



**Analytical Resources, LLC**  
Analytical Chemists and Consultants

23 May 2023

Ali Judkins  
Anchor QEA, LLC  
1201 3rd Ave, Suite 2600  
Seattle, WA 98101

RE: AOC5 MR Phase 1

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
23D0063	N/A

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I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclosed Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

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Analytical Resources, LLC

Susan Dunninghoo, Director, Client Services

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



# CHAIN-OF-CUSTODY/TEST REQUEST FORM

No **3991**

Project/Client Name: AOC5 MR Phase 1  
 Project Number: 210075.01.02  
 Contact Name: Amera Vandervort  
 Sampled By: Windward

Ship to: ARL  
 Attn: Sue Duranico  
 Shipper: carrier  
 Form filled out by: KM  
 Shipping Date: 4/4/23  
 Airbill Number:             
 Turnaround requested: std.

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions (Jar tag number(s))
					Pb/Bs	SMS SVOCs	TDC/TS	SMS Metals	DIF	Archive		
4/4/23	1002	LDW23-SS1818	4	Sediment	X	X	X	X	X	X		
	1025	LDW23-SC1818	4	↓	X		X			X		
	1252	LDW23-SS1819	4		X	X	X	X	X	X		
	1312	LDW23-SC1819	4		X		X			X		
<del>_____</del>												
<b>Total Number of Containers</b>			<b>16</b>	<b>Purchase Order / Statement of Work #</b> <u>APJ-110222-AOC5-ARL</u>								

1) Released by:	1) Rec'd by: <u>Philip BA</u>	2) Released by:	2) Rec'd by:
Print name: <u>Kate McPeck</u>	Company: <u>AR</u>	Print name:	Company:
Signature: <u>[Signature]</u>	Date/Time: <u>4/4/23 15:10</u>	Signature:	Date/Time:
Company: <u>Windward</u>		Company:	

\* Distribution: White copies accompany shipment; yellow retained by consignor.



200 1st Ave W, Suite 500  
 Seattle, WA 98119  
 206.378.1364

**To be completed by Laboratory upon sample receipt:**

Date of receipt: <u>4/4/23</u>	Laboratory W.O. #: <u>2300063</u>
Condition upon receipt: <u>good</u>	Time of receipt: <u>15:10</u>
Cooler temperature: <u>4.1°C</u>	Received by: <u>Philip Bates</u>





# Cooler Receipt Form

ARI Client: Anchor QEA/windward  
 COC No(s): 3991 NA  
 Assigned ARI Job No: 2300063

Project Name: AOC5 MR Phase1  
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: \_\_\_\_\_  
 Tracking No: \_\_\_\_\_ NA

**Preliminary Examination Phase:**

Were intact, properly signed and dated custody seals attached to the outside of the cooler? YES NO  
 Were custody papers included with the cooler? YES NO  
 Were custody papers properly filled out (ink, signed, etc.) YES NO  
 Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 4.1  
 Time 15:29  
 If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 3009708  
 Cooler Accepted by: PIB Date: 4/14/23 Time: 15:10

**Complete custody forms and attach all shipping documents**

**Log-In Phase:**

Was a temperature blank included in the cooler? YES NO  
 What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: \_\_\_\_\_  
 Was sufficient ice used (if appropriate)? NA YES NO  
 How were bottles sealed in plastic bags? Individually Grouped Not  
 Did all bottles arrive in good condition (unbroken)? 12 B YES NO  
 Were all bottle labels complete and legible? 4/4 YES NO  
 Did the number of containers listed on COC match with the number of containers received? YES NO  
 Did all bottle labels and tags agree with custody papers? YES NO  
 Were all bottles used correct for the requested analyses? YES NO  
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... NA YES NO  
 Were all VOC vials free of air bubbles? NA YES NO  
 Was sufficient amount of sample sent in each bottle? YES NO  
 Date VOC Trip Blank was made at ARI: \_\_\_\_\_ NA  
 Were the sample(s) split by ARI? NA YES Date/Time: \_\_\_\_\_ Equipment: \_\_\_\_\_ Split by: \_\_\_\_\_

Samples Logged by: PIB Date: 4/14/23 Time: 15:39 Labels checked by: PIB

**\*\* Notify Project Manager of discrepancies or concerns \*\***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

**Additional Notes, Discrepancies, & Resolutions:**

By: \_\_\_\_\_ Date: \_\_\_\_\_



Anchor QEA, LLC

1201 3rd Ave, Suite 2600

Seattle, WA 98101

Project: AOC5 MR Phase 1

Project Number: 210075-01.02

Project Manager: Ali Judkins

**Reported:**

05/23/2023 12:25

**ANALYTICAL REPORT FOR SAMPLES**

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
23D0063-01	LDW23-SS1818	Solid	04/04/23 10:02	04/04/23 15:10
23D0063-02	LDW23-SC1818	Solid	04/04/23 10:25	04/04/23 15:10
23D0063-03	LDW23-SS1819	Solid	04/04/23 12:52	04/04/23 15:10
23D0063-04	LDW23-SC1819	Solid	04/04/23 13:12	04/04/23 15:10



Anchor QEA, LLC  
1201 3rd Ave, Suite 2600  
Seattle WA, 98101

Project: AOC5 MR Phase 1  
Project Number: 210075-01.02  
Project Manager: Ali Judkins

Reported:  
23-May-2023 12:25

## Case Narrative

**Client:** Anchor QEA, LLC  
**Project:** AOC5 MR Phase 1  
**Work Order:** 23D0063

### Sample receipt

Samples as listed on the preceding page were received 04-Apr-2023 15:10 under ARI work order 23D0063. For details regarding sample receipt, please refer to the Cooler Receipt Form. Samples were frozen on receipt to preserve holding times.

### Semivolatiles - EPA Method SW8270E

The sample(s) were extracted and analyzed within the recommended holding times for samples stored frozen.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank showed response for phenol just over the reporting limit and was rerun to initial a second sequence. Associated positive results have been "B"-flagged.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent differences (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries outside advisory control limits have been flagged on the summary sheet. Relative percent differences (RPD) were within advisory control limits.

The reference material (SRM) percent recoveries were within control limits.

### Semivolatiles - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times for samples stored frozen.

Initial and continuing calibrations were within method requirements, with accepted excursions outside the 20% window. Associated positive results have been "Q"-flagged.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent differences (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent differences (RPD) were within advisory control limits.

The reference material (SRM) percent recoveries were within control limits.





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Project: AOC5 MR Phase 1  
Project Number: 210075-01.02  
Project Manager: Ali Judkins

Reported:  
23-May-2023 12:25

## Case Narrative

### Pesticides - EPA Method SW8081B (Hexachlorobenzene)

The sample(s) were extracted and analyzed within the recommended holding times for samples stored frozen.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The batch BLD0299 matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits, reported under work order 23D0037.

Results that have been "P1"-flagged indicate a greater than 40% difference between the results on the two analytical columns, attributed to interference from the matrix.

### PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times for samples stored frozen. Due to failures of the internal standards attributed to matrix interference, all samples were run at a 5x dilution to mitigate matrix effect.

Standard SLE0029-CCV3 showed tetra-chloro-m-xylene (TCMX) above limits. As TCMX is used as an indicator of blow down efficiency and is not required by the method, no action was taken.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent differences (RPD) were within control limits.

The batch BLD0300 matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent differences (RPD) were within advisory control limits, reported under work order 23D0037.

The reference material (SRM) percent recoveries were within control limits.

### Total Metals - EPA Method 6020B

The sample(s) were digested and analyzed within the recommended holding times for samples stored frozen.

Lead was high of limits for several standards in sequence SLE0204. Affected analytes were not reported. The standard mode was noted noisy in sample LDW23-SS1006 and affected analytes were not reported. SLE0204-HCV1 showed indium noisy but cadmium results were low and no action was taken. SLE0204-IFA showed chromium-53 high.

The method blank(s) were clean at the reporting limits.



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Reported:  
23-May-2023 12:25

### Case Narrative

The blank spike (BS/LCS) percent recoveries were within control limits.

The duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent differences (RPD) were within advisory control limits.

#### **Total Mercury - EPA Method 7471B**

The sample(s) were digested and analyzed within the recommended holding times for samples stored frozen.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recovery was within control limits.

The duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent differences (RPD) were within advisory control limits.

#### **Wet Chemistry (Total Organic Carbon and Total Solids)**

The sample(s) were prepared and analyzed within the recommended holding times for samples stored frozen.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The batch BLE0415 matrix spike (MS) percent recovery is high of limits, flagged "HC", indicating a deviation attributed to high concentration in the parent sample, reported under work order 23C0752.

The batch BLE0415 duplicate (DUP) relative percent differences (RPD) were within advisory control limits, reported under work order 23C0752.

#### **Dioxin/Furans - EPA Method 1613**

The sample(s) were extracted and analyzed within the recommended holding times for samples stored frozen. Analysis was performed using an application specific column developed by Restek. The RTX-Dioxin2 column has unique isomer separation for the 2378-TCDF, eliminating the need for confirmation analysis.

In sequence SLE0060, the standard SLE0060-CCV1 had recovery for 13C12-1,2,3,6,7,8-HxCDD below the control limit.

The cleanup surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits, with response for OCDD noted below the reporting limit. Associated positive results have been "B"-flagged.

The OPR (Ongoing Precision and Recovery) standard percent recoveries were within control limits.



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Project Number: 210075-01.02  
Project Manager: Ali Judkins

**Reported:**  
23-May-2023 12:25

### **Case Narrative**

The duplicate (DUP) relative percent differences (RPD) for OCDD and OCDF were outside advisory control limits and flagged on the summary sheet.

The reference material (SRM) percent recoveries were within control limits.

The sample was reanalyzed due to a bad injection in the initial analysis.





## QUALIFIERS AND NOTES

<u>Qualifier</u>	<u>Definition</u>
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
J	Estimated concentration value detected below the reporting limit.
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
H	Hold time violation - Hold time was exceeded.
EMPC	Estimated Maximum Possible Concentration qualifier for HRGCMS Dioxin
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
D	The reported value is from a dilution
B	This analyte was detected in the method blank.
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



**Analytical Resources, LLC**  
Analytical Chemists and Consultants  
Tukwila, WA

## ICP-MS Metals

### Analyzed with Secondary Isotopes

ICPMS metals are quantitated with the primary Ion and major wavelength unless interference is noted. When secondary ions are used for quantitation, both ions will be reported for laboratory and matrix QC.

These results were reported from a secondary ion:

Labnumber  
23D0063-01

SampleName  
LDW23-SS1818

Analyte  
Copper-65



Form I  
ORGANIC ANALYSIS DATA SHEET  
EPA 8270E  
Semivolatiles (20ug/kg - 0.2ug/L SepF)

Laboratory: Analytical Resources, LLC

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment

Laboratory ID: 23D0063-01 A

SDG: 23D0063

Sampled: 04/04/23 10:02

Prepared: 04/17/23 12:00

File ID: NT1405012313.D

% Solids: 43.18

Preparation: EPA 3546 (Microwave)

Analyzed: 05/01/23 21:54

Batch: BLD0297

Sequence: SLE0024

Initial/Final: 23.16 g Wet / 1 mL

Instrument: NT14

Column: ZB-5MS

Calibration: GD00062

Cleanups: GPC

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg dry)	Q	DL	RL
108-95-2	Phenol	1	12.6	J, B	4.4	20.0
106-44-5	4-Methylphenol	1	20.0	U	7.4	20.0
91-20-3	Naphthalene	1	13.0	J	4.2	20.0
91-57-6	2-Methylnaphthalene	1	10.8	J	4.5	20.0
208-96-8	Acenaphthylene	1	12.9	J	6.2	20.0
131-11-3	Dimethylphthalate	1	4.5	J	4.4	20.0
83-32-9	Acenaphthene	1	10.4	J	5.2	20.0
132-64-9	Dibenzofuran	1	20.0	U	14.1	20.0
86-73-7	Fluorene	1	20.0	U	14.6	20.0
85-01-8	Phenanthrene	1	97.1		8.7	20.0
120-12-7	Anthracene	1	38.7		7.2	20.0
206-44-0	Fluoranthene	1	221		6.1	20.0
129-00-0	Pyrene	1	298		5.7	20.0
85-68-7	Butylbenzylphthalate	1	11.9	J	9.4	20.0
56-55-3	Benzo(a)anthracene	1	141		6.0	20.0
218-01-9	Chrysene	1	226		6.1	20.0
117-81-7	bis(2-Ethylhexyl)phthalate	1	50.0	U	5.5	50.0
	Benzo(a)fluoranthenes, Total	1	444		10.0	40.0
50-32-8	Benzo(a)pyrene	1	150		4.2	20.0
193-39-5	Indeno(1,2,3-cd)pyrene	1	41.6		14.6	20.0
53-70-3	Dibenzo(a,h)anthracene	1	20.0	U	17.2	20.0
191-24-2	Benzo(g,h,i)perylene	1	39.9		13.6	20.0

SURROGATES	ADDED: (ug/kg dry)	FOUND: (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	749.96	530	70.6	27 - 120	
Phenol-d5	749.96	568	75.7	29 - 120	
2-Chlorophenol-d4	749.96	605	80.7	31 - 120	
1,2-Dichlorobenzene-d4	499.98	372	74.4	32 - 120	
Nitrobenzene-d5	499.98	408	81.6	30 - 120	
2-Fluorobiphenyl	499.98	445	89.0	35 - 120	





**Form I**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8270E**  
**Semivolatiles (20ug/kg - 0.2ug/L SepF)**

Laboratory: Analytical Resources, LLC

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment

Laboratory ID: 23D0063-01 A

SDG: 23D0063

Sampled: 04/04/23 10:02

Prepared: 04/17/23 12:00

File ID: NT1405012313.D

% Solids: 43.18

Preparation: EPA 3546 (Microwave)

Analyzed: 05/01/23 21:54

Batch: BLD0297

Sequence: SLE0024

Initial/Final: 23.16 g Wet / 1 mL

Instrument: NT14

Column: ZB-5MS

Calibration: GD00062

Cleanups: GPC

SURROGATES	ADDED: (ug/kg dry)	FOUND: (ug/kg dry)	% REC	QC LIMITS	Q
2,4,6-Tribromophenol	749.96	654	87.2	24 - 134	
p-Terphenyl-d14	499.98	363	72.7	37 - 120	

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012313.D

Date: 01-May-2023 21:54

Client ID:

Sample Info: 23D0063-01

Page 1

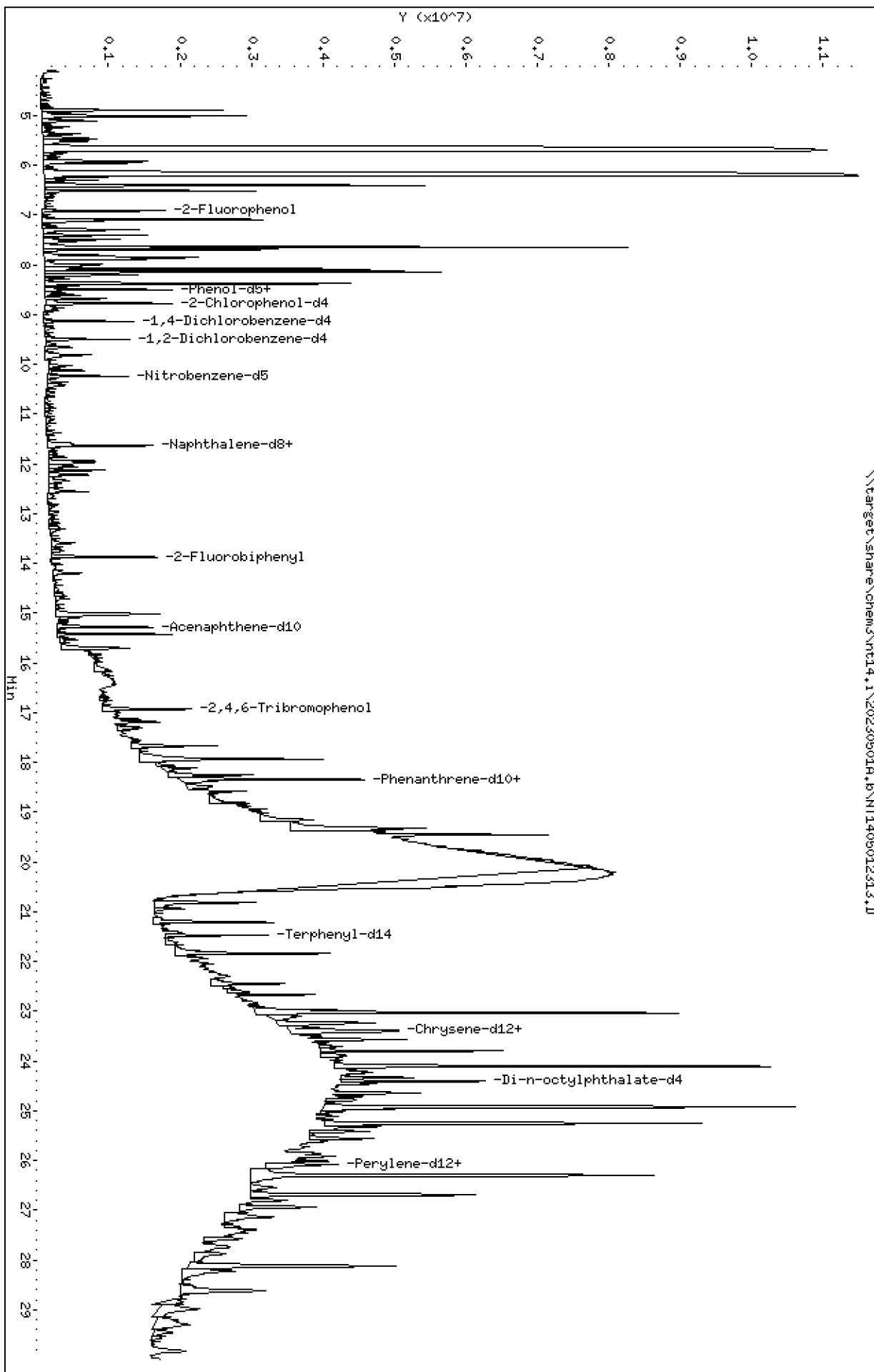
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JSD

Column diameter: 0.25

\\target\share\chem3\nt14.1\20230501A.B\NT1405012313.D



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

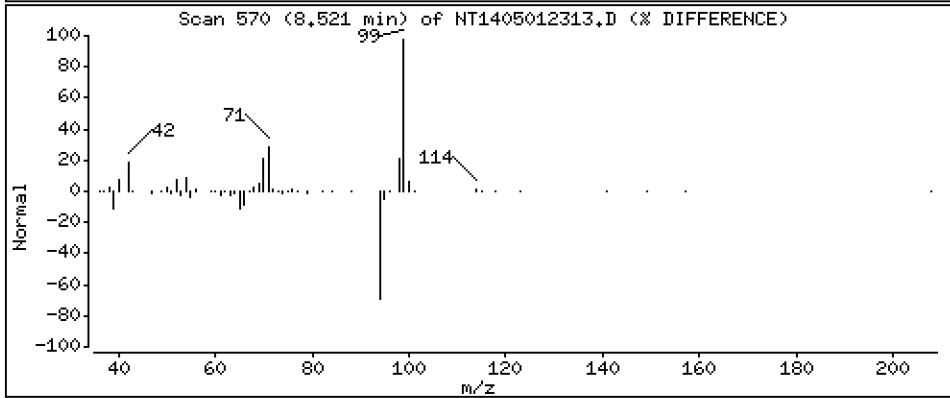
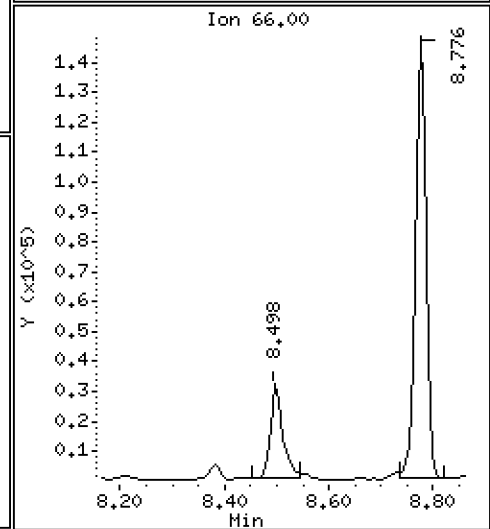
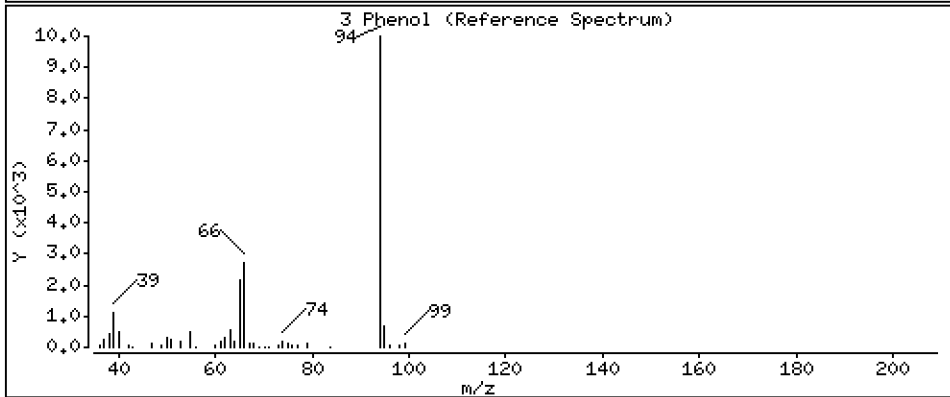
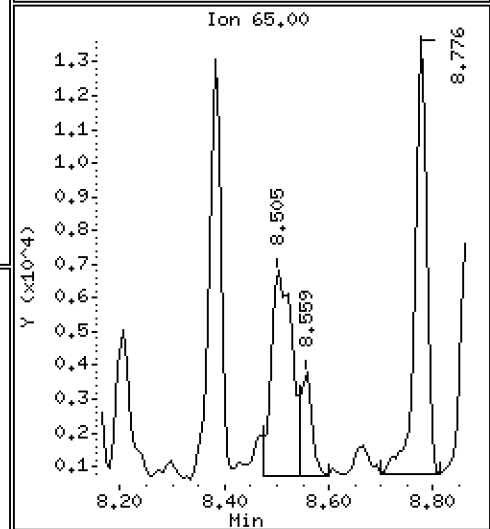
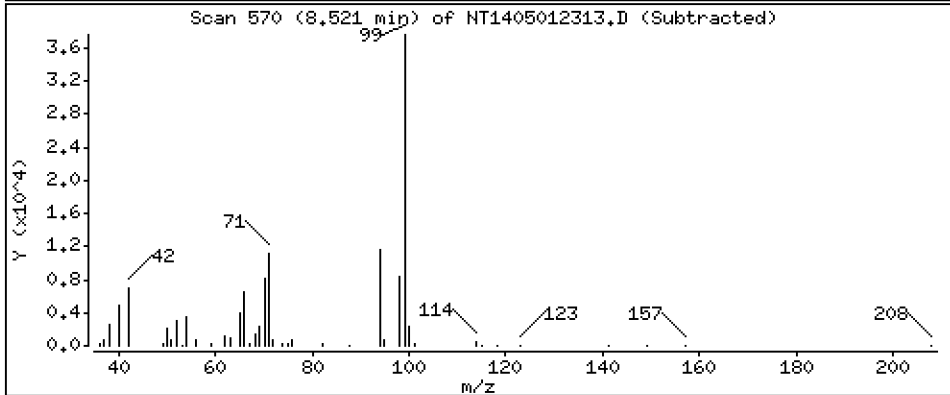
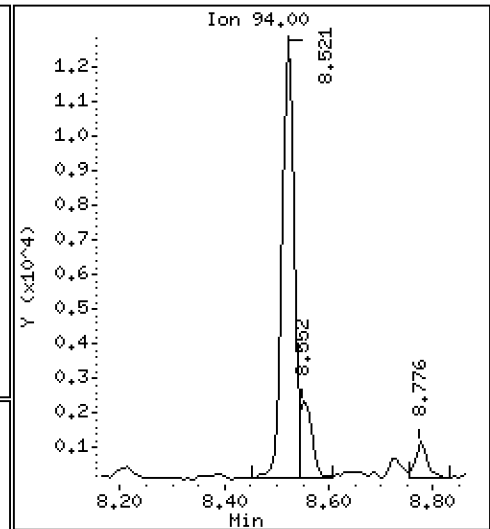
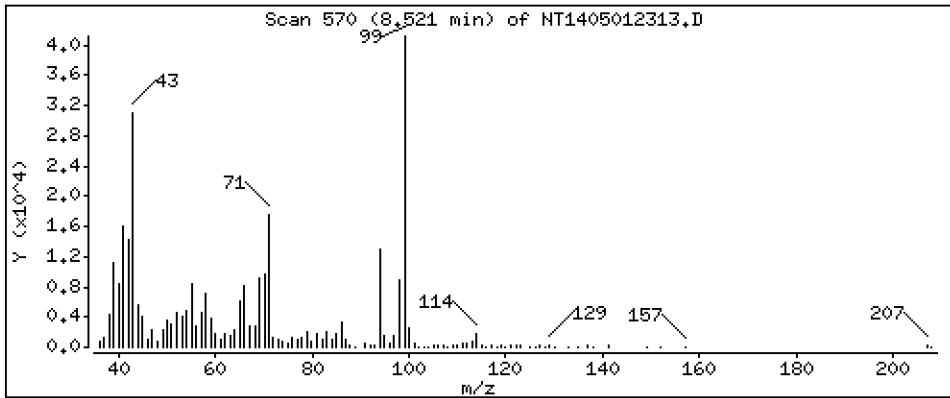
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,1261 ug/mL





Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

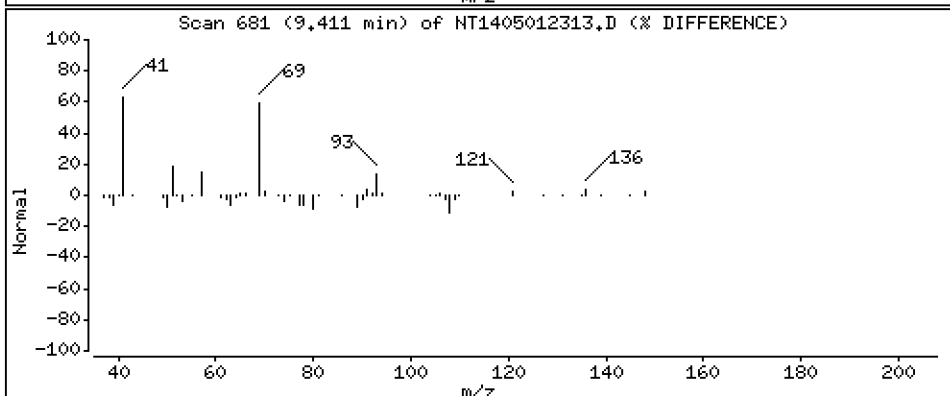
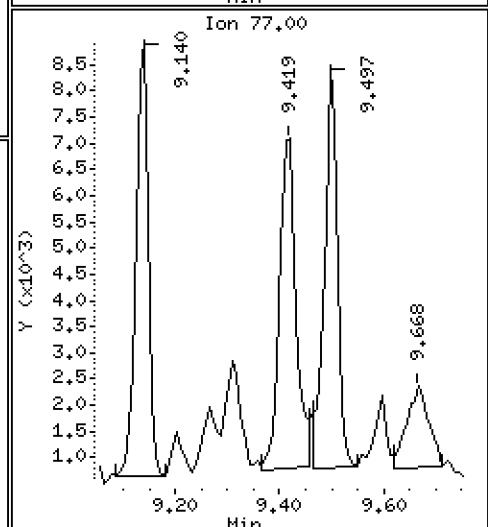
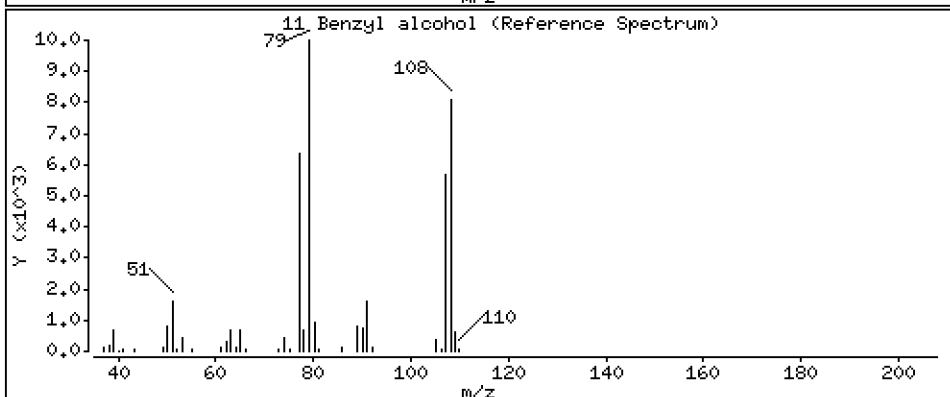
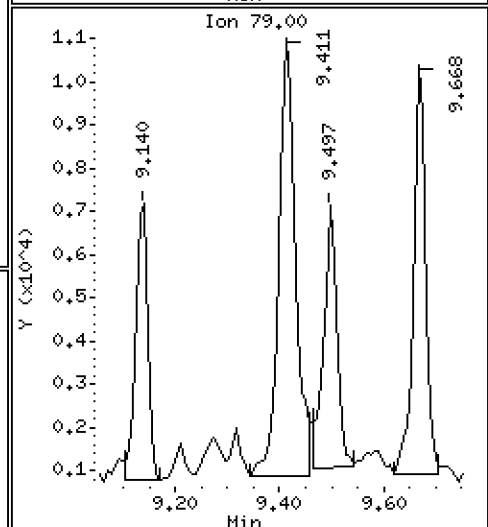
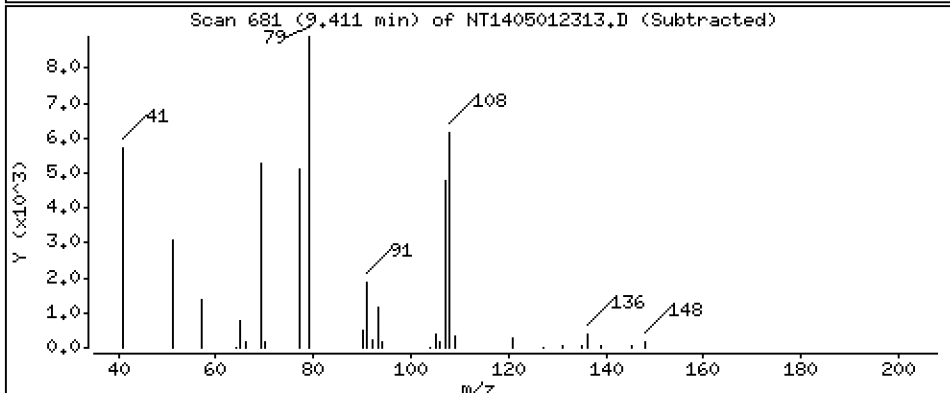
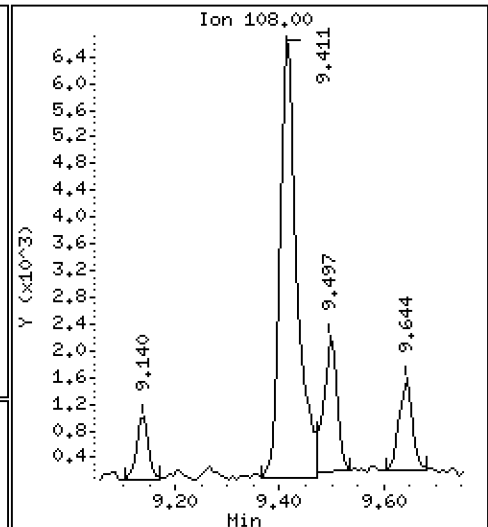
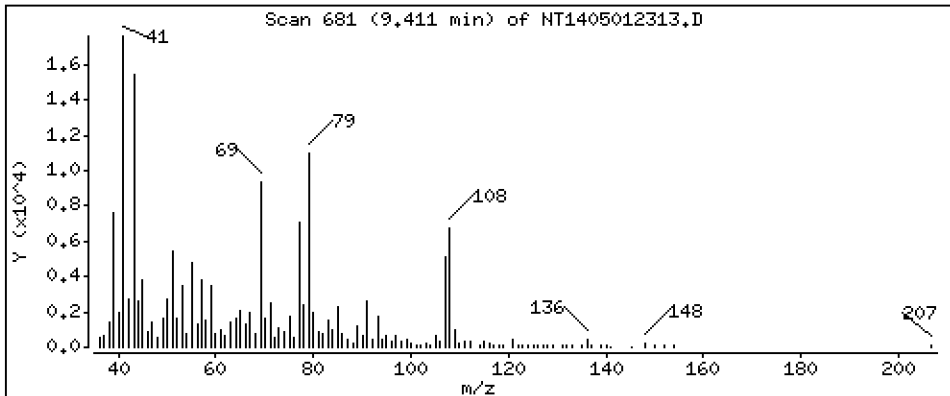
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 0.2066 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

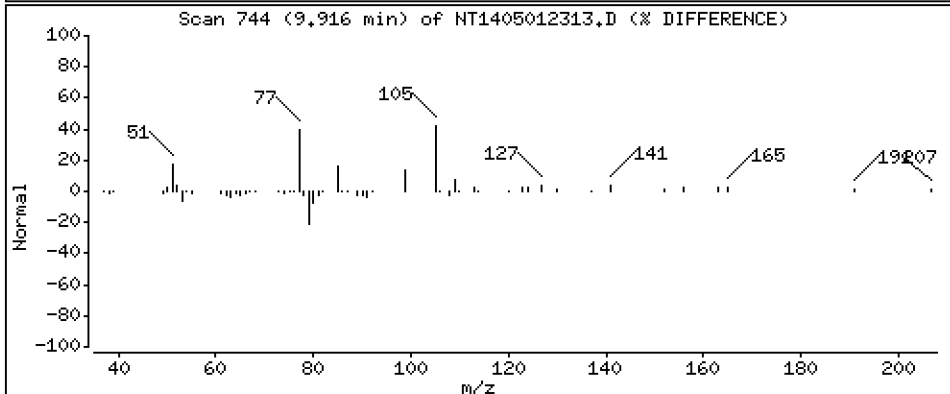
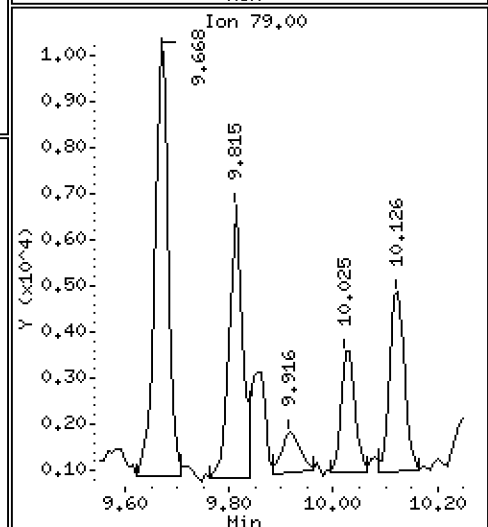
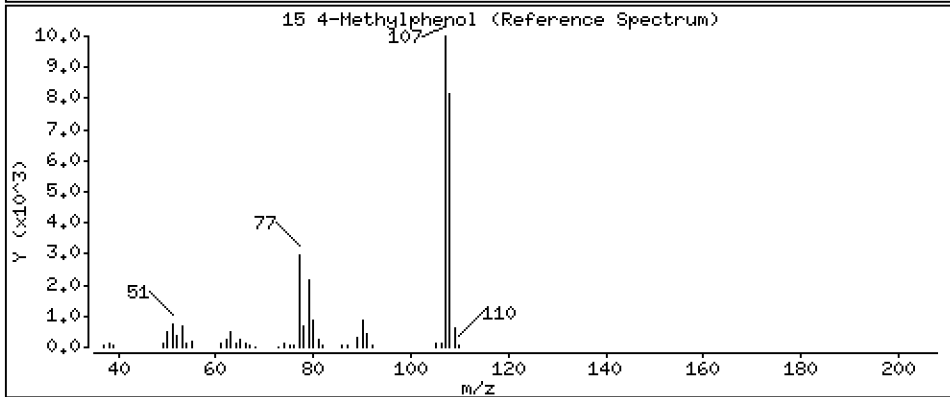
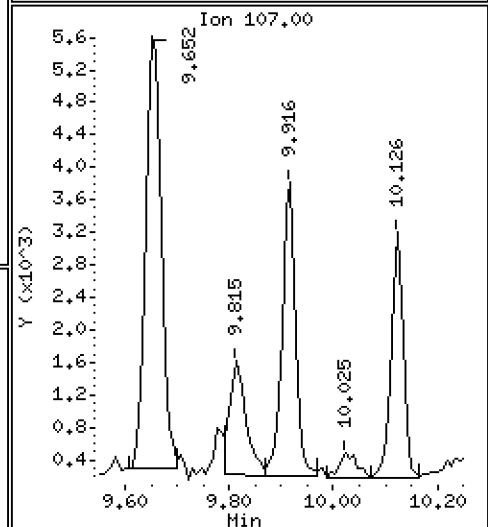
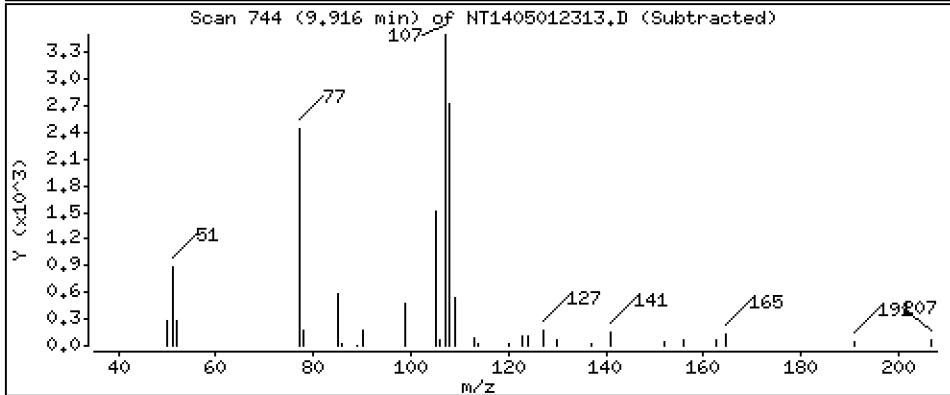
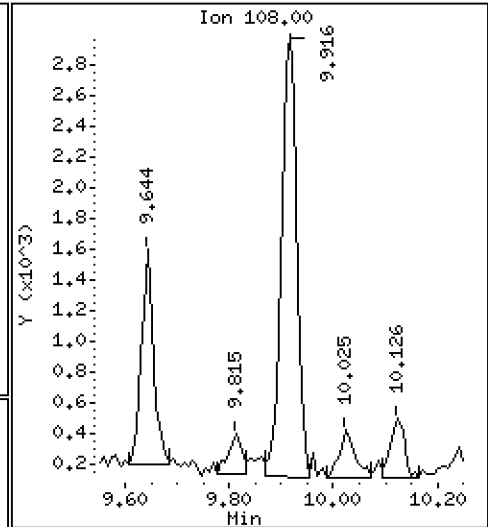
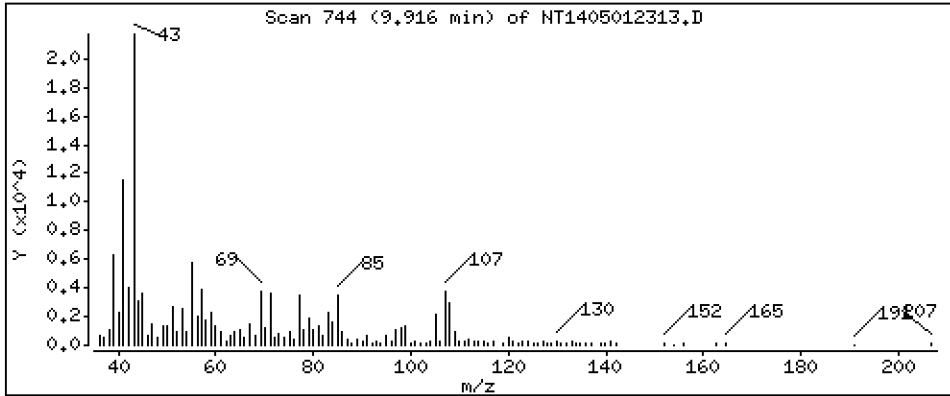
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 0.05063 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

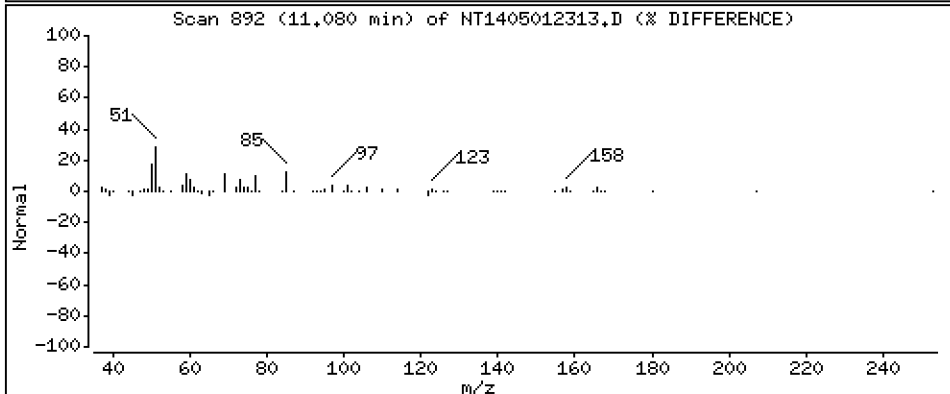
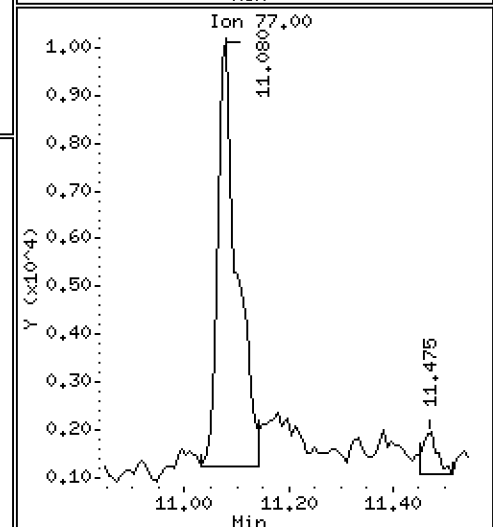
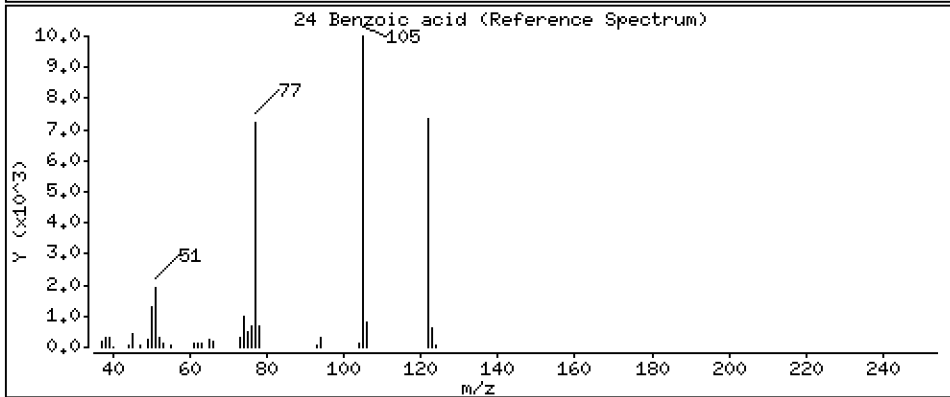
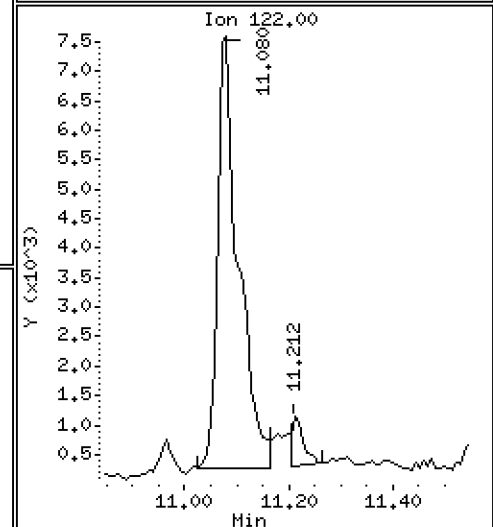
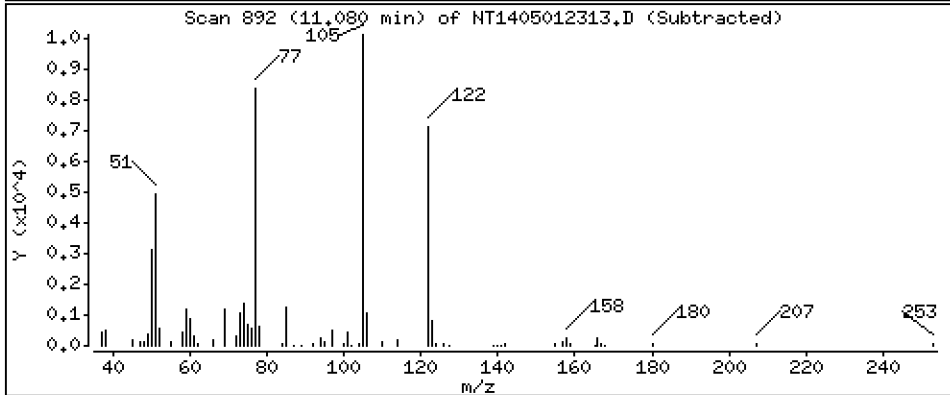
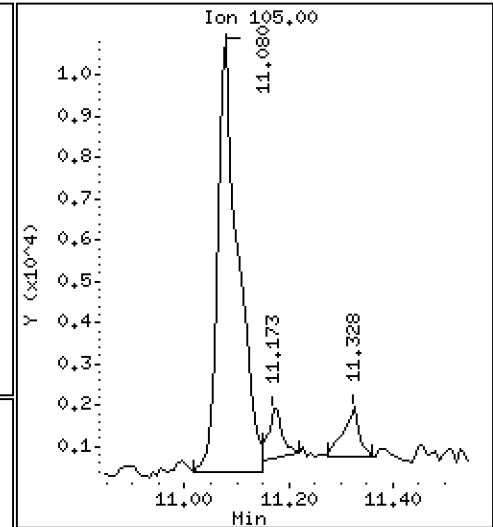
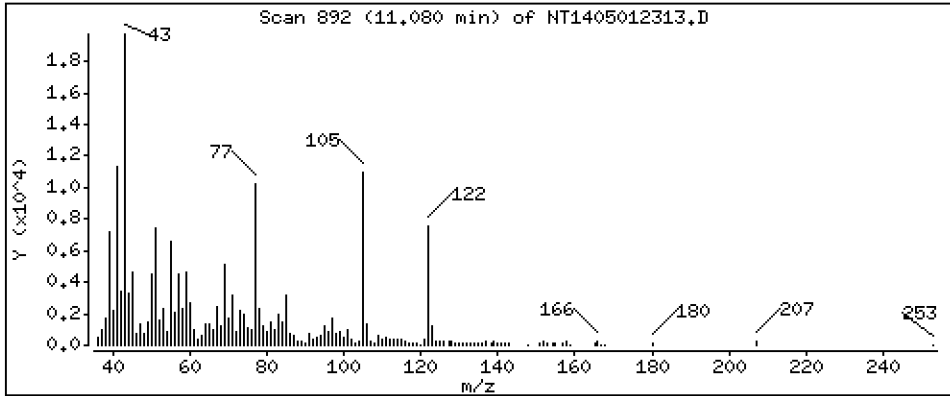
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 0,3273 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

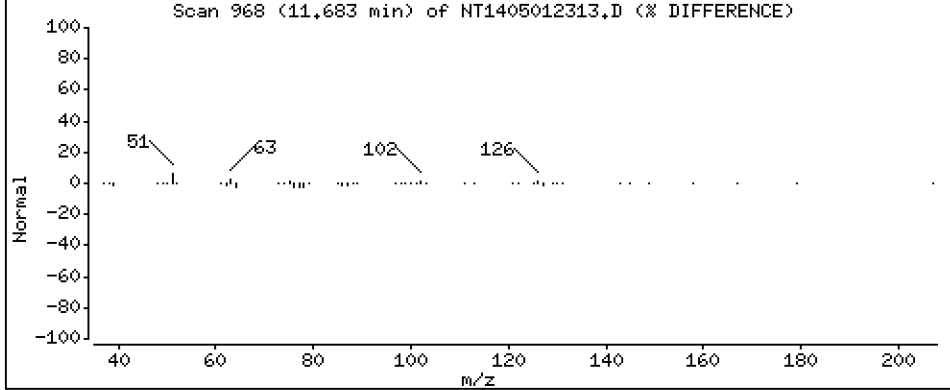
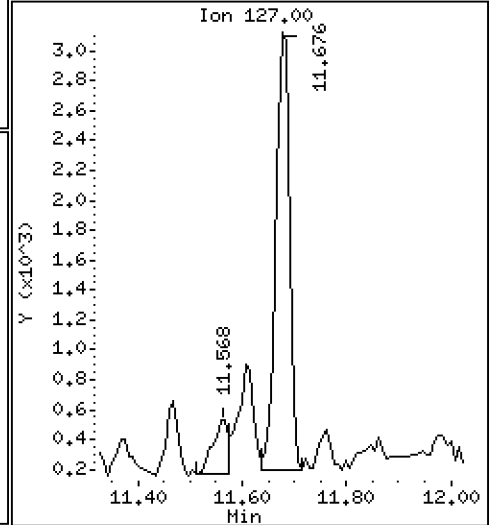
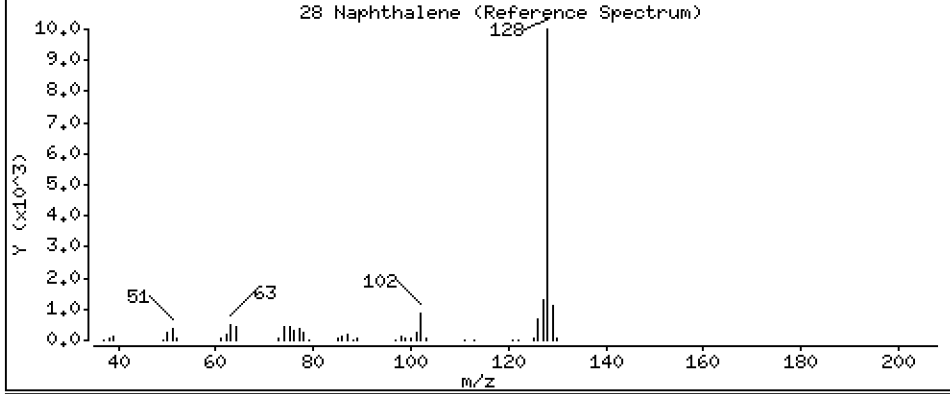
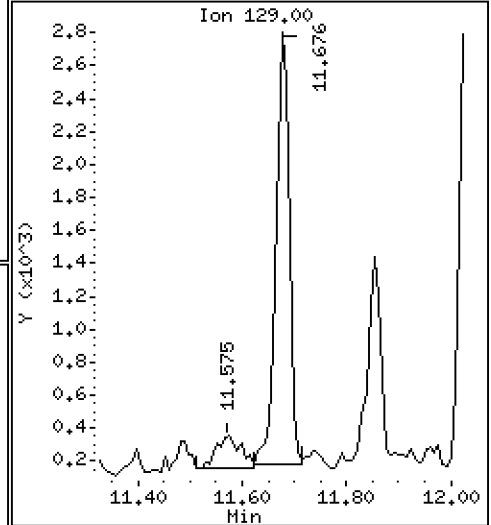
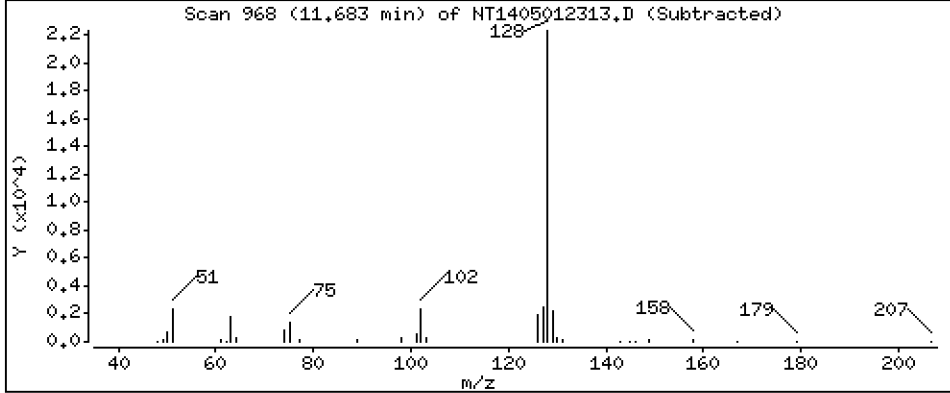
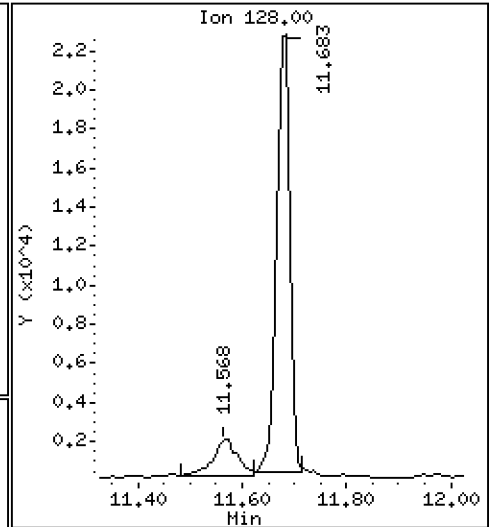
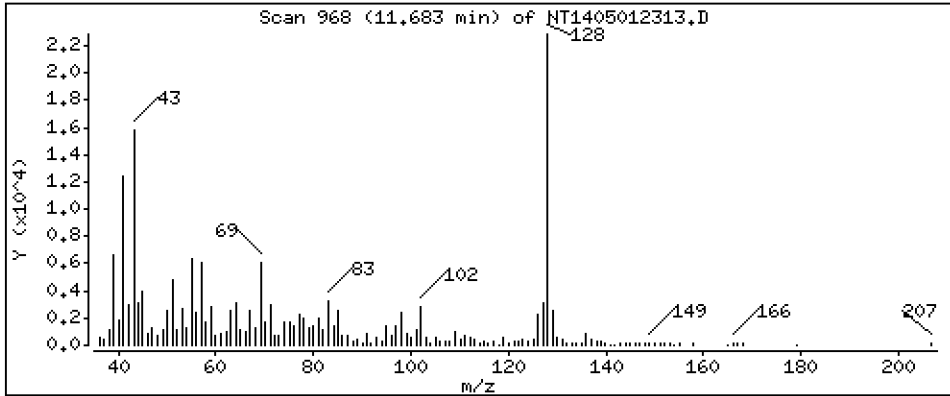
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

28 Naphthalene

Concentration: 0.1297 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

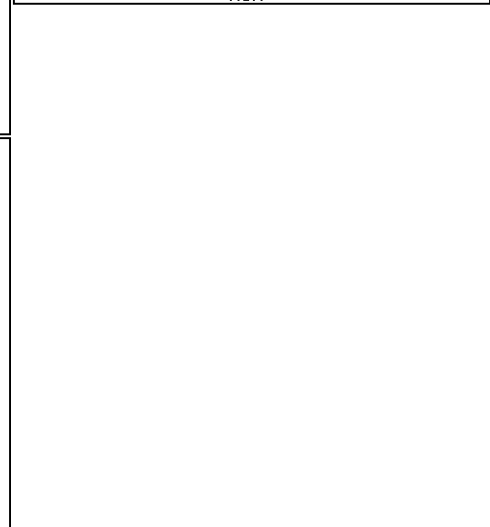
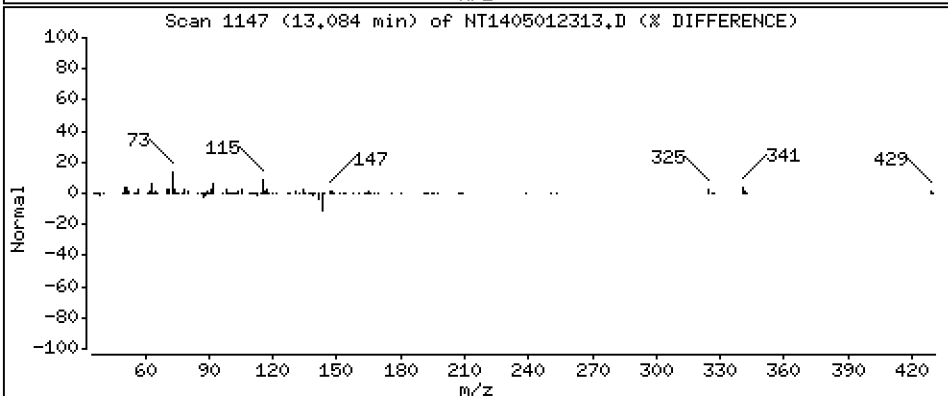
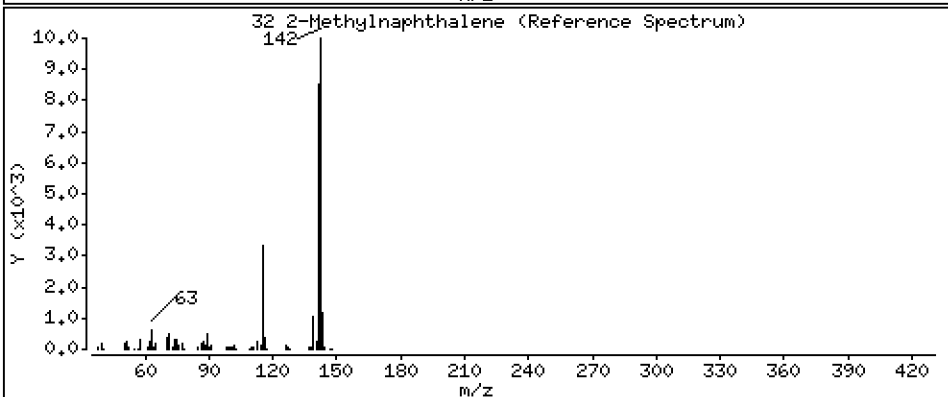
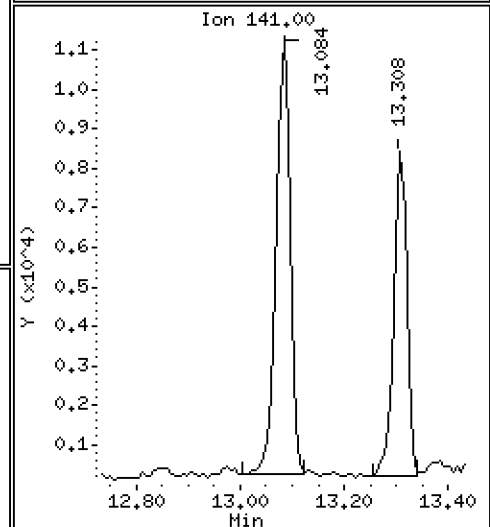
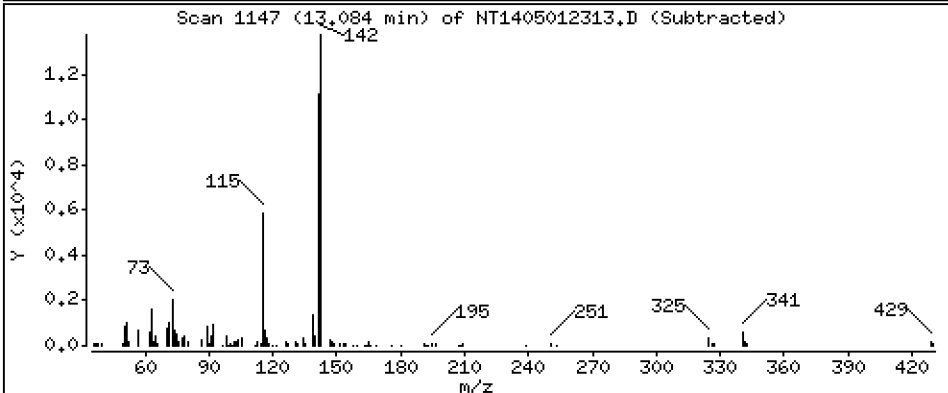
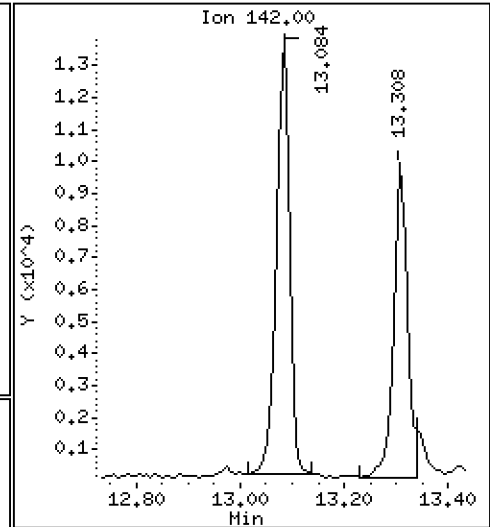
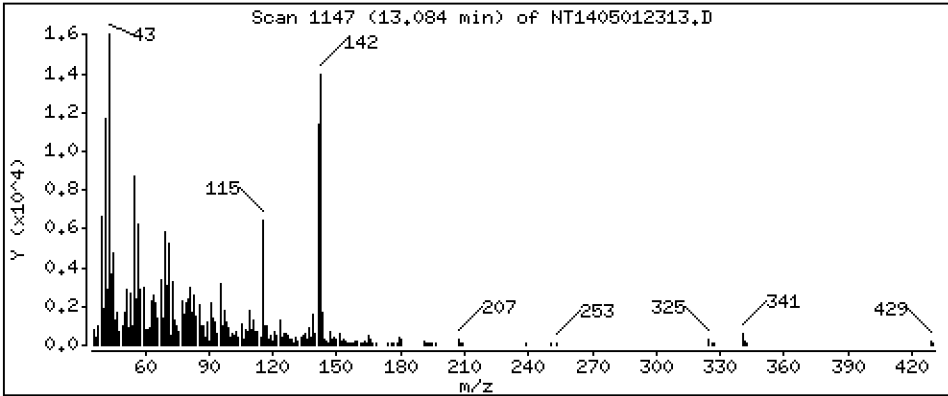
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 0,1077 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

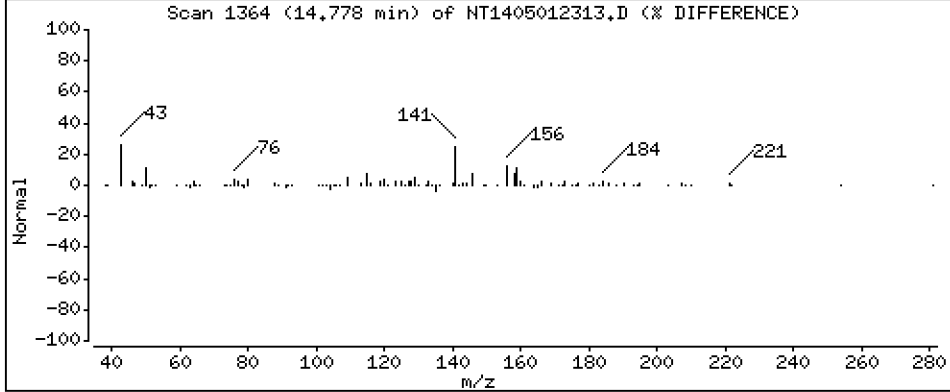
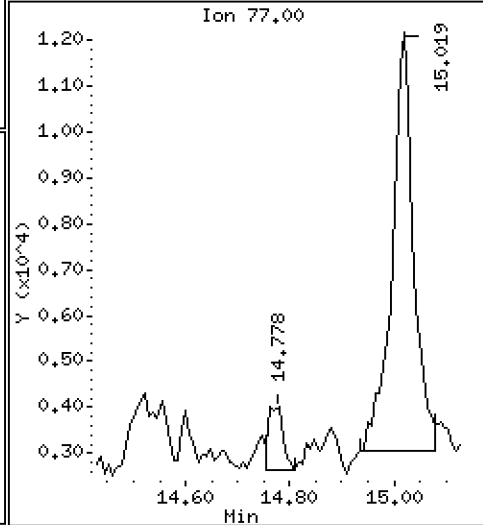
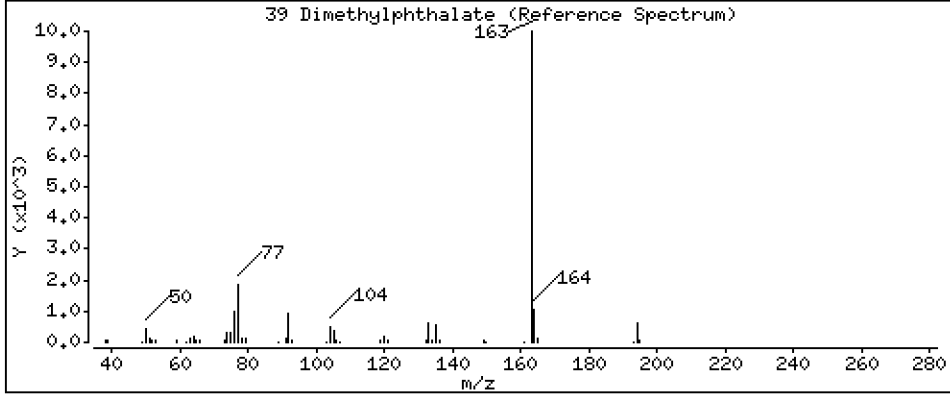
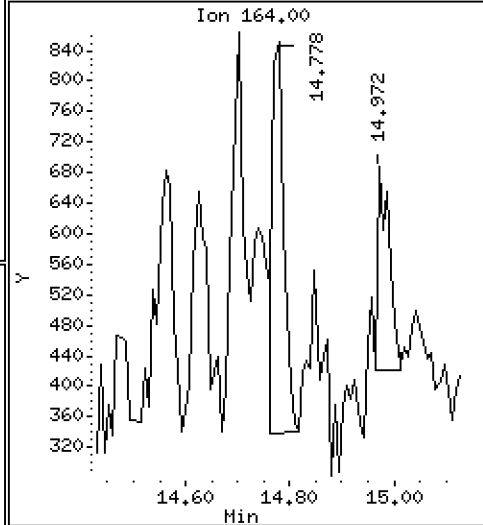
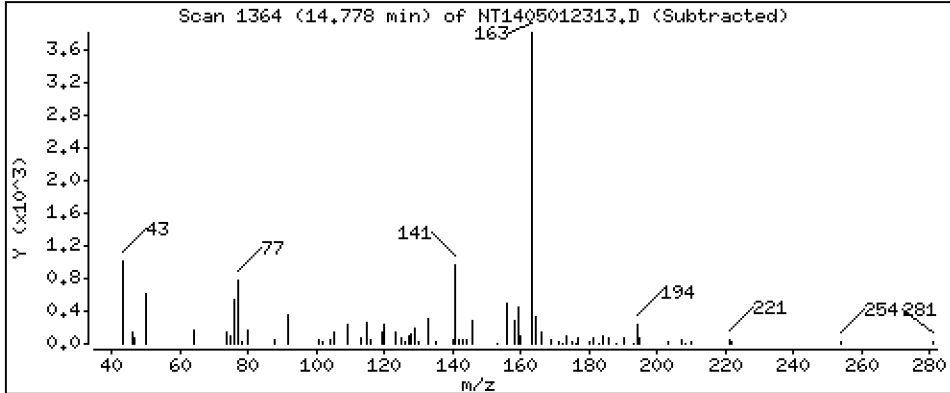
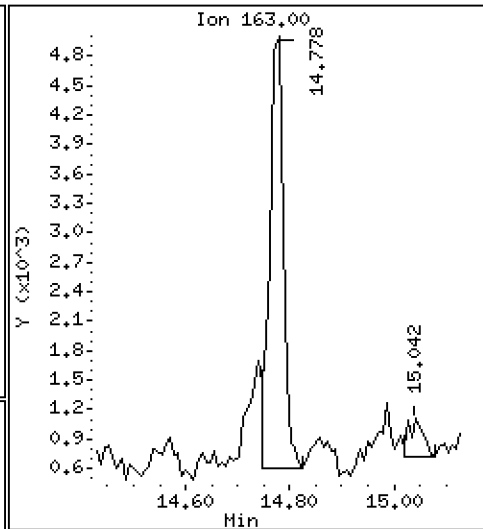
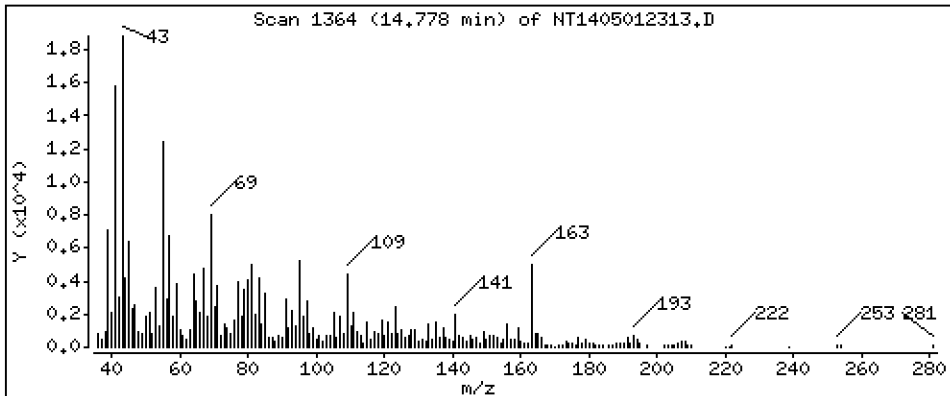
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

39 Dimethylphthalate

Concentration: 0.04498 ug/mL





Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

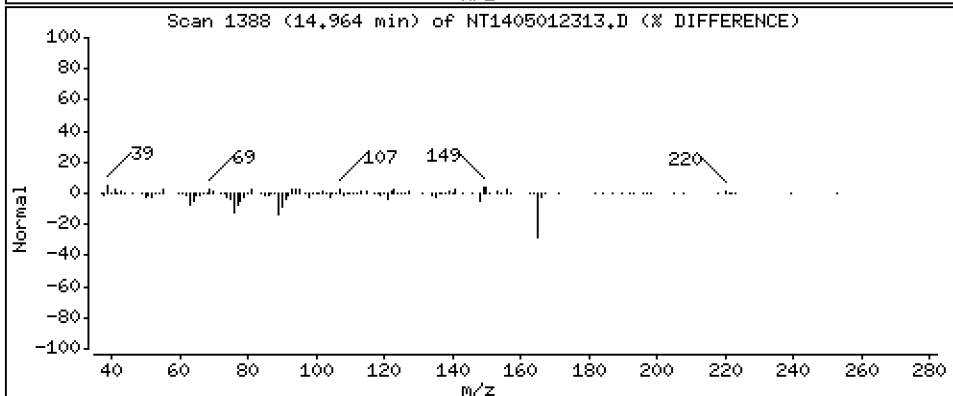
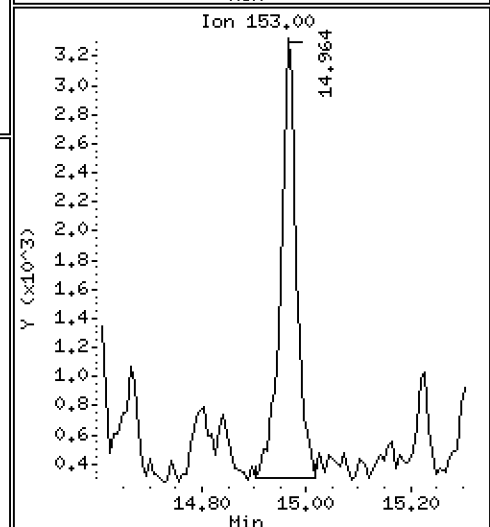
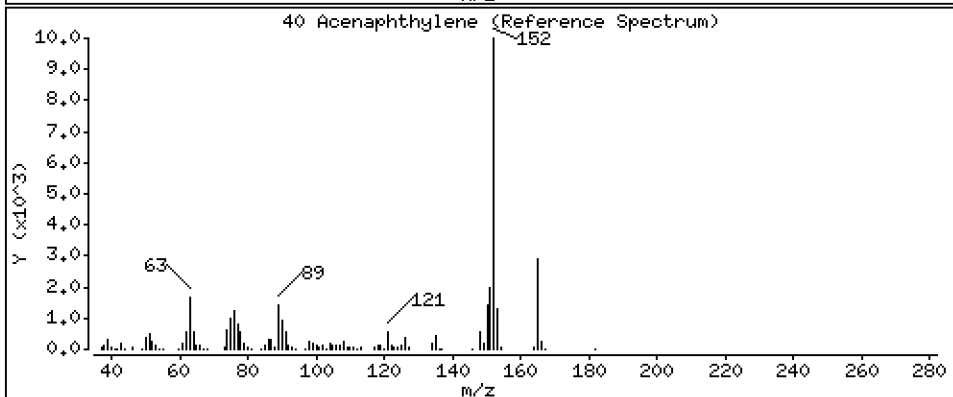
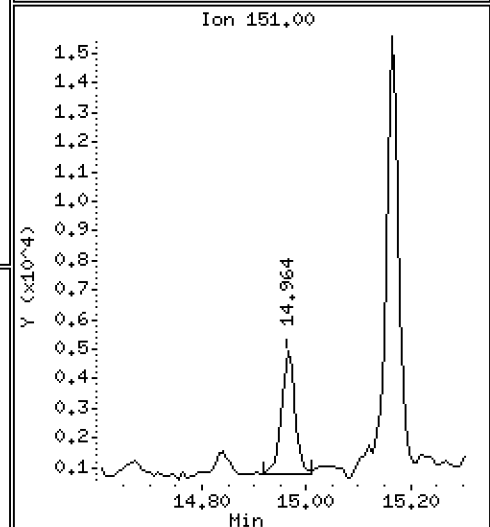
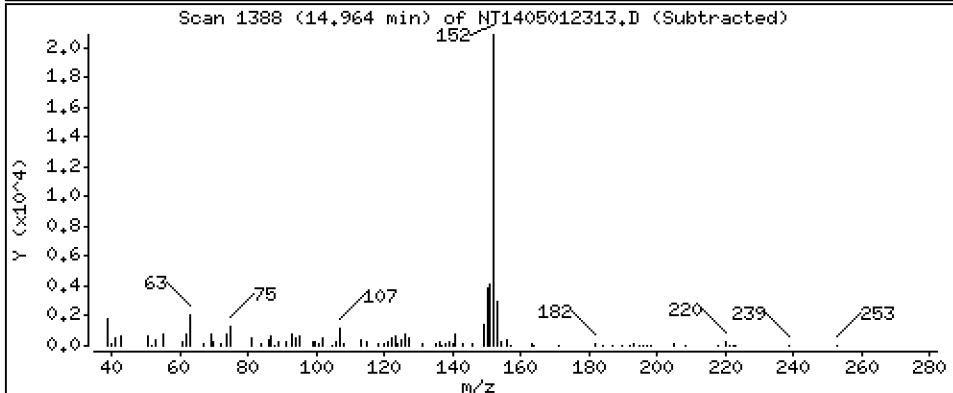
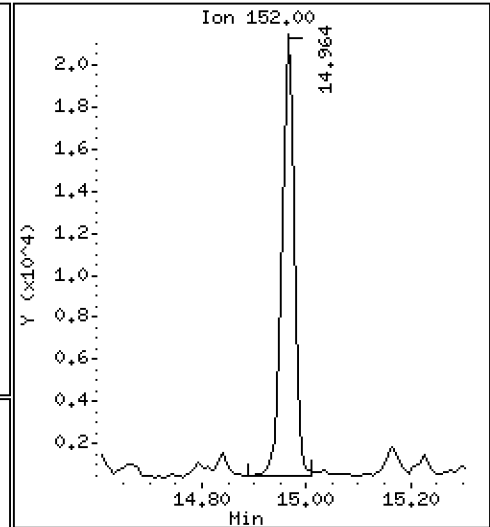
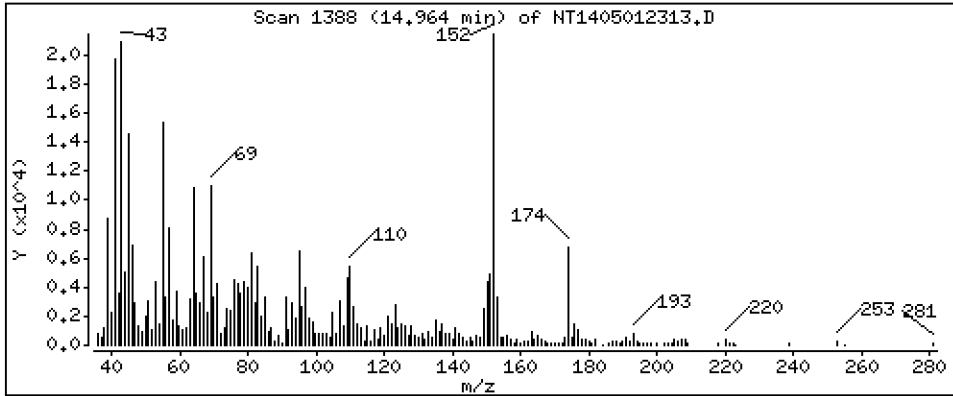
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 0,1293 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

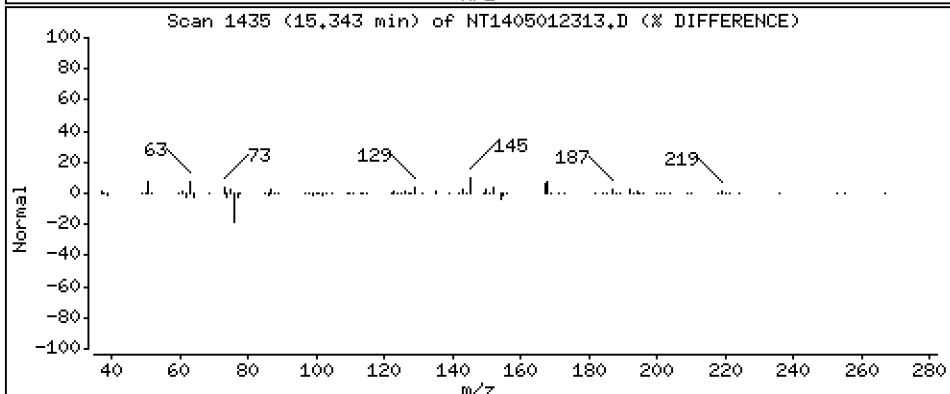
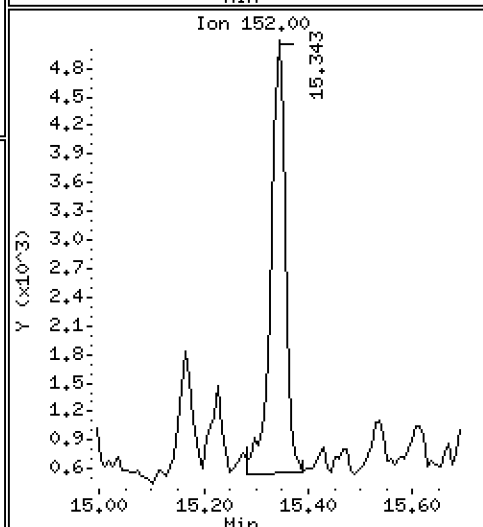
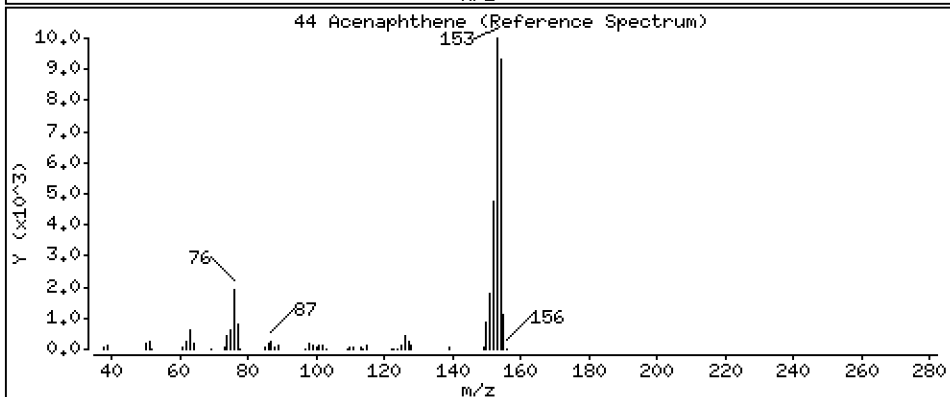
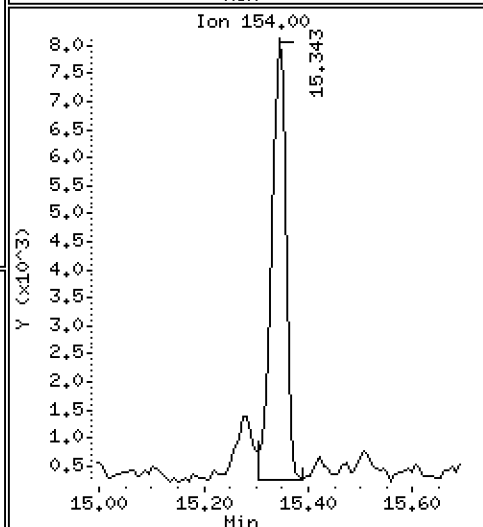
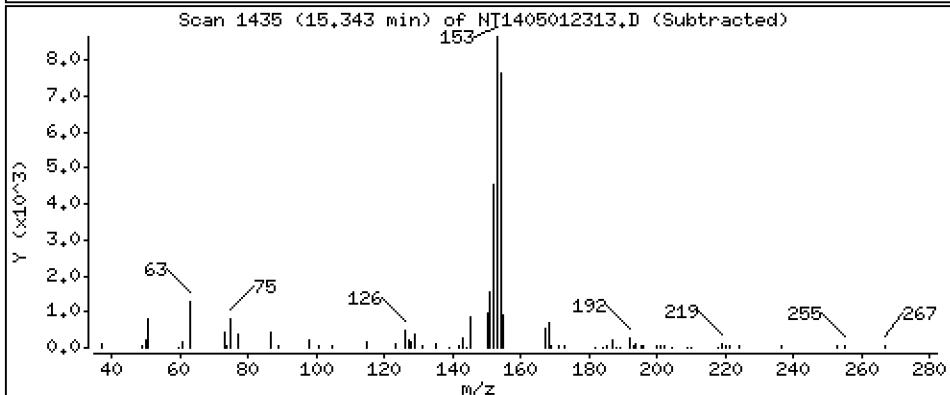
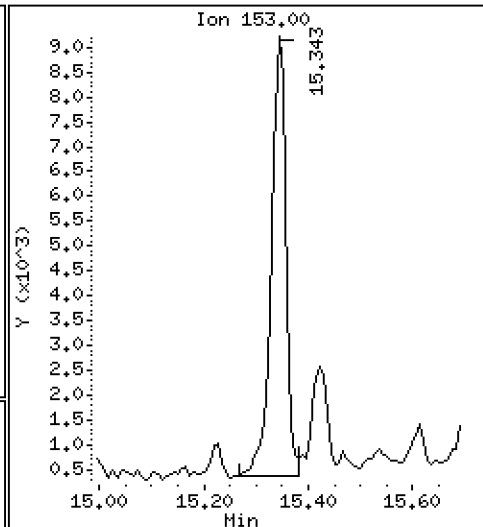
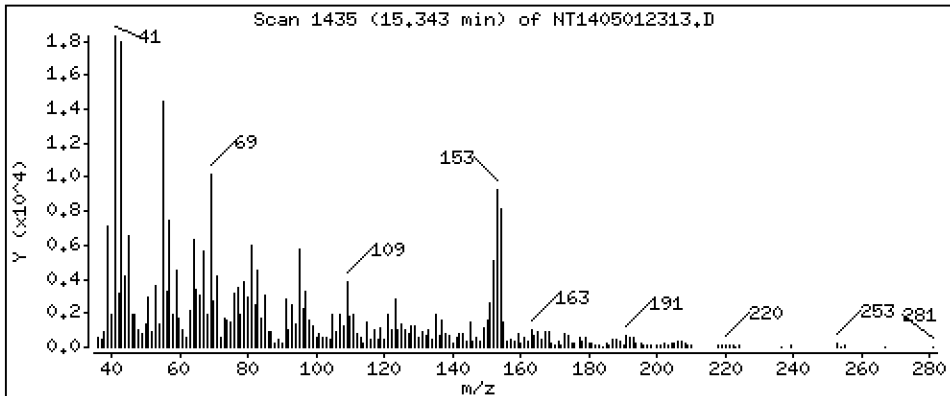
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 0,1045 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

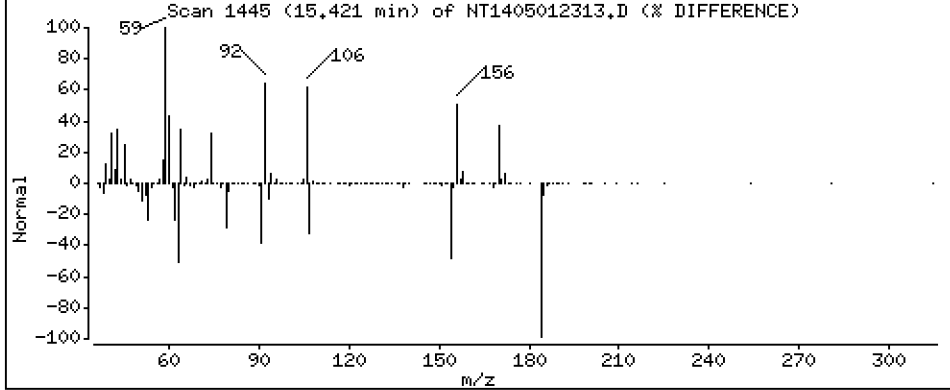
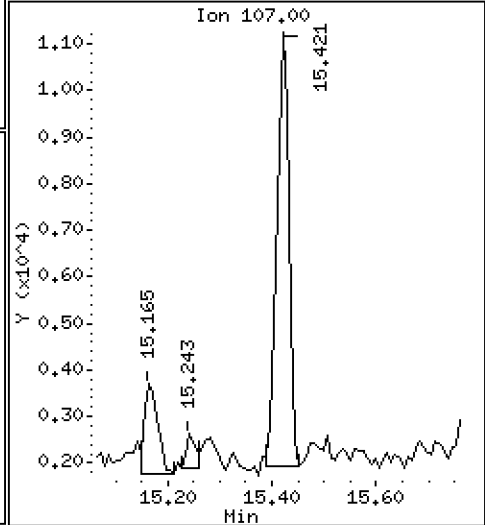
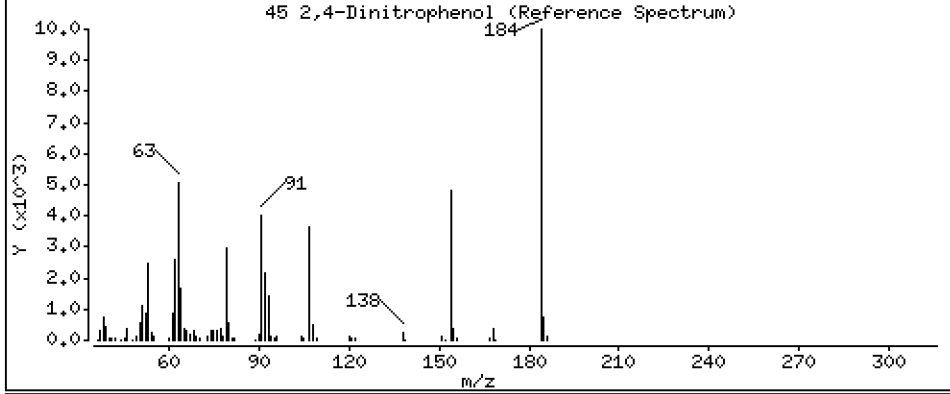
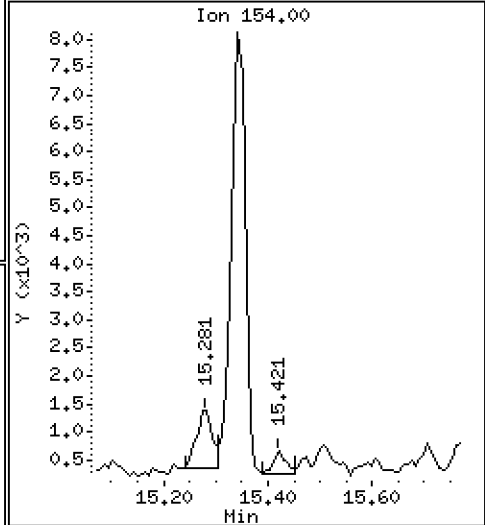
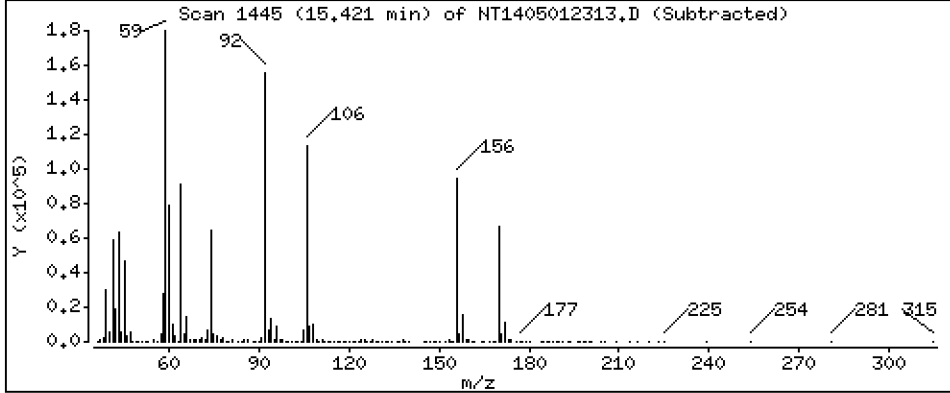
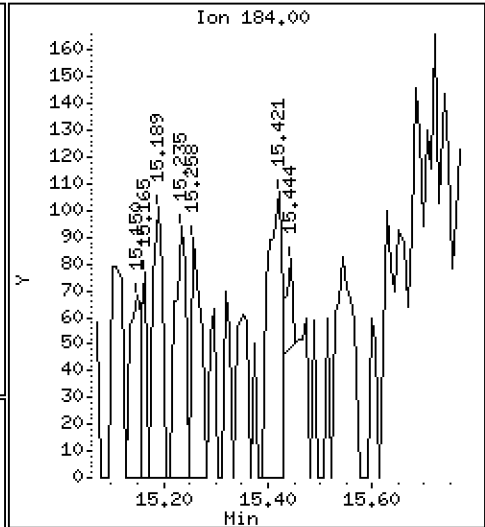
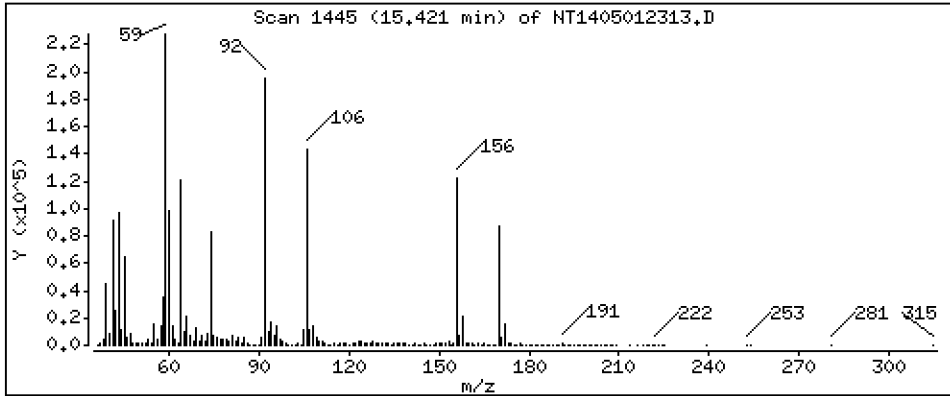
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 0,008349 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

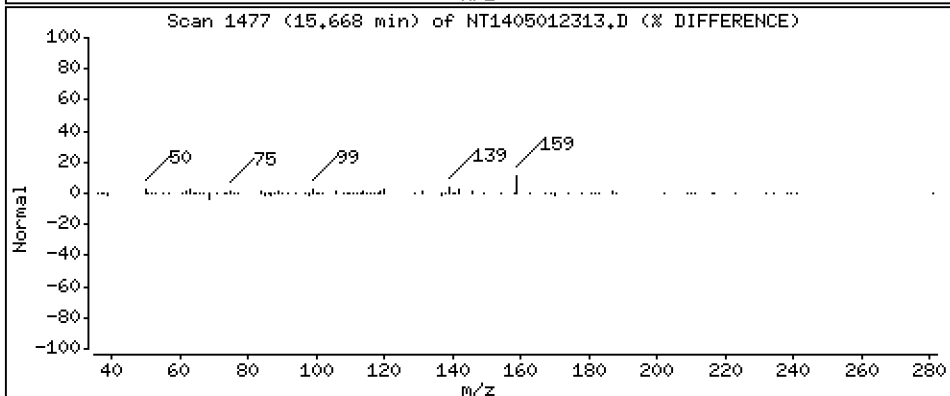
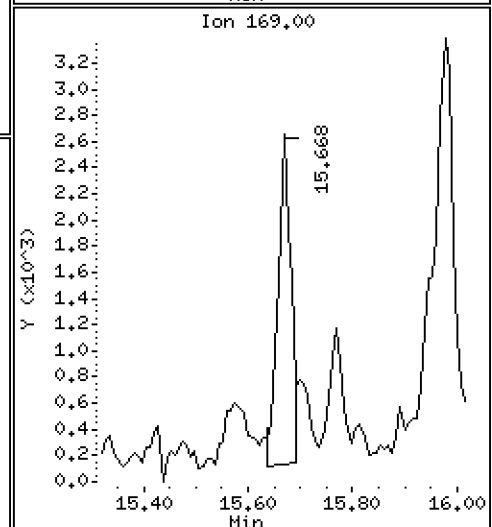
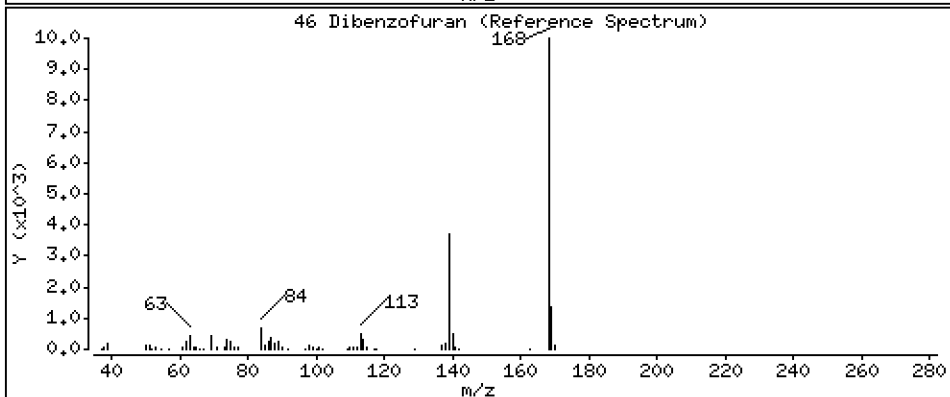
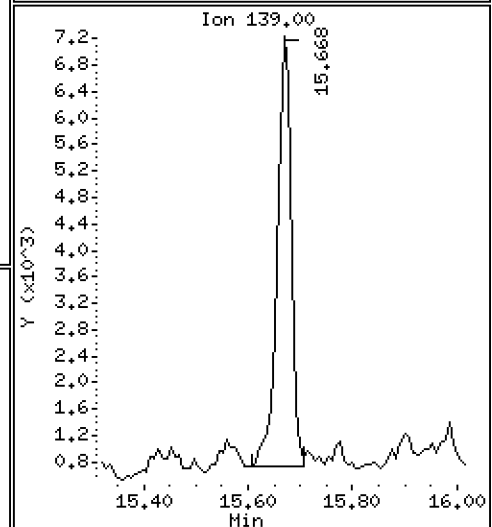
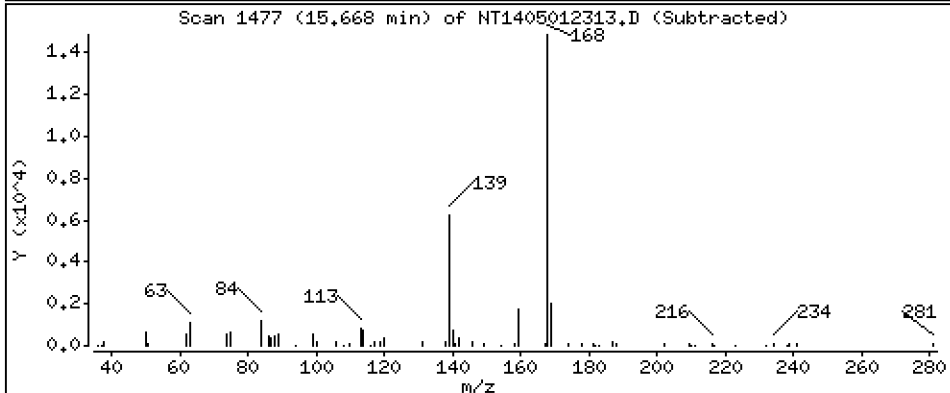
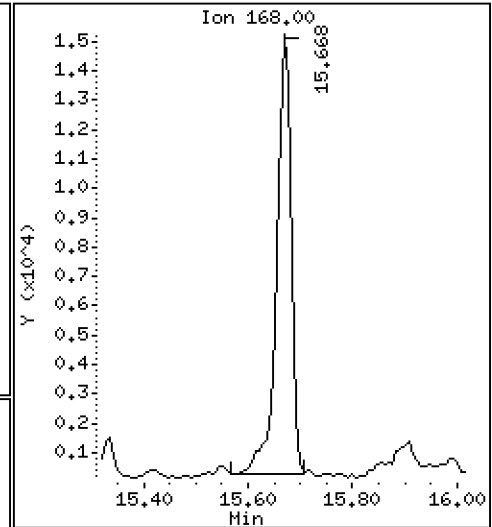
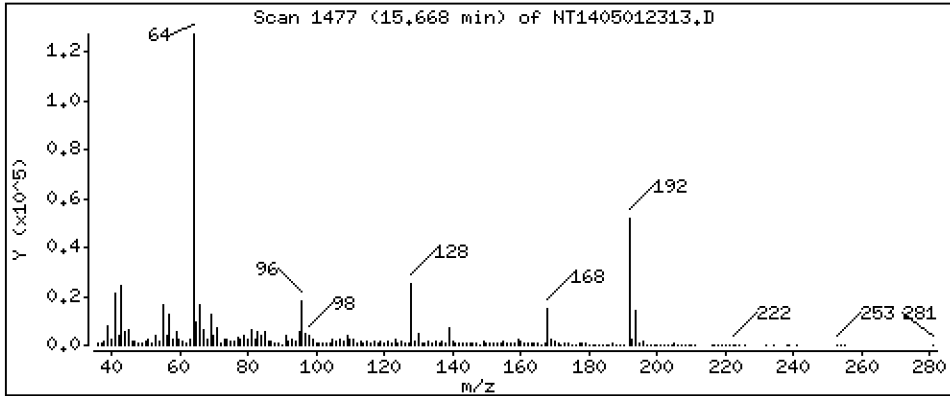
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

46 Dibenzofuran

Concentration: 0.1215 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

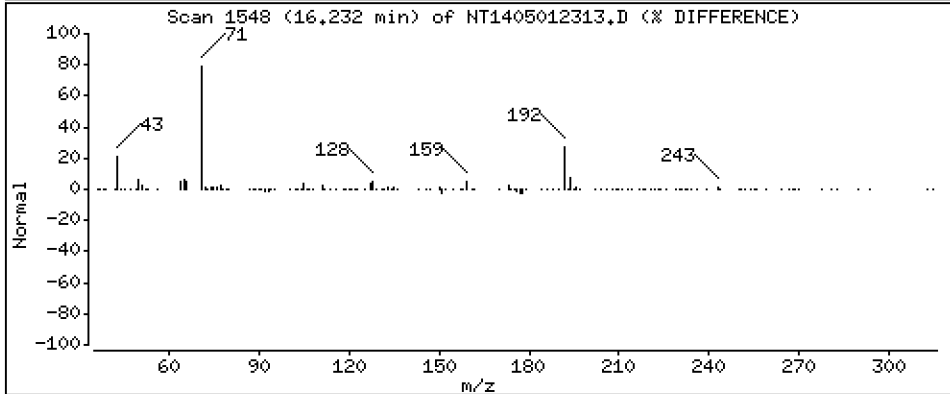
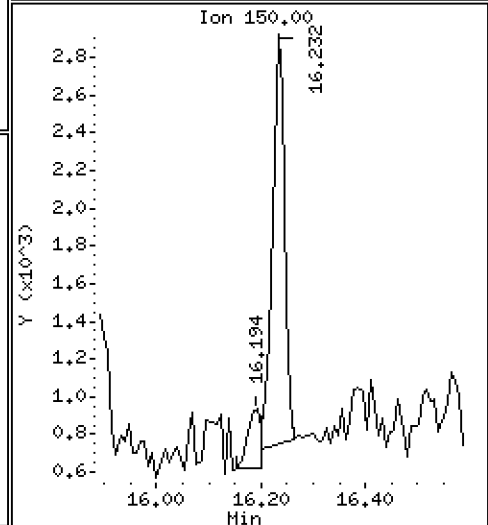
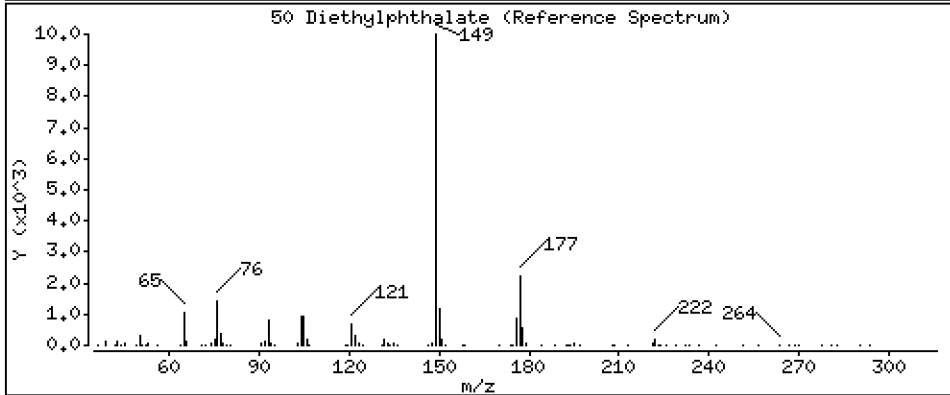
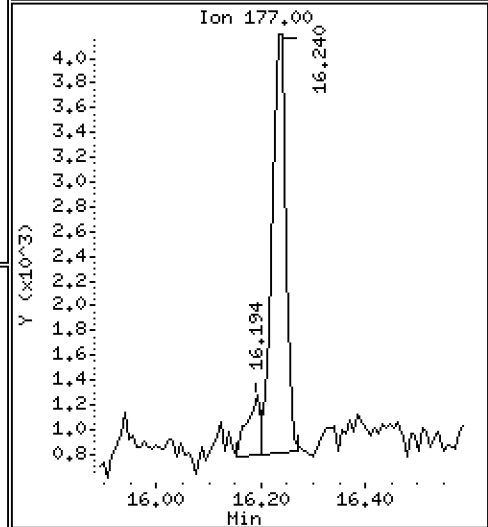
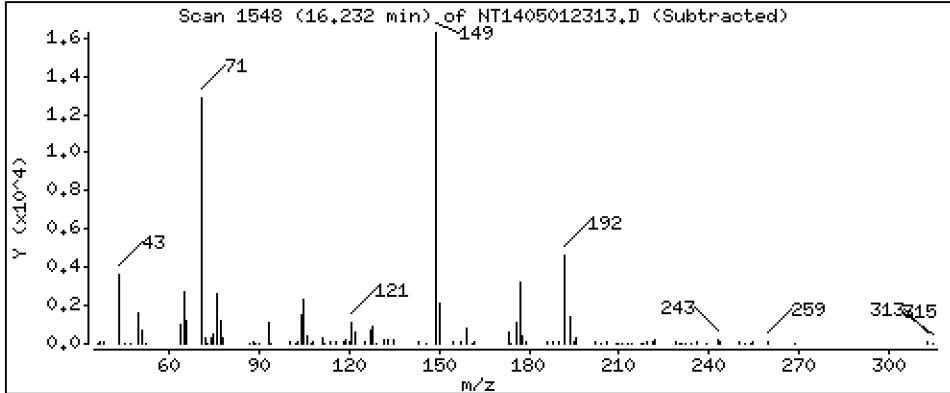
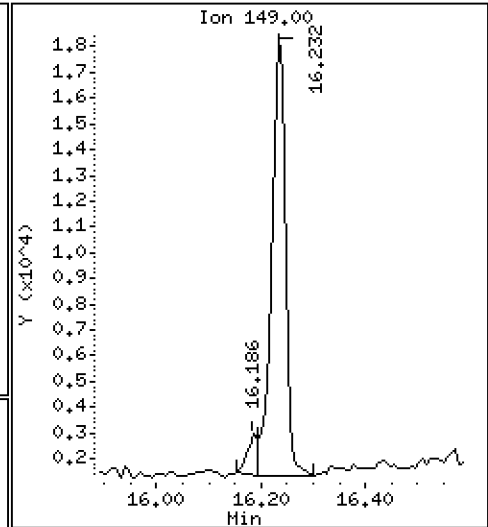
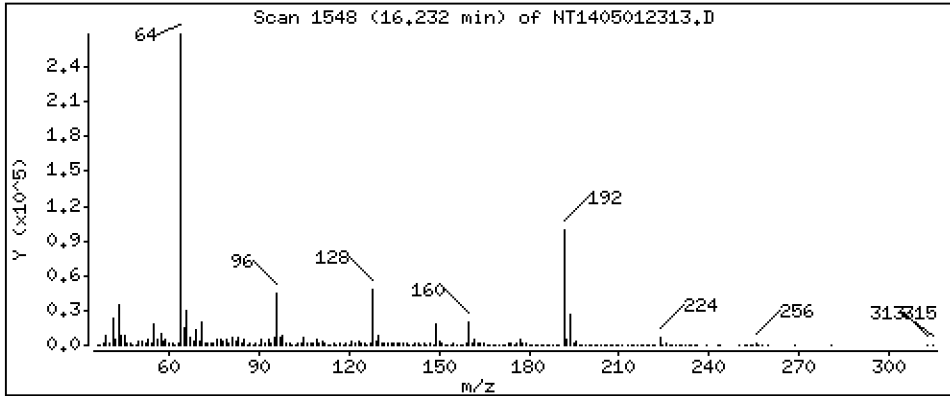
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

50 Diethylphthalate

Concentration: 0.1901 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

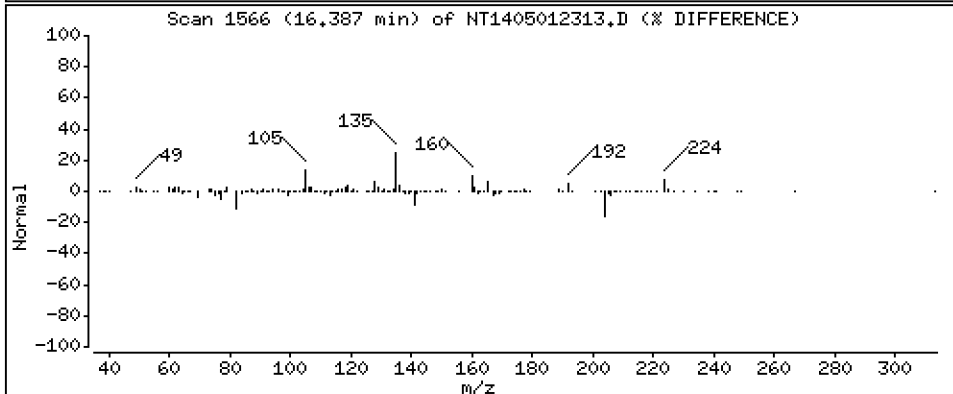
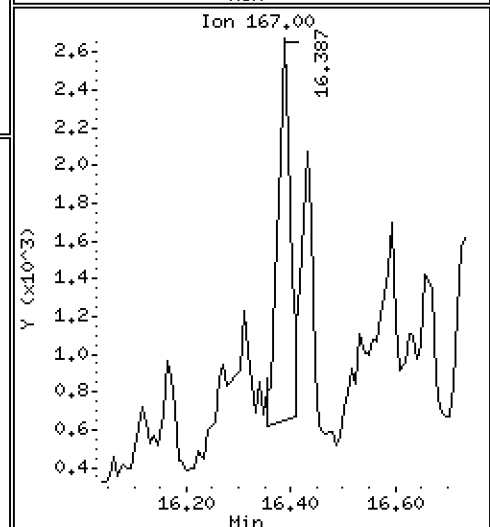
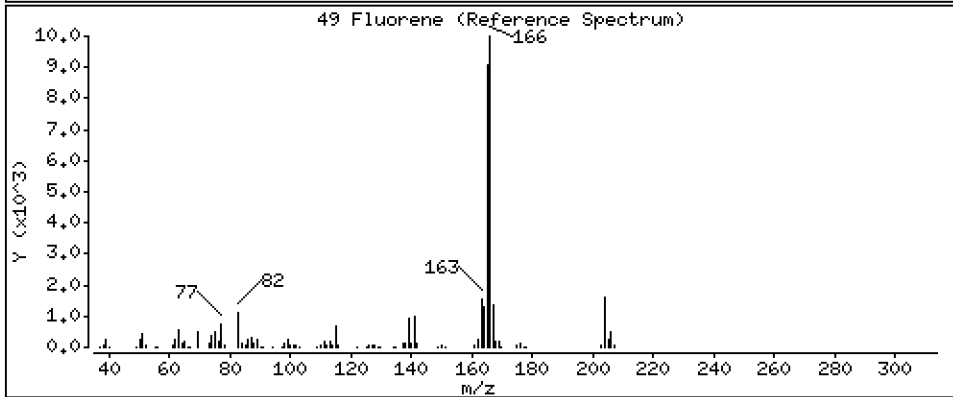
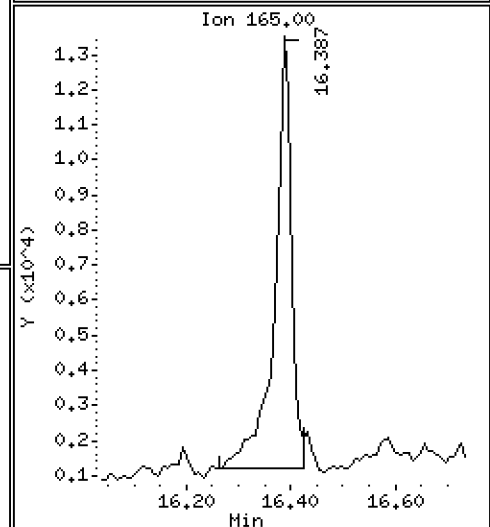
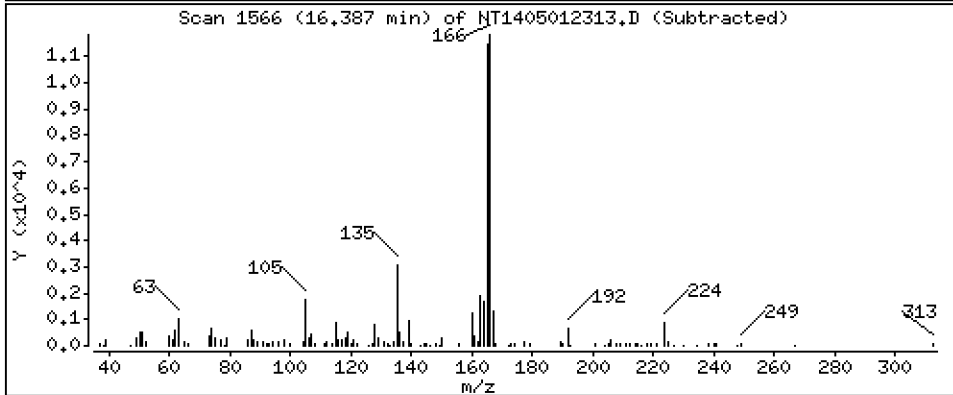
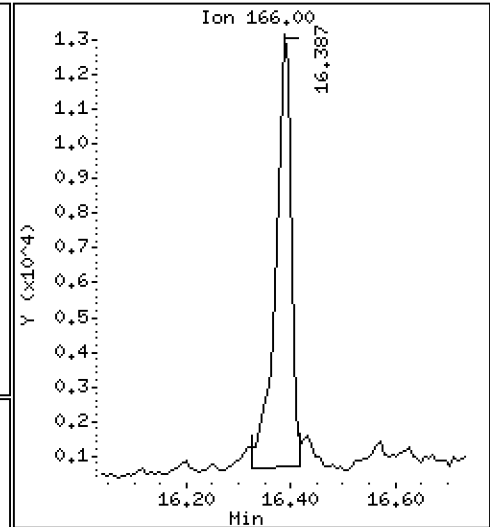
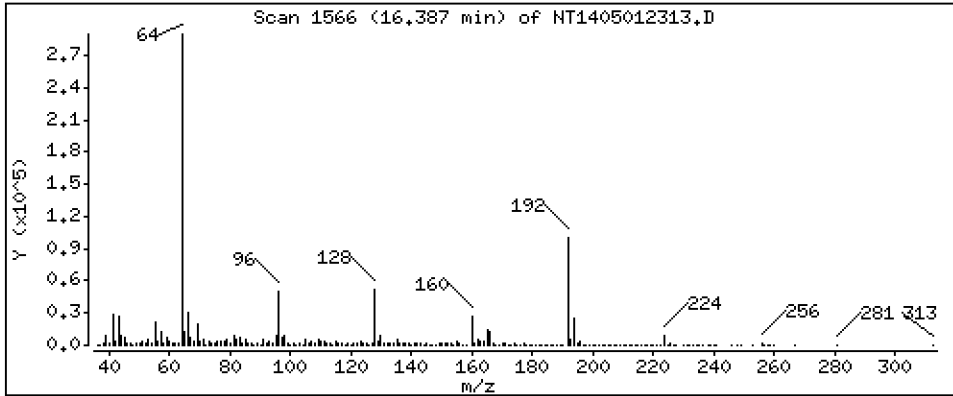
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

49 Fluorene

Concentration: 0.1276 ug/mL





Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

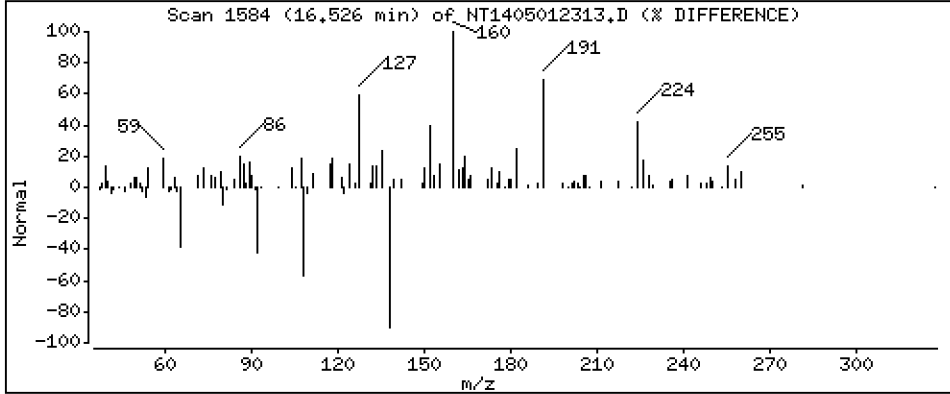
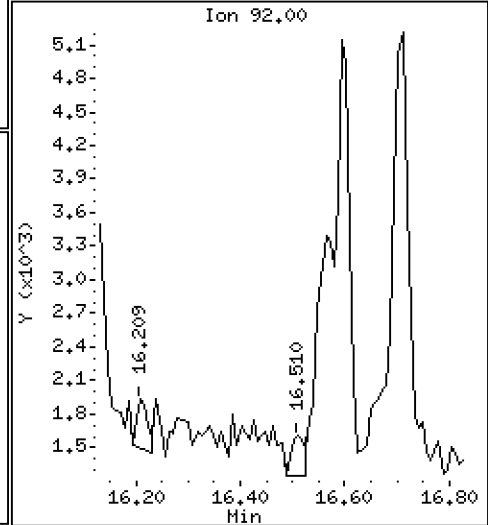
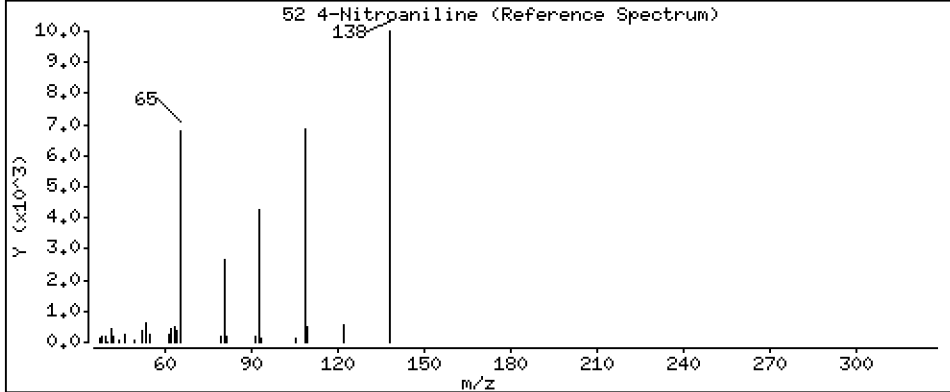
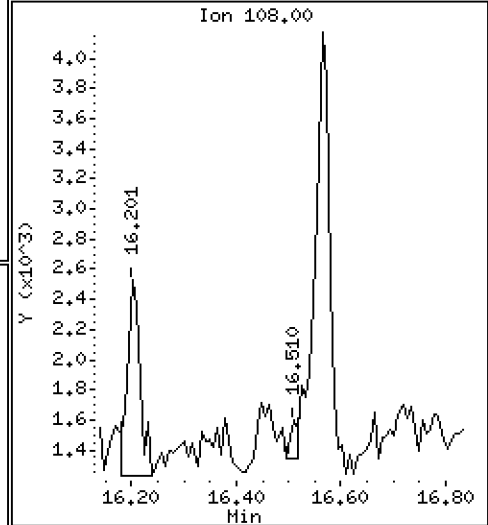
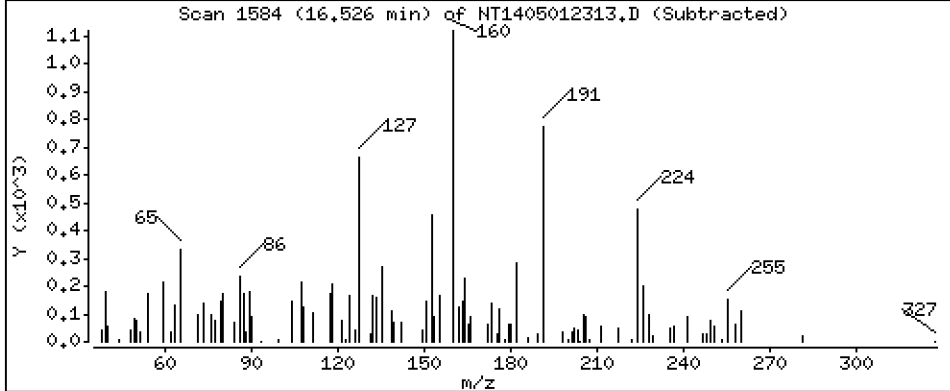
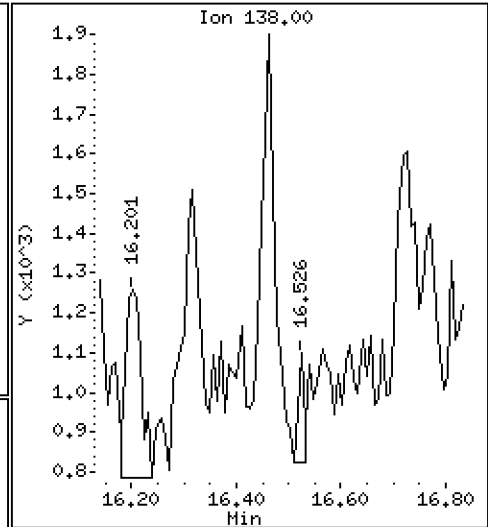
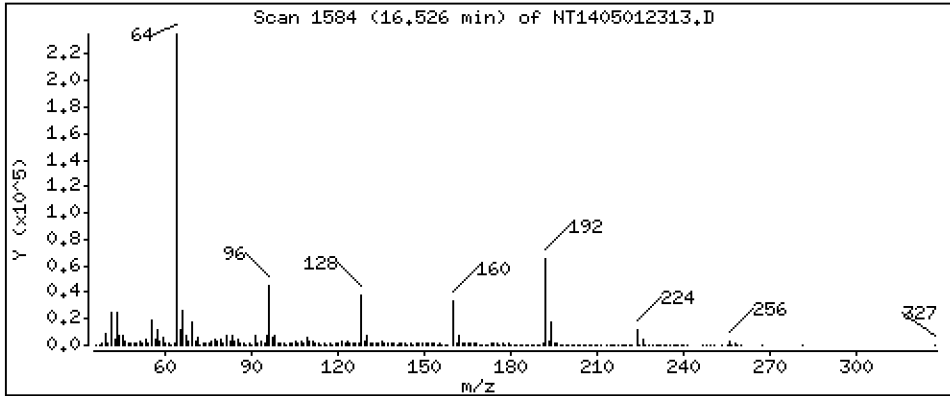
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

Concentration: 0,005303 ug/mL

52 4-Nitroaniline



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

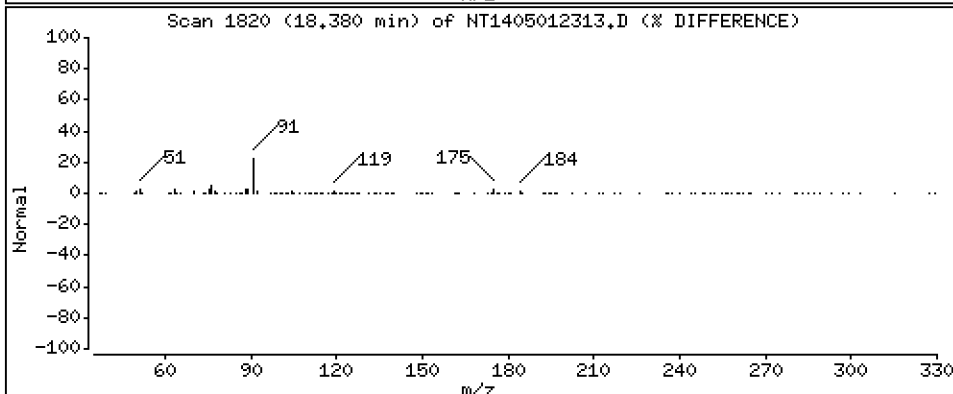
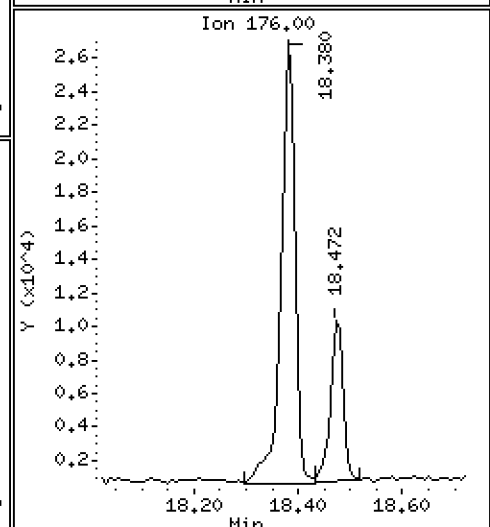
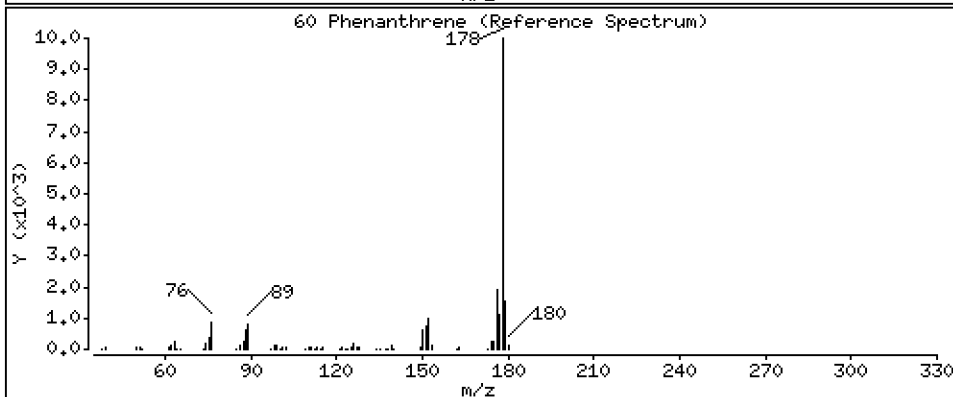
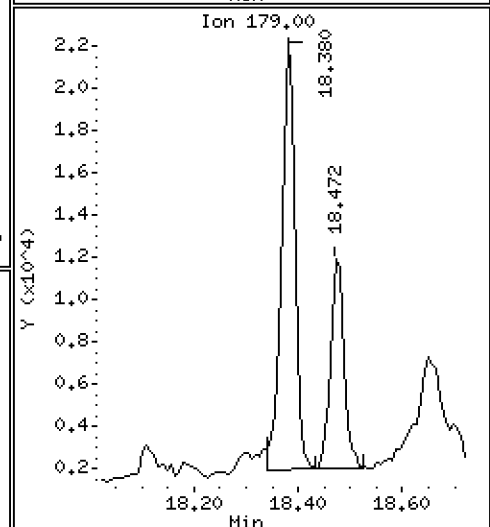
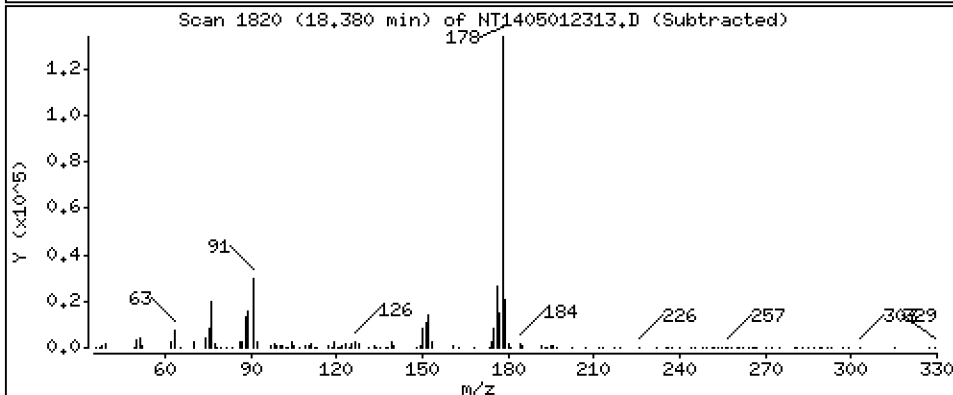
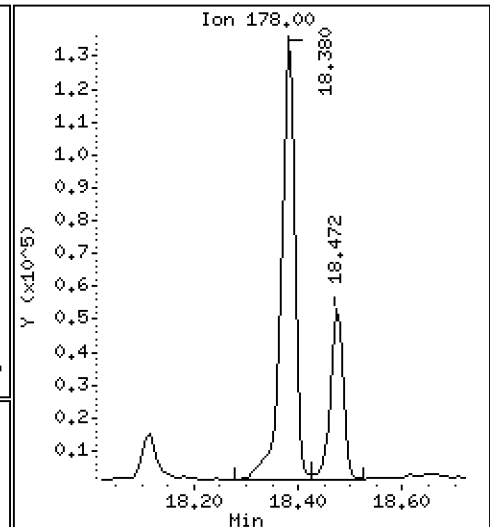
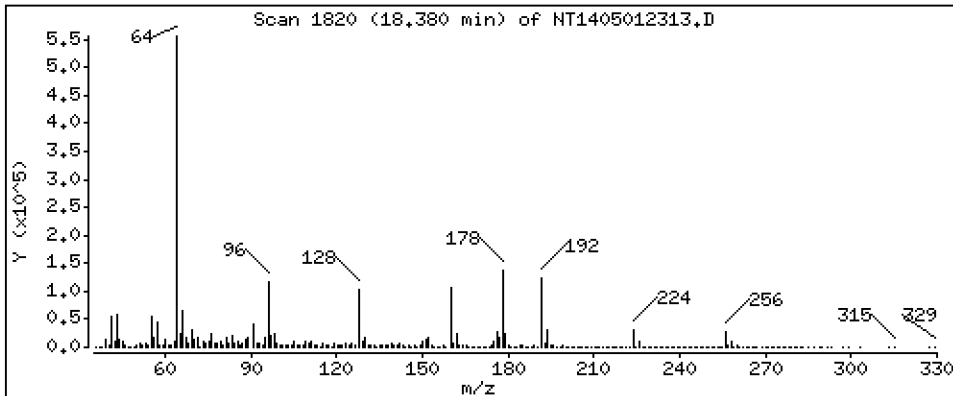
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 0,9715 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

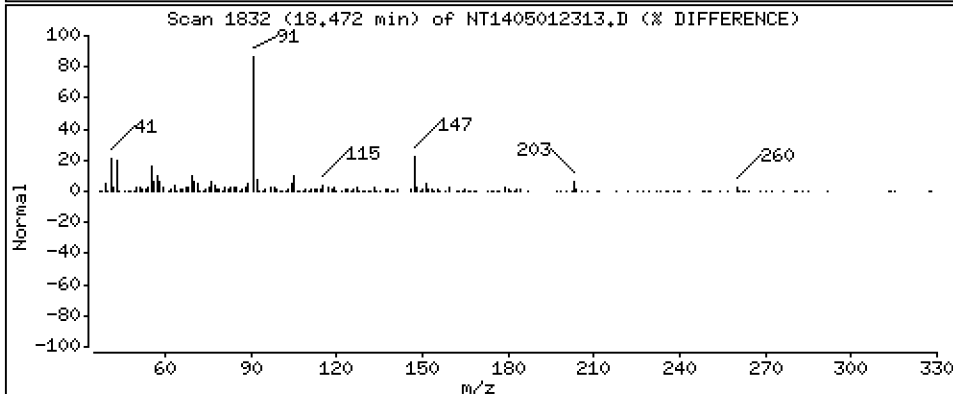
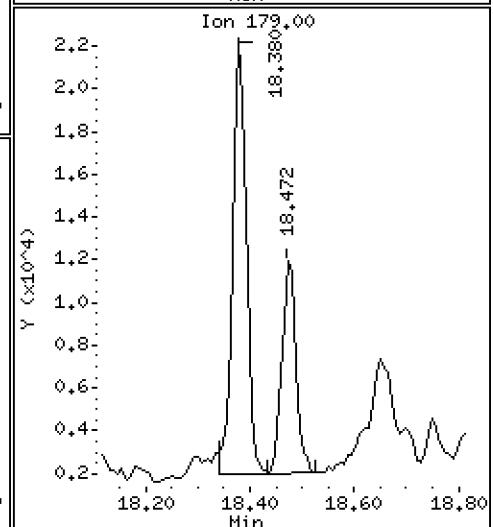
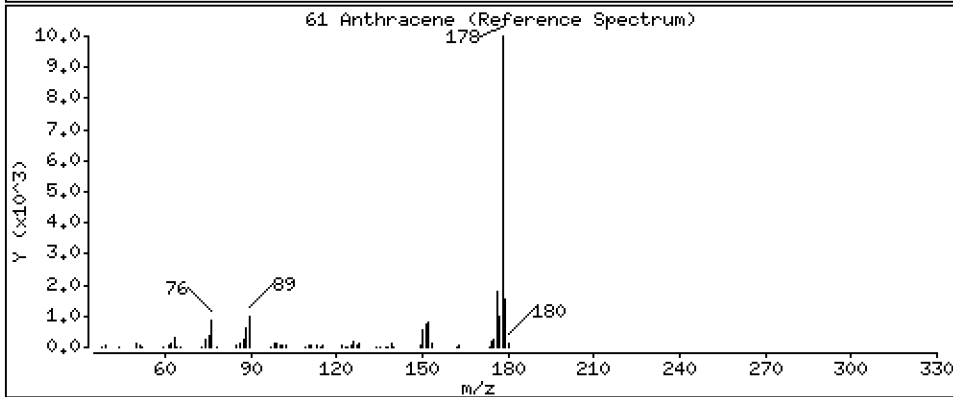
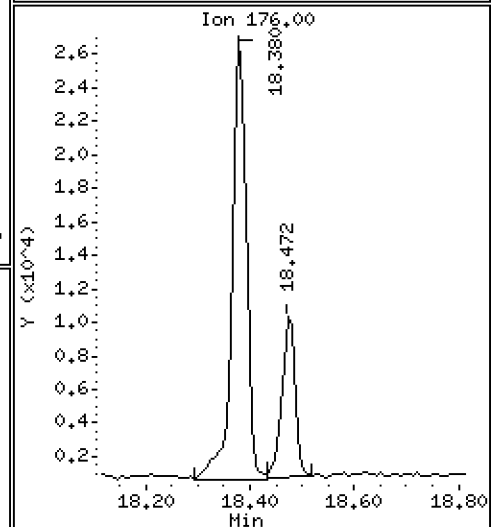
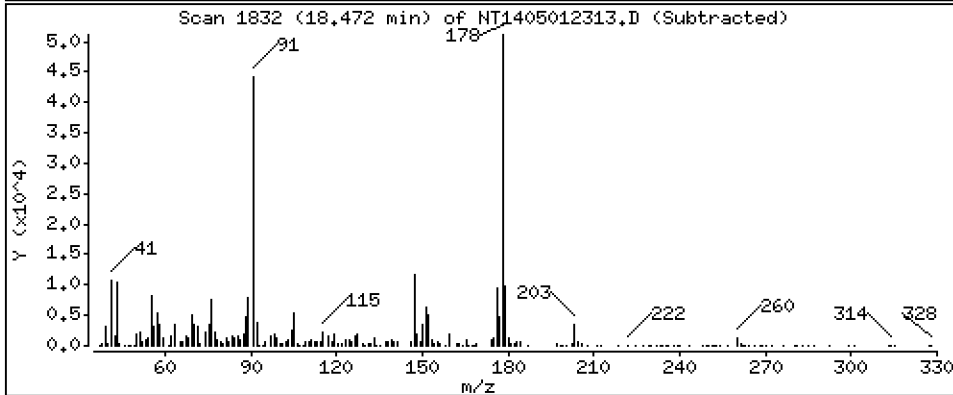
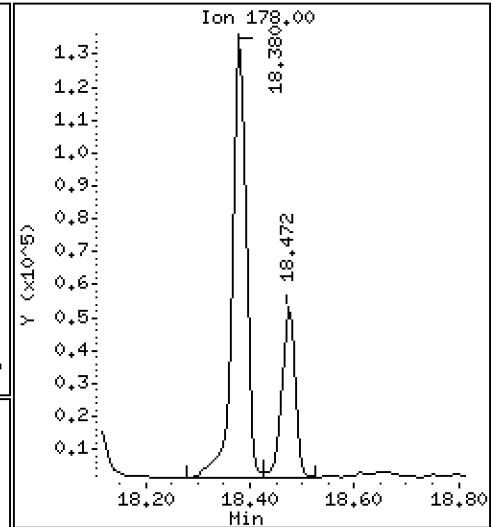
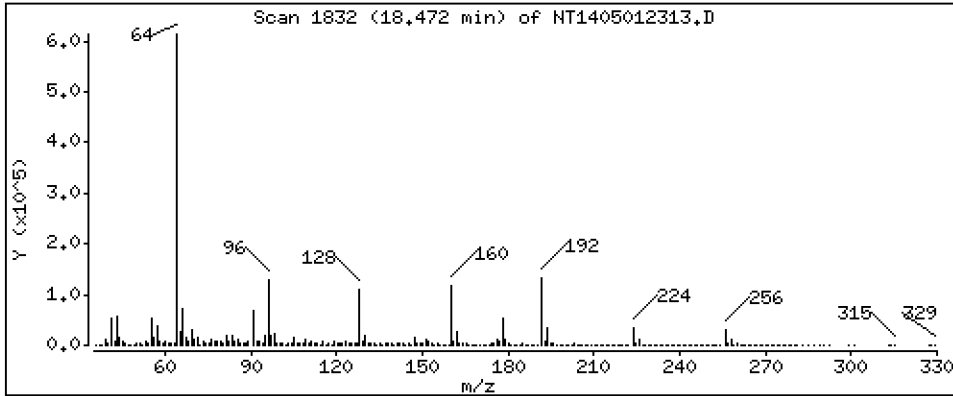
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 0,3868 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

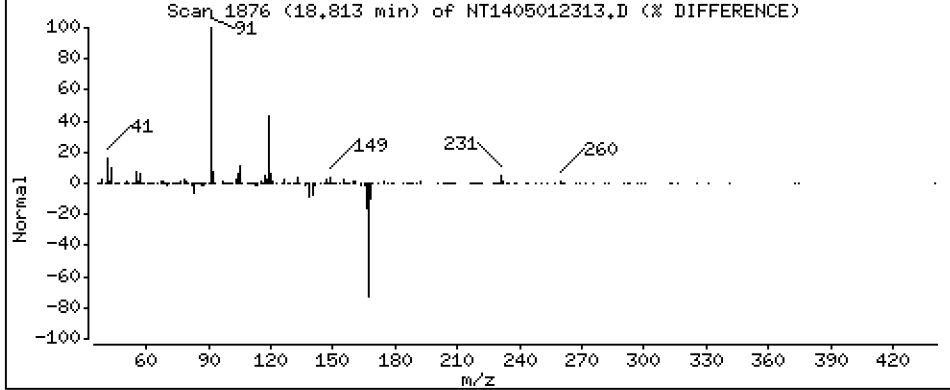
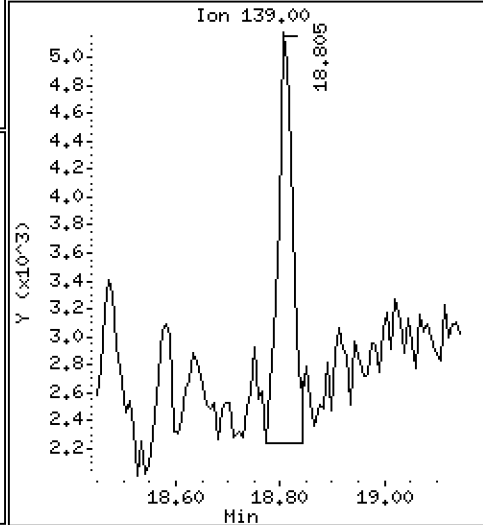
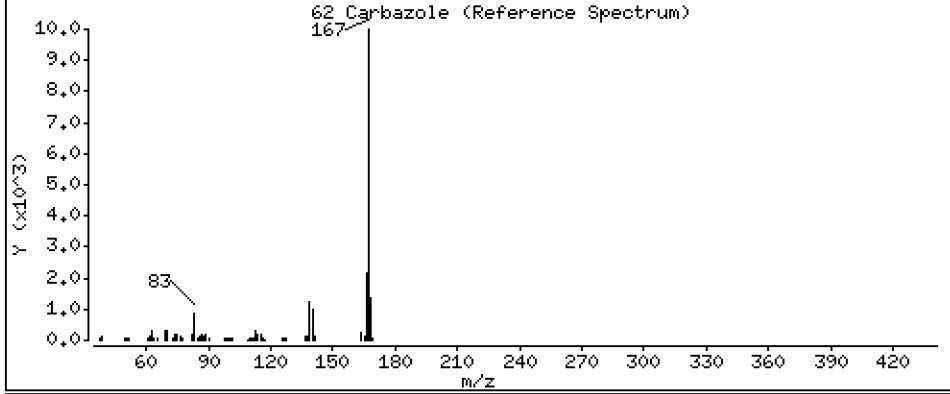
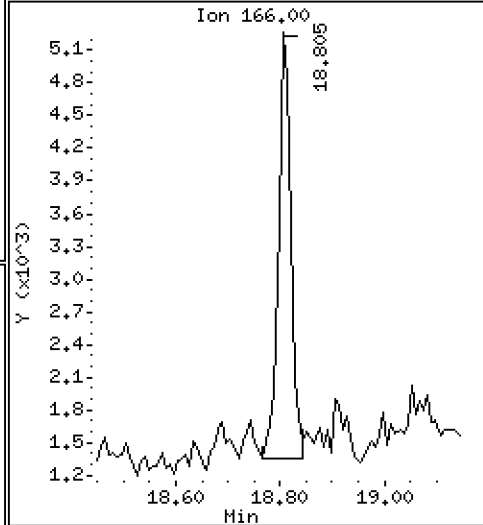
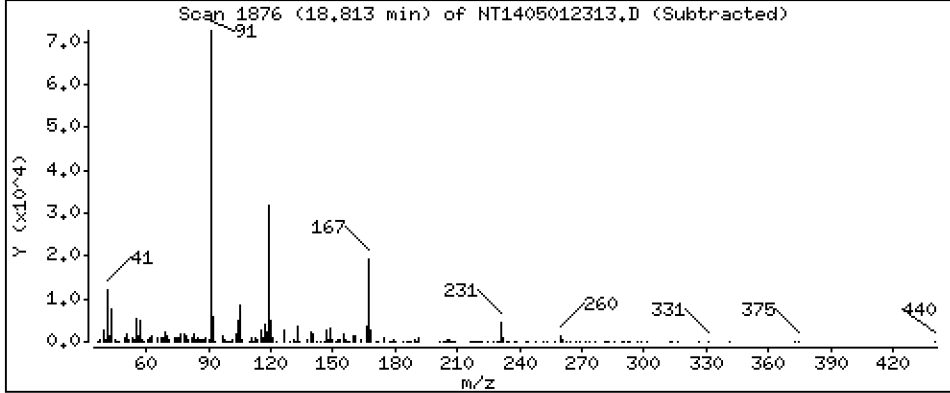
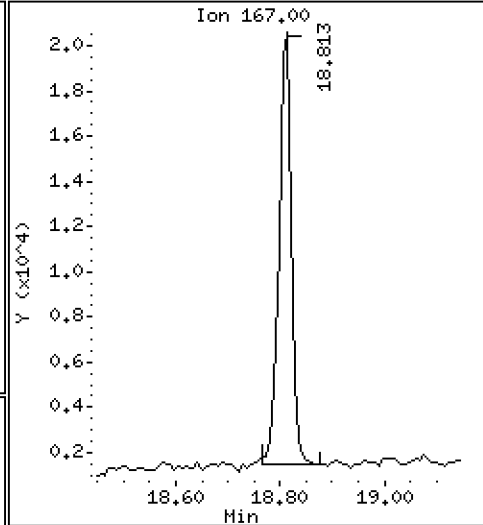
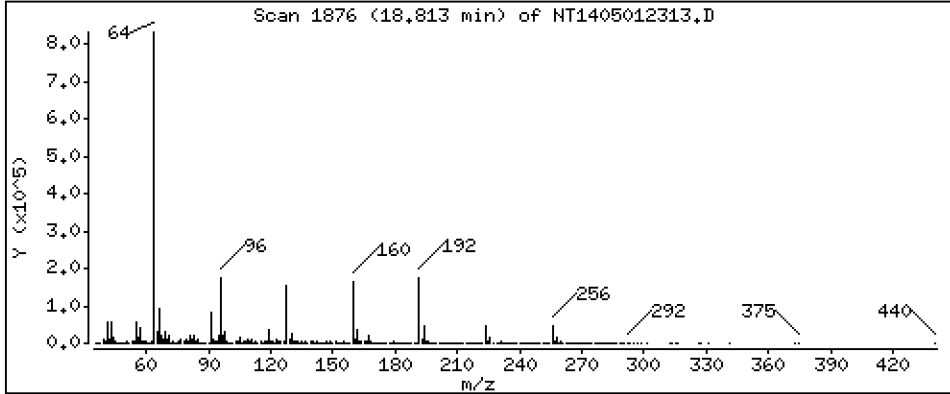
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 0,1449 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

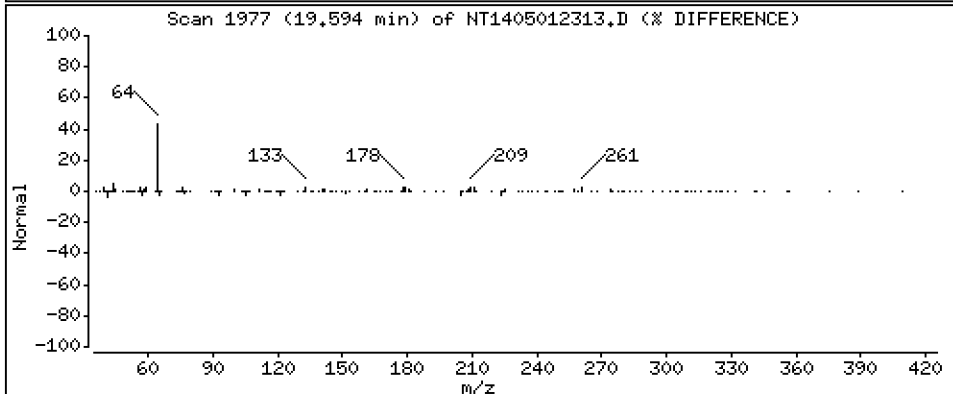
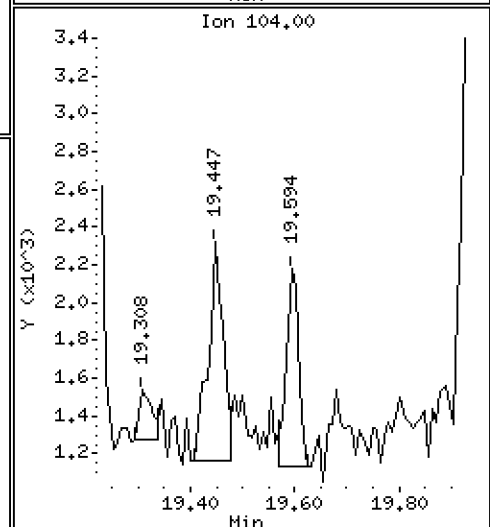
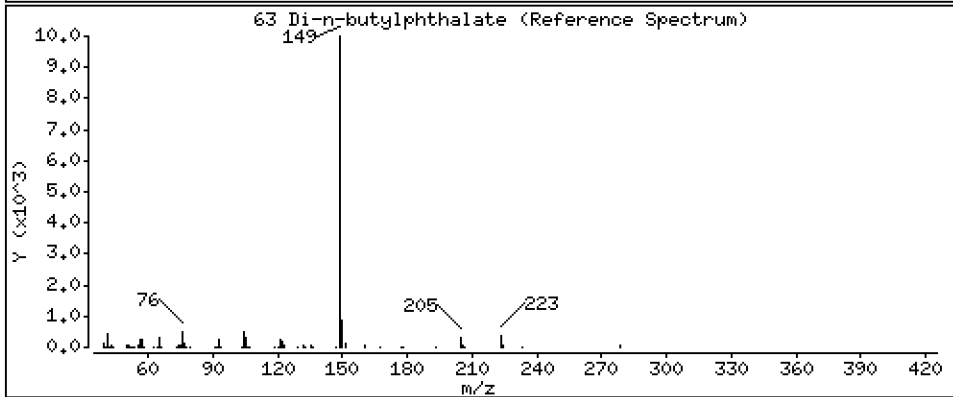
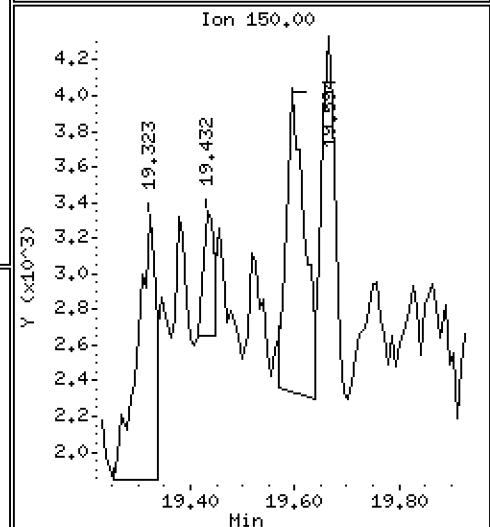
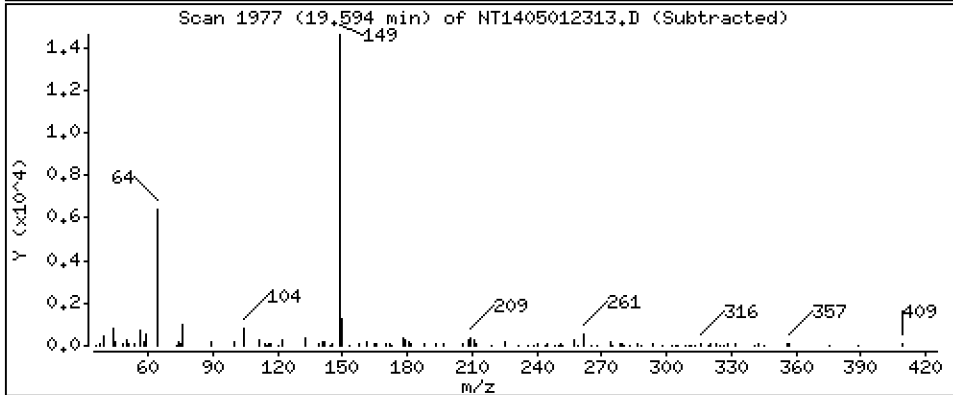
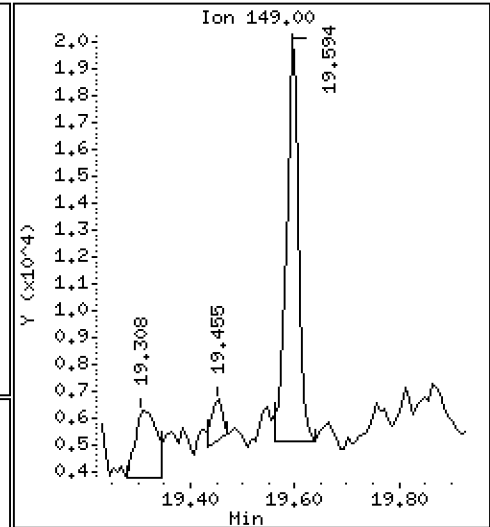
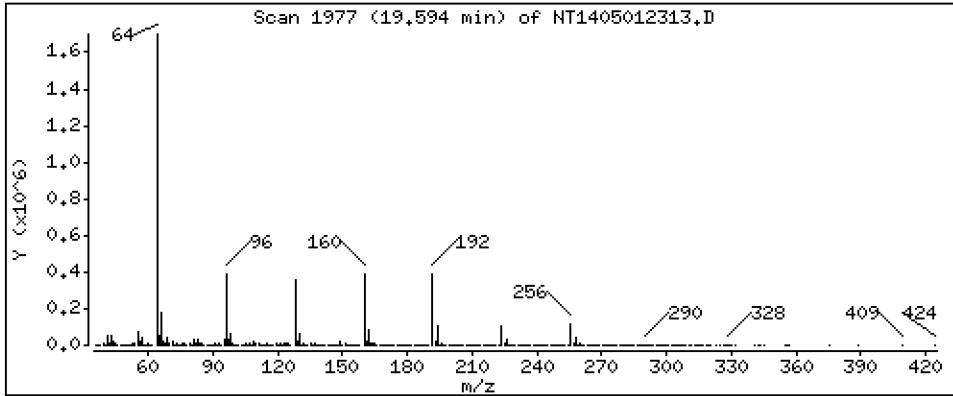
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

63 Di-n-butylphthalate

Concentration: 0.07121 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

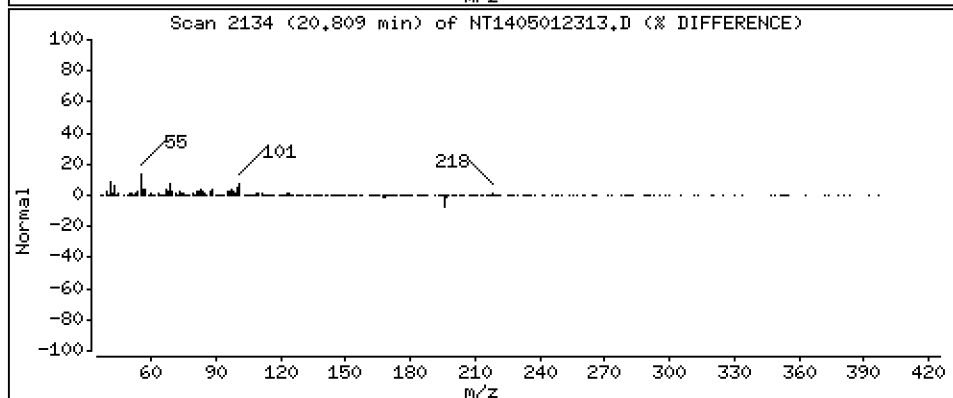
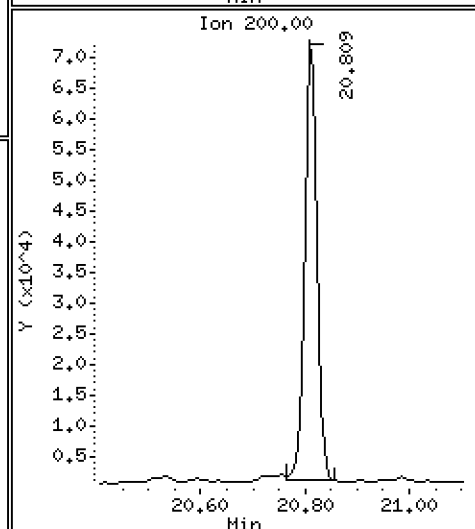
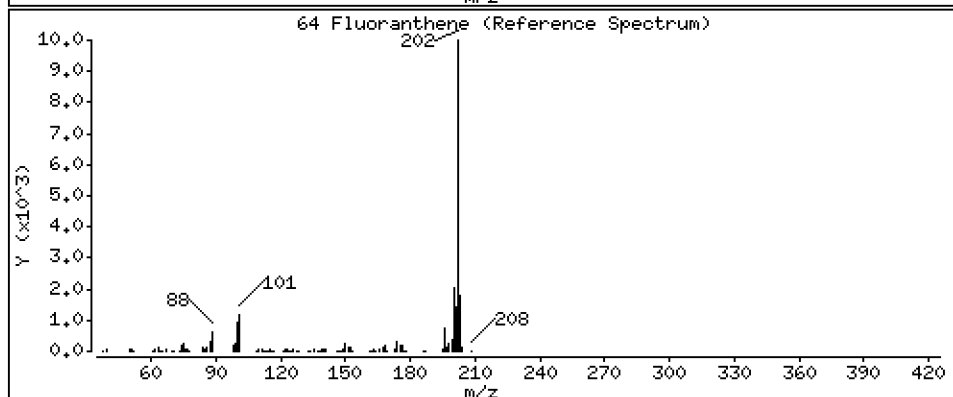
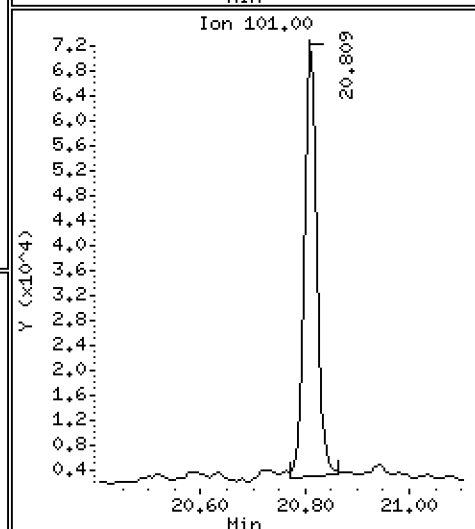
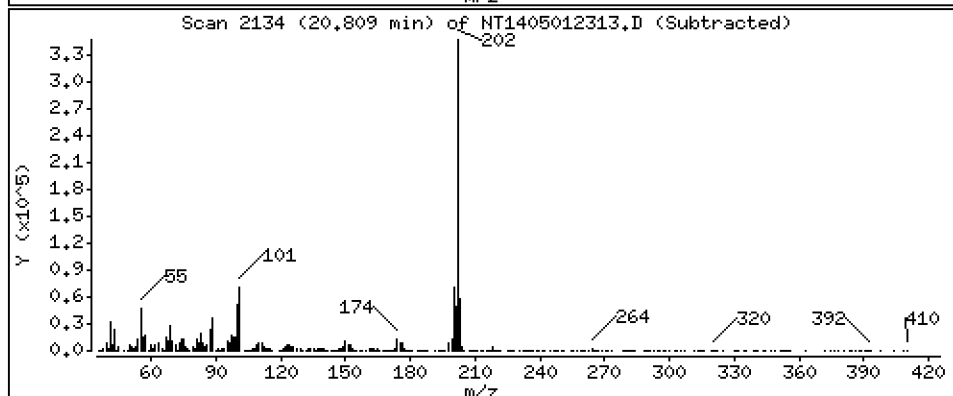
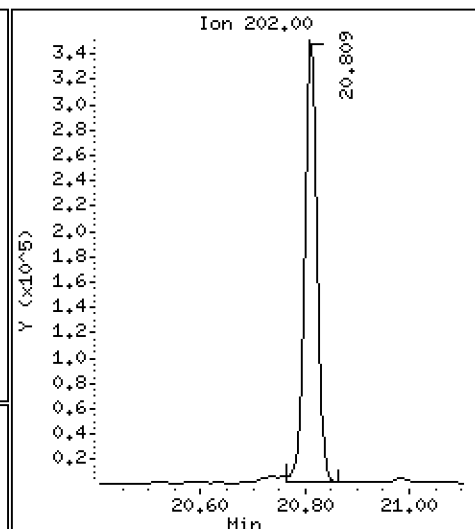
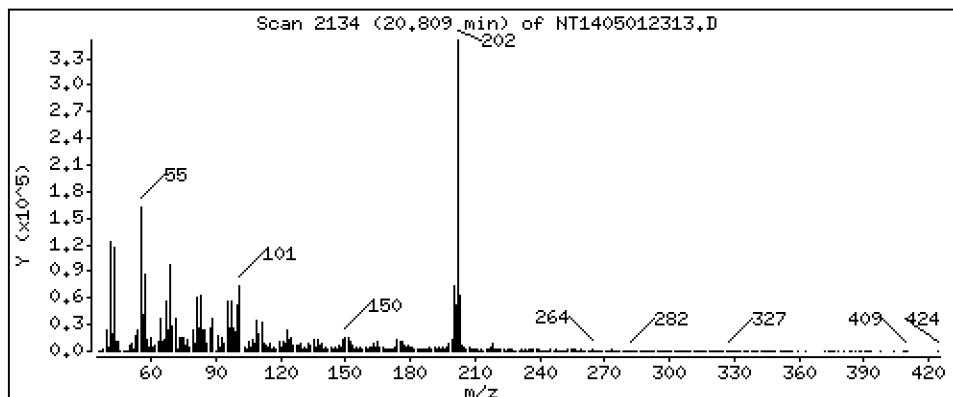
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 2,206 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

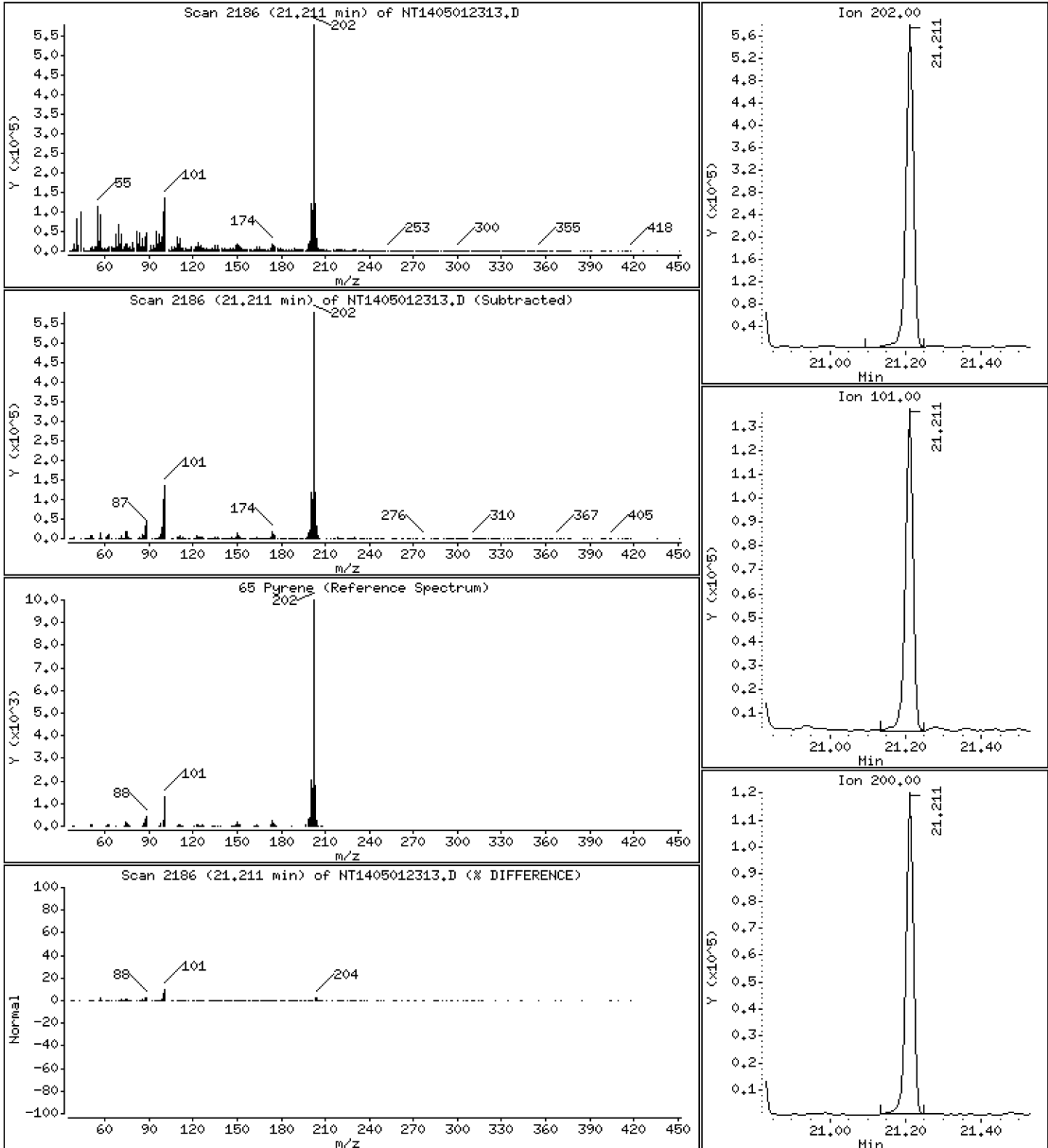
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 2,979 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

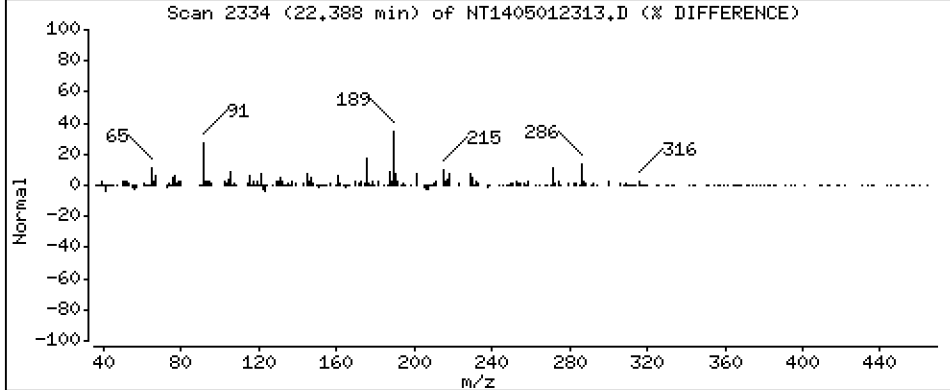
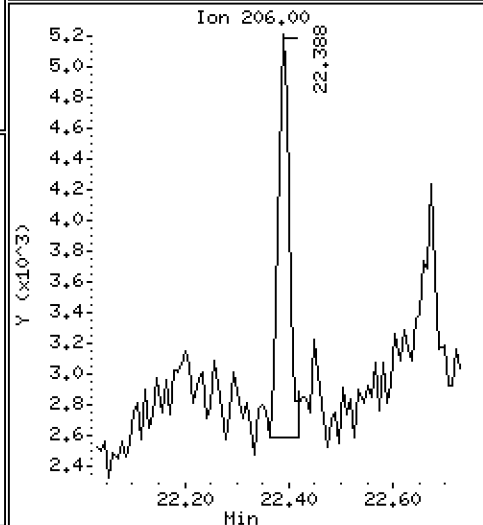
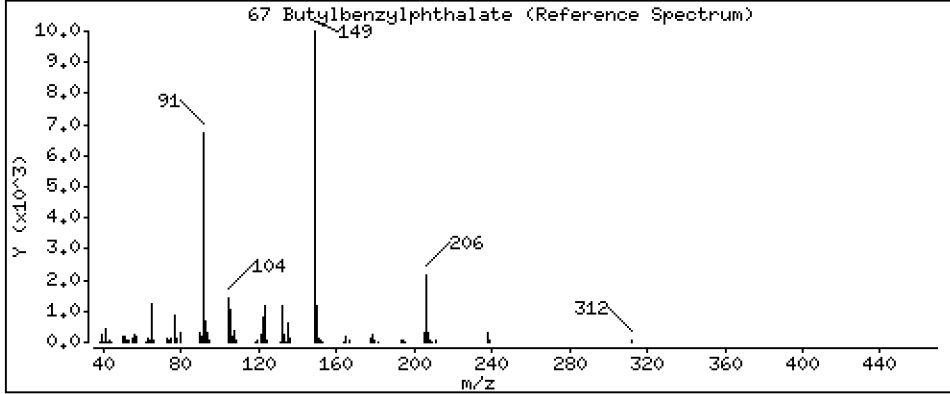
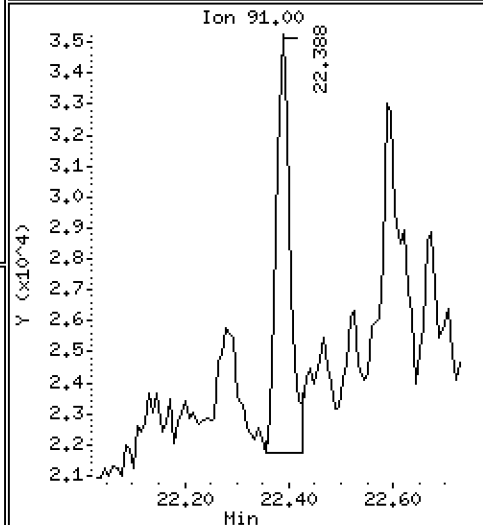
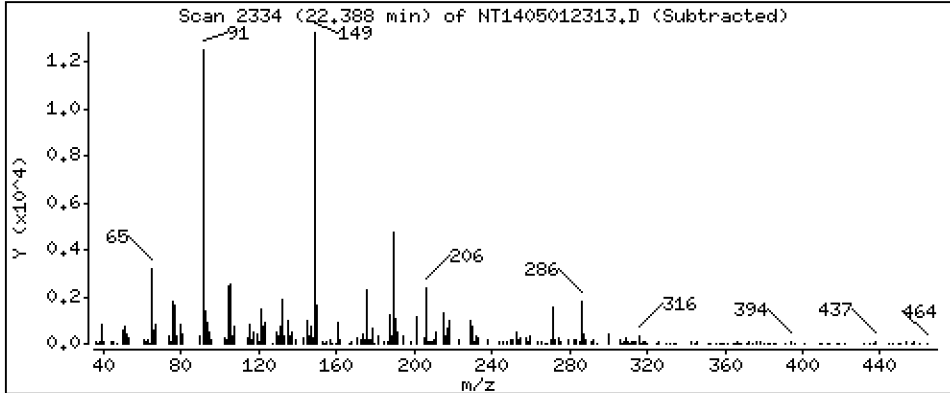
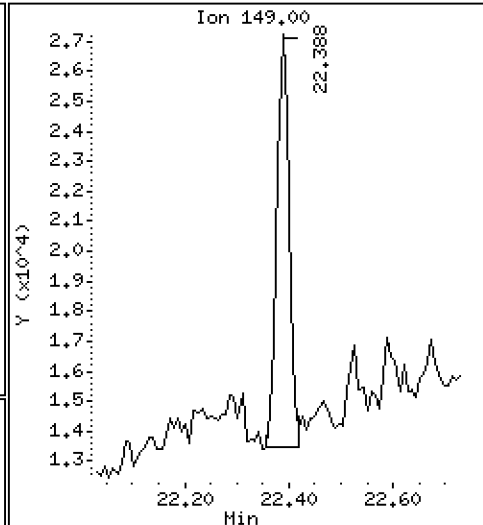
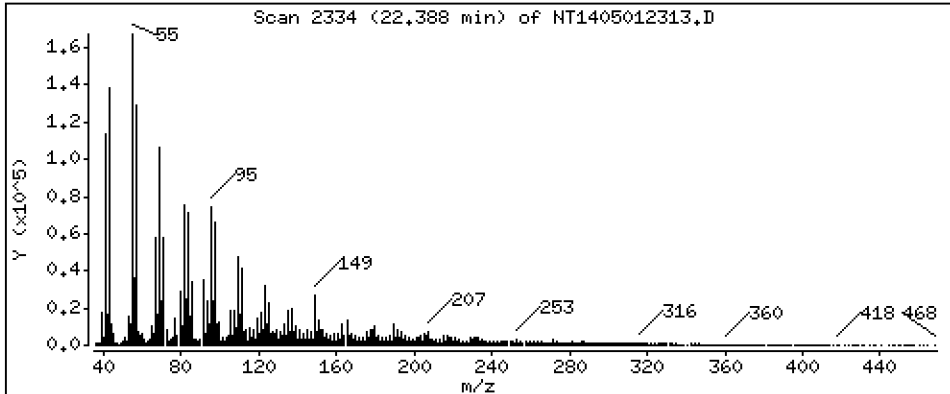
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,1185 ug/mL





Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

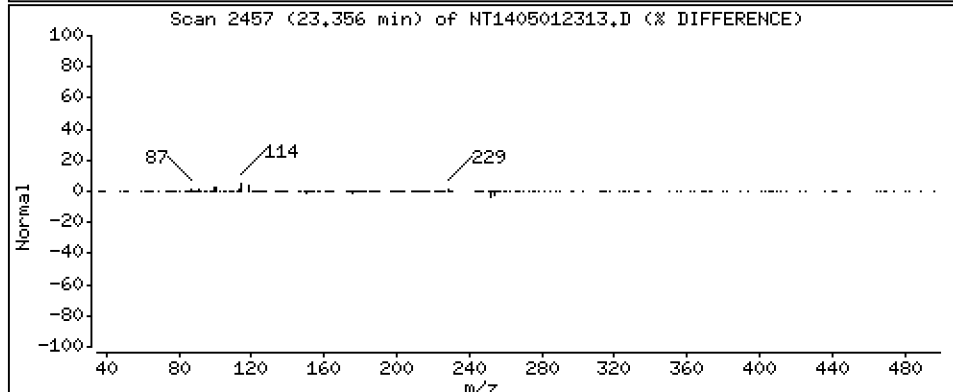
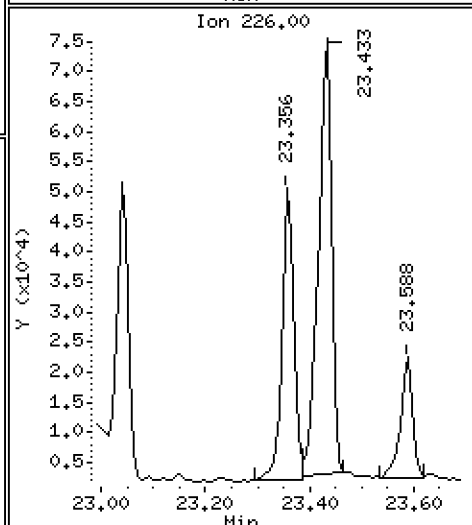
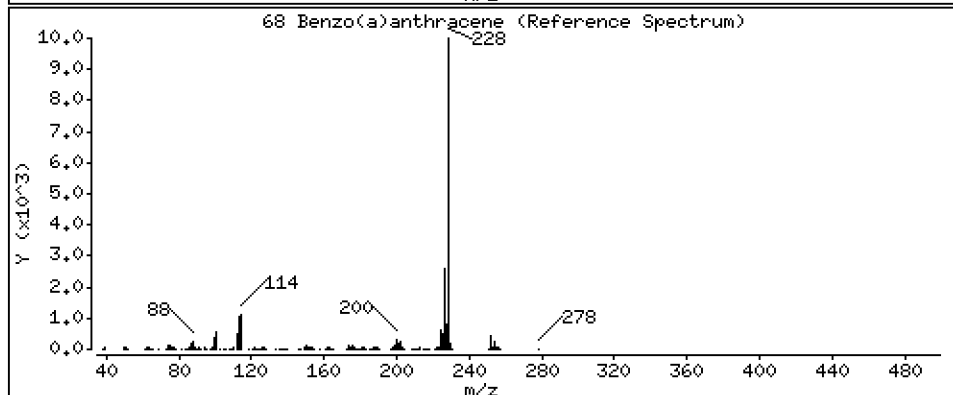
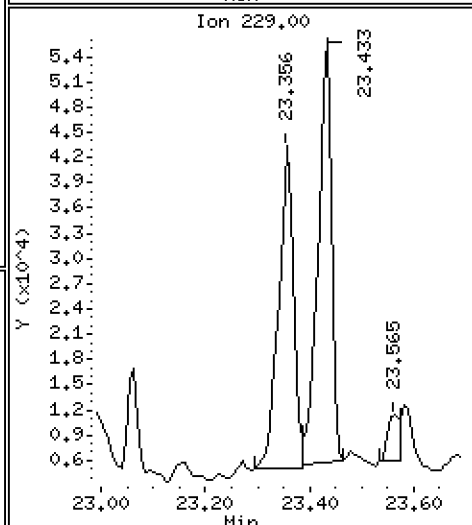
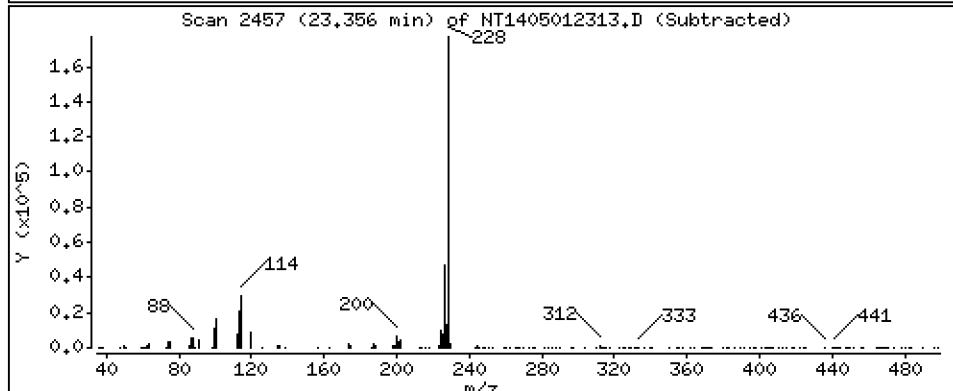
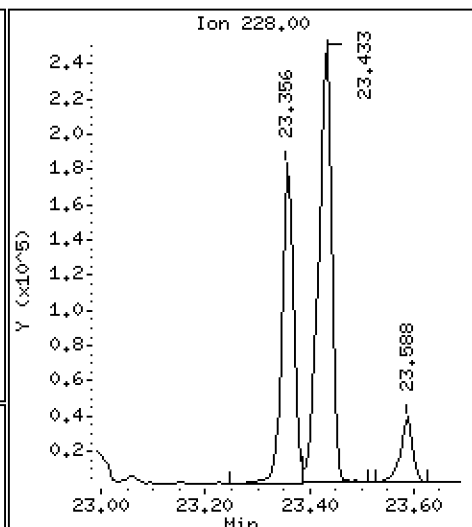
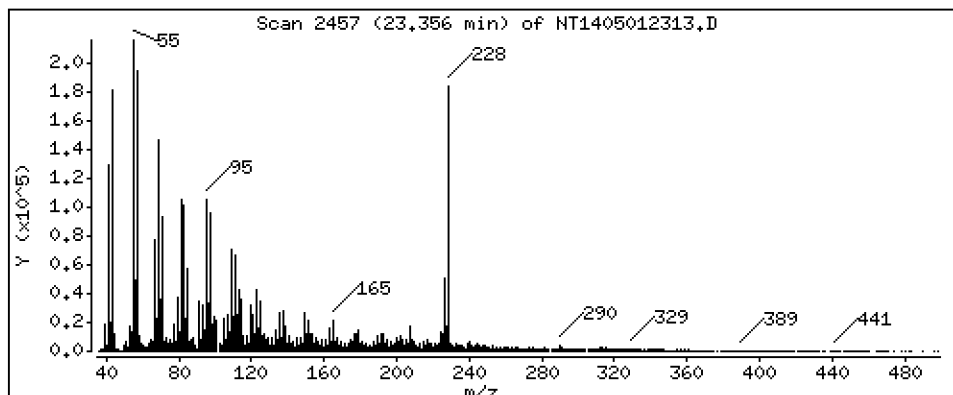
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

68 Benzo(a)anthracene

Concentration: 1.413 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

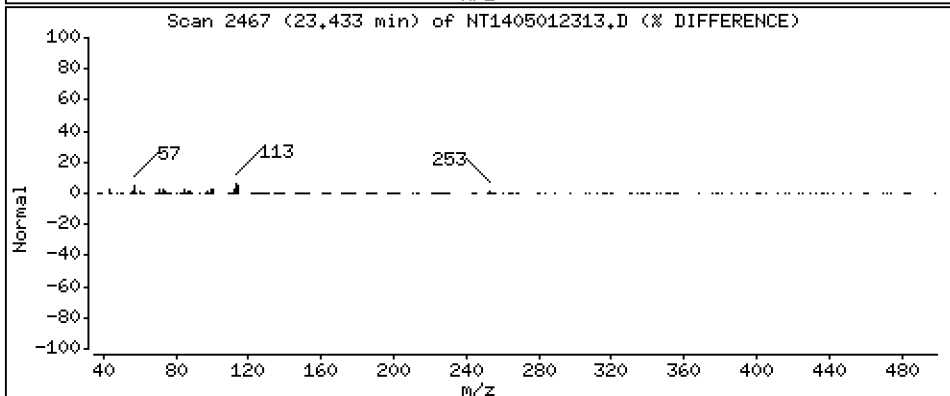
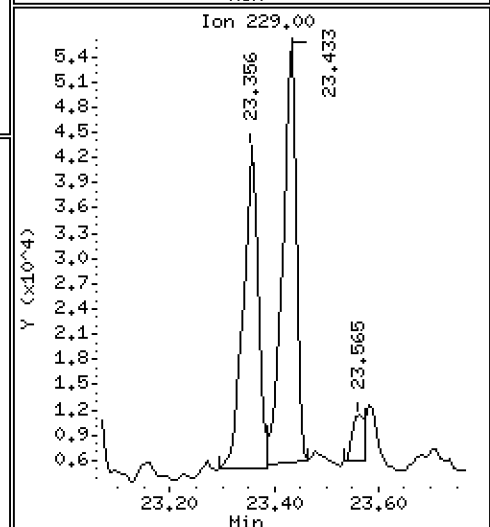
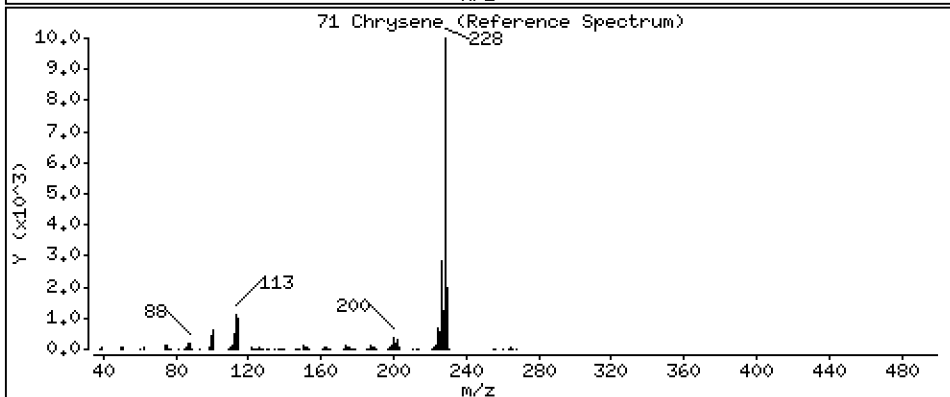
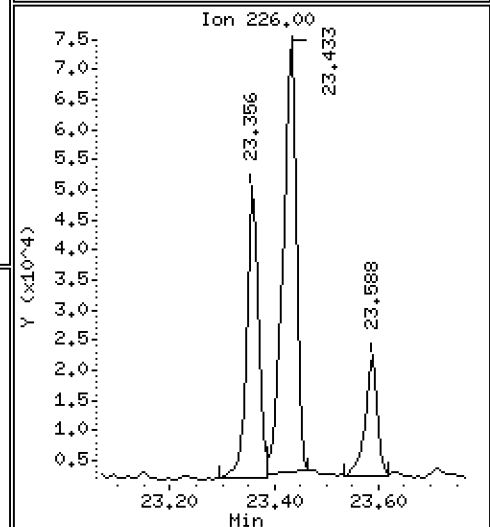
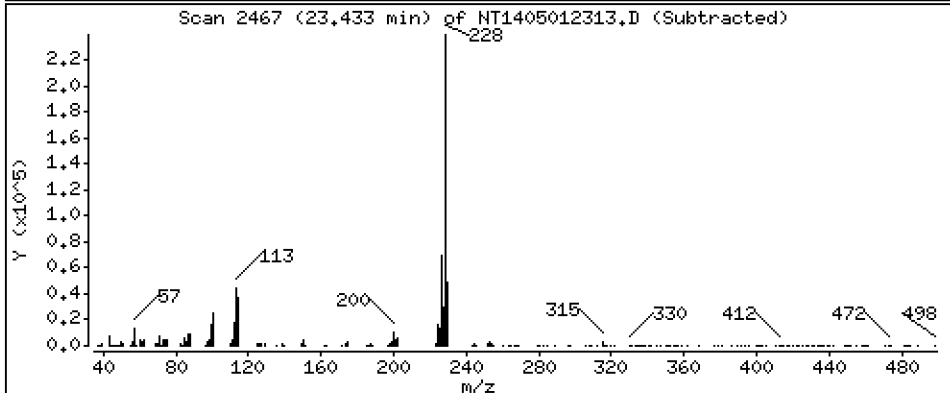
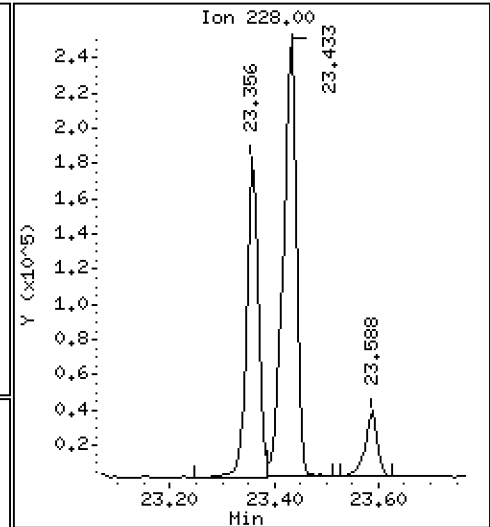
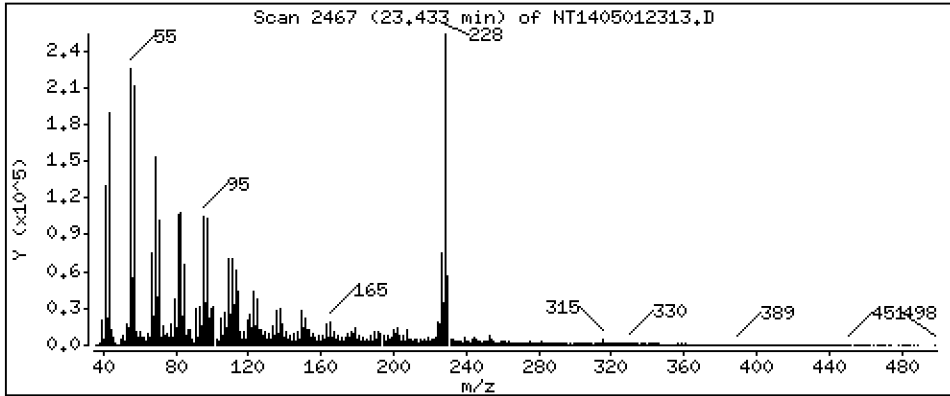
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 2,262 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

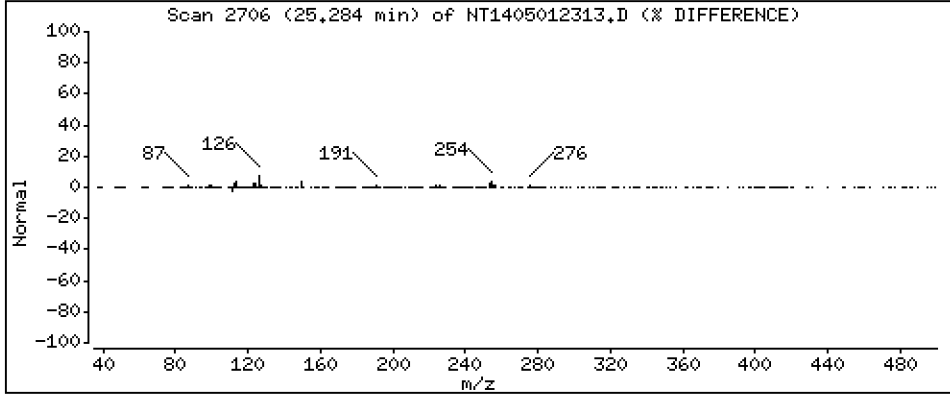
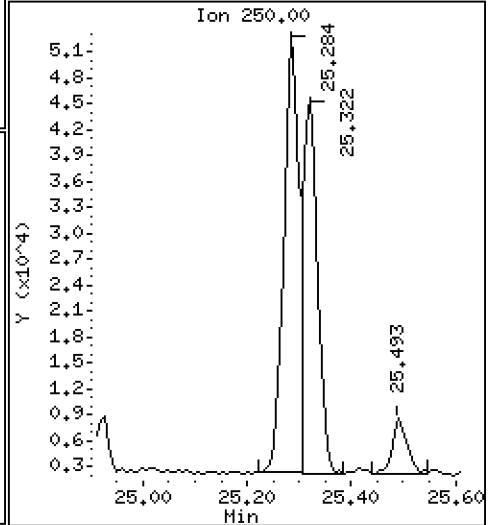
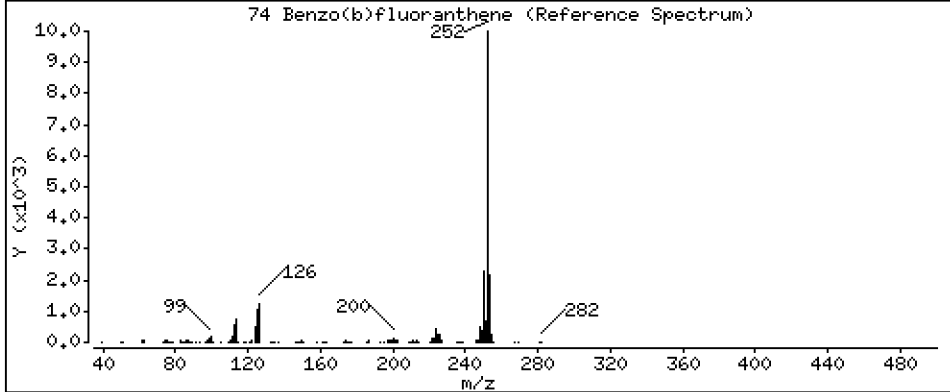
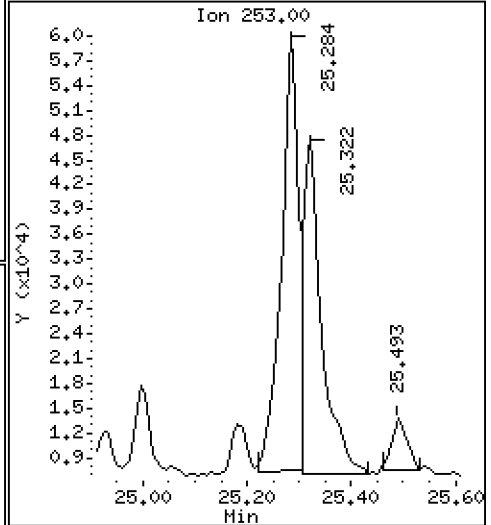
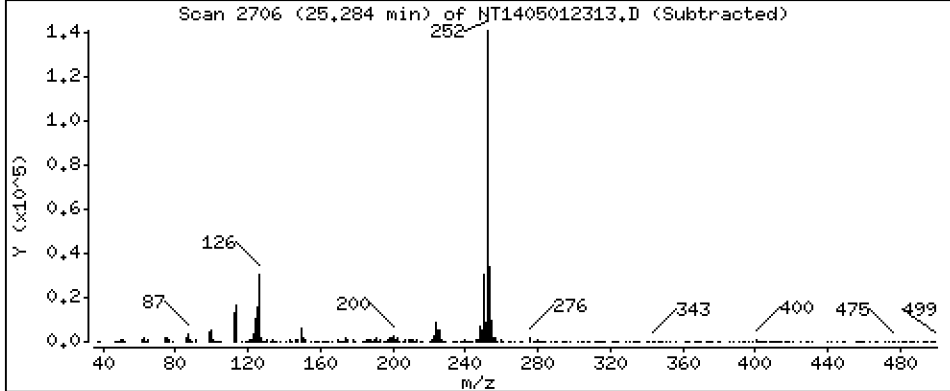
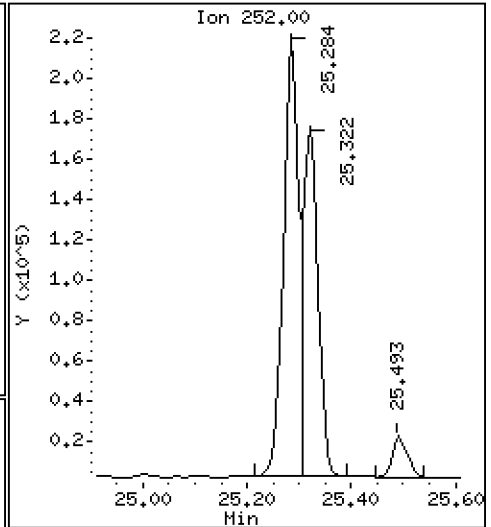
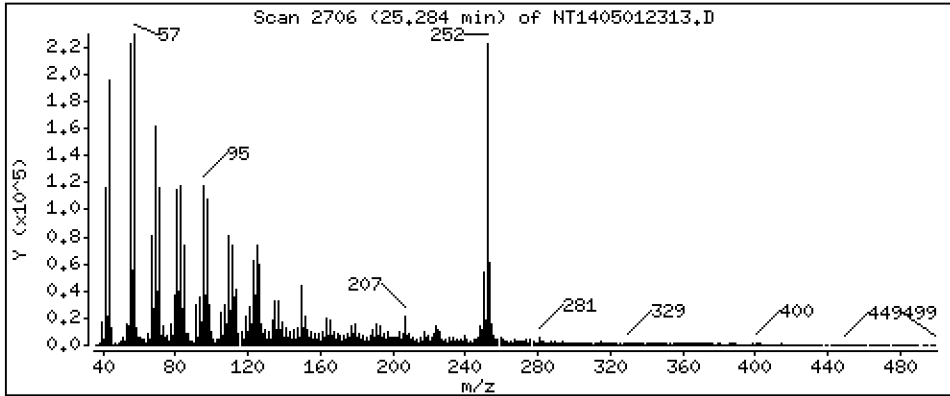
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 2,578 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

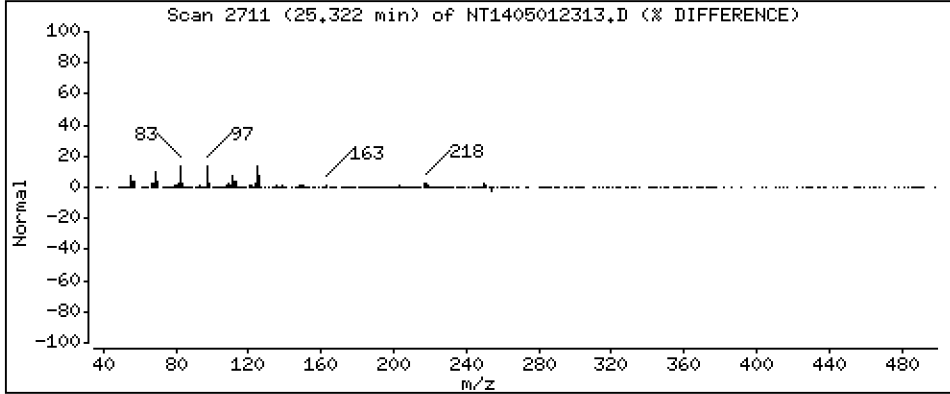
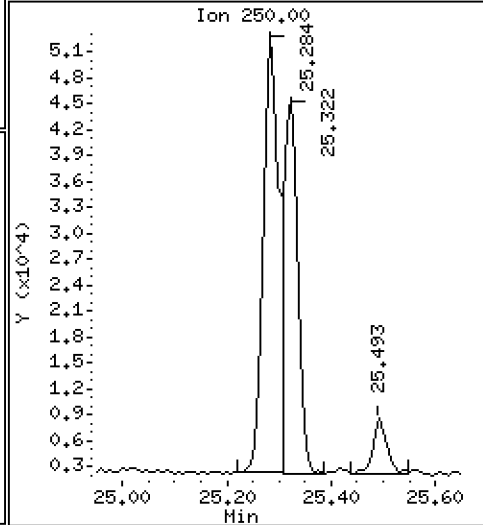
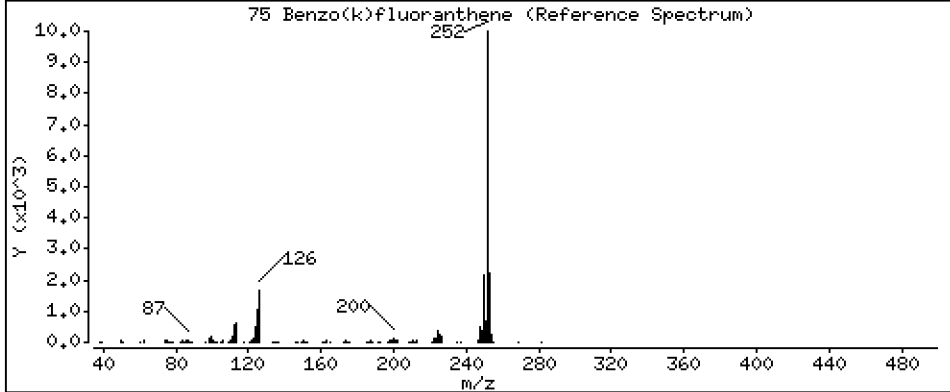
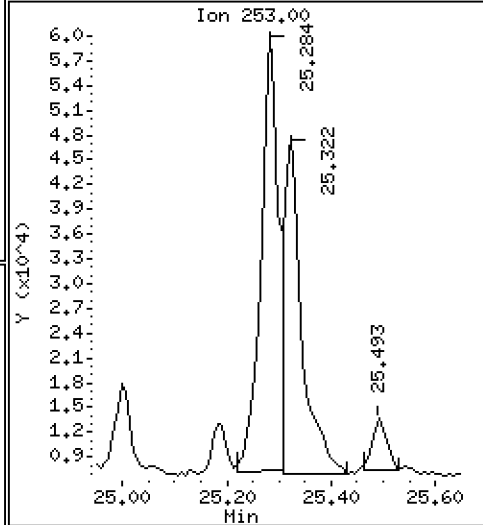
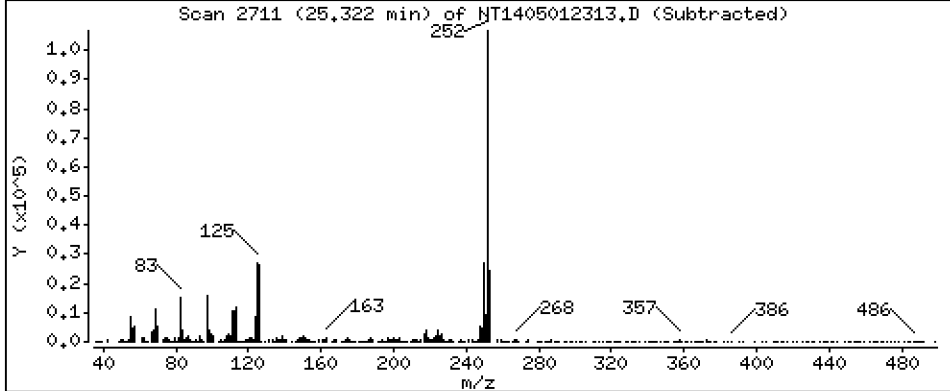
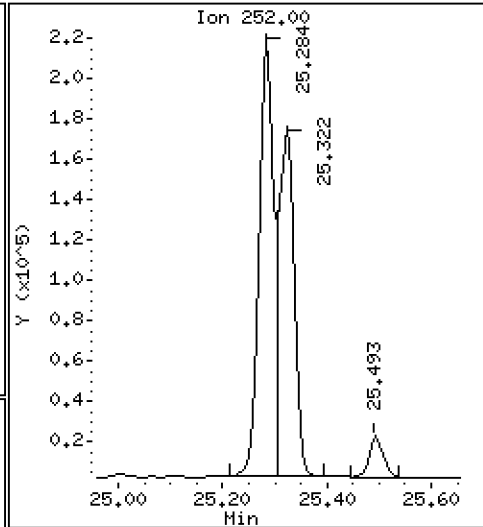
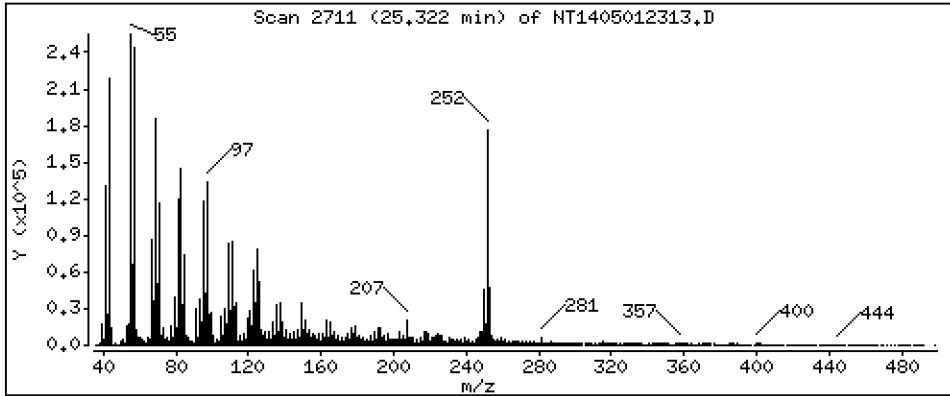
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 1,950 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

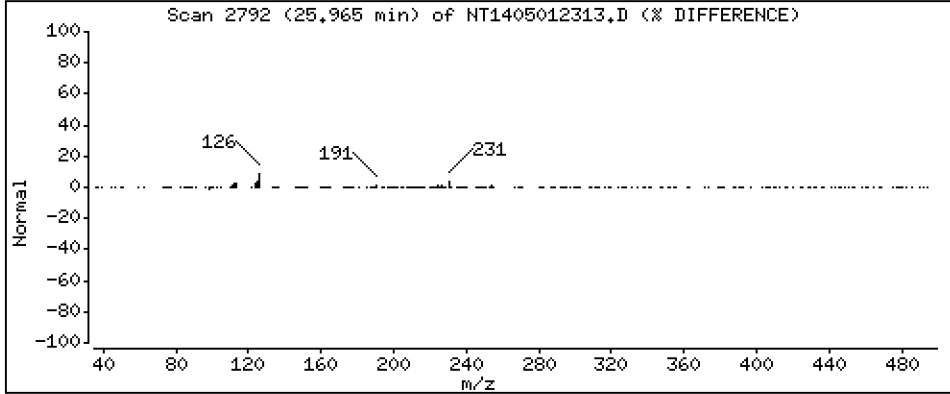
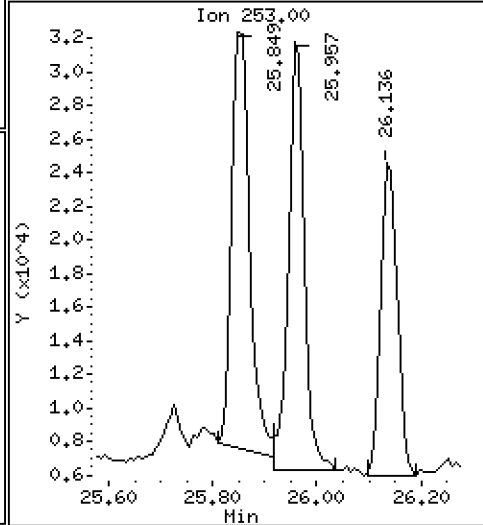
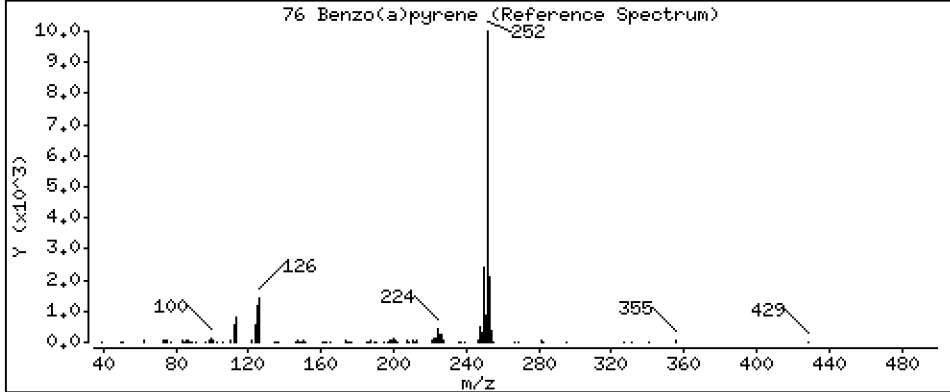
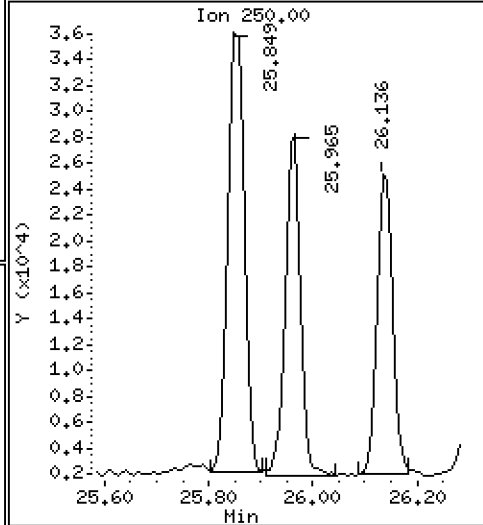
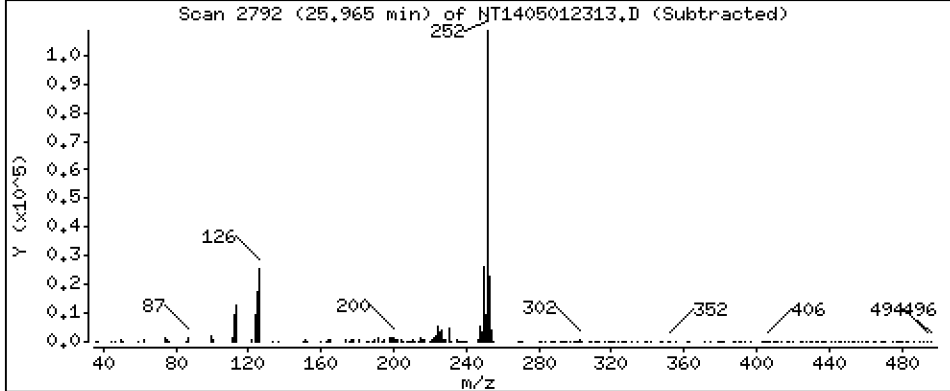
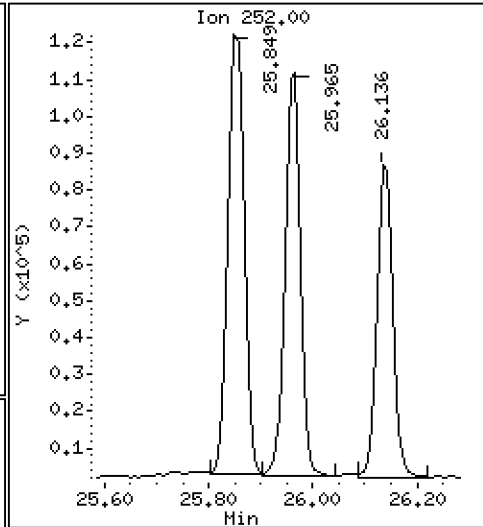
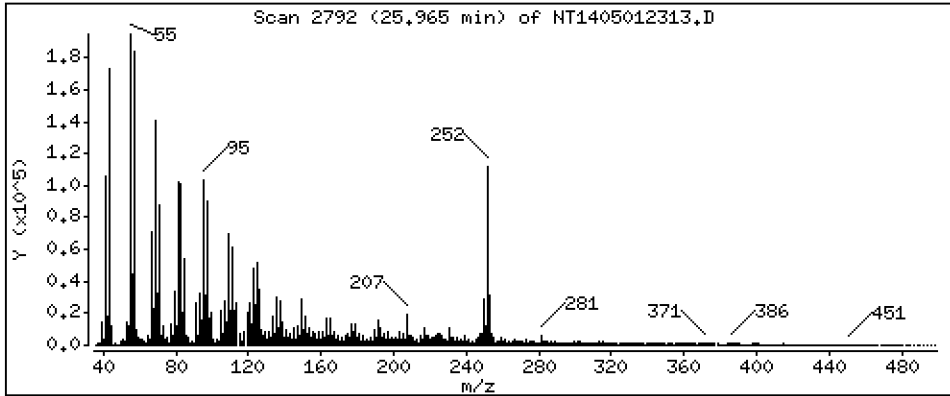
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 1,505 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

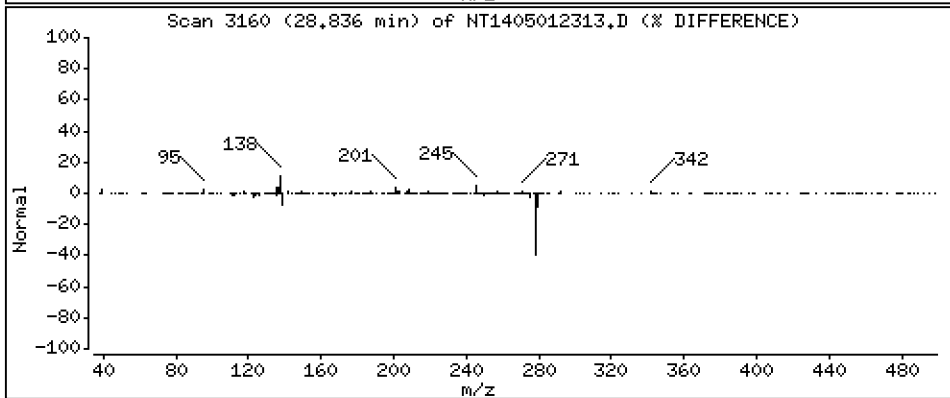
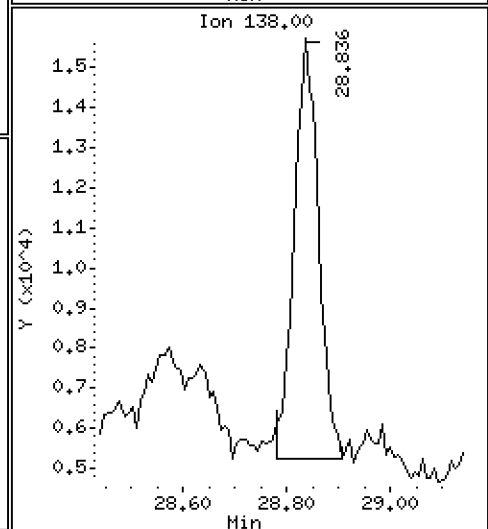
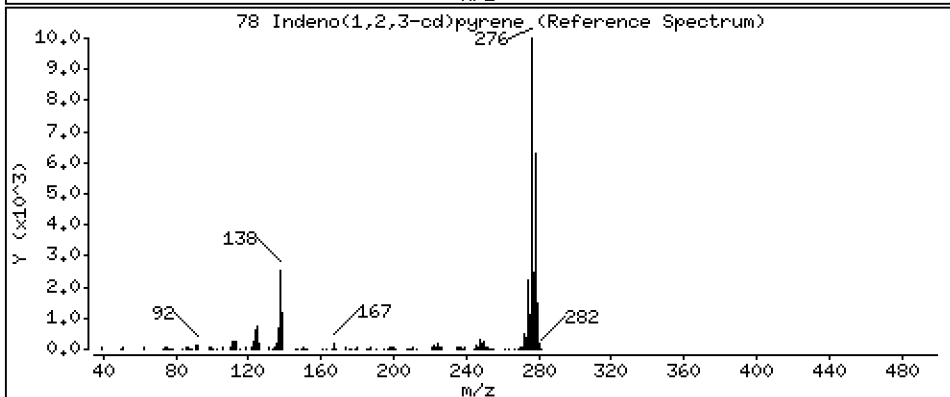
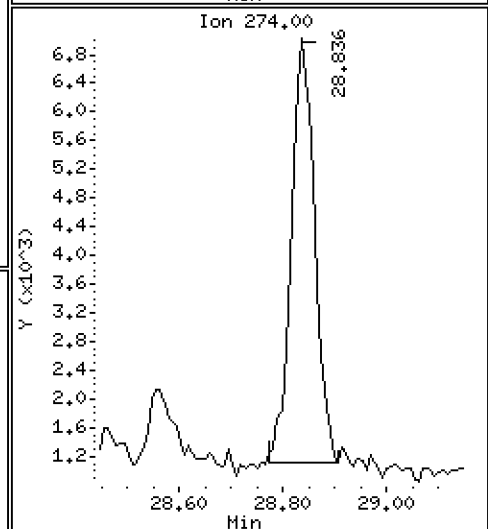
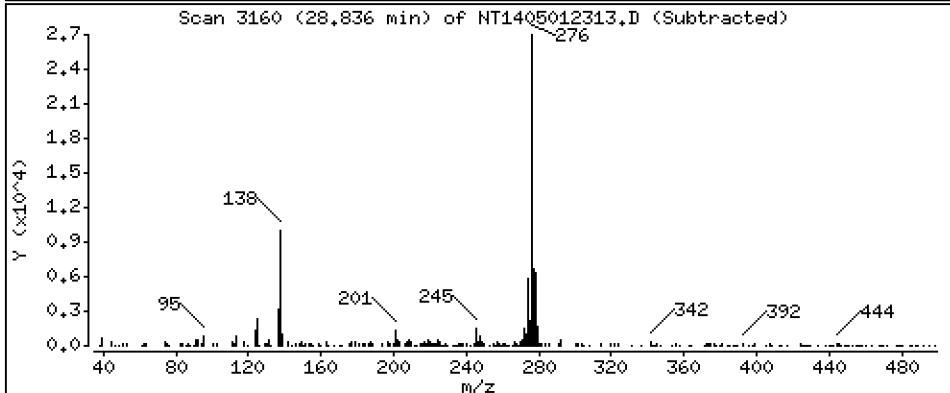
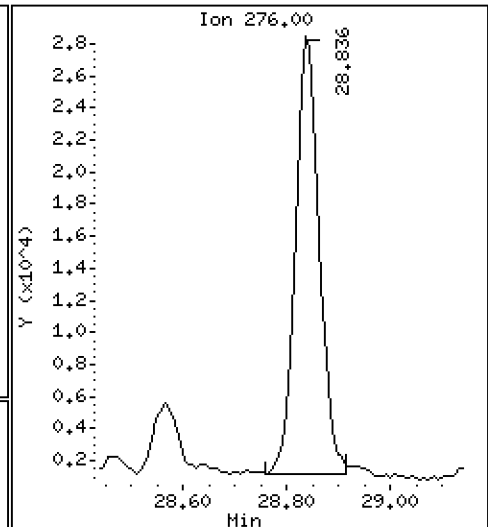
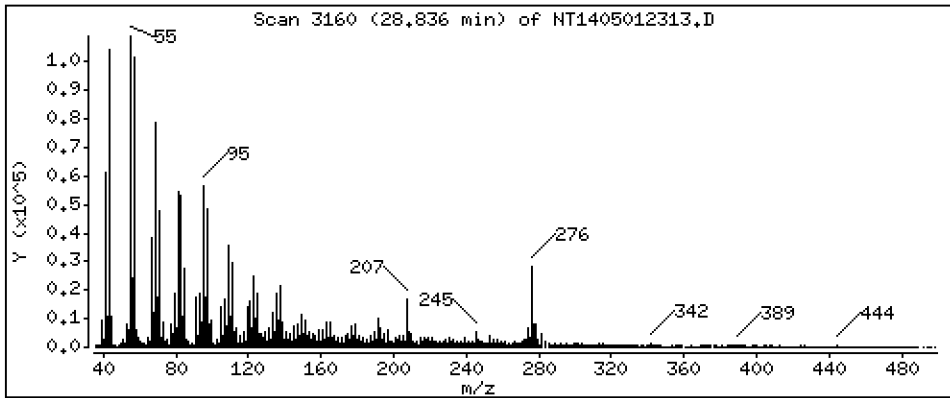
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 0,4158 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

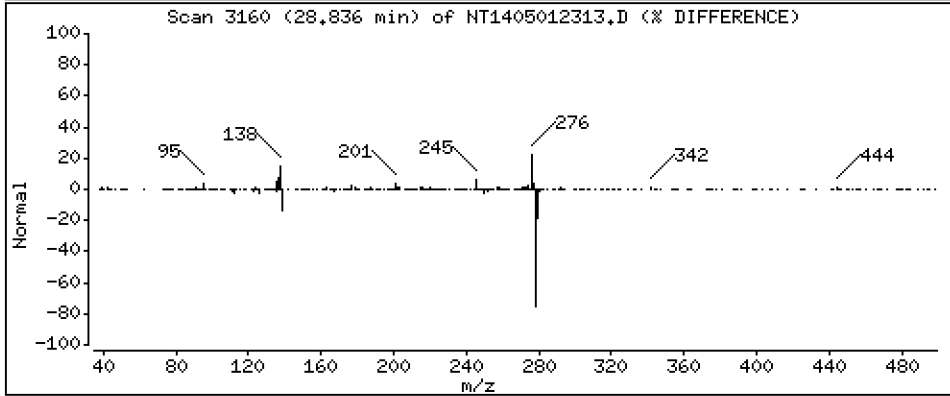
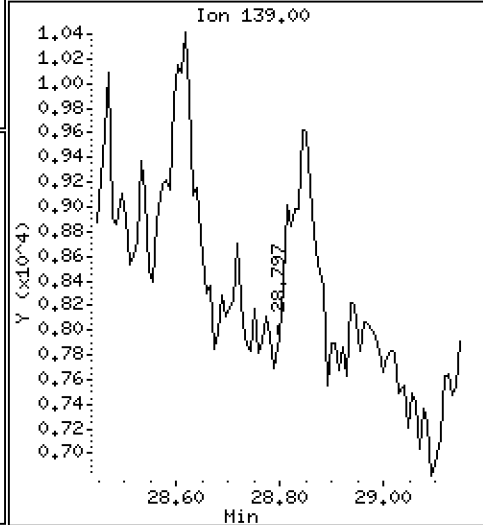
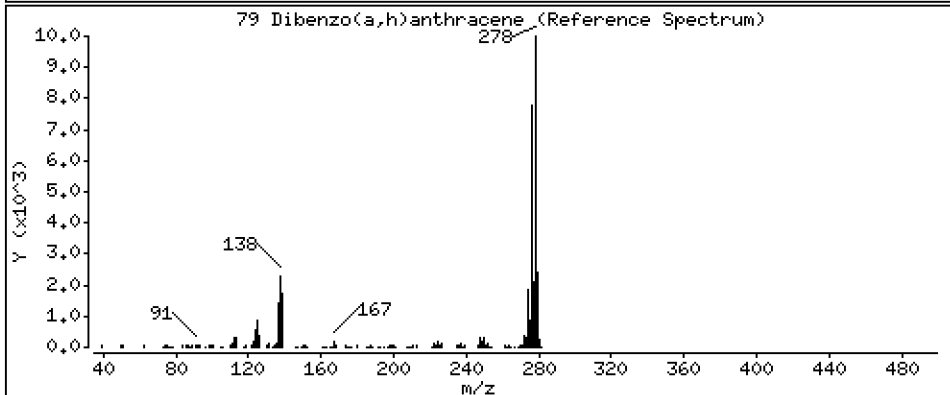
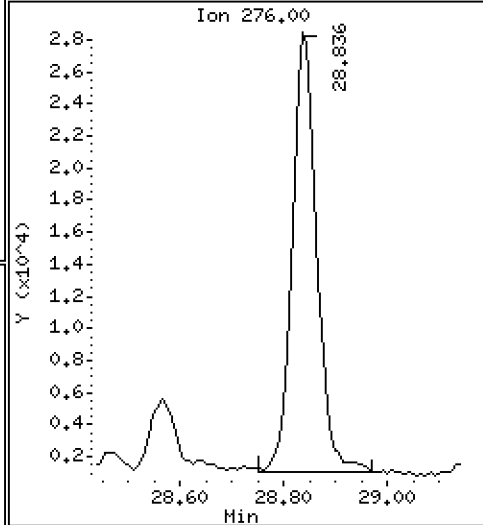
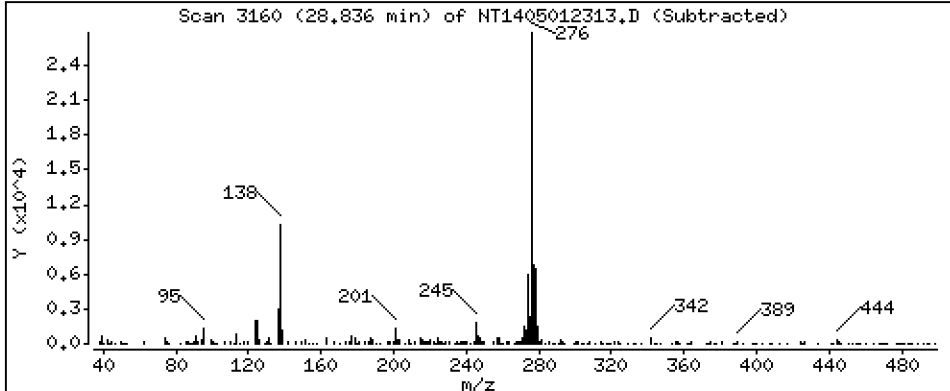
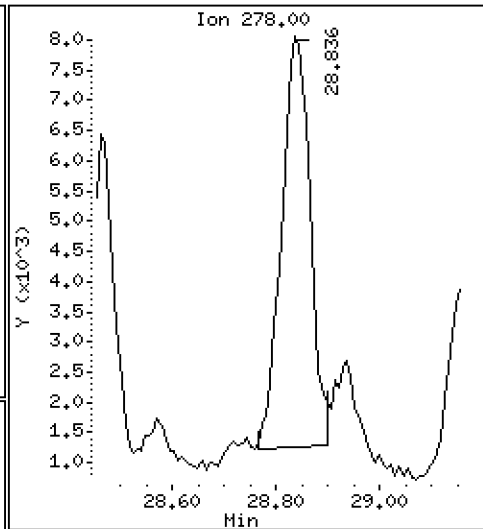
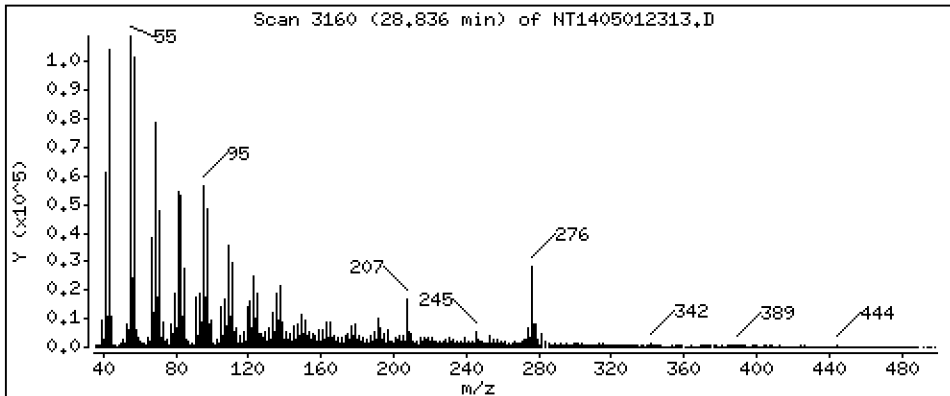
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,1520 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

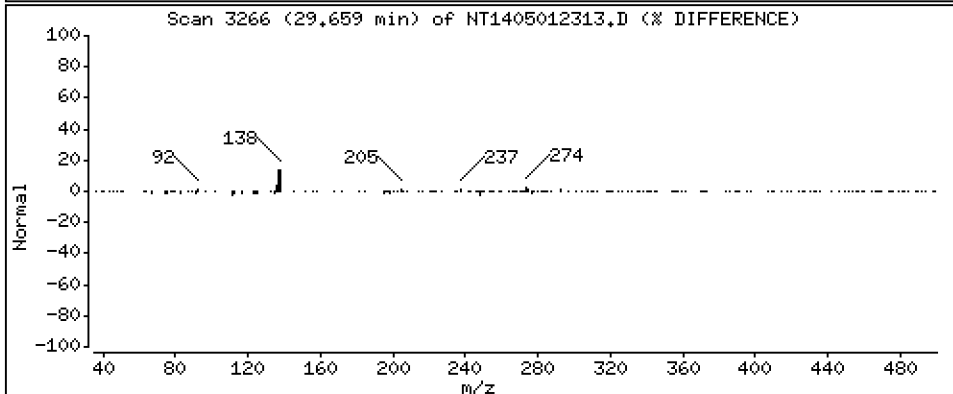
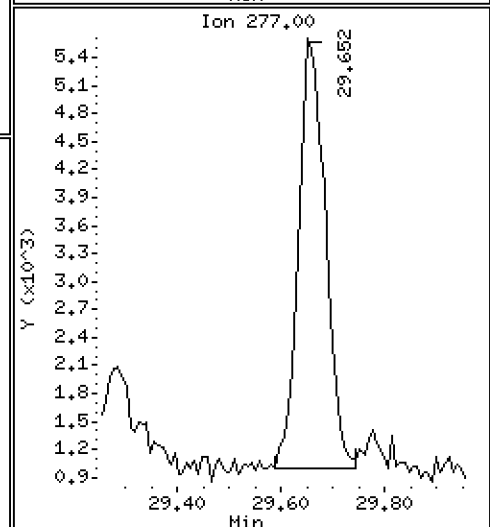
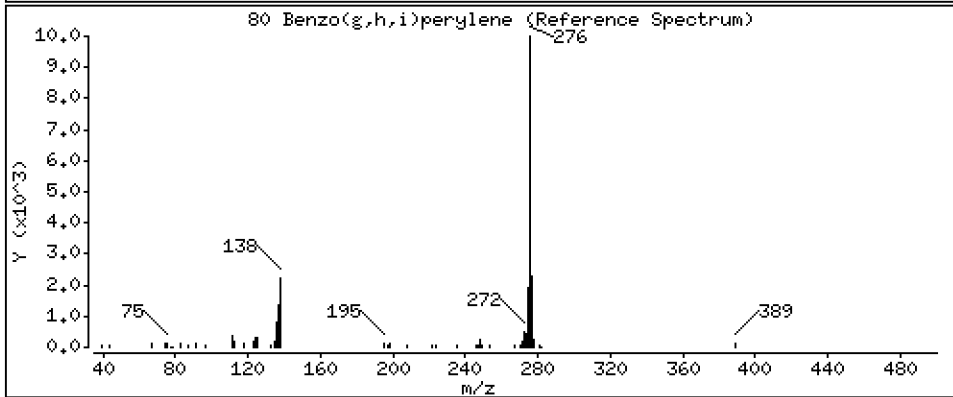
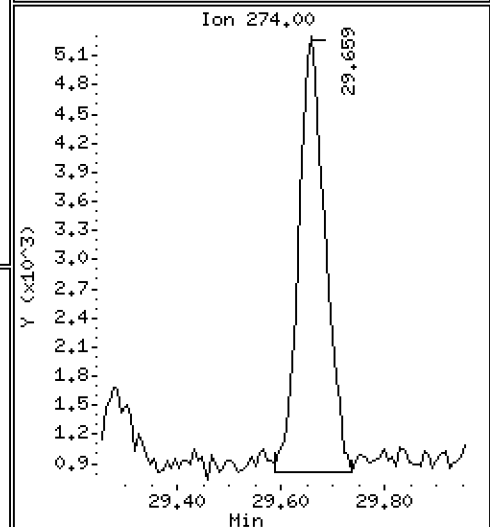
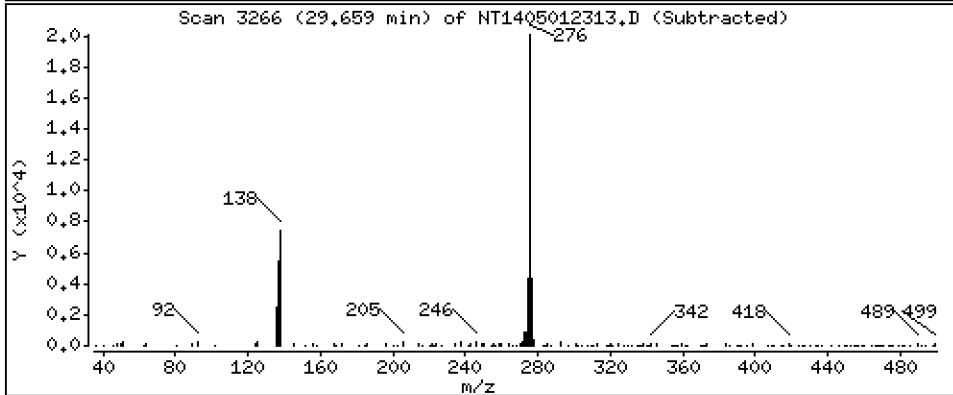
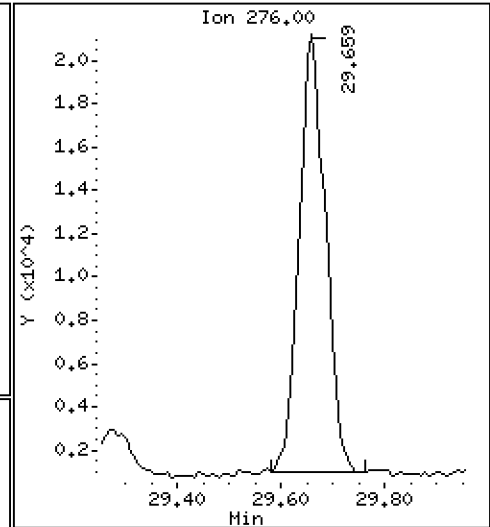
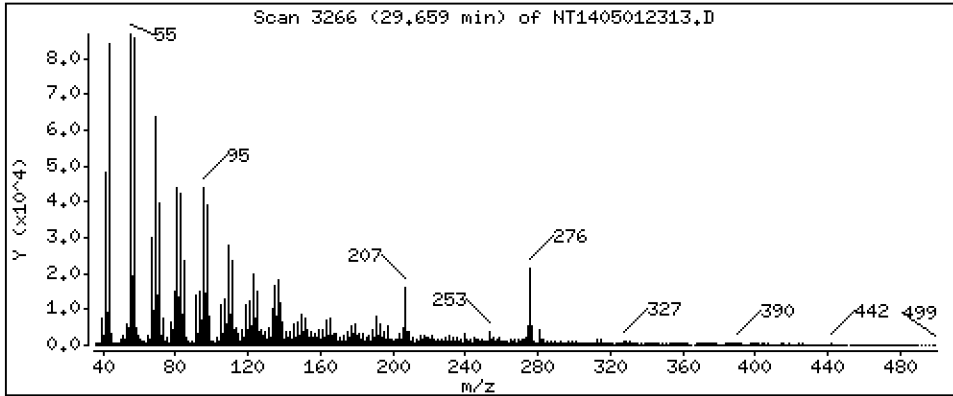
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 0,3985 ug/mL





Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

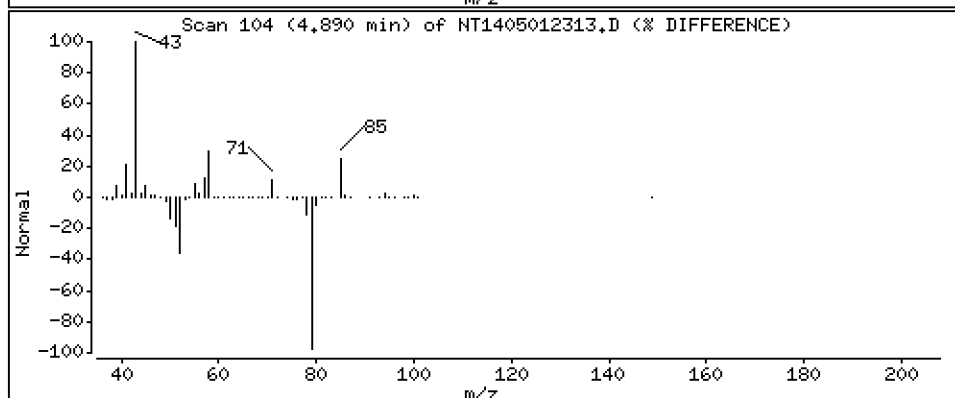
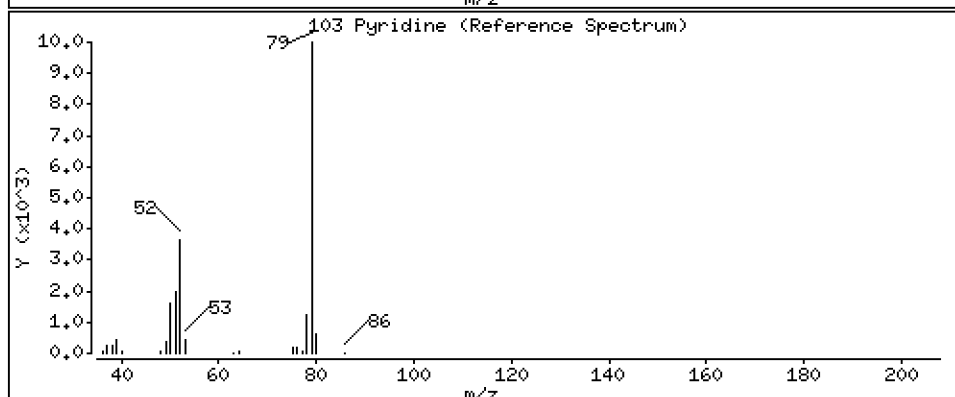
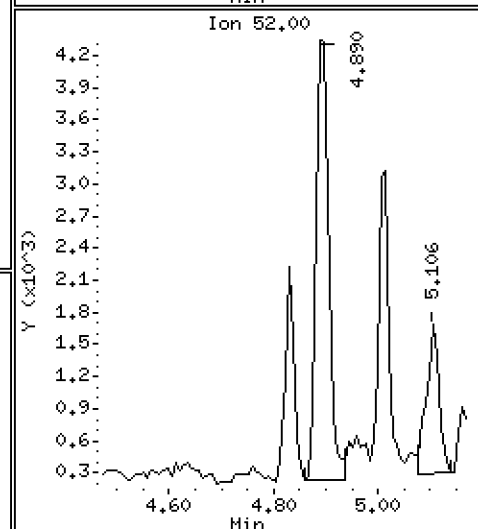
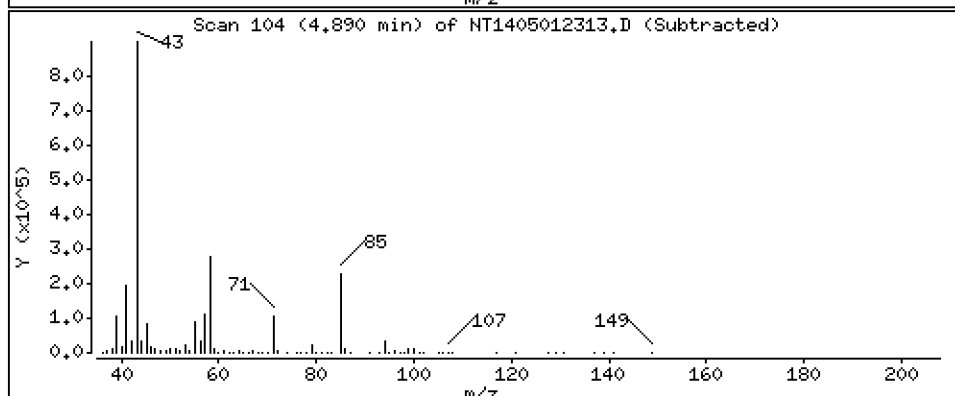
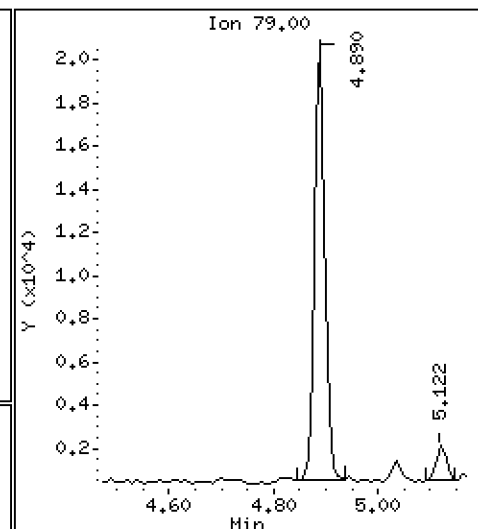
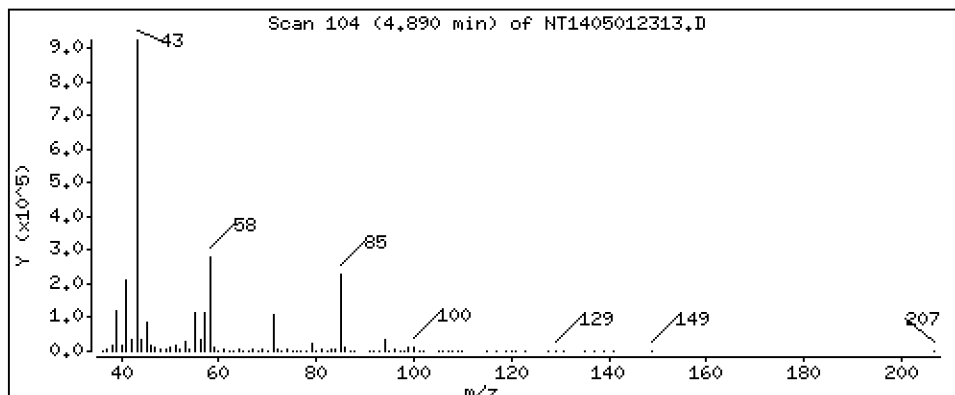
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,1140 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

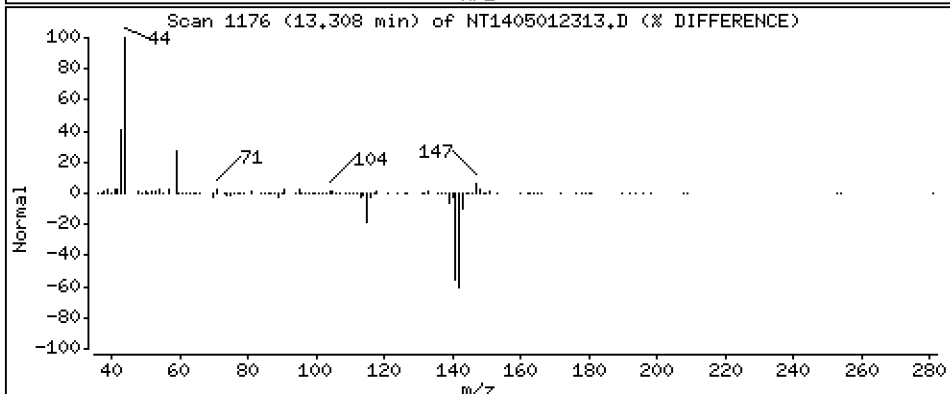
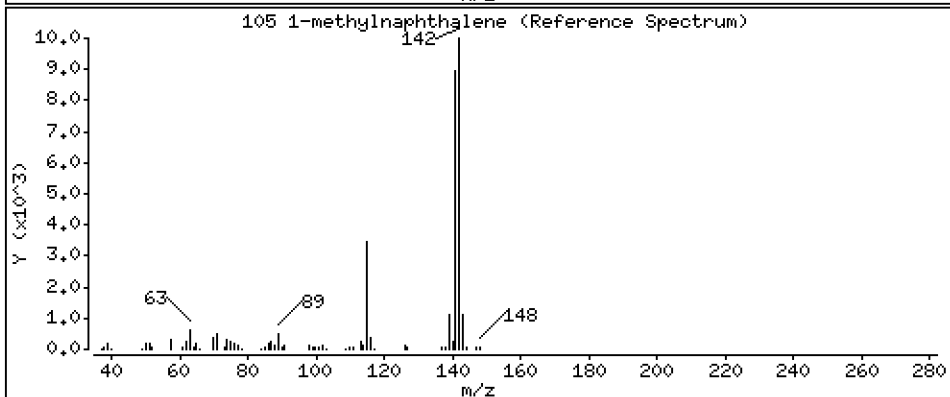
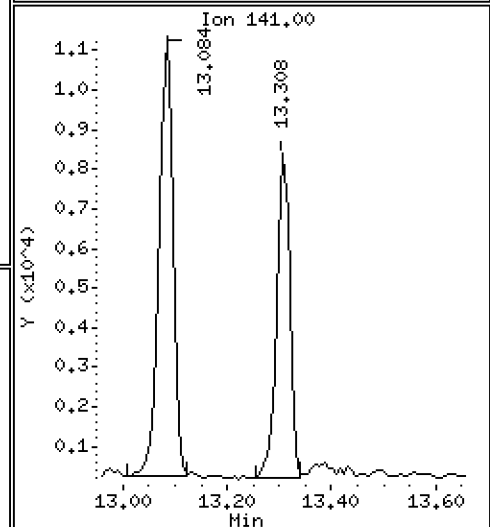
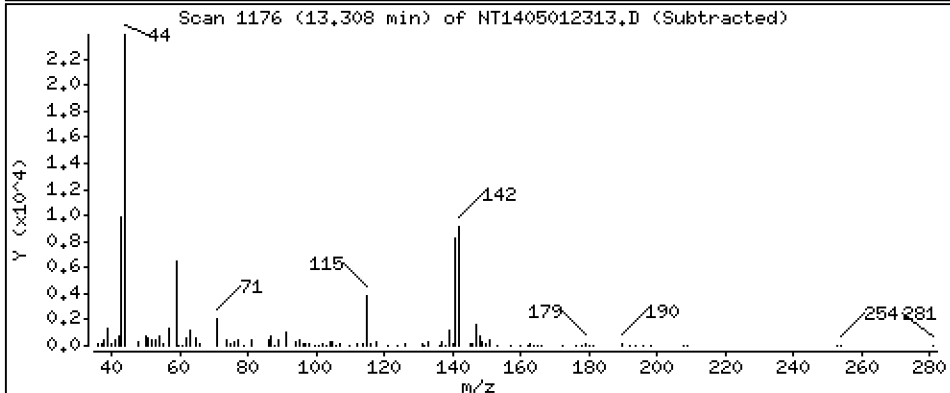
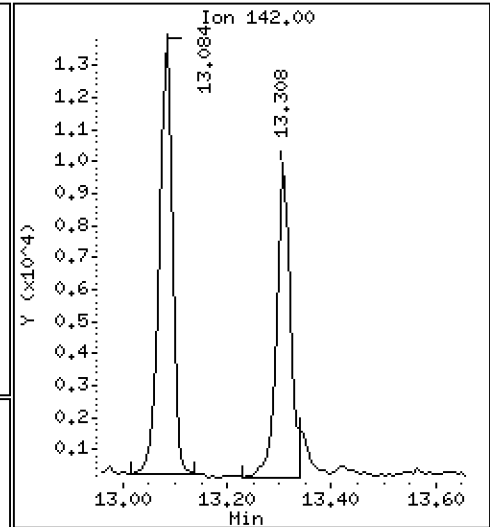
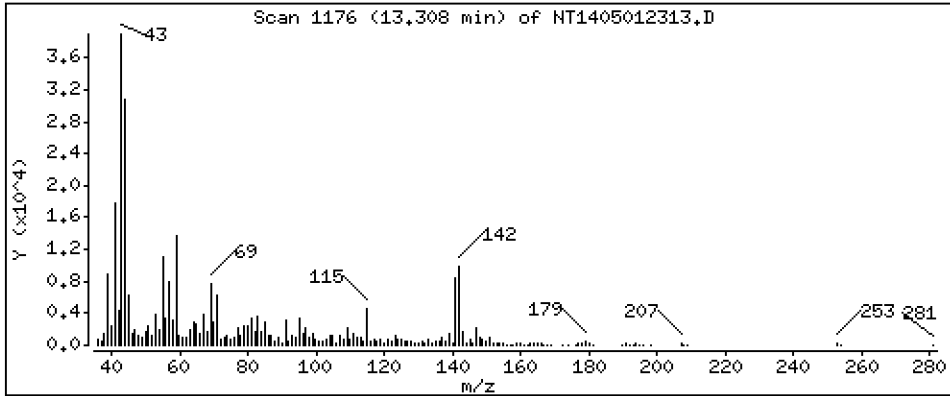
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 0,08414 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

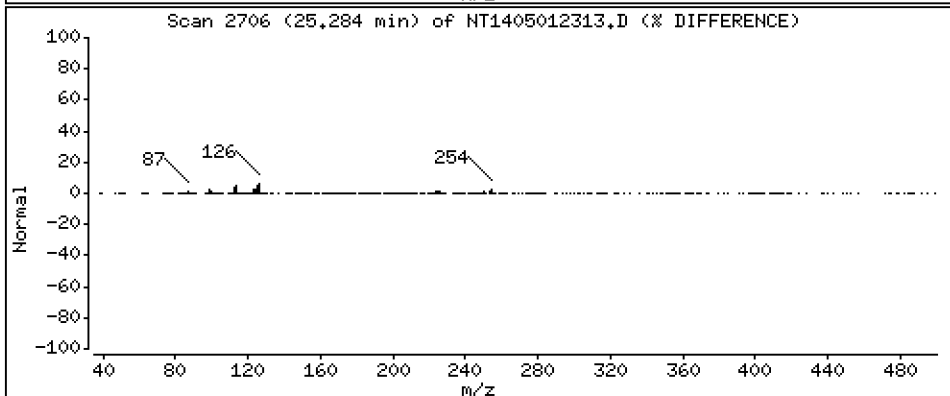
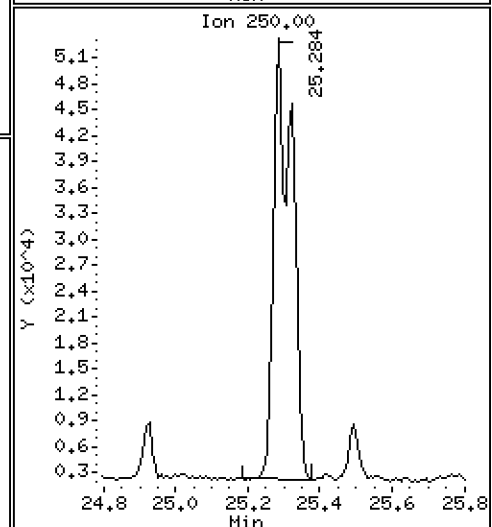
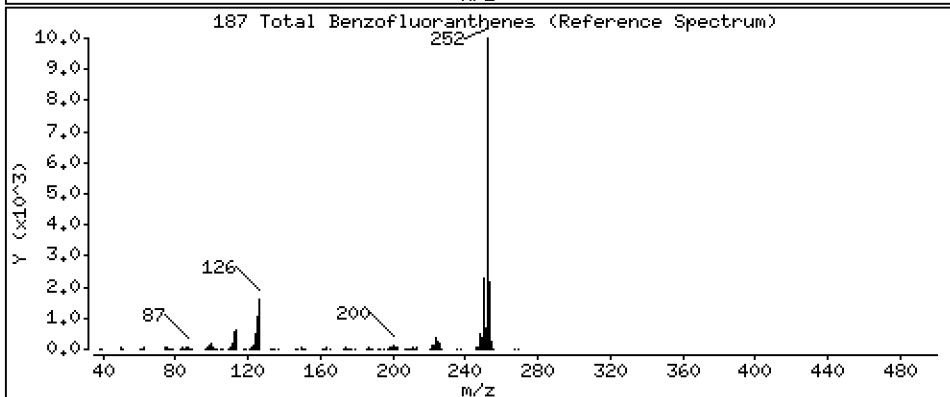
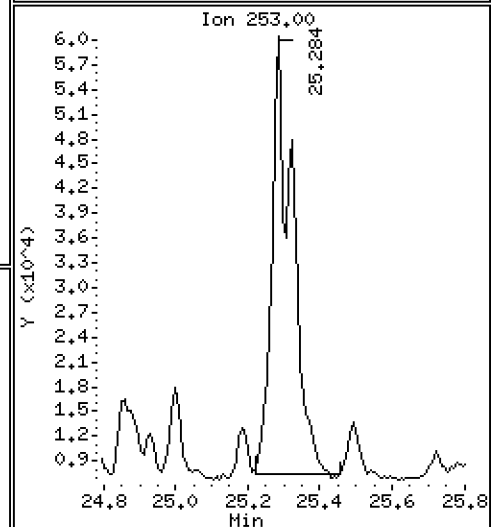
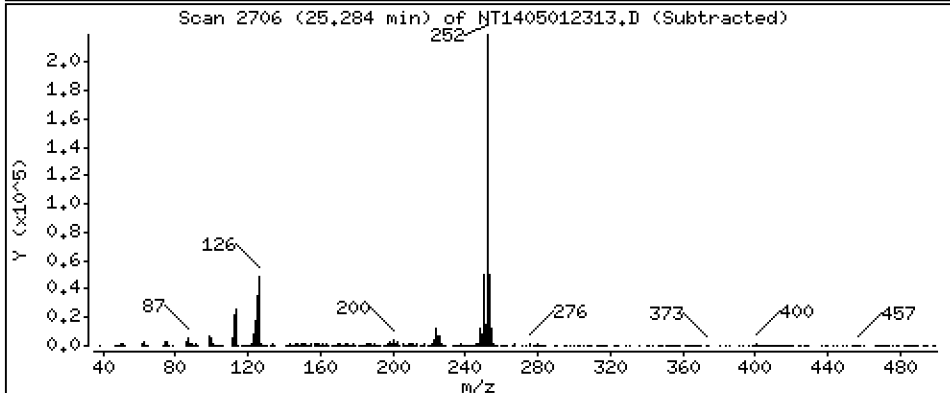
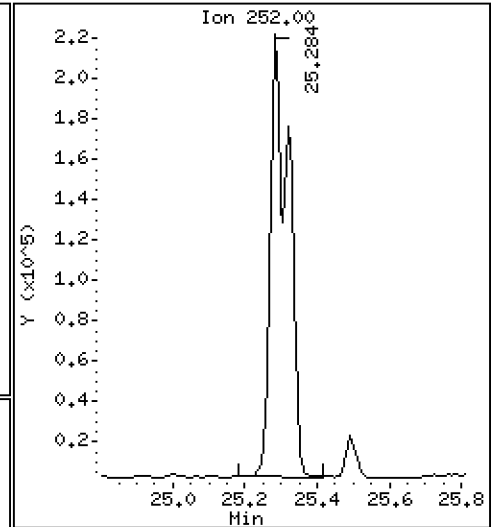
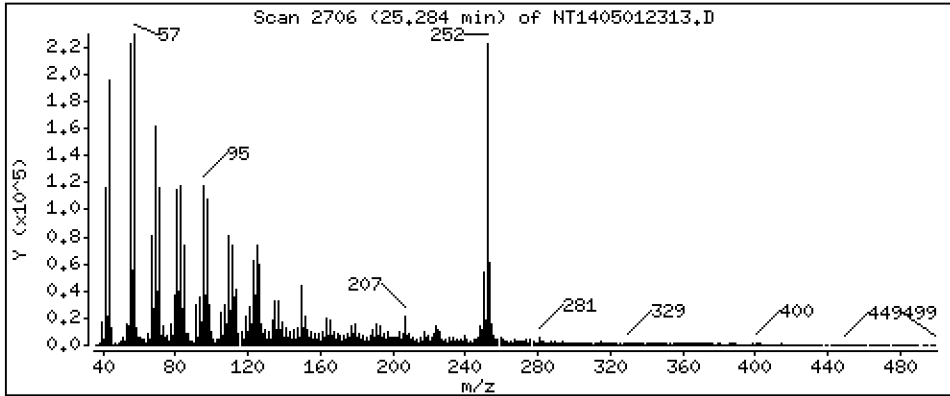
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 4,437 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012313.D  
 Lab Smp Id: 23D0063-01  
 Inj Date : 01-MAY-2023 21:54 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : 23D0063-01  
 Misc Info :  
 Comment : lul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 13  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.921	6.898	(0.757)	518893	5.29556	5.296
\$ 2 Phenol-d5	99		8.497	8.490	(0.930)	780974	5.67930	5.679
3 Phenol	94		8.520	8.513	(0.932)	19440	0.12614	0.1261
\$ 5 2-Chlorophenol-d4	132		8.775	8.768	(0.960)	592145	6.05320	6.053
4 Bis(2-Chloroethyl)ether	93		Compound Not Detected.					
6 2-Chlorophenol	128		Compound Not Detected.					
7 1,3-Dichlorobenzene	146		Compound Not Detected.					
* 8 1,4-Dichlorobenzene-d4	152		9.139	9.132	(1.000)	270952	4.00000	
9 1,4-Dichlorobenzene	146		Compound Not Detected.					
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.039)	230476	3.71922	3.719
12 1,2-Dichlorobenzene	146		Compound Not Detected.					
11 Benzyl alcohol	108		9.411	9.403	(1.030)	14527	0.20665	0.2066
14 2,2'-oxybis(1-Chloropropane)	121		Compound Not Detected.					
13 2-Methylphenol	108		Compound Not Detected.					
17 Hexachloroethane	117		Compound Not Detected.					
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
15 4-Methylphenol	108		9.916	9.900	(1.085)	5928	0.05063	0.05063
\$ 18 Nitrobenzene-d5	82		10.241	10.242	(0.880)	544155	4.08000	4.080
19 Nitrobenzene	77		Compound Not Detected.					
20 Isophorone	82		Compound Not Detected.					
21 2-Nitrophenol	139		Compound Not Detected.					
22 2,4-Dimethylphenol	107		Compound Not Detected.					
23 Bis(2-Chloroethoxy)methane	93		Compound Not Detected.					
24 Benzoic acid	105		11.079	11.196	(0.952)	29121	0.32731	0.3273 (H)
25 2,4-Dichlorophenol	162		Compound Not Detected.					
26 1,2,4-Trichlorobenzene	180		Compound Not Detected.					
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1083674	4.00000	
28 Naphthalene	128		11.683	11.675	(1.004)	37765	0.12965	0.1297
29 4-Chloroaniline	127		Compound Not Detected.					
30 Hexachlorobutadiene	225		Compound Not Detected.					
31 4-Chloro-3-methylphenol	107		Compound Not Detected.					
32 2-Methylnaphthalene	142		13.083	13.083	(1.124)	22730	0.10773	0.1077
33 Hexachlorocyclopentadiene	237		Compound Not Detected.					

Compounds	QUANT MASS	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196					Compound Not Detected.		
35 2,4,5-Trichlorophenol	196					Compound Not Detected.		
\$ 36 2-Fluorobiphenyl	172		13.872	13.865	(0.908)	778064	4.44989	4.450
37 2-Chloronaphthalene	162					Compound Not Detected.		
38 2-Nitroaniline	65					Compound Not Detected.		
39 Dimethylphthalate	163		14.778	14.778	(0.967)	7744	0.04498	0.04498
40 Acenaphthylene	152		14.964	14.956	(0.979)	34433	0.12926	0.1293
41 2,6-Dinitrotoluene	165					Compound Not Detected.		
* 42 Acenaphthene-d10	164		15.281	15.273	(1.000)	502004	4.00000	
43 3-Nitroaniline	138					Compound Not Detected.		
44 Acenaphthene	153		15.343	15.343	(1.004)	16671	0.10447	0.1045
45 2,4-Dinitrophenol	184		15.420	15.420	(1.009)	197	0.00835	0.008349
46 Dibenzofuran	168		15.667	15.668	(1.025)	27689	0.12154	0.1215
47 4-Nitrophenol	109					Compound Not Detected.		
48 2,4-Dinitrotoluene	165					Compound Not Detected.		
50 Diethylphthalate	149		16.232	16.240	(1.062)	35421	0.19006	0.1901
49 Fluorene	166		16.386	16.386	(1.072)	25729	0.12763	0.1276
51 4-Chlorophenyl-phenylether	204					Compound Not Detected.		
52 4-Nitroaniline	138		16.525	16.487	(1.081)	230	0.00530	0.005303
53 4,6-Dinitro-2-methylphenol	198					Compound Not Detected.		
54 N-Nitrosodiphenylamine	169					Compound Not Detected.		
\$ 55 2,4,6-Tribromophenol	330		16.926	16.919	(1.108)	107981	6.54293	6.543
56 4-Bromophenyl-phenylether	248					Compound Not Detected.		
57 Hexachlorobenzene	284					Compound Not Detected.		
58 Pentachlorophenol	266					Compound Not Detected.		
* 59 Phenanthrene-d10	188		18.333	18.325	(1.000)	874574	4.00000	
60 Phenanthrene	178		18.379	18.372	(1.003)	240230	0.97149	0.9715
61 Anthracene	178		18.472	18.464	(1.008)	91741	0.38682	0.3868
62 Carbazole	167		18.812	18.797	(1.026)	31804	0.14492	0.1449
63 Di-n-butylphthalate	149		19.594	19.579	(1.069)	23824	0.07121	0.07121
64 Fluoranthene	202		20.808	20.755	(0.890)	594322	2.20621	2.206
65 Pyrene	202		21.211	21.180	(0.907)	828735	2.97896	2.979
\$ 66 Terphenyl-d14	244		21.474	21.459	(0.918)	705744	3.63458	3.635
67 Butylbenzylphthalate	149		22.388	22.380	(0.957)	21389	0.11854	0.1185
68 Benzo(a)anthracene	228		23.356	23.340	(0.999)	294272	1.41261	1.413
* 69 Chrysene-d12	240		23.386	23.371	(1.000)	583588	4.00000	
70 3,3'-Dichlorobenzidine	252					Compound Not Detected.		
71 Chrysene	228		23.433	23.418	(1.002)	439408	2.26155	2.262
72 bis(2-Ethylhexyl)phthalate	149					Compound Not Detected.		
* 134 Di-n-octylphthalate-d4	153		24.401	24.385	(1.000)	1363355	4.00000	
73 Di-n-octylphthalate	149					Compound Not Detected.		
74 Benzo(b)fluoranthene	252		25.283	25.260	(0.969)	472507	2.57812	2.578
75 Benzo(k)fluoranthene	252		25.322	25.307	(0.971)	350697	1.95017	1.950
76 Benzo(a)pyrene	252		25.965	25.934	(0.996)	233056	1.50472	1.505
* 77 Perylene-d12	264		26.081	26.050	(1.000)	549663	4.00000	
78 Indeno(1,2,3-cd)pyrene	276		28.836	28.789	(1.106)	89049	0.41578	0.4158
79 Dibenzo(a,h)anthracene	278		28.836	28.805	(1.106)	26622	0.15196	0.1520 (M)
80 Benzo(g,h,i)perylene	276		29.659	29.605	(1.137)	72260	0.39854	0.3985
90 N-Nitrosodimethylamine	74					Compound Not Detected.		
91 Aniline	93					Compound Not Detected.		
93 Benzidine	184					Compound Not Detected.		
103 Pyridine	79		4.890	4.821	(0.535)	27484	0.11397	0.1140
105 1-methylnaphthalene	142		13.307	13.308	(1.144)	17144	0.08414	0.08414
111 Azobenzene (1,2-DP-Hydrazine)	77					Compound Not Detected.		

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS		
						ON-COLUMN (ug/mL)	FINAL (ug/mL)	
187 Total Benzofluoranthenes	252	25.283	25.307	(0.969)	769866	4.43706	4.437	
120 2,3,4,6-Tetrachlorophenol	232	Compound Not Detected.						

### QC Flag Legend

- M - Compound response manually integrated.
- H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012313.D Calibration Time: 15:06  
 Lab Smp Id: 23D0063-01  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	270952	-1.11
27 Naphthalene-d8	1103207	551604	2206414	1083674	-1.77
42 Acenaphthene-d10	520358	260179	1040716	502004	-3.53
59 Phenanthrene-d10	882575	441288	1765150	874574	-0.91
69 Chrysene-d12	600619	300310	1201238	583588	-2.84
134 Di-n-octylphthala	1445631	722816	2891262	1363355	-5.69
77 Perylene-d12	570040	285020	1140080	549663	-3.57

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.14	0.08
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.33	17.83	18.83	18.33	0.04
69 Chrysene-d12	23.37	22.87	23.87	23.39	0.07
134 Di-n-octylphthala	24.39	23.89	24.89	24.40	0.06
77 Perylene-d12	26.05	25.55	26.55	26.08	0.12

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012313.D

Lab ID: 23D0063-01  
nt14.i, ABN.m, 01-MAY-2023 21:54

RT	CO-ELUTION COMPOUNDS
28.836	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
28.836	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.952	0.962	-0.0100	Benzoic acid
0.535	0.528	0.0071	Pyridine

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



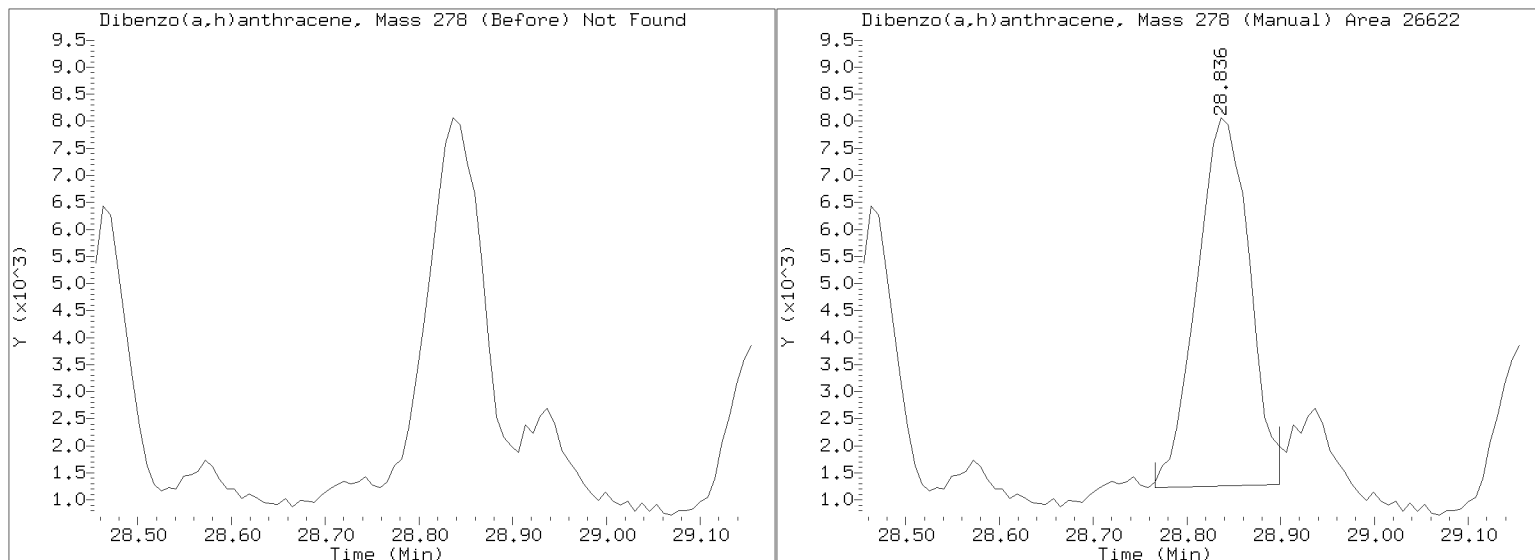
# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230501A.b/NT1405012313.D

Injection Date: 01-MAY-2023 21:54

Lab ID:23D0063-01 Client ID:

Report Date: 05/03/2023 12:05



**APPROVED**

*By Deenay Dunmore at 12:07 pm, May 03, 2023*



Form I  
ORGANIC ANALYSIS DATA SHEET  
EPA 8270E  
Semivolatiles (20ug/kg - 0.2ug/L SepF)

Laboratory: Analytical Resources, LLC

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment

Laboratory ID: 23D0063-03 A

SDG: 23D0063

Sampled: 04/04/23 12:52

Prepared: 04/17/23 12:00

File ID: NT1405012316.D

% Solids: 35.11

Preparation: EPA 3546 (Microwave)

Analyzed: 05/01/23 23:45

Batch: BLD0297

Sequence: SLE0024

Initial/Final: 28.51 g Wet / 1 mL

Instrument: NT14

Column: ZB-5MS

Calibration: GD00062

Cleanups: GPC

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg dry)	Q	DL	RL
108-95-2	Phenol	1	18.1	J, B	4.4	20.0
106-44-5	4-Methylphenol	1	9.8	J	7.4	20.0
91-20-3	Naphthalene	1	16.2	J	4.2	20.0
91-57-6	2-Methylnaphthalene	1	13.4	J	4.5	20.0
208-96-8	Acenaphthylene	1	12.6	J	6.2	20.0
131-11-3	Dimethylphthalate	1	9.1	J	4.4	20.0
83-32-9	Acenaphthene	1	14.0	J	5.2	20.0
132-64-9	Dibenzofuran	1	18.0	J	14.1	20.0
86-73-7	Fluorene	1	15.3	J	14.6	20.0
85-01-8	Phenanthrene	1	109		8.7	20.0
120-12-7	Anthracene	1	50.6		7.2	20.0
206-44-0	Fluoranthene	1	324		6.1	20.0
129-00-0	Pyrene	1	329		5.7	20.0
85-68-7	Butylbenzylphthalate	1	14.5	J	9.4	20.0
56-55-3	Benzo(a)anthracene	1	156		6.0	20.0
218-01-9	Chrysene	1	229		6.1	20.0
117-81-7	bis(2-Ethylhexyl)phthalate	1	50.0	U	5.5	50.0
	Benzo(a)fluoranthenes, Total	1	511		10.0	40.0
50-32-8	Benzo(a)pyrene	1	171		4.2	20.0
193-39-5	Indeno(1,2,3-cd)pyrene	1	36.7		14.6	20.0
53-70-3	Dibenzo(a,h)anthracene	1	20.0	U	17.2	20.0
191-24-2	Benzo(g,h,i)perylene	1	35.3		13.6	20.0

SURROGATES	ADDED: (ug/kg dry)	FOUND: (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	749.26	545	72.8	27 - 120	
Phenol-d5	749.26	552	73.7	29 - 120	
2-Chlorophenol-d4	749.26	592	79.0	31 - 120	
1,2-Dichlorobenzene-d4	499.51	343	68.7	32 - 120	
Nitrobenzene-d5	499.51	387	77.4	30 - 120	
2-Fluorobiphenyl	499.51	410	82.0	35 - 120	



**Form I**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8270E**  
**Semivolatiles (20ug/kg - 0.2ug/L SepF)**

Laboratory: Analytical Resources, LLC

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment

Laboratory ID: 23D0063-03 A

SDG: 23D0063

Sampled: 04/04/23 12:52

Prepared: 04/17/23 12:00

File ID: NT1405012316.D

% Solids: 35.11

Preparation: EPA 3546 (Microwave)

Analyzed: 05/01/23 23:45

Batch: BLD0297

Sequence: SLE0024

Initial/Final: 28.51 g Wet / 1 mL

Instrument: NT14

Column: ZB-5MS

Calibration: GD00062

Cleanups: GPC

SURROGATES	ADDED: (ug/kg dry)	FOUND: (ug/kg dry)	% REC	QC LIMITS	Q
2,4,6-Tribromophenol	749.26	687	91.7	24 - 134	
p-Terphenyl-d14	499.51	320	64.0	37 - 120	

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012316.D

Date: 01-May-2023 23:45

Client ID:

Sample Info: 23D0063-03

Page 1

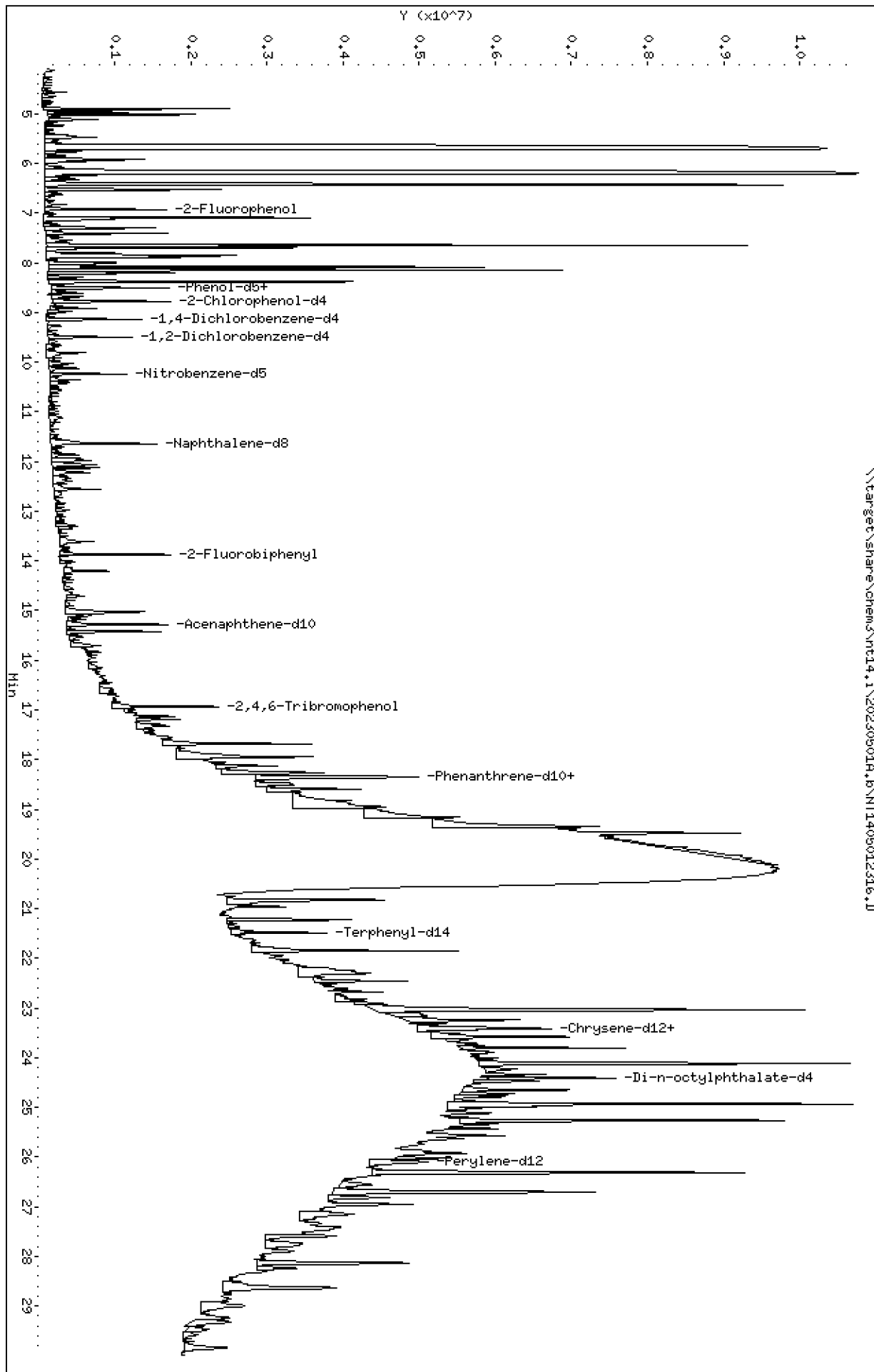
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JSD

Column diameter: 0.25

\\target\share\chem3\nt14.1\20230501A.B\NT1405012316.D



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

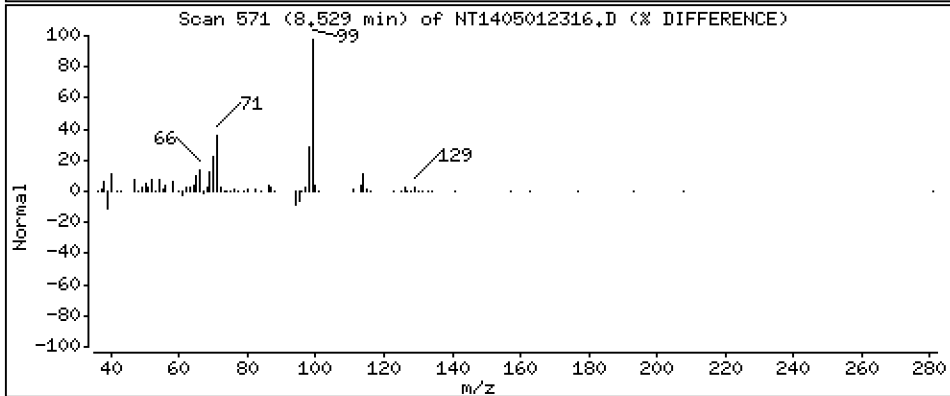
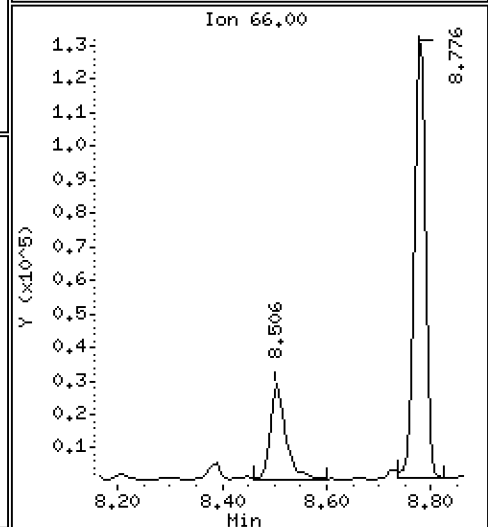
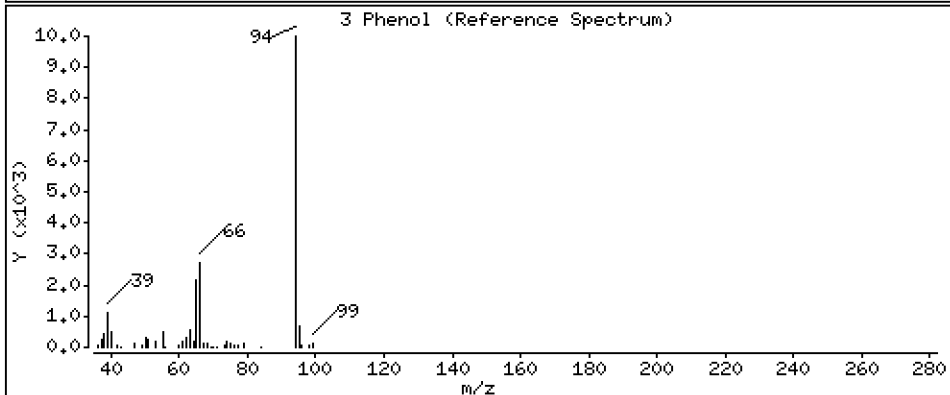
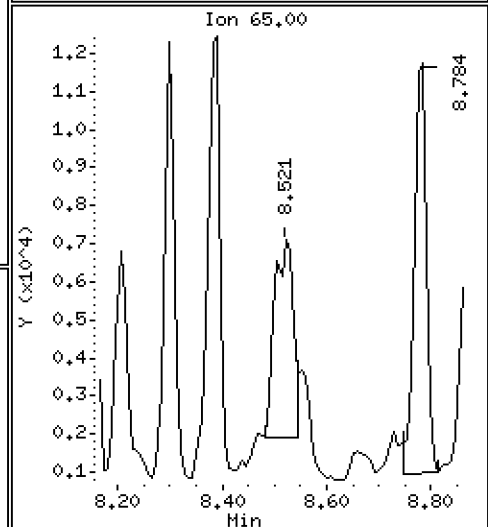
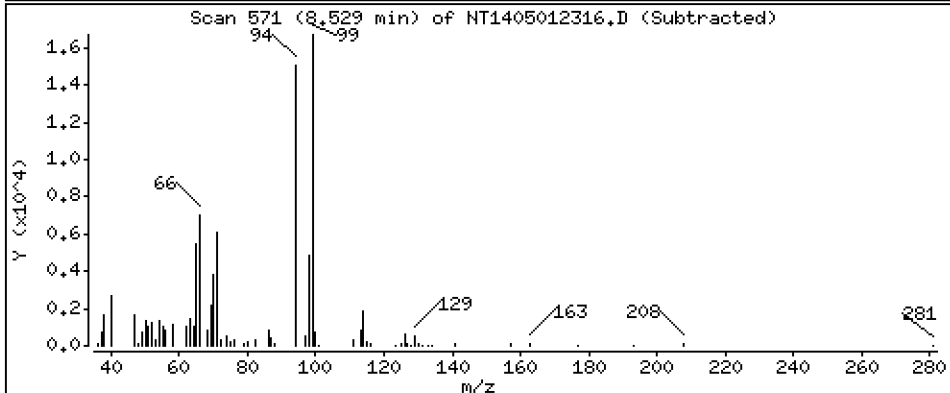
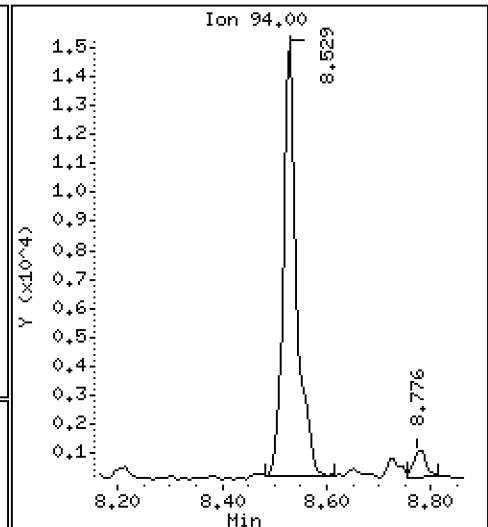
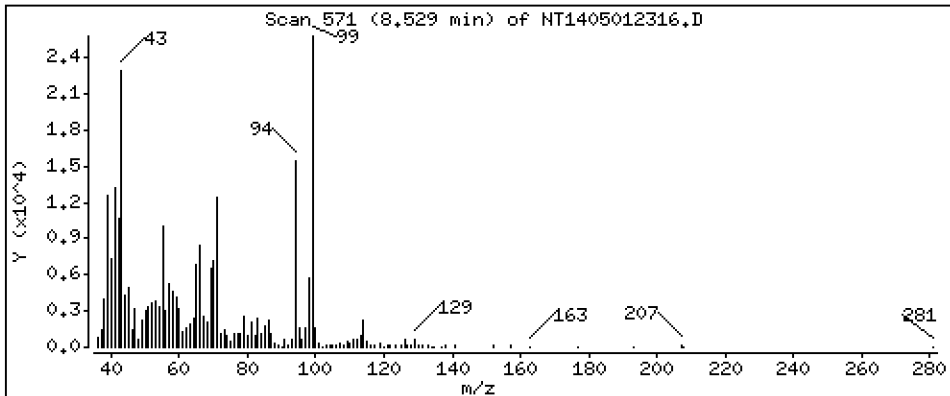
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,1809 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

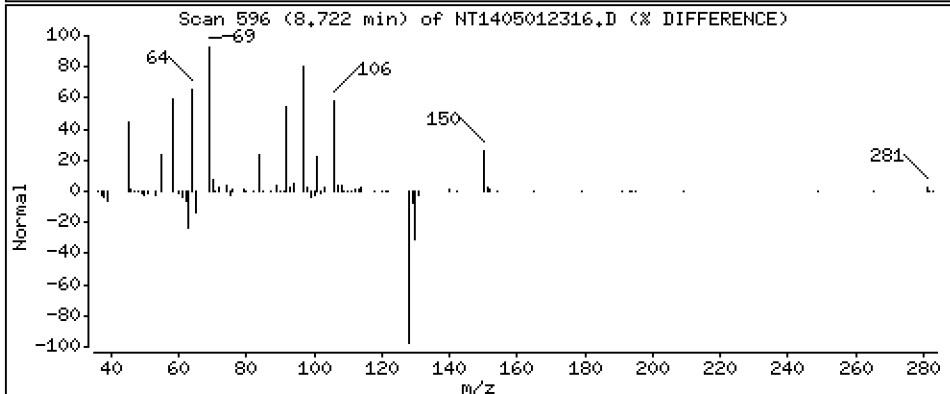
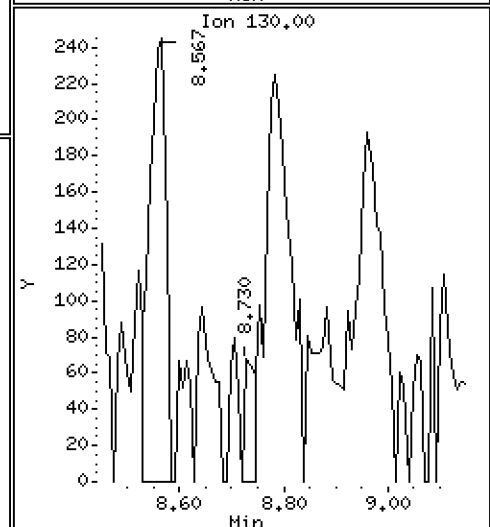
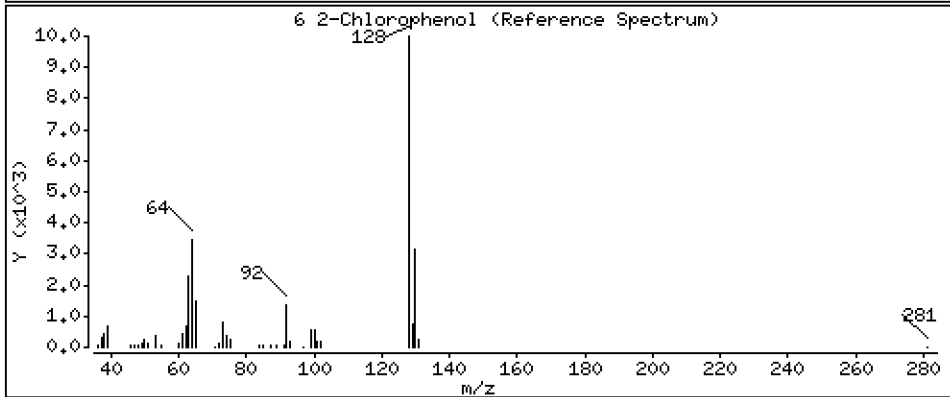
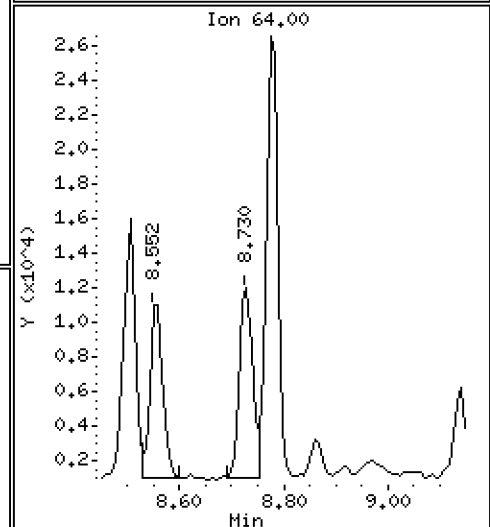
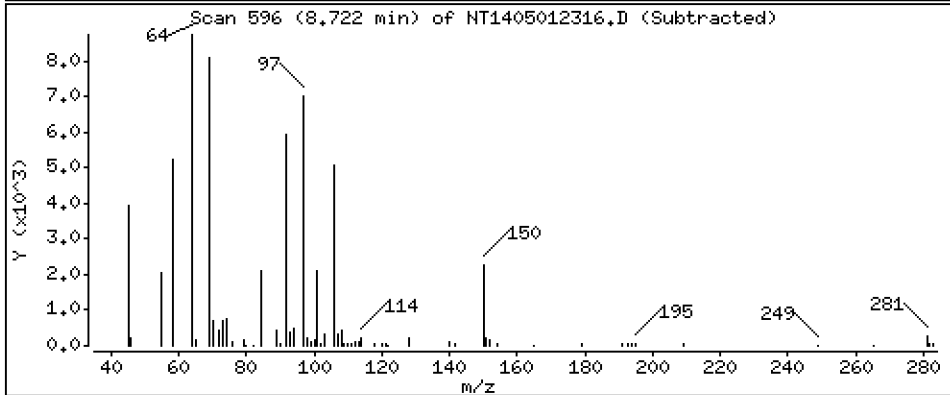
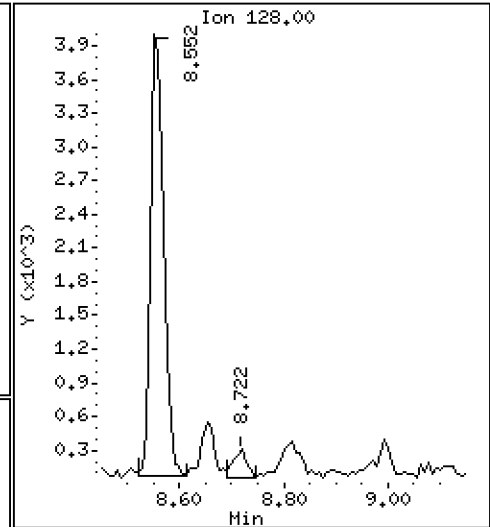
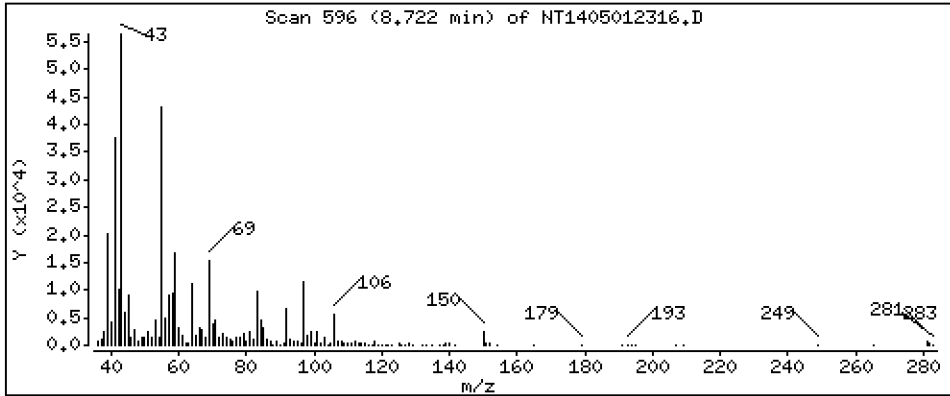
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

6 2-Chlorophenol

Concentration: 0.004547 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

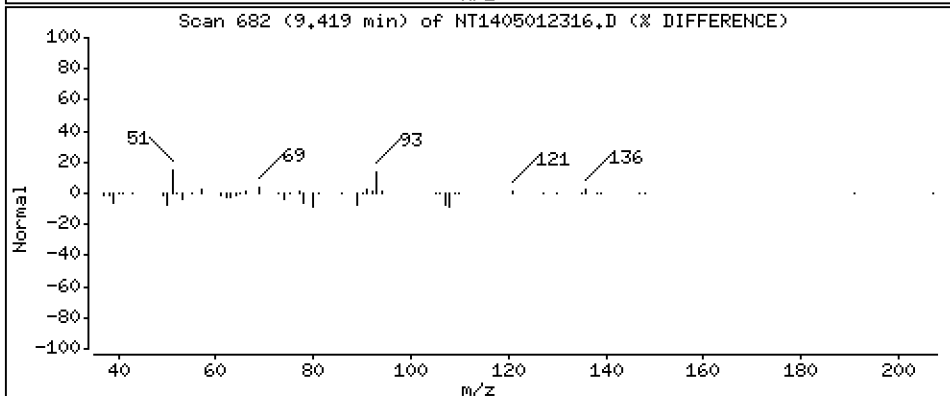
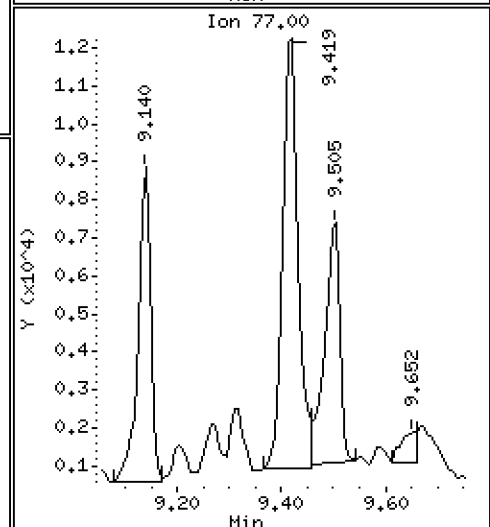
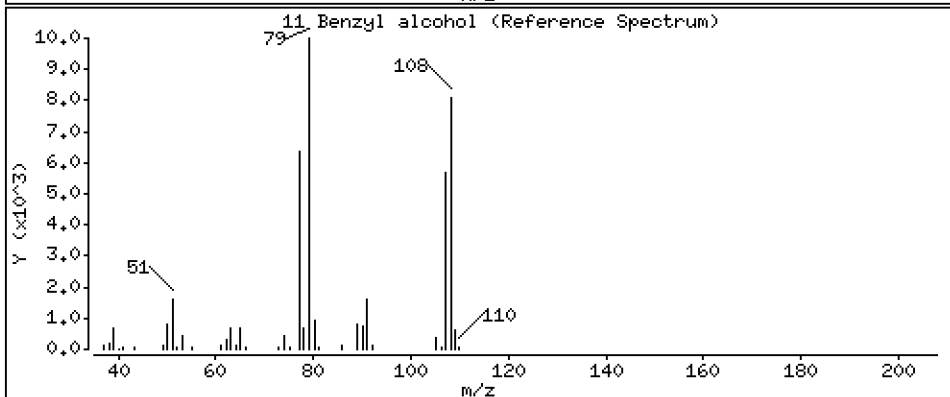
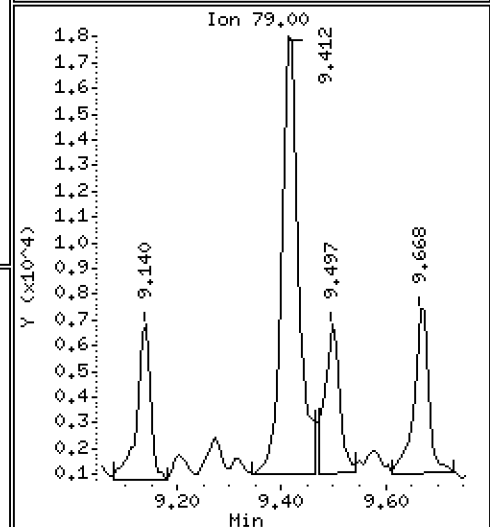
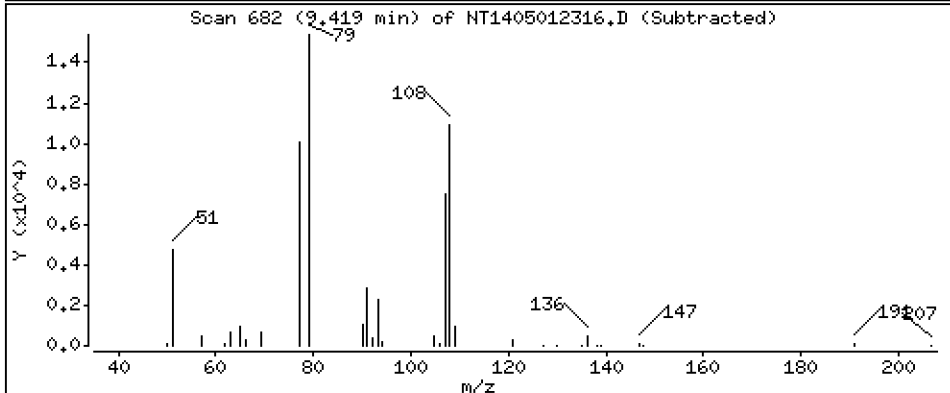
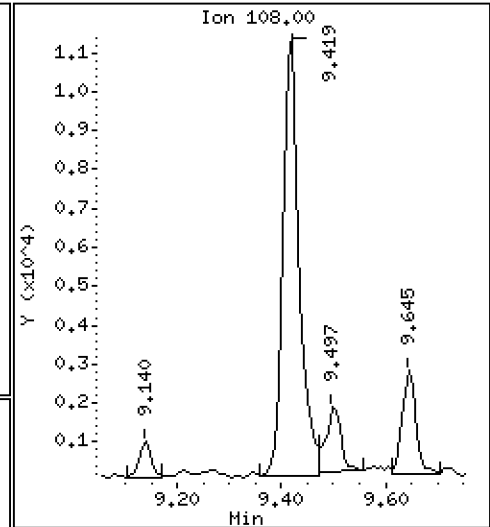
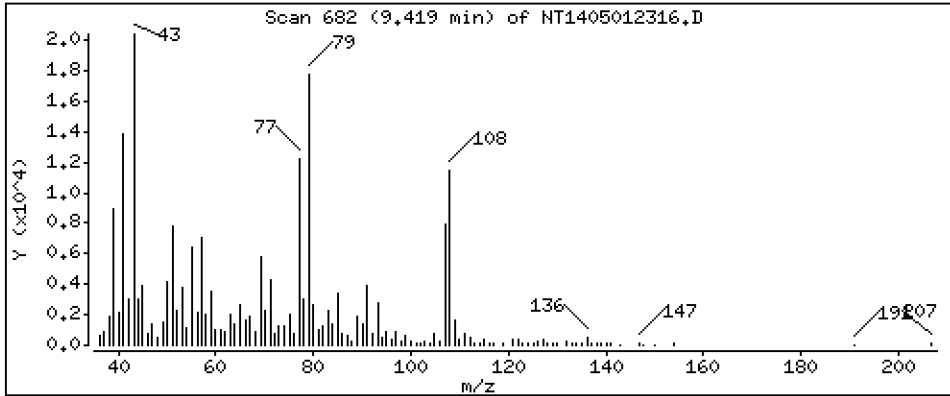
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 0.3525 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

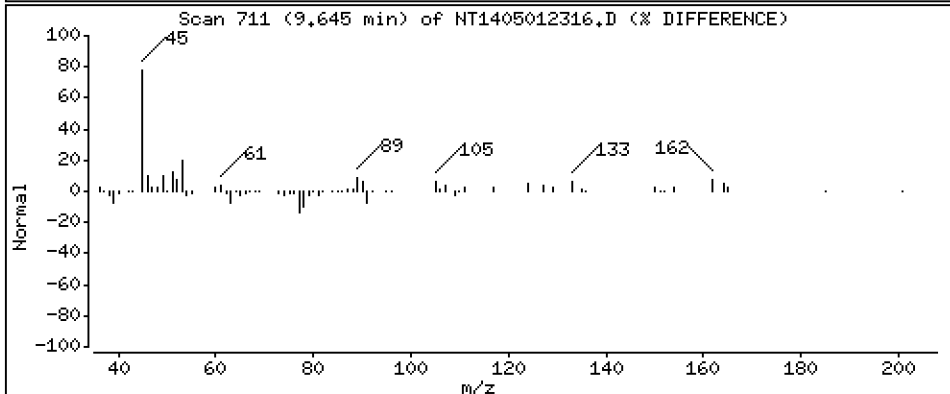
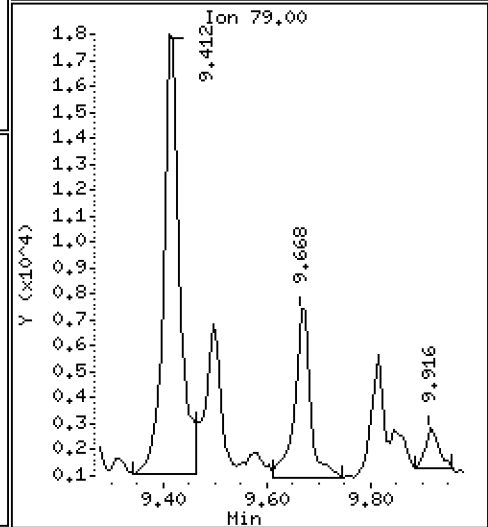
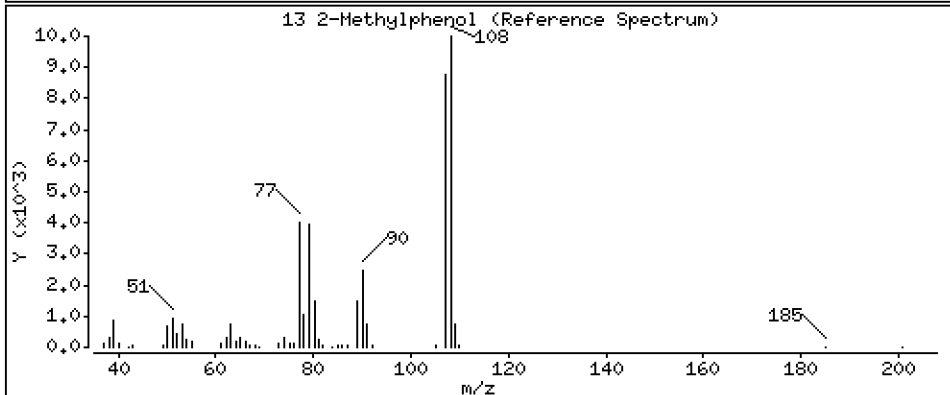
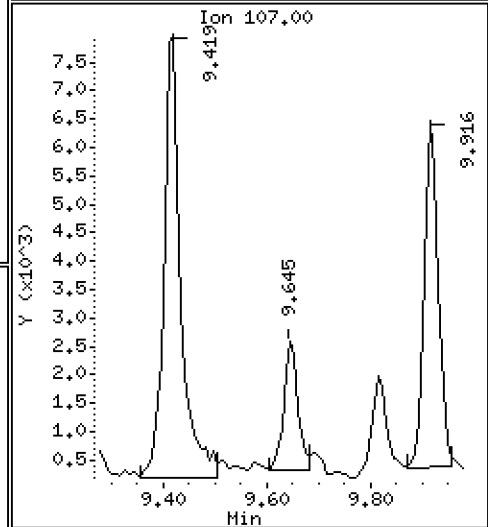
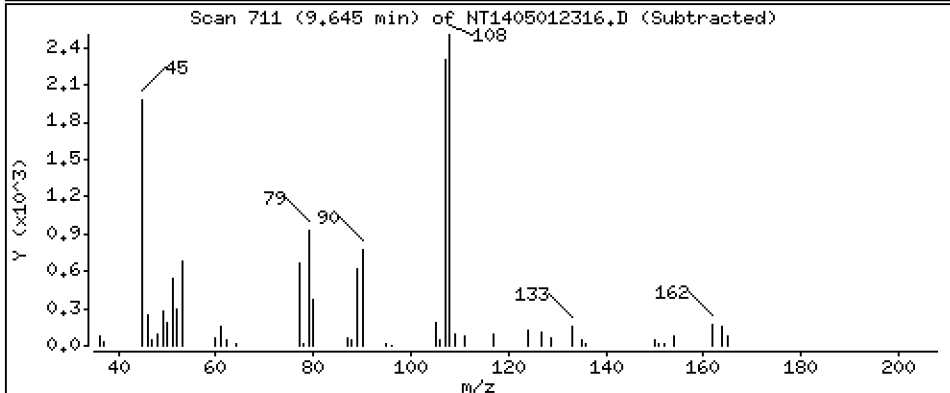
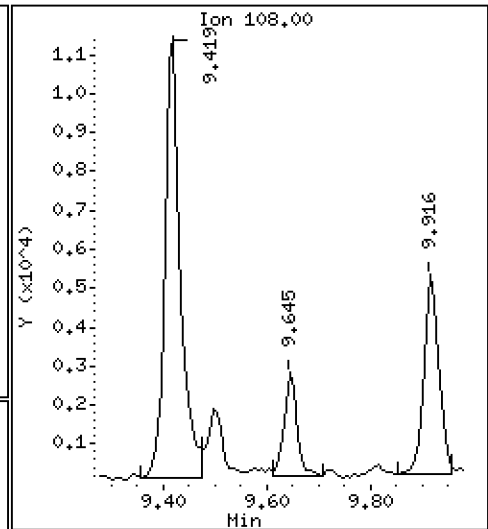
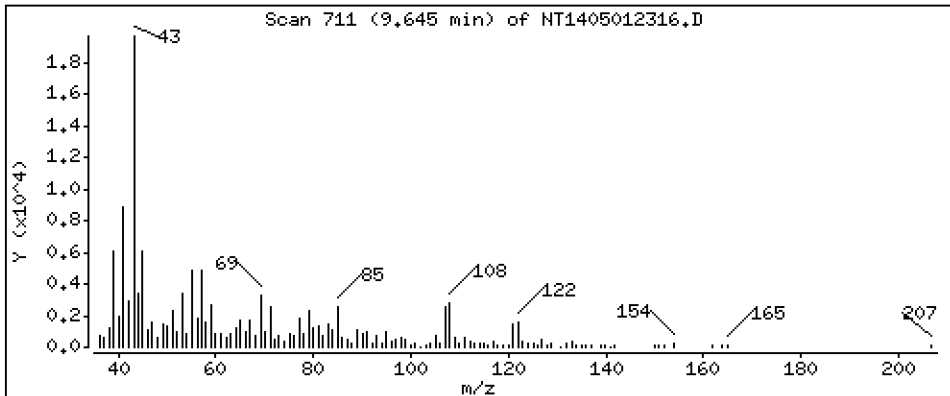
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 0.04539 ug/mL





Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

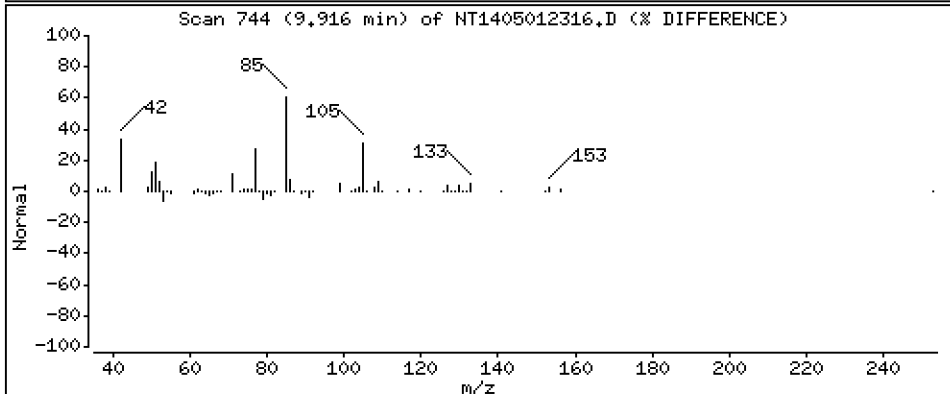
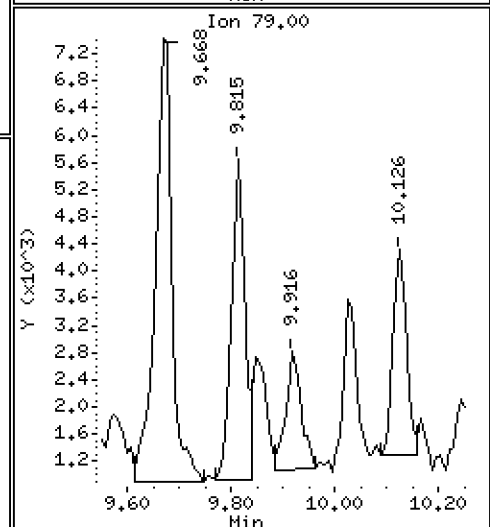
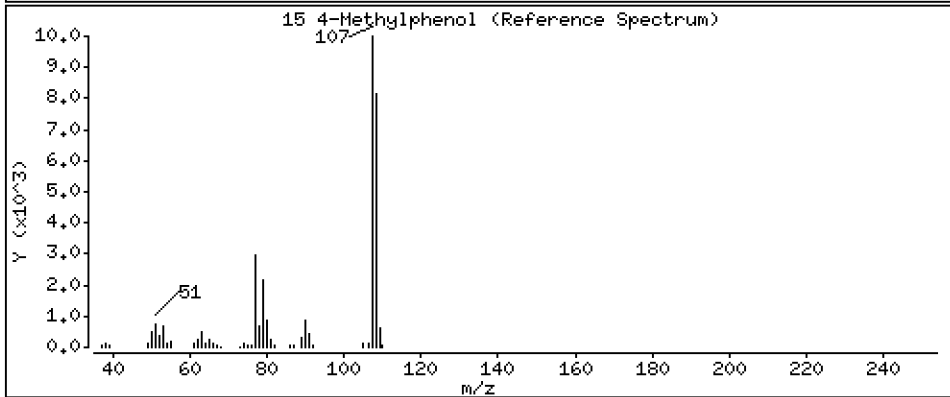
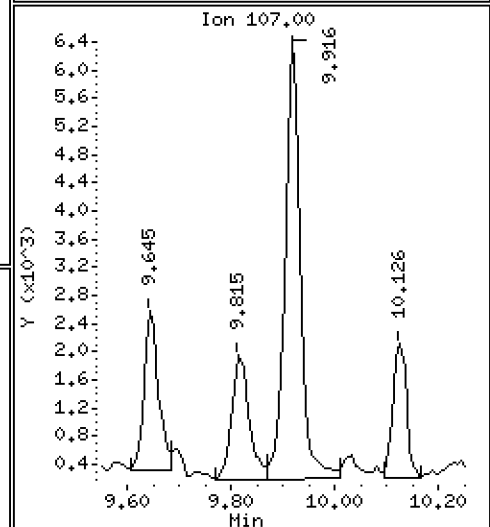
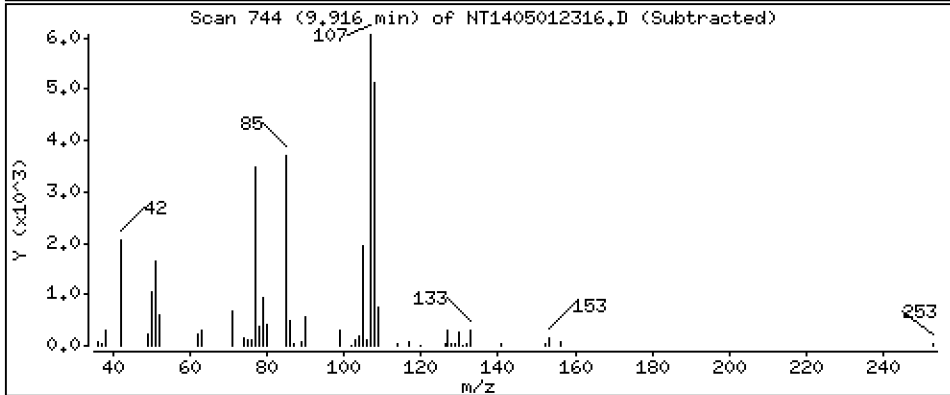
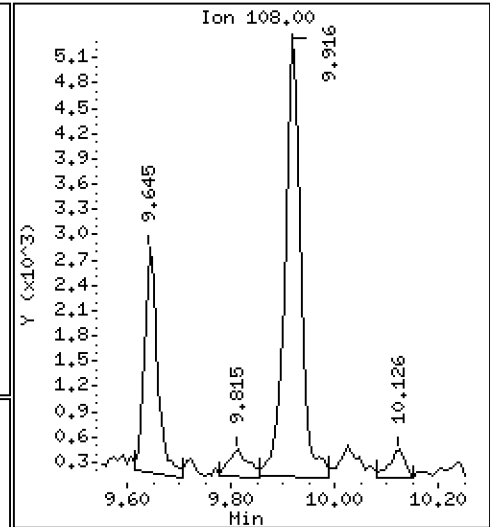
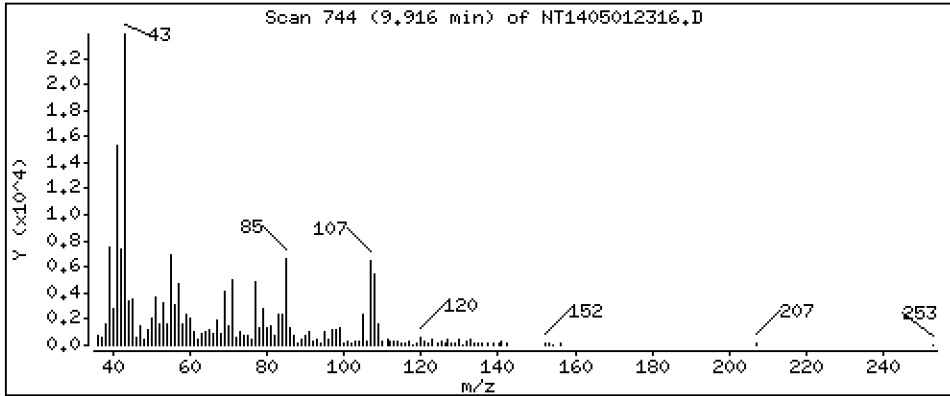
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 0.09845 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

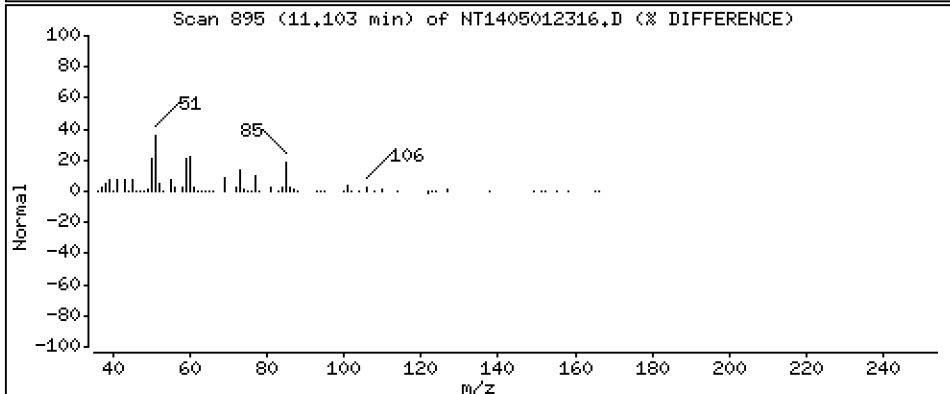
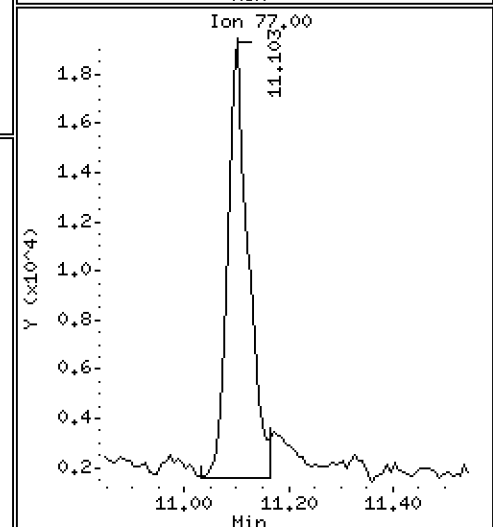
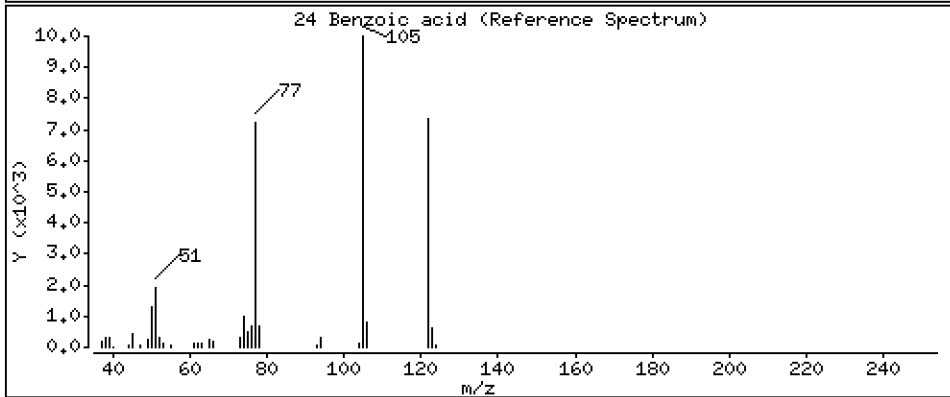
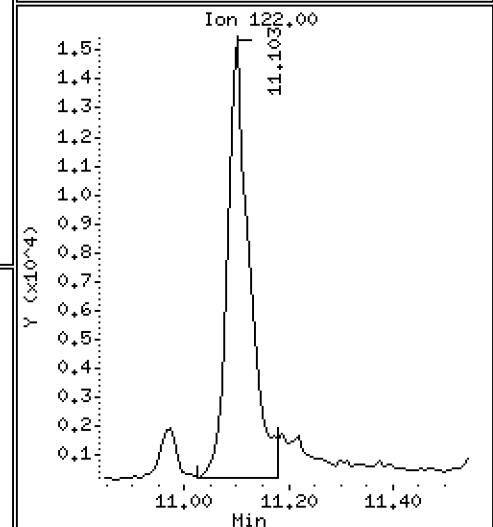
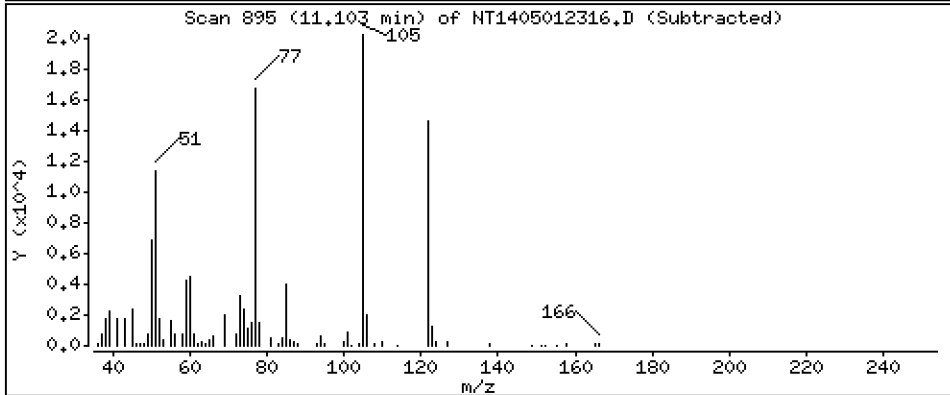
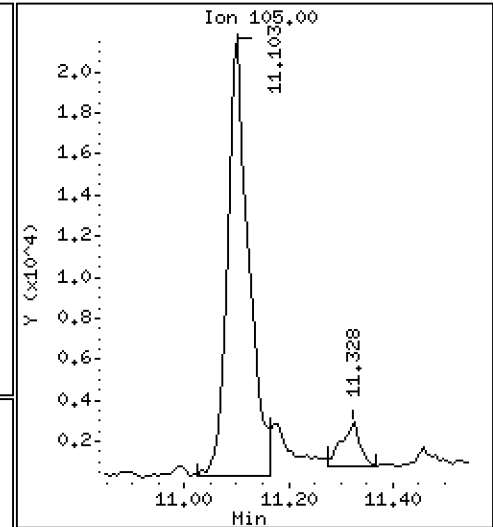
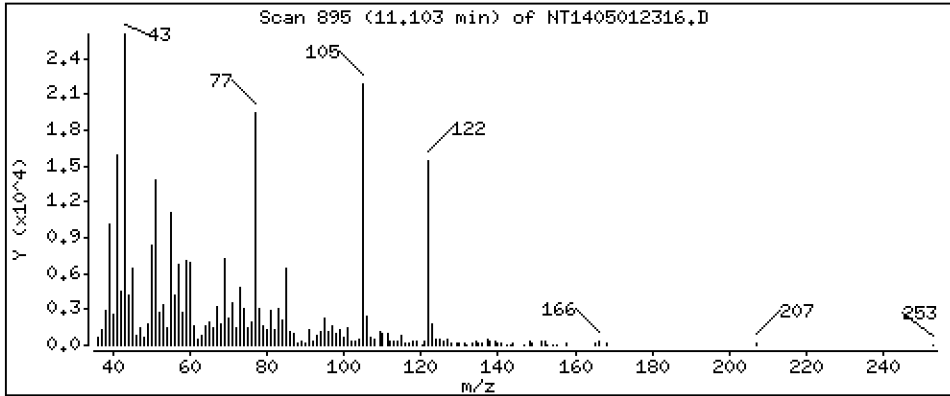
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

24 Benzoic acid

Concentration: 0.6871 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

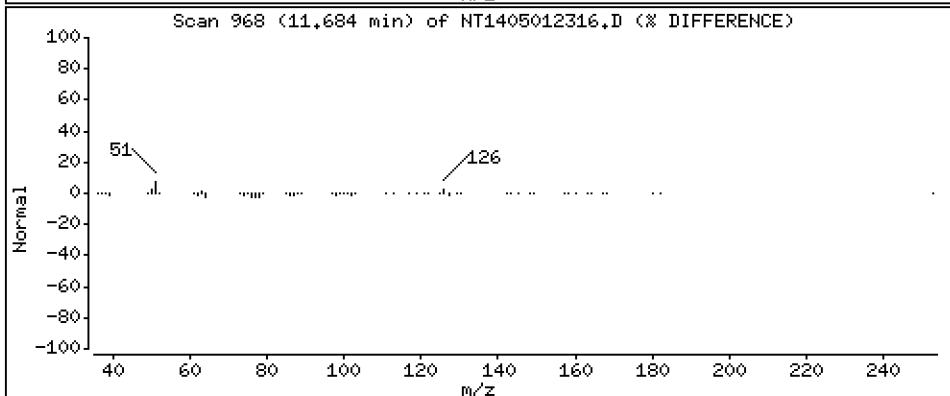
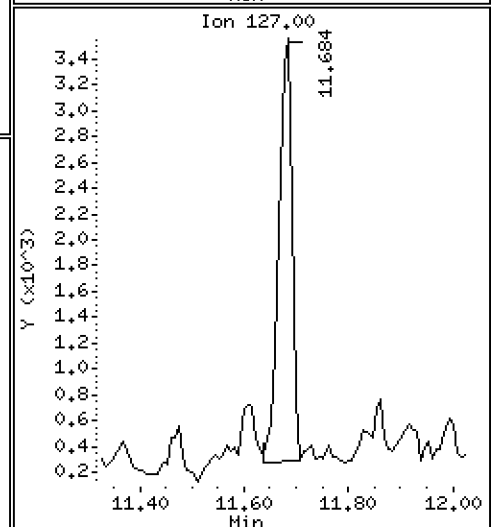
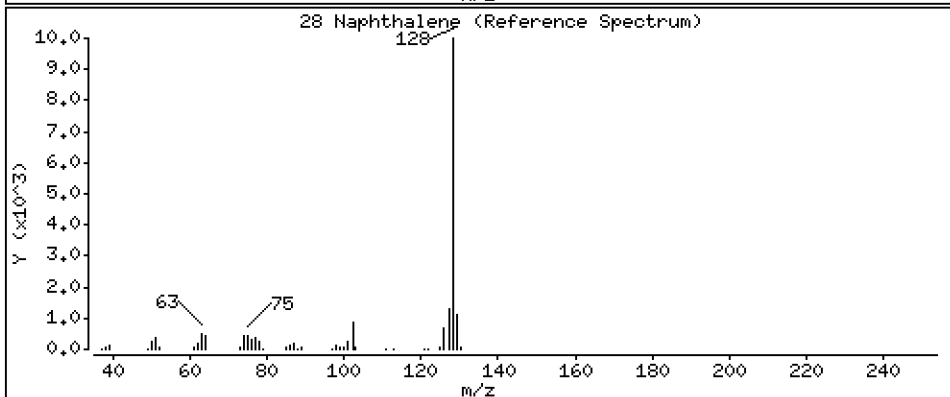
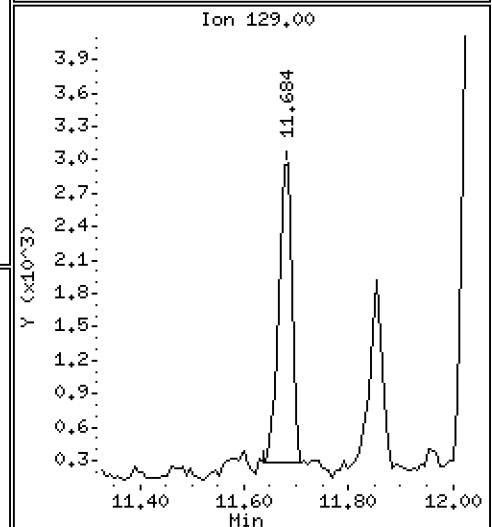
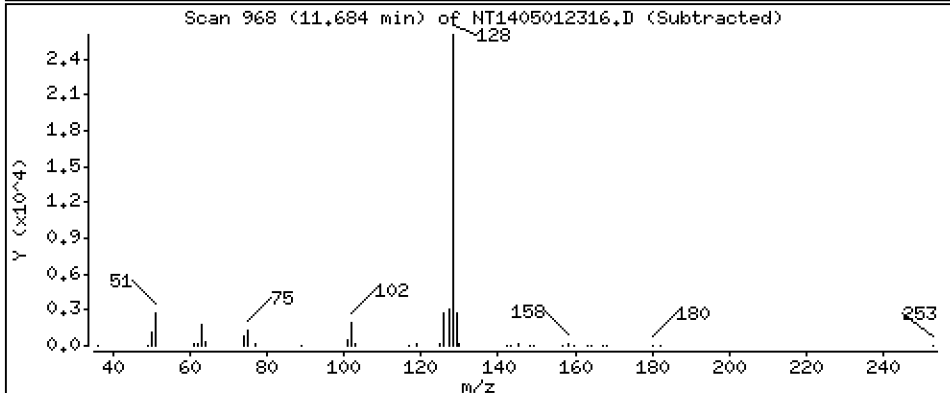
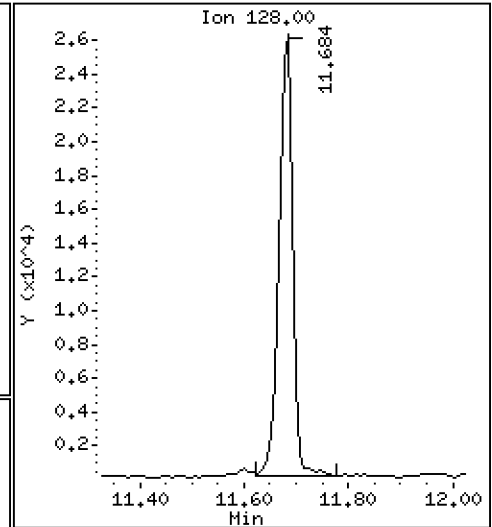
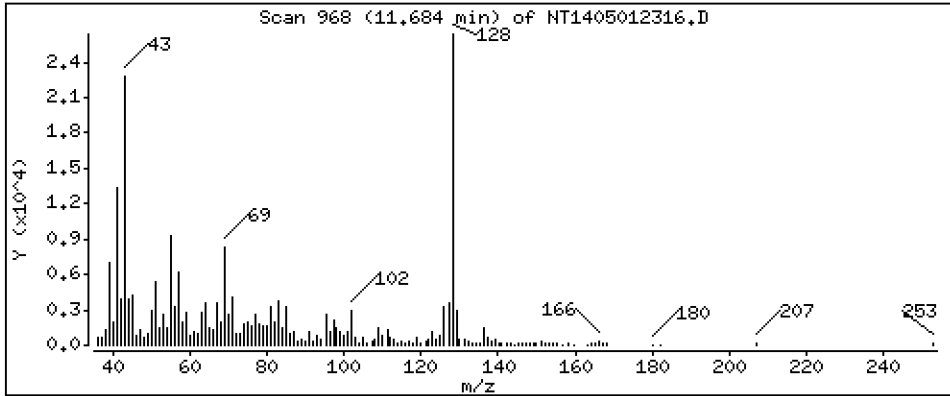
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 0,1618 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

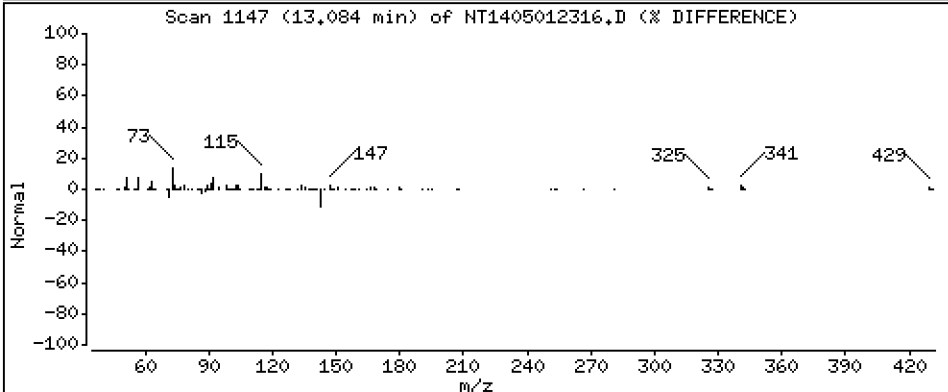
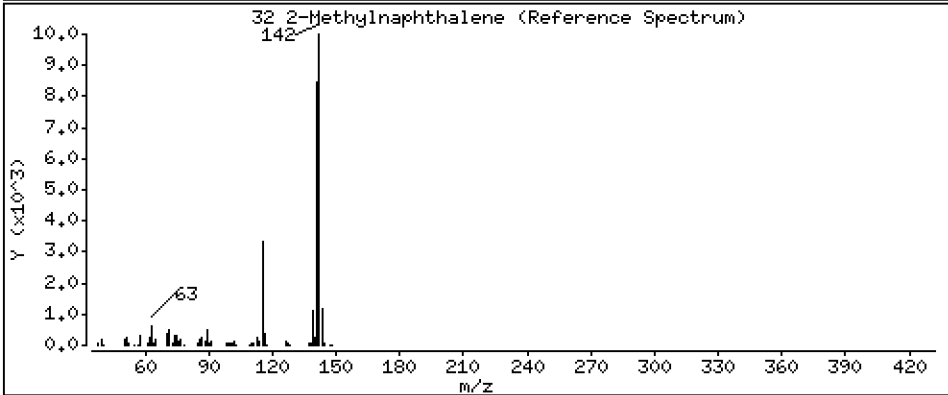
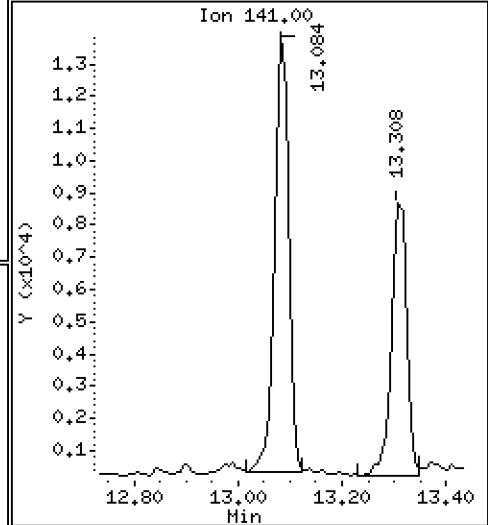
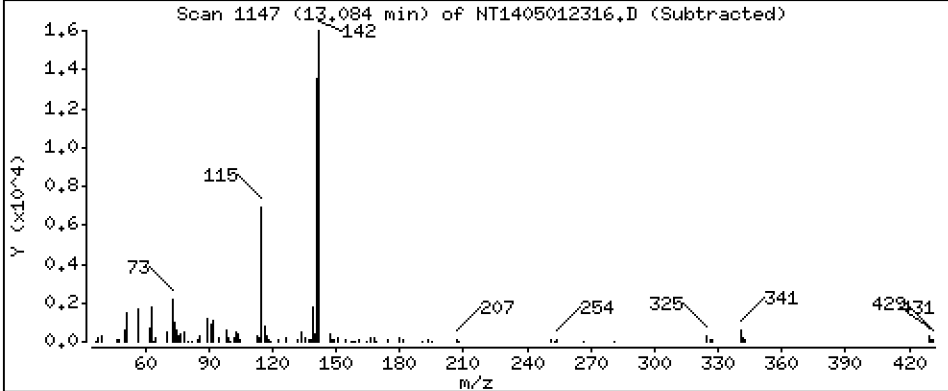
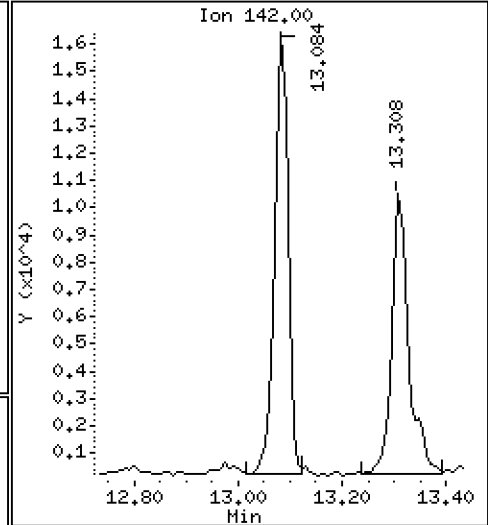
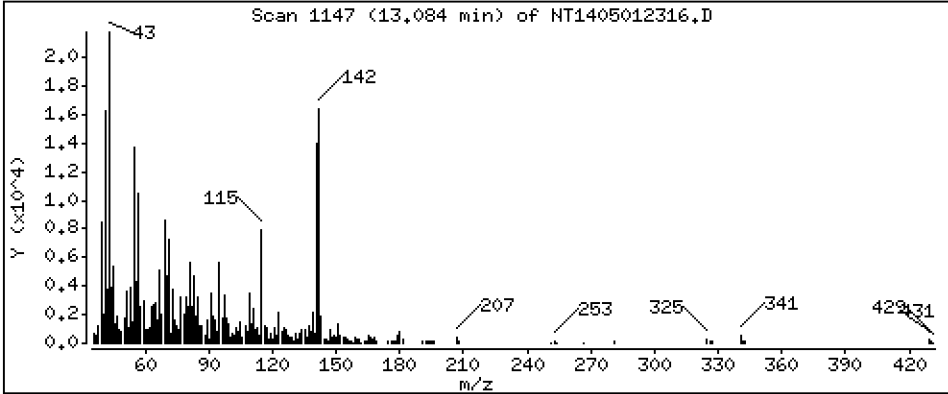
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 0,1343 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

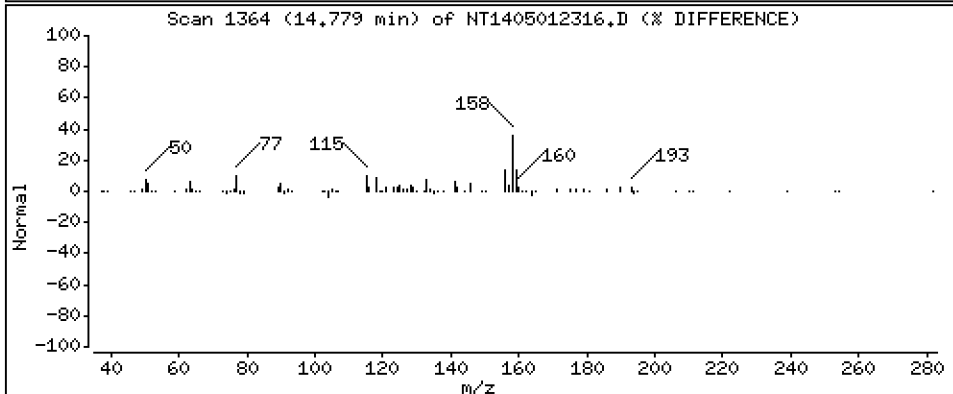
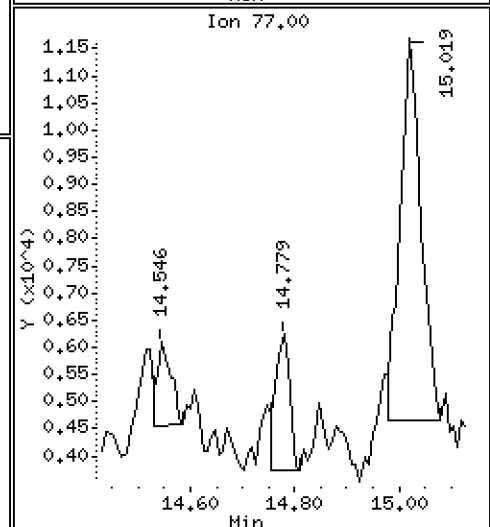
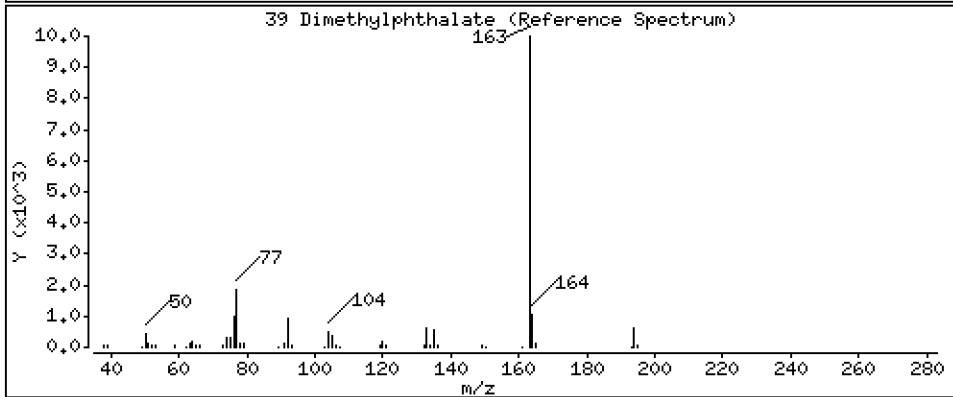
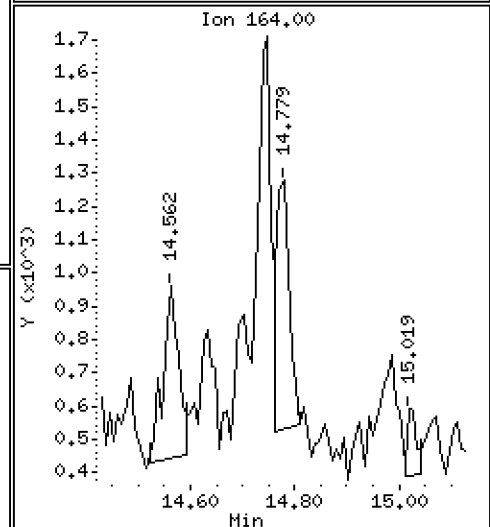
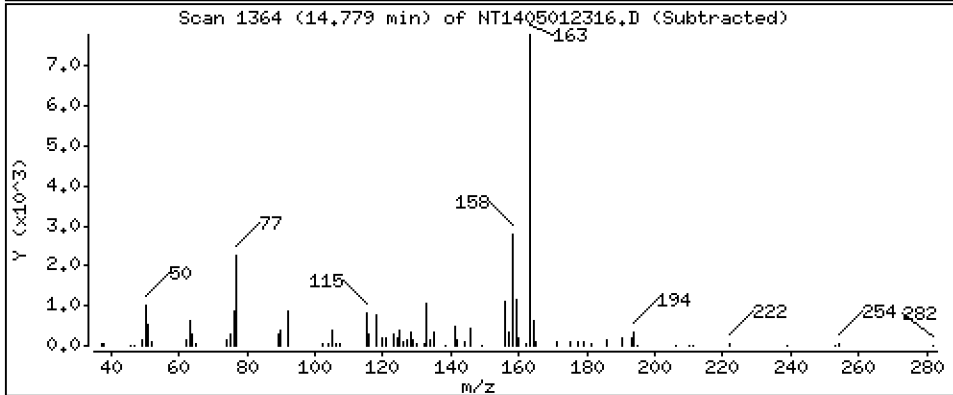
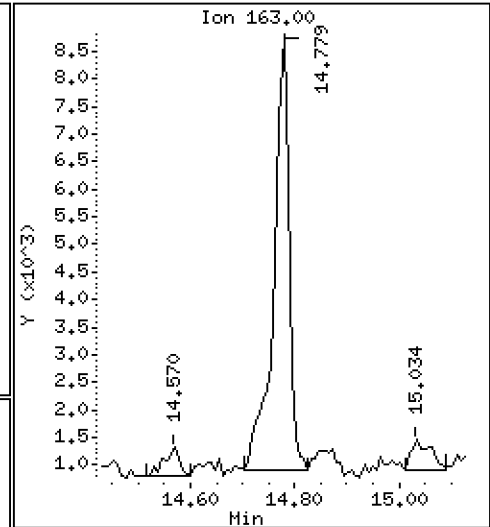
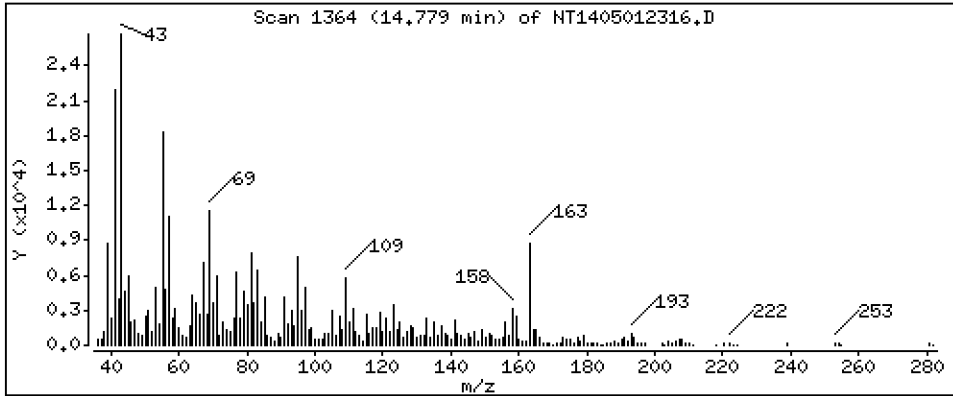
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

39 Dimethylphthalate

Concentration: 0.09094 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

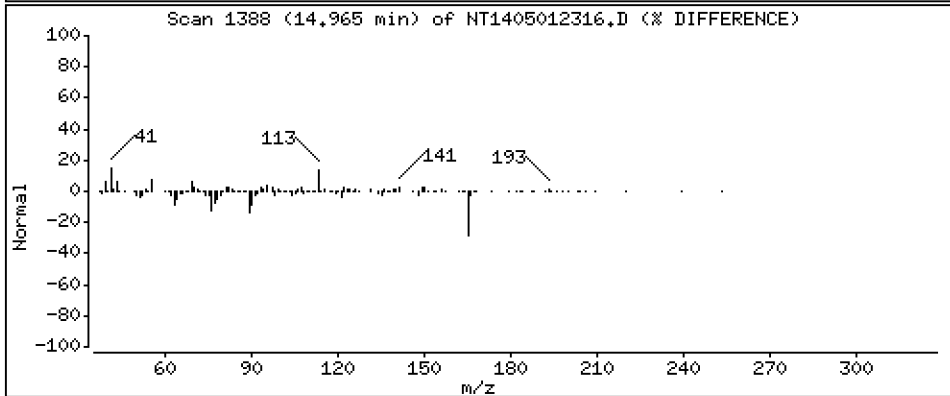
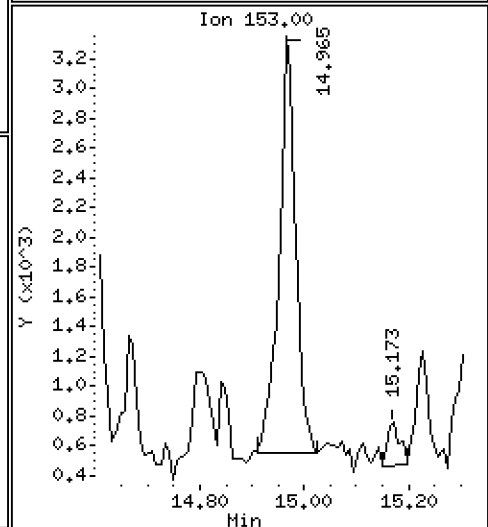
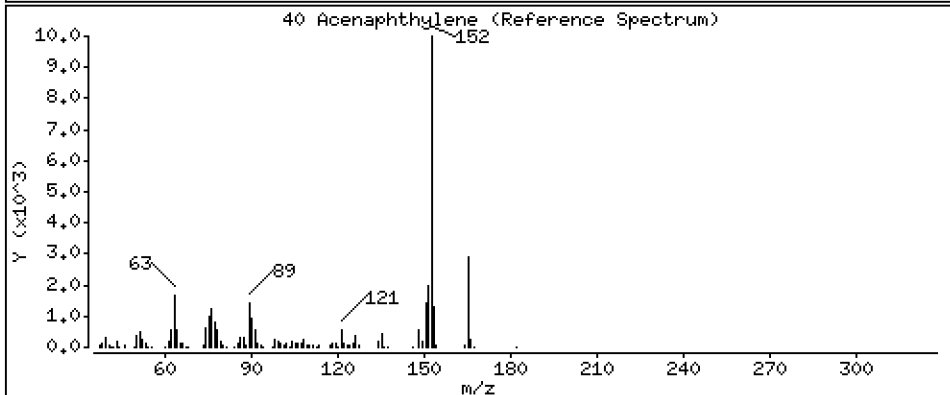
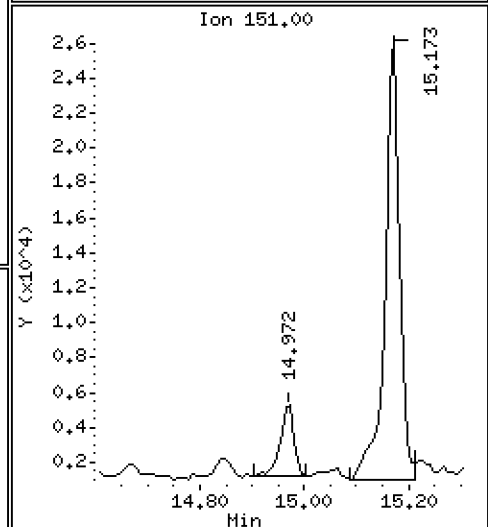
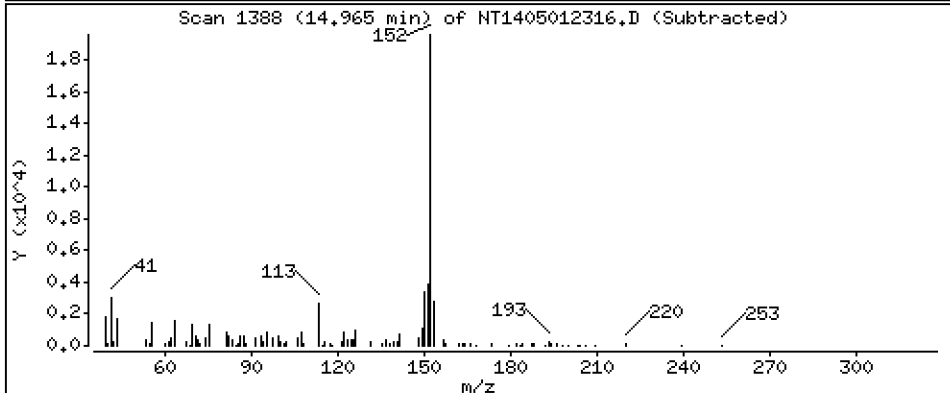
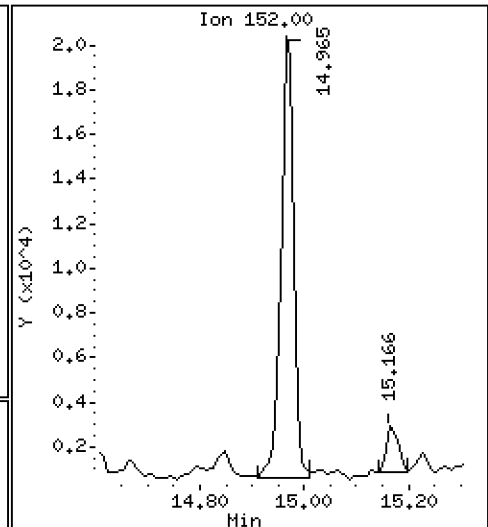
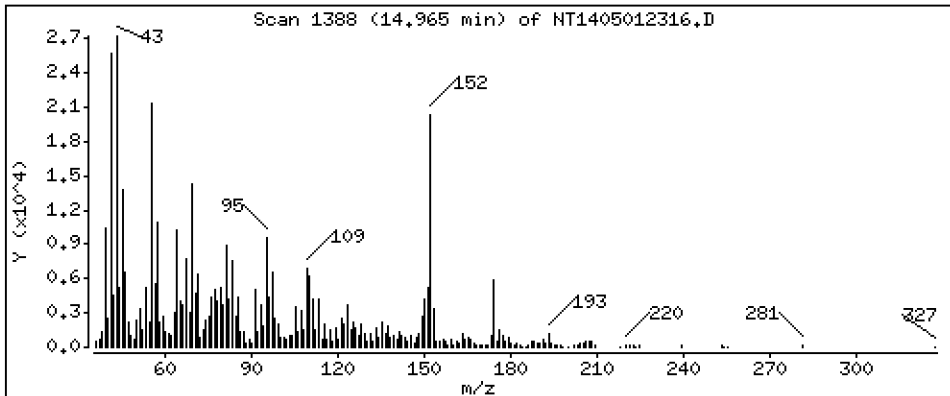
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

40 Acenaphthylene

Concentration: 0.1261 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

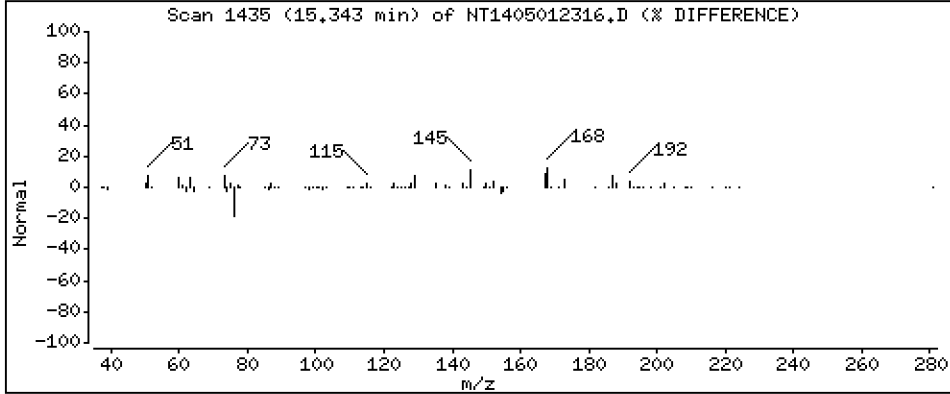
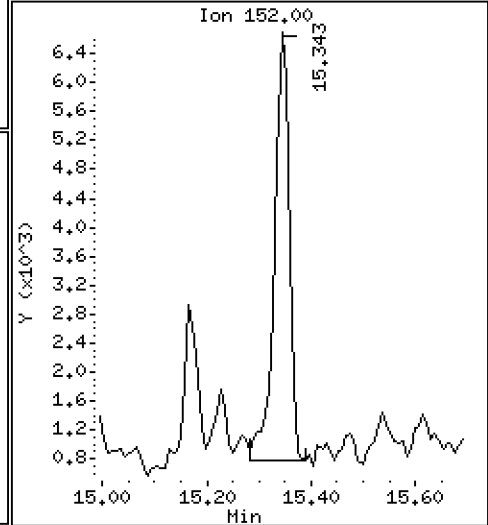
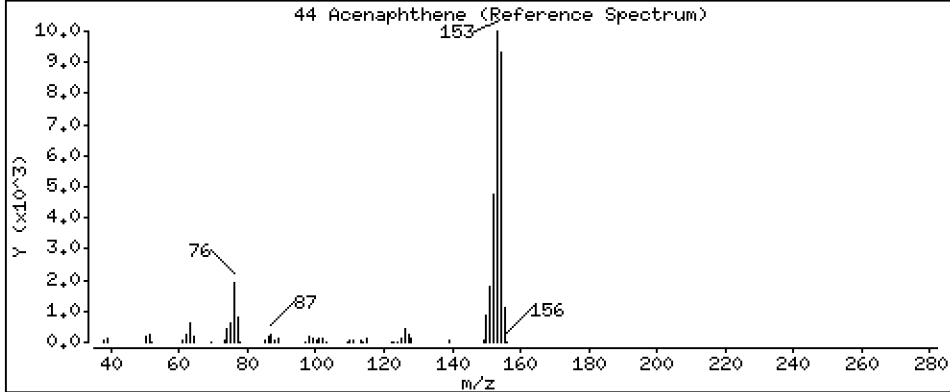
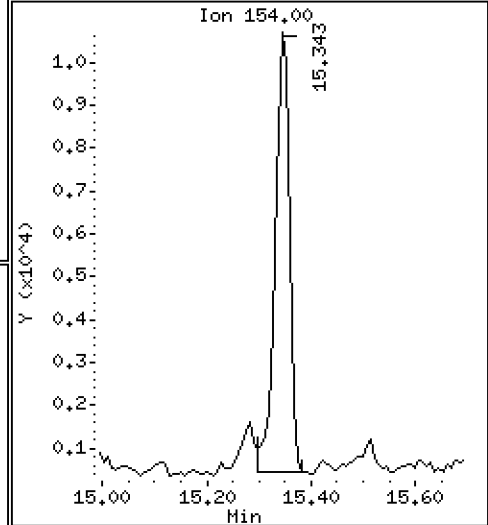
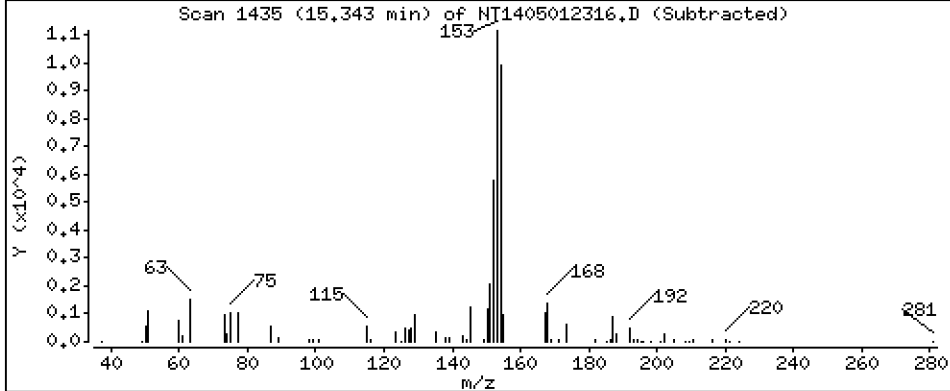
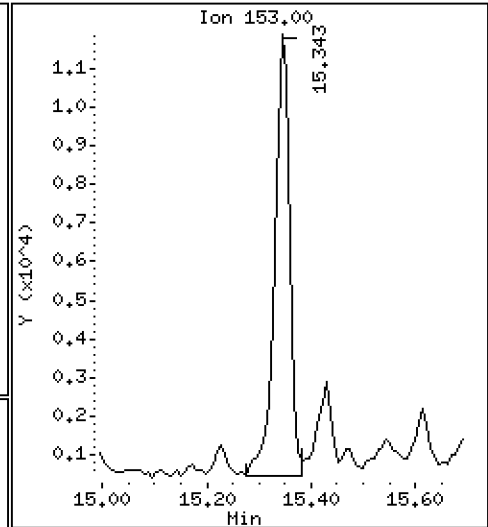
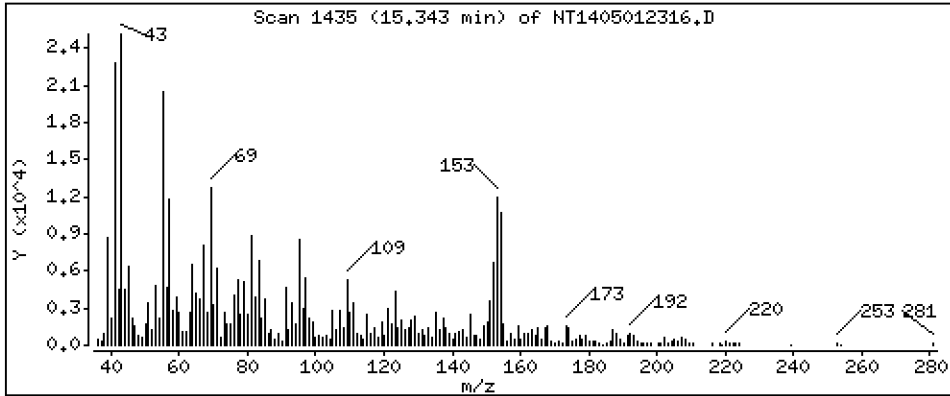
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 0,1401 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

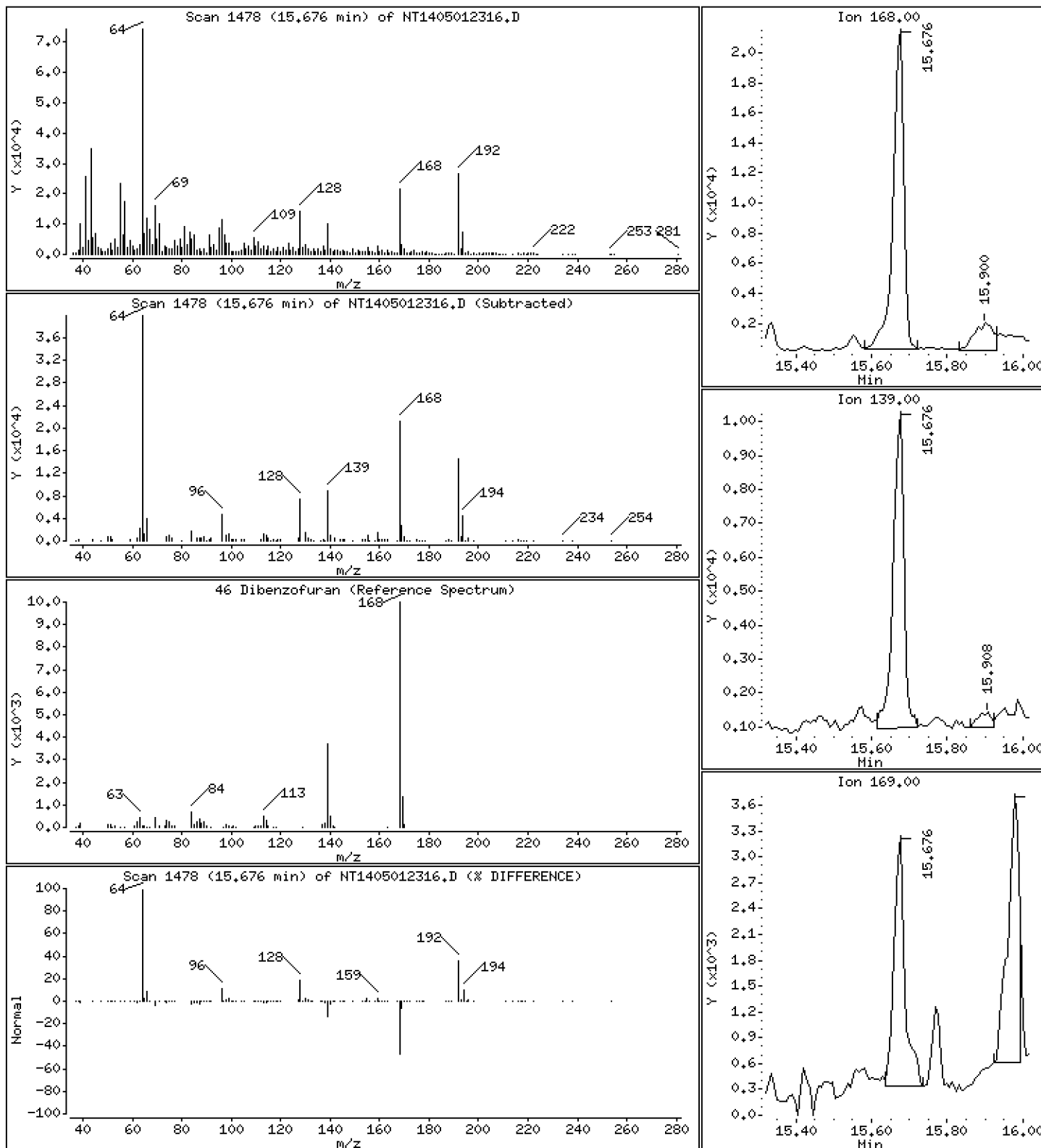
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 0,1805 ug/mL





Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

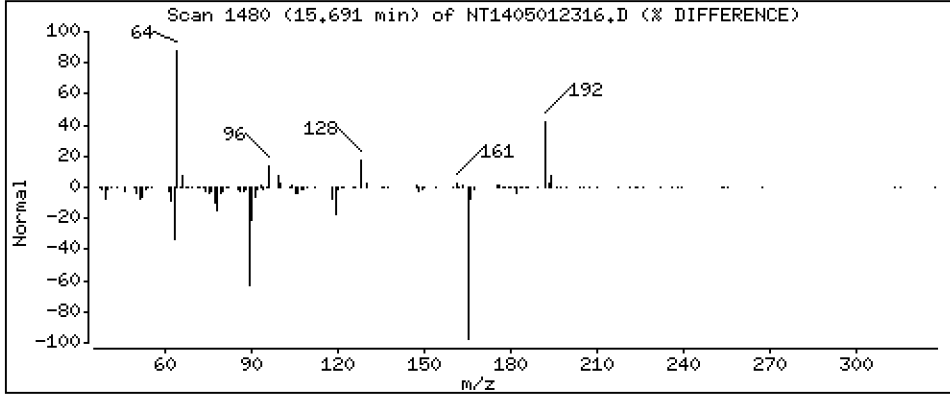
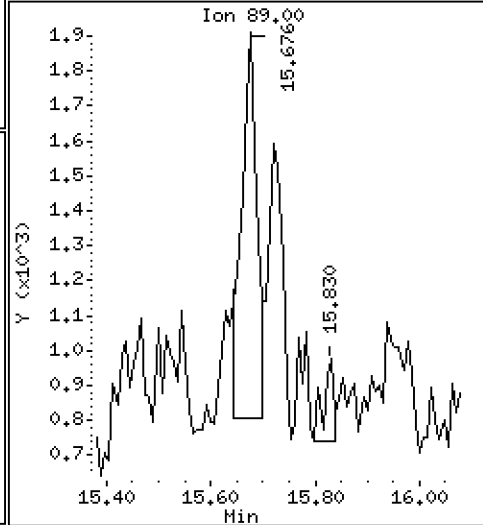
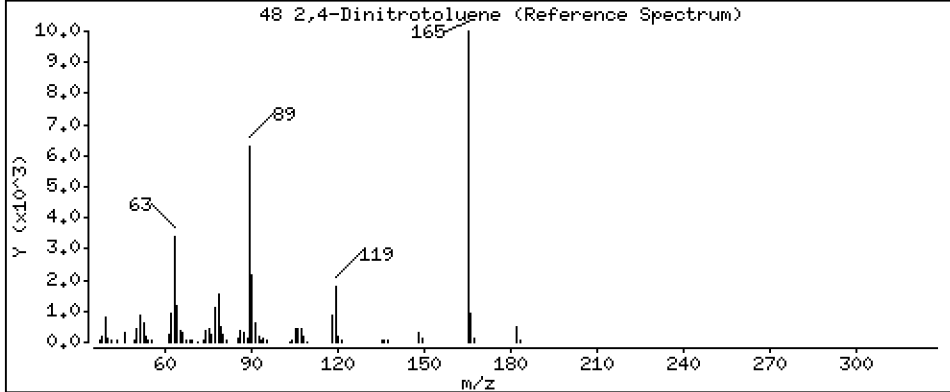
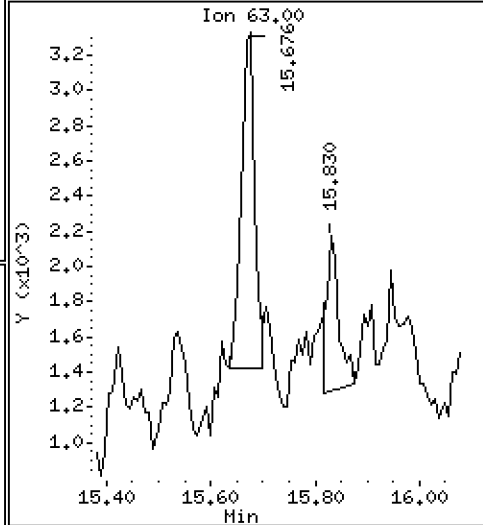
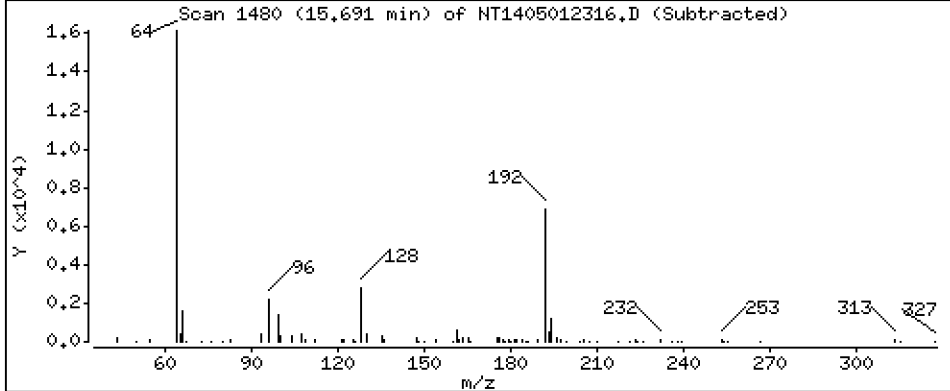
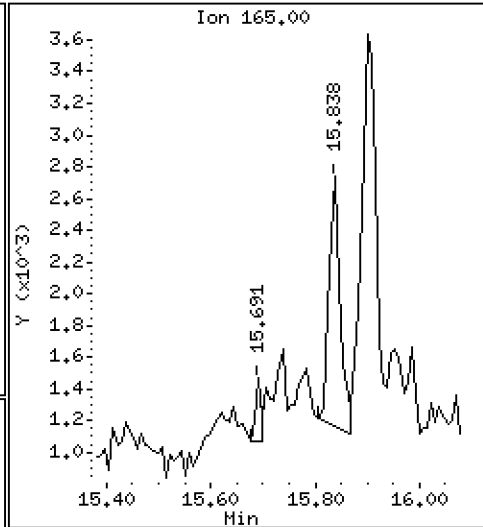
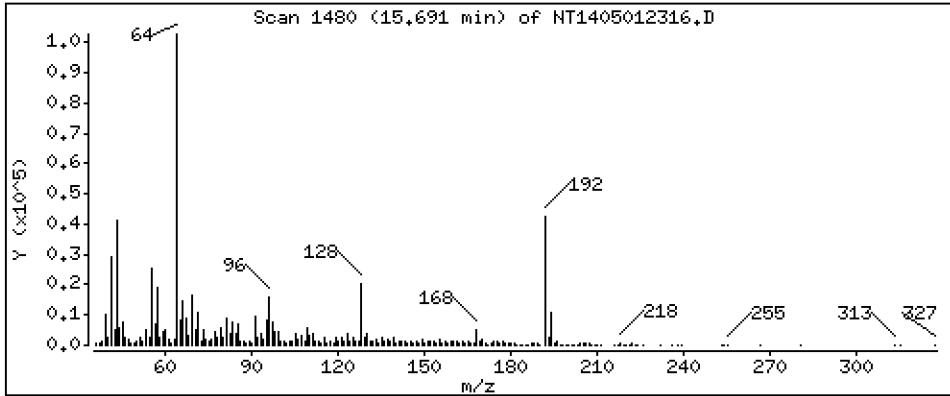
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

48 2,4-Dinitrotoluene

Concentration: 0.005912 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

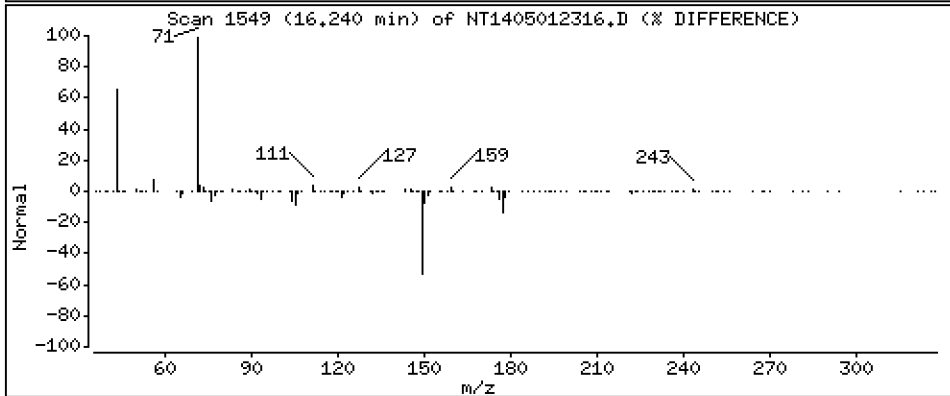
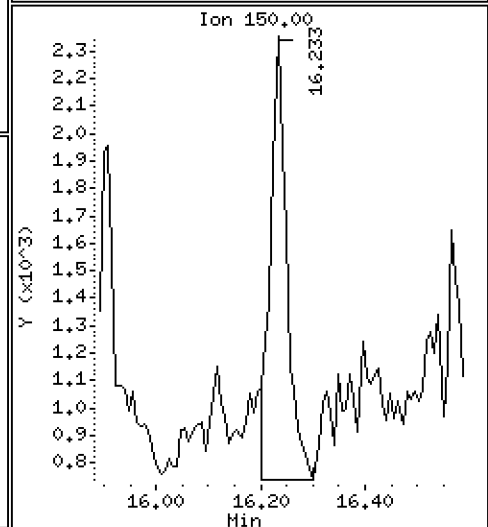
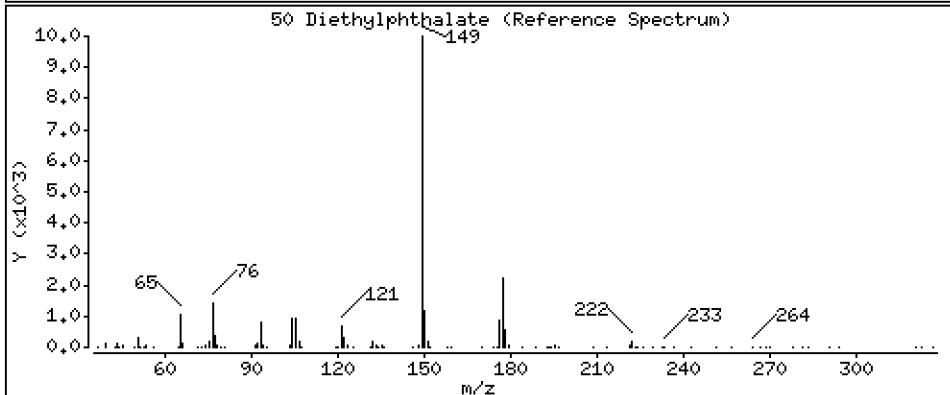
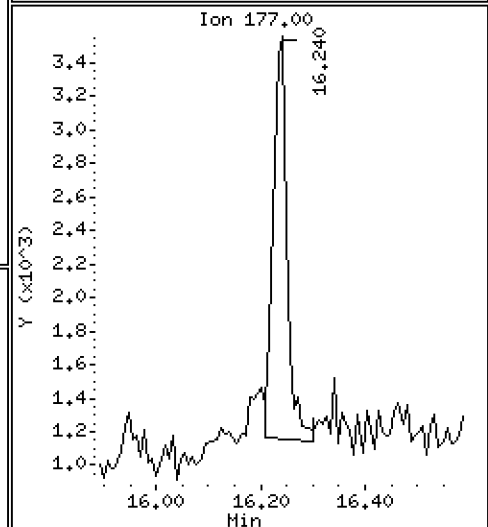
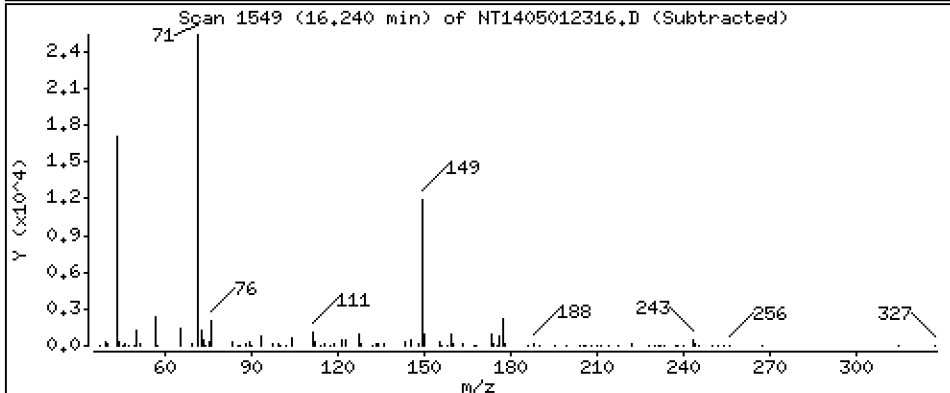
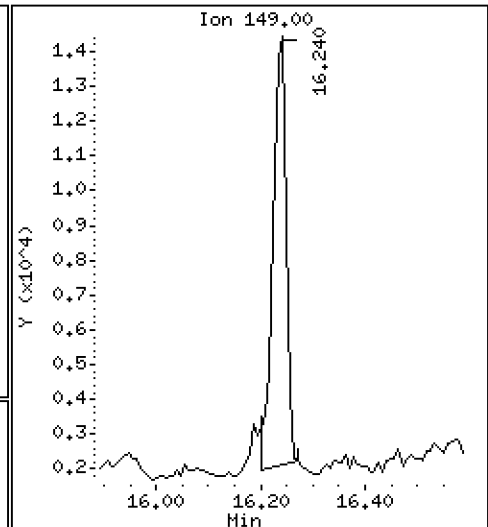
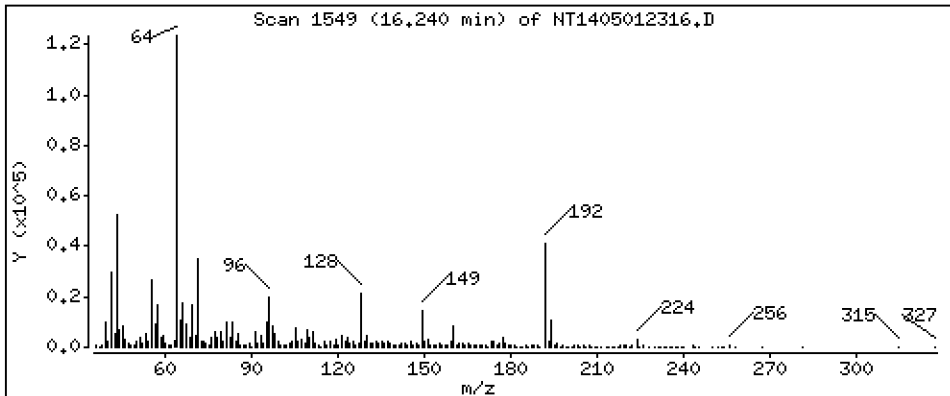
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

50 Diethylphthalate

Concentration: 0.1145 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

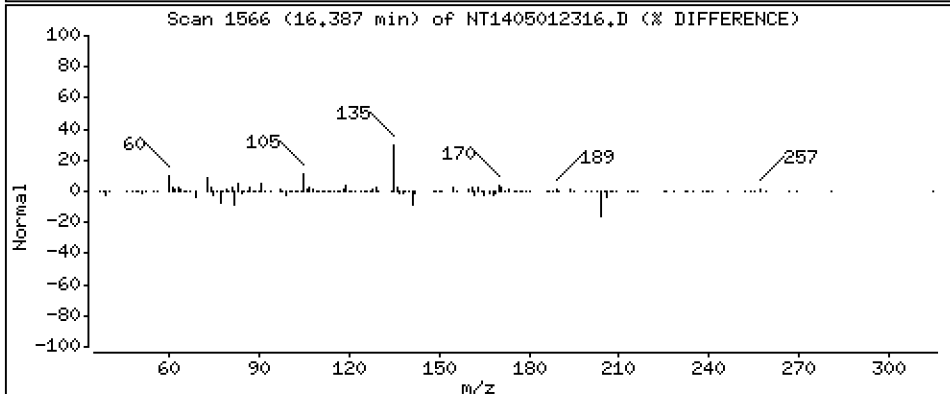
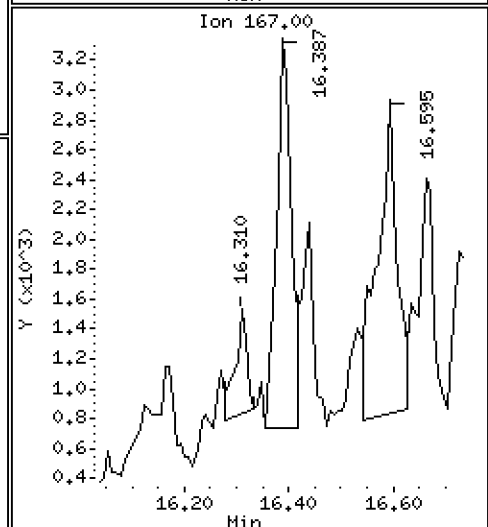
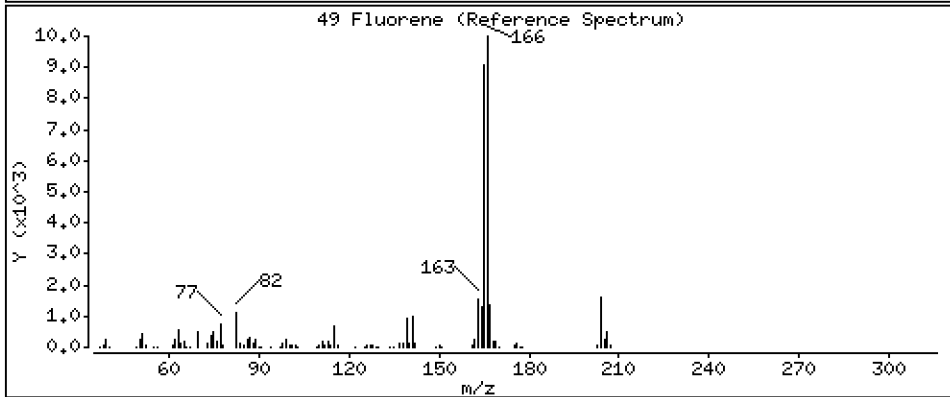
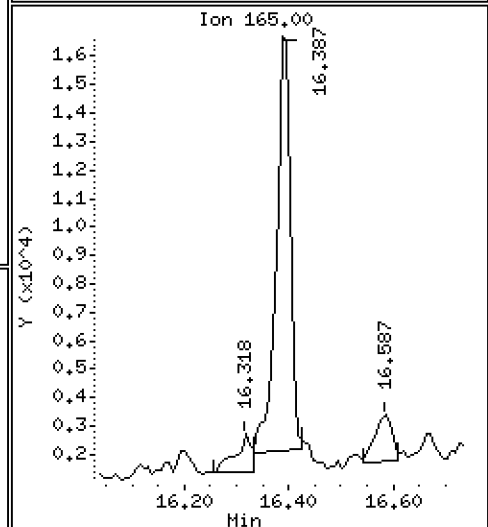
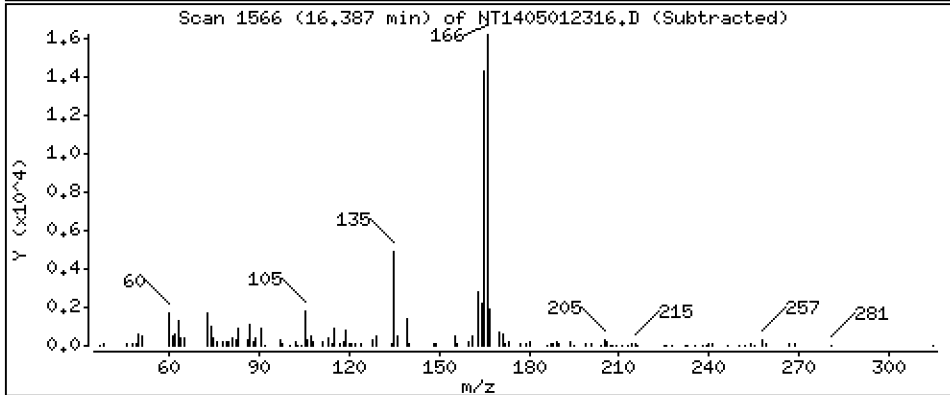
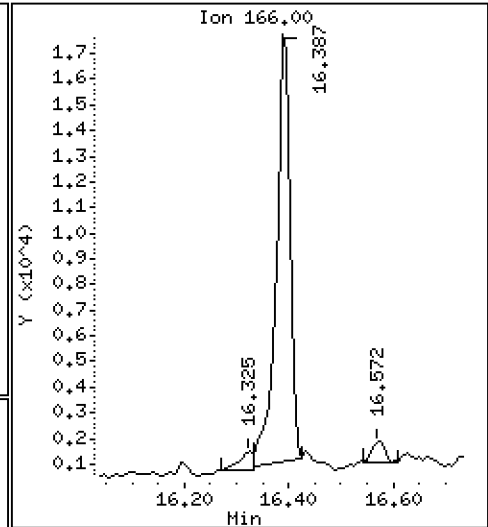
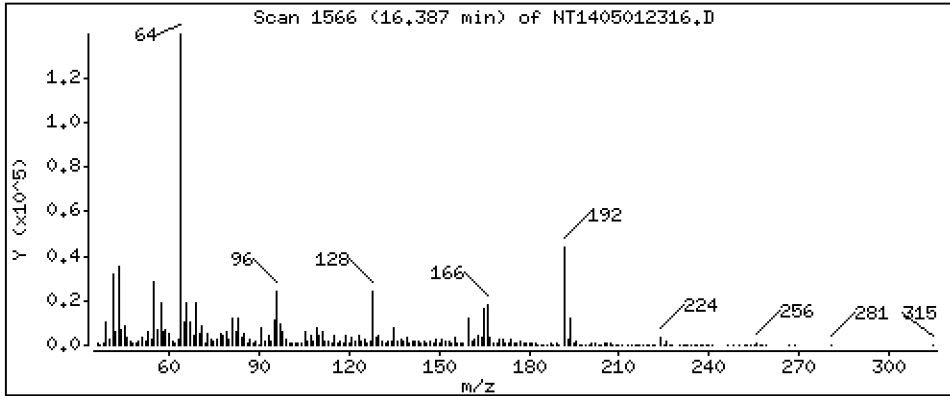
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

49 Fluorene

Concentration: 0.1534 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

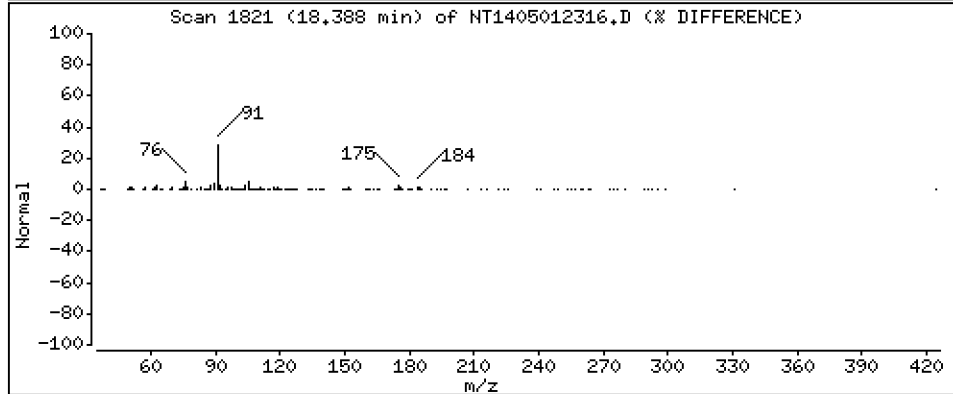
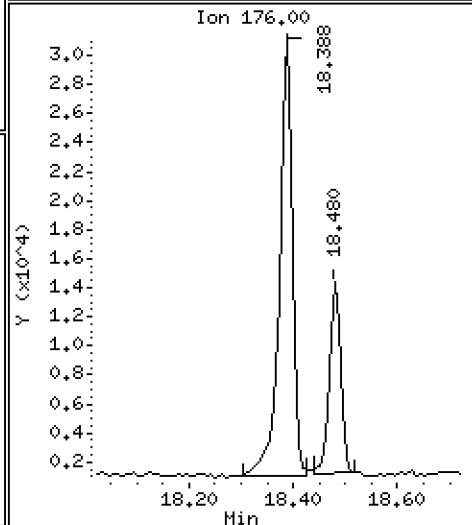
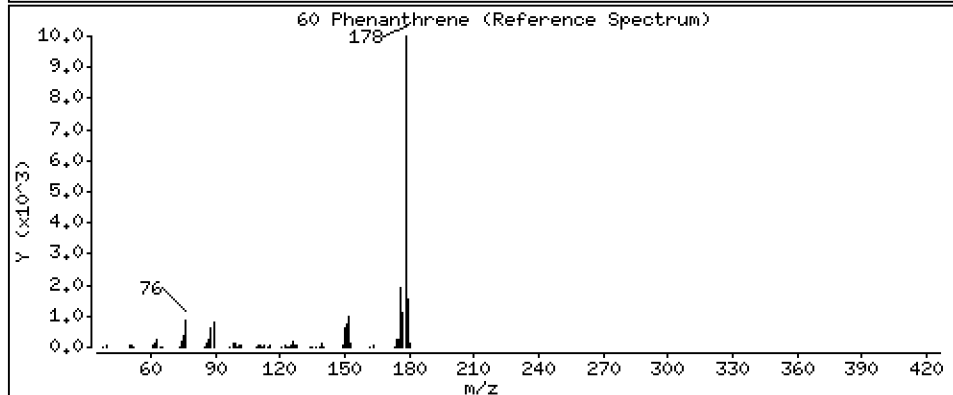
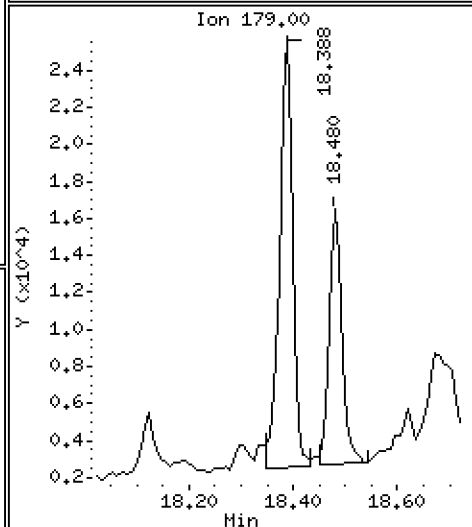
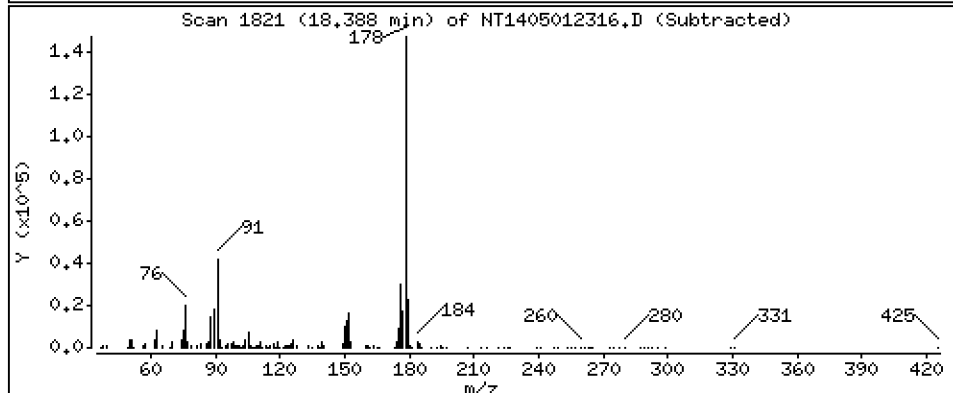
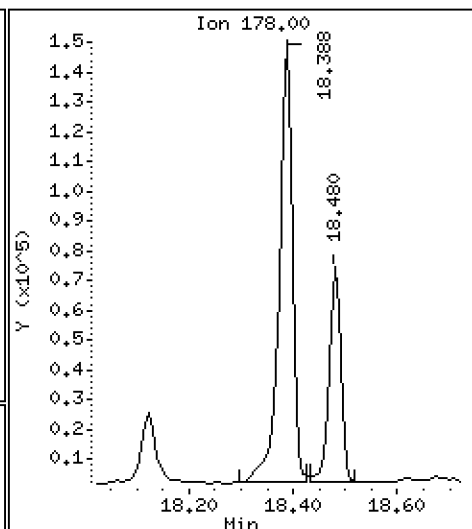
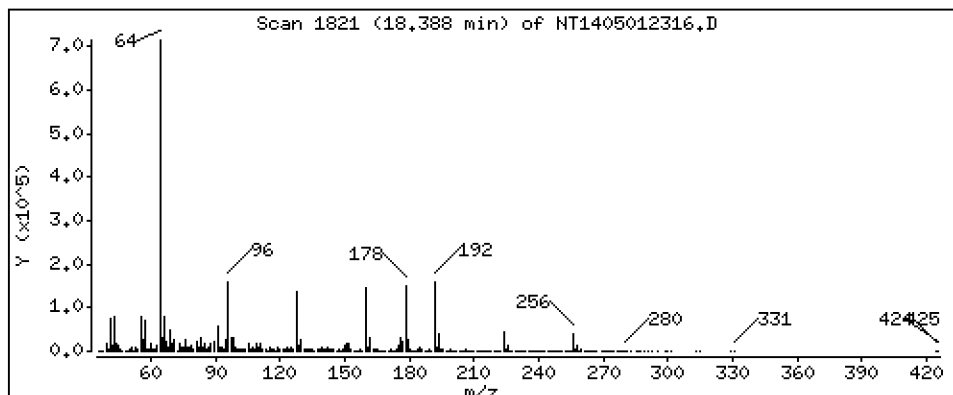
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

60 Phenanthrene

Concentration: 1.093 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

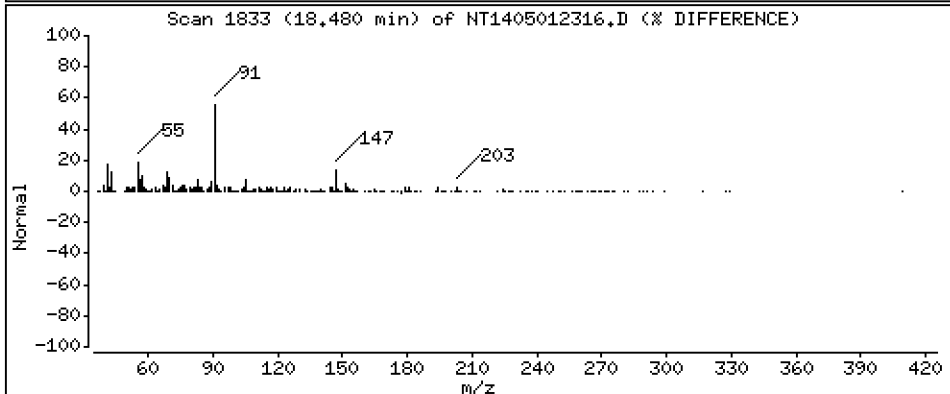
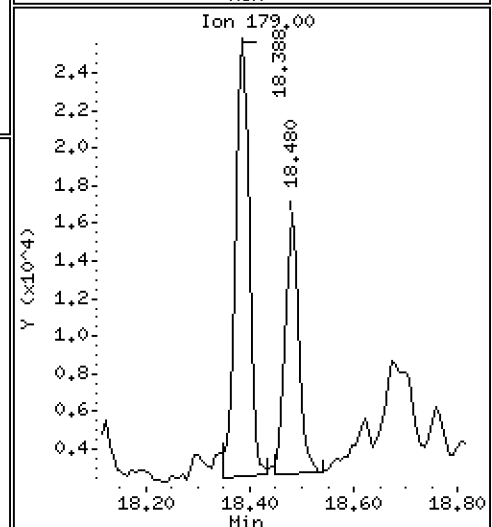
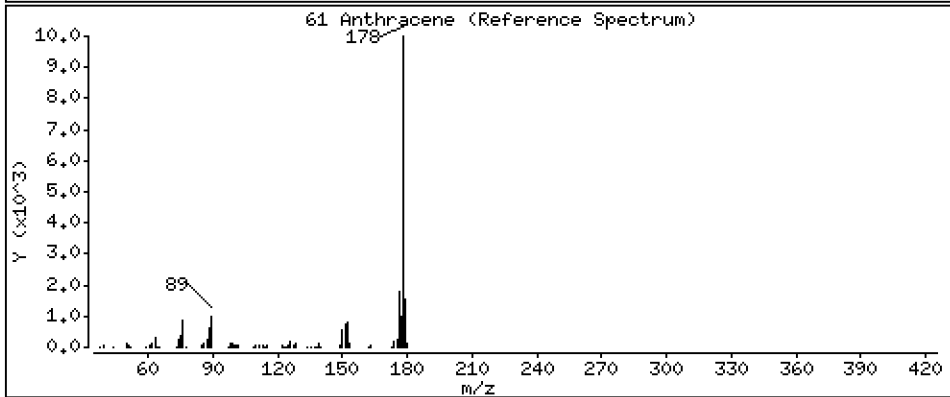
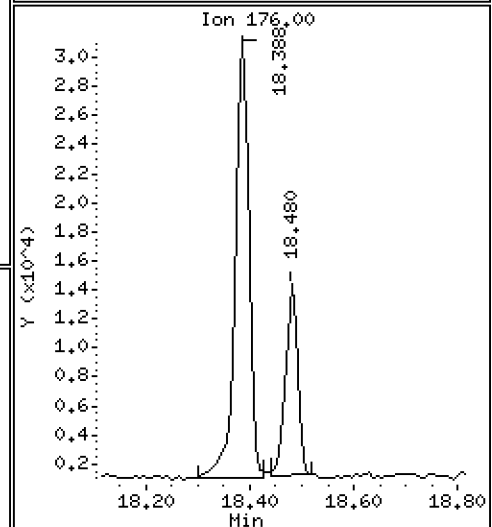
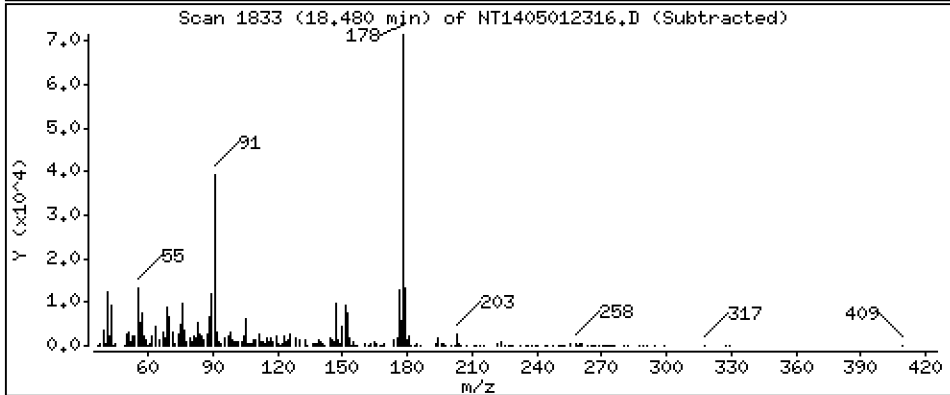
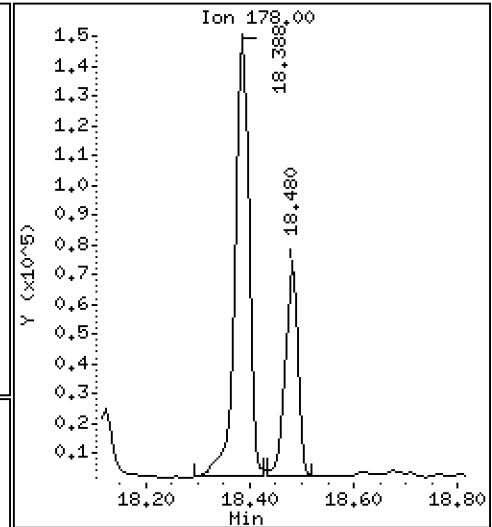
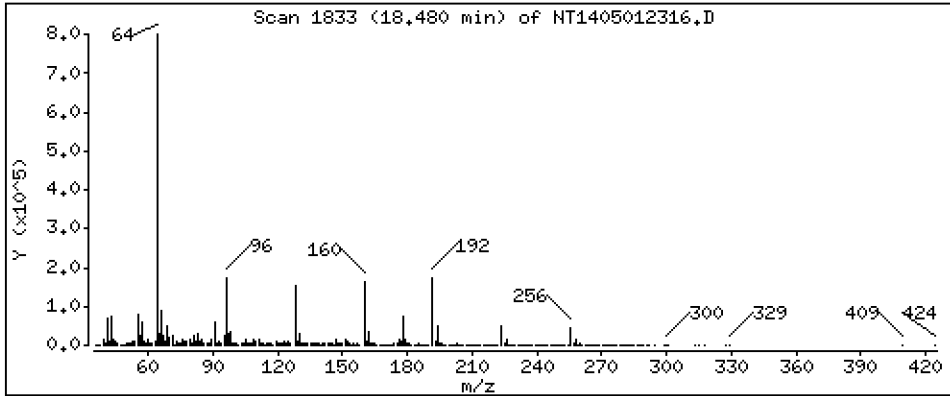
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 0,5062 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

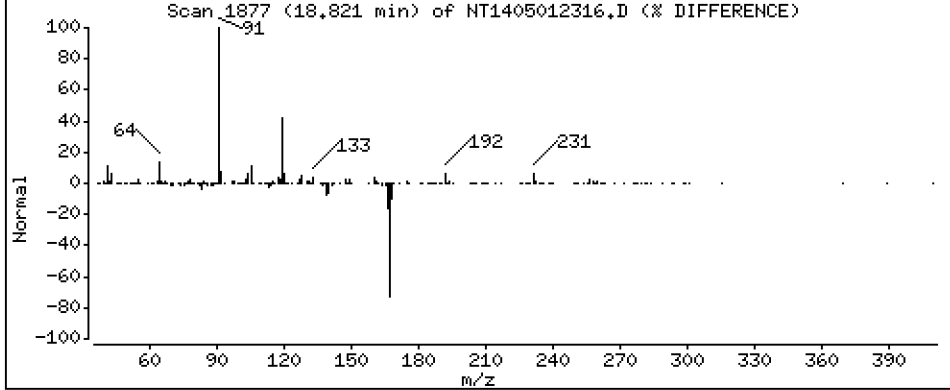
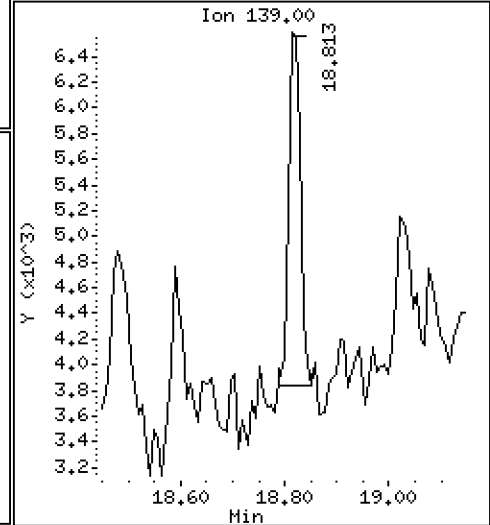
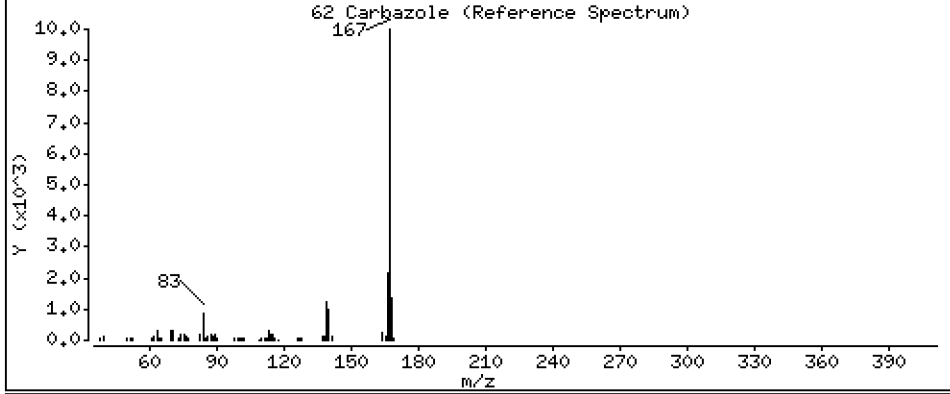
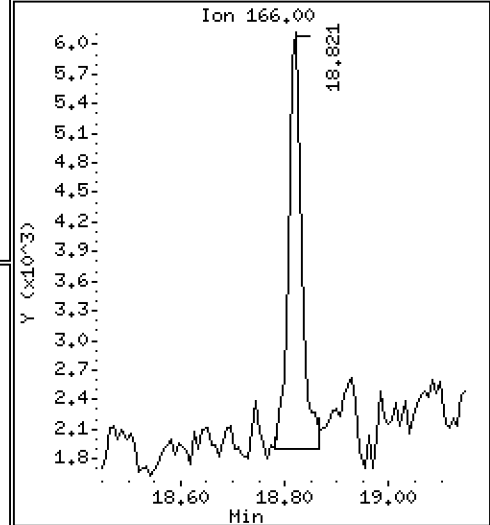
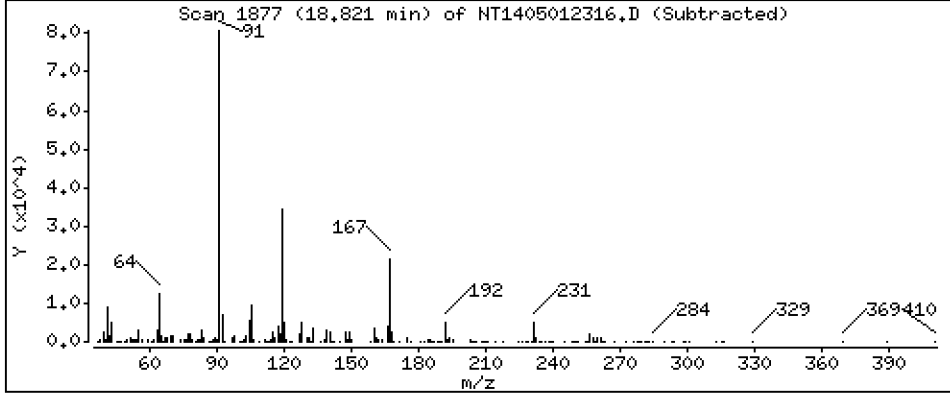
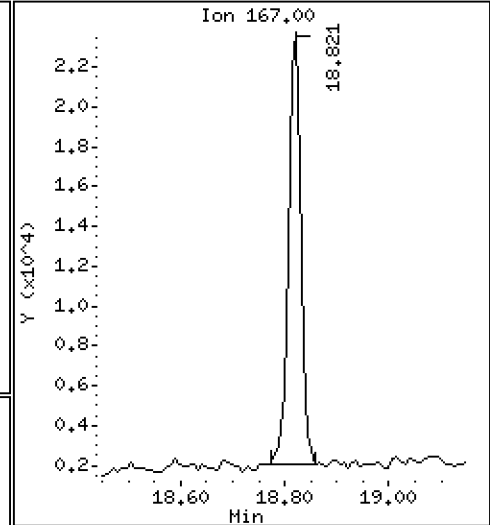
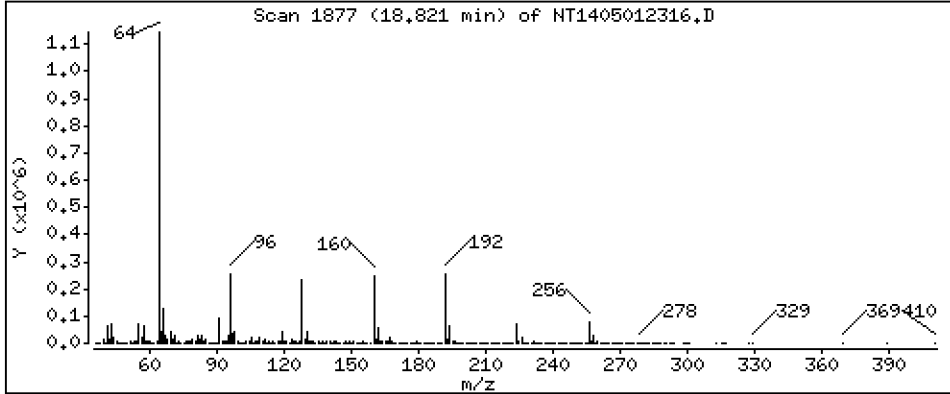
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 0,1734 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

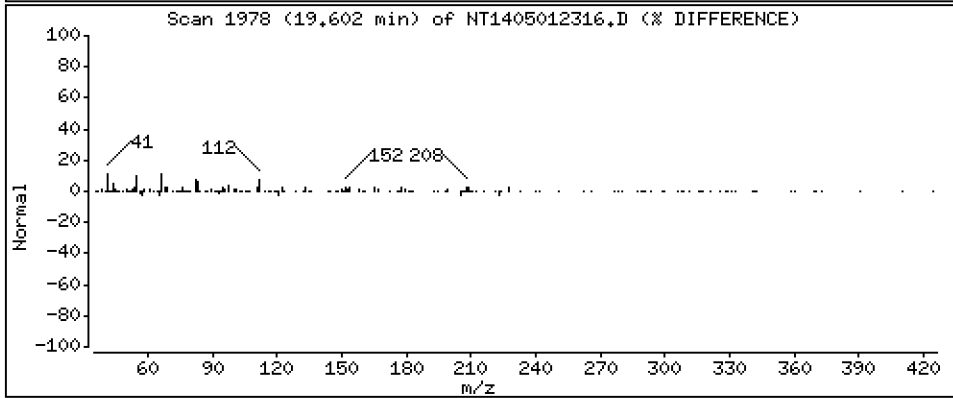
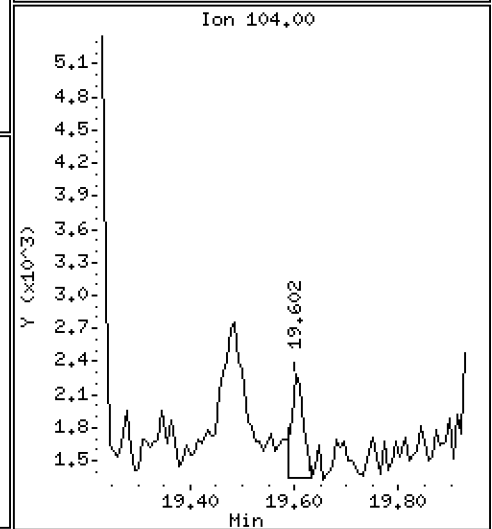
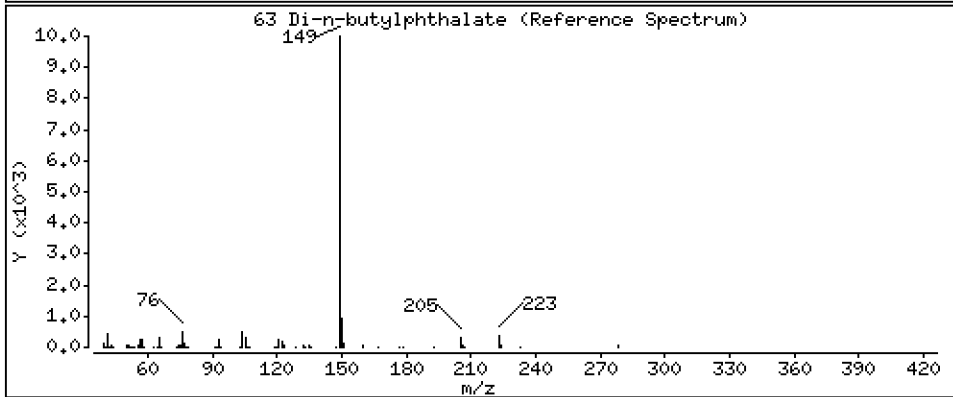
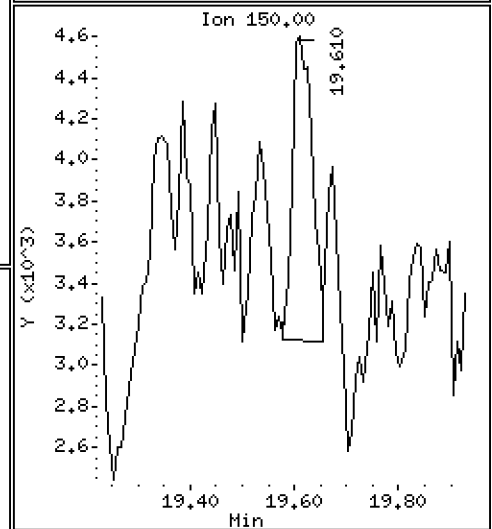
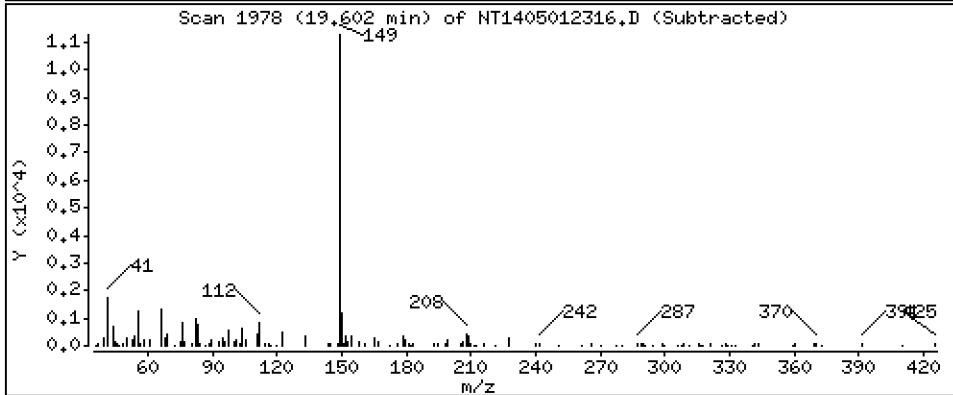
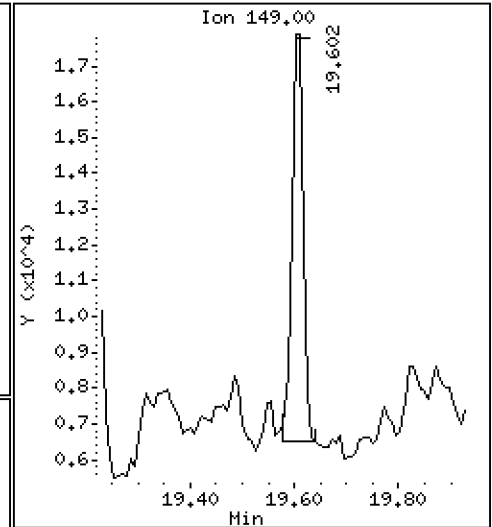
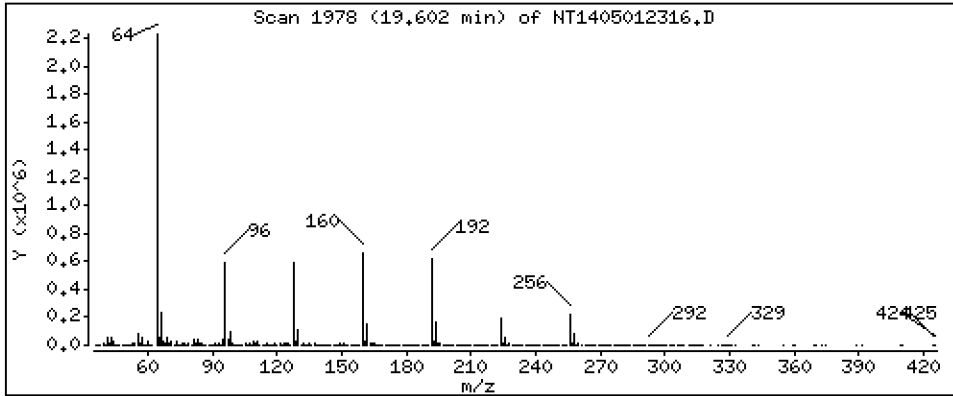
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 0,05394 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

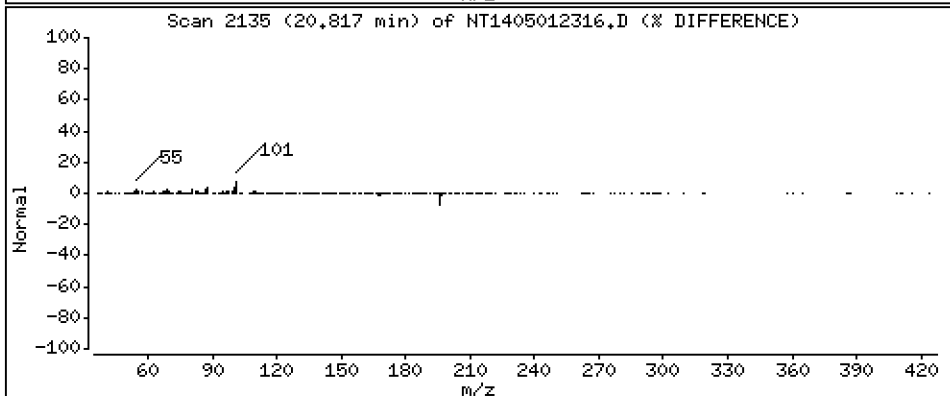
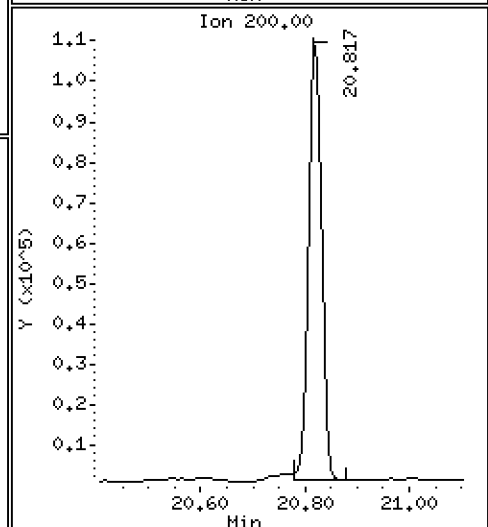
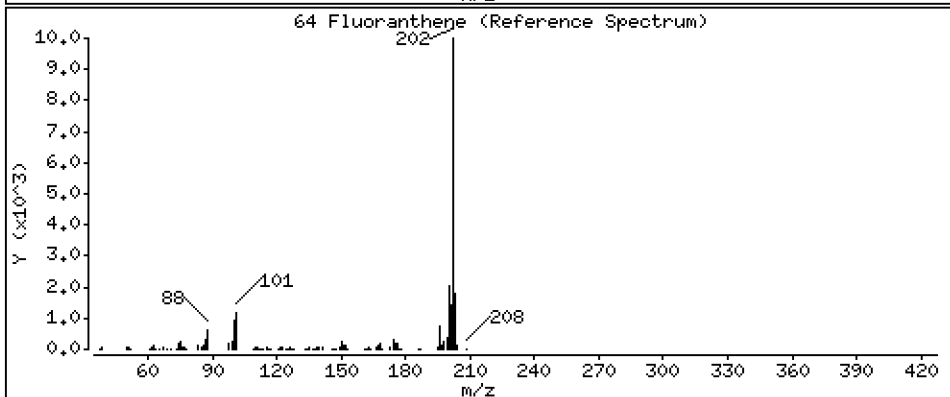
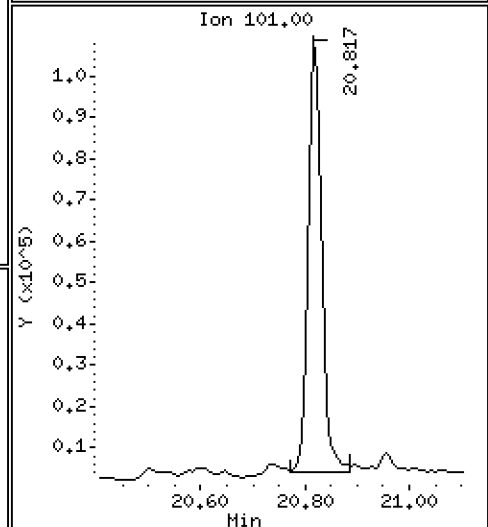
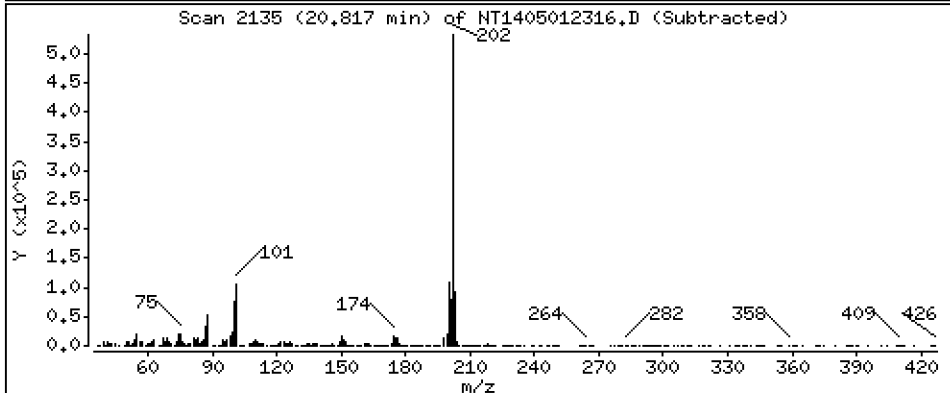
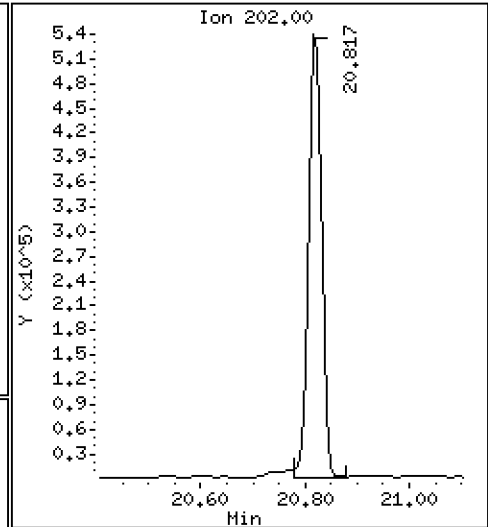
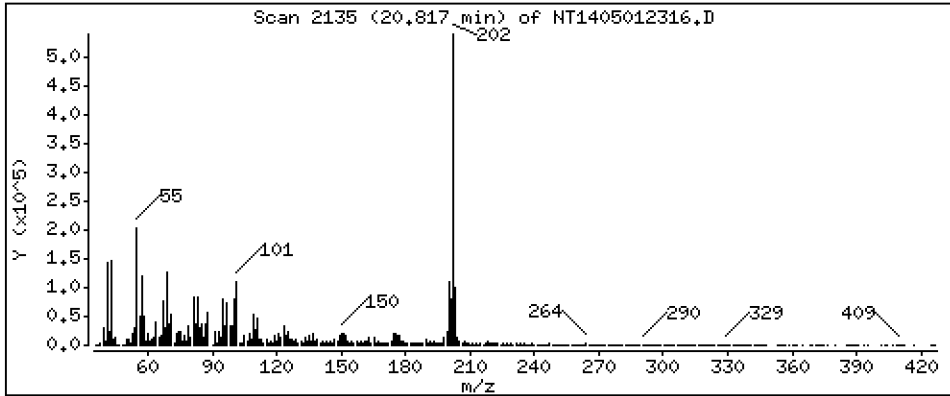
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 3,240 ug/mL





Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

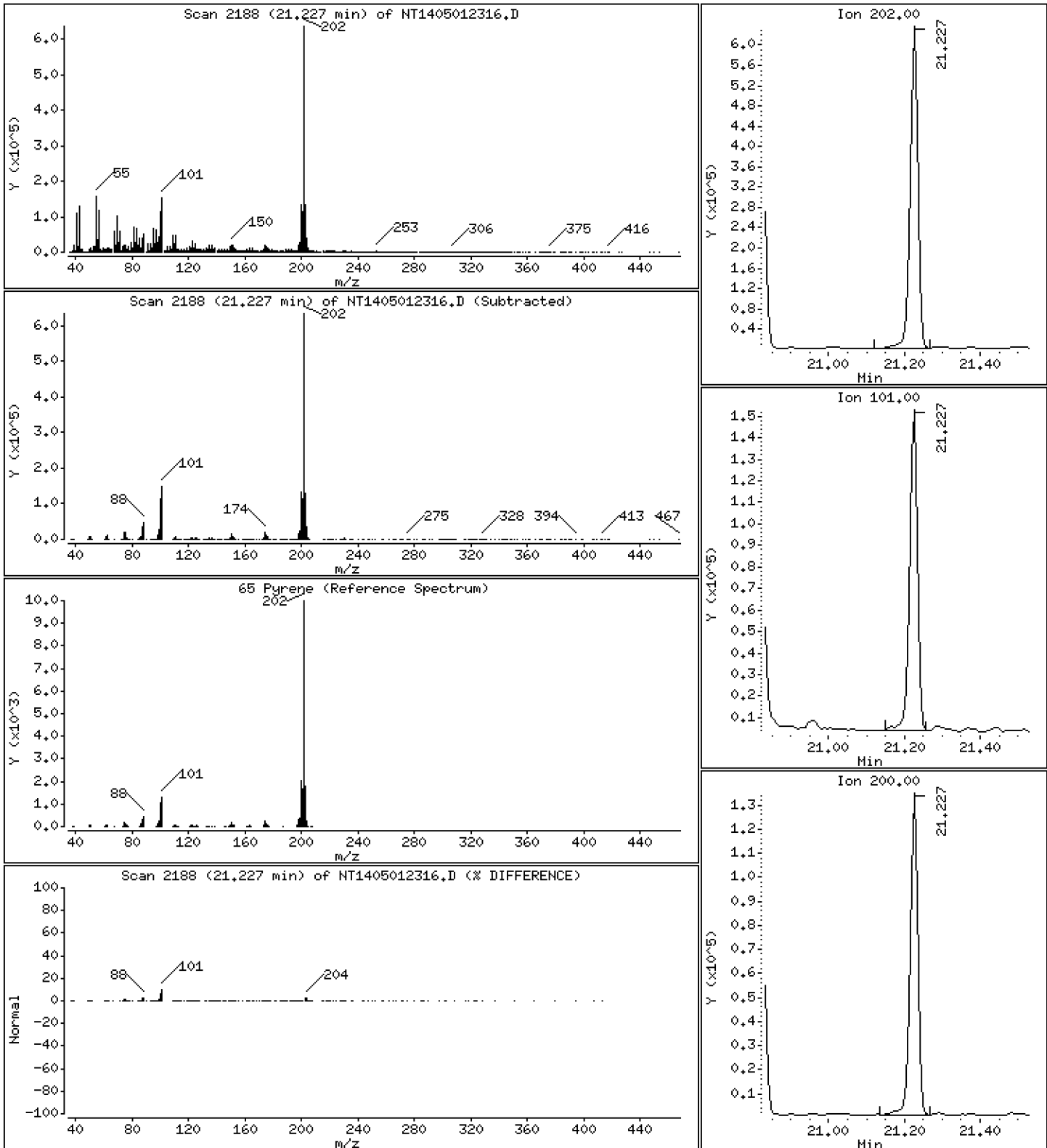
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 3,296 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

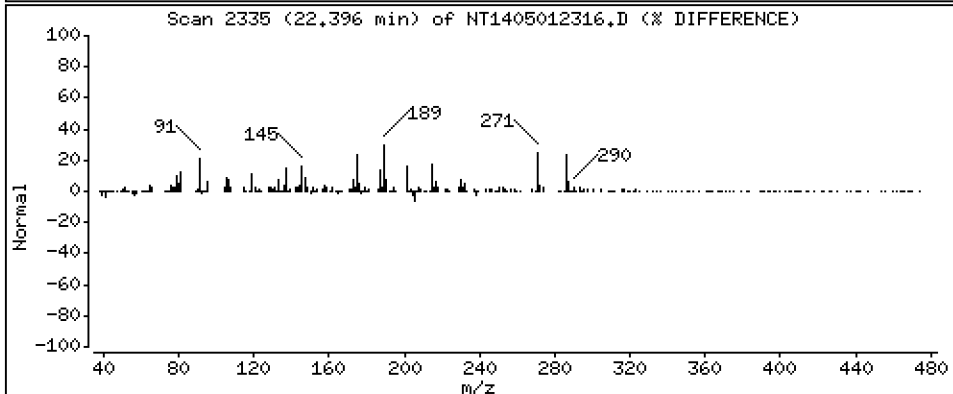
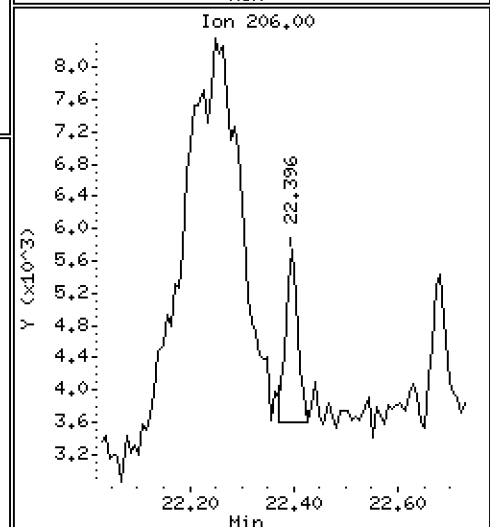
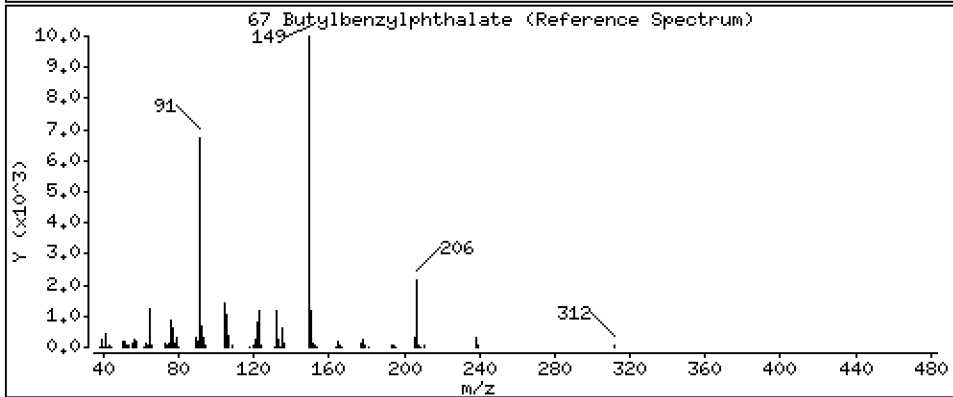
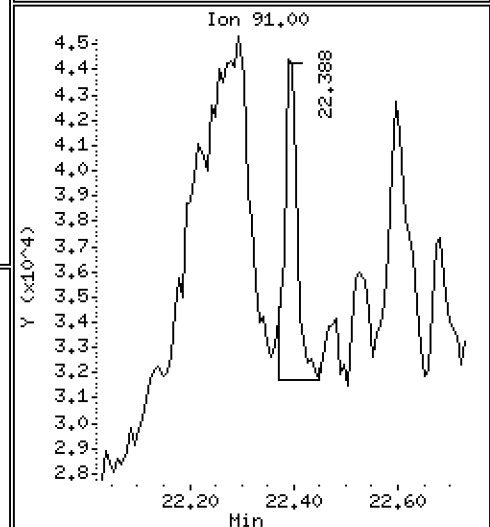
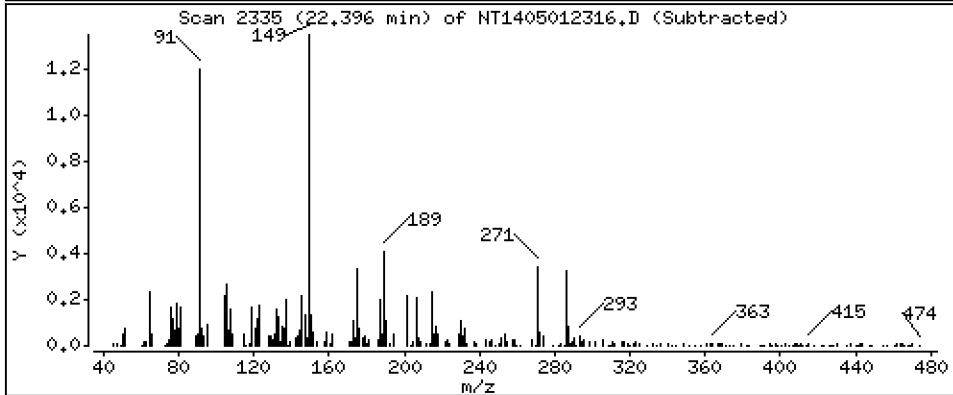
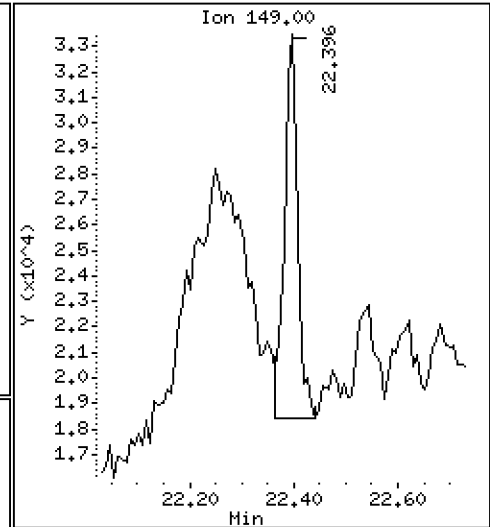
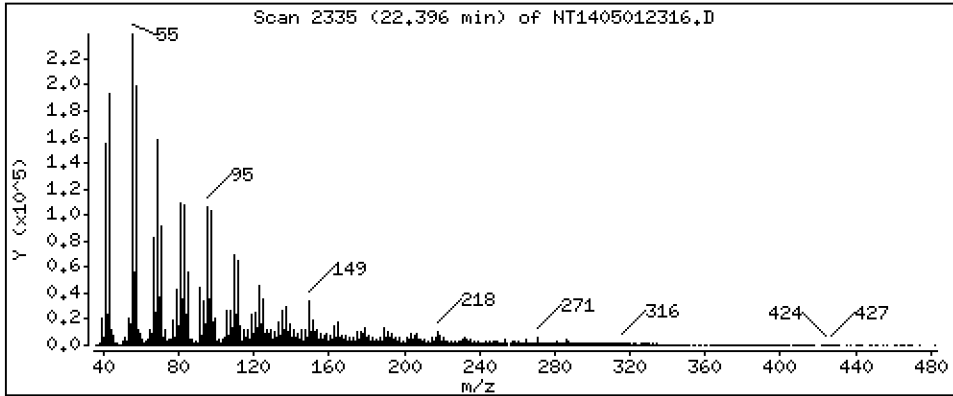
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,1456 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

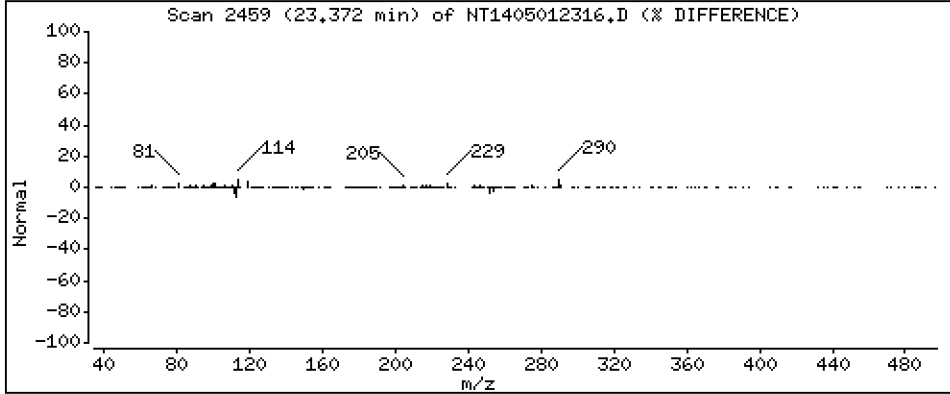
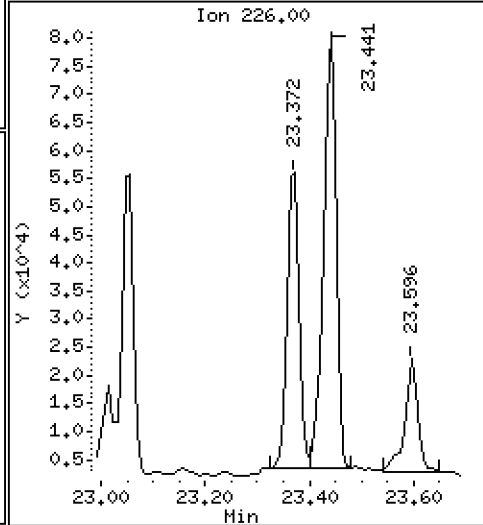
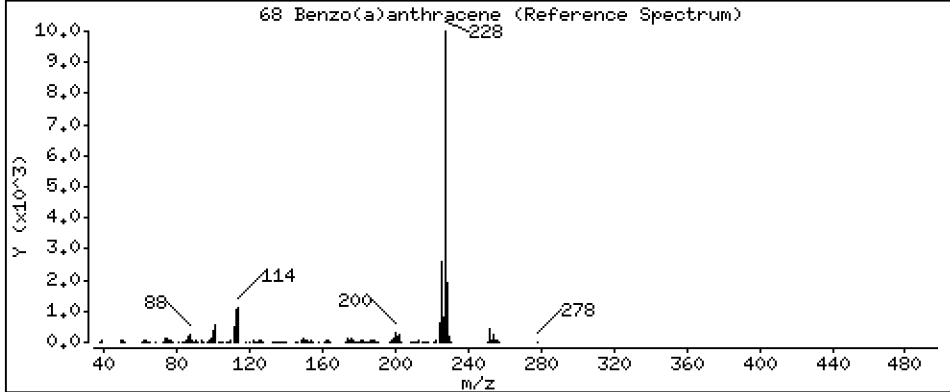
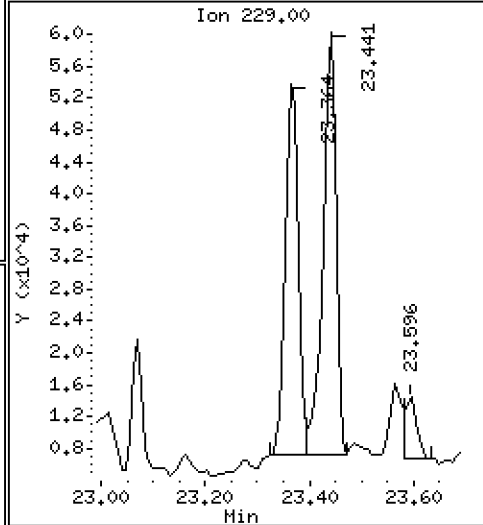
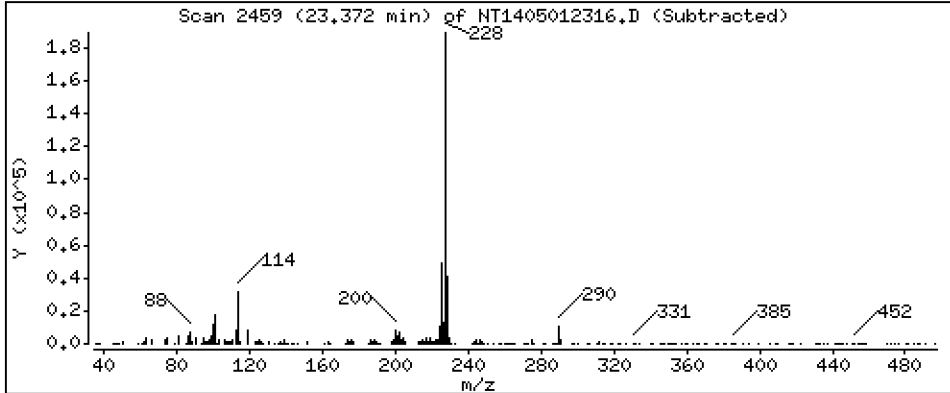
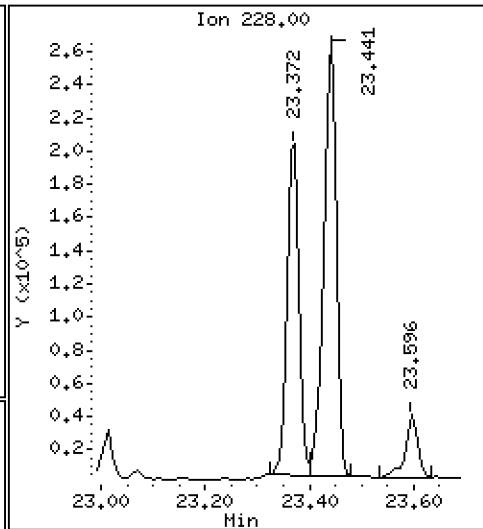
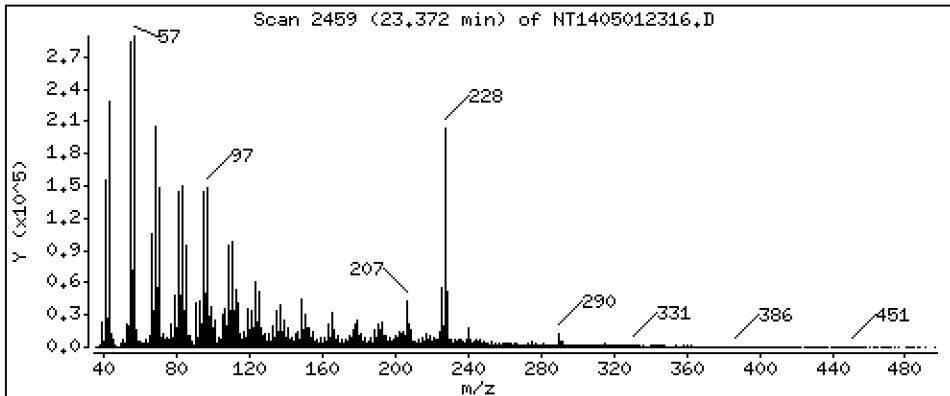
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 1,557 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

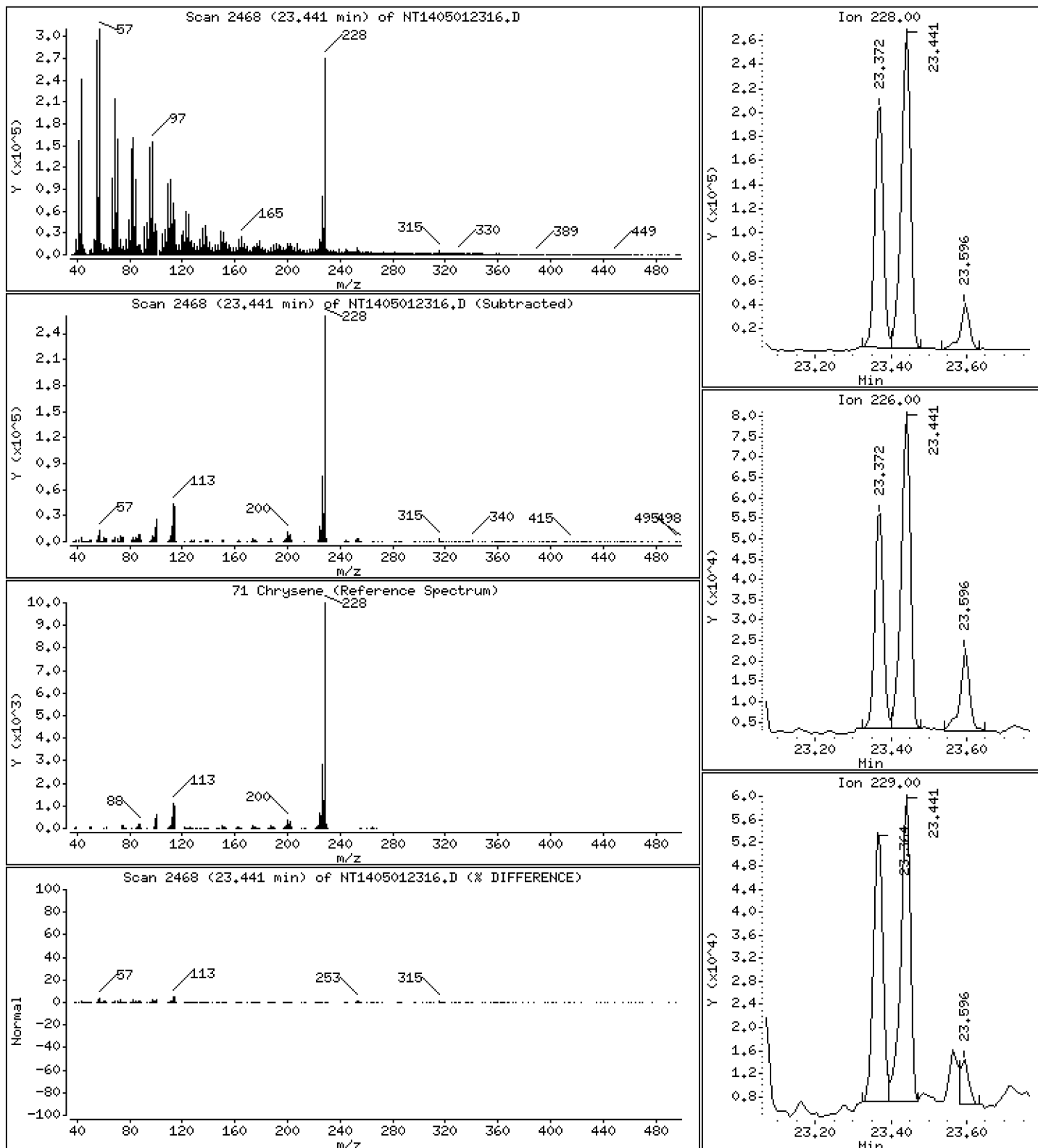
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 2,287 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

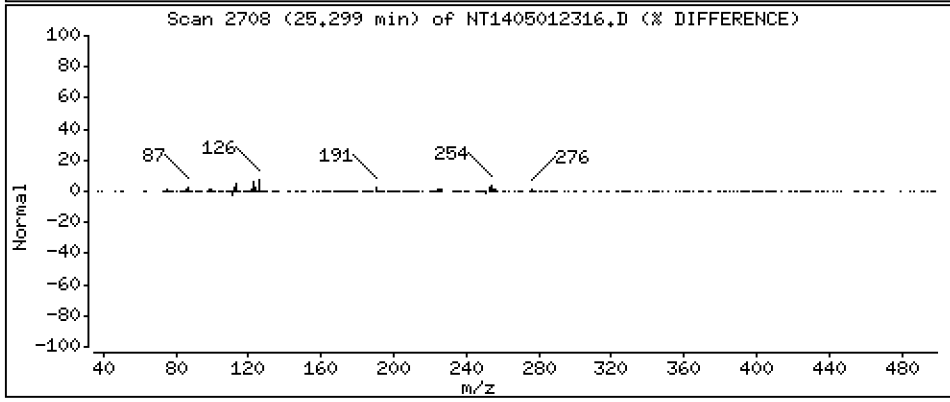
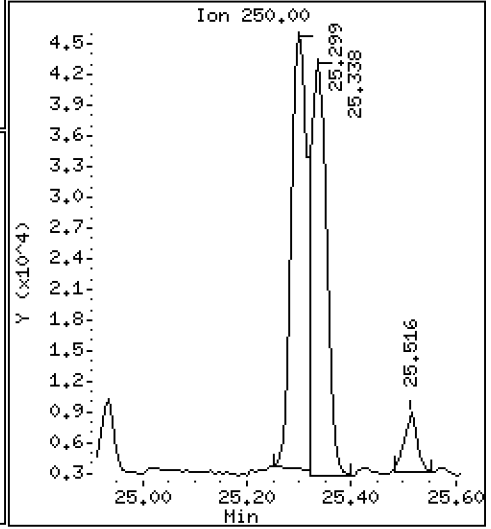
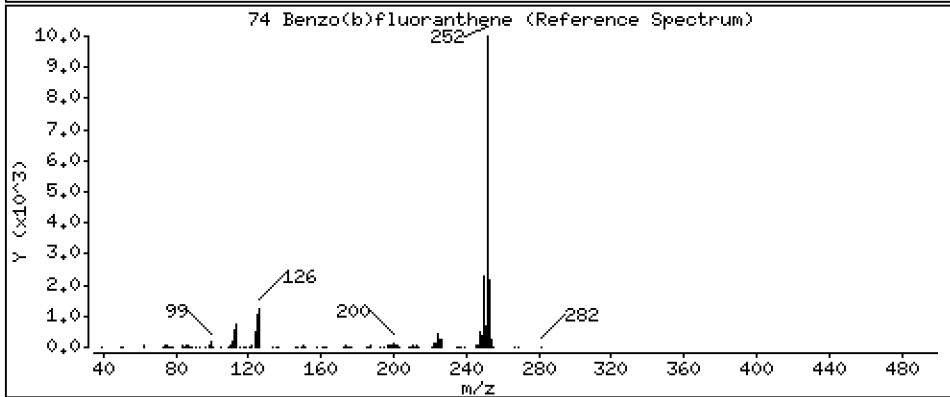
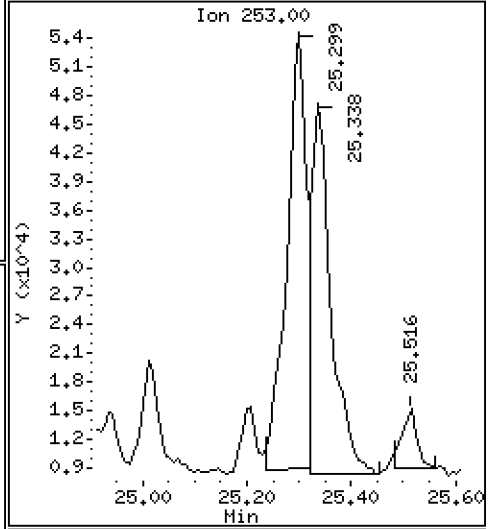
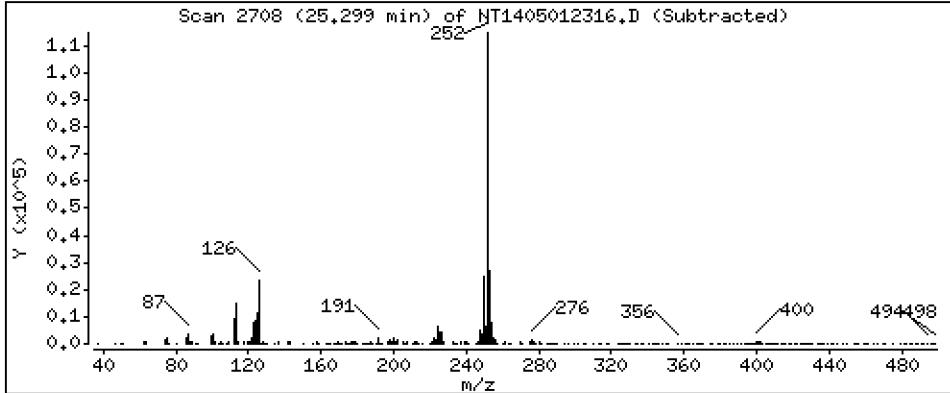
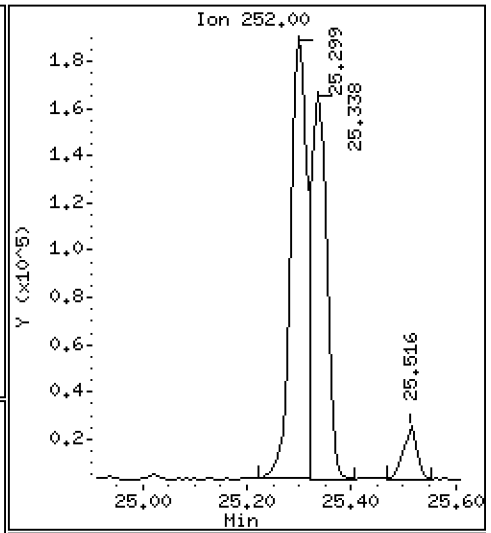
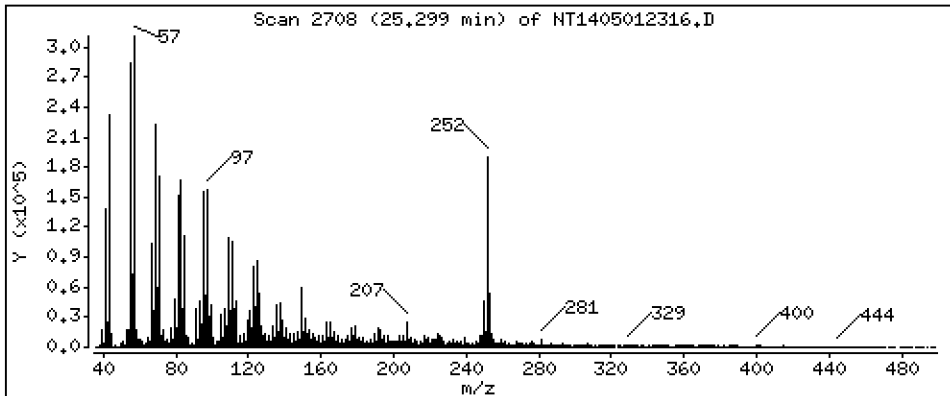
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 2,981 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

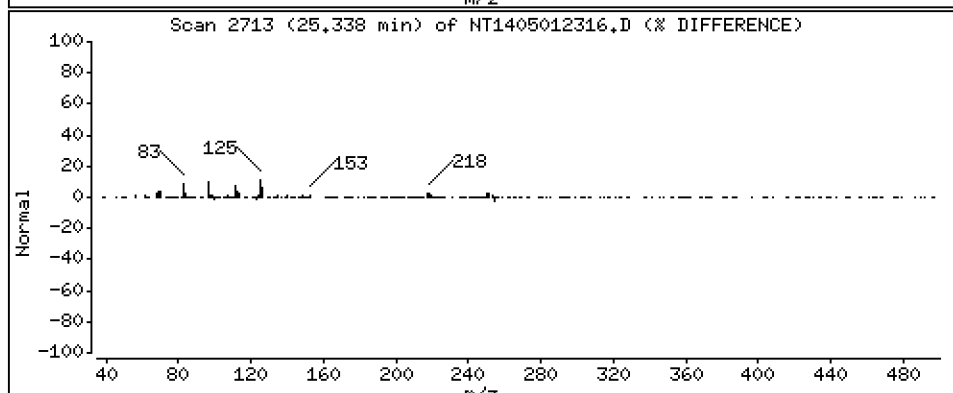
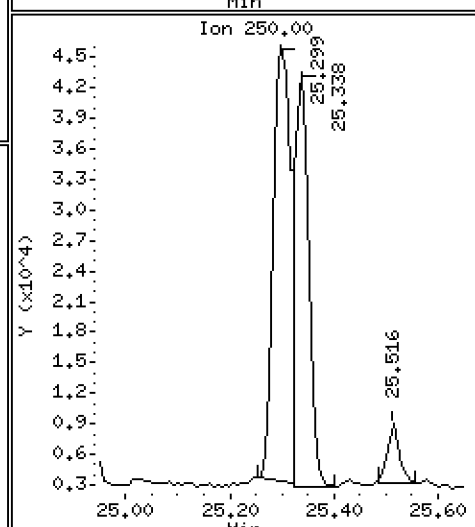
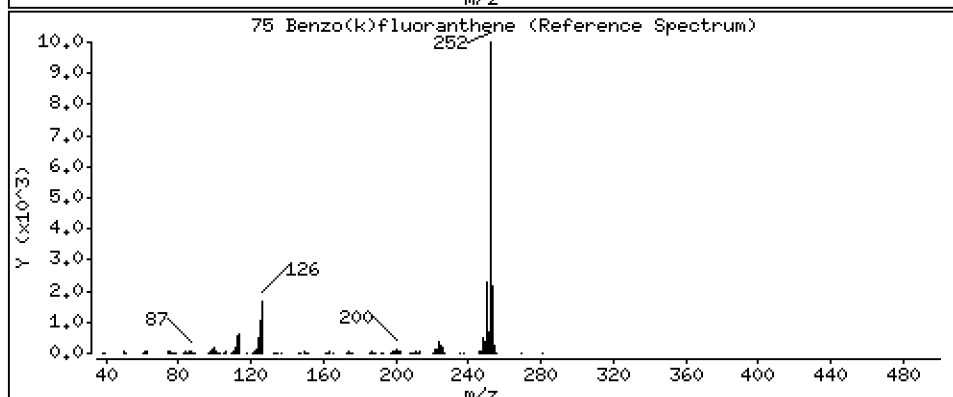
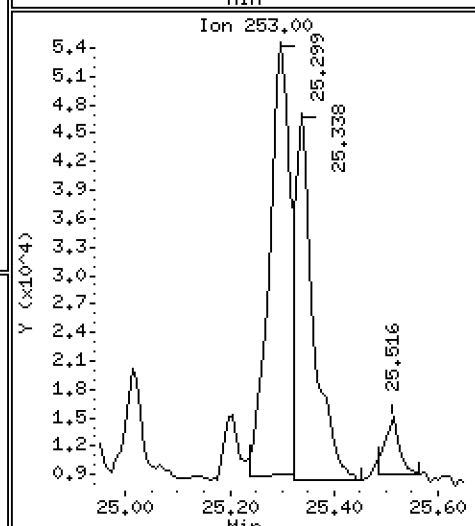
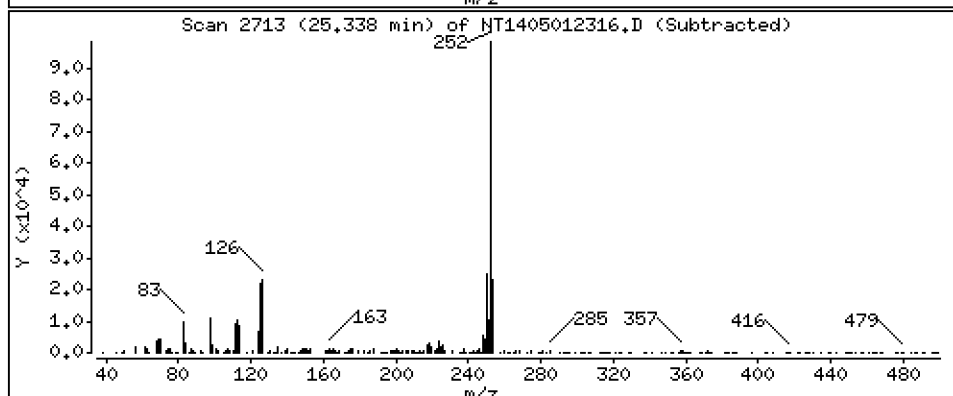
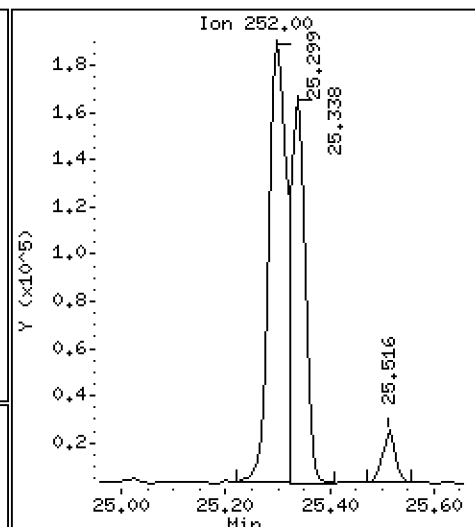
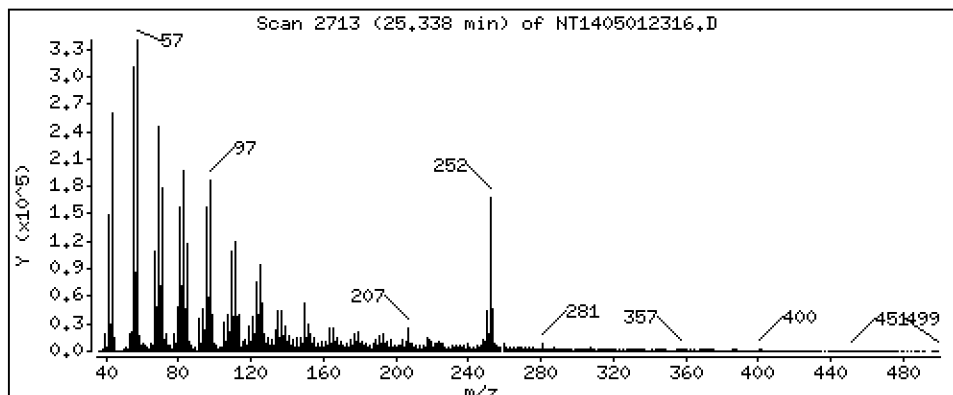
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 2,245 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

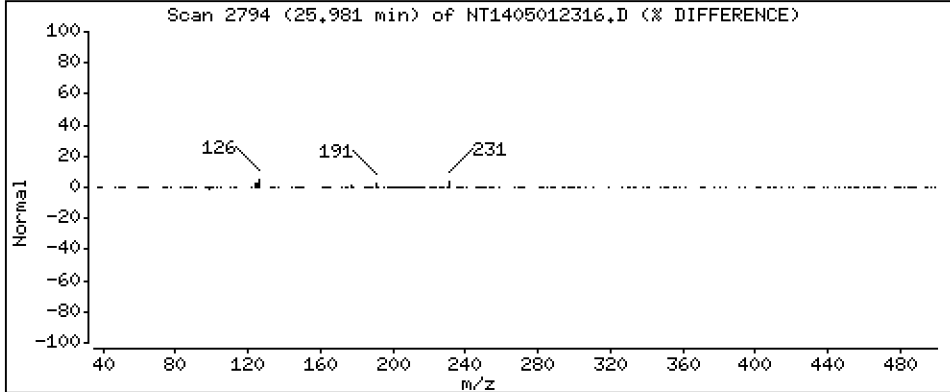
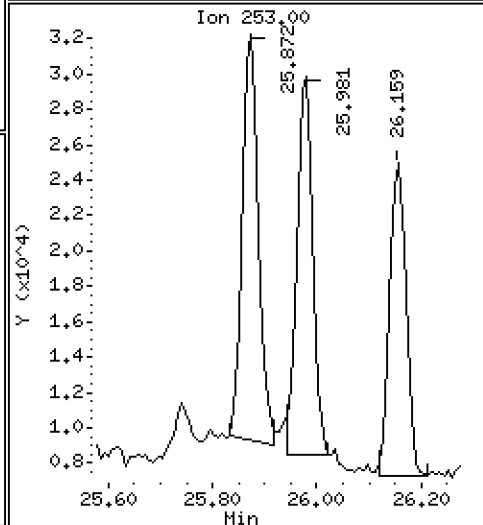
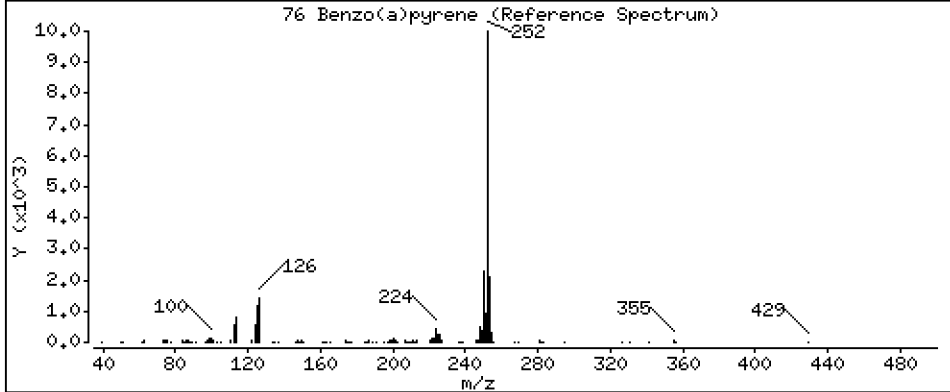
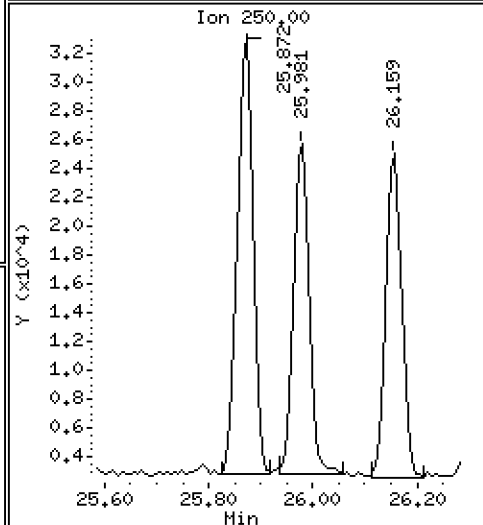
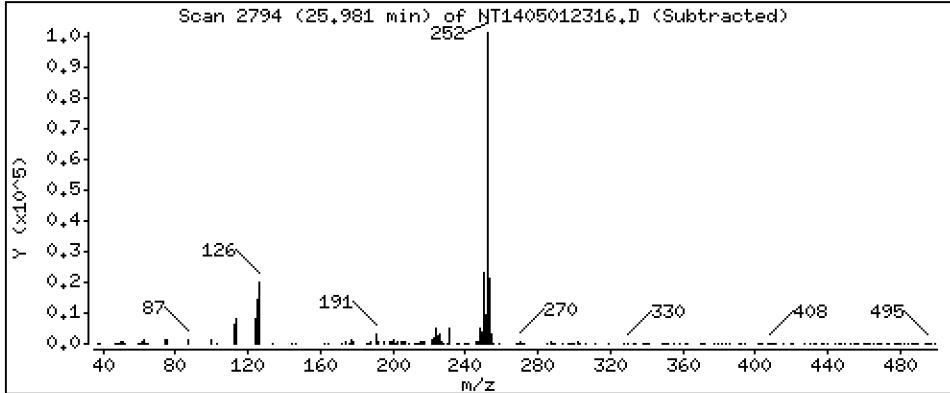
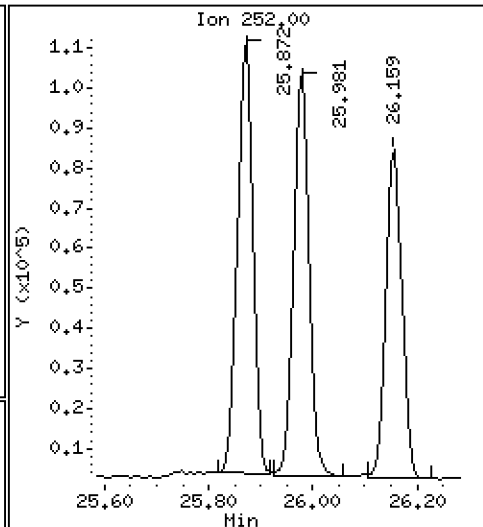
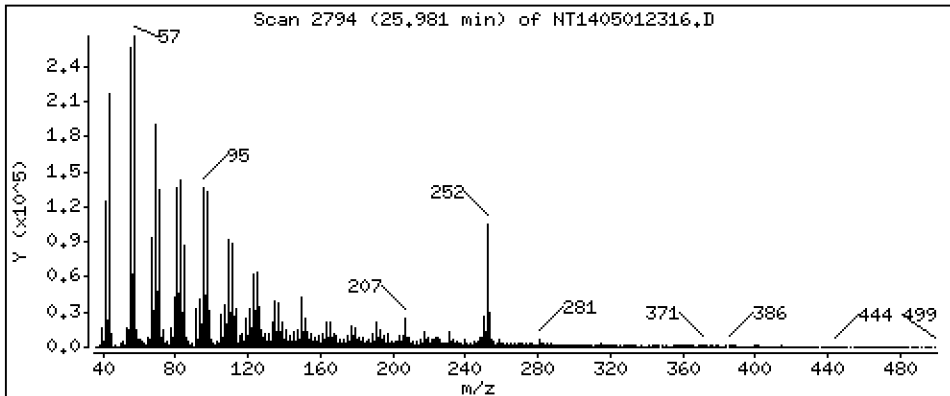
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 1,708 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

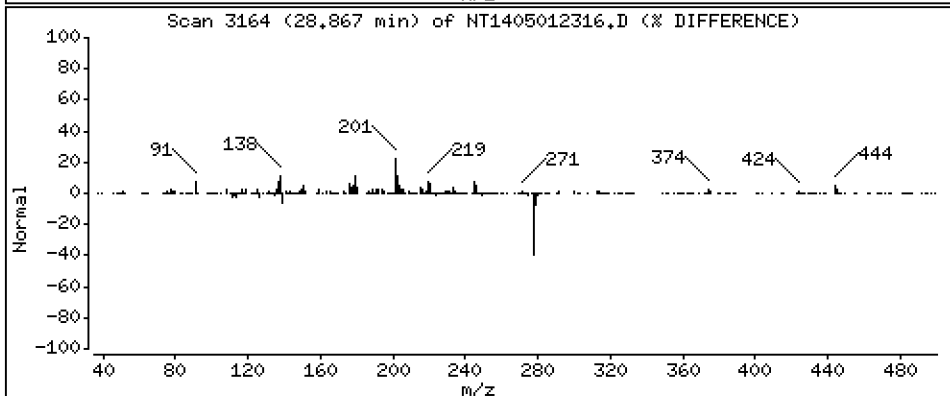
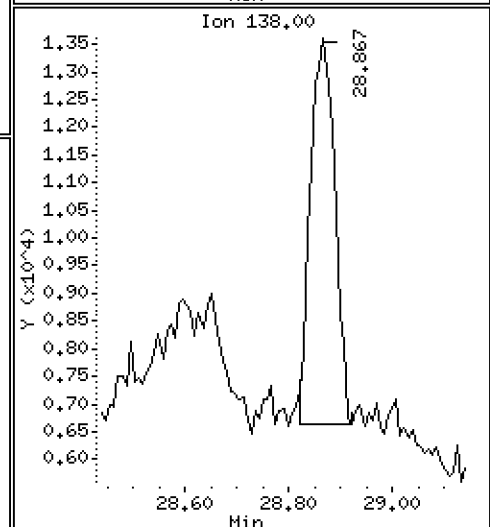
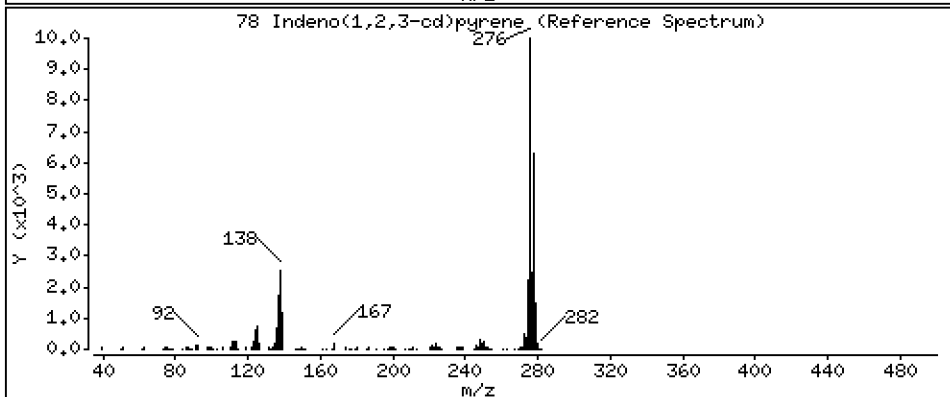
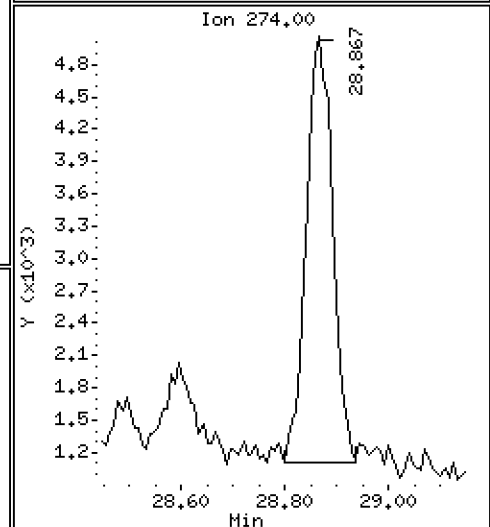
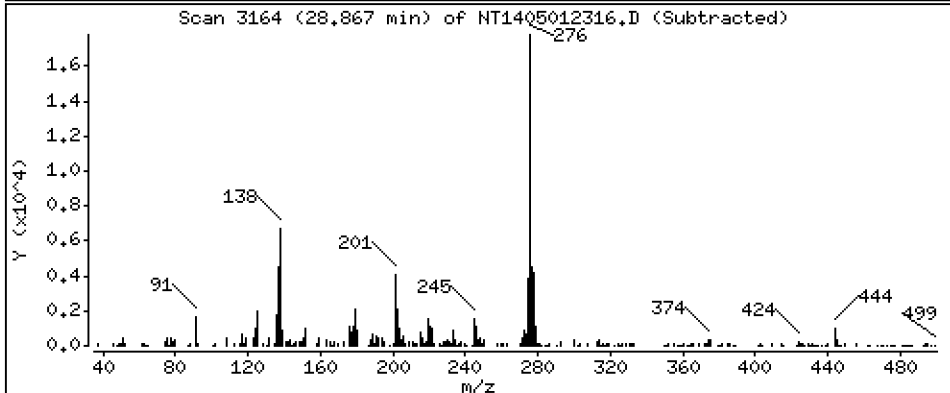
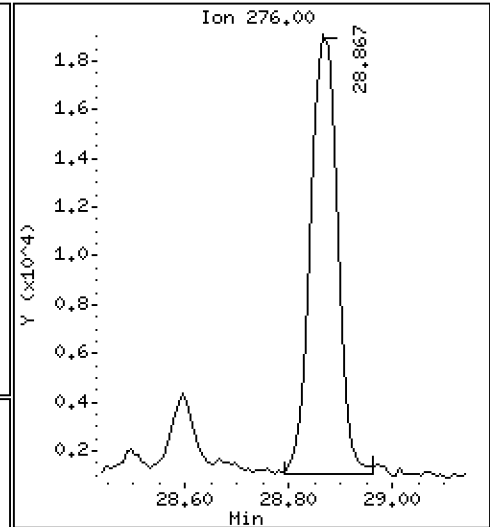
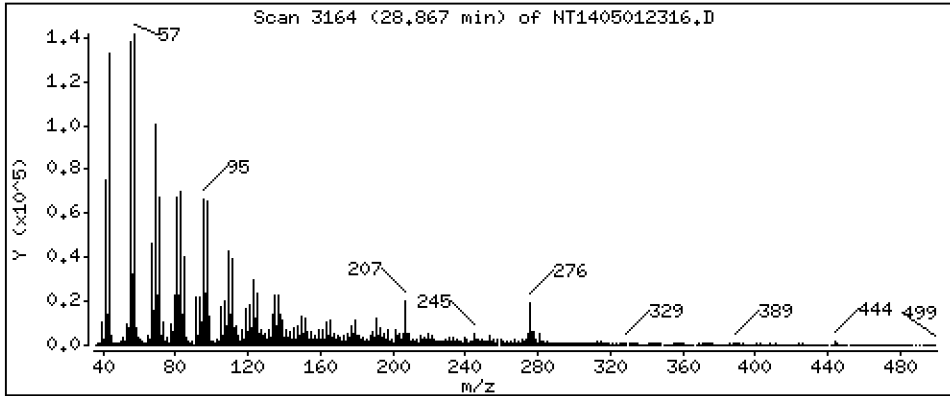
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 0,3675 ug/mL





Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

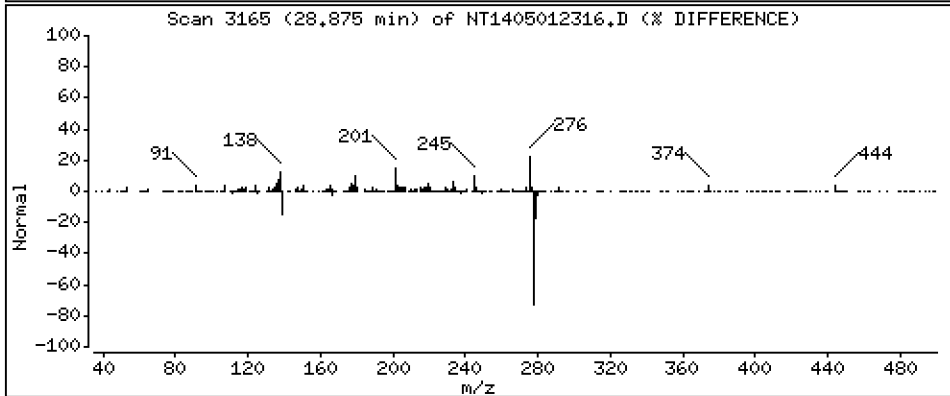
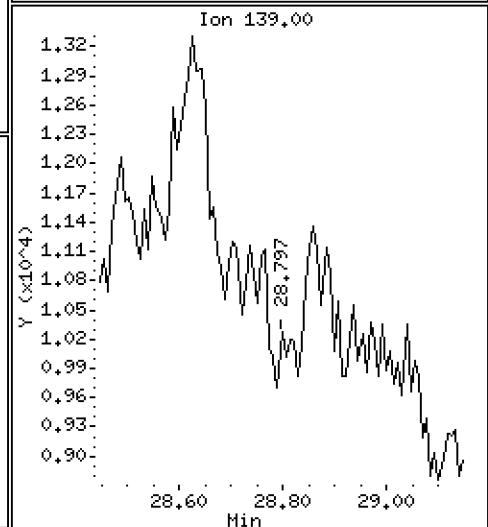
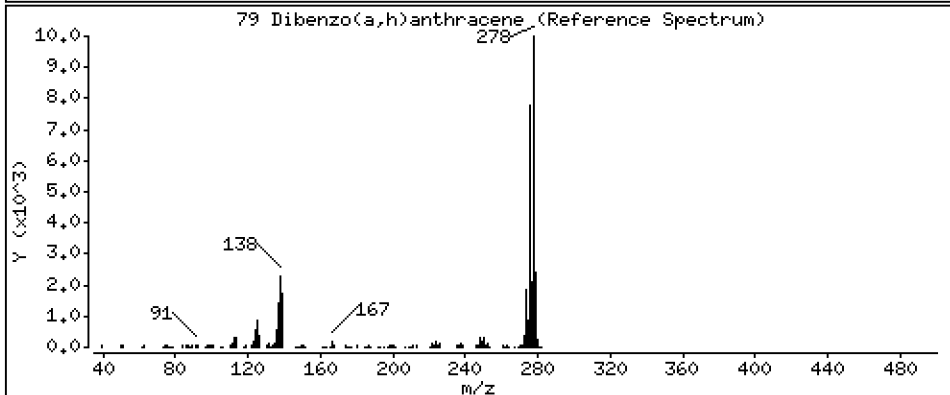
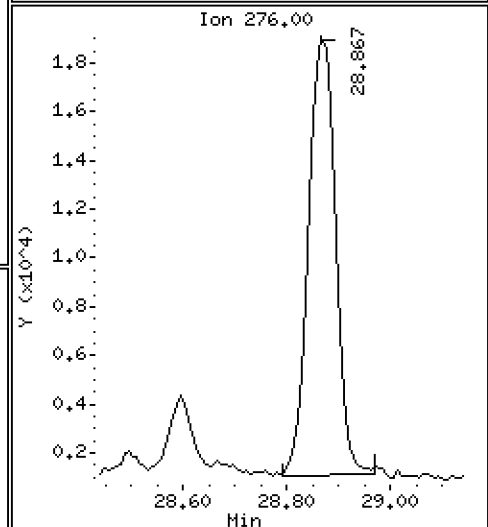
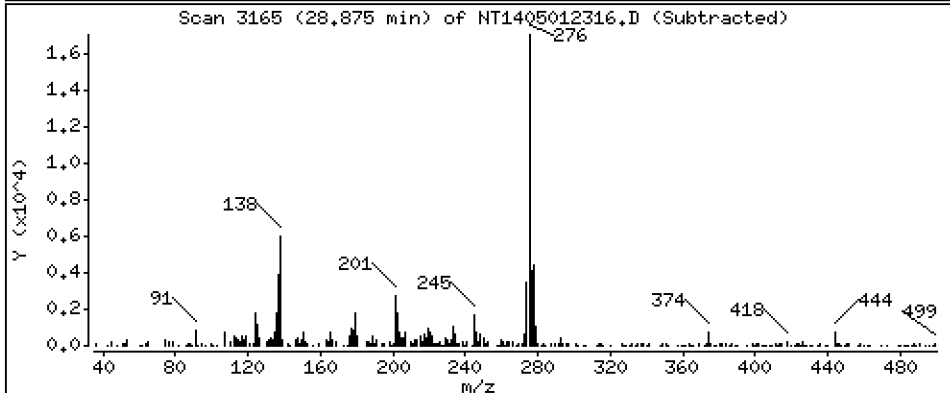
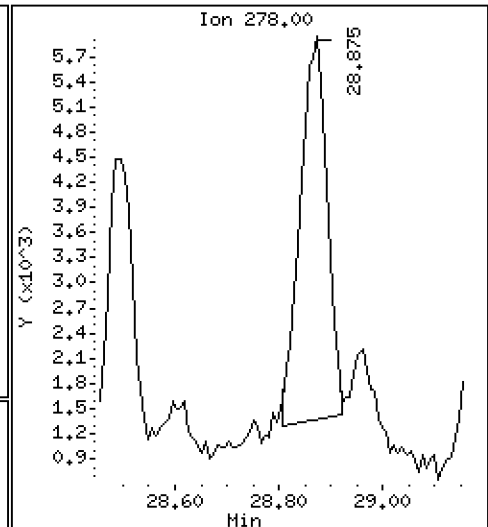
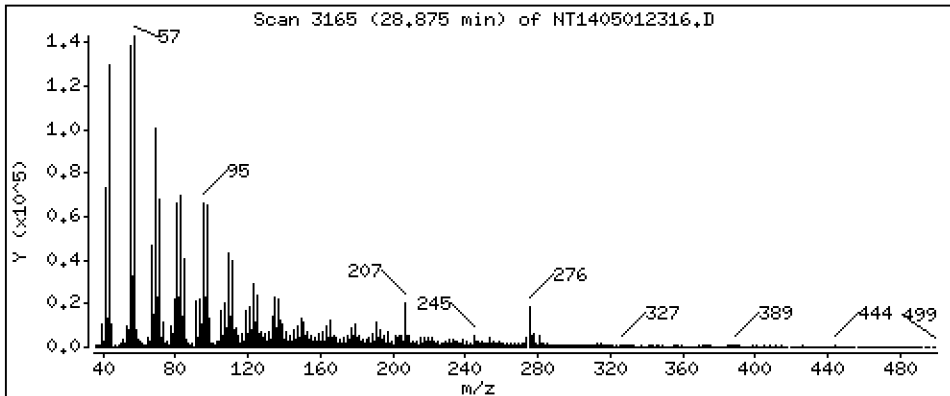
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,1151 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

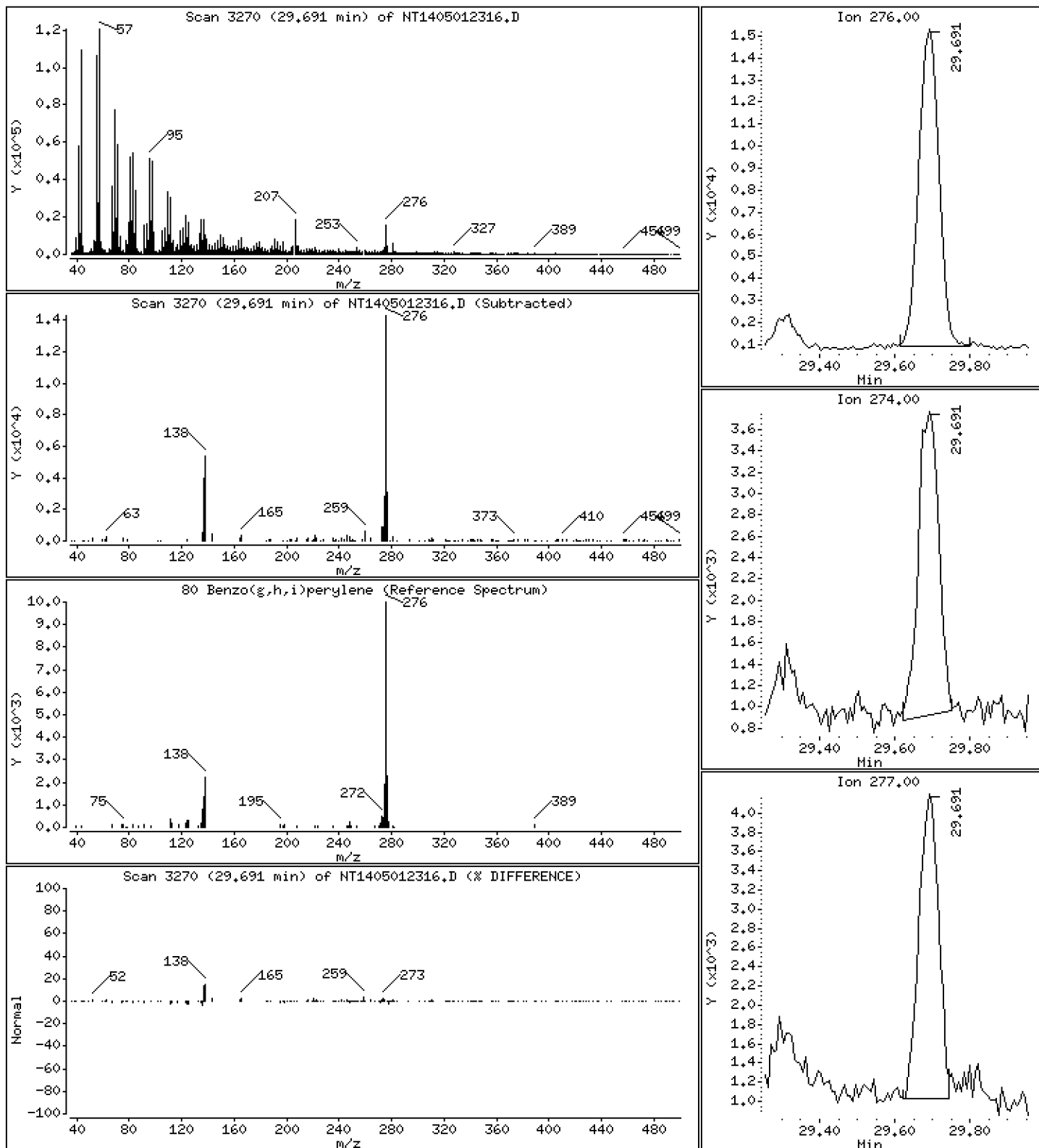
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

80 Benzo(g,h,i)perylene

Concentration: 0.3536 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

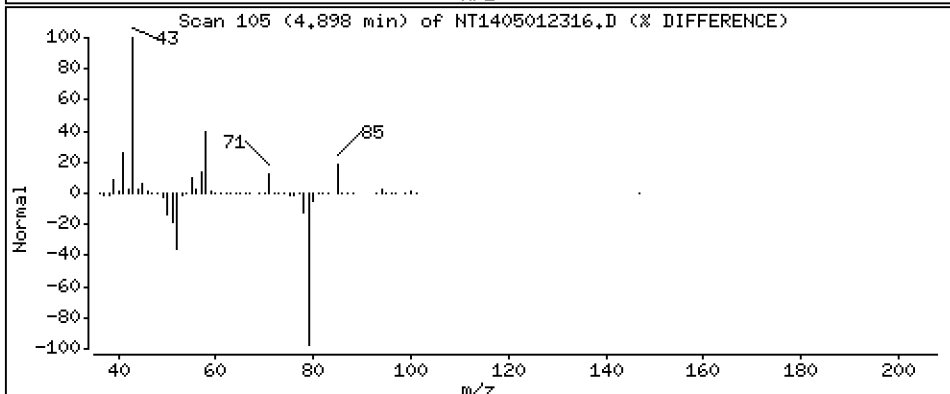
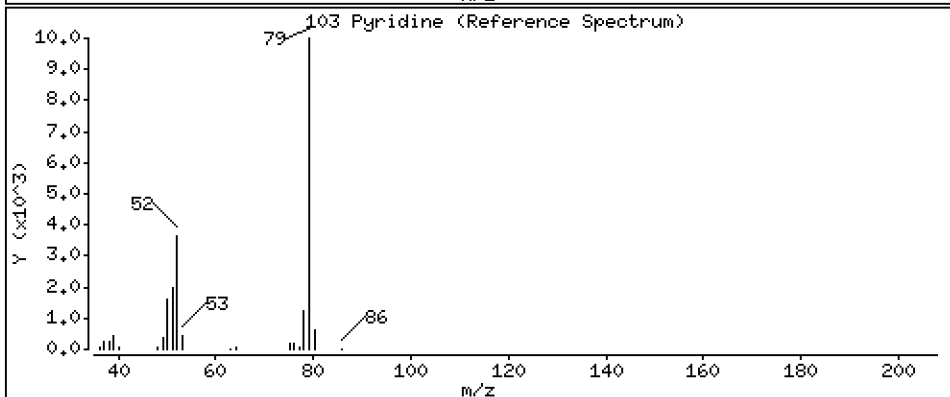
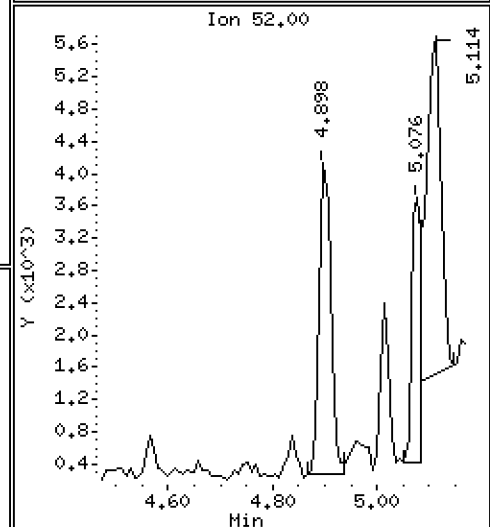
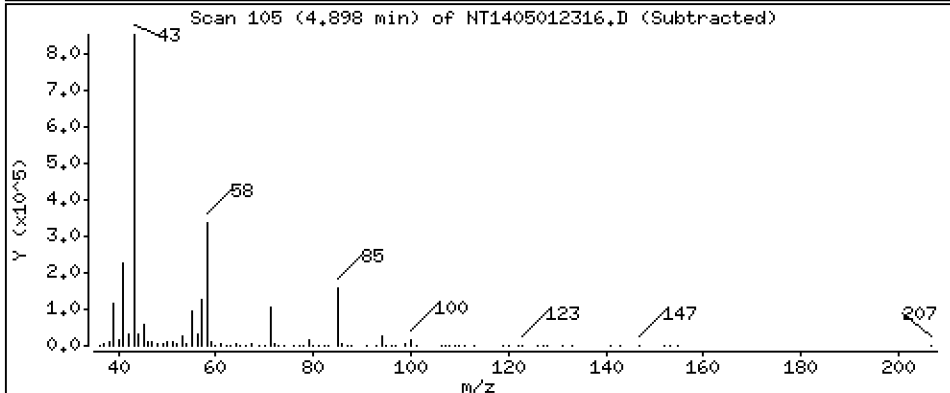
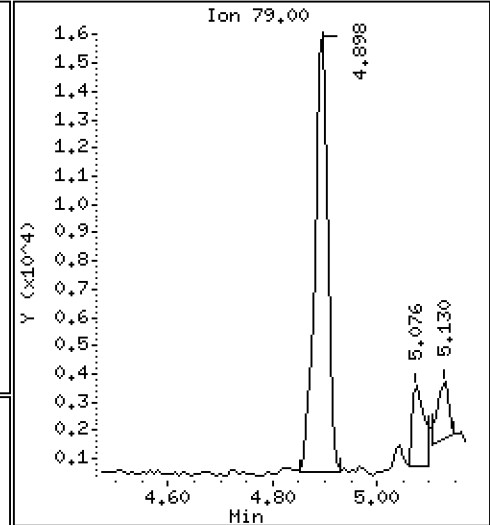
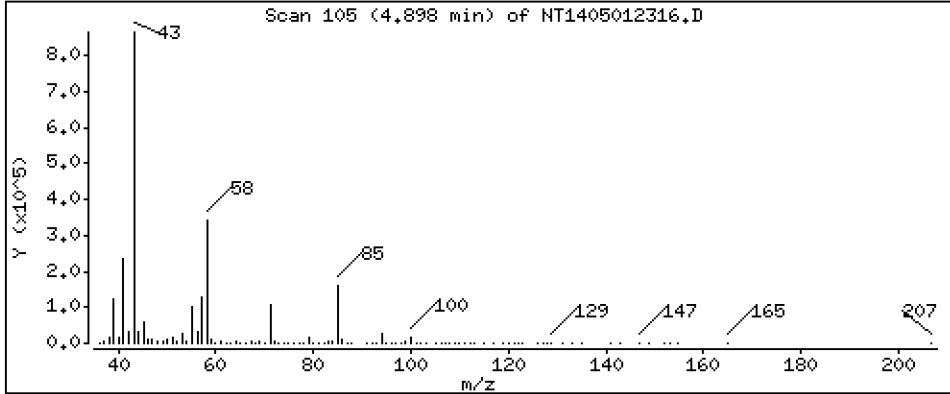
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,1083 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

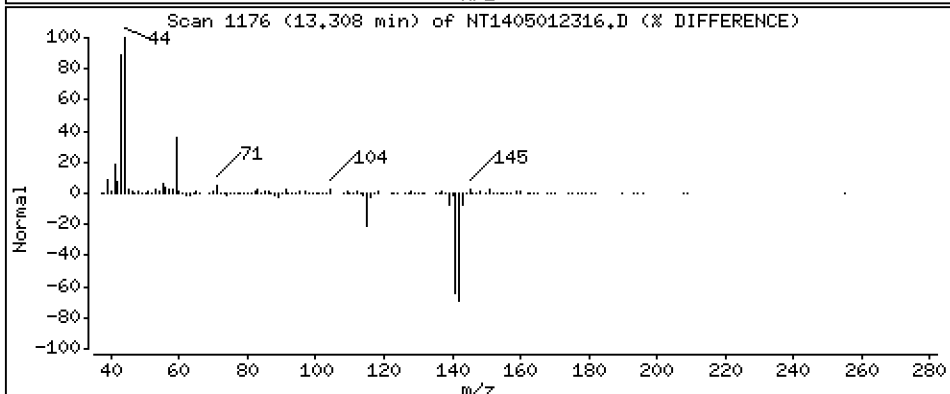
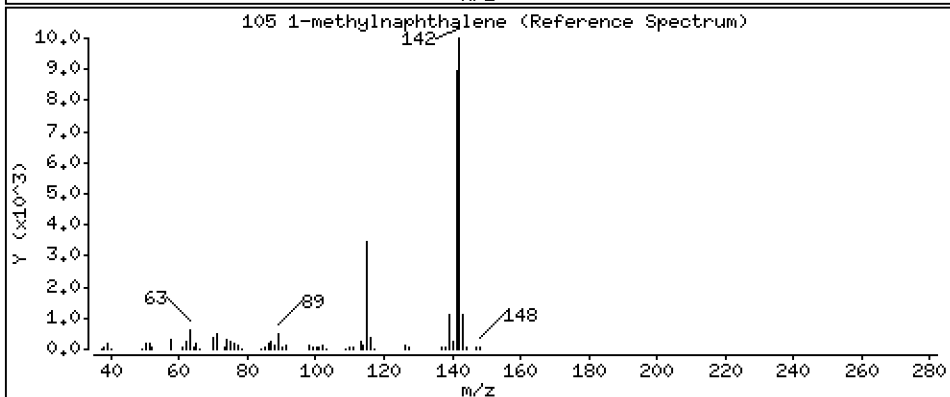
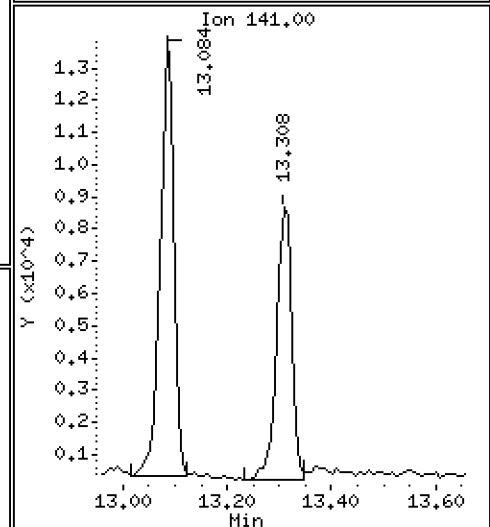
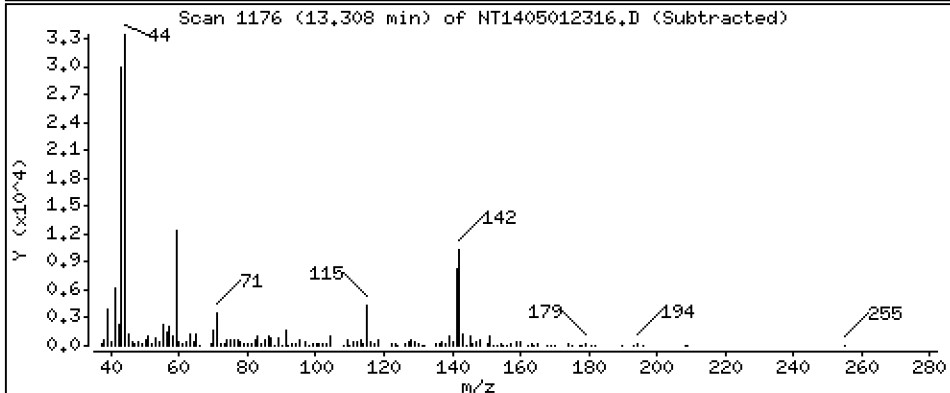
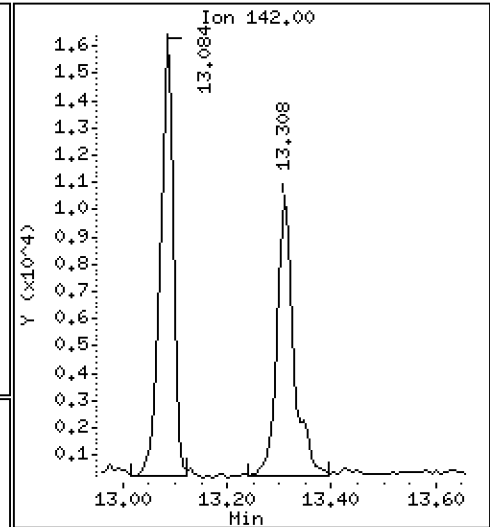
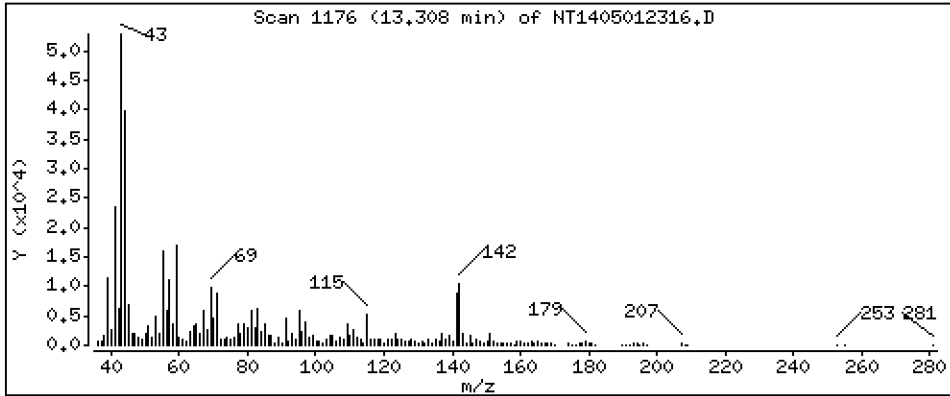
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 0,1120 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

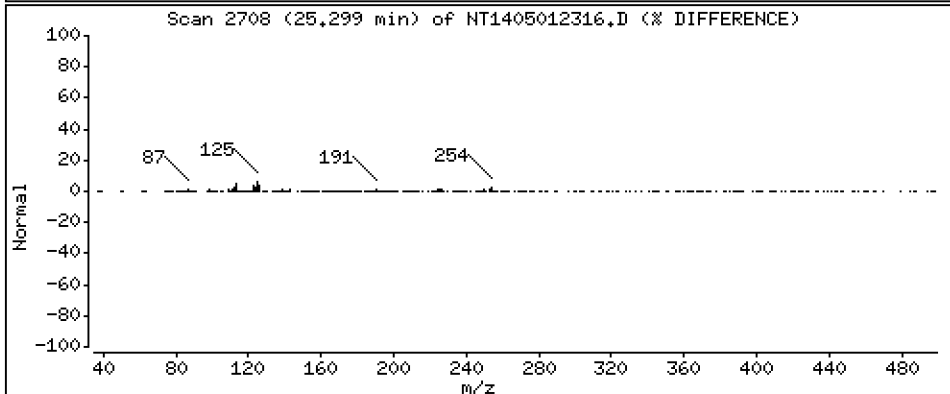
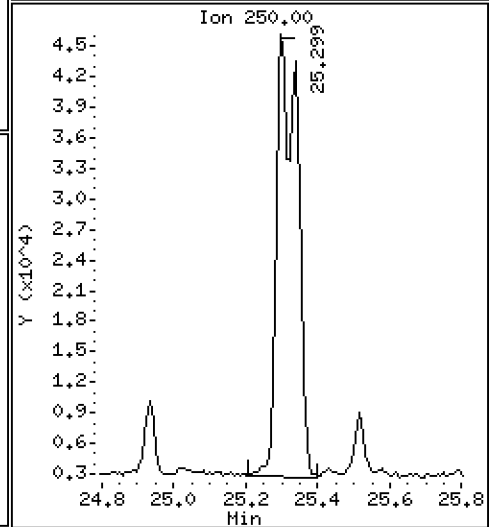
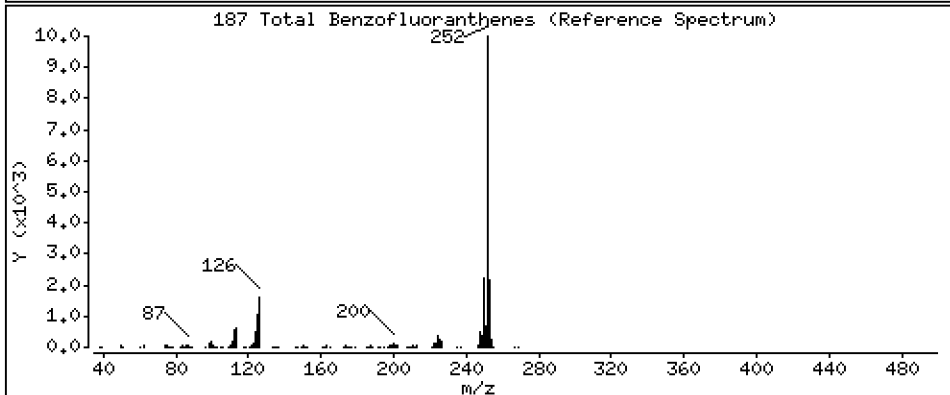
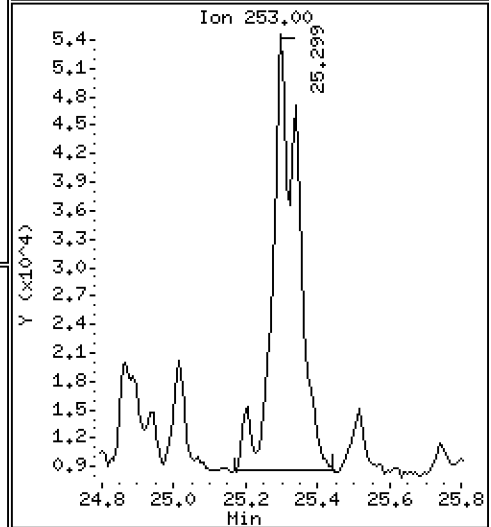
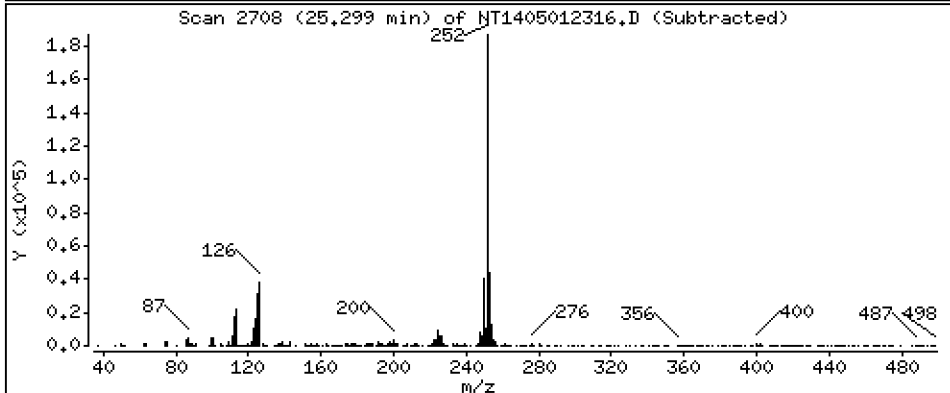
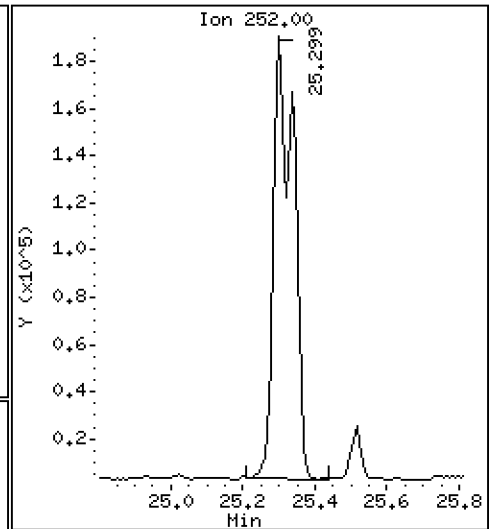
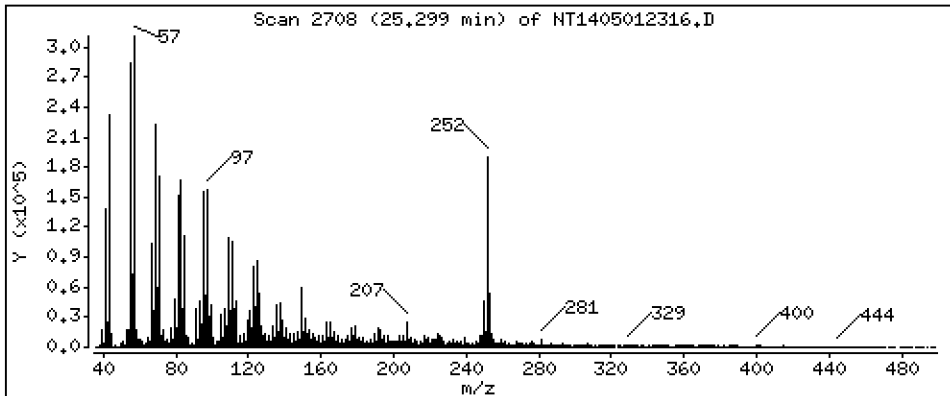
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 5,116 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012316.D  
 Lab Smp Id: 23D0063-03  
 Inj Date : 01-MAY-2023 23:45 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : 23D0063-03  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 16  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.929	6.898	(0.758)	519423	5.45886	5.459
\$ 2 Phenol-d5	99		8.505	8.490	(0.931)	738031	5.52687	5.527
3 Phenol	94		8.528	8.513	(0.933)	27078	0.18093	0.1809
\$ 5 2-Chlorophenol-d4	132		8.775	8.768	(0.960)	562594	5.92241	5.922
4 Bis(2-Chloroethyl)ether	93		Compound Not Detected.					
6 2-Chlorophenol	128		8.721	8.799	(0.954)	474	0.00455	0.004547
7 1,3-Dichlorobenzene	146		Compound Not Detected.					
* 8 1,4-Dichlorobenzene-d4	152		9.139	9.132	(1.000)	263115	4.00000	
9 1,4-Dichlorobenzene	146		Compound Not Detected.					
\$ 10 1,2-Dichlorobenzene-d4	152		9.504	9.497	(1.040)	206714	3.43513	3.435
12 1,2-Dichlorobenzene	146		Compound Not Detected.					
11 Benzyl alcohol	108		9.419	9.403	(1.031)	24061	0.35246	0.3525
14 2,2'-oxybis(1-Chloropropane)	121		Compound Not Detected.					
13 2-Methylphenol	108		9.644	9.629	(1.055)	4532	0.04539	0.04539
17 Hexachloroethane	117		Compound Not Detected.					
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
15 4-Methylphenol	108		9.916	9.900	(1.085)	11194	0.09845	0.09845
\$ 18 Nitrobenzene-d5	82		10.242	10.242	(0.880)	503973	3.87150	3.872
19 Nitrobenzene	77		Compound Not Detected.					
20 Isophorone	82		Compound Not Detected.					
21 2-Nitrophenol	139		Compound Not Detected.					
22 2,4-Dimethylphenol	107		Compound Not Detected.					
23 Bis(2-Chloroethoxy)methane	93		Compound Not Detected.					
24 Benzoic acid	105		11.103	11.196	(0.954)	59668	0.68712	0.6871
25 2,4-Dichlorophenol	162		Compound Not Detected.					
26 1,2,4-Trichlorobenzene	180		Compound Not Detected.					
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1057704	4.00000	
28 Naphthalene	128		11.683	11.675	(1.004)	46002	0.16181	0.1618
29 4-Chloroaniline	127		Compound Not Detected.					
30 Hexachlorobutadiene	225		Compound Not Detected.					
31 4-Chloro-3-methylphenol	107		Compound Not Detected.					
32 2-Methylnaphthalene	142		13.083	13.083	(1.124)	27658	0.13430	0.1343
33 Hexachlorocyclopentadiene	237		Compound Not Detected.					

Compounds	QUANT MASS	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196					Compound Not Detected.		
35 2,4,5-Trichlorophenol	196					Compound Not Detected.		
\$ 36 2-Fluorobiphenyl	172		13.873	13.865	(0.908)	708765	4.09924	4.099
37 2-Chloronaphthalene	162					Compound Not Detected.		
38 2-Nitroaniline	65					Compound Not Detected.		
39 Dimethylphthalate	163		14.778	14.778	(0.967)	15484	0.09094	0.09094
40 Acenaphthylene	152		14.964	14.956	(0.979)	33208	0.12607	0.1261
41 2,6-Dinitrotoluene	165					Compound Not Detected.		
* 42 Acenaphthene-d10	164		15.281	15.273	(1.000)	496409	4.00000	
43 3-Nitroaniline	138					Compound Not Detected.		
44 Acenaphthene	153		15.343	15.343	(1.004)	22107	0.14010	0.1401
45 2,4-Dinitrophenol	184					Compound Not Detected.		
46 Dibenzofuran	168		15.675	15.668	(1.026)	40671	0.18054	0.1805
47 4-Nitrophenol	109					Compound Not Detected.		
48 2,4-Dinitrotoluene	165		15.691	15.729	(1.027)	309	0.00591	0.005912
50 Diethylphthalate	149		16.240	16.240	(1.063)	21098	0.11448	0.1145
49 Fluorene	166		16.386	16.386	(1.072)	30581	0.15341	0.1534
51 4-Chlorophenyl-phenylether	204					Compound Not Detected.		
52 4-Nitroaniline	138					Compound Not Detected.		
53 4,6-Dinitro-2-methylphenol	198					Compound Not Detected.		
54 N-Nitrosodiphenylamine	169					Compound Not Detected.		
\$ 55 2,4,6-Tribromophenol	330		16.934	16.919	(1.108)	112226	6.87680	6.877
56 4-Bromophenyl-phenylether	248					Compound Not Detected.		
57 Hexachlorobenzene	284					Compound Not Detected.		
58 Pentachlorophenol	266					Compound Not Detected.		
* 59 Phenanthrene-d10	188		18.341	18.325	(1.000)	856347	4.00000	
60 Phenanthrene	178		18.387	18.372	(1.003)	264670	1.09310	1.093
61 Anthracene	178		18.480	18.464	(1.008)	117545	0.50617	0.5062
62 Carbazole	167		18.820	18.797	(1.026)	37253	0.17336	0.1734
63 Di-n-butylphthalate	149		19.602	19.579	(1.069)	17671	0.05394	0.05394
64 Fluoranthene	202		20.816	20.755	(0.890)	899260	3.23970	3.240
65 Pyrene	202		21.226	21.180	(0.907)	944790	3.29595	3.296
\$ 66 Terphenyl-d14	244		21.482	21.459	(0.918)	647621	3.19889	3.199
67 Butylbenzylphthalate	149		22.396	22.380	(0.957)	27050	0.14560	0.1456
68 Benzo(a)anthracene	228		23.371	23.340	(0.999)	334156	1.55675	1.557
* 69 Chrysene-d12	240		23.394	23.371	(1.000)	601327	4.00000	
70 3,3'-Dichlorobenzidine	252					Compound Not Detected.		
71 Chrysene	228		23.441	23.418	(1.002)	457956	2.28749	2.287
72 bis(2-Ethylhexyl)phthalate	149					Compound Not Detected.		
* 134 Di-n-octylphthalate-d4	153		24.409	24.385	(1.000)	1372526	4.00000	
73 Di-n-octylphthalate	149					Compound Not Detected.		
74 Benzo(b)fluoranthene	252		25.299	25.260	(0.969)	450557	2.98081	2.981
75 Benzo(k)fluoranthene	252		25.338	25.307	(0.971)	332981	2.24518	2.245
76 Benzo(a)pyrene	252		25.980	25.934	(0.995)	218235	1.70848	1.708
* 77 Perylene-d12	264		26.104	26.050	(1.000)	453322	4.00000	
78 Indeno(1,2,3-cd)pyrene	276		28.867	28.789	(1.106)	64920	0.36754	0.3675
79 Dibenzo(a,h)anthracene	278		28.875	28.805	(1.106)	16628	0.11508	0.1151 (M)
80 Benzo(g,h,i)perylene	276		29.690	29.605	(1.137)	52871	0.35358	0.3536
90 N-Nitrosodimethylamine	74					Compound Not Detected.		
91 Aniline	93					Compound Not Detected.		
93 Benzidine	184					Compound Not Detected.		
103 Pyridine	79		4.898	4.821	(0.536)	25364	0.10831	0.1083
105 1-methylnaphthalene	142		13.308	13.308	(1.144)	22276	0.11201	0.1120
111 Azobenzene (1,2-DP-Hydrazine)	77					Compound Not Detected.		

Compounds	QUANT MASS	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS		
							ON-COLUMN (ug/mL)	FINAL (ug/mL)	
187 Total Benzofluoranthenes	252		25.299	25.307	(0.969)	732100	5.11612	5.116	
120 2,3,4,6-Tetrachlorophenol	232		Compound Not Detected.						

QC Flag Legend

M - Compound response manually integrated.



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012316.D Calibration Time: 15:06  
 Lab Smp Id: 23D0063-03  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	263115	-3.97
27 Naphthalene-d8	1103207	551604	2206414	1057704	-4.12
42 Acenaphthene-d10	520358	260179	1040716	496409	-4.60
59 Phenanthrene-d10	882575	441288	1765150	856347	-2.97
69 Chrysene-d12	600619	300310	1201238	601327	0.12
134 Di-n-octylphthala	1445631	722816	2891262	1372526	-5.06
77 Perylene-d12	570040	285020	1140080	453322	-20.48

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.14	0.08
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.33	17.83	18.83	18.34	0.08
69 Chrysene-d12	23.37	22.87	23.87	23.39	0.10
134 Di-n-octylphthala	24.39	23.89	24.89	24.41	0.10
77 Perylene-d12	26.05	25.55	26.55	26.10	0.21

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012316.D

Lab ID: 23D0063-03  
nt14.i, ABN.m, 01-MAY-2023 23:45

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.954	0.964	-0.0093	2-Chlorophenol
0.954	0.962	-0.0080	Benzoic acid
0.536	0.528	0.0080	Pyridine

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

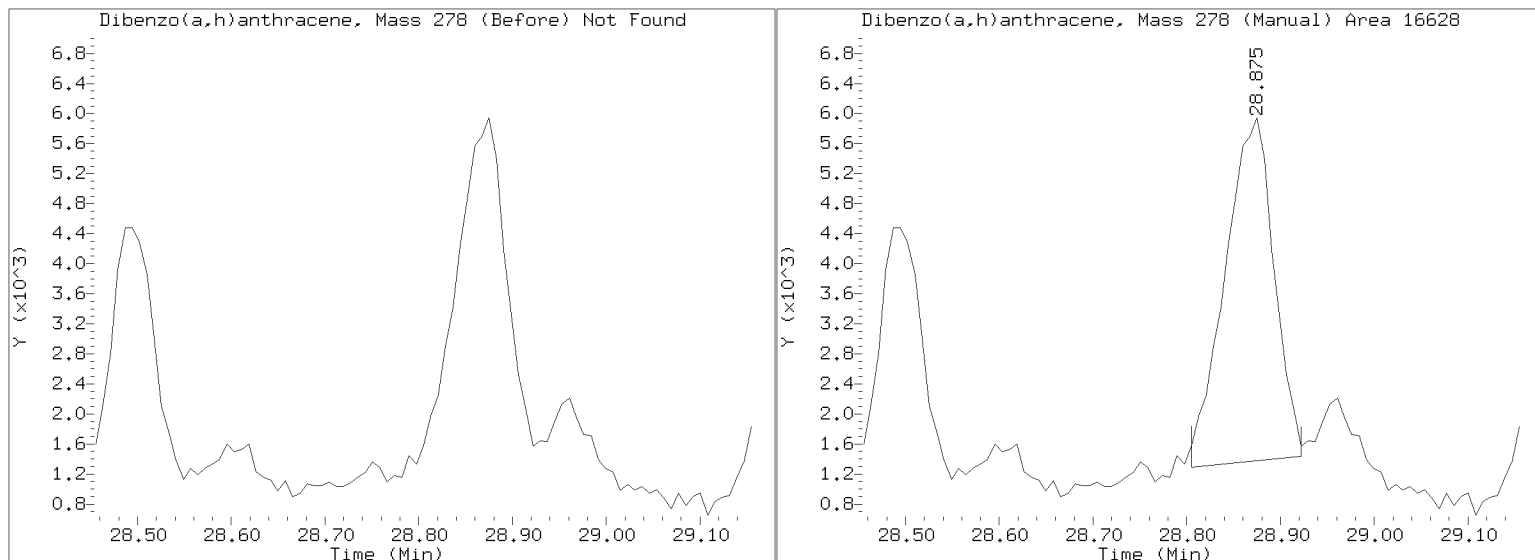
# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230501A.b/NT1405012316.D

Injection Date: 01-MAY-2023 23:45

Lab ID:23D0063-03 Client ID:

Report Date: 05/03/2023 12:05



**APPROVED**

*By Deenay Dunmore at 12:07 pm, May 03, 2023*





Batch: BLD0297

Prepared using: EPA 3546 (Microwave)

8270E SVOC (20ug/kg solid or 0.2ug/L low H2O Sepf) in Solid (Version:AOC4 List)

Matrix: Solid

Date Prepared: 04/17/23

Balance ID: B146462614

Set Up By: CTO 4/12/23

From BLC0185 on 4/12/2023 by CTO

WO Comments

23C0109: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

The following standards may be missing from this batch!

Designator	Description
39	Benzidine Spike
QLS 14	QLS Spike (Freezer)

Analysis: 8270E SVOC (20ug/kg solid or 0.2ug/L low H2O Sepf)

Lab Number & Container	% Solids	Initial (g)		(REQ) GPC C/U (1:1) 1 2 3	Water Wash 1mL	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
		Target Dry: 10 (Wet)	Actual					
23C0109-02RE1 A	35.9	(27.86)	27.89	(1:1)	1mL	1	0.5	From BLC0185 by CTO on 12-Apr-2023
23D0037-01 A	56.6	(17.66)	17.67	(1:1)	1mL	1	0.5	
23D0037-03 A	71.7	(13.94)	13.99	(1:1)	1mL	1	0.5	
23D0063-01 A	43.2	(23.16)	23.16	(1:1)	1mL	1	0.5	
23D0063-03 A	35.1	(28.48)	28.51	(1:1)	1mL	1	0.5	

Batch QC

Lab Number	% Solids	Initial (g)		(REQ) GPC C/U (1:1) 1 2 3	Water Wash 1mL	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
		Target Dry: 10 (Wet)	Actual					
BLD0297-BLK1	100.0	(10.00)	10.00	(1:1)	1mL	1	0.5	Use 5g Neutral Sodium Sulfate for Blanks
BLD0297-BS1	100.0	(10.00)	10.00	(1:1)	1mL	1	0.5	Use 5g Neutral Sodium Sulfate for Blanks
BLD0297-BSD1	100.0	(10.00)	10.00	(1:1)	1mL	1	0.5	Use 5g Neutral Sodium Sulfate for Blanks
BLD0297-MS1	43.2	(23.16)	23.16	(1:1)	1mL	1	0.5	Use 23D0063-01
BLD0297-MSD1	43.2	(23.16)	23.16	(1:1)	1mL	1	0.5	Use 23D0063-01
BLD0297-SRM1	100.0	(10.00) <sup>(1.00)</sup>	1.00	(1:1)	1mL	1	0.5	Use K003477

\*1g DI WATER

Checked By: [Signature] 04/17/23

Date

Preparation Reviewed By: [Signature] 4/25/23

Date

Extraction Date and Time: 04/17/23 12:00





Batch: BLD0297

Prepared using: EPA 3546 (Microwave)

8270E SVOC (20ug/kg solid or 0.2ug/L low H2O Sept) in Solid (Version:AOC4 List)

**WO Comments**  
 23C0109: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
 23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
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 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Prep Steps

Reagents Used

Surrogates & Spike Standards Used

Station/Reagent	Standard ID
Microwave	
Analyst: <i>CT</i> Date: <i>4/17/23</i>	
Anhydrous Sodium Sulfate	<i>L003261</i>
1:1 Methylene Chloride/Acetone	<i>L002244</i>
Methylene Chloride	<i>L002621</i>
Pre-Deactivated Glass Wool	<i>L001924</i>
Pre GPC KD	
Analyst: <i>AA</i> Date: <i>4-21-23</i>	
Pre-Deactivated Glass Wool	<i>NA</i>
Anhydrous Sodium Sulfate	<i>NA</i>
Methylene Chloride	<i>L002621</i>
Hexane	<i>L001957</i>
GPC Filter Prep	
Analyst: <i>nes</i> Date: <i>4/22/23</i>	
Methylene Chloride	<i>L002621</i>
GPC Filter	<i>L001769</i>
GPC	
Analyst: <i>TWC</i> Date: <i>4/22/23</i>	
Methylene Chloride	<i>L002621</i>
GPC Calibration File	<i>U00132</i>
Post GPC KD	
Analyst: <i>AA</i> Date: <i>4-24-23</i>	
Methylene Chloride	<i>K005941</i>
Vialing	
Analyst: <i>lj</i> Date: <i>4/25/23</i>	
Methylene Chloride	<i>K005941</i>

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate	A L001153	50uL		
100/150ug/mL	Exp Date: <i>8/1/24/23</i>		<i>CT</i>	<i>Y</i>
Full List Spike (Freezer)	7 L001812 (V)	50uL		
100ug/mL	Exp Date: <i>8/4/24/23</i>		<i>CT</i>	<i>Y</i>
Base Spike	56 L001812 (V)	50uL		
200ug/mL	Exp Date: <i>8/24/24/23</i>		<i>CT</i>	<i>Y</i>
Acid Spike	38 L001812 (V)	50uL		
100/200ug/mL	Exp Date: <i>8/24/24/23</i>		<i>CT</i>	<i>Y</i>

MANUALLY ENTER EXPIRATION DATES!

(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards.

If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator in the Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).



Batch: BLD0297

Prepared using: EPA 3546 (Microwave)

8270E SVOC (20ug/kg solid or 0.2ug/L low H2O Sepf) in Solid (Version:AOC4 List)

**WO Comments**  
 23C0109: <C>BPR SRM, MS, DUP <C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
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 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Prep Instructions	
<p><b>SPECIAL INSTRUCTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Weigh into beakers-lightly dry with Sodium Sulfate.</li> <li>2. Transfer to microwave vessel.</li> <li>3. Add DCM ONLY to the vessels (until solvent is 3 inches above soil layer after homogenization).</li> <li>4. Add surr/spike.</li> <li>5. Microwave on appropriate power setting determined by # of samples.</li> <li>6. After microwave-re-homogenize while hot then let cool 10-15 min in Refridgerator 05. Re-homogenize while cool.</li> <li>7. Decant DCM into Erlenmeyer flask with a funnel containing pre-deactivated glasswool.</li> <li>8. Rinse with DCM</li> <li>9. Microwave a 2nd time using 1:1 DCM/ACE.</li> <li>10. Let cool and decant the solvent then empty the soil into the funnel and rinse with DCM.</li> <li>11. KD: Add 10 mL Hexane directly to extract in the KD.</li> <li>12. GPC REQUIRED 100°C water bath (CLP) KD to 5mL.</li> <li>13. Vialers to take 1:5 Split Pre- GPC.</li> <li>14. (After GPC): KD at 80°C.</li> <li>15. TurboVap to 1mL in DCM.</li> <li>16. WATER WASH REQUIRED:             <ol style="list-style-type: none"> <li>16a. Vial 1mL of all extracts in 2mL amber vials in DCM.</li> <li>16b. Add ~0.5mL DI water and vortex for ~5 seconds each.</li> <li>16c. Centrifuge extracts for 5 minutes at 1500-2000rpm.</li> <li>16d. Transfer and vial 0.5mL. to new 2mL. amber vials (Avoiding collecting water in syringe and cleaning syringe with Acetone and DCM between each vial).</li> </ol> </li> <li>17. Archive water washed vials and deliever new vials to GC Department for analysis.</li> </ol> <p>A. Need Total Solids Y <input type="checkbox"/> N <input checked="" type="checkbox"/></p> <p>B. Archive/Freeze <input checked="" type="checkbox"/> Y <input type="checkbox"/> N</p>	



Extraction Parameter: SVA Extraction Batch BLP0290

Total Solids Batch: BLD0066 Work Order(s): 23D0037

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)=	
<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= <u>φ1 - φ4.</u>	<u>M φ4/φ4/23</u>
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input checked="" type="checkbox"/> Oily, obvious fuel/sulfur odors= <u>φ1 - φ4.</u>	<u>M φ4/φ4/23</u>
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input type="checkbox"/> Previously Frozen =	
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input checked="" type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<u>SRM smells like not SRM. BSD smells like SRM at KD after GPC.</u>	<u>AA 4-24-23</u>
<input checked="" type="checkbox"/> Share Samples Y/N	<u>φ4/φ4/23</u>
<input checked="" type="checkbox"/> Multiple Jars Y/N	<u>φ4/φ4/23</u>
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	





Extraction Parameter: SWA Extraction Batch BCP0292

Total Solids Batch: BLD0093 Work Order(s): 23D0063

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input checked="" type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)= <u>01-04</u>	<u>CR 4/5/23</u>
<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= <u>01-04</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input checked="" type="checkbox"/> Previously Frozen = <u>01-04</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input checked="" type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<input checked="" type="checkbox"/> Share Samples Y / <u>N</u>	<u>CR 4/5/23</u>
<input checked="" type="checkbox"/> Multiple Jars Y / <u>N</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	



### CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0170

Cleanup Type: GPC

Cleanup Method: EPA 3640A GPC Cleanup 1:1

Analysis: EPA 8270E

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LCS	BLD0297-BS1	NT1405012307.D	04/25/2023	
Reference	BLD0297-SRM1	NT1405012309.D	04/25/2023	
Matrix Spike Dup	BLD0297-MSD1	NT1405012315.D	04/25/2023	
LCS Dup	BLD0297-BSD1	NT1405012308.D	04/25/2023	
Blank	BLD0297-BLK1	NT1405012306.D	04/25/2023	
LDW23-SS1819	23D0063-03	NT1405012316.D	04/25/2023	
LDW23-SS1818	23D0063-01	NT1405012313.D	04/25/2023	
Matrix Spike	BLD0297-MS1	NT1405012314.D	04/25/2023	



**CLEANUP BENCH SHEET**

CLD0170

Matrix: Solid      Cleanup using: Organics - EPA 3640A GPC Cleanup 1:1      Check Standard: CLB0132-GPC1      Printed: 4/25/2023 10:41:00AM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0109-02RE1	A	LDW23-SS1104	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
23C0109-02RE1	A	LDW23-SS1104	A 04	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0037-01	A	LDW23-SS1812	A 01	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0037-01	A	LDW23-SS1812	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
23D0037-03	A	LDW23-SS1813	A 01	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0037-03	A	LDW23-SS1813	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
23D0063-01	A	LDW23-SS1818	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
23D0063-01	A	LDW23-SS1818	A 01	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0063-03	A	LDW23-SS1819	A 01	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0063-03	A	LDW23-SS1819	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
BLD0297-BLK1	-	Blank	-	1	1	-	4/25/2023	LMJ	
BLD0297-BLK2	-	Blank	-	1	1	-	4/25/2023	LMJ	
BLD0297-BS1	-	LCS	-	1	1	-	4/25/2023	LMJ	
BLD0297-BS2	-	LCS	-	1	1	-	4/25/2023	LMJ	
BLD0297-BSD1	-	LCS Dup	-	1	1	-	4/25/2023	LMJ	
BLD0297-BSD2	-	LCS Dup	-	1	1	-	4/25/2023	LMJ	
BLD0297-MS1	-	Matrix Spike	-	1	1	-	4/25/2023	LMJ	
BLD0297-MS2	-	Matrix Spike	-	1	1	-	4/25/2023	LMJ	
BLD0297-MSD1	-	Matrix Spike Dup	-	1	1	-	4/25/2023	LMJ	
BLD0297-MSD2	-	Matrix Spike Dup	-	1	1	-	4/25/2023	LMJ	
BLD0297-SRM1	-	Reference	-	1	1	-	4/25/2023	LMJ	
BLD0297-SRM2	-	Reference	-	1	1	-	4/25/2023	LMJ	



### CLEANUP BENCH SHEET

CLD0170

**Matrix: Solid**      **Cleanup using: Organics - EPA 3640A GPC Cleanup 1:1**      **Check Standard: CLB0132-GPC1**      **Printed: 4/25/2023 10:41:00AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
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Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012306.D

Date: 01-May-2023 17:36

Client ID:

Sample Info: BLD0297-BLK1

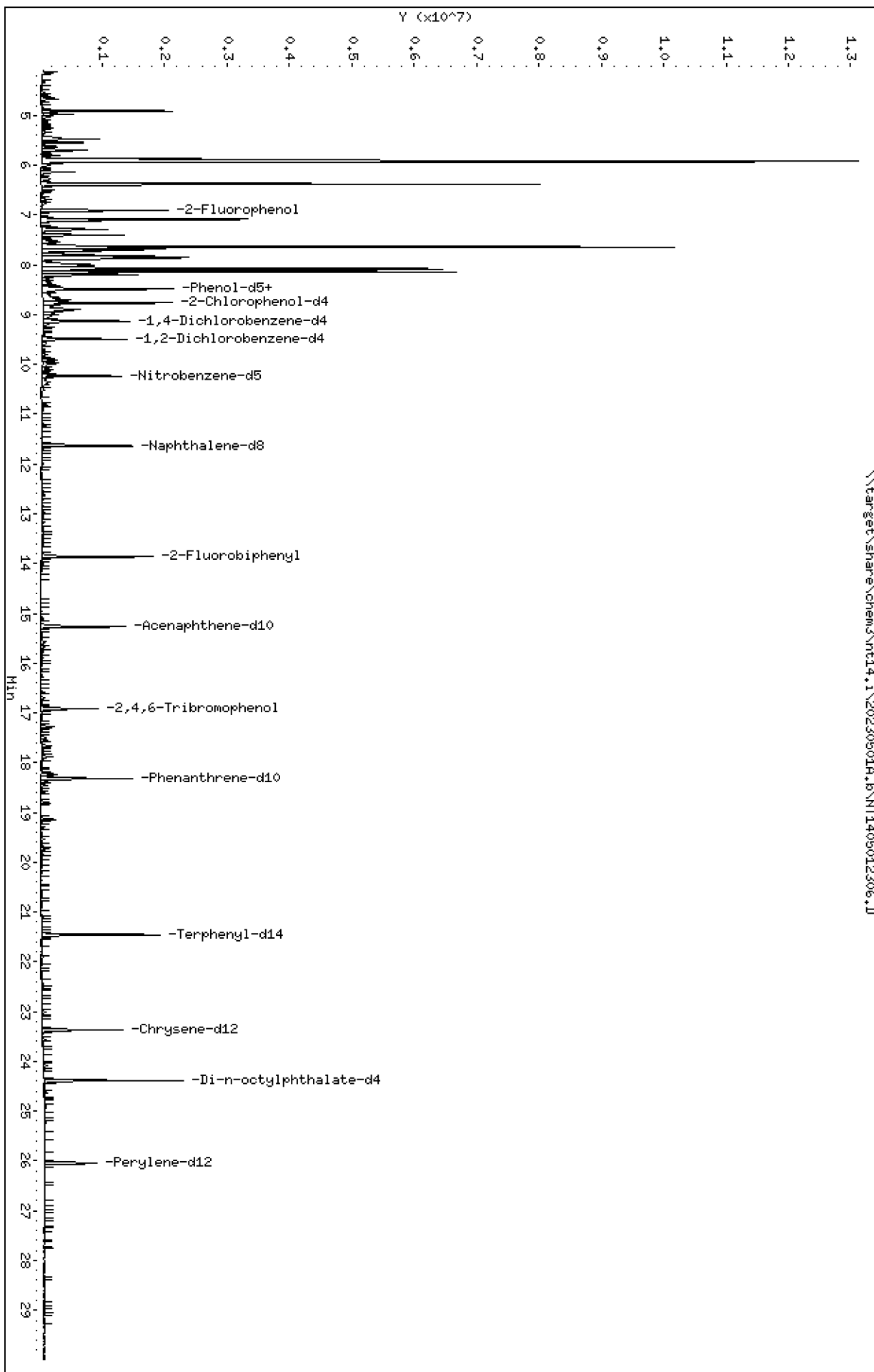
Column phase: ZB-5msi

Instrument: nt14.1

Operator: USD

Column diameter: 0.25

\\target\share\chem3\nt14.1\20230501A.B\NT1405012306.D



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

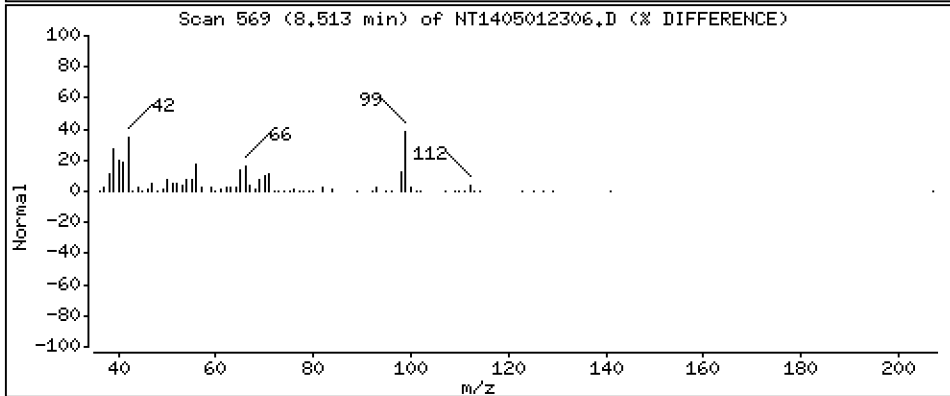
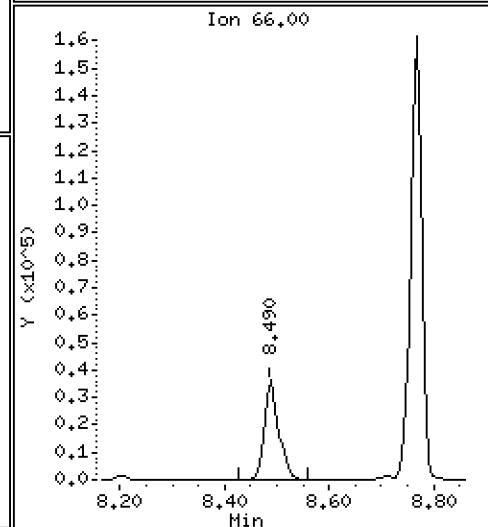
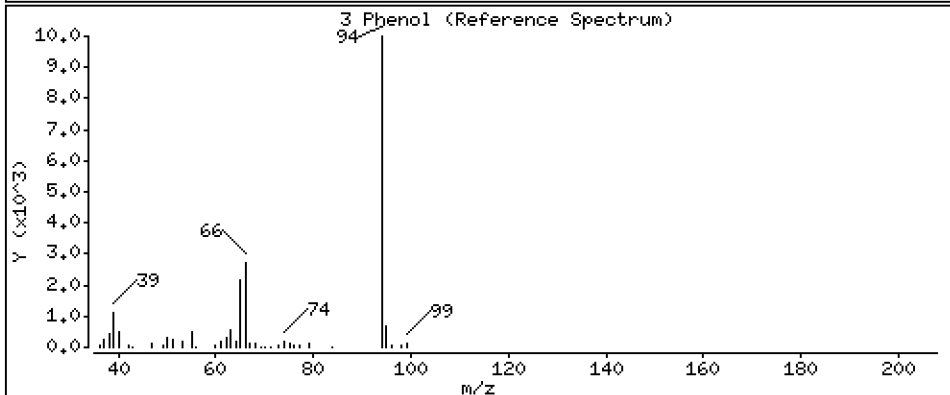
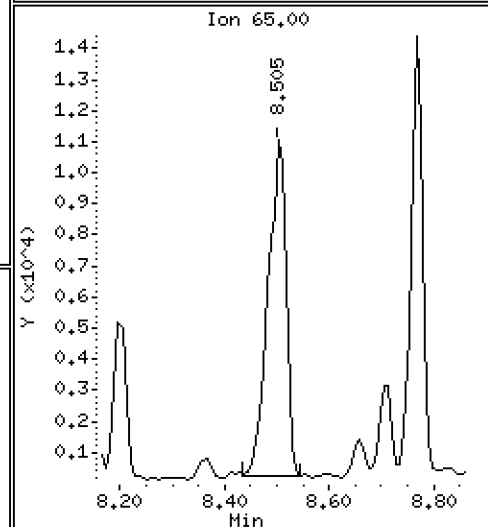
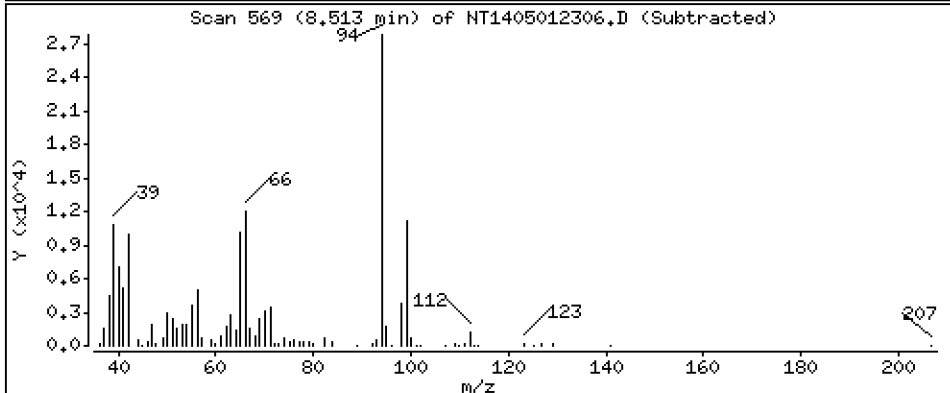
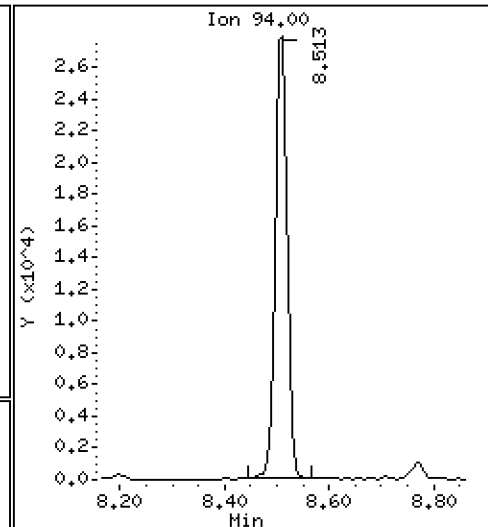
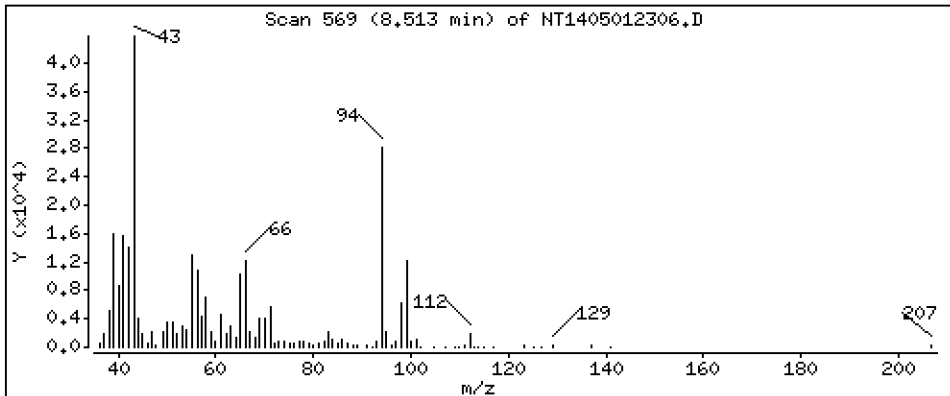
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,2633 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

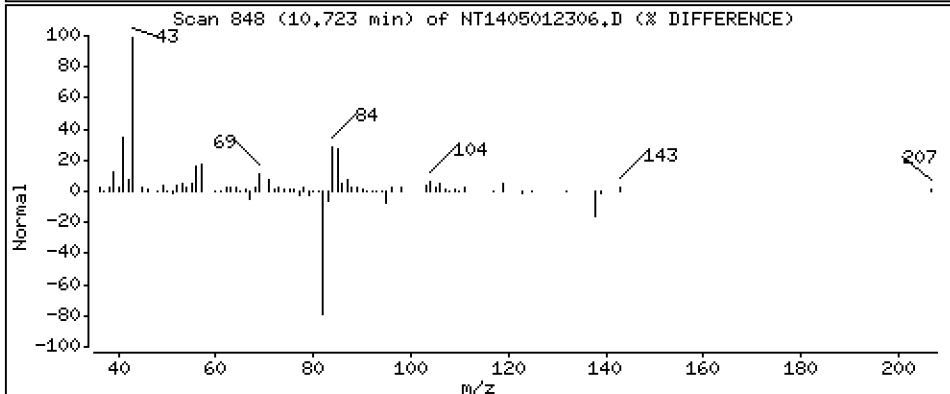
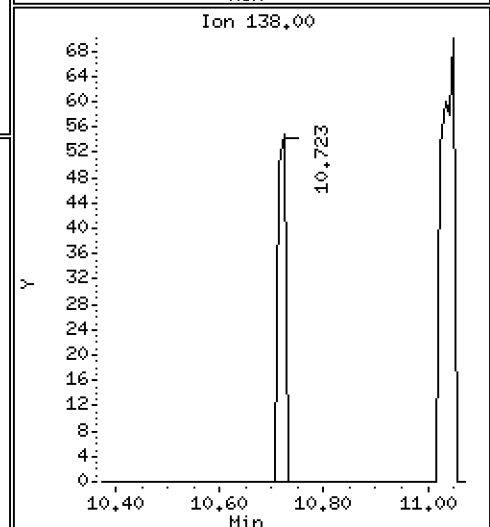
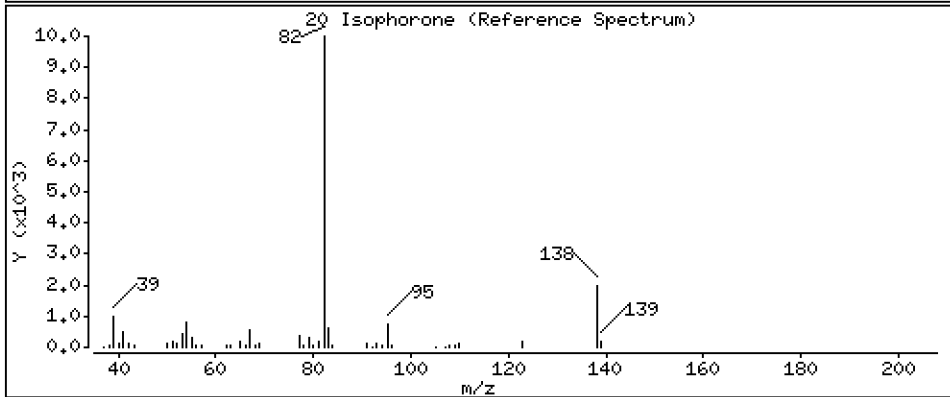
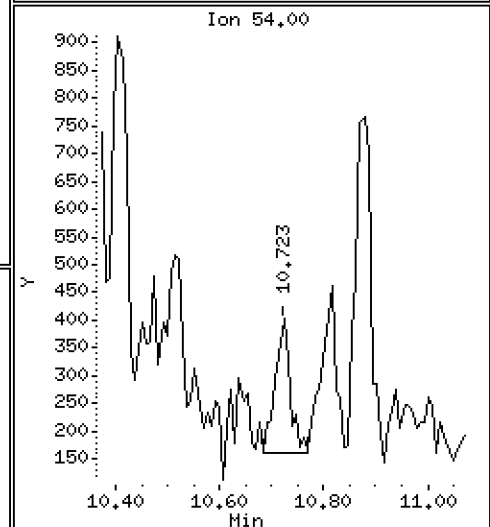
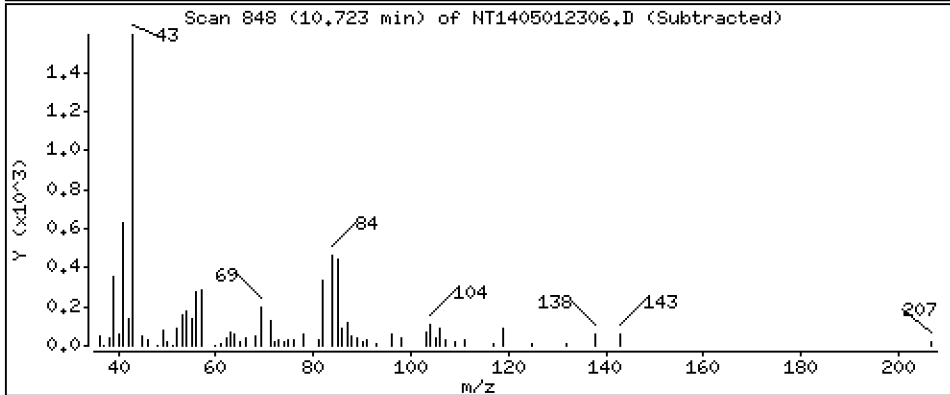
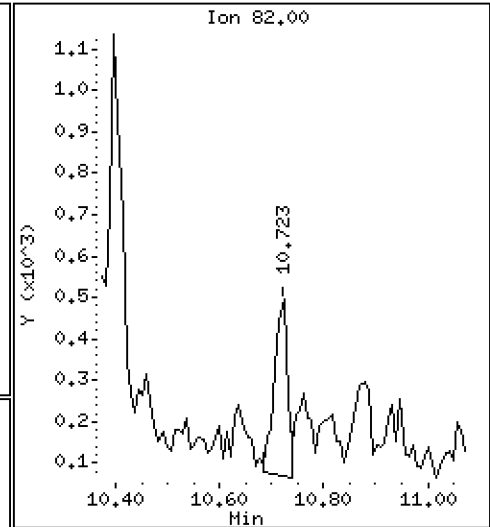
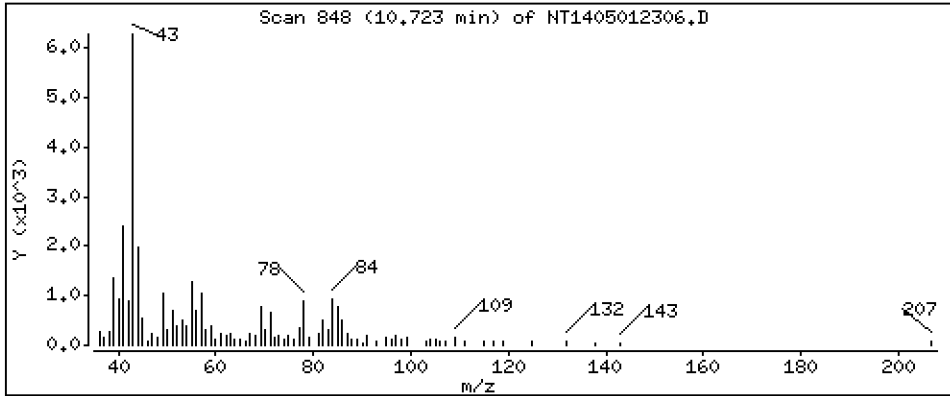
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 0,003494 ug/mL





Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

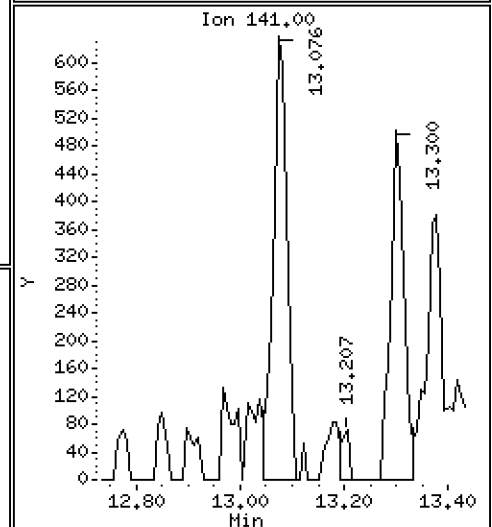
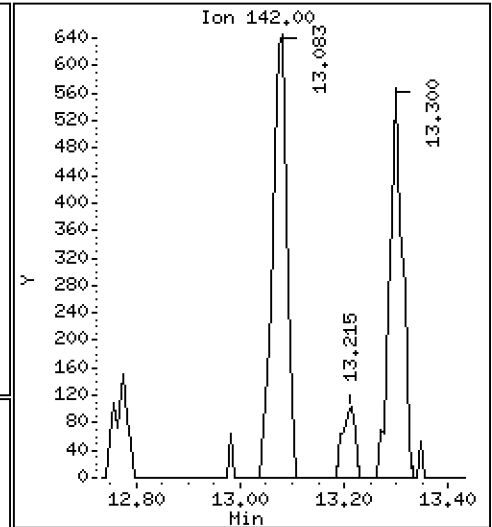
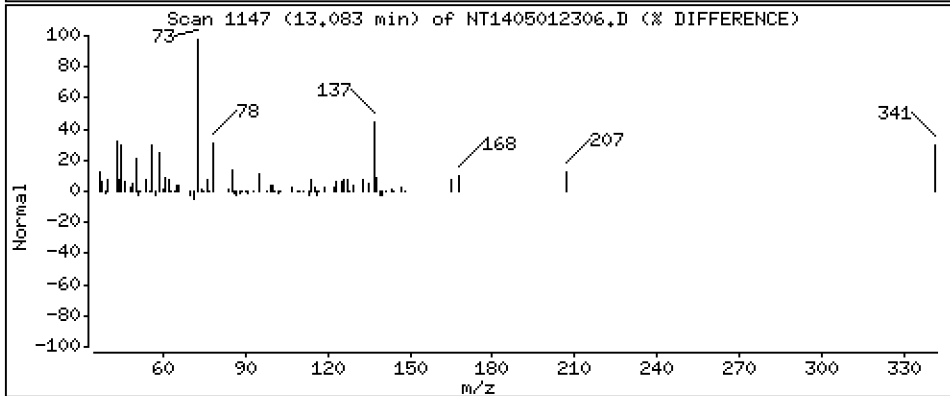
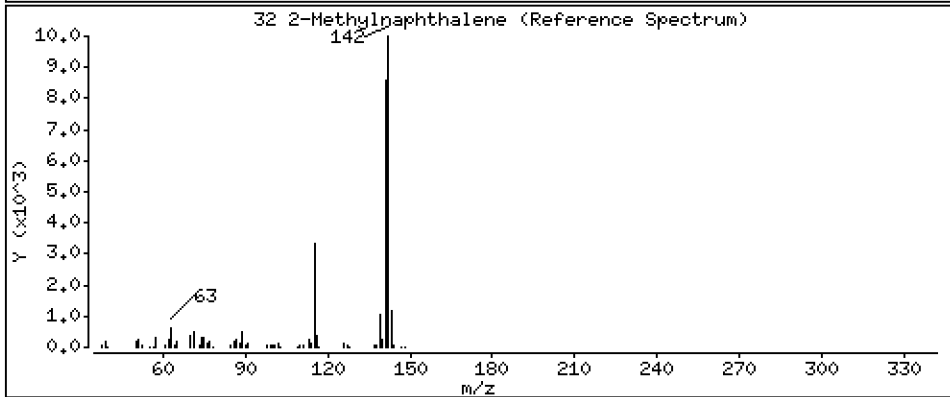
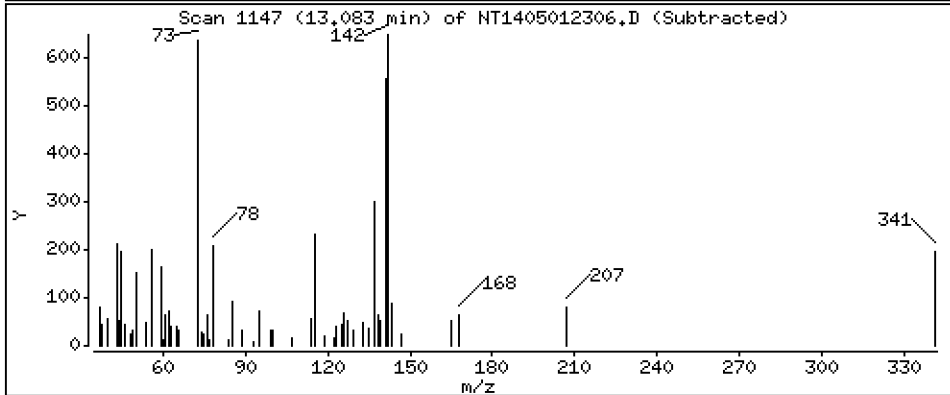
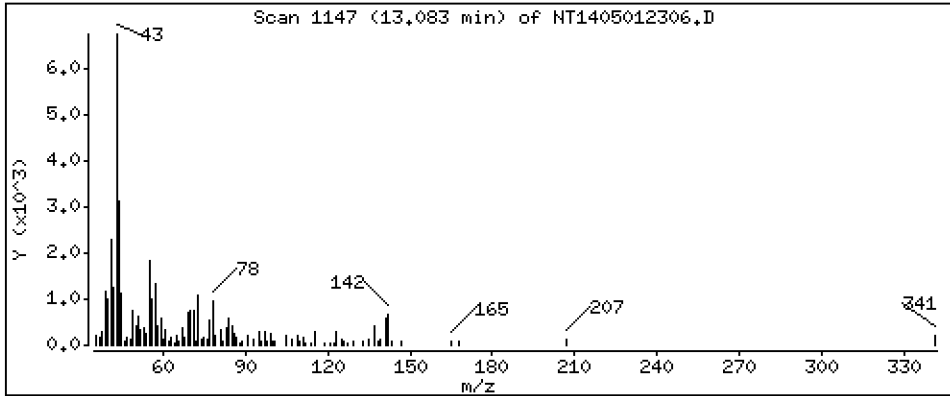
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 0,005535 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

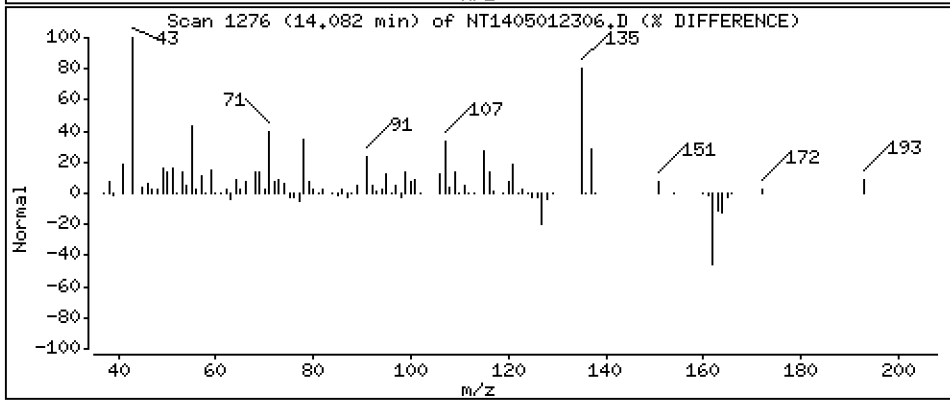
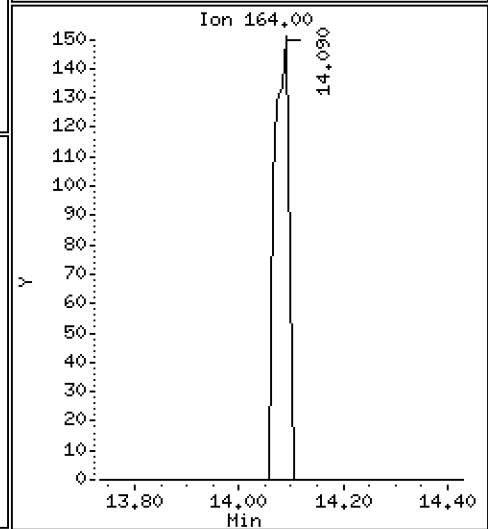
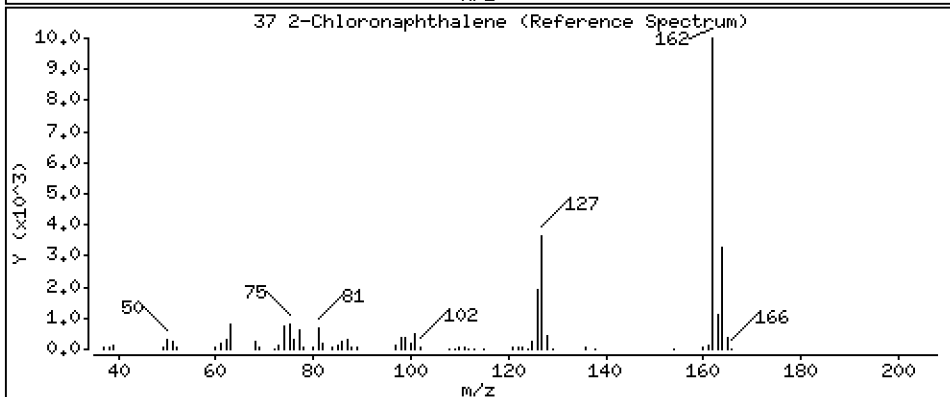
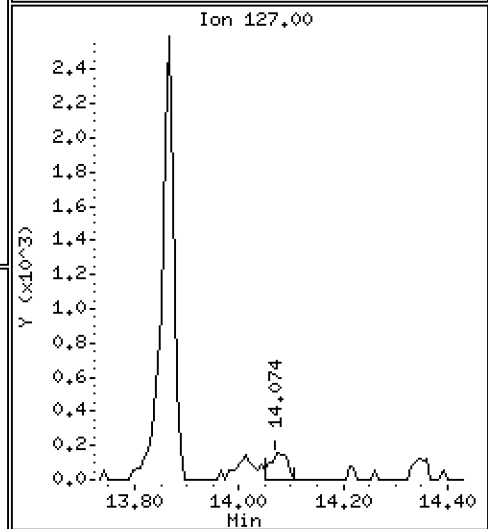
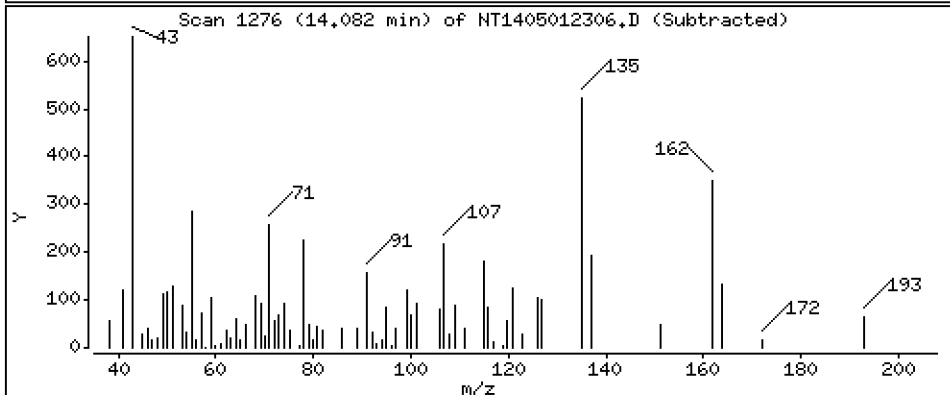
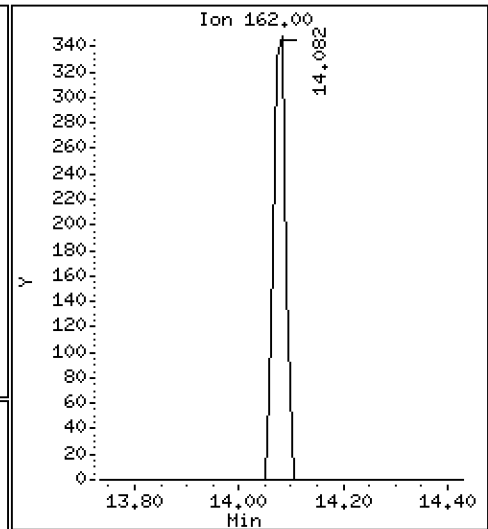
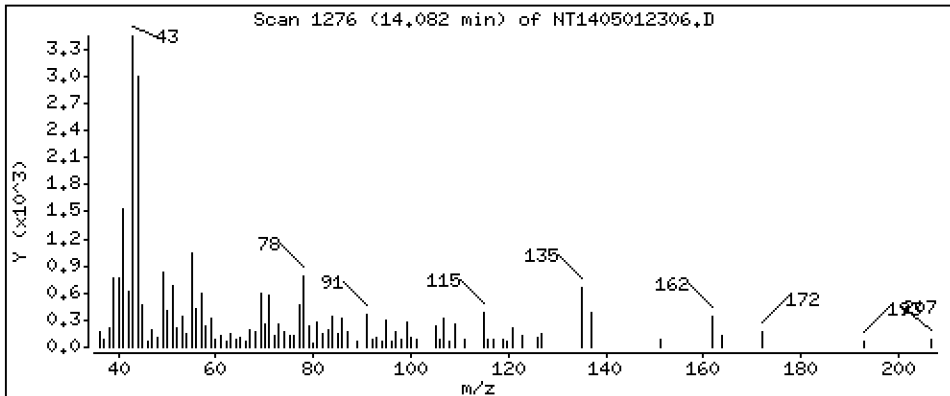
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 0,003067 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

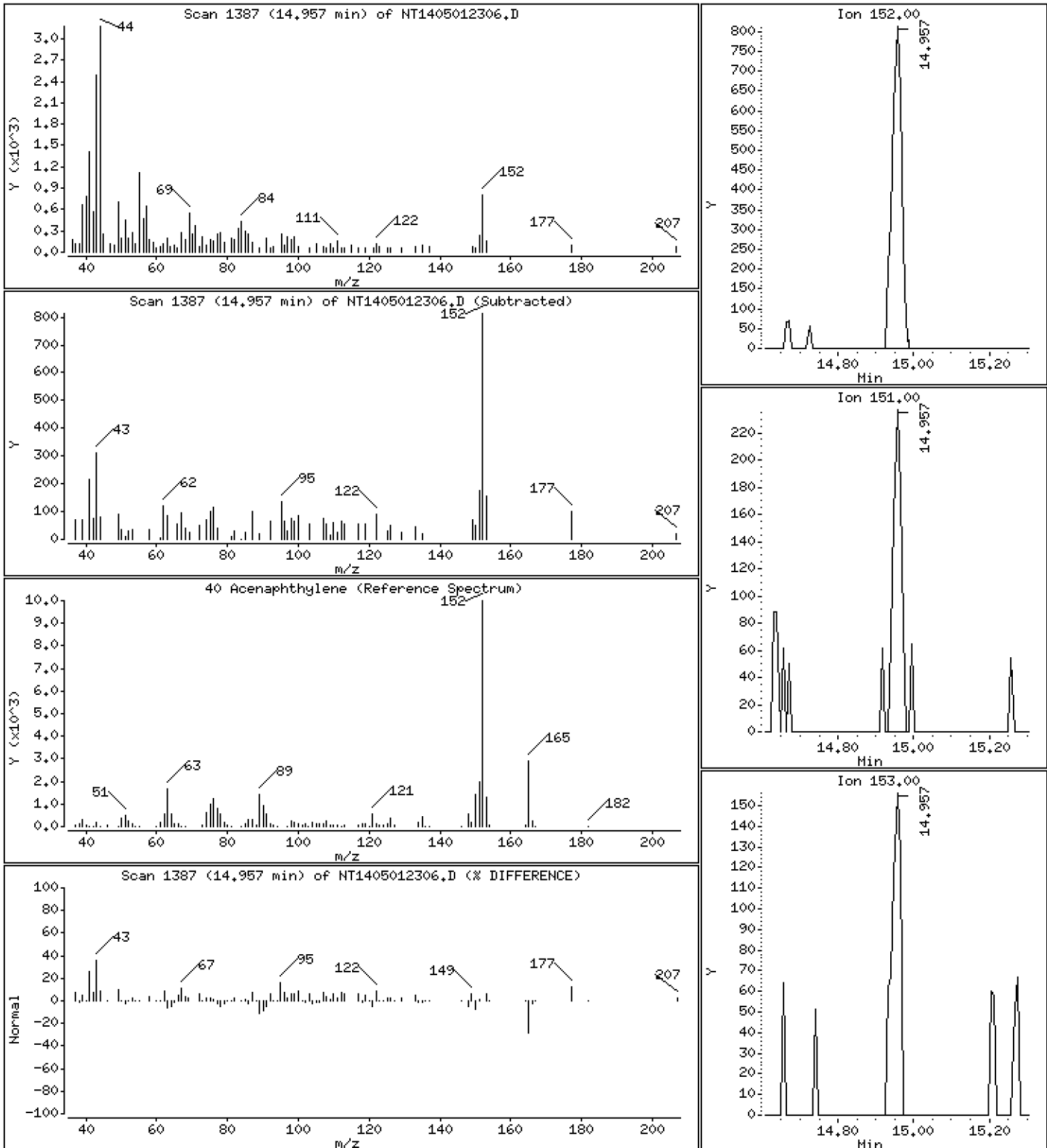
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 0,004902 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

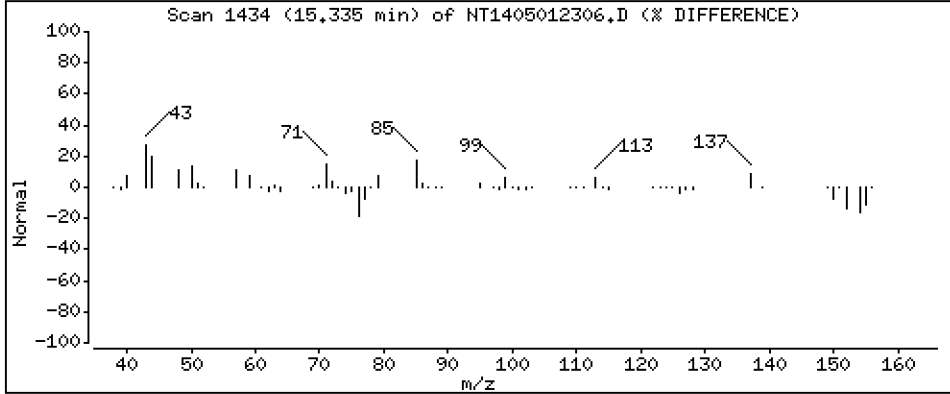
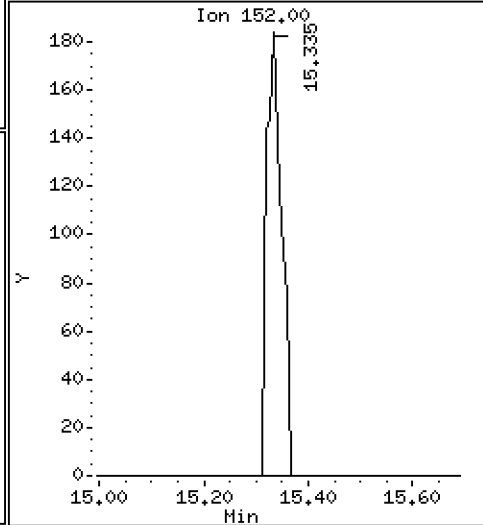
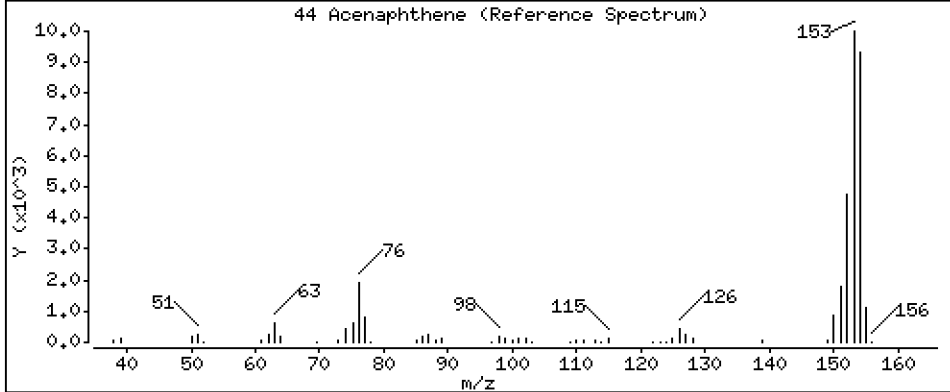
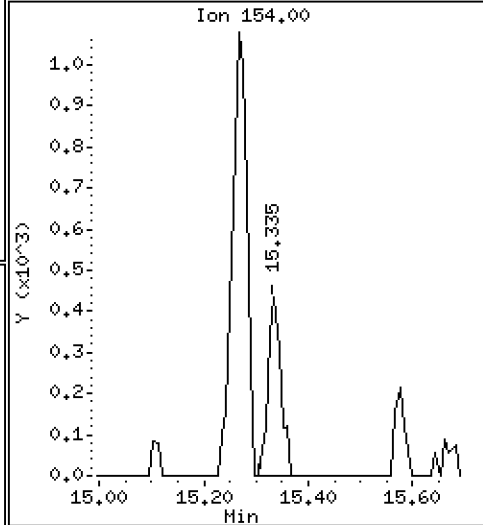
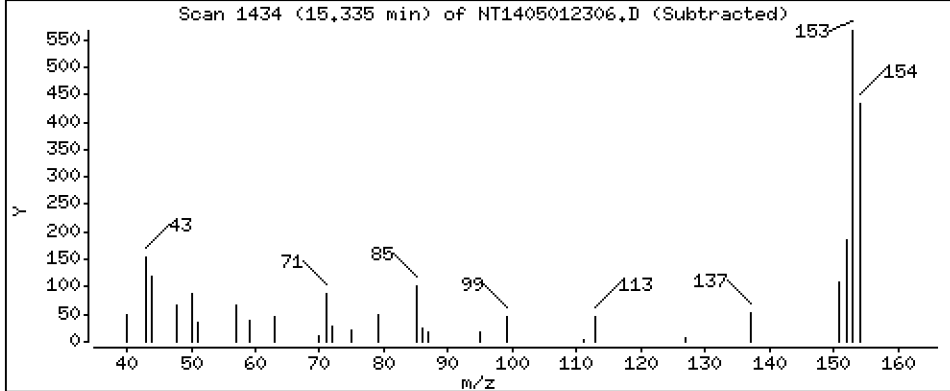
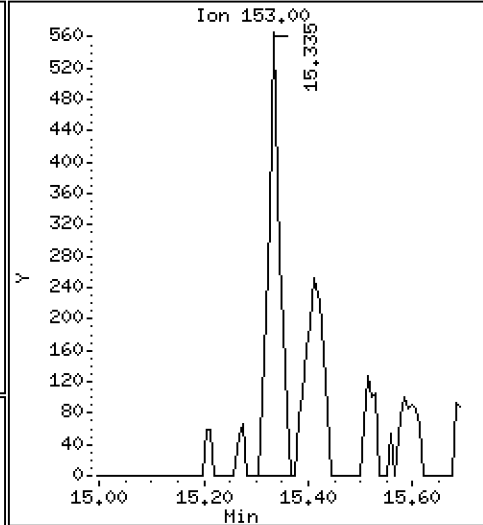
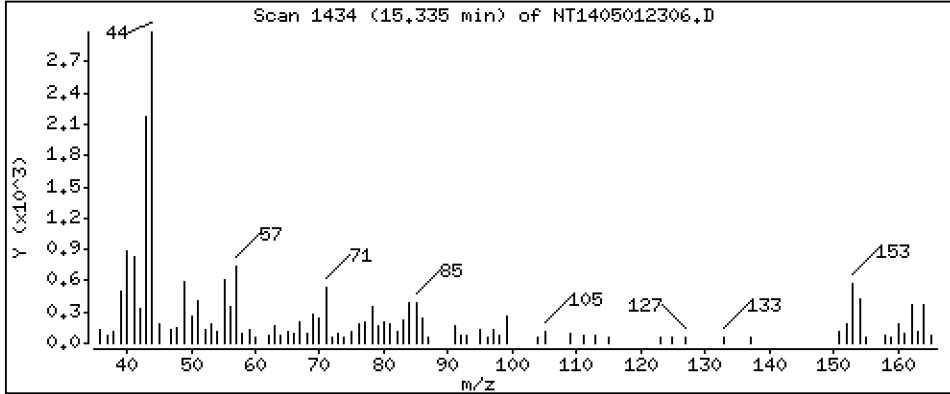
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

44 Acenaphthene

Concentration: 0.004860 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

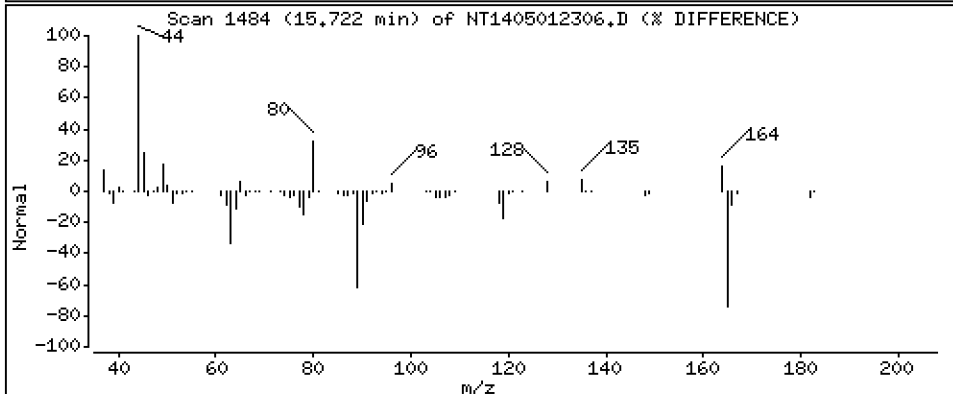
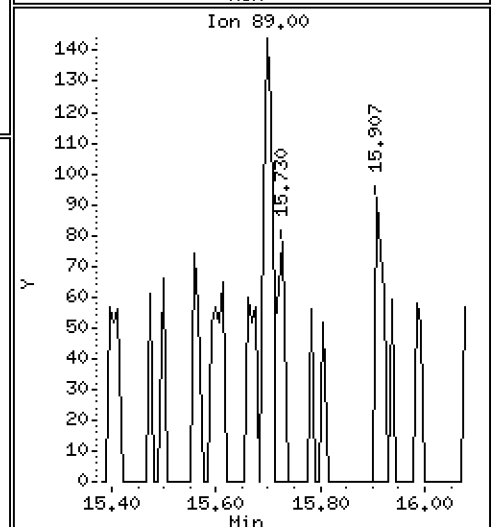
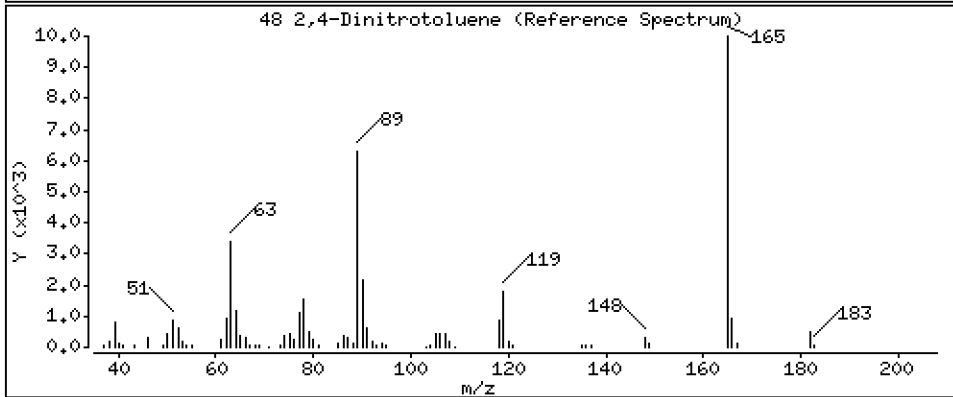
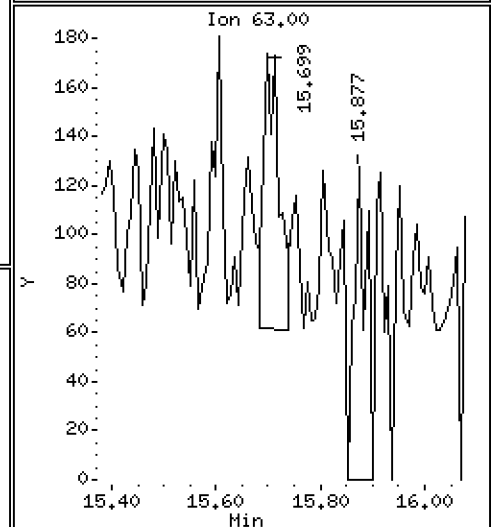
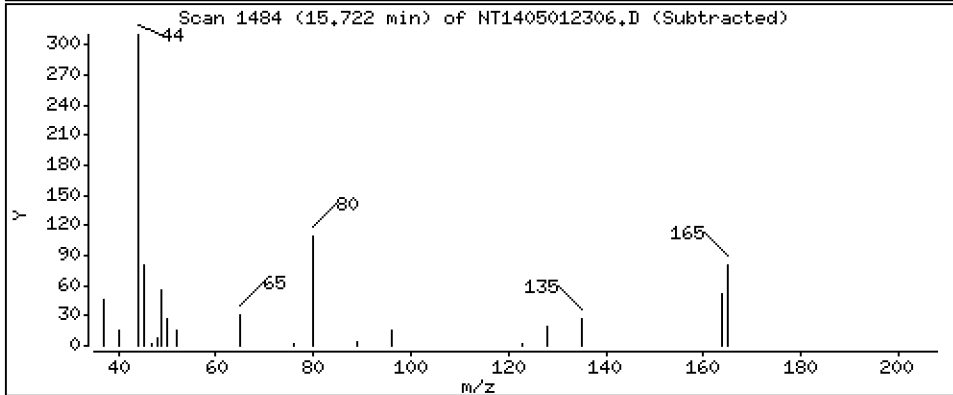
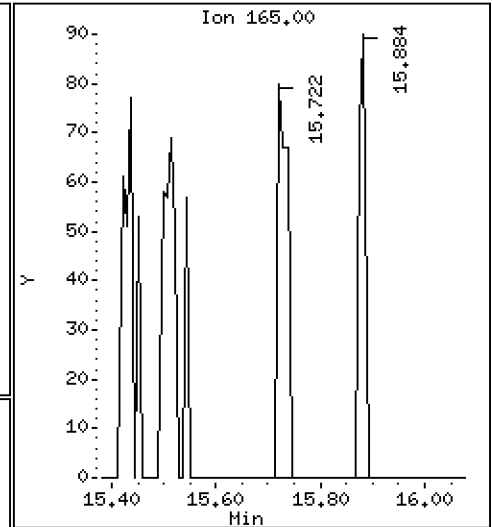
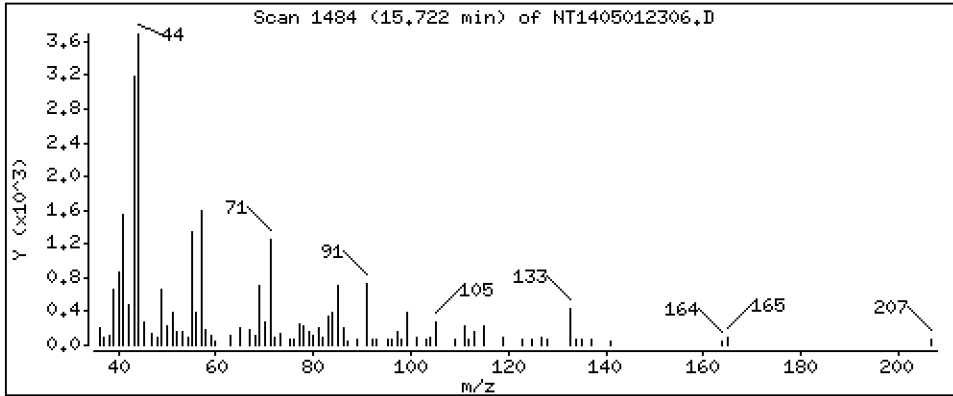
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

48 2,4-Dinitrotoluene

Concentration: 0.001796 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

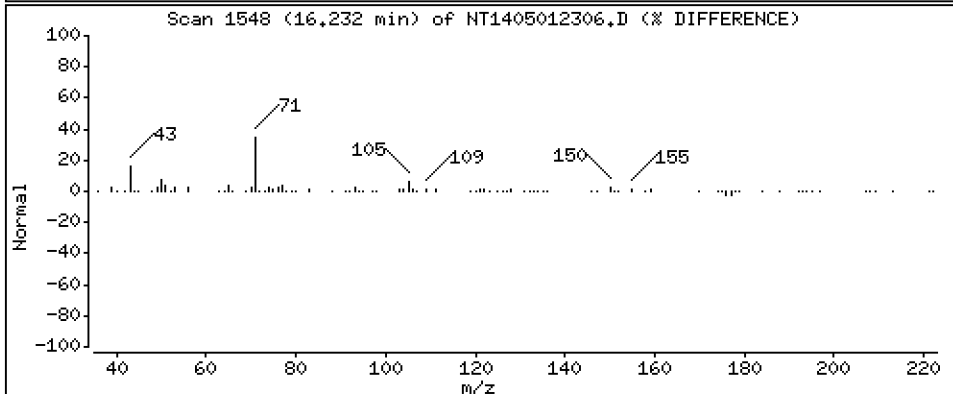
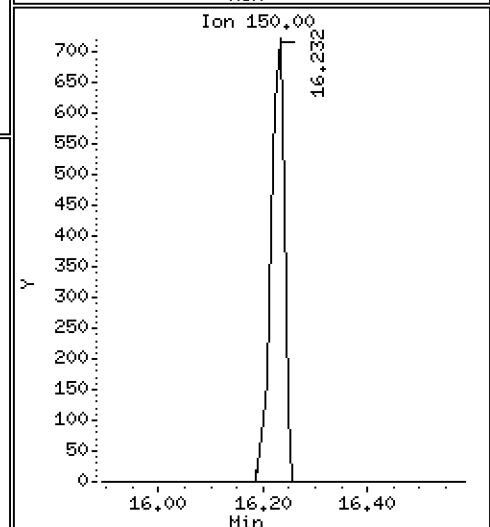
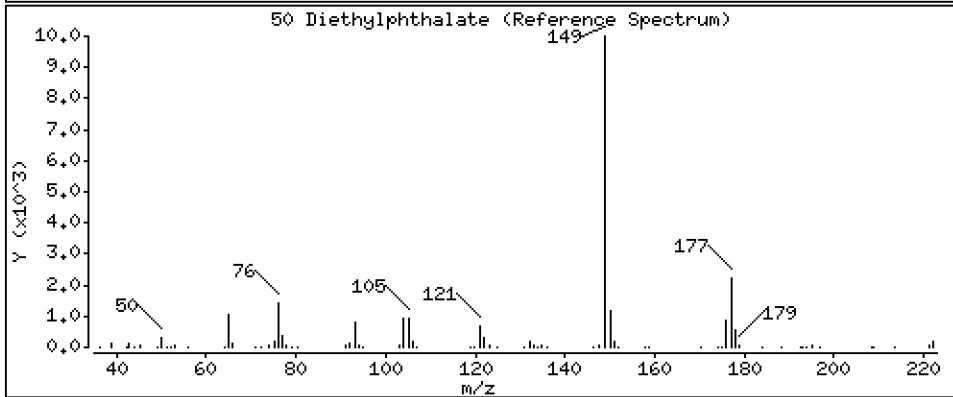
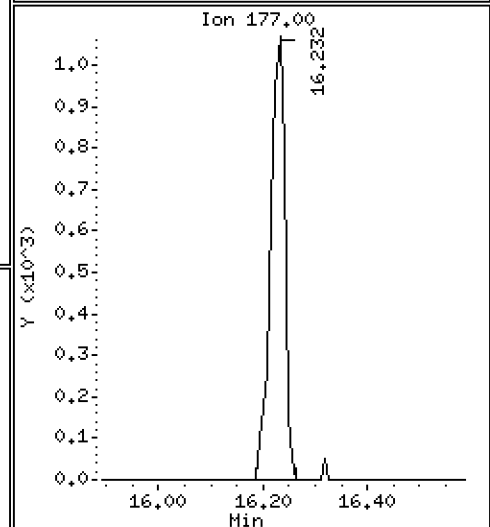
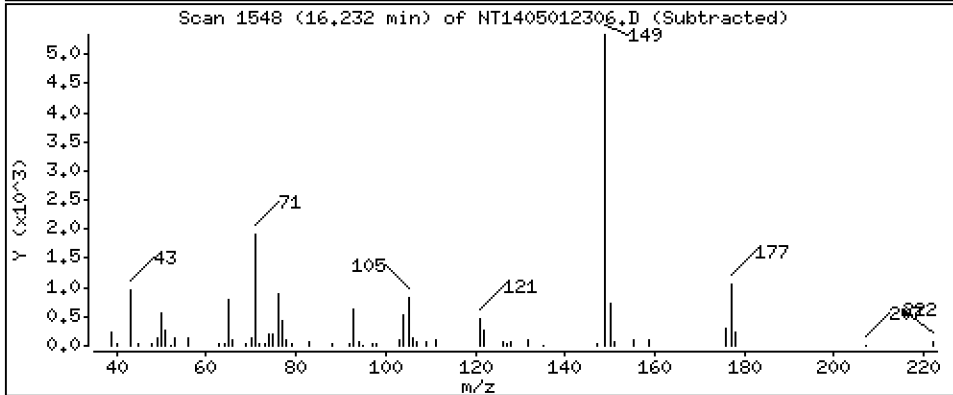
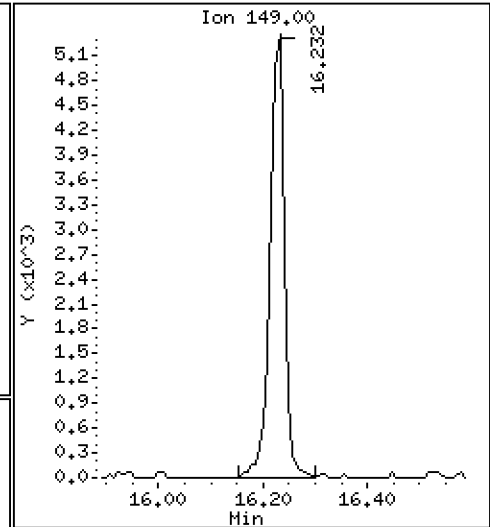
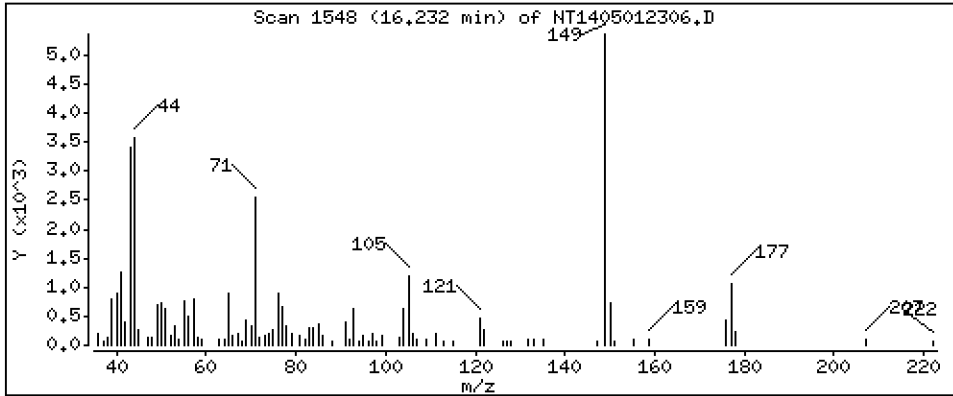
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

50 Diethylphthalate

Concentration: 0.05562 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

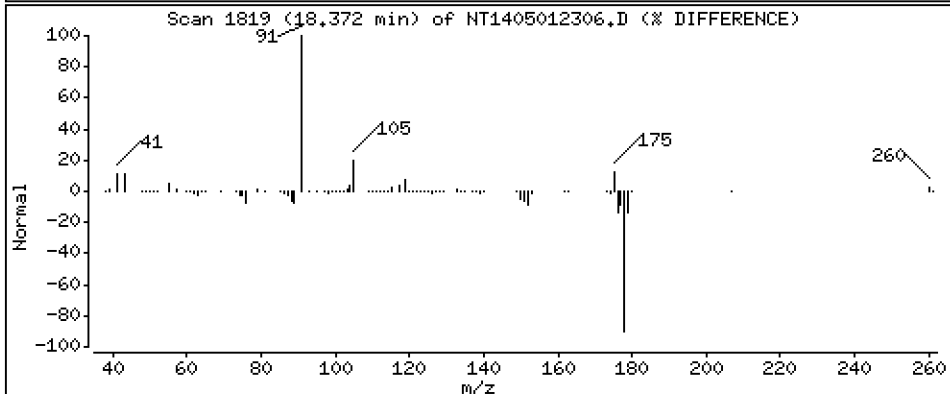
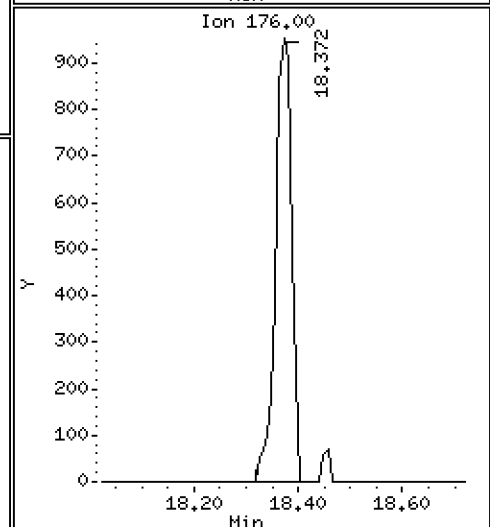
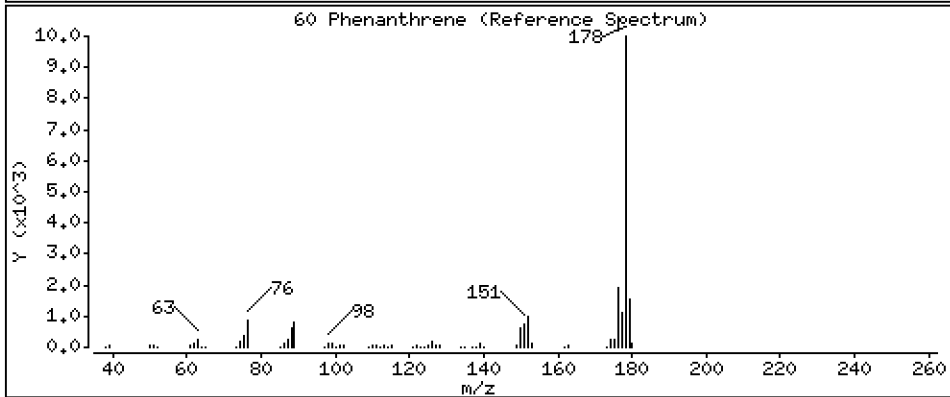
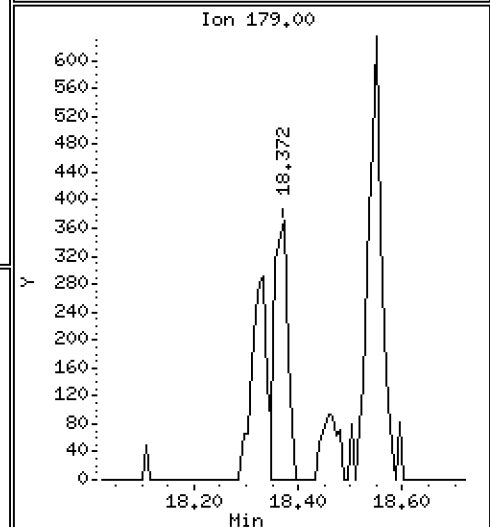
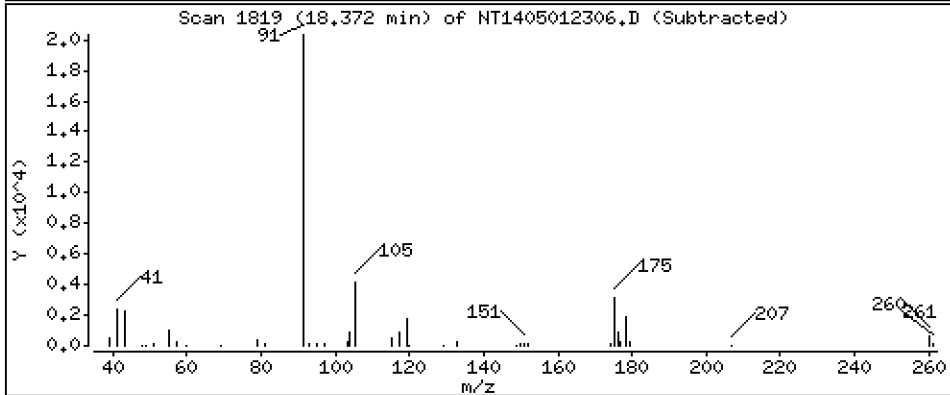
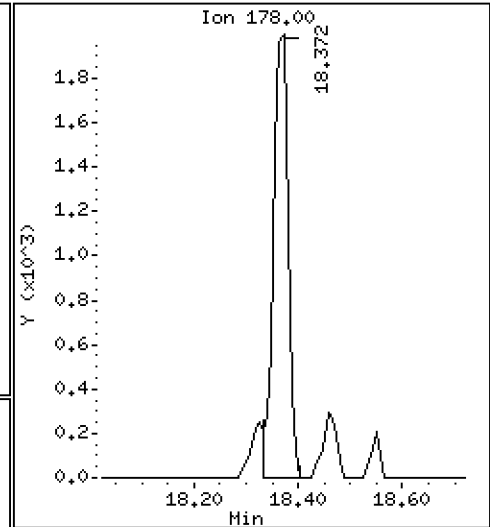
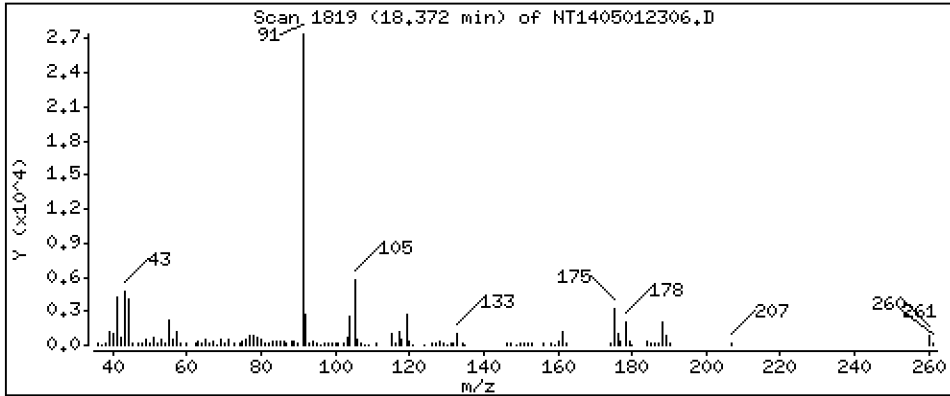
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 0,01476 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

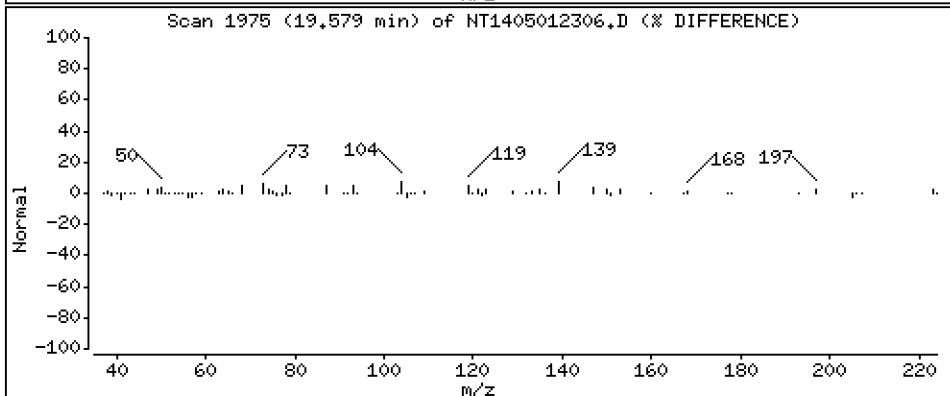
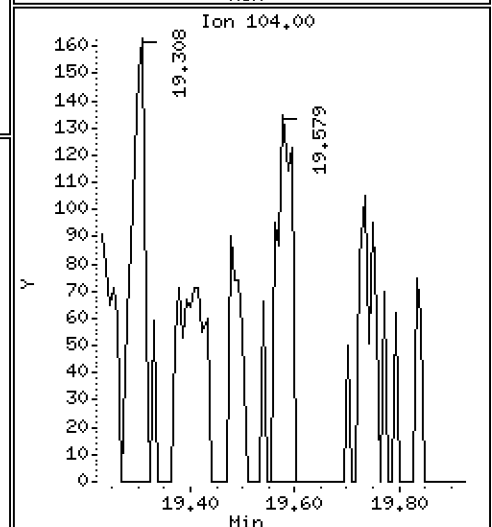
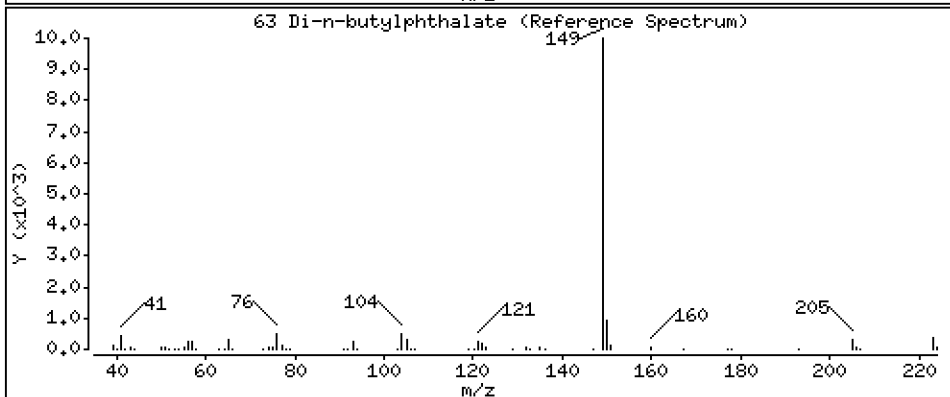
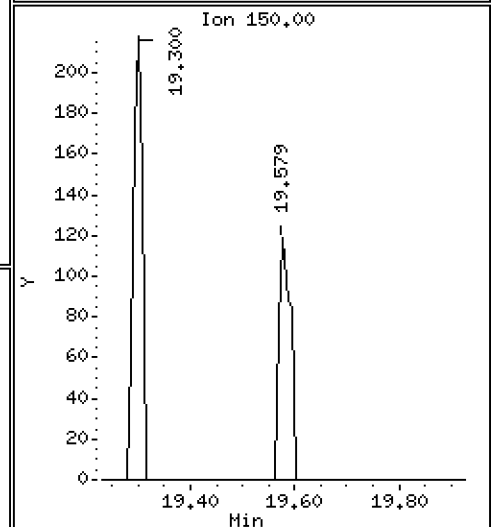
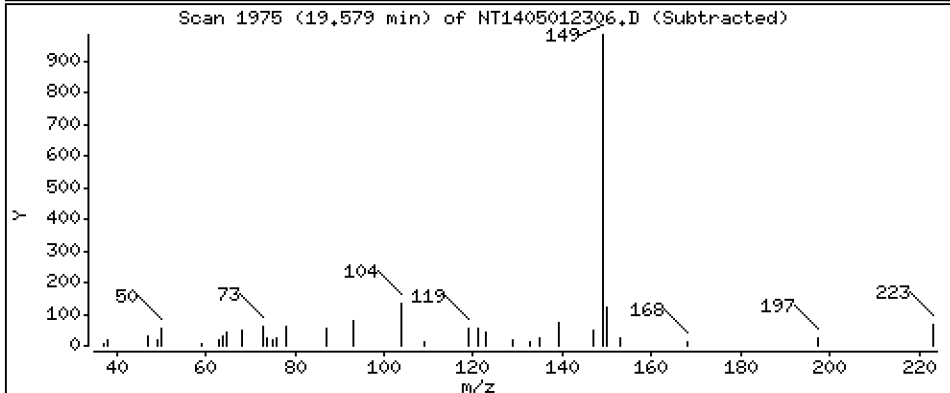
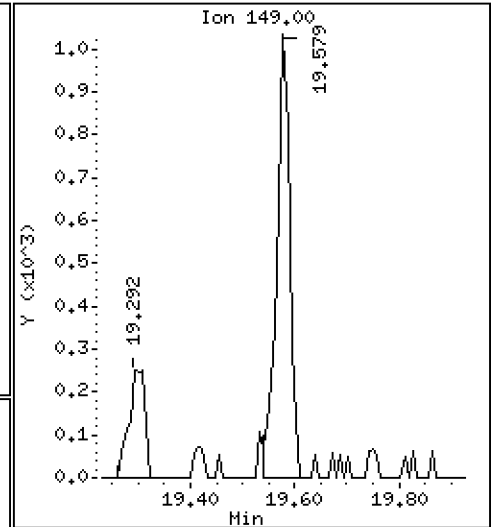
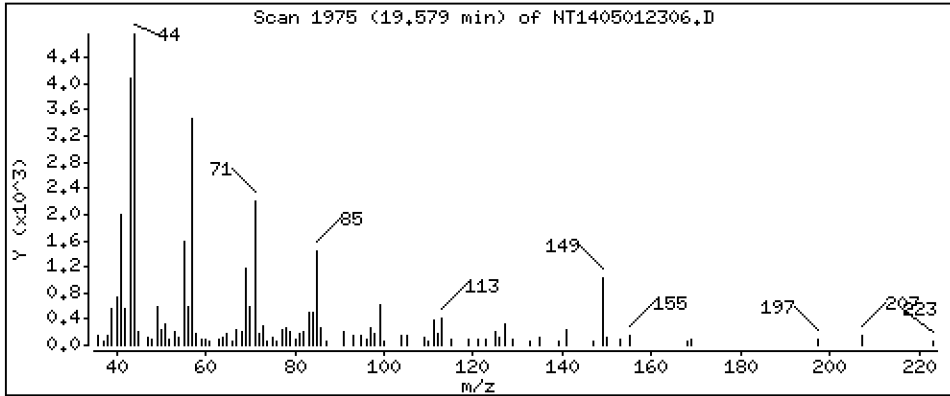
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 0,004952 ug/mL





Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

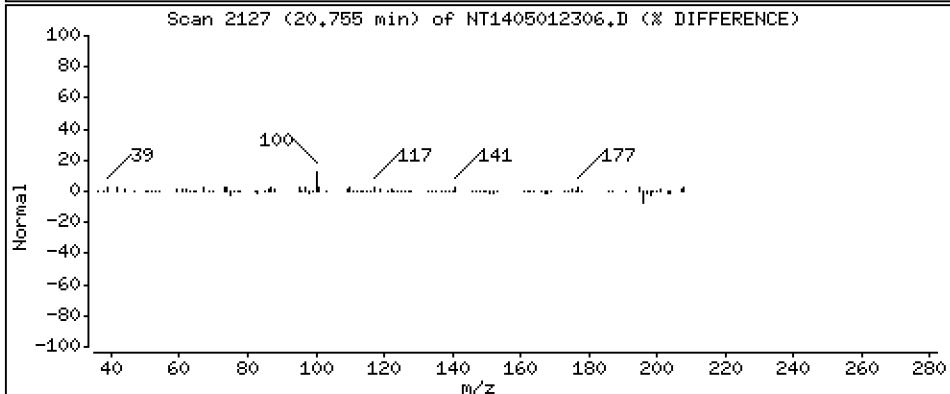
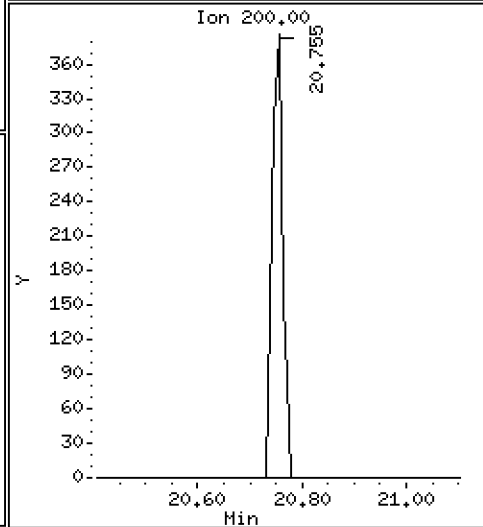
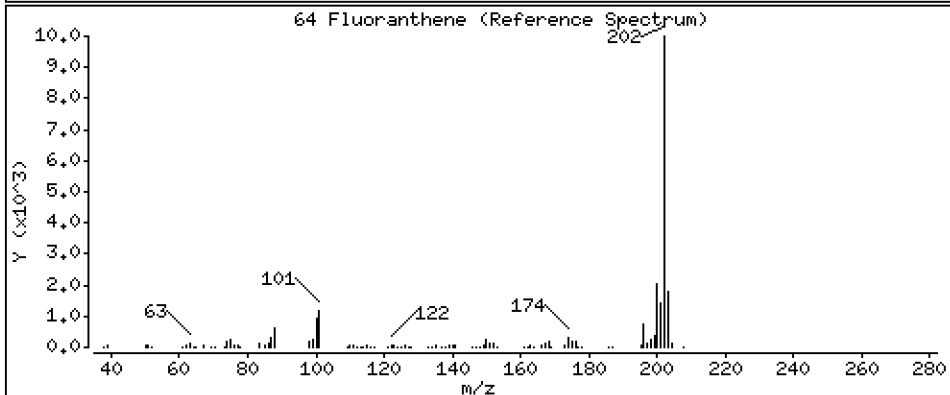
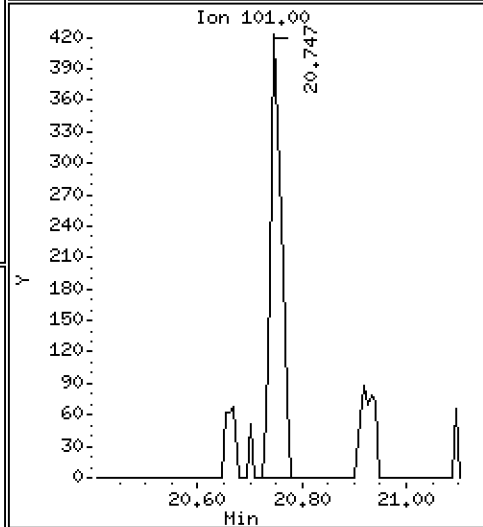
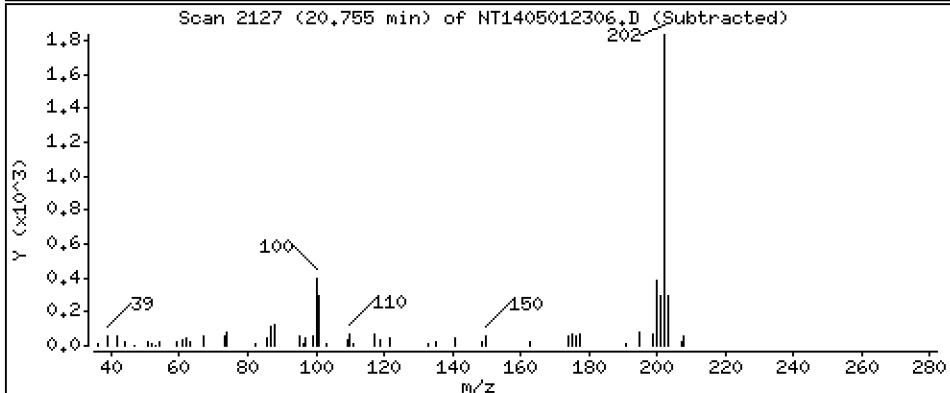
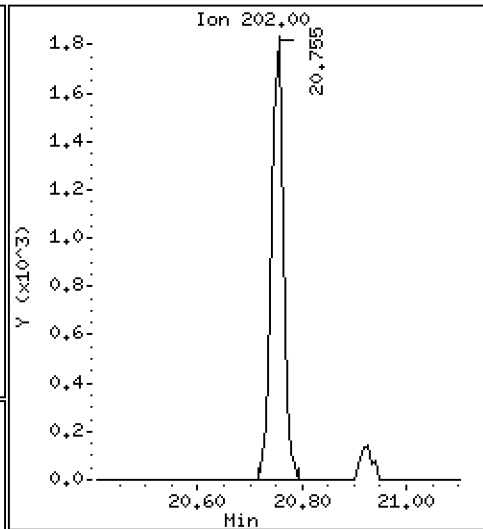
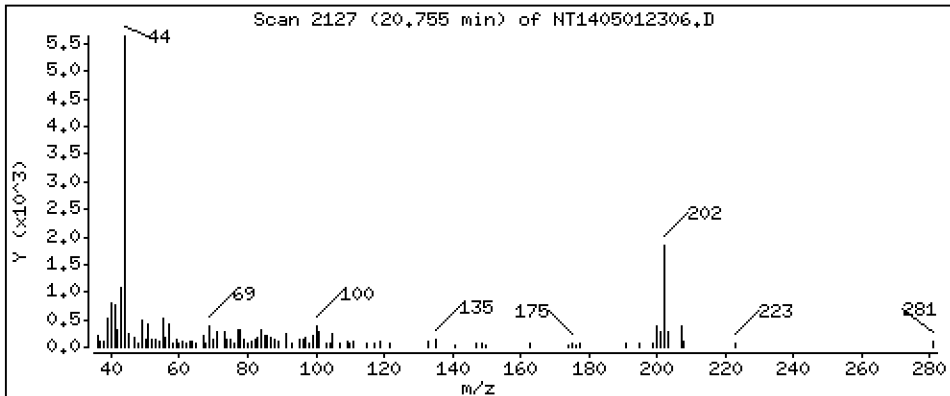
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 0,01013 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK1

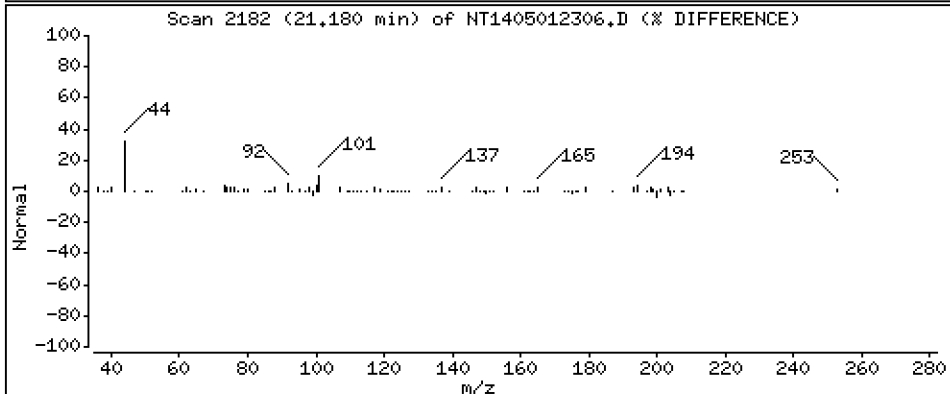
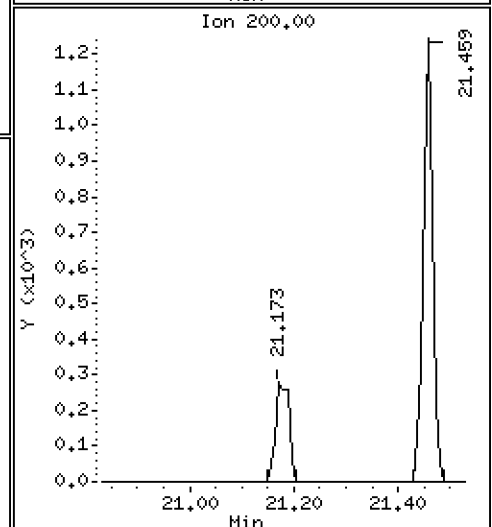
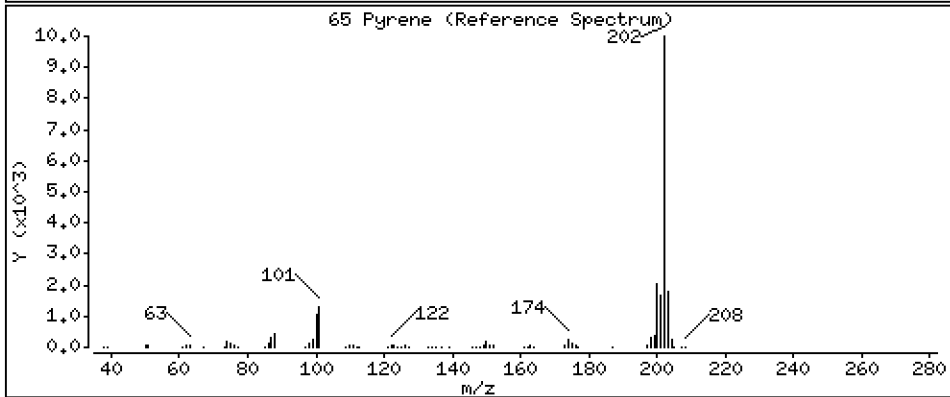
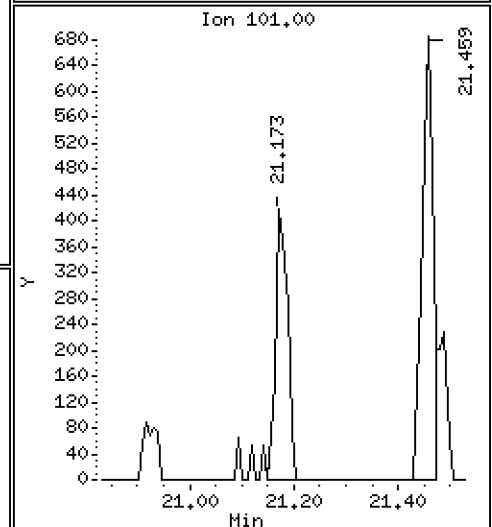
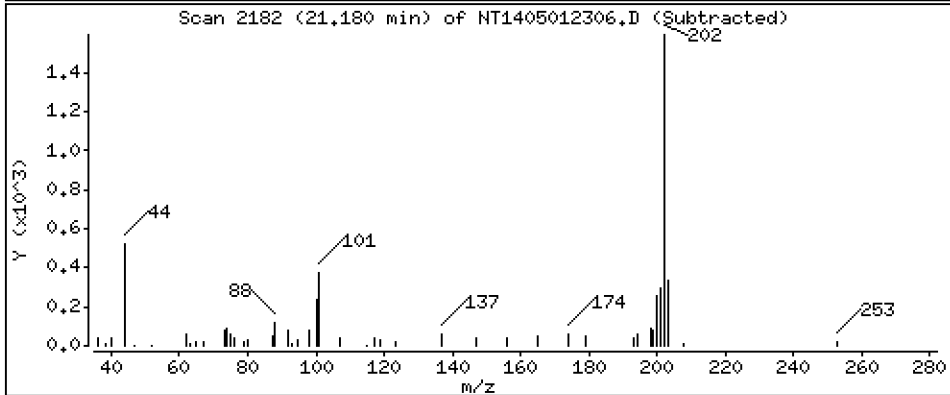
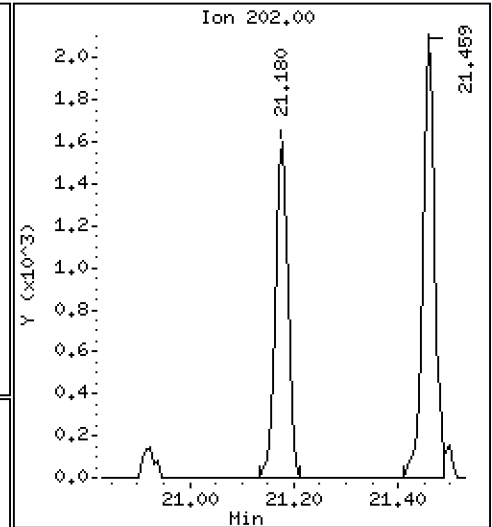
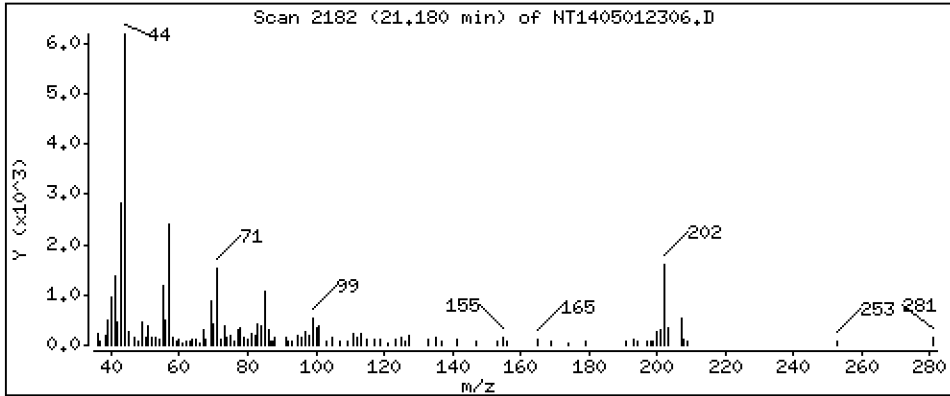
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 0,009177 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012306.D  
 Lab Smp Id: BLD0297-BLK1  
 Inj Date : 01-MAY-2023 17:36 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-BLK1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 6  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.906	6.898	(0.756)	600821	5.86787	5.868
\$ 2 Phenol-d5	99		8.489	8.490	(0.930)	889873	6.19281	6.193
3 Phenol	94		8.513	8.513	(0.932)	42397	0.26326	0.2633
\$ 5 2-Chlorophenol-d4	132		8.767	8.768	(0.960)	673917	6.59273	6.593
4 Bis(2-Chloroethyl)ether	93		Compound Not Detected.					
6 2-Chlorophenol	128		Compound Not Detected.					
7 1,3-Dichlorobenzene	146		Compound Not Detected.					
* 8 1,4-Dichlorobenzene-d4	152		9.131	9.132	(1.000)	283133	4.00000	
9 1,4-Dichlorobenzene	146		Compound Not Detected.					
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.040)	279033	4.30907	4.309
12 1,2-Dichlorobenzene	146		Compound Not Detected.					
11 Benzyl alcohol	108		Compound Not Detected.					
14 2,2'-oxybis(1-Chloropropane)	121		Compound Not Detected.					
13 2-Methylphenol	108		Compound Not Detected.					
17 Hexachloroethane	117		Compound Not Detected.					
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
15 4-Methylphenol	108		Compound Not Detected.					
\$ 18 Nitrobenzene-d5	82		10.234	10.242	(0.879)	620755	4.49573	4.496
19 Nitrobenzene	77		Compound Not Detected.					
20 Isophorone	82		10.723	10.723	(0.921)	708	0.00349	0.003494
21 2-Nitrophenol	139		Compound Not Detected.					
22 2,4-Dimethylphenol	107		Compound Not Detected.					
23 Bis(2-Chloroethoxy)methane	93		Compound Not Detected.					
24 Benzoic acid	105		Compound Not Detected.					
25 2,4-Dichlorophenol	162		Compound Not Detected.					
26 1,2,4-Trichlorobenzene	180		Compound Not Detected.					
* 27 Naphthalene-d8	136		11.636	11.637	(1.000)	1121905	4.00000	
28 Naphthalene	128		Compound Not Detected.					
29 4-Chloroaniline	127		Compound Not Detected.					
30 Hexachlorobutadiene	225		Compound Not Detected.					
31 4-Chloro-3-methylphenol	107		Compound Not Detected.					
32 2-Methylnaphthalene	142		13.083	13.083	(1.124)	1209	0.00553	0.005535
33 Hexachlorocyclopentadiene	237		Compound Not Detected.					

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/mL)
=====	=====	=====	=====	=====	=====	=====	=====	=====
34 2,4,6-Trichlorophenol	196					Compound Not Detected.		
35 2,4,5-Trichlorophenol	196					Compound Not Detected.		
\$ 36 2-Fluorobiphenyl	172		13.865	13.865	(0.908)	855956	4.69339	4.693
37 2-Chloronaphthalene	162		14.081	14.082	(0.922)	534	0.00307	0.003067
38 2-Nitroaniline	65					Compound Not Detected.		
39 Dimethylphthalate	163					Compound Not Detected.		
40 Acenaphthylene	152		14.956	14.956	(0.979)	1362	0.00490	0.004902
41 2,6-Dinitrotoluene	165					Compound Not Detected.		
* 42 Acenaphthene-d10	164		15.273	15.273	(1.000)	523607	4.00000	
43 3-Nitroaniline	138					Compound Not Detected.		
44 Acenaphthene	153		15.335	15.343	(1.004)	809	0.00486	0.004860
45 2,4-Dinitrophenol	184					Compound Not Detected.		
46 Dibenzofuran	168					Compound Not Detected.		
47 4-Nitrophenol	109					Compound Not Detected.		
48 2,4-Dinitrotoluene	165		15.721	15.729	(1.029)	99	0.00180	0.001796
50 Diethylphthalate	149		16.232	16.240	(1.063)	10813	0.05562	0.05562
49 Fluorene	166					Compound Not Detected.		
51 4-Chlorophenyl-phenylether	204					Compound Not Detected.		
52 4-Nitroaniline	138					Compound Not Detected.		
53 4,6-Dinitro-2-methylphenol	198					Compound Not Detected.		
54 N-Nitrosodiphenylamine	169					Compound Not Detected.		
\$ 55 2,4,6-Tribromophenol	330		16.918	16.919	(1.108)	92274	5.36051	5.361
56 4-Bromophenyl-phenylether	248					Compound Not Detected.		
57 Hexachlorobenzene	284					Compound Not Detected.		
58 Pentachlorophenol	266					Compound Not Detected.		
* 59 Phenanthrene-d10	188		18.317	18.325	(1.000)	904280	4.00000	
60 Phenanthrene	178		18.371	18.372	(1.003)	3773	0.01476	0.01476
61 Anthracene	178					Compound Not Detected.		
62 Carbazole	167					Compound Not Detected.		
63 Di-n-butylphthalate	149		19.578	19.579	(1.069)	1713	0.00495	0.004952
64 Fluoranthene	202		20.754	20.755	(0.888)	2729	0.01013	0.01013
65 Pyrene	202		21.180	21.180	(0.906)	2553	0.00918	0.009177
\$ 66 Terphenyl-d14	244		21.458	21.459	(0.918)	862560	4.54802	4.548
67 Butylbenzylphthalate	149					Compound Not Detected.		
68 Benzo(a)anthracene	228					Compound Not Detected.		
* 69 Chrysene-d12	240		23.371	23.371	(1.000)	583587	4.00000	
70 3,3'-Dichlorobenzidine	252					Compound Not Detected.		
71 Chrysene	228					Compound Not Detected.		
72 bis(2-Ethylhexyl)phthalate	149					Compound Not Detected.		
* 134 Di-n-octylphthalate-d4	153		24.385	24.385	(1.000)	1320118	4.00000	
73 Di-n-octylphthalate	149					Compound Not Detected.		
74 Benzo(b)fluoranthene	252					Compound Not Detected.		
75 Benzo(k)fluoranthene	252					Compound Not Detected.		
76 Benzo(a)pyrene	252					Compound Not Detected.		
* 77 Perylene-d12	264		26.042	26.050	(1.000)	535151	4.00000	
78 Indeno(1,2,3-cd)pyrene	276					Compound Not Detected.		
79 Dibenzo(a,h)anthracene	278					Compound Not Detected.		
80 Benzo(g,h,i)perylene	276					Compound Not Detected.		
90 N-Nitrosodimethylamine	74					Compound Not Detected.		
91 Aniline	93					Compound Not Detected.		
93 Benzidine	184					Compound Not Detected.		
103 Pyridine	79					Compound Not Detected.		
105 1-methylnaphthalene	142					Compound Not Detected.		
111 Azobenzene (1,2-DP-Hydrazine)	77					Compound Not Detected.		

Compounds	QUANT MASS	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/mL)
=====	=====	=====	=====	=====	=====	=====	=====	
187 Total Benzofluoranthenes	252				Compound Not Detected.			
120 2,3,4,6-Tetrachlorophenol	232				Compound Not Detected.			

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012306.D Calibration Time: 15:06  
 Lab Smp Id: BLD0297-BLK1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	283133	3.34
27 Naphthalene-d8	1103207	551604	2206414	1121905	1.69
42 Acenaphthene-d10	520358	260179	1040716	523607	0.62
59 Phenanthrene-d10	882575	441288	1765150	904280	2.46
69 Chrysene-d12	600619	300310	1201238	583587	-2.84
134 Di-n-octylphthala	1445631	722816	2891262	1320118	-8.68
77 Perylene-d12	570040	285020	1140080	535151	-6.12

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.13	-0.00
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.33	17.83	18.83	18.32	-0.04
69 Chrysene-d12	23.37	22.87	23.87	23.37	-0.00
134 Di-n-octylphthala	24.39	23.89	24.89	24.39	-0.00
77 Perylene-d12	26.05	25.55	26.55	26.04	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012306.D

Lab ID: BLD0297-BLK1  
nt14.i, ABN.m, 01-MAY-2023 17:36

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*





Data File: \\target\share\chem3\nt14,1\20230502,16\NT1405022306.D

Date: 02-May-2023 16:56

Client ID:

Sample Info: BLD0297-BLK3

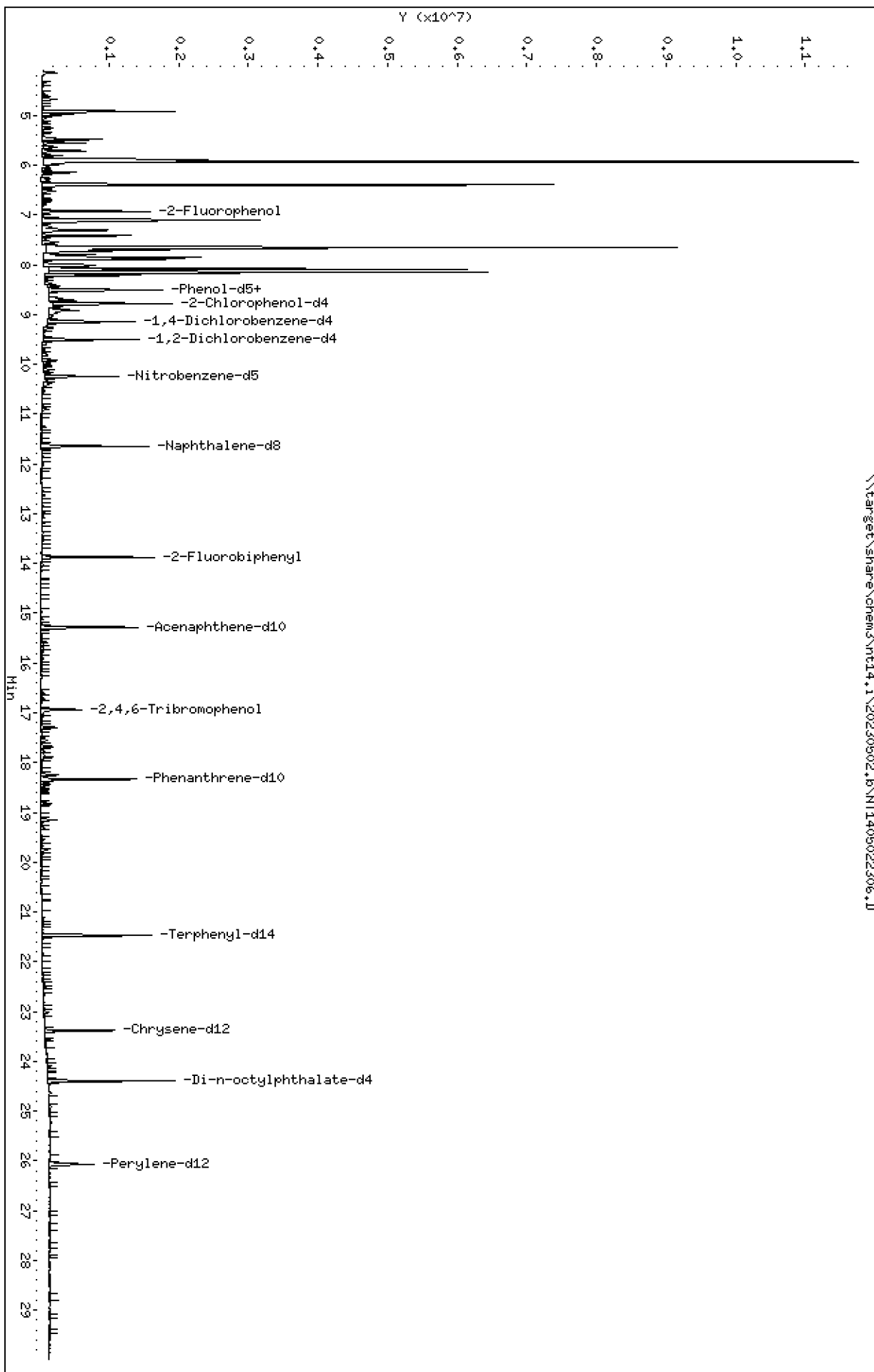
Column phase: ZB-5msi

Instrument: nt14,1

Operator: JSD

Column diameter: 0.25

\\target\share\chem3\nt14,1\20230502,16\NT1405022306.D



Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

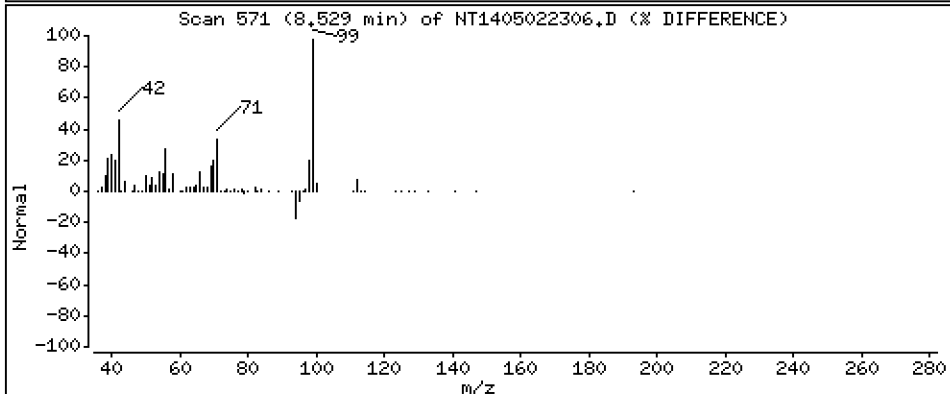
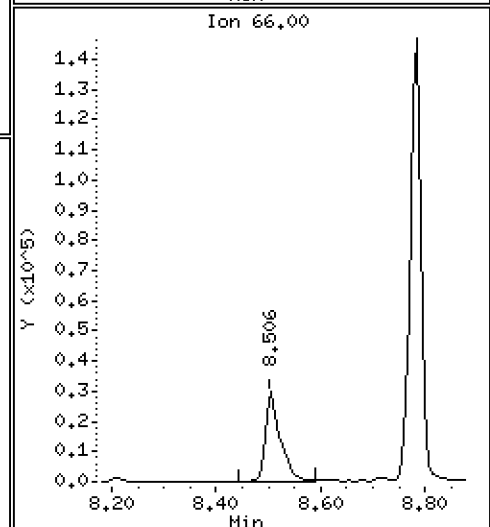
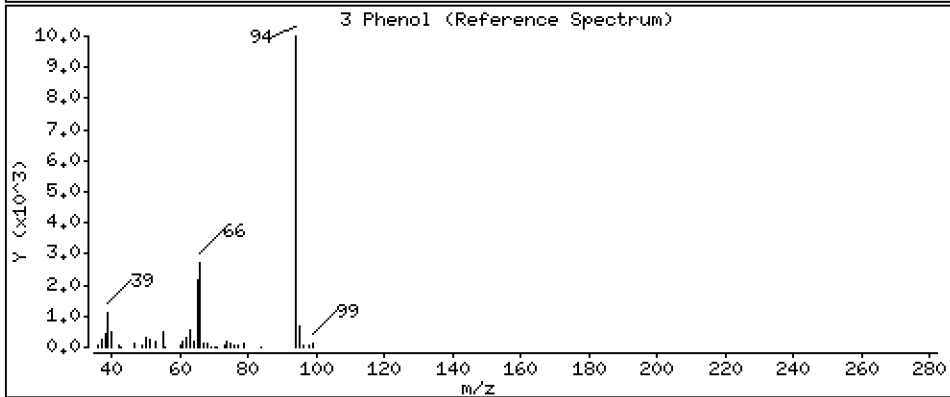
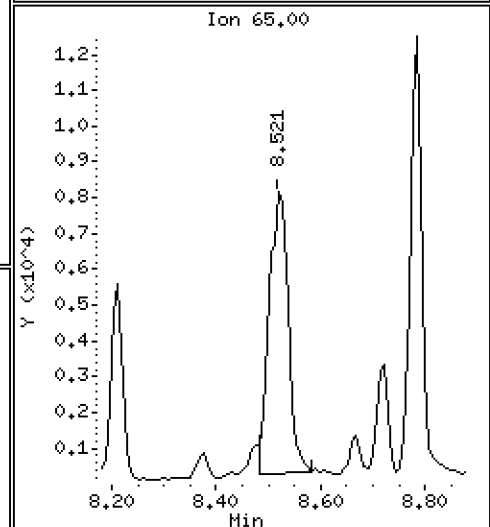
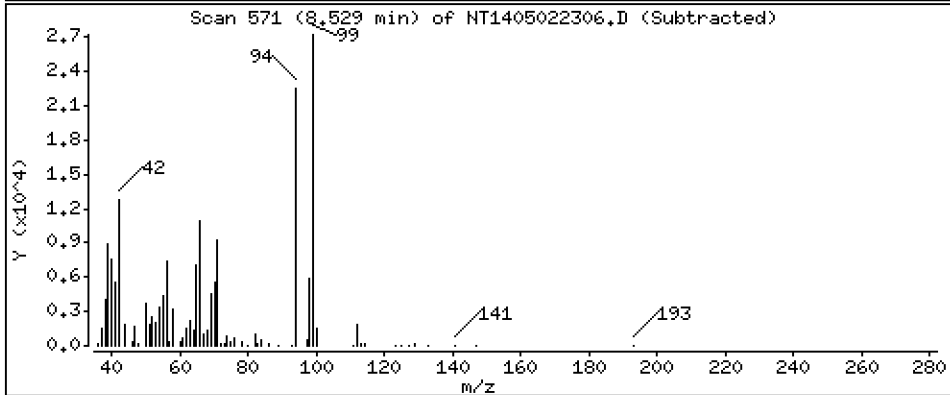
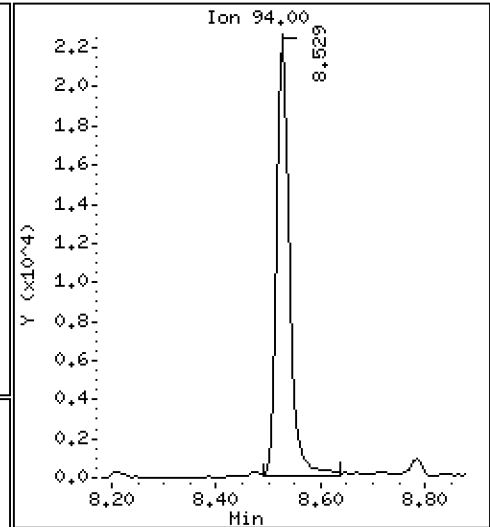
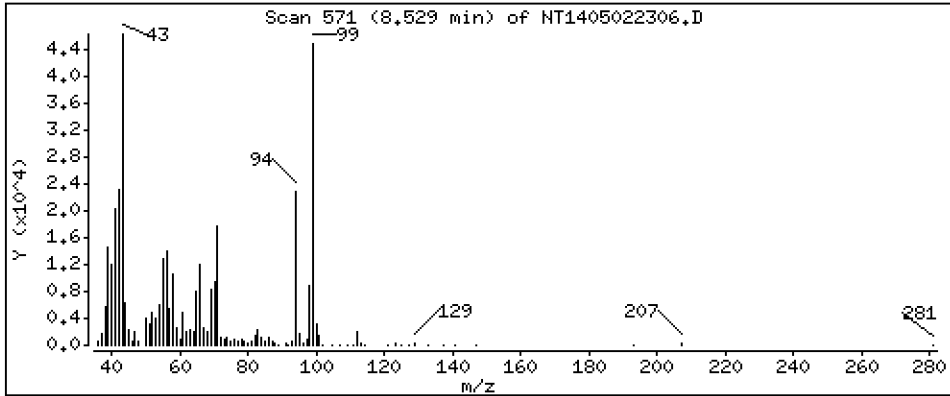
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,2448 ug/mL



Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

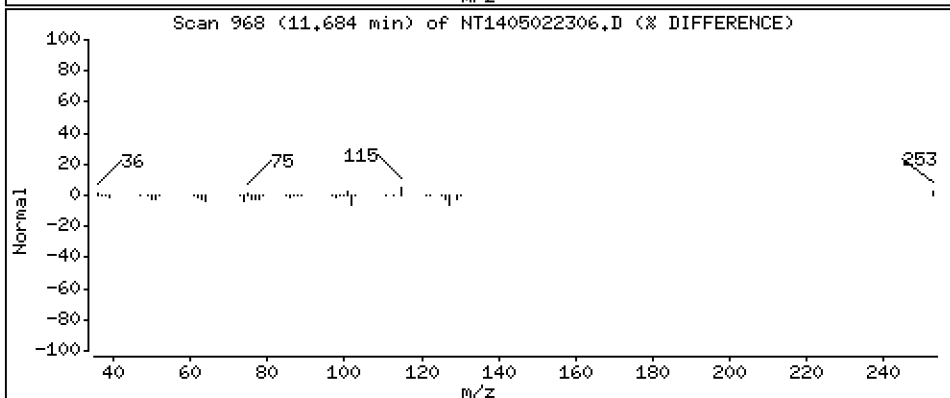
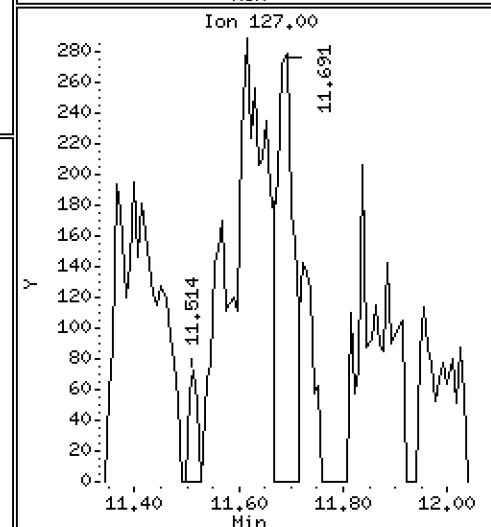
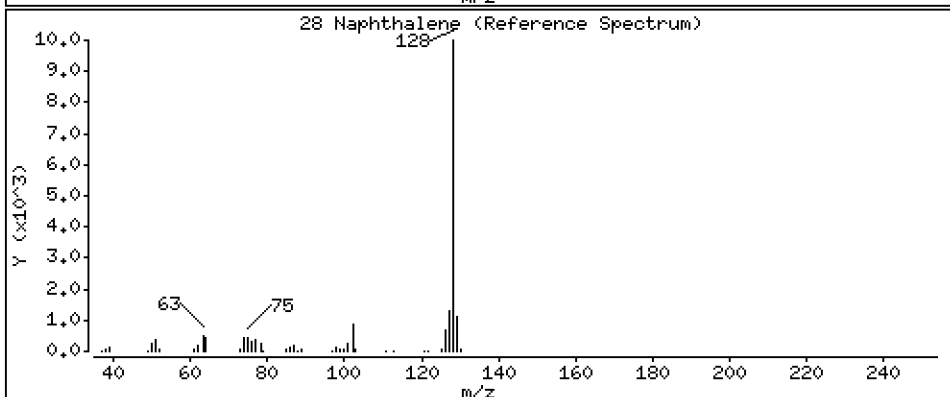
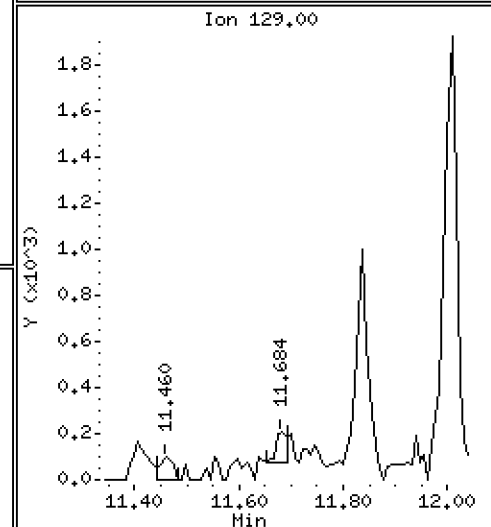
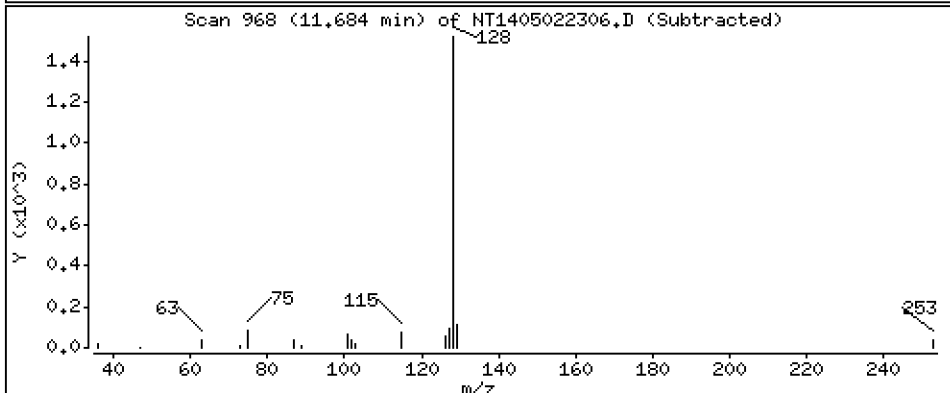
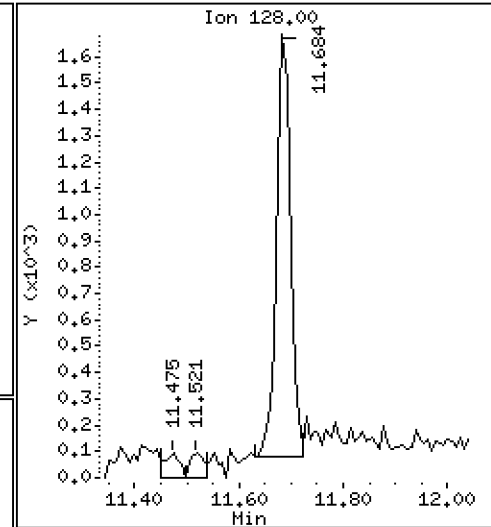
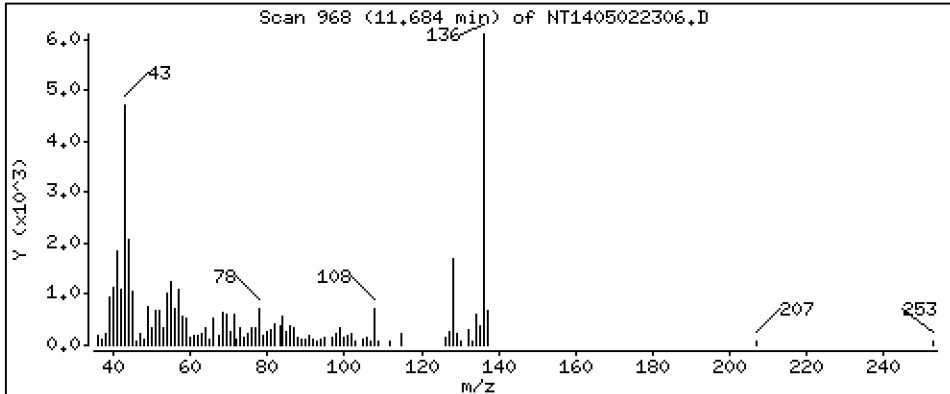
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

28 Naphthalene

Concentration: 0.01015 ug/mL



Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

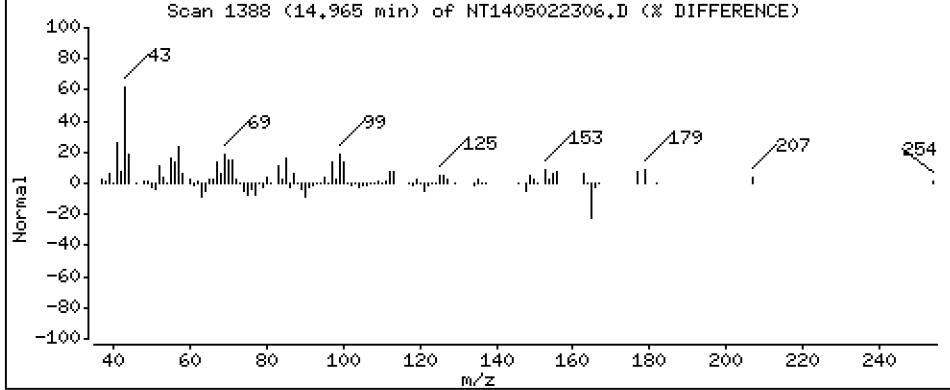
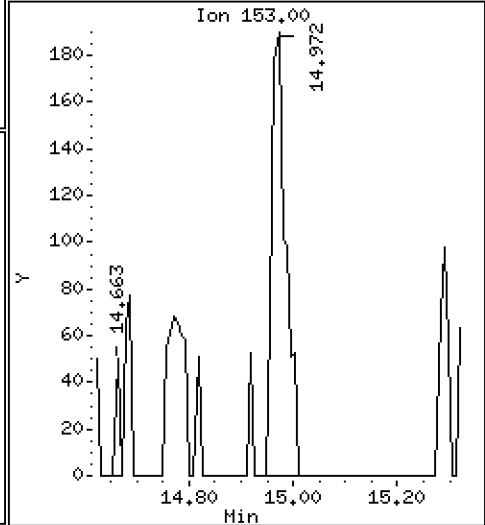
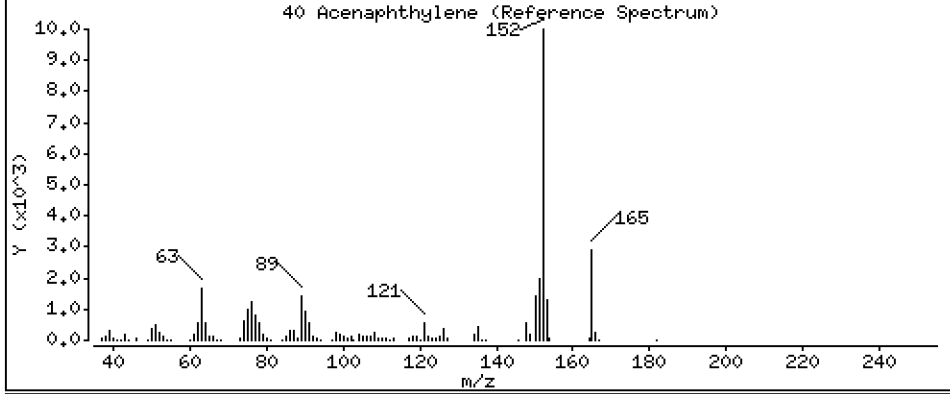
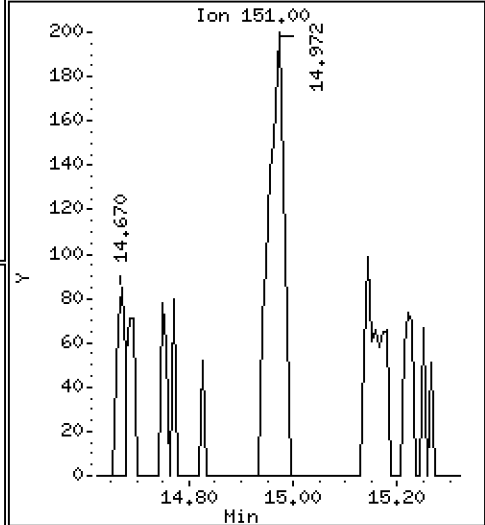
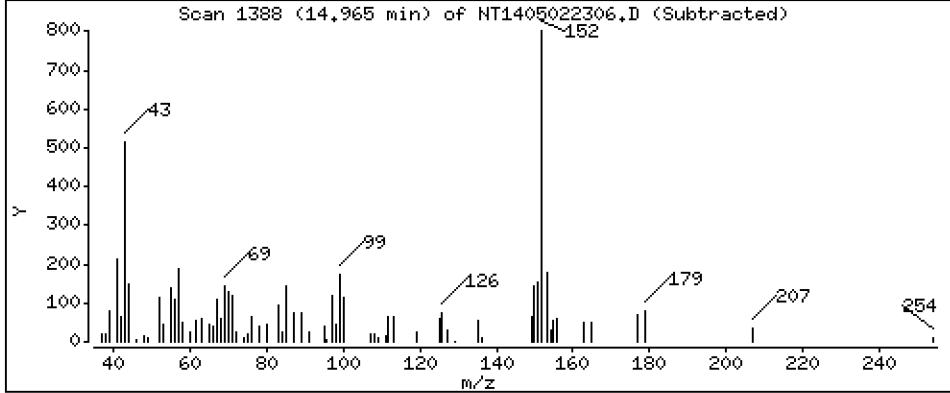
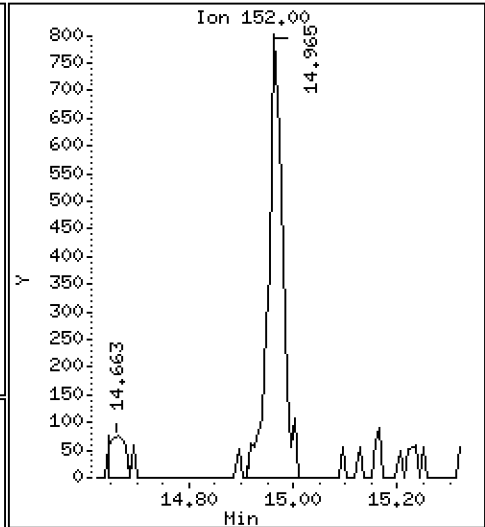
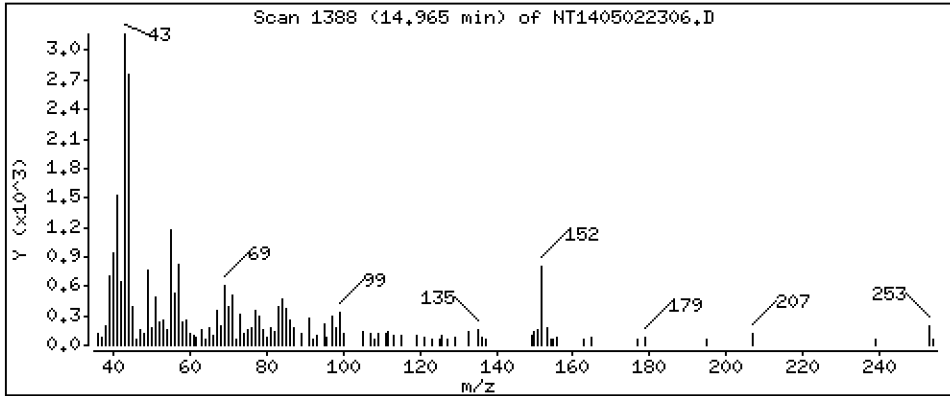
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 0,005525 ug/mL



Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

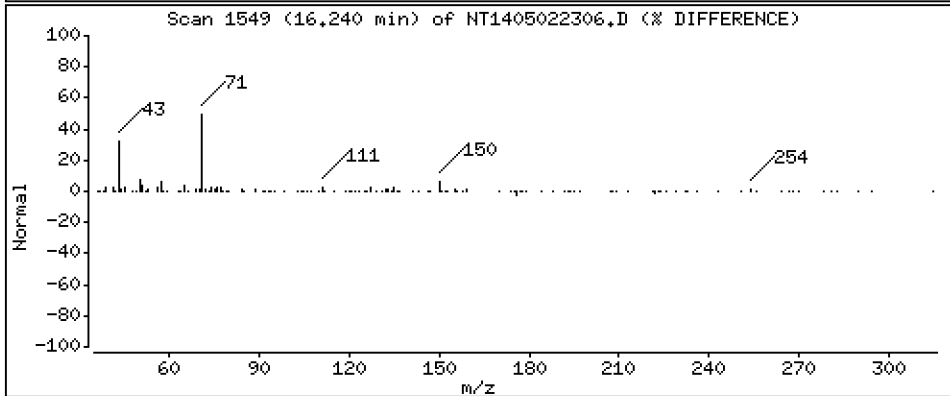
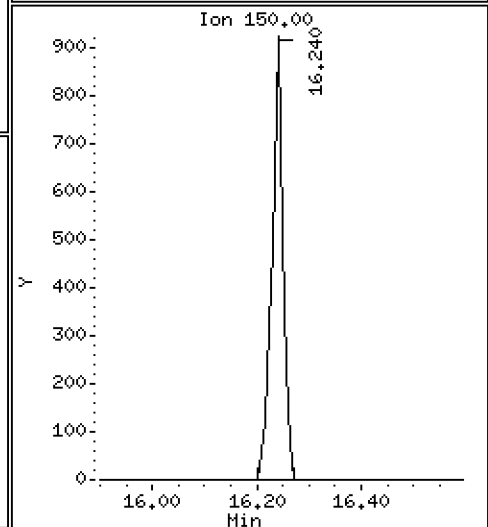
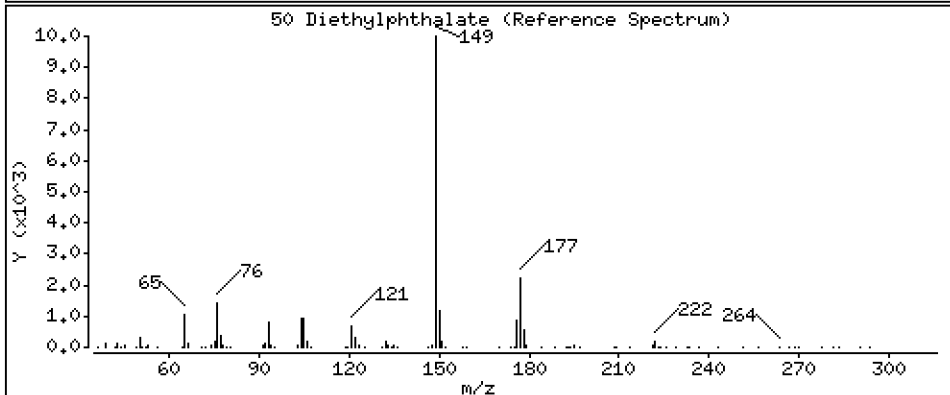
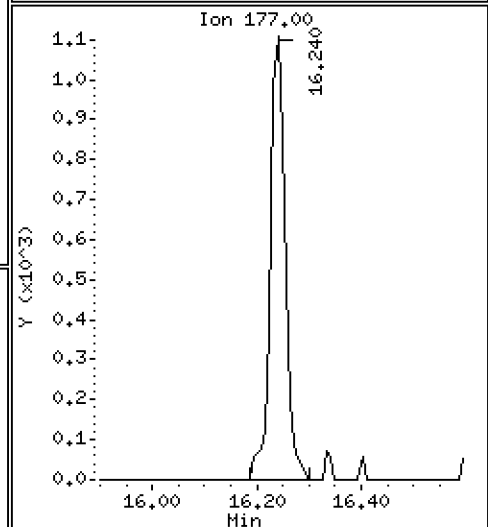
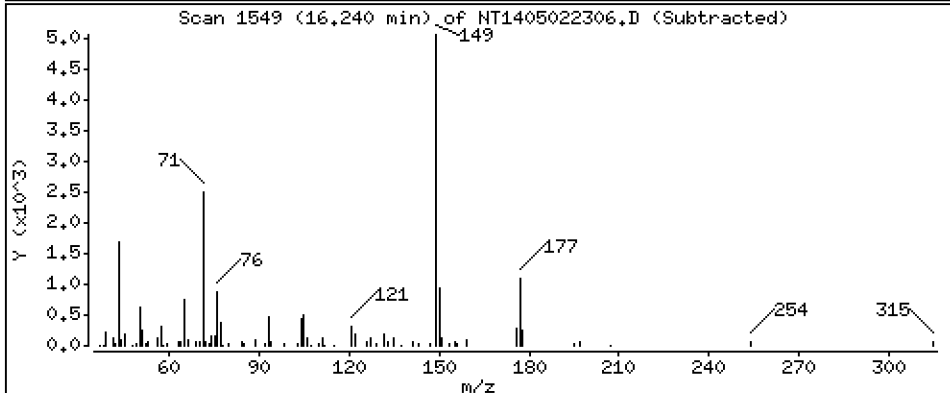
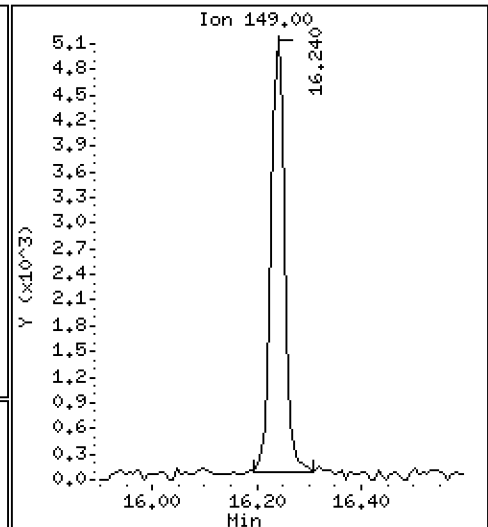
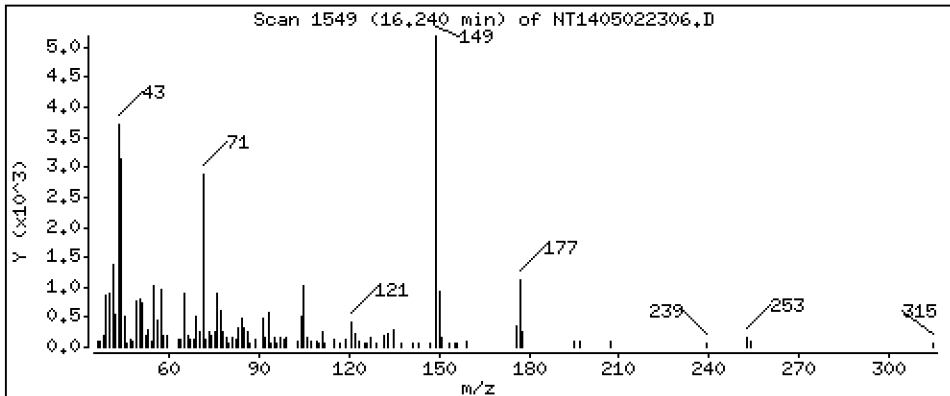
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,05517 ug/mL



Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

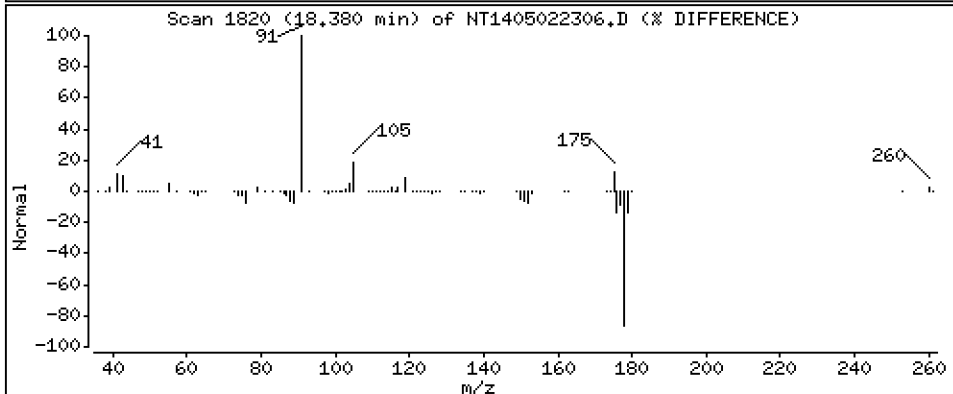
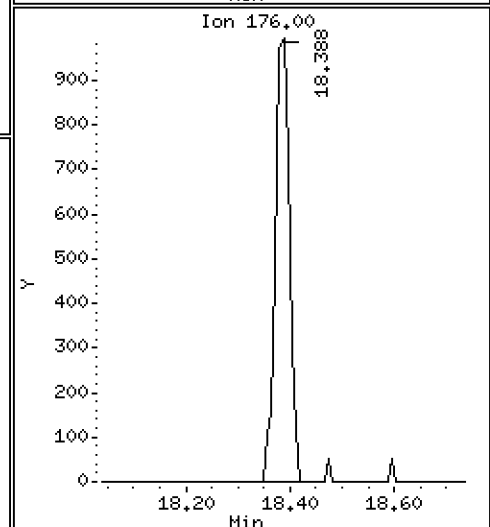
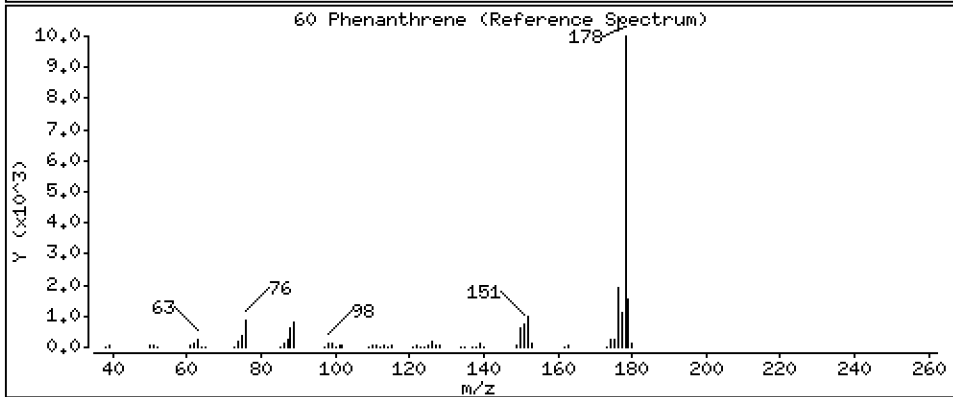
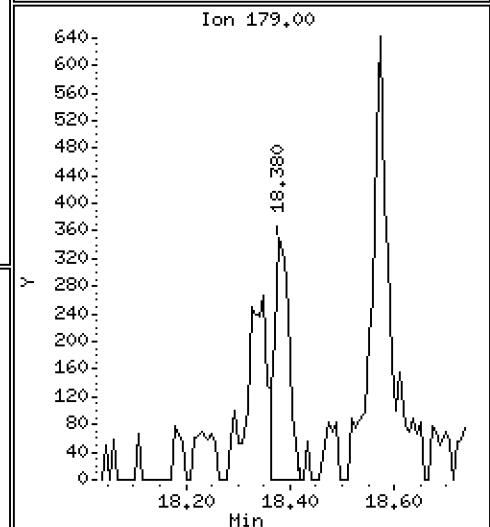
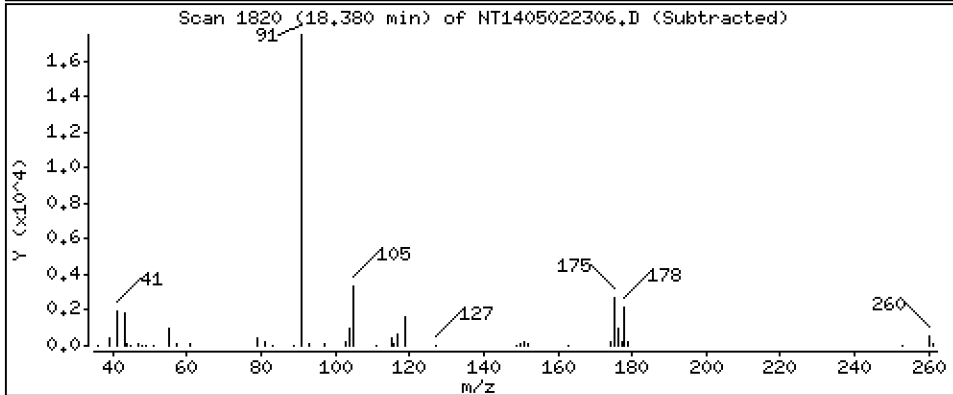
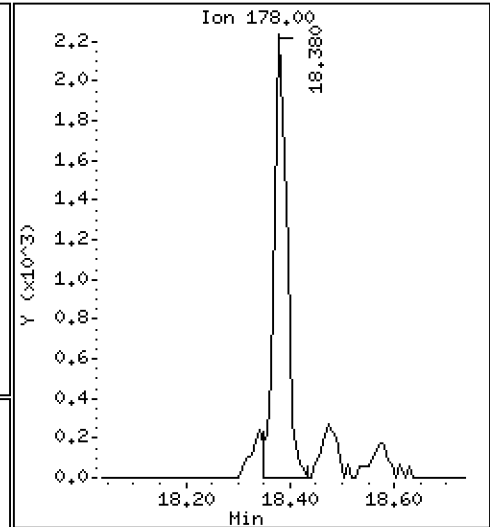
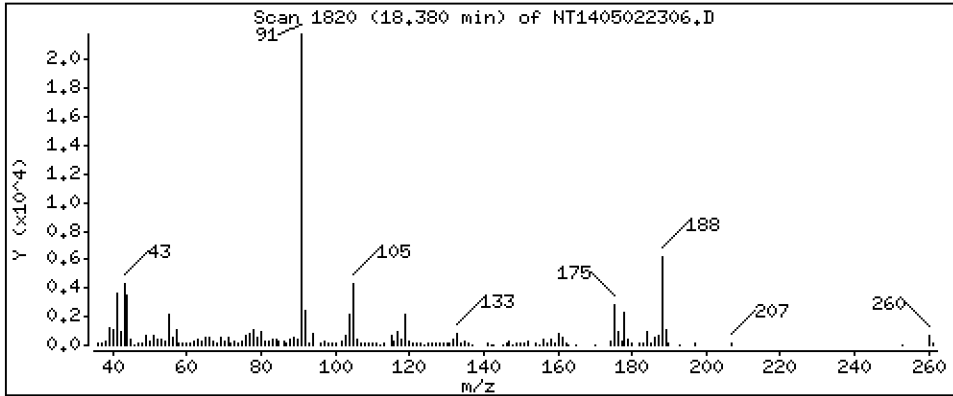
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 0,01512 ug/mL



Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

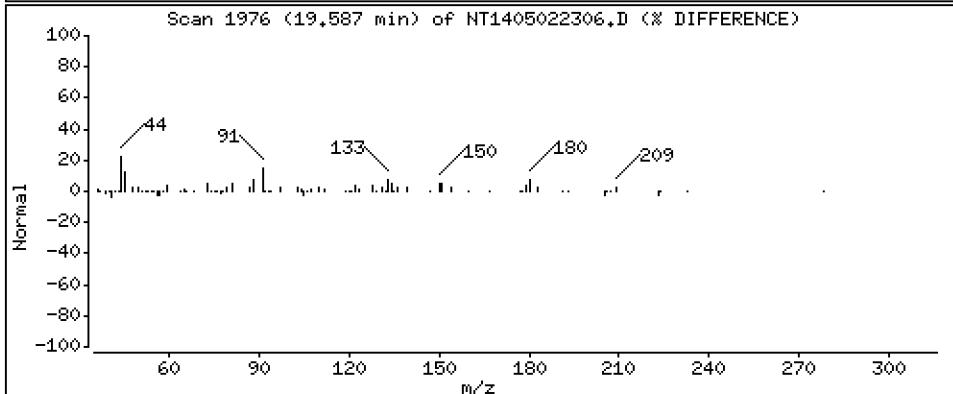
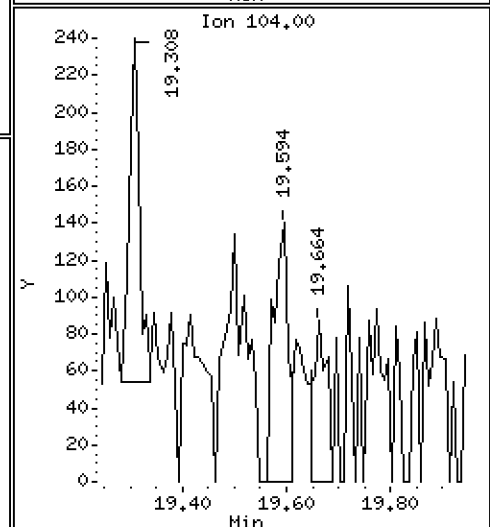
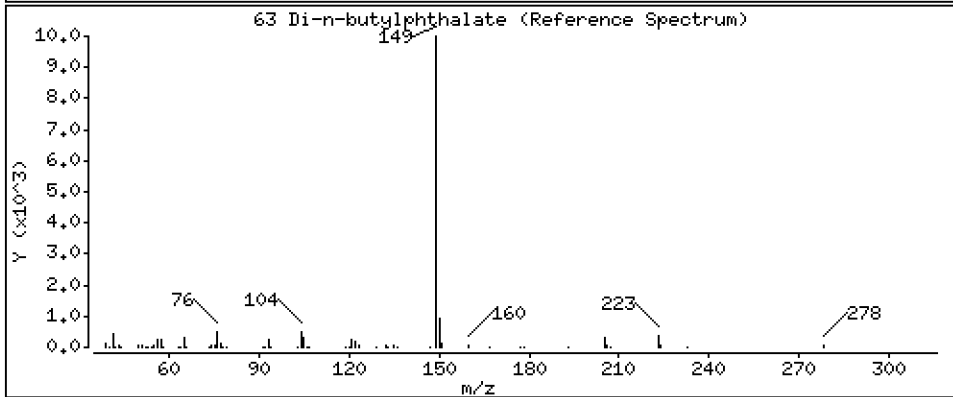
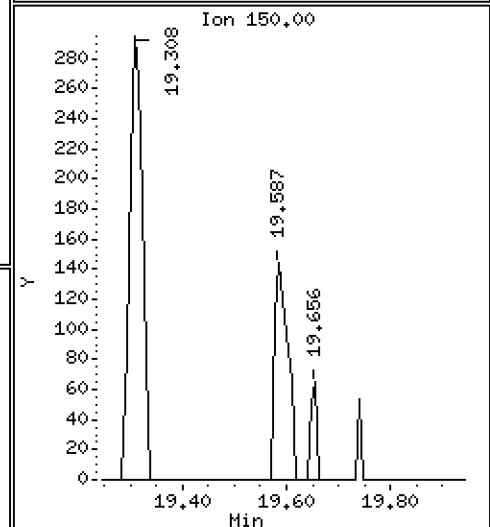
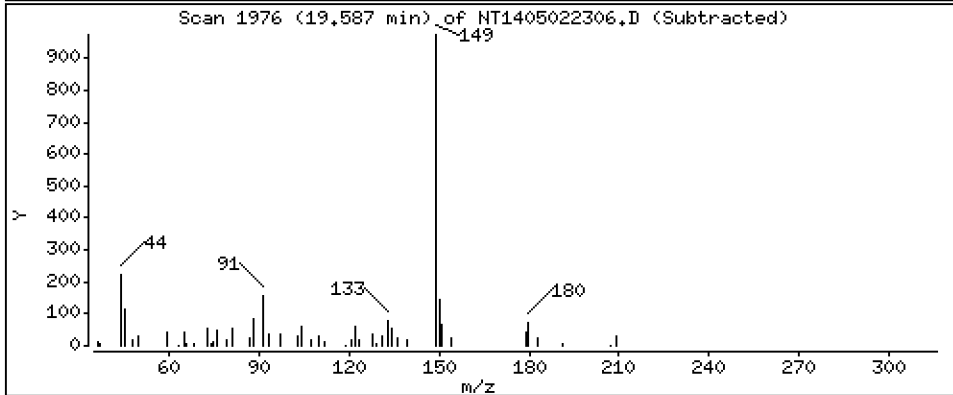
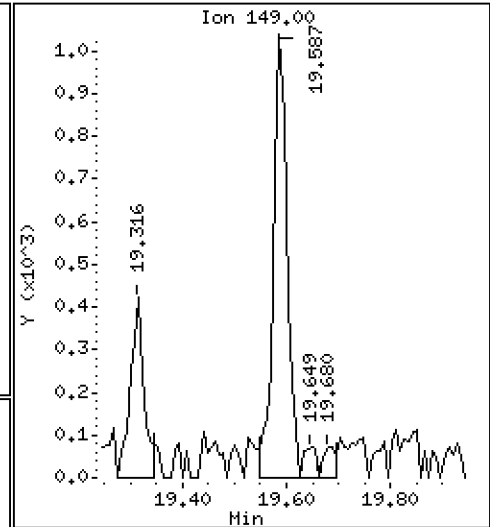
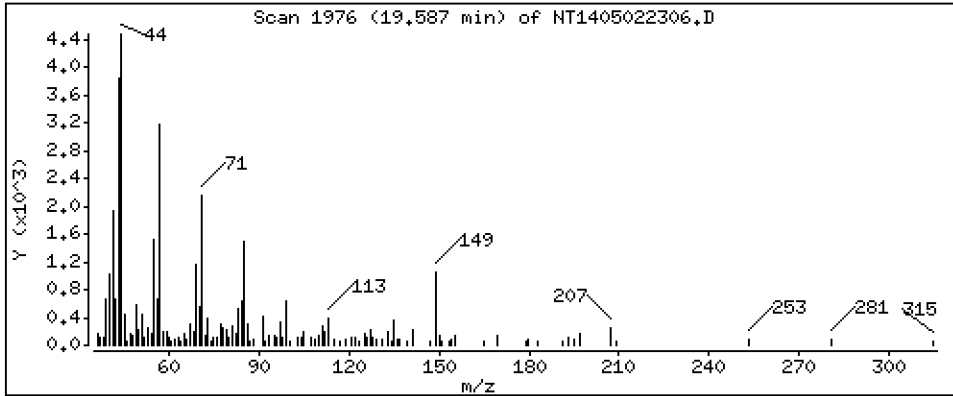
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 0,005599 ug/mL



Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

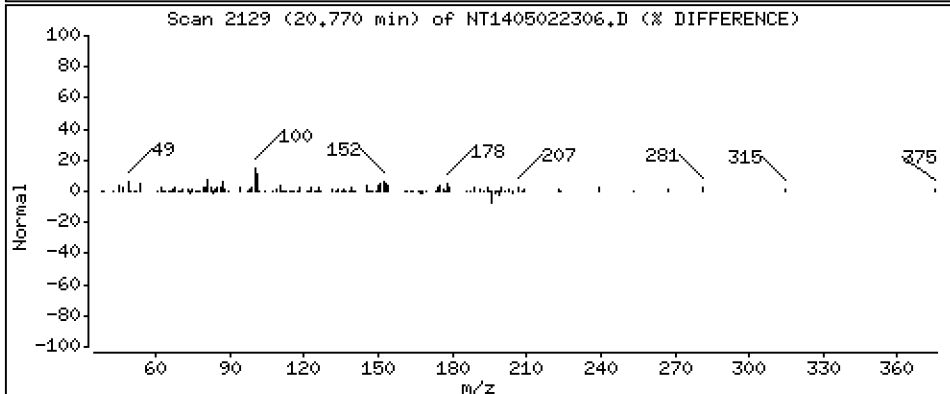
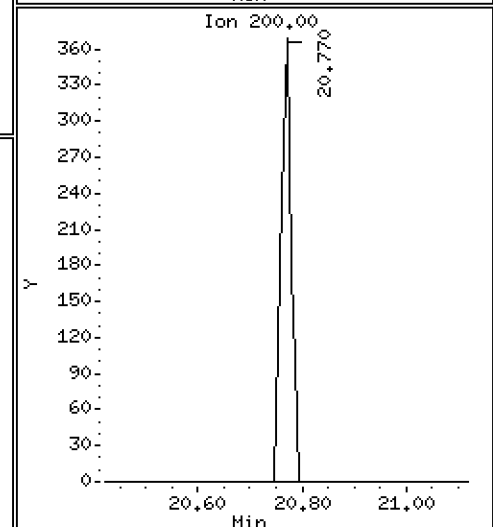
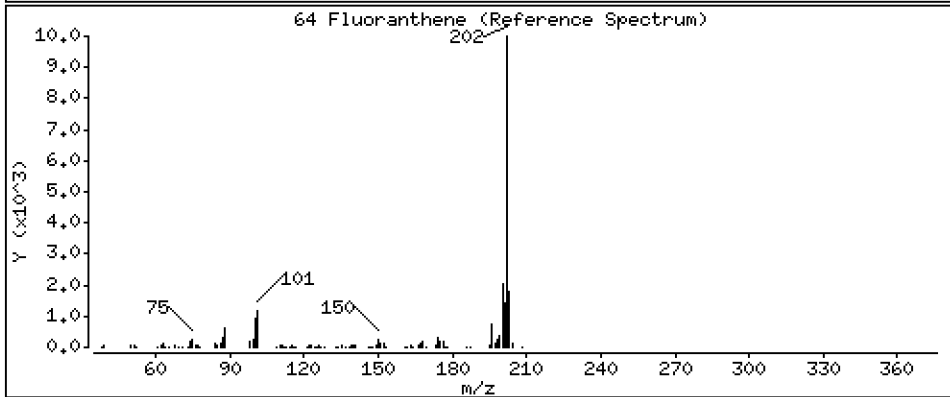
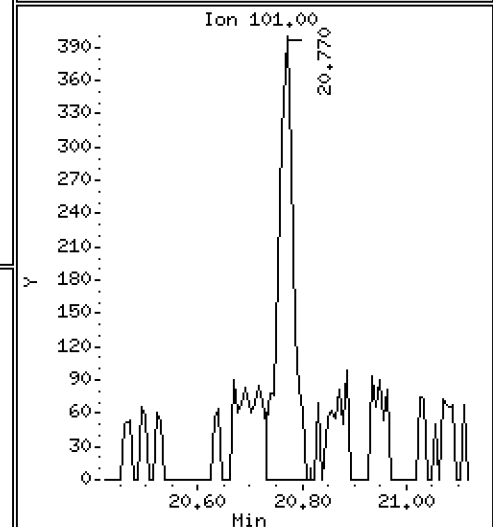
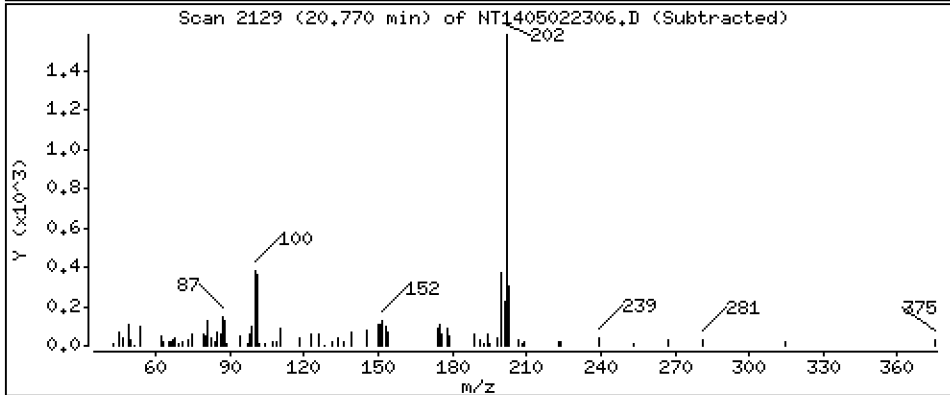
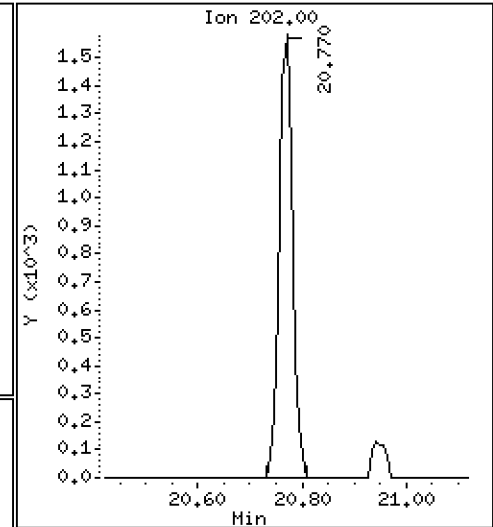
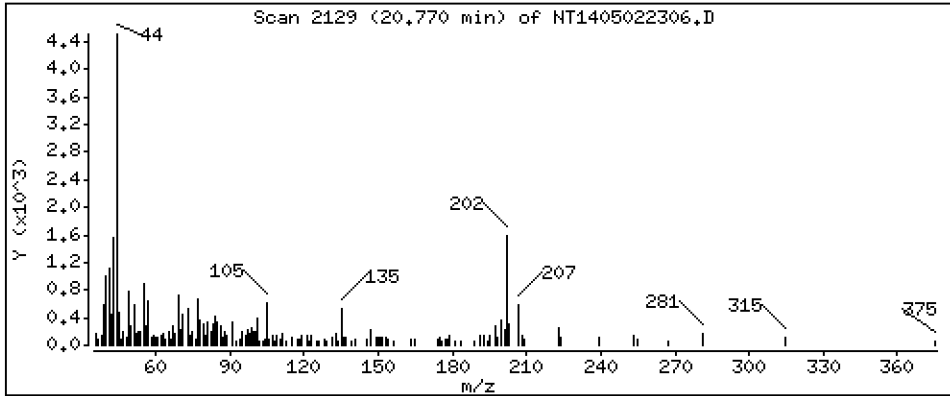
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 0,01221 ug/mL





Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

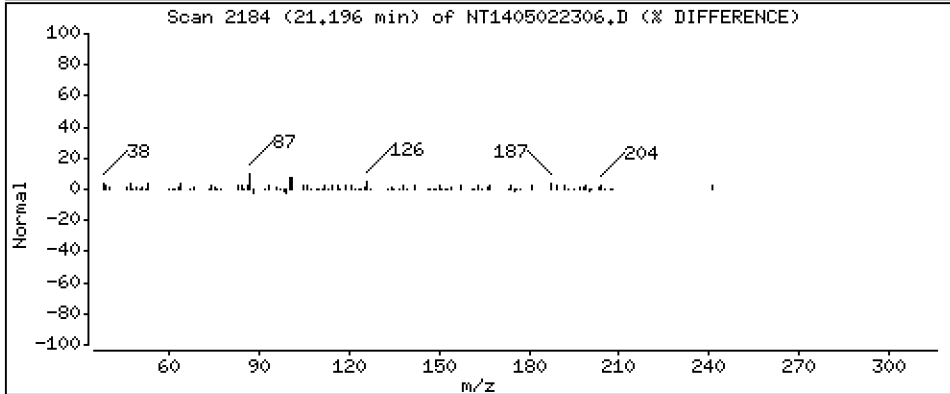
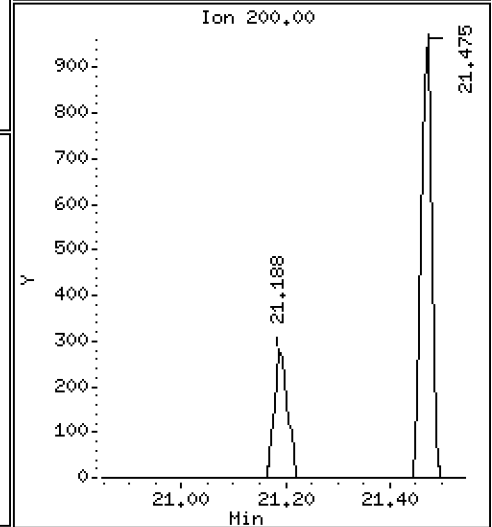
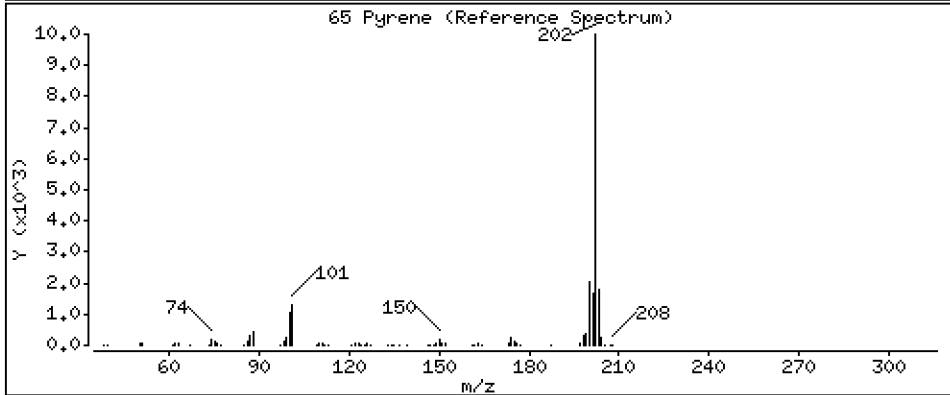
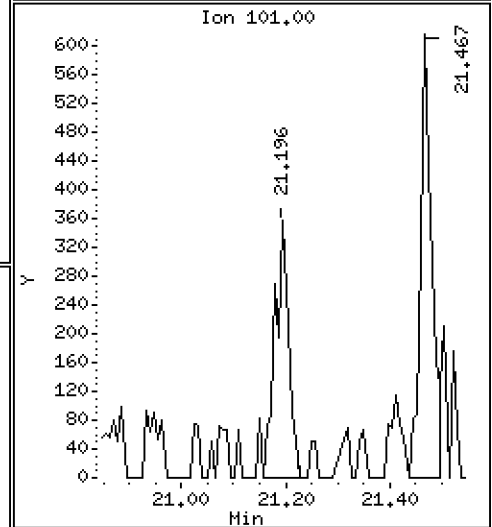
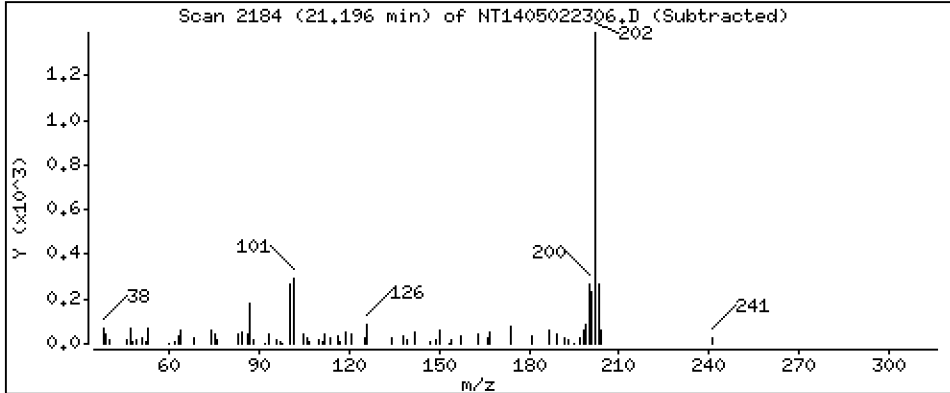
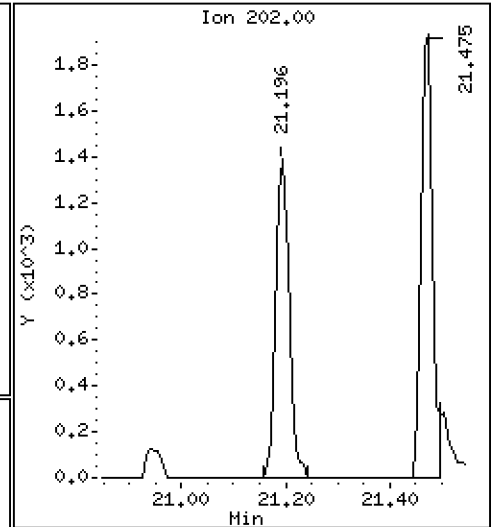
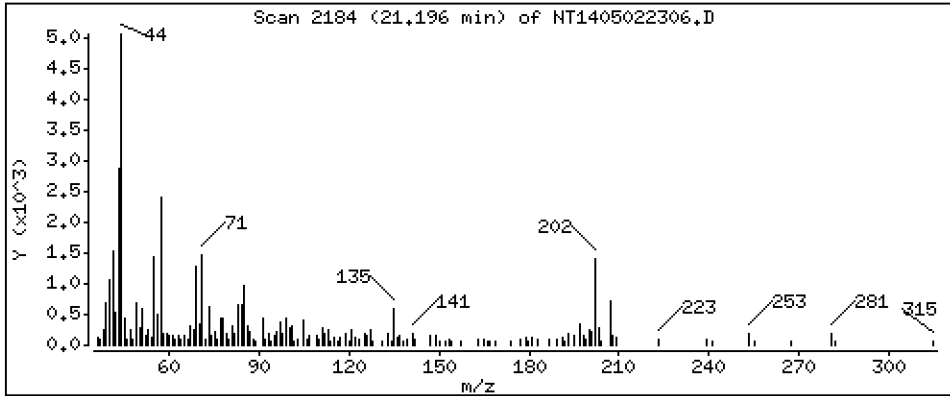
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 0,01055 ug/mL



Date : 02-MAY-2023 16:56

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK3

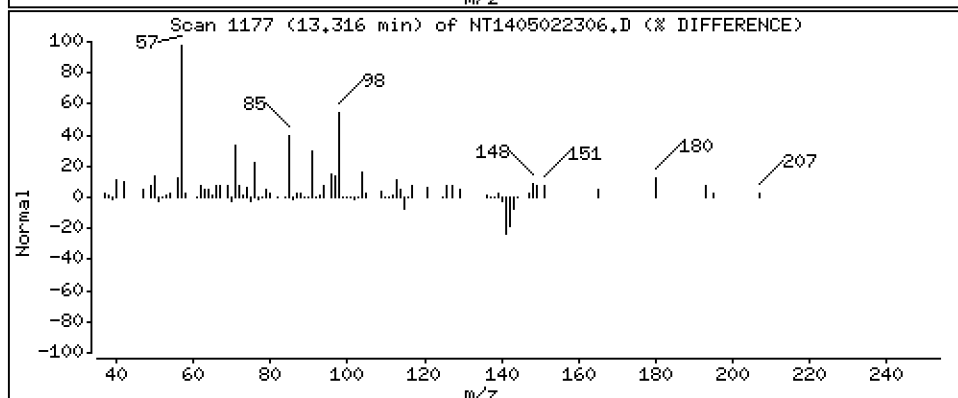
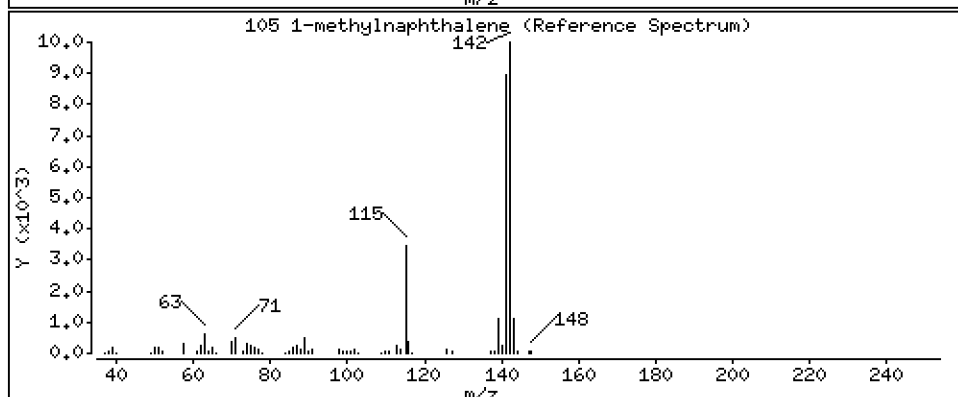
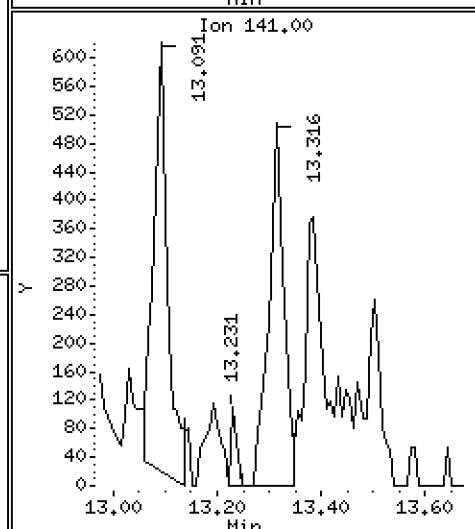
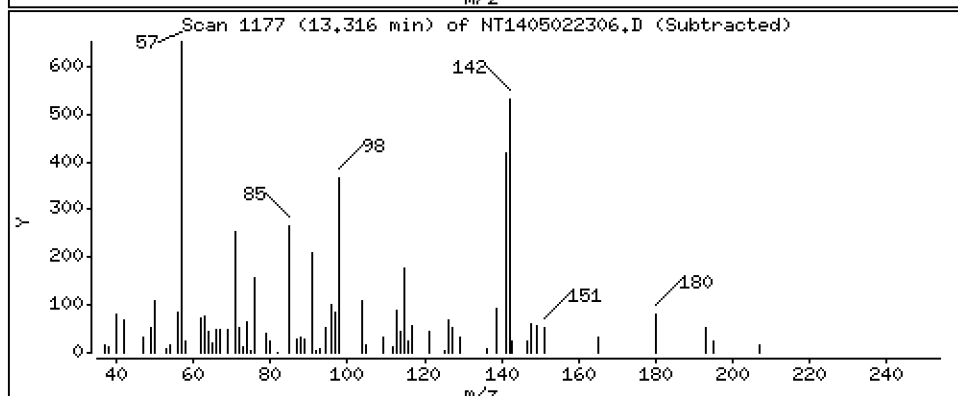
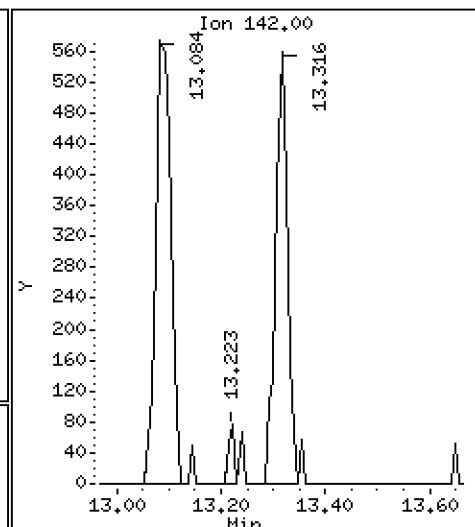
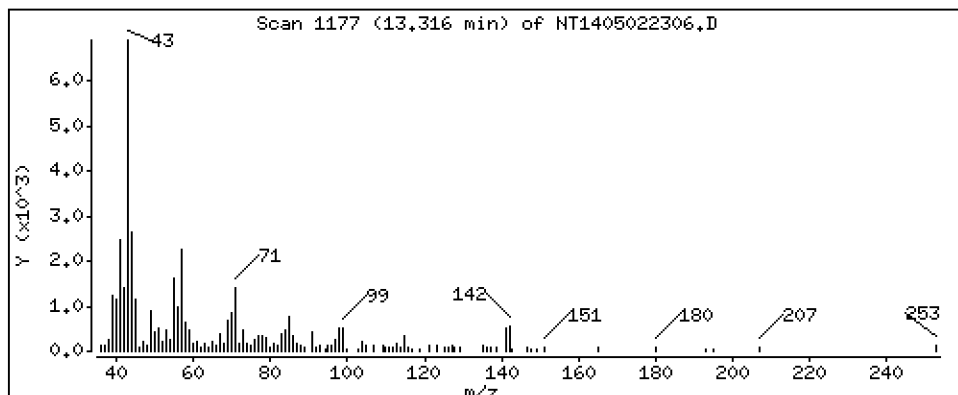
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 0,004270 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230502.b\NT1405022306.D  
 Lab Smp Id: BLD0297-BLK3  
 Inj Date : 02-MAY-2023 16:56 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-BLK3  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Meth Date : 03-May-2023 12:20 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 6  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.921	6.914	(0.757)	524670	5.59986	5.600
\$ 2 Phenol-d5	99		8.505	8.505	(0.931)	762638	5.80007	5.800
3 Phenol	94		8.528	8.528	(0.933)	36076	0.24481	0.2448
\$ 5 2-Chlorophenol-d4	132		8.783	8.783	(0.961)	655519	7.00808	7.008
4 Bis(2-Chloroethyl)ether	93		Compound Not Detected.					
6 2-Chlorophenol	128		Compound Not Detected.					
7 1,3-Dichlorobenzene	146		Compound Not Detected.					
* 8 1,4-Dichlorobenzene-d4	152		9.139	9.147	(1.000)	259081	4.00000	
9 1,4-Dichlorobenzene	146		Compound Not Detected.					
\$ 10 1,2-Dichlorobenzene-d4	152		9.504	9.504	(1.040)	262047	4.42244	4.422
12 1,2-Dichlorobenzene	146		Compound Not Detected.					
11 Benzyl alcohol	108		Compound Not Detected.					
14 2,2'-oxybis(1-Chloropropane)	121		Compound Not Detected.					
13 2-Methylphenol	108		Compound Not Detected.					
17 Hexachloroethane	117		Compound Not Detected.					
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
15 4-Methylphenol	108		Compound Not Detected.					
\$ 18 Nitrobenzene-d5	82		10.242	10.249	(0.880)	572491	4.46721	4.467
19 Nitrobenzene	77		Compound Not Detected.					
20 Isophorone	82		Compound Not Detected.					
21 2-Nitrophenol	139		Compound Not Detected.					
22 2,4-Dimethylphenol	107		Compound Not Detected.					
23 Bis(2-Chloroethoxy)methane	93		Compound Not Detected.					
24 Benzoic acid	105		Compound Not Detected.					
25 2,4-Dichlorophenol	162		Compound Not Detected.					
26 1,2,4-Trichlorobenzene	180		Compound Not Detected.					
* 27 Naphthalene-d8	136		11.644	11.652	(1.000)	1041283	4.00000	
28 Naphthalene	128		11.683	11.691	(1.003)	2842	0.01015	0.01015
29 4-Chloroaniline	127		Compound Not Detected.					
30 Hexachlorobutadiene	225		Compound Not Detected.					
31 4-Chloro-3-methylphenol	107		Compound Not Detected.					
32 2-Methylnaphthalene	142		Compound Not Detected.					
33 Hexachlorocyclopentadiene	237		Compound Not Detected.					

Compounds	QUANT MASS	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196							
35 2,4,5-Trichlorophenol	196							
\$ 36 2-Fluorobiphenyl	172		13.873	13.880	(0.908)	803512	4.68417	4.684
37 2-Chloronaphthalene	162							
38 2-Nitroaniline	65							
39 Dimethylphthalate	163							
40 Acenaphthylene	152		14.964	14.972	(0.979)	1444	0.00553	0.005525
41 2,6-Dinitrotoluene	165							
* 42 Acenaphthene-d10	164		15.281	15.289	(1.000)	492494	4.00000	
43 3-Nitroaniline	138							
44 Acenaphthene	153							
45 2,4-Dinitrophenol	184							
46 Dibenzofuran	168							
47 4-Nitrophenol	109							
48 2,4-Dinitrotoluene	165							
50 Diethylphthalate	149		16.240	16.247	(1.063)	10087	0.05517	0.05517
49 Fluorene	166							
51 4-Chlorophenyl-phenylether	204							
52 4-Nitroaniline	138							
53 4,6-Dinitro-2-methylphenol	198							
54 N-Nitrosodiphenylamine	169							
\$ 55 2,4,6-Tribromophenol	330		16.942	16.942	(1.109)	66404	4.10134	4.101
56 4-Bromophenyl-phenylether	248							
57 Hexachlorobenzene	284							
58 Pentachlorophenol	266							
* 59 Phenanthrene-d10	188		18.333	18.341	(1.000)	848264	4.00000	
60 Phenanthrene	178		18.379	18.387	(1.003)	3626	0.01512	0.01512
61 Anthracene	178							
62 Carbazole	167							
63 Di-n-butylphthalate	149		19.586	19.594	(1.068)	1817	0.00560	0.005599
64 Fluoranthene	202		20.770	20.770	(0.888)	2661	0.01221	0.01221
65 Pyrene	202		21.196	21.195	(0.907)	2375	0.01055	0.01055
\$ 66 Terphenyl-d14	244		21.474	21.474	(0.919)	757917	4.99197	4.992
67 Butylbenzylphthalate	149							
68 Benzo(a)anthracene	228							
* 69 Chrysene-d12	240		23.379	23.387	(1.000)	472309	4.00000	
70 3,3'-Dichlorobenzidine	252							
71 Chrysene	228							
72 bis(2-Ethylhexyl)phthalate	149							
* 134 Di-n-octylphthalate-d4	153		24.393	24.401	(1.000)	1104482	4.00000	
73 Di-n-octylphthalate	149							
74 Benzo(b)fluoranthene	252							
75 Benzo(k)fluoranthene	252							
76 Benzo(a)pyrene	252							
* 77 Perylene-d12	264		26.066	26.073	(1.000)	436656	4.00000	
78 Indeno(1,2,3-cd)pyrene	276							
79 Dibenzo(a,h)anthracene	278							
80 Benzo(g,h,i)perylene	276							
90 N-Nitrosodimethylamine	74							
91 Aniline	93							
93 Benzidine	184							
103 Pyridine	79							
105 1-methylnaphthalene	142		13.315	13.315	(1.143)	836	0.00427	0.004270
111 Azobenzene (1,2-DP-Hydrazine)	77							

Compounds	QUANT MASS	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/mL)
=====	=====	=====	=====	=====	=====	=====	=====	
187 Total Benzofluoranthenes	252				Compound Not Detected.			
120 2,3,4,6-Tetrachlorophenol	232				Compound Not Detected.			

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 02-MAY-2023  
 Lab File ID: NT1405022306.D Calibration Time: 14:28  
 Lab Smp Id: BLD0297-BLK3  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	246356	123178	492712	259081	5.17
27 Naphthalene-d8	988717	494359	1977434	1041283	5.32
42 Acenaphthene-d10	475022	237511	950044	492494	3.68
59 Phenanthrene-d10	791082	395541	1582164	848264	7.23
69 Chrysene-d12	470889	235445	941778	472309	0.30
134 Di-n-octylphthala	1158641	579321	2317282	1104482	-4.67
77 Perylene-d12	463245	231623	926490	436656	-5.74

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.15	8.65	9.65	9.14	-0.08
27 Naphthalene-d8	11.65	11.15	12.15	11.64	-0.07
42 Acenaphthene-d10	15.29	14.79	15.79	15.28	-0.05
59 Phenanthrene-d10	18.34	17.84	18.84	18.33	-0.04
69 Chrysene-d12	23.39	22.89	23.89	23.38	-0.03
134 Di-n-octylphthala	24.40	23.90	24.90	24.39	-0.03
77 Perylene-d12	26.07	25.57	26.57	26.07	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405022306.D

Lab ID: BLD0297-BLK3  
nt14.i, ABN.m, 02-MAY-2023 16:56

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: NT1405022302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



LCS / LCS DUPLICATE RECOVERY  
EPA 8270E

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Analyzed: 05/01/23 18:13

Batch: BLD0297

Laboratory ID: BLD0297-BS1

Preparation: EPA 3546 (Microwave)

Sequence Name: LCS

Initial/Final: 10 g / 1 mL

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Phenol	500	385	B	77.1	34 - 120
4-Methylphenol	500	359		71.8	29 - 120
Naphthalene	500	464		92.8	43 - 120
2-Methylnaphthalene	500	404		80.7	43 - 120
Acenaphthylene	500	410		82.0	42 - 120
Dimethylphthalate	500	451		90.2	43 - 120
Acenaphthene	500	435		87.0	45 - 120
Dibenzofuran	500	422		84.5	43 - 120
Fluorene	500	445		89.1	45 - 120
Phenanthrene	500	462		92.4	49 - 120
Anthracene	500	380		76.1	45 - 120
Fluoranthene	500	442		88.4	53 - 145
Pyrene	500	435		87.0	52 - 134
Butylbenzylphthalate	500	394		78.8	45 - 132
Benzo(a)anthracene	500	461		92.1	49 - 120
Chrysene	500	462		92.5	47 - 120
bis(2-Ethylhexyl)phthalate	500	459		91.7	34 - 130
Benzofluoranthenes, Total	1000	1040		104	30 - 160
Benzo(a)pyrene	500	440		88.0	42 - 120
Indeno(1,2,3-cd)pyrene	500	411		82.1	42 - 163
Dibenzo(a,h)anthracene	500	411		82.1	30 - 133
Benzo(g,h,i)perylene	500	393		78.7	46 - 148

\* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Phenol	500	402	B	80.3	4.12	30	34 - 120
4-Methylphenol	500	373		74.5	3.69	30	29 - 120
Naphthalene	500	419		83.8	10.2	30	43 - 120
2-Methylnaphthalene	500	397		79.5	1.55	30	43 - 120
Acenaphthylene	500	421		84.3	2.73	30	42 - 120
Dimethylphthalate	500	453		90.5	0.385	30	43 - 120
Acenaphthene	500	443		88.6	1.79	30	45 - 120

\* Indicates values outside of QC limits





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Date: 01-May-2023 18:13

Client ID:

Sample Info: BLD0297-B51

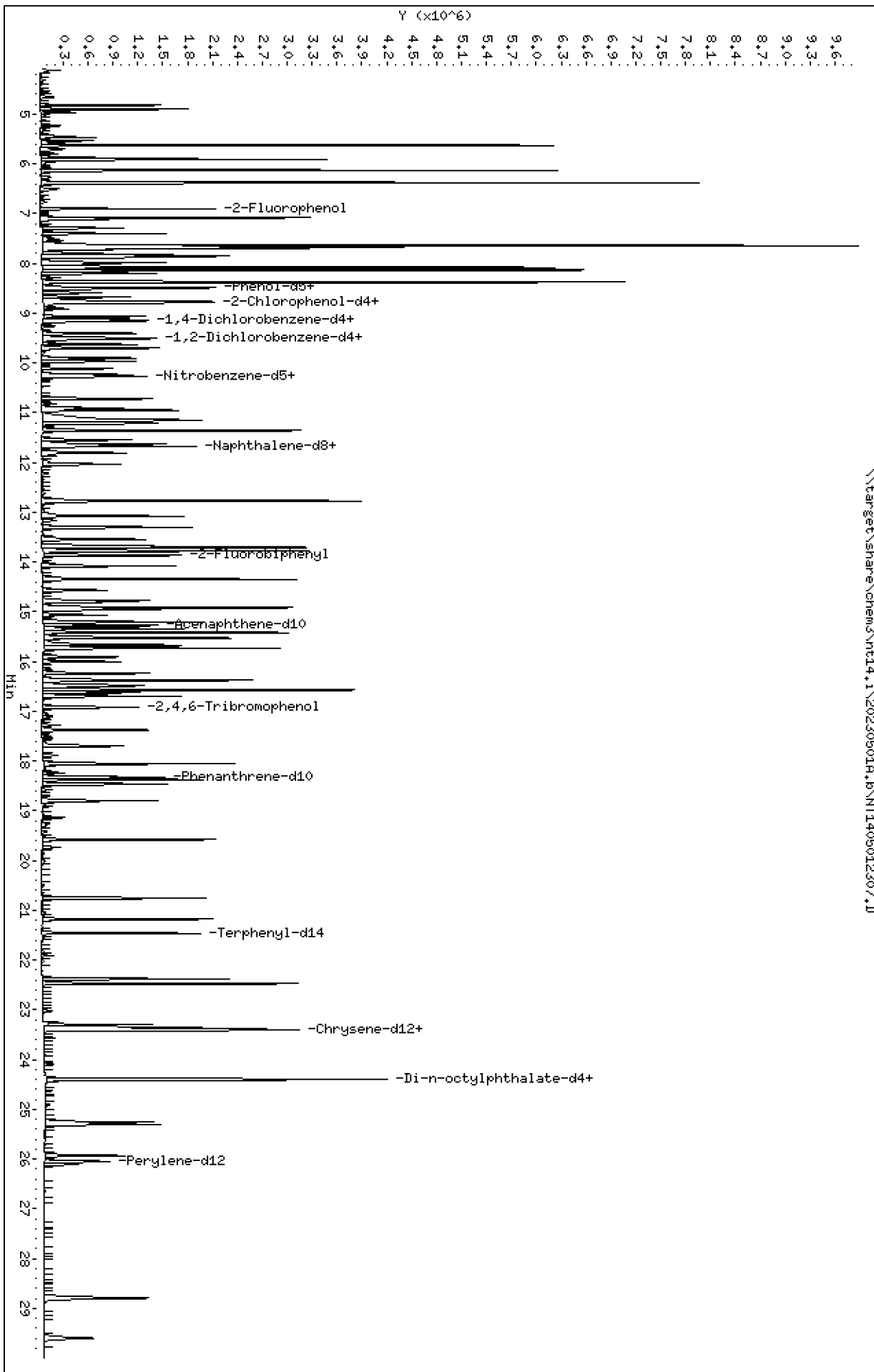
Instrument: nt14.1

Operator: USD

Column diameter: 0.25

Column phase: ZB-5msi

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Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

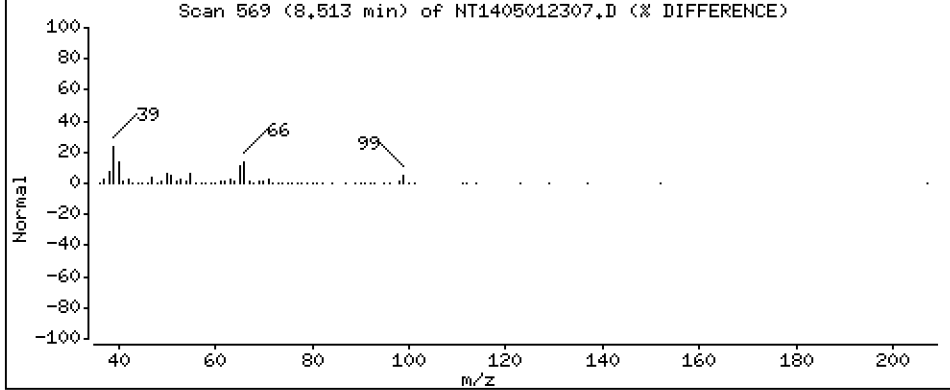
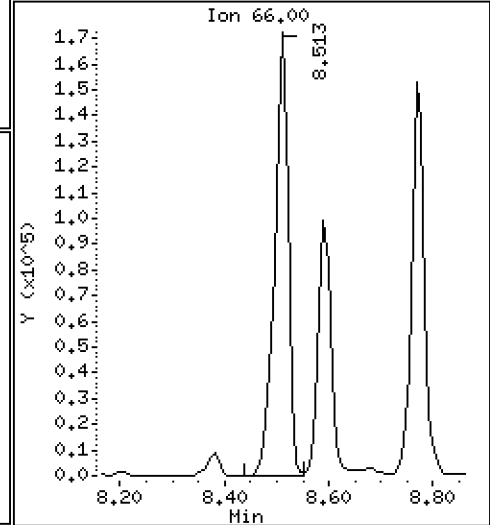
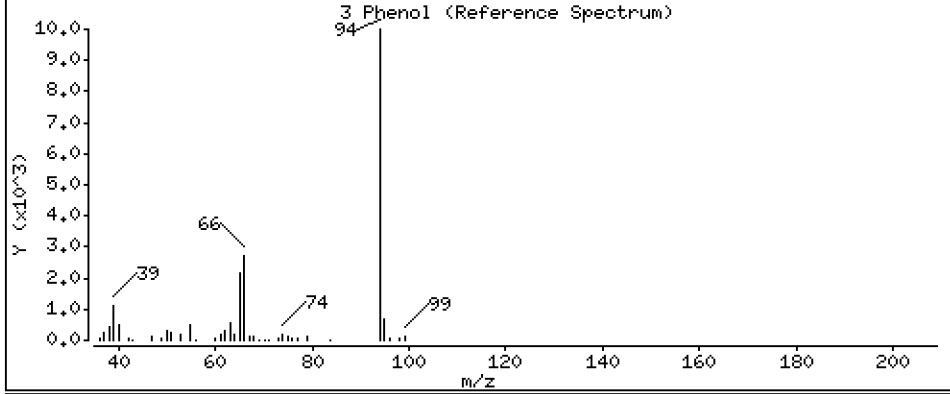
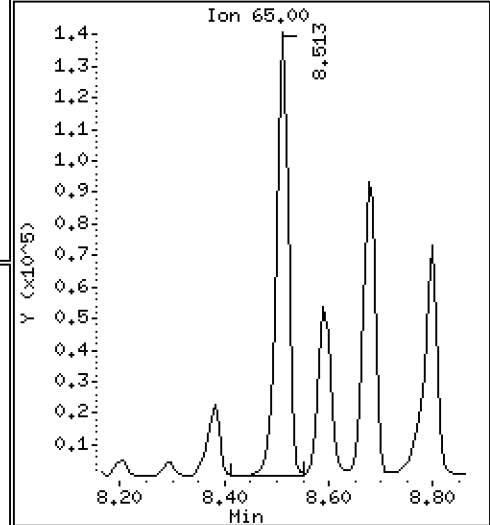
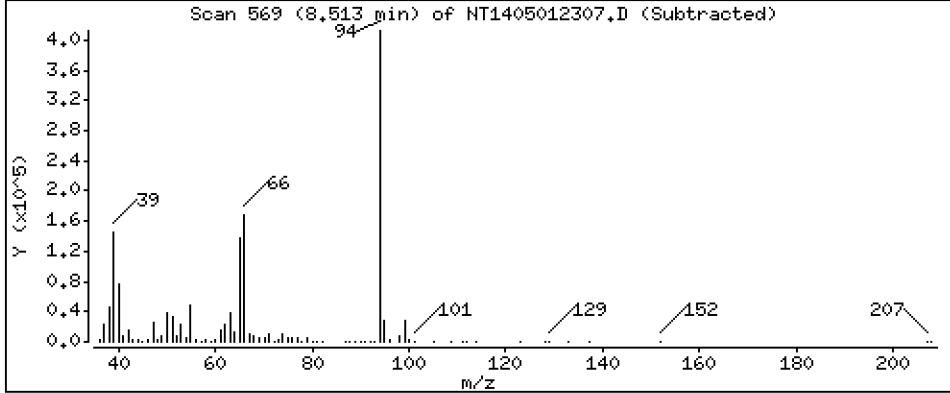
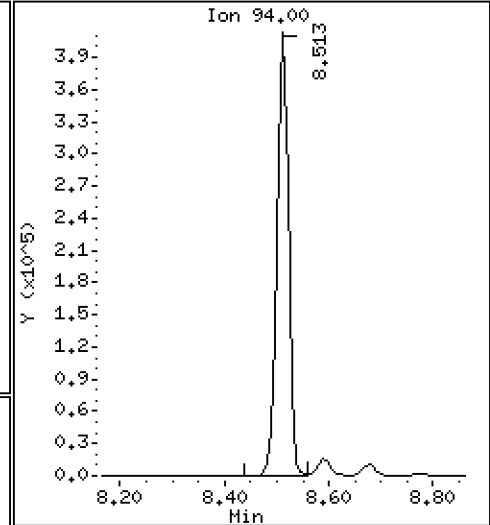
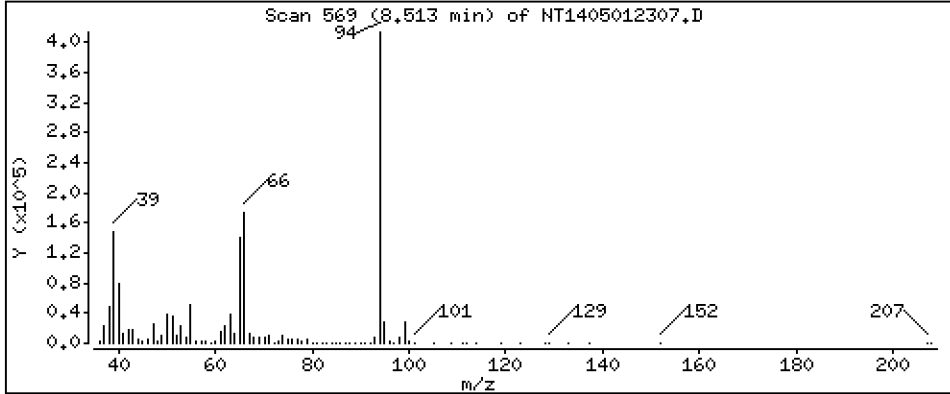
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 3,855 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

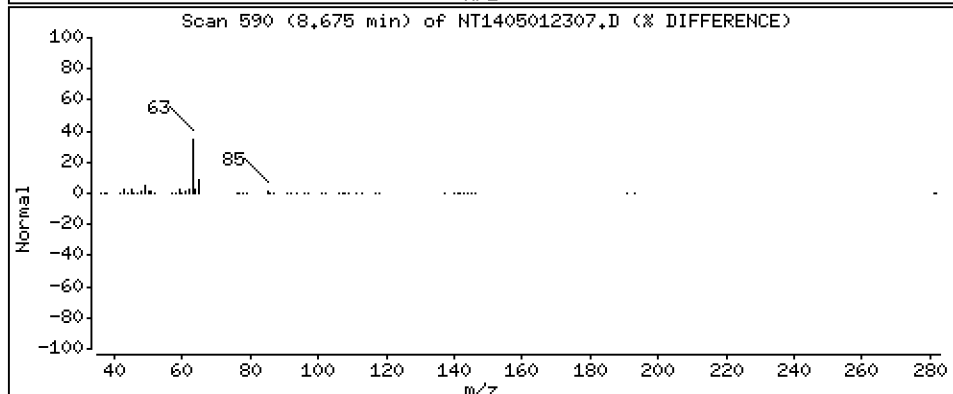
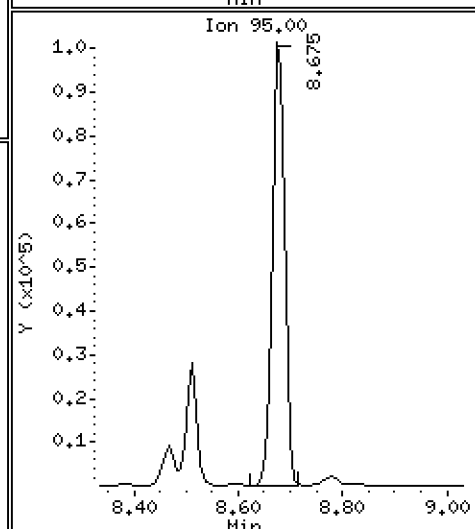
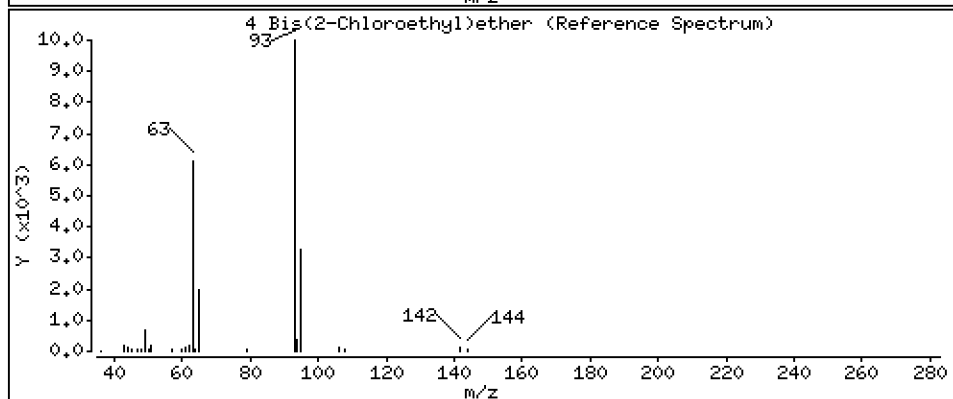
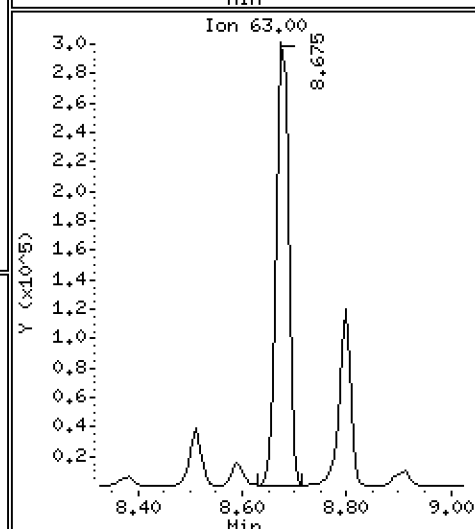
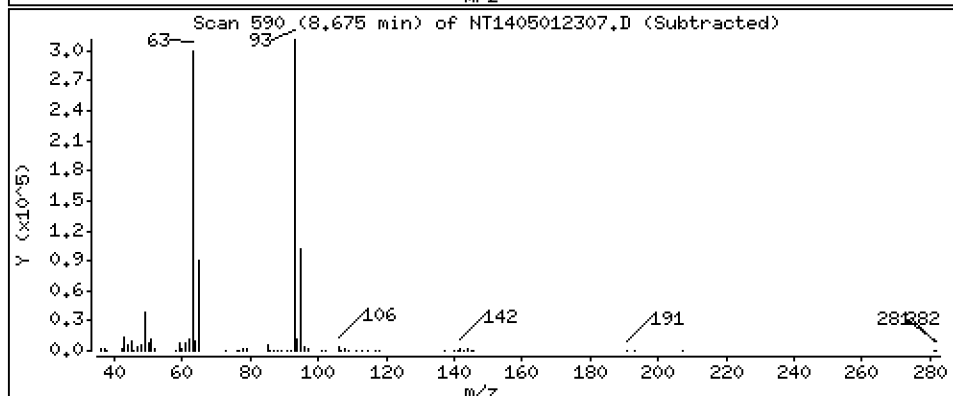
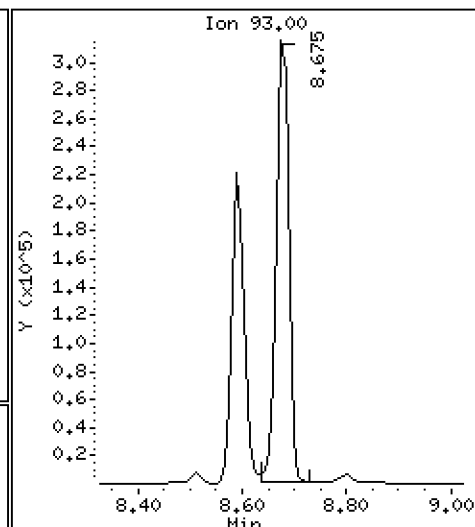
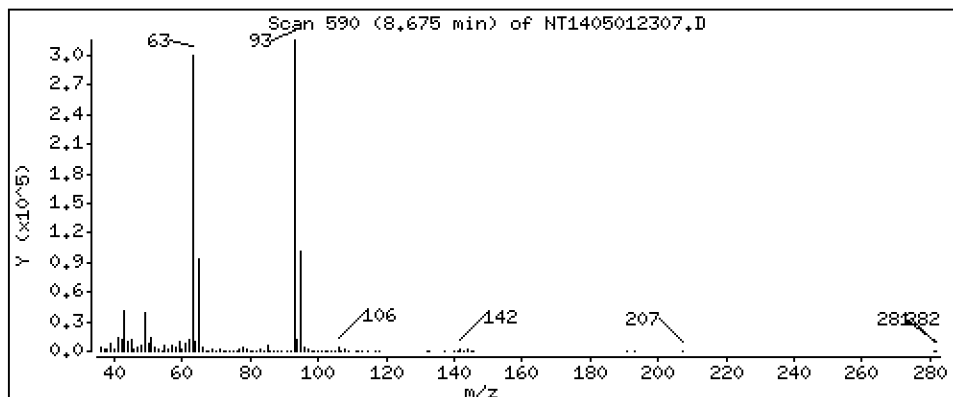
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 4,251 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

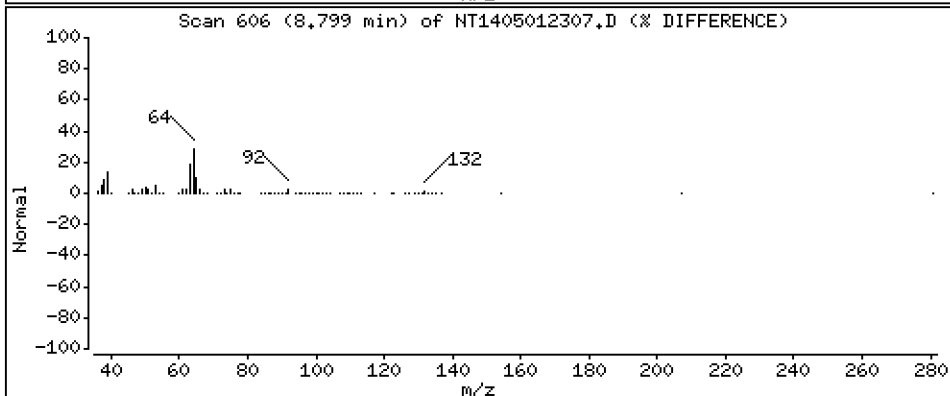
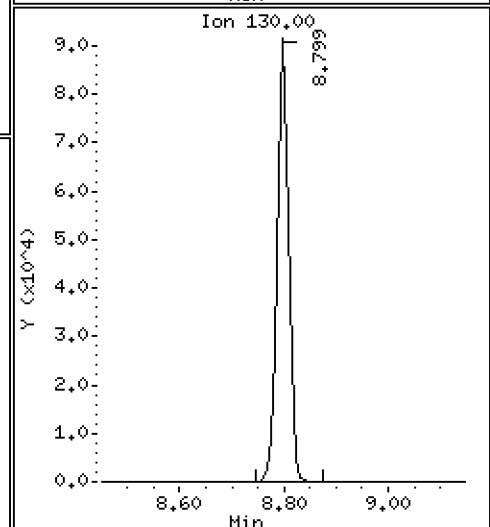
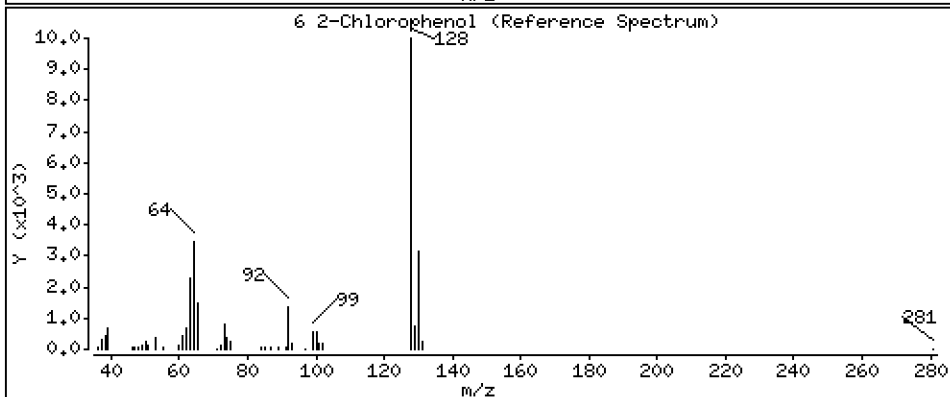
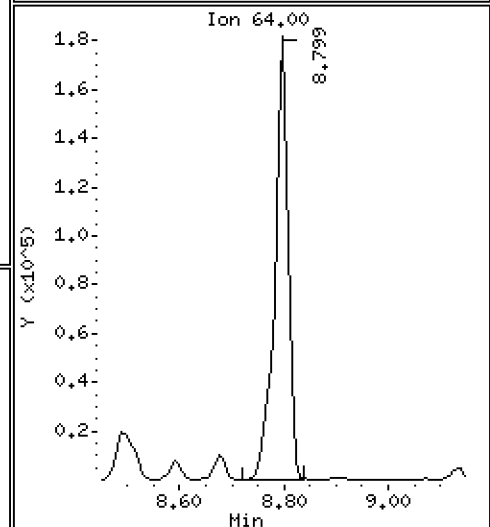
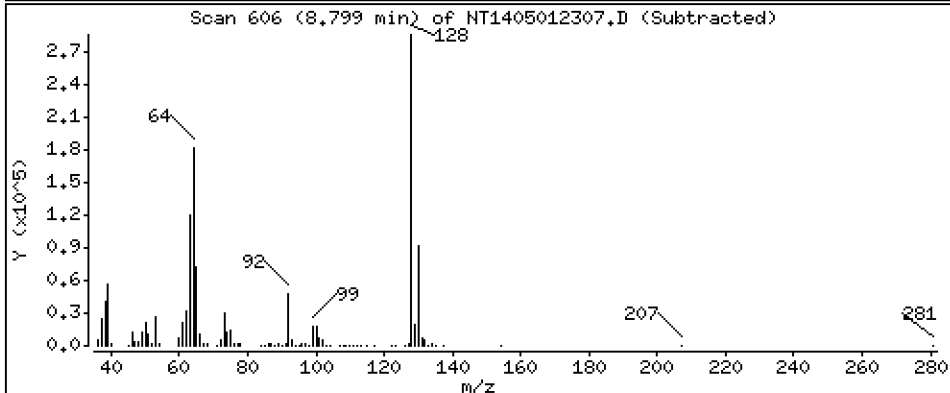
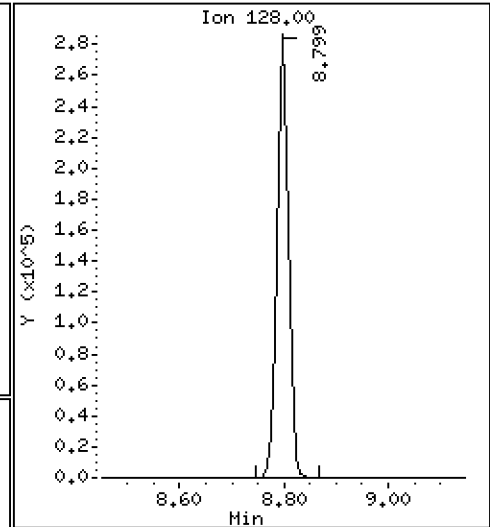
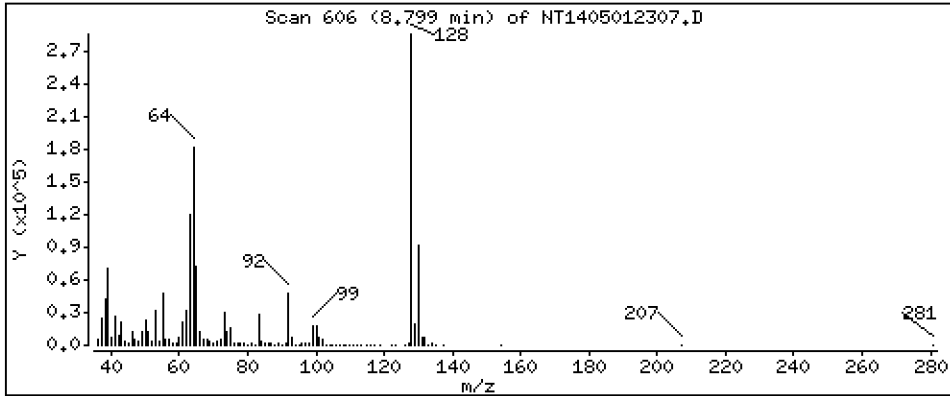
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 3,983 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

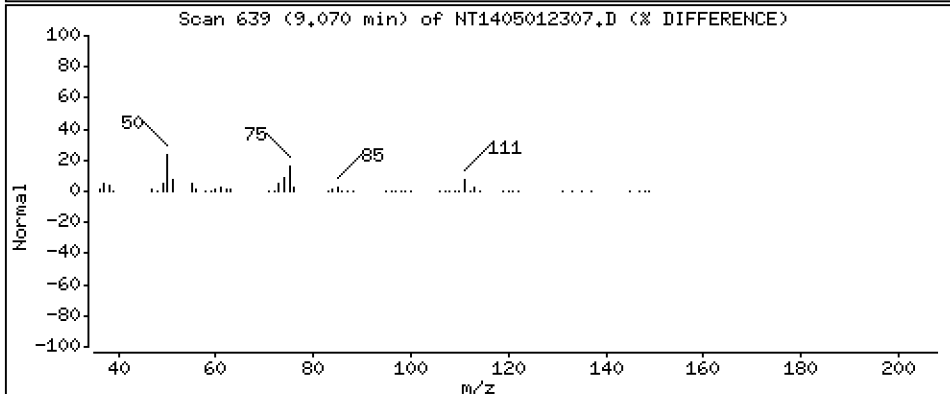
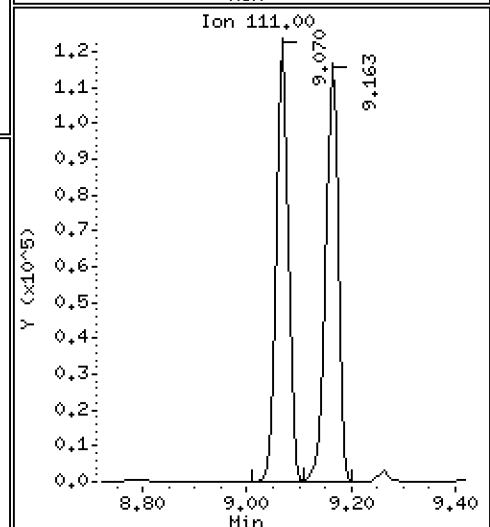
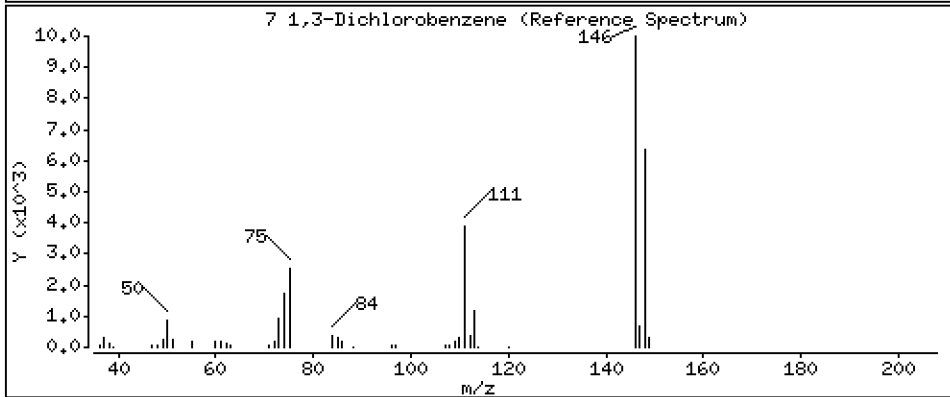
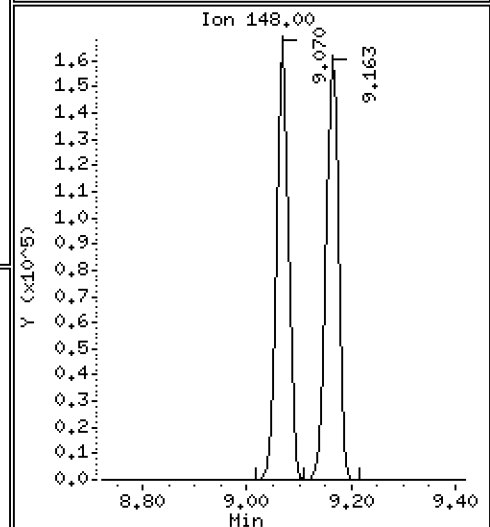
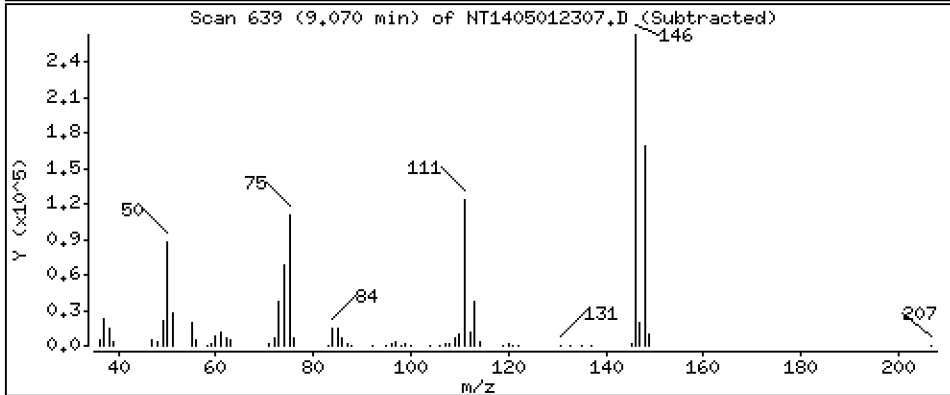
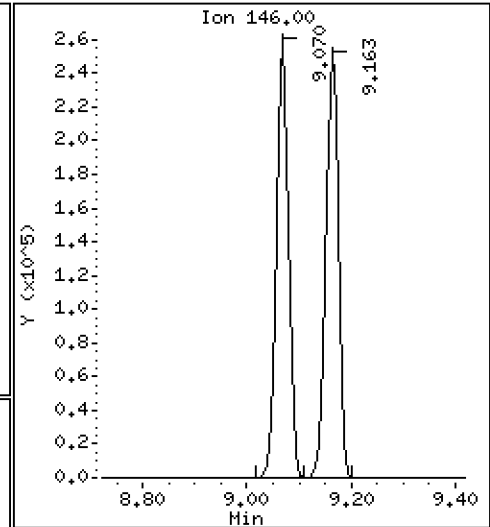
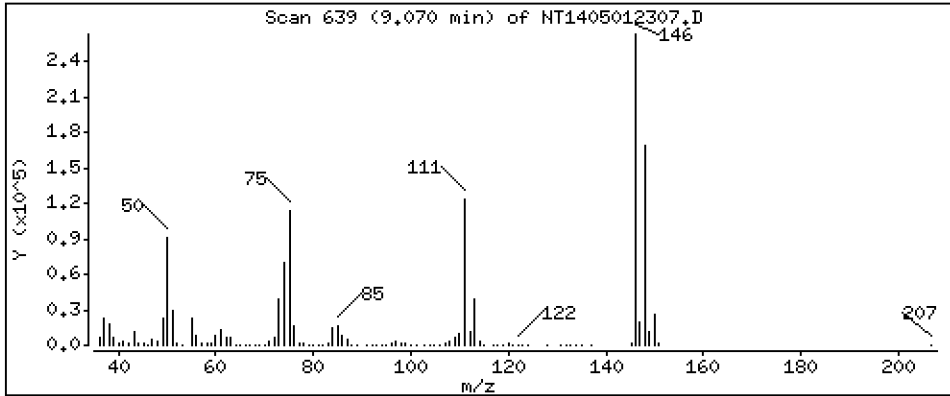
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

7 1,3-Dichlorobenzene

Concentration: 3,846 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

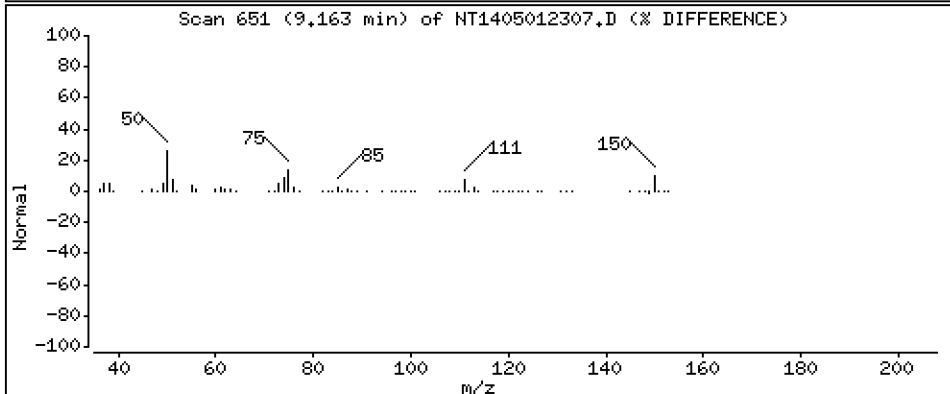
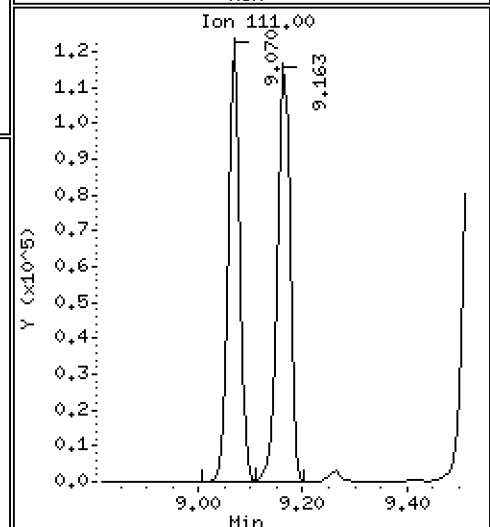
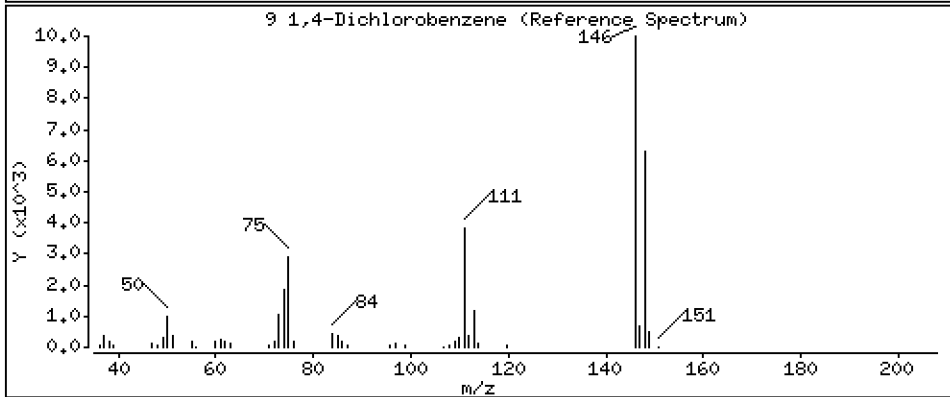
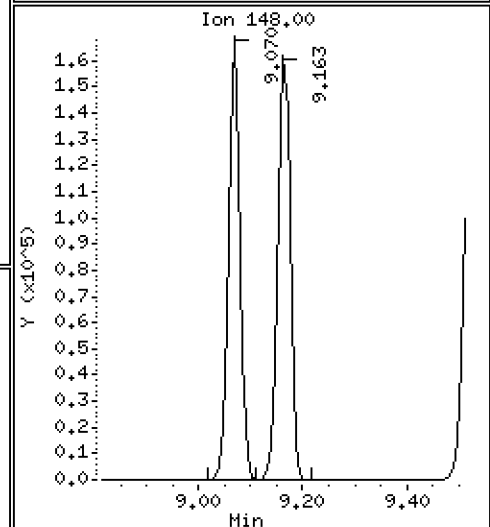
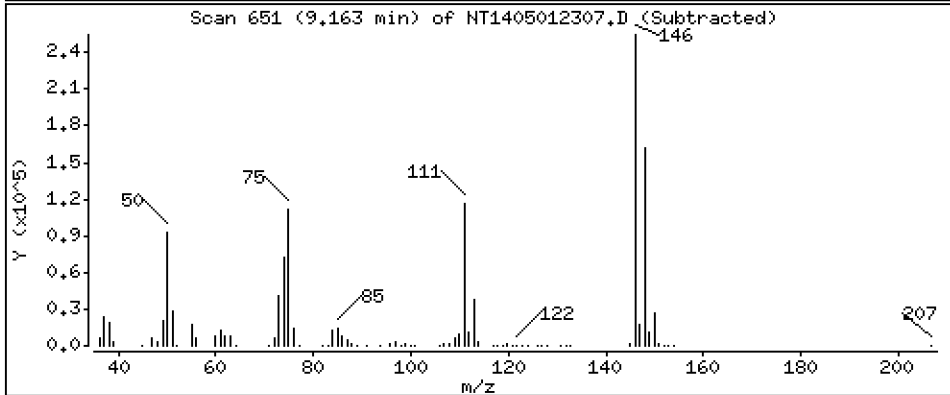
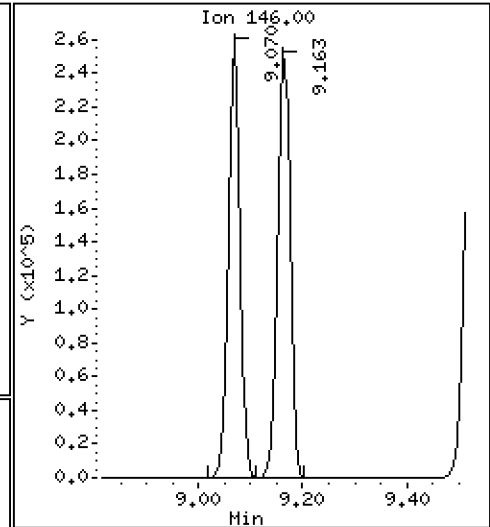
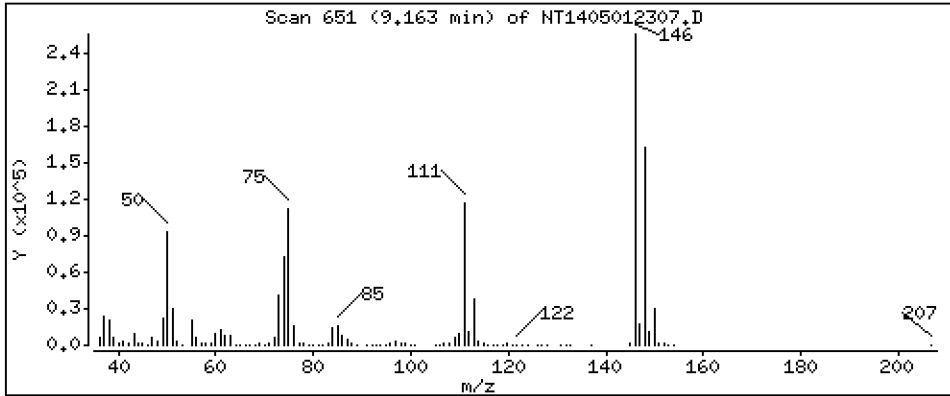
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 3,931 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

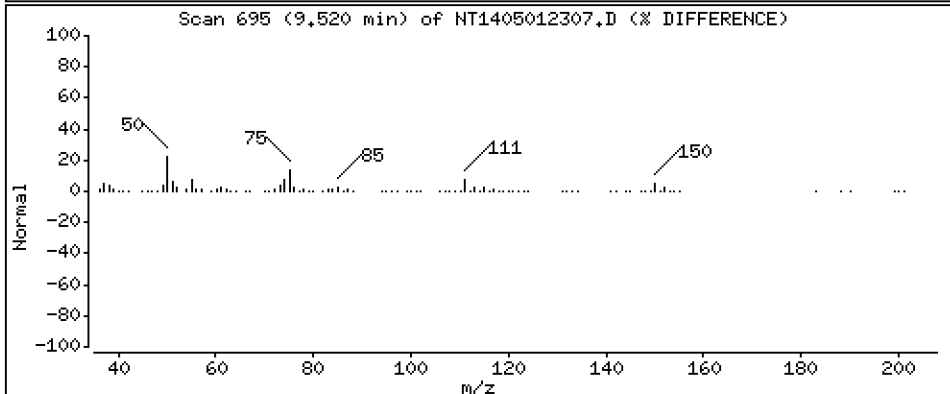
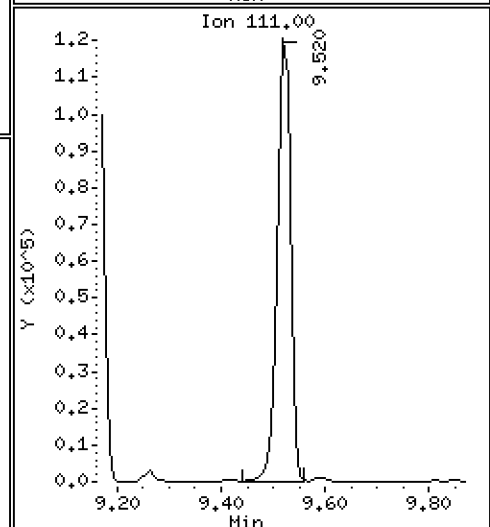
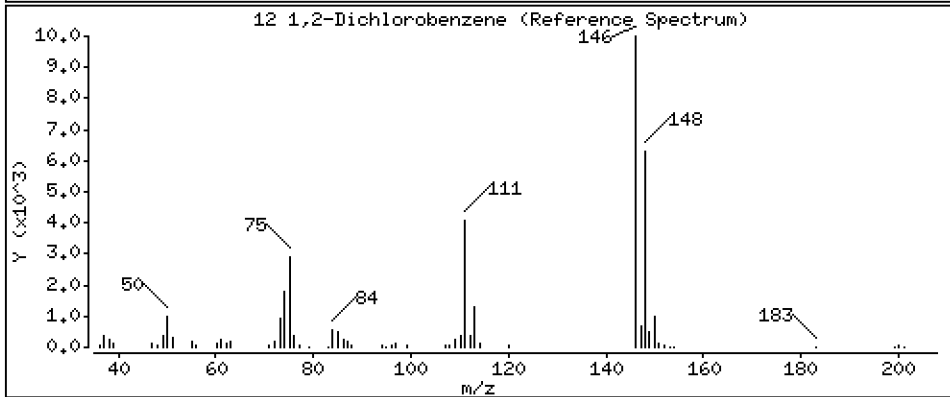
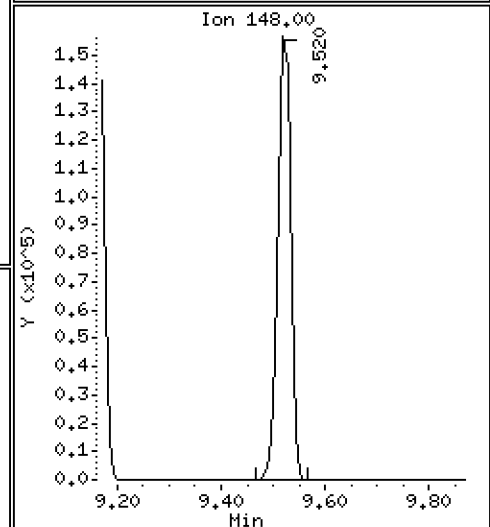
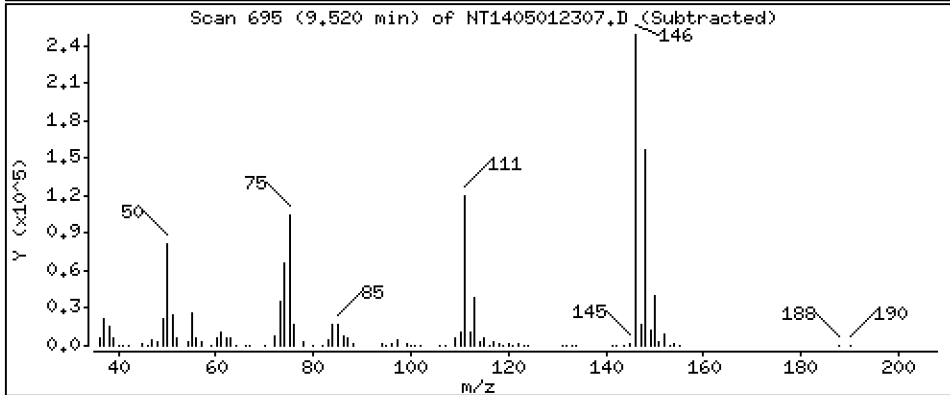
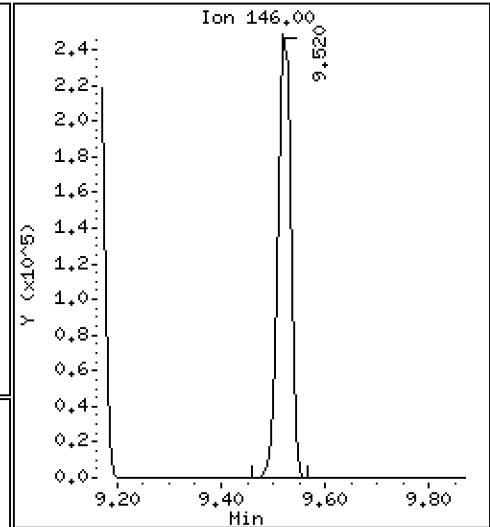
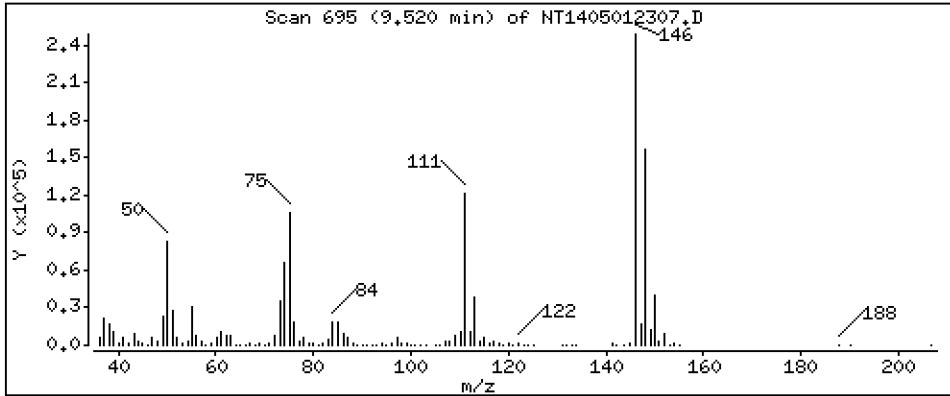
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.003 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

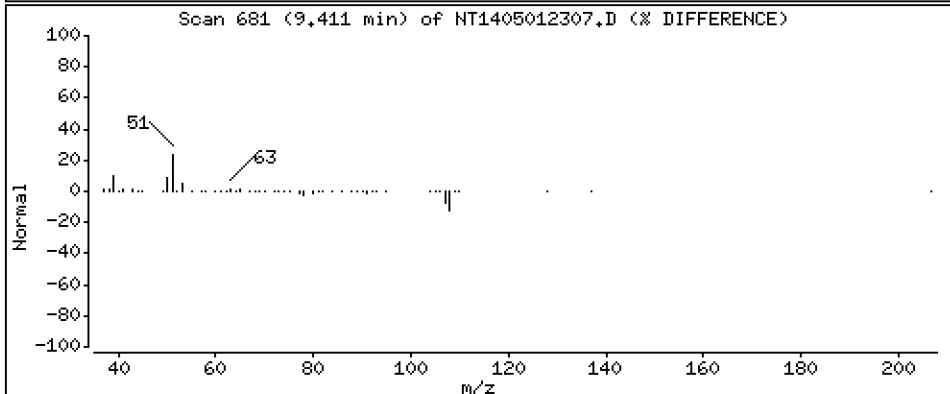
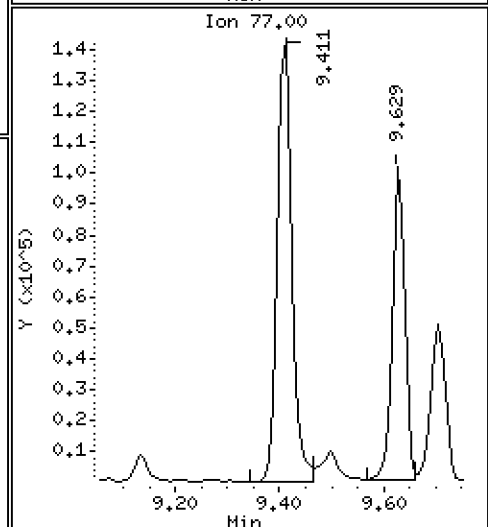
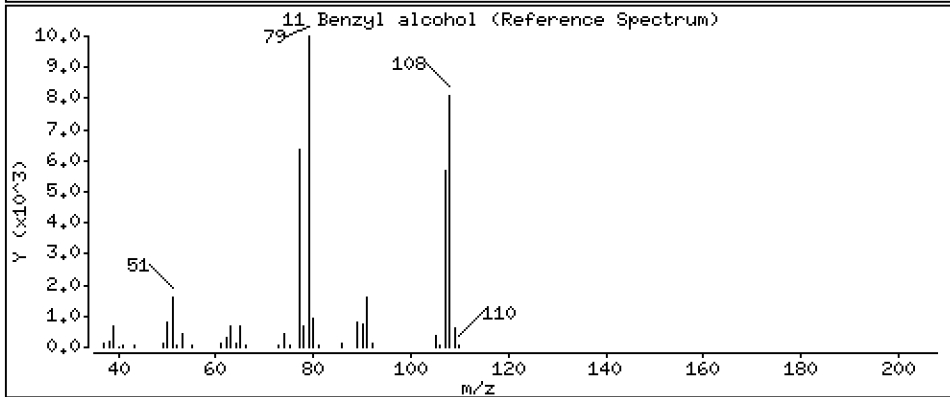
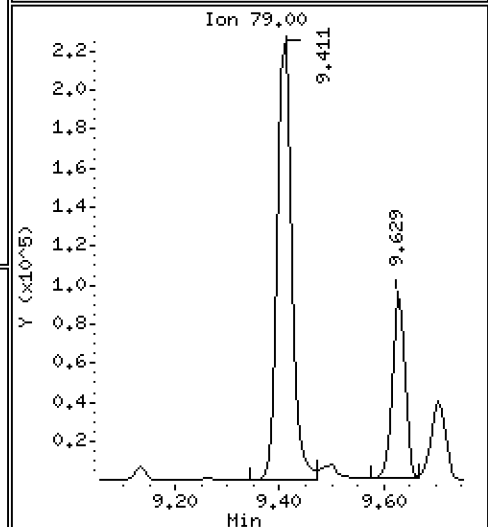
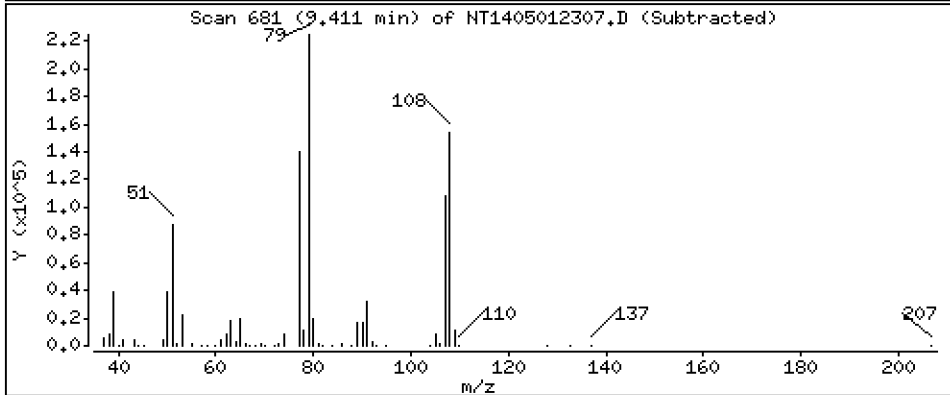
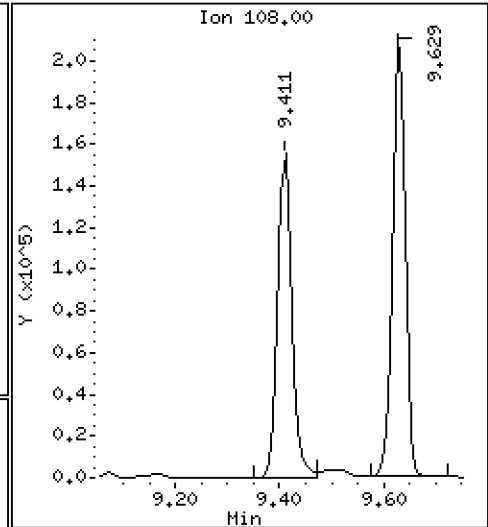
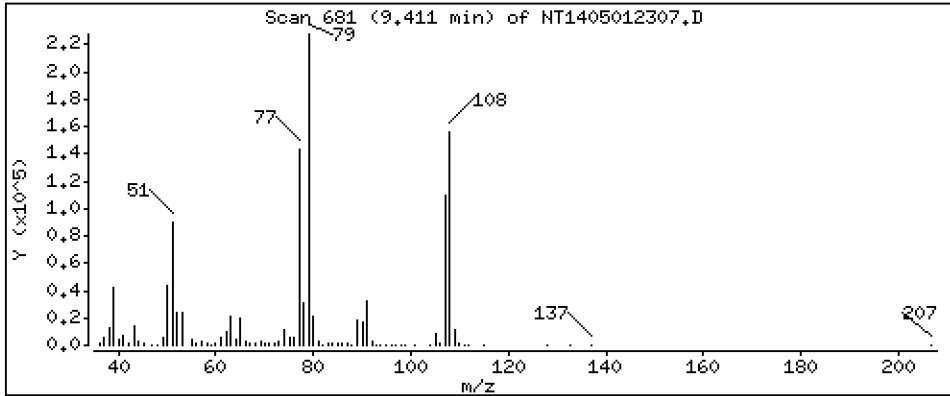
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.066 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

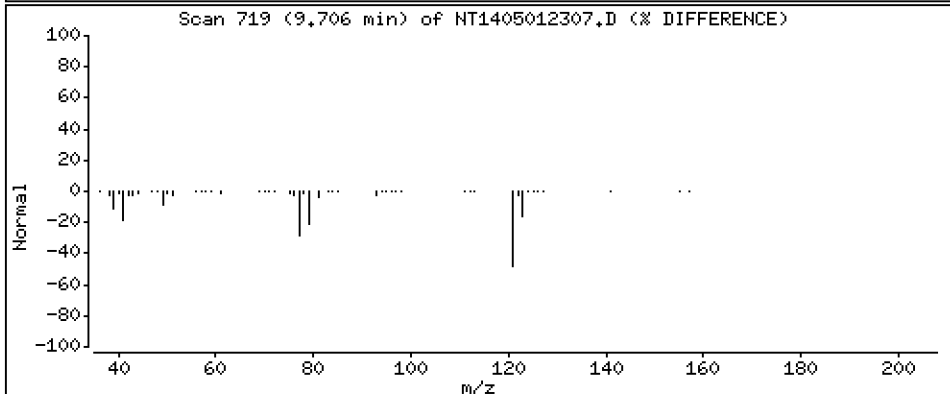
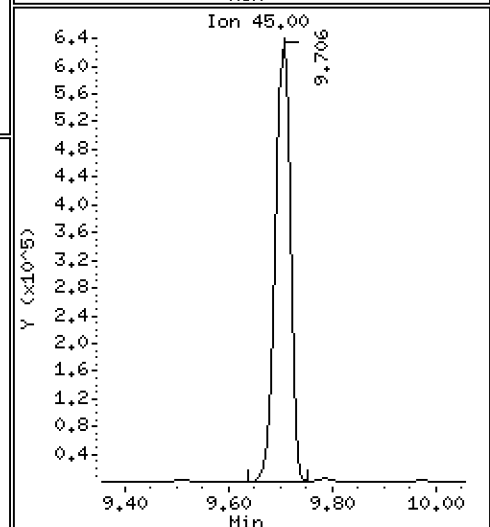
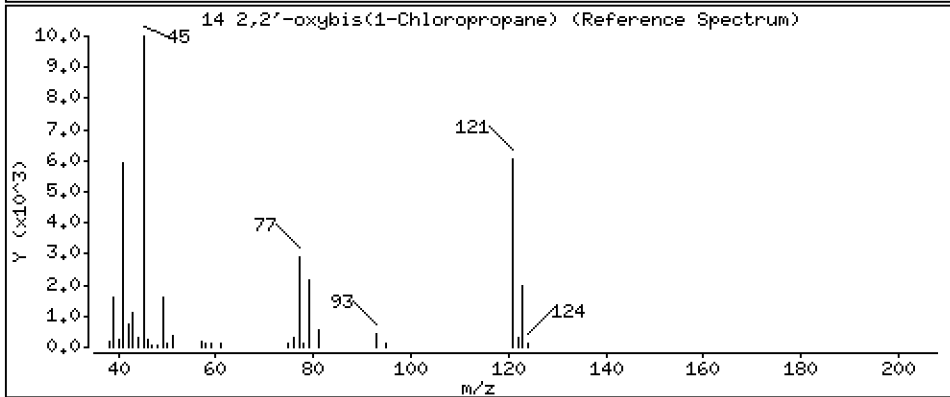
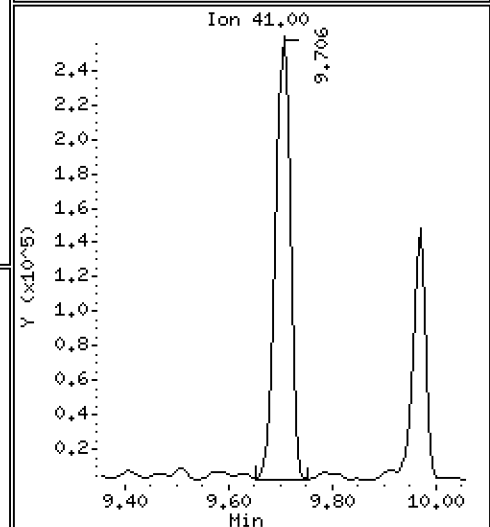
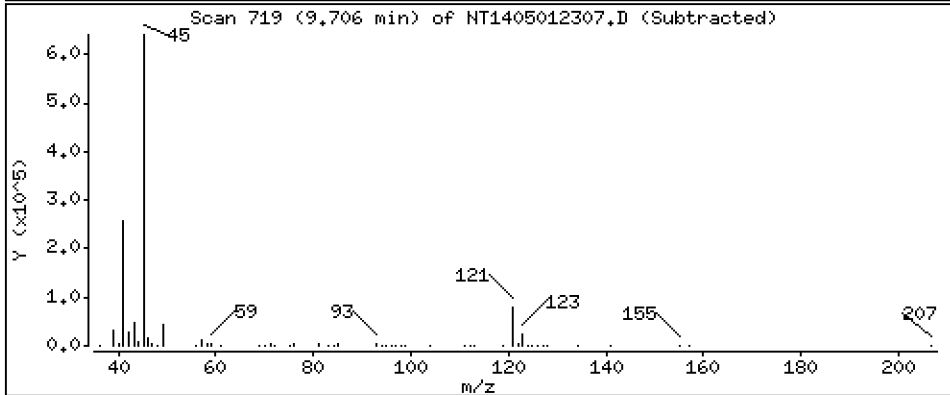
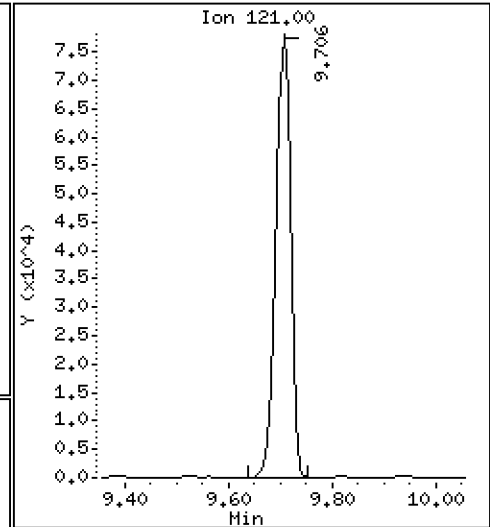
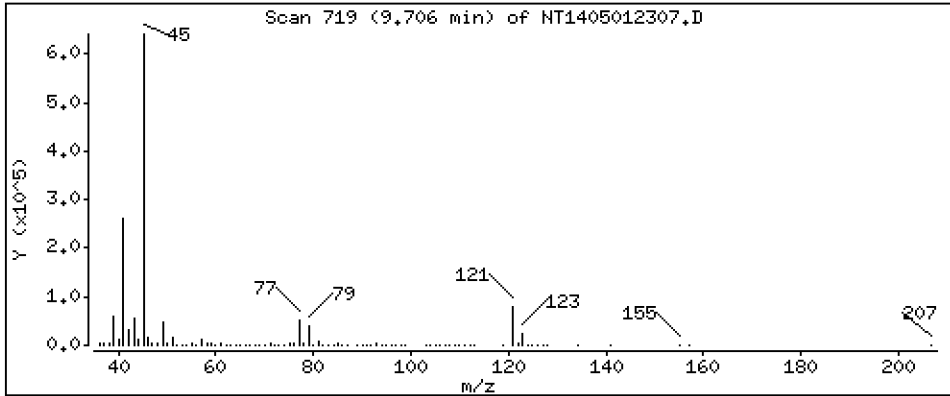
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 4,343 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

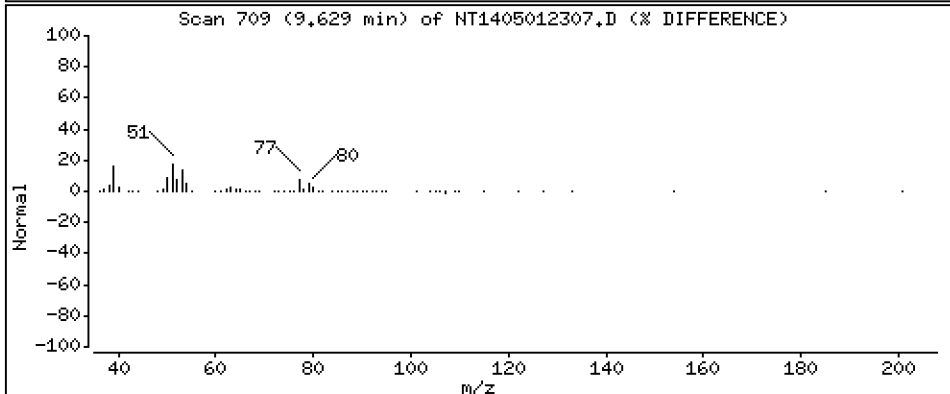
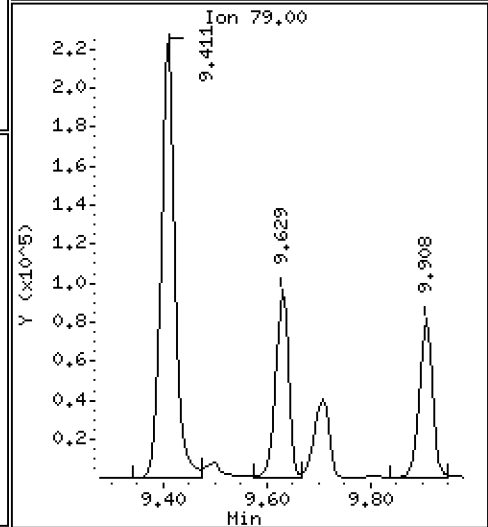
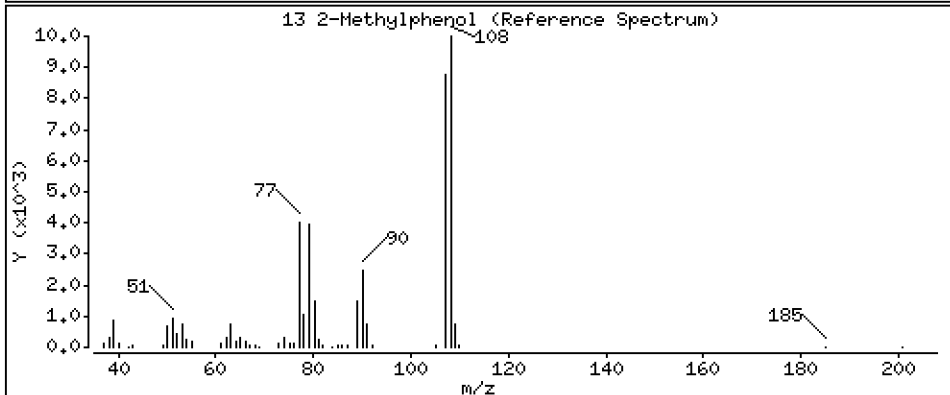
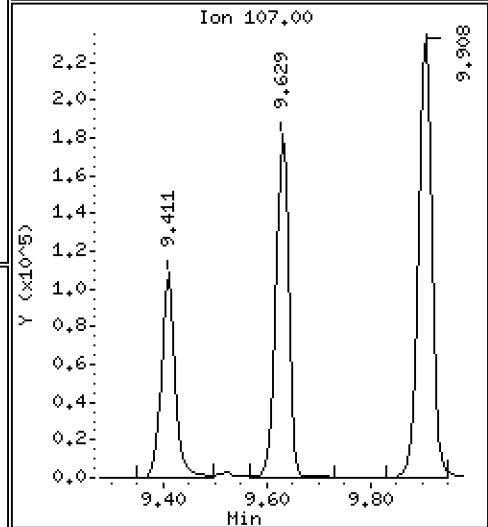
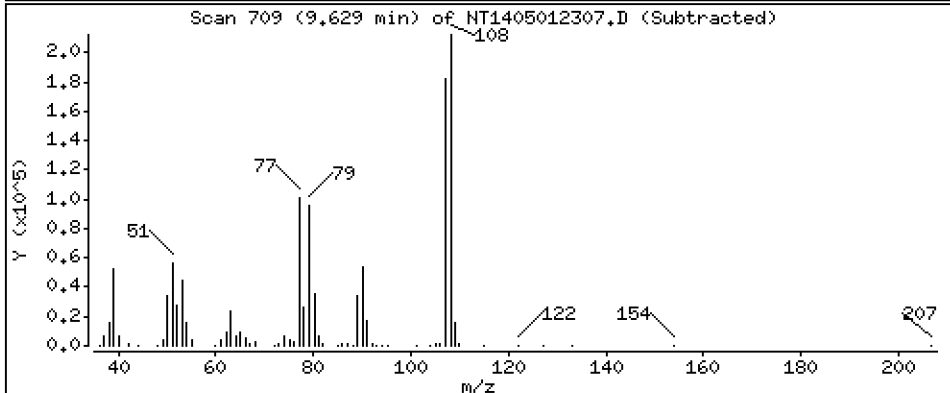
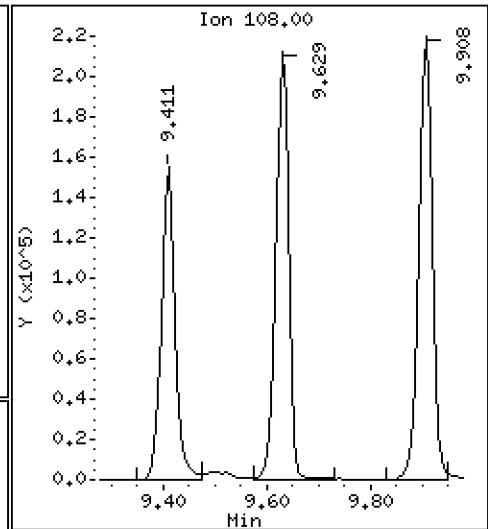
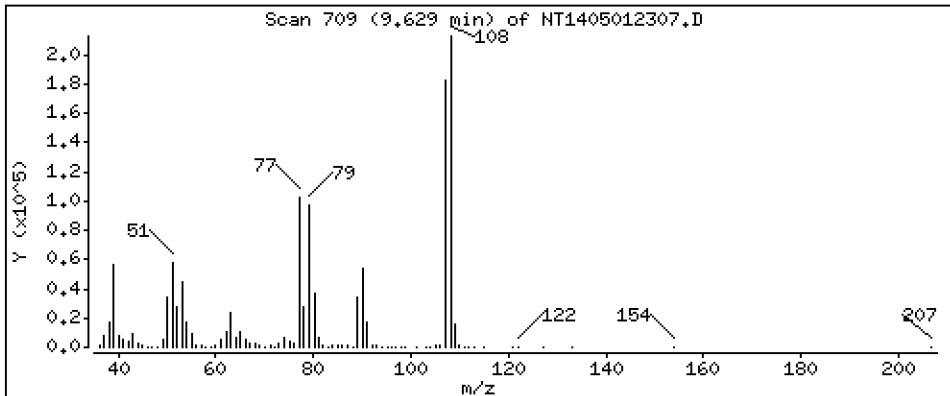
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 3.373 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

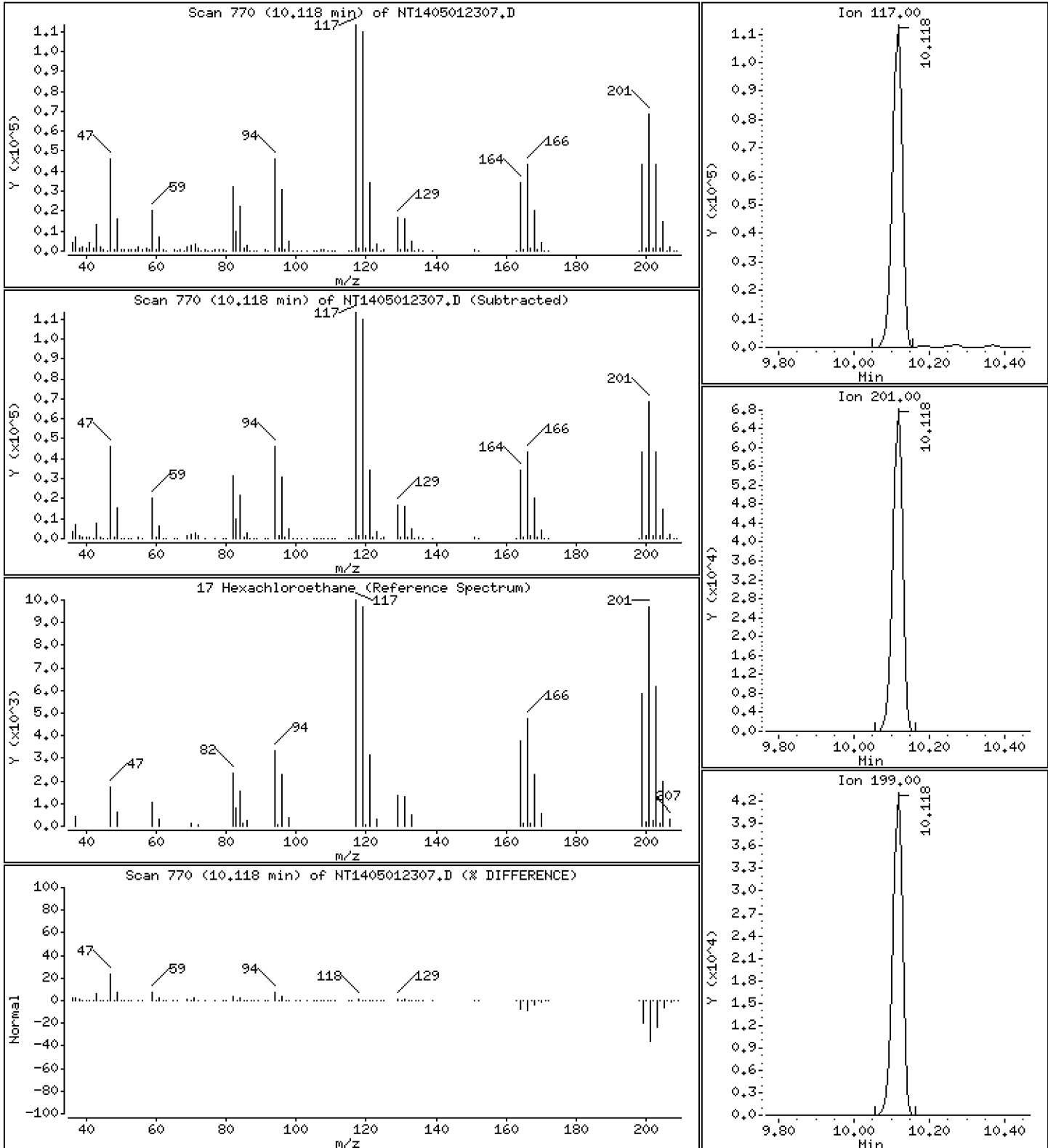
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

17 Hexachloroethane

Concentration: 4.013 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

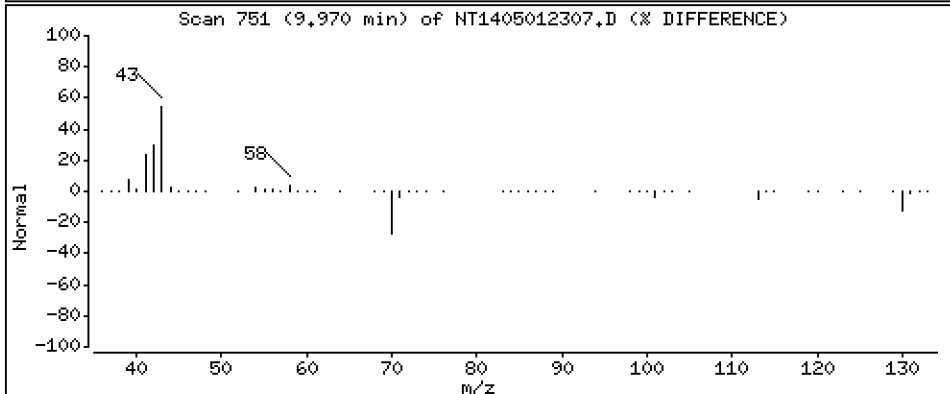
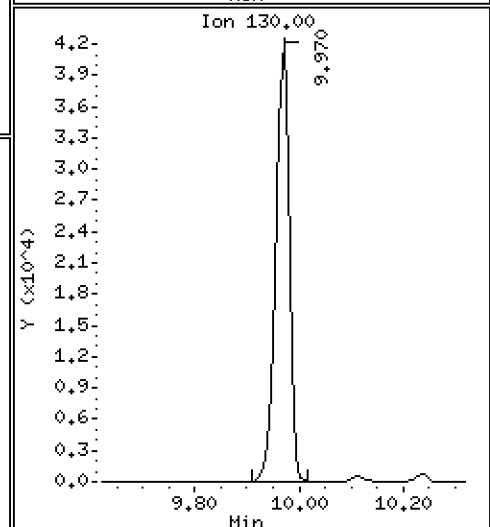
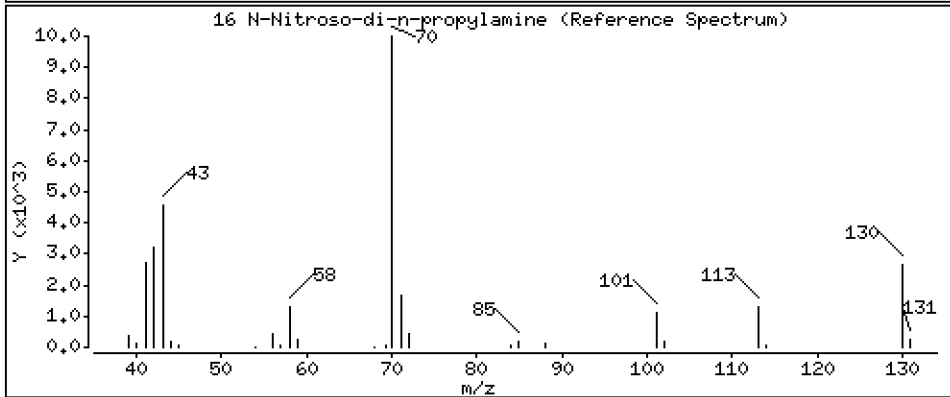
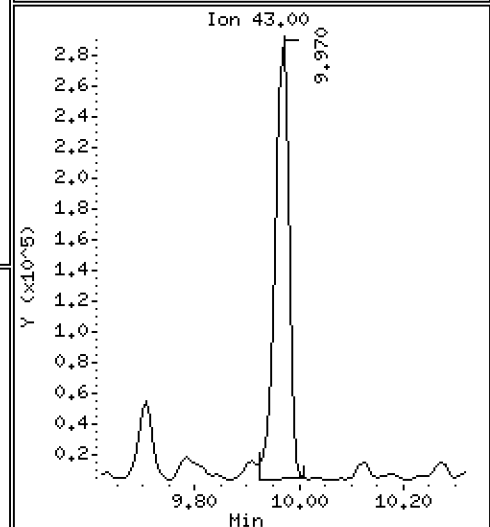
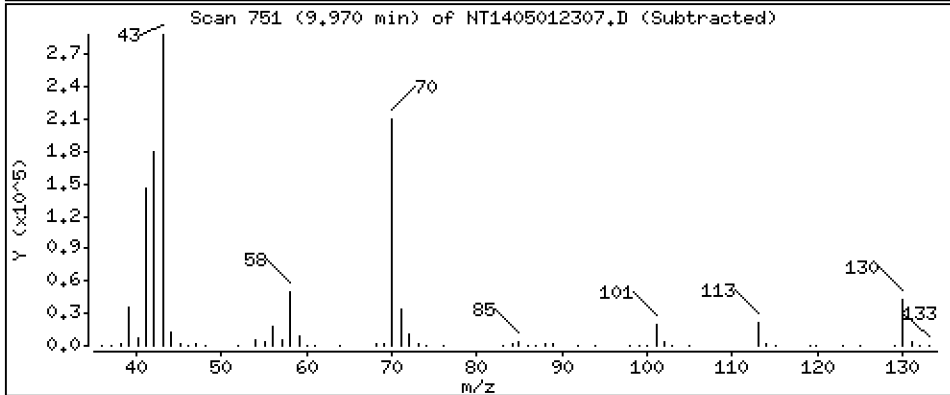
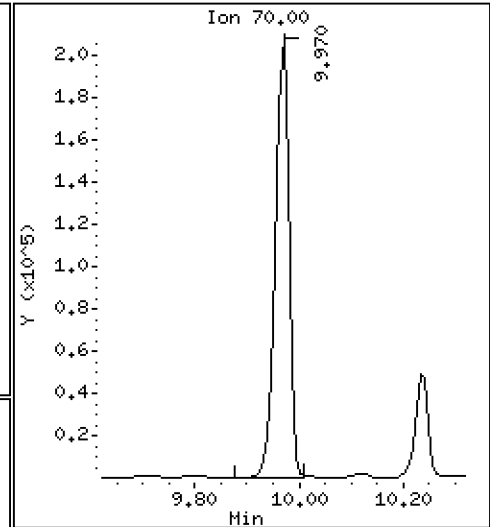
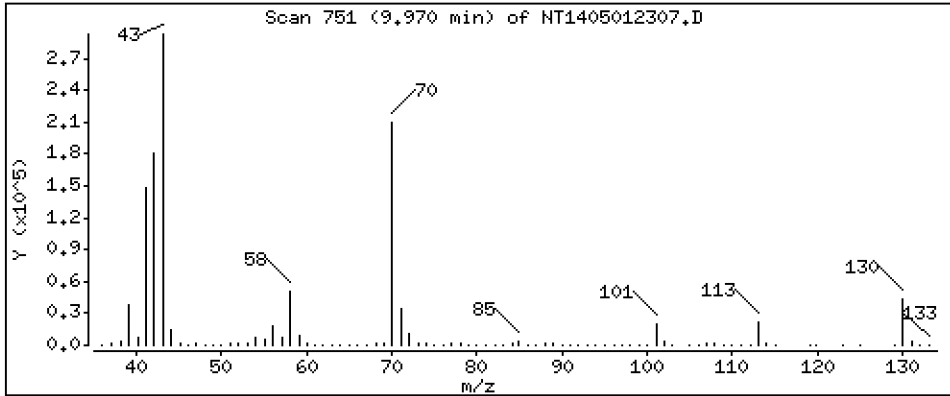
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 3,504 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

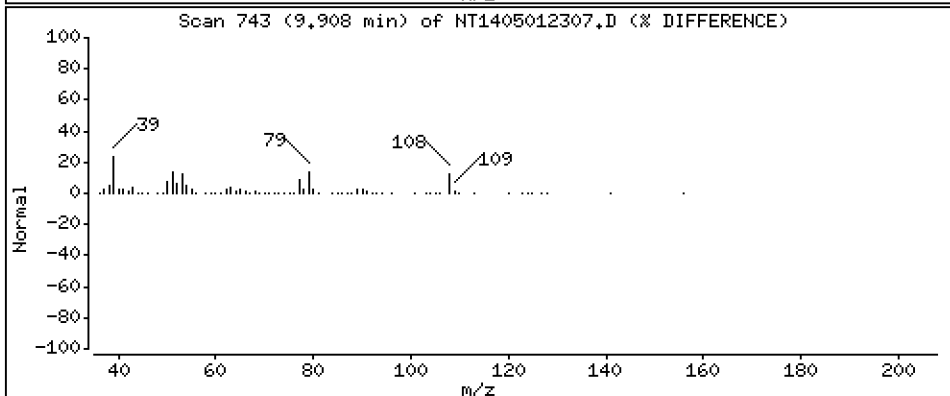
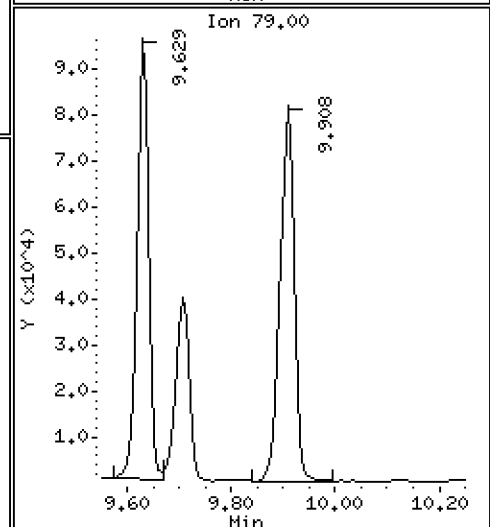
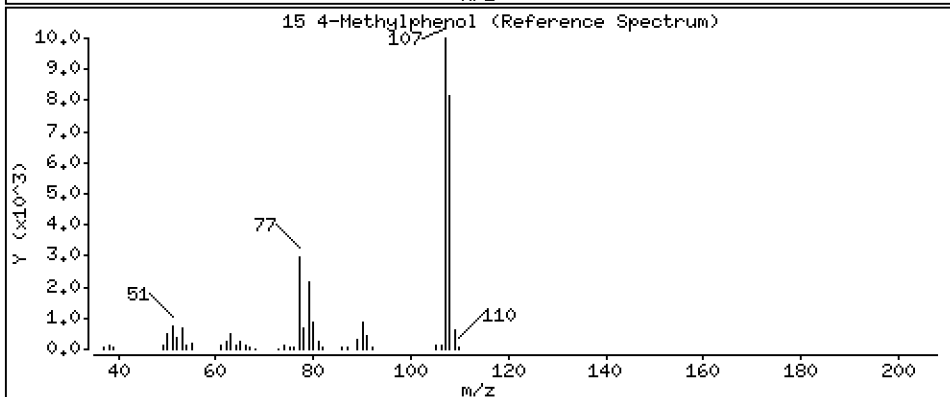
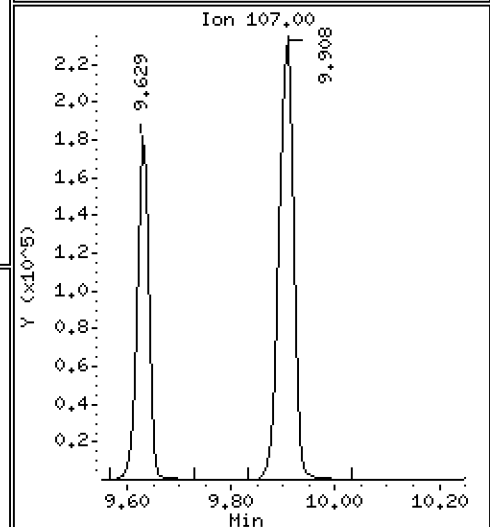
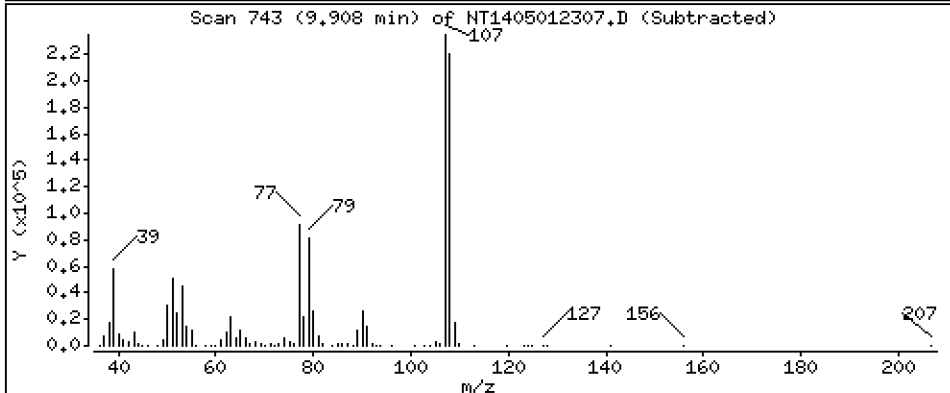
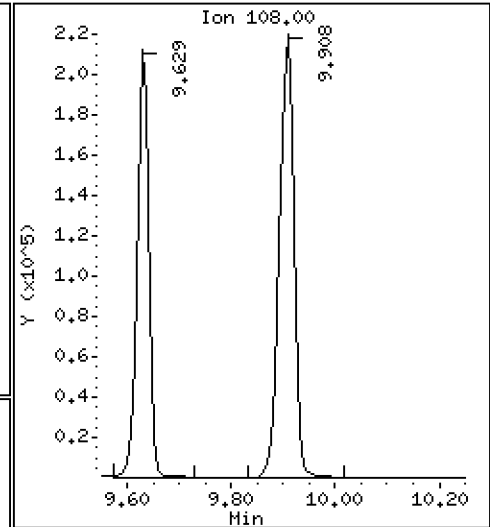
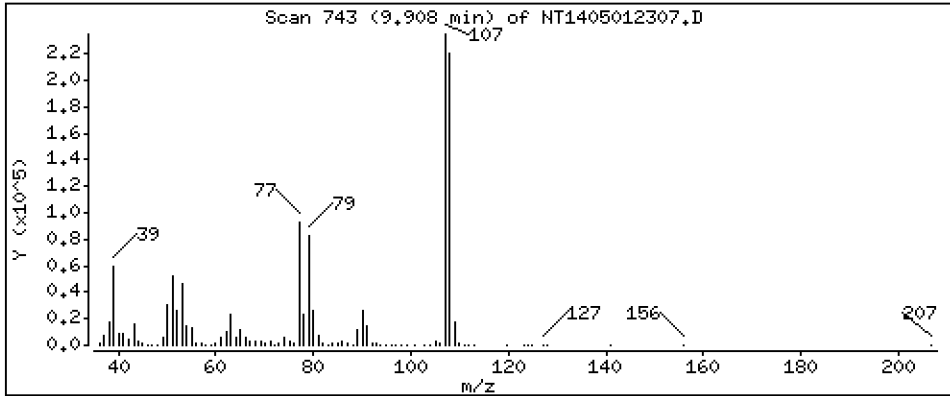
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 3.591 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

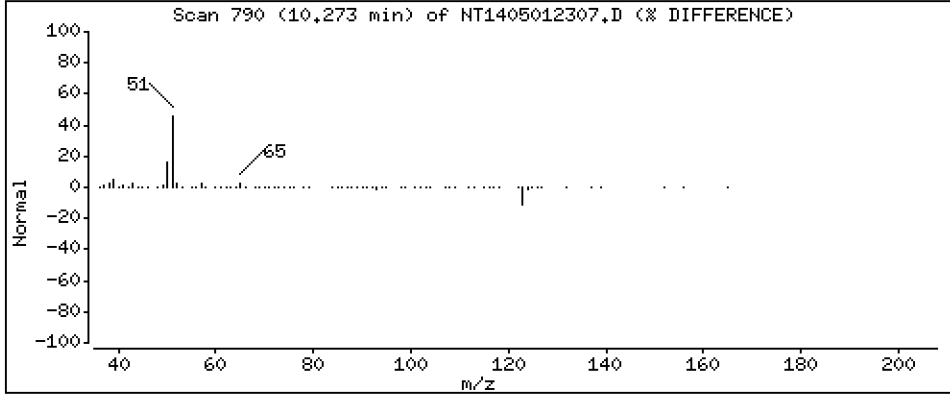
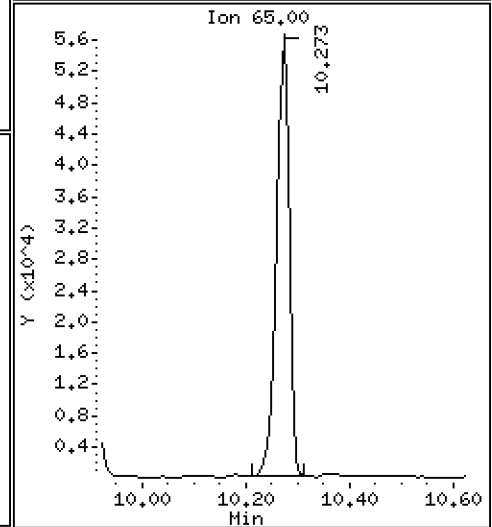
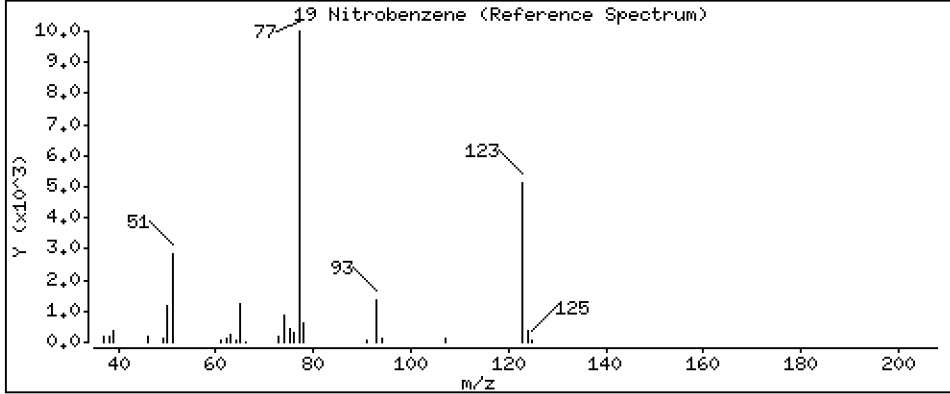
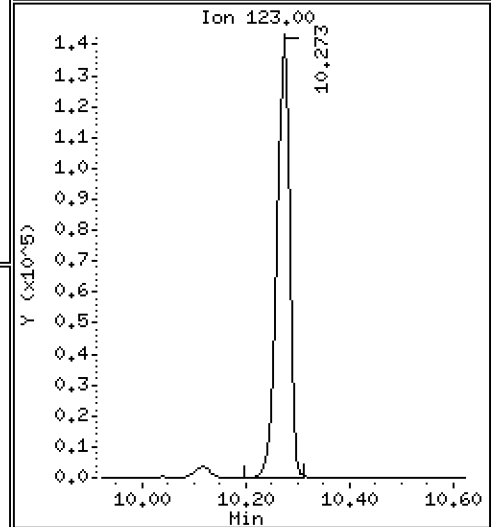
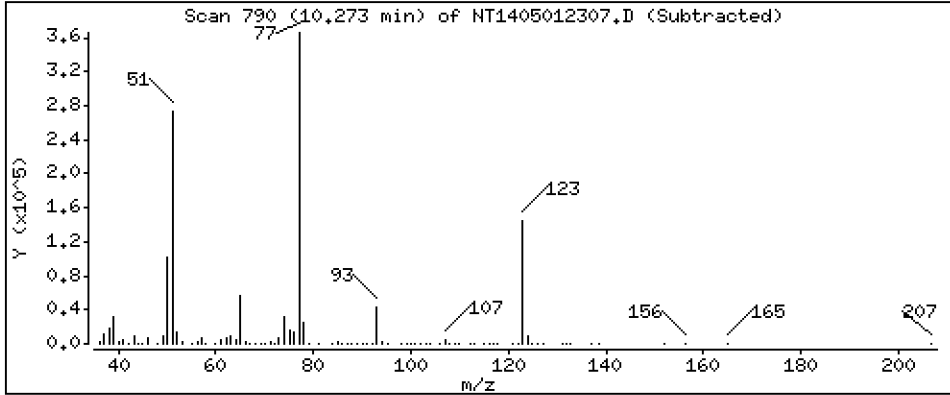
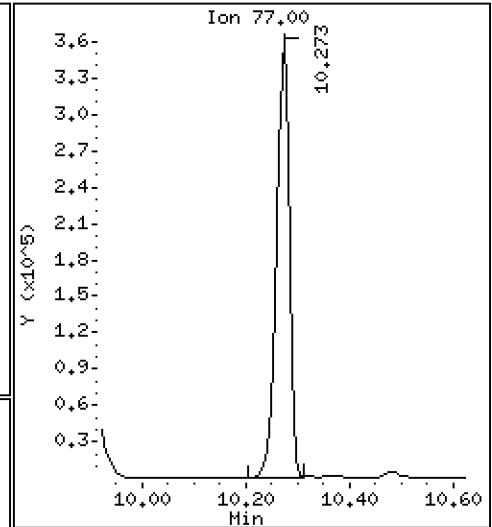
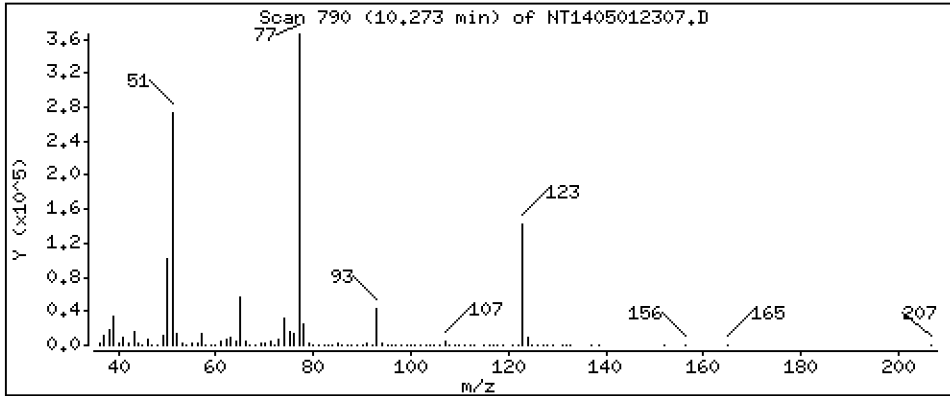
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 4,160 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

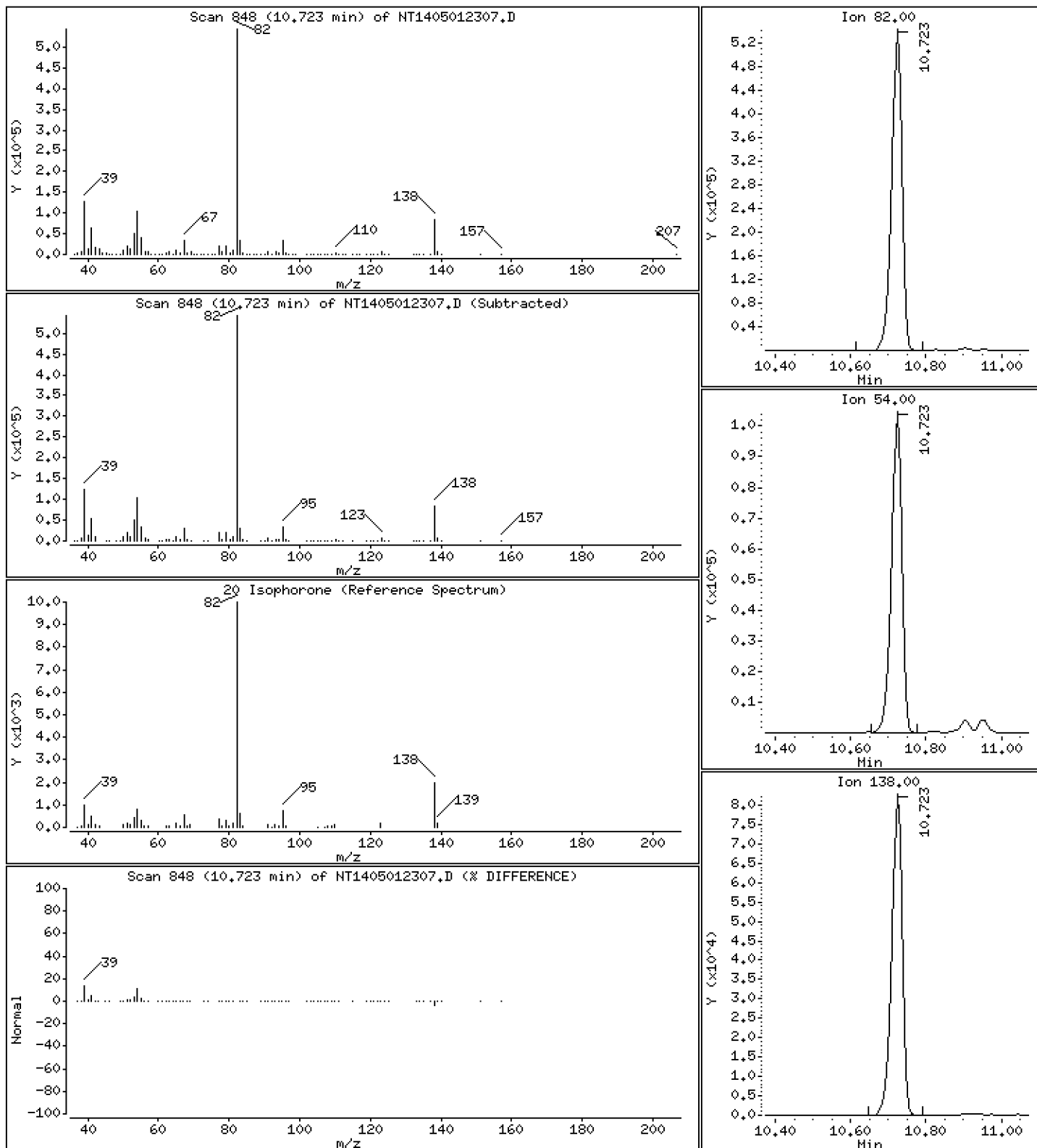
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 5,112 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

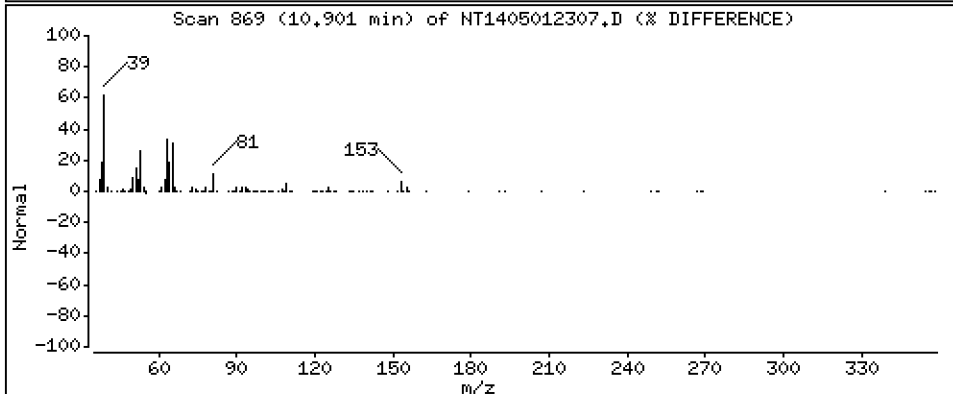
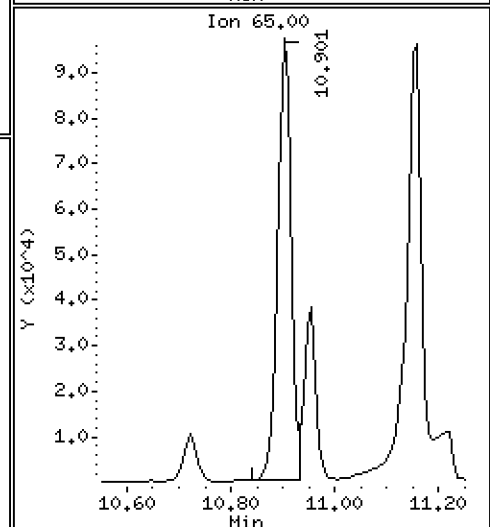
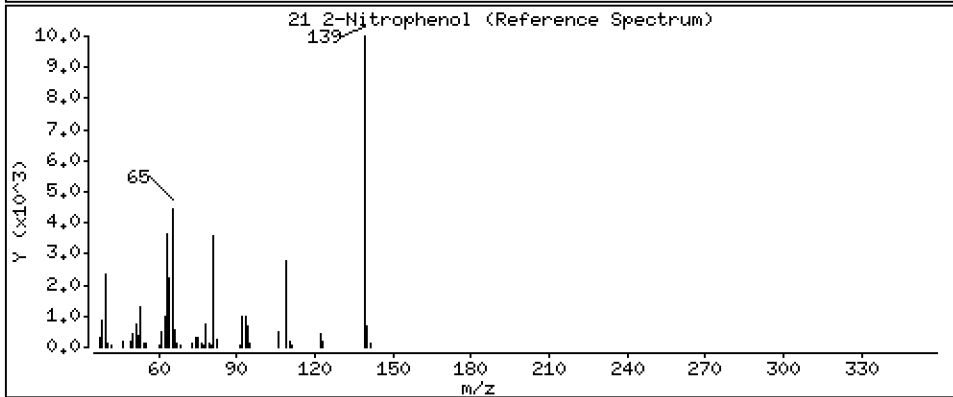
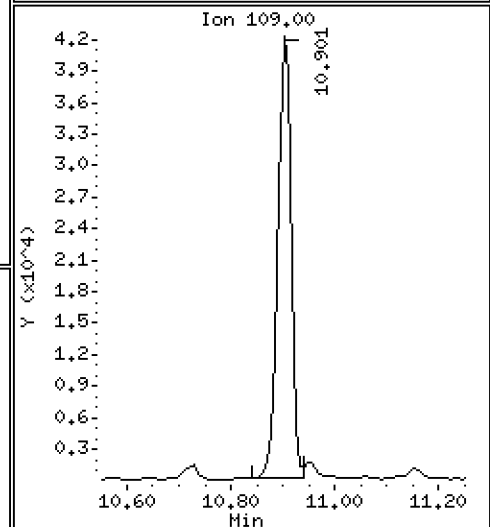
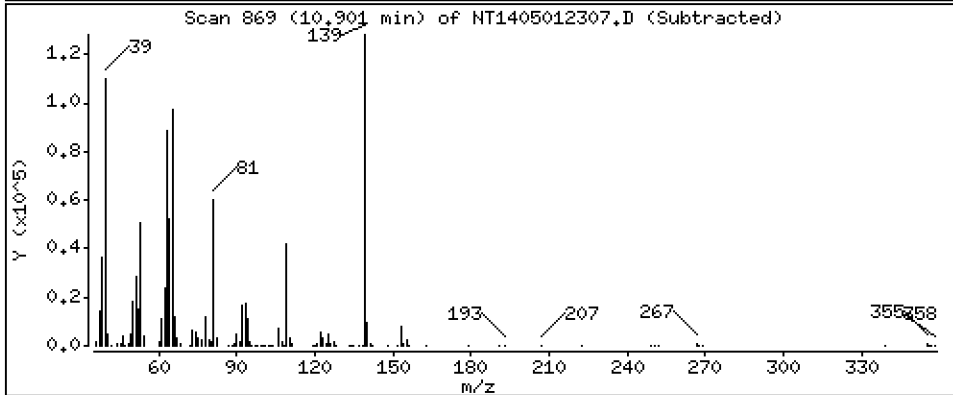
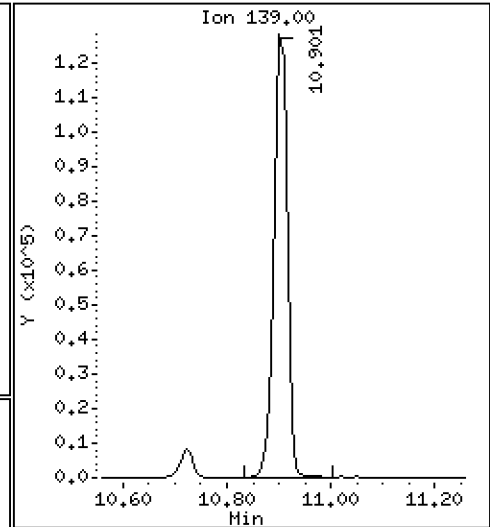
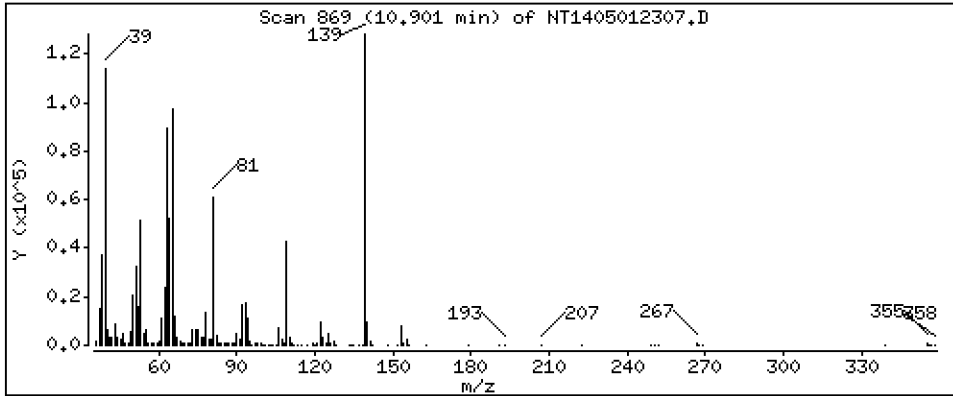
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 3,176 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

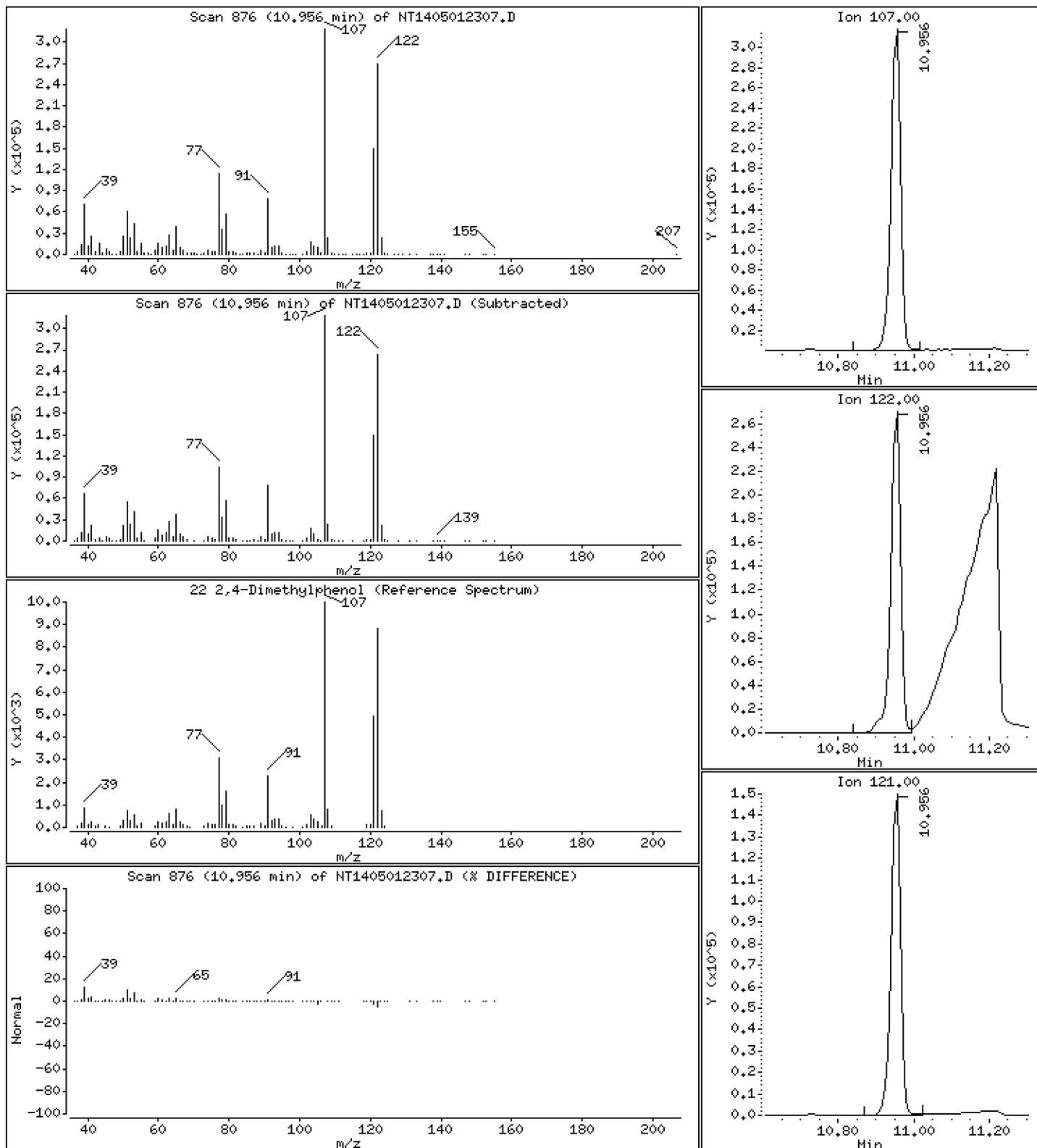
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 5,053 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

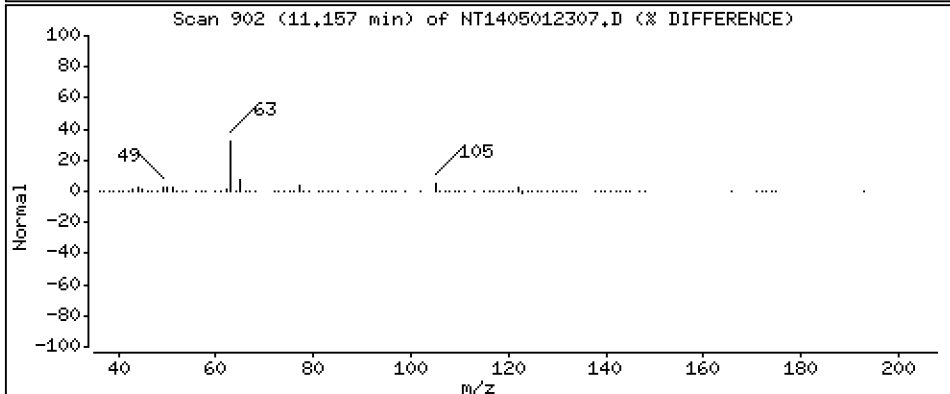
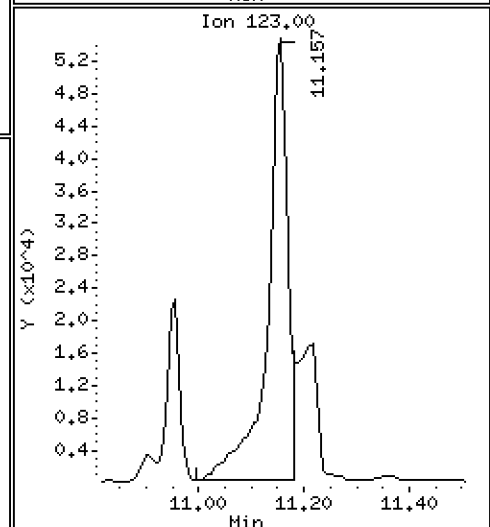
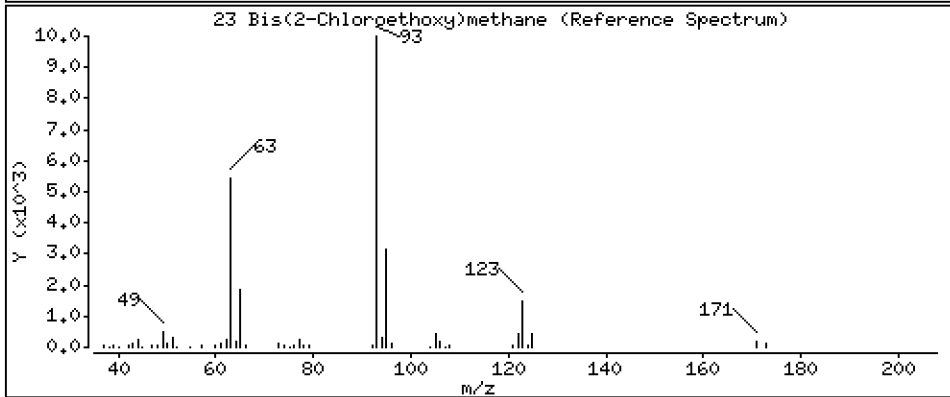
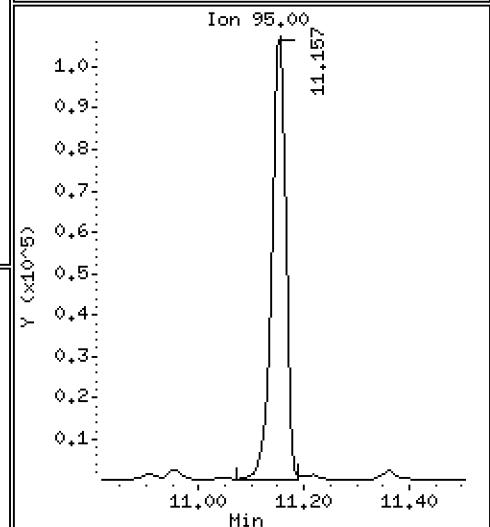
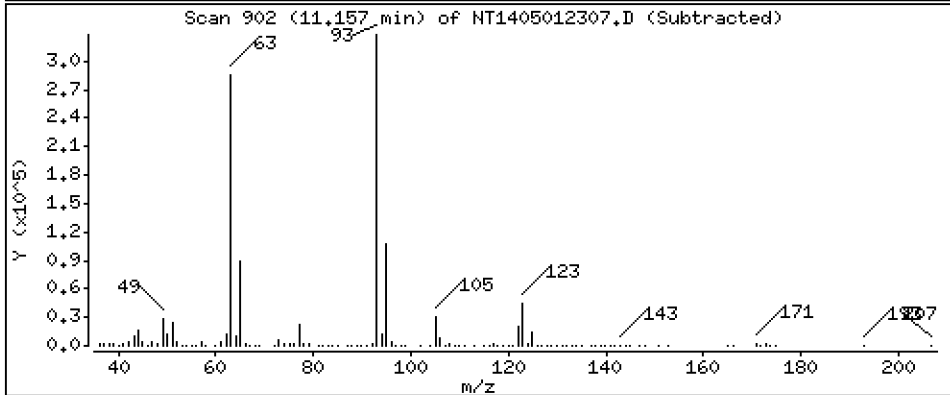
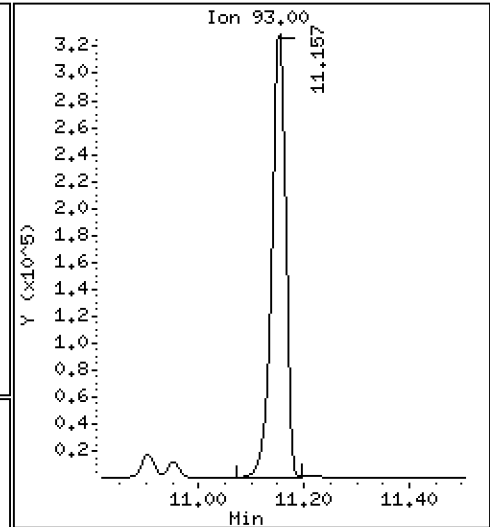
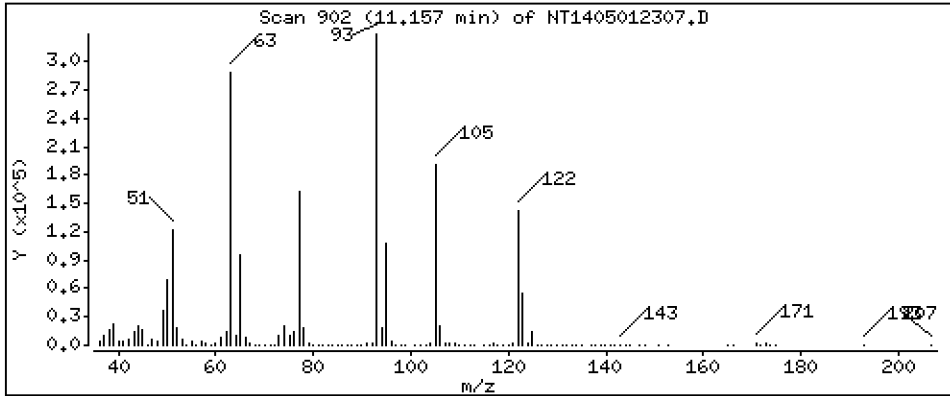
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

23 Bis(2-Chloroethoxy)methane

Concentration: 4.775 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

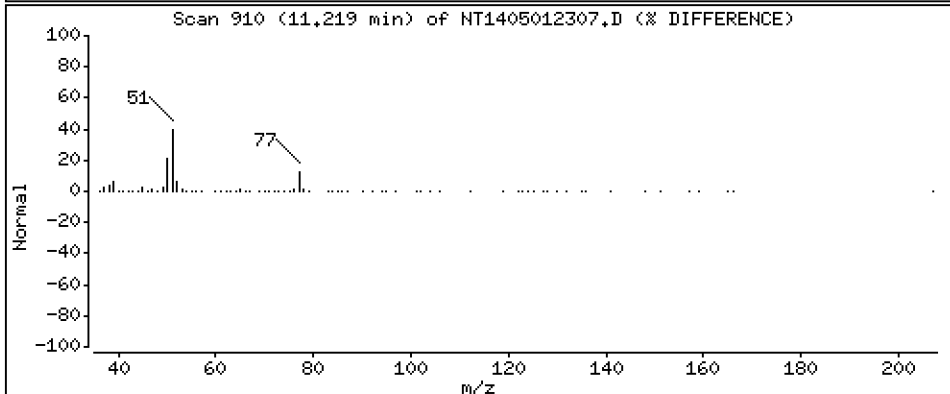
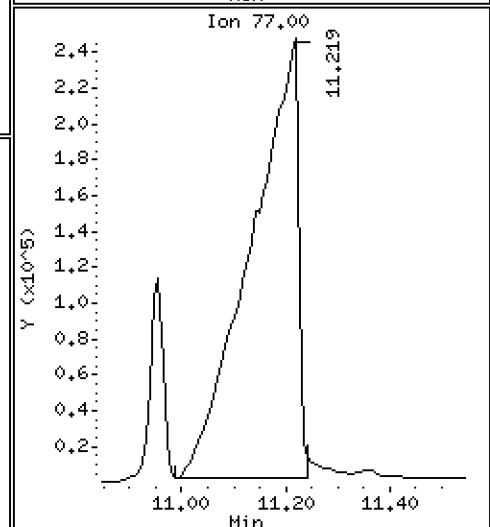
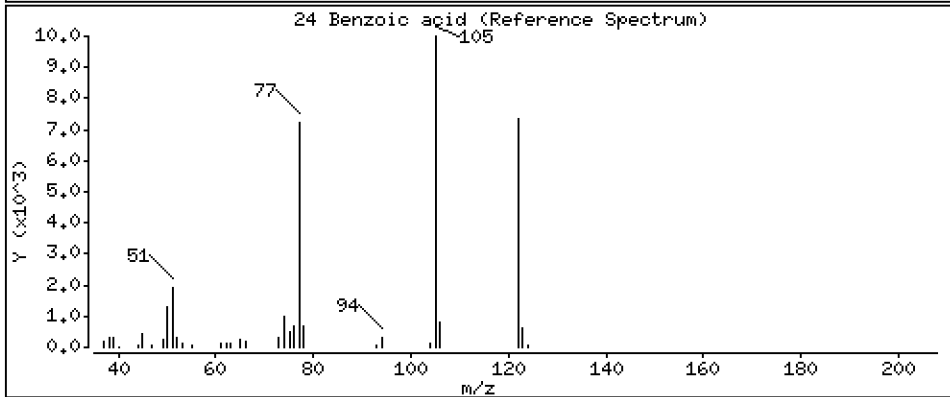
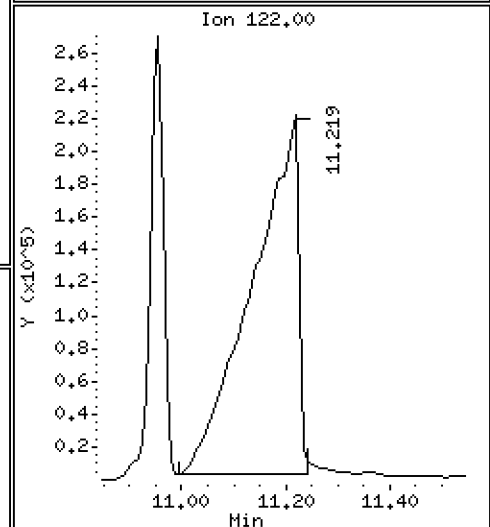
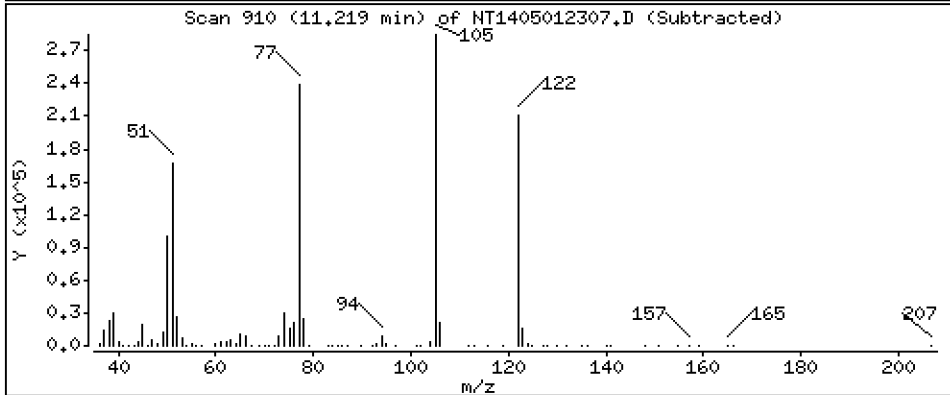
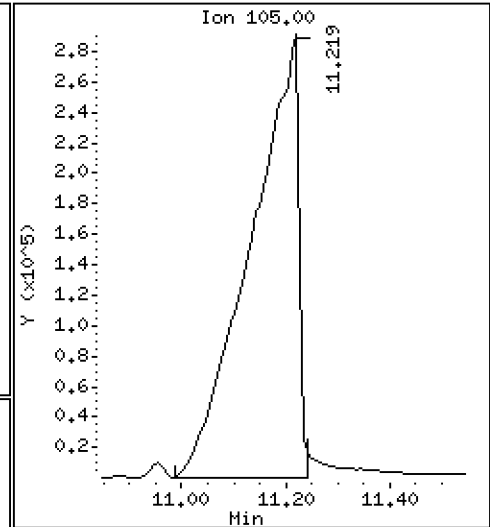
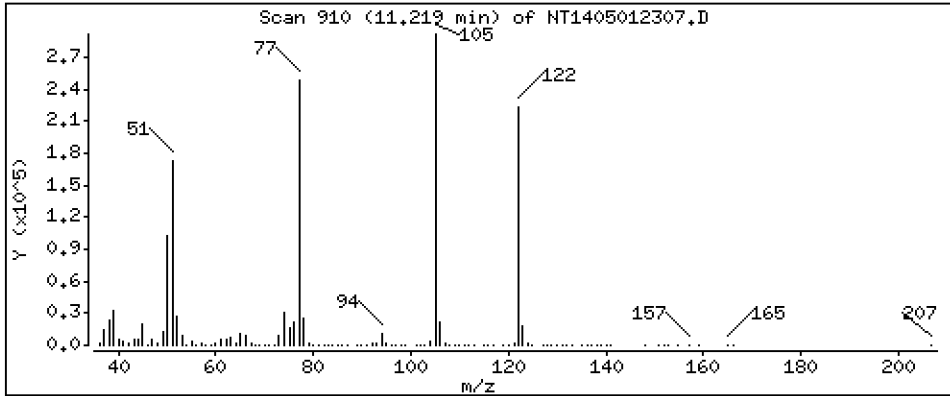
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 21,02 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

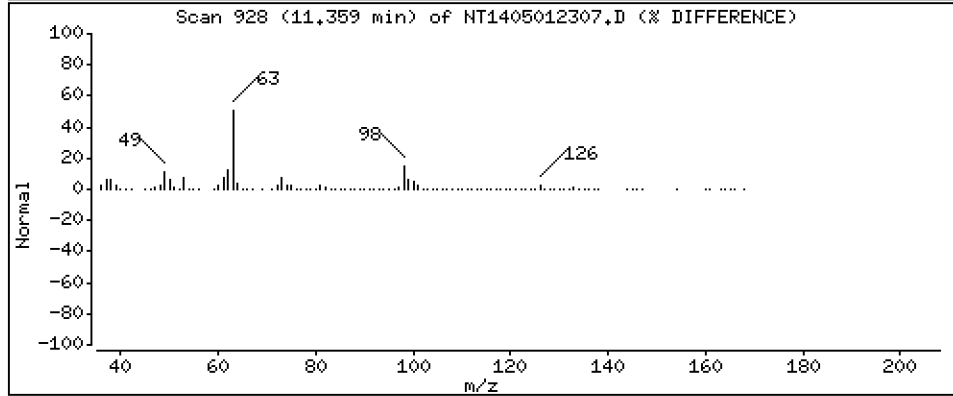
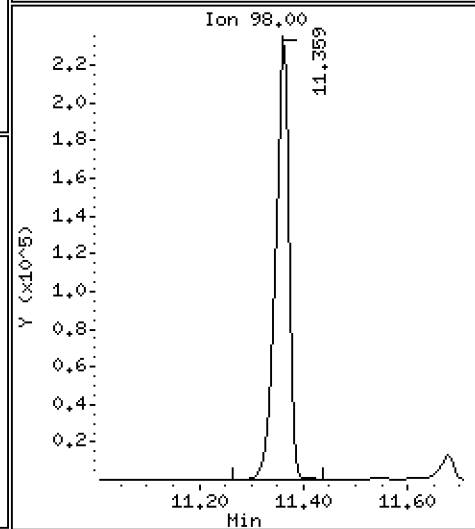
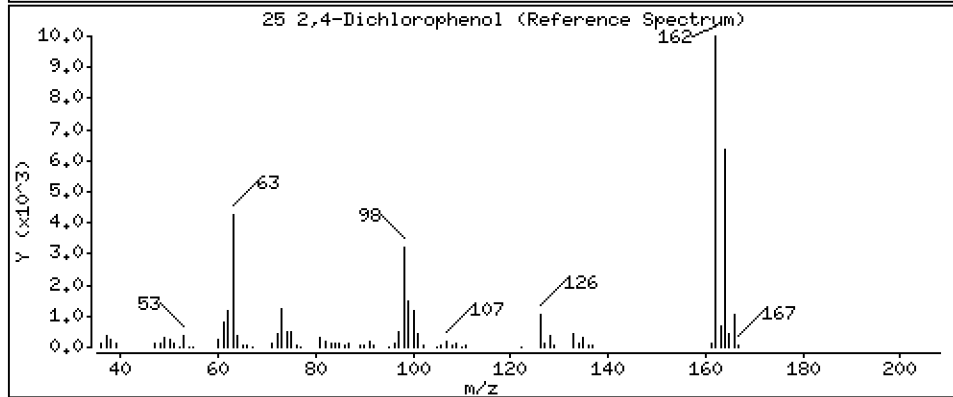
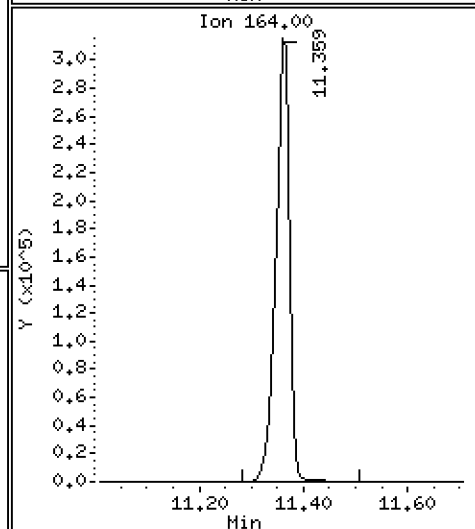
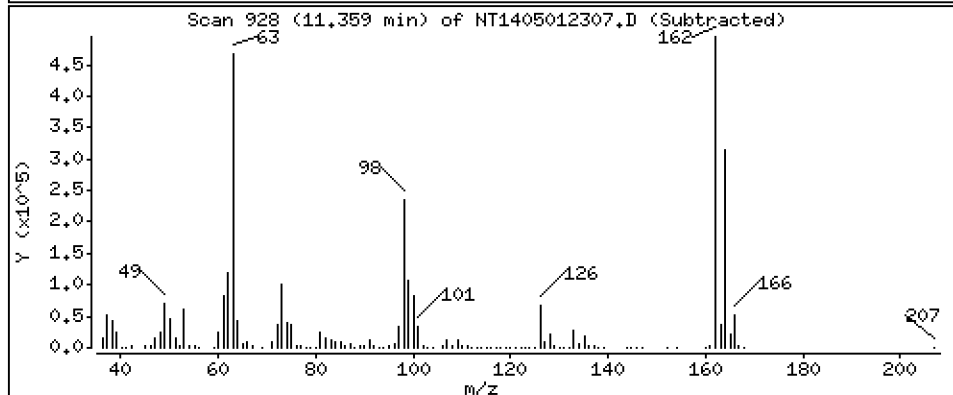
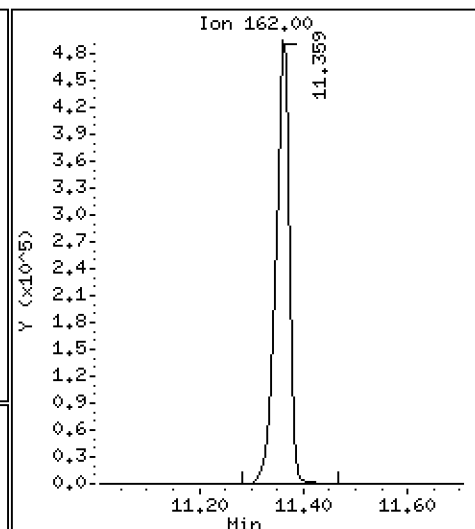
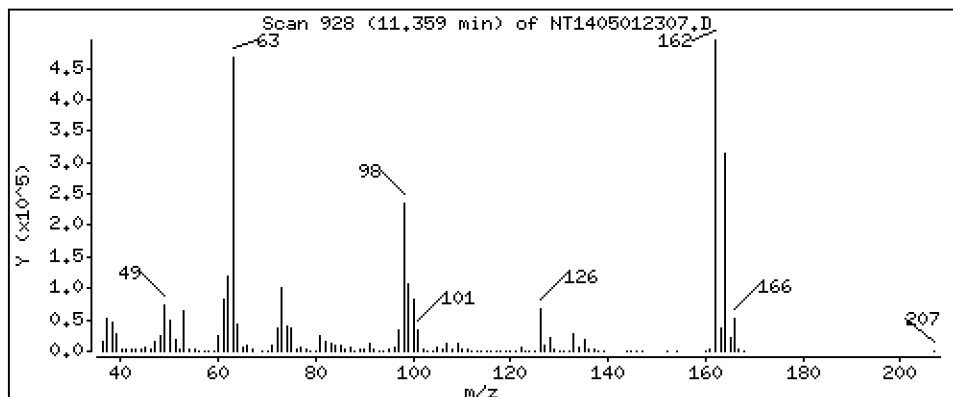
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 11,62 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

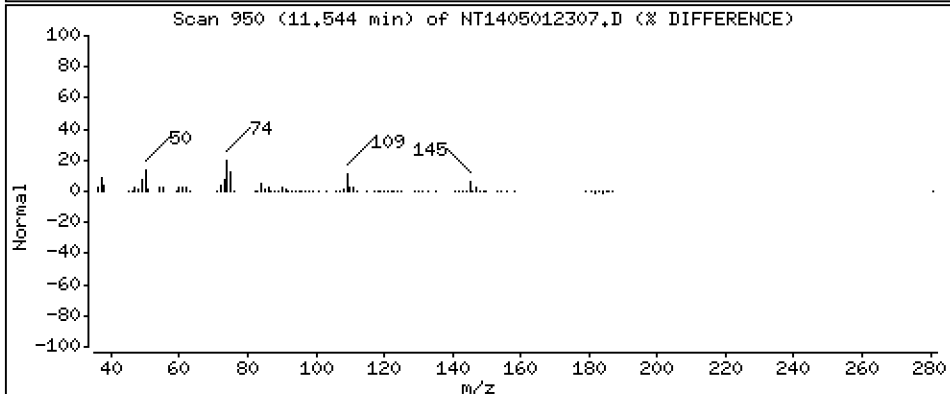
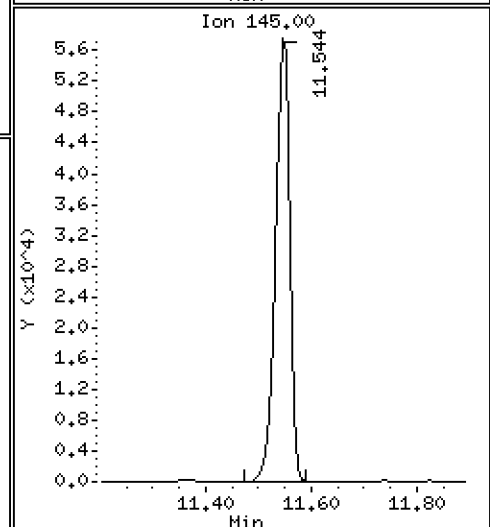
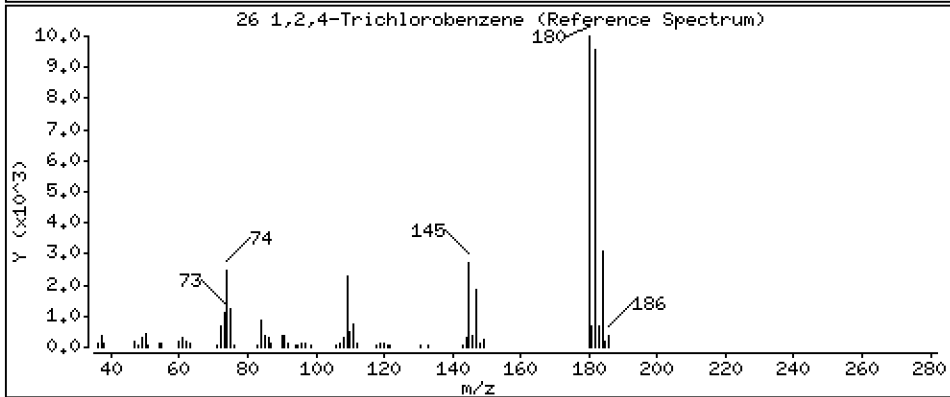
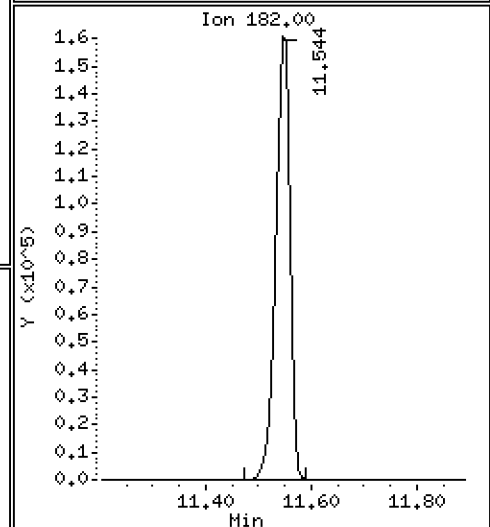
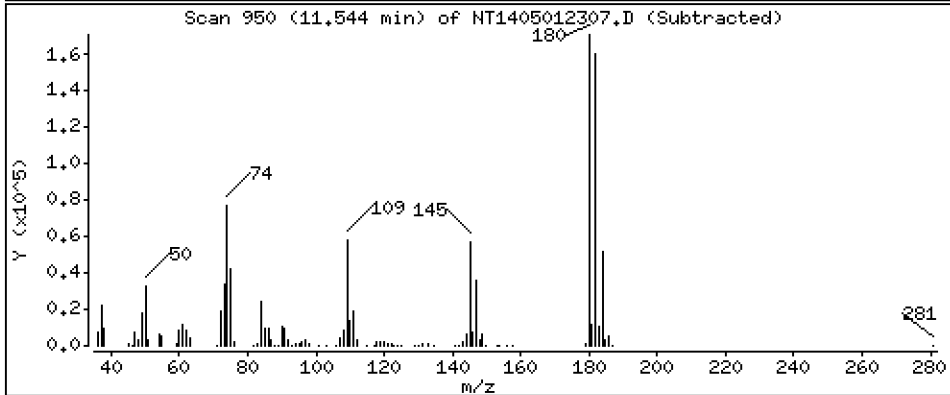
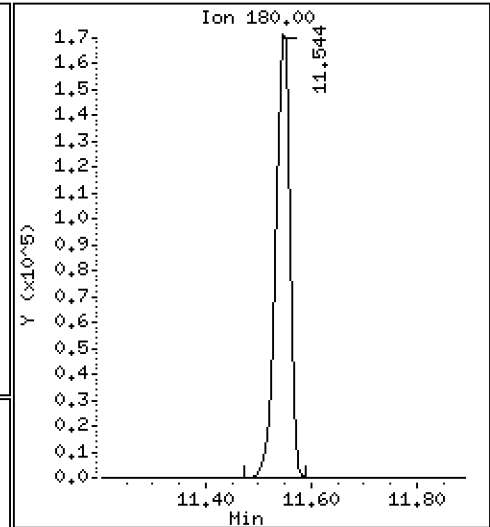
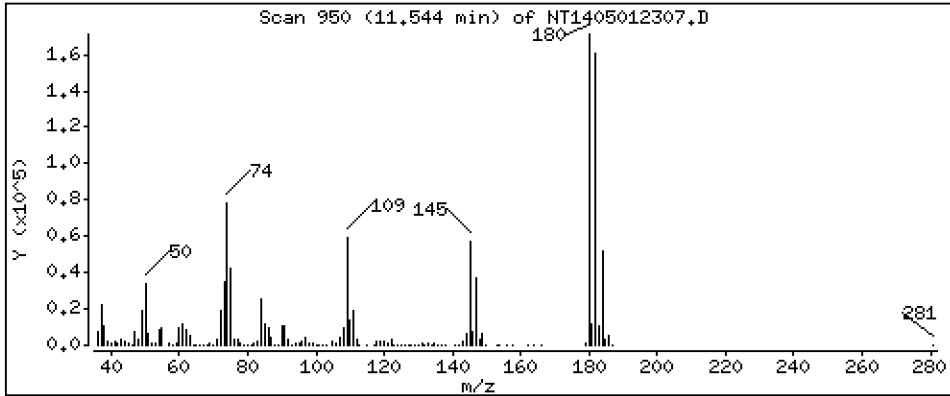
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 3,940 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

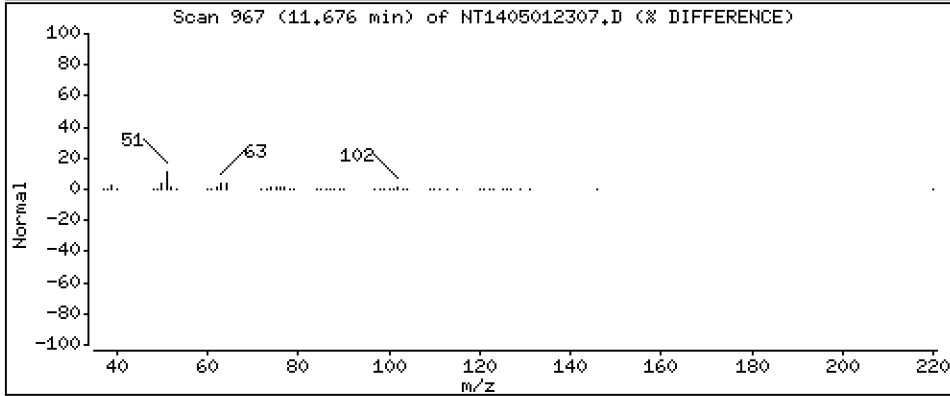
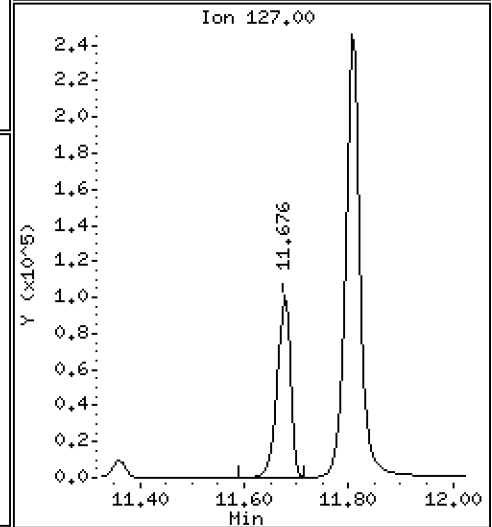
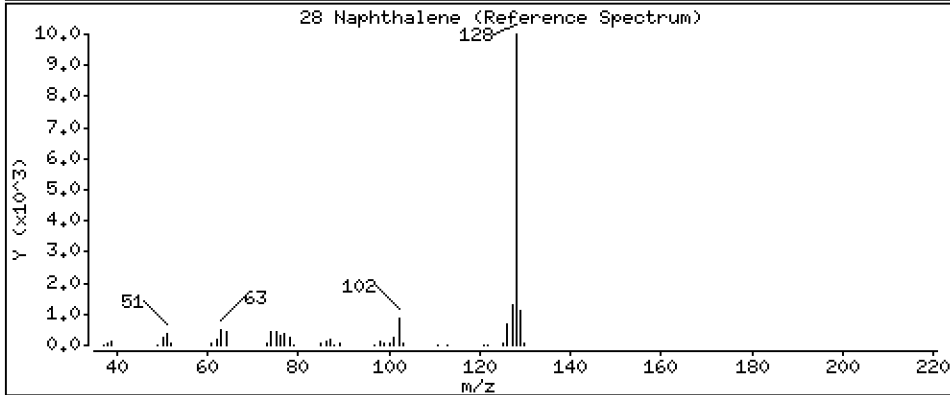
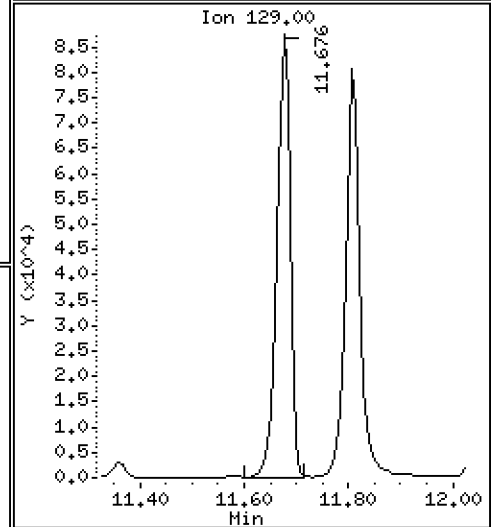
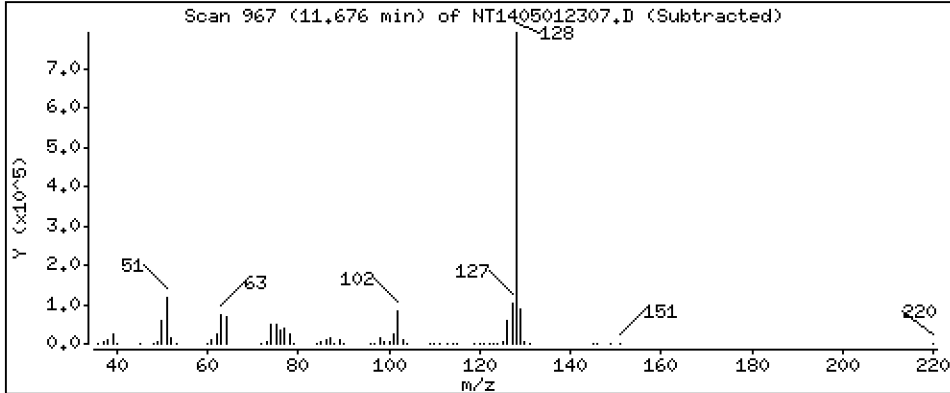
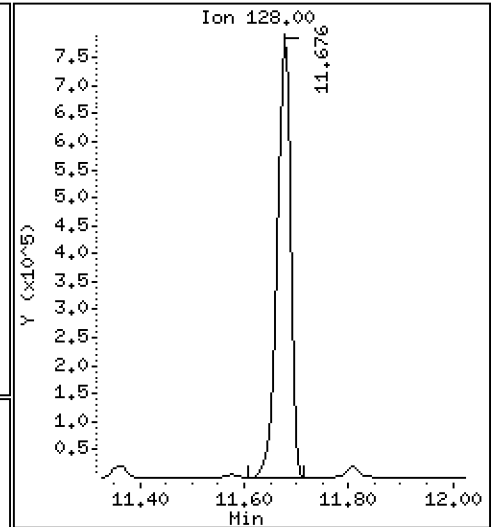
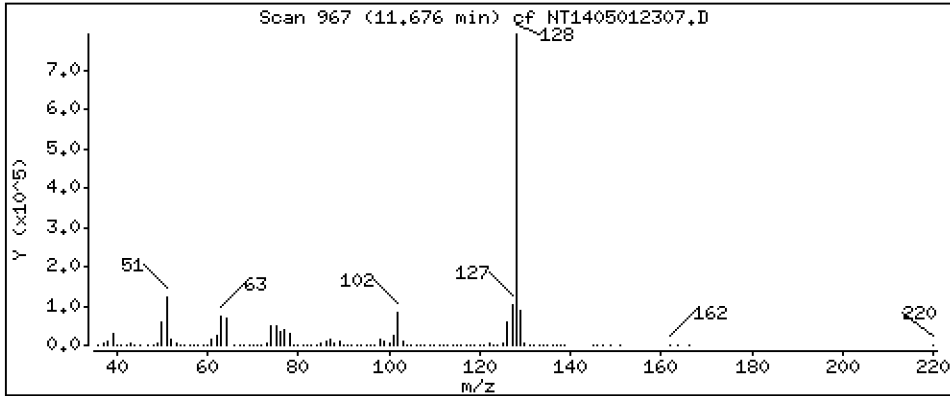
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

28 Naphthalene

Concentration: 4.638 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

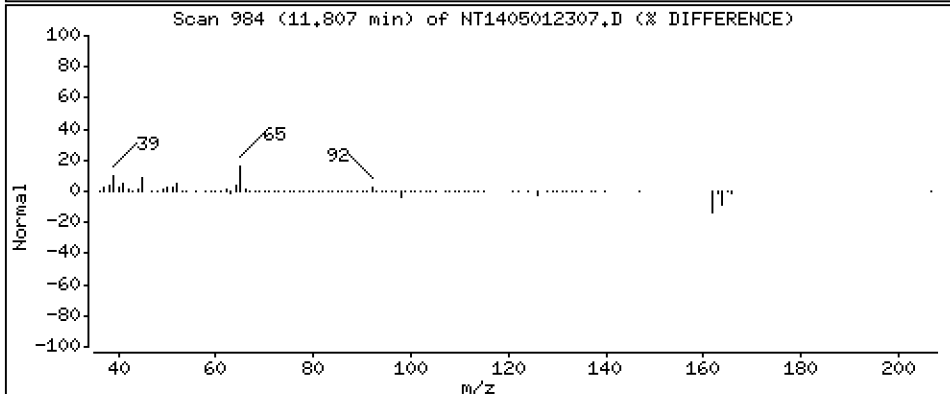
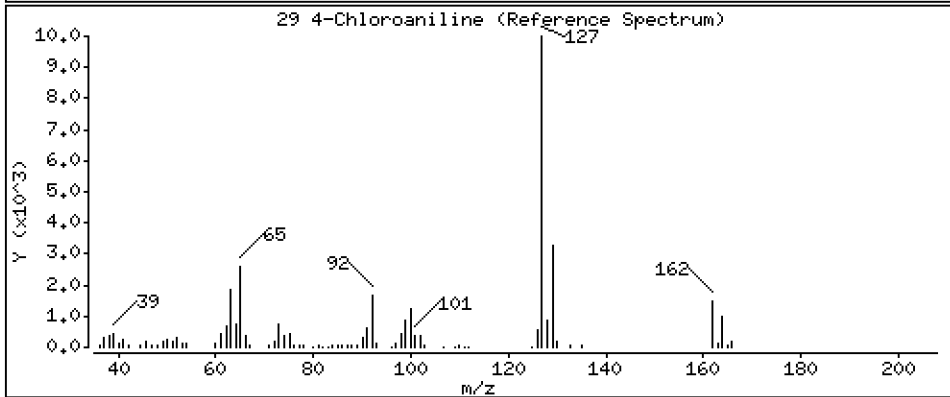
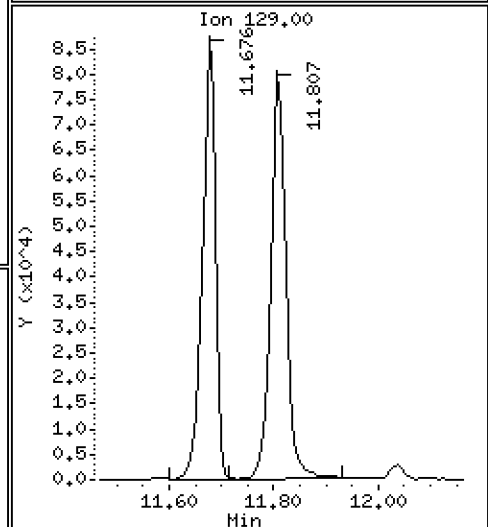
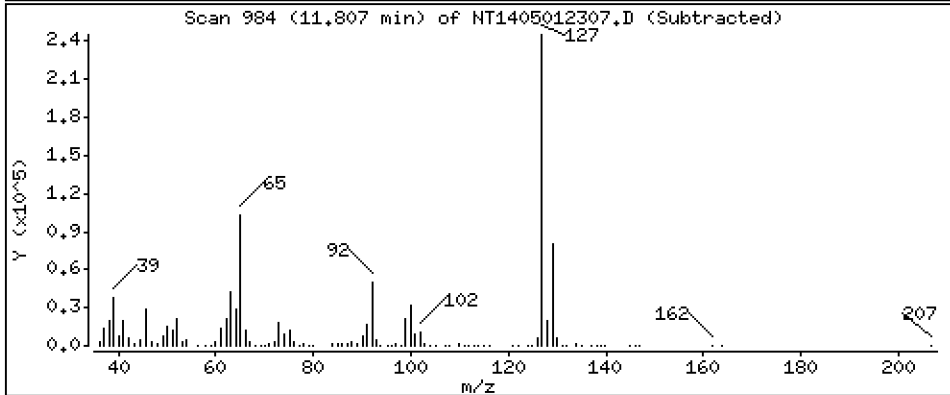
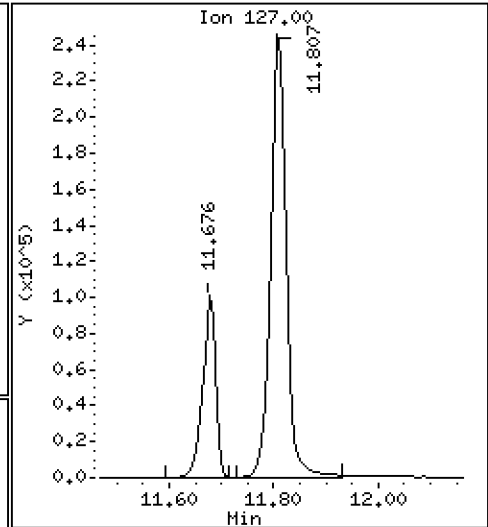
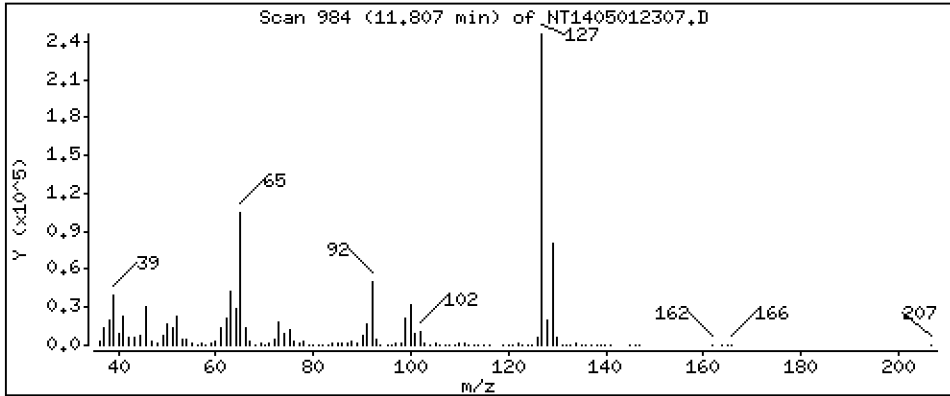
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 4,295 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

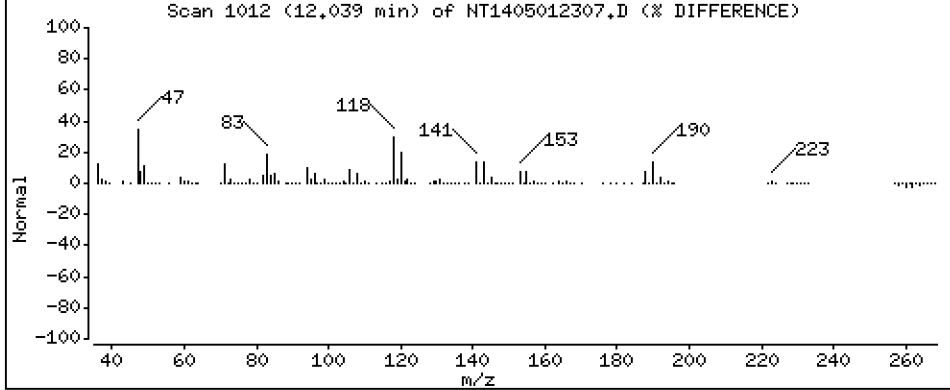
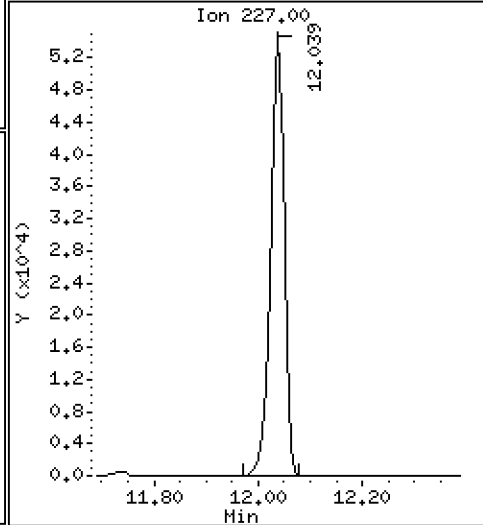
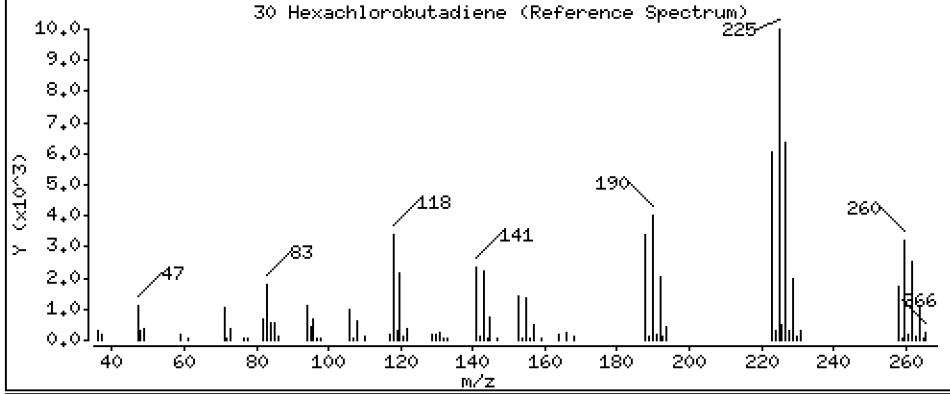
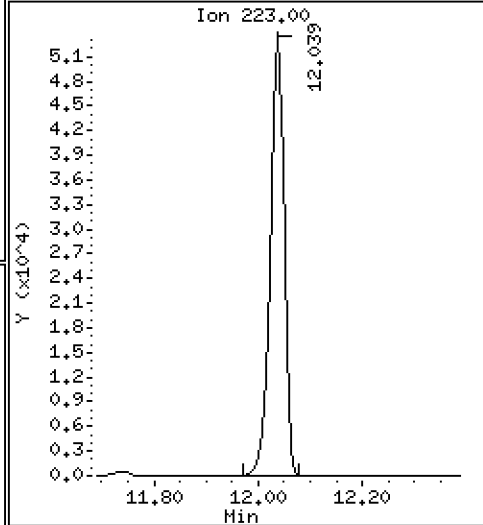
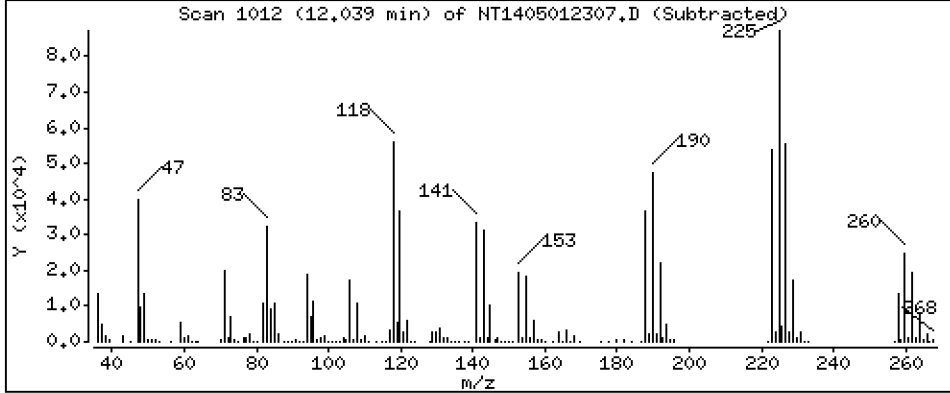
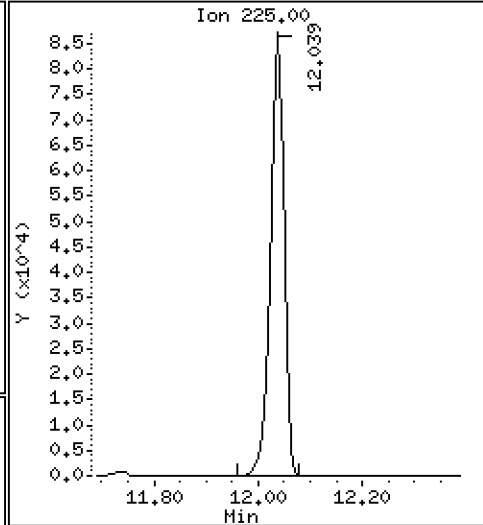
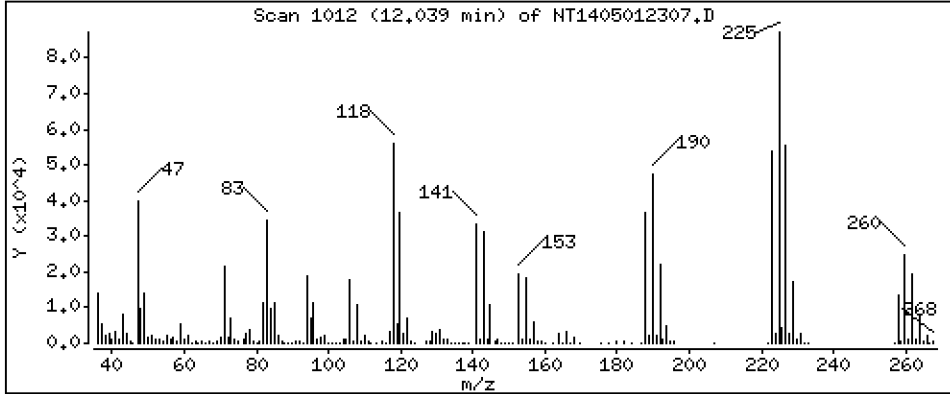
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,127 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

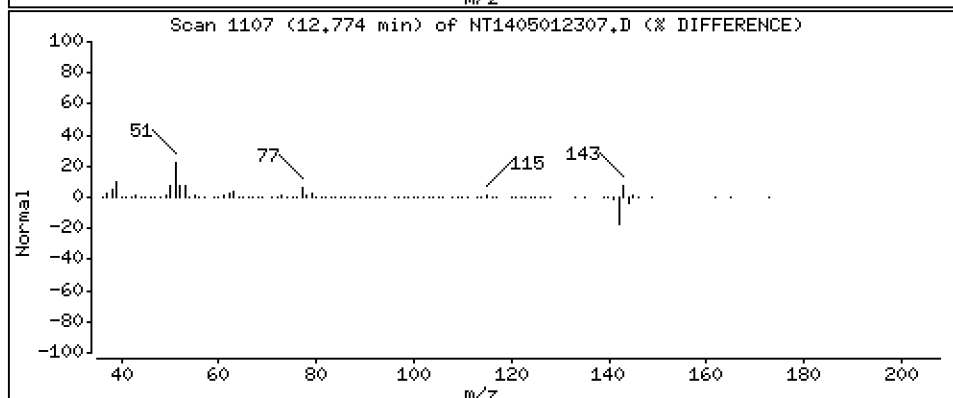
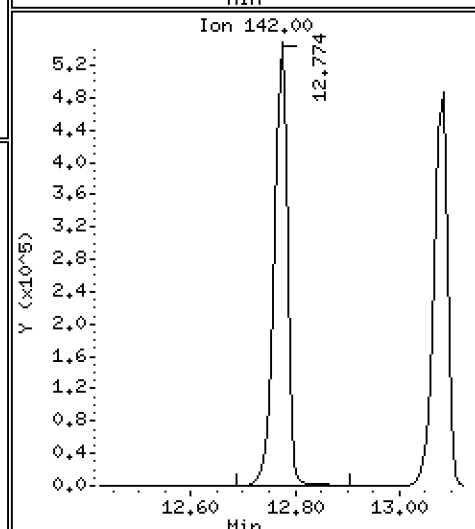
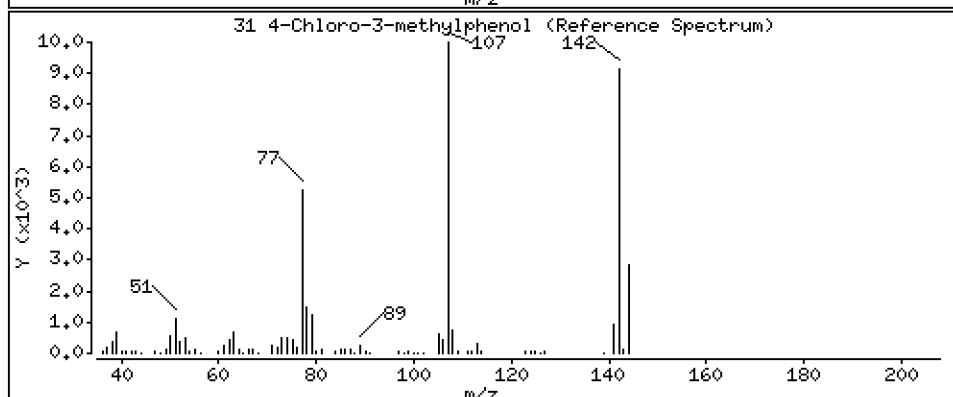
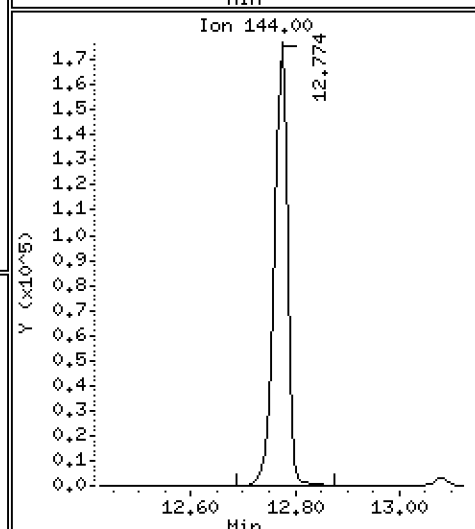
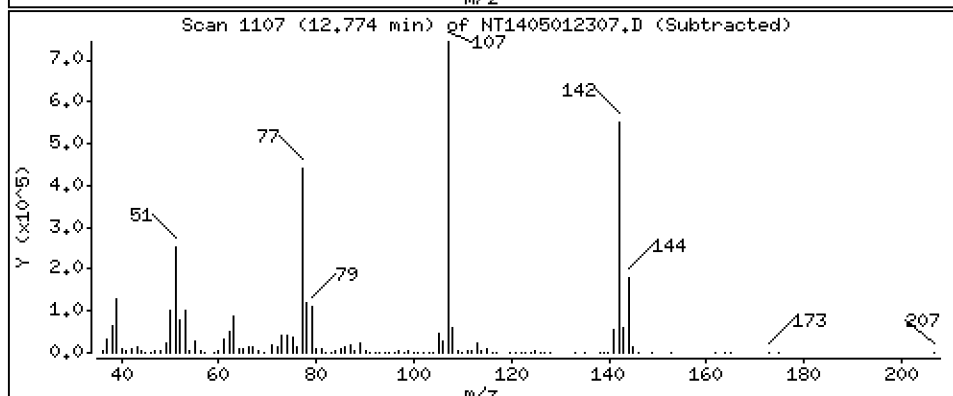
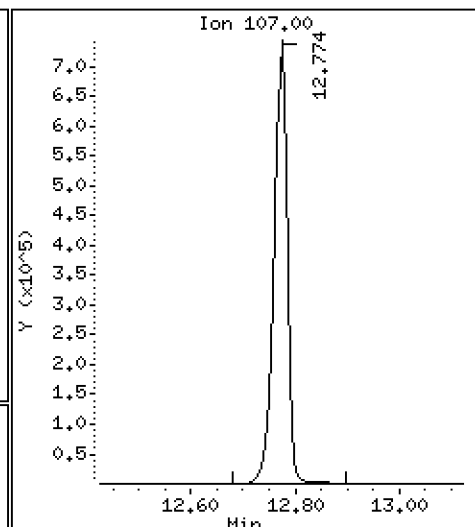
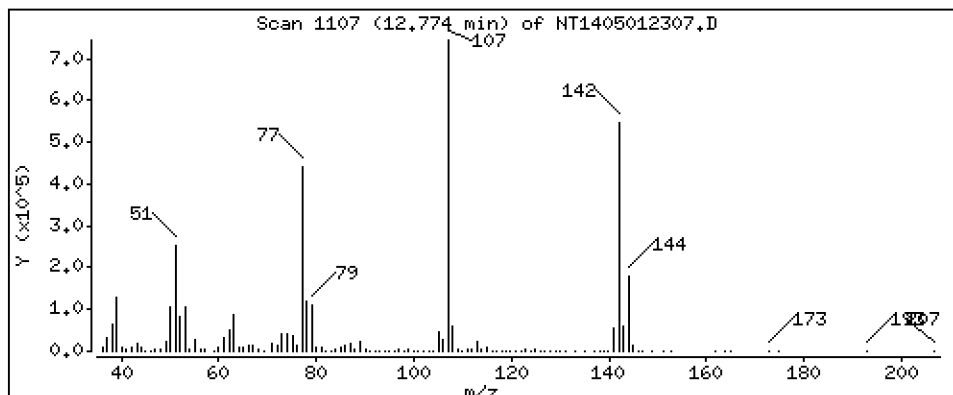
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 13,20 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

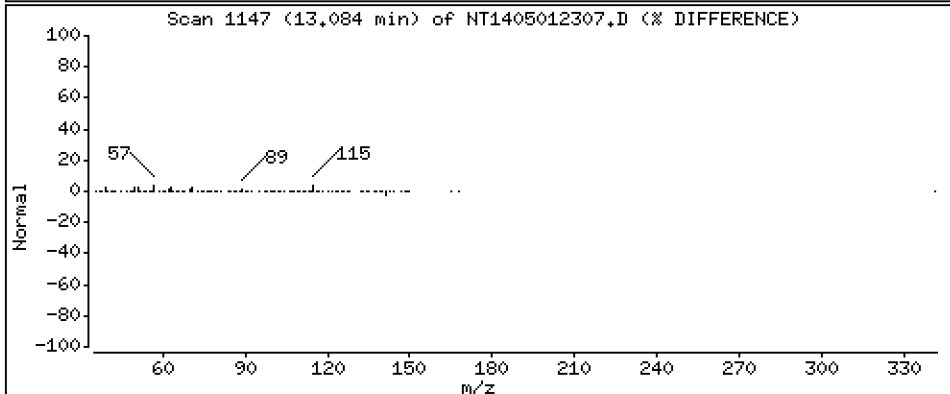
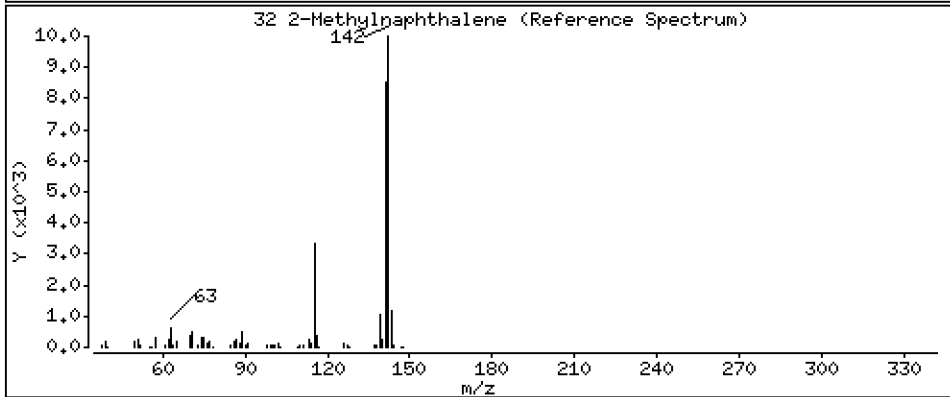
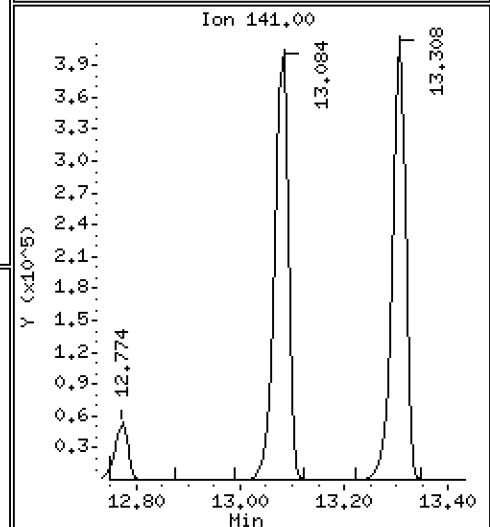
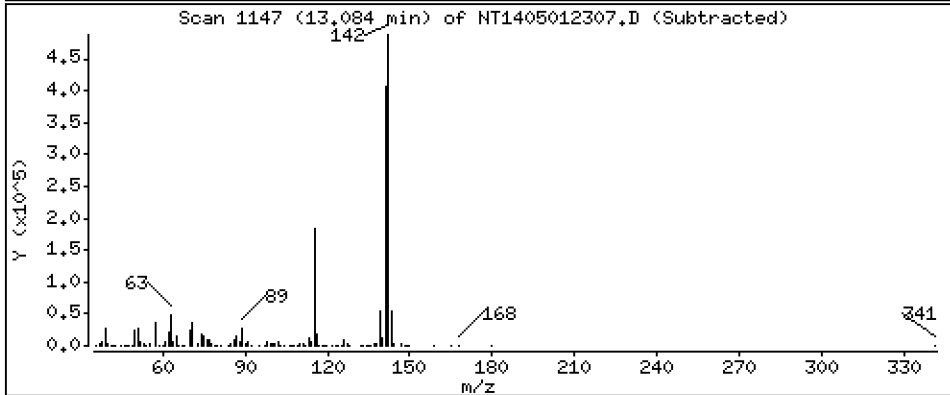
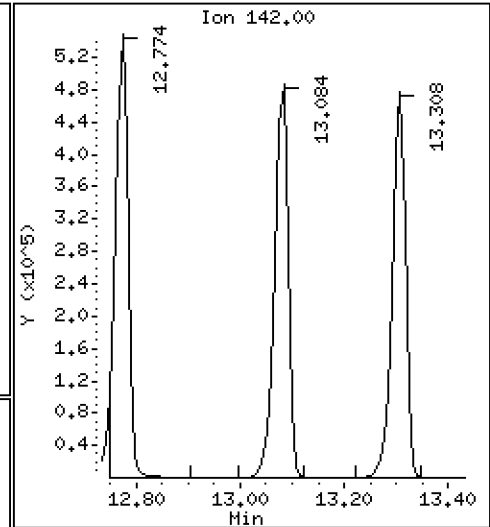
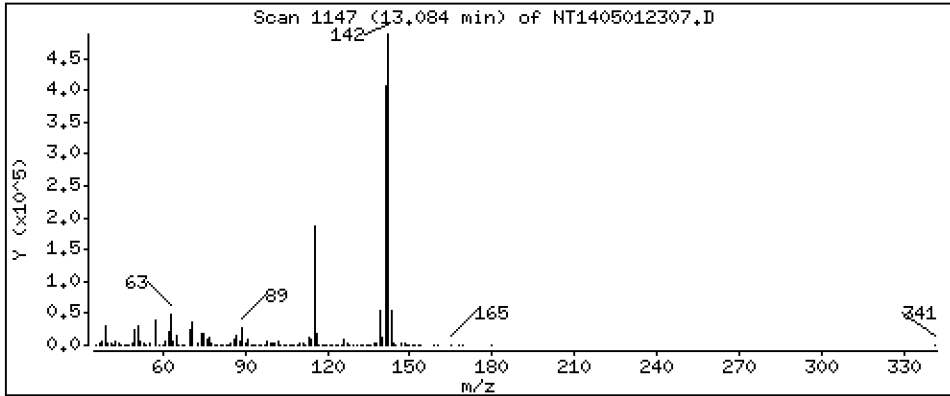
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 4,036 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

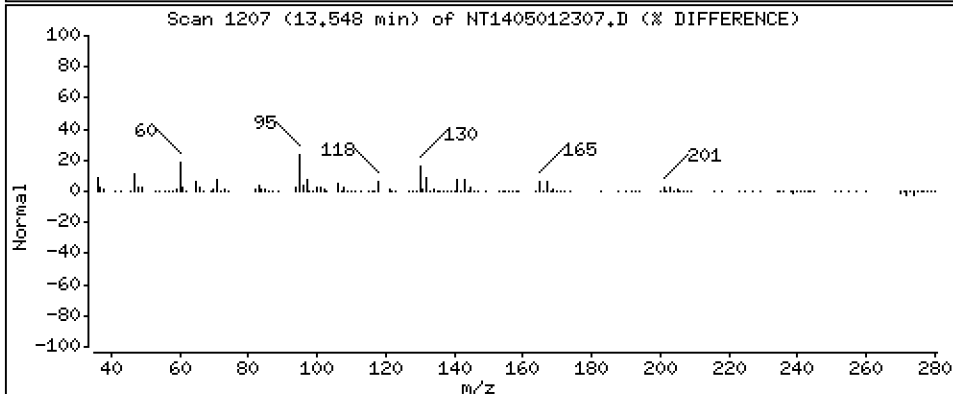
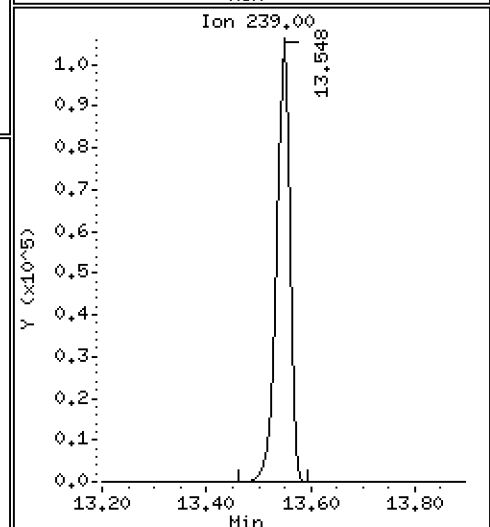
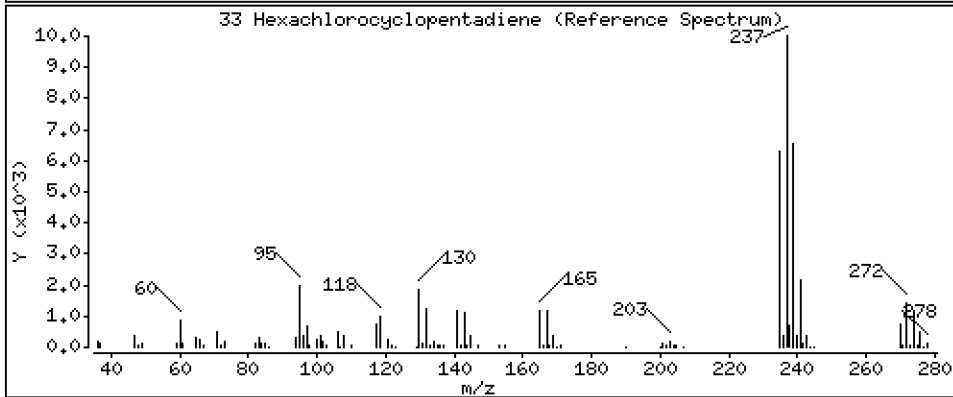
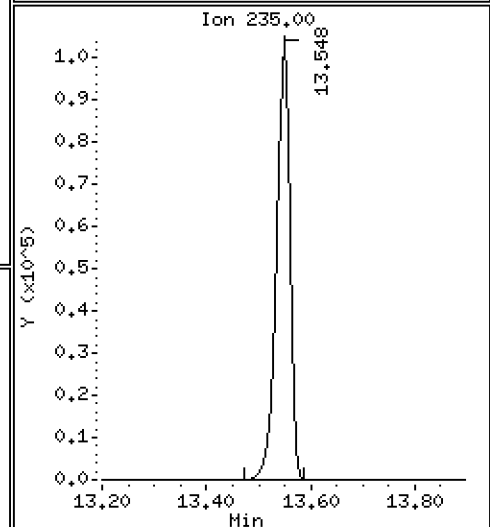
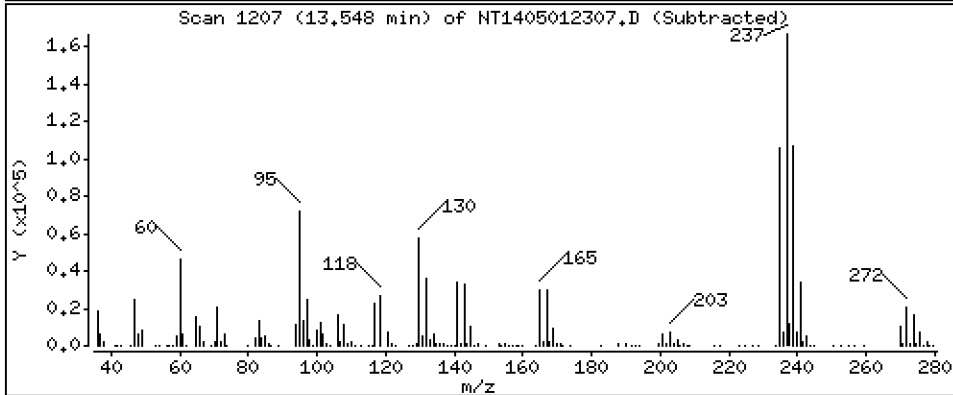
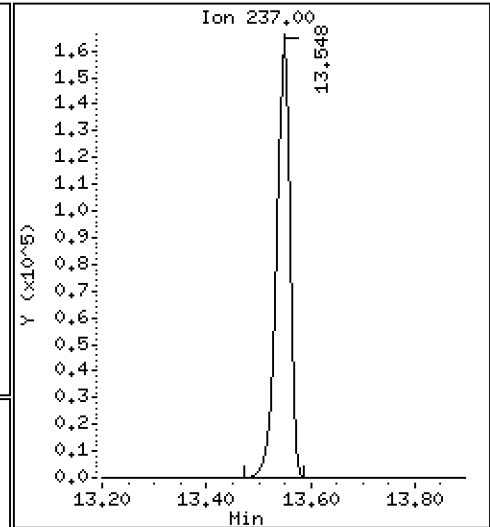
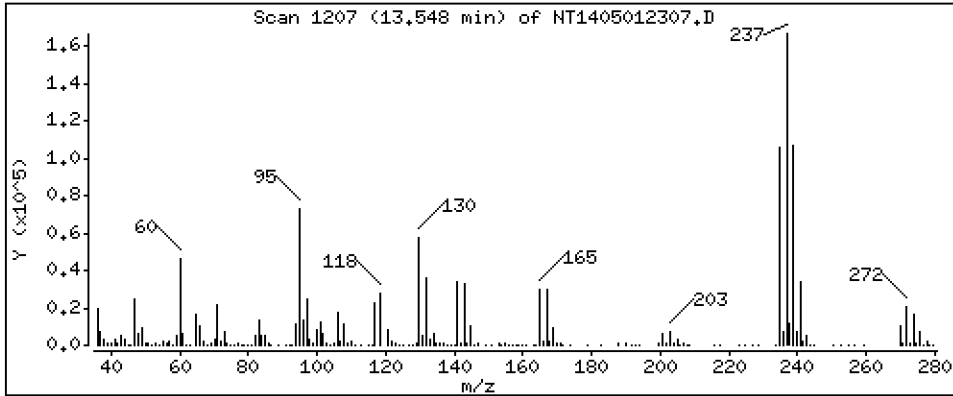
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 7,484 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

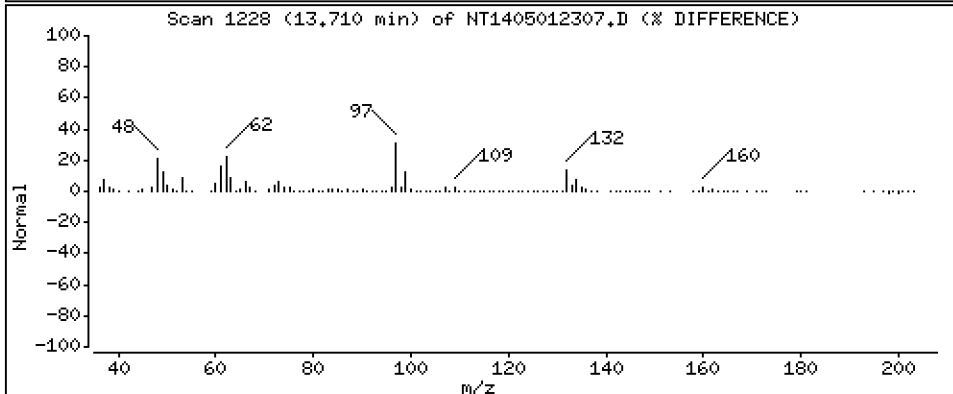
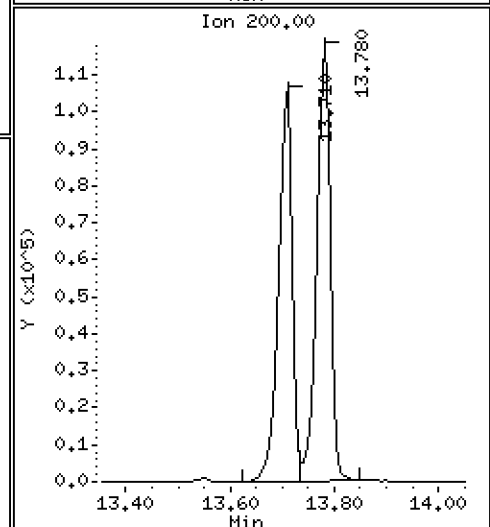
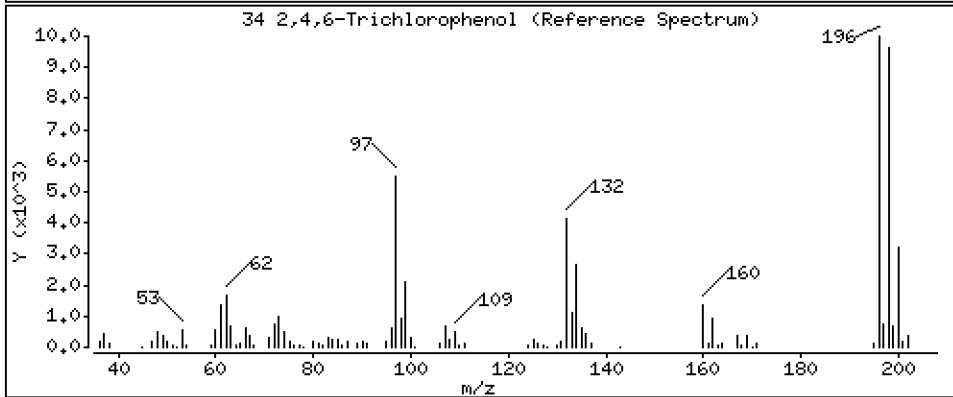
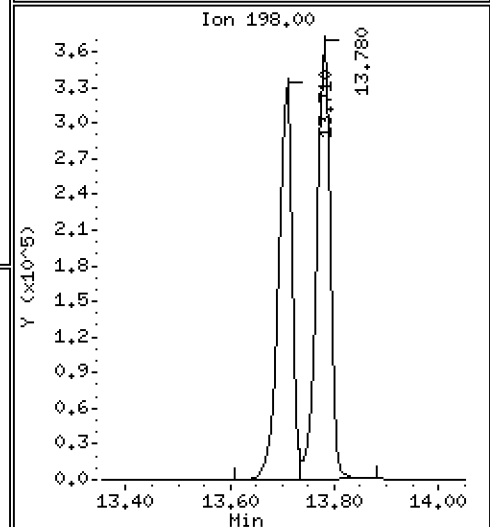
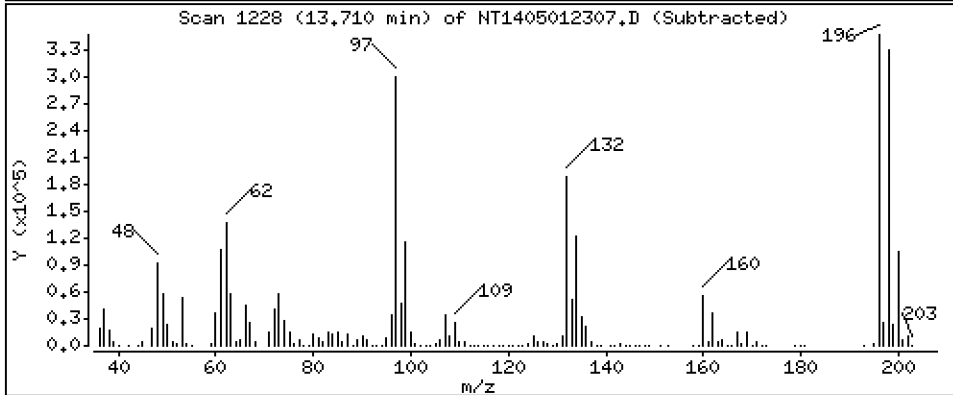
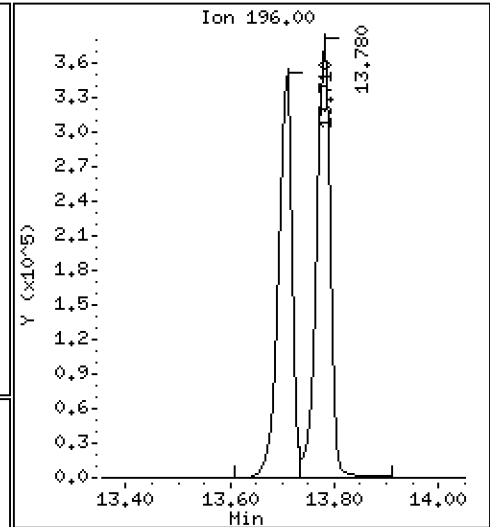
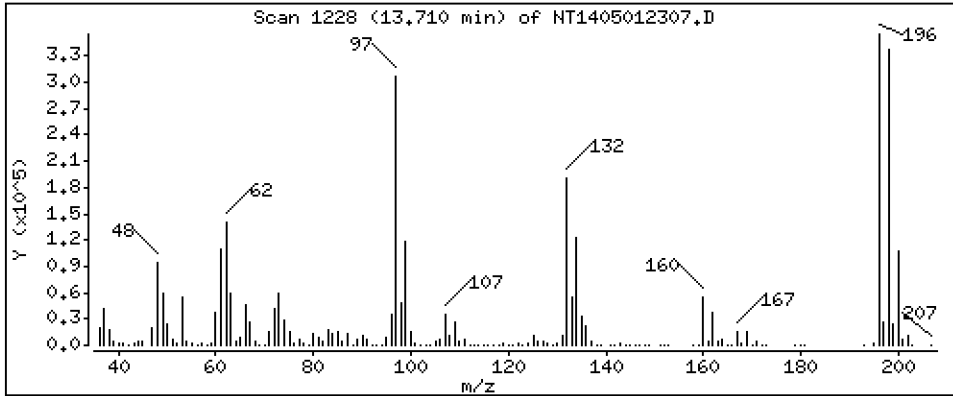
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 13,26 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

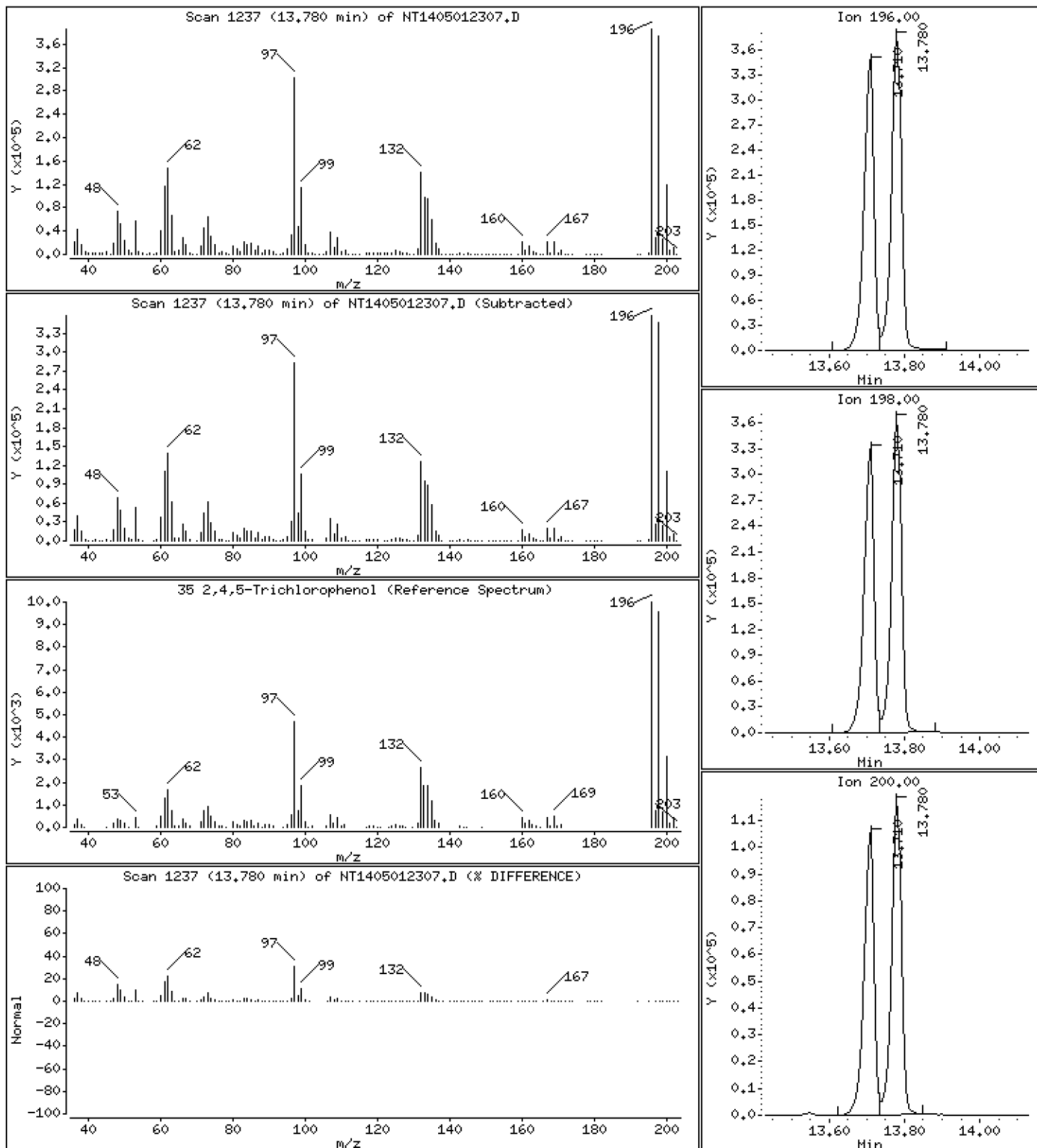
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 13,56 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

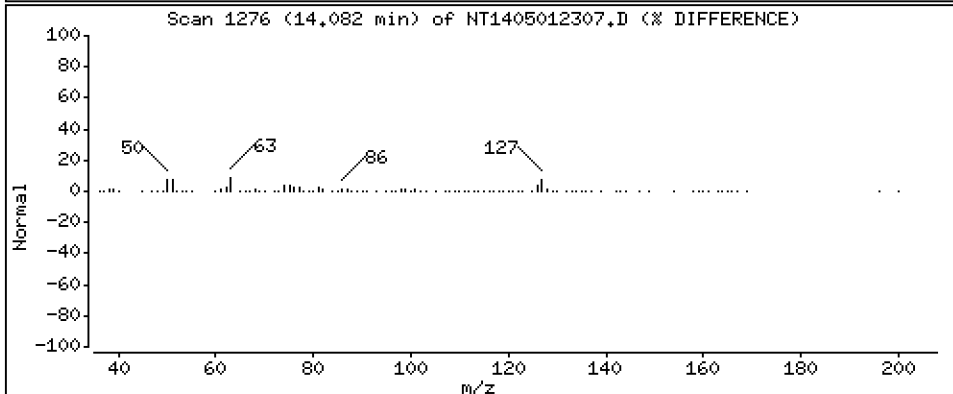
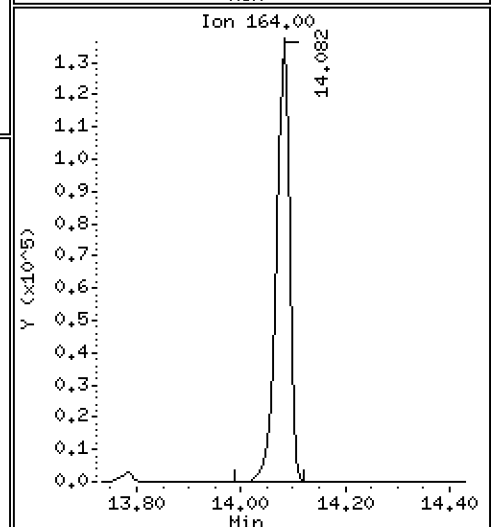
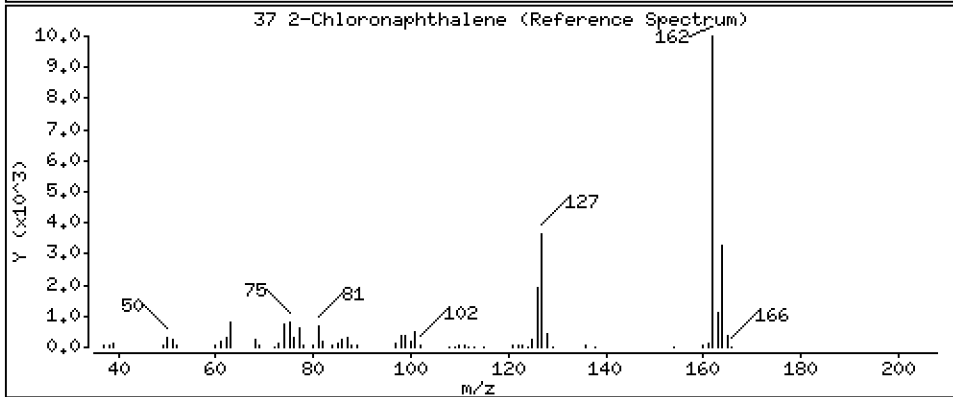
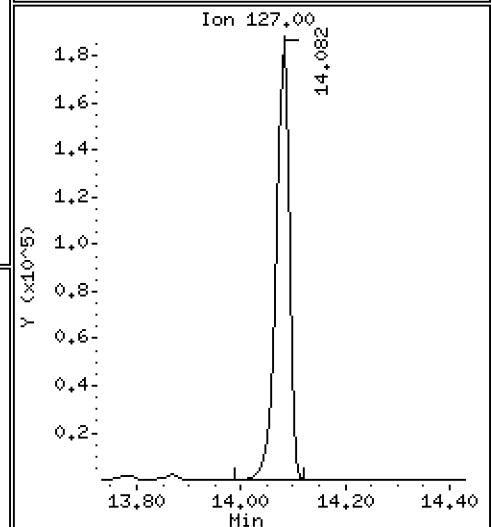
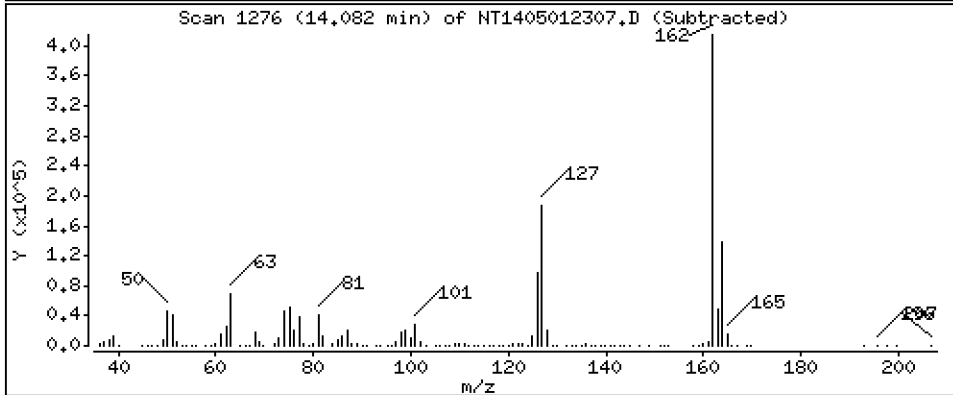
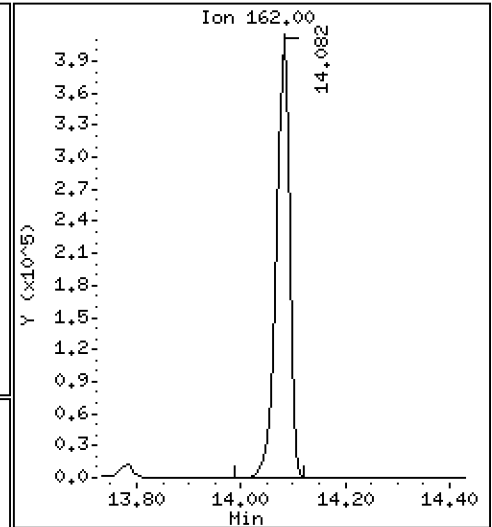
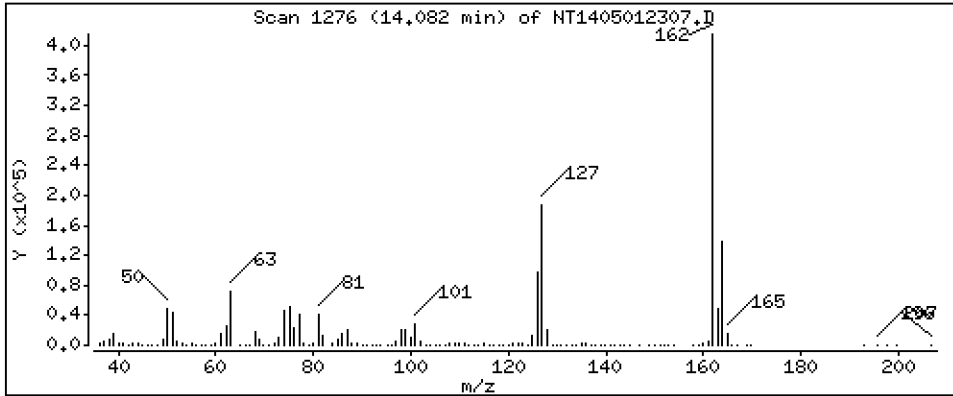
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

37 2-Chloronaphthalene

Concentration: 4.134 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

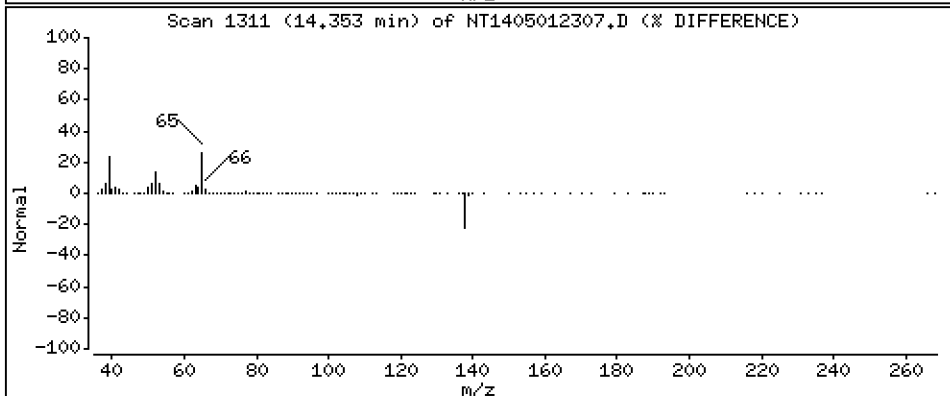
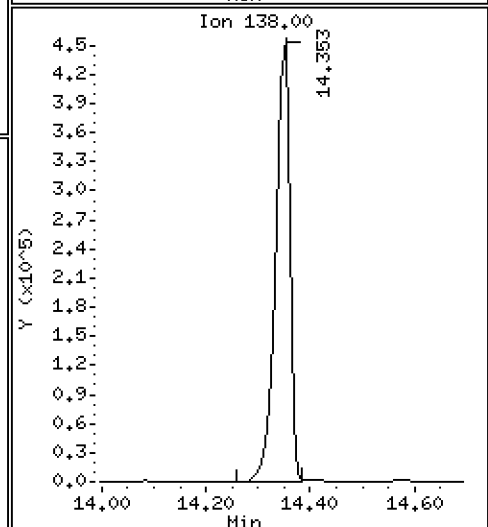
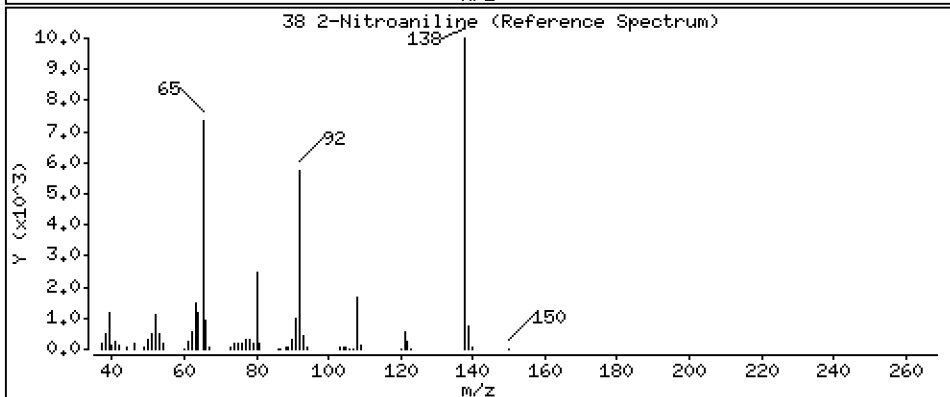
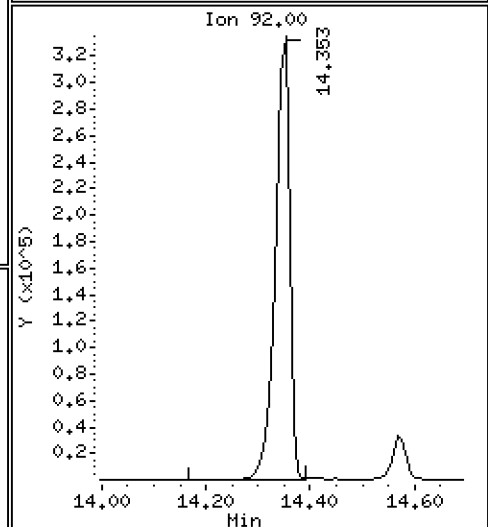
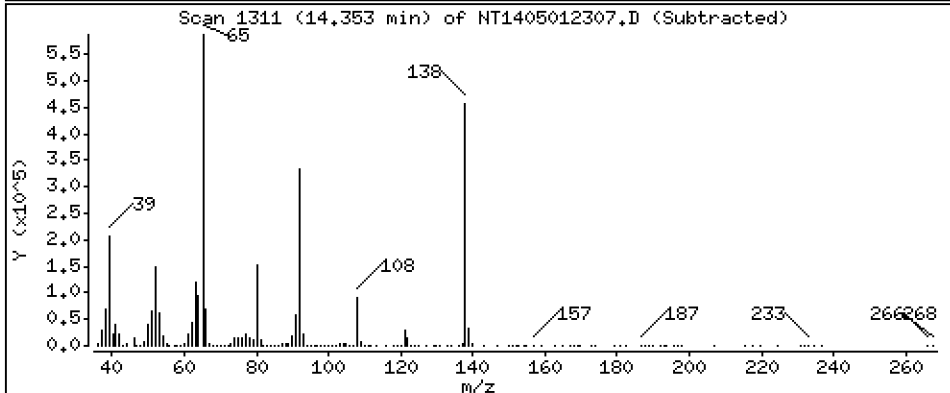
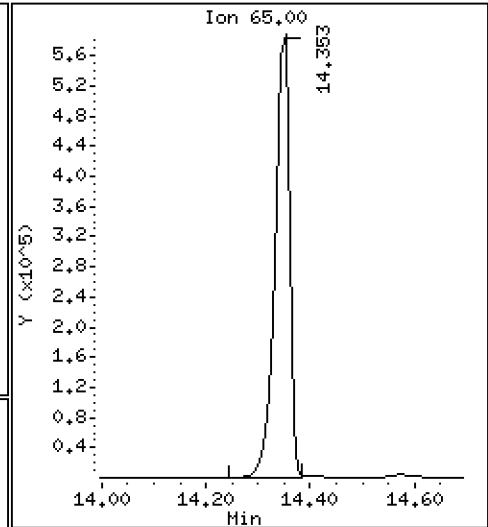
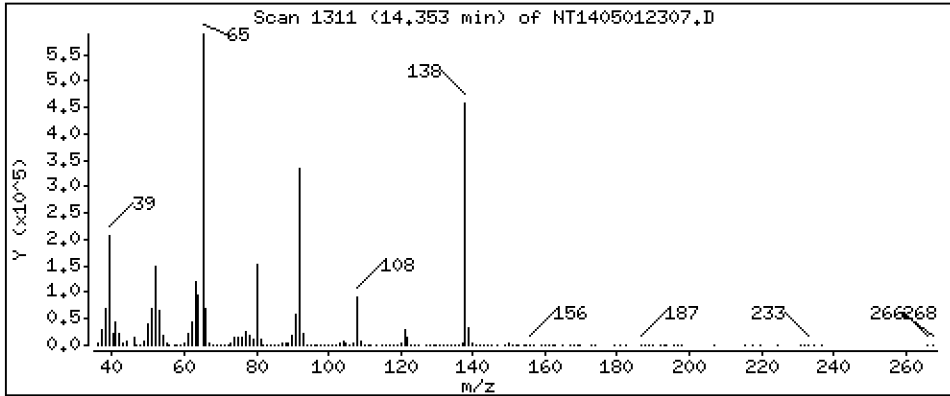
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 12,11 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

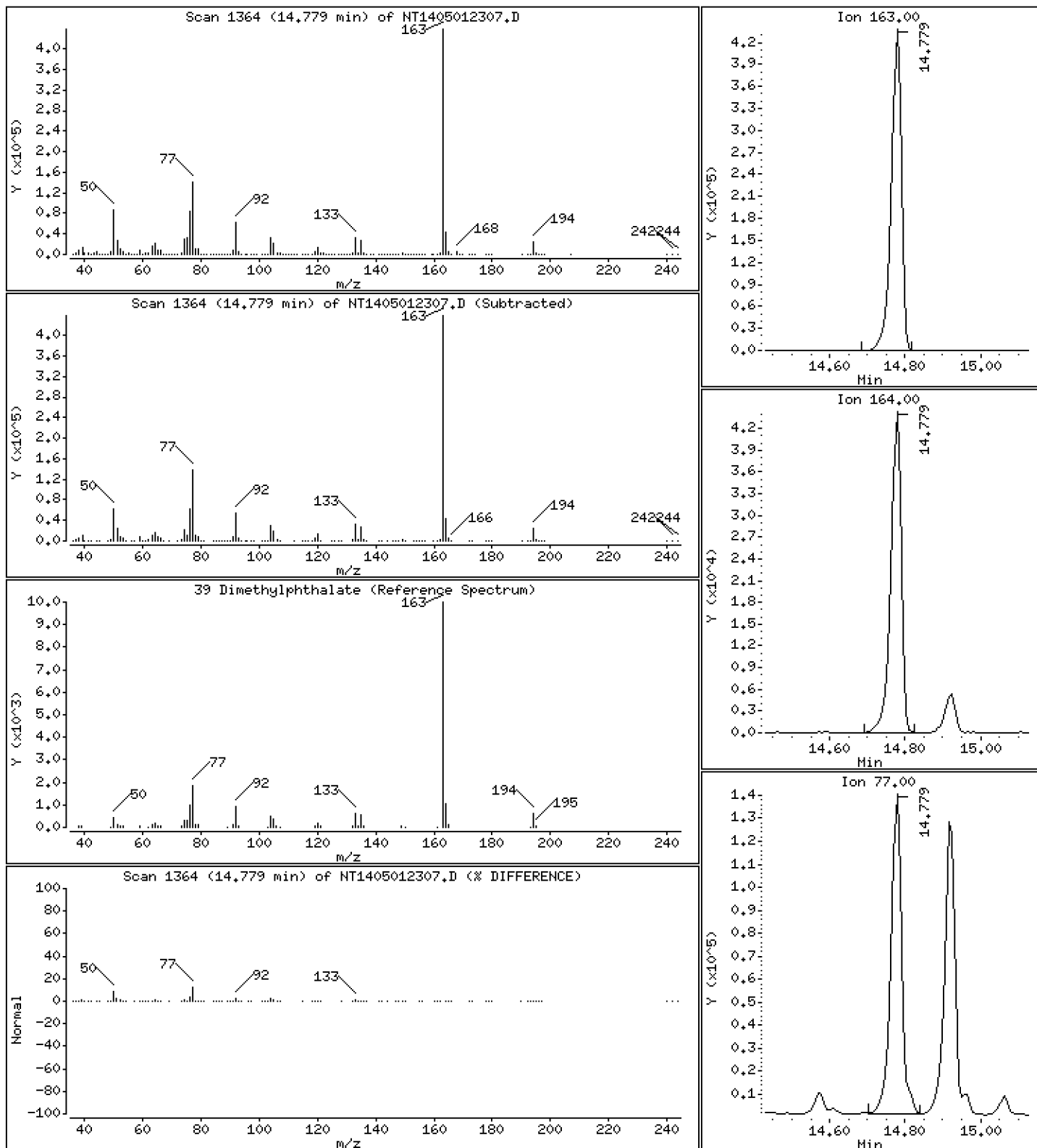
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,510 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

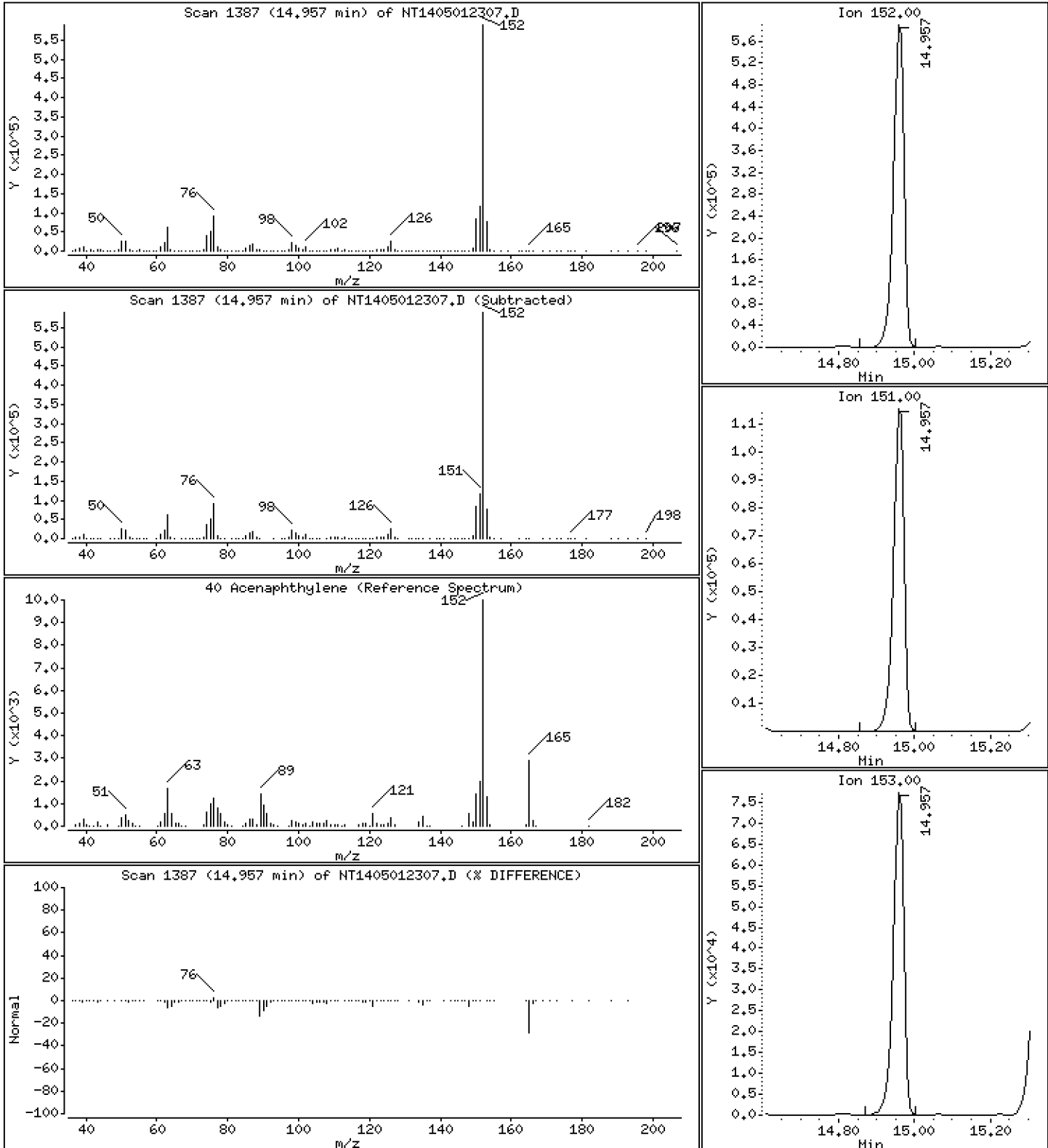
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

40 Acenaphthylene

Concentration: 4,100 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

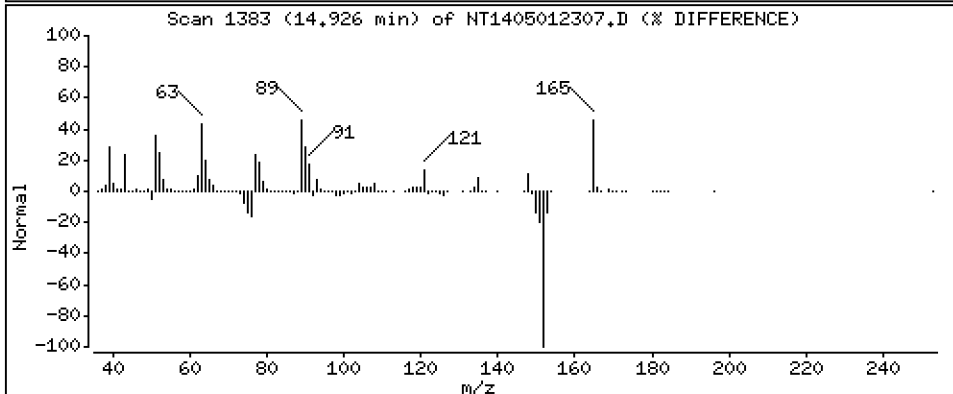
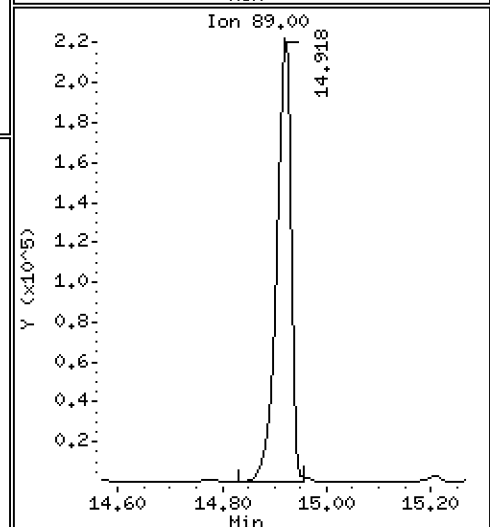
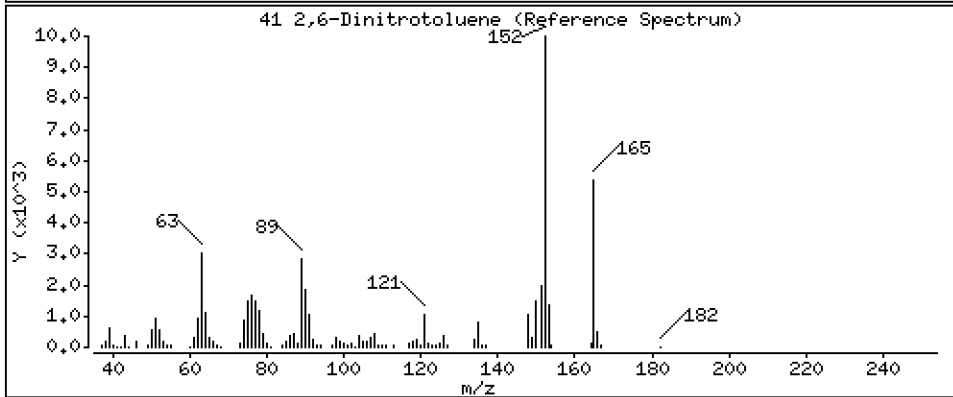
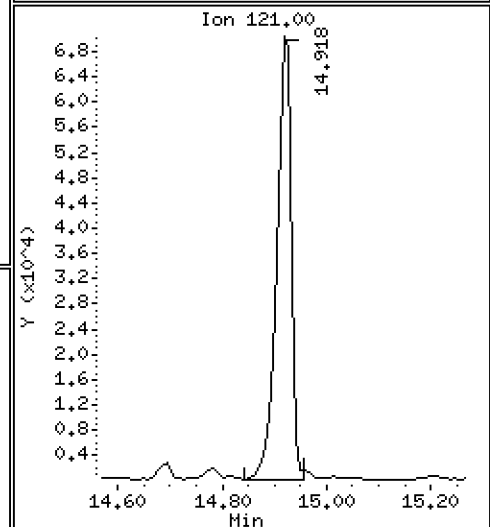
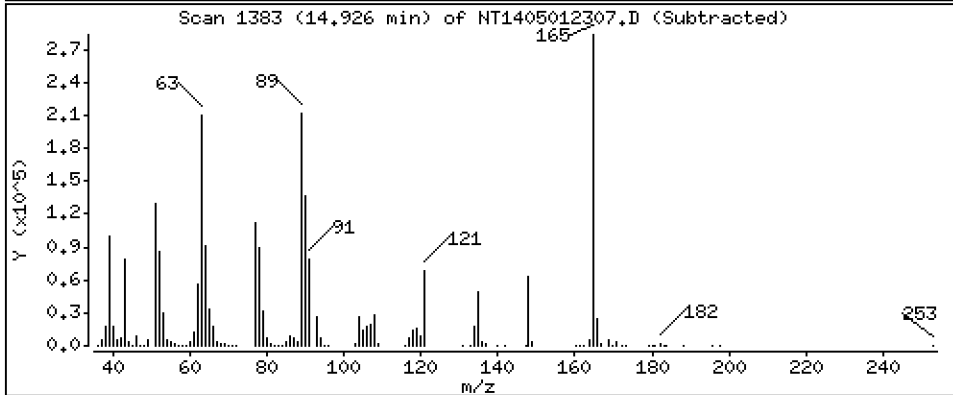
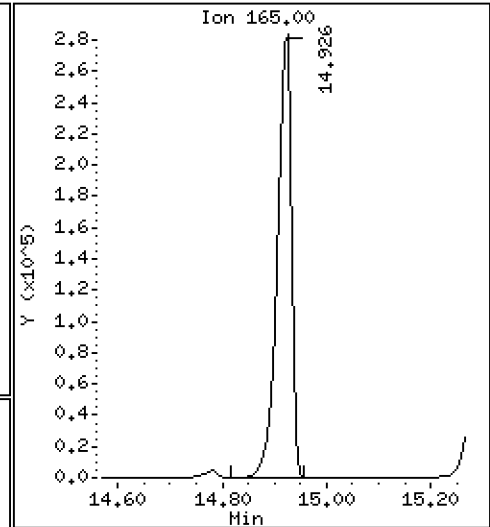
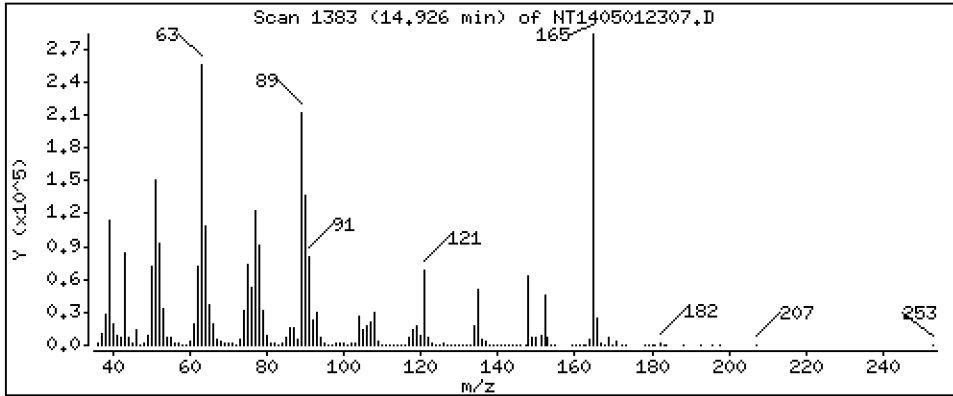
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

41 2,6-Dinitrotoluene

Concentration: 13,05 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

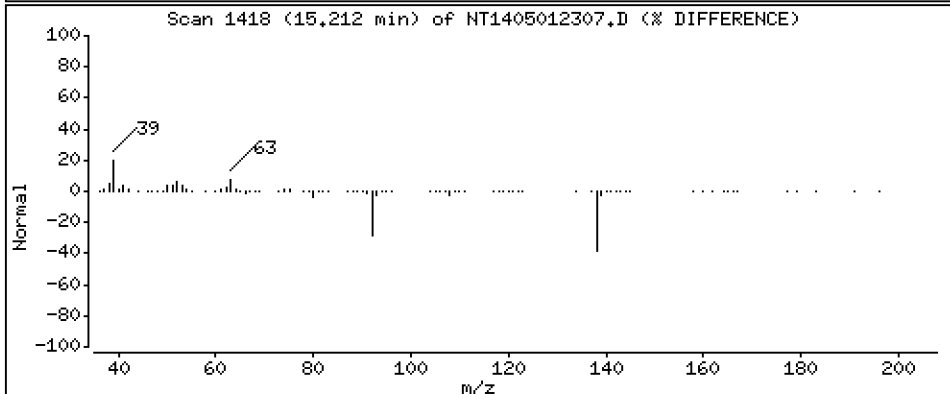
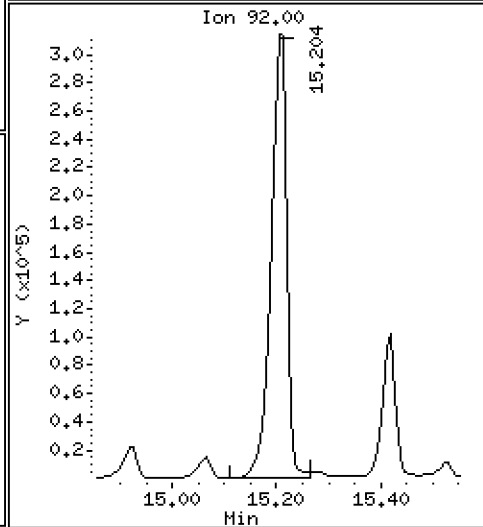
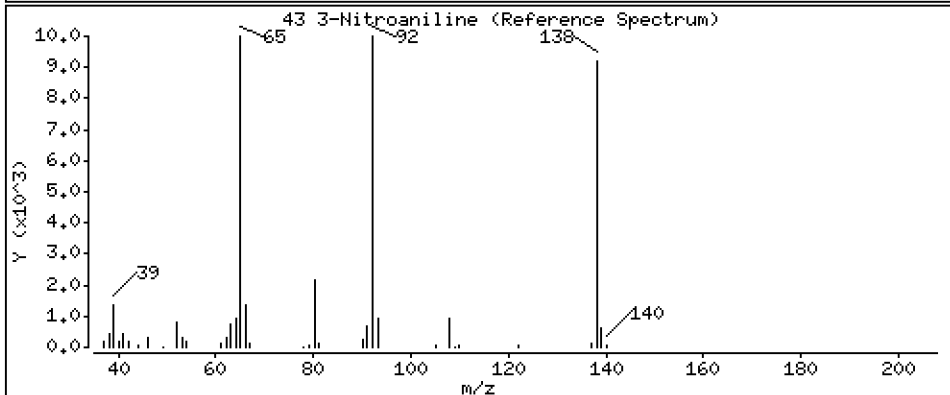
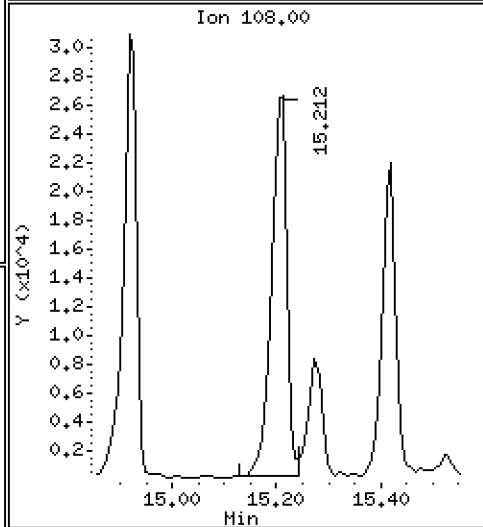
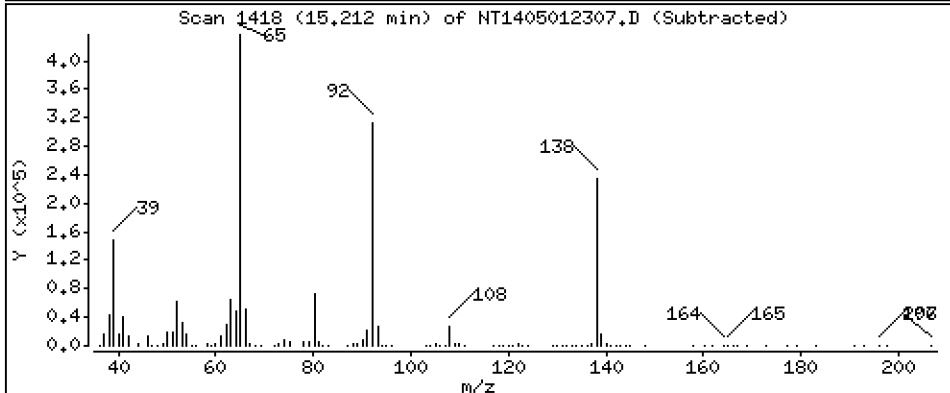
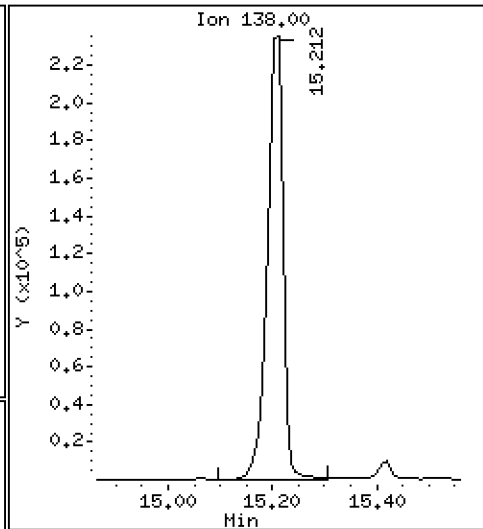
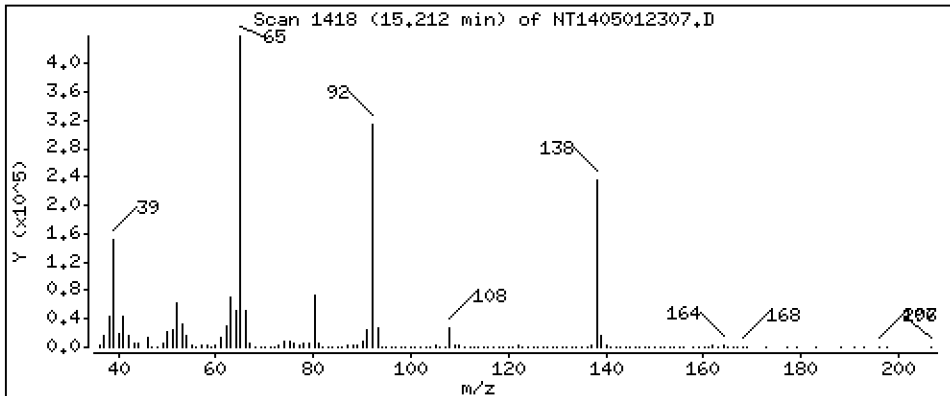
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 9,609 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

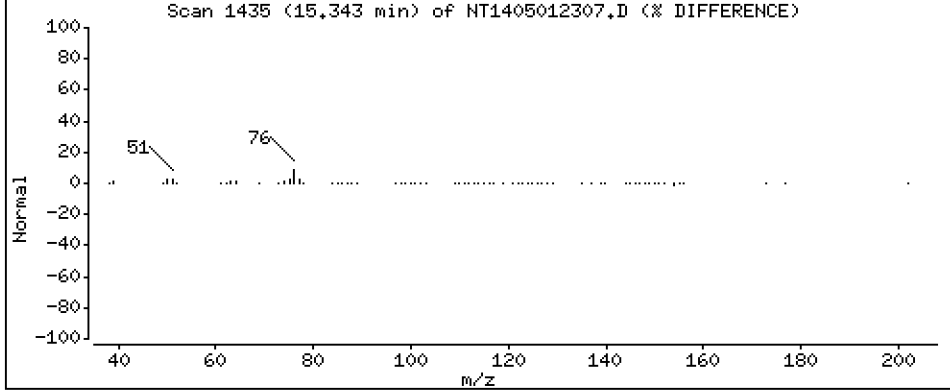
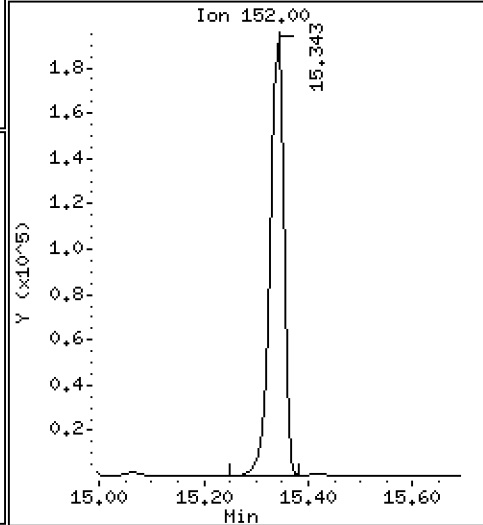
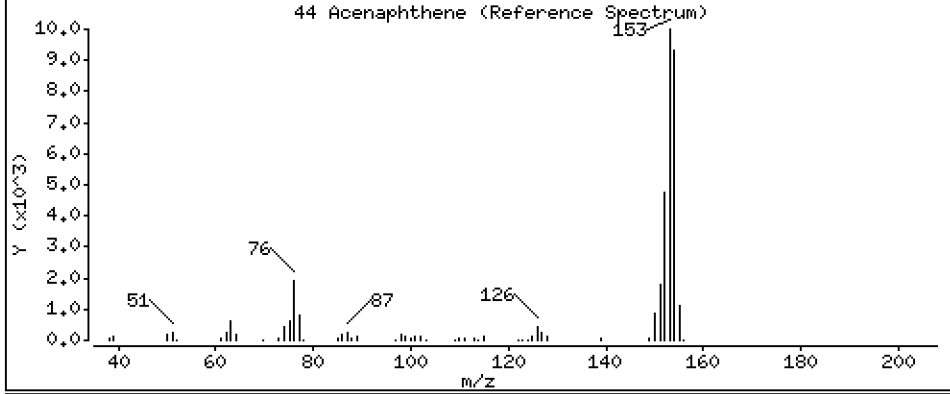
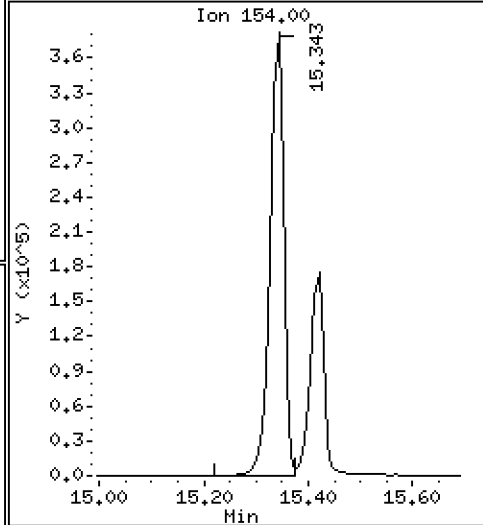
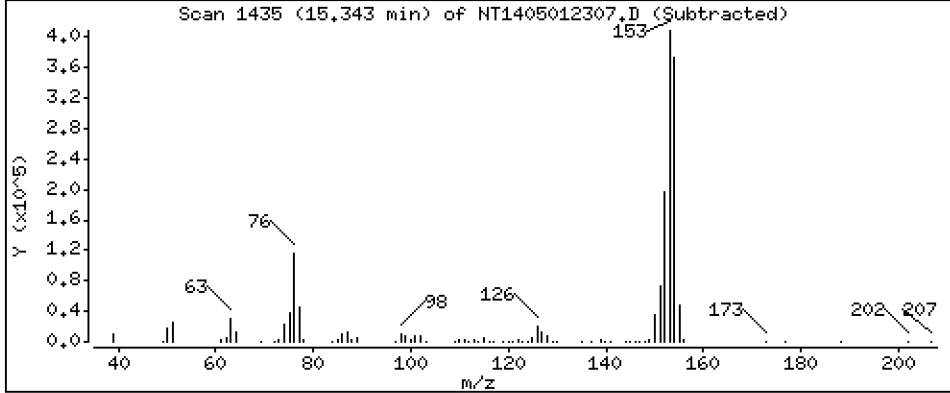
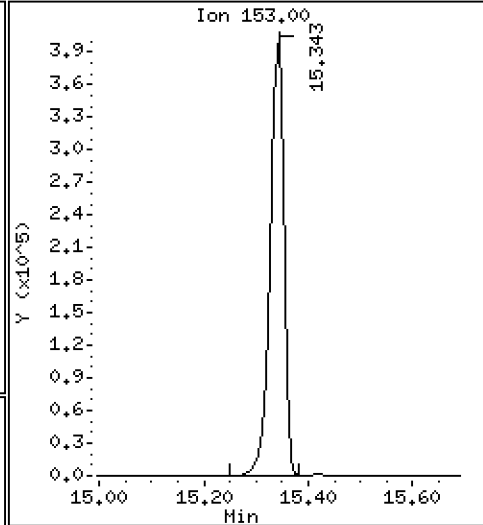
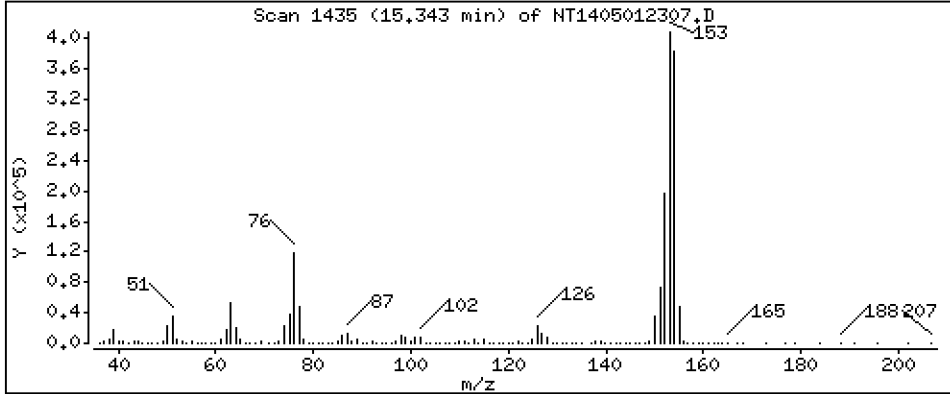
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 4,351 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

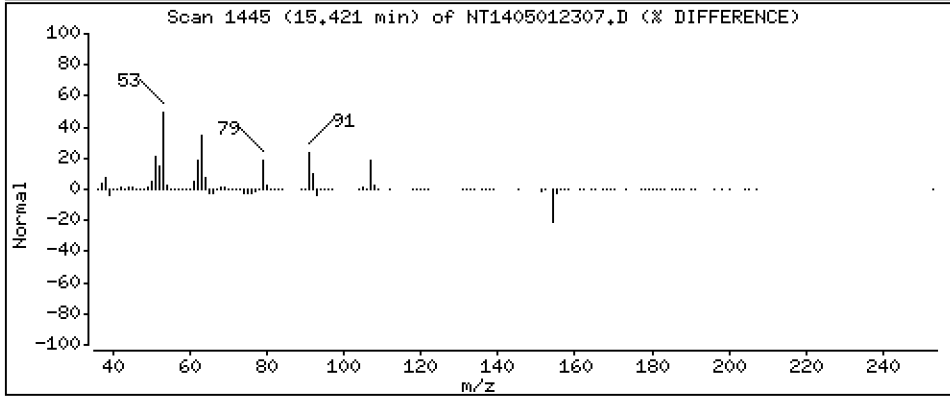
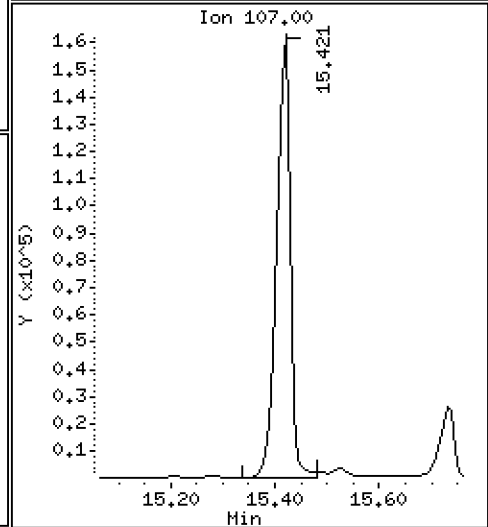
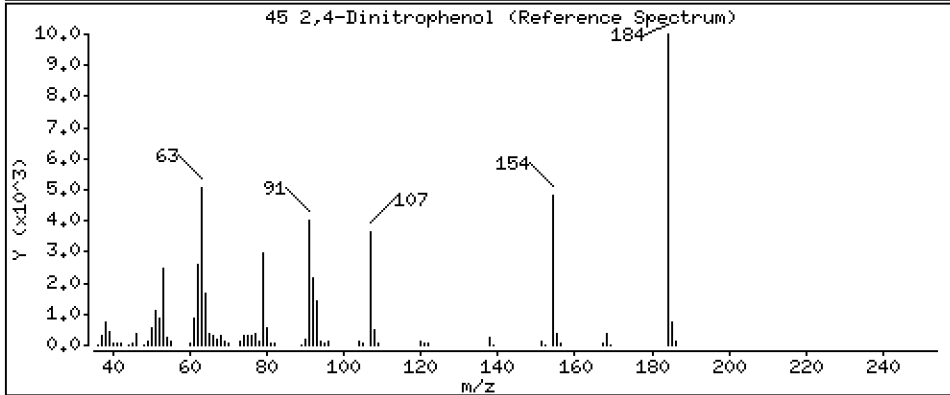
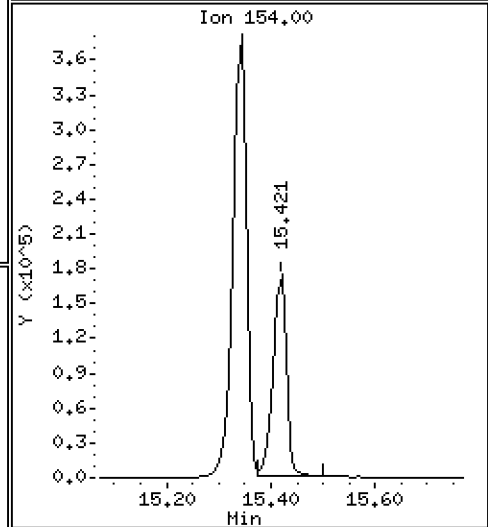
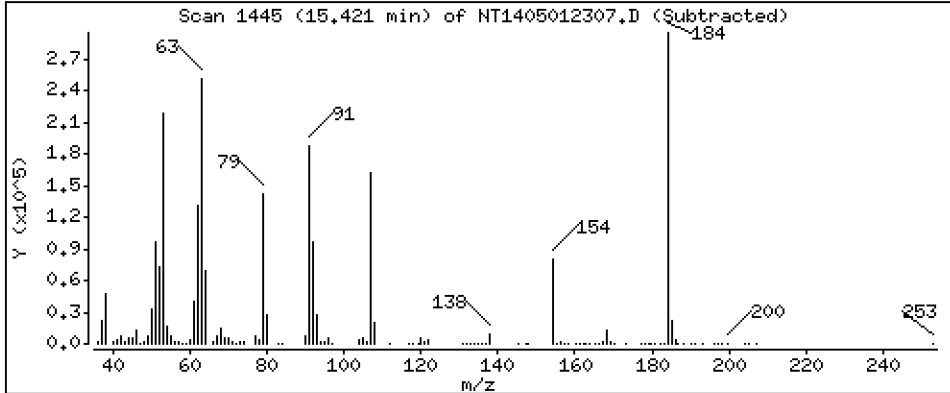
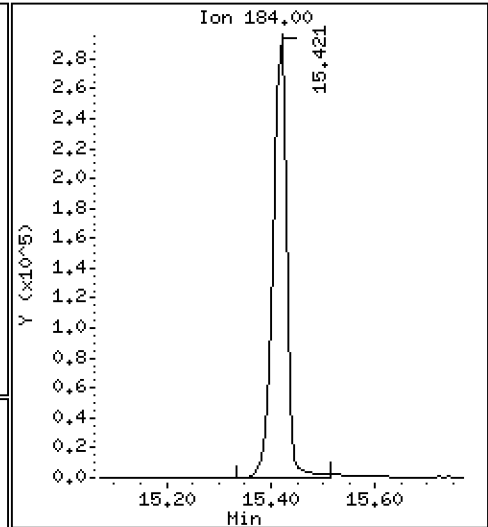
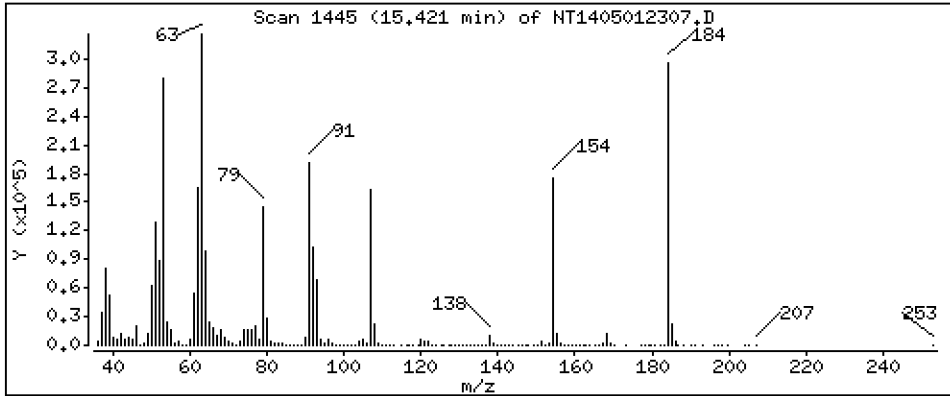
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 21,59 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

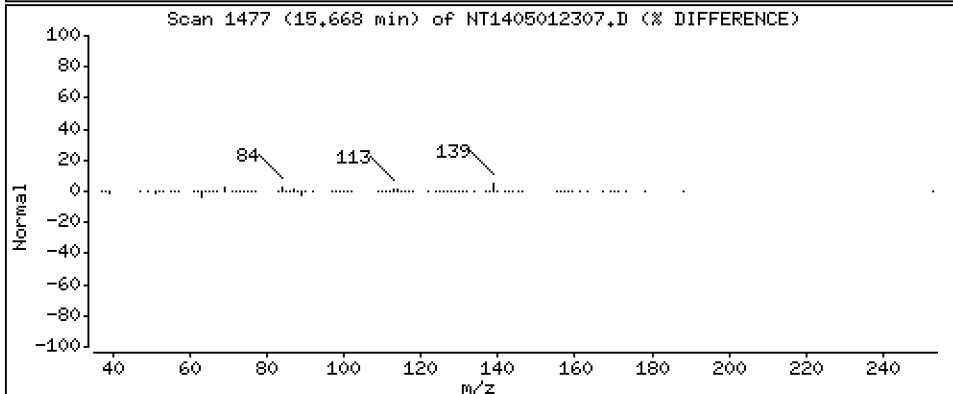
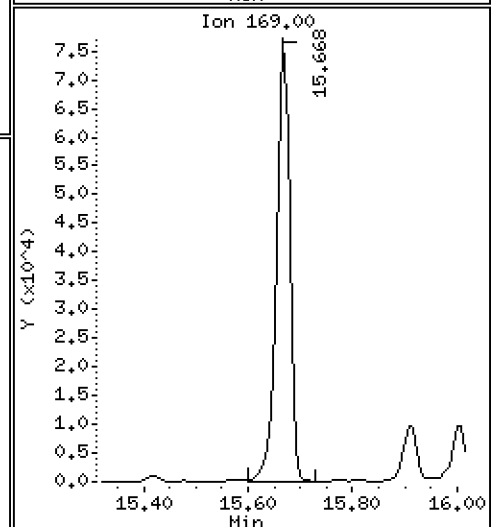
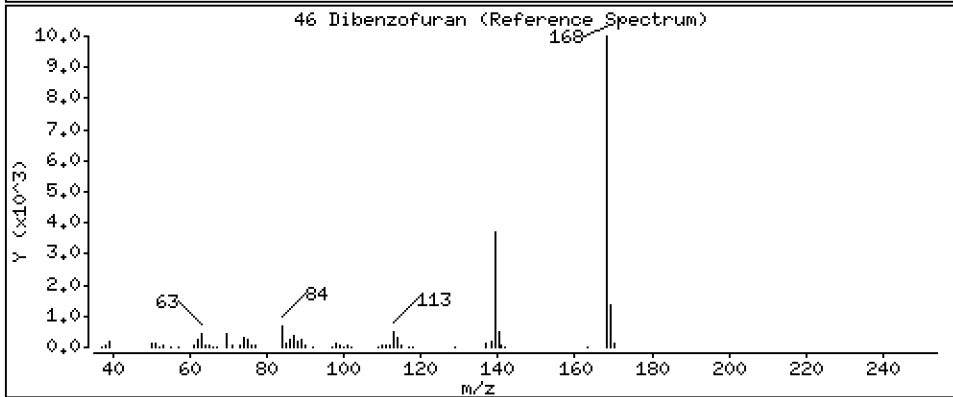
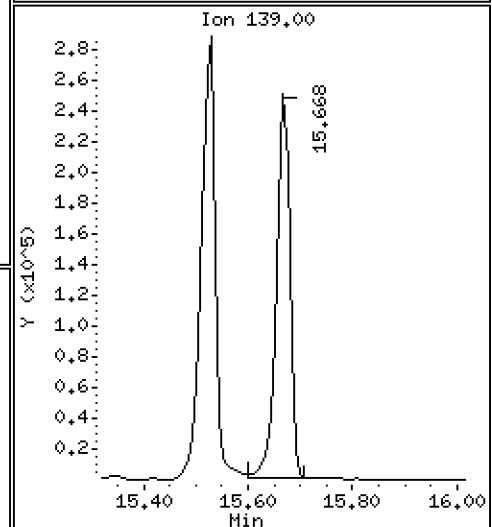
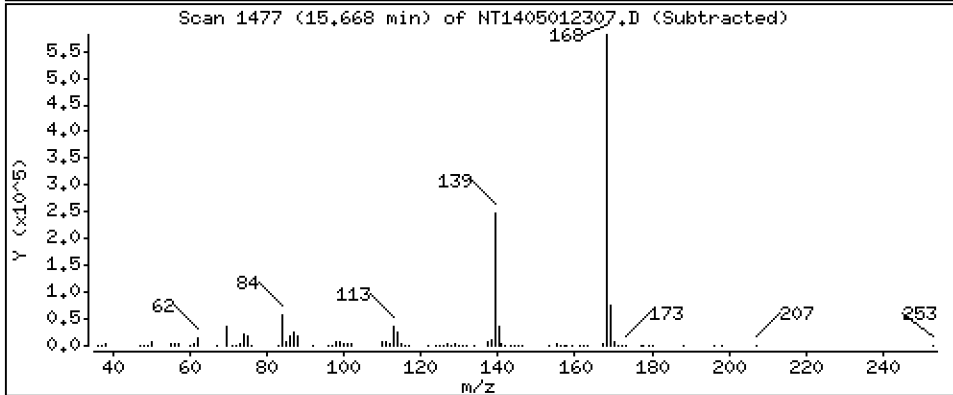
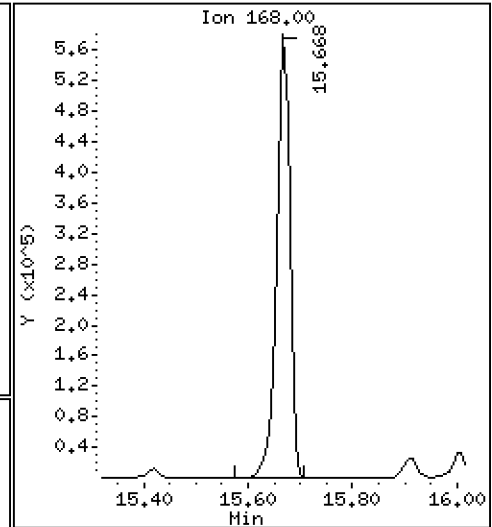
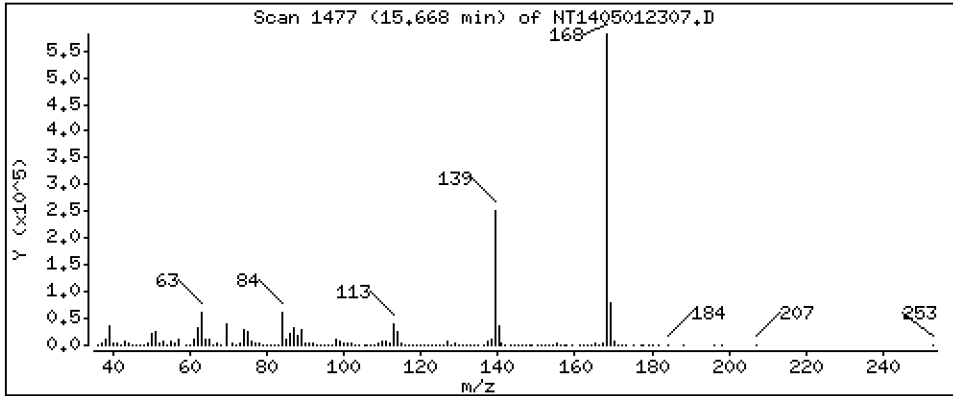
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 4,224 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

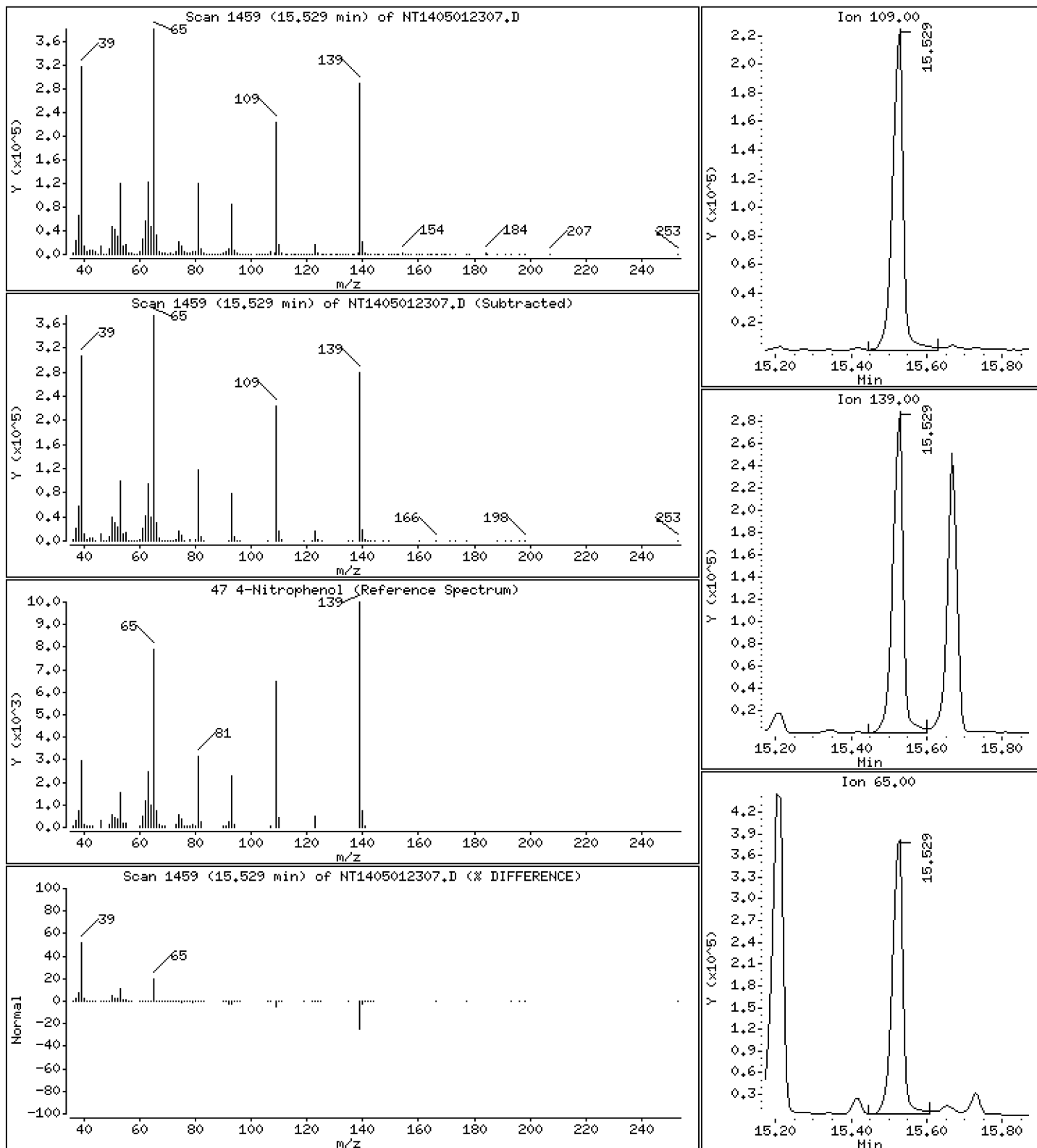
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 14,50 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

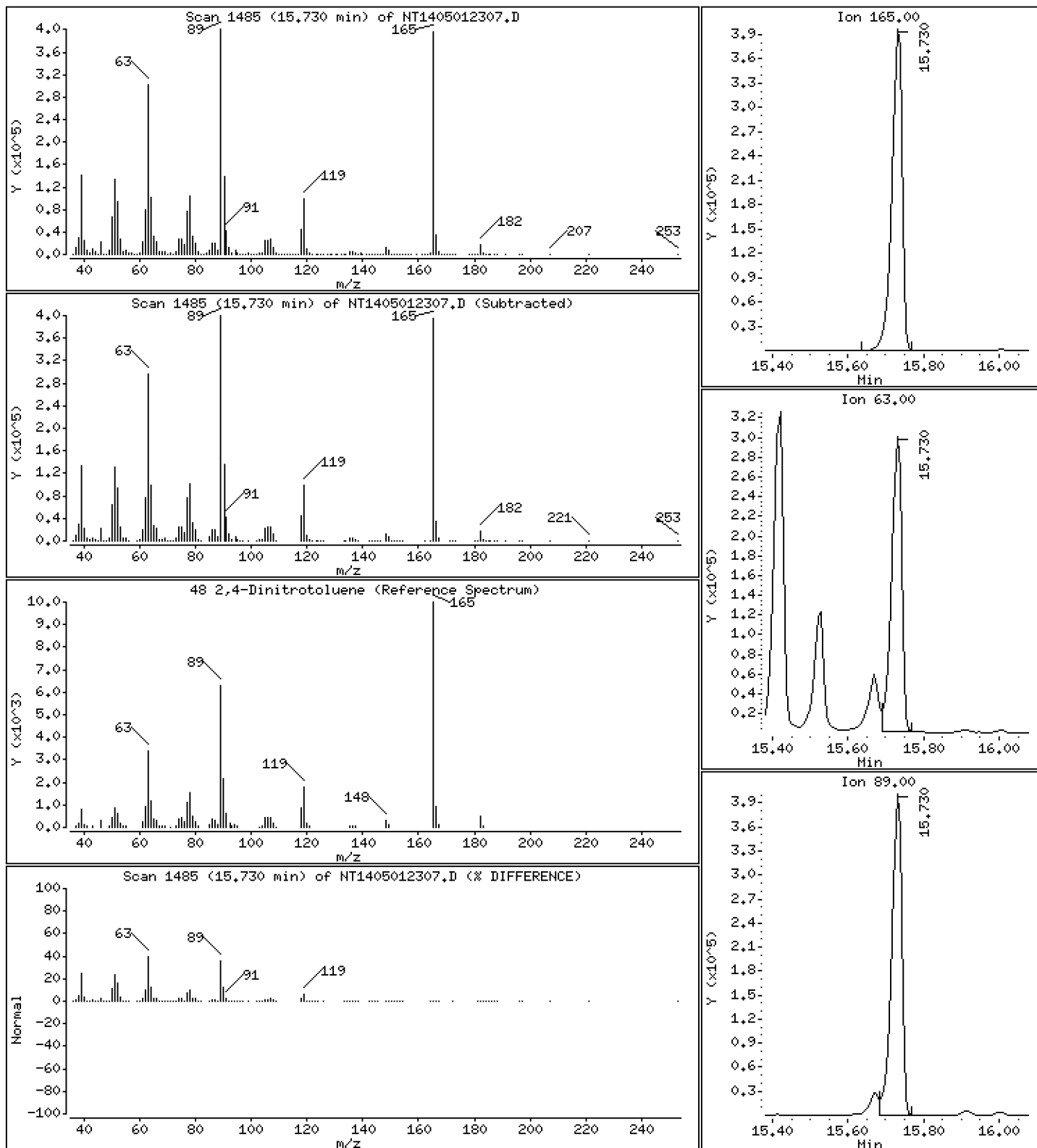
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

48 2,4-Dinitrotoluene

Concentration: 13.40 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

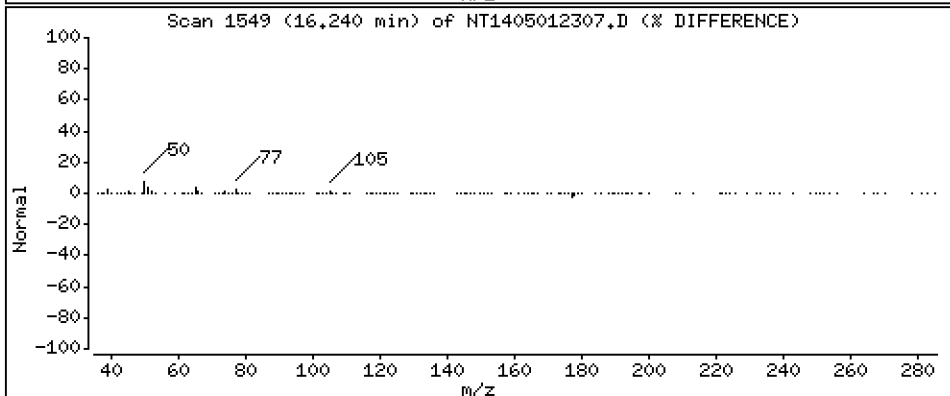
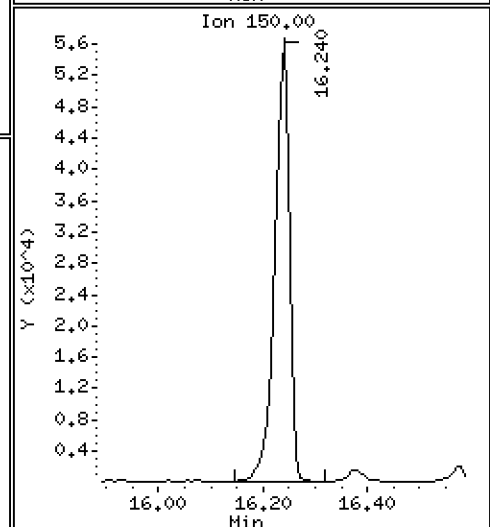
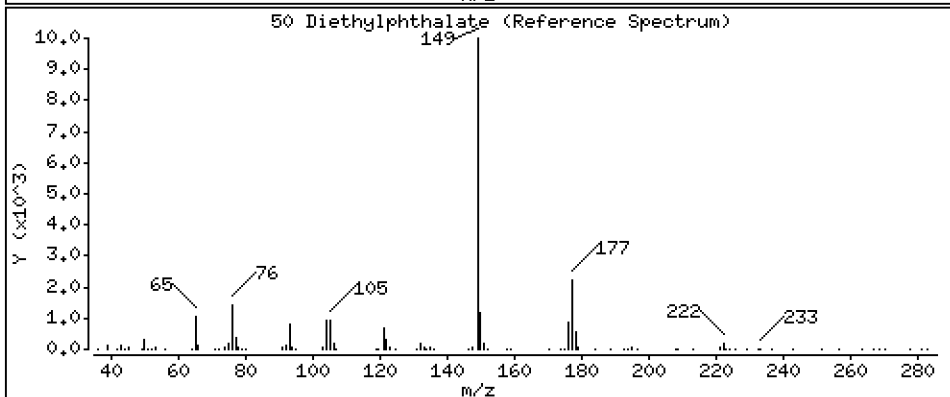
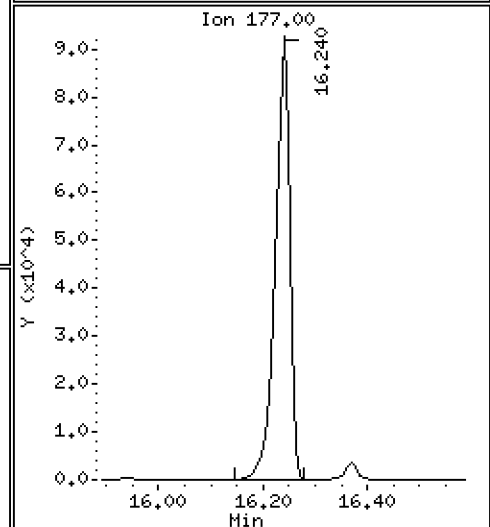
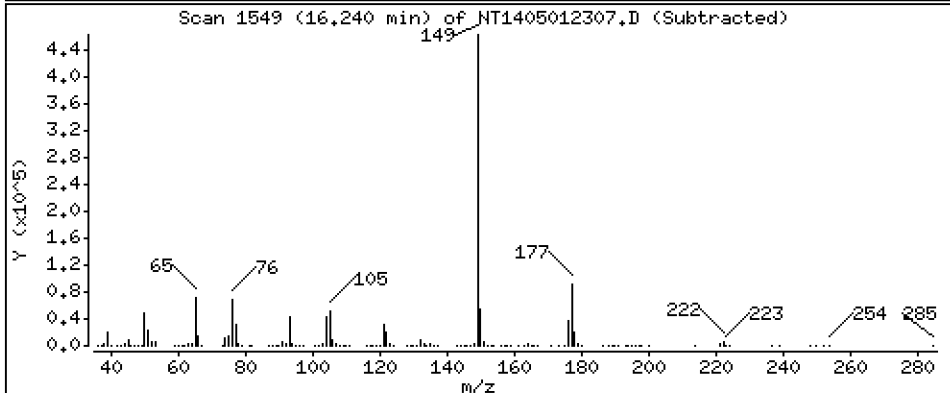
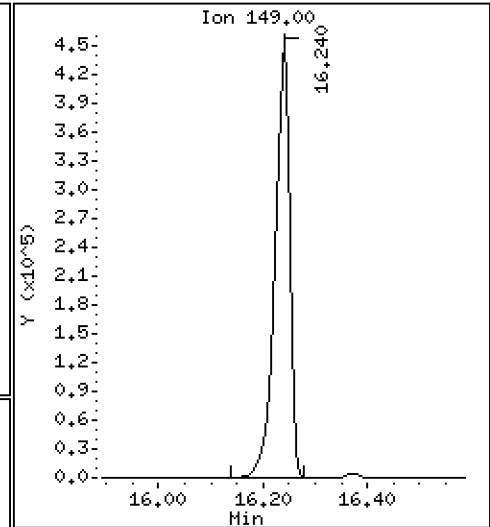
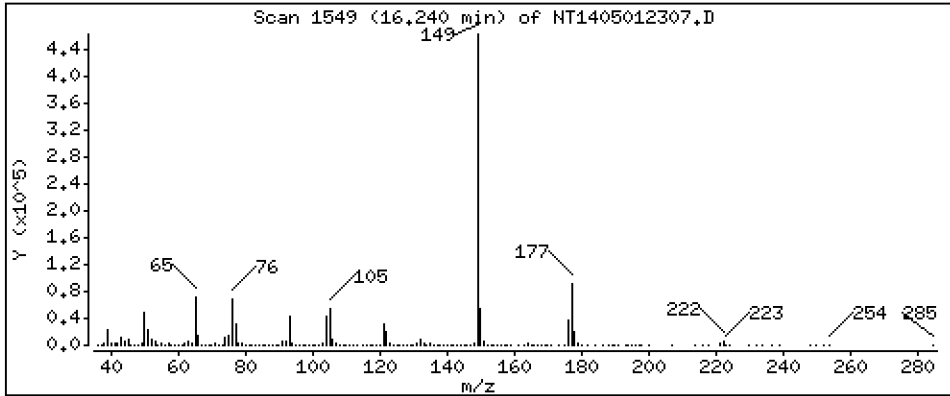
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,622 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

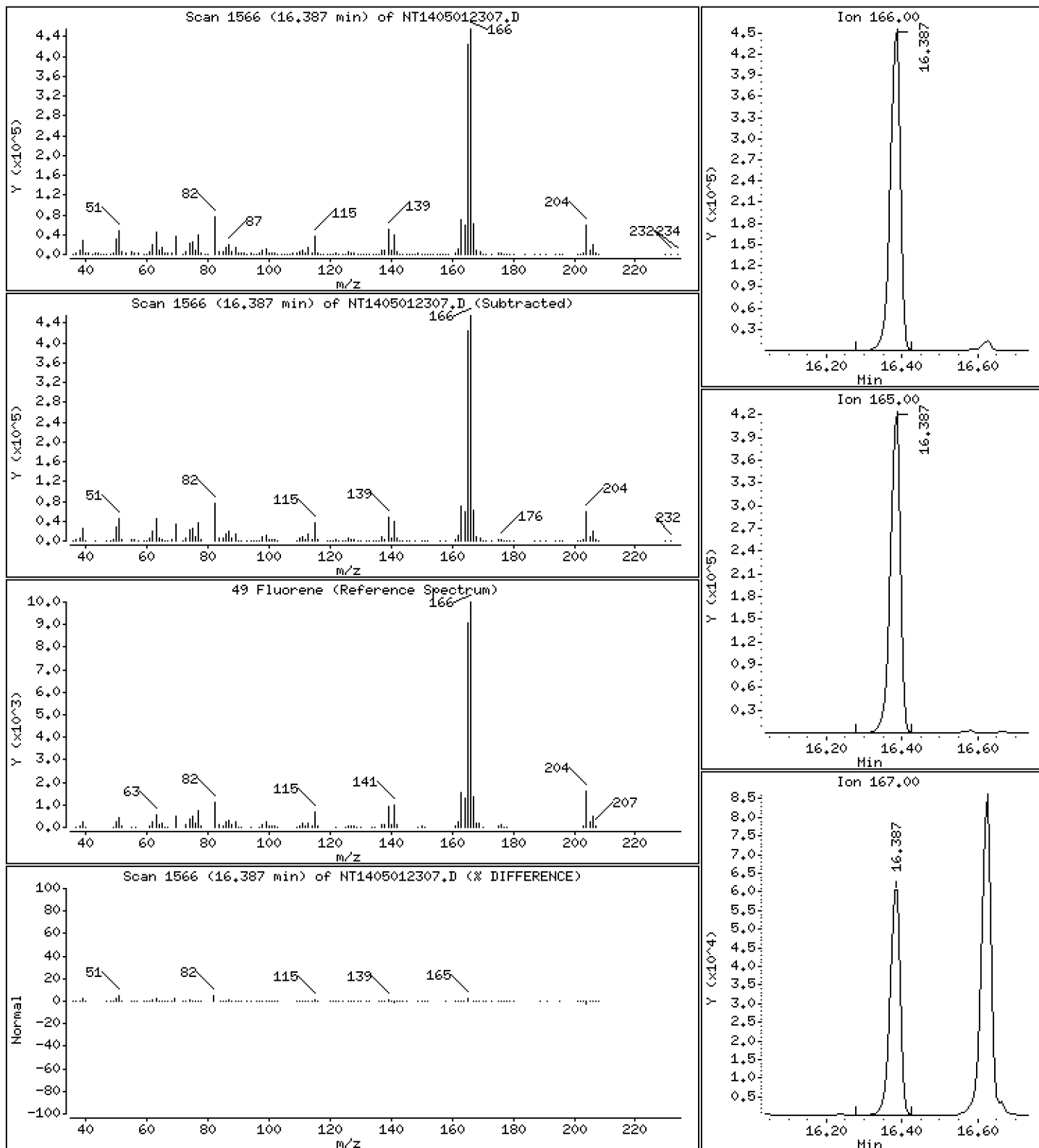
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,453 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

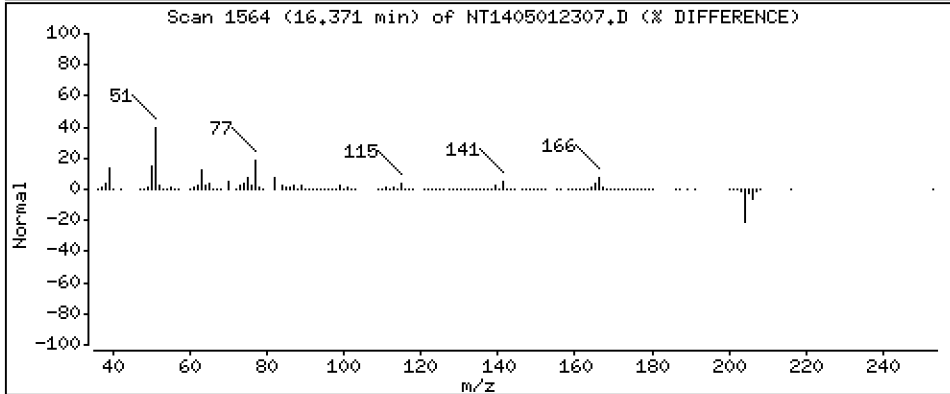
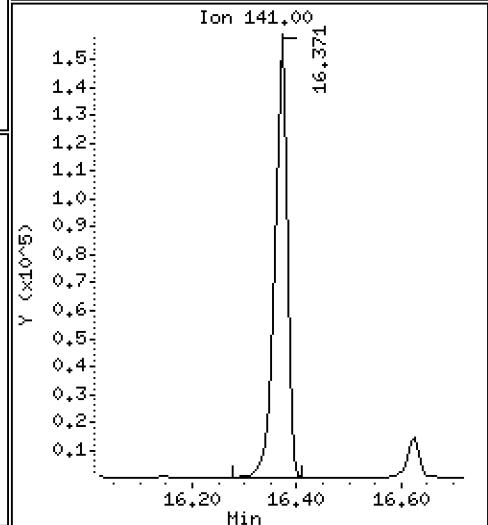
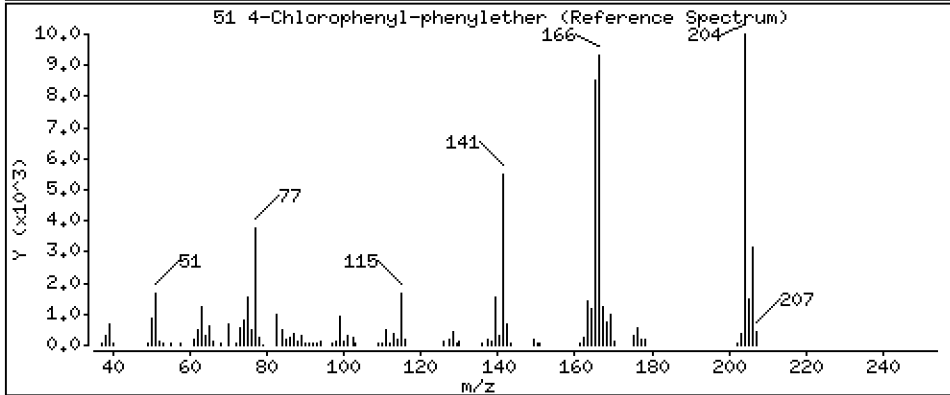
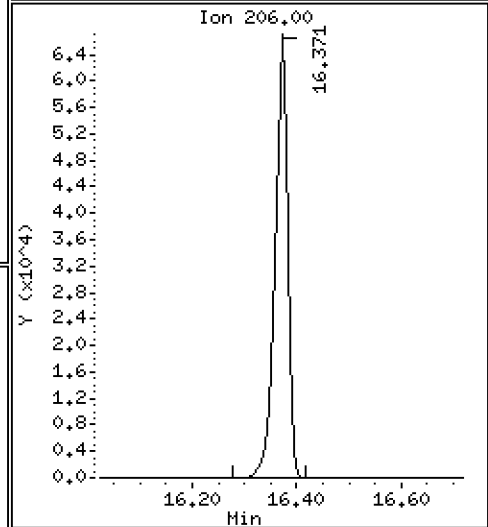
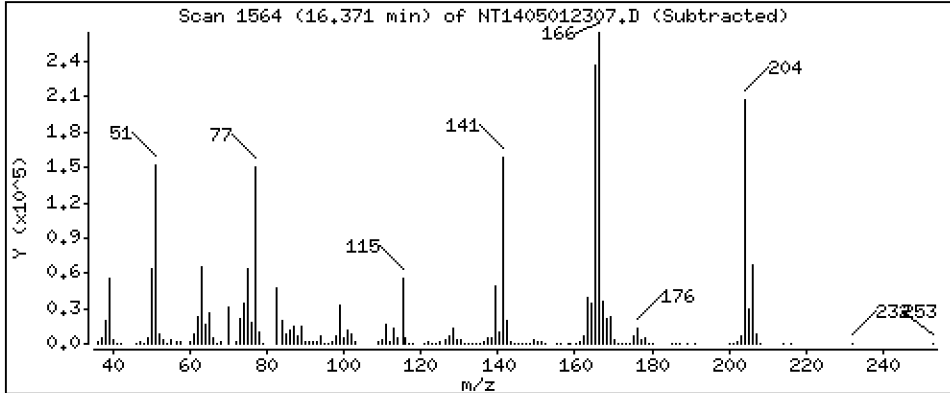
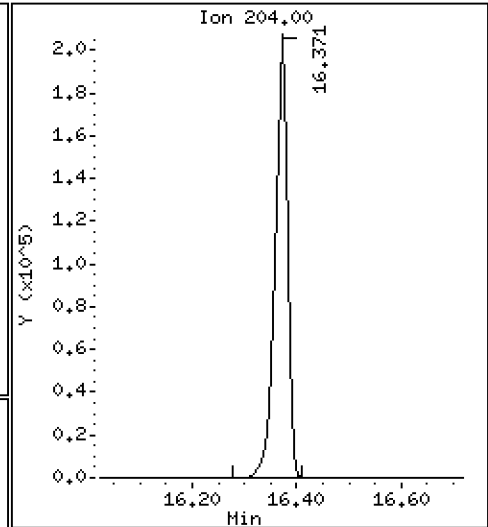
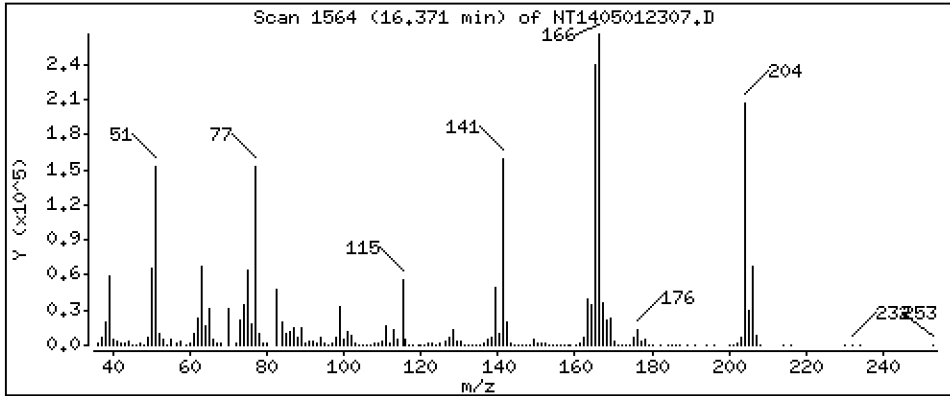
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,519 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

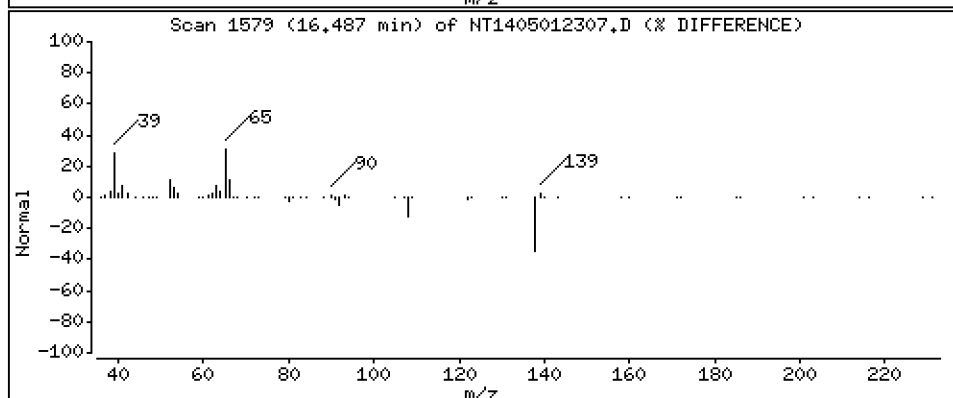
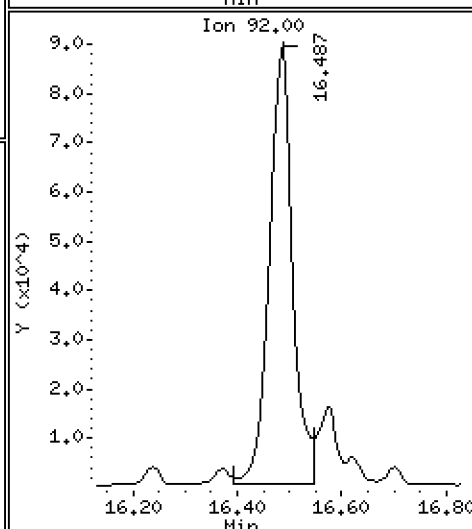
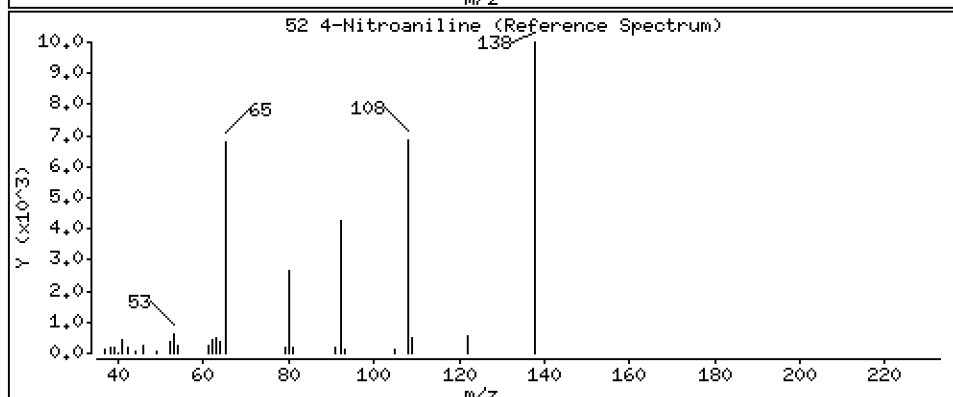
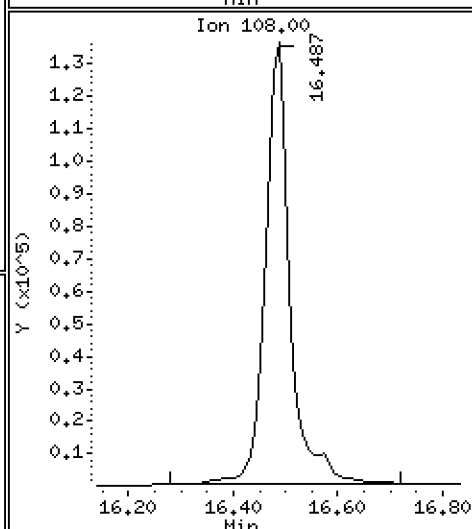
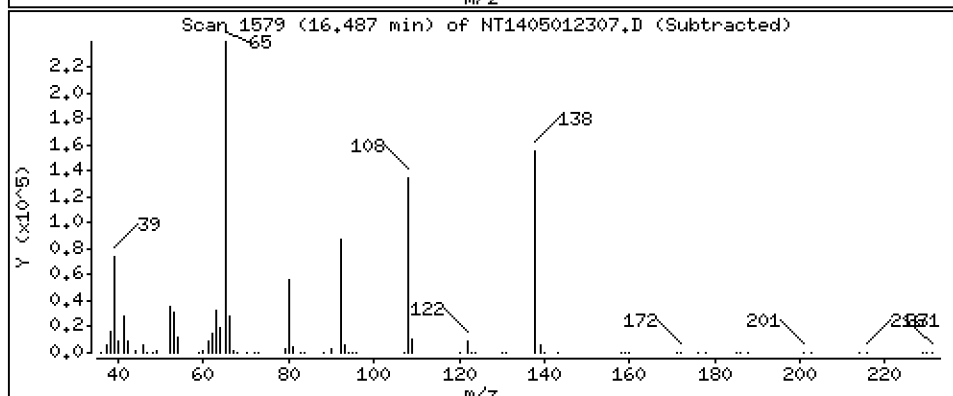
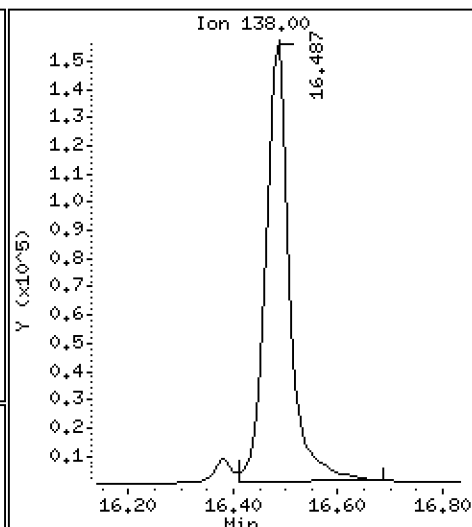
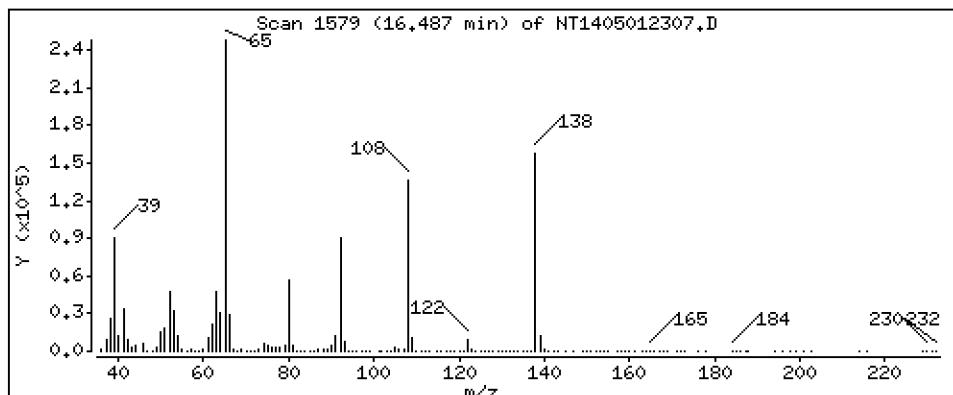
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 11,12 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

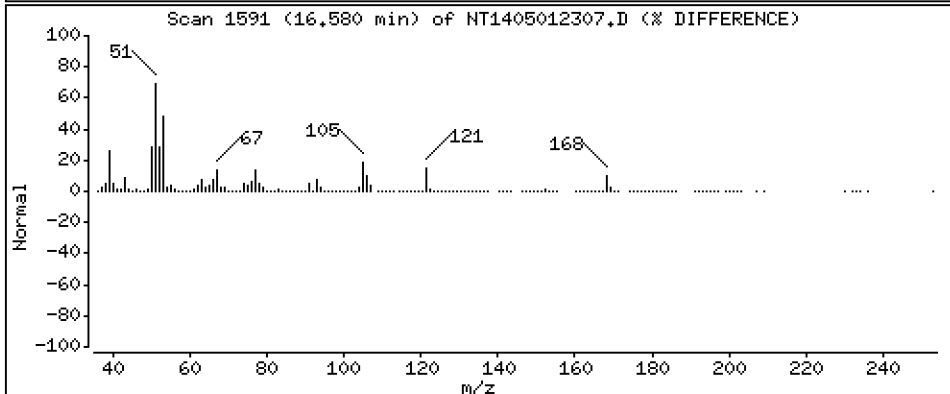
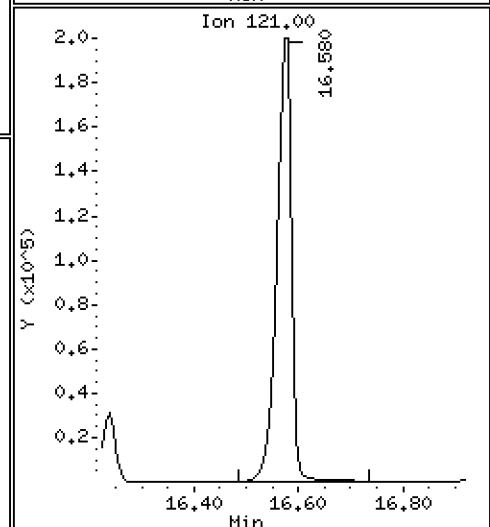
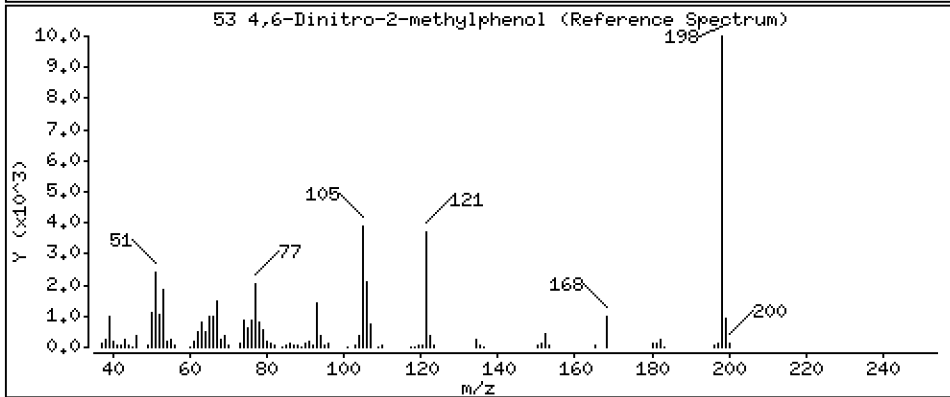
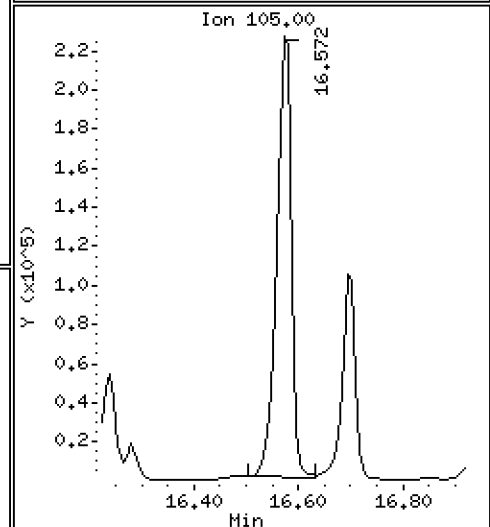
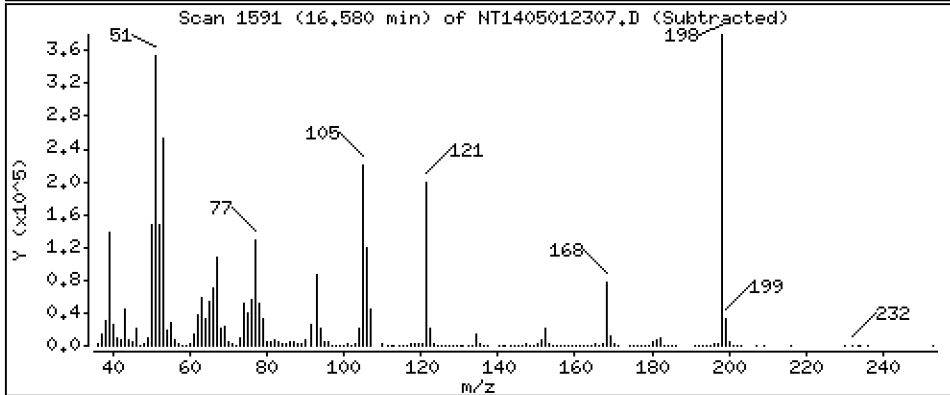
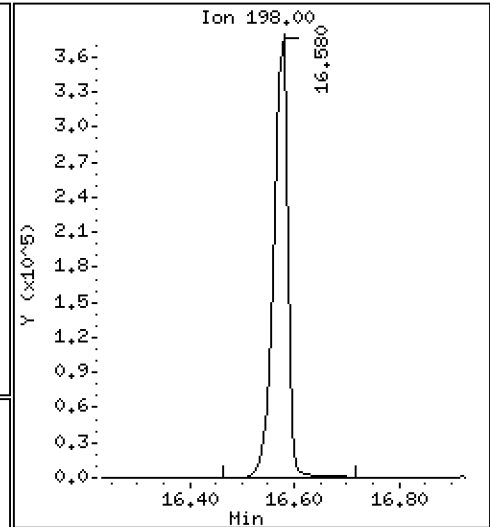
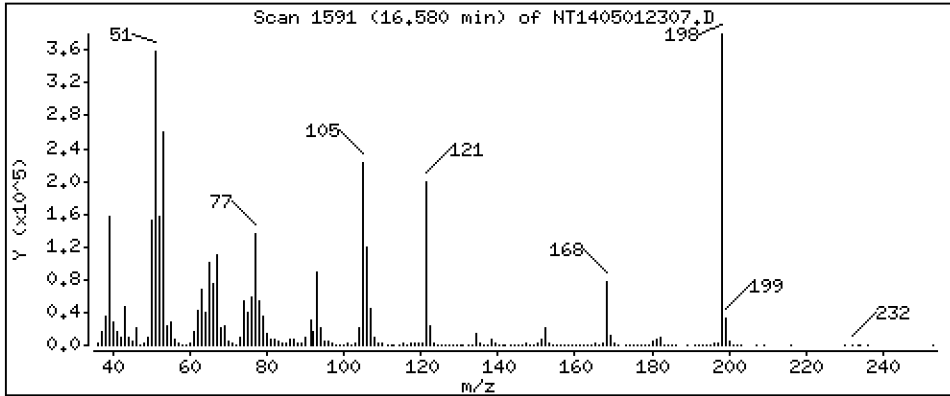
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 25,40 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

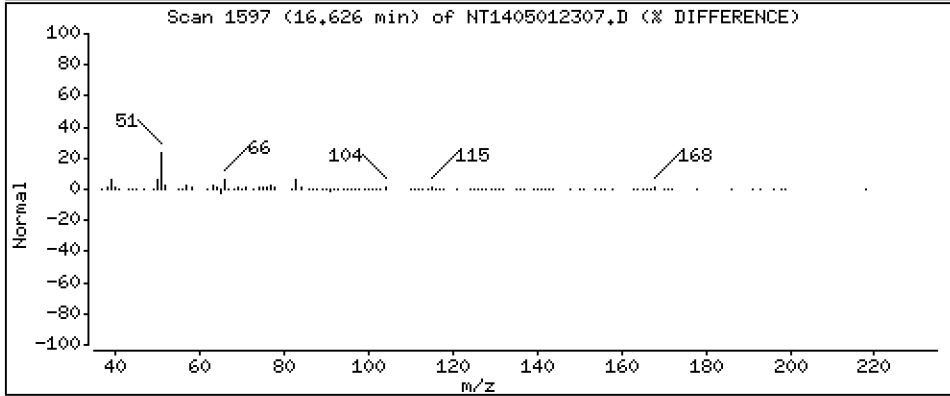
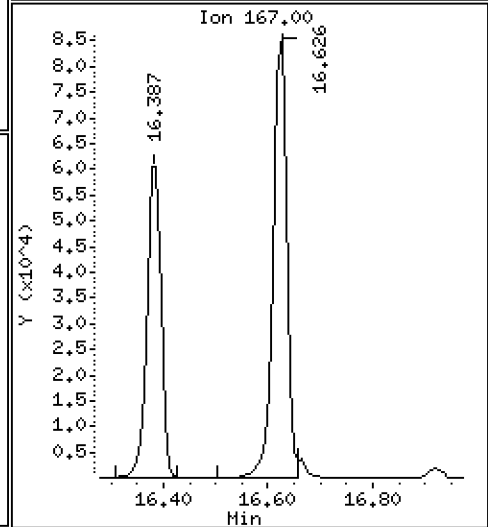
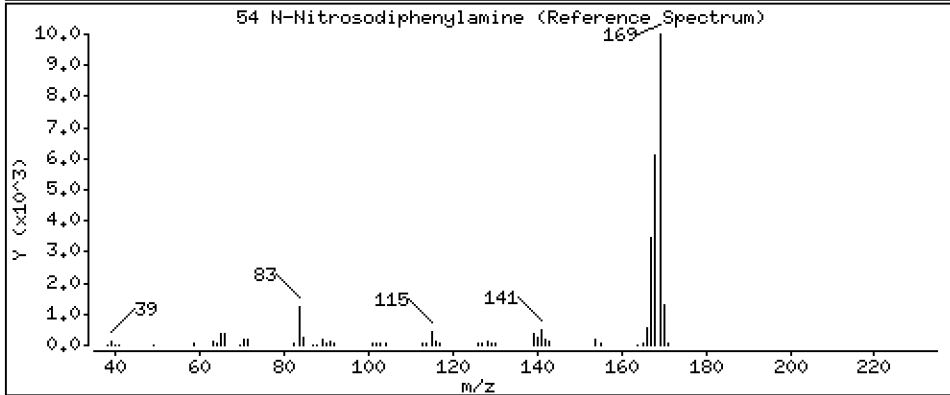
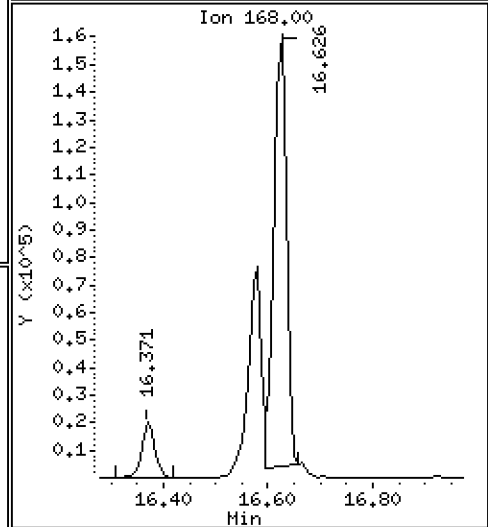
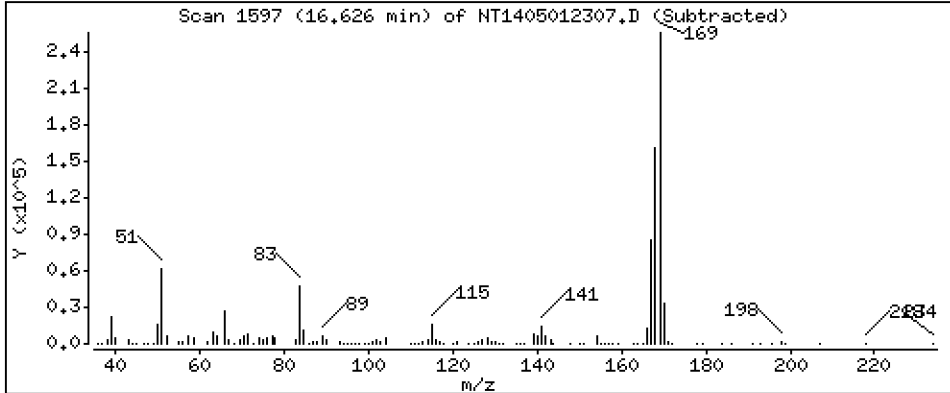
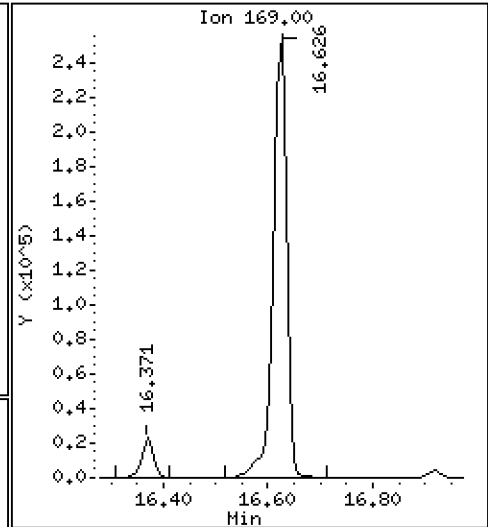
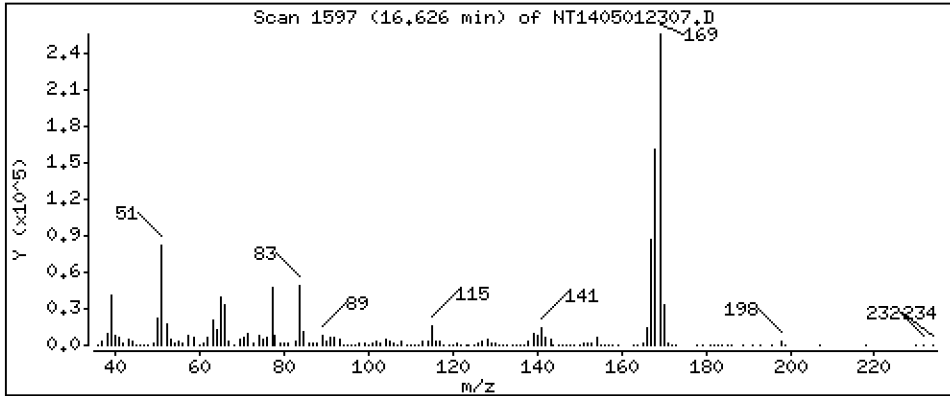
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 3,630 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

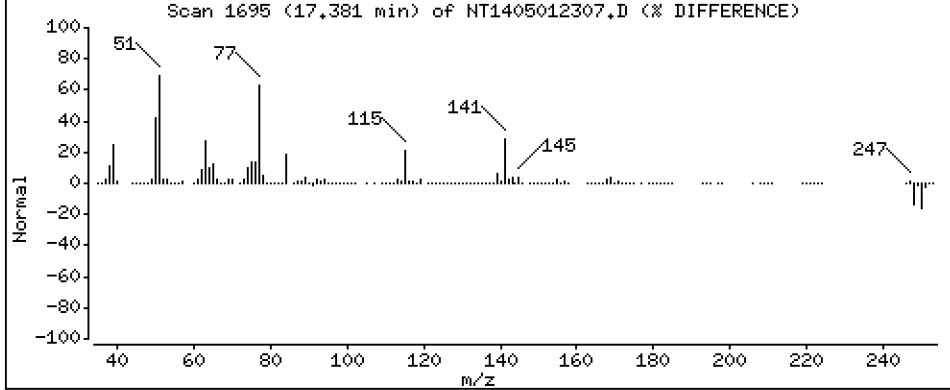
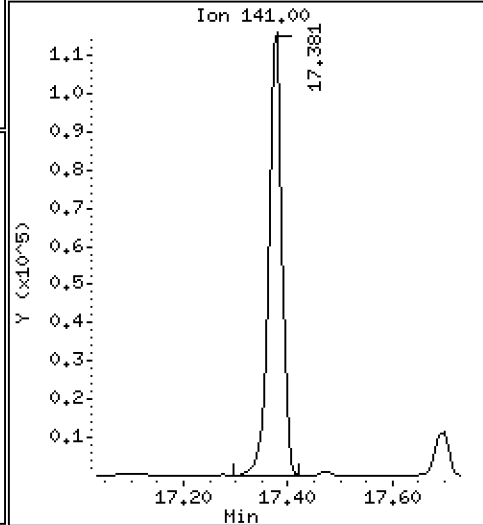
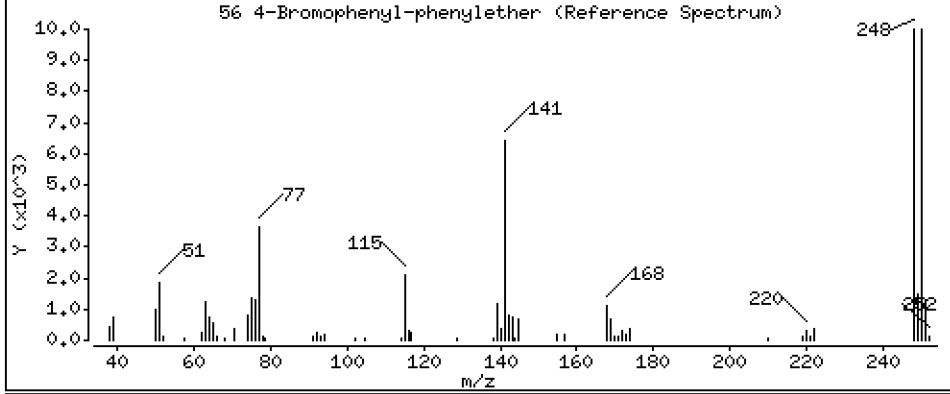
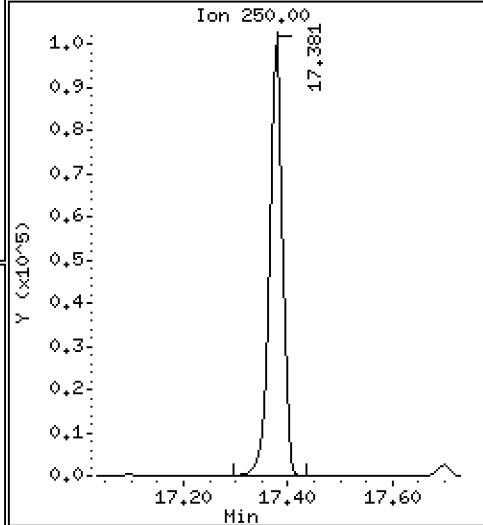
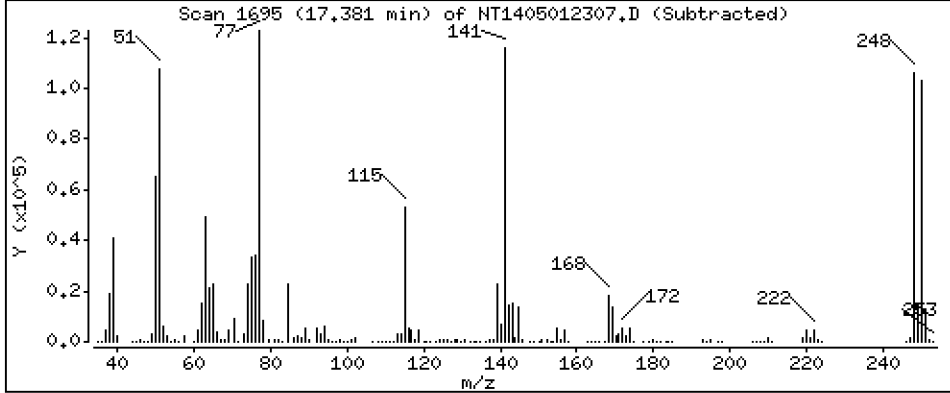
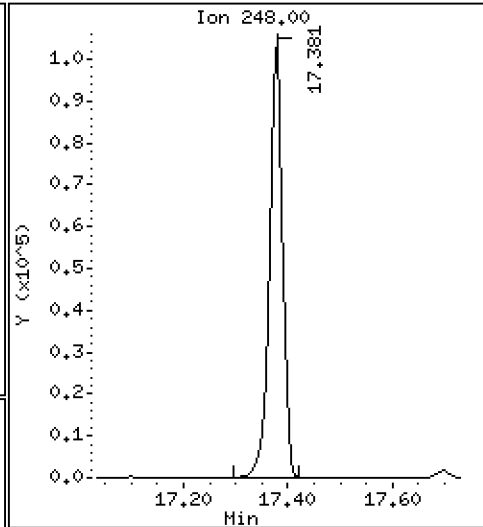
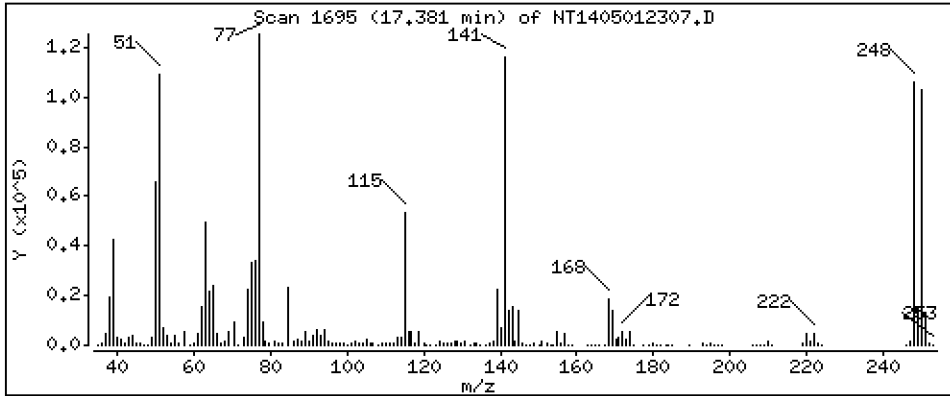
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 4,537 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

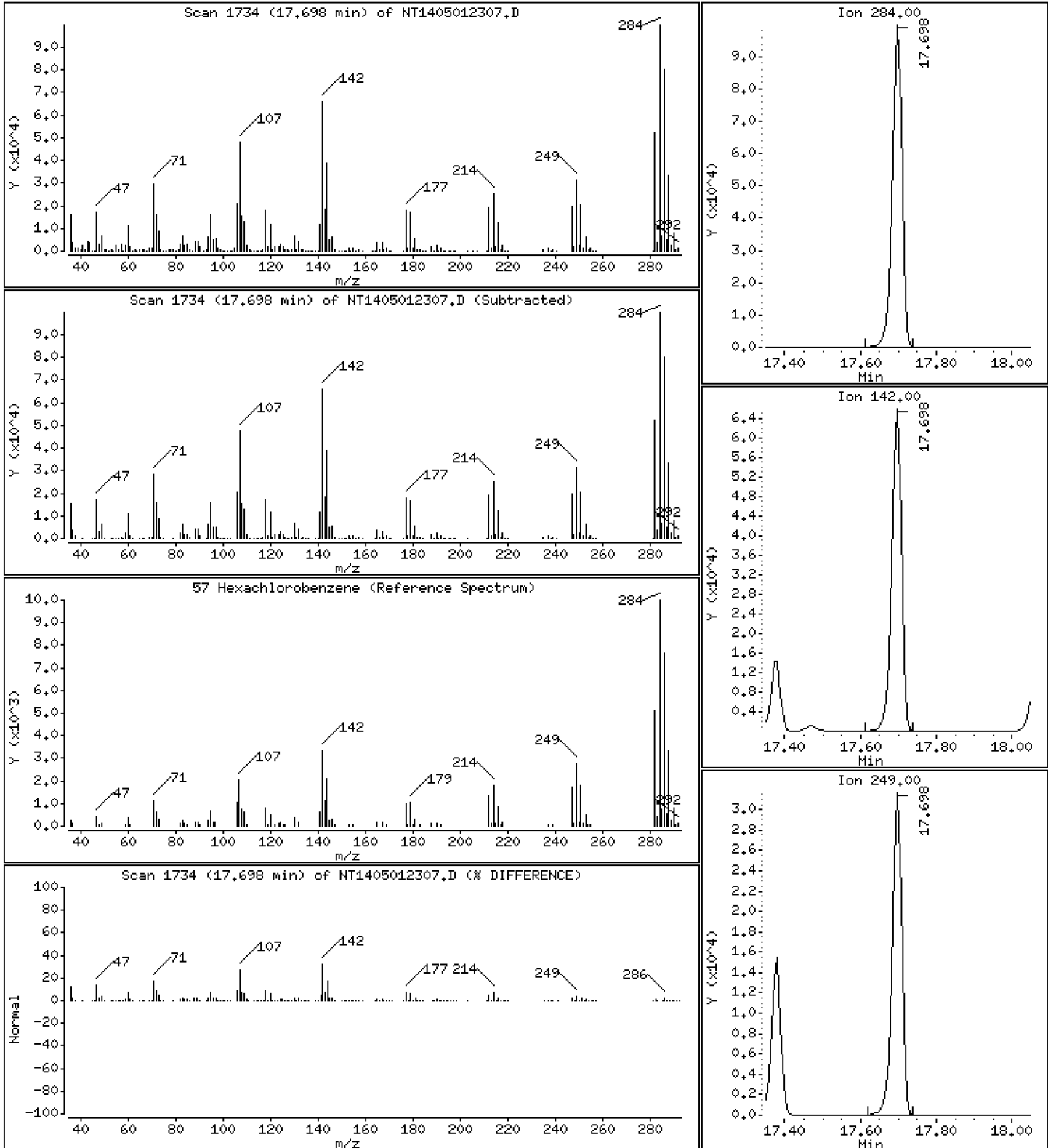
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,184 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

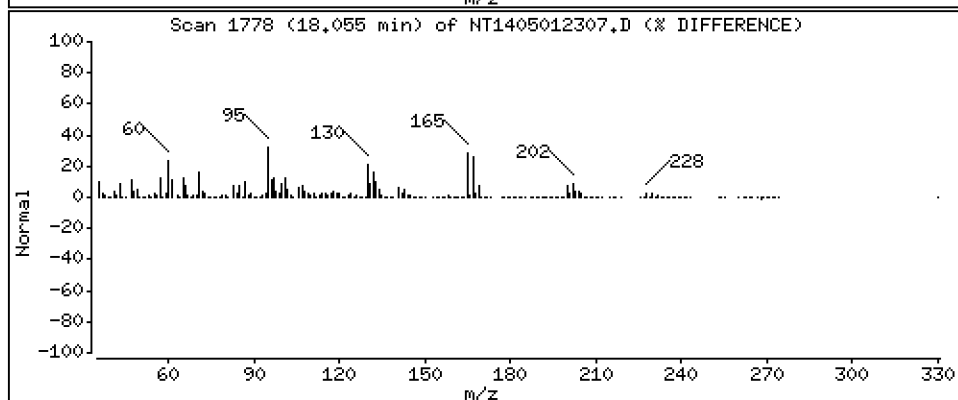
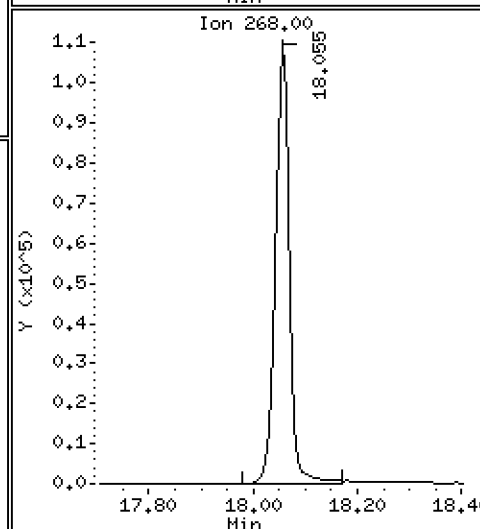
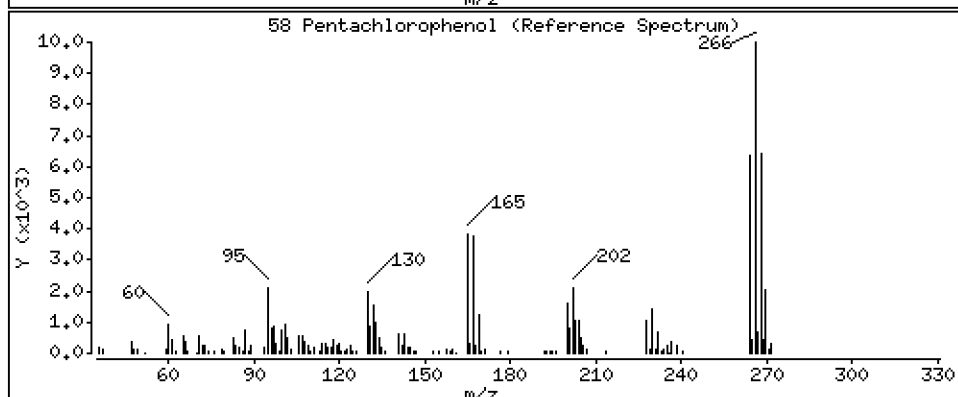
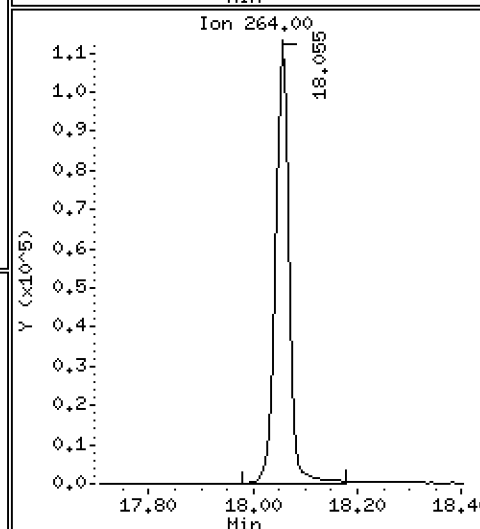
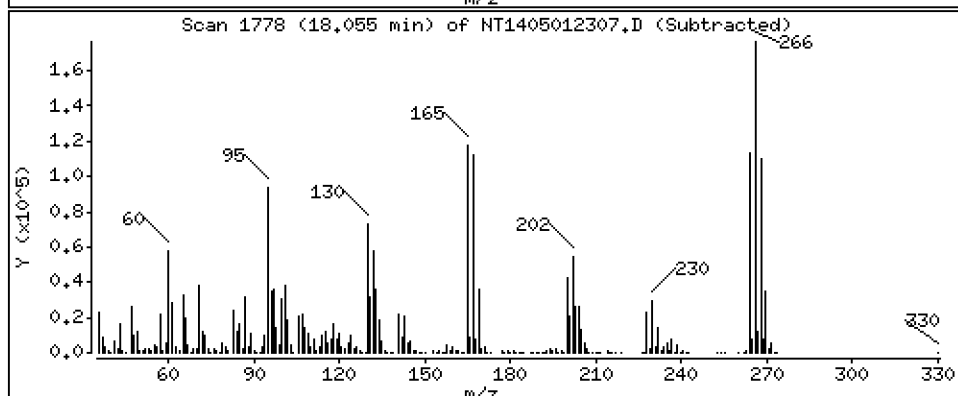
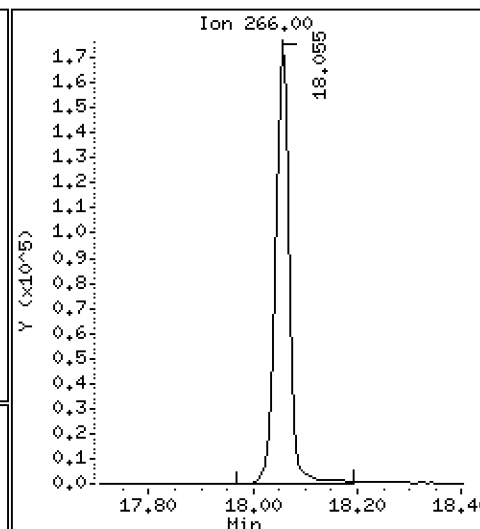
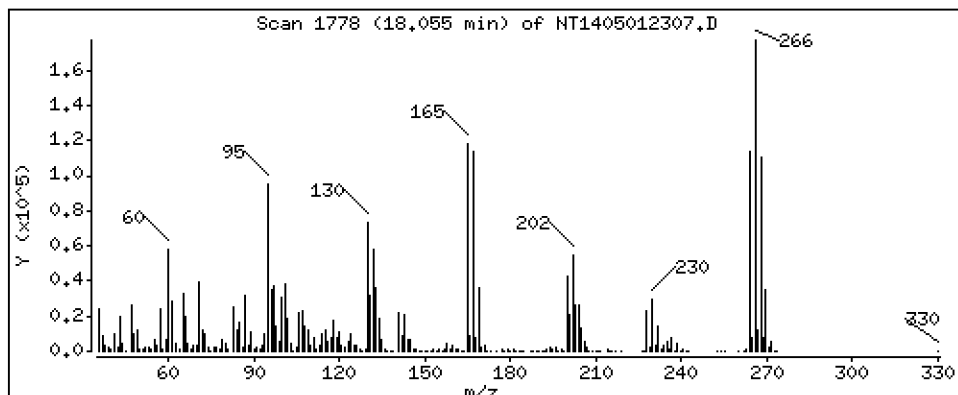
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 12,12 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

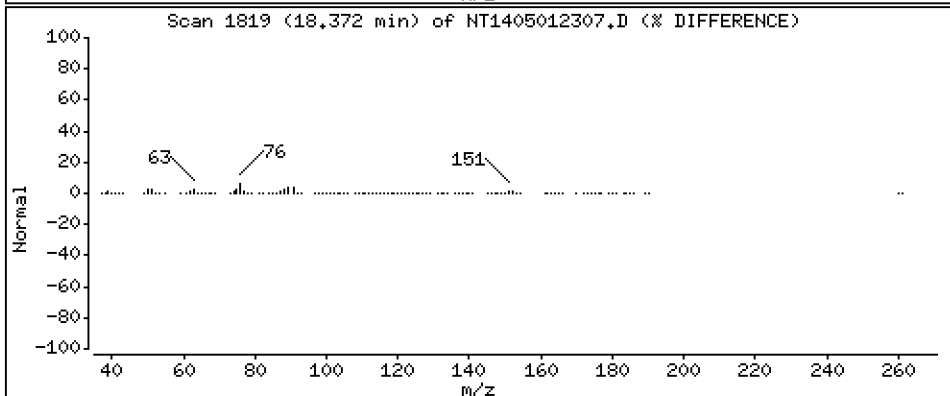
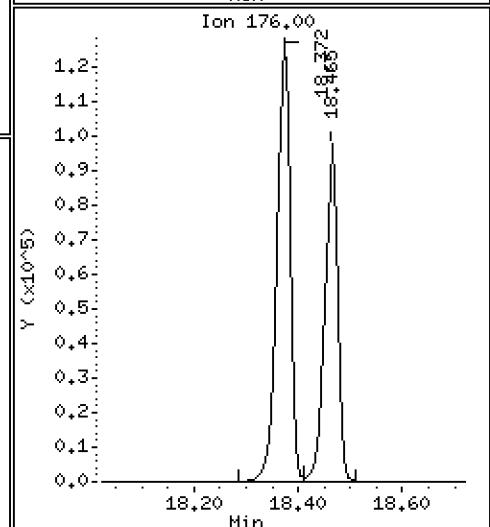
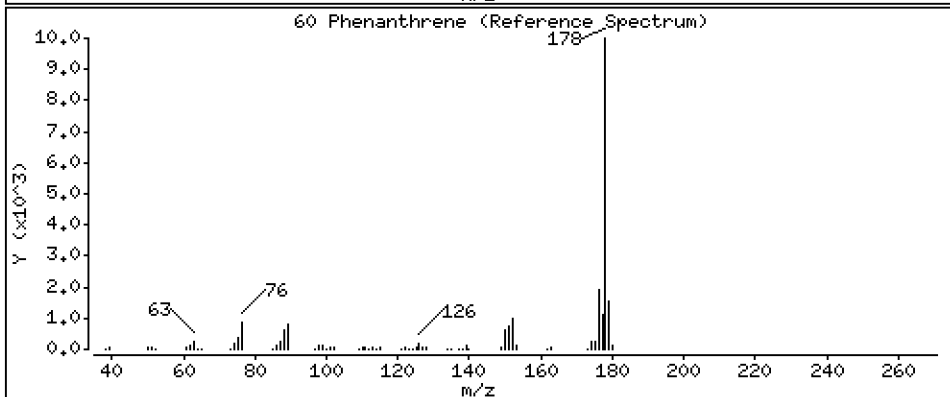
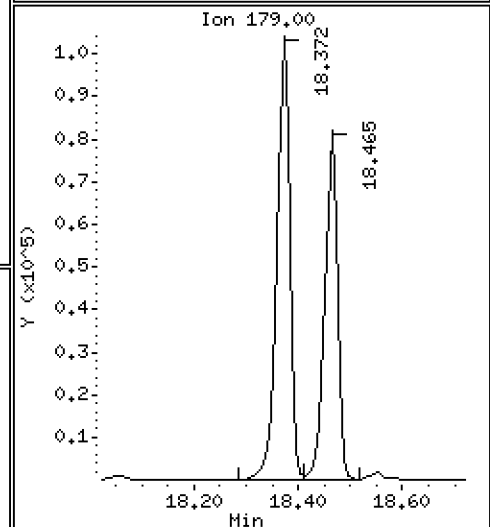
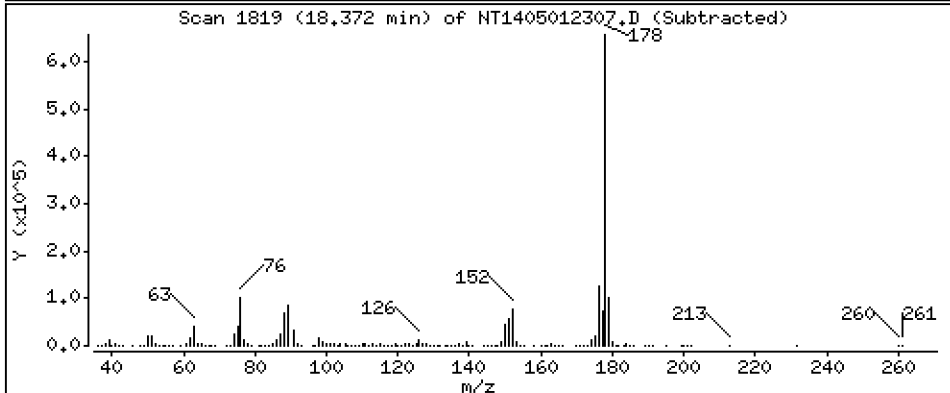
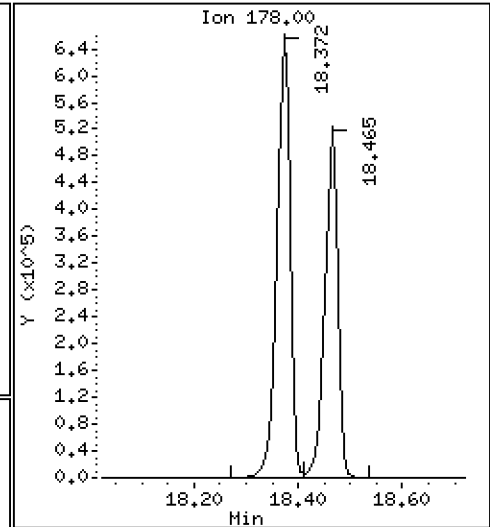
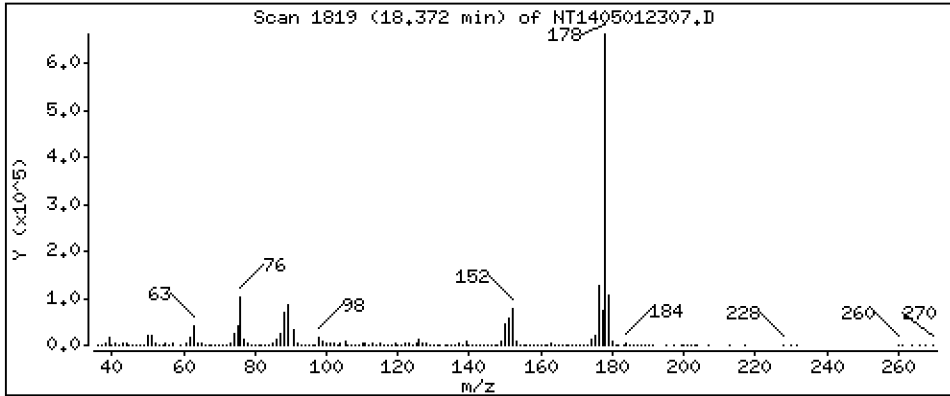
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

60 Phenanthrene

Concentration: 4.619 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

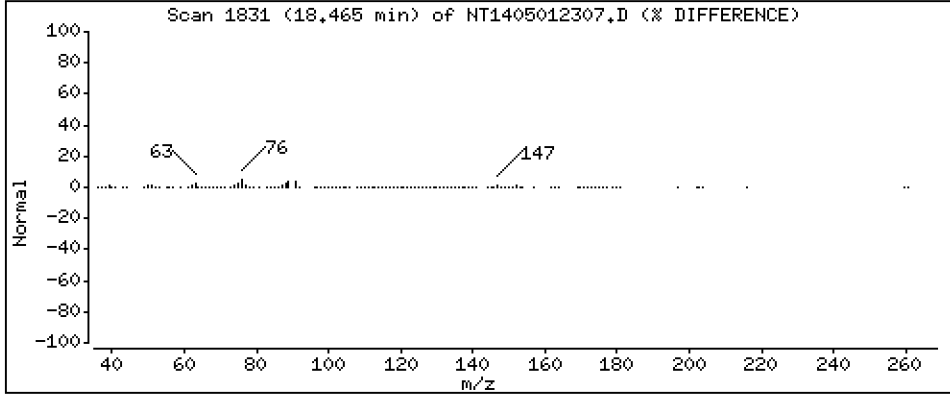
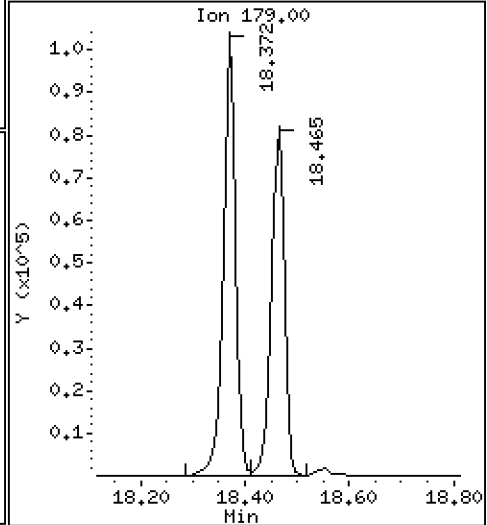
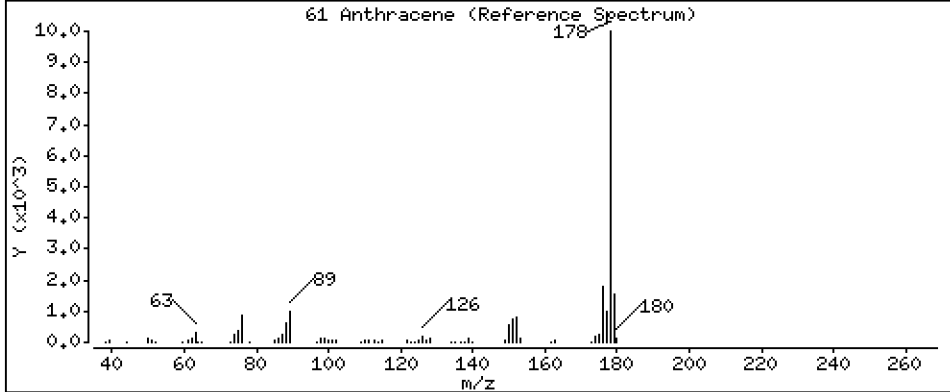
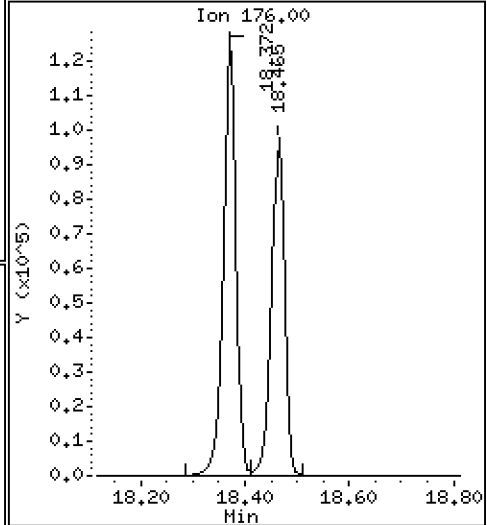
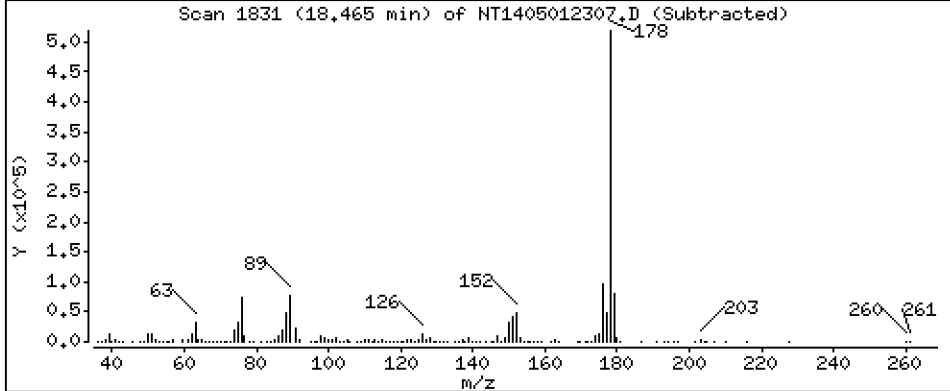
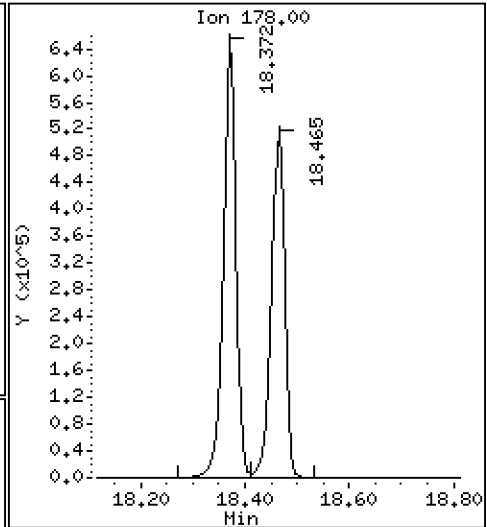
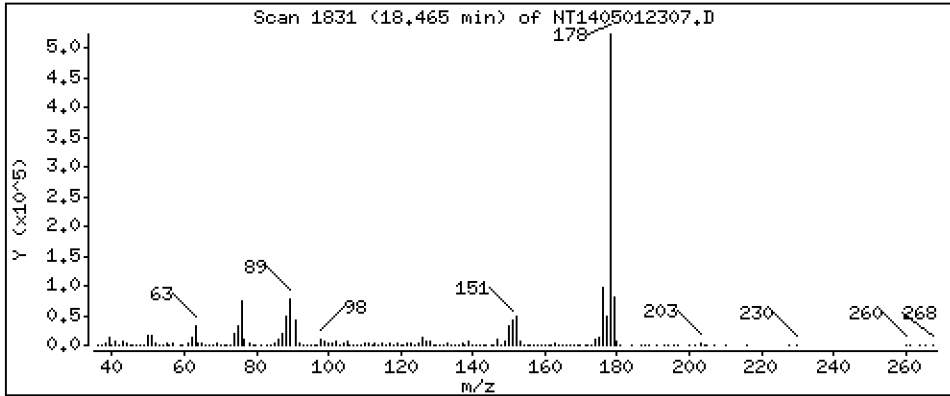
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 3,805 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

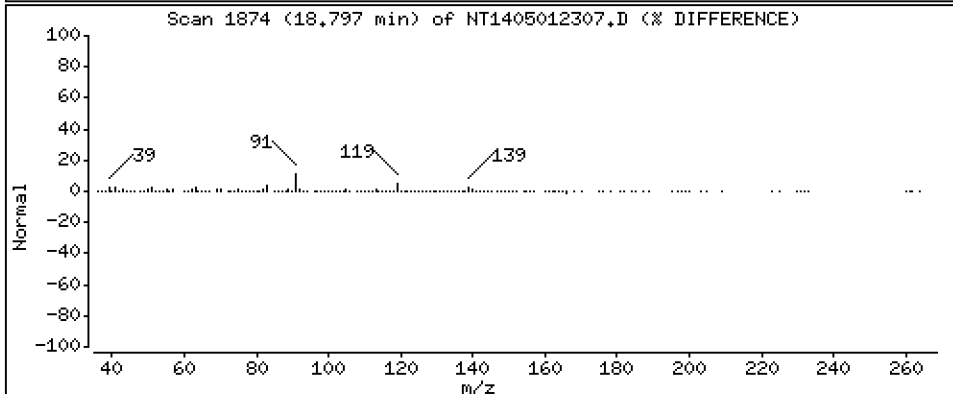
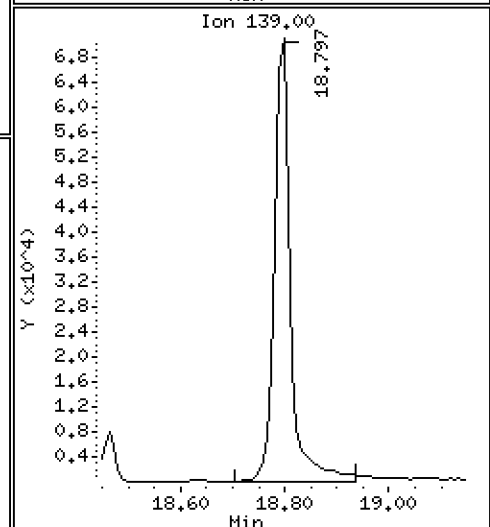
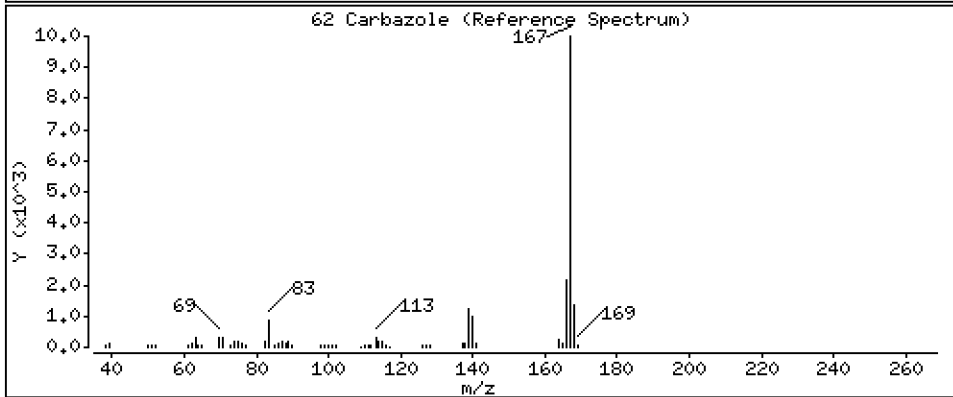
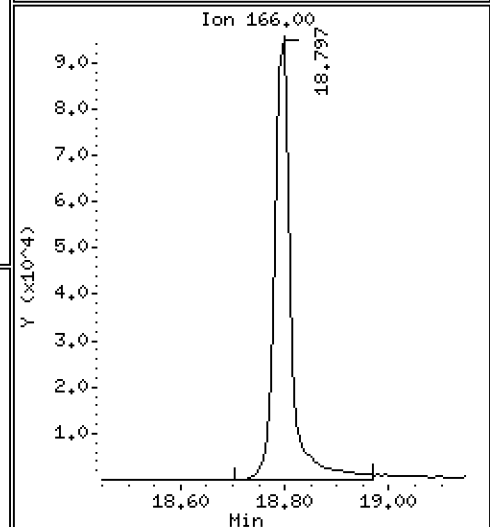
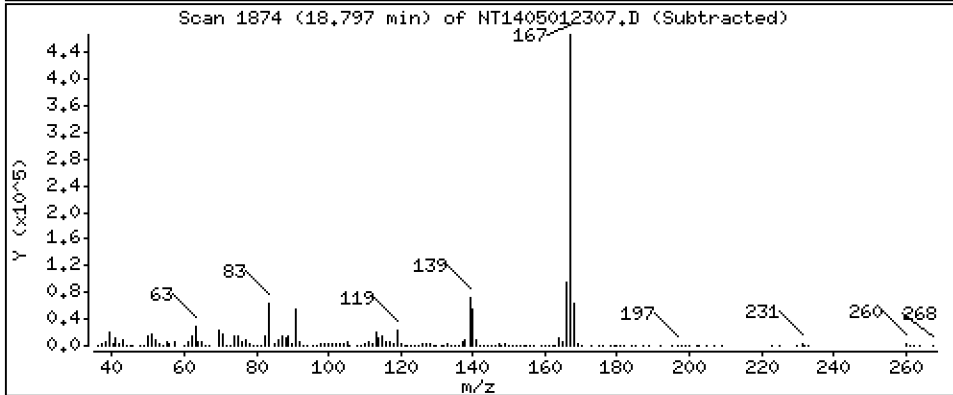
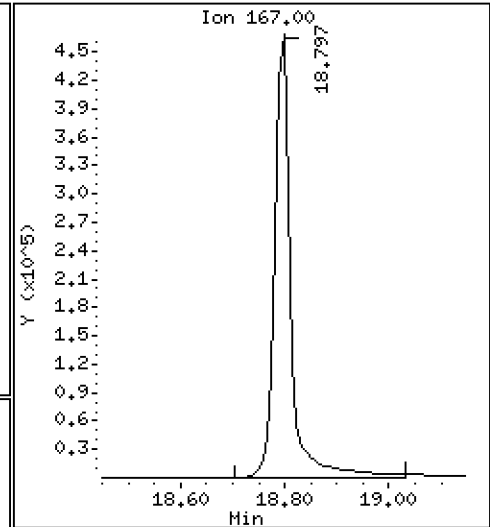
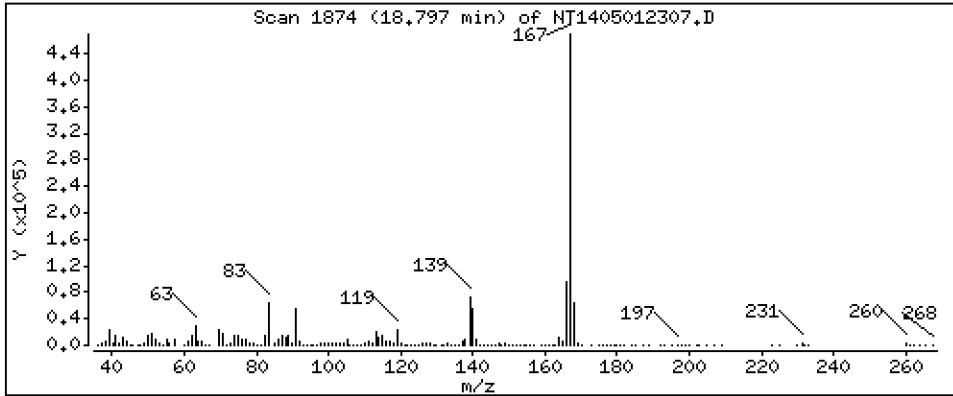
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 4,560 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

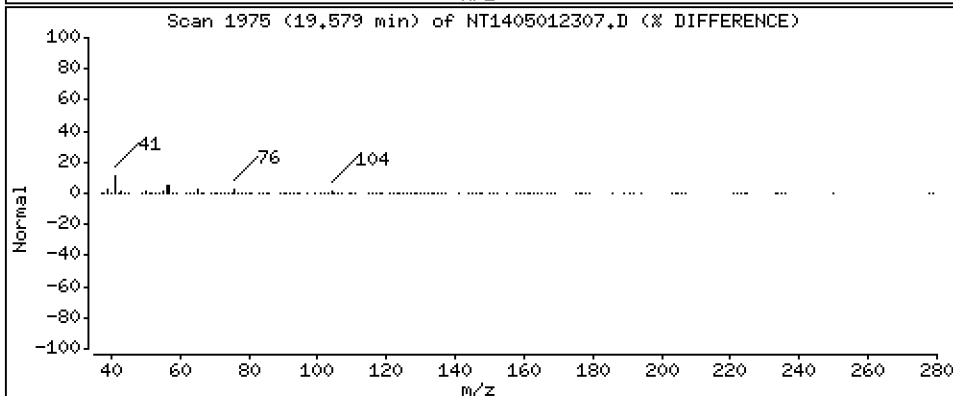
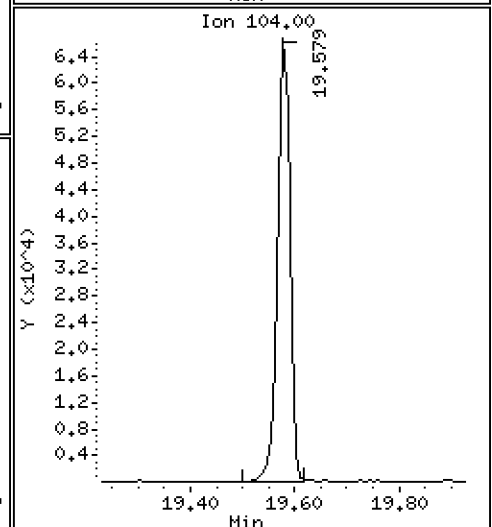
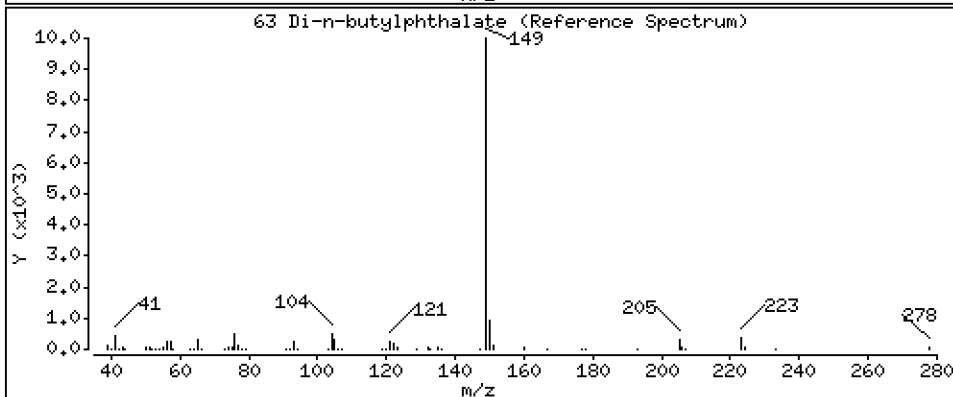
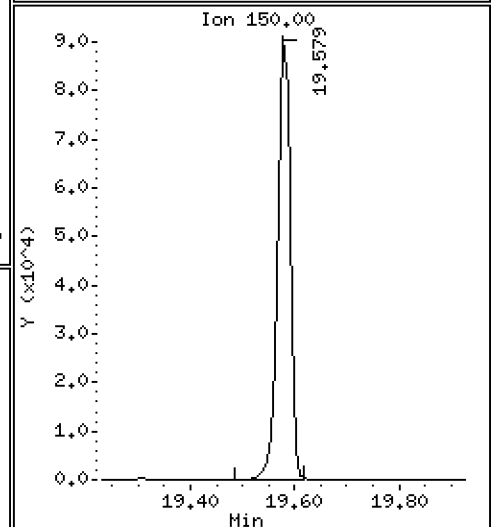
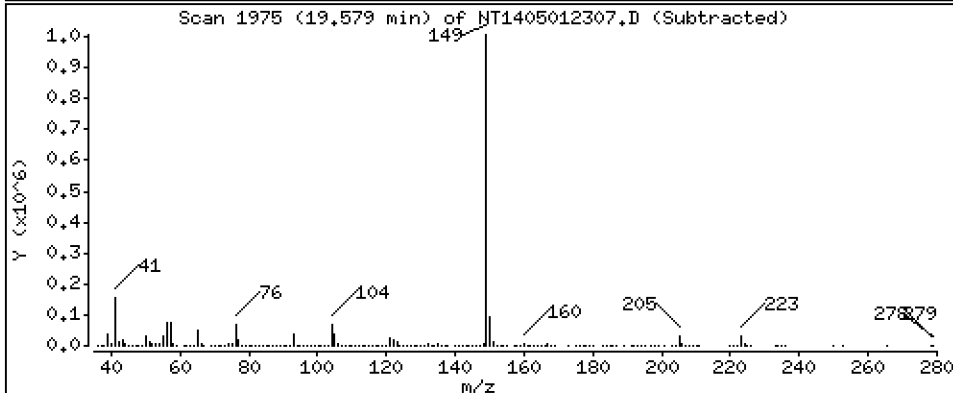
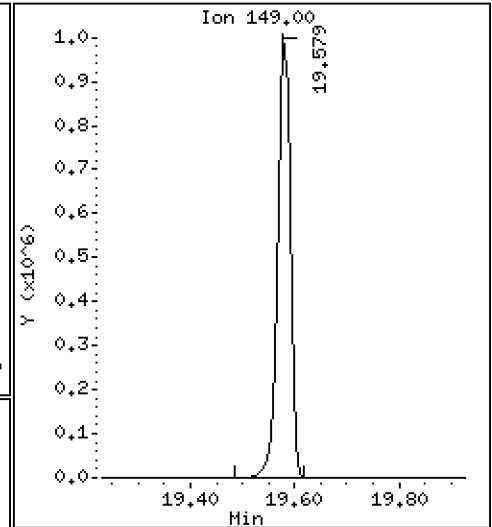
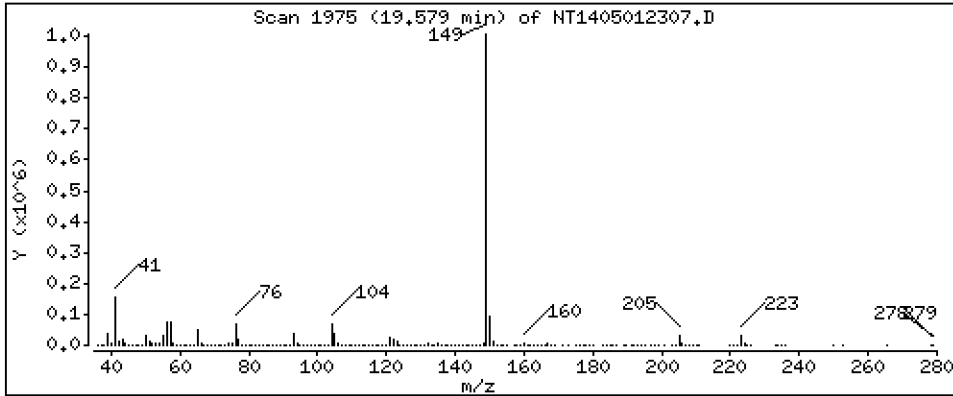
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

63 Di-n-butylphthalate

Concentration: 4.871 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

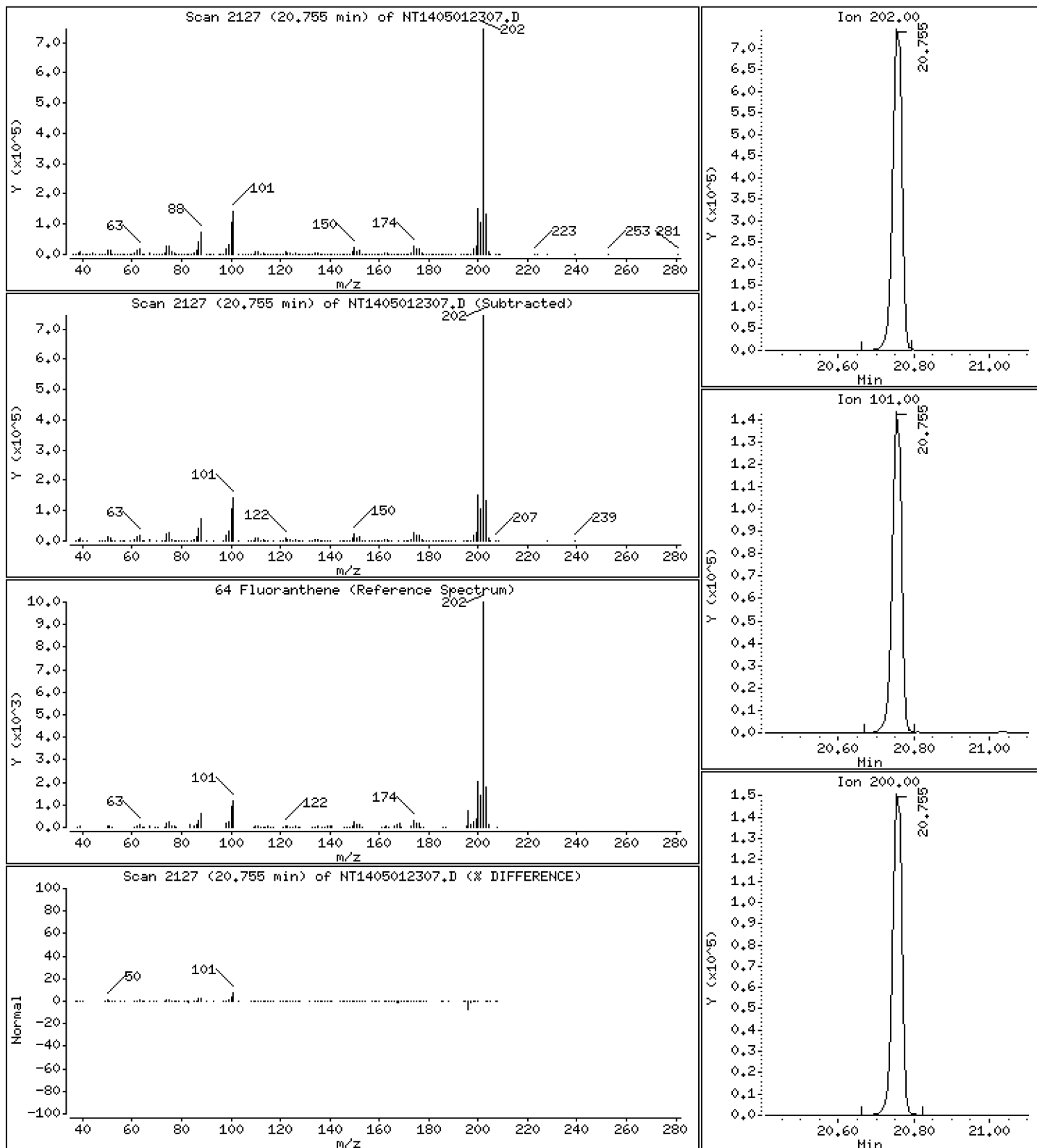
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 4,422 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

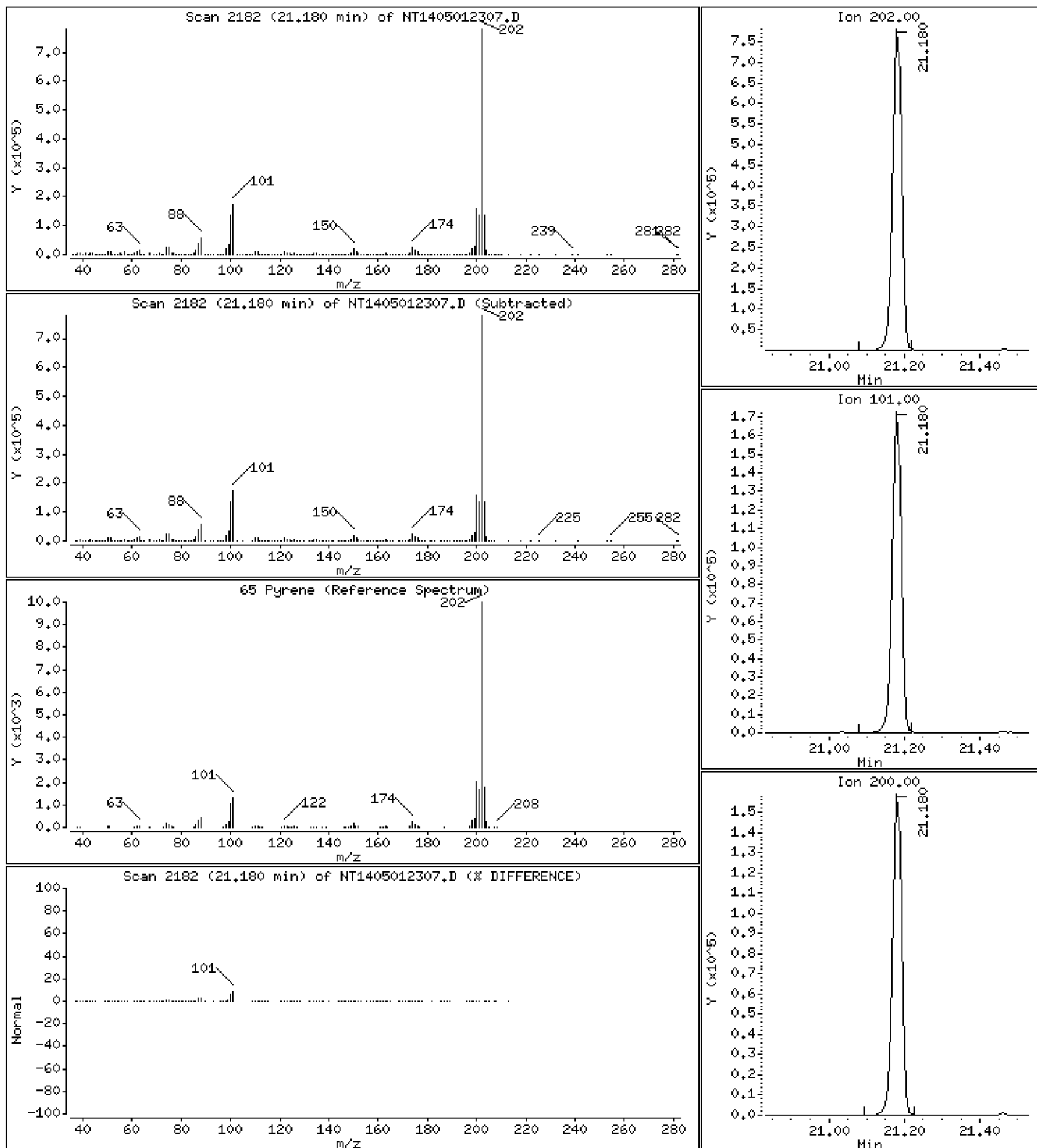
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 4,349 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

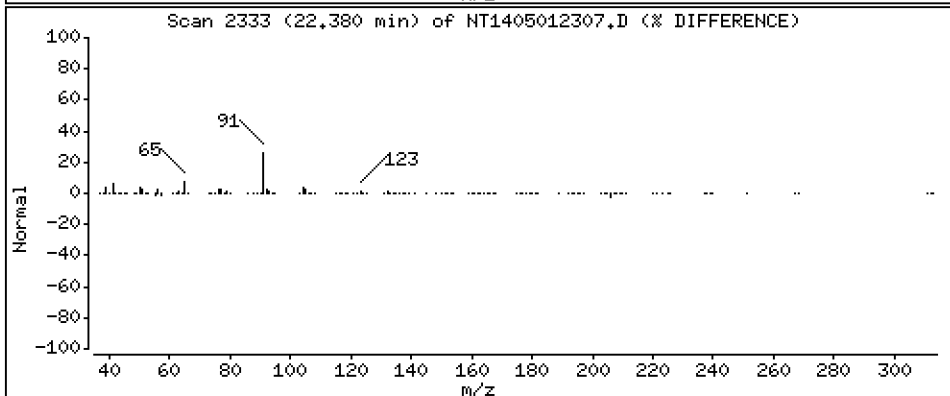
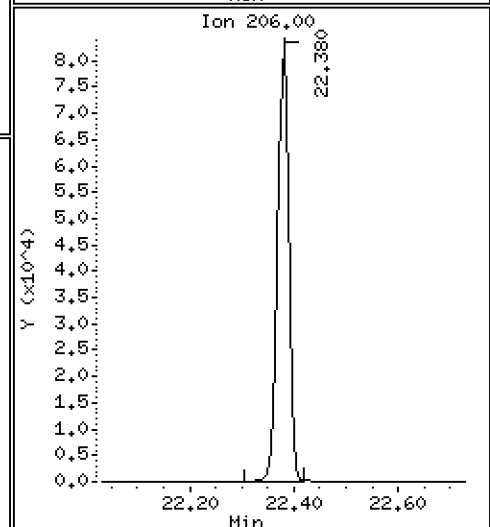
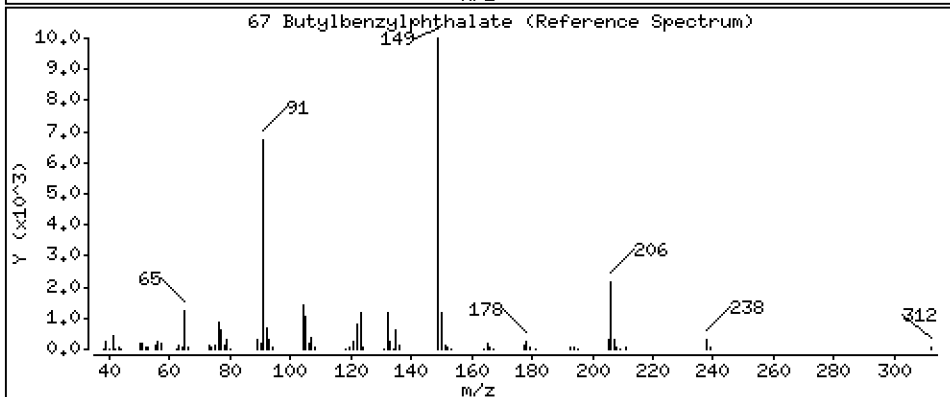
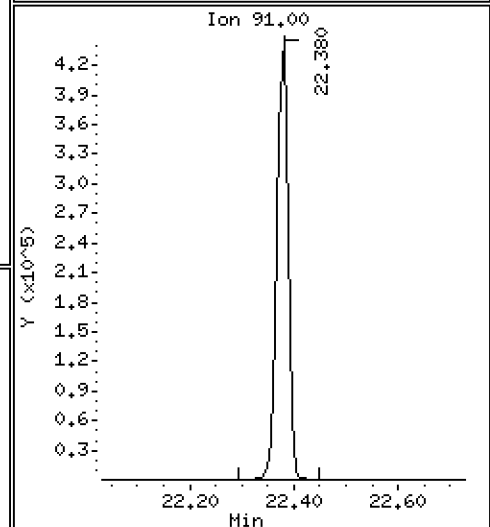
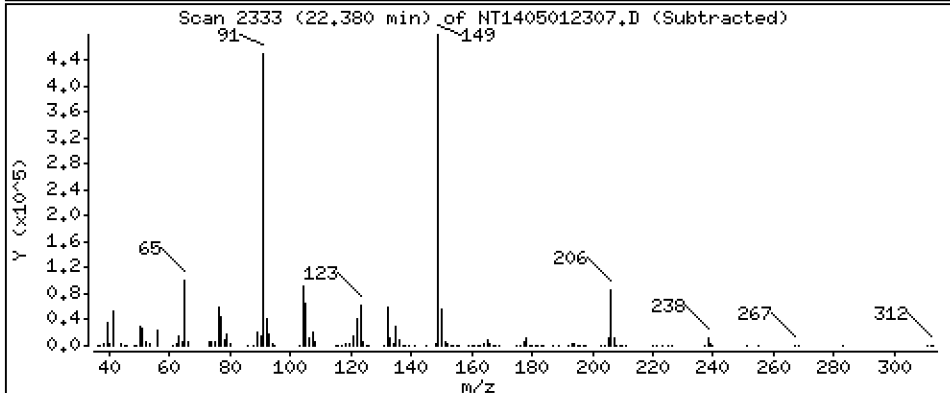
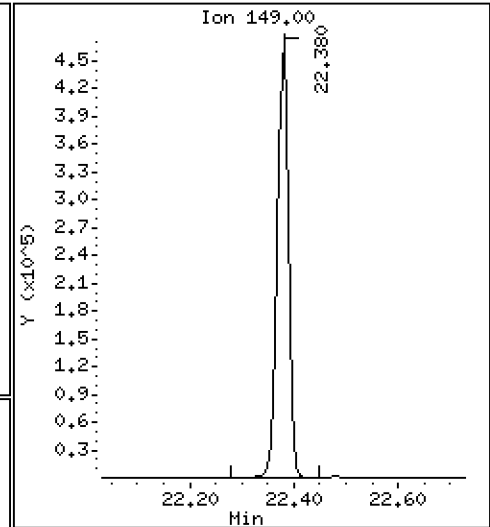
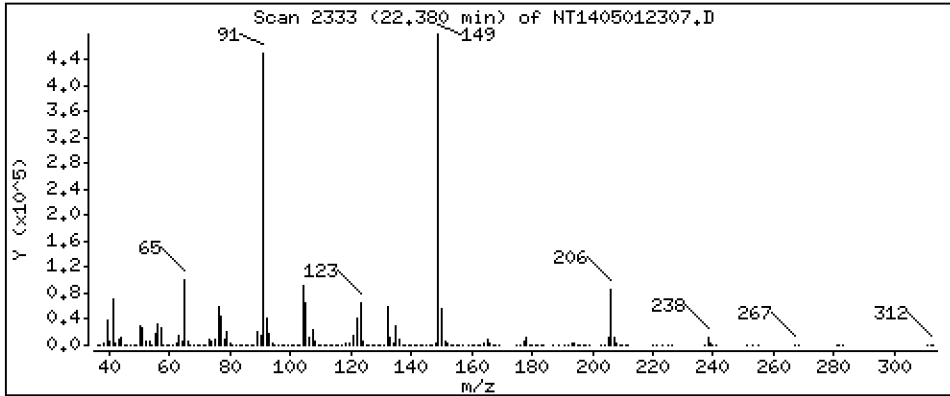
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 3,941 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

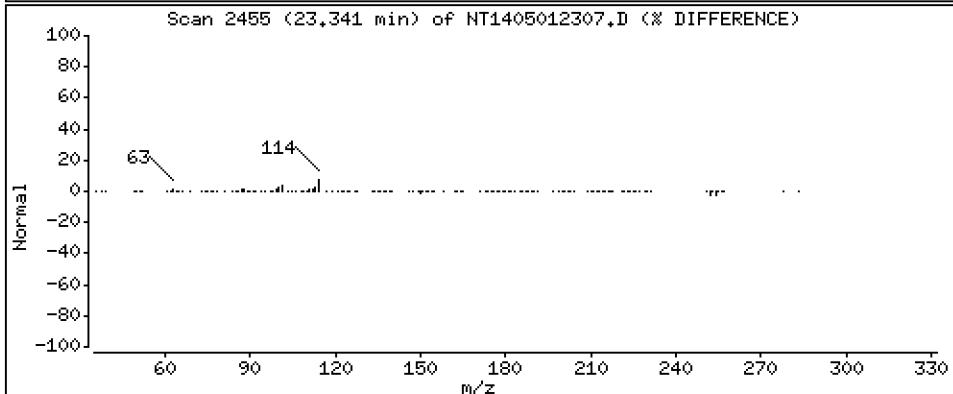
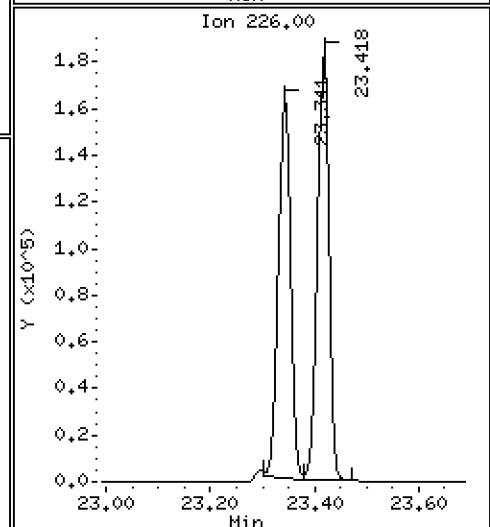
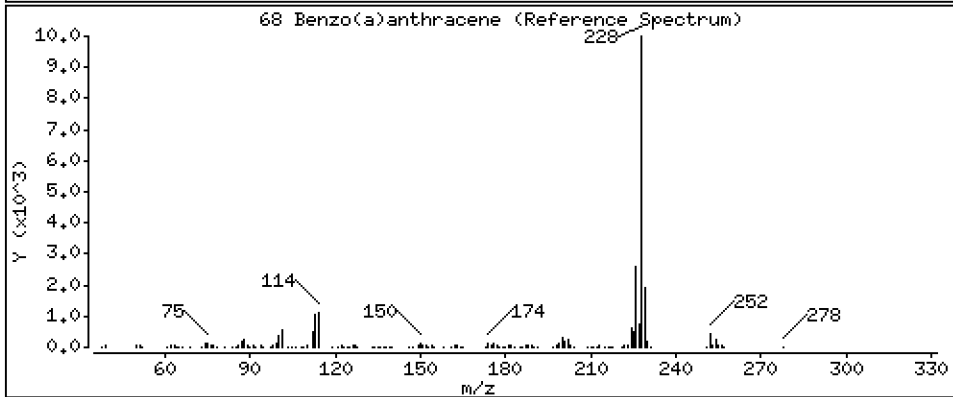
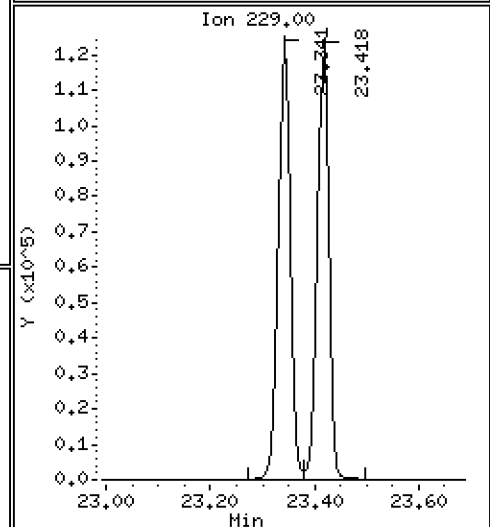
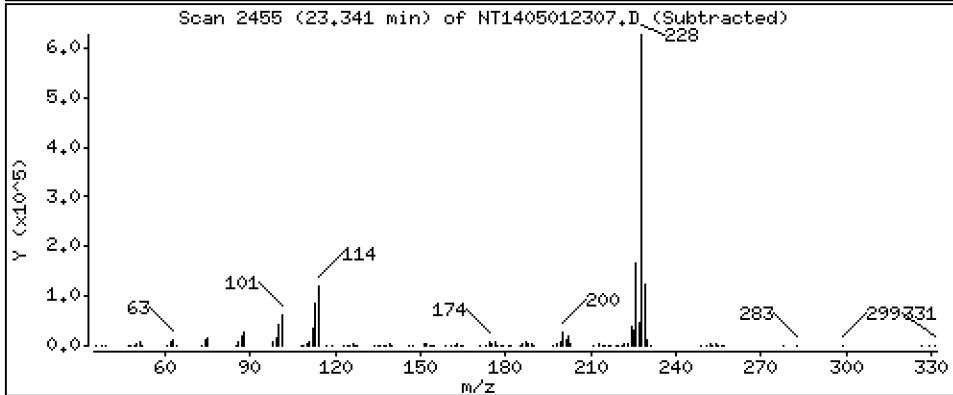
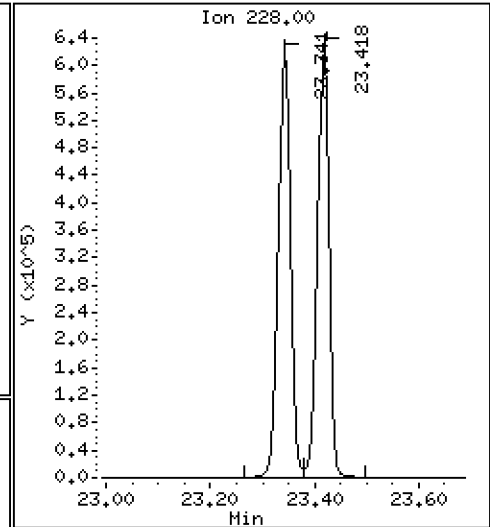
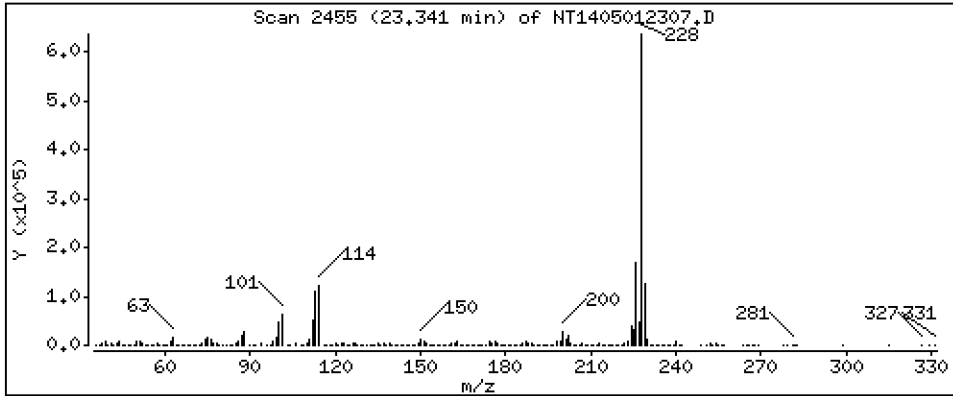
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 4,606 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

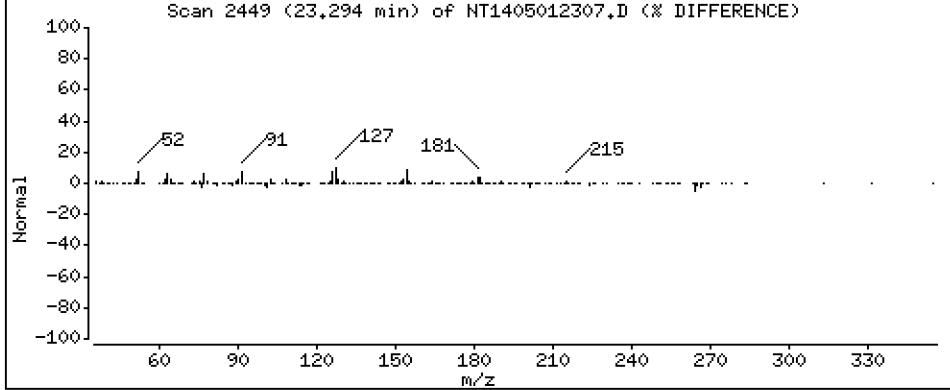
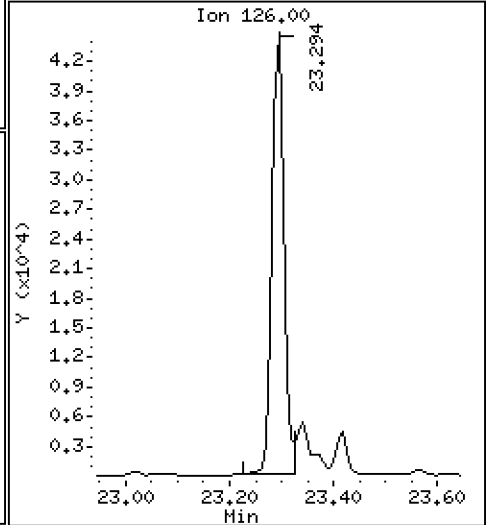
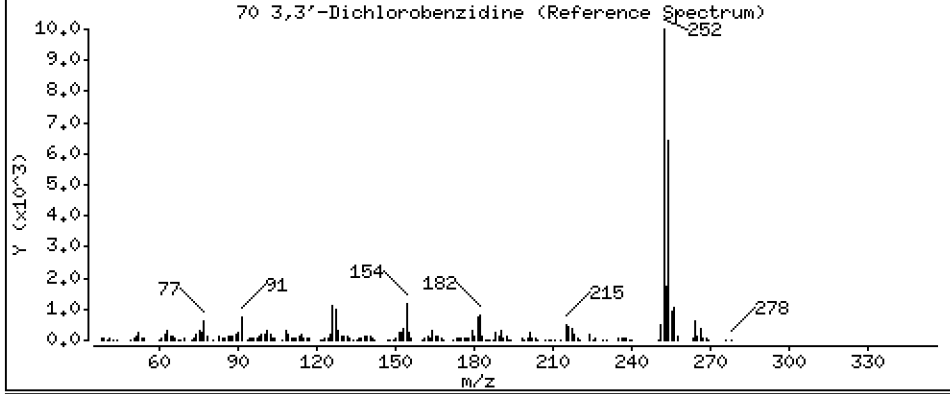
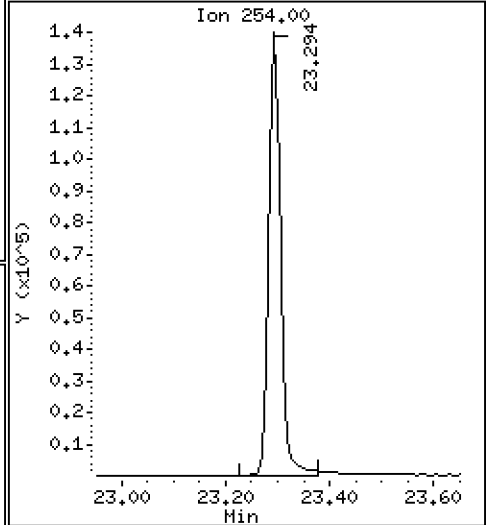
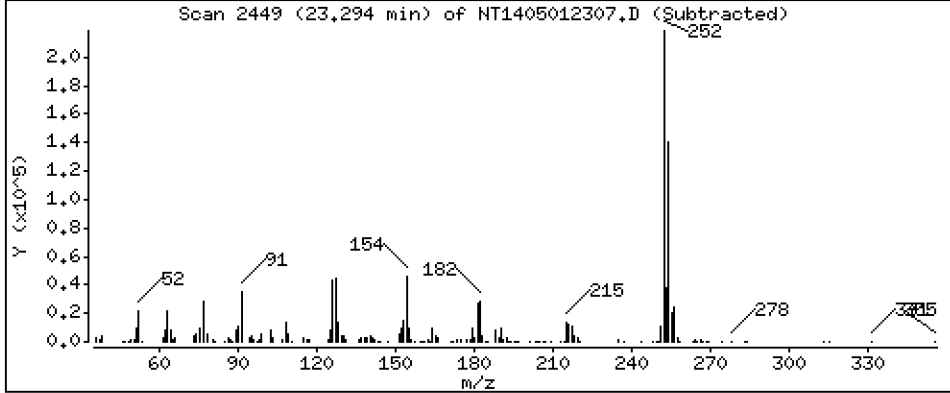
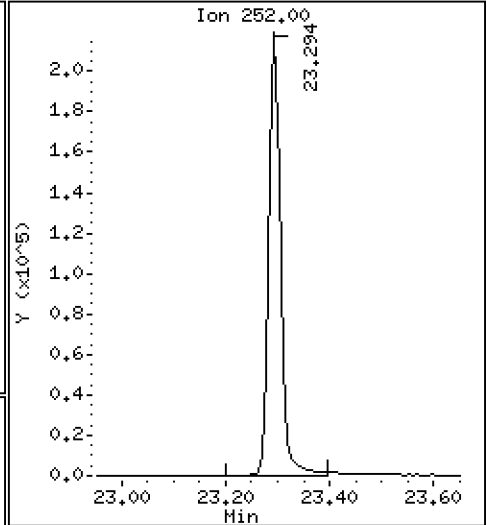
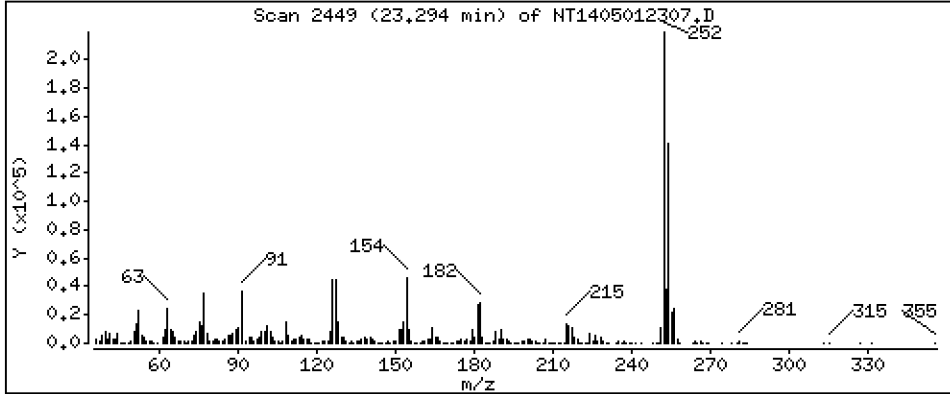
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 4,826 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

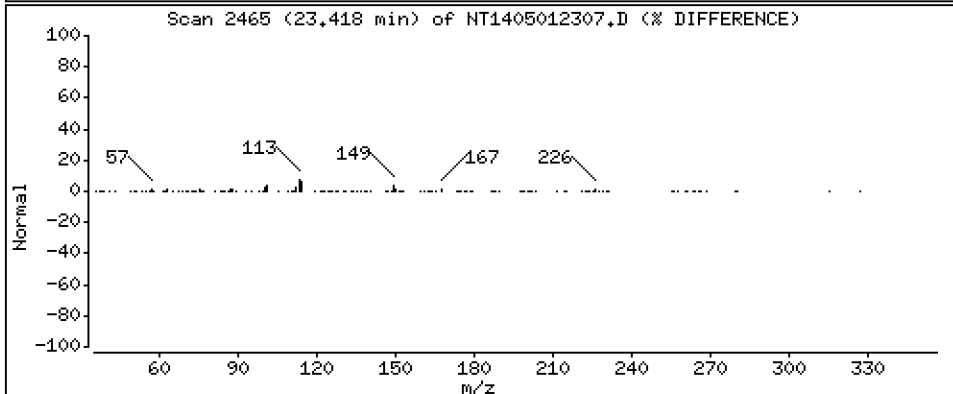
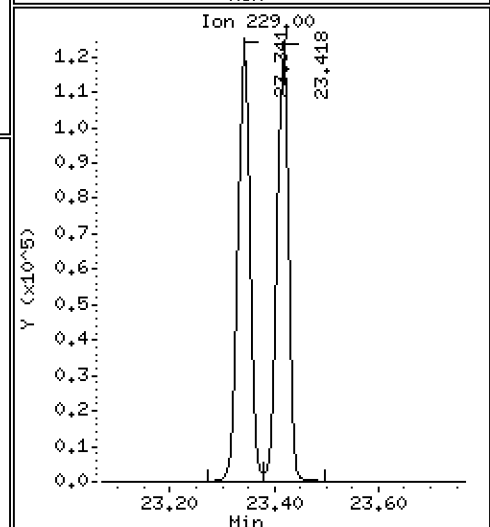
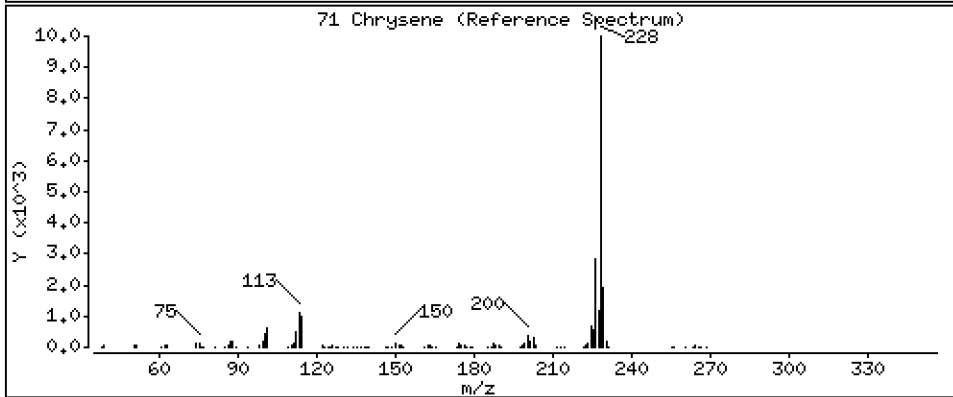
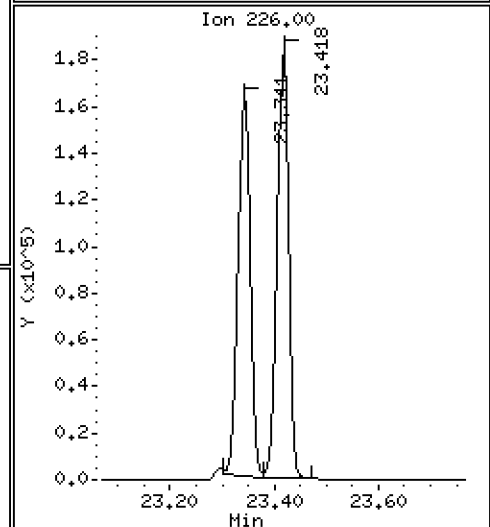
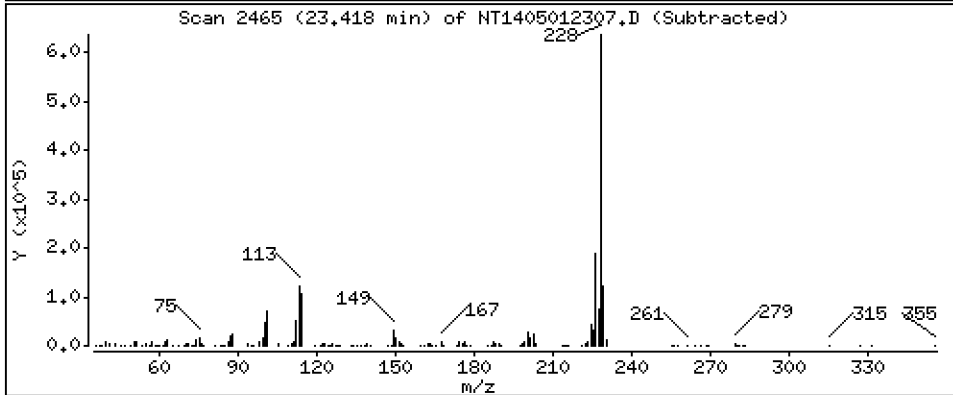
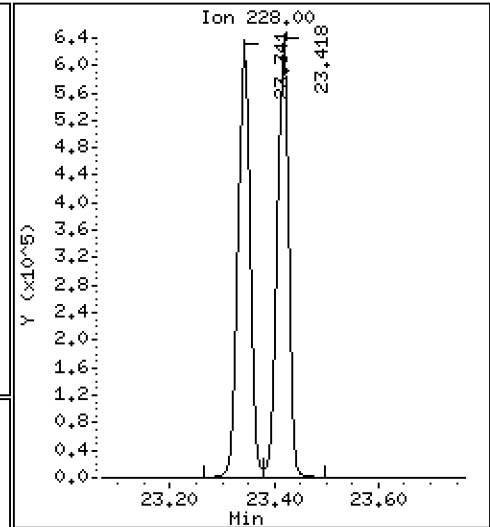
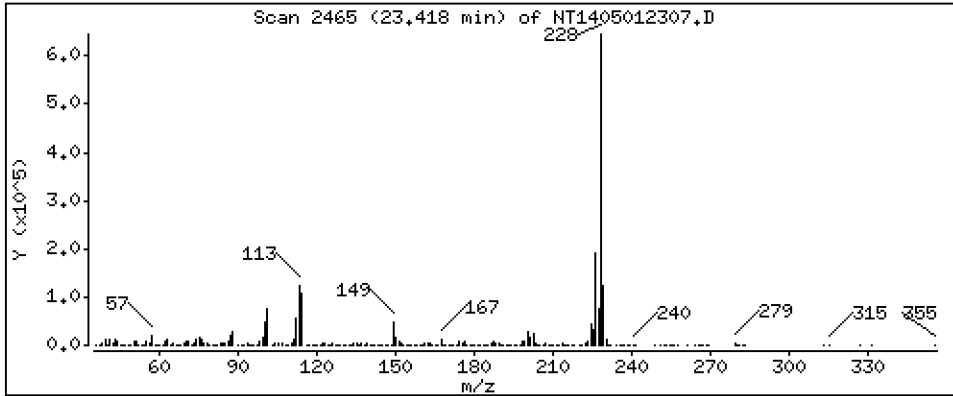
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 4,623 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

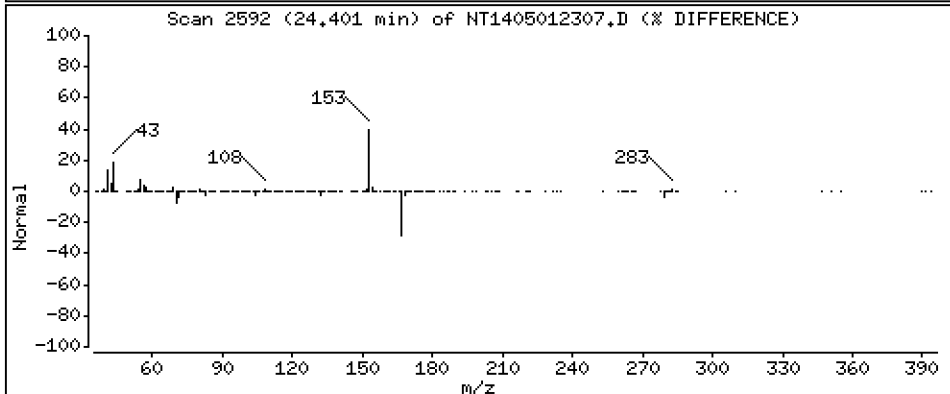
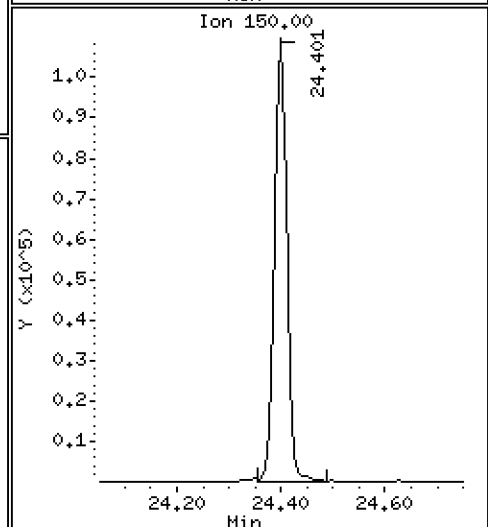
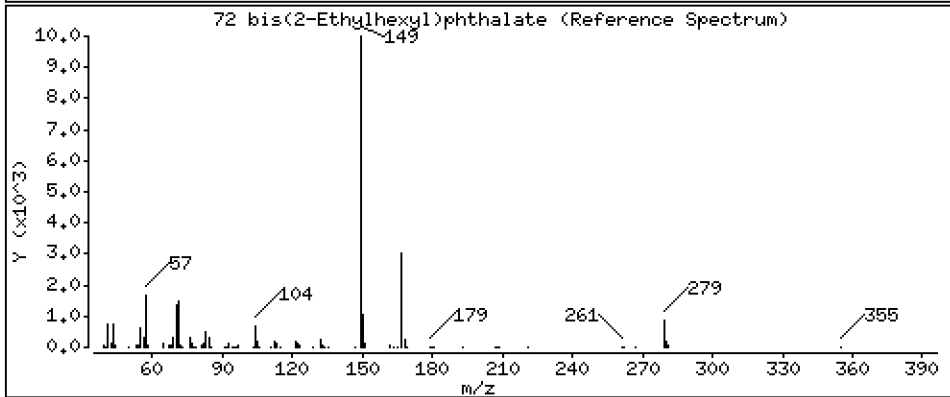
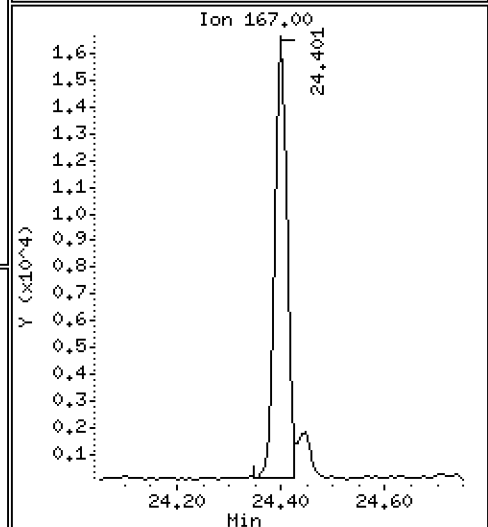
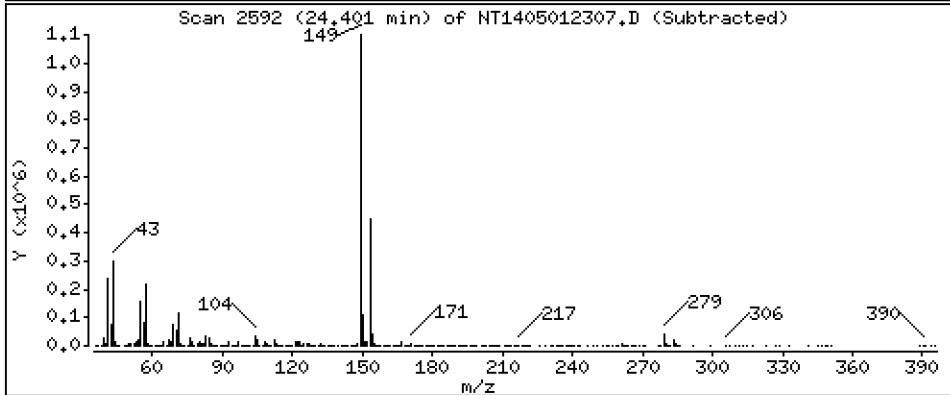
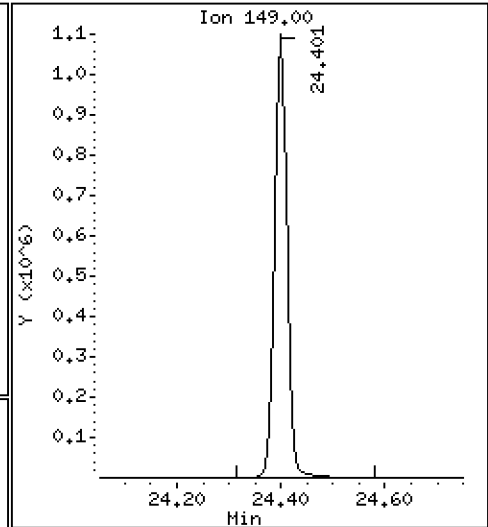
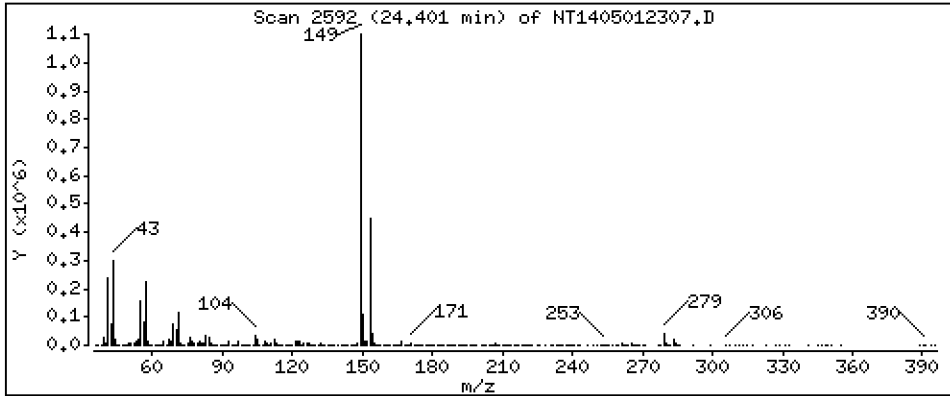
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,586 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

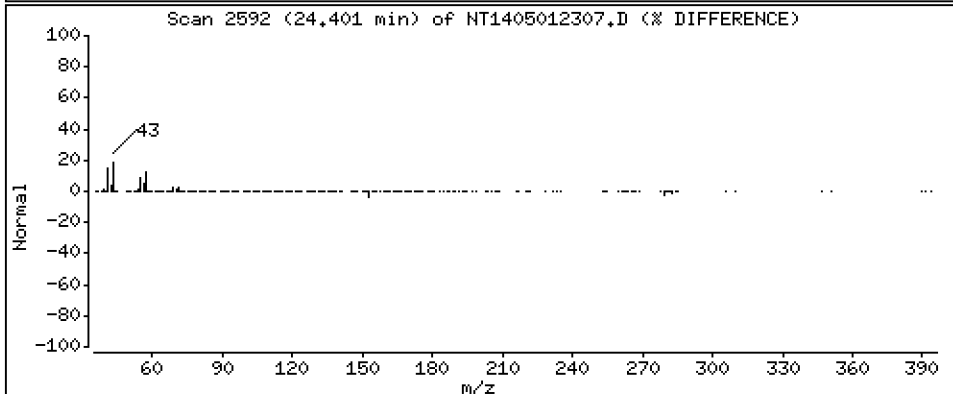
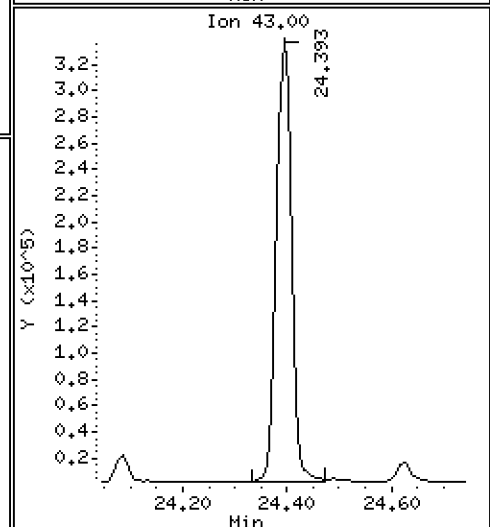
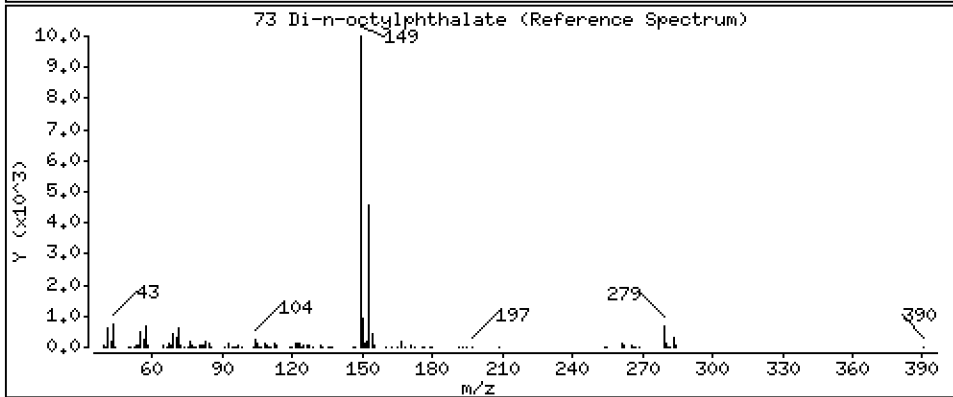
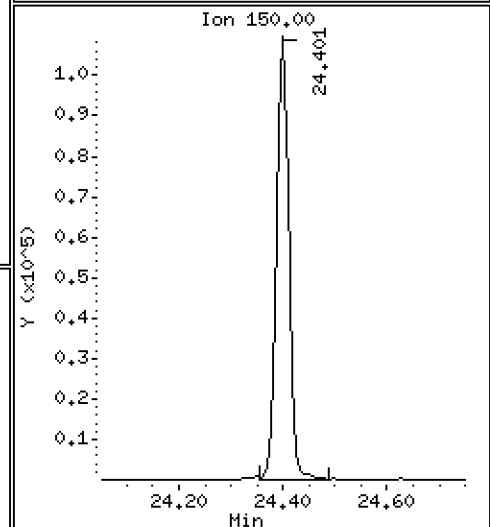
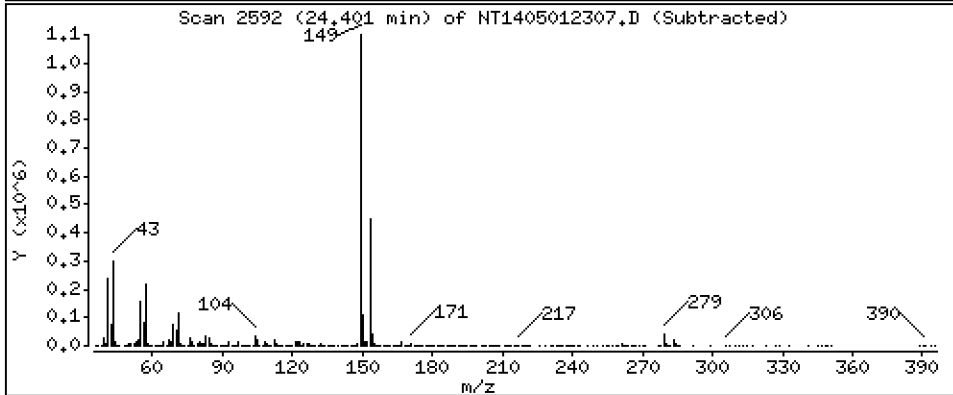
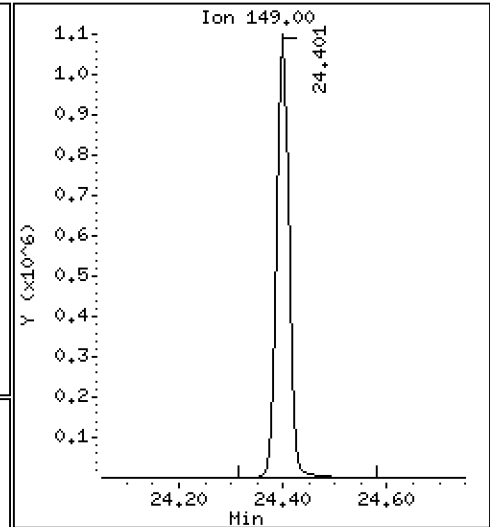
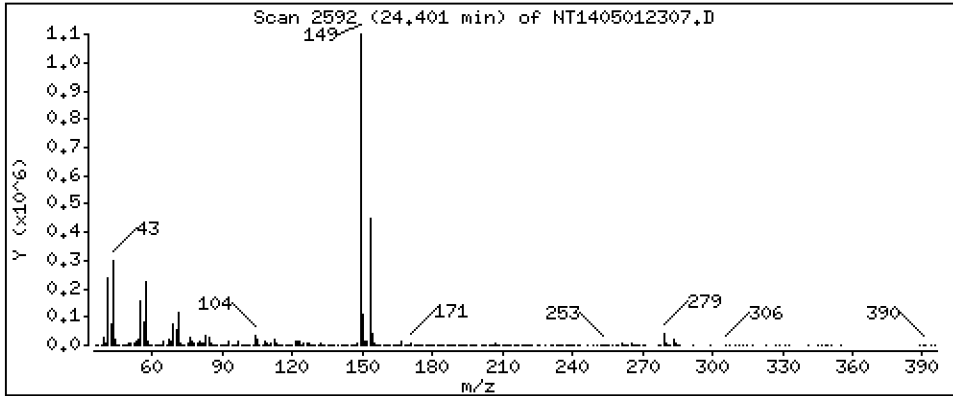
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,586 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

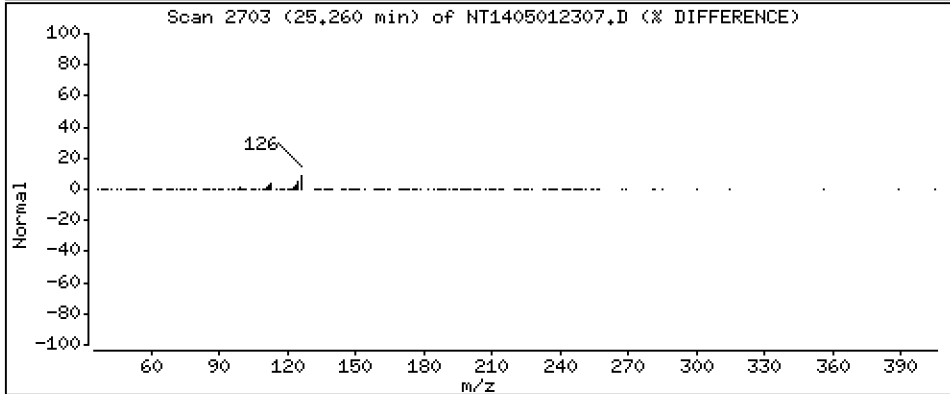
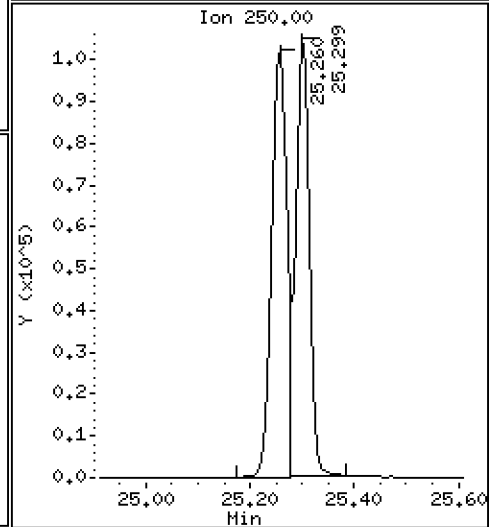
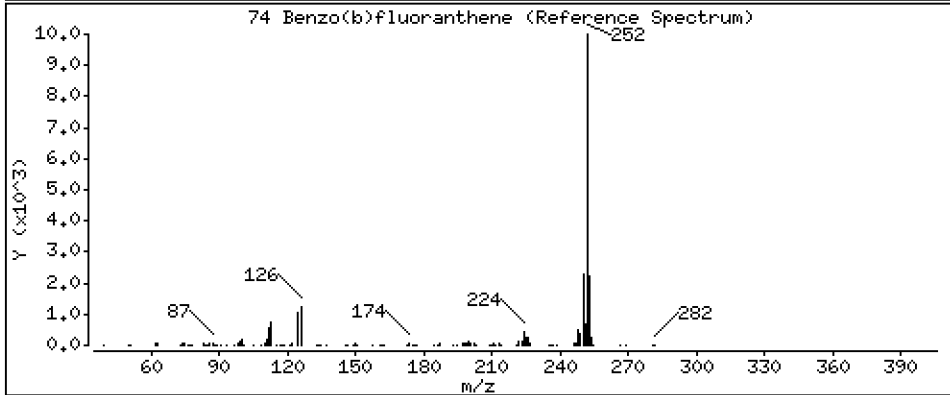
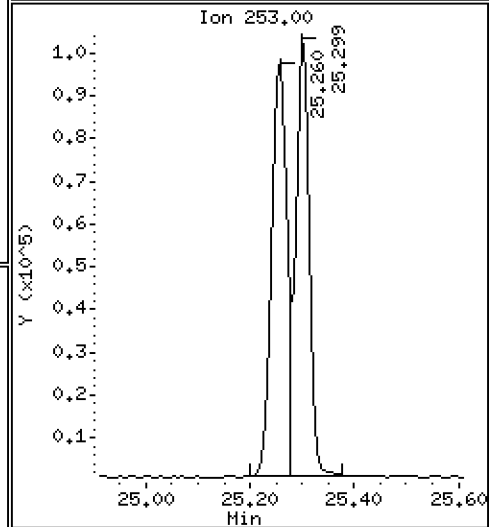
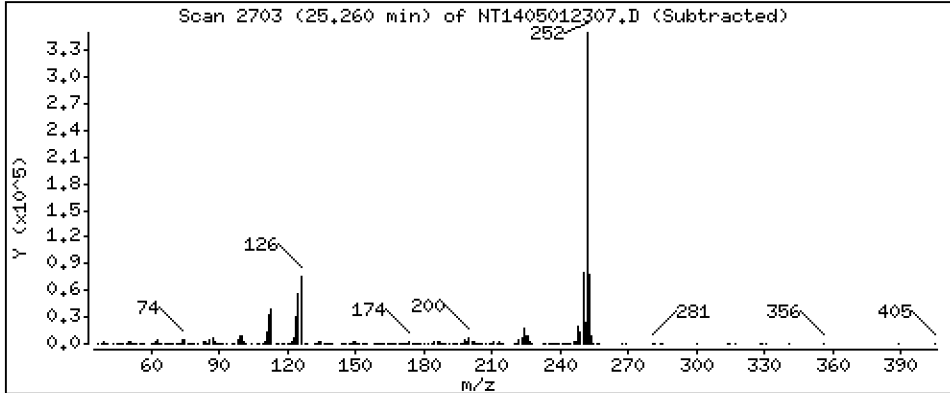
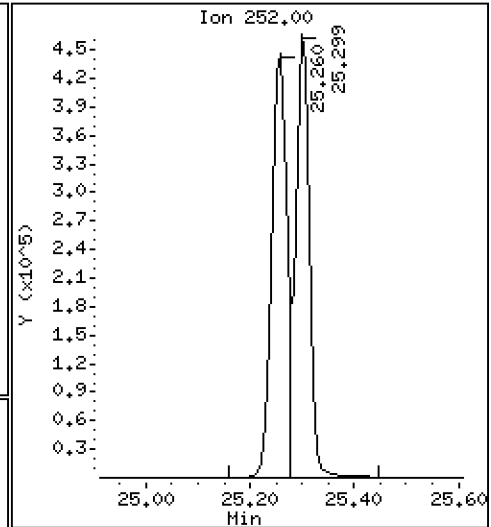
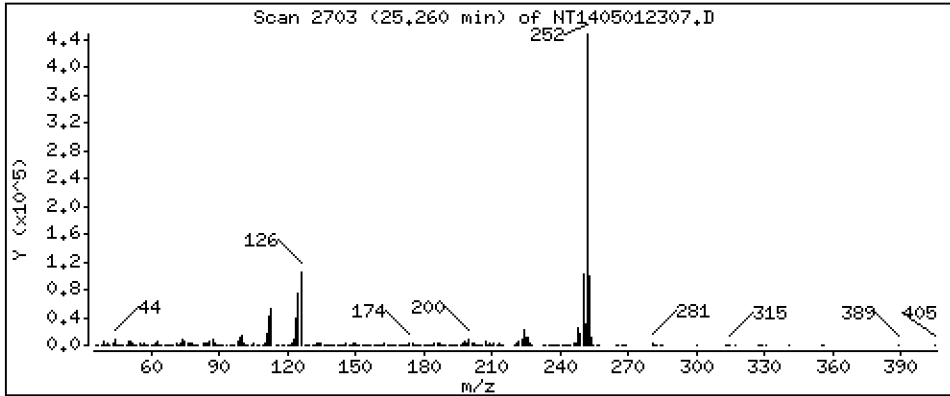
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 4,963 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

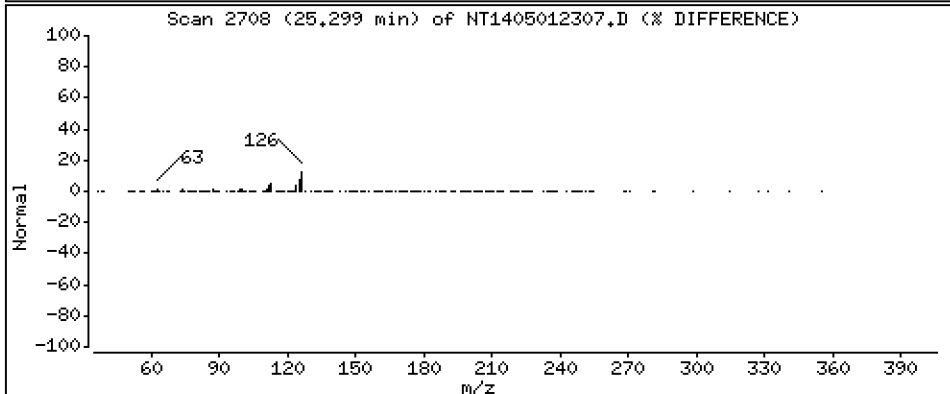
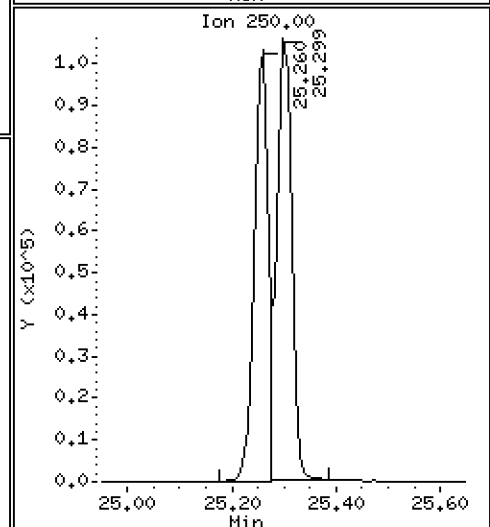
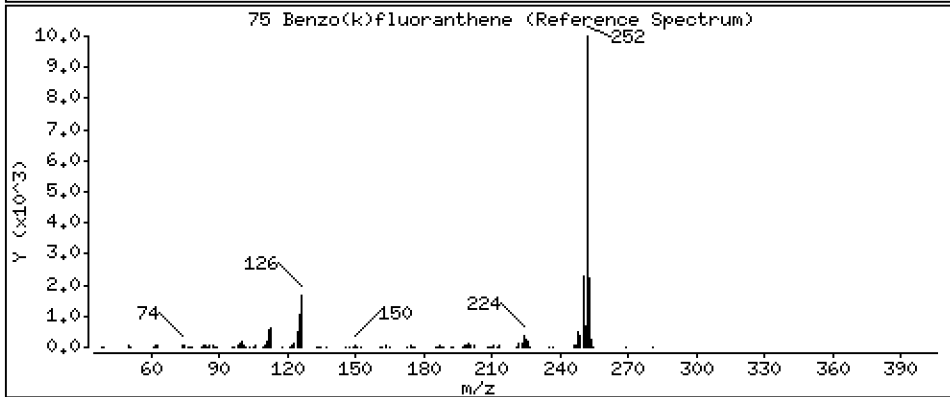
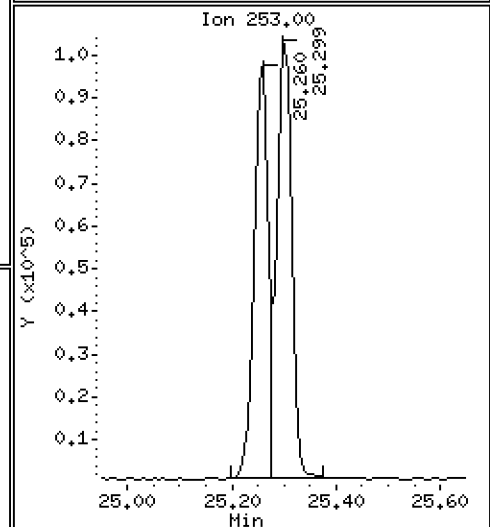
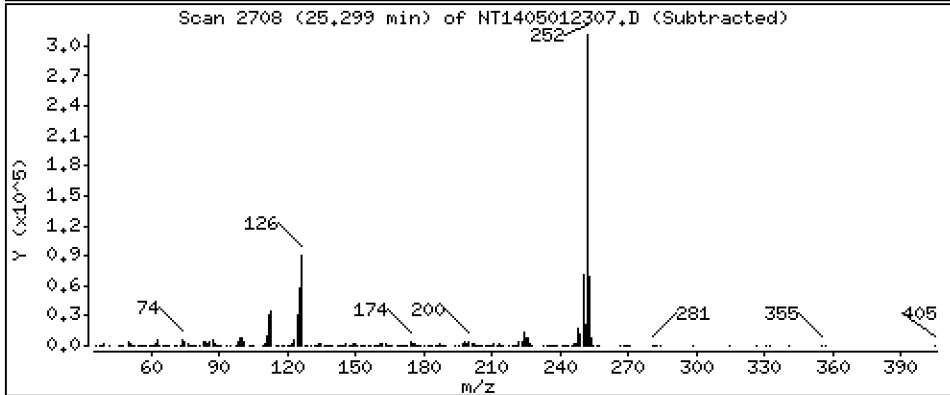
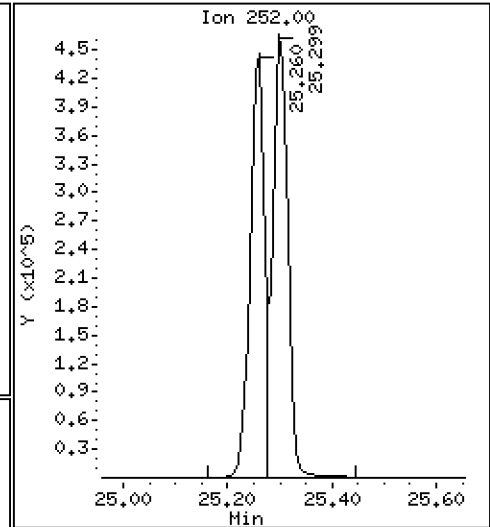
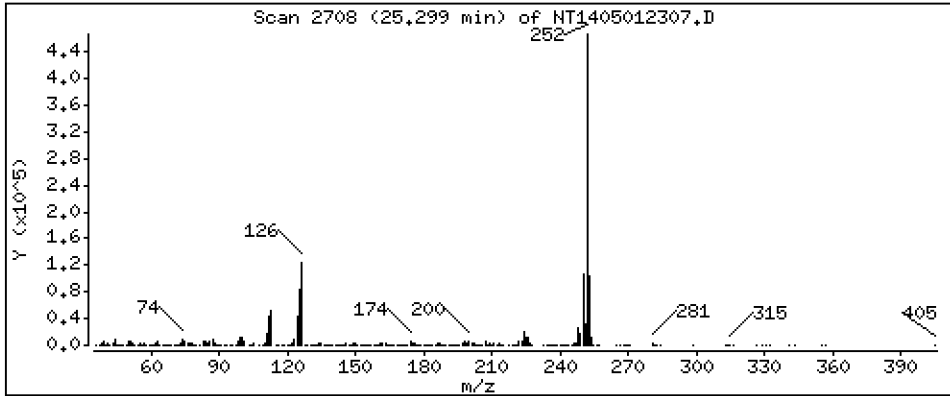
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 5,453 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

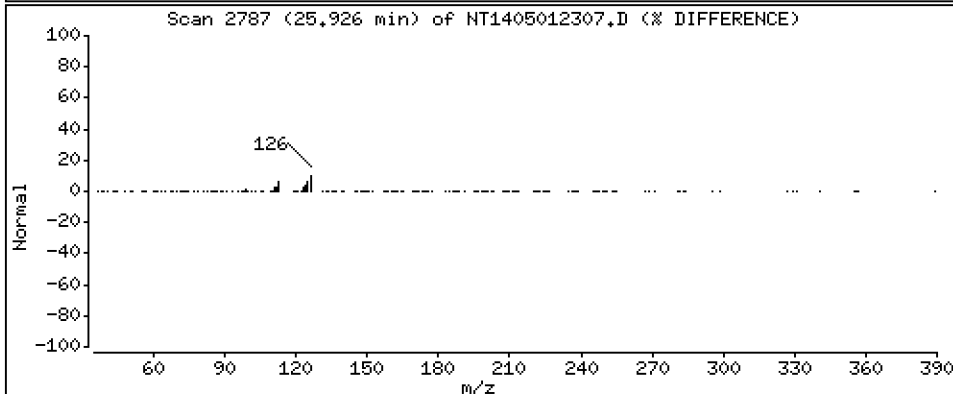
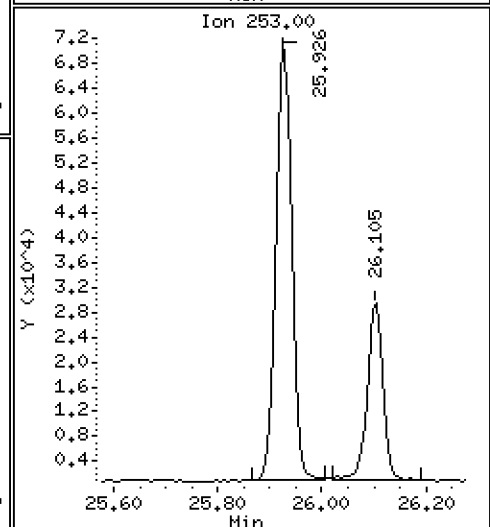
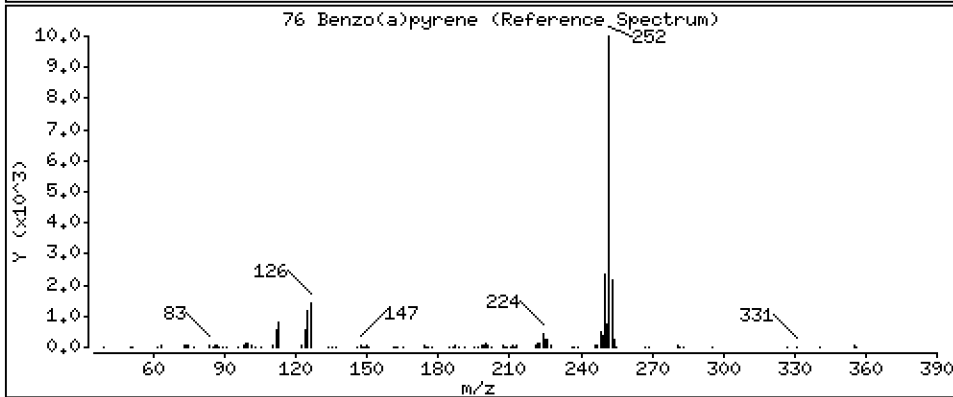
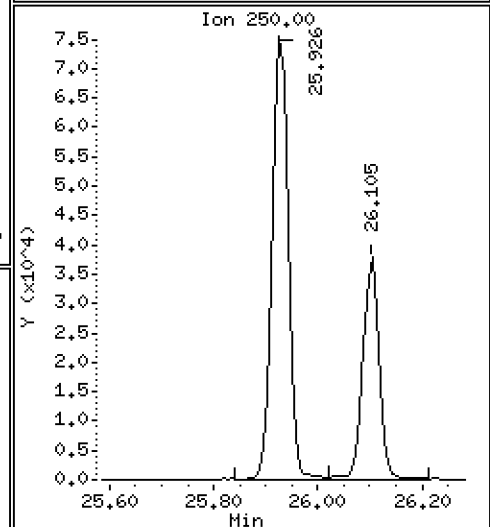
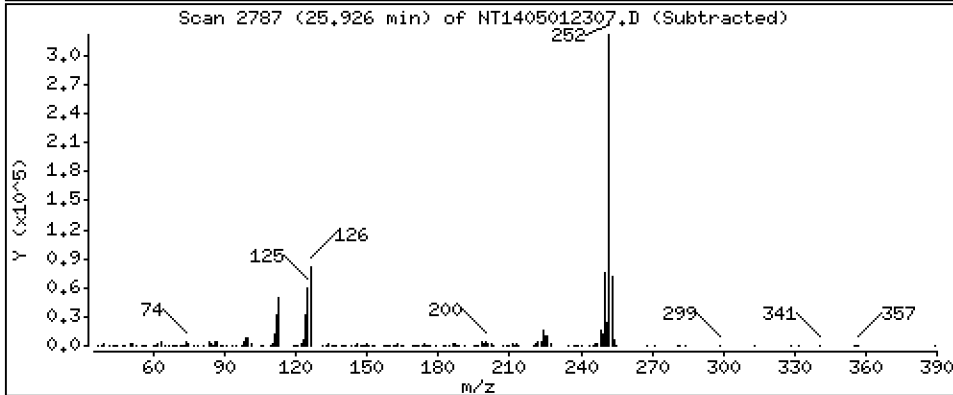
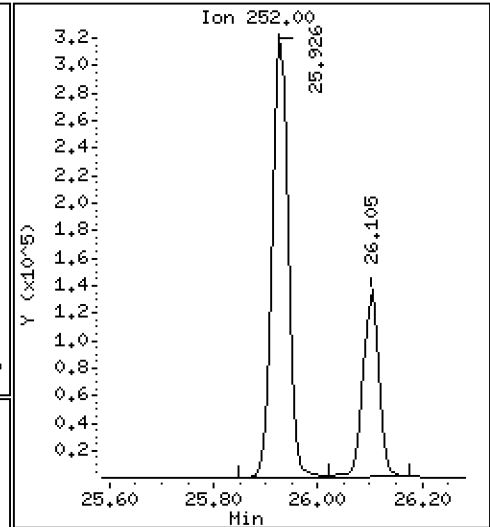
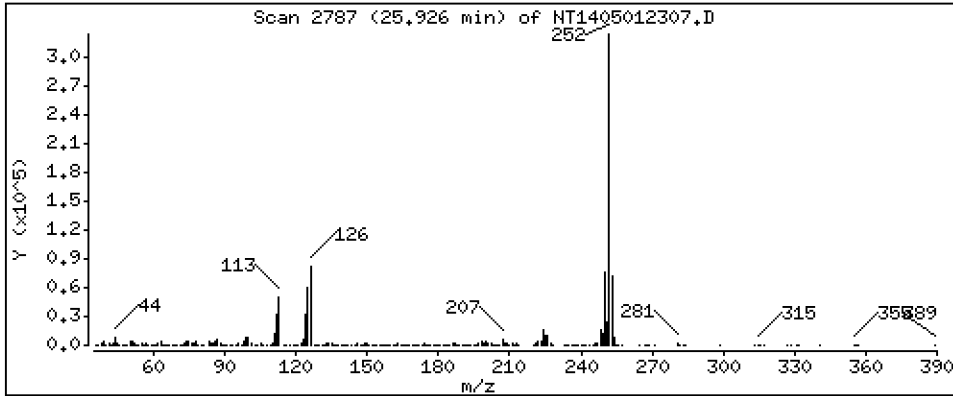
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 4,399 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

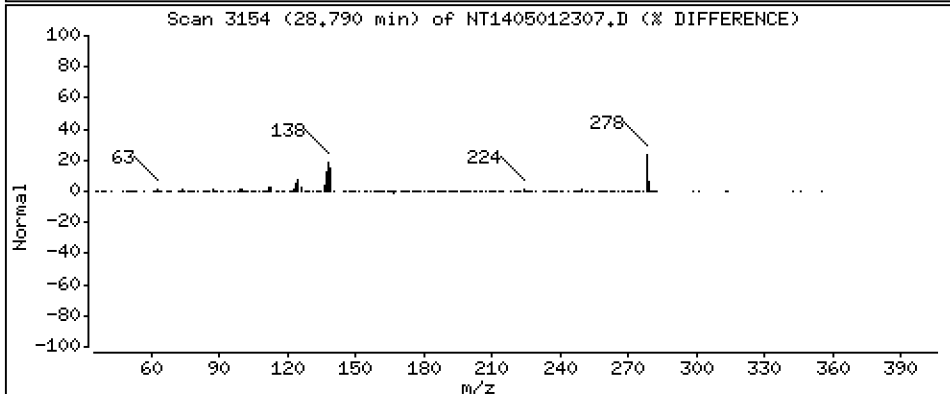
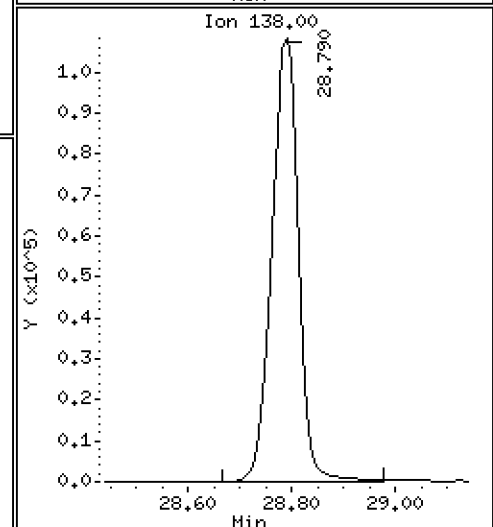
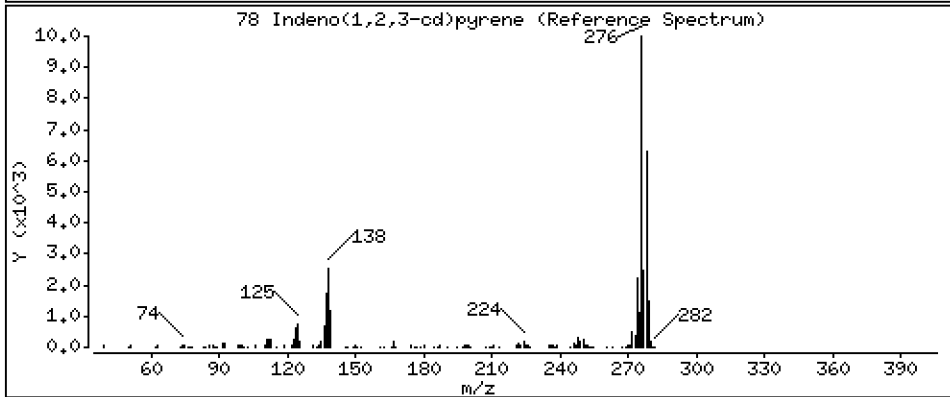
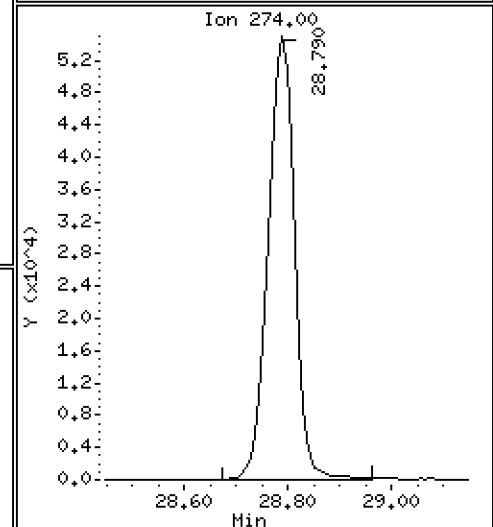
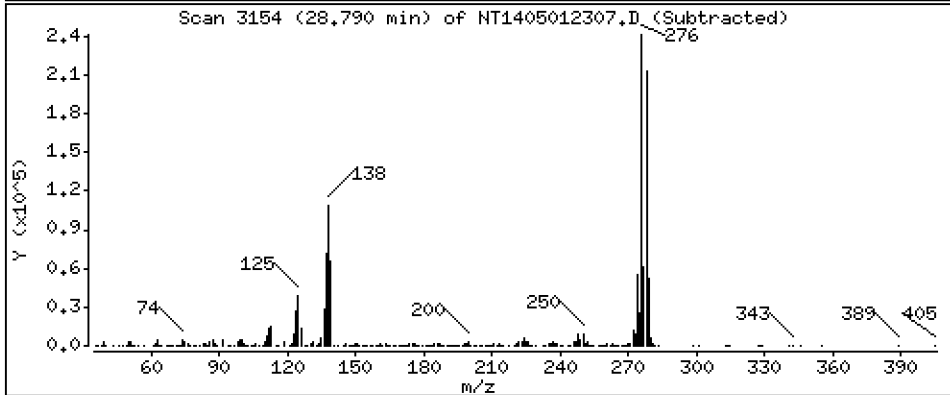
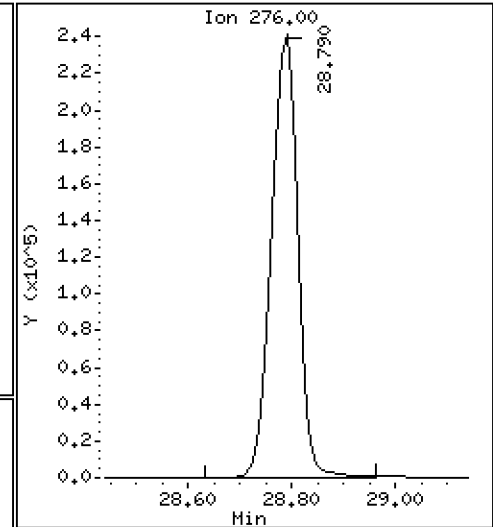
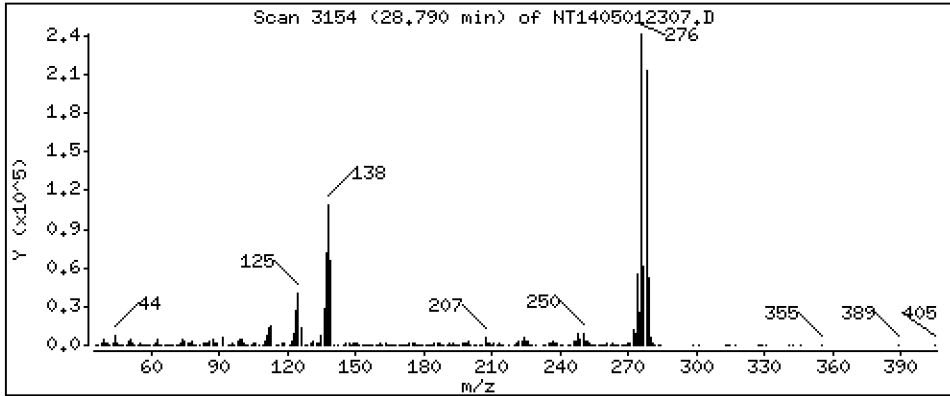
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 4,106 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

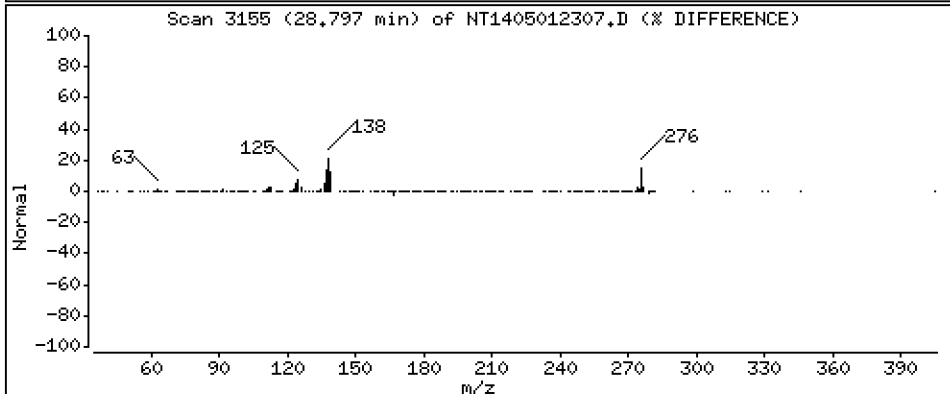
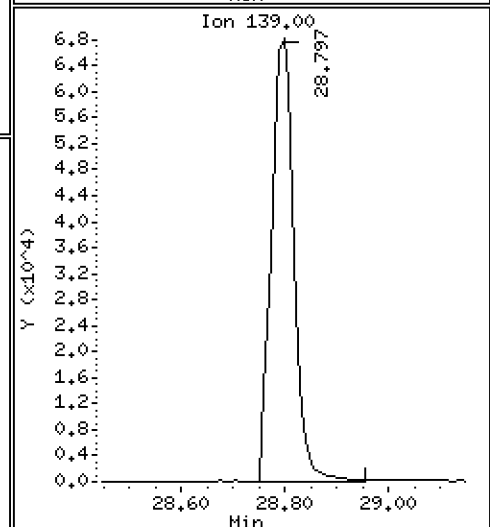
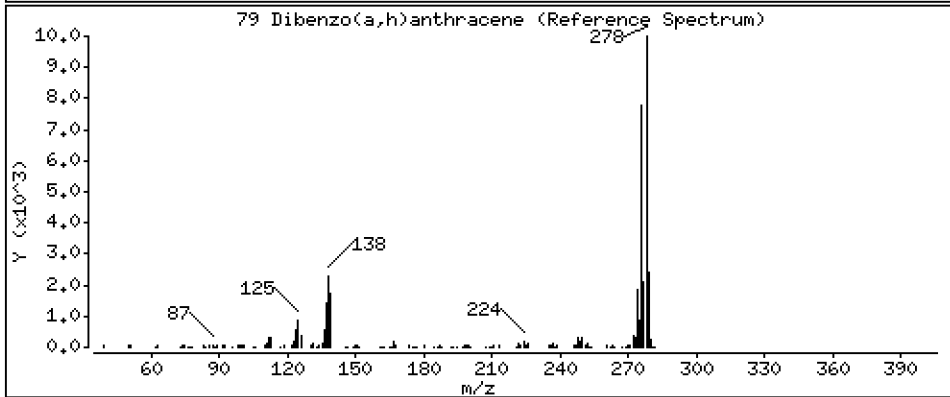
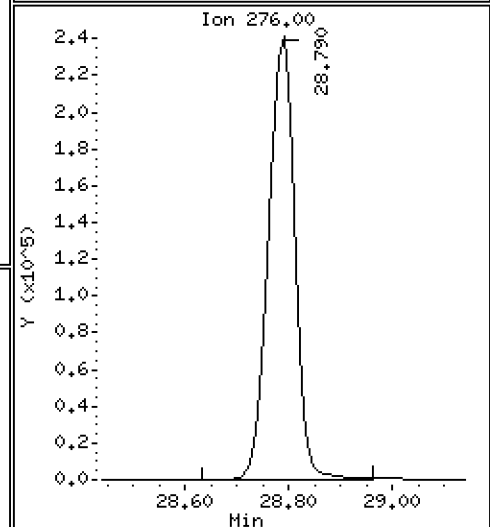
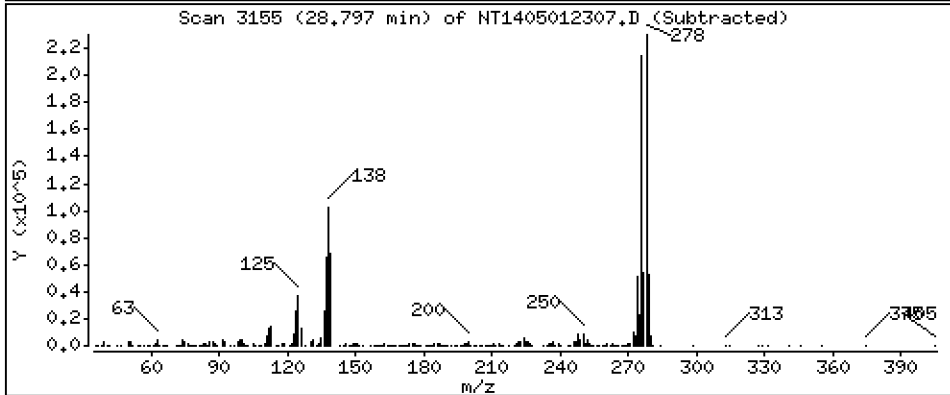
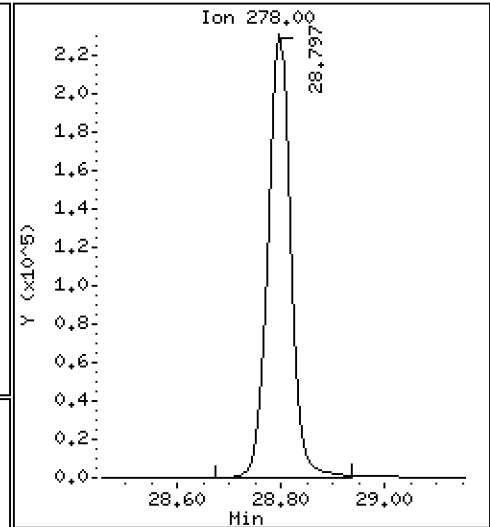
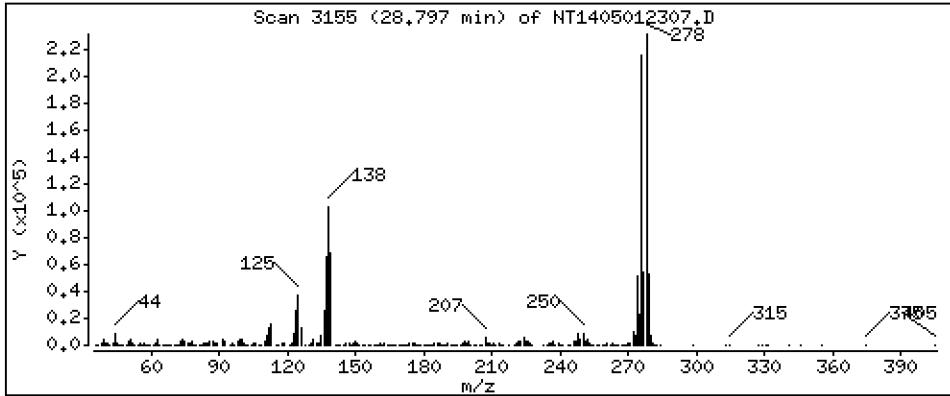
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,106 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

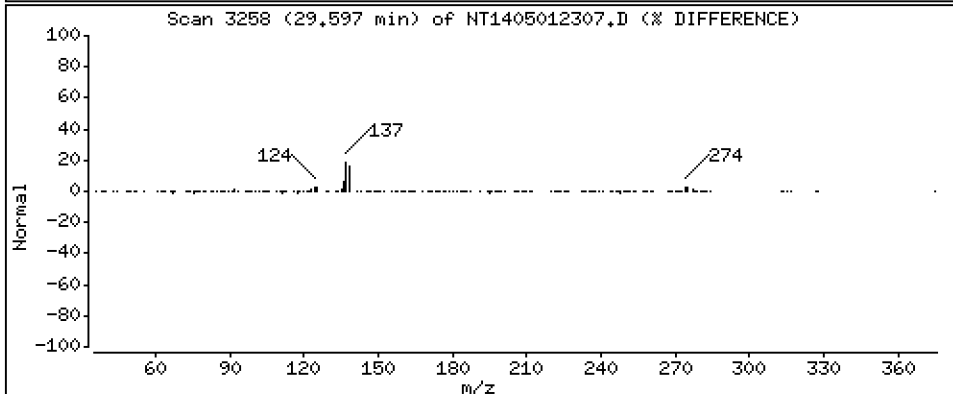
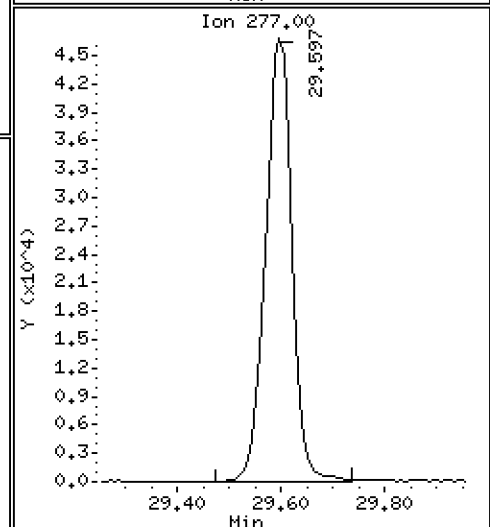
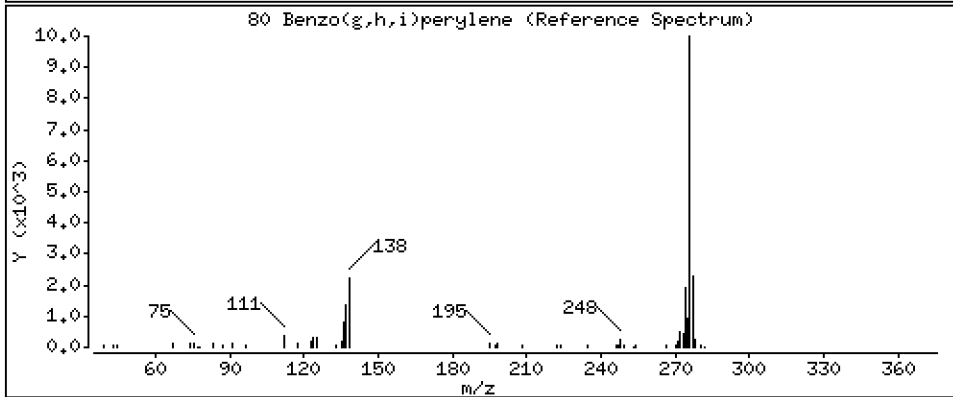
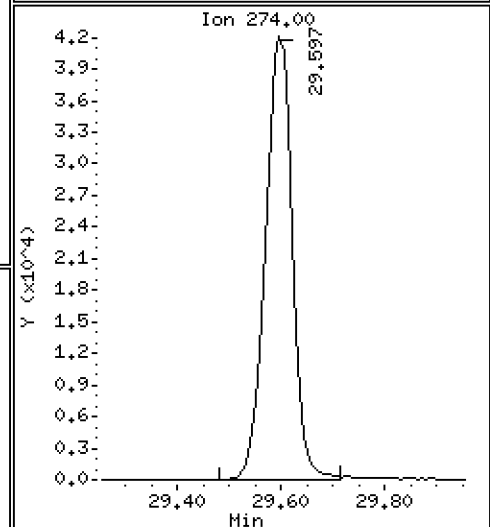
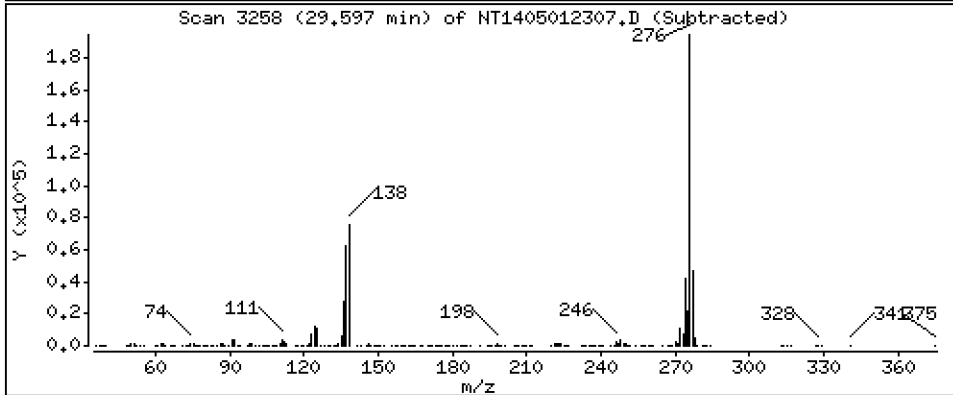
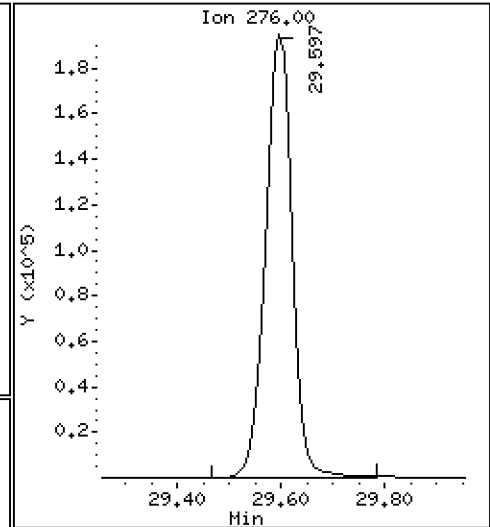
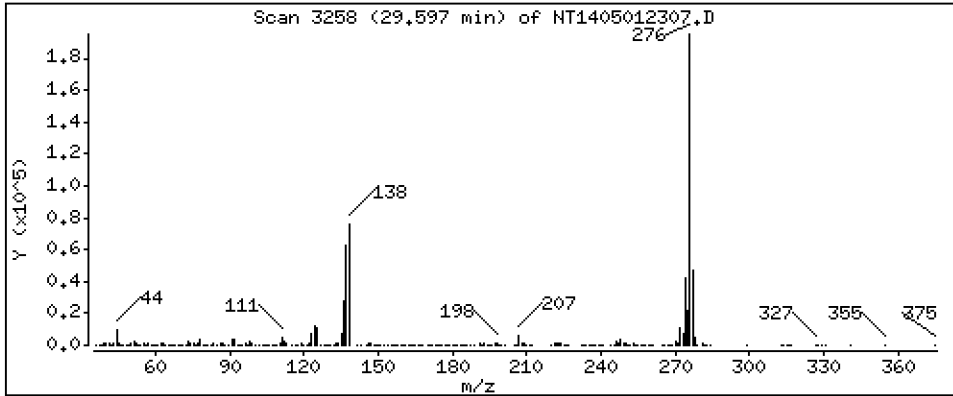
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 3,933 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

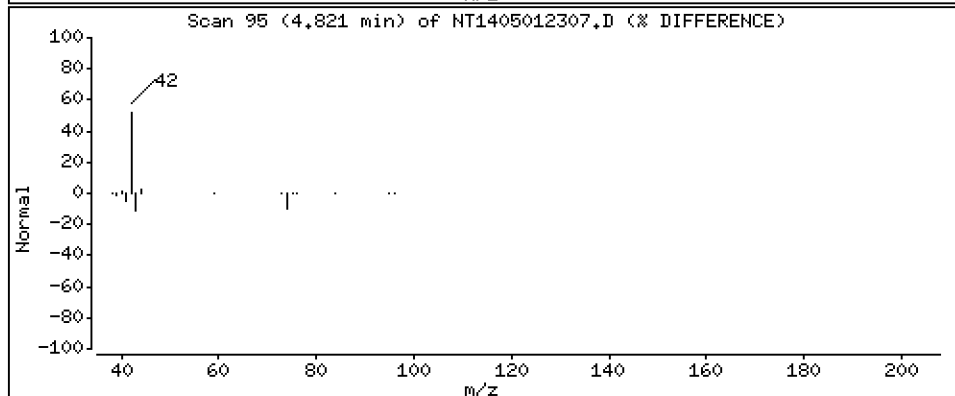
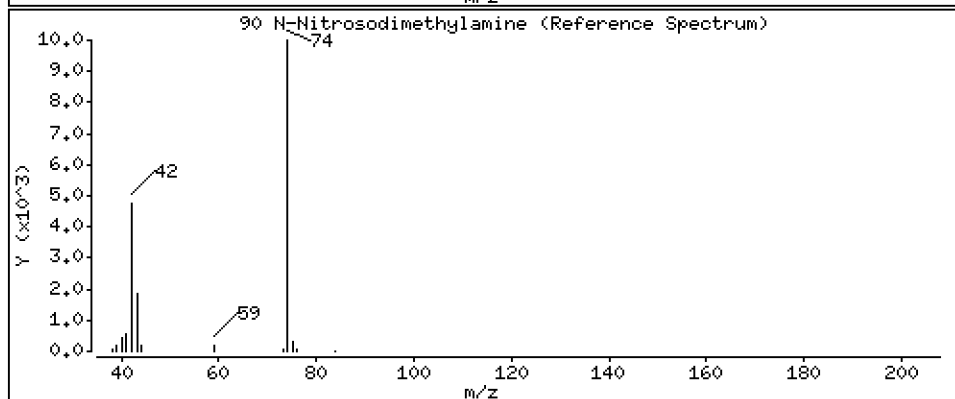
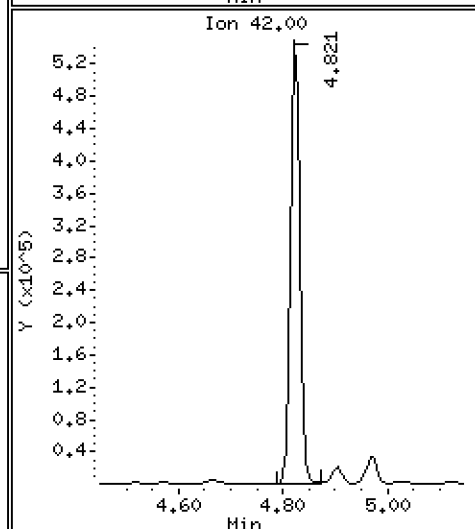
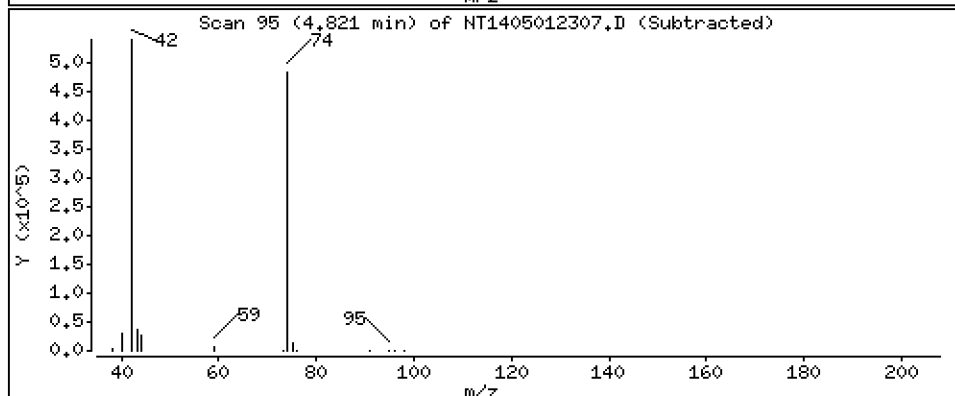
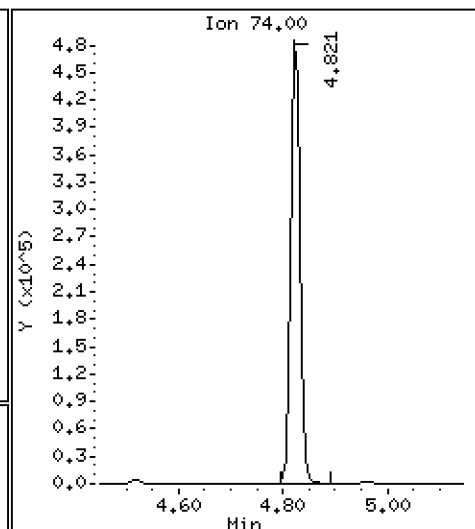
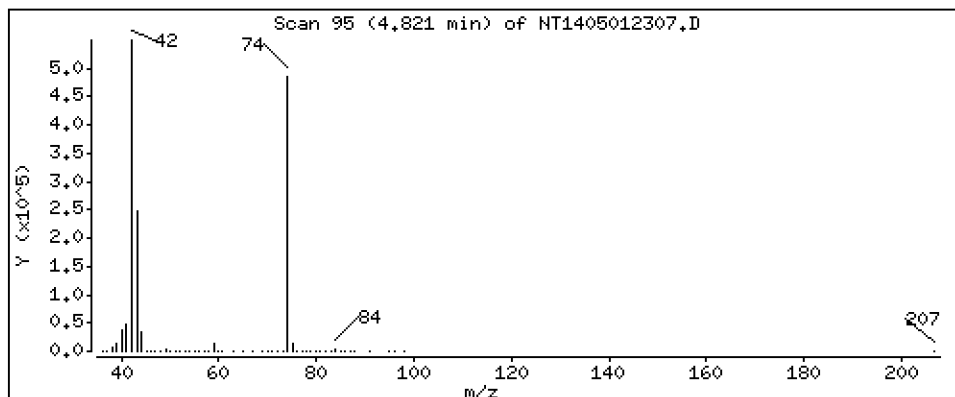
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 7,807 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

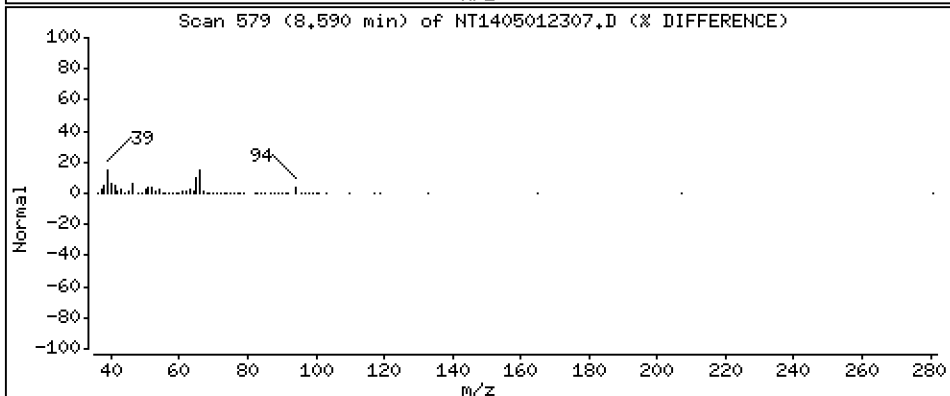
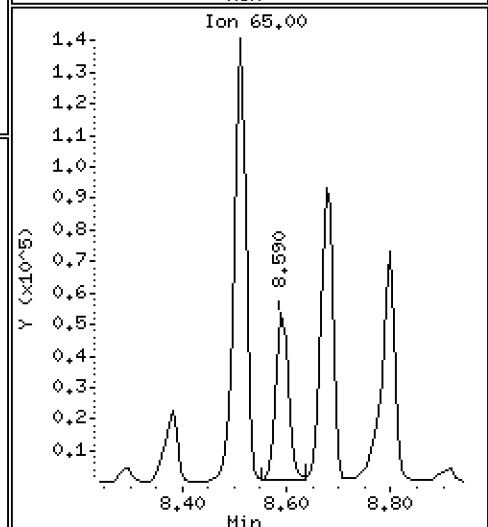
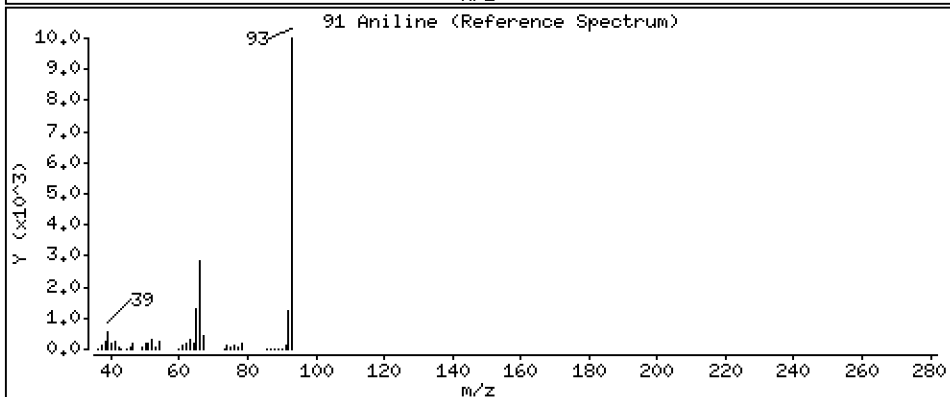
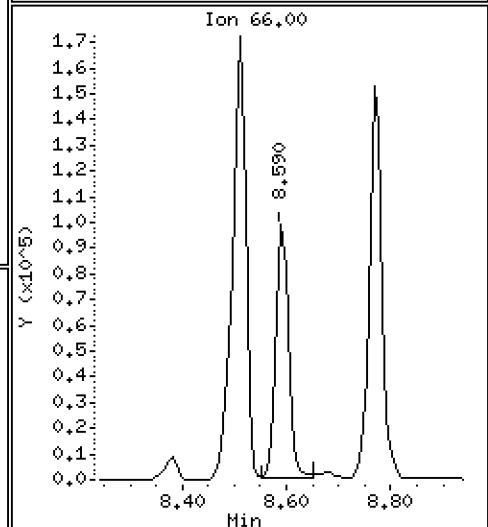
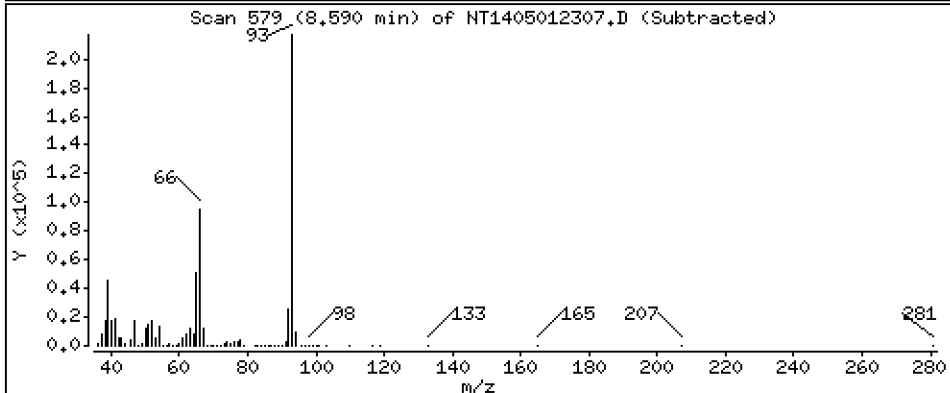
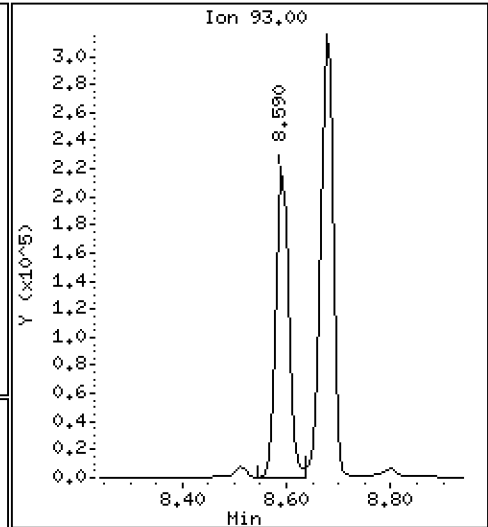
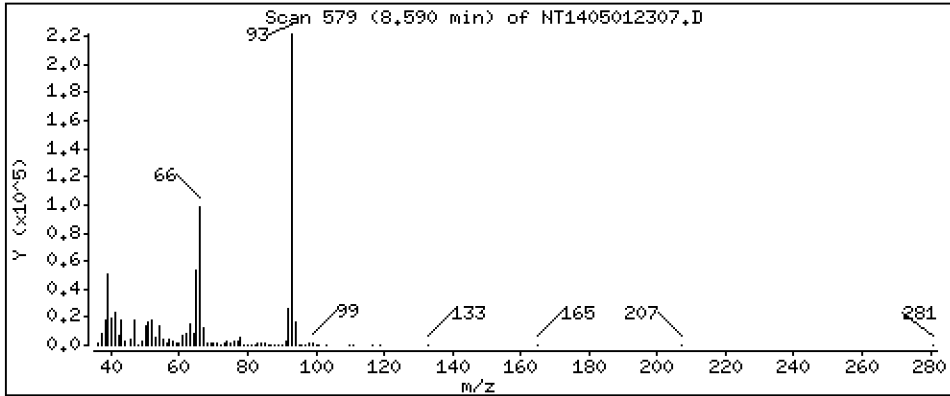
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

91 Aniline

Concentration: 2,559 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

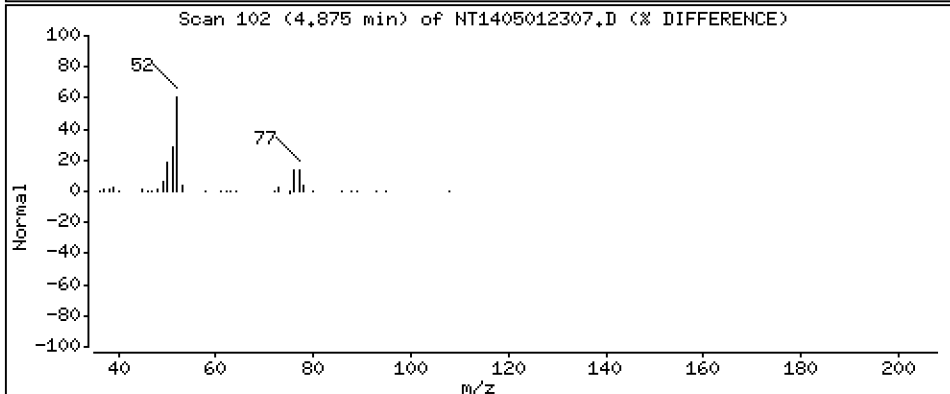
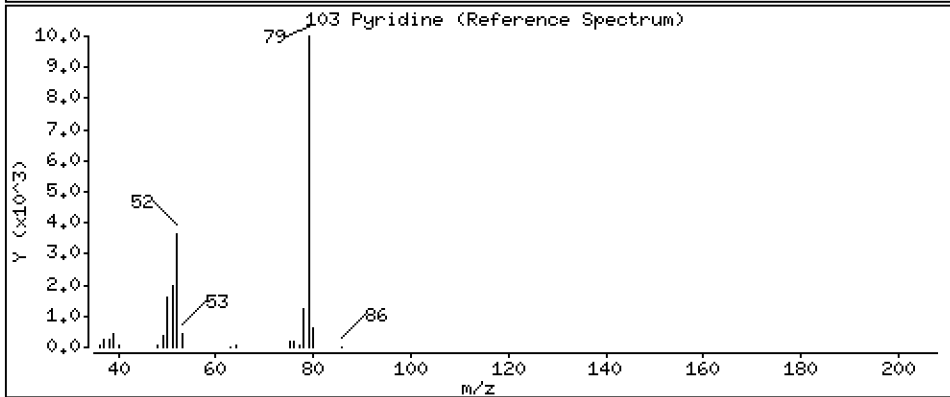
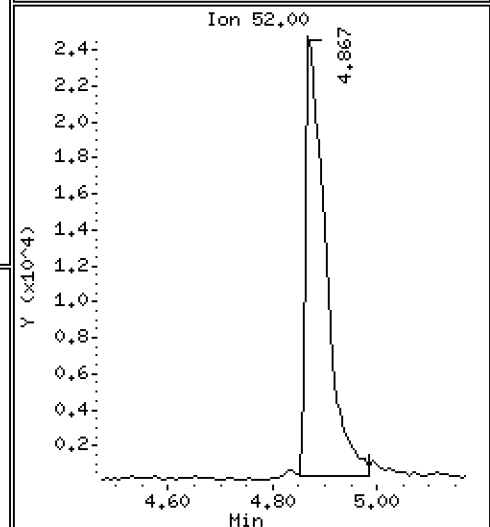
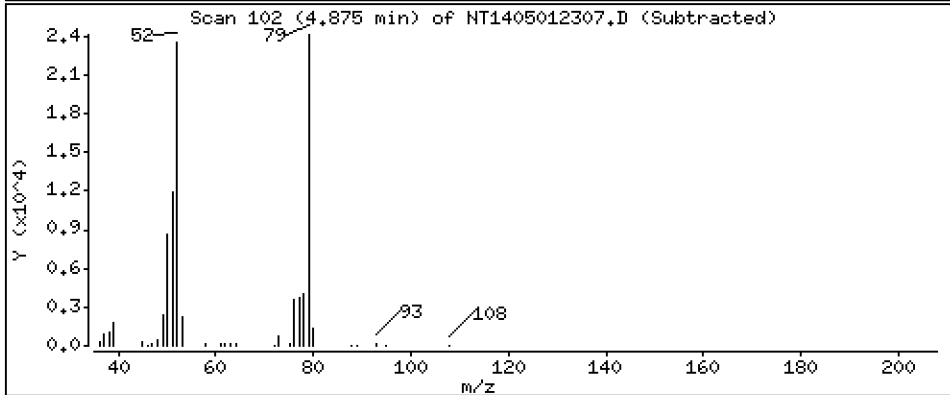
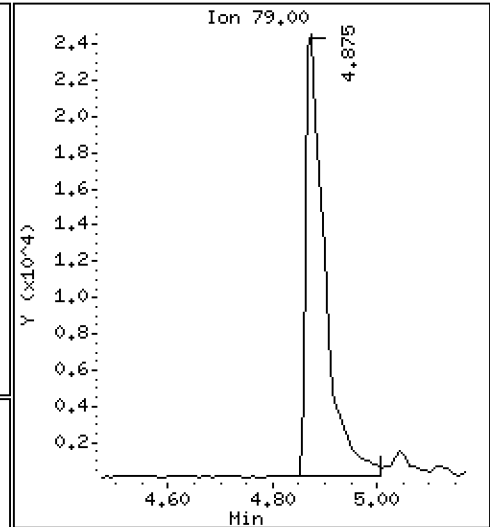
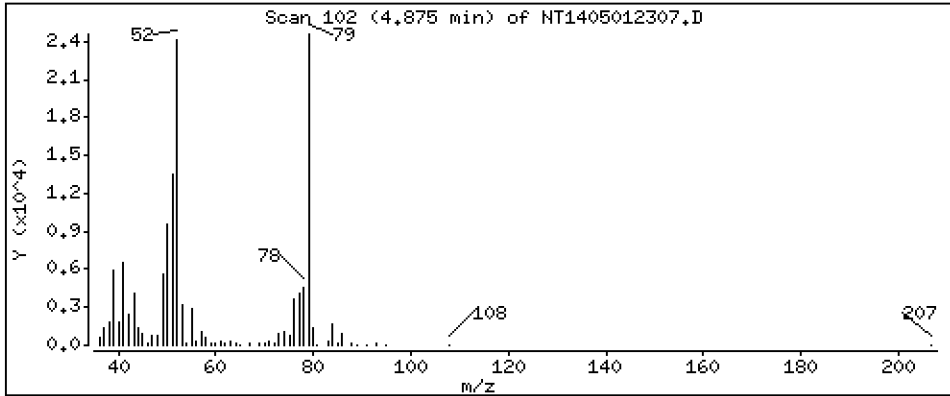
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,2567 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

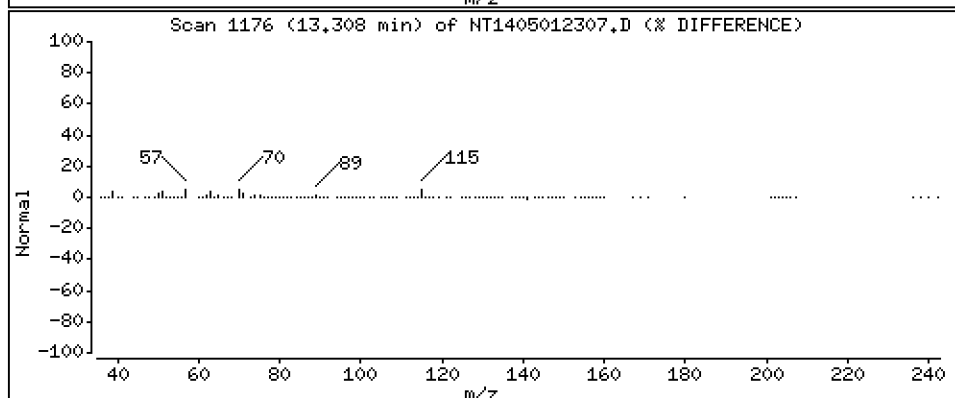
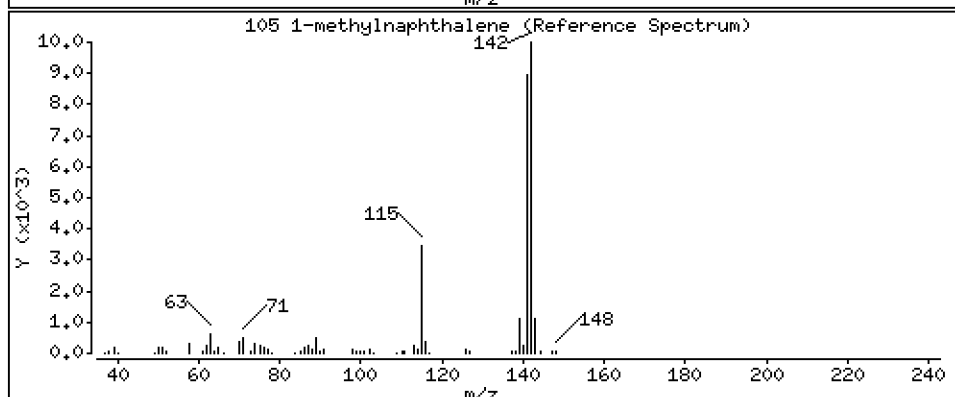
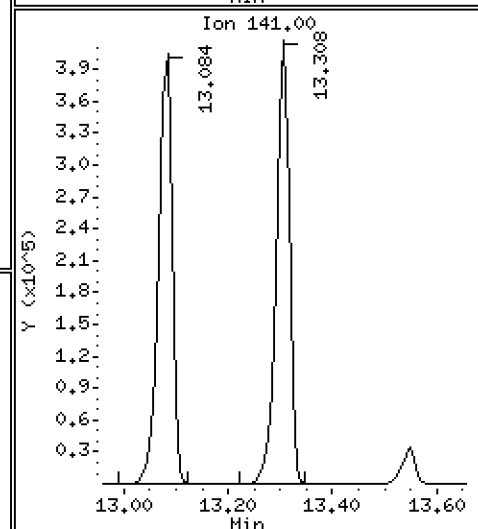
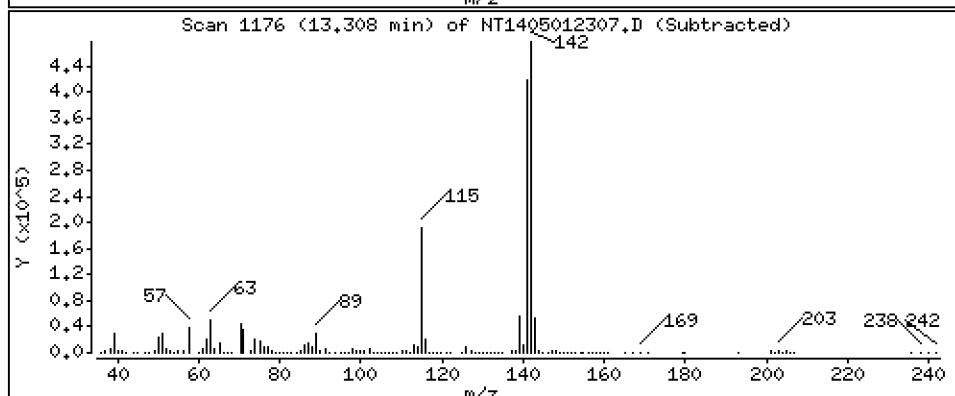
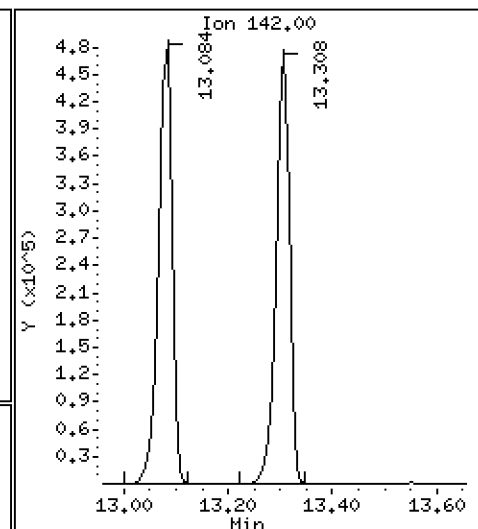
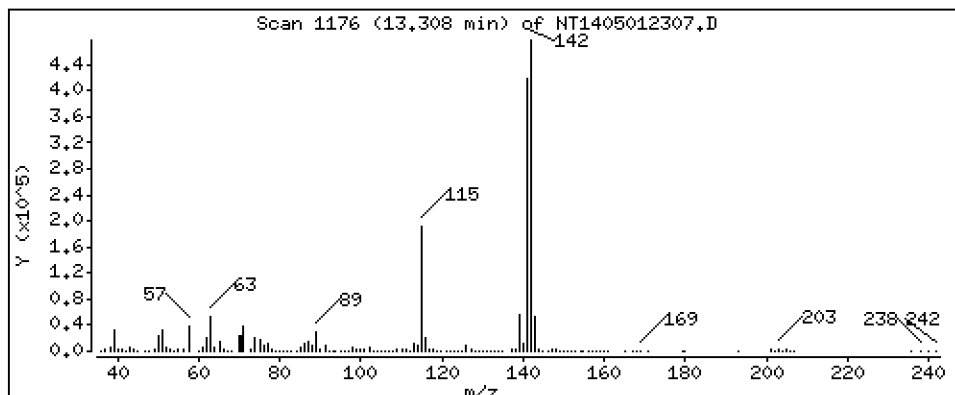
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 4,020 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

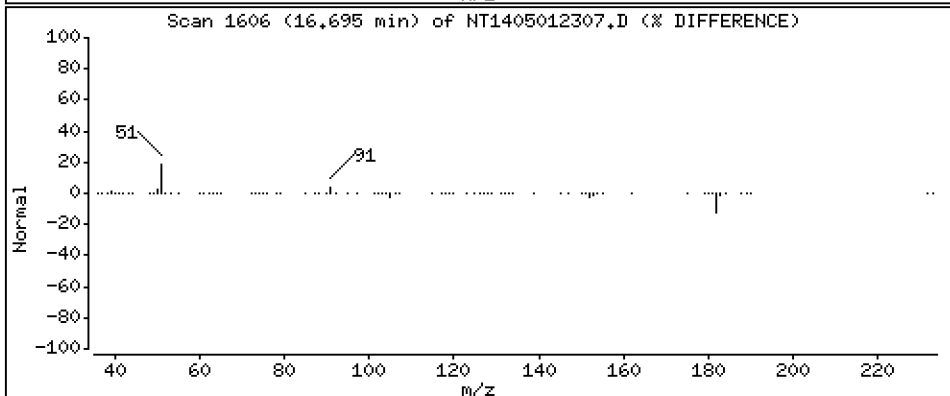
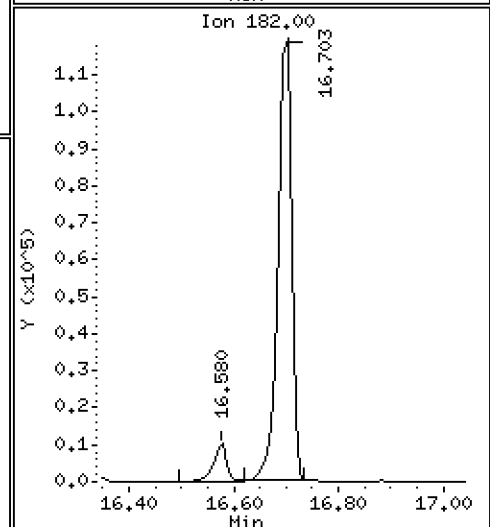
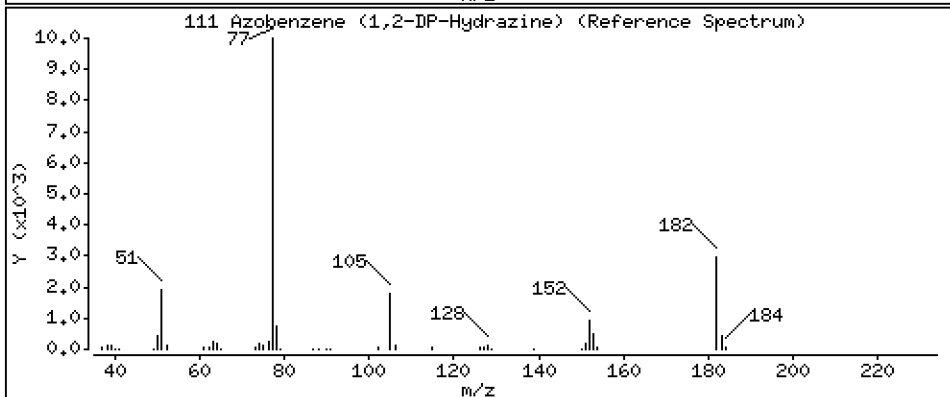
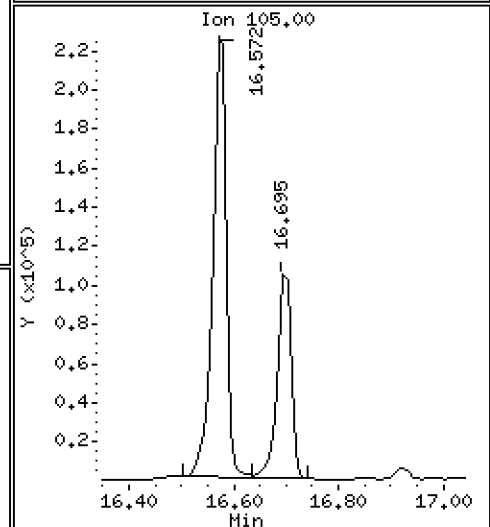
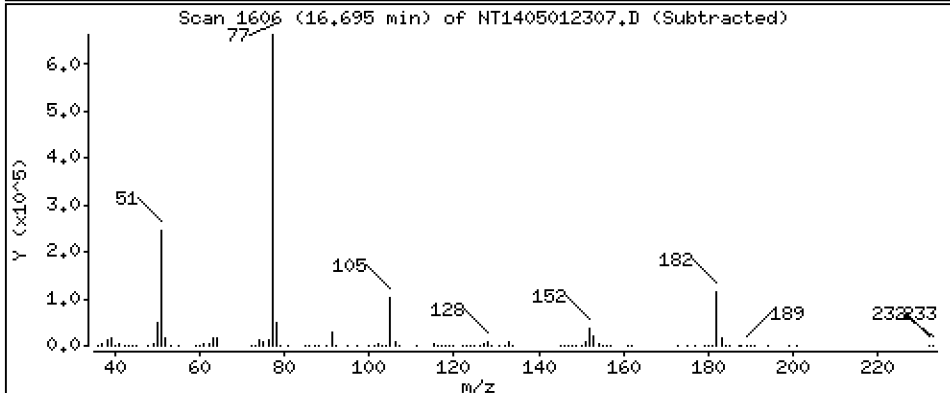
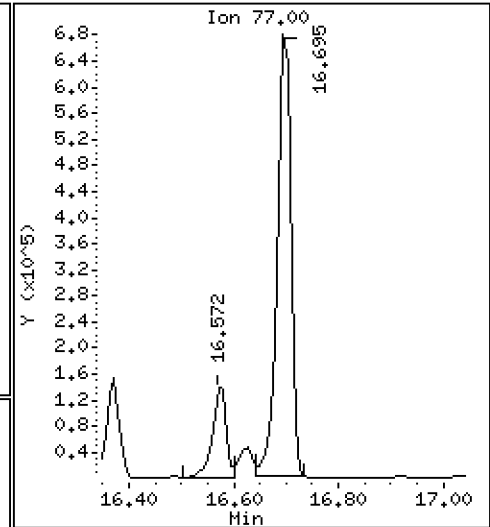
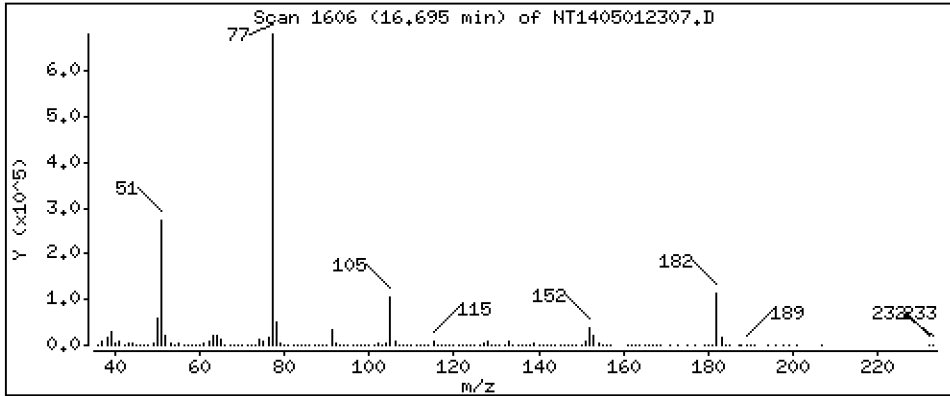
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 4,055 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

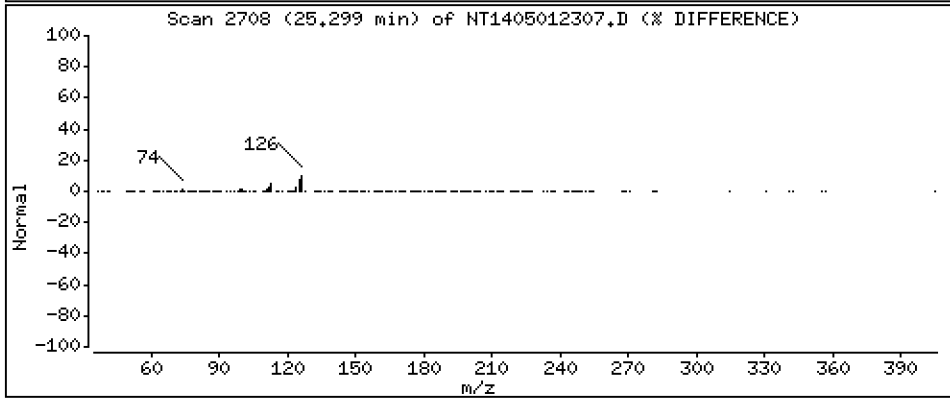
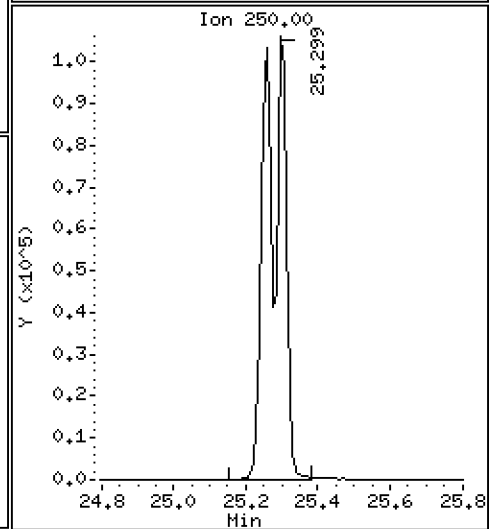
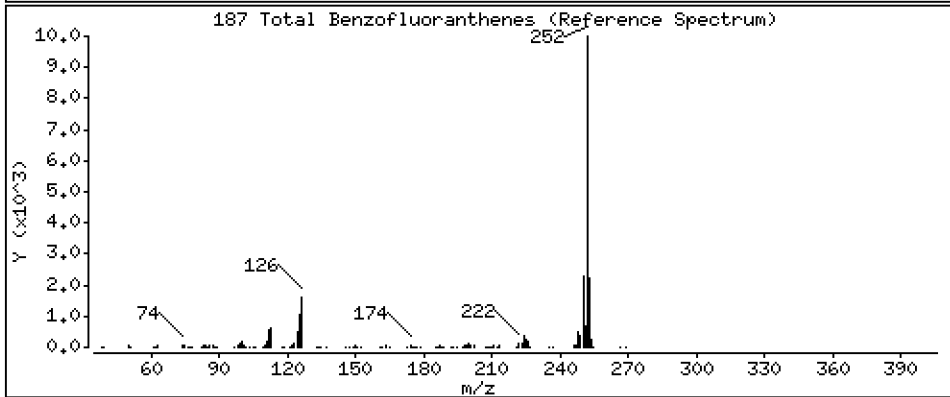
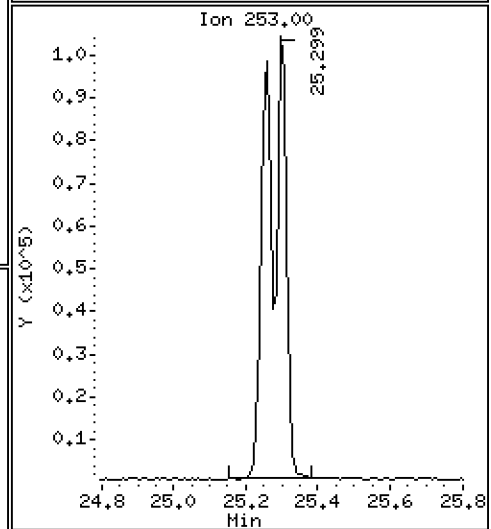
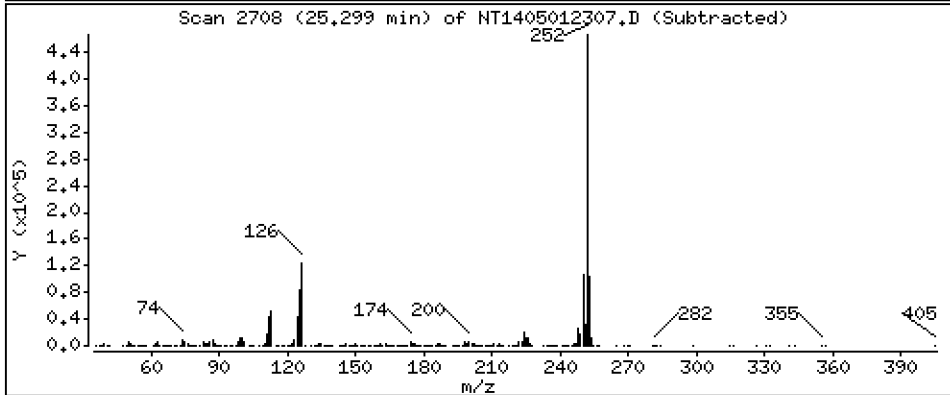
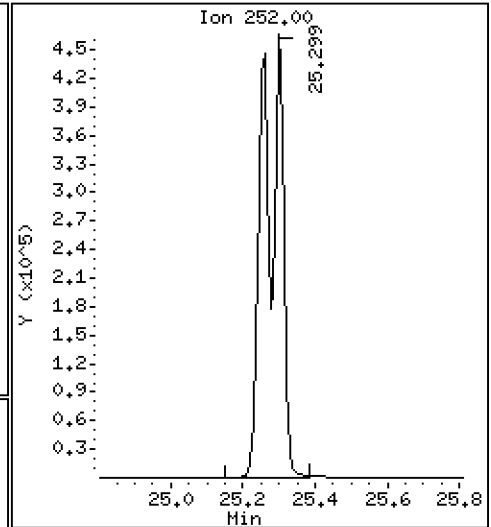
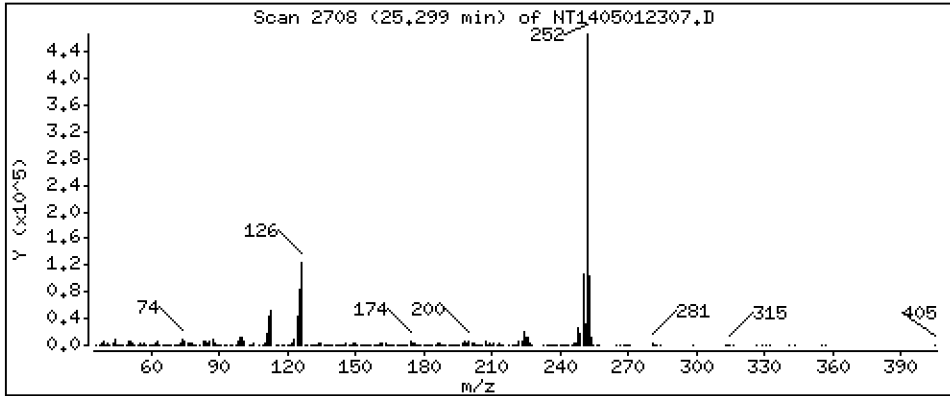
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 10,40 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS1

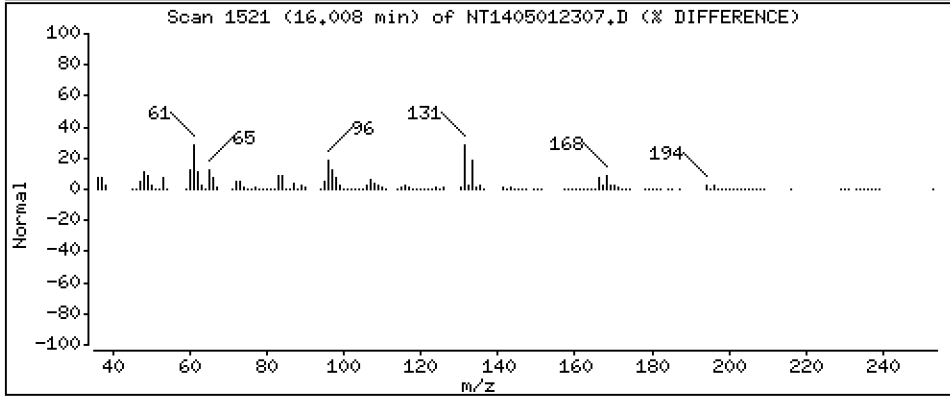
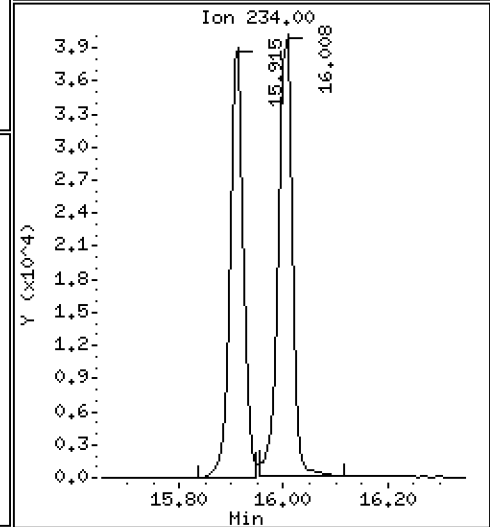
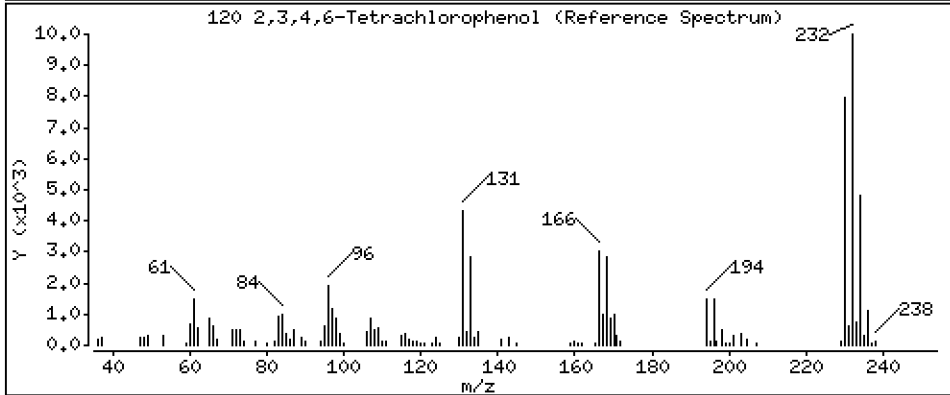
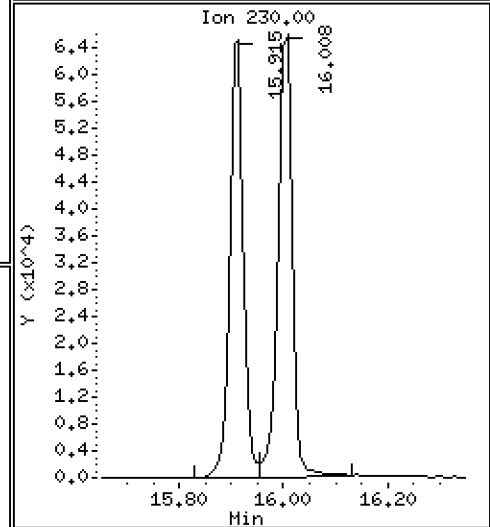
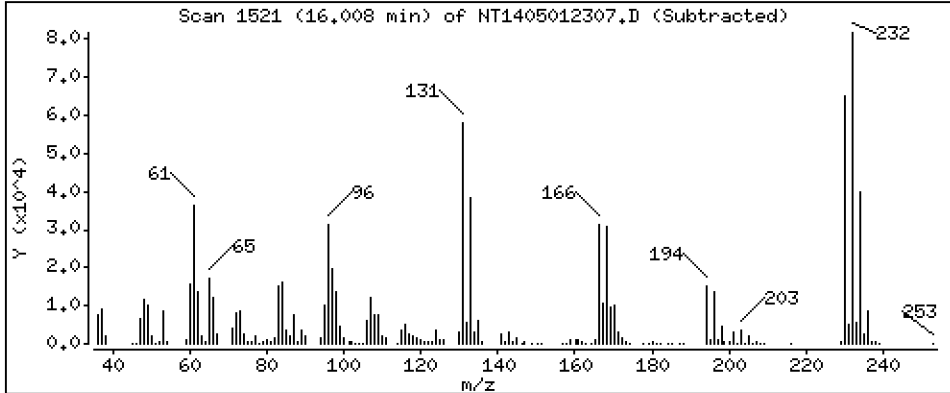
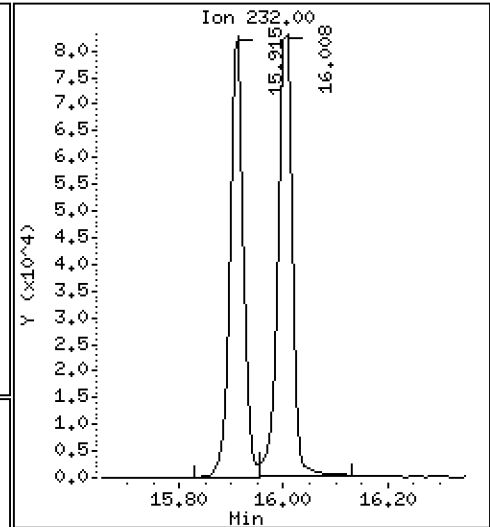
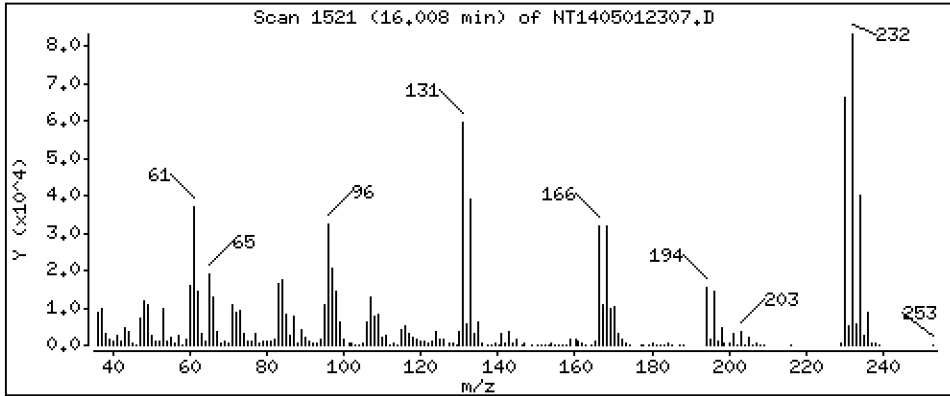
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 3,725 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012307.D  
 Lab Smp Id: BLD0297-BS1  
 Inj Date : 01-MAY-2023 18:13 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-BS1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 7  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.906	6.898	(0.756)	632404	6.48306	6.483
\$ 2 Phenol-d5	99		8.490	8.490	(0.930)	892178	6.51721	6.517
3 Phenol	94		8.513	8.513	(0.932)	591446	3.85494	3.855
\$ 5 2-Chlorophenol-d4	132		8.768	8.768	(0.960)	662039	6.79817	6.798
4 Bis(2-Chloroethyl)ether	93		8.675	8.675	(0.950)	497966	4.25102	4.251
6 2-Chlorophenol	128		8.798	8.799	(0.964)	425685	3.98342	3.983
7 1,3-Dichlorobenzene	146		9.069	9.070	(0.993)	411574	3.84640	3.846
* 8 1,4-Dichlorobenzene-d4	152		9.131	9.132	(1.000)	269737	4.00000	
9 1,4-Dichlorobenzene	146		9.163	9.163	(1.003)	400960	3.93076	3.931
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.040)	263548	4.27206	4.272
12 1,2-Dichlorobenzene	146		9.520	9.520	(1.042)	406332	4.00348	4.003
11 Benzyl alcohol	108		9.411	9.403	(1.031)	284534	4.06572	4.066
14 2,2'-oxybis(1-Chloropropane)	121		9.706	9.706	(1.063)	148807	4.34300	4.343
13 2-Methylphenol	108		9.628	9.629	(1.054)	345238	3.37296	3.373
17 Hexachloroethane	117		10.117	10.118	(1.108)	195162	4.01323	4.013
16 N-Nitroso-di-n-propylamine	70		9.970	9.970	(1.092)	360676	3.50397	3.504
15 4-Methylphenol	108		9.908	9.900	(1.085)	418581	3.59102	3.591
\$ 18 Nitrobenzene-d5	82		10.234	10.242	(0.879)	589778	4.49959	4.500
19 Nitrobenzene	77		10.272	10.273	(0.883)	582917	4.16008	4.160
20 Isophorone	82		10.723	10.723	(0.921)	983259	5.11210	5.112
21 2-Nitrophenol	139		10.901	10.909	(0.937)	218320	3.17595	3.176
22 2,4-Dimethylphenol	107		10.955	10.955	(0.941)	533557	5.05332	5.053
23 Bis(2-Chloroethoxy)methane	93		11.157	11.157	(0.959)	590315	4.77510	4.775
24 Benzoic acid	105		11.219	11.196	(0.964)	1838286	21.0239	21.02
25 2,4-Dichlorophenol	162		11.358	11.359	(0.976)	966603	11.6249	11.62
26 1,2,4-Trichlorobenzene	180		11.544	11.552	(0.992)	310504	3.93970	3.940
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1065007	4.00000	
28 Naphthalene	128		11.675	11.675	(1.003)	1327821	4.63846	4.638
29 4-Chloroaniline	127		11.806	11.814	(1.015)	531994	4.29532	4.295
30 Hexachlorobutadiene	225		12.038	12.039	(1.035)	148703	4.12694	4.127
31 4-Chloro-3-methylphenol	107		12.774	12.774	(1.098)	1245293	13.1979	13.20
32 2-Methylnaphthalene	142		13.083	13.083	(1.124)	836969	4.03630	4.036
33 Hexachlorocyclopentadiene	237		13.547	13.548	(0.887)	278329	7.48399	7.484

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.710	13.702	(0.898)	614354	13.2602	13.26
35 2,4,5-Trichlorophenol	196	13.780	13.780	(0.902)	667436	13.5603	13.56
§ 36 2-Fluorobiphenyl	172	13.865	13.865	(0.908)	813780	4.62408	4.624
37 2-Chloronaphthalene	162	14.081	14.082	(0.922)	694520	4.13406	4.134
38 2-Nitroaniline	65	14.352	14.345	(0.940)	1087124	12.1140	12.11
39 Dimethylphthalate	163	14.778	14.778	(0.968)	781593	4.51001	4.510
40 Acenaphthylene	152	14.956	14.956	(0.979)	1099333	4.10014	4.100
41 2,6-Dinitrotoluene	165	14.925	14.918	(0.977)	512680	13.0488	13.05
* 42 Acenaphthene-d10	164	15.273	15.273	(1.000)	505269	4.00000	
43 3-Nitroaniline	138	15.211	15.212	(0.996)	474337	9.60868	9.609
44 Acenaphthene	153	15.343	15.343	(1.005)	698906	4.35140	4.351
45 2,4-Dinitrophenol	184	15.420	15.420	(1.010)	512650	21.5855	21.59
46 Dibenzofuran	168	15.667	15.668	(1.026)	968458	4.22363	4.224
47 4-Nitrophenol	109	15.528	15.521	(1.017)	416524	14.4999	14.50
48 2,4-Dinitrotoluene	165	15.729	15.729	(1.030)	712760	13.3985	13.40
50 Diethylphthalate	149	16.240	16.240	(1.063)	867047	4.62218	4.622
49 Fluorene	166	16.386	16.386	(1.073)	903473	4.45269	4.453
51 4-Chlorophenyl-phenylether	204	16.371	16.371	(1.072)	379253	4.51871	4.519
52 4-Nitroaniline	138	16.486	16.487	(1.079)	485314	11.1175	11.12
53 4,6-Dinitro-2-methylphenol	198	16.579	16.579	(0.905)	671339	25.4021	25.40
54 N-Nitrosodiphenylamine	169	16.625	16.626	(0.907)	435713	3.63044	3.630
§ 55 2,4,6-Tribromophenol	330	16.918	16.919	(1.108)	117286	7.06083	7.061
56 4-Bromophenyl-phenylether	248	17.381	17.381	(0.948)	179109	4.53710	4.537
57 Hexachlorobenzene	284	17.698	17.698	(0.966)	167023	4.18375	4.184
58 Pentachlorophenol	266	18.054	18.054	(0.985)	307654	12.1166	12.12
* 59 Phenanthrene-d10	188	18.325	18.325	(1.000)	849855	4.00000	
60 Phenanthrene	178	18.371	18.372	(1.003)	1109950	4.61918	4.619
61 Anthracene	178	18.464	18.464	(1.008)	876900	3.80494	3.805
62 Carbazole	167	18.797	18.797	(1.026)	972532	4.56025	4.560
63 Di-n-butylphthalate	149	19.578	19.579	(1.068)	1583502	4.87070	4.871
64 Fluoranthene	202	20.754	20.755	(0.888)	1201127	4.42249	4.422
65 Pyrene	202	21.180	21.180	(0.906)	1219788	4.34898	4.349
§ 66 Terphenyl-d14	244	21.458	21.459	(0.918)	824302	4.28218	4.282
67 Butylbenzylphthalate	149	22.380	22.380	(0.958)	656067	3.94111	3.941
68 Benzo(a)anthracene	228	23.340	23.340	(0.999)	967449	4.60632	4.606
* 69 Chrysene-d12	240	23.371	23.371	(1.000)	588373	4.00000	
70 3,3'-Dichlorobenzidine	252	23.294	23.302	(0.997)	324841	4.82590	4.826
71 Chrysene	228	23.417	23.418	(1.002)	905639	4.62326	4.623
72 bis(2-Ethylhexyl)phthalate	149	24.401	24.401	(1.001)	1713812	4.58552	4.586
* 134 Di-n-octylphthalate-d4	153	24.385	24.385	(1.000)	1400043	4.00000	
73 Di-n-octylphthalate	149	24.401	24.401	(1.001)	1713812	4.58552	4.586
74 Benzo(b)fluoranthene	252	25.260	25.260	(0.970)	875465	4.96258	4.963
75 Benzo(k)fluoranthene	252	25.299	25.307	(0.971)	943940	5.45331	5.453
76 Benzo(a)pyrene	252	25.926	25.934	(0.995)	655857	4.39926	4.399
* 77 Perylene-d12	264	26.050	26.050	(1.000)	529081	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.789	28.789	(1.105)	846460	4.10594	4.106
79 Dibenzo(a,h)anthracene	278	28.797	28.805	(1.105)	692400	4.10597	4.106
80 Benzo(g,h,i)perylene	276	29.597	29.605	(1.136)	686313	3.93255	3.933
90 N-Nitrosodimethylamine	74	4.820	4.797	(0.528)	633160	7.80685	7.807
91 Aniline	93	8.590	8.590	(0.941)	356329	2.55926	2.559
93 Benzidine	184	Compound Not Detected.					
103 Pyridine	79	4.874	4.821	(0.534)	61633	0.25672	0.2567
105 1-methylnaphthalene	142	13.307	13.308	(1.144)	804925	4.01978	4.020
111 Azobenzene (1,2-DP-Hydrazine)	77	16.695	16.695	(1.093)	1173796	4.05492	4.055

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.299	25.307	(0.971)	1737059	10.4009	10.40
120 2,3,4,6-Tetrachlorophenol	232	16.008	16.000	(1.048)	166048	3.72482	3.725

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012307.D Calibration Time: 15:06  
 Lab Smp Id: BLD0297-BS1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	269737	-1.55
27 Naphthalene-d8	1103207	551604	2206414	1065007	-3.46
42 Acenaphthene-d10	520358	260179	1040716	505269	-2.90
59 Phenanthrene-d10	882575	441288	1765150	849855	-3.71
69 Chrysene-d12	600619	300310	1201238	588373	-2.04
134 Di-n-octylphthala	1445631	722816	2891262	1400043	-3.15
77 Perylene-d12	570040	285020	1140080	529081	-7.19

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.13	-0.00
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.33	17.83	18.83	18.33	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.37	-0.00
134 Di-n-octylphthala	24.39	23.89	24.89	24.39	-0.00
77 Perylene-d12	26.05	25.55	26.55	26.05	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012307.D

Lab ID: BLD0297-BS1  
nt14.i, ABN.m, 01-MAY-2023 18:13

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.534	0.528	0.0059	Pyridine

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012308.D

Date: 01-May-2023 18:50

Client ID:

Sample Info: BLD0297-BSM1

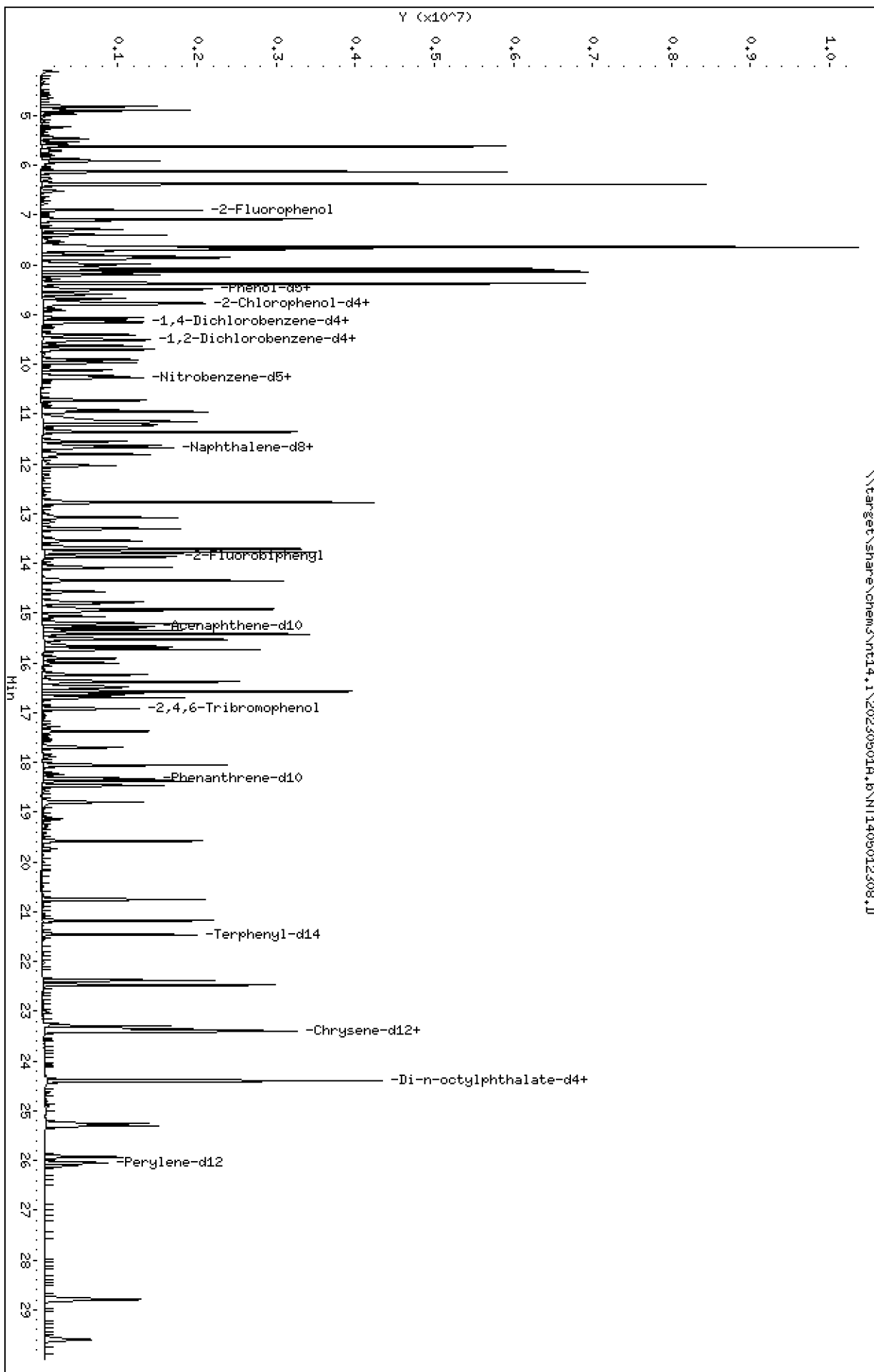
Column phase: ZB-Smsi

Instrument: nt14.1

Operator: USD

Column diameter: 0.25

\\target\share\chem3\nt14.1\20230501A.B\NT1405012308.D



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

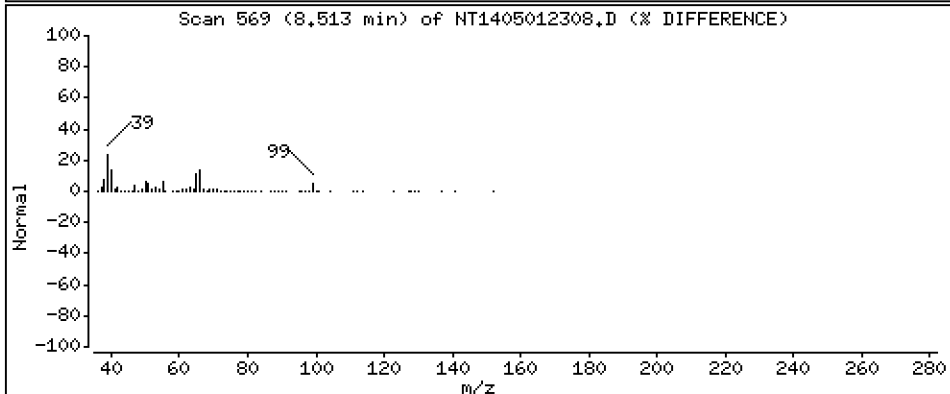
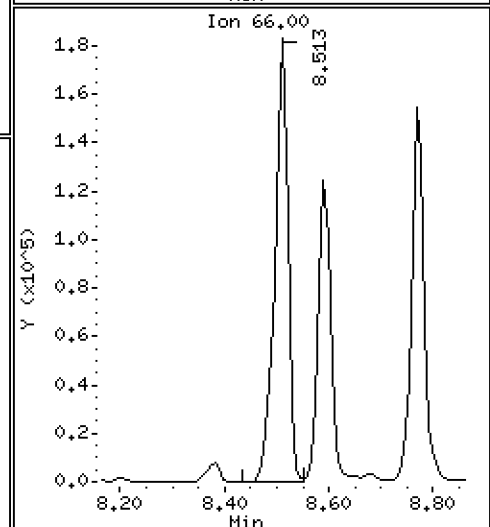
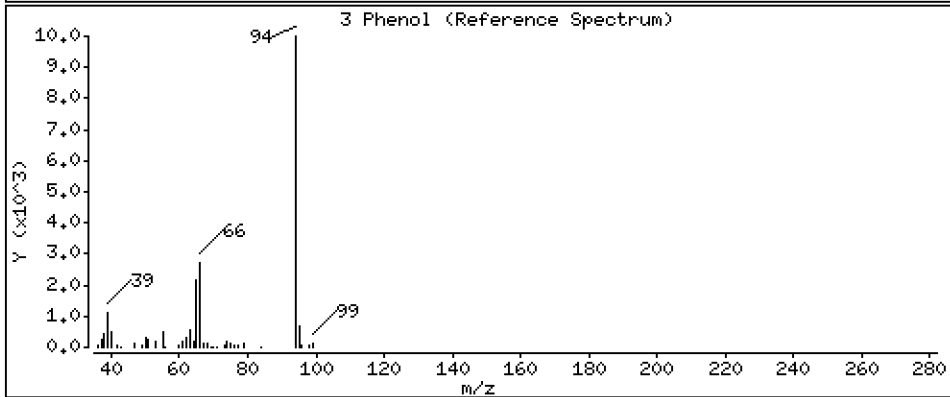
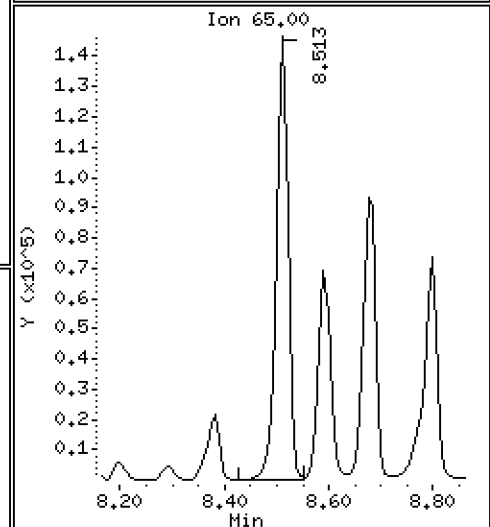
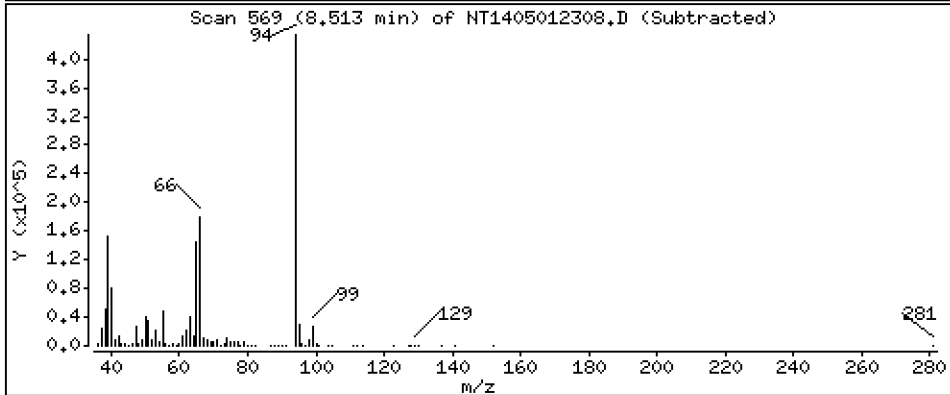
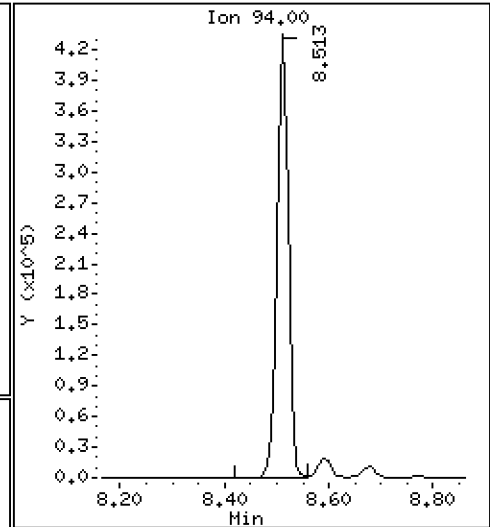
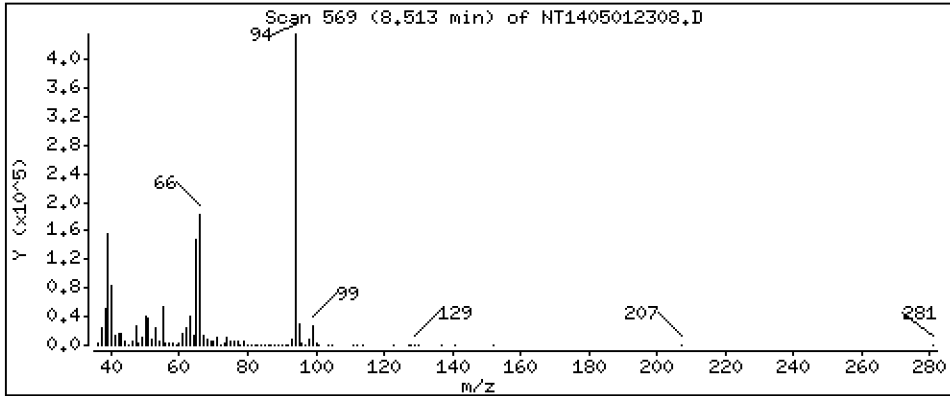
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,017 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

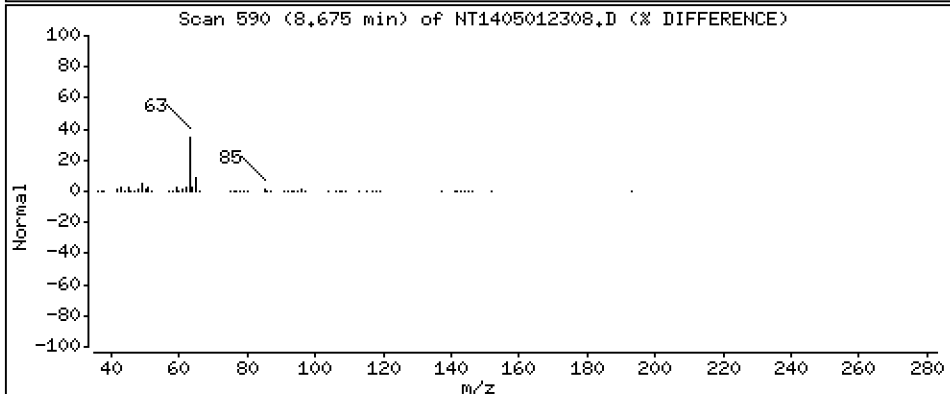
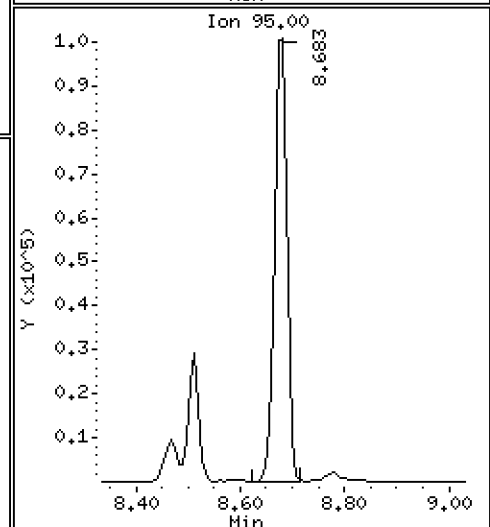
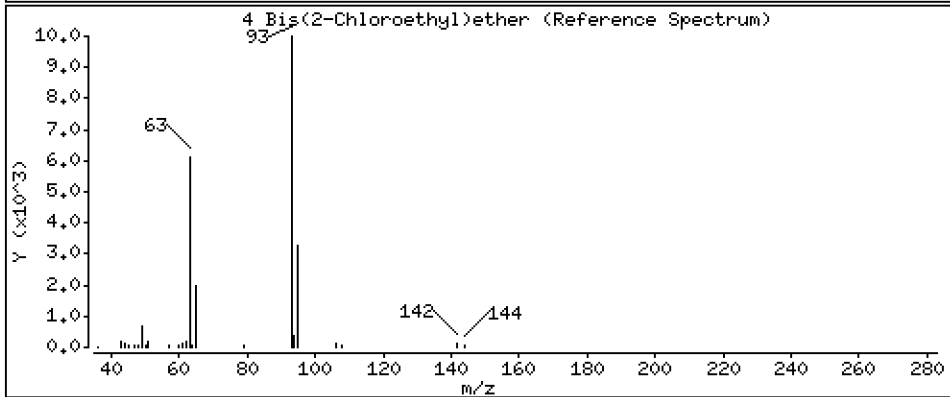
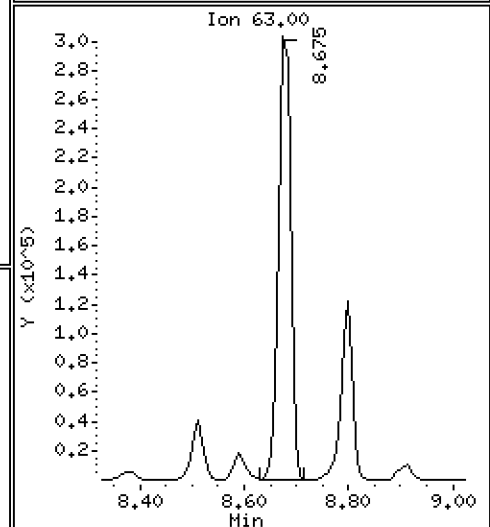
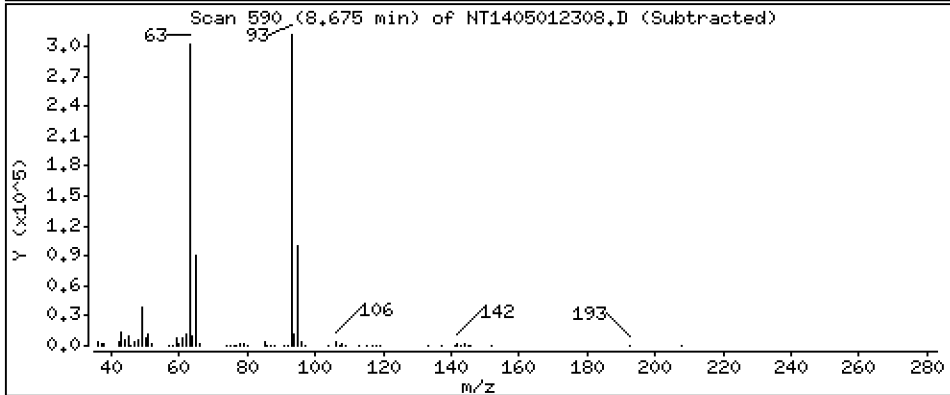
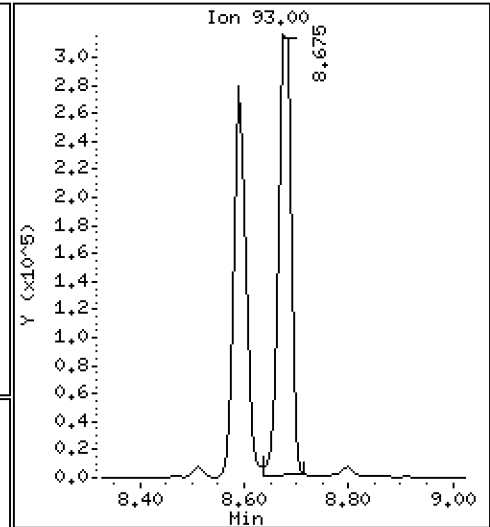
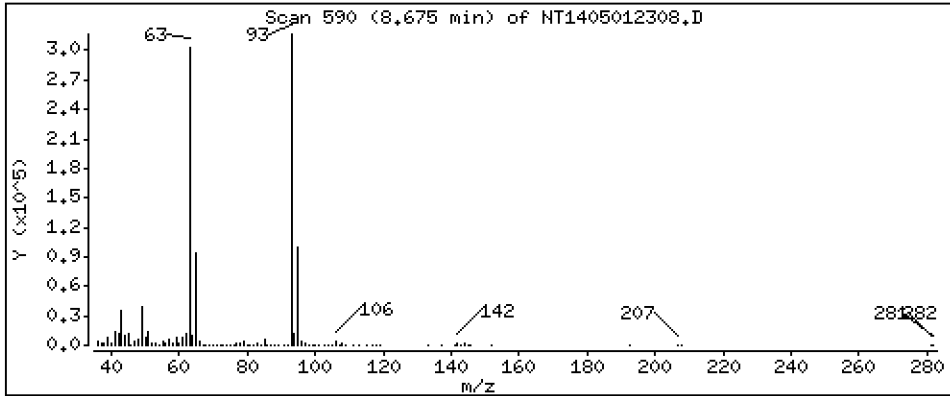
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

4 Bis(2-Chloroethyl)ether

Concentration: 4.292 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

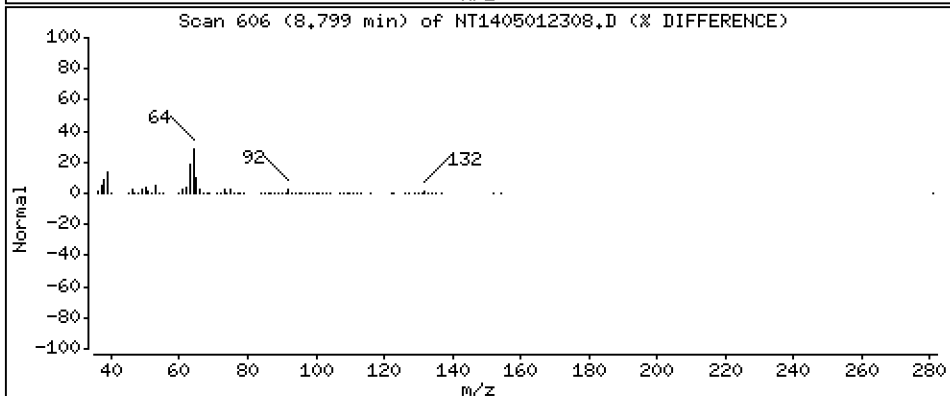
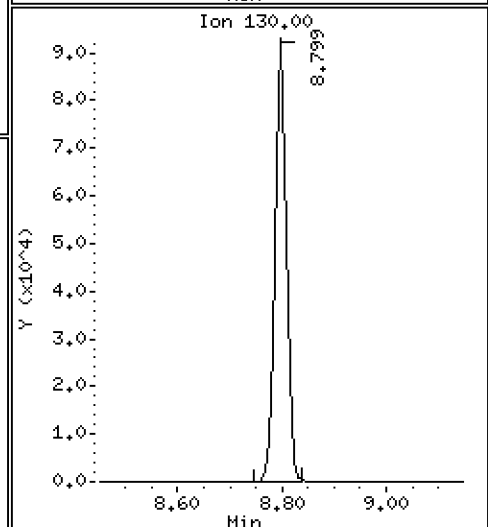
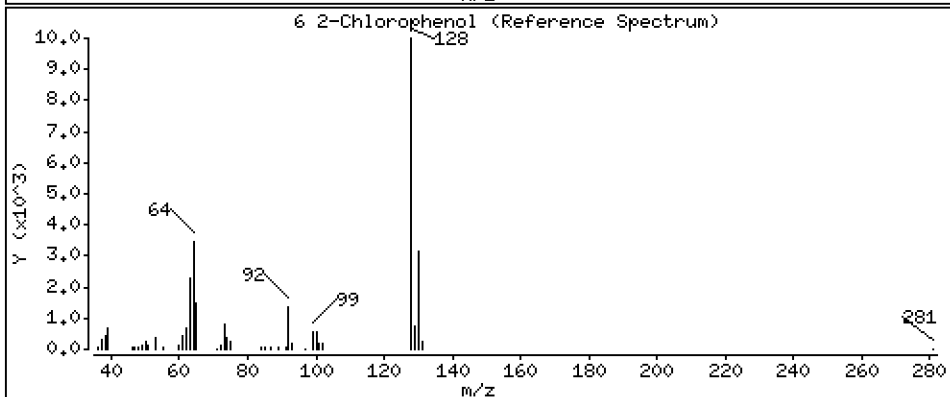
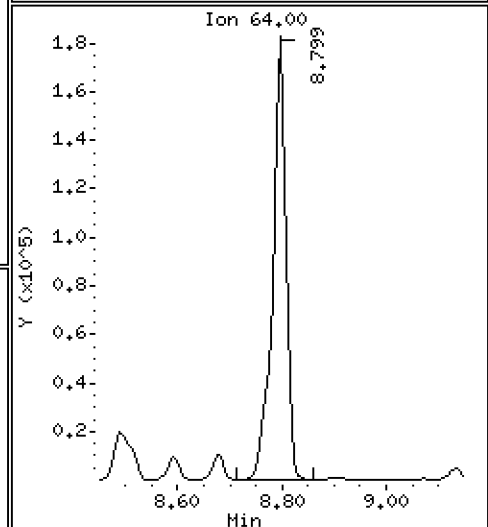
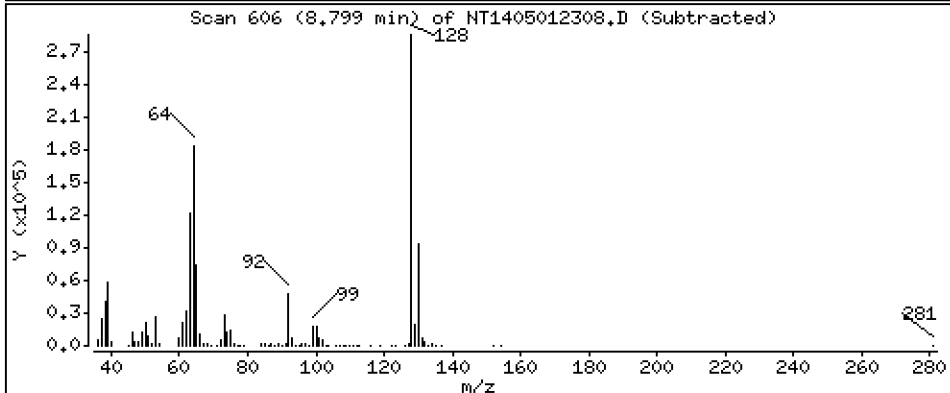
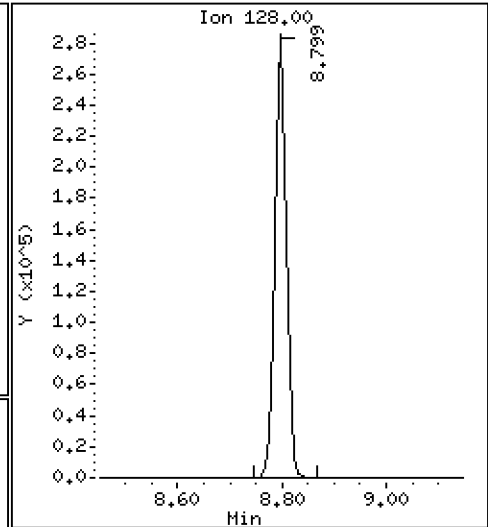
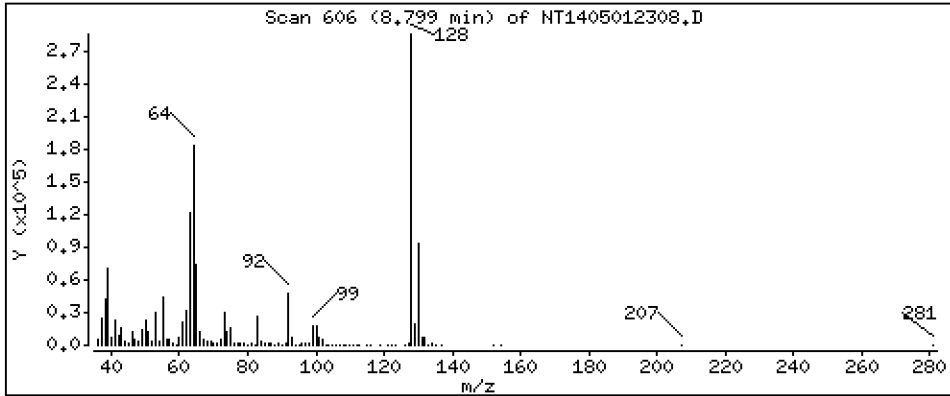
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 3,992 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

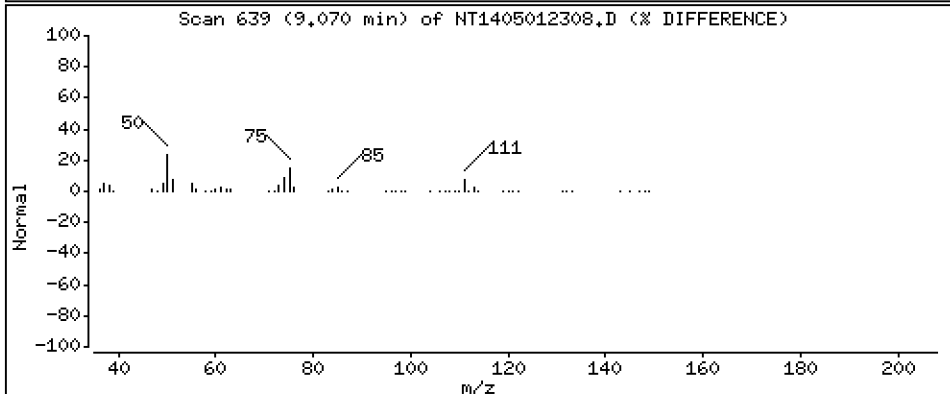
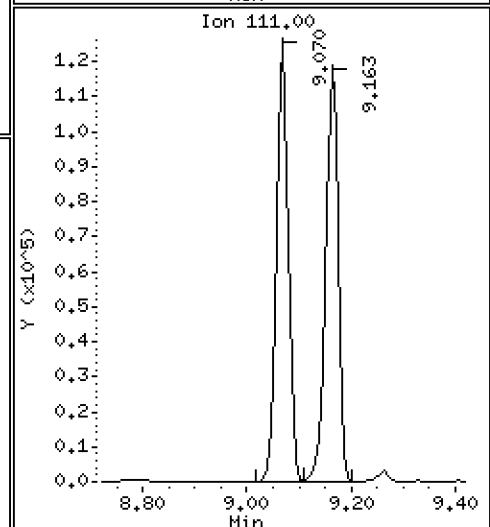
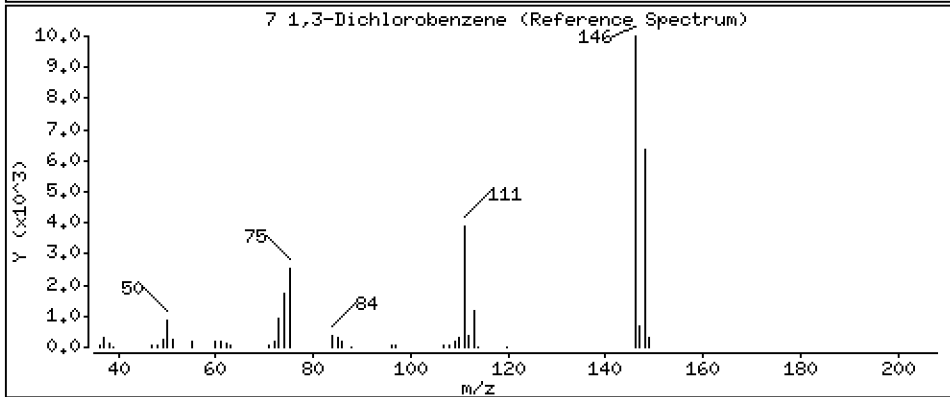
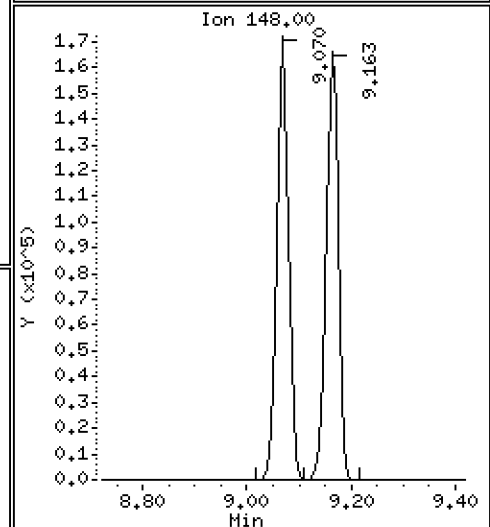
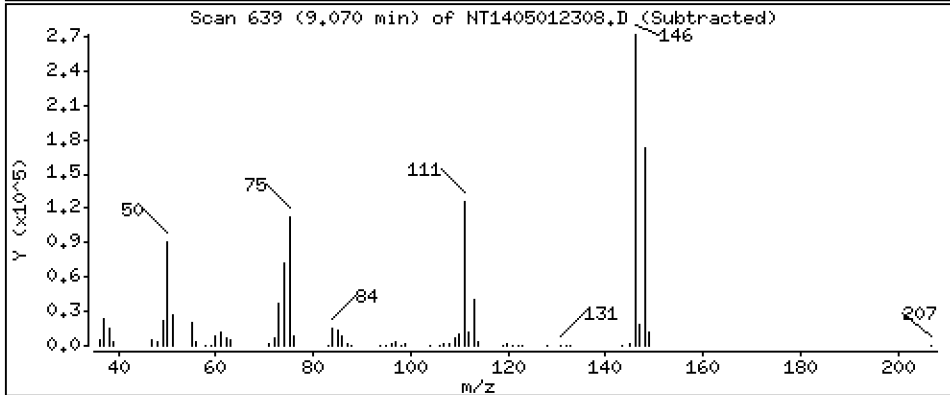
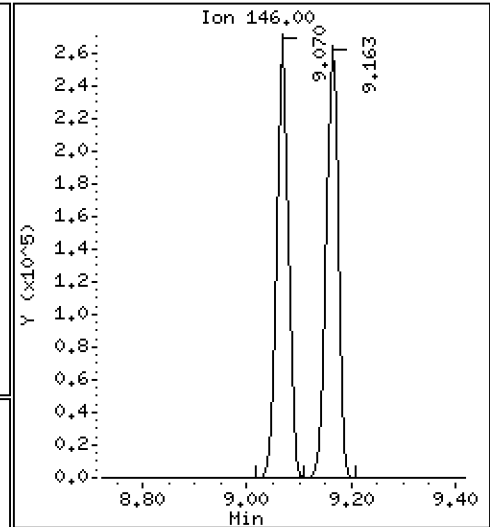
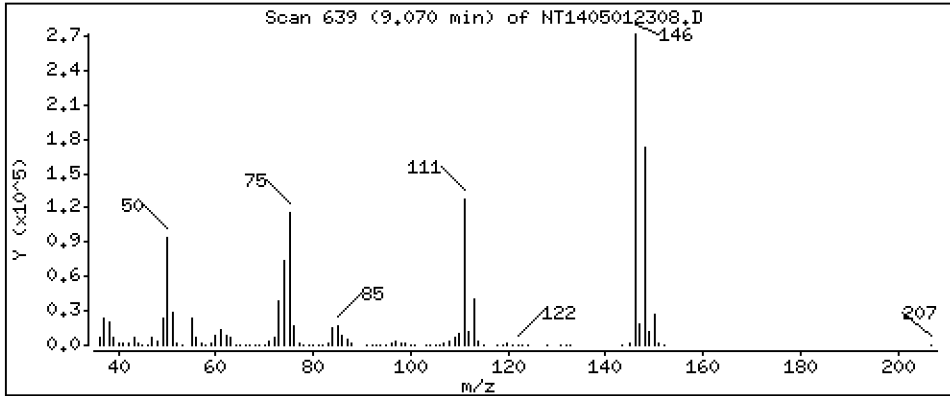
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 3,866 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

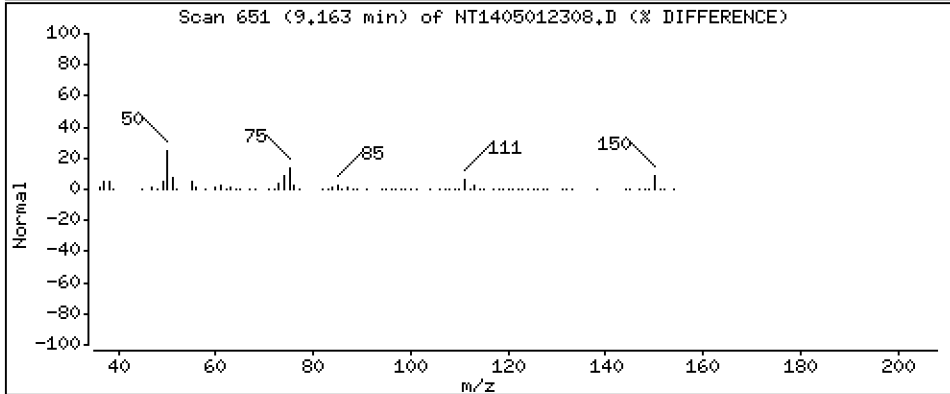
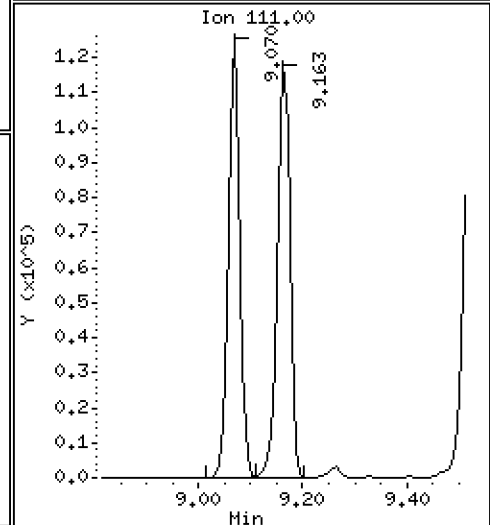
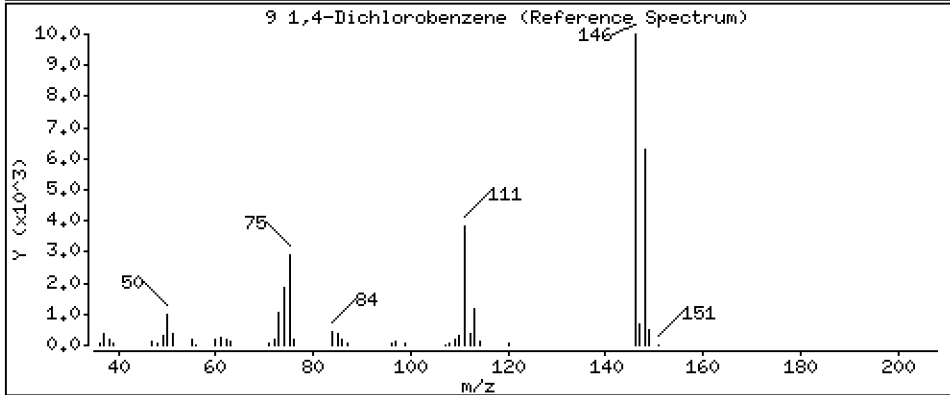
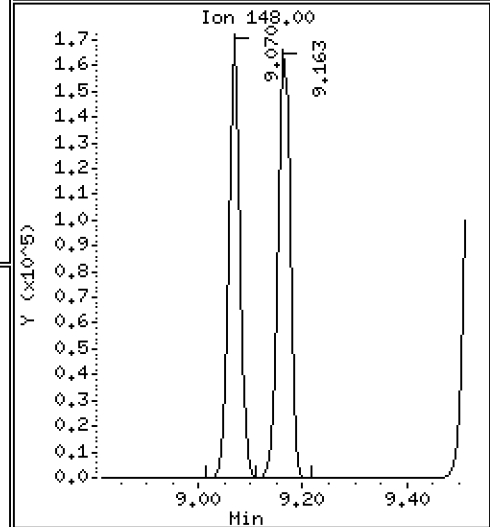
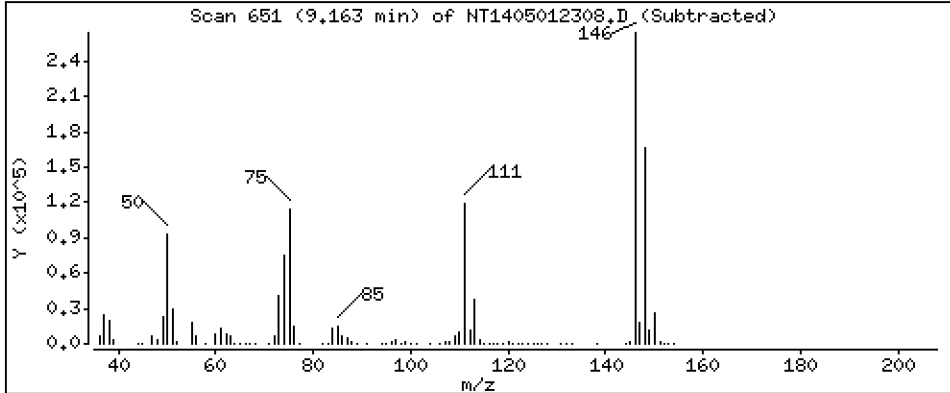
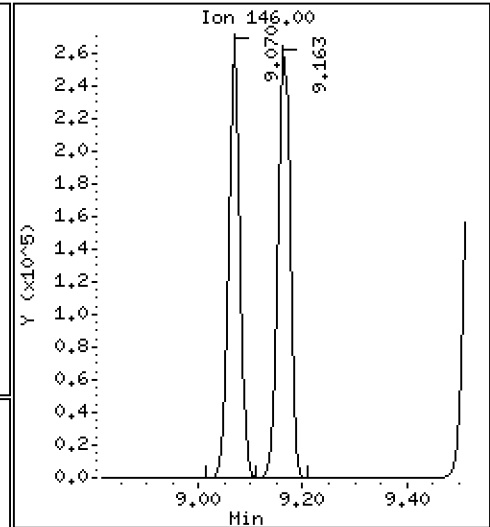
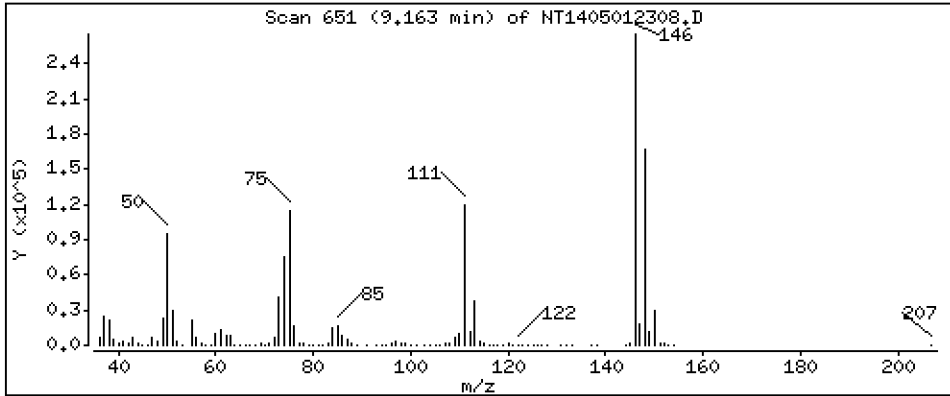
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 3.991 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

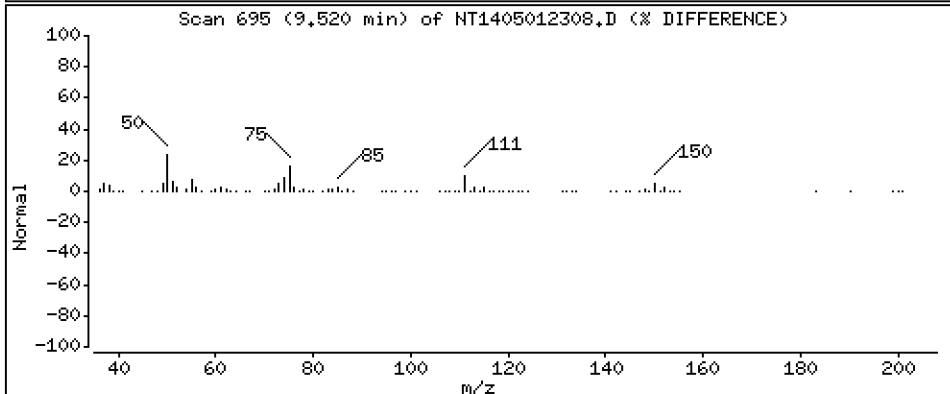
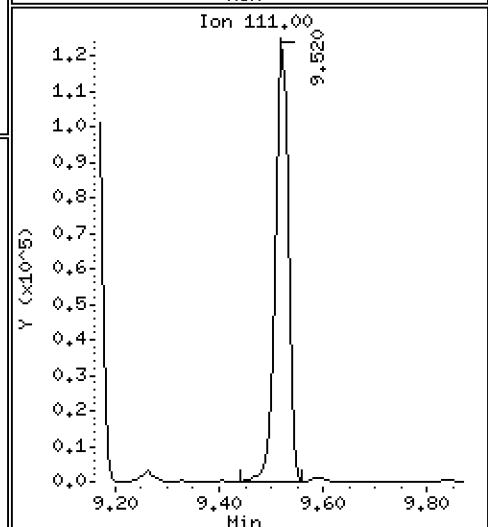
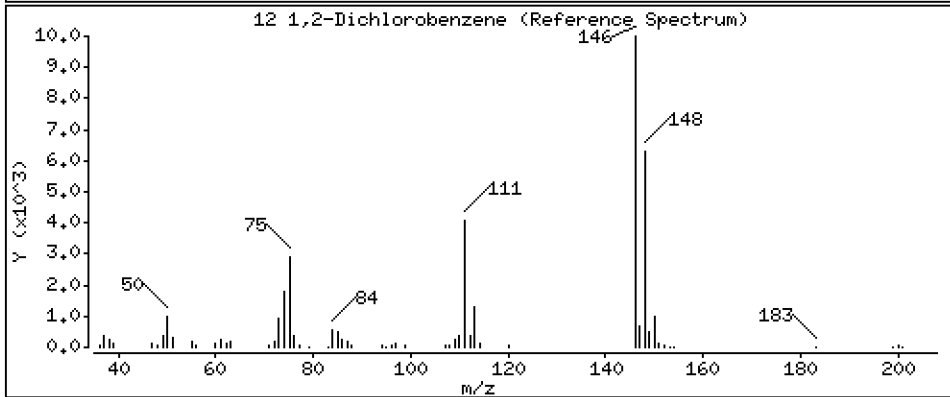
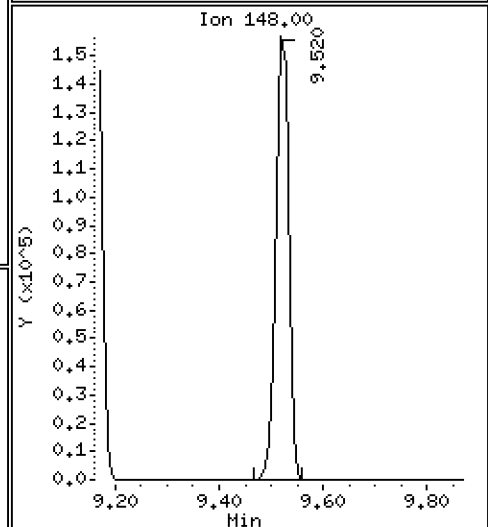
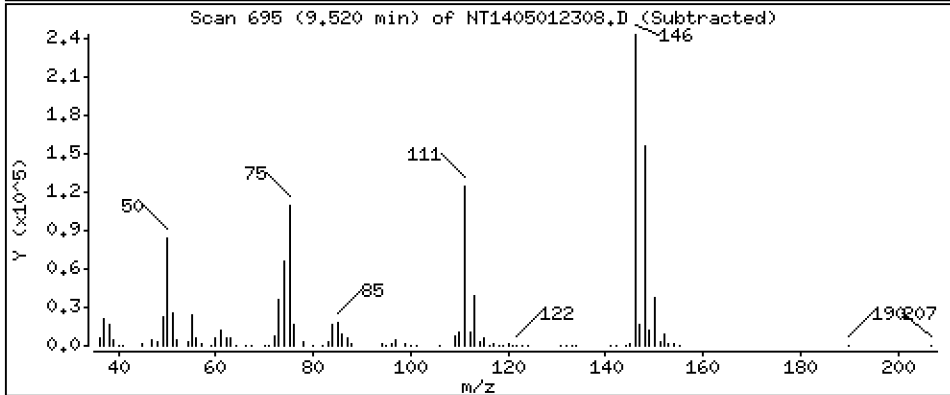
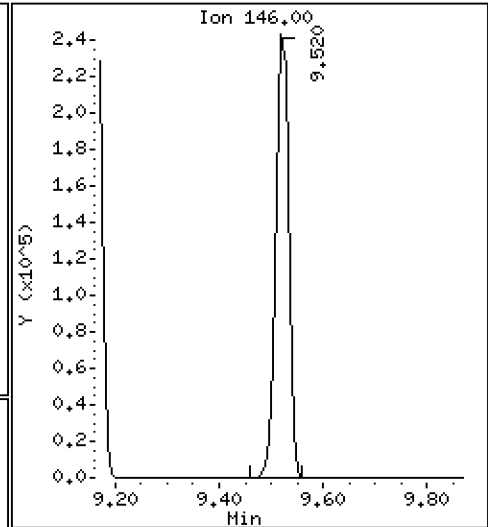
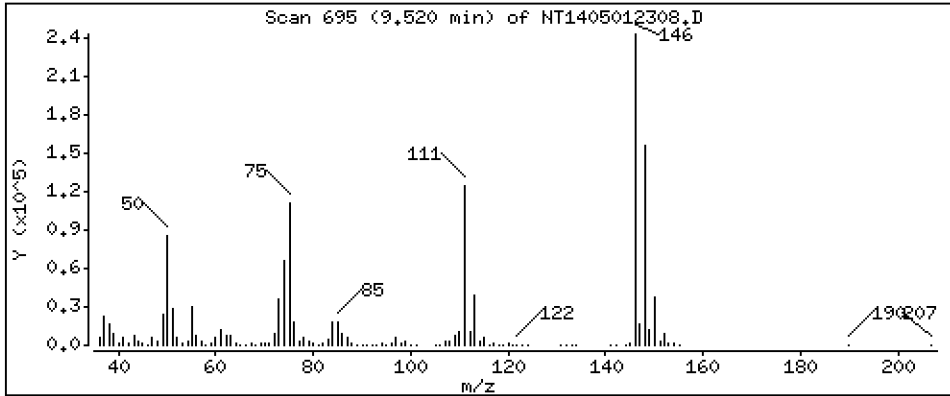
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 3.964 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

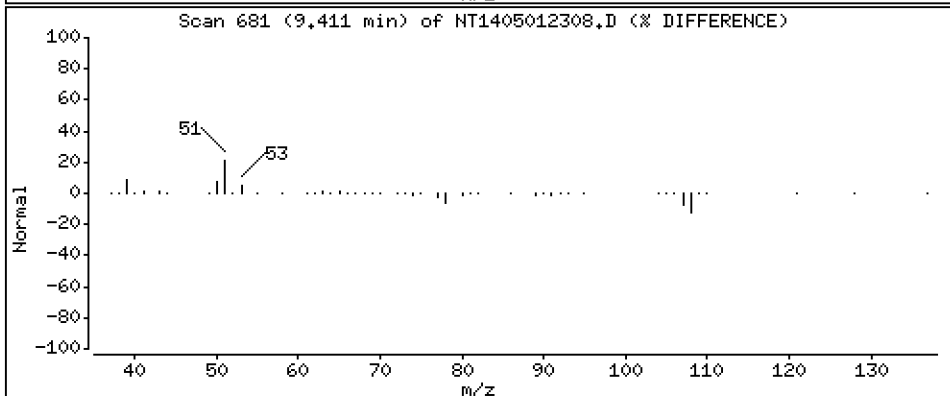
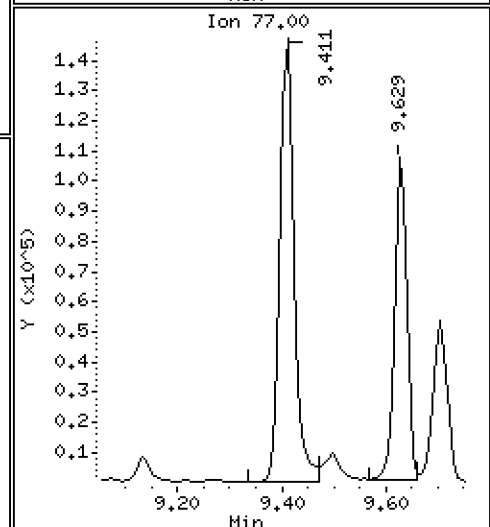
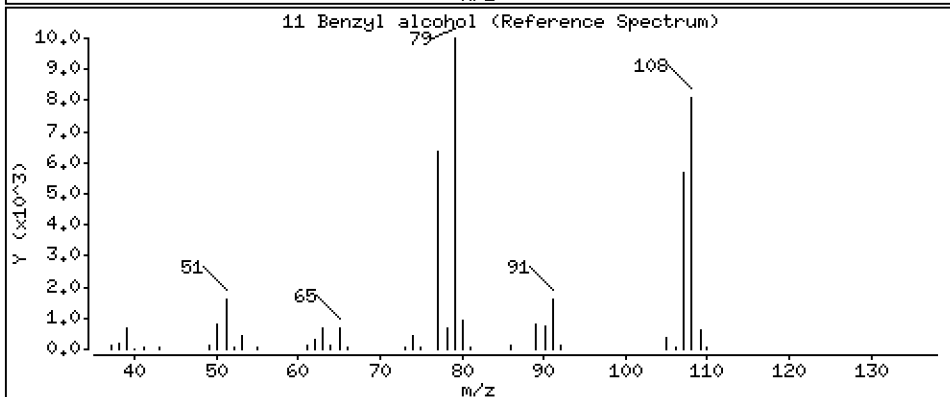
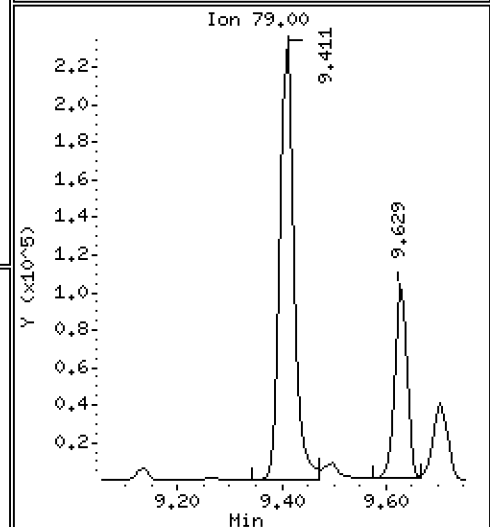
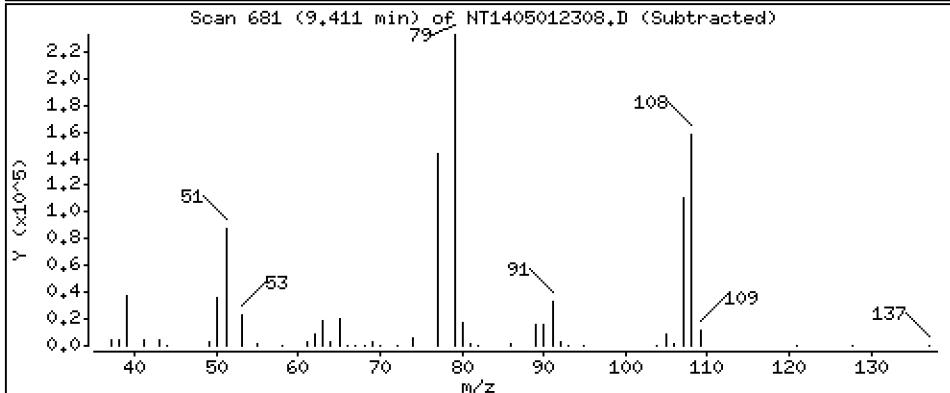
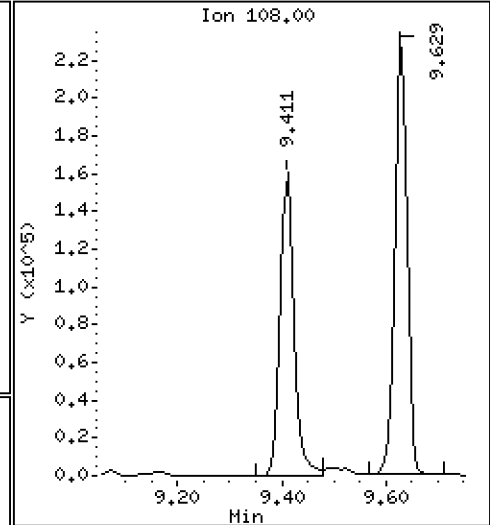
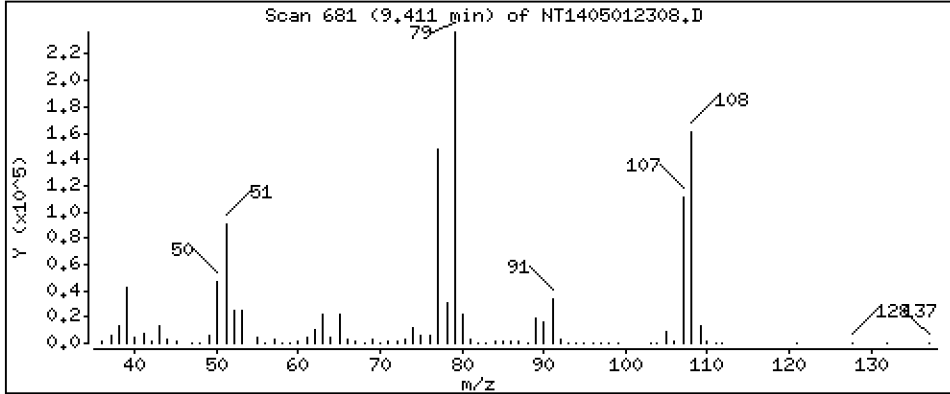
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

11 Benzyl alcohol

Concentration: 4,141 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

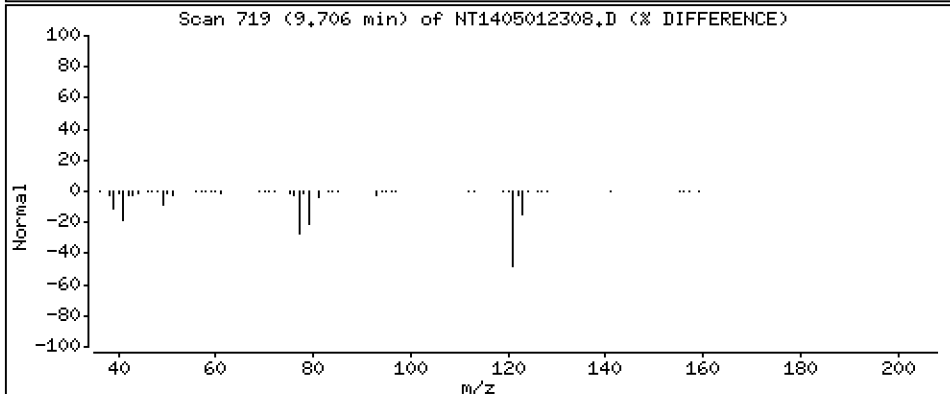
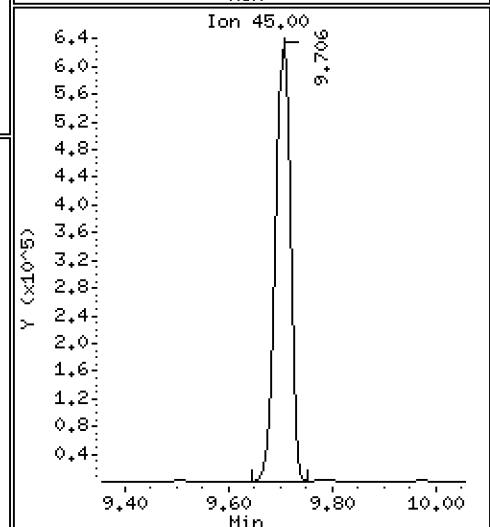
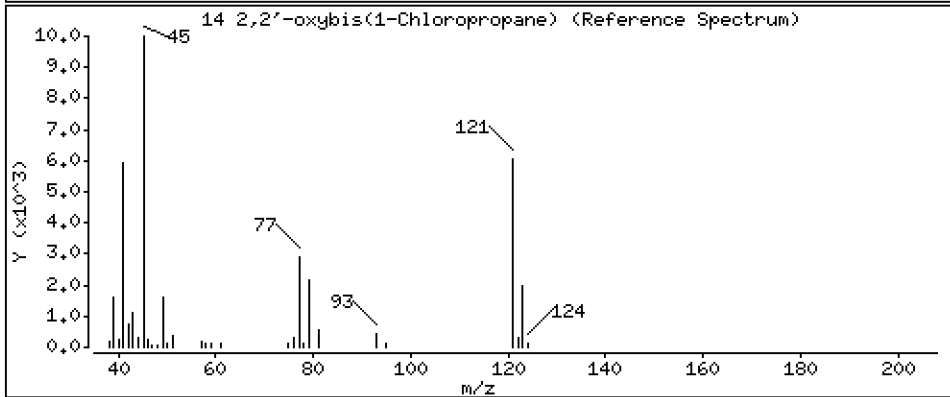
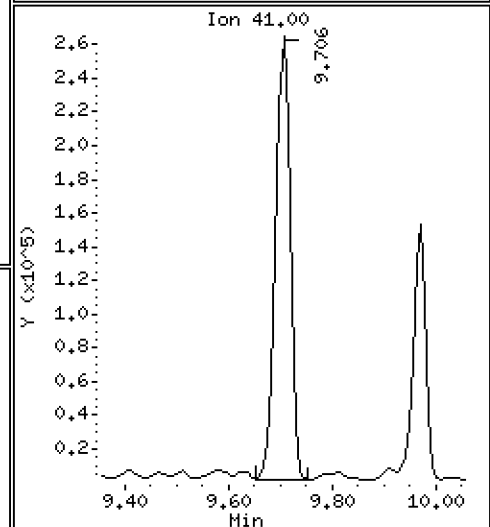
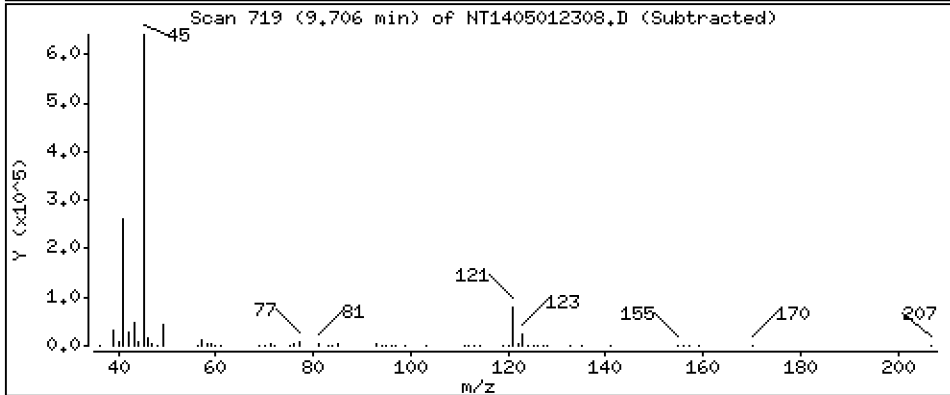
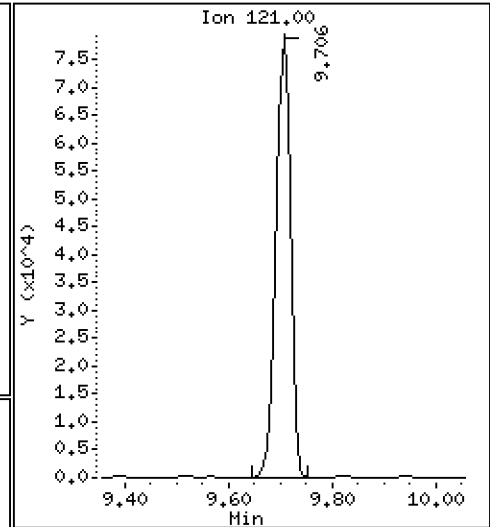
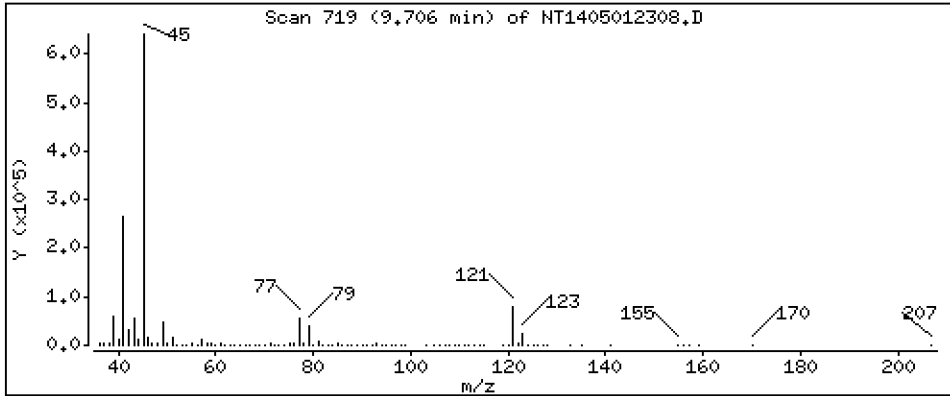
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 4,393 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

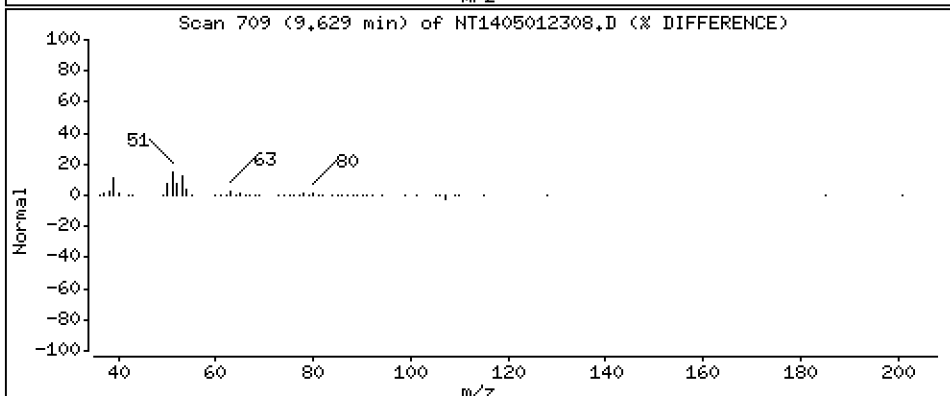
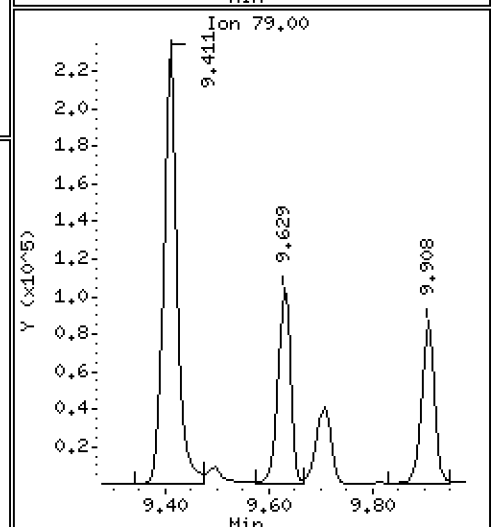
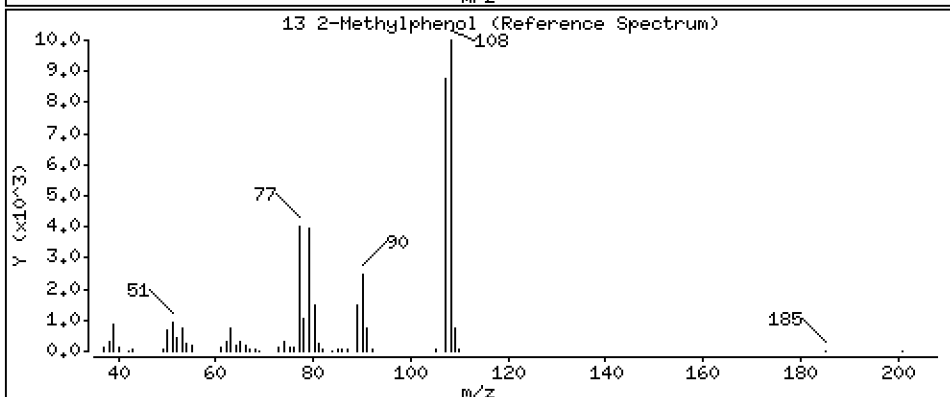
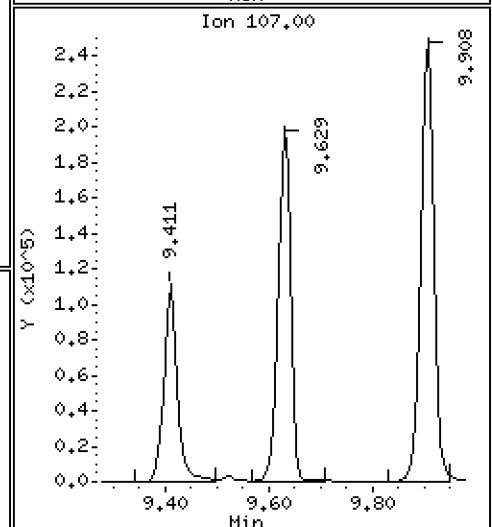
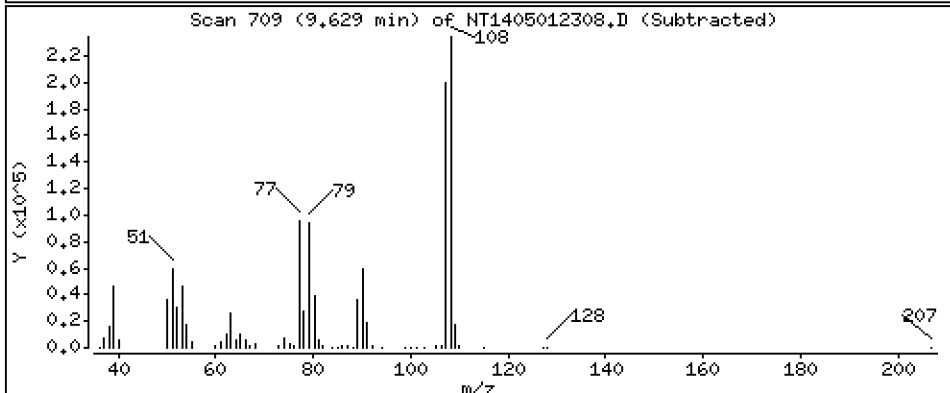
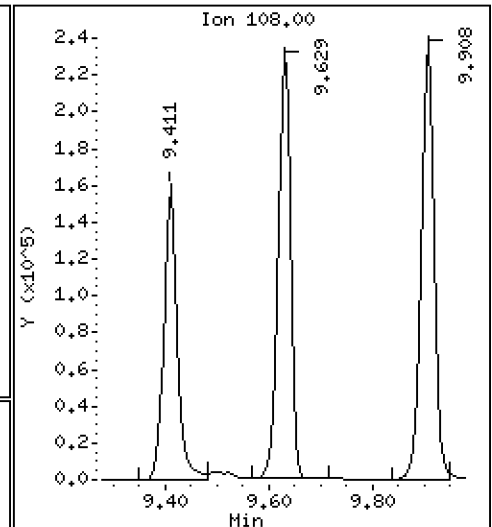
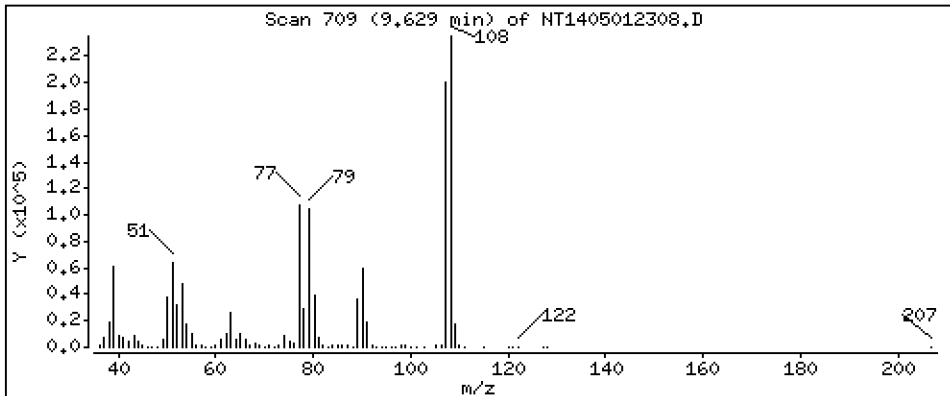
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 3,603 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

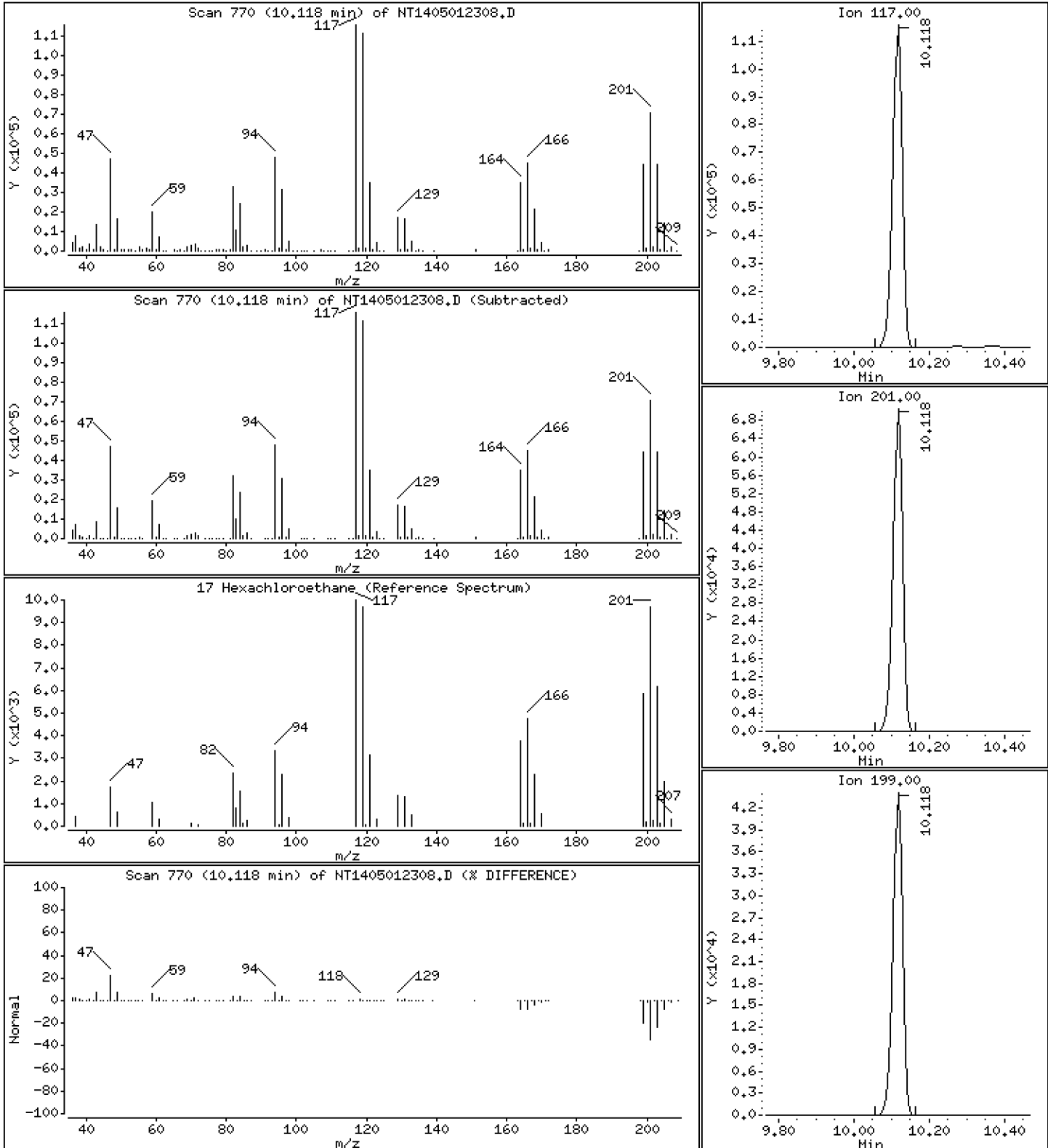
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 4,044 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

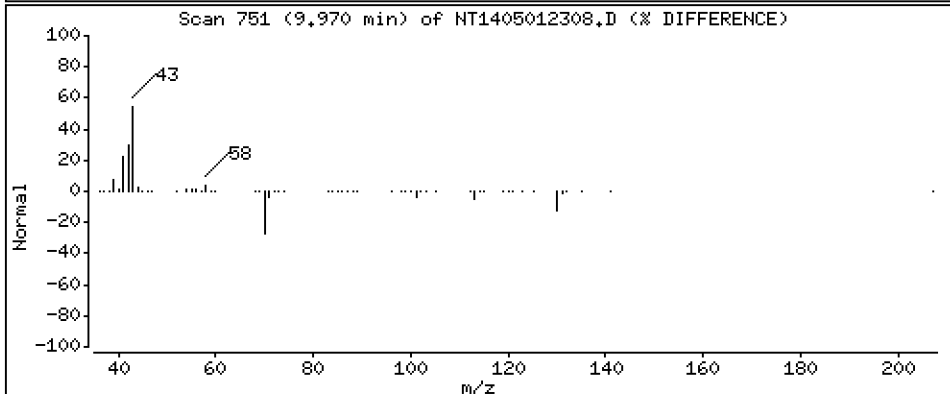
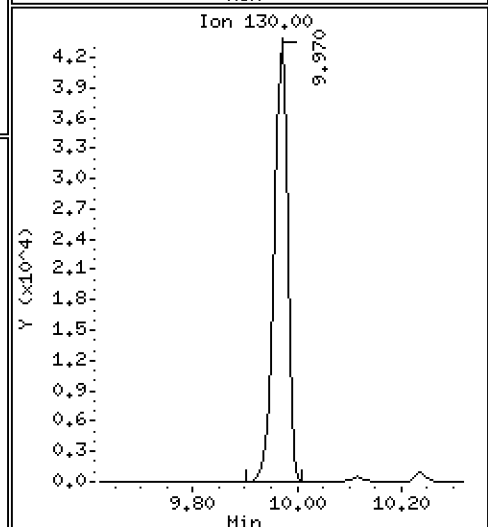
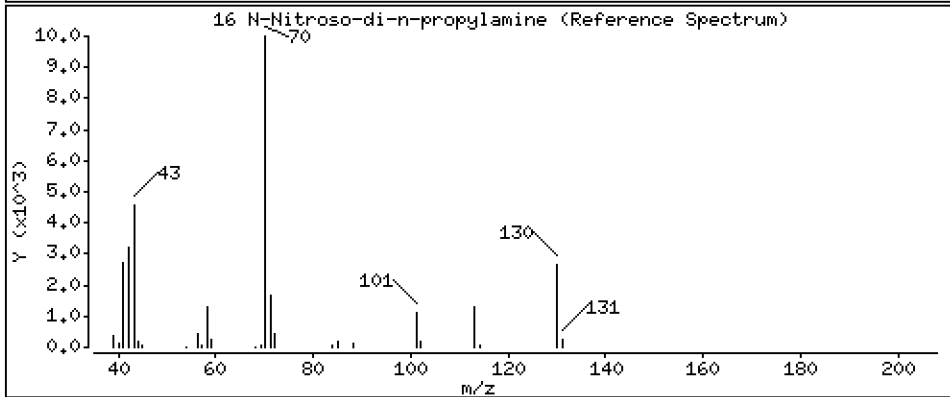
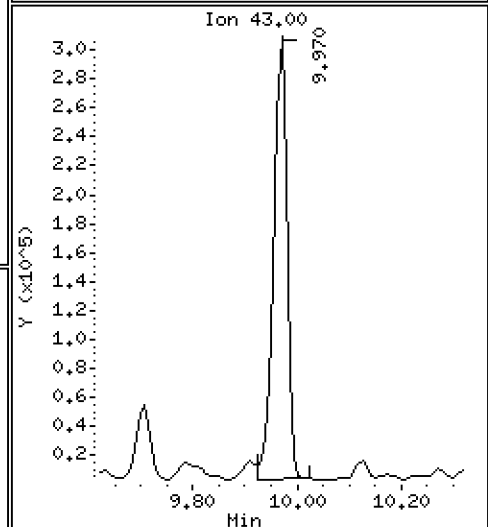
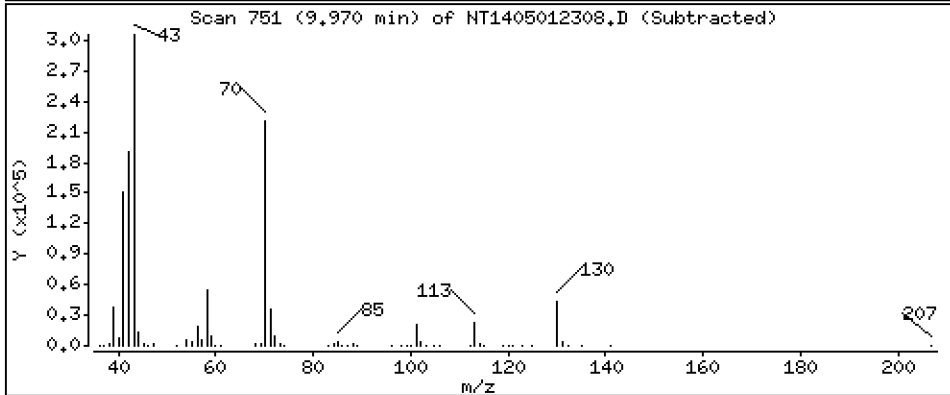
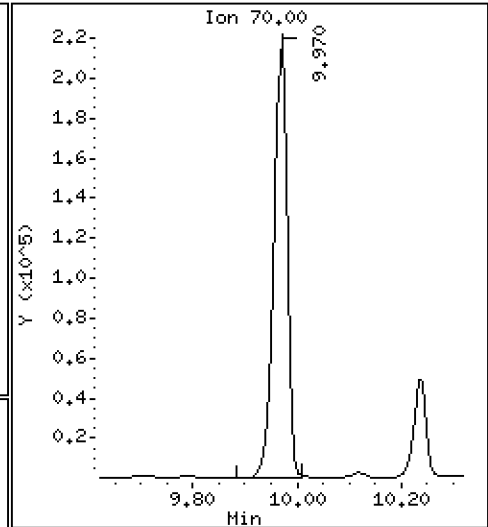
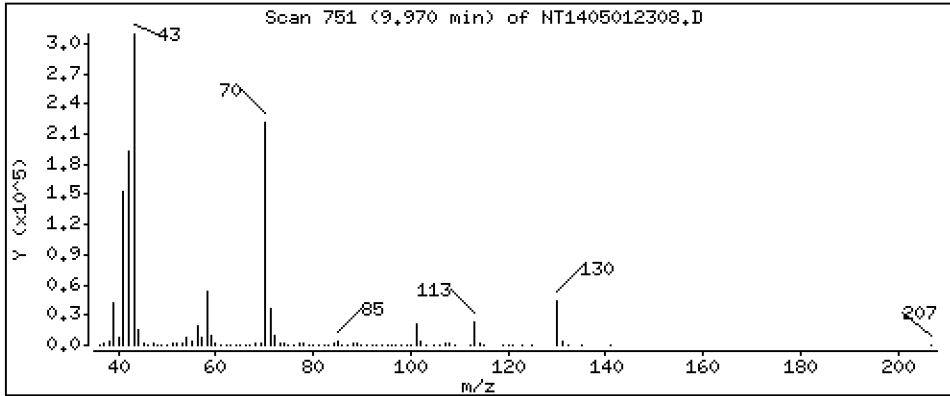
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 3,650 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

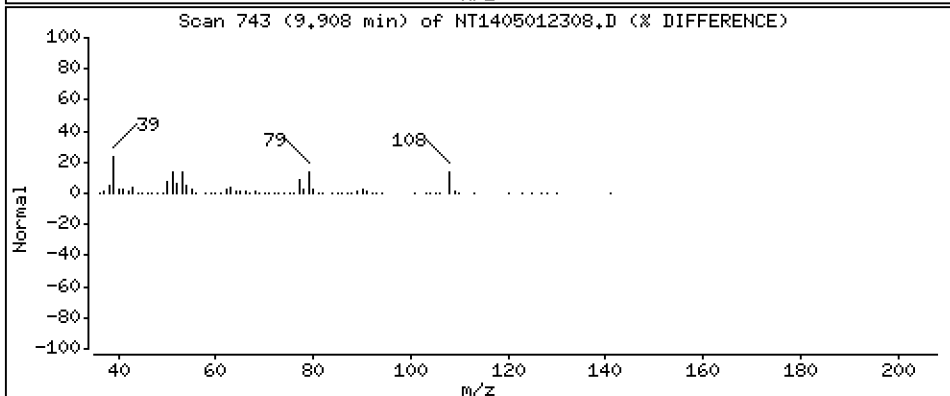
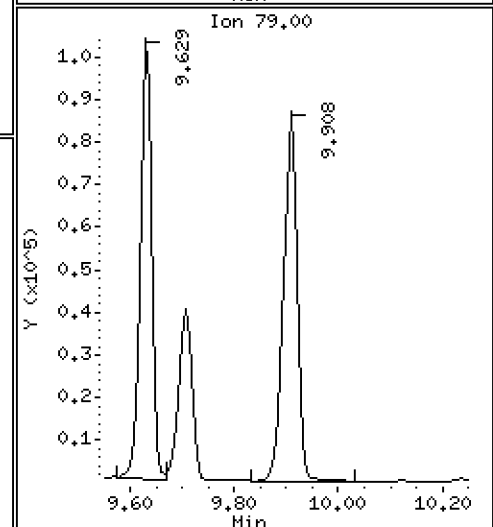
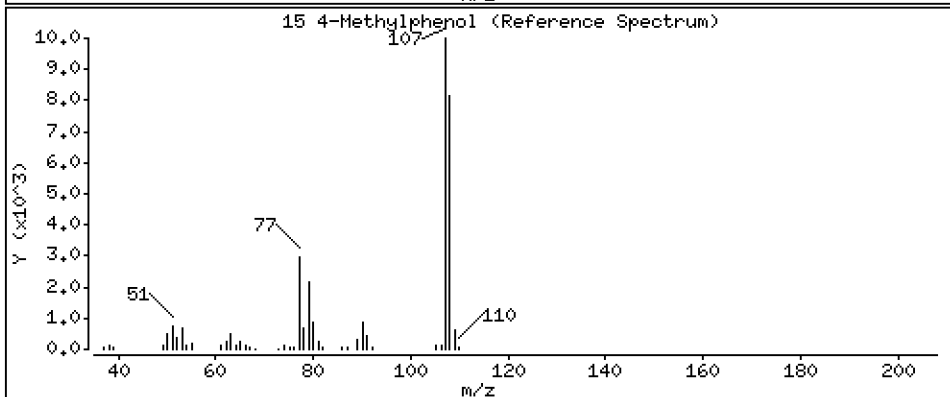
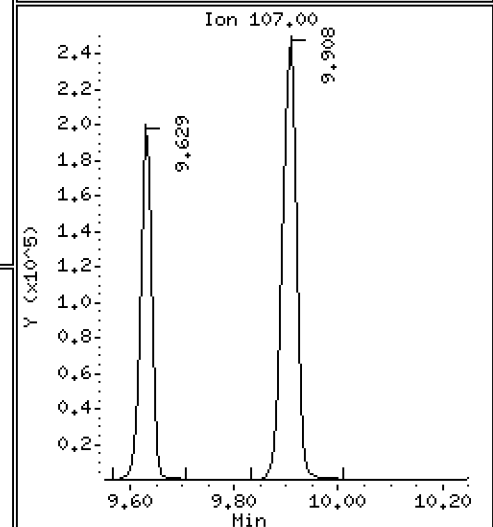
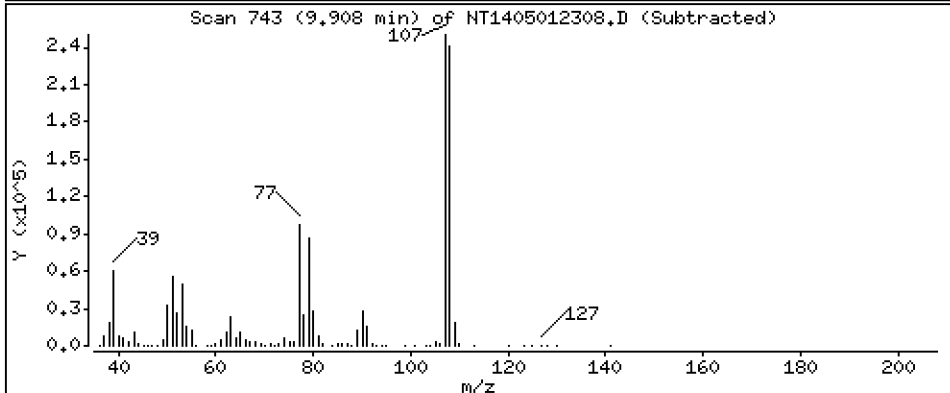
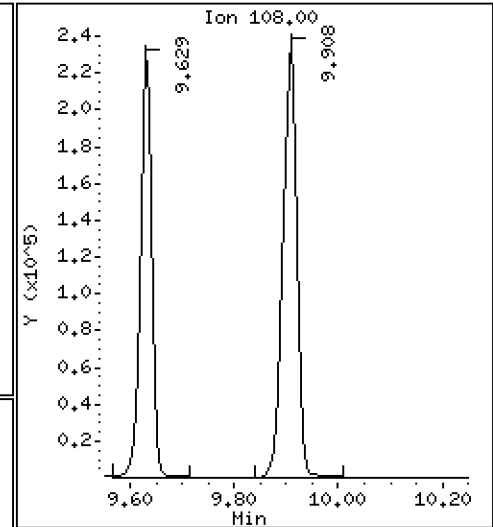
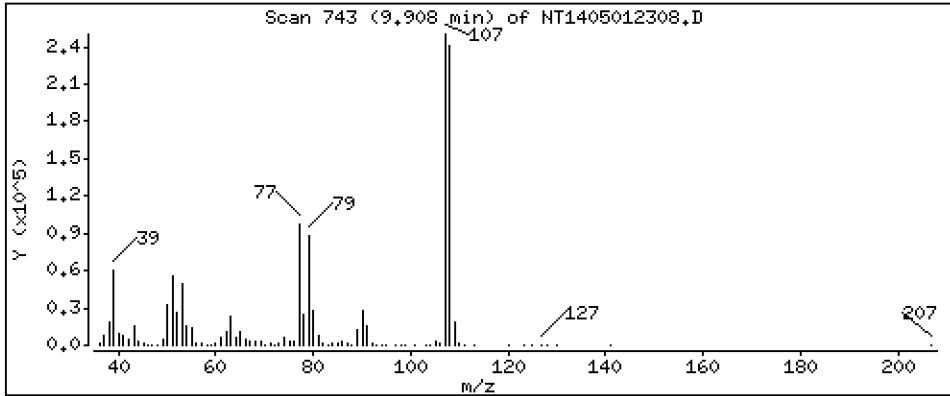
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 3,726 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

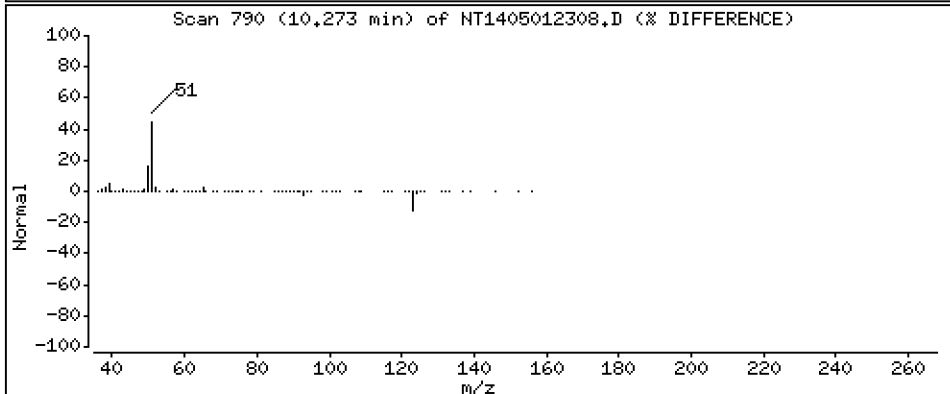
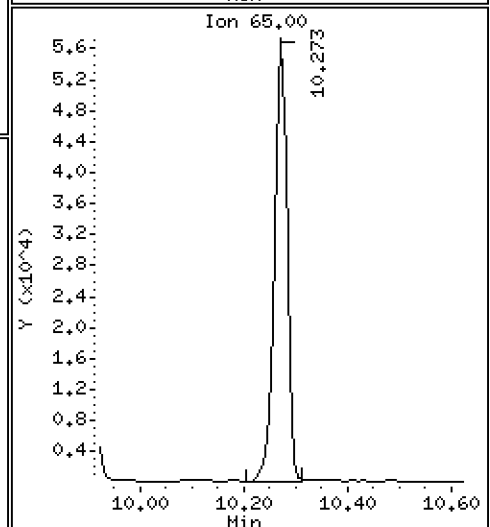
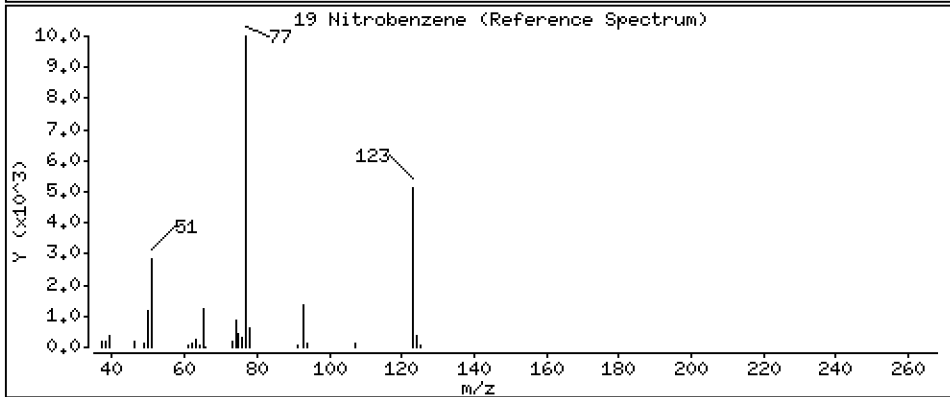
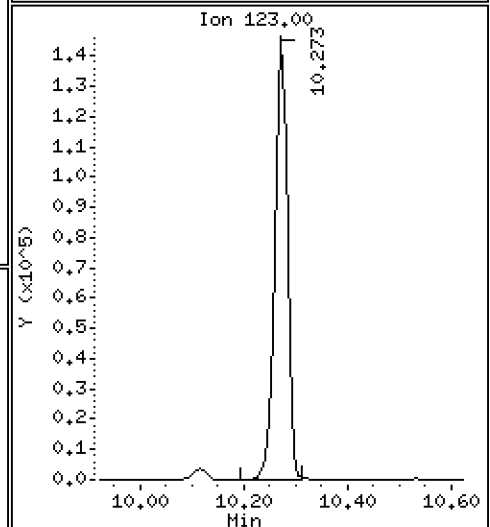
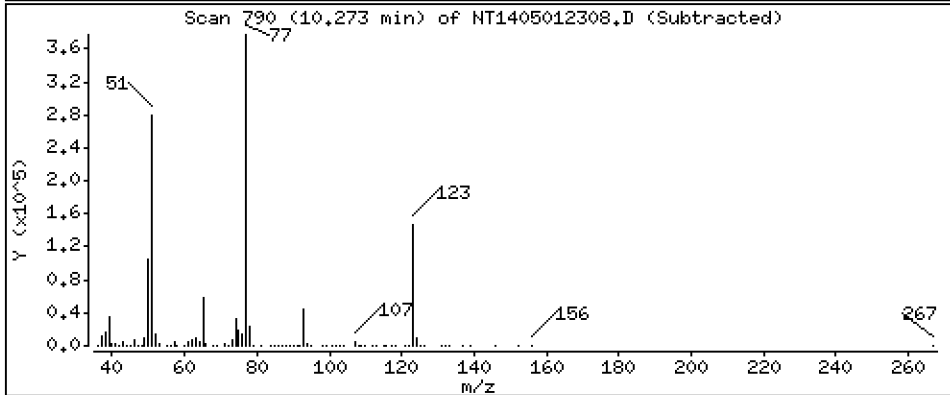
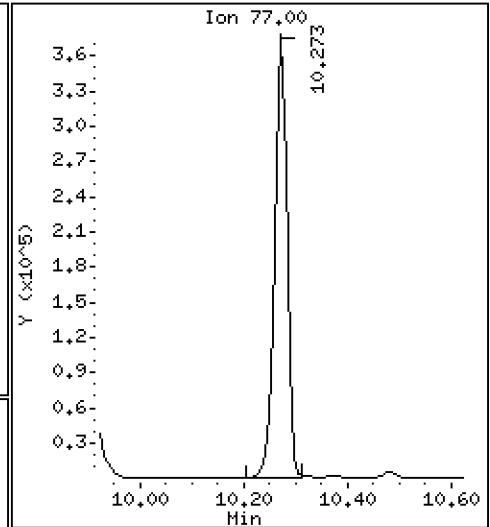
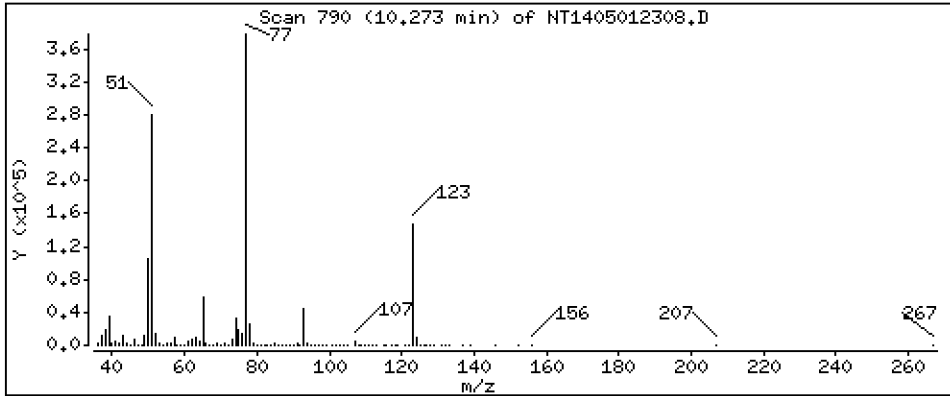
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 4,160 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

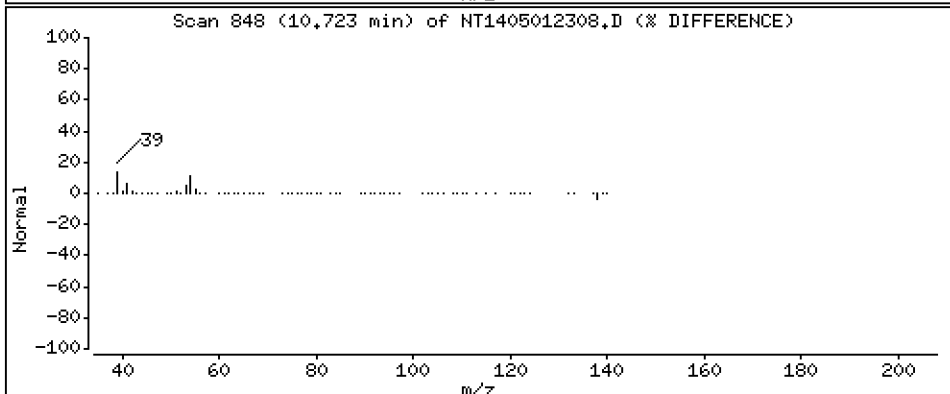
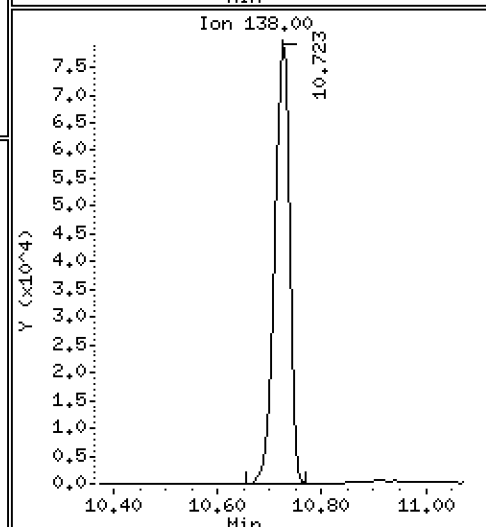
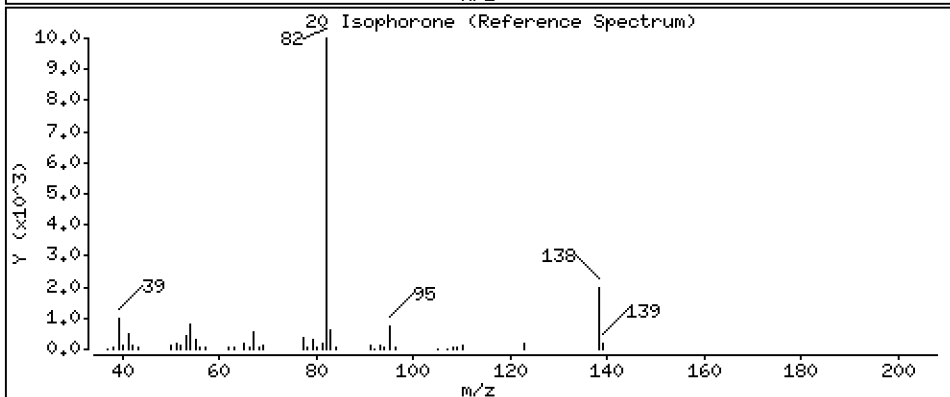
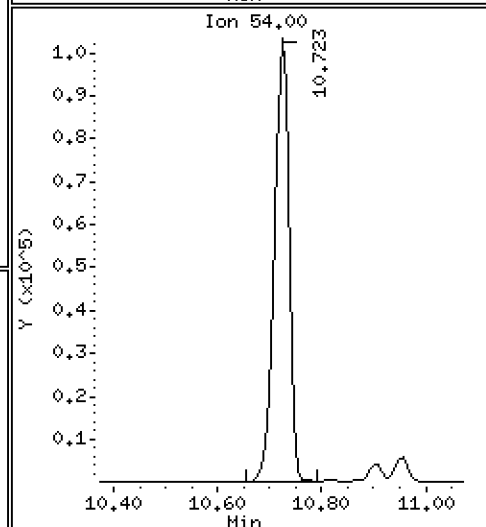
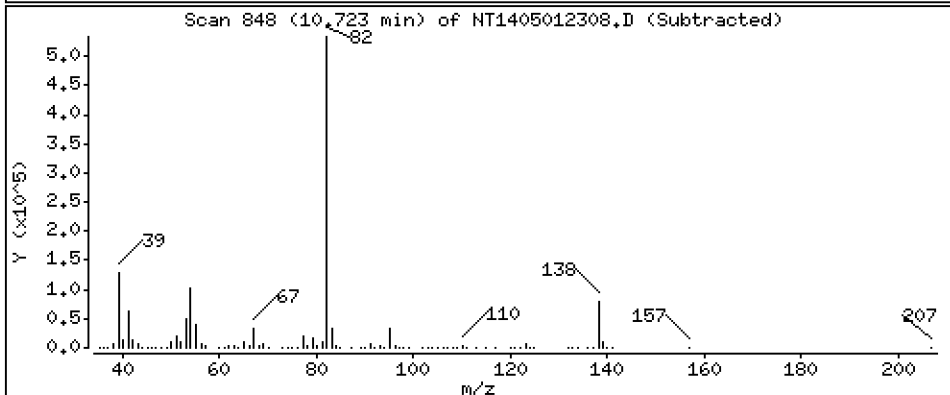
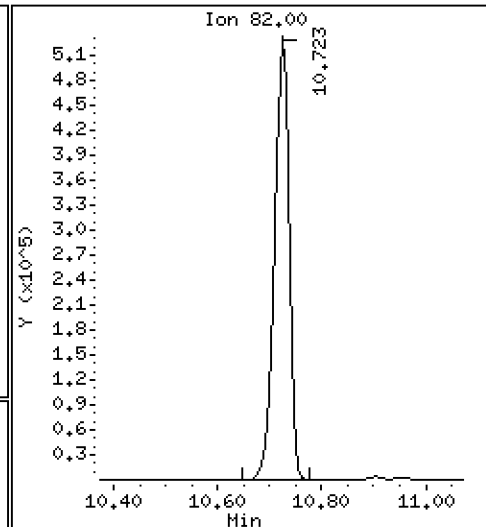
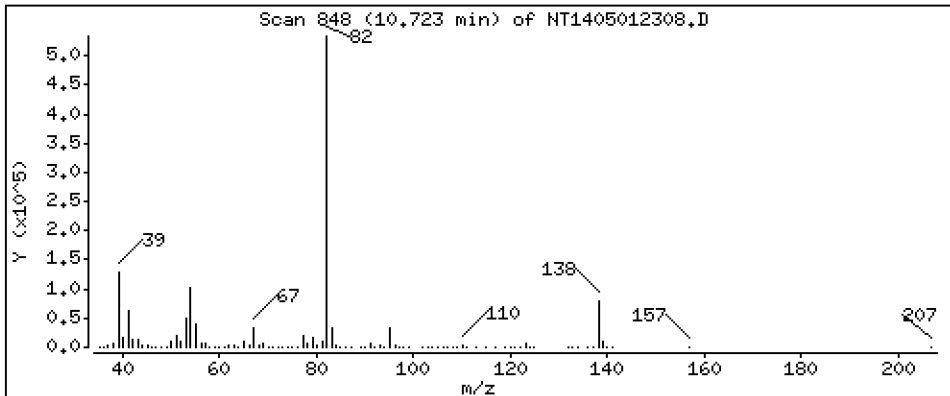
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 5,177 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

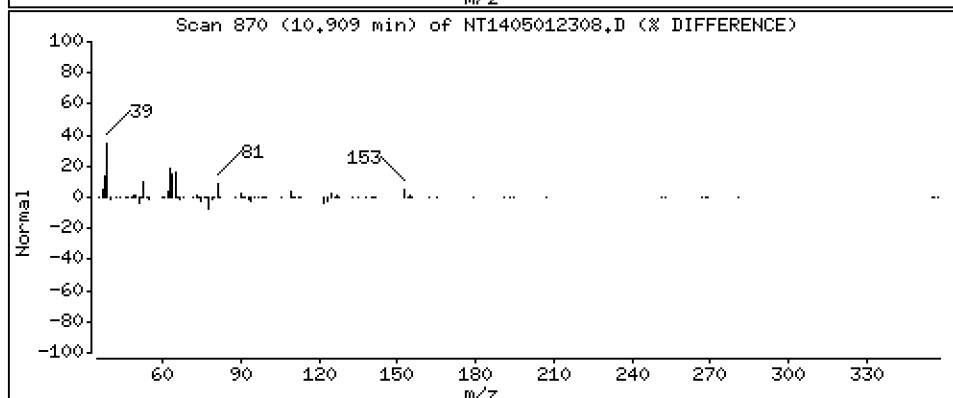
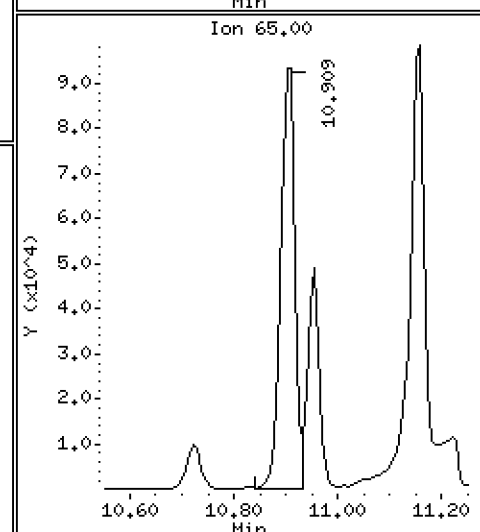
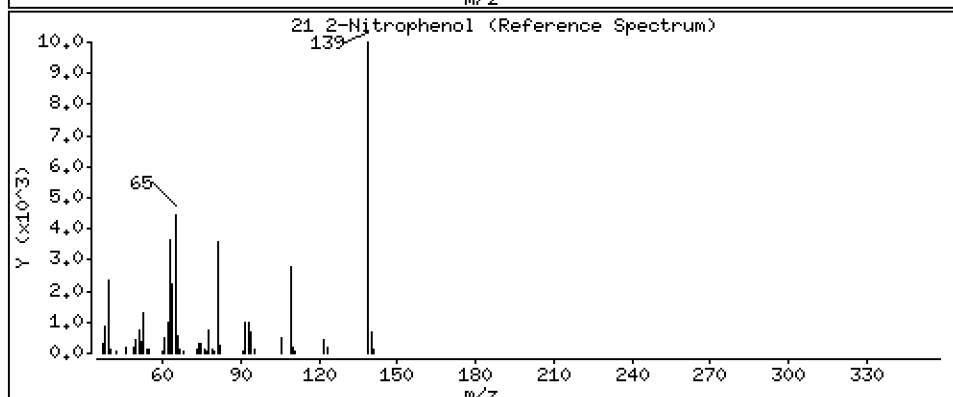
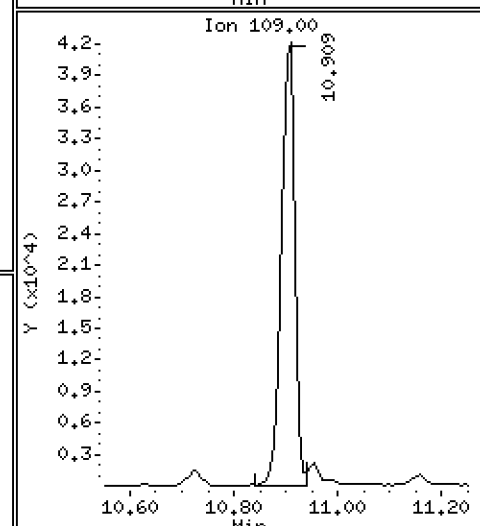
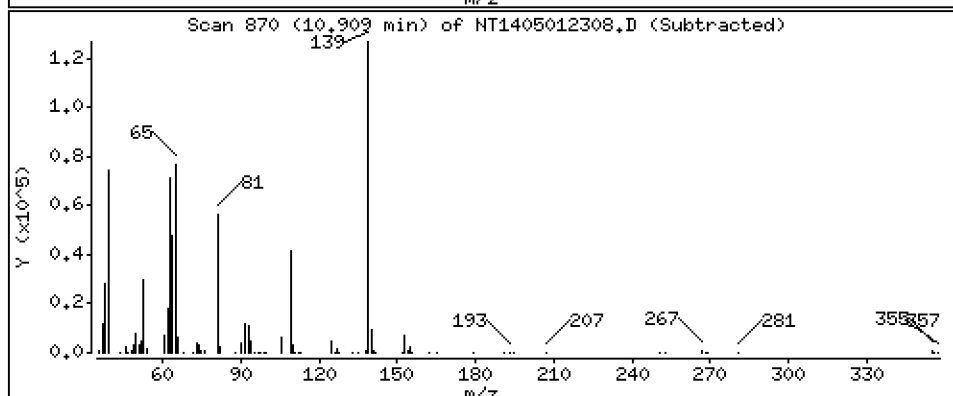
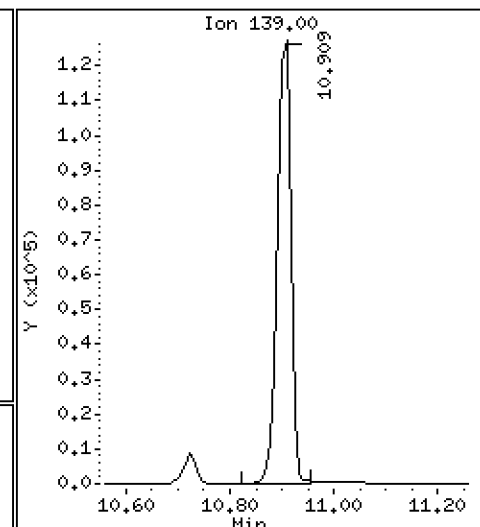
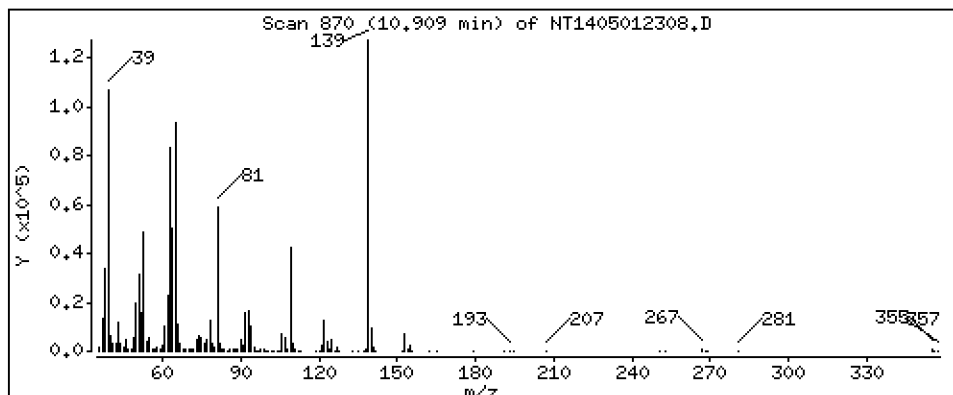
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 3,215 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

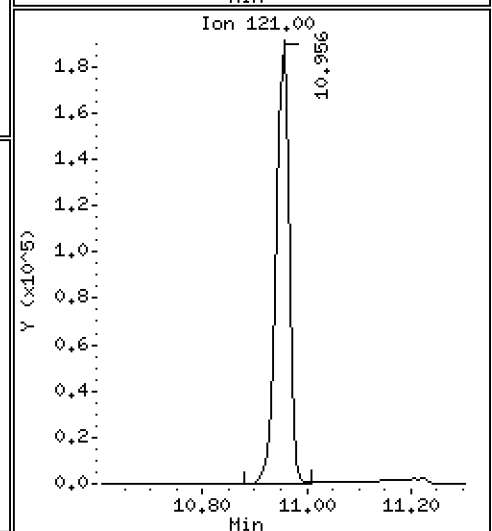
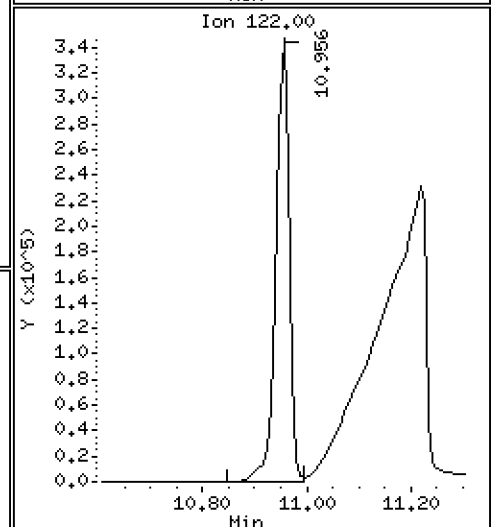
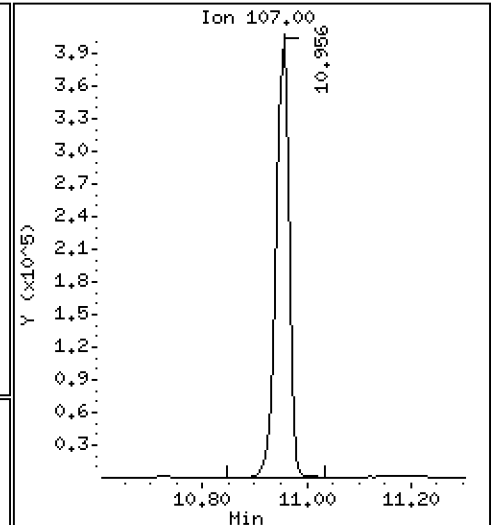
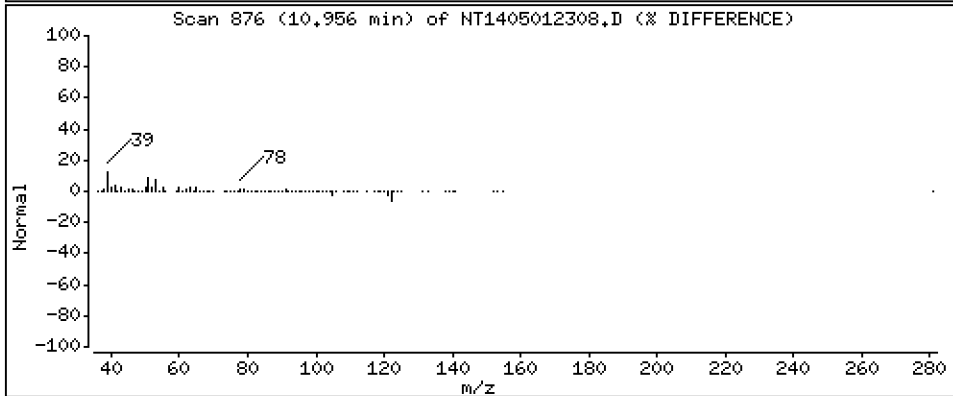
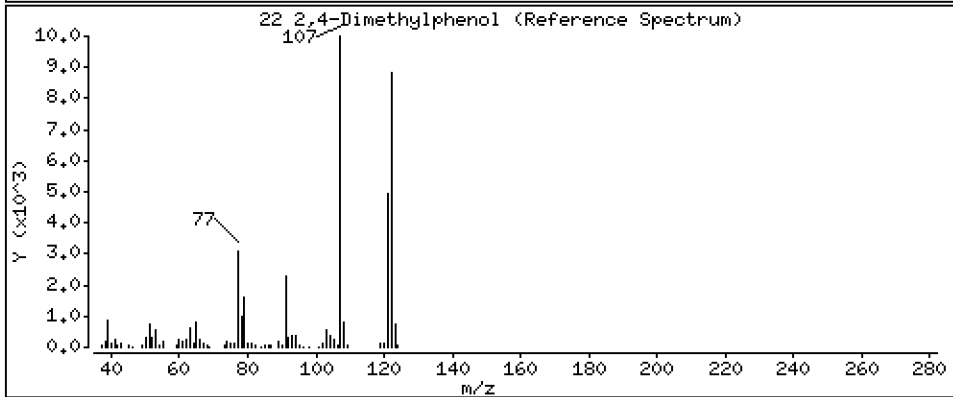
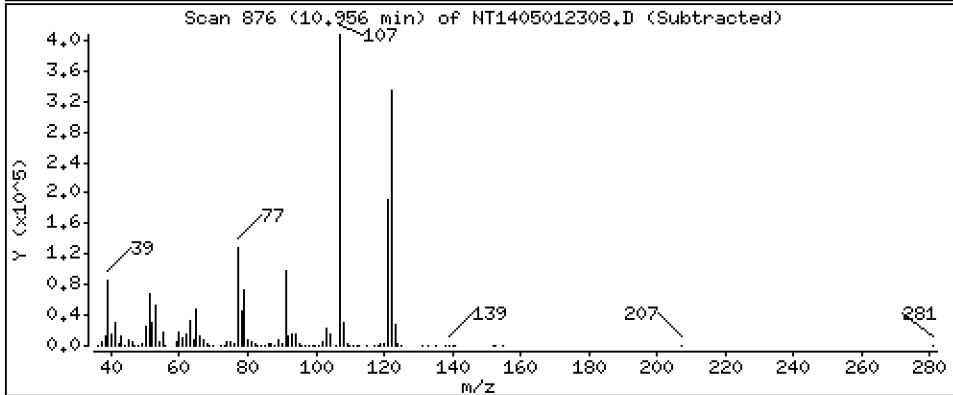
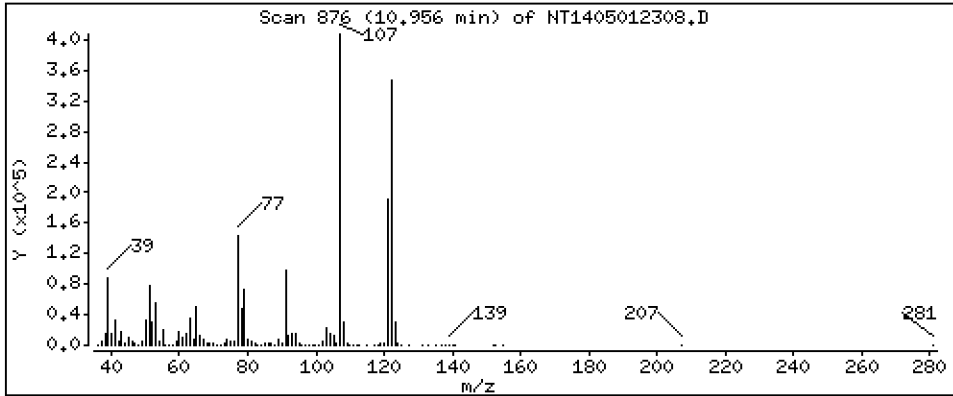
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 6,349 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

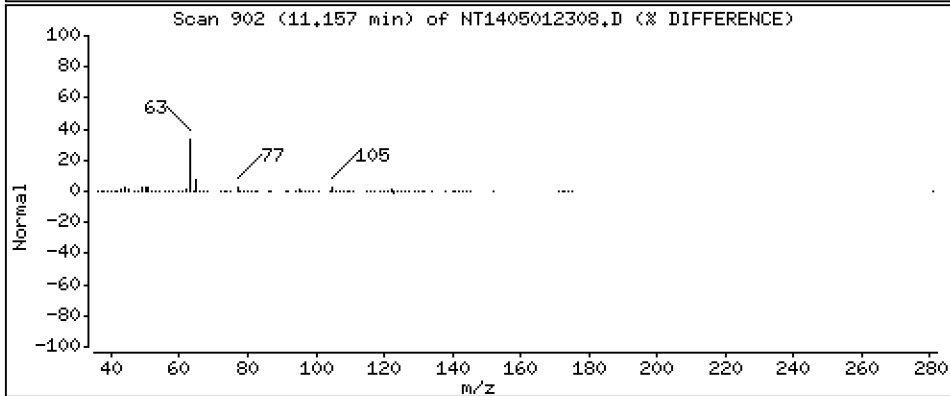
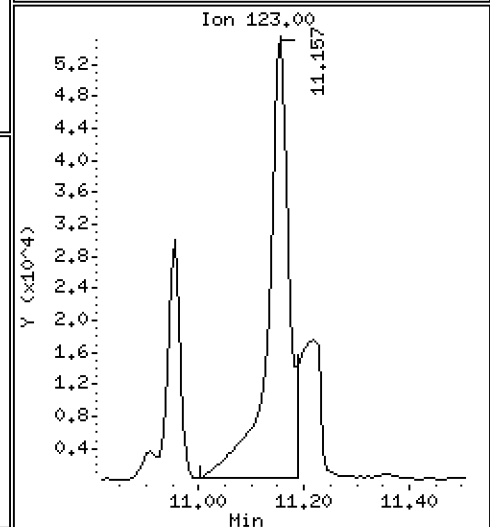
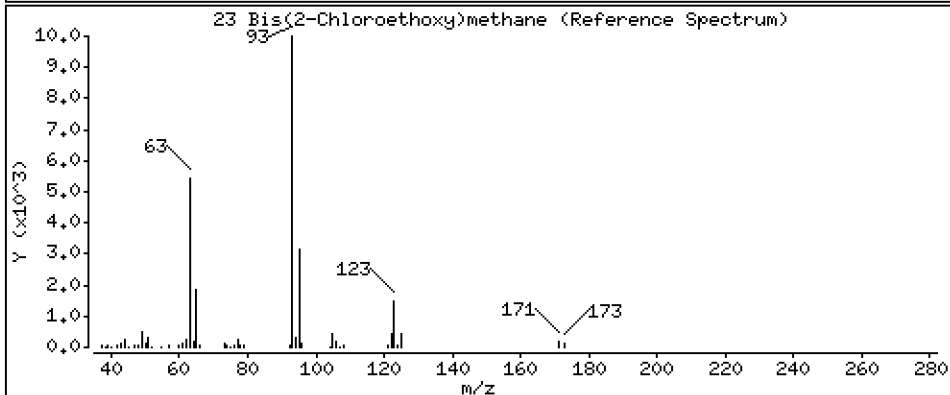
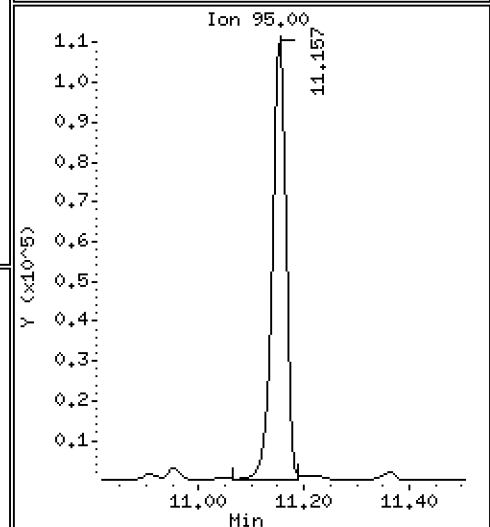
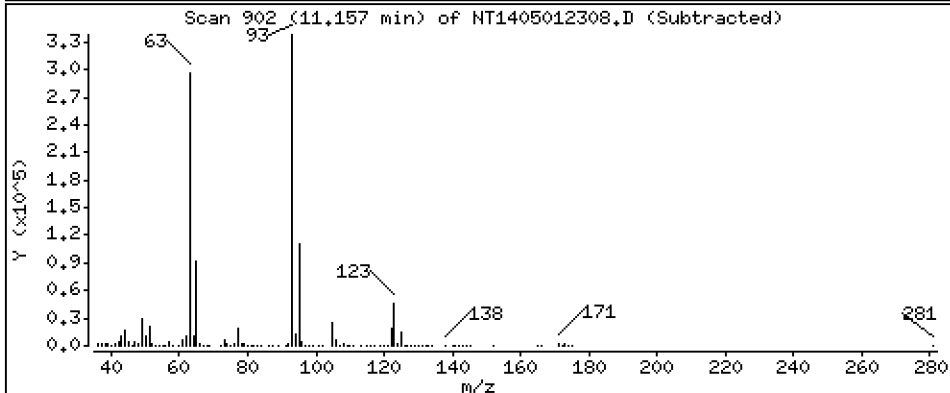
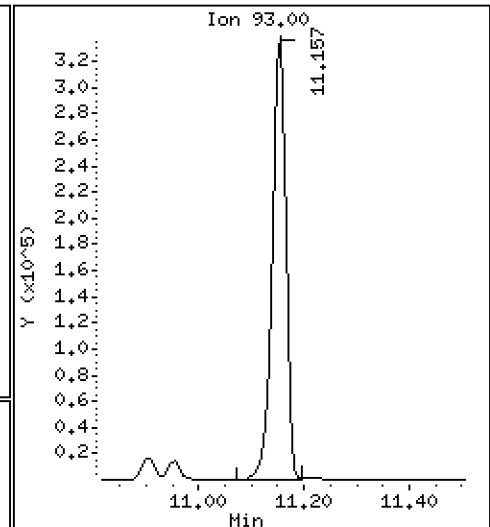
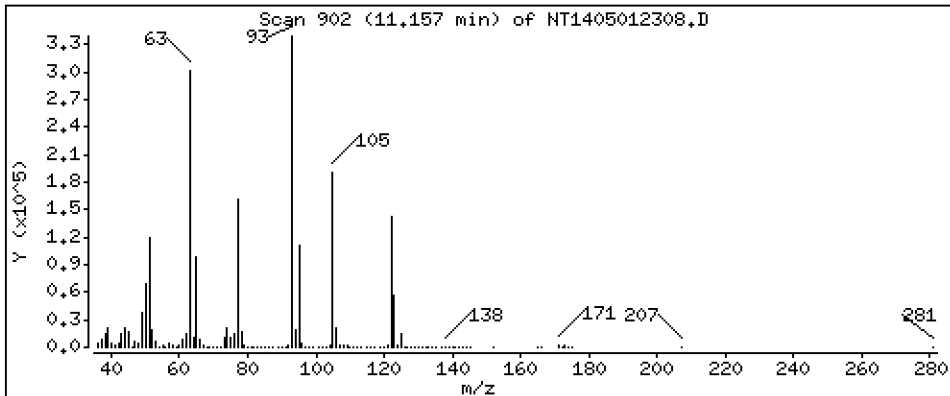
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

23 Bis(2-Chloroethoxy)methane

Concentration: 4.773 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

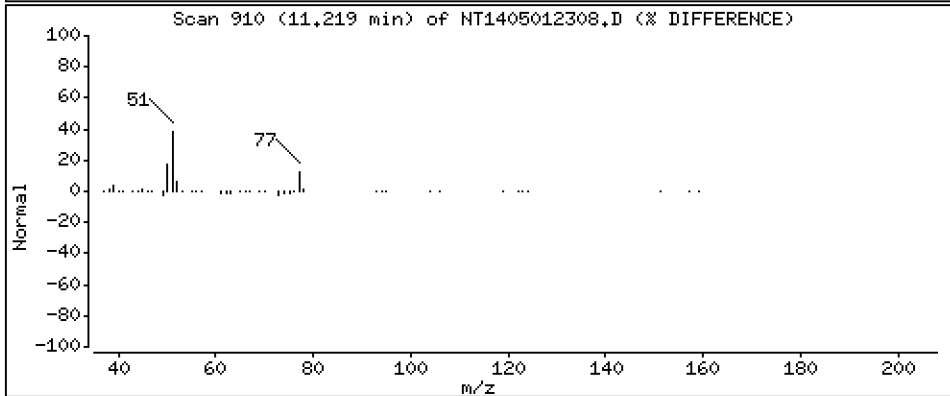
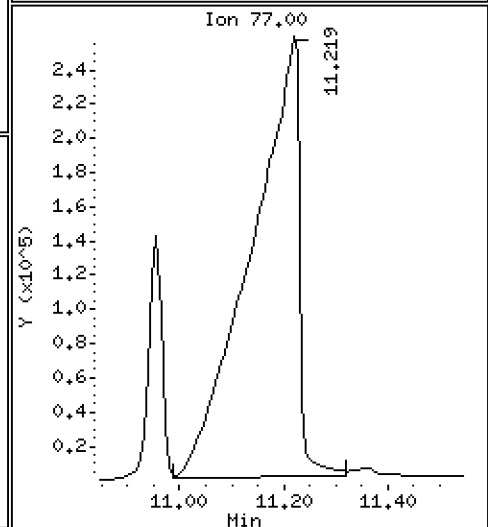
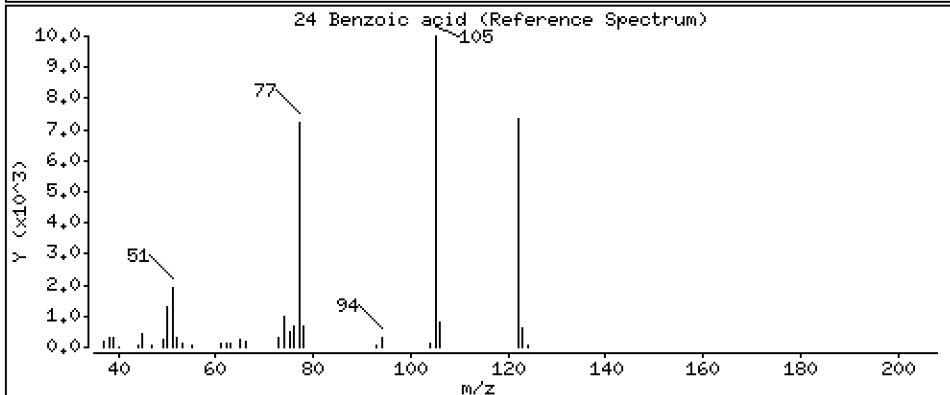
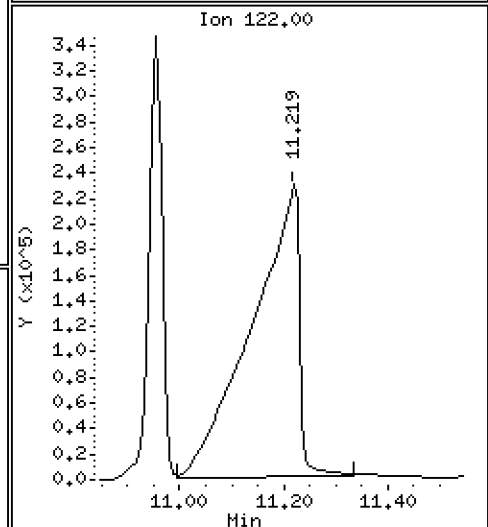
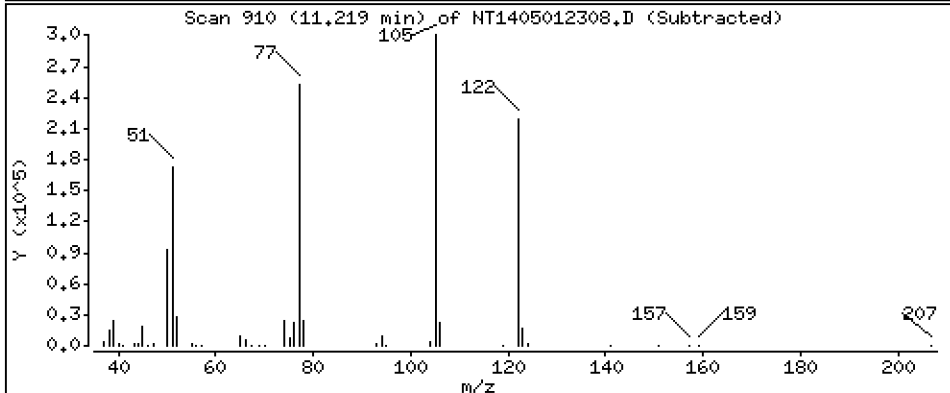
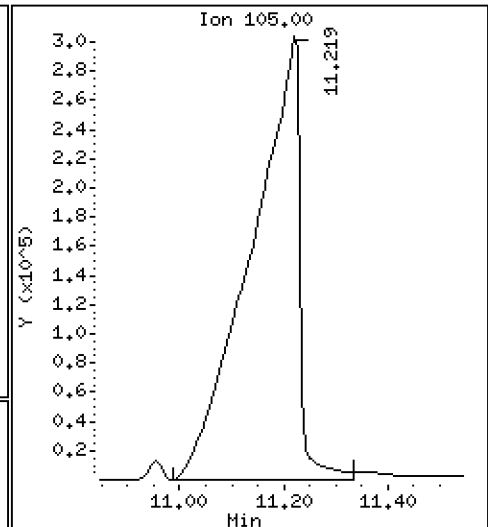
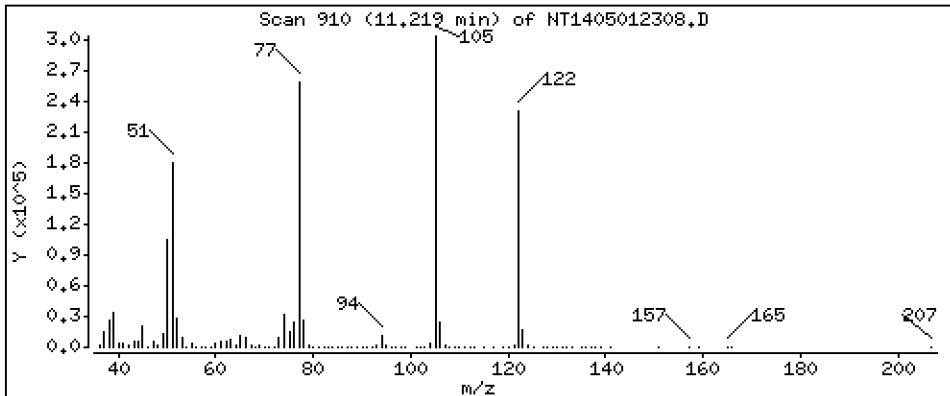
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

24 Benzoic acid

Concentration: 22.44 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

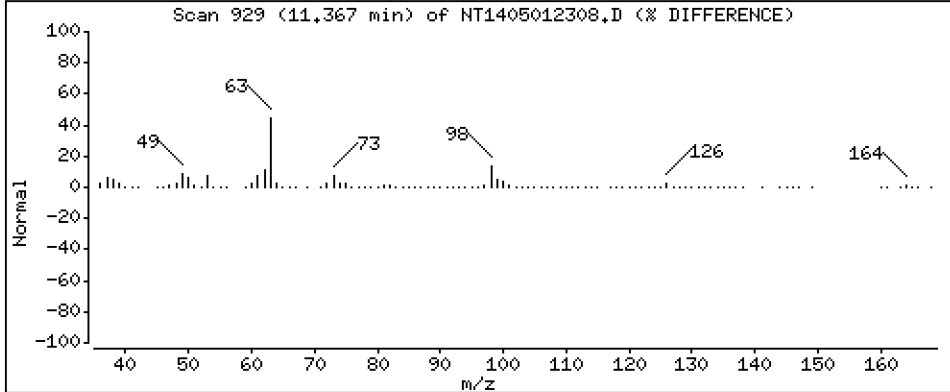
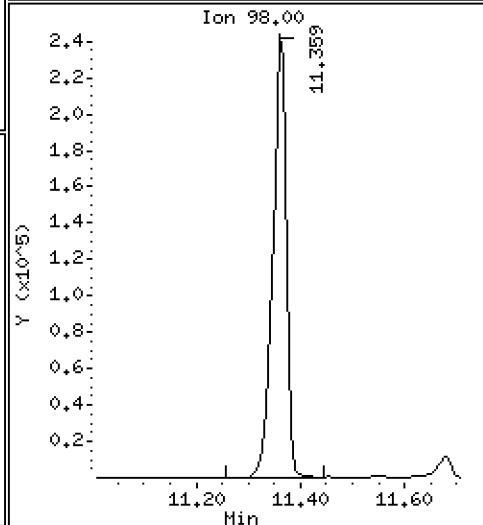
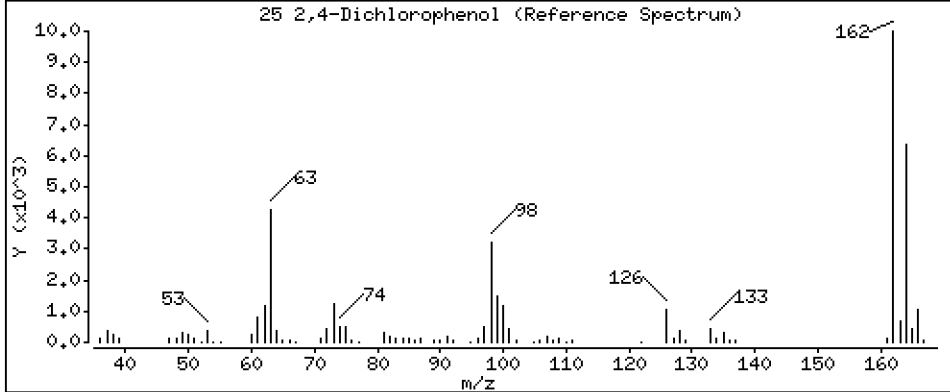
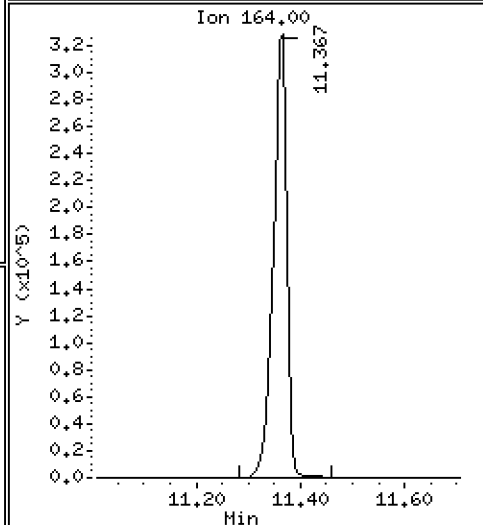
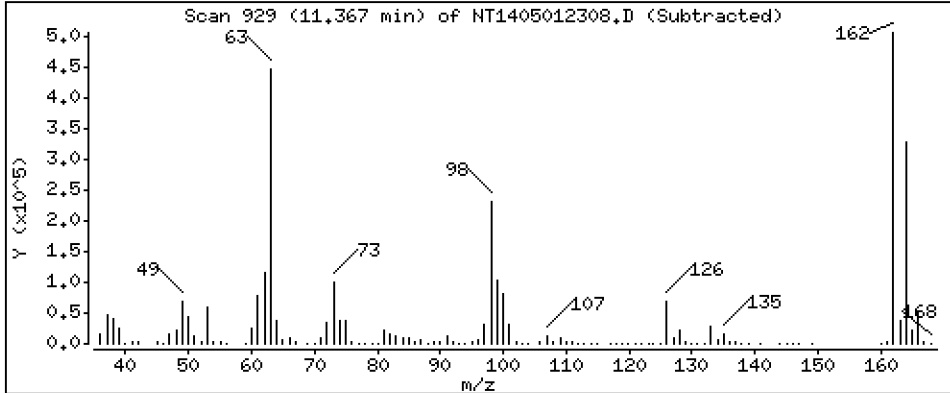
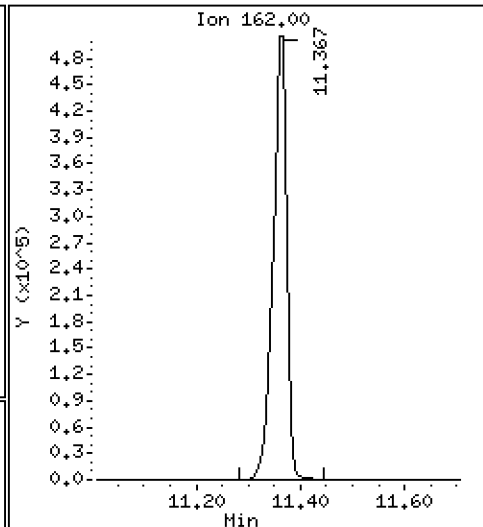
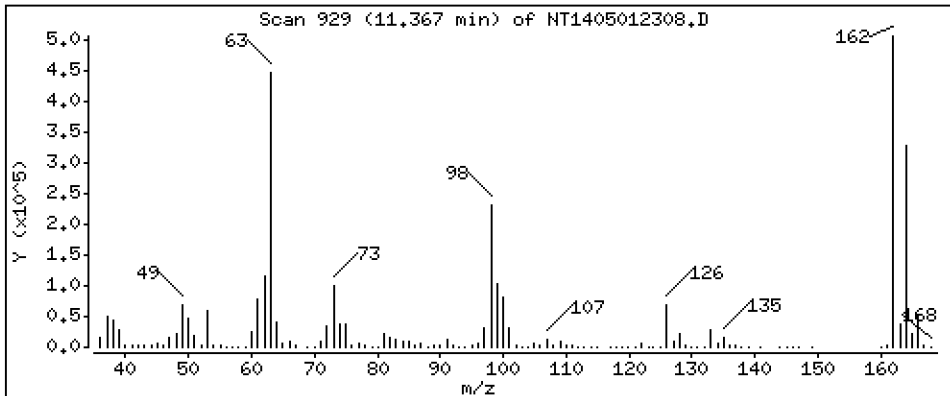
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 12,43 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

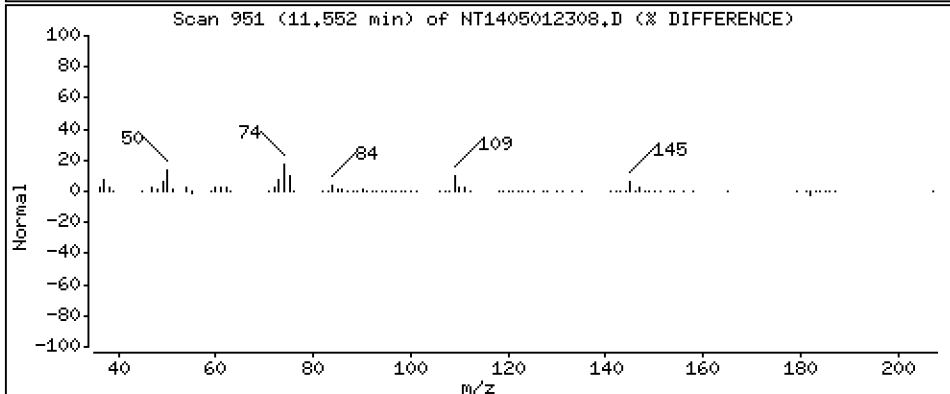
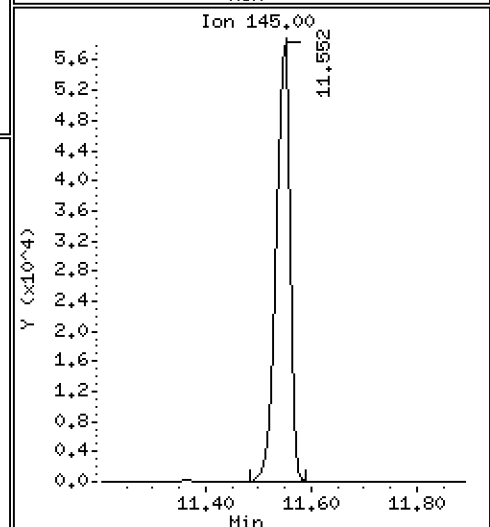
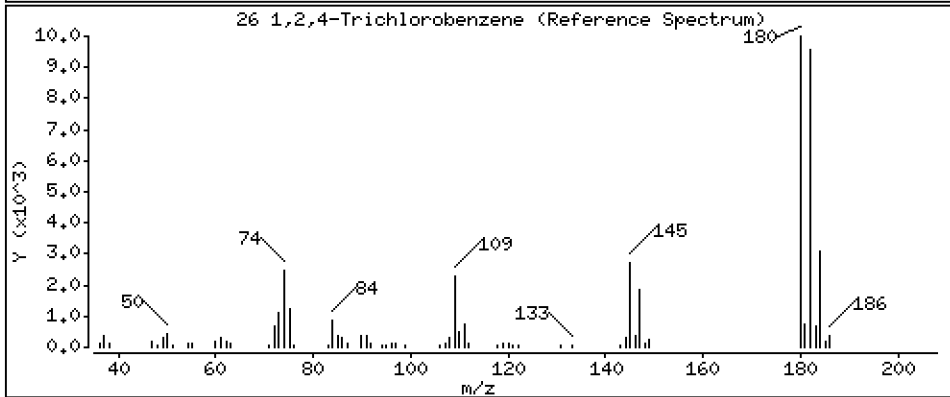
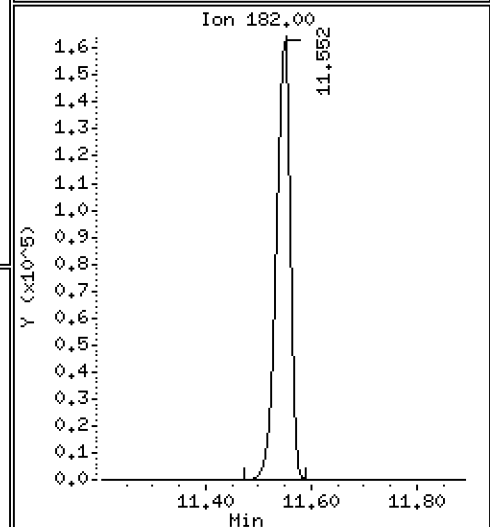
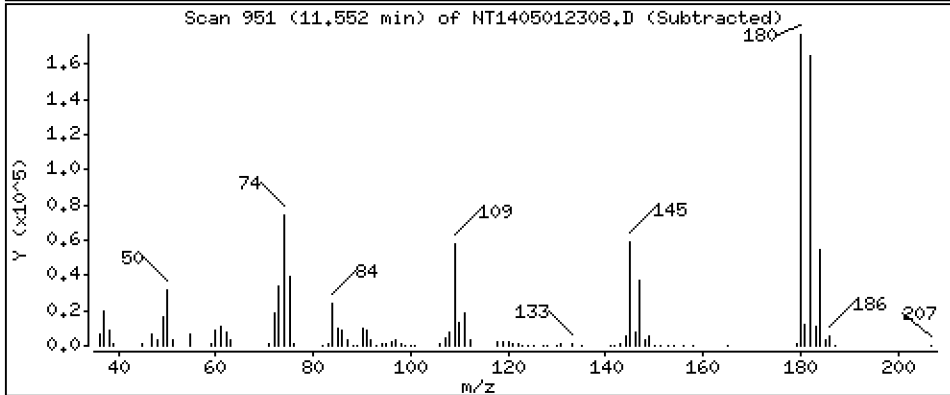
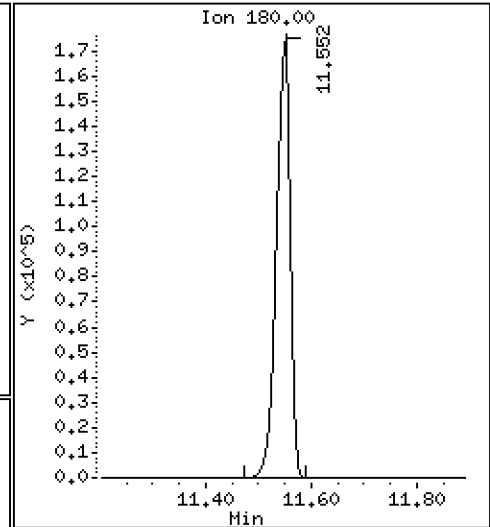
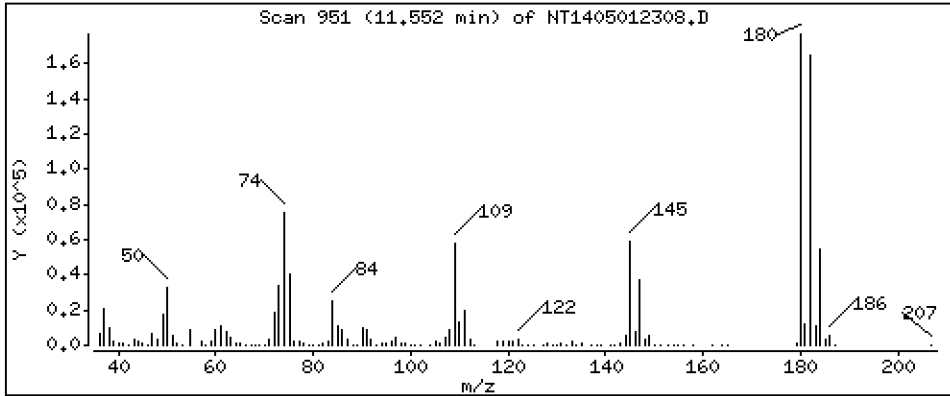
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 3,919 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

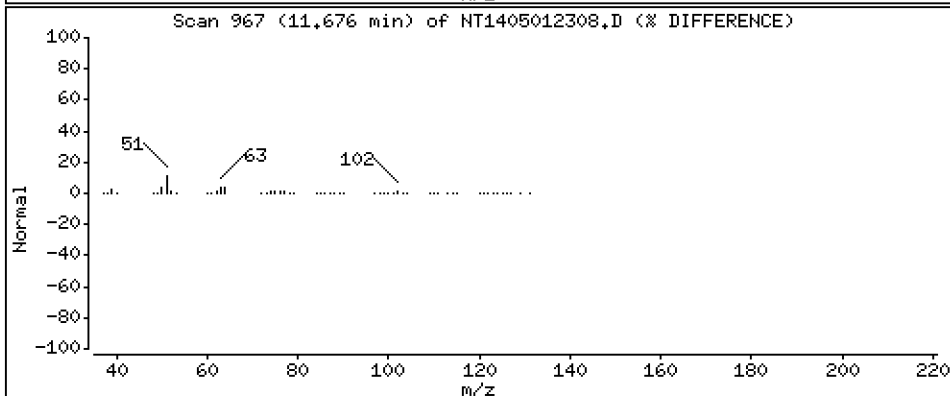
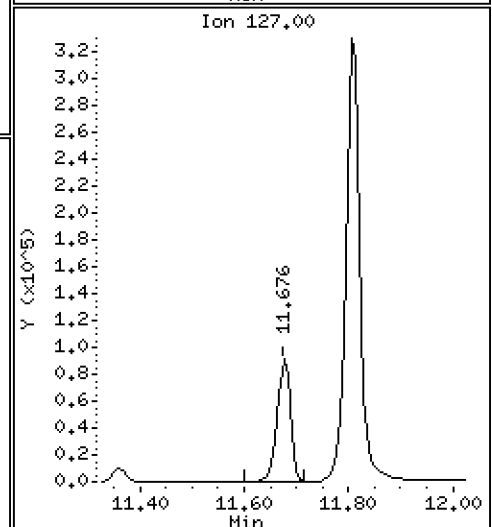
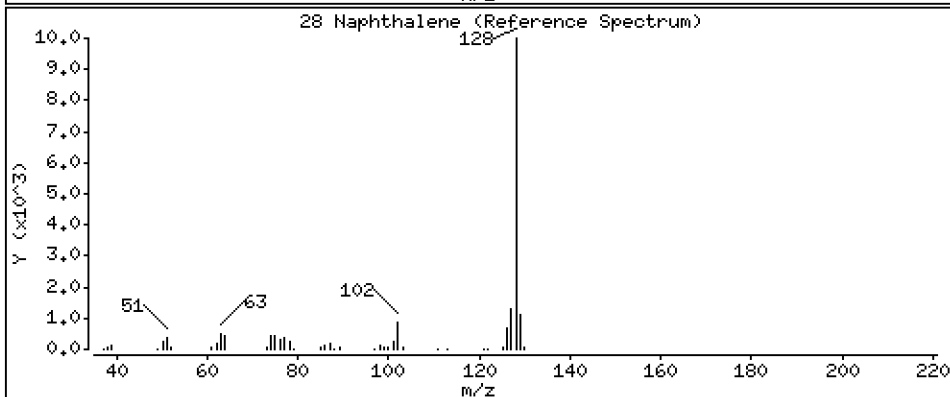
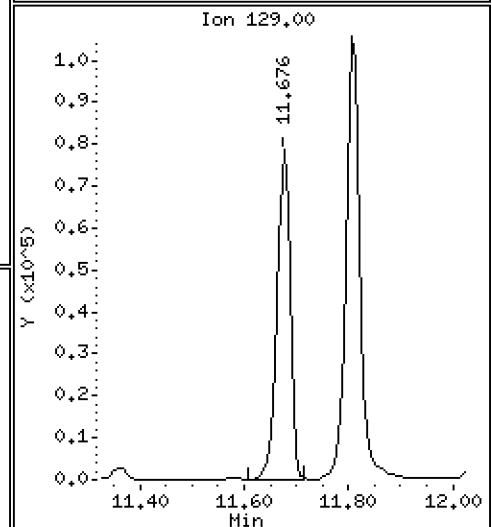
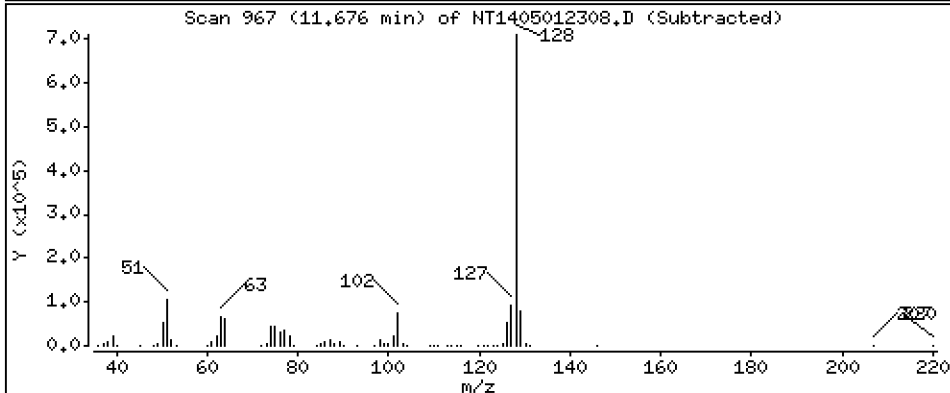
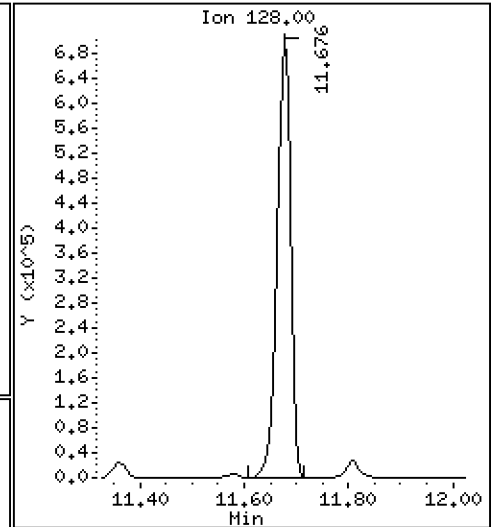
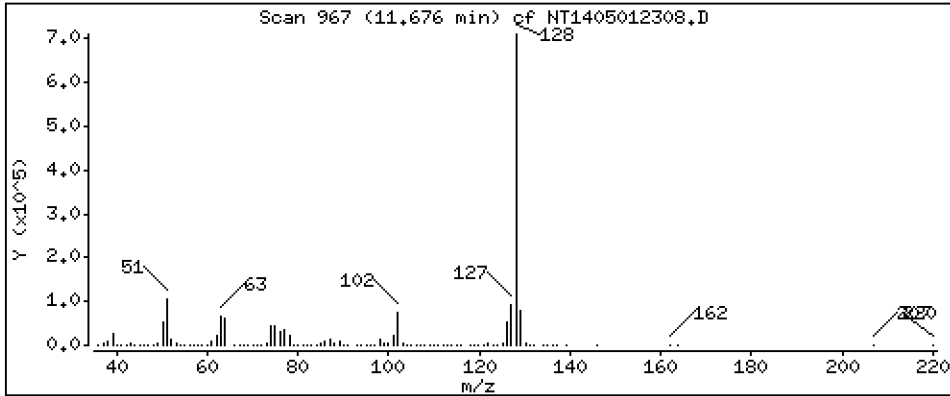
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

28 Naphthalene

Concentration: 4.190 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

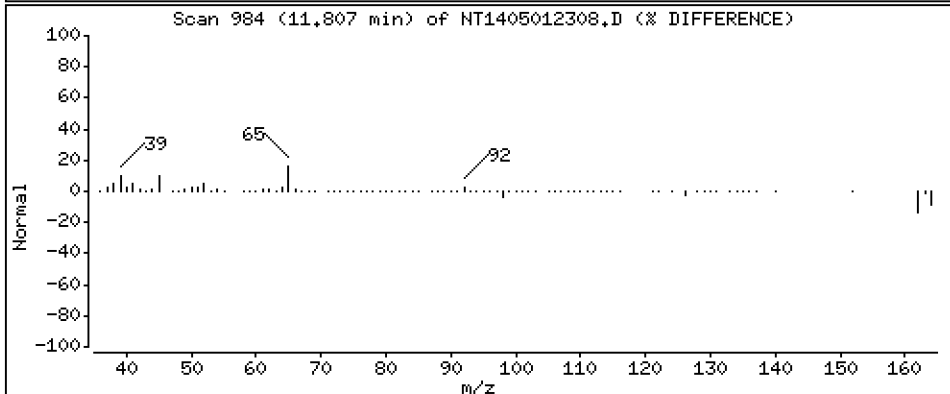
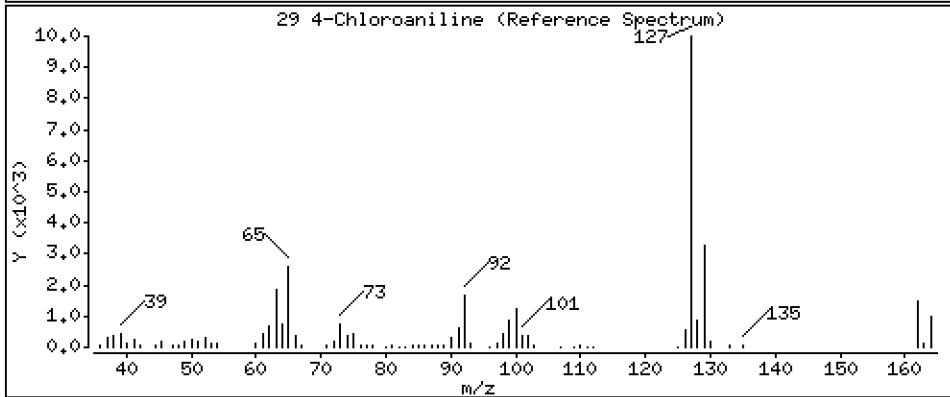
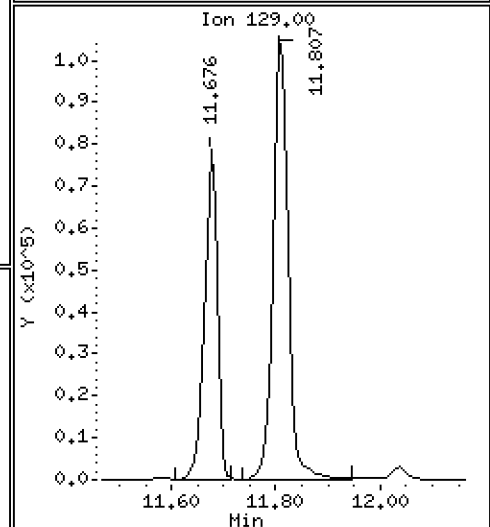
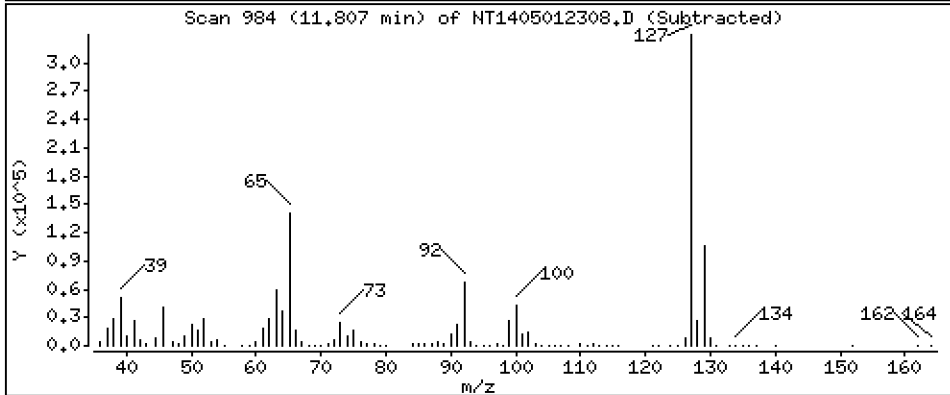
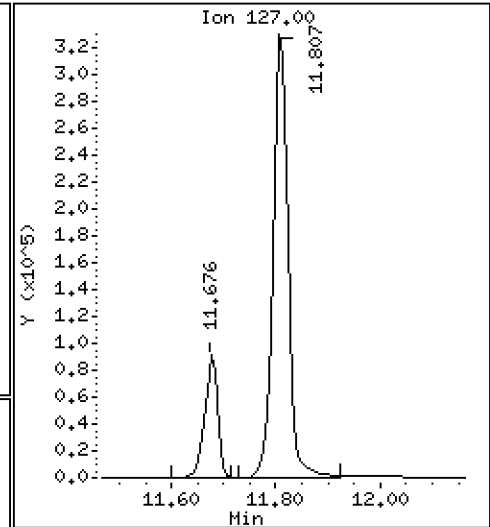
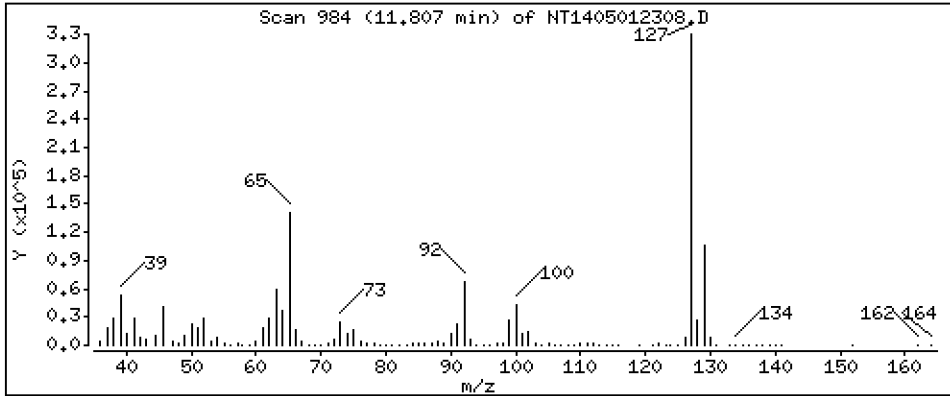
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

29 4-Chloroaniline

Concentration: 5.571 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

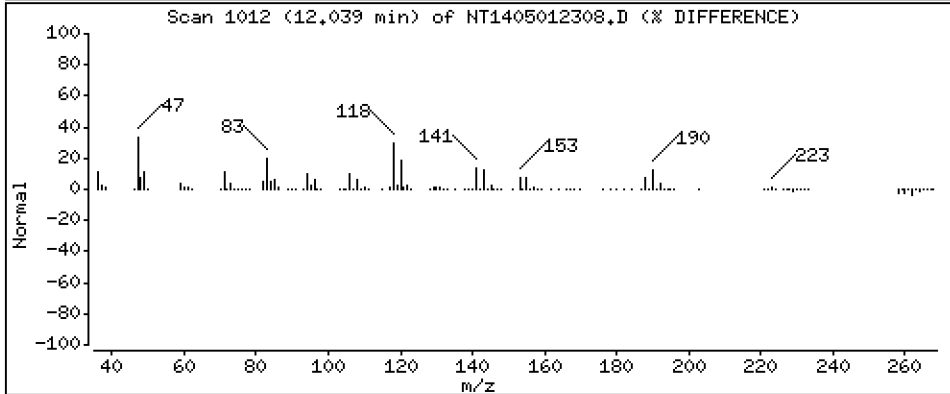
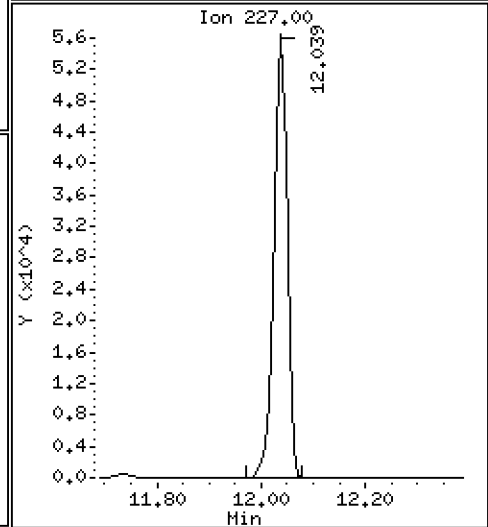
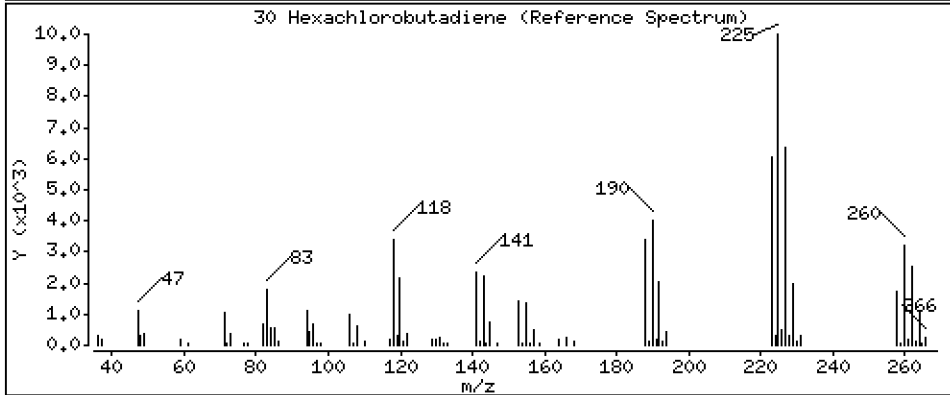
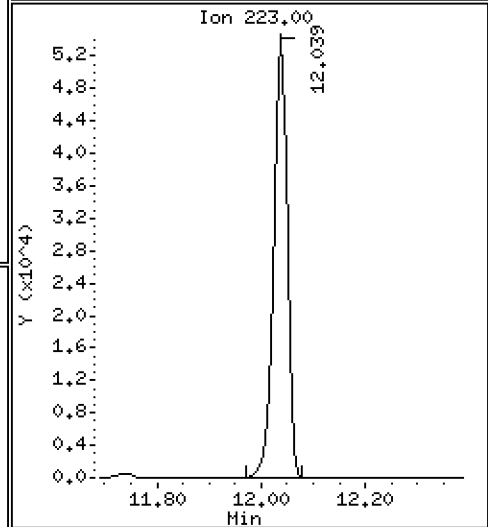
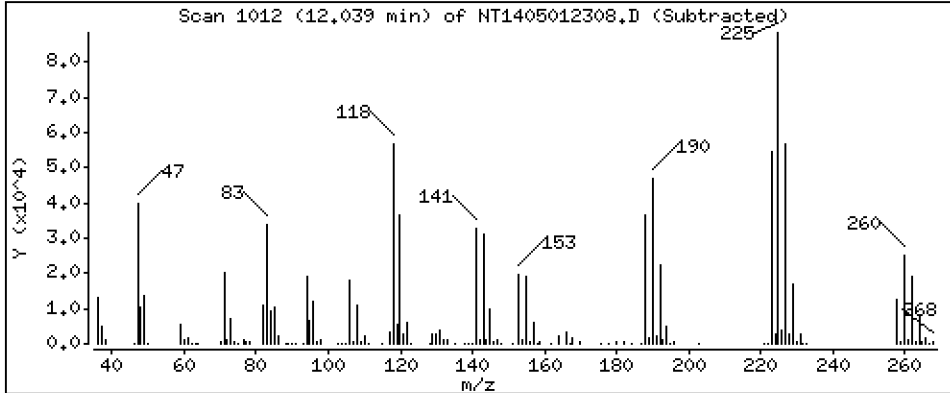
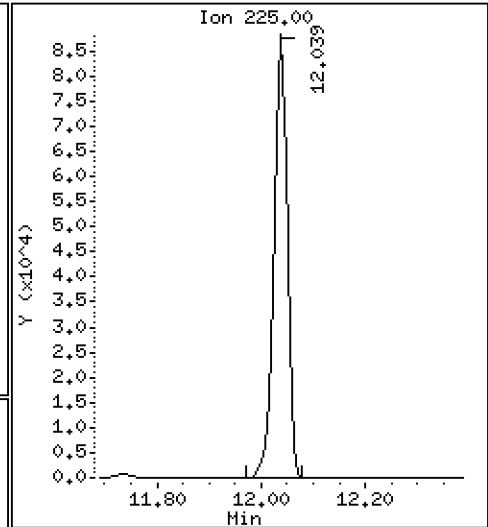
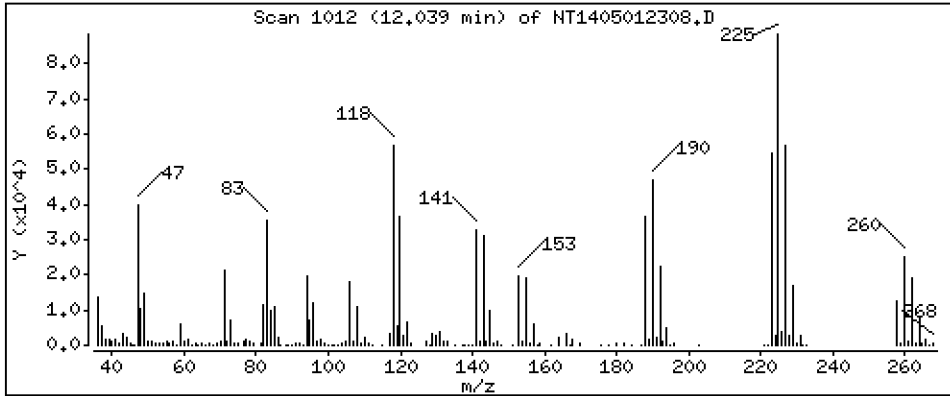
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,112 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

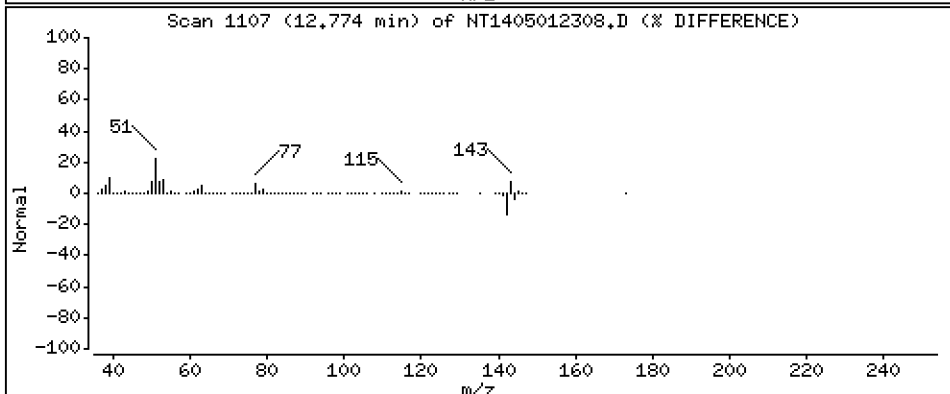
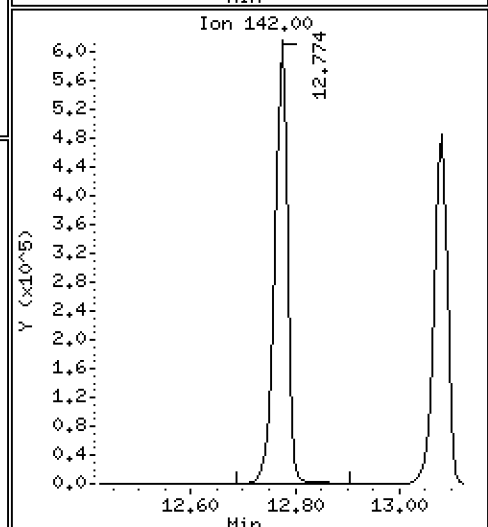
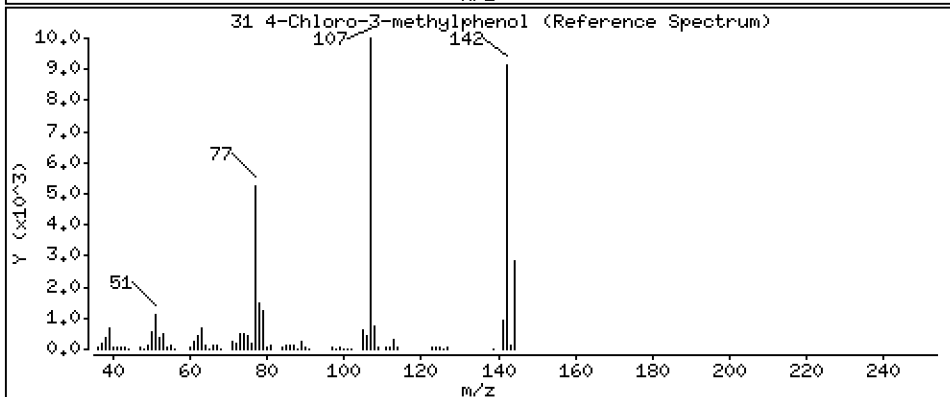
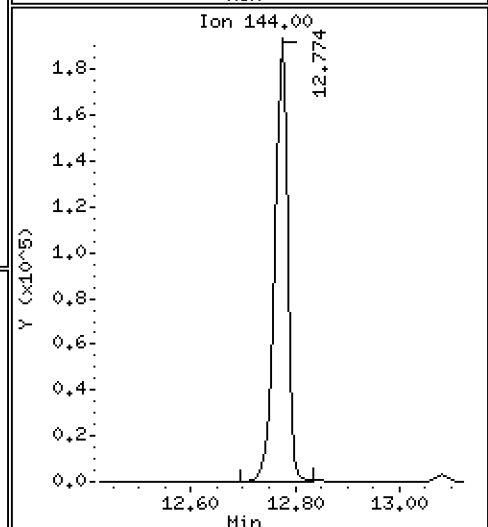
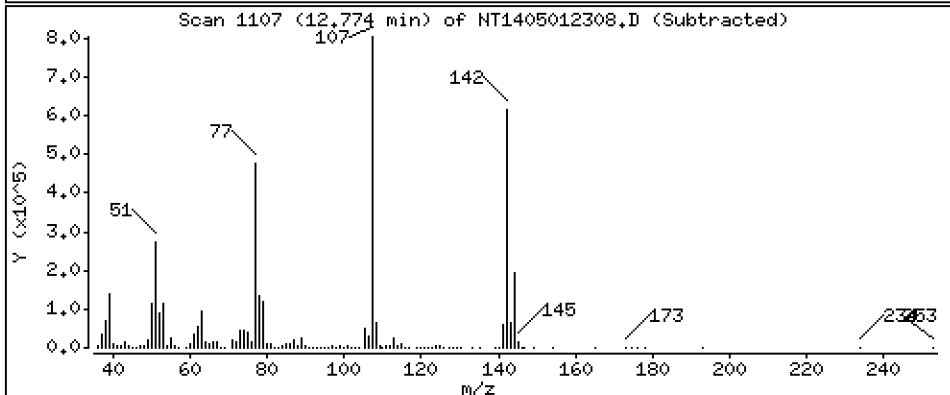
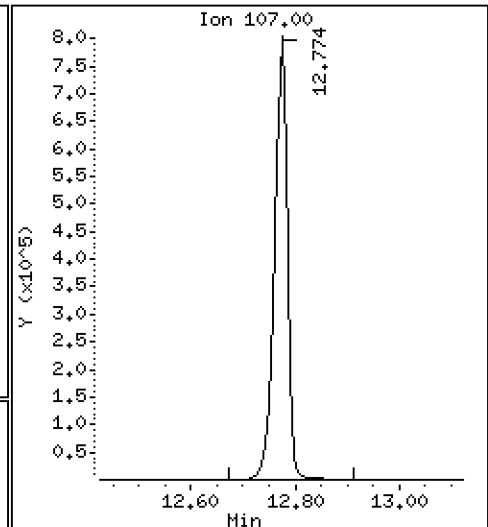
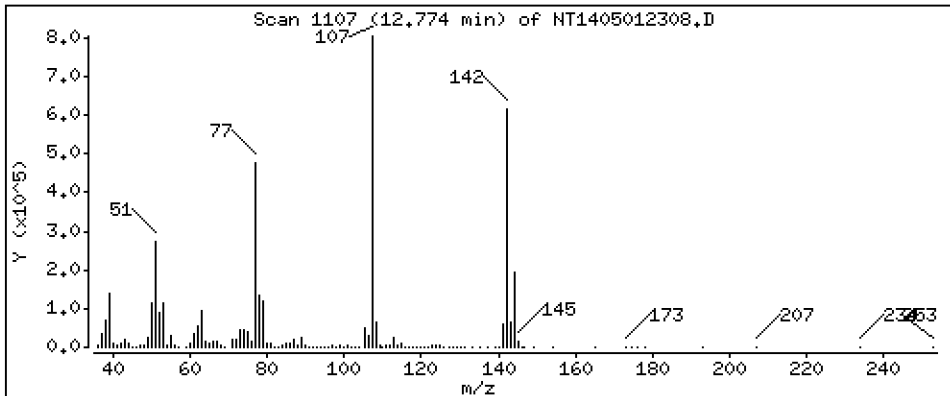
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 13,85 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

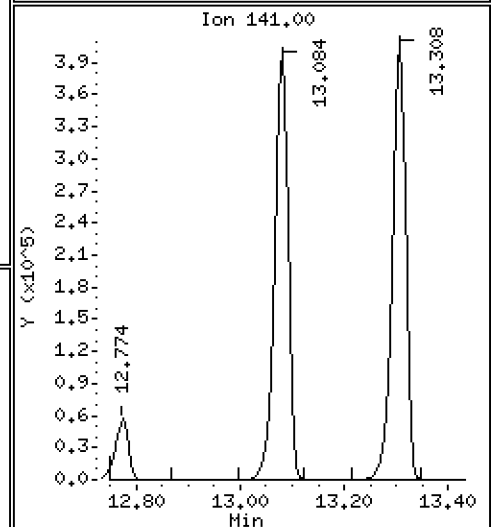
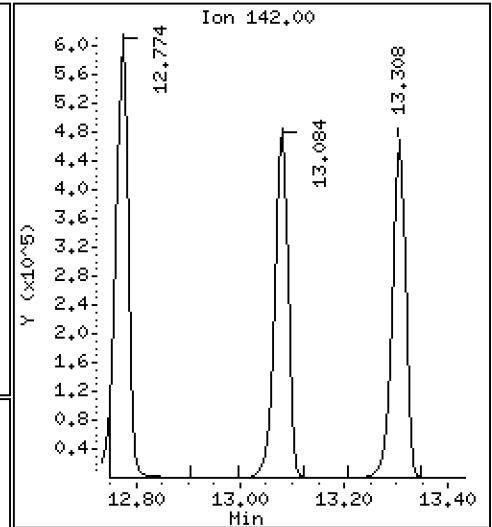
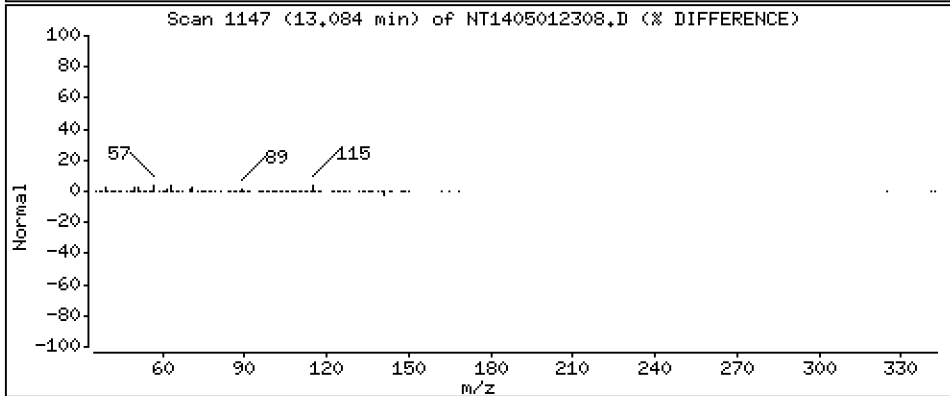
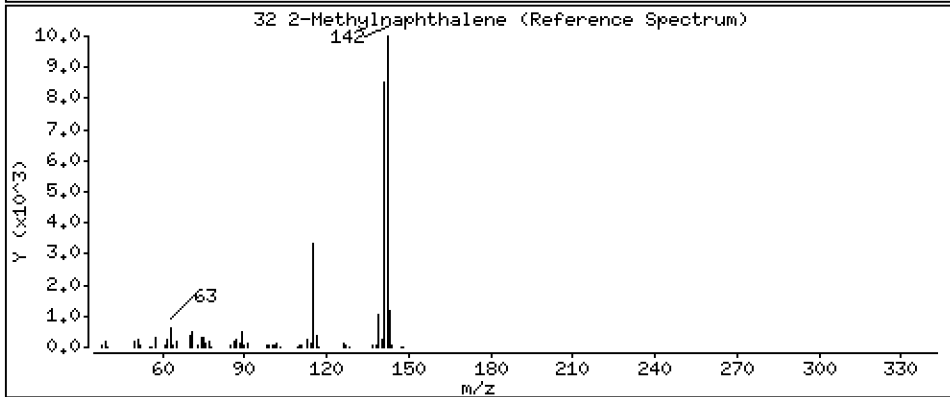
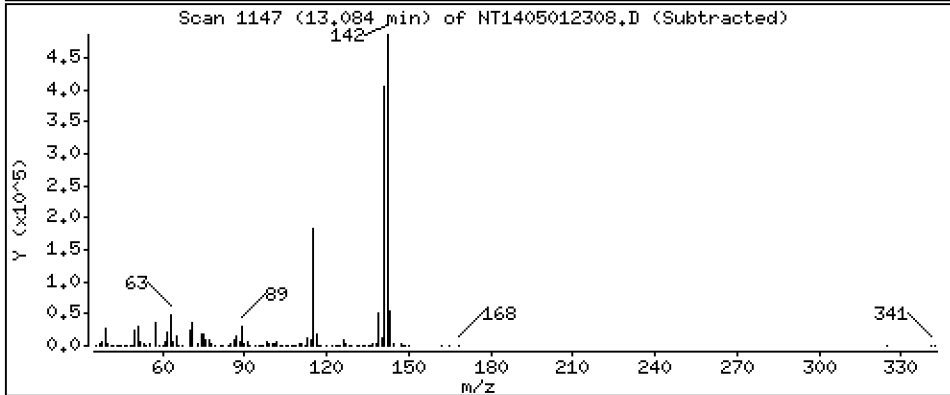
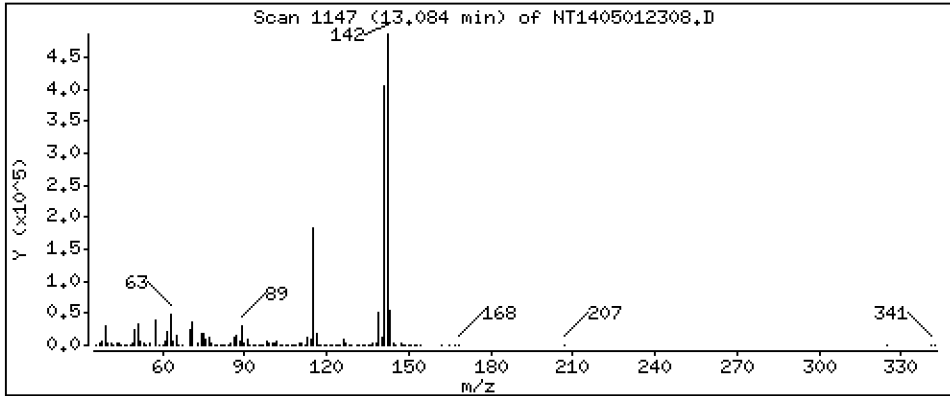
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 3,974 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

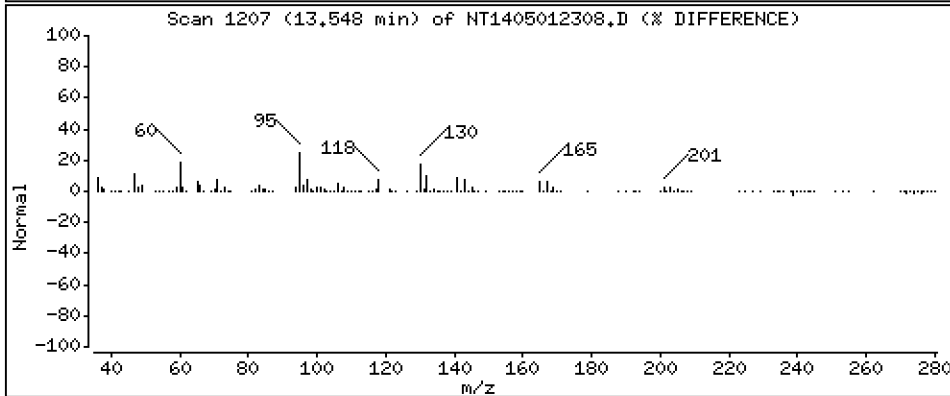
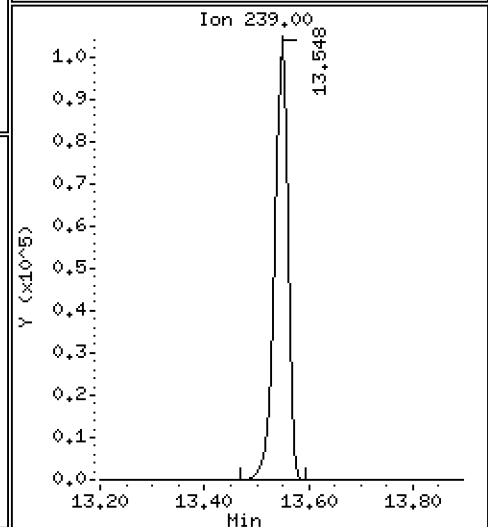
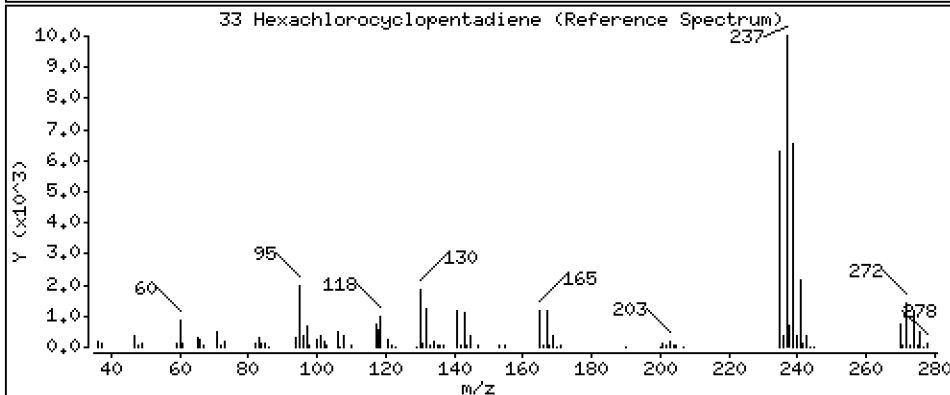
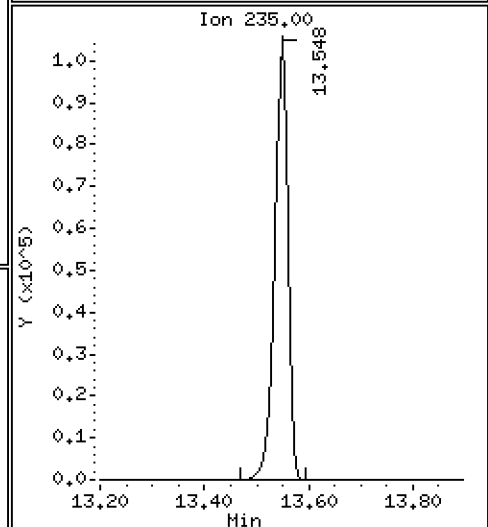
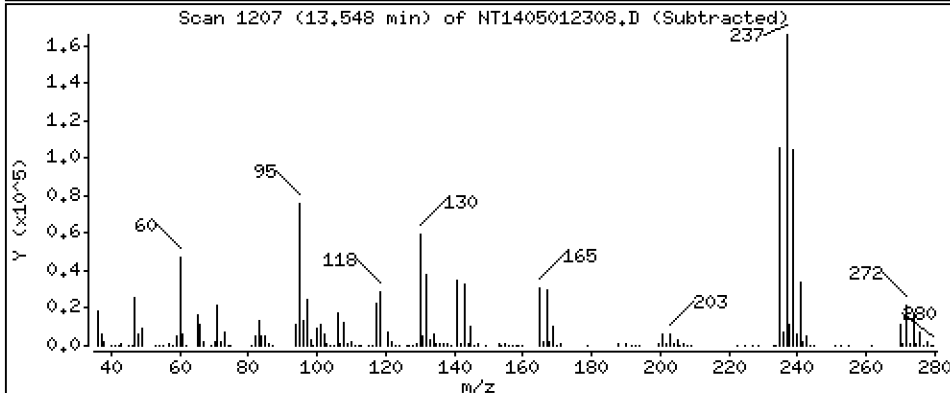
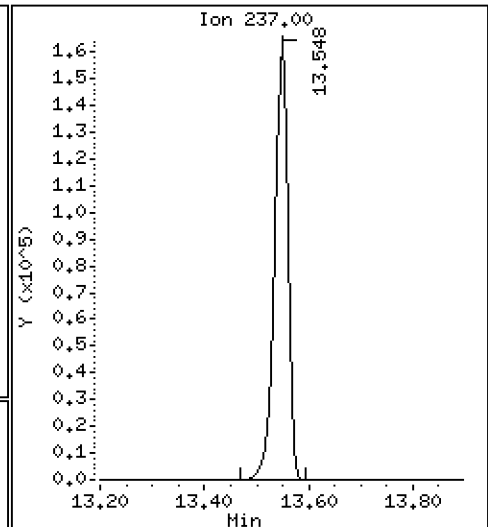
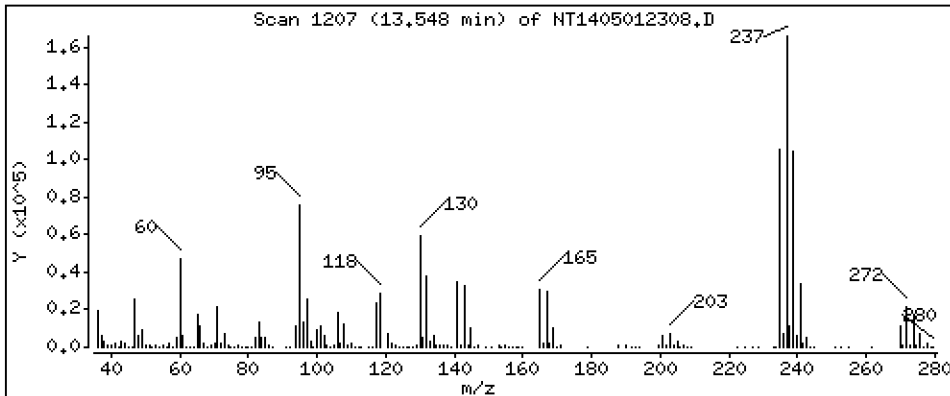
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 7,421 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

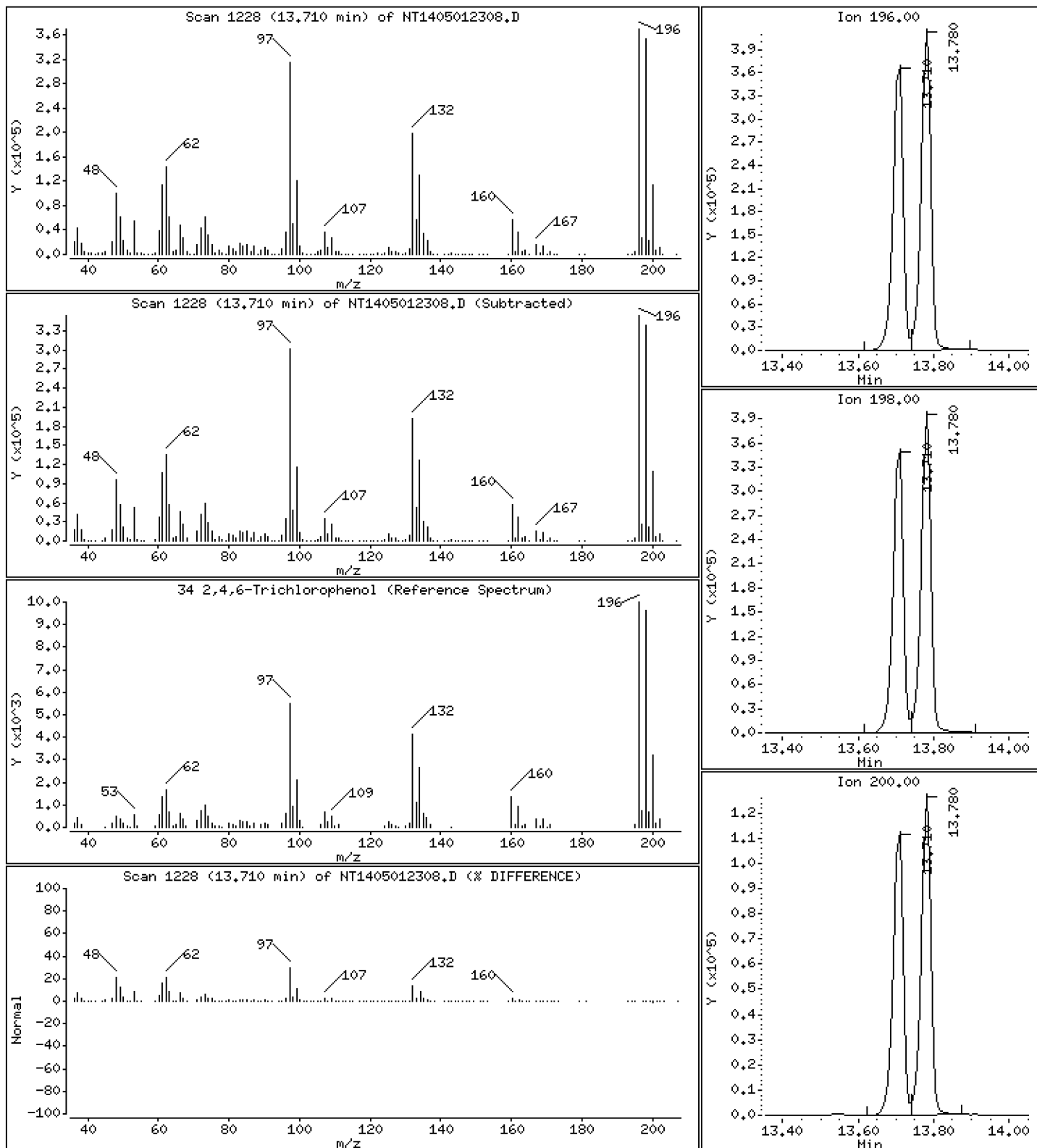
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 14,11 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

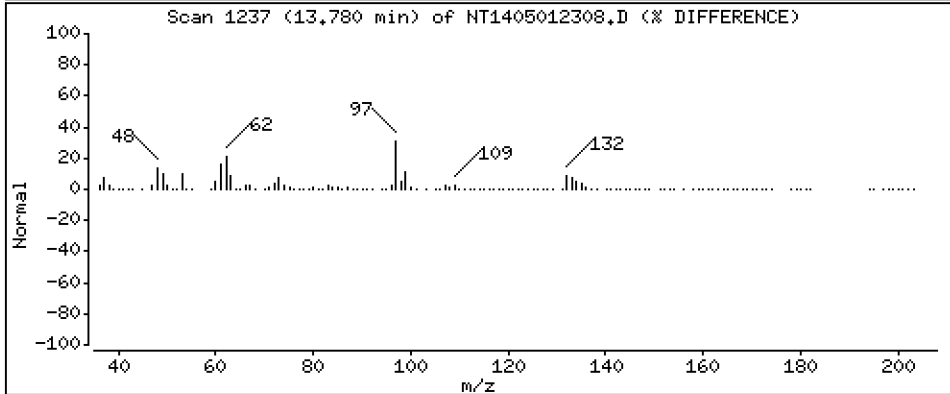
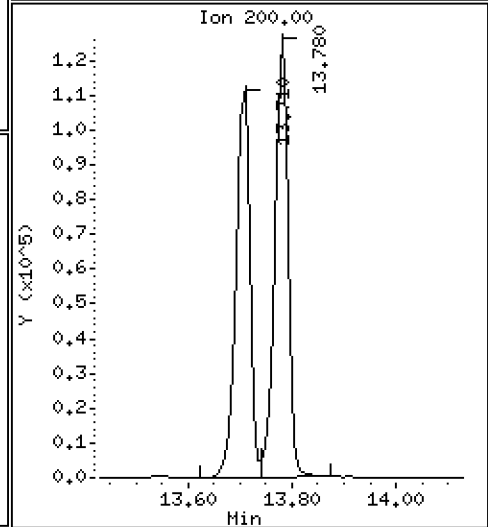
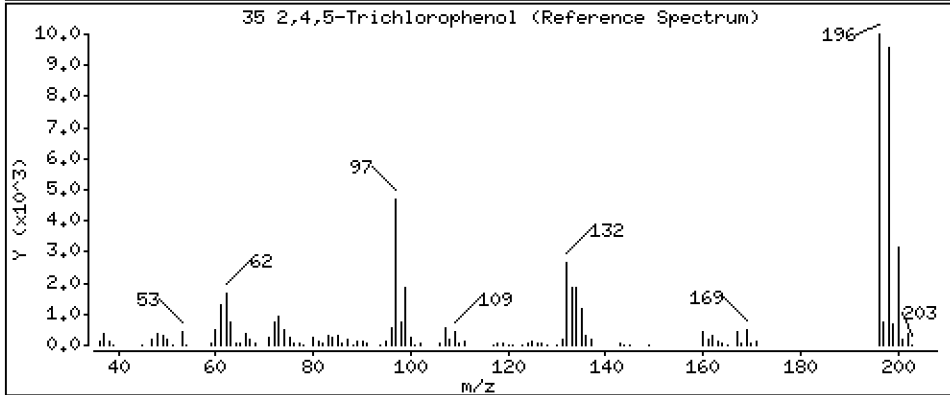
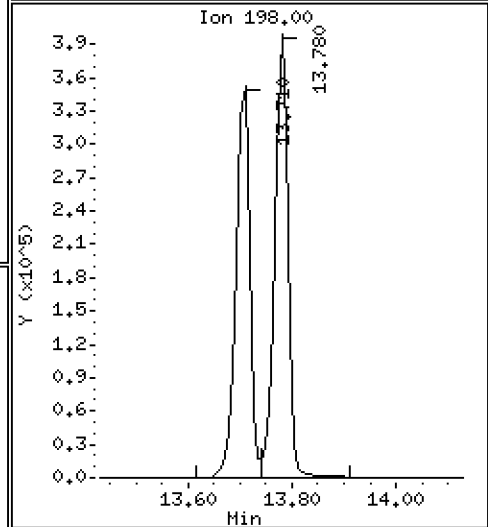
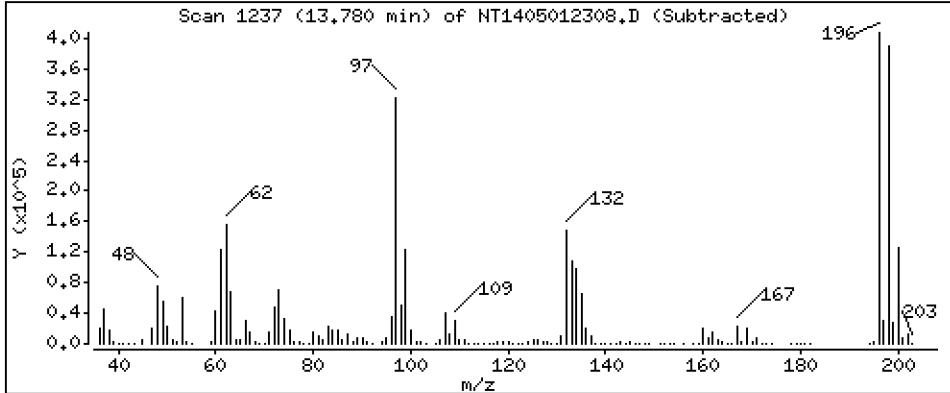
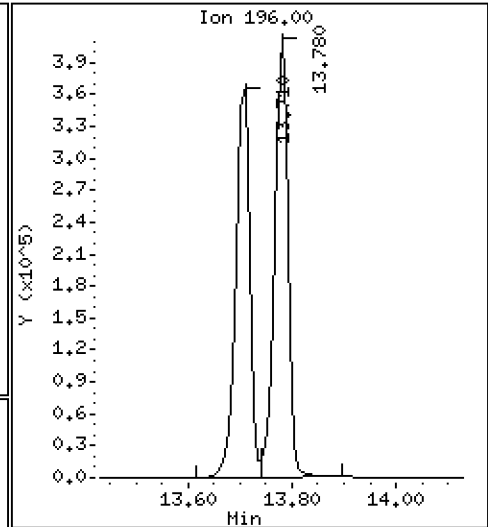
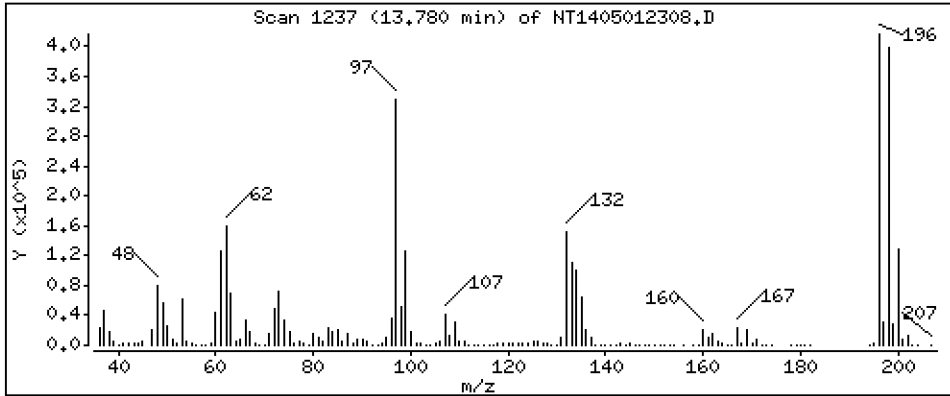
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 14,14 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

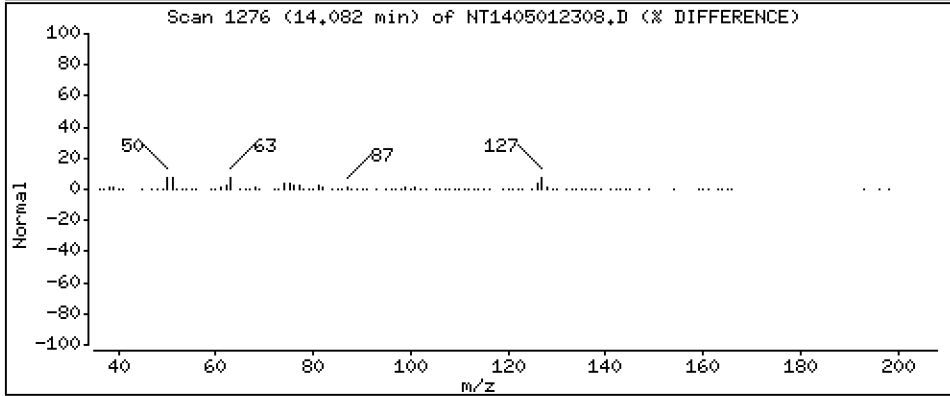
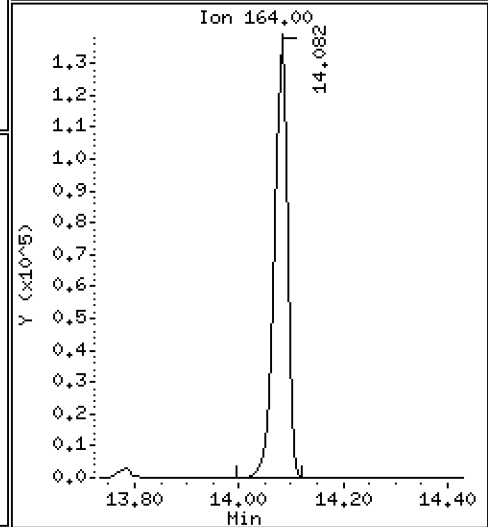
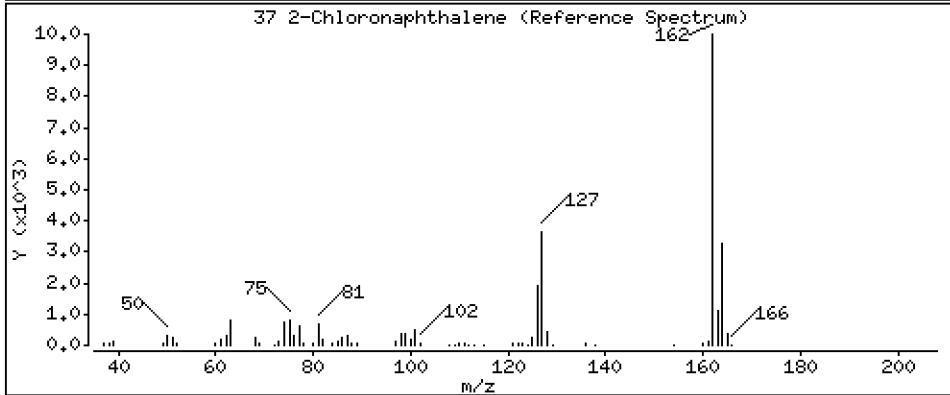
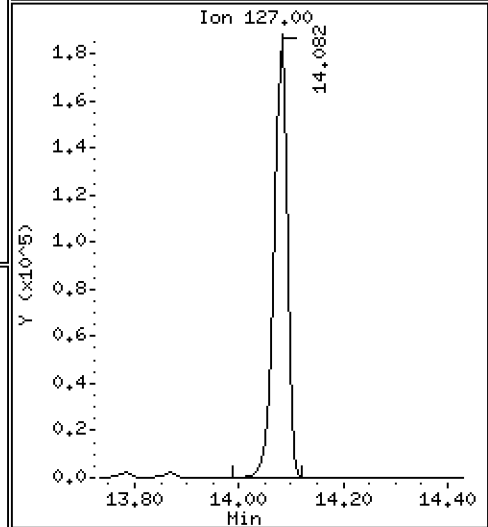
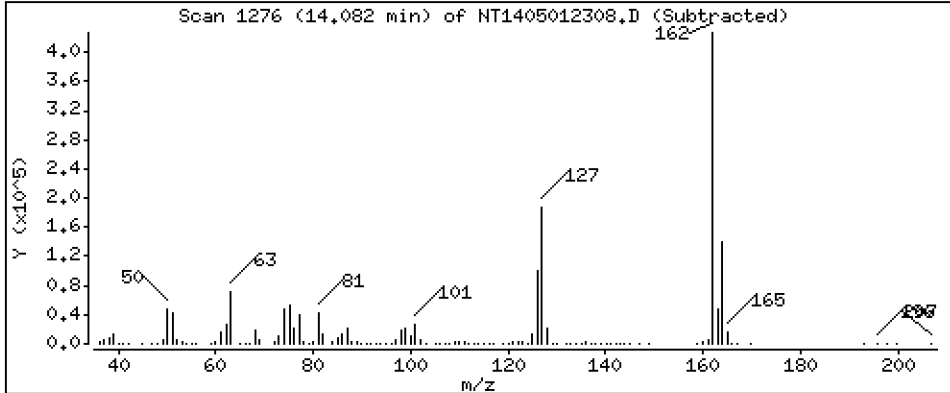
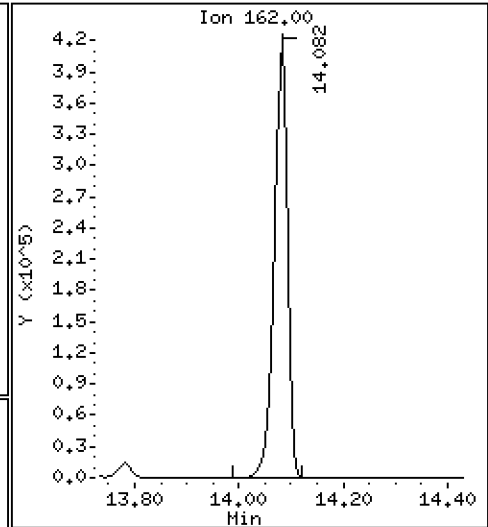
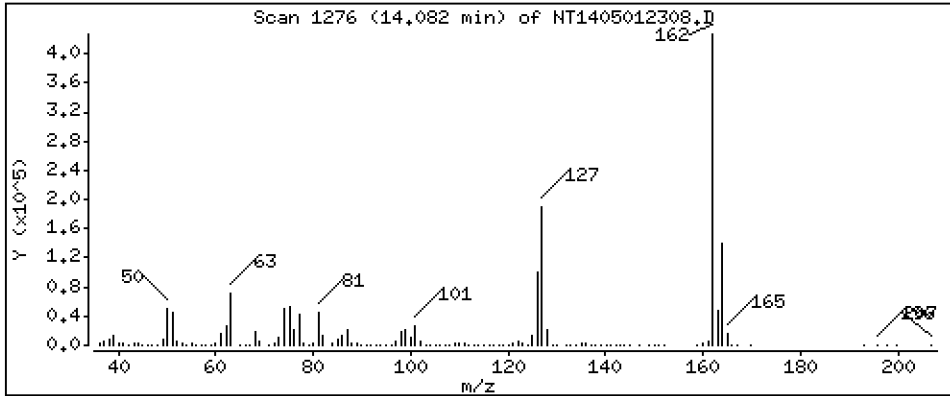
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 4,151 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

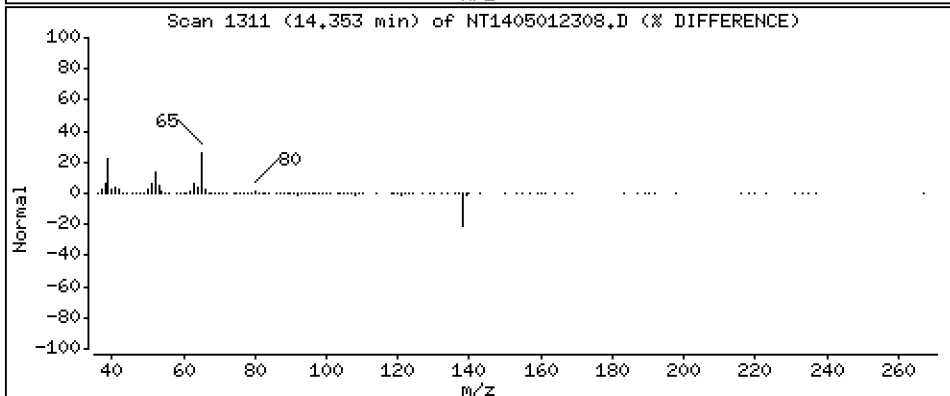
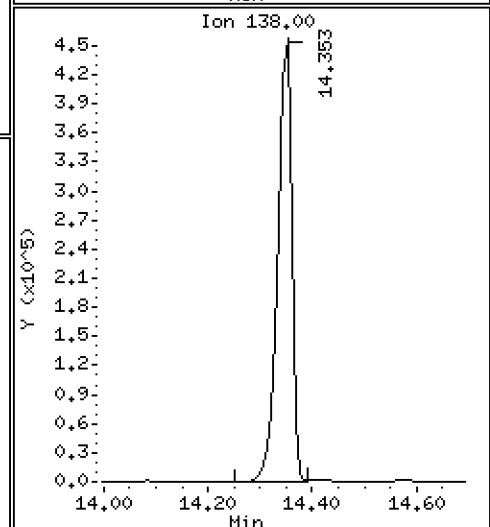
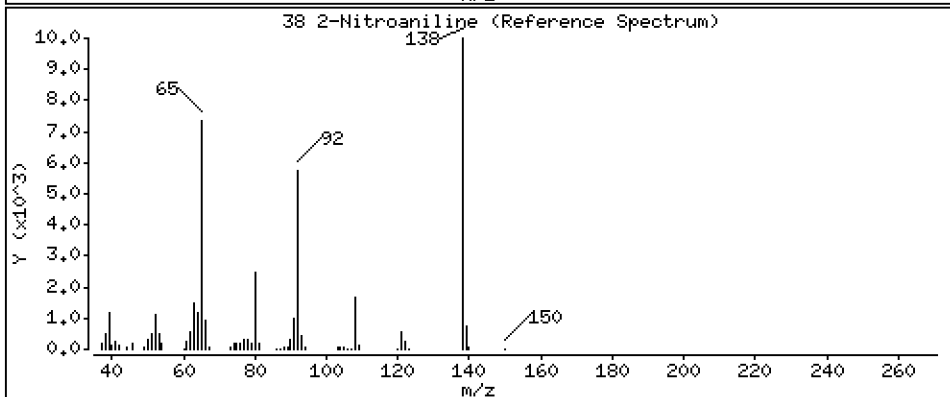
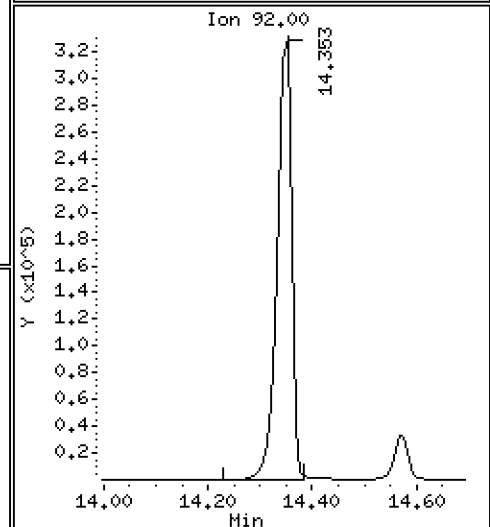
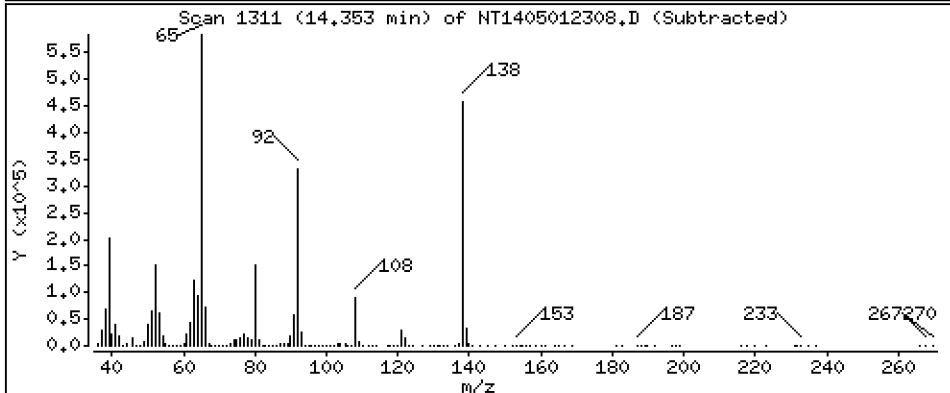
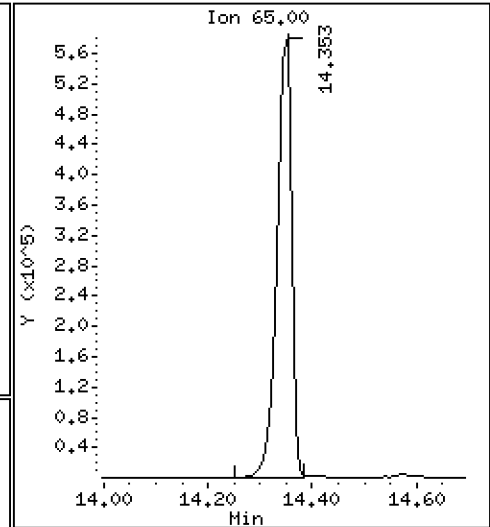
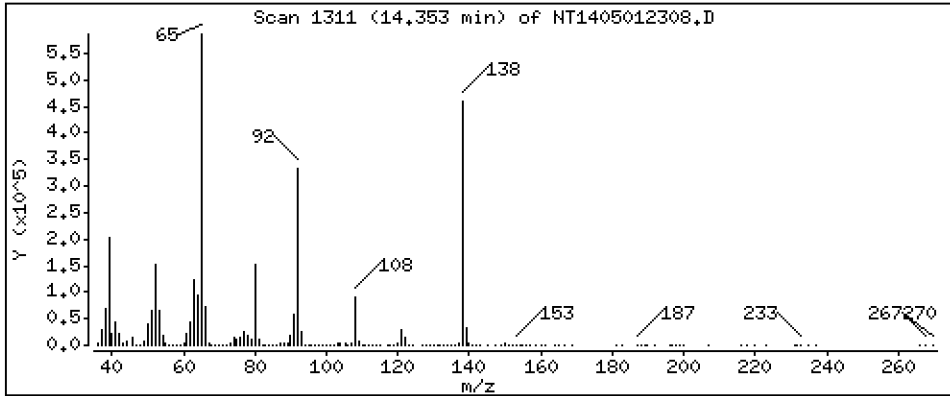
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 11,99 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

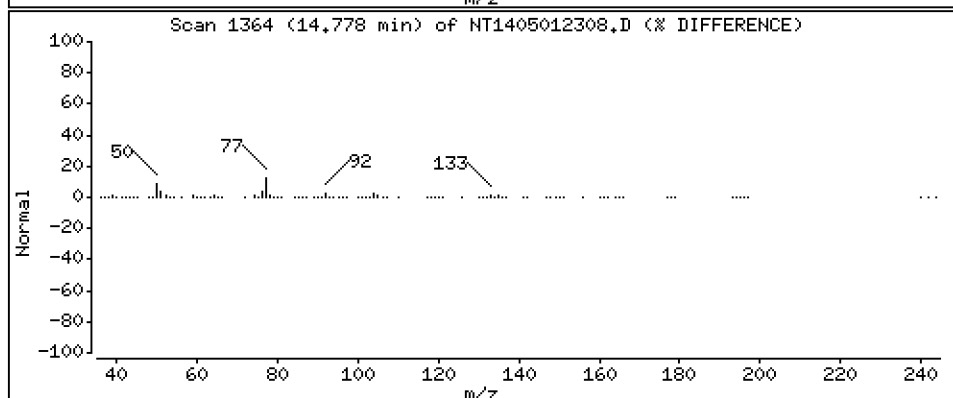
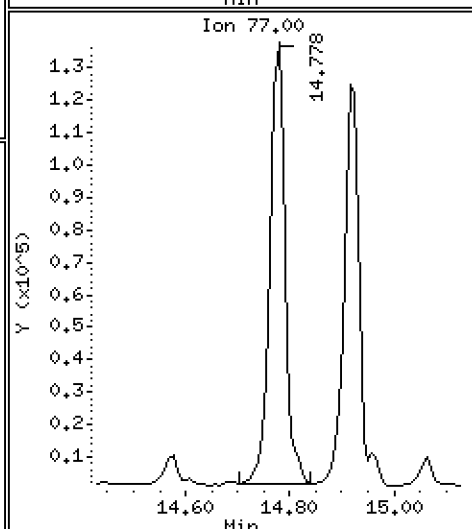
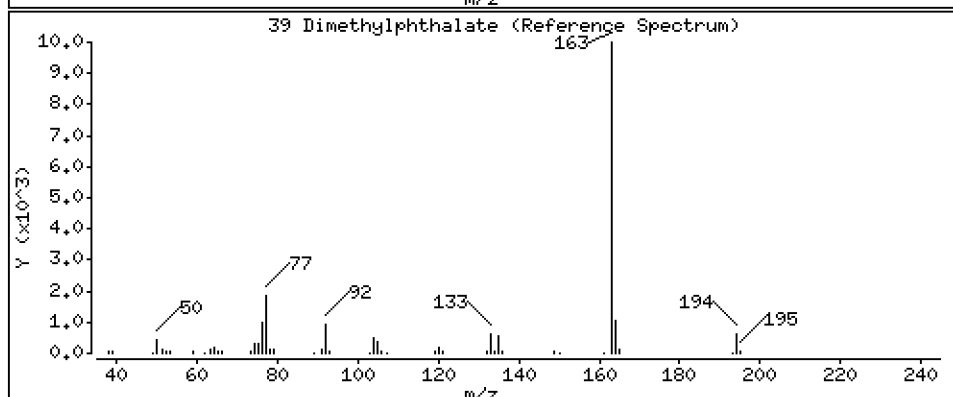
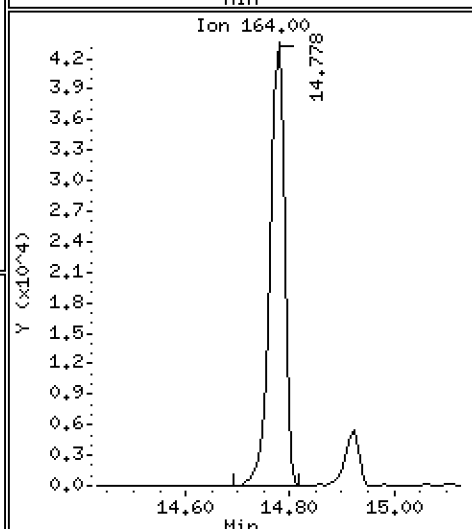
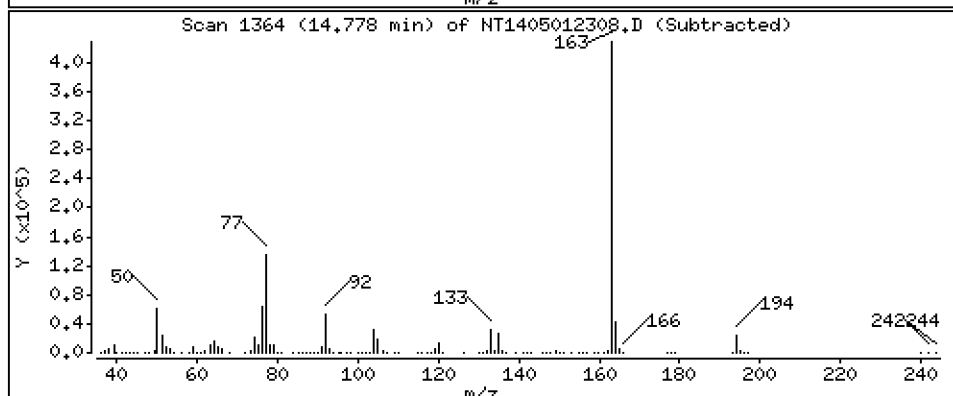
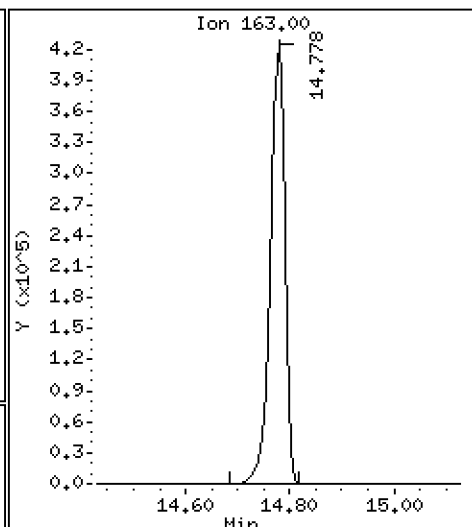
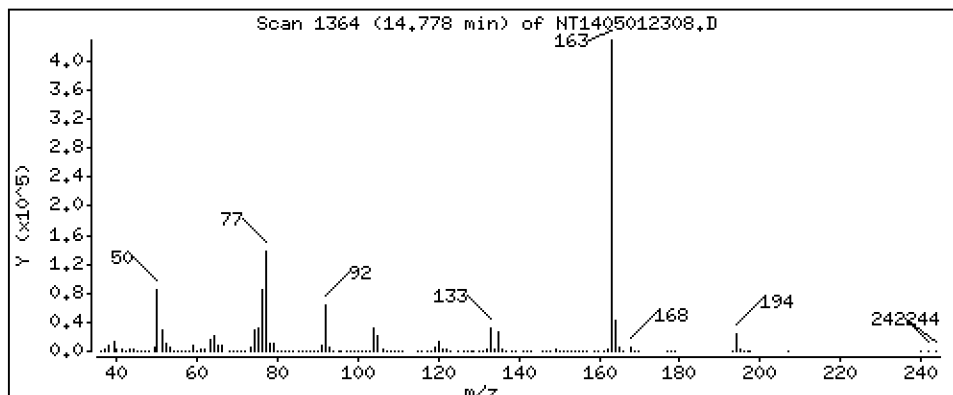
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,527 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

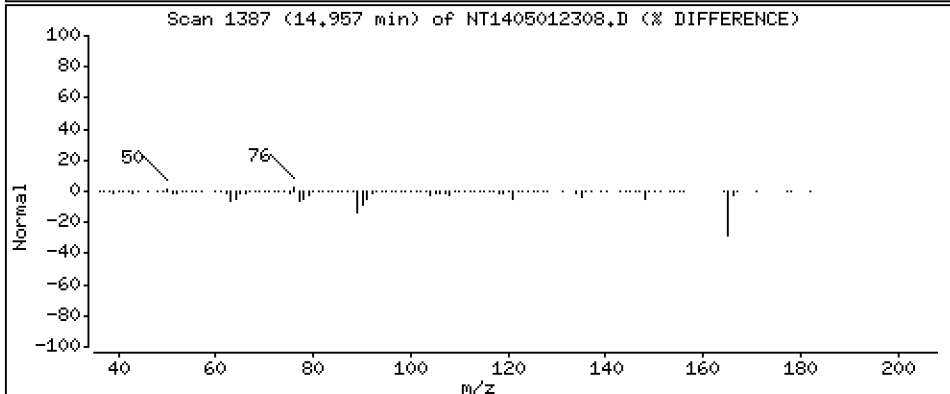
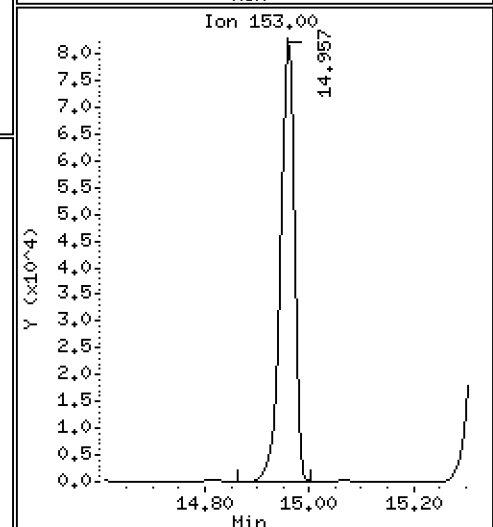
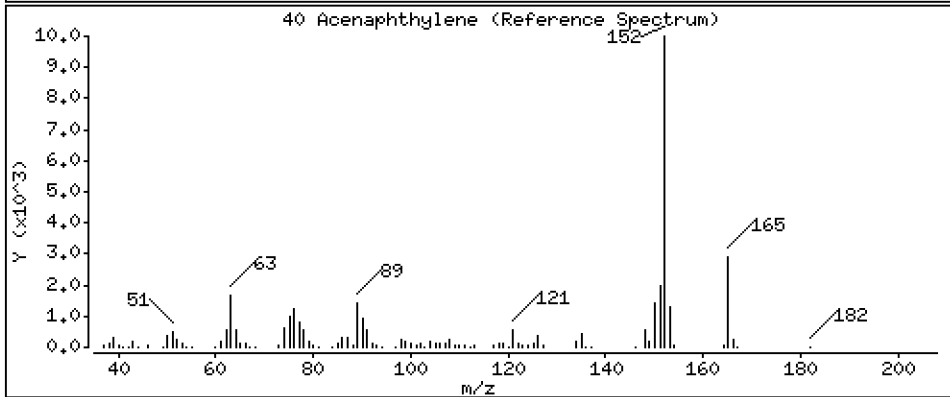
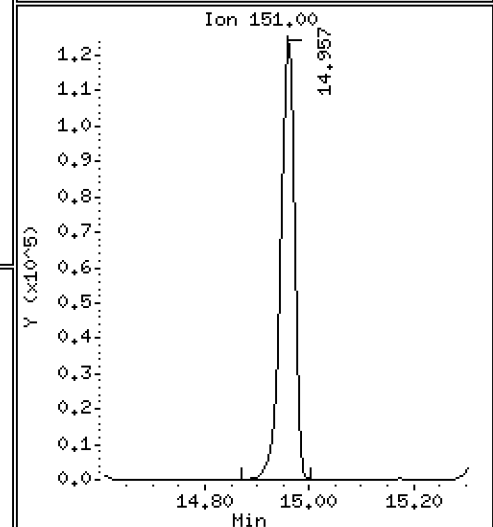
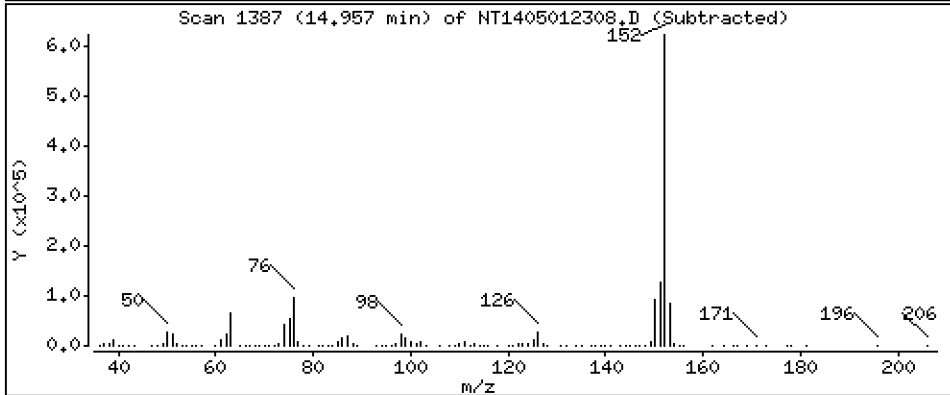
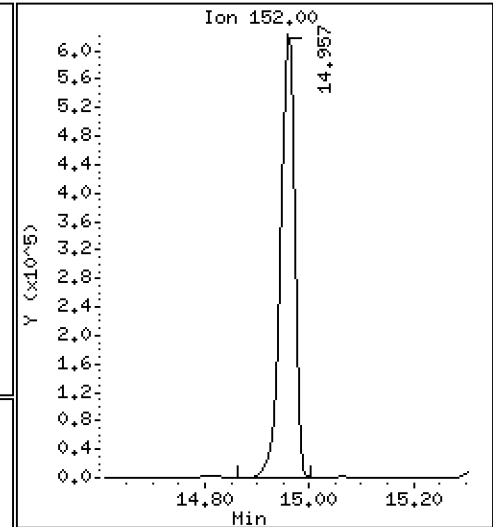
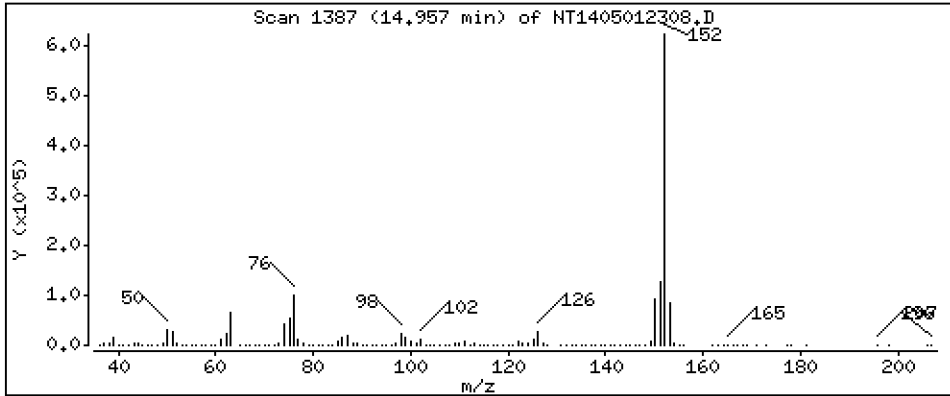
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 4,214 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

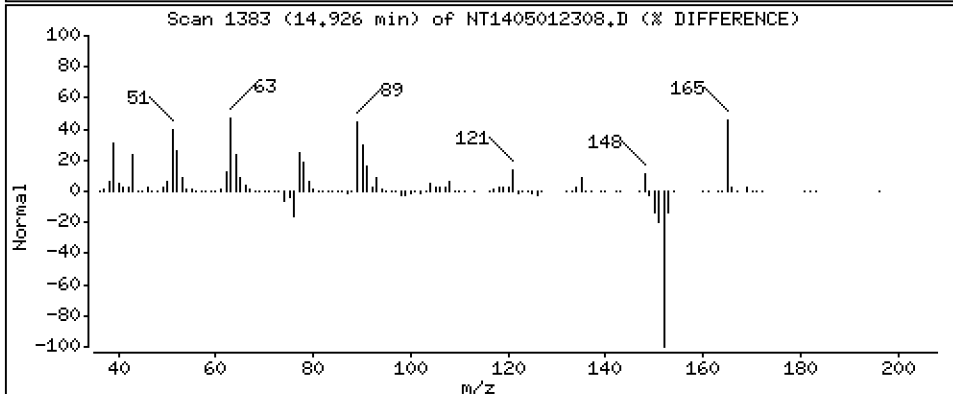
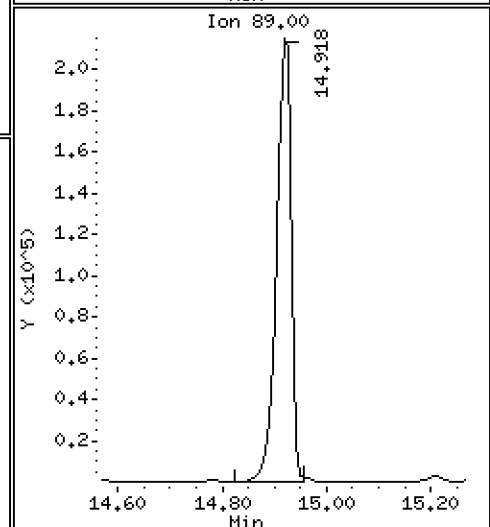
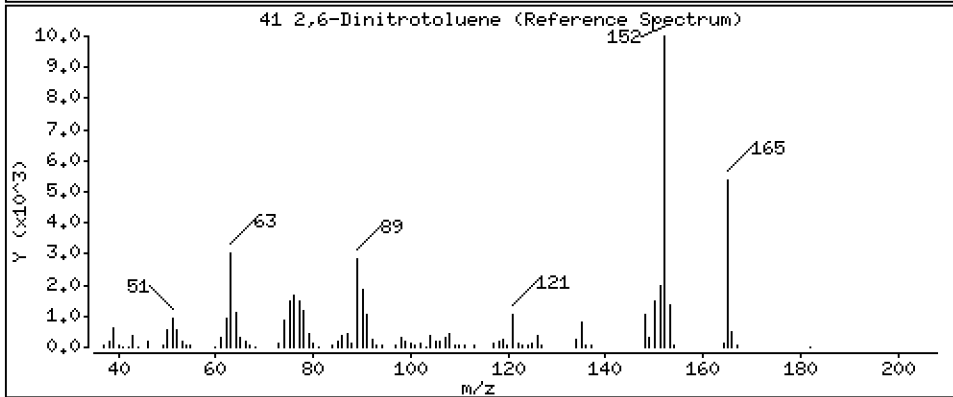
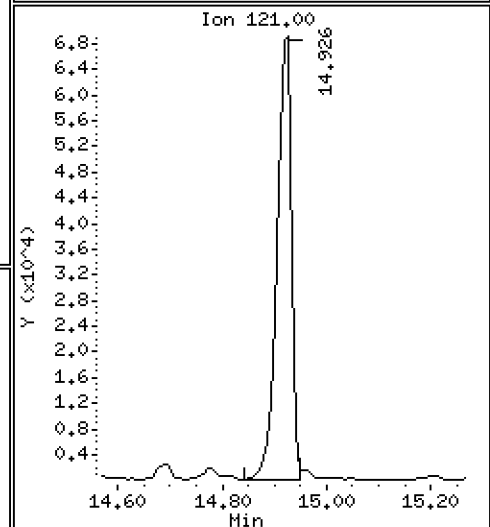
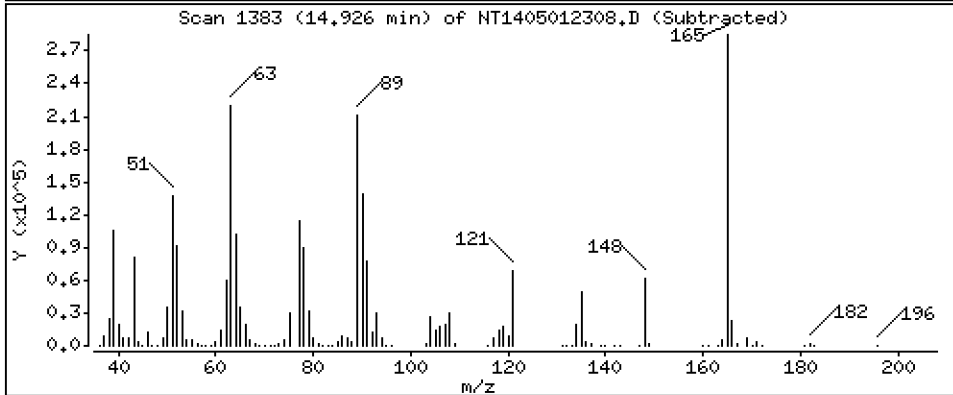
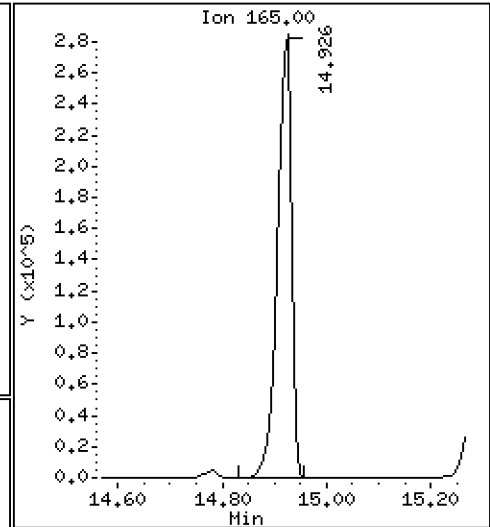
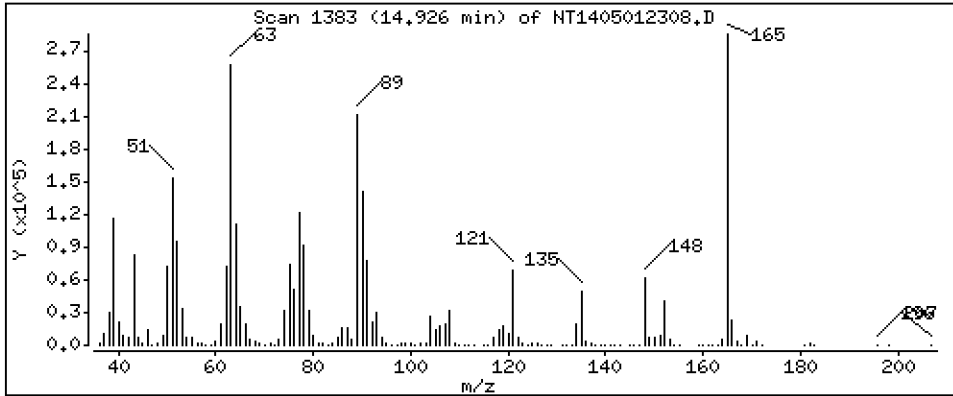
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

41 2,6-Dinitrotoluene

Concentration: 12,99 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

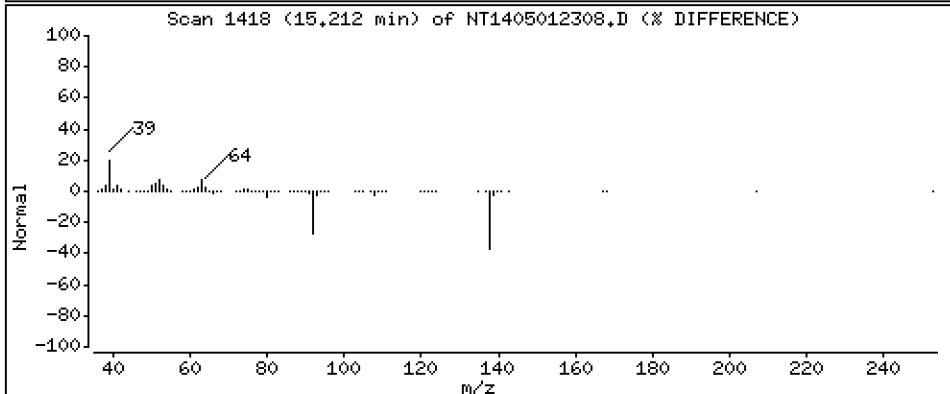
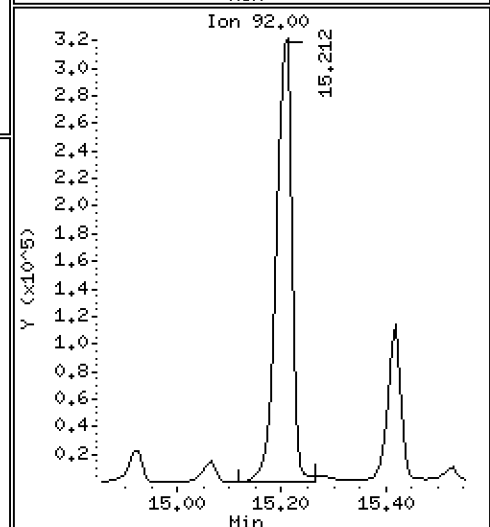
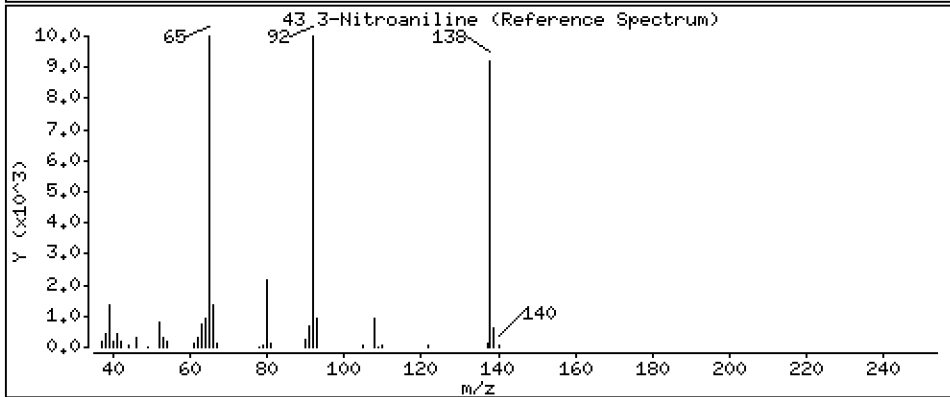
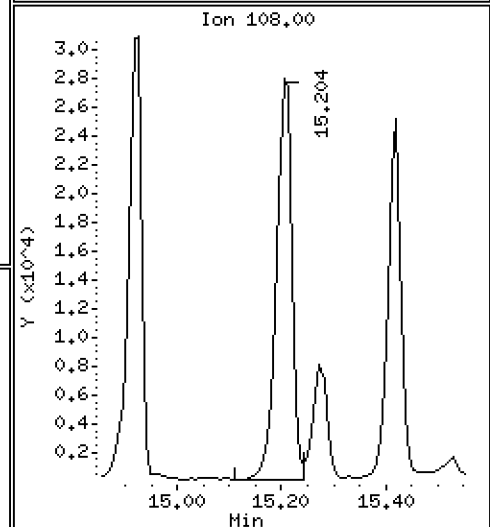
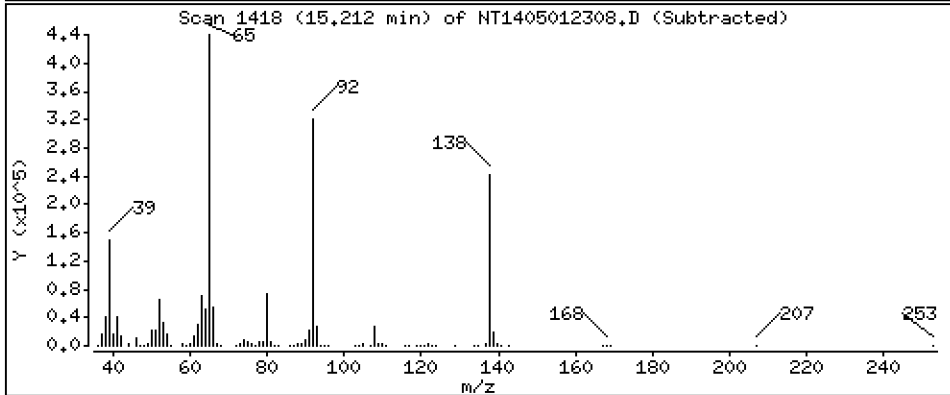
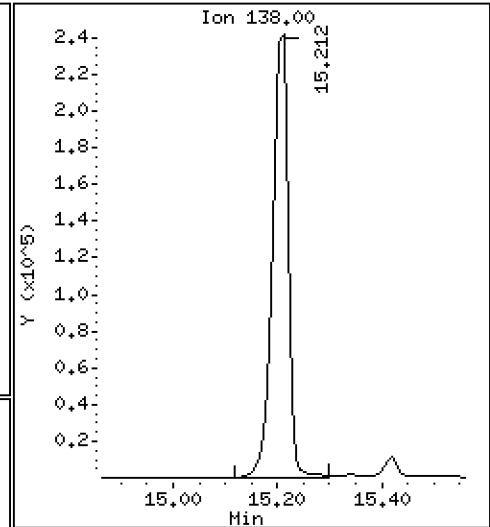
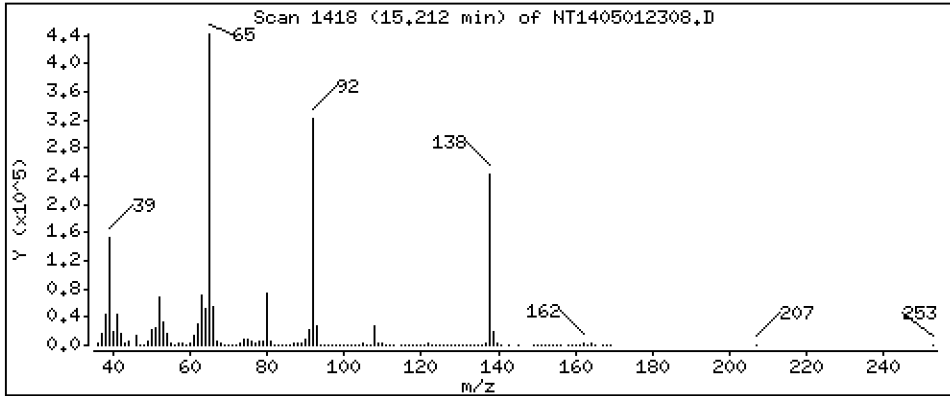
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 9,845 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

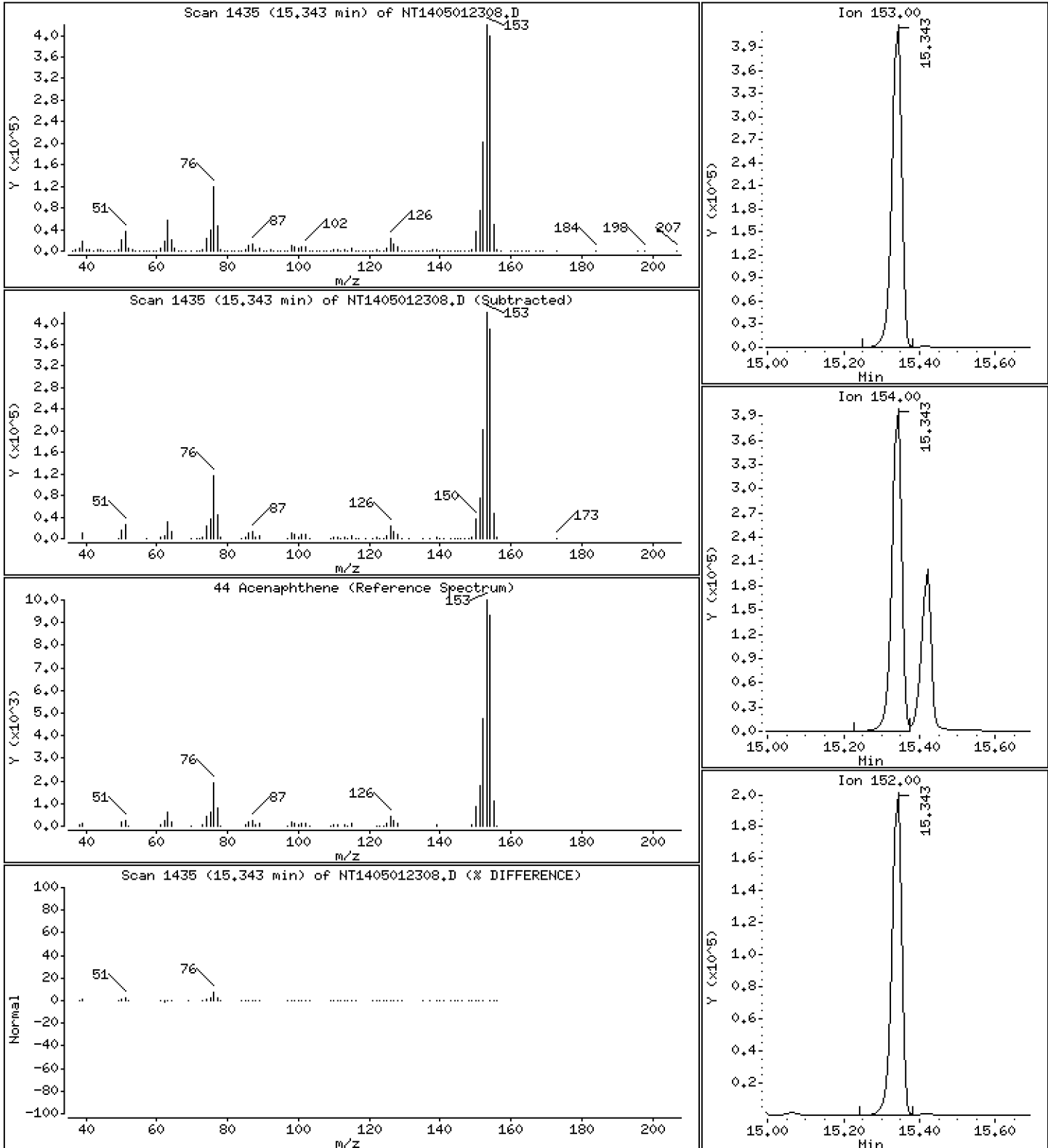
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 4,430 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

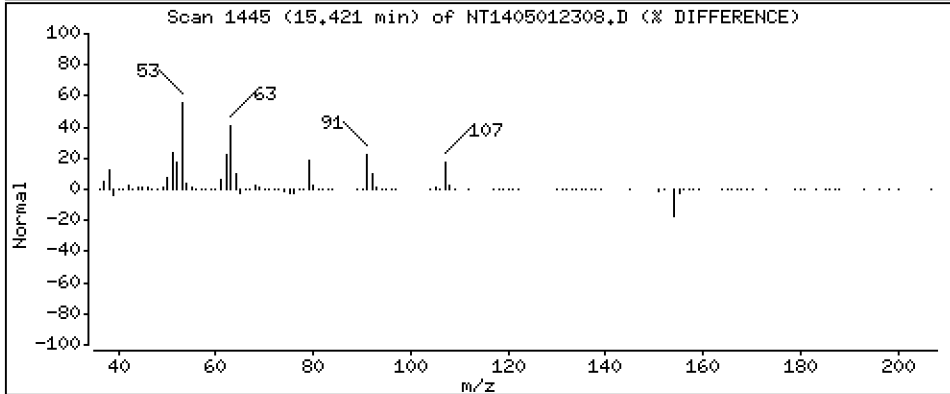
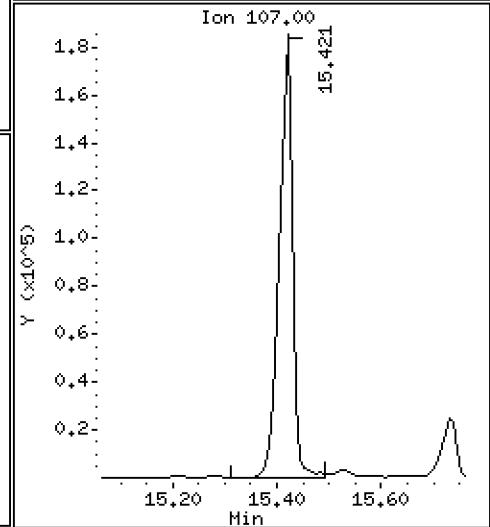
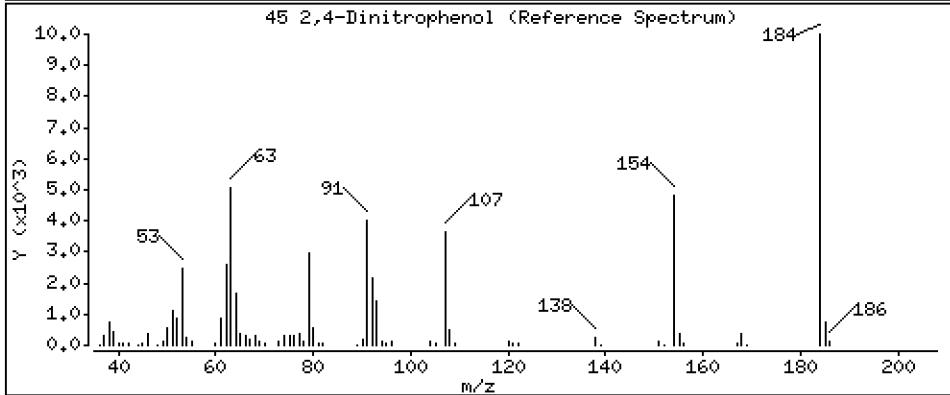
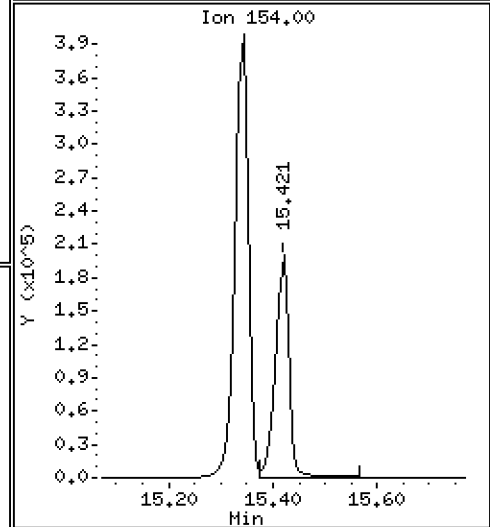
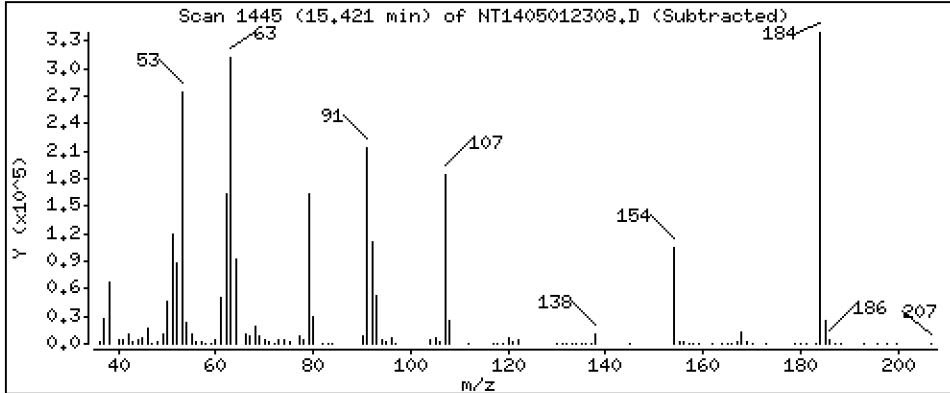
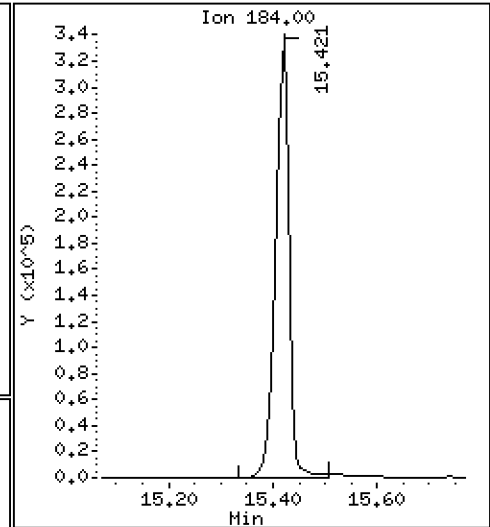
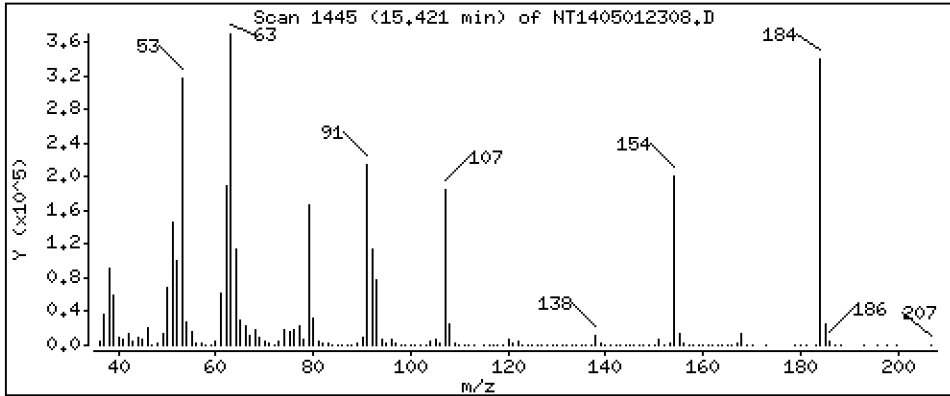
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 24,15 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

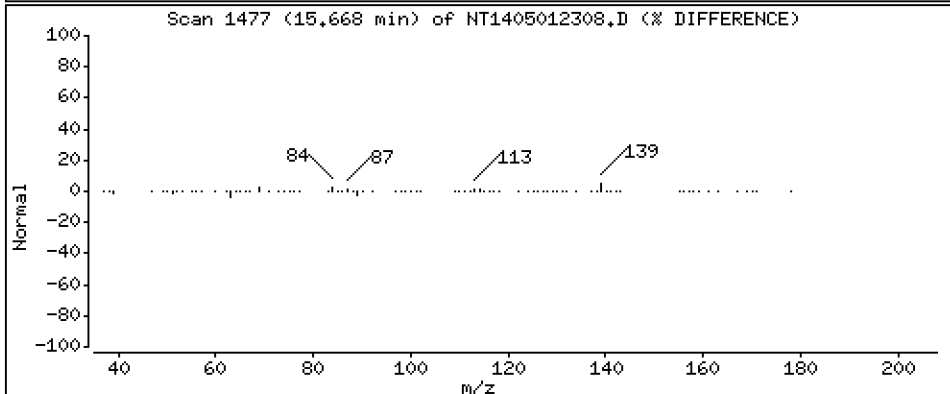
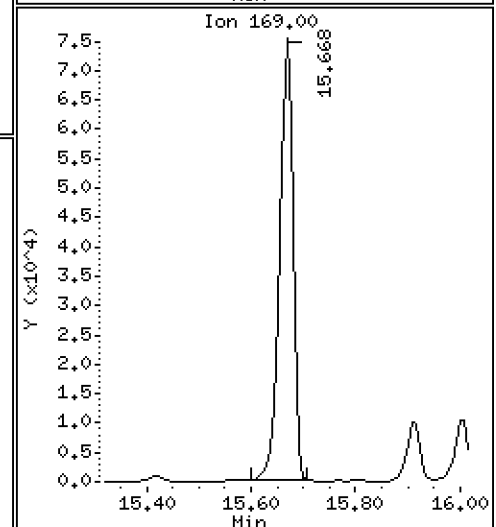
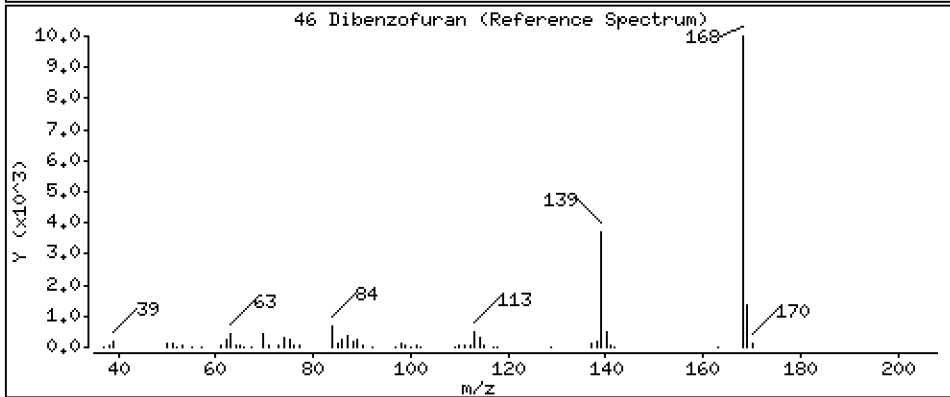
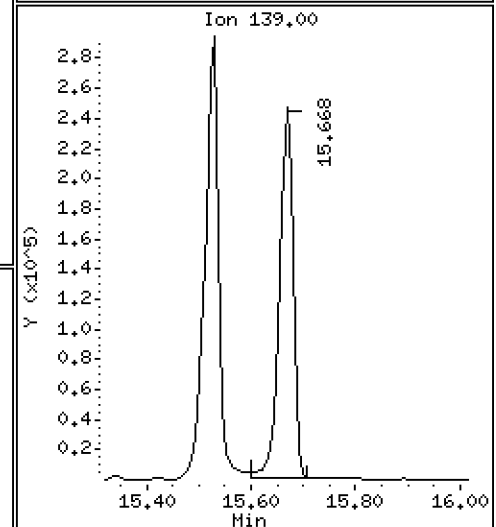
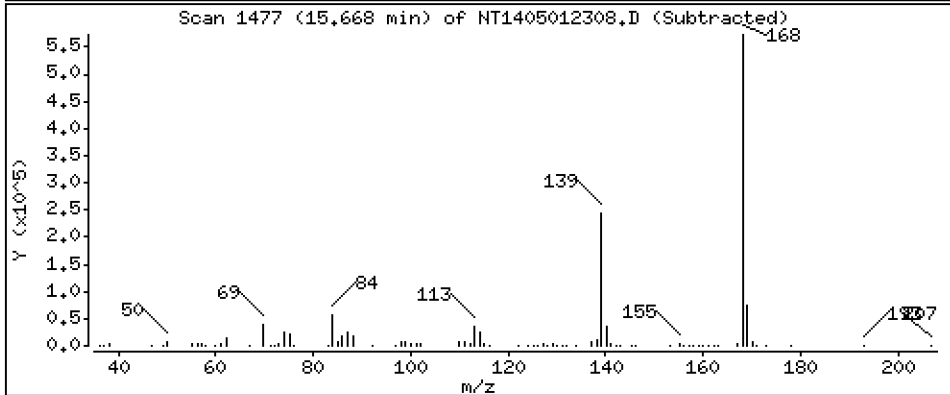
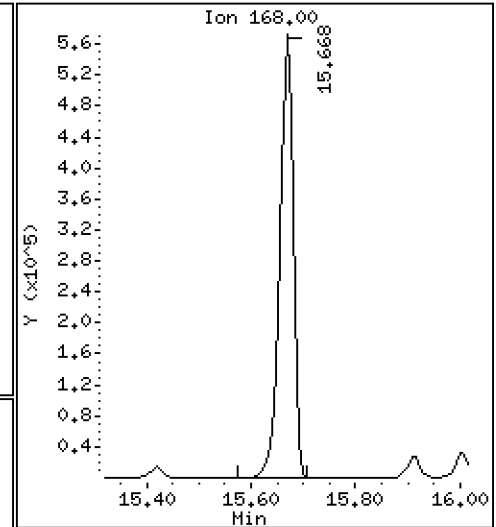
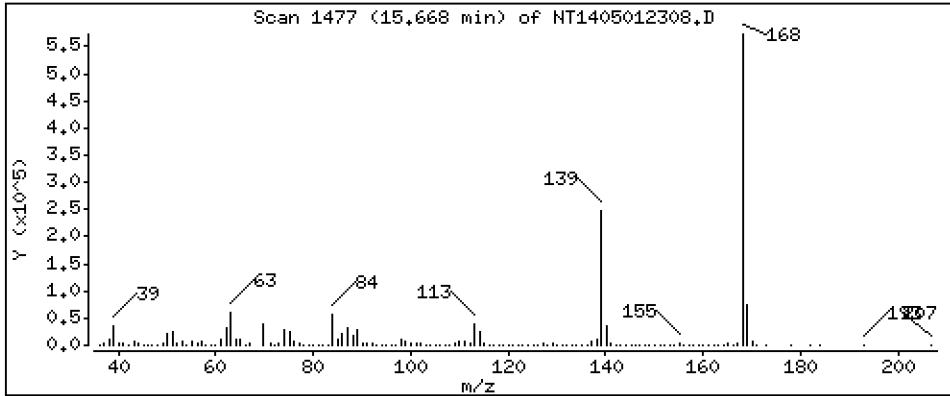
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 4,254 ug/mL



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Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

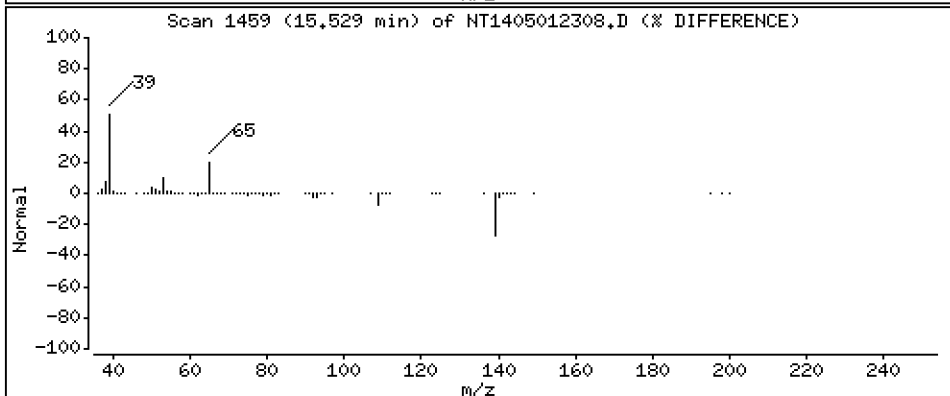
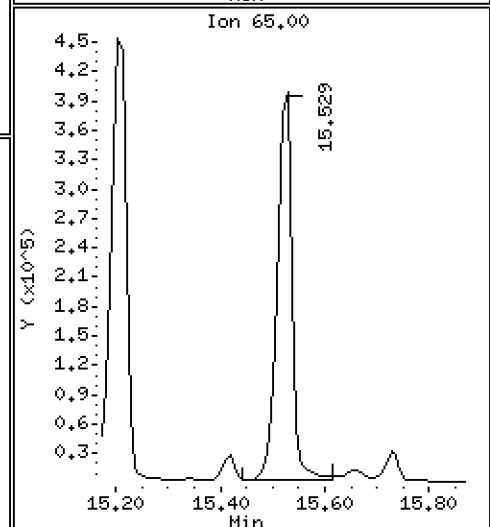
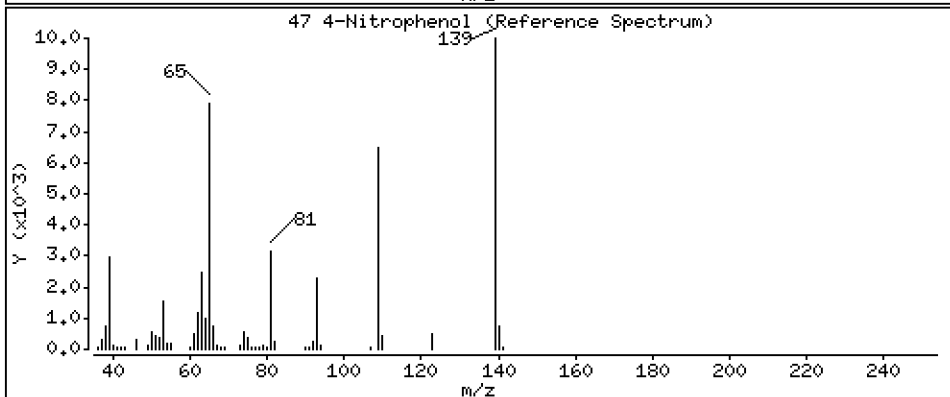
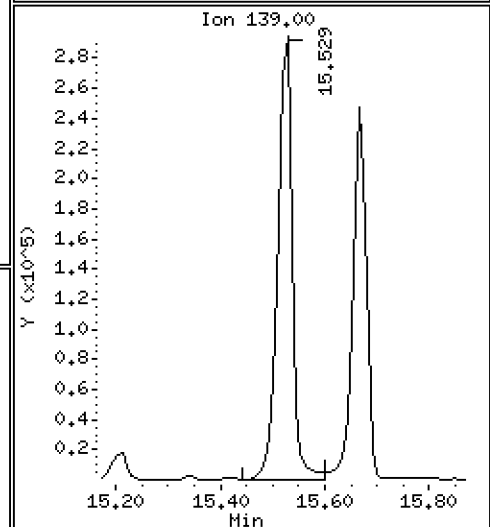
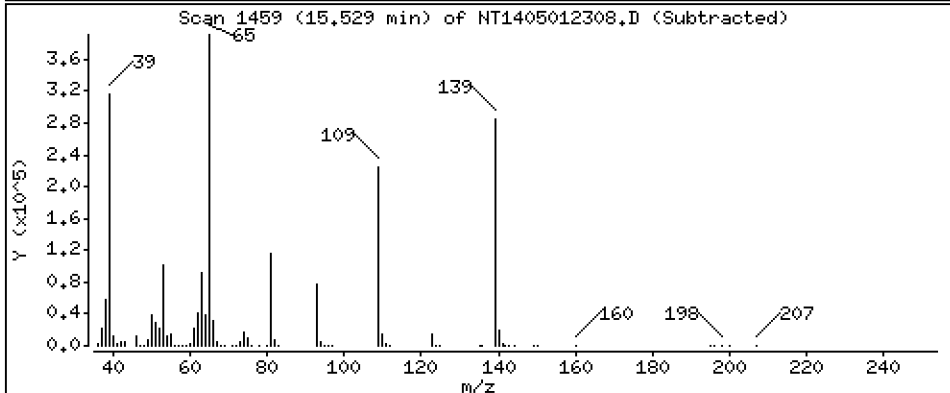
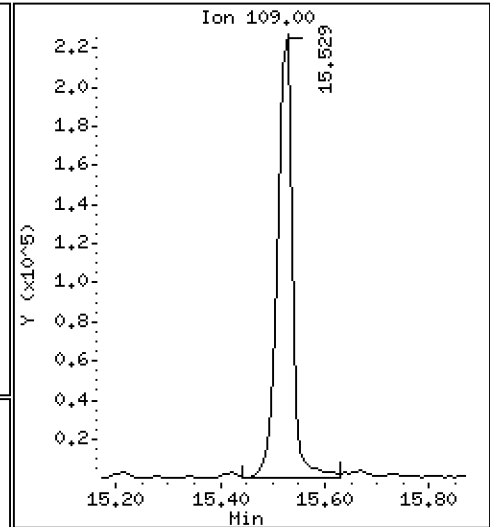
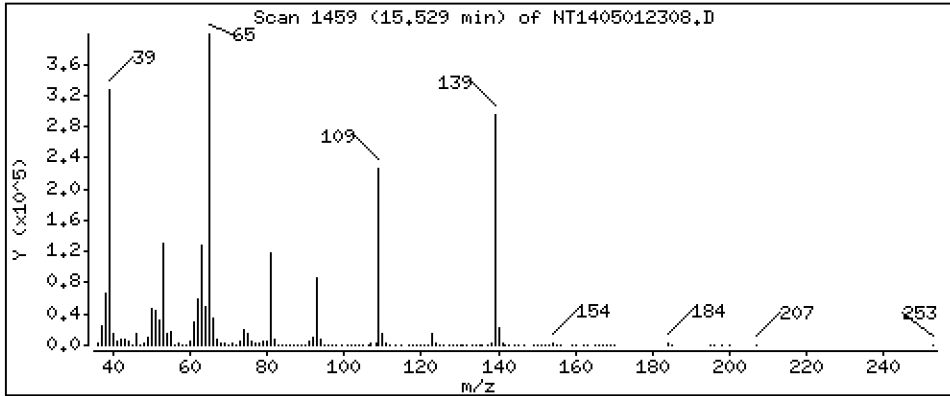
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 14,99 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

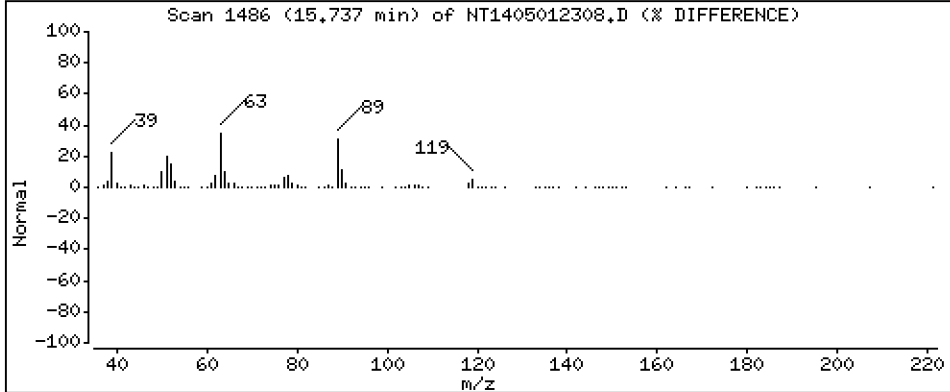
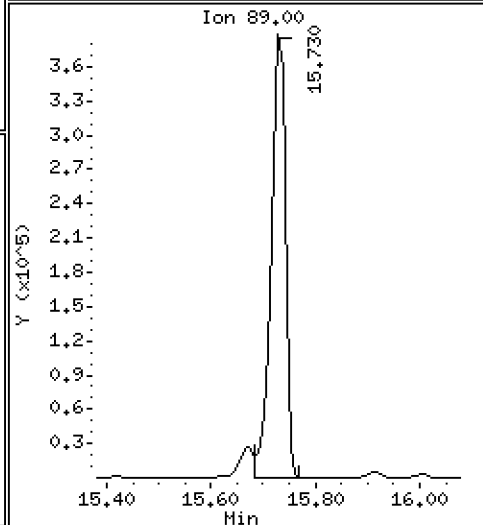
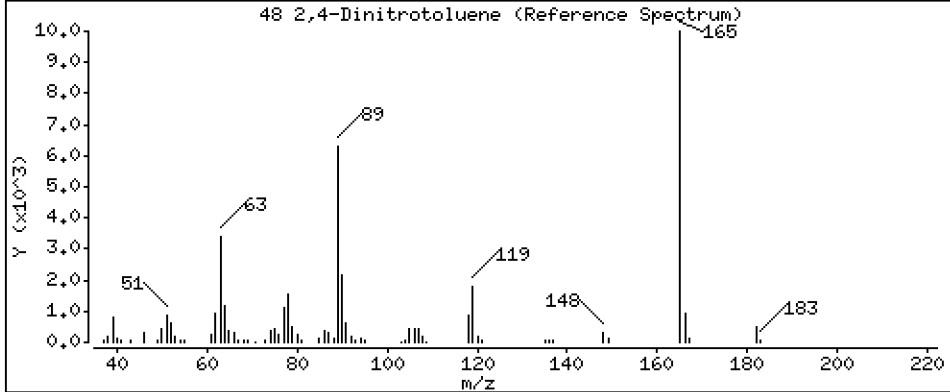
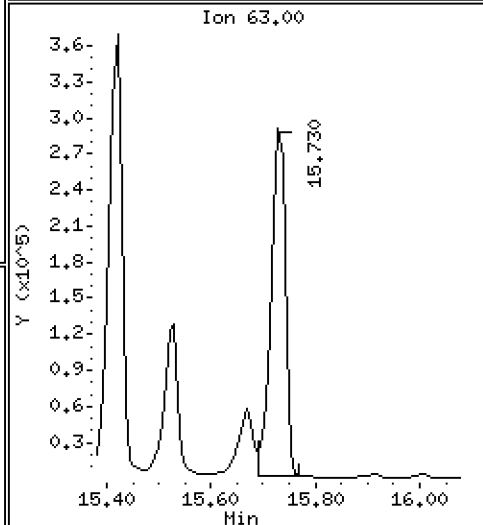
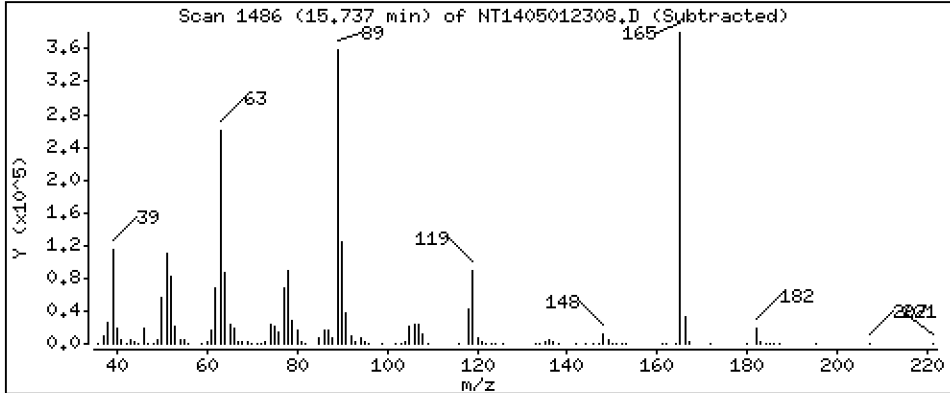
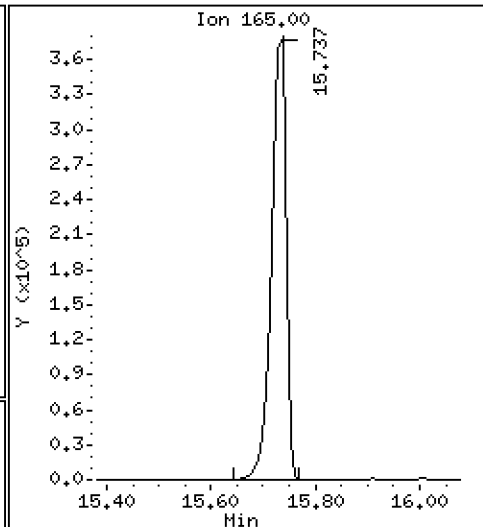
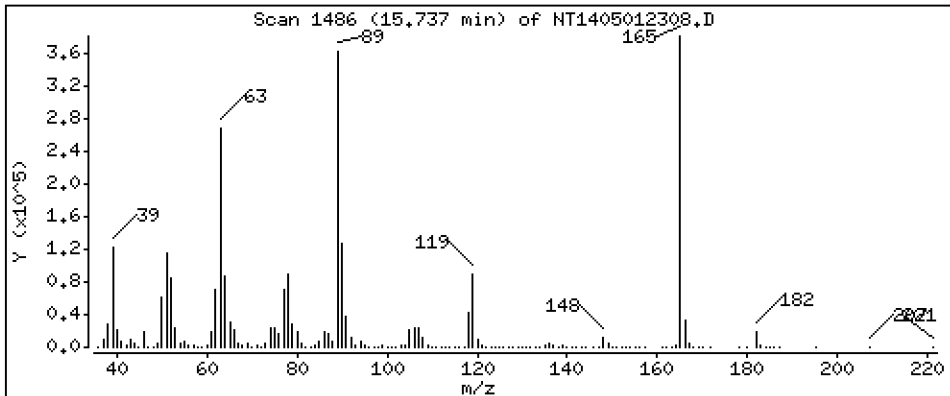
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 13,17 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

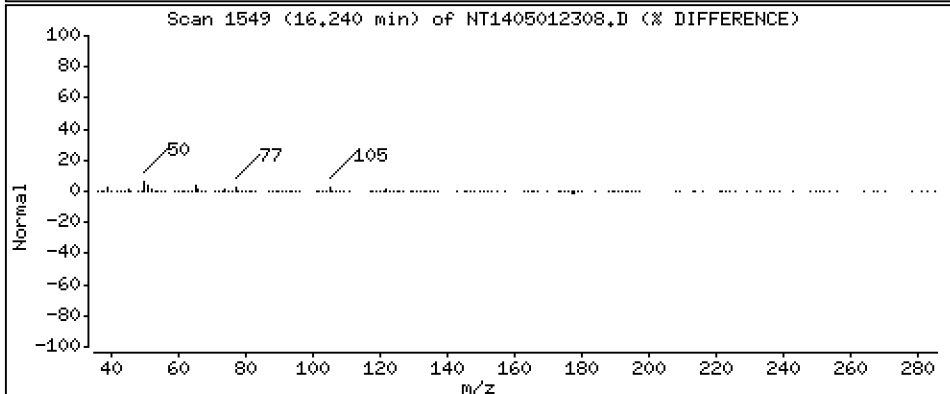
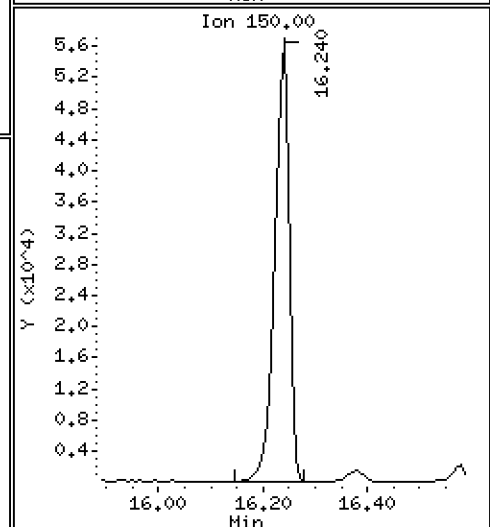
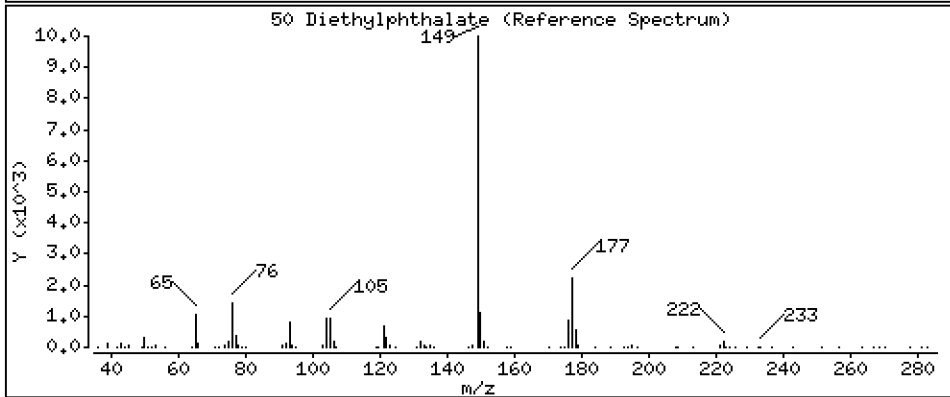
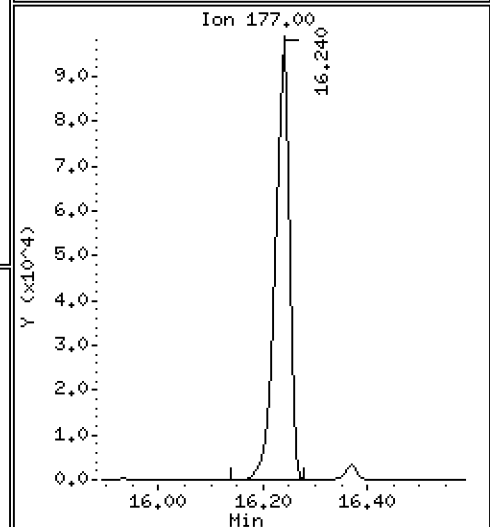
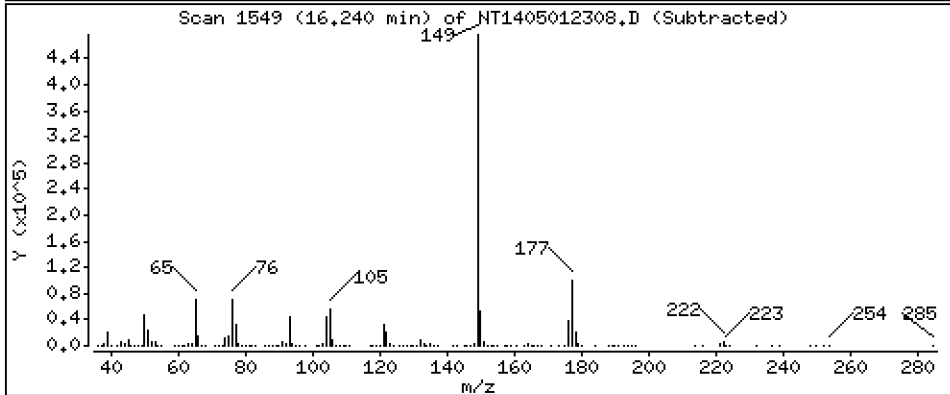
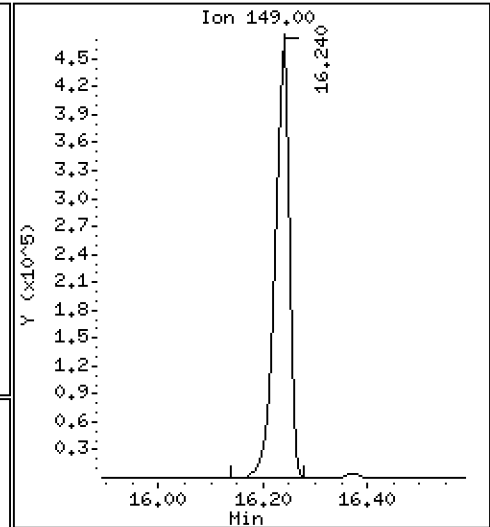
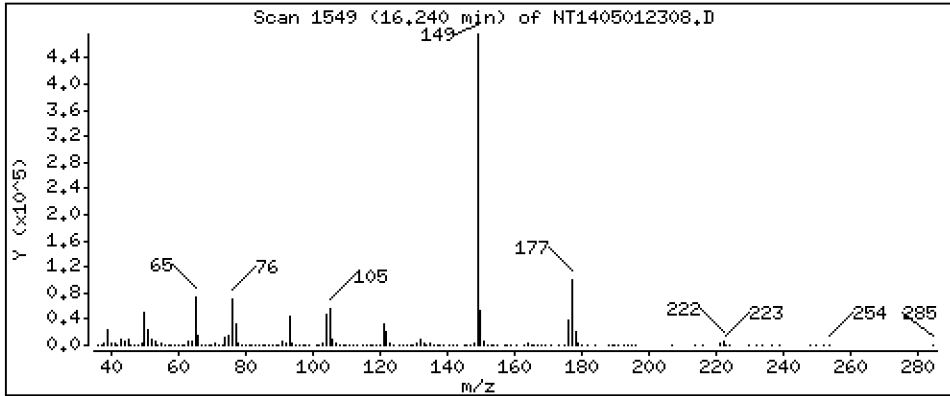
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,631 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

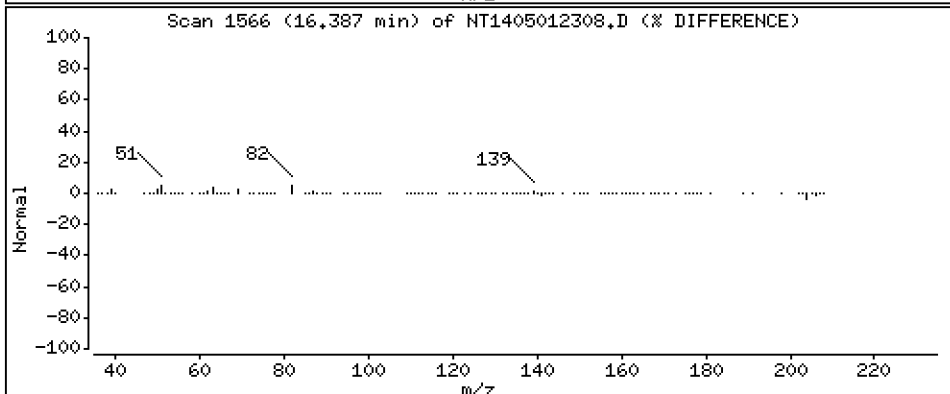
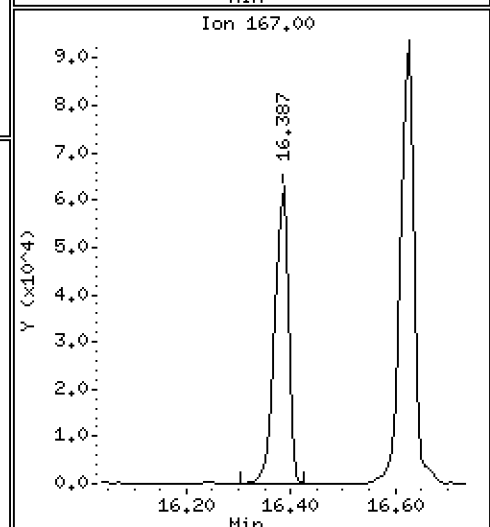
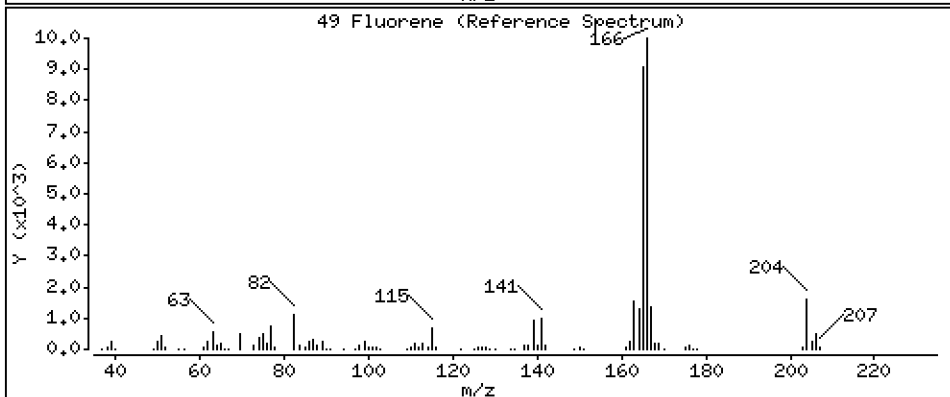
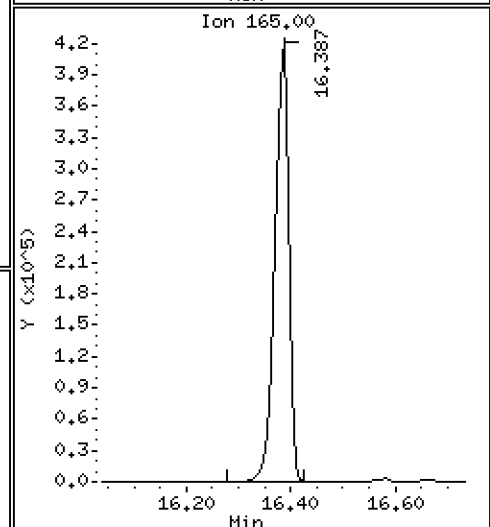
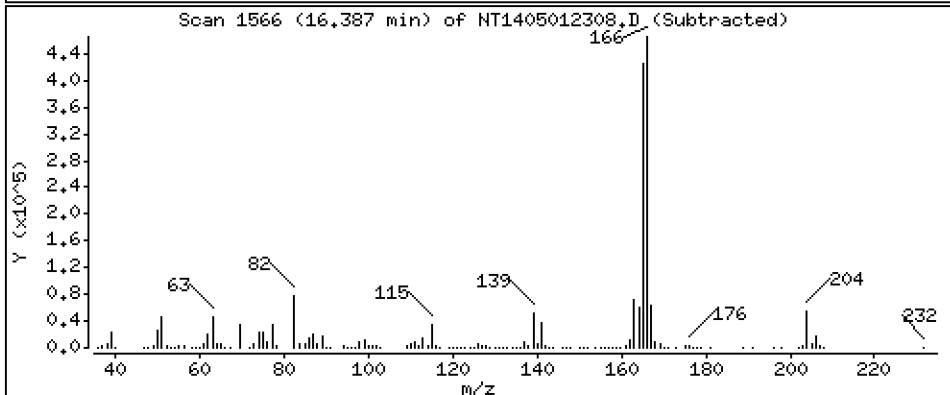
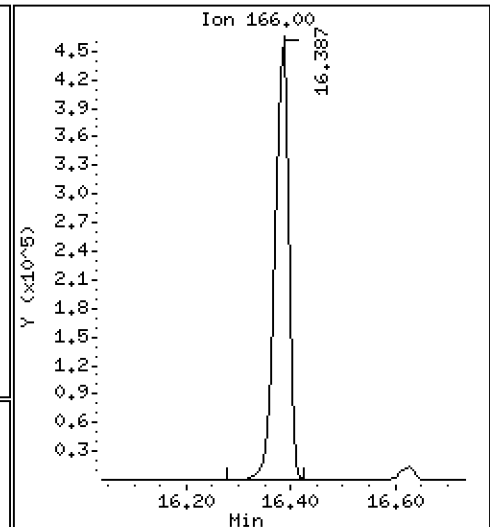
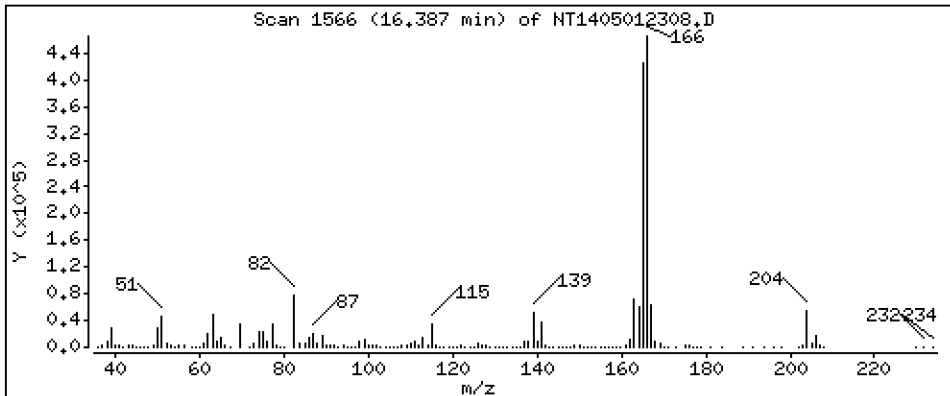
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,506 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

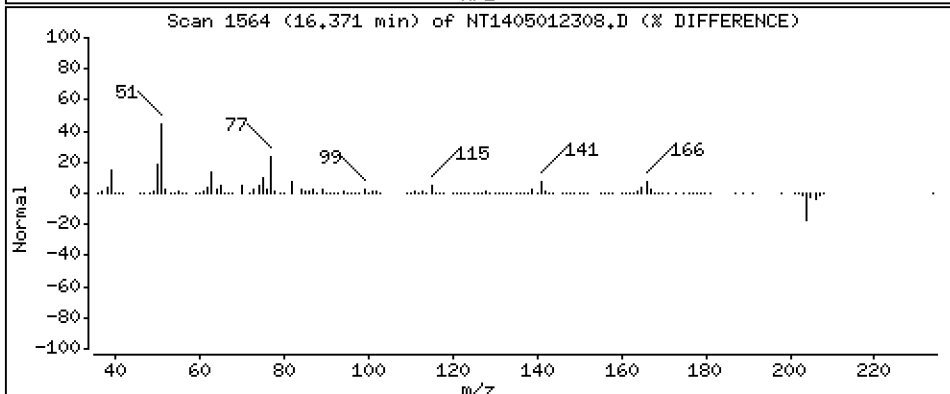
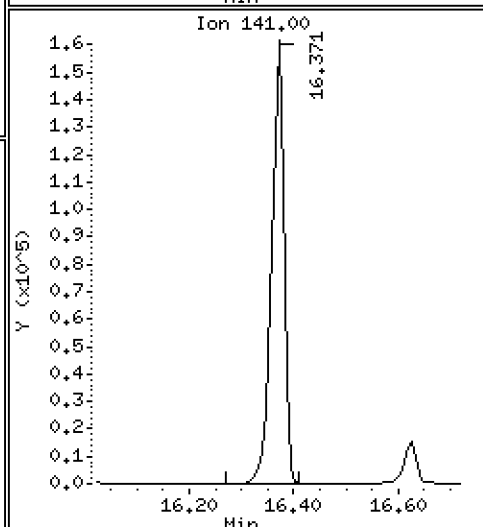
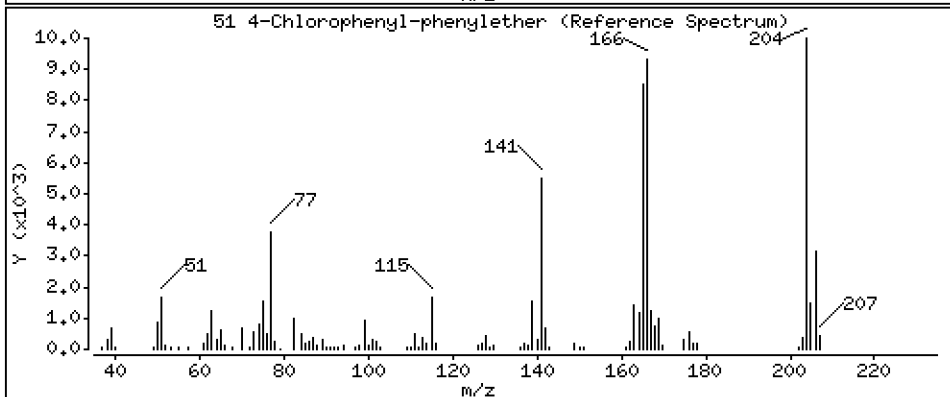
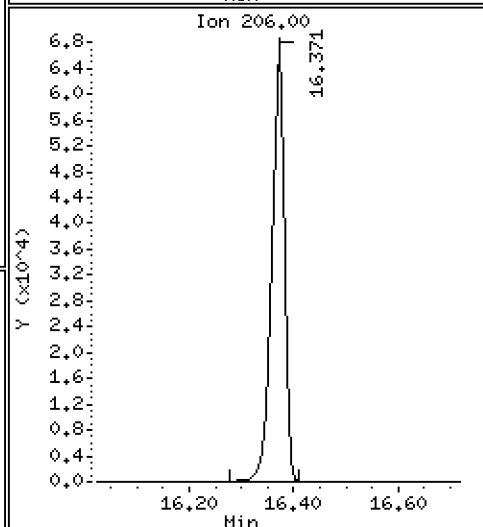
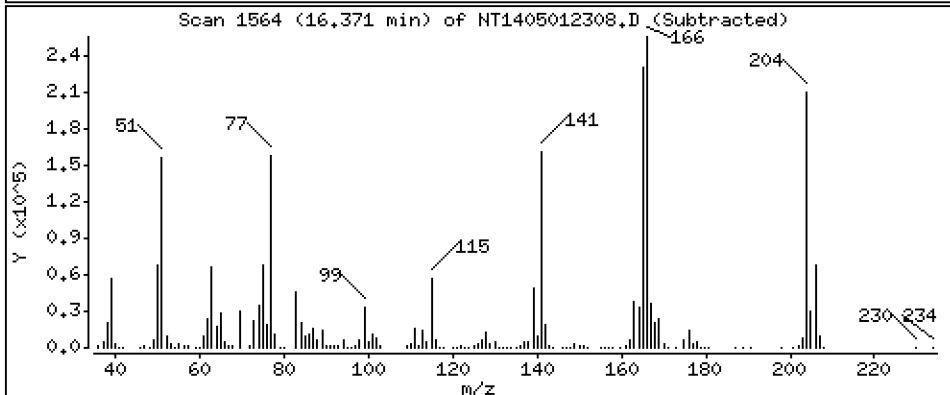
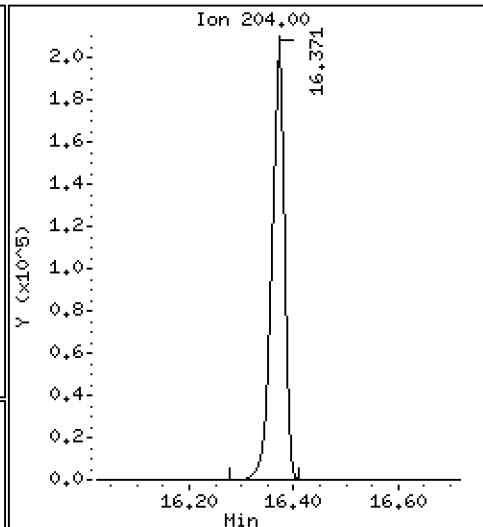
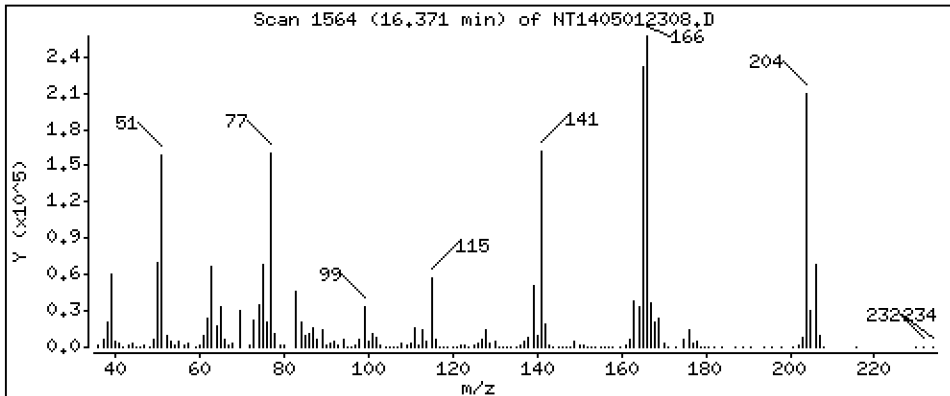
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,552 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

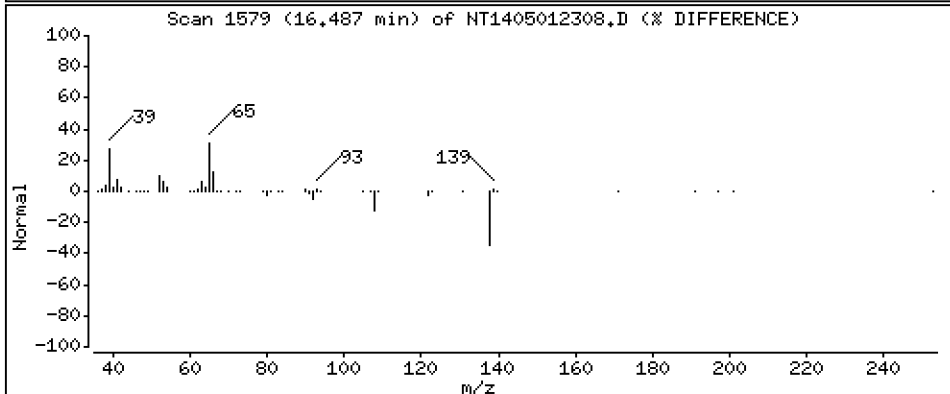
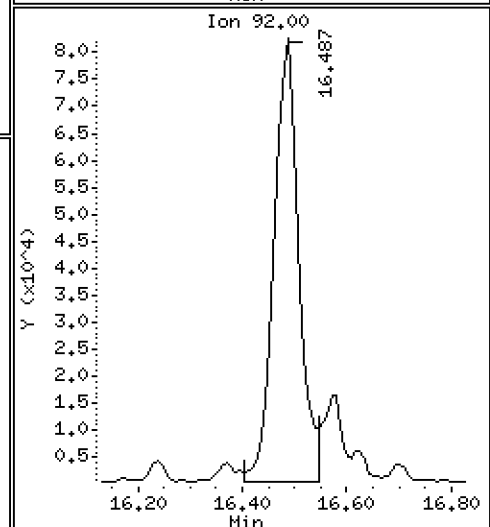
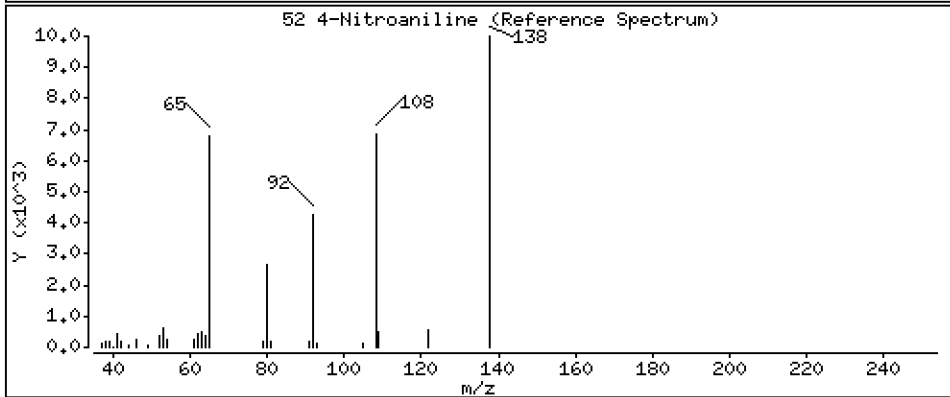
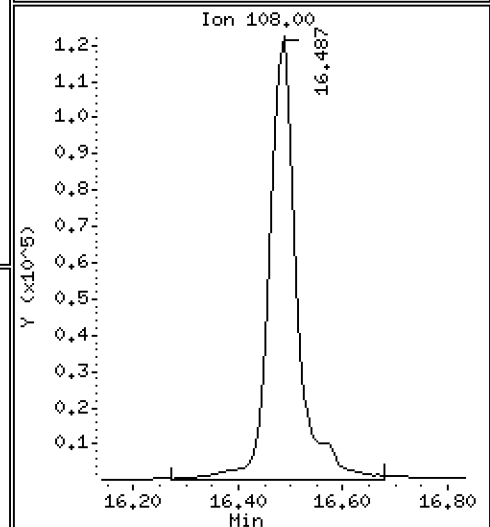
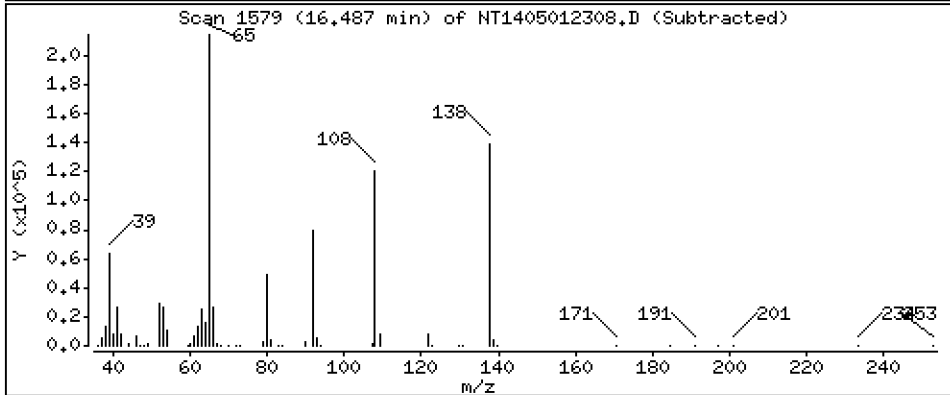
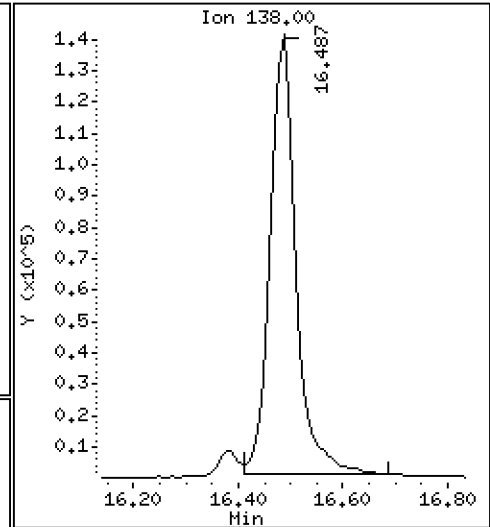
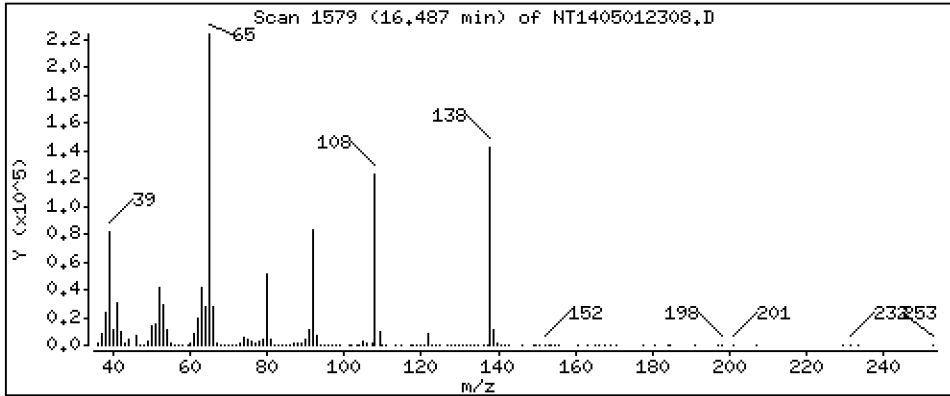
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 10,89 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

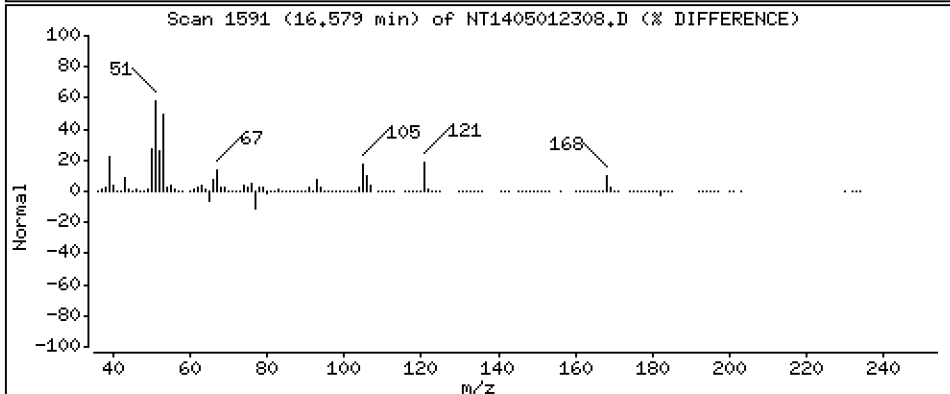
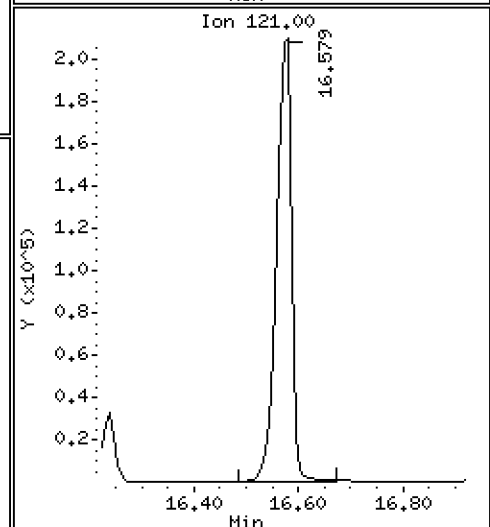
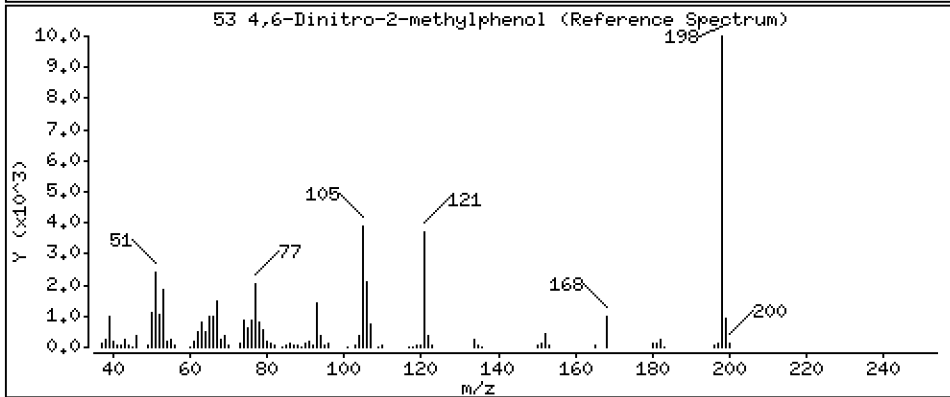
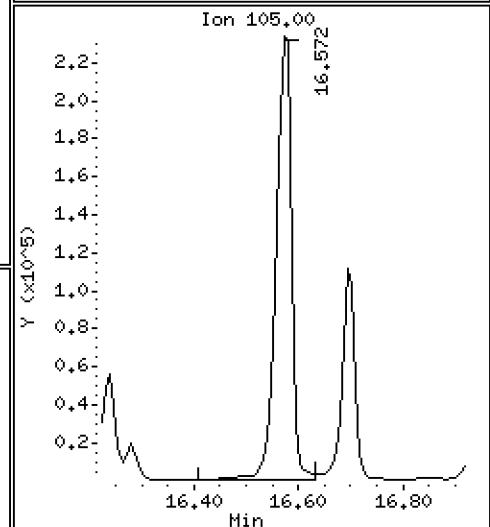
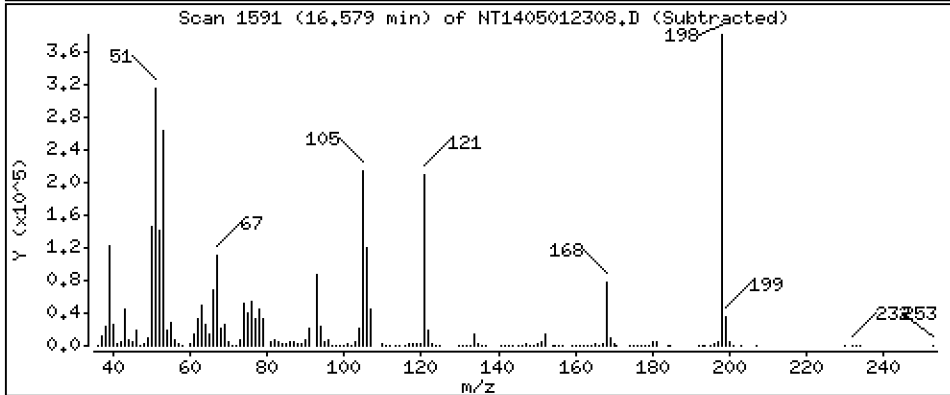
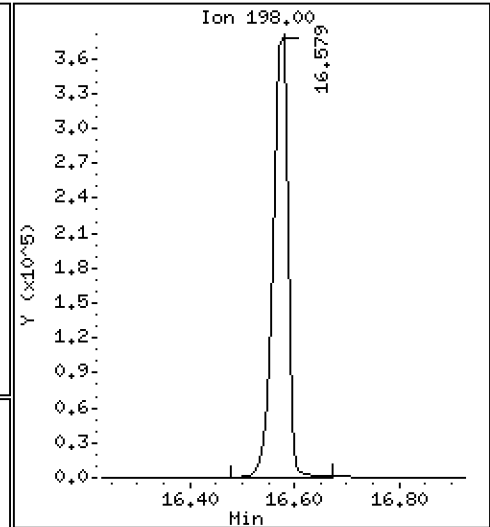
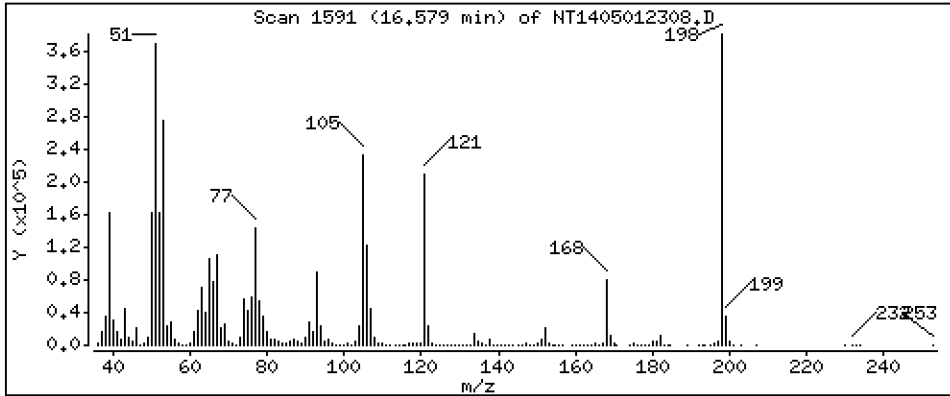
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 27,02 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

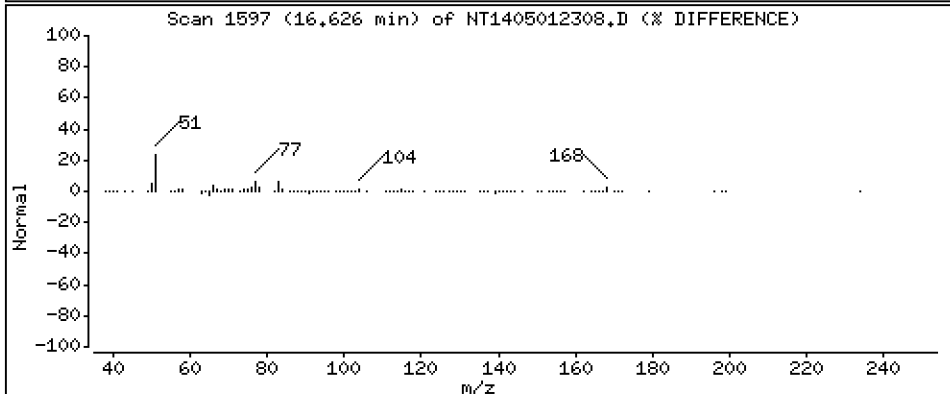
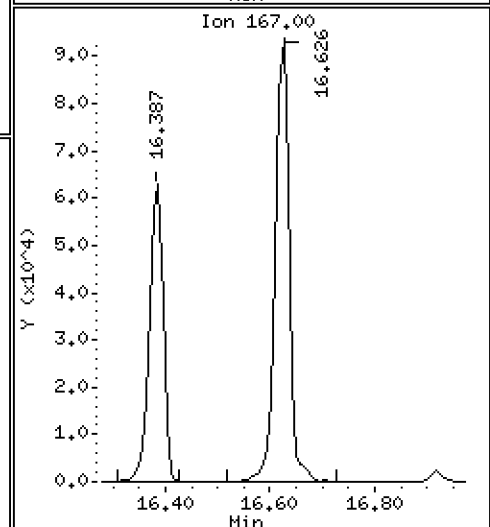
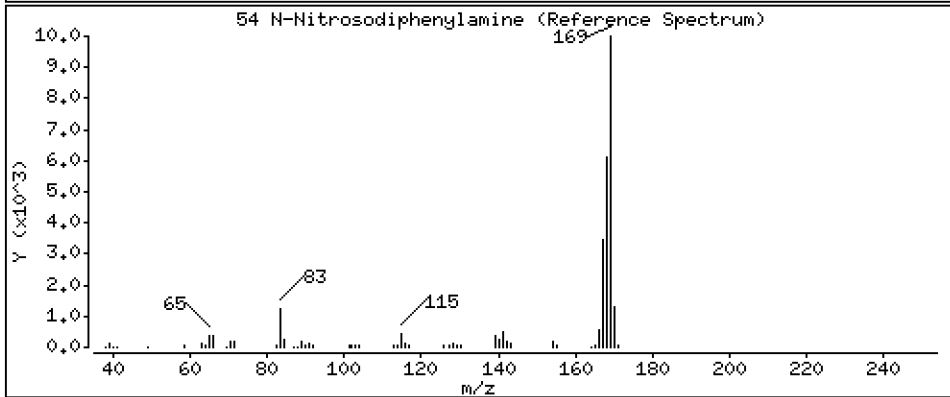
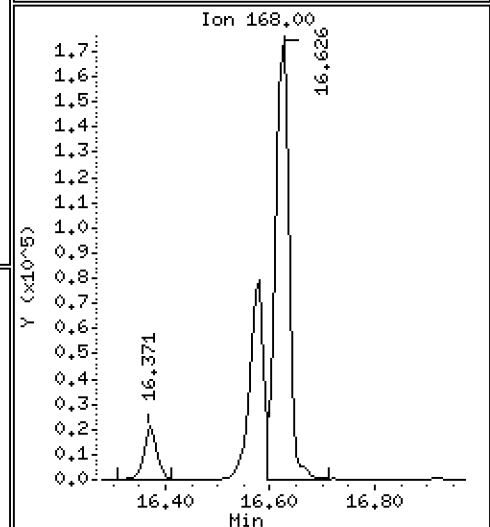
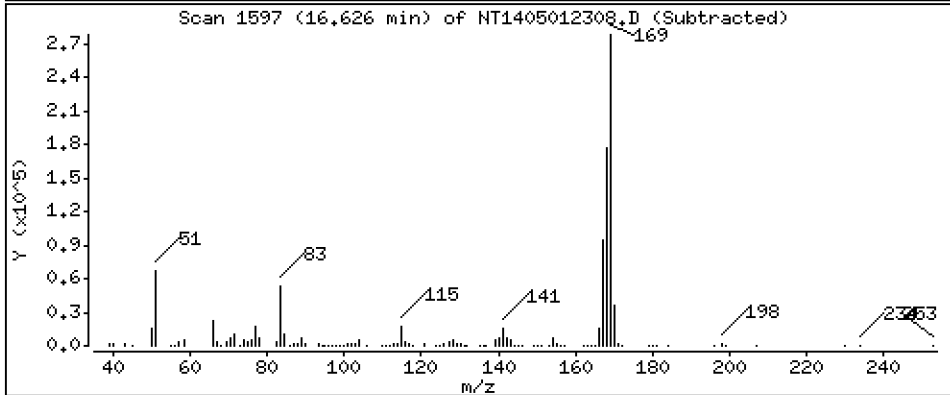
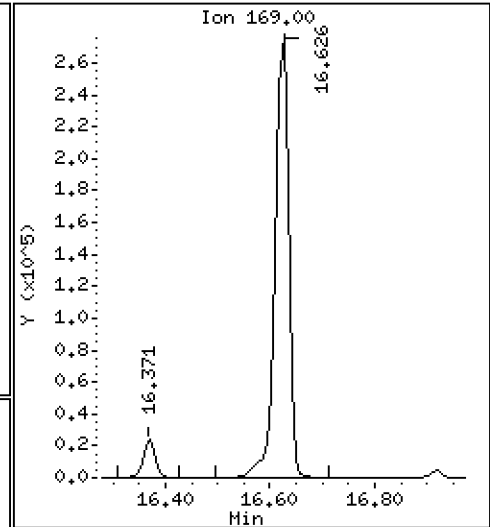
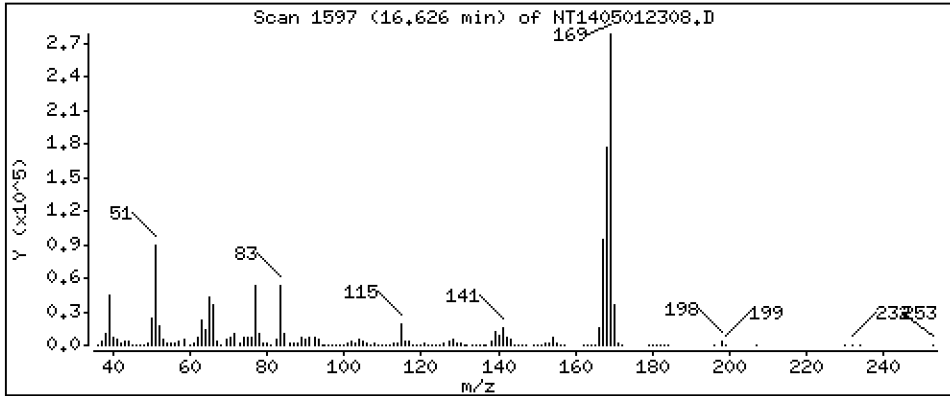
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 3,955 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

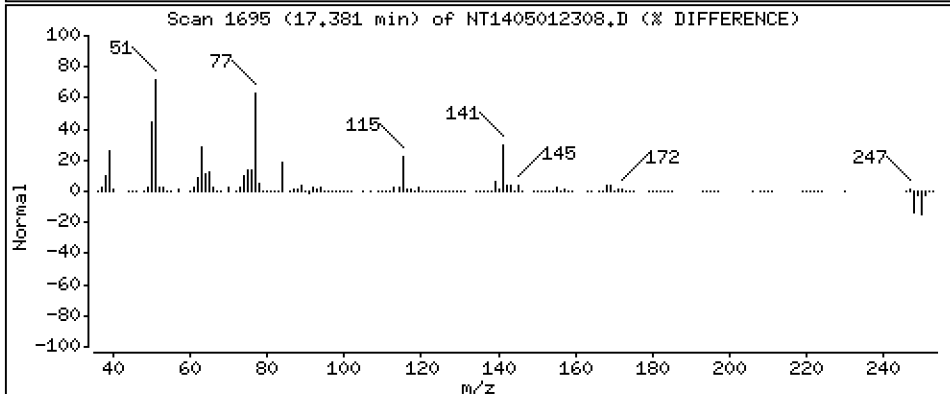
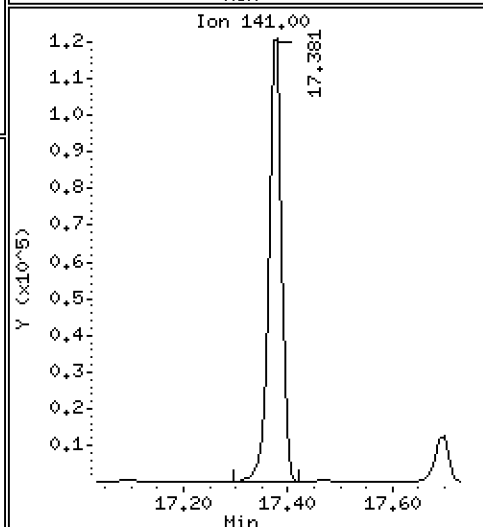
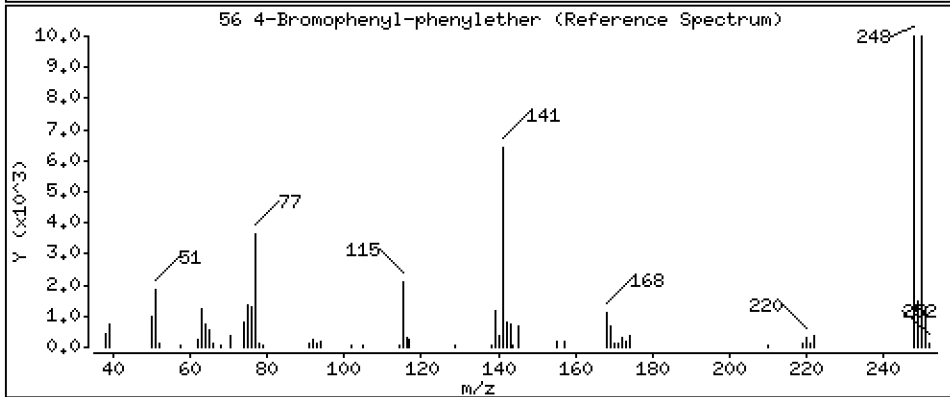
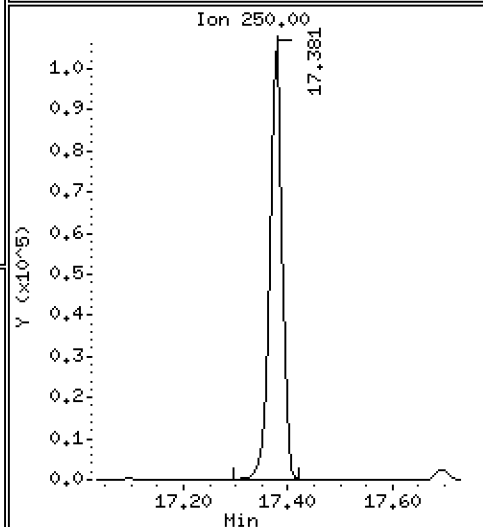
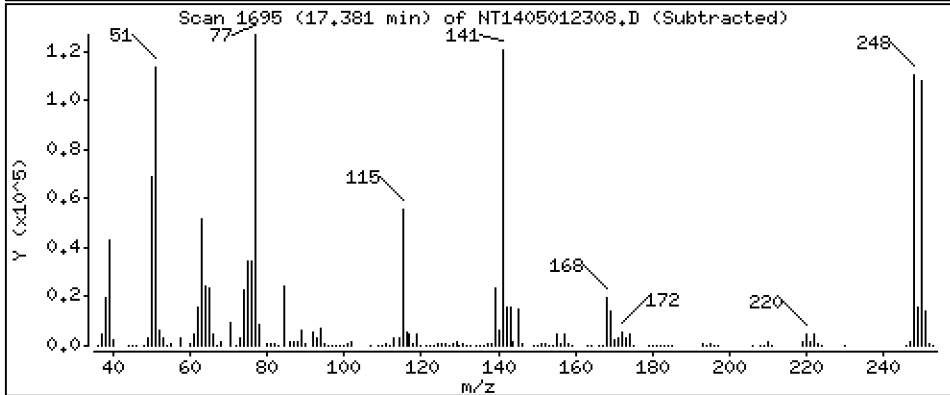
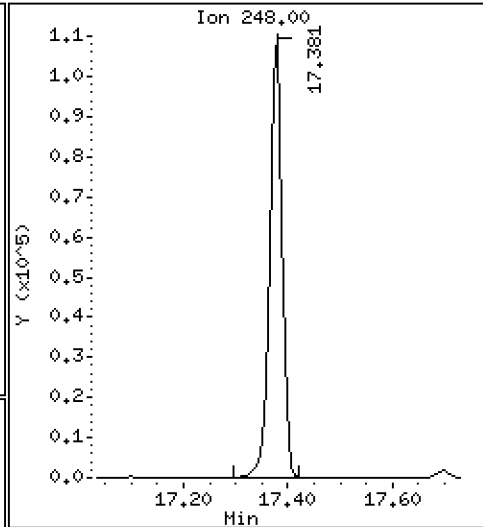
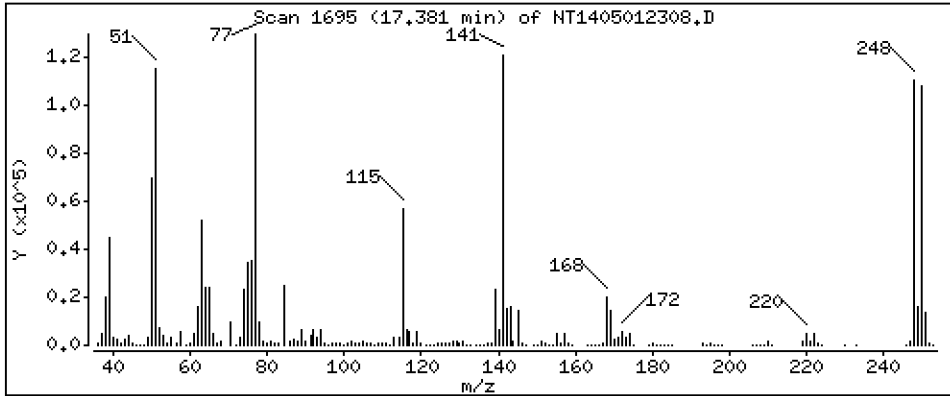
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 4,515 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

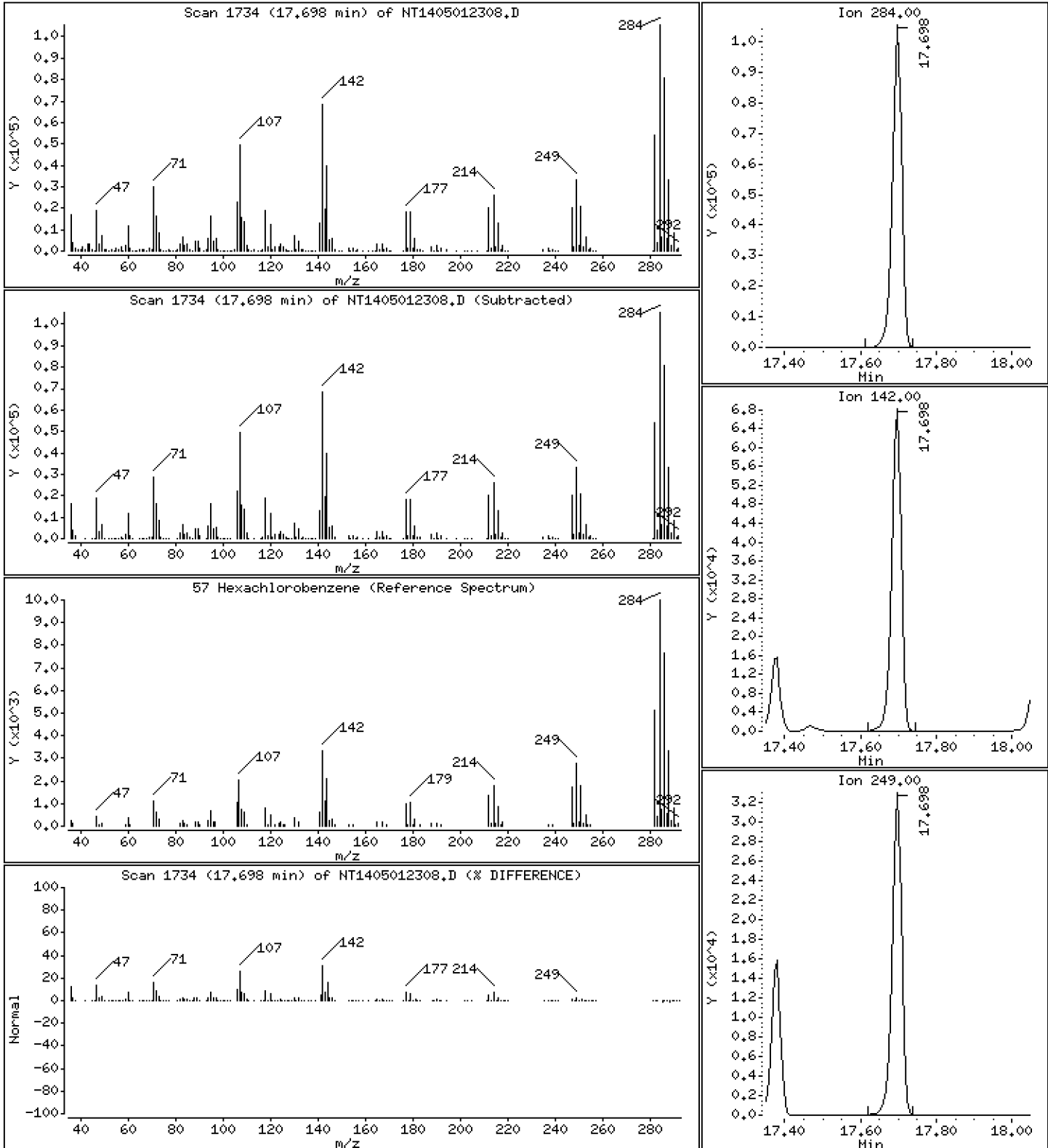
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,230 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

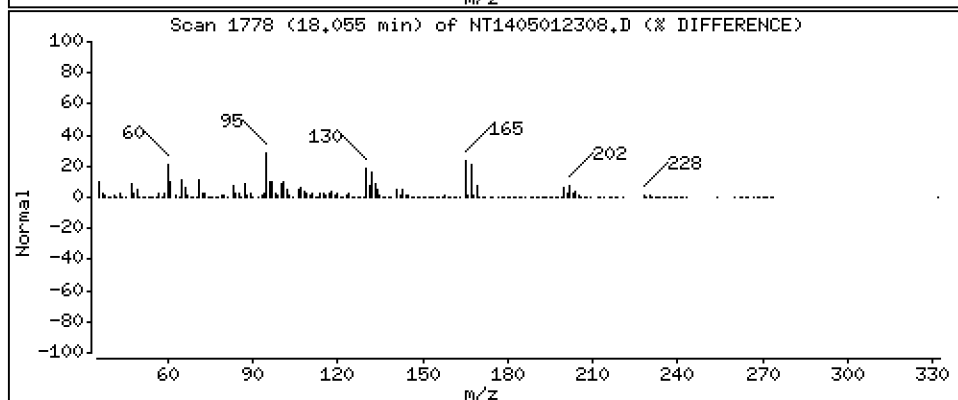
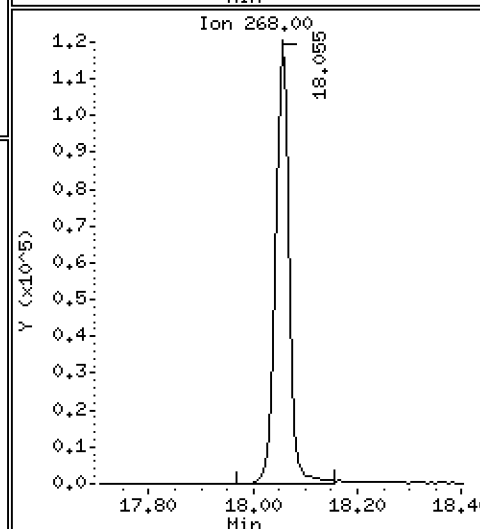
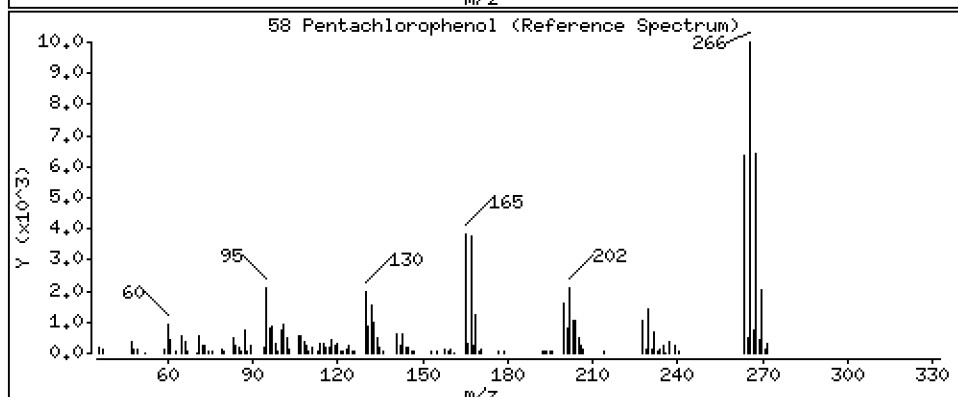
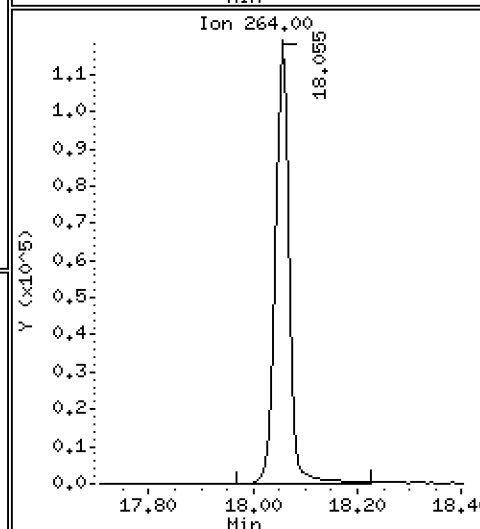
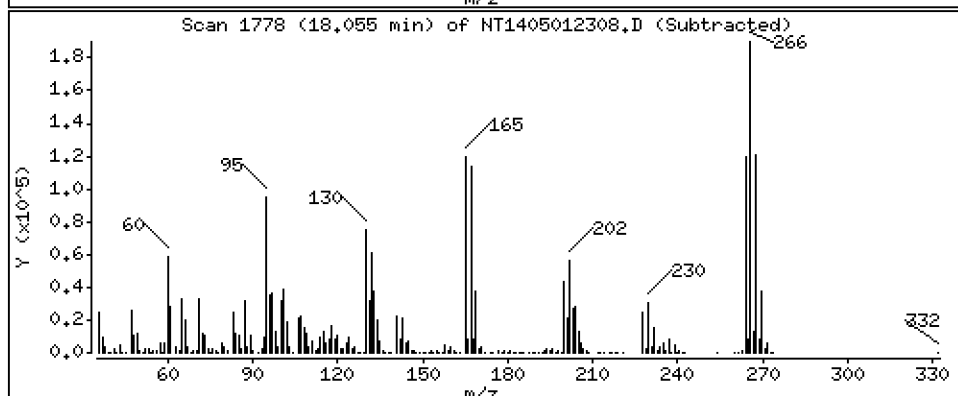
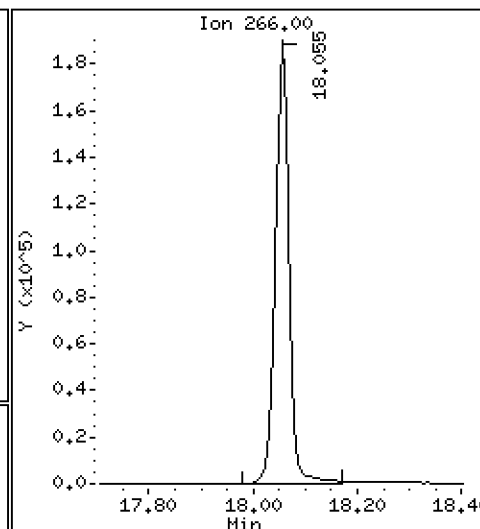
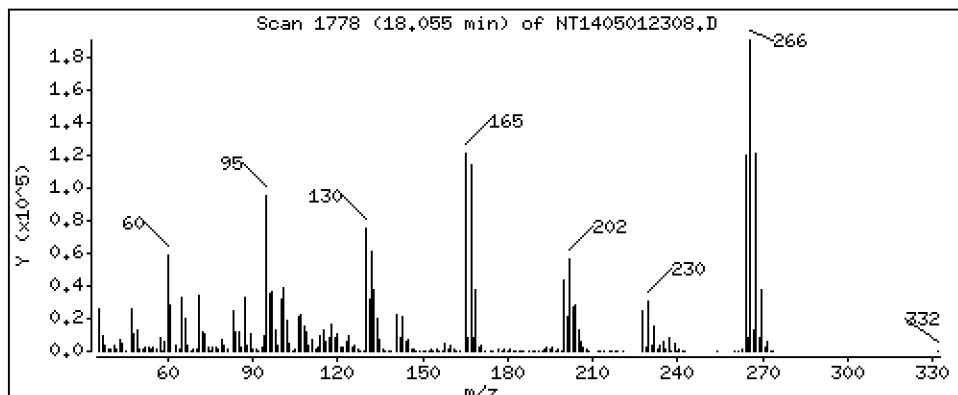
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 12,71 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

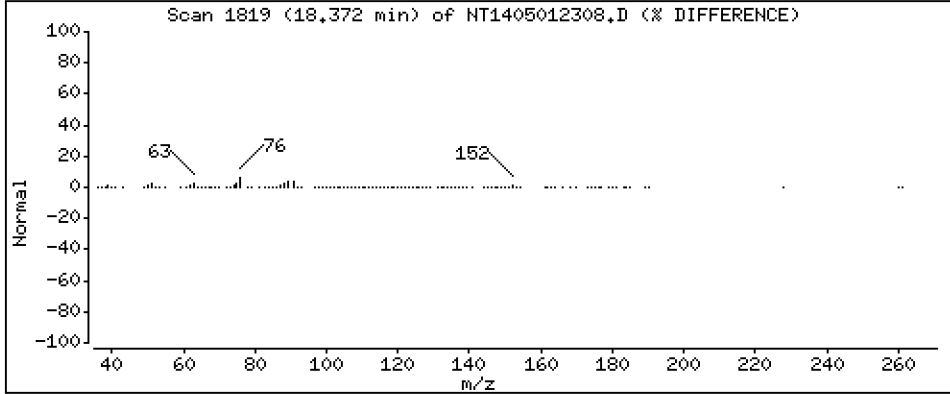
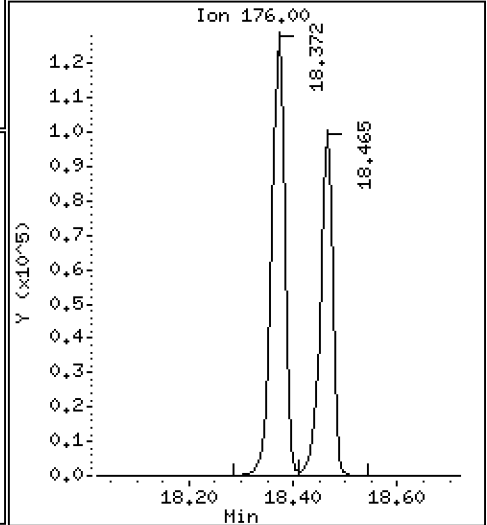
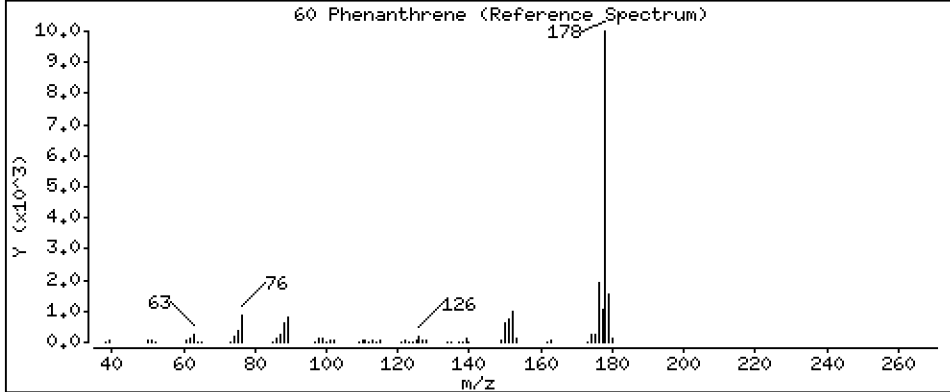
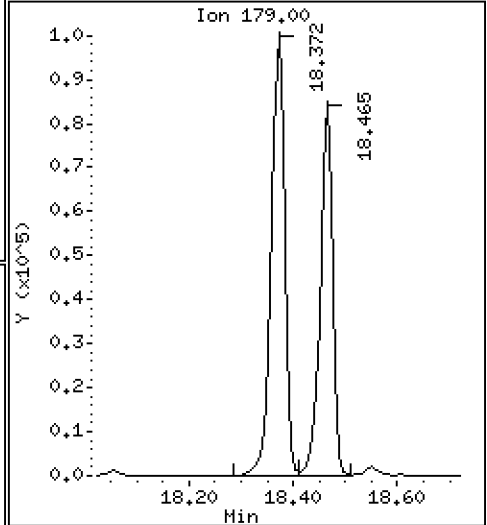
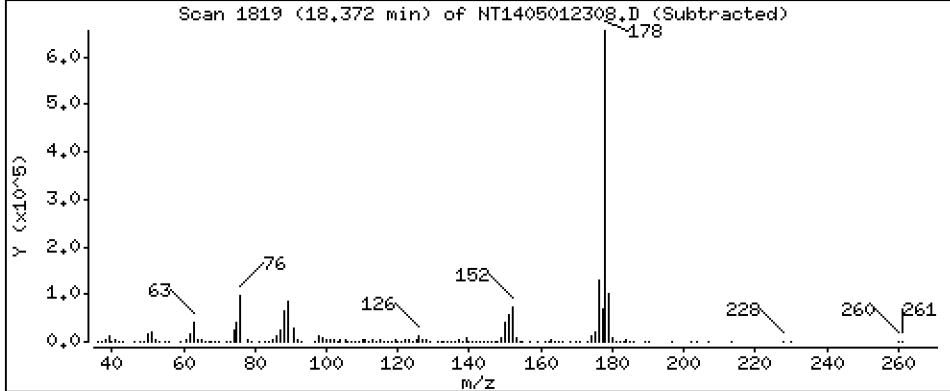
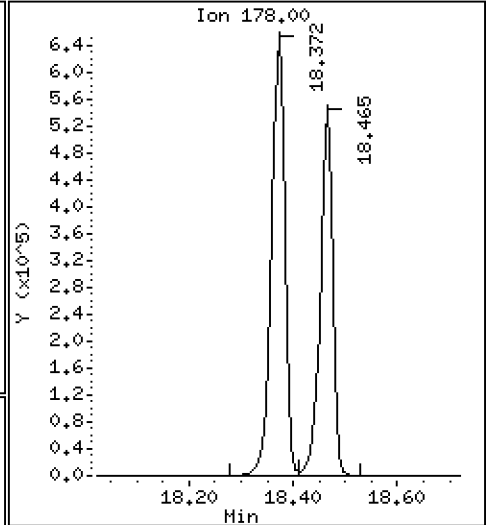
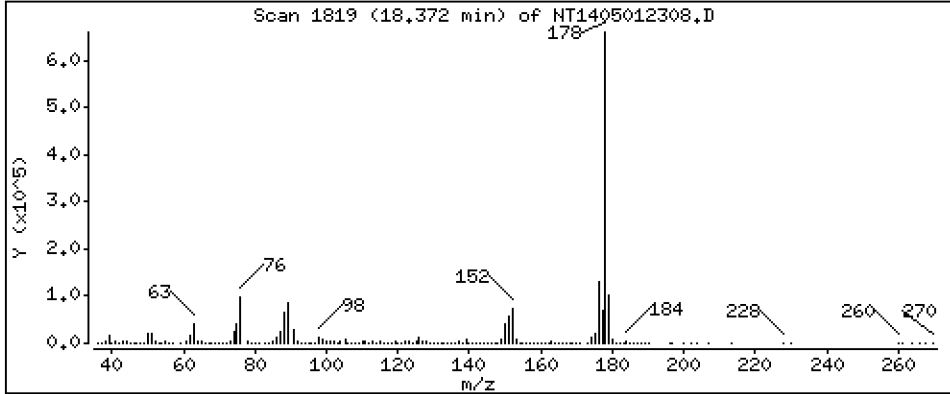
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 4,567 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

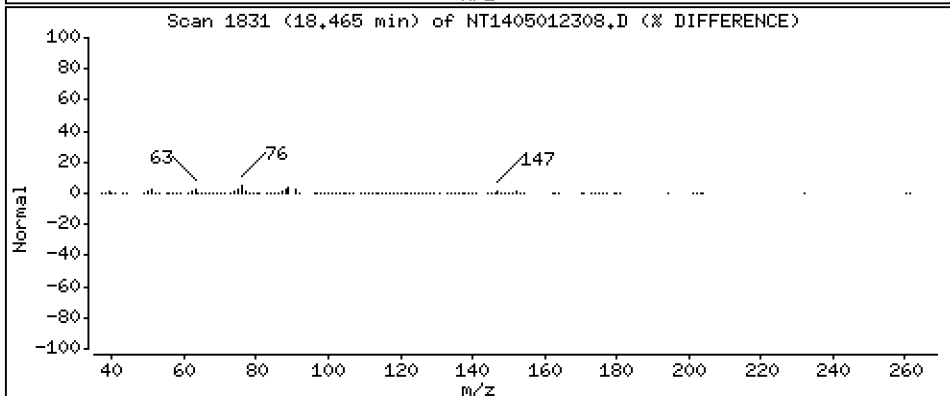
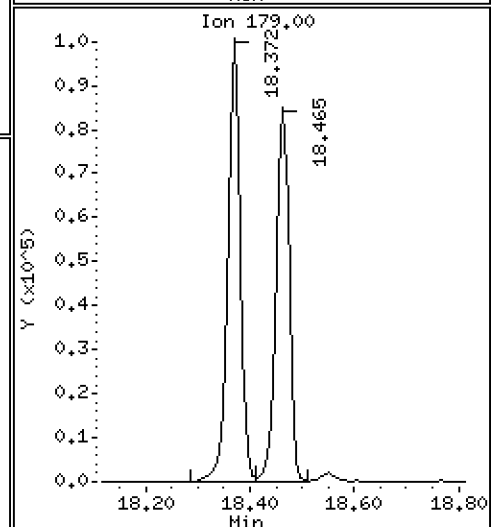
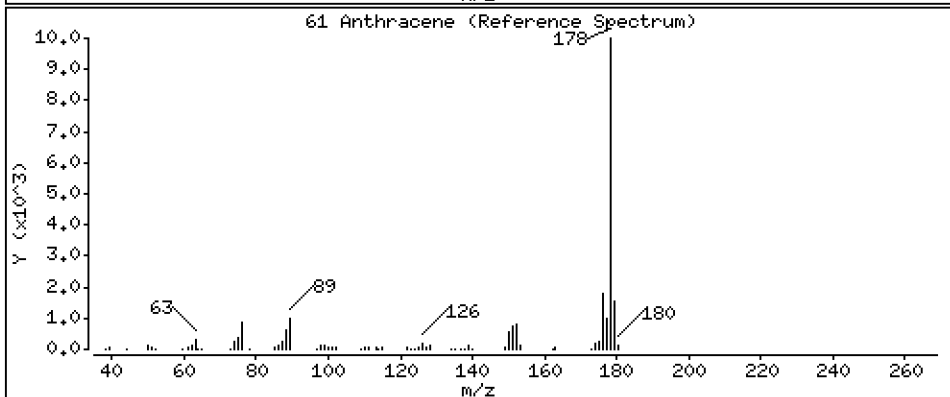
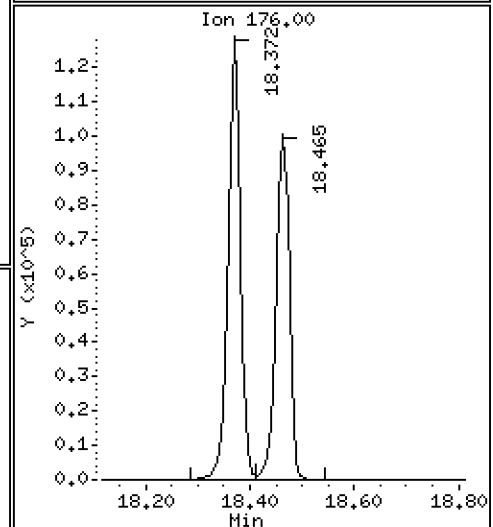
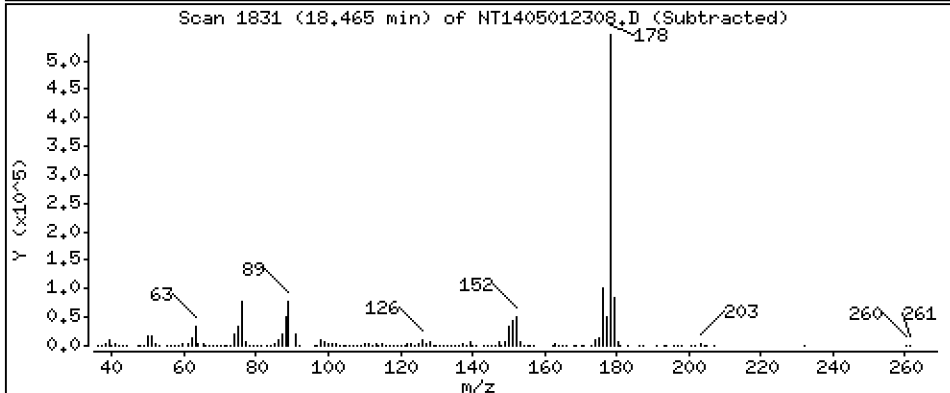
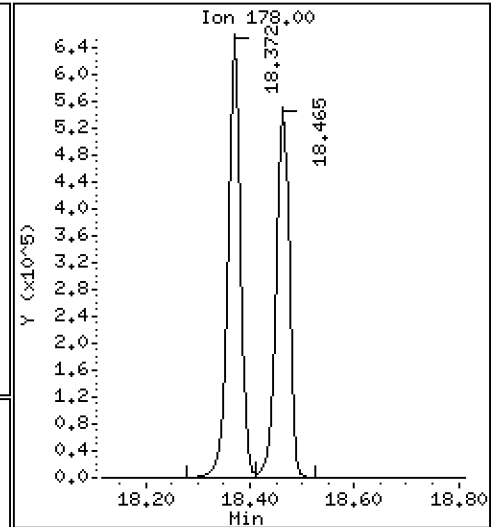
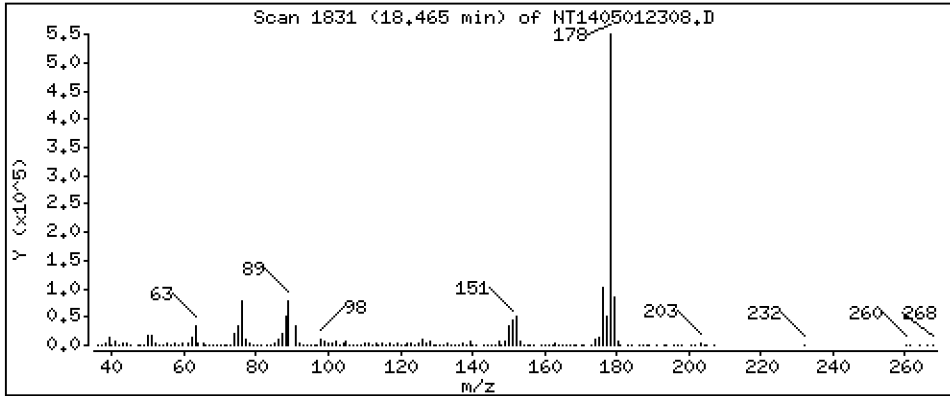
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 3,931 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

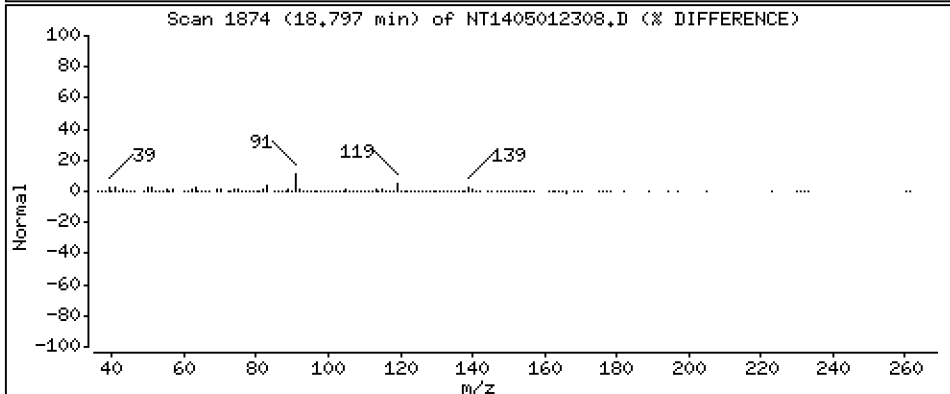
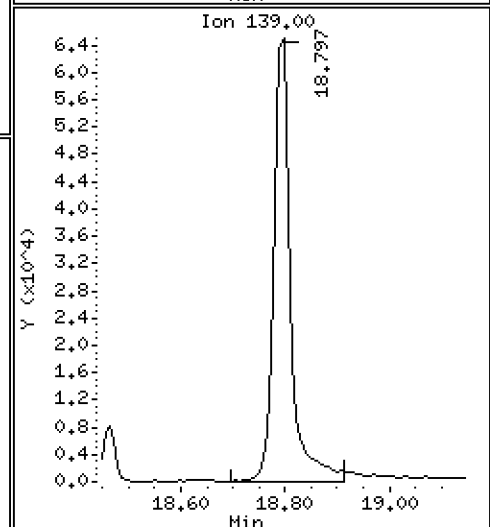
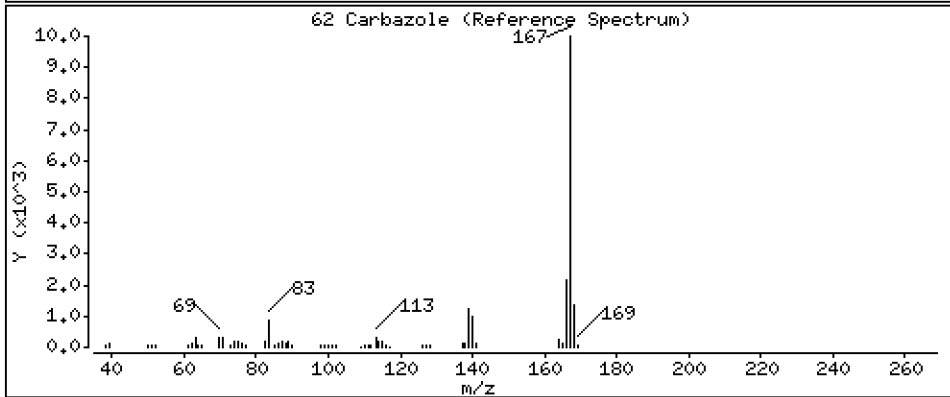
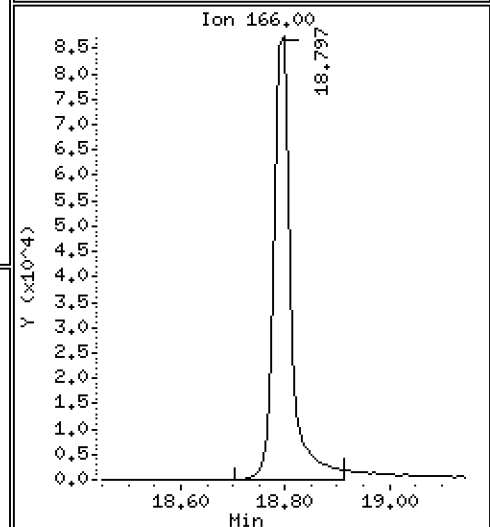
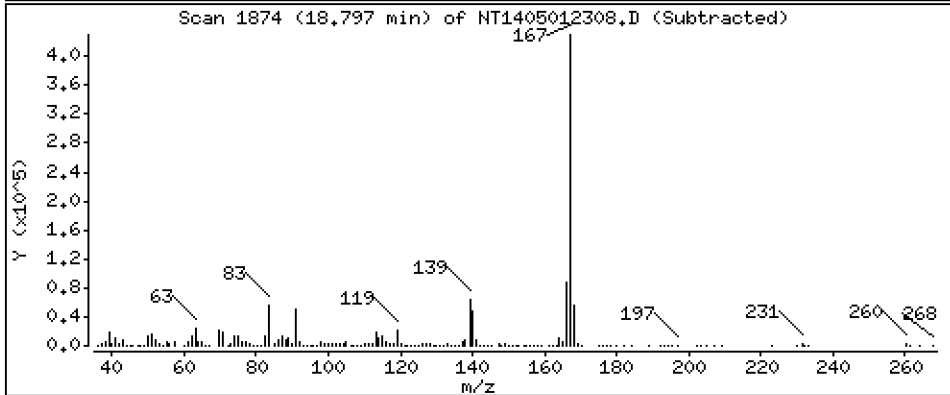
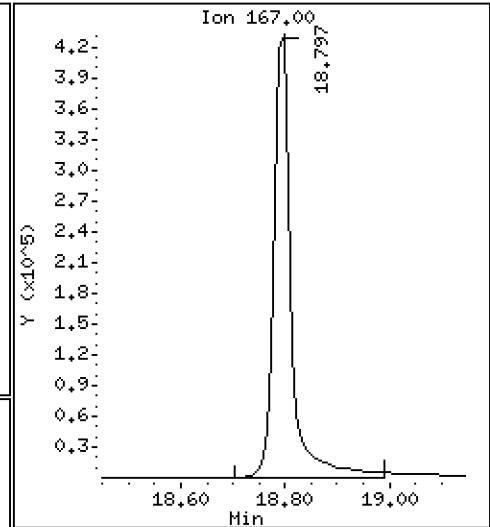
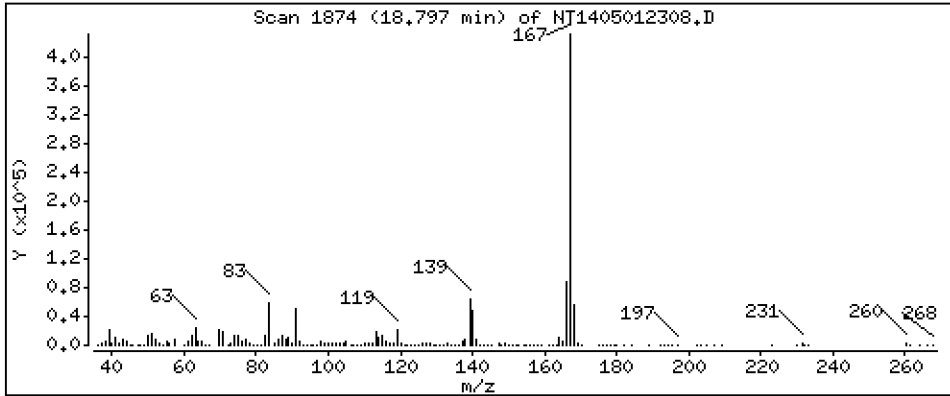
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 4,491 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

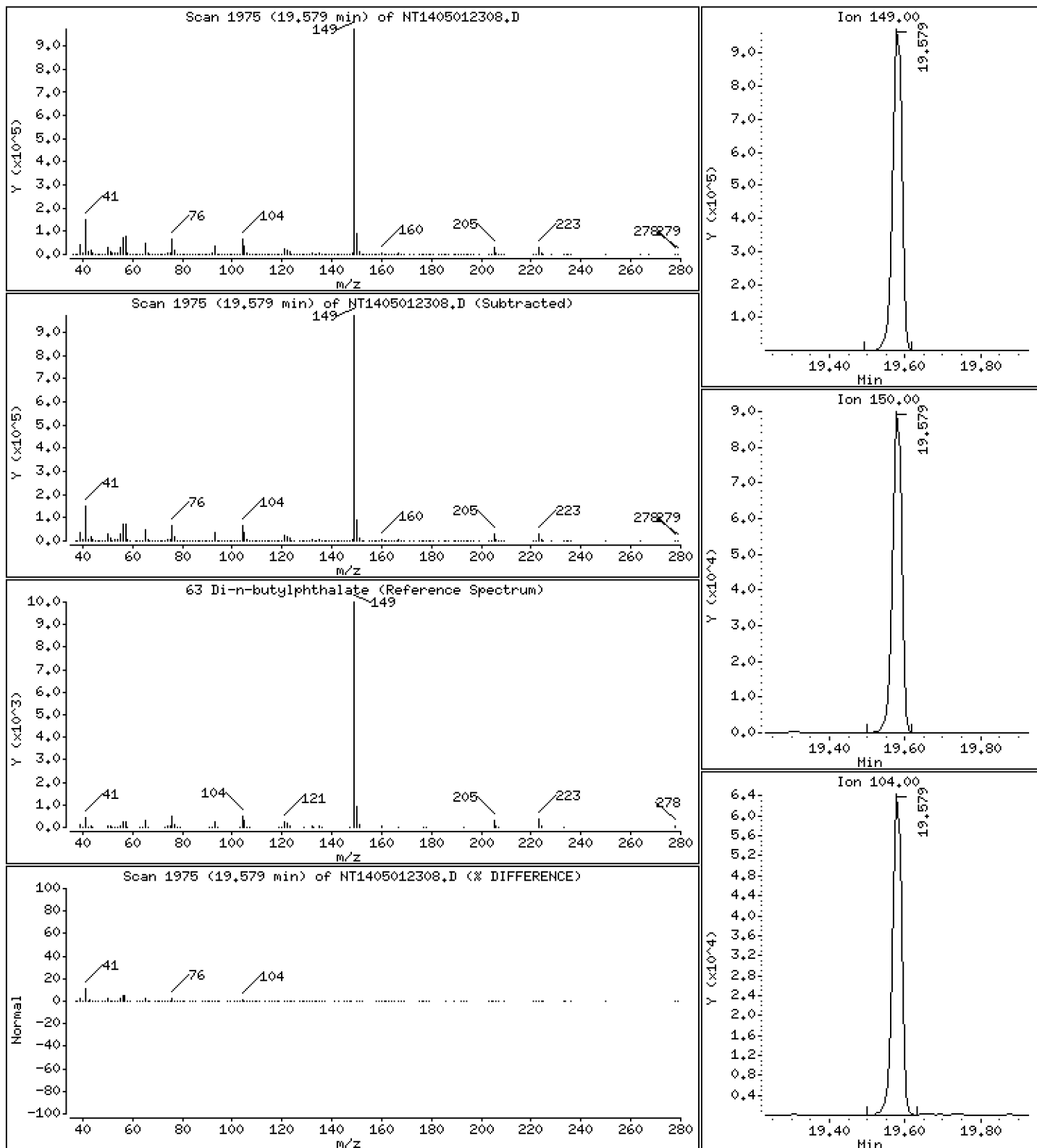
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 4,809 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

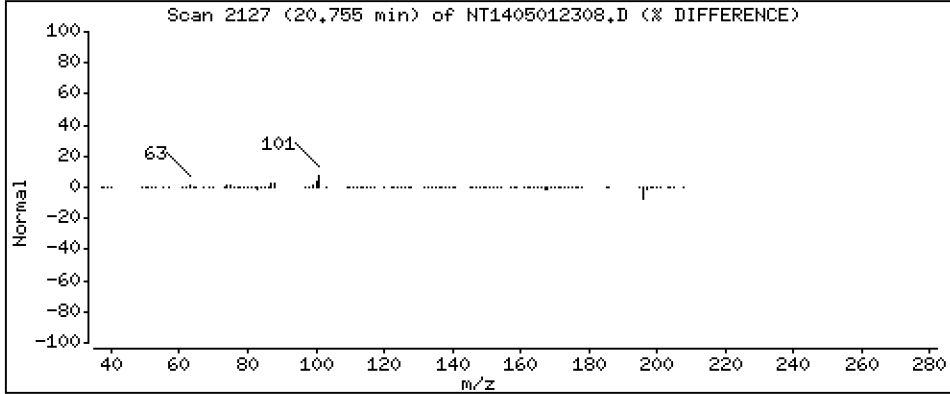
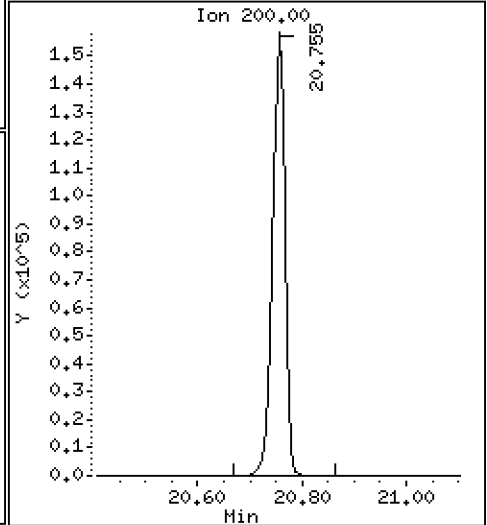
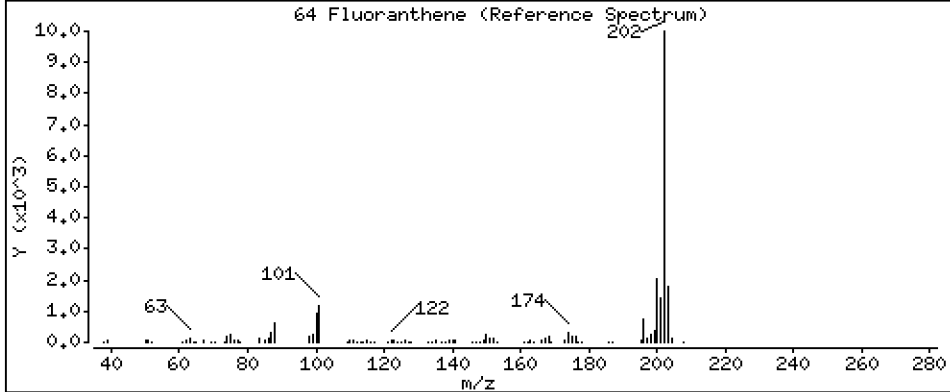
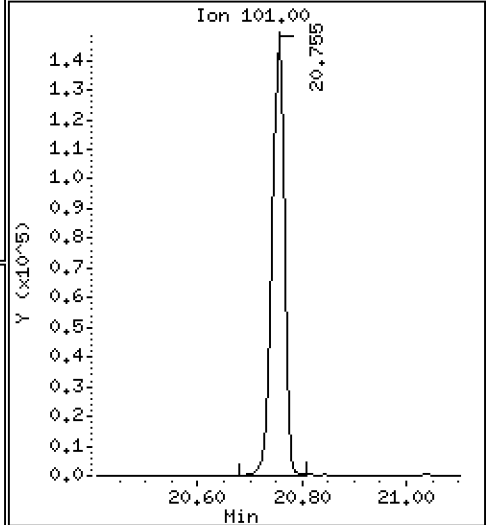
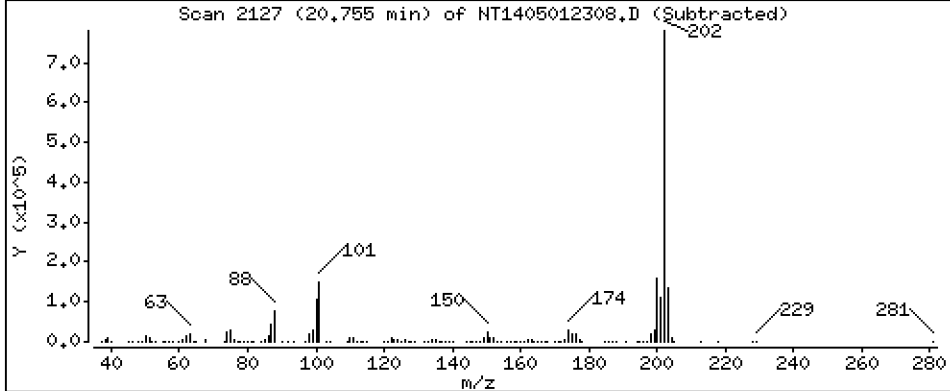
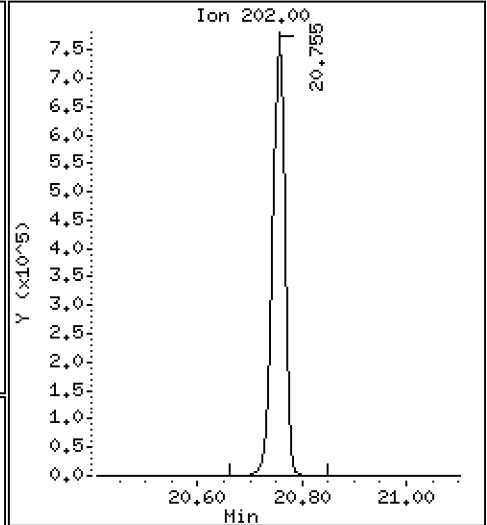
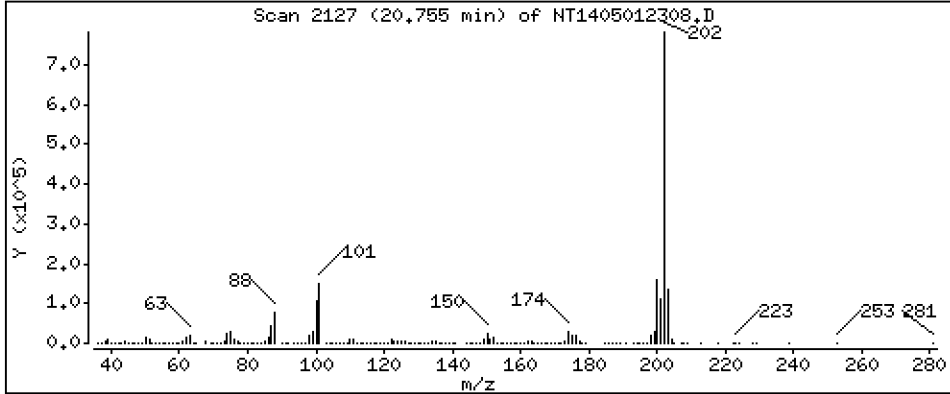
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 4,554 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

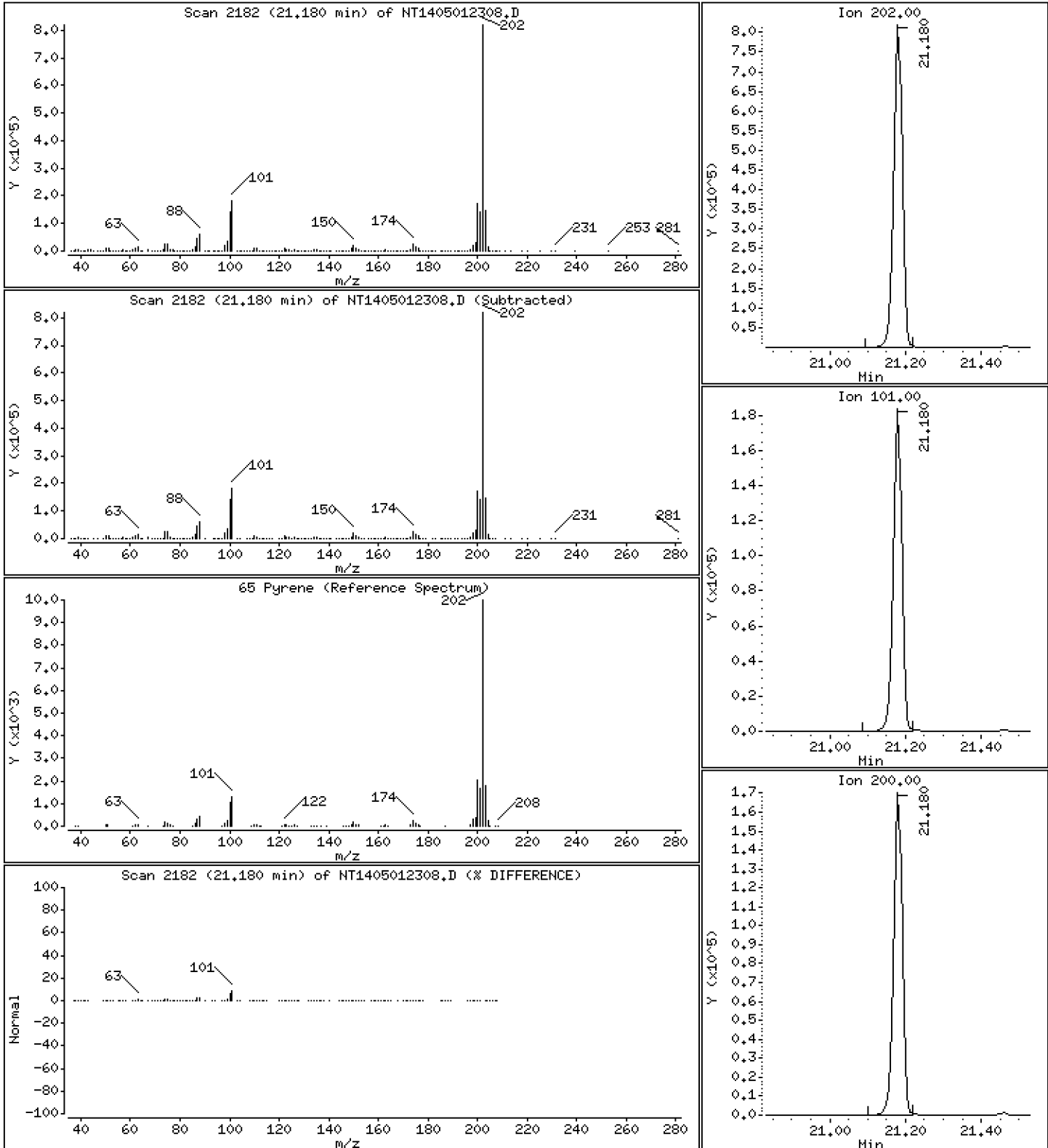
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 4,454 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

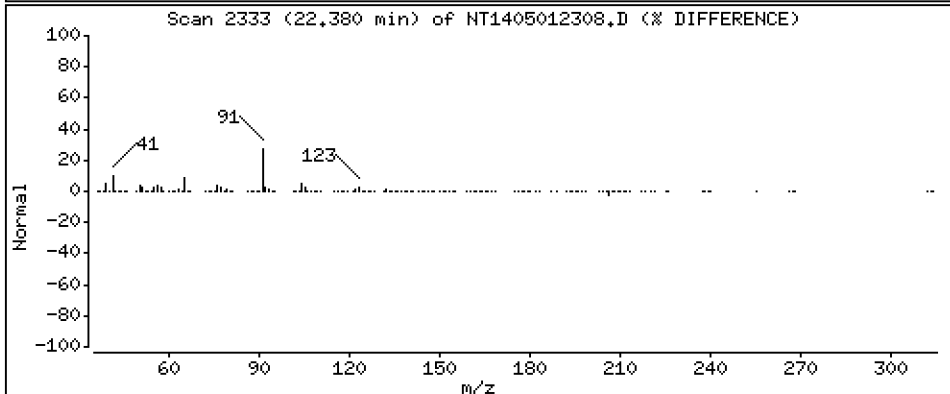
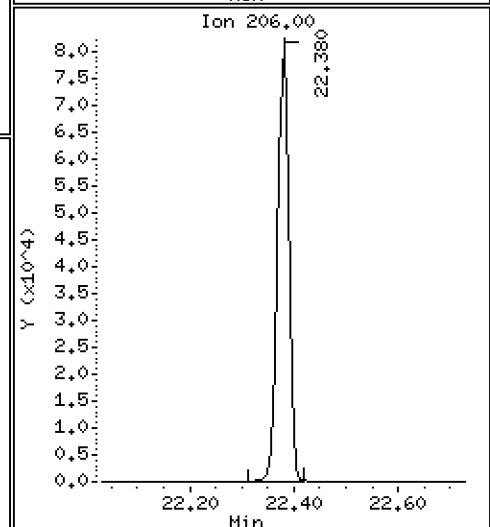
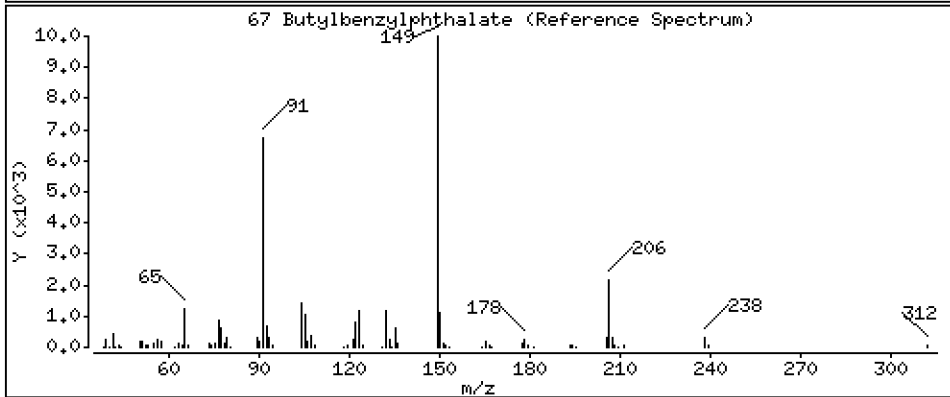
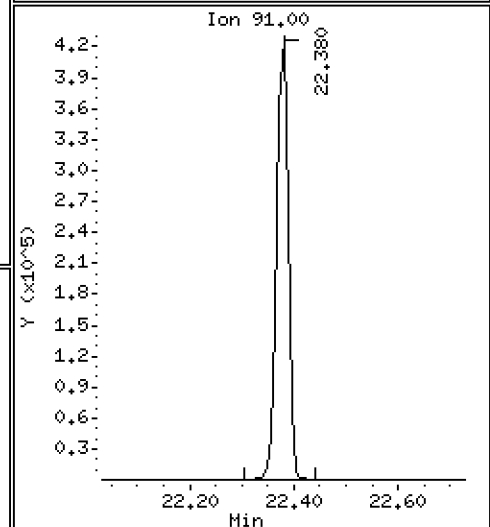
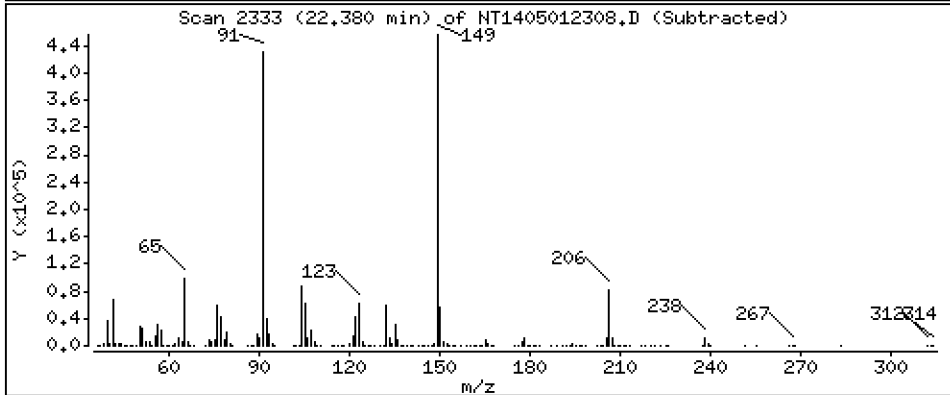
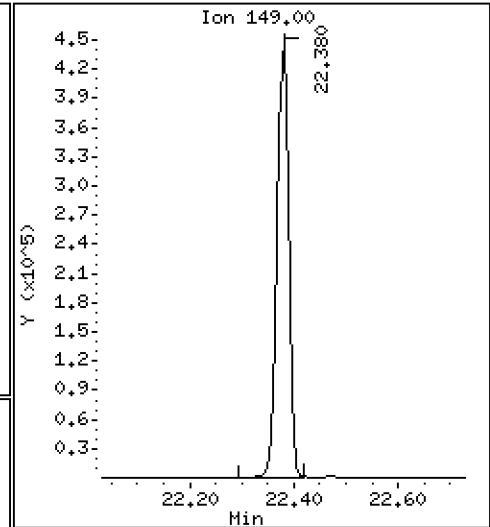
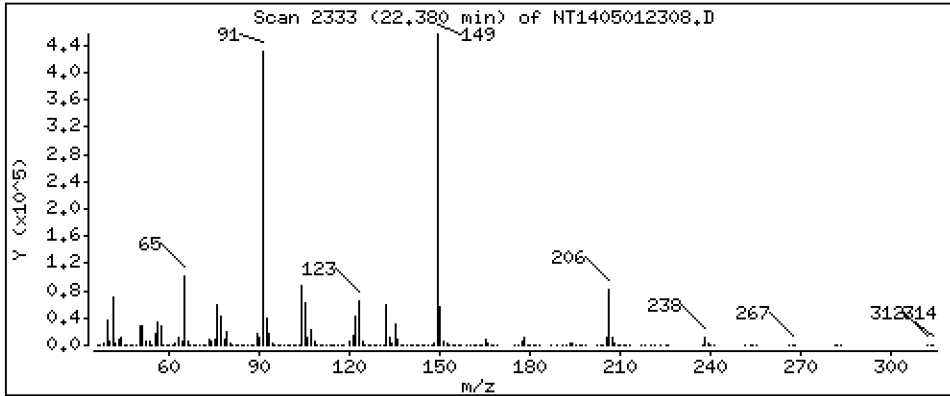
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,040 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

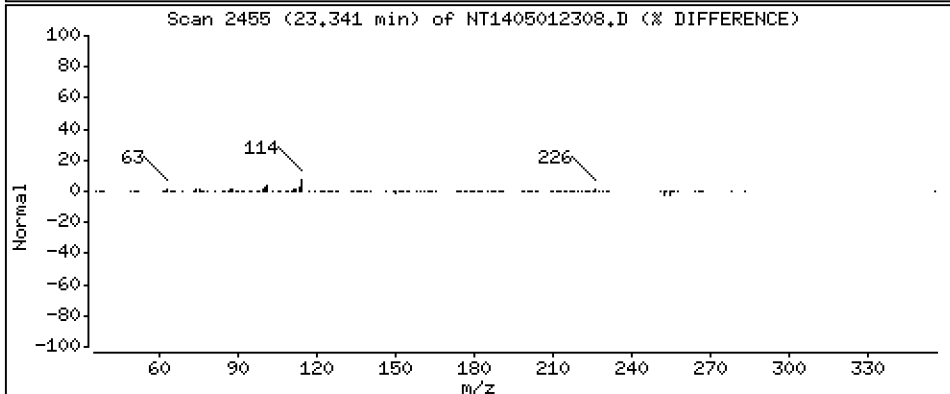
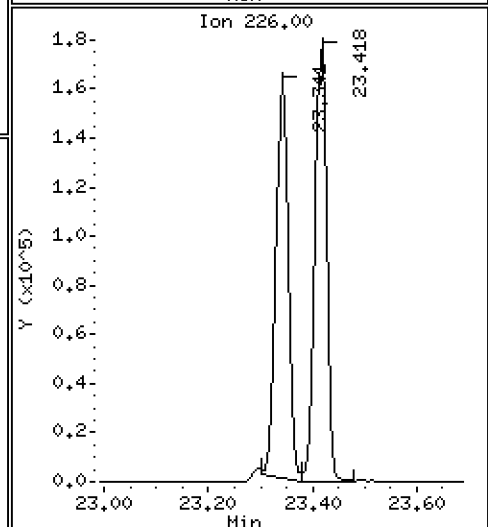
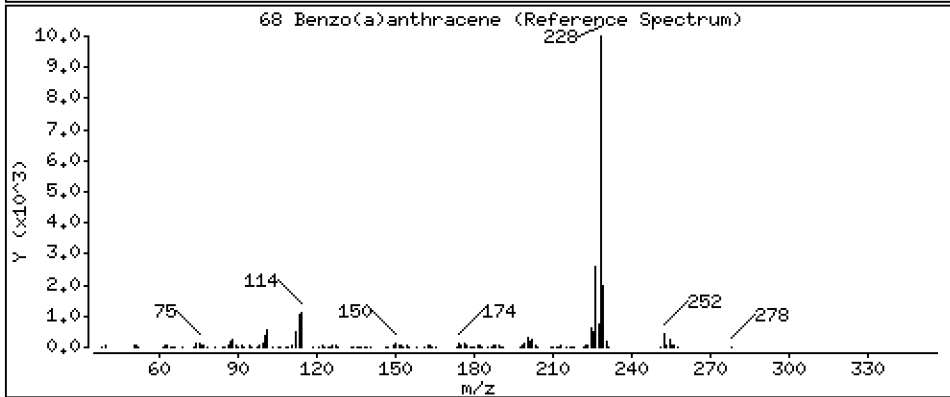
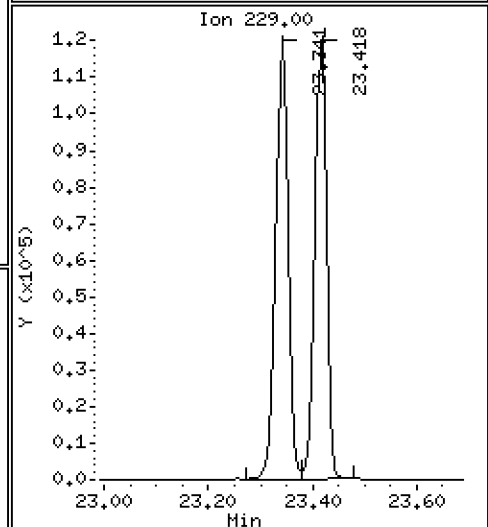
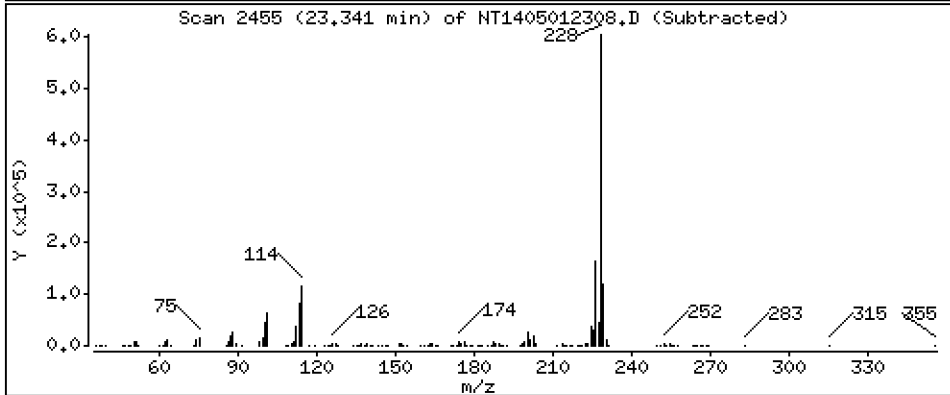
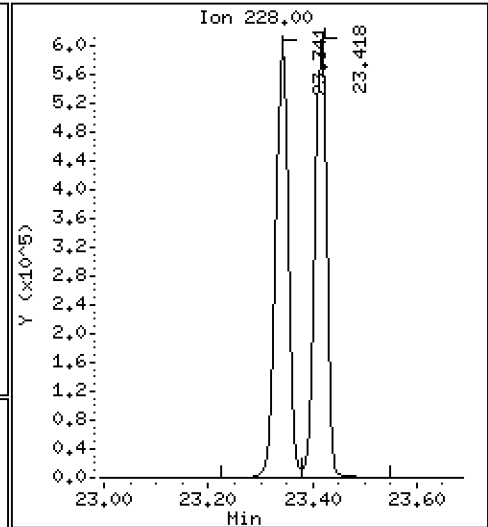
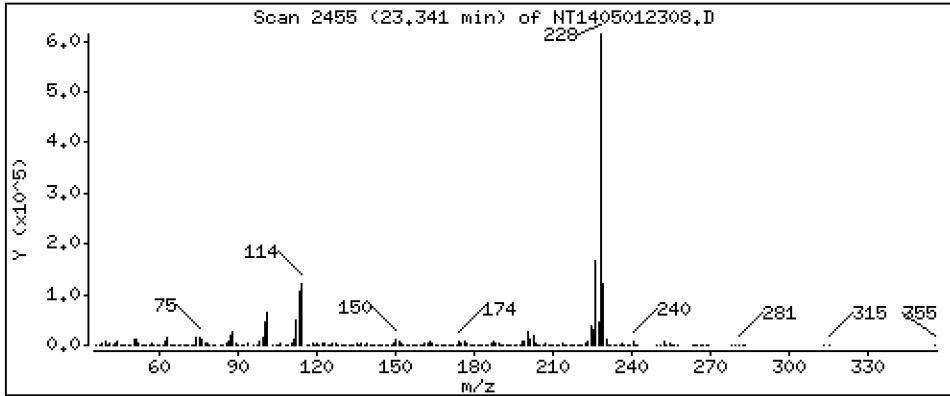
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 4,734 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

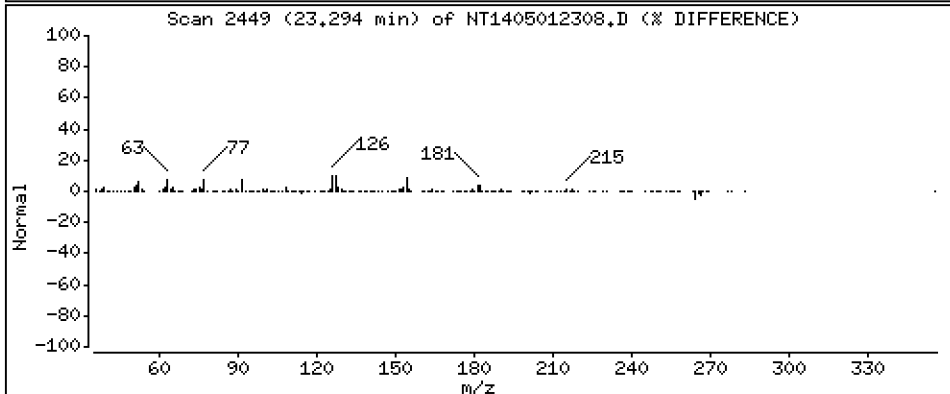
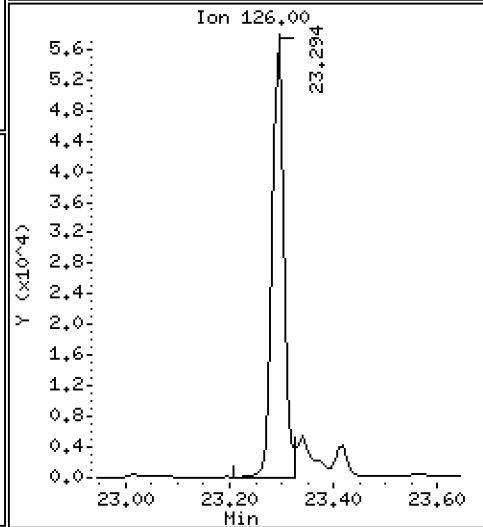
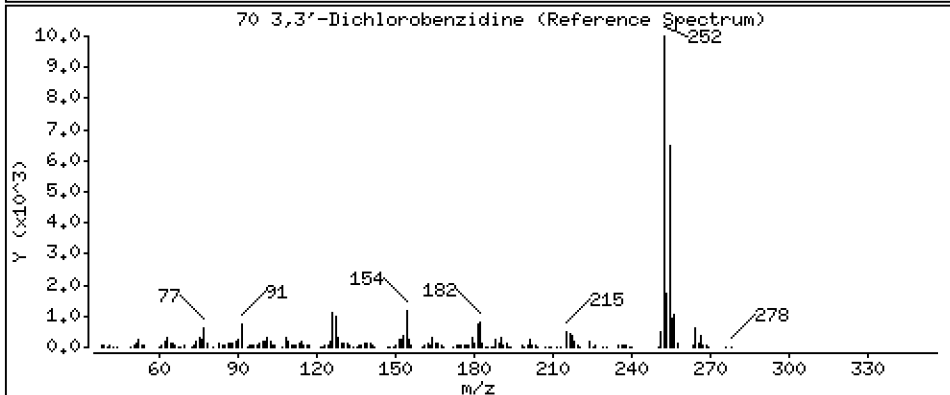
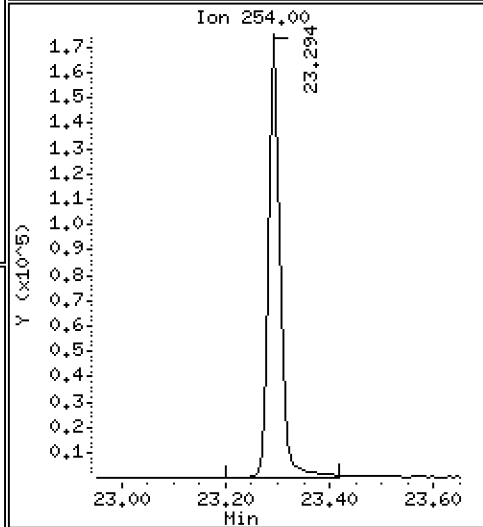
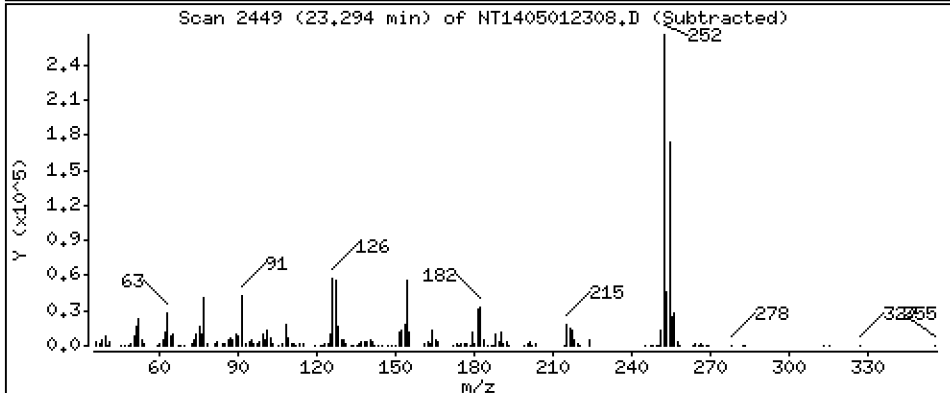
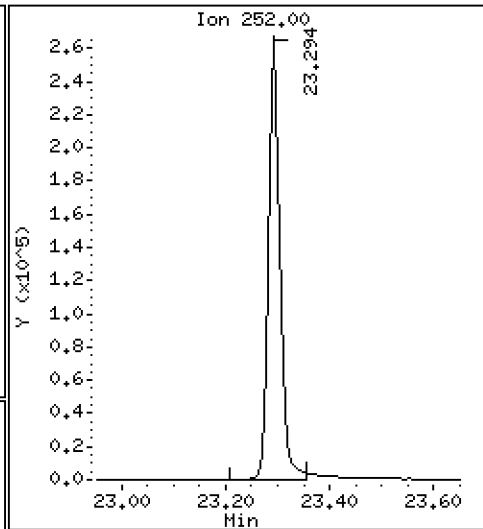
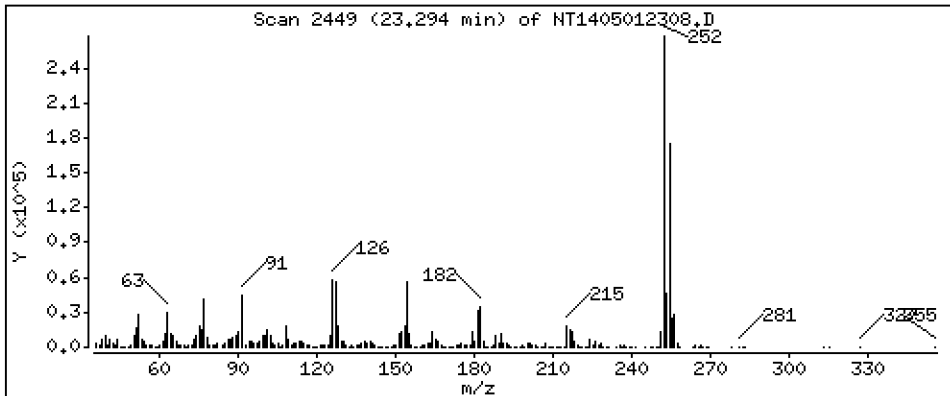
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 6,037 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

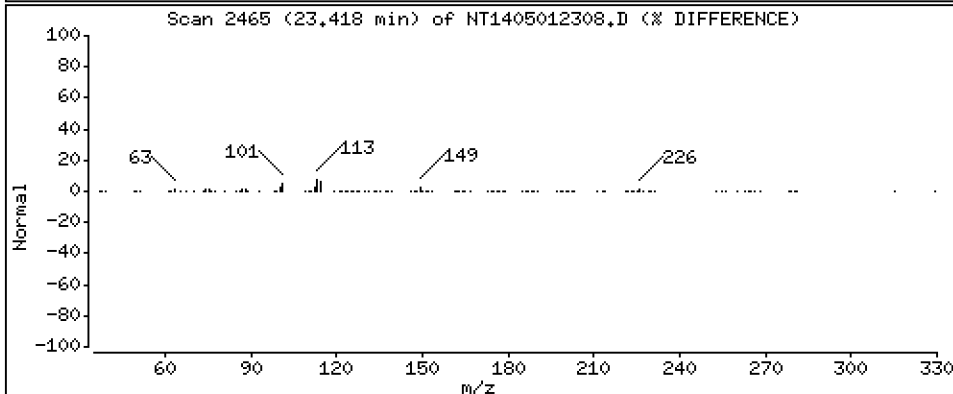
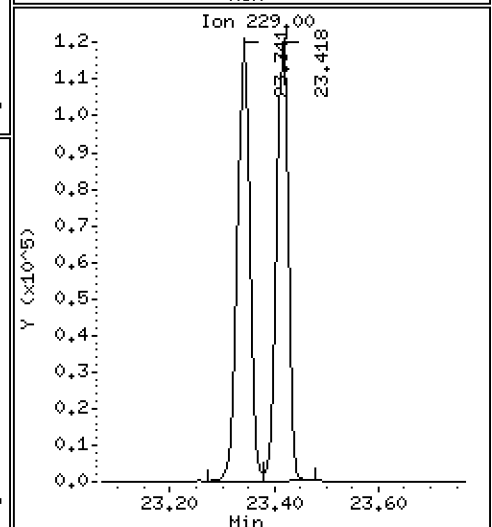
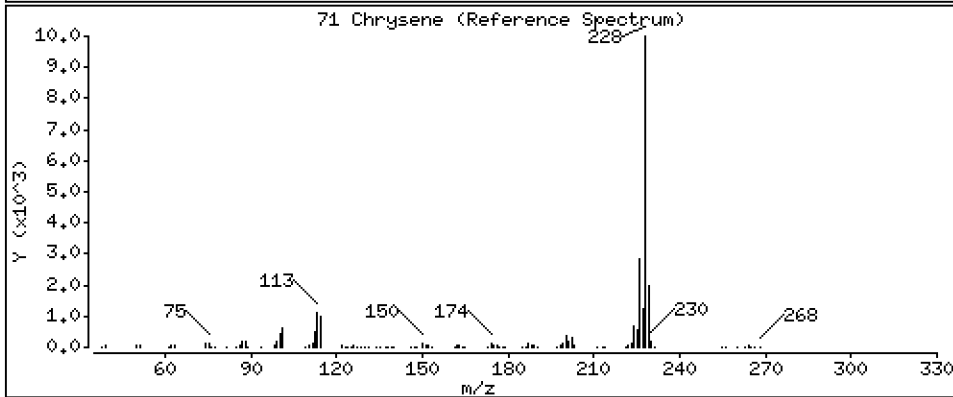
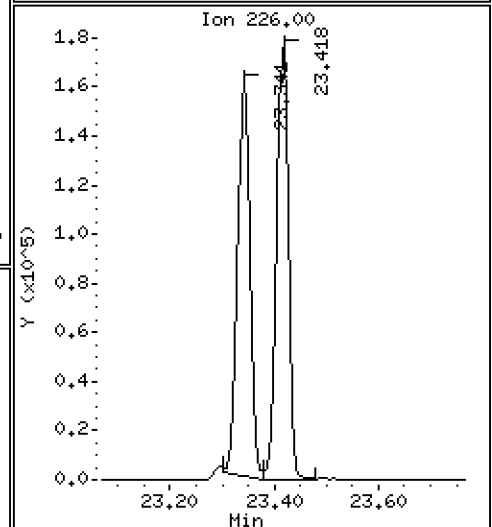
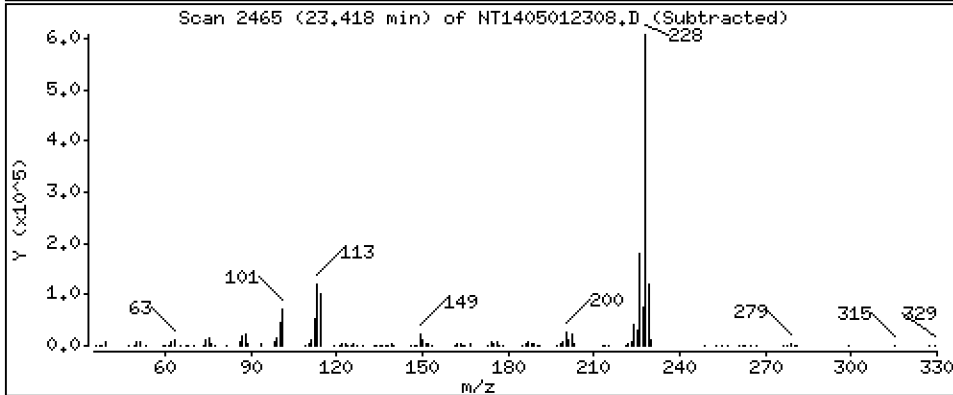
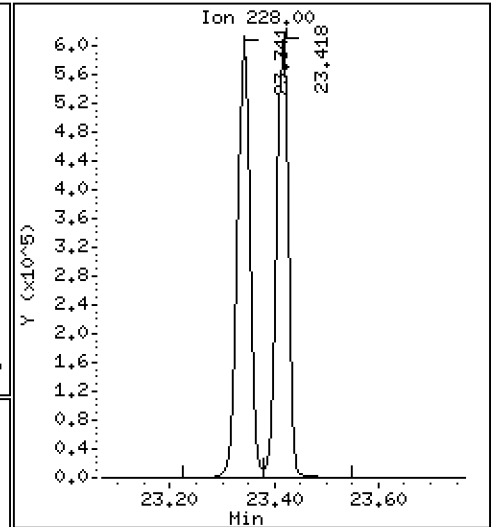
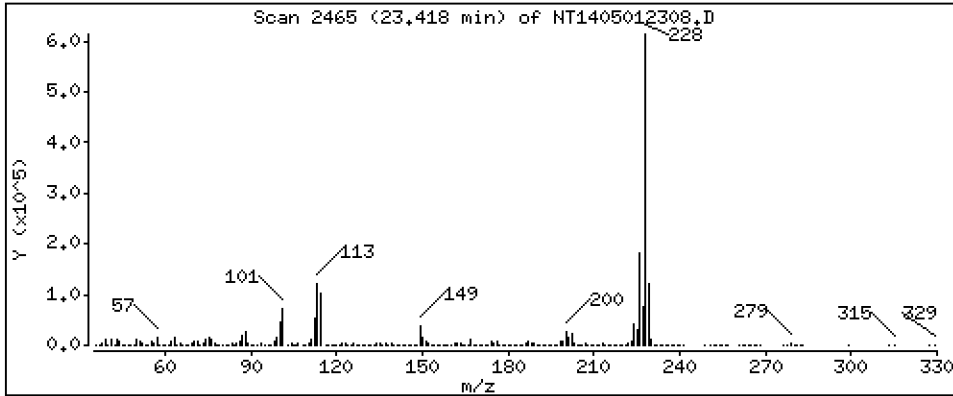
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 4,742 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

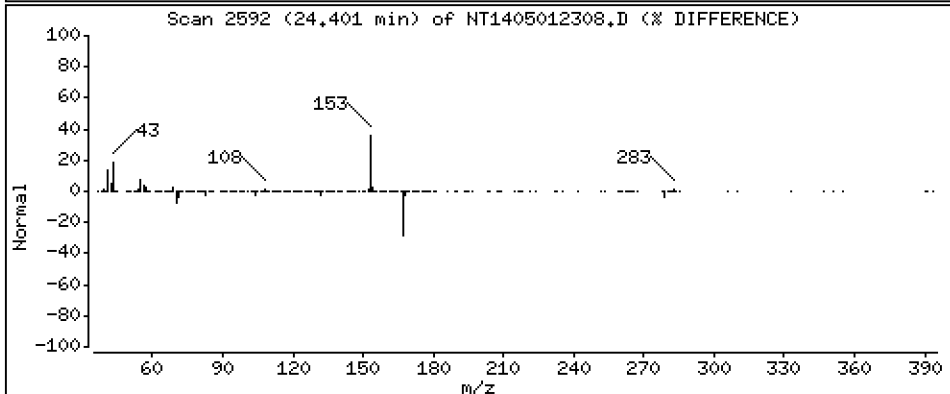
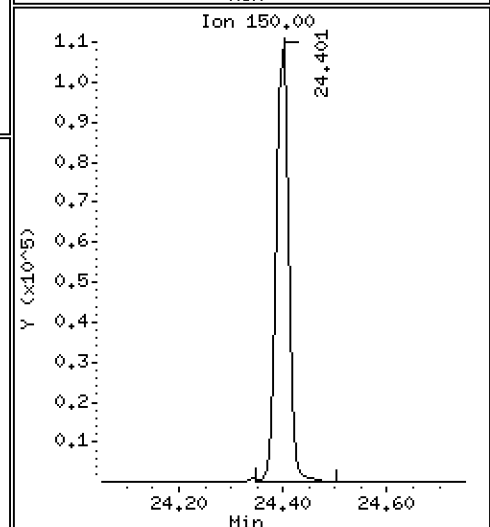
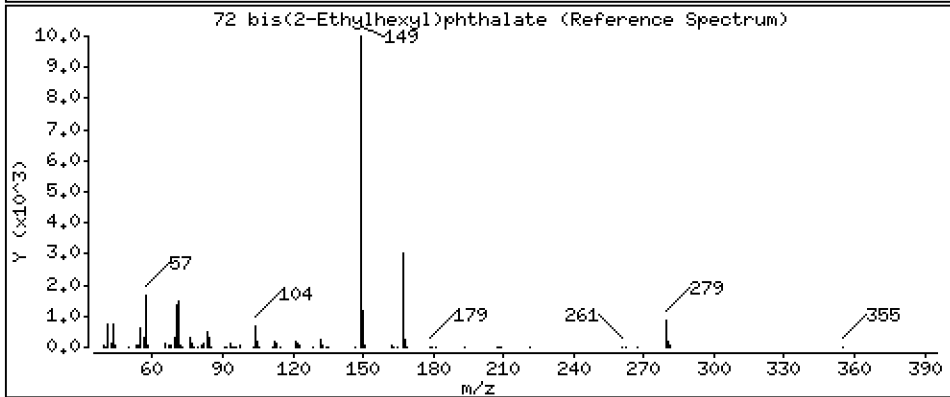
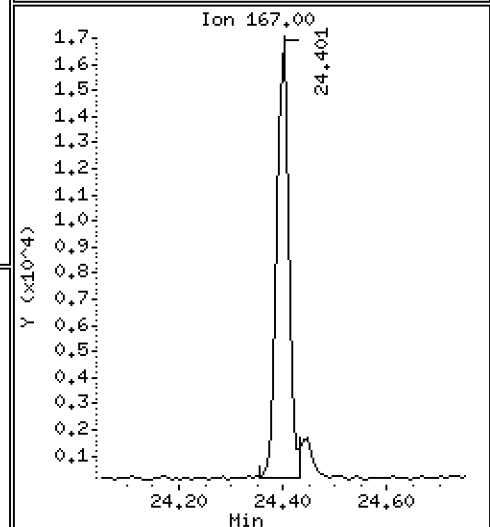
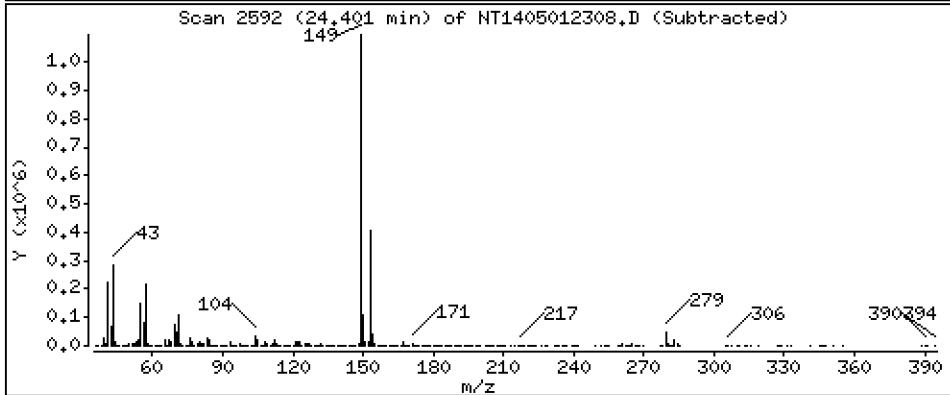
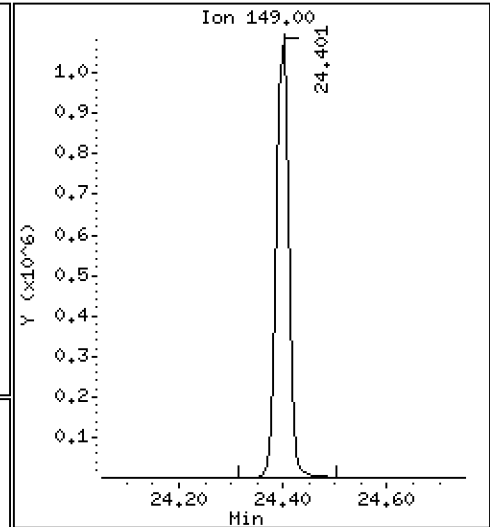
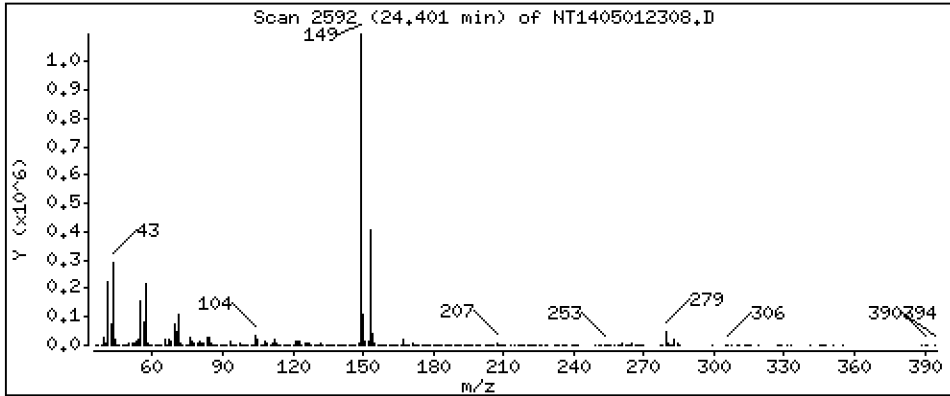
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,608 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

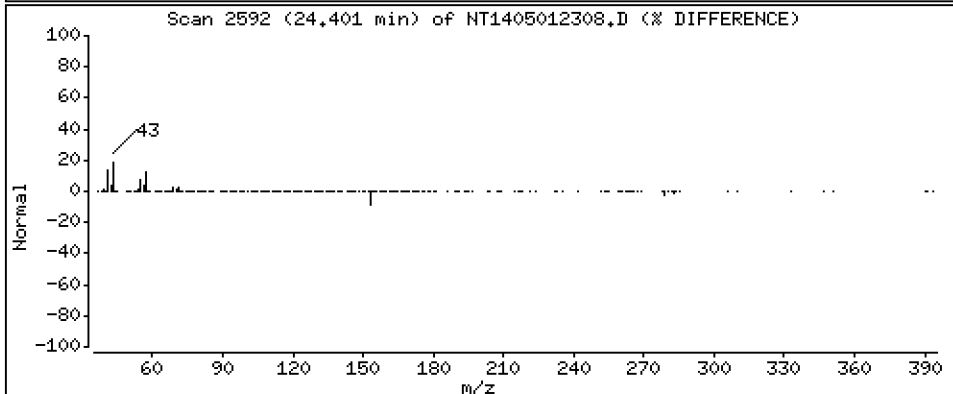
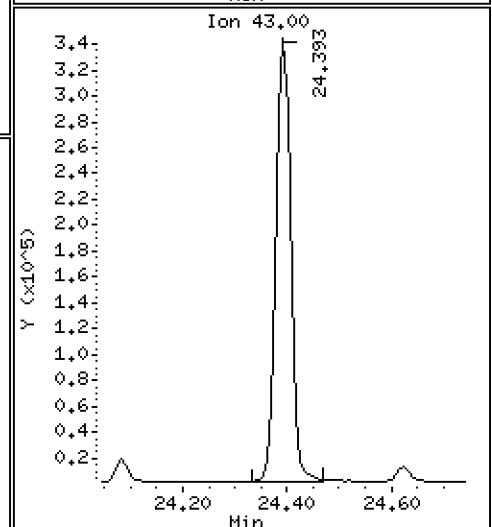
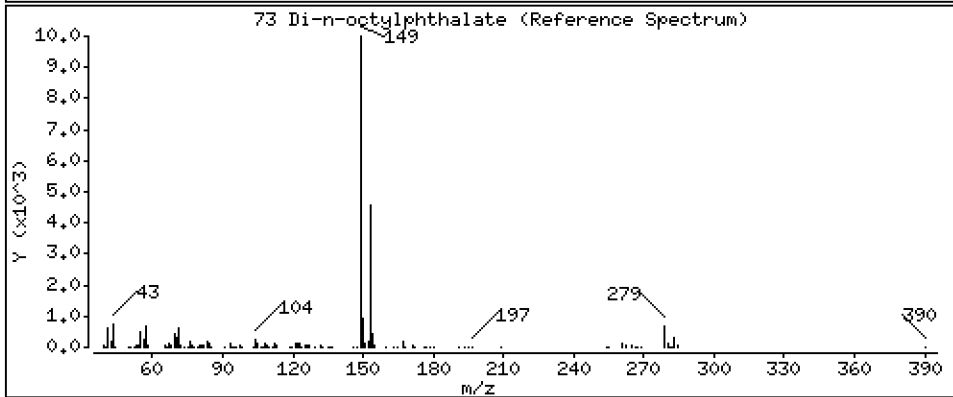
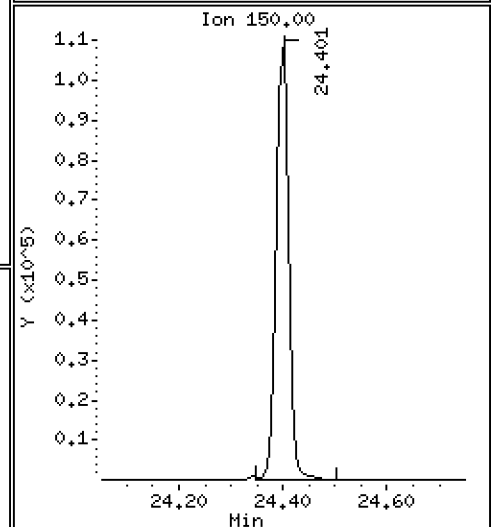
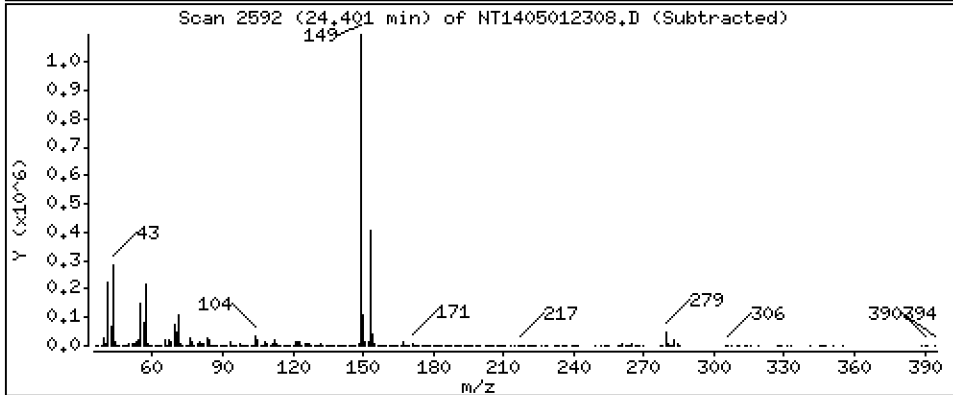
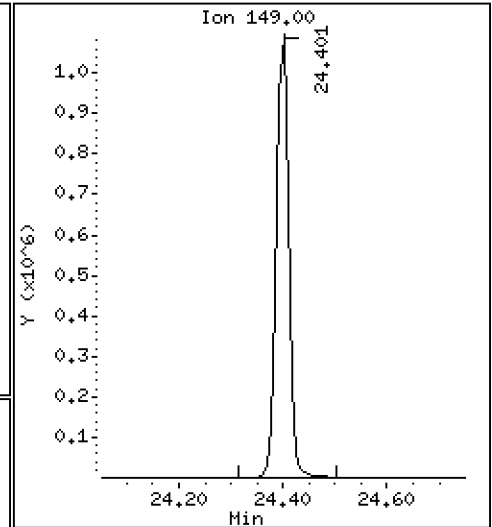
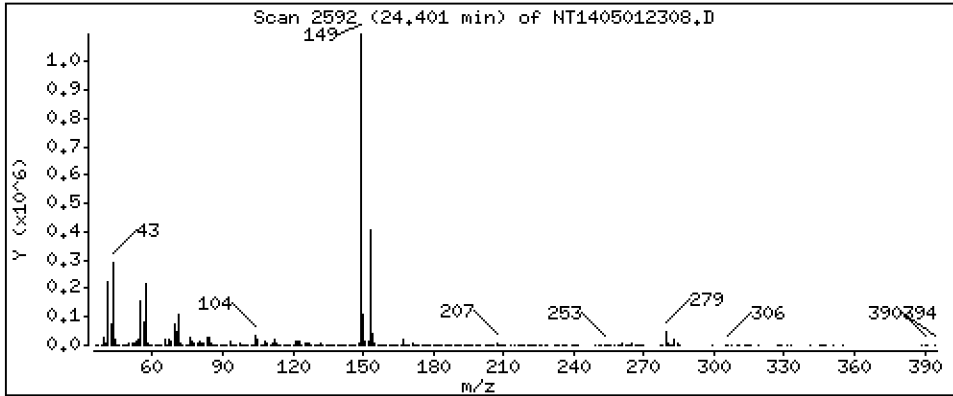
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,608 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

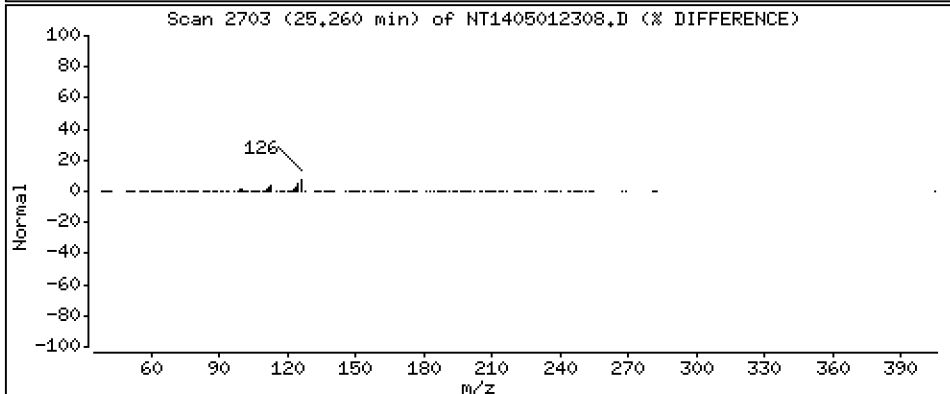
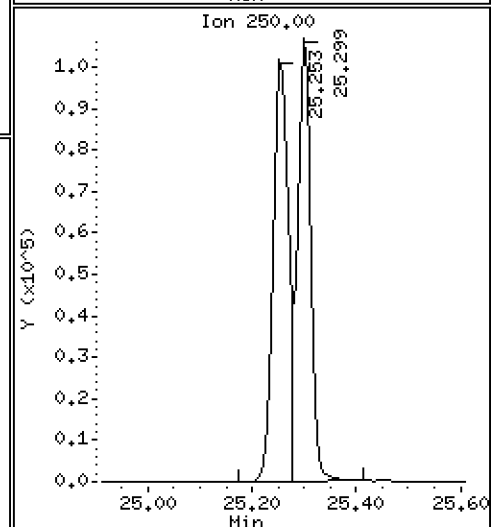
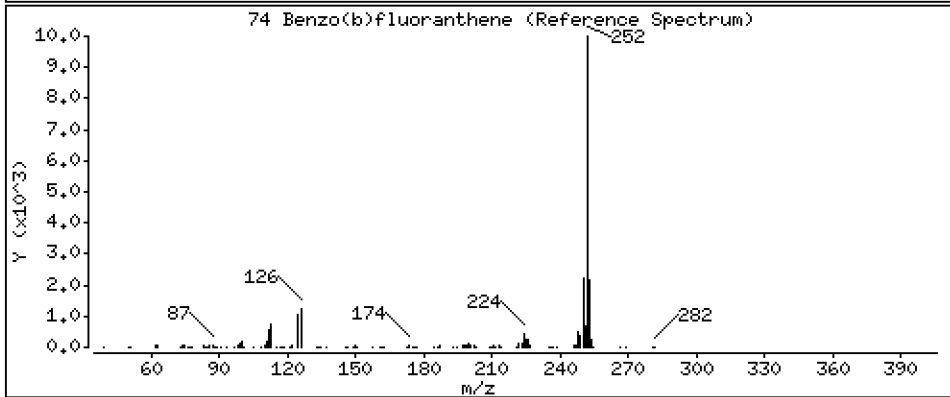
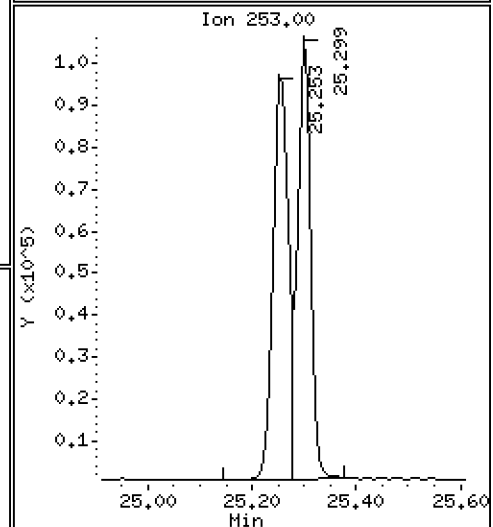
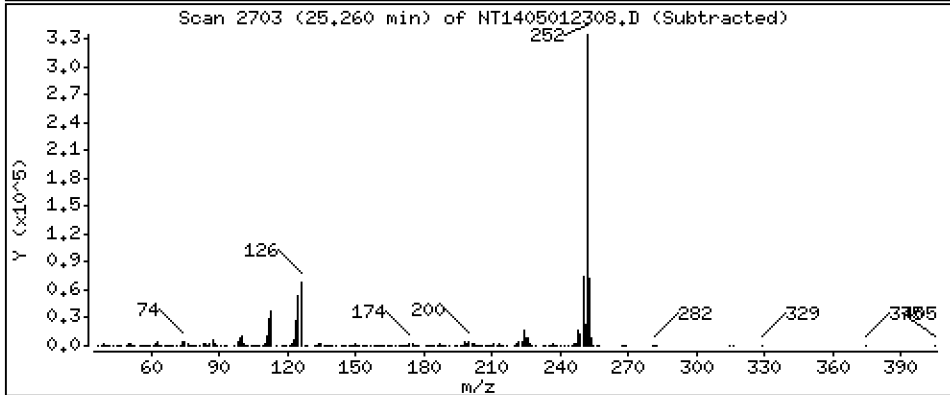
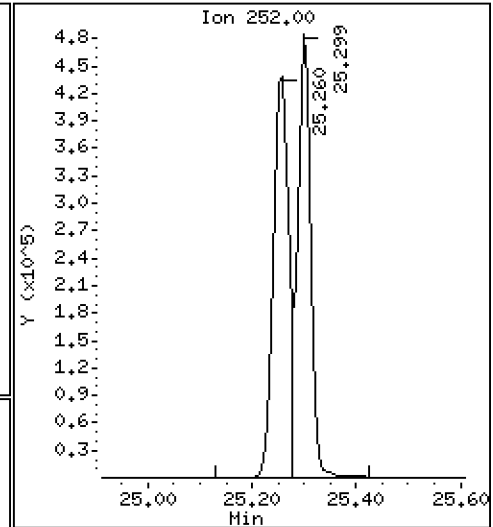
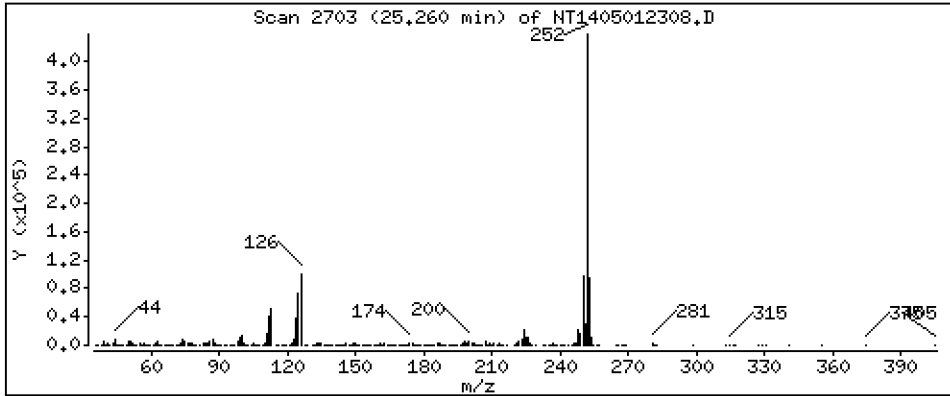
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 5,108 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

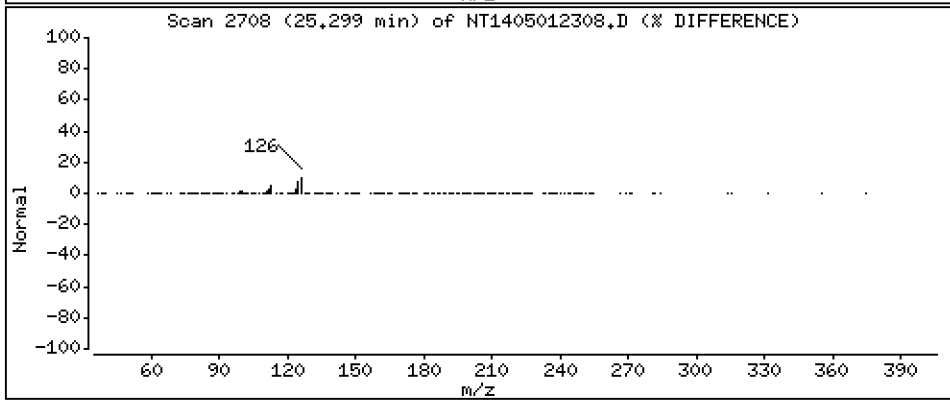
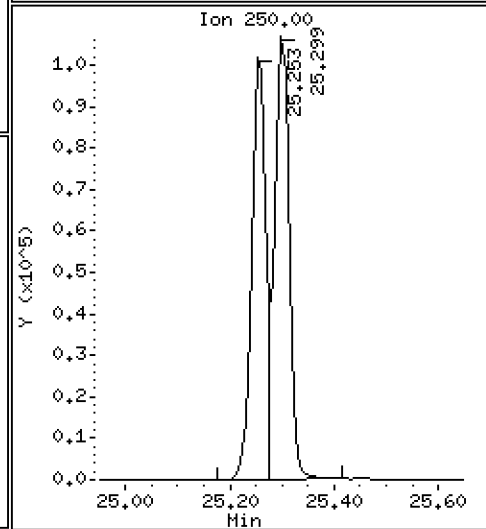
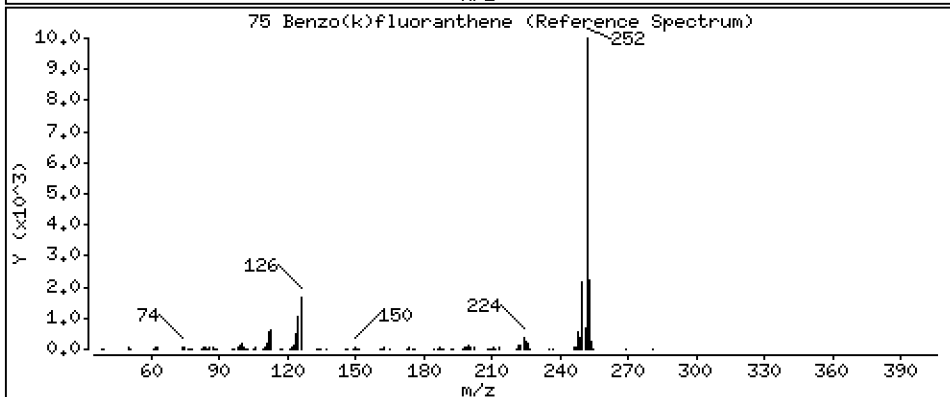
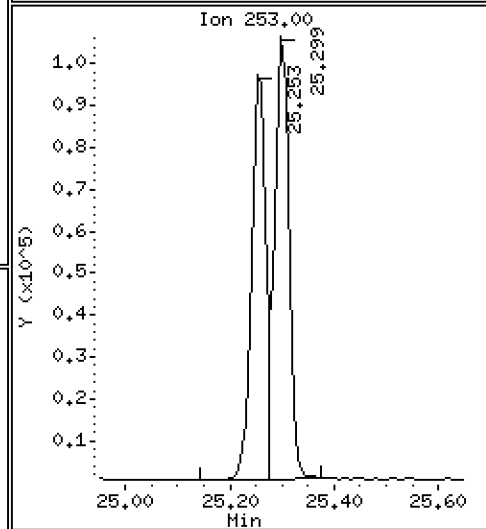
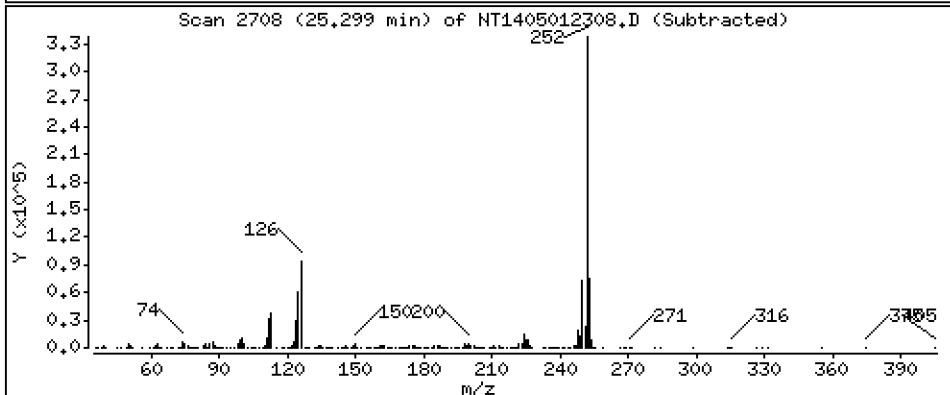
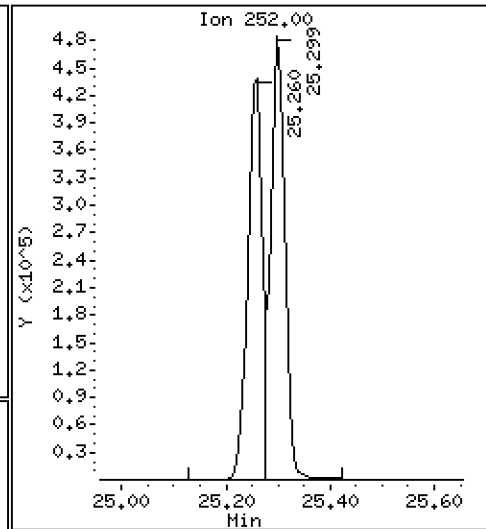
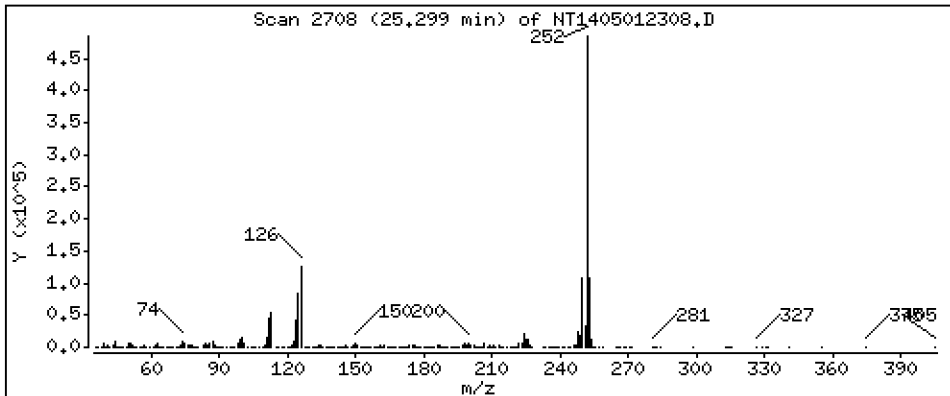
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 5,534 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

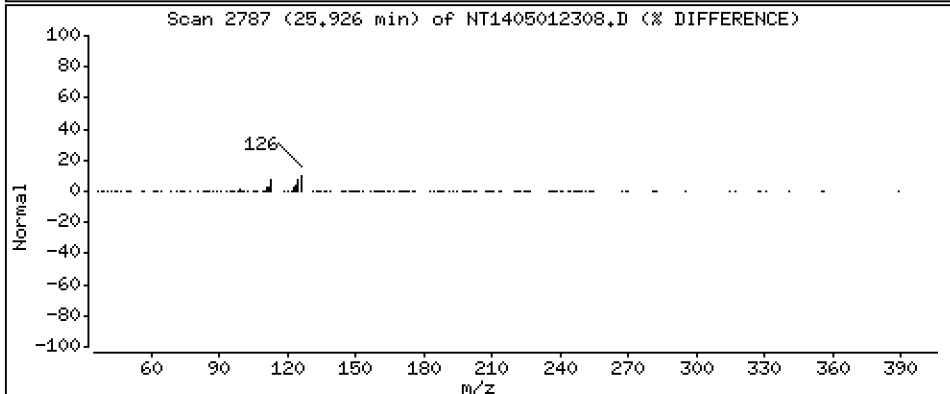
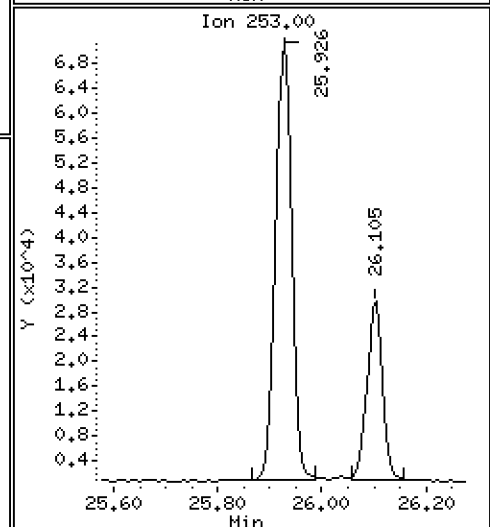
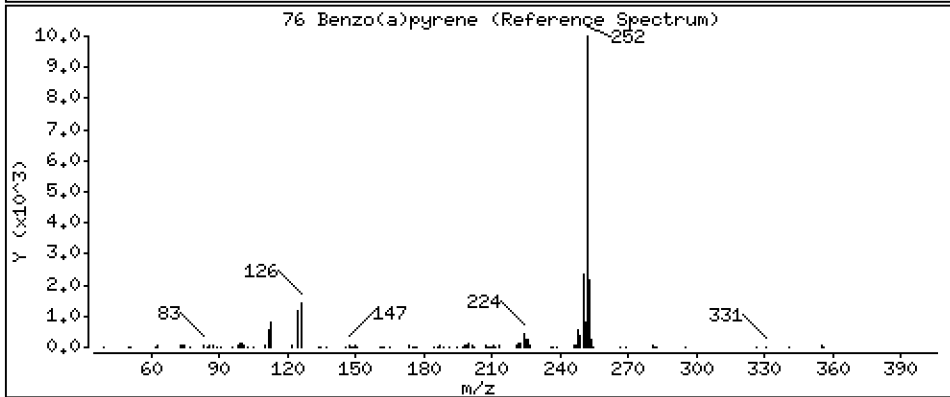
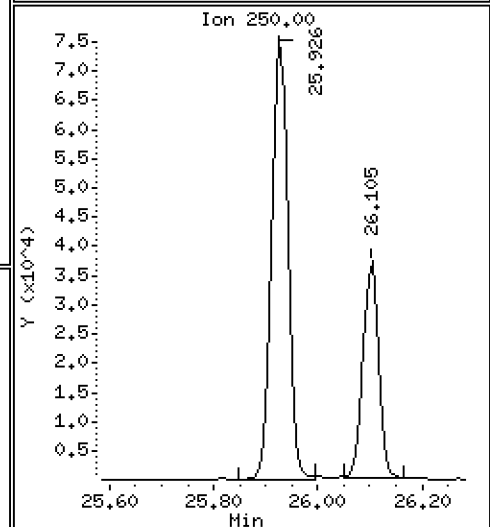
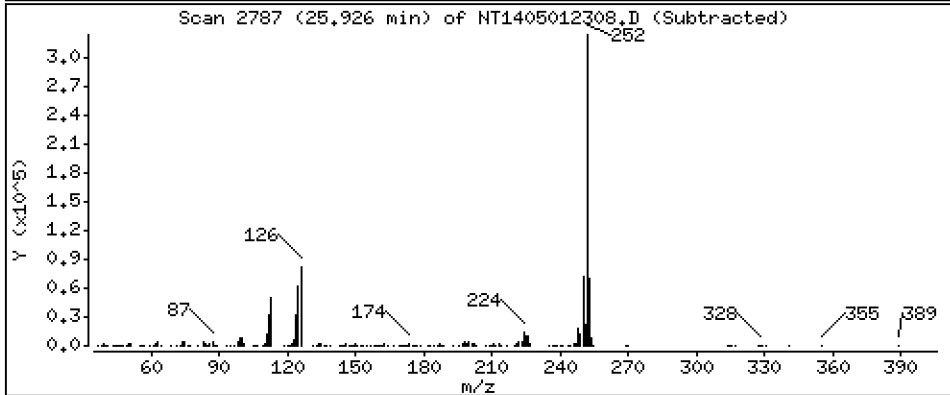
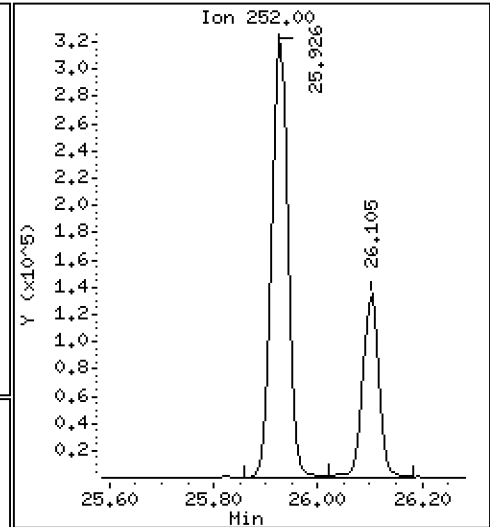
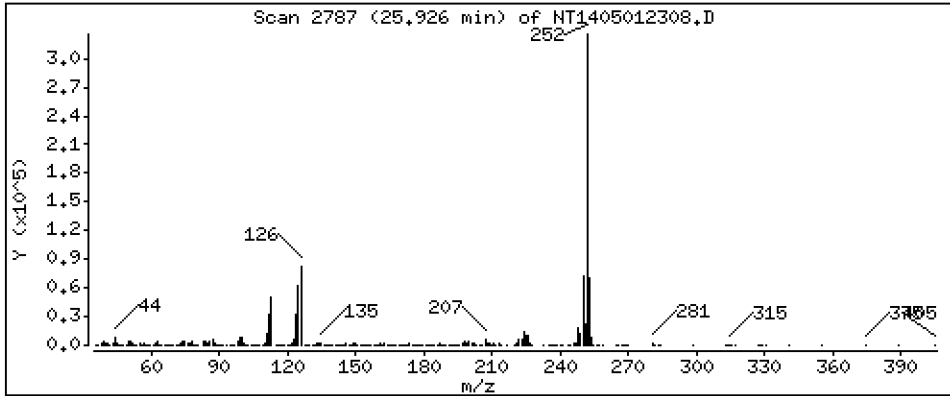
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 4,644 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

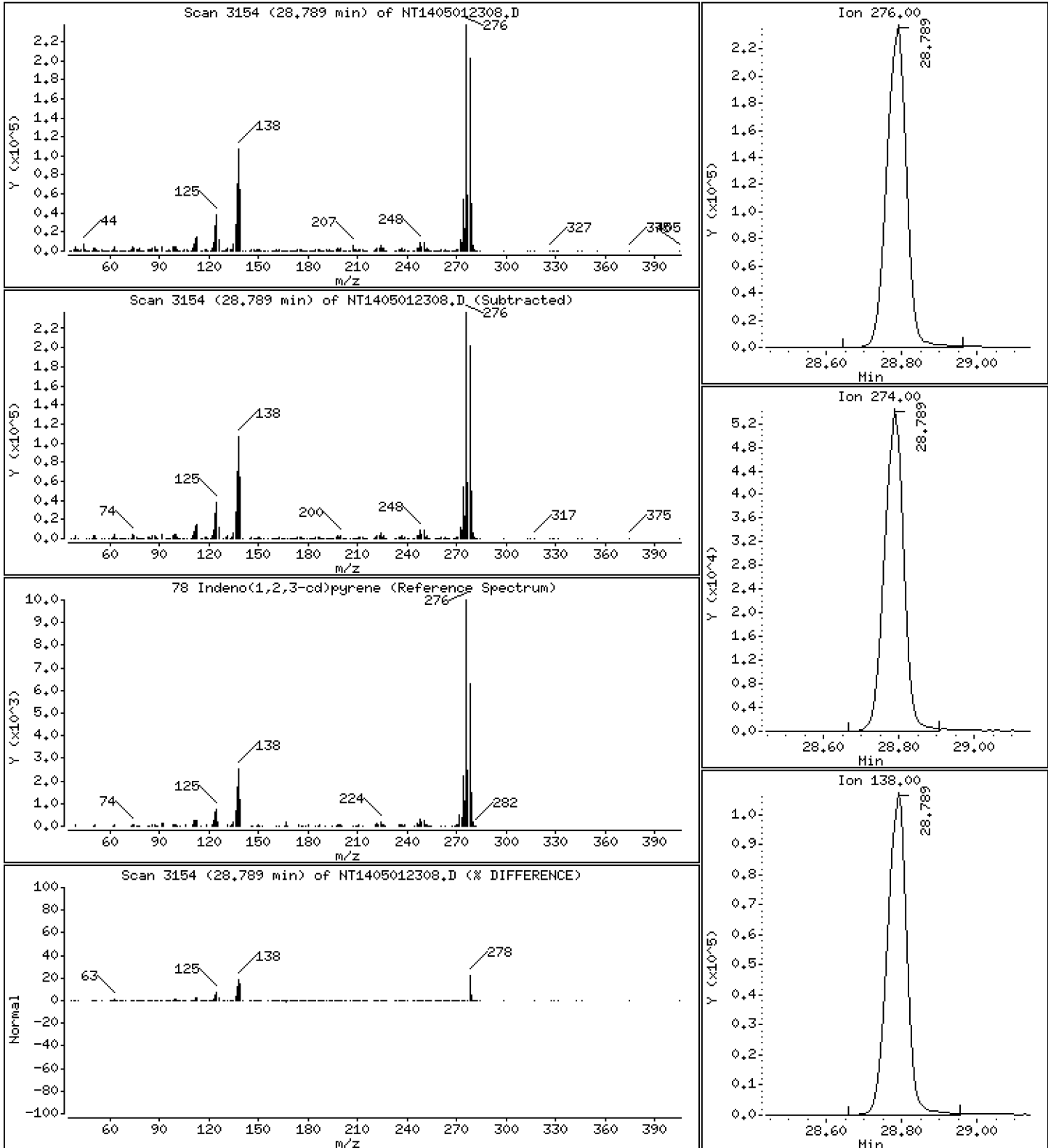
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 4,202 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

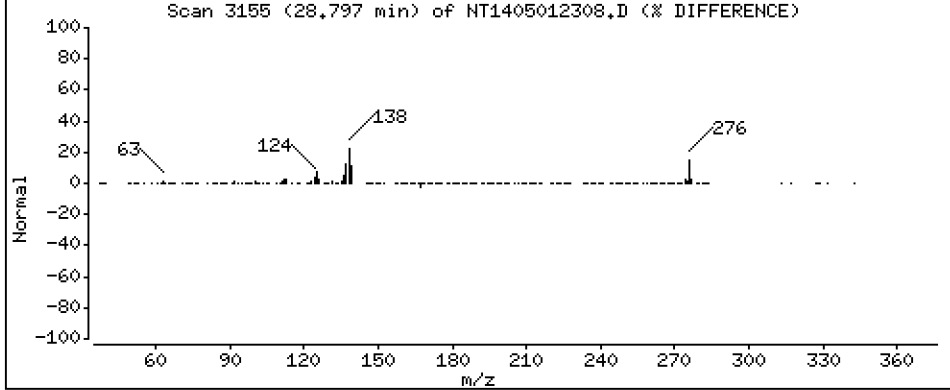
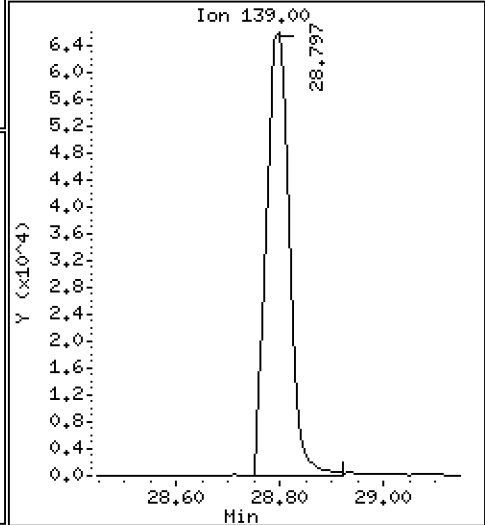
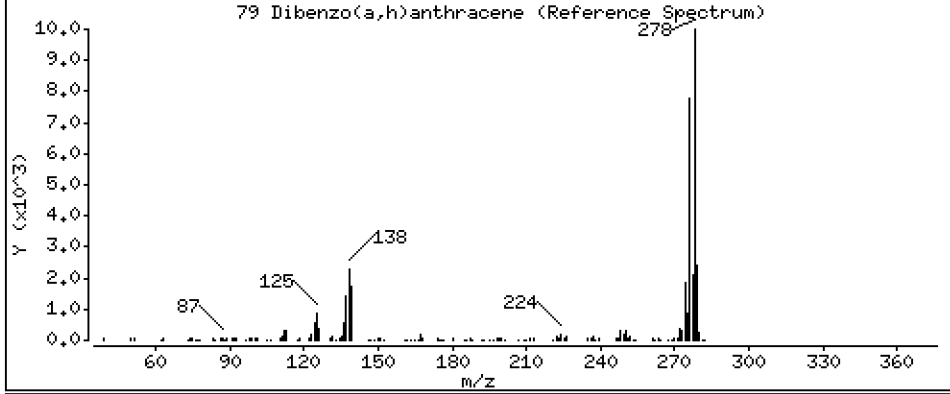
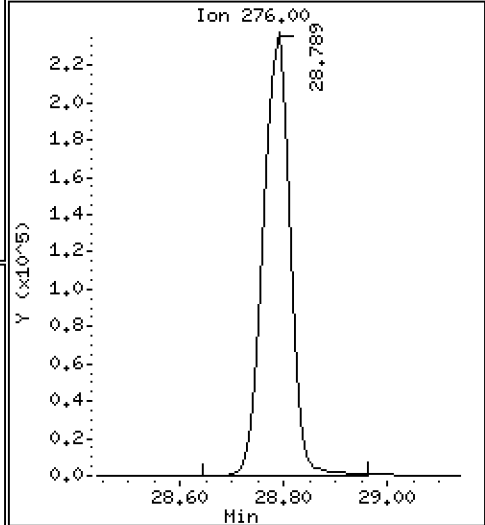
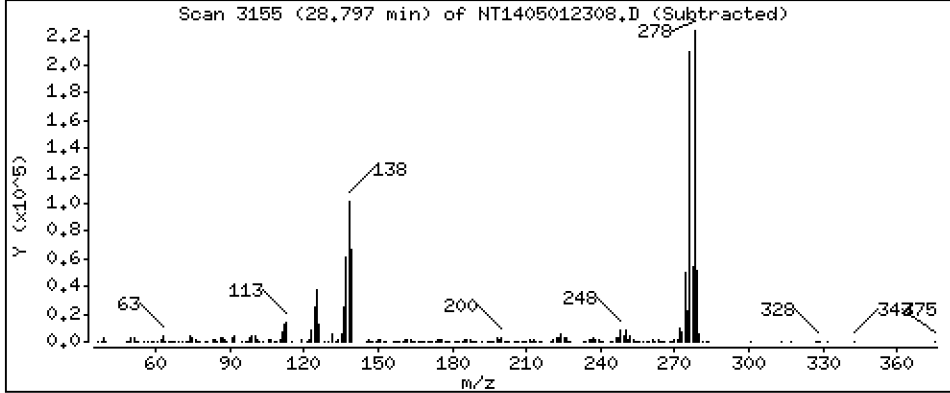
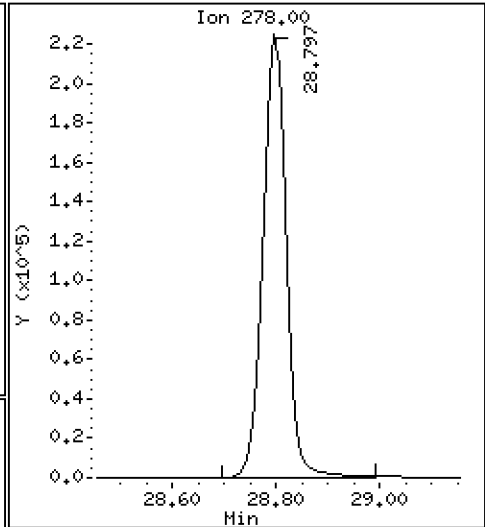
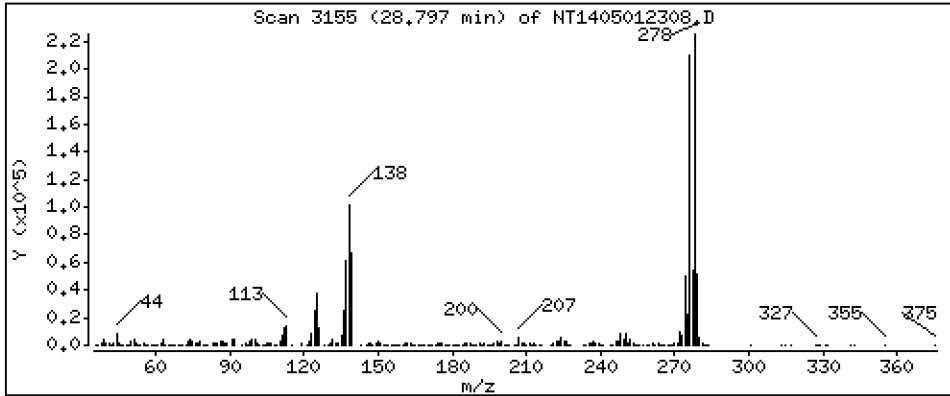
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,177 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

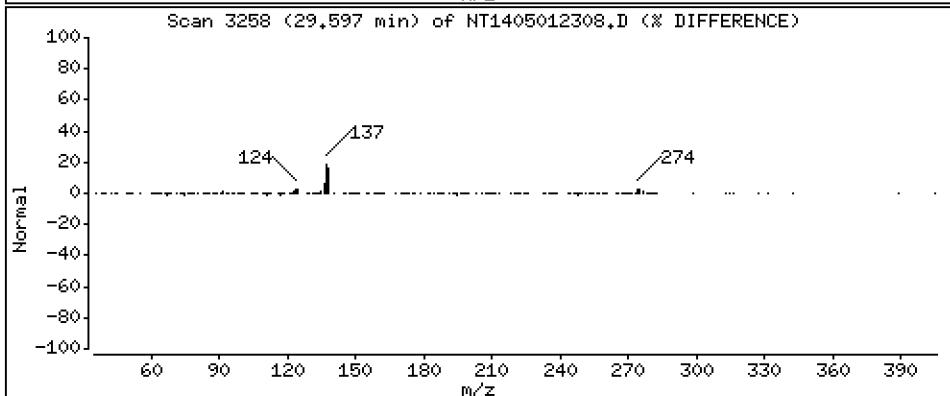
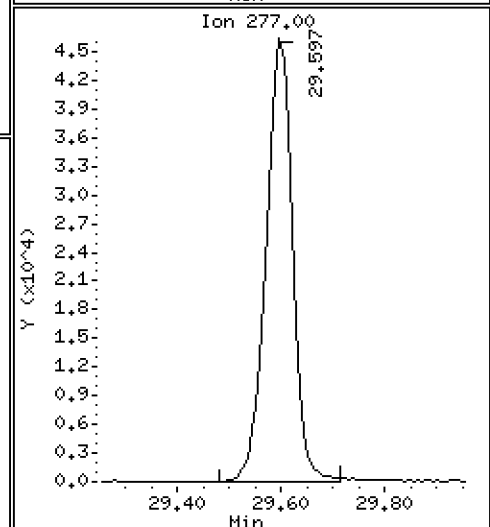
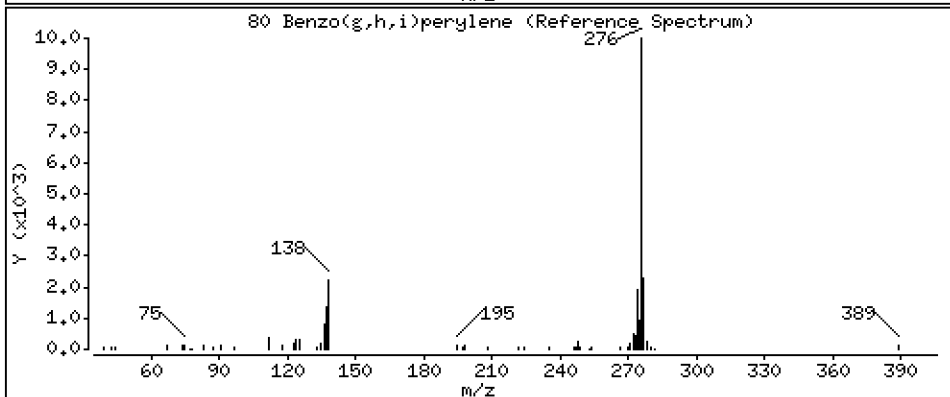
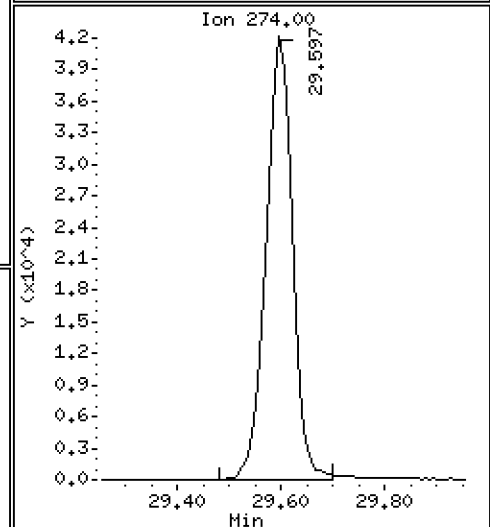
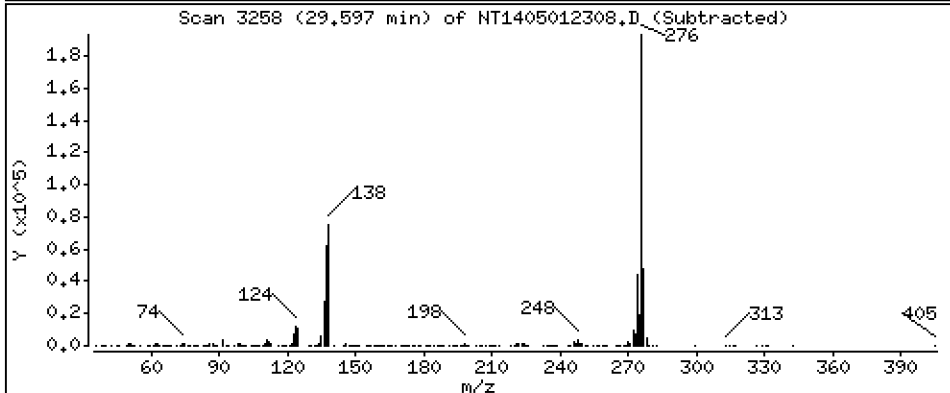
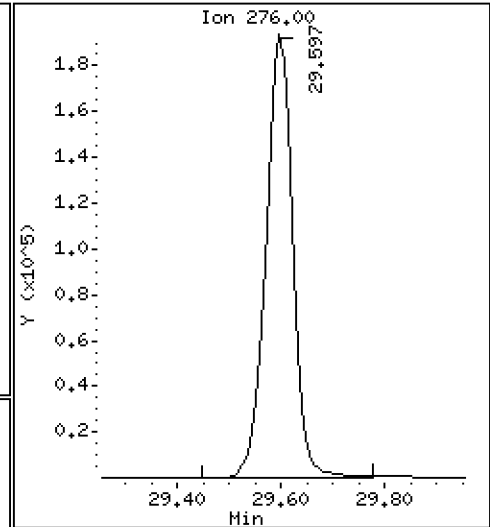
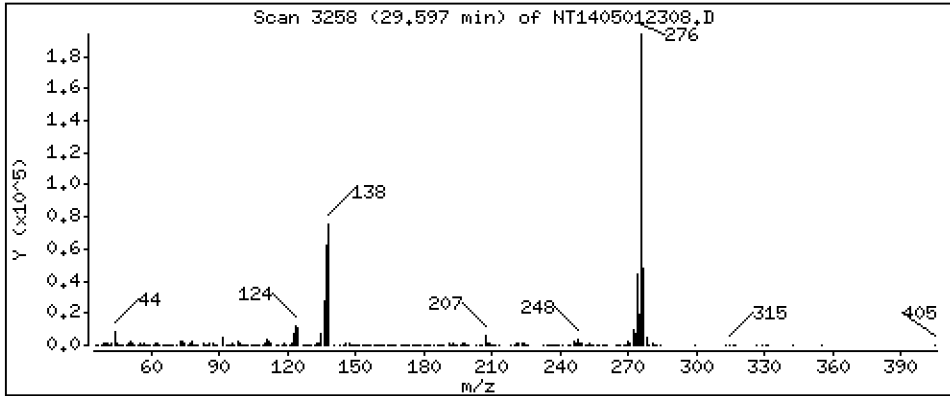
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 4,026 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

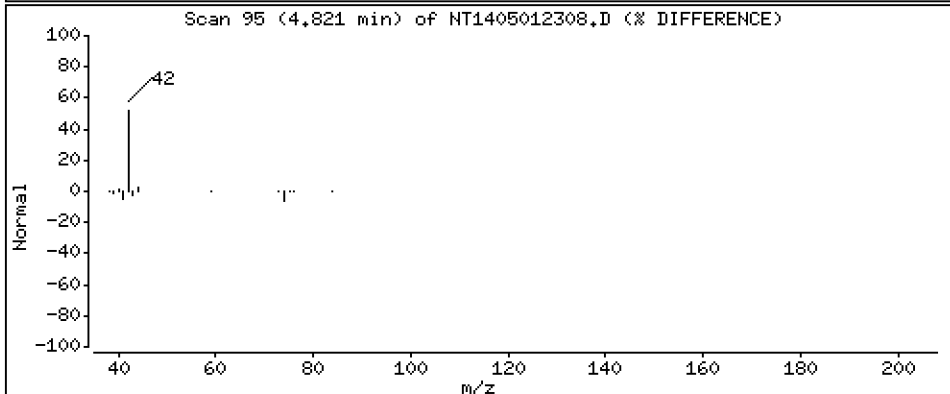
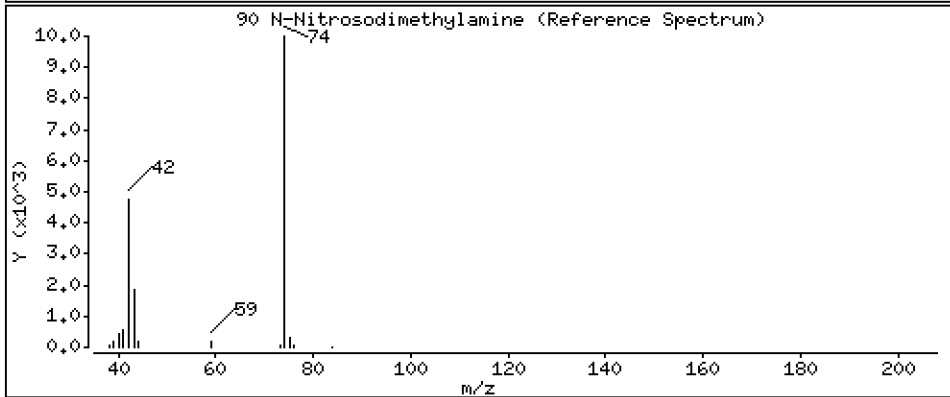
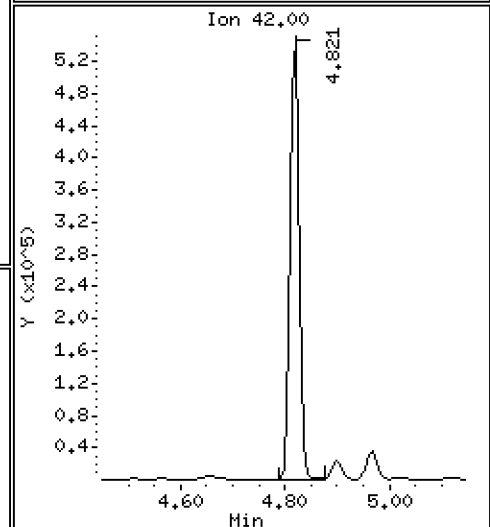
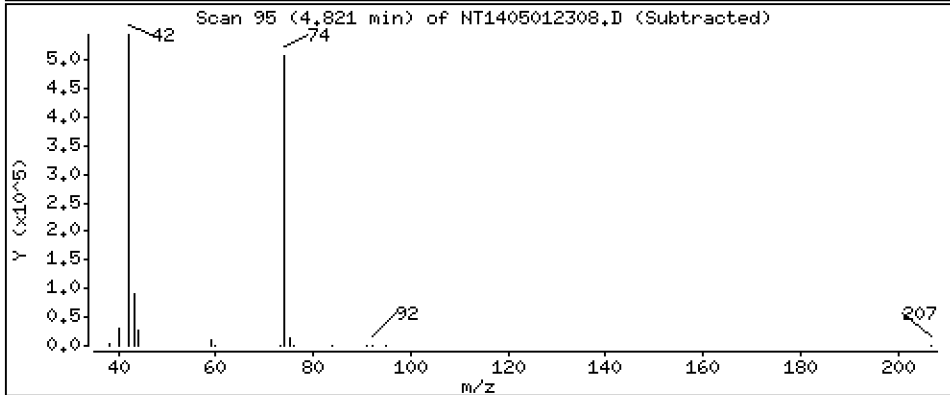
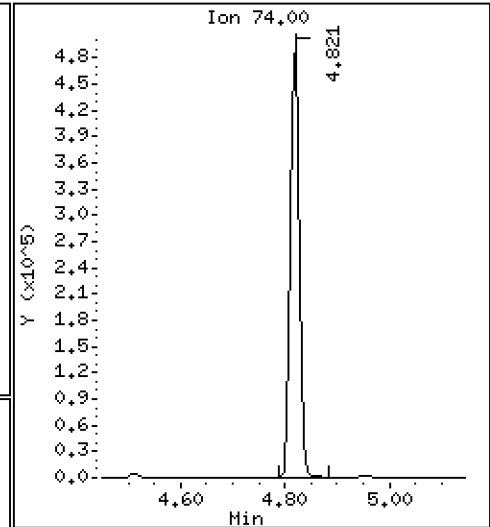
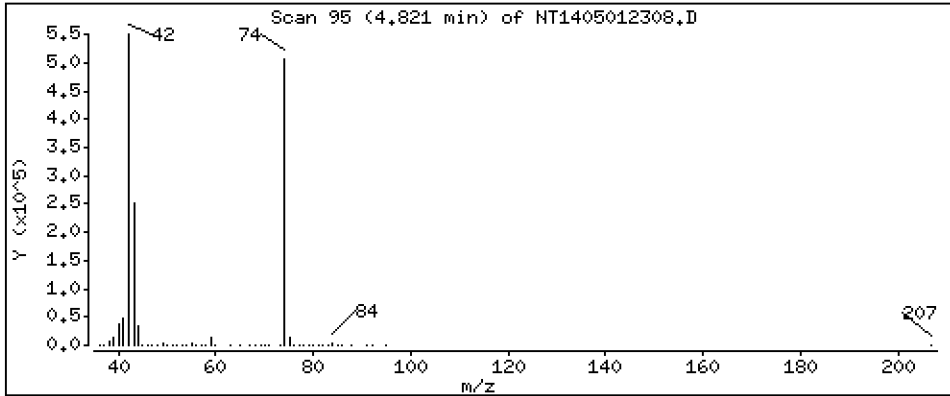
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 7,872 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

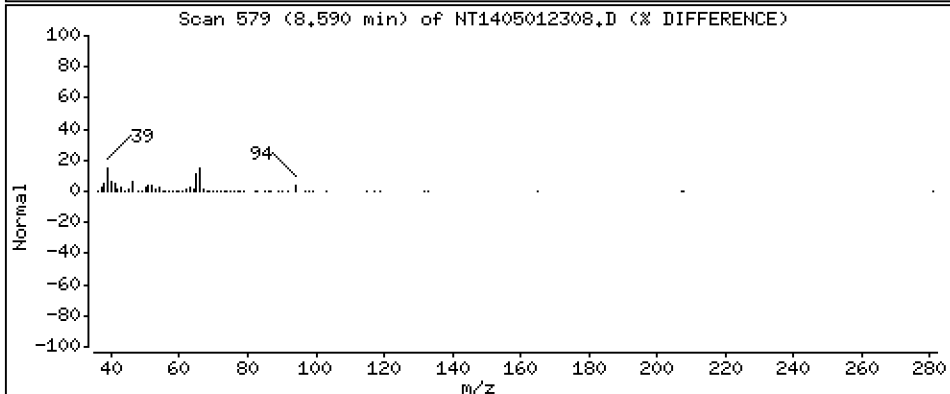
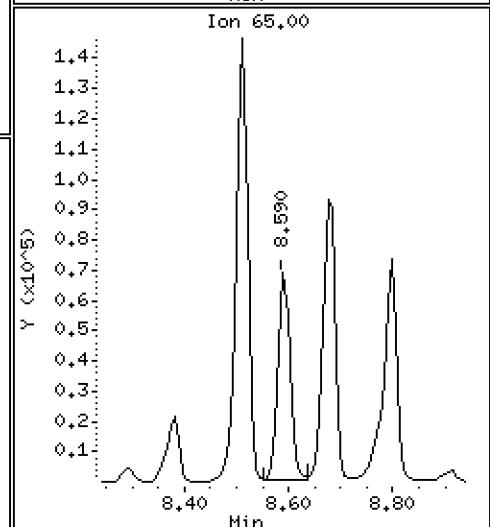
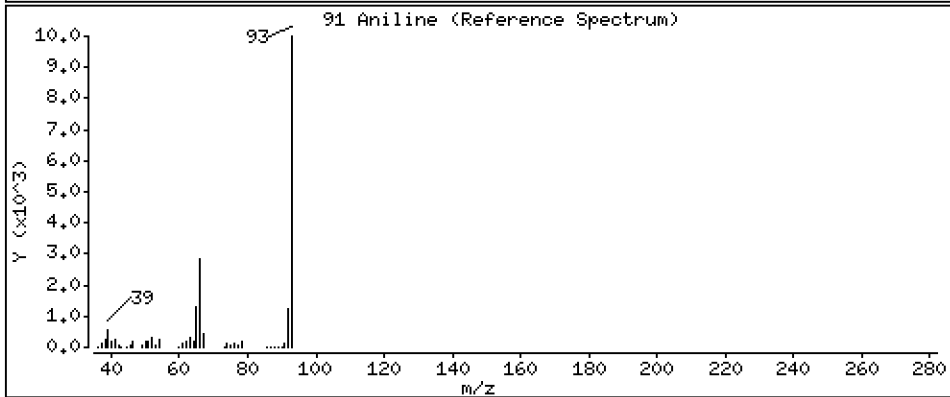
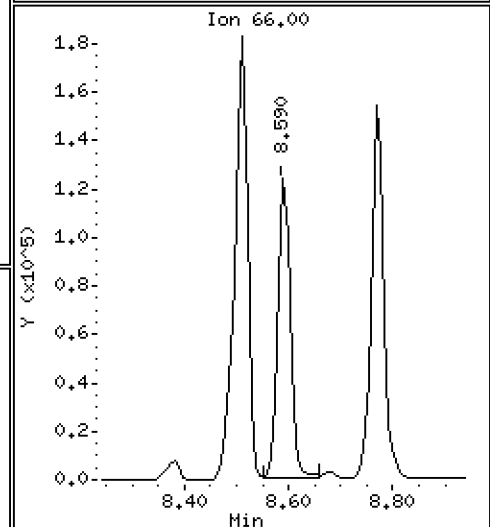
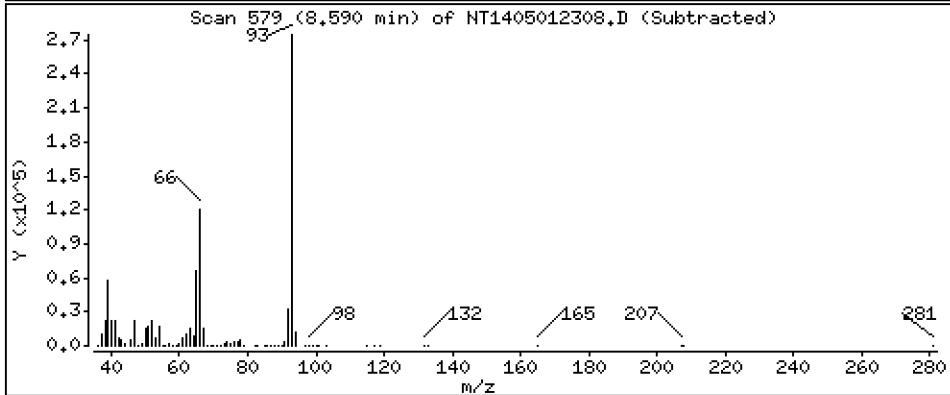
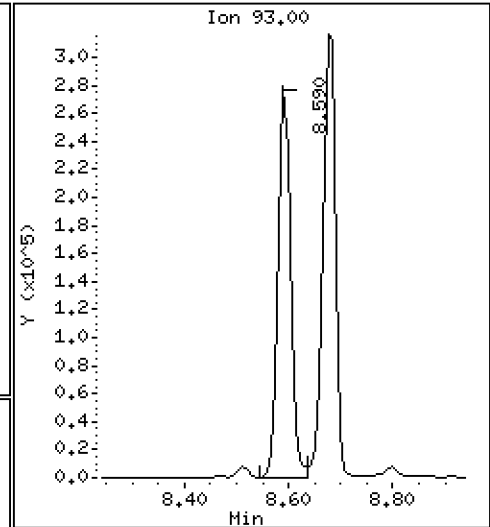
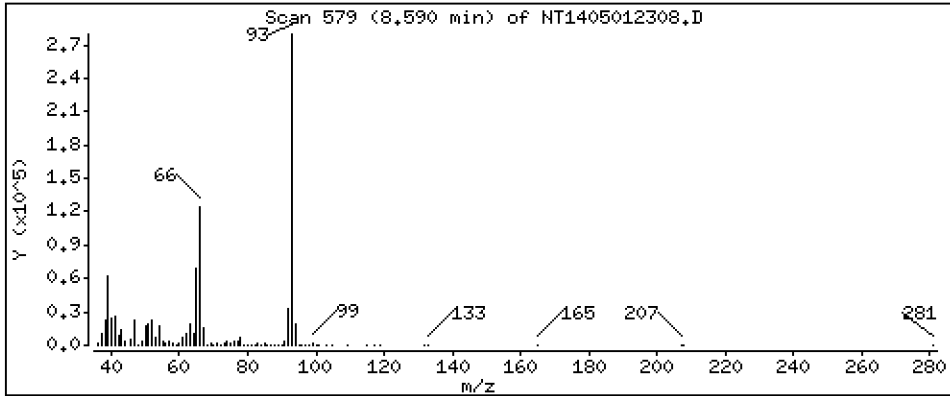
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

91 Aniline

Concentration: 3,189 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

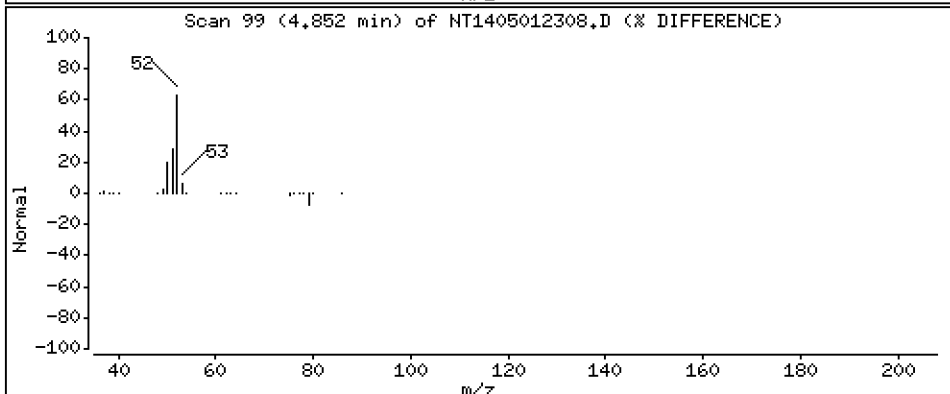
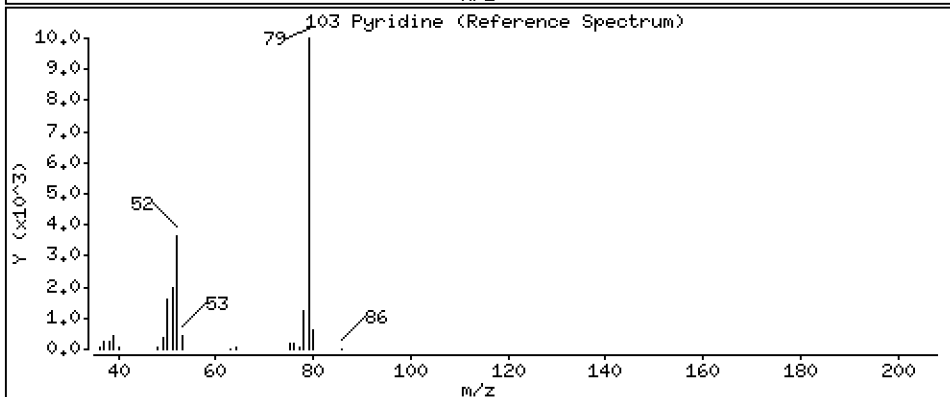
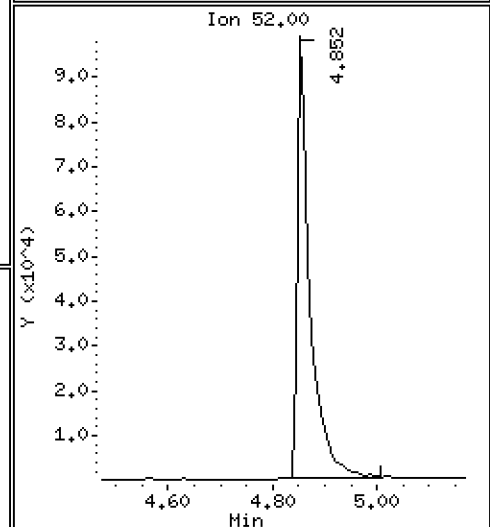
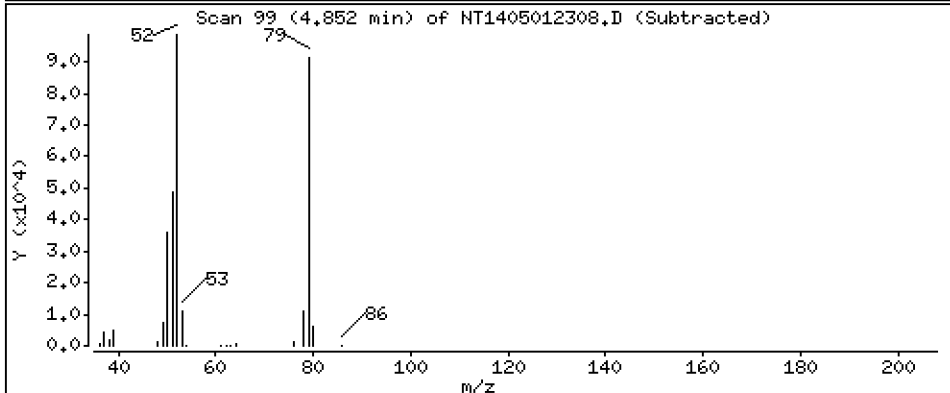
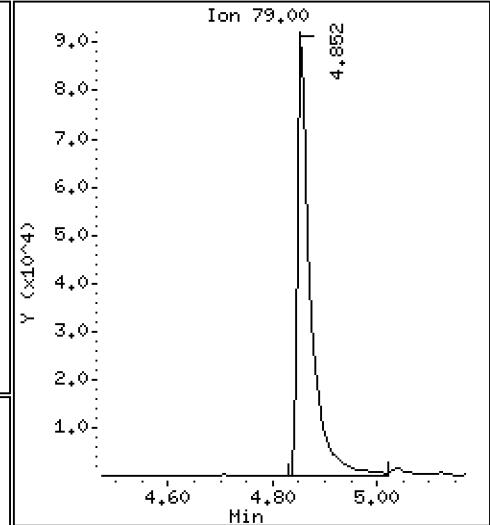
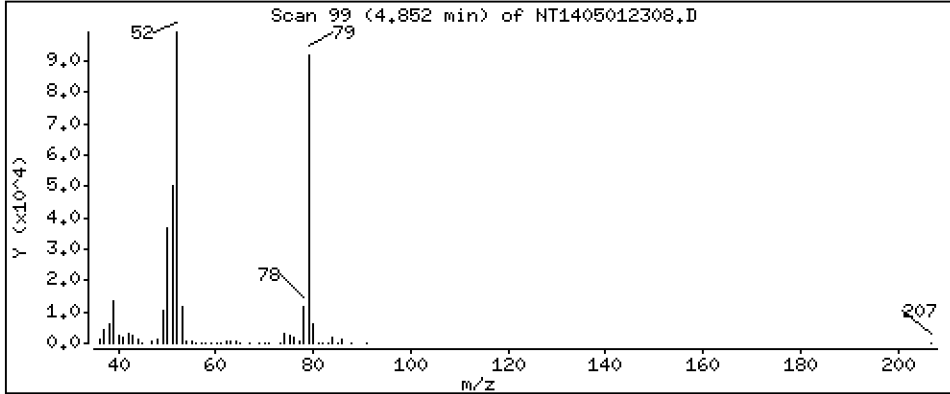
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,6885 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

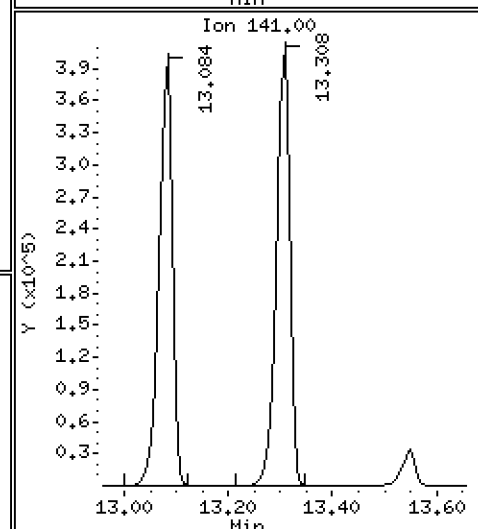
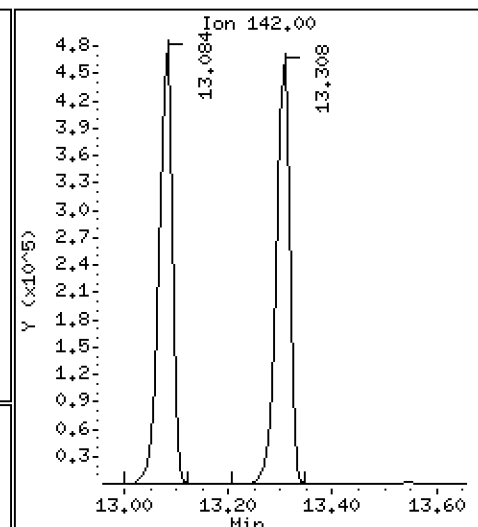
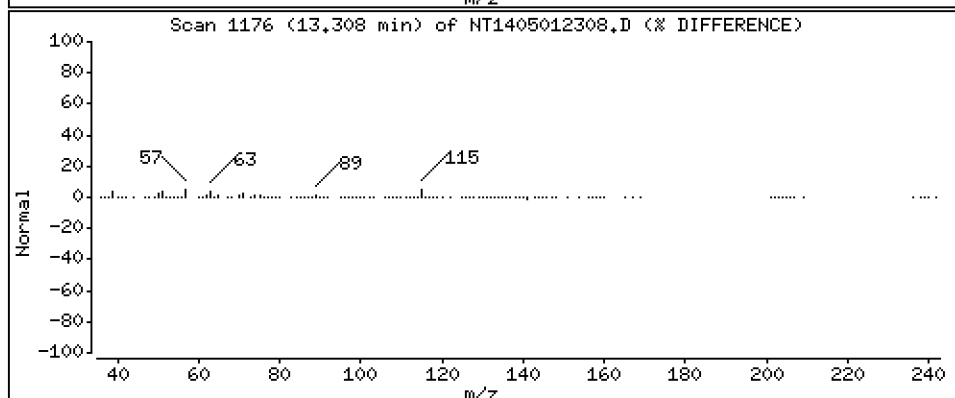
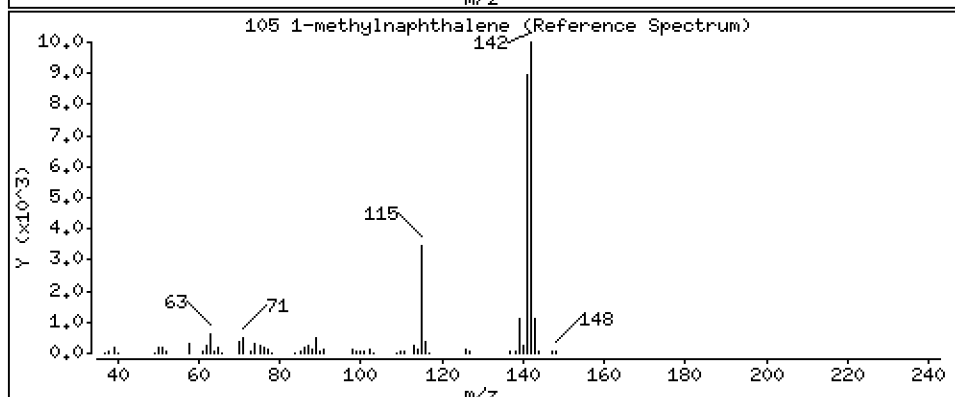
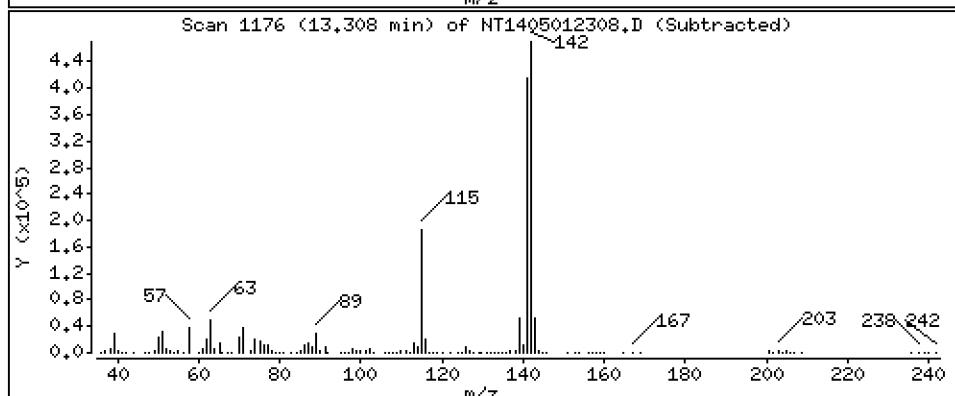
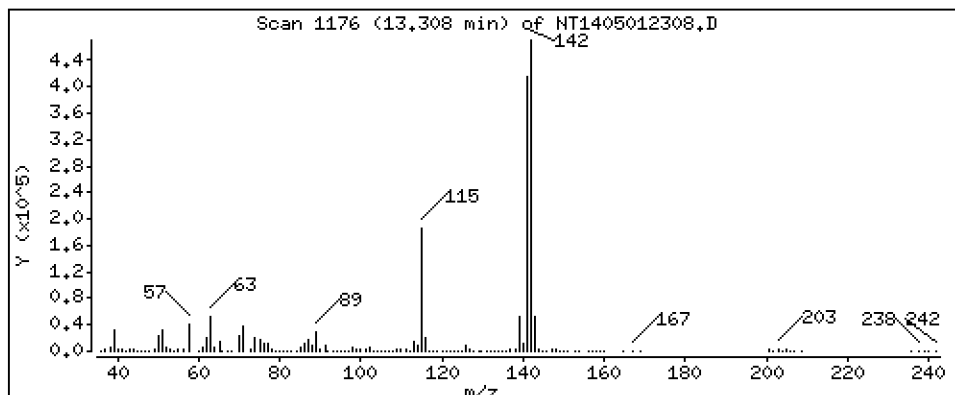
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 3,985 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

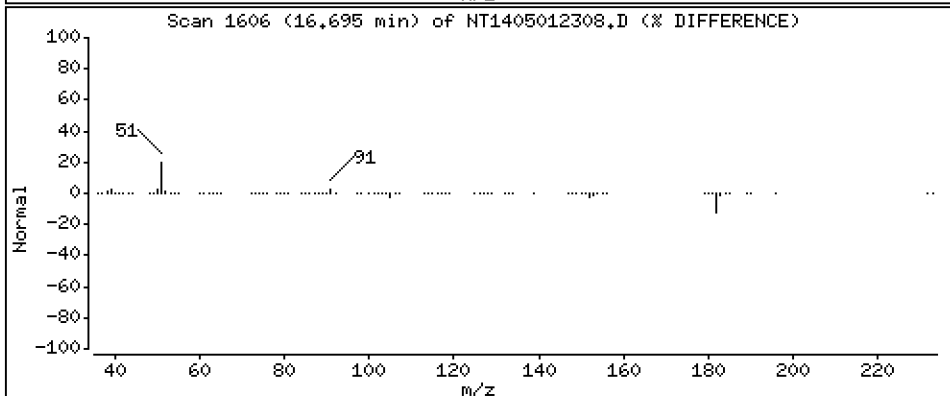
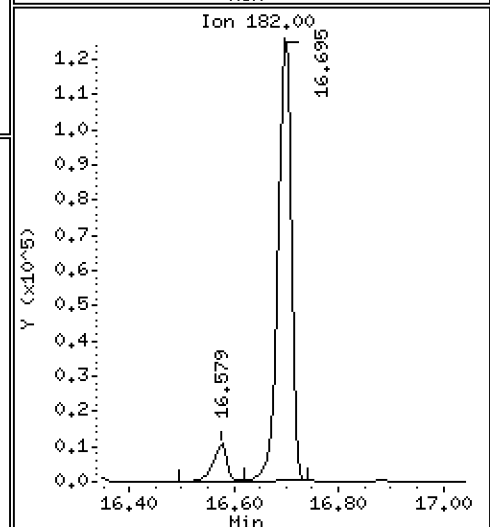
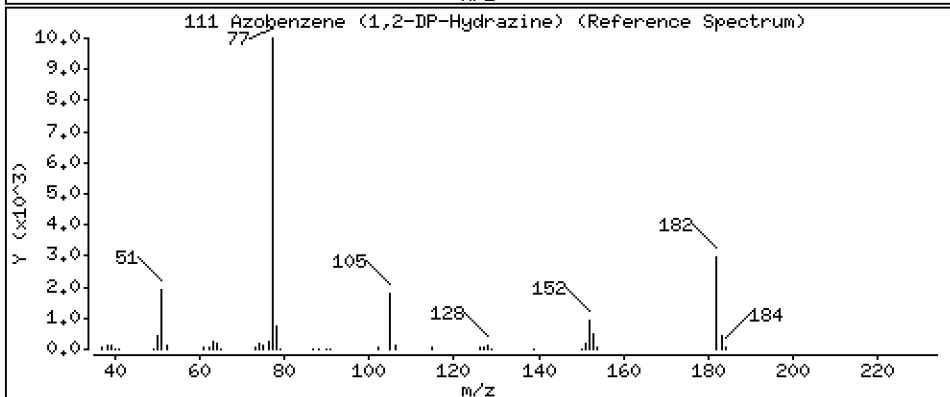
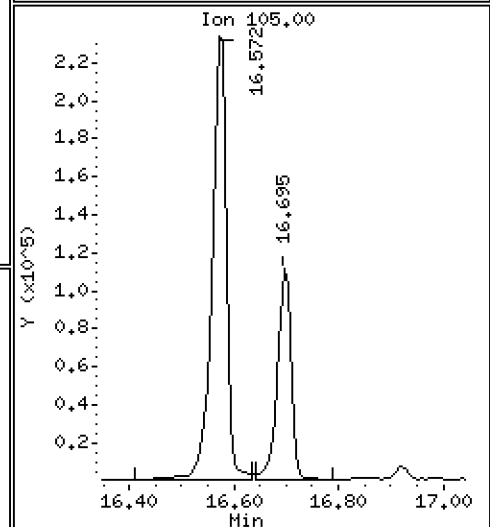
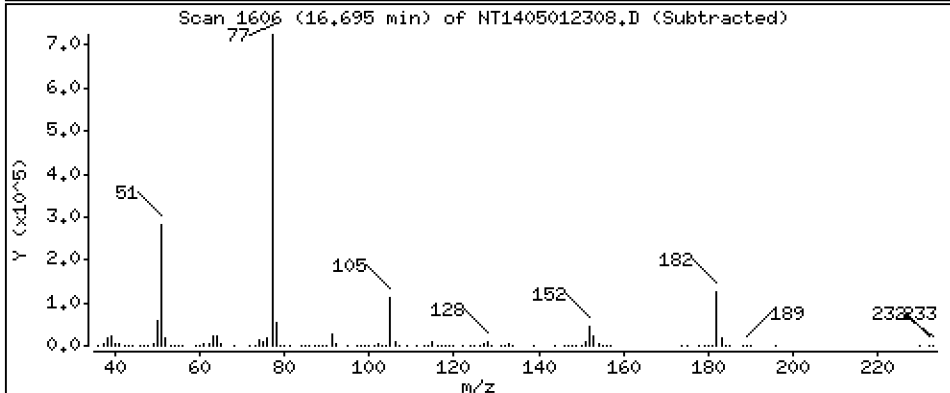
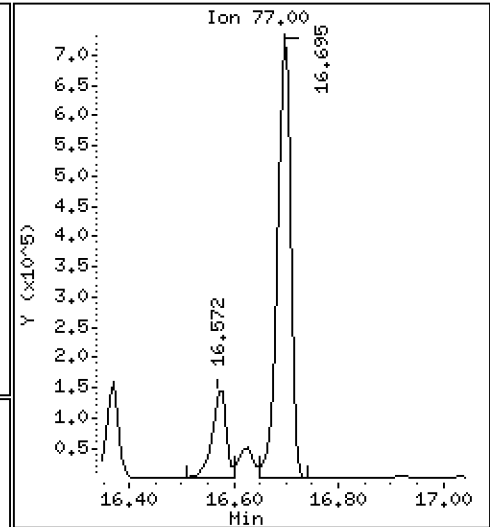
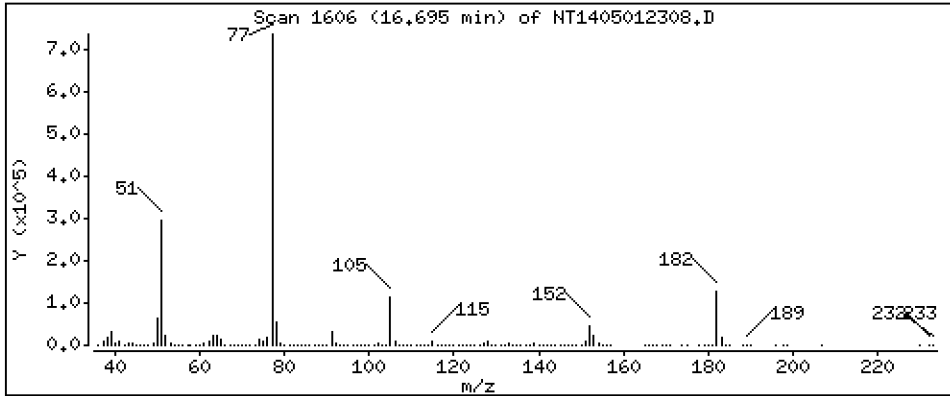
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 4,195 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

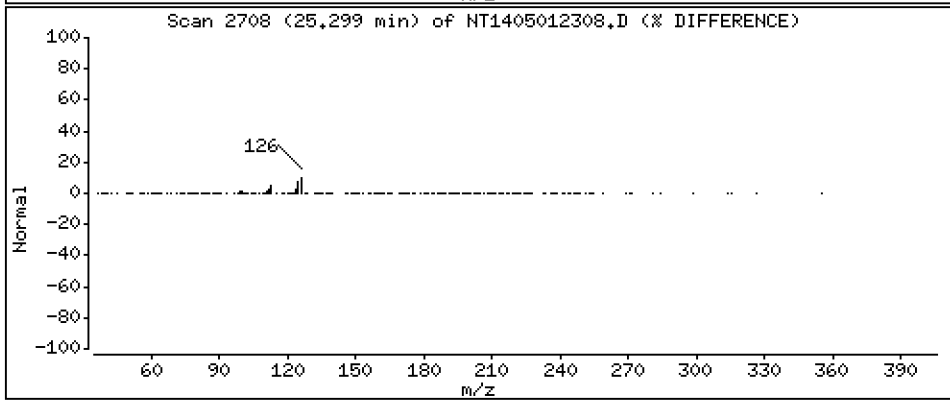
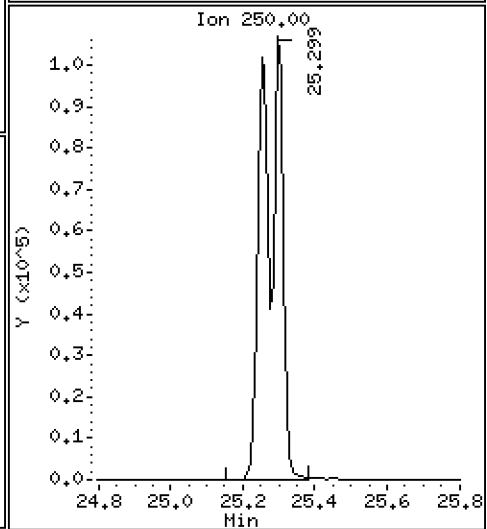
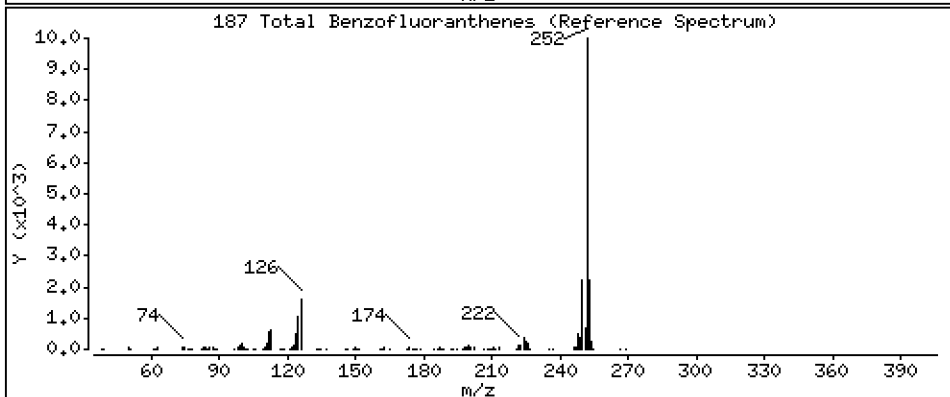
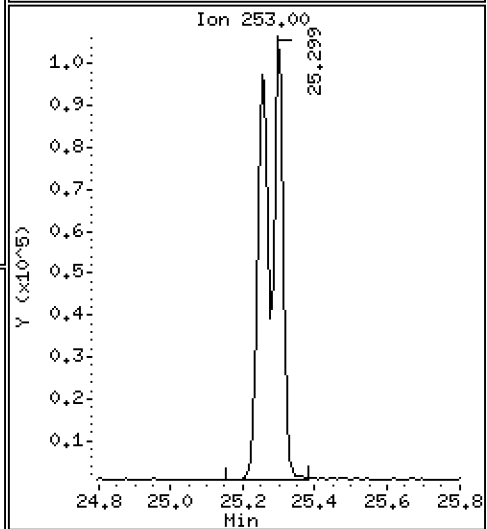
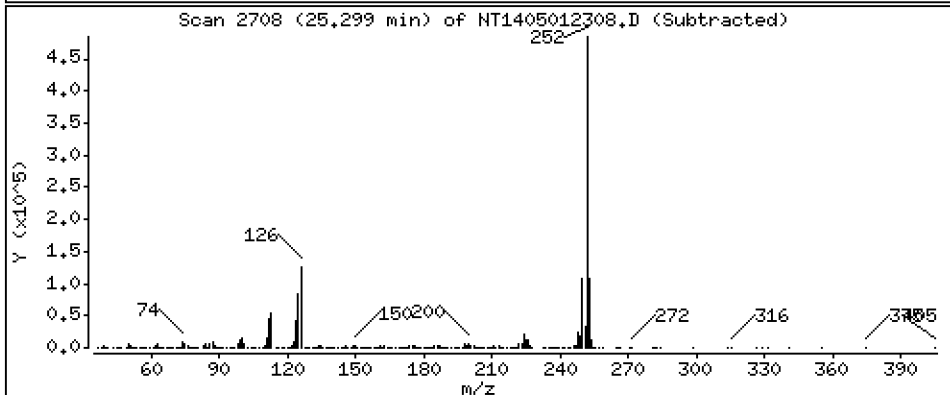
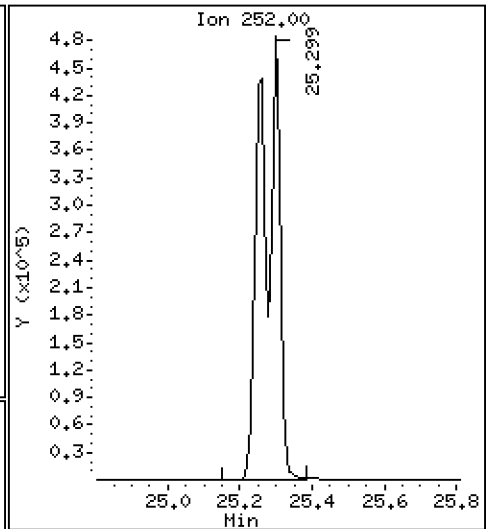
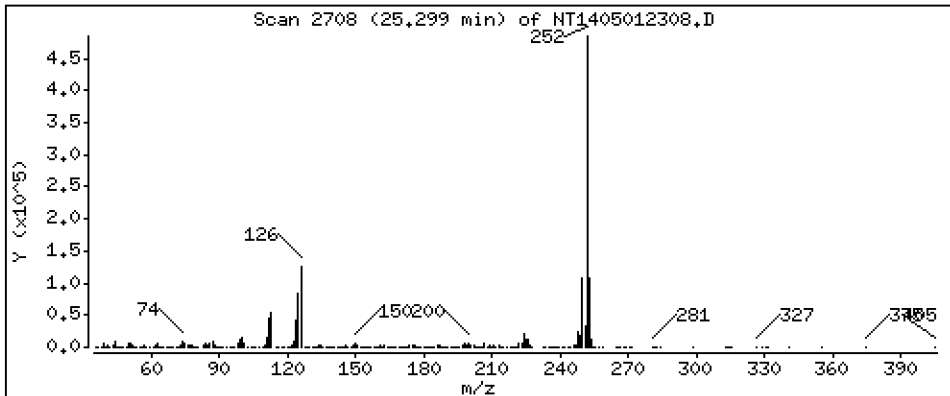
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 10,64 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD1

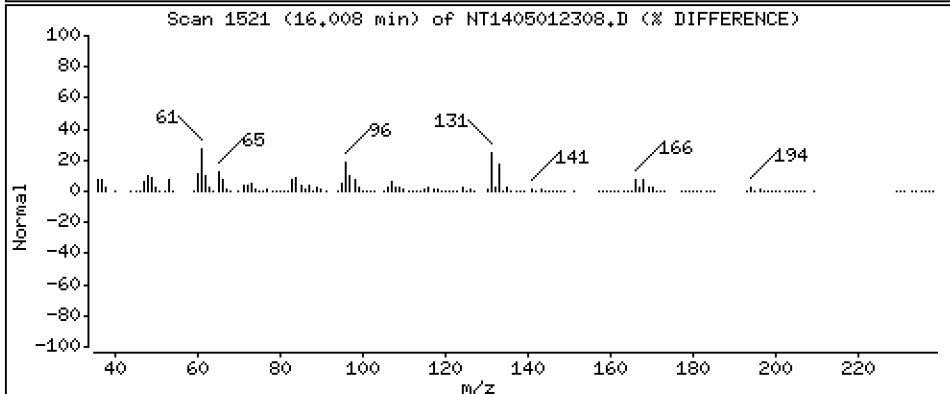
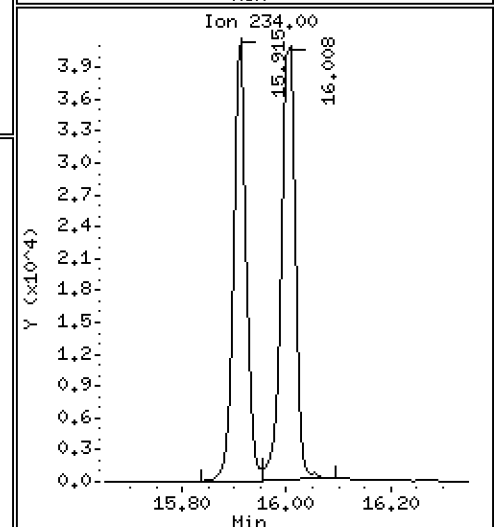
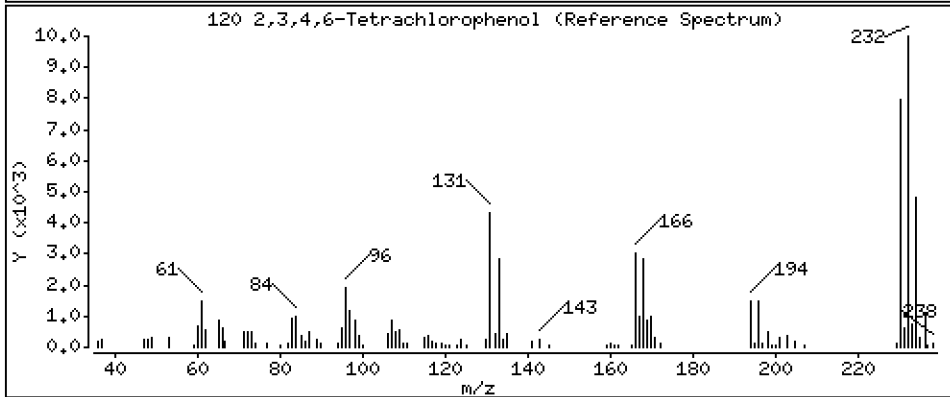
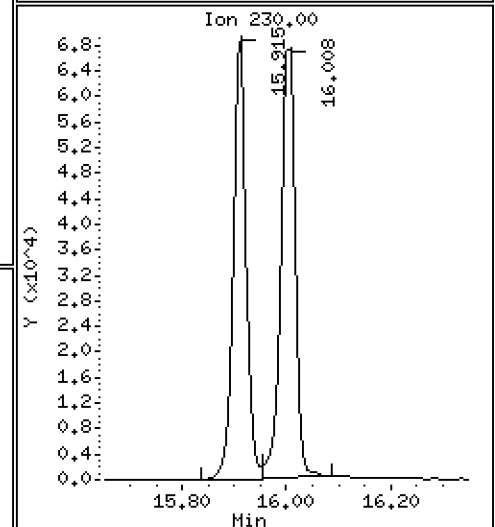
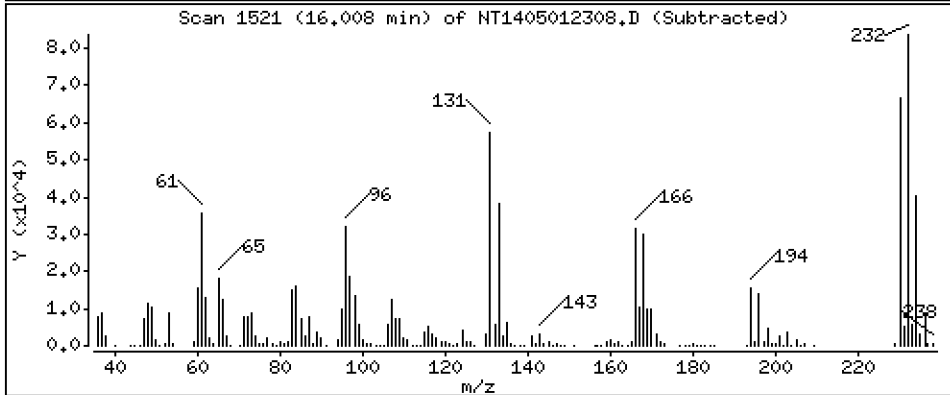
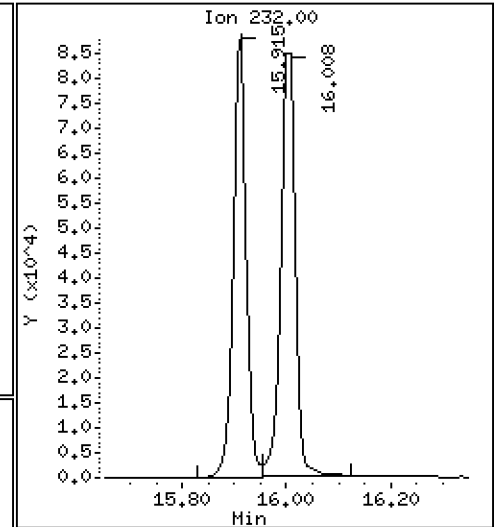
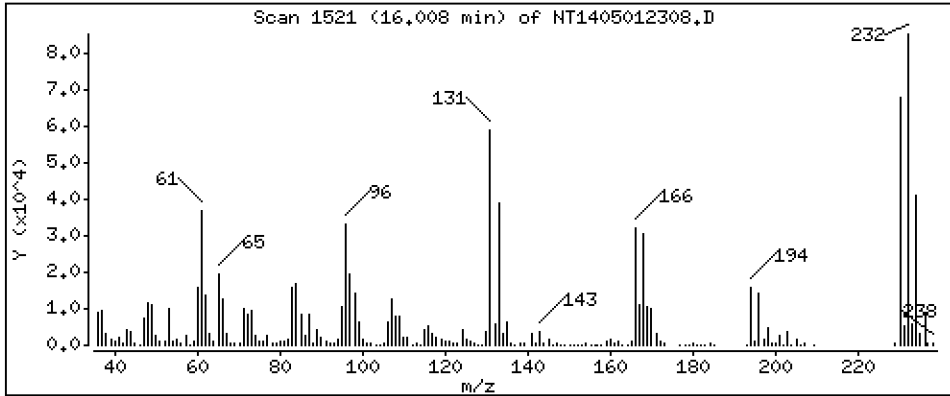
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 3,836 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012308.D  
 Lab Smp Id: BLD0297-BSD1  
 Inj Date : 01-MAY-2023 18:50 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-BSD1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 8  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.906	6.898	(0.756)	620988	6.43773	6.438
\$ 2 Phenol-d5	99		8.489	8.490	(0.930)	888359	6.56239	6.562
3 Phenol	94		8.513	8.513	(0.932)	609449	4.01702	4.017
\$ 5 2-Chlorophenol-d4	132		8.768	8.768	(0.960)	662073	6.87509	6.875
4 Bis(2-Chloroethyl)ether	93		8.675	8.675	(0.950)	497223	4.29248	4.292
6 2-Chlorophenol	128		8.798	8.799	(0.964)	421851	3.99200	3.992
7 1,3-Dichlorobenzene	146		9.069	9.070	(0.993)	409093	3.86627	3.866
* 8 1,4-Dichlorobenzene-d4	152		9.131	9.132	(1.000)	266733	4.00000	
9 1,4-Dichlorobenzene	146		9.162	9.163	(1.003)	402603	3.99132	3.991
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.040)	258544	4.23815	4.238
12 1,2-Dichlorobenzene	146		9.520	9.520	(1.042)	397822	3.96377	3.964
11 Benzyl alcohol	108		9.411	9.403	(1.031)	286581	4.14109	4.141
14 2,2'-oxybis(1-Chloropropane)	121		9.706	9.706	(1.063)	148845	4.39303	4.393
13 2-Methylphenol	108		9.628	9.629	(1.054)	364649	3.60272	3.603
17 Hexachloroethane	117		10.117	10.118	(1.108)	194452	4.04366	4.044
16 N-Nitroso-di-n-propylamine	70		9.970	9.970	(1.092)	371514	3.64991	3.650
15 4-Methylphenol	108		9.908	9.900	(1.085)	429470	3.72593	3.726
\$ 18 Nitrobenzene-d5	82		10.234	10.242	(0.879)	588439	4.49991	4.500
19 Nitrobenzene	77		10.272	10.273	(0.883)	581587	4.16033	4.160
20 Isophorone	82		10.723	10.723	(0.921)	993366	5.17677	5.177
21 2-Nitrophenol	139		10.909	10.909	(0.937)	220295	3.21493	3.215
22 2,4-Dimethylphenol	107		10.955	10.955	(0.941)	668765	6.34875	6.349
23 Bis(2-Chloroethoxy)methane	93		11.157	11.157	(0.959)	588717	4.77335	4.773
24 Benzoic acid	105		11.219	11.196	(0.964)	1957892	22.4443	22.44
25 2,4-Dichlorophenol	162		11.366	11.359	(0.977)	1019133	12.4341	12.43
26 1,2,4-Trichlorobenzene	180		11.552	11.552	(0.993)	308162	3.91916	3.919
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1062513	4.00000	
28 Naphthalene	128		11.675	11.675	(1.003)	1196542	4.18968	4.190
29 4-Chloroaniline	127		11.806	11.814	(1.015)	688367	5.57092	5.571
30 Hexachlorobutadiene	225		12.038	12.039	(1.035)	147826	4.11223	4.112
31 4-Chloro-3-methylphenol	107		12.773	12.774	(1.098)	1303673	13.8491	13.85
32 2-Methylnaphthalene	142		13.083	13.083	(1.124)	822138	3.97408	3.974
33 Hexachlorocyclopentadiene	237		13.547	13.548	(0.887)	276010	7.42091	7.421

Compounds	QUANT SIG					CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)	
34 2,4,6-Trichlorophenol	196	13.710	13.702	(0.898)	653962	14.1137	14.11	
35 2,4,5-Trichlorophenol	196	13.780	13.780	(0.902)	696283	14.1450	14.14	
§ 36 2-Fluorobiphenyl	172	13.865	13.865	(0.908)	816516	4.63918	4.639	
37 2-Chloronaphthalene	162	14.081	14.082	(0.922)	697372	4.15063	4.151	
38 2-Nitroaniline	65	14.352	14.345	(0.940)	1075973	11.9886	11.99	
39 Dimethylphthalate	163	14.778	14.778	(0.968)	784682	4.52740	4.527	
40 Acenaphthylene	152	14.956	14.956	(0.979)	1129852	4.21356	4.214	
41 2,6-Dinitrotoluene	165	14.925	14.918	(0.977)	510530	12.9928	12.99	
* 42 Acenaphthene-d10	164	15.273	15.273	(1.000)	505318	4.00000		
43 3-Nitroaniline	138	15.211	15.212	(0.996)	486041	9.84482	9.845	
44 Acenaphthene	153	15.343	15.343	(1.005)	711600	4.43000	4.430	
45 2,4-Dinitrophenol	184	15.420	15.420	(1.010)	573535	24.1467	24.15	
46 Dibenzofuran	168	15.667	15.668	(1.026)	975464	4.25377	4.254	
47 4-Nitrophenol	109	15.528	15.521	(1.017)	430552	14.9868	14.99	
48 2,4-Dinitrotoluene	165	15.737	15.729	(1.030)	700787	13.1722	13.17	
50 Diethylphthalate	149	16.240	16.240	(1.063)	868865	4.63143	4.631	
49 Fluorene	166	16.386	16.386	(1.073)	914308	4.50565	4.506	
51 4-Chlorophenyl-phenylether	204	16.371	16.371	(1.072)	382109	4.55230	4.552	
52 4-Nitroaniline	138	16.486	16.487	(1.079)	475242	10.8857	10.89	
53 4,6-Dinitro-2-methylphenol	198	16.579	16.579	(0.905)	720628	27.0245	27.02	
54 N-Nitrosodiphenylamine	169	16.625	16.626	(0.907)	478951	3.95520	3.955	
§ 55 2,4,6-Tribromophenol	330	16.918	16.919	(1.108)	120167	7.23357	7.234	
56 4-Bromophenyl-phenylether	248	17.381	17.381	(0.948)	179850	4.51533	4.515	
57 Hexachlorobenzene	284	17.698	17.698	(0.966)	170385	4.22998	4.230	
58 Pentachlorophenol	266	18.054	18.054	(0.985)	325568	12.7081	12.71	
* 59 Phenanthrene-d10	188	18.325	18.325	(1.000)	857485	4.00000		
60 Phenanthrene	178	18.371	18.372	(1.003)	1107273	4.56703	4.567	
61 Anthracene	178	18.464	18.464	(1.008)	914154	3.93129	3.931	
62 Carbazole	167	18.797	18.797	(1.026)	966295	4.49069	4.491	
63 Di-n-butylphthalate	149	19.578	19.579	(1.068)	1577589	4.80934	4.809	
64 Fluoranthene	202	20.754	20.755	(0.888)	1209010	4.55354	4.554	
65 Pyrene	202	21.180	21.180	(0.906)	1221144	4.45360	4.454	
§ 66 Terphenyl-d14	244	21.458	21.459	(0.918)	832363	4.44095	4.441	
67 Butylbenzylphthalate	149	22.380	22.380	(0.958)	656151	4.04012	4.040	
68 Benzo(a)anthracene	228	23.340	23.340	(0.999)	971917	4.73366	4.734	
* 69 Chrysene-d12	240	23.371	23.371	(1.000)	575190	4.00000		
70 3,3'-Dichlorobenzidine	252	23.294	23.302	(0.997)	397283	6.03739	6.037	
71 Chrysene	228	23.417	23.418	(1.002)	908004	4.74157	4.742	
72 bis(2-Ethylhexyl)phthalate	149	24.401	24.401	(1.001)	1713739	4.60781	4.608	
* 134 Di-n-octylphthalate-d4	153	24.385	24.385	(1.000)	1393213	4.00000		
73 Di-n-octylphthalate	149	24.401	24.401	(1.001)	1713739	4.60781	4.608	
74 Benzo(b)fluoranthene	252	25.260	25.260	(0.970)	878898	5.10798	5.108	
75 Benzo(k)fluoranthene	252	25.299	25.307	(0.971)	934337	5.53428	5.534	
76 Benzo(a)pyrene	252	25.926	25.934	(0.995)	675312	4.64427	4.644	
* 77 Perylene-d12	264	26.050	26.050	(1.000)	516036	4.00000		
78 Indeno(1,2,3-cd)pyrene	276	28.789	28.789	(1.105)	844927	4.20211	4.202	
79 Dibenzo(a,h)anthracene	278	28.797	28.805	(1.105)	687062	4.17731	4.177	
80 Benzo(g,h,i)perylene	276	29.597	29.605	(1.136)	685361	4.02636	4.026	
90 N-Nitrosodimethylamine	74	4.820	4.797	(0.528)	631349	7.87220	7.872	
91 Aniline	93	8.590	8.590	(0.941)	439096	3.18923	3.189	
93 Benzidine	184	Compound Not Detected.						
103 Pyridine	79	4.851	4.821	(0.531)	163451	0.68850	0.6885	
105 1-methylnaphthalene	142	13.307	13.308	(1.144)	796149	3.98529	3.985	
111 Azobenzene (1,2-DP-Hydrazine)	77	16.695	16.695	(1.093)	1214420	4.19485	4.195	

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.299	25.307	(0.971)	1732707	10.6371	10.64
120 2,3,4,6-Tetrachlorophenol	232	16.007	16.000	(1.048)	171035	3.83632	3.836

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012308.D Calibration Time: 15:06  
 Lab Smp Id: BLD0297-BSD1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	266733	-2.65
27 Naphthalene-d8	1103207	551604	2206414	1062513	-3.69
42 Acenaphthene-d10	520358	260179	1040716	505318	-2.89
59 Phenanthrene-d10	882575	441288	1765150	857485	-2.84
69 Chrysene-d12	600619	300310	1201238	575190	-4.23
134 Di-n-octylphthala	1445631	722816	2891262	1393213	-3.63
77 Perylene-d12	570040	285020	1140080	516036	-9.47

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.13	-0.00
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.33	17.83	18.83	18.33	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.37	-0.00
134 Di-n-octylphthala	24.39	23.89	24.89	24.39	-0.00
77 Perylene-d12	26.05	25.55	26.55	26.05	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012308.D

Lab ID: BLD0297-BSD1  
nt14.i, ABN.m, 01-MAY-2023 18:50

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*







**MS / MS DUPLICATE RECOVERY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC  
Client: Anchor QEA, LLC  
Matrix: Solid  
Batch: BLD0297  
Preparation: EPA 3546 (Microwave)  
Initial/Final: 23.16 g / 1 mL

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Analyzed: 05/01/23 23:08  
Laboratory ID: BLD0297-MSD1  
Sequence Name: Matrix Spike Dup  
Source Sample: LDW23-SS1818

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Phenol	500	345	B	66.5	3.29	30	34 - 120
4-Methylphenol	500	249	*	49.8	31.3 *	30	29 - 120
Naphthalene	500	437		84.9	10.4	30	43 - 120
2-Methylnaphthalene	500	386		75.0	1.19	30	43 - 120
Acenaphthylene	500	369		71.3	5.25	30	42 - 120
Dimethylphthalate	500	417		82.5	0.440	30	43 - 120
Acenaphthene	500	421		82.2	1.70	30	45 - 120
Dibenzofuran	500	411		82.2	0.0618	30	43 - 120
Fluorene	500	431		86.3	0.712	30	45 - 120
Phenanthrene	500	505		81.5	0.319	30	49 - 120
Anthracene	500	347		61.7	9.75	30	45 - 120
Fluoranthene	500	546		65.2	3.83	30	53 - 145
Pyrene	500	621		64.7	3.39	30	52 - 134
Butylbenzylphthalate	500	327		63.0	3.61	30	45 - 132
Benzo(a)anthracene	500	524		76.5	5.05	30	49 - 120
Chrysene	500	615		77.9	5.25	30	47 - 120
bis(2-Ethylhexyl)phthalate	500	404		80.7	0.991	30	34 - 130
Benzo(a)fluoranthene, Total	1000	1430		98.5	1.26	30	30 - 160
Benzo(a)pyrene	500	516		73.2	11.9	30	42 - 120
Indeno(1,2,3-cd)pyrene	500	208	*	33.2 *	6.33	30	42 - 163
Dibenzo(a,h)anthracene	500	203		40.7	6.22	30	30 - 133
Benzo(g,h,i)perylene	500	158	*	23.7 *	8.15	30	46 - 148

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012314.D

Date: 01-May-2023 22:31

Client ID:

Sample Info: BLD0297-HS1

Page 1

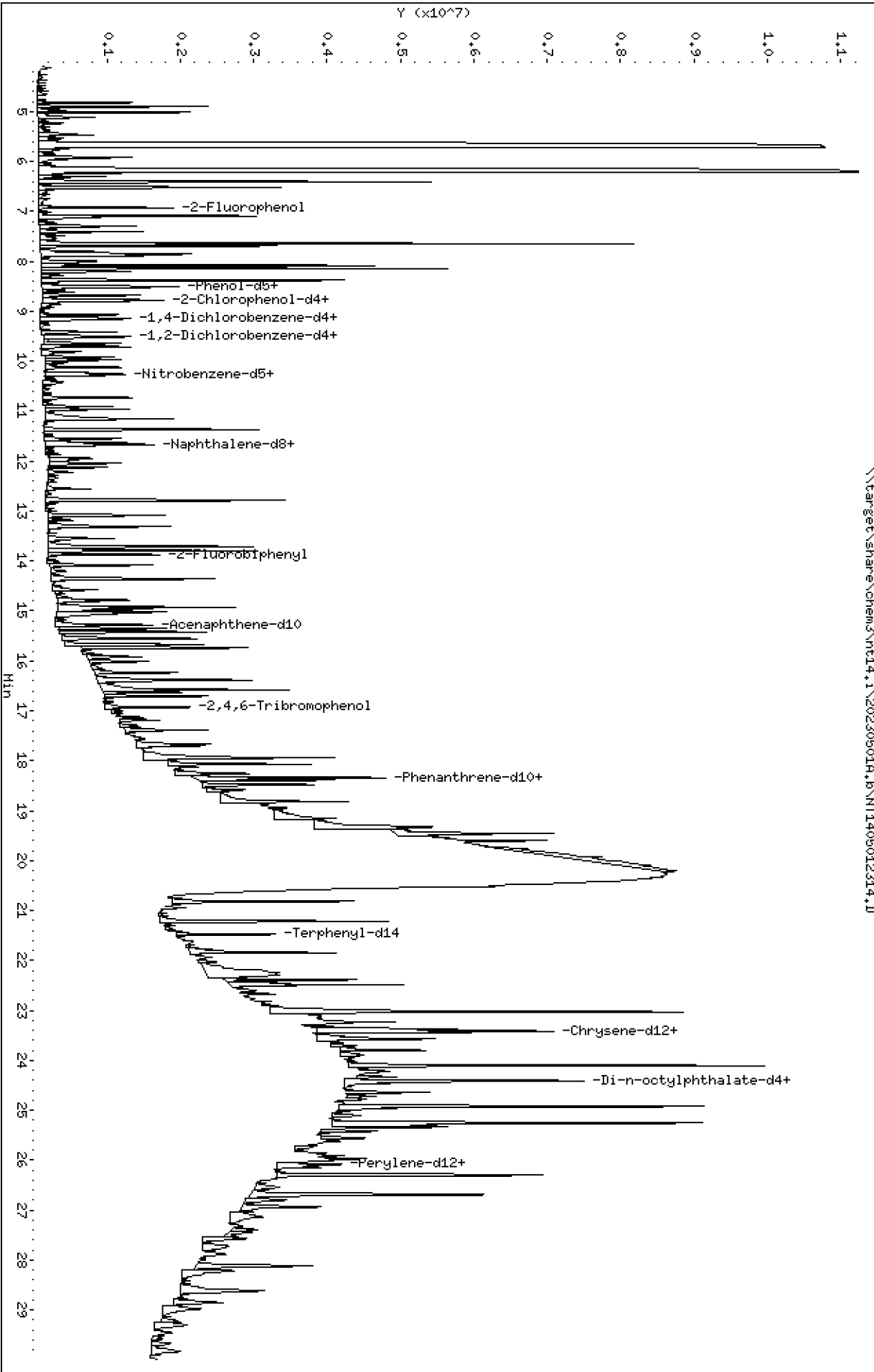
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JSD

Column diameter: 0.25

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Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

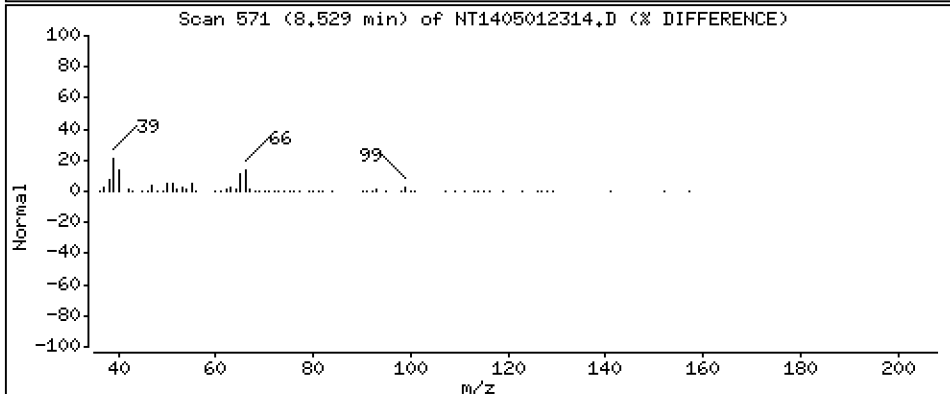
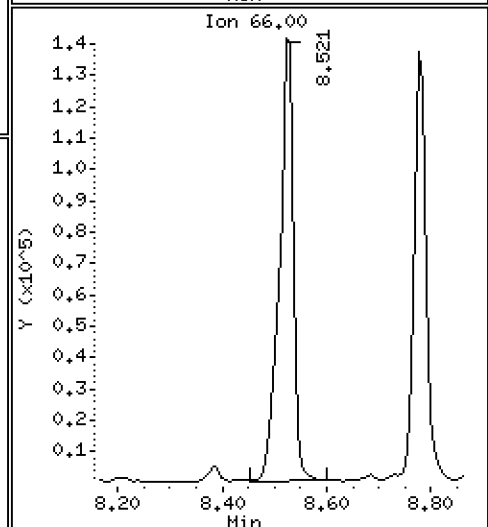
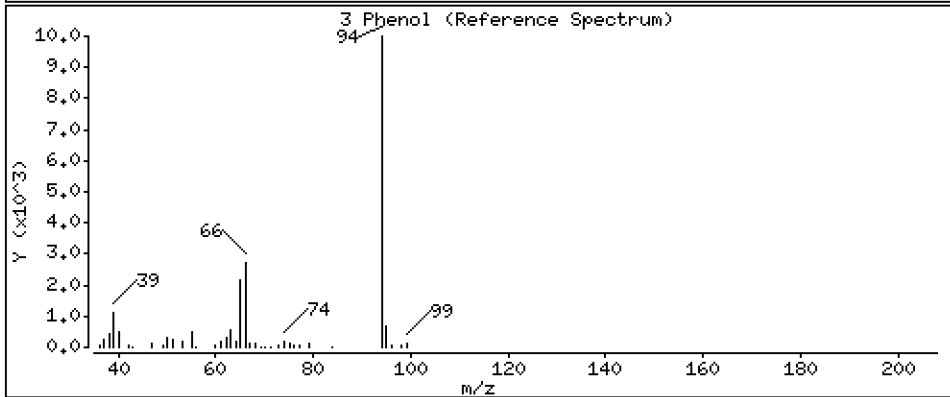
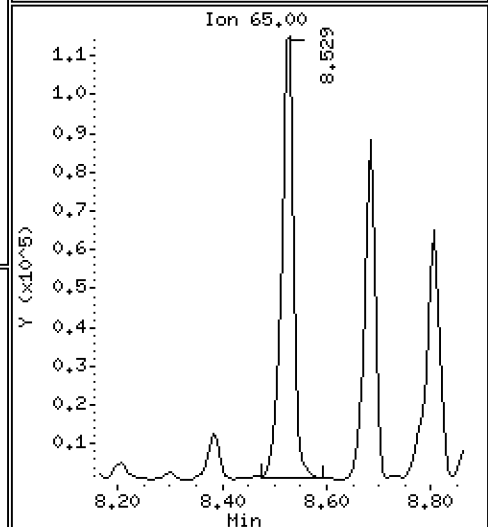
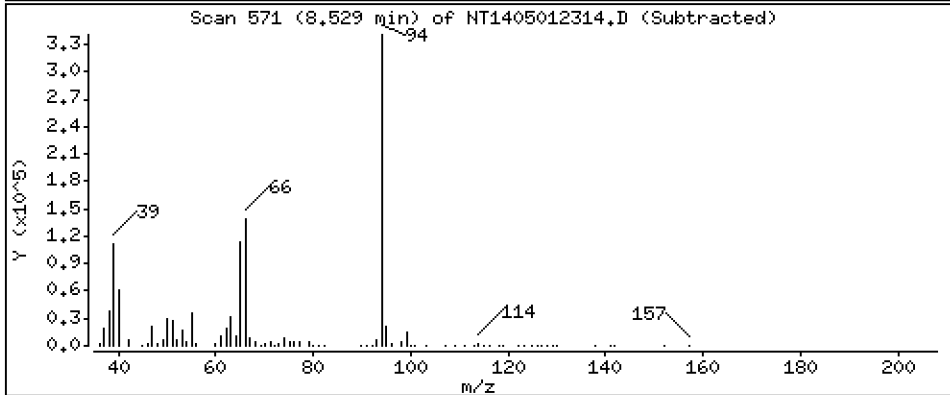
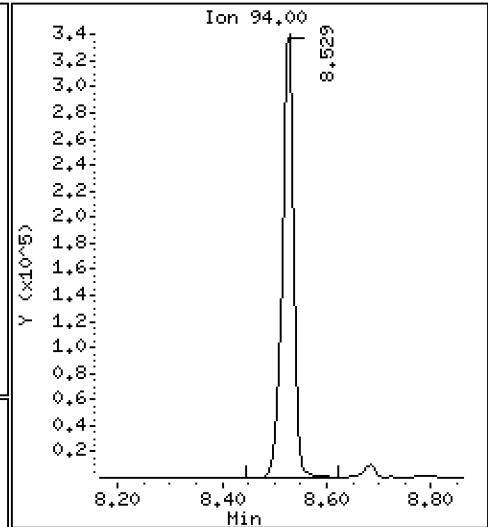
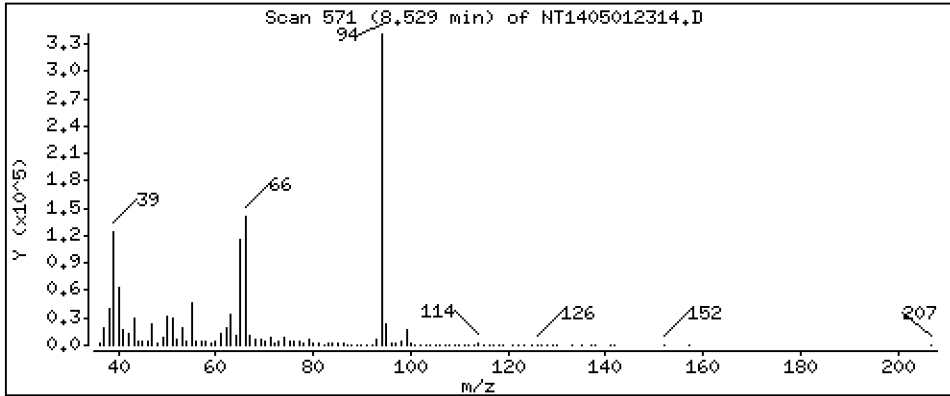
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 3,565 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

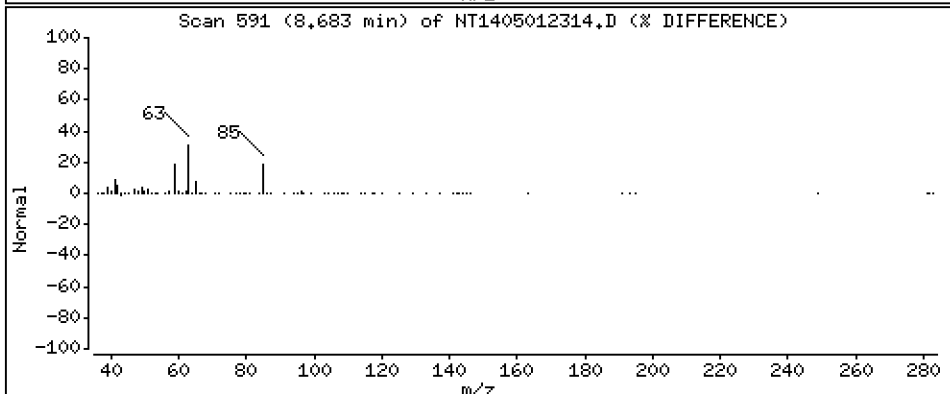
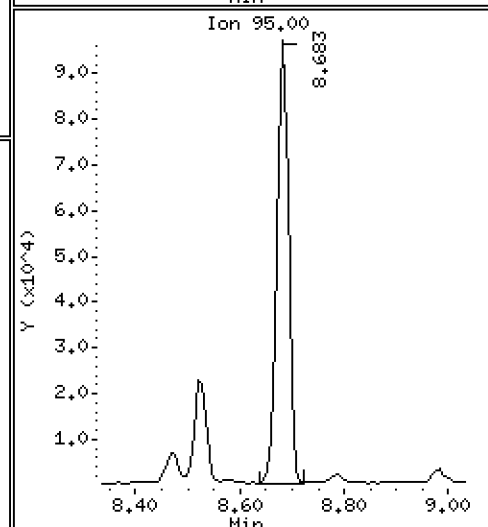
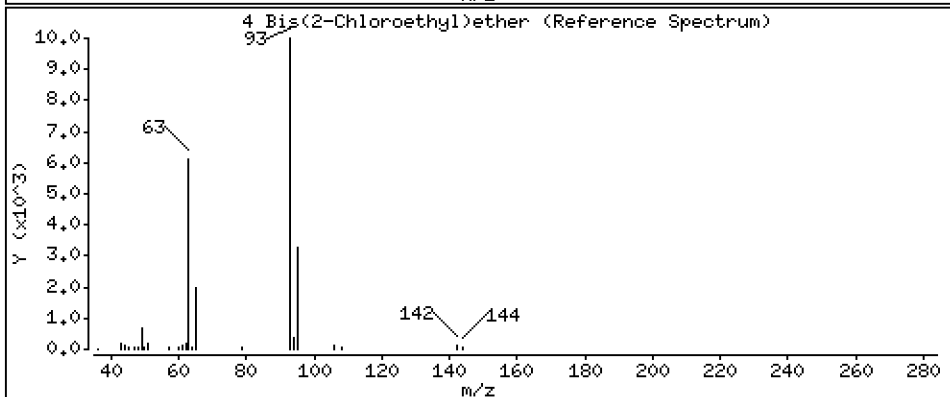
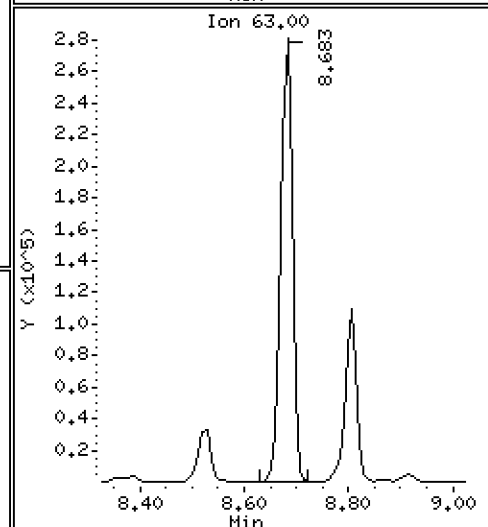
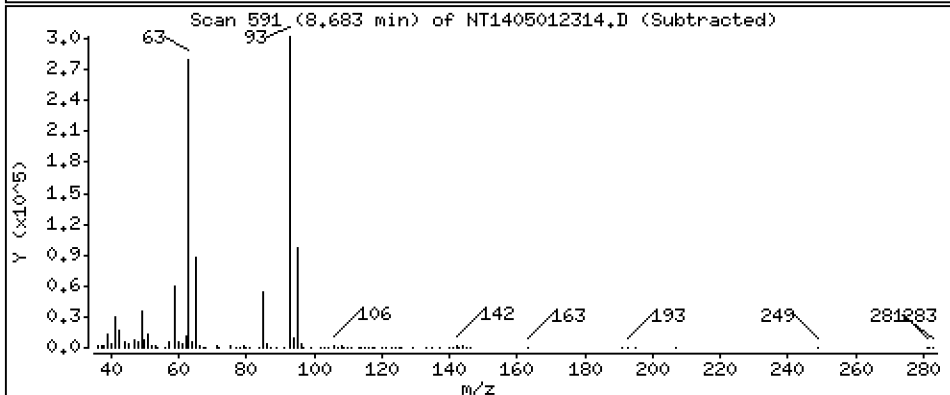
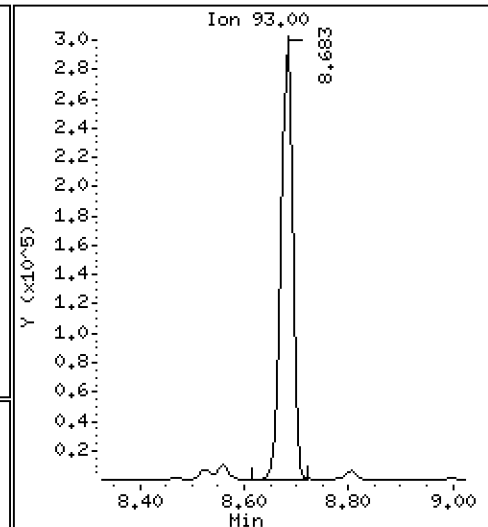
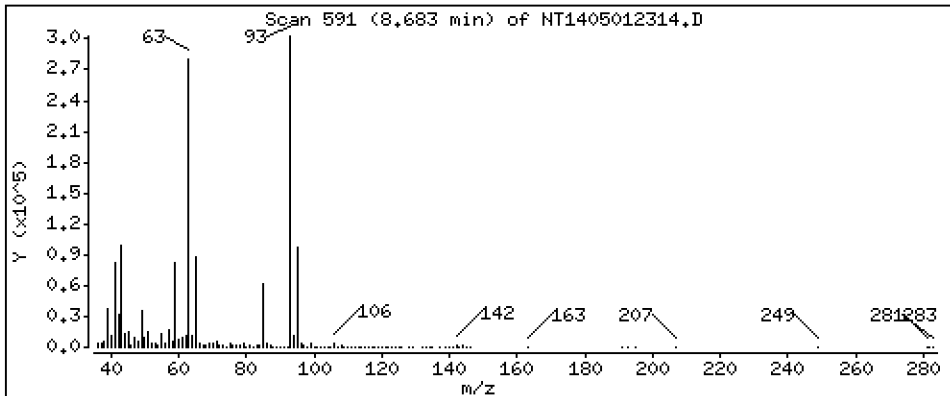
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 3,930 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

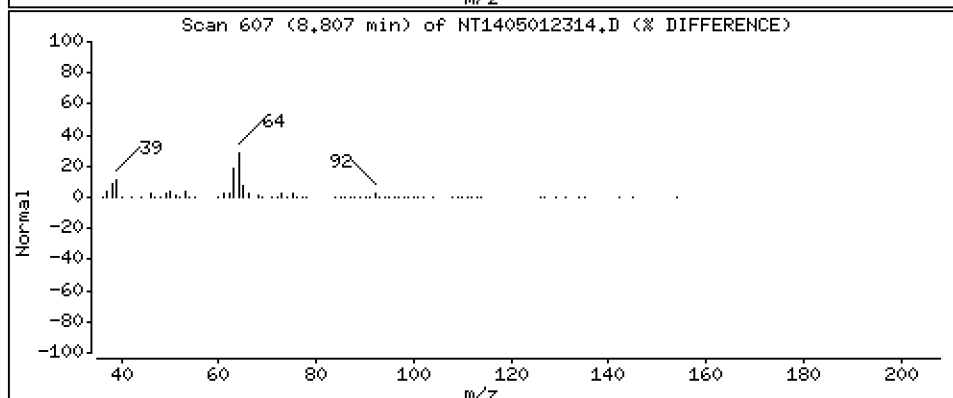
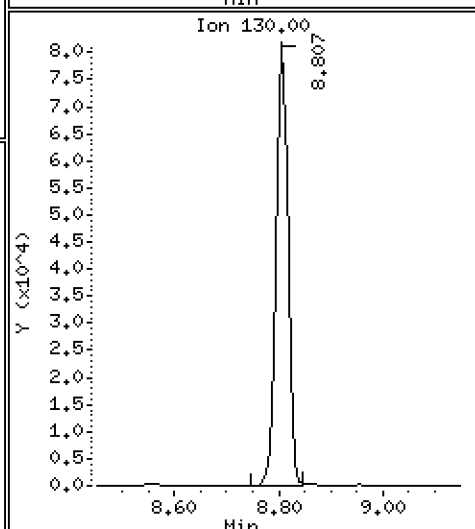
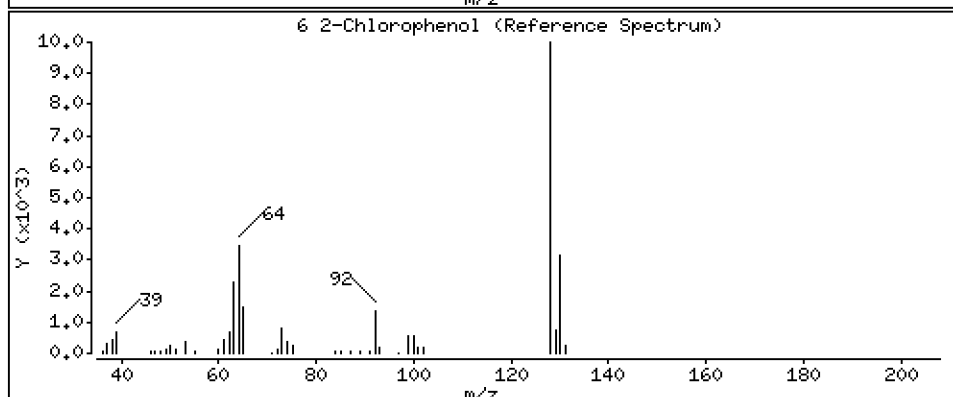
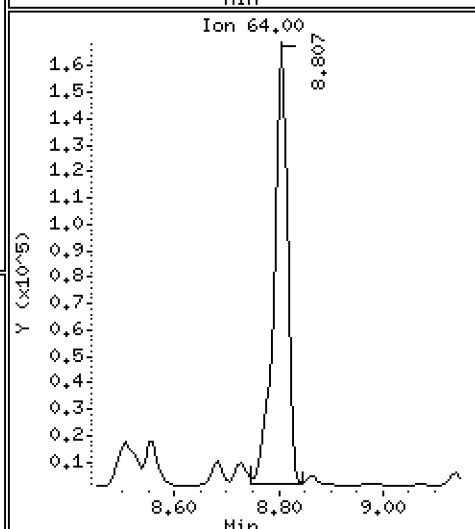
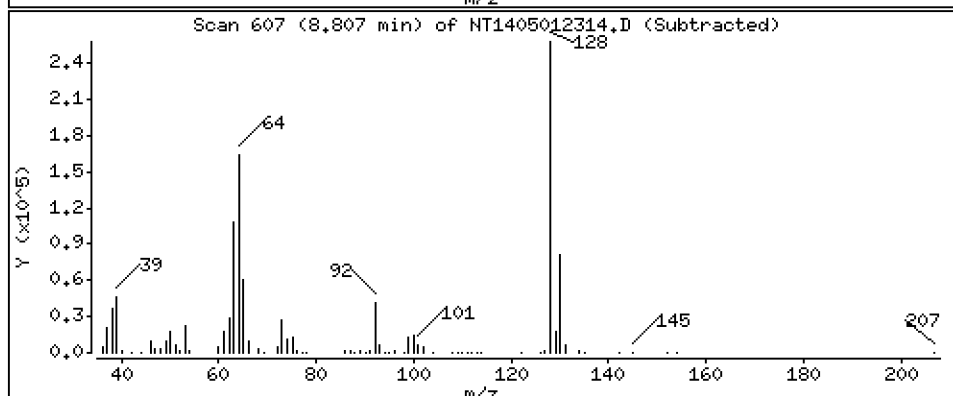
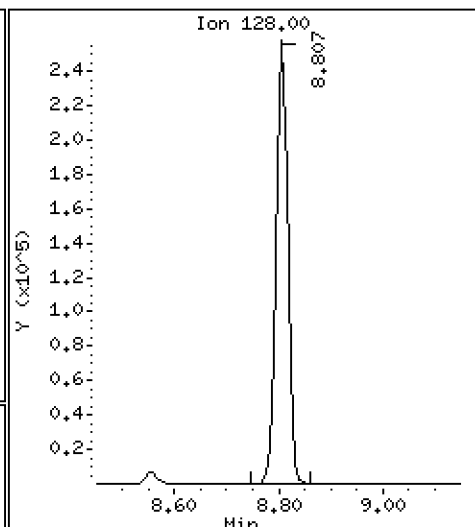
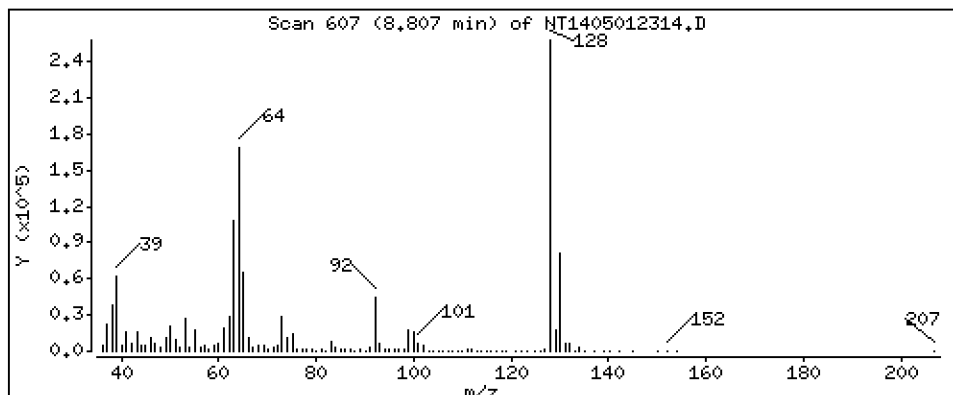
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

6 2-Chlorophenol

Concentration: 3.658 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

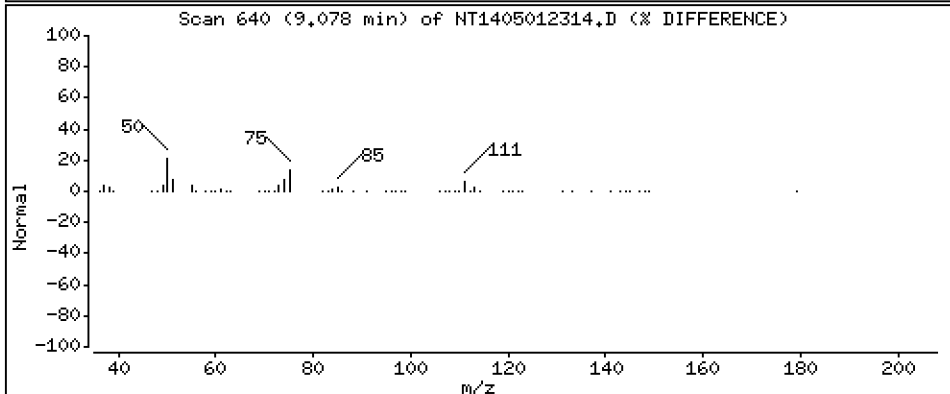
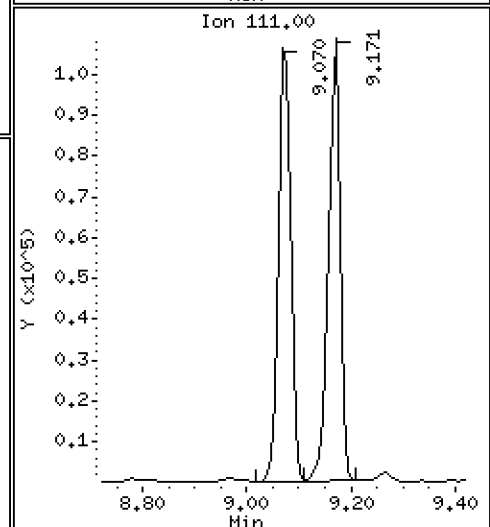
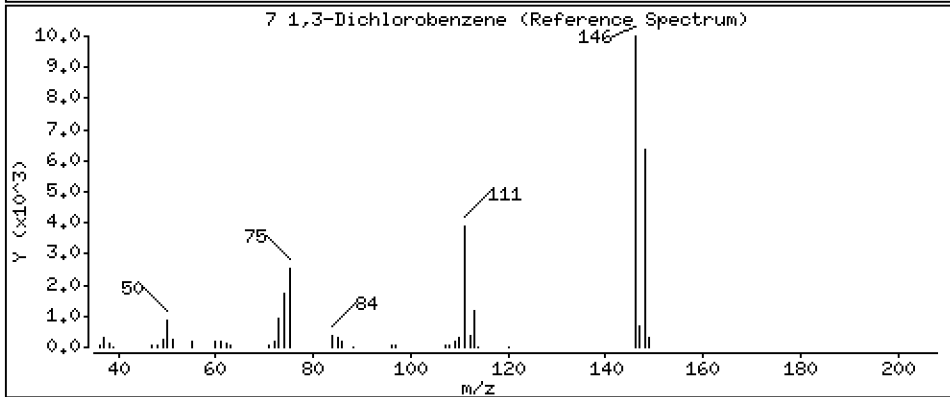
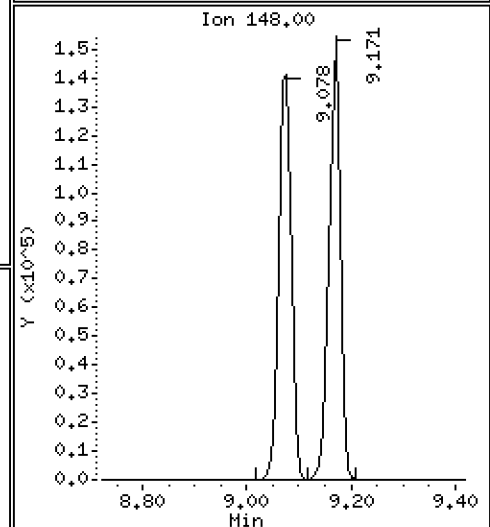
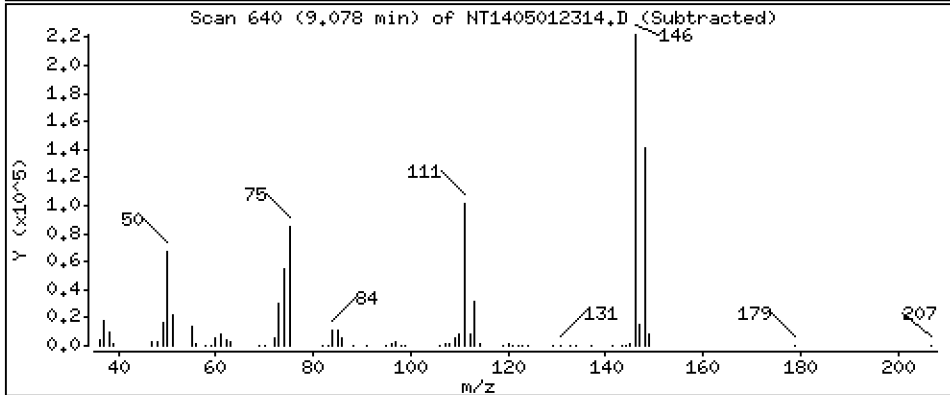
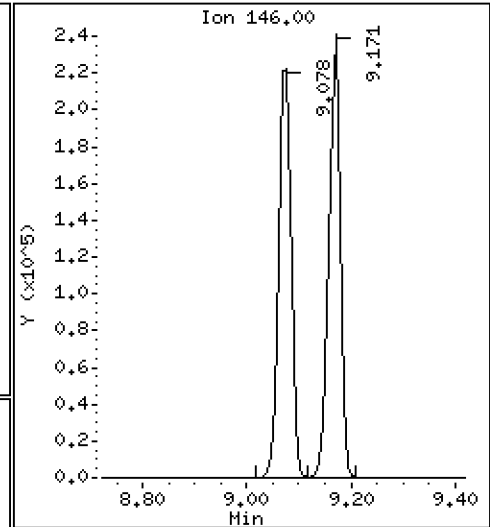
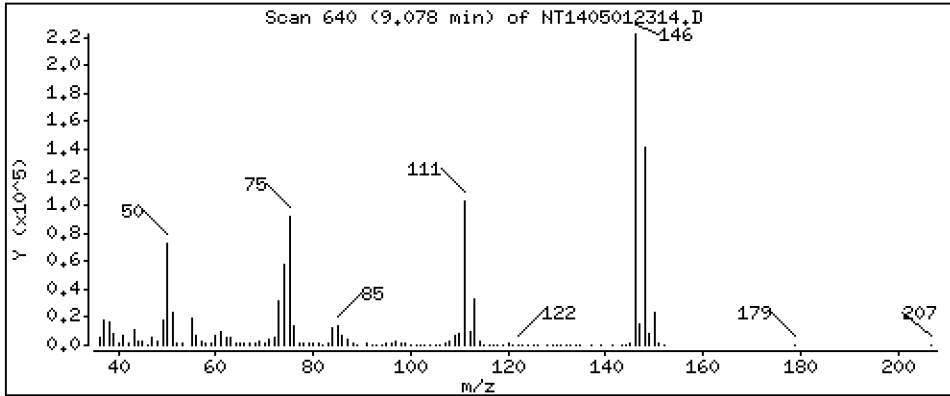
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

7 1,3-Dichlorobenzene

Concentration: 3,499 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

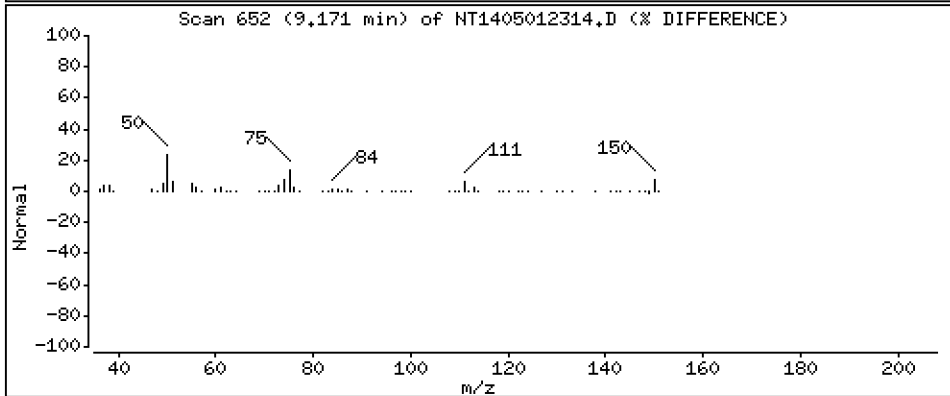
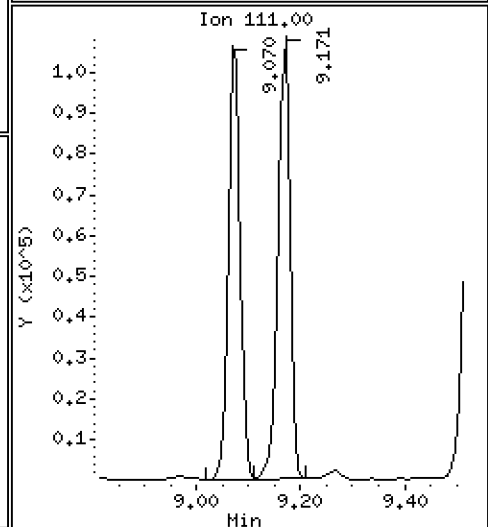
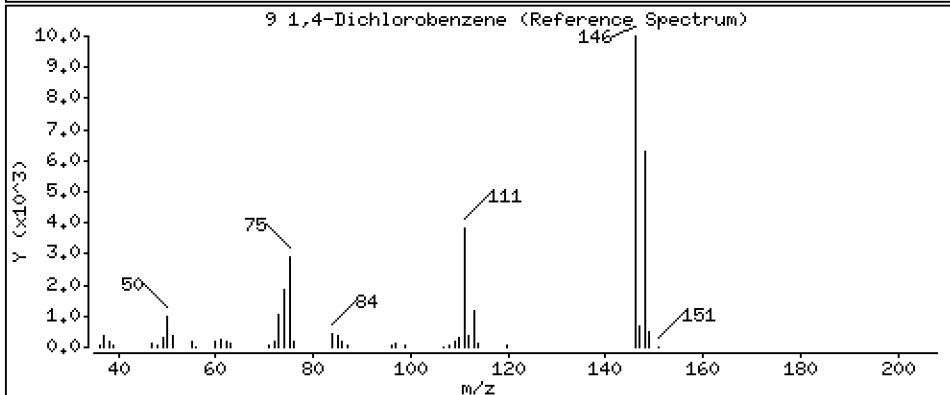
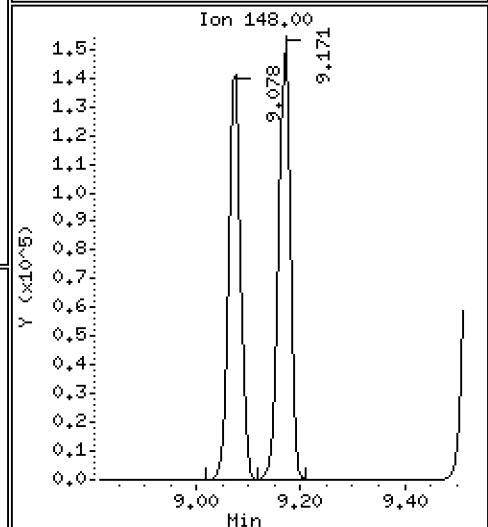
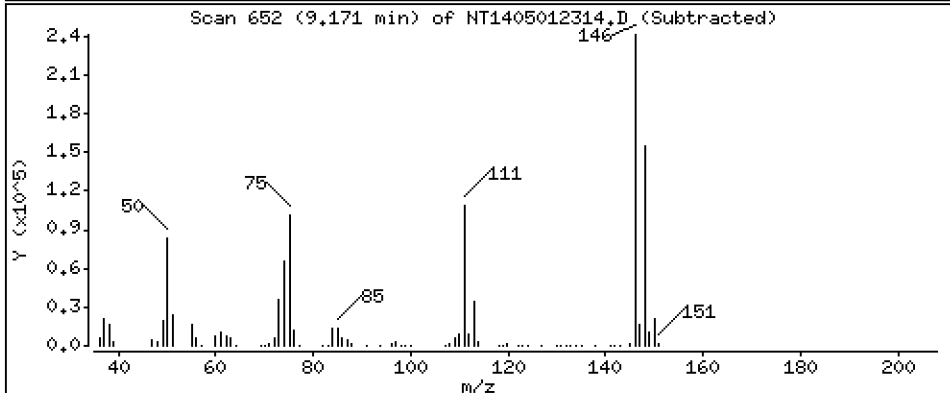
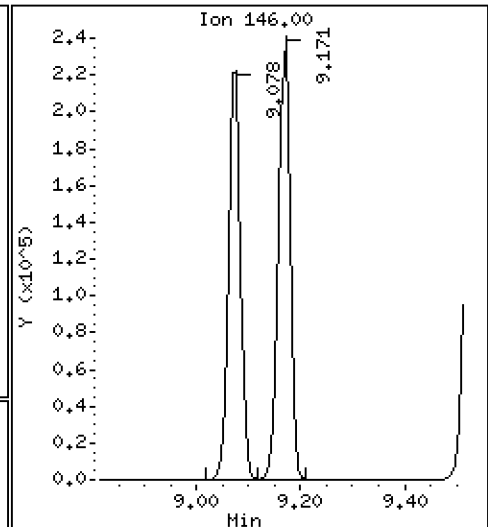
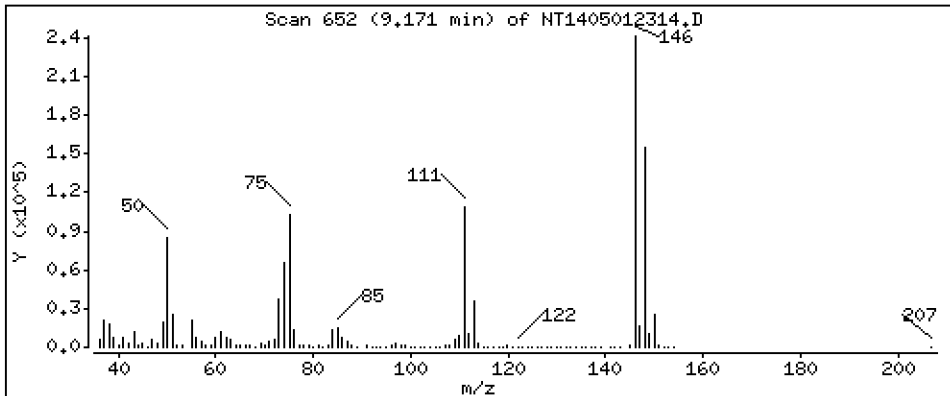
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 3,624 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

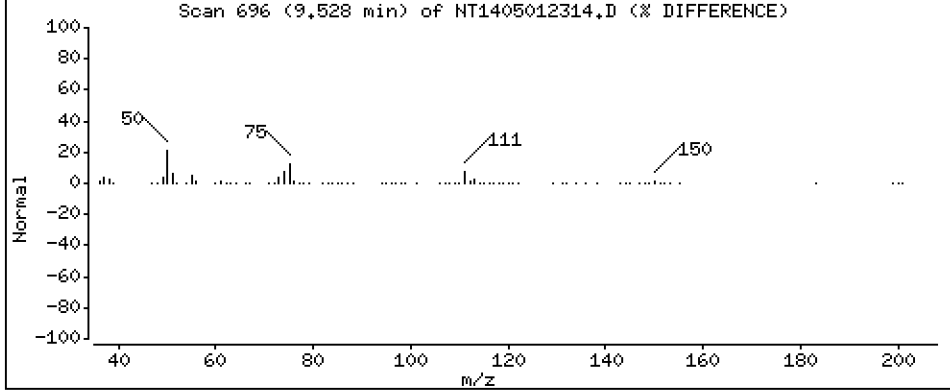
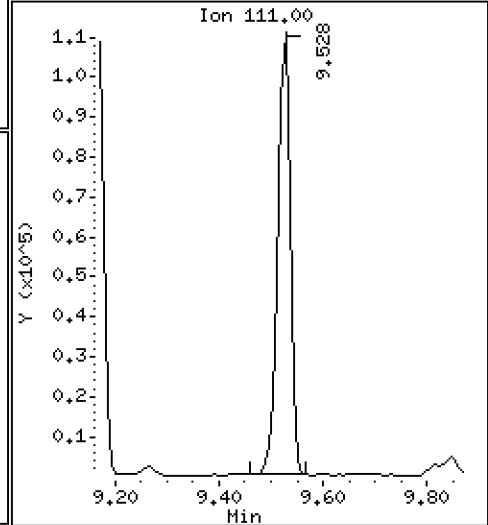
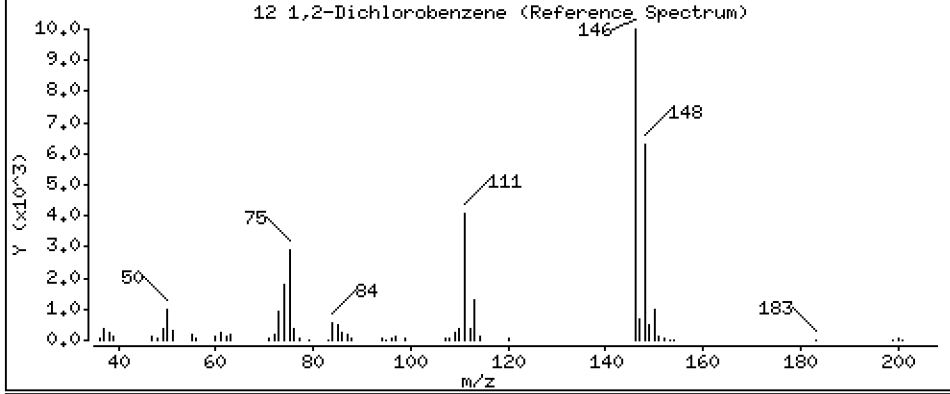
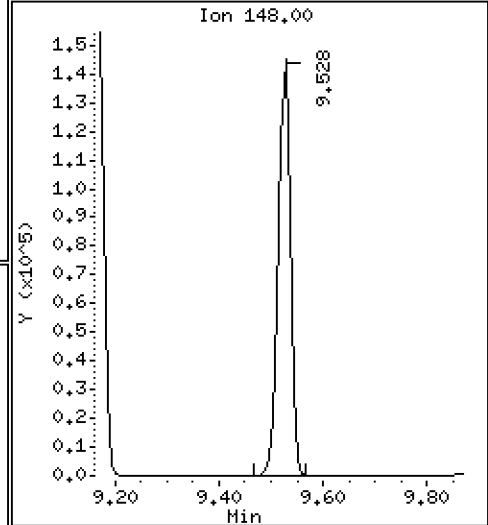
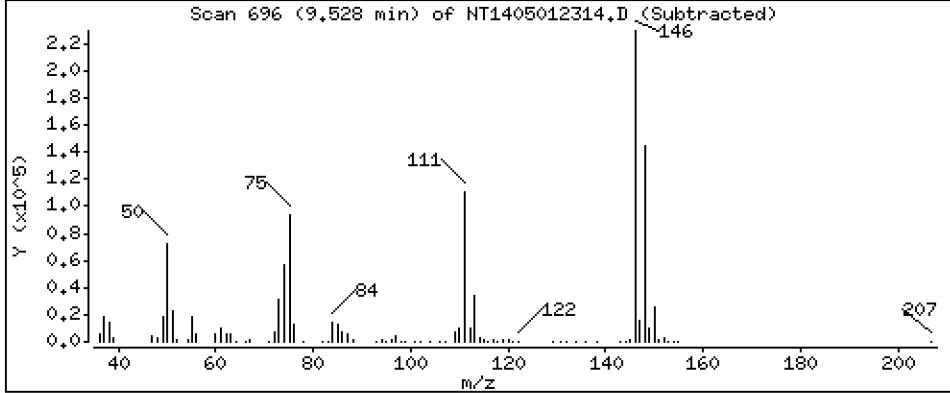
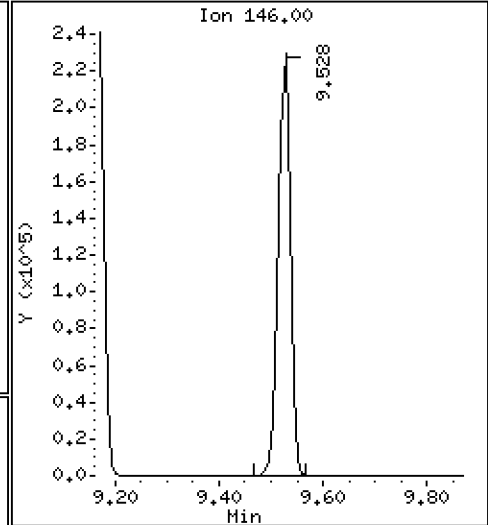
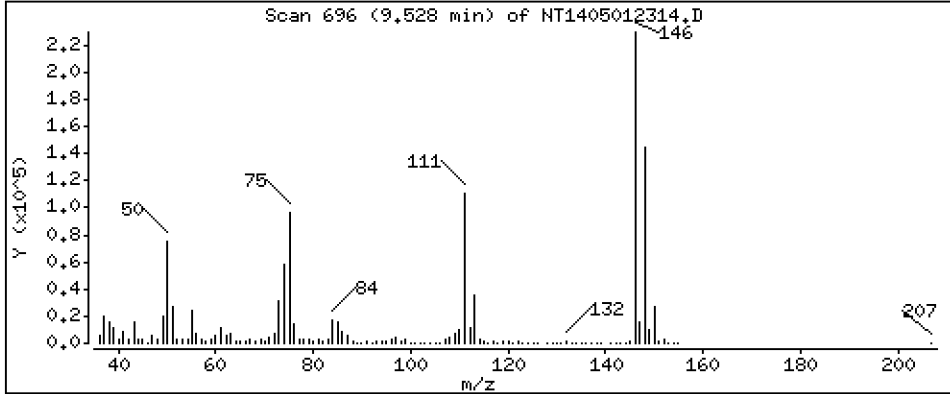
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 3,632 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

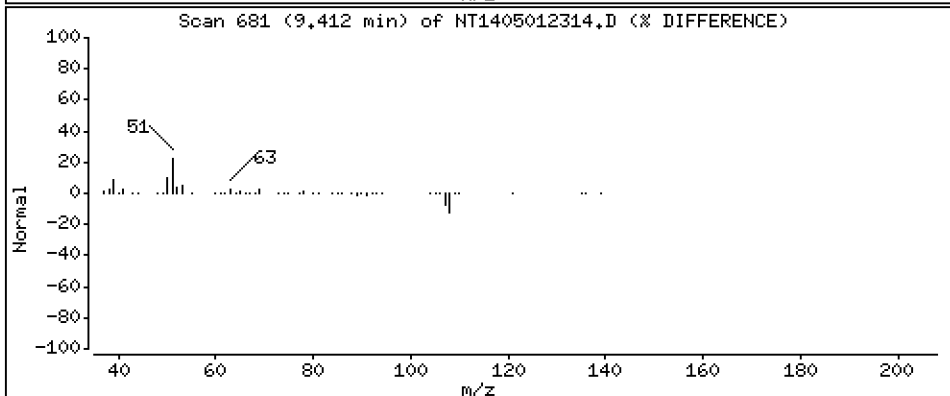
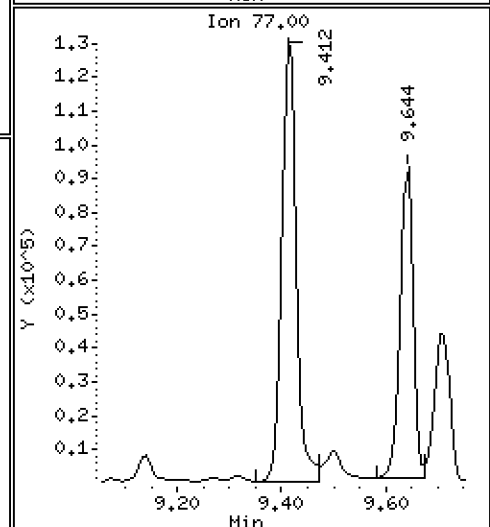
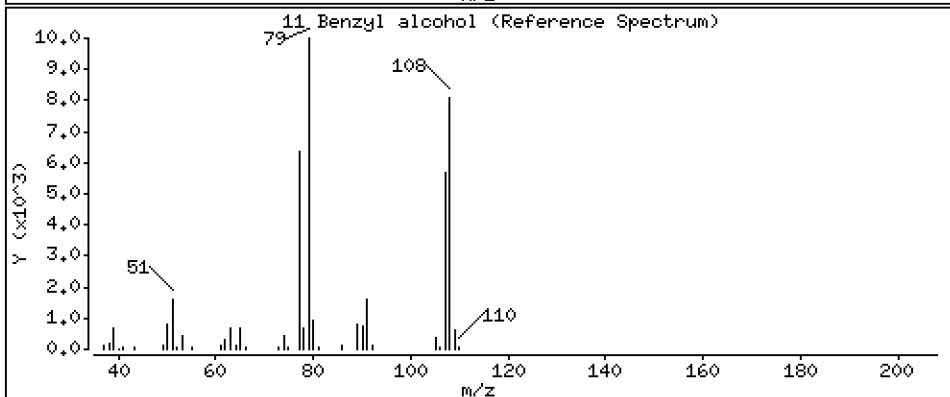
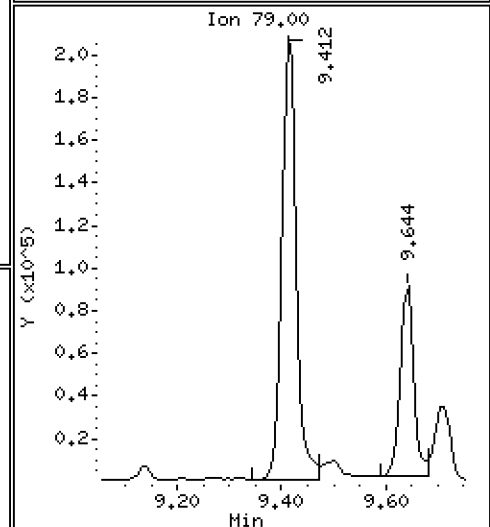
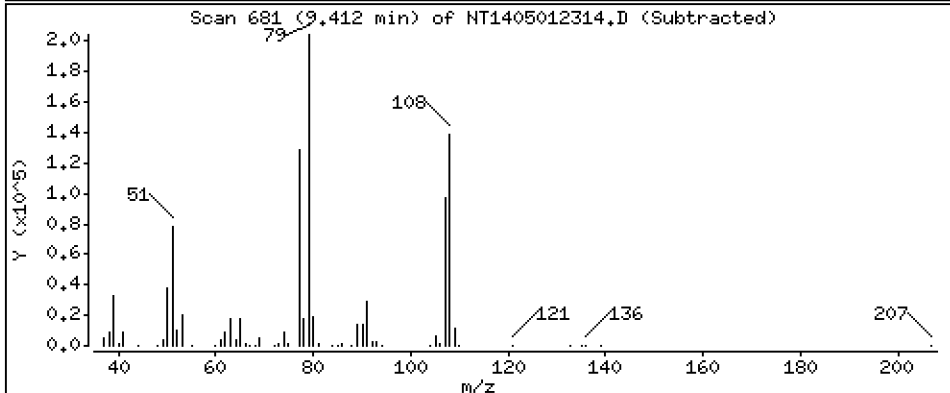
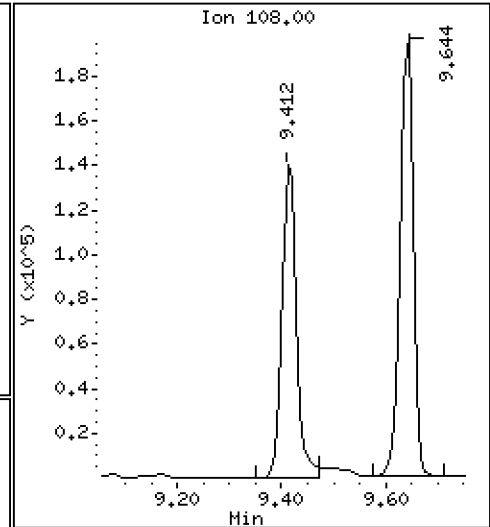
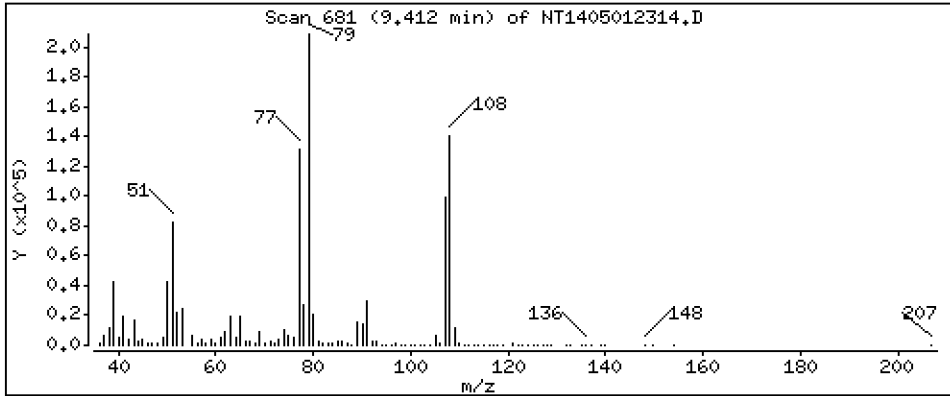
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 3,900 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

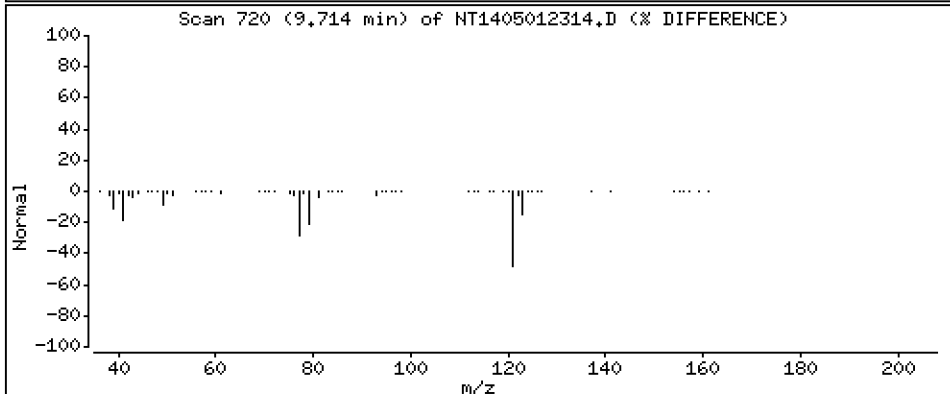
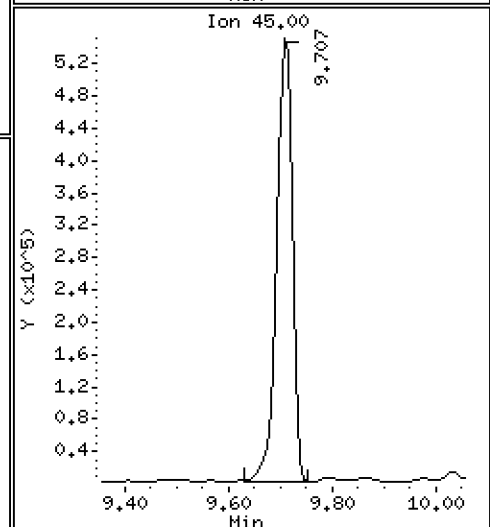
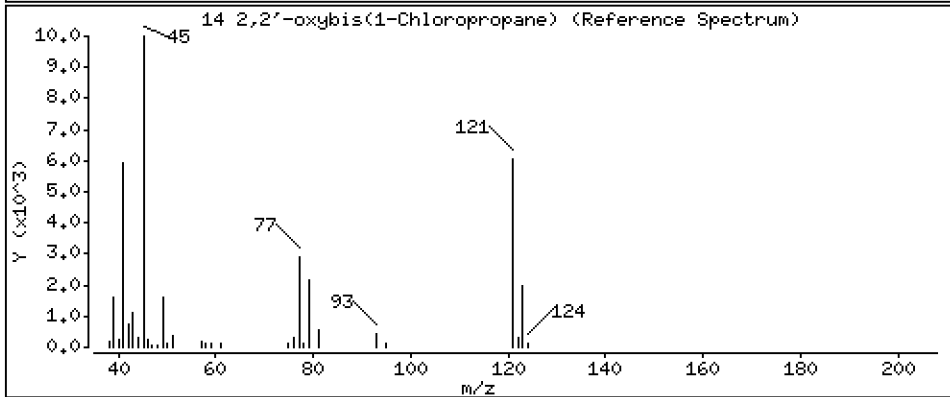
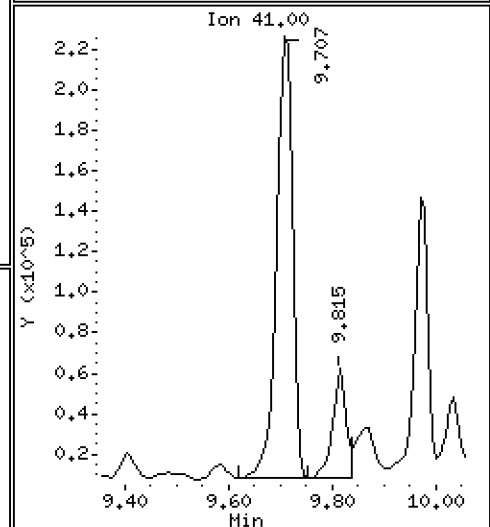
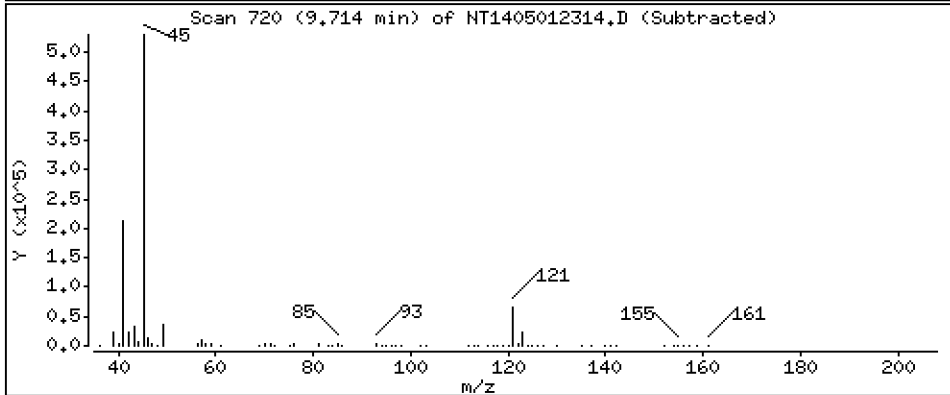
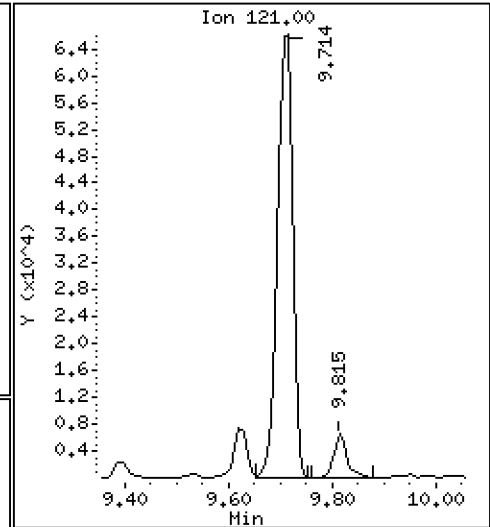
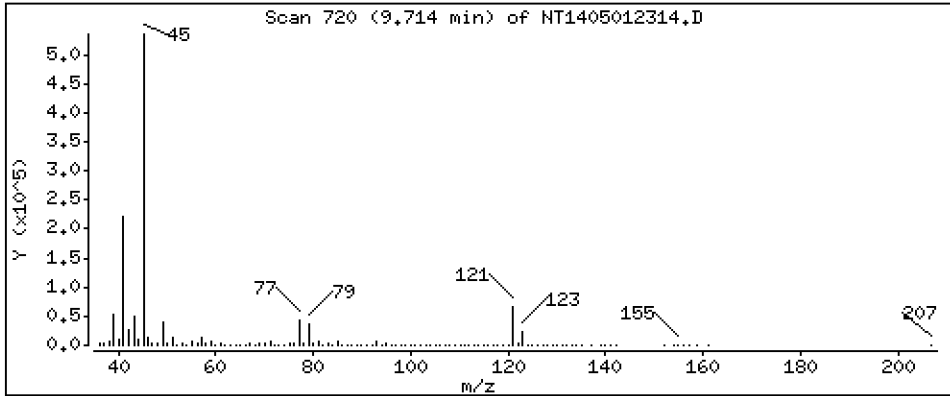
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 3,993 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

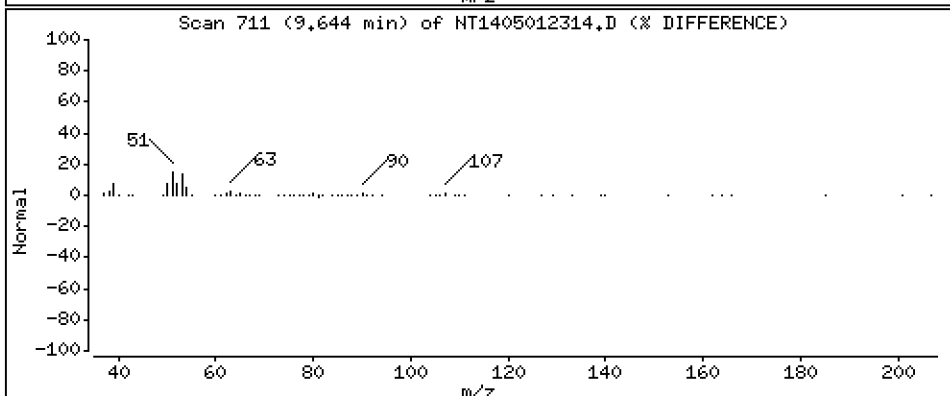
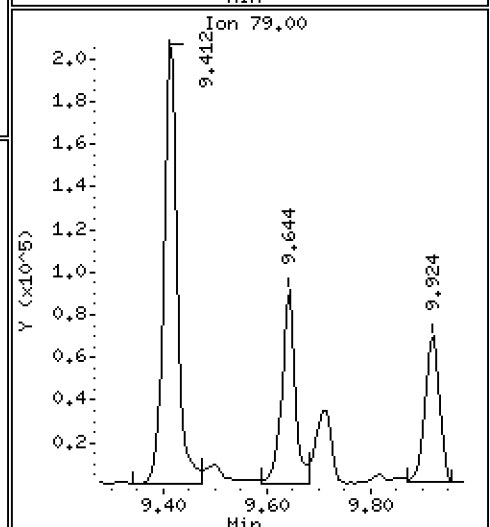
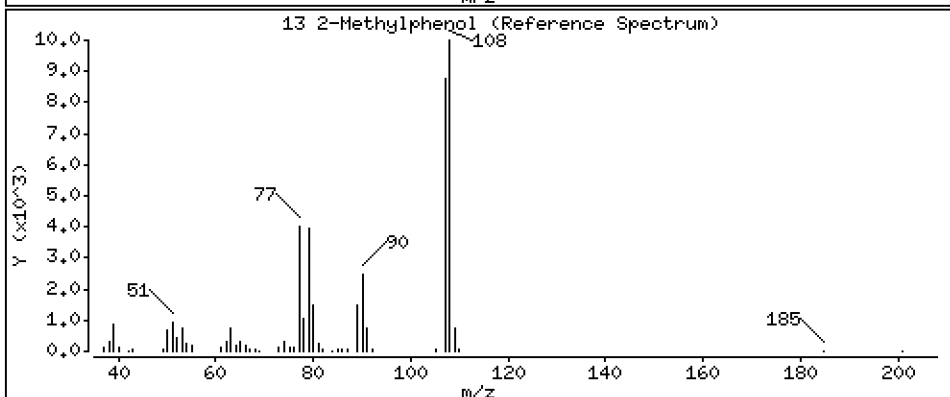
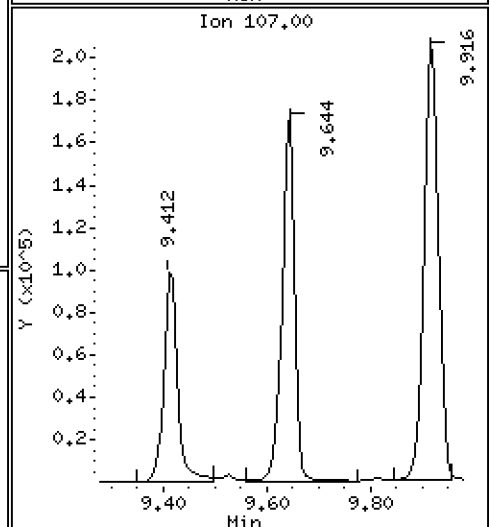
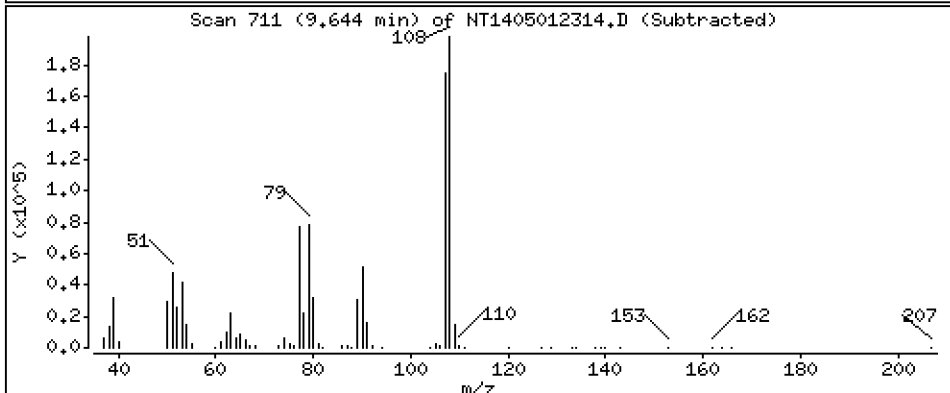
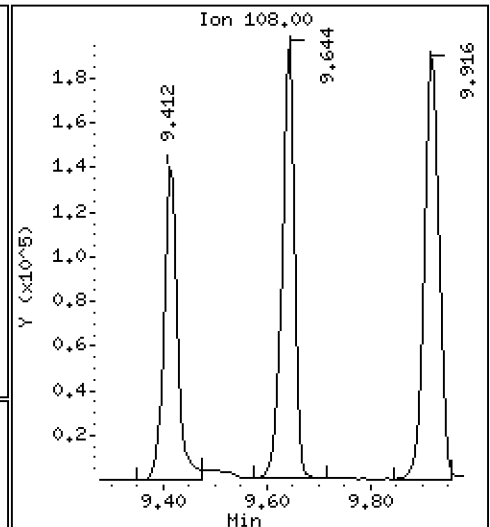
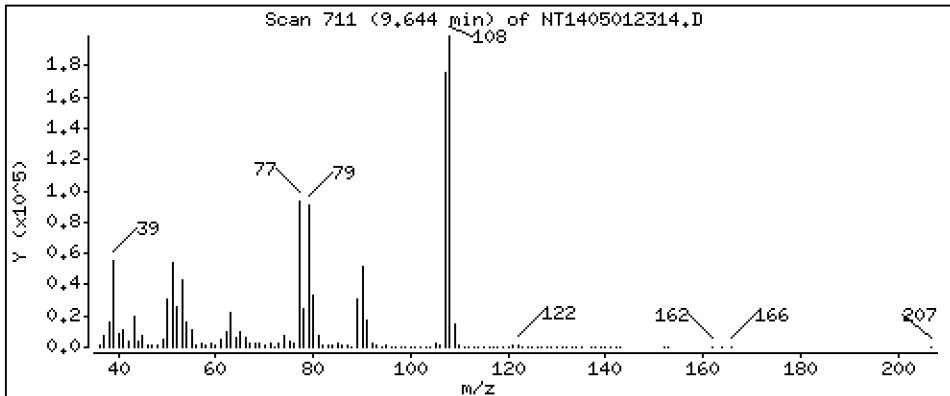
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 3.325 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

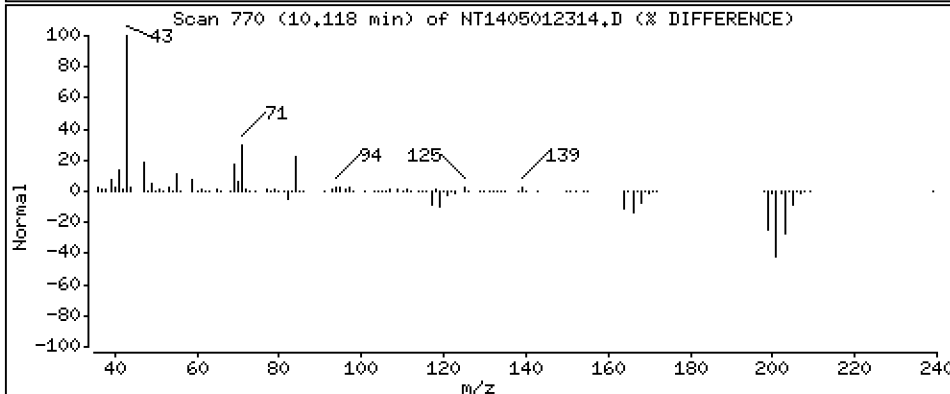
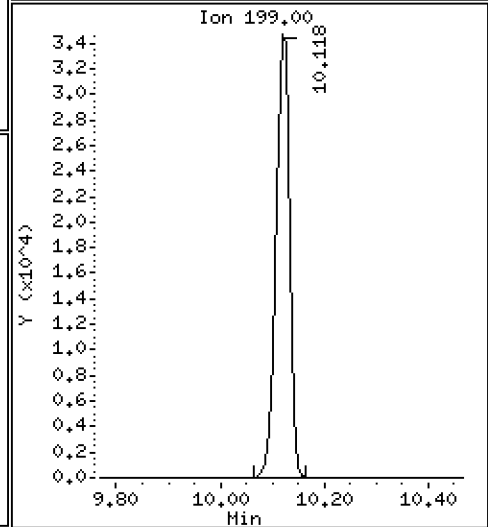
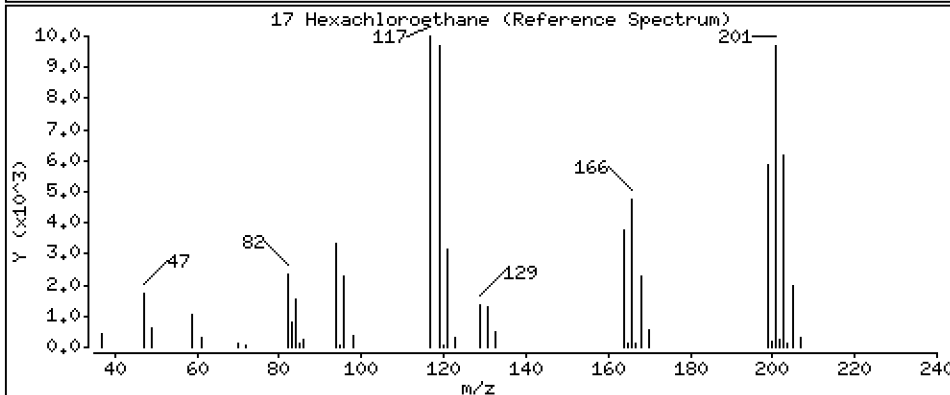
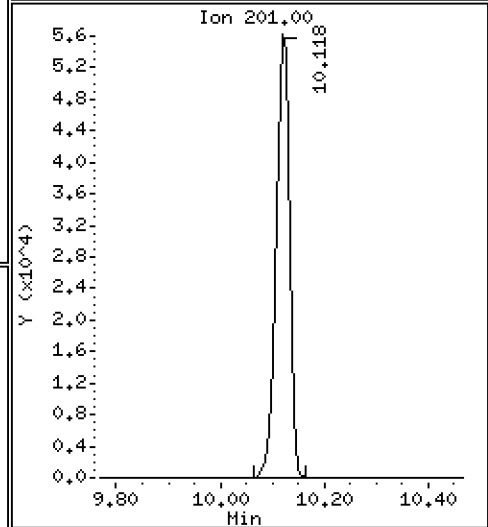
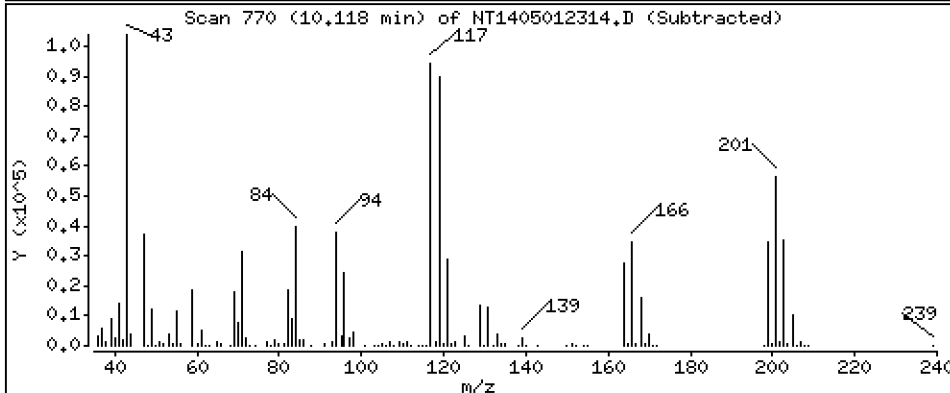
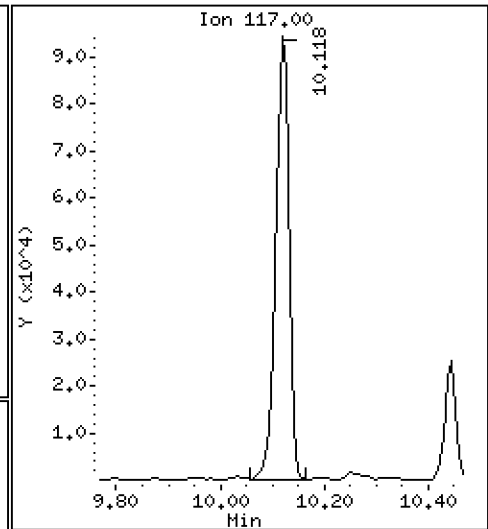
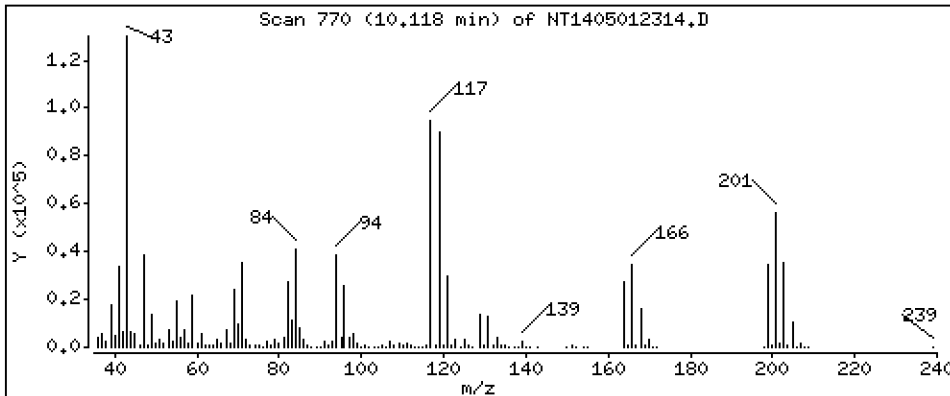
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

17 Hexachloroethane

Concentration: 3.438 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

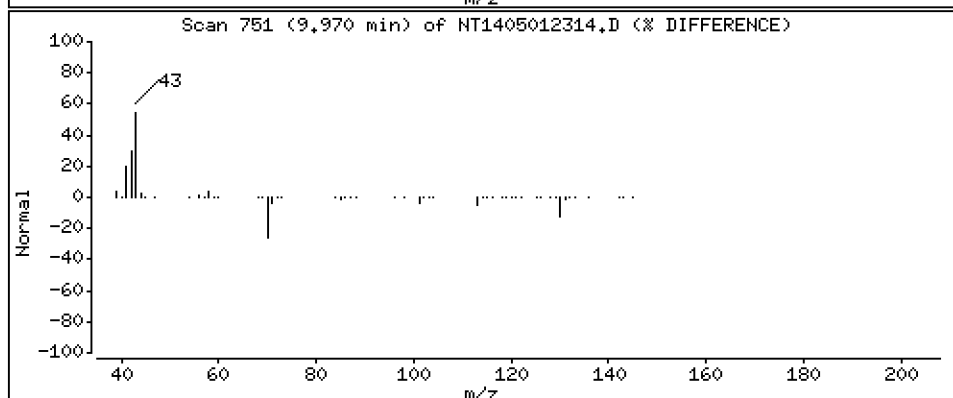
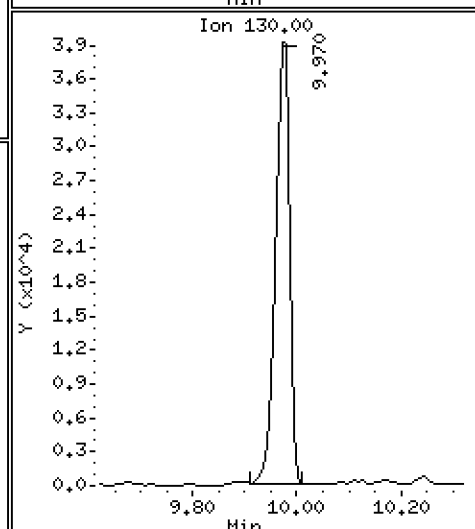
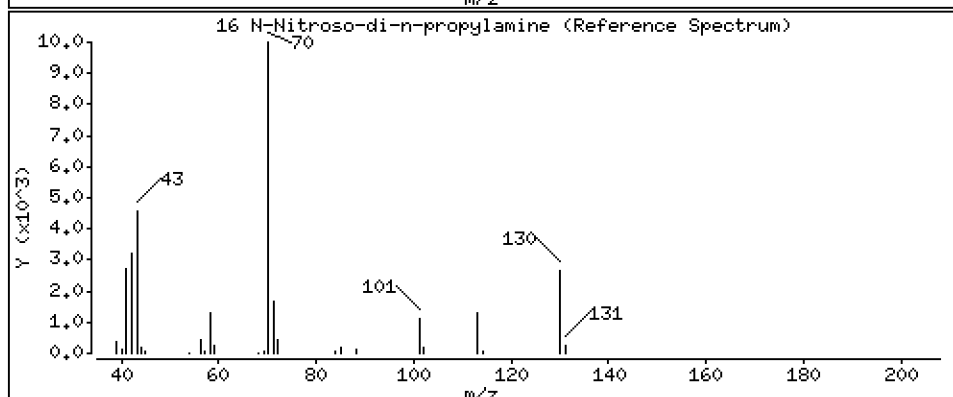
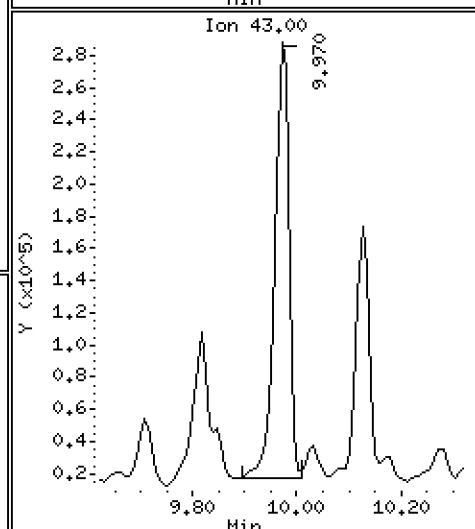
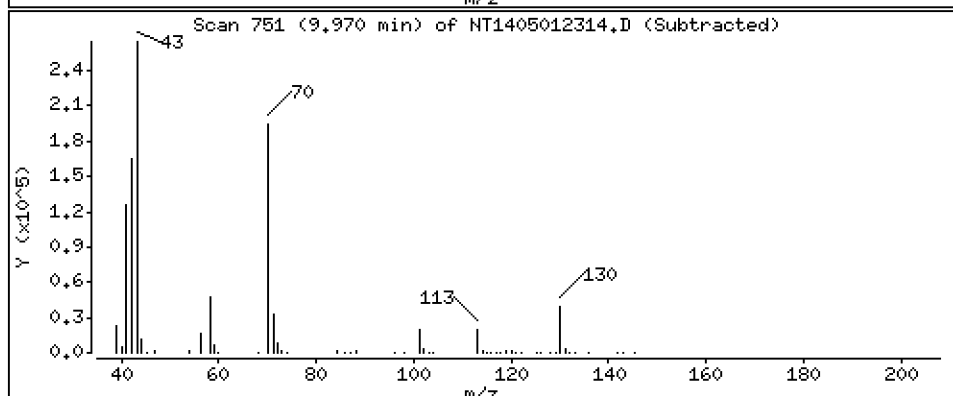
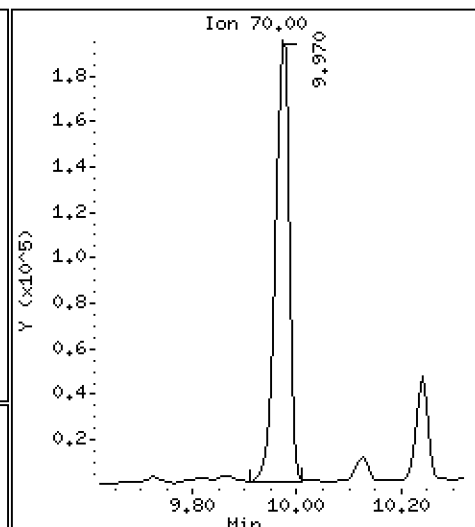
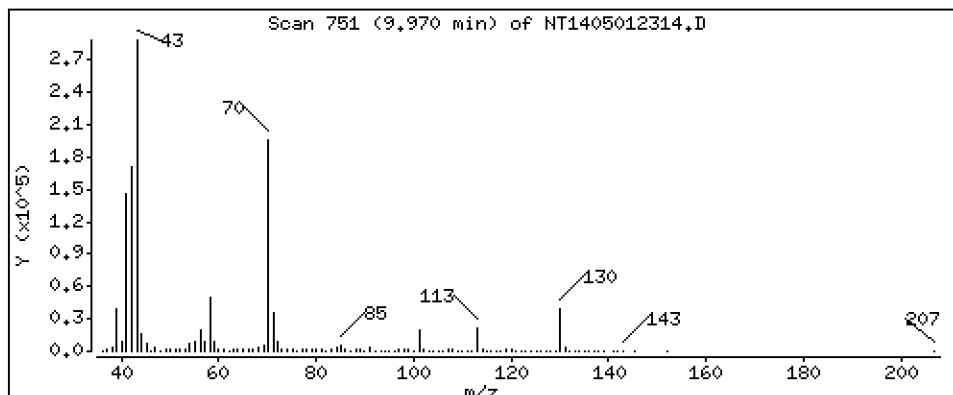
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 3,524 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

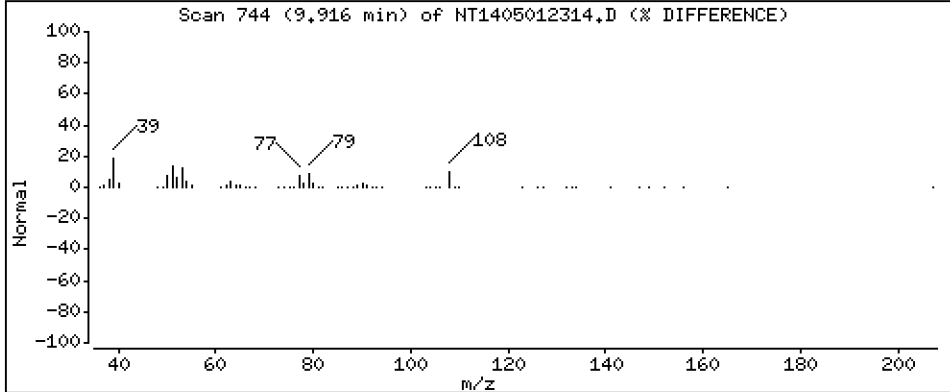
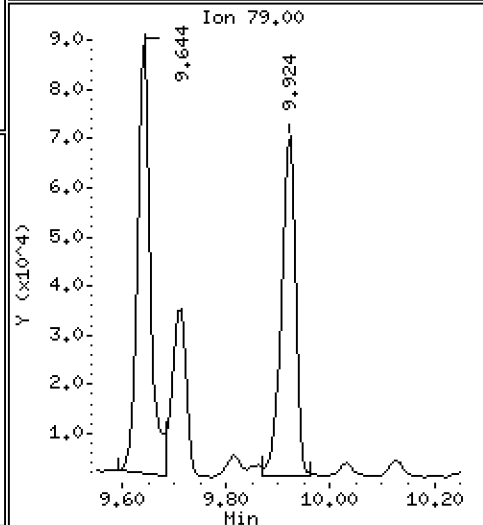
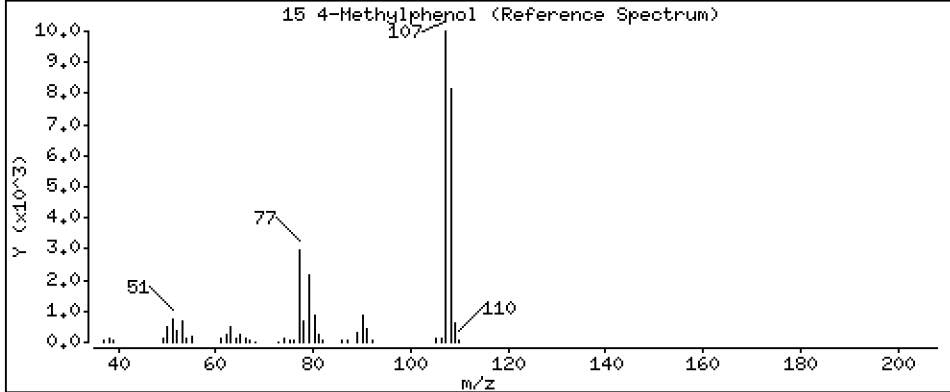
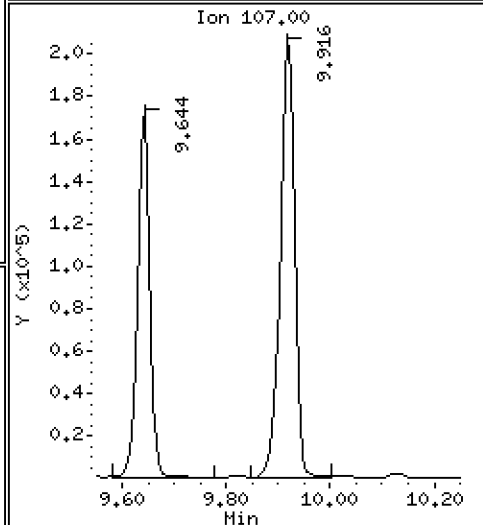
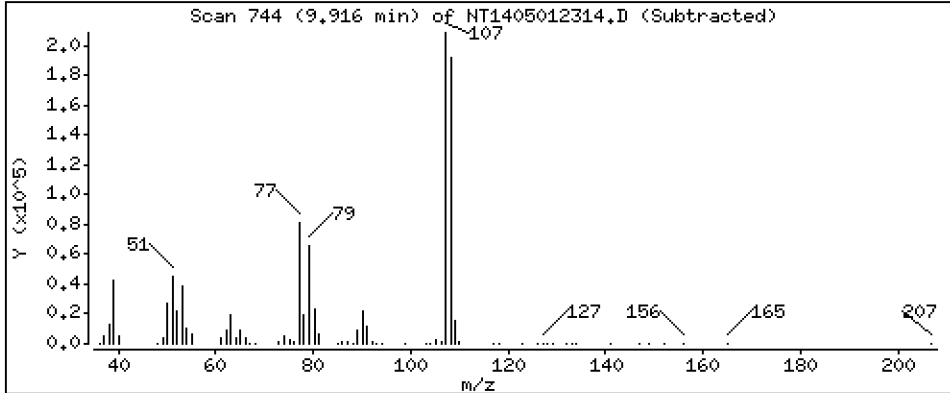
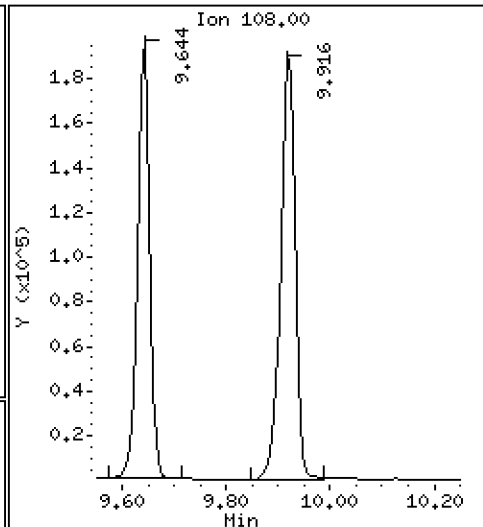
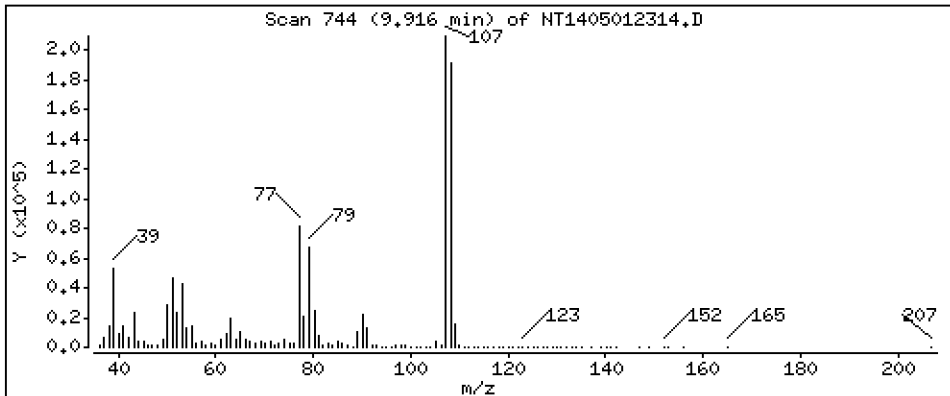
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 3.414 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

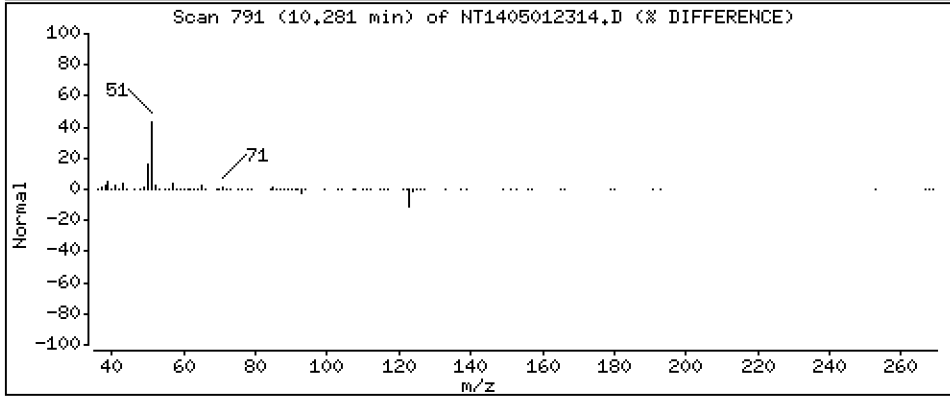
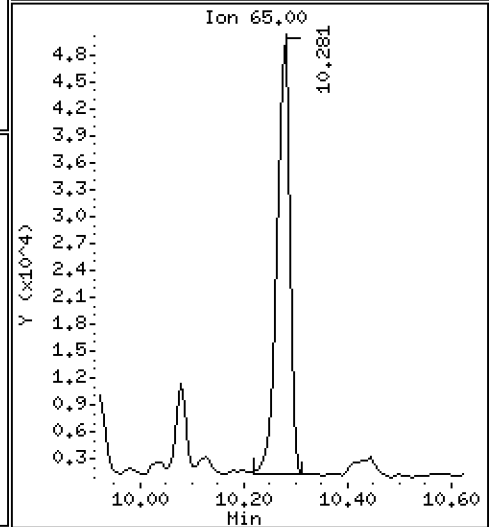
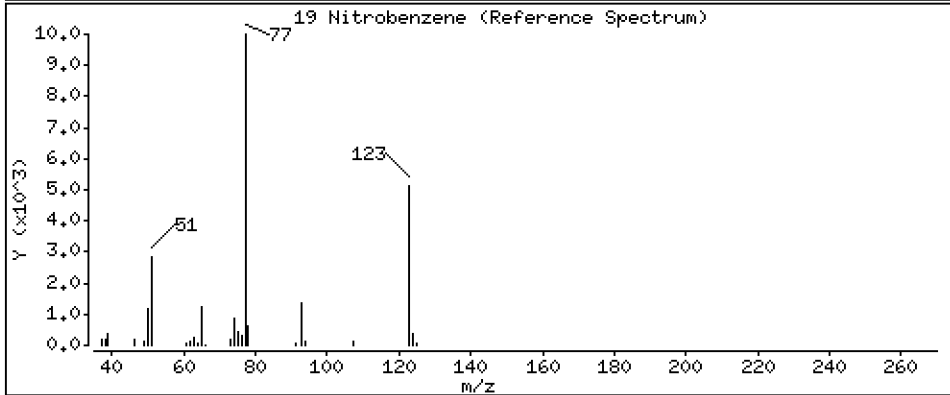
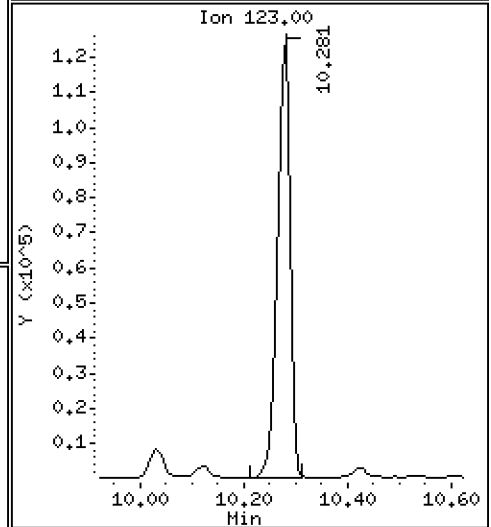
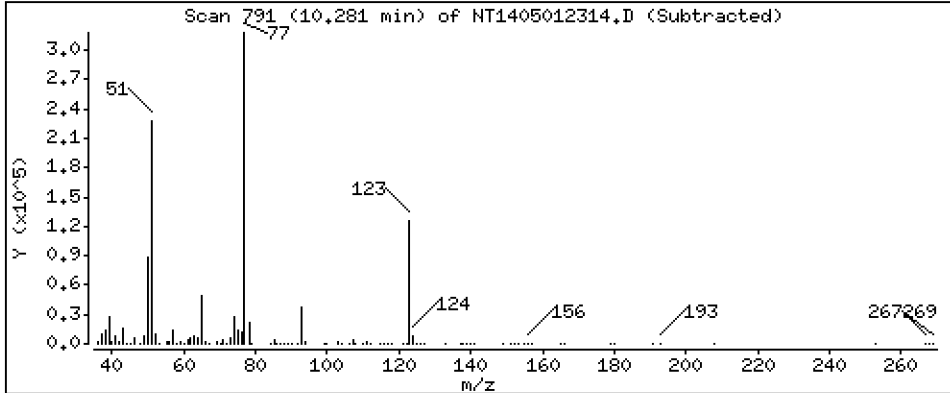
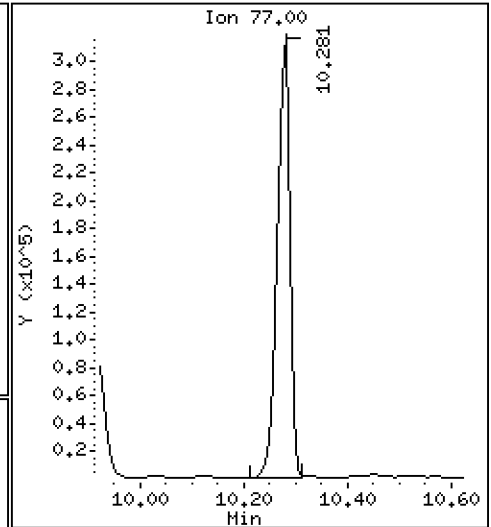
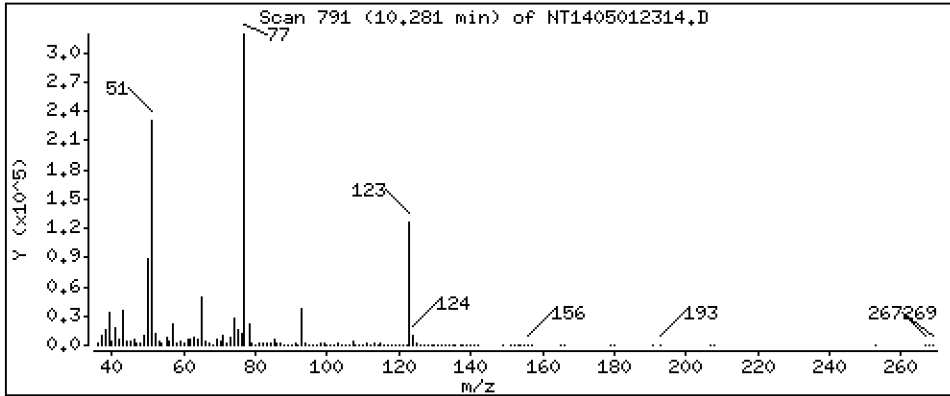
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 3,768 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

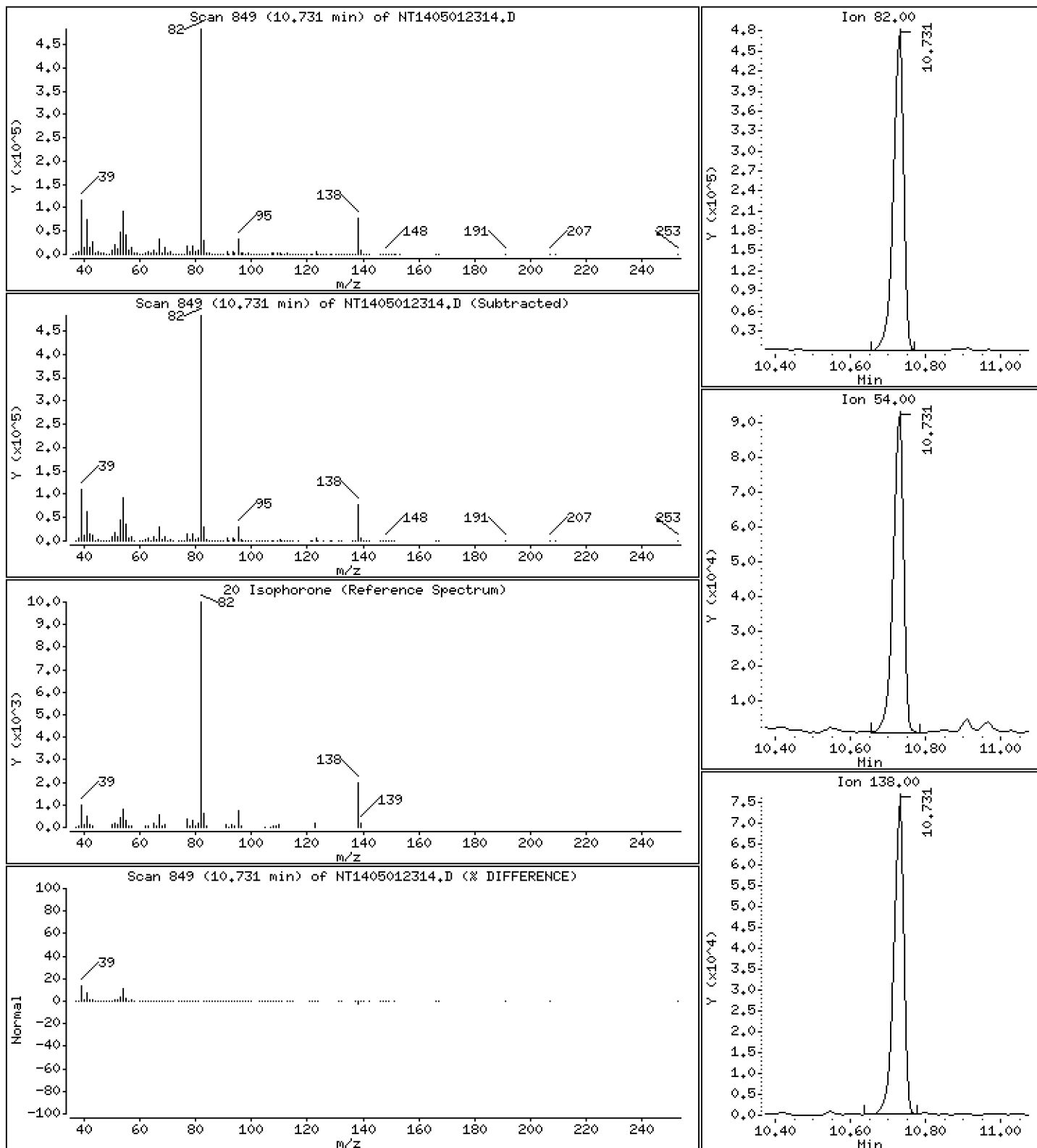
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 4,637 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

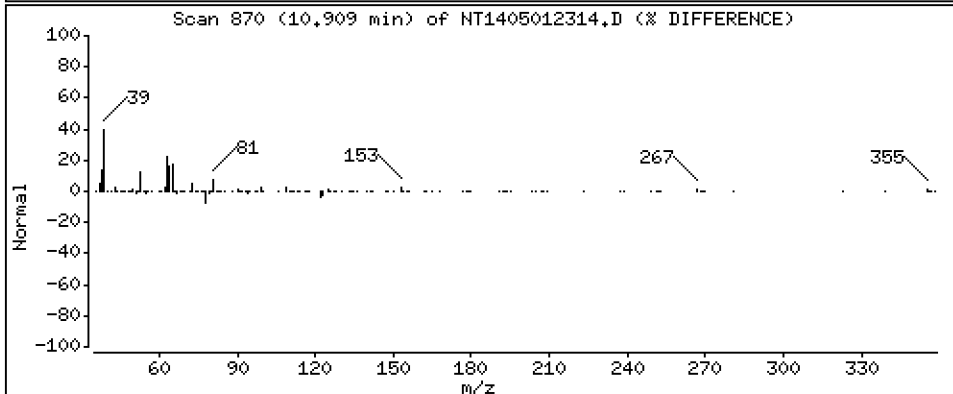
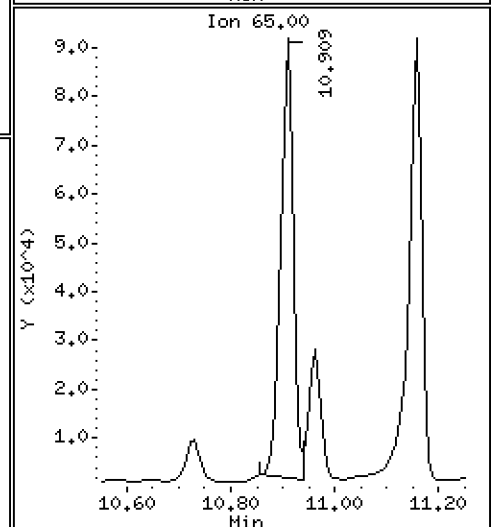
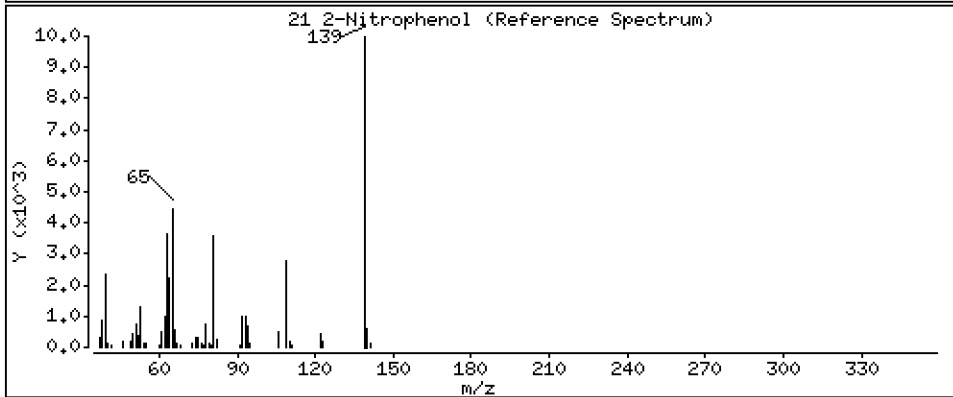
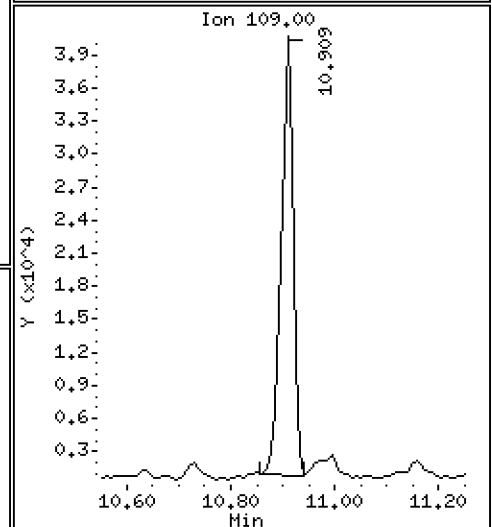
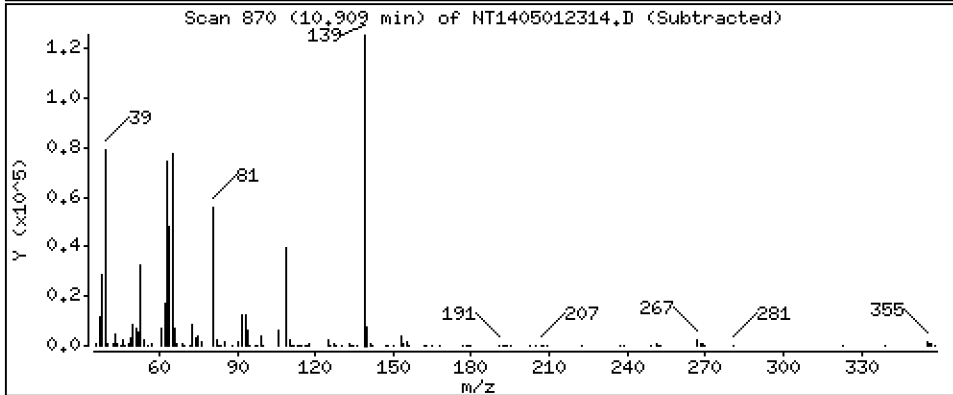
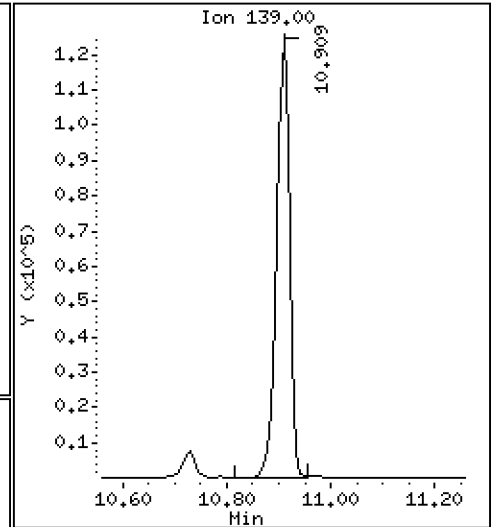
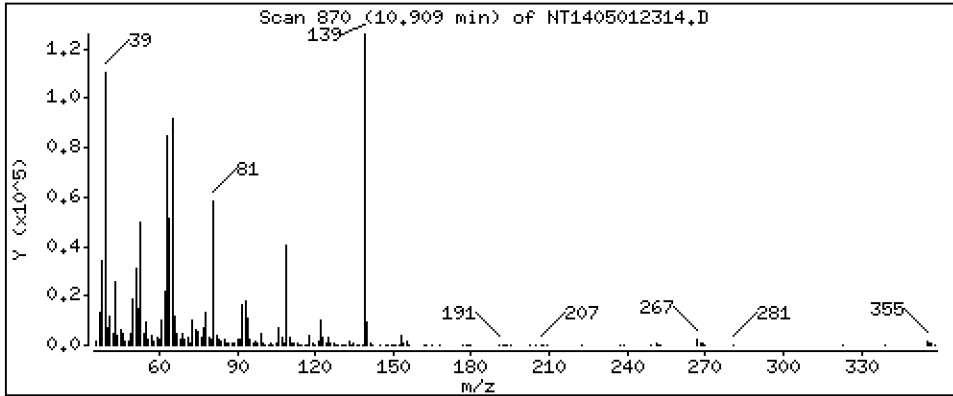
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 3,032 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

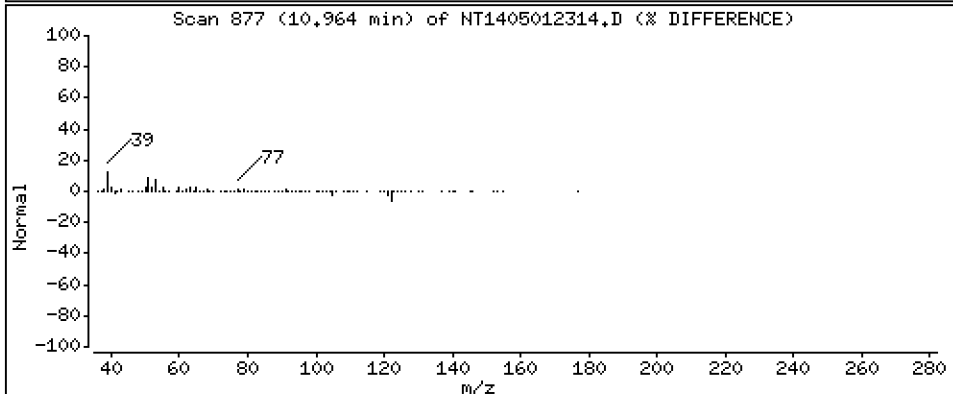
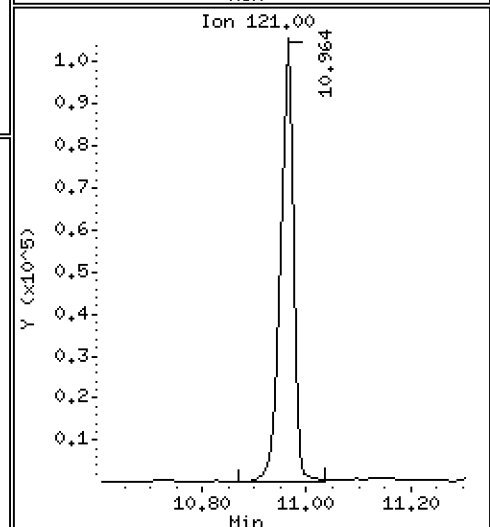
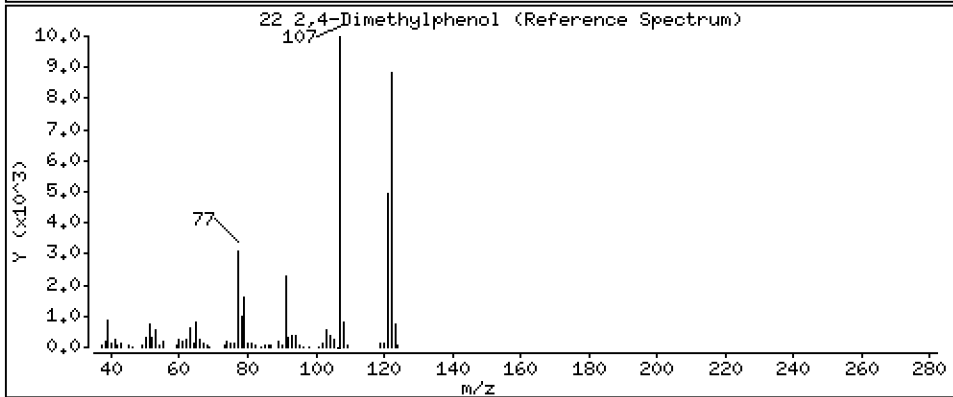
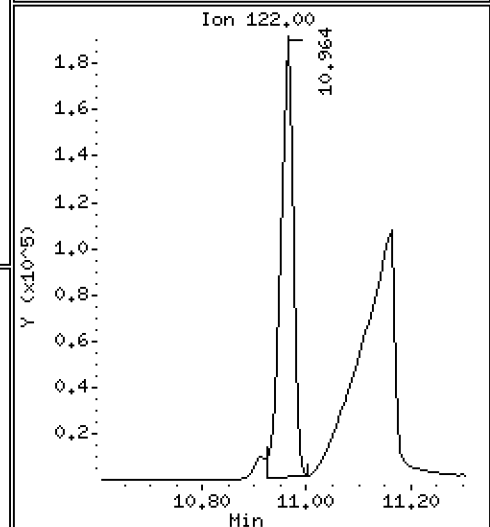
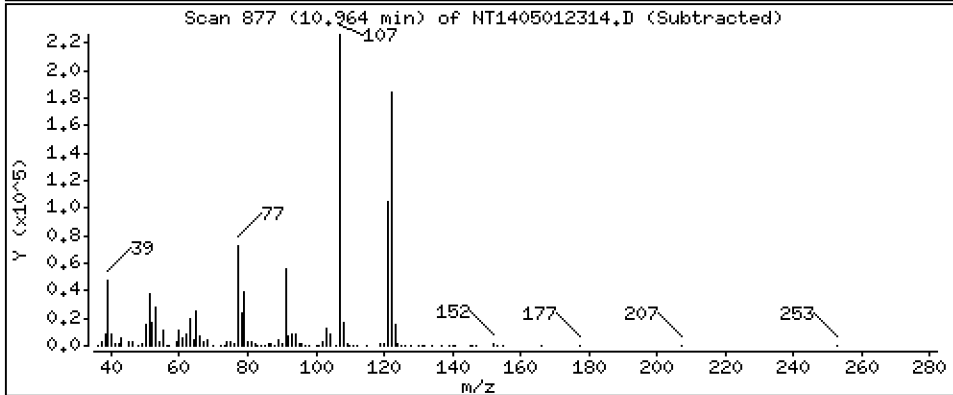
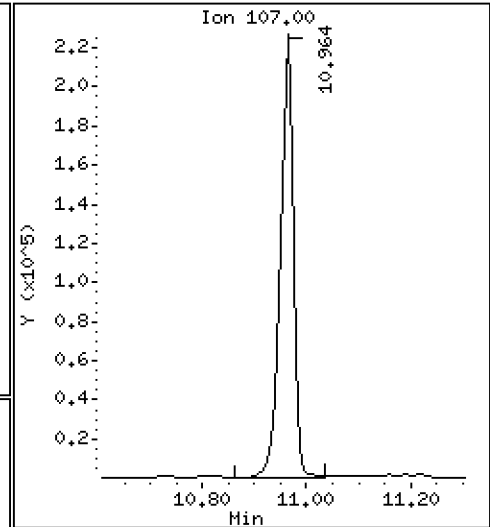
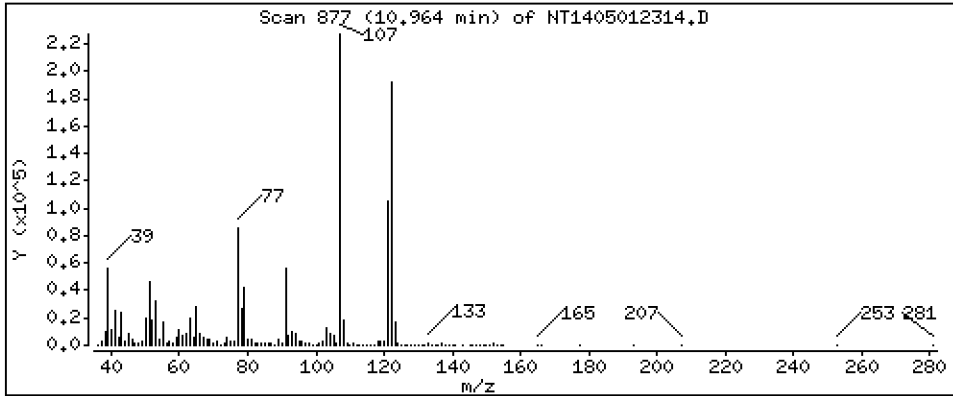
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 3,715 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

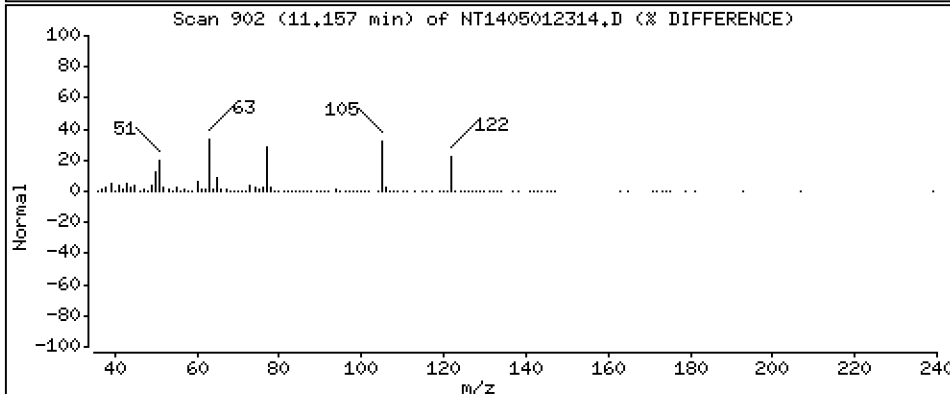
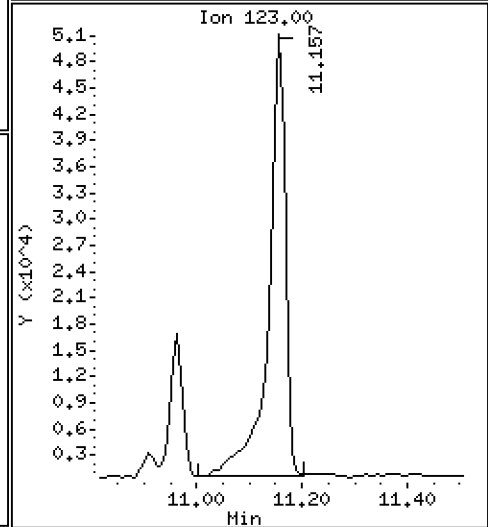
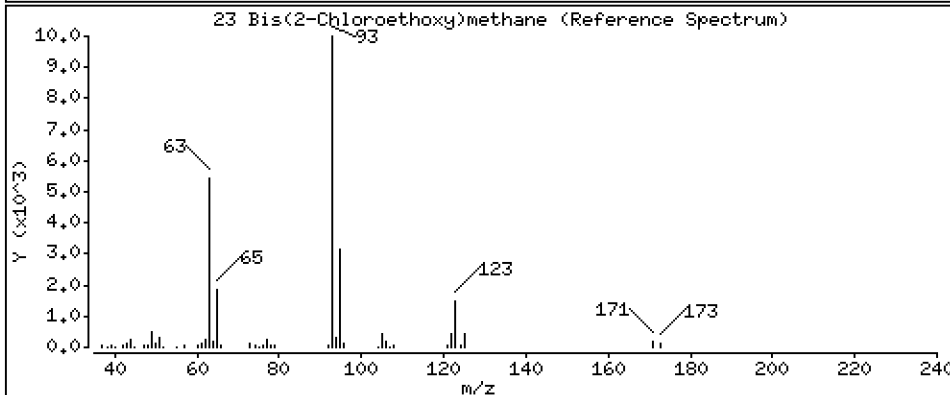
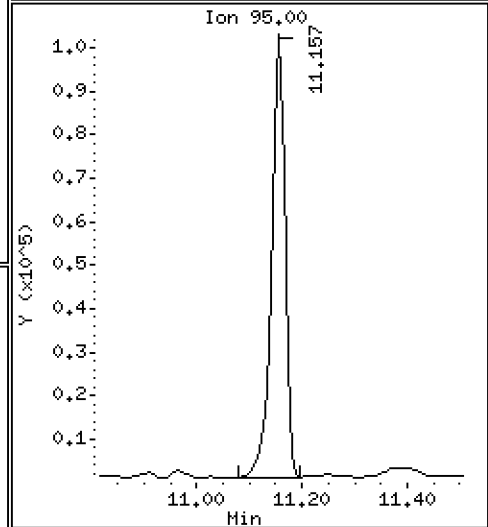
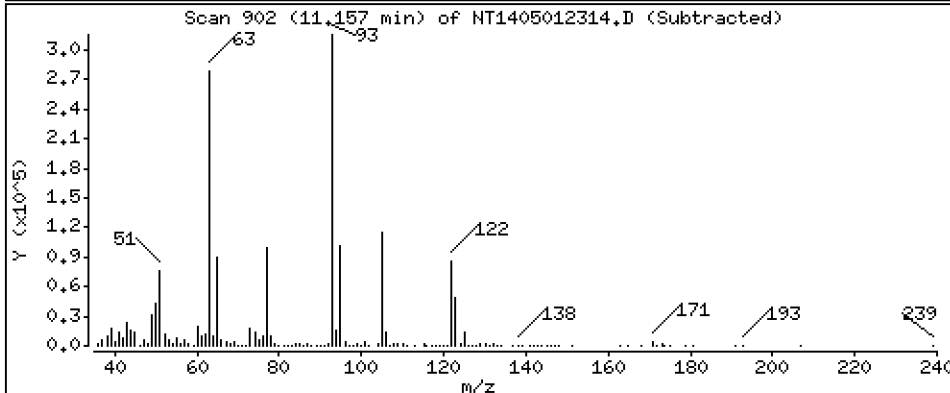
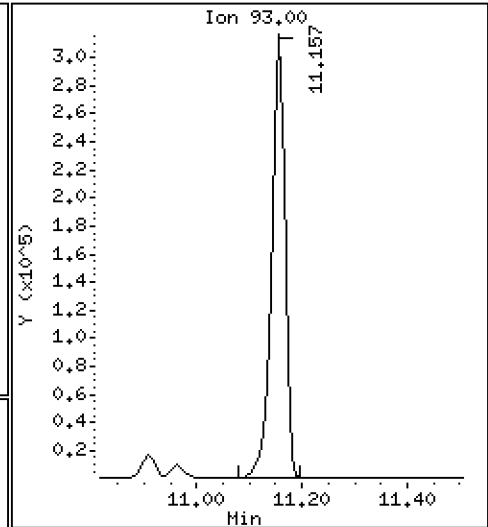
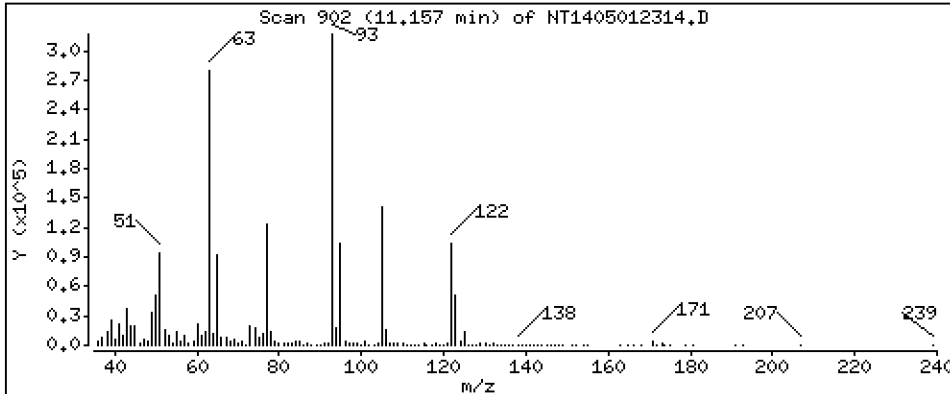
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

23 Bis(2-Chloroethoxy)methane

Concentration: 4.408 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

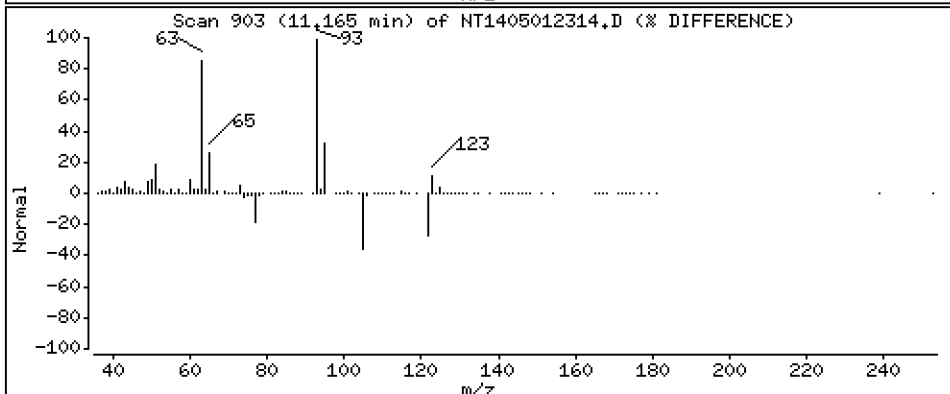
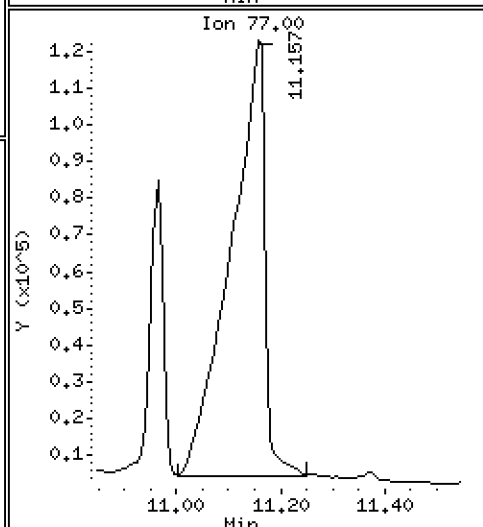
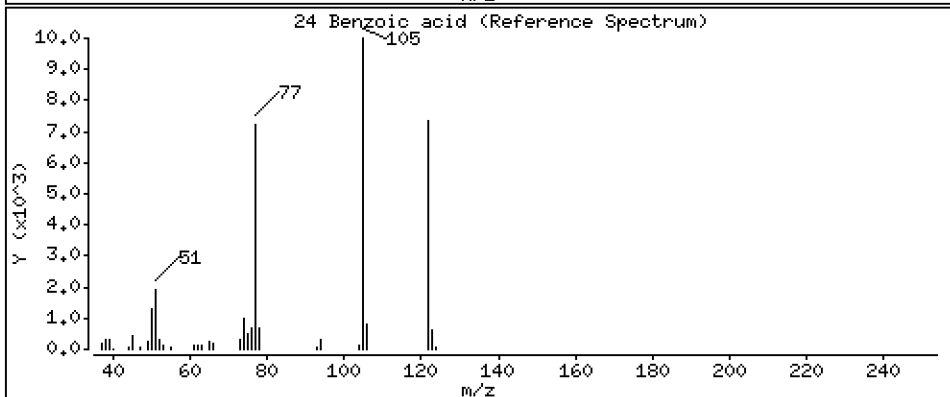
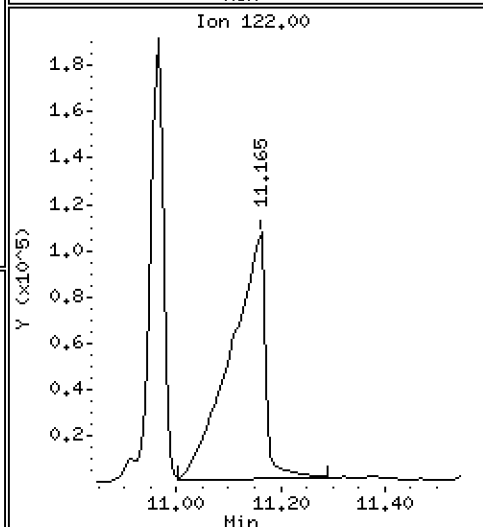
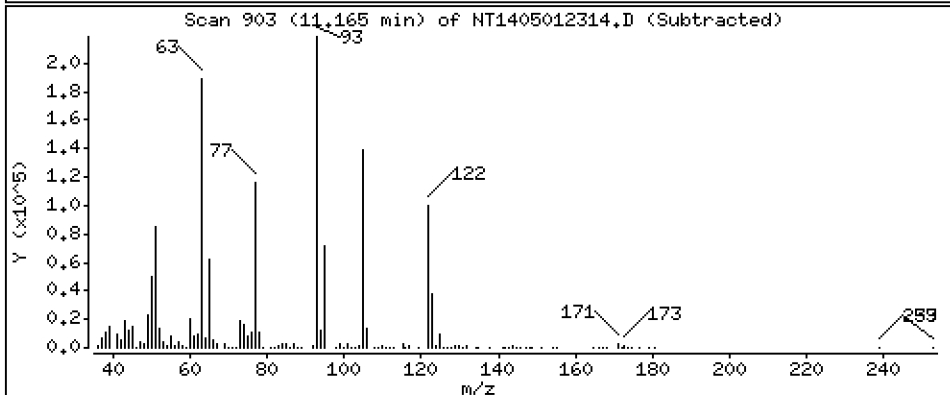
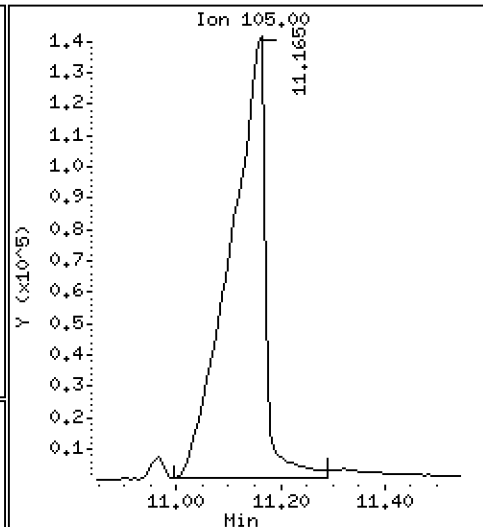
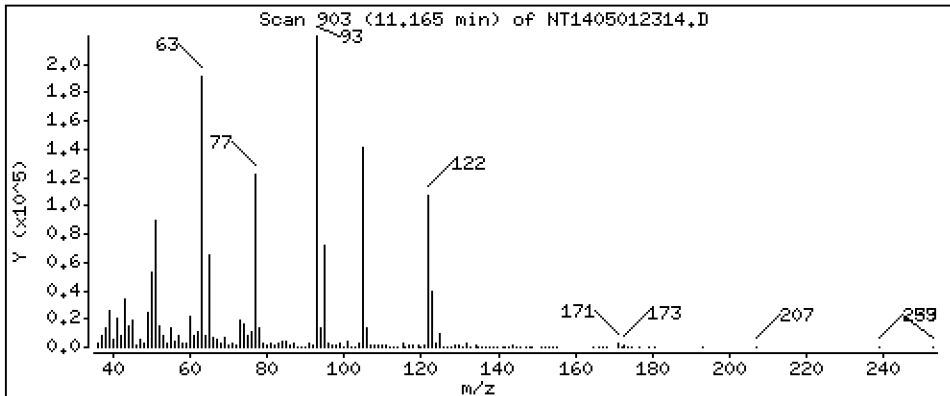
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 7,934 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

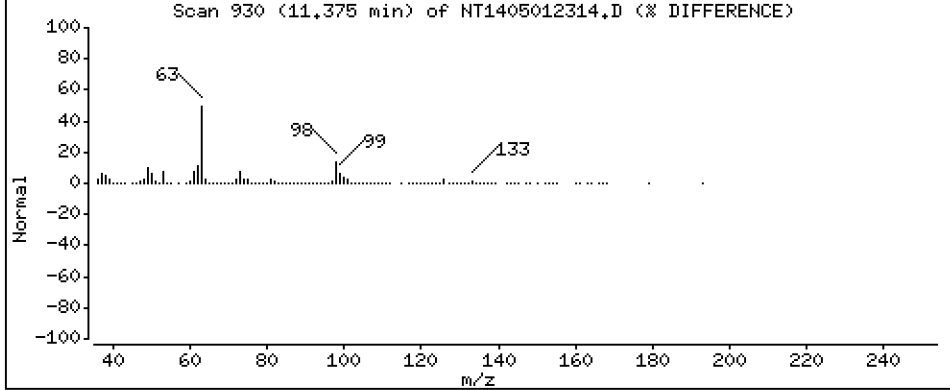
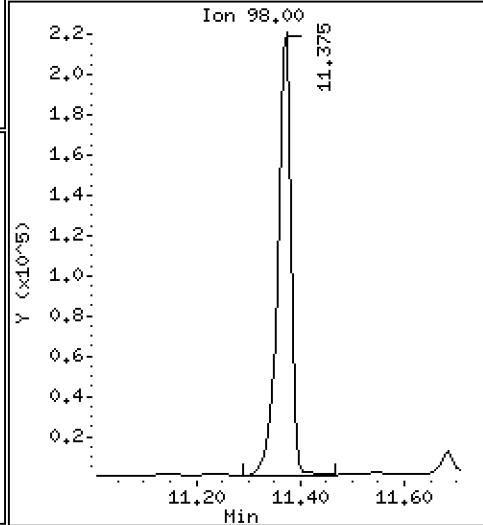
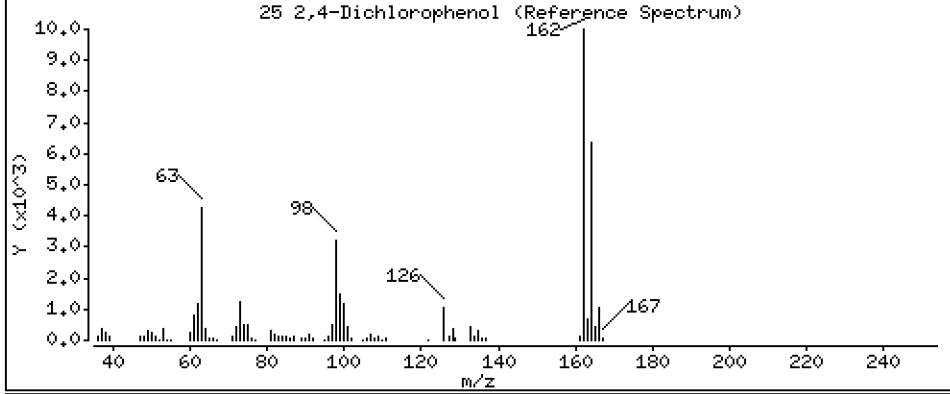
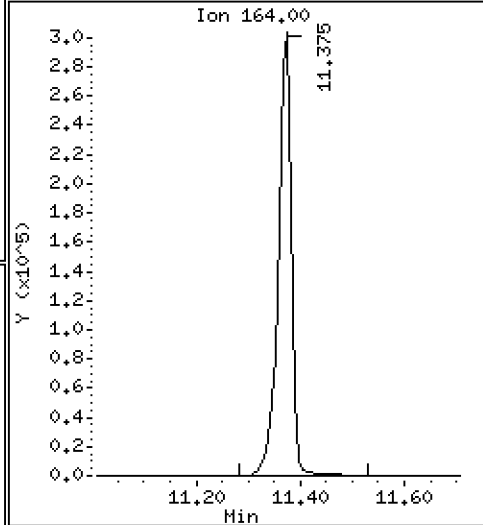
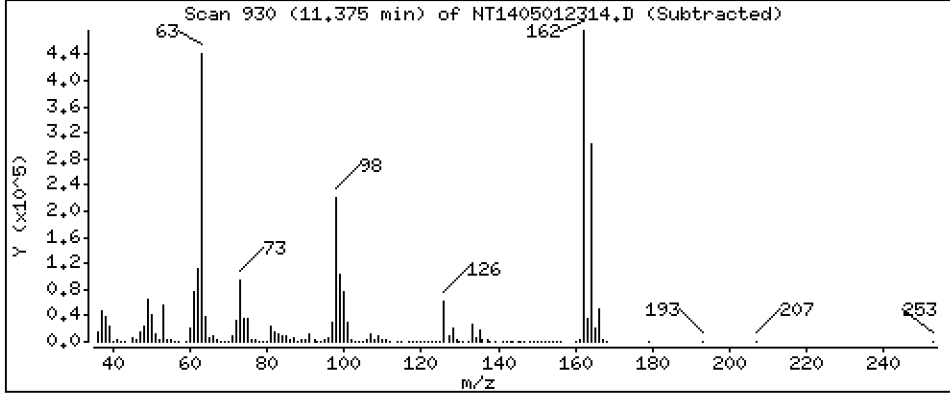
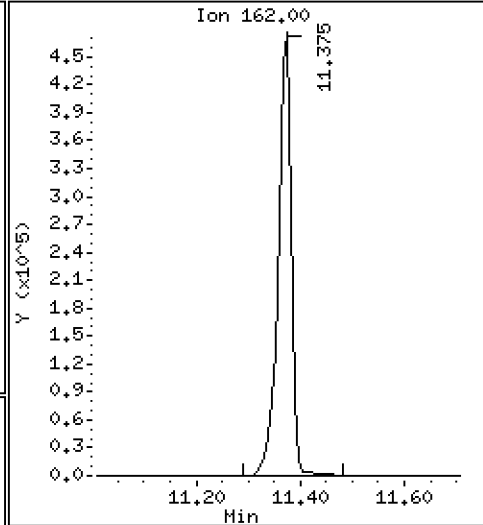
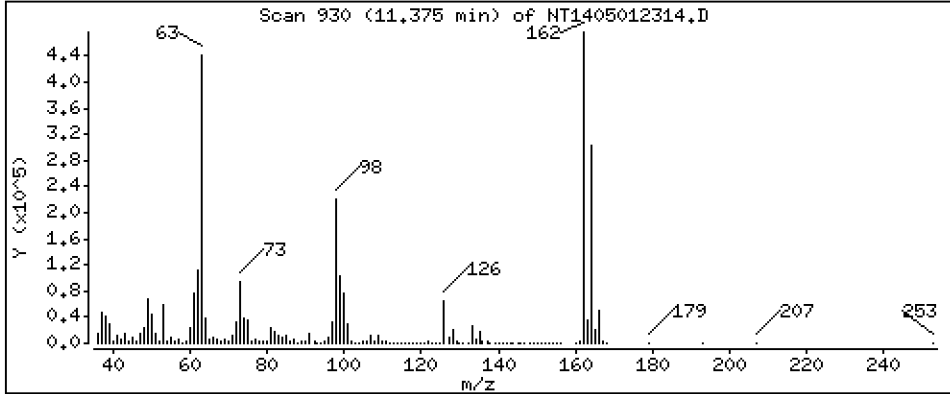
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 11,42 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

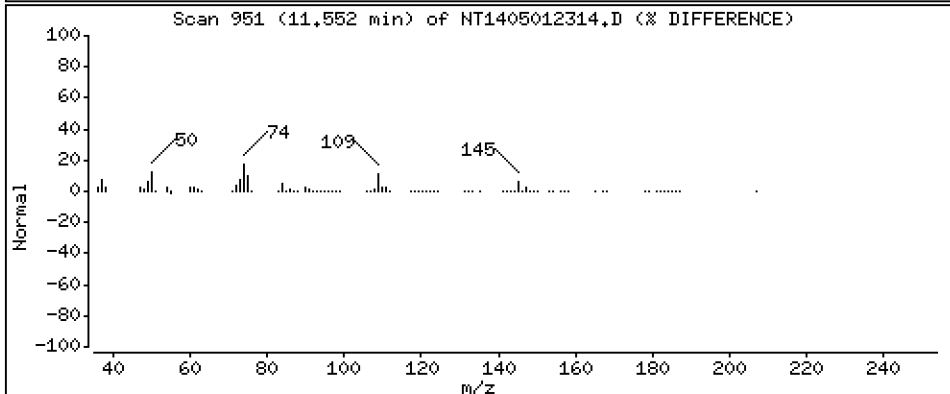
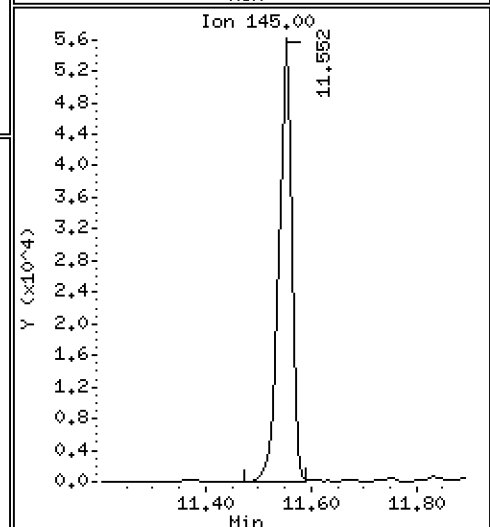
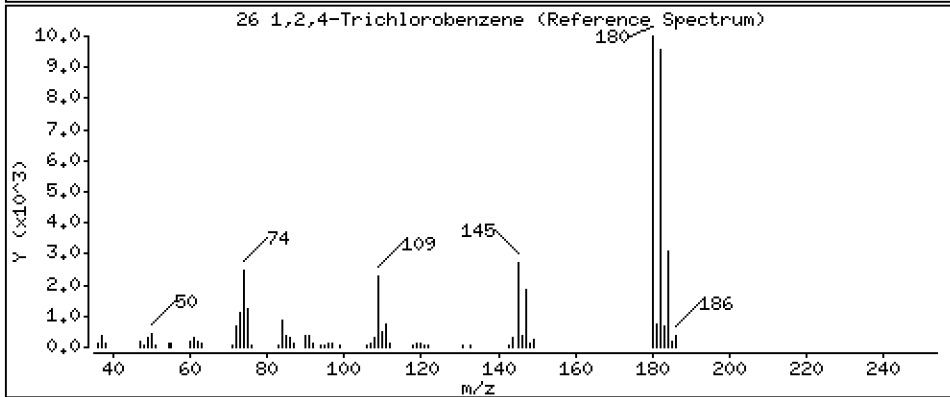
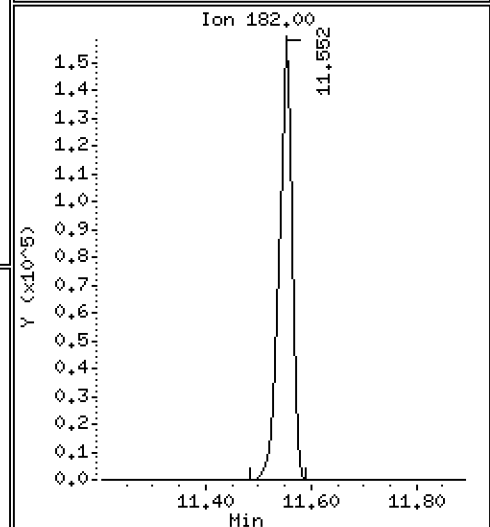
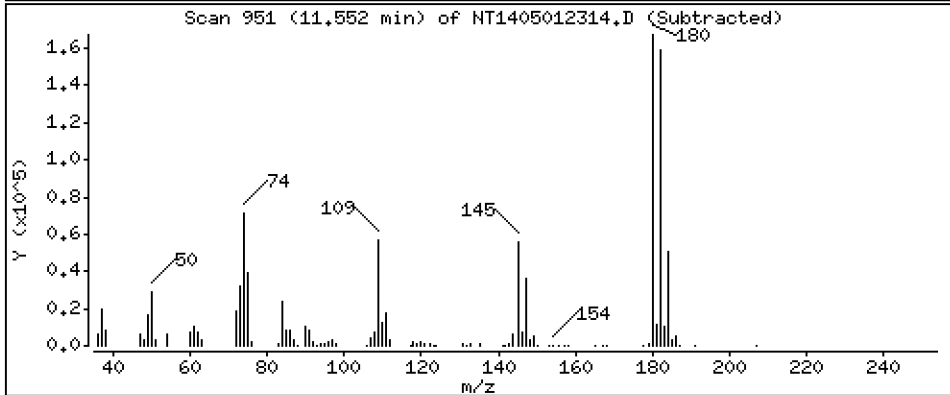
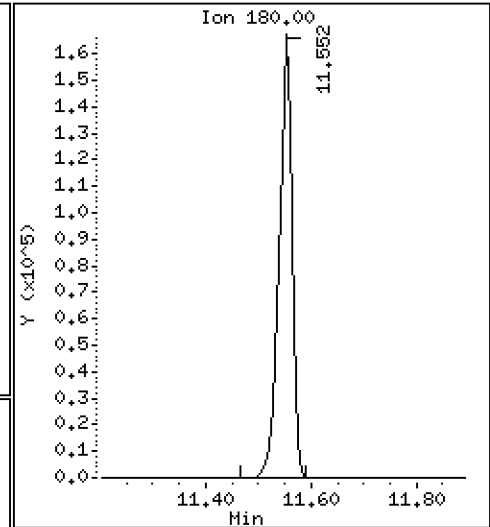
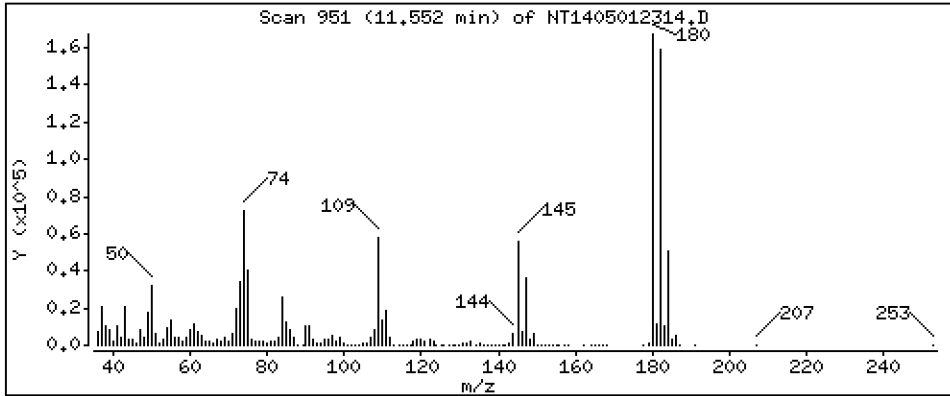
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 3,649 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

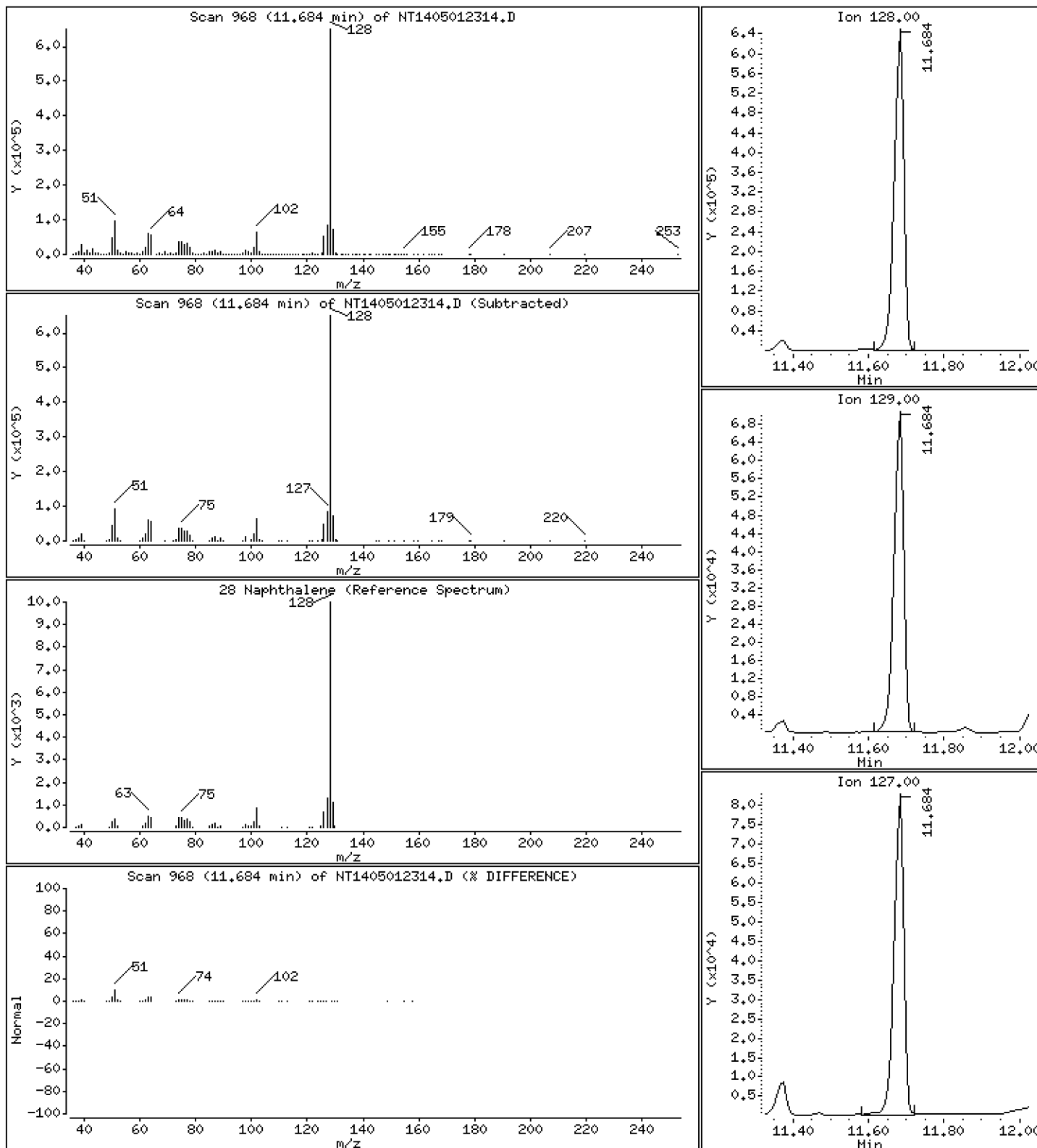
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 3,943 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

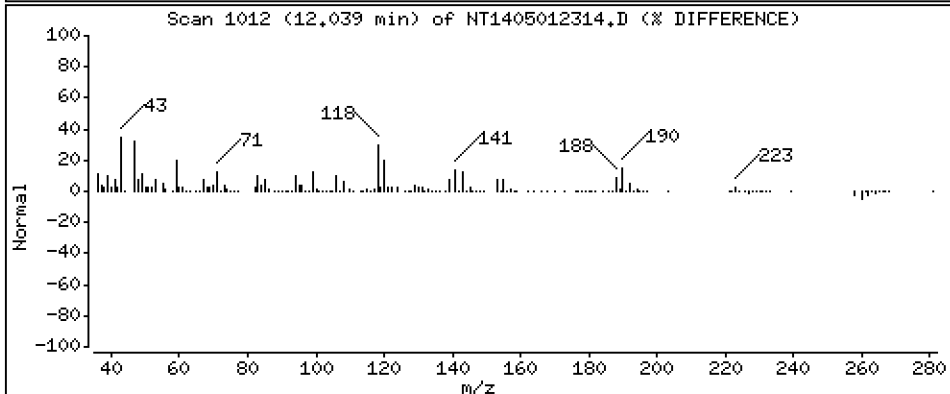
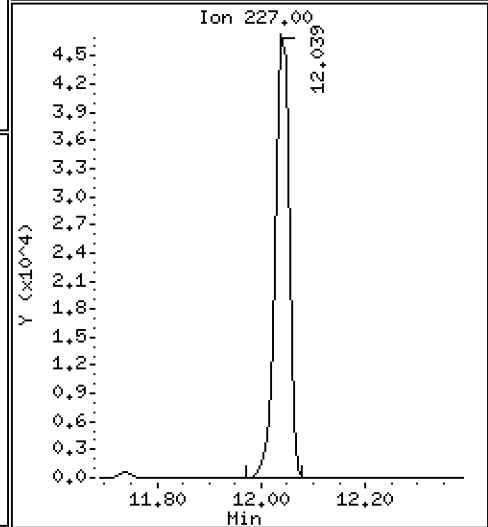
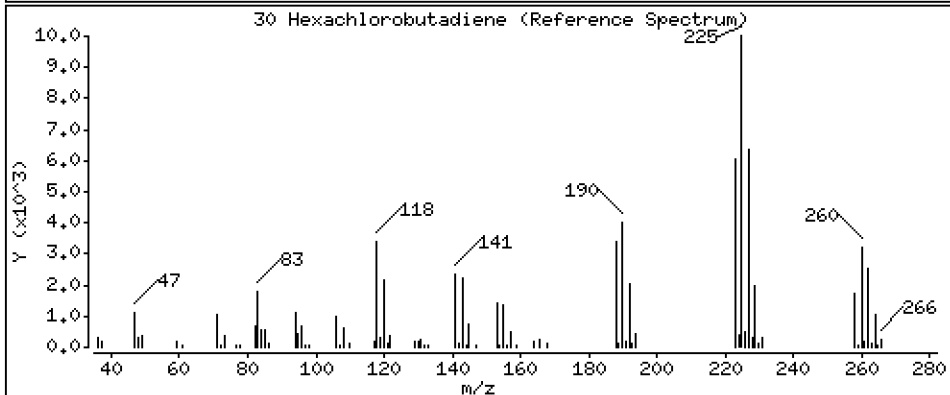
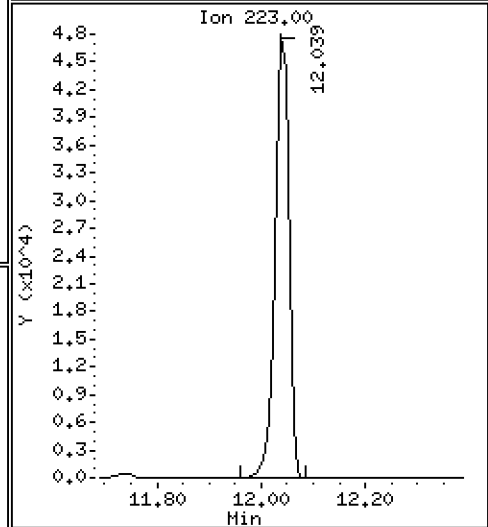
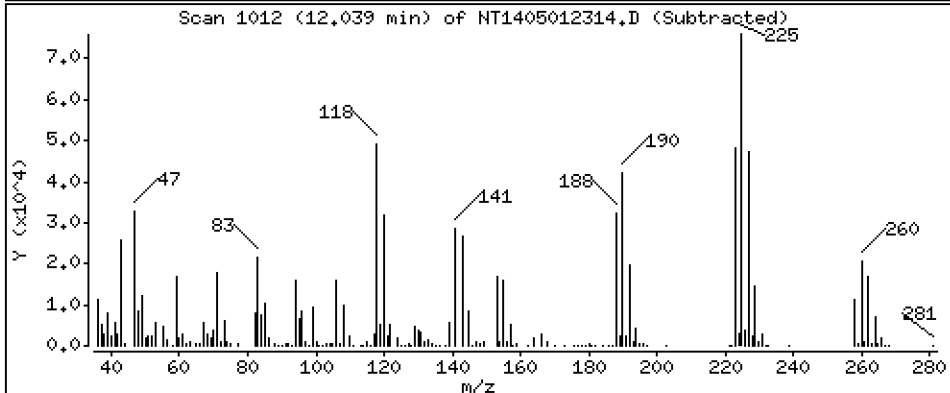
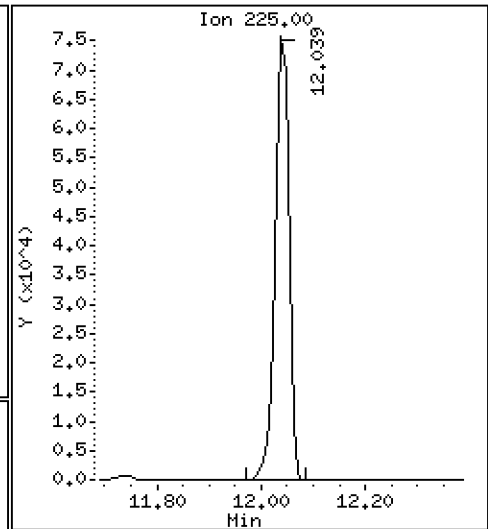
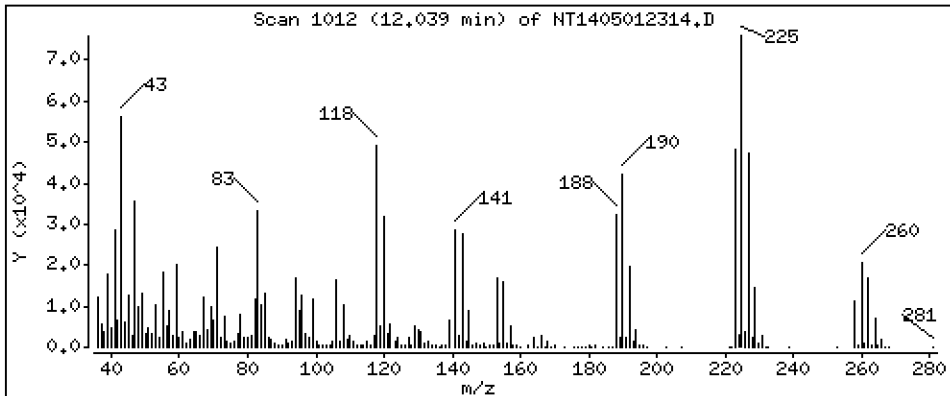
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 3,794 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

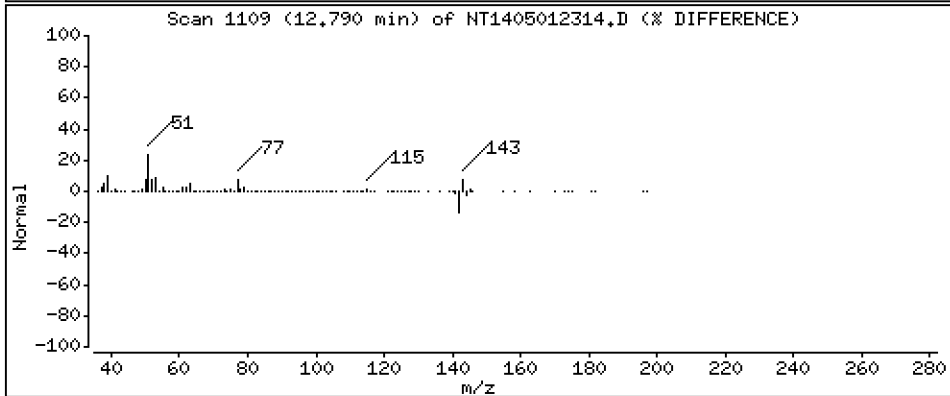
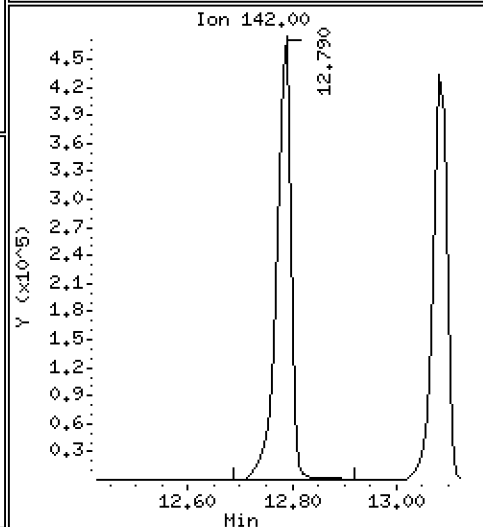
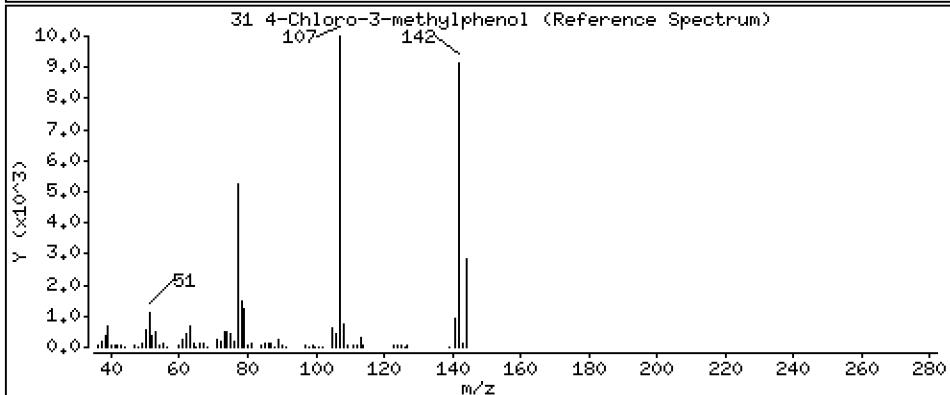
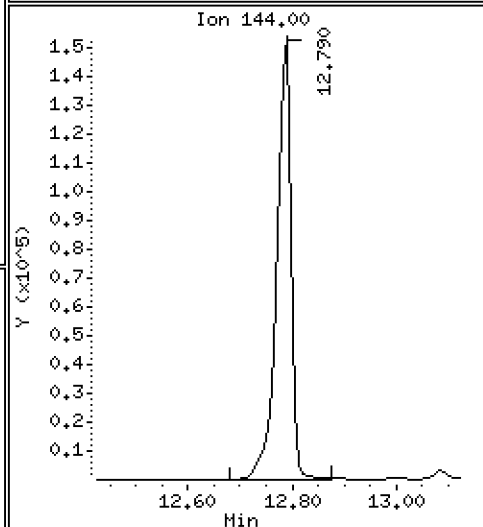
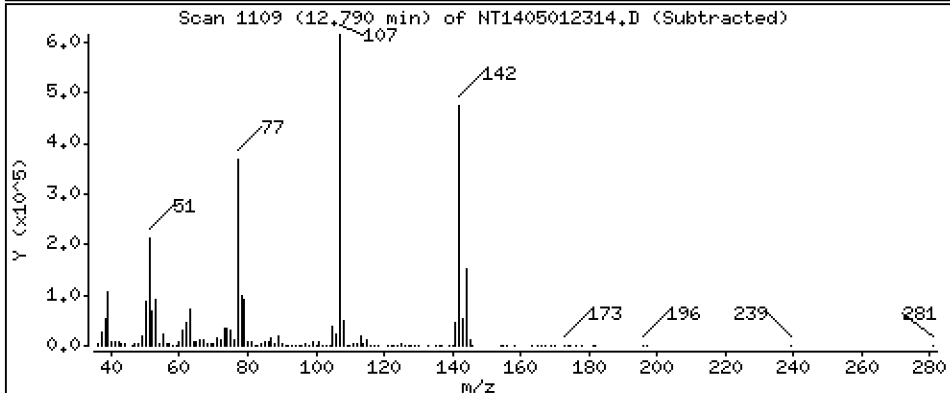
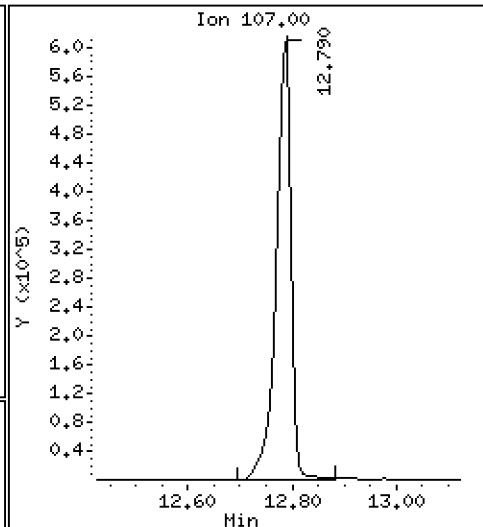
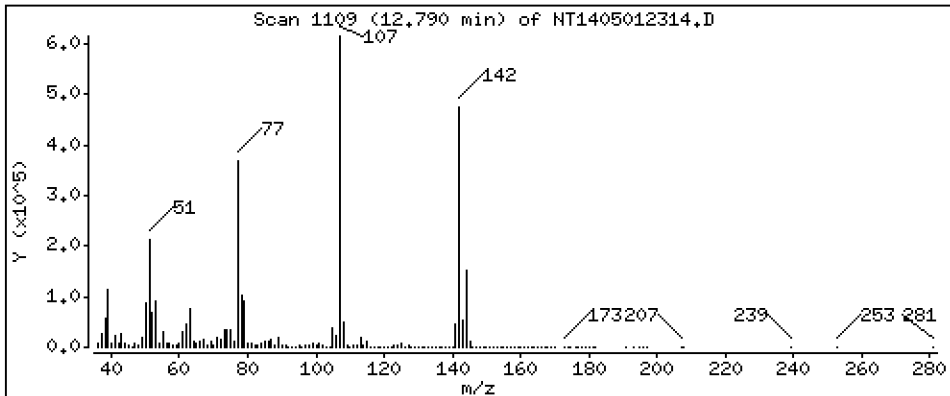
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

31 4-Chloro-3-methylphenol

Concentration: 12.60 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

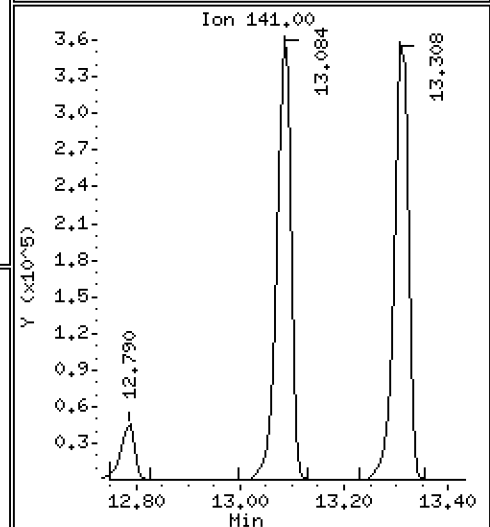
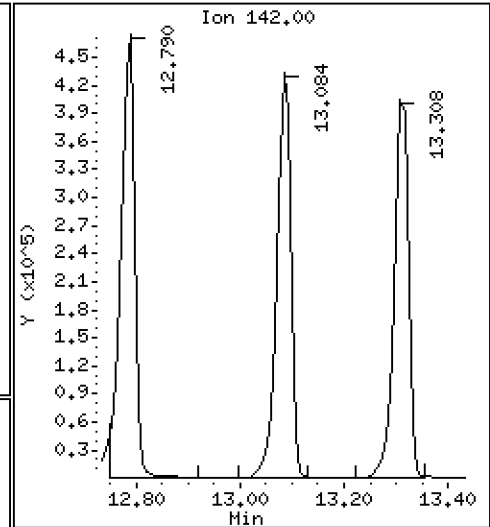
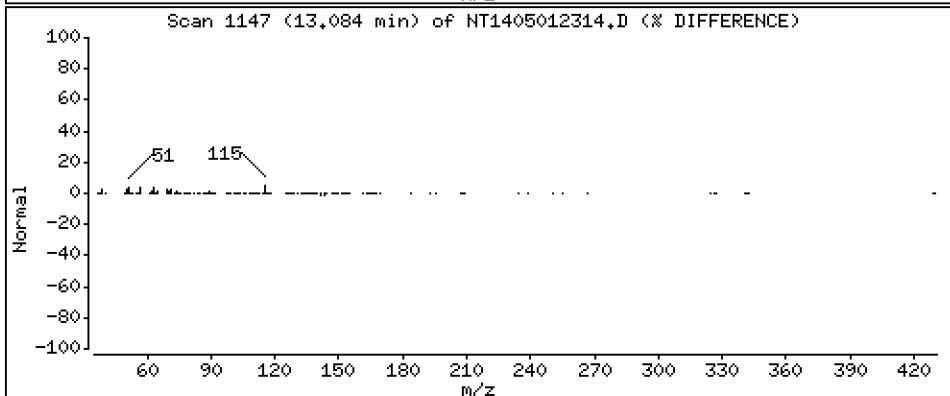
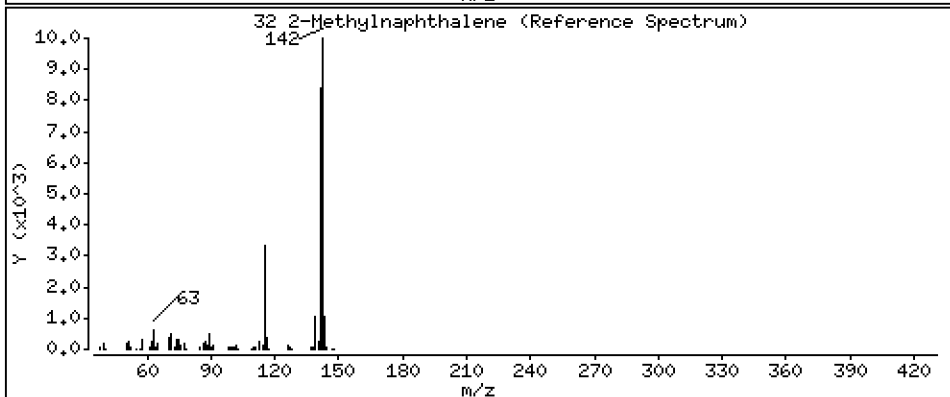
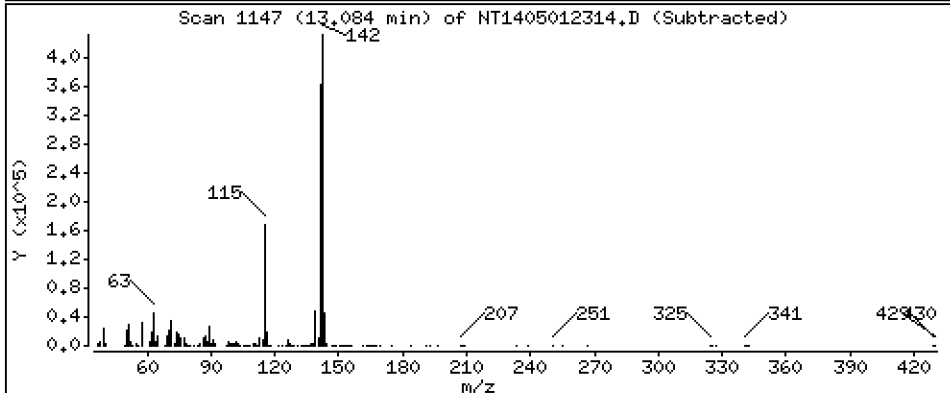
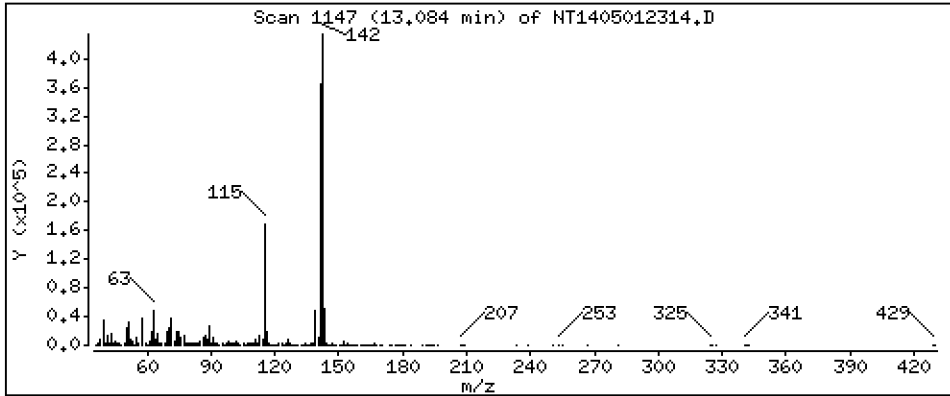
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 3,810 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

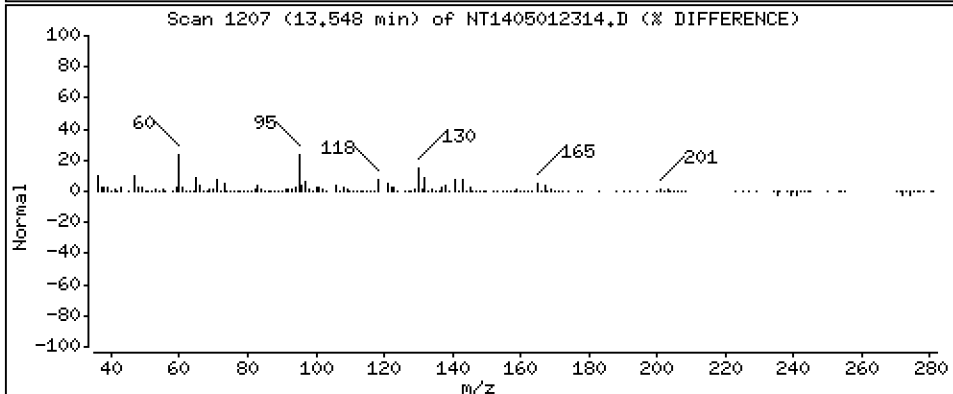
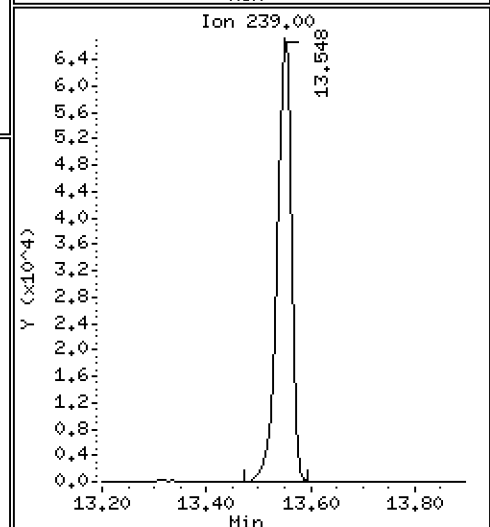
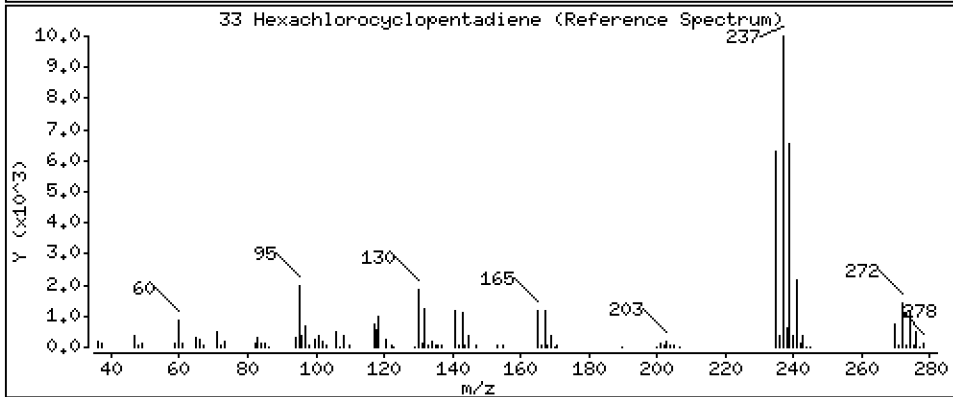
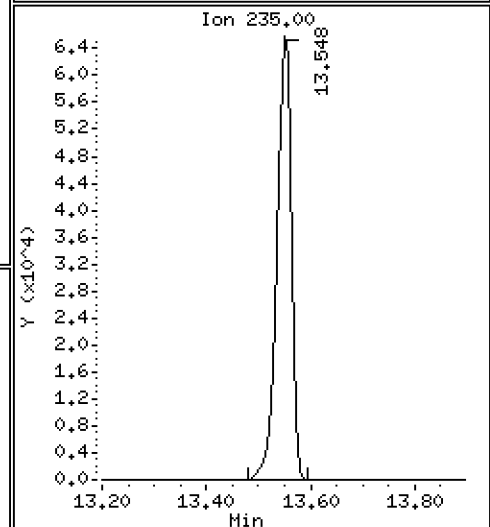
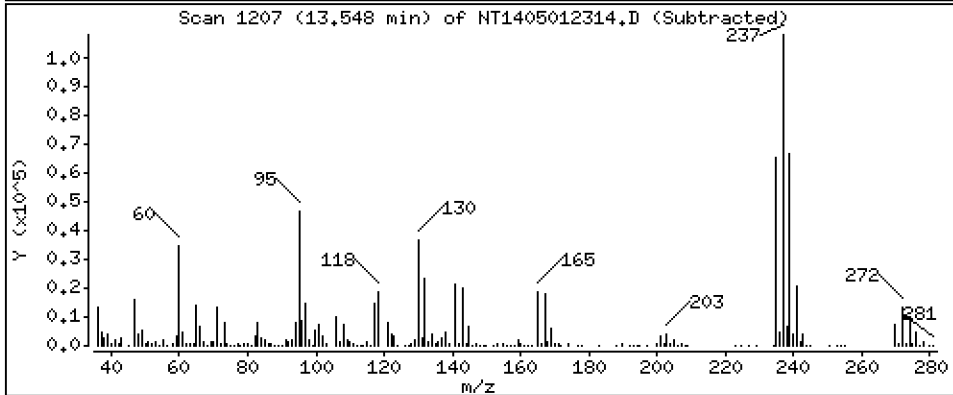
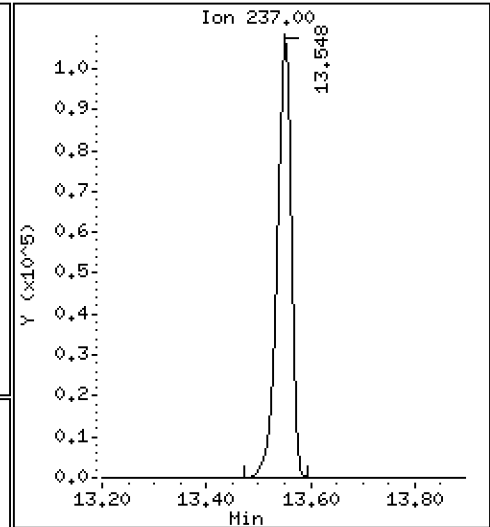
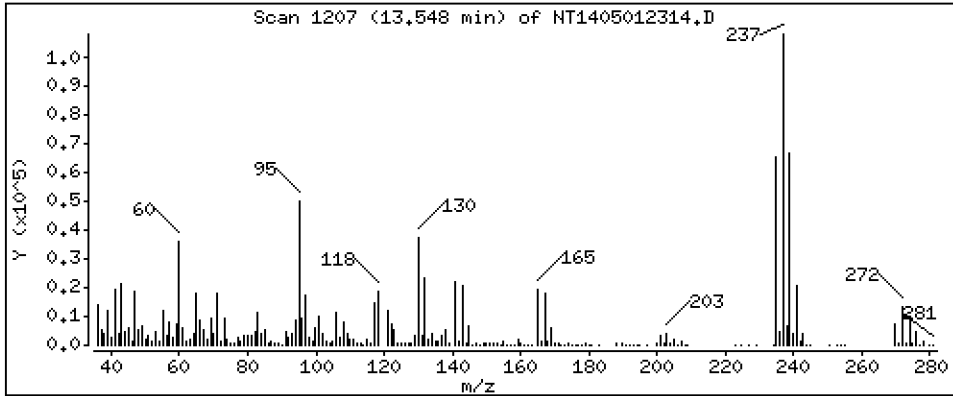
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 5,272 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

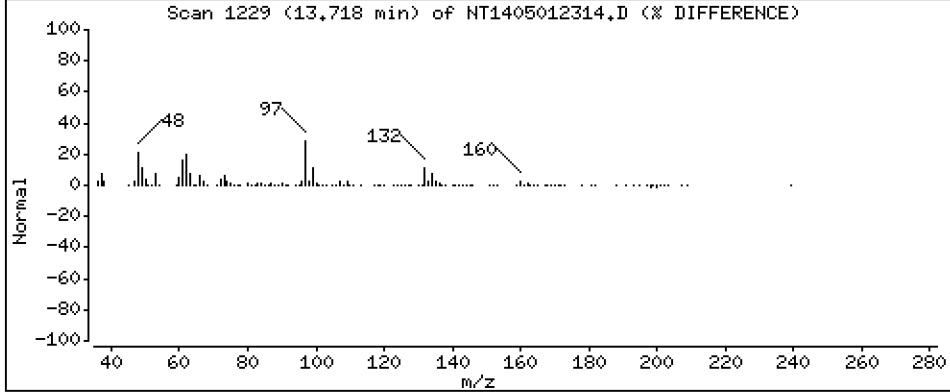
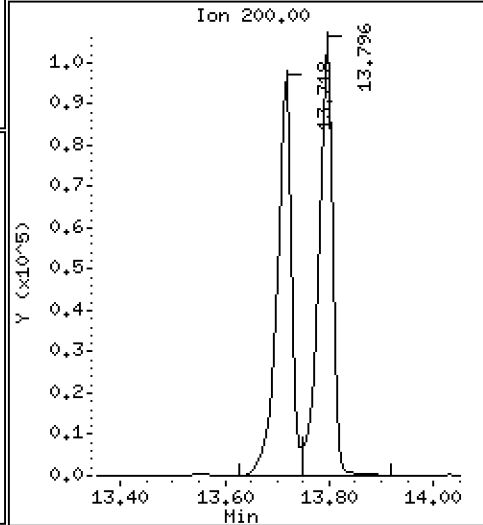
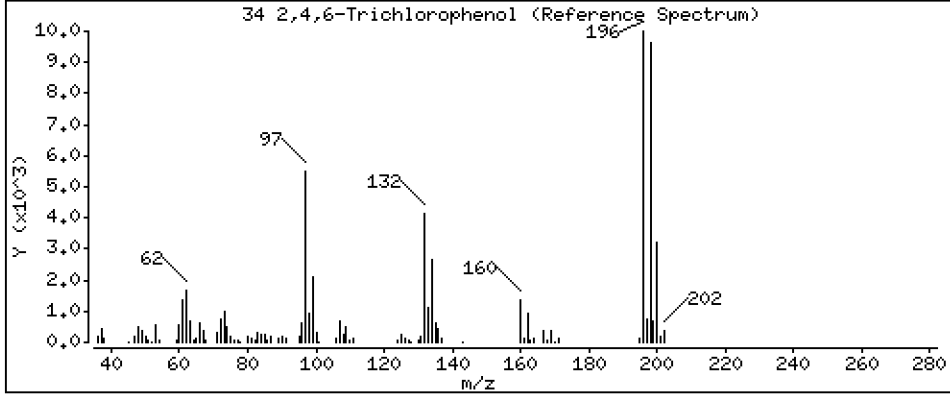
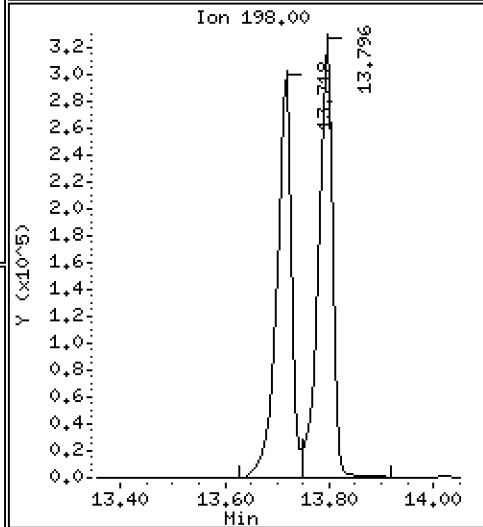
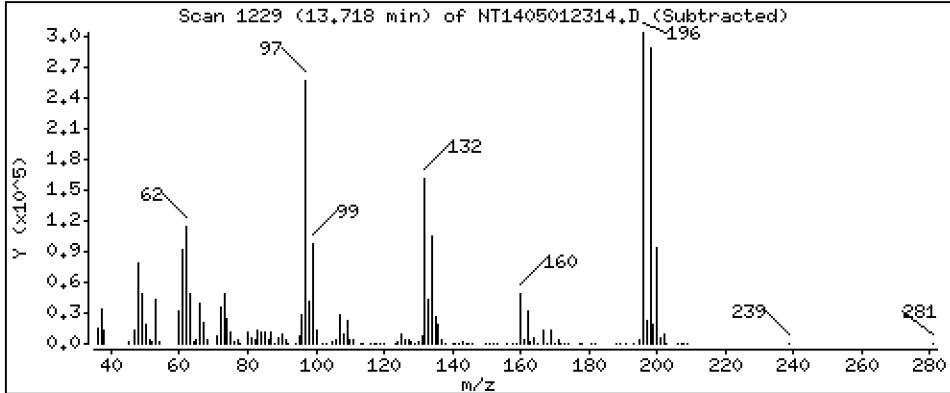
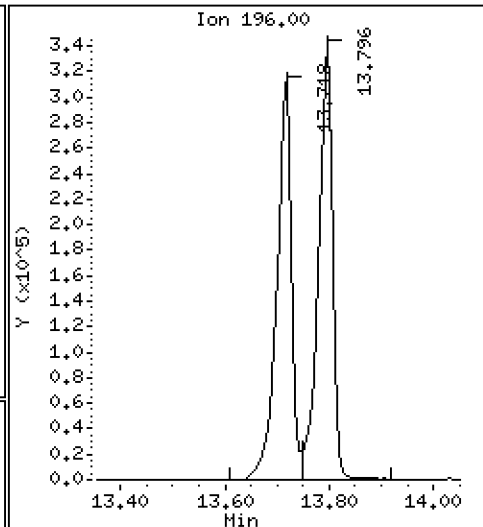
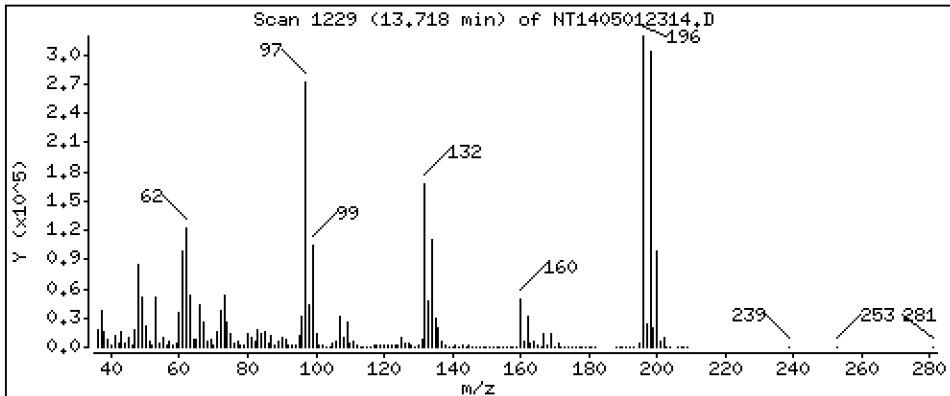
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

34 2,4,6-Trichlorophenol

Concentration: 13.46 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

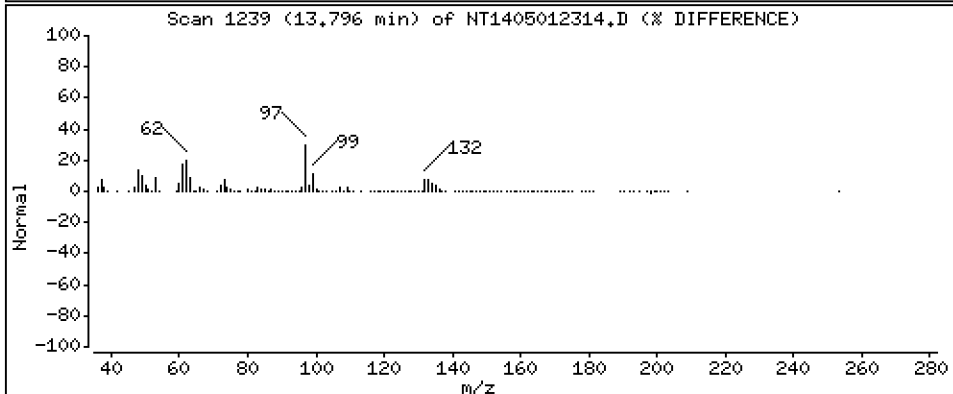
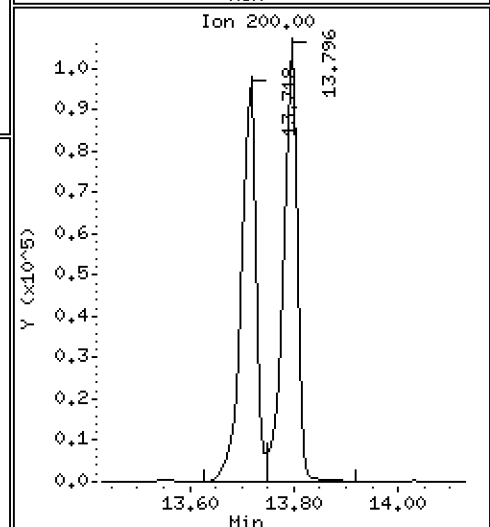
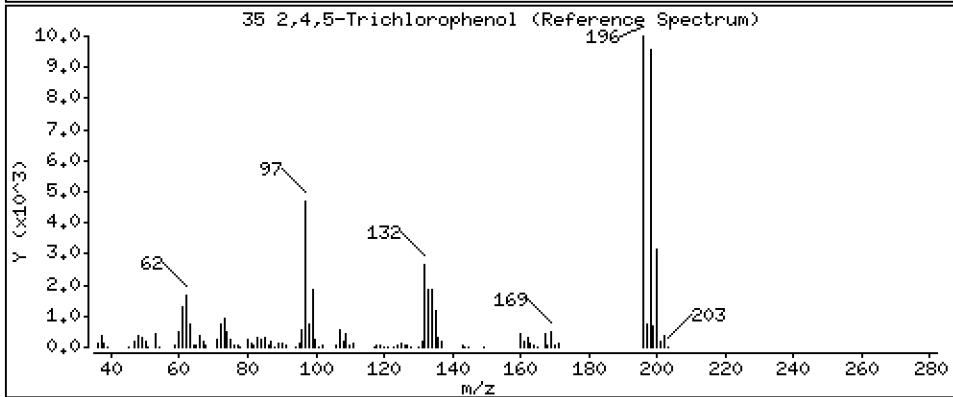
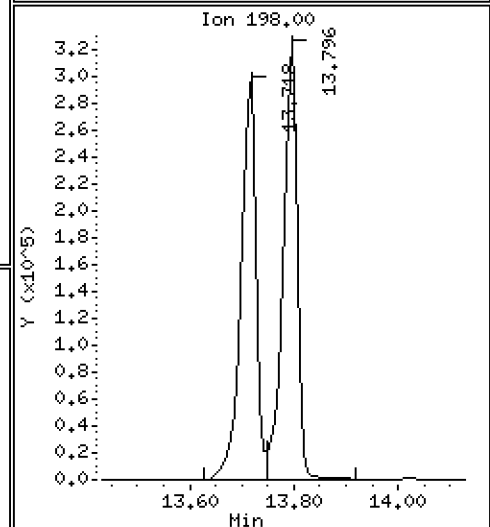
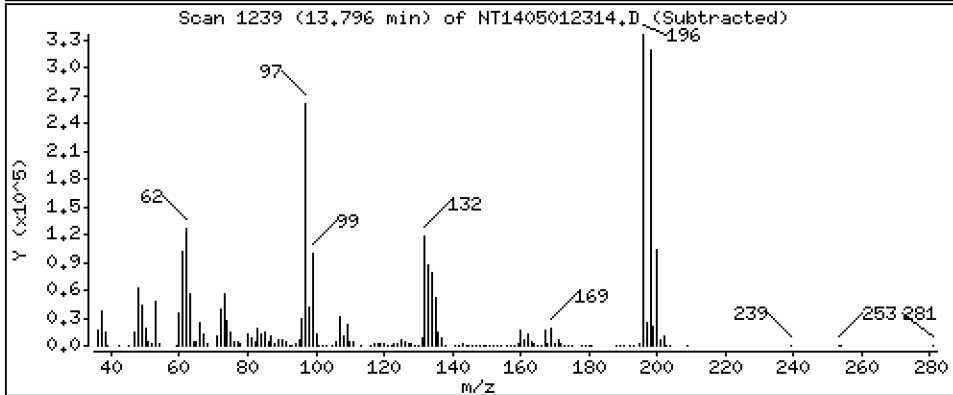
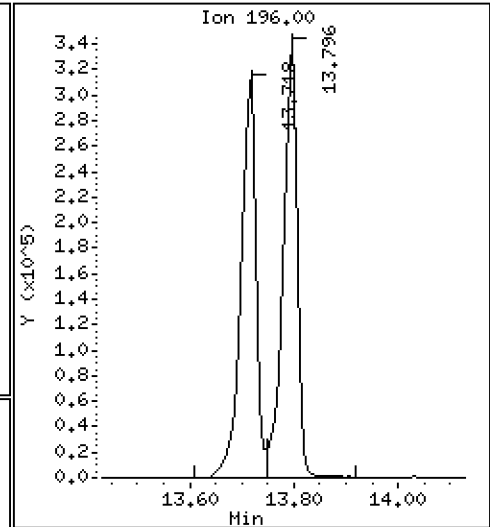
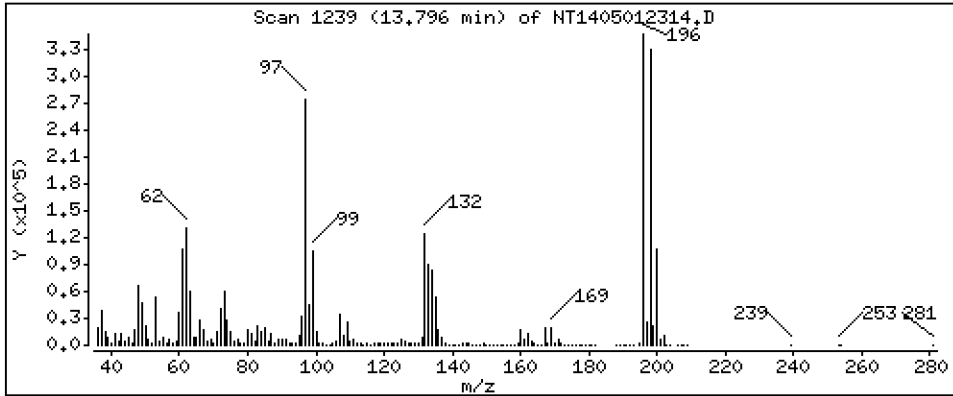
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 12,91 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

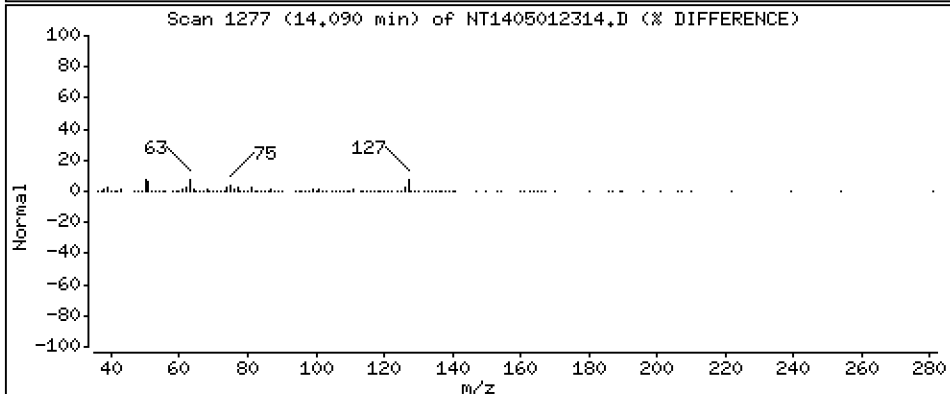
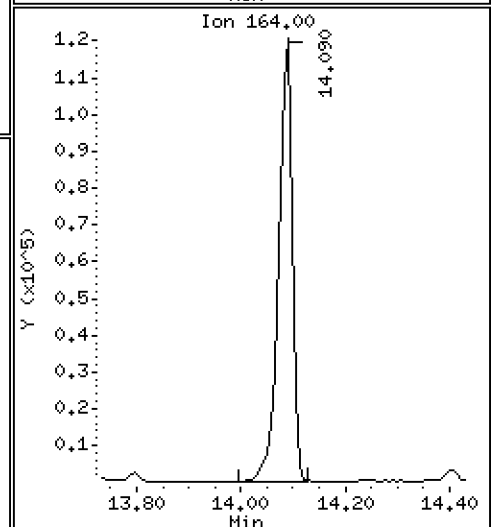
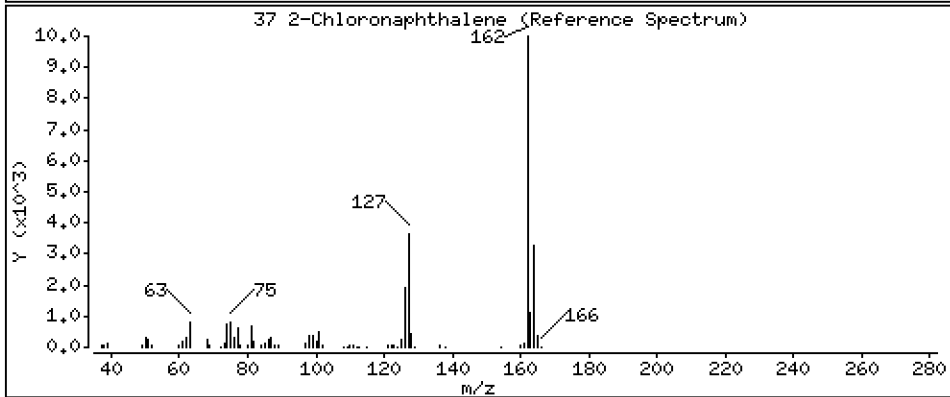
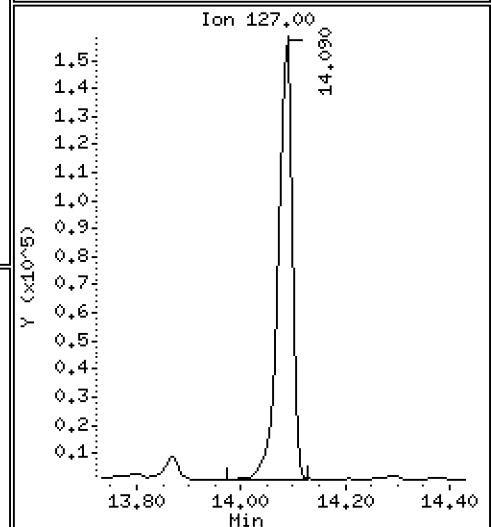
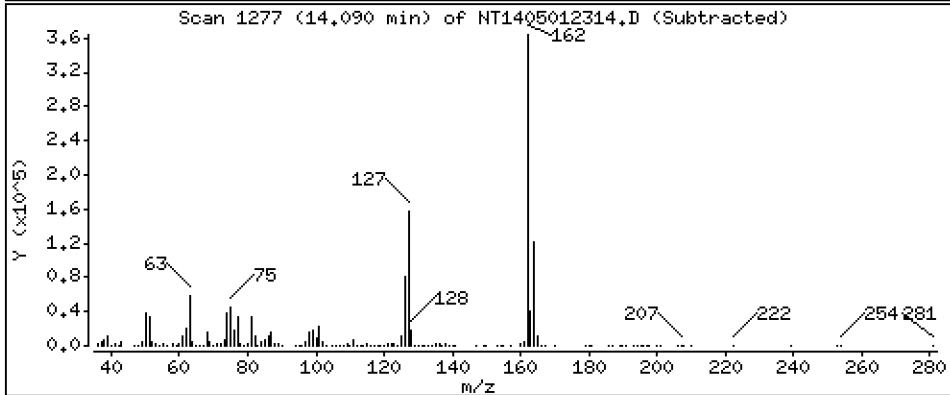
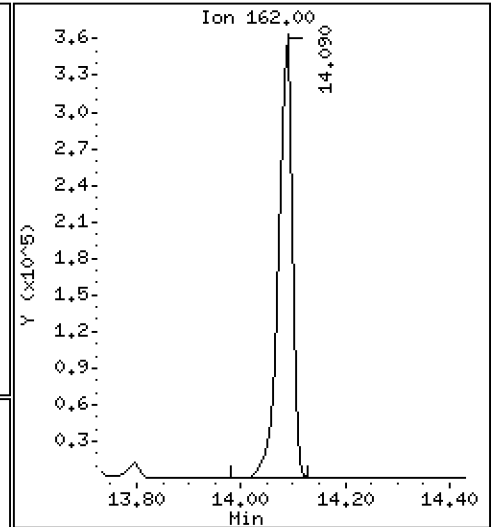
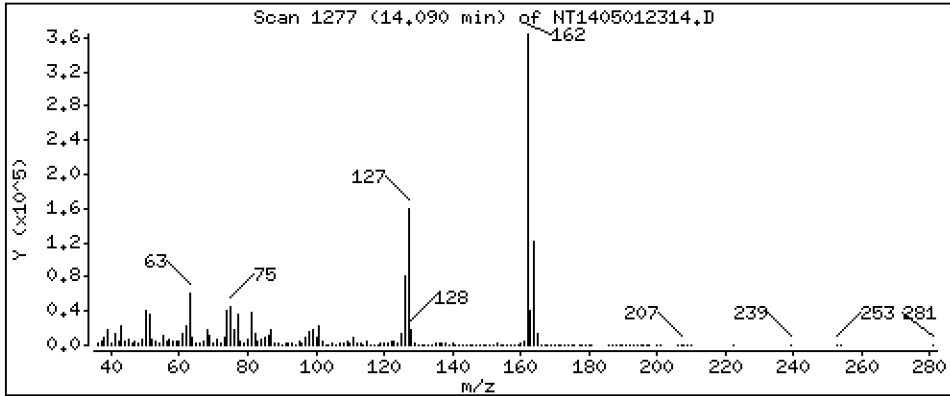
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 3,872 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

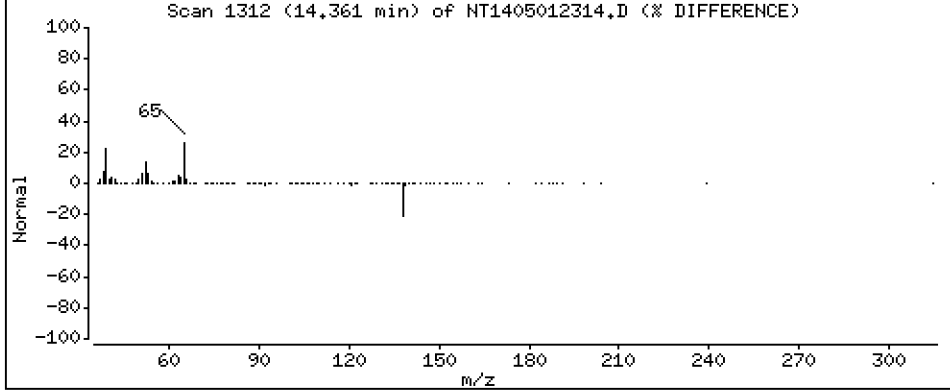
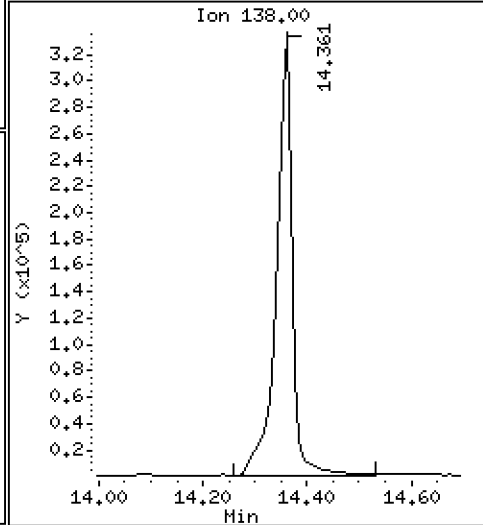
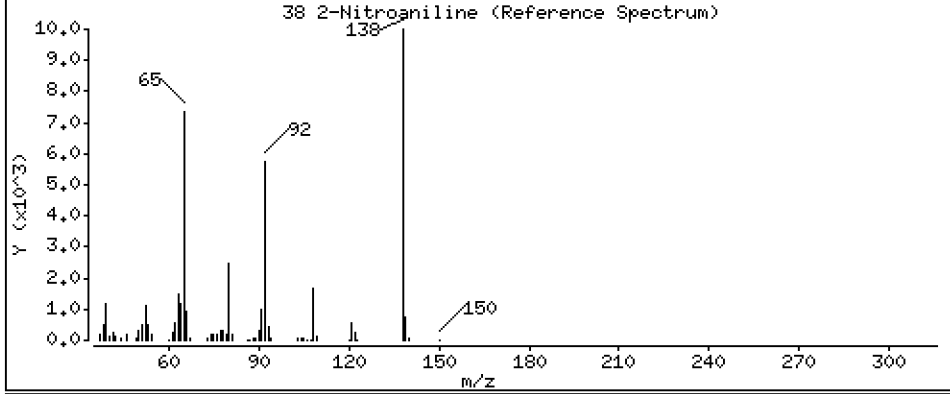
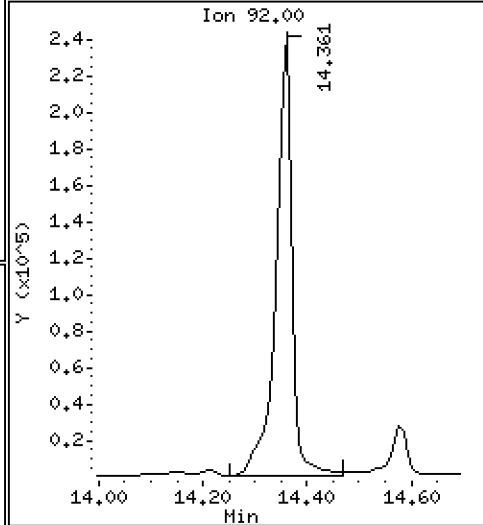
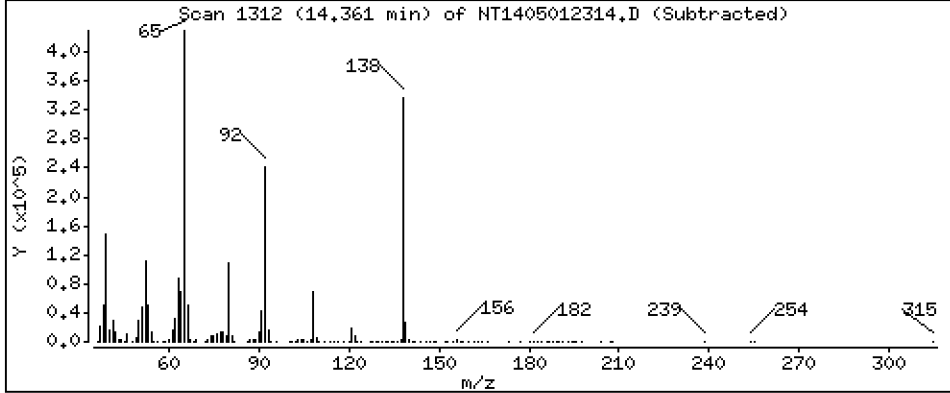
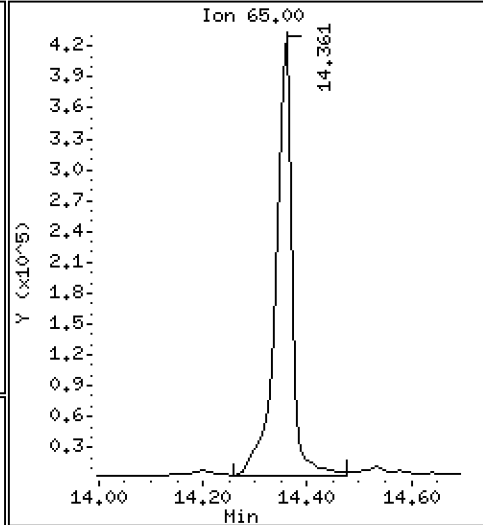
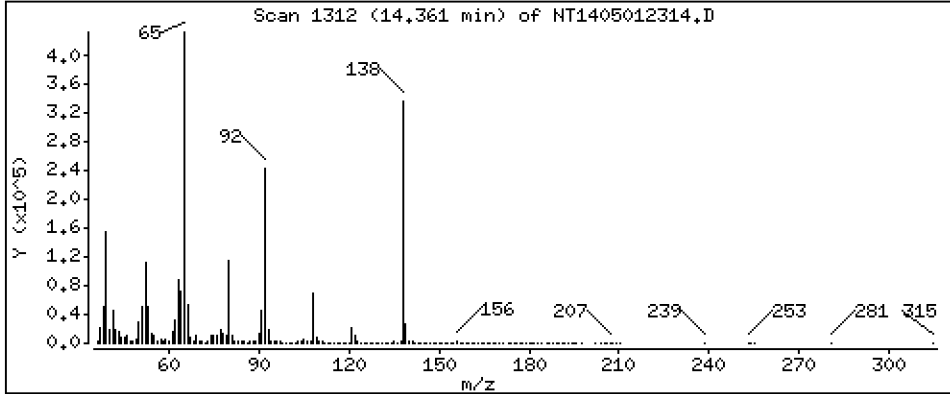
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 10,16 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

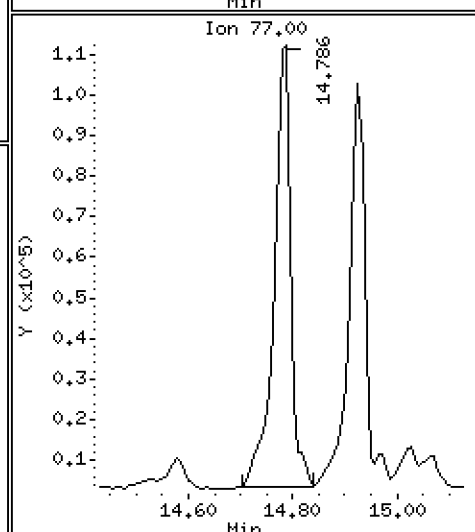
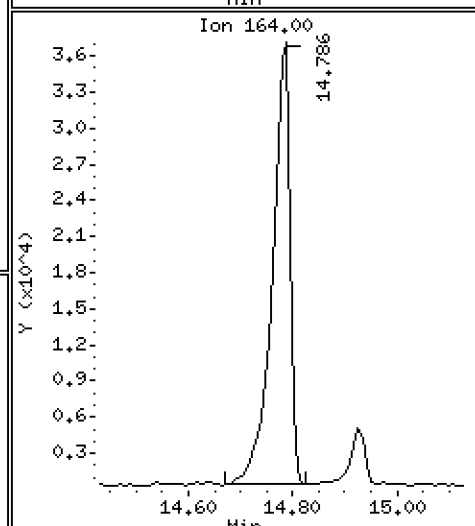
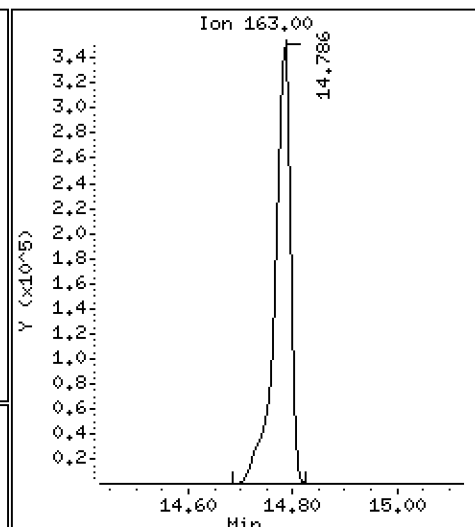
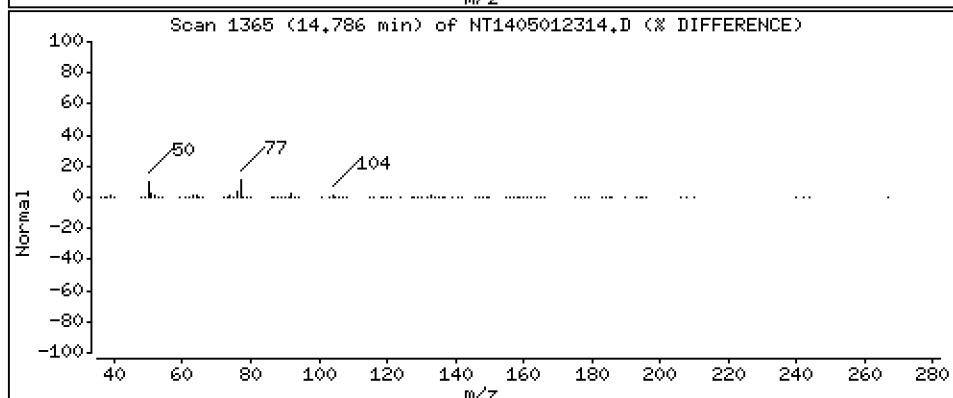
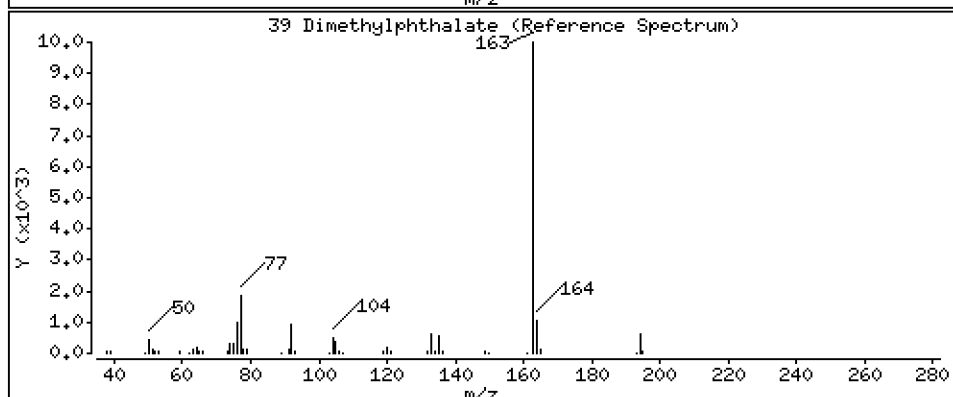
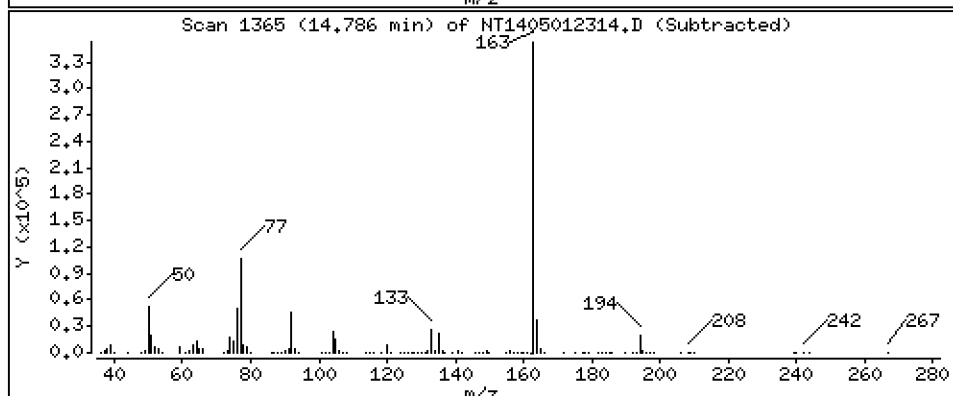
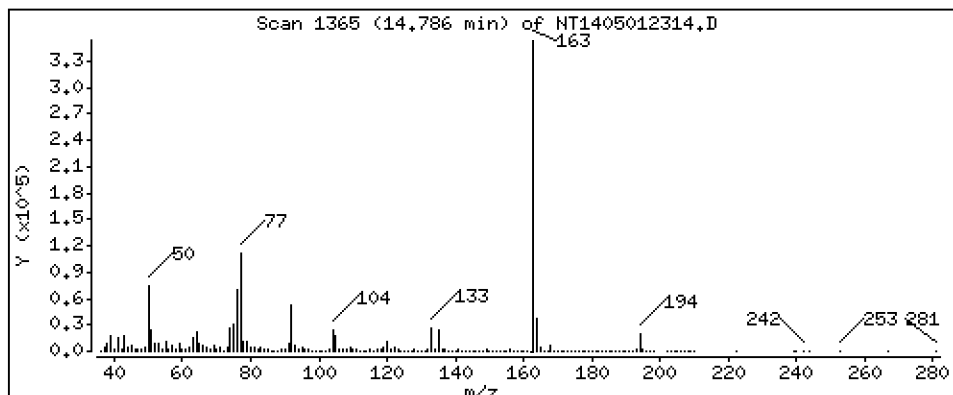
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

39 Dimethylphthalate

Concentration: 4.152 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

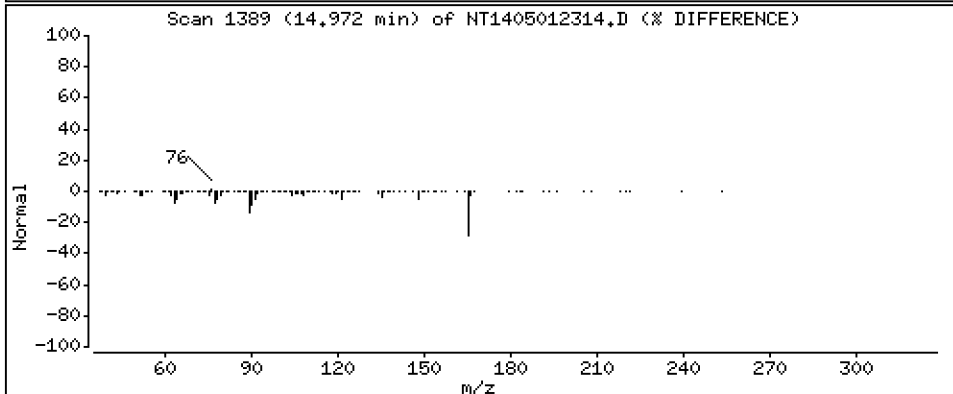
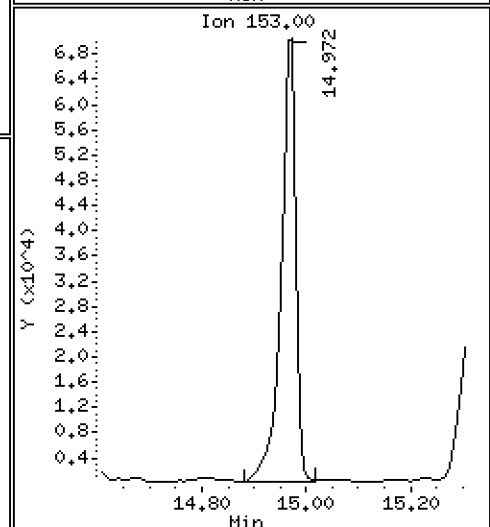
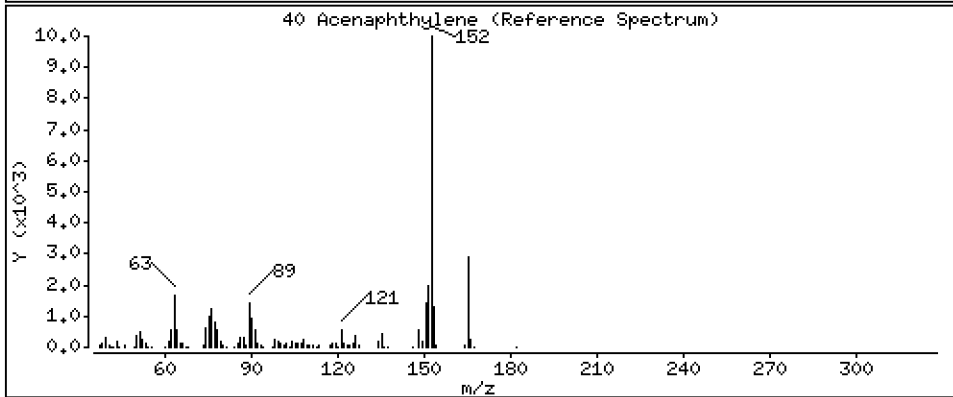
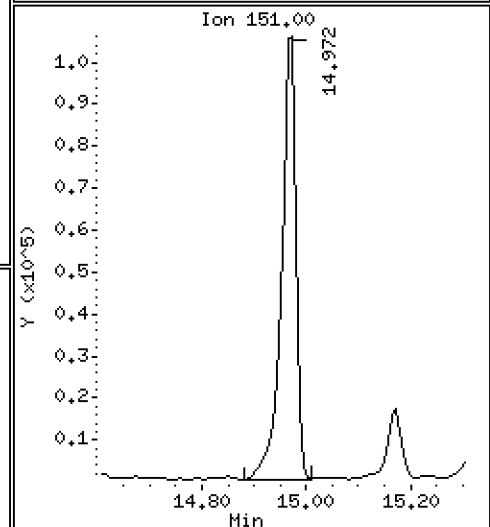
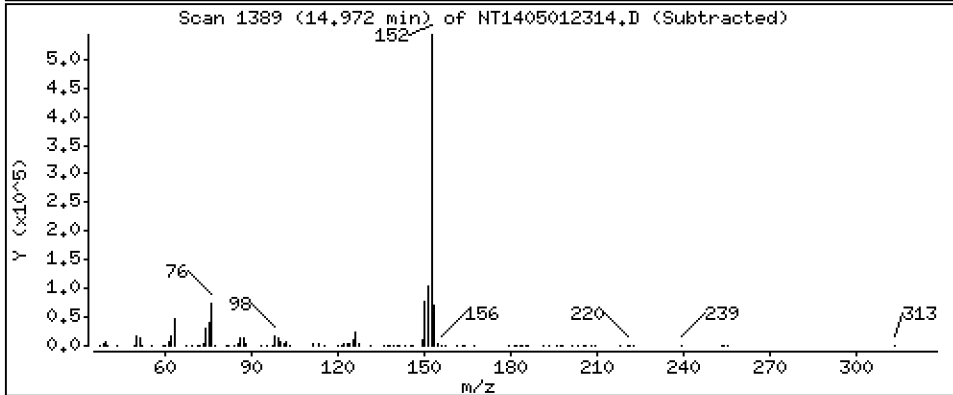
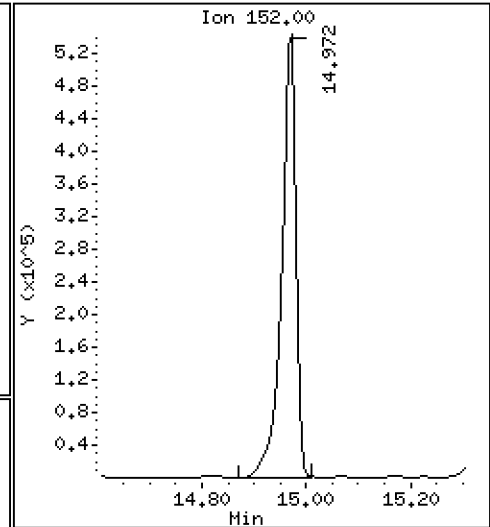
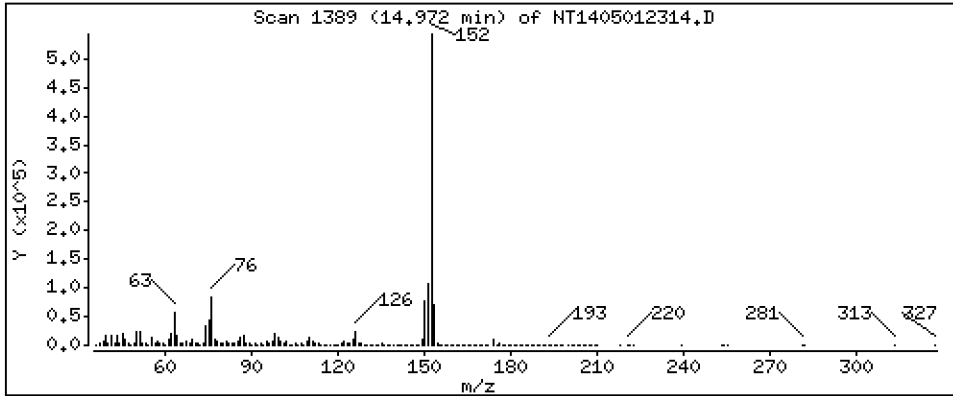
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 3,893 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

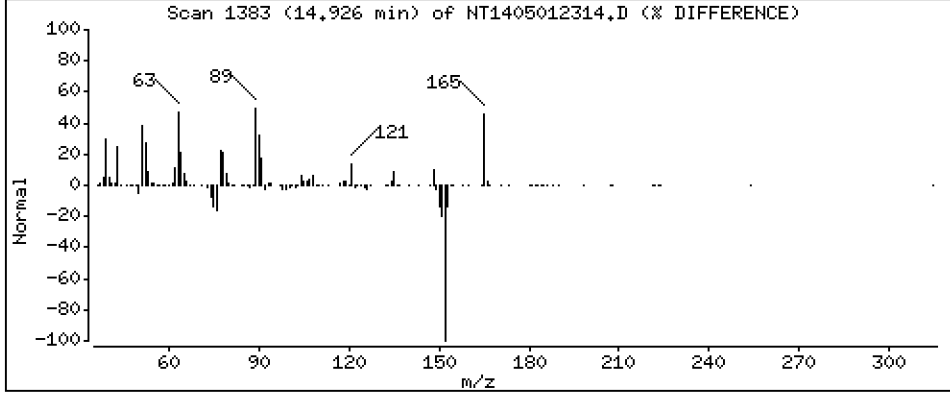
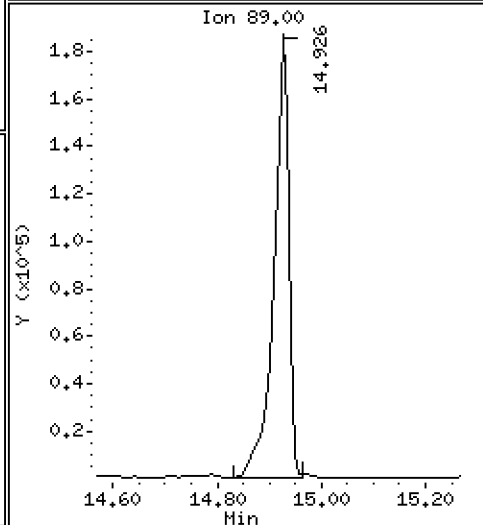
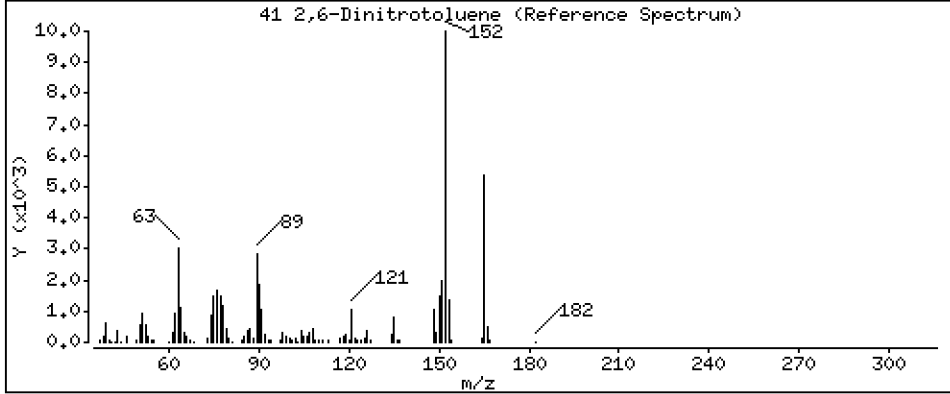
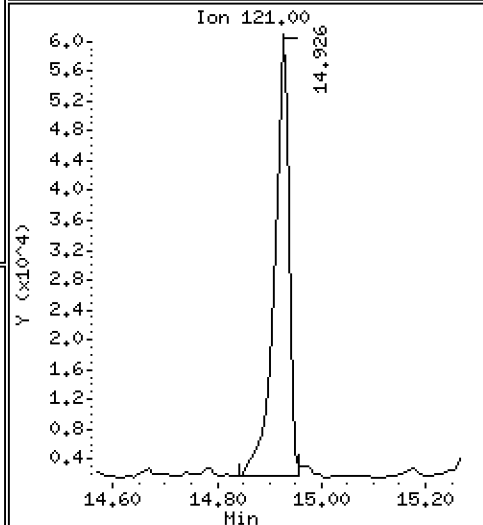
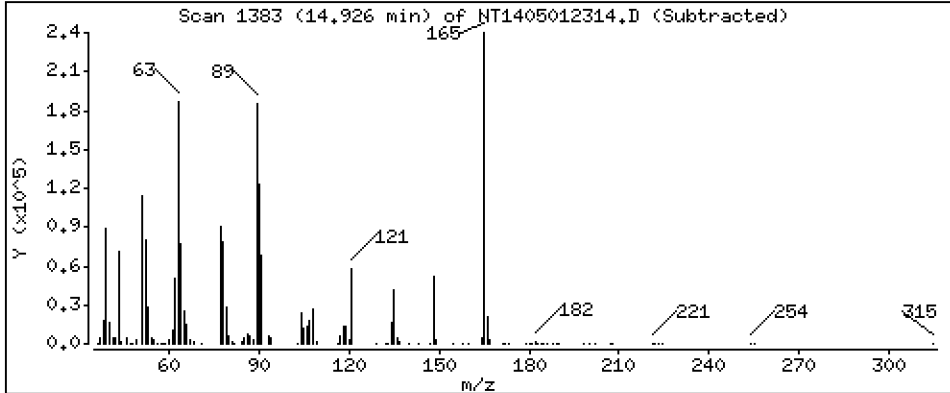
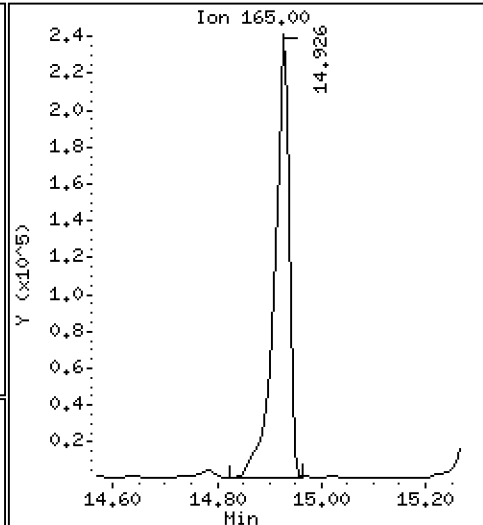
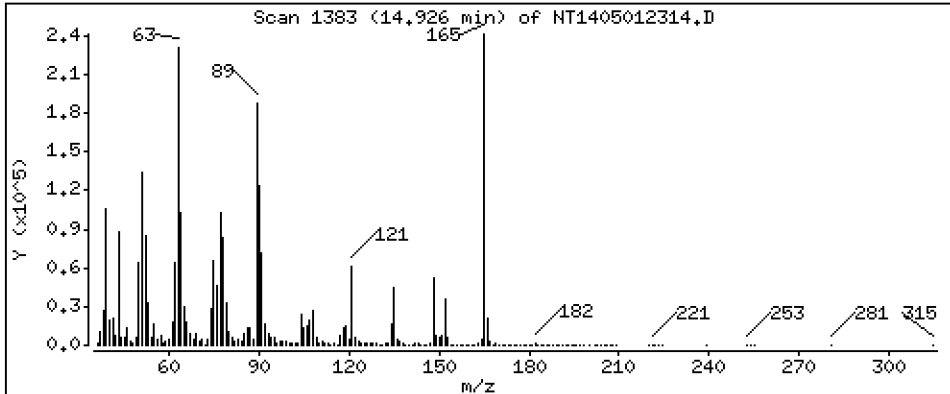
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

41 2,6-Dinitrotoluene

Concentration: 11,89 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

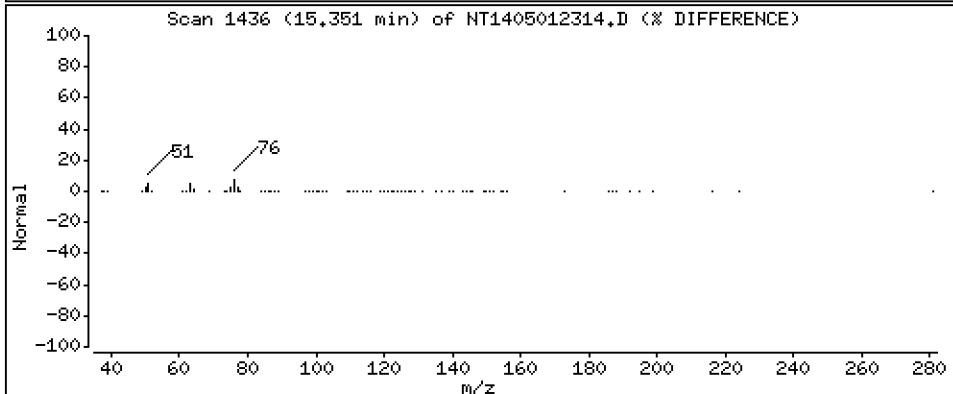
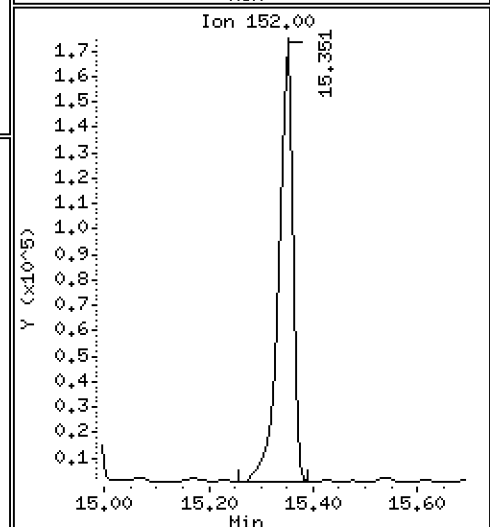
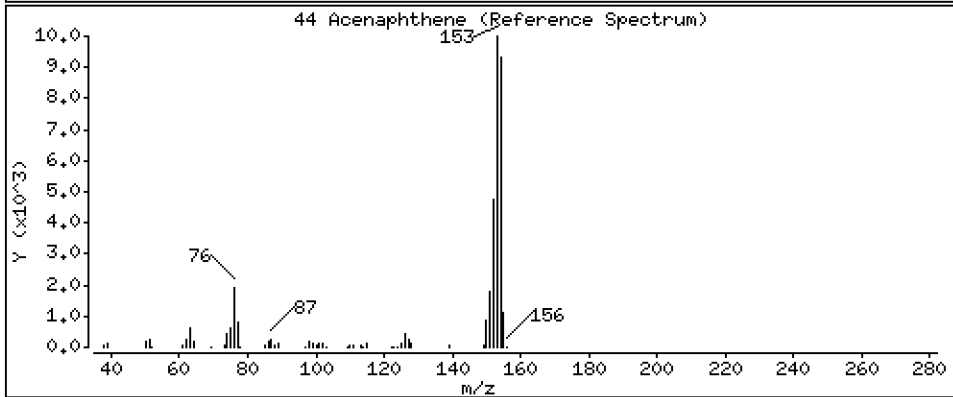
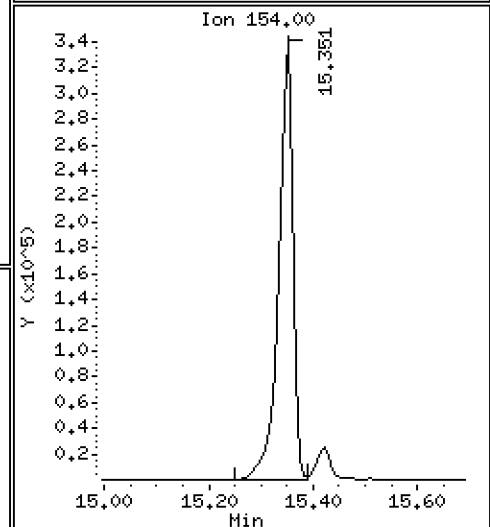
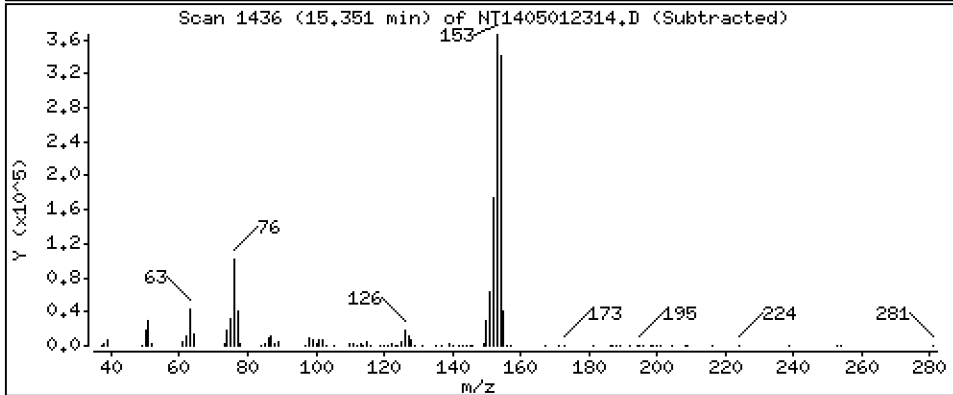
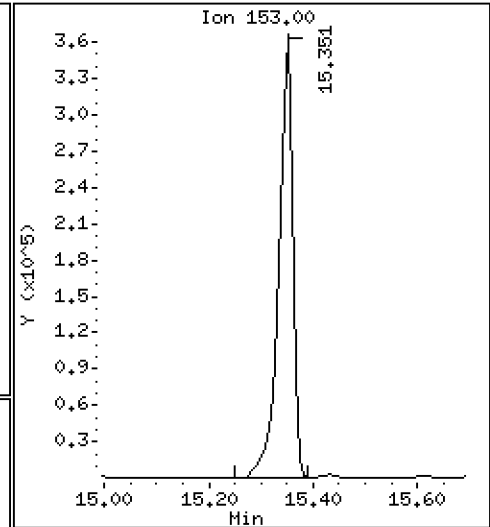
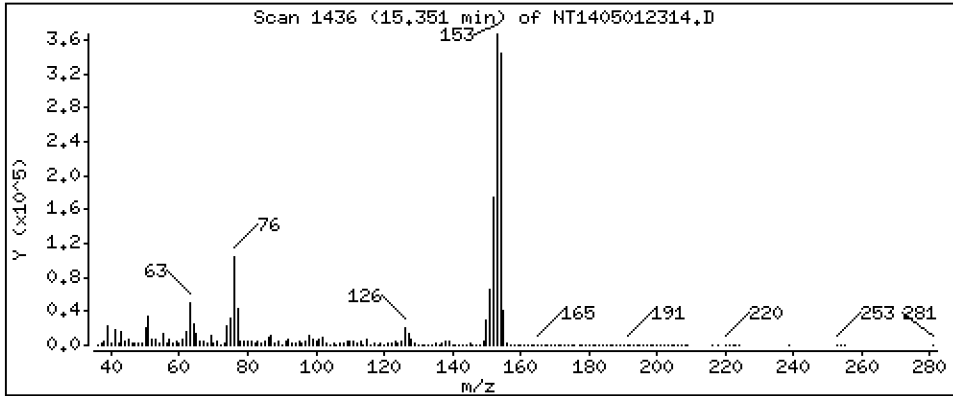
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 4,144 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

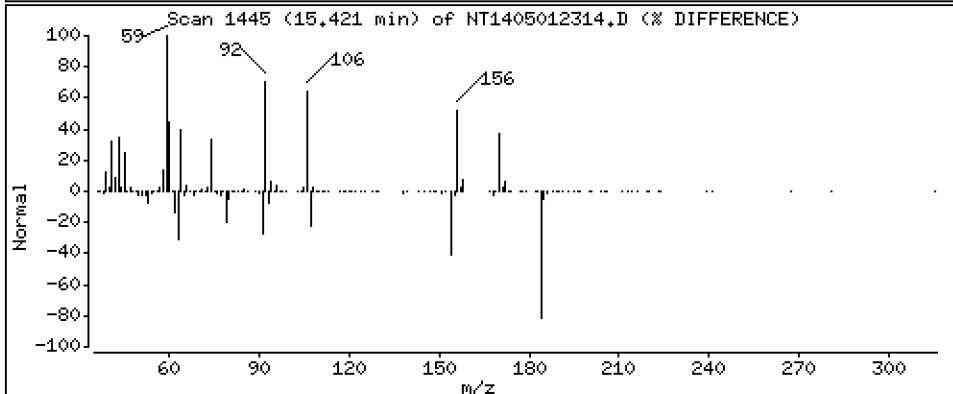
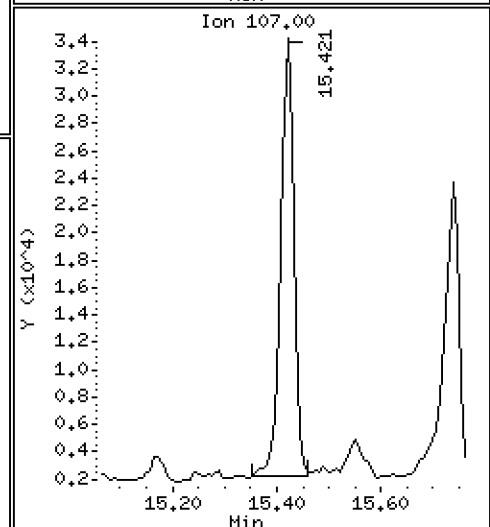
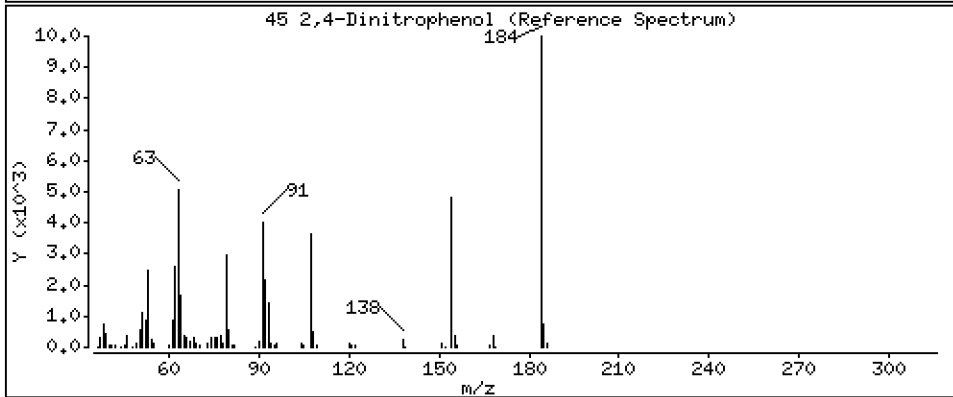
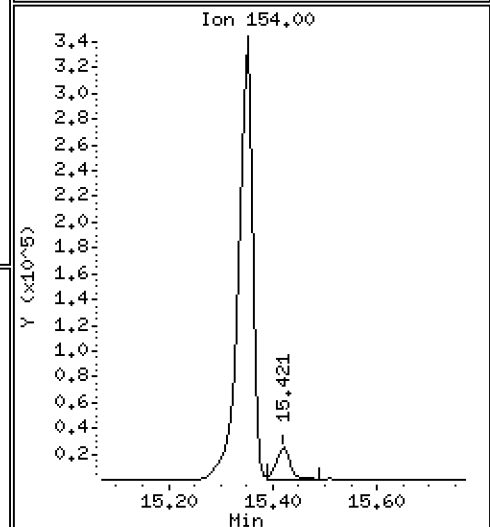
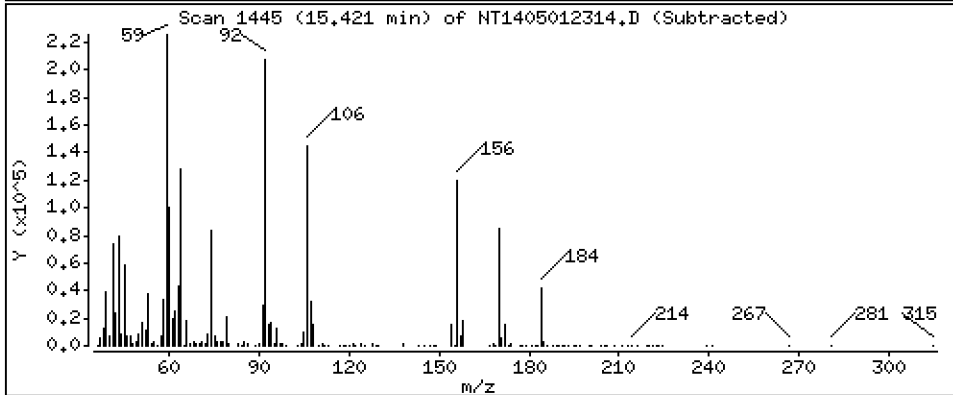
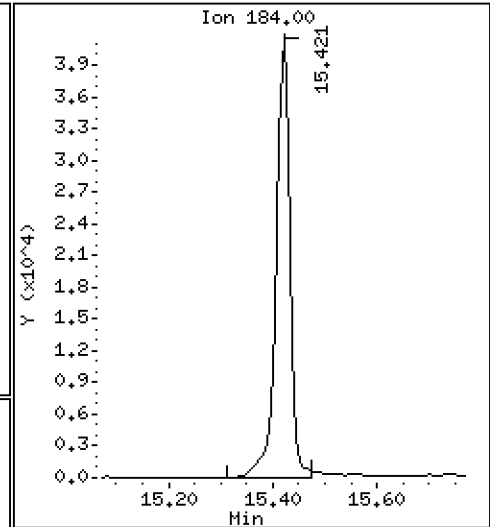
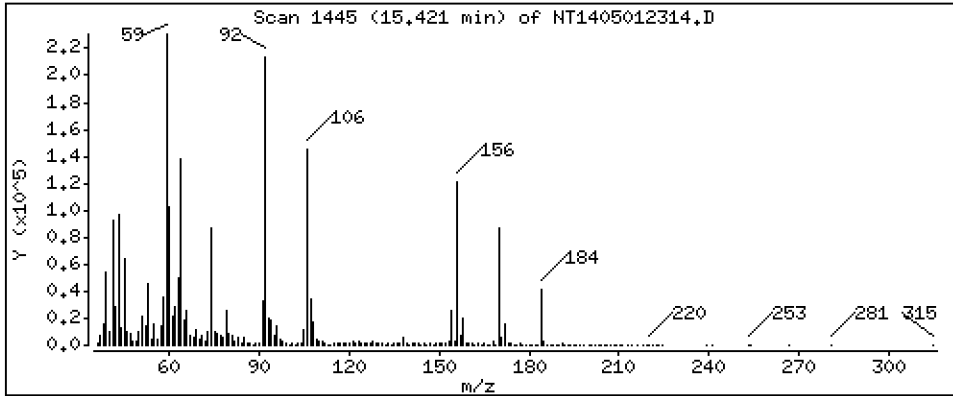
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 3,092 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

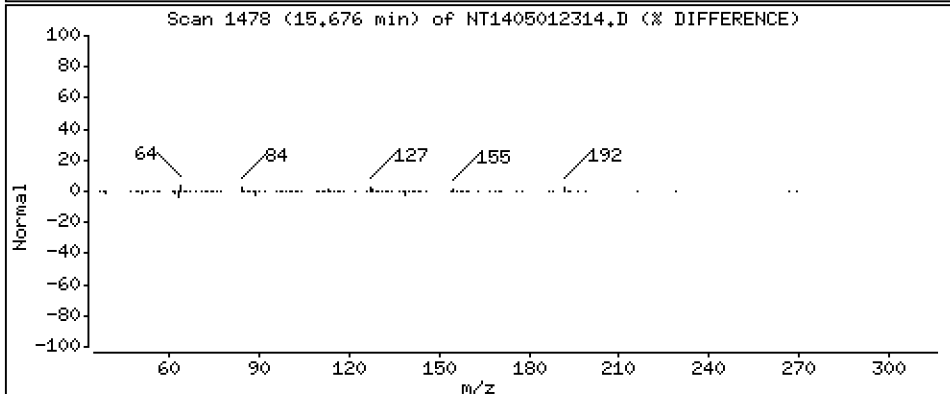
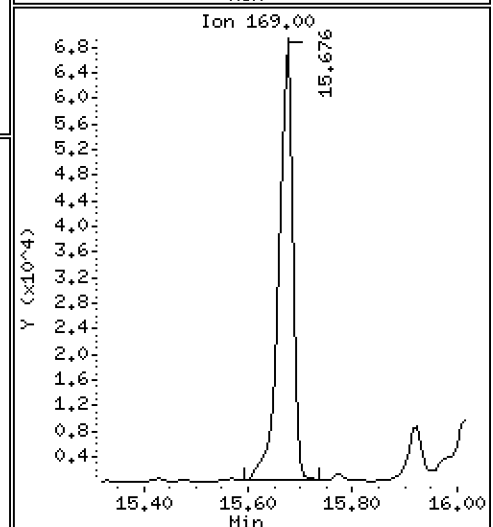
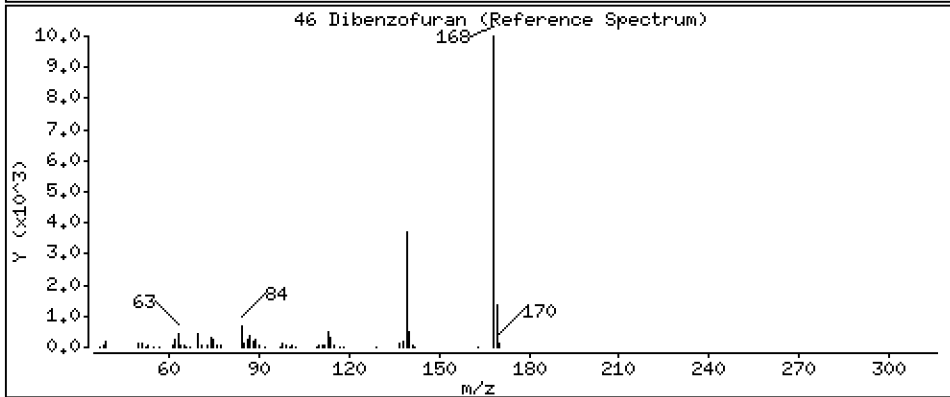
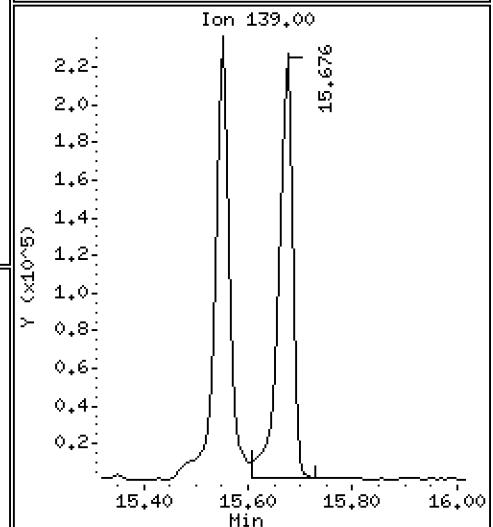
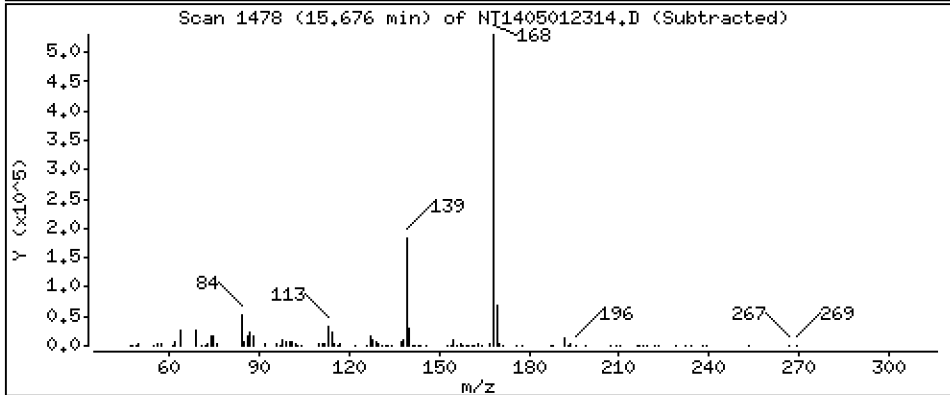
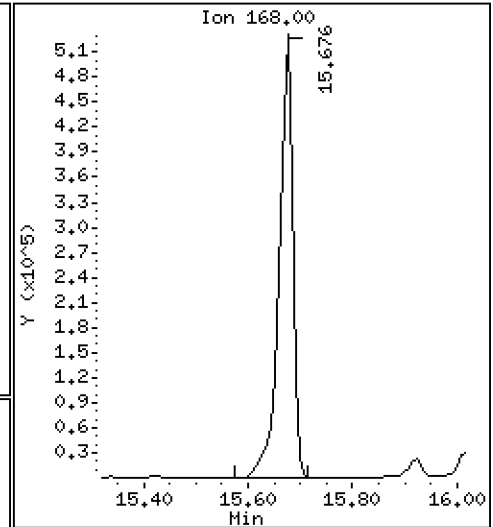
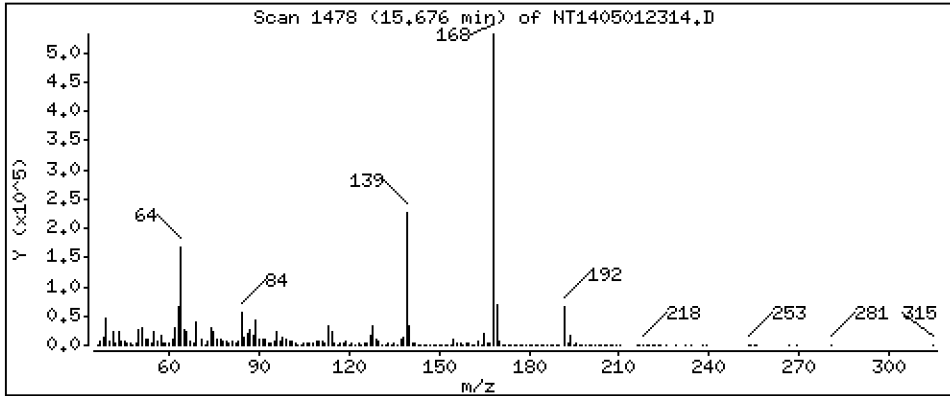
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 4,112 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

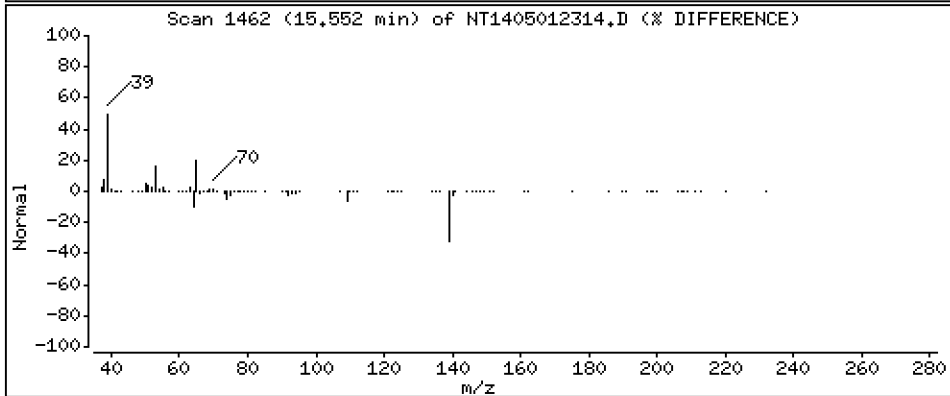
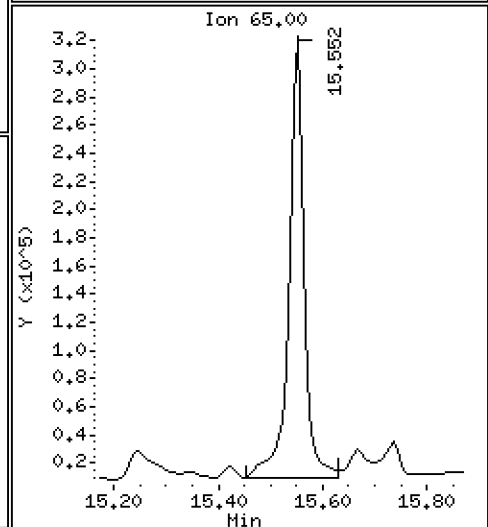
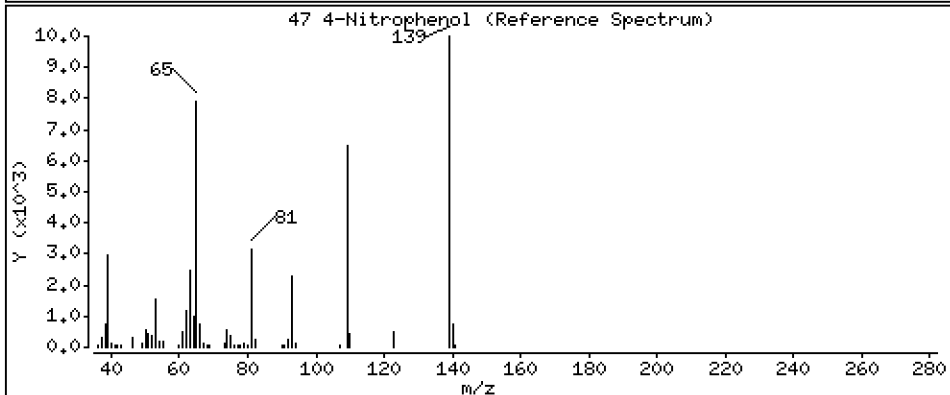
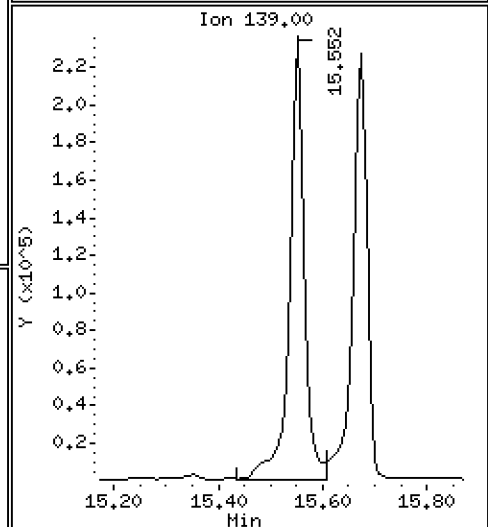
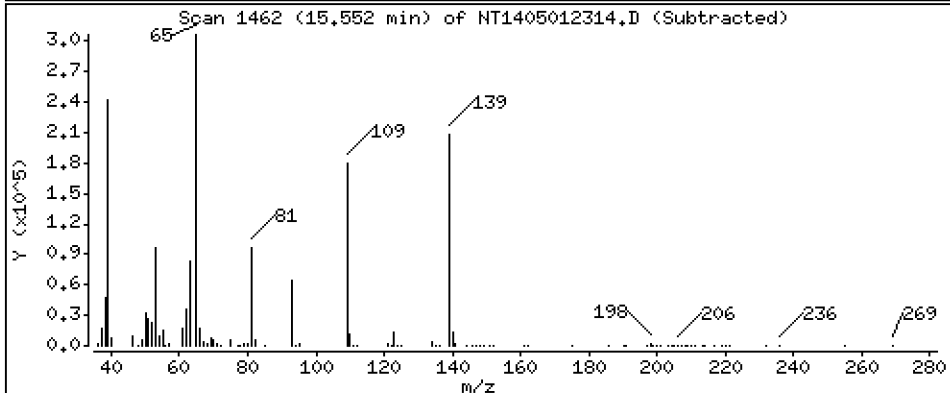
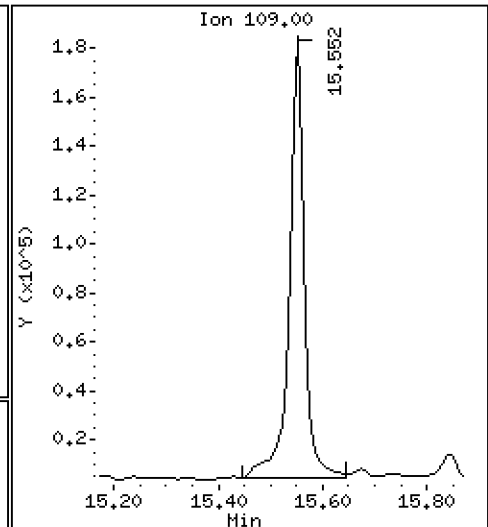
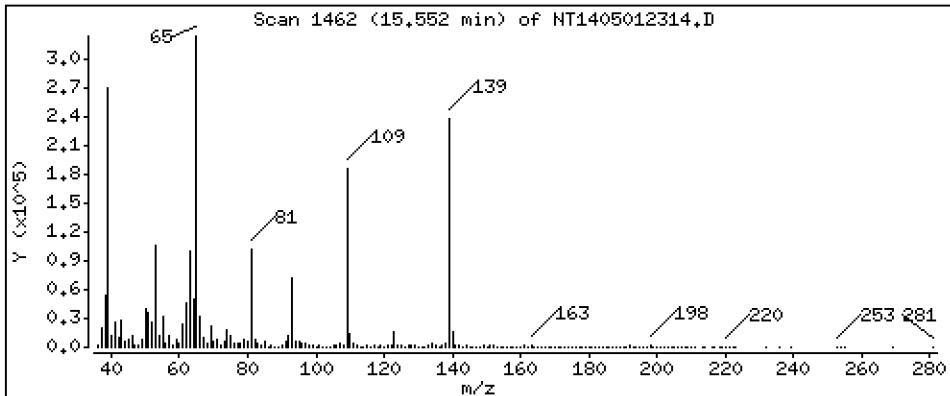
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 13,12 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

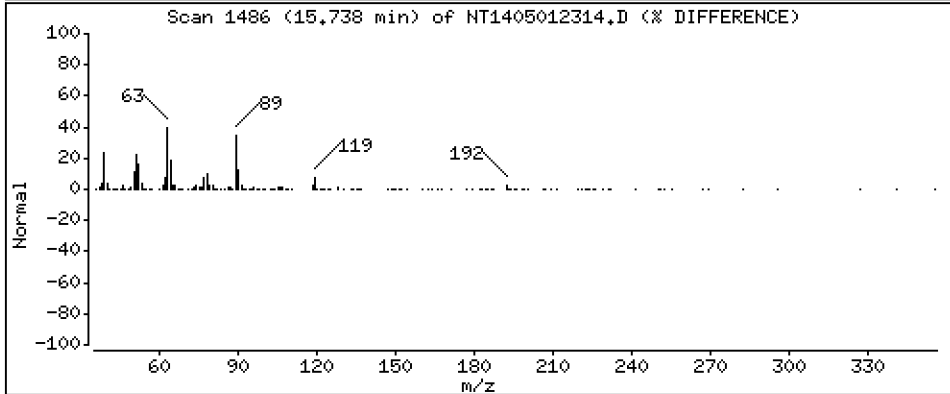
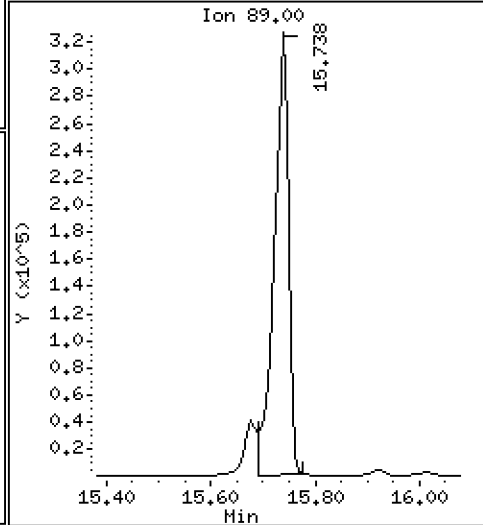
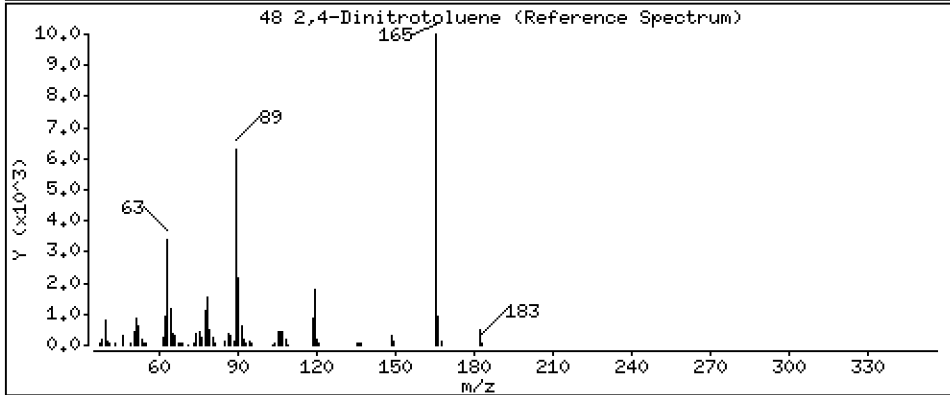
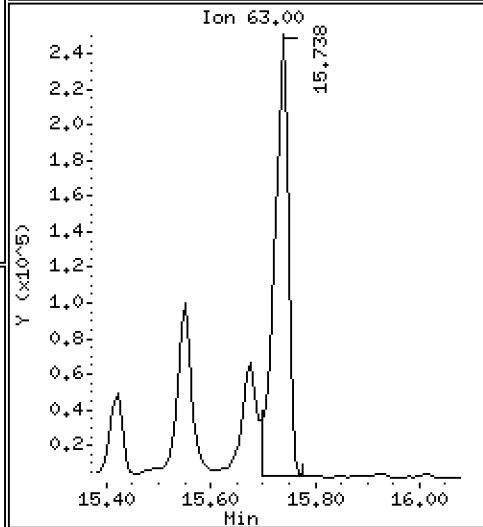
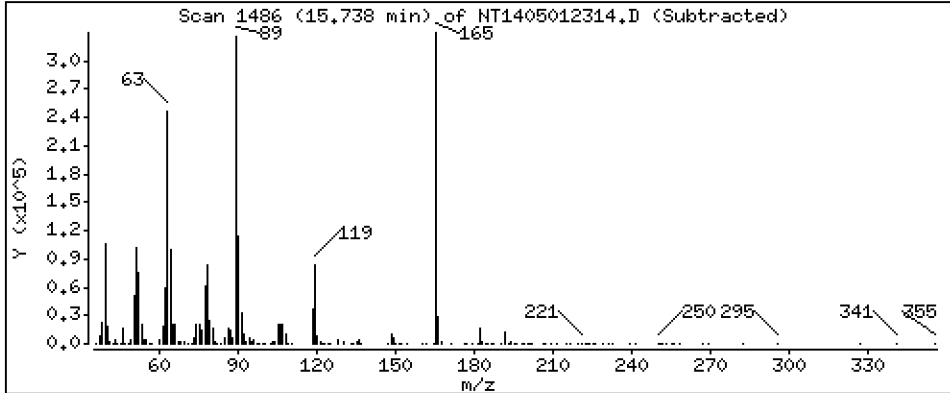
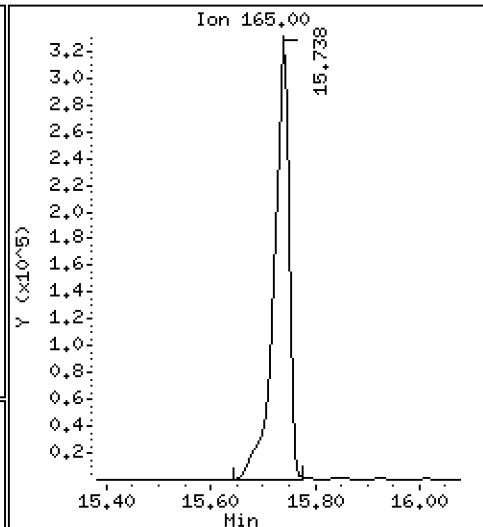
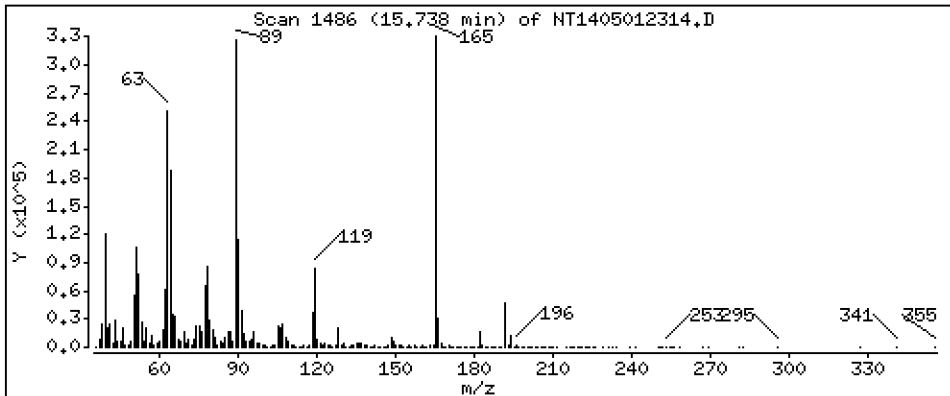
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 12,28 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

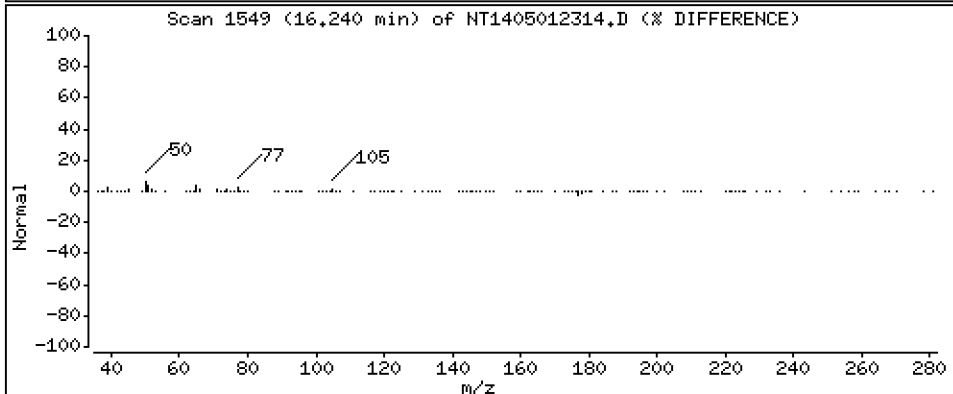
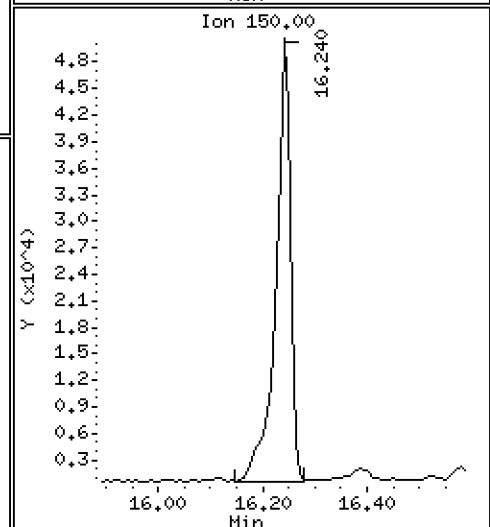
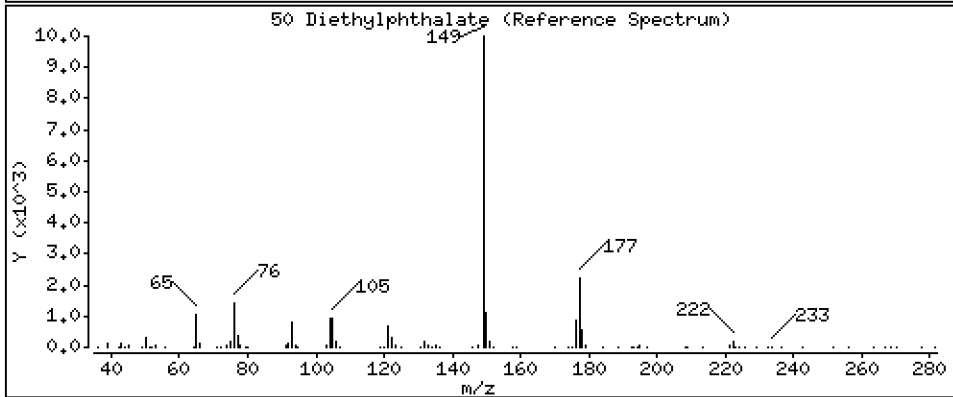
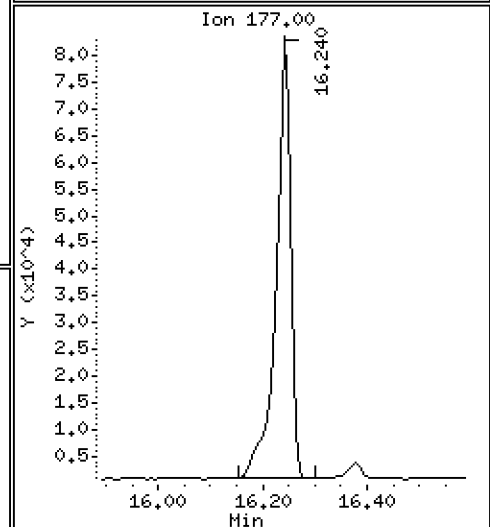
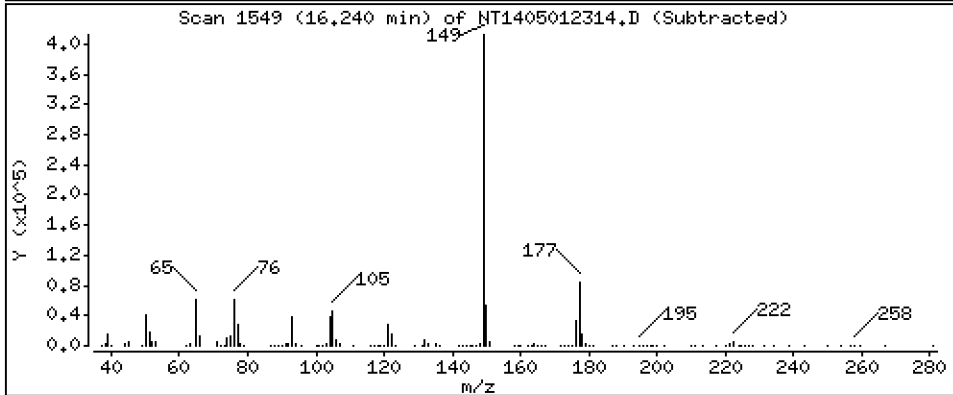
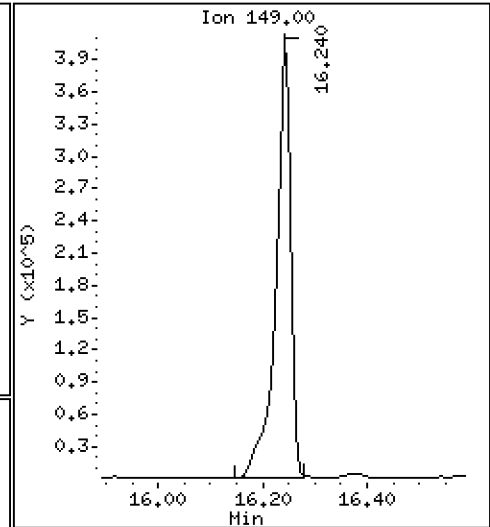
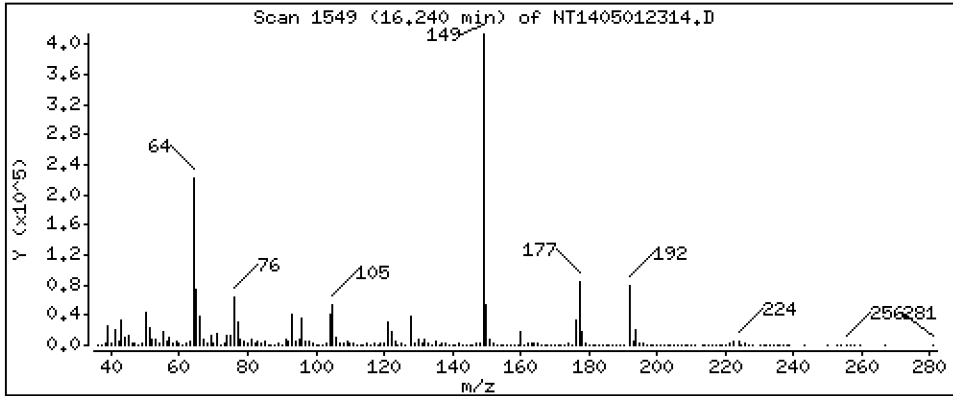
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,275 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

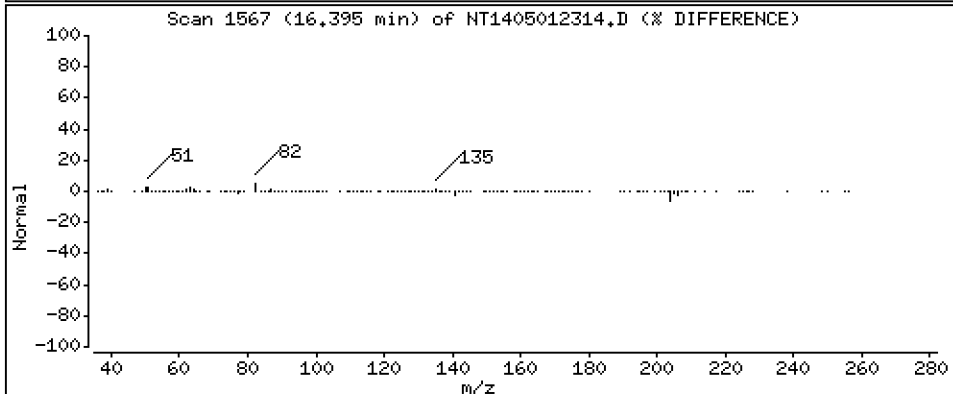
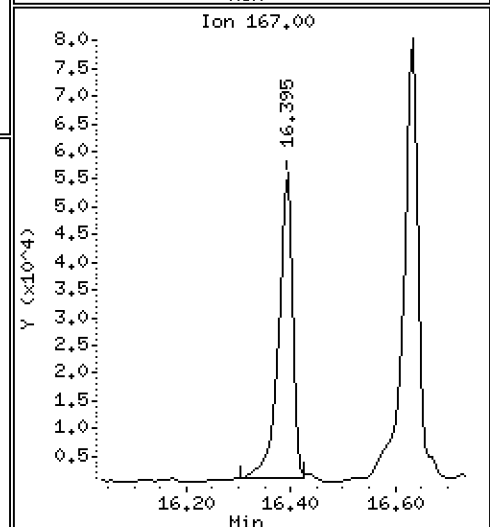
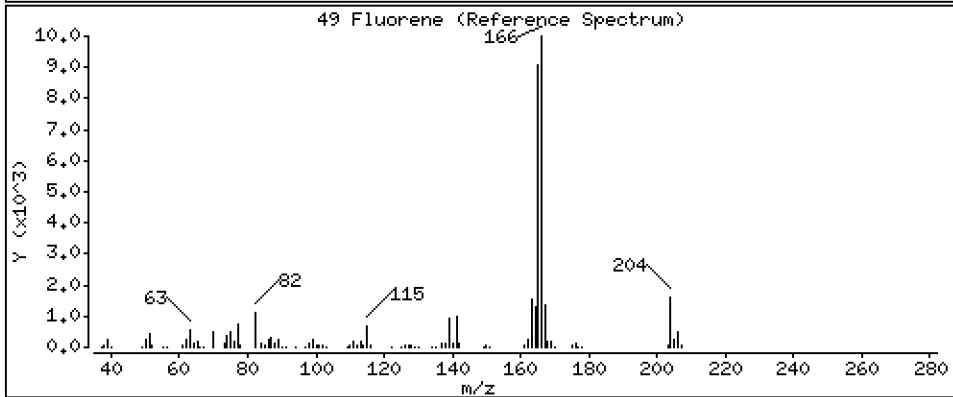
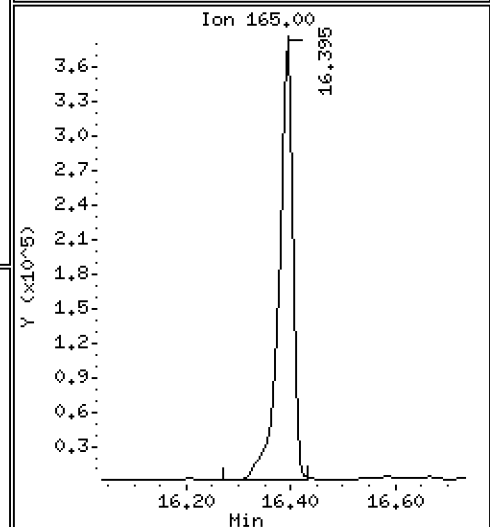
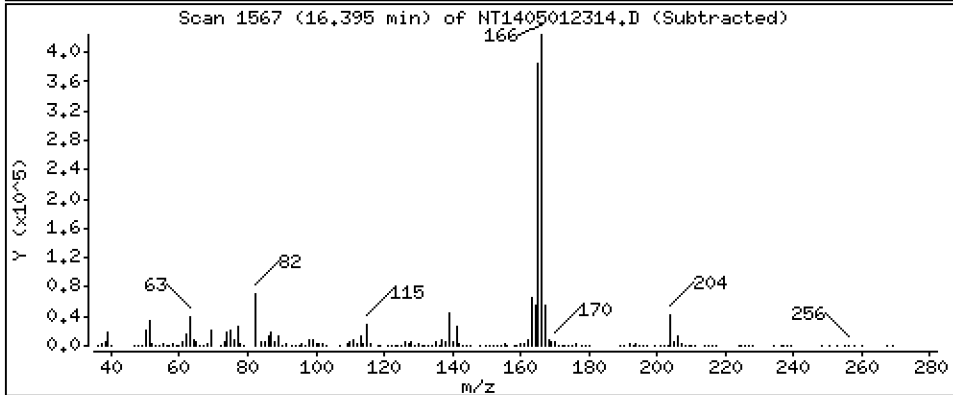
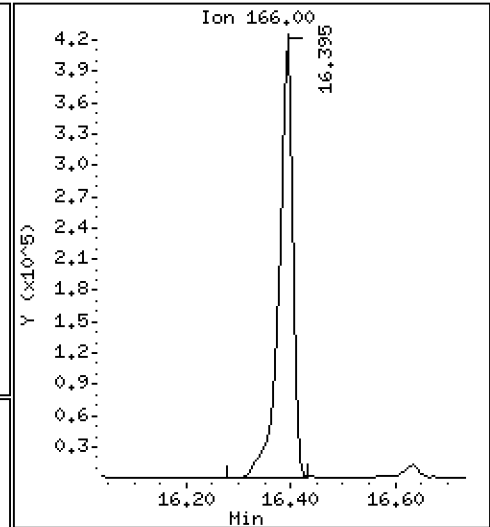
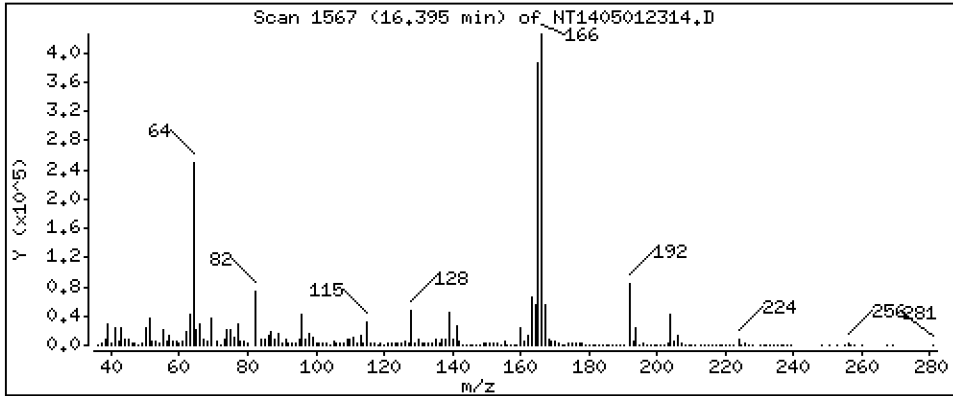
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,284 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

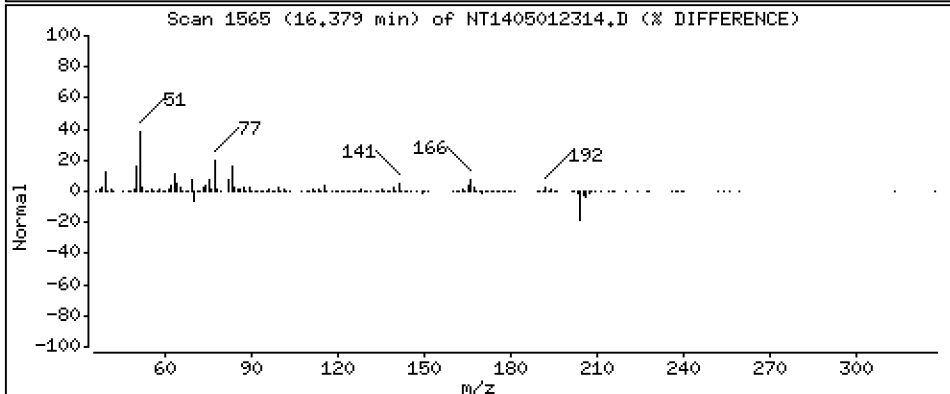
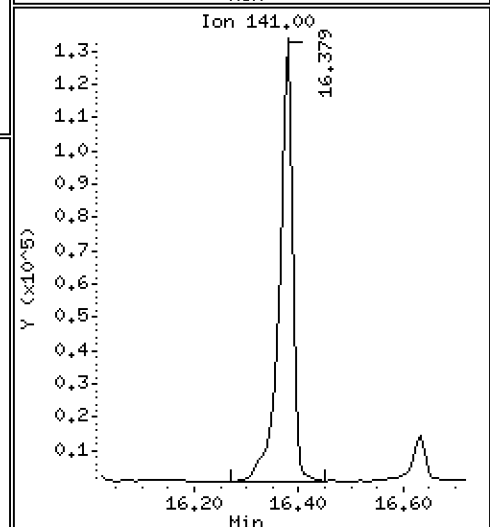
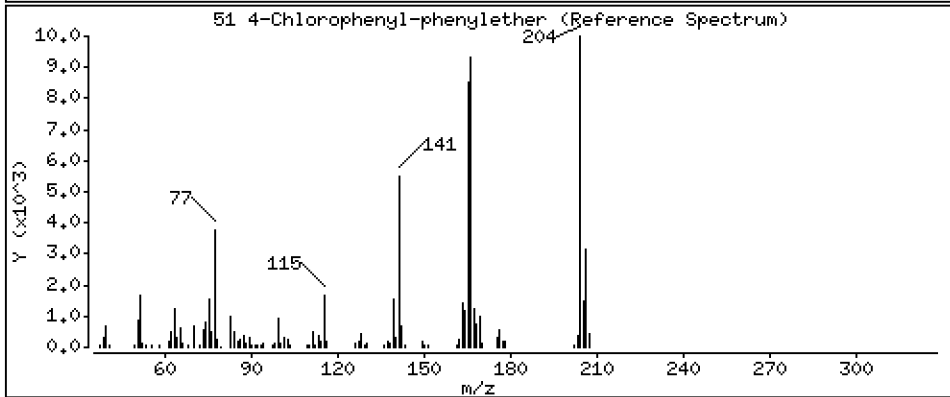
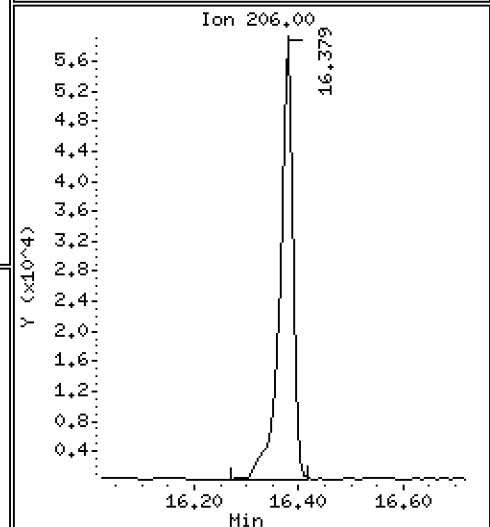
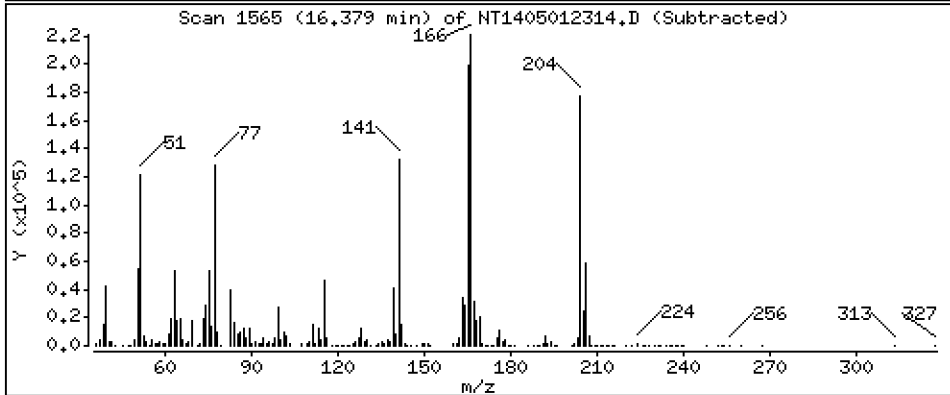
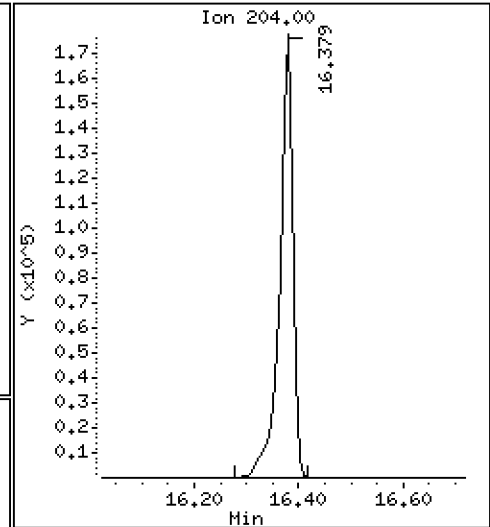
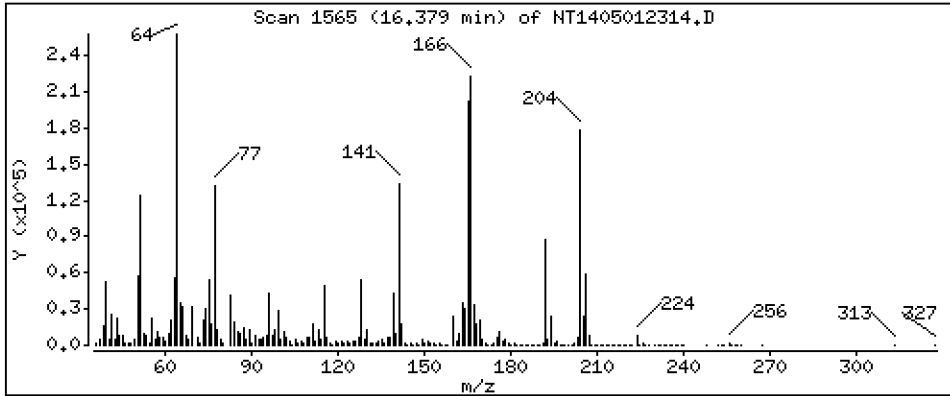
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,220 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

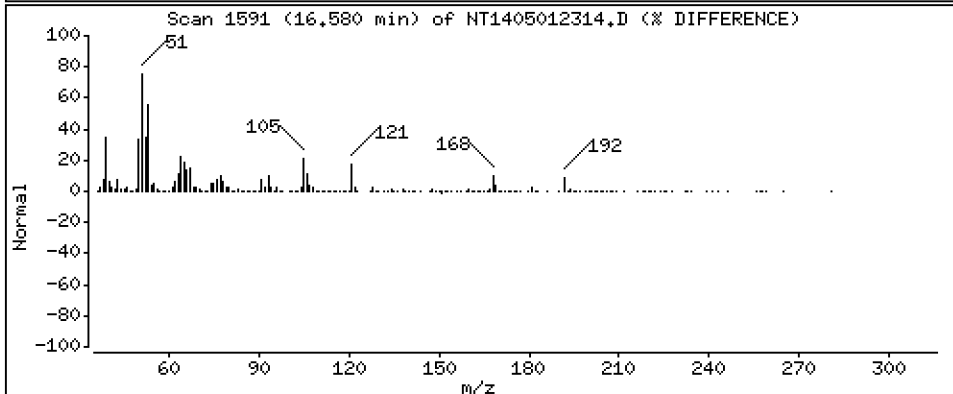
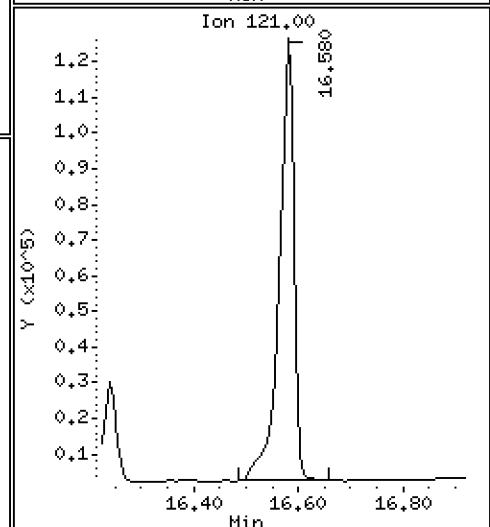
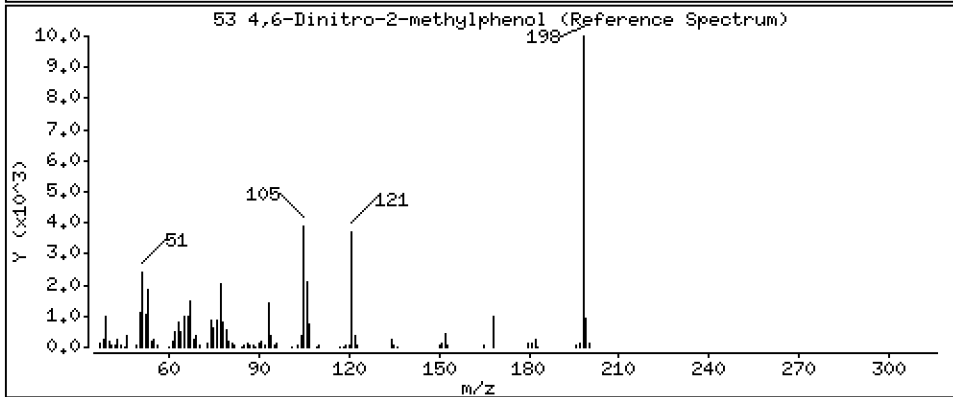
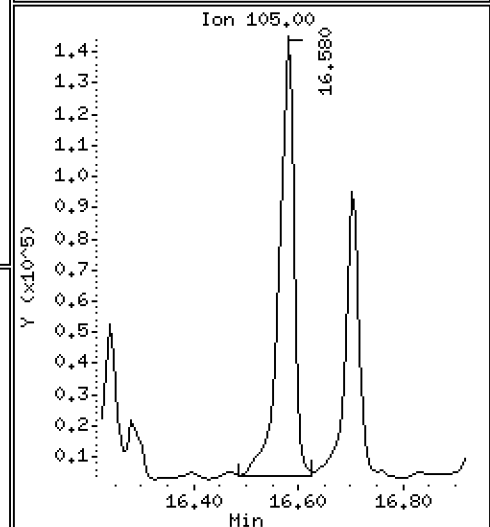
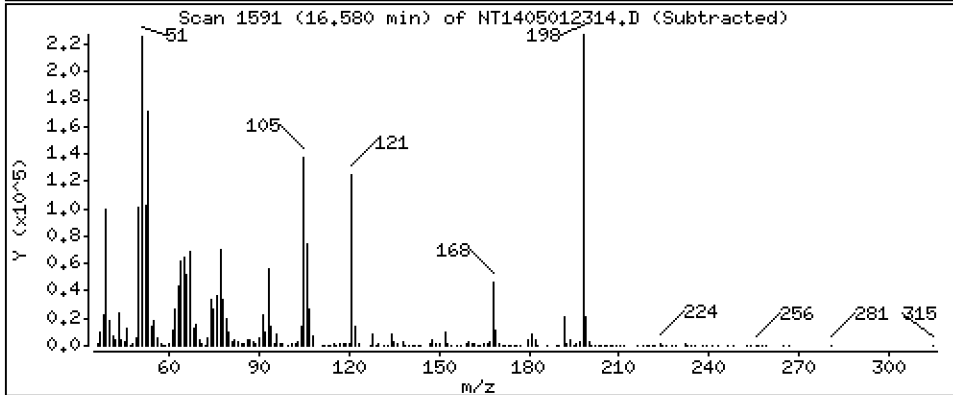
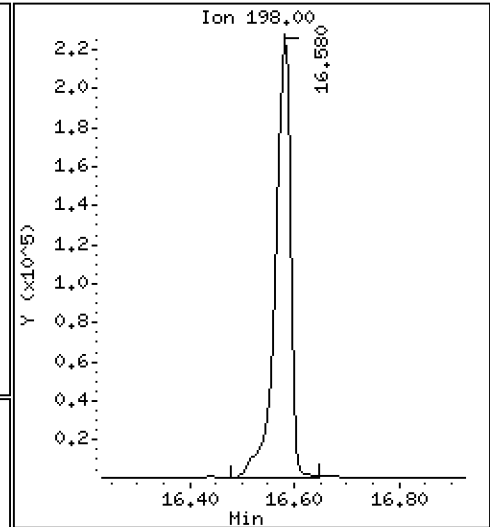
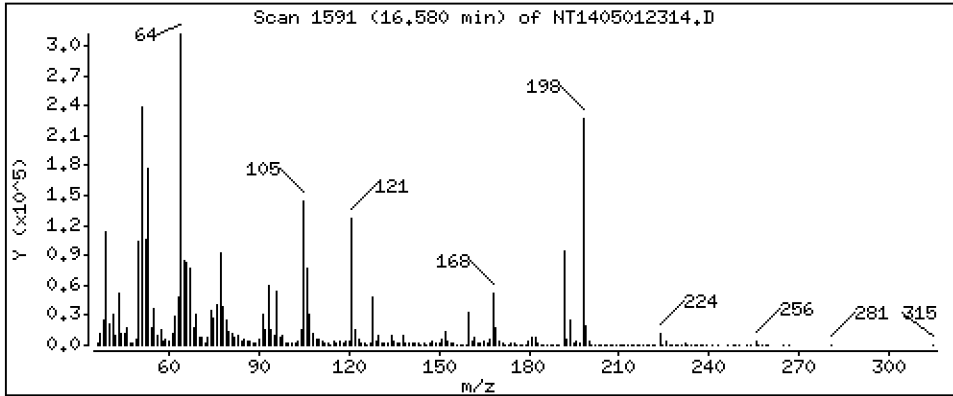
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 16,29 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

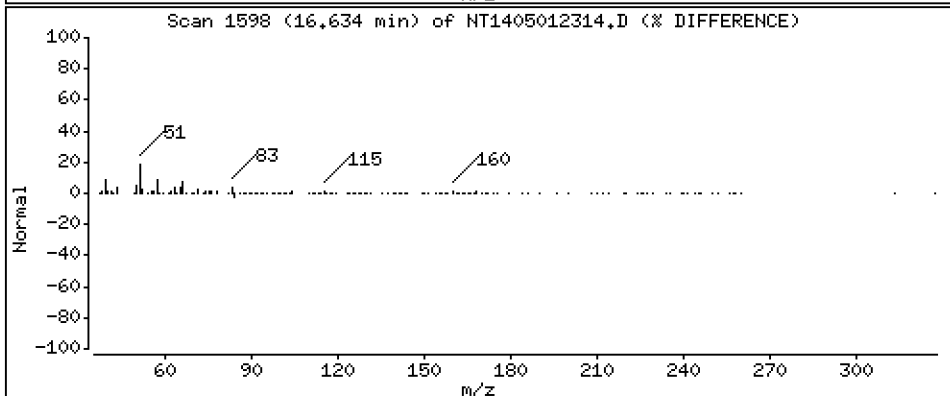
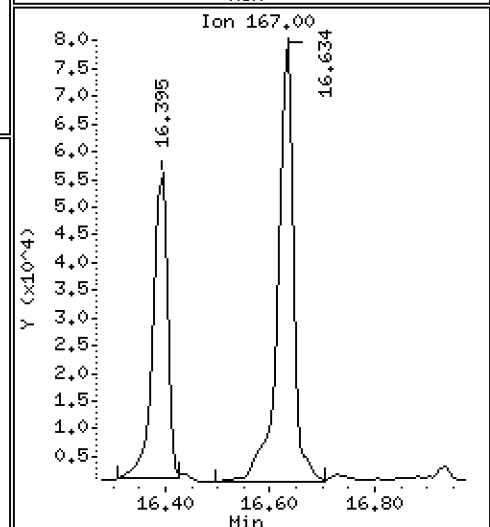
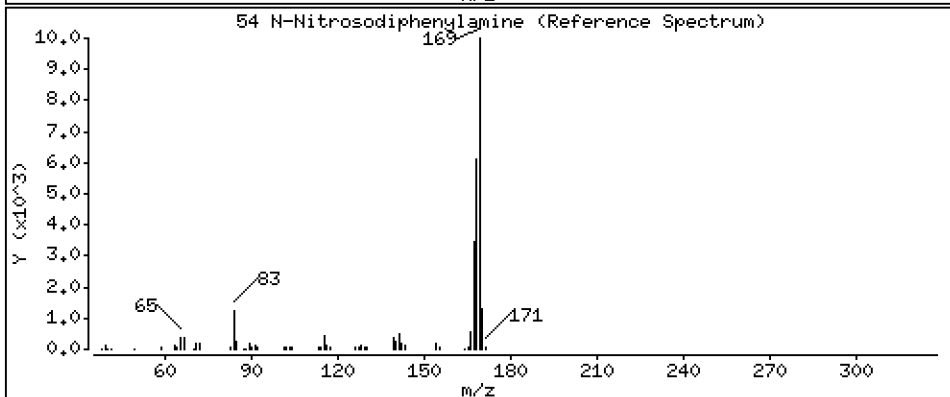
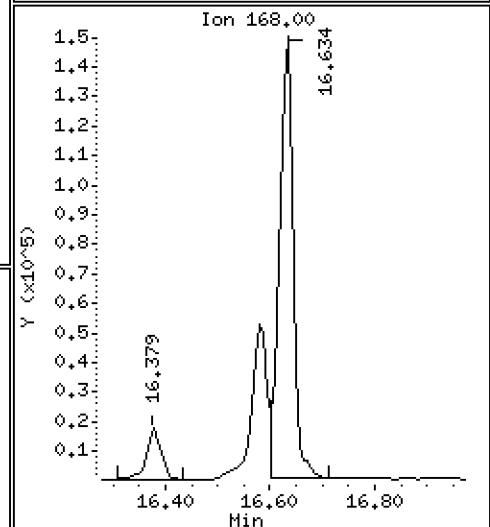
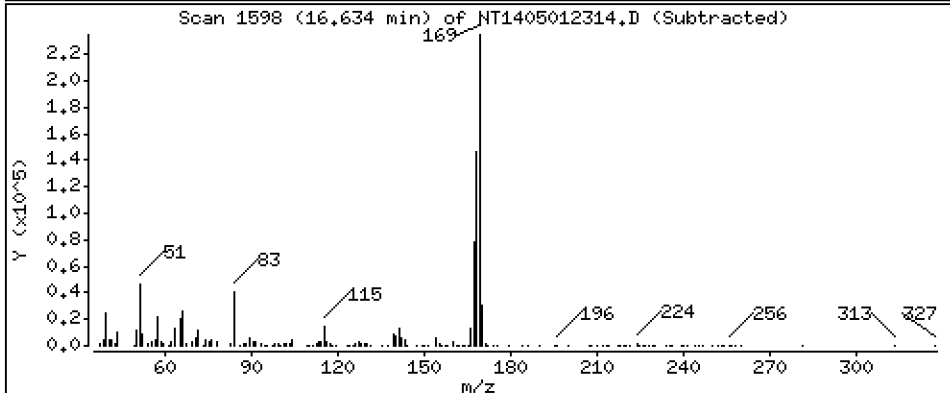
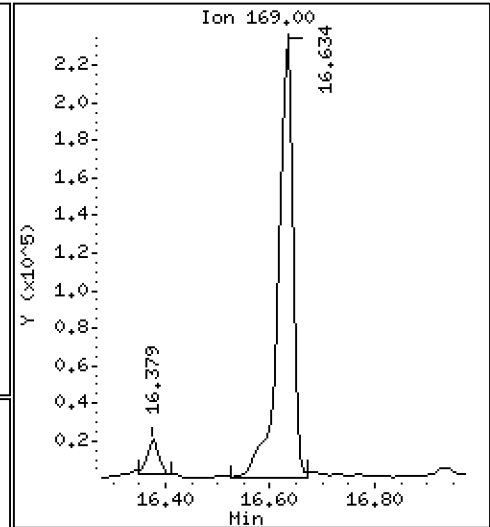
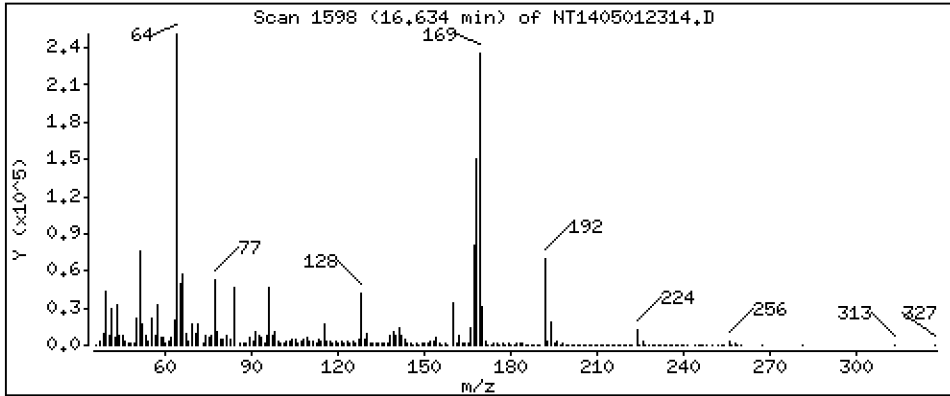
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 3,617 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

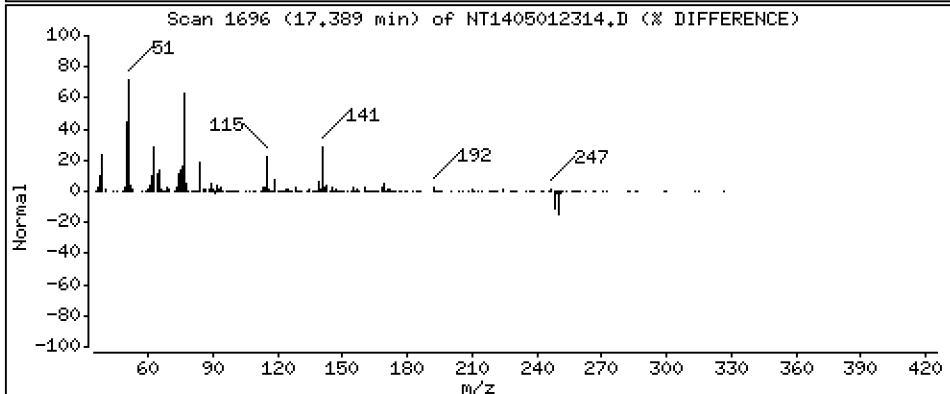
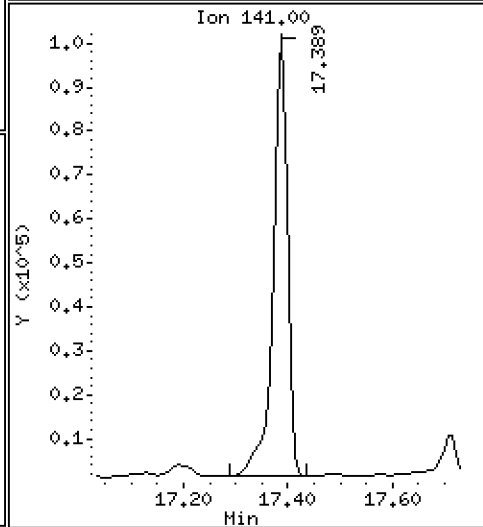
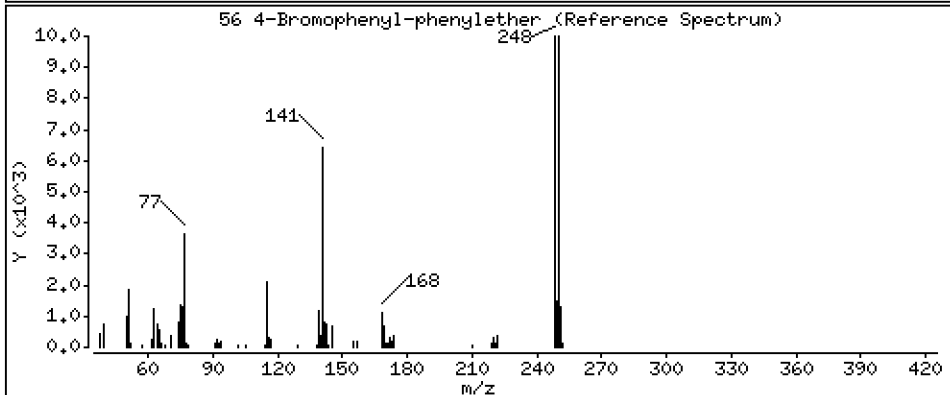
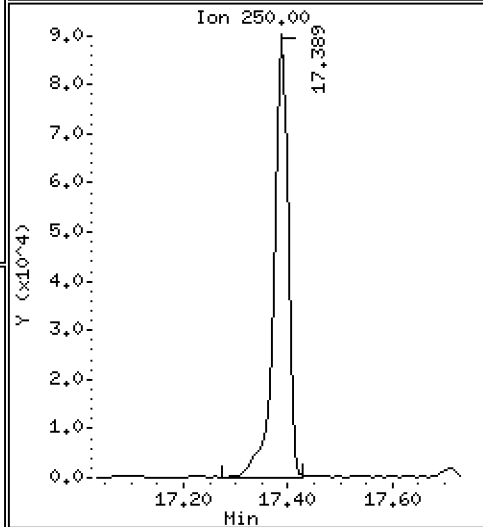
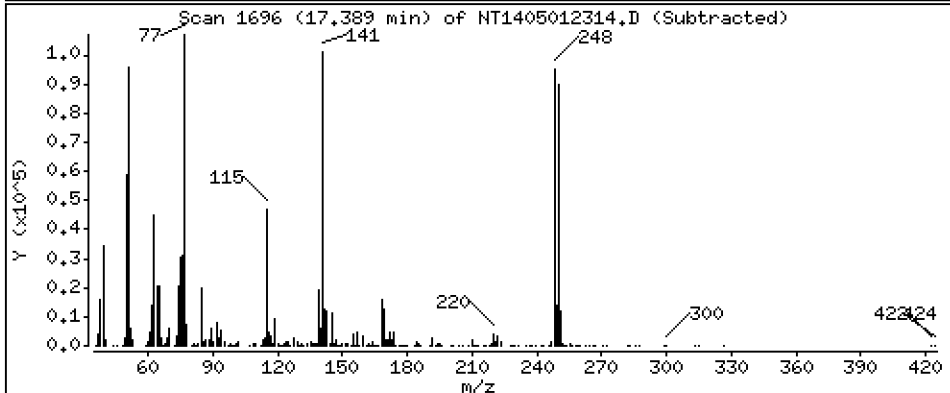
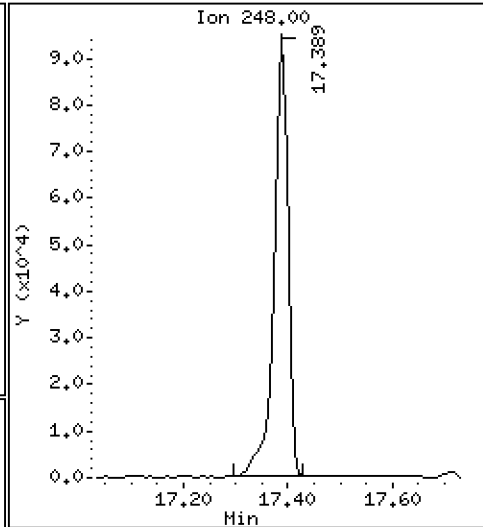
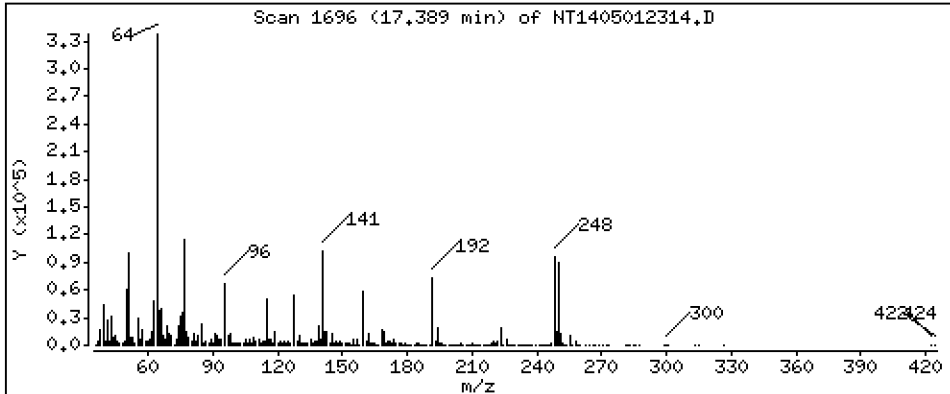
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 4,113 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

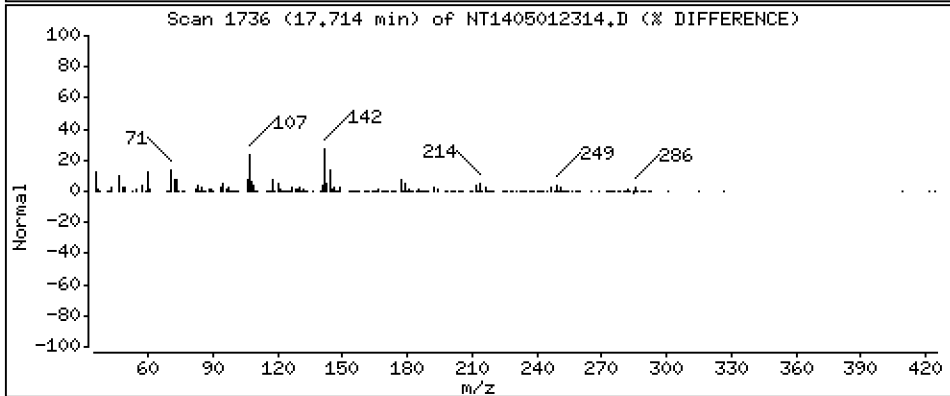
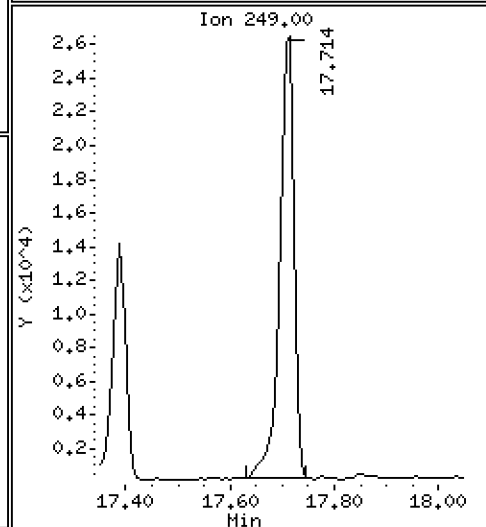
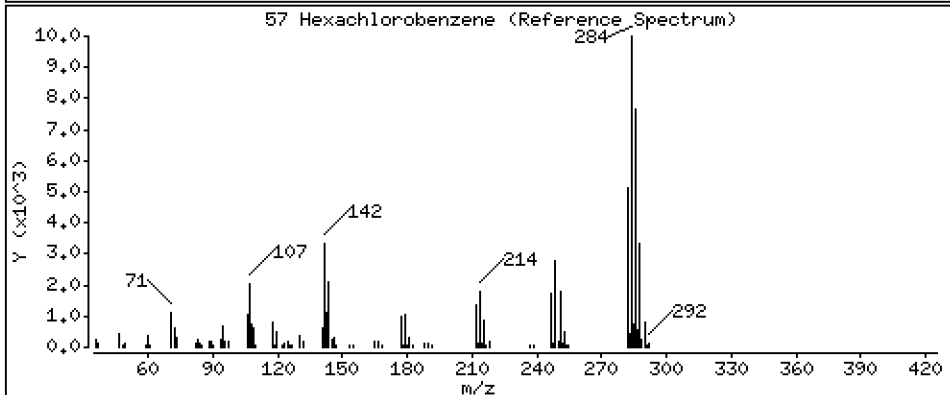
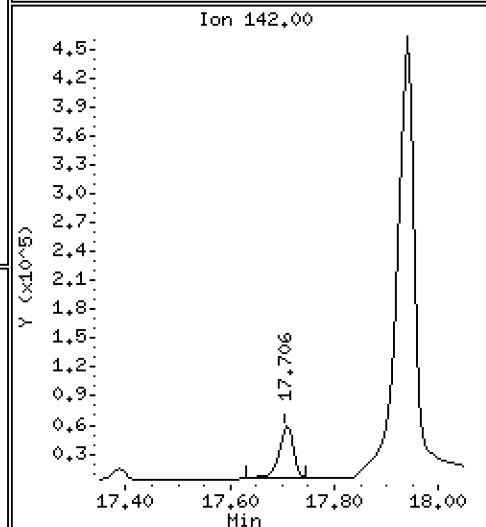
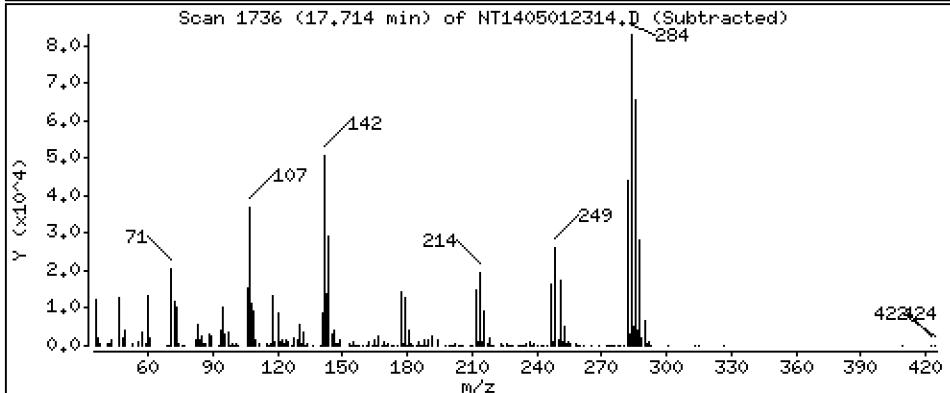
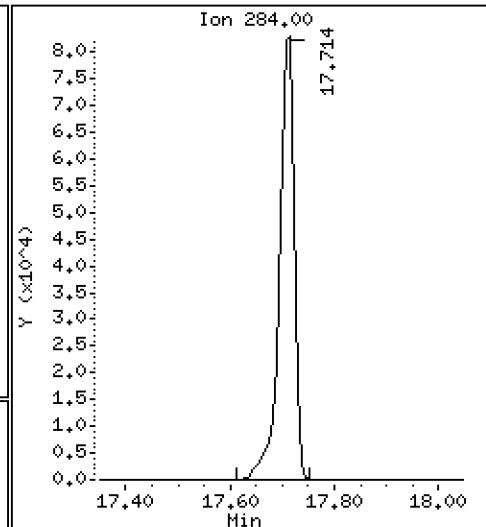
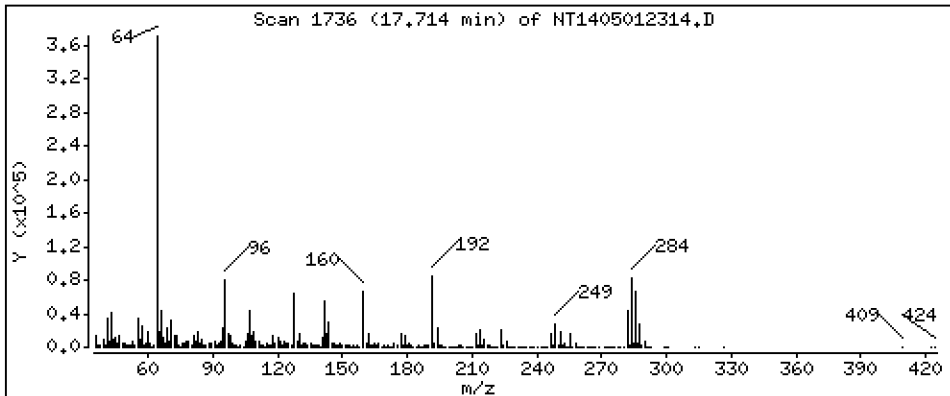
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 3,891 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

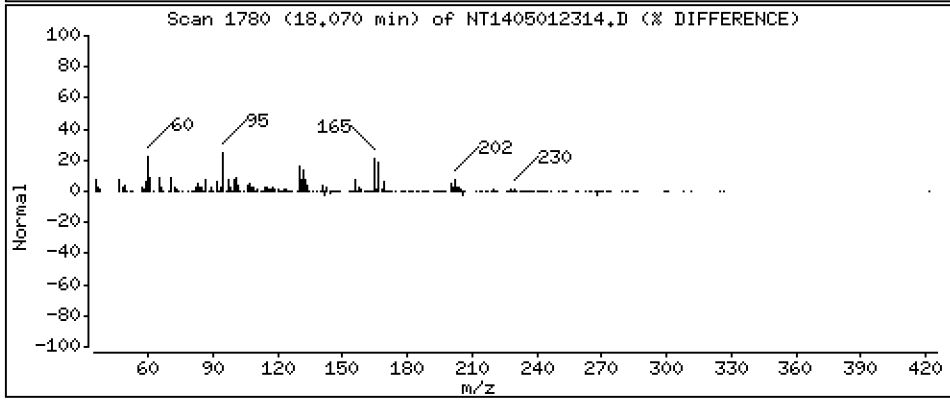
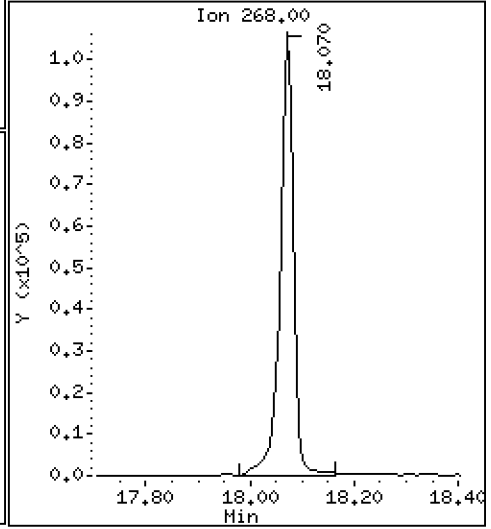
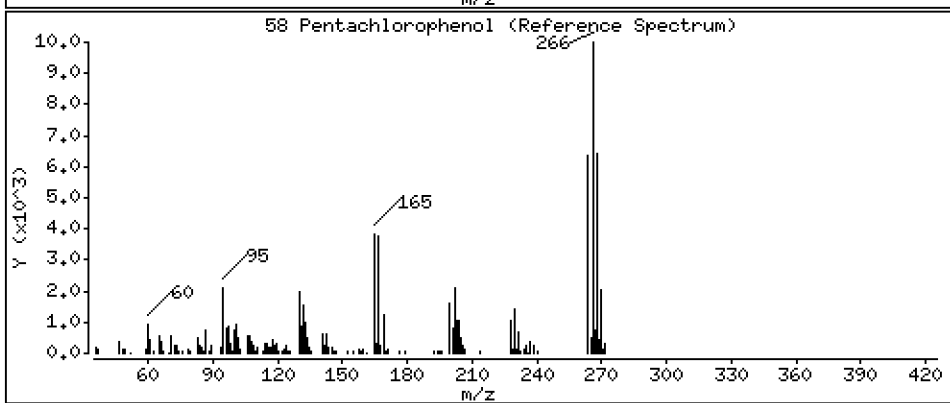
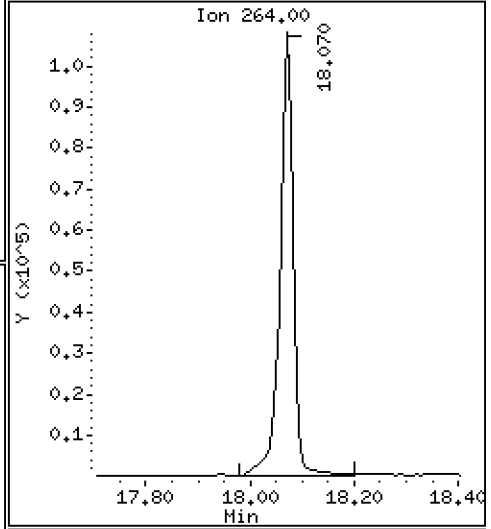
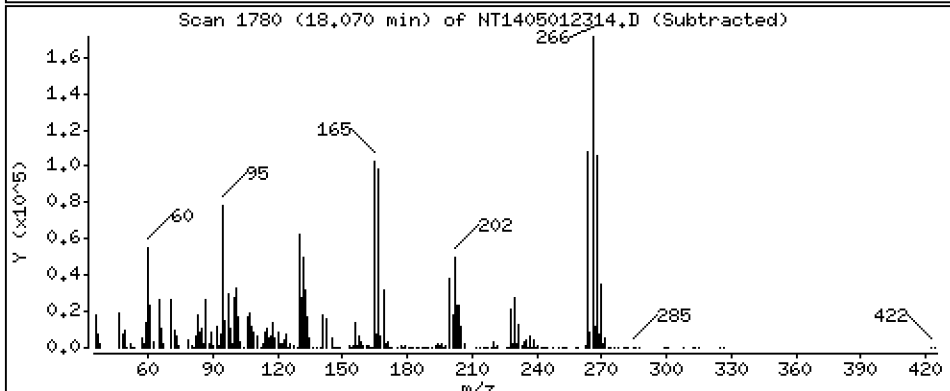
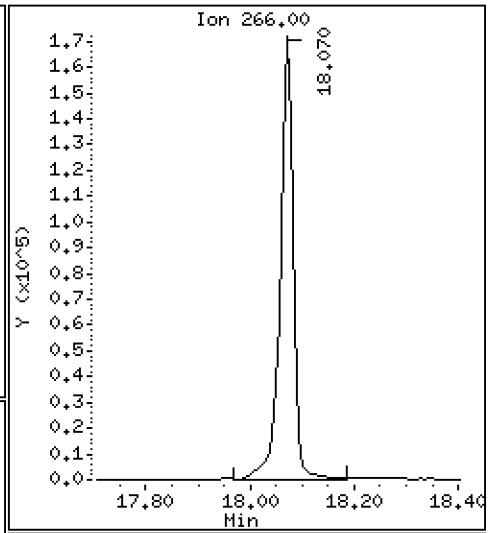
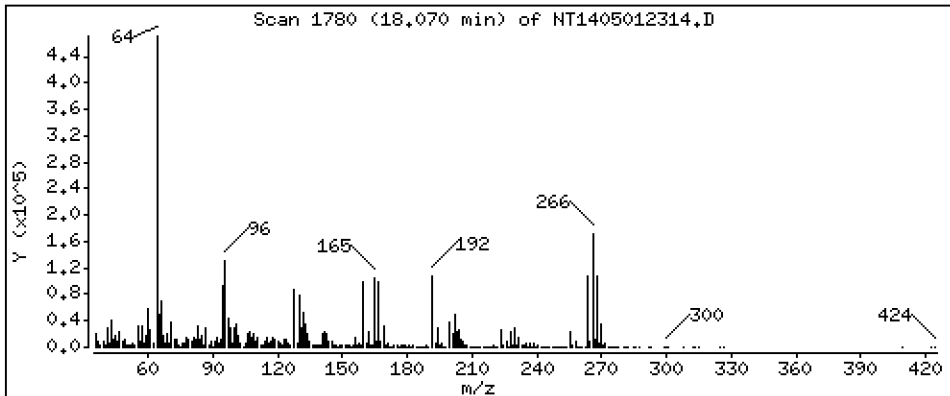
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 11,78 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

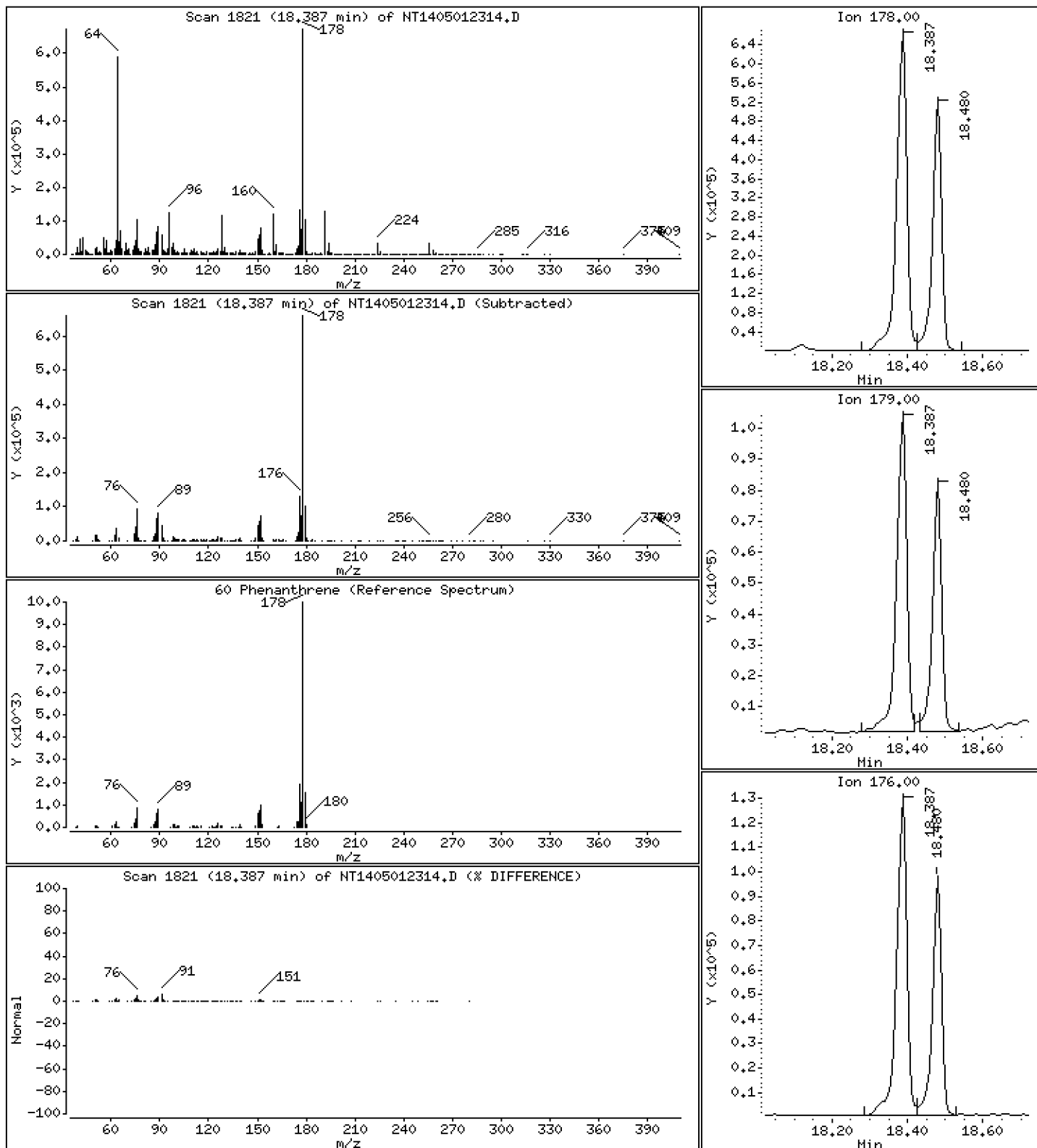
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 5,030 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

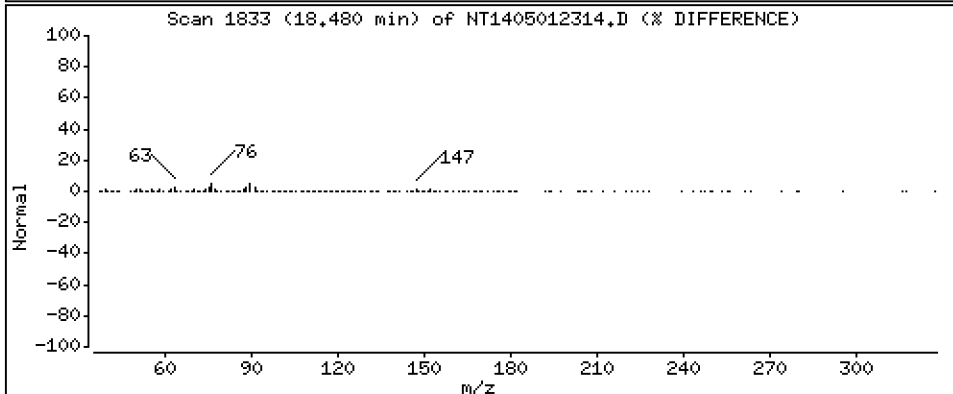
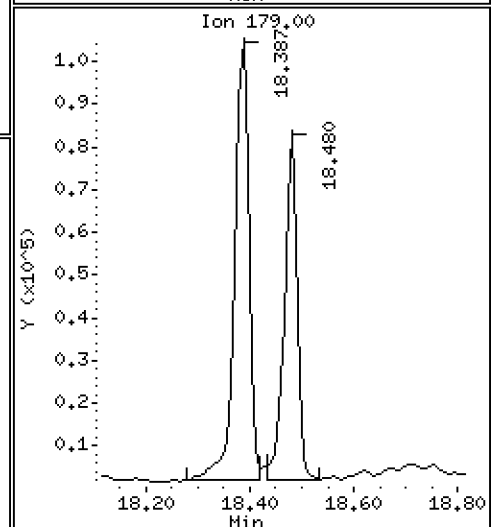
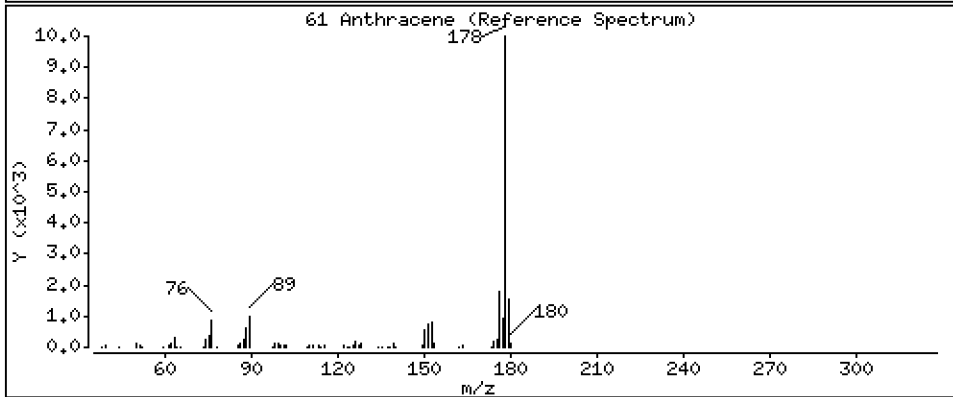
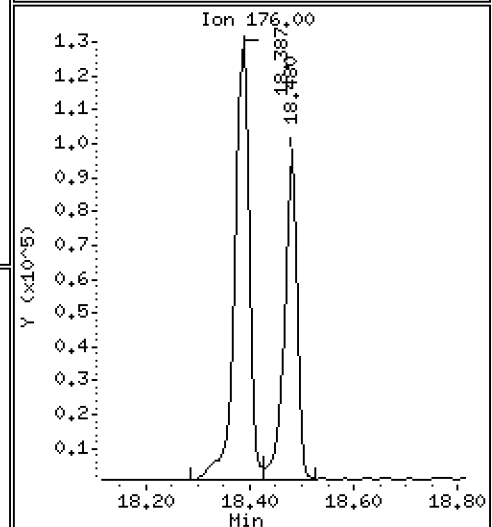
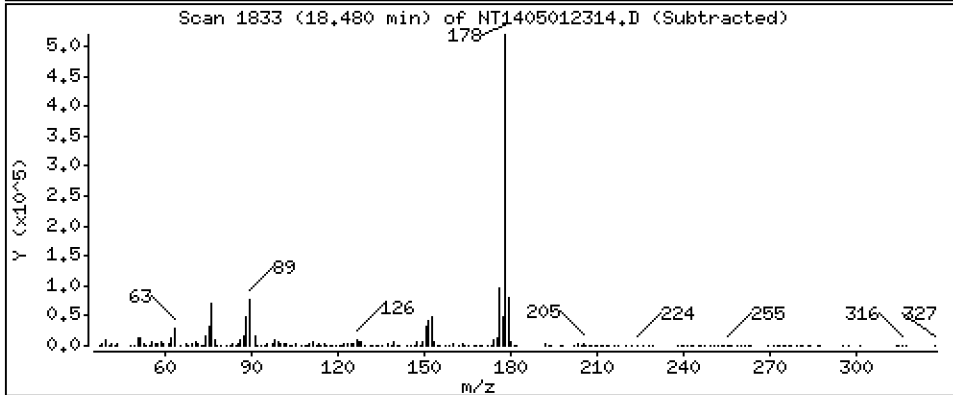
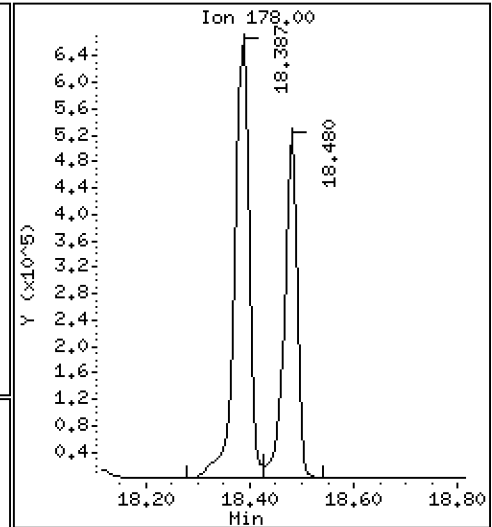
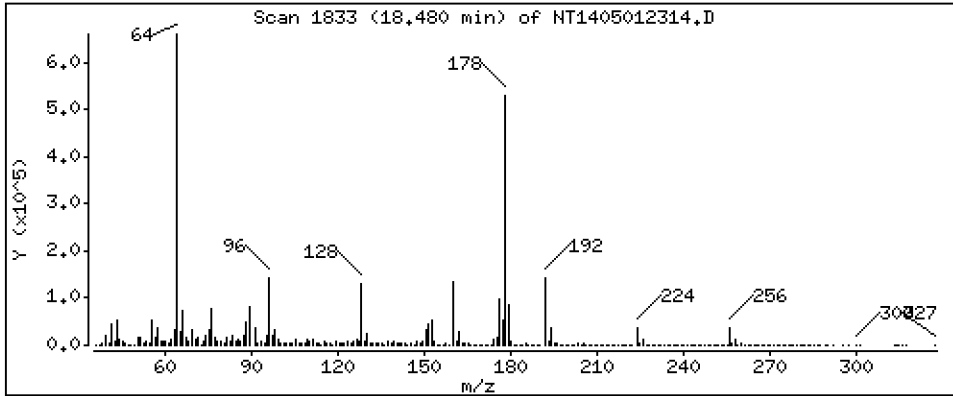
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 3,826 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

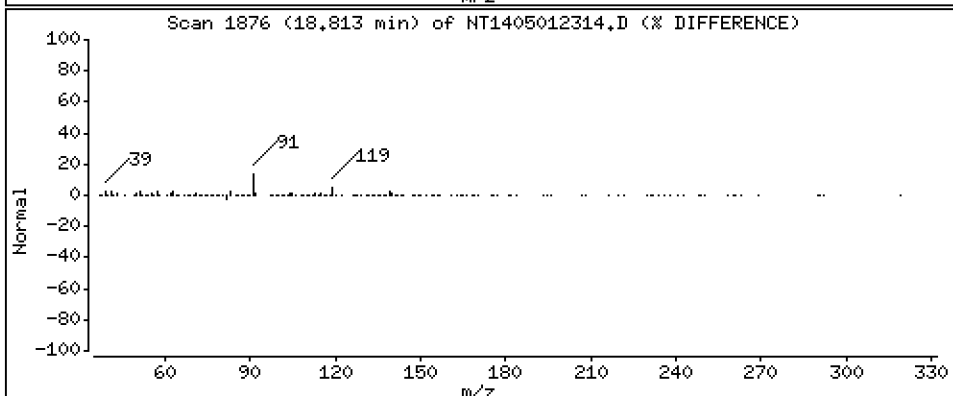
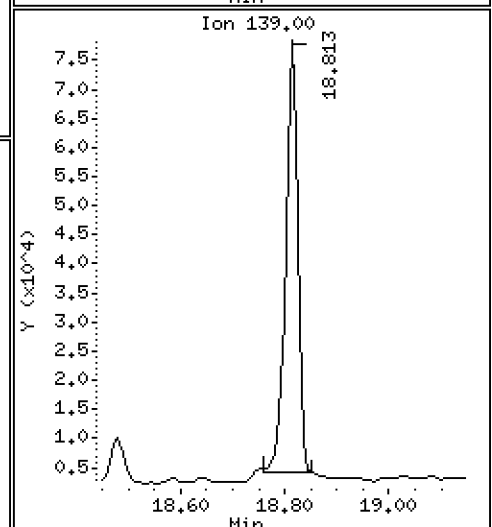
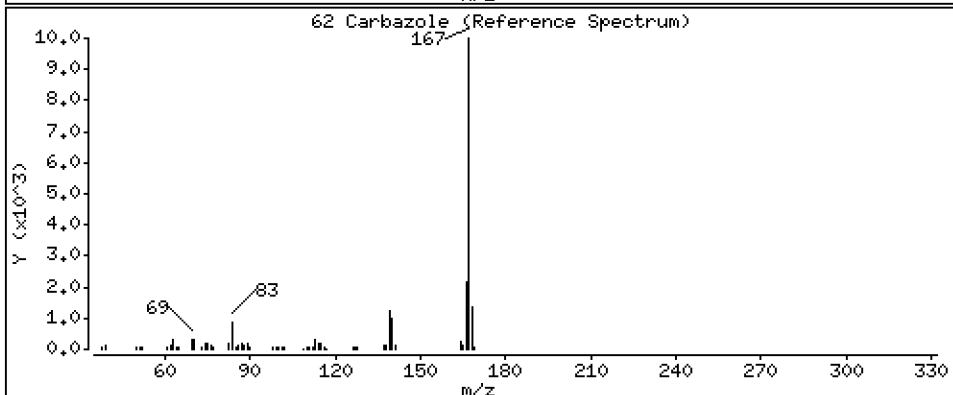
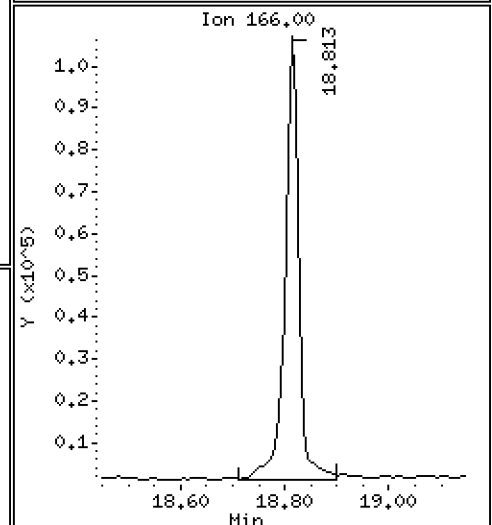
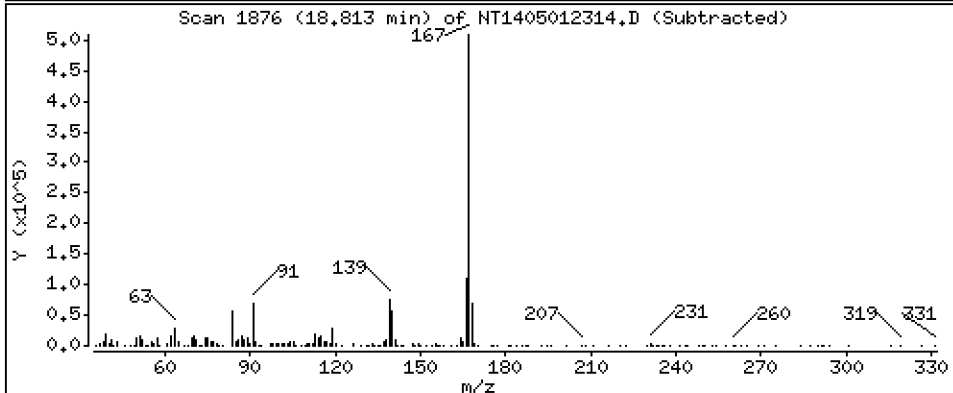
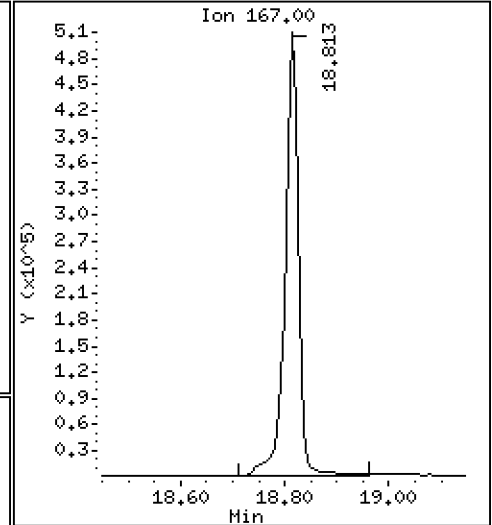
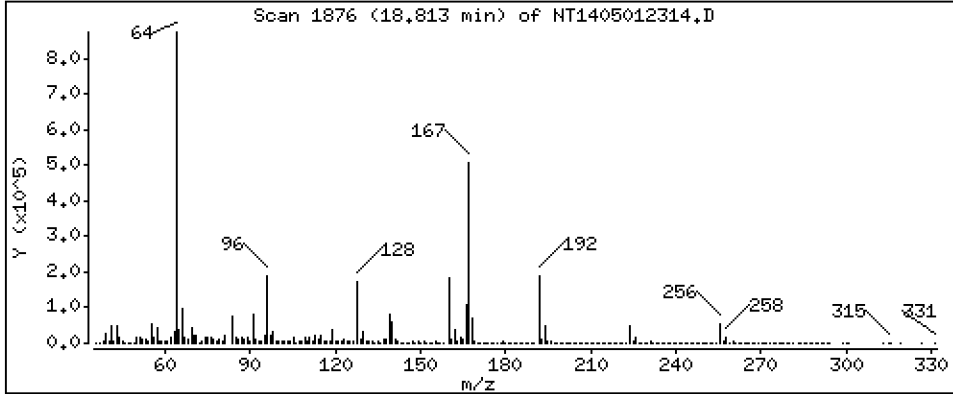
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 4,241 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

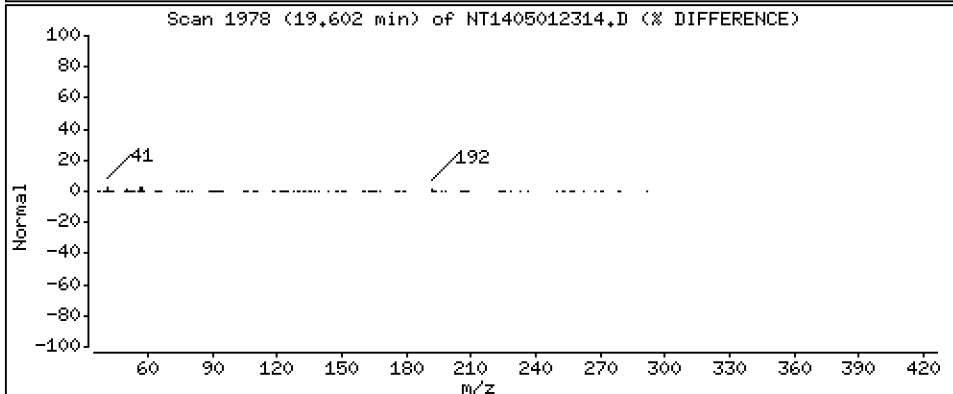
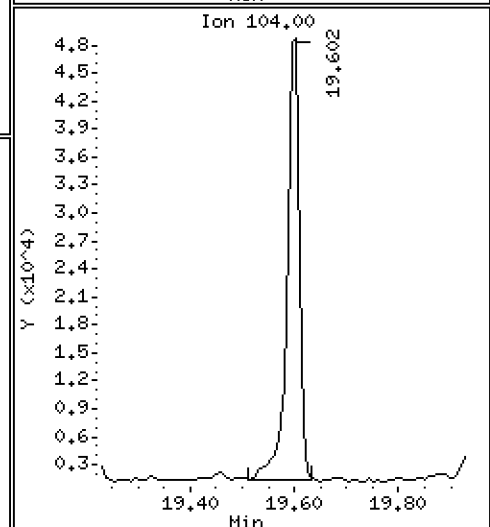
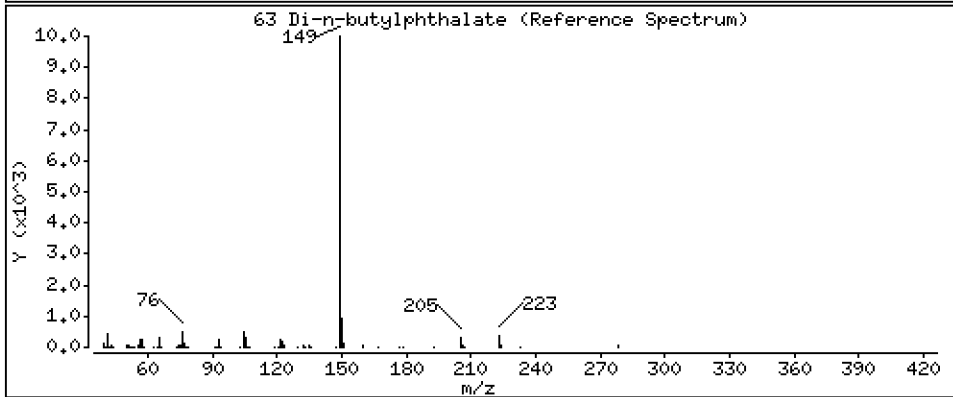
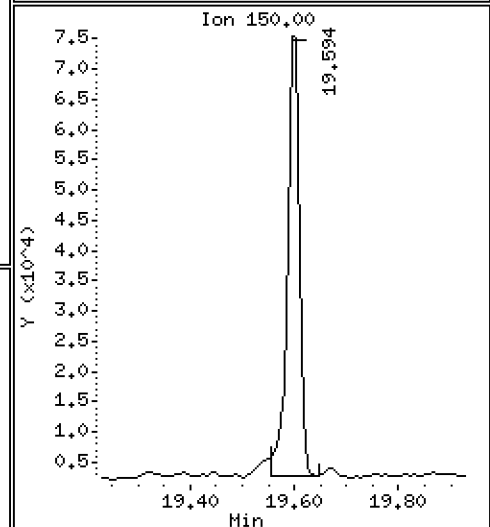
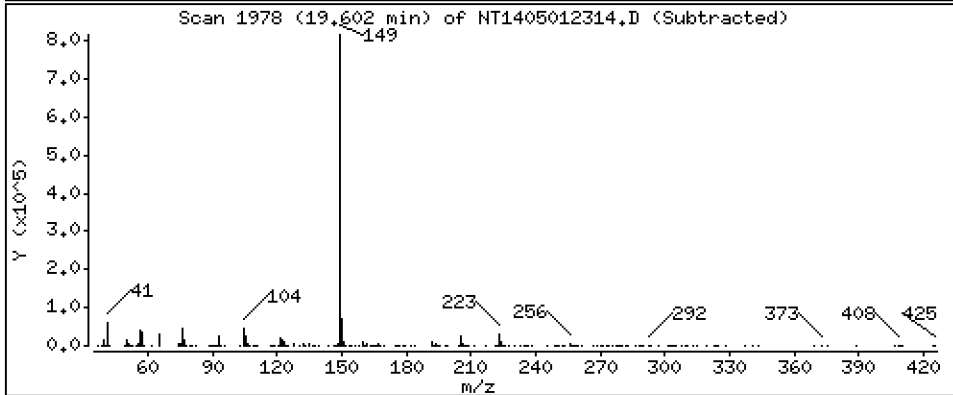
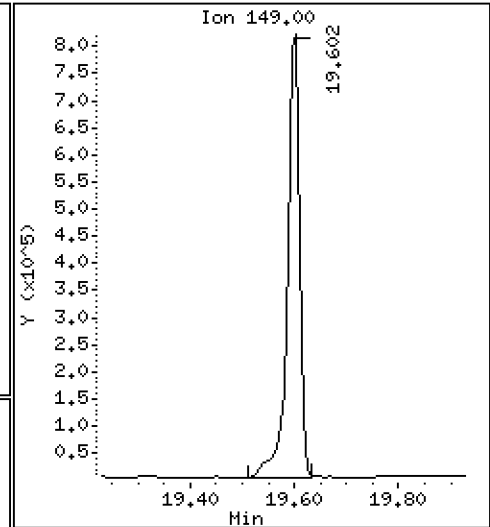
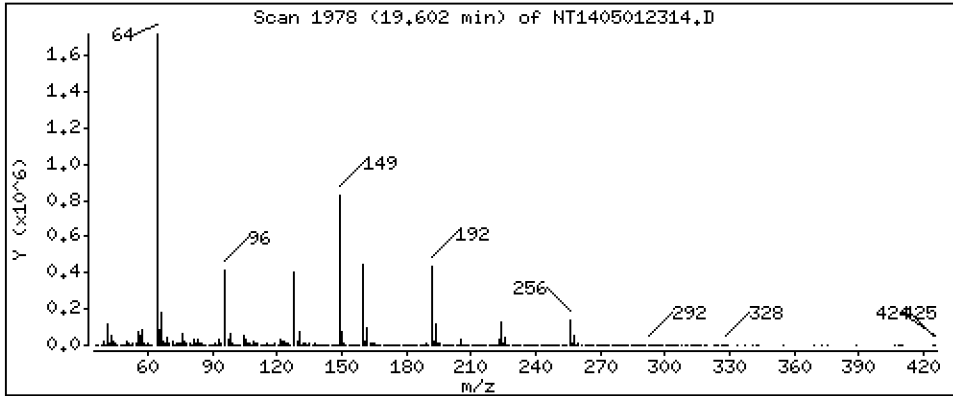
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 4,137 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

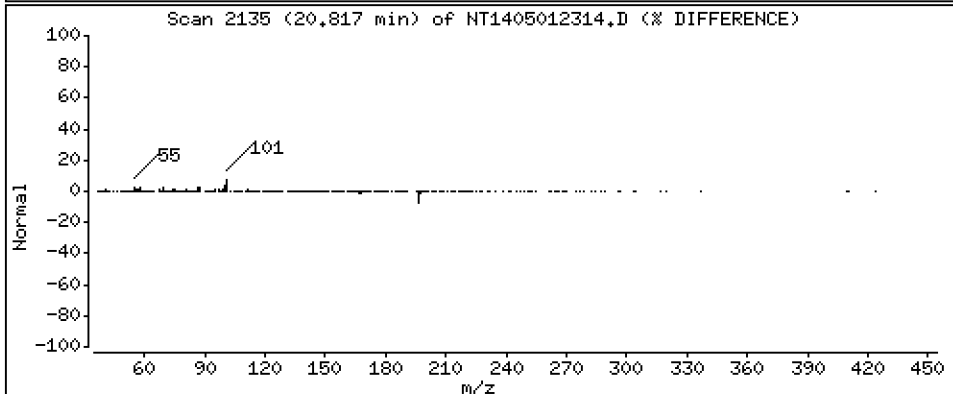
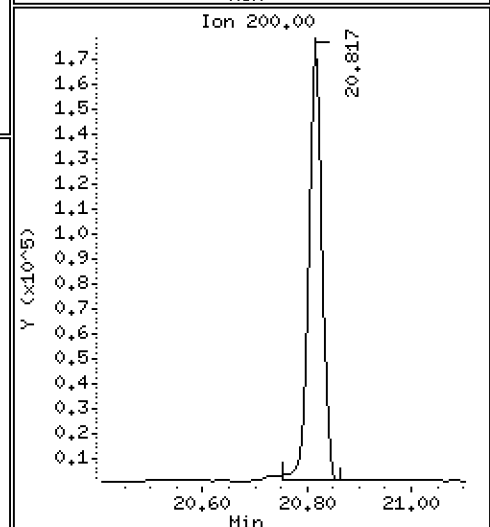
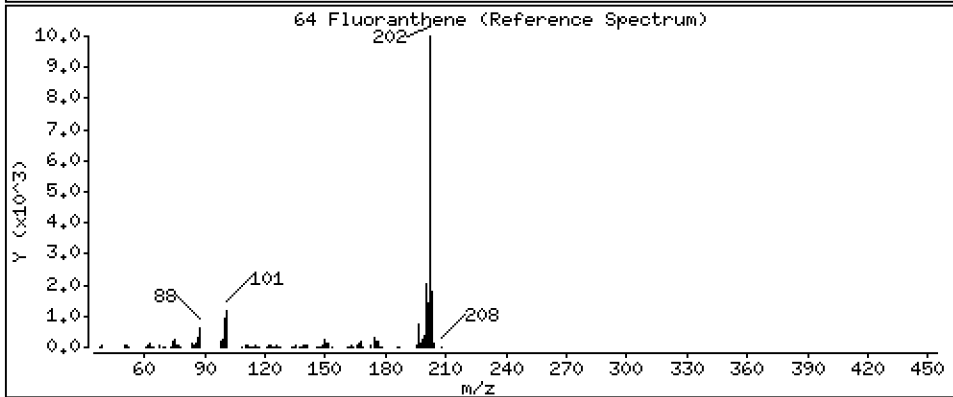
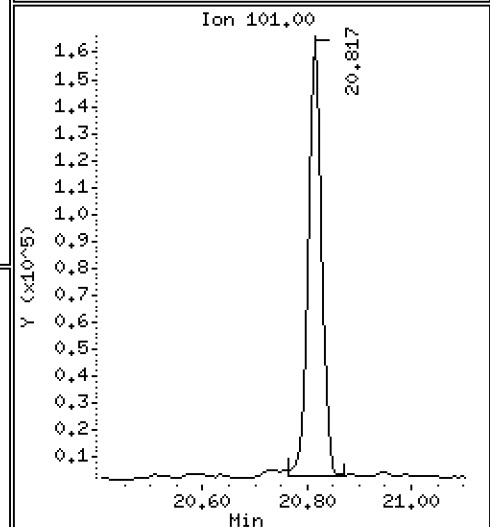
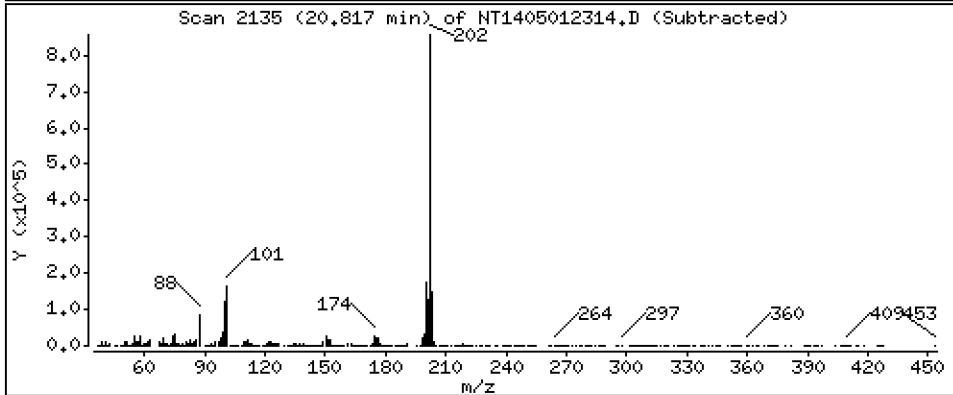
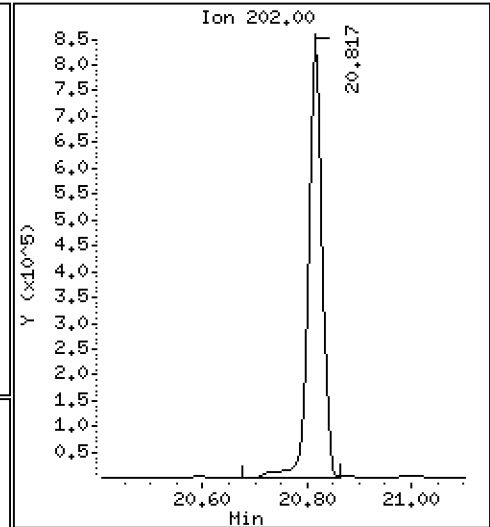
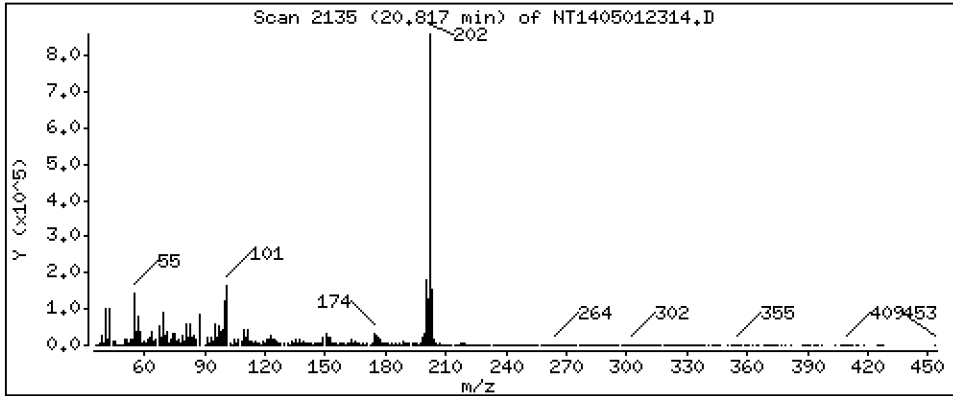
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 5,678 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

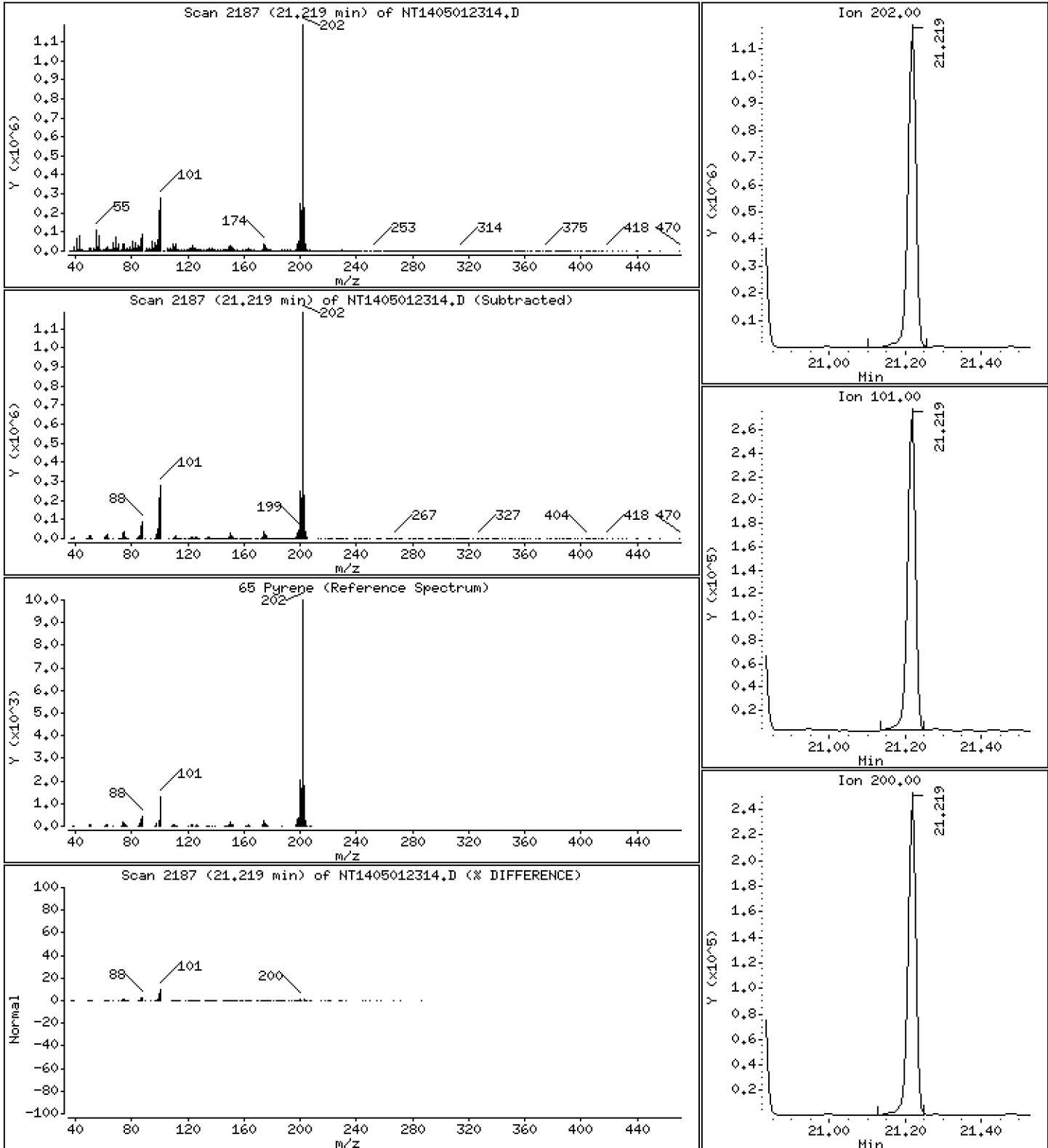
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 6,429 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

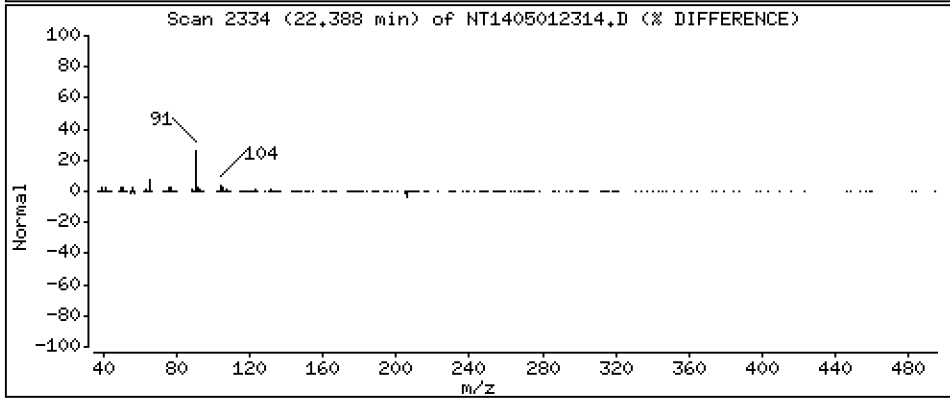
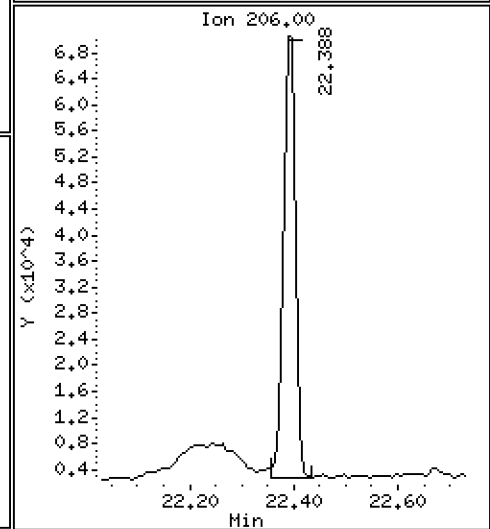
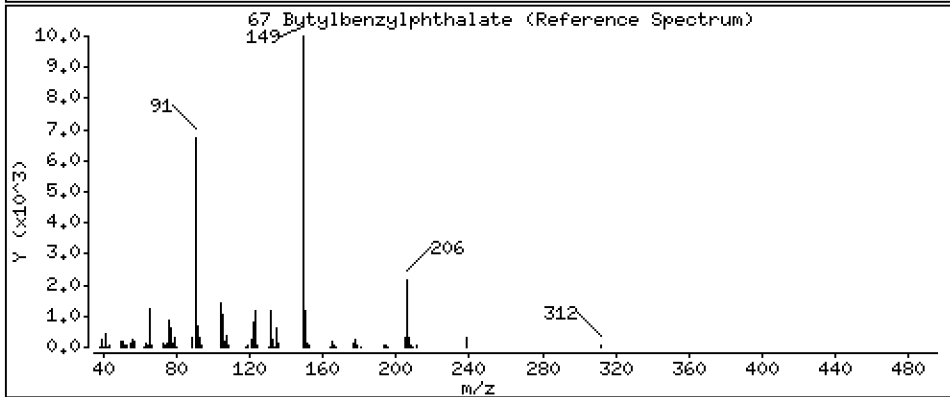
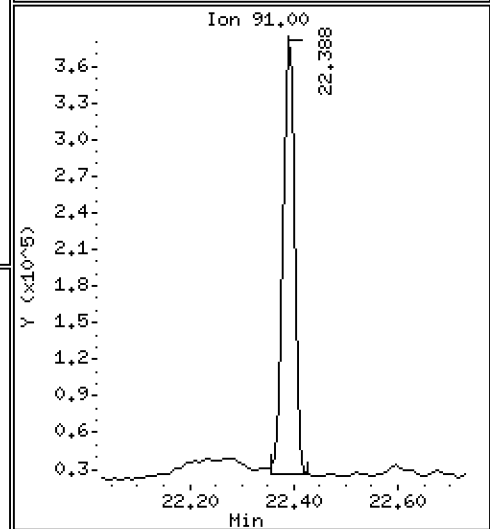
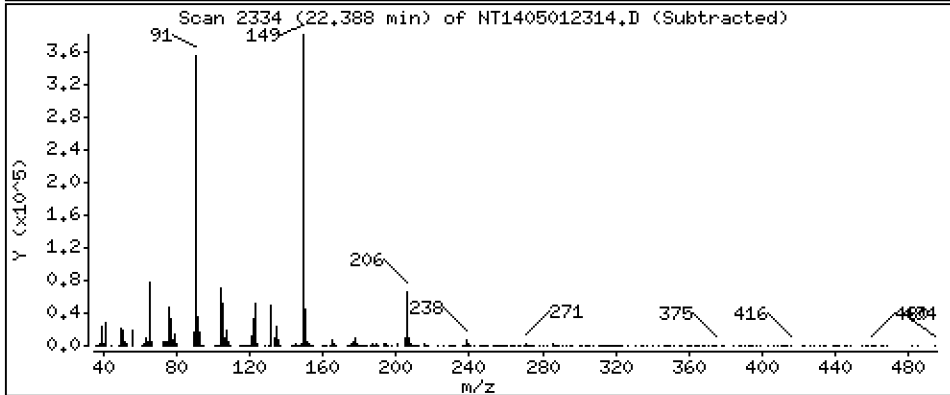
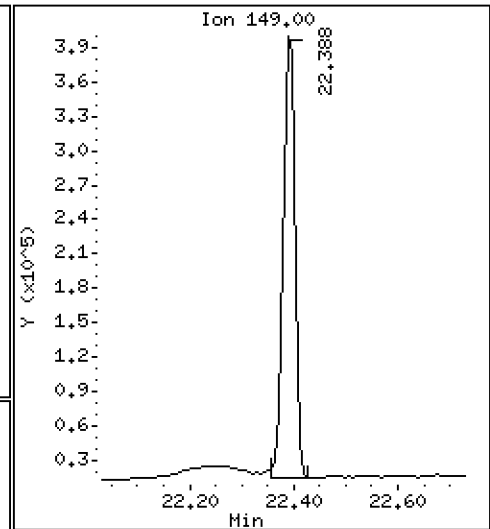
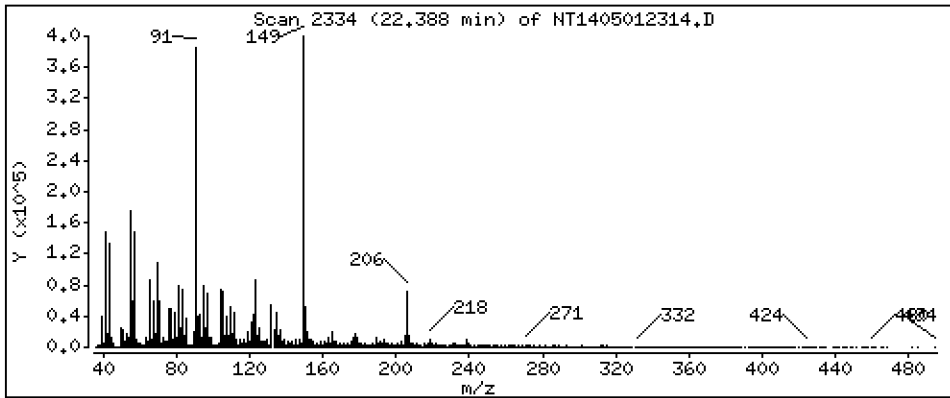
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 3,390 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

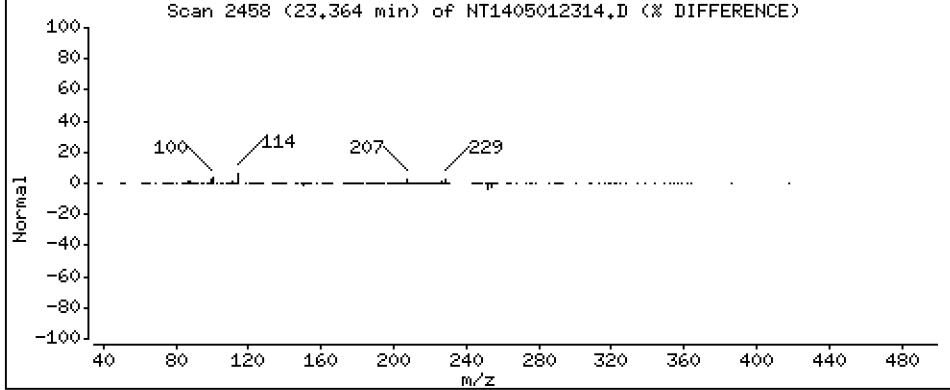
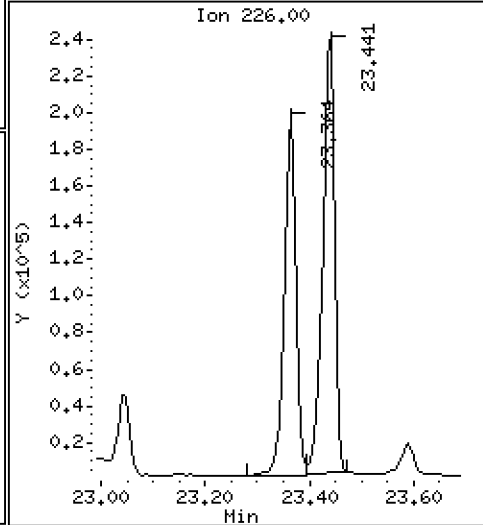
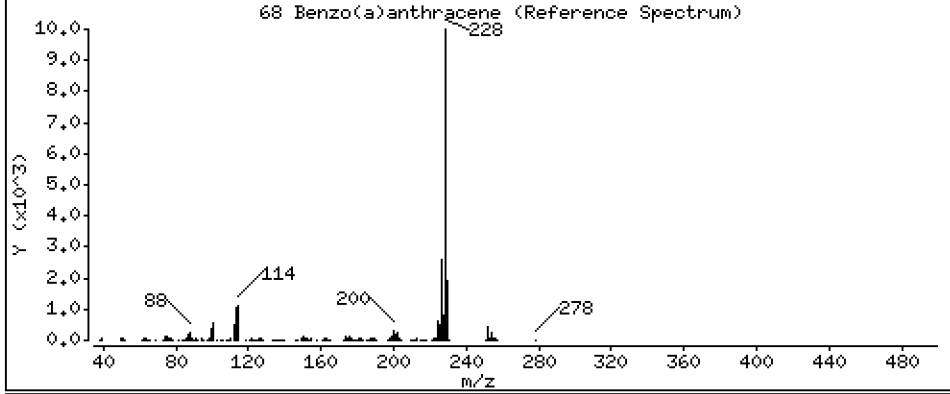
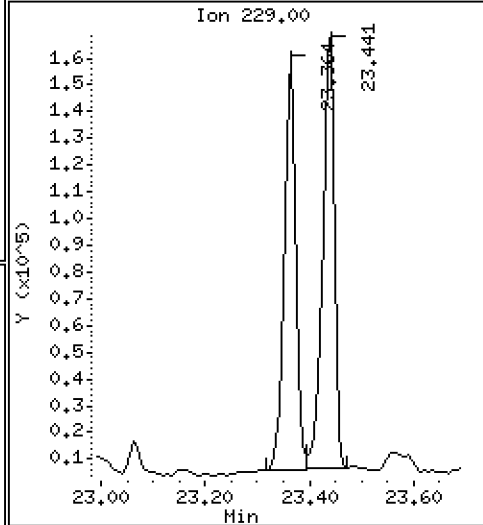
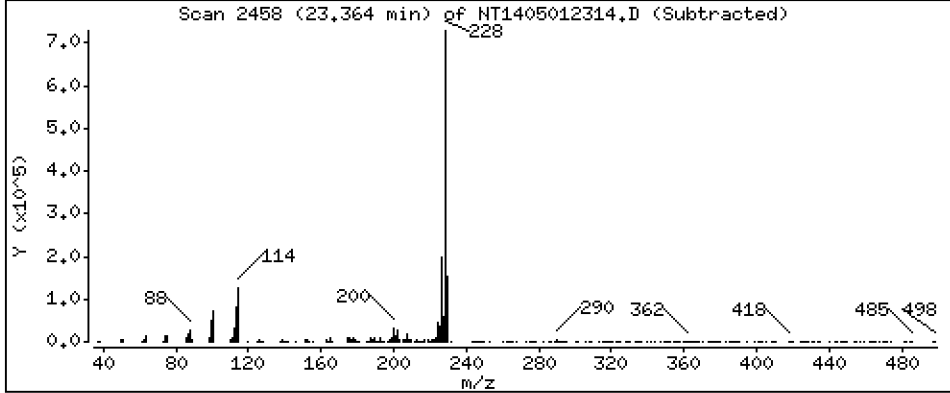
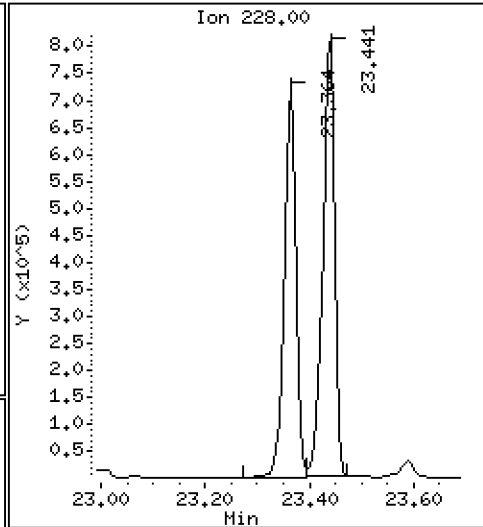
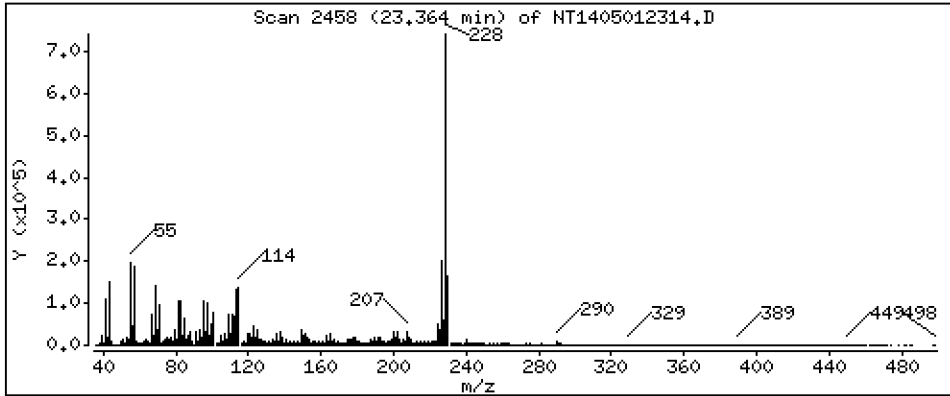
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 5,509 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

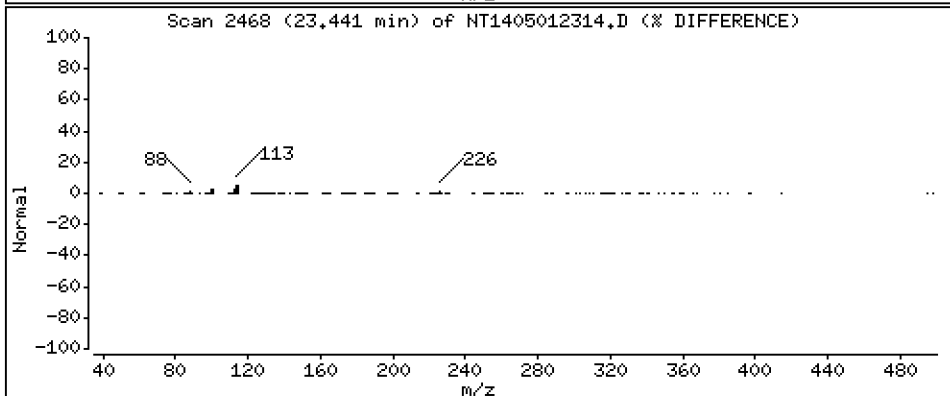
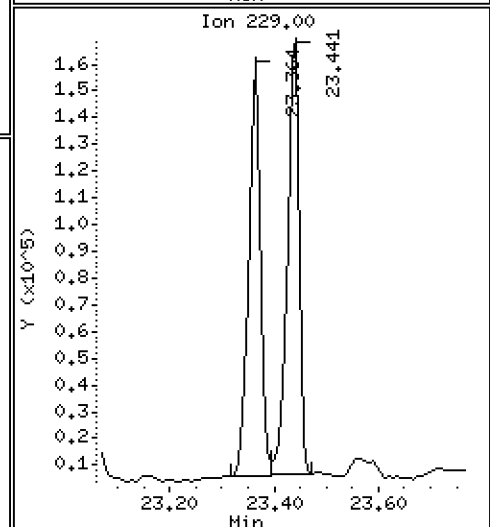
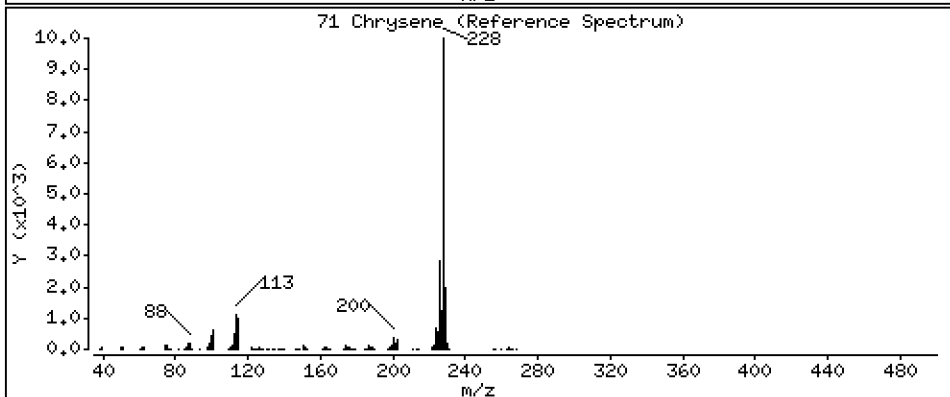
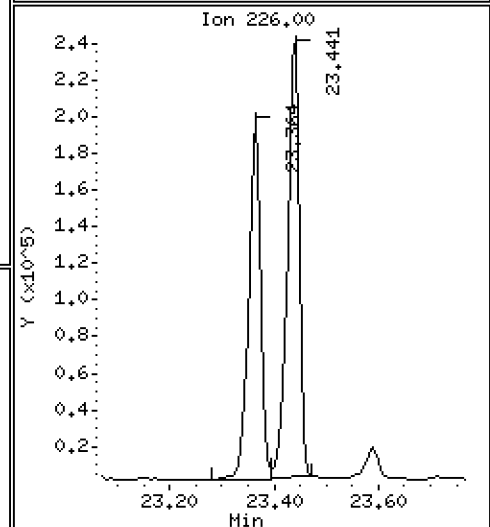
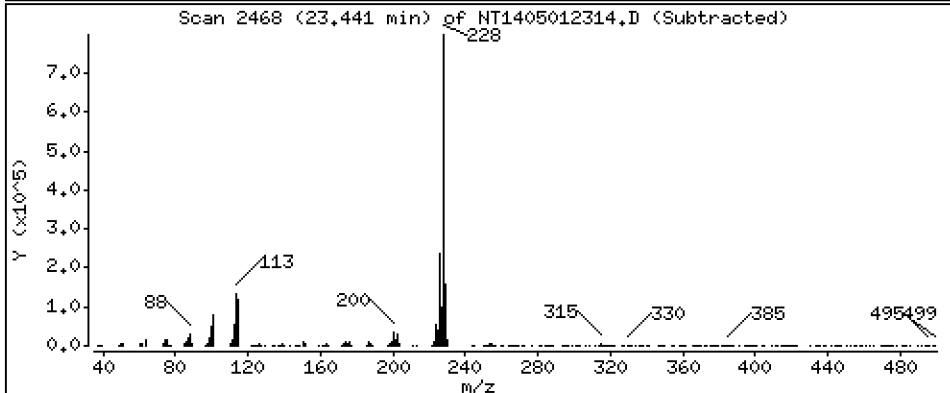
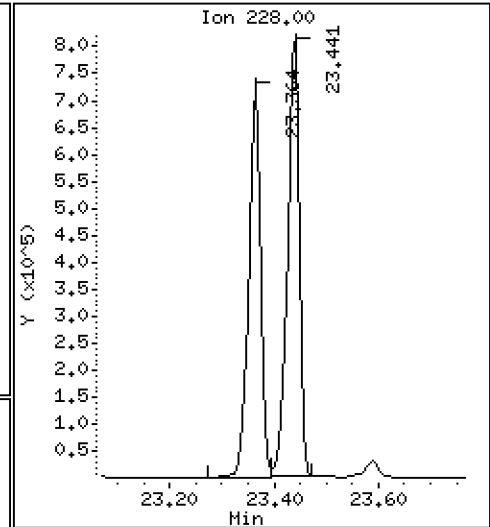
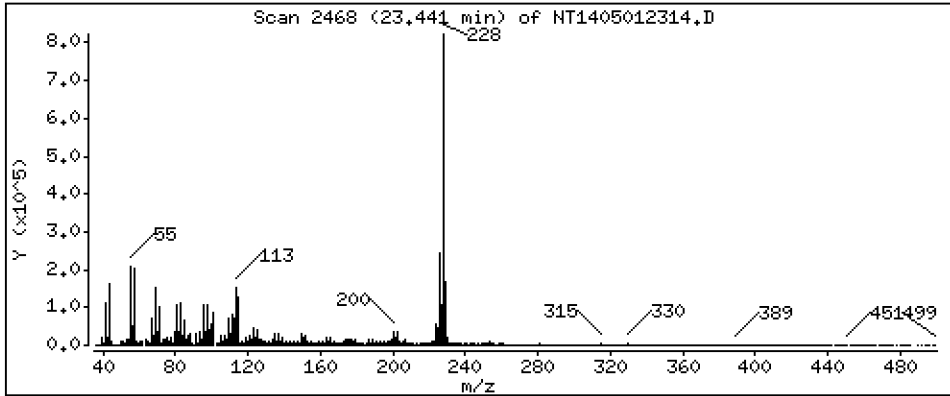
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 6,486 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

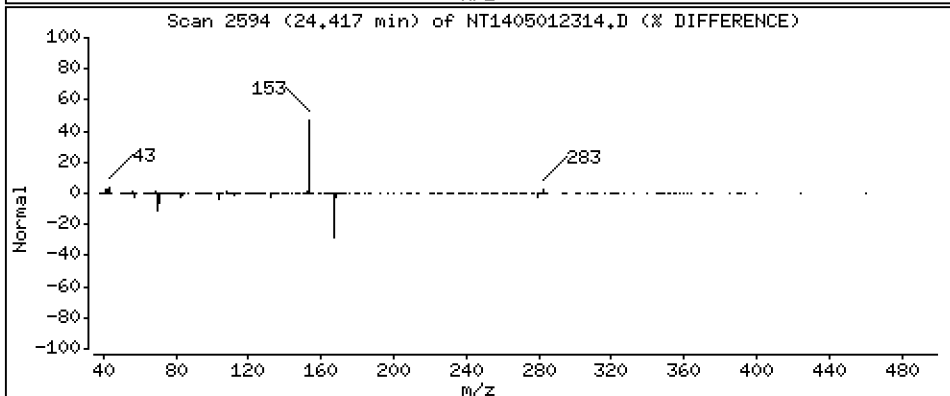
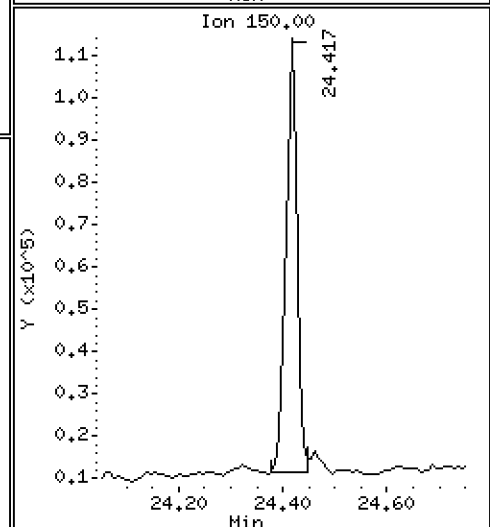
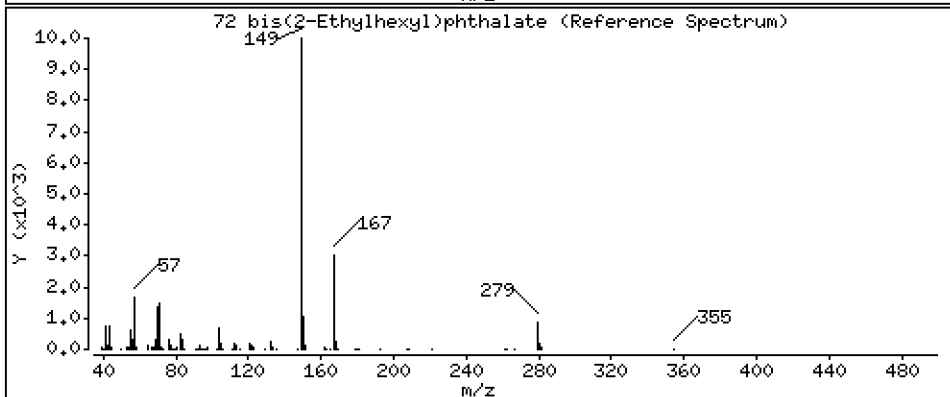
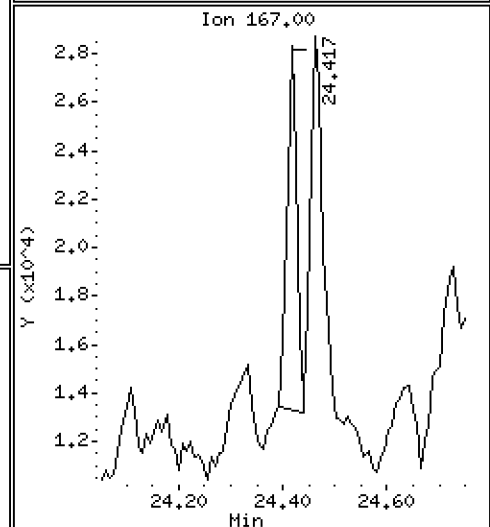
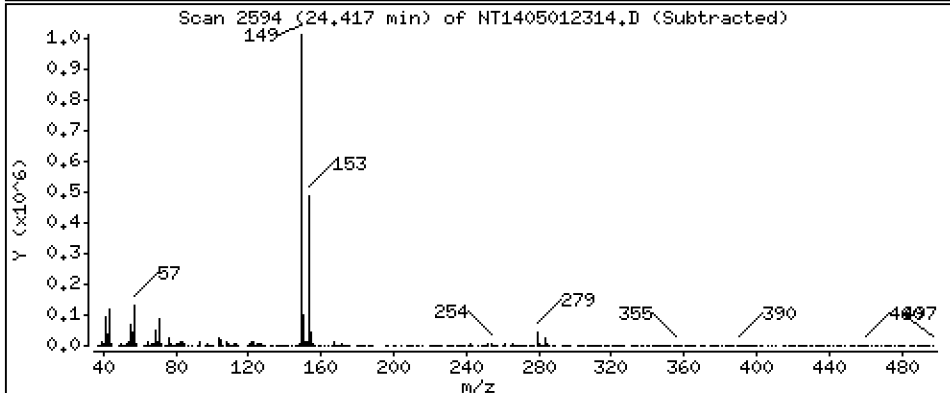
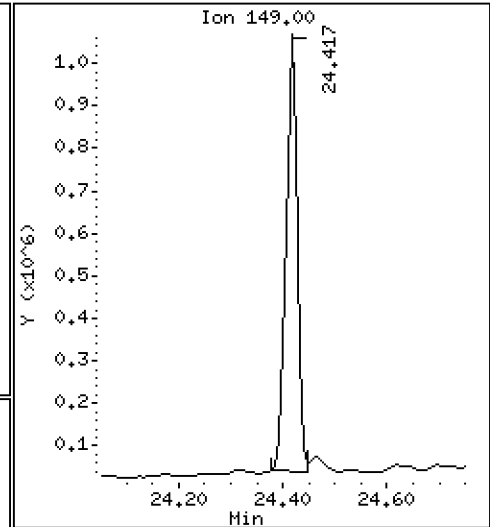
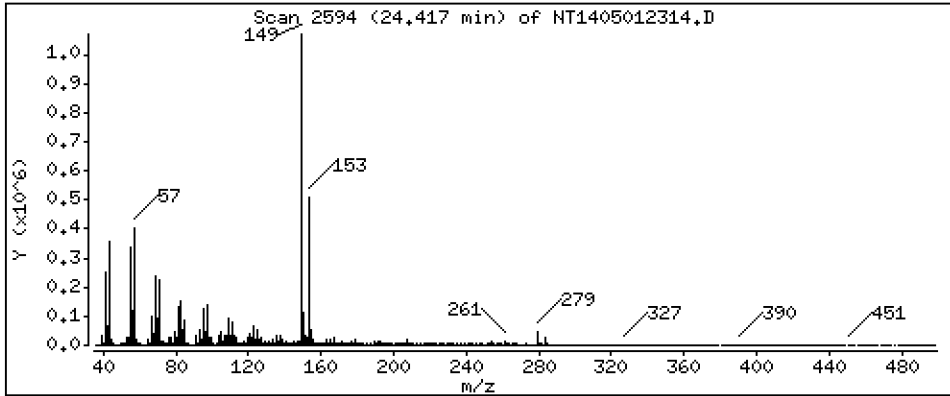
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,077 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

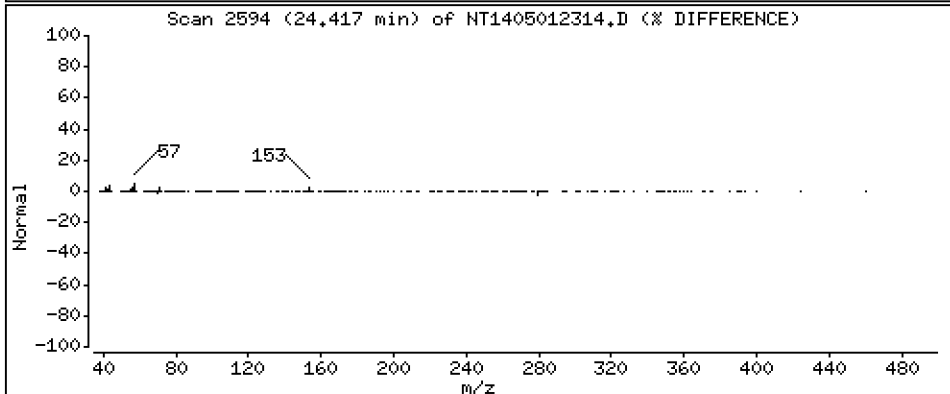
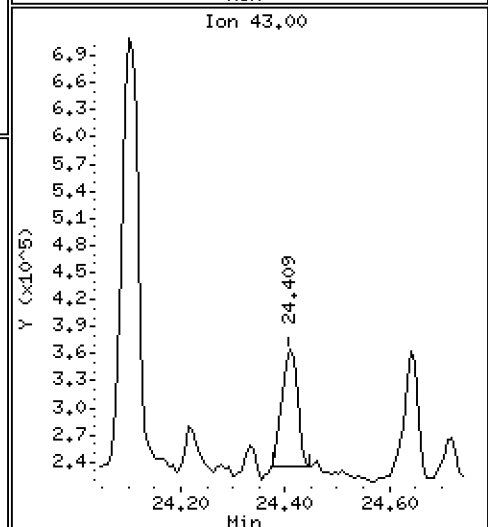
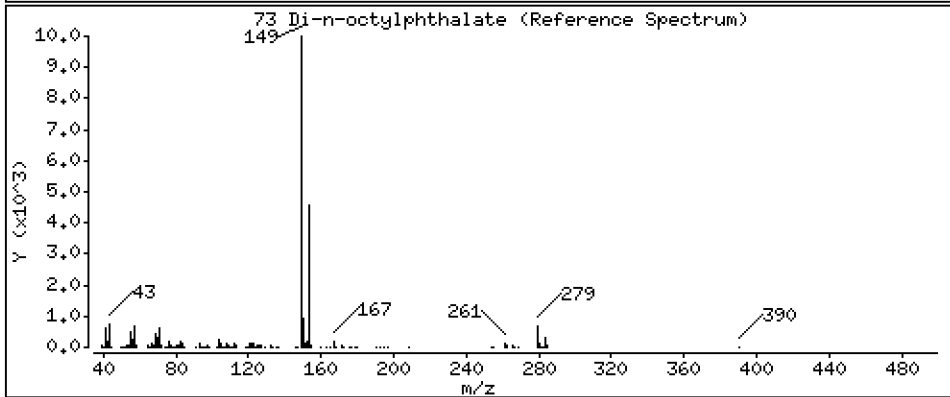
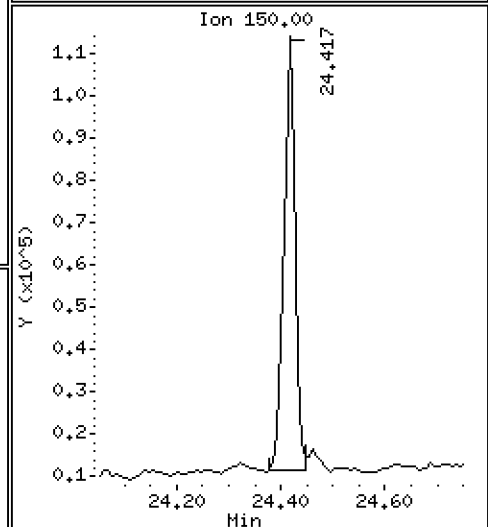
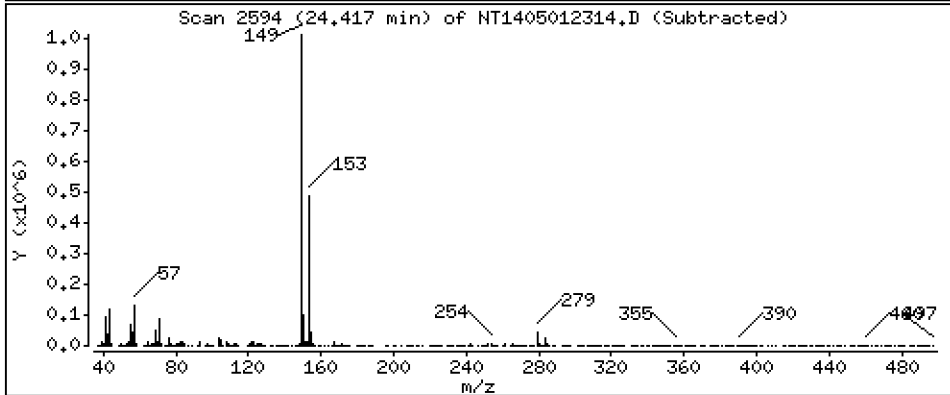
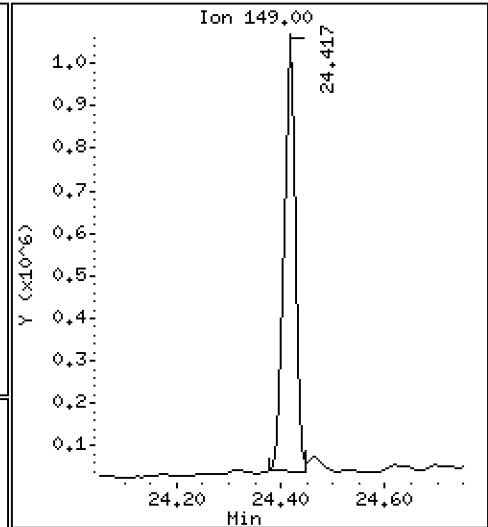
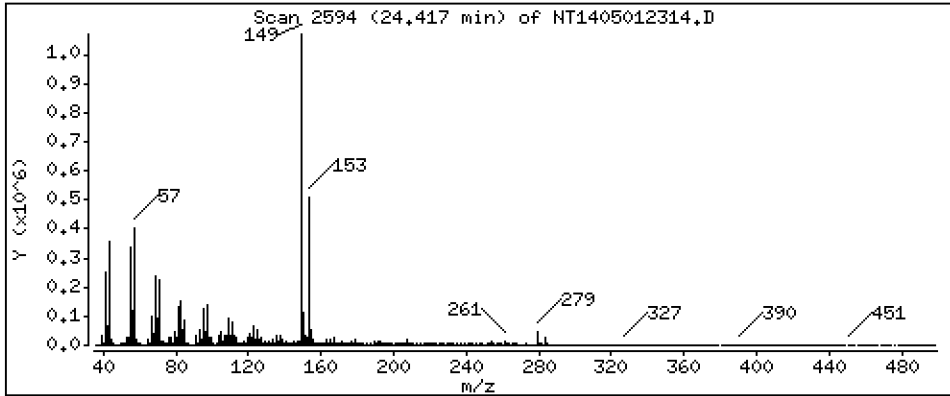
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,077 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

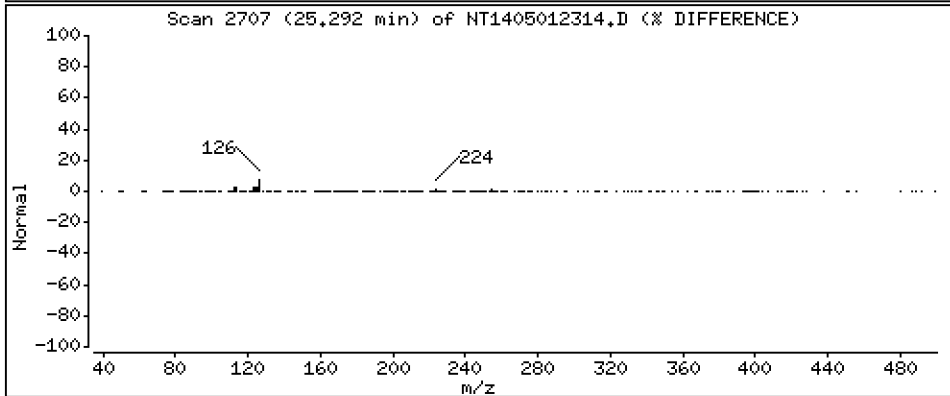
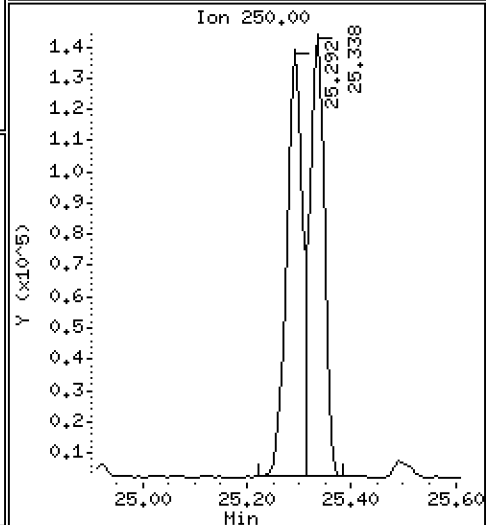
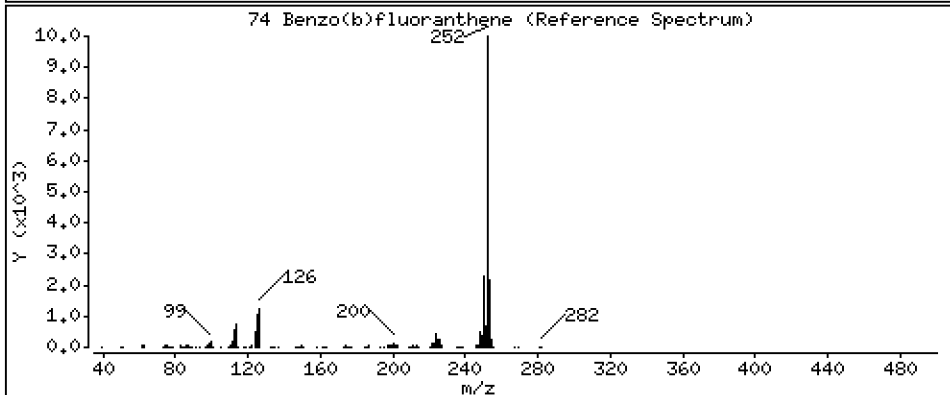
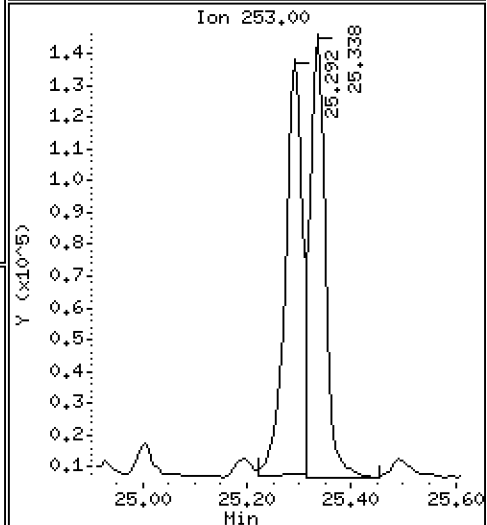
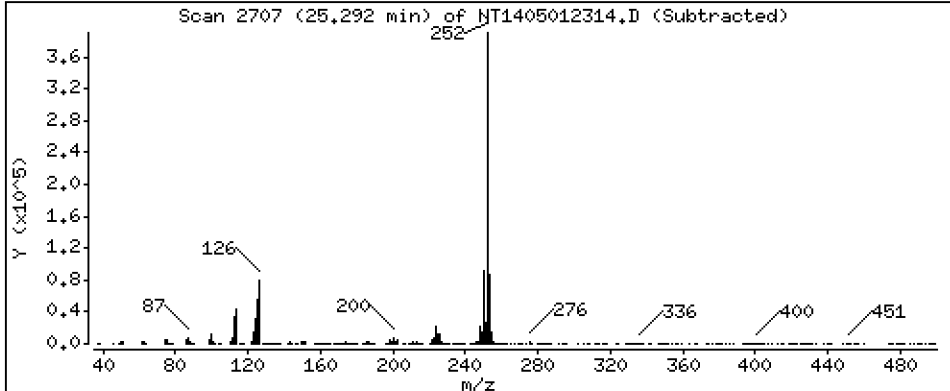
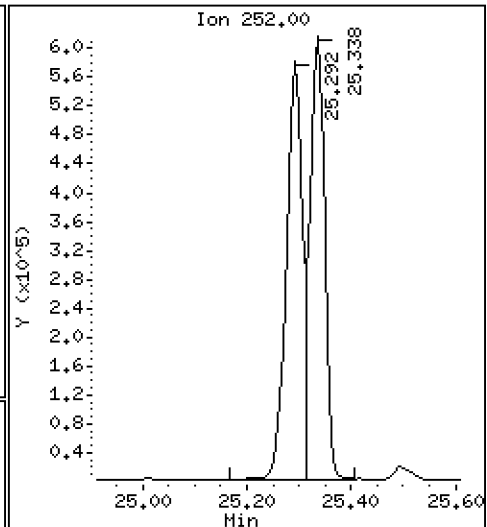
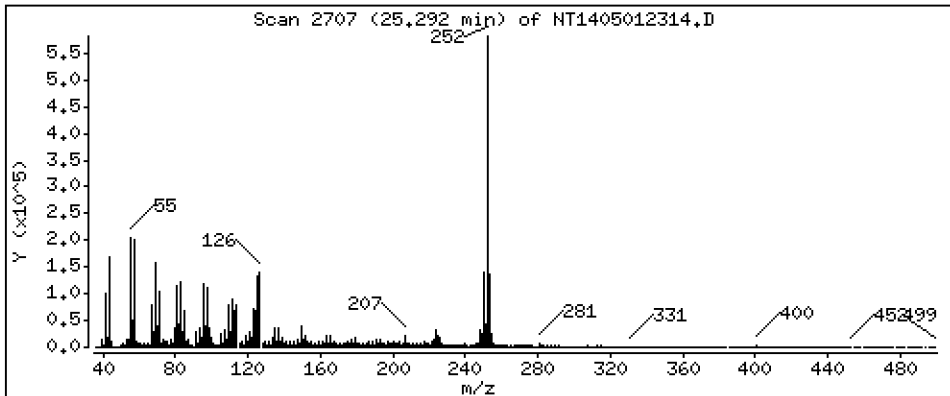
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 7,480 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

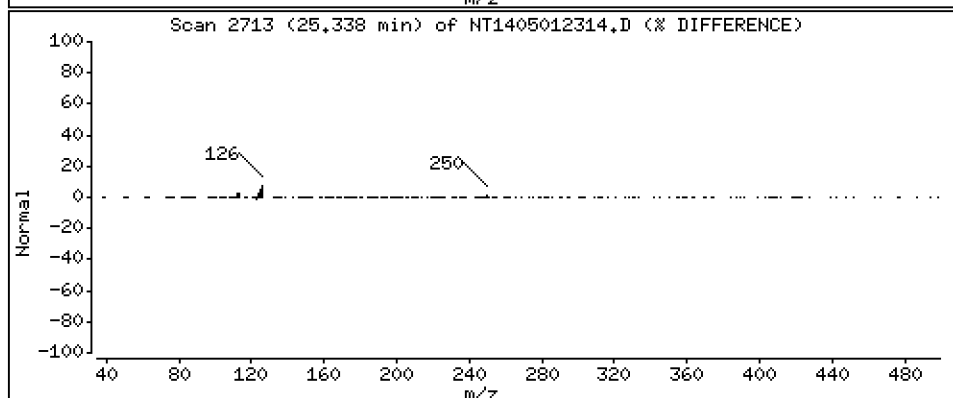
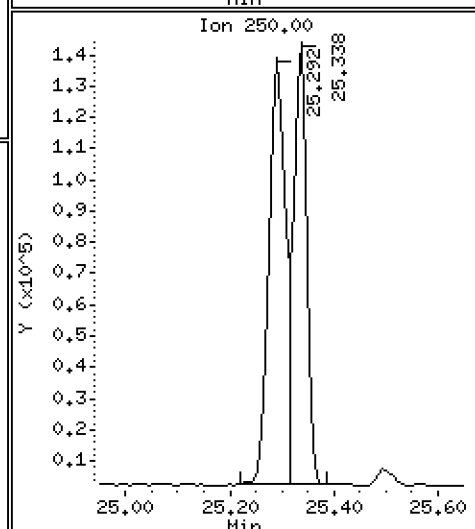
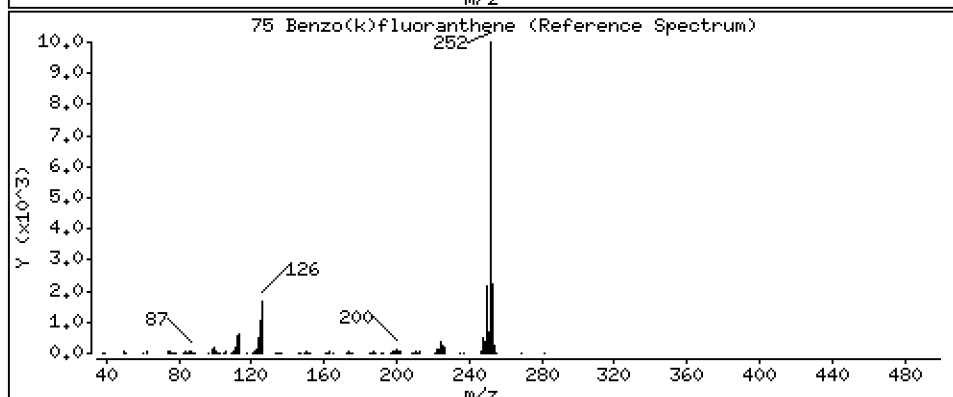
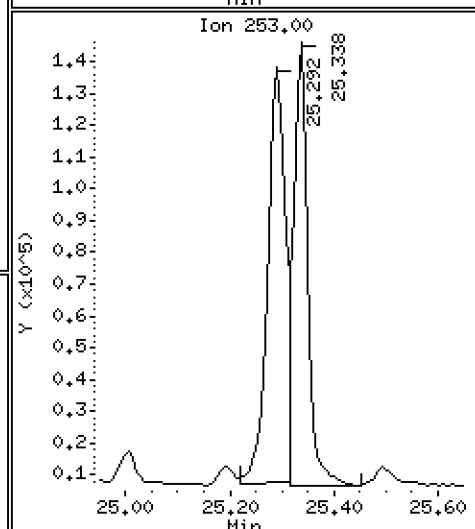
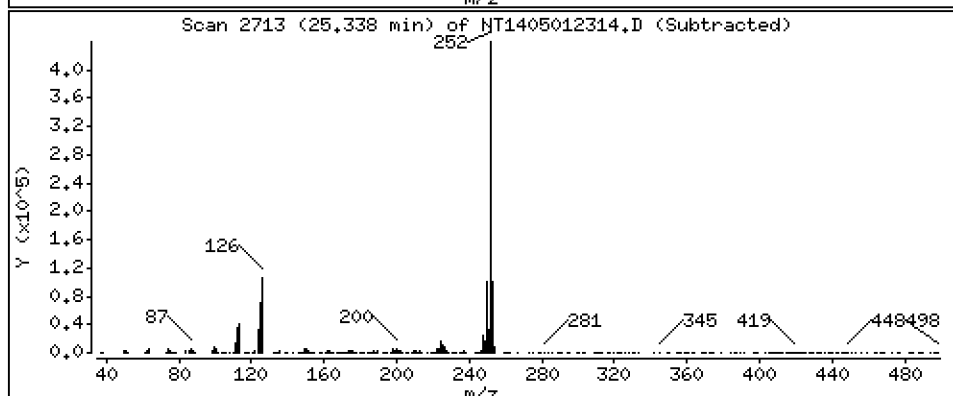
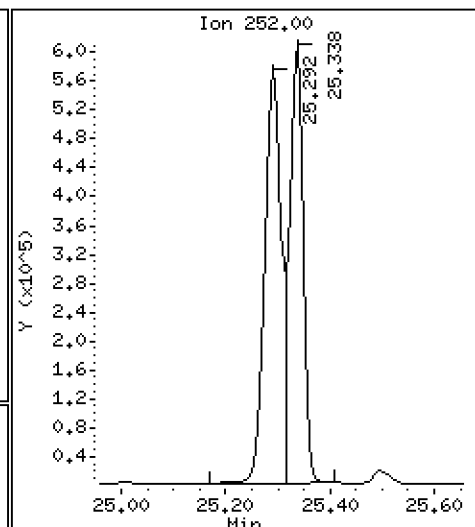
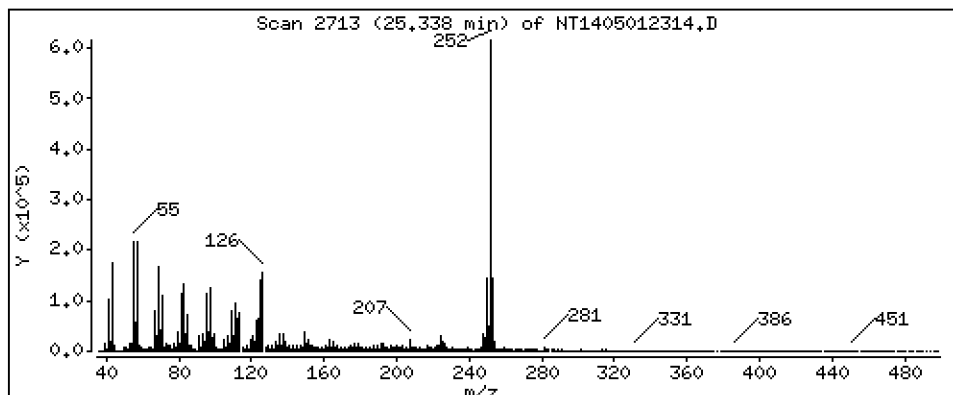
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 6,786 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

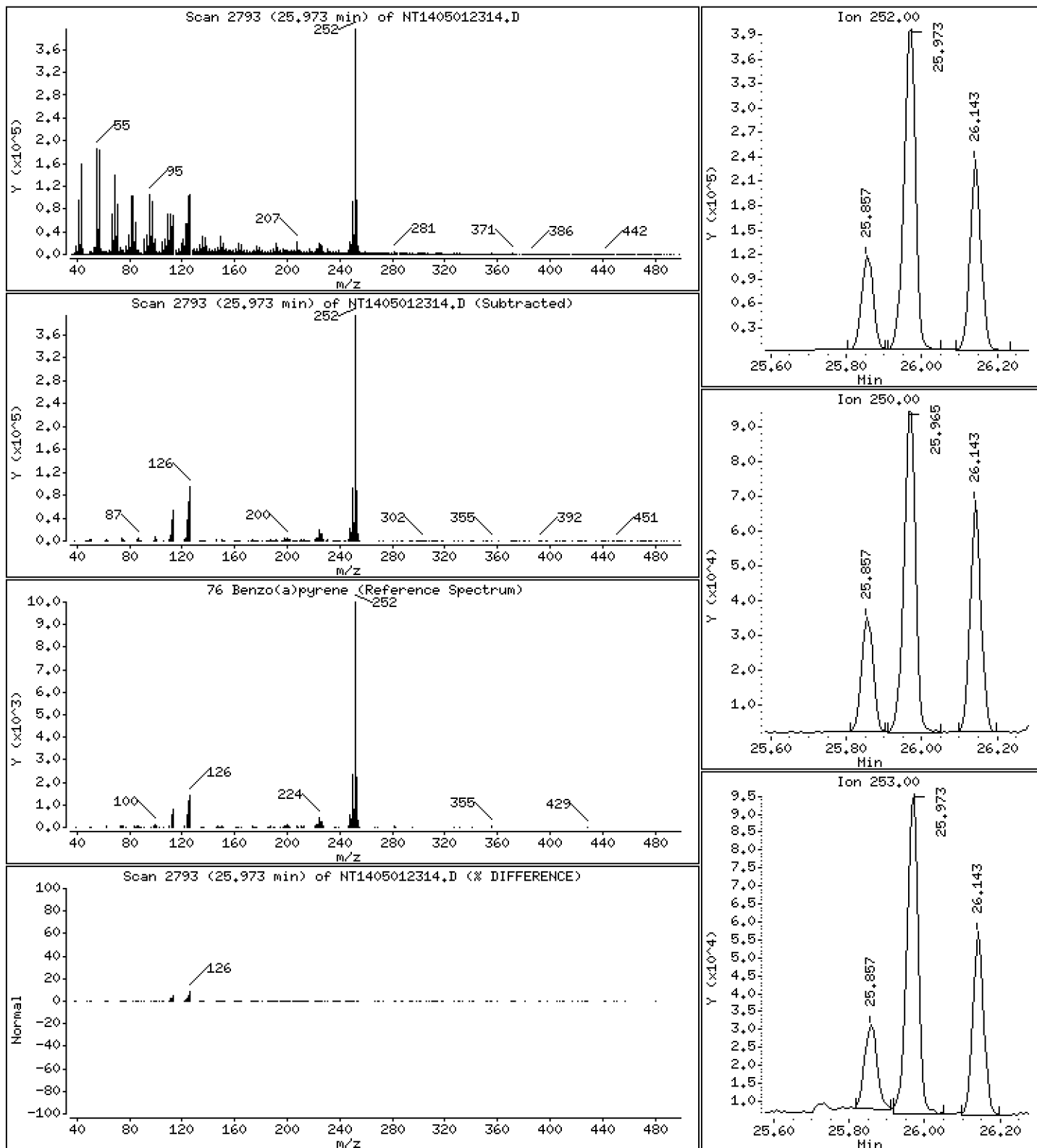
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 5,822 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

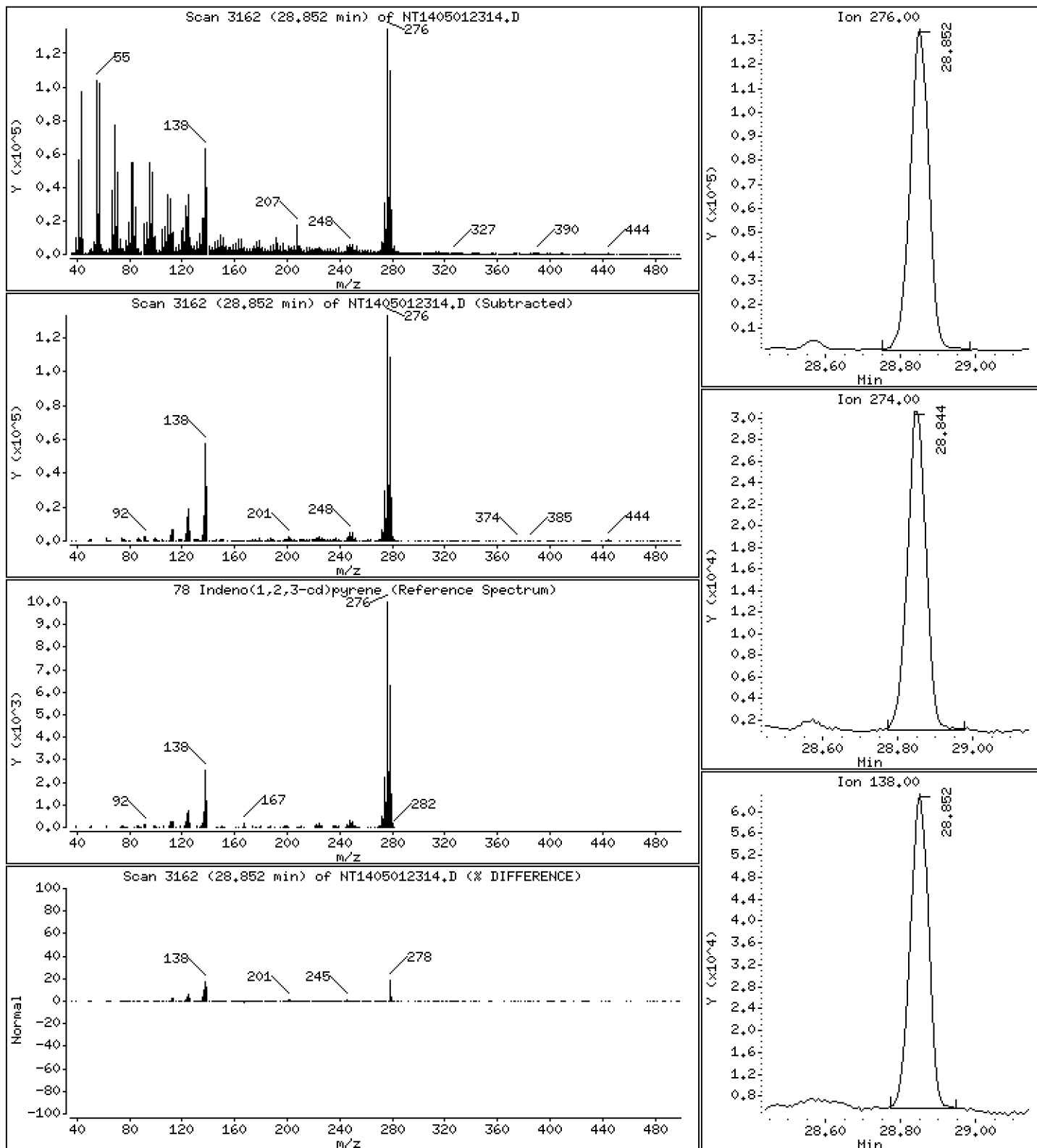
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 2,211 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

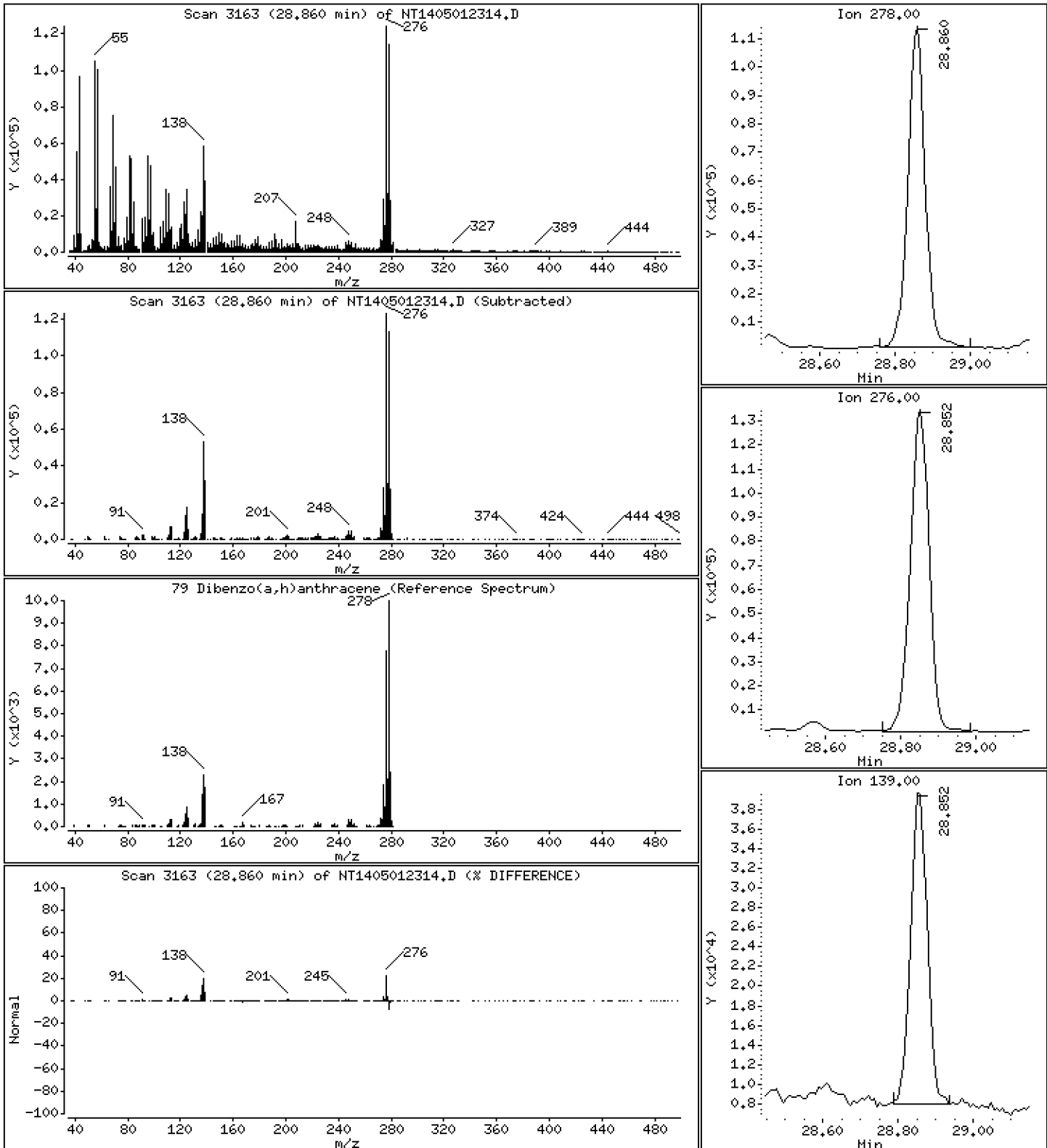
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 2,164 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

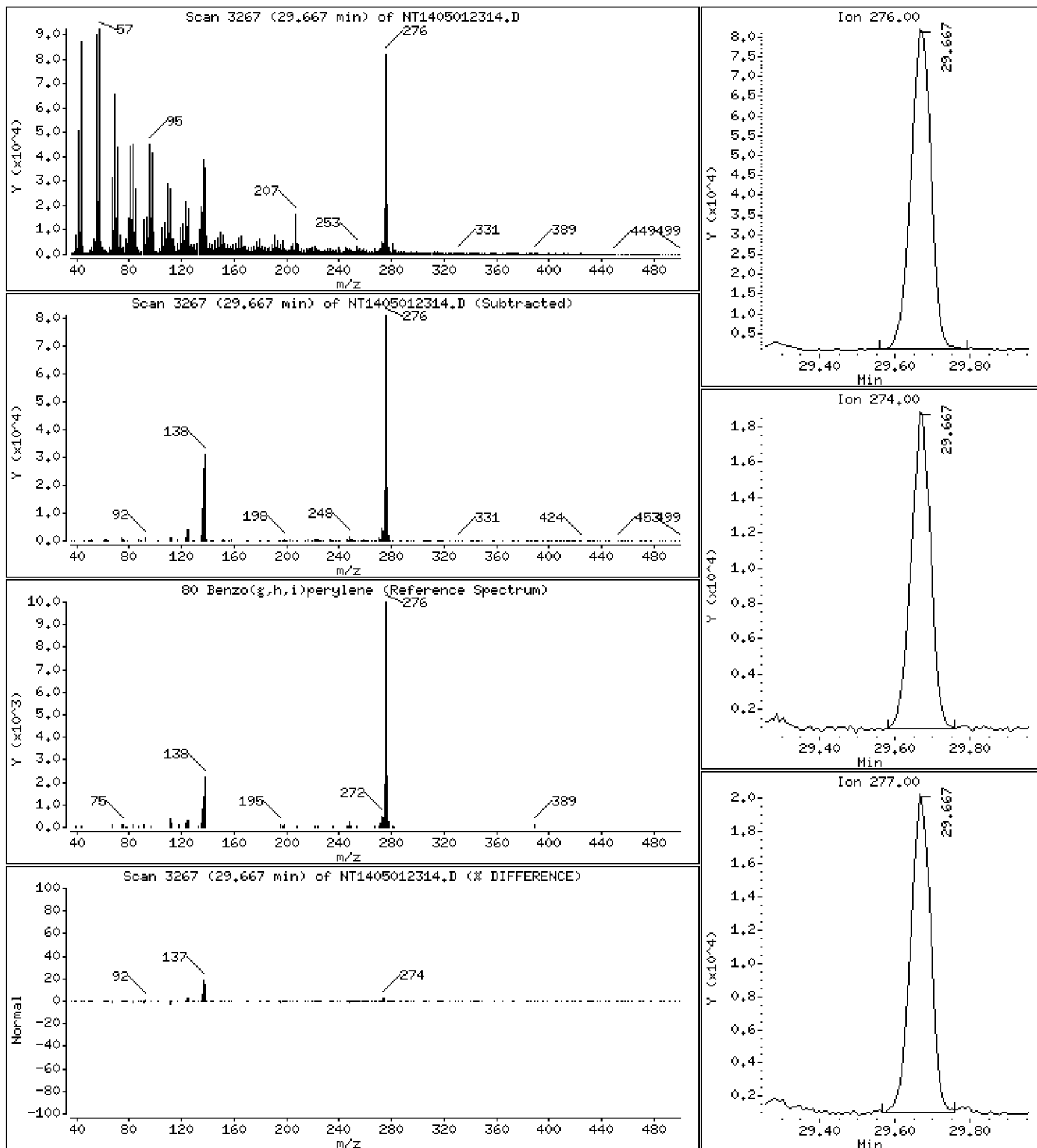
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 1,716 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

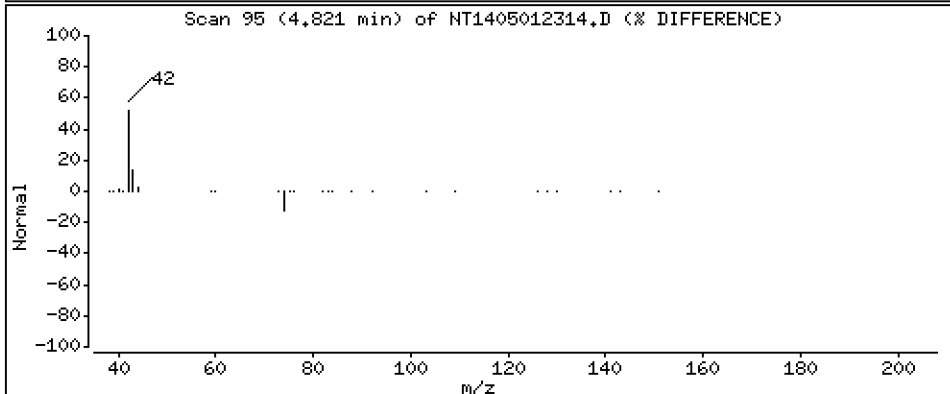
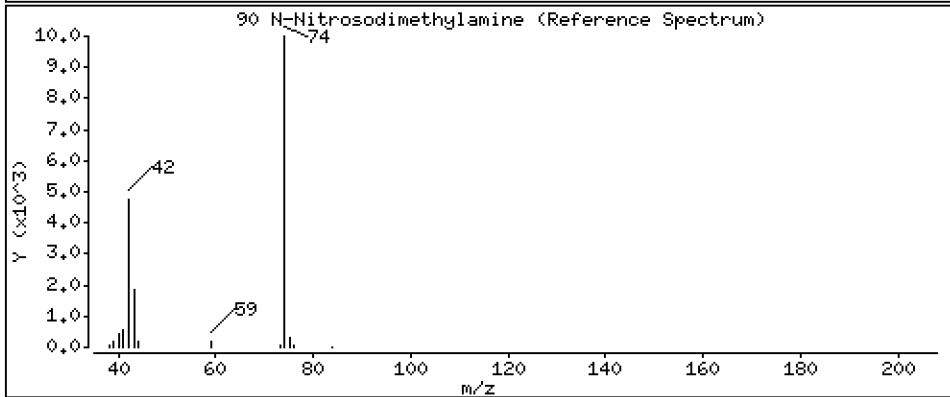
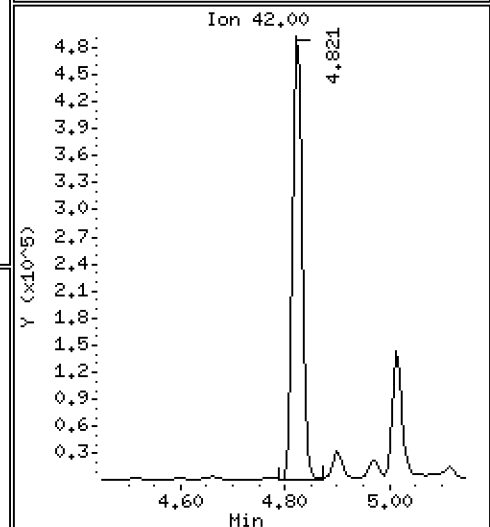
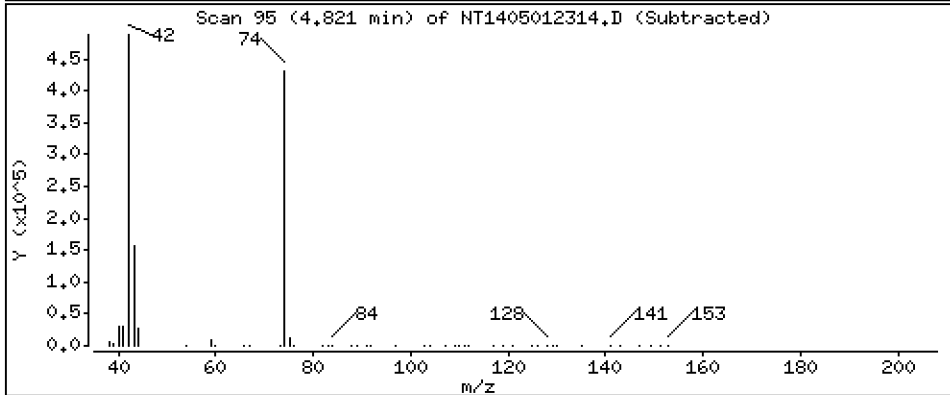
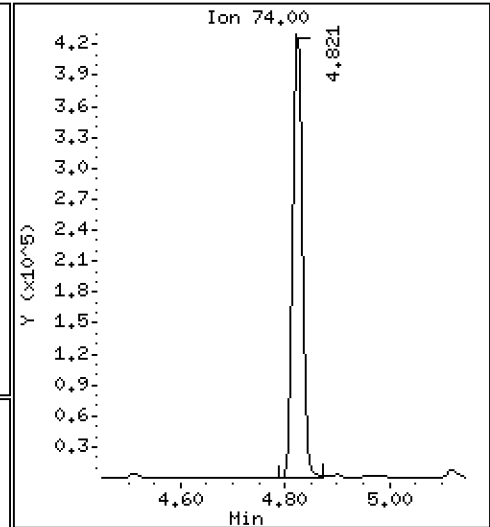
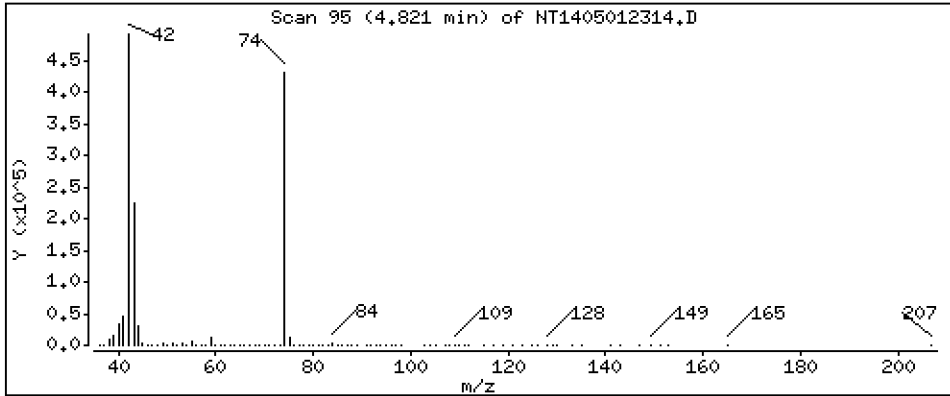
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 7,655 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

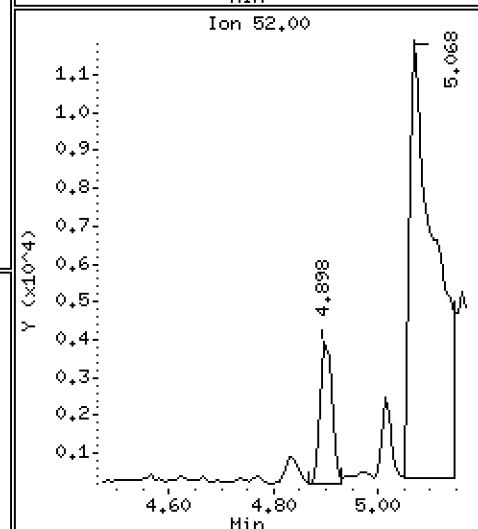
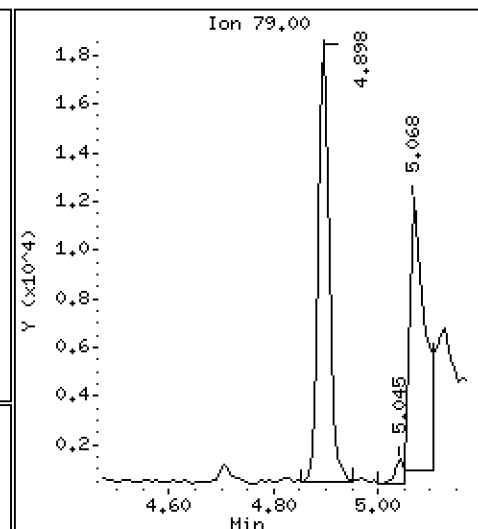
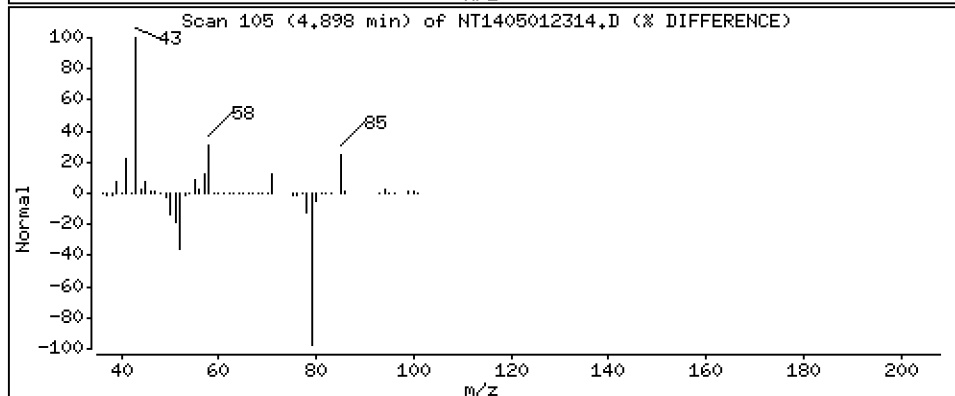
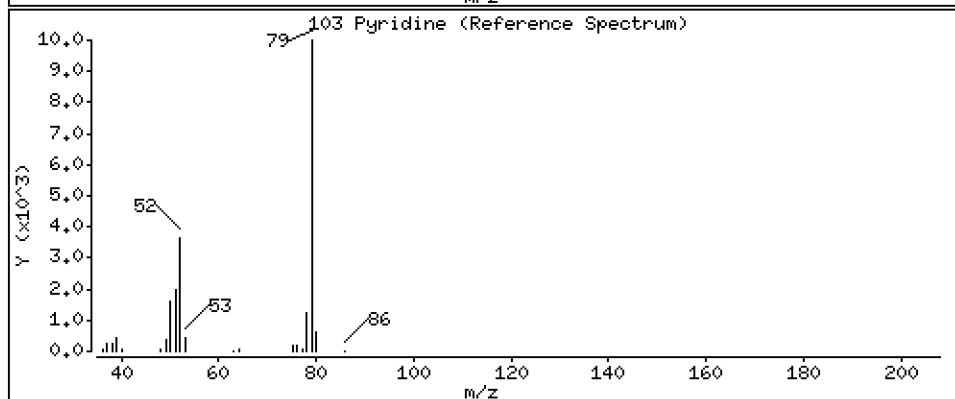
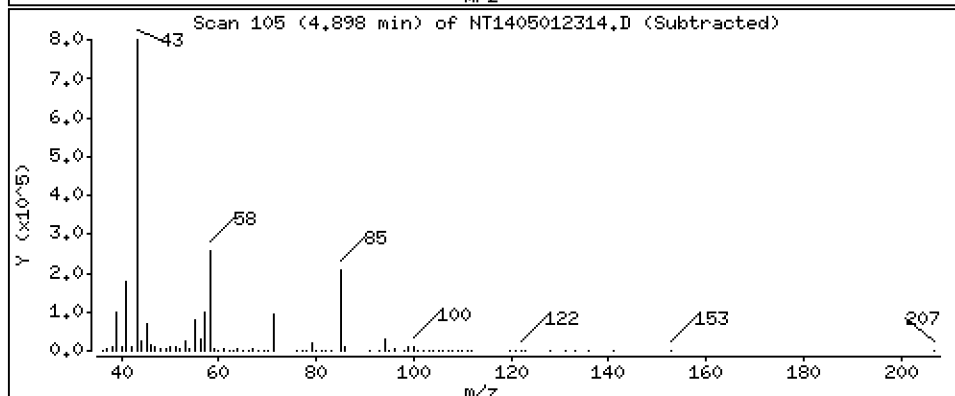
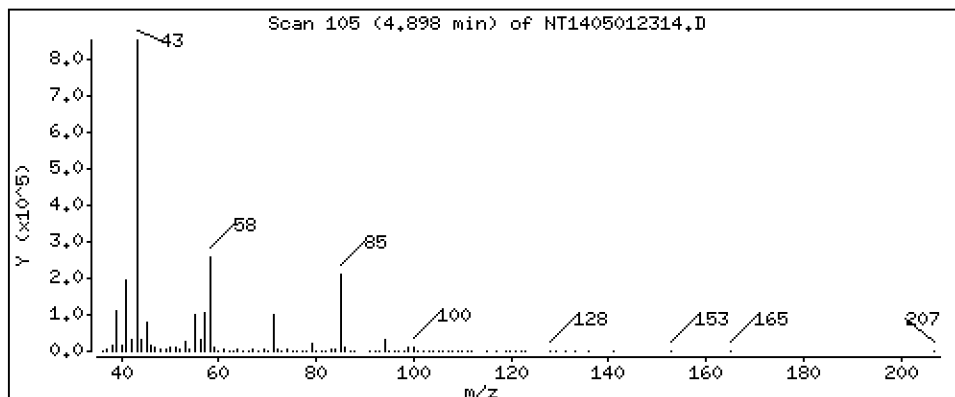
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,1085 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

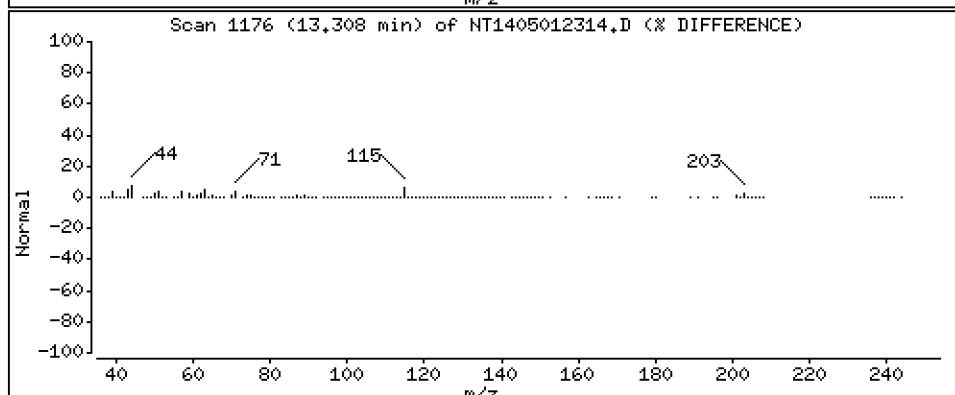
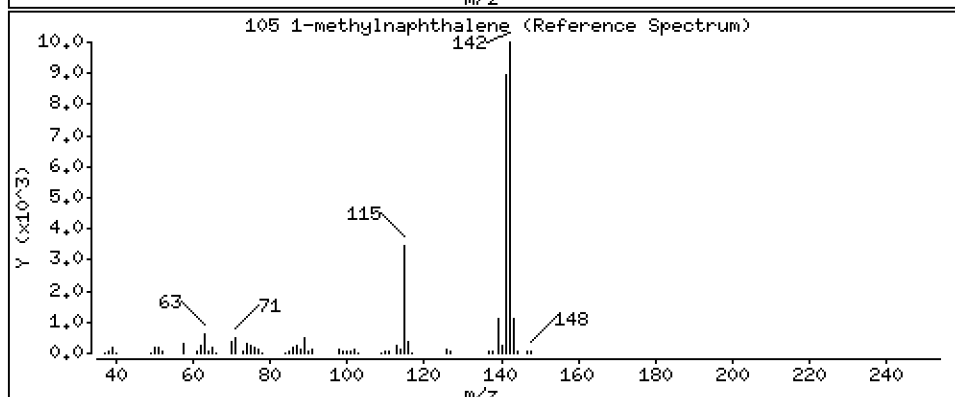
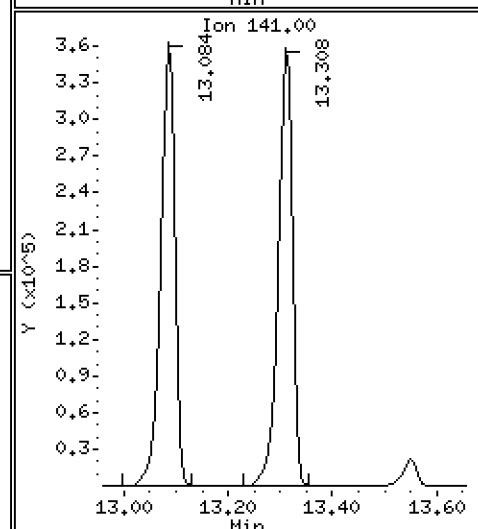
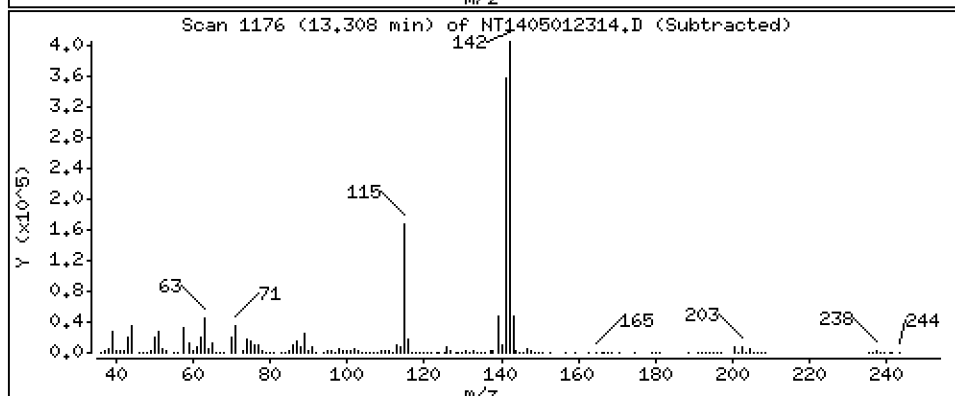
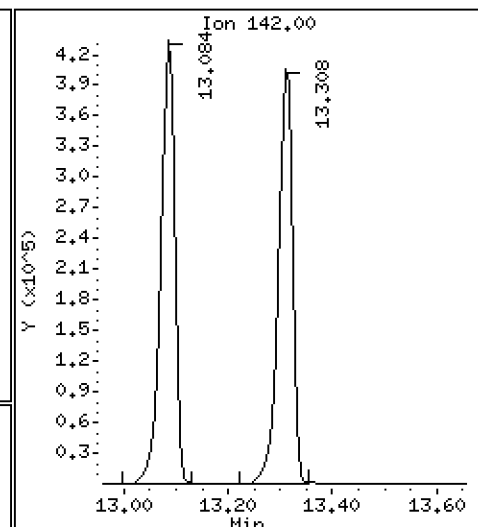
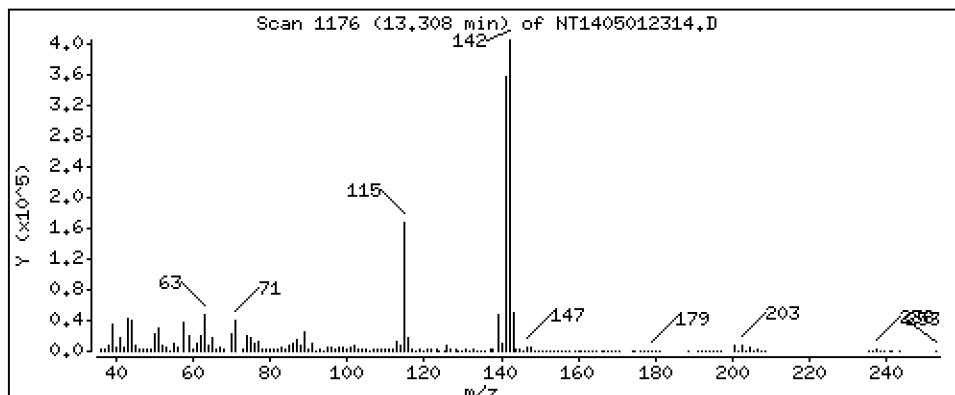
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 3,803 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

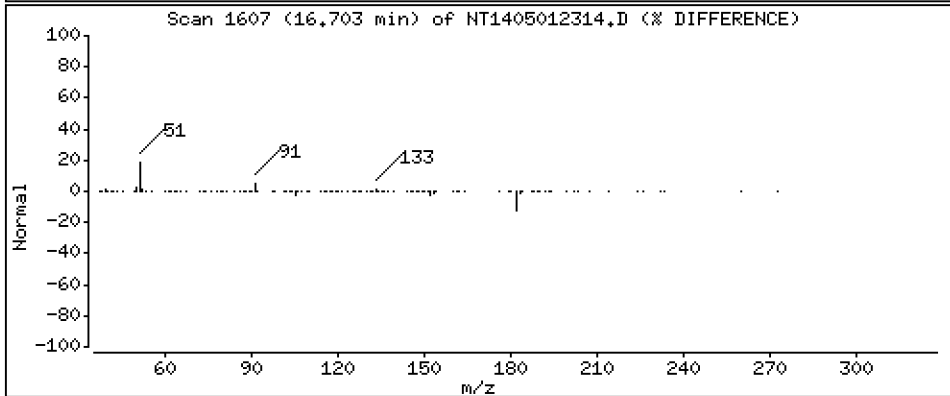
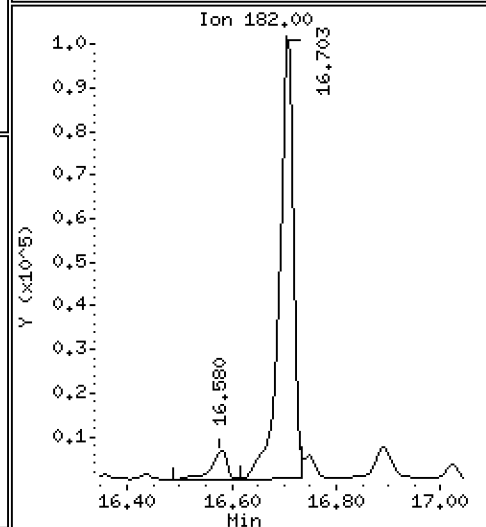
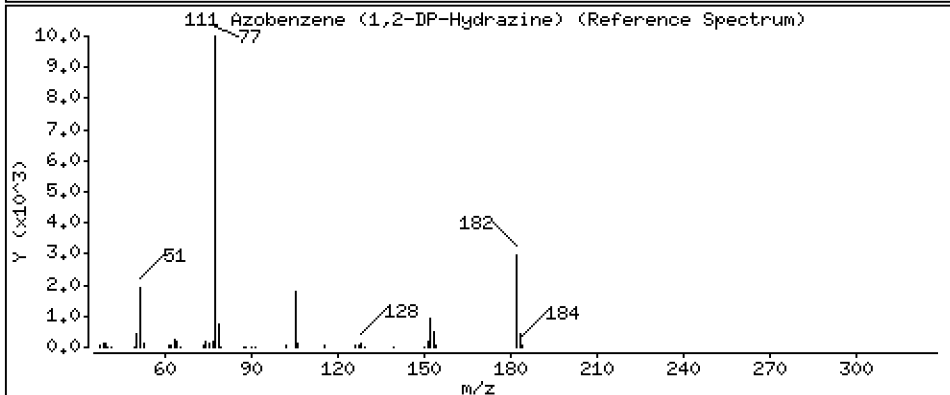
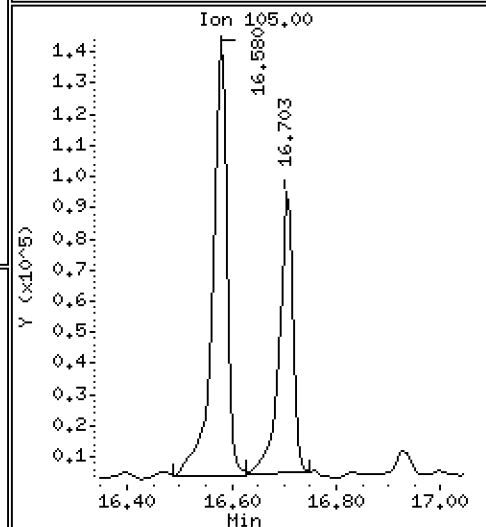
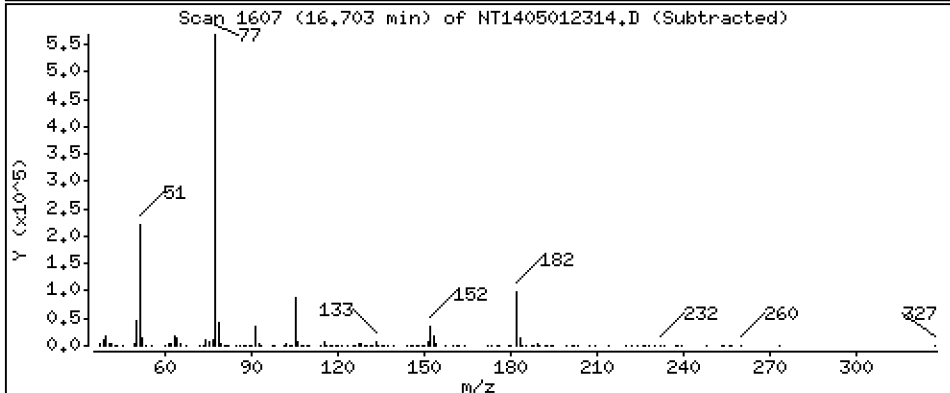
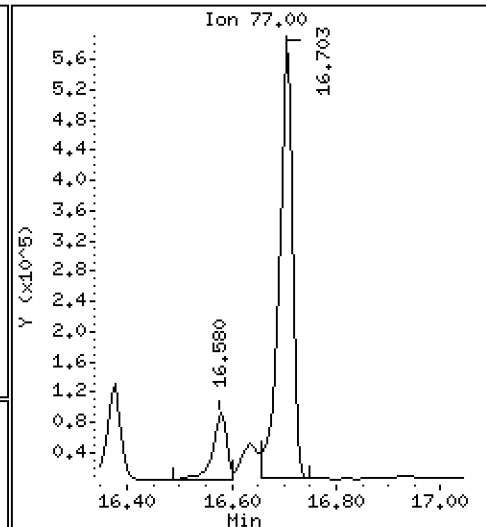
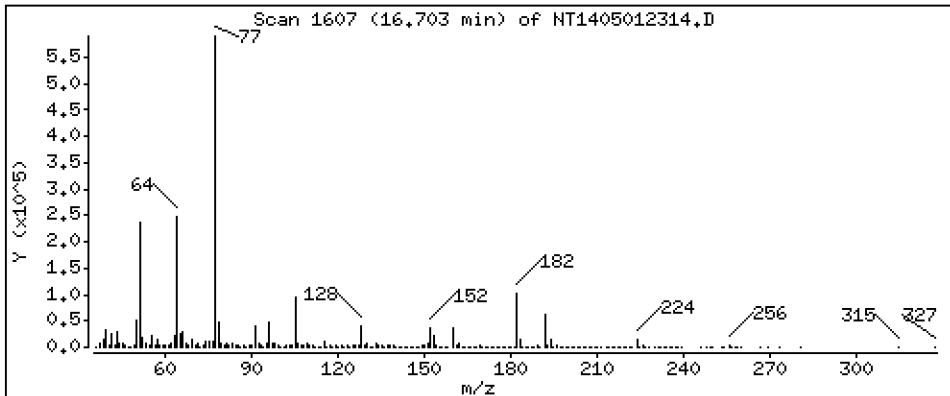
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 3,548 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

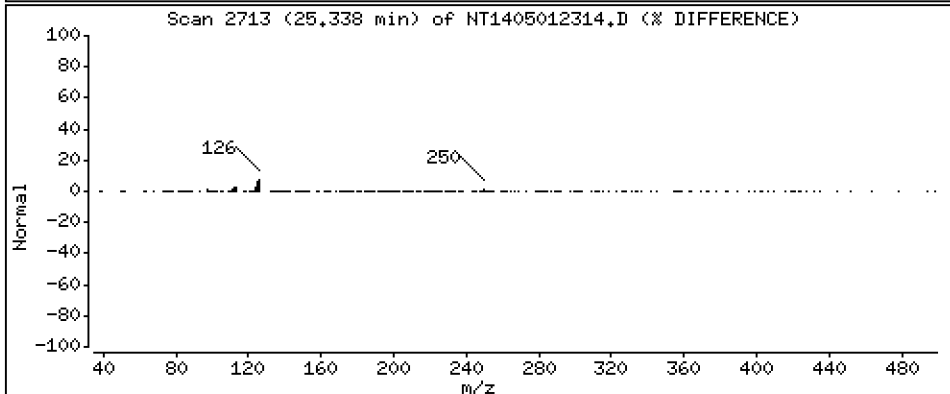
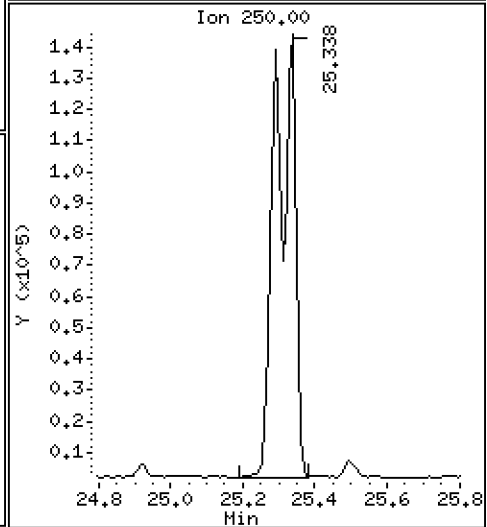
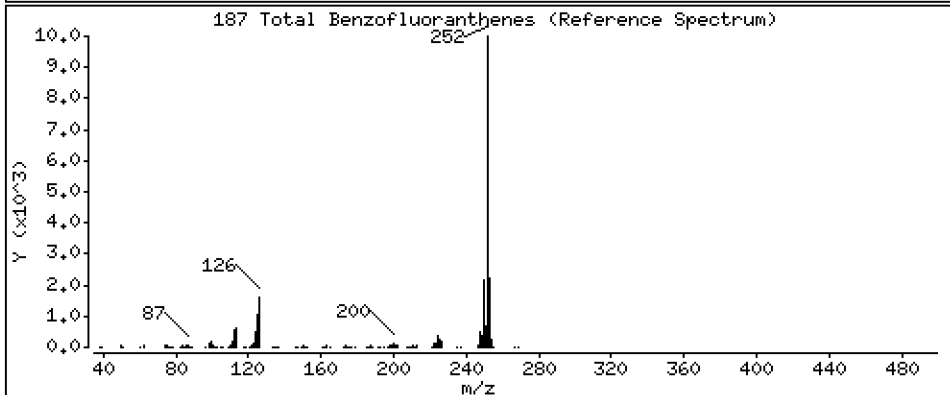
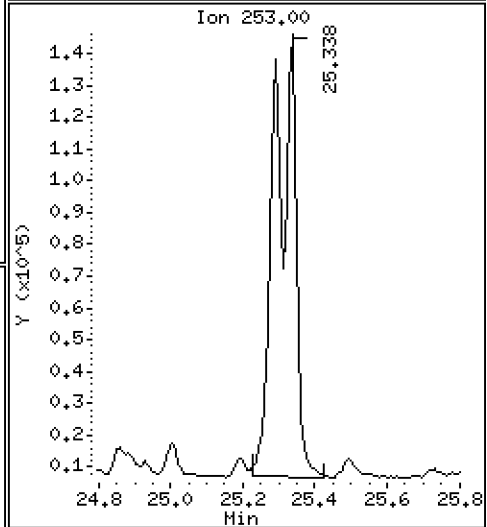
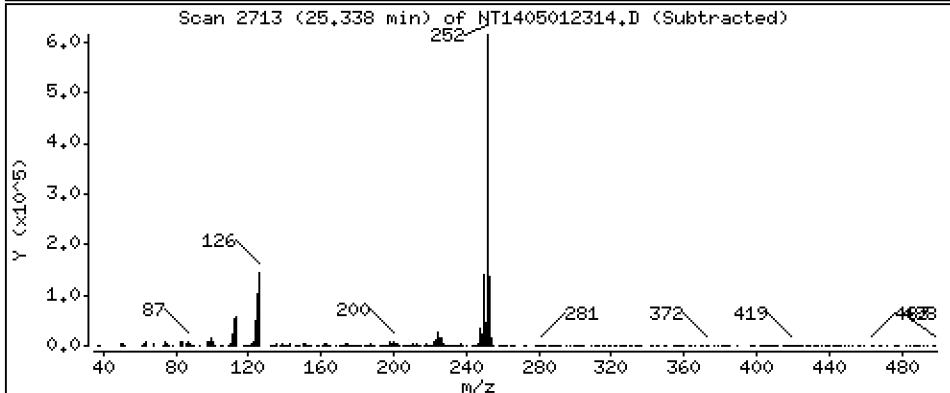
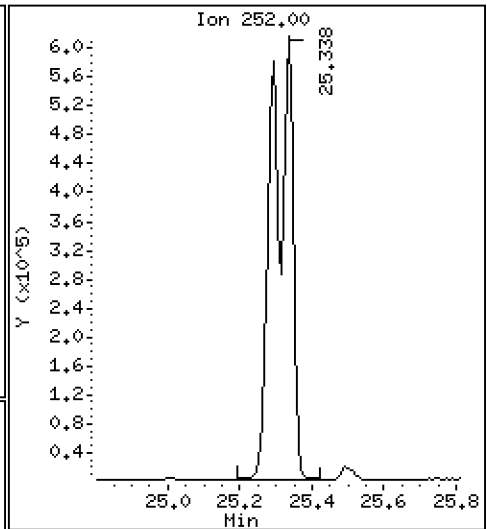
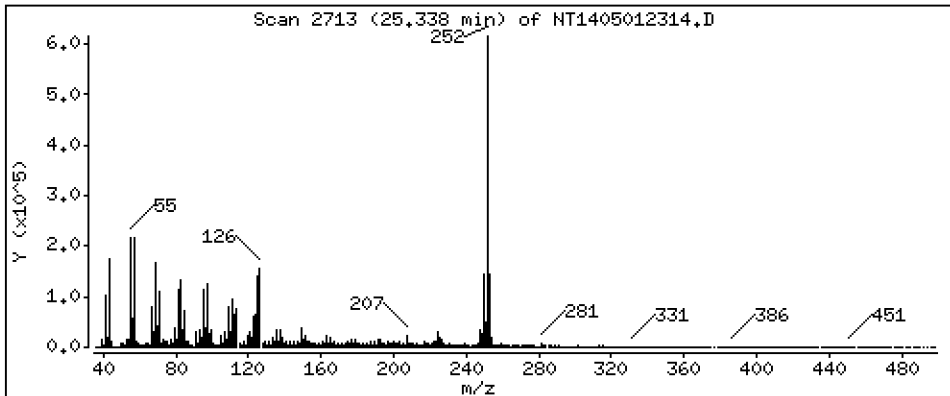
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 14,11 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS1

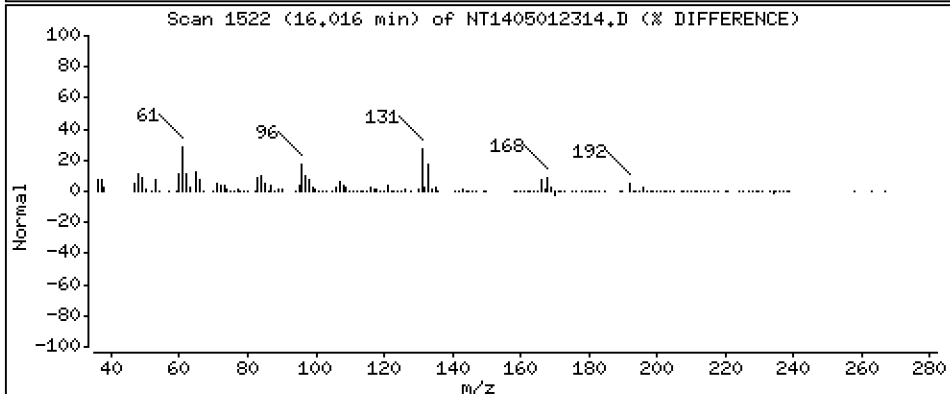
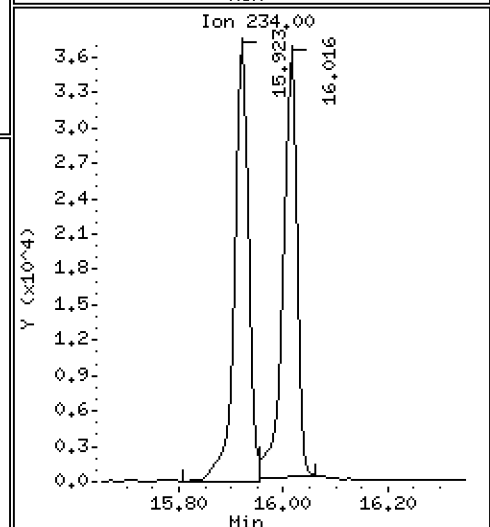
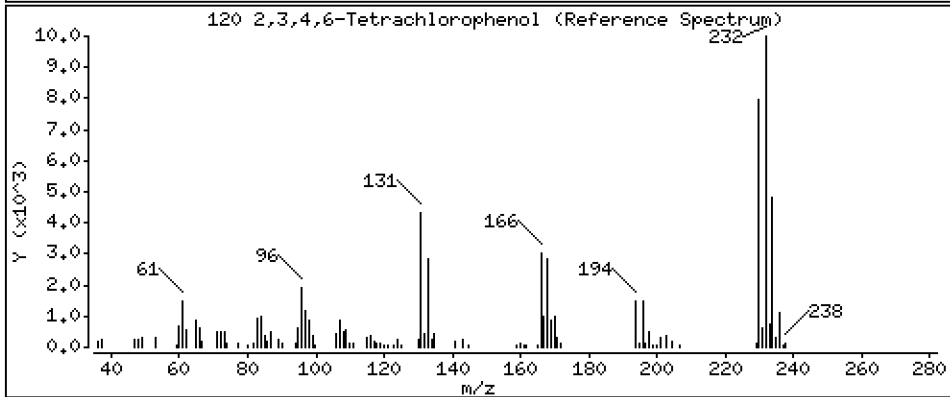
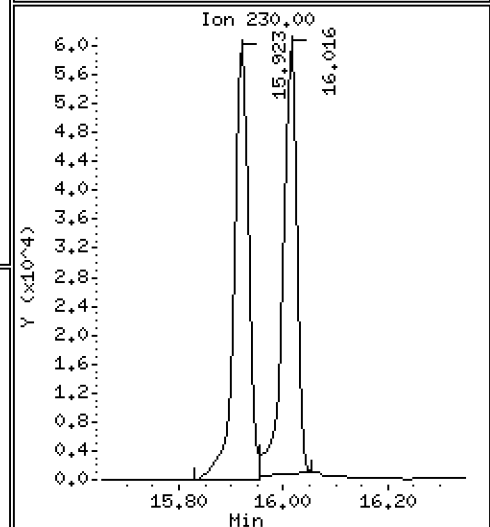
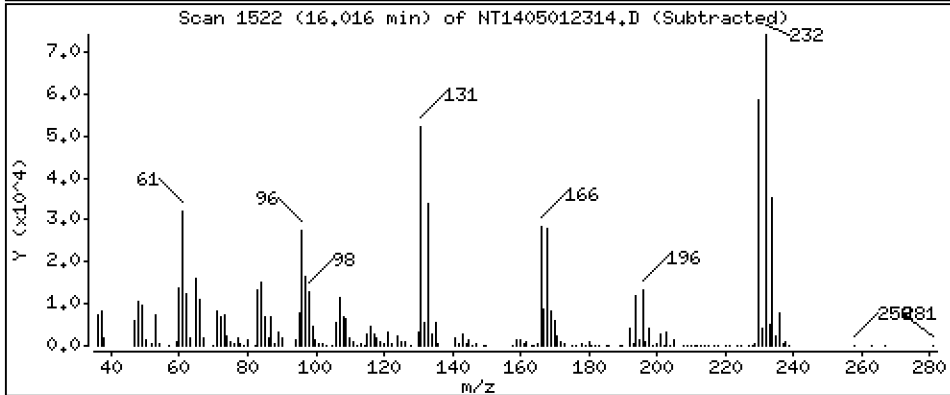
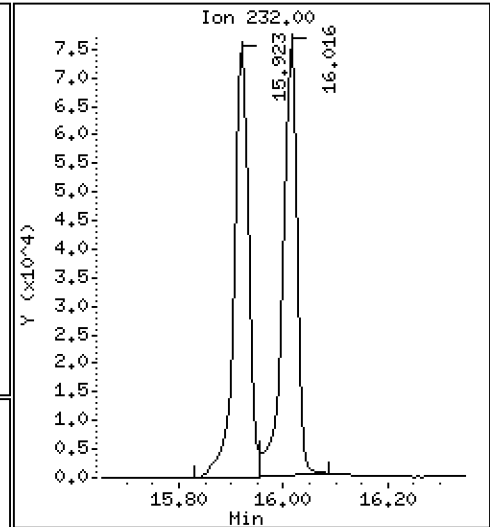
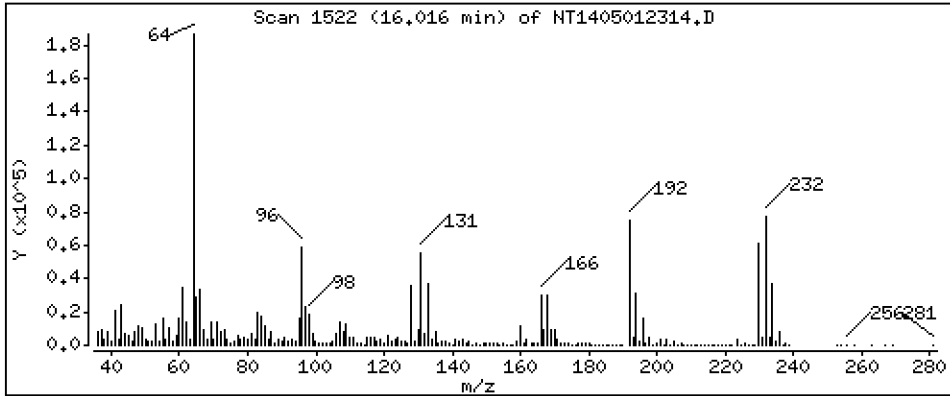
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 3,213 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012314.D  
 Lab Smp Id: BLD0297-MS1  
 Inj Date : 01-MAY-2023 22:31 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-MS1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 14  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.921	6.898	(0.757)	551233	5.92227	5.922
\$ 2 Phenol-d5	99		8.505	8.490	(0.931)	798247	6.11103	6.111
3 Phenol	94		8.528	8.513	(0.933)	521887	3.56489	3.565
\$ 5 2-Chlorophenol-d4	132		8.775	8.768	(0.960)	593773	6.38994	6.390
4 Bis(2-Chloroethyl)ether	93		8.683	8.675	(0.950)	439232	3.92966	3.930
6 2-Chlorophenol	128		8.806	8.799	(0.964)	373045	3.65844	3.658
7 1,3-Dichlorobenzene	146		9.077	9.070	(0.993)	357265	3.49916	3.499
* 8 1,4-Dichlorobenzene-d4	152		9.139	9.132	(1.000)	257379	4.00000	
9 1,4-Dichlorobenzene	146		9.170	9.163	(1.003)	352756	3.62424	3.624
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.039)	226480	3.84747	3.847
12 1,2-Dichlorobenzene	146		9.528	9.520	(1.042)	351787	3.63248	3.632
11 Benzyl alcohol	108		9.411	9.403	(1.030)	260414	3.89974	3.900
14 2,2'-oxybis(1-Chloropropane)	121		9.714	9.706	(1.063)	130547	3.99301	3.993
13 2-Methylphenol	108		9.644	9.629	(1.055)	324711	3.32473	3.325
17 Hexachloroethane	117		10.117	10.118	(1.107)	159514	3.43767	3.438
16 N-Nitroso-di-n-propylamine	70		9.970	9.970	(1.091)	346158	3.52440	3.524 (H)
15 4-Methylphenol	108		9.916	9.900	(1.085)	379742	3.41424	3.414
\$ 18 Nitrobenzene-d5	82		10.242	10.242	(0.880)	532273	4.17265	4.173
19 Nitrobenzene	77		10.280	10.273	(0.883)	513880	3.76834	3.768
20 Isophorone	82		10.730	10.723	(0.922)	868055	4.63737	4.637
21 2-Nitrophenol	139		10.909	10.909	(0.937)	203475	3.03189	3.032
22 2,4-Dimethylphenol	107		10.963	10.955	(0.942)	381720	3.71479	3.715
23 Bis(2-Chloroethoxy)methane	93		11.157	11.157	(0.959)	530381	4.40838	4.408
24 Benzoic acid	105		11.165	11.196	(0.959)	675190	7.93449	7.934
25 2,4-Dichlorophenol	162		11.374	11.359	(0.977)	926929	11.4189	11.42
26 1,2,4-Trichlorobenzene	180		11.552	11.552	(0.993)	279878	3.64886	3.649
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1036476	4.00000	
28 Naphthalene	128		11.683	11.675	(1.004)	1098445	3.94281	3.943
29 4-Chloroaniline	127		Compound Not Detected.					
30 Hexachlorobutadiene	225		12.038	12.039	(1.035)	133038	3.79382	3.794
31 4-Chloro-3-methylphenol	107		12.789	12.774	(1.099)	1156823	12.5978	12.60
32 2-Methylnaphthalene	142		13.083	13.083	(1.124)	768850	3.80986	3.810
33 Hexachlorocyclopentadiene	237		13.548	13.548	(0.887)	193488	5.27210	5.272

Compounds	QUANT		SIG				CONCENTRATIONS	
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)	
34 2,4,6-Trichlorophenol	196	13.718	13.702	(0.898)	615427	13.4605	13.46	
35 2,4,5-Trichlorophenol	196	13.795	13.780	(0.903)	626989	12.9084	12.91	
§ 36 2-Fluorobiphenyl	172	13.873	13.865	(0.908)	759035	4.37054	4.371	
37 2-Chloronaphthalene	162	14.089	14.082	(0.922)	641970	3.87223	3.872	
38 2-Nitroaniline	65	14.360	14.345	(0.940)	899531	10.1573	10.16 (H)	
39 Dimethylphthalate	163	14.786	14.778	(0.968)	710121	4.15226	4.152	
40 Acenaphthylene	152	14.972	14.956	(0.980)	1030105	3.89319	3.893	
41 2,6-Dinitrotoluene	165	14.925	14.918	(0.977)	461007	11.8901	11.89	
* 42 Acenaphthene-d10	164	15.281	15.273	(1.000)	498618	4.00000		
43 3-Nitroaniline	138	Compound Not Detected.						
44 Acenaphthene	153	15.351	15.343	(1.005)	656824	4.14394	4.144	
45 2,4-Dinitrophenol	184	15.420	15.420	(1.009)	72479	3.09248	3.092	
46 Dibenzofuran	168	15.675	15.668	(1.026)	930521	4.11231	4.112	
47 4-Nitrophenol	109	15.552	15.521	(1.018)	372043	13.1242	13.12	
48 2,4-Dinitrotoluene	165	15.737	15.729	(1.030)	644681	12.2804	12.28	
50 Diethylphthalate	149	16.240	16.240	(1.063)	791368	4.27502	4.275	
49 Fluorene	166	16.394	16.386	(1.073)	857707	4.28352	4.284	
51 4-Chlorophenyl-phenylether	204	16.379	16.371	(1.072)	349490	4.21964	4.220	
52 4-Nitroaniline	138	Compound Not Detected.						
53 4,6-Dinitro-2-methylphenol	198	16.579	16.579	(0.904)	440466	16.2936	16.29	
54 N-Nitrosodiphenylamine	169	16.633	16.626	(0.907)	444086	3.61744	3.617	
§ 55 2,4,6-Tribromophenol	330	16.934	16.919	(1.108)	116409	7.10151	7.102	
56 4-Bromophenyl-phenylether	248	17.389	17.381	(0.948)	166078	4.11290	4.113	
57 Hexachlorobenzene	284	17.714	17.698	(0.966)	158881	3.89077	3.891	
58 Pentachlorophenol	266	18.070	18.054	(0.985)	306028	11.7830	11.78	
* 59 Phenanthrene-d10	188	18.341	18.325	(1.000)	869300	4.00000		
60 Phenanthrene	178	18.387	18.372	(1.003)	1236224	5.02960	5.030	
61 Anthracene	178	18.480	18.464	(1.008)	901911	3.82592	3.826	
62 Carbazole	167	18.813	18.797	(1.026)	925117	4.24088	4.241	
63 Di-n-butylphthalate	149	19.602	19.579	(1.069)	1375635	4.13668	4.137	
64 Fluoranthene	202	20.816	20.755	(0.890)	1553226	5.67804	5.678	
65 Pyrene	202	21.219	21.180	(0.907)	1816123	6.42886	6.429	
§ 66 Terphenyl-d14	244	21.482	21.459	(0.918)	685516	3.46049	3.460	
67 Butylbenzylphthalate	149	22.388	22.380	(0.957)	574916	3.38982	3.390	
68 Benzo(a)anthracene	228	23.363	23.340	(0.999)	1165409	5.50923	5.509	
* 69 Chrysene-d12	240	23.394	23.371	(1.000)	592607	4.00000		
70 3,3'-Dichlorobenzidine	252	Compound Not Detected.						
71 Chrysene	228	23.441	23.418	(1.002)	1279745	6.48638	6.486	
72 bis(2-Ethylhexyl)phthalate	149	24.416	24.401	(1.000)	1506728	4.07713	4.077	
* 134 Di-n-octylphthalate-d4	153	24.409	24.385	(1.000)	1384356	4.00000		
73 Di-n-octylphthalate	149	24.416	24.401	(1.000)	1506728	4.07713	4.077	
74 Benzo(b)fluoranthene	252	25.291	25.260	(0.969)	1324853	7.47963	7.480	
75 Benzo(k)fluoranthene	252	25.338	25.307	(0.971)	1179381	6.78599	6.786	
76 Benzo(a)pyrene	252	25.973	25.934	(0.996)	871424	5.82162	5.822	
* 77 Perylene-d12	264	26.089	26.050	(1.000)	531225	4.00000		
78 Indeno(1,2,3-cd)pyrene	276	28.851	28.789	(1.106)	457593	2.21070	2.211	
79 Dibenzo(a,h)anthracene	278	28.859	28.805	(1.106)	366398	2.16399	2.164	
80 Benzo(g,h,i)perylene	276	29.667	29.605	(1.137)	300727	1.71620	1.716	
90 N-Nitrosodimethylamine	74	4.820	4.797	(0.527)	592395	7.65493	7.655	
91 Aniline	93	Compound Not Detected.						
93 Benzidine	184	Compound Not Detected.						
103 Pyridine	79	4.898	4.821	(0.536)	24846	0.10846	0.1085	
105 1-methylnaphthalene	142	13.308	13.308	(1.144)	741157	3.80321	3.803	
111 Azobenzene (1,2-DP-Hydrazine)	77	16.703	16.695	(1.093)	1013523	3.54795	3.548	



Compounds	QUANT SIG		CONCENTRATIONS					
	MASS		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
=====	=====		=====	=====	=====	=====	=====	=====
187 Total Benzofluoranthenes	252		25.338	25.307	(0.971)	2365587	14.1071	14.11
120 2,3,4,6-Tetrachlorophenol	232		16.015	16.000	(1.048)	141360	3.21331	3.213

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012314.D Calibration Time: 15:06  
 Lab Smp Id: BLD0297-MS1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	257379	-6.06
27 Naphthalene-d8	1103207	551604	2206414	1036476	-6.05
42 Acenaphthene-d10	520358	260179	1040716	498618	-4.18
59 Phenanthrene-d10	882575	441288	1765150	869300	-1.50
69 Chrysene-d12	600619	300310	1201238	592607	-1.33
134 Di-n-octylphthala	1445631	722816	2891262	1384356	-4.24
77 Perylene-d12	570040	285020	1140080	531225	-6.81

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.14	0.08
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.33	17.83	18.83	18.34	0.08
69 Chrysene-d12	23.37	22.87	23.87	23.39	0.10
134 Di-n-octylphthala	24.39	23.89	24.89	24.41	0.10
77 Perylene-d12	26.05	25.55	26.55	26.09	0.15

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012314.D

Lab ID: BLD0297-MS1  
nt14.i, ABN.m, 01-MAY-2023 22:31

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.536	0.528	0.0080	Pyridine

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012315.D

Date: 01-May-2023 23:08

Client ID:

Sample Info: BLD0297-HSDM

Page 1

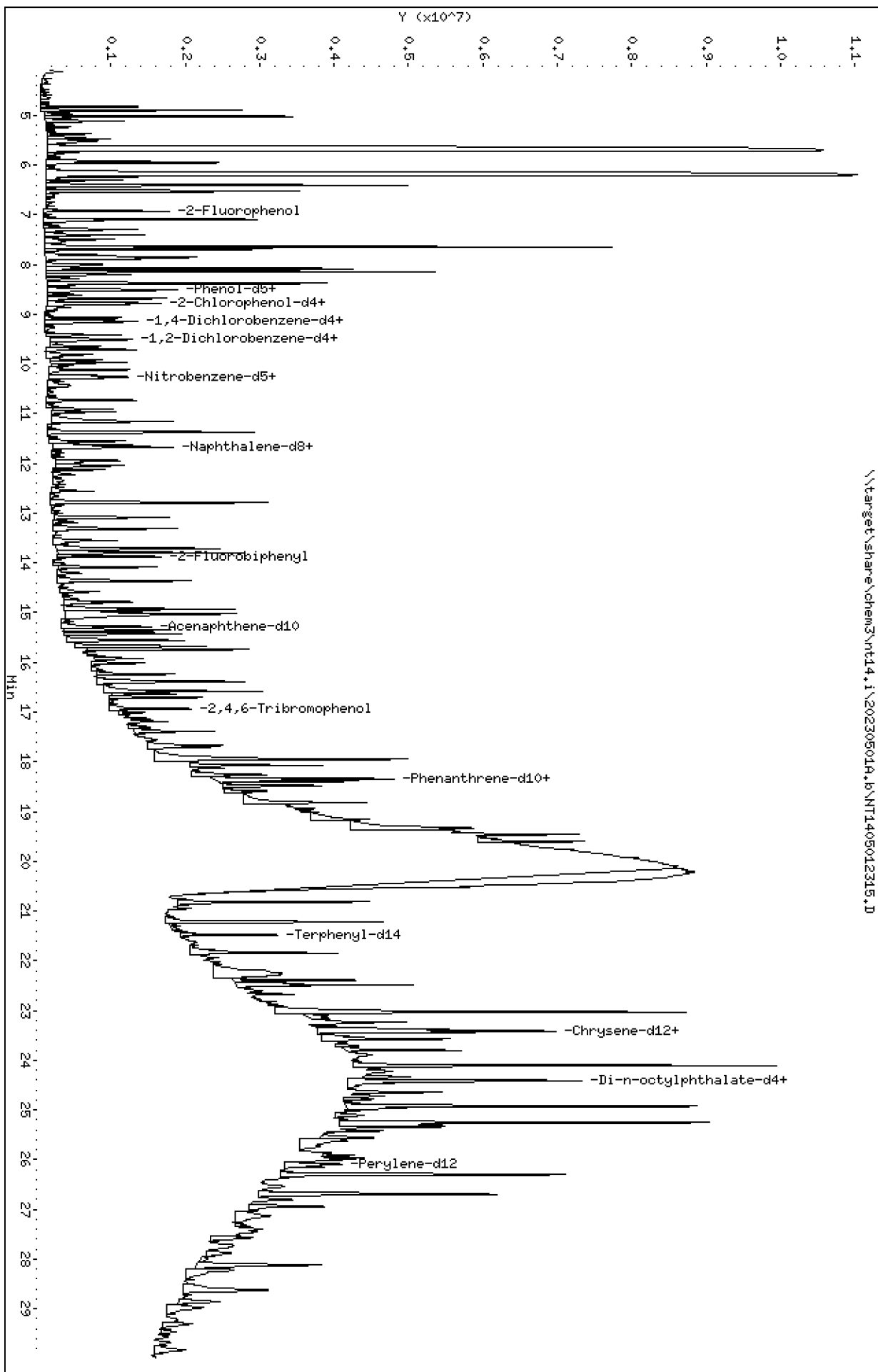
Column phase: ZB-5msi

Instrument: nt14.1

Operator: USD

Column diameter: 0.25

\\target\share\chem3\nt14.1\20230501A.B\NT1405012315.D



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

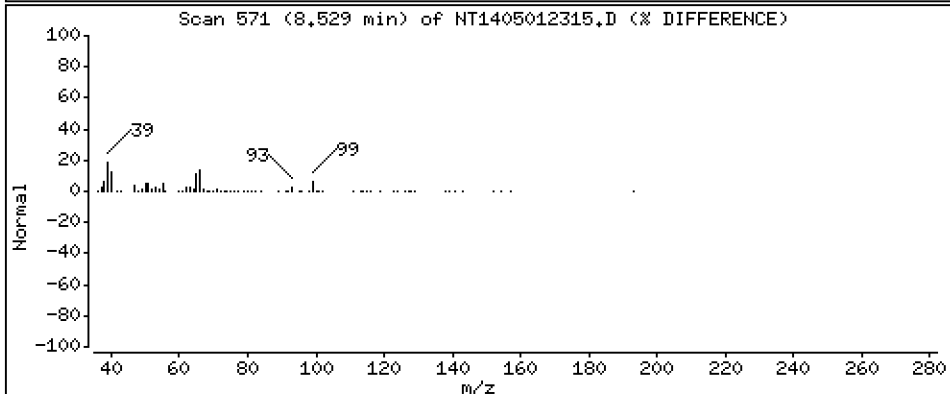
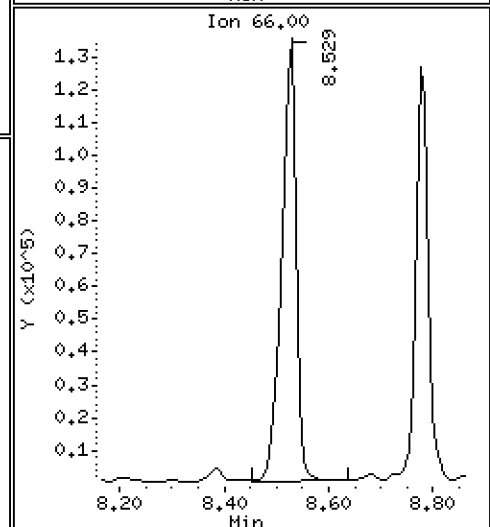
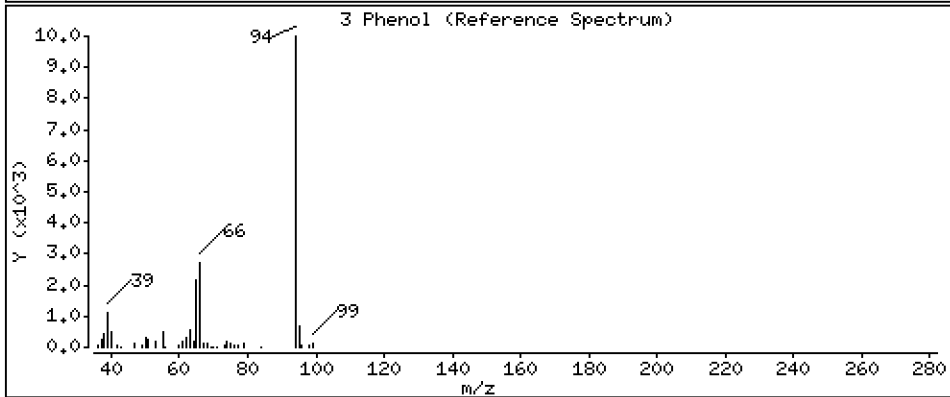
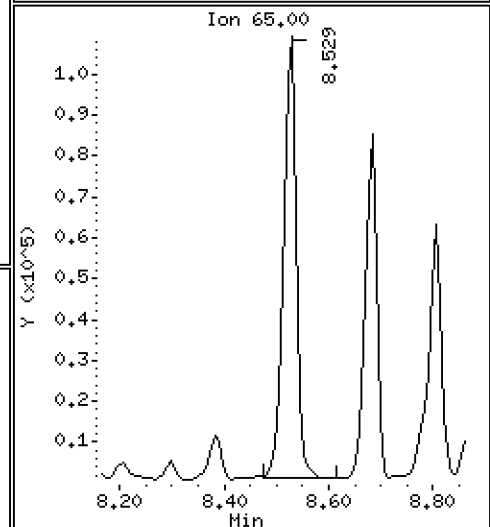
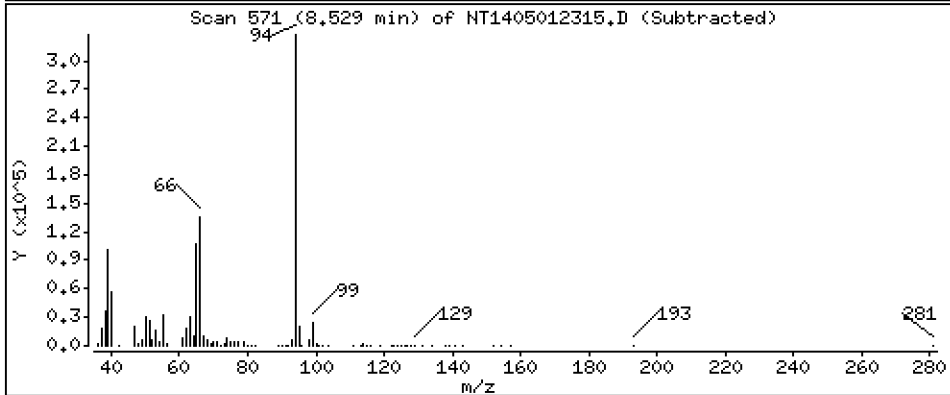
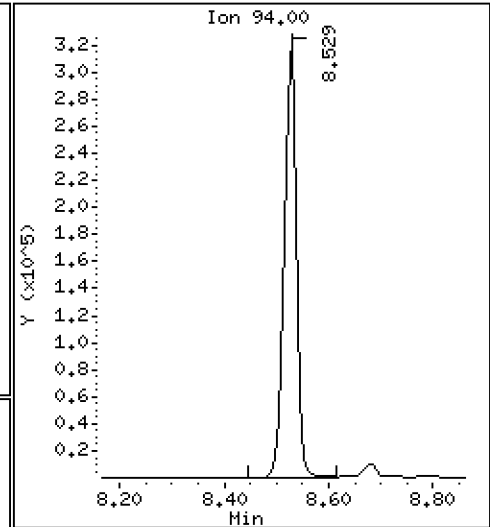
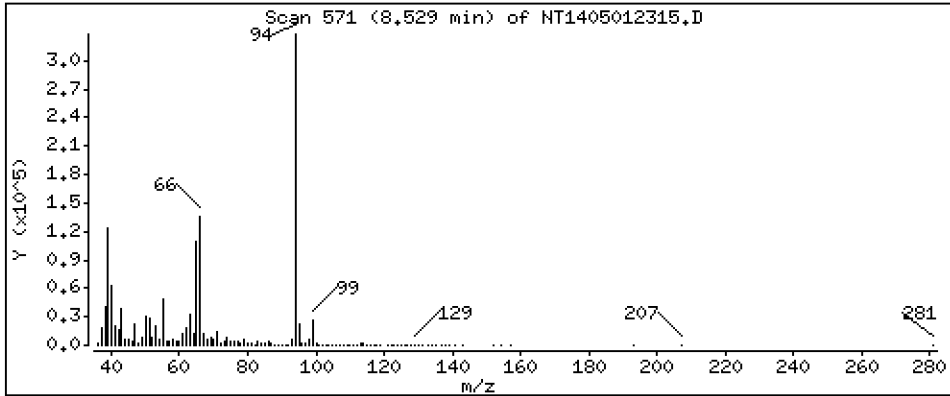
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 3,450 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

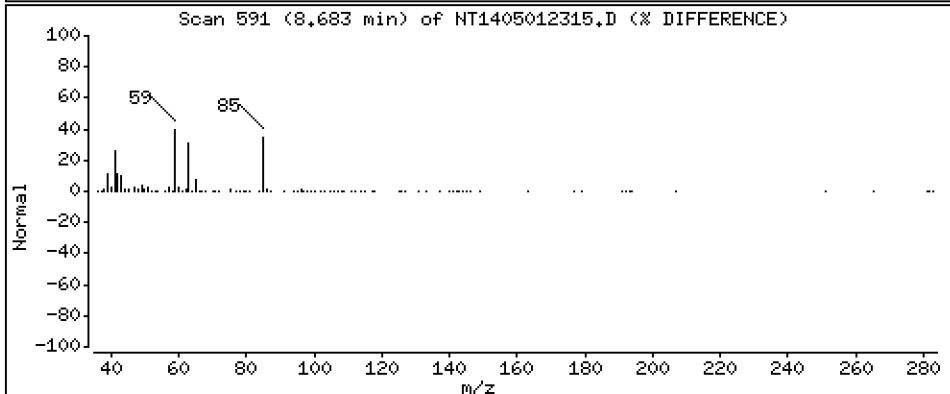
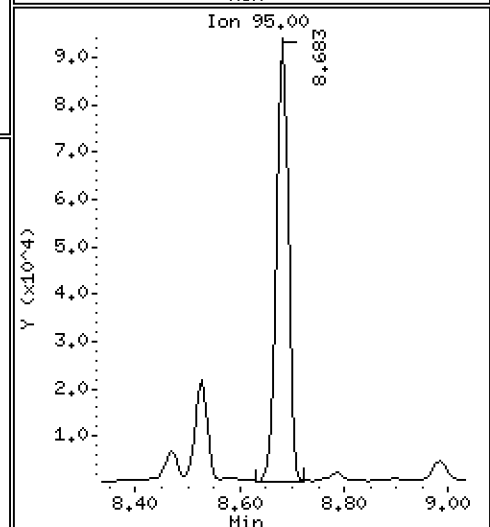
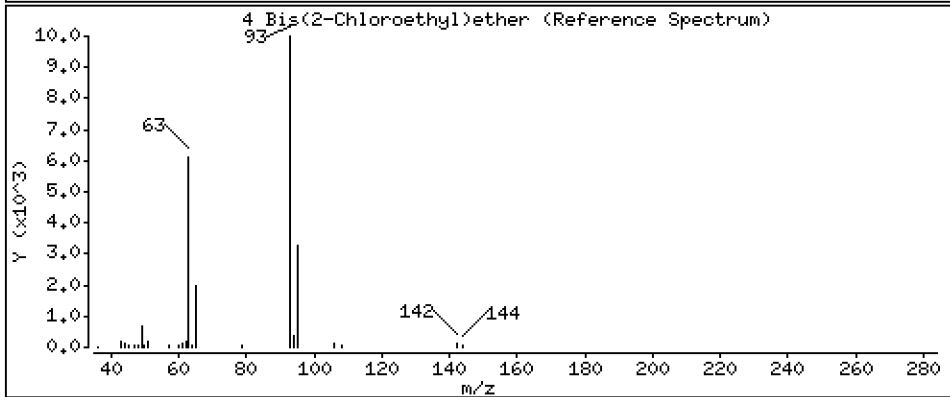
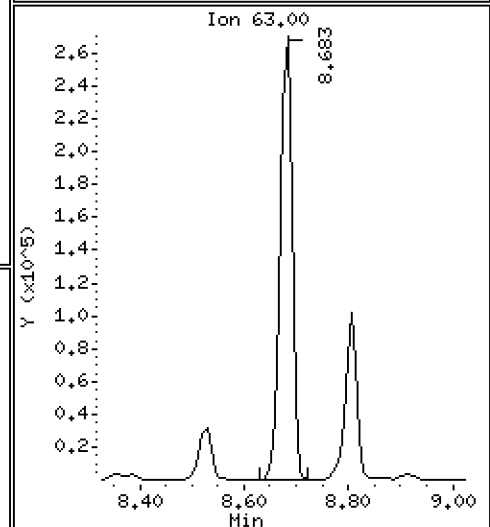
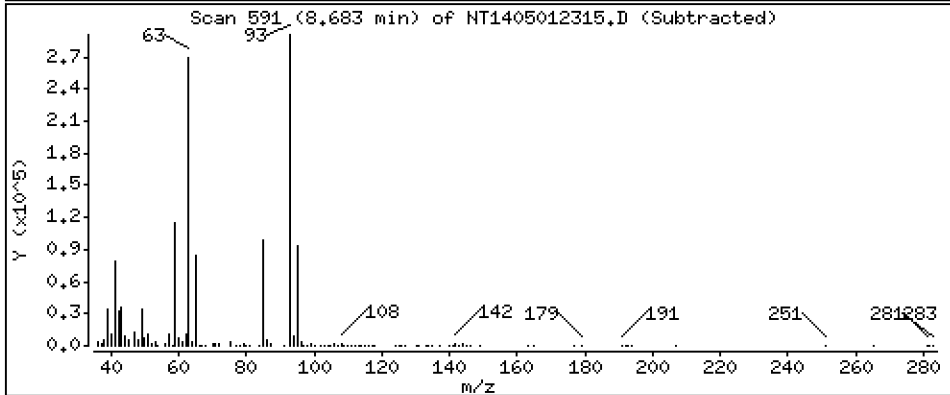
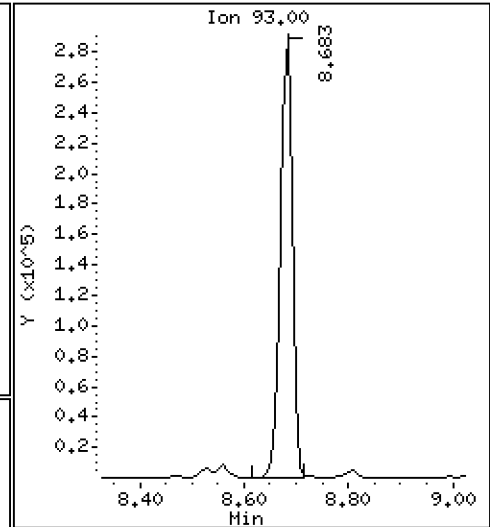
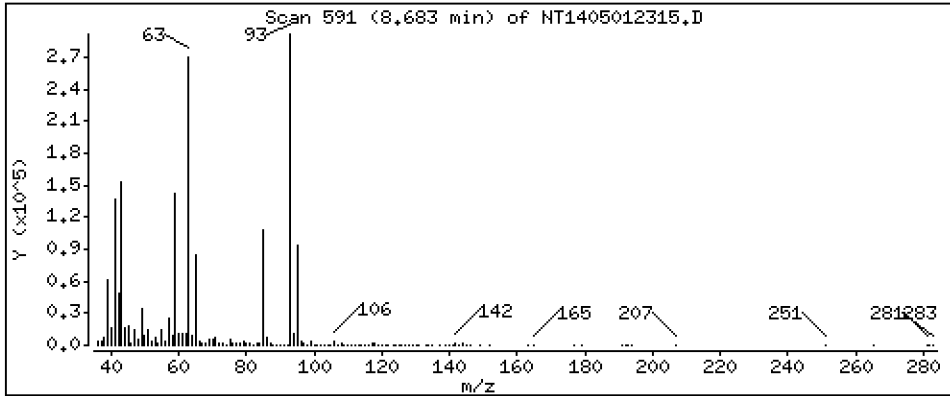
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 3,906 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

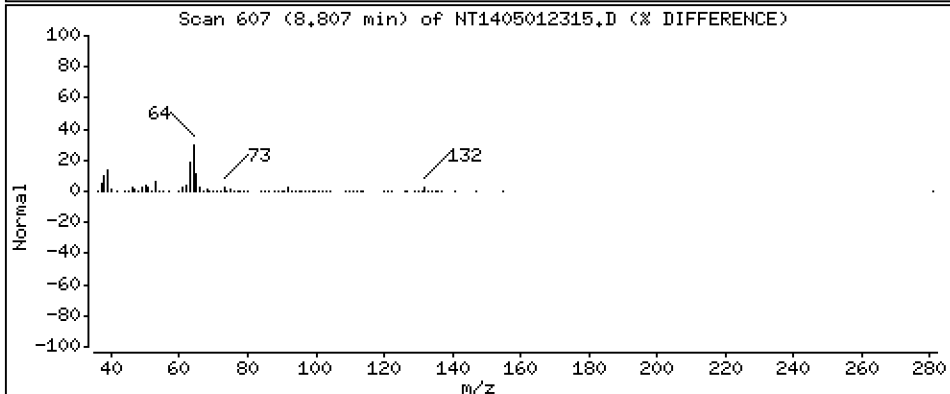
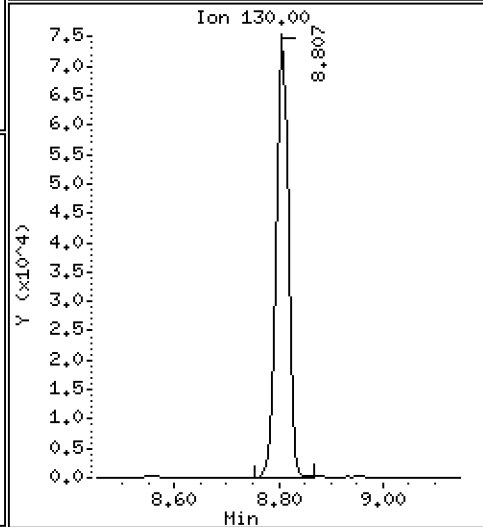
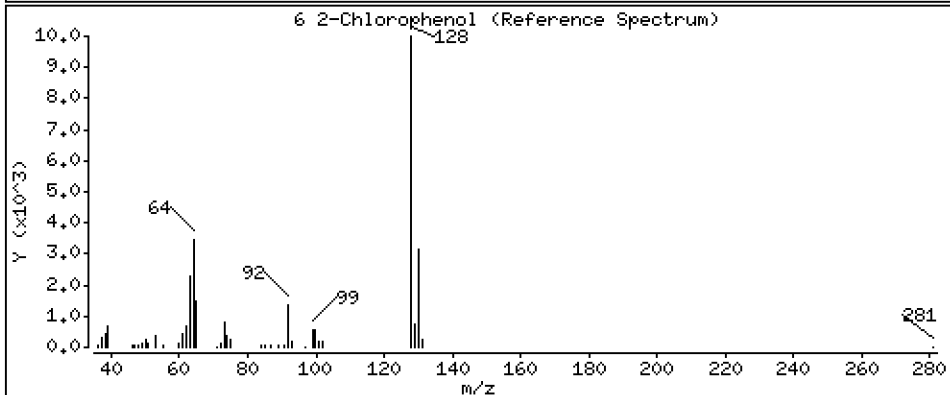
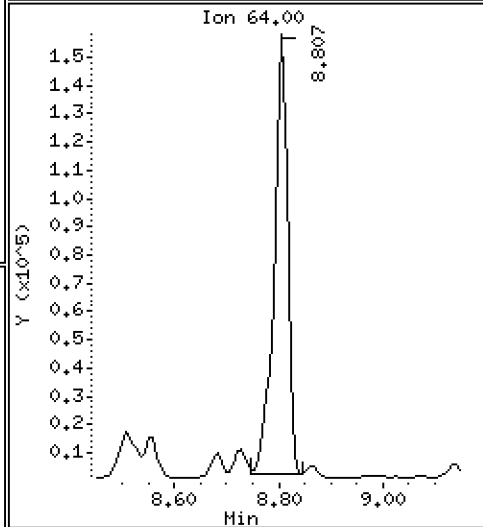
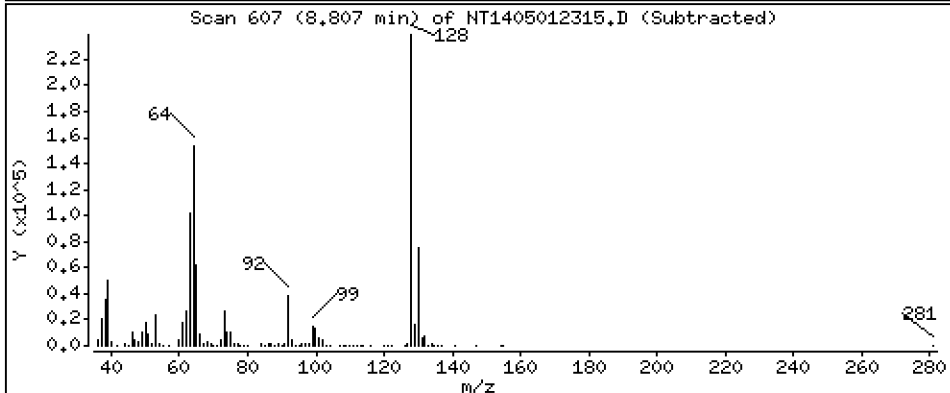
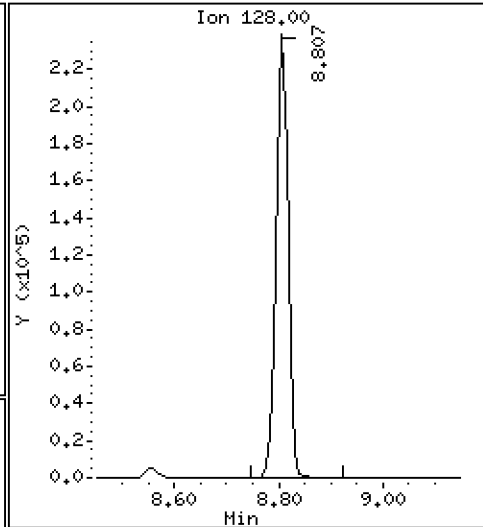
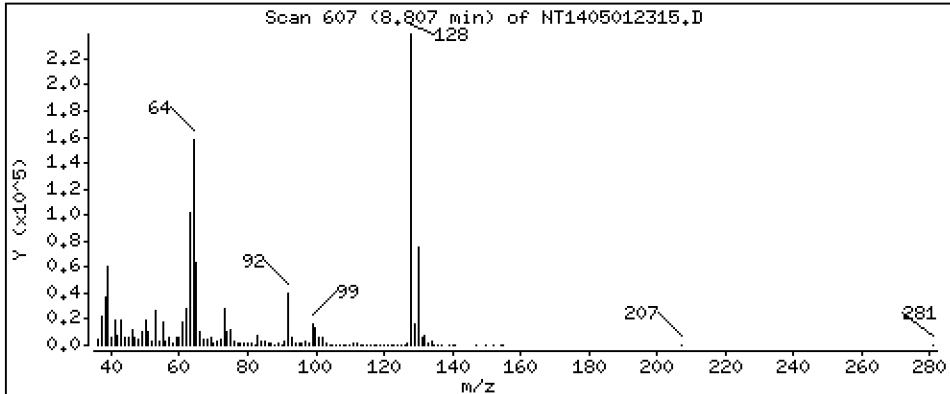
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 3,843 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

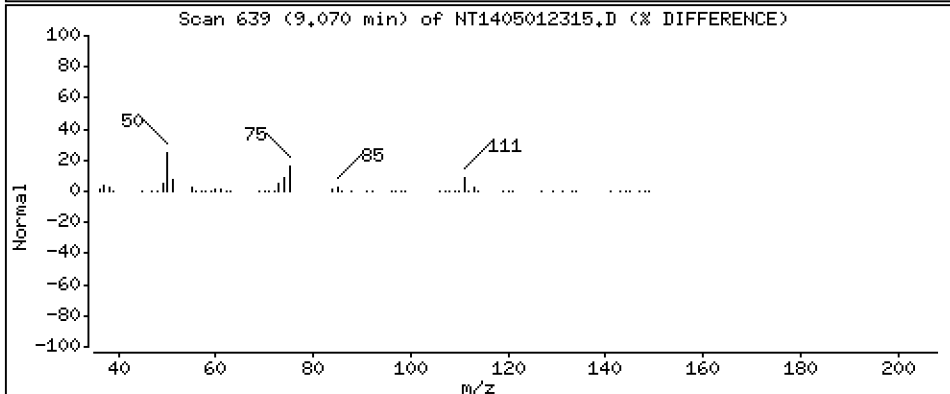
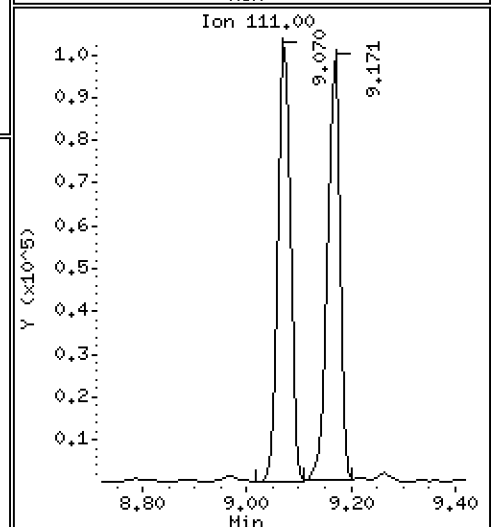
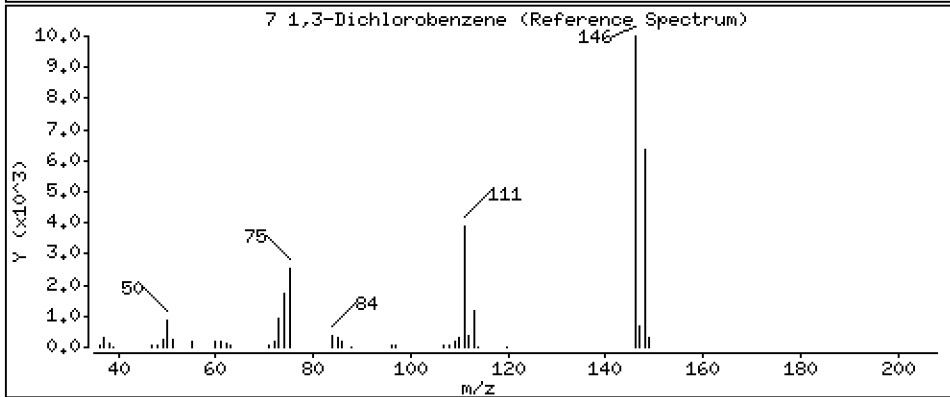
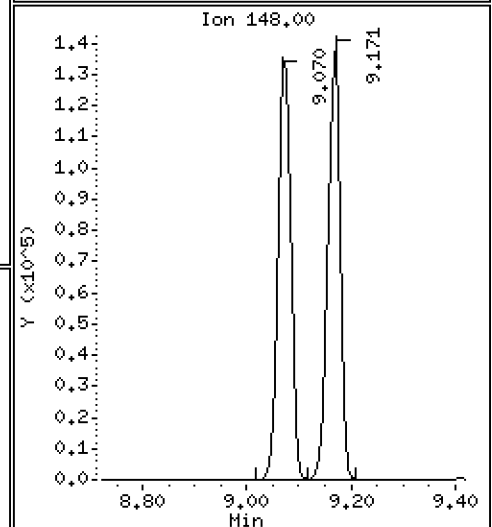
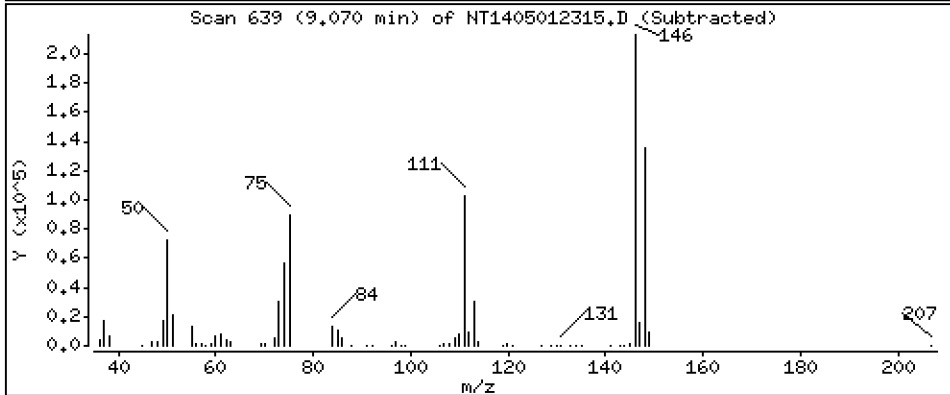
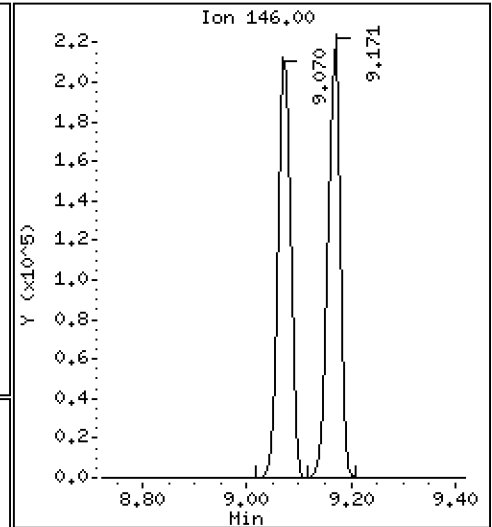
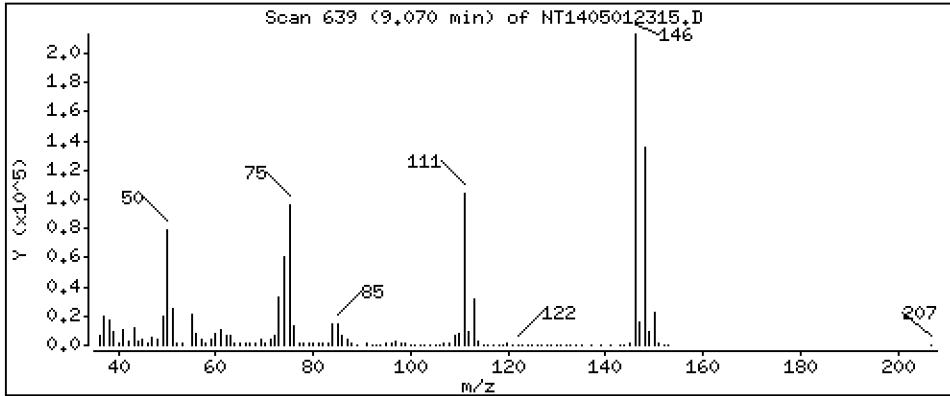
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

7 1,3-Dichlorobenzene

Concentration: 3.452 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

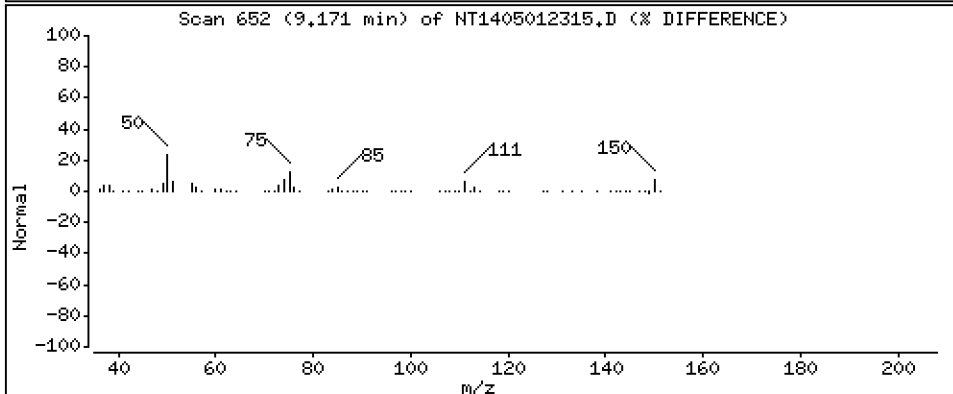
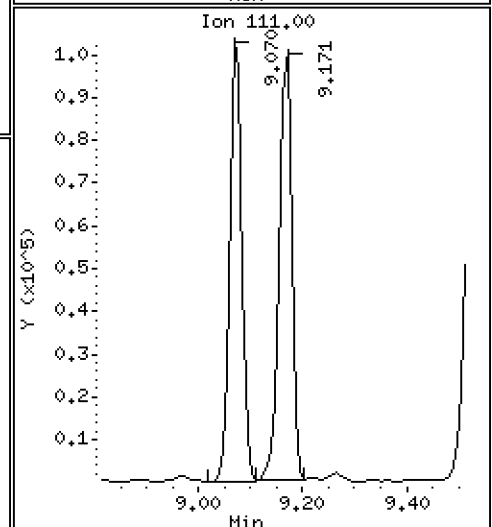
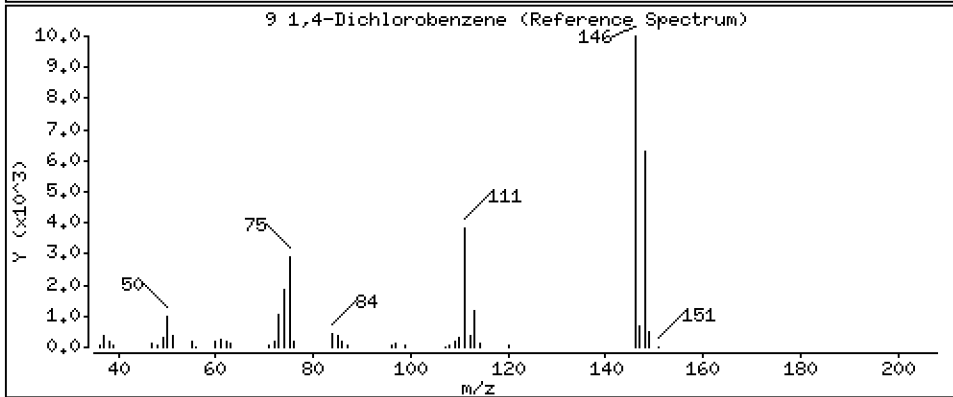
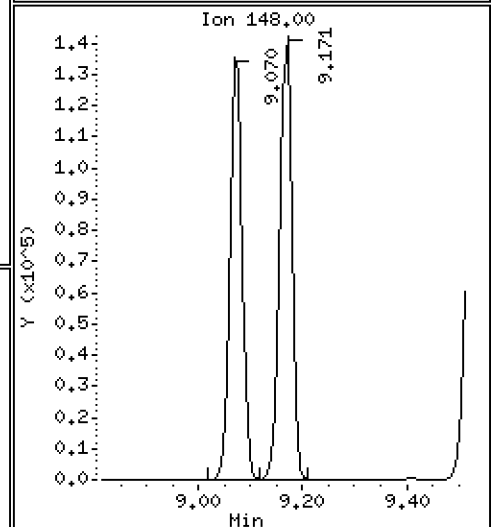
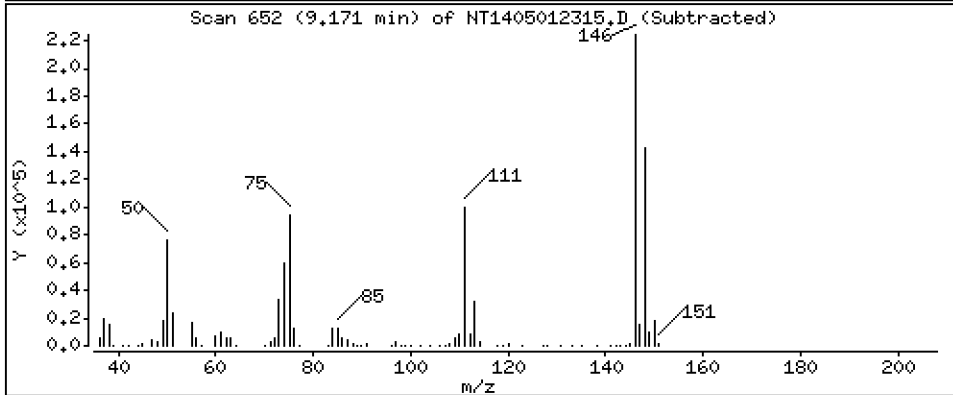
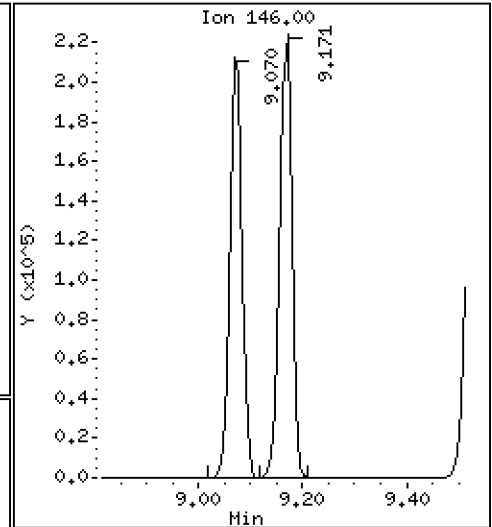
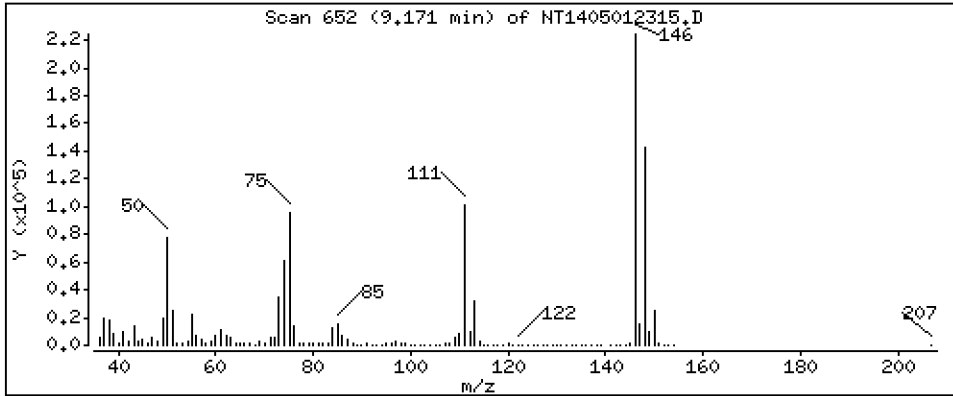
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 3.575 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

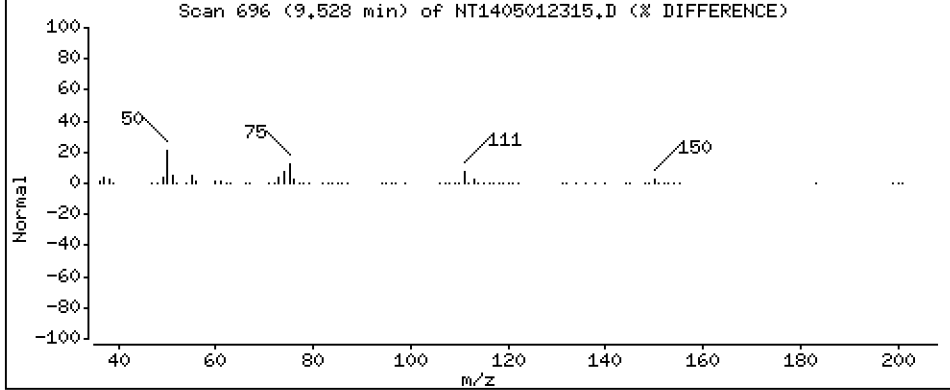
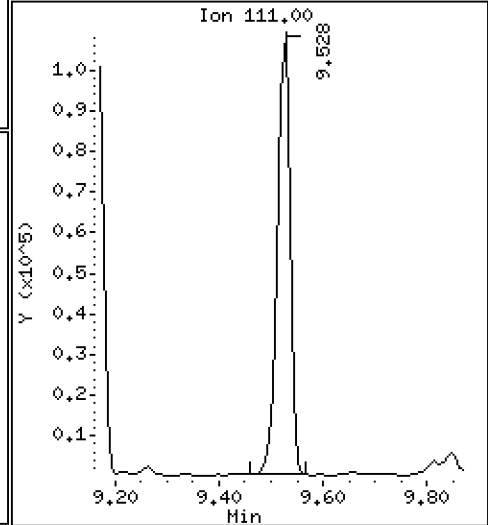
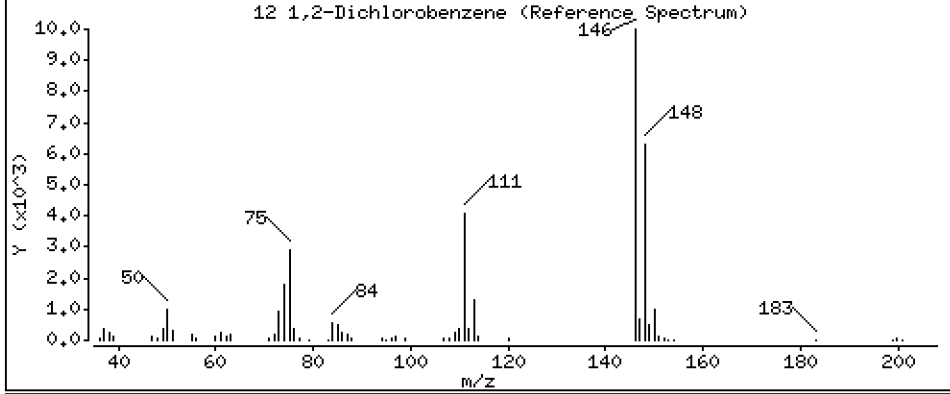
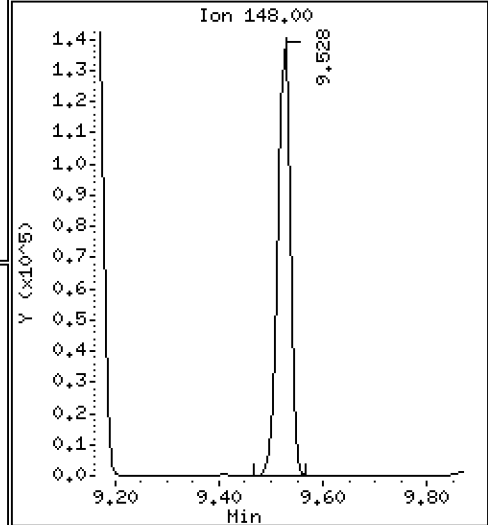
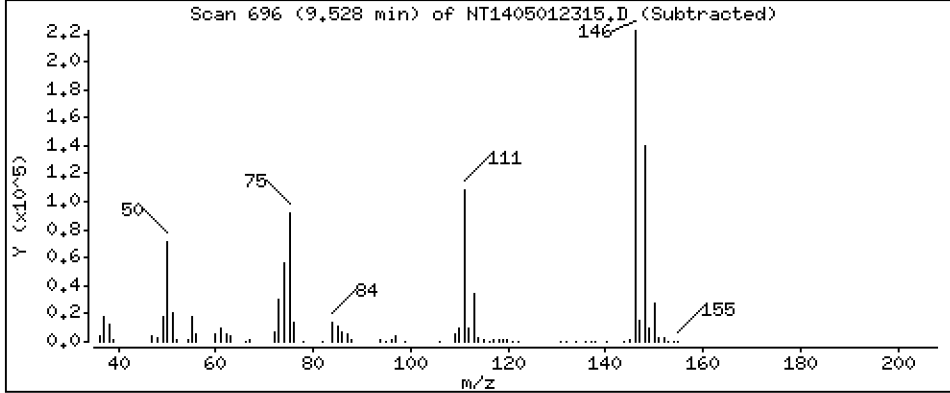
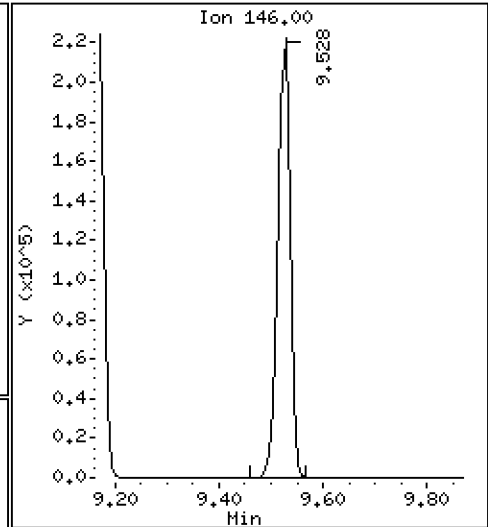
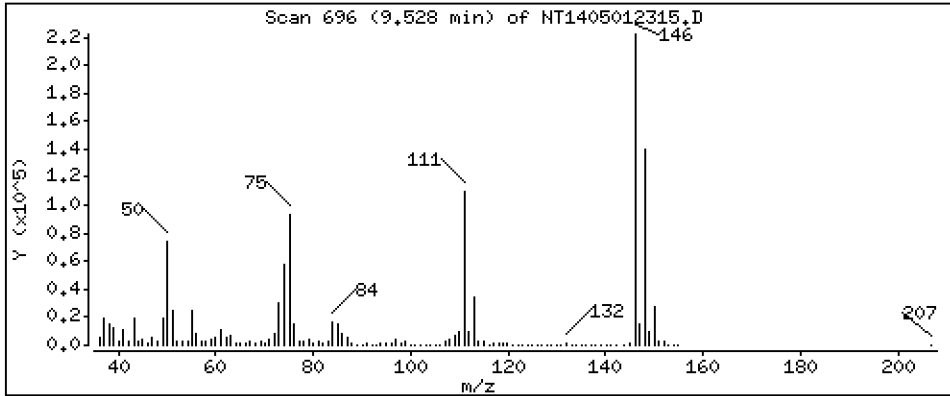
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 3,595 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

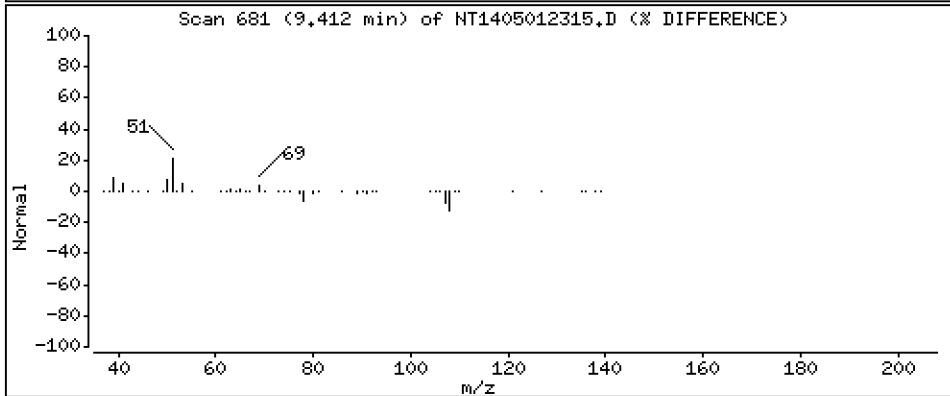
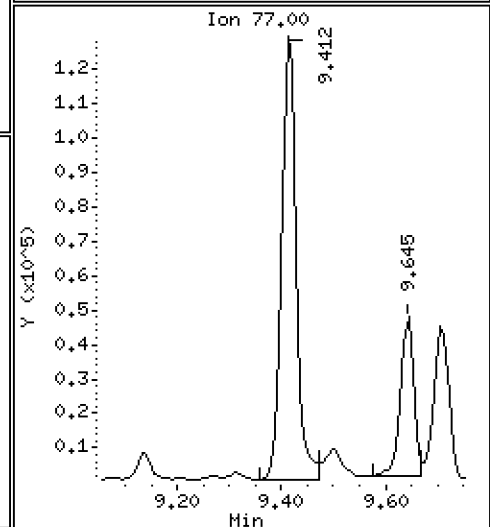
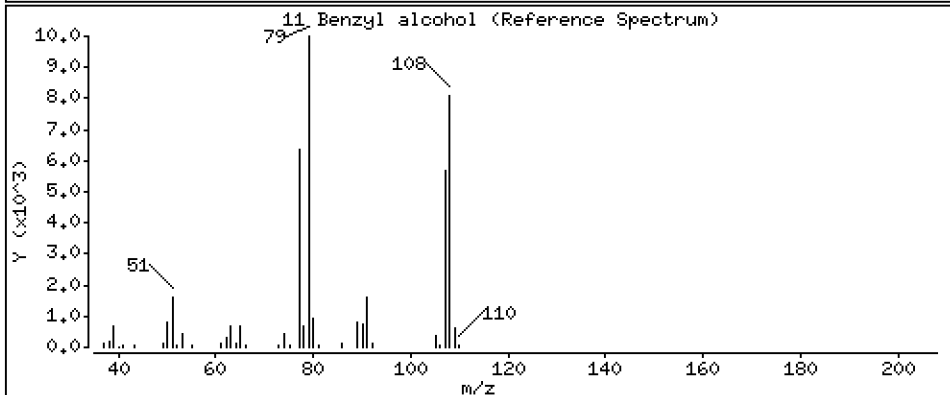
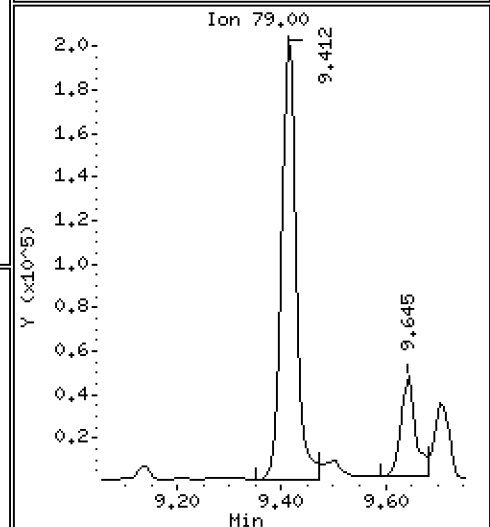
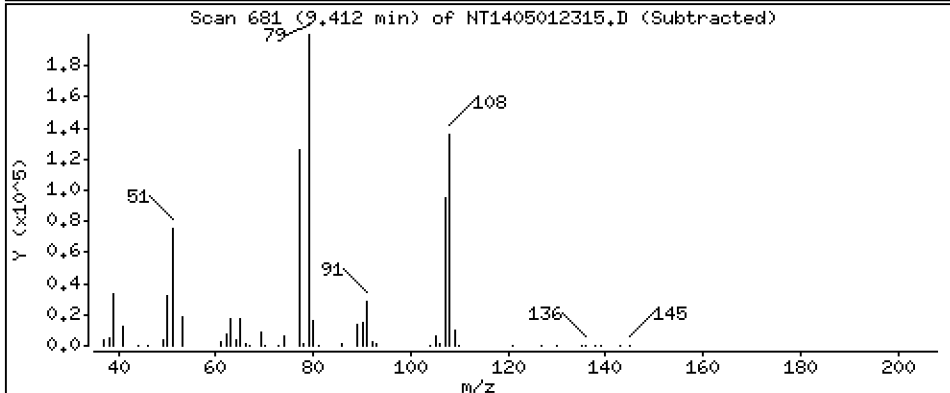
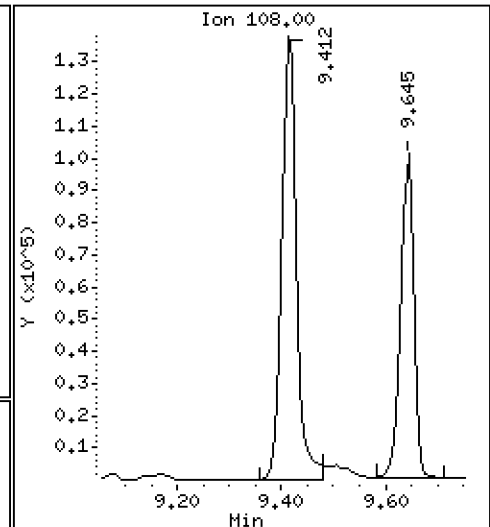
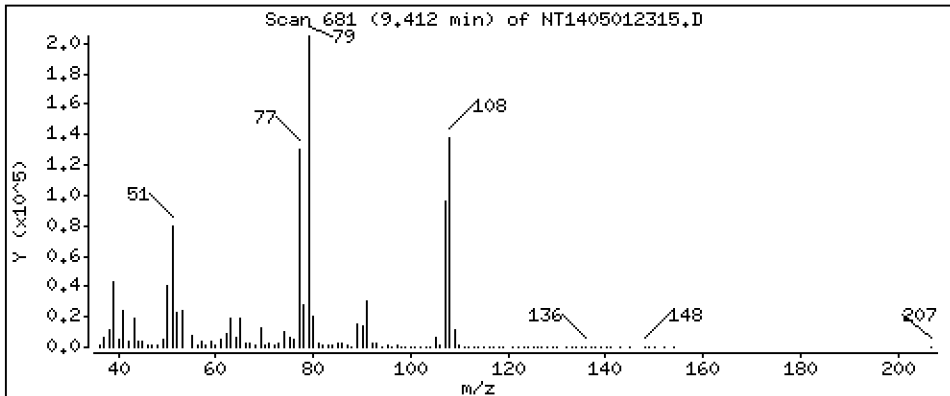
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

11 Benzyl alcohol

Concentration: 3,921 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

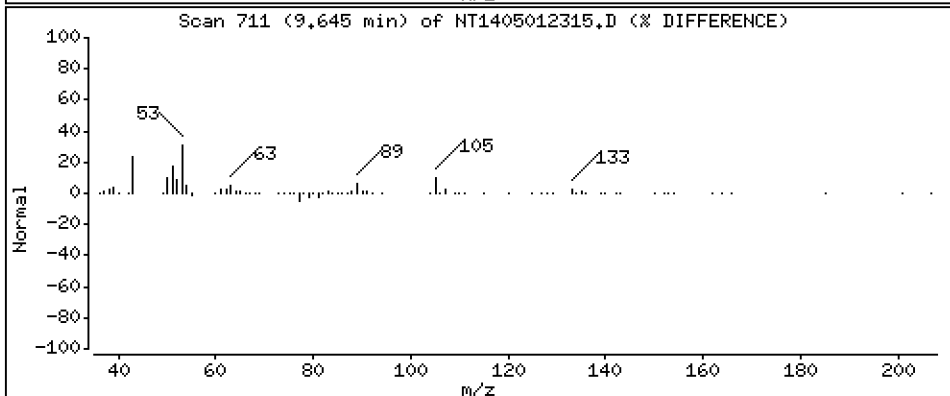
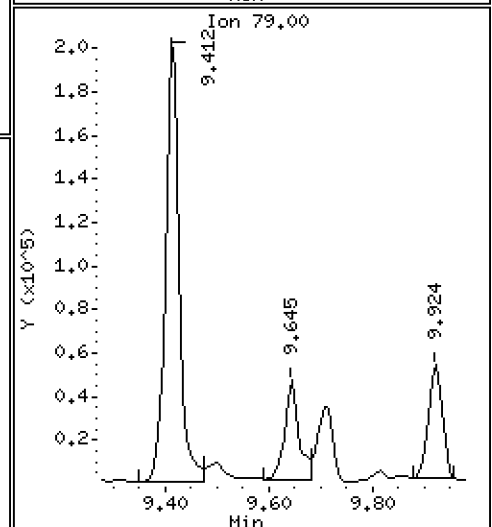
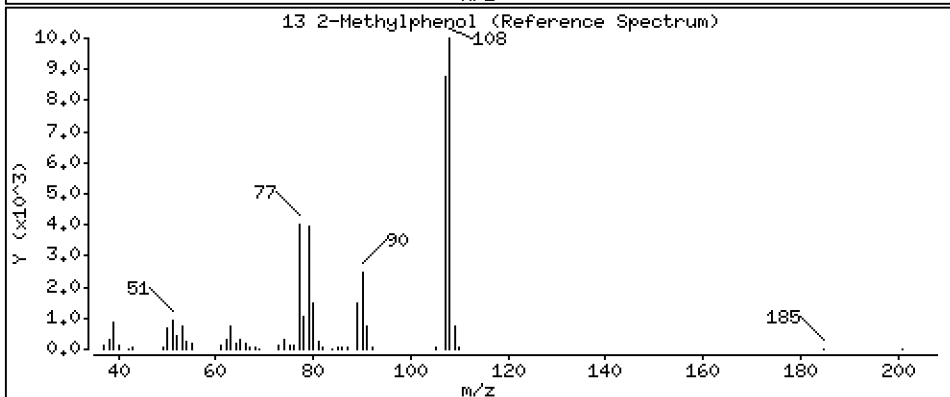
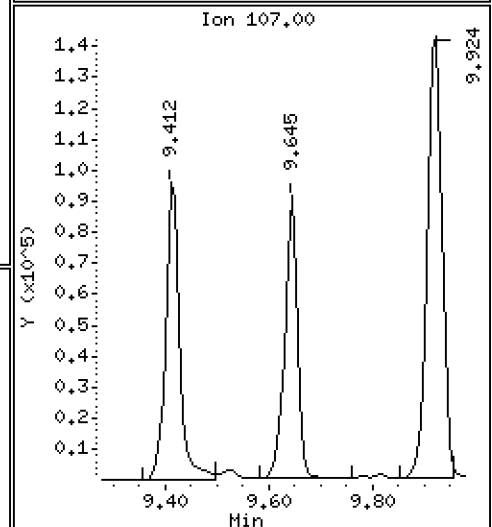
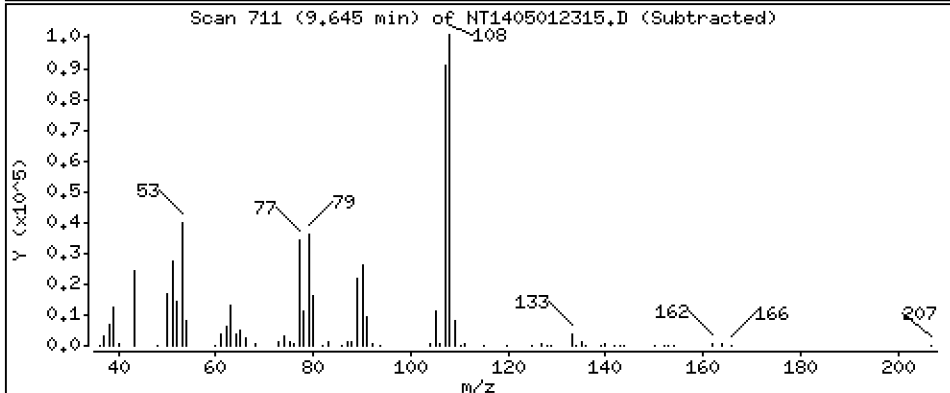
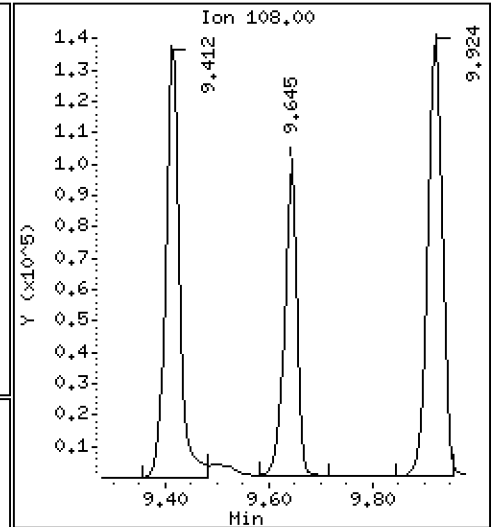
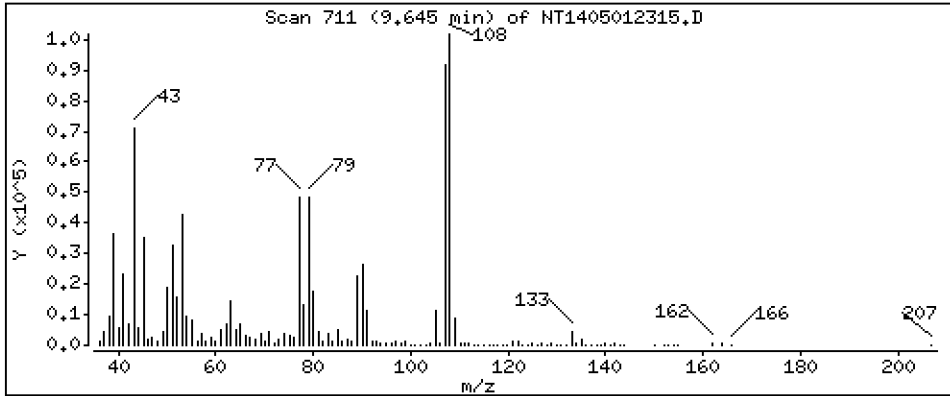
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 1.719 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

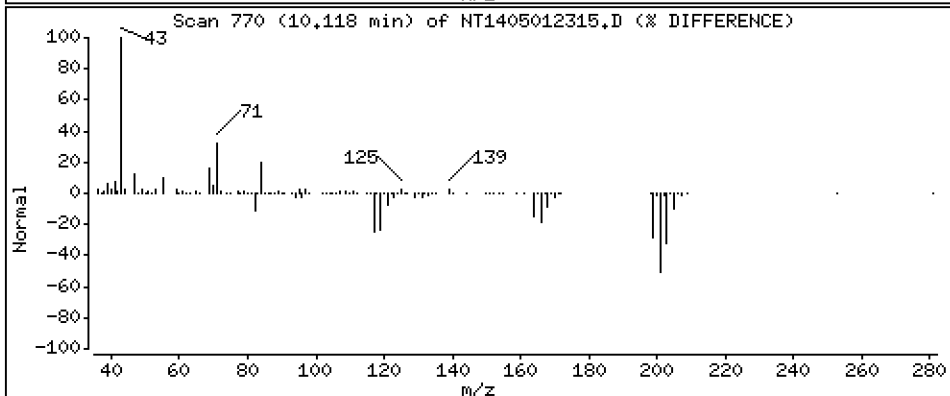
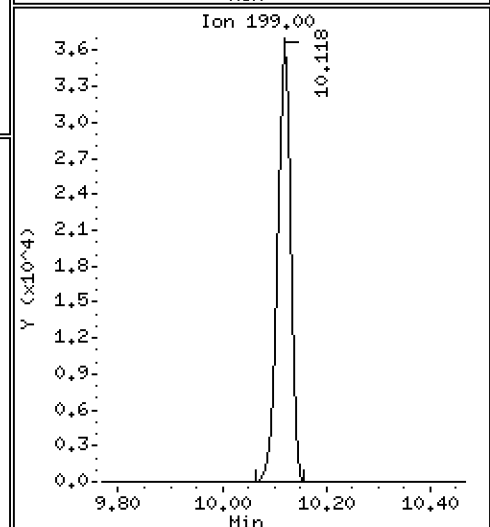
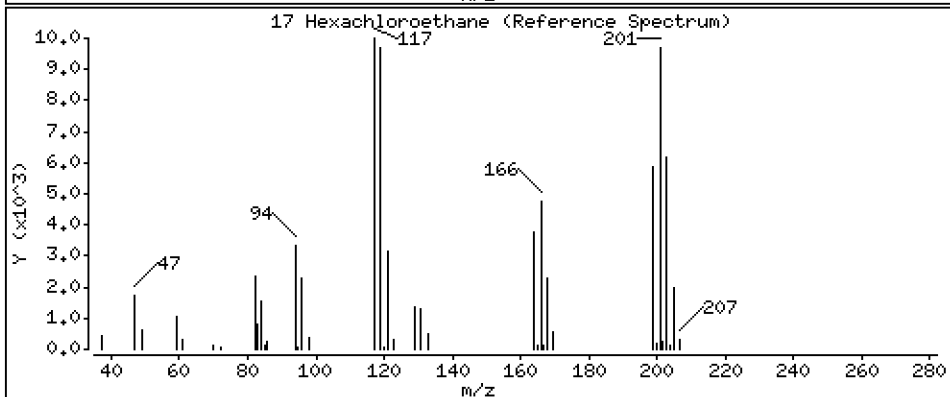
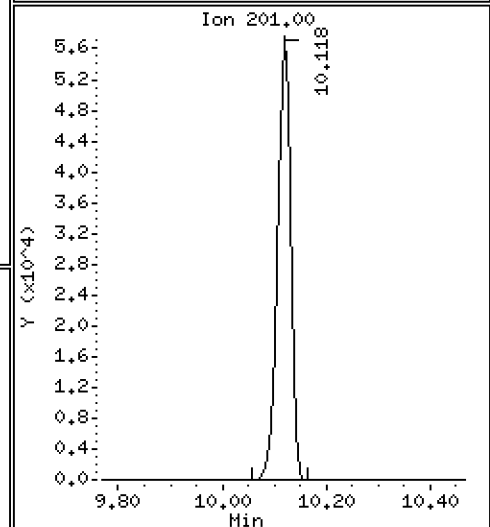
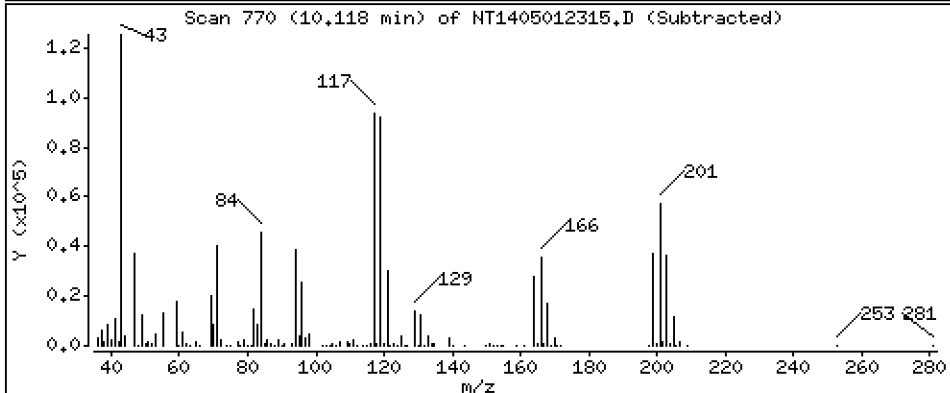
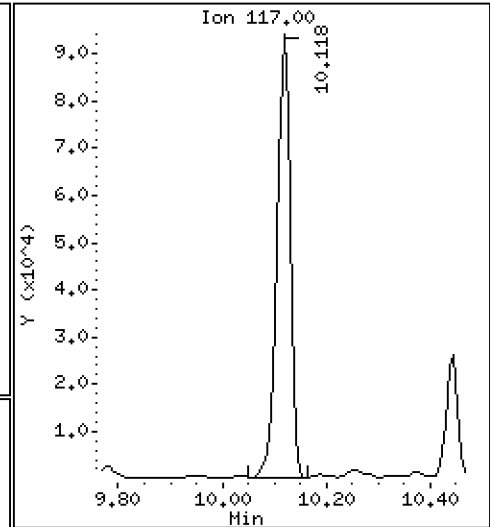
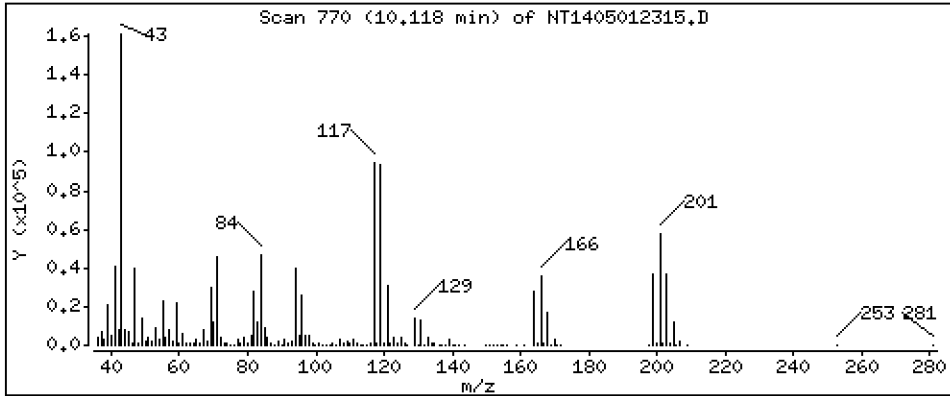
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 3,421 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

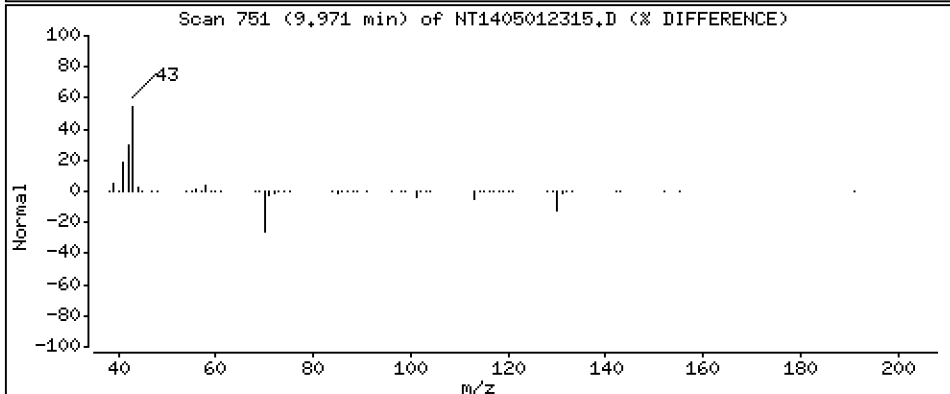
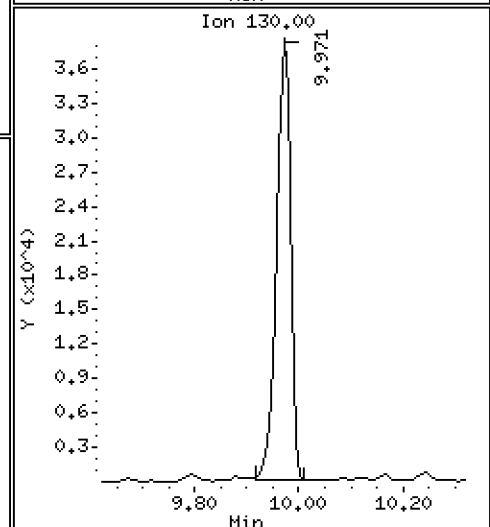
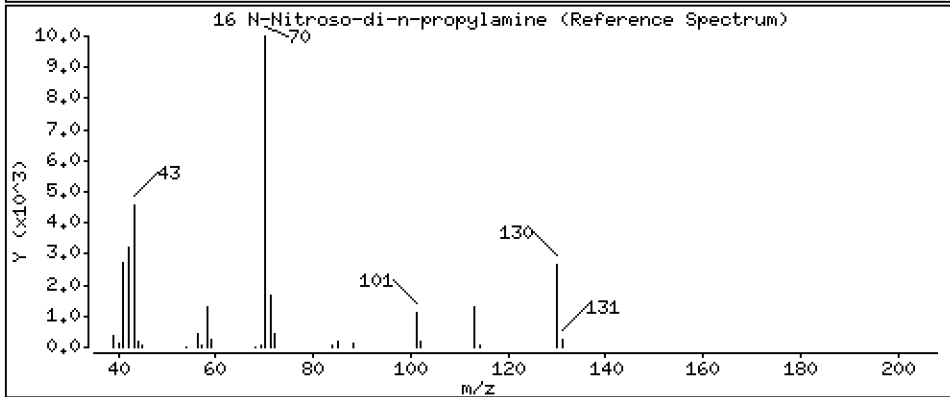
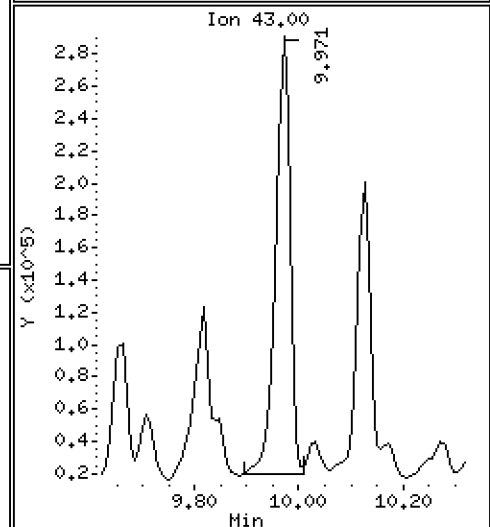
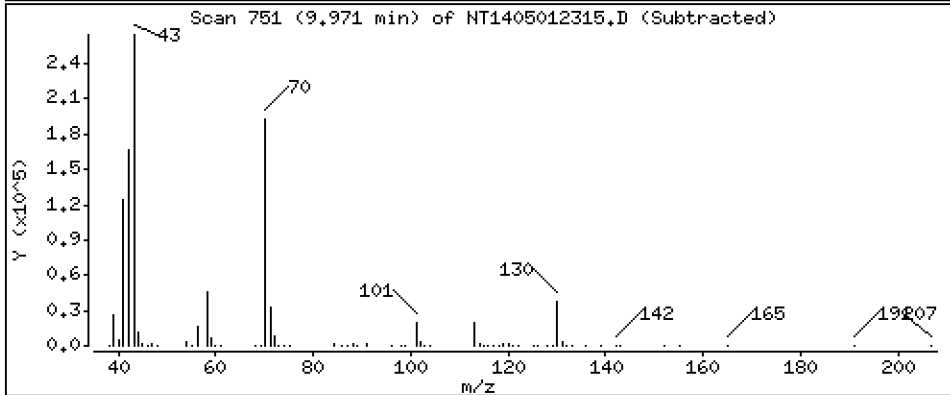
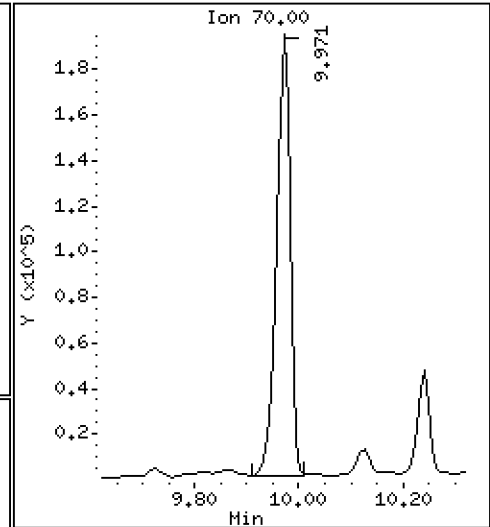
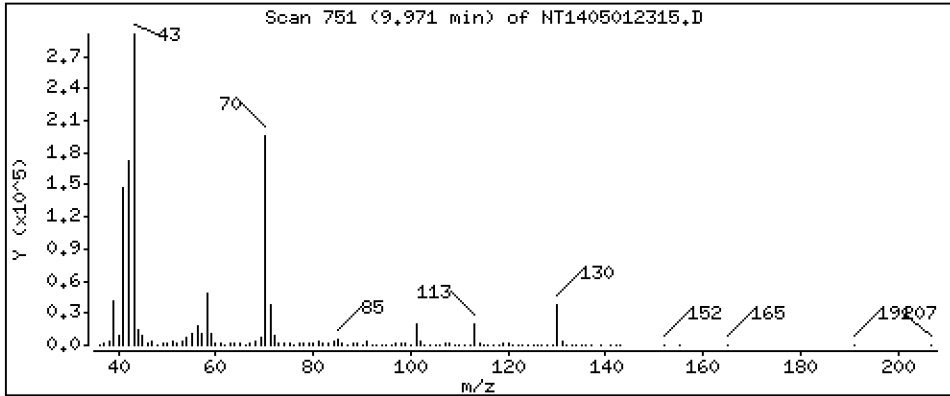
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

16 N-Nitroso-di-n-propylamine

Concentration: 3.449 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

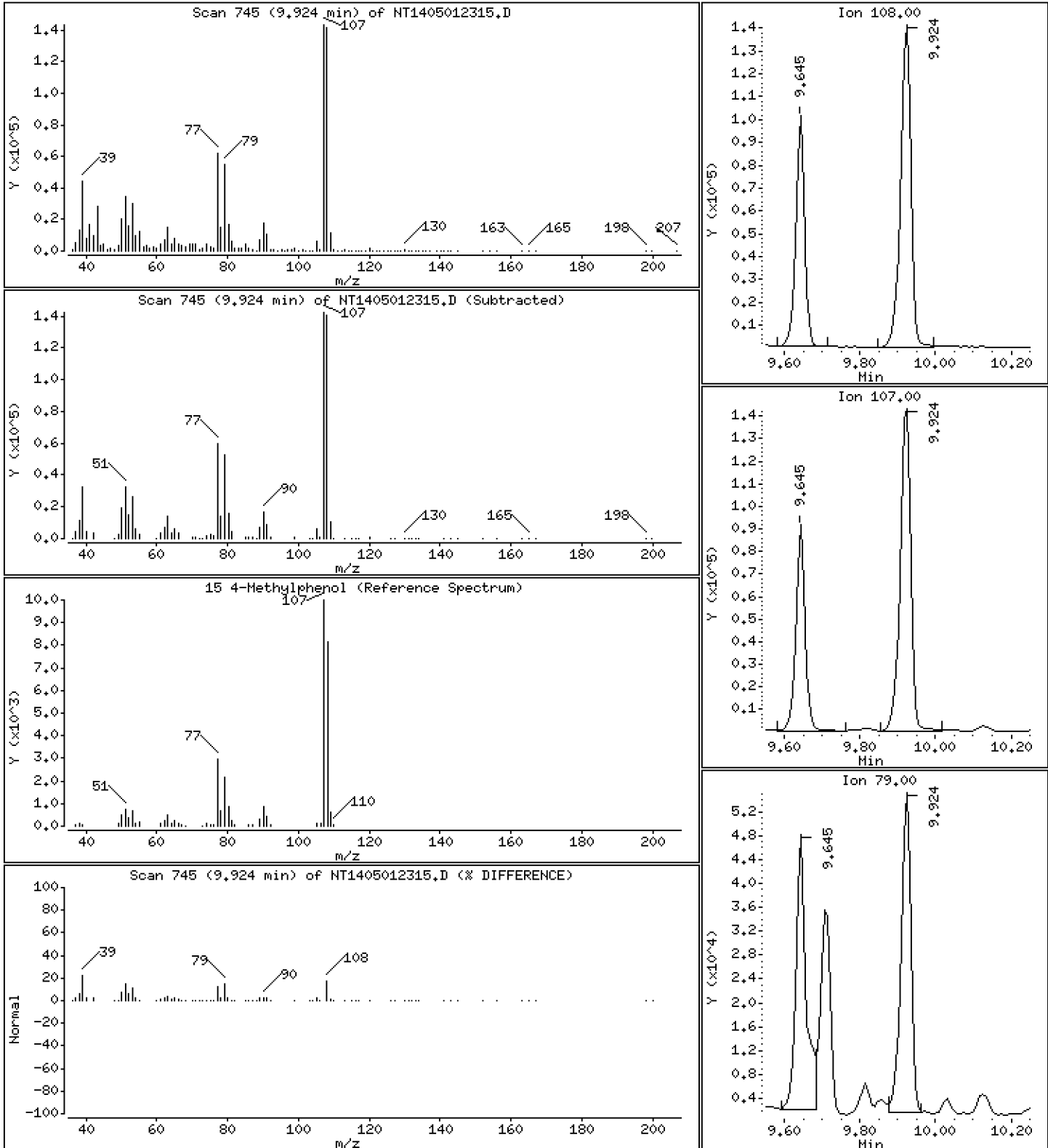
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 2,490 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

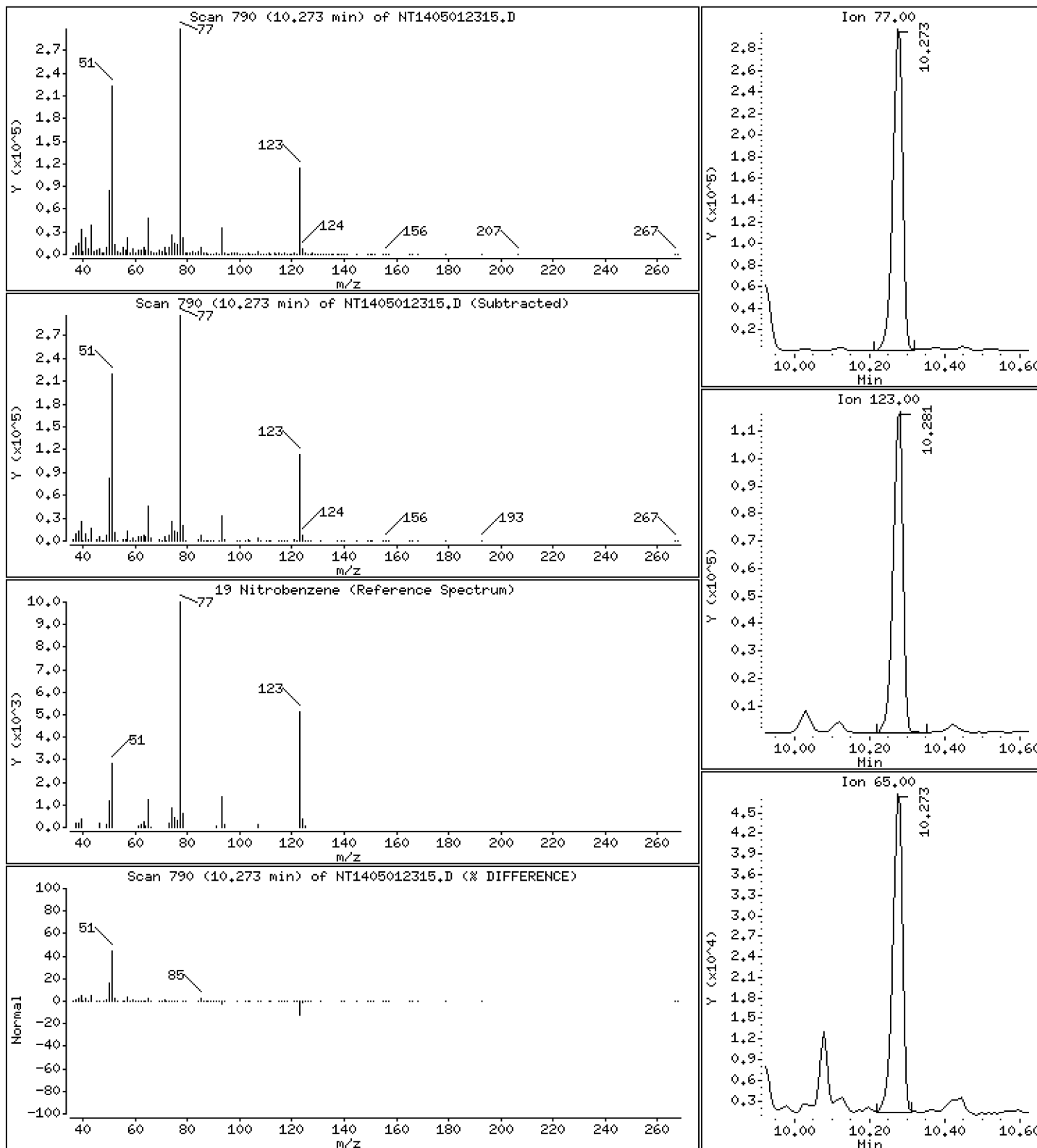
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 3,817 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

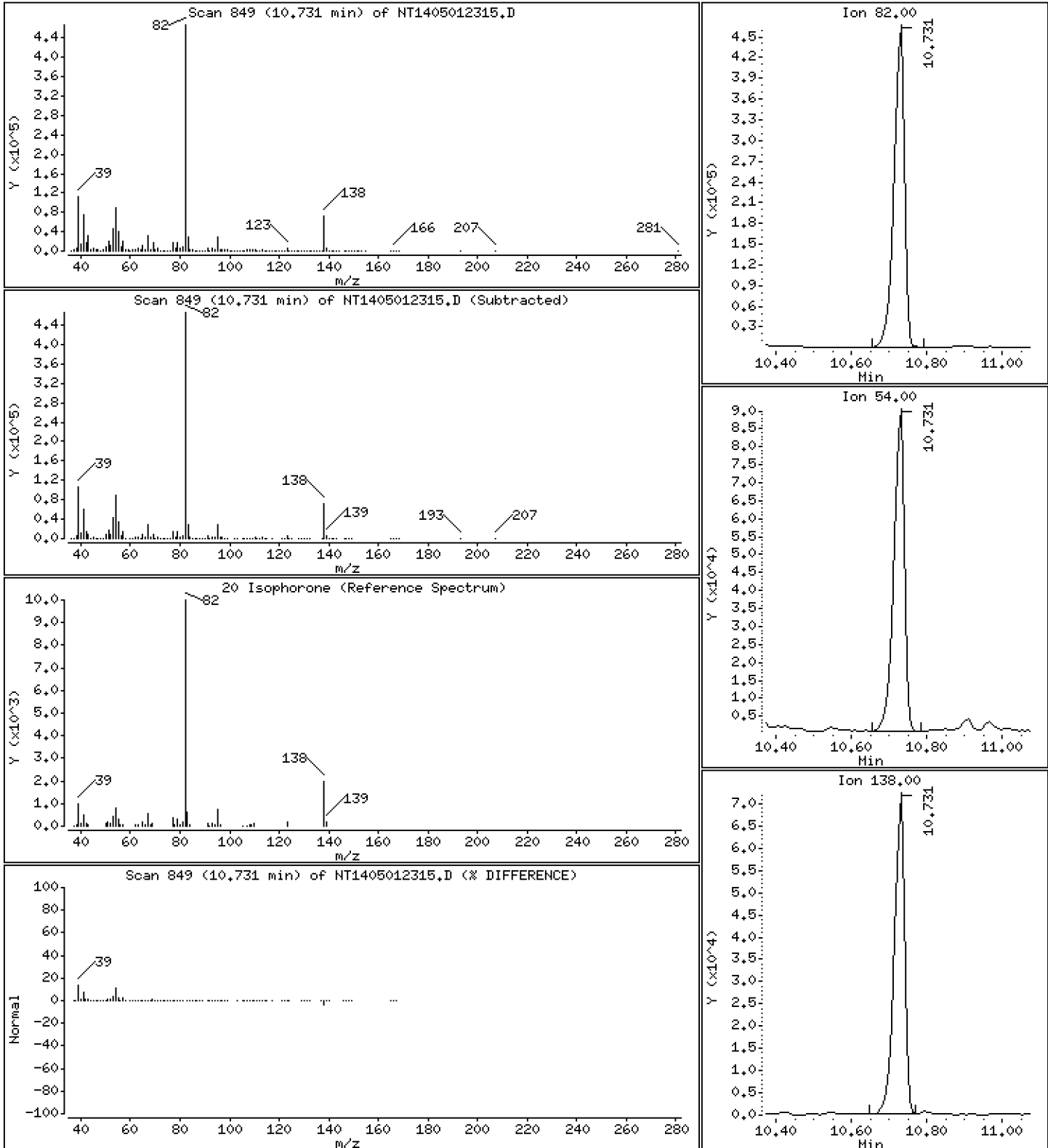
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 4,647 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

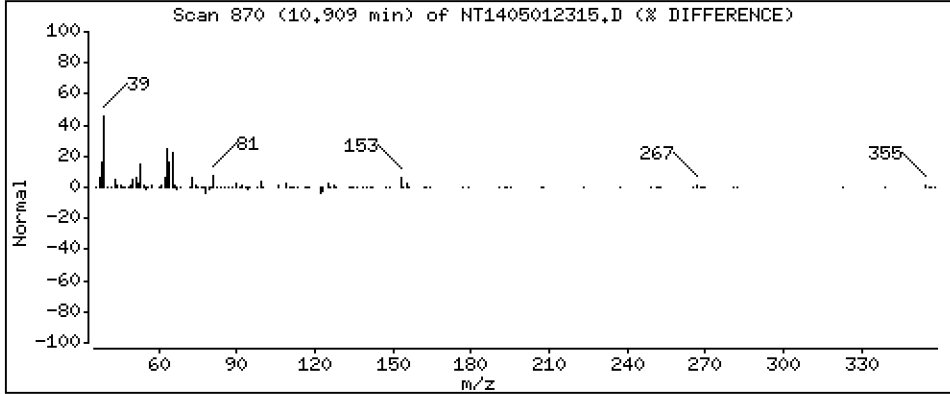
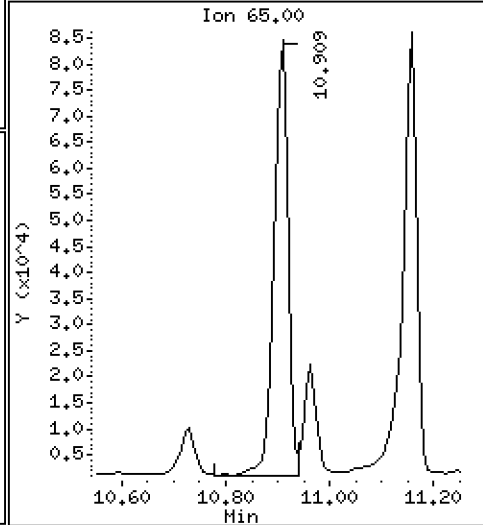
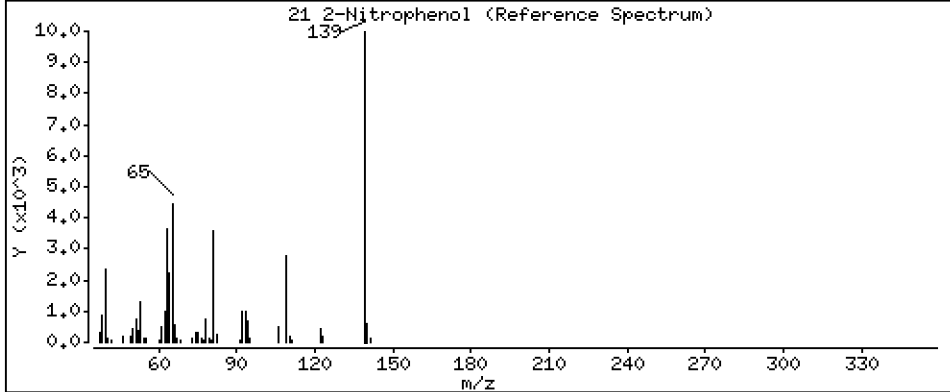
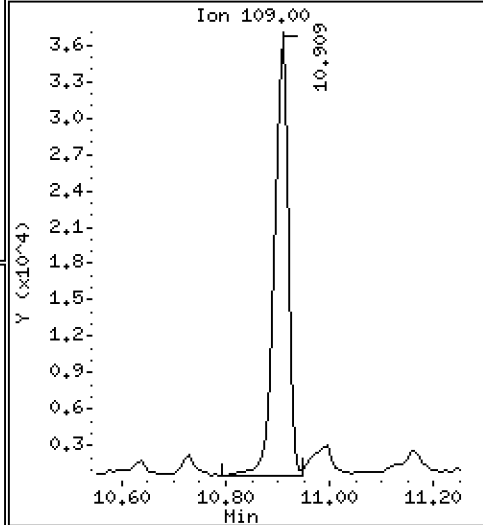
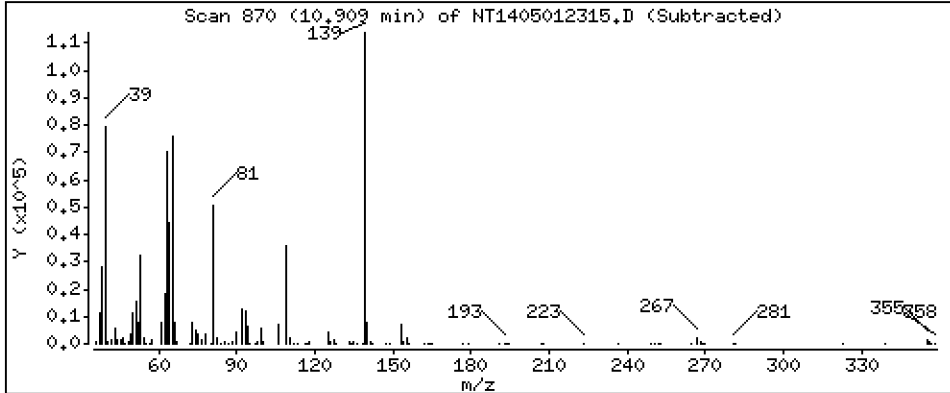
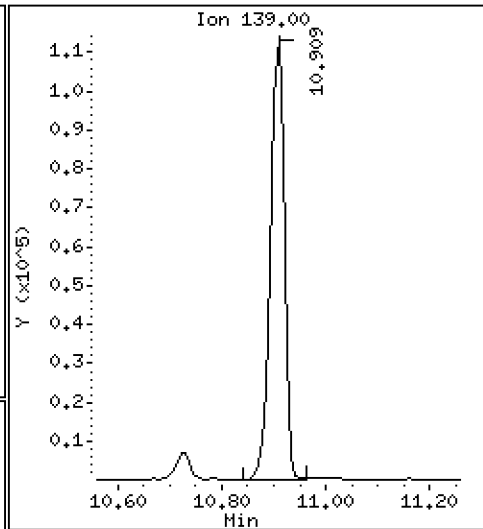
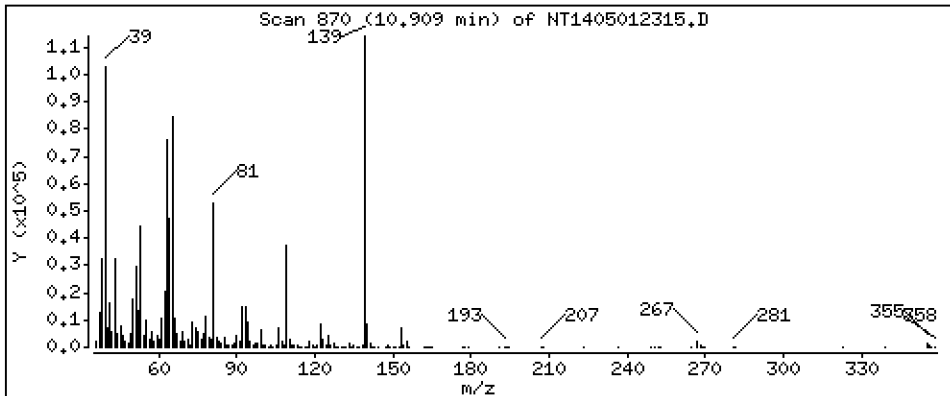
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 3,015 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

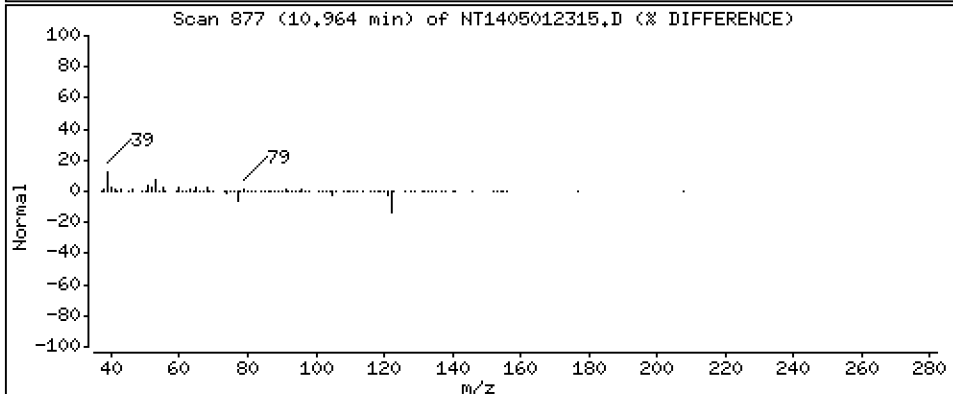
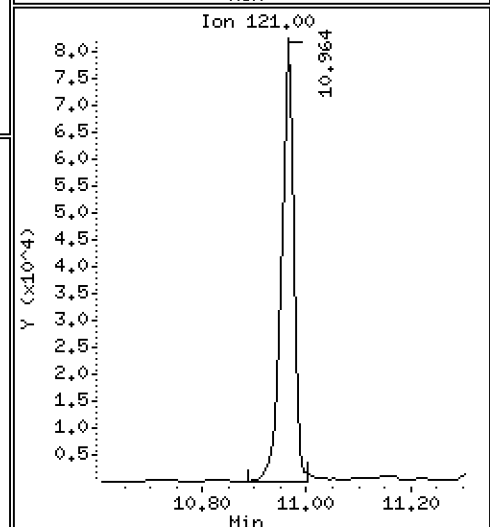
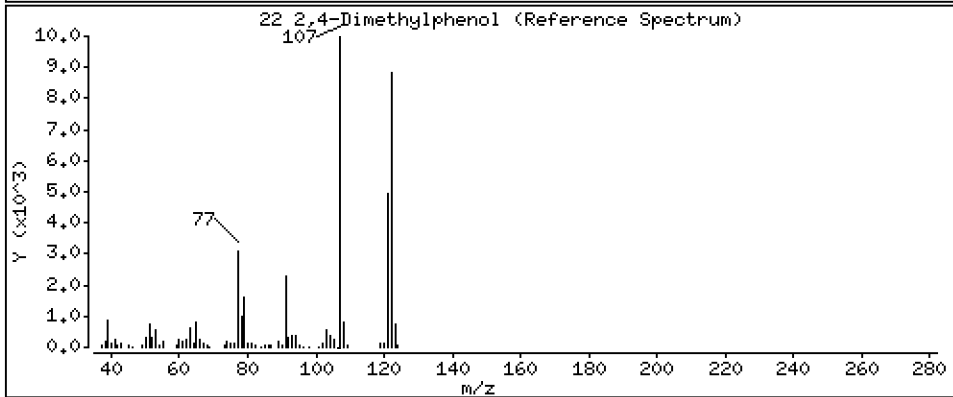
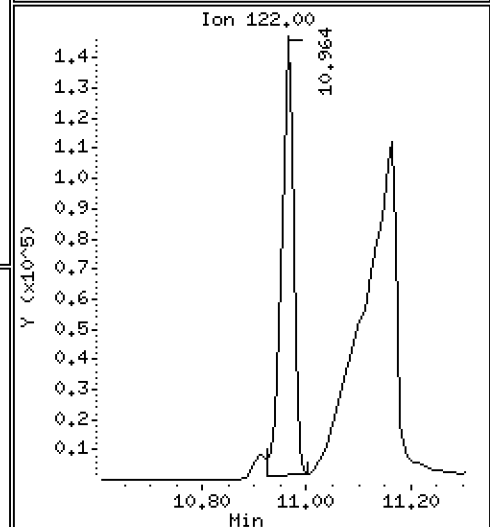
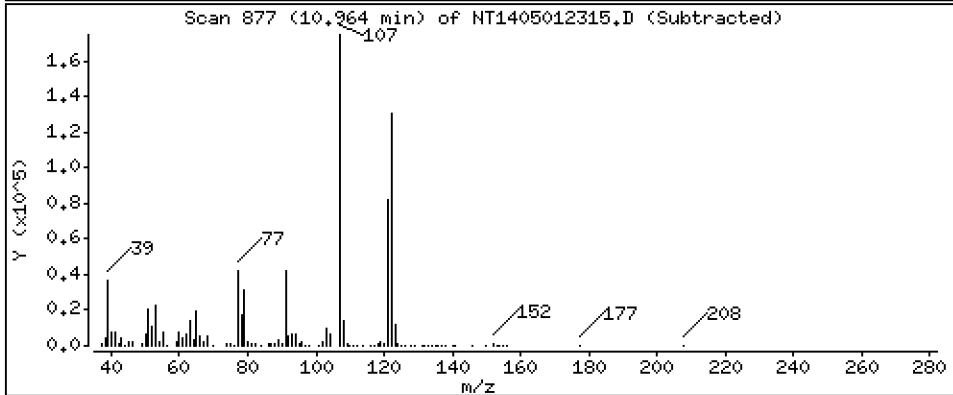
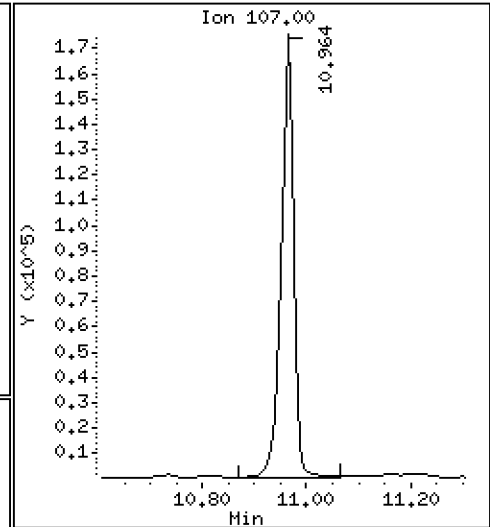
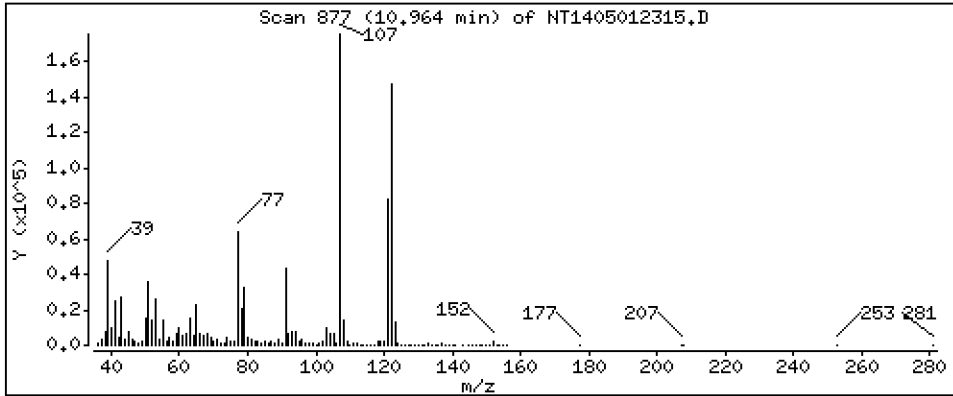
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 2.812 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

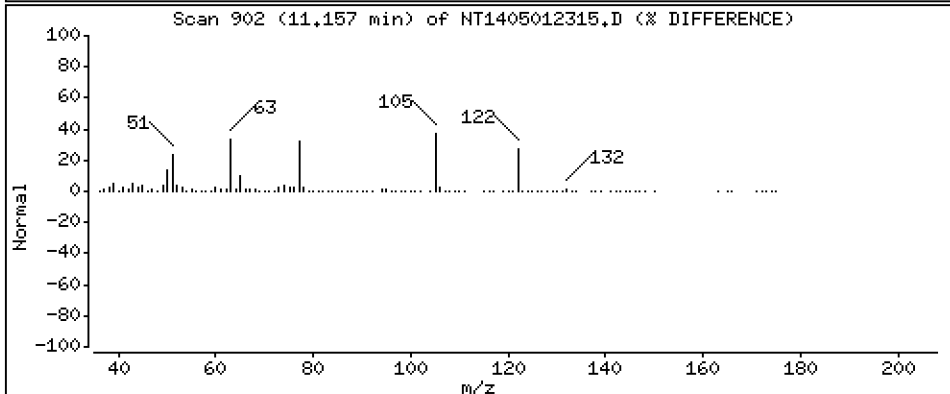
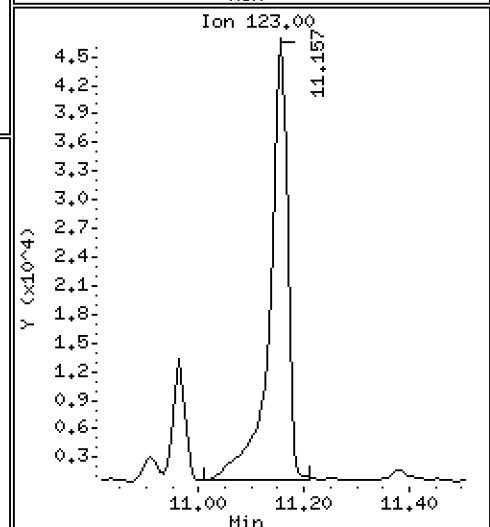
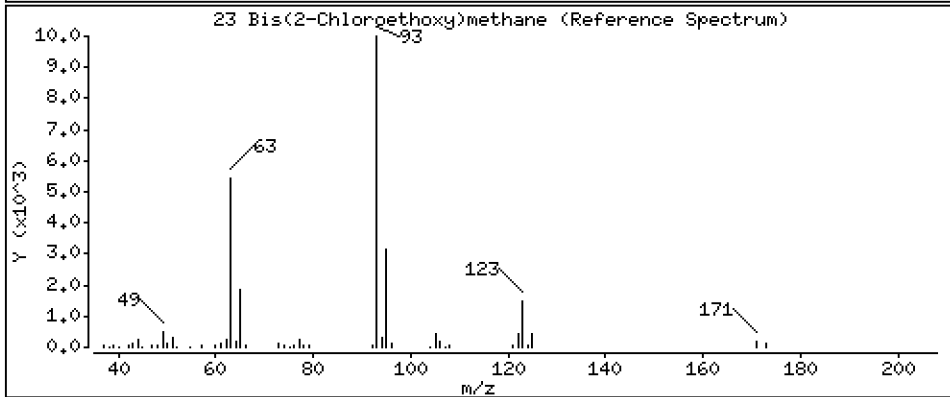
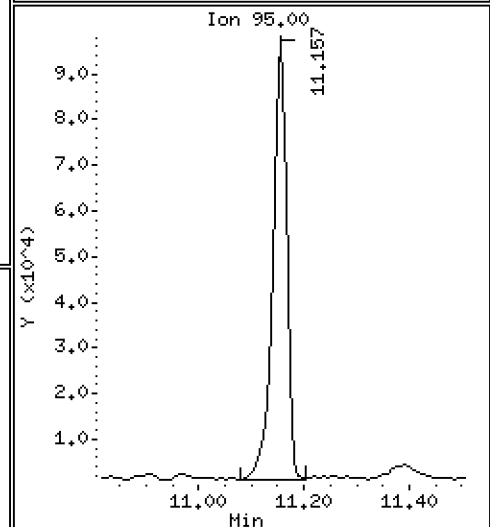
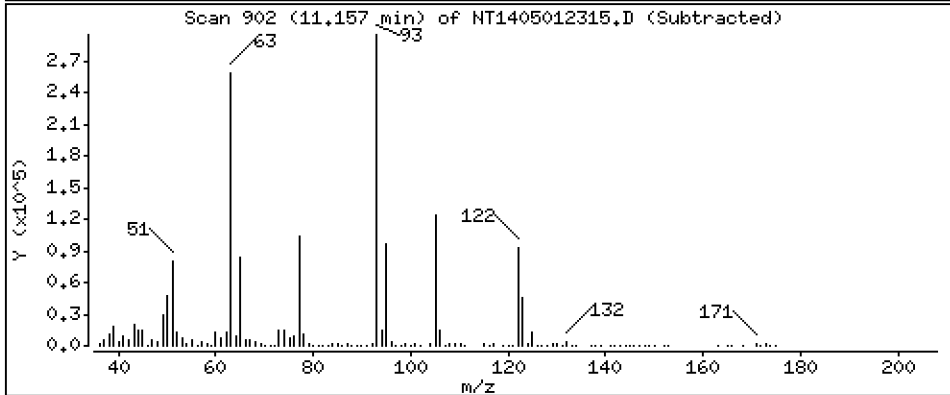
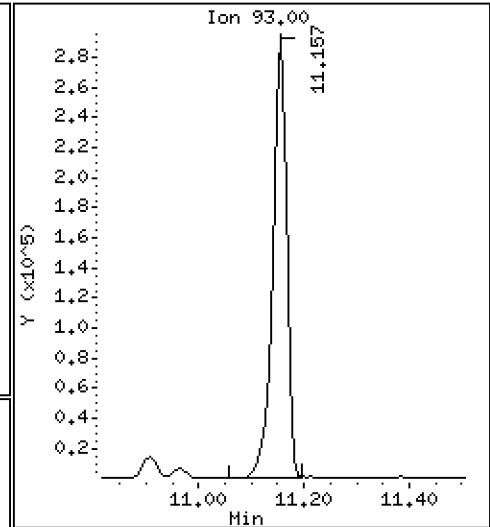
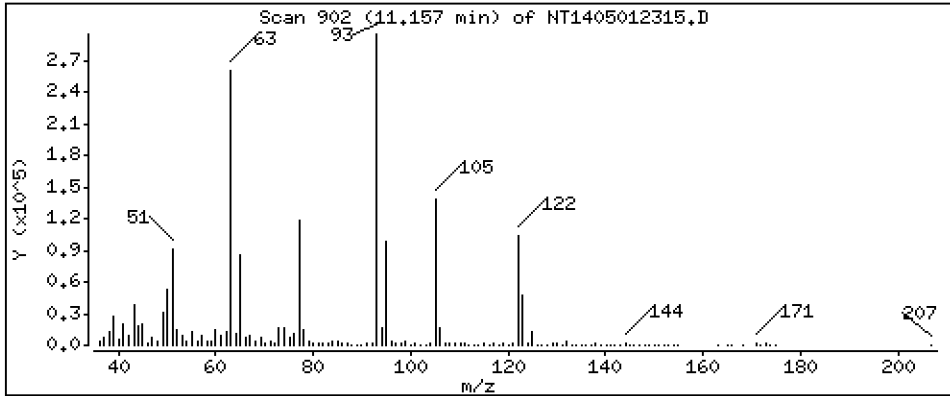
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 4,363 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

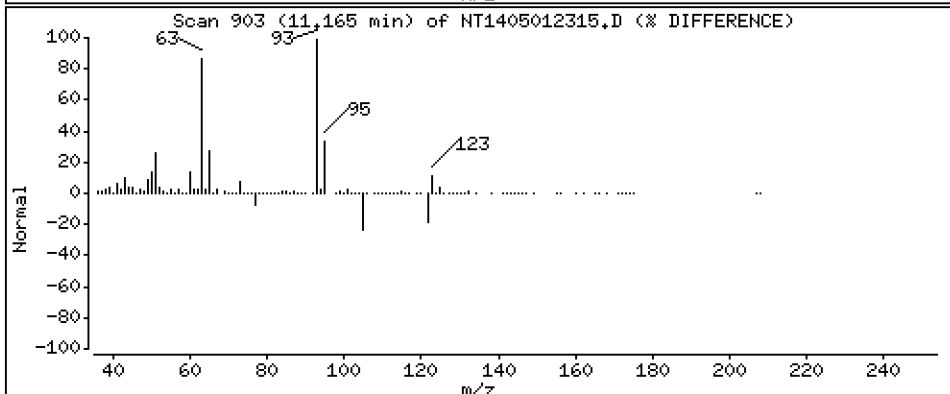
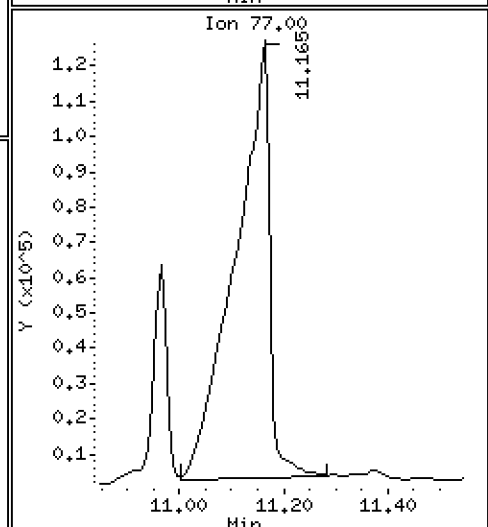
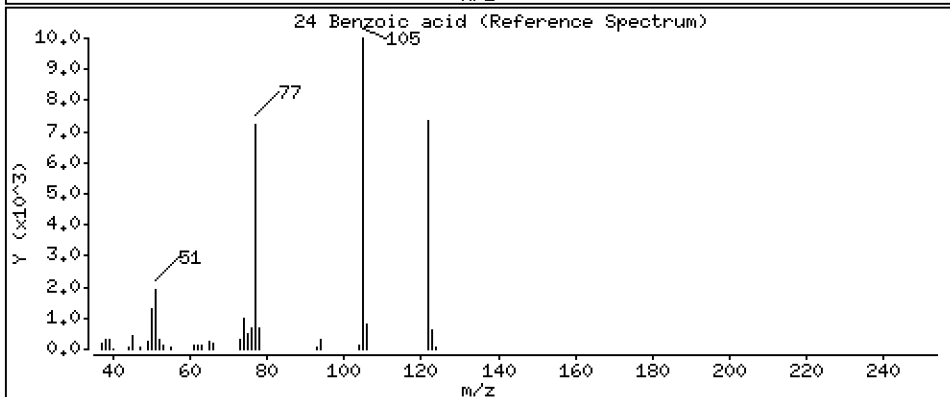
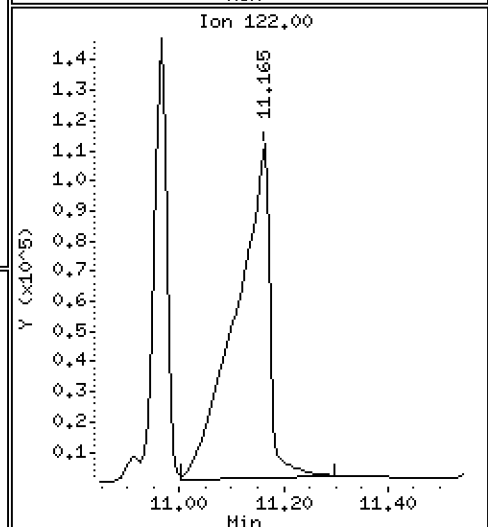
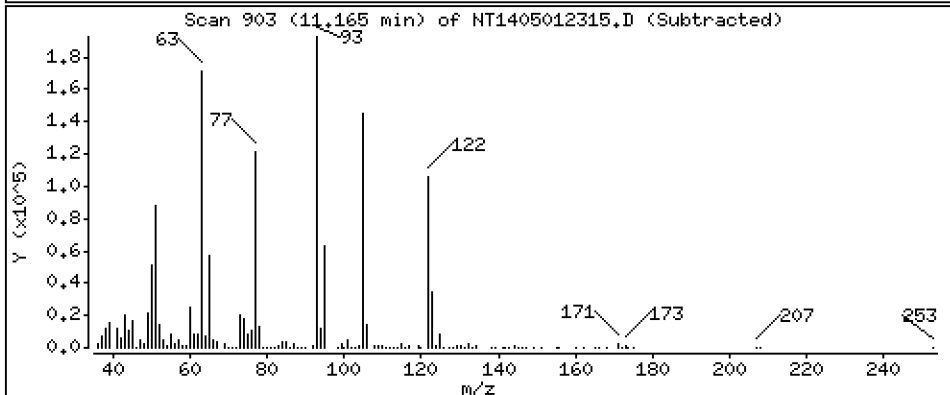
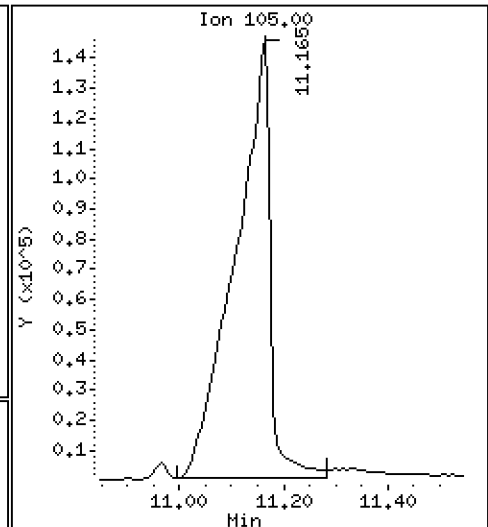
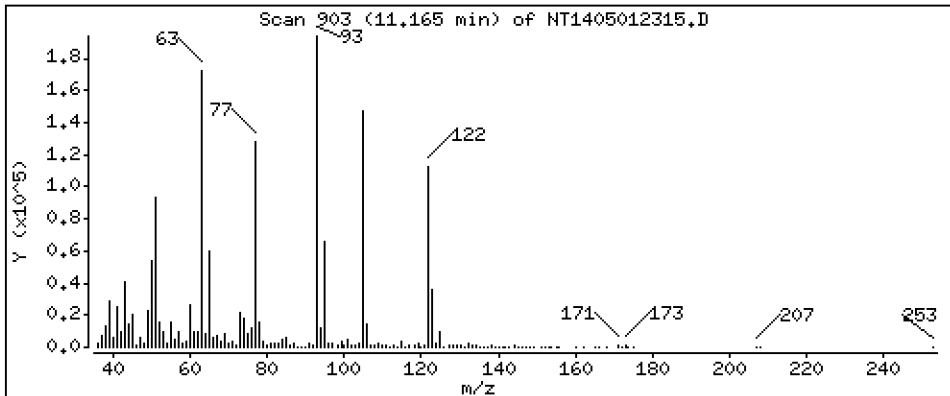
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 8,224 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

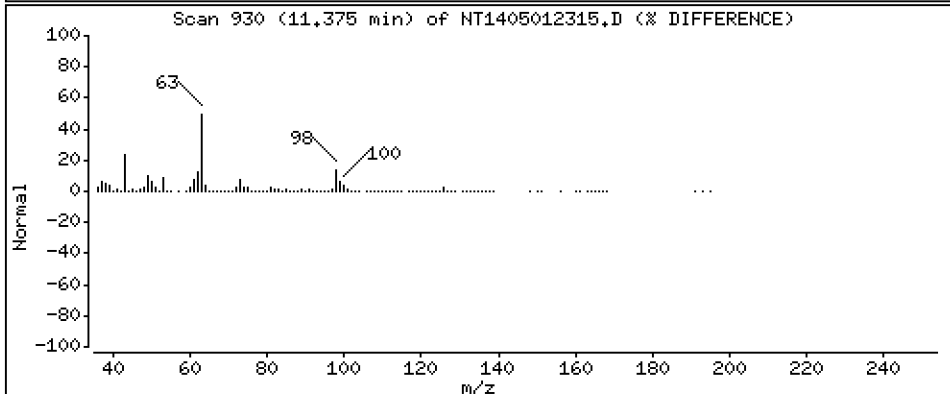
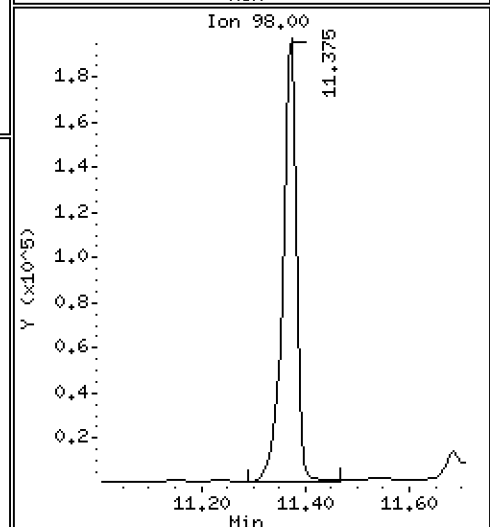
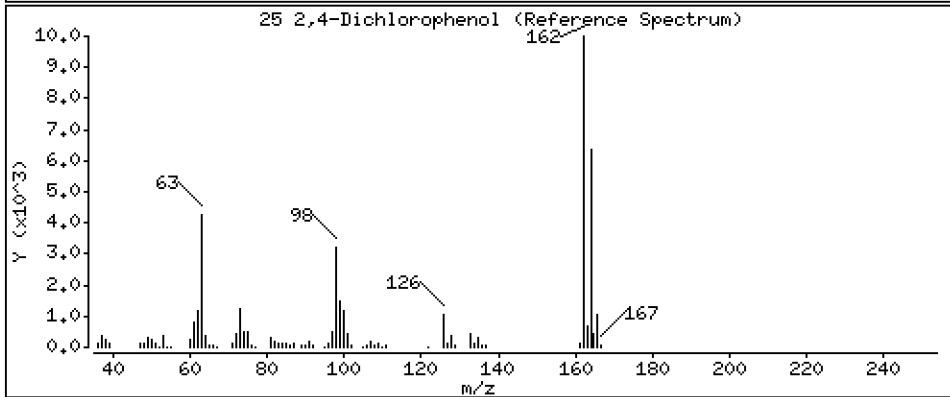
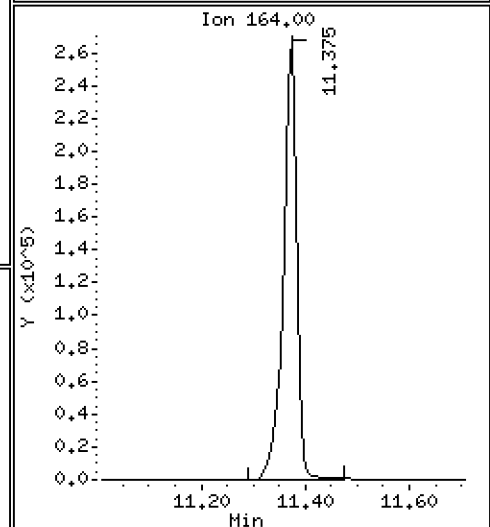
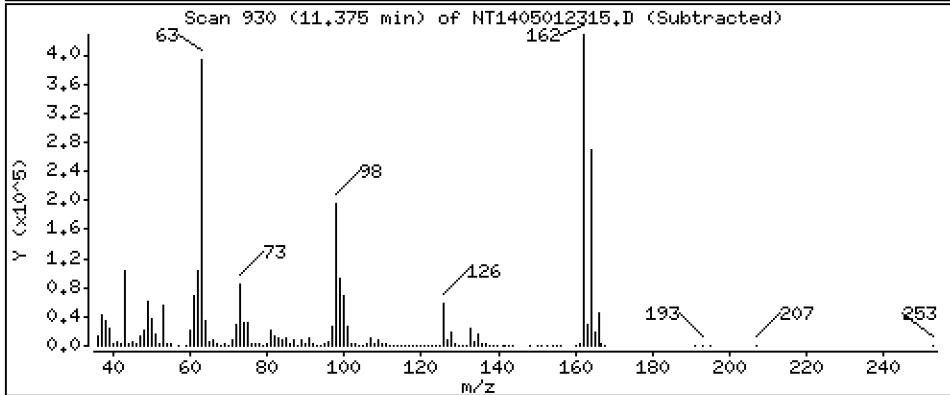
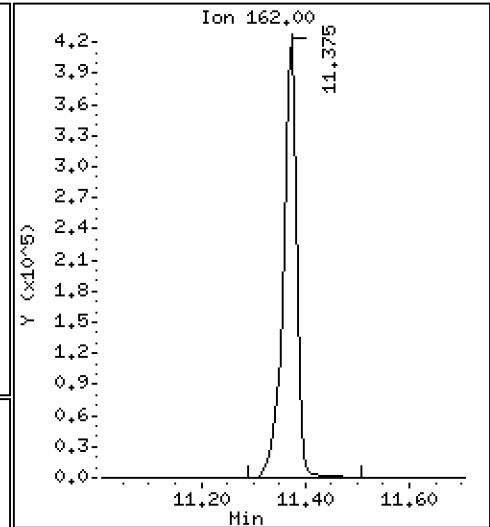
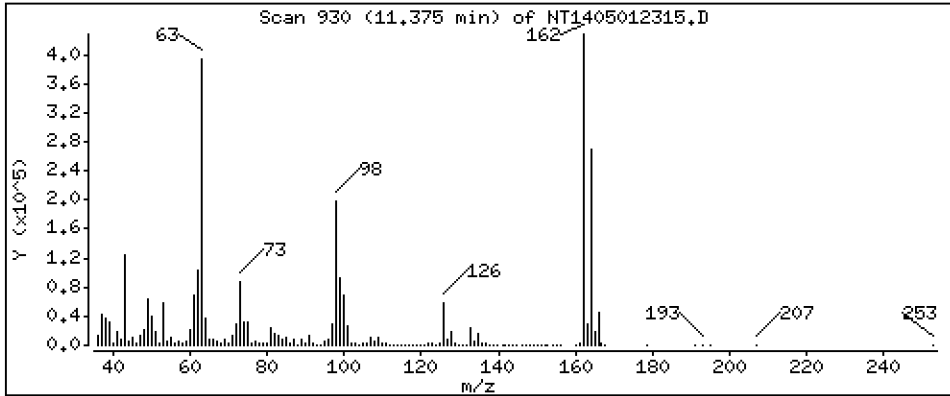
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 10,29 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

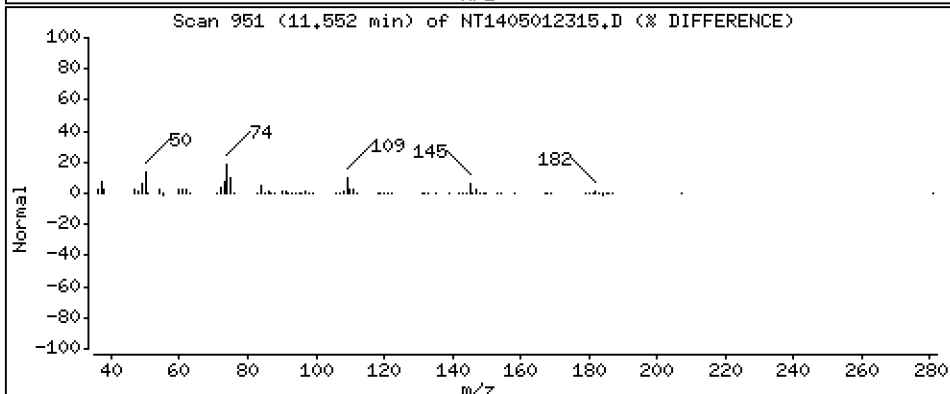
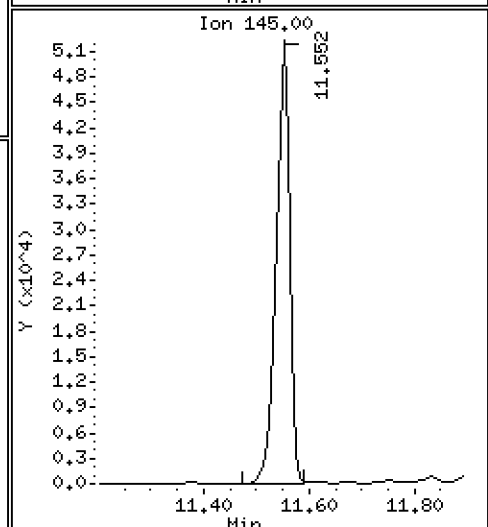
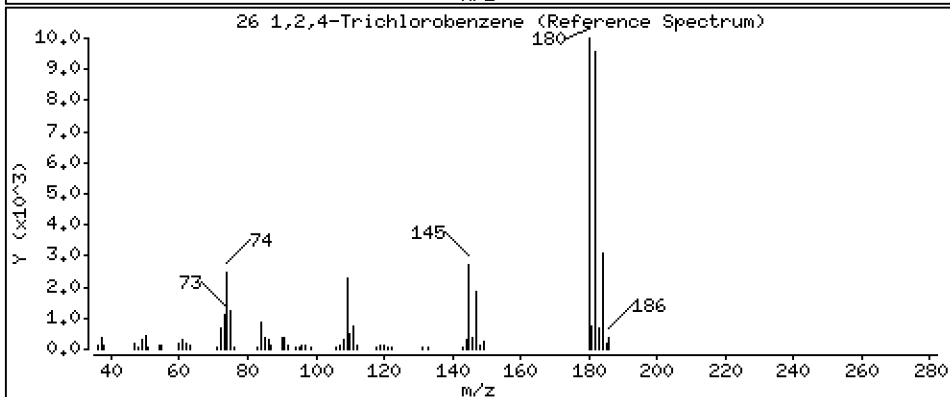
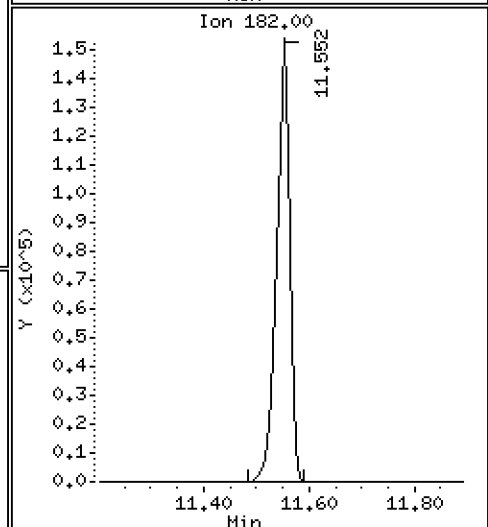
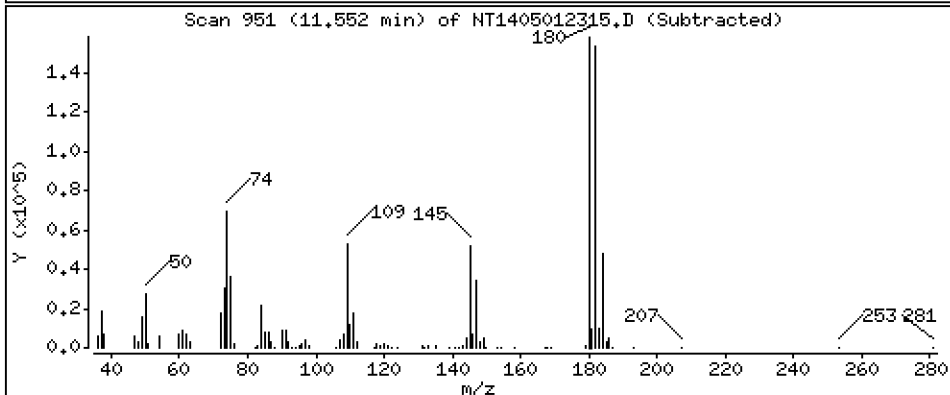
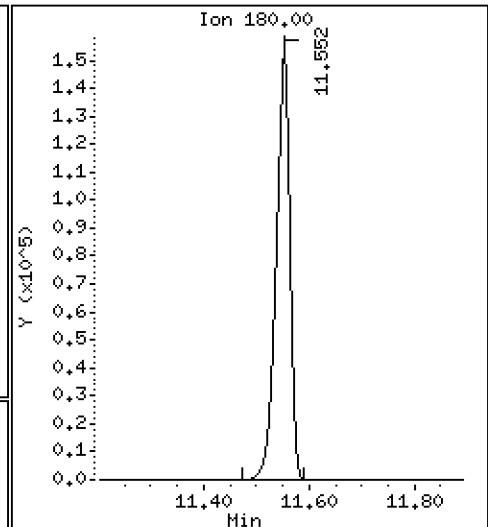
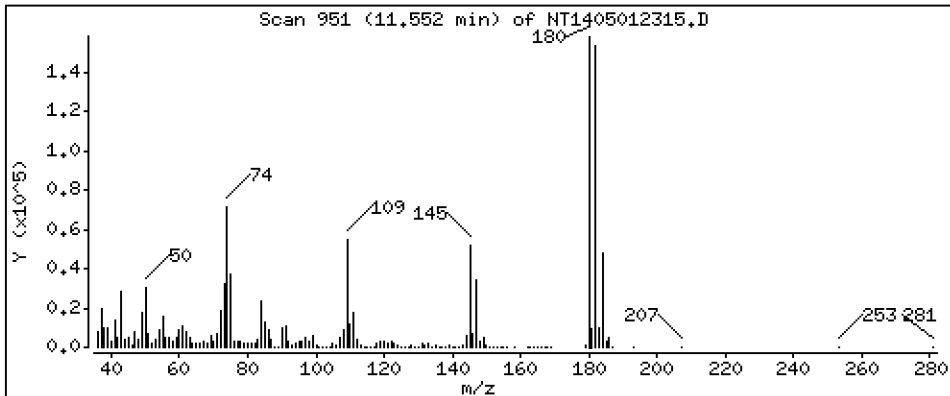
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 3,622 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

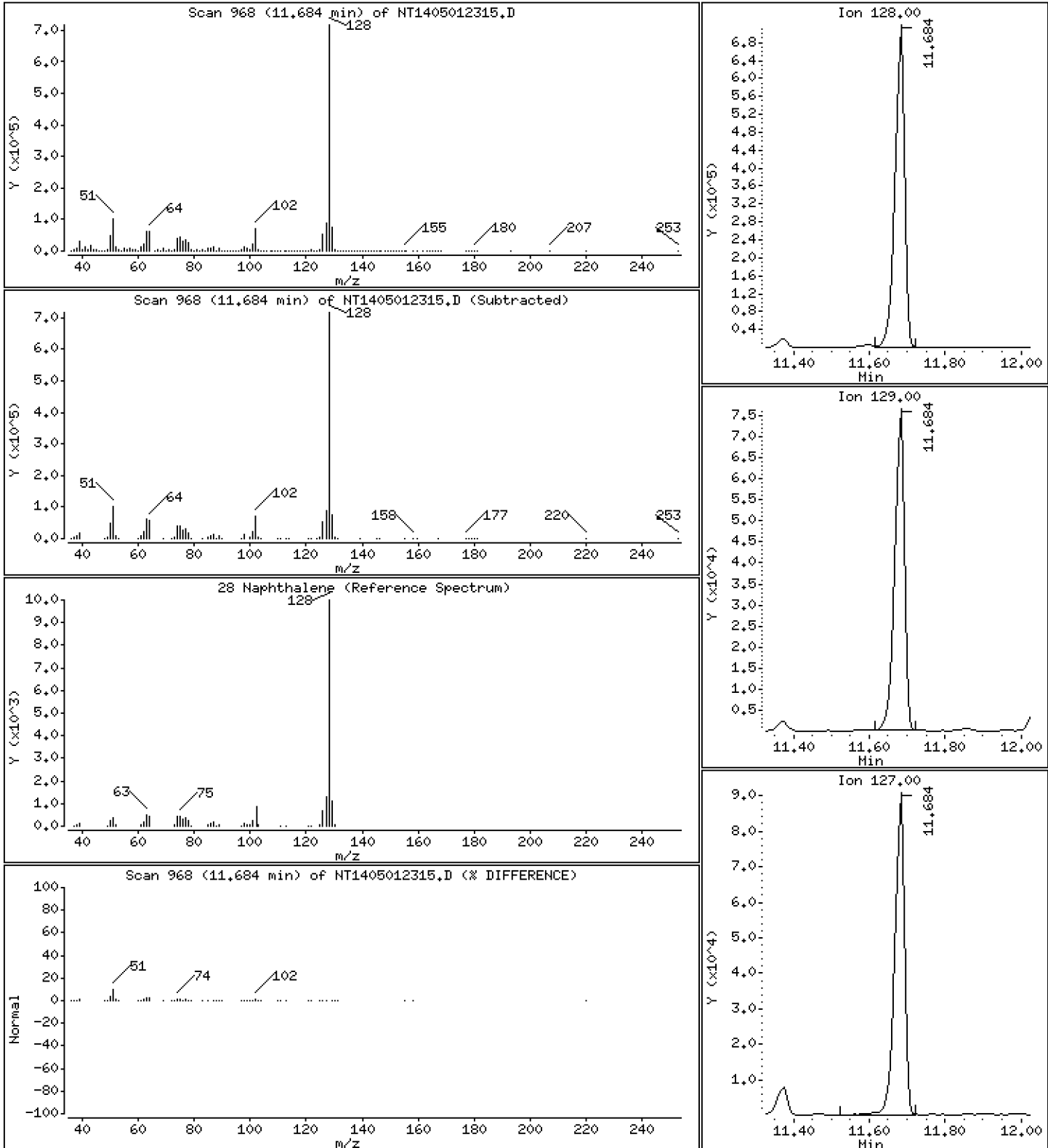
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 4,373 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

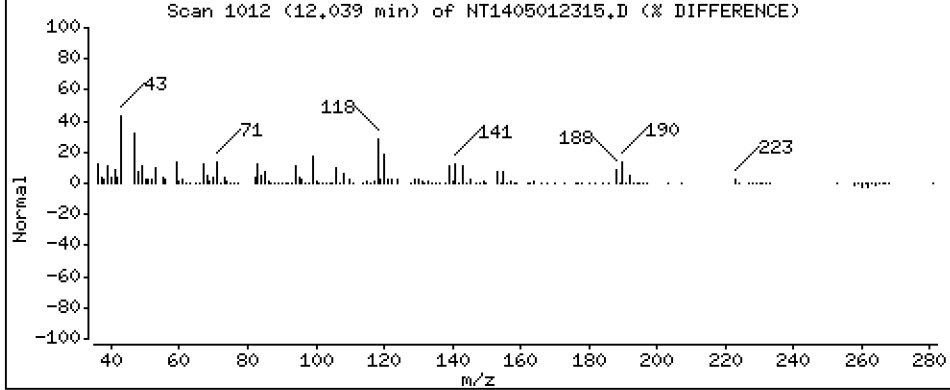
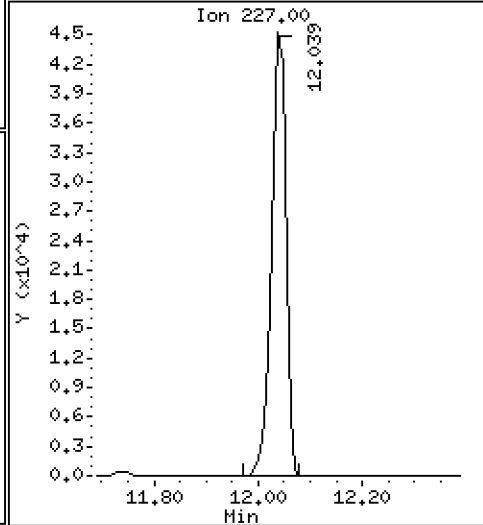
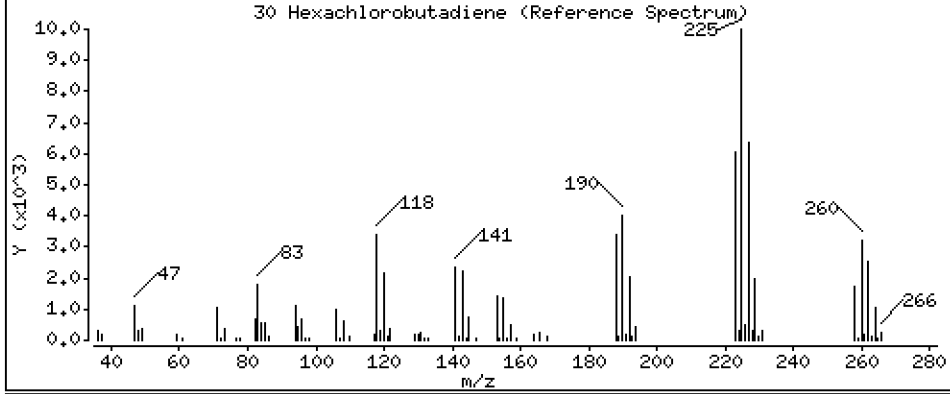
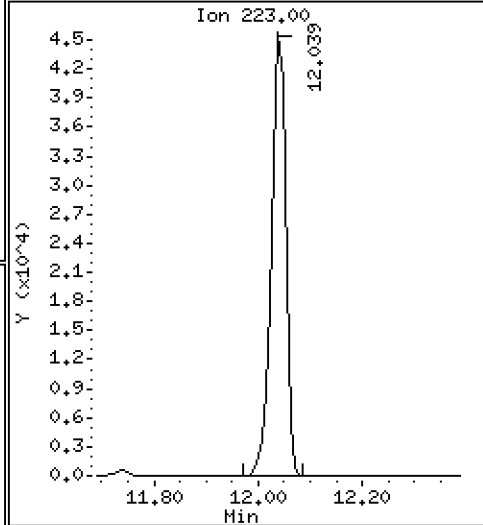
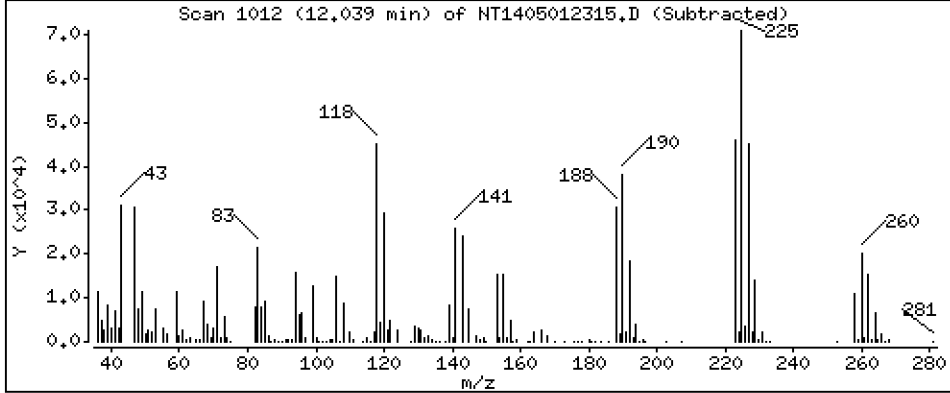
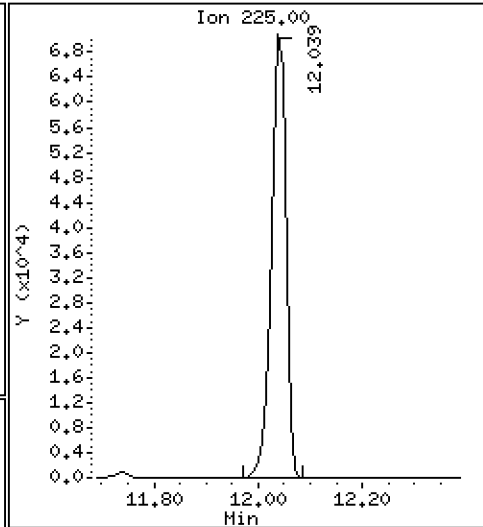
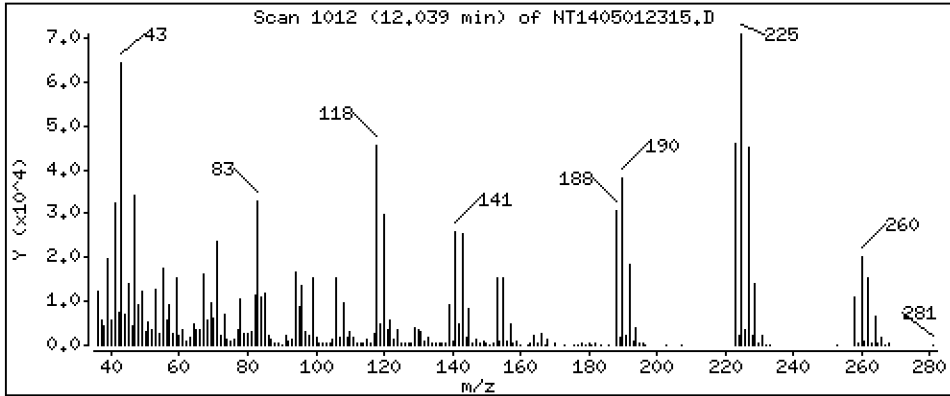
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 3,805 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

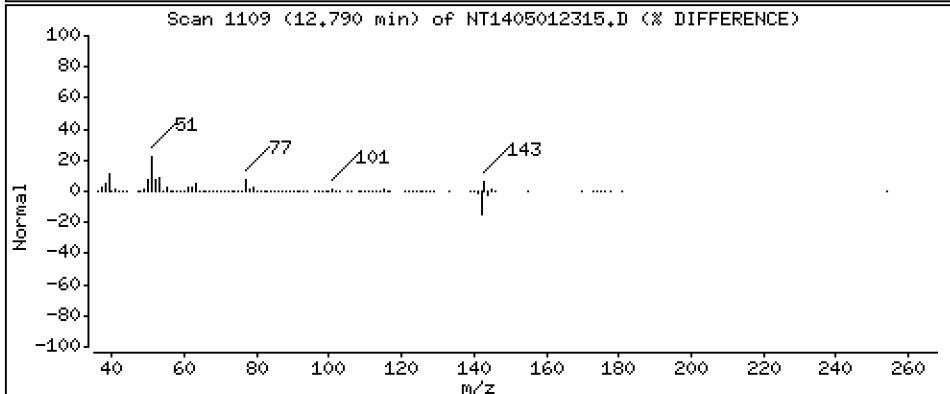
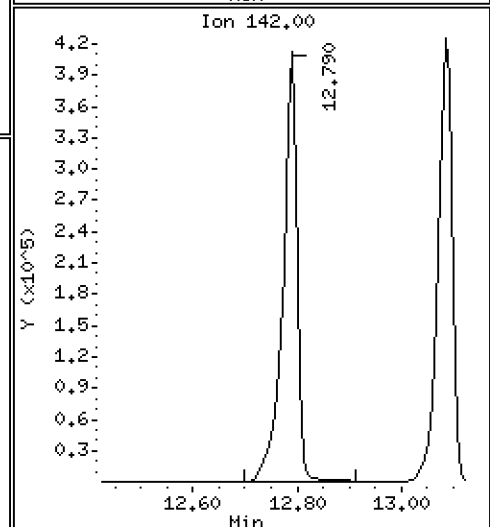
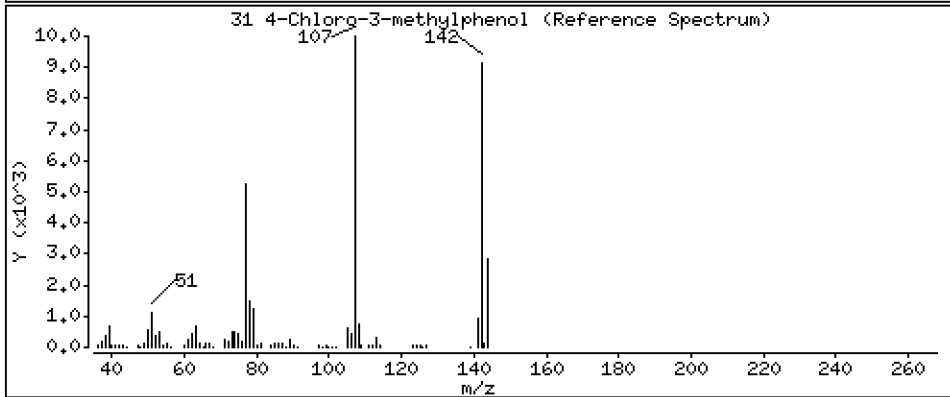
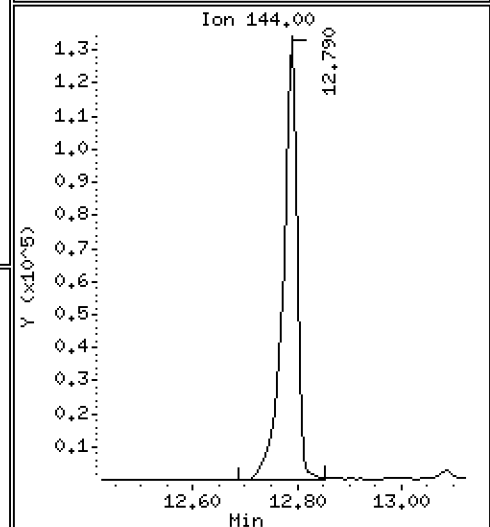
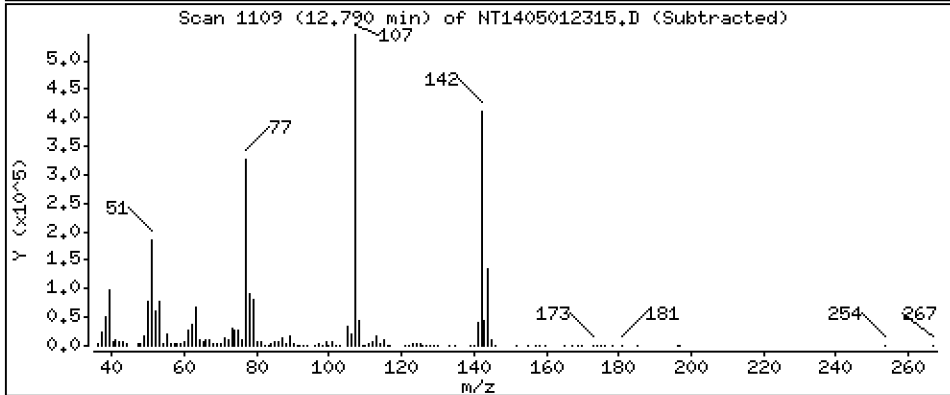
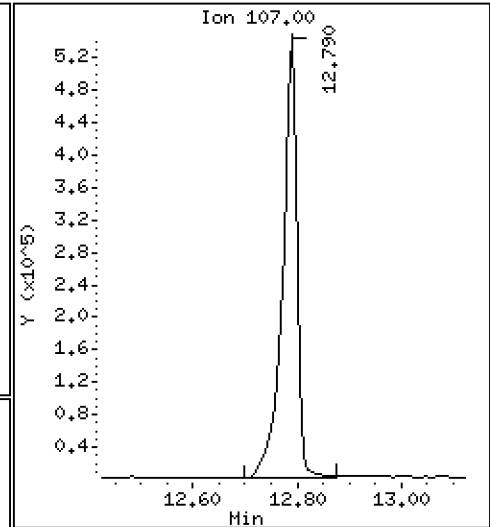
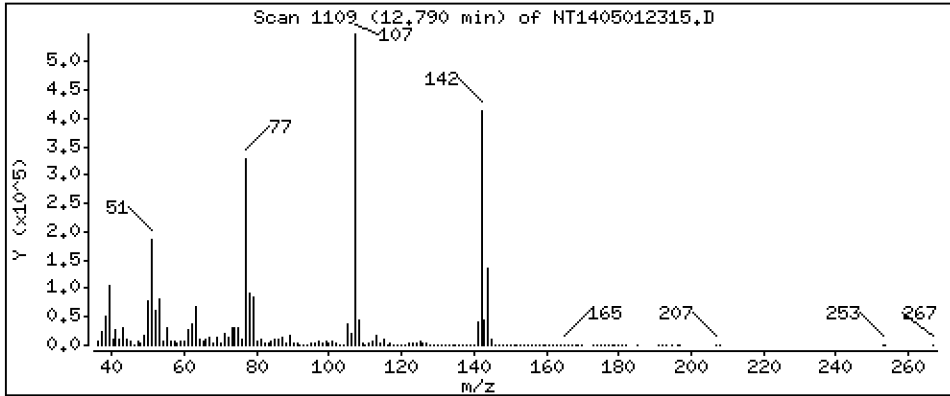
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 11,53 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

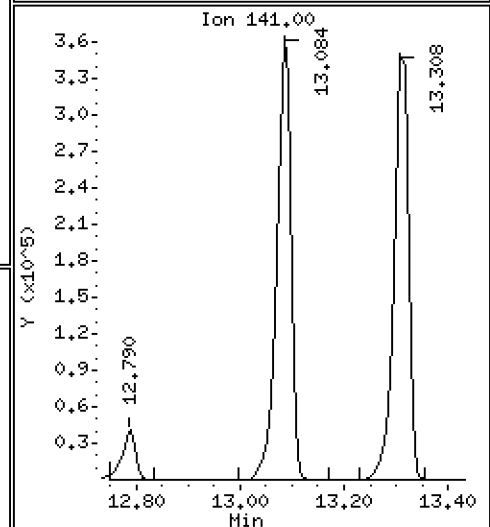
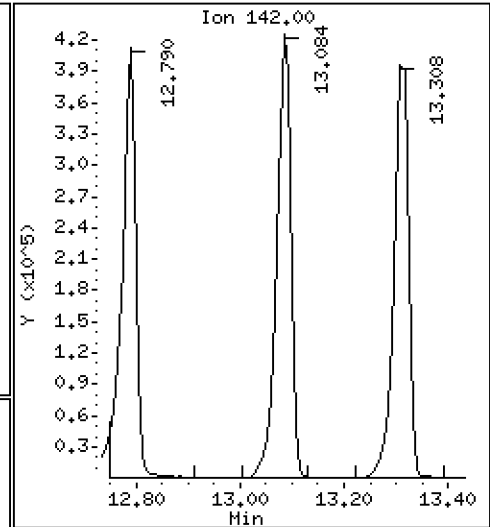
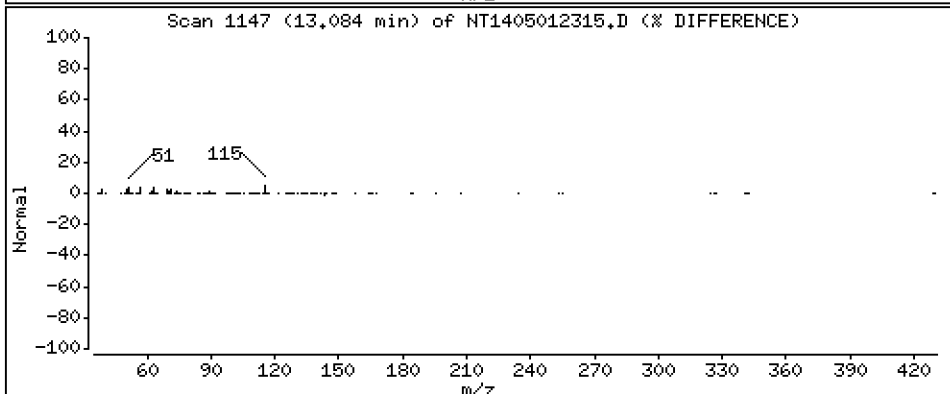
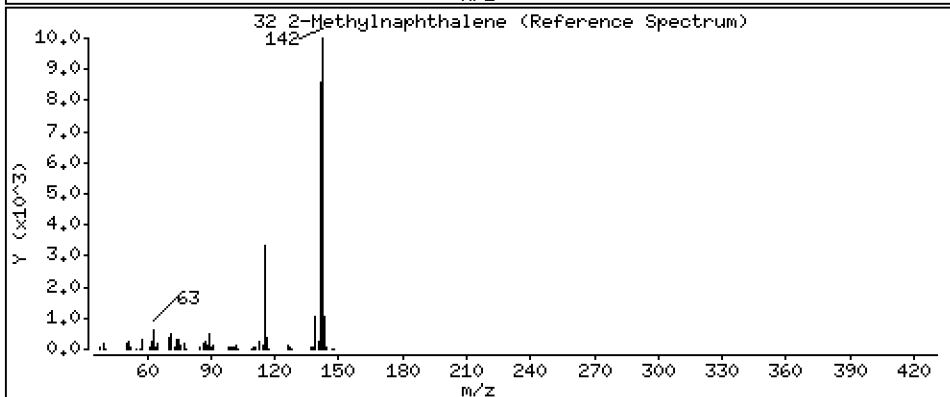
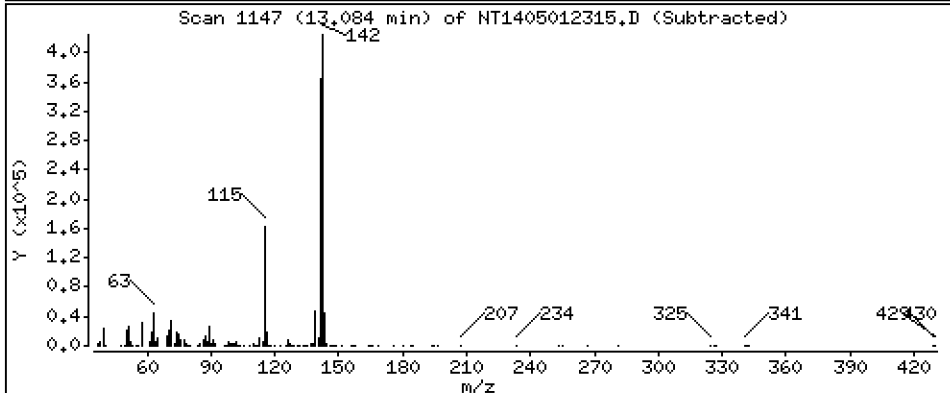
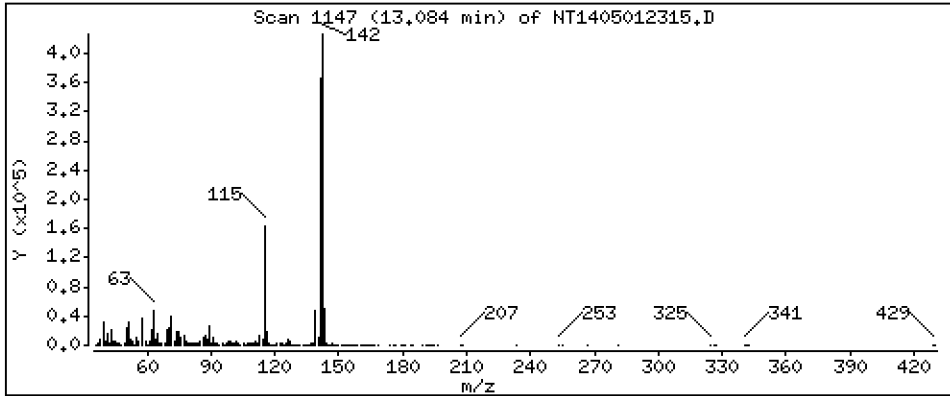
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 3,856 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

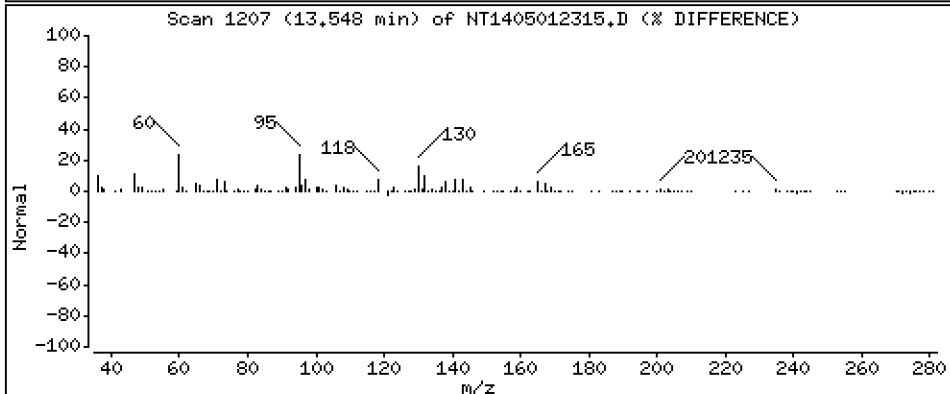
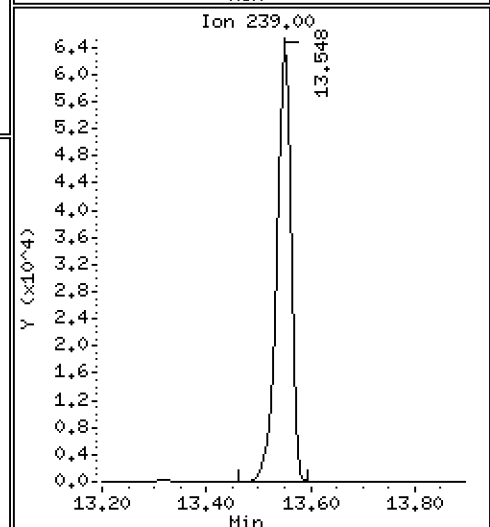
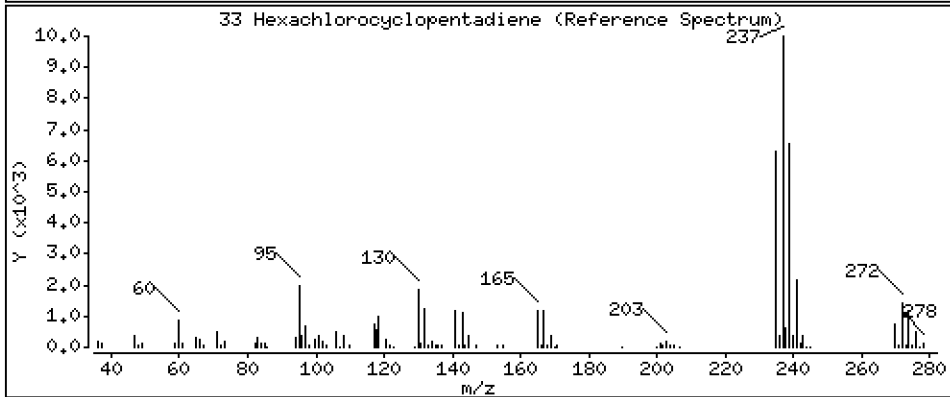
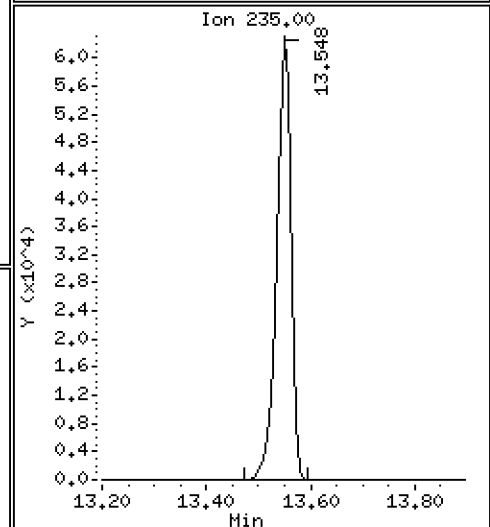
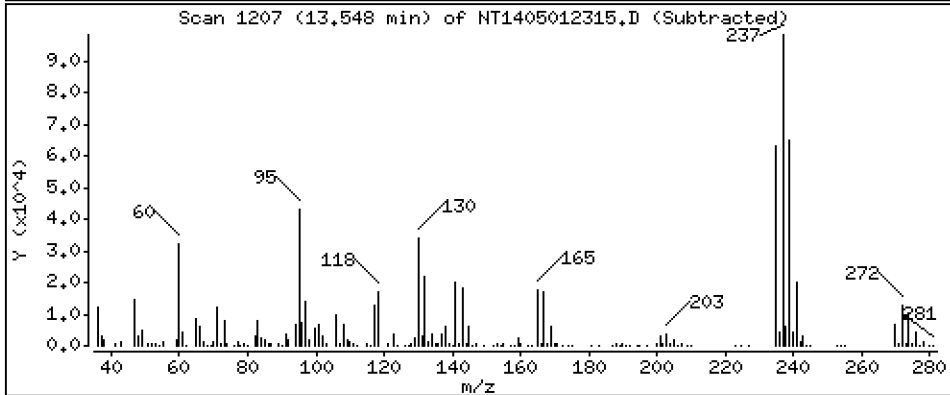
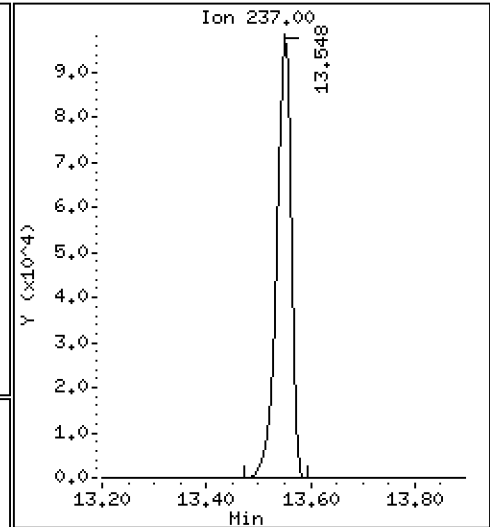
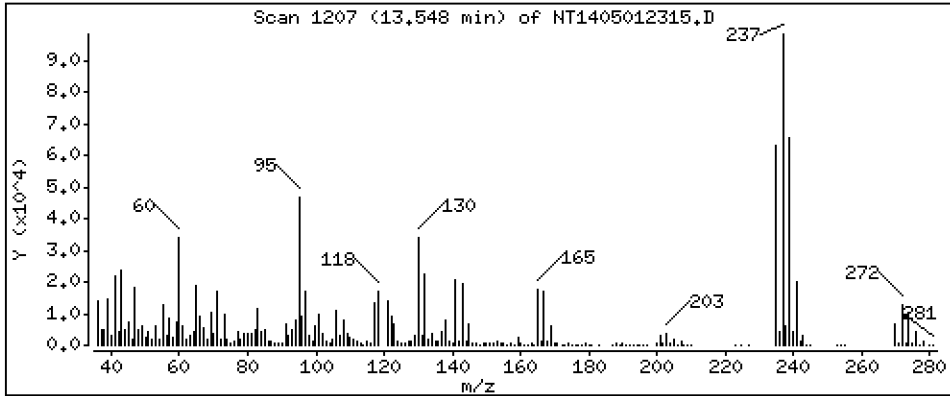
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 5,077 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

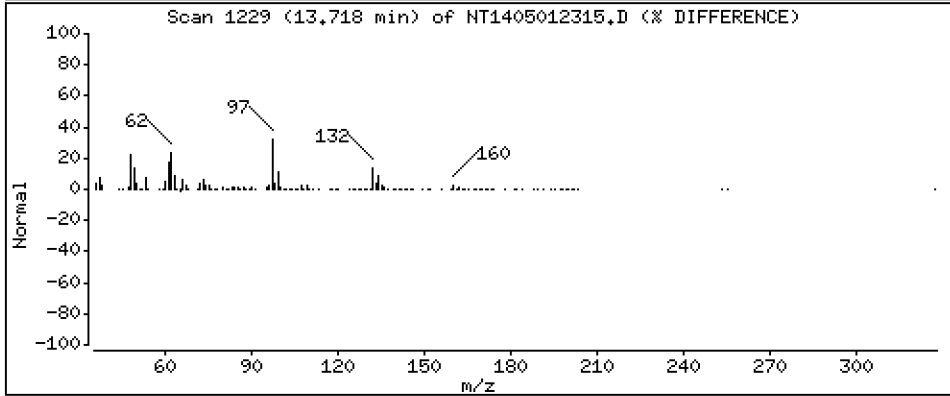
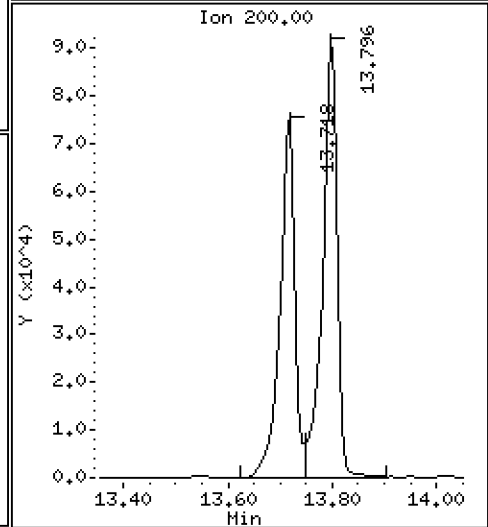
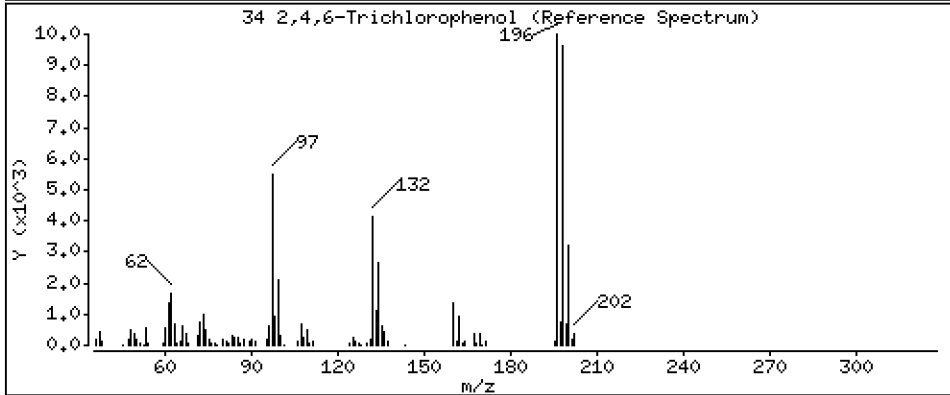
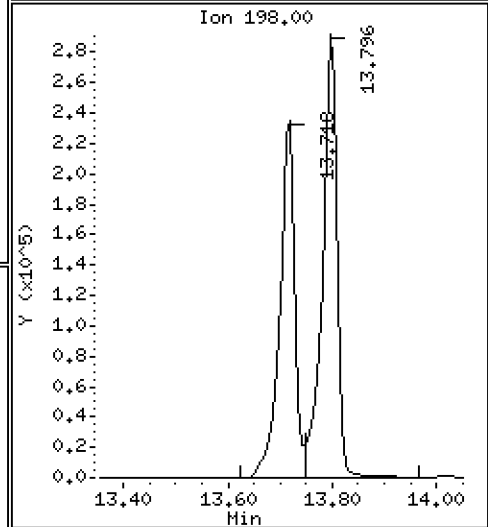
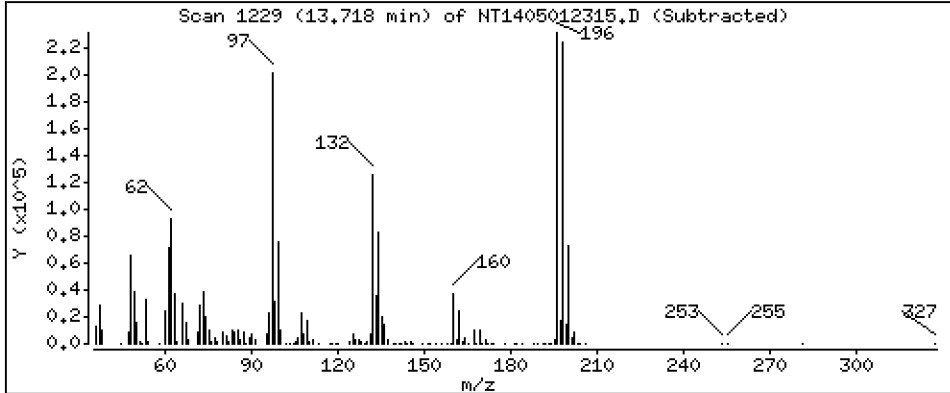
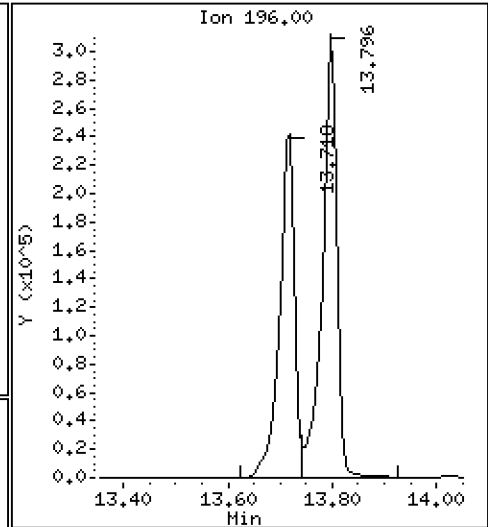
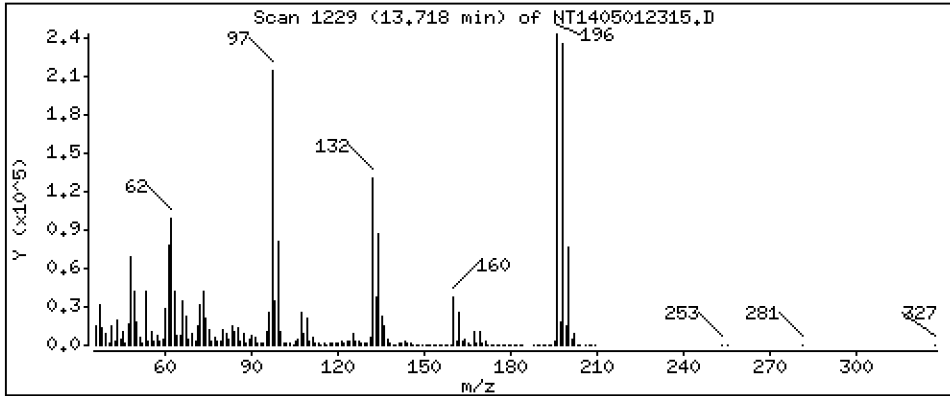
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 10,83 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

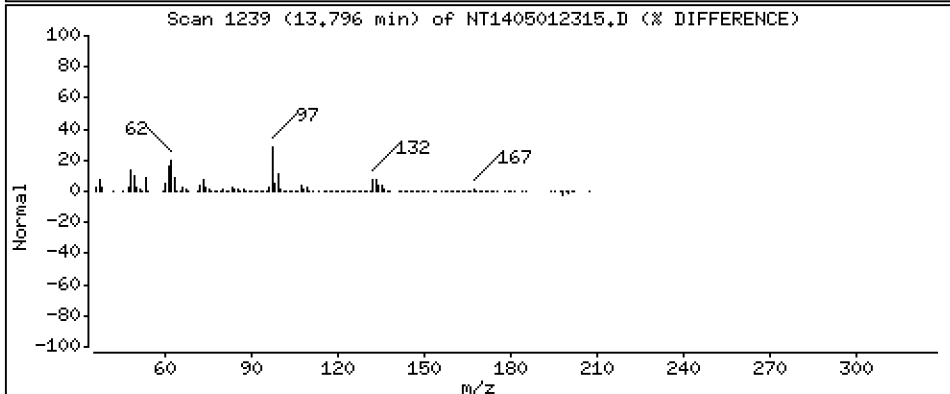
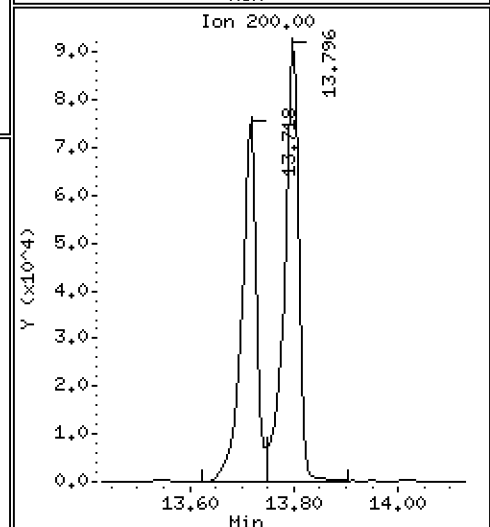
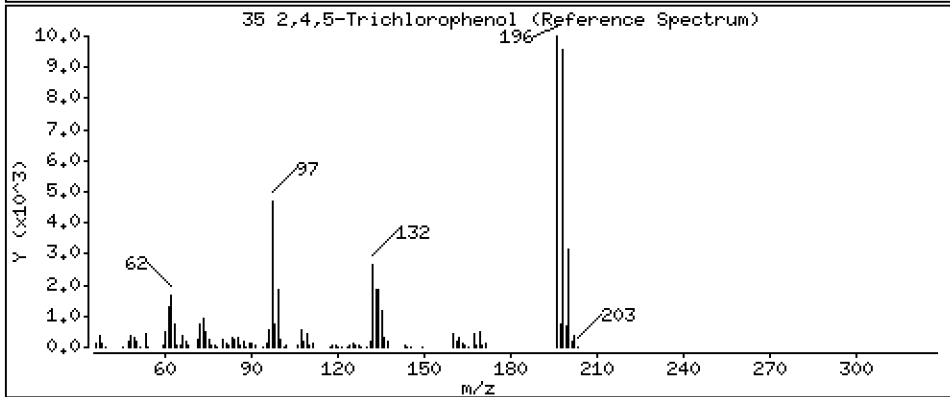
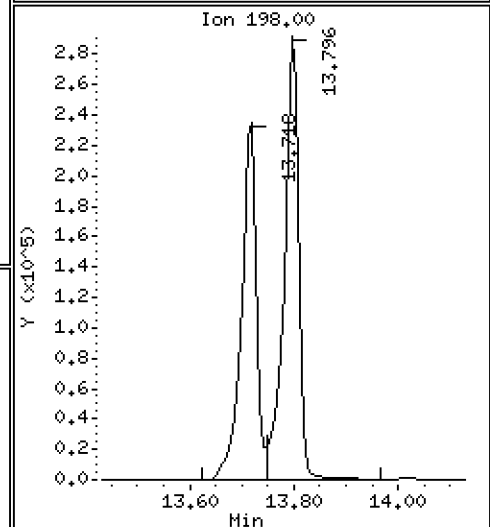
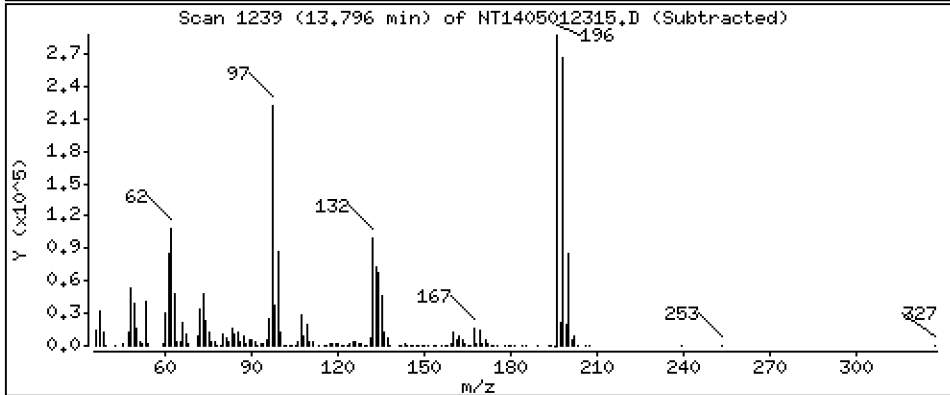
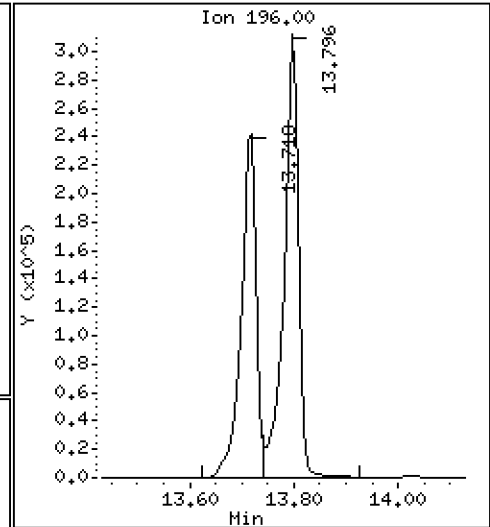
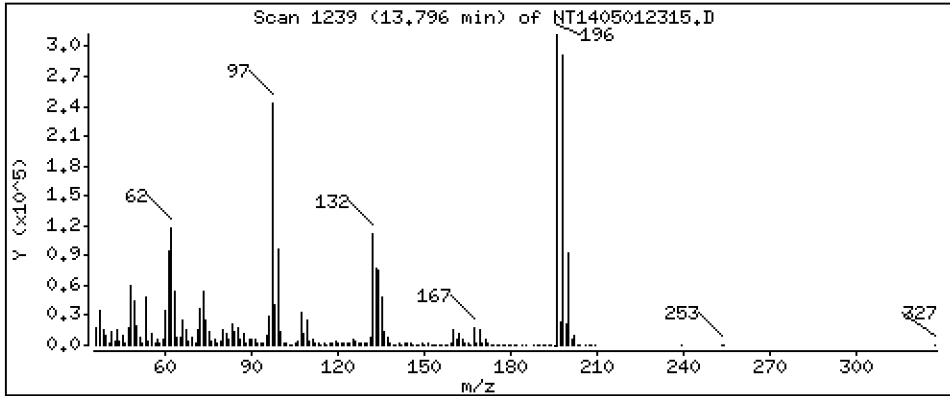
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 12,89 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

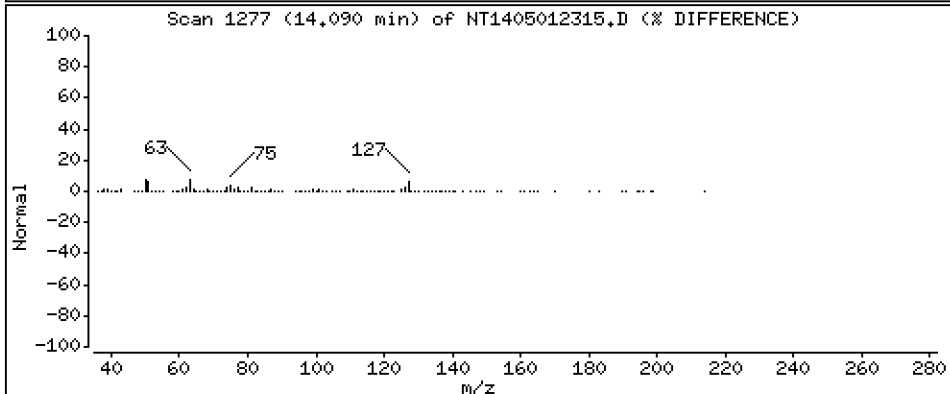
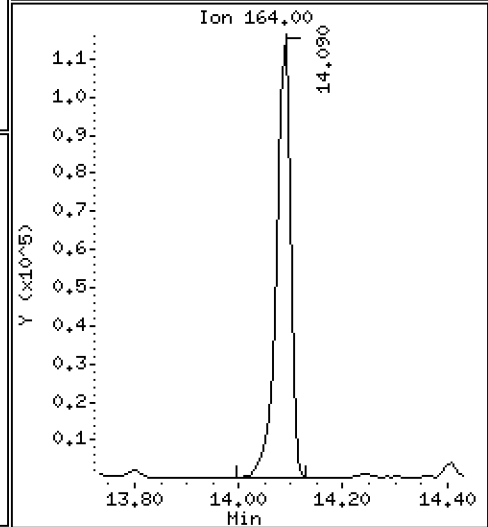
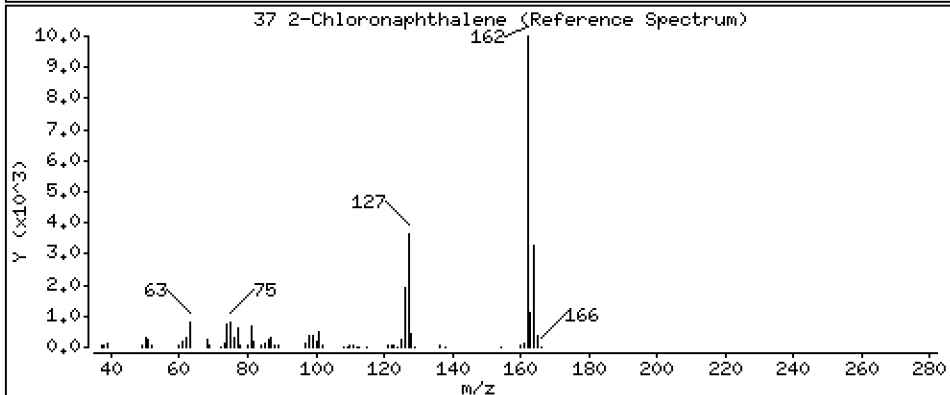
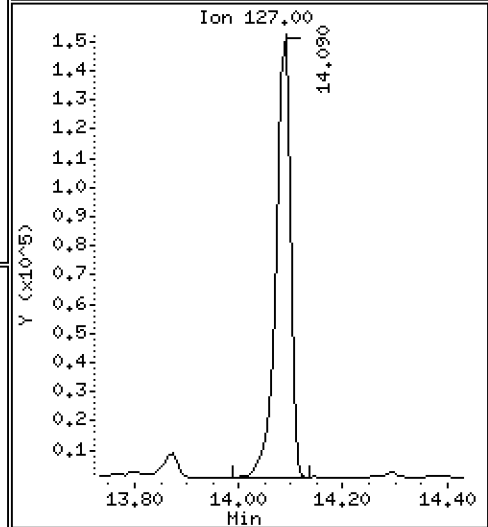
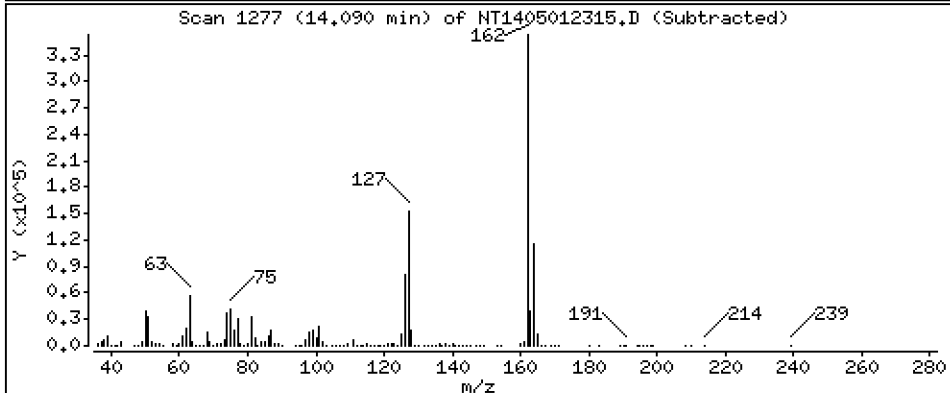
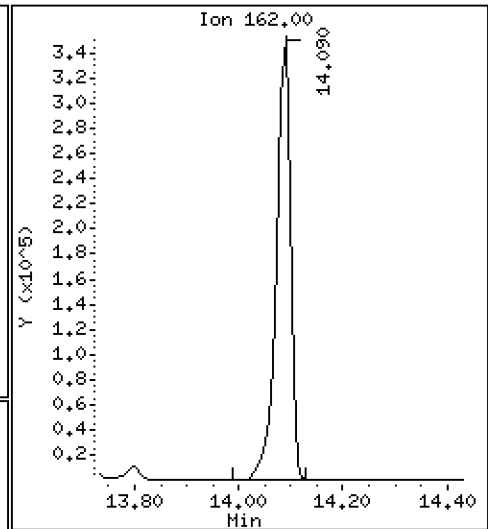
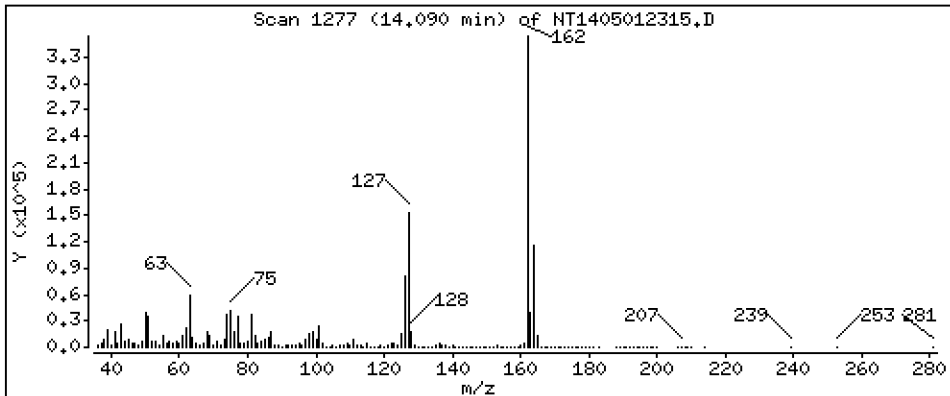
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 3,902 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

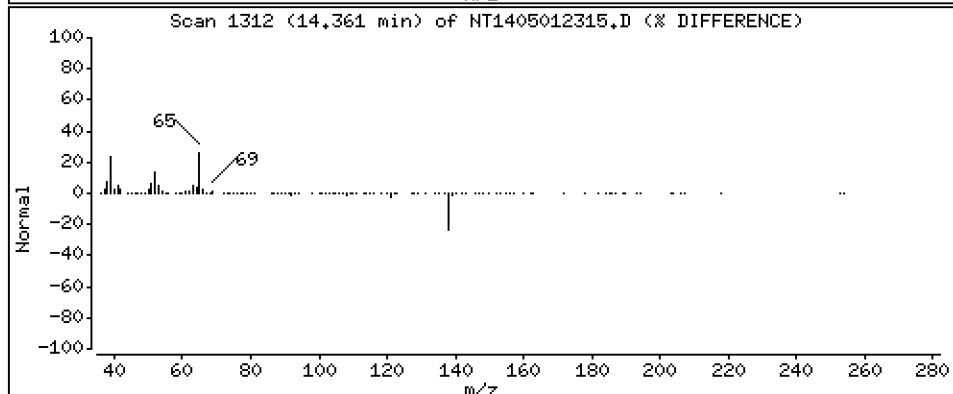
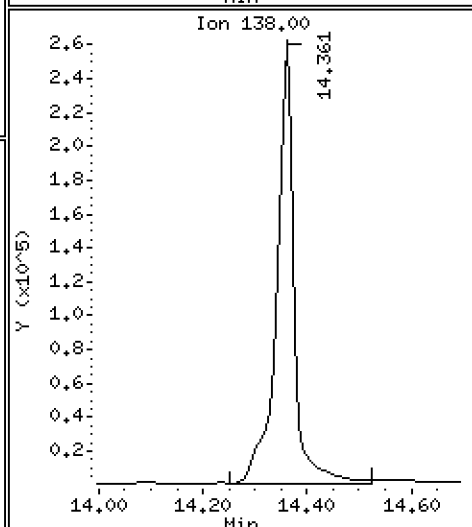
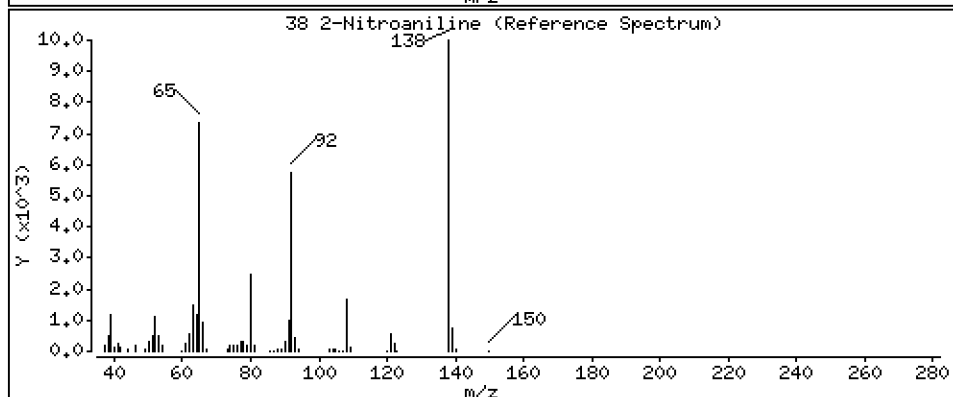
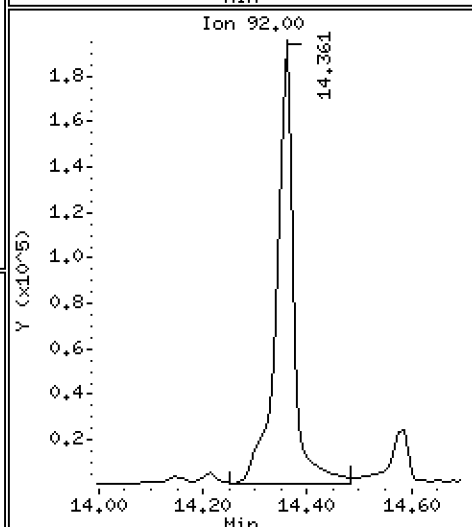
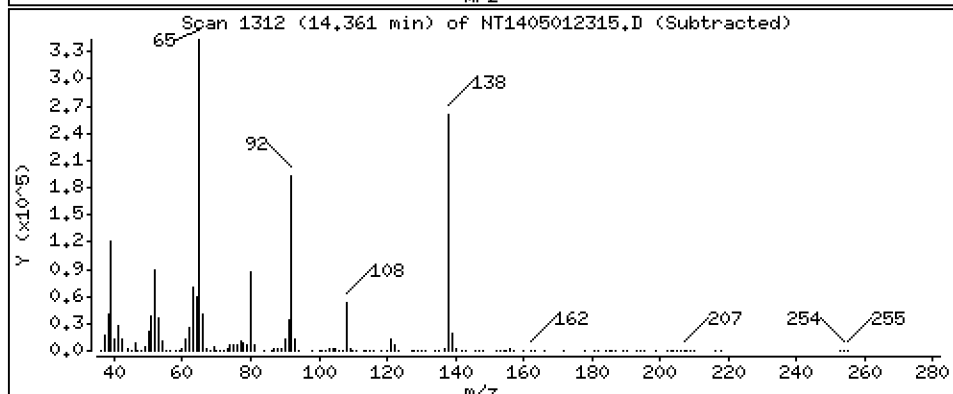
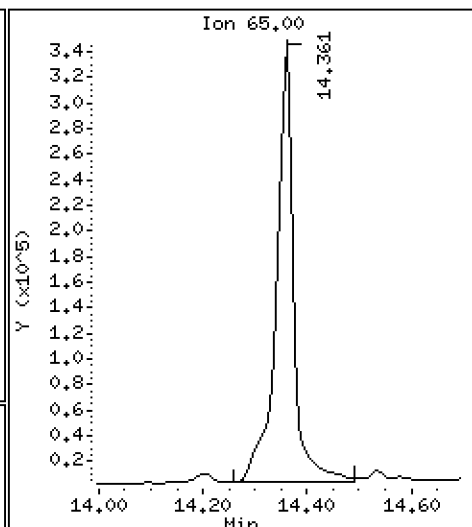
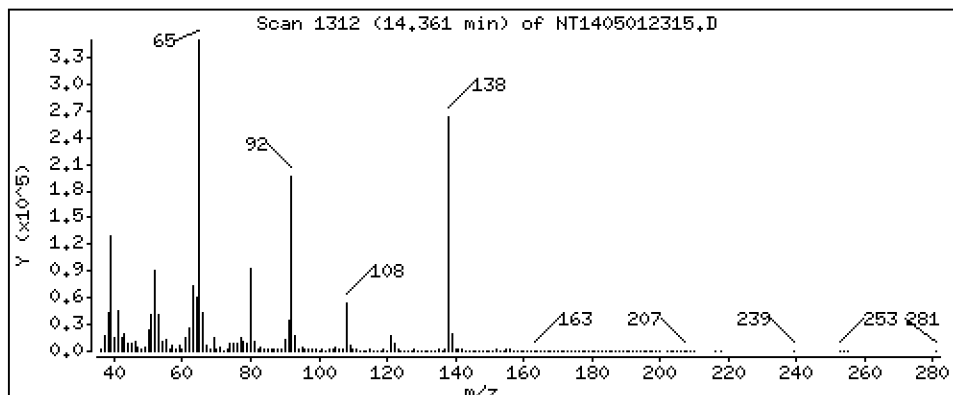
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 9,080 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

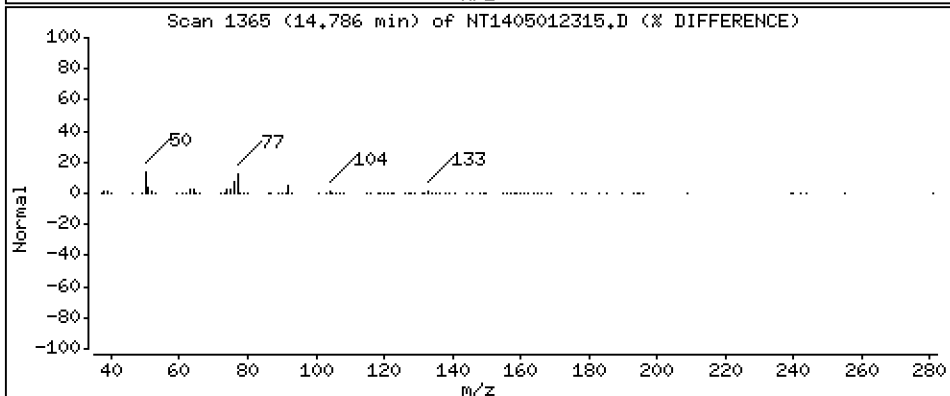
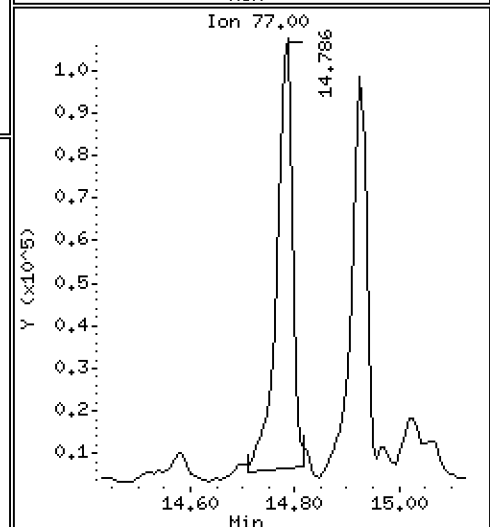
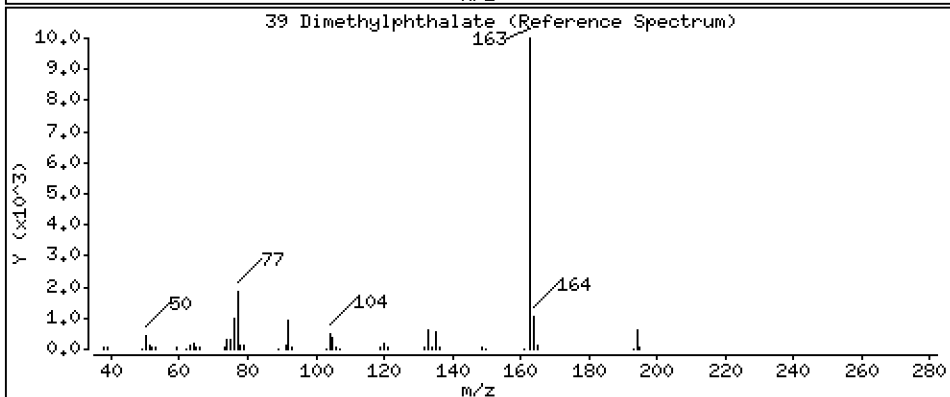
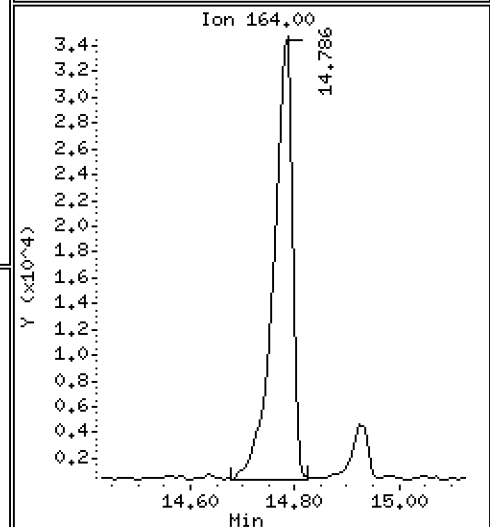
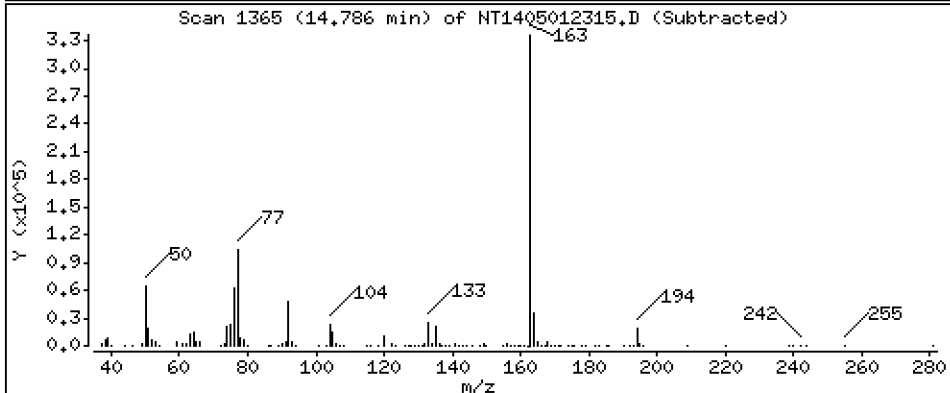
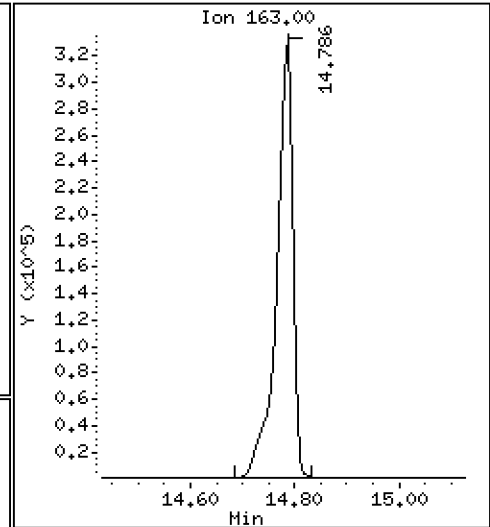
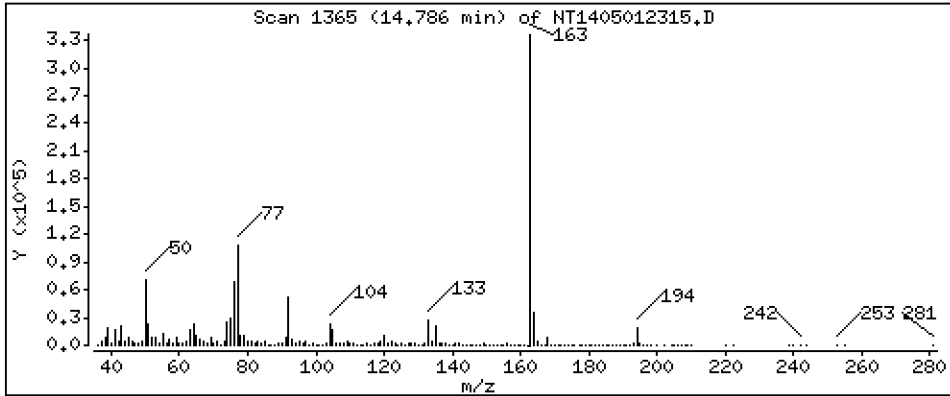
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

39 Dimethylphthalate

Concentration: 4.171 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

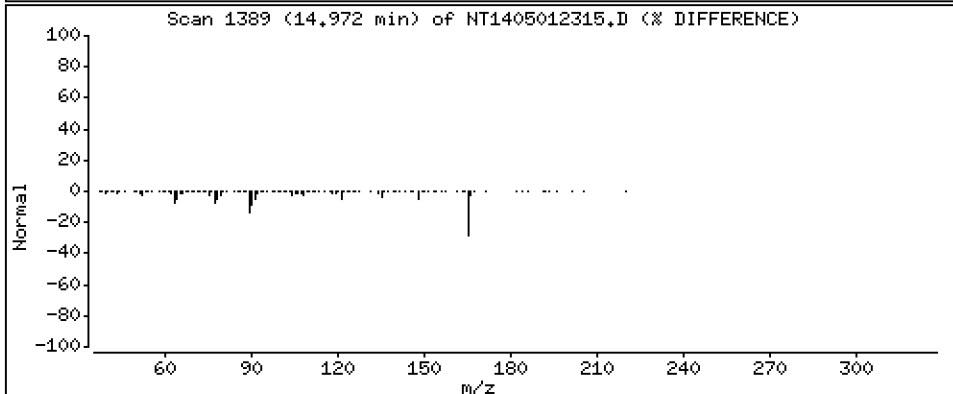
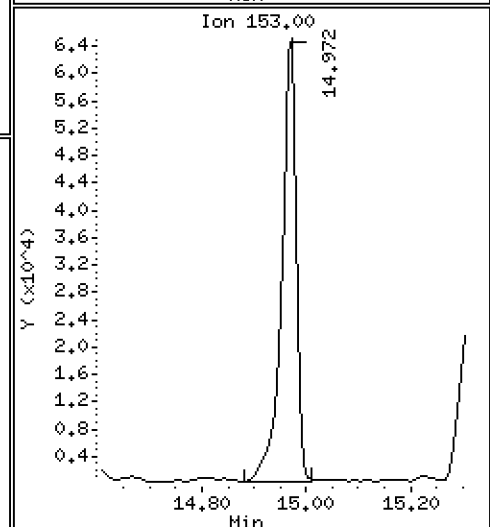
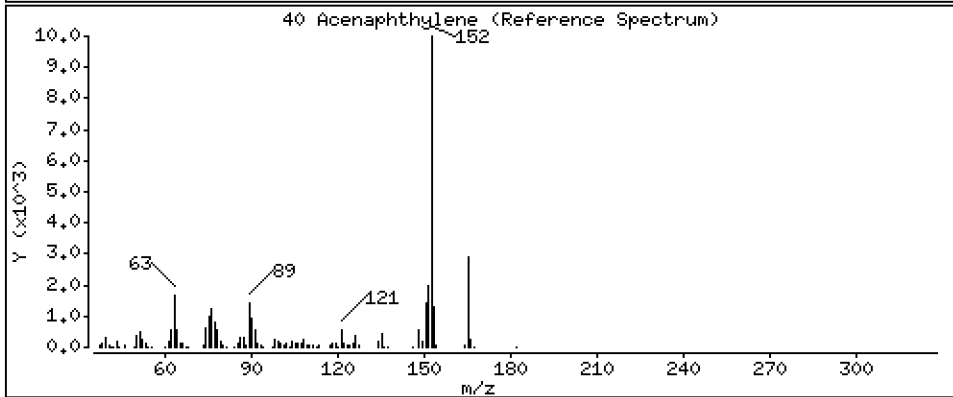
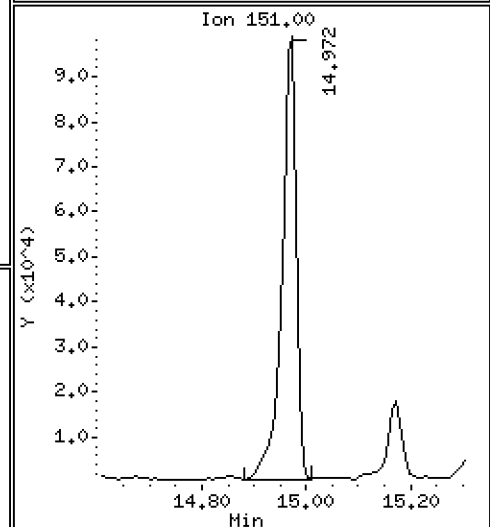
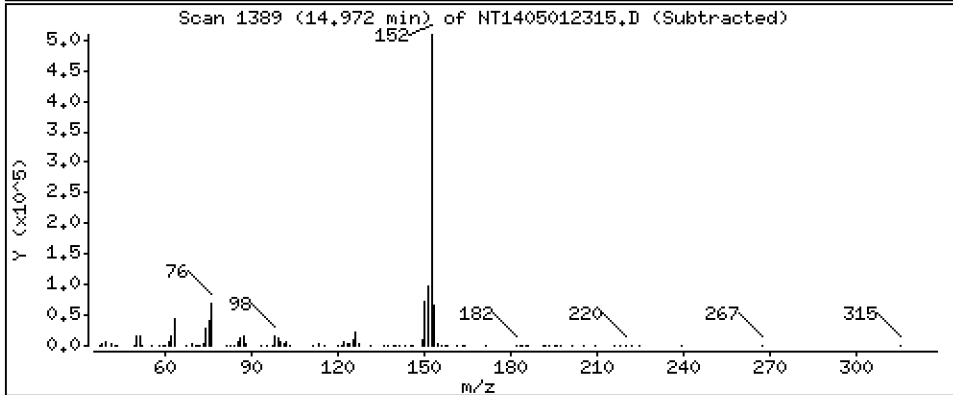
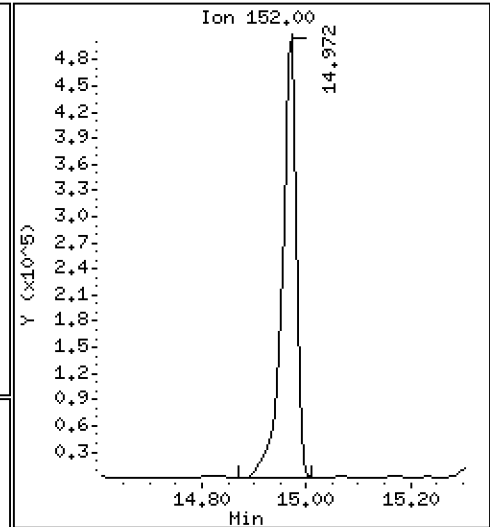
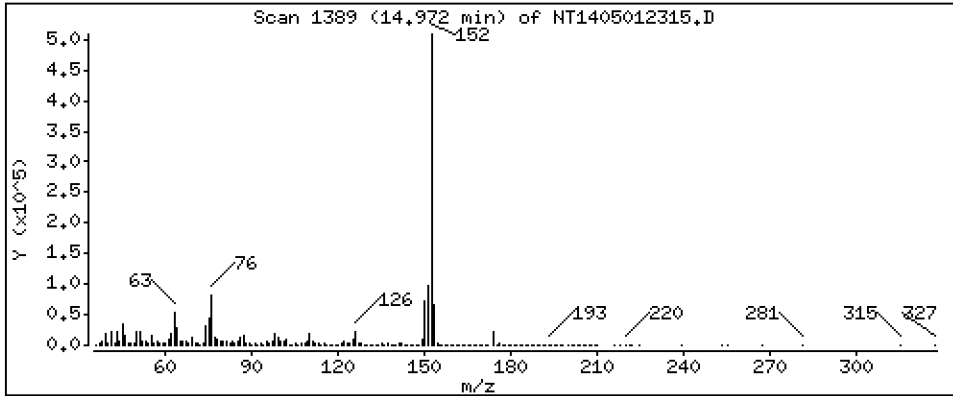
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 3,694 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

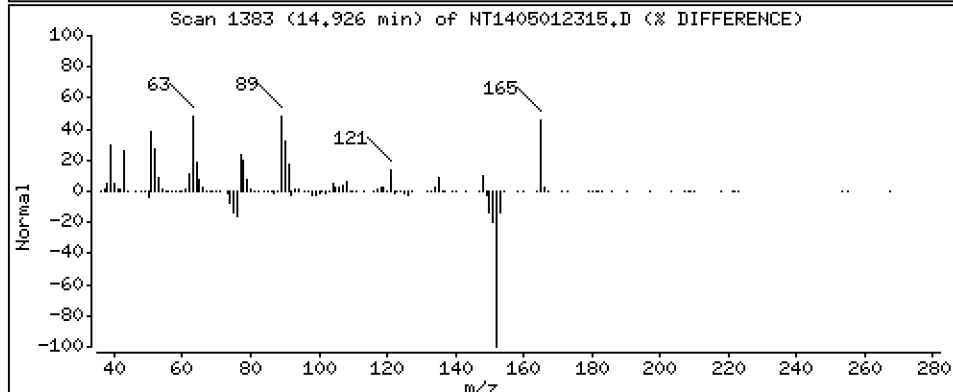
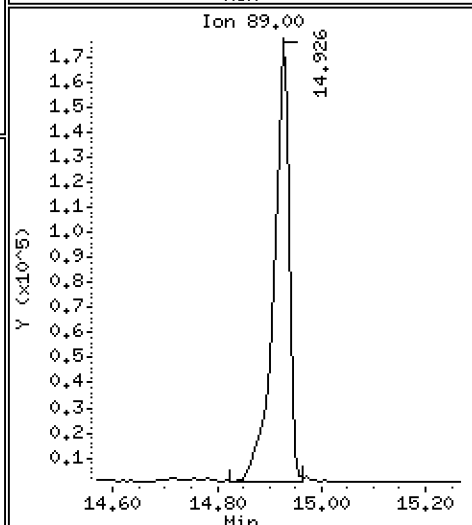
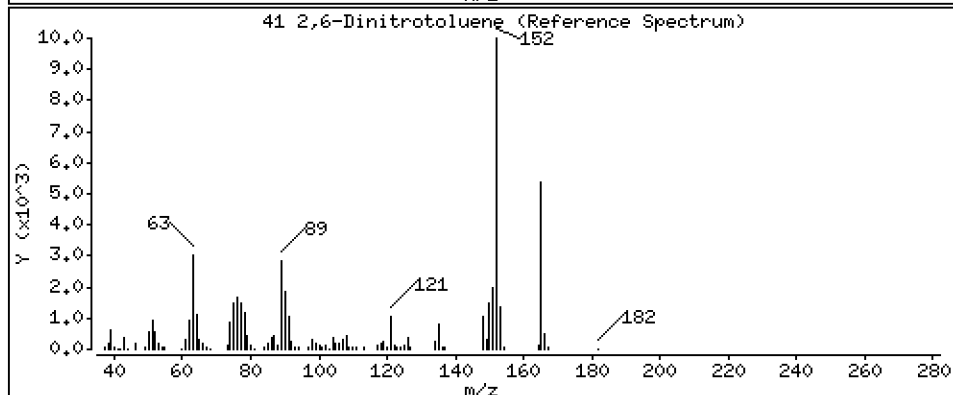
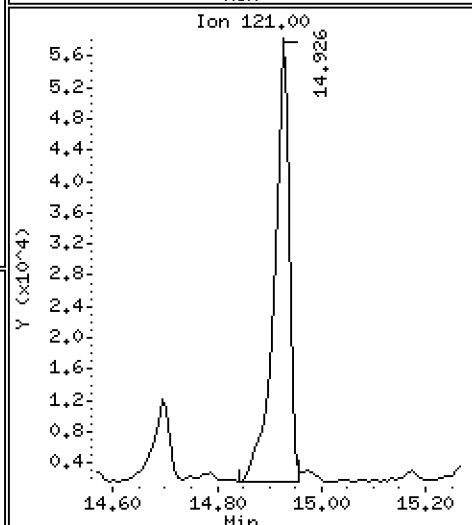
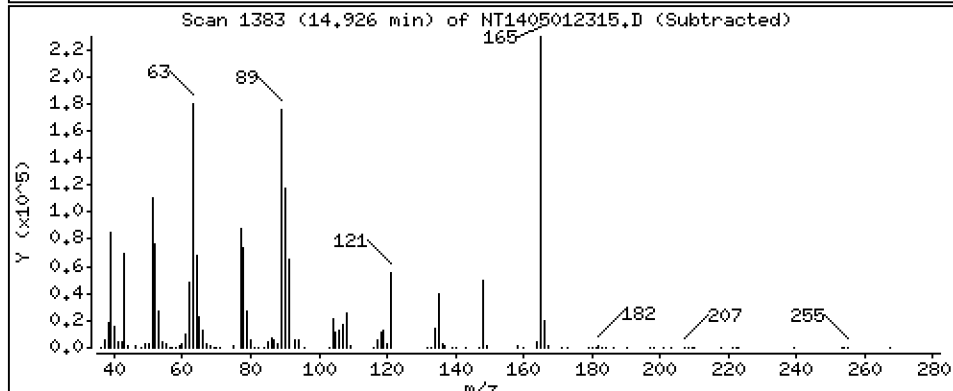
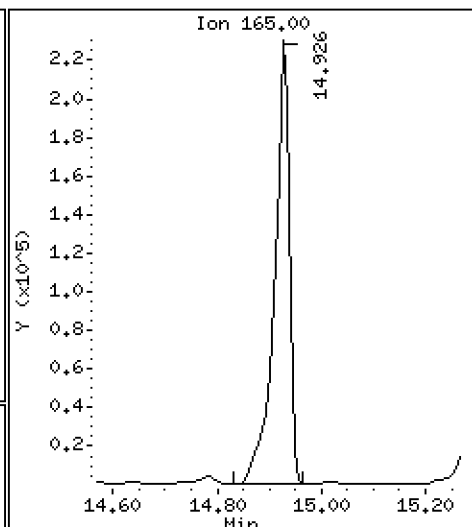
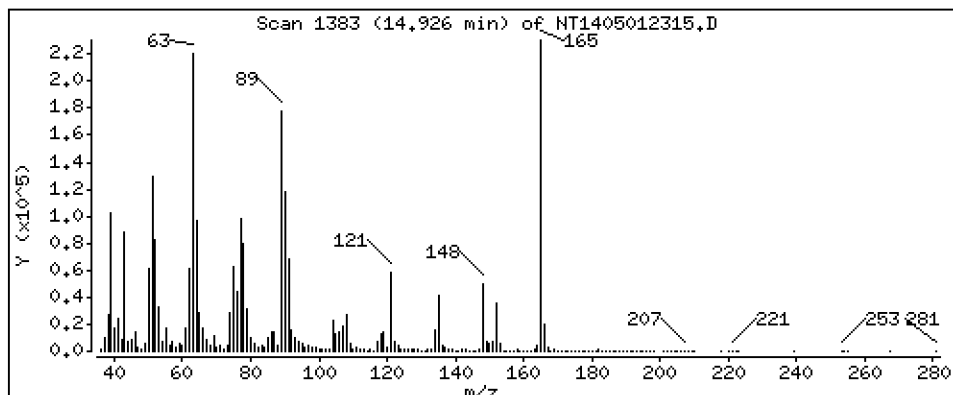
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

41 2,6-Dinitrotoluene

Concentration: 11,84 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

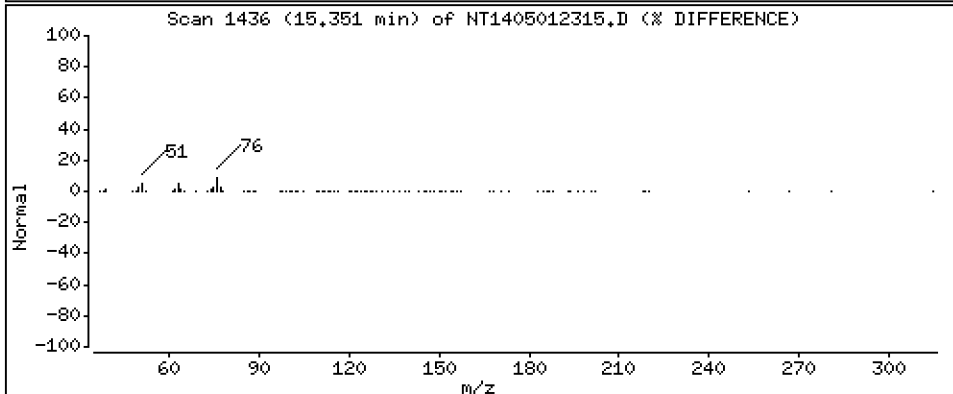
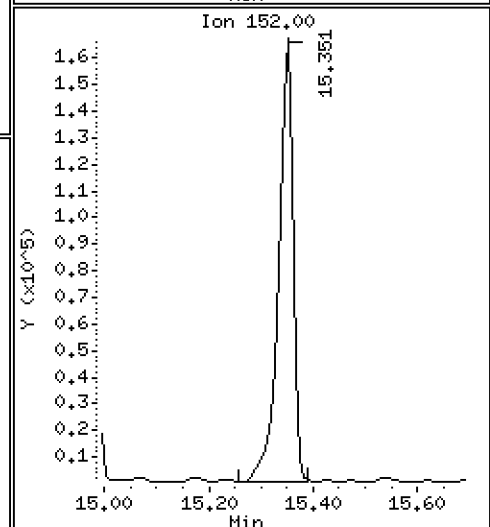
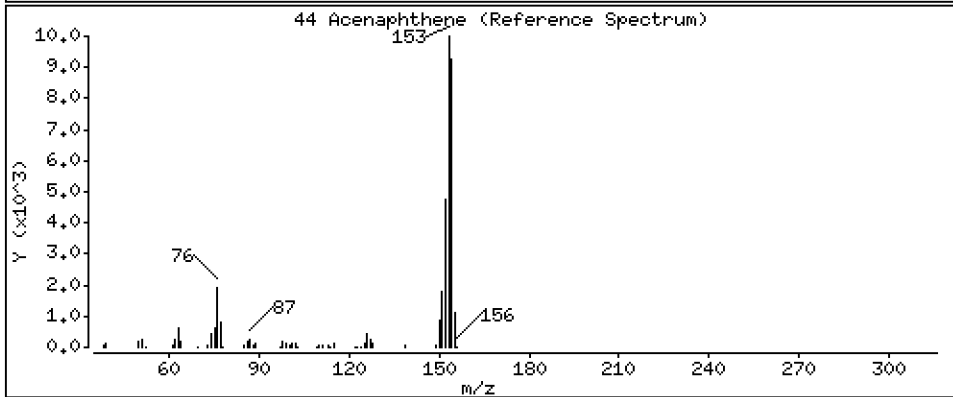
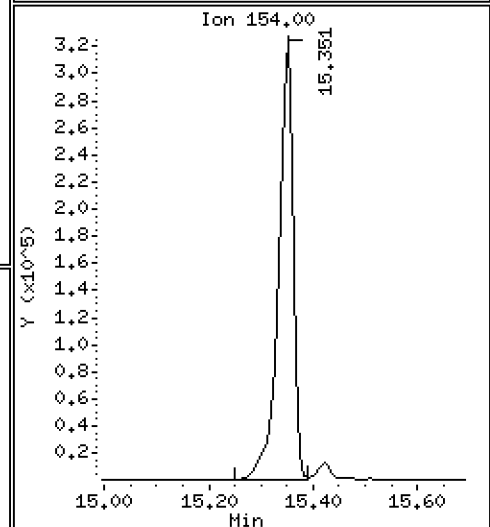
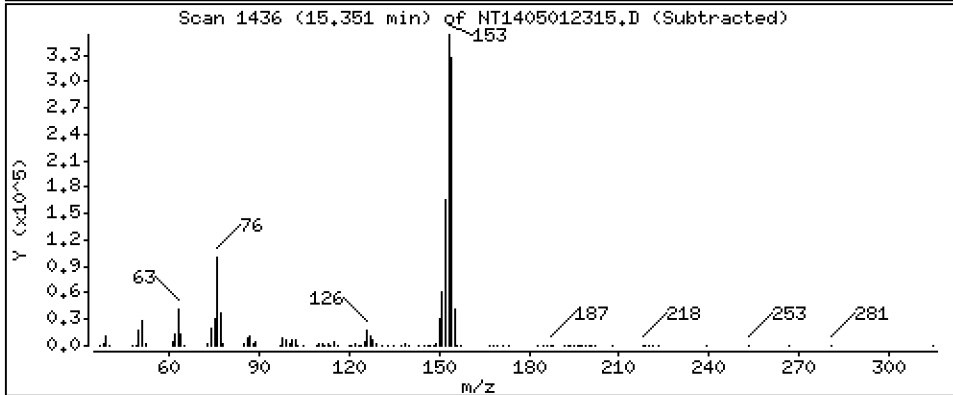
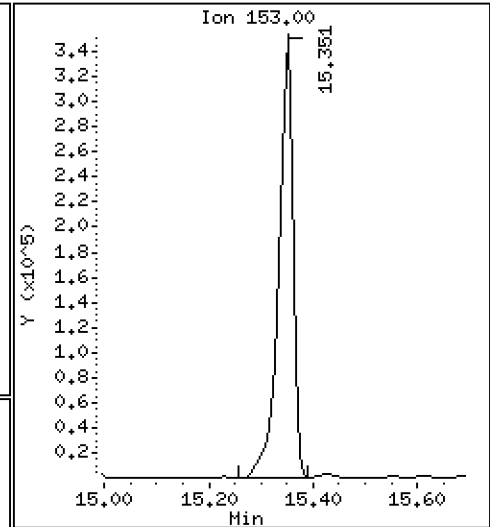
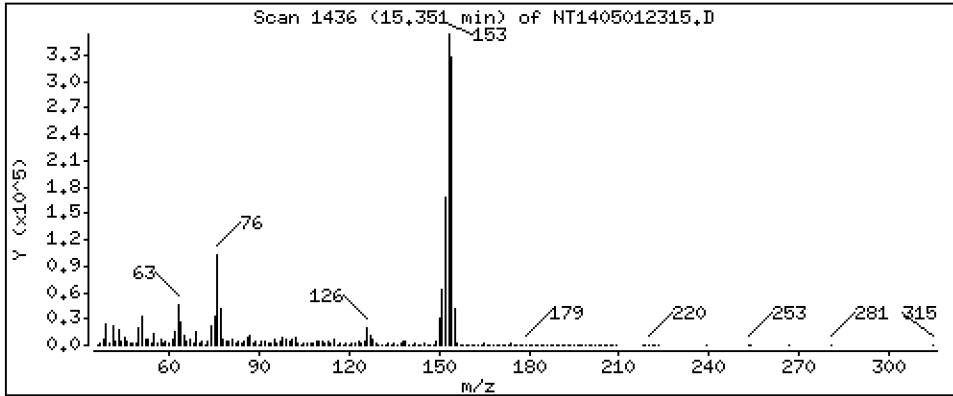
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 4,215 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

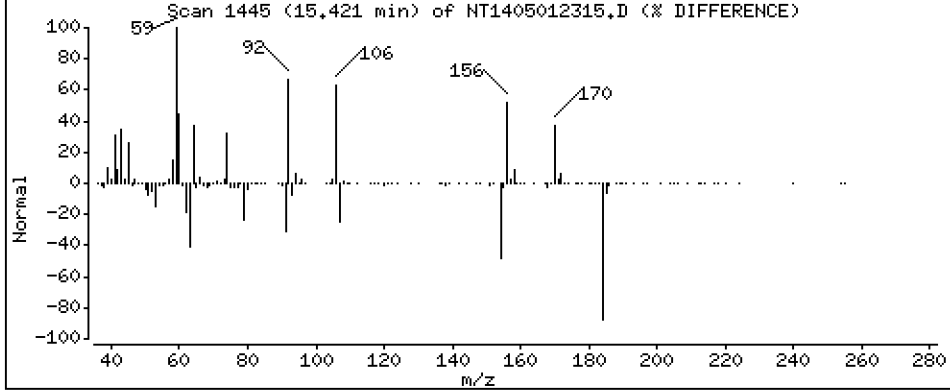
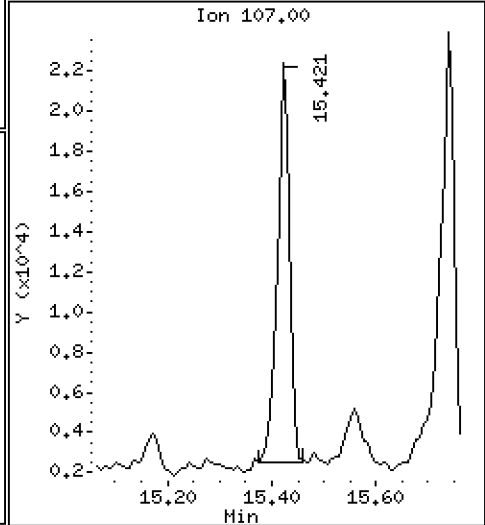
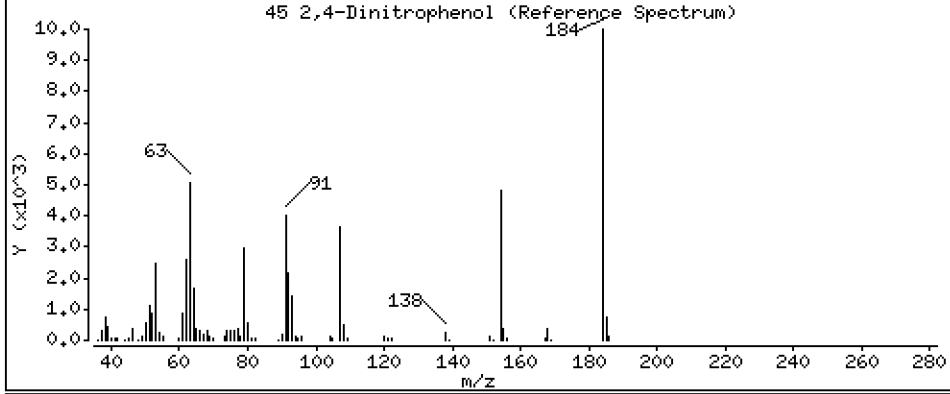
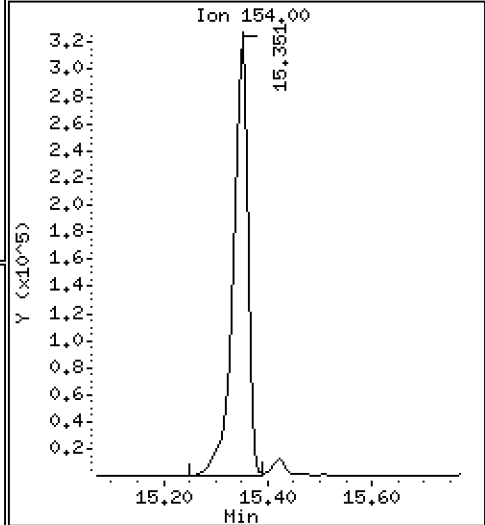
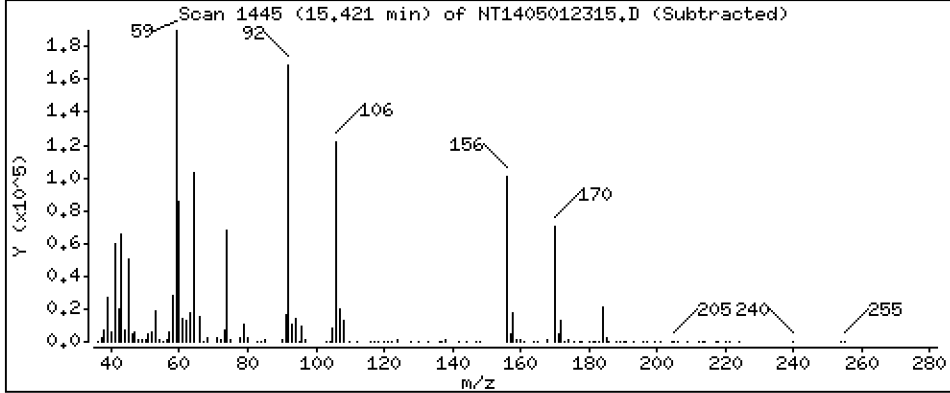
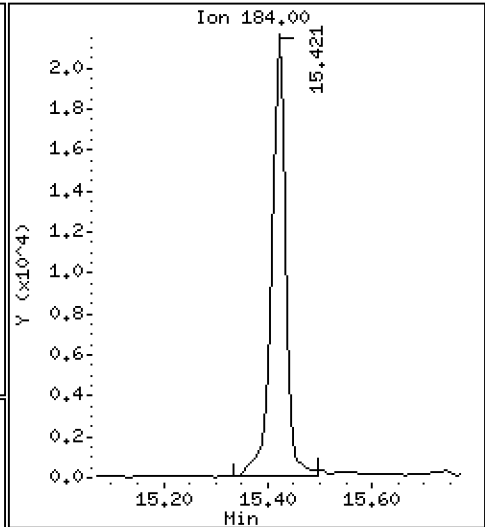
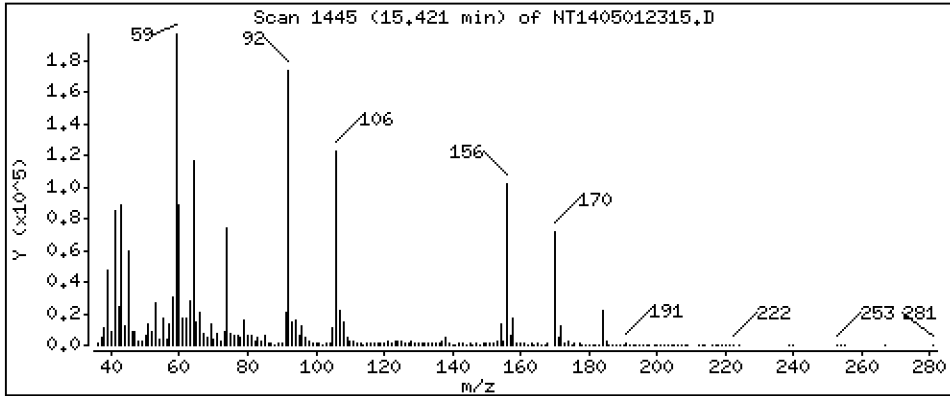
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 1,695 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

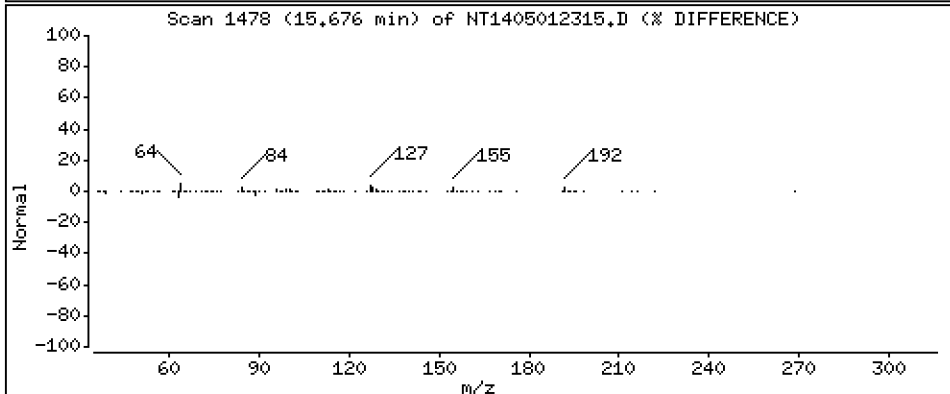
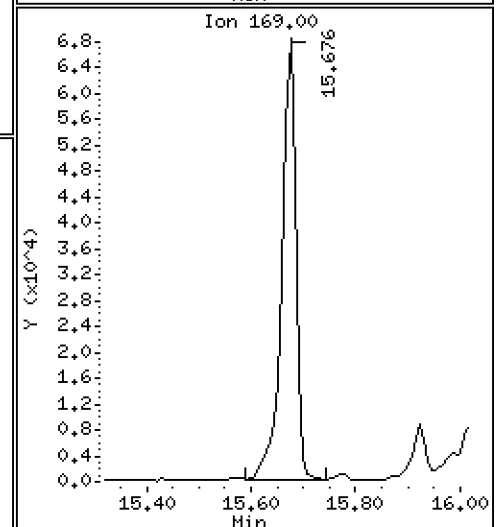
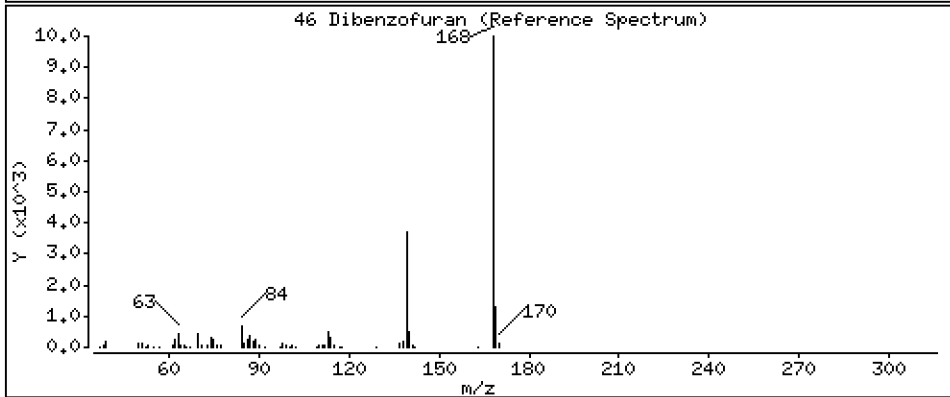
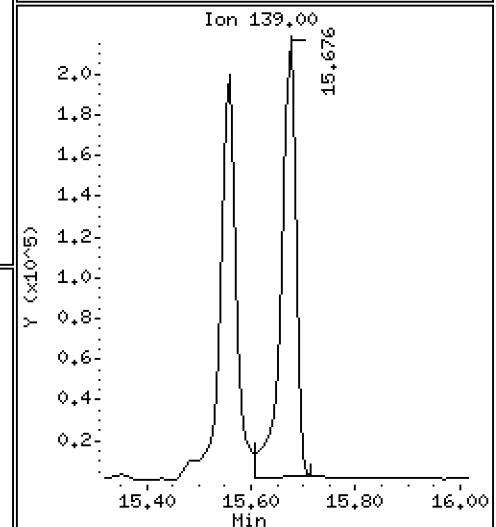
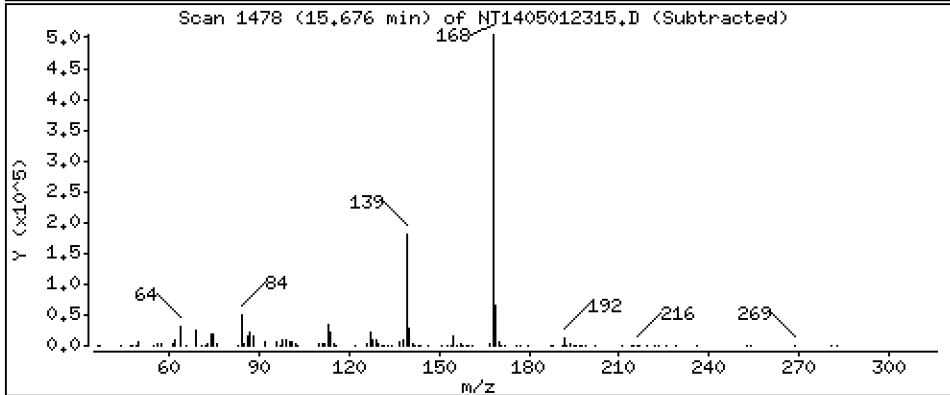
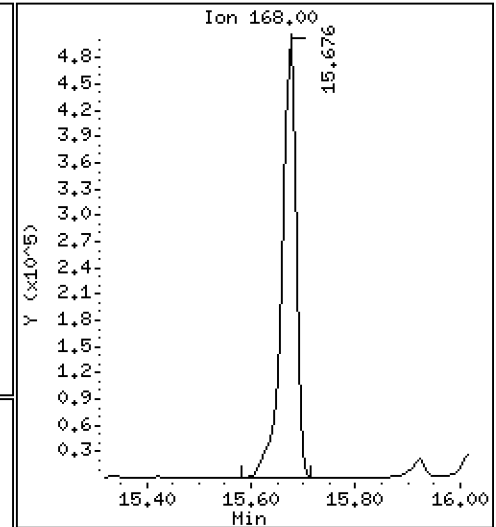
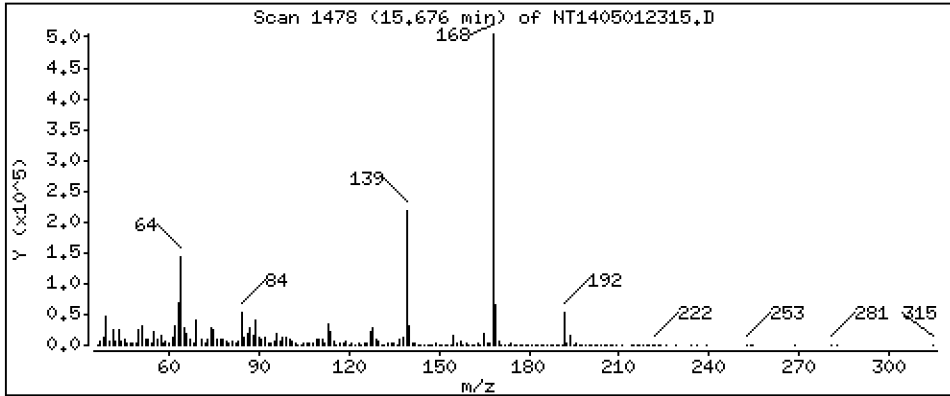
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 4,110 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

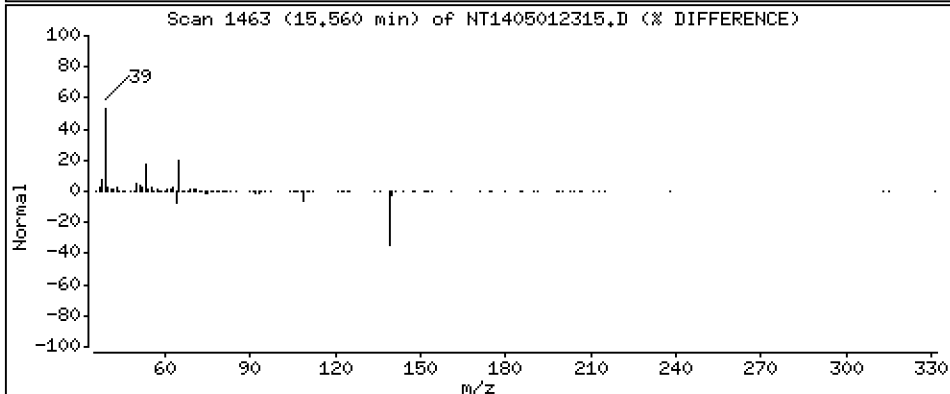
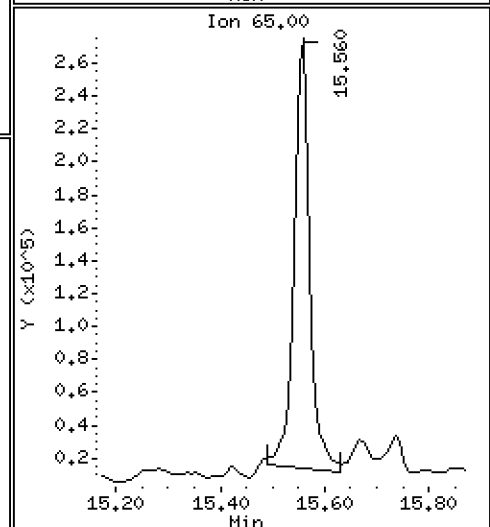
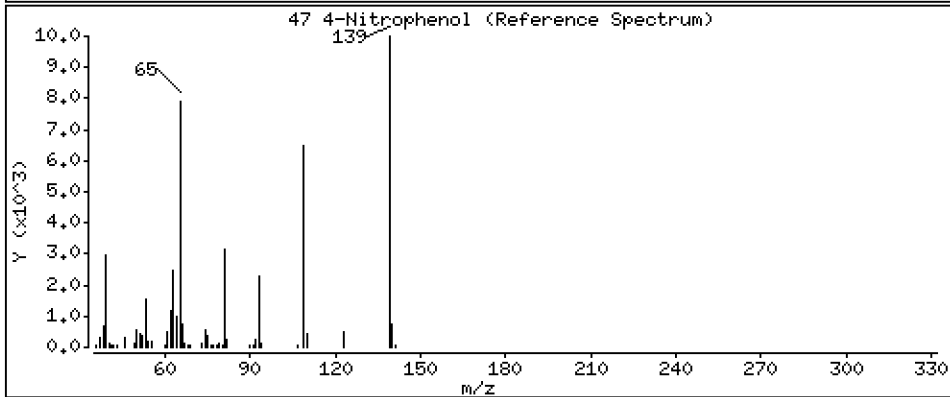
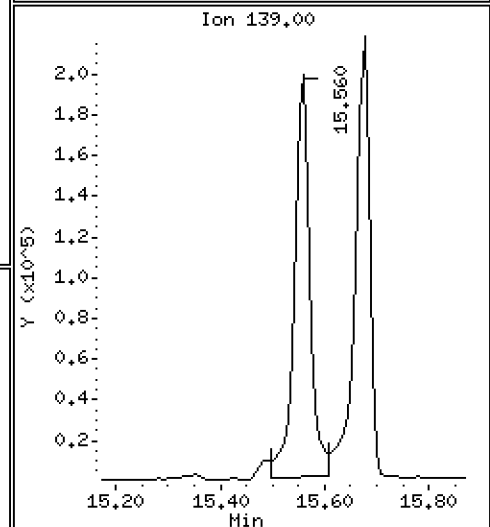
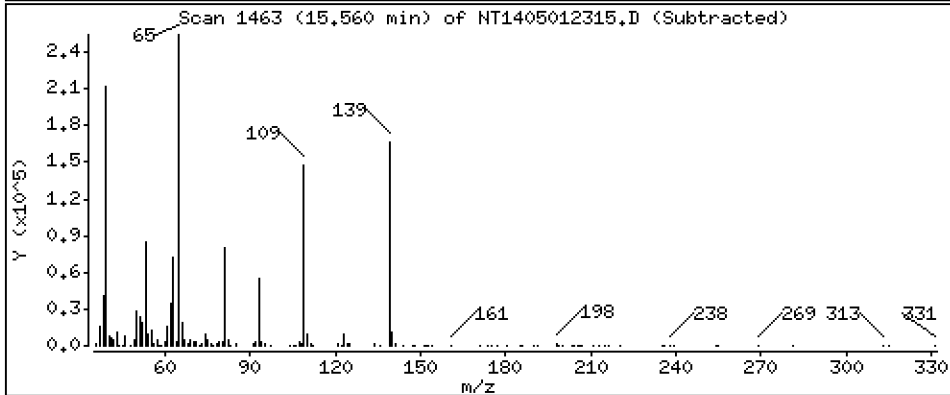
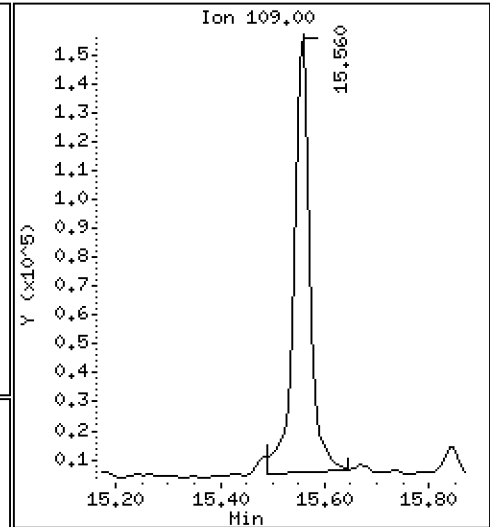
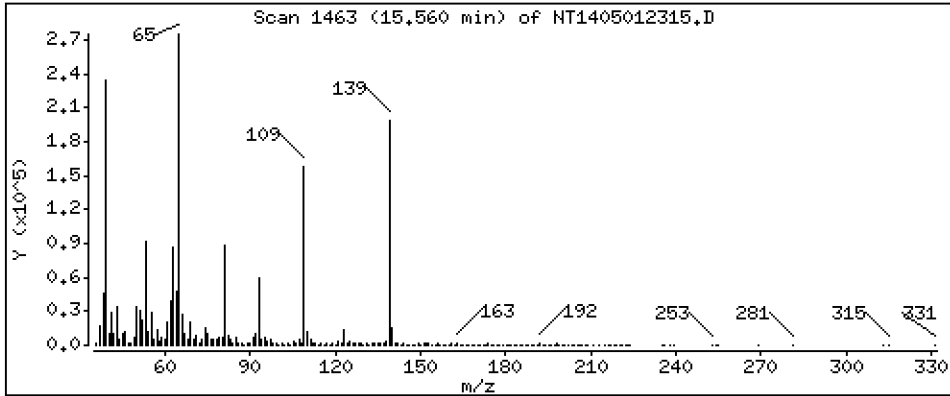
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 12,11 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

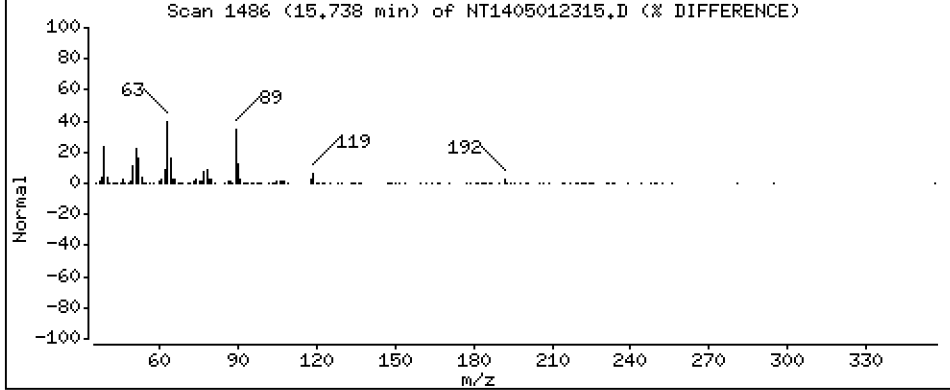
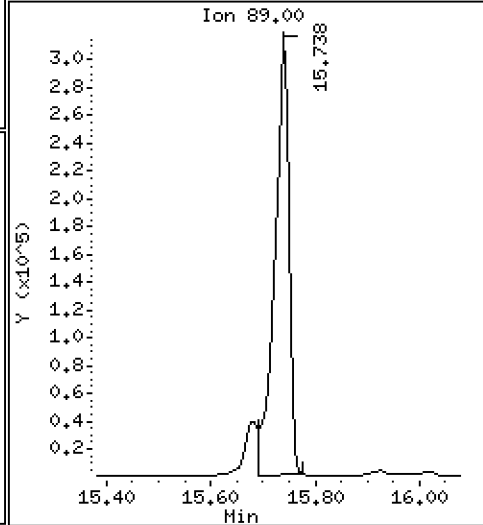
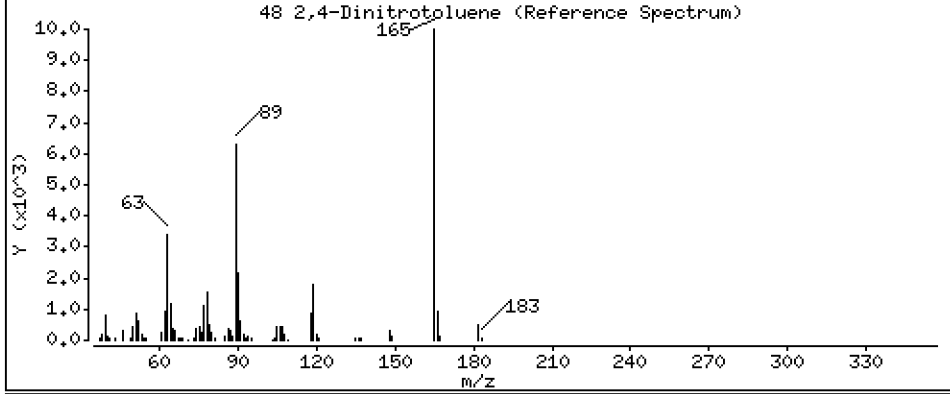
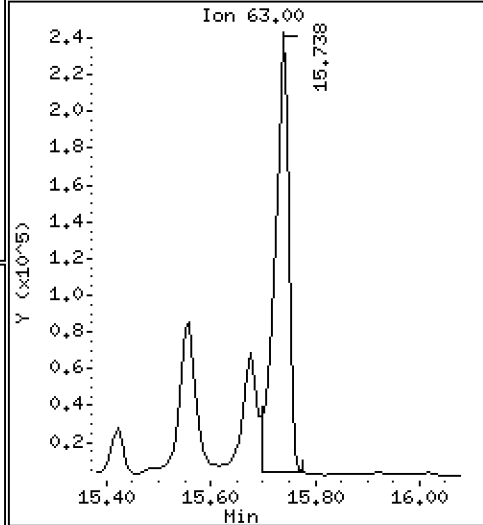
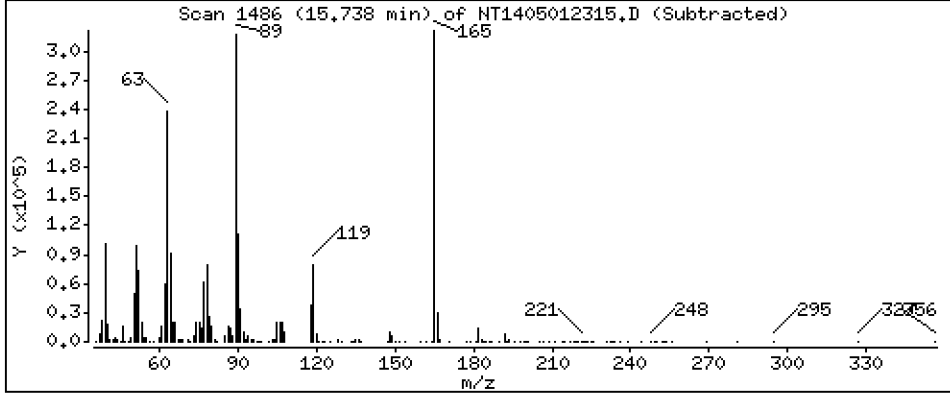
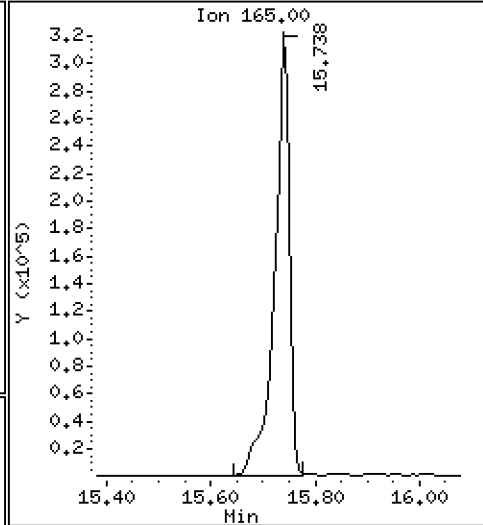
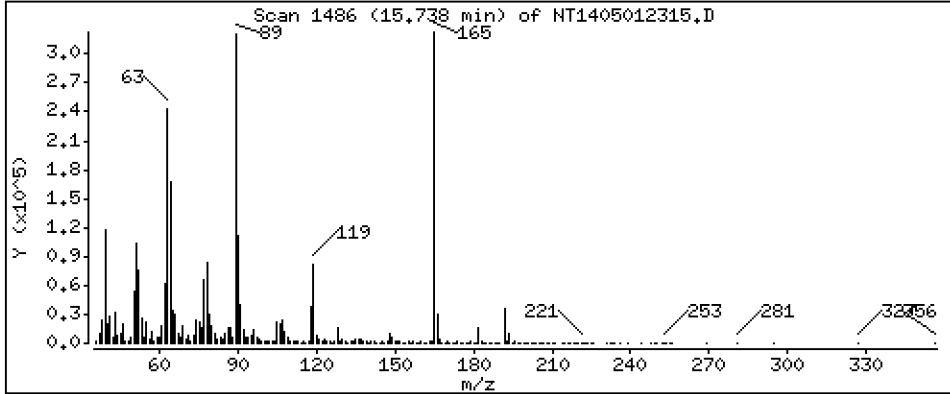
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 12,17 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

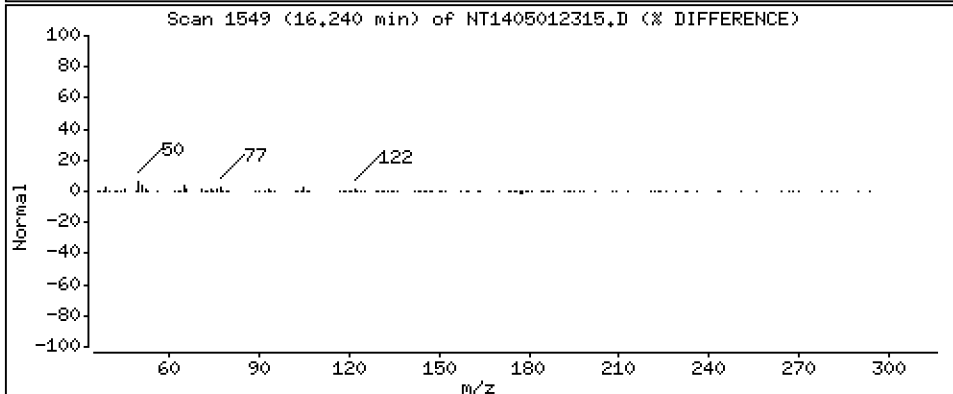
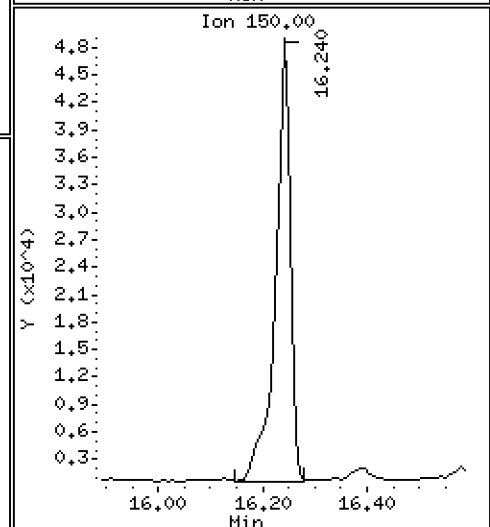
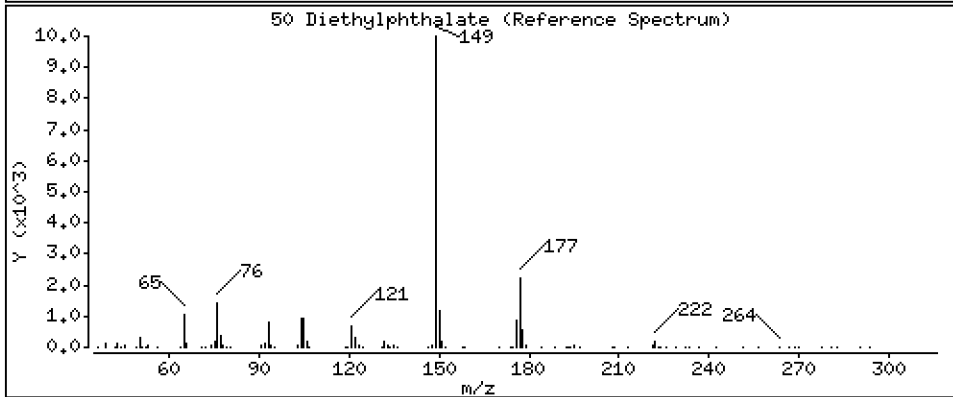
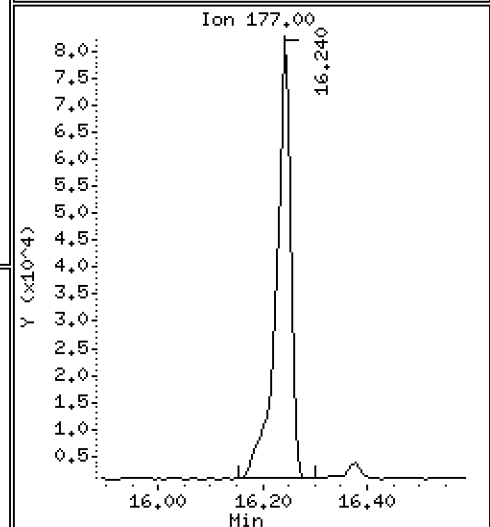
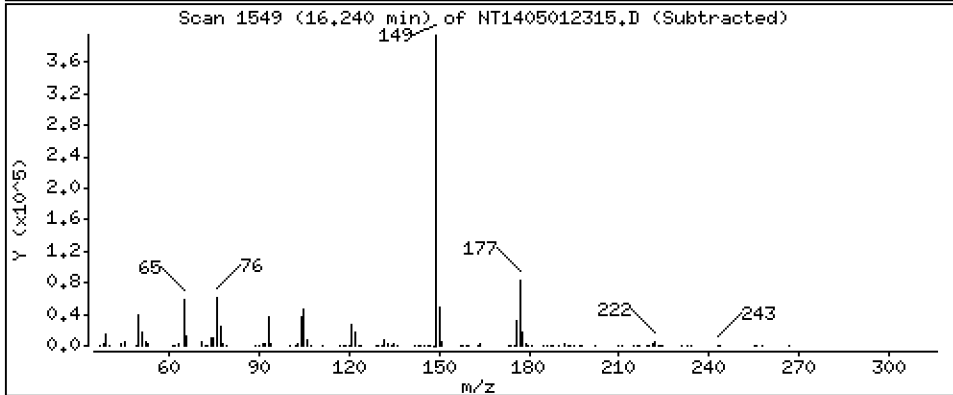
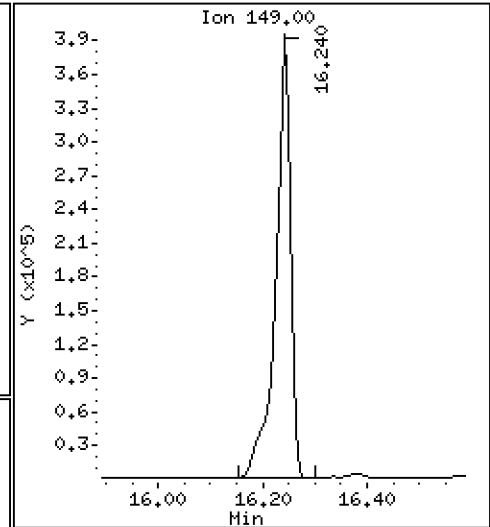
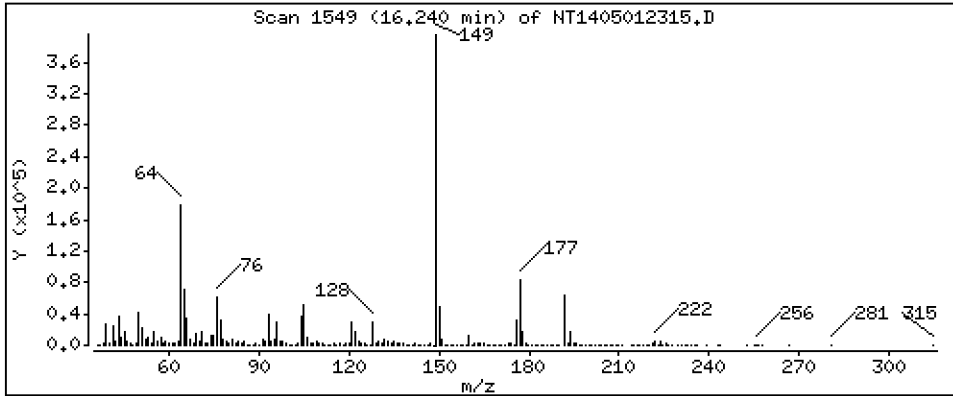
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,724 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

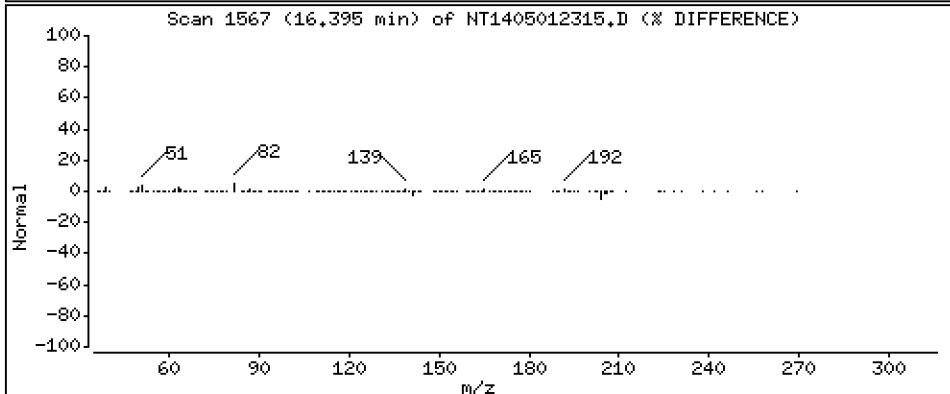
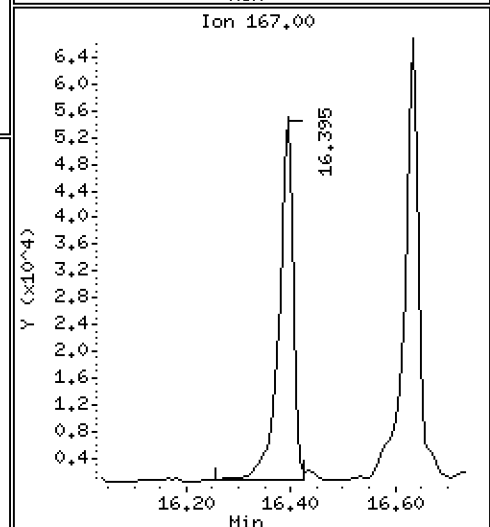
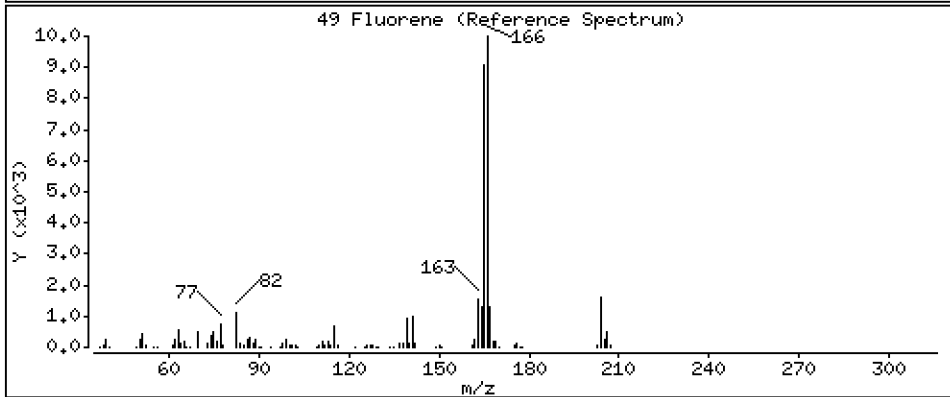
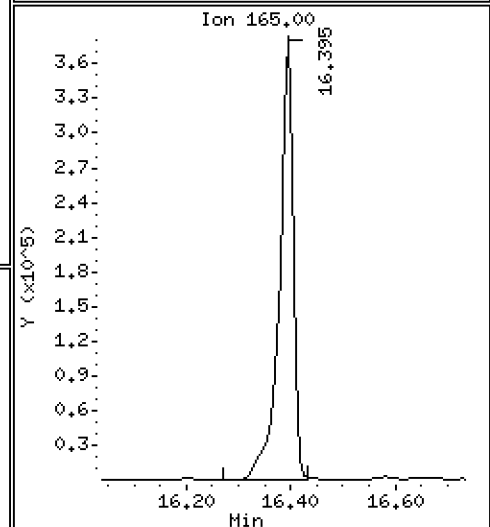
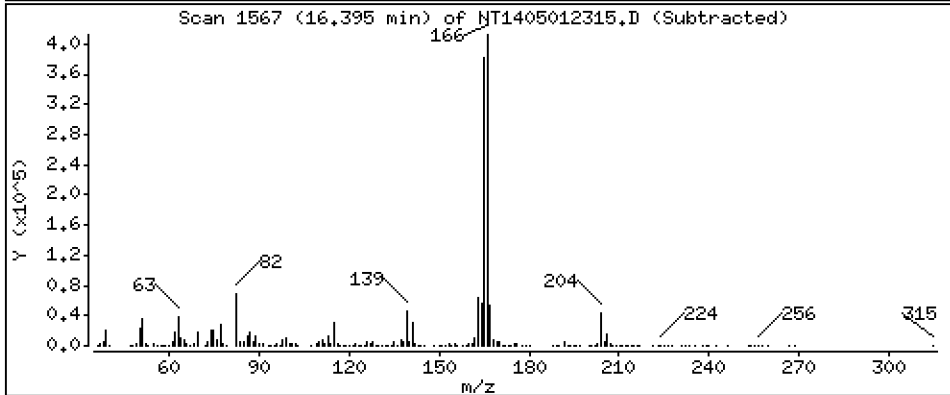
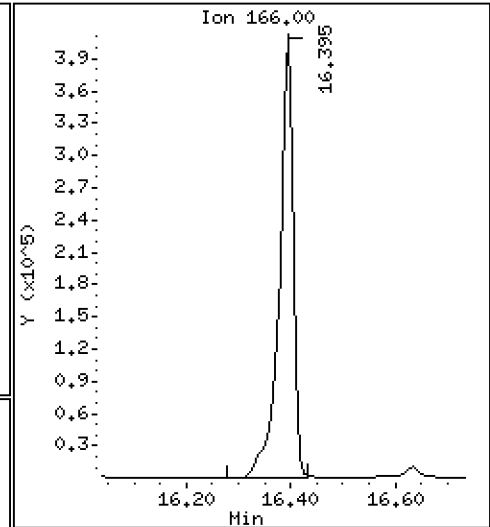
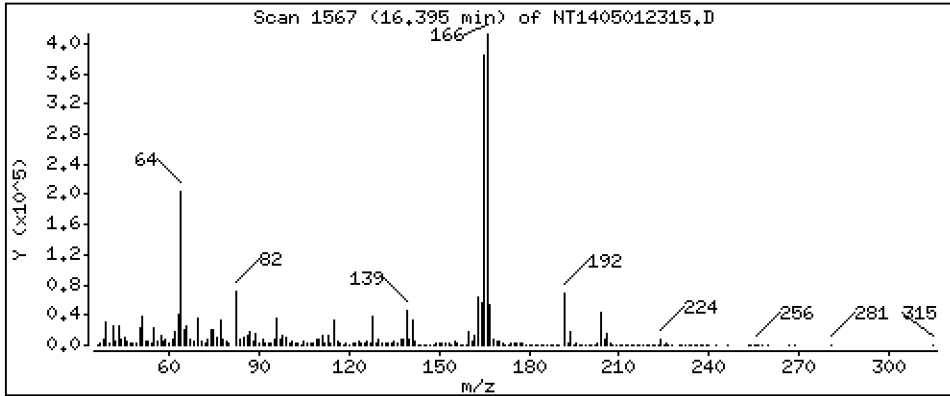
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,314 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

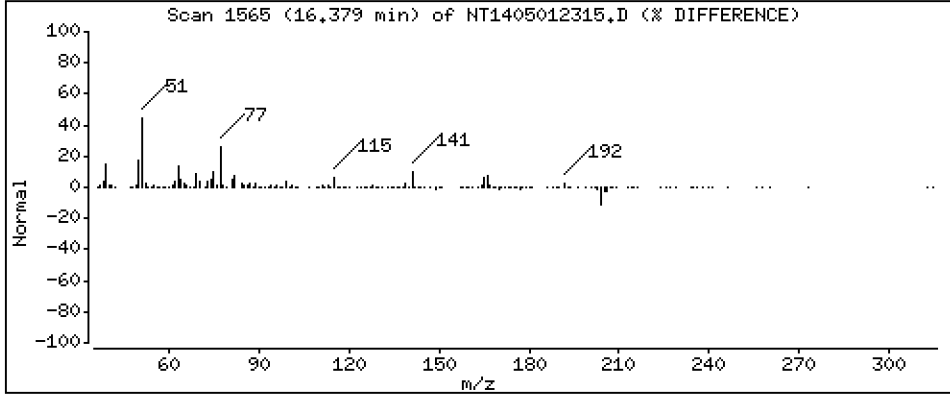
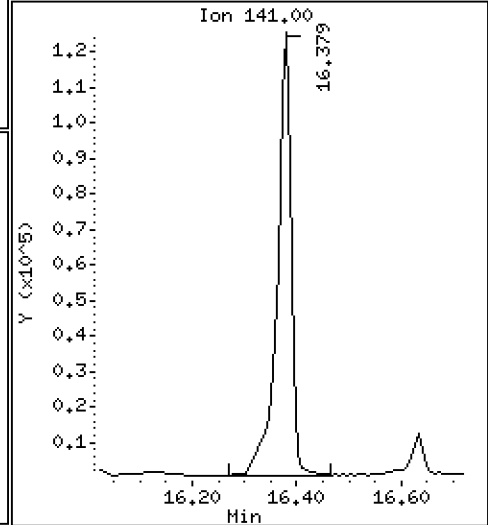
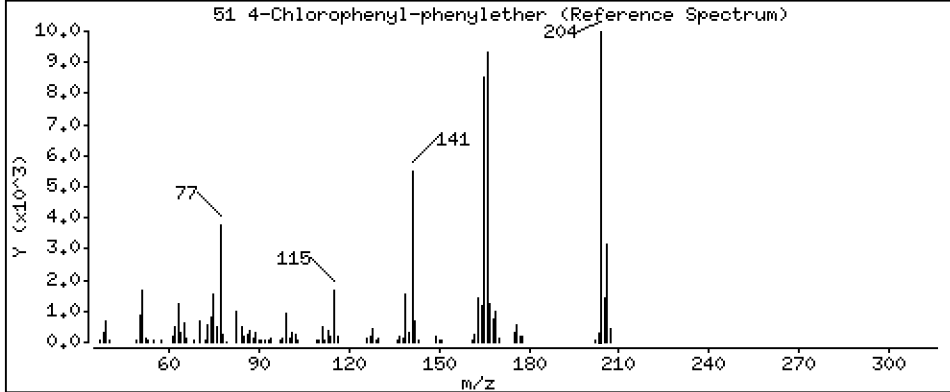
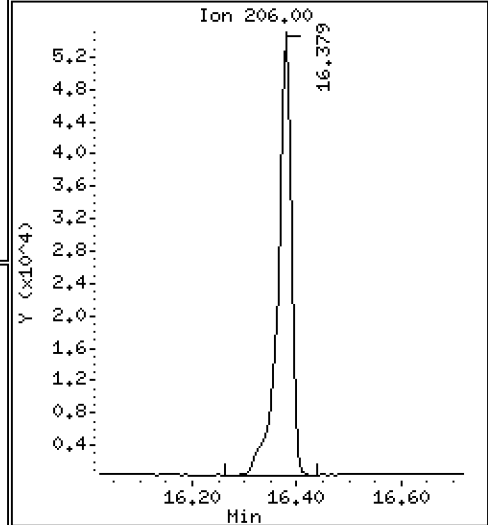
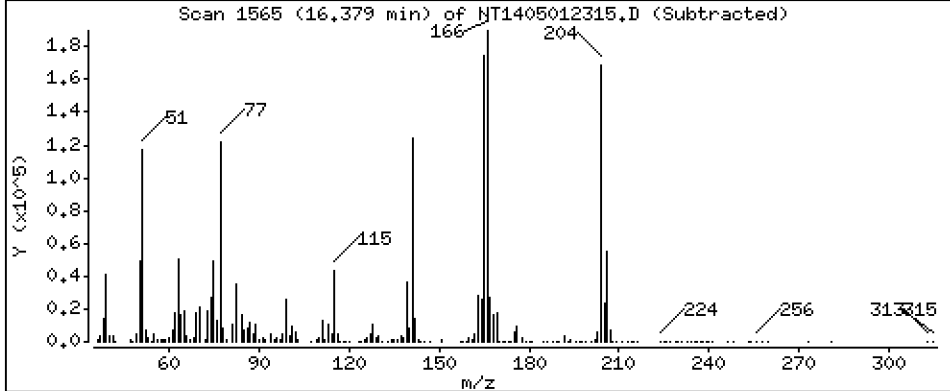
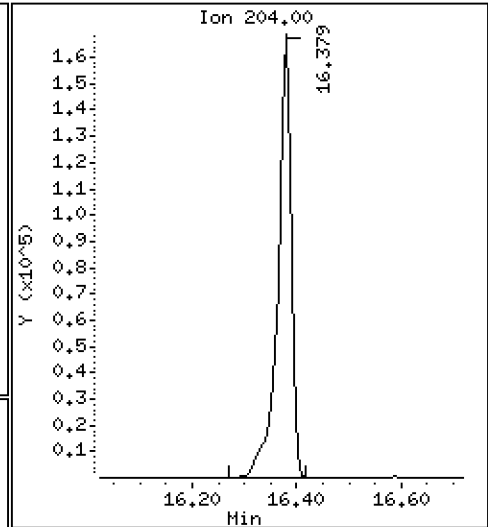
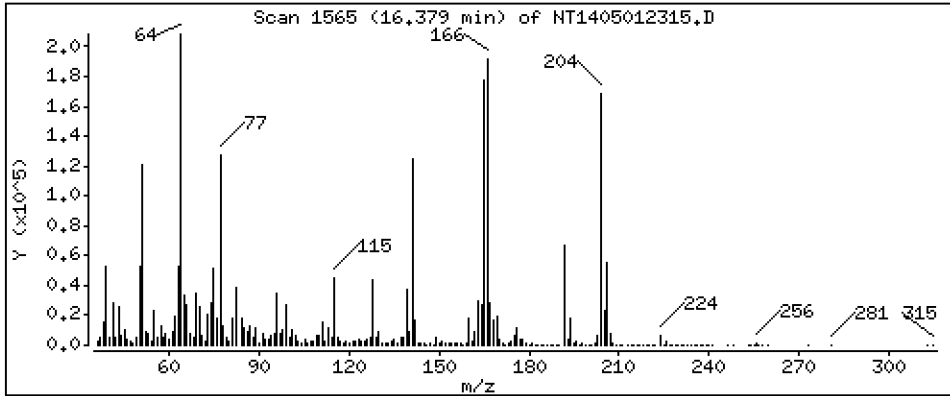
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,173 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

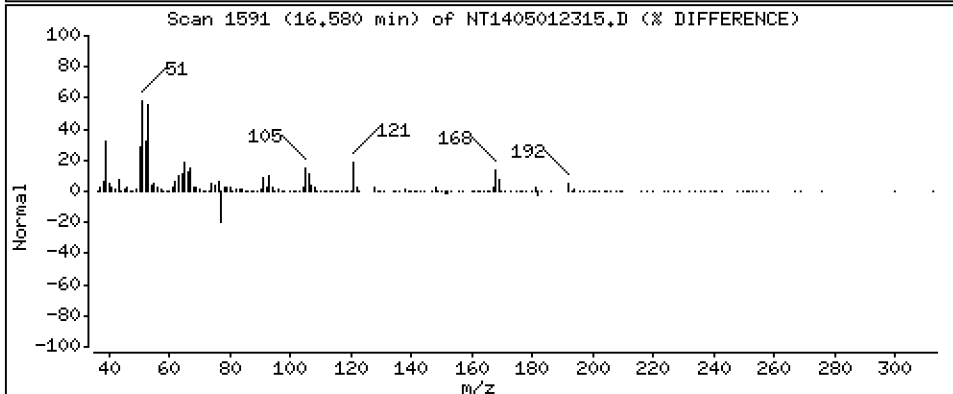
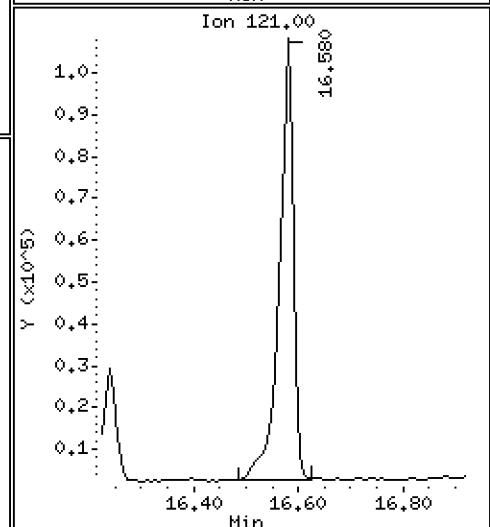
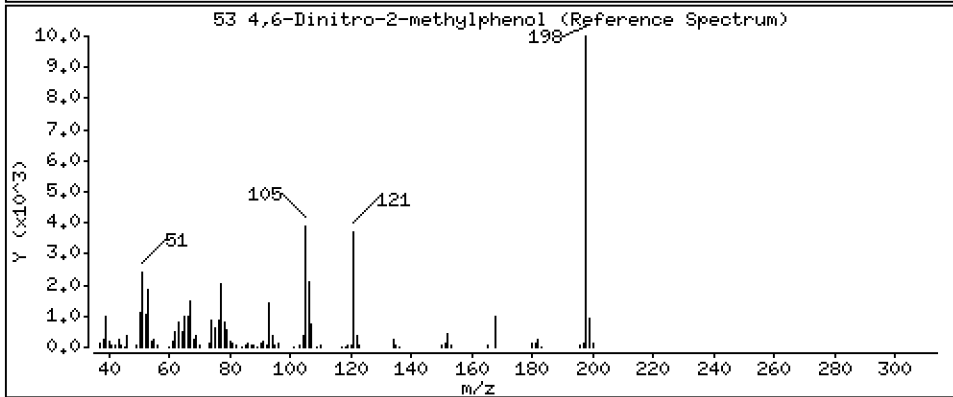
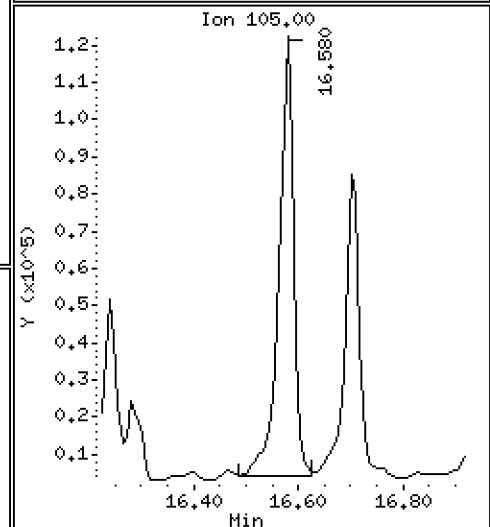
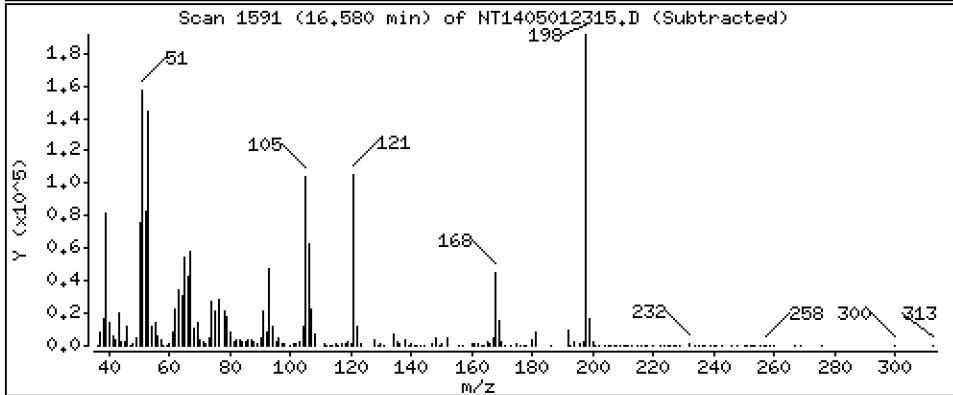
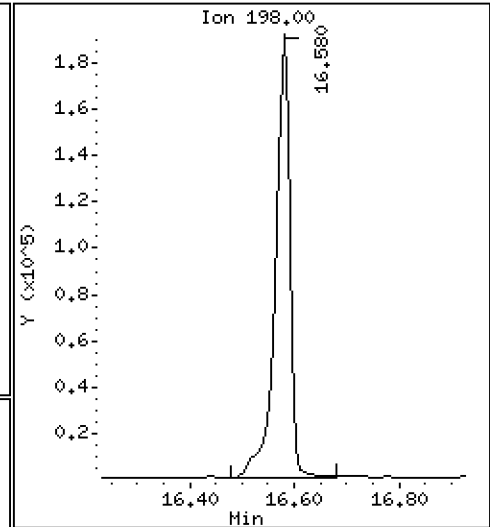
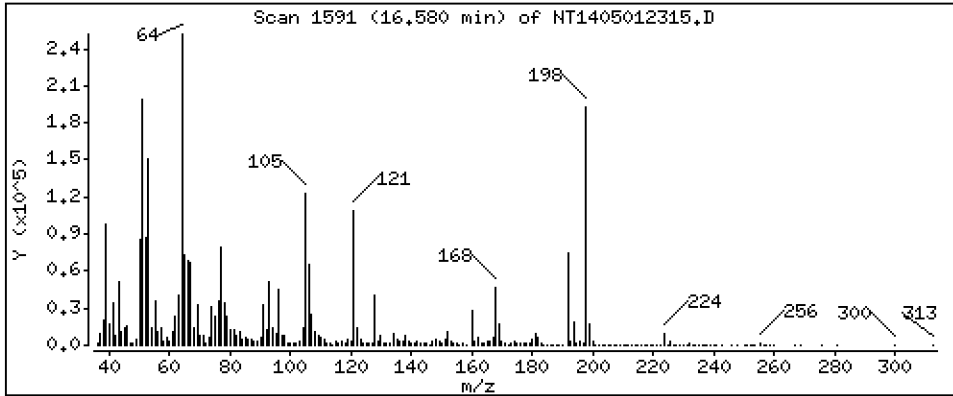
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 13,10 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

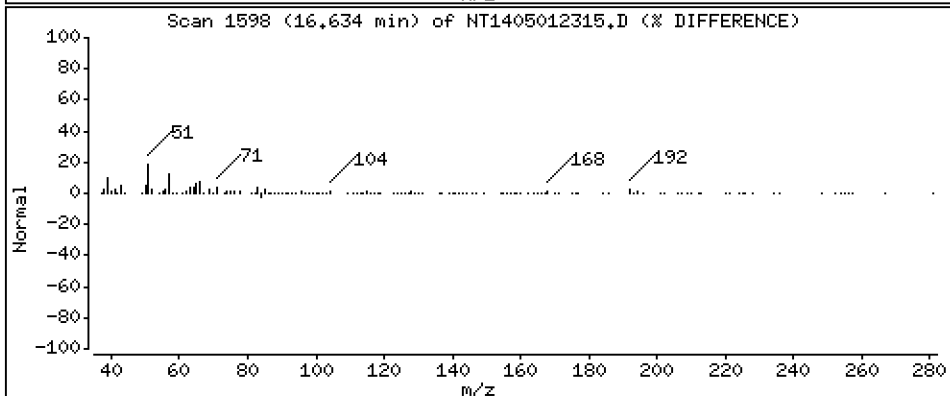
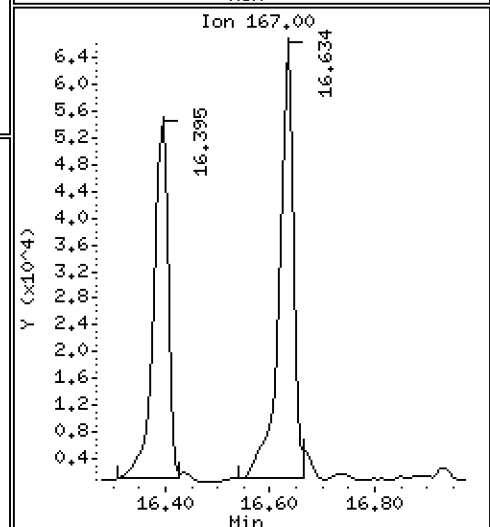
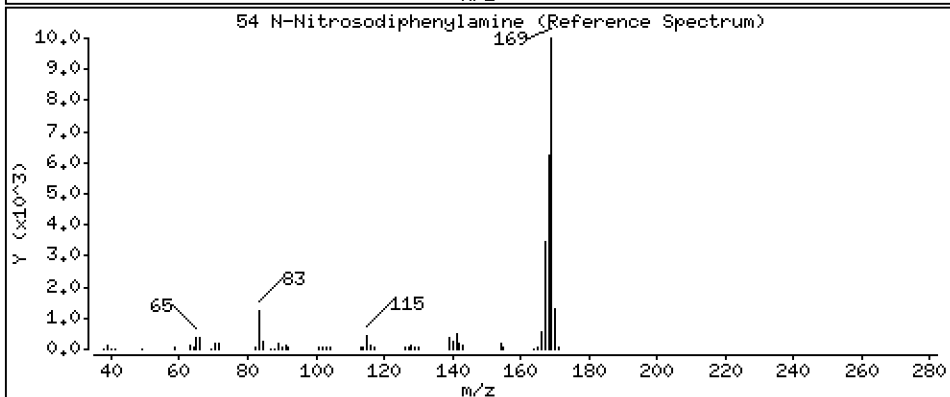
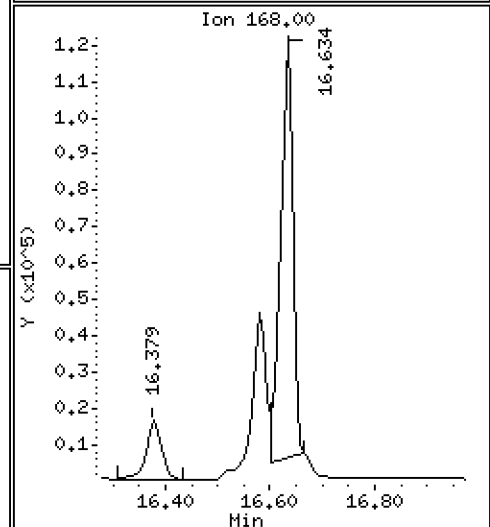
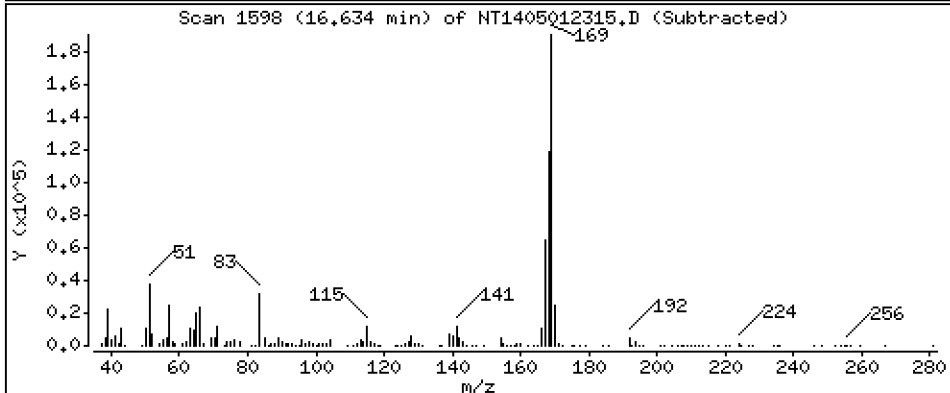
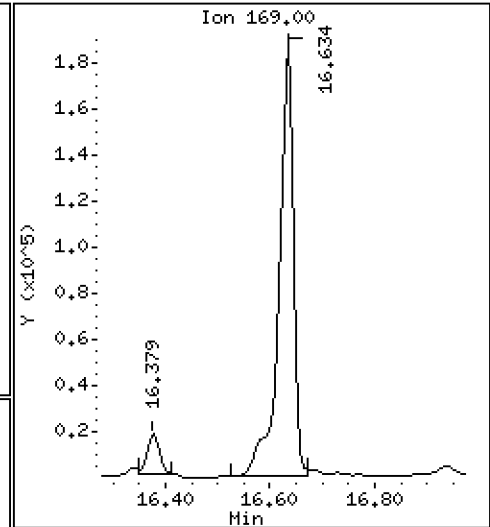
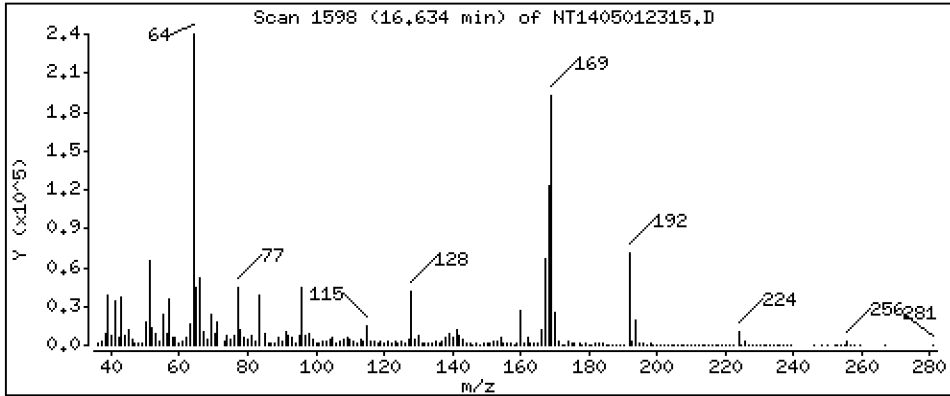
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 2,894 ug/mL



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Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

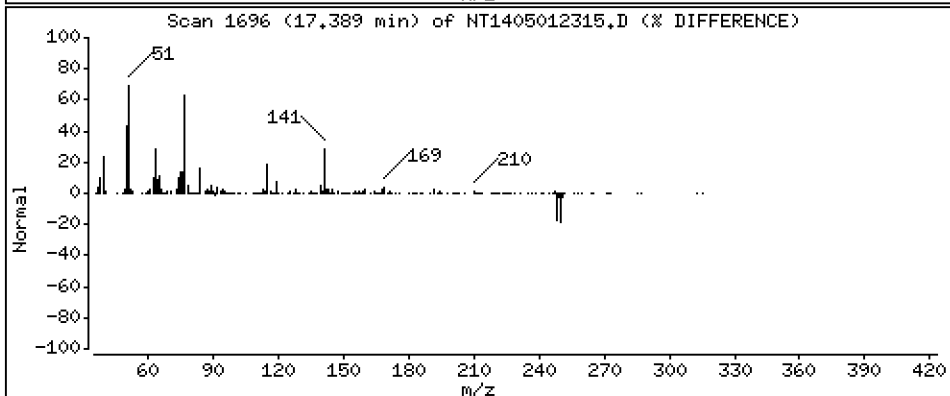
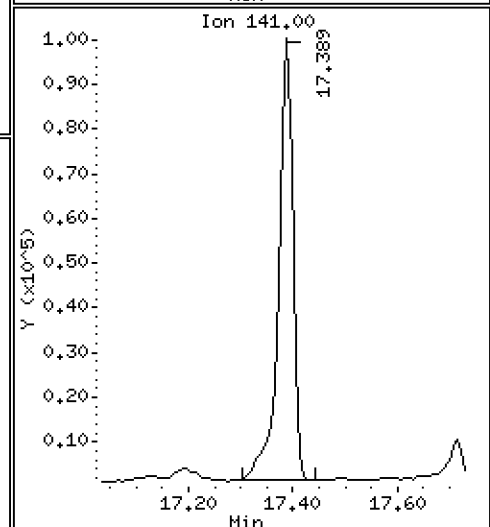
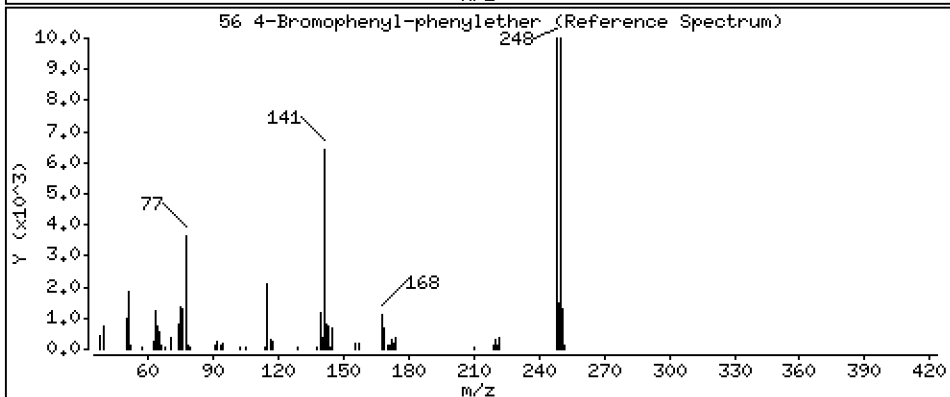
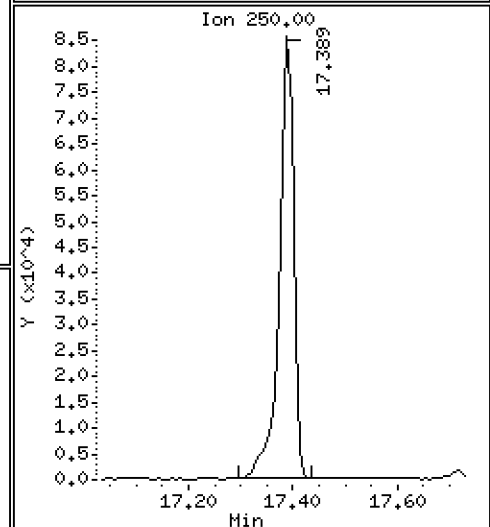
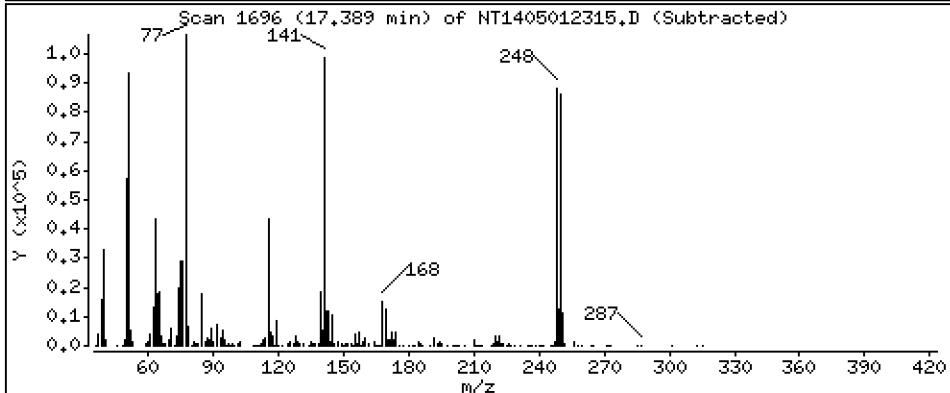
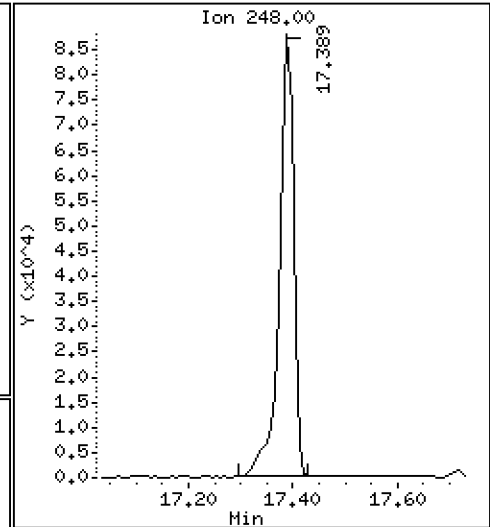
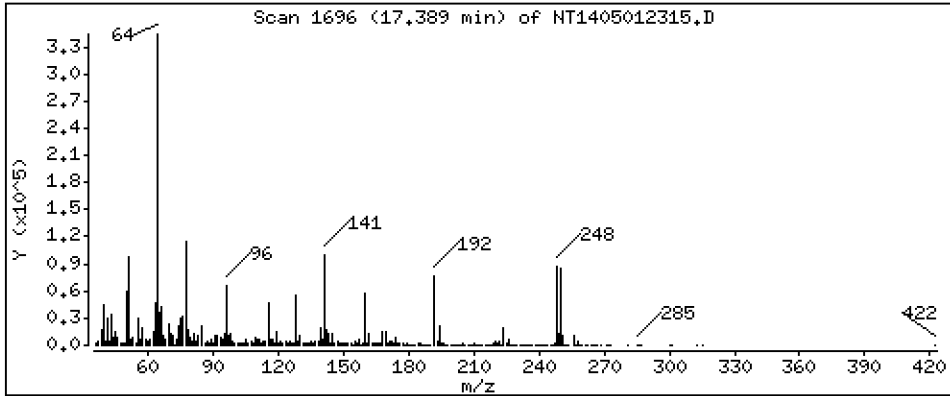
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 3,968 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

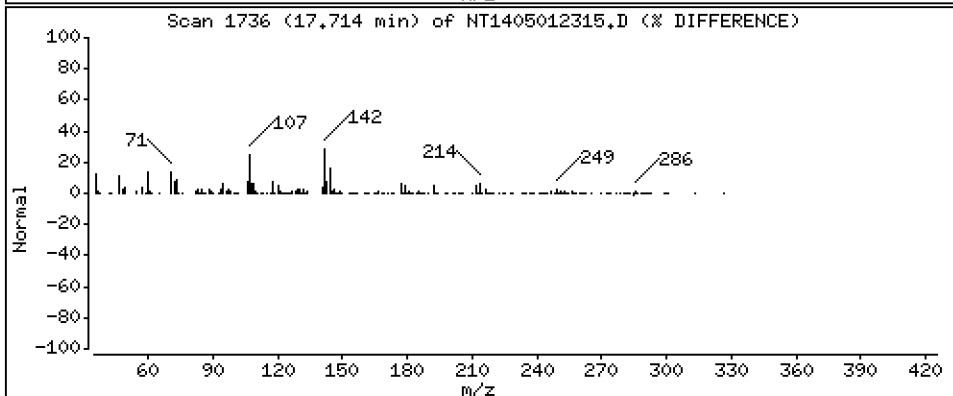
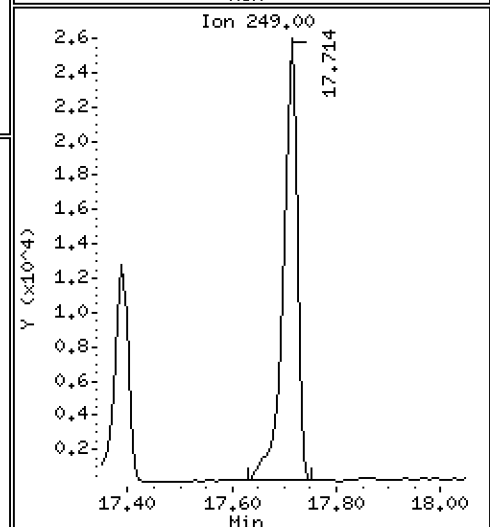
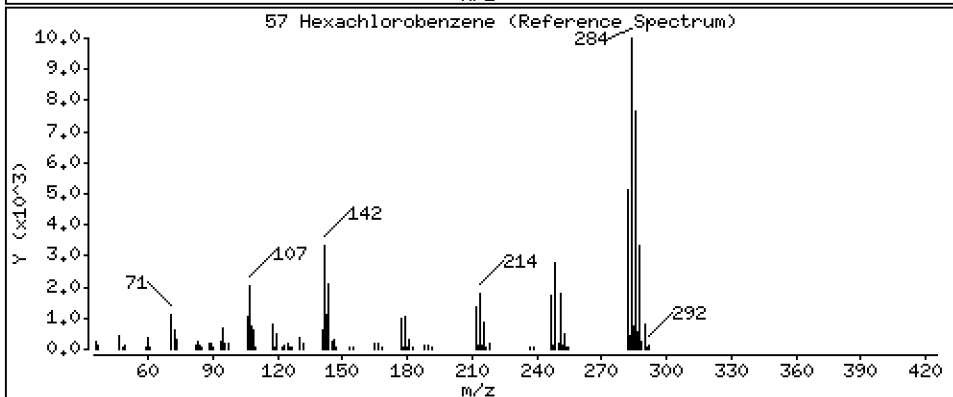
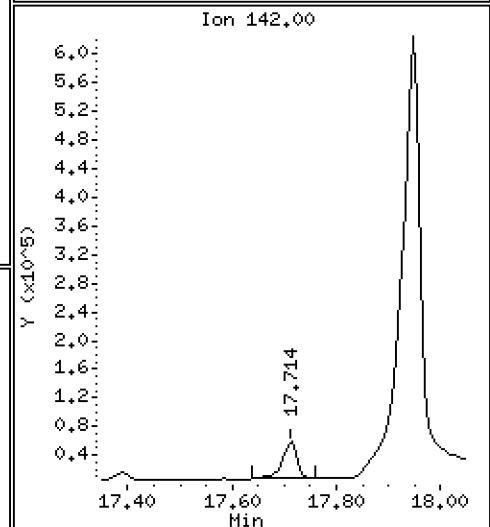
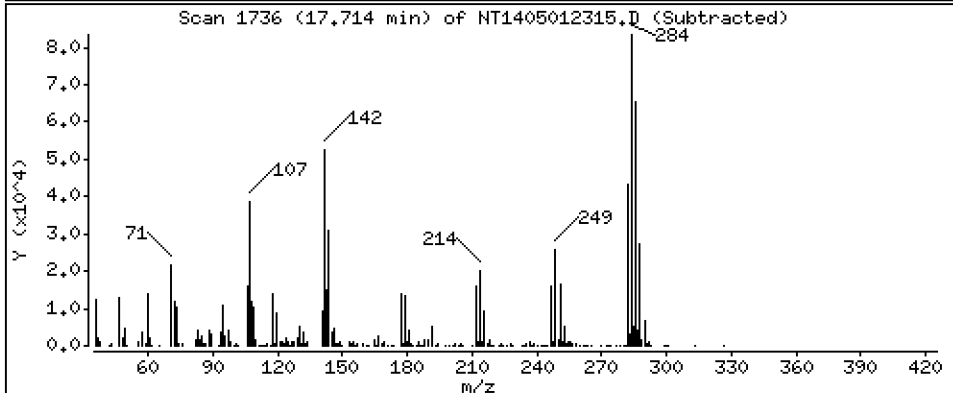
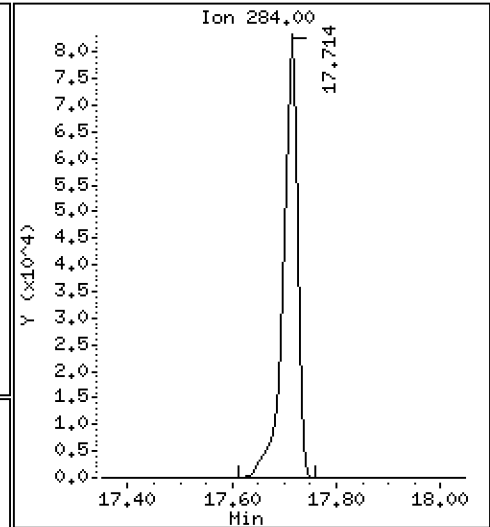
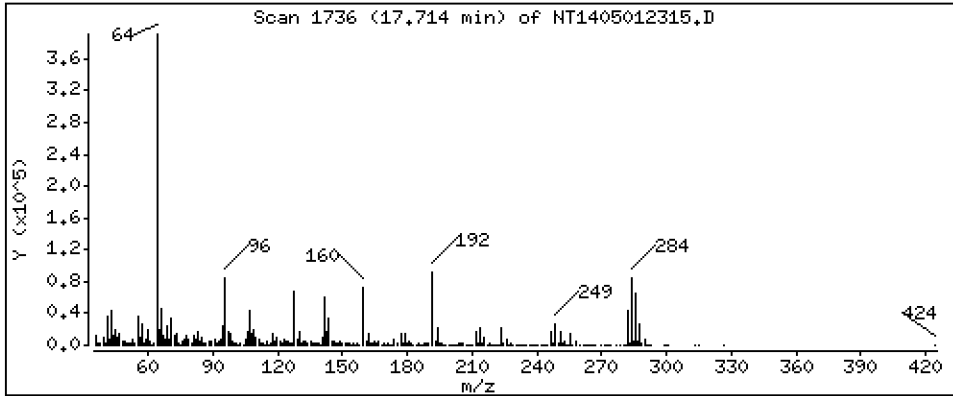
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 3,825 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

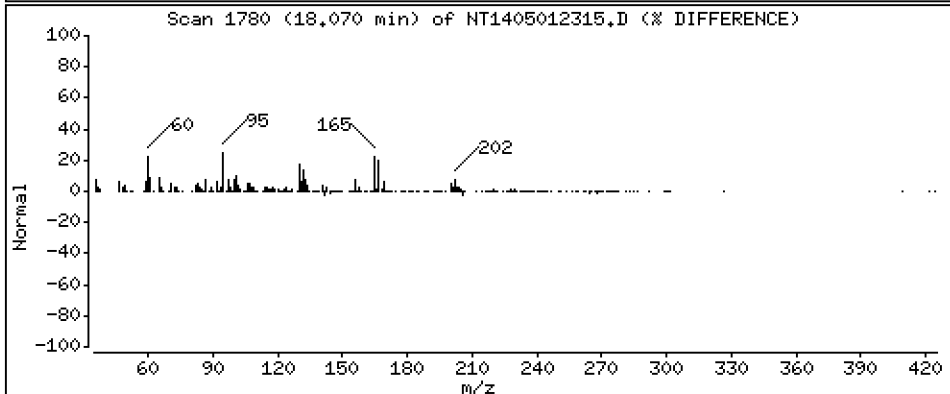
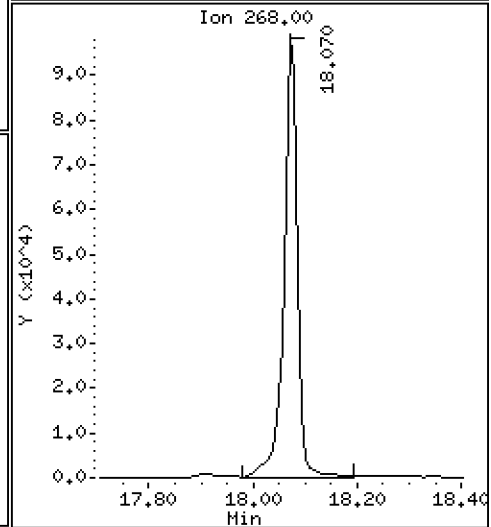
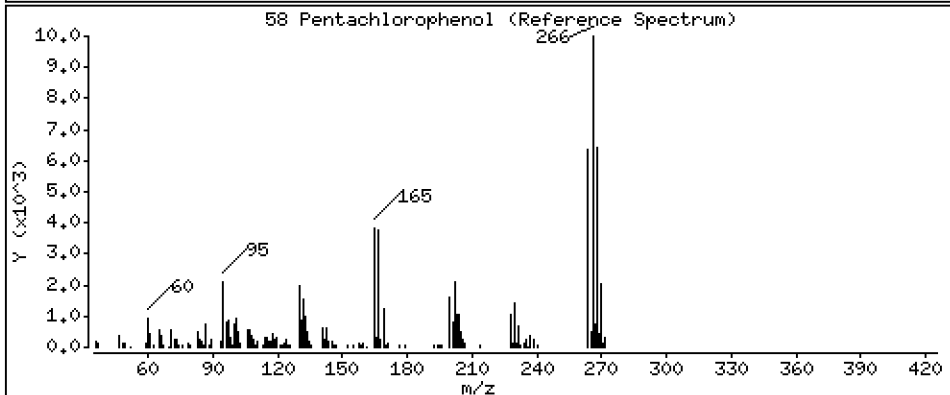
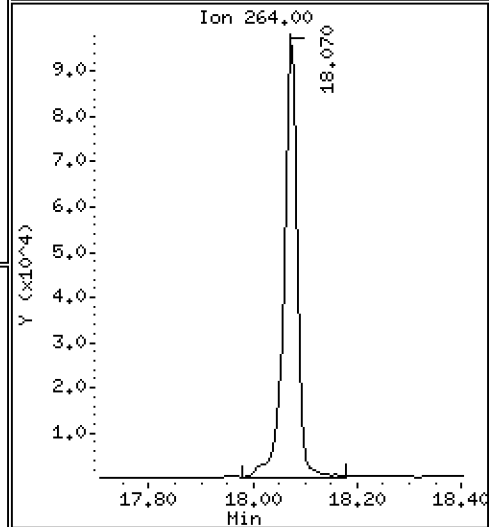
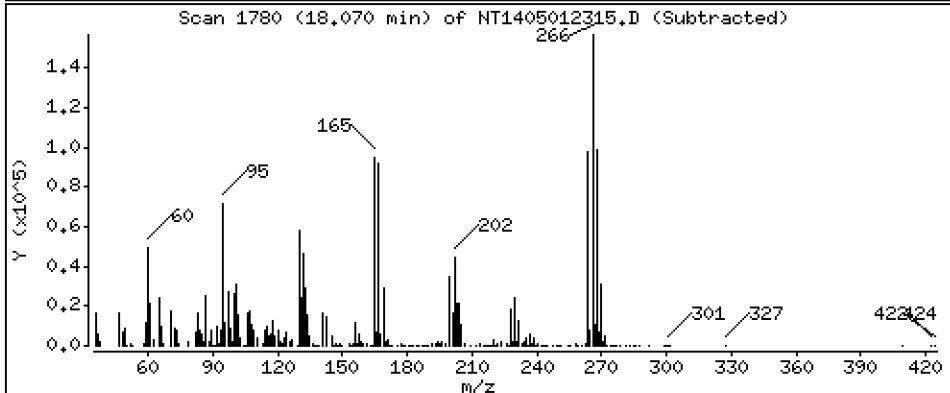
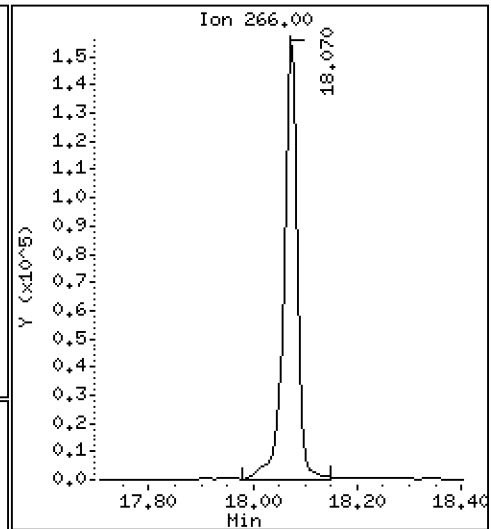
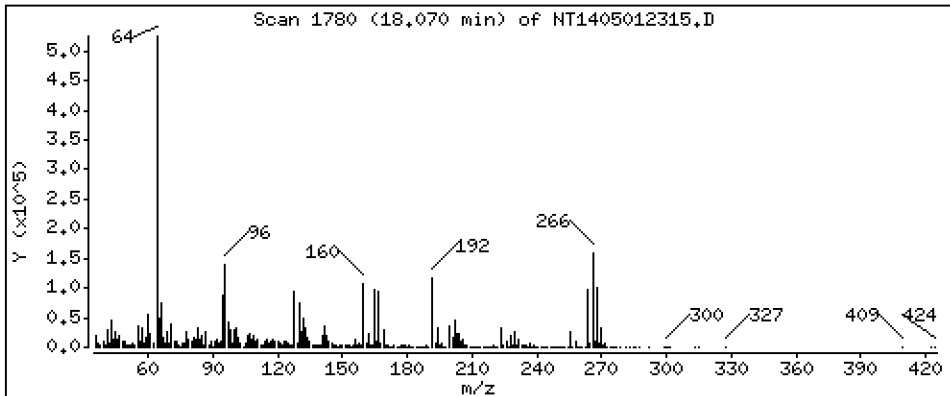
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 10,99 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

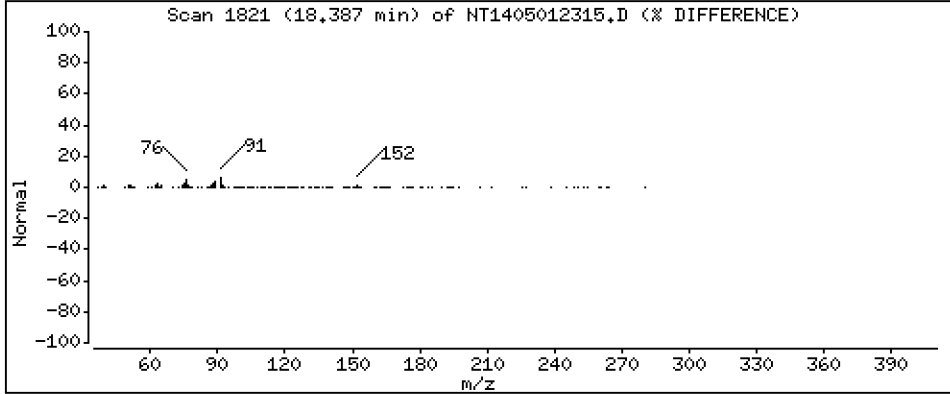
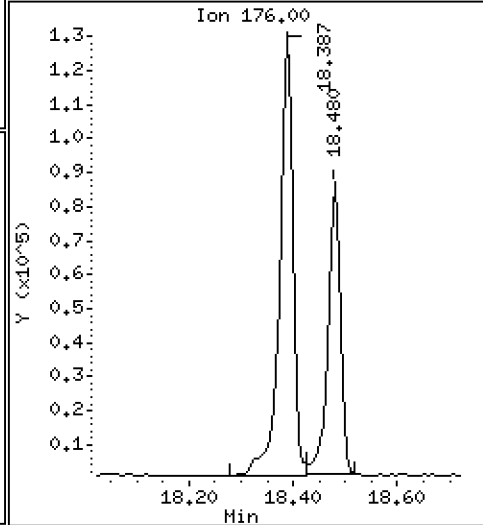
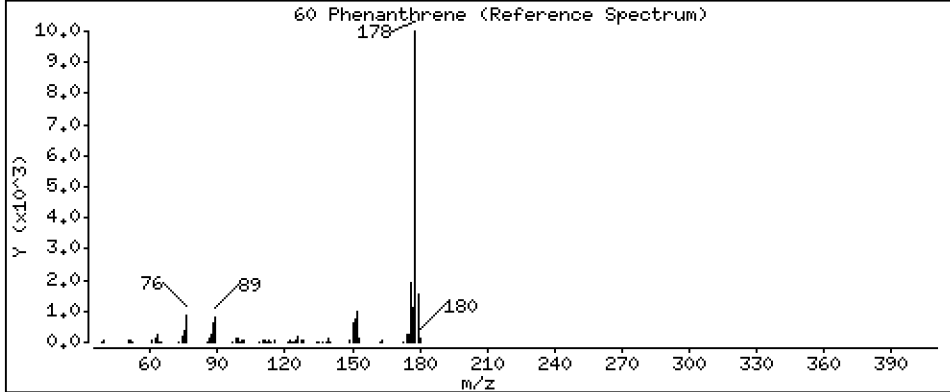
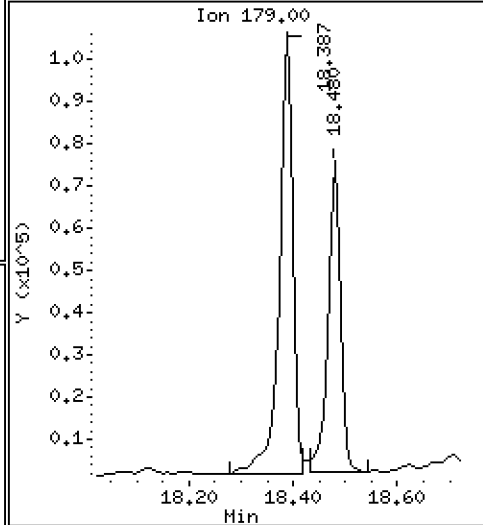
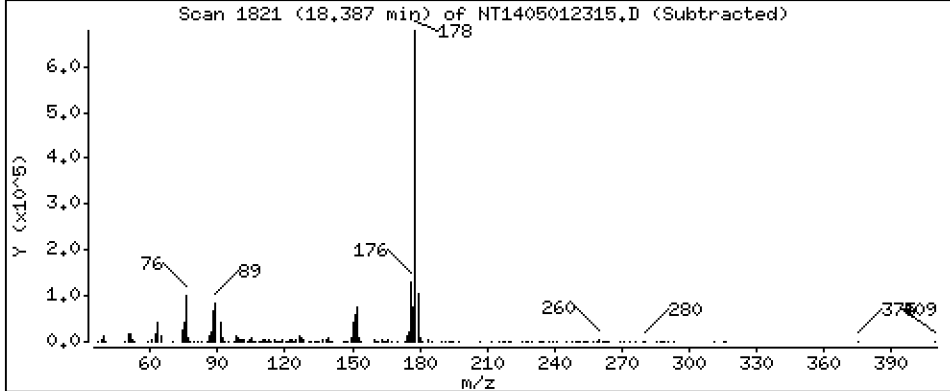
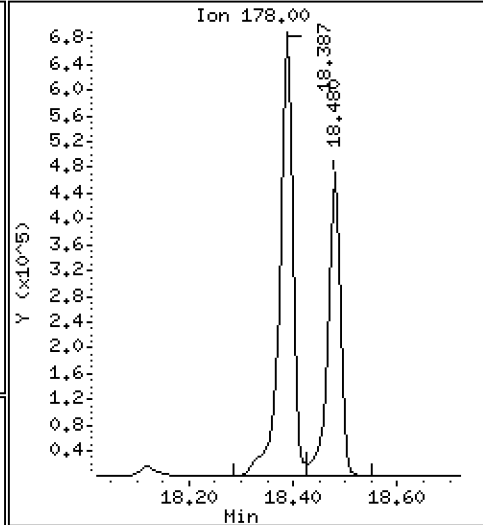
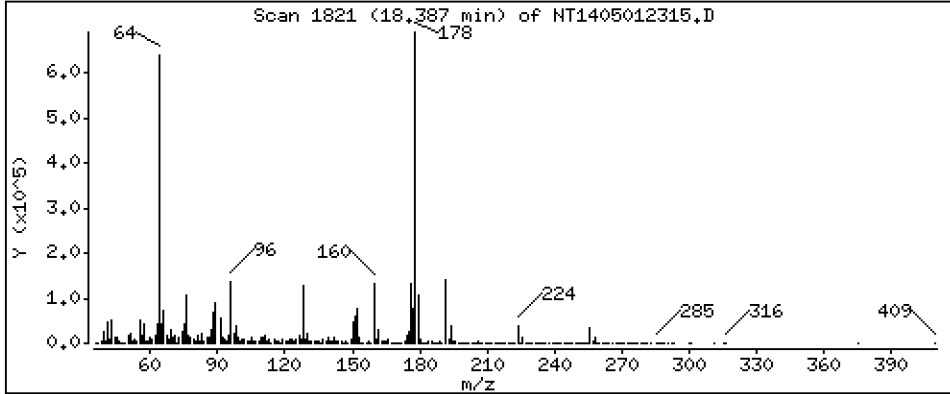
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 5,046 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

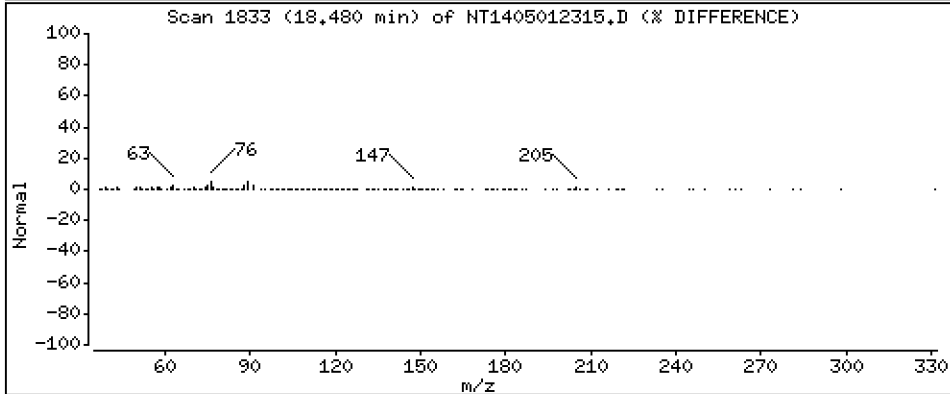
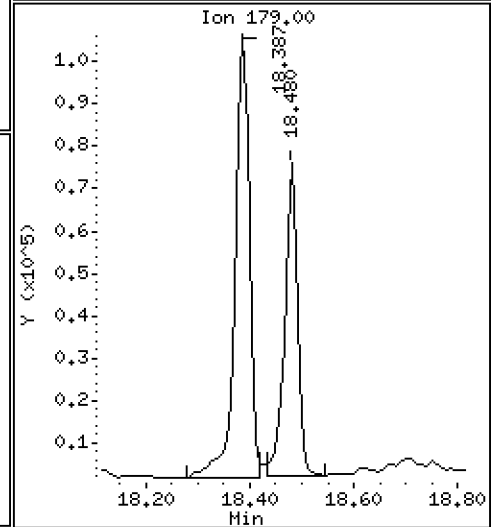
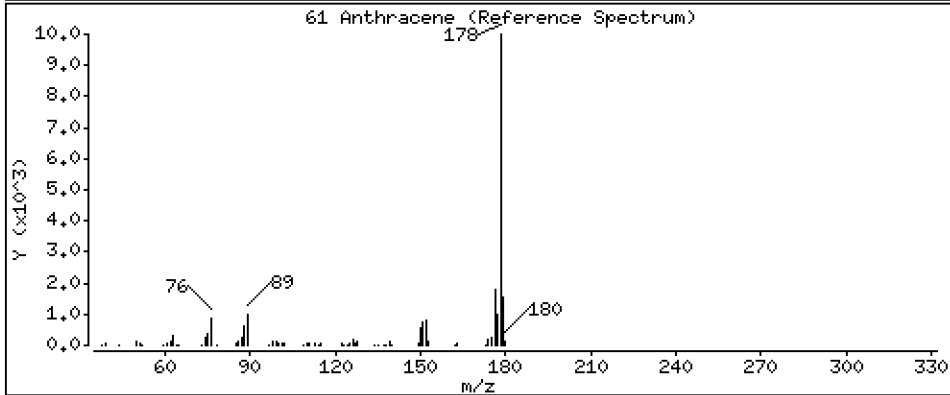
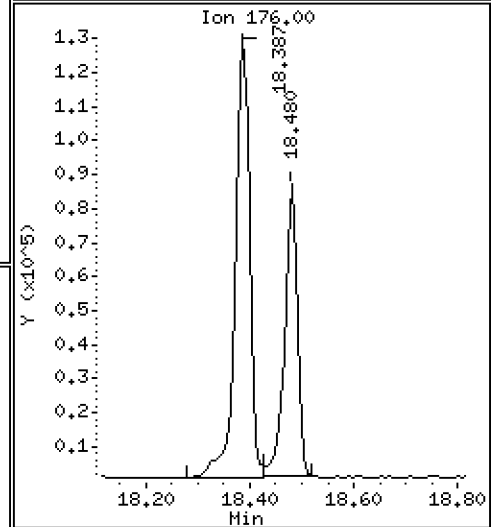
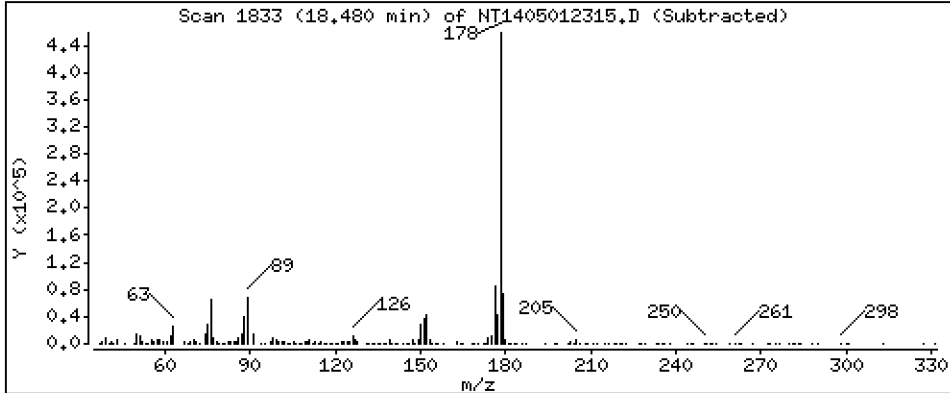
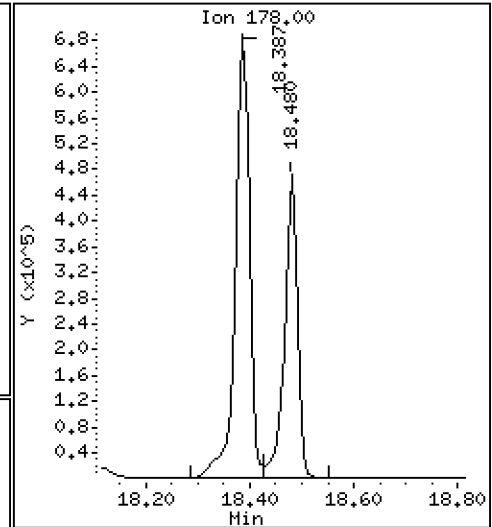
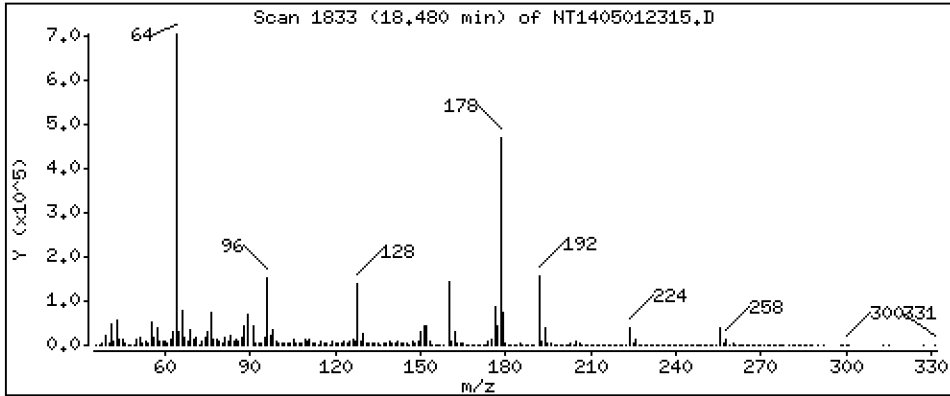
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 3,470 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

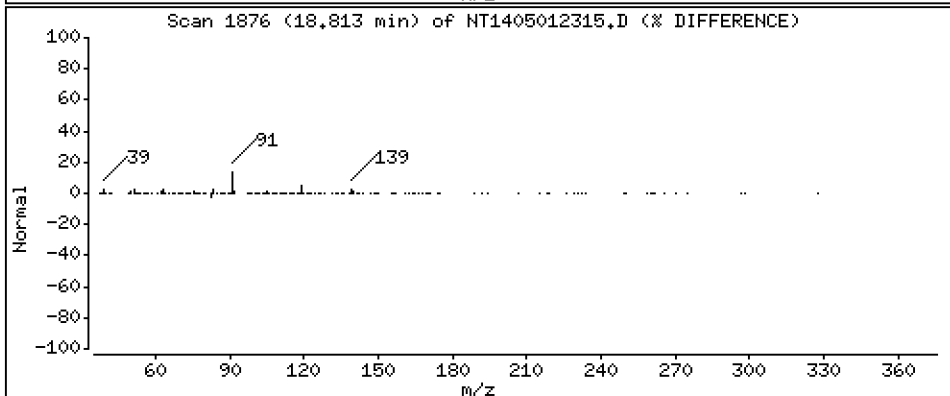
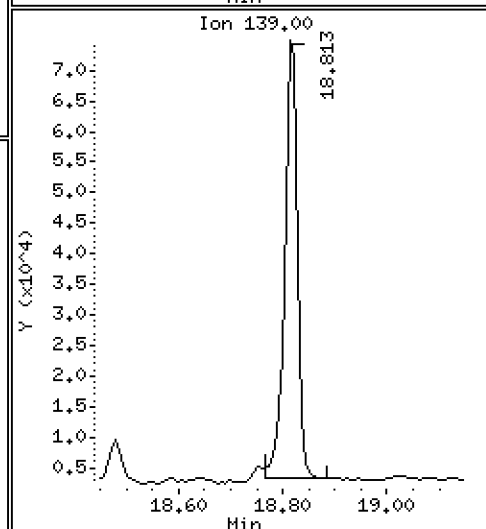
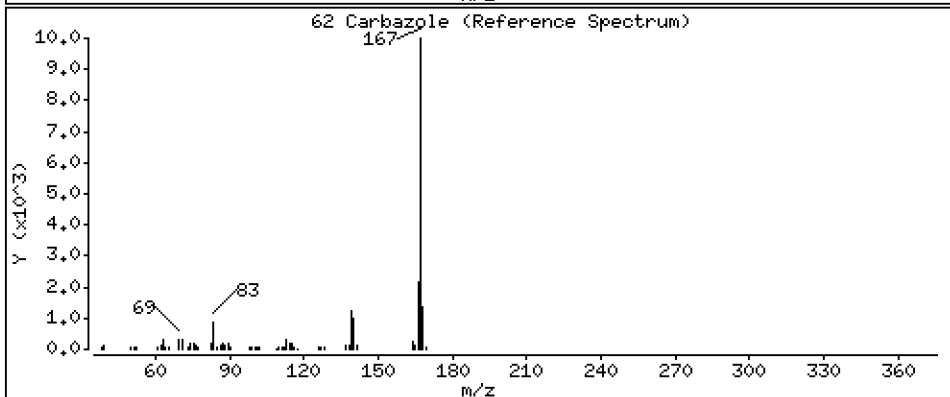
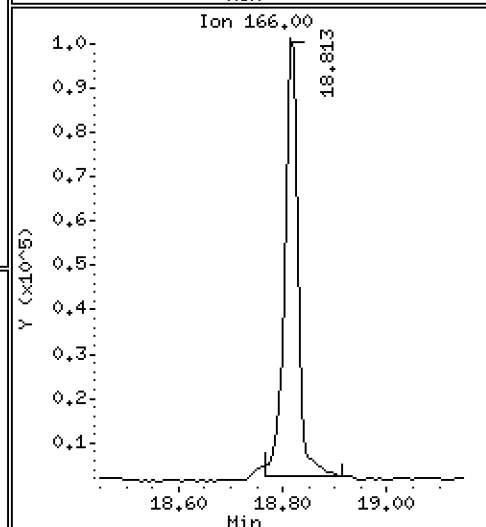
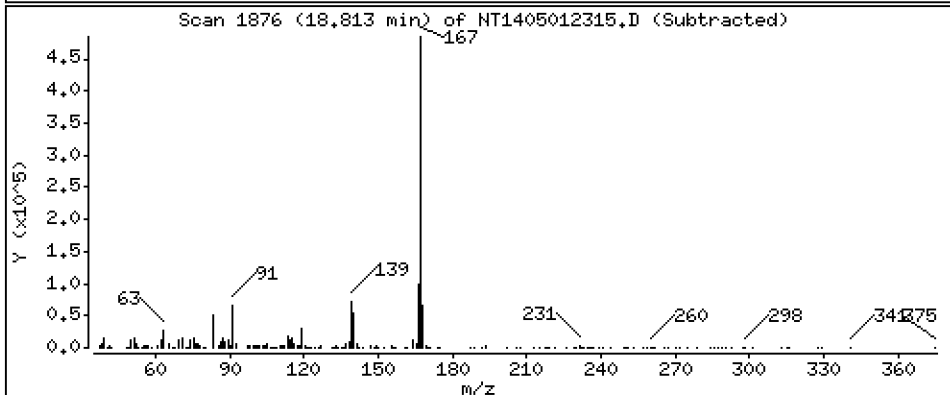
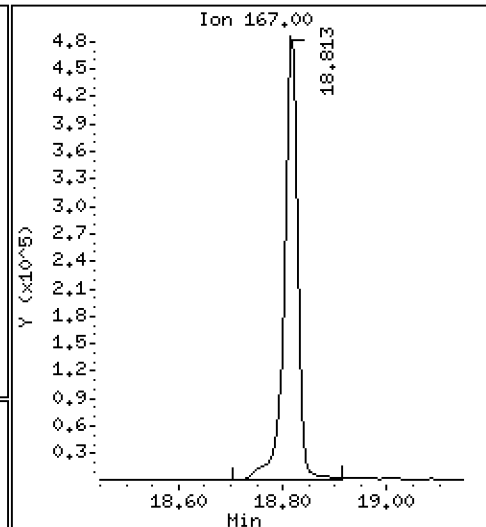
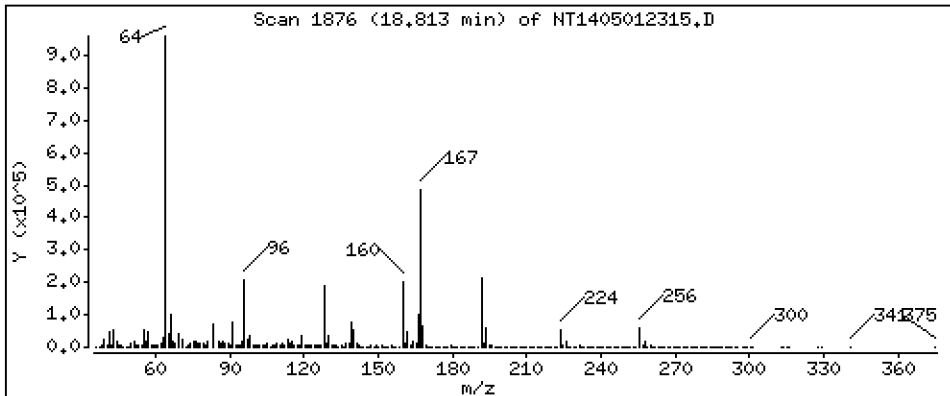
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 4,146 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

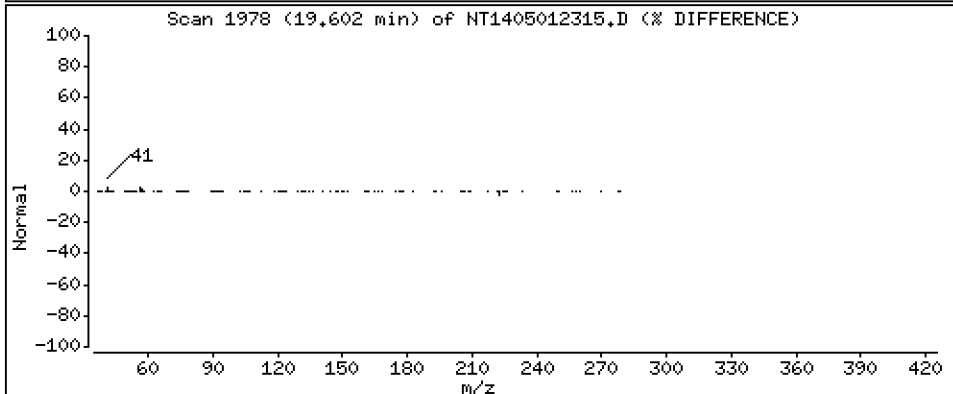
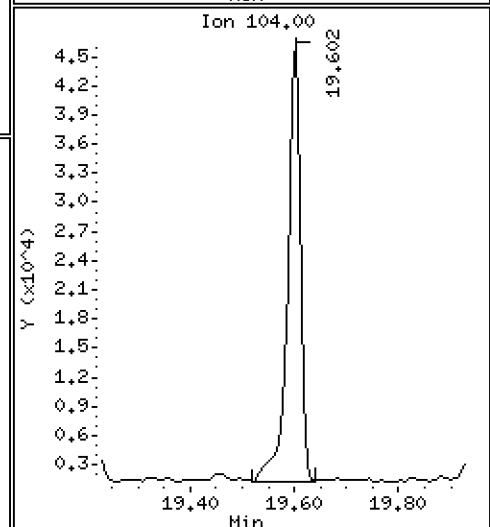
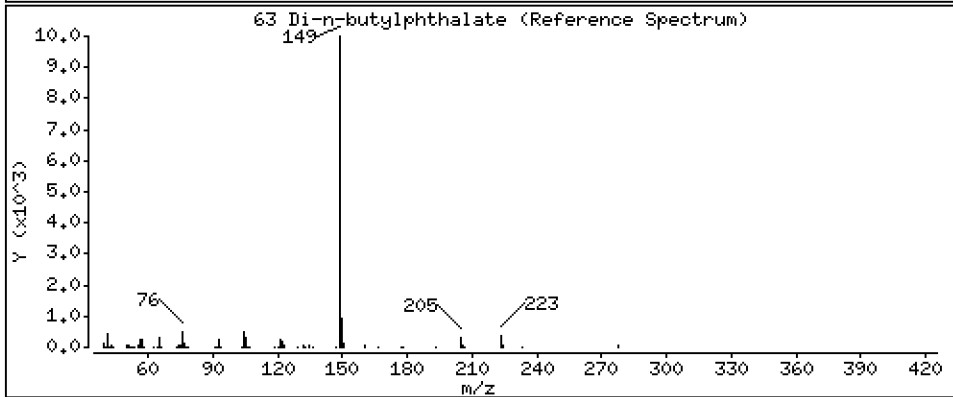
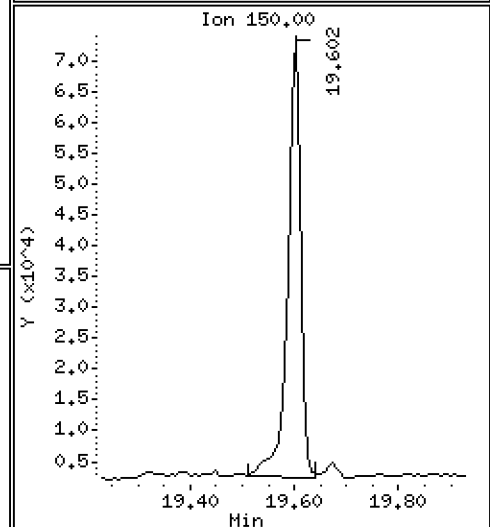
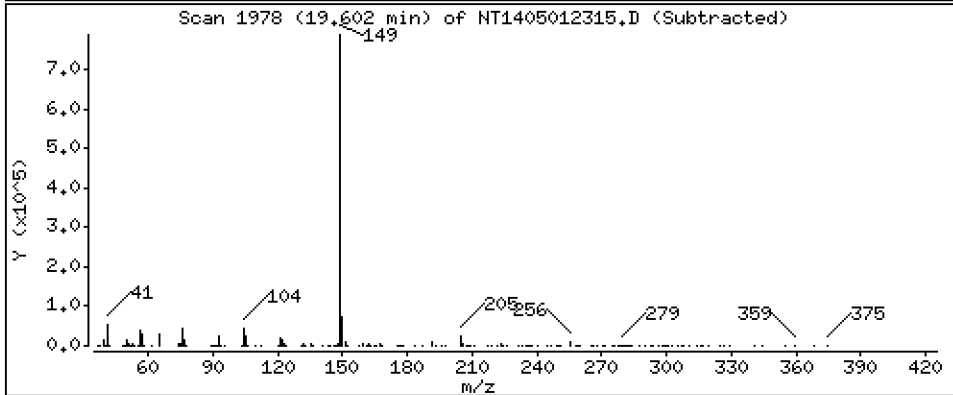
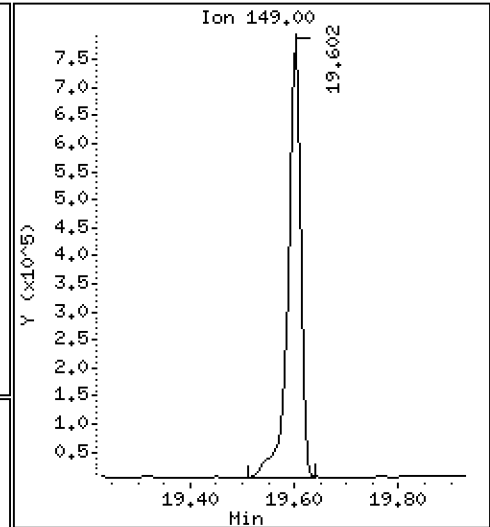
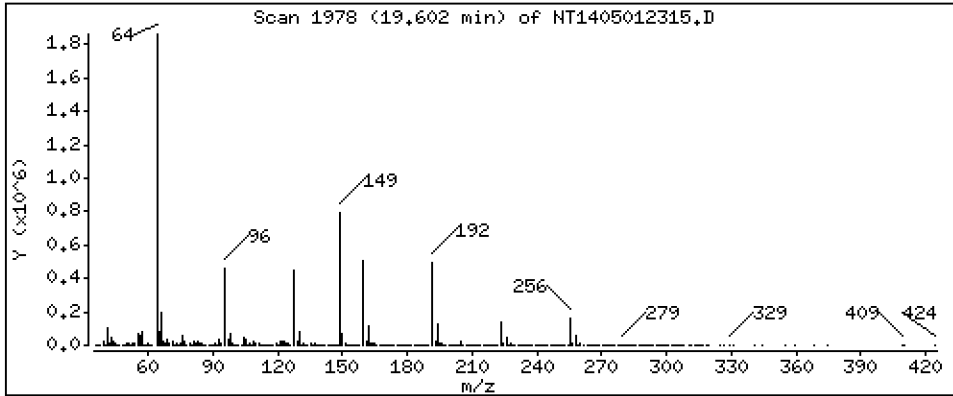
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 4,015 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

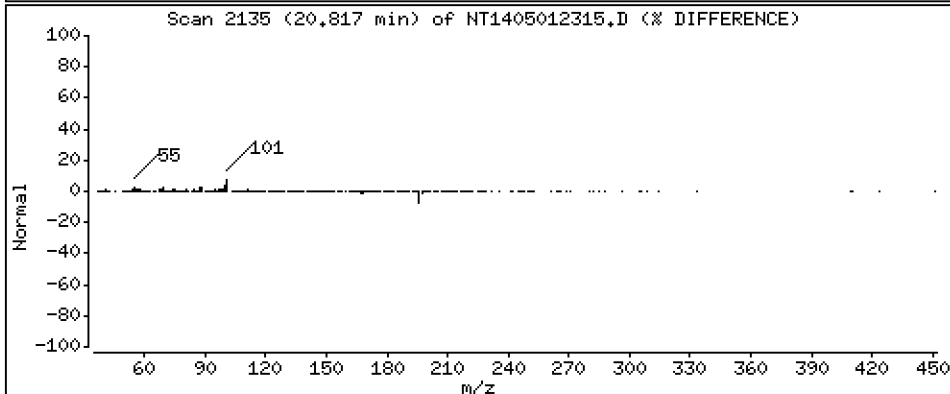
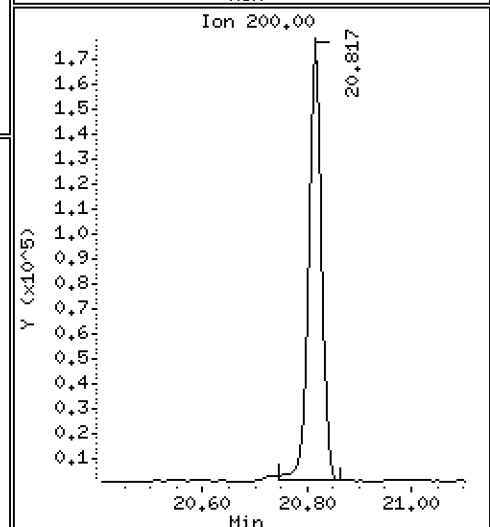
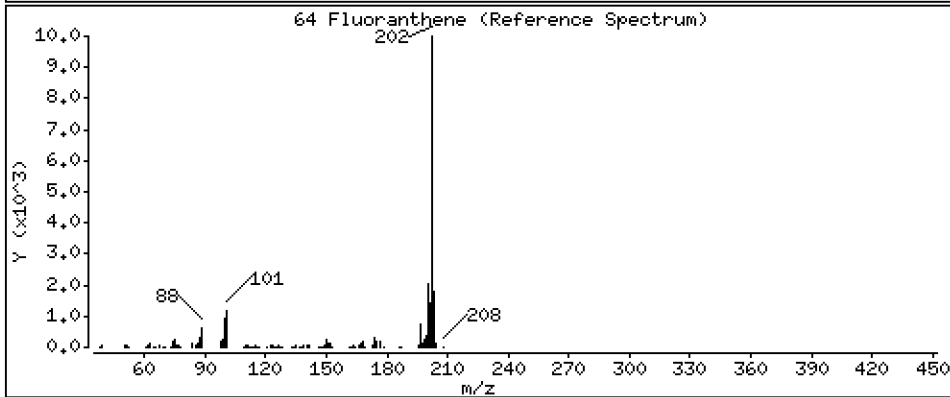
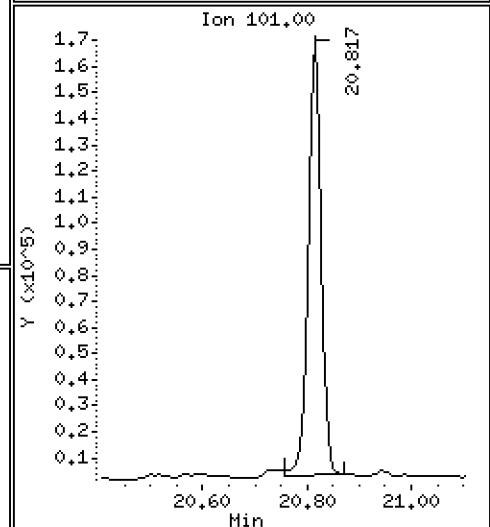
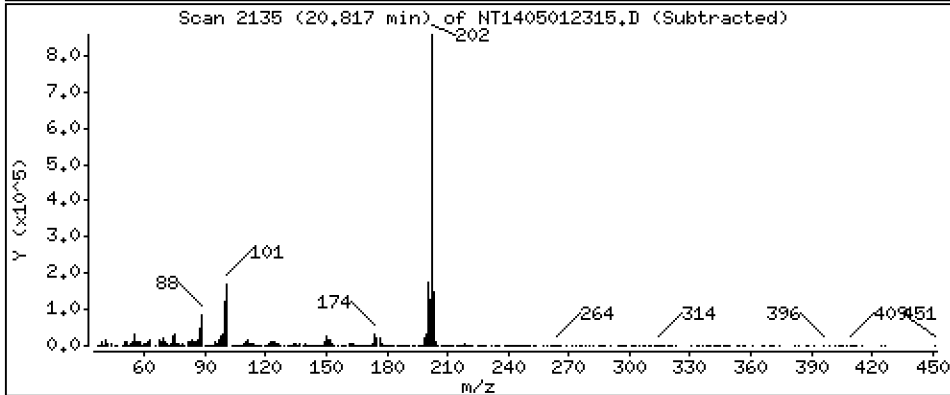
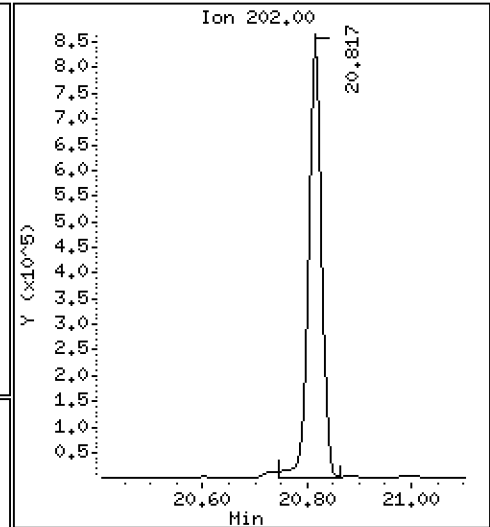
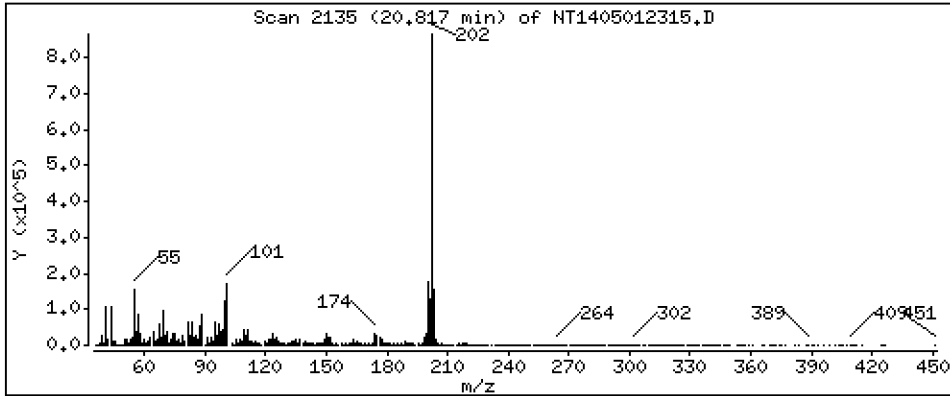
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 5,465 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

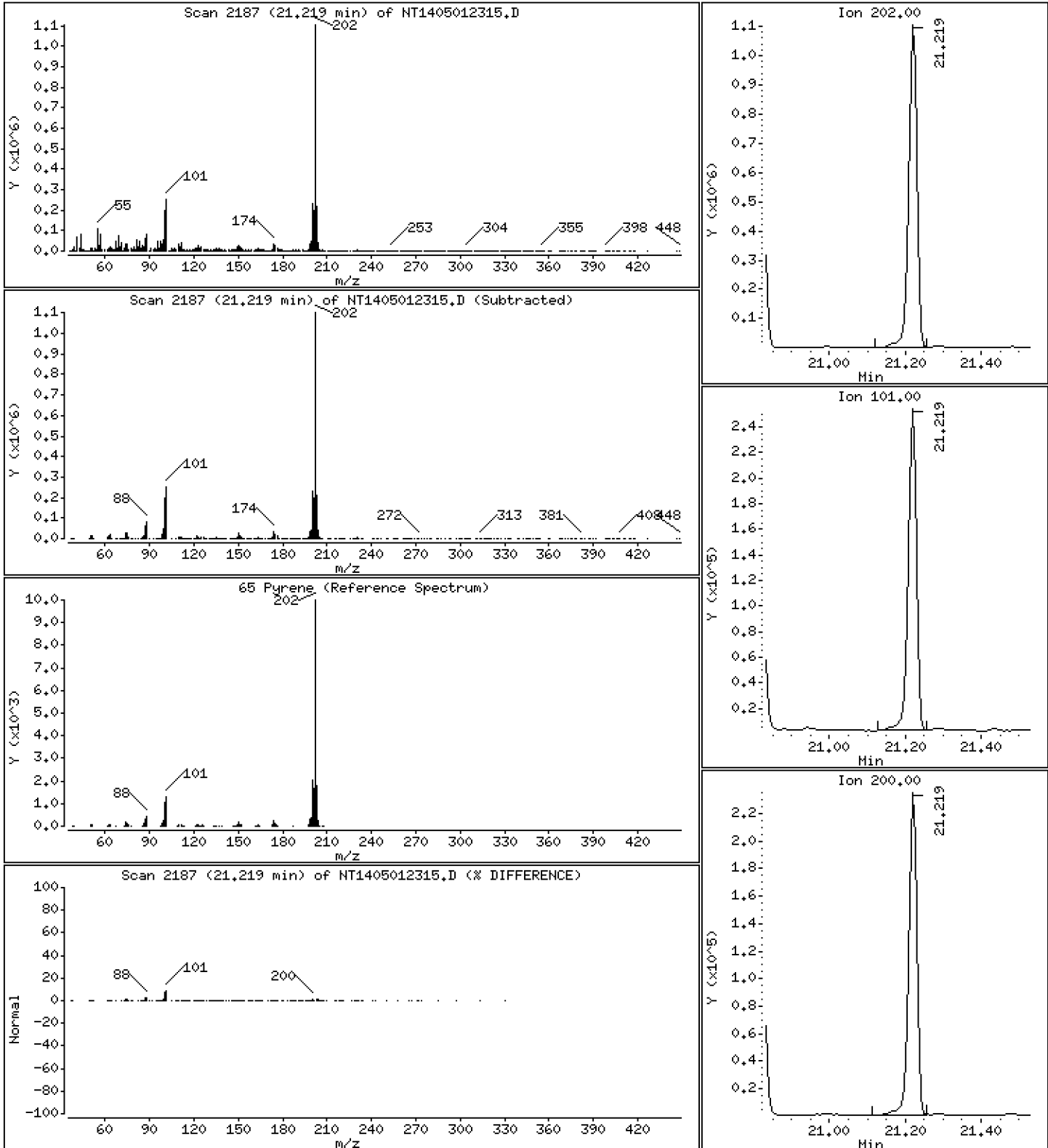
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 6,215 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

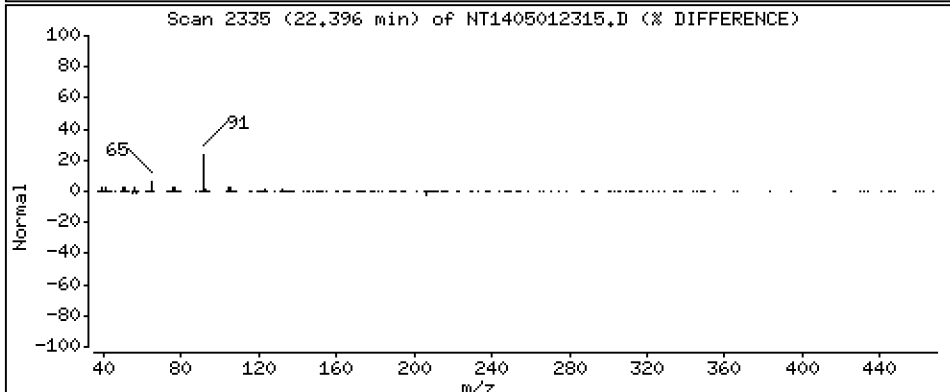
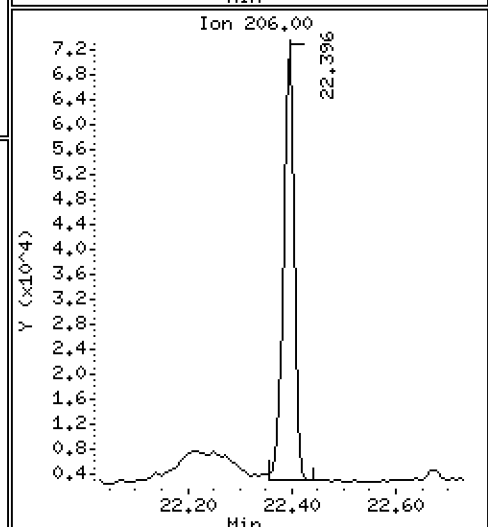
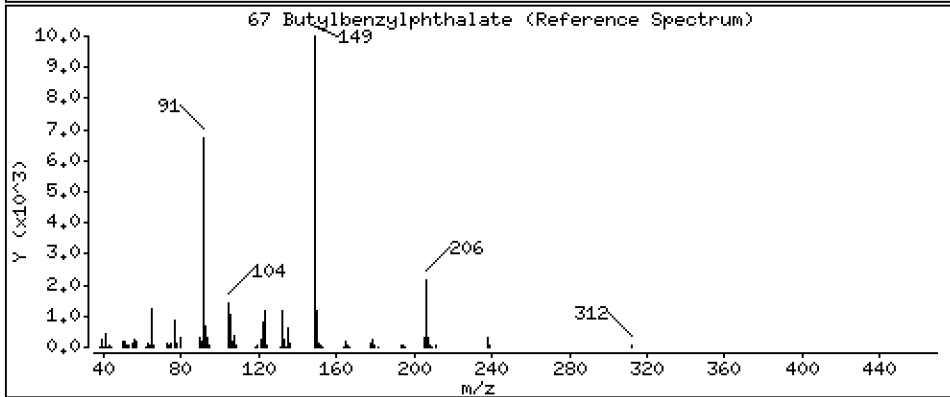
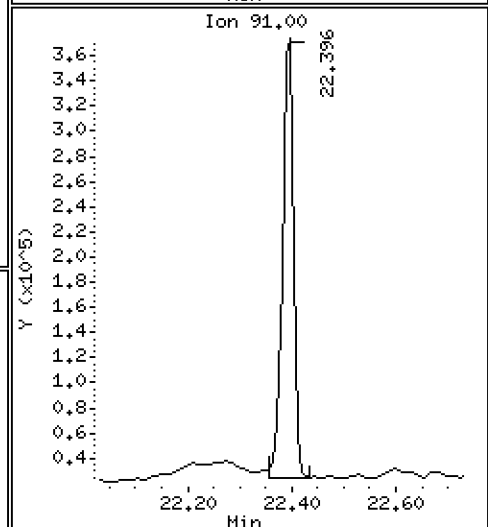
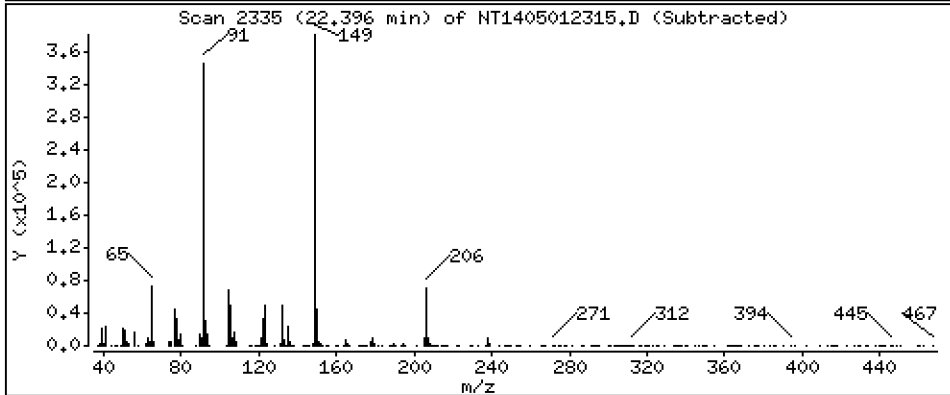
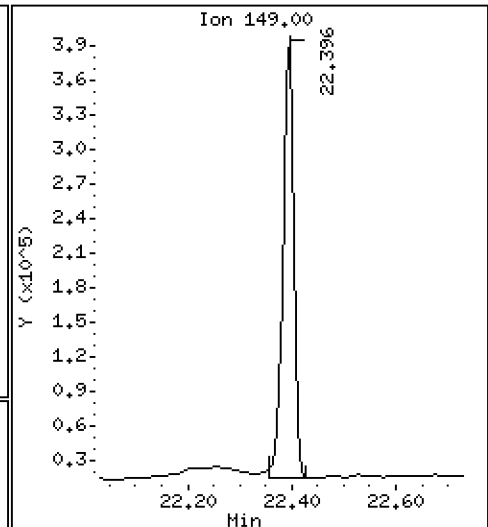
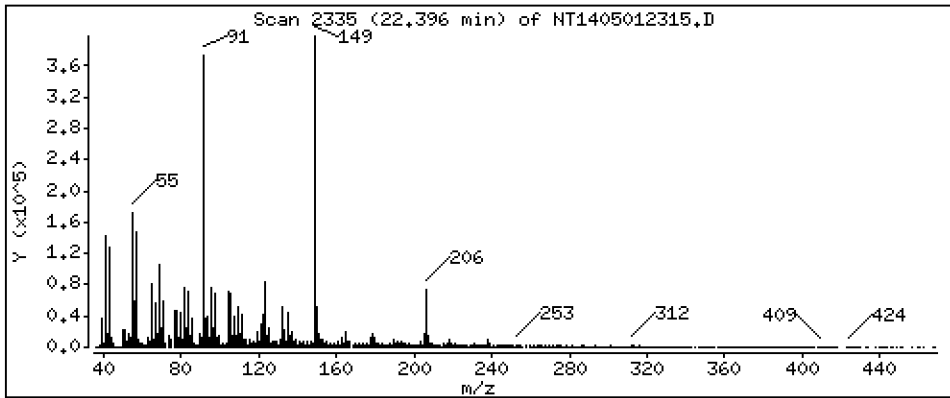
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 3,270 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

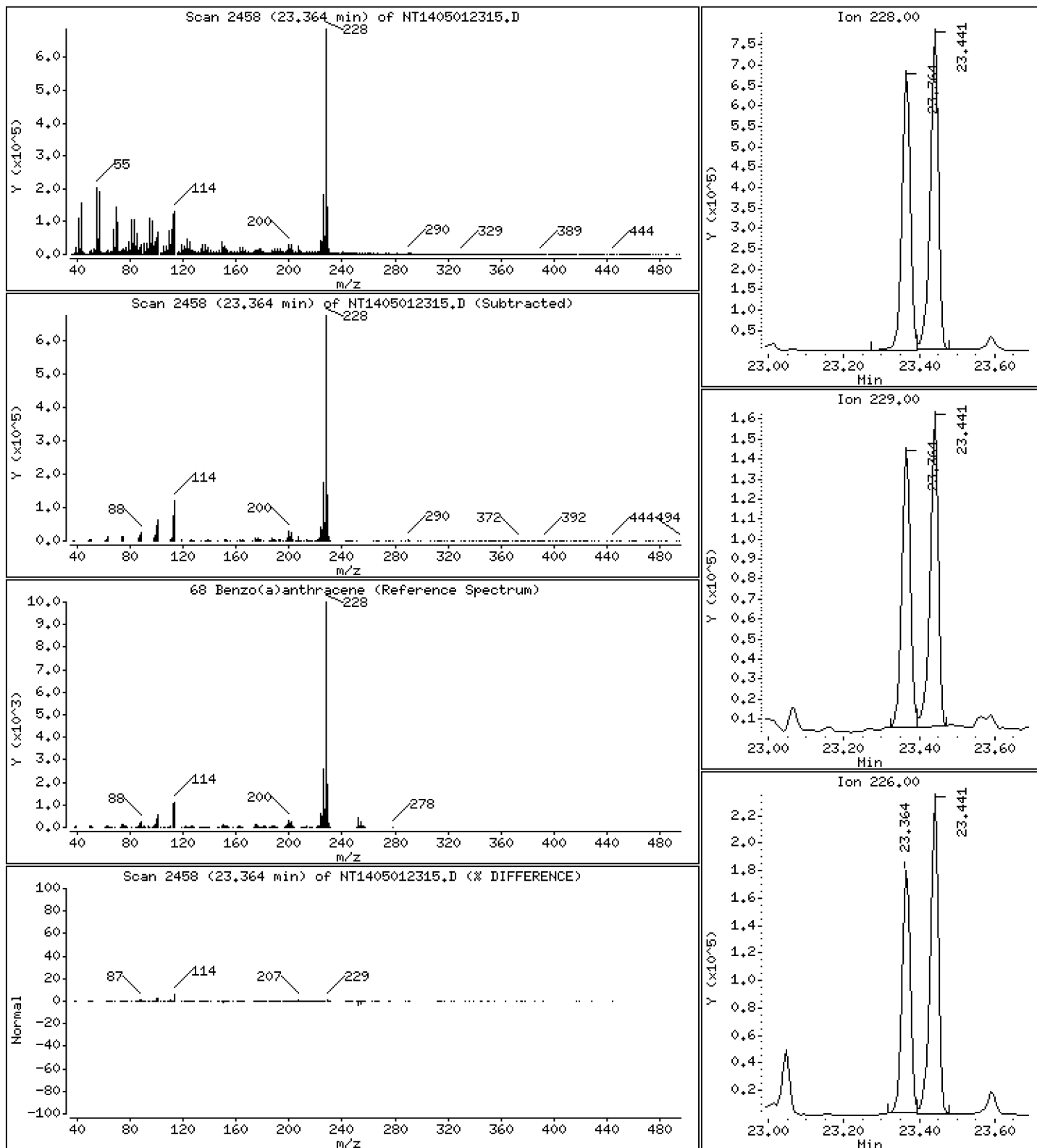
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 5,238 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

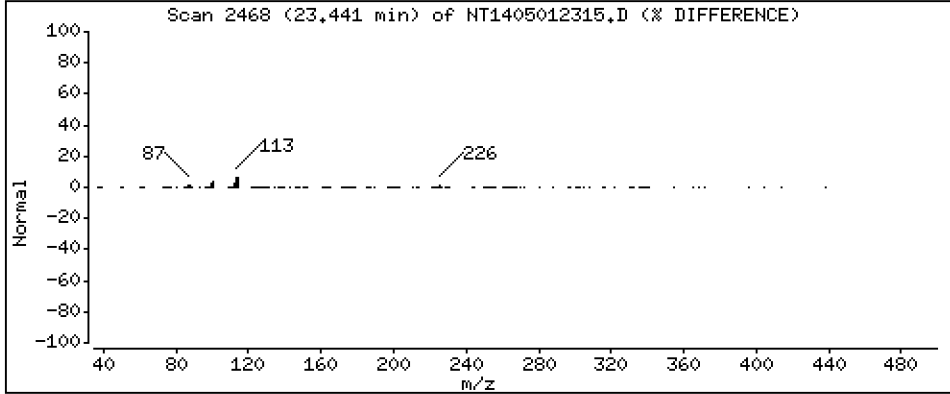
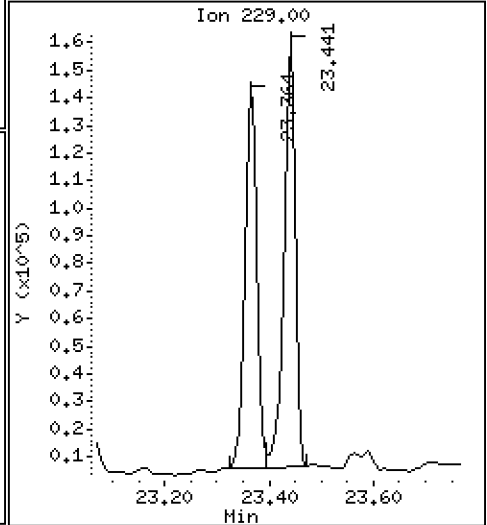
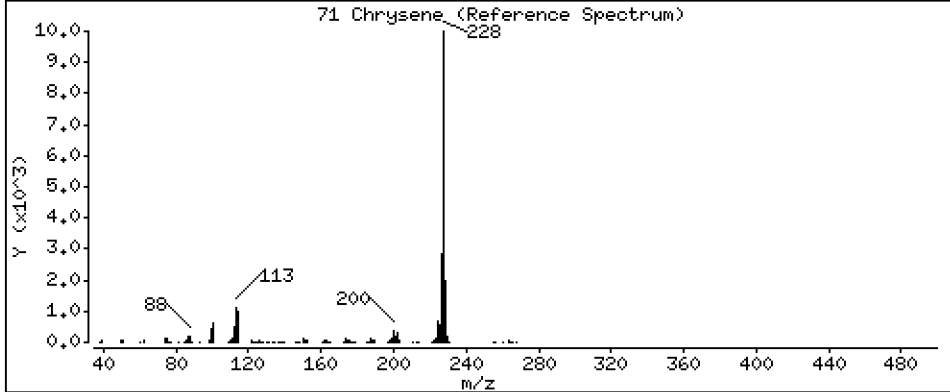
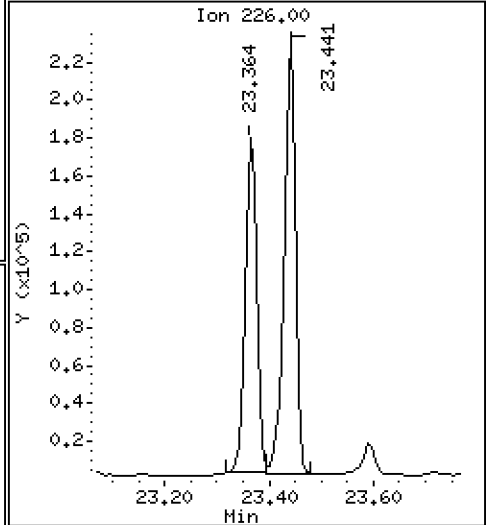
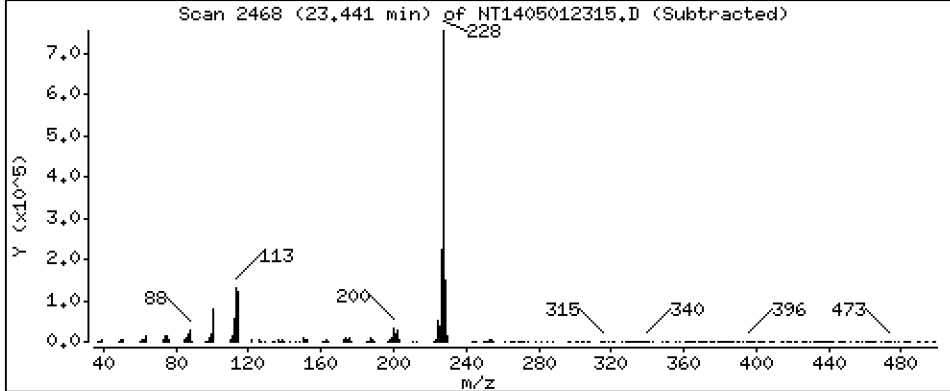
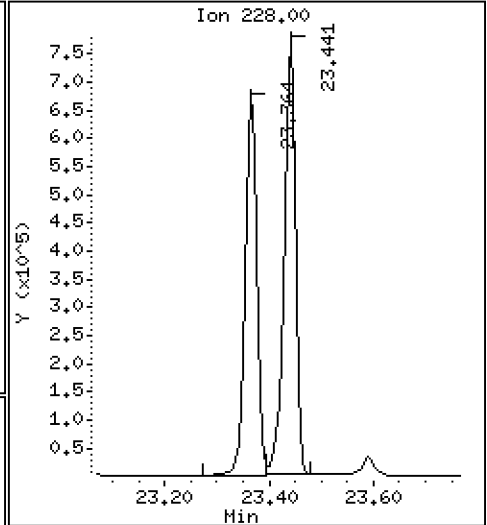
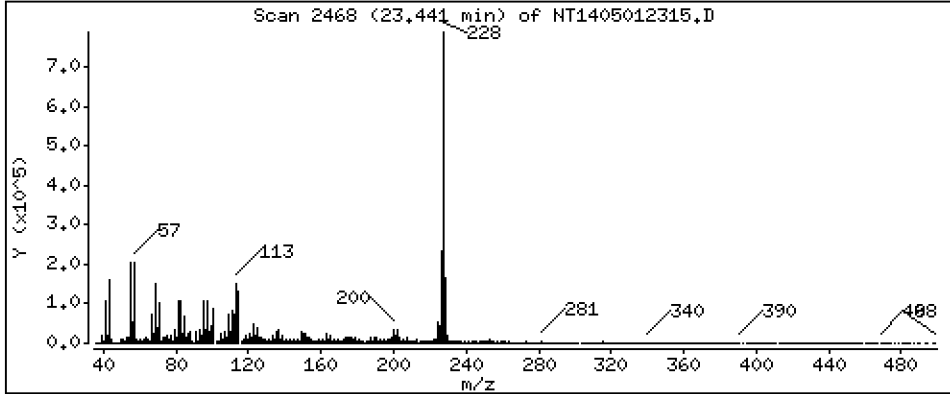
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 6,154 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

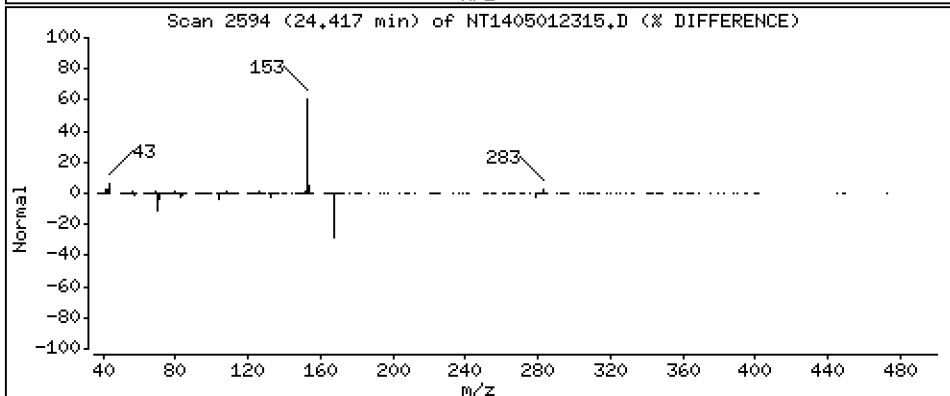
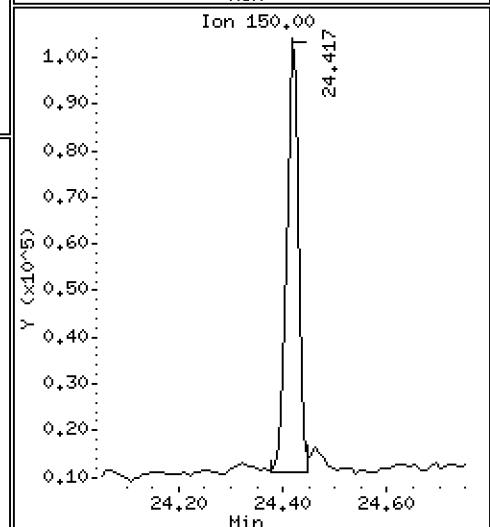
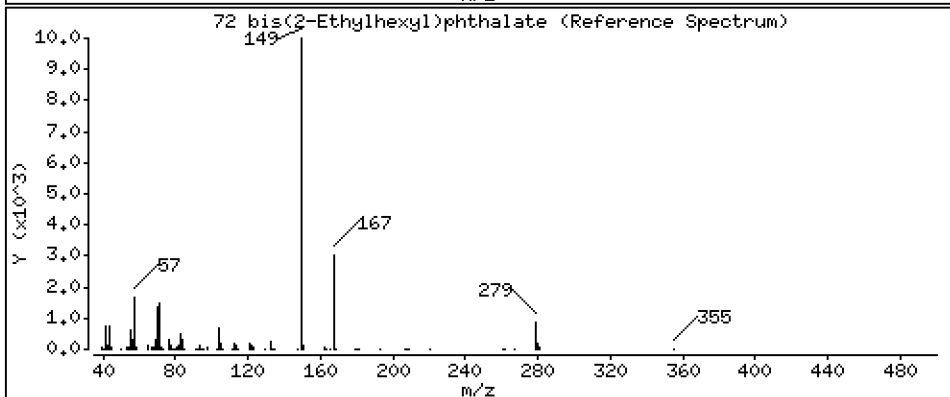
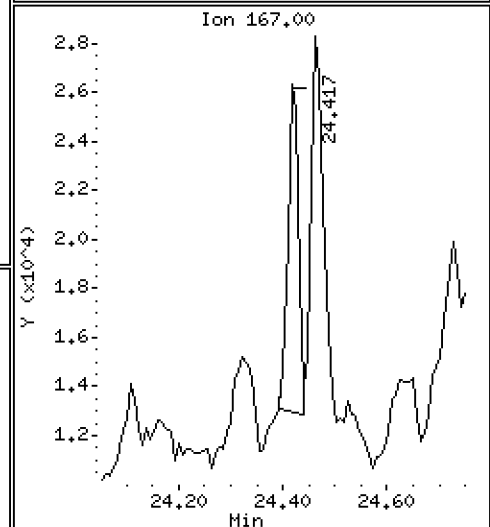
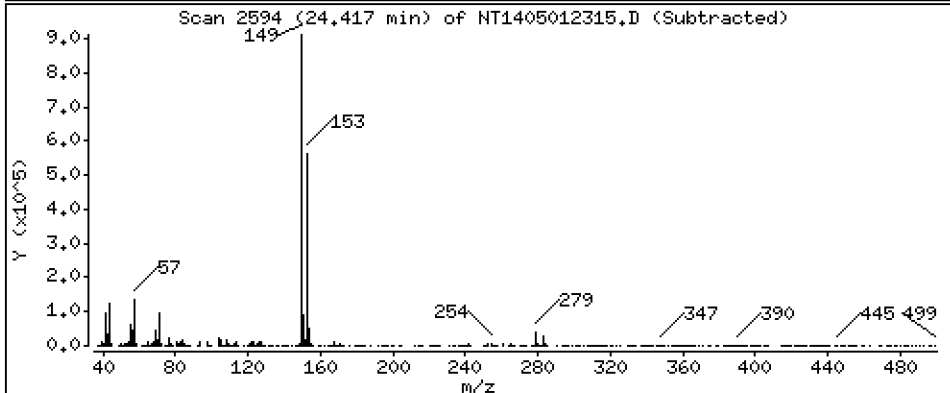
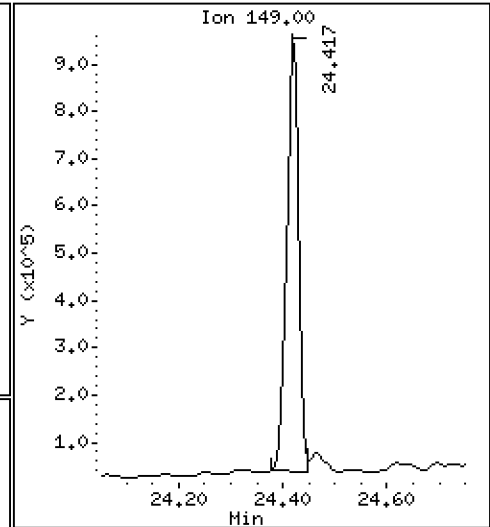
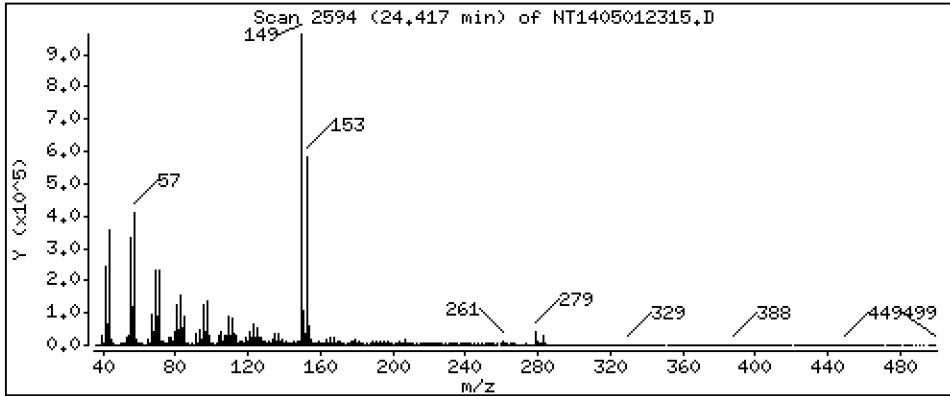
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,037 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

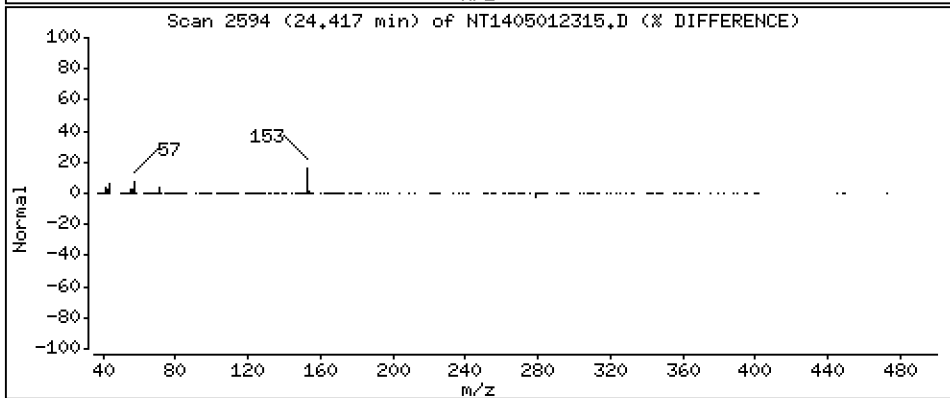
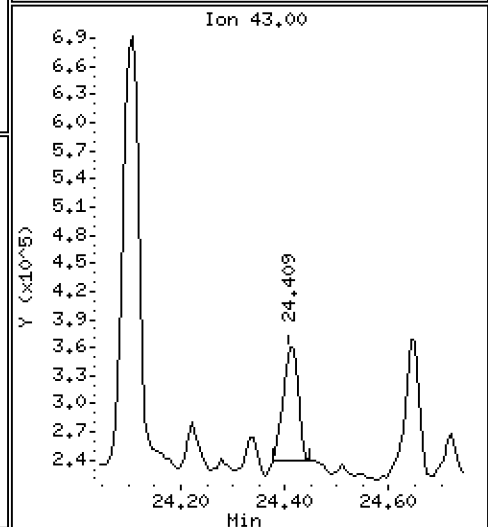
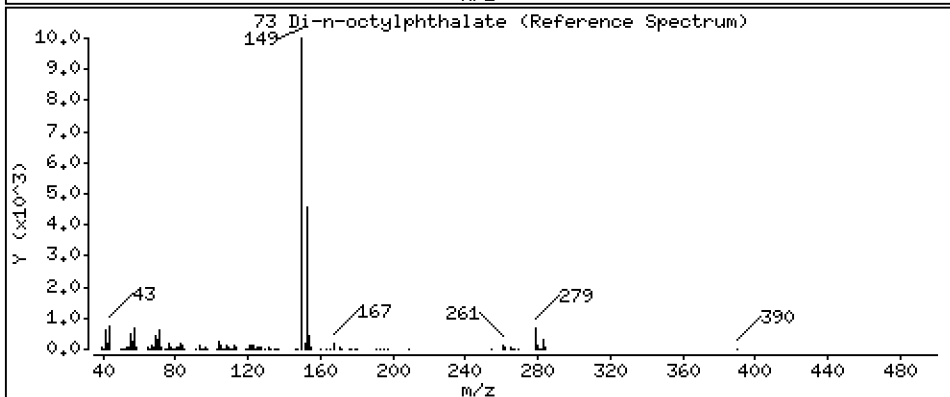
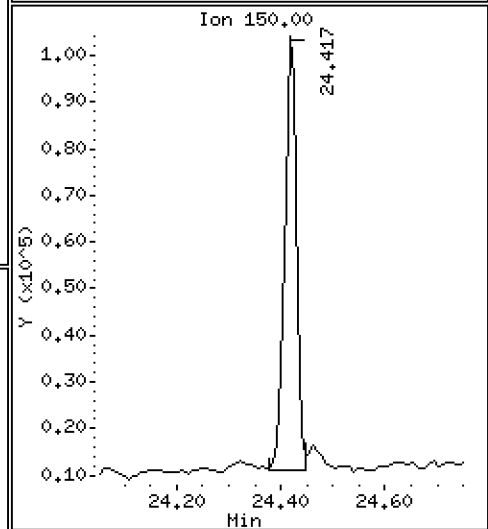
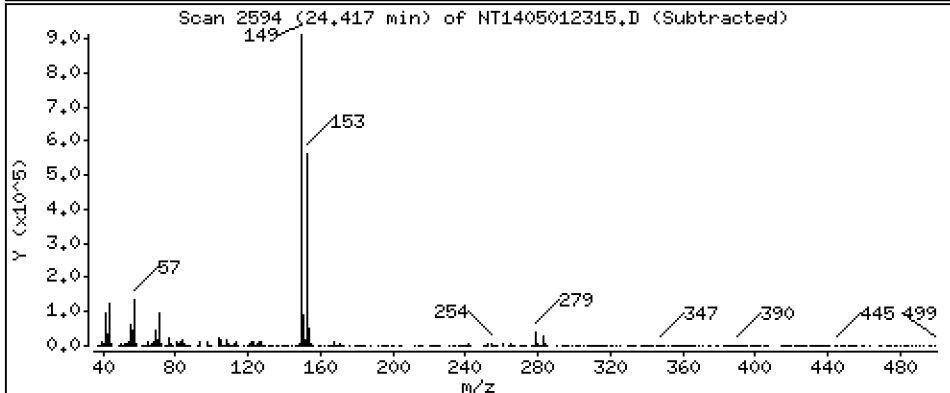
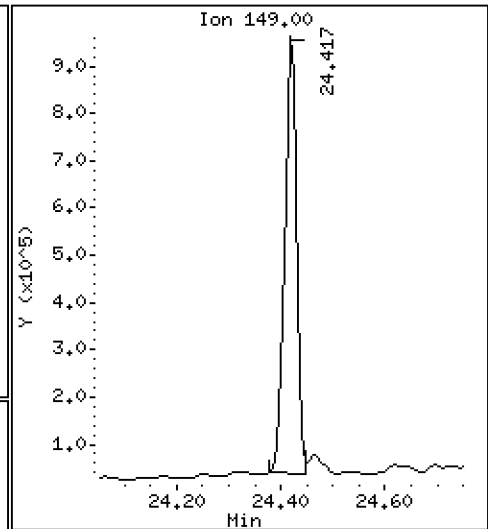
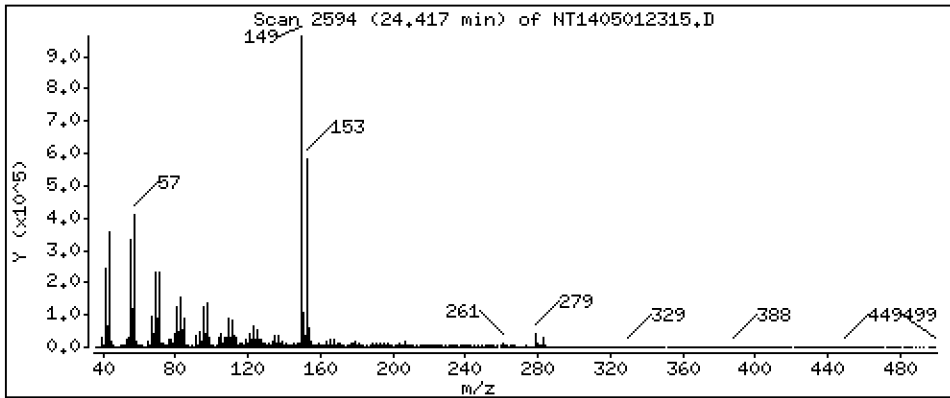
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,037 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

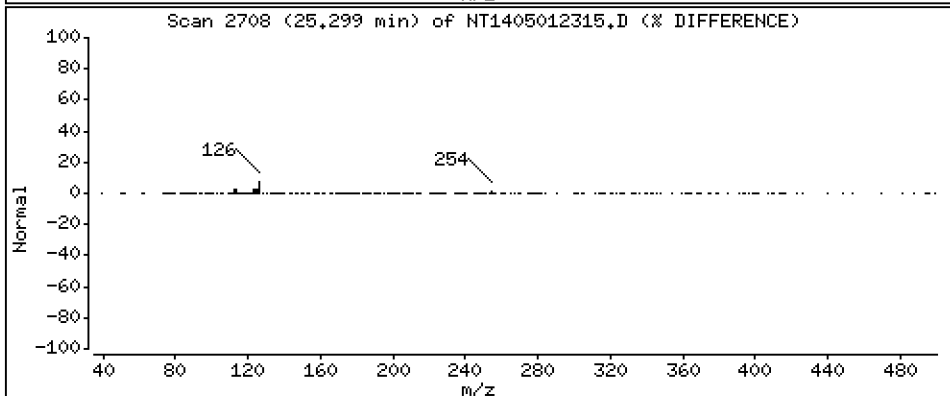
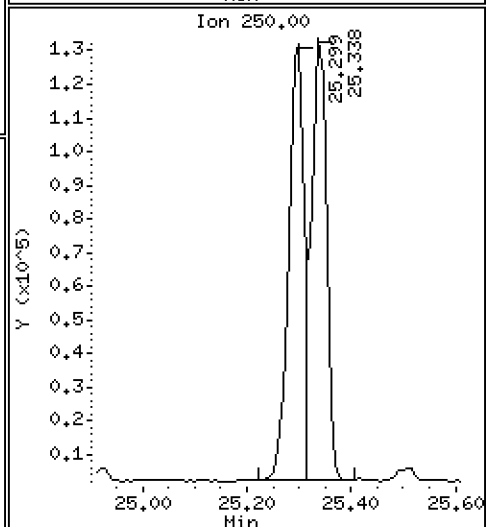
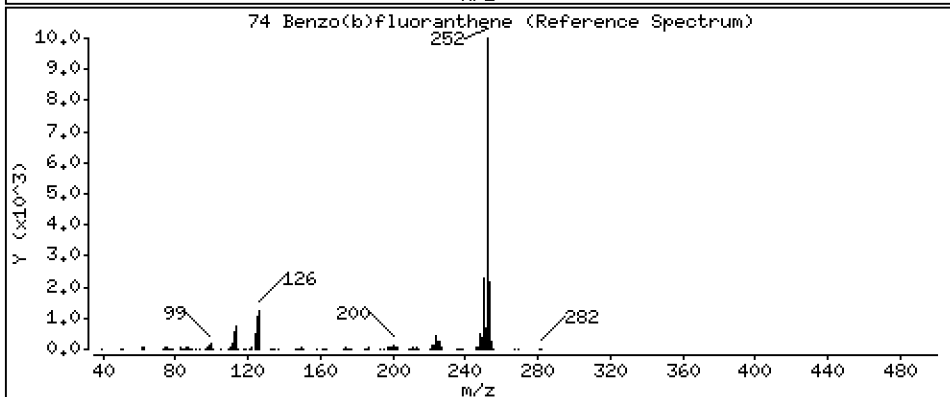
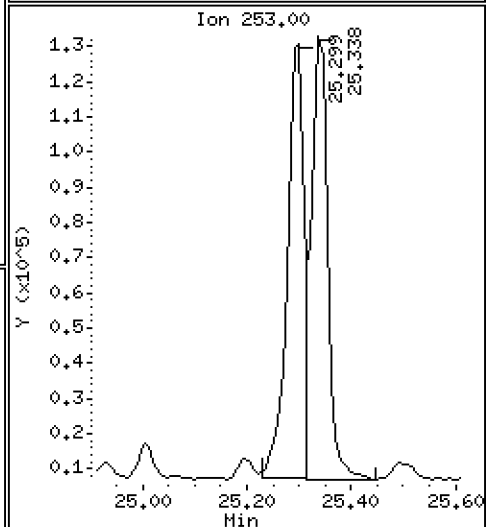
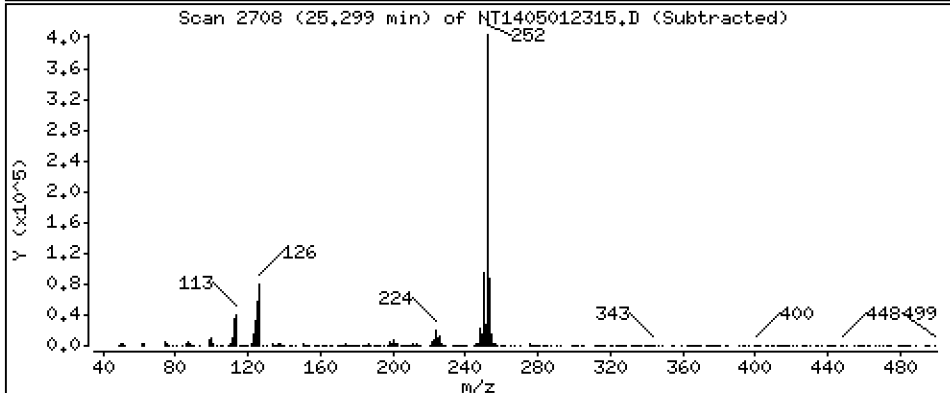
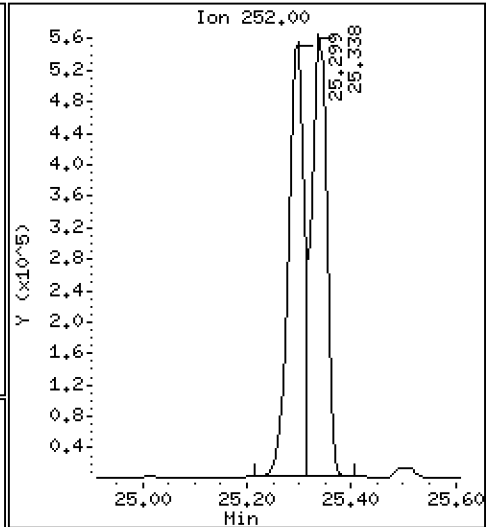
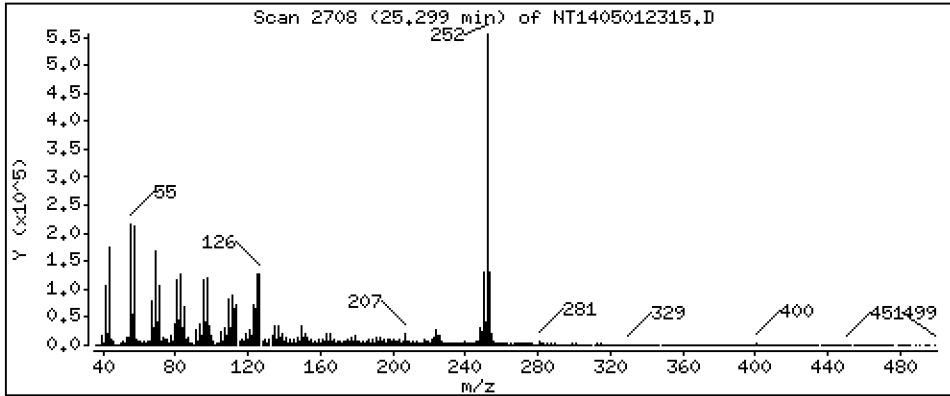
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 7,241 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

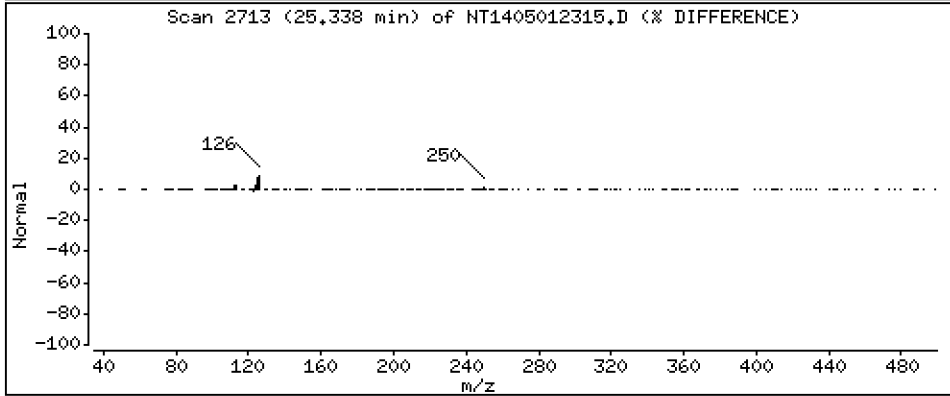
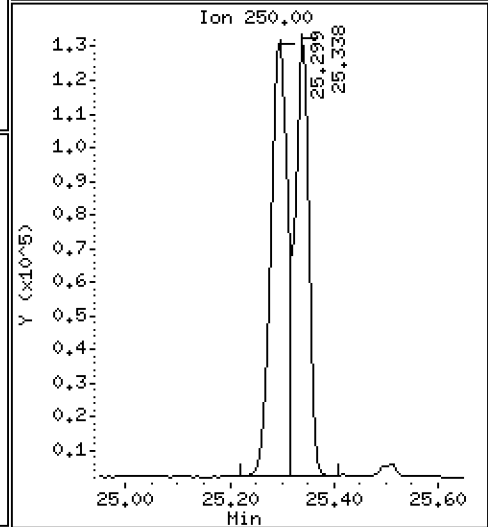
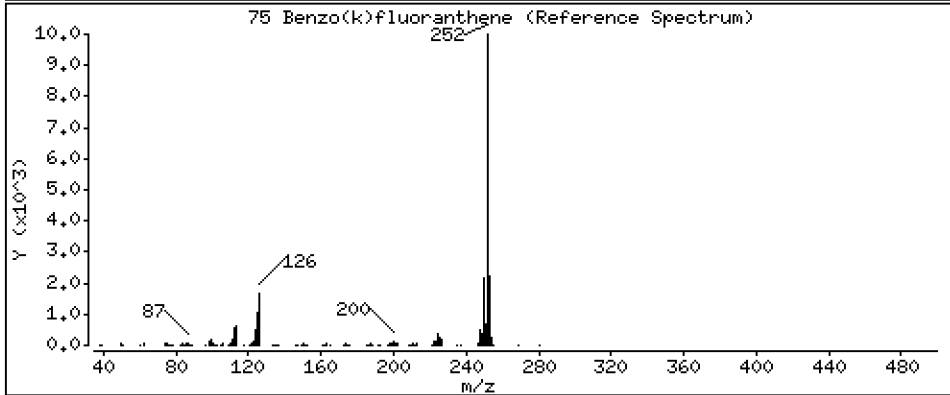
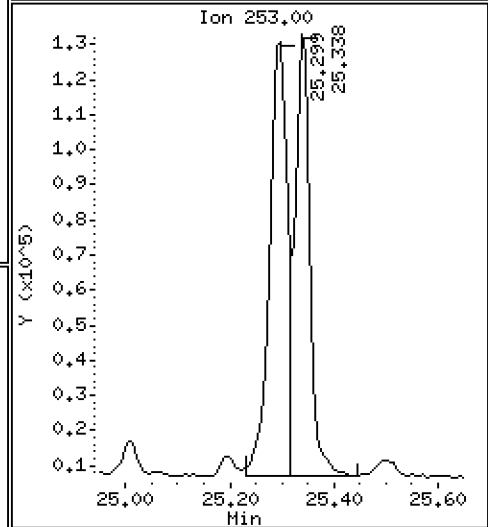
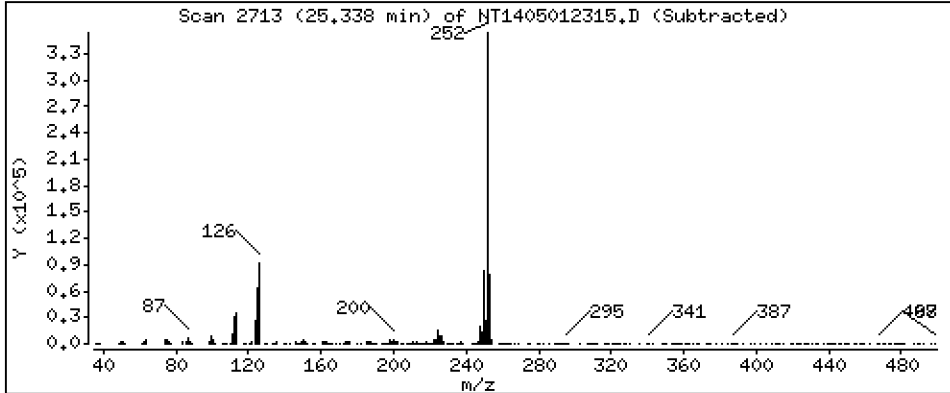
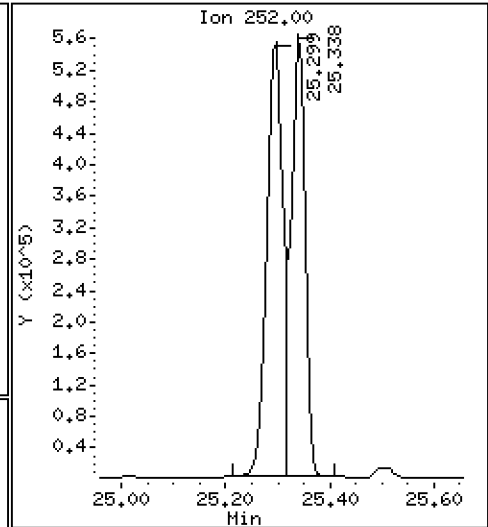
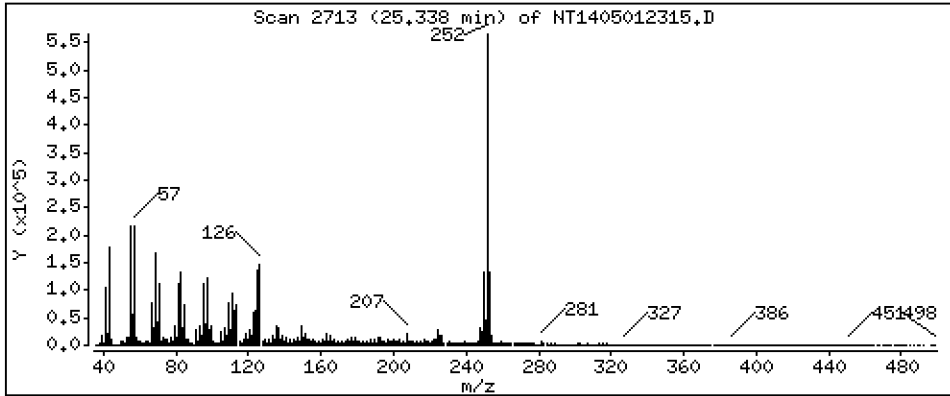
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 7,139 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

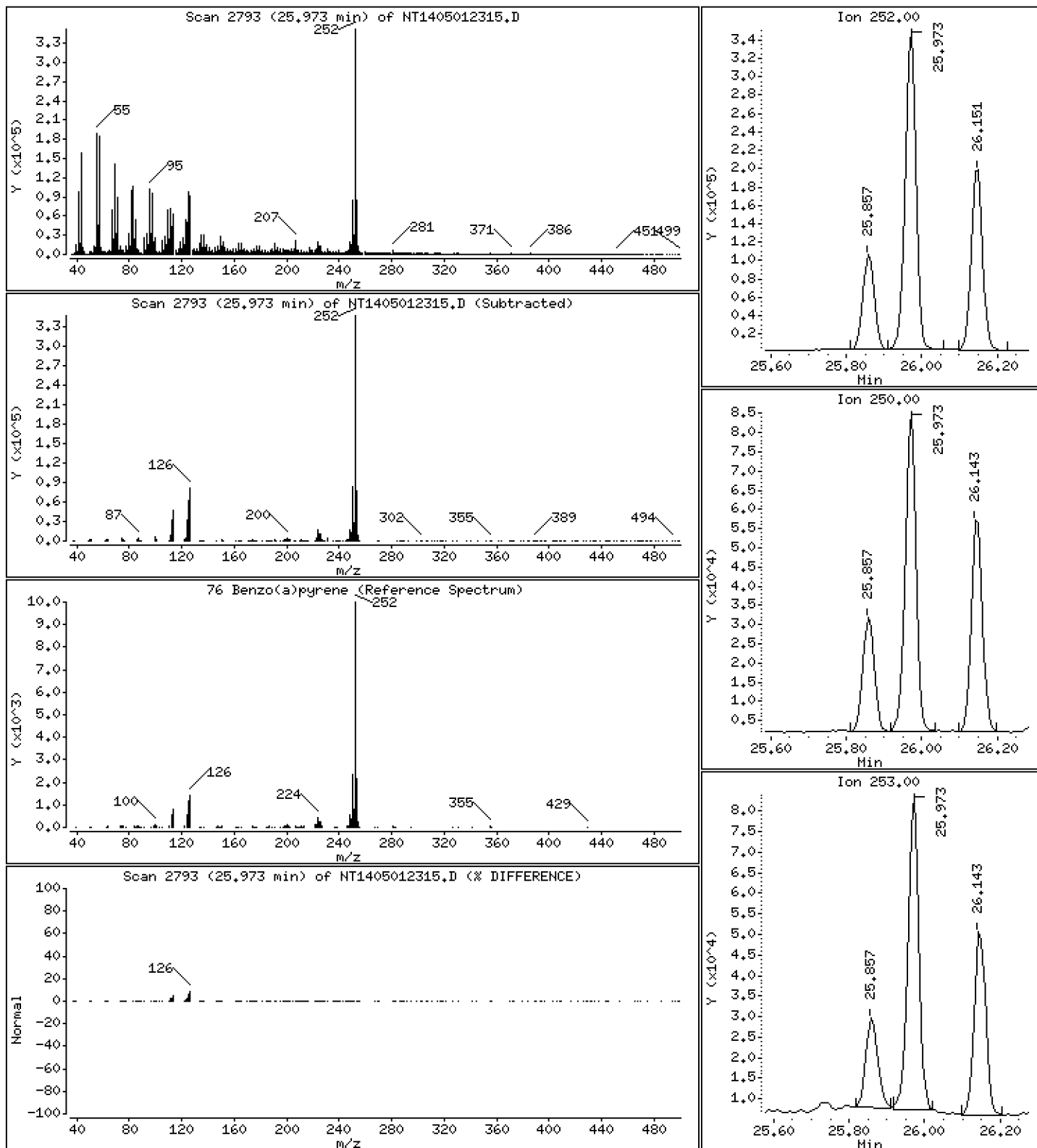
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 5,165 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

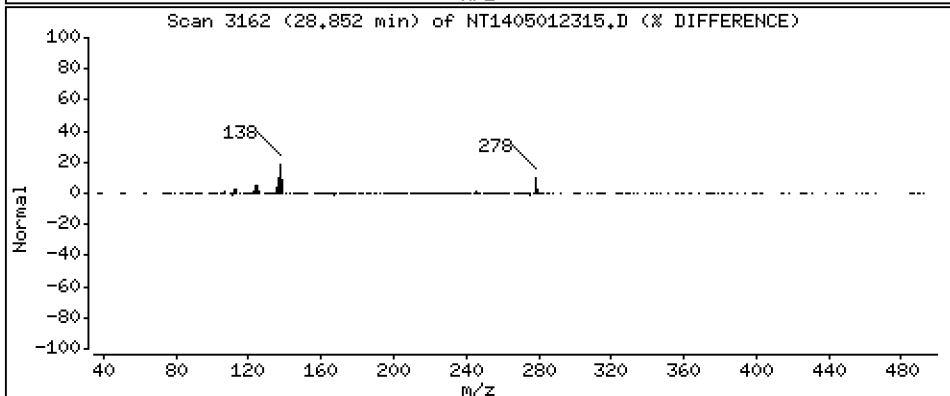
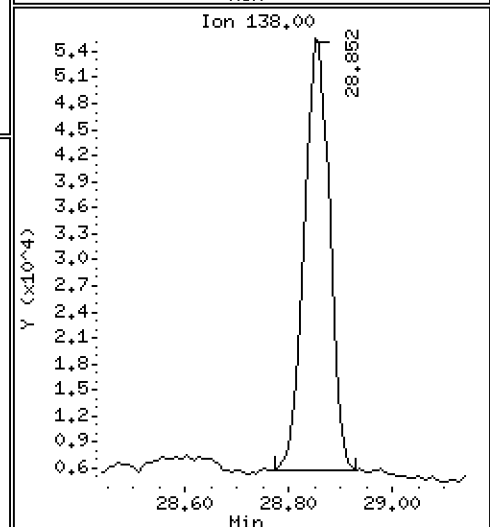
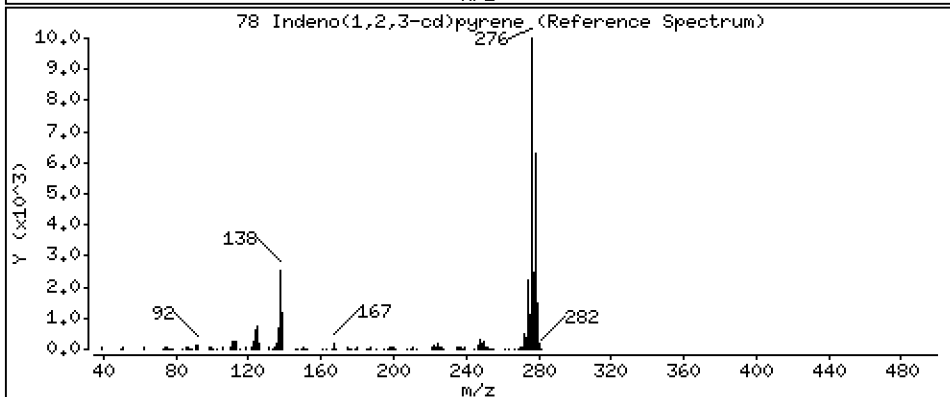
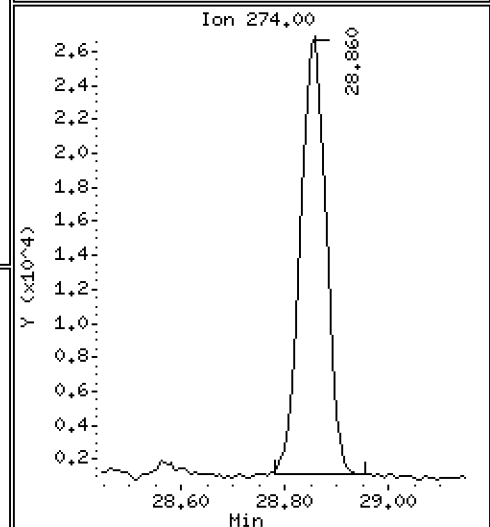
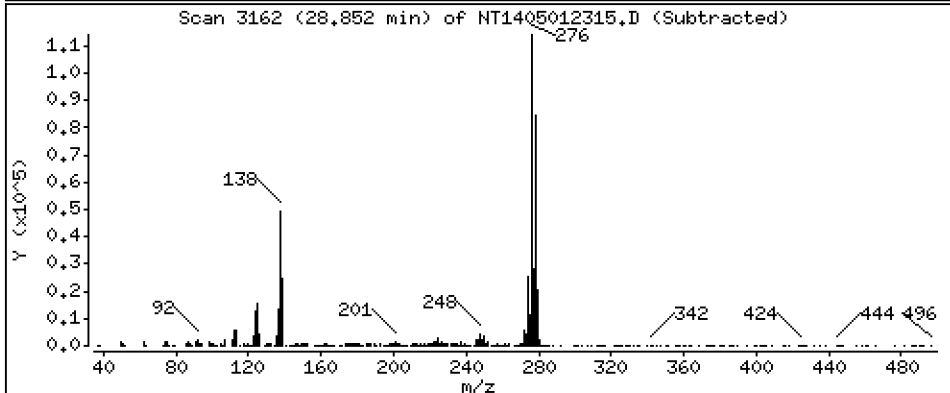
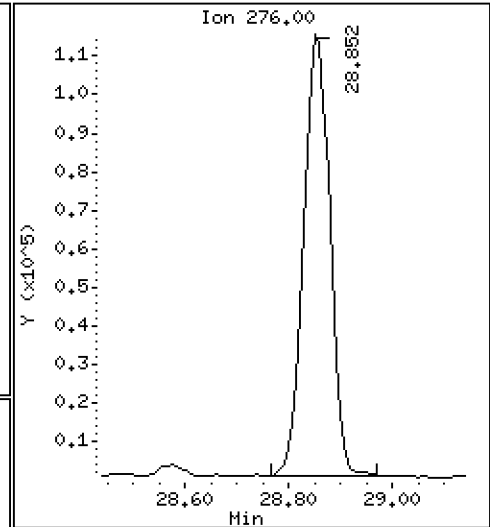
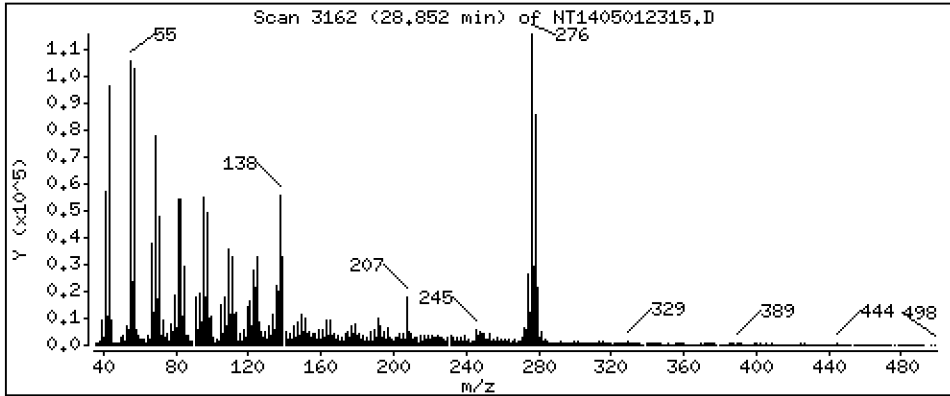
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 2,075 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

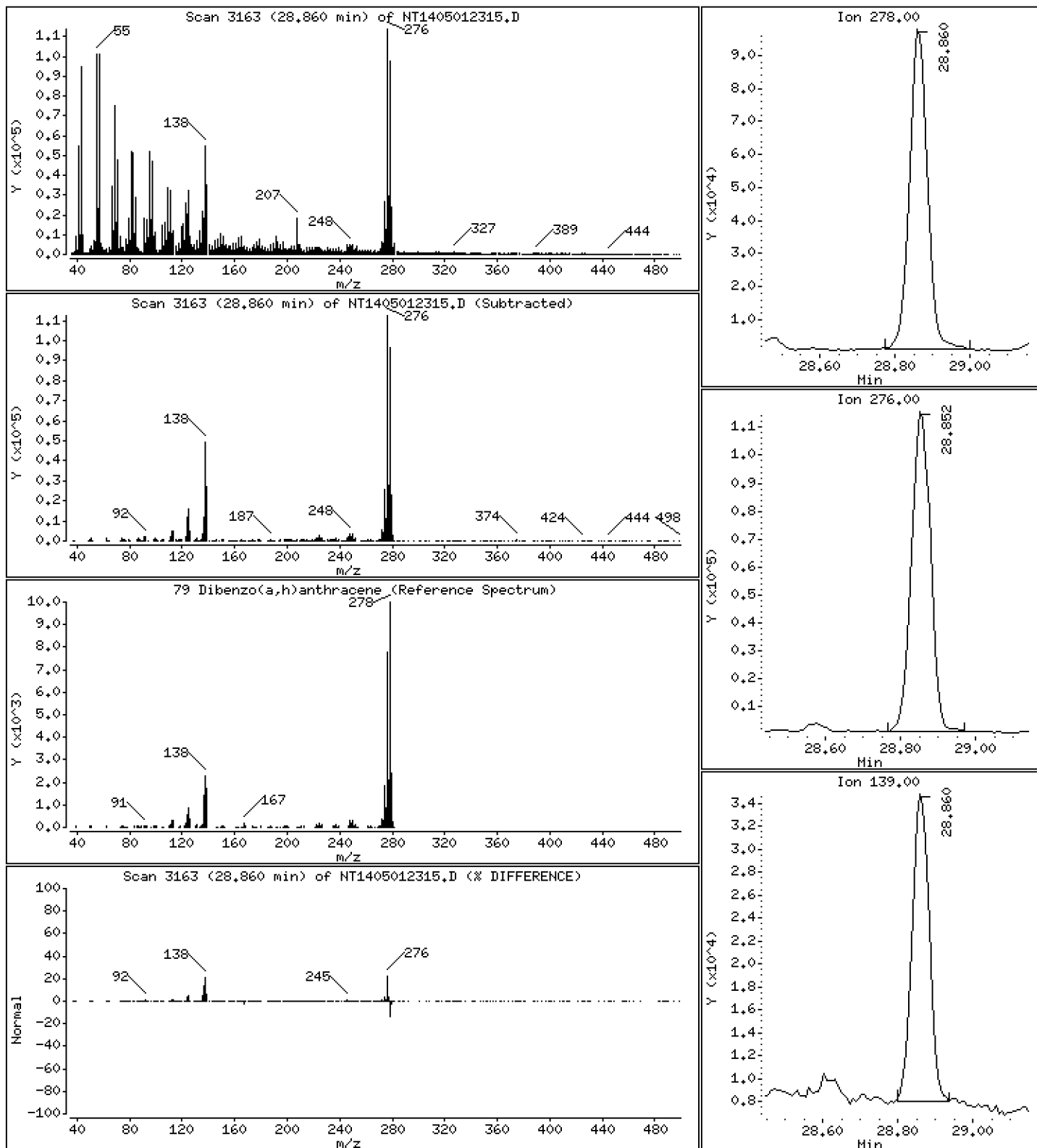
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 2,033 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

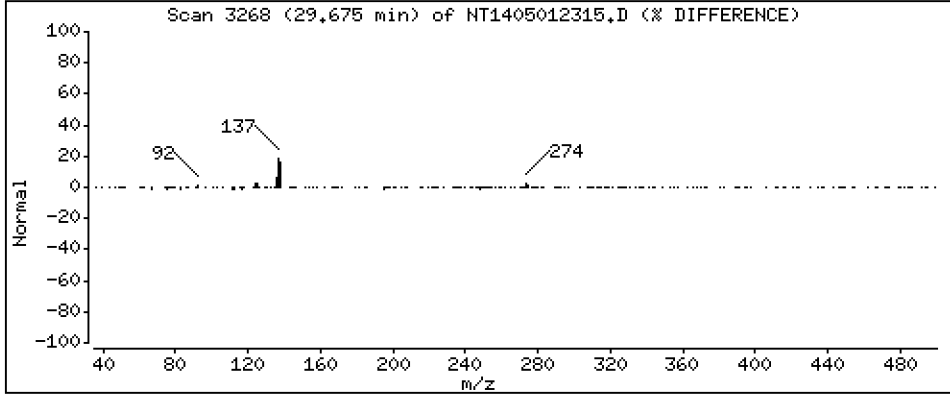
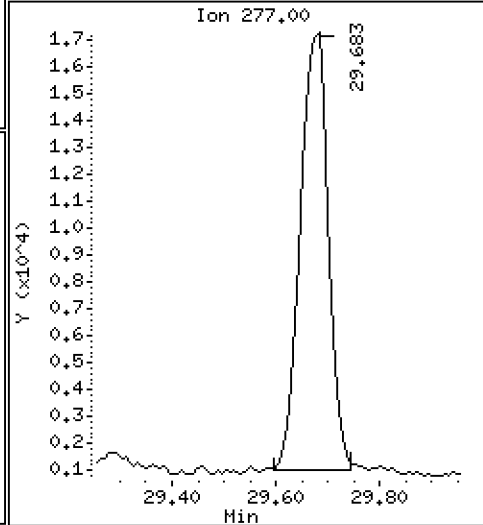
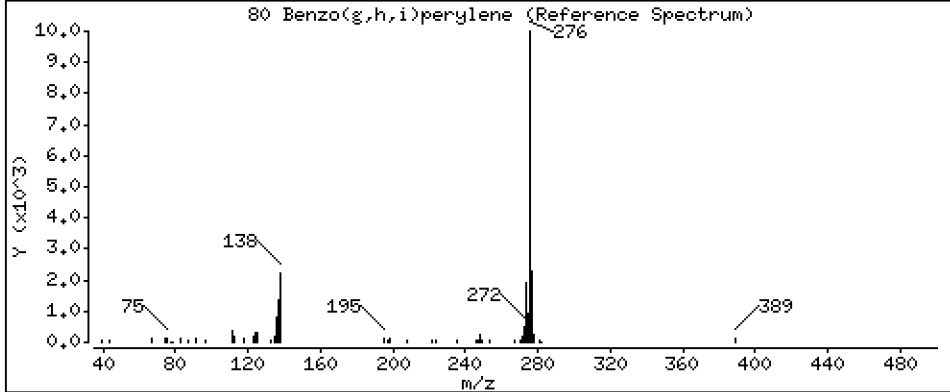
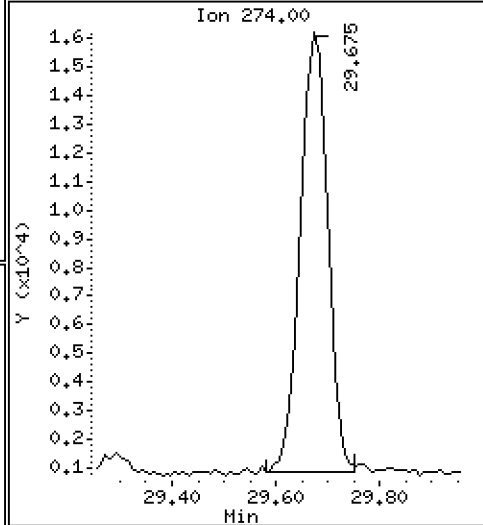
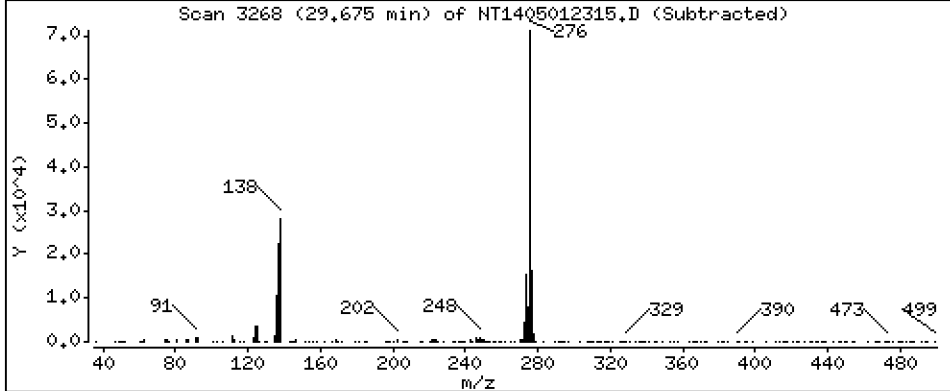
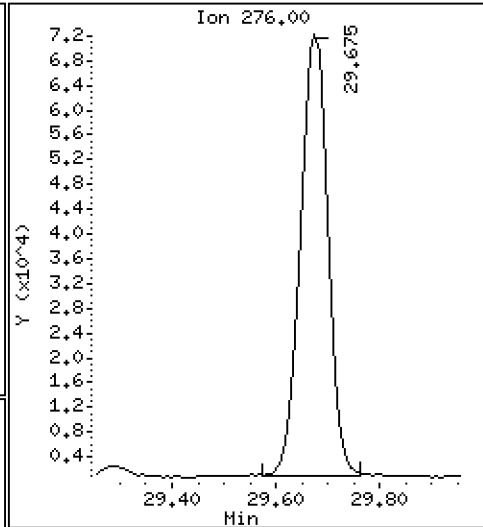
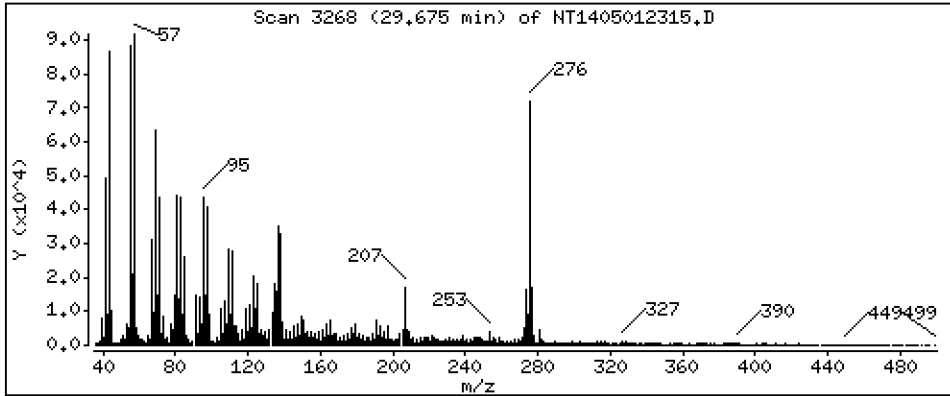
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 1,582 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

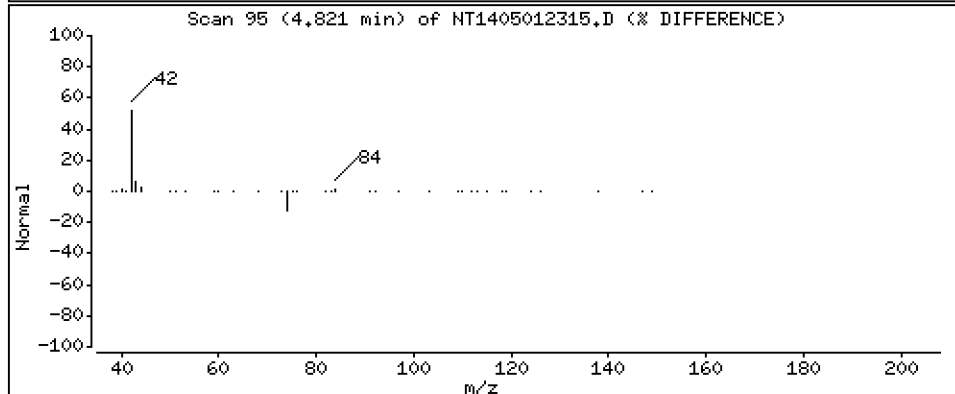
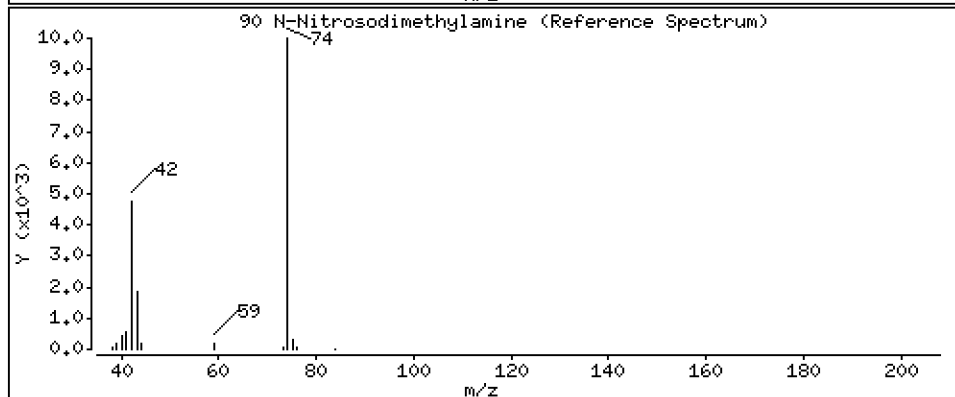
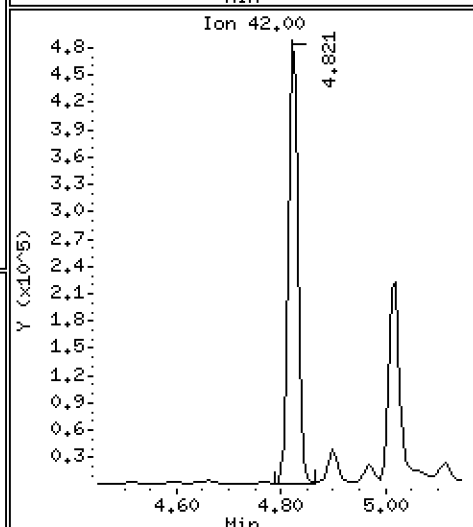
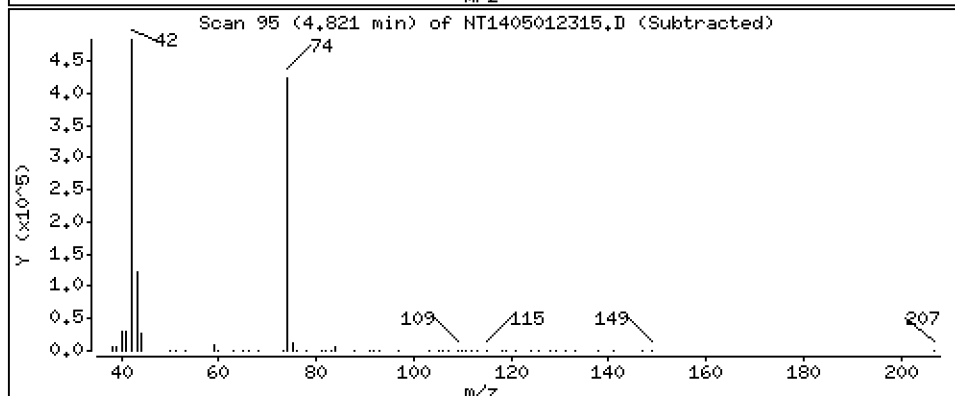
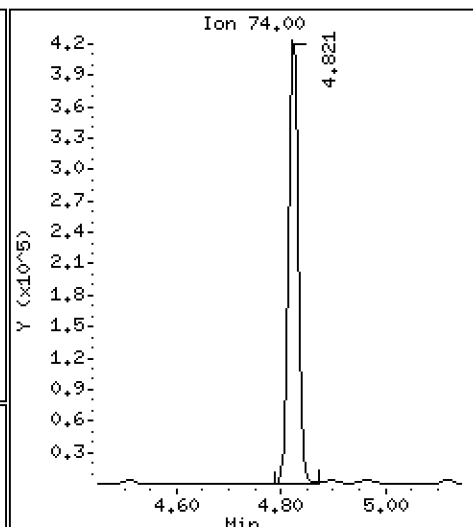
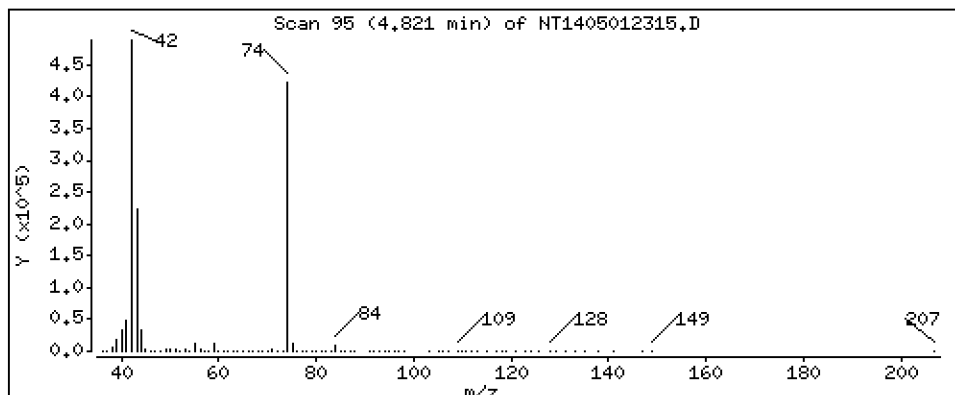
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 7,519 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

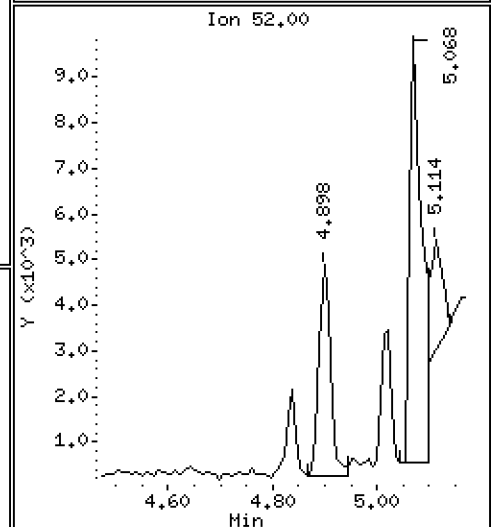
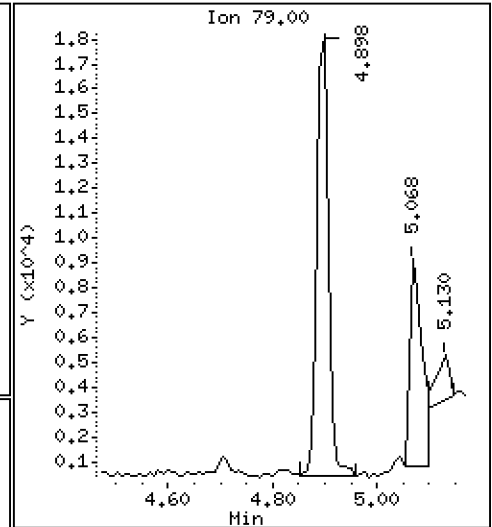
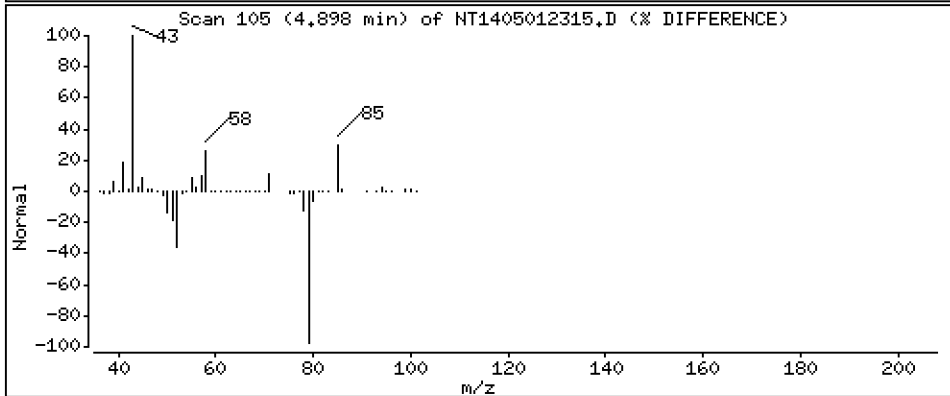
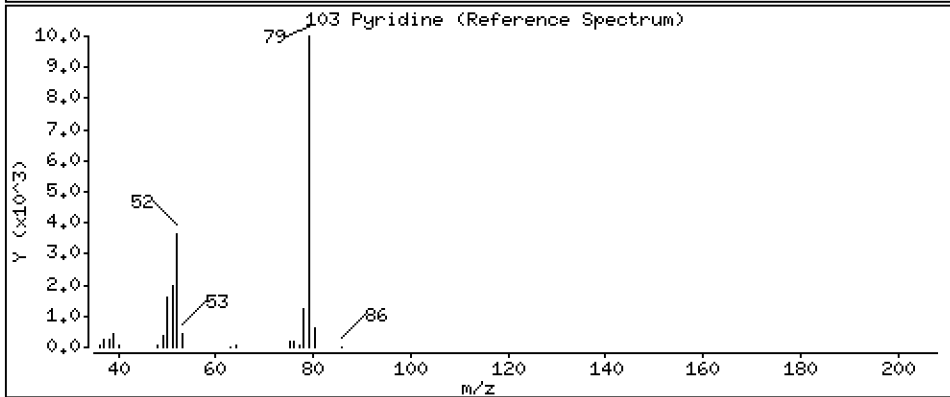
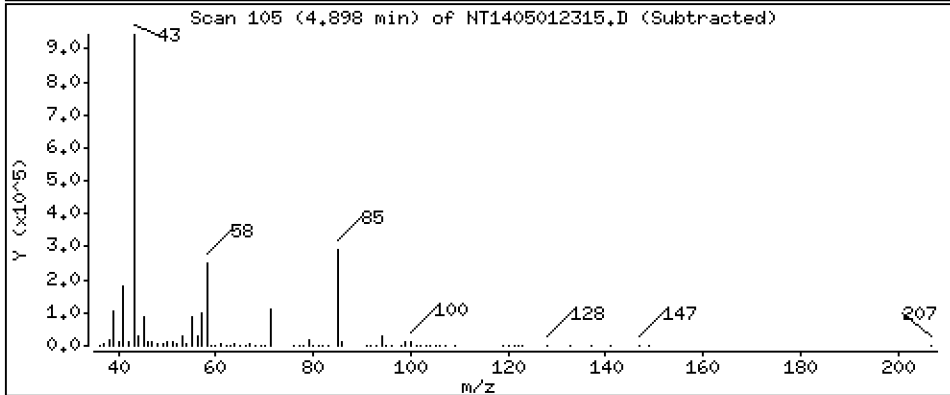
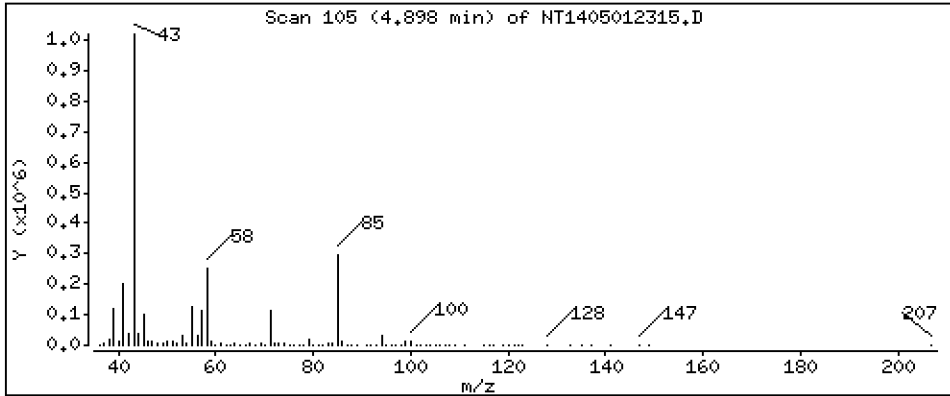
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,1120 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

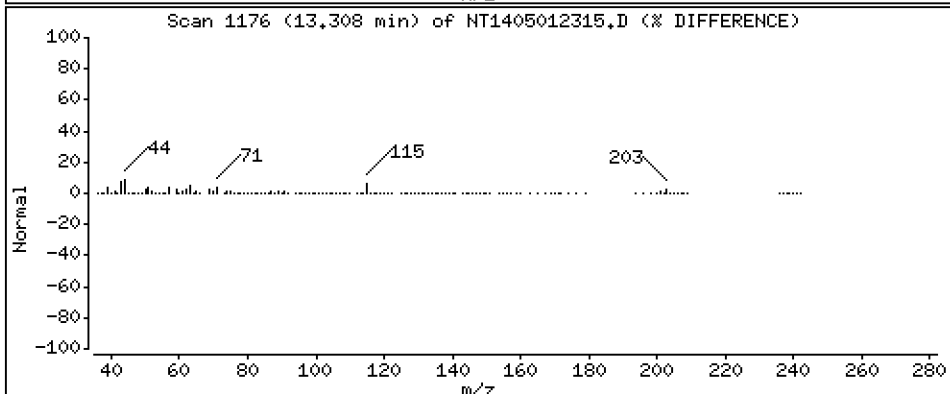
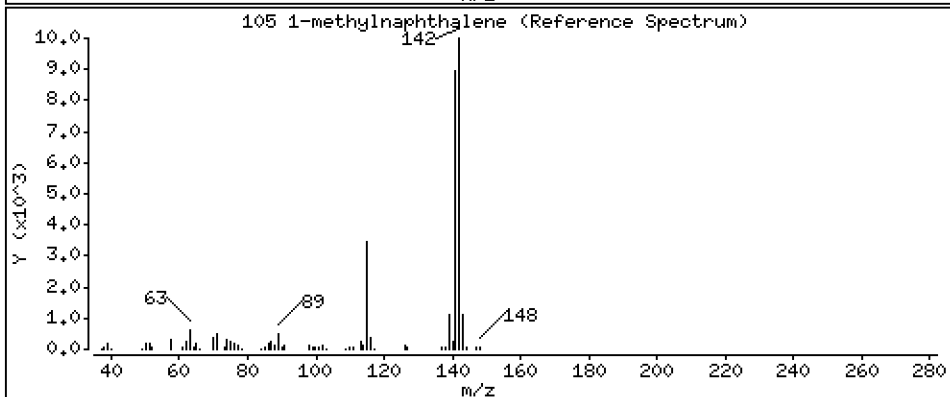
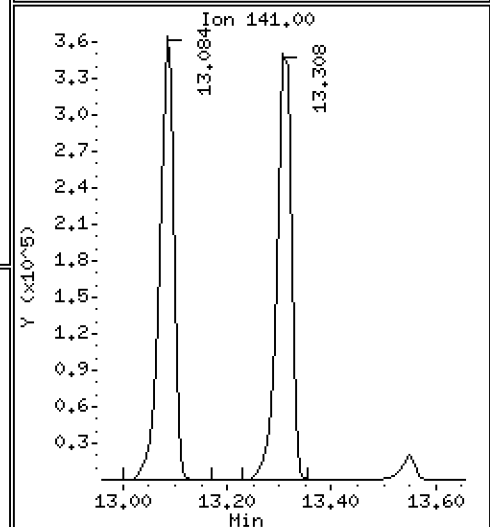
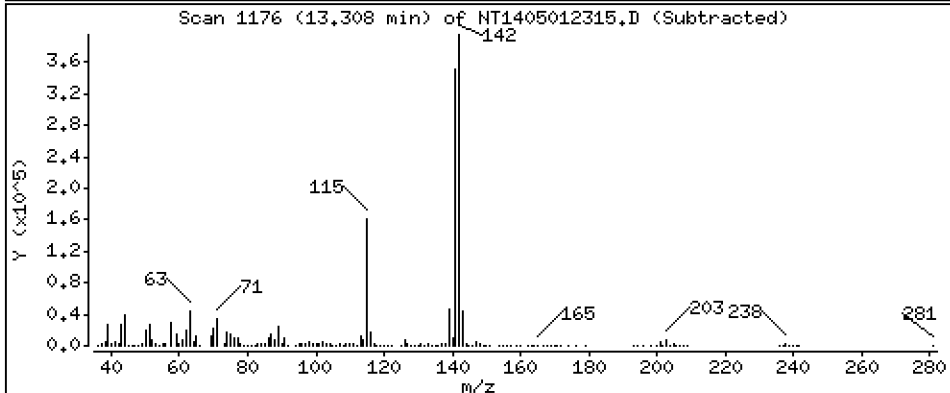
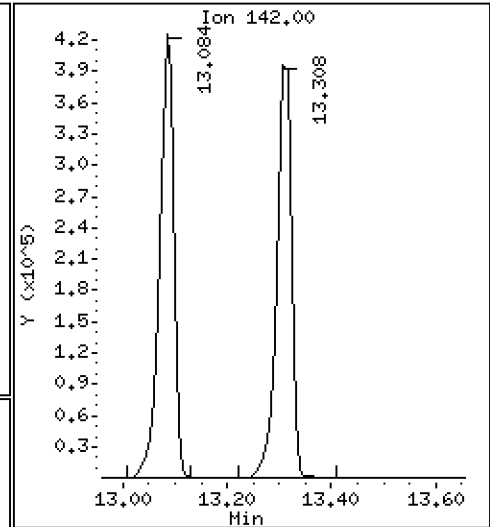
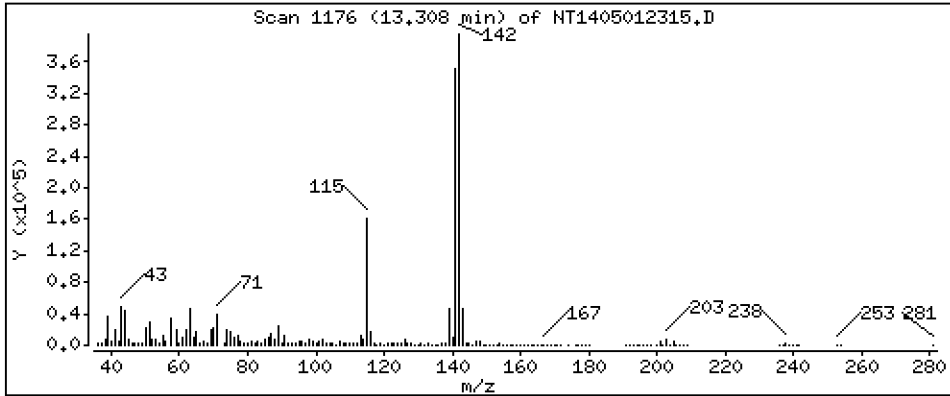
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 3,855 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

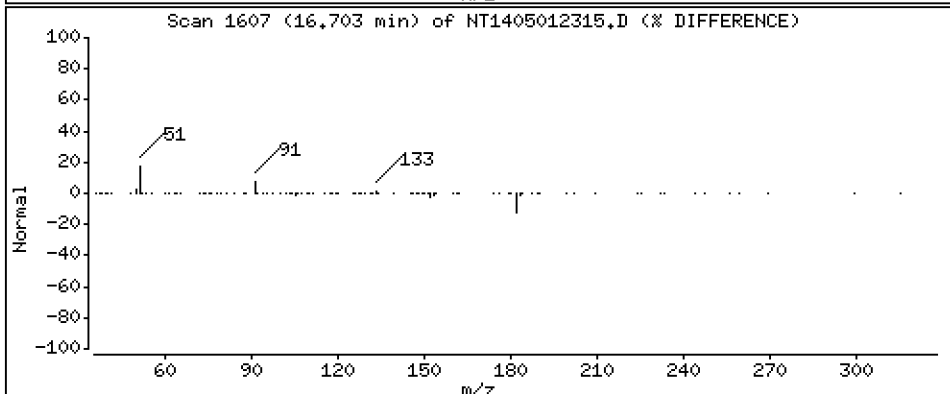
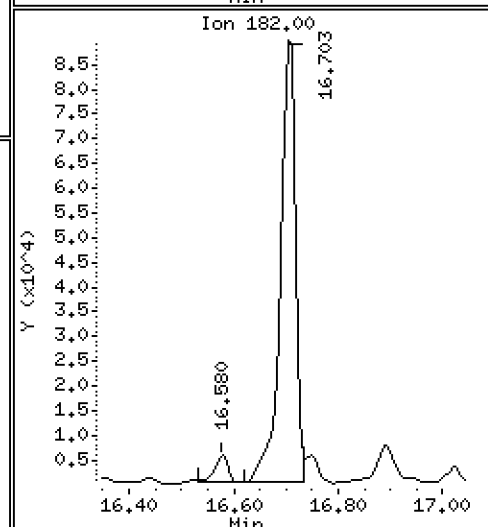
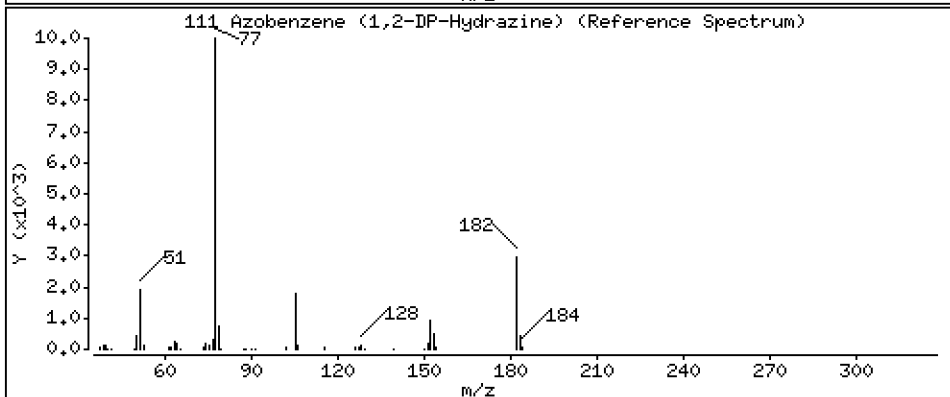
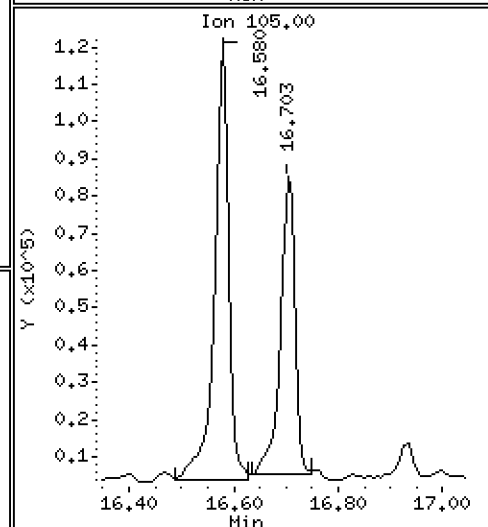
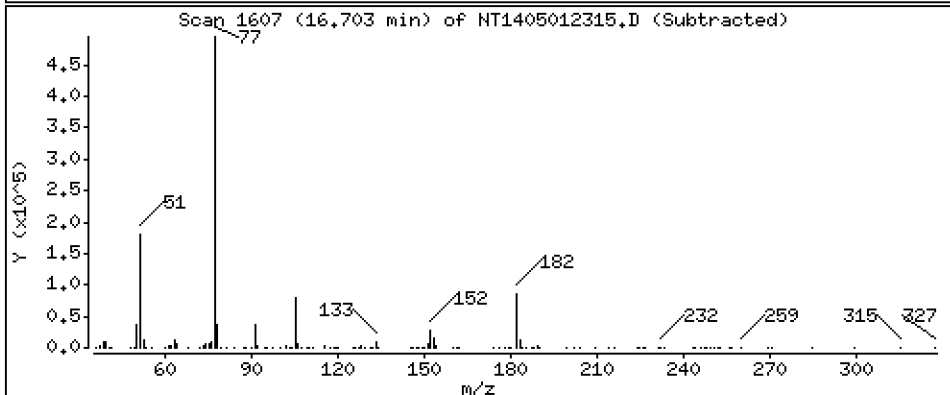
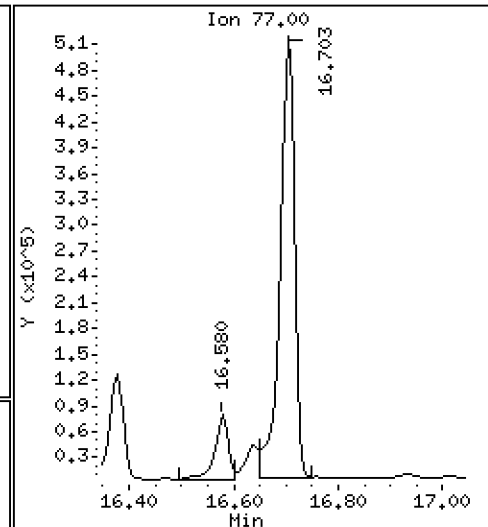
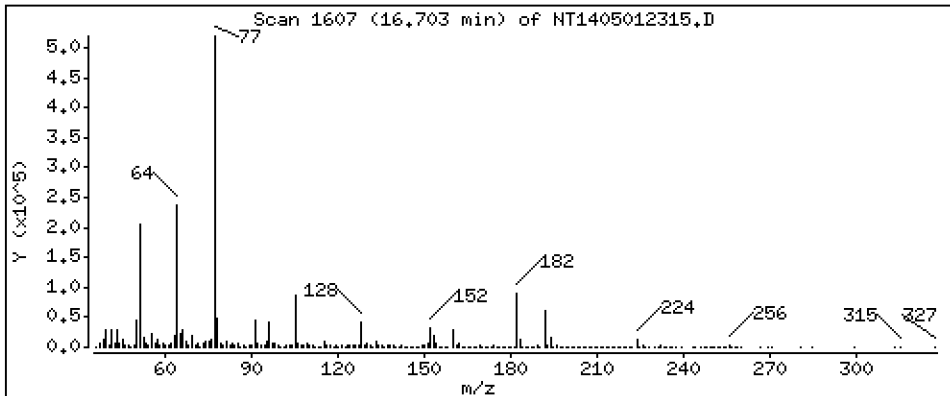
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 3,374 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

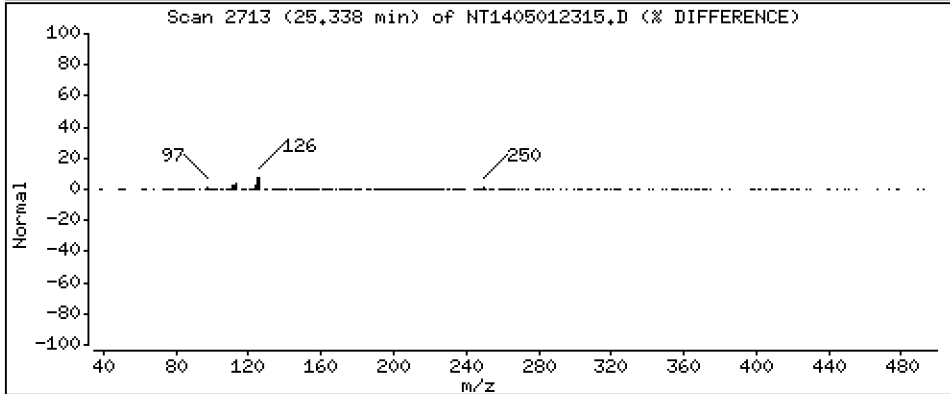
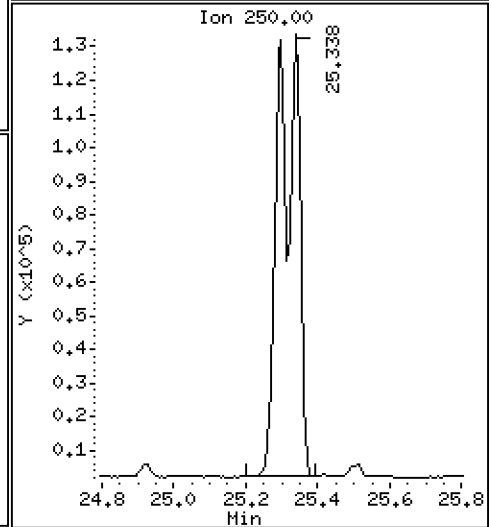
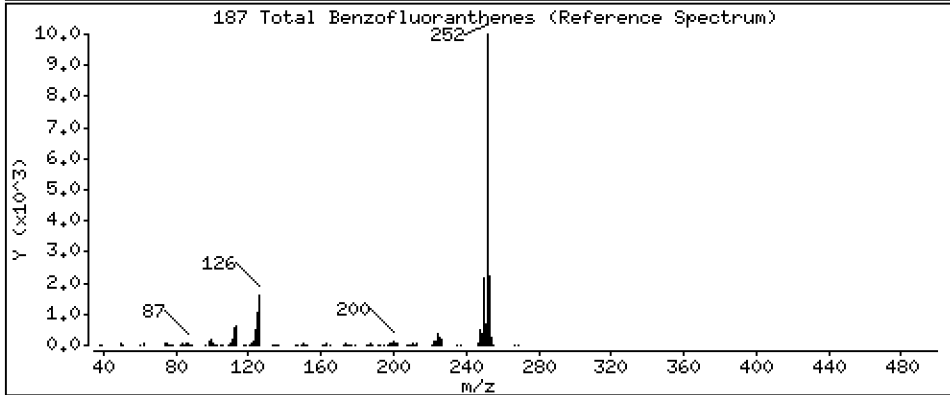
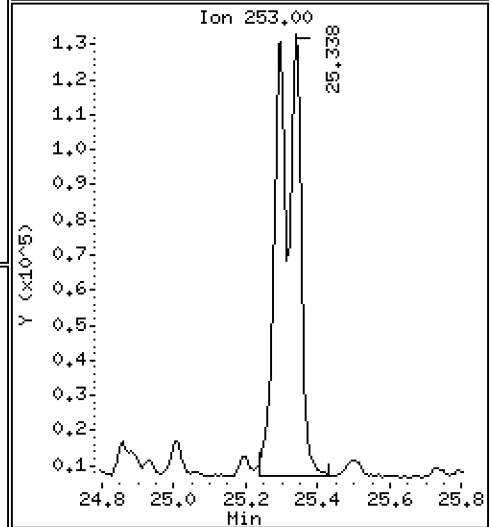
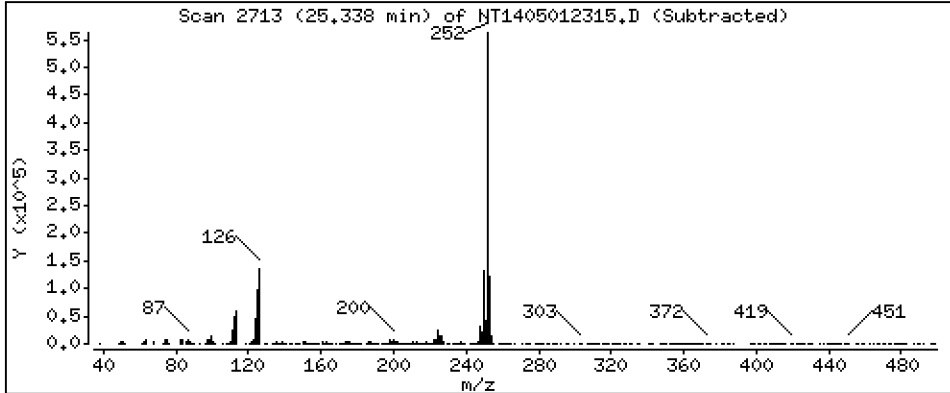
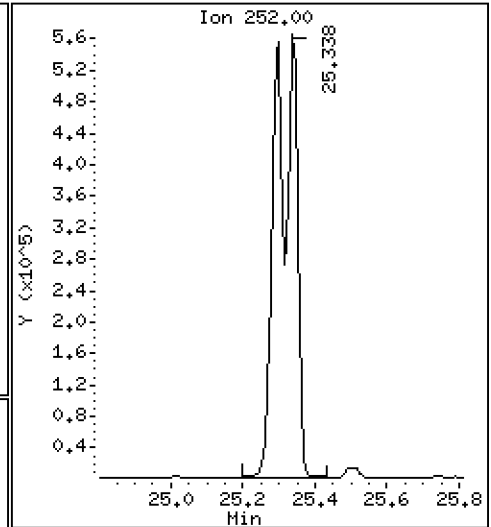
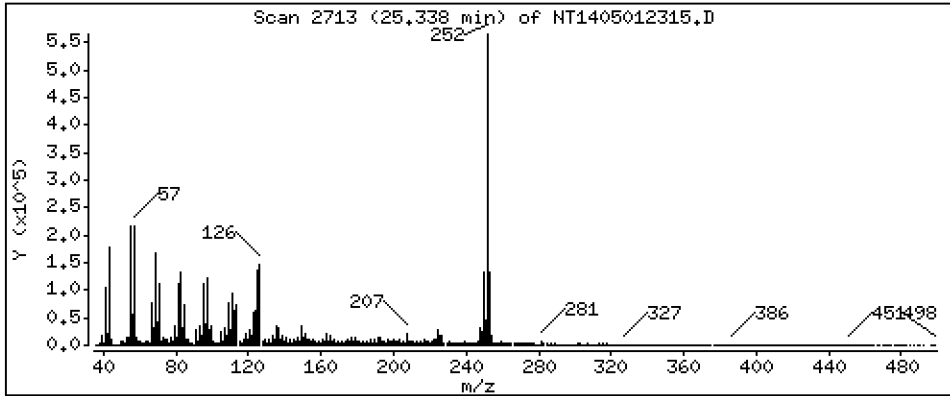
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 14,29 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD1

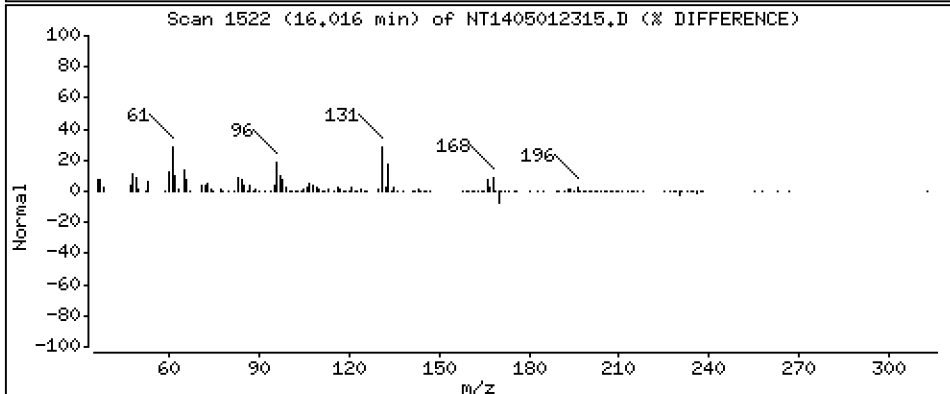
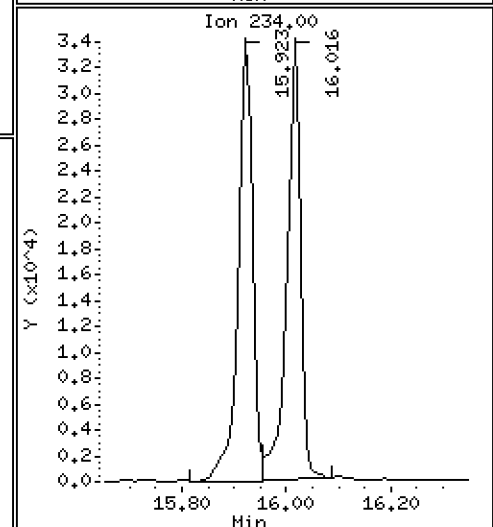
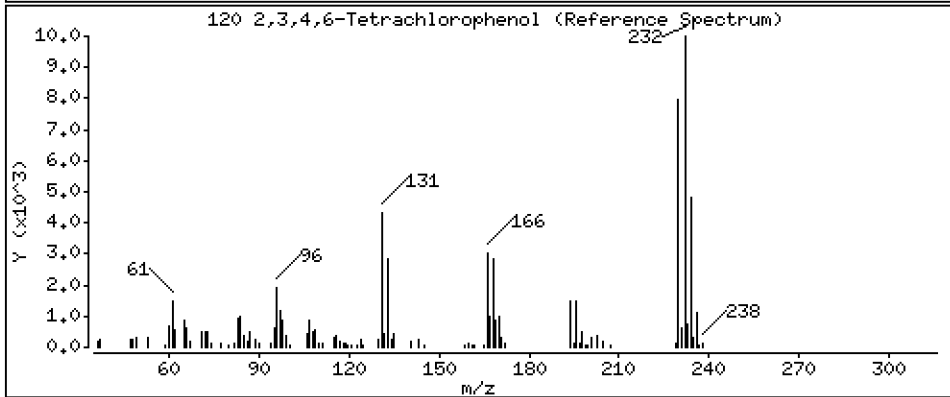
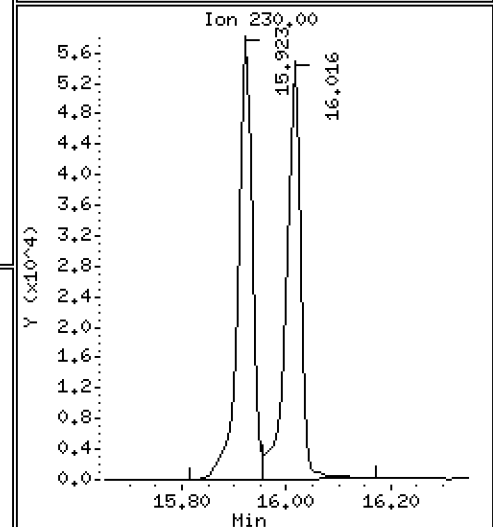
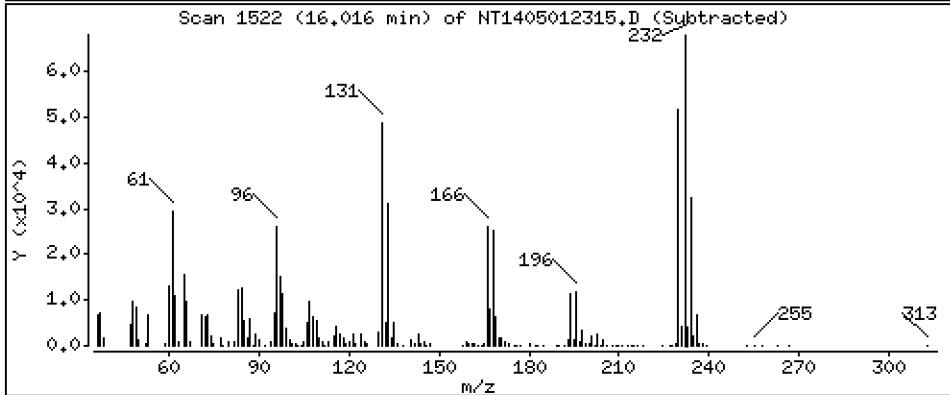
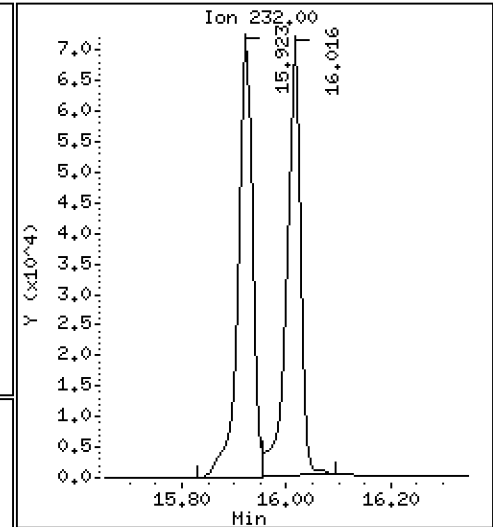
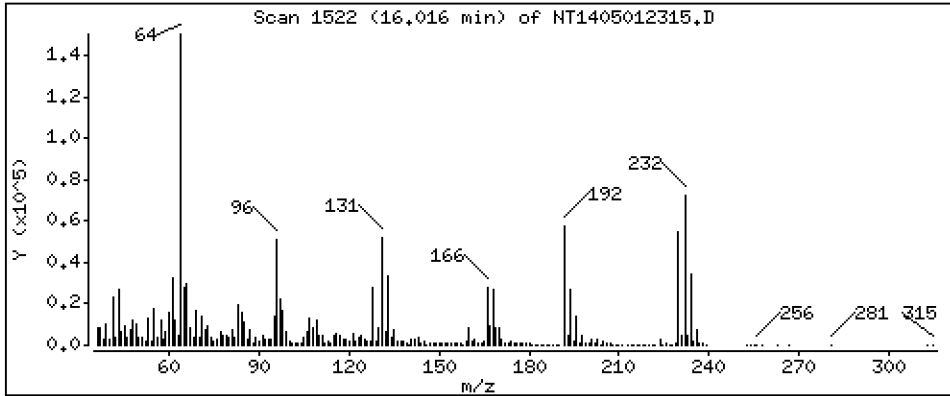
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 2,984 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012315.D  
 Lab Smp Id: BLD0297-MSD1  
 Inj Date : 01-MAY-2023 23:08 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-MSD1  
 Misc Info :  
 Comment : lul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 15  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.921	6.898	(0.757)	505299	5.46703	5.467
\$ 2 Phenol-d5	99		8.505	8.490	(0.931)	757664	5.84122	5.841
3 Phenol	94		8.528	8.513	(0.933)	501482	3.44965	3.450
\$ 5 2-Chlorophenol-d4	132		8.775	8.768	(0.960)	558246	6.04994	6.050
4 Bis(2-Chloroethyl)ether	93		8.683	8.675	(0.950)	433572	3.90635	3.906
6 2-Chlorophenol	128		8.806	8.799	(0.964)	389083	3.84262	3.843
7 1,3-Dichlorobenzene	146		9.070	9.070	(0.992)	350002	3.45218	3.452
* 8 1,4-Dichlorobenzene-d4	152		9.139	9.132	(1.000)	255578	4.00000	
9 1,4-Dichlorobenzene	146		9.170	9.163	(1.003)	345504	3.57475	3.575
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.039)	223352	3.82107	3.821
12 1,2-Dichlorobenzene	146		9.528	9.520	(1.042)	345738	3.59518	3.595
11 Benzyl alcohol	108		9.411	9.403	(1.030)	260000	3.92097	3.921
14 2,2'-oxybis(1-Chloropropane)	121		Compound Not Detected.					
13 2-Methylphenol	108		9.644	9.629	(1.055)	166705	1.71893	1.719
17 Hexachloroethane	117		10.117	10.118	(1.107)	157651	3.42147	3.421
16 N-Nitroso-di-n-propylamine	70		9.970	9.970	(1.091)	336420	3.44939	3.449
15 4-Methylphenol	108		9.923	9.900	(1.086)	274962	2.48959	2.490
\$ 18 Nitrobenzene-d5	82		10.242	10.242	(0.880)	523090	4.16476	4.165
19 Nitrobenzene	77		10.273	10.273	(0.883)	512464	3.81670	3.817
20 Isophorone	82		10.731	10.723	(0.922)	856496	4.64715	4.647
21 2-Nitrophenol	139		10.909	10.909	(0.937)	199293	3.01486	3.015
22 2,4-Dimethylphenol	107		10.963	10.955	(0.942)	284539	2.81234	2.812
23 Bis(2-Chloroethoxy)methane	93		11.157	11.157	(0.959)	516792	4.36258	4.363
24 Benzoic acid	105		11.165	11.196	(0.959)	689052	8.22397	8.224
25 2,4-Dichlorophenol	162		11.374	11.359	(0.977)	836784	10.2864	10.29
26 1,2,4-Trichlorobenzene	180		11.552	11.552	(0.993)	273536	3.62193	3.622
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1020523	4.00000	
28 Naphthalene	128		11.683	11.675	(1.004)	1199634	4.37334	4.373
29 4-Chloroaniline	127		Compound Not Detected.					
30 Hexachlorobutadiene	225		12.038	12.039	(1.035)	131392	3.80546	3.805
31 4-Chloro-3-methylphenol	107		12.789	12.774	(1.099)	1042279	11.5278	11.53
32 2-Methylnaphthalene	142		13.083	13.083	(1.124)	766101	3.85558	3.856
33 Hexachlorocyclopentadiene	237		13.548	13.548	(0.887)	181563	5.07674	5.077



Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196		13.718	13.702	(0.898)	482468	10.8289	10.83	
35 2,4,5-Trichlorophenol	196		13.795	13.780	(0.903)	610245	12.8927	12.89	
§ 36 2-Fluorobiphenyl	172		13.873	13.865	(0.908)	734015	4.33717	4.337	
37 2-Chloronaphthalene	162		14.089	14.082	(0.922)	630371	3.90186	3.902	
38 2-Nitroaniline	65		14.360	14.345	(0.940)	783589	9.07986	9.080	
39 Dimethylphthalate	163		14.786	14.778	(0.968)	695050	4.17058	4.171	
40 Acenaphthylene	152		14.972	14.956	(0.980)	952462	3.69403	3.694	
41 2,6-Dinitrotoluene	165		14.925	14.918	(0.977)	447320	11.8392	11.84	
* 42 Acenaphthene-d10	164		15.281	15.273	(1.000)	485892	4.00000		
43 3-Nitroaniline	138		Compound Not Detected.						
44 Acenaphthene	153		15.351	15.343	(1.005)	651043	4.21505	4.215	
45 2,4-Dinitrophenol	184		15.420	15.420	(1.009)	38720	1.69535	1.695	
46 Dibenzofuran	168		15.675	15.668	(1.026)	906211	4.10977	4.110	
47 4-Nitrophenol	109		15.559	15.521	(1.018)	334629	12.1135	12.11	
48 2,4-Dinitrotoluene	165		15.737	15.729	(1.030)	622404	12.1666	12.17	
50 Diethylphthalate	149		16.240	16.240	(1.063)	852136	4.72385	4.724	
49 Fluorene	166		16.394	16.386	(1.073)	841788	4.31413	4.314	
51 4-Chlorophenyl-phenylether	204		16.379	16.371	(1.072)	336819	4.17316	4.173	
52 4-Nitroaniline	138		Compound Not Detected.						
53 4,6-Dinitro-2-methylphenol	198		16.579	16.579	(0.904)	352929	13.1023	13.10	
54 N-Nitrosodiphenylamine	169		16.633	16.626	(0.907)	353964	2.89367	2.894	
§ 55 2,4,6-Tribromophenol	330		16.934	16.919	(1.108)	97146	6.08160	6.082	
56 4-Bromophenyl-phenylether	248		17.389	17.381	(0.948)	159647	3.96783	3.968	
57 Hexachlorobenzene	284		17.714	17.698	(0.966)	155625	3.82472	3.825	
58 Pentachlorophenol	266		18.070	18.054	(0.985)	284529	10.9945	10.99	
* 59 Phenanthrene-d10	188		18.341	18.325	(1.000)	866191	4.00000		
60 Phenanthrene	178		18.387	18.372	(1.003)	1235735	5.04566	5.046	
61 Anthracene	178		18.480	18.464	(1.008)	815097	3.47007	3.470	
62 Carbazole	167		18.813	18.797	(1.026)	901268	4.14639	4.146	
63 Di-n-butylphthalate	149		19.602	19.579	(1.069)	1330479	4.01525	4.015	
64 Fluoranthene	202		20.816	20.755	(0.890)	1489203	5.46464	5.465	
65 Pyrene	202		21.219	21.180	(0.907)	1748949	6.21456	6.215	
§ 66 Terphenyl-d14	244		21.482	21.459	(0.918)	667947	3.37694	3.377	
67 Butylbenzylphthalate	149		22.396	22.380	(0.957)	553872	3.26978	3.270	
68 Benzo(a)anthracene	228		23.363	23.340	(0.999)	1103856	5.23804	5.238	
* 69 Chrysene-d12	240		23.394	23.371	(1.000)	590368	4.00000		
70 3,3'-Dichlorobenzidine	252		Compound Not Detected.						
71 Chrysene	228		23.441	23.418	(1.002)	1209638	6.15429	6.154	
72 bis(2-Ethylhexyl)phthalate	149		24.416	24.401	(1.000)	1443850	4.03693	4.037	
* 134 Di-n-octylphthalate-d4	153		24.409	24.385	(1.000)	1339795	4.00000		
73 Di-n-octylphthalate	149		24.416	24.401	(1.000)	1443850	4.03693	4.037	
74 Benzo(b)fluoranthene	252		25.299	25.260	(0.969)	1201031	7.24091	7.241	
75 Benzo(k)fluoranthene	252		25.338	25.307	(0.971)	1161904	7.13930	7.139	
76 Benzo(a)pyrene	252		25.973	25.934	(0.995)	724012	5.16519	5.165	
* 77 Perylene-d12	264		26.097	26.050	(1.000)	497453	4.00000		
78 Indeno(1,2,3-cd)pyrene	276		28.851	28.789	(1.106)	402222	2.07512	2.075	
79 Dibenzo(a,h)anthracene	278		28.859	28.805	(1.106)	322404	2.03343	2.033	
80 Benzo(g,h,i)perylene	276		29.675	29.605	(1.137)	259545	1.58174	1.582	
90 N-Nitrosodimethylamine	74		4.820	4.797	(0.527)	577827	7.51930	7.519	
91 Aniline	93		Compound Not Detected.						
93 Benzidine	184		Compound Not Detected.						
103 Pyridine	79		4.898	4.821	(0.536)	25477	0.11200	0.1120	
105 1-methylnaphthalene	142		13.308	13.308	(1.144)	739696	3.85505	3.855	
111 Azobenzene (1,2-DP-Hydrazine)	77		16.703	16.695	(1.093)	939310	3.37428	3.374	

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.338	25.307	(0.971)	2243303	14.2861	14.29
120 2,3,4,6-Tetrachlorophenol	232	16.015	16.000	(1.048)	127935	2.98431	2.984

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012315.D Calibration Time: 15:06  
 Lab Smp Id: BLD0297-MSD1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	255578	-6.72
27 Naphthalene-d8	1103207	551604	2206414	1020523	-7.49
42 Acenaphthene-d10	520358	260179	1040716	485892	-6.62
59 Phenanthrene-d10	882575	441288	1765150	866191	-1.86
69 Chrysene-d12	600619	300310	1201238	590368	-1.71
134 Di-n-octylphthala	1445631	722816	2891262	1339795	-7.32
77 Perylene-d12	570040	285020	1140080	497453	-12.73

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.14	0.08
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.33	17.83	18.83	18.34	0.08
69 Chrysene-d12	23.37	22.87	23.87	23.39	0.10
134 Di-n-octylphthala	24.39	23.89	24.89	24.41	0.10
77 Perylene-d12	26.05	25.55	26.55	26.10	0.18

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012315.D

Lab ID: BLD0297-MSD1  
nt14.i, ABN.m, 01-MAY-2023 23:08

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.536	0.528	0.0080	Pyridine

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



**STANDARD REFERENCE MATERIAL RECOVERY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Laboratory ID: BLD0297-SRM1

Batch: BLD0297

Initial/Final: 1 g / 1 mL

Preparation: EPA 3546 (Microwave)

Analyzed: 05/01/2023 19:27

Standard ID: K003477

Expires: 01/31/2024

Standard Lot#: CRM 143 (LRAC8918)

Description: CRM 143 BNAs - Sandy Loam

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Phenol	2660.0	2530	43.9	200	B	95.1	26 - 174
4-Methylphenol	6617.0	6520	73.9	200		98.5	40 - 160
Naphthalene	4458.0	3870	42.4	200		86.9	25 - 175
Acenaphthylene	1948.0	1620	62.4	200		83.4	37 - 167
Dimethylphthalate	4537.0	4540	43.9	200		100	41 - 159
Acenaphthene	5489.0	5360	52.2	200		97.7	41 - 159
Dibenzofuran	6130.0	5950	141	200		97.1	45 - 155
Fluorene	3724.0	3680	146	200		98.9	44 - 156
Phenanthrene	5052.0	4930	87.2	200		97.7	46 - 154
Anthracene	2866.0	2150	71.9	200		74.9	42 - 158
Fluoranthene	2497.0	2250	60.9	200		90.0	39 - 161
Pyrene	2964.0	2810	56.8	200		94.8	38 - 162
Butylbenzylphthalate	3511.0	2690	94.1	200		76.7	36 - 164
Benzo(a)anthracene	5751.0	5410	59.6	200		94.1	49 - 151
Chrysene	1477.0	1300	60.6	200		88.0	45 - 155
bis(2-Ethylhexyl)phthalate	2905.0	1590	54.6	500		54.8	26 - 174
Benzofluoranthenes, Total	6534.0	5380	100	400		82.4	40 - 160
Benzo(a)pyrene	5902.0	4410	42.3	200		74.6	43 - 157
Indeno(1,2,3-cd)pyrene	3914.0	3170	147	200		81.1	22 - 178
Dibenzo(a,h)anthracene	3420.0	2870	172	200		84.0	37 - 163
Benzo(g,h,i)perylene	1380.0	1100	136	200		80.0	35 - 165

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012309.D

Date: 01-May-2023 19:27

Client ID:

Sample Info: BLD0297-SRM1

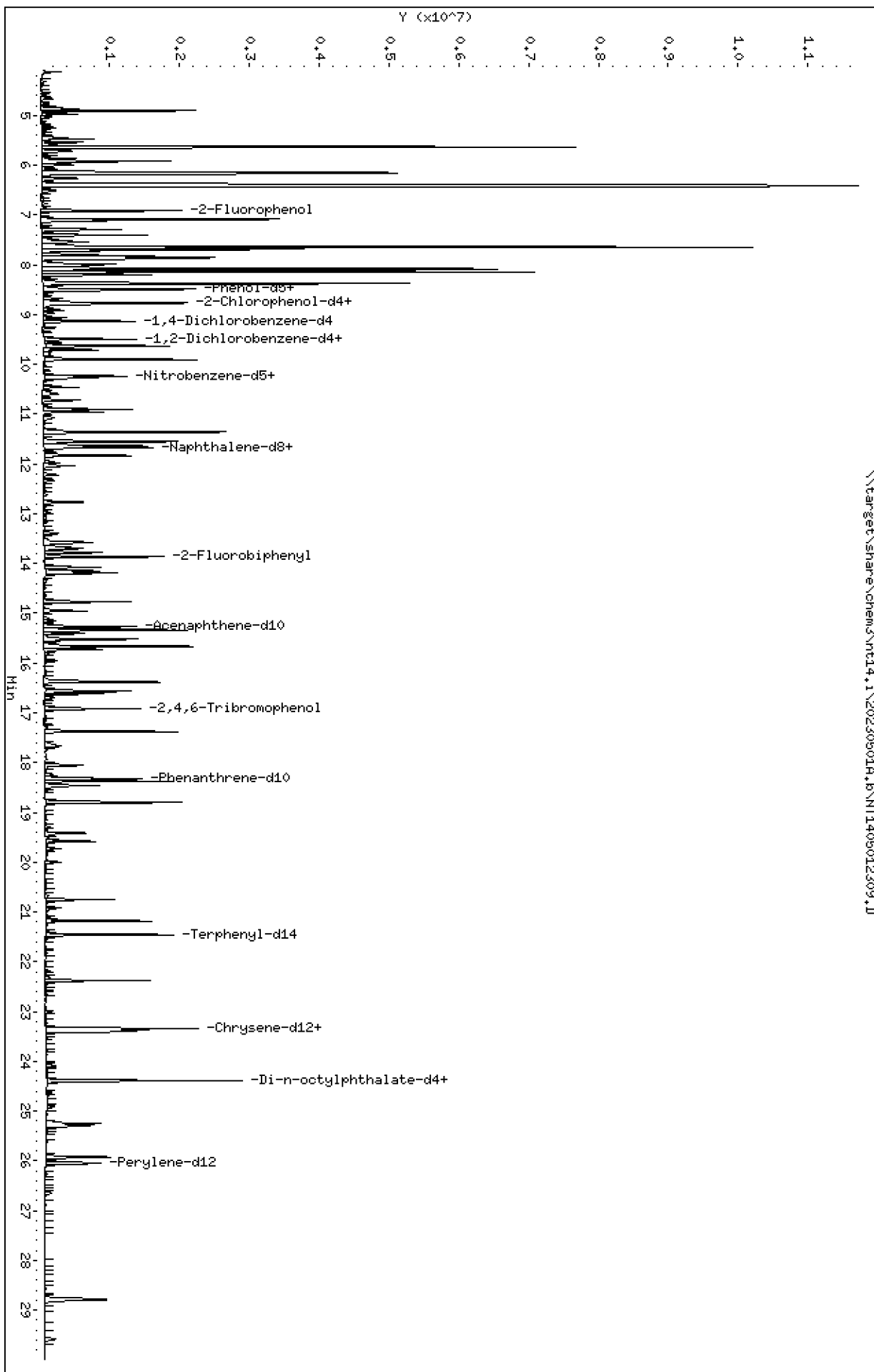
Column phase: ZB-Smsi

Instrument: nt14.1

Operator: USD

Column diameter: 0.25

\\target\share\chem3\nt14.1\20230501A.B\NT1405012309.D



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

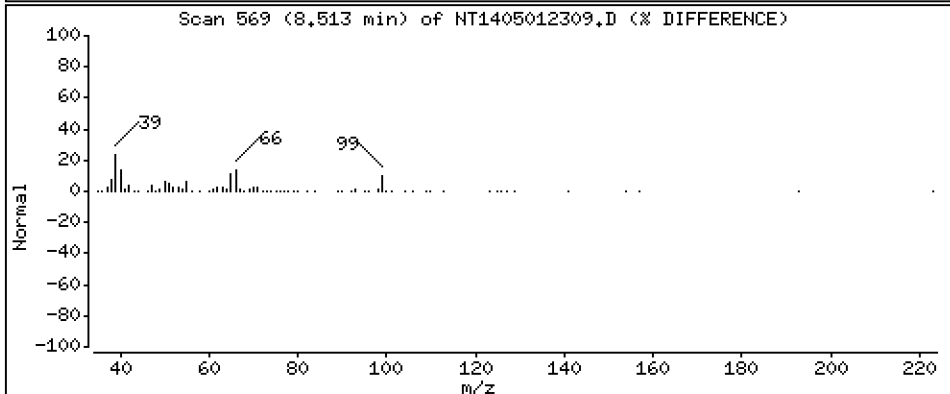
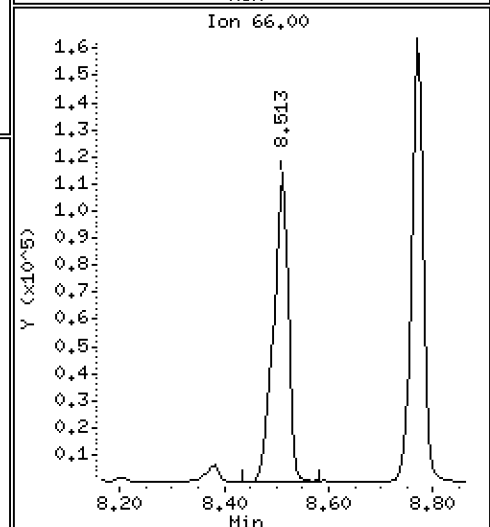
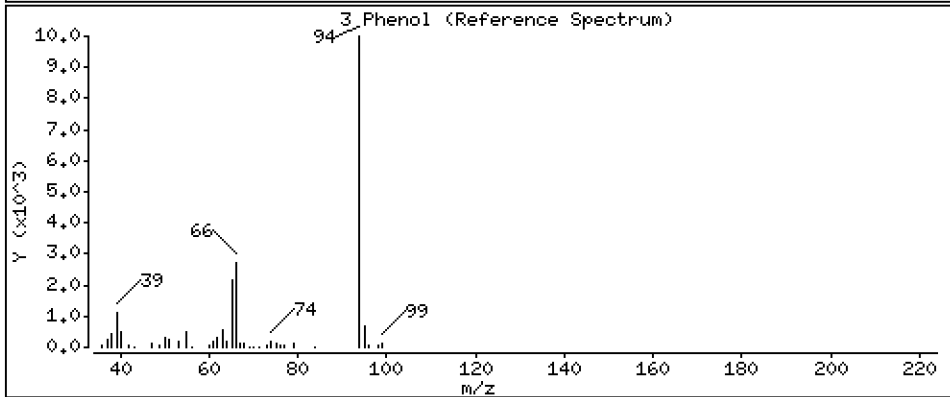
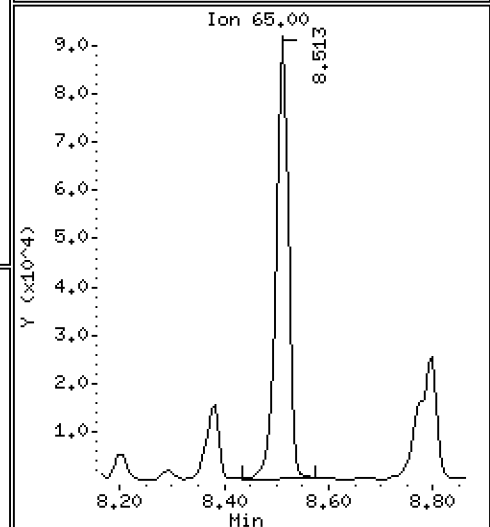
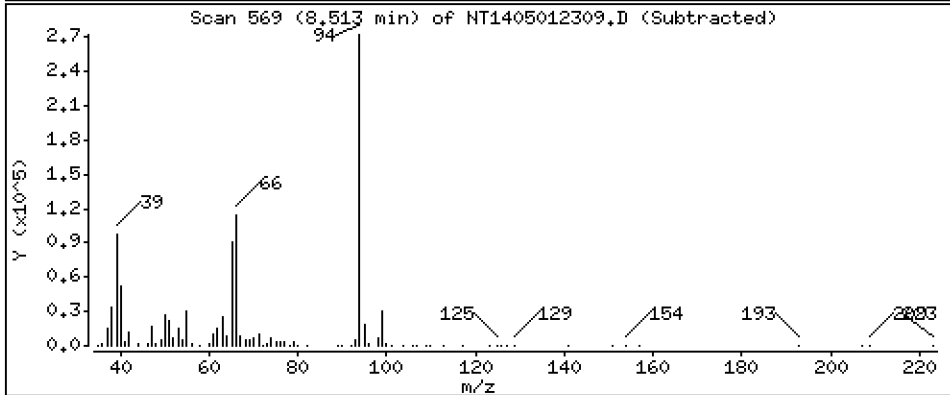
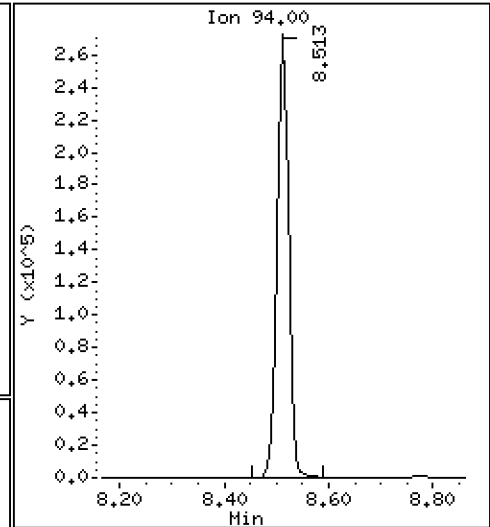
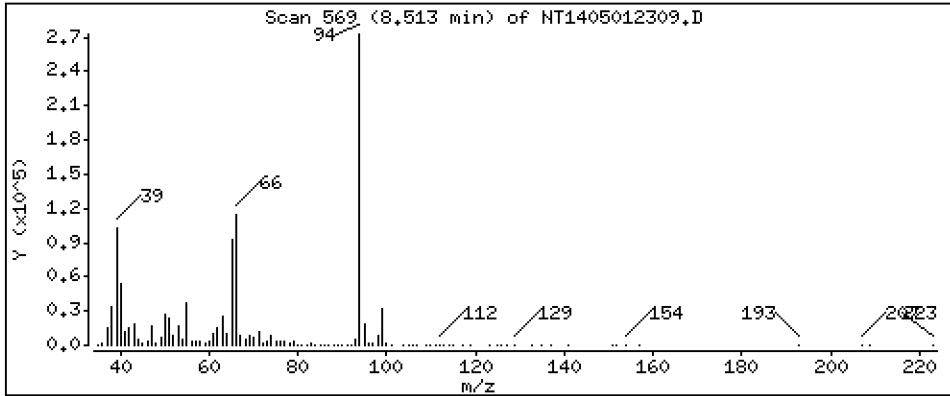
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 2,530 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

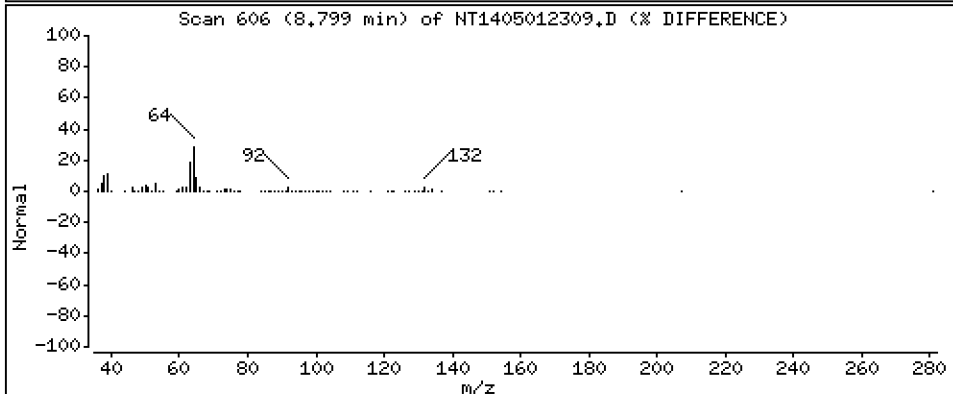
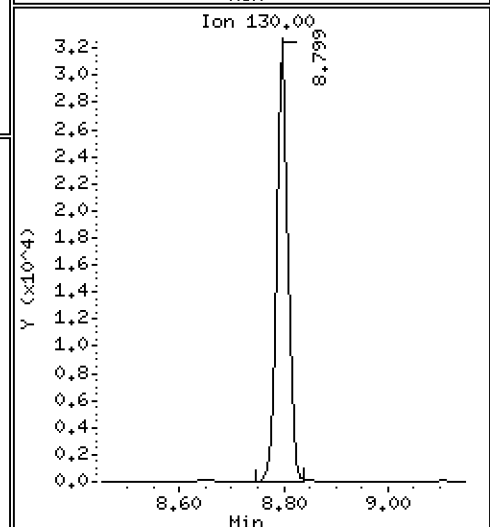
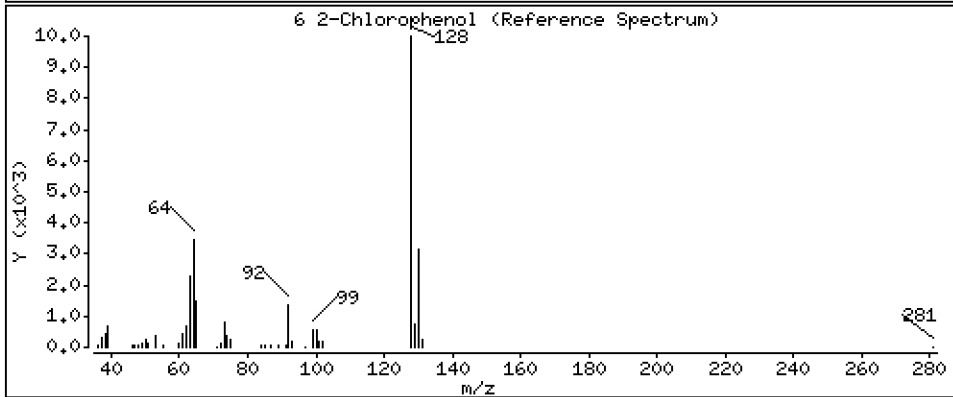
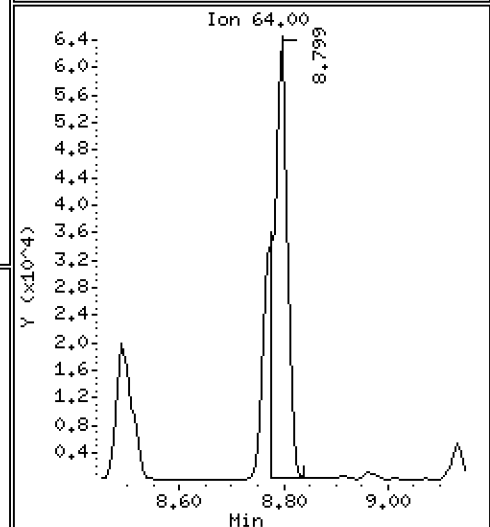
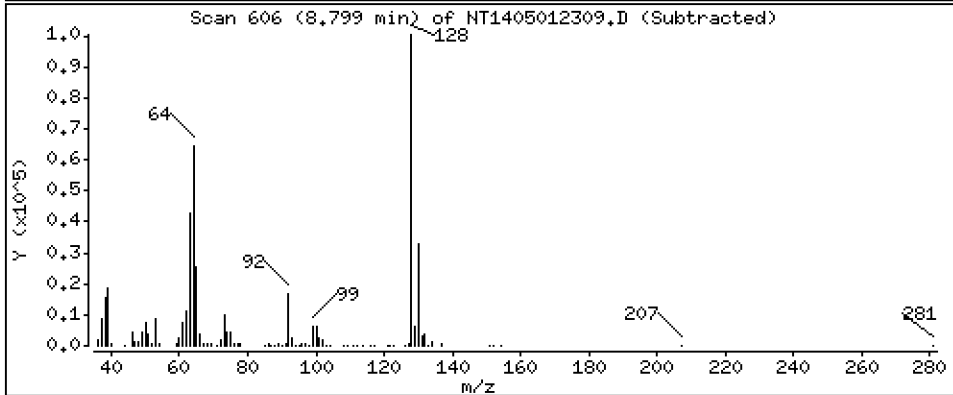
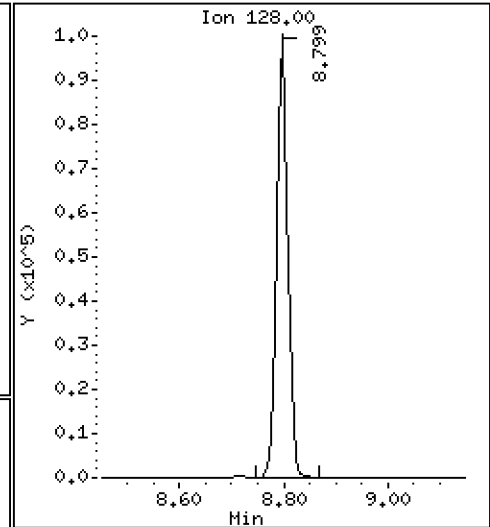
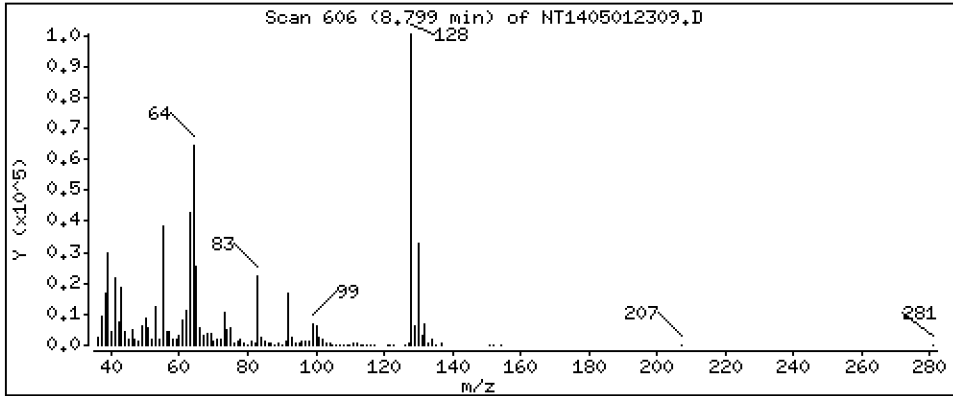
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

6 2-Chlorophenol

Concentration: 1.350 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

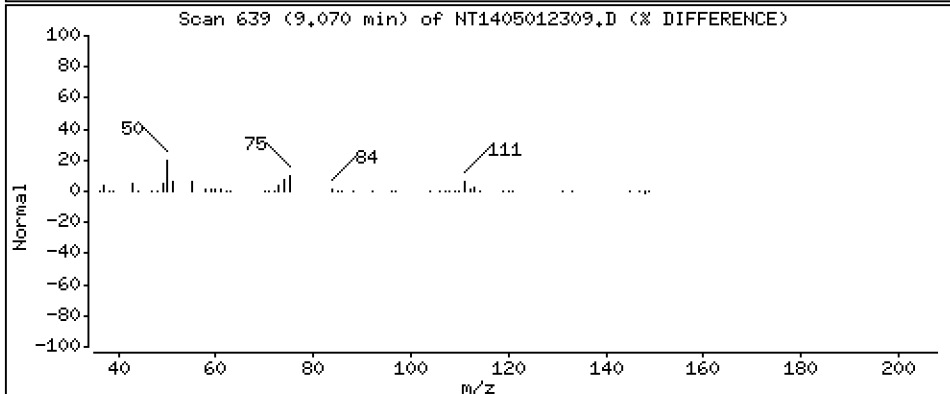
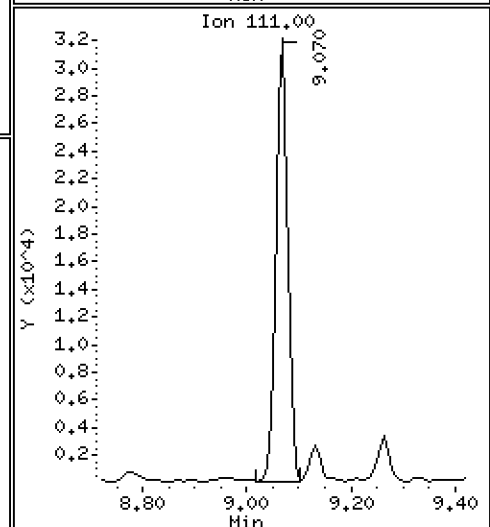
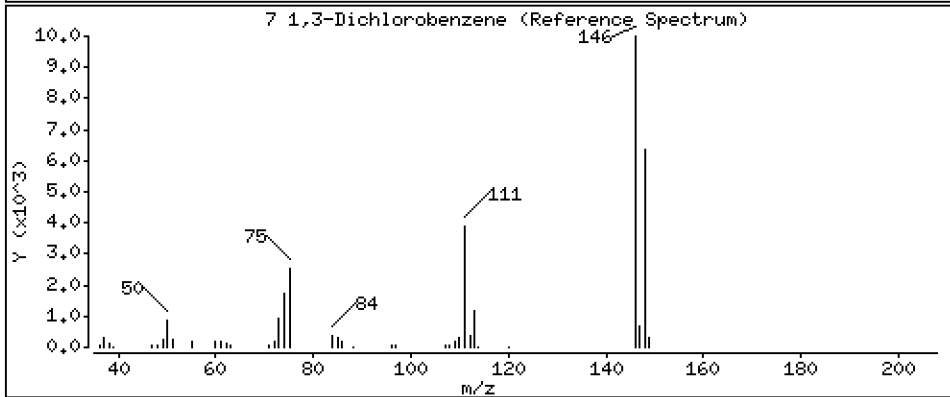
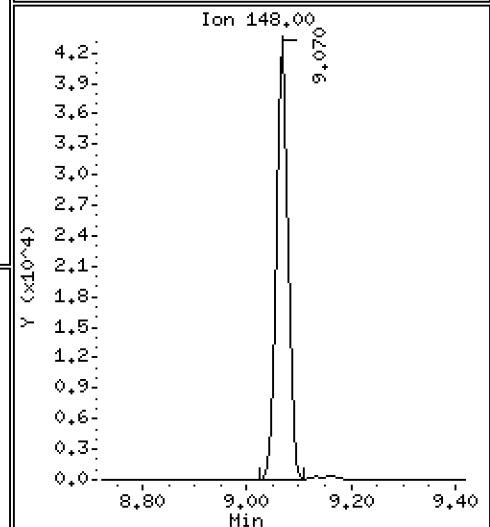
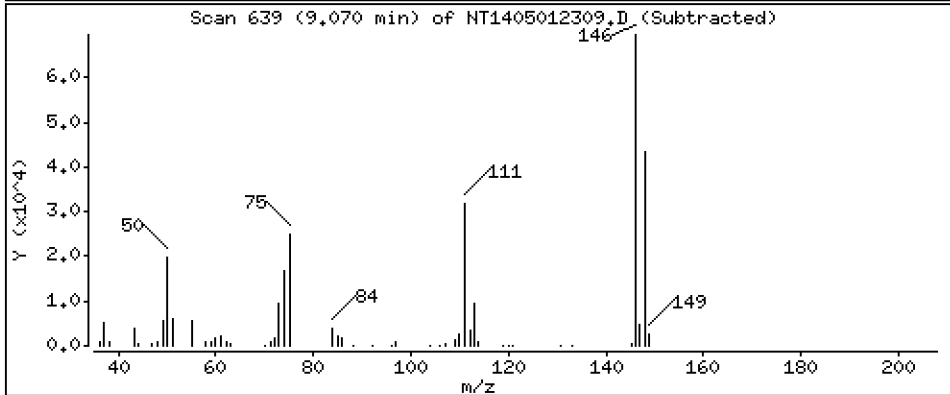
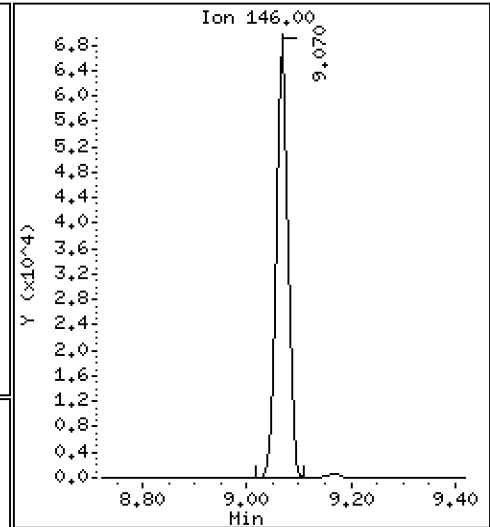
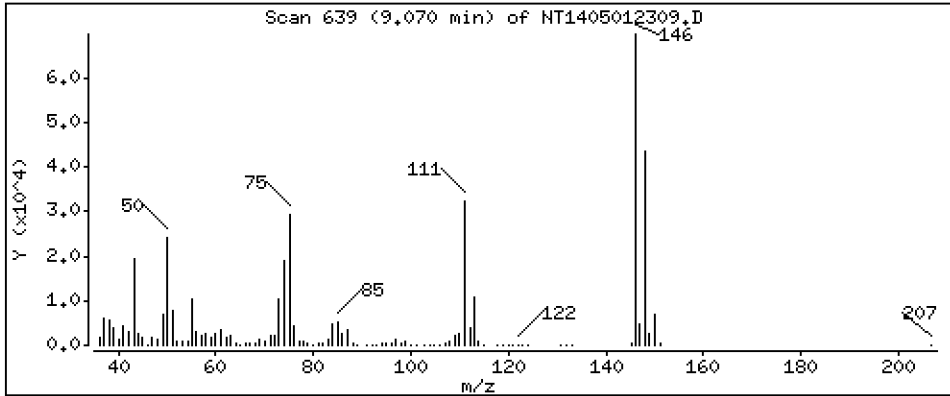
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

7 1,3-Dichlorobenzene

Concentration: 0.9826 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

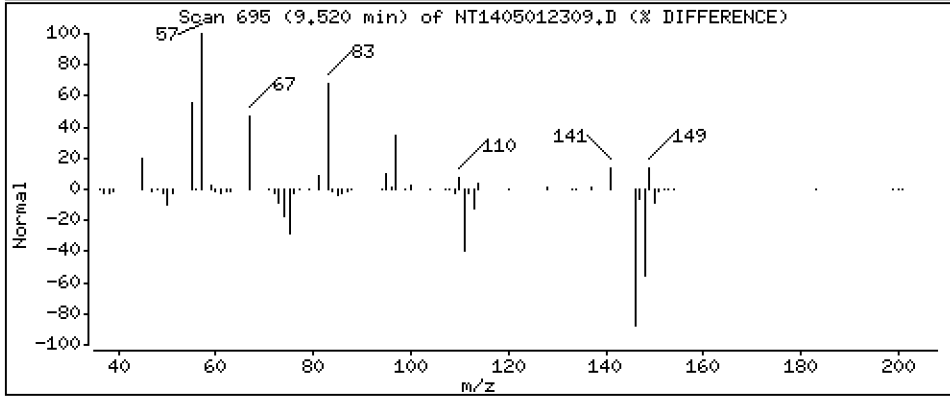
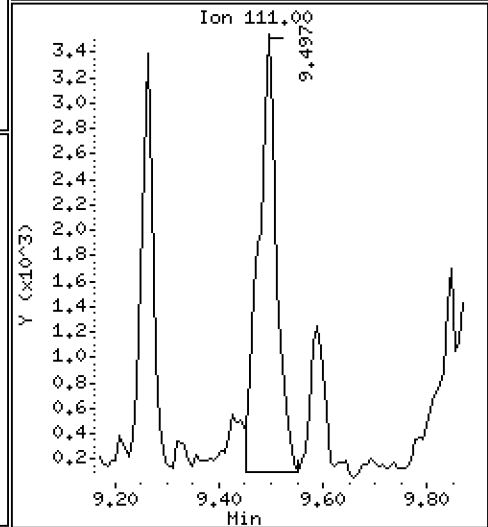
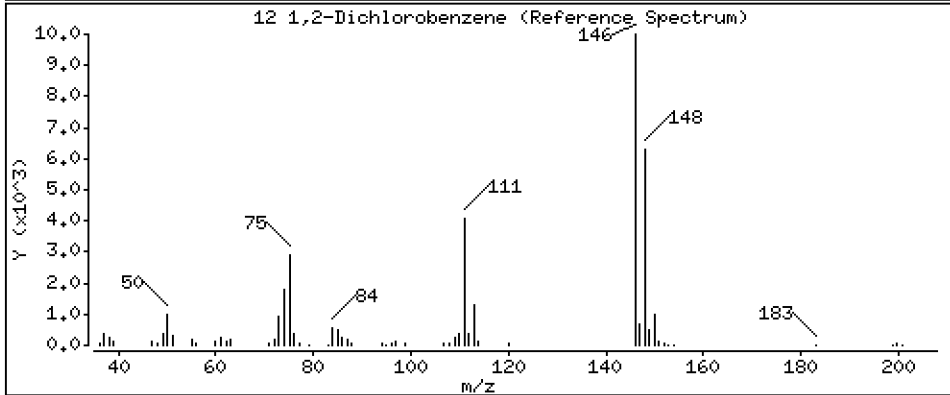
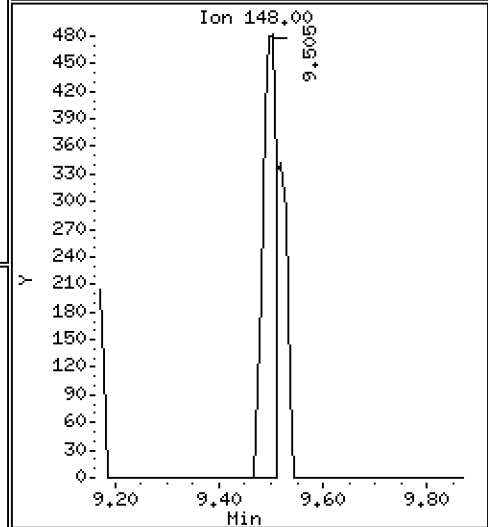
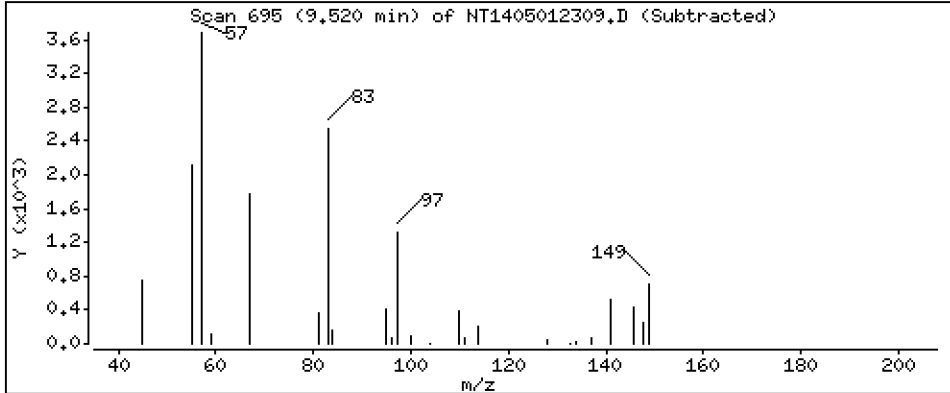
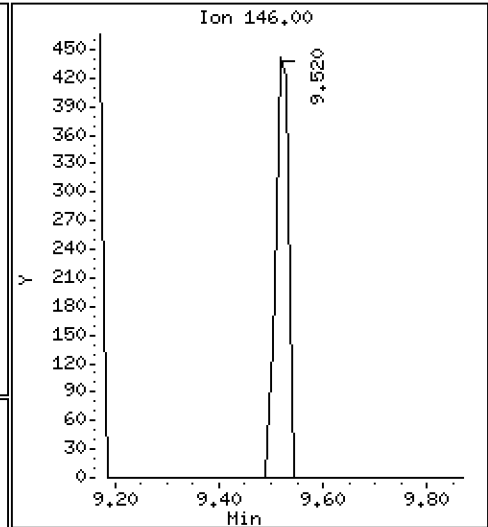
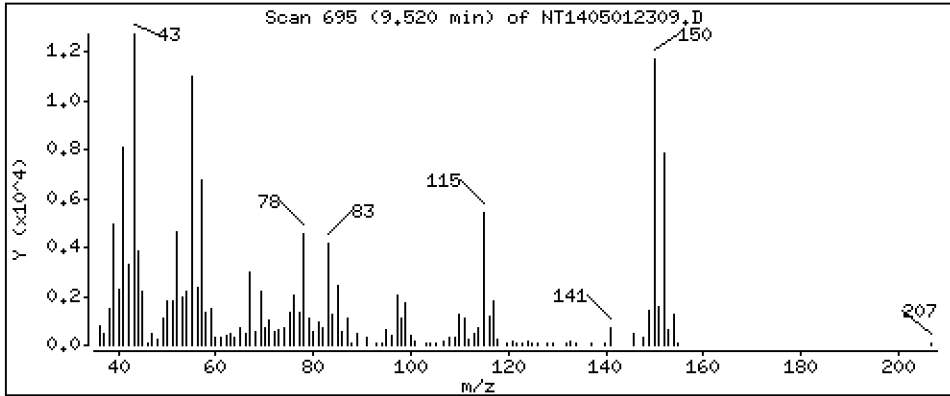
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 0.006993 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

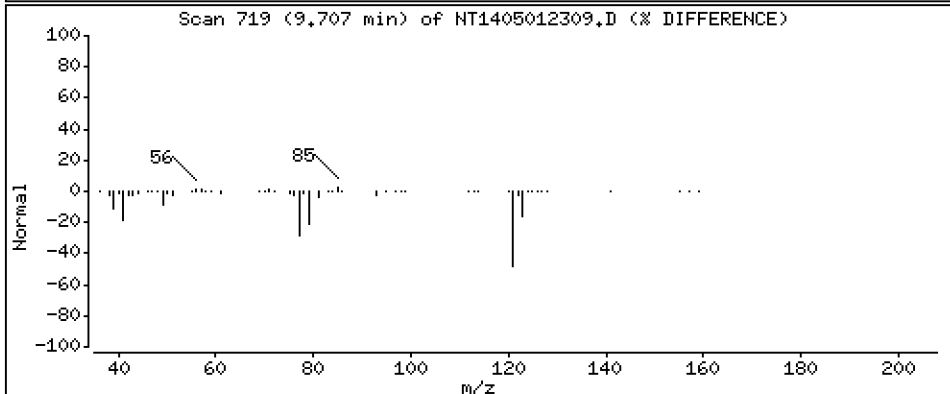
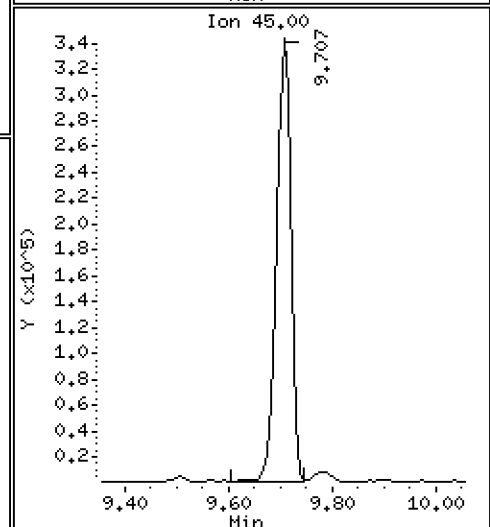
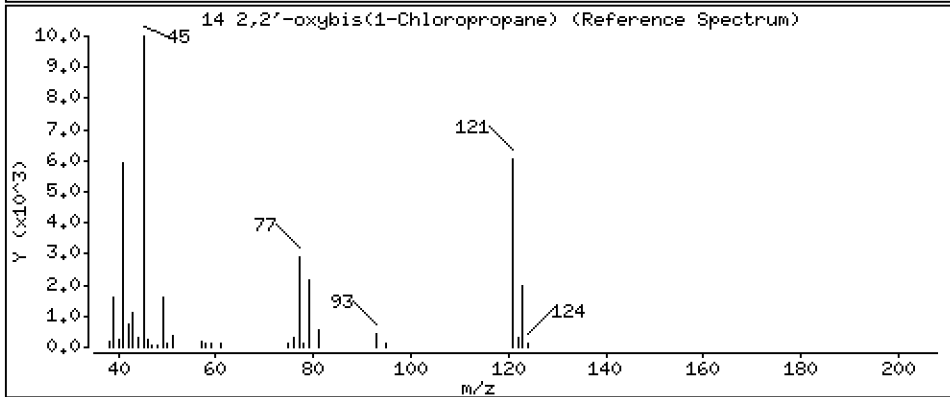
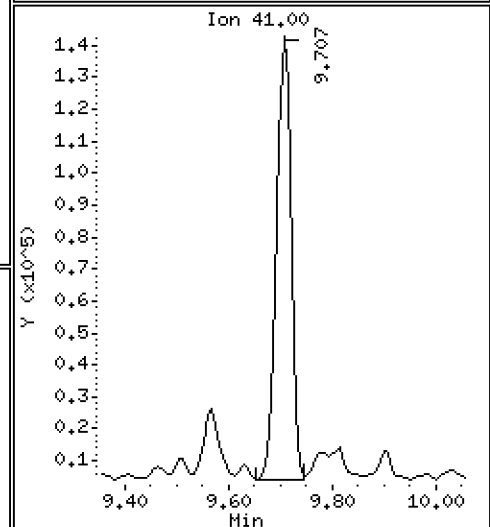
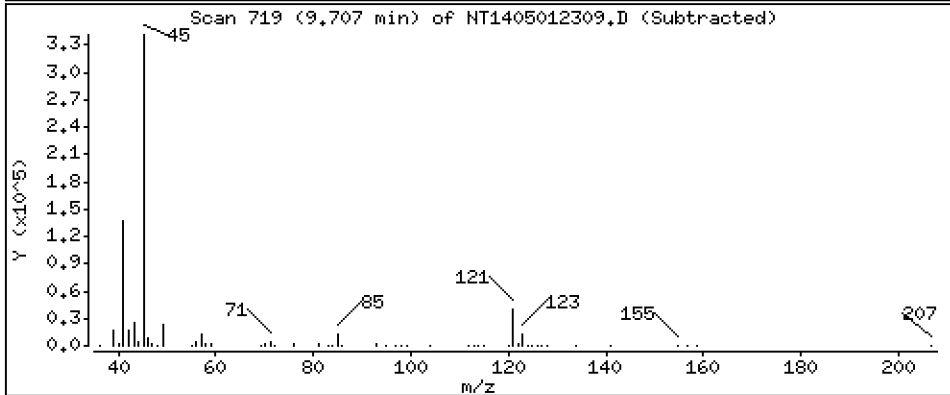
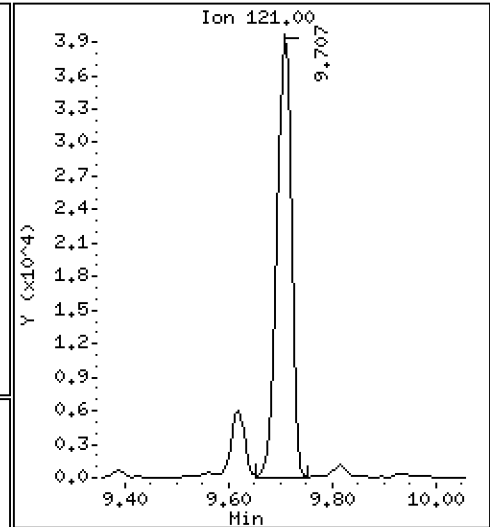
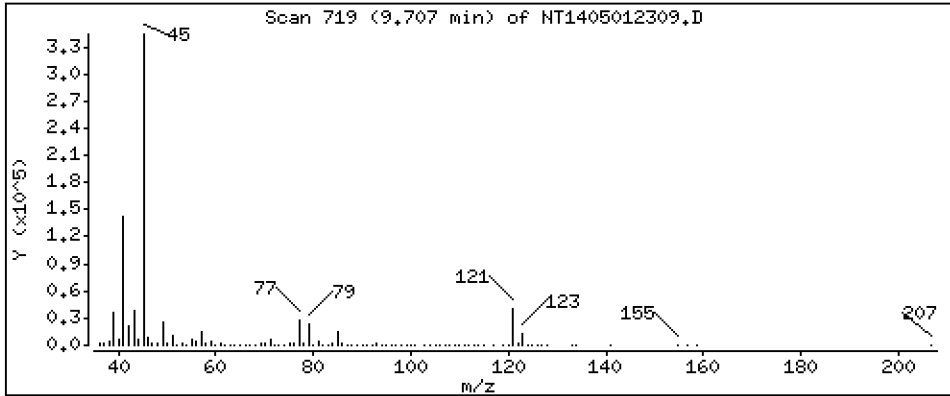
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 2,146 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

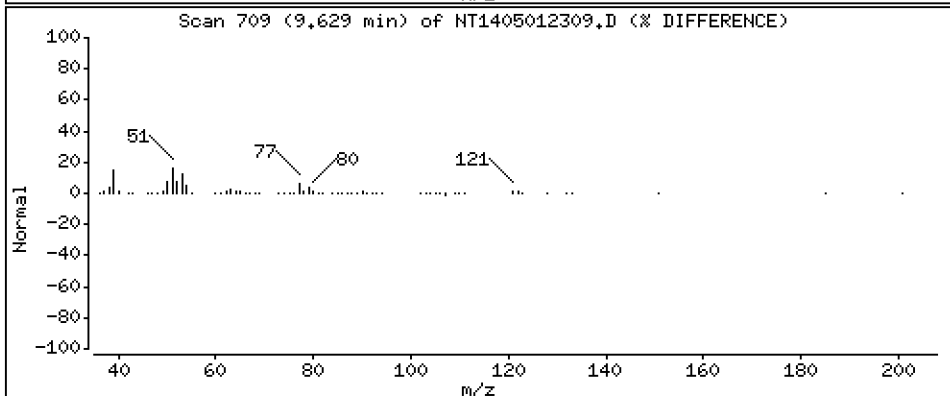
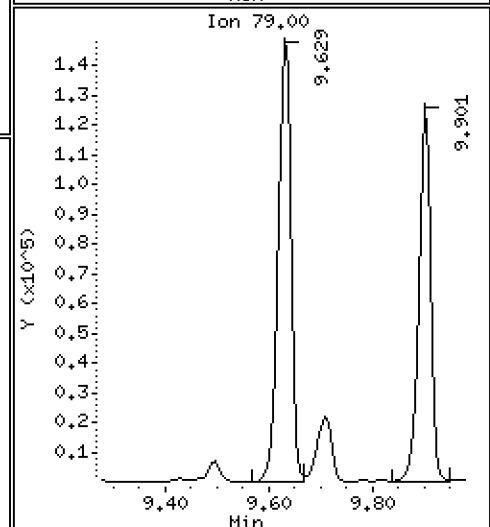
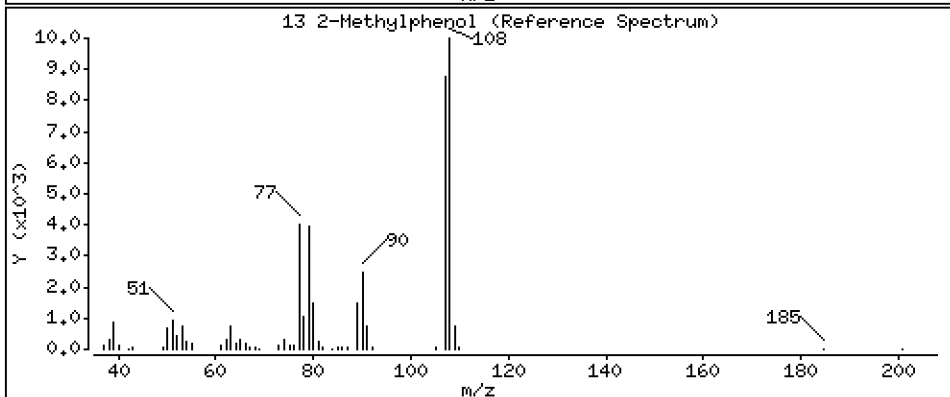
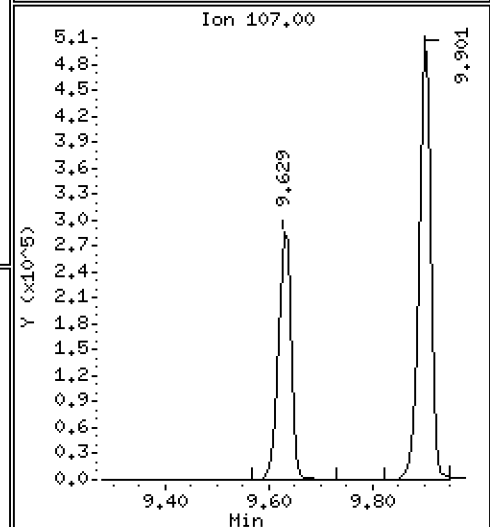
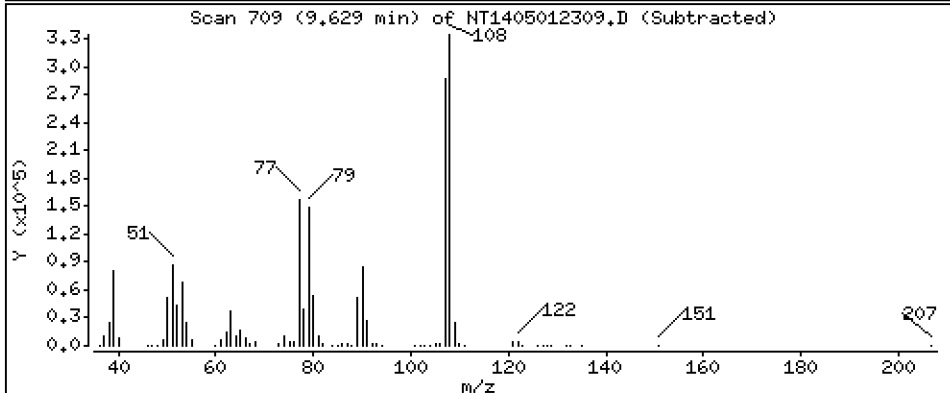
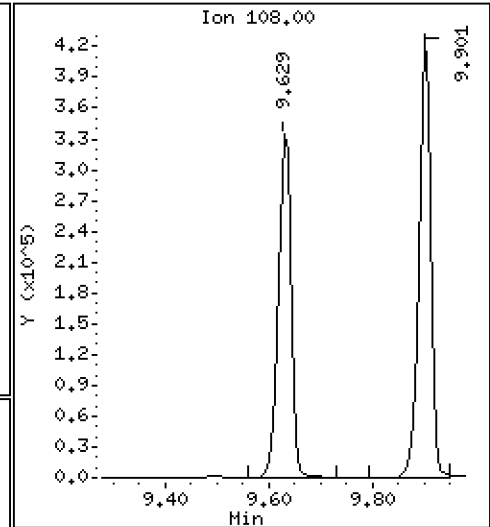
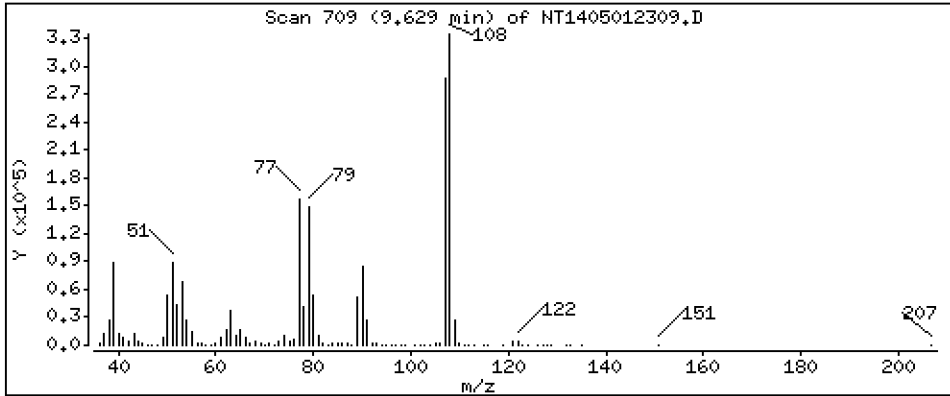
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 5.302 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

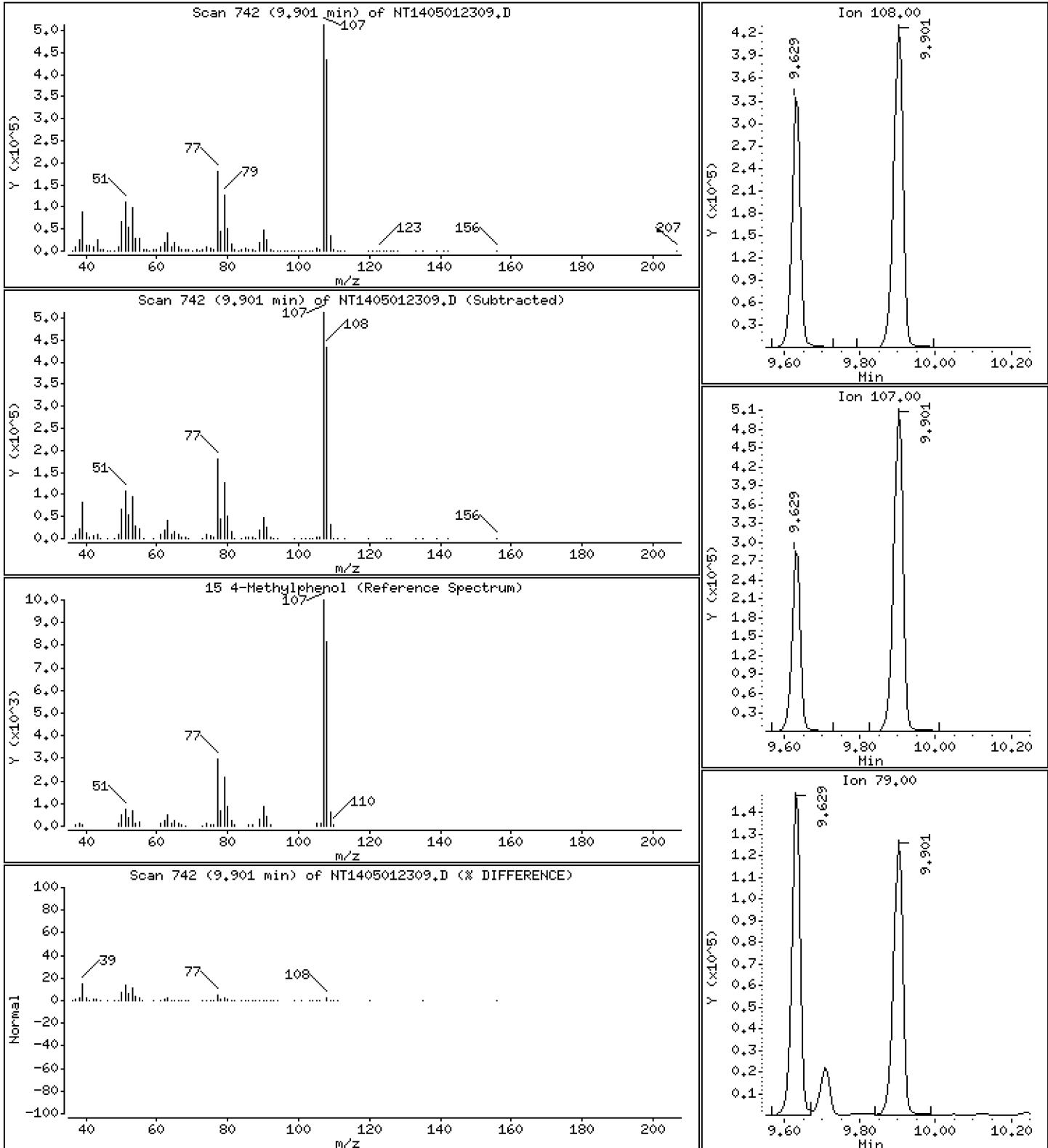
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 6,517 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

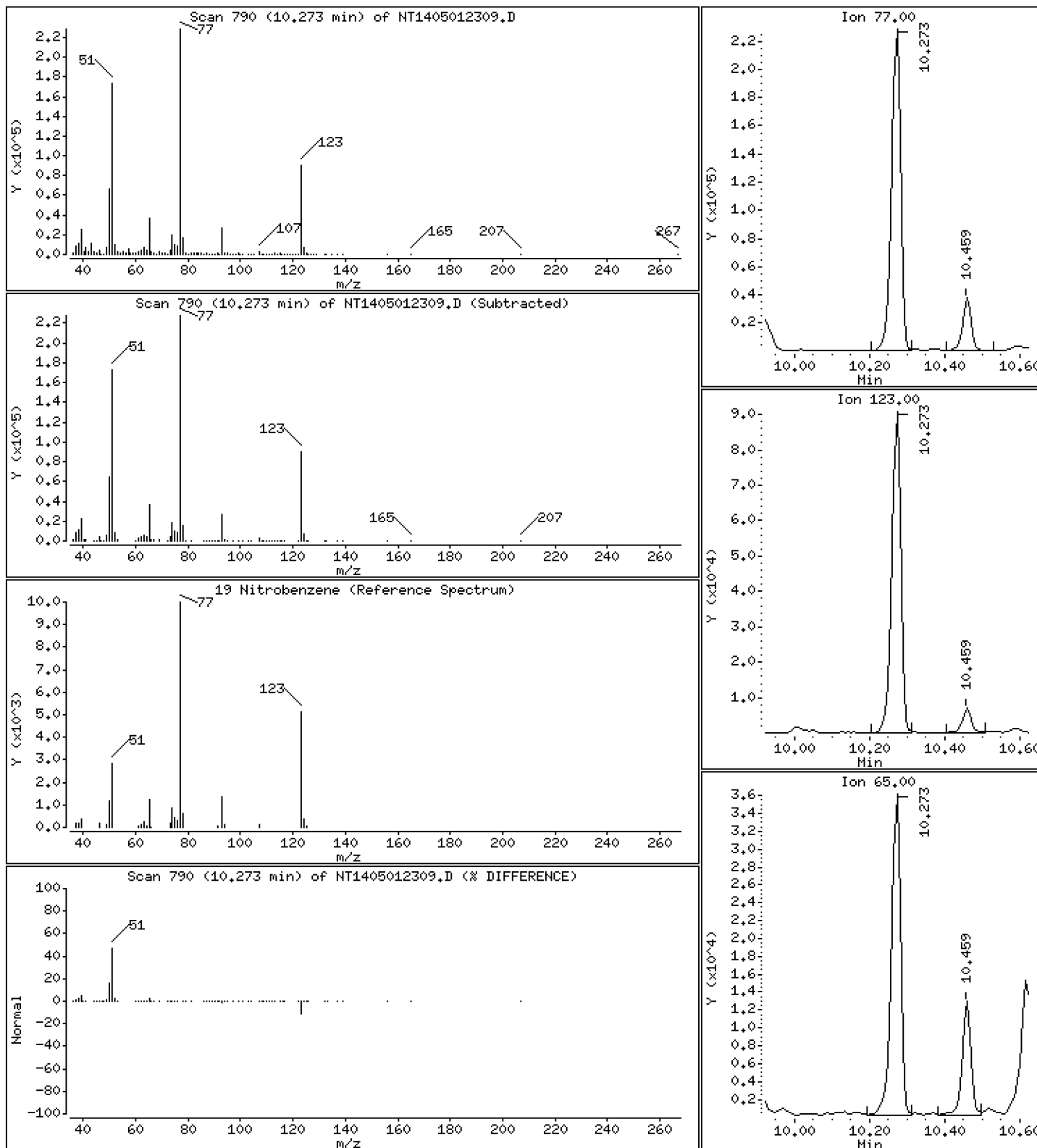
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 2,595 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

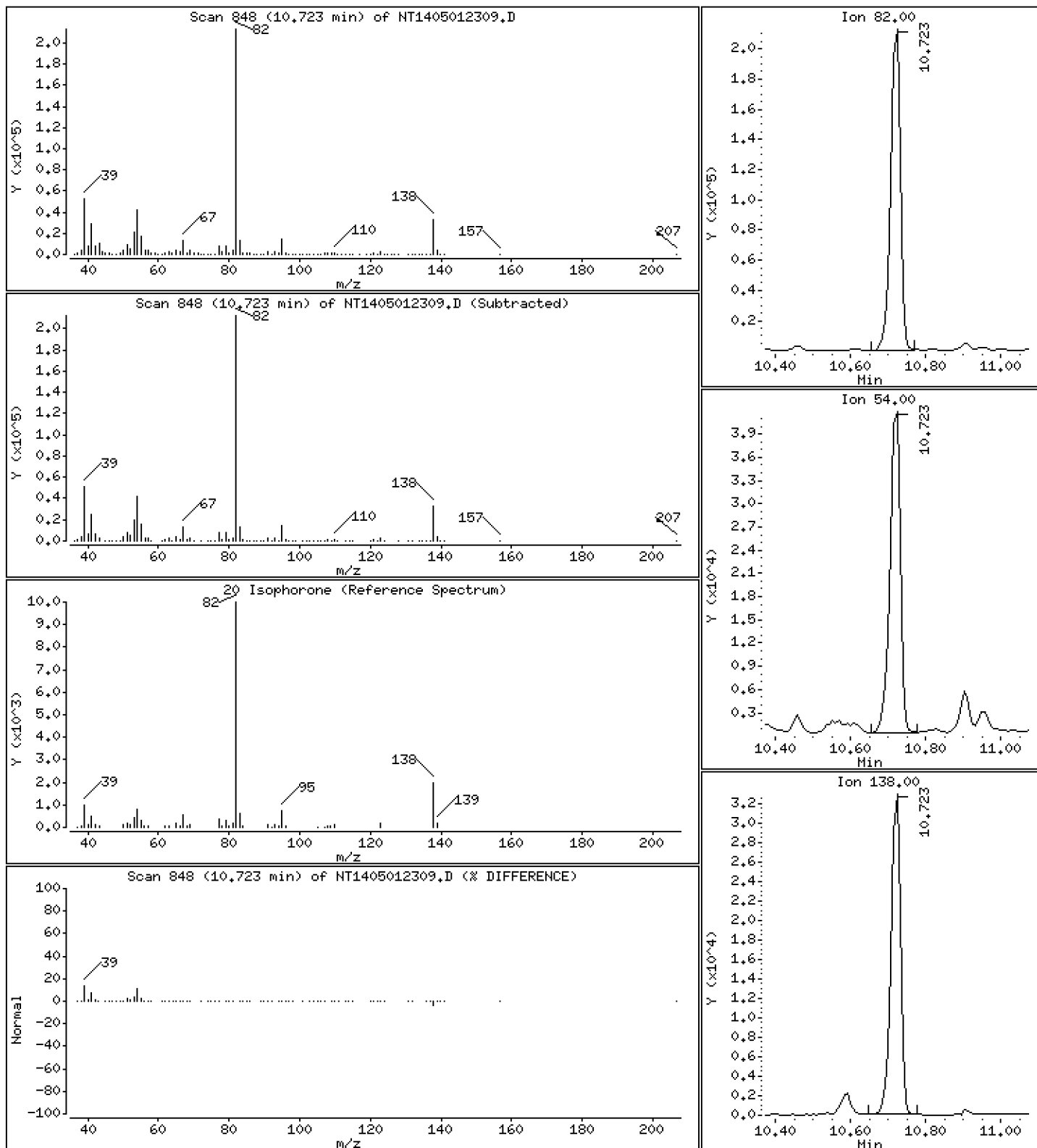
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 1,867 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

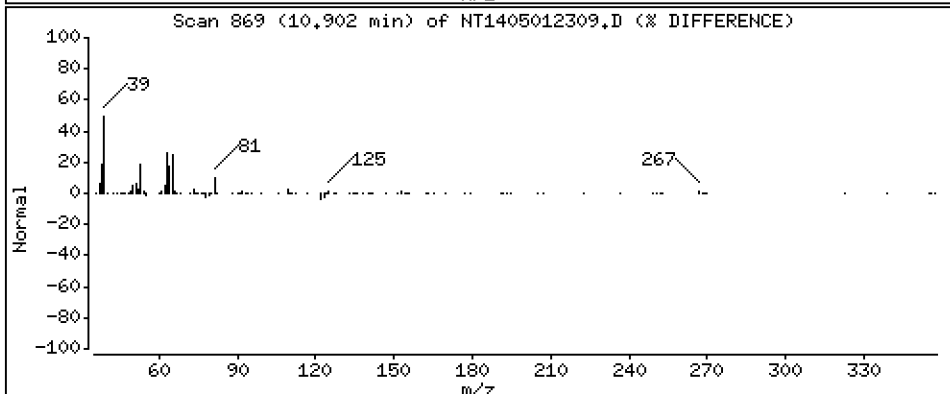
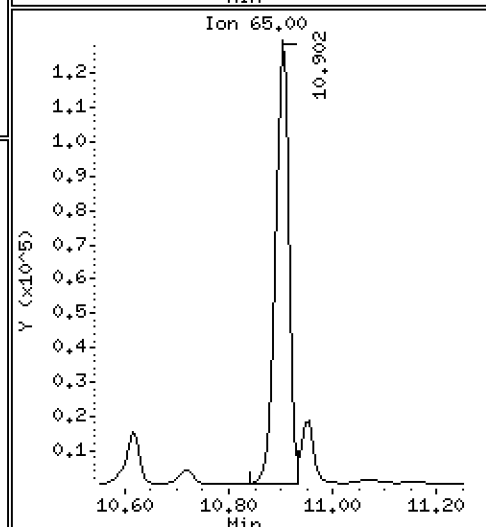
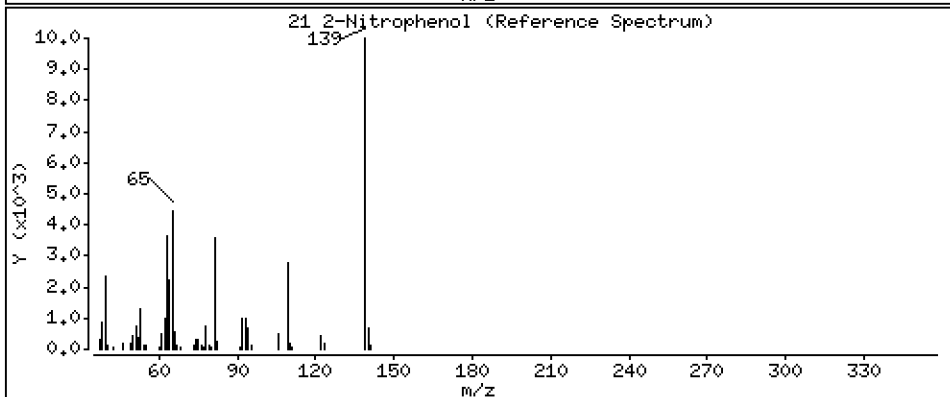
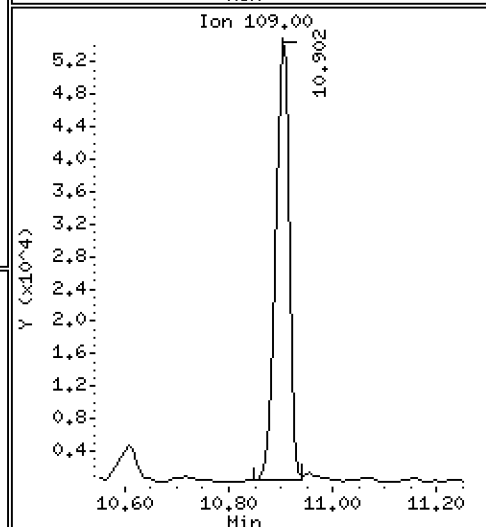
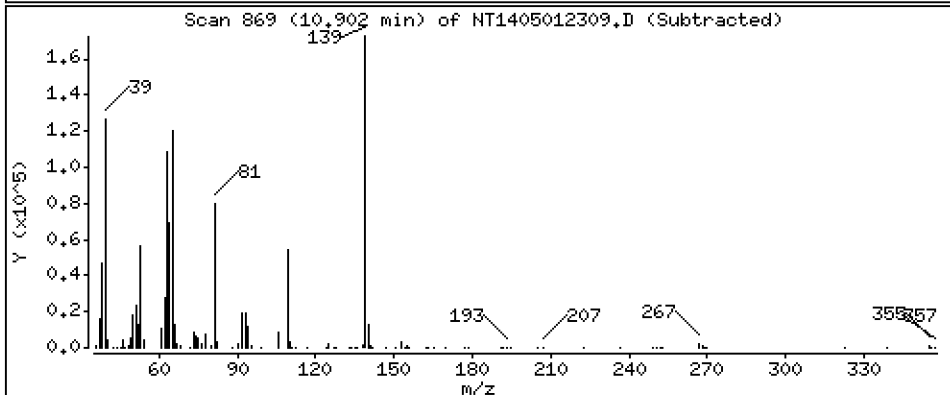
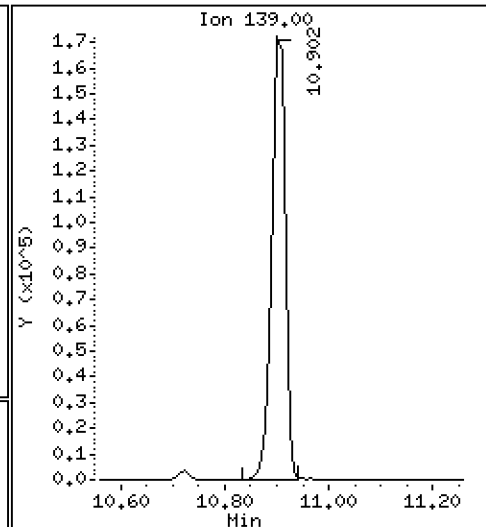
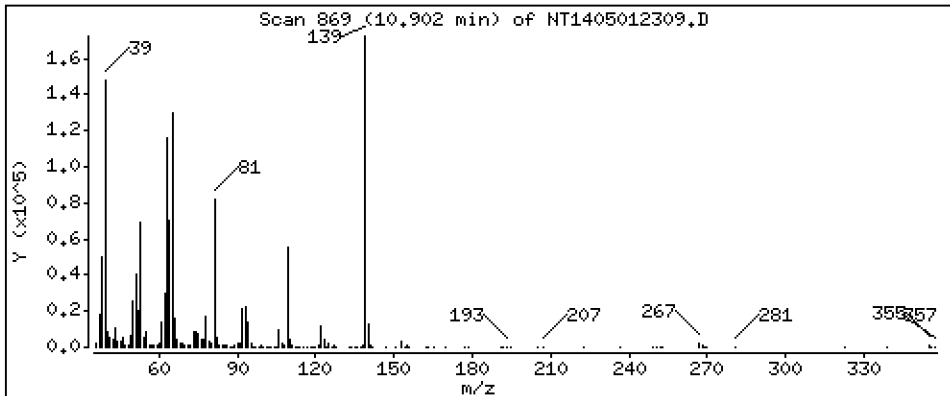
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 4,463 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

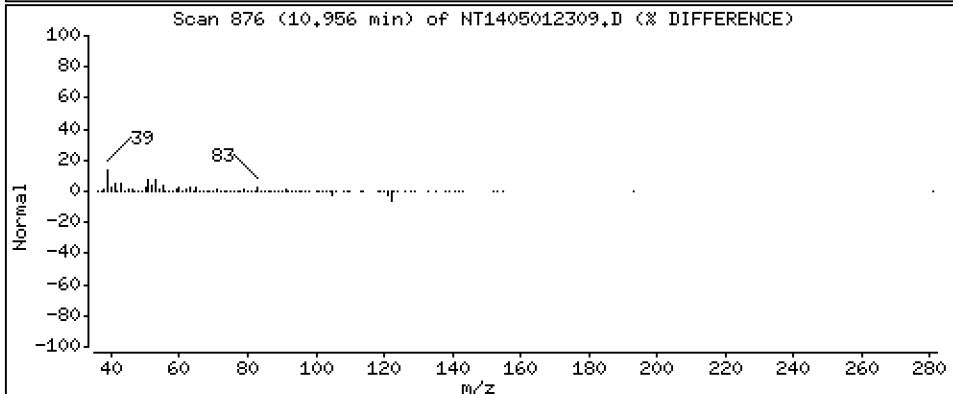
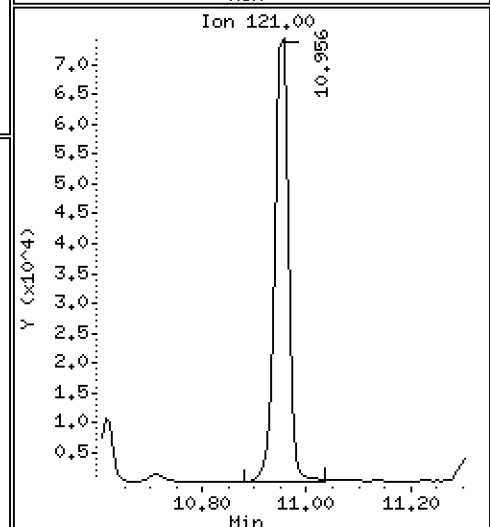
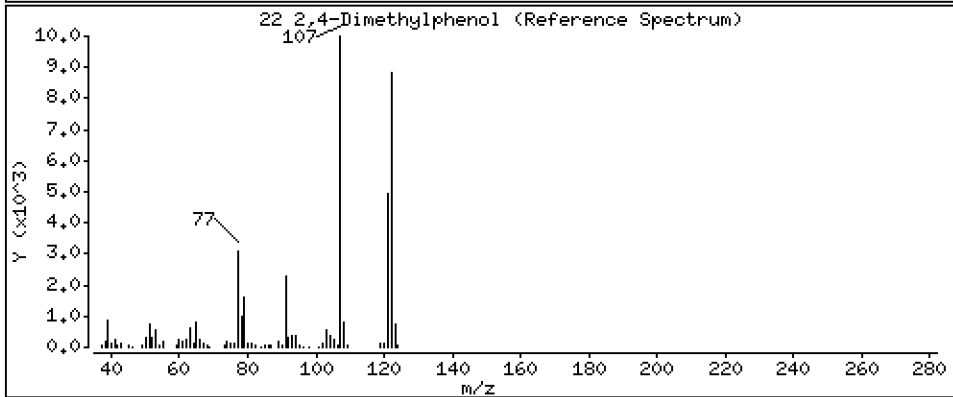
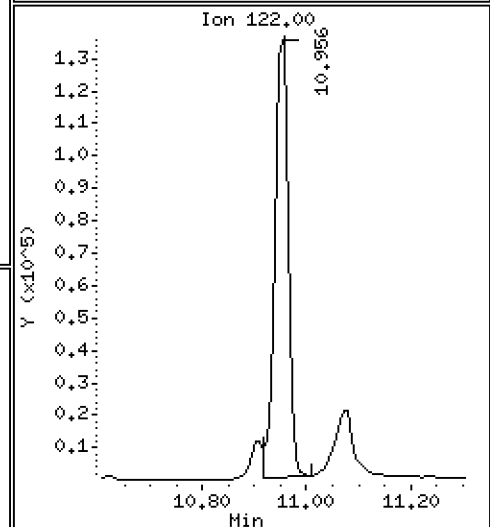
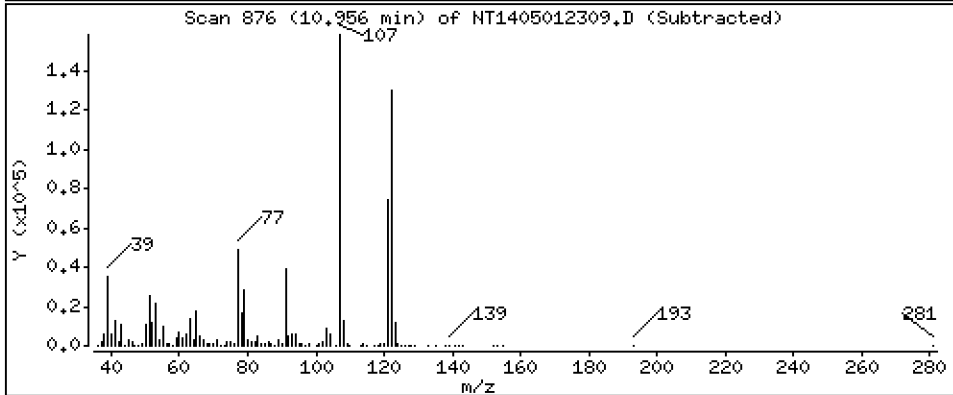
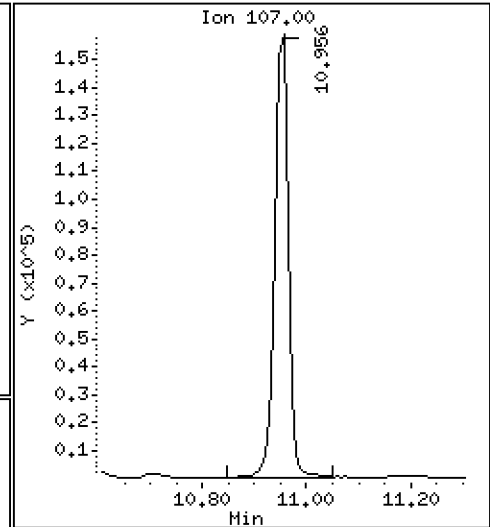
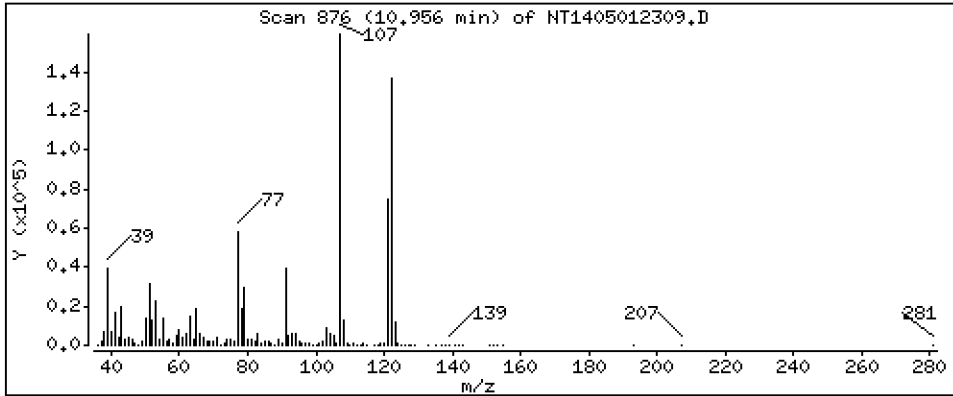
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 2,609 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

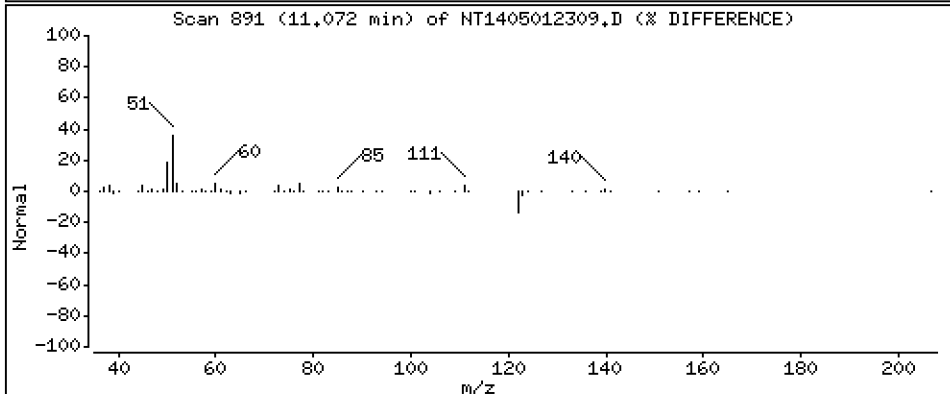
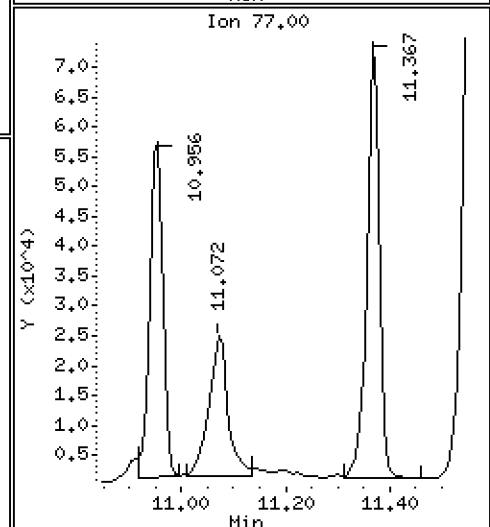
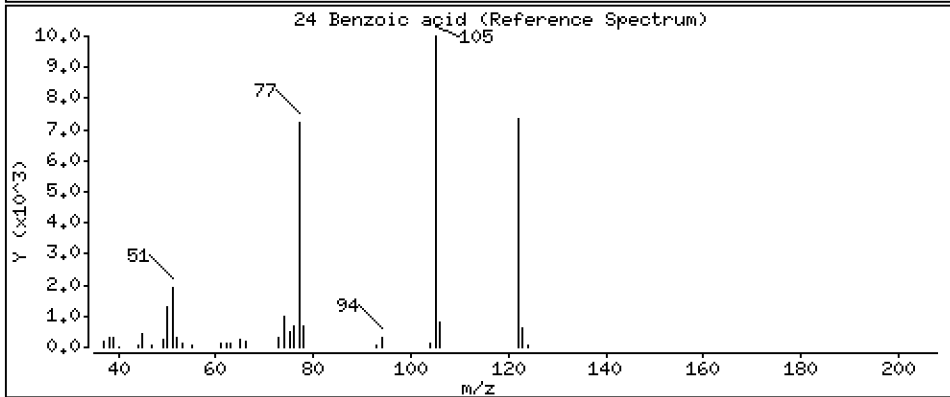
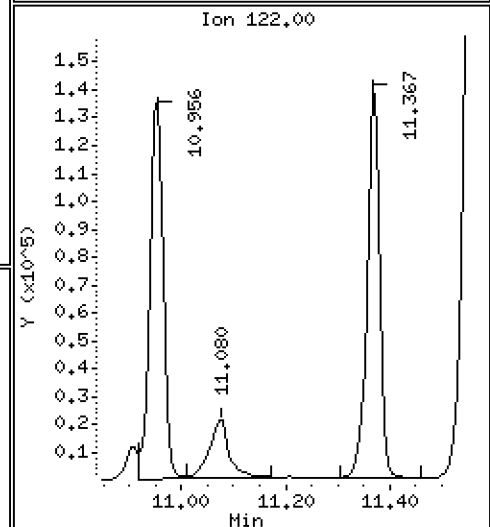
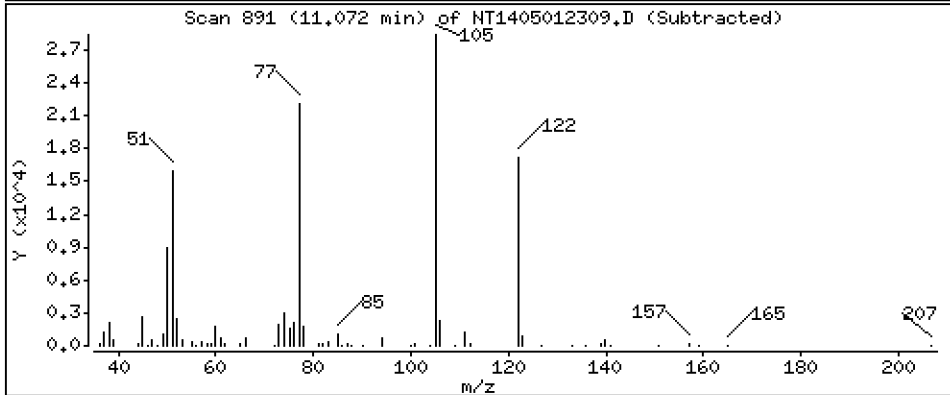
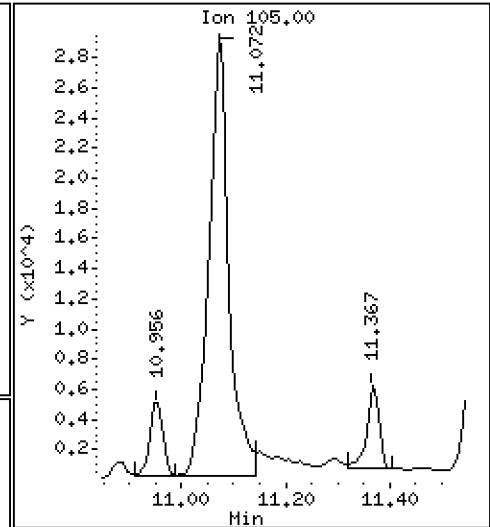
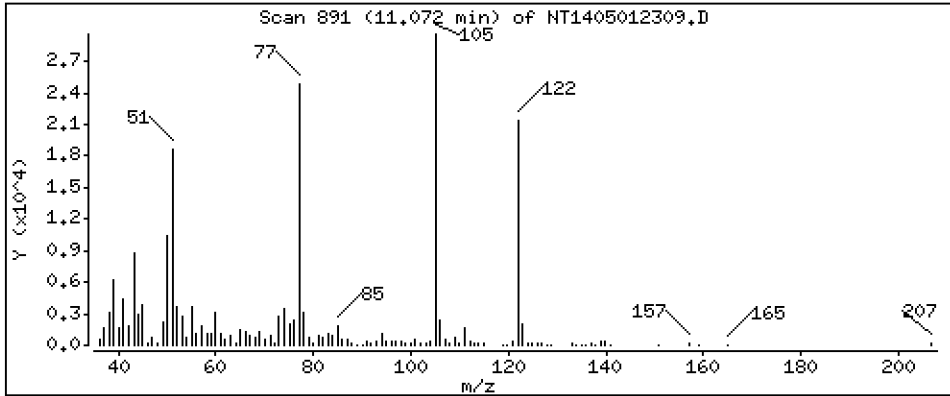
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 0,9118 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

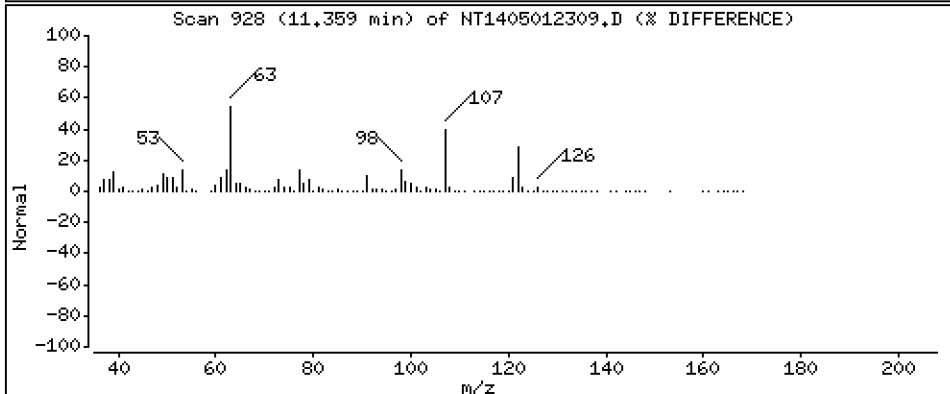
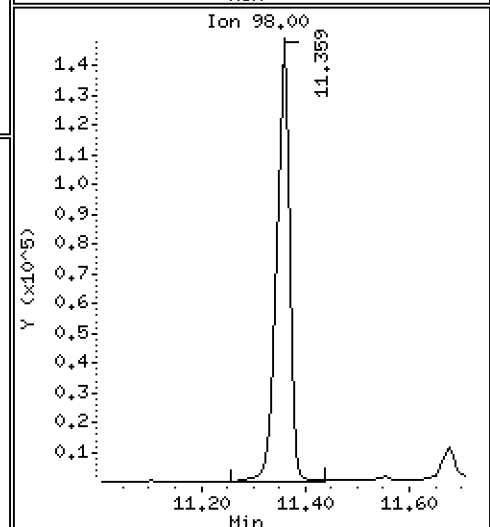
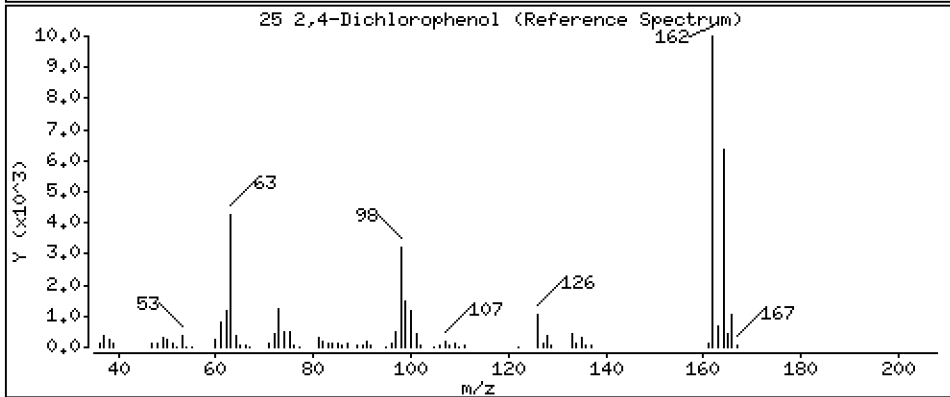
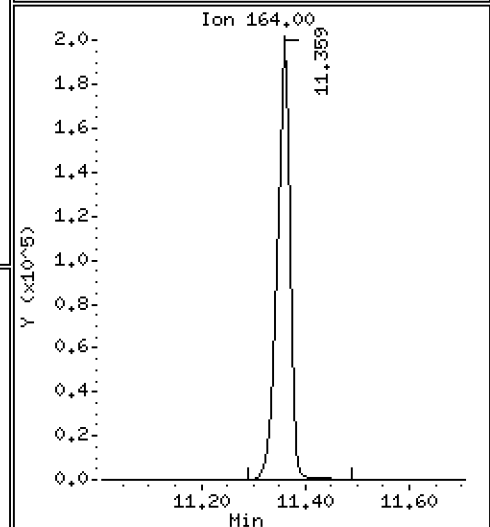
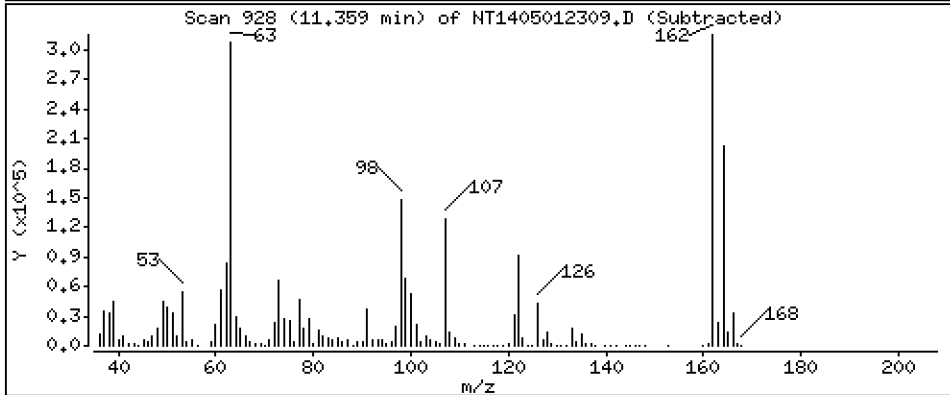
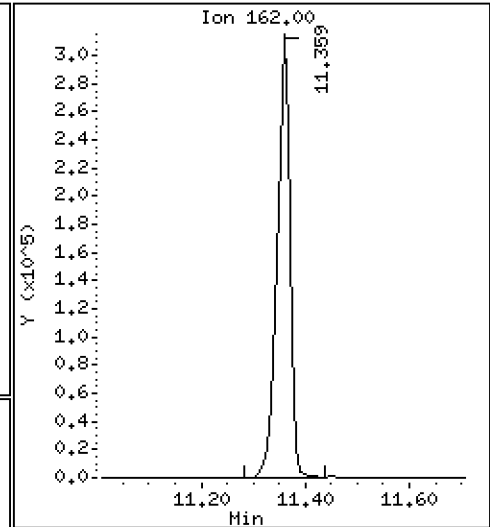
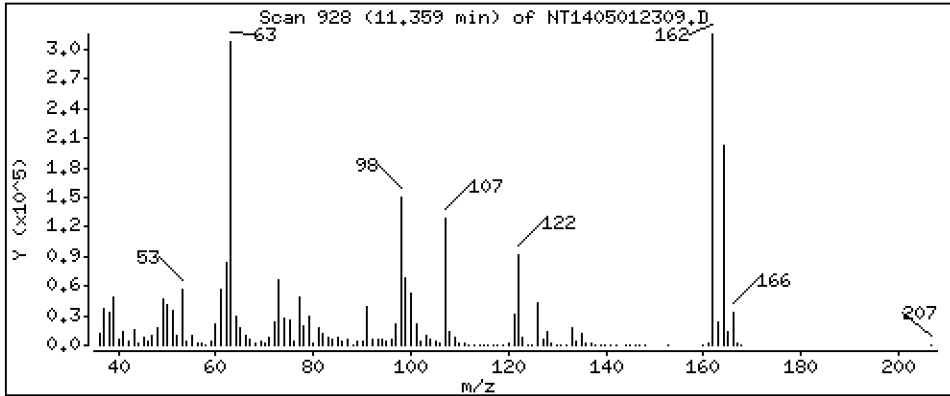
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 6,467 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

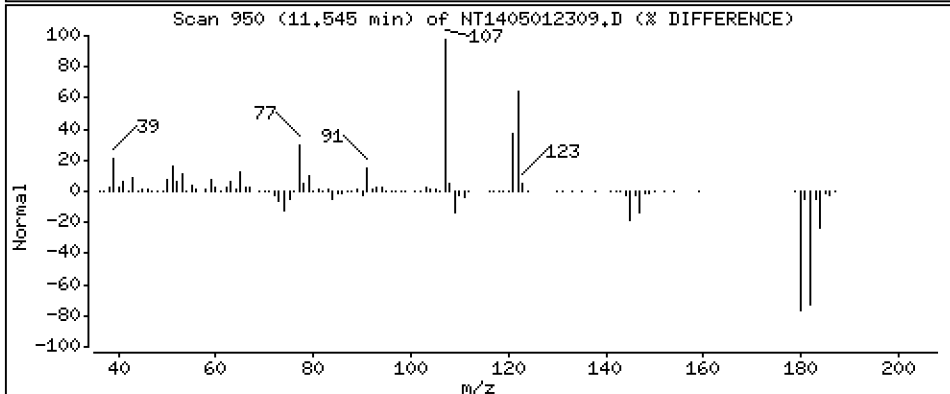
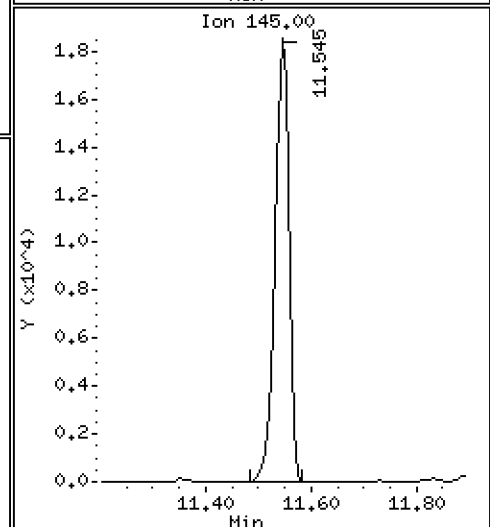
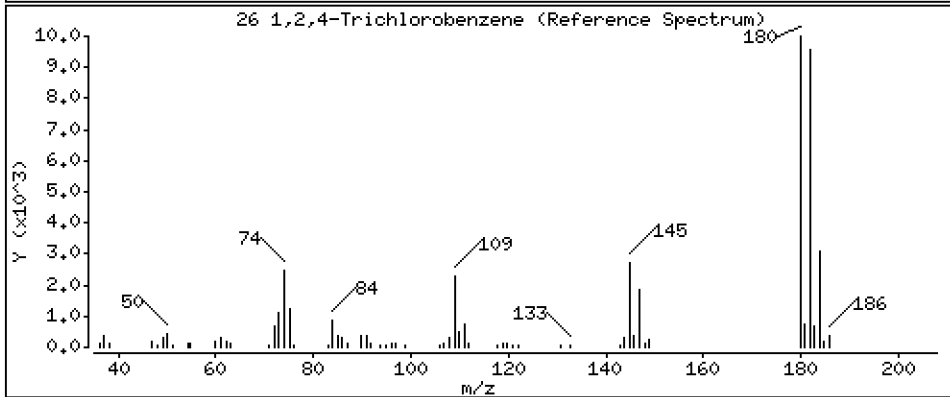
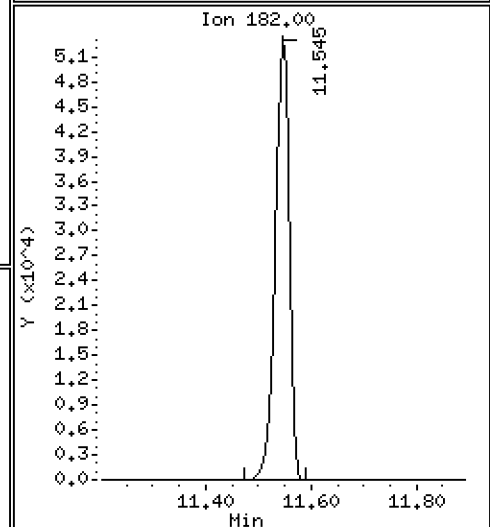
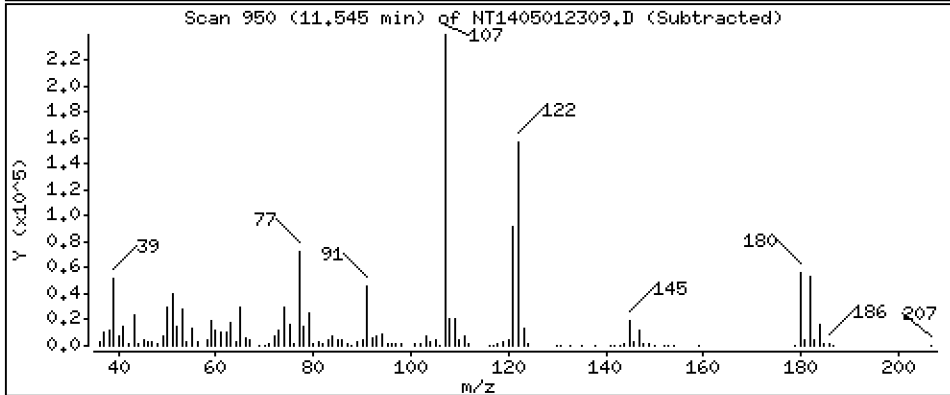
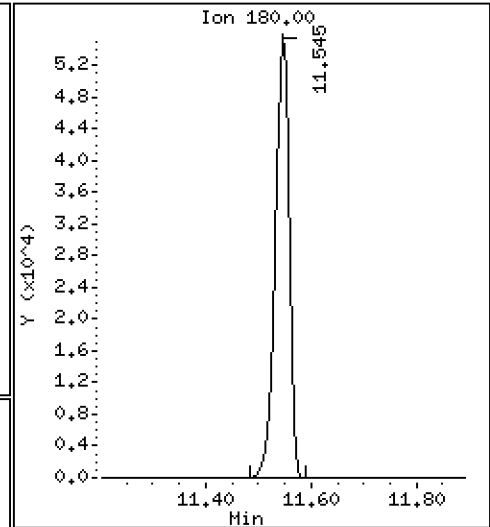
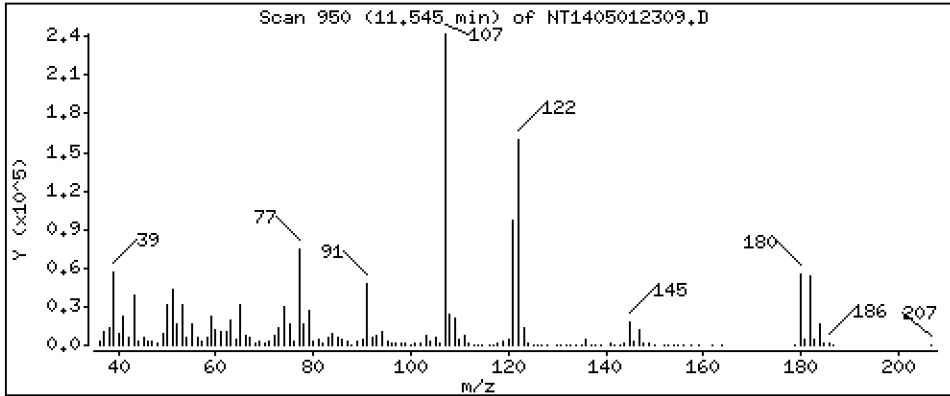
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

26 1,2,4-Trichlorobenzene

Concentration: 1.255 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

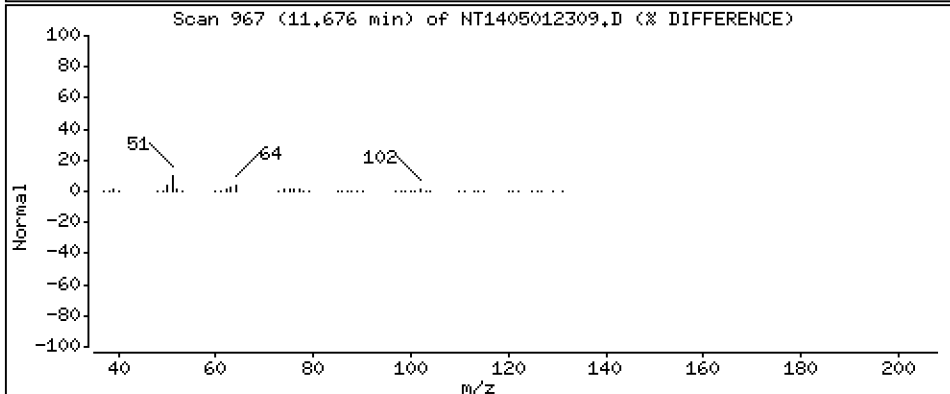
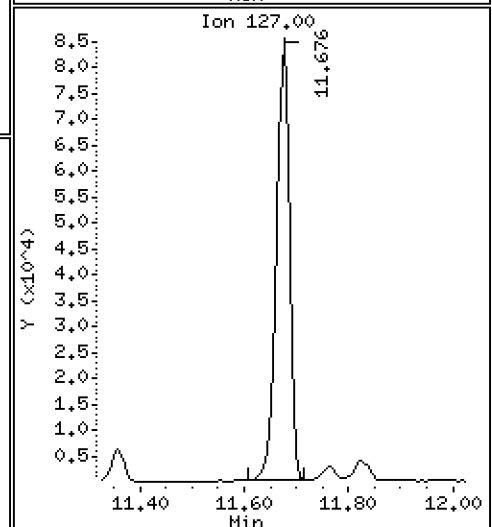
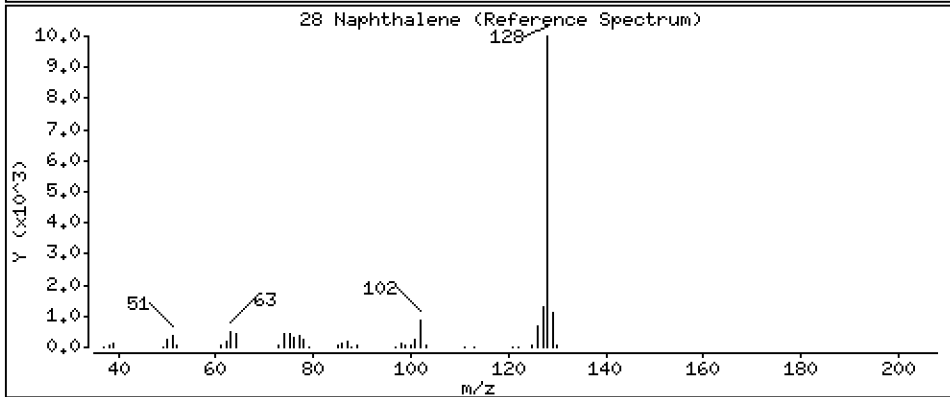
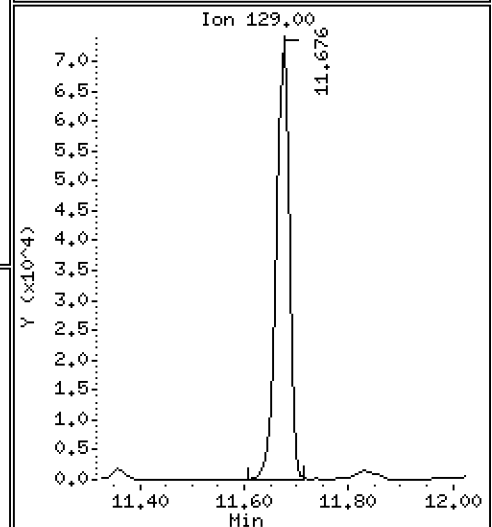
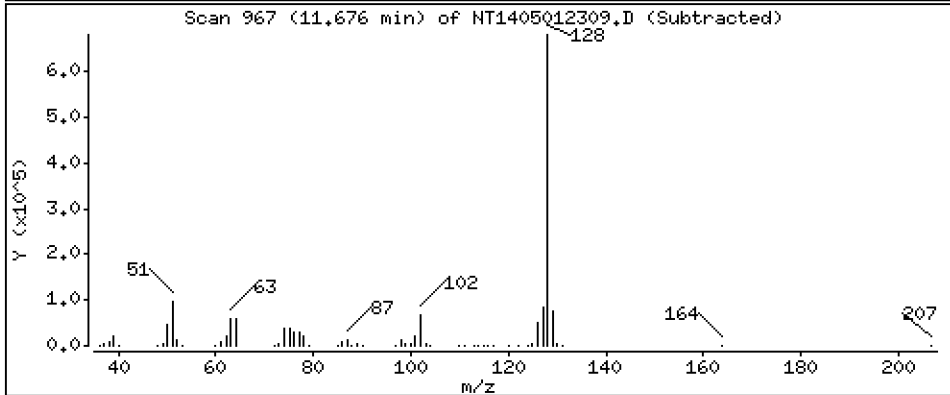
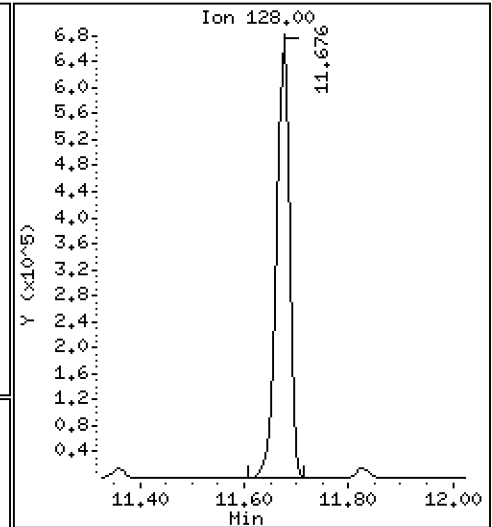
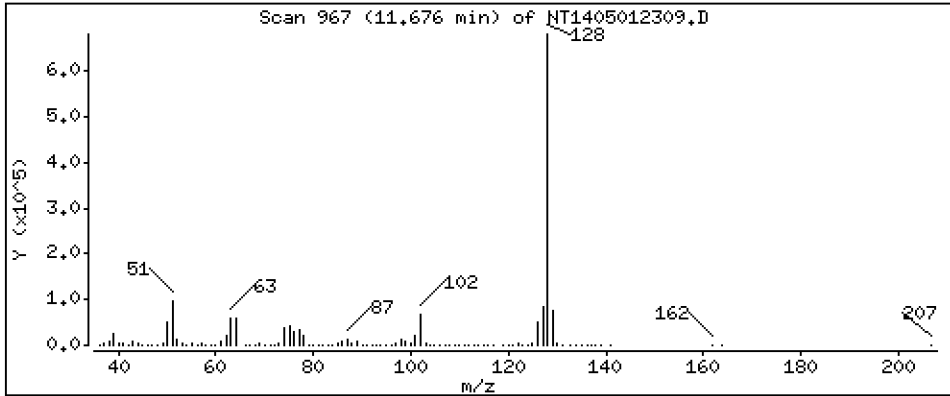
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 3,874 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

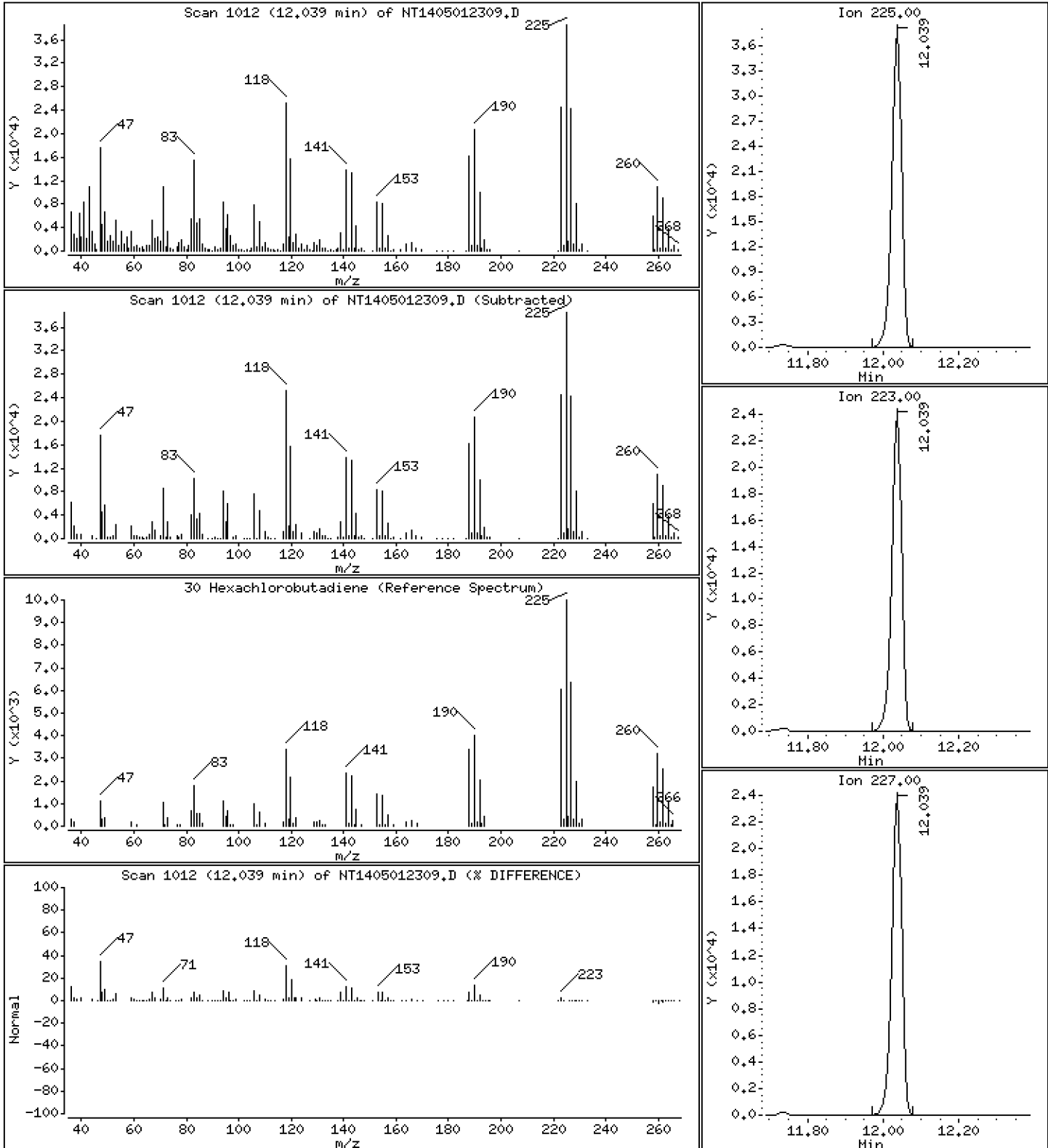
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 1,813 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

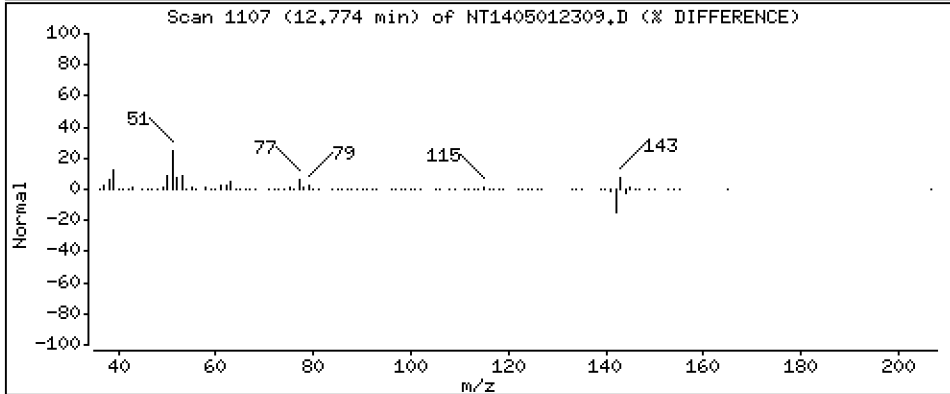
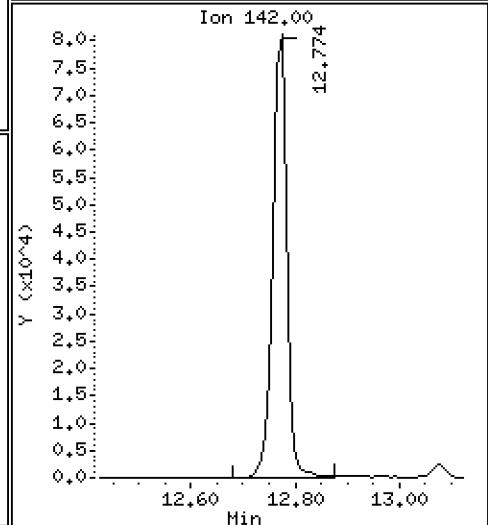
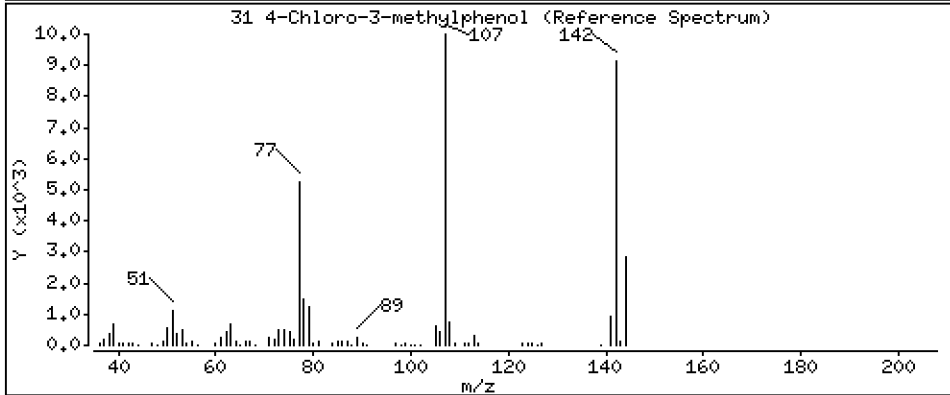
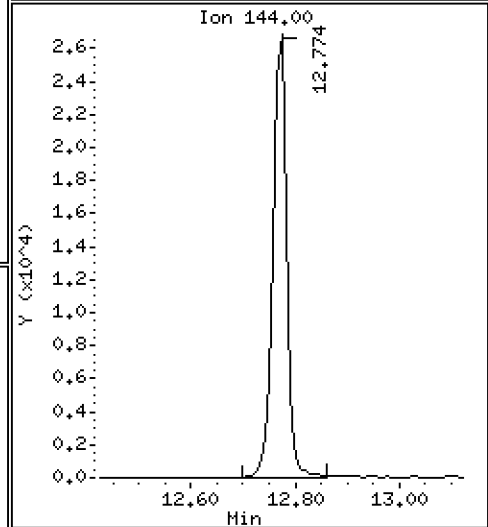
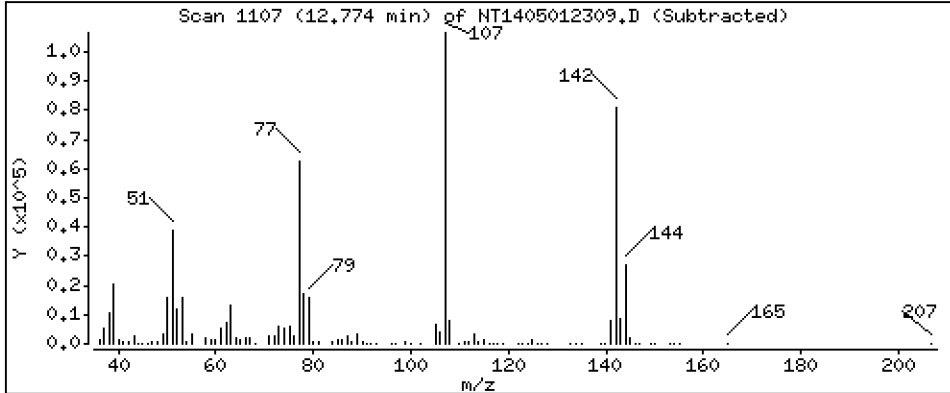
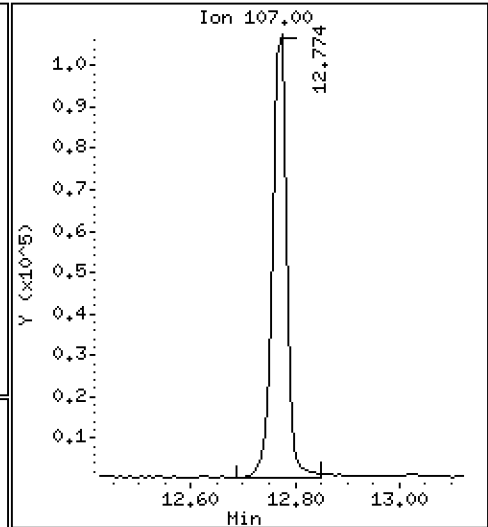
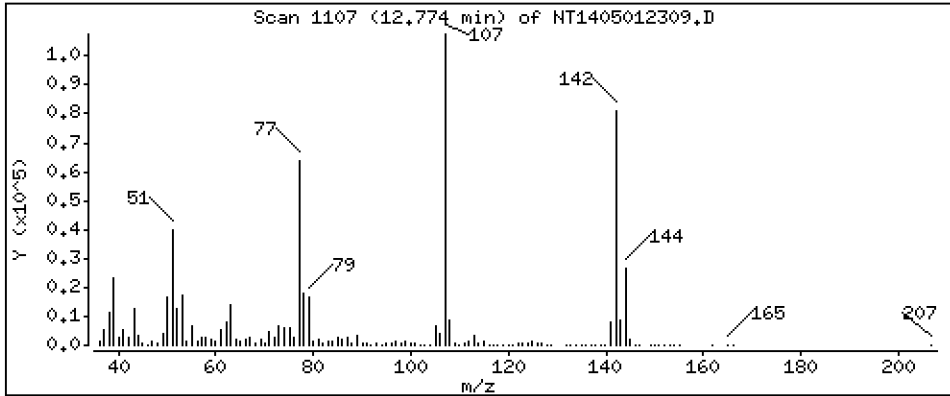
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

31 4-Chloro-3-methylphenol

Concentration: 2.042 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

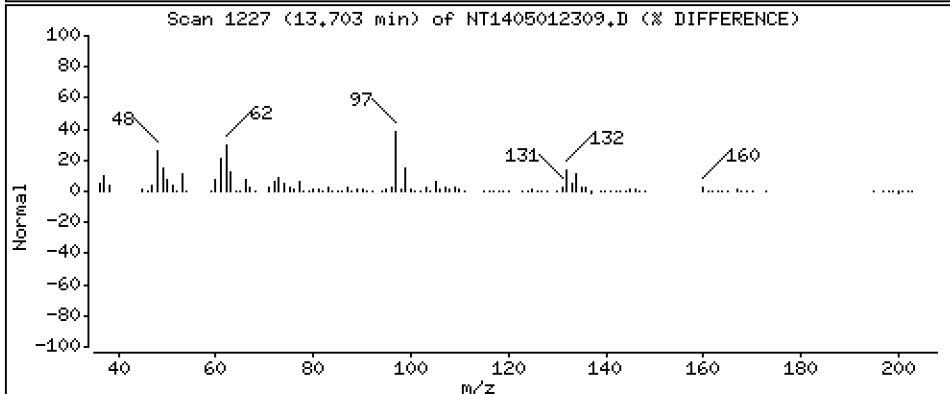
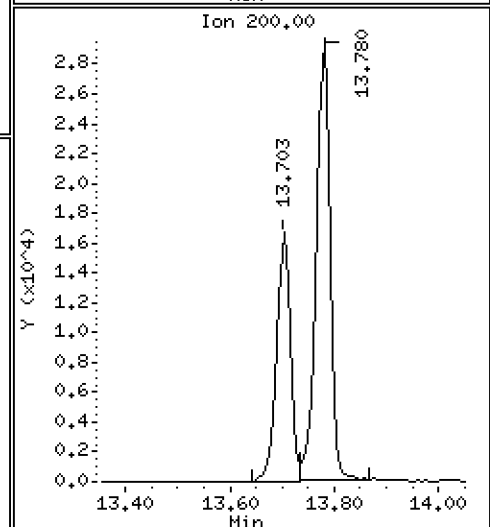
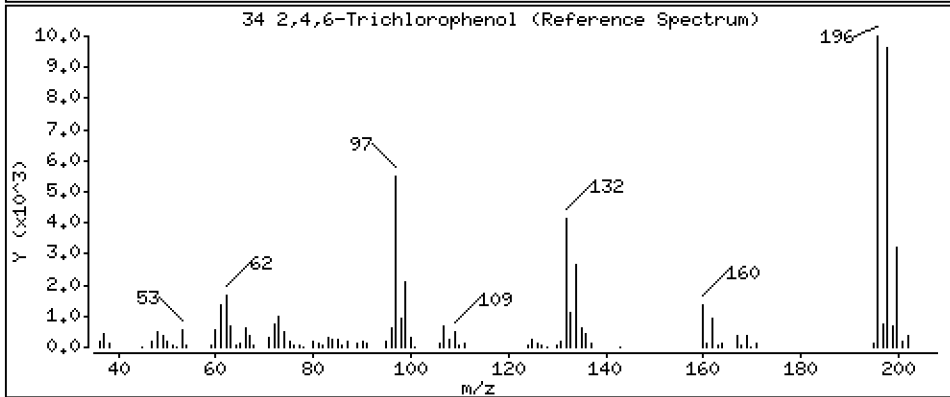
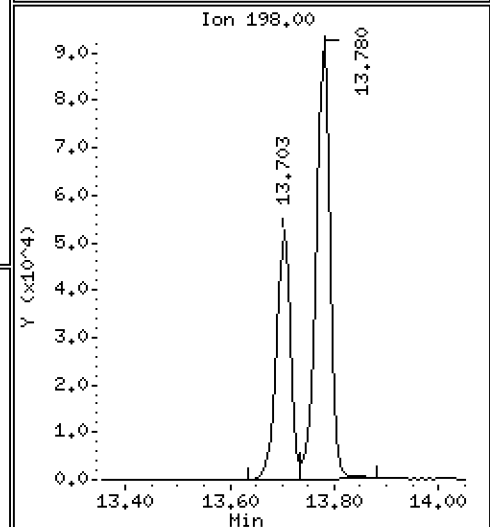
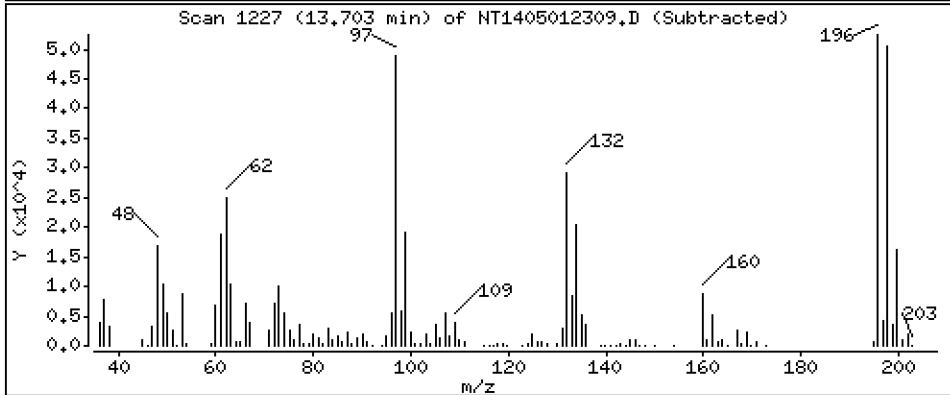
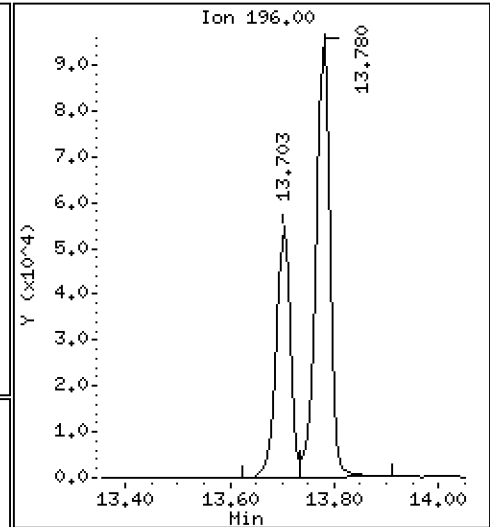
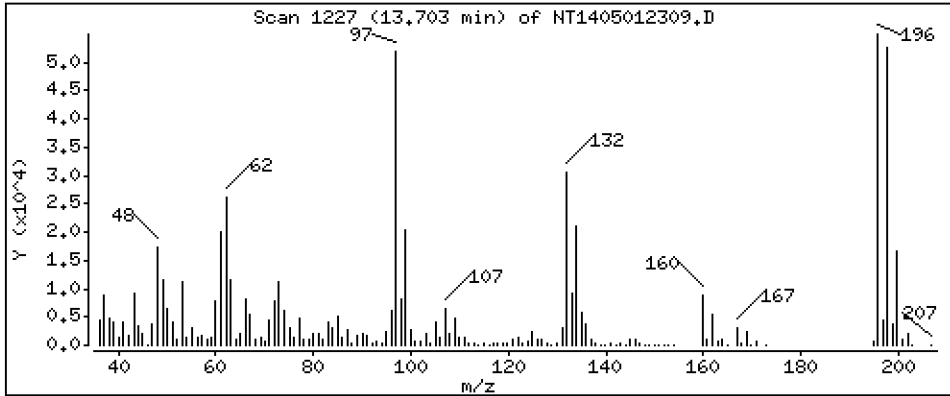
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 2,162 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

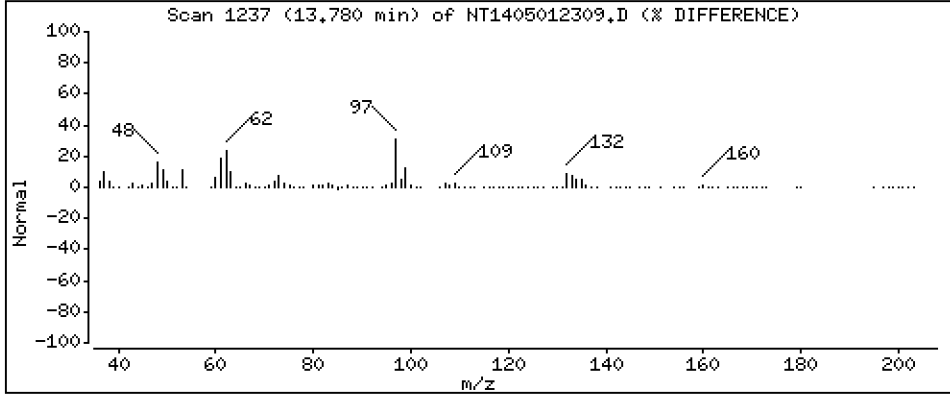
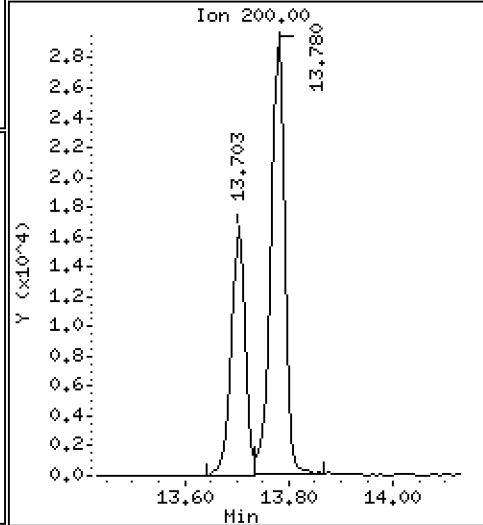
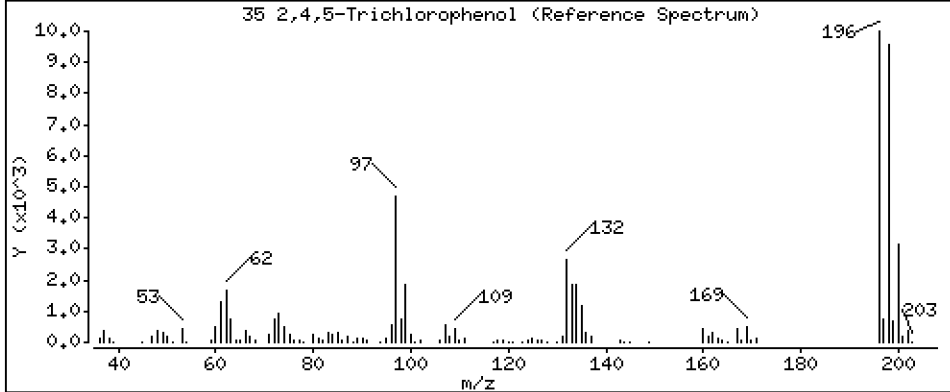
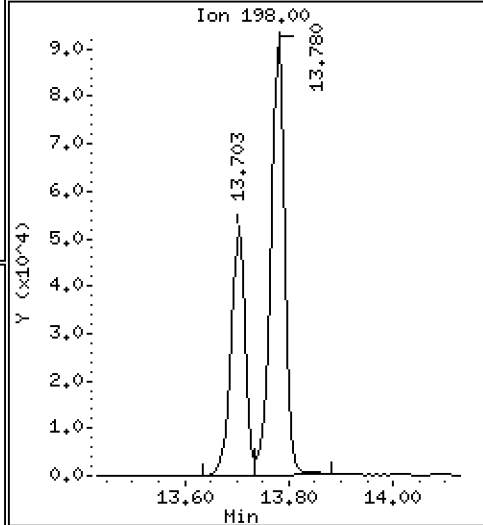
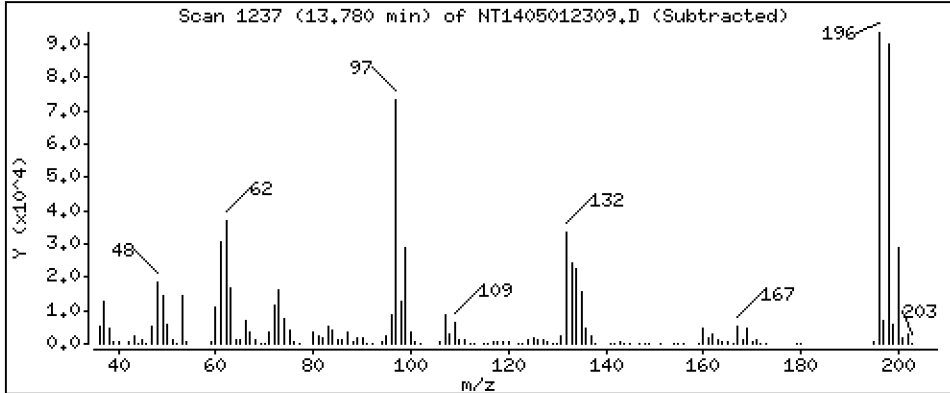
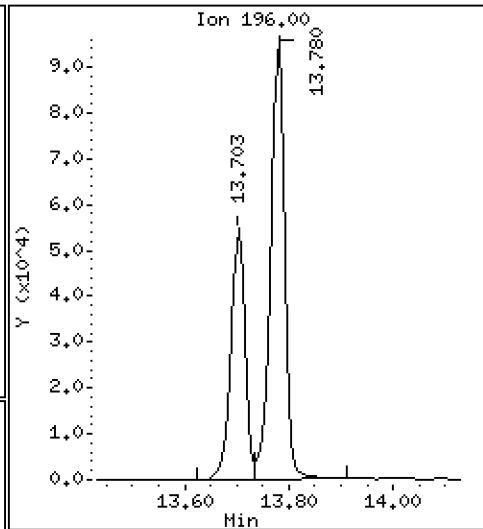
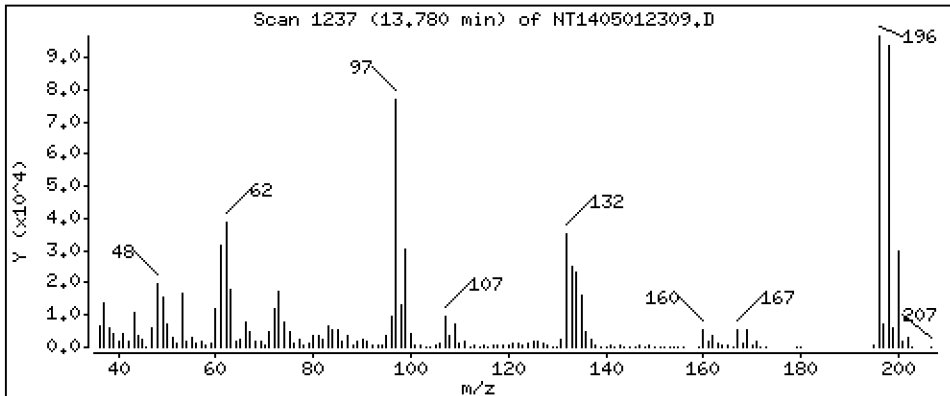
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 3,509 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

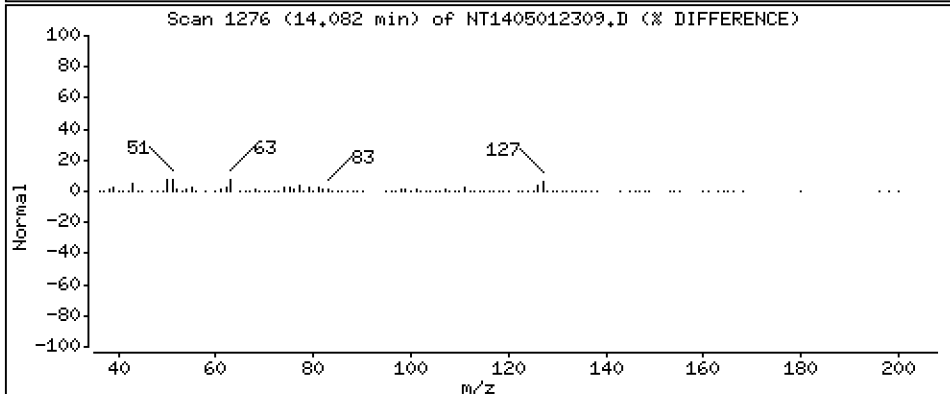
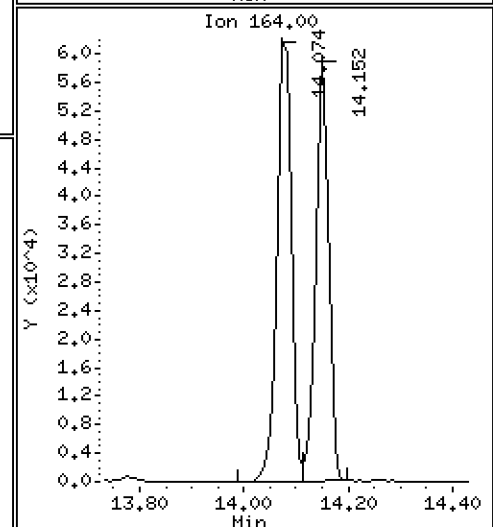
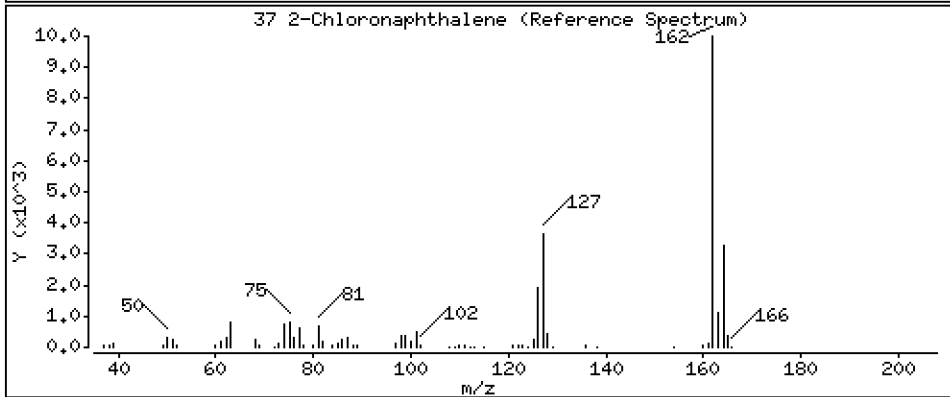
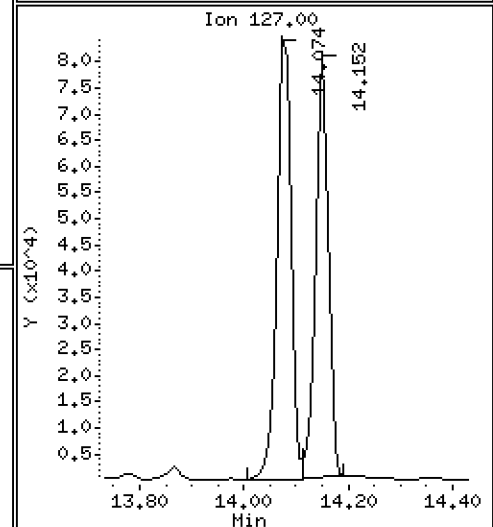
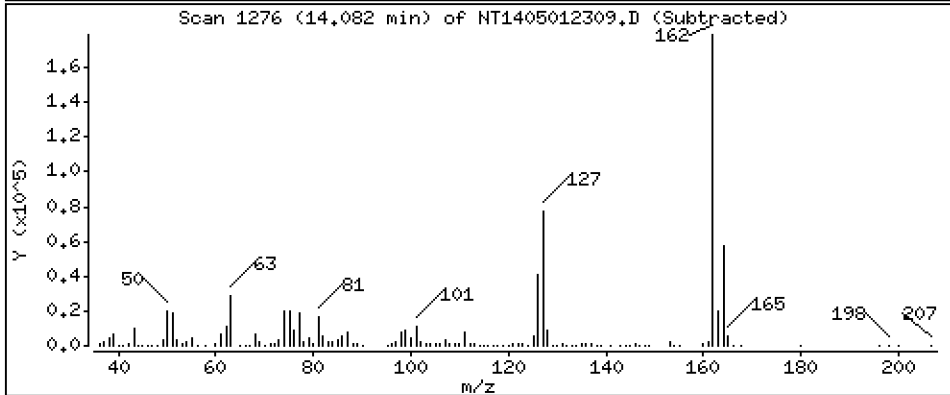
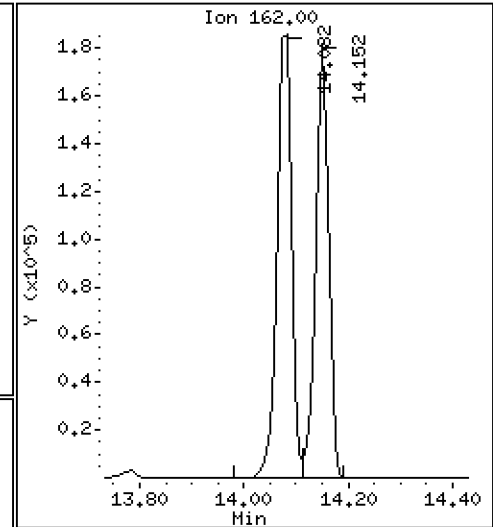
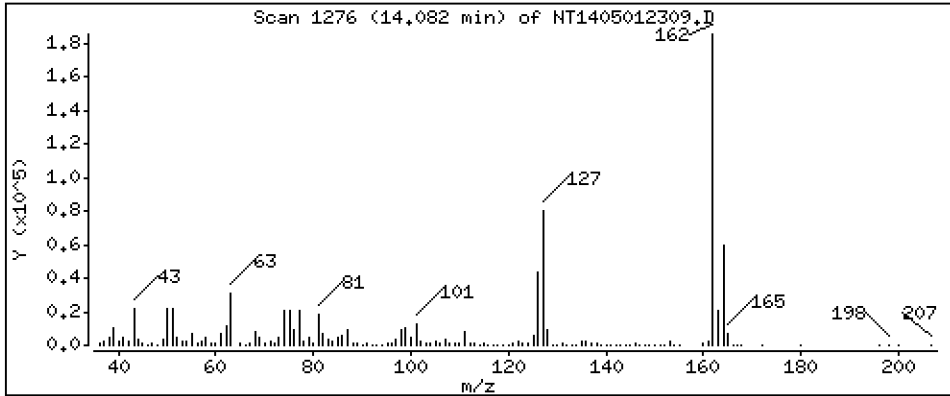
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

37 2-Chloronaphthalene

Concentration: 2.065 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

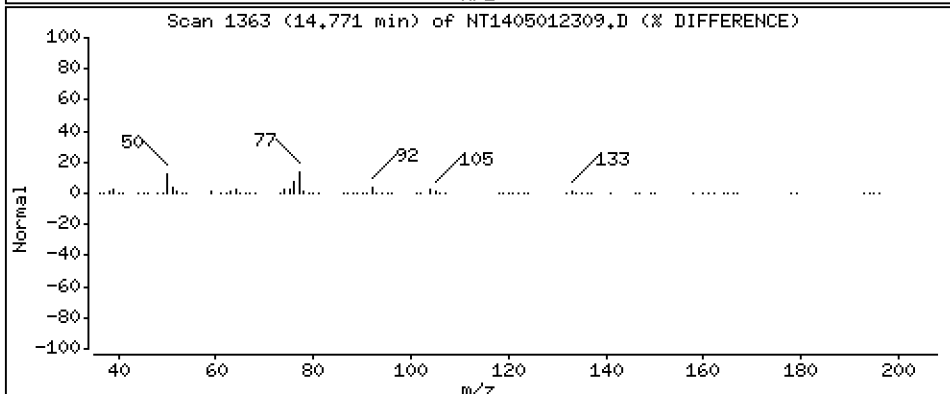
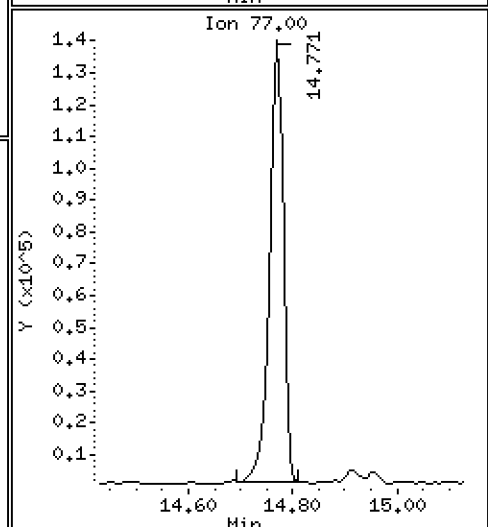
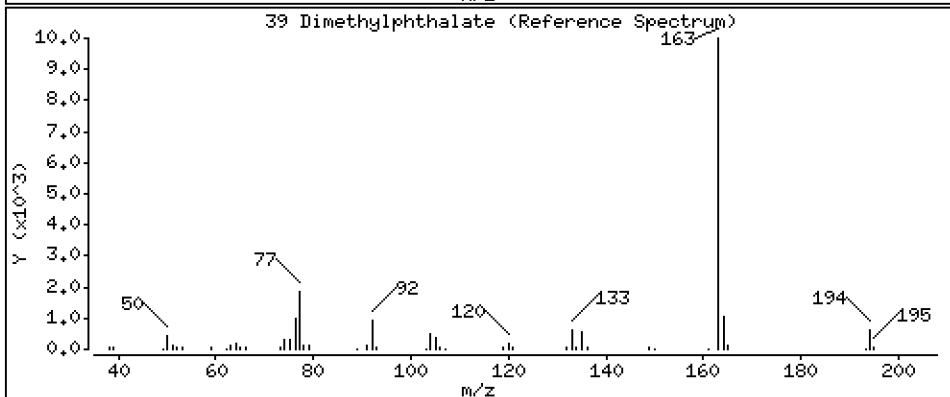
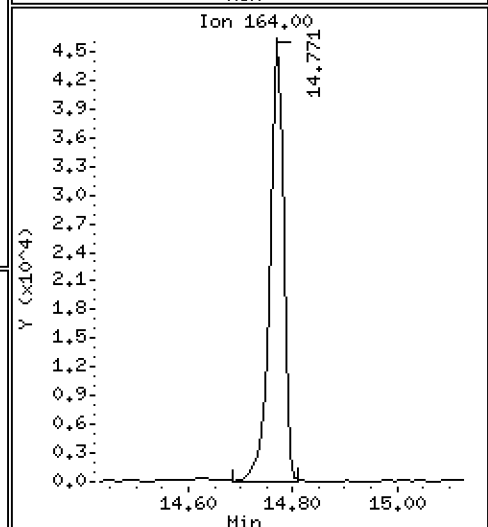
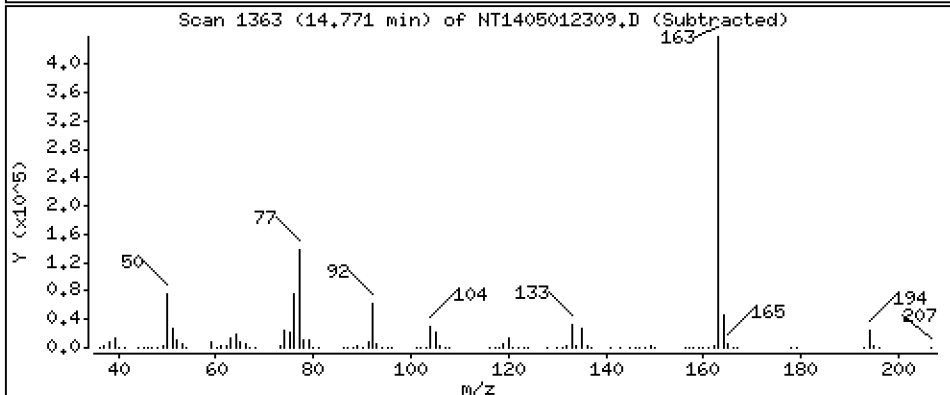
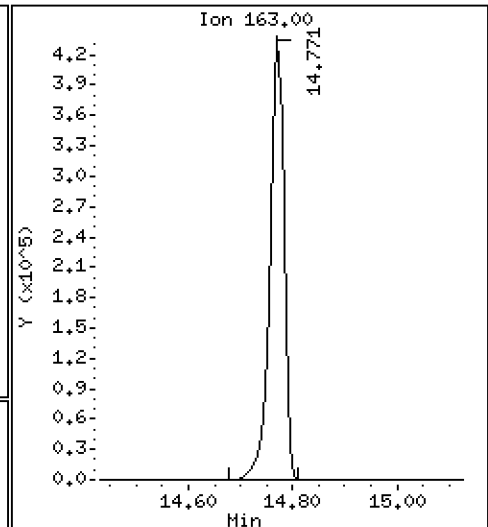
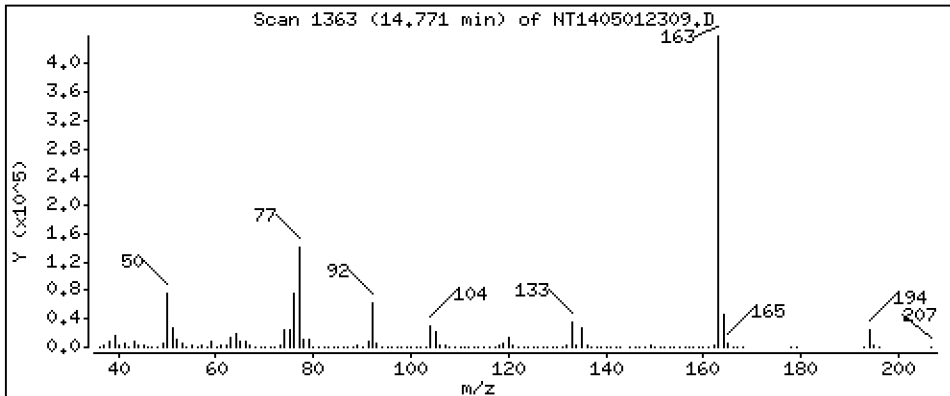
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,541 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

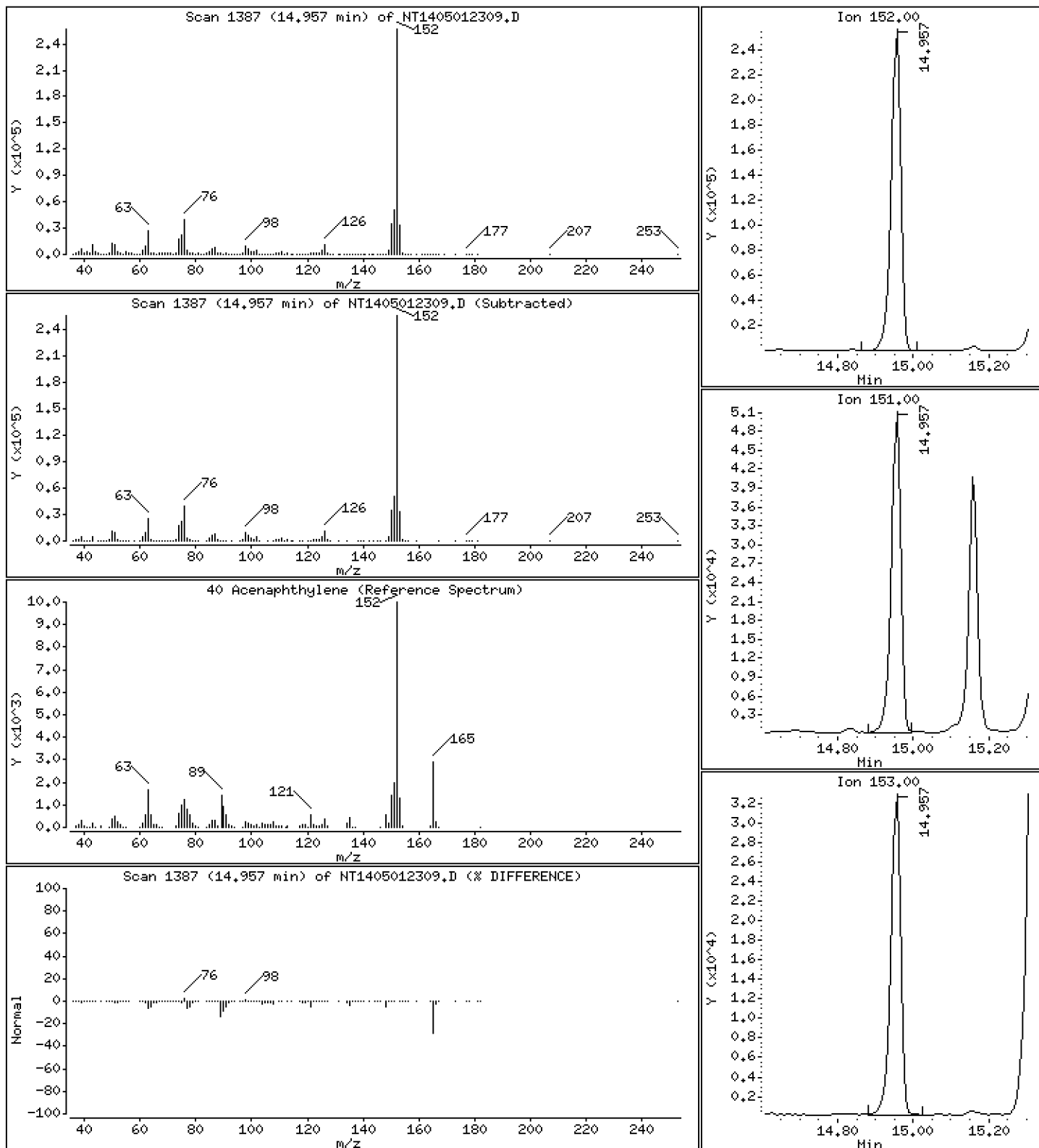
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

40 Acenaphthylene

Concentration: 1.624 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

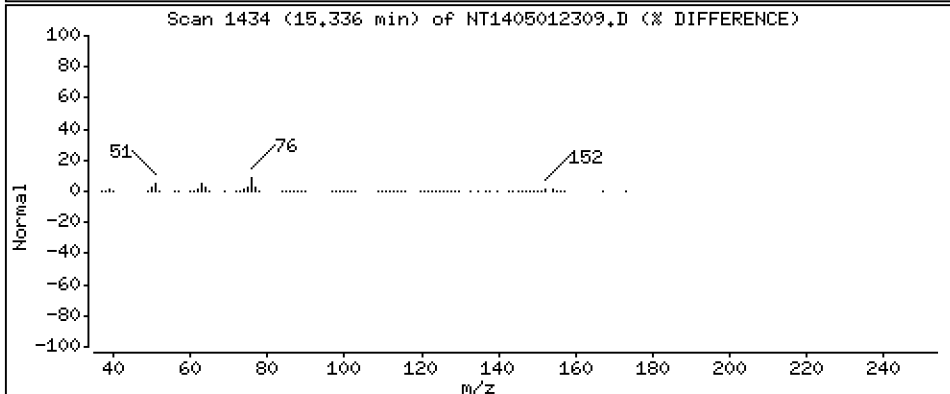
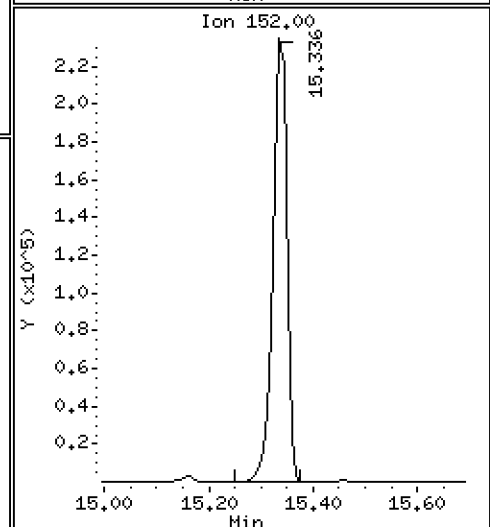
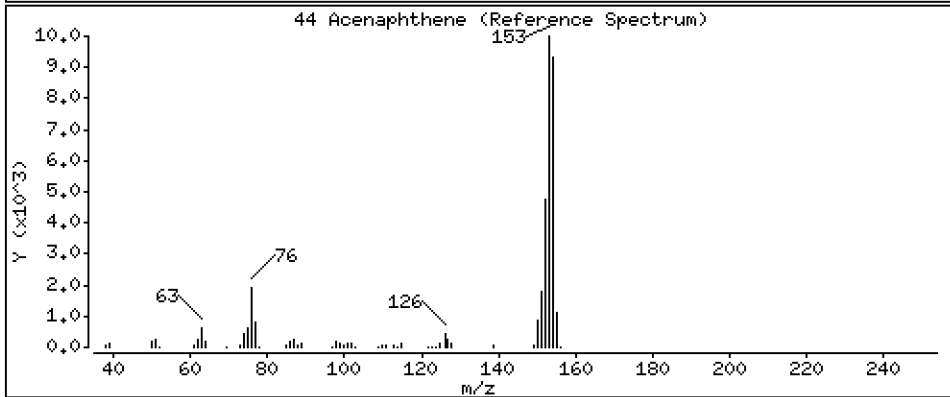
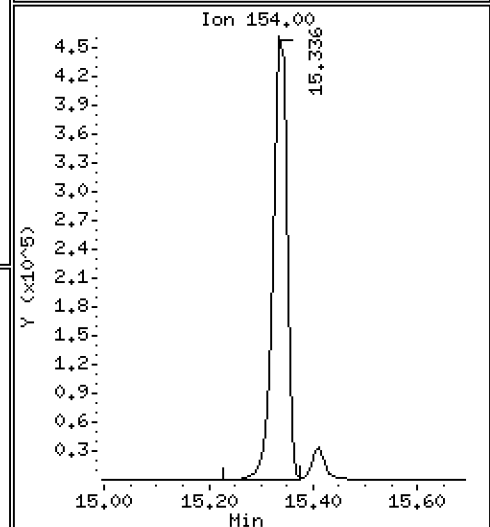
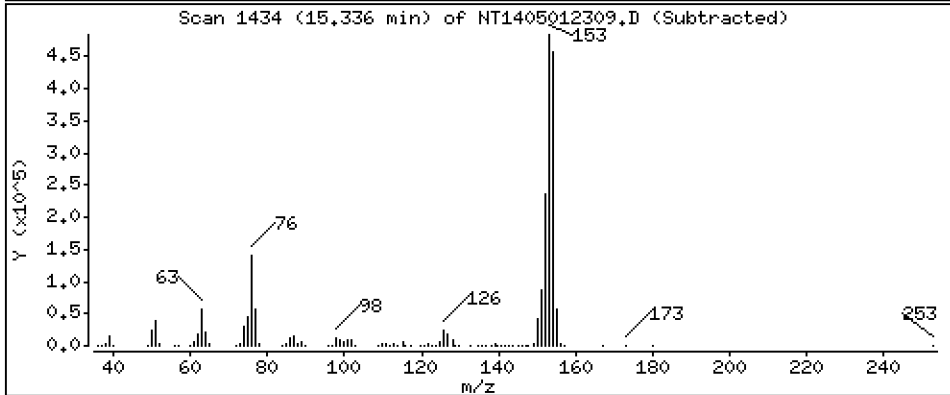
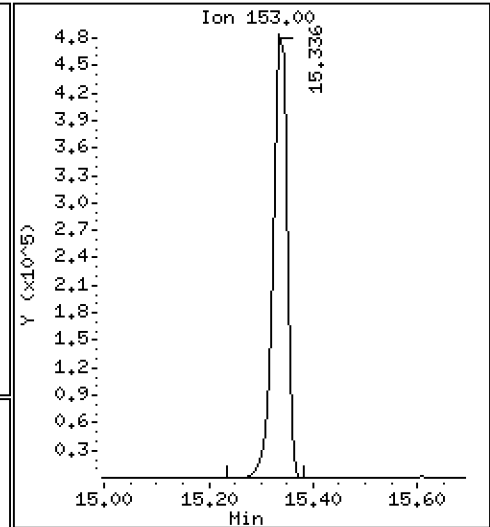
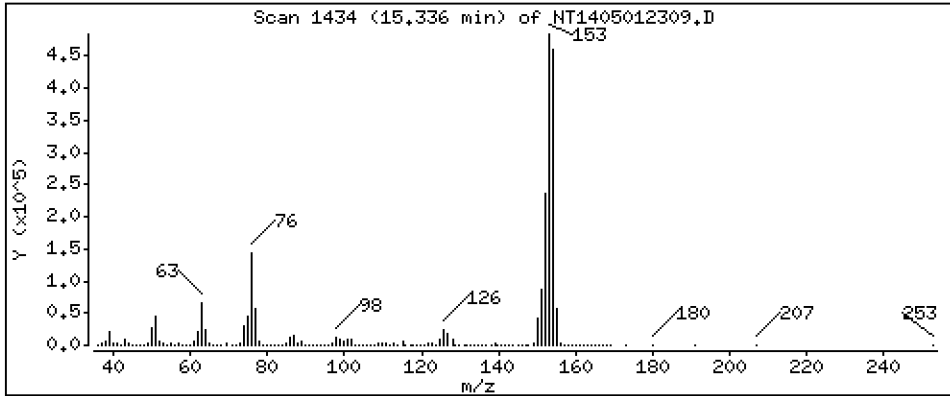
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 5,362 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

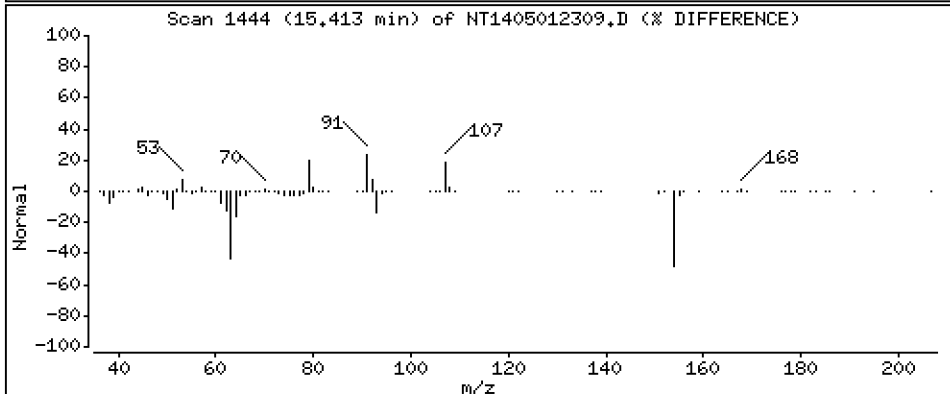
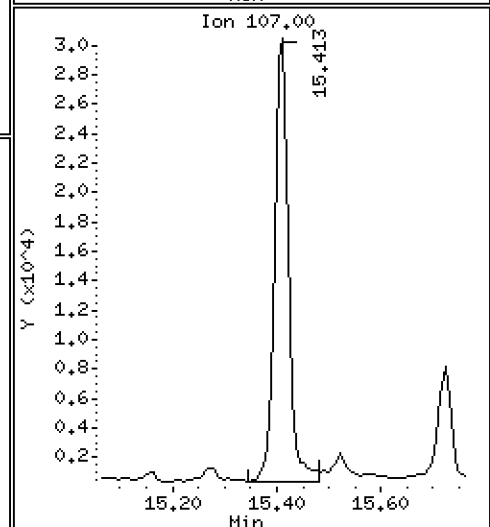
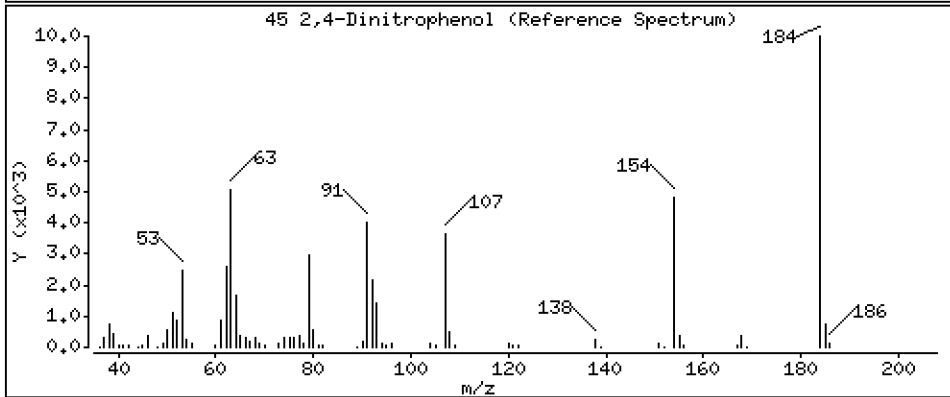
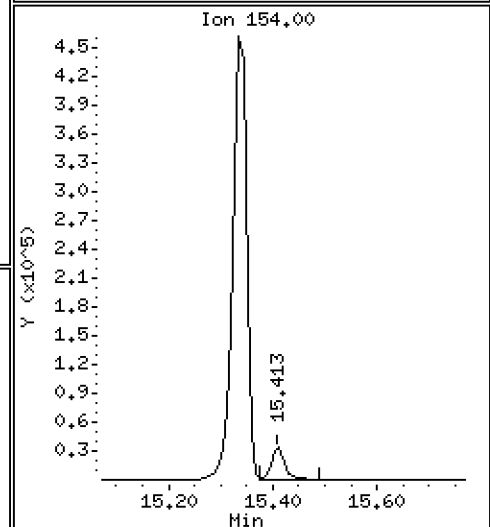
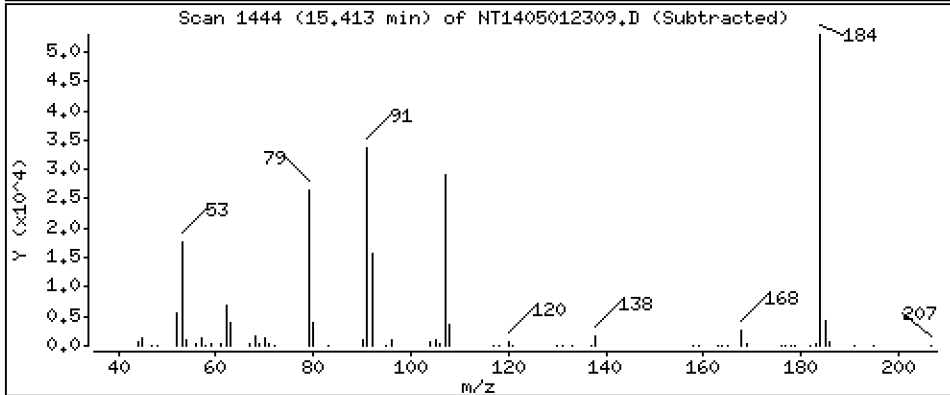
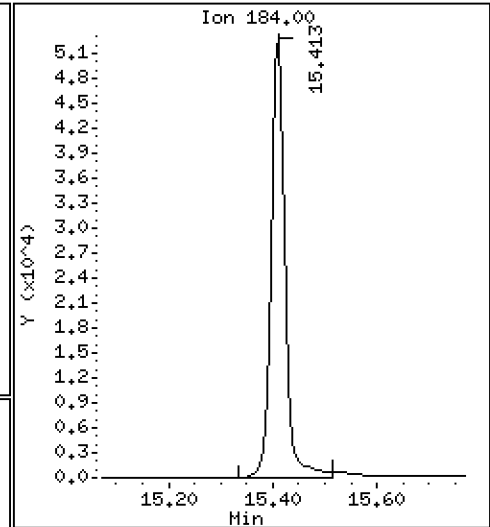
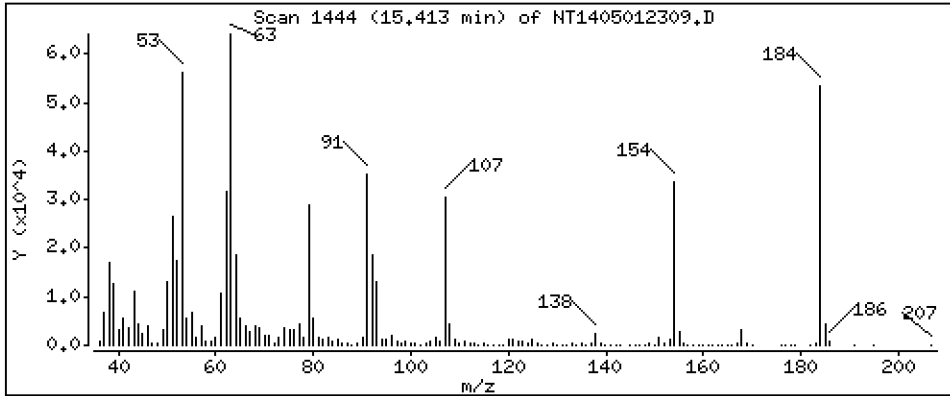
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

45 2,4-Dinitrophenol

Concentration: 3.976 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

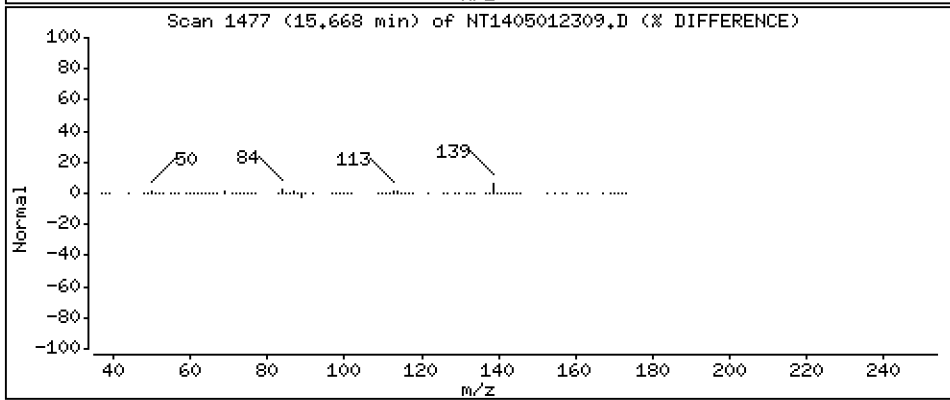
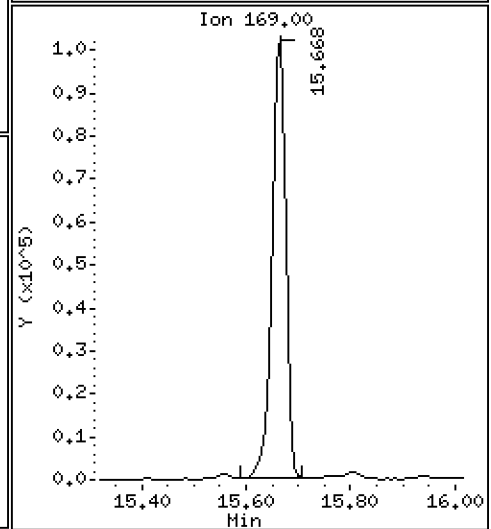
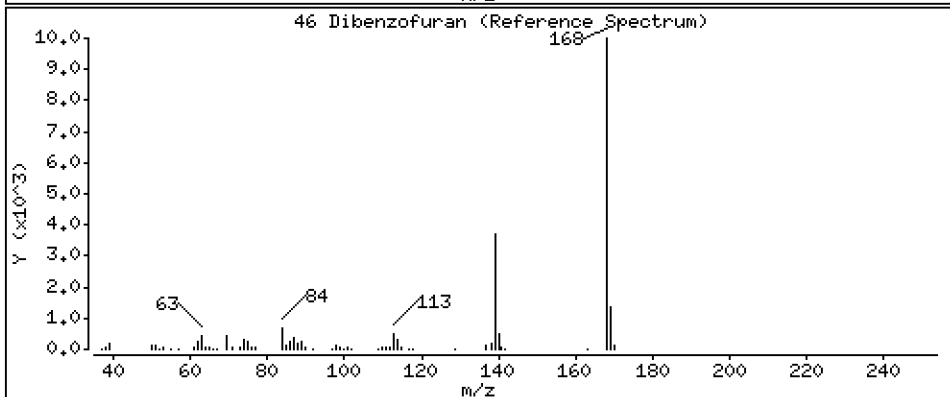
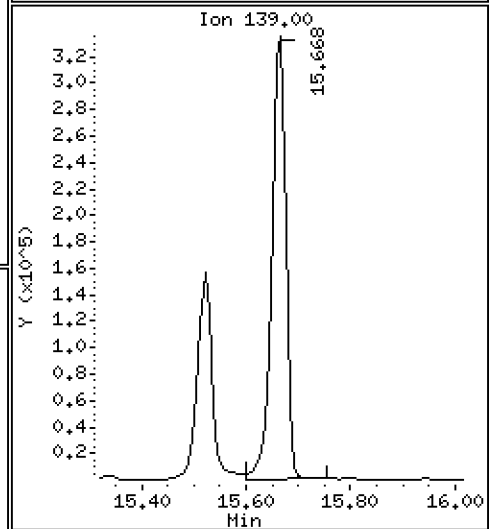
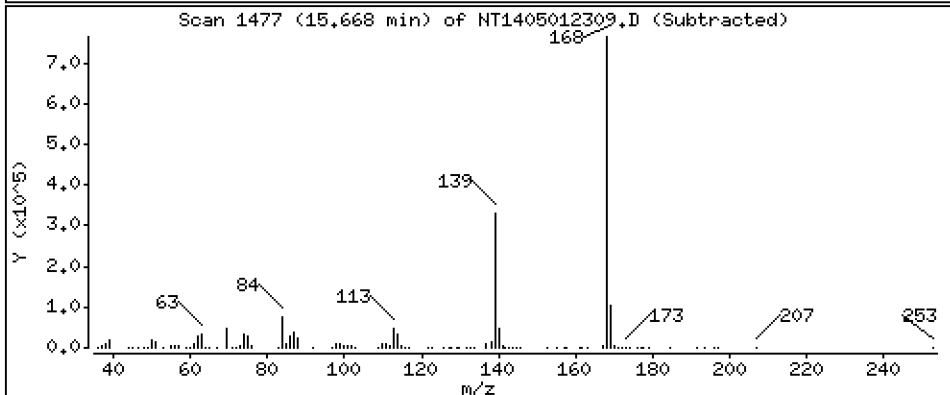
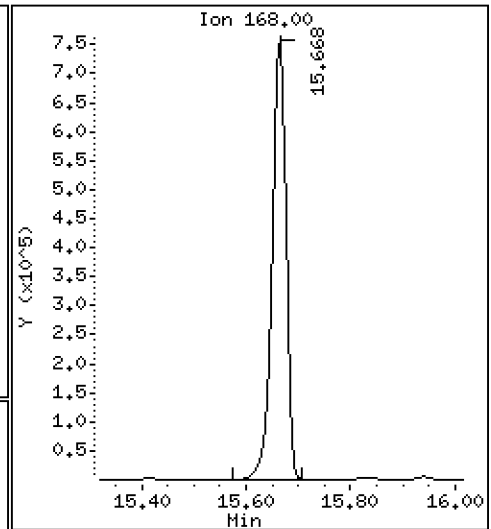
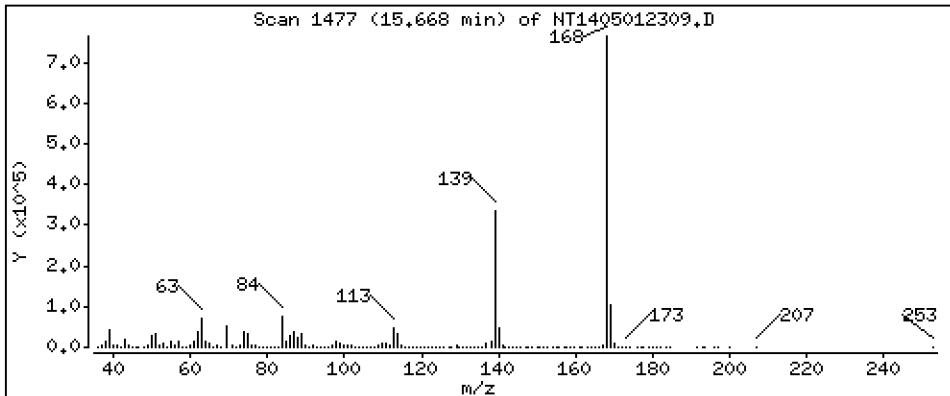
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 5,952 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

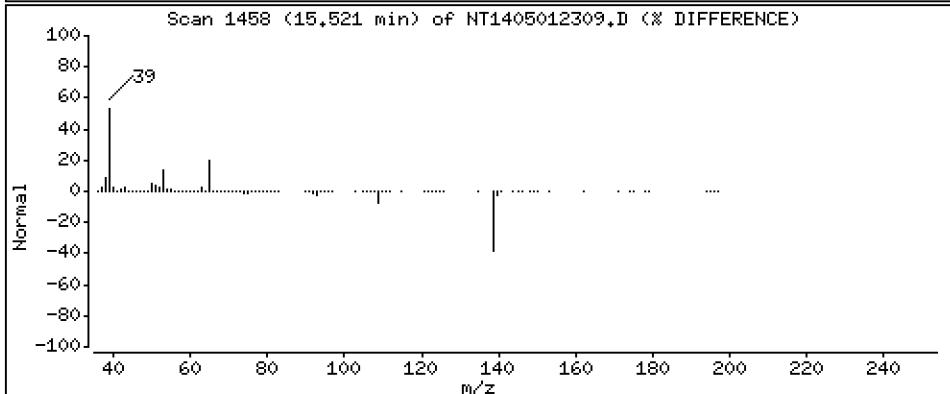
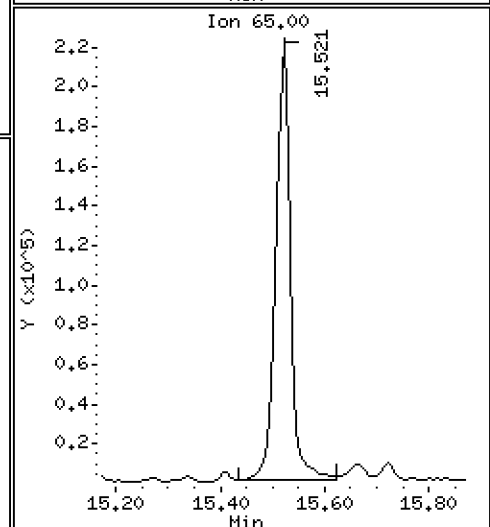
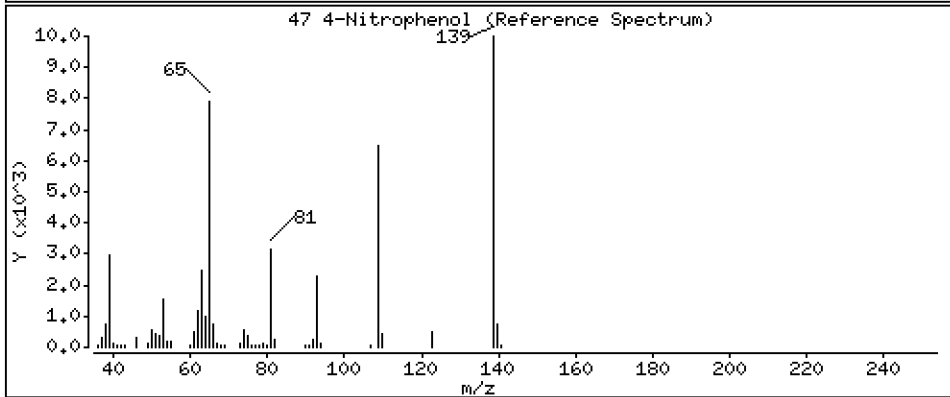
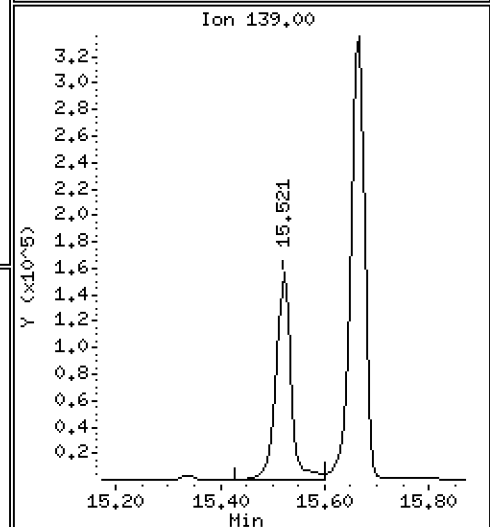
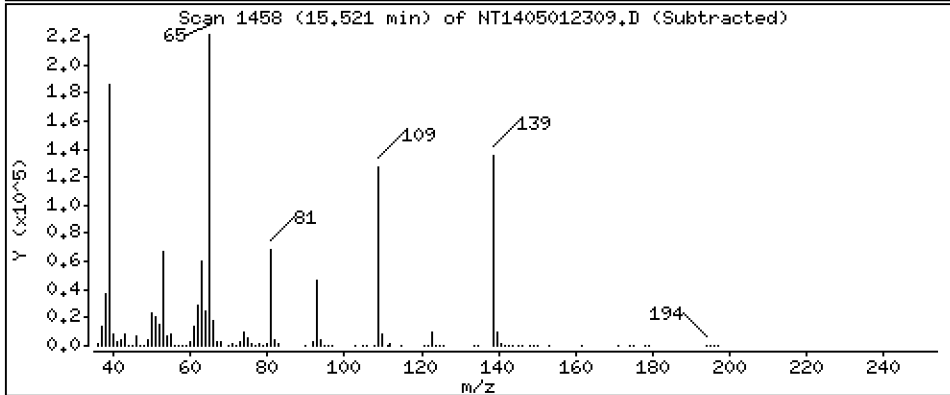
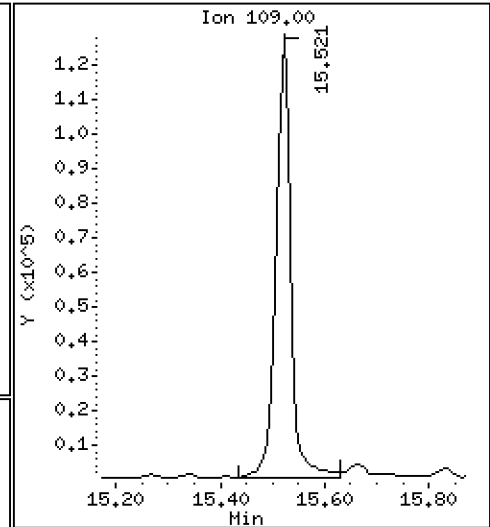
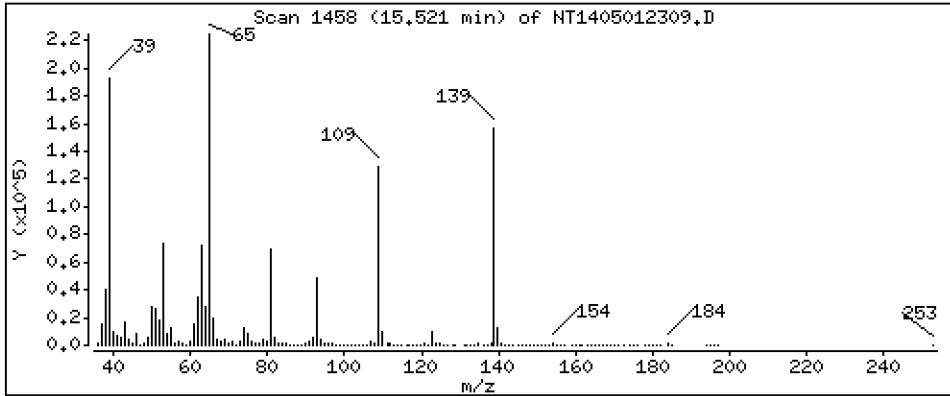
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 8,454 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

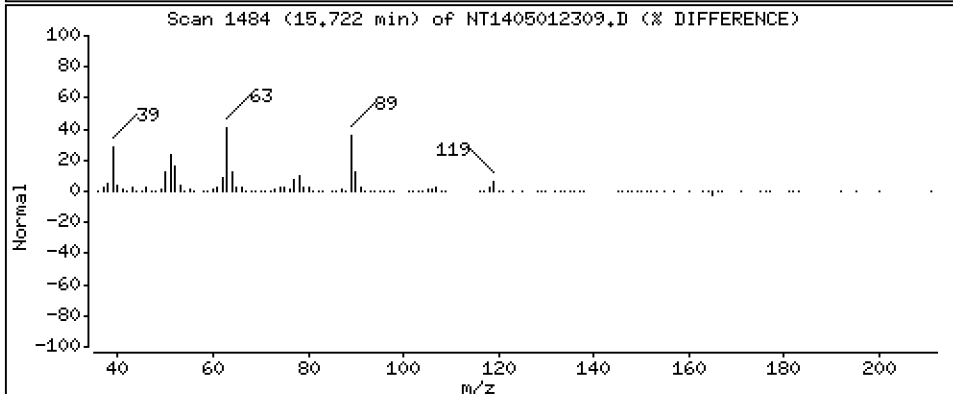
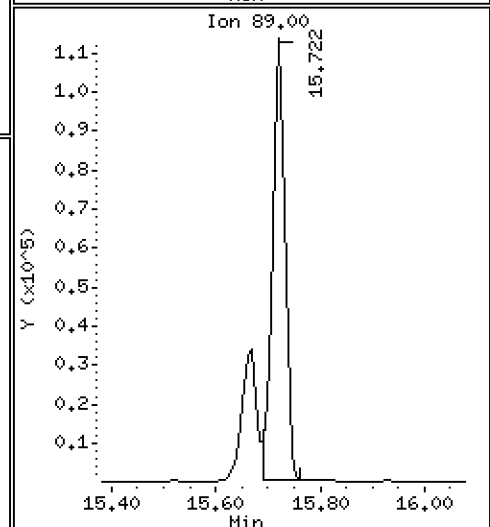
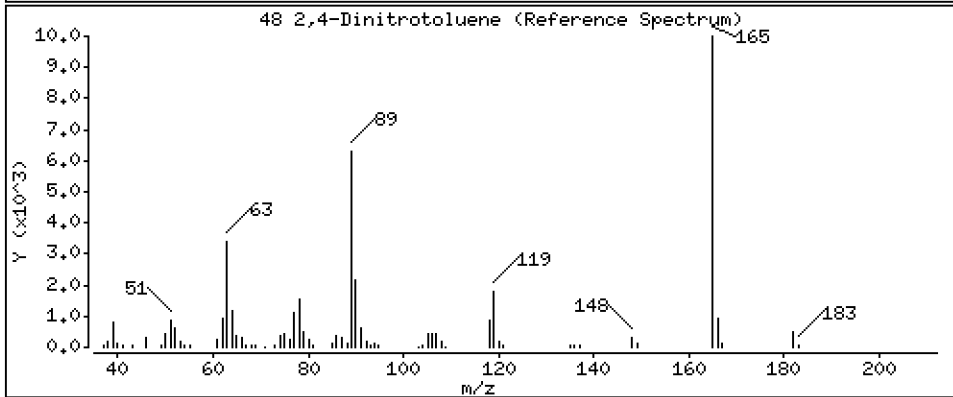
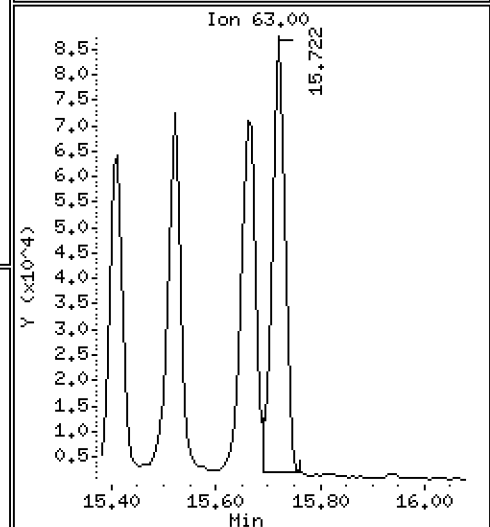
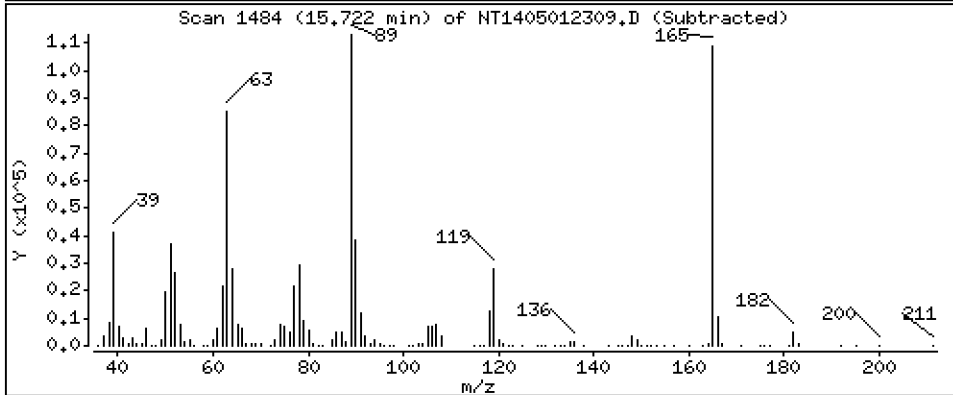
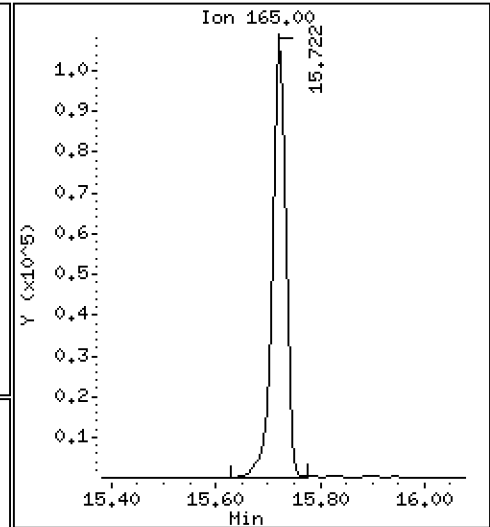
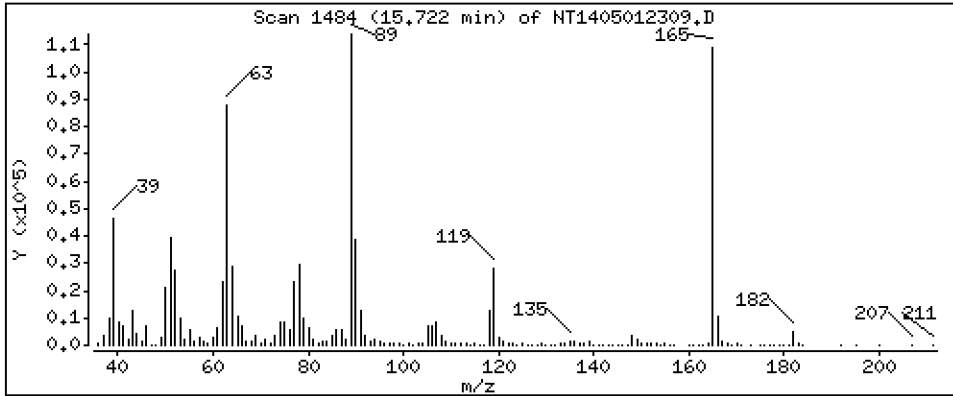
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

48 2,4-Dinitrotoluene

Concentration: 3,600 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

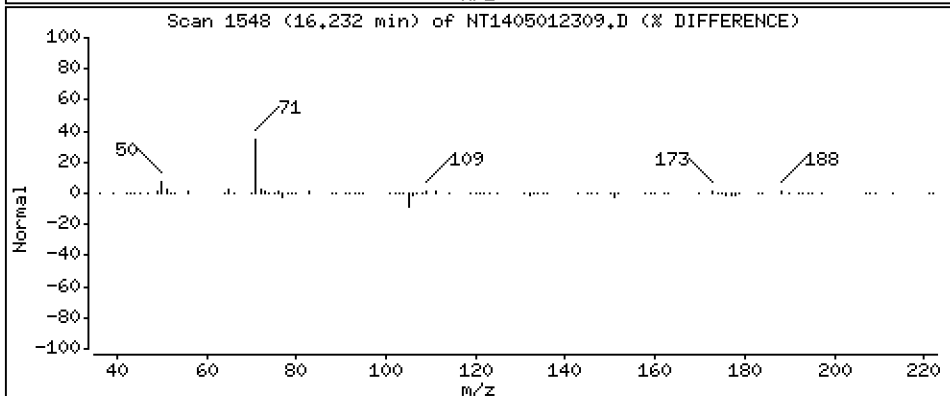
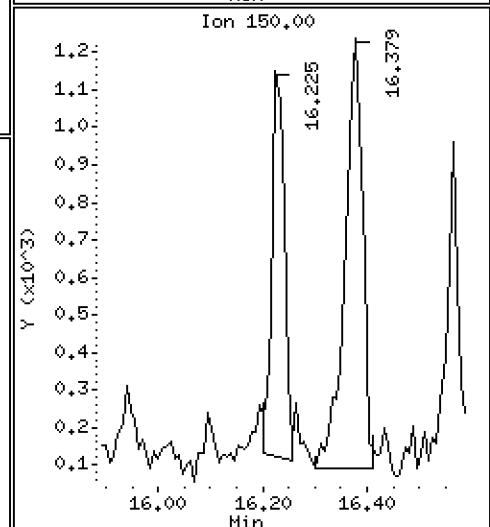
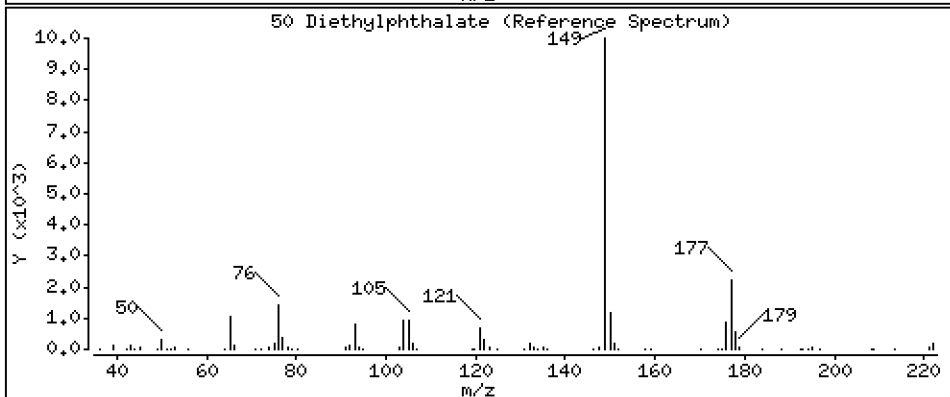
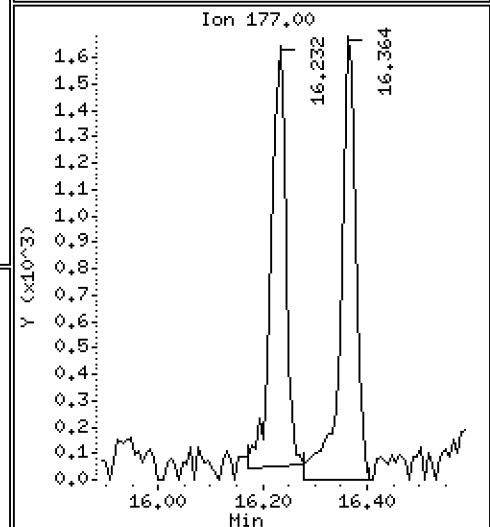
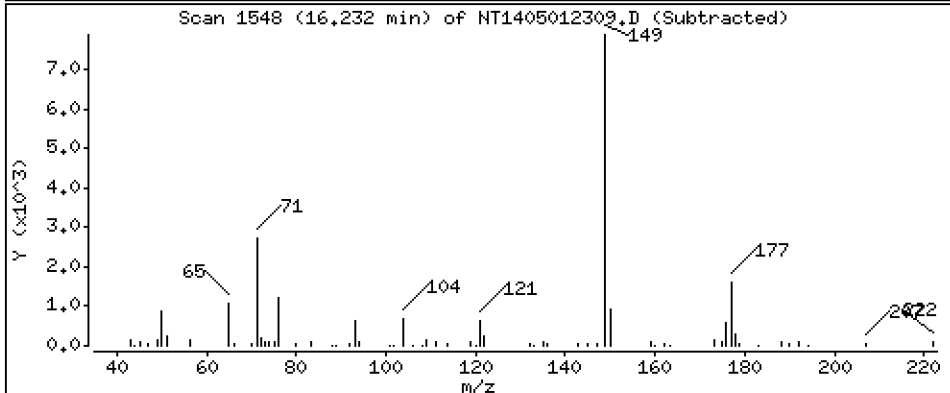
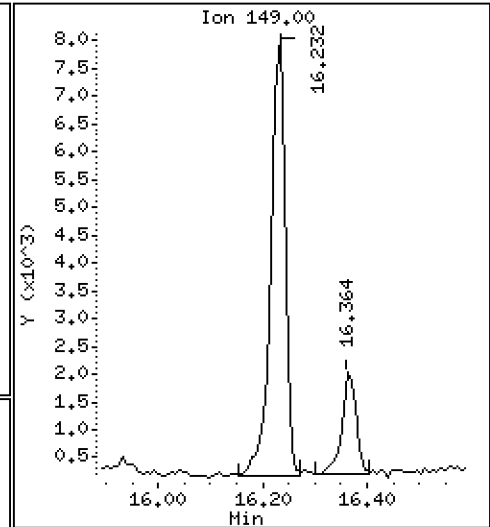
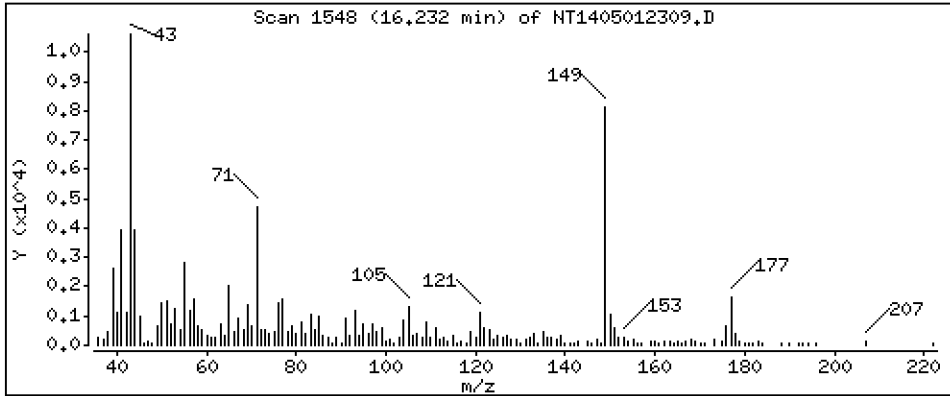
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

50 Diethylphthalate

Concentration: 0.07738 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

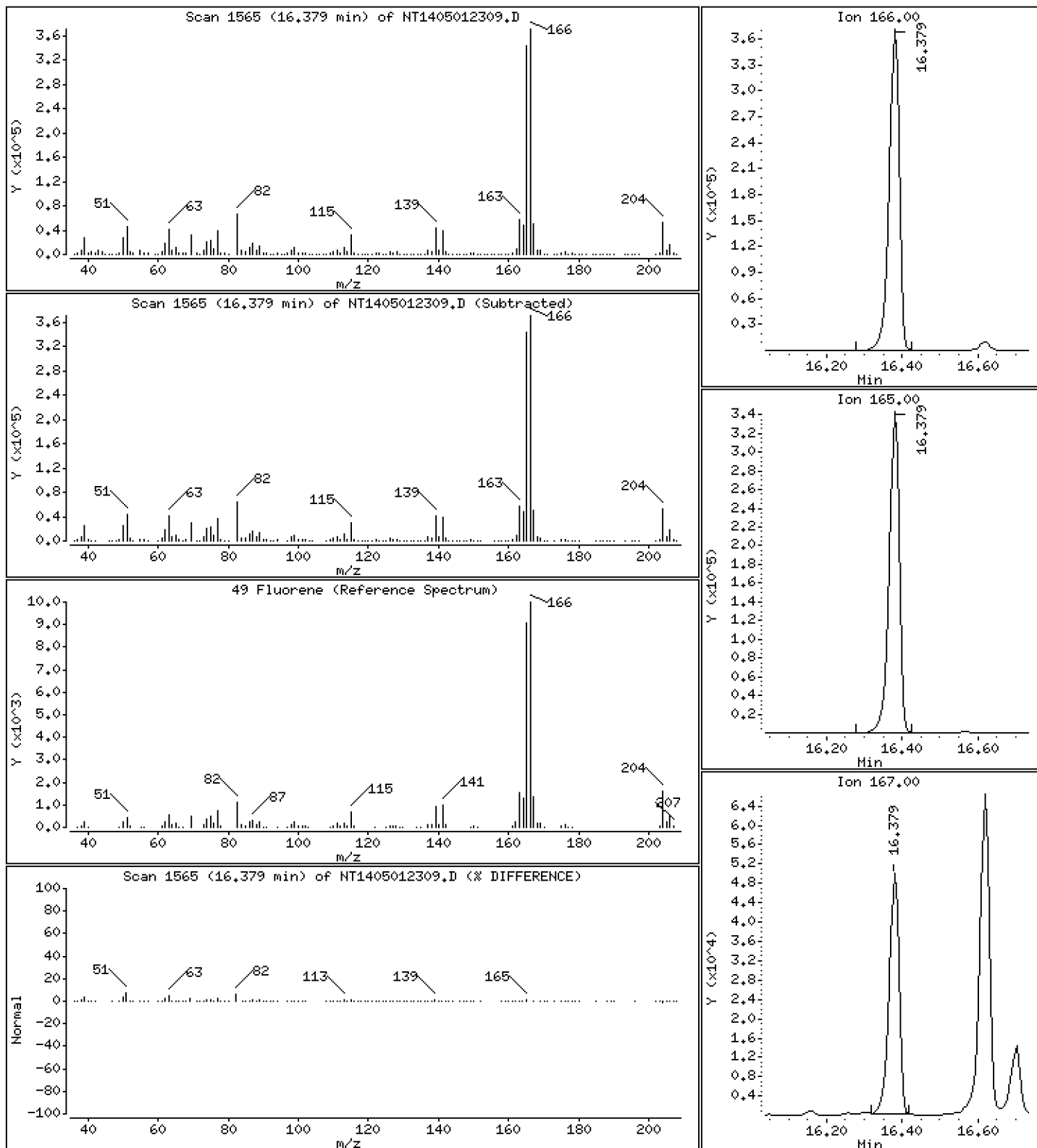
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

49 Fluorene

Concentration: 3,682 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

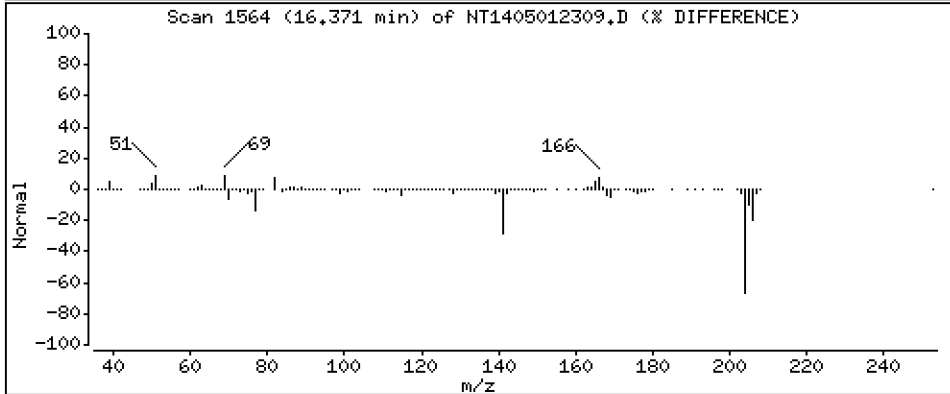
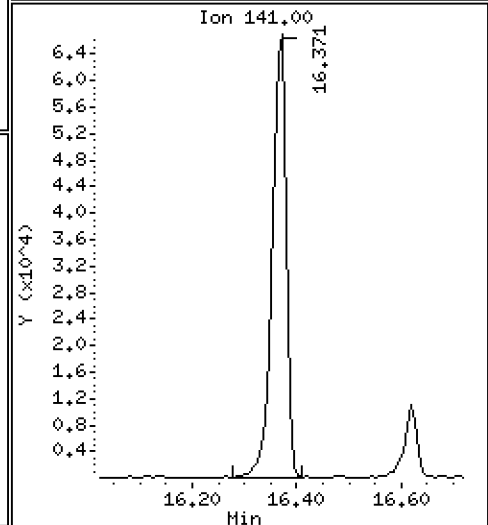
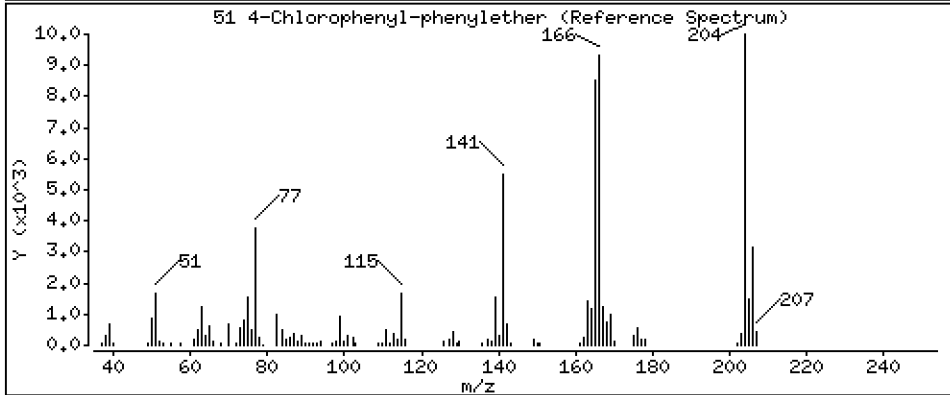
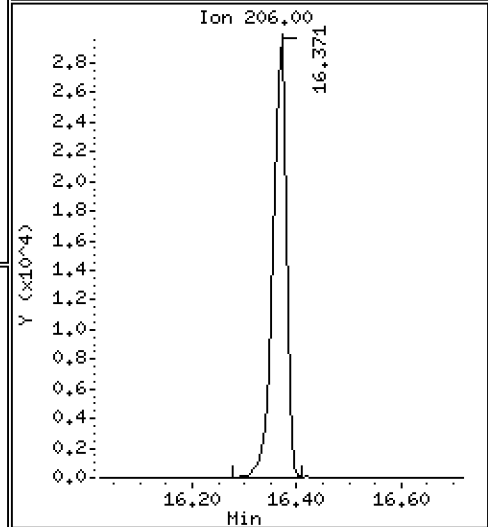
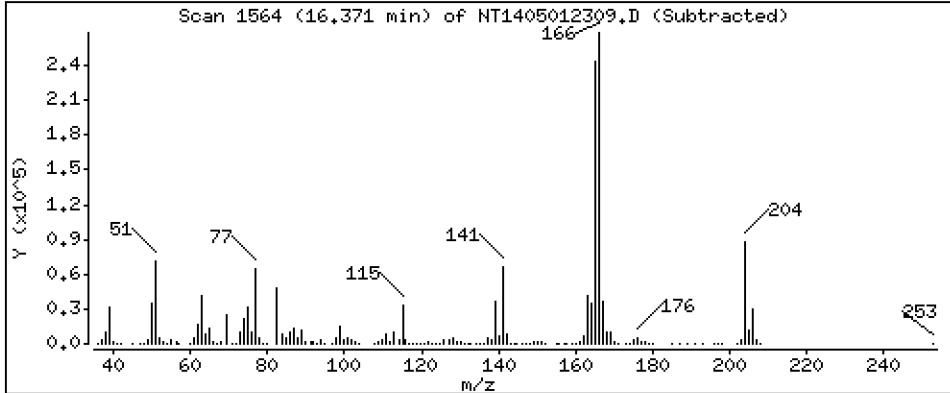
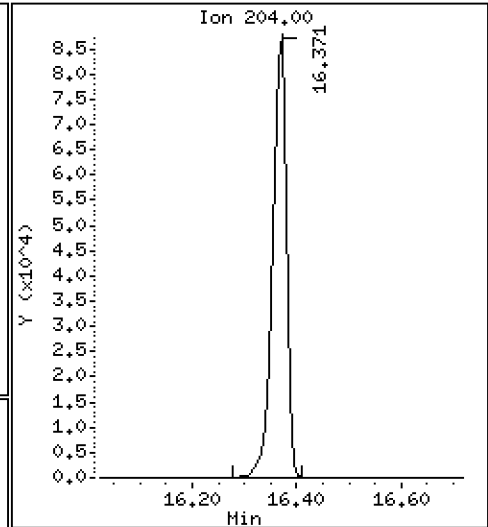
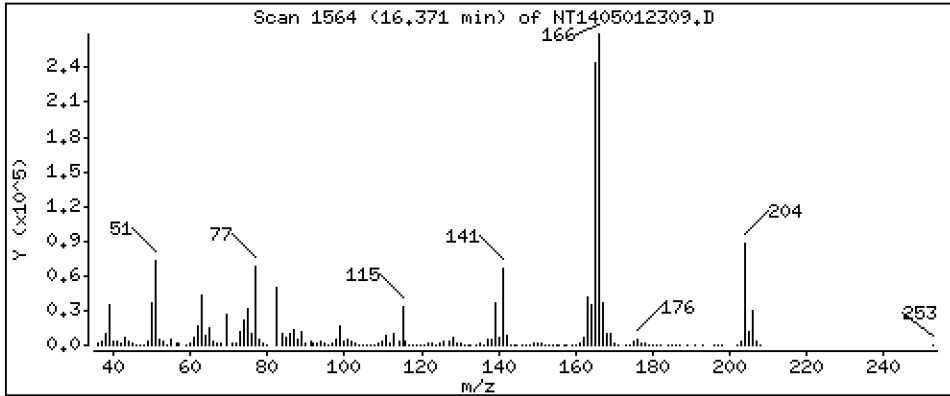
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 2,122 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

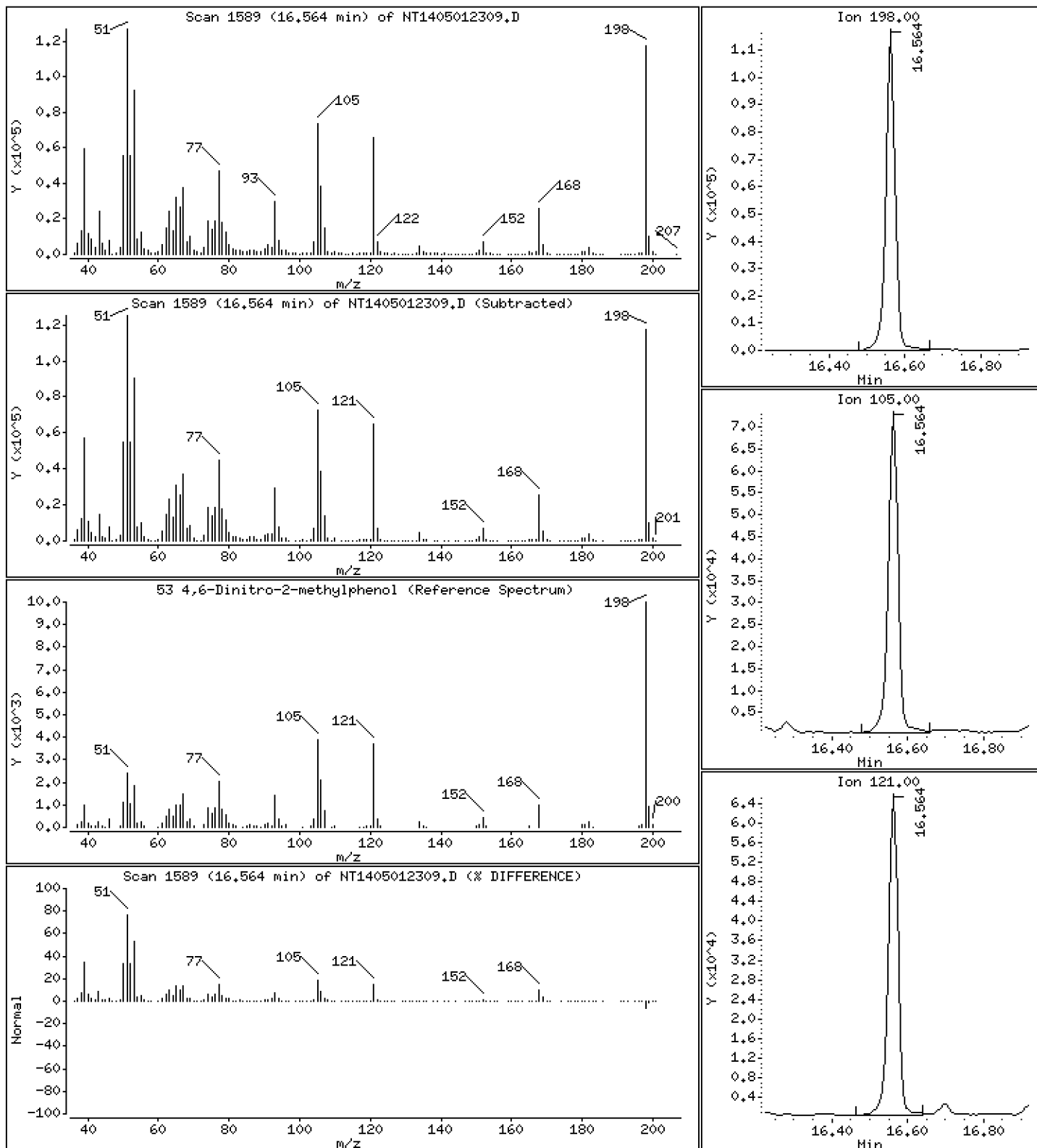
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

53 4,6-Dinitro-2-methylphenol

Concentration: 7.371 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

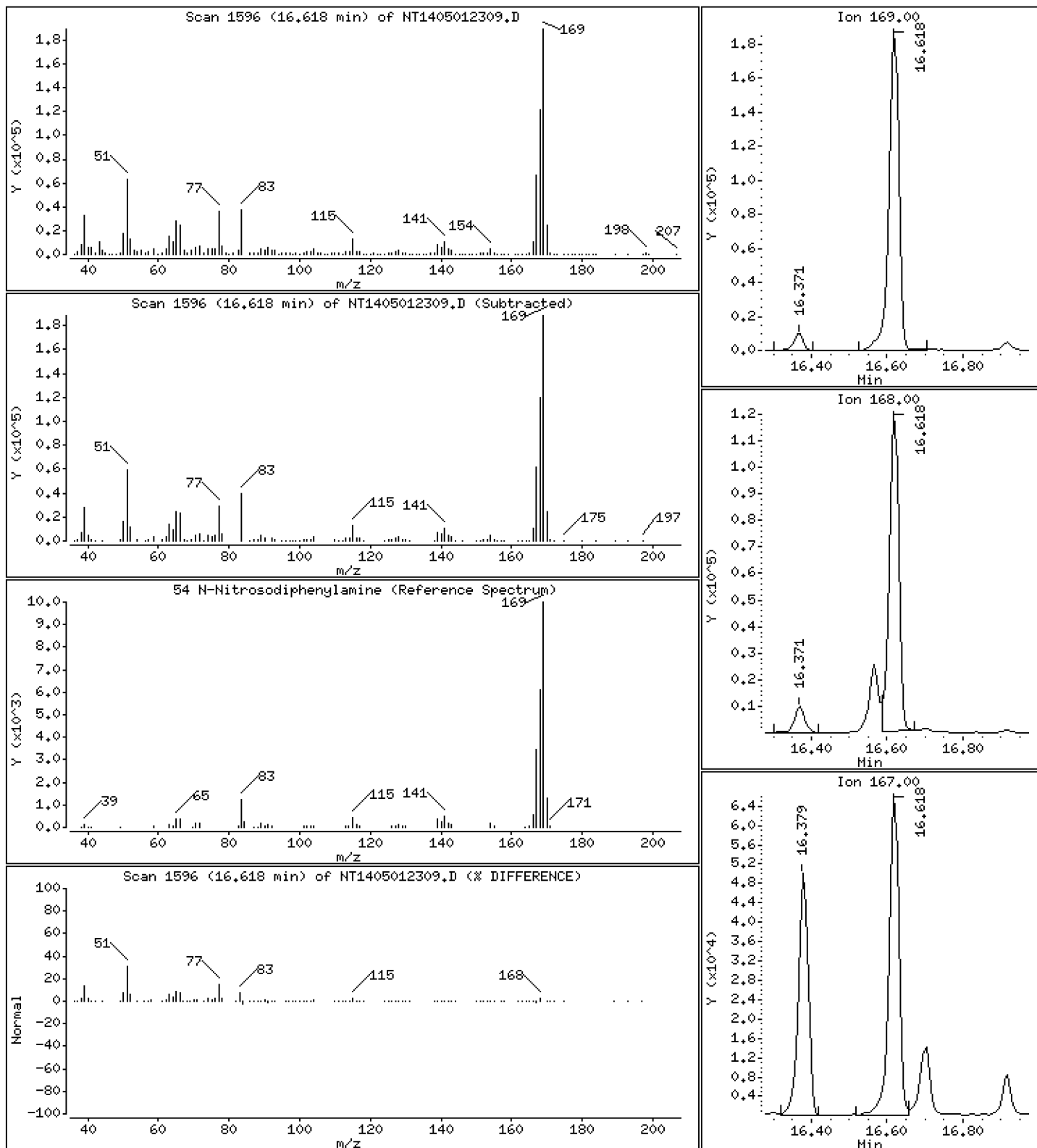
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 2,705 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

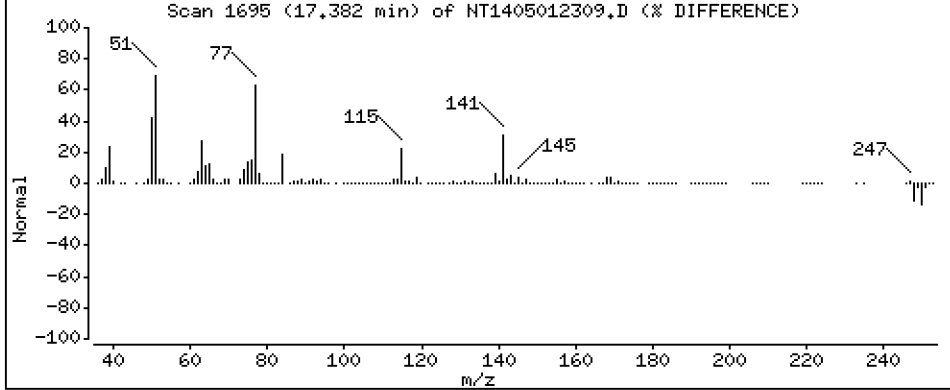
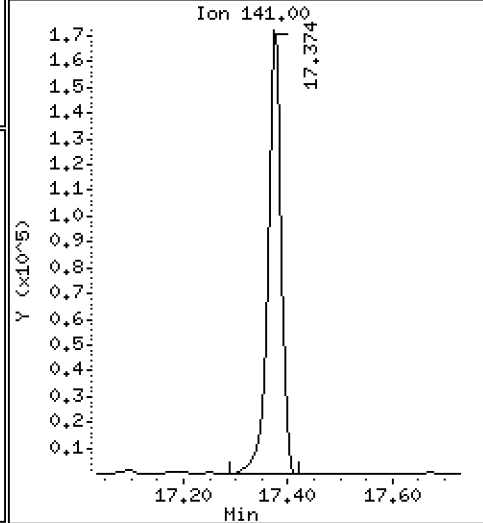
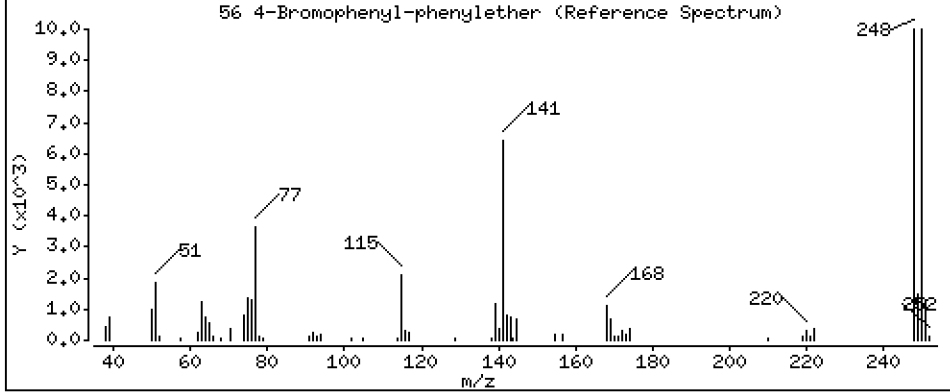
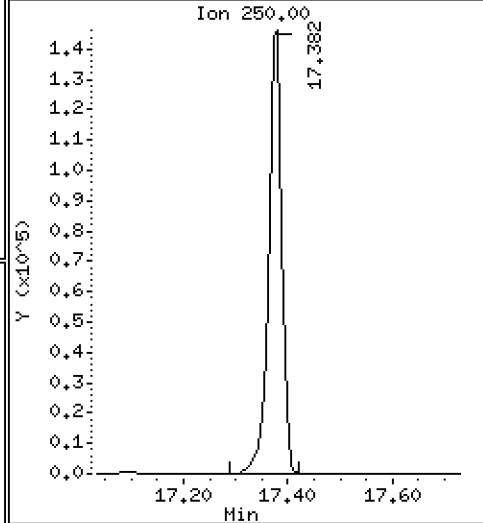
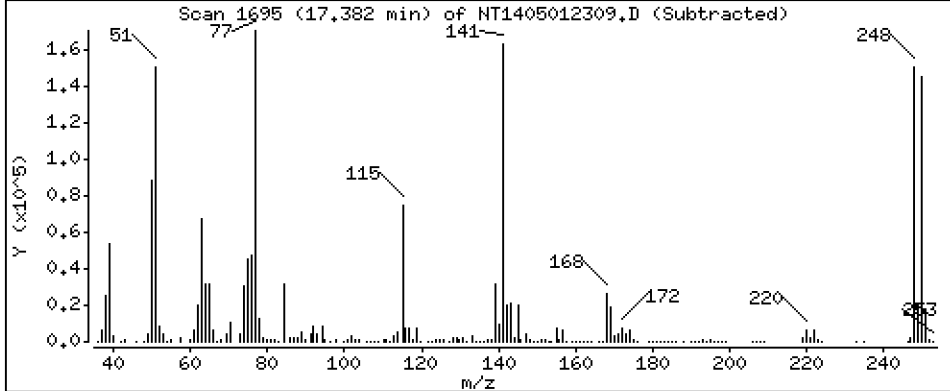
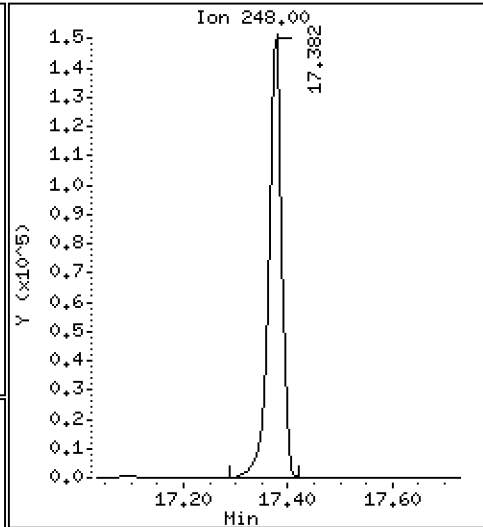
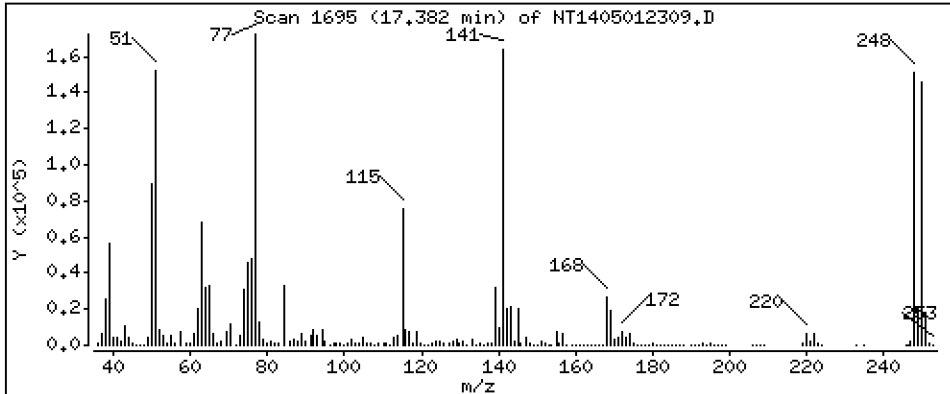
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 6,612 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

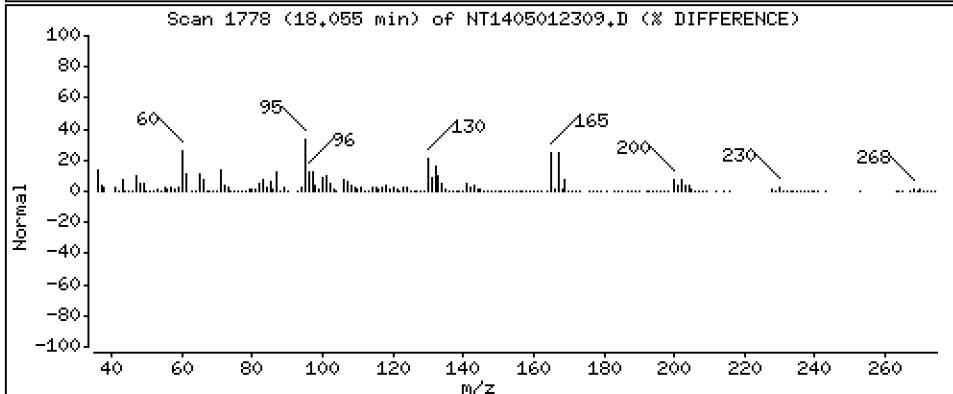
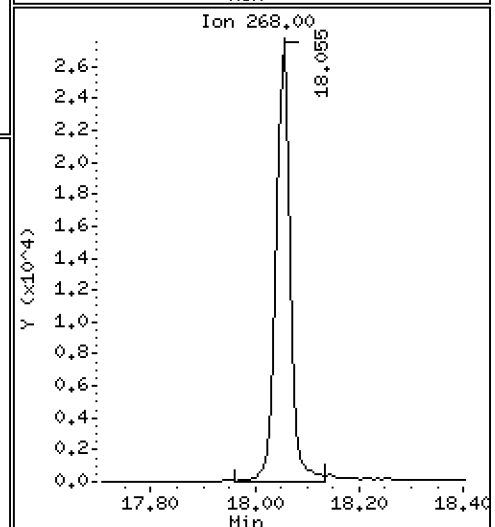
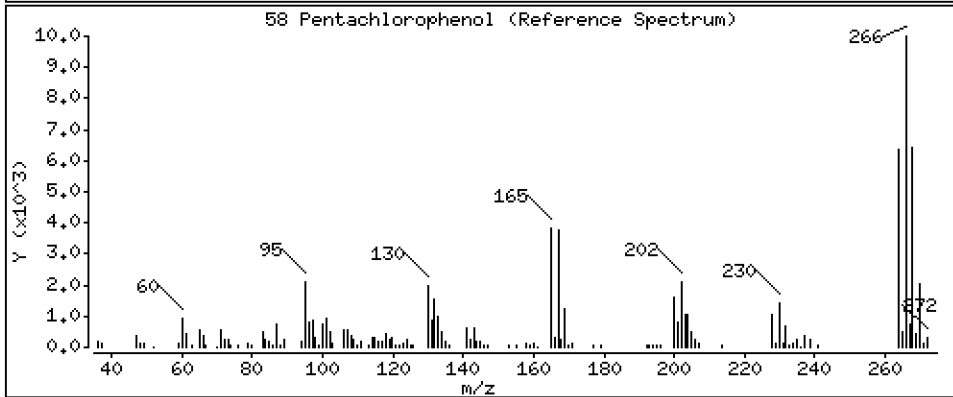
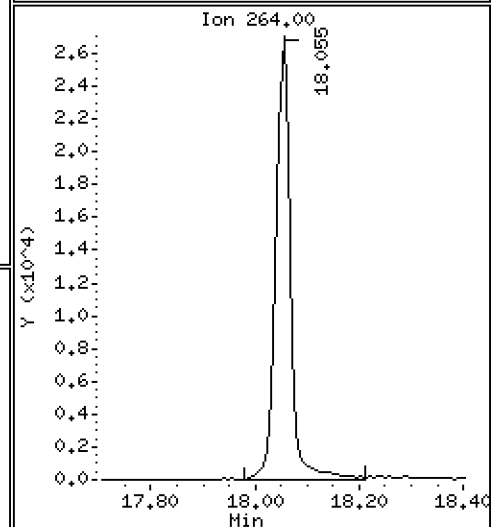
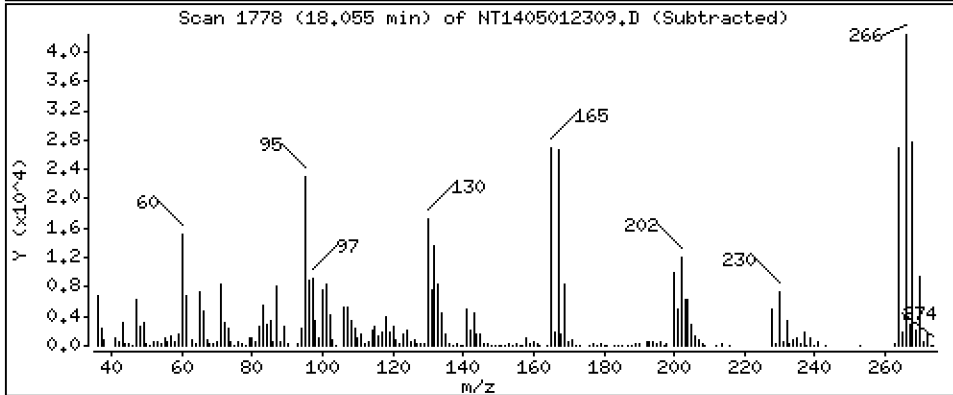
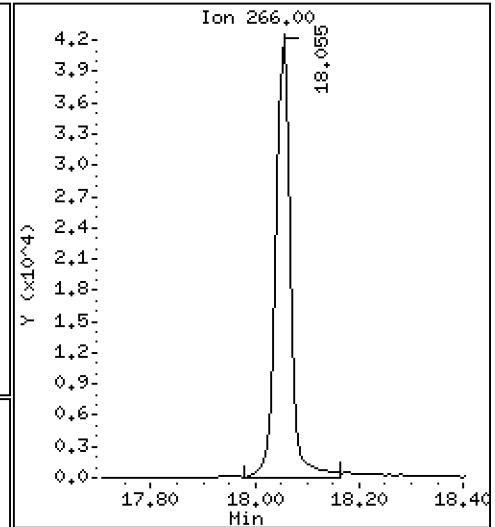
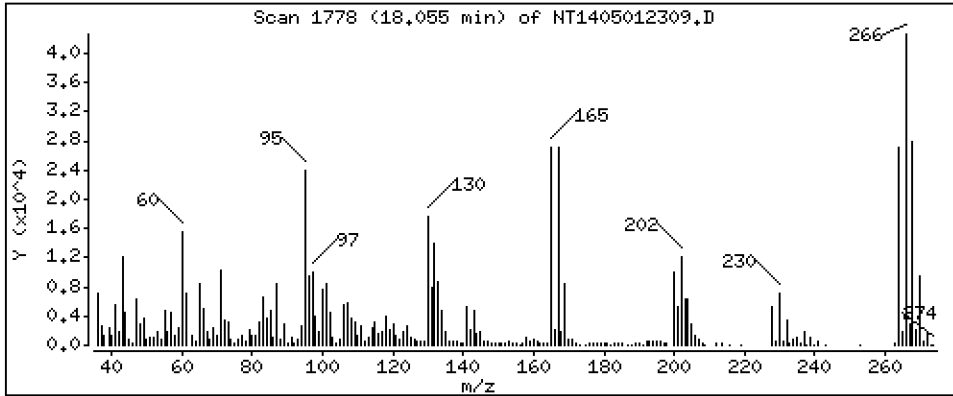
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,122 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

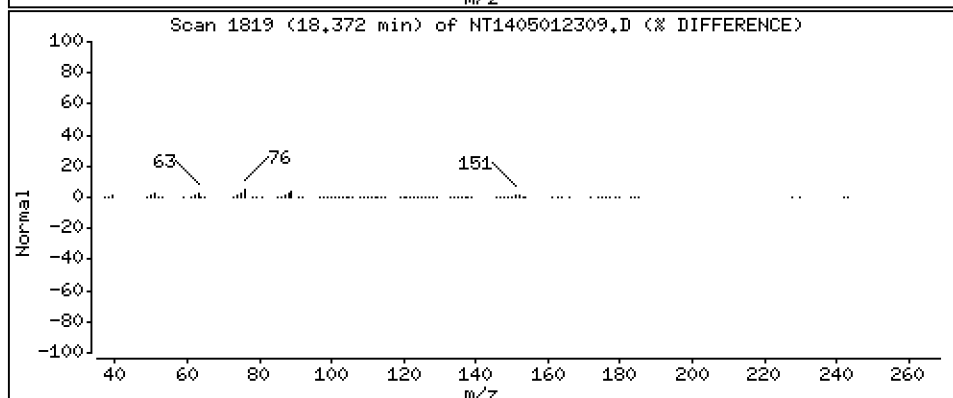
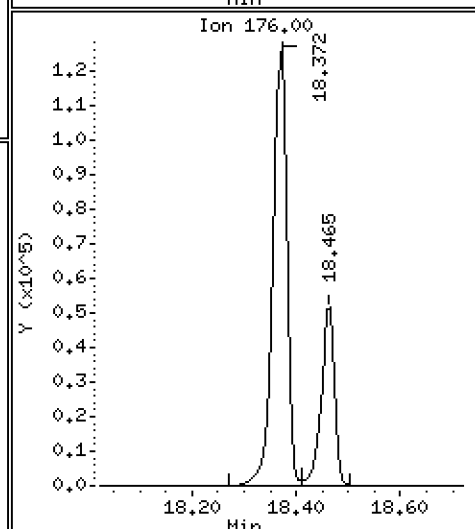
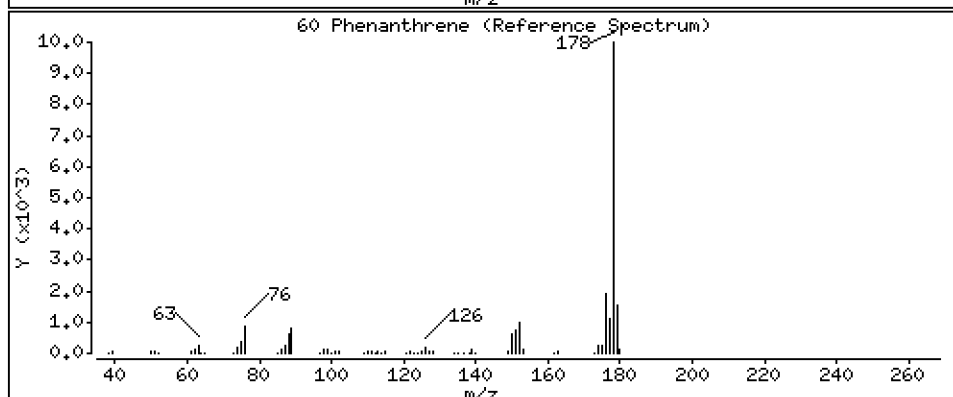
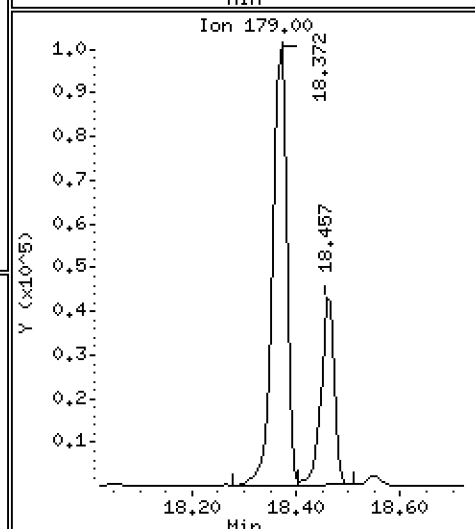
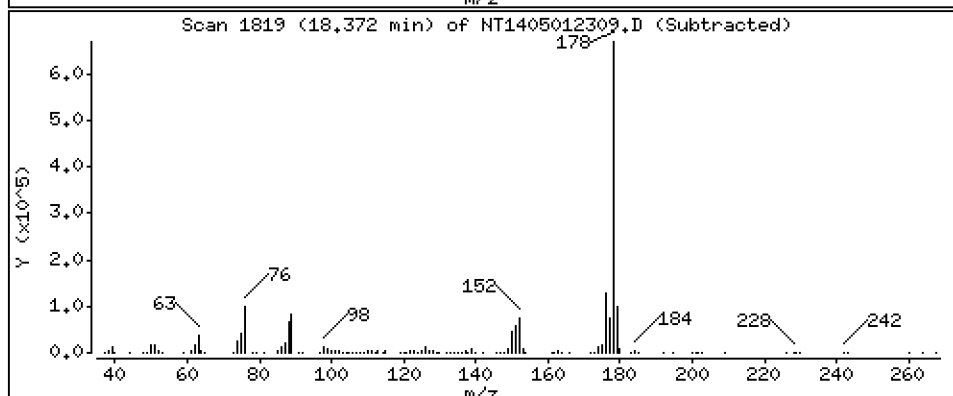
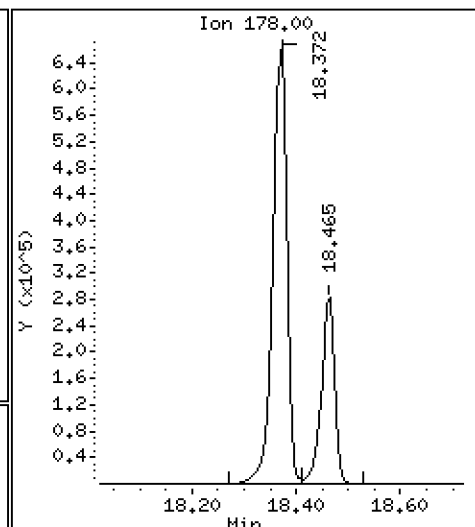
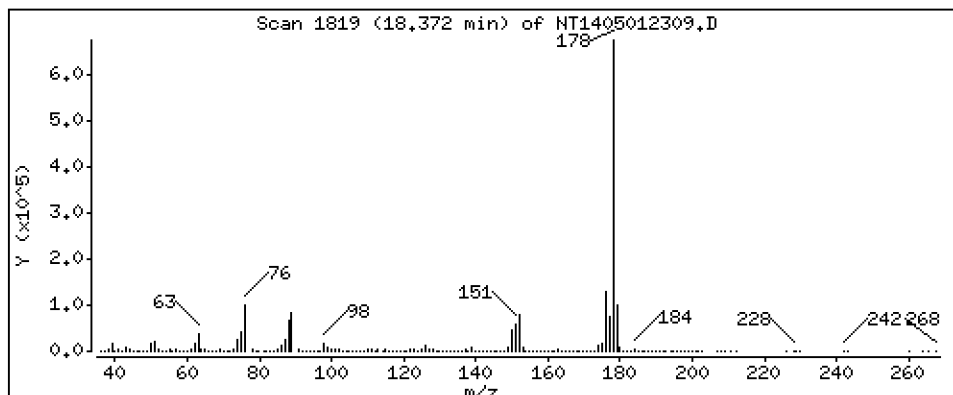
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 4,934 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

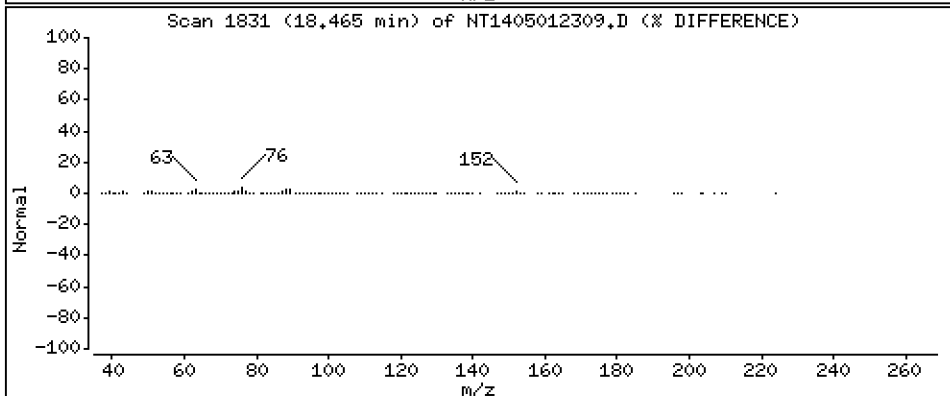
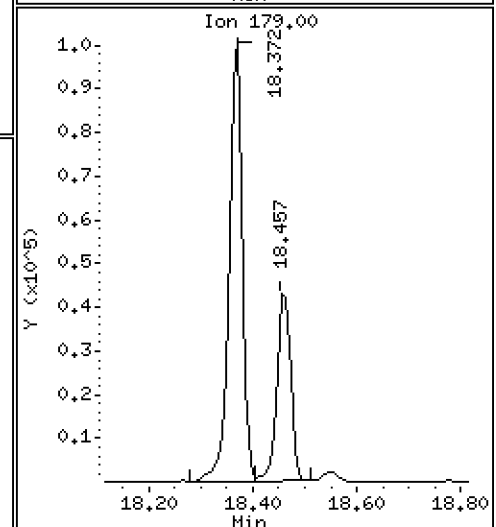
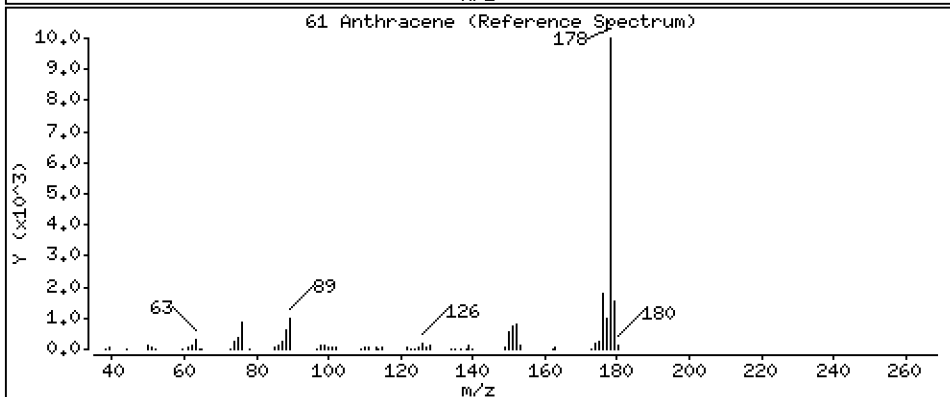
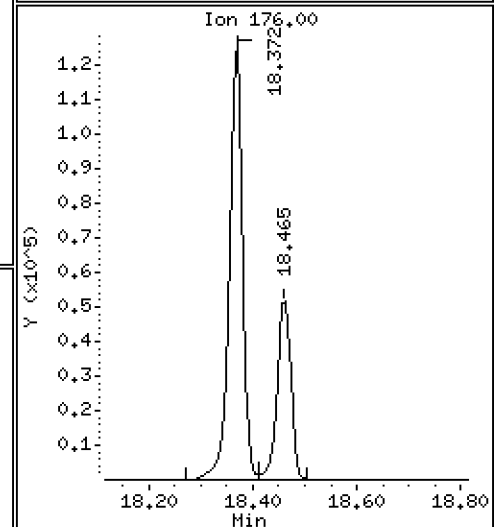
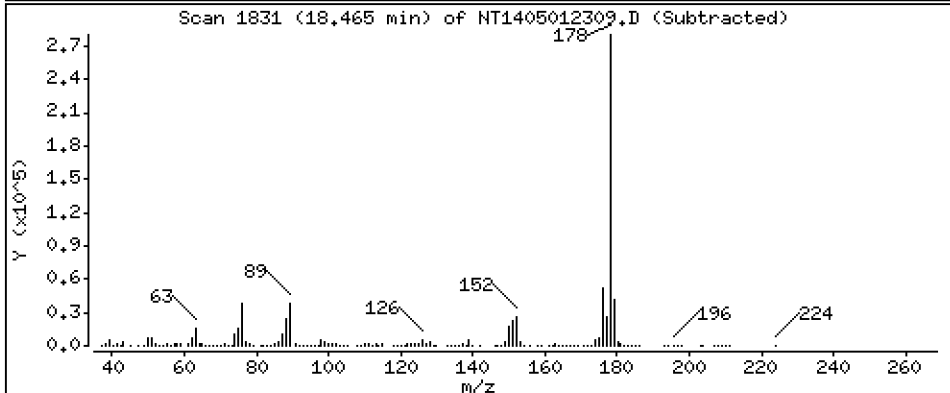
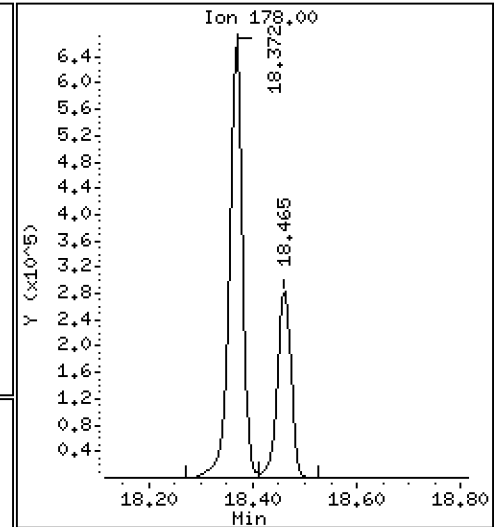
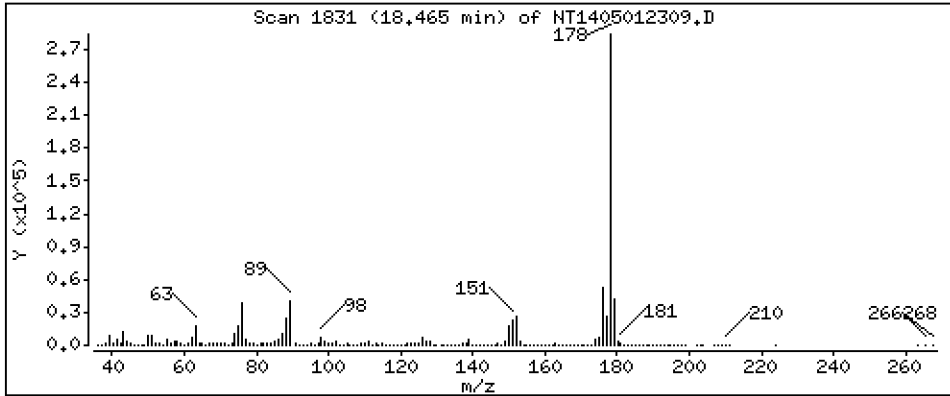
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

61 Anthracene

Concentration: 2,148 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

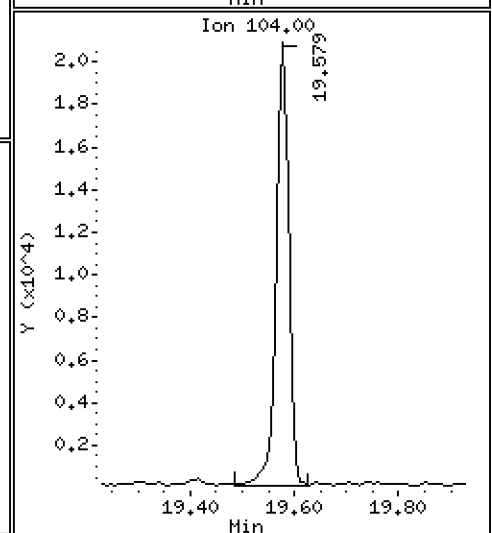
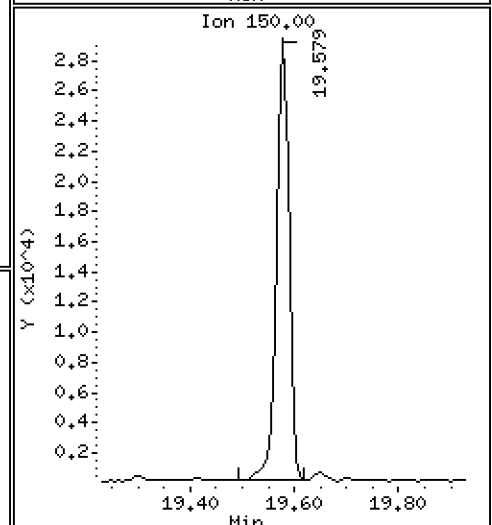
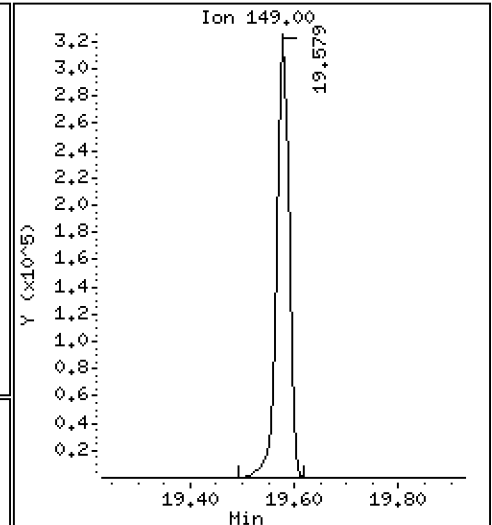
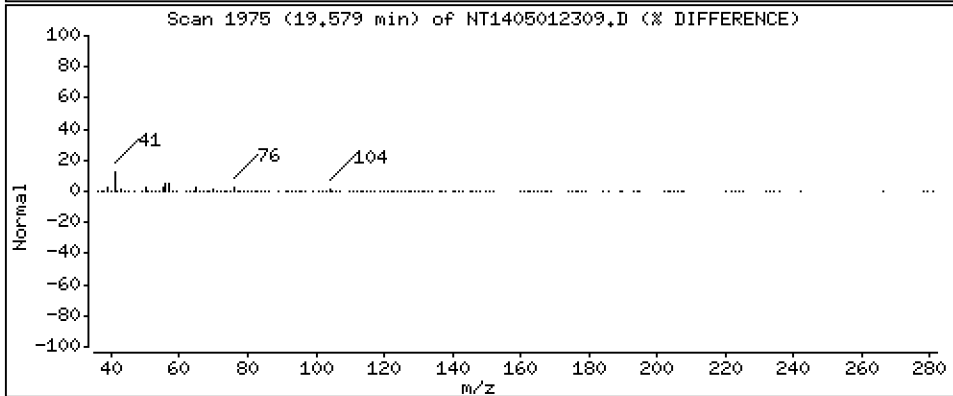
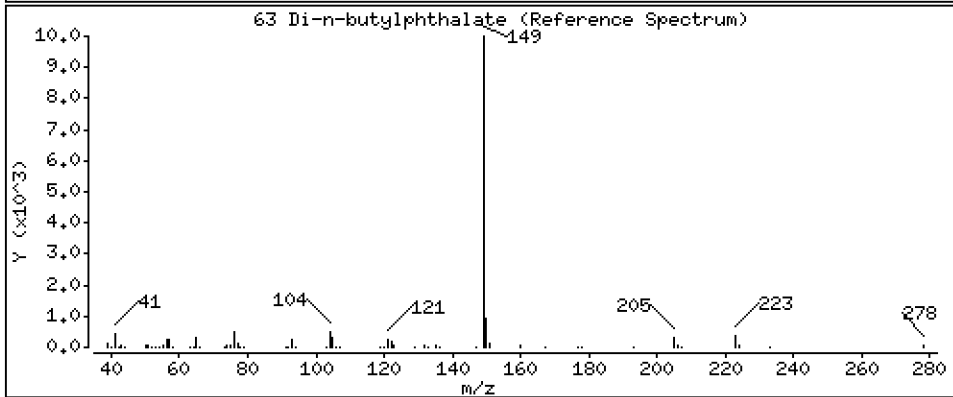
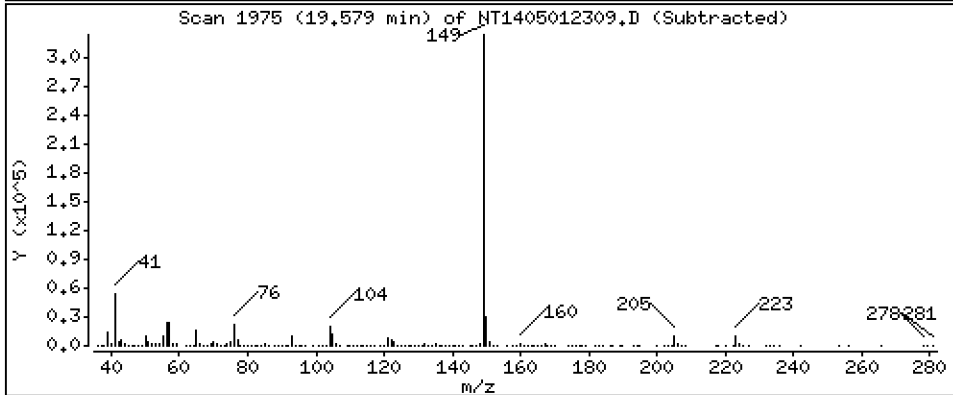
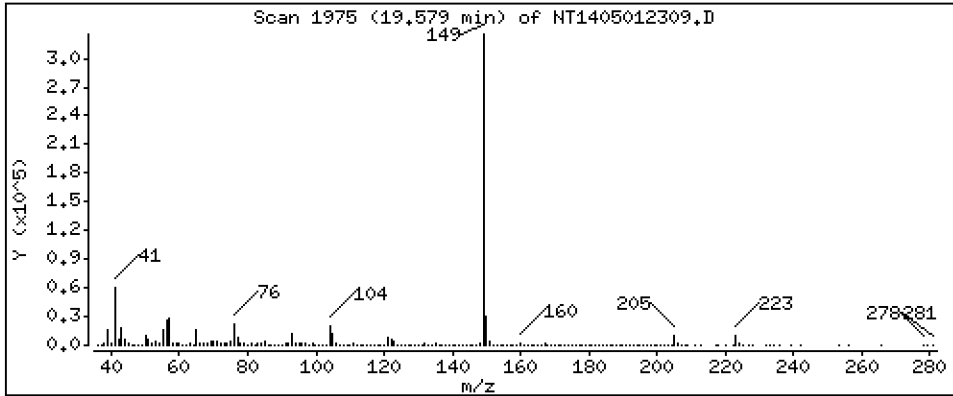
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 1,538 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

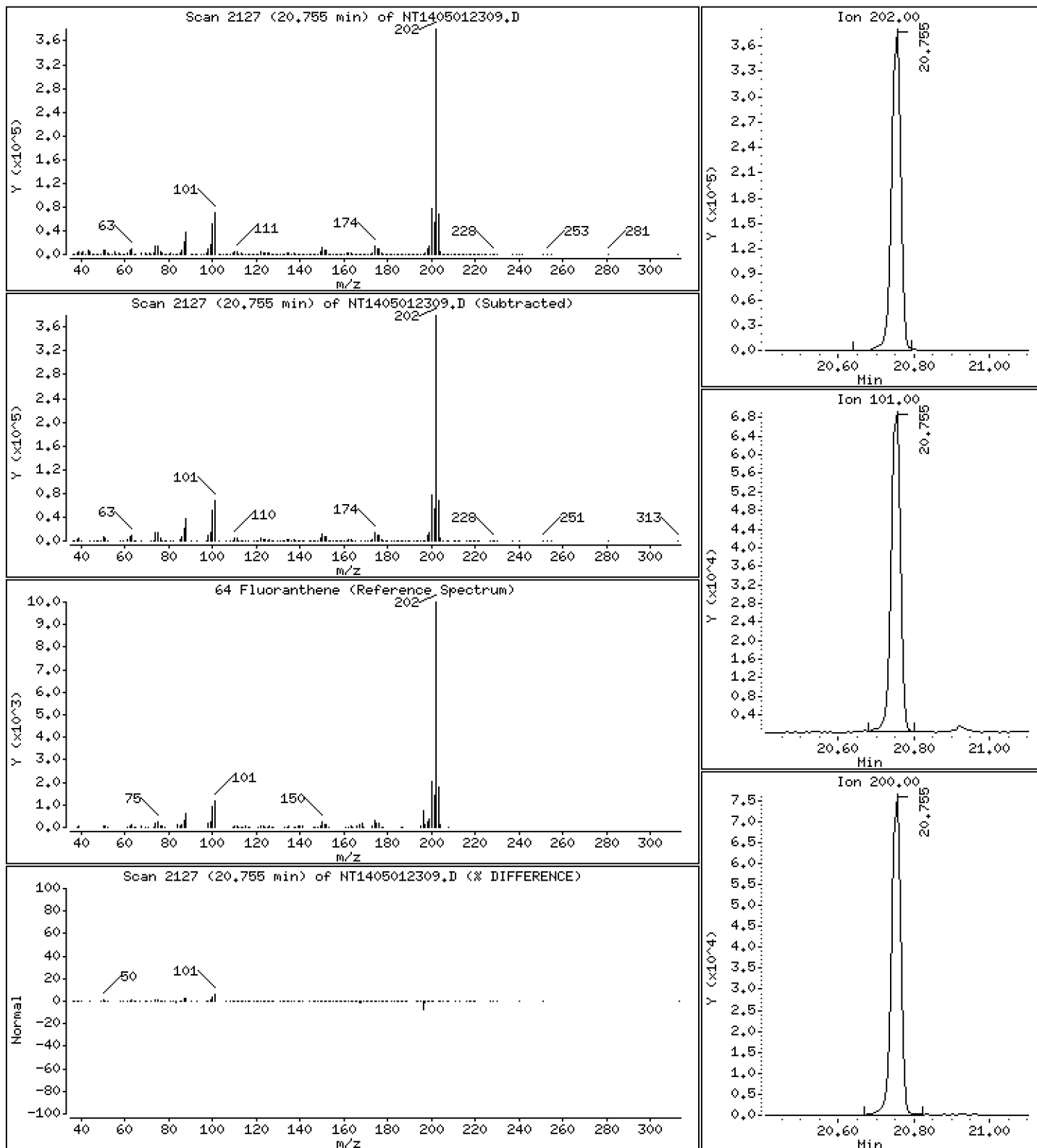
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 2,248 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

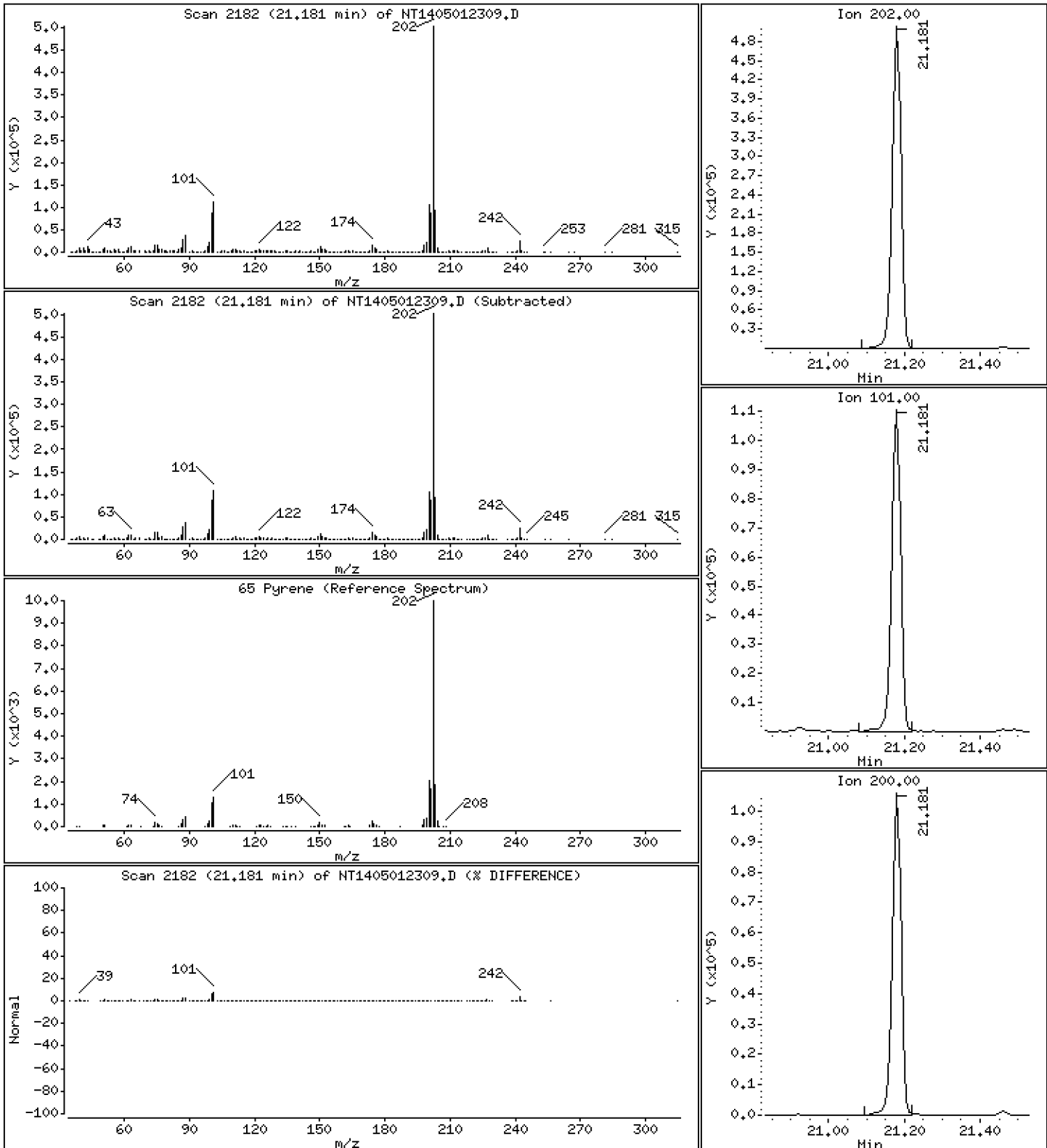
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 2,810 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

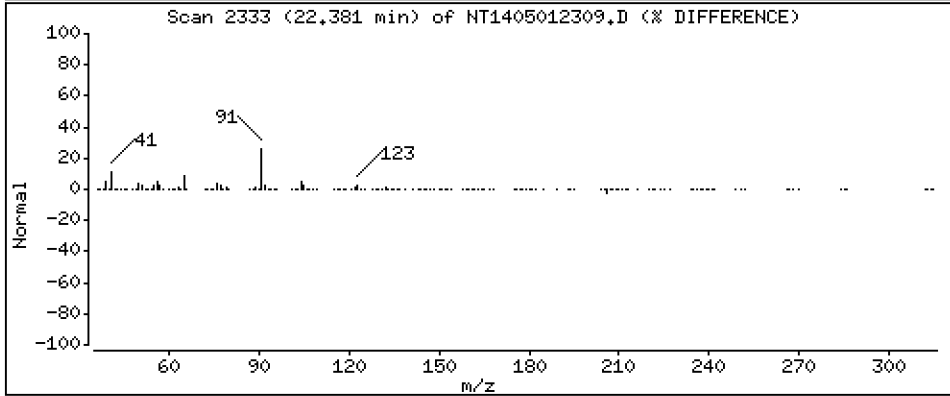
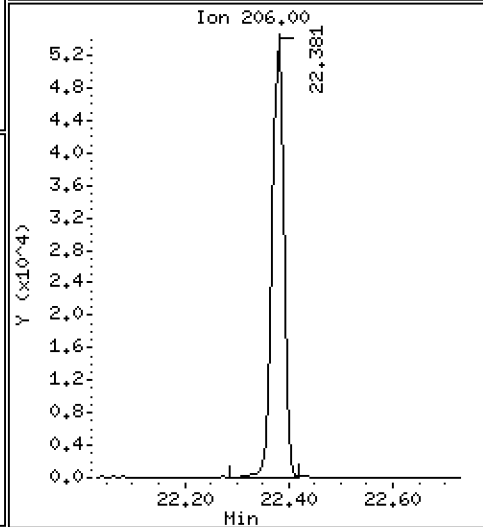
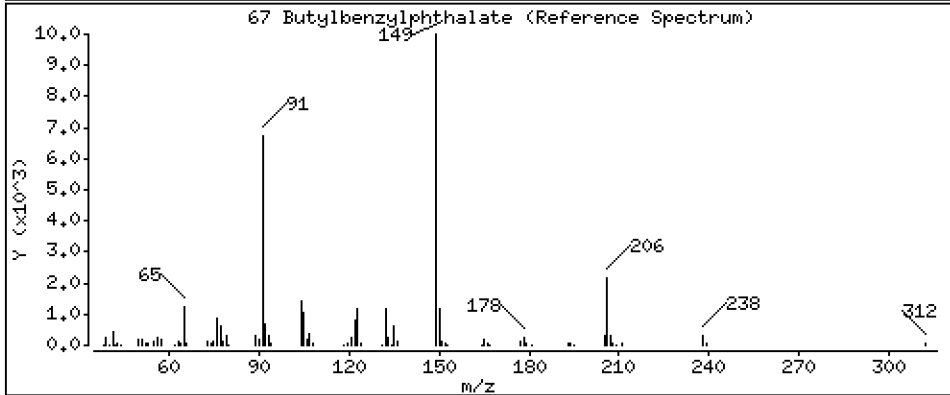
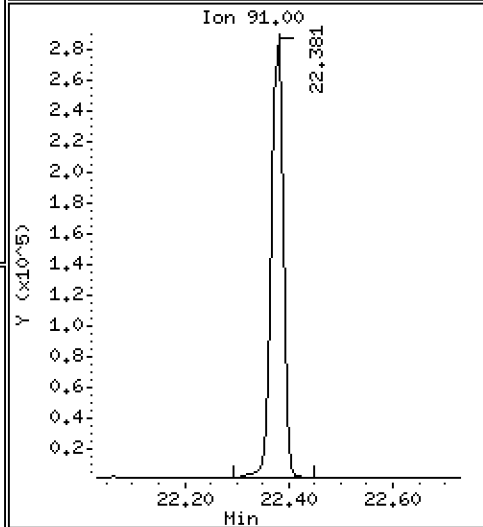
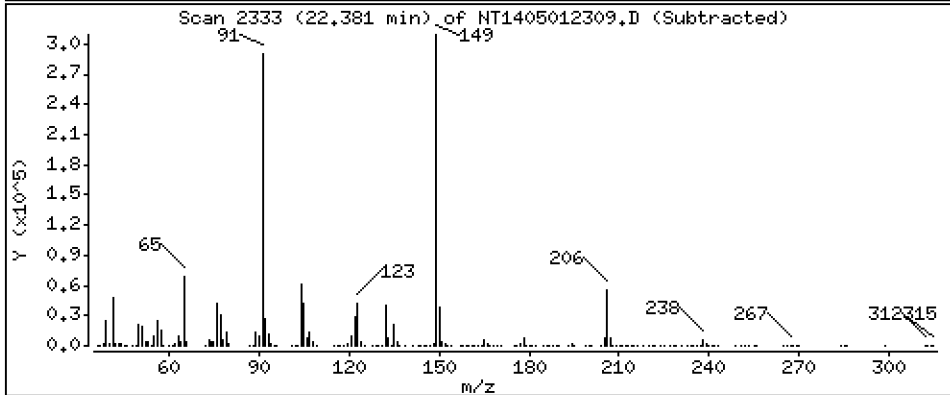
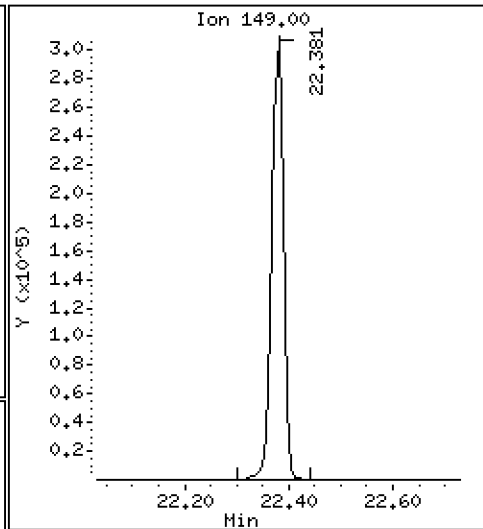
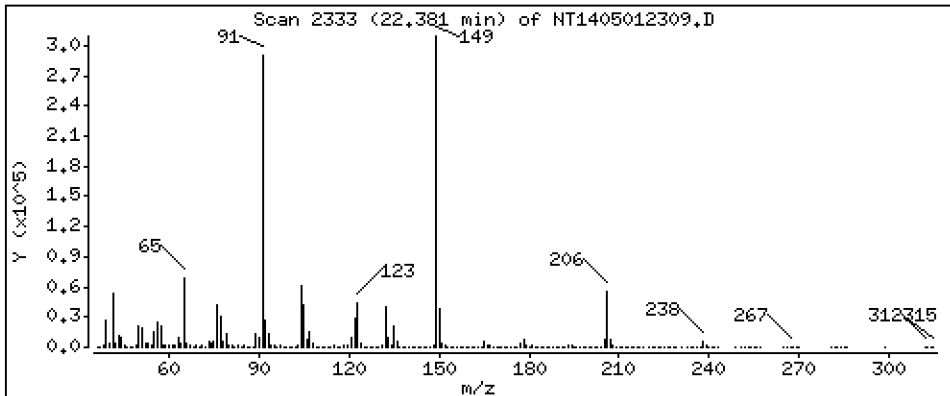
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 2,693 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

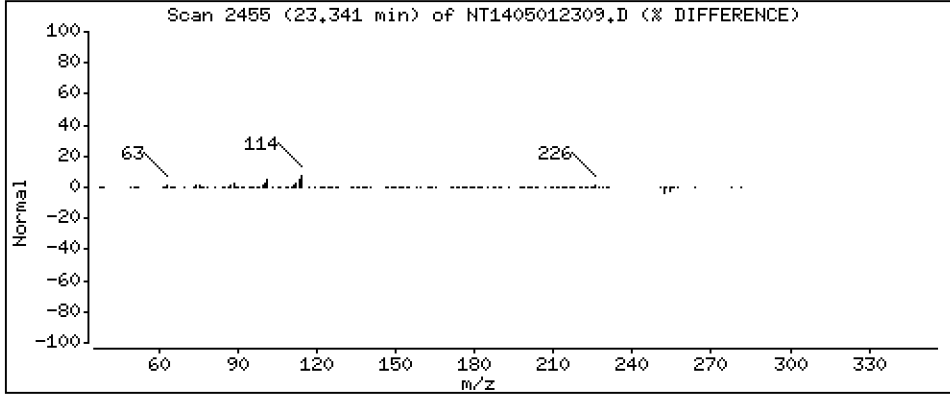
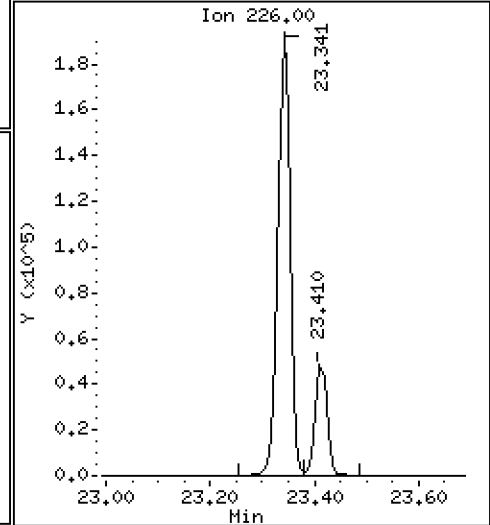
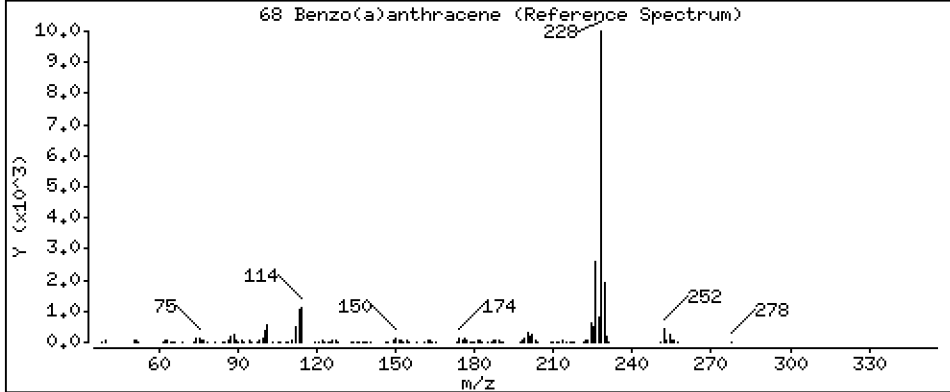
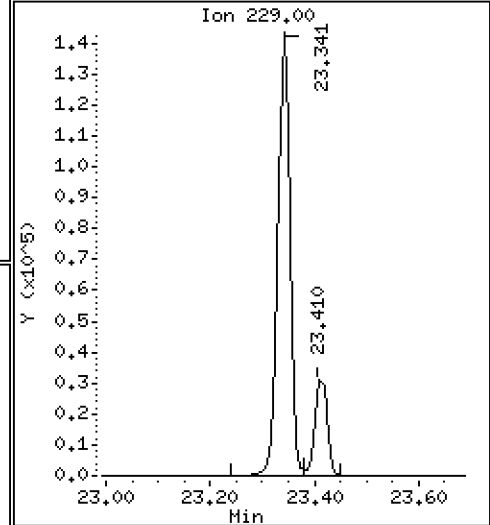
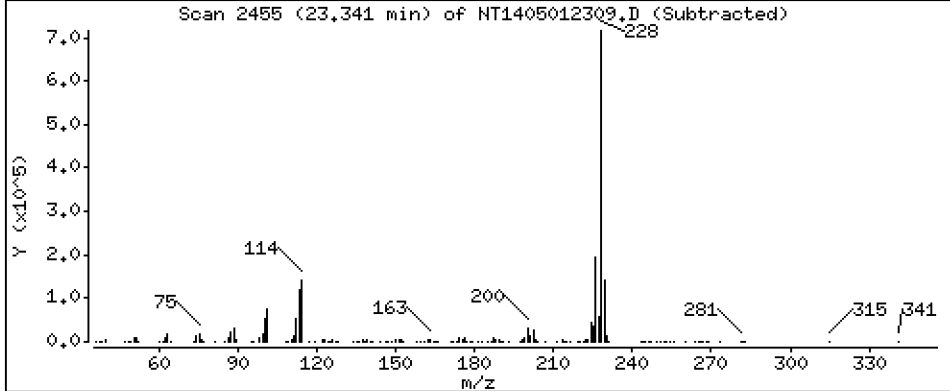
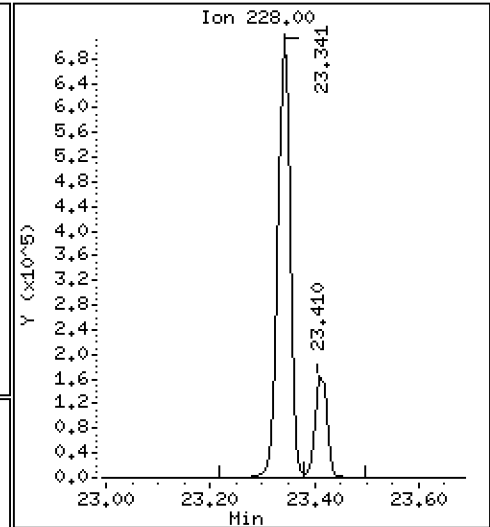
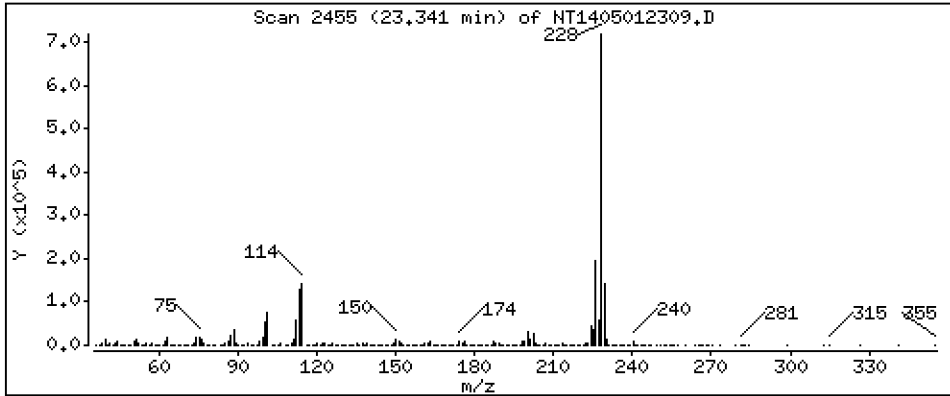
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 5,411 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

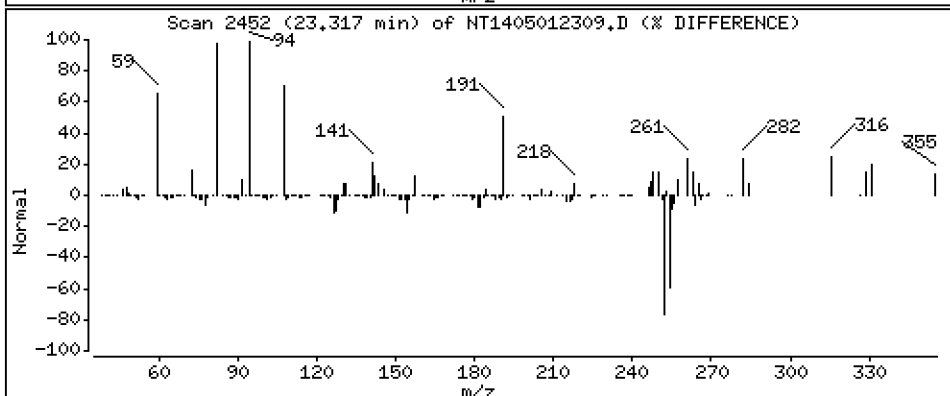
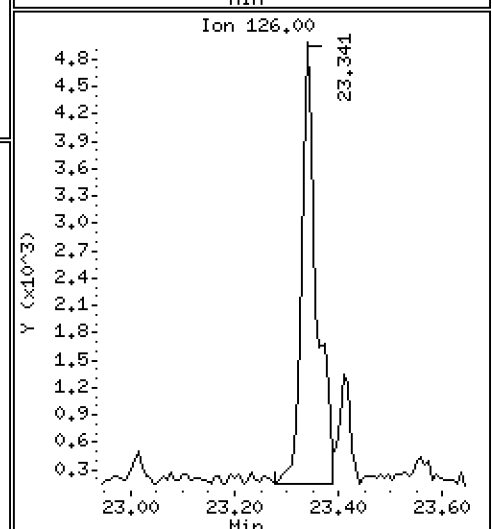
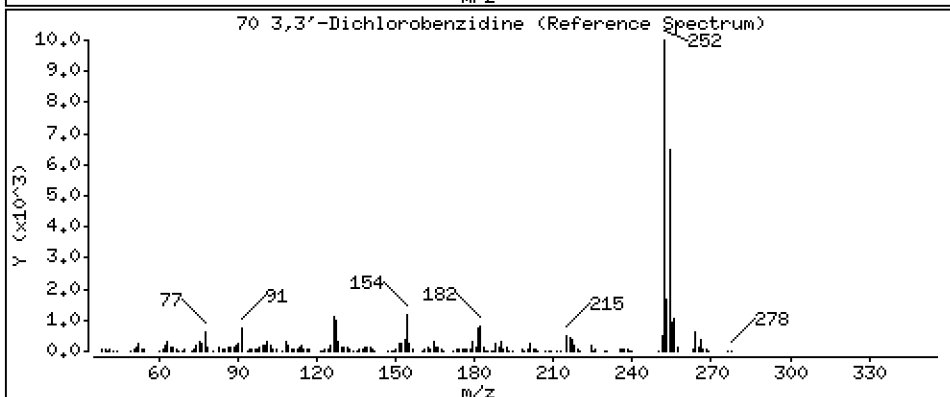
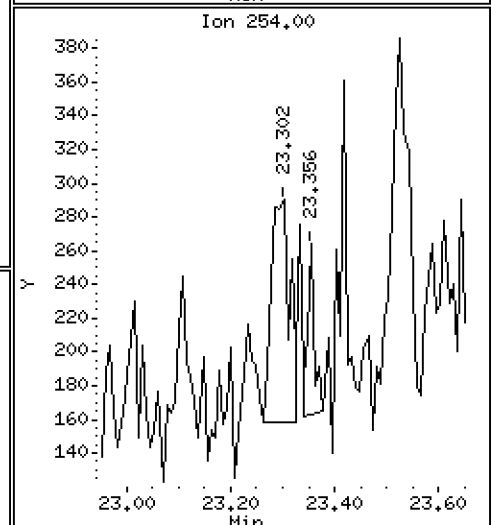
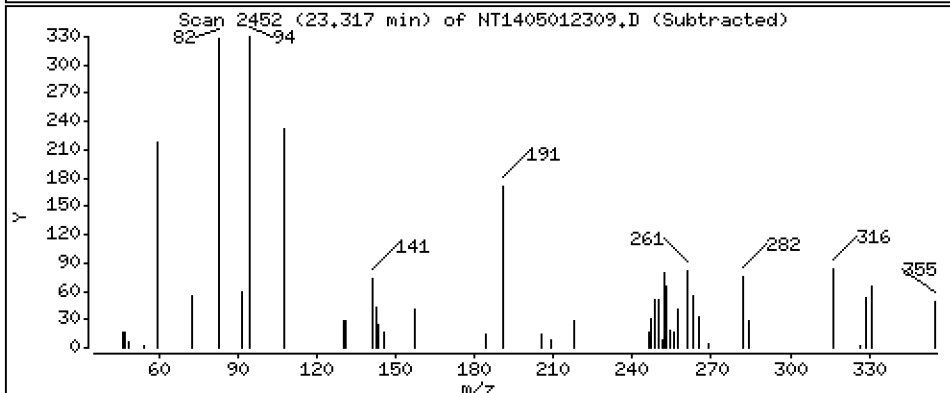
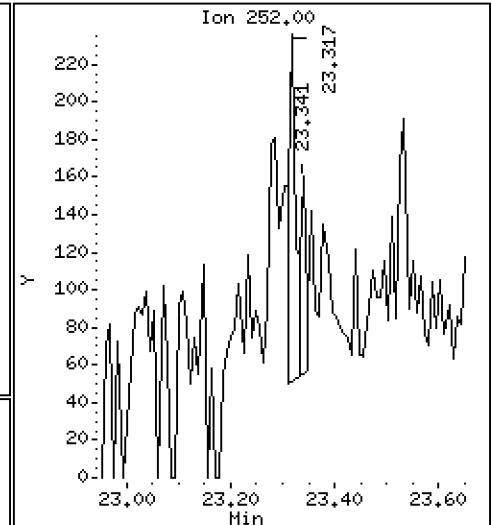
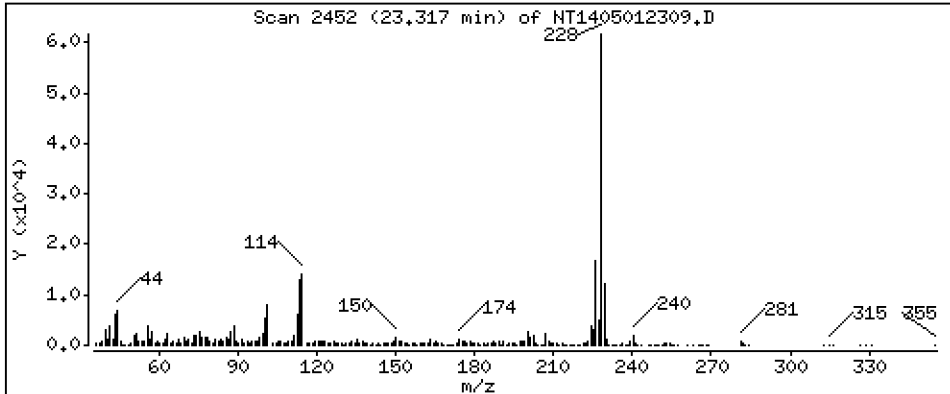
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 0,002954 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

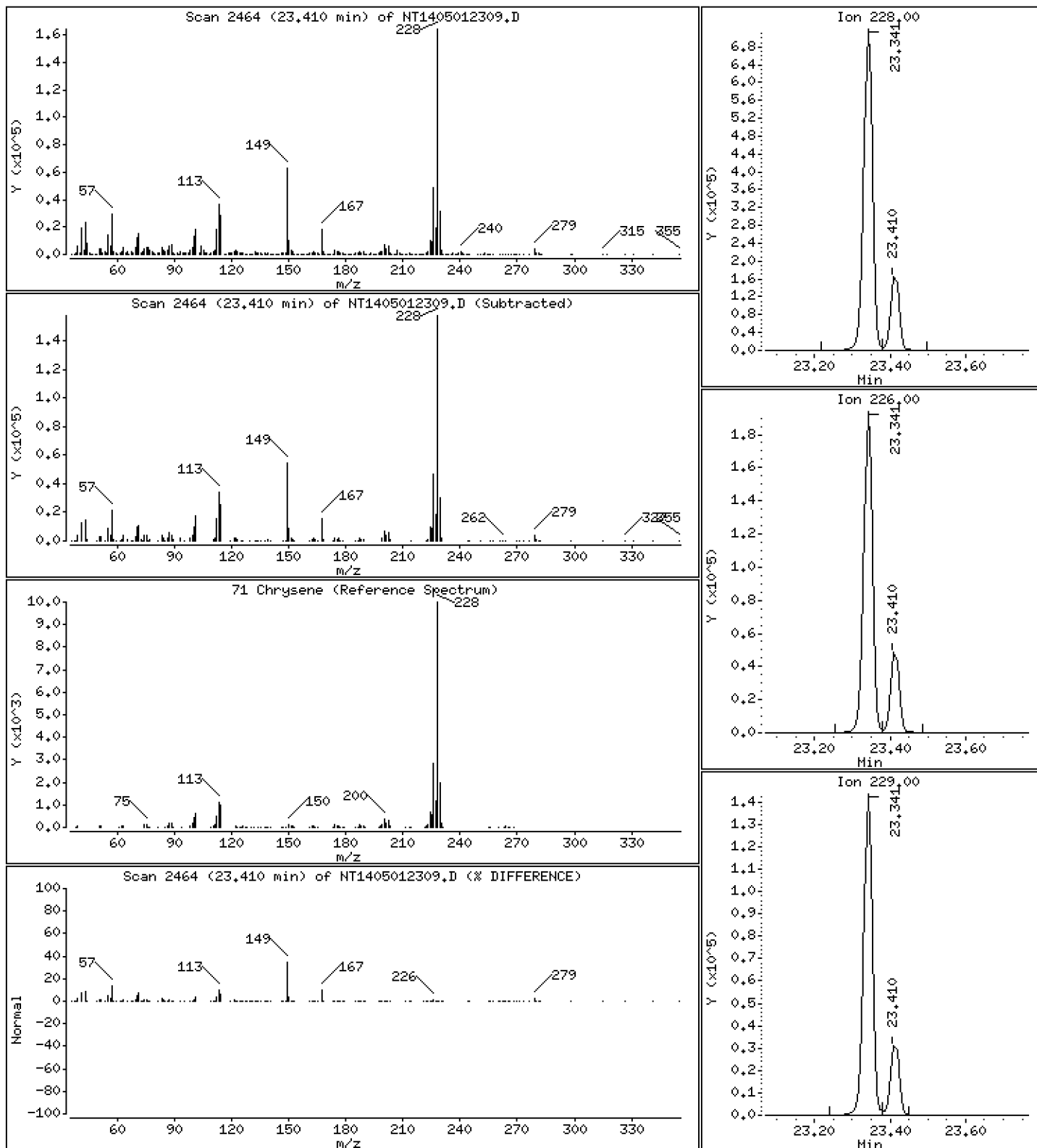
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 1,300 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

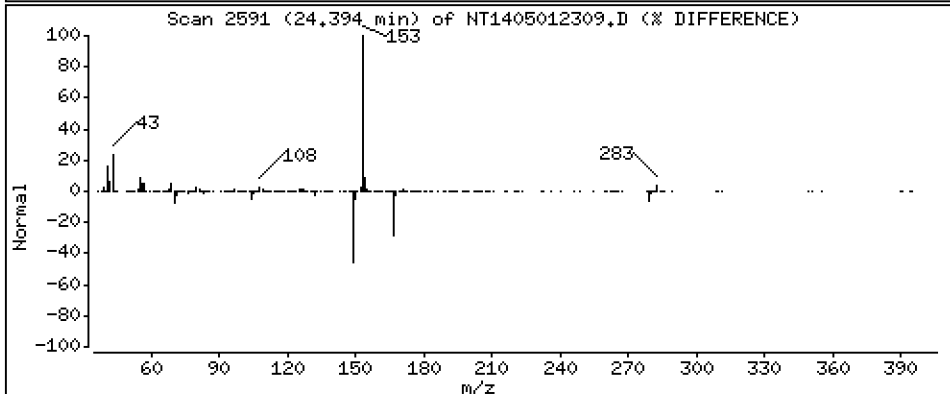
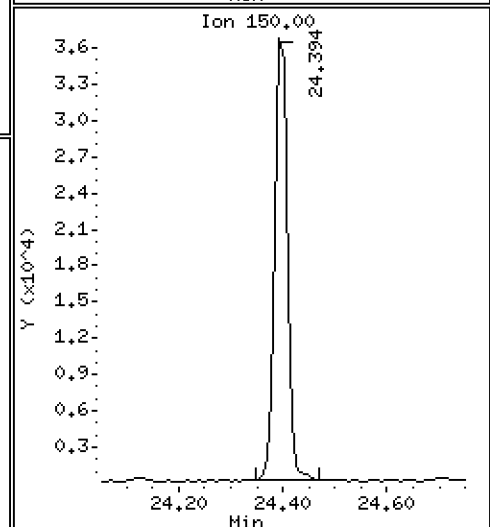
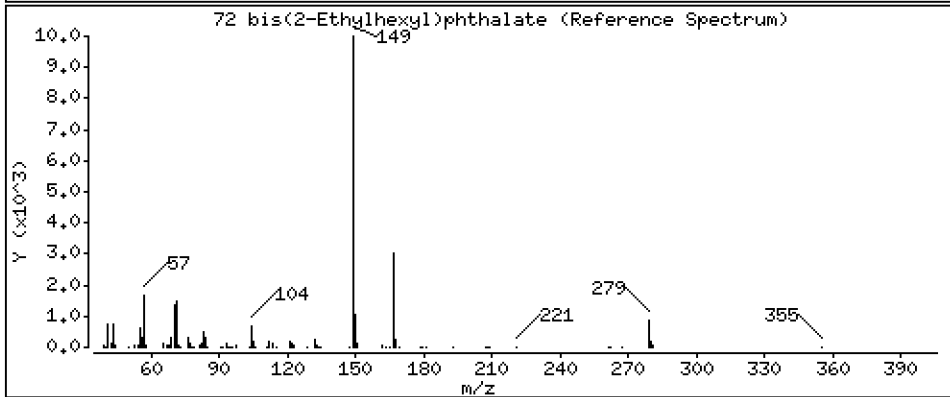
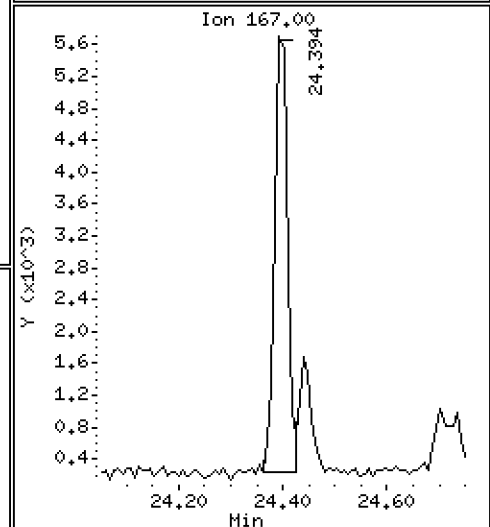
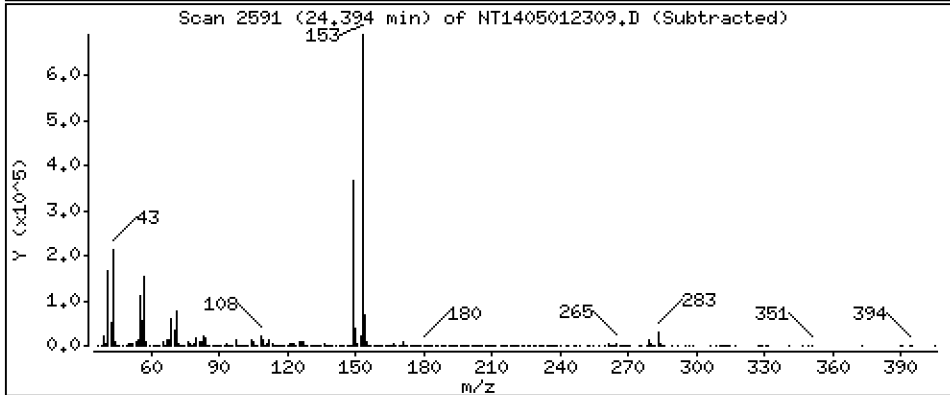
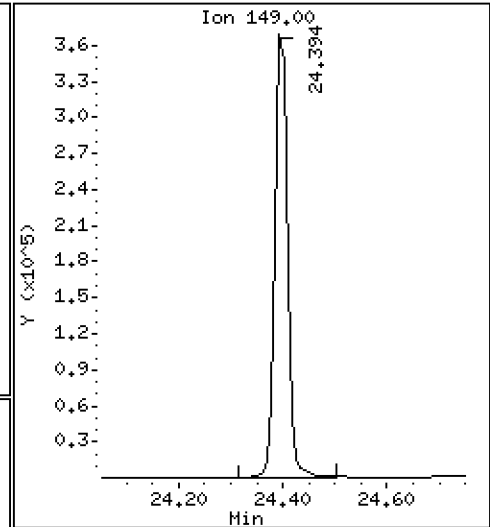
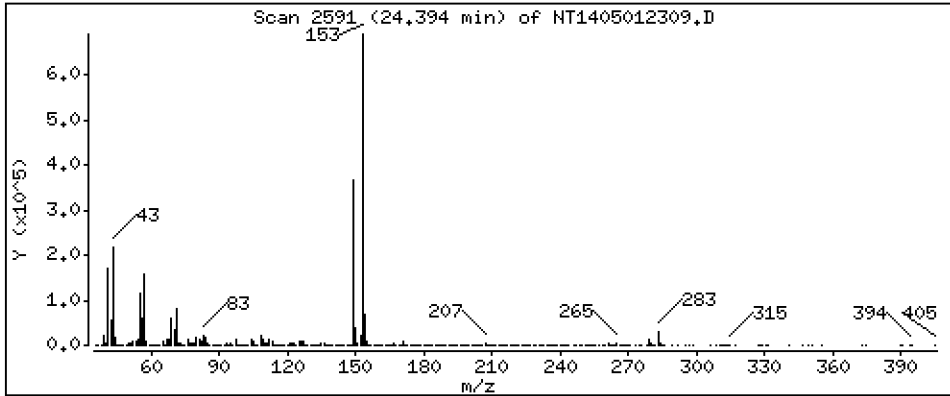
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 1,591 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

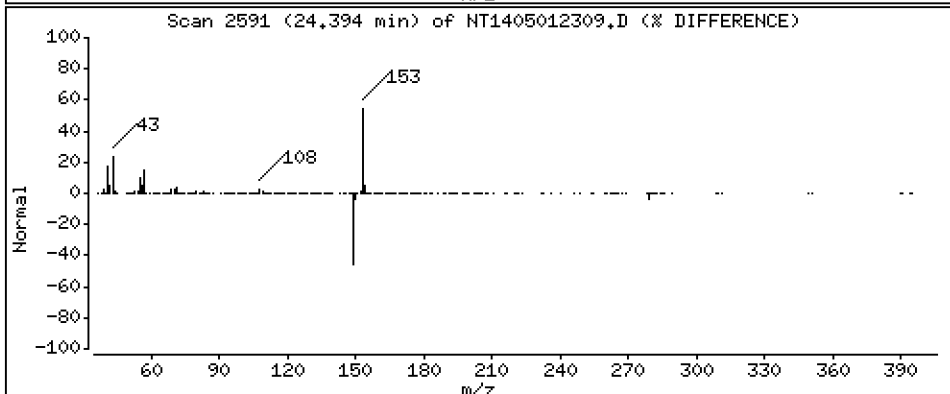
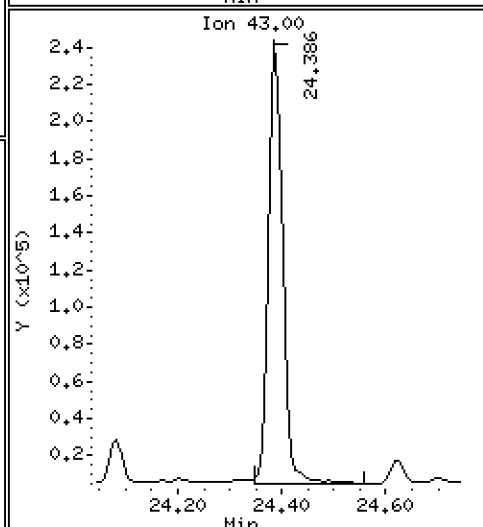
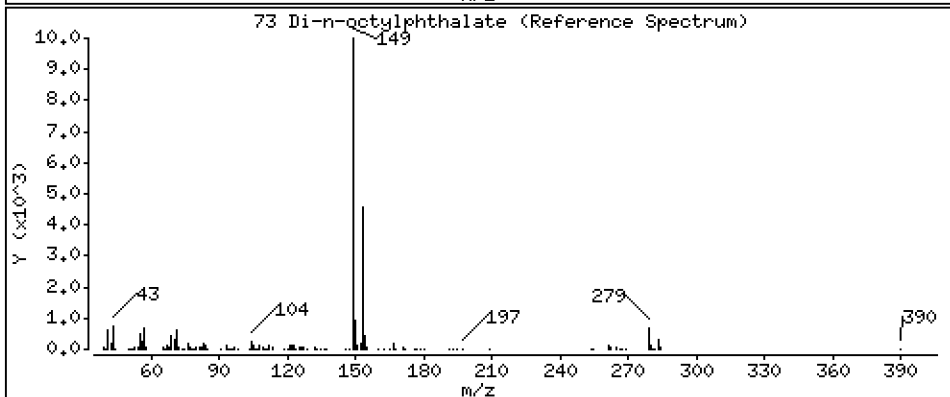
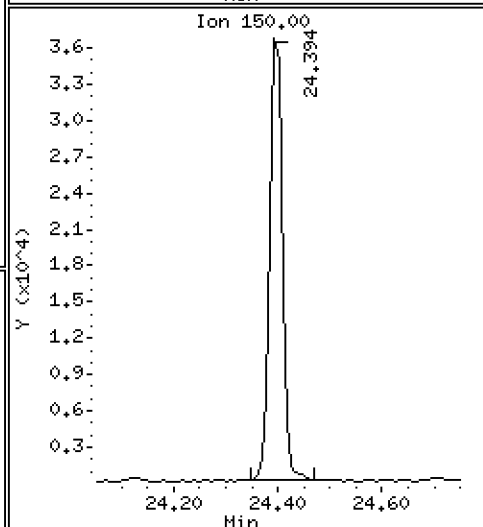
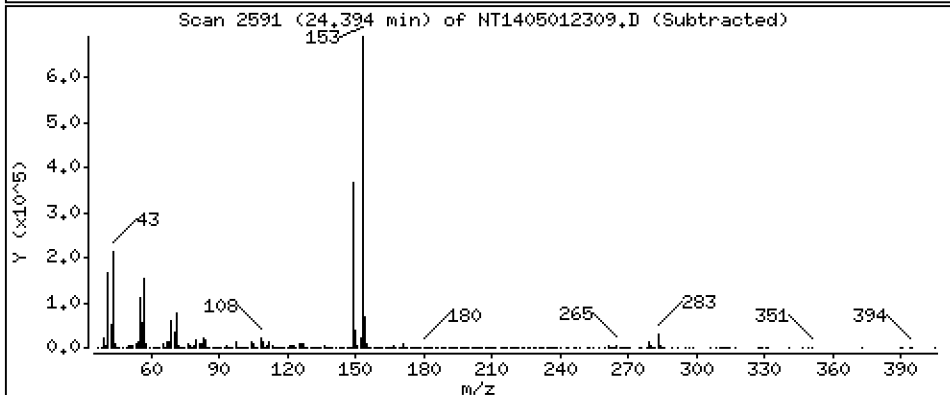
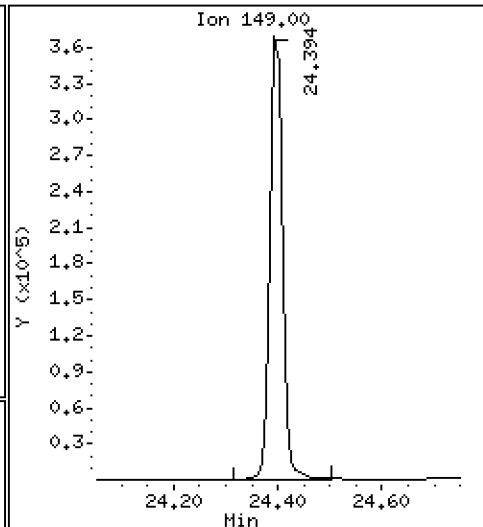
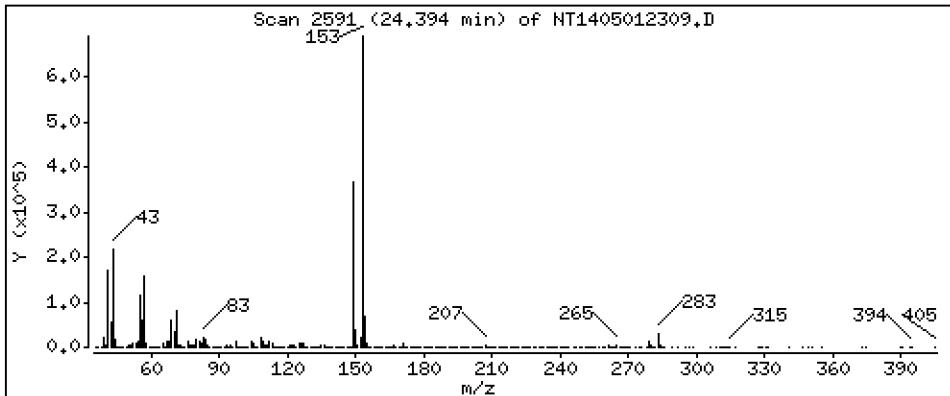
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 1,591 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

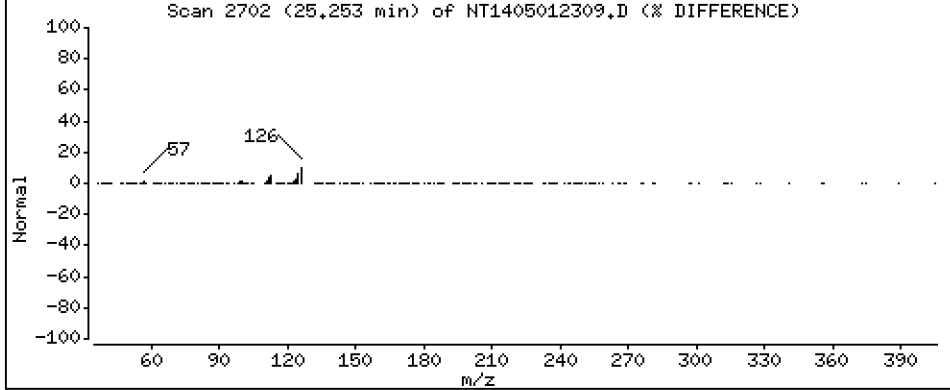
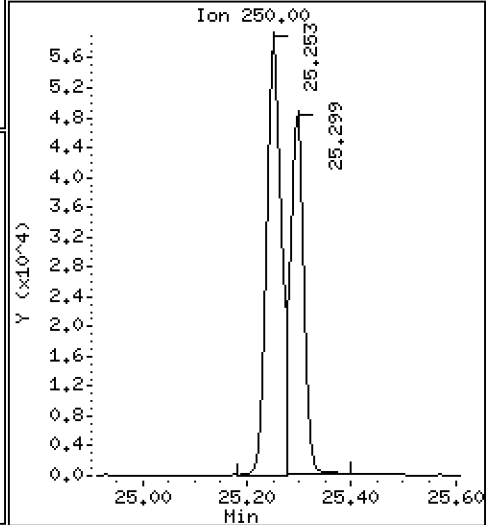
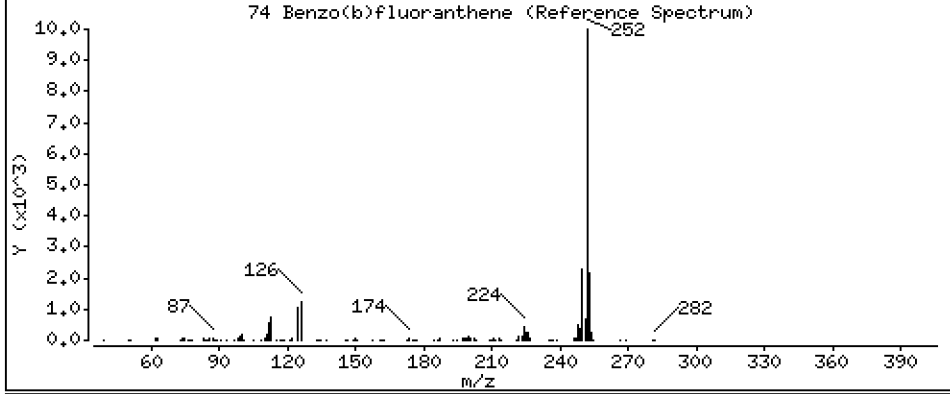
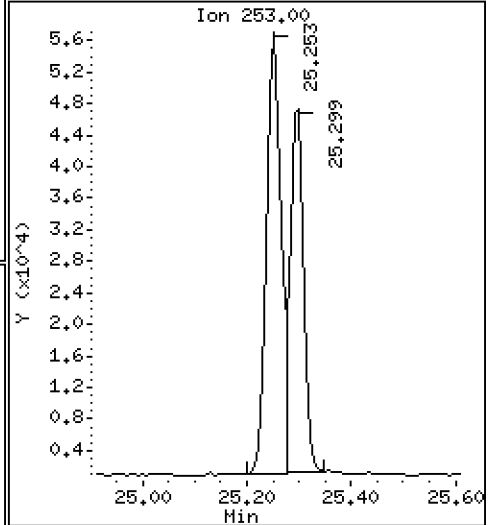
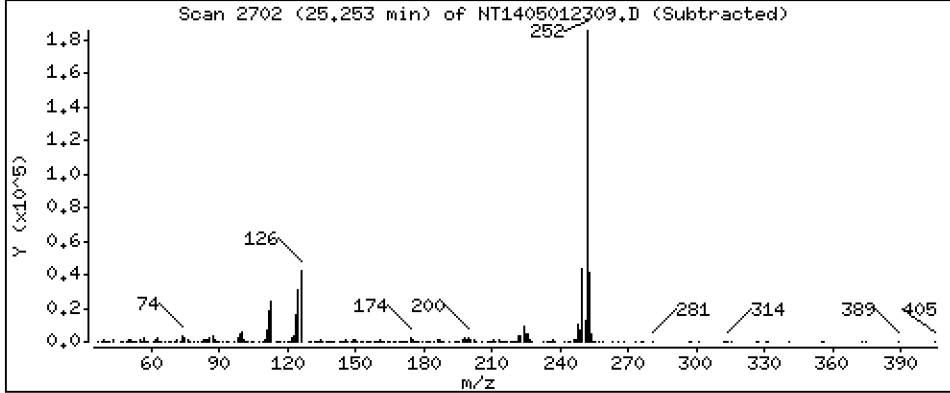
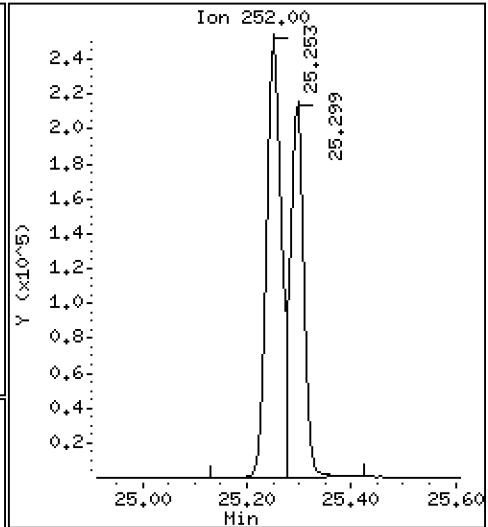
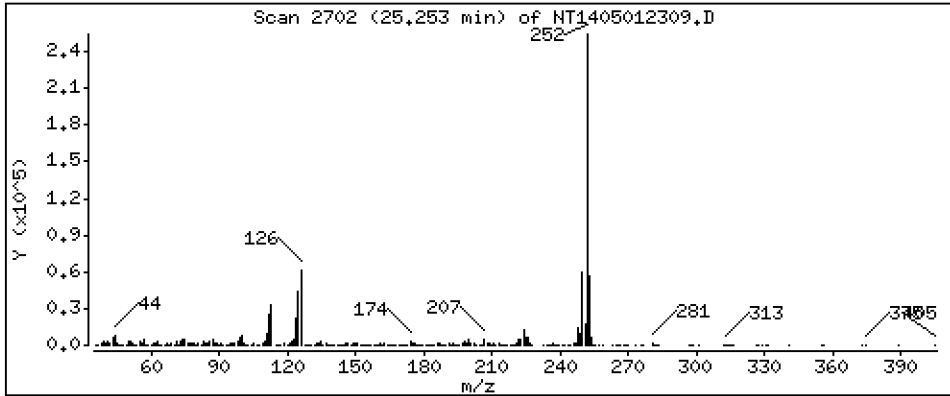
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 2,940 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

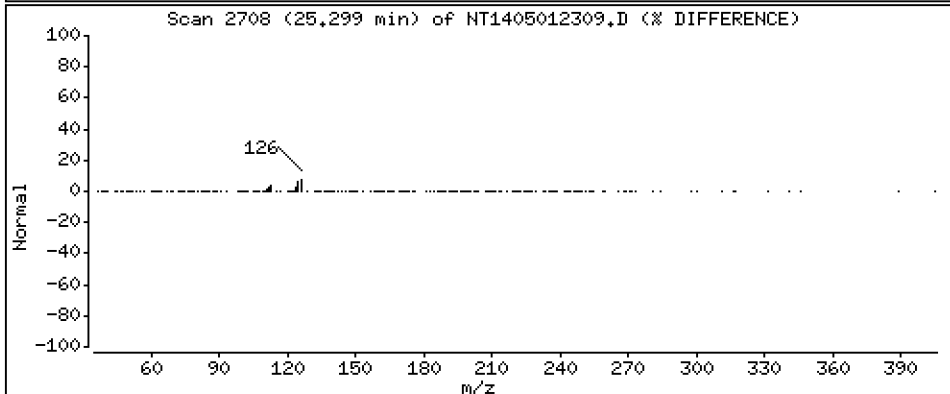
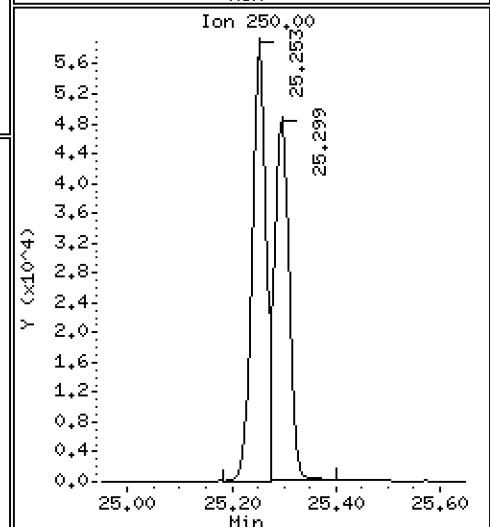
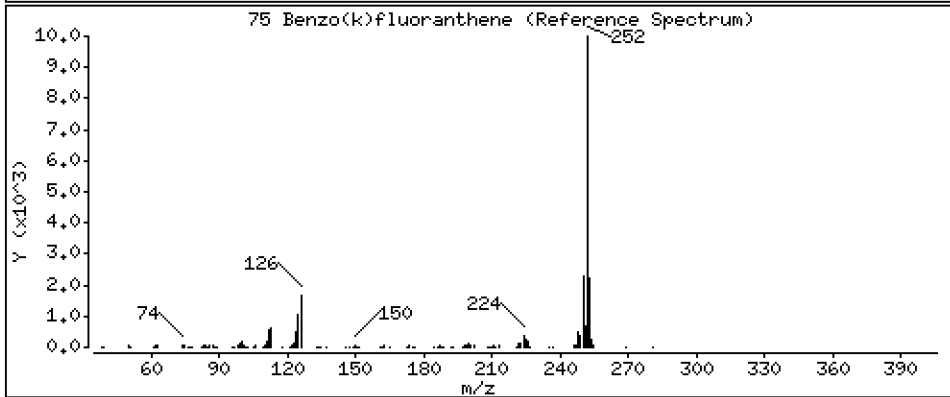
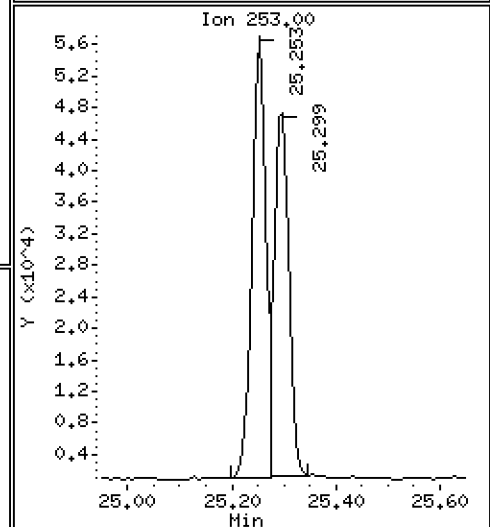
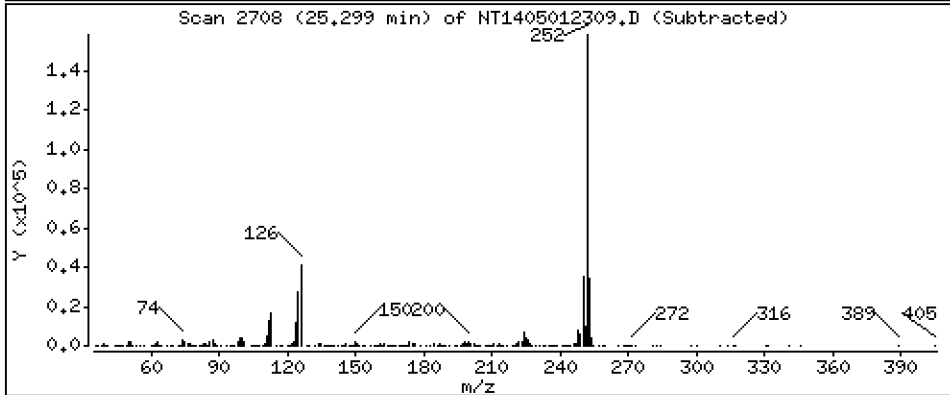
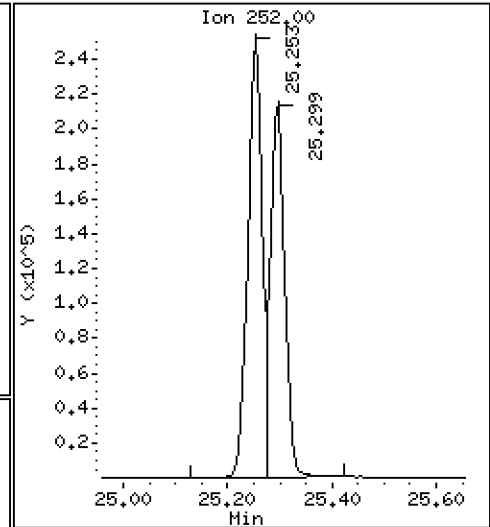
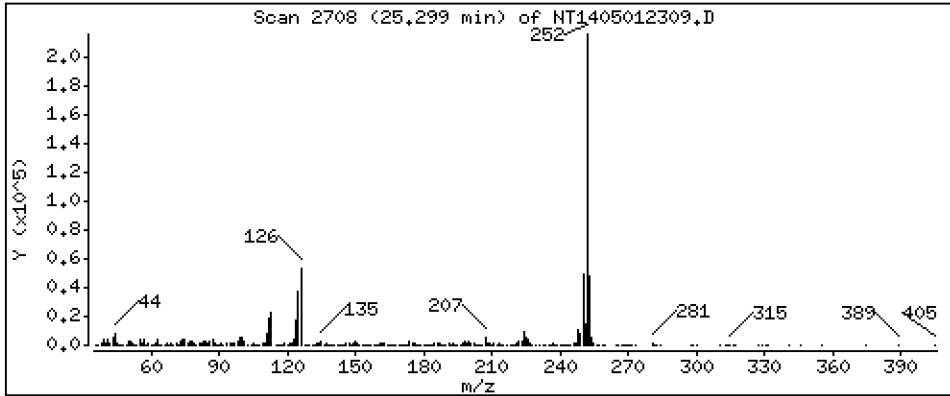
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 2,466 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

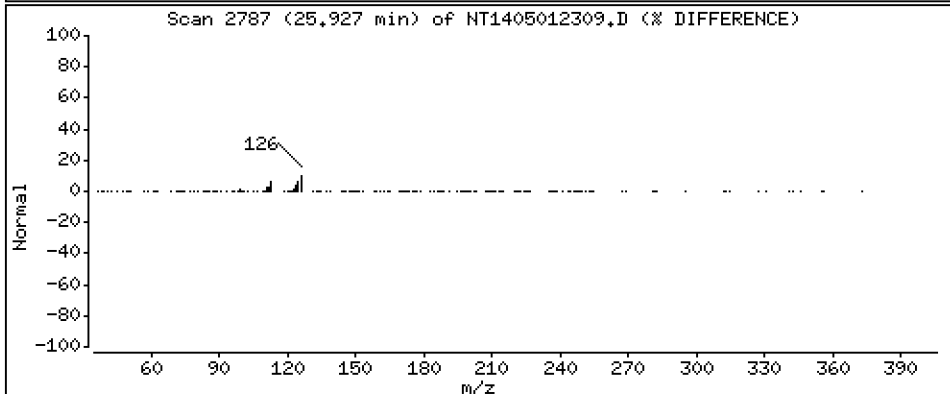
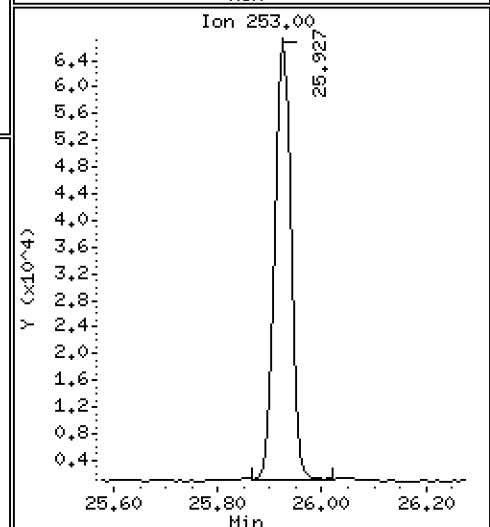
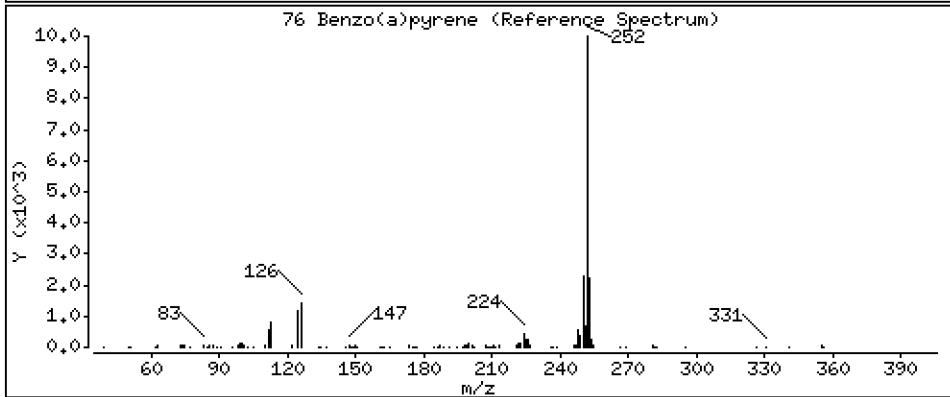
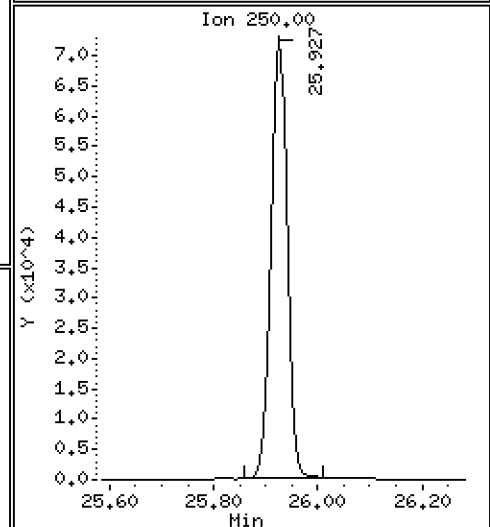
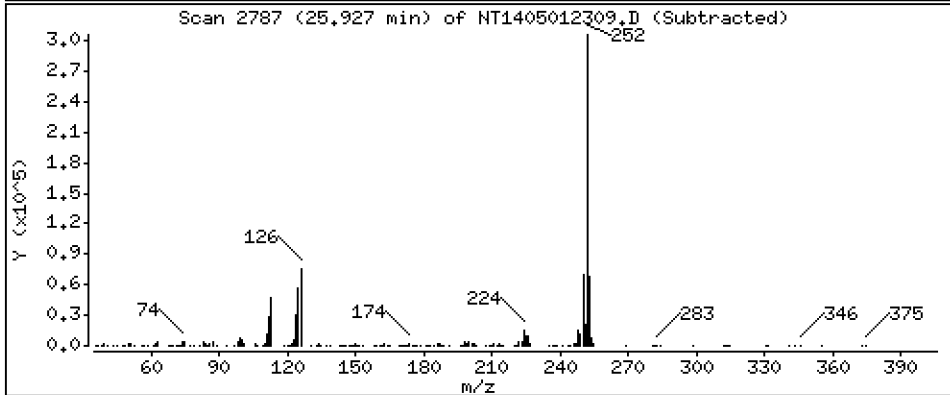
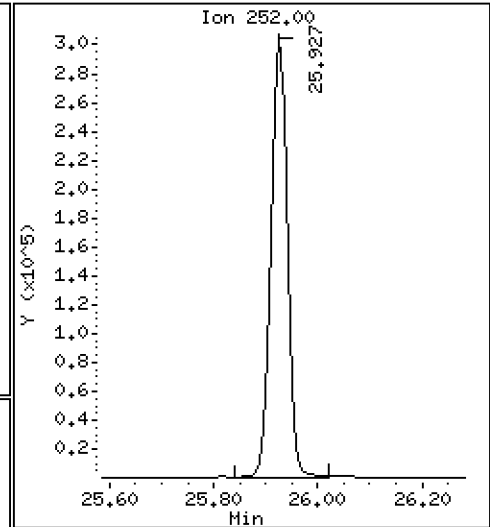
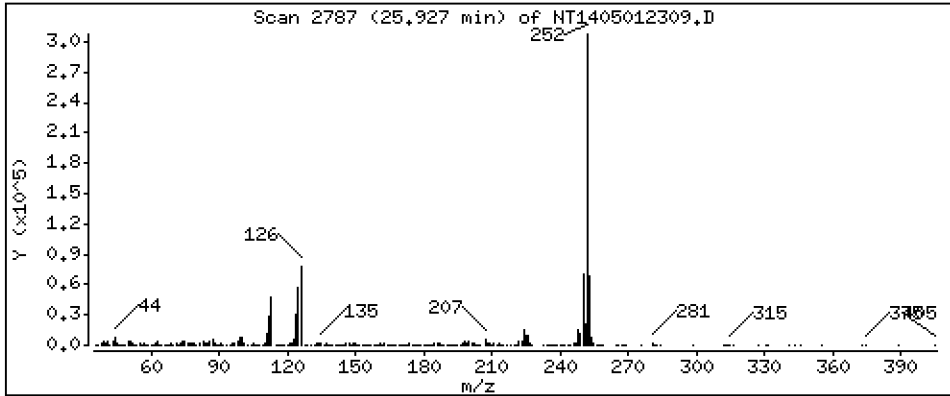
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 4,406 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

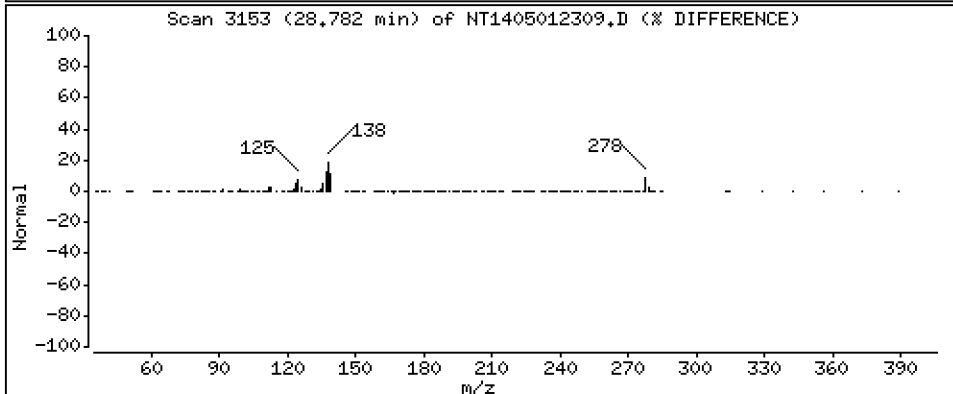
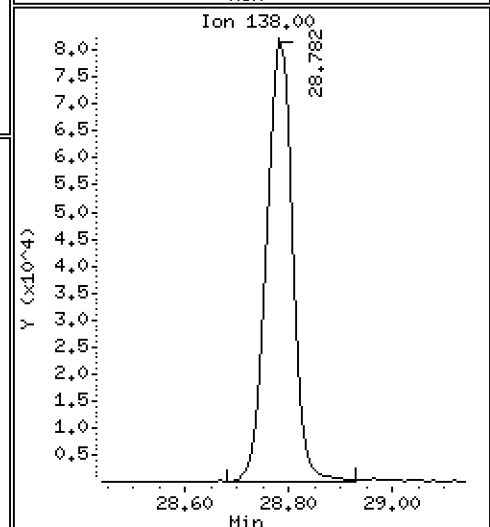
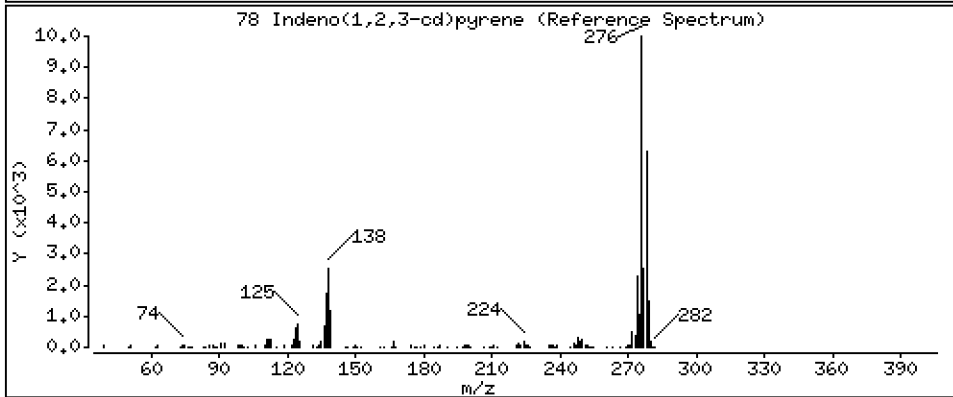
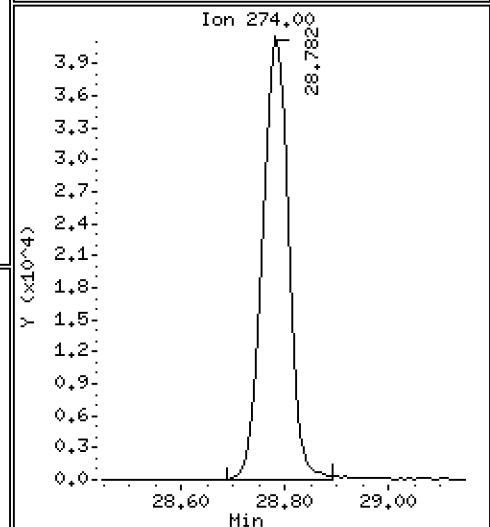
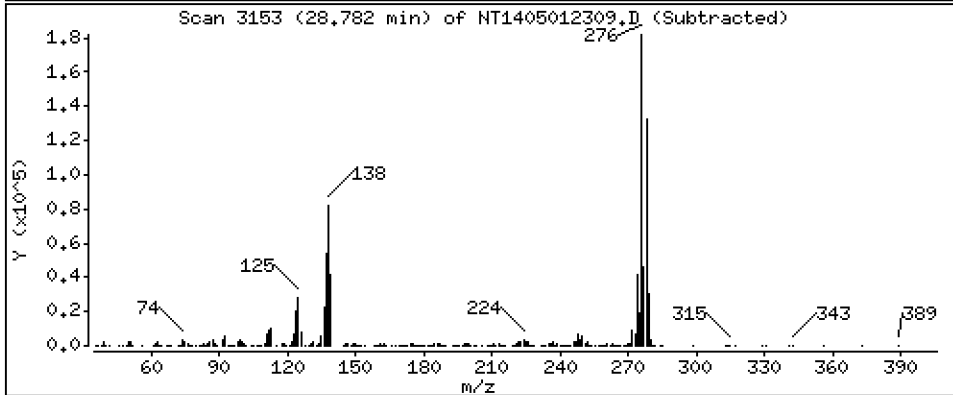
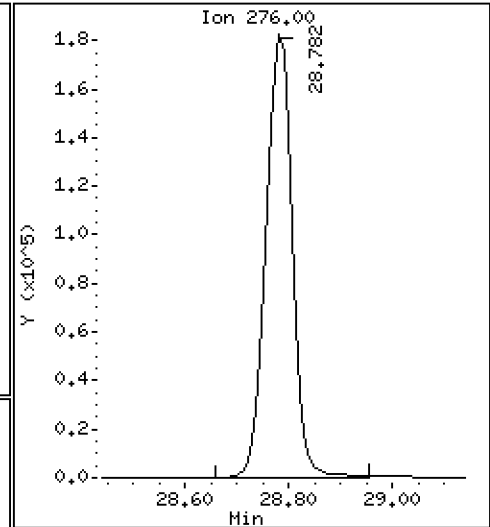
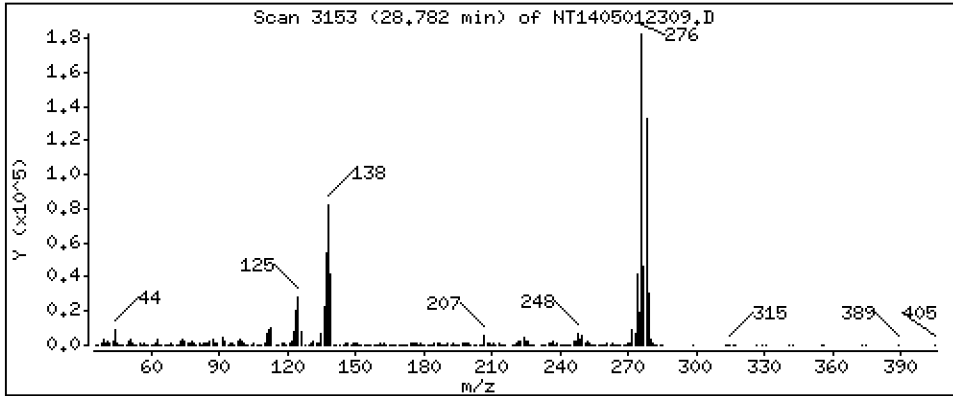
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 3,174 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

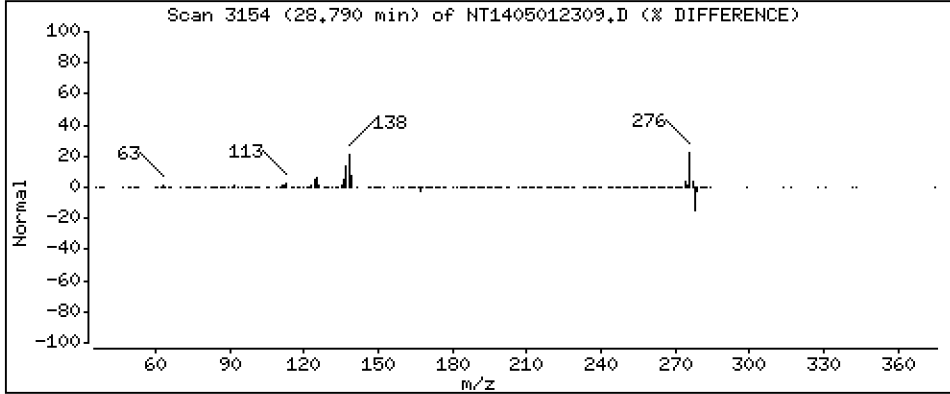
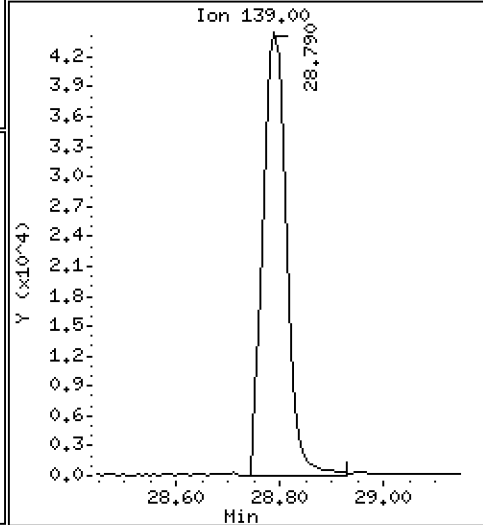
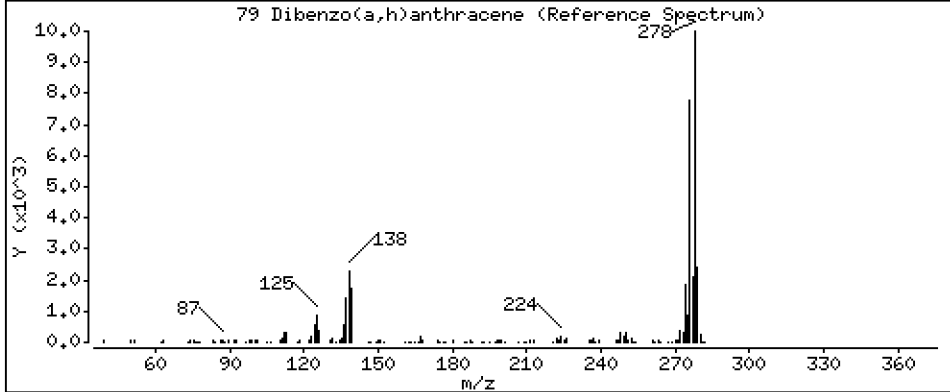
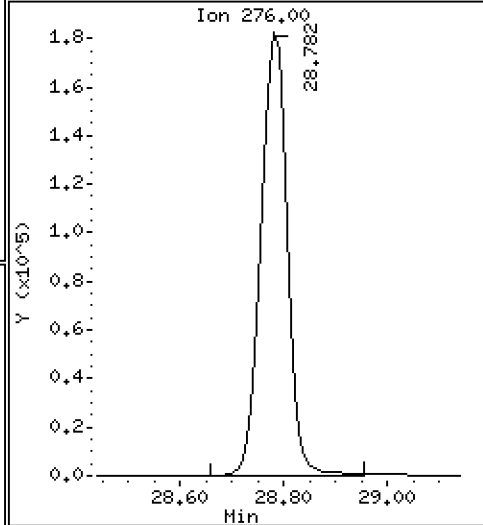
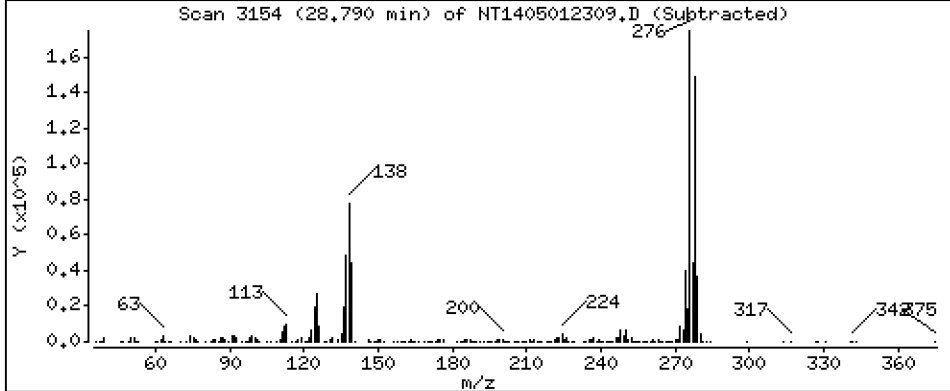
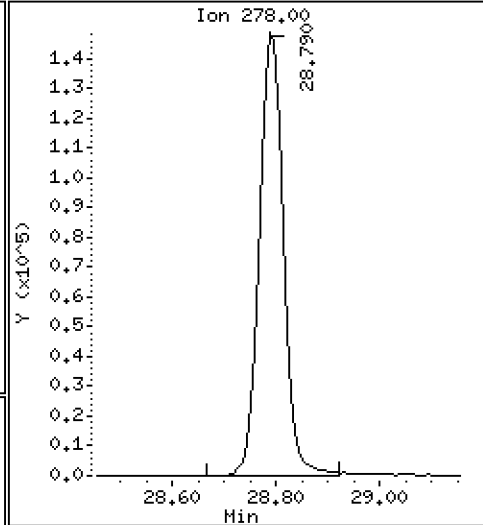
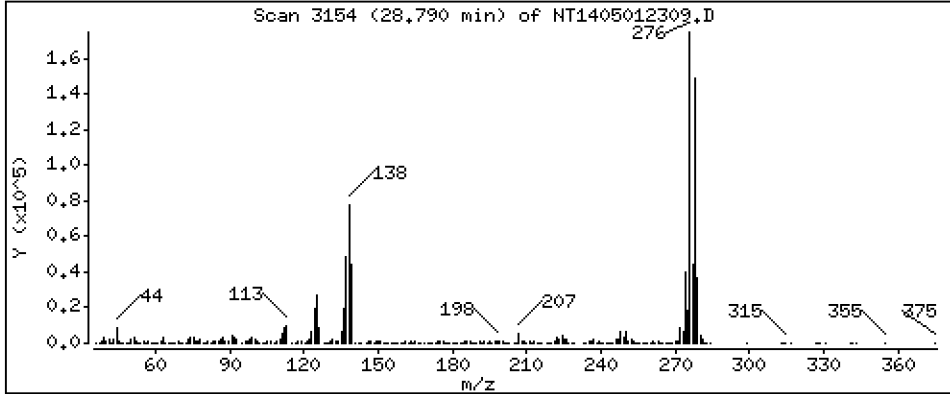
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 2,874 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

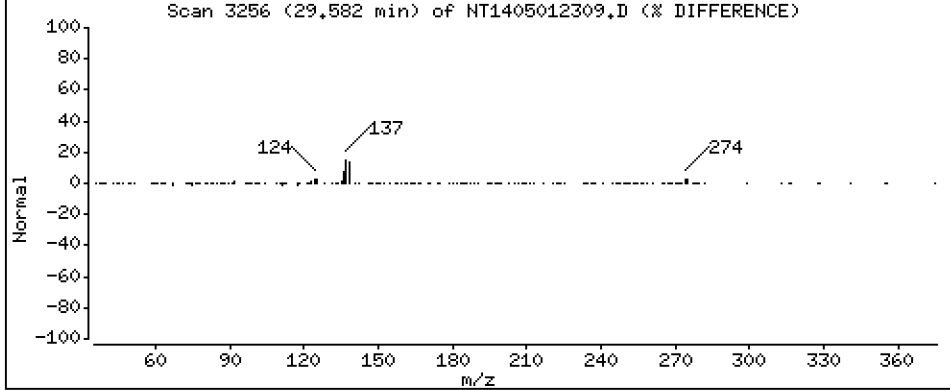
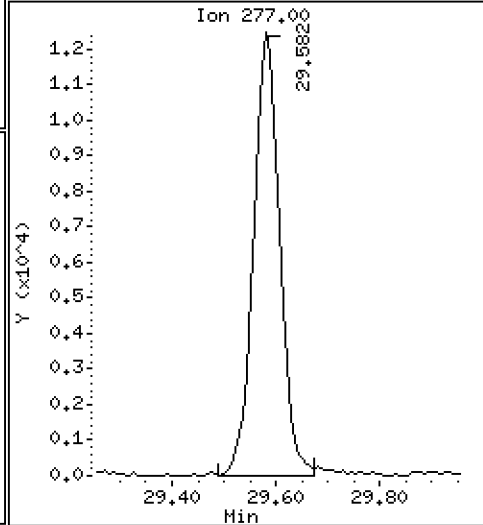
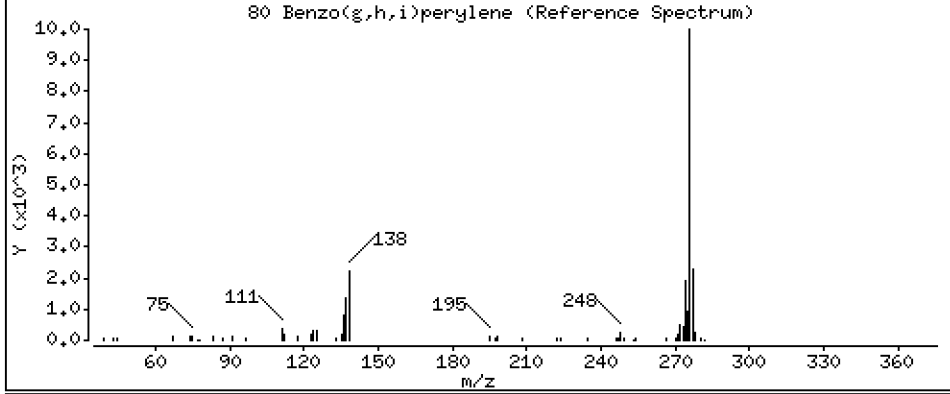
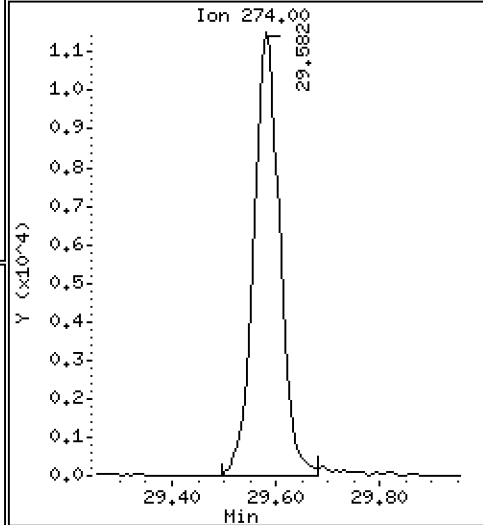
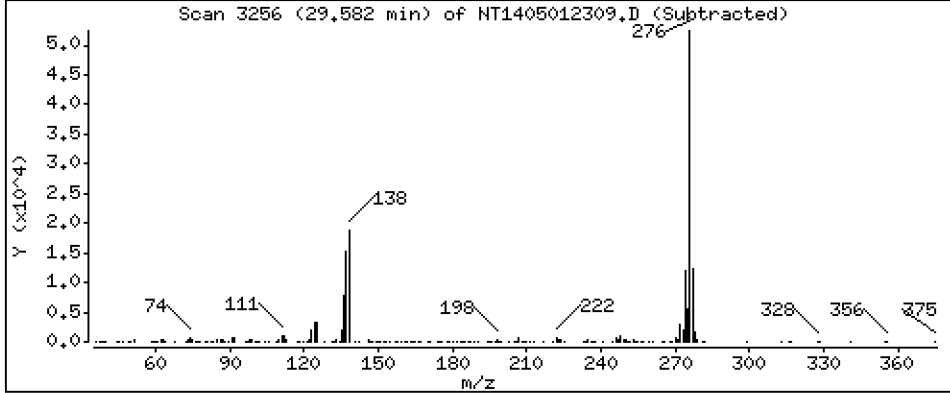
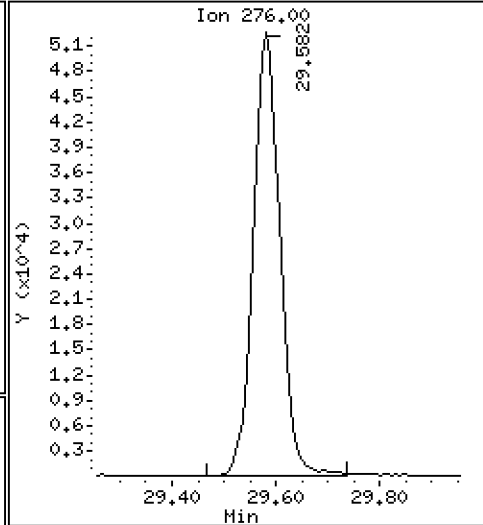
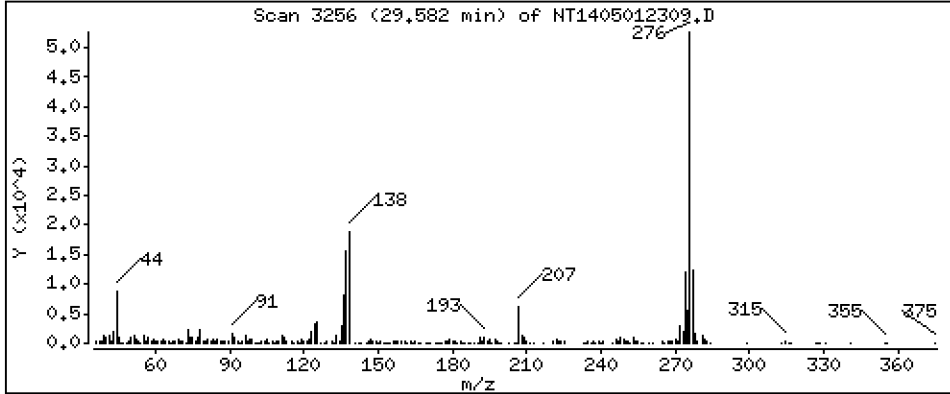
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

80 Benzo(g,h,i)perylene

Concentration: 1.104 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

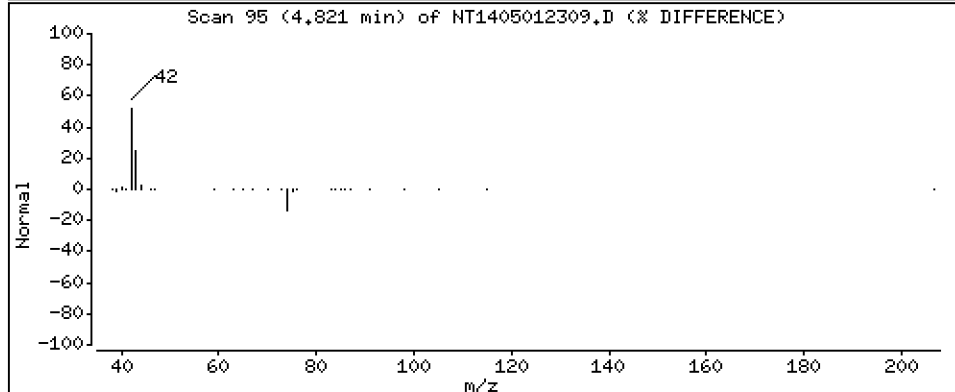
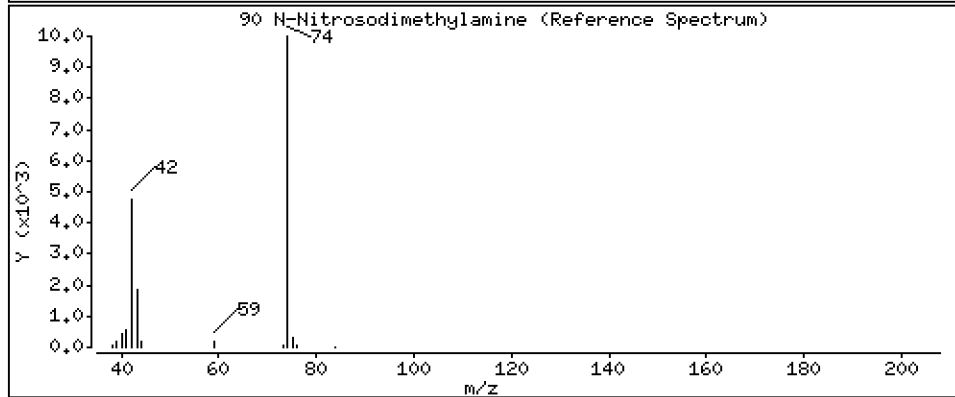
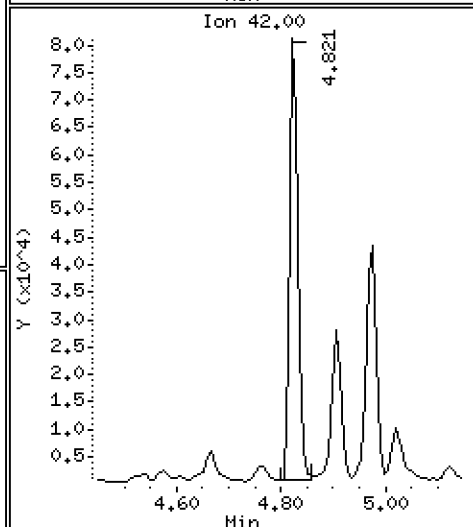
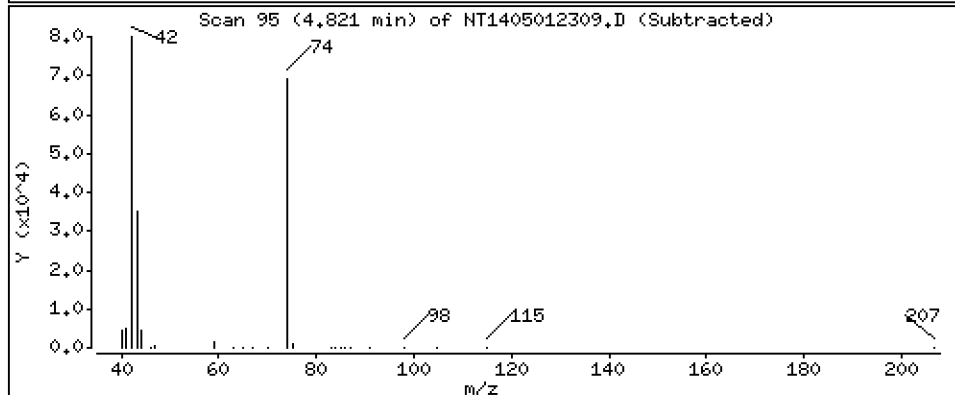
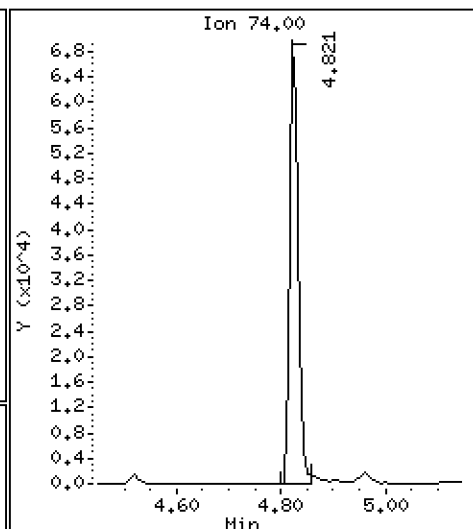
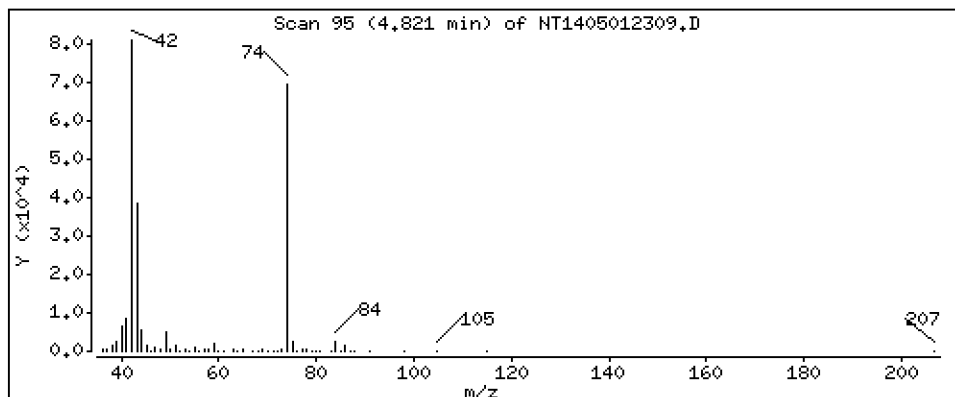
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 1.011 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

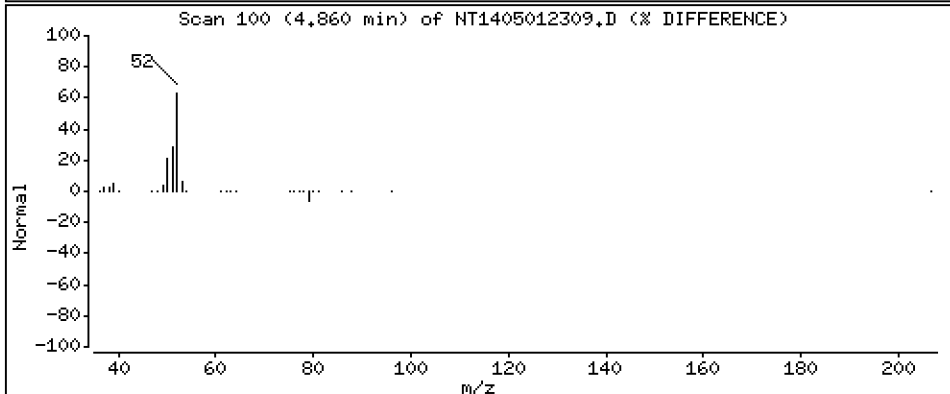
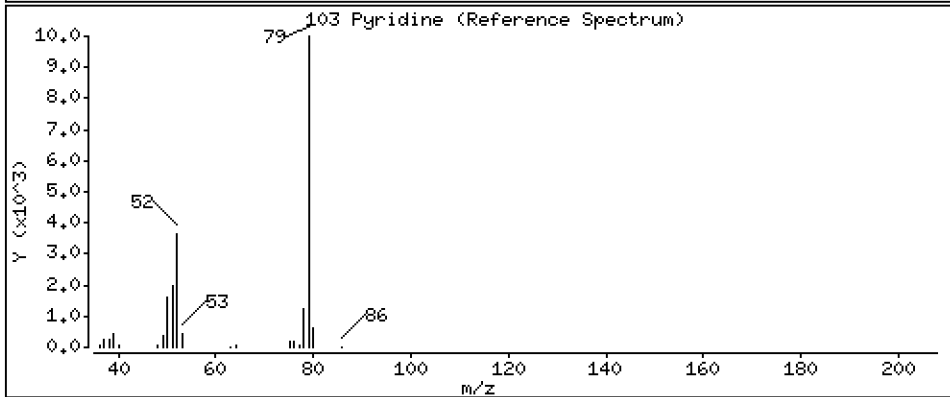
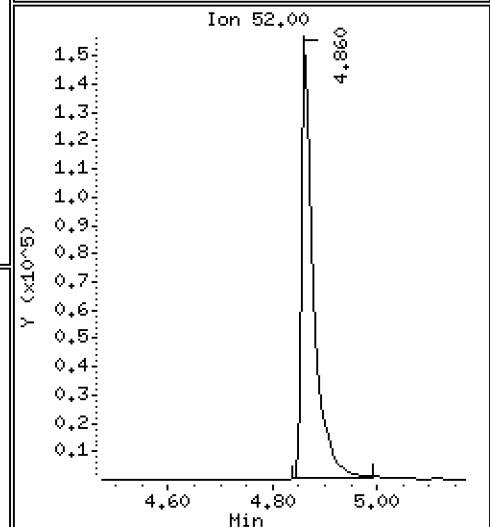
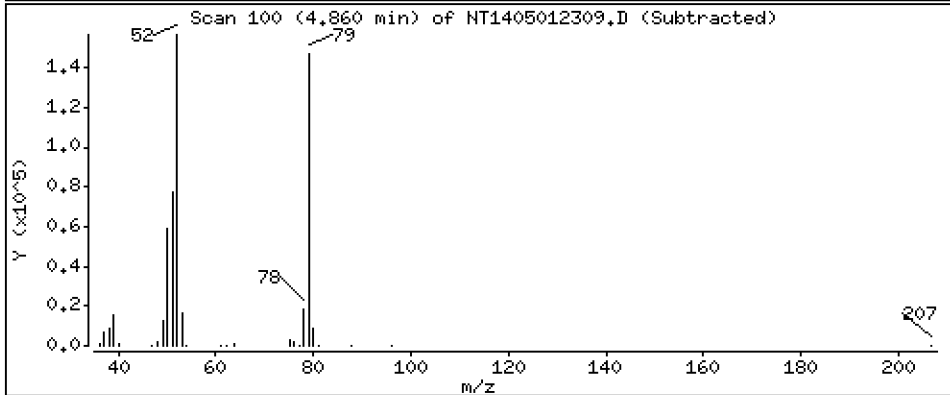
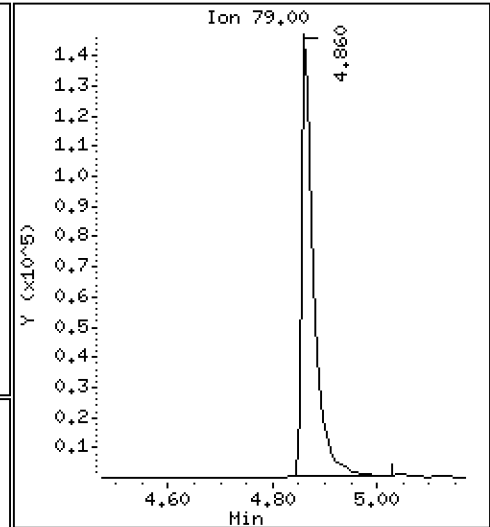
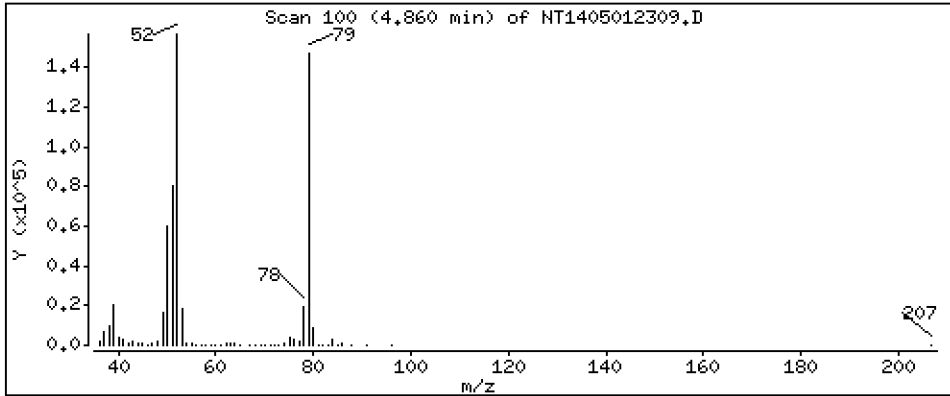
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,9957 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

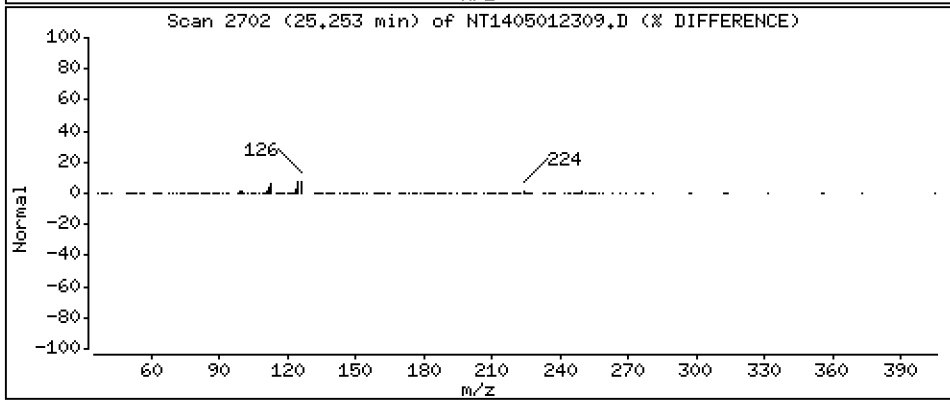
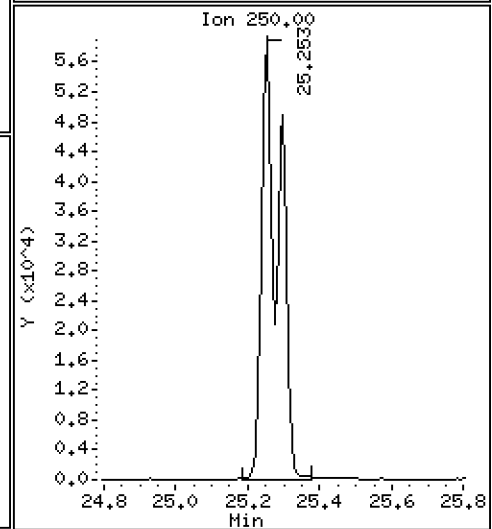
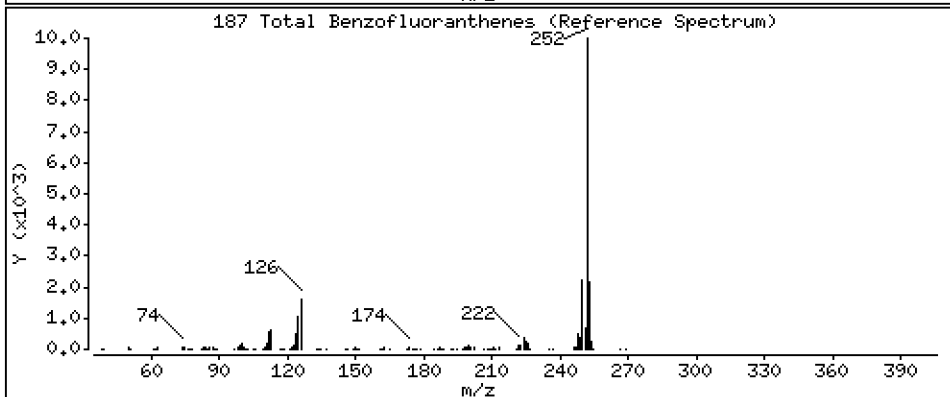
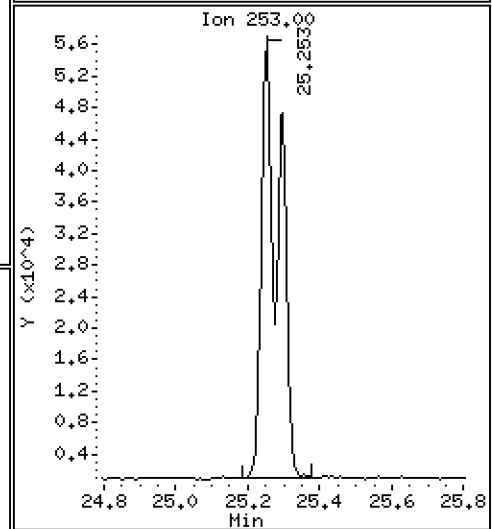
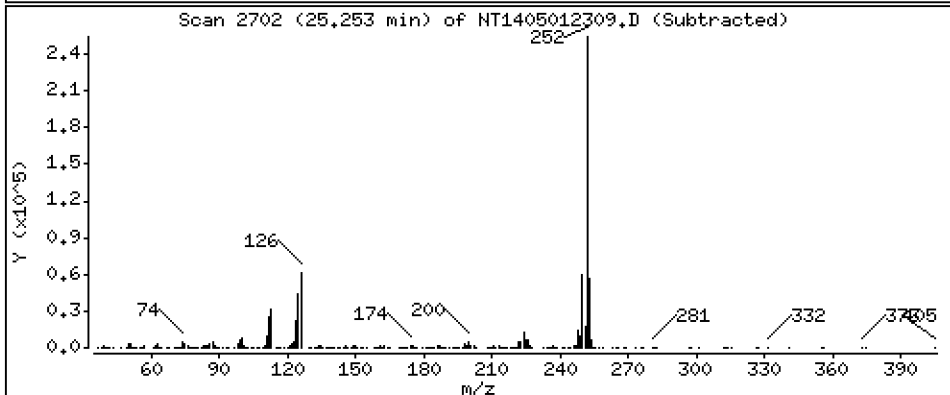
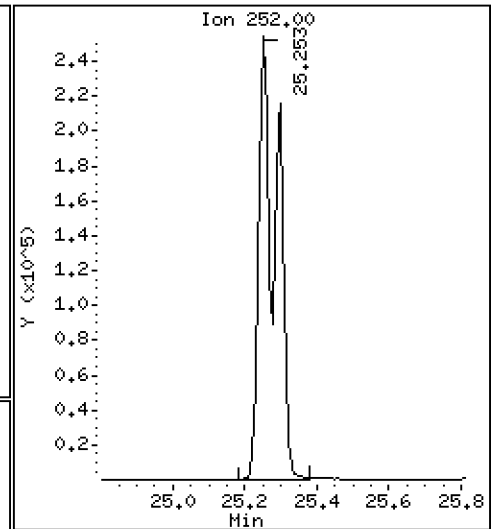
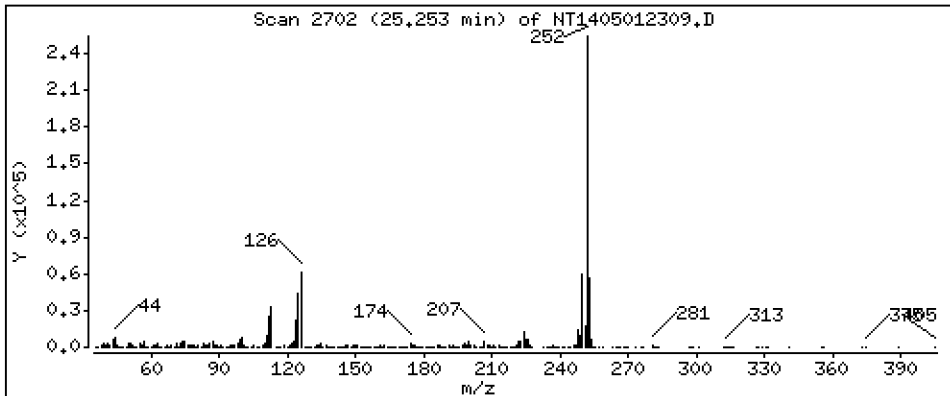
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 5,381 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM1

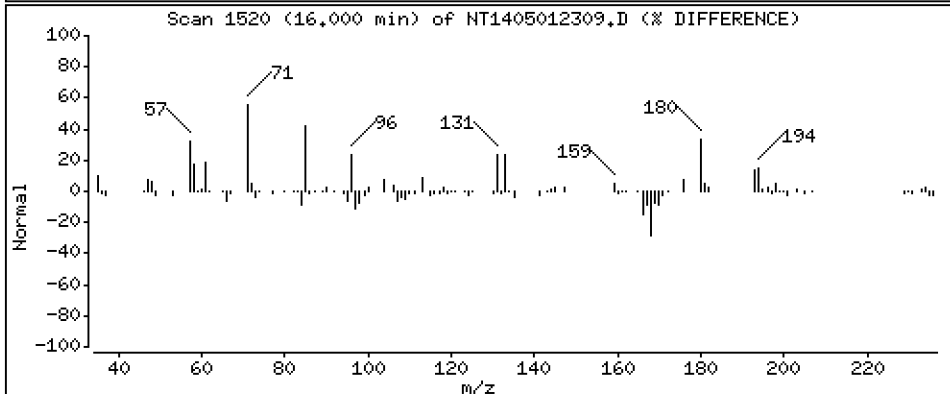
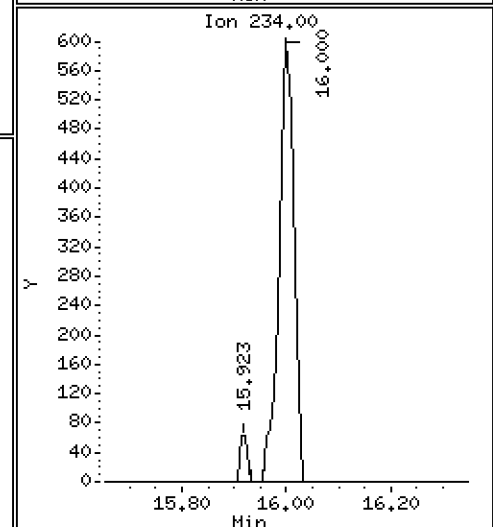
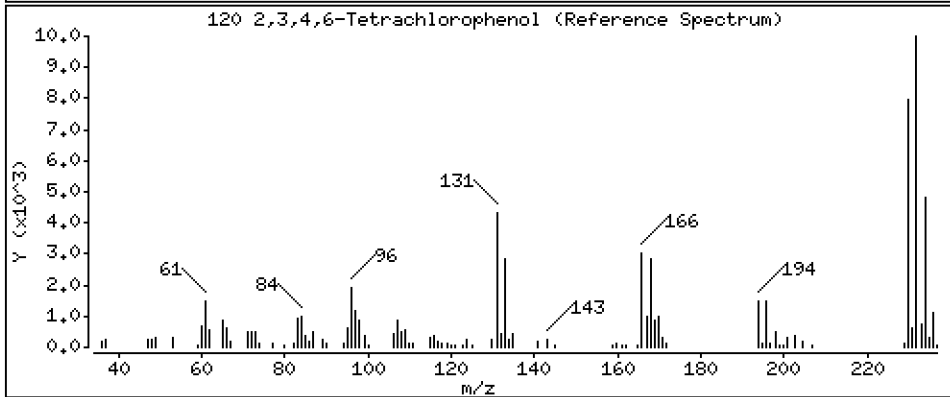
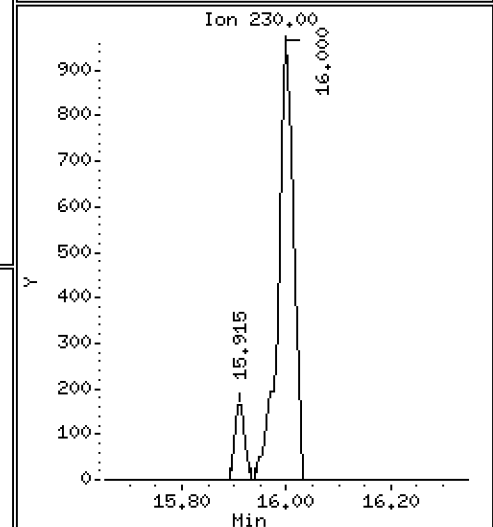
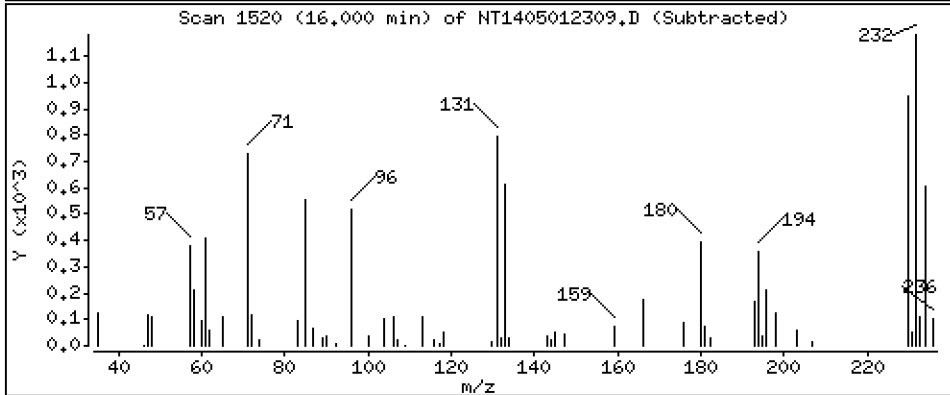
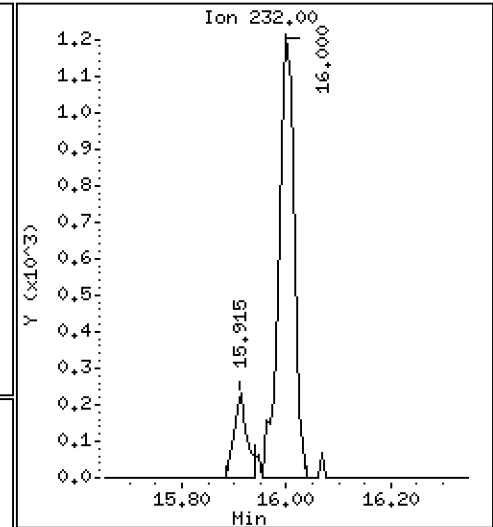
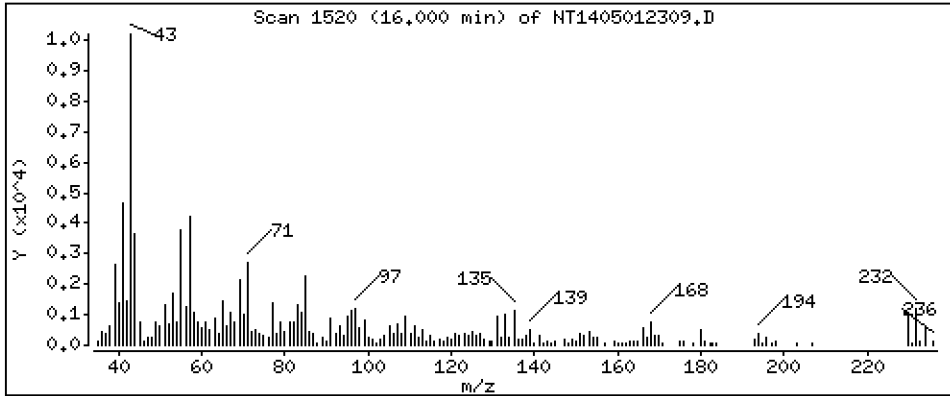
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 0,05347 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012309.D  
 Lab Smp Id: BLD0297-SRM1  
 Inj Date : 01-MAY-2023 19:27 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-SRM1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 9  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.914	6.898	(0.757)	640408	6.52573	6.526
\$ 2 Phenol-d5	99		8.490	8.490	(0.930)	915862	6.65008	6.650
3 Phenol	94		8.513	8.513	(0.932)	390551	2.53027	2.530
\$ 5 2-Chlorophenol-d4	132		8.768	8.768	(0.960)	691370	7.05677	7.057
4 Bis(2-Chloroethyl)ether	93		Compound Not Detected.					
6 2-Chlorophenol	128		8.799	8.799	(0.964)	145132	1.34995	1.350
7 1,3-Dichlorobenzene	146		9.070	9.070	(0.993)	105771	0.98256	0.9826
* 8 1,4-Dichlorobenzene-d4	152		9.132	9.132	(1.000)	271365	4.00000	
9 1,4-Dichlorobenzene	146		Compound Not Detected.					
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.040)	274368	4.42077	4.421
12 1,2-Dichlorobenzene	146		9.520	9.520	(1.042)	714	0.00699	0.006993
11 Benzyl alcohol	108		Compound Not Detected.					
14 2,2'-oxybis(1-Chloropropane)	121		9.706	9.706	(1.063)	73961	2.14564	2.146
13 2-Methylphenol	108		9.628	9.629	(1.054)	545973	5.30213	5.302
17 Hexachloroethane	117		Compound Not Detected.					
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
15 4-Methylphenol	108		9.900	9.900	(1.084)	764189	6.51667	6.517
\$ 18 Nitrobenzene-d5	82		10.234	10.242	(0.879)	609633	4.66562	4.666
19 Nitrobenzene	77		10.273	10.273	(0.883)	362451	2.59478	2.595
20 Isophorone	82		10.723	10.723	(0.921)	358023	1.86724	1.867
21 2-Nitrophenol	139		10.901	10.909	(0.937)	297669	4.46268	4.463
22 2,4-Dimethylphenol	107		10.955	10.955	(0.941)	274619	2.60906	2.609
23 Bis(2-Chloroethoxy)methane	93		Compound Not Detected.					
24 Benzoic acid	105		11.072	11.196	(0.951)	79481	0.91184	0.9118
25 2,4-Dichlorophenol	162		11.359	11.359	(0.976)	585004	6.46725	6.467
26 1,2,4-Trichlorobenzene	180		11.544	11.552	(0.992)	98613	1.25512	1.255
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1061685	4.00000	
28 Naphthalene	128		11.675	11.675	(1.003)	1105561	3.87413	3.874
29 4-Chloroaniline	127		Compound Not Detected.					
30 Hexachlorobutadiene	225		12.038	12.039	(1.035)	65134	1.81331	1.813
31 4-Chloro-3-methylphenol	107		12.774	12.774	(1.098)	192060	2.04186	2.042
32 2-Methylnaphthalene	142		Compound Not Detected.					
33 Hexachlorocyclopentadiene	237		Compound Not Detected.					

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196		13.702	13.702	(0.897)	99076	2.16180	2.162	
35 2,4,5-Trichlorophenol	196		13.780	13.780	(0.902)	170832	3.50867	3.509	
§ 36 2-Fluorobiphenyl	172		13.865	13.865	(0.908)	855362	4.91341	4.913	
37 2-Chloronaphthalene	162		14.082	14.082	(0.922)	343095	2.06453	2.065	
38 2-Nitroaniline	65		Compound Not Detected.						
39 Dimethylphthalate	163		14.770	14.778	(0.967)	778472	4.54104	4.541	
40 Acenaphthylene	152		14.956	14.956	(0.979)	430803	1.62429	1.624	
41 2,6-Dinitrotoluene	165		Compound Not Detected.						
* 42 Acenaphthene-d10	164		15.273	15.273	(1.000)	499813	4.00000		
43 3-Nitroaniline	138		Compound Not Detected.						
44 Acenaphthene	153		15.335	15.343	(1.004)	851927	5.36201	5.362	
45 2,4-Dinitrophenol	184		15.412	15.420	(1.009)	93404	3.97577	3.976	
46 Dibenzofuran	168		15.668	15.668	(1.026)	1350140	5.95250	5.952	
47 4-Nitrophenol	109		15.521	15.521	(1.016)	240217	8.45363	8.454	
48 2,4-Dinitrotoluene	165		15.722	15.729	(1.029)	189445	3.60007	3.600	
50 Diethylphthalate	149		16.232	16.240	(1.063)	14359	0.07738	0.07738	
49 Fluorene	166		16.379	16.386	(1.072)	739119	3.68245	3.682	
51 4-Chlorophenyl-phenylether	204		16.371	16.371	(1.072)	176211	2.12243	2.122	
52 4-Nitroaniline	138		Compound Not Detected.						
53 4,6-Dinitro-2-methylphenol	198		16.564	16.579	(0.904)	195838	7.37125	7.371	
54 N-Nitrosodiphenylamine	169		16.618	16.626	(0.907)	326324	2.70473	2.705	
§ 55 2,4,6-Tribromophenol	330		16.918	16.919	(1.108)	121013	7.36473	7.365	
56 4-Bromophenyl-phenylether	248		17.381	17.381	(0.949)	262391	6.61189	6.612	
57 Hexachlorobenzene	284		Compound Not Detected.						
58 Pentachlorophenol	266		18.054	18.054	(0.986)	79701	3.12248	3.122	
* 59 Phenanthrene-d10	188		18.317	18.325	(1.000)	854336	4.00000		
60 Phenanthrene	178		18.372	18.372	(1.003)	1191777	4.93370	4.934	
61 Anthracene	178		18.464	18.464	(1.008)	497638	2.14796	2.148	
62 Carbazole	167		18.797	18.797	(1.026)	1329993	6.20369	6.204	
63 Di-n-butylphthalate	149		19.578	19.579	(1.069)	502682	1.53809	1.538	
64 Fluoranthene	202		20.754	20.755	(0.888)	598721	2.24808	2.248	
65 Pyrene	202		21.180	21.180	(0.906)	772741	2.80962	2.810	
§ 66 Terphenyl-d14	244		21.459	21.459	(0.918)	826688	4.39172	4.392	
67 Butylbenzylphthalate	149		22.380	22.380	(0.958)	451383	2.69275	2.693	
68 Benzo(a)anthracene	228		23.340	23.340	(0.999)	1114463	5.41130	5.411	
* 69 Chrysene-d12	240		23.371	23.371	(1.000)	576956	4.00000		
70 3,3'-Dichlorobenzidine	252		23.317	23.302	(0.998)	195	0.00295	0.002954	
71 Chrysene	228		23.410	23.418	(1.002)	249760	1.30025	1.300	
72 bis(2-Ethylhexyl)phthalate	149		24.393	24.401	(1.000)	586527	1.59130	1.591	
* 134 Di-n-octylphthalate-d4	153		24.385	24.385	(1.000)	1380708	4.00000		
73 Di-n-octylphthalate	149		24.393	24.401	(1.000)	586527	1.59130	1.591	
74 Benzo(b)fluoranthene	252		25.252	25.260	(0.970)	504883	2.94016	2.940	
75 Benzo(k)fluoranthene	252		25.299	25.307	(0.971)	415490	2.46596	2.466	
76 Benzo(a)pyrene	252		25.926	25.934	(0.996)	639343	4.40570	4.406	
* 77 Perylene-d12	264		26.042	26.050	(1.000)	515005	4.00000		
78 Indeno(1,2,3-cd)pyrene	276		28.781	28.789	(1.105)	636834	3.17354	3.174	
79 Dibenzo(a,h)anthracene	278		28.789	28.805	(1.105)	471786	2.87418	2.874	
80 Benzo(g,h,i)perylene	276		29.581	29.605	(1.136)	187522	1.10386	1.104	
90 N-Nitrosodimethylamine	74		4.820	4.797	(0.528)	82464	1.01068	1.011	
91 Aniline	93		Compound Not Detected.						
93 Benzidine	184		Compound Not Detected.						
103 Pyridine	79		4.859	4.821	(0.532)	240479	0.99567	0.9957	
105 1-methylnaphthalene	142		Compound Not Detected.						
111 Azobenzene (1,2-DP-Hydrazine)	77		Compound Not Detected.						



Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.252	25.307	(0.970)	874840	5.38139	5.381
120 2,3,4,6-Tetrachlorophenol	232	16.000	16.000	(1.048)	2358	0.05347	0.05347

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012309.D Calibration Time: 15:06  
 Lab Smp Id: BLD0297-SRM1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	271365	-0.96
27 Naphthalene-d8	1103207	551604	2206414	1061685	-3.76
42 Acenaphthene-d10	520358	260179	1040716	499813	-3.95
59 Phenanthrene-d10	882575	441288	1765150	854336	-3.20
69 Chrysene-d12	600619	300310	1201238	576956	-3.94
134 Di-n-octylphthala	1445631	722816	2891262	1380708	-4.49
77 Perylene-d12	570040	285020	1140080	515005	-9.65

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.13	-0.00
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.33	17.83	18.83	18.32	-0.04
69 Chrysene-d12	23.37	22.87	23.87	23.37	-0.00
134 Di-n-octylphthala	24.39	23.89	24.89	24.39	-0.00
77 Perylene-d12	26.05	25.55	26.55	26.04	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012309.D

Lab ID: BLD0297-SRM1  
nt14.i, ABN.m, 01-MAY-2023 19:27

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.951	0.962	-0.0107	Benzoic acid

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



**MASS SPECTROMETER  
INSTRUMENT PERFORMANCE CHECK  
EPA 8270E**

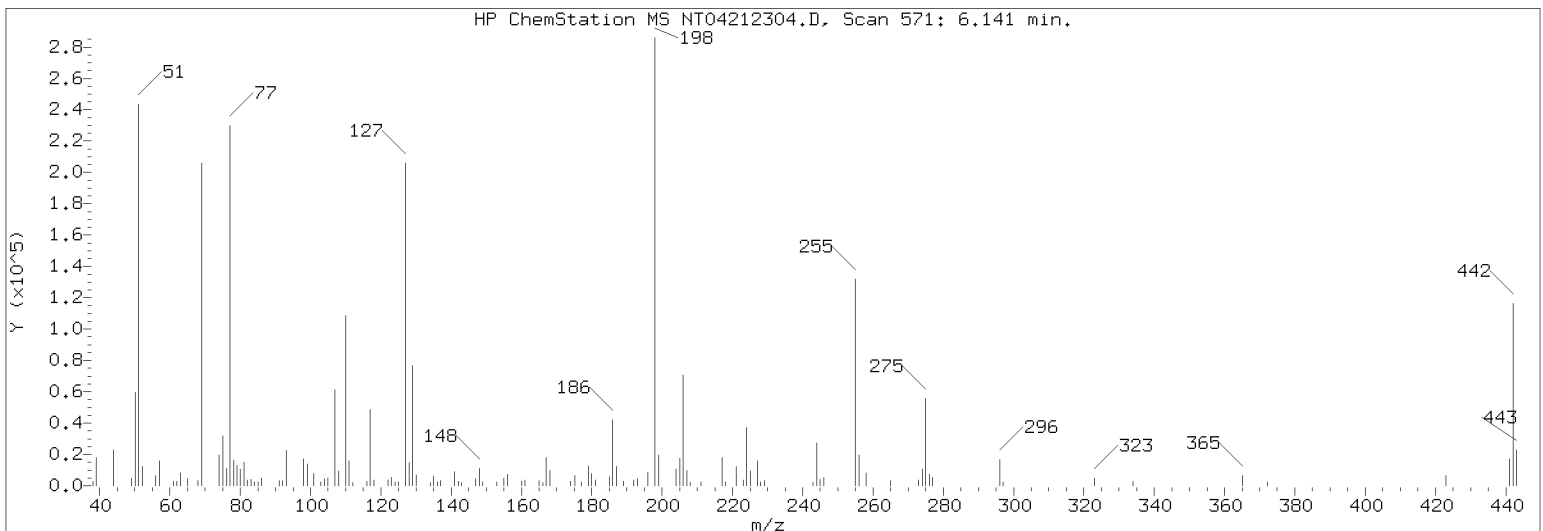
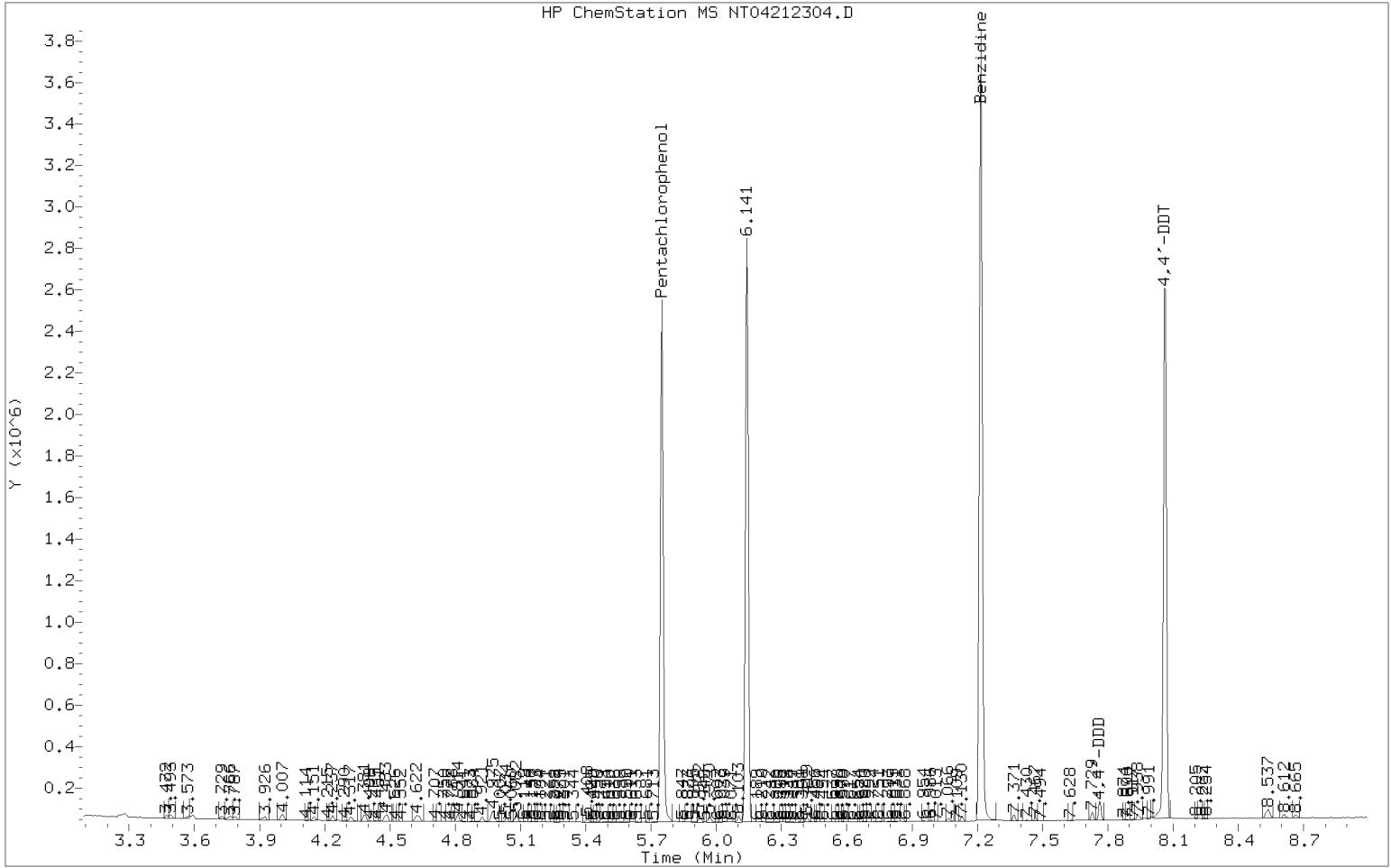
Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Lab File ID:	<u>NT04212304.D</u>	Injection Date:	<u>04/21/23</u>
Instrument ID:	<u>NT14</u>	Injection Time:	<u>15:32</u>
Sequence:	<u>SLD0357</u>	Lab Sample ID:	<u>SLD0357-TUN1</u>

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
68	Less than 2% of 69	1.55	PASS
69	Less than 100% of 198	73.1	PASS
70	Less than 2% of 69	0	PASS
197	Less than 2% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.86	PASS
365	1 - 100% of 198	2.31	PASS
441	Less than 150% of 443	76.8	PASS
442	1 - 200% of 198	44.3	PASS
443	15 - 24% of 442	19.5	PASS
4,4'-DDD	Less than 20% of 4,4'-DDT		
4,4'-DDE	Less than 20% of 4,4'-DDT		
4,4'-DDT	Base peak, 100% relative abundance		

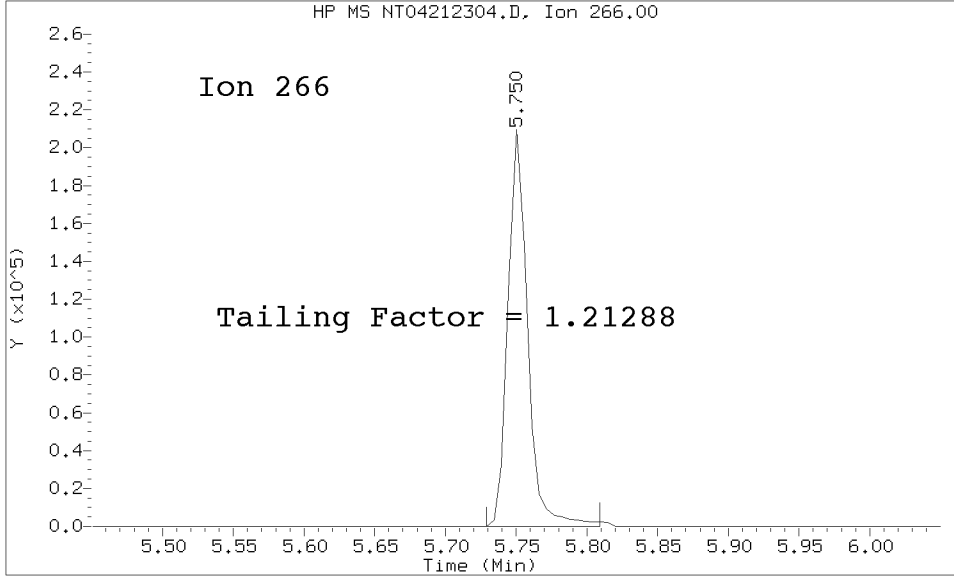
Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SLD0357-TUN1	NT04212304.D	04/21/2023	15:32
Cal Standard	SLD0357-CAL7	NT04212305.D	04/21/2023	15:47
Cal Standard	SLD0357-CAL6	NT04212306.D	04/21/2023	16:23
Cal Standard	SLD0357-CAL5	NT04212307.D	04/21/2023	17:00
Cal Standard	SLD0357-CAL4	NT04212308.D	04/21/2023	17:37
Cal Standard	SLD0357-CAL3	NT04212309.D	04/21/2023	18:13
Cal Standard	SLD0357-CAL2	NT04212310.D	04/21/2023	18:50
Cal Standard	SLD0357-CAL1	NT04212311.D	04/21/2023	19:27
Secondary Cal Check	SLD0357-SCV1	NT04212314.D	04/21/2023	21:16
Initial Cal Blank	SLD0357-ICB1	NT04212315.D	04/21/2023	21:53

DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20230421.b/NT04212304.D/NT04212304.D  
Method Used: \20230421.b\DFTPP8270E.m Inst: nt14  
Injection Date: 21-APR-2023 15:32 Operator: JGR  
Sample Info: SEQ-TUN SEQ-TUN  
Report Date: 04/27/2023 08:14



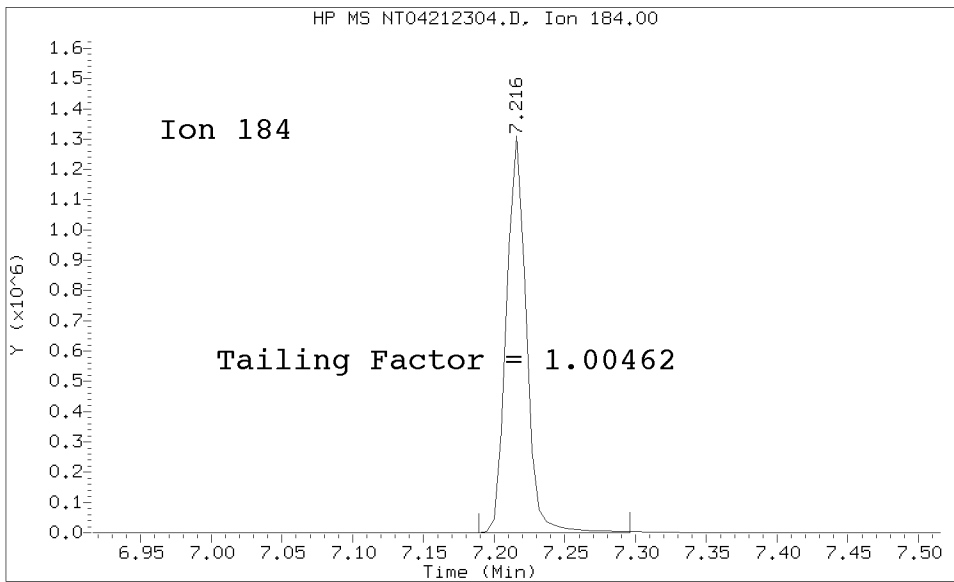
Datafile Analyzed: /20230421.b/NT04212304.D/NT04212304.D  
Method Used: \20230421.b\DFTPP8270E.m\sw846ddt.m Inst: nt14  
Injection Date: 21-APR-2023 15:32 Operator: JGR  
Sample Info: SEQ-TUN  
Report Date: 04/27/2023 08:14



Pentachlorophenol

=====  
Exp. RT = 5.751  
Found RT = 5.750

Tail Factor = 1.213 Maximum Allowed = 2.0



Benzidine

=====  
Exp. RT = 7.216  
Found RT = 7.216

Tail Factor = 1.005 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.2128778	2.000	PASS
Benzidine	1.0046189	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	368019			N/A
4,4-DDE	0	0.0	20.0	PASS
4,4-DDD	19097	4.9	20.0	PASS
4,4-DDD + DDE	19097	4.9	20.0	PASS

Tuning Sample, nt14.i/20230421.b/NT04212304.D, \*\*\* PASSED \*\*\*

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	1.14 ( 1.55)
69	Mass 69 relative abundance	73.13
70	Less than 2.00% of mass 69	0.00 ( 0.00)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.86
365	1.00 - 100.00% of mass 198	2.31
441	Less than 150.00% of mass 443	6.62 ( 76.77)
442	Less than 200.00% of mass 198	44.31
443	15.00 - 24.00% of mass 442	8.62 ( 19.45)



Data File: NT04212304.D

Spectrum: Avg. Scans 570-572 ( 6.14), Background Scan 566

Location of Maximum: 198.00

Number of points: 124

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	2454	103.00	803	160.00	932	225.00	7648
39.00	15373	104.00	3625	161.00	3109	227.00	13109
50.00	49616	105.00	3767	165.00	1870	228.00	807
51.00	203328	107.00	48928	166.00	1426	229.00	2072
52.00	10370	108.00	7621	167.00	9571	243.00	672
56.00	5554	110.00	86880	168.00	7589	244.00	22152
57.00	13104	111.00	12950	174.00	2602	245.00	3069
61.00	890	112.00	696	175.00	5223	246.00	4423
62.00	2450	116.00	2422	177.00	1674	255.00	109240
63.00	6873	117.00	39288	179.00	9808	256.00	15861
65.00	3662	118.00	2912	180.00	6483	258.00	6699
68.00	2587	122.00	2971	181.00	3049	265.00	2074
69.00	166528	123.00	4322	185.00	4646	273.00	2532
74.00	15879	124.00	856	186.00	33960	274.00	8498
75.00	25240	125.00	810	187.00	9711	275.00	44848
76.00	8841	127.00	161600	189.00	1703	276.00	5938
77.00	186048	128.00	11874	192.00	2937	277.00	4100
78.00	13175	129.00	60088	193.00	3398	296.00	13718
79.00	10739	130.00	5211	196.00	6802	297.00	1538
80.00	8544	134.00	703	198.00	227712	323.00	3918
81.00	12412	135.00	4899	199.00	15624	334.00	1975
82.00	3101	136.00	779	204.00	8470	365.00	5265
83.00	3022	137.00	2478	205.00	13852	372.00	1613
84.00	168	141.00	7254	206.00	56008	423.00	5637
85.00	749	142.00	2395	207.00	7500	441.00	15065
86.00	4555	143.00	698	208.00	1486	442.00	100888
91.00	2722	147.00	3733	211.00	1592	443.00	19624
92.00	2706	148.00	8974	217.00	14687	444.00	800
93.00	18152	149.00	773	218.00	797		
98.00	13633	153.00	1554	221.00	10031		
99.00	10999	155.00	3828	223.00	3190		
101.00	6240	156.00	5705	224.00	29976		









## INITIAL CALIBRATION DATA

### EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00062	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Phenol	20	2.054655										
bis(2-chloroethyl) ether	20	1.583281										
2-Chlorophenol	20	1.514316										
1,3-Dichlorobenzene	20	1.41905										
1,4-Dichlorobenzene	20	1.391254										
1,2-Dichlorobenzene	20	1.398997										
Benzyl Alcohol	20	1.050458										
2,2'-Oxybis(1-chloropropane)	20	0.492796										
2-Methylphenol	20	1.441451										
Hexachloroethane	20	0.7195834										
N-Nitroso-di-n-Propylamine	20	1.421189										
4-Methylphenol	20	1.655702										
Nitrobenzene	20	0.4976874										
Isophorone	20	0.678069										
2-Nitrophenol	20	0.1980422										
2,4-Dimethylphenol	40	0.3505781										
Bis(2-Chloroethoxy)methane	20	0.4284809										
2,4-Dichlorophenol	40	0.2313376										
1,2,4-Trichlorobenzene	20	0.2633554										
Naphthalene	20	0.9905833										
Benzoic acid	80	0.3242001										
4-Chloroaniline	40	0.4195448										
Hexachlorobutadiene	20	0.1245038										
4-Chloro-3-Methylphenol	40	0.3366011										
2-Methylnaphthalene	20	0.7193888										
Hexachlorocyclopentadiene	40	0.3060808										
2,4,6-Trichlorophenol	40	0.3505449										
2,4,5-Trichlorophenol	40	0.360671										



**INITIAL CALIBRATION DATA**  
**EPA 8270E**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00062	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
2-Chloronaphthalene	20	1.225487										
2-Nitroaniline	40	0.6675318										
Acenaphthylene	20	1.910788										
Dimethylphthalate	20	1.197195										
2,6-Dinitrotoluene	40	0.2941341										
Acenaphthene	20	1.194994										
3-Nitroaniline	40	0.3897223										
2,4-Dinitrophenol	80	0.189795										
Dibenzofuran	20	1.706252										
4-Nitrophenol	40	0.221177										
2,4-Dinitrotoluene	40	0.4123274										
Fluorene	20	1.449032										
4-Chlorophenylphenyl ether	20	0.5982785										
Diethyl phthalate	20	1.372571										
4-Nitroaniline	40	0.345402										
4,6-Dinitro-2-methylphenol	80	0.1241697										
N-Nitrosodiphenylamine	20	0.5610414										
4-Bromophenyl phenyl ether	20	0.1953047										
Hexachlorobenzene	20	0.1804053										
Pentachlorophenol	40	0.119297										
Phenanthrene	20	1.091042										
Anthracene	20	1.086349										
Carbazole	20	1.024442										
Di-n-Butylphthalate	20	1.491104										
Fluoranthene	20	1.709277										
Pyrene	20	1.737008										
Butylbenzylphthalate	20	0.8894643										
Benzo(a)anthracene	20	1.365491										



**INITIAL CALIBRATION DATA**  
**EPA 8270E**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00062	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
3,3'-Dichlorobenzidine	60	0.4861687										
Chrysene	20	1.255731										
bis(2-Ethylhexyl)phthalate	20	0.9431878										
Di-n-Octylphthalate	20	0.9431878										
Benzo(a)fluoranthenes, Total	40	1.315142										
Benzo(a)pyrene	20	1.213991										
Indeno(1,2,3-cd)pyrene	20	1.543509										
Dibenzo(a,h)anthracene	20	1.260039										
Benzo(g,h,i)perylene	20	1.317728										
1-Methylnaphthalene	20	0.6964477										
2-Fluorophenol	30	1.277687										
Phenol-d5	30	1.904592										
2-Chlorophenol-d4	30	1.380715										
1,2-Dichlorobenzene-d4	20	0.8596197										
Nitrobenzene-d5	20	0.4759985										
2-Fluorobiphenyl	20	1.288538										
2,4,6-Tribromophenol	30	0.1307048										
p-Terphenyl-d14	20	0.9909944										



**INITIAL CALIBRATION DATA**  
**EPA 8270E**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00062	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Phenol	2.275185	11.7			RSD (15)	
bis(2-chloroethyl) ether	1.737105	10.6			RSD (15)	
2-Chlorophenol	1.584716	10.4			RSD (15)	
1,3-Dichlorobenzene	1.586768	11.1			RSD (15)	
1,4-Dichlorobenzene	1.51267	10.3			RSD (15)	
1,2-Dichlorobenzene	1.505092	10.3			RSD (15)	
Benzyl Alcohol	1.037805	13.0			RSD (15)	
2,2'-Oxybis(1-chloropropane)	0.5081044	11.2			RSD (15)	
2-Methylphenol	1.517844	10.8			RSD (15)	
Hexachloroethane	0.7211424	10.9			RSD (15)	
N-Nitroso-di-n-Propylamine	1.526427	10.9			RSD (15)	
4-Methylphenol	1.728547	13.3			RSD (15)	
Nitrobenzene	0.5262744	11.0			RSD (15)	
Isophorone	0.722397	13.9			RSD (15)	
2-Nitrophenol	0.1931545	24.7		0.9938	QCOD (0.99)	
2,4-Dimethylphenol	0.3965622	11.8			RSD (15)	
Bis(2-Chloroethoxy)methane	0.4643114	10.5			RSD (15)	
2,4-Dichlorophenol	0.2719576	15.7		0.9950	QCOD (0.99)	
1,2,4-Trichlorobenzene	0.2960138	11.7			RSD (15)	
Naphthalene	1.075159	10.7			RSD (15)	
Benzoic acid	0.2535745	40.1	0.9971		LCOD (0.99)	
4-Chloroaniline	0.4651777	11.2			RSD (15)	
Hexachlorobutadiene	0.1353317	12.5			RSD (15)	
4-Chloro-3-Methylphenol	0.3543842	10.6			RSD (15)	
2-Methylnaphthalene	0.7788139	11.3			RSD (15)	
Hexachlorocyclopentadiene	0.2944169	13.3			RSD (15)	
2,4,6-Trichlorophenol	0.3667802	10.6			RSD (15)	
2,4,5-Trichlorophenol	0.3896539	11.8			RSD (15)	
2-Chloronaphthalene	1.329981	10.6			RSD (15)	
2-Nitroaniline	0.710443	10.0			RSD (15)	
Acenaphthylene	2.122598	11.2			RSD (15)	





**INITIAL CALIBRATION DATA**  
**EPA 8270E**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00062	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Dimethylphthalate	1.371956	11.1			RSD (15)	
2,6-Dinitrotoluene	0.3110389	9.9			RSD (15)	
Acenaphthene	1.271532	10.3			RSD (15)	
3-Nitroaniline	0.3908054	10.2			RSD (15)	
2,4-Dinitrophenol	0.1134901	62.6	0.9927		LCOD (0.99)	
Dibenzofuran	1.815232	10.5			RSD (15)	
4-Nitrophenol	0.1984752	30.3	0.9958		LCOD (0.99)	
2,4-Dinitrotoluene	0.4211377	10.8			RSD (15)	
Fluorene	1.606313	11.3			RSD (15)	
4-Chlorophenylphenyl ether	0.6644338	10.0			RSD (15)	
Diethyl phthalate	1.485021	10.8			RSD (15)	
4-Nitroaniline	0.3455847	14.6			RSD (15)	
4,6-Dinitro-2-methylphenol	8.913572E-02	44.8	0.9971		LCOD (0.99)	
N-Nitrosodiphenylamine	0.5648799	10.1			RSD (15)	
4-Bromophenyl phenyl ether	0.1858037	12.5			RSD (15)	
Hexachlorobenzene	0.1878998	9.7			RSD (15)	
Pentachlorophenol	9.070121E-02	37.3	0.9977		LCOD (0.99)	
Phenanthrene	1.130977	9.4			RSD (15)	
Anthracene	1.084721	11.5			RSD (15)	
Carbazole	1.003762	11.4			RSD (15)	
Di-n-Butylphthalate	1.46782	15.5	0.9965		LCOD (0.99)	
Fluoranthene	1.846415	13.0			RSD (15)	
Pyrene	1.906796	12.0			RSD (15)	
Butylbenzylphthalate	0.9308079	17.9		0.9976	QCOD (0.99)	
Benzo(a)anthracene	1.427845	9.9			RSD (15)	
3,3'-Dichlorobenzidine	0.4576145	13.4			RSD (15)	
Chrysene	1.331725	10.5			RSD (15)	
bis(2-Ethylhexyl)phthalate	1.067807	11.5			RSD (15)	
Di-n-Octylphthalate	1.067807	11.5			RSD (15)	
Benzo(a)fluoranthene, Total	1.26265	13.0			RSD (15)	
Benzo(a)pyrene	1.127112	14.9			RSD (15)	



**INITIAL CALIBRATION DATA**  
**EPA 8270E**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00062	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Indeno(1,2,3-cd)pyrene	1.399266	18.0	0.9985		LCOD (0.99)	
Dibenzo(a,h)anthracene	1.16278	16.7	0.9985		LCOD (0.99)	
Benzo(g,h,i)perylene	1.148832	17.9	0.9984		LCOD (0.99)	
1-Methylnaphthalene	0.7520738	12.0			RSD (15)	
2-Fluorophenol	1.446551	11.6			RSD (15)	
Phenol-d5	2.030063	12.2			RSD (15)	
2-Chlorophenol-d4	1.444145	10.4			RSD (15)	
1,2-Dichlorobenzene-d4	0.9148326	10.7			RSD (15)	
Nitrobenzene-d5	0.4922929	12.1			RSD (15)	
2-Fluorobiphenyl	1.393218	10.1			RSD (15)	
2,4,6-Tribromophenol	0.1113678	22.9	0.9977		LCOD (0.99)	
p-Terphenyl-d14	1.192127	18.4		0.9976	QCOD (0.99)	



INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230421.b

Time	Filename	LabID	ClientId	DF															
1	1532	NT04212304.D	SEQ-TUN		1	NO ISTDs FOUND													
2	1547	NT04212305.D	SEQ-CAL7		1	9.12	265117	11.63	1081013	15.27	511876	18.32	780182	23.36	492514	26.03	519591	24.38	1141430
3	1623	NT04212306.D	SEQ-CAL6		1	9.12	263269	11.62	1052524	15.26	501412	18.31	792660	23.36	458575	26.03	483255	24.38	1090519
4	1700	NT04212307.D	SEQ-CAL5		1	9.12	239131	11.61	954450	15.26	448699	18.30	711389	23.36	410209	26.03	424249	24.37	929005
5	1737	NT04212308.D	SEQ-CAL4		1	9.11	252290	11.61	995953	15.25	475373	18.30	772801	23.36	439097	26.03	454075	24.37	972124
6	1813	NT04212309.D	SEQ-CAL3		1	9.11	262871	11.61	1042624	15.25	486388	18.30	806729	23.35	459922	26.02	464832	24.37	979871
7	1850	NT04212310.D	SEQ-CAL2		1	9.11	261457	11.61	1011776	15.25	476664	18.30	796851	23.35	452731	26.02	452605	24.37	910929
8	1927	NT04212311.D	SEQ-CAL1		1	9.11	261004	11.61	1007973	15.25	466900	18.30	781987	23.36	453231	26.02	443928	24.37	890581
9	2116	NT04212314.D			1	9.11	238265	11.61	954318	15.26	452418	18.30	736482	23.36	415993	26.02	420543	24.38	909750
10	2153	NT04212315.D			1	9.11	247630	11.61	984847	15.25	450660	18.30	759650	23.36	432017	26.02	424950	24.37	820994

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230421.b

ARI Job No.: SEQ- Method: DFTPP8270E.m Instrument: nt14.i Date: 21-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1532	NT04212304.D	SEQ-TUN		1	NO MANUAL INTEGRATION
1547	NT04212305.D	SEQ-CAL7		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1623	NT04212306.D	SEQ-CAL6		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1700	NT04212307.D	SEQ-CAL5		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1737	NT04212308.D	SEQ-CAL4		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1813	NT04212309.D	SEQ-CAL3		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1850	NT04212310.D	SEQ-CAL2		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1927	NT04212311.D	SEQ-CAL1		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
2116	NT04212314.D			1	NO MANUAL INTEGRATION
2153	NT04212315.D			1	NO MANUAL INTEGRATION

Security Status Report

Date: 26-Apr-2023 17:37

NT04212304.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212305.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212306.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212307.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212308.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212309.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212310.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212311.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212314.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212315.D	Data Locked	j rains, 26-Apr-2023 17:28

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 15:47  
 End Cal Date : 21-APR-2023 19:27  
 Quant Method : ISTD  
 Origin : Force  
 Target Version : 4.14  
 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Last Edit : 25-Apr-2023 18:53 jrains

Calibration File Names:

- Level 1: \\target\share\chem3\nt14.i\20230421.b\NT04212311.D
- Level 2: \\target\share\chem3\nt14.i\20230421.b\NT04212310.D
- Level 3: \\target\share\chem3\nt14.i\20230421.b\NT04212309.D
- Level 4: \\target\share\chem3\nt14.i\20230421.b\NT04212308.D
- Level 5: \\target\share\chem3\nt14.i\20230421.b\NT04212307.D
- Level 6: \\target\share\chem3\nt14.i\20230421.b\NT04212306.D
- Level 7: \\target\share\chem3\nt14.i\20230421.b\NT04212305.D

Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	Coefficients			%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
186 Carbaryl	+++++	+++++	+++++	+++++	+++++	+++++	AVRG	0.000e+000			0.000e+000 <-
179 n-Decane	+++++	+++++	+++++	+++++	+++++	+++++	AVRG	0.000e+000			0.000e+000 <-
180 n-Octadecane	+++++	+++++	+++++	+++++	+++++	+++++	AVRG	0.000e+000			0.000e+000 <-
169 4-tert-Butylphenol	+++++	+++++	+++++	+++++	+++++	+++++	AVRG	0.000e+000			0.000e+000

ARI Labs, Inc.

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
170 N,N-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
171 2,3-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
172 2,4-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
173 2,5-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
174 2,6-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
175 3,4-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
176 3,5-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000



ARI Labs, Inc.

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
177 p-Benzoquinone	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
168 Pentachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
145 4,4'-DDE	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
146 4,4'-DDD	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
147 4,4'-DDT	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
148 Dieldrin	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
149 TCMX	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
150 DCBP	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
138 Chlorobenzilate	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
139 Isodrin	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
140 Diallate A	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
141 Diallate B	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
142 1,2-Dibromo-3-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
135 2,3,5,6-Tetrachlorophenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-

ARI Labs, Inc.

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 Method file : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Last Edit : 25-Apr-2023 18:53 jrains

Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
136 2,3,4,5-tetrachlorophenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
133 Butylatedhydroxytoluene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
132 3,6-Dimethylphenanthrene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
131 1-Methylphenanthrene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
130 Dibenzothiophene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
129 1-Methylfluorene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
128 N-Hexadecane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

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 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Last Edit : 25-Apr-2023 18:53 jrains

Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
127 2-Isopropyl-naphthalene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
126 N-Tetradecane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
144 alpha-Terpineol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
125 Safrole	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
124 3,4-Dimethylphenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
123 Acetophenone	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
122 Furfuraldehyde	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

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 Target Version : 4.14  
 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Last Edit : 25-Apr-2023 18:53 jrains

Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
143 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000			0.000e+000 <-
121 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000			0.000e+000
120 2,3,4,6-Tetrachlorophenol	3839	15460	28553	108839	183407	465284					
	894780						LINR	0.000e+000	0.35291		0.99812
178 2-Benzyl-4-Chlorophenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000			0.000e+000 <-
119 7,12-Dimethylbenz(a)anthracen	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000			0.000e+000
118 Triphenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000			0.000e+000 <-
117 Butyl Diphenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000			0.000e+000 <-

ARI Labs, Inc.

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 Target Version : 4.14  
 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Last Edit : 25-Apr-2023 18:53 jrains

Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
116 Dibutyl Phenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
115 Tributyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
114 Beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
113 Diphenyl Oxide	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
112 Biphenyl	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
111 Azobenzene (1,2-DP-Hydrazine)	2.10375	2.68291	2.05916	2.56536	2.19895	2.34788					
	2.08353						AVRG		2.29165		10.87172
110 Tetrachloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
109 3,4,5-Trichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
181 3,4,6-Trichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
108 4,5,6-Trichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
184 3,4-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
107 4,5-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
182 4,6-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-
185 4-Chloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000 <-

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
106 Guaiacol	++++	++++	++++	++++	++++	++++					
	++++						AVRG		0.000e+000		0.000e+000 <-
105 1-methylnaphthalene	0.66976	0.86454	0.64271	0.86273	0.73628	0.79205					
	0.69645						AVRG		0.75207		11.96327
151 1,2,4,5-Tetrachlorobenzene	++++	++++	++++	++++	++++	++++					
	++++						AVRG		0.000e+000		0.000e+000 <-
152 Benzo(e)pyrene	++++	++++	++++	++++	++++	++++					
	++++						AVRG		0.000e+000		0.000e+000
153 Chlorpyrifos	++++	++++	++++	++++	++++	++++					
	++++						AVRG		0.000e+000		0.000e+000
154 Diazinon	++++	++++	++++	++++	++++	++++					
	++++						AVRG		0.000e+000		0.000e+000
155 Kelthane	++++	++++	++++	++++	++++	++++					
	++++						AVRG		0.000e+000		0.000e+000



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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
156 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
157 Ethyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
158 Ethion	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
159 4-Nonylphenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
160 Tetraethyl Tin	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
161 1,2,3-Trichloronaphthalene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
162 1,2,3,4-Tetrachloronaphthalene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
163 1,2,3,5,8-Pentachloronaphthal	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
164 1,2,3,4,6,7-Hexachloronaphtha	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
165 1,2,3,4,5,6,7-Heptachloronaph	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
166 Octachloronaphthalene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
167 2,2',4,4',5-Pentabromobipheny	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
3 Phenol	2.06824	2.68422	2.04931	2.60072	2.19004	2.27911					
	2.05466						AVRG		2.27519		11.67056
4 Bis(2-Chloroethyl)ether	1.68679	2.05075	1.55675	1.92337	1.63291	1.72589					
	1.58328						AVRG		1.73711		10.58290

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
6 2-Chlorophenol	1.40029  1.51432	1.79942	1.40729	1.78130	1.53905	1.65135					
							AVRG		1.58472		10.35988
7 1,3-Dichlorobenzene	1.51523  1.41905	1.87231	1.41665	1.77993	1.51628	1.58792					
							AVRG		1.58677		11.09612
9 1,4-Dichlorobenzene	1.45316  1.39125	1.75071	1.33258	1.69449	1.44108	1.52541					
							AVRG		1.51267		10.30273
11 Benzyl alcohol	0.82803  1.05046	1.13533	0.89627	1.19399	1.01712	1.14343					
							AVRG		1.03781		13.02821
12 1,2-Dichlorobenzene	1.39308  1.39900	1.74172	1.33698	1.68687	1.44438	1.53363					
							AVRG		1.50509		10.34999
13 2-Methylphenol	1.33002  1.44145	1.70690	1.33888	1.73589	1.49251	1.57927					
							AVRG		1.51784		10.78690
14 2,2'-oxybis(1-Chloropropane)	0.47716  0.49280	0.61229	0.43022	0.52673	0.48744	0.53010					
							AVRG		0.50810		11.18273

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
15 4-Methylphenol	1.36634	2.00939	1.56460	1.99192	1.70422	1.80766					
	1.65570						AVRG		1.72855		13.32833
16 N-Nitroso-di-n-propylamine	1.37423	1.78523	1.37584	1.71800	1.45800	1.55251					
	1.42119						AVRG		1.52643		10.89541
17 Hexachloroethane	0.61838	0.80824	0.62236	0.80339	0.70738	0.76867					
	0.71958						AVRG		0.72114		10.90689
19 Nitrobenzene	0.45620	0.59940	0.46763	0.59554	0.51297	0.55449					
	0.49769						AVRG		0.52627		11.04824
20 Isophorone	0.61091	0.86267	0.61512	0.80323	0.68324	0.80354					
	0.67807						AVRG		0.72240		13.86902
21 2-Nitrophenol	5713	25463	38073	147679	251328	645669					
	1070431						QUAD	0.000e+000	3.58495	1.40622	0.99488
22 2,4-Dimethylphenol	0.36138	0.46672	0.36048	0.45542	0.38361	0.39774					
	0.35058						AVRG		0.39656		11.83238

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	Coefficients			%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	20.0000										
	Level 7										
23 Bis(2-Chloroethoxy)methane	0.43862	0.54195	0.41554	0.51996	0.43603	0.46960					
	0.42848						AVRG		0.46431		10.50514
24 Benzoic acid	++++	101685	198452	830173	1440693	3687101					
	7009291						LINR	0.000e+000	0.32840		0.99681
25 2,4-Dichlorophenol	21521	79425	126648	399381	673265	1573279					
	2500790						QUAD	0.000e+000	2.52035	0.75115	0.99557
26 1,2,4-Trichlorobenzene	0.28017	0.35249	0.26498	0.33432	0.27893	0.29785					
	0.26336						AVRG		0.29601		11.72935
28 Naphthalene	1.00056	1.23527	0.93675	1.21241	1.03870	1.11184					
	0.99058						AVRG		1.07516		10.67403
29 4-Chloroaniline	++++	0.50648	0.38508	0.51745	0.48026	0.48225					
	0.41954						AVRG		0.46518		11.15160
30 Hexachlorobutadiene	0.12207	0.16173	0.11682	0.15380	0.12961	0.13880					
	0.12450						AVRG		0.13533		12.50598

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
31 4-Chloro-3-methylphenol	++++ 0.33660	0.37512	0.29294	0.39605	0.34493	0.38066					
							AVRG		0.35438		10.58601
32 2-Methylnaphthalene	0.69849 0.71939	0.89496	0.67365	0.87617	0.76577	0.82327					
							AVRG		0.77881		11.26182
33 Hexachlorocyclopentadiene	++++ 0.30608	0.27624	0.22781	0.32695	0.29432	0.33511					
							AVRG		0.29442		13.25745
34 2,4,6-Trichlorophenol	++++ 0.35054	0.38196	0.29994	0.41185	0.36662	0.38977					
							AVRG		0.36678		10.57463
35 2,4,5-Trichlorophenol	++++ 0.36067	0.39639	0.31714	0.44448	0.39309	0.42615					
							AVRG		0.38965		11.75673
37 2-Chloronaphthalene	1.21311 1.22549	1.52500	1.17401	1.50250	1.29413	1.37563					
							AVRG		1.32998		10.63645
38 2-Nitroaniline	++++ 0.66753	0.72569	0.60067	0.80788	0.70968	0.75121					
							AVRG		0.71044		10.00876

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
39 Dimethylphthalate	1.35052  1.19719	1.61823	1.25074	1.53638	1.30472	1.34590					
							AVRG		1.37196		11.07727
40 Acenaphthylene	1.95982  1.91079	2.48739	1.89694	2.39334	2.02857	2.18134					
							AVRG		2.12260		11.23051
41 2,6-Dinitrotoluene	++++  0.29413	0.32594	0.26128	0.34746	0.30659	0.33083					
							AVRG		0.31104		9.87988
43 3-Nitroaniline	++++  0.38972	0.38726	0.32290	0.43082	0.38243	0.43170					
							AVRG		0.39081		10.21481
44 Acenaphthene	1.16008  1.19499	1.43670	1.09912	1.42461	1.24874	1.33647					
							AVRG		1.27153		10.32706
45 2,4-Dinitrophenol	++++  1943030	12408	27890	167667	329819	960117					
							LINR	0.000e+000	0.18802		0.99189
46 Dibenzofuran	1.64236  1.70625	2.07834	1.58968	2.02144	1.75841	1.91014					
							AVRG		1.81523		10.46750

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	Coefficients			%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	20.0000										
	Level 7										
47 4-Nitrophenol	++++ 1132152	22325	39389	152659	257053	621391	LINR	0.000e+000	0.22741		0.99532
48 2,4-Dinitrotoluene	++++ 0.41233	0.40981	0.34614	0.47805	0.42289	0.45762	AVRG		0.42114		10.83187
49 Fluorene	1.45213 1.44903	1.85627	1.41685	1.82093	1.58152	1.66746	AVRG		1.60631		11.28895
50 Diethylphthalate	1.42994 1.37257	1.75283	1.31143	1.61736	1.36538	1.54563	AVRG		1.48502		10.75441
51 4-Chlorophenyl-phenylether	0.64703 0.59828	0.76332	0.58998	0.74016	0.63690	0.67536	AVRG		0.66443		10.02354
52 4-Nitroaniline	++++ 0.34540	0.34022	0.25414	0.39656	0.35111	0.38607	AVRG		0.34558		14.56023
53 4,6-Dinitro-2-methylphenol	++++ 1937500	24357	49085	219889	389802	1025139	LINR	0.000e+000	0.12439		0.99683



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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
54 N-Nitrosodiphenylamine	0.50131  0.56104	0.64350	0.49603	0.62291	0.54073	0.58864					
							AVRG		0.56488		10.09034
56 4-Bromophenyl-phenylether	0.15294  0.19530	0.19918	0.15430	0.20680	0.18522	0.20687					
							AVRG		0.18580		12.48148
57 Hexachlorobenzene	0.17374  0.18041	0.21286	0.16104	0.20600	0.18481	0.19645					
							AVRG		0.18790		9.74523
58 Pentachlorophenol	+++++  930734	14169	28333	108179	188913	491206					
							LINR	0.000e+000	0.11951		0.99755
60 Phenanthrene	1.03572  1.09104	1.26342	0.98188	1.24834	1.10905	1.18739					
							AVRG		1.13098		9.40448
61 Anthracene	0.90582  1.08635	1.17623	0.92660	1.22259	1.09768	1.17777					
							AVRG		1.08472		11.49104
62 Carbazole	0.88927  1.02444	1.16042	0.89348	1.06961	0.88458	1.10453					
							AVRG		1.00376		11.42669

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	Coefficients			%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	20.0000										
	Level 7										
63 Di-n-butylphthalate	42084 5816661	153414	252576	830676	1365558	3288100	LINR	0.000e+000	1.53018		0.99647
64 Fluoranthene	1.51212 1.70928	2.02336	1.61325	2.14424	1.87675	2.04590	AVRG		1.84641		12.99913
65 Pyrene	1.63330 1.73701	2.12683	1.67128	2.18535	1.91552	2.07829	AVRG		1.90680		12.00862
67 Butylbenzylphthalate	14353 2190368	55092	94438	309994	514452	1221090	QUAD	0.000e+000	0.80602	0.06959	0.99804
68 Benzo(a)anthracene	1.26999 1.36549	1.57733	1.25517	1.59084	1.40424	1.53186	AVRG		1.42784		9.85940
70 3,3'-Dichlorobenzidine	++++ 0.48617	0.49746	0.38656	0.44031	0.39418	0.54101	AVRG		0.45761		13.37430
71 Chrysene	1.19581 1.25573	1.48056	1.14280	1.48484	1.32655	1.43577	AVRG		1.33172		10.45835

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
72 bis(2-Ethylhexyl)phthalate	1.03517  0.94319	1.26708	0.94141	1.19614	1.02482	1.06685					
							AVRG		1.06781		11.50801
73 Di-n-octylphthalate	1.03517  0.94319	1.26708	0.94141	1.19614	1.02482	1.06685					
							AVRG		1.06781		11.50801
74 Benzo(b)fluoranthene	1.04305  1.46279	1.42572	1.10969	1.43520	1.35168	1.50800					
							AVRG		1.33373		13.71612
75 Benzo(k)fluoranthene	1.09036  1.30480	1.43201	1.10399	1.49575	1.28323	1.45038					
							AVRG		1.30865		12.49829
187 Total Benzofluoranthenes	1.01343  1.31514	1.37136	1.05858	1.40878	1.25839	1.41287					
							AVRG		1.26265		13.02439
76 Benzo(a)pyrene	0.84725  1.21399	1.19788	0.93859	1.26063	1.14814	1.28329					
							AVRG		1.12711		14.89362
78 Indeno(1,2,3-cd)pyrene	21563  4009966	80390	132489	458717	777749	1976401					
							LINR	0.000e+000	1.55859		0.99853

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 15:47  
 End Cal Date : 21-APR-2023 19:27  
 Quant Method : ISTD  
 Origin : Force  
 Target Version : 4.14  
 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Last Edit : 25-Apr-2023 18:53 jrains

Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	Coefficients			%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		b	m1	m2	
	20.0000										
	Level 7										
79 Dibenzo(a,h)anthracene	18327  3273525	67781	112367	377988	643408	1623227	  LINR	  0.000e+000	  1.27491	 	  0.99847
80 Benzo(g,h,i)perylene	18230  3423397	65004	107228	366496	624865	1644744	  LINR	  0.000e+000	  1.31943	 	  0.99843
90 N-Nitrosodimethylamine	1.17435  0.97010	1.45788	1.10596	1.39145	1.17117	1.14799	  AVRG	 	  1.20270	 	  13.95410
91 Aniline	1.87353  1.93579	2.37336	1.80564	2.33745	2.00394	2.12317	  AVRG	 	  2.06470	 	  10.77660
92 1,2-Diphenylhydrazine	+++++  +++++	+++++	+++++	+++++	+++++	+++++	  AVRG	  0.000e+000	 	 	  0.000e+000
93 Benzidine	+++++  3563461	79913	124766	330065	548276	1806496	  LINR	  0.000e+000	  0.72867	 	  0.99029
96 p-Cymene	+++++  +++++	+++++	+++++	+++++	+++++	+++++	  AVRG	  0.000e+000	 	 	  0.000e+000

ARI Labs, Inc.

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 Method file : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Last Edit : 25-Apr-2023 18:53 jrains

Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
97 Caffeine	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000		0.000e+000	
98 Retene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000		0.000e+000	<-
99 Perylene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000		0.000e+000	<-
100 3-beta-Coprostanol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000		0.000e+000	<-
101 Cholesterol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000		0.000e+000	<-
102 beta-Sitosterol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG	0.000e+000		0.000e+000	
103 Pyridine	3.44018	4.38754	3.34651	4.12013	3.43411	3.36740					
	2.82520						AVRG	3.56015		14.73598	

ARI Labs, Inc.

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
188 2,6-Dichlorophenol	++++	++++	++++	++++	++++	++++					
	++++						AVRG	0.000e+000			0.000e+000 <-
189 N-Nitrosomethylethylamine	++++	++++	++++	++++	++++	++++					
	++++						AVRG	0.000e+000			0.000e+000 <-
\$ 1 2-Fluorophenol	1.33035	1.68643	1.30807	1.66758	1.41239	1.44335					
	1.27769						AVRG	1.44655			11.59399
\$ 137 d8-1,4-Dioxane	++++	++++	++++	++++	++++	++++					
	++++						AVRG	0.000e+000			0.000e+000 <-
\$ 2 Phenol-d5	1.69372	2.29963	1.79916	2.34481	2.01910	2.14944					
	1.90459						AVRG	2.03006			12.20426
\$ 5 2-Chlorophenol-d4	1.27022	1.62009	1.27299	1.62794	1.41513	1.52193					
	1.38072						AVRG	1.44415			10.39431
\$ 10 1,2-Dichlorobenzene-d4	0.83754	1.05299	0.79886	1.03242	0.87995	0.94246					
	0.85962						AVRG	0.91483			10.68855

ARI Labs, Inc.

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 Last Edit : 25-Apr-2023 18:53 jrains

Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
\$ 18 Nitrobenzene-d5	0.41221	0.55555	0.42799	0.56620	0.48489	0.52322					
	0.47600						AVRG		0.49229		12.09946
\$ 36 2-Fluorobiphenyl	1.30311	1.60803	1.22810	1.54877	1.34812	1.42787					
	1.28854						AVRG		1.39322		10.14716
\$ 55 2,4,6-Tribromophenol	2292	9865	16557	56753	98202	259843					
	501785						LINR	0.000e+000	0.13150		0.99774
\$ 66 Terphenyl-d14	22729	90463	119507	368037	595183	1388576					
	2440393						QUAD	0.000e+000	0.67082	0.06661	0.99784
\$ 85 p-Cresol-d4	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
\$ 86 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
\$ 87 Fluoranthene-d10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

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Compound	0.2000000	0.5000000	1.0000	2.5000	5.0000	10.0000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	20.0000										
	Level 7										
\$ 88 Dibenz(a,h)anthracene-d14	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
\$ 89 Diphenyl-d10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
\$ 95 D10-1-methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000



ARI Labs, Inc.

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Method file : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
Last Edit : 25-Apr-2023 18:53 jrains

Curve	Formula	Units
Averaged	Amt = Rsp/ml	Response
Linear	Amt = b + Rsp/ml	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230421.b
Inst ID: nt14.i

ID: RT01 RT02 RT03 RT04 RT05 RT06 RT07
FILENAME: NT04212305 NT04212306 NT04212307 NT04212308 NT04212309 NT04212310 NT04212311
INJ. DATE: 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023
INJ. TIME: 15:47 16:23 17:00 17:37 18:13 18:50 19:27

Table with columns: Compound, RT01, RT02, RT03, RT04, RT05, RT06, RT07, EXPECT RT, RT WINDOW, AVG RT, STD DEV. Rows include various chemical compounds like 2-Fluorophenol, Carbaryl, n-Decane, etc.

Reviewer 1 \_\_\_\_\_ Date: \_\_\_\_\_
Reviewer 2 \_\_\_\_\_ Date: \_\_\_\_\_

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
Batch File: \\target\share\chem3\nt14.i\20230421.b  
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
148 Dieldrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.281	44.281-50.281	+++++	+++++
149 TCMX	+++++	+++++	+++++	+++++	+++++	+++++	+++++	43.387	40.387-46.387	+++++	+++++
150 DCBP	+++++	+++++	+++++	+++++	+++++	+++++	+++++	50.989	47.989-53.989	+++++	+++++
138 Chlorobenzilate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	67.733	64.733-70.733	+++++	+++++
139 Isodrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.067	62.067-68.067	+++++	+++++
140 Diallate A	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.487	62.487-68.487	+++++	+++++
141 Diallate B	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.487	62.487-68.487	+++++	+++++
142 1,2-Dibromo-3-Chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	49.917	46.917-52.917	+++++	+++++
135 2,3,5,6-Tetrachlorophe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.383	13.383-19.383	+++++	+++++
136 2,3,4,5-tetrachlorophe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	39.317	36.317-42.317	+++++	+++++
137 d8-1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	2.445	0.000-5.445	+++++	+++++
* 134 Di-n-octylphthalate-d4	24.378	24.378	24.370	24.370	24.370	24.370	24.370	24.370	21.370-27.370	24.373	0.004
133 Butylatedhydroxytoluen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.571	12.571-18.571	+++++	+++++
132 3,6-Dimethylphenanthre	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.450	62.450-68.450	+++++	+++++
131 1-Methylphenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	64.400	61.400-67.400	+++++	+++++
130 Dibenzothiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	62.100	59.100-65.100	+++++	+++++
129 1-Methylfluorene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.912	51.912-57.912	+++++	+++++
128 N-Hexadecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.212	51.212-57.212	+++++	+++++
127 2-Isopropylaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	57.650	54.650-60.650	+++++	+++++
126 N-Tetradecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	56.750	53.750-59.750	+++++	+++++
144 alpha-Terpineol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.447	8.447-14.447	+++++	+++++
125 Safrole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	52.166	49.166-55.166	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
Batch File: \\target\share\chem3\nt14.i\20230421.b  
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
124 3,4-Dimethylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	50.617	47.617-53.617	+++++	+++++
123 Acetophenone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.252	7.252-13.252	+++++	+++++
122 Furfuraldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	43.467	40.467-46.467	+++++	+++++
143 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	2.697	0.000-5.697	+++++	+++++
121 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.500	51.500-57.500	+++++	+++++
120 2,3,4,6-Tetrachlorophe	16.000	15.985	15.985	15.977	15.977	15.985	15.985	15.977	12.977-18.977	15.985	0.008
178 2-Benzyl-4-Chloropheno	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.963	15.963-21.963	+++++	+++++
119 7,12-Dimethylbenz(a)an	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.069	44.069-50.069	+++++	+++++
118 Triphenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.215	18.215-24.215	+++++	+++++
117 Butyl Diphenyl Phospha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.761	13.761-19.761	+++++	+++++
116 Dibutyl Phenyl Phospha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.747	15.747-21.747	+++++	+++++
115 Tributyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.923	13.923-19.923	+++++	+++++
114 Beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	48.950	45.950-51.950	+++++	+++++
113 Diphenyl Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.341	11.341-17.341	+++++	+++++
112 Biphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.085	11.085-17.085	+++++	+++++
111 Azobenzene (1,2-DP-Hyd	16.703	16.688	16.680	16.680	16.672	16.672	16.672	16.680	13.680-19.680	16.681	0.011
110 Tetrachloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.140	14.140-20.140	+++++	+++++
109 3,4,5-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.070	12.070-18.070	+++++	+++++
181 3,4,6-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.232	12.232-18.232	+++++	+++++
108 4,5,6-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.374	13.374-19.374	+++++	+++++
184 3,4-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.120	10.120-16.120	+++++	+++++
107 4,5-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.096	11.096-17.096	+++++	+++++
182 4,6-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.096	11.096-17.096	+++++	+++++
185 4-Chloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.735	8.735-14.735	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
Batch File: \\target\share\chem3\nt14.i\20230421.b  
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
106 Guaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.243	6.243-12.243	+++++	+++++
105 1-methylnaphthalene	13.300	13.293	13.285	13.285	13.285	13.285	13.285	13.285	10.285-16.285	13.288	0.006
151 1,2,4,5-Tetrachloroben	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.499	8.499-14.499	+++++	+++++
152 Benzo(e)pyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	30.943	27.943-33.943	+++++	+++++
153 Chlorpyrifos	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.642	24.642-30.642	+++++	+++++
154 Diazinon	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.953	22.953-28.953	+++++	+++++
155 Kelthane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.750	24.750-30.750	+++++	+++++
156 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.464	23.464-29.464	+++++	+++++
157 Ethyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.099	24.099-30.099	+++++	+++++
158 Ethion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	24.513	21.513-27.513	+++++	+++++
159 4-Nonylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.132	22.132-28.132	+++++	+++++
160 Tetraethyl Tin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.528	16.528-22.528	+++++	+++++
161 1,2,3-Trichloronaphtha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	36.246	33.246-39.246	+++++	+++++
162 1,2,3,4-Tetrachloronap	+++++	+++++	+++++	+++++	+++++	+++++	+++++	37.506	34.506-40.506	+++++	+++++
163 1,2,3,5,8-Pentachloron	+++++	+++++	+++++	+++++	+++++	+++++	+++++	38.893	35.893-41.893	+++++	+++++
164 1,2,3,4,6,7-Hexachloro	+++++	+++++	+++++	+++++	+++++	+++++	+++++	39.681	36.681-42.681	+++++	+++++
165 1,2,3,4,5,6,7-Heptachl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	41.123	38.123-44.123	+++++	+++++
166 Octachloronaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	42.253	39.253-45.253	+++++	+++++
167 2,2',4,4',5-Pentabromo	+++++	+++++	+++++	+++++	+++++	+++++	+++++	42.033	39.033-45.033	+++++	+++++
\$ 2 Phenol-d5	8.490	8.475	8.459	8.459	8.459	8.459	8.459	8.459	5.459-11.459	8.466	0.012
3 Phenol	8.513	8.498	8.483	8.482	8.475	8.475	8.475	8.482	5.482-11.483	8.486	0.015
4 Bis(2-Chloroethyl)ethe	8.675	8.668	8.660	8.660	8.652	8.652	8.652	8.660	5.660-11.660	8.660	0.009
\$ 5 2-Chlorophenol-d4	8.760	8.753	8.745	8.745	8.745	8.745	8.745	8.745	5.745-11.745	8.748	0.006

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

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Batch File: \\target\share\chem3\nt14.i\20230421.b  
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
6 2-Chlorophenol	8.791	8.784	8.776	8.776	8.768	8.768	8.768	8.776	5.776-11.776	8.776	0.009
7 1,3-Dichlorobenzene	9.054	9.054	9.047	9.047	9.047	9.047	9.047	9.047	6.047-12.047	9.049	0.004
* 8 1,4-Dichlorobenzene-d4	9.116	9.117	9.117	9.109	9.109	9.109	9.109	9.109	6.109-12.109	9.112	0.004
9 1,4-Dichlorobenzene	9.148	9.148	9.140	9.140	9.140	9.140	9.140	9.140	6.140-12.140	9.142	0.004
\$ 10 1,2-Dichlorobenzene-d4	9.481	9.481	9.474	9.474	9.474	9.474	9.474	9.474	6.474-12.474	9.476	0.004
11 Benzyl alcohol	9.404	9.396	9.388	9.381	9.381	9.381	9.380	9.381	6.381-12.381	9.387	0.009
12 1,2-Dichlorobenzene	9.512	9.505	9.505	9.505	9.497	9.497	9.497	9.505	6.505-12.505	9.502	0.006
13 2-Methylphenol	9.621	9.613	9.606	9.606	9.606	9.606	9.606	9.606	6.606-12.606	9.609	0.006
14 2,2'-oxybis(1-Chloropr	9.699	9.691	9.691	9.683	9.683	9.683	9.683	9.683	6.683-12.683	9.688	0.006
15 4-Methylphenol	9.901	9.885	9.877	9.877	9.870	9.870	9.870	9.877	6.877-12.877	9.878	0.011
16 N-Nitroso-di-n-propyla	9.986	9.963	9.955	9.947	9.947	9.947	9.947	9.947	6.947-12.947	9.956	0.014
17 Hexachloroethane	10.102	10.102	10.095	10.095	10.095	10.095	10.095	10.095	7.095-13.095	10.097	0.004
\$ 18 Nitrobenzene-d5	10.234	10.226	10.219	10.219	10.211	10.211	10.211	10.219	7.219-13.219	10.219	0.009
19 Nitrobenzene	10.273	10.258	10.250	10.250	10.250	10.250	10.250	10.250	7.250-13.250	10.254	0.009
20 Isophorone	10.746	10.723	10.708	10.700	10.700	10.700	10.700	10.700	7.700-13.700	10.711	0.018
21 2-Nitrophenol	10.894	10.894	10.886	10.886	10.886	10.886	10.886	10.886	7.886-13.886	10.888	0.004
22 2,4-Dimethylphenol	10.956	10.940	10.933	10.933	10.925	10.925	10.925	10.933	7.933-13.933	10.934	0.011
23 Bis(2-Chloroethoxy)met	11.150	11.142	11.134	11.134	11.134	11.134	11.134	11.134	8.134-14.134	11.138	0.006
24 Benzoic acid	11.374	11.281	11.173	11.134	11.065	11.049	11.018	11.134	8.134-14.134	11.156	0.131
25 2,4-Dichlorophenol	11.359	11.343	11.336	11.336	11.336	11.336	11.336	11.336	8.336-14.336	11.340	0.009
26 1,2,4-Trichlorobenzene	11.537	11.537	11.529	11.529	11.522	11.529	11.529	11.529	8.529-14.529	11.530	0.005
* 27 Naphthalene-d8	11.629	11.622	11.614	11.614	11.614	11.614	11.614	11.614	8.614-14.614	11.617	0.006
28 Naphthalene	11.668	11.660	11.660	11.660	11.653	11.653	11.653	11.660	8.660-14.660	11.658	0.006
29 4-Chloroaniline	11.807	11.799	11.792	11.784	11.784	11.784	11.784	11.784	8.784-14.784	11.791	0.009

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m

Batch File: \\target\share\chem3\nt14.i\20230421.b

Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
30 Hexachlorobutadiene	12.023	12.023	12.024	12.016	12.016	12.016	12.016	12.016	9.016-15.016	12.019	0.004
31 4-Chloro-3-methylpheno	12.766	12.759	12.743	12.743	12.743	12.743	12.743	12.743	9.743-15.743	12.749	0.010
32 2-Methylnaphthalene	13.076	13.068	13.061	13.061	13.061	13.061	13.061	13.061	10.061-16.061	13.064	0.006
33 Hexachlorocyclopentadi	13.540	13.532	13.533	13.533	13.525	13.525	13.525	13.533	10.533-16.533	13.530	0.006
34 2,4,6-Trichlorophenol	13.703	13.695	13.687	13.680	13.680	13.680	13.680	13.680	10.680-16.680	13.686	0.009
35 2,4,5-Trichlorophenol	13.772	13.765	13.757	13.757	13.749	13.749	13.749	13.757	10.757-16.757	13.757	0.009
36 2-Fluorobiphenyl	13.857	13.850	13.850	13.850	13.842	13.842	13.842	13.850	10.850-16.850	13.848	0.006
37 2-Chloronaphthalene	14.074	14.066	14.059	14.059	14.059	14.059	14.059	14.059	11.059-17.059	14.062	0.006
38 2-Nitroaniline	14.353	14.337	14.330	14.322	14.322	14.322	14.322	14.322	11.322-17.322	14.330	0.012
39 Dimethylphthalate	14.786	14.771	14.756	14.756	14.748	14.756	14.755	14.756	11.756-17.756	14.761	0.013
40 Acenaphthylene	14.949	14.941	14.941	14.934	14.934	14.934	14.934	14.934	11.934-17.934	14.938	0.006
41 2,6-Dinitrotoluene	14.926	14.918	14.903	14.903	14.895	14.895	14.895	14.903	11.903-17.903	14.905	0.012
42 Acenaphthene-d10	15.266	15.258	15.258	15.251	15.251	15.251	15.251	15.251	12.251-18.251	15.255	0.006
43 3-Nitroaniline	15.220	15.204	15.189	15.181	15.173	15.173	15.173	15.181	12.181-18.181	15.188	0.018
44 Acenaphthene	15.336	15.328	15.320	15.320	15.320	15.320	15.320	15.320	12.320-18.320	15.324	0.006
45 2,4-Dinitrophenol	15.436	15.413	15.398	15.398	15.390	15.390	15.390	15.398	12.398-18.398	15.402	0.017
46 Dibenzofuran	15.668	15.660	15.653	15.645	15.645	15.645	15.645	15.645	12.645-18.645	15.651	0.009
47 4-Nitrophenol	15.537	15.513	15.490	15.483	15.483	15.483	15.483	15.483	12.483-18.483	15.496	0.021
48 2,4-Dinitrotoluene	15.745	15.730	15.714	15.707	15.699	15.699	15.707	15.707	12.707-18.707	15.714	0.017
49 Fluorene	16.379	16.371	16.364	16.364	16.356	16.364	16.356	16.364	13.364-19.364	16.365	0.008
50 Diethylphthalate	16.248	16.232	16.225	16.217	16.209	16.209	16.209	16.217	13.217-19.217	16.221	0.015
51 4-Chlorophenyl-phenyle	16.364	16.356	16.356	16.348	16.348	16.348	16.348	16.348	13.348-19.348	16.353	0.006
52 4-Nitroaniline	16.533	16.495	16.464	16.456	16.449	16.449	16.449	16.456	13.456-19.456	16.471	0.032
53 4,6-Dinitro-2-methylph	16.603	16.572	16.557	16.549	16.541	16.541	16.541	16.549	13.549-19.549	16.558	0.023

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
Batch File: \\target\share\chem3\nt14.i\20230421.b  
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
54 N-Nitrosodiphenylamine	16.634	16.618	16.603	16.603	16.595	16.603	16.603	16.603	13.603-19.603	16.608	0.013
\$ 55 2,4,6-Tribromophenol	16.919	16.911	16.904	16.896	16.896	16.896	16.896	16.896	13.896-19.896	16.902	0.009
56 4-Bromophenyl-phenylet	17.374	17.366	17.359	17.359	17.359	17.359	17.358	17.359	14.359-20.359	17.362	0.006
57 Hexachlorobenzene	17.691	17.683	17.675	17.675	17.676	17.676	17.675	17.675	14.675-20.675	17.679	0.006
58 Pentachlorophenol	18.047	18.039	18.032	18.032	18.032	18.032	18.032	18.032	15.032-21.032	18.035	0.006
* 59 Phenanthrene-d10	18.318	18.310	18.302	18.302	18.302	18.302	18.302	18.302	15.302-21.302	18.306	0.006
60 Phenanthrene	18.372	18.356	18.357	18.349	18.349	18.349	18.349	18.349	15.349-21.349	18.354	0.009
61 Anthracene	18.465	18.457	18.442	18.442	18.442	18.442	18.442	18.442	15.442-21.442	18.447	0.010
62 Carbazole	18.790	18.782	18.774	18.774	18.767	18.774	18.774	18.774	15.774-21.774	18.777	0.007
63 Di-n-butylphthalate	19.571	19.571	19.564	19.564	19.564	19.564	19.564	19.564	16.564-22.564	19.566	0.004
64 Fluoranthene	20.755	20.739	20.740	20.740	20.732	20.732	20.732	20.740	17.740-23.740	20.738	0.008
65 Pyrene	21.180	21.173	21.165	21.165	21.157	21.165	21.165	21.165	18.165-24.165	21.167	0.007
\$ 66 Terphenyl-d14	21.451	21.444	21.444	21.444	21.444	21.444	21.444	21.444	18.444-24.444	21.445	0.003
67 Butylbenzylphthalate	22.373	22.365	22.365	22.365	22.365	22.365	22.365	22.365	19.365-25.365	22.366	0.003
68 Benzo(a)anthracene	23.341	23.333	23.325	23.325	23.325	23.325	23.317	23.325	20.325-26.325	23.327	0.007
* 69 Chrysene-d12	23.364	23.356	23.356	23.356	23.349	23.349	23.356	23.356	20.356-26.356	23.355	0.005
70 3,3'-Dichlorobenzidine	23.302	23.286	23.279	23.279	23.271	23.279	23.279	23.279	20.279-26.279	23.282	0.010
71 Chrysene	23.418	23.410	23.403	23.395	23.395	23.395	23.395	23.395	20.395-26.395	23.402	0.009
72 bis(2-Ethylhexyl)phtha	24.393	24.386	24.386	24.386	24.378	24.386	24.386	24.386	21.386-27.386	24.386	0.004
73 Di-n-octylphthalate	24.393	24.386	24.386	24.386	24.378	24.386	24.386	24.386	21.386-27.386	24.386	0.004
74 Benzo(b)fluoranthene	25.260	25.245	25.237	25.230	25.230	25.230	25.230	25.230	22.230-28.230	25.237	0.012
75 Benzo(k)fluoranthene	25.307	25.291	25.284	25.276	25.276	25.276	25.276	25.276	22.276-28.276	25.284	0.012
187 Total Benzofluoranthen	25.307	25.291	25.284	25.276	25.230	25.230	25.230	25.276	22.276-28.276	25.264	0.033
76 Benzo(a)pyrene	25.934	25.919	25.903	25.903	25.903	25.903	25.896	25.903	22.903-28.903	25.909	0.013



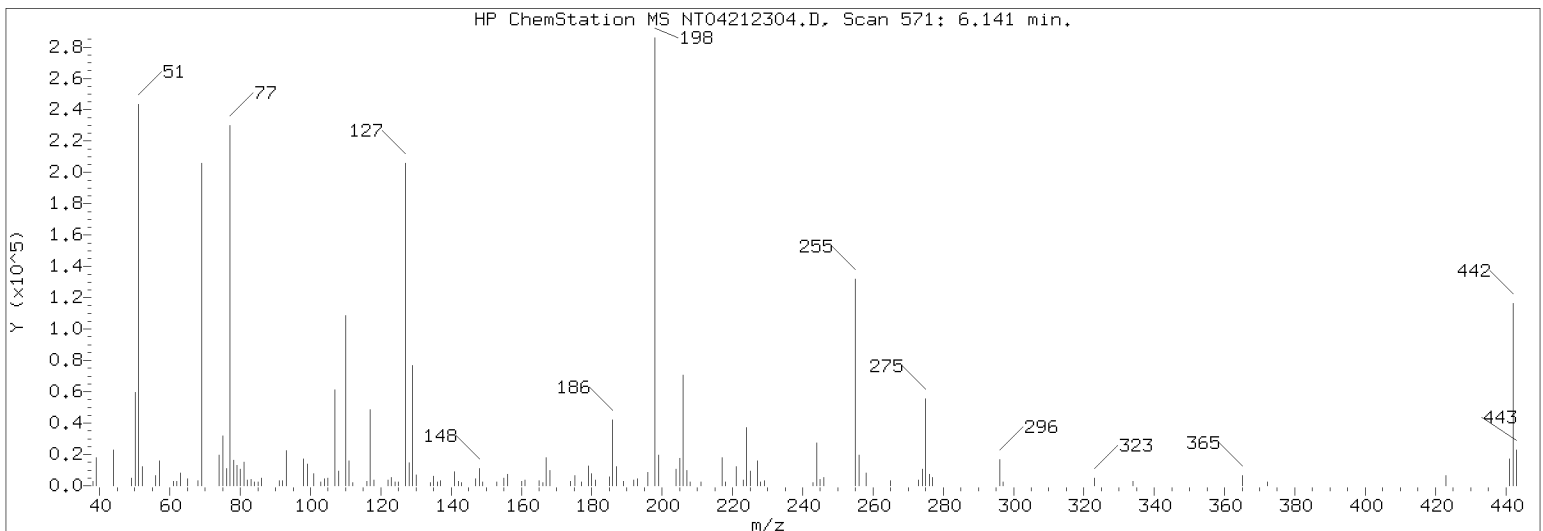
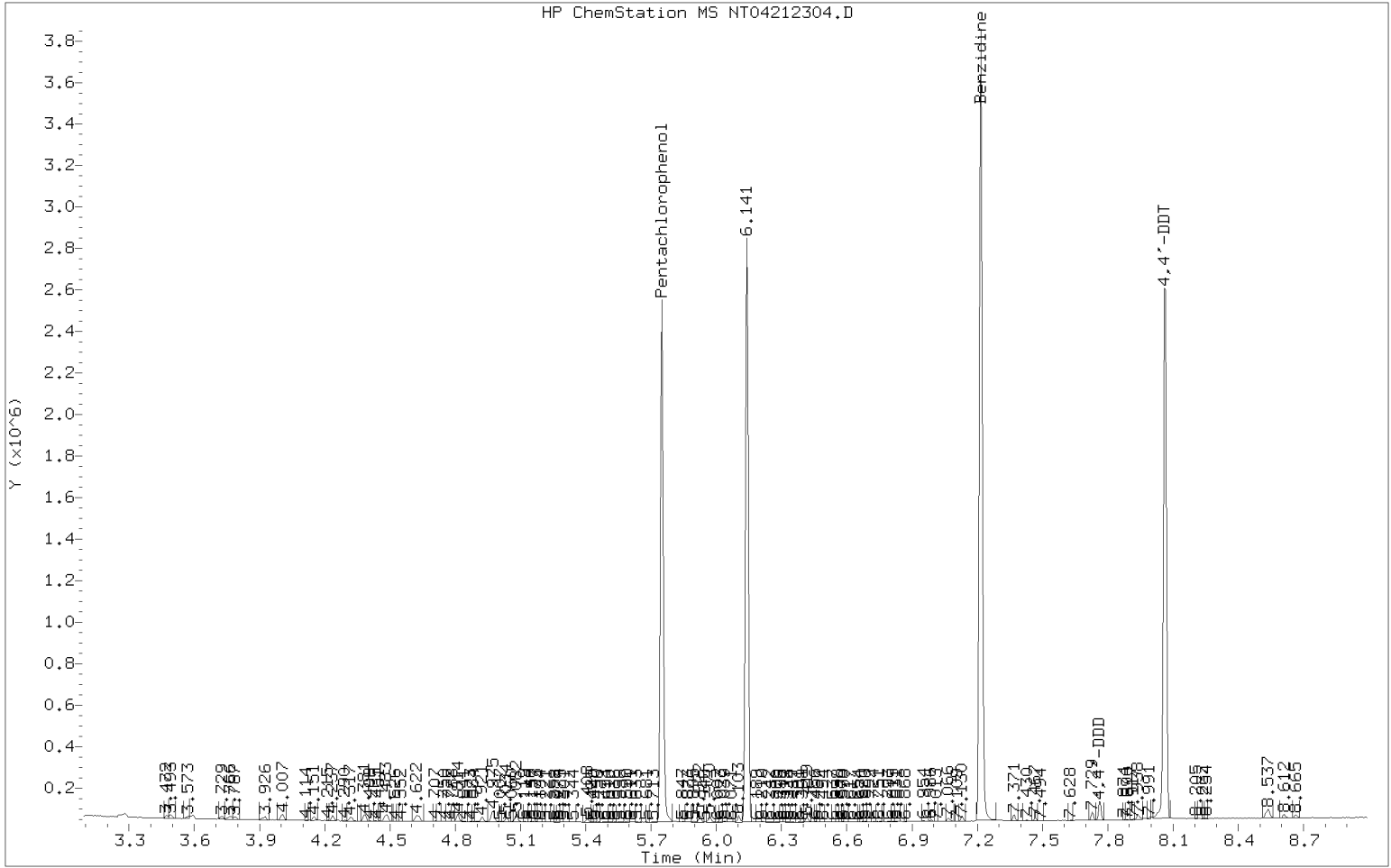
ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
Batch File: \\target\share\chem3\nt14.i\20230421.b  
Inst ID: nt14.i

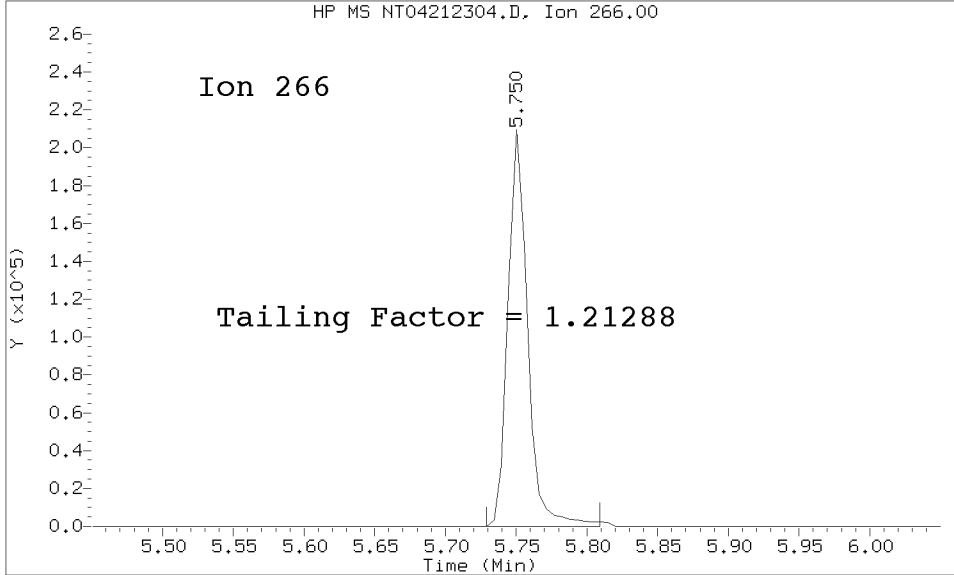
Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 77 Perylene-d12	26.035	26.027	26.027	26.027	26.020	26.020	26.020	26.027	23.027-29.027	26.025	0.006
78 Indeno(1,2,3-cd)pyrene	28.828	28.774	28.751	28.743	28.735	28.735	28.743	28.743	25.743-31.743	28.759	0.033
79 Dibenzo(a,h)anthracene	28.836	28.790	28.766	28.751	28.751	28.751	28.751	28.751	25.751-31.751	28.771	0.032
80 Benzo(g,h,i)perylene	29.628	29.590	29.559	29.559	29.543	29.543	29.543	29.559	26.559-32.559	29.566	0.032
\$ 85 p-Cresol-d4	++++	++++	++++	++++	++++	++++	++++	51.633	48.633-54.633	++++	++++
\$ 86 Anthracene-d10	++++	++++	++++	++++	++++	++++	++++	63.533	60.533-66.533	++++	++++
\$ 87 Fluoranthene-d10	++++	++++	++++	++++	++++	++++	++++	60.273	57.273-63.273	++++	++++
\$ 88 Dibenzo(a,h)anthracene-	++++	++++	++++	++++	++++	++++	++++	78.600	75.600-81.600	++++	++++
\$ 89 Diphenyl-d10	++++	++++	++++	++++	++++	++++	++++	50.841	47.841-53.841	++++	++++
90 N-Nitrosodimethylamine	4.805	4.790	4.775	4.775	4.767	4.775	4.775	4.775	1.775-7.775	4.780	0.013
91 Aniline	8.590	8.583	8.567	8.567	8.568	8.567	8.567	8.567	5.567-11.567	8.573	0.010
92 1,2-Diphenylhydrazine	++++	++++	++++	++++	++++	++++	++++	56.160	53.160-59.160	++++	++++
93 Benzidine	20.987	20.979	20.972	20.972	20.972	20.972	20.972	20.972	17.972-23.972	20.975	0.006
\$ 95 D10-1-methylnaphthalen	++++	++++	++++	++++	++++	++++	++++	52.075	49.075-55.075	++++	++++
96 p-Cymene	++++	++++	++++	++++	++++	++++	++++	49.250	46.250-52.250	++++	++++
97 Caffeine	++++	++++	++++	++++	++++	++++	++++	61.202	58.202-64.202	++++	++++
98 Retene	++++	++++	++++	++++	++++	++++	++++	18.787	15.787-21.787	++++	++++
99 Perylene	++++	++++	++++	++++	++++	++++	++++	24.361	21.361-27.361	++++	++++
100 3-beta-Coprostanol	++++	++++	++++	++++	++++	++++	++++	25.411	22.411-28.411	++++	++++
101 Cholesterol	++++	++++	++++	++++	++++	++++	++++	26.023	23.023-29.023	++++	++++
102 beta-Sitosterol	++++	++++	++++	++++	++++	++++	++++	79.550	76.550-82.550	++++	++++
103 Pyridine	4.798	4.790	4.798	4.798	4.806	4.813	4.836	4.798	1.798-7.798	4.805	0.015
188 2,6-Dichlorophenol	++++	++++	++++	++++	++++	++++	++++	11.874	8.874-14.874	++++	++++
189 N-Nitrosomethylethylam	++++	++++	++++	++++	++++	++++	++++	5.818	2.818-8.818	++++	++++

DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20230421.b/NT04212304.D/NT04212304.D  
Method Used: \20230421.b\DFTPP8270E.m Inst: nt14  
Injection Date: 21-APR-2023 15:32 Operator: JGR  
Sample Info: SEQ-TUN SEQ-TUN  
Report Date: 04/27/2023 08:14



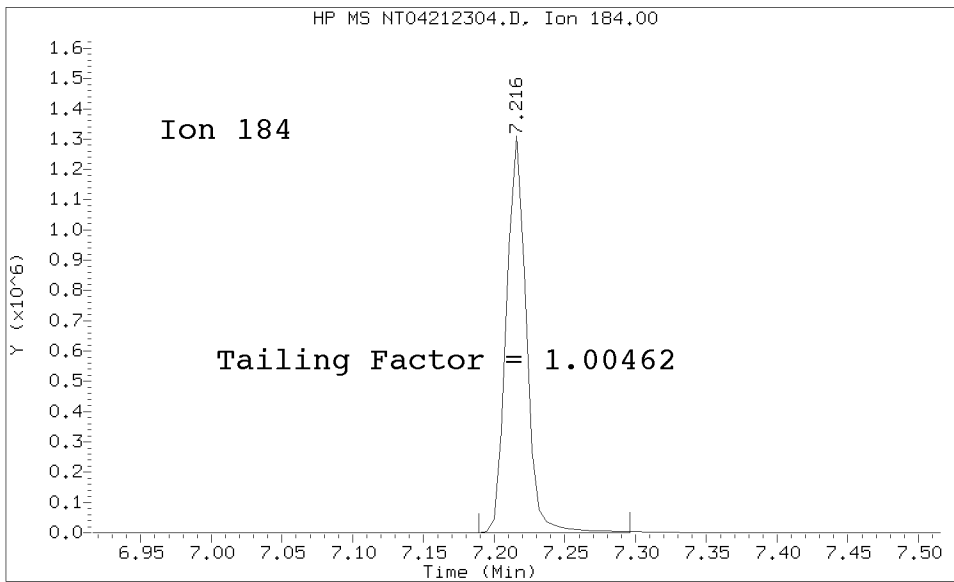
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Injection Date: 21-APR-2023 15:32 Operator: JGR  
Sample Info: SEQ-TUN  
Report Date: 04/27/2023 08:14



Pentachlorophenol

=====  
Exp. RT = 5.751  
Found RT = 5.750

Tail Factor = 1.213 Maximum Allowed = 2.0



Benzidine

=====  
Exp. RT = 7.216  
Found RT = 7.216

Tail Factor = 1.005 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.2128778	2.000	PASS
Benzidine	1.0046189	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	368019			N/A
4,4-DDE	0	0.0	20.0	PASS
4,4-DDD	19097	4.9	20.0	PASS
4,4-DDD + DDE	19097	4.9	20.0	PASS

Tuning Sample, nt14.i/20230421.b/NT04212304.D, \*\*\* PASSED \*\*\*

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	1.14 ( 1.55)
69	Mass 69 relative abundance	73.13
70	Less than 2.00% of mass 69	0.00 ( 0.00)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.86
365	1.00 - 100.00% of mass 198	2.31
441	Less than 150.00% of mass 443	6.62 ( 76.77)
442	Less than 200.00% of mass 198	44.31
443	15.00 - 24.00% of mass 442	8.62 ( 19.45)

Data File: NT04212304.D

Spectrum: Avg. Scans 570-572 ( 6.14), Background Scan 566

Location of Maximum: 198.00

Number of points: 124

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	2454	103.00	803	160.00	932	225.00	7648
39.00	15373	104.00	3625	161.00	3109	227.00	13109
50.00	49616	105.00	3767	165.00	1870	228.00	807
51.00	203328	107.00	48928	166.00	1426	229.00	2072
52.00	10370	108.00	7621	167.00	9571	243.00	672
56.00	5554	110.00	86880	168.00	7589	244.00	22152
57.00	13104	111.00	12950	174.00	2602	245.00	3069
61.00	890	112.00	696	175.00	5223	246.00	4423
62.00	2450	116.00	2422	177.00	1674	255.00	109240
63.00	6873	117.00	39288	179.00	9808	256.00	15861
65.00	3662	118.00	2912	180.00	6483	258.00	6699
68.00	2587	122.00	2971	181.00	3049	265.00	2074
69.00	166528	123.00	4322	185.00	4646	273.00	2532
74.00	15879	124.00	856	186.00	33960	274.00	8498
75.00	25240	125.00	810	187.00	9711	275.00	44848
76.00	8841	127.00	161600	189.00	1703	276.00	5938
77.00	186048	128.00	11874	192.00	2937	277.00	4100
78.00	13175	129.00	60088	193.00	3398	296.00	13718
79.00	10739	130.00	5211	196.00	6802	297.00	1538
80.00	8544	134.00	703	198.00	227712	323.00	3918
81.00	12412	135.00	4899	199.00	15624	334.00	1975
82.00	3101	136.00	779	204.00	8470	365.00	5265
83.00	3022	137.00	2478	205.00	13852	372.00	1613
84.00	168	141.00	7254	206.00	56008	423.00	5637
85.00	749	142.00	2395	207.00	7500	441.00	15065
86.00	4555	143.00	698	208.00	1486	442.00	100888
91.00	2722	147.00	3733	211.00	1592	443.00	19624
92.00	2706	148.00	8974	217.00	14687	444.00	800
93.00	18152	149.00	773	218.00	797		
98.00	13633	153.00	1554	221.00	10031		
99.00	10999	155.00	3828	223.00	3190		
101.00	6240	156.00	5705	224.00	29976		

Data File: \\target\share\chem3\nt14.1\20230421.6\NT04212305.D

Date: 21-APR-2023 15:47

Client ID:

Sample Info: SEQ-CAL7

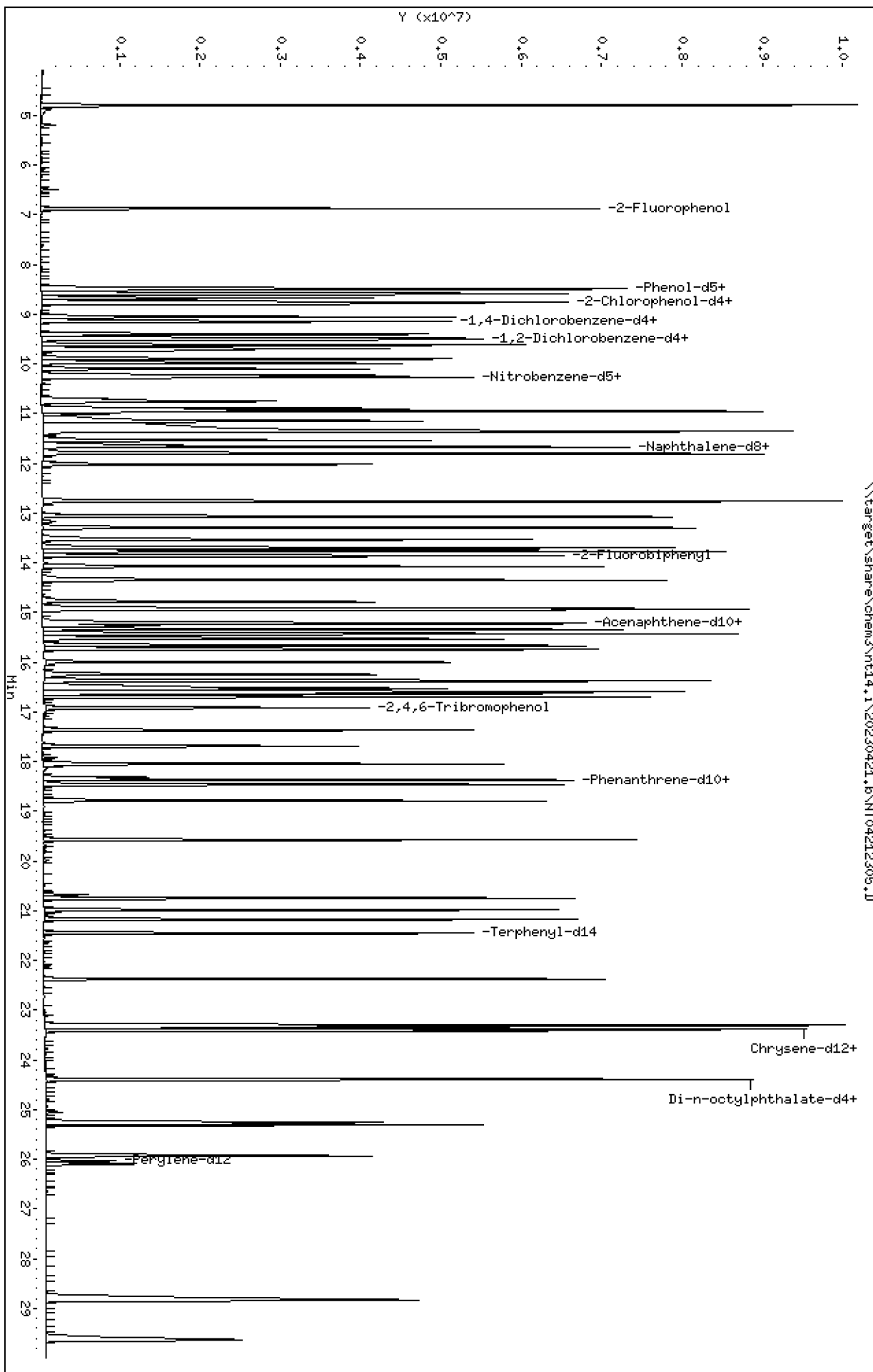
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

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ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212305.D  
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 Inj Date : 21-APR-2023 15:47 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL7  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 2 Calibration Sample, Level: 7  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.875	6.867	(0.754)	2540525	30.0000	26.50
\$ 2 Phenol-d5	99		8.490	8.459	(0.931)	3787047	30.0000	28.15
3 Phenol	94		8.513	8.482	(0.934)	2723620	20.0000	18.06
\$ 5 2-Chlorophenol-d4	132		8.760	8.745	(0.961)	2745383	30.0000	28.68
4 Bis(2-Chloroethyl)ether	93		8.675	8.660	(0.952)	2098774	20.0000	18.23
6 2-Chlorophenol	128		8.791	8.775	(0.964)	2007354	20.0000	19.11
7 1,3-Dichlorobenzene	146		9.054	9.046	(0.993)	1881071	20.0000	17.89
* 8 1,4-Dichlorobenzene-d4	152		9.116	9.108	(1.000)	265117	4.00000	
9 1,4-Dichlorobenzene	146		9.147	9.139	(1.003)	1844226	20.0000	18.39
\$ 10 1,2-Dichlorobenzene-d4	152		9.481	9.473	(1.040)	1139499	20.0000	18.79
12 1,2-Dichlorobenzene	146		9.512	9.504	(1.043)	1854490	20.0000	18.59
11 Benzyl alcohol	108		9.403	9.380	(1.031)	1392472	20.0000	20.24
14 2,2'-oxybis(1-Chloropropane)	121		9.698	9.683	(1.064)	653243	20.0000	19.40 (M)
13 2-Methylphenol	108		9.621	9.605	(1.055)	1910766	20.0000	18.99
17 Hexachloroethane	117		10.102	10.094	(1.108)	953869	20.0000	19.96
16 N-Nitroso-di-n-propylamine	70		9.985	9.947	(1.095)	1883907	20.0000	18.62
15 4-Methylphenol	108		9.900	9.877	(1.086)	2194774	20.0000	19.16
\$ 18 Nitrobenzene-d5	82		10.234	10.218	(0.880)	2572803	20.0000	19.34
19 Nitrobenzene	77		10.272	10.249	(0.883)	2690033	20.0000	18.91
20 Isophorone	82		10.746	10.700	(0.924)	3665007	20.0000	18.77 (H)
21 2-Nitrophenol	139		10.893	10.886	(0.937)	1070431	20.0000	19.71
22 2,4-Dimethylphenol	107		10.955	10.932	(0.942)	3789795	40.0000	35.36
23 Bis(2-Chloroethoxy)methane	93		11.149	11.134	(0.959)	2315967	20.0000	18.46
24 Benzoic acid	105		11.374	11.134	(0.978)	7009291	80.0000	78.98 (M)
25 2,4-Dichlorophenol	162		11.358	11.335	(0.977)	2500790	40.0000	39.40
26 1,2,4-Trichlorobenzene	180		11.536	11.529	(0.992)	1423453	20.0000	17.79
* 27 Naphthalene-d8	136		11.629	11.614	(1.000)	1081013	4.00000	
28 Naphthalene	128		11.667	11.660	(1.003)	5354167	20.0000	18.43
29 4-Chloroaniline	127		11.806	11.784	(1.015)	4535334	40.0000	36.08
30 Hexachlorobutadiene	225		12.023	12.015	(1.034)	672951	20.0000	18.40
31 4-Chloro-3-methylphenol	107		12.766	12.743	(1.098)	3638702	40.0000	37.99
32 2-Methylnaphthalene	142		13.075	13.060	(1.124)	3888343	20.0000	18.47
33 Hexachlorocyclopentadiene	237		13.540	13.532	(0.887)	1566754	40.0000	41.58



Compounds	QUANT SIG			AMOUNTS			
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.702	13.679	(0.898)	1794355	40.0000	38.23
35 2,4,5-Trichlorophenol	196	13.772	13.757	(0.902)	1846188	40.0000	37.02
§ 36 2-Fluorobiphenyl	172	13.857	13.849	(0.908)	3297859	20.0000	18.50
37 2-Chloronaphthalene	162	14.074	14.058	(0.922)	3136486	20.0000	18.43
38 2-Nitroaniline	65	14.352	14.322	(0.940)	3416935	40.0000	37.58
39 Dimethylphthalate	163	14.786	14.755	(0.969)	3064076	20.0000	17.45
40 Acenaphthylene	152	14.948	14.933	(0.979)	4890432	20.0000	18.00
41 2,6-Dinitrotoluene	165	14.925	14.902	(0.978)	1505602	40.0000	37.83
* 42 Acenaphthene-d10	164	15.265	15.250	(1.000)	511876	4.00000	
43 3-Nitroaniline	138	15.219	15.181	(0.997)	1994895	40.0000	39.89
44 Acenaphthene	153	15.335	15.320	(1.005)	3058443	20.0000	18.80
45 2,4-Dinitrophenol	184	15.436	15.397	(1.011)	1943030	80.0000	80.76
46 Dibenzofuran	168	15.667	15.644	(1.026)	4366946	20.0000	18.80
47 4-Nitrophenol	109	15.536	15.482	(1.018)	1132152	40.0000	38.90
48 2,4-Dinitrotoluene	165	15.745	15.706	(1.031)	2110605	40.0000	39.16
50 Diethylphthalate	149	16.247	16.217	(1.064)	3512932	20.0000	18.49
49 Fluorene	166	16.379	16.363	(1.073)	3708623	20.0000	18.04
51 4-Chlorophenyl-phenylether	204	16.363	16.348	(1.072)	1531222	20.0000	18.01
52 4-Nitroaniline	138	16.533	16.456	(1.083)	1768030	40.0000	39.98
53 4,6-Dinitro-2-methylphenol	198	16.602	16.548	(0.906)	1937500	80.0000	79.86
54 N-Nitrosodiphenylamine	169	16.633	16.602	(0.908)	2188572	20.0000	19.86
§ 55 2,4,6-Tribromophenol	330	16.918	16.895	(1.108)	501785	30.0000	29.82
56 4-Bromophenyl-phenylether	248	17.373	17.358	(0.948)	761866	20.0000	21.02
57 Hexachlorobenzene	284	17.690	17.675	(0.966)	703745	20.0000	19.20
58 Pentachlorophenol	266	18.046	18.031	(0.985)	930734	40.0000	39.93
* 59 Phenanthrene-d10	188	18.317	18.302	(1.000)	780182	4.00000	
60 Phenanthrene	178	18.371	18.348	(1.003)	4256055	20.0000	19.29
61 Anthracene	178	18.464	18.441	(1.008)	4237749	20.0000	20.03
62 Carbazole	167	18.789	18.774	(1.026)	3996256	20.0000	20.41
63 Di-n-butylphthalate	149	19.571	19.563	(1.068)	5816661	20.0000	19.49
64 Fluoranthene	202	20.754	20.739	(0.888)	4209214	20.0000	18.51
65 Pyrene	202	21.180	21.165	(0.907)	4277503	20.0000	18.22
§ 66 Terphenyl-d14	244	21.451	21.443	(0.918)	2440393	20.0000	19.84
67 Butylbenzylphthalate	149	22.372	22.365	(0.958)	2190368	20.0000	19.84
68 Benzo(a)anthracene	228	23.340	23.325	(0.999)	3362616	20.0000	19.13
* 69 Chrysene-d12	240	23.363	23.356	(1.000)	492514	4.00000	
70 3,3'-Dichlorobenzidine	252	23.301	23.278	(0.997)	3591673	60.0000	63.74
71 Chrysene	228	23.417	23.394	(1.002)	3092326	20.0000	18.86
72 bis(2-Ethylhexyl)phthalate	149	24.393	24.385	(1.001)	5382914	20.0000	17.67
* 134 Di-n-octylphthalate-d4	153	24.377	24.370	(1.000)	1141430	4.00000	
73 Di-n-octylphthalate	149	24.393	24.385	(1.001)	5382914	20.0000	17.67
74 Benzo(b)fluoranthene	252	25.260	25.229	(0.970)	3800269	20.0000	21.94
75 Benzo(k)fluoranthene	252	25.306	25.276	(0.972)	3389815	20.0000	19.94
76 Benzo(a)pyrene	252	25.934	25.903	(0.996)	3153894	20.0000	21.54
* 77 Perylene-d12	264	26.034	26.027	(1.000)	519591	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.828	28.743	(1.107)	4009966	20.0000	19.81
79 Dibenzo(a,h)anthracene	278	28.836	28.750	(1.108)	3273525	20.0000	19.77
80 Benzo(g,h,i)perylene	276	29.628	29.558	(1.138)	3423397	20.0000	19.97
90 N-Nitrosodimethylamine	74	4.805	4.774	(0.527)	2571900	40.0000	32.26
91 Aniline	93	8.590	8.567	(0.942)	5132106	40.0000	37.50
93 Benzidine	184	20.986	20.971	(0.898)	3563461	40.0000	39.72
103 Pyridine	79	4.797	4.797	(0.526)	3745038	20.0000	15.87
105 1-methylnaphthalene	142	13.300	13.285	(1.144)	3764345	20.0000	18.52
111 Azobenzene (1,2-DP-Hydrazine)	77	16.702	16.679	(1.094)	5332538	20.0000	18.18

Compounds	QUANT SIG						AMOUNTS	
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
187 Total Benzofluoranthenes	252		25.306	25.276	(0.972)	6833358	40.0000	41.66
120 2,3,4,6-Tetrachlorophenol	232		16.000	15.977	(1.048)	894780	20.0000	19.81

QC Flag Legend

- M - Compound response manually integrated.
- H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212305.D Calibration Time: 17:00  
 Lab Smp Id: SEQ-CAL7  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	265117	10.87
27 Naphthalene-d8	954450	477225	1908900	1081013	13.26
42 Acenaphthene-d10	448699	224350	897398	511876	14.08
59 Phenanthrene-d10	711389	355695	1422778	780182	9.67
69 Chrysene-d12	410209	205105	820418	492514	20.06
134 Di-n-octylphthala	929005	464503	1858010	1141430	22.87
77 Perylene-d12	424249	212125	848498	519591	22.47

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.12	-0.00
27 Naphthalene-d8	11.61	11.11	12.11	11.63	0.13
42 Acenaphthene-d10	15.26	14.76	15.76	15.27	0.05
59 Phenanthrene-d10	18.30	17.80	18.80	18.32	0.08
69 Chrysene-d12	23.36	22.86	23.86	23.36	0.03
134 Di-n-octylphthala	24.37	23.87	24.87	24.38	0.03
77 Perylene-d12	26.03	25.53	26.53	26.03	0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212305.D

Lab ID: SEQ-CAL7  
nt14.i, ABN.m, 21-APR-2023 15:47

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.978	0.959	0.0194	Benzoic acid

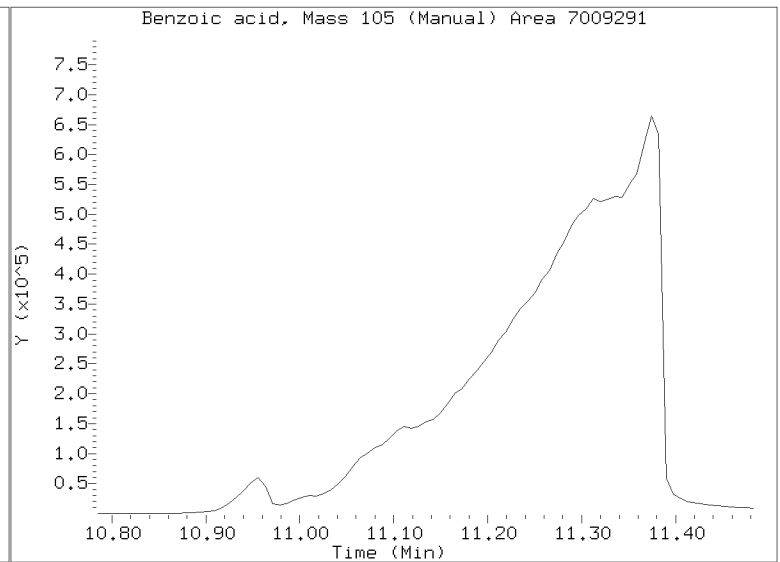
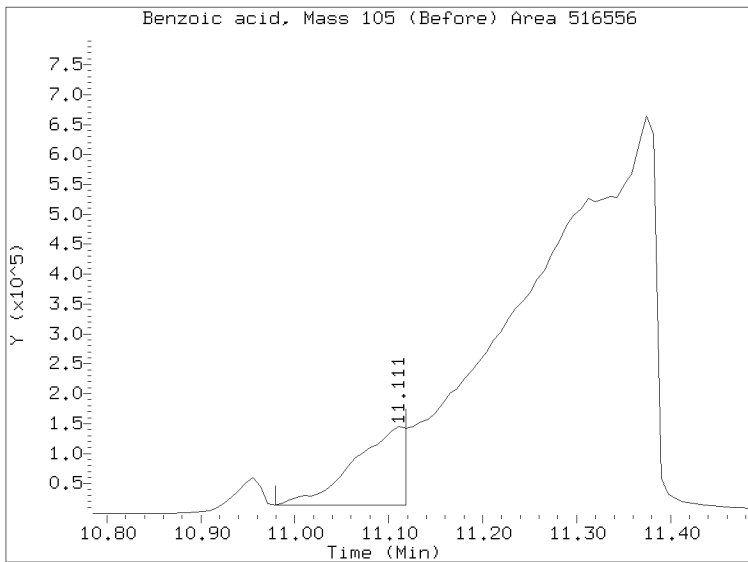
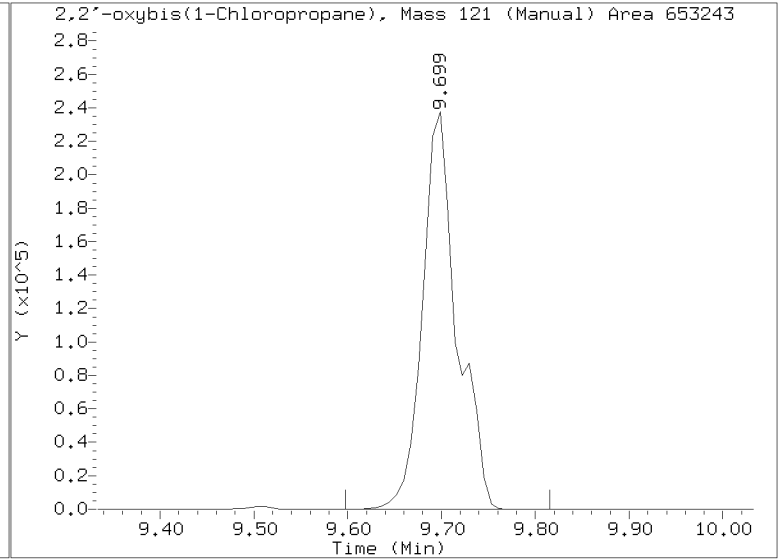
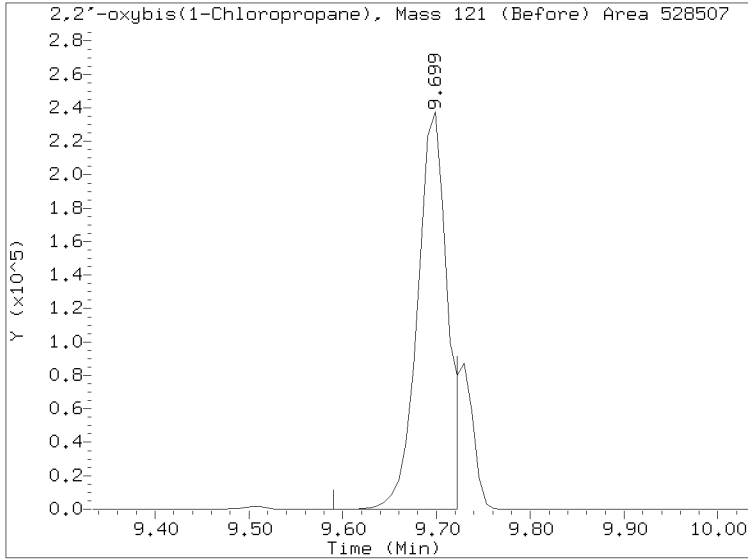
RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/NT04212305.D  
Injection Date: 21-APR-2023 15:47  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/27/2023 08:14



Data File: \\target\share\chem3\nt14.1\20230421.1\NT04212306.D

Date: 21-APR-2023 16:23

Client ID:

Sample Info: SEQ-CAL6

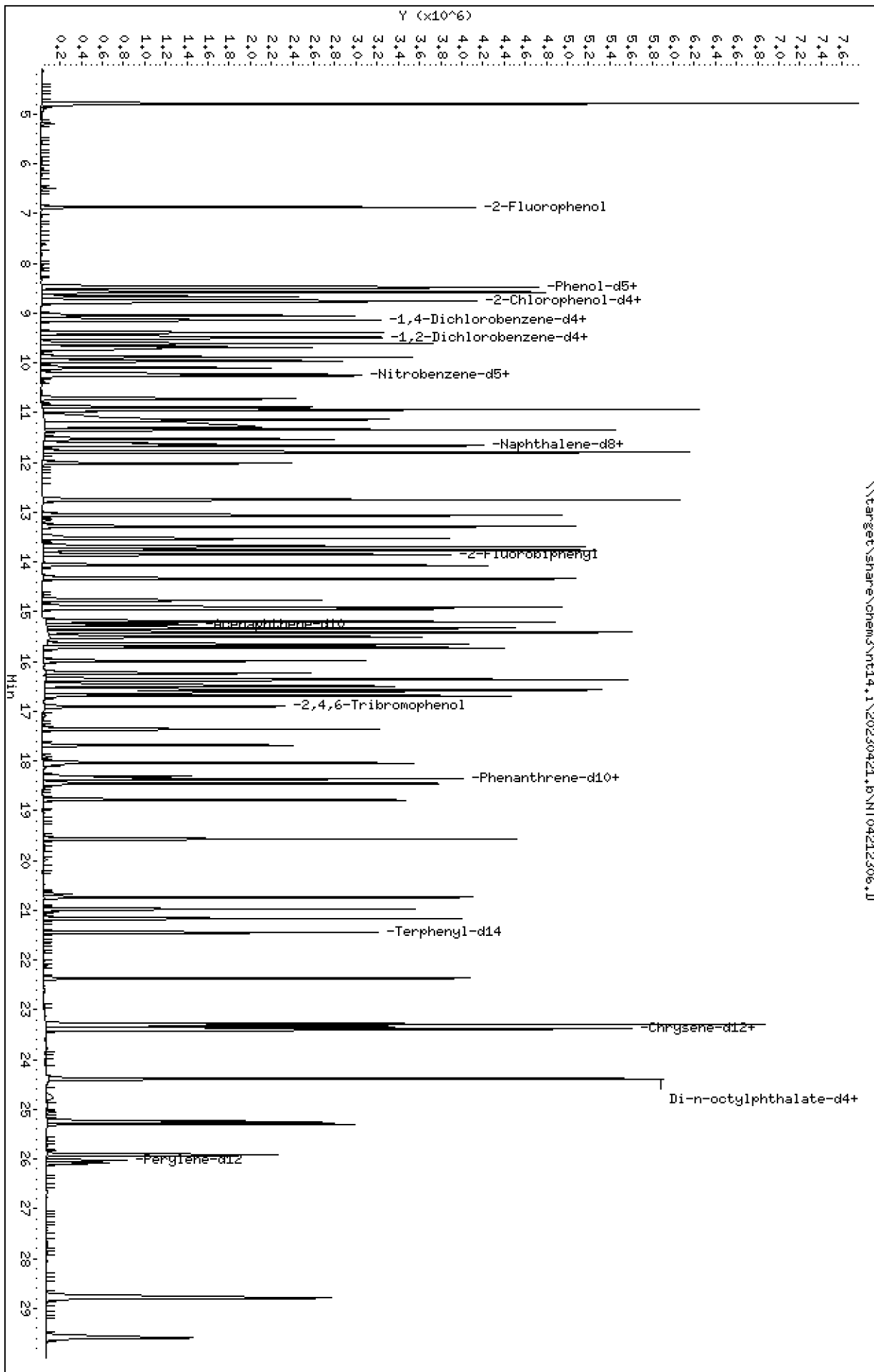
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212306.D  
 Lab Smp Id: SEQ-CAL6  
 Inj Date : 21-APR-2023 16:23 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL6  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 3 Calibration Sample, Level: 6  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.875	6.867	(0.754)	1424964	15.0000	14.97
\$ 2 Phenol-d5	99		8.474	8.459	(0.930)	2122051	15.0000	15.88
3 Phenol	94		8.497	8.482	(0.932)	1500047	10.0000	10.02
\$ 5 2-Chlorophenol-d4	132		8.752	8.745	(0.960)	1502542	15.0000	15.81
4 Bis(2-Chloroethyl)ether	93		8.667	8.660	(0.951)	1135931	10.0000	9.935
6 2-Chlorophenol	128		8.783	8.775	(0.963)	1086876	10.0000	10.42
7 1,3-Dichlorobenzene	146		9.054	9.046	(0.993)	1045127	10.0000	10.01
* 8 1,4-Dichlorobenzene-d4	152		9.116	9.108	(1.000)	263269	4.00000	
9 1,4-Dichlorobenzene	146		9.147	9.139	(1.003)	1003983	10.0000	10.08
\$ 10 1,2-Dichlorobenzene-d4	152		9.481	9.473	(1.040)	620300	10.0000	10.30
12 1,2-Dichlorobenzene	146		9.504	9.504	(1.043)	1009392	10.0000	10.19
11 Benzyl alcohol	108		9.395	9.380	(1.031)	752577	10.0000	11.02
14 2,2'-oxybis(1-Chloropropane)	121		9.690	9.683	(1.063)	348898	10.0000	10.43 (M)
13 2-Methylphenol	108		9.613	9.605	(1.054)	1039429	10.0000	10.40
17 Hexachloroethane	117		10.102	10.094	(1.108)	505917	10.0000	10.66
16 N-Nitroso-di-n-propylamine	70		9.962	9.947	(1.093)	1021820	10.0000	10.17
15 4-Methylphenol	108		9.885	9.877	(1.084)	1189750	10.0000	10.46
\$ 18 Nitrobenzene-d5	82		10.226	10.218	(0.880)	1376756	10.0000	10.63
19 Nitrobenzene	77		10.257	10.249	(0.883)	1459023	10.0000	10.54
20 Isophorone	82		10.723	10.700	(0.923)	2114358	10.0000	11.12
21 2-Nitrophenol	139		10.893	10.886	(0.937)	645669	10.0000	10.91
22 2,4-Dimethylphenol	107		10.940	10.932	(0.941)	2093179	20.0000	20.06
23 Bis(2-Chloroethoxy)methane	93		11.141	11.134	(0.959)	1235652	10.0000	10.11
24 Benzoic acid	105		11.281	11.134	(0.971)	3687101	40.0000	42.67 (M)
25 2,4-Dichlorophenol	162		11.343	11.335	(0.976)	1573279	20.0000	21.78
26 1,2,4-Trichlorobenzene	180		11.536	11.529	(0.993)	783739	10.0000	10.06
* 27 Naphthalene-d8	136		11.621	11.614	(1.000)	1052524	4.00000	
28 Naphthalene	128		11.660	11.660	(1.003)	2925591	10.0000	10.34
29 4-Chloroaniline	127		11.799	11.784	(1.015)	2537873	20.0000	20.73
30 Hexachlorobutadiene	225		12.023	12.015	(1.035)	365217	10.0000	10.26
31 4-Chloro-3-methylphenol	107		12.758	12.743	(1.098)	2003283	20.0000	21.48
32 2-Methylnaphthalene	142		13.068	13.060	(1.124)	2166281	10.0000	10.57
33 Hexachlorocyclopentadiene	237		13.532	13.532	(0.887)	840132	20.0000	22.76

Compounds	QUANT SIG					AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.694	13.679	(0.898)	977179	20.0000	21.25
35 2,4,5-Trichlorophenol	196	13.764	13.757	(0.902)	1068385	20.0000	21.87
§ 36 2-Fluorobiphenyl	172	13.849	13.849	(0.908)	1789878	10.0000	10.25
37 2-Chloronaphthalene	162	14.066	14.058	(0.922)	1724399	10.0000	10.34
38 2-Nitroaniline	65	14.337	14.322	(0.940)	1883325	20.0000	21.15
39 Dimethylphthalate	163	14.770	14.755	(0.968)	1687132	10.0000	9.810
40 Acenaphthylene	152	14.941	14.933	(0.979)	2734381	10.0000	10.28
41 2,6-Dinitrotoluene	165	14.917	14.902	(0.978)	829411	20.0000	21.27
* 42 Acenaphthene-d10	164	15.258	15.250	(1.000)	501412	4.00000	
43 3-Nitroaniline	138	15.204	15.181	(0.996)	1082294	20.0000	22.09
44 Acenaphthene	153	15.327	15.320	(1.005)	1675309	10.0000	10.51
45 2,4-Dinitrophenol	184	15.412	15.397	(1.010)	960117	40.0000	40.74
46 Dibenzofuran	168	15.660	15.644	(1.026)	2394420	10.0000	10.52
47 4-Nitrophenol	109	15.513	15.482	(1.017)	621391	20.0000	21.80
48 2,4-Dinitrotoluene	165	15.729	15.706	(1.031)	1147281	20.0000	21.73
50 Diethylphthalate	149	16.232	16.217	(1.064)	1937495	10.0000	10.41
49 Fluorene	166	16.371	16.363	(1.073)	2090212	10.0000	10.38
51 4-Chlorophenyl-phenylether	204	16.355	16.348	(1.072)	846580	10.0000	10.16
52 4-Nitroaniline	138	16.494	16.456	(1.081)	967904	20.0000	22.34
53 4,6-Dinitro-2-methylphenol	198	16.571	16.548	(0.905)	1025139	40.0000	41.59
54 N-Nitrosodiphenylamine	169	16.618	16.602	(0.908)	1166483	10.0000	10.42
§ 55 2,4,6-Tribromophenol	330	16.911	16.895	(1.108)	259843	15.0000	15.76
56 4-Bromophenyl-phenylether	248	17.366	17.358	(0.948)	409949	10.0000	11.13
57 Hexachlorobenzene	284	17.683	17.675	(0.966)	389299	10.0000	10.46
58 Pentachlorophenol	266	18.039	18.031	(0.985)	491206	20.0000	20.74
* 59 Phenanthrene-d10	188	18.310	18.302	(1.000)	792660	4.00000	
60 Phenanthrene	178	18.356	18.348	(1.003)	2352993	10.0000	10.50
61 Anthracene	178	18.457	18.441	(1.008)	2333932	10.0000	10.86
62 Carbazole	167	18.781	18.774	(1.026)	2188794	10.0000	11.00
63 Di-n-butylphthalate	149	19.571	19.563	(1.069)	3288100	10.0000	10.84
64 Fluoranthene	202	20.739	20.739	(0.888)	2345500	10.0000	11.08
65 Pyrene	202	21.172	21.165	(0.907)	2382628	10.0000	10.90
§ 66 Terphenyl-d14	244	21.443	21.443	(0.918)	1388576	10.0000	10.57
67 Butylbenzylphthalate	149	22.364	22.365	(0.958)	1221090	10.0000	10.56
68 Benzo(a)anthracene	228	23.332	23.325	(0.999)	1756181	10.0000	10.73
* 69 Chrysene-d12	240	23.356	23.356	(1.000)	458575	4.00000	
70 3,3'-Dichlorobenzidine	252	23.286	23.278	(0.997)	1860688	30.0000	35.47
71 Chrysene	228	23.410	23.394	(1.002)	1646023	10.0000	10.78
72 bis(2-Ethylhexyl)phthalate	149	24.385	24.385	(1.000)	2908559	10.0000	9.991
* 134 Di-n-octylphthalate-d4	153	24.377	24.370	(1.000)	1090519	4.00000	
73 Di-n-octylphthalate	149	24.385	24.385	(1.000)	2908559	10.0000	9.991
74 Benzo(b)fluoranthene	252	25.245	25.229	(0.970)	1821874	10.0000	11.31
75 Benzo(k)fluoranthene	252	25.291	25.276	(0.972)	1752257	10.0000	11.08
76 Benzo(a)pyrene	252	25.918	25.903	(0.996)	1550392	10.0000	11.39
* 77 Perylene-d12	264	26.027	26.027	(1.000)	483255	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.774	28.743	(1.106)	1976401	10.0000	10.50
79 Dibenzo(a,h)anthracene	278	28.789	28.750	(1.106)	1623227	10.0000	10.54
80 Benzo(g,h,i)perylene	276	29.589	29.558	(1.137)	1644744	10.0000	10.32
90 N-Nitrosodimethylamine	74	4.789	4.774	(0.525)	1511155	20.0000	19.09
91 Aniline	93	8.582	8.567	(0.941)	2794828	20.0000	20.57
93 Benzidine	184	20.979	20.971	(0.898)	1806496	20.0000	21.63
103 Pyridine	79	4.789	4.797	(0.525)	2216333	10.0000	9.459
105 1-methylnaphthalene	142	13.292	13.285	(1.144)	2084128	10.0000	10.53
111 Azobenzene (1,2-DP-Hydrazine)	77	16.687	16.679	(1.094)	2943133	10.0000	10.25



Compounds	QUANT SIG						AMOUNTS	
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
187 Total Benzofluoranthenes	252		25.291	25.276	(0.972)	3413875	20.0000	22.38
120 2,3,4,6-Tetrachlorophenol	232		15.984	15.977	(1.048)	465284	10.0000	10.52

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212306.D Calibration Time: 17:00  
 Lab Smp Id: SEQ-CAL6  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	263269	10.09
27 Naphthalene-d8	954450	477225	1908900	1052524	10.28
42 Acenaphthene-d10	448699	224350	897398	501412	11.75
59 Phenanthrene-d10	711389	355695	1422778	792660	11.42
69 Chrysene-d12	410209	205105	820418	458575	11.79
134 Di-n-octylphthala	929005	464503	1858010	1090519	17.39
77 Perylene-d12	424249	212125	848498	483255	13.91

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.12	-0.00
27 Naphthalene-d8	11.61	11.11	12.11	11.62	0.07
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.30	17.80	18.80	18.31	0.04
69 Chrysene-d12	23.36	22.86	23.86	23.36	-0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.38	0.03
77 Perylene-d12	26.03	25.53	26.53	26.03	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212306.D

Lab ID: SEQ-CAL6  
nt14.i, ABN.m, 21-APR-2023 16:23

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.971	0.959	0.0121	Benzoic acid

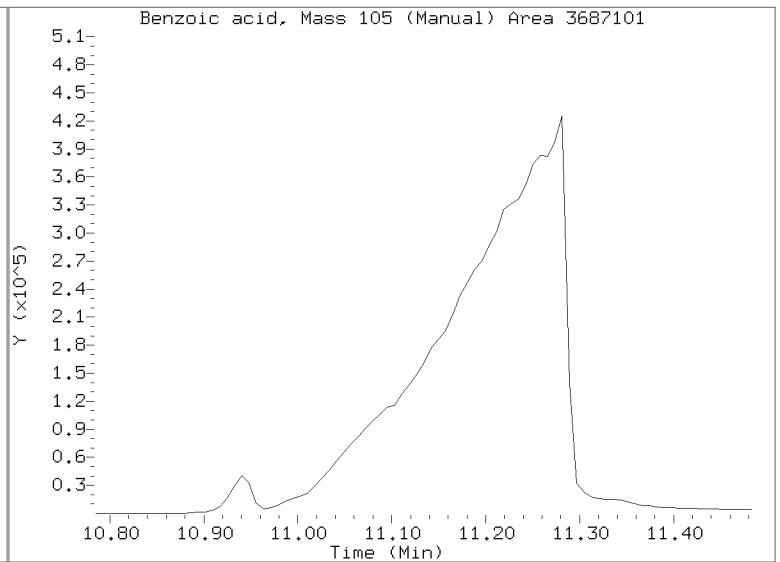
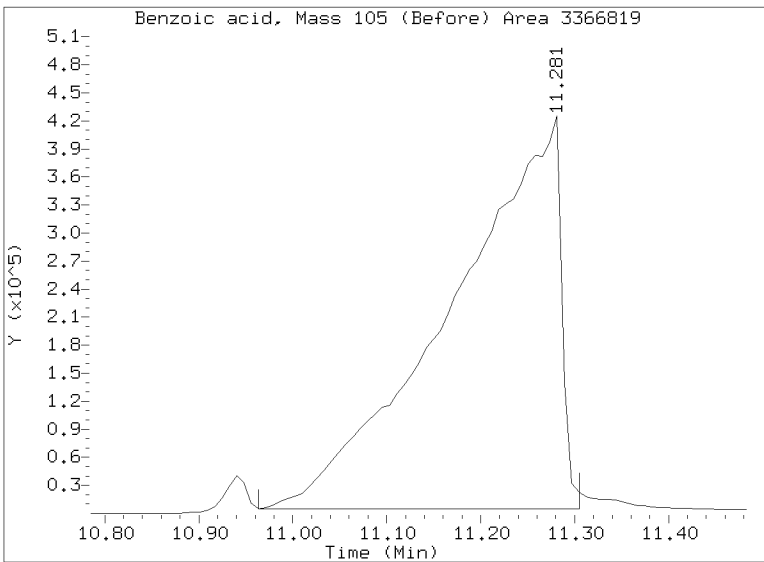
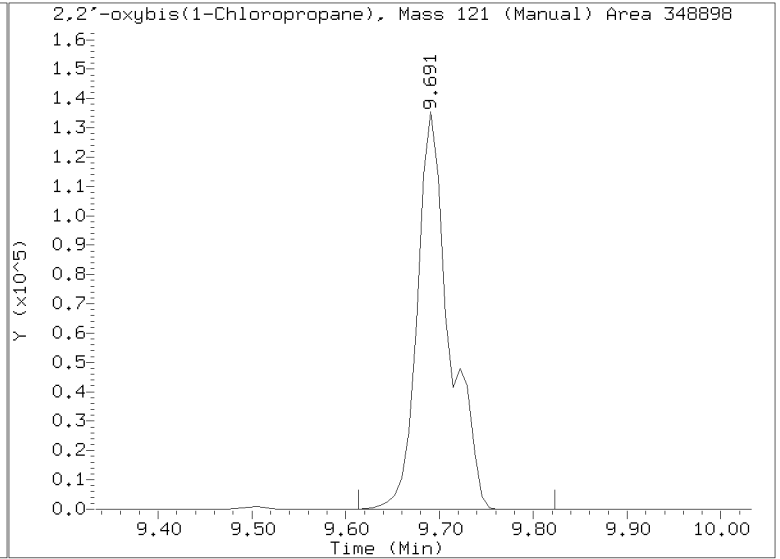
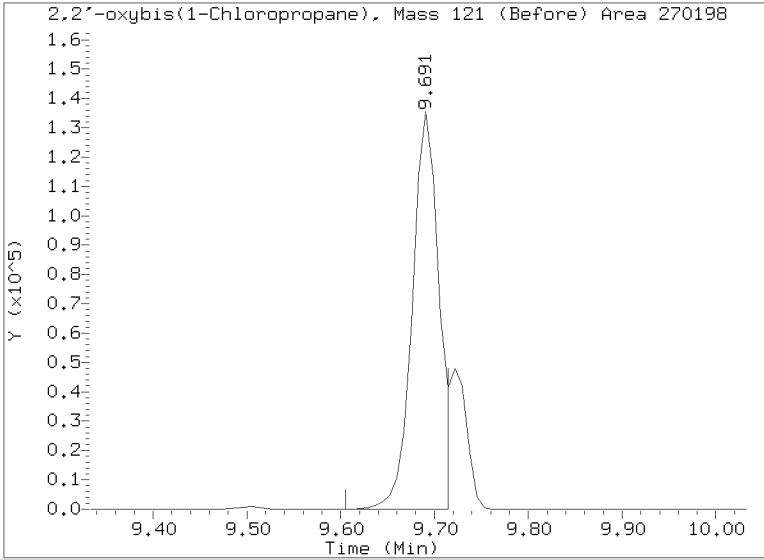
RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/NT04212306.D  
Injection Date: 21-APR-2023 16:23  
Lab ID:SEQ-CAL6 Client ID:  
Report Date: 04/27/2023 08:15



Data File: \\target\share\chem3\nt14.1\20230421.1\NT04212307.D

Date: 21-APR-2023 17:00

Client ID:

Sample Info: SEQ-CALL5

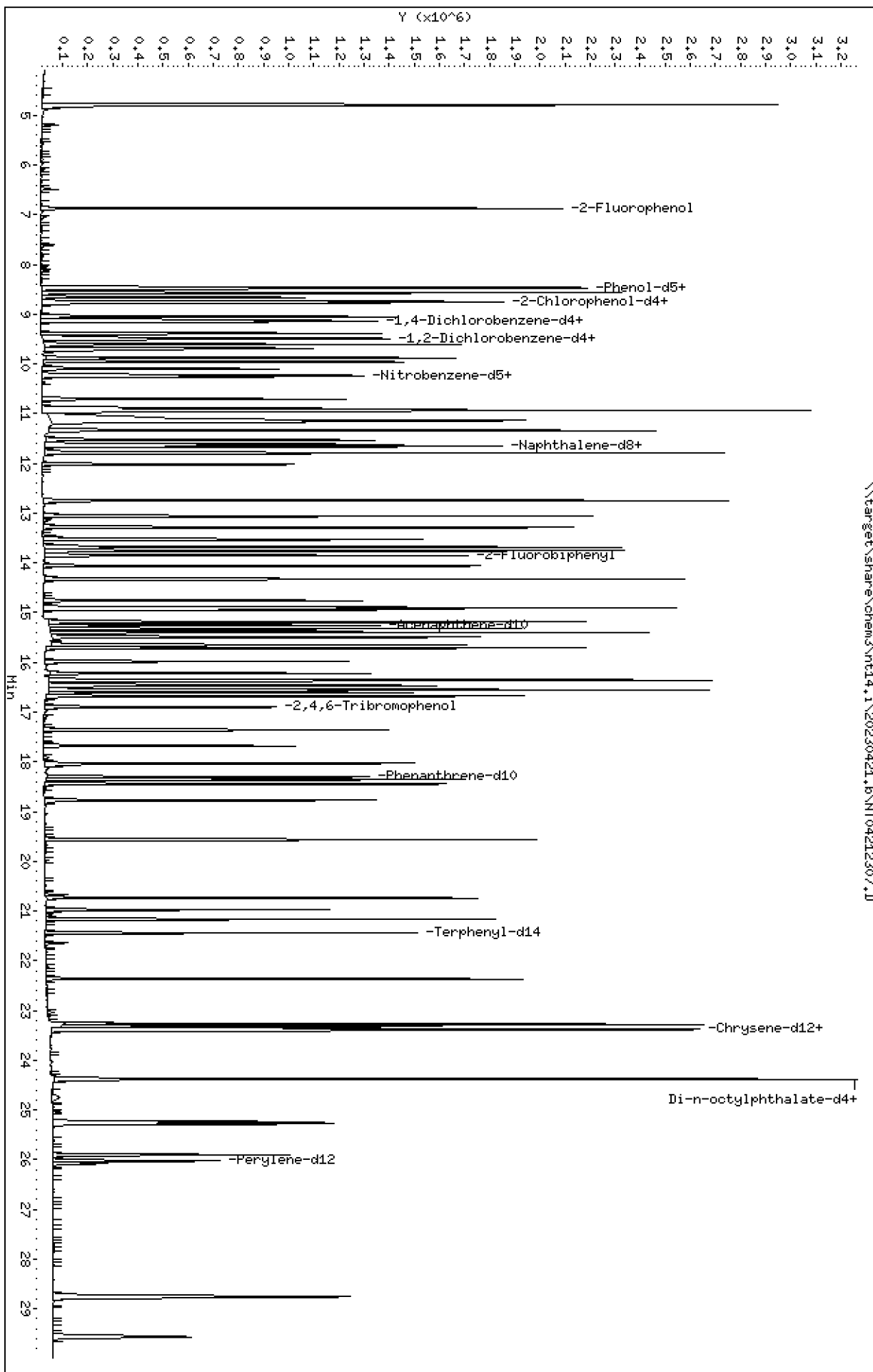
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212307.D  
 Lab Smp Id: SEQ-CAL5  
 Inj Date : 21-APR-2023 17:00 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL5  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 4 Calibration Sample, Level: 5  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.867	6.867	(0.753)	633275	7.50000	7.323
\$ 2 Phenol-d5	99		8.459	8.459	(0.928)	905304	7.50000	7.459
3 Phenol	94		8.482	8.482	(0.930)	654632	5.00000	4.813
\$ 5 2-Chlorophenol-d4	132		8.745	8.745	(0.959)	634501	7.50000	7.349
4 Bis(2-Chloroethyl)ether	93		8.660	8.660	(0.950)	488098	5.00000	4.700
6 2-Chlorophenol	128		8.776	8.775	(0.963)	460043	5.00000	4.856
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.992)	453238	5.00000	4.778
* 8 1,4-Dichlorobenzene-d4	152		9.116	9.108	(1.000)	239131	4.00000	
9 1,4-Dichlorobenzene	146		9.139	9.139	(1.003)	430759	5.00000	4.763
\$ 10 1,2-Dichlorobenzene-d4	152		9.473	9.473	(1.039)	263029	5.00000	4.809
12 1,2-Dichlorobenzene	146		9.504	9.504	(1.043)	431745	5.00000	4.798
11 Benzyl alcohol	108		9.388	9.380	(1.030)	304031	5.00000	4.900
14 2,2'-oxybis(1-Chloropropane)	121		9.691	9.683	(1.063)	145702	5.00000	4.797 (M)
13 2-Methylphenol	108		9.605	9.605	(1.054)	446133	5.00000	4.917
17 Hexachloroethane	117		10.094	10.094	(1.107)	211445	5.00000	4.905
16 N-Nitroso-di-n-propylamine	70		9.955	9.947	(1.092)	435815	5.00000	4.776
15 4-Methylphenol	108		9.877	9.877	(1.083)	509415	5.00000	4.930
\$ 18 Nitrobenzene-d5	82		10.218	10.218	(0.880)	578503	5.00000	4.925
19 Nitrobenzene	77		10.249	10.249	(0.883)	612007	5.00000	4.874
20 Isophorone	82		10.707	10.700	(0.922)	815153	5.00000	4.729
21 2-Nitrophenol	139		10.886	10.886	(0.937)	251328	5.00000	4.166
22 2,4-Dimethylphenol	107		10.932	10.932	(0.941)	915337	10.0000	9.673
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	520216	5.00000	4.695
24 Benzoic acid	105		11.173	11.134	(0.962)	1440693	20.0000	18.39 (M)
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	673265	10.0000	8.606
26 1,2,4-Trichlorobenzene	180		11.529	11.529	(0.993)	332786	5.00000	4.712
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	954450	4.00000	
28 Naphthalene	128		11.660	11.660	(1.004)	1239237	5.00000	4.830
29 4-Chloroaniline	127		11.791	11.784	(1.015)	1145969	10.0000	10.32
30 Hexachlorobutadiene	225		12.023	12.015	(1.035)	154631	5.00000	4.789
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	823048	10.0000	9.733
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	913609	5.00000	4.916
33 Hexachlorocyclopentadiene	237		13.532	13.532	(0.887)	330157	10.0000	9.997

Compounds	QUANT SIG					AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.687	13.679	(0.897)	411253	10.0000	9.996
35 2,4,5-Trichlorophenol	196	13.757	13.757	(0.902)	440950	10.0000	10.09
§ 36 2-Fluorobiphenyl	172	13.849	13.849	(0.908)	756124	5.00000	4.838
37 2-Chloronaphthalene	162	14.058	14.058	(0.921)	725842	5.00000	4.865
38 2-Nitroaniline	65	14.329	14.322	(0.939)	796085	10.0000	9.989
39 Dimethylphthalate	163	14.755	14.755	(0.967)	731784	5.00000	4.755
40 Acenaphthylene	152	14.941	14.933	(0.979)	1137772	5.00000	4.779
41 2,6-Dinitrotoluene	165	14.902	14.902	(0.977)	343913	10.0000	9.857
* 42 Acenaphthene-d10	164	15.258	15.250	(1.000)	448699	4.00000	
43 3-Nitroaniline	138	15.188	15.181	(0.995)	428991	10.0000	9.786
44 Acenaphthene	153	15.320	15.320	(1.004)	700387	5.00000	4.910
45 2,4-Dinitrophenol	184	15.397	15.397	(1.009)	329819	20.0000	15.64
46 Dibenzofuran	168	15.652	15.644	(1.026)	986244	5.00000	4.843
47 4-Nitrophenol	109	15.490	15.482	(1.015)	257053	10.0000	10.08
48 2,4-Dinitrotoluene	165	15.714	15.706	(1.030)	474371	10.0000	10.04
50 Diethylphthalate	149	16.224	16.217	(1.063)	765808	5.00000	4.597
49 Fluorene	166	16.363	16.363	(1.072)	887032	5.00000	4.923
51 4-Chlorophenyl-phenylether	204	16.356	16.348	(1.072)	357222	5.00000	4.793
52 4-Nitroaniline	138	16.464	16.456	(1.079)	393859	10.0000	10.16
53 4,6-Dinitro-2-methylphenol	198	16.556	16.548	(0.905)	389802	20.0000	17.62
54 N-Nitrosodiphenylamine	169	16.602	16.602	(0.907)	480833	5.00000	4.786
§ 55 2,4,6-Tribromophenol	330	16.903	16.895	(1.108)	98202	7.50000	6.657
56 4-Bromophenyl-phenylether	248	17.358	17.358	(0.948)	164705	5.00000	4.984
57 Hexachlorobenzene	284	17.675	17.675	(0.966)	164337	5.00000	4.918
58 Pentachlorophenol	266	18.031	18.031	(0.985)	188913	10.0000	8.888
* 59 Phenanthrene-d10	188	18.302	18.302	(1.000)	711389	4.00000	
60 Phenanthrene	178	18.356	18.348	(1.003)	986210	5.00000	4.903
61 Anthracene	178	18.441	18.441	(1.008)	976093	5.00000	5.060
62 Carbazole	167	18.774	18.774	(1.026)	786603	5.00000	4.406
63 Di-n-butylphthalate	149	19.563	19.563	(1.069)	1365558	5.00000	5.018
64 Fluoranthene	202	20.739	20.739	(0.888)	962326	5.00000	5.082
65 Pyrene	202	21.165	21.165	(0.906)	982202	5.00000	5.023
§ 66 Terphenyl-d14	244	21.443	21.443	(0.918)	595183	5.00000	4.454
67 Butylbenzylphthalate	149	22.365	22.365	(0.958)	514452	5.00000	4.481
68 Benzo(a)anthracene	228	23.325	23.325	(0.999)	720040	5.00000	4.917
* 69 Chrysene-d12	240	23.356	23.356	(1.000)	410209	4.00000	
70 3,3'-Dichlorobenzidine	252	23.278	23.278	(0.997)	606365	15.0000	12.92
71 Chrysene	228	23.402	23.394	(1.002)	680205	5.00000	4.981
72 bis(2-Ethylhexyl)phthalate	149	24.385	24.385	(1.001)	1190074	5.00000	4.799
* 134 Di-n-octylphthalate-d4	153	24.370	24.370	(1.000)	929005	4.00000	
73 Di-n-octylphthalate	149	24.385	24.385	(1.001)	1190074	5.00000	4.799
74 Benzo(b)fluoranthene	252	25.237	25.229	(0.970)	716810	5.00000	5.067
75 Benzo(k)fluoranthene	252	25.283	25.276	(0.971)	680512	5.00000	4.903
76 Benzo(a)pyrene	252	25.903	25.903	(0.995)	608872	5.00000	5.093
* 77 Perylene-d12	264	26.027	26.027	(1.000)	424249	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.750	28.743	(1.105)	777749	5.00000	4.705
79 Dibenzo(a,h)anthracene	278	28.766	28.750	(1.105)	643408	5.00000	4.758
80 Benzo(g,h,i)perylene	276	29.558	29.558	(1.136)	624865	5.00000	4.465
90 N-Nitrosodimethylamine	74	4.774	4.774	(0.524)	700157	10.0000	9.738
91 Aniline	93	8.567	8.567	(0.940)	1198011	10.0000	9.706
93 Benzidine	184	20.971	20.971	(0.898)	548276	10.0000	7.337
103 Pyridine	79	4.797	4.797	(0.526)	1026504	5.00000	4.823
105 1-methylnaphthalene	142	13.284	13.285	(1.144)	878425	5.00000	4.895
111 Azobenzene (1,2-DP-Hydrazine)	77	16.679	16.679	(1.093)	1233333	5.00000	4.798

Compounds	QUANT SIG						AMOUNTS	
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
187 Total Benzofluoranthenes	252		25.283	25.276	(0.971)	1334681	10.0000	9.966
120 2,3,4,6-Tetrachlorophenol	232		15.985	15.977	(1.048)	183407	5.00000	4.633

QC Flag Legend

M - Compound response manually integrated.



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212307.D Calibration Time: 17:00  
 Lab Smp Id: SEQ-CAL5  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	239131	0.00
27 Naphthalene-d8	954450	477225	1908900	954450	0.00
42 Acenaphthene-d10	448699	224350	897398	448699	0.00
59 Phenanthrene-d10	711389	355695	1422778	711389	0.00
69 Chrysene-d12	410209	205105	820418	410209	0.00
134 Di-n-octylphthala	929005	464503	1858010	929005	0.00
77 Perylene-d12	424249	212125	848498	424249	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.12	0.00
27 Naphthalene-d8	11.61	11.11	12.11	11.61	0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	0.00
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	0.00
69 Chrysene-d12	23.36	22.86	23.86	23.36	0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.37	0.00
77 Perylene-d12	26.03	25.53	26.53	26.03	0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212307.D

Lab ID: SEQ-CAL5  
nt14.i, ABN.m, 21-APR-2023 17:00

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

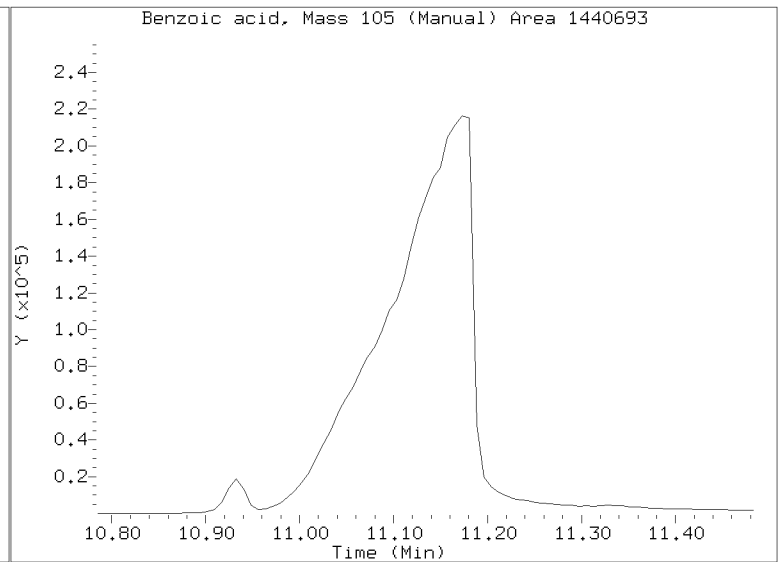
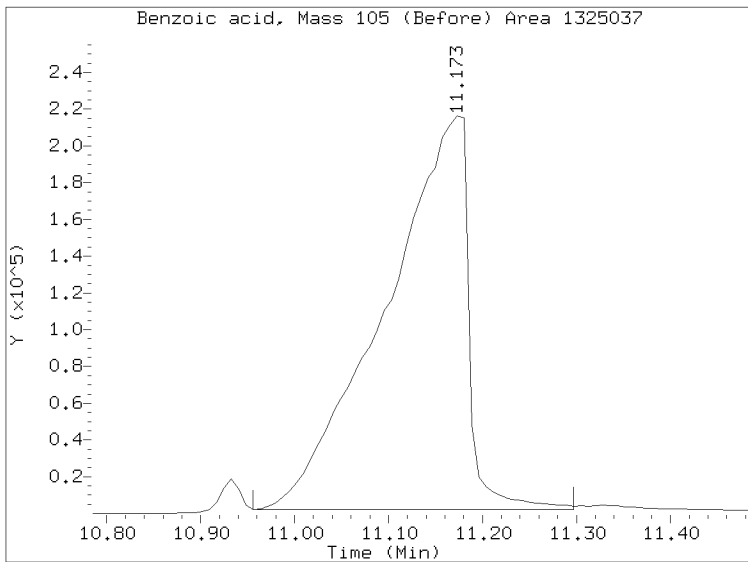
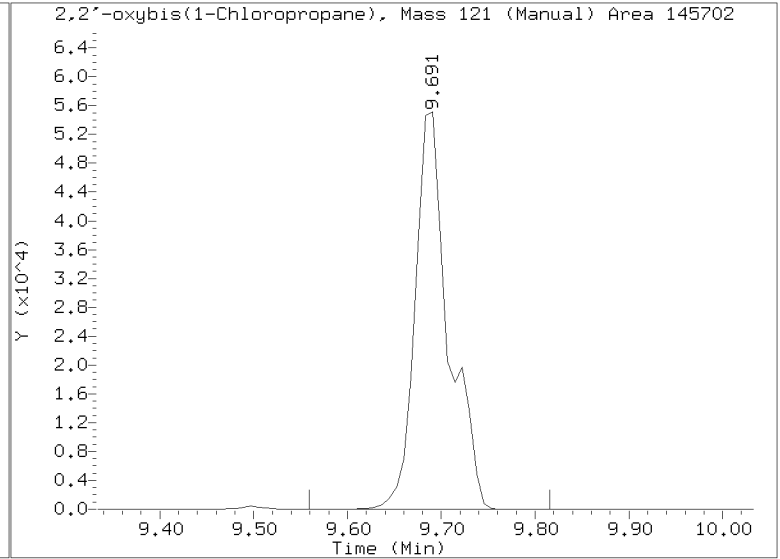
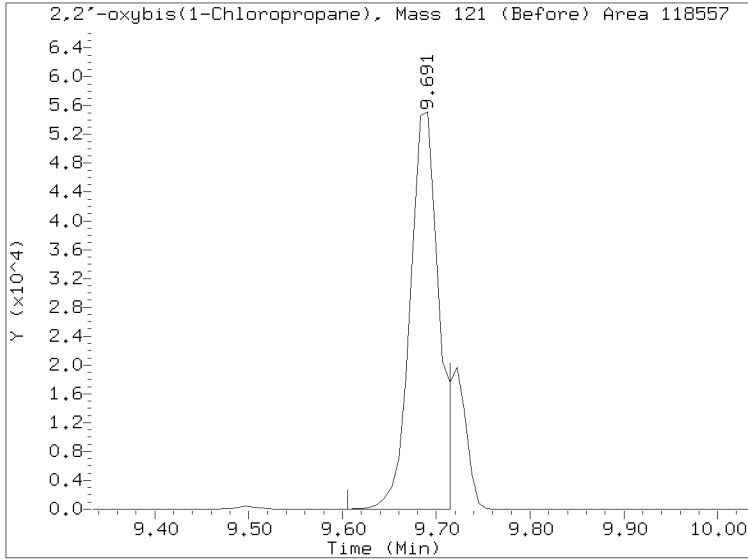
RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/NT04212307.D  
Injection Date: 21-APR-2023 17:00  
Lab ID:SEQ-CAL5 Client ID:  
Report Date: 04/27/2023 08:15



Data File: \\target\share\chem3\nt14.1\20230421.6\NT04212308.D

Date: 21-APR-2023 17:37

Client ID:

Sample Info: SEQ-CAL4

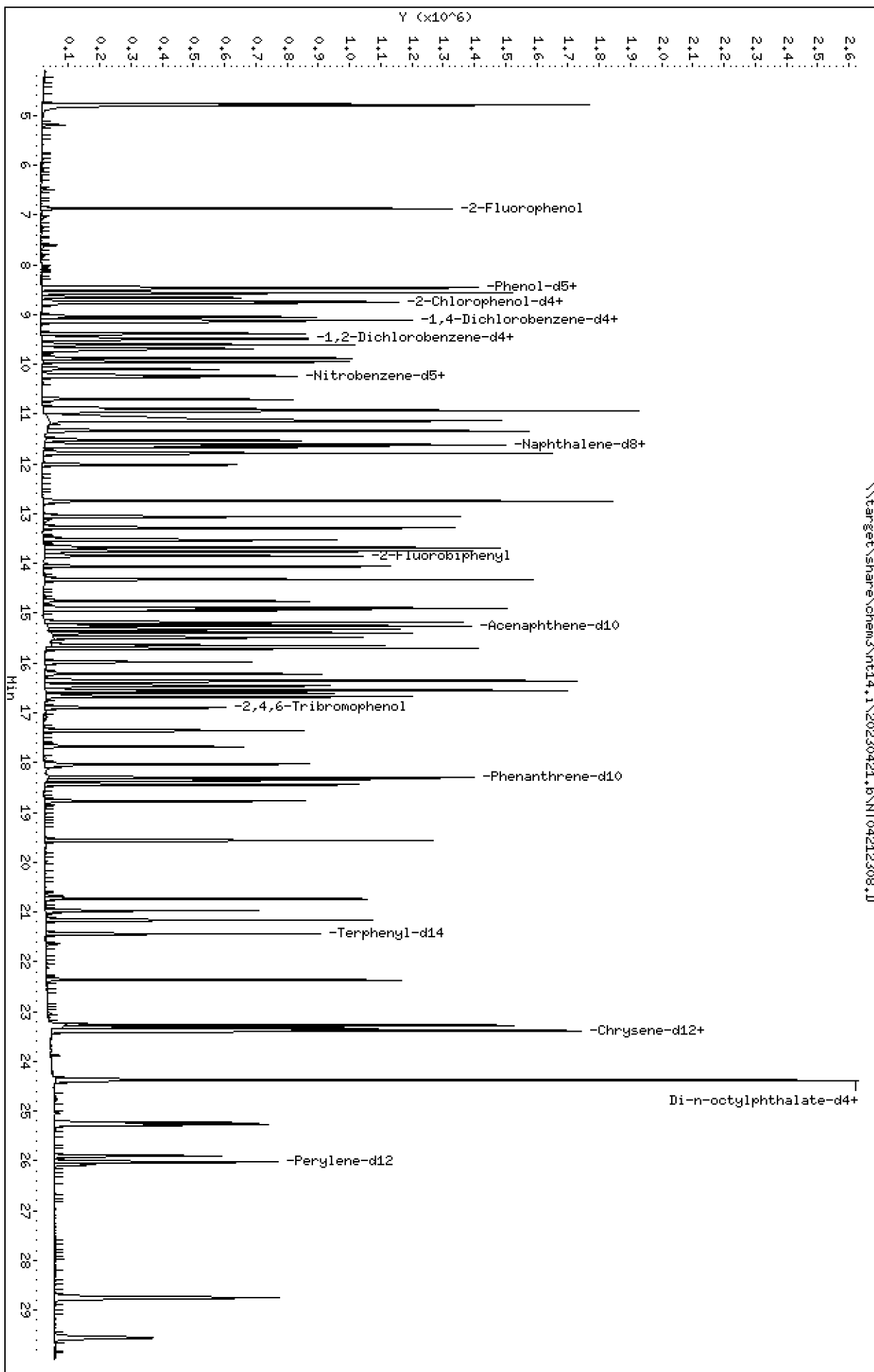
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

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ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212308.D  
 Lab Smp Id: SEQ-CAL4  
 Inj Date : 21-APR-2023 17:37 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL4  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 5 Calibration Sample, Level: 4  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.867	6.867	(0.754)	394419	3.75000	4.323
\$ 2 Phenol-d5	99		8.459	8.459	(0.929)	554600	3.75000	4.331
3 Phenol	94		8.482	8.482	(0.931)	410085	2.50000	2.858
\$ 5 2-Chlorophenol-d4	132		8.745	8.745	(0.960)	385043	3.75000	4.227
4 Bis(2-Chloroethyl)ether	93		8.660	8.660	(0.951)	303279	2.50000	2.768
6 2-Chlorophenol	128		8.775	8.775	(0.963)	280877	2.50000	2.810
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.993)	280662	2.50000	2.804
* 8 1,4-Dichlorobenzene-d4	152		9.108	9.108	(1.000)	252290	4.00000	
9 1,4-Dichlorobenzene	146		9.139	9.139	(1.003)	267190	2.50000	2.801
\$ 10 1,2-Dichlorobenzene-d4	152		9.473	9.473	(1.040)	162793	2.50000	2.821
12 1,2-Dichlorobenzene	146		9.504	9.504	(1.043)	265987	2.50000	2.802
11 Benzyl alcohol	108		9.380	9.380	(1.030)	188270	2.50000	2.876
14 2,2'-oxybis(1-Chloropropane)	121		9.683	9.683	(1.063)	83055	2.50000	2.592 (M)
13 2-Methylphenol	108		9.605	9.605	(1.055)	273717	2.50000	2.859
17 Hexachloroethane	117		10.094	10.094	(1.108)	126679	2.50000	2.785
16 N-Nitroso-di-n-propylamine	70		9.947	9.947	(1.092)	270896	2.50000	2.814
15 4-Methylphenol	108		9.877	9.877	(1.084)	314089	2.50000	2.881
\$ 18 Nitrobenzene-d5	82		10.218	10.218	(0.880)	352441	2.50000	2.875
19 Nitrobenzene	77		10.249	10.249	(0.883)	370709	2.50000	2.829
20 Isophorone	82		10.700	10.700	(0.921)	499986	2.50000	2.780
21 2-Nitrophenol	139		10.886	10.886	(0.937)	147679	2.50000	2.250
22 2,4-Dimethylphenol	107		10.932	10.932	(0.941)	566972	5.00000	5.742
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	323657	2.50000	2.800
24 Benzoic acid	105		11.134	11.134	(0.959)	830173	10.0000	10.15 (M)
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	399381	5.00000	4.526
26 1,2,4-Trichlorobenzene	180		11.529	11.529	(0.993)	208106	2.50000	2.824
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	995953	4.00000	
28 Naphthalene	128		11.660	11.660	(1.004)	754690	2.50000	2.819
29 4-Chloroaniline	127		11.783	11.784	(1.015)	644201	5.00000	5.562
30 Hexachlorobutadiene	225		12.015	12.015	(1.035)	95737	2.50000	2.841
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	493057	5.00000	5.588
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	545391	2.50000	2.813
33 Hexachlorocyclopentadiene	237		13.532	13.532	(0.887)	194278	5.00000	5.552

Compounds	QUANT SIG			AMOUNTS			
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.679	13.679	(0.897)	244726	5.00000	5.614
35 2,4,5-Trichlorophenol	196	13.757	13.757	(0.902)	264117	5.00000	5.704
\$ 36 2-Fluorobiphenyl	172	13.849	13.849	(0.908)	460152	2.50000	2.779
37 2-Chloronaphthalene	162	14.058	14.058	(0.922)	446405	2.50000	2.824
38 2-Nitroaniline	65	14.322	14.322	(0.939)	480056	5.00000	5.686
39 Dimethylphthalate	163	14.755	14.755	(0.968)	456470	2.50000	2.800
40 Acenaphthylene	152	14.933	14.933	(0.979)	711080	2.50000	2.819
41 2,6-Dinitrotoluene	165	14.902	14.902	(0.977)	206467	5.00000	5.585
* 42 Acenaphthene-d10	164	15.250	15.250	(1.000)	475373	4.00000	
43 3-Nitroaniline	138	15.181	15.181	(0.995)	256000	5.00000	5.512
44 Acenaphthene	153	15.320	15.320	(1.005)	423264	2.50000	2.801
45 2,4-Dinitrophenol	184	15.397	15.397	(1.010)	167667	10.0000	7.504
46 Dibenzofuran	168	15.644	15.644	(1.026)	600586	2.50000	2.784
47 4-Nitrophenol	109	15.482	15.482	(1.015)	152659	5.00000	5.649
48 2,4-Dinitrotoluene	165	15.706	15.706	(1.030)	284066	5.00000	5.676
50 Diethylphthalate	149	16.217	16.217	(1.063)	480530	2.50000	2.723
49 Fluorene	166	16.363	16.363	(1.073)	541013	2.50000	2.834
51 4-Chlorophenyl-phenylether	204	16.348	16.348	(1.072)	219908	2.50000	2.785
52 4-Nitroaniline	138	16.456	16.456	(1.079)	235643	5.00000	5.738
53 4,6-Dinitro-2-methylphenol	198	16.548	16.548	(0.904)	219889	10.0000	9.150
54 N-Nitrosodiphenylamine	169	16.602	16.602	(0.907)	300864	2.50000	2.757
\$ 55 2,4,6-Tribromophenol	330	16.895	16.895	(1.108)	56753	3.75000	3.632
56 4-Bromophenyl-phenylether	248	17.358	17.358	(0.948)	99886	2.50000	2.783
57 Hexachlorobenzene	284	17.675	17.675	(0.966)	99500	2.50000	2.741
58 Pentachlorophenol	266	18.031	18.031	(0.985)	108179	5.00000	4.685
* 59 Phenanthrene-d10	188	18.302	18.302	(1.000)	772801	4.00000	
60 Phenanthrene	178	18.348	18.348	(1.003)	602947	2.50000	2.759
61 Anthracene	178	18.441	18.441	(1.008)	590514	2.50000	2.818
62 Carbazole	167	18.774	18.774	(1.026)	516620	2.50000	2.664
63 Di-n-butylphthalate	149	19.563	19.563	(1.069)	830676	2.50000	2.810
64 Fluoranthene	202	20.739	20.739	(0.888)	588455	2.50000	2.903
65 Pyrene	202	21.165	21.165	(0.906)	599739	2.50000	2.865
\$ 66 Terphenyl-d14	244	21.443	21.443	(0.918)	368037	2.50000	2.436
67 Butylbenzylphthalate	149	22.365	22.365	(0.958)	309994	2.50000	2.415
68 Benzo(a)anthracene	228	23.325	23.325	(0.999)	436582	2.50000	2.785
* 69 Chrysene-d12	240	23.356	23.356	(1.000)	439097	4.00000	
70 3,3'-Dichlorobenzidine	252	23.278	23.278	(0.997)	362508	7.50000	7.216
71 Chrysene	228	23.394	23.394	(1.002)	407493	2.50000	2.787
72 bis(2-Ethylhexyl)phthalate	149	24.385	24.385	(1.001)	726746	2.50000	2.800
* 134 Di-n-octylphthalate-d4	153	24.370	24.370	(1.000)	972124	4.00000	
73 Di-n-octylphthalate	149	24.385	24.385	(1.001)	726746	2.50000	2.800
74 Benzo(b)fluoranthene	252	25.229	25.229	(0.969)	407304	2.50000	2.690
75 Benzo(k)fluoranthene	252	25.276	25.276	(0.971)	424489	2.50000	2.857
76 Benzo(a)pyrene	252	25.903	25.903	(0.995)	357763	2.50000	2.796
* 77 Perylene-d12	264	26.027	26.027	(1.000)	454075	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.743	28.743	(1.104)	458717	2.50000	2.593
79 Dibenzo(a,h)anthracene	278	28.750	28.750	(1.105)	377988	2.50000	2.612
80 Benzo(g,h,i)perylene	276	29.558	29.558	(1.136)	366496	2.50000	2.447
90 N-Nitrosodimethylamine	74	4.774	4.774	(0.524)	438810	5.00000	5.785
91 Aniline	93	8.567	8.567	(0.941)	737143	5.00000	5.661
93 Benzidine	184	20.971	20.971	(0.898)	330065	5.00000	4.126
103 Pyridine	79	4.797	4.797	(0.527)	649668	2.50000	2.893
105 1-methylnaphthalene	142	13.285	13.285	(1.144)	537024	2.50000	2.868
111 Azobenzene (1,2-DP-Hydrazine)	77	16.679	16.679	(1.094)	762188	2.50000	2.799

Compounds	QUANT SIG		AMOUNTS					
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
187 Total Benzofluoranthenes	252		25.276	25.276	(0.971)	799616	5.00000	5.579
120 2,3,4,6-Tetrachlorophenol	232		15.977	15.977	(1.048)	108839	2.50000	2.595

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212308.D Calibration Time: 17:00  
 Lab Smp Id: SEQ-CAL4  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	252290	5.50
27 Naphthalene-d8	954450	477225	1908900	995953	4.35
42 Acenaphthene-d10	448699	224350	897398	475373	5.94
59 Phenanthrene-d10	711389	355695	1422778	772801	8.63
69 Chrysene-d12	410209	205105	820418	439097	7.04
134 Di-n-octylphthala	929005	464503	1858010	972124	4.64
77 Perylene-d12	424249	212125	848498	454075	7.03

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.09
27 Naphthalene-d8	11.61	11.11	12.11	11.61	0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.25	-0.05
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	0.00
69 Chrysene-d12	23.36	22.86	23.86	23.36	0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.37	0.00
77 Perylene-d12	26.03	25.53	26.53	26.03	0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



REVIEW SUMMARY FOR FILE - NT04212308.D

Lab ID: SEQ-CAL4  
nt14.i, ABN.m, 21-APR-2023 17:37

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

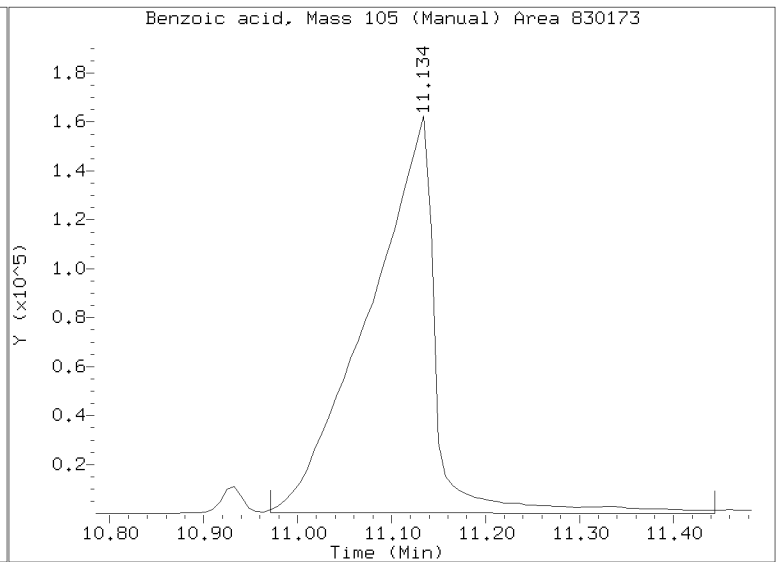
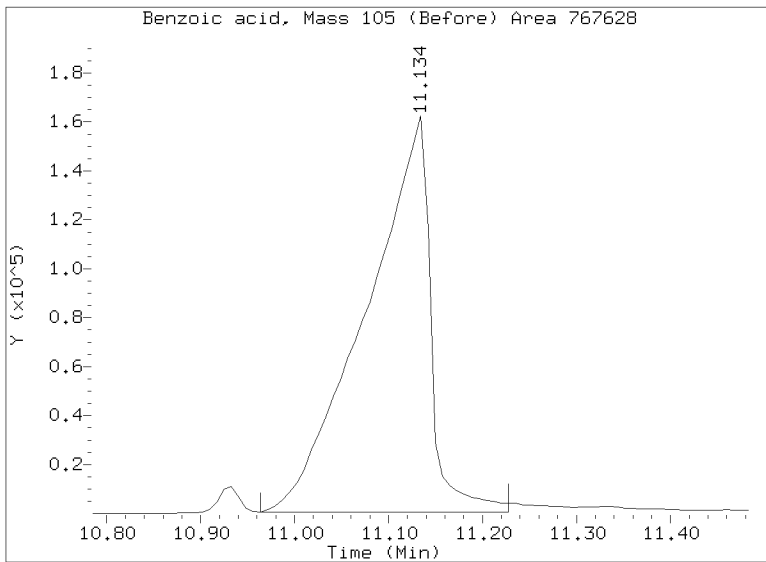
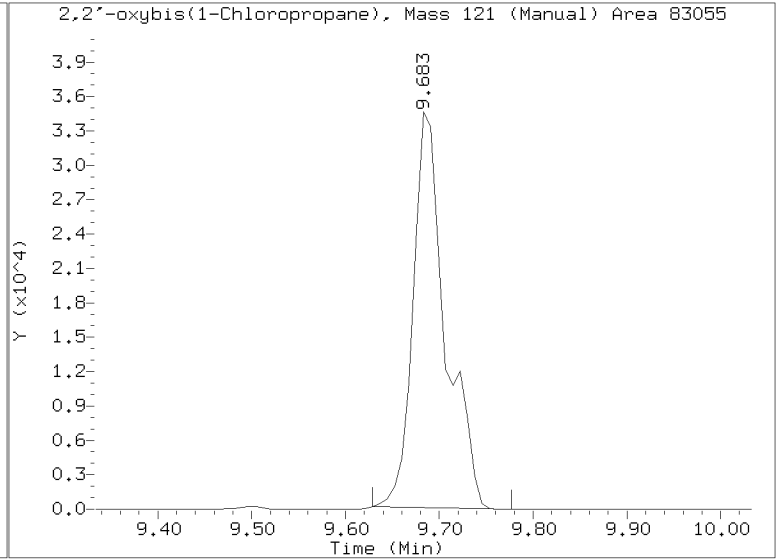
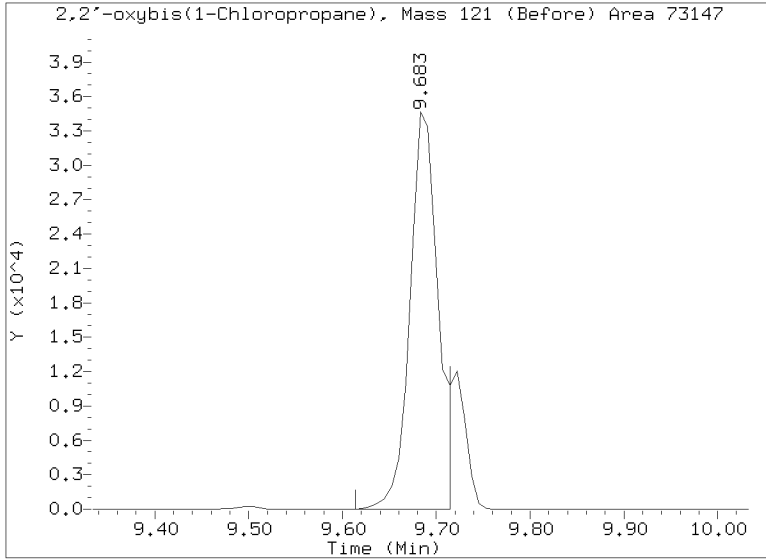
RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/NT04212308.D  
Injection Date: 21-APR-2023 17:37  
Lab ID:SEQ-CAL4 Client ID:  
Report Date: 04/27/2023 08:15



Data File: \\target\share\chem3\nt14.1\20230421.1\NT04212309.D

Date: 21-APR-2023 18:13

Client ID:

Sample Info: SEQ-CAL3

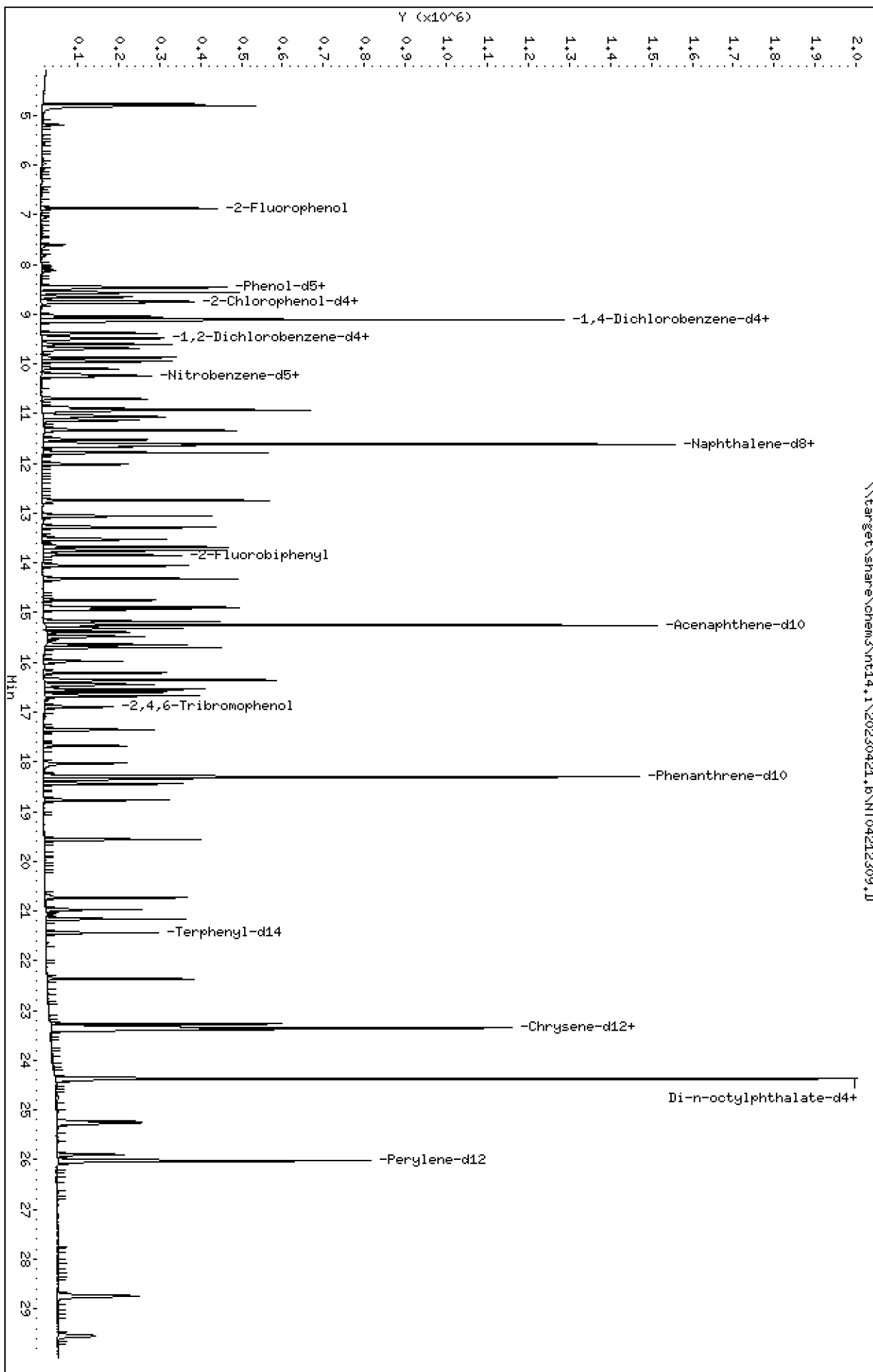
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212309.D  
 Lab Smp Id: SEQ-CAL3  
 Inj Date : 21-APR-2023 18:13 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL3  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 6 Calibration Sample, Level: 3  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
1 2-Fluorophenol	112		6.867	6.867	(0.754)	128945	1.50000	1.356
2 Phenol-d5	99		8.459	8.459	(0.929)	177355	1.50000	1.329
3 Phenol	94		8.474	8.482	(0.930)	134676	1.00000	0.9007
5 2-Chlorophenol-d4	132		8.745	8.745	(0.960)	125487	1.50000	1.322
4 Bis(2-Chloroethyl)ether	93		8.652	8.660	(0.950)	102306	1.00000	0.8962
6 2-Chlorophenol	128		8.768	8.775	(0.963)	92484	1.00000	0.8880
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.993)	93099	1.00000	0.8928
* 8 1,4-Dichlorobenzene-d4	152		9.109	9.108	(1.000)	262871	4.00000	
9 1,4-Dichlorobenzene	146		9.140	9.139	(1.003)	87574	1.00000	0.8809
\$ 10 1,2-Dichlorobenzene-d4	152		9.473	9.473	(1.040)	52499	1.00000	0.8732
12 1,2-Dichlorobenzene	146		9.497	9.504	(1.043)	87863	1.00000	0.8883
11 Benzyl alcohol	108		9.380	9.380	(1.030)	58901	1.00000	0.8636
14 2,2'-oxybis(1-Chloropropane)	121		9.683	9.683	(1.063)	28273	1.00000	0.8467 (M)
13 2-Methylphenol	108		9.605	9.605	(1.055)	87988	1.00000	0.8821
17 Hexachloroethane	117		10.094	10.094	(1.108)	40900	1.00000	0.8630
16 N-Nitroso-di-n-propylamine	70		9.947	9.947	(1.092)	90417	1.00000	0.9013
15 4-Methylphenol	108		9.869	9.877	(1.084)	102822	1.00000	0.9052
\$ 18 Nitrobenzene-d5	82		10.211	10.218	(0.879)	111557	1.00000	0.8694
19 Nitrobenzene	77		10.249	10.249	(0.883)	121891	1.00000	0.8886
20 Isophorone	82		10.700	10.700	(0.921)	160336	1.00000	0.8515
21 2-Nitrophenol	139		10.886	10.886	(0.937)	38073	1.00000	0.5311
22 2,4-Dimethylphenol	107		10.925	10.932	(0.941)	187923	2.00000	1.818
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	108312	1.00000	0.8950
24 Benzoic acid	105		11.064	11.134	(0.953)	198452	4.00000	2.318 (M)
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	126648	2.00000	1.269
26 1,2,4-Trichlorobenzene	180		11.521	11.529	(0.992)	69068	1.00000	0.8952
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	1042624	4.00000	
28 Naphthalene	128		11.652	11.660	(1.003)	244169	1.00000	0.8713
29 4-Chloroaniline	127		11.783	11.784	(1.015)	200748	2.00000	1.656
30 Hexachlorobutadiene	225		12.015	12.015	(1.035)	30449	1.00000	0.8632
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	152715	2.00000	1.653
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	175591	1.00000	0.8650
33 Hexachlorocyclopentadiene	237		13.524	13.532	(0.887)	55401	2.00000	1.548

Compounds	QUANT SIG					AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.679	13.679	(0.897)	72943	2.00000	1.636
35 2,4,5-Trichlorophenol	196	13.749	13.757	(0.902)	77127	2.00000	1.628
§ 36 2-Fluorobiphenyl	172	13.842	13.849	(0.908)	149333	1.00000	0.8815
37 2-Chloronaphthalene	162	14.058	14.058	(0.922)	142756	1.00000	0.8827
38 2-Nitroaniline	65	14.322	14.322	(0.939)	146079	2.00000	1.691
39 Dimethylphthalate	163	14.747	14.755	(0.967)	152086	1.00000	0.9116
40 Acenaphthylene	152	14.933	14.933	(0.979)	230662	1.00000	0.8937
41 2,6-Dinitrotoluene	165	14.894	14.902	(0.977)	63542	2.00000	1.680
* 42 Acenaphthene-d10	164	15.250	15.250	(1.000)	486388	4.00000	
43 3-Nitroaniline	138	15.173	15.181	(0.995)	78528	2.00000	1.652
44 Acenaphthene	153	15.320	15.320	(1.005)	133650	1.00000	0.8644
45 2,4-Dinitrophenol	184	15.389	15.397	(1.009)	27890	4.00000	1.220
46 Dibenzofuran	168	15.644	15.644	(1.026)	193300	1.00000	0.8757
47 4-Nitrophenol	109	15.482	15.482	(1.015)	39389	2.00000	1.424
48 2,4-Dinitrotoluene	165	15.699	15.706	(1.029)	84178	2.00000	1.644
50 Diethylphthalate	149	16.209	16.217	(1.063)	159466	1.00000	0.8831
49 Fluorene	166	16.356	16.363	(1.072)	172285	1.00000	0.8821
51 4-Chlorophenyl-phenylether	204	16.348	16.348	(1.072)	71740	1.00000	0.8879
52 4-Nitroaniline	138	16.448	16.456	(1.079)	61805	2.00000	1.471
53 4,6-Dinitro-2-methylphenol	198	16.541	16.548	(0.904)	49085	4.00000	1.957
54 N-Nitrosodiphenylamine	169	16.595	16.602	(0.907)	100040	1.00000	0.8781
§ 55 2,4,6-Tribromophenol	330	16.895	16.895	(1.108)	16557	1.50000	1.035
56 4-Bromophenyl-phenylether	248	17.358	17.358	(0.948)	31119	1.00000	0.8304
57 Hexachlorobenzene	284	17.675	17.675	(0.966)	32478	1.00000	0.8570
58 Pentachlorophenol	266	18.031	18.031	(0.985)	28333	2.00000	1.176
* 59 Phenanthrene-d10	188	18.302	18.302	(1.000)	806729	4.00000	
60 Phenanthrene	178	18.348	18.348	(1.003)	198027	1.00000	0.8682
61 Anthracene	178	18.441	18.441	(1.008)	186879	1.00000	0.8542
62 Carbazole	167	18.766	18.774	(1.025)	180199	1.00000	0.8901
63 Di-n-butylphthalate	149	19.563	19.563	(1.069)	252576	1.00000	0.8184
64 Fluoranthene	202	20.731	20.739	(0.888)	185492	1.00000	0.8737
65 Pyrene	202	21.157	21.165	(0.906)	192165	1.00000	0.8765
§ 66 Terphenyl-d14	244	21.443	21.443	(0.918)	119507	1.00000	0.7152
67 Butylbenzylphthalate	149	22.365	22.365	(0.958)	94438	1.00000	0.6738
68 Benzo(a)anthracene	228	23.325	23.325	(0.999)	144320	1.00000	0.8791
* 69 Chrysene-d12	240	23.348	23.356	(1.000)	459922	4.00000	
70 3,3'-Dichlorobenzidine	252	23.271	23.278	(0.997)	133341	3.00000	2.534
71 Chrysene	228	23.394	23.394	(1.002)	131400	1.00000	0.8581
72 bis(2-Ethylhexyl)phthalate	149	24.378	24.385	(1.000)	230614	1.00000	0.8816
* 134 Di-n-octylphthalate-d4	153	24.370	24.370	(1.000)	979871	4.00000	
73 Di-n-octylphthalate	149	24.378	24.385	(1.000)	230614	1.00000	0.8816
74 Benzo(b)fluoranthene	252	25.229	25.229	(0.970)	128955	1.00000	0.8320
75 Benzo(k)fluoranthene	252	25.276	25.276	(0.971)	128293	1.00000	0.8436
76 Benzo(a)pyrene	252	25.903	25.903	(0.996)	109072	1.00000	0.8327
* 77 Perylene-d12	264	26.019	26.027	(1.000)	464832	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.735	28.743	(1.104)	132489	1.00000	0.7315
79 Dibenzo(a,h)anthracene	278	28.750	28.750	(1.105)	112367	1.00000	0.7584
80 Benzo(g,h,i)perylene	276	29.543	29.558	(1.135)	107228	1.00000	0.6993
90 N-Nitrosodimethylamine	74	4.766	4.774	(0.523)	145362	2.00000	1.839
91 Aniline	93	8.567	8.567	(0.941)	237325	2.00000	1.749
93 Benzidine	184	20.971	20.971	(0.898)	124766	2.00000	1.489
103 Pyridine	79	4.805	4.797	(0.528)	219925	1.00000	0.9400
105 1-methylnaphthalene	142	13.285	13.285	(1.144)	167527	1.00000	0.8546
111 Azobenzene (1,2-DP-Hydrazine)	77	16.672	16.679	(1.093)	250388	1.00000	0.8986

Compounds	QUANT SIG						AMOUNTS	
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
187 Total Benzofluoranthenes	252		25.229	25.276	(0.970)	246030	2.00000	1.677
120 2,3,4,6-Tetrachlorophenol	232		15.977	15.977	(1.048)	28553	1.00000	0.6654

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212309.D Calibration Time: 17:00  
 Lab Smp Id: SEQ-CAL3  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	262871	9.93
27 Naphthalene-d8	954450	477225	1908900	1042624	9.24
42 Acenaphthene-d10	448699	224350	897398	486388	8.40
59 Phenanthrene-d10	711389	355695	1422778	806729	13.40
69 Chrysene-d12	410209	205105	820418	459922	12.12
134 Di-n-octylphthala	929005	464503	1858010	979871	5.48
77 Perylene-d12	424249	212125	848498	464832	9.57

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.08
27 Naphthalene-d8	11.61	11.11	12.11	11.61	0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.25	-0.05
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	0.00
69 Chrysene-d12	23.36	22.86	23.86	23.35	-0.03
134 Di-n-octylphthala	24.37	23.87	24.87	24.37	0.00
77 Perylene-d12	26.03	25.53	26.53	26.02	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212309.D

Lab ID: SEQ-CAL3  
nt14.i, ABN.m, 21-APR-2023 18:13

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.953	0.959	-0.0060	Benzoic acid

RRT check based on Ccal File: NT04212308.D

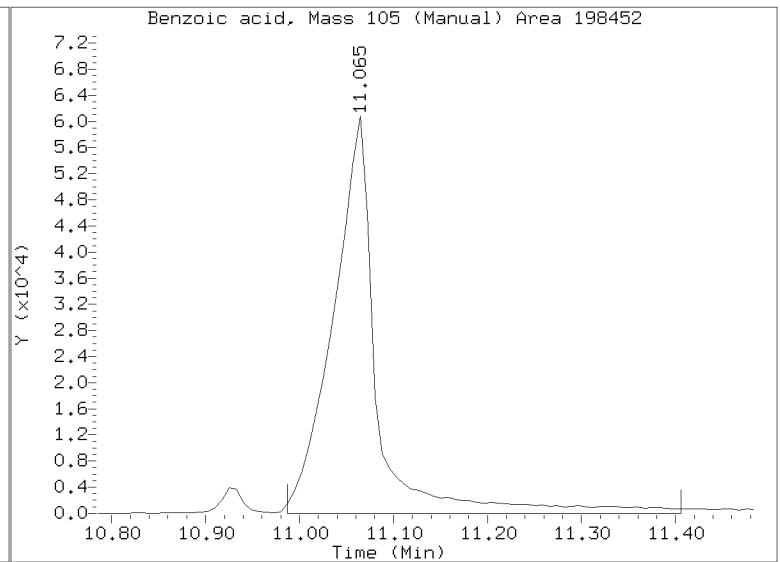
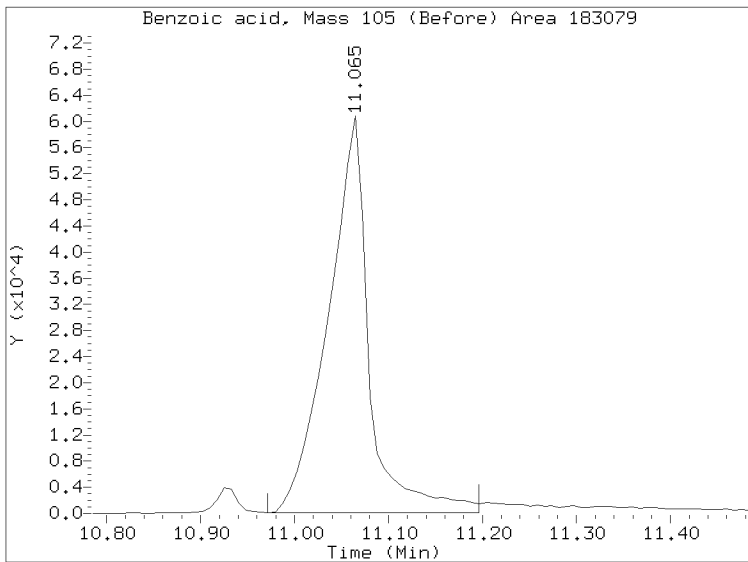
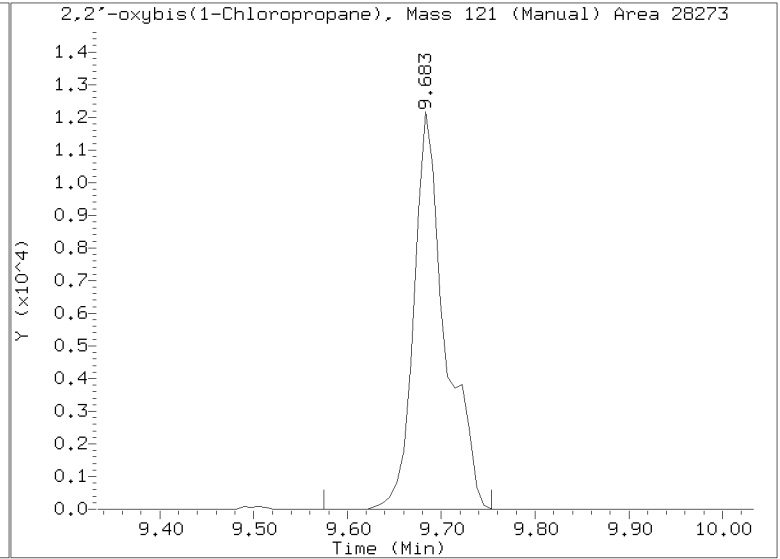
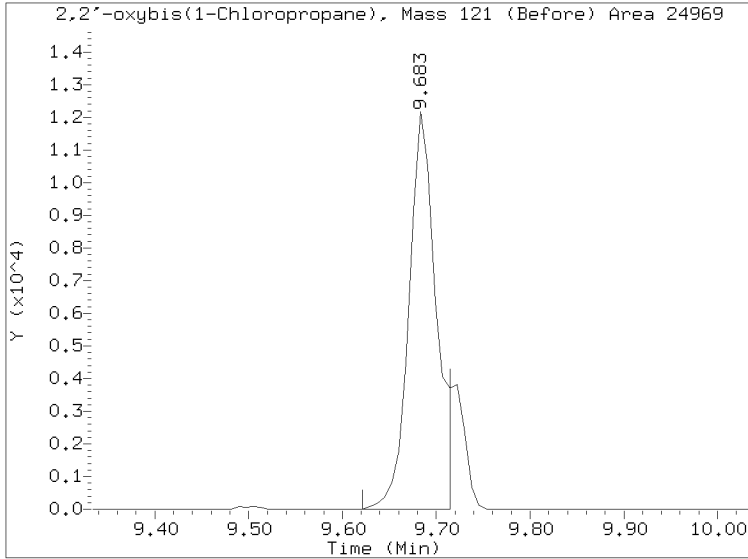
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



# Quant Ion Manual Peak Adjustment Report

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Injection Date: 21-APR-2023 18:13  
Lab ID:SEQ-CAL3 Client ID:  
Report Date: 04/27/2023 08:15



Data File: \\target\share\chem3\nt14.1\20230421.6\NT04212310.D

Date: 21-APR-2023 18:50

Client ID:

Sample Info: SEQ-CAL2

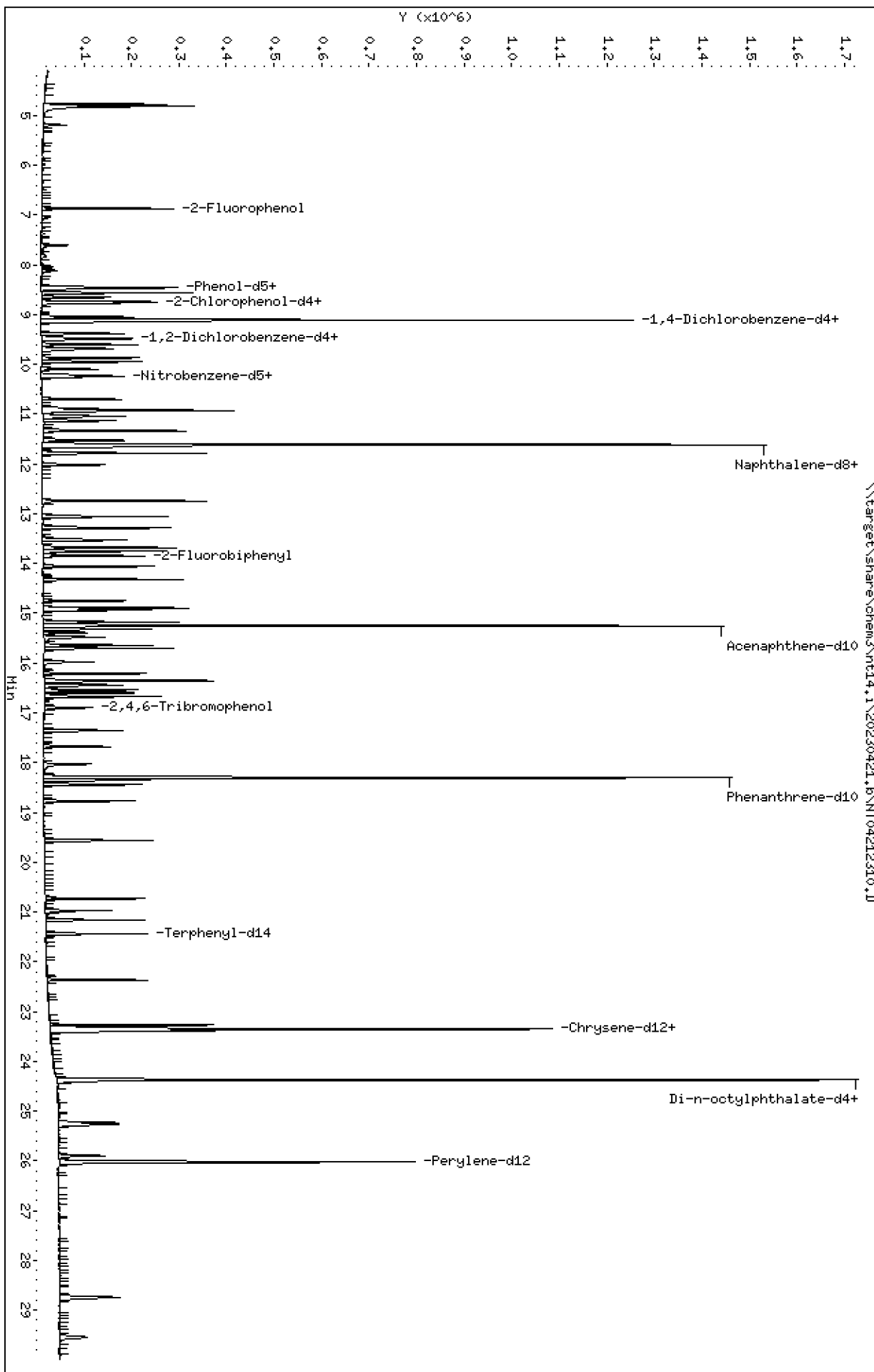
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212310.D  
 Lab Smp Id: SEQ-CAL2  
 Inj Date : 21-APR-2023 18:50 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL2  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 7 Calibration Sample, Level: 2  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.867	6.867	(0.754)	82674	0.75000	0.8744
\$ 2 Phenol-d5	99		8.459	8.459	(0.929)	112735	0.75000	0.8496
3 Phenol	94		8.474	8.482	(0.930)	87726	0.50000	0.5899
\$ 5 2-Chlorophenol-d4	132		8.745	8.745	(0.960)	79422	0.75000	0.8414
4 Bis(2-Chloroethyl)ether	93		8.652	8.660	(0.950)	67023	0.50000	0.5903
6 2-Chlorophenol	128		8.768	8.775	(0.963)	58809	0.50000	0.5677
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.993)	61191	0.50000	0.5900
* 8 1,4-Dichlorobenzene-d4	152		9.108	9.108	(1.000)	261457	4.00000	
9 1,4-Dichlorobenzene	146		9.139	9.139	(1.003)	57217	0.50000	0.5787
\$ 10 1,2-Dichlorobenzene-d4	152		9.473	9.473	(1.040)	34414	0.50000	0.5755
12 1,2-Dichlorobenzene	146		9.497	9.504	(1.043)	56923	0.50000	0.5786
11 Benzyl alcohol	108		9.380	9.380	(1.030)	37105	0.50000	0.5470
14 2,2'-oxybis(1-Chloropropane)	121		9.683	9.683	(1.063)	20011	0.50000	0.6025 (M)
13 2-Methylphenol	108		9.605	9.605	(1.055)	55785	0.50000	0.5623
17 Hexachloroethane	117		10.094	10.094	(1.108)	26415	0.50000	0.5604
16 N-Nitroso-di-n-propylamine	70		9.947	9.947	(1.092)	58345	0.50000	0.5848
15 4-Methylphenol	108		9.869	9.877	(1.084)	65671	0.50000	0.5812
\$ 18 Nitrobenzene-d5	82		10.211	10.218	(0.879)	70261	0.50000	0.5642
19 Nitrobenzene	77		10.249	10.249	(0.883)	75807	0.50000	0.5695
20 Isophorone	82		10.700	10.700	(0.921)	109103	0.50000	0.5971
21 2-Nitrophenol	139		10.886	10.886	(0.937)	25463	0.50000	0.3644
22 2,4-Dimethylphenol	107		10.924	10.932	(0.941)	118055	1.00000	1.177
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	68542	0.50000	0.5836
24 Benzoic acid	105		11.048	11.134	(0.951)	101685	2.00000	1.224 (M)
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	79425	1.00000	0.8099
26 1,2,4-Trichlorobenzene	180		11.529	11.529	(0.993)	44580	0.50000	0.5954
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	1011776	4.00000	
28 Naphthalene	128		11.652	11.660	(1.003)	156227	0.50000	0.5745
29 4-Chloroaniline	127		11.783	11.784	(1.015)	128110	1.00000	1.089
30 Hexachlorobutadiene	225		12.015	12.015	(1.035)	20454	0.50000	0.5975
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	94884	1.00000	1.059
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	113187	0.50000	0.5746
33 Hexachlorocyclopentadiene	237		13.524	13.532	(0.887)	32918	1.00000	0.9382

Compounds	QUANT SIG					AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.679	13.679	(0.897)	45517	1.00000	1.041
35 2,4,5-Trichlorophenol	196	13.749	13.757	(0.902)	47236	1.00000	1.017
§ 36 2-Fluorobiphenyl	172	13.842	13.849	(0.908)	95811	0.50000	0.5771
37 2-Chloronaphthalene	162	14.058	14.058	(0.922)	90864	0.50000	0.5733
38 2-Nitroaniline	65	14.322	14.322	(0.939)	86477	1.00000	1.021
39 Dimethylphthalate	163	14.755	14.755	(0.968)	96419	0.50000	0.5898
40 Acenaphthylene	152	14.933	14.933	(0.979)	148206	0.50000	0.5859
41 2,6-Dinitrotoluene	165	14.894	14.902	(0.977)	38841	1.00000	1.048
* 42 Acenaphthene-d10	164	15.250	15.250	(1.000)	476664	4.00000	
43 3-Nitroaniline	138	15.173	15.181	(0.995)	46148	1.00000	0.9909
44 Acenaphthene	153	15.320	15.320	(1.005)	85603	0.50000	0.5649
45 2,4-Dinitrophenol	184	15.389	15.397	(1.009)	12408	2.00000	0.5538
46 Dibenzofuran	168	15.644	15.644	(1.026)	123834	0.50000	0.5725
47 4-Nitrophenol	109	15.482	15.482	(1.015)	22325	1.00000	0.8238
48 2,4-Dinitrotoluene	165	15.699	15.706	(1.029)	48835	1.00000	0.9731
50 Diethylphthalate	149	16.209	16.217	(1.063)	104439	0.50000	0.5902
49 Fluorene	166	16.363	16.363	(1.073)	110602	0.50000	0.5778
51 4-Chlorophenyl-phenylether	204	16.348	16.348	(1.072)	45481	0.50000	0.5744
52 4-Nitroaniline	138	16.448	16.456	(1.079)	40543	1.00000	0.9845
53 4,6-Dinitro-2-methylphenol	198	16.541	16.548	(0.904)	24357	2.00000	0.9829
54 N-Nitrosodiphenylamine	169	16.602	16.602	(0.907)	64097	0.50000	0.5696
§ 55 2,4,6-Tribromophenol	330	16.895	16.895	(1.108)	9865	0.75000	0.6295
56 4-Bromophenyl-phenylether	248	17.358	17.358	(0.948)	19840	0.50000	0.5360
57 Hexachlorobenzene	284	17.675	17.675	(0.966)	21202	0.50000	0.5664
58 Pentachlorophenol	266	18.031	18.031	(0.985)	14169	1.00000	0.5951
* 59 Phenanthrene-d10	188	18.302	18.302	(1.000)	796851	4.00000	
60 Phenanthrene	178	18.348	18.348	(1.003)	125845	0.50000	0.5586
61 Anthracene	178	18.441	18.441	(1.008)	117160	0.50000	0.5422
62 Carbazole	167	18.774	18.774	(1.026)	115585	0.50000	0.5780
63 Di-n-butylphthalate	149	19.563	19.563	(1.069)	153414	0.50000	0.5033
64 Fluoranthene	202	20.731	20.739	(0.888)	114505	0.50000	0.5479
65 Pyrene	202	21.165	21.165	(0.906)	120360	0.50000	0.5577
§ 66 Terphenyl-d14	244	21.443	21.443	(0.918)	90463	0.50000	0.5468
67 Butylbenzylphthalate	149	22.365	22.365	(0.958)	55092	0.50000	0.3965
68 Benzo(a)anthracene	228	23.325	23.325	(0.999)	89263	0.50000	0.5523
* 69 Chrysene-d12	240	23.348	23.356	(1.000)	452731	4.00000	
70 3,3'-Dichlorobenzidine	252	23.278	23.278	(0.997)	84456	1.50000	1.631
71 Chrysene	228	23.394	23.394	(1.002)	83787	0.50000	0.5559
72 bis(2-Ethylhexyl)phthalate	149	24.385	24.385	(1.001)	144278	0.50000	0.5933
* 134 Di-n-octylphthalate-d4	153	24.370	24.370	(1.000)	910929	4.00000	
73 Di-n-octylphthalate	149	24.385	24.385	(1.001)	144278	0.50000	0.5933
74 Benzo(b)fluoranthene	252	25.229	25.229	(0.970)	80661	0.50000	0.5345
75 Benzo(k)fluoranthene	252	25.276	25.276	(0.971)	81017	0.50000	0.5471
76 Benzo(a)pyrene	252	25.903	25.903	(0.996)	67771	0.50000	0.5314
* 77 Perylene-d12	264	26.019	26.027	(1.000)	452605	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.735	28.743	(1.104)	80390	0.50000	0.4558
79 Dibenzo(a,h)anthracene	278	28.750	28.750	(1.105)	67781	0.50000	0.4699
80 Benzo(g,h,i)perylene	276	29.543	29.558	(1.135)	65004	0.50000	0.4354
90 N-Nitrosodimethylamine	74	4.774	4.774	(0.524)	95293	1.00000	1.212
91 Aniline	93	8.567	8.567	(0.941)	155133	1.00000	1.149
93 Benzidine	184	20.971	20.971	(0.898)	79913	1.00000	0.9690
103 Pyridine	79	4.813	4.797	(0.528)	143394	0.50000	0.6162
105 1-methylnaphthalene	142	13.285	13.285	(1.144)	109340	0.50000	0.5748
111 Azobenzene (1,2-DP-Hydrazine)	77	16.672	16.679	(1.093)	159856	0.50000	0.5854

Compounds	QUANT SIG						AMOUNTS	
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	=====		=====	=====	=====	=====	=====	=====
187 Total Benzofluoranthenes	252		25.229	25.276	(0.970)	155171	1.00000	1.086
120 2,3,4,6-Tetrachlorophenol	232		15.985	15.977	(1.048)	15460	0.50000	0.3676

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212310.D Calibration Time: 17:00  
 Lab Smp Id: SEQ-CAL2  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	261457	9.34
27 Naphthalene-d8	954450	477225	1908900	1011776	6.01
42 Acenaphthene-d10	448699	224350	897398	476664	6.23
59 Phenanthrene-d10	711389	355695	1422778	796851	12.01
69 Chrysene-d12	410209	205105	820418	452731	10.37
134 Di-n-octylphthala	929005	464503	1858010	910929	-1.95
77 Perylene-d12	424249	212125	848498	452605	6.68

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.09
27 Naphthalene-d8	11.61	11.11	12.11	11.61	0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.25	-0.05
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	0.00
69 Chrysene-d12	23.36	22.86	23.86	23.35	-0.03
134 Di-n-octylphthala	24.37	23.87	24.87	24.37	0.00
77 Perylene-d12	26.03	25.53	26.53	26.02	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212310.D

Lab ID: SEQ-CAL2  
nt14.i, ABN.m, 21-APR-2023 18:50

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.951	0.959	-0.0073	Benzoic acid

RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

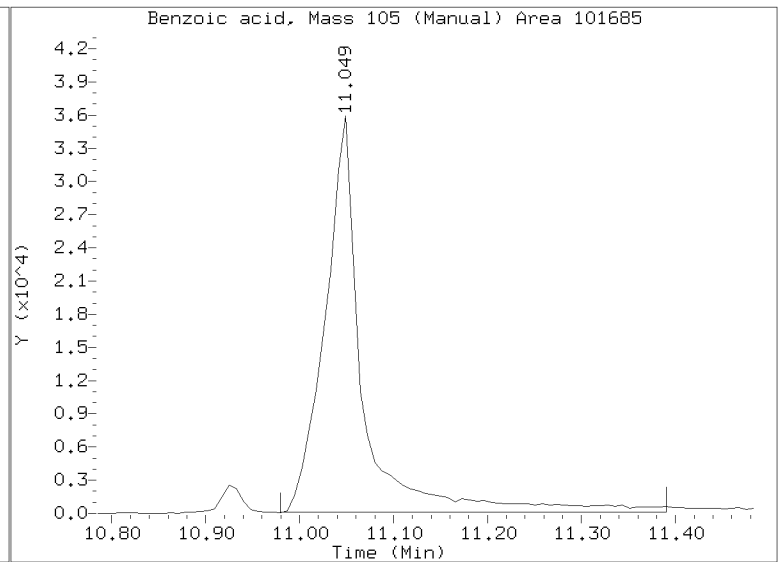
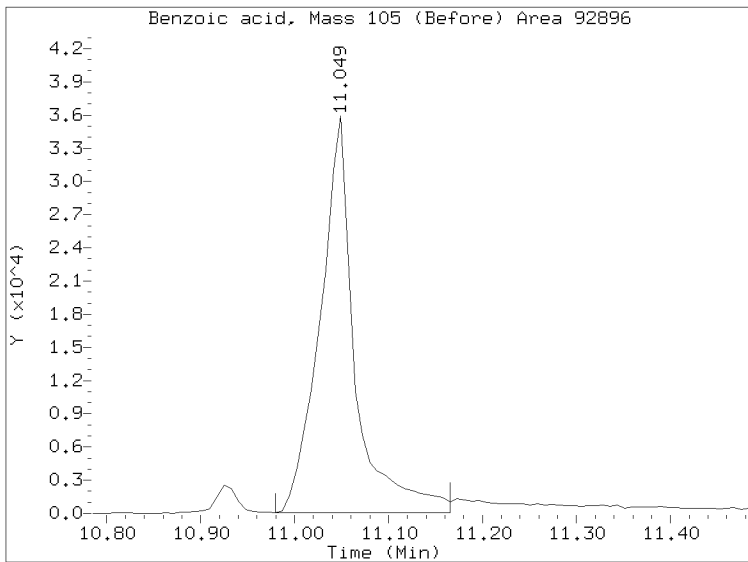
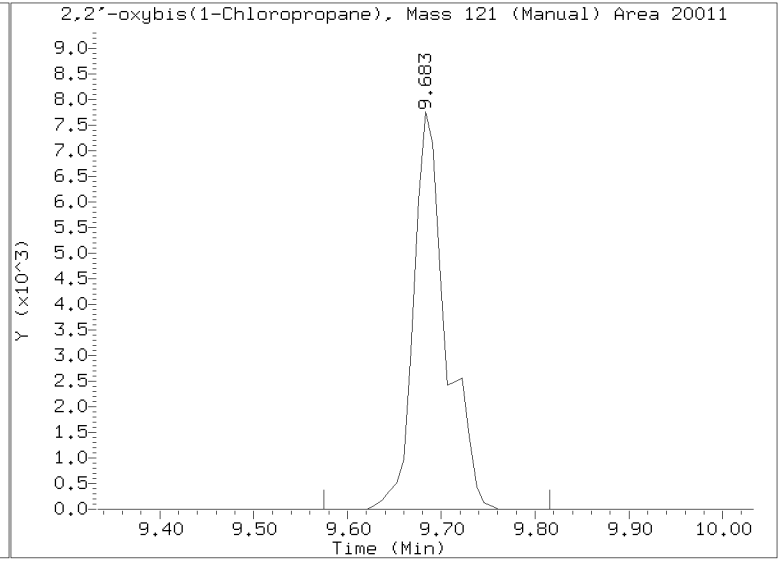
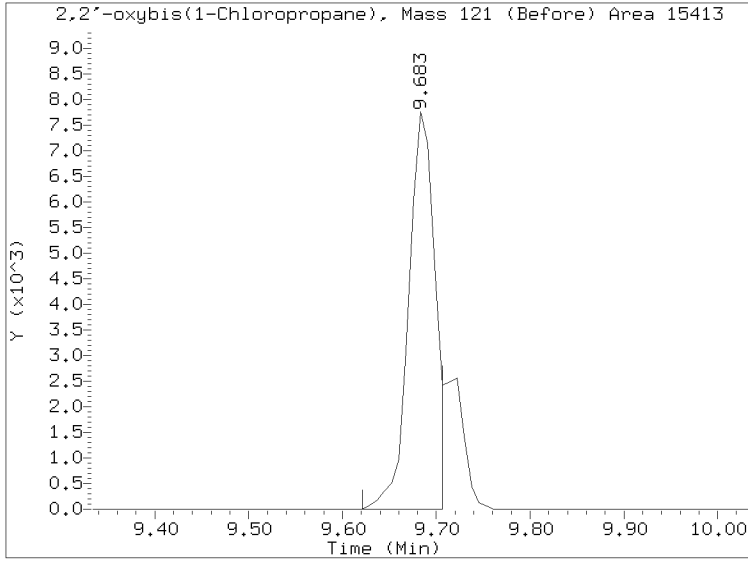
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Injection Date: 21-APR-2023 18:50

Lab ID: SEQ-CAL2 Client ID:

Report Date: 04/27/2023 08:15





Data File: \\target\share\chem3\nt14.1\20230421.6\NT04212311.D

Date: 21-APR-2023 19:27

Client ID:

Sample Info: SEQ-CALL

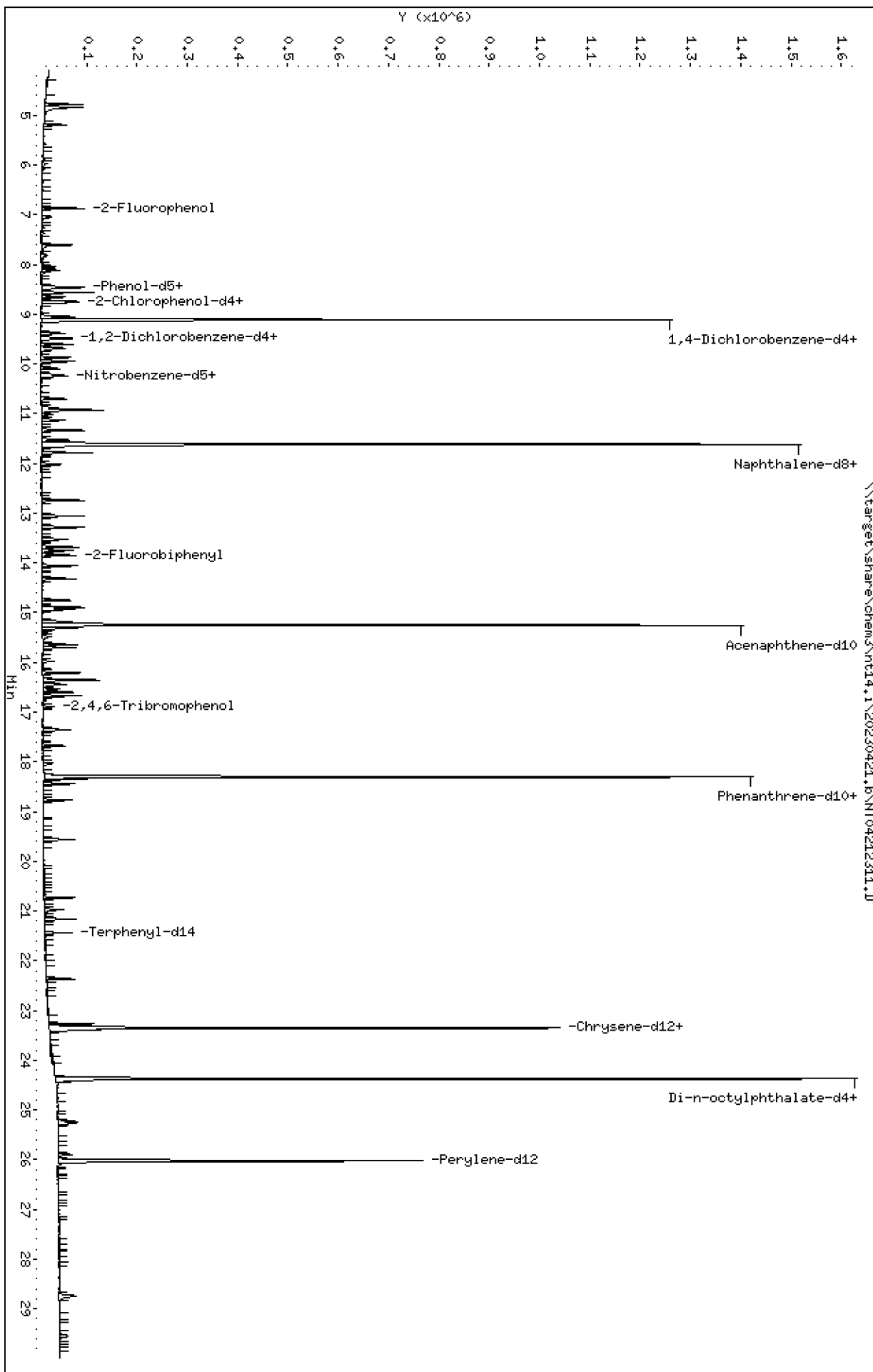
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212311.D  
 Lab Smp Id: SEQ-CAL1  
 Inj Date : 21-APR-2023 19:27 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 8 Calibration Sample, Level: 1  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.867	6.867	(0.754)	26042	0.30000	0.2759
\$ 2 Phenol-d5	99		8.459	8.459	(0.929)	33155	0.30000	0.2503
3 Phenol	94		8.474	8.482	(0.930)	26991	0.20000	0.1818
\$ 5 2-Chlorophenol-d4	132		8.745	8.745	(0.960)	24865	0.30000	0.2639
4 Bis(2-Chloroethyl)ether	93		8.652	8.660	(0.950)	22013	0.20000	0.1942
6 2-Chlorophenol	128		8.768	8.775	(0.963)	18274	0.20000	0.1767
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.993)	19774	0.20000	0.1910
* 8 1,4-Dichlorobenzene-d4	152		9.108	9.108	(1.000)	261004	4.00000	
9 1,4-Dichlorobenzene	146		9.139	9.139	(1.003)	18964	0.20000	0.1921
\$ 10 1,2-Dichlorobenzene-d4	152		9.473	9.473	(1.040)	10930	0.20000	0.1831
12 1,2-Dichlorobenzene	146		9.496	9.504	(1.043)	18180	0.20000	0.1851
11 Benzyl alcohol	108		9.380	9.380	(1.030)	10806	0.20000	0.1596
14 2,2'-oxybis(1-Chloropropane)	121		9.683	9.683	(1.063)	6227	0.20000	0.1878 (M)
13 2-Methylphenol	108		9.605	9.605	(1.055)	17357	0.20000	0.1753
17 Hexachloroethane	117		10.094	10.094	(1.108)	8070	0.20000	0.1715
16 N-Nitroso-di-n-propylamine	70		9.947	9.947	(1.092)	17934	0.20000	0.1801
15 4-Methylphenol	108		9.869	9.877	(1.084)	17831	0.20000	0.1581
\$ 18 Nitrobenzene-d5	82		10.211	10.218	(0.879)	20775	0.20000	0.1675
19 Nitrobenzene	77		10.249	10.249	(0.883)	22992	0.20000	0.1734
20 Isophorone	82		10.699	10.700	(0.921)	30789	0.20000	0.1691
21 2-Nitrophenol	139		10.886	10.886	(0.937)	5713	0.20000	0.08146
22 2,4-Dimethylphenol	107		10.924	10.932	(0.941)	36426	0.40000	0.3645
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	22106	0.20000	0.1889
24 Benzoic acid	105		11.017	11.134	(0.949)	14890	0.80000	0.1799 (M)
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	21521	0.40000	0.2166
26 1,2,4-Trichlorobenzene	180		11.529	11.529	(0.993)	14120	0.20000	0.1893
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	1007973	4.00000	
28 Naphthalene	128		11.652	11.660	(1.003)	50427	0.20000	0.1861
29 4-Chloroaniline	127		11.783	11.784	(1.015)	38131	0.40000	0.3253
30 Hexachlorobutadiene	225		12.015	12.015	(1.035)	6152	0.20000	0.1804
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	25373	0.40000	0.2841
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	35203	0.20000	0.1794
33 Hexachlorocyclopentadiene	237		13.524	13.532	(0.887)	8628	0.40000	0.2511

Compounds	QUANT SIG					AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.679	13.679	(0.897)	11976	0.40000	0.2797
35 2,4,5-Trichlorophenol	196	13.749	13.757	(0.902)	11720	0.40000	0.2577
§ 36 2-Fluorobiphenyl	172	13.842	13.849	(0.908)	30421	0.20000	0.1871
37 2-Chloronaphthalene	162	14.058	14.058	(0.922)	28320	0.20000	0.1824
38 2-Nitroaniline	65	14.321	14.322	(0.939)	19592	0.40000	0.2363
39 Dimethylphthalate	163	14.755	14.755	(0.968)	31528	0.20000	0.1969
40 Acenaphthylene	152	14.933	14.933	(0.979)	45752	0.20000	0.1847
41 2,6-Dinitrotoluene	165	14.894	14.902	(0.977)	9816	0.40000	0.2704
* 42 Acenaphthene-d10	164	15.250	15.250	(1.000)	466900	4.00000	
43 3-Nitroaniline	138	15.173	15.181	(0.995)	10794	0.40000	0.2366
44 Acenaphthene	153	15.320	15.320	(1.005)	27082	0.20000	0.1825
45 2,4-Dinitrophenol	184	15.389	15.397	(1.009)	1462	0.80000	0.06662
46 Dibenzofuran	168	15.644	15.644	(1.026)	38341	0.20000	0.1810
47 4-Nitrophenol	109	15.482	15.482	(1.015)	3965	0.40000	0.1494
48 2,4-Dinitrotoluene	165	15.706	15.706	(1.030)	11332	0.40000	0.2305
50 Diethylphthalate	149	16.209	16.217	(1.063)	33382	0.20000	0.1926
49 Fluorene	166	16.356	16.363	(1.072)	33900	0.20000	0.1808
51 4-Chlorophenyl-phenylether	204	16.348	16.348	(1.072)	15105	0.20000	0.1948
52 4-Nitroaniline	138	16.448	16.456	(1.079)	10441	0.40000	0.2588
53 4,6-Dinitro-2-methylphenol	198	16.541	16.548	(0.904)	3921	0.80000	0.1612
54 N-Nitrosodiphenylamine	169	16.602	16.602	(0.907)	19601	0.20000	0.1775
§ 55 2,4,6-Tribromophenol	330	16.895	16.895	(1.108)	2292	0.30000	0.1493
56 4-Bromophenyl-phenylether	248	17.358	17.358	(0.948)	5980	0.20000	0.1646
57 Hexachlorobenzene	284	17.675	17.675	(0.966)	6793	0.20000	0.1849
58 Pentachlorophenol	266	18.031	18.031	(0.985)	2510	0.40000	0.1074
* 59 Phenanthrene-d10	188	18.302	18.302	(1.000)	781987	4.00000	
60 Phenanthrene	178	18.348	18.348	(1.003)	40496	0.20000	0.1832
61 Anthracene	178	18.441	18.441	(1.008)	35417	0.20000	0.1670
62 Carbazole	167	18.774	18.774	(1.026)	34770	0.20000	0.1772
63 Di-n-butylphthalate	149	19.563	19.563	(1.069)	42084	0.20000	0.1407
64 Fluoranthene	202	20.731	20.739	(0.888)	34267	0.20000	0.1638
65 Pyrene	202	21.165	21.165	(0.906)	37013	0.20000	0.1713
§ 66 Terphenyl-d14	244	21.443	21.443	(0.918)	22729	0.20000	0.1352
67 Butylbenzylphthalate	149	22.365	22.365	(0.958)	14353	0.20000	0.1024
68 Benzo(a)anthracene	228	23.317	23.325	(0.998)	28780	0.20000	0.1779
* 69 Chrysene-d12	240	23.356	23.356	(1.000)	453231	4.00000	
70 3,3'-Dichlorobenzidine	252	23.278	23.278	(0.997)	22363	0.60000	0.4313
71 Chrysene	228	23.394	23.394	(1.002)	27099	0.20000	0.1796
72 bis(2-Ethylhexyl)phthalate	149	24.385	24.385	(1.001)	46095	0.20000	0.1939
* 134 Di-n-octylphthalate-d4	153	24.370	24.370	(1.000)	890581	4.00000	
73 Di-n-octylphthalate	149	24.385	24.385	(1.001)	46095	0.20000	0.1939
74 Benzo(b)fluoranthene	252	25.229	25.229	(0.970)	23152	0.20000	0.1564
75 Benzo(k)fluoranthene	252	25.276	25.276	(0.971)	24202	0.20000	0.1666
76 Benzo(a)pyrene	252	25.895	25.903	(0.995)	18806	0.20000	0.1503
* 77 Perylene-d12	264	26.019	26.027	(1.000)	443928	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.743	28.743	(1.105)	21563	0.20000	0.1247
79 Dibenzo(a,h)anthracene	278	28.750	28.750	(1.105)	18327	0.20000	0.1295
80 Benzo(g,h,i)perylene	276	29.543	29.558	(1.135)	18230	0.20000	0.1245
90 N-Nitrosodimethylamine	74	4.774	4.774	(0.524)	30651	0.40000	0.3906
91 Aniline	93	8.567	8.567	(0.941)	48900	0.40000	0.3630
93 Benzidine	184	20.971	20.971	(0.898)	25036	0.40000	0.3032
103 Pyridine	79	4.836	4.797	(0.531)	44895	0.20000	0.1933
105 1-methylnaphthalene	142	13.284	13.285	(1.144)	33755	0.20000	0.1781
111 Azobenzene (1,2-DP-Hydrazine)	77	16.672	16.679	(1.093)	49112	0.20000	0.1836

Compounds	QUANT SIG						AMOUNTS	
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	=====		=====	=====	=====	=====	=====	=====
187 Total Benzofluoranthenes	252		25.229	25.276	(0.970)	44989	0.40000	0.3210
120 2,3,4,6-Tetrachlorophenol	232		15.984	15.977	(1.048)	3839	0.20000	0.09319

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212311.D Calibration Time: 17:00  
 Lab Smp Id: SEQ-CAL1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	261004	9.15
27 Naphthalene-d8	954450	477225	1908900	1007973	5.61
42 Acenaphthene-d10	448699	224350	897398	466900	4.06
59 Phenanthrene-d10	711389	355695	1422778	781987	9.92
69 Chrysene-d12	410209	205105	820418	453231	10.49
134 Di-n-octylphthala	929005	464503	1858010	890581	-4.14
77 Perylene-d12	424249	212125	848498	443928	4.64

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.09
27 Naphthalene-d8	11.61	11.11	12.11	11.61	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.25	-0.05
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	-0.00
69 Chrysene-d12	23.36	22.86	23.86	23.36	-0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.37	-0.00
77 Perylene-d12	26.03	25.53	26.53	26.02	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212311.D

Lab ID: SEQ-CAL1  
nt14.i, ABN.m, 21-APR-2023 19:27

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.949	0.959	-0.0100	Benzoic acid

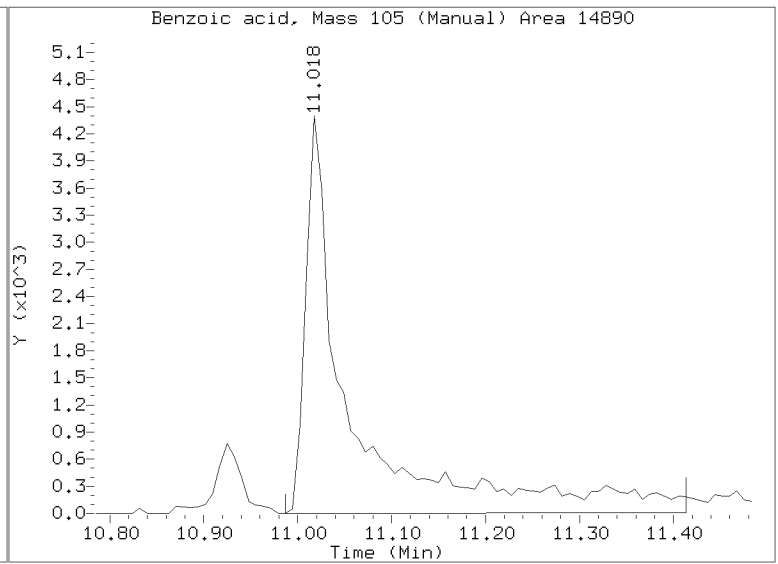
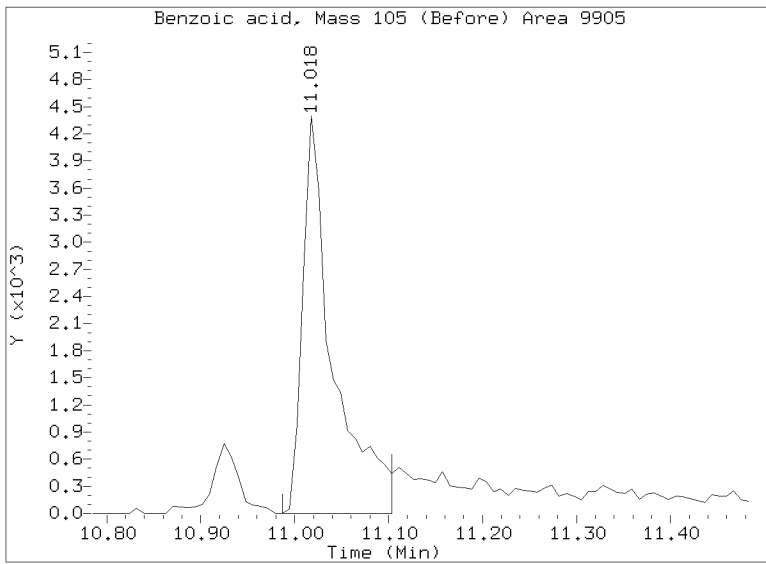
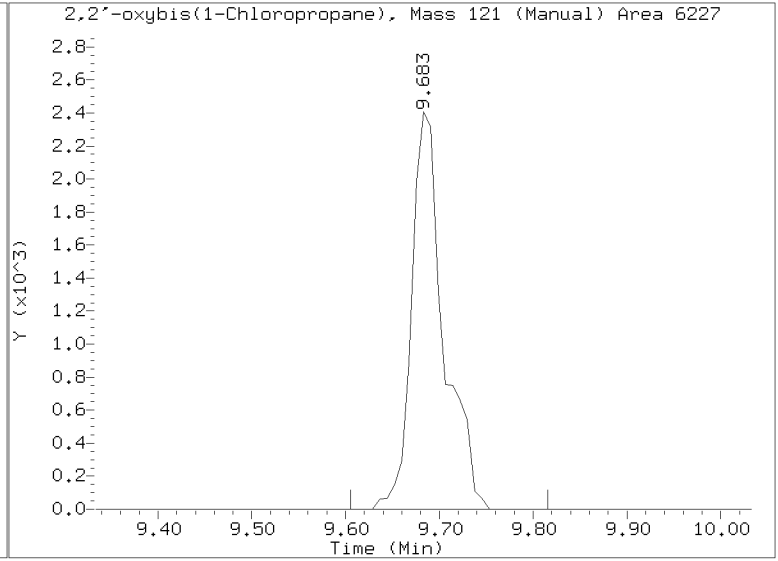
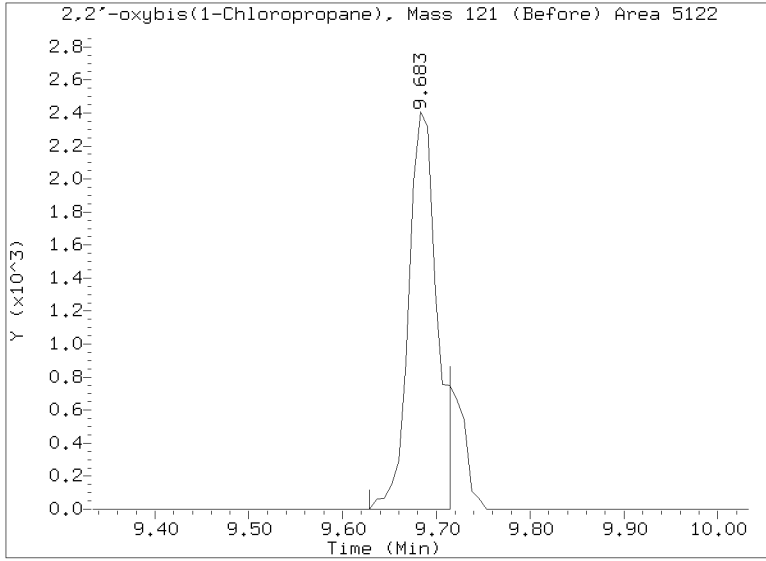
RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/NT04212311.D  
Injection Date: 21-APR-2023 19:27  
Lab ID:SEQ-CAL1 Client ID:  
Report Date: 04/27/2023 08:15







ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212312.D  
 Lab Smp Id: SEQ-SIM2  
 Inj Date : 21-APR-2023 20:03  
 Operator : YZ  
 Smp Info : SEQ-SIM2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 22-Apr-2023 13:04 j rains  
 Cal Date : 21-APR-2023 20:40  
 Als bottle: 9  
 Dil Factor: 1.00000  
 Integrator: HP RTE  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Inst ID: nt14.i

Quant Type: ISTD  
 Cal File: NT04212313.D  
 Calibration Sample, Level: 2

Compound Sublist: PSSDA.sub

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	13669	0.15000	0.1286
3 Phenol	94		8.479	8.479	(0.930)	14832	0.10000	0.08706
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	12116	0.10000	0.09376
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	304906	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	11408	0.10000	0.09331
11 Benzyl alcohol	79		9.385	9.385	(1.030)	7796	0.10000	0.07422
12 1,2-Dichlorobenzene	146		9.501	9.501	(1.043)	11275	0.10000	0.09244
13 2-Methylphenol	108		9.385	9.385	(1.030)	5424	0.10000	0.06784
15 4-Methylphenol	108		9.602	9.602	(1.054)	9121	0.10000	0.08490
16 N-Nitroso-di-n-propylamine	70		9.944	9.944	(1.091)	8644	0.10000	0.08597
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	19004	0.20000	0.1739
24 Benzoic acid	105		11.022	11.054	(0.949)	3194	0.40000	0.04162 (M)
26 1,2,4-Trichlorobenzene	180		11.526	11.526	(0.992)	8822	0.10000	0.1052
* 27 Naphthalene-d8	136		11.618	11.619	(1.000)	1142624	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	4195	0.10000	0.09035
39 Dimethylphthalate	163		14.752	14.752	(0.967)	17700	0.10000	0.09299
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	521404	4.00000	
50 Diethylphthalate	149		16.214	16.214	(1.063)	20602	0.10000	0.1058

54	N-Nitrosodiphenylamine	169	16.599	16.600	(0.907)	10430	0.10000	0.08367
57	Hexachlorobenzene	284	17.680	17.672	(0.966)	4305	0.10000	0.09047
58	Pentachlorophenol	266	18.036	18.037	(0.985)	1654	0.20000	0.05228 (M)
* 59	Phenanthrene-d10	188	18.307	18.299	(1.000)	891505	4.00000	
\$ 66	Terphenyl-d14	244	21.440	21.441	(0.918)	7280	0.10000	0.07836
67	Butylbenzylphthalate	149	22.369	22.370	(0.958)	6887	0.10000	0.05194
* 69	Chrysene-d12	240	23.353	23.353	(1.000)	584134	4.00000	
* 77	Perylene-d12	264	26.024	26.024	(1.000)	587277	4.00000	
79	Dibenzo(a,h)anthracene	278	28.755	28.756	(1.105)	10634	0.10000	0.05981
90	N-Nitrosodimethylamine	74	4.787	4.787	(0.525)	15862	0.20000	0.1829

### QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212312.D  
 Lab Smp Id: SEQ-SIM2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: YZ  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13

Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	304906	-2.85
27 Naphthalene-d8	1195091	597546	2390182	1142624	-4.39
42 Acenaphthene-d10	556977	278489	1113954	521404	-6.39
59 Phenanthrene-d10	941816	470908	1883632	891505	-5.34
69 Chrysene-d12	617803	308902	1235606	584134	-5.45
77 Perylene-d12	639373	319687	1278746	587277	-8.15

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.35	-0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212312.D

Lab ID: SEQ-SIM2

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 20:03

RT CO-ELUTION COMPOUNDS

-----  
9.385 2-Methylphenol and Benzyl alcohol

Quant Method: ICAL

RRT CHECK

RRT CCV RRT DELTA COMPOUND  
-----

NONE

RRT check based on Ccal File: 20230421.b/NT04212313.D

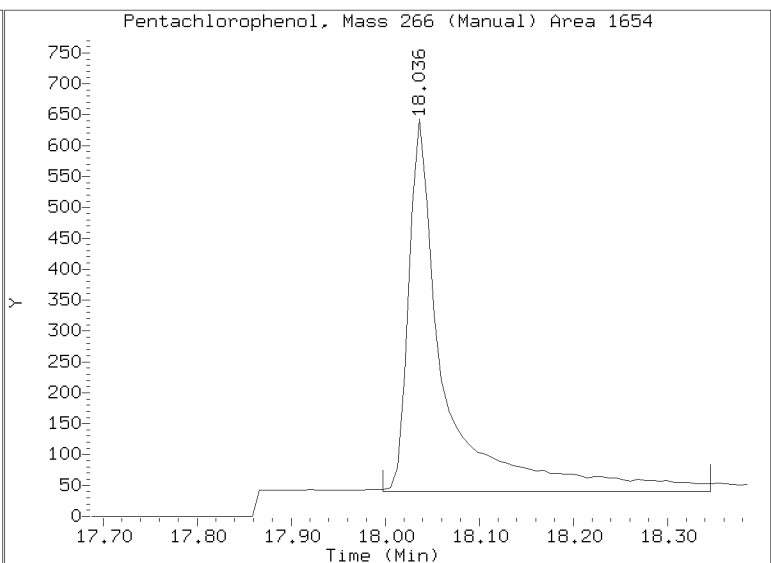
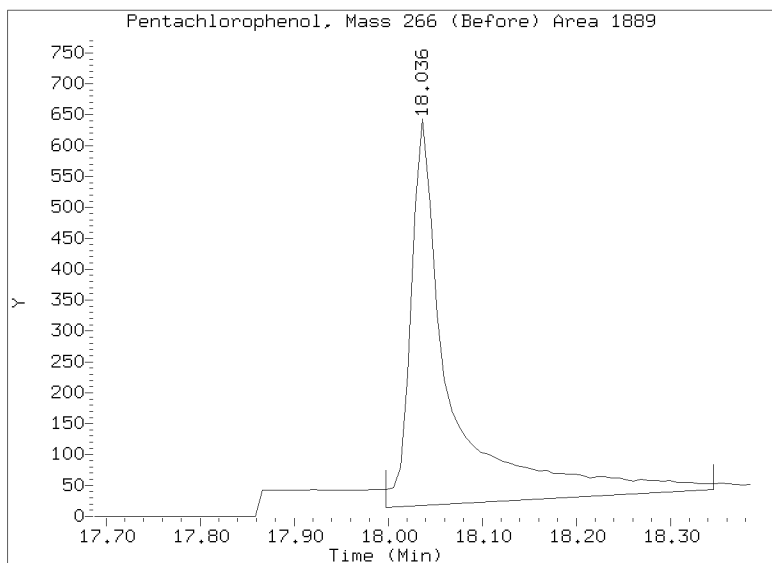
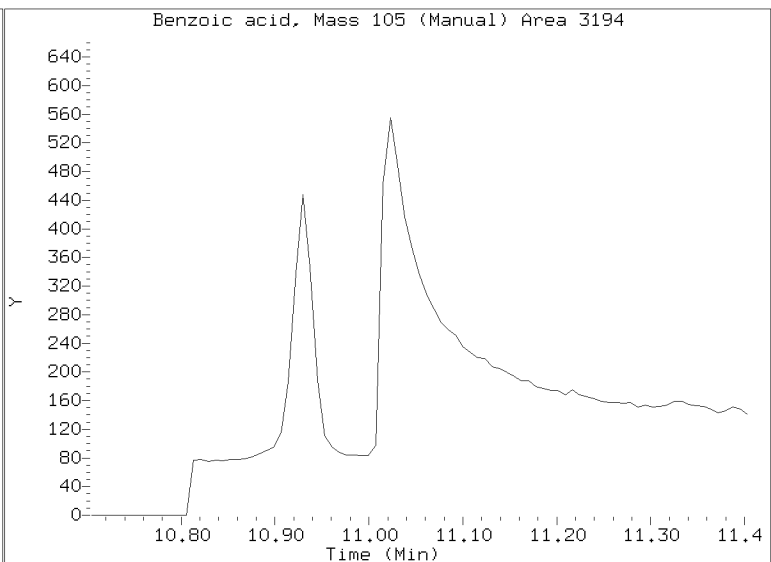
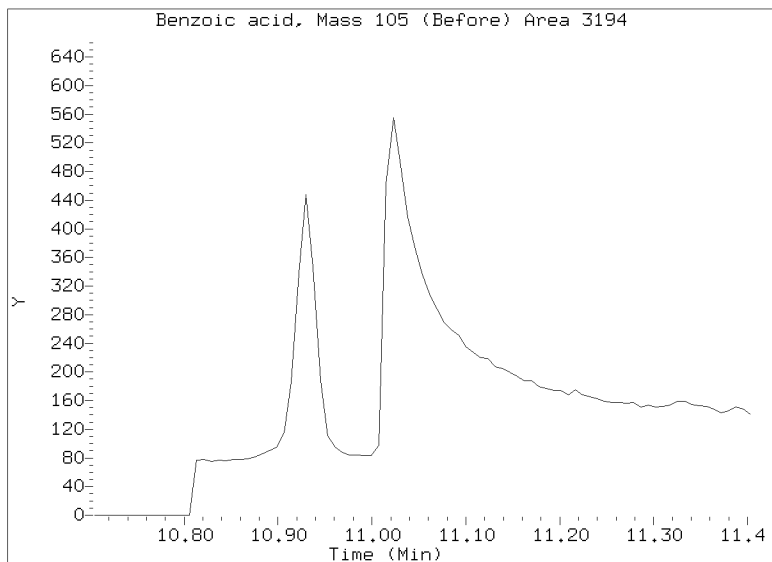
On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/20230421.b/NT04212312.D  
Injection Date: 21-APR-2023 20:03  
Lab ID:SEQ-SIM2 Client ID:  
Report Date: 04/22/2023 13:05





ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212313.D  
 Lab Smp Id: SEQ-SIM1  
 Inj Date : 21-APR-2023 20:40  
 Operator : YZ  
 Smp Info : SEQ-SIM1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 22-Apr-2023 13:04 j rains  
 Cal Date : 21-APR-2023 20:40  
 Als bottle: 10  
 Dil Factor: 1.00000  
 Integrator: HP RTE  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Inst ID: nt14.i

Quant Type: ISTD  
 Cal File: NT04212313.D  
 Calibration Sample, Level: 1

Compound Sublist: PSDDA.sub

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/mL)	ON-COL (ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	8719	0.07500	0.08271
3 Phenol	94		8.479	8.479	(0.930)	9594	0.05000	0.05677
7 1,3-Dichlorobenzene	146		9.044	9.044	(0.992)	8047	0.05000	0.06277
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	302484	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	7630	0.05000	0.06291
11 Benzyl alcohol	79		9.385	9.385	(1.030)	4896	0.05000	0.04699
12 1,2-Dichlorobenzene	146		9.501	9.501	(1.043)	7475	0.05000	0.06177
13 2-Methylphenol	108		9.385	9.385	(1.030)	3732	0.05000	0.04705
15 4-Methylphenol	108		9.602	9.602	(1.054)	5802	0.05000	0.05444
16 N-Nitroso-di-n-propylamine	70		9.944	9.944	(1.091)	5537	0.05000	0.05551
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	11824	0.10000	0.1089
24 Benzoic acid	105		11.053	11.054	(0.951)	998	0.20000	0.01309 (M)
26 1,2,4-Trichlorobenzene	180		11.526	11.526	(0.992)	6024	0.05000	0.07229
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1135075	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	2803	0.05000	0.06077
39 Dimethylphthalate	163		14.752	14.752	(0.967)	11826	0.05000	0.06241
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	519077	4.00000	
50 Diethylphthalate	149		16.214	16.214	(1.063)	14221	0.05000	0.07339



54	N-Nitrosodiphenylamine	169	16.600	16.600	(0.907)	6284	0.05000	0.05098
57	Hexachlorobenzene	284	17.672	17.672	(0.966)	2840	0.05000	0.06036
58	Pentachlorophenol	266	18.036	18.037	(0.986)	935	0.10000	0.02989 (M)
* 59	Phenanthrene-d10	188	18.299	18.299	(1.000)	881493	4.00000	
\$ 66	Terphenyl-d14	244	21.440	21.441	(0.918)	6747	0.05000	0.07424
67	Butylbenzylphthalate	149	22.370	22.370	(0.958)	3691	0.05000	0.02846
* 69	Chrysene-d12	240	23.353	23.353	(1.000)	571384	4.00000	
* 77	Perylene-d12	264	26.024	26.024	(1.000)	579560	4.00000	
79	Dibenzo(a,h)anthracene	278	28.755	28.756	(1.105)	6485	0.05000	0.03696
90	N-Nitrosodimethylamine	74	4.787	4.787	(0.525)	10313	0.10000	0.1199

### QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212313.D  
 Lab Smp Id: SEQ-SIM1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: YZ  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13

Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	302484	-3.62
27 Naphthalene-d8	1195091	597546	2390182	1135075	-5.02
42 Acenaphthene-d10	556977	278489	1113954	519077	-6.80
59 Phenanthrene-d10	941816	470908	1883632	881493	-6.40
69 Chrysene-d12	617803	308902	1235606	571384	-7.51
77 Perylene-d12	639373	319687	1278746	579560	-9.35

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.30	-0.04
69 Chrysene-d12	23.35	22.85	23.85	23.35	-0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212313.D

Lab ID: SEQ-SIM1

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 20:40

RT	CO-ELUTION COMPOUNDS
9.385	2-Methylphenol and Benzyl alcohol

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: 20230421.b/NT04212313.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

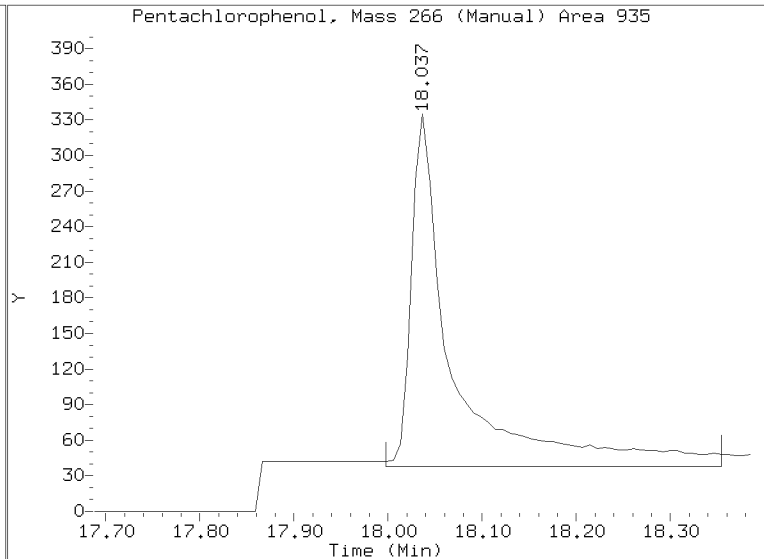
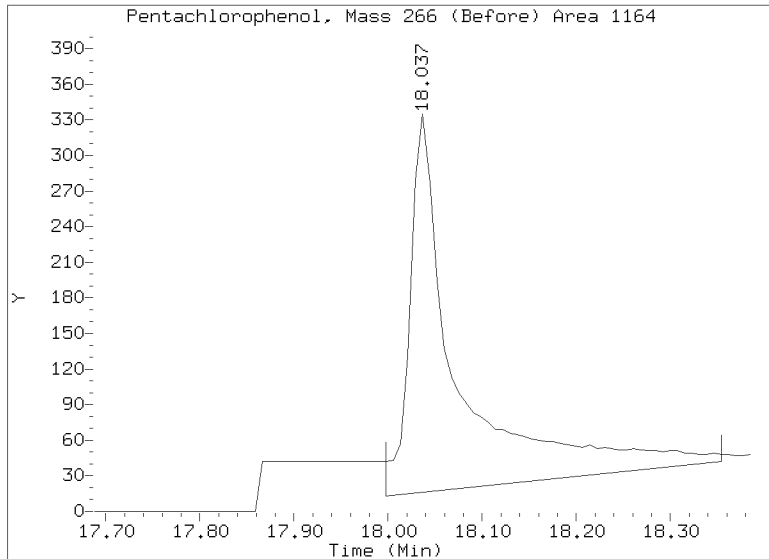
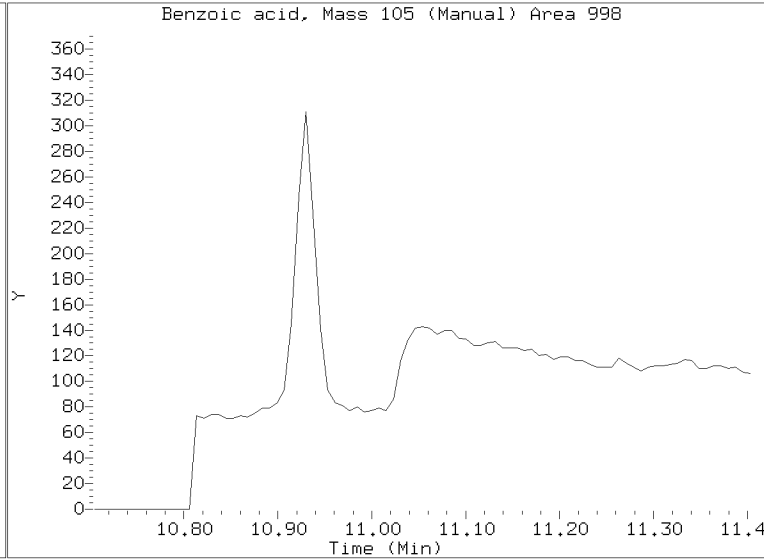
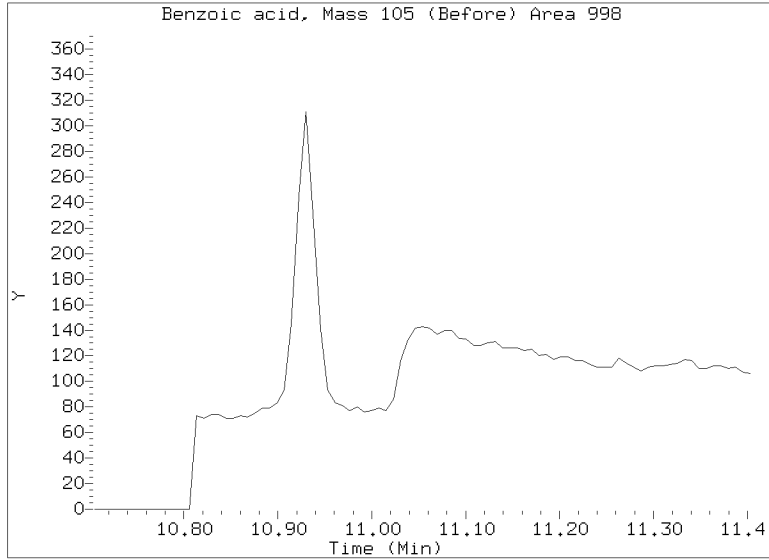
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Injection Date: 21-APR-2023 20:40

Lab ID:SEQ-SIM1 Client ID:

Report Date: 04/22/2023 13:05



Data File: \\target\share\chem3\nt14.1\20230421.6\NT04212314.D

Date : 21-APR-2023 21:16

Client ID:

Sample Info: SEQ-SCV1

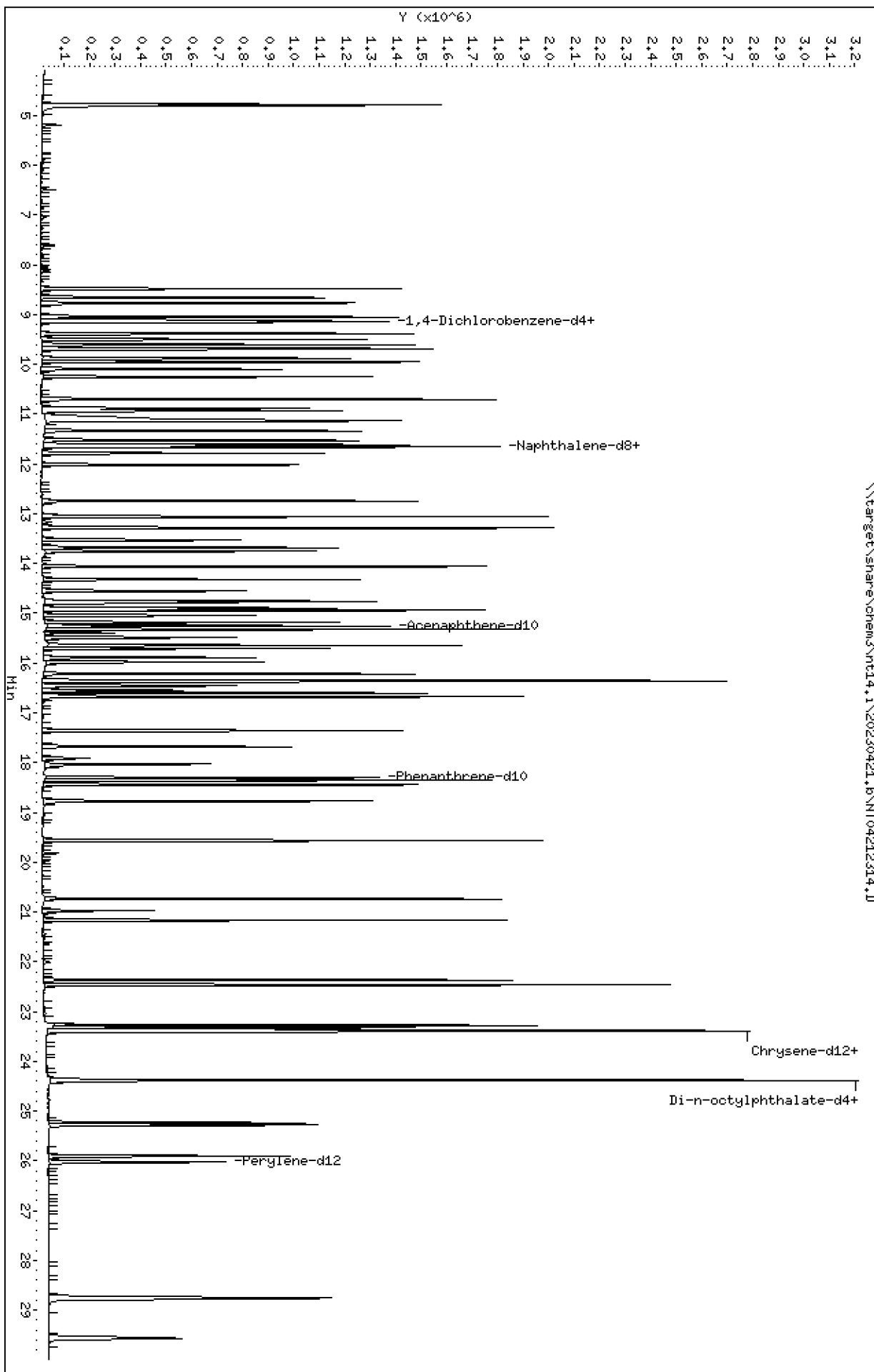
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

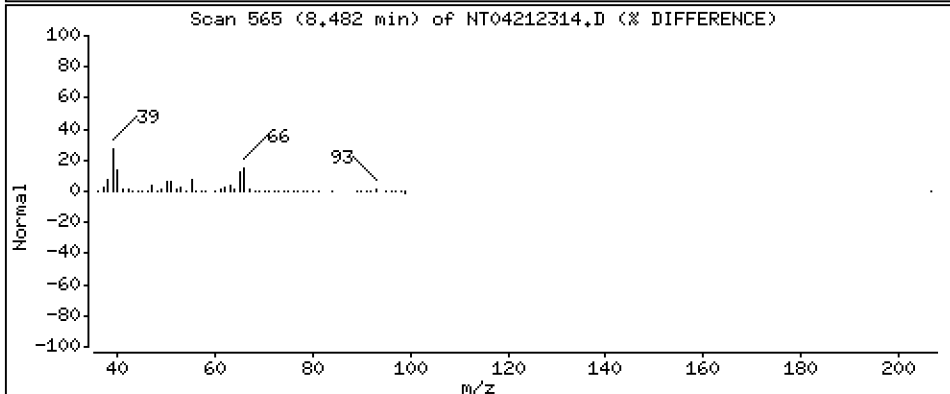
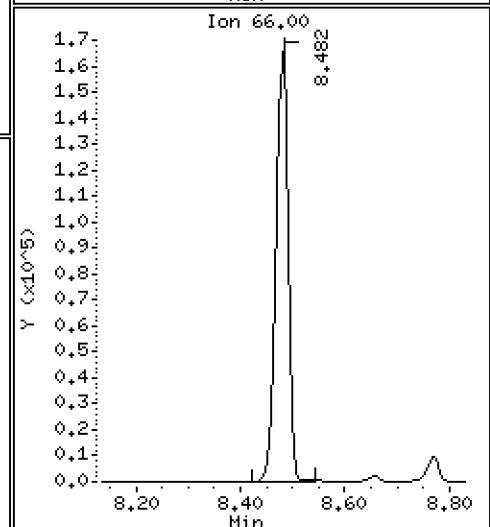
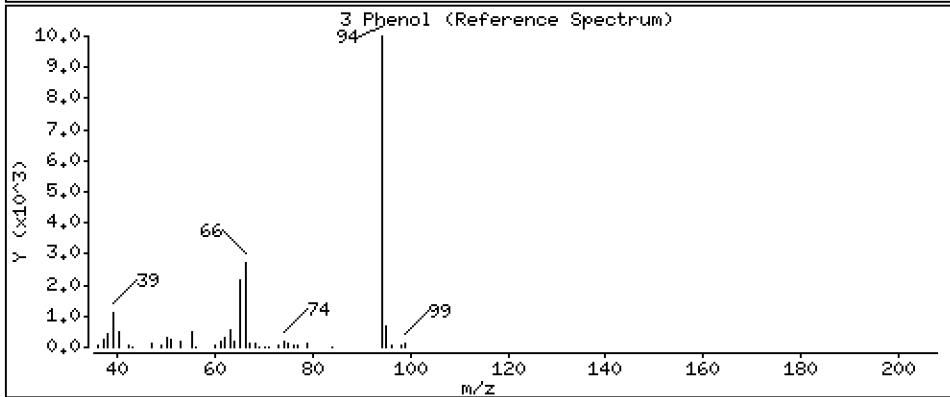
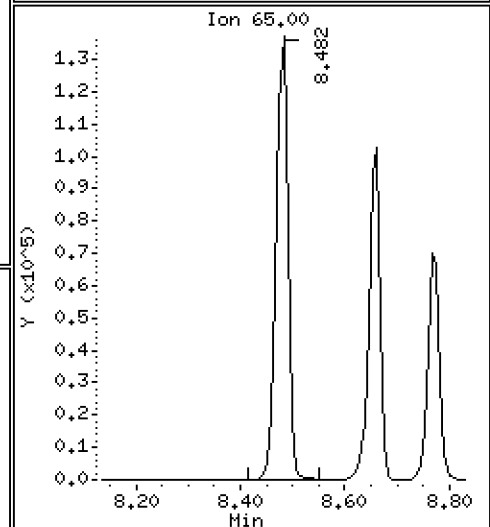
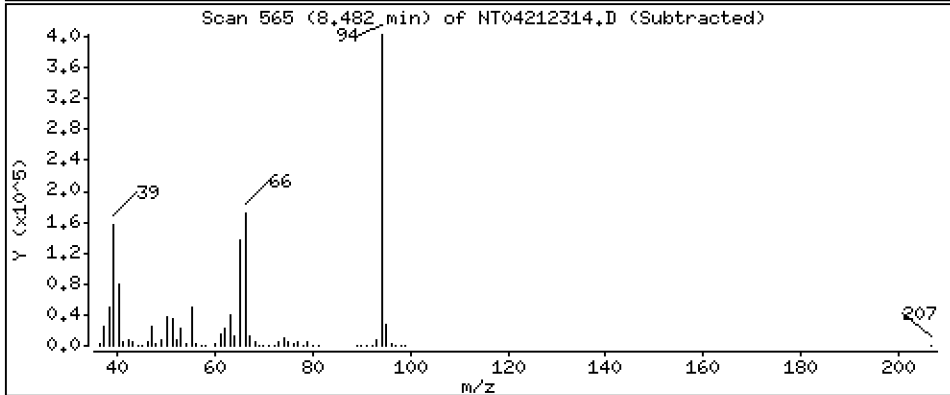
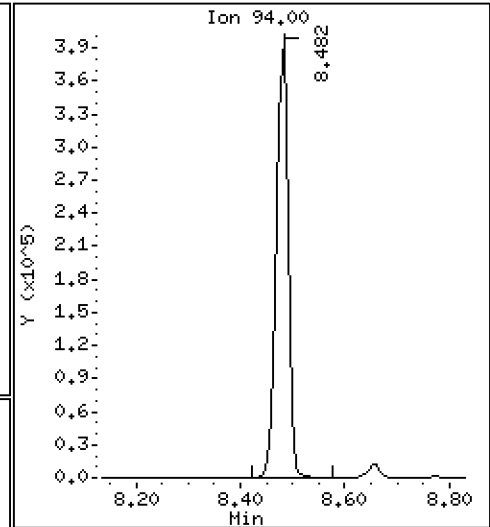
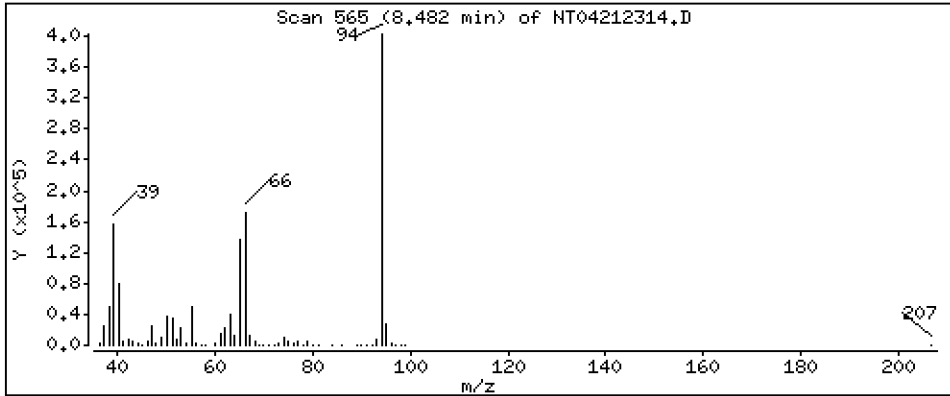
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,331 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

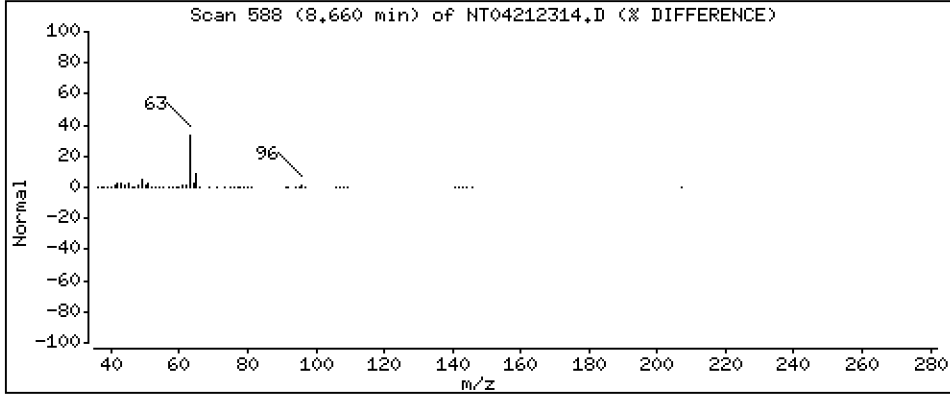
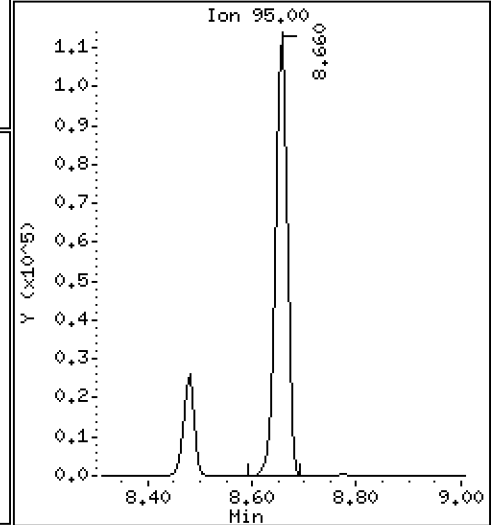
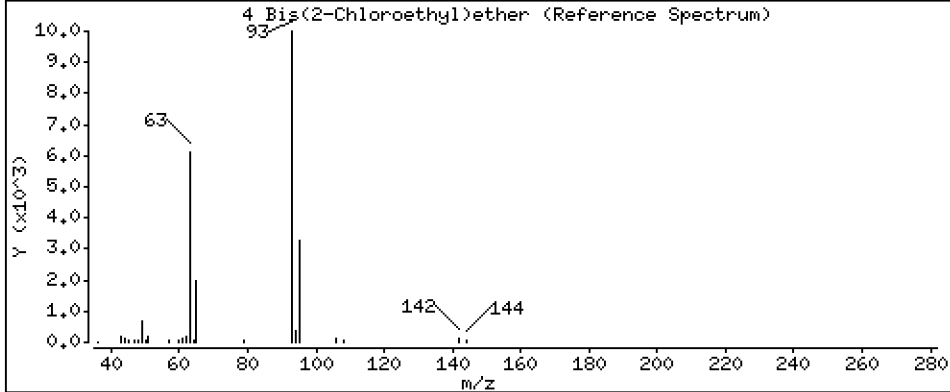
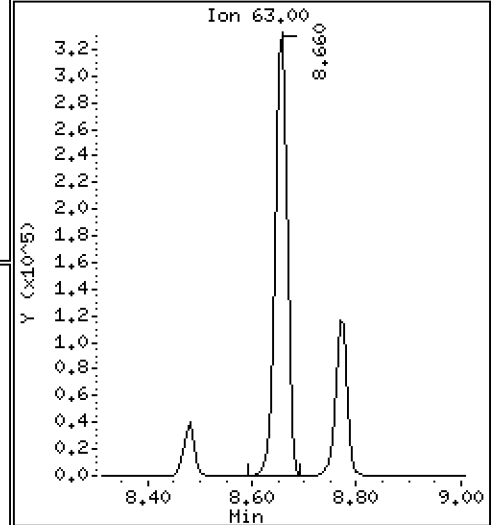
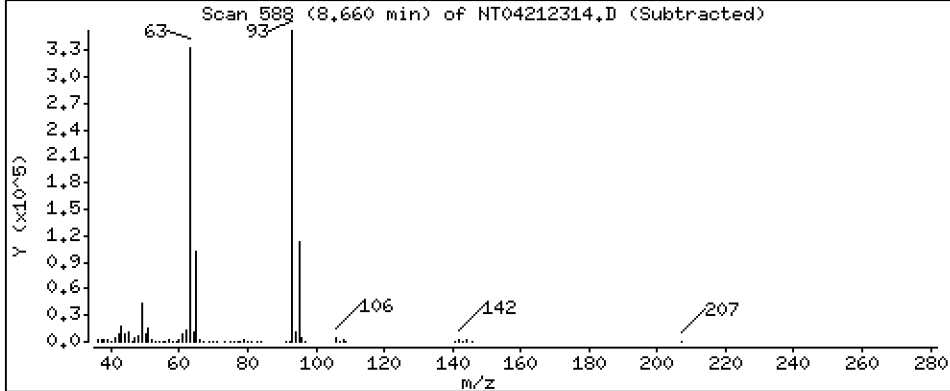
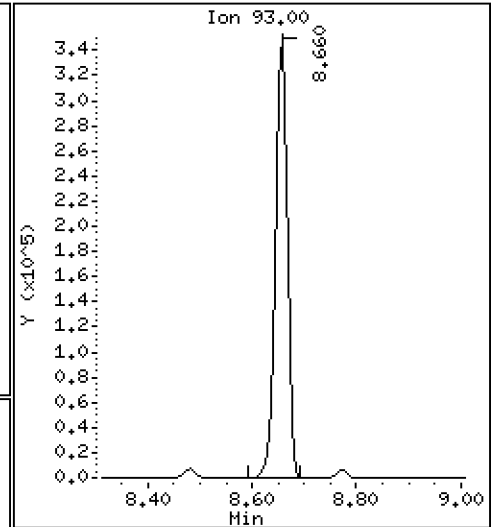
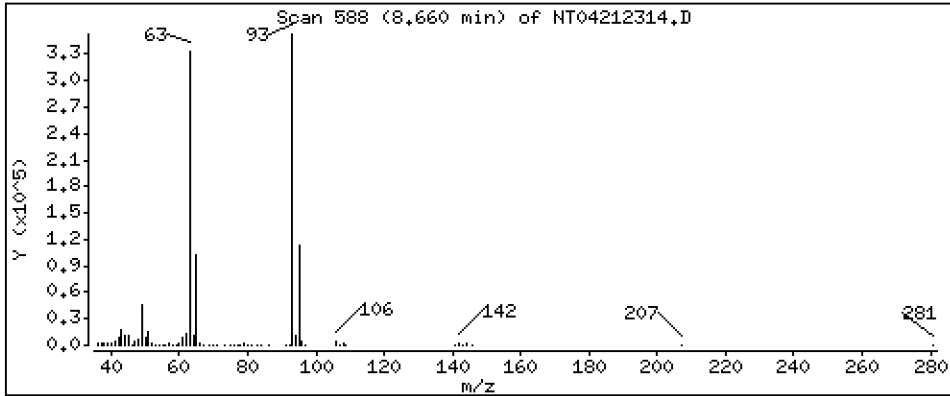
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 5,070 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

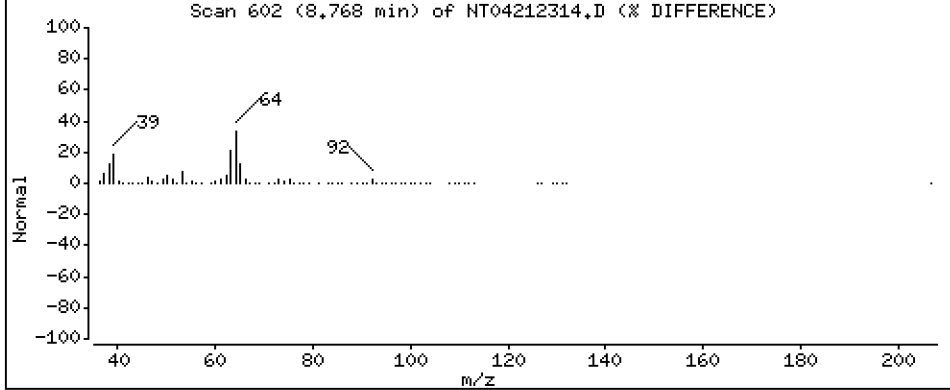
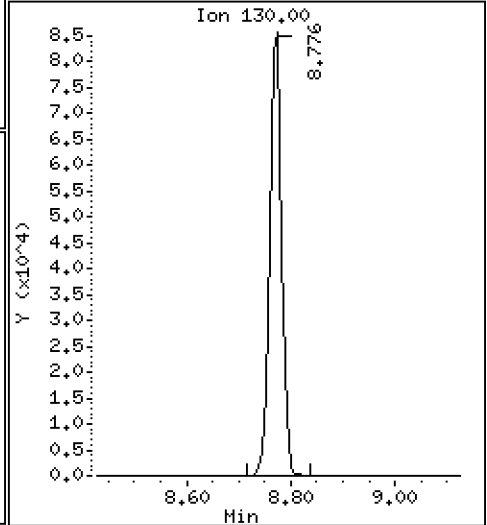
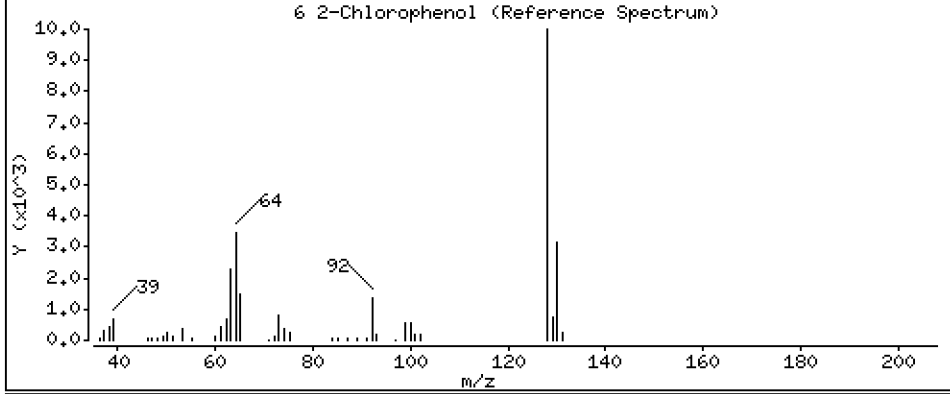
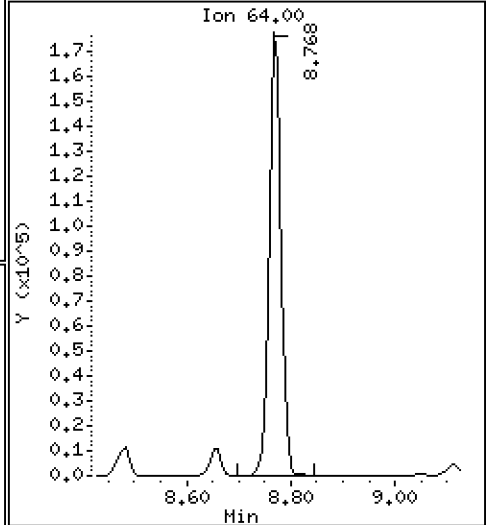
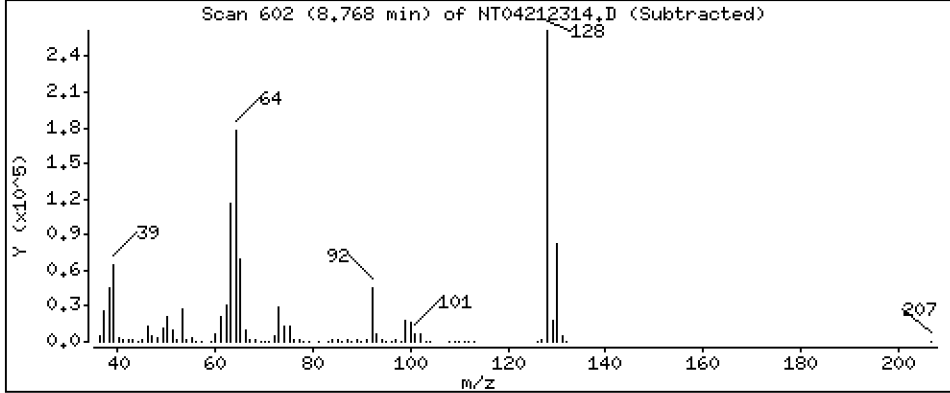
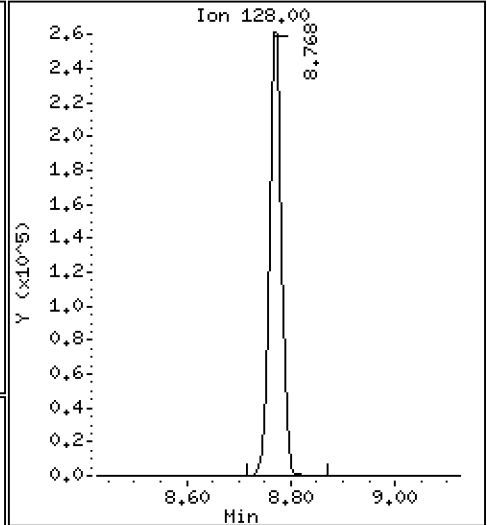
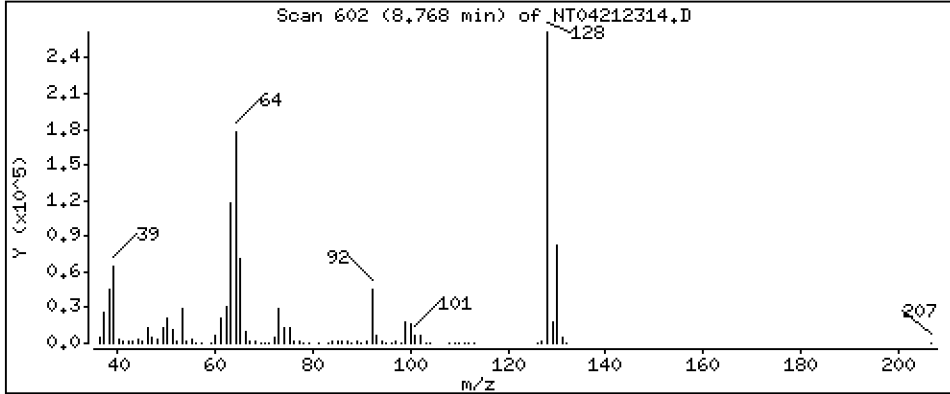
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

6 2-Chlorophenol

Concentration: 4.478 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

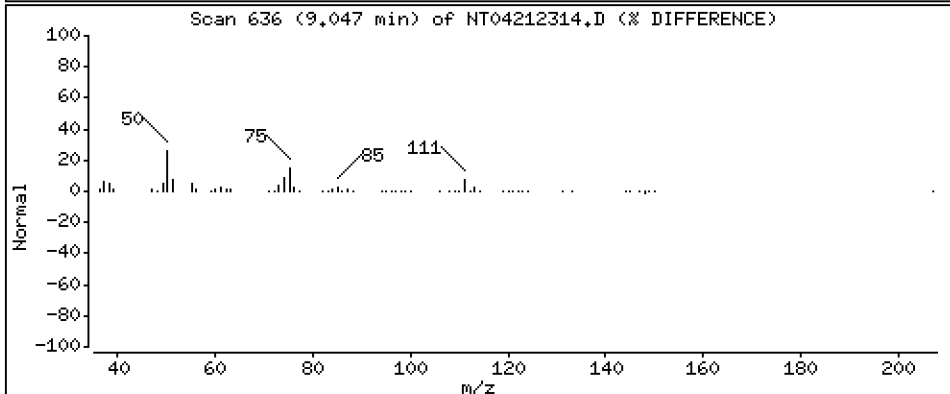
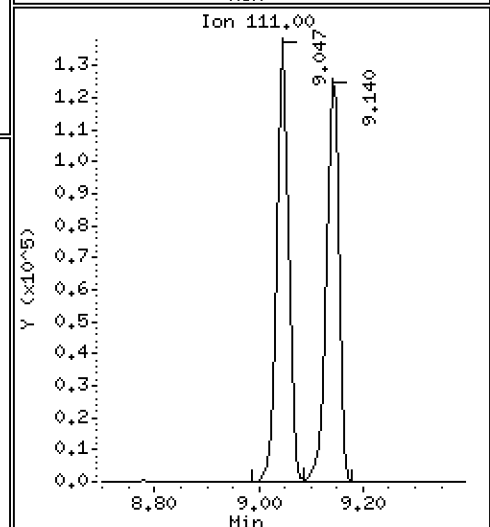
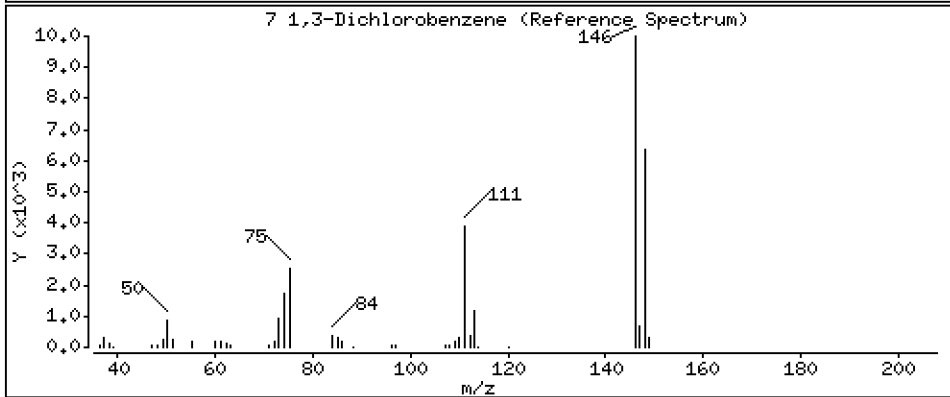
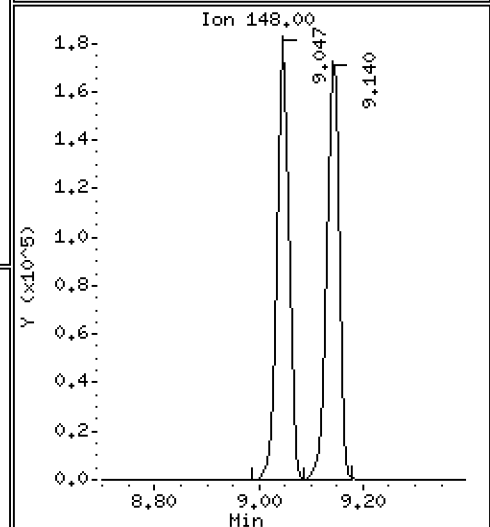
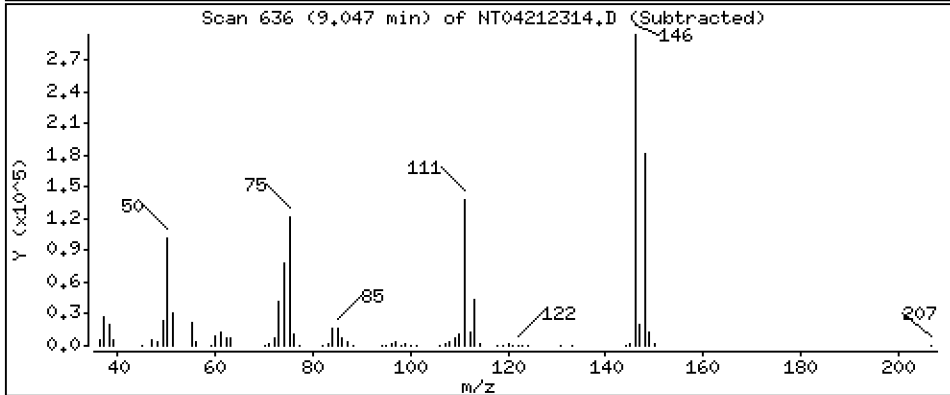
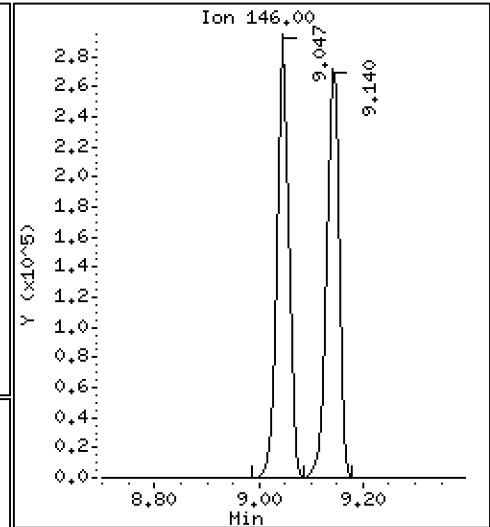
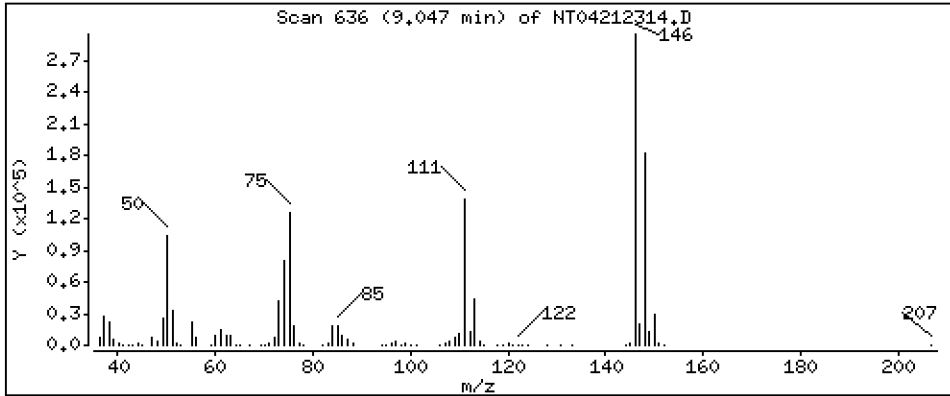
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 4,735 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

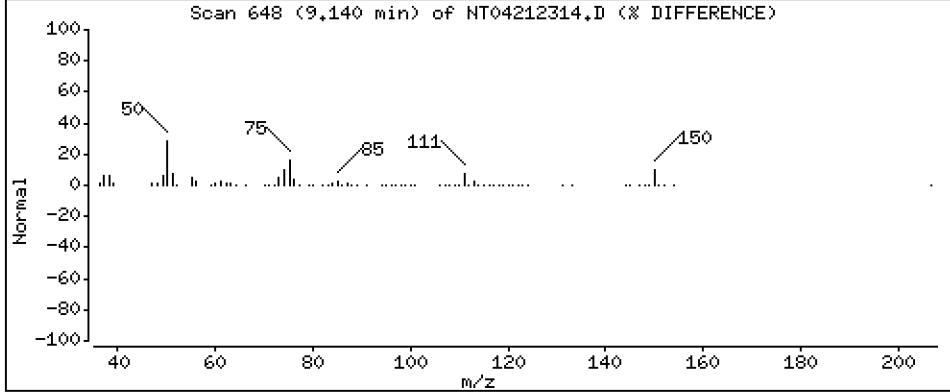
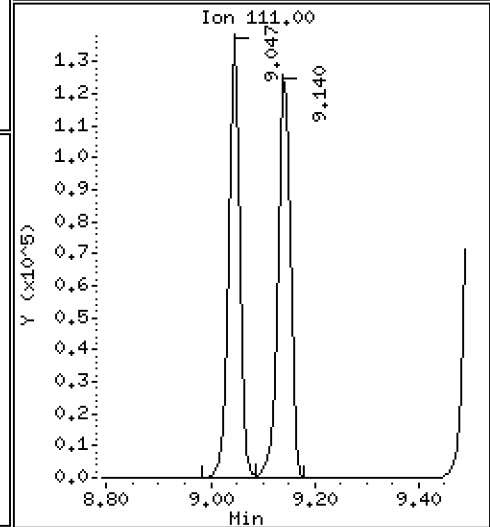
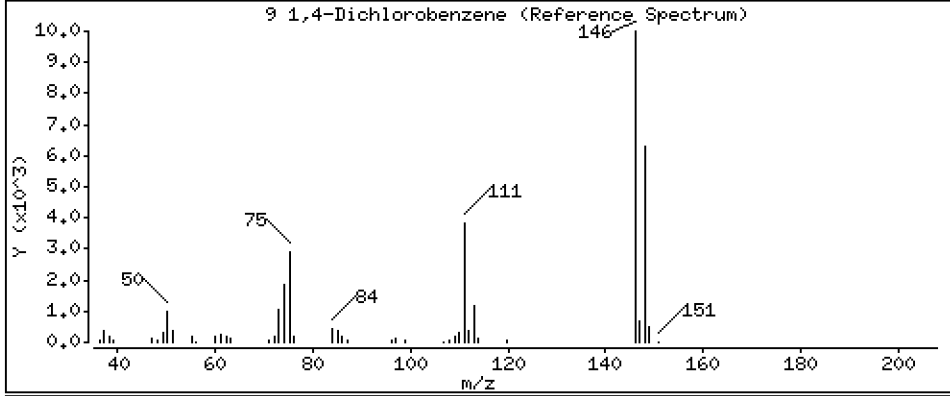
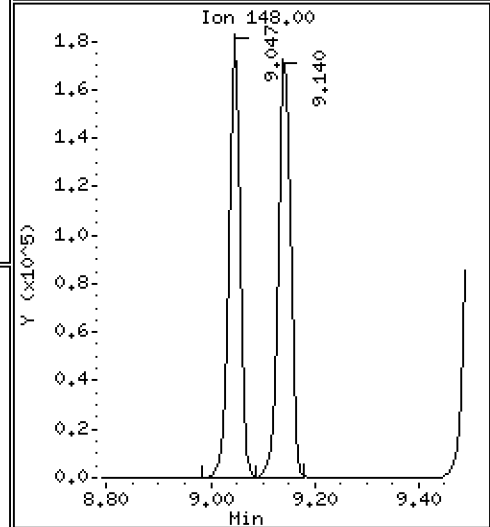
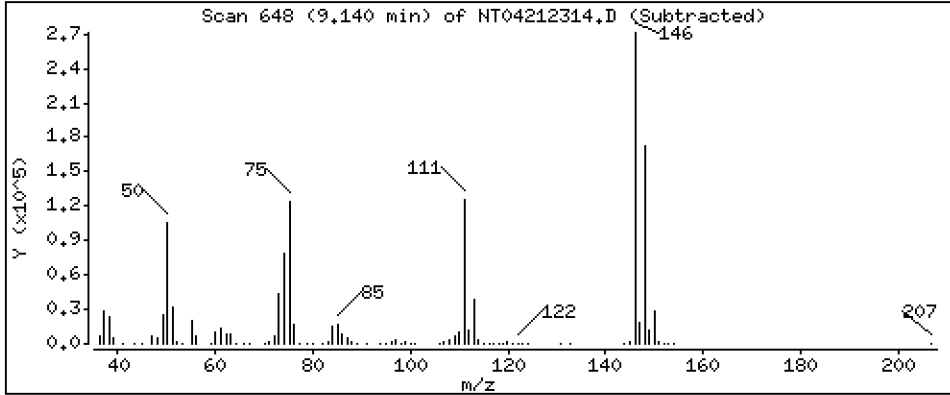
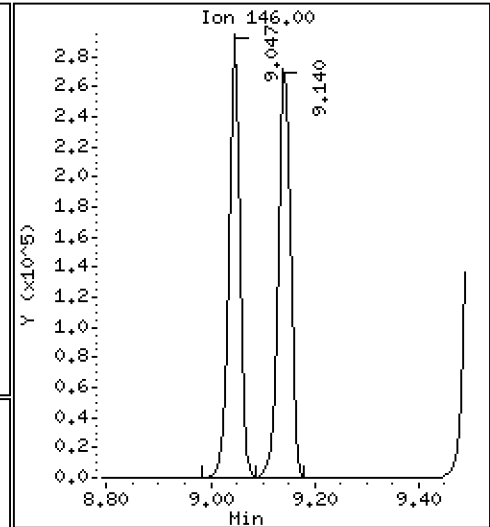
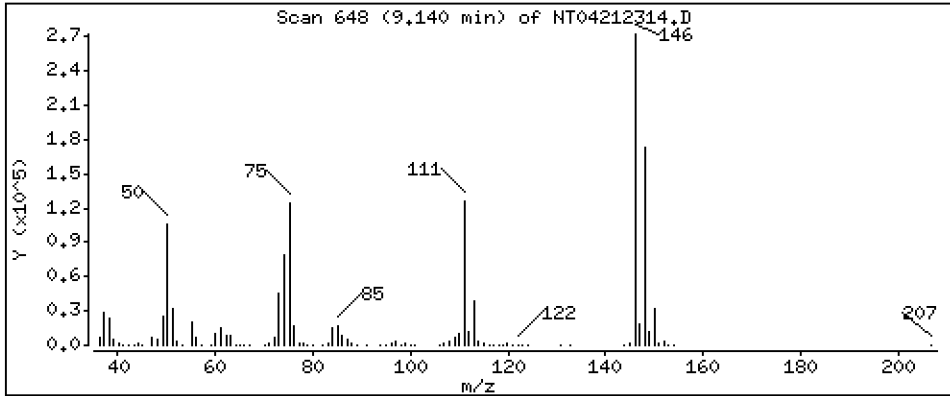
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 4,779 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

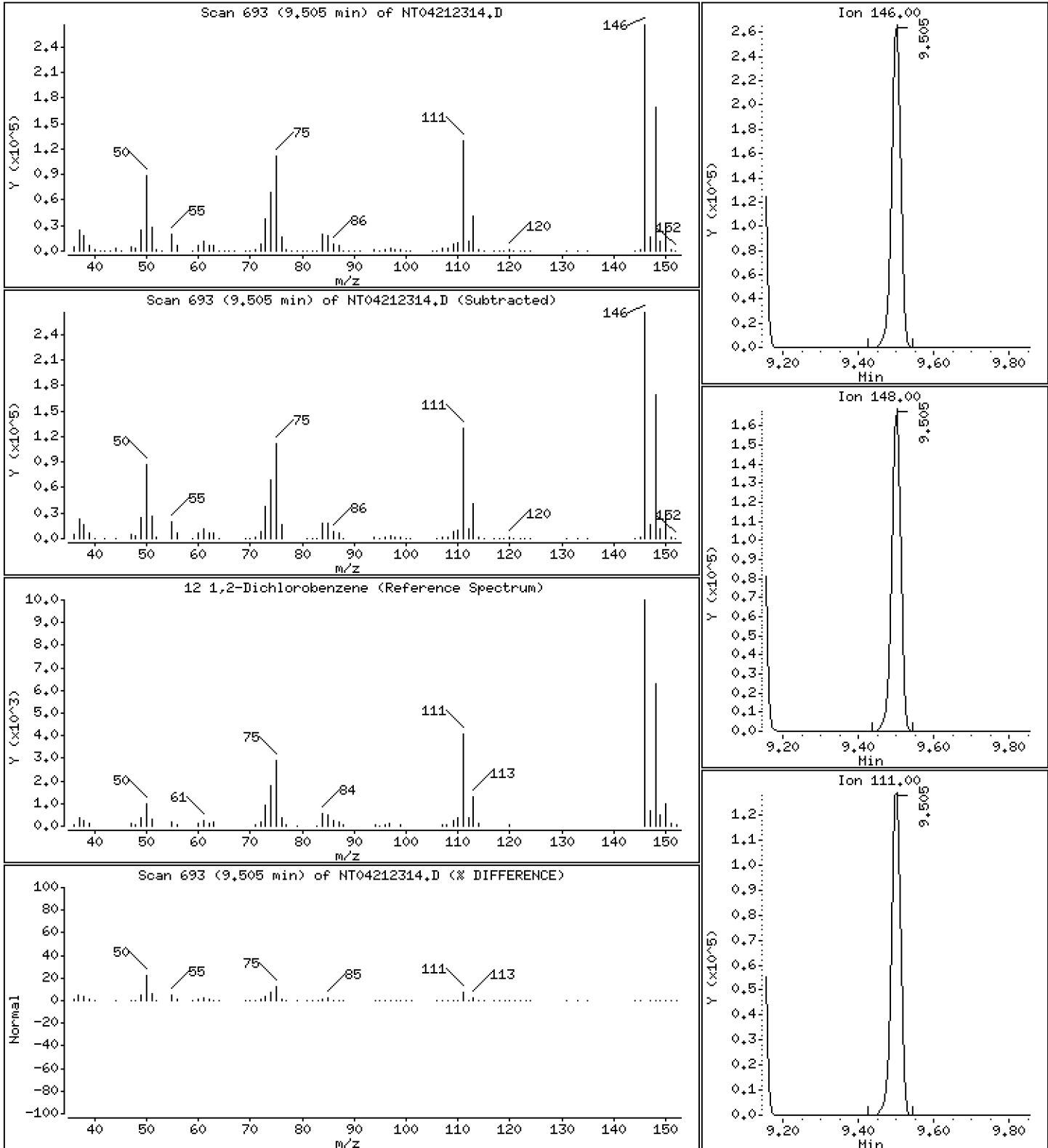
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.754 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

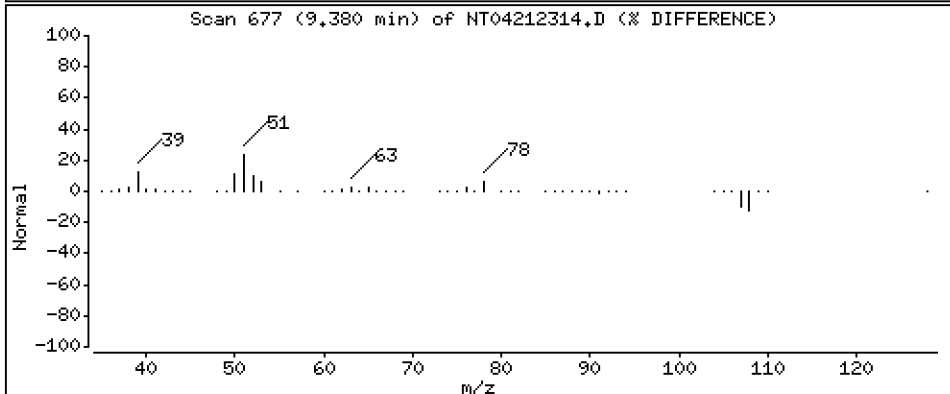
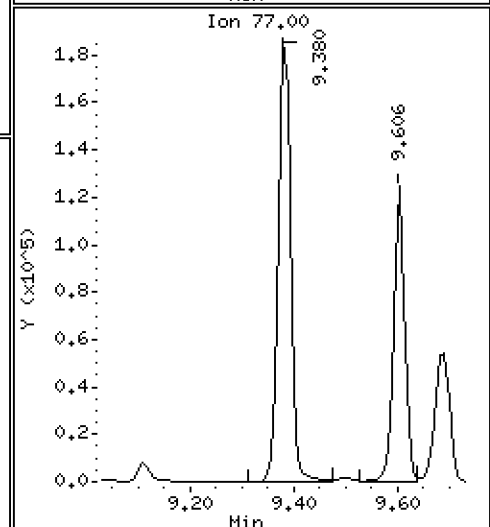
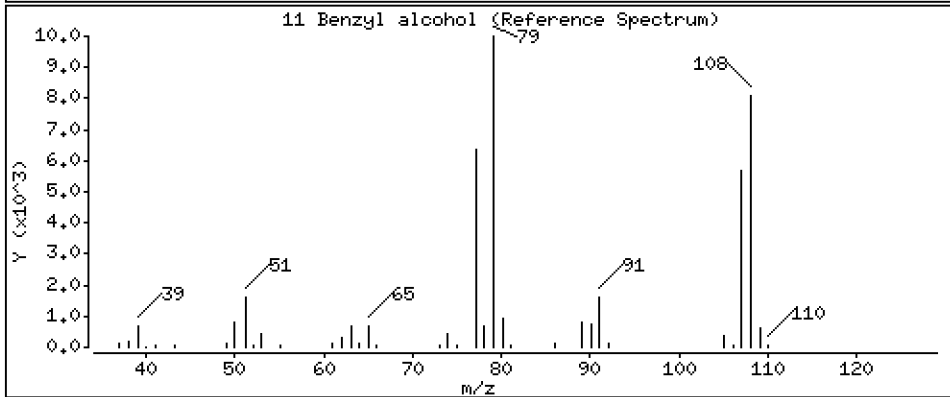
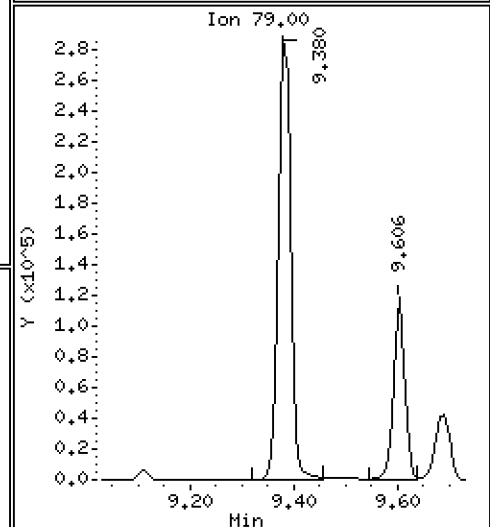
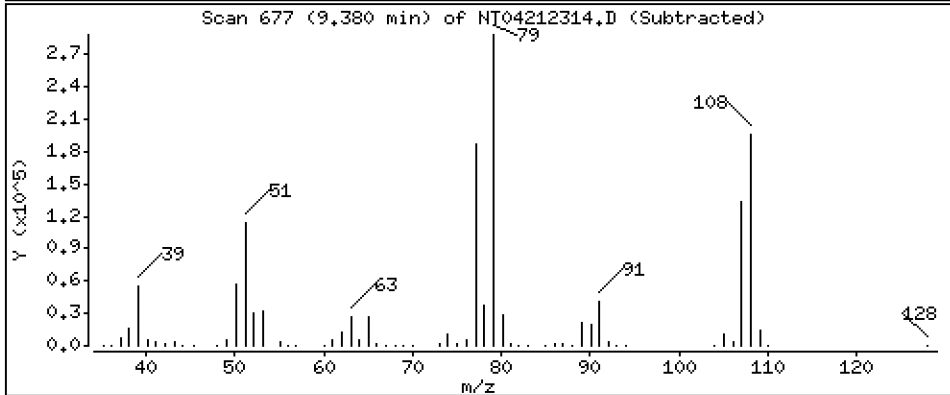
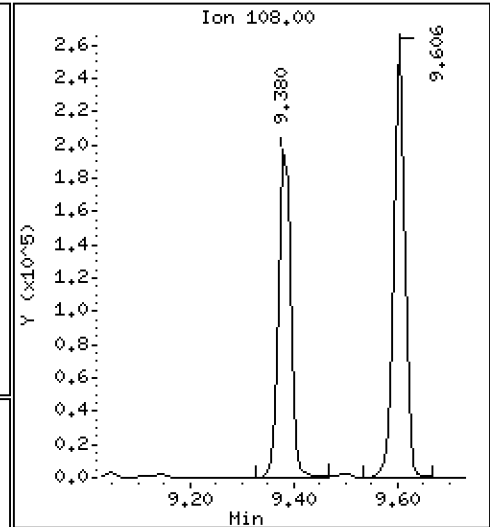
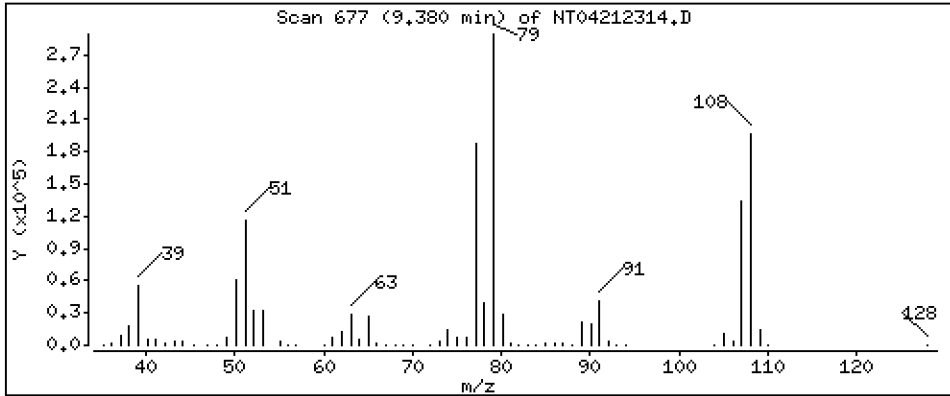
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.909 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

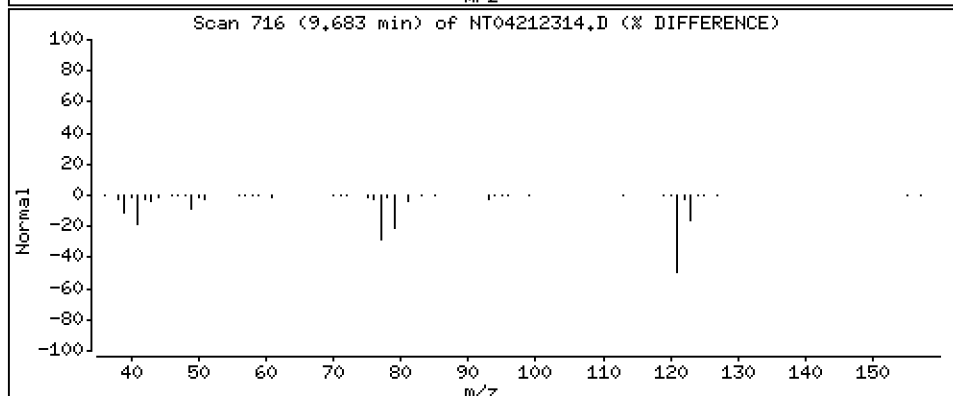
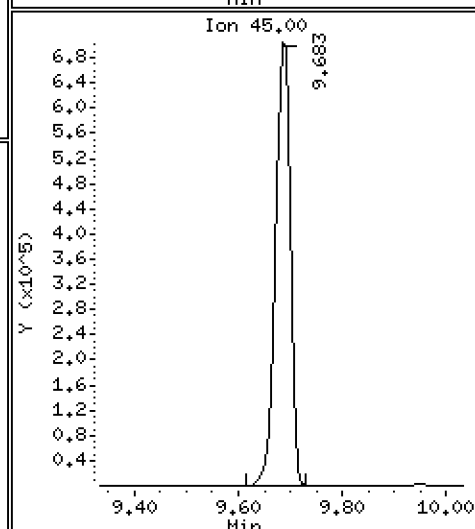
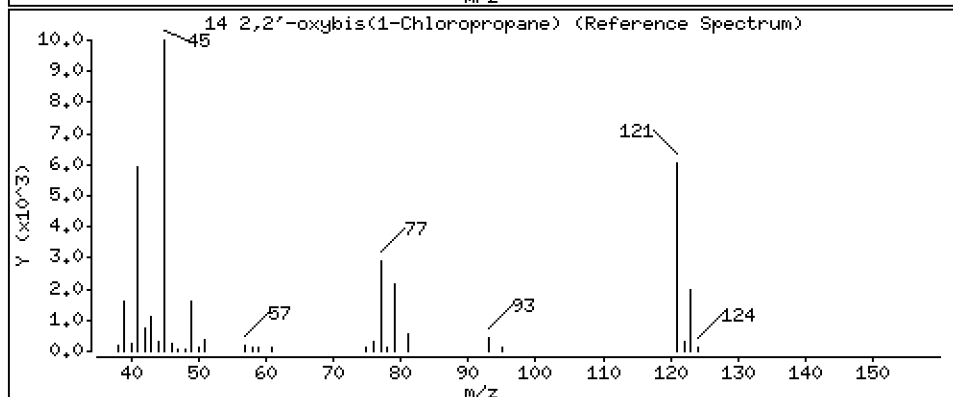
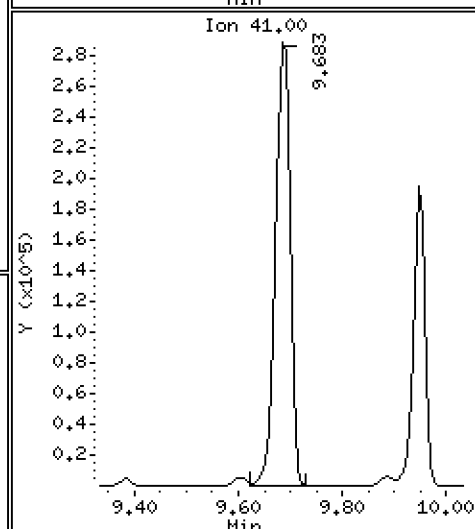
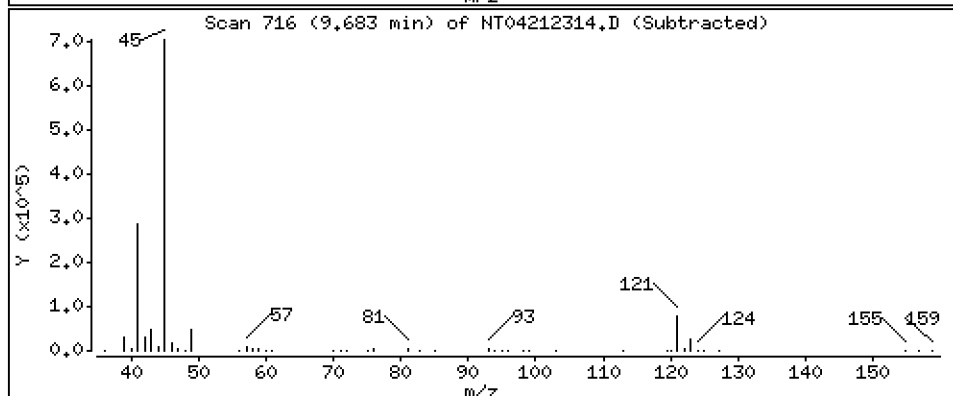
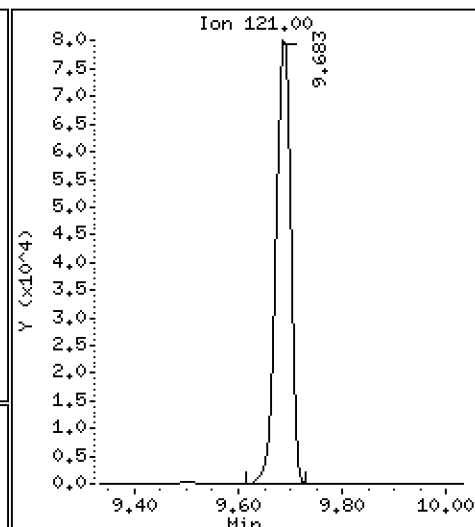
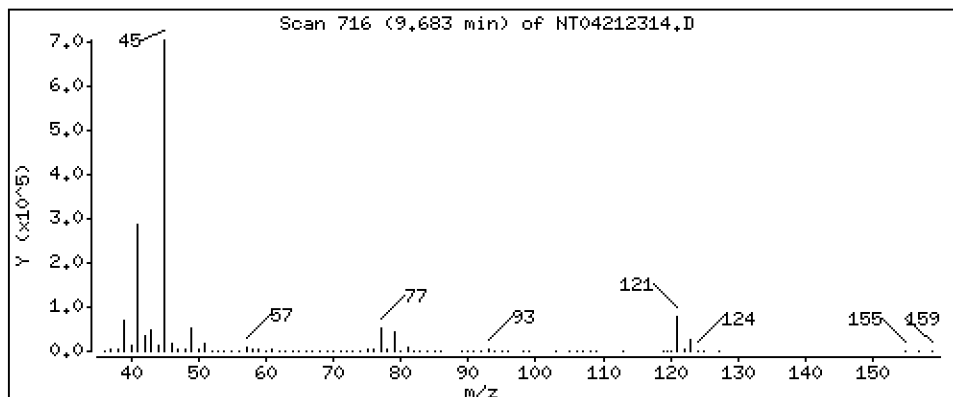
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 5,062 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

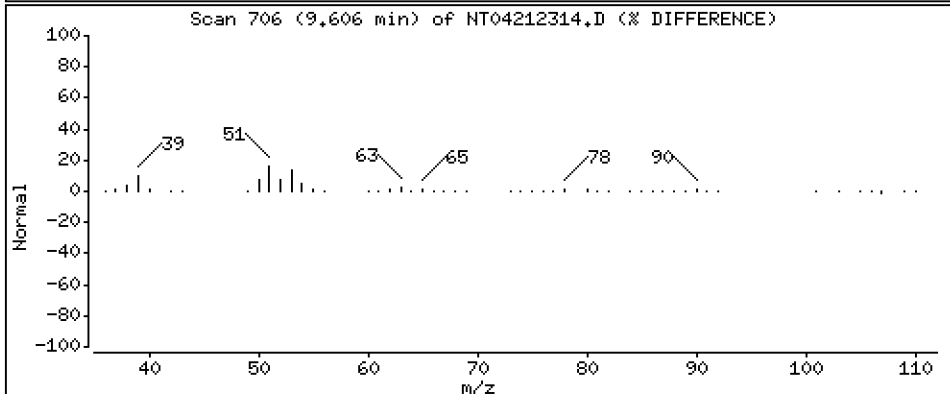
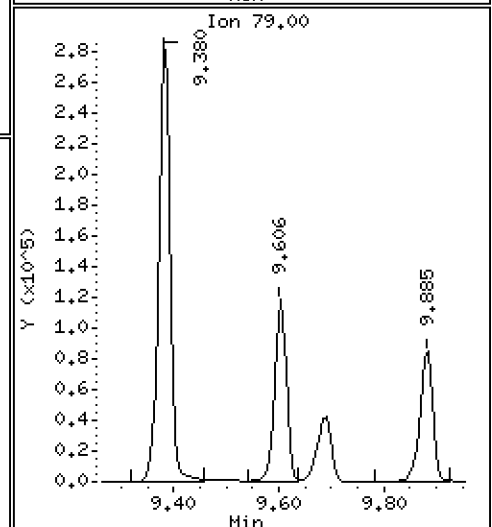
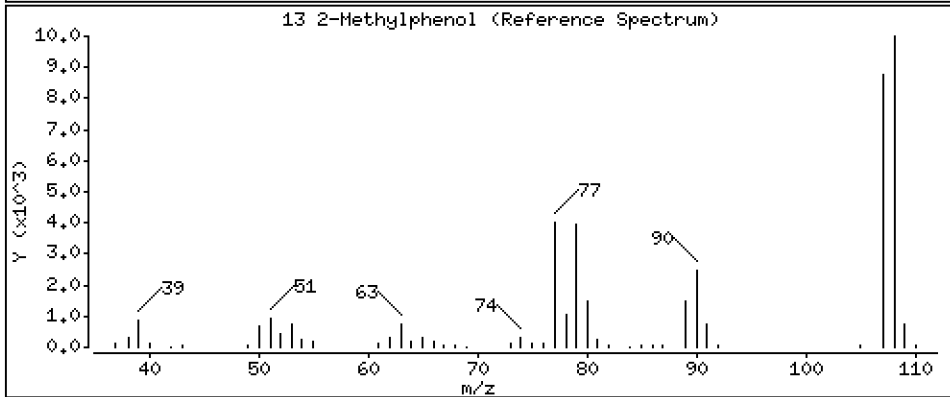
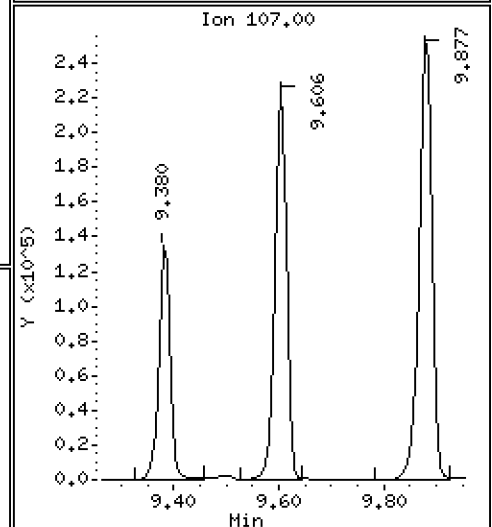
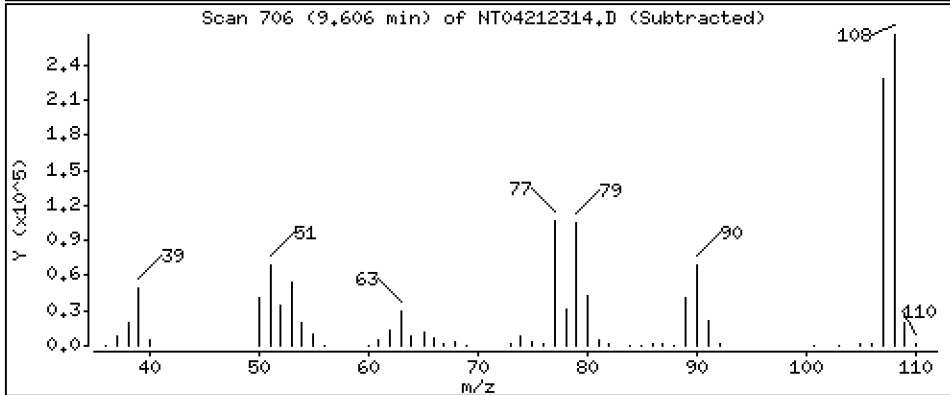
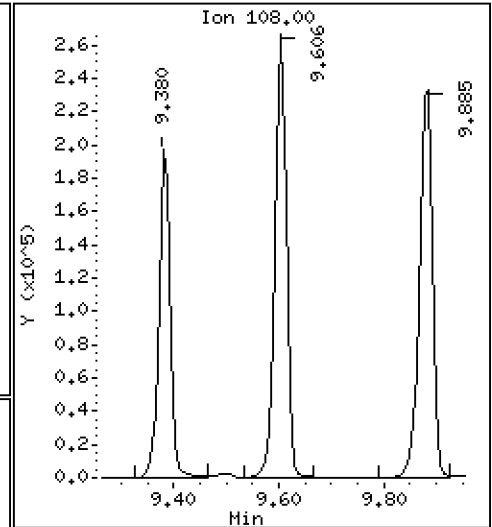
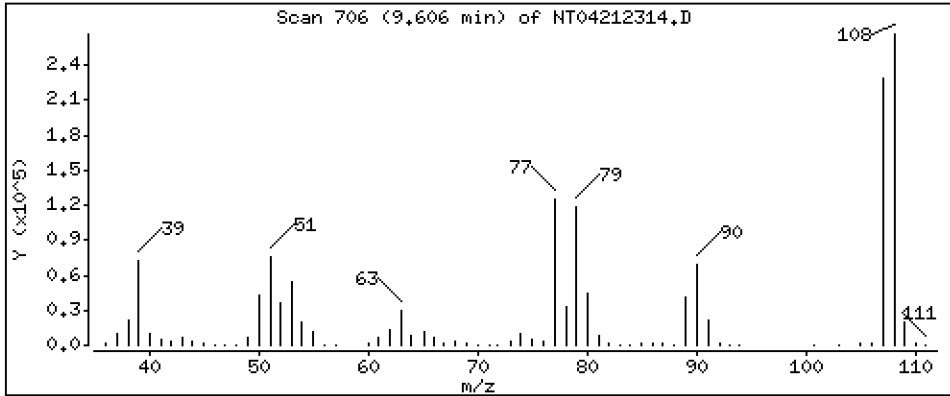
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 4.199 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

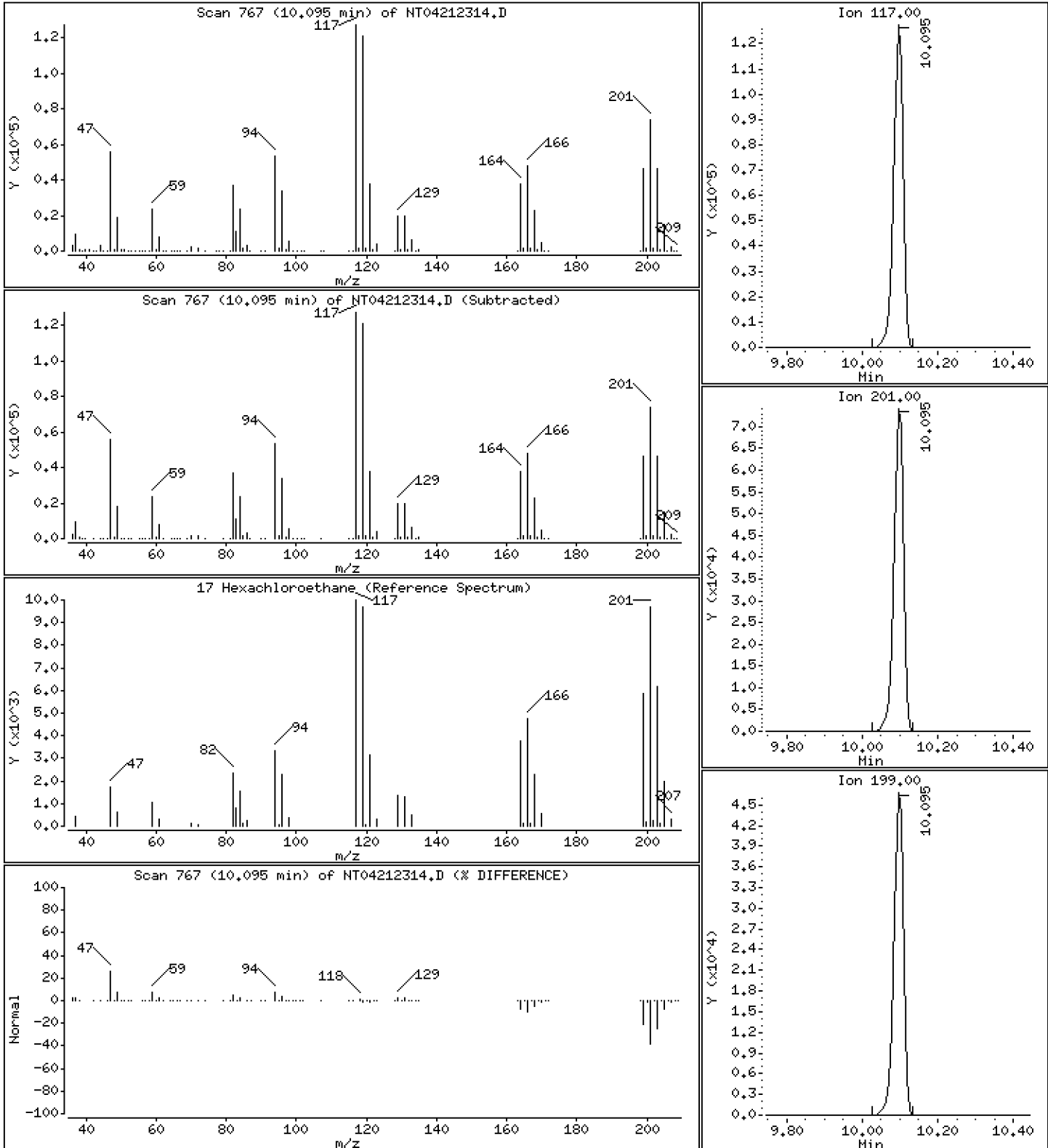
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 4,872 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

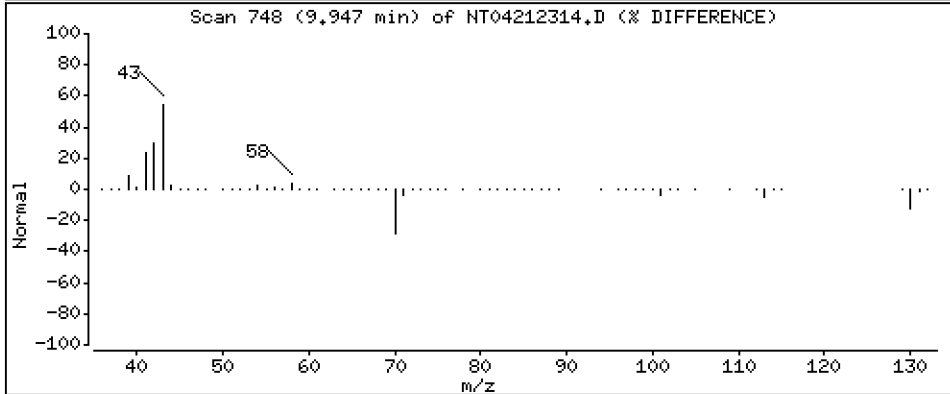
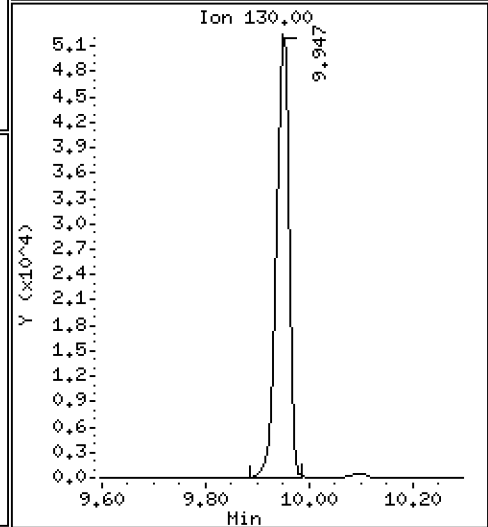
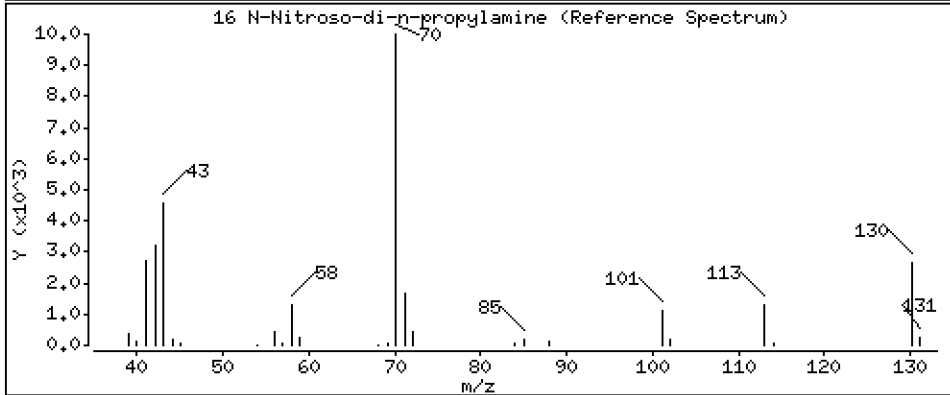
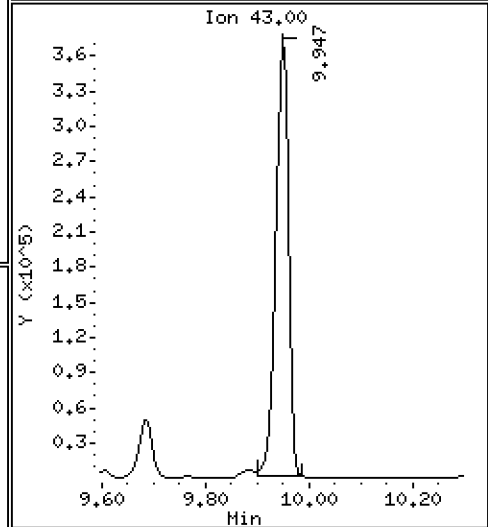
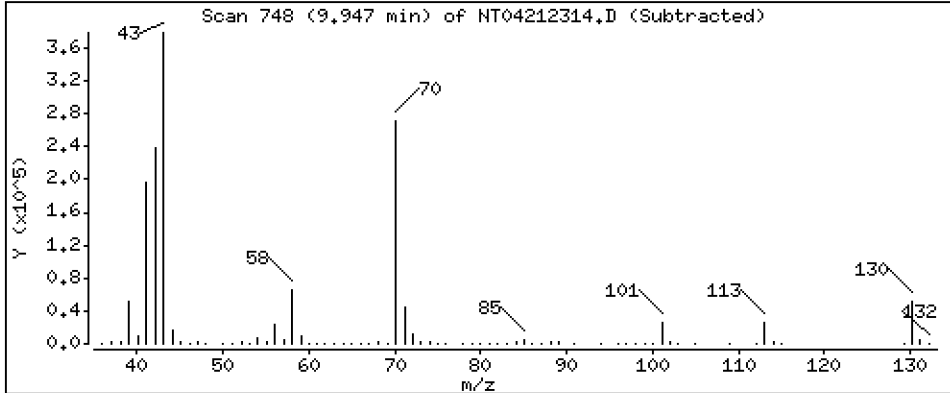
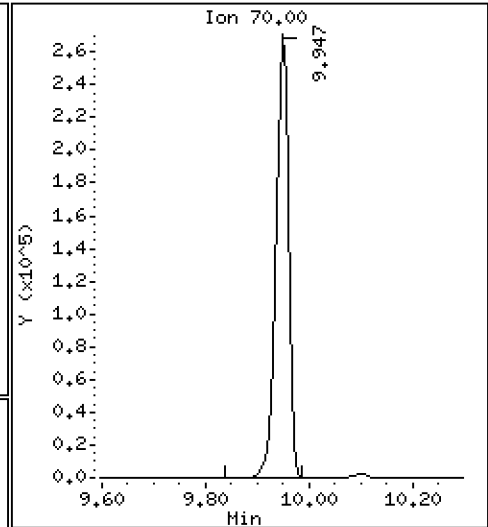
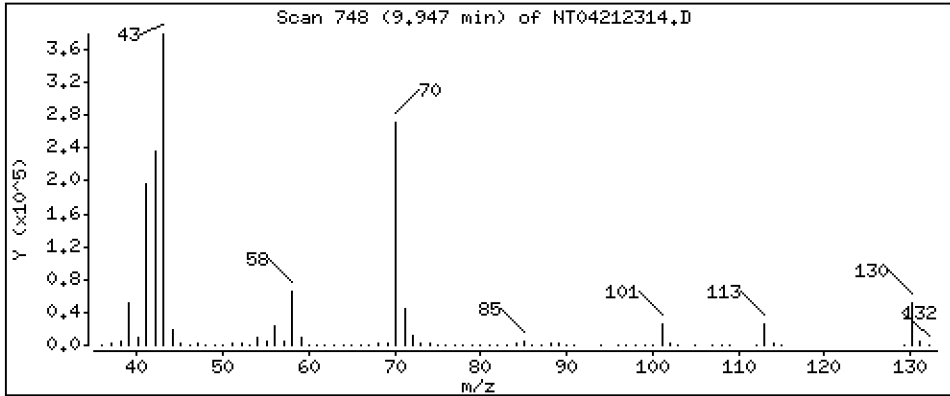
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 4,737 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

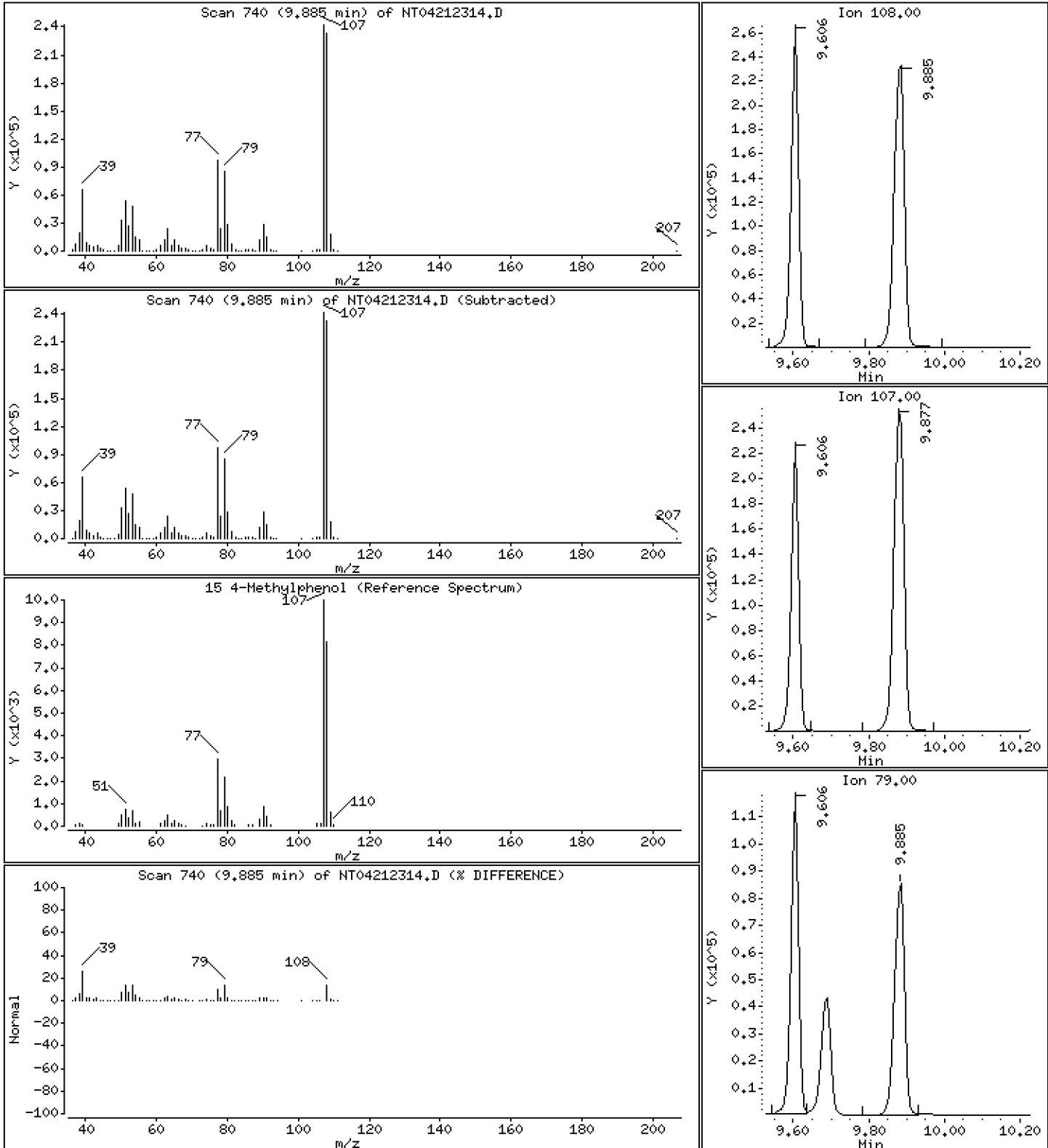
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.451 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

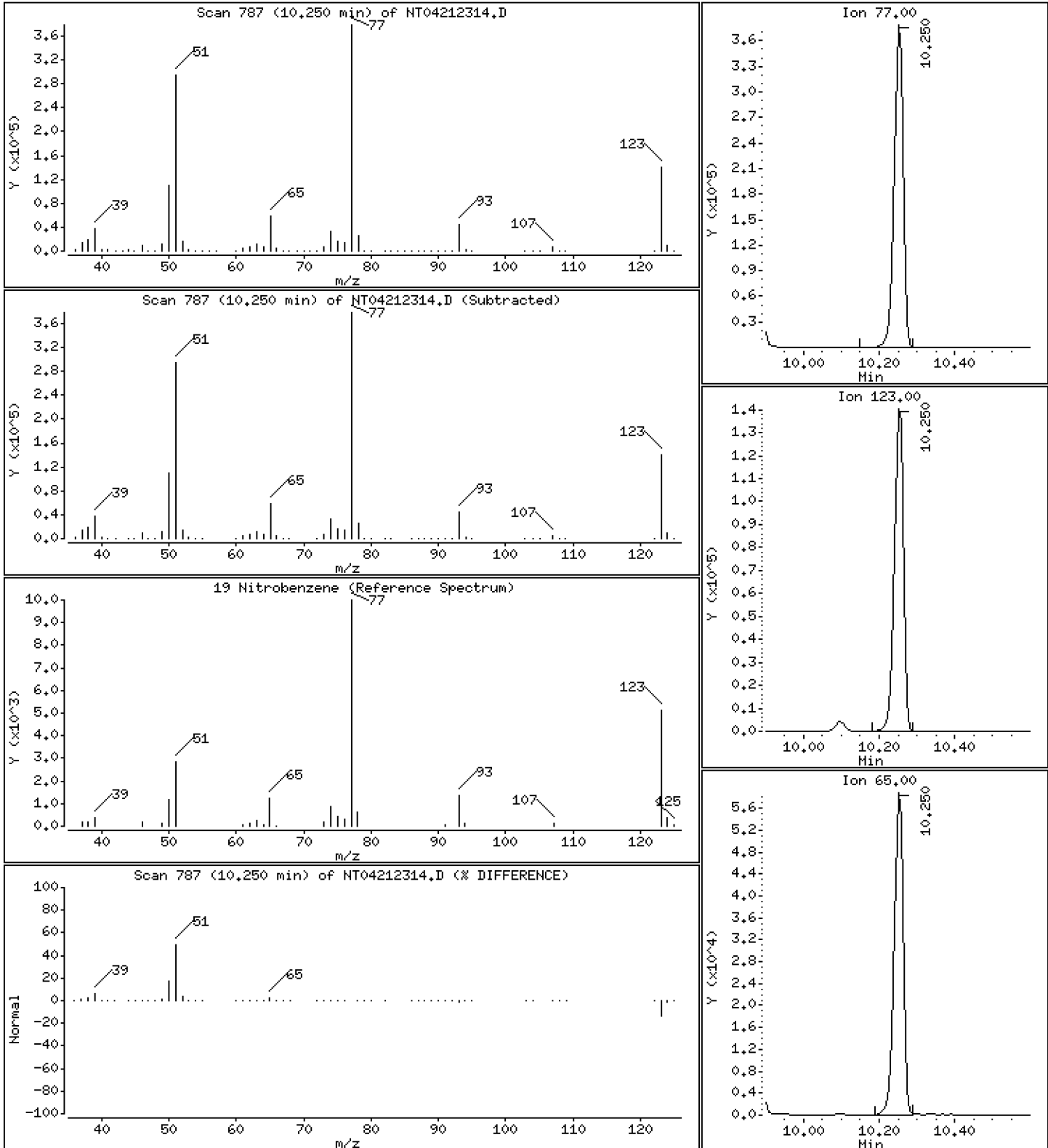
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 4,715 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

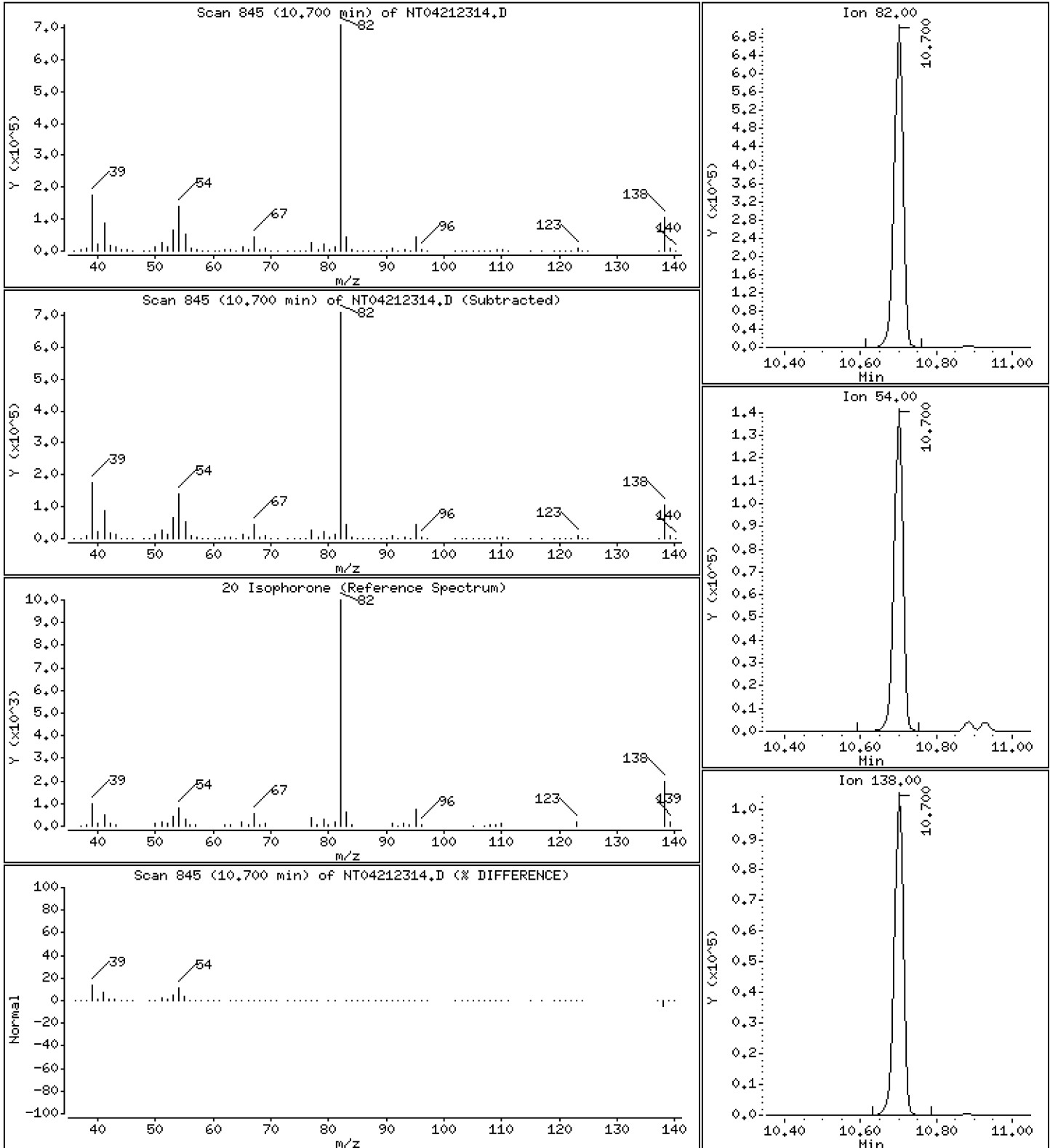
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

20 Isophorone

Concentration: 6.317 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

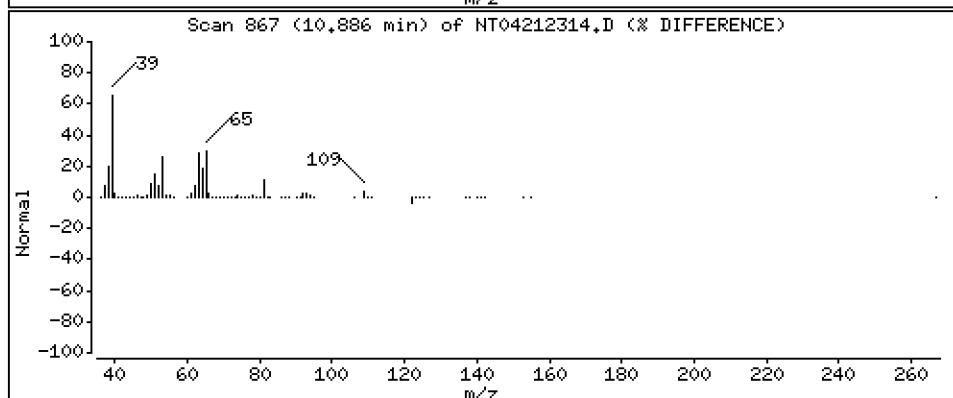
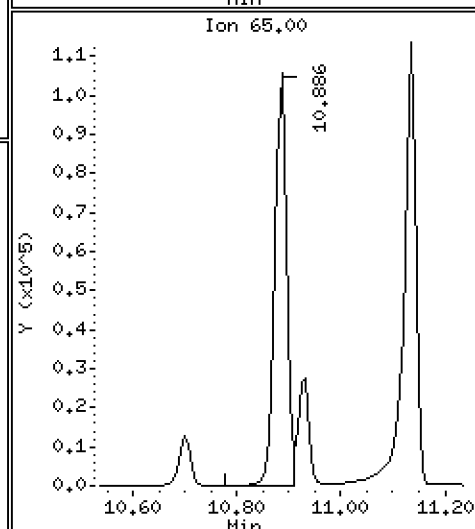
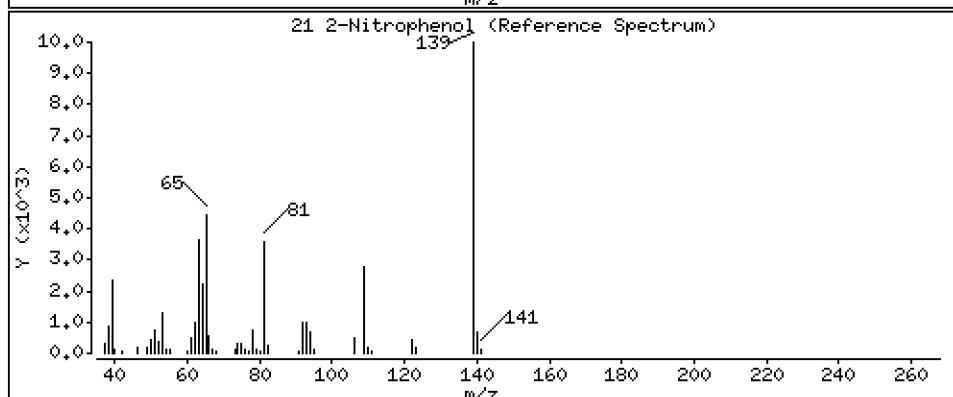
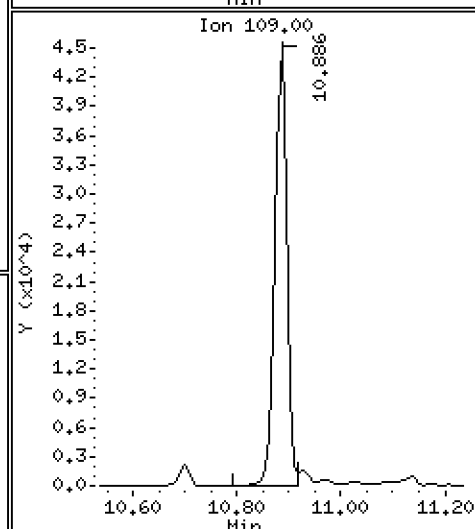
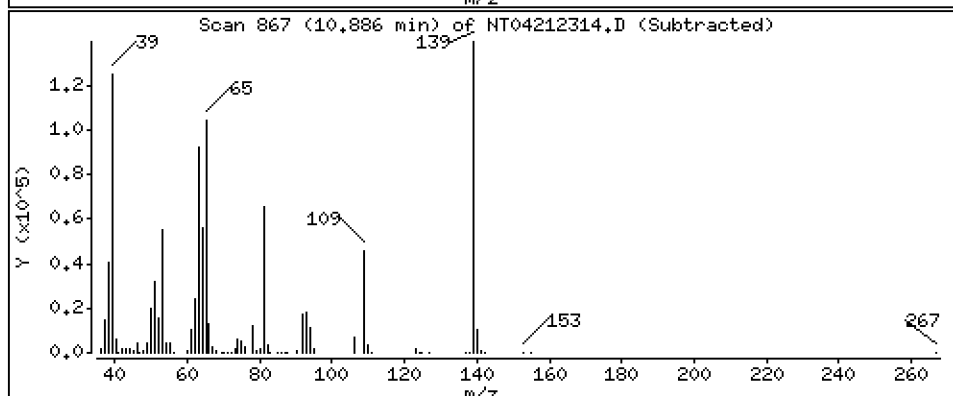
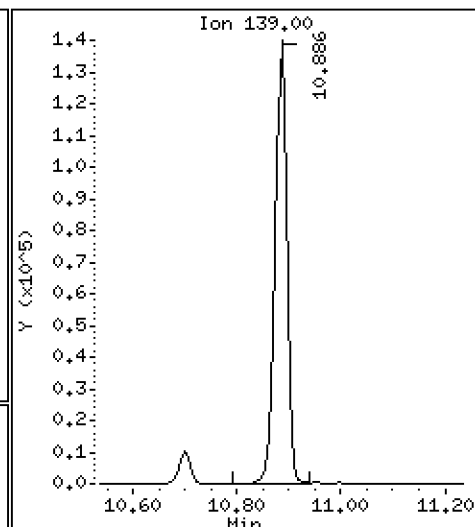
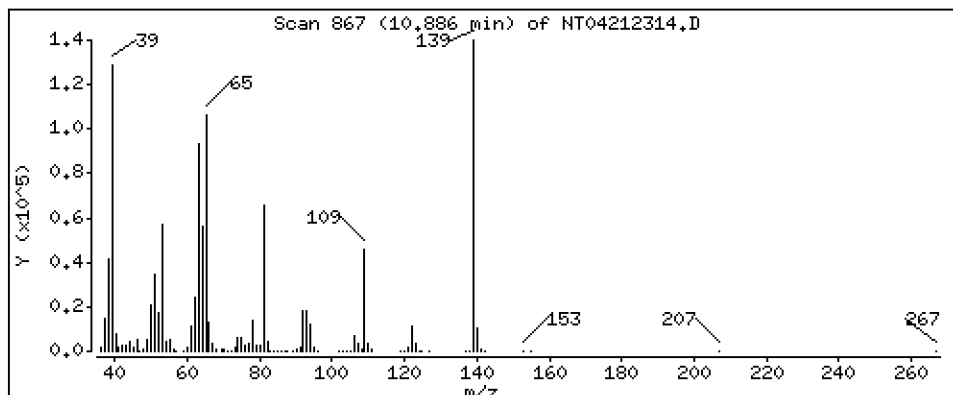
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 3,779 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

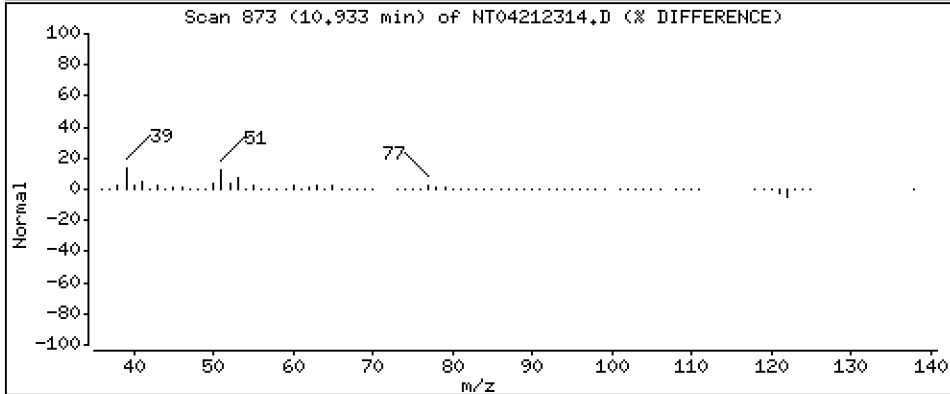
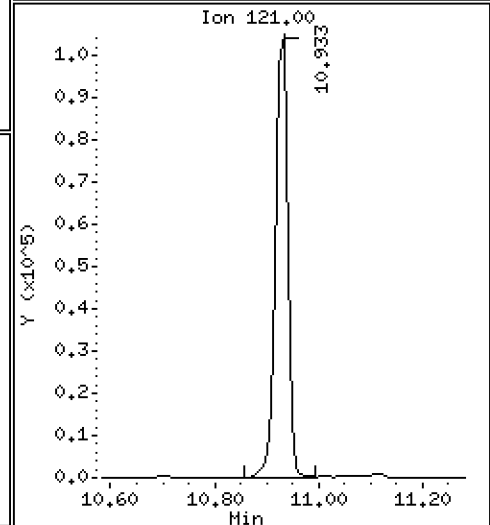
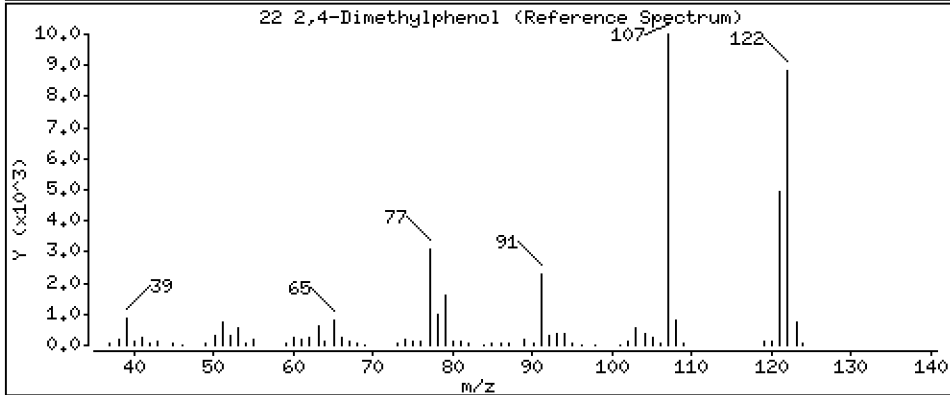
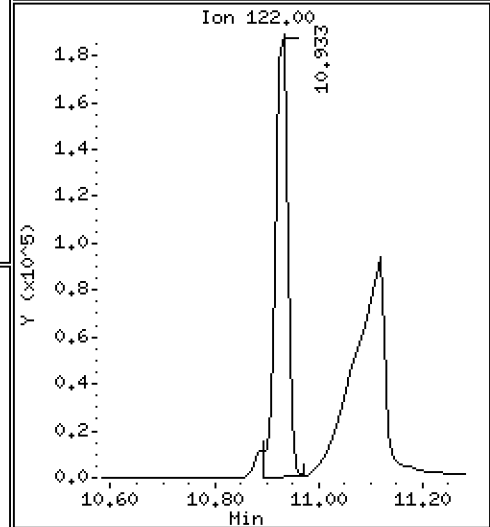
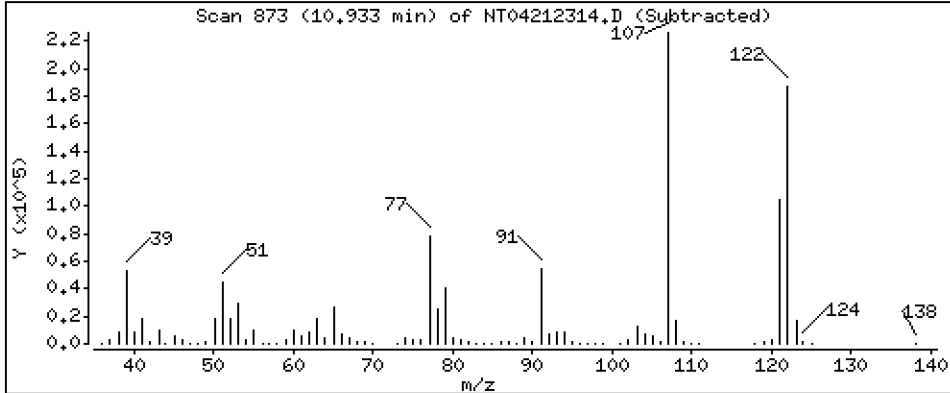
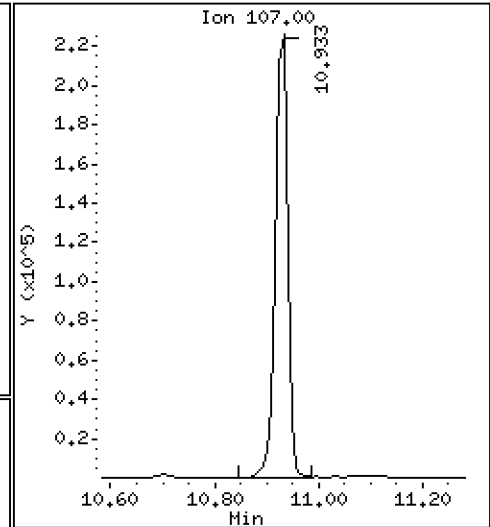
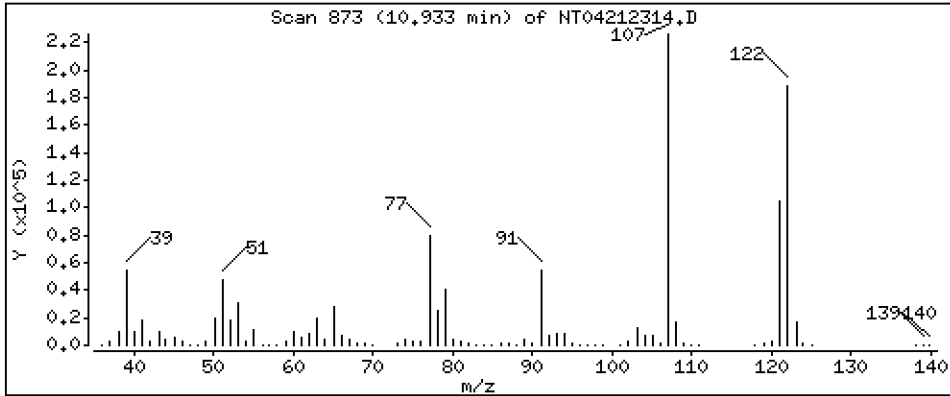
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 3,707 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

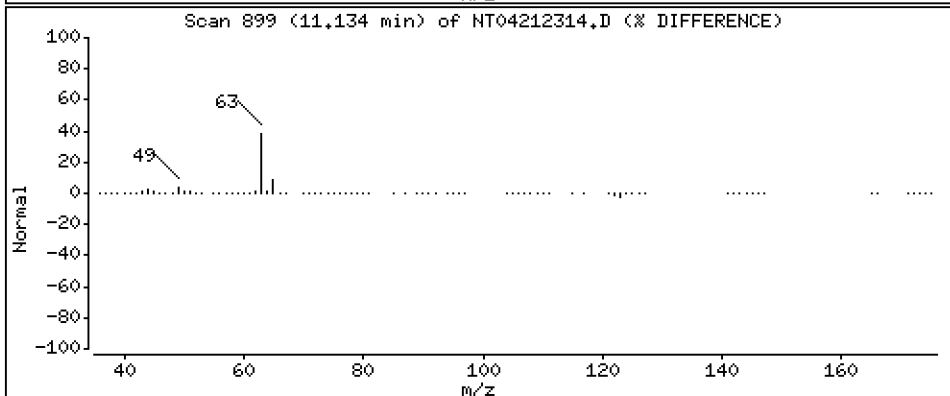
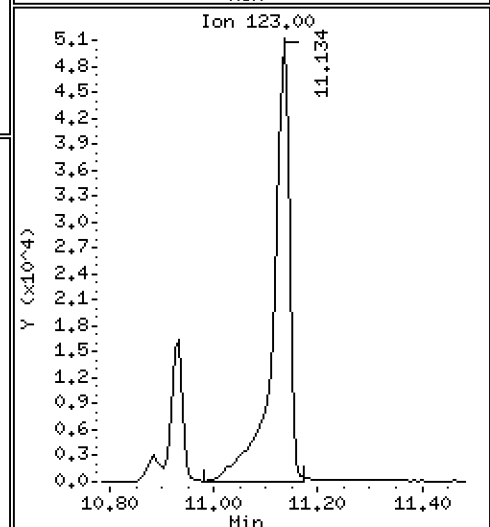
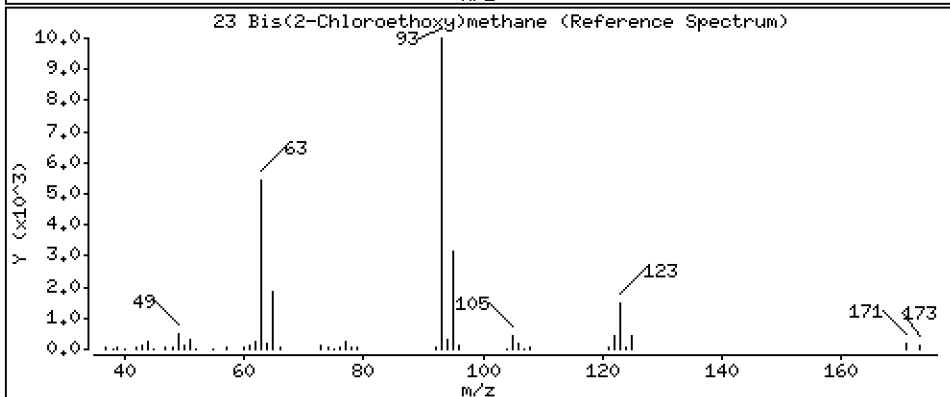
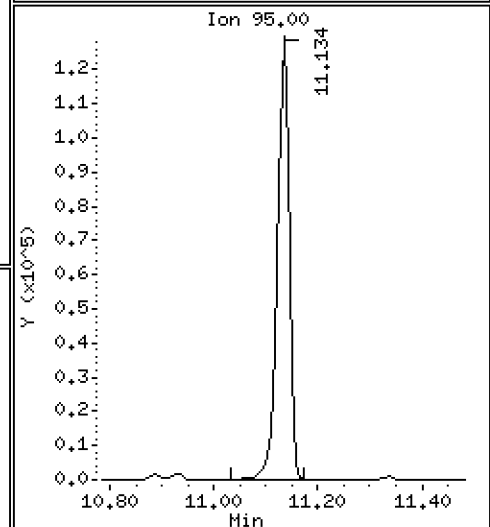
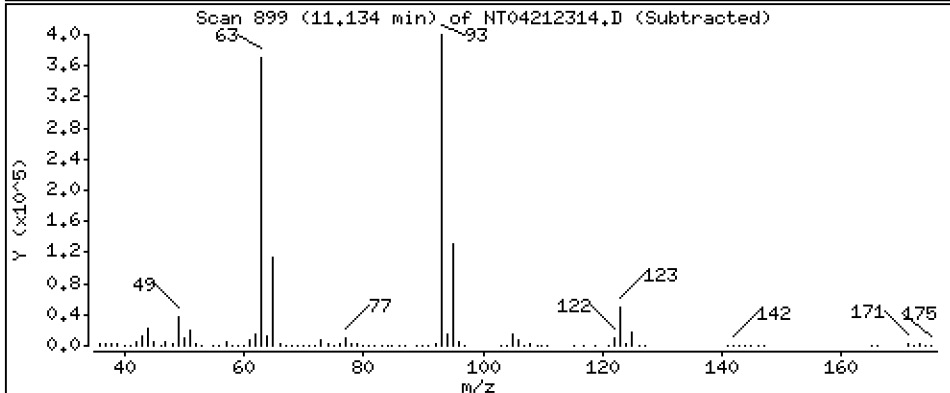
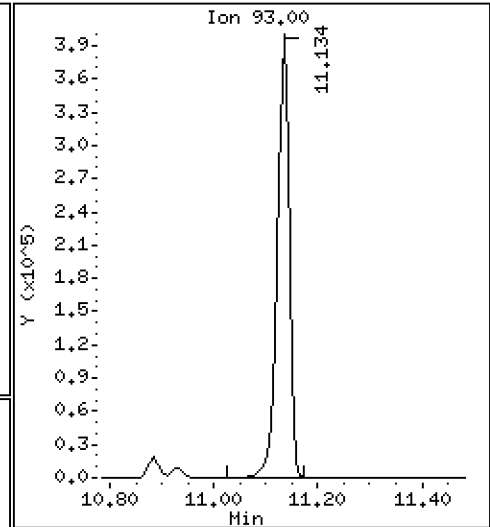
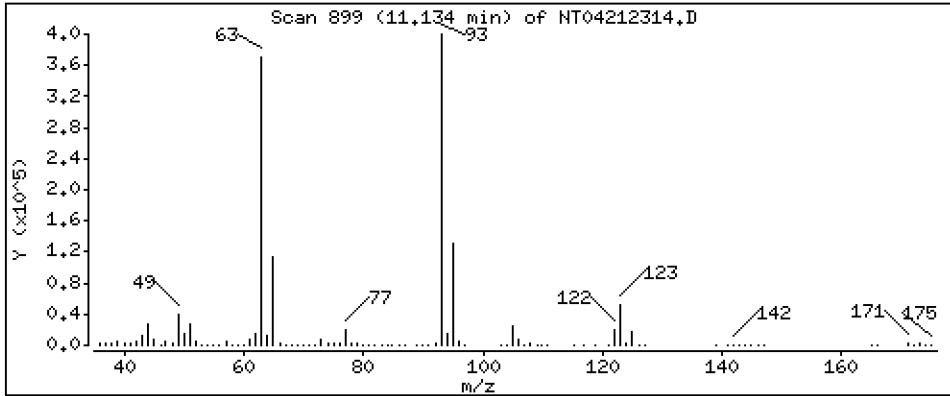
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 5,396 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

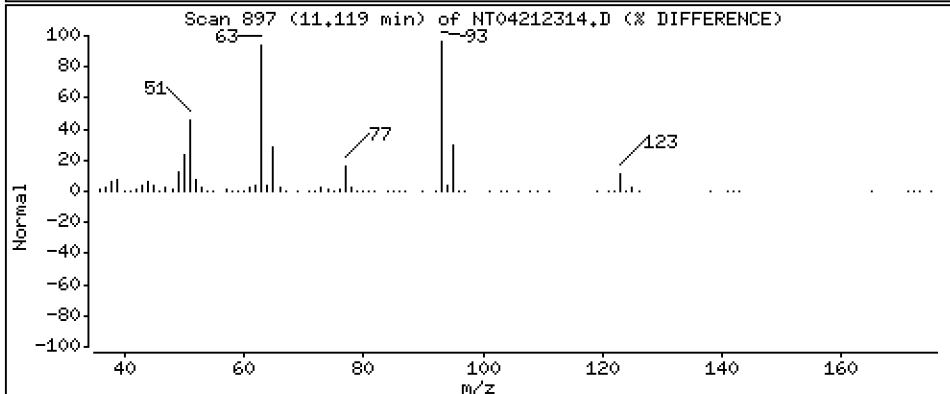
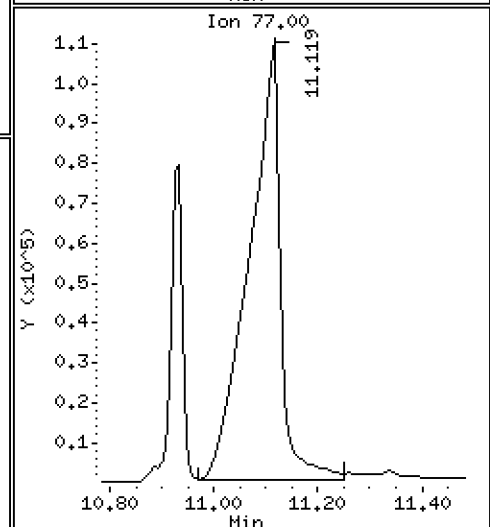
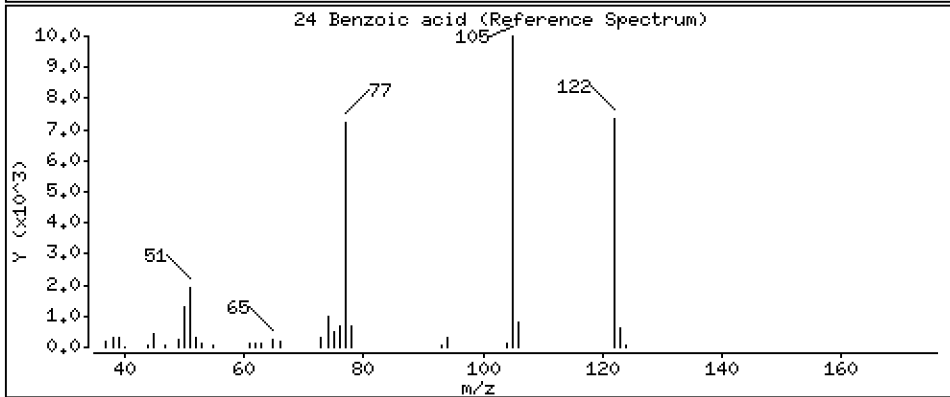
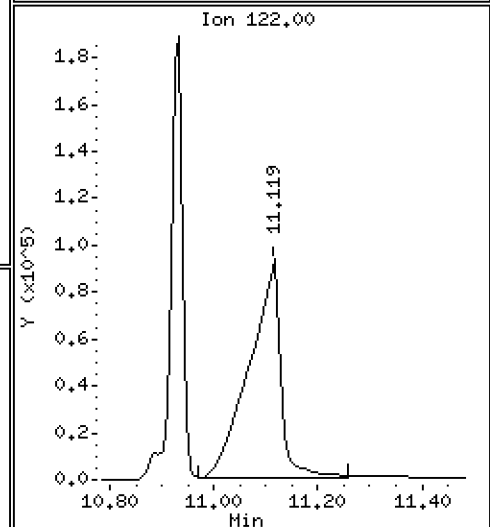
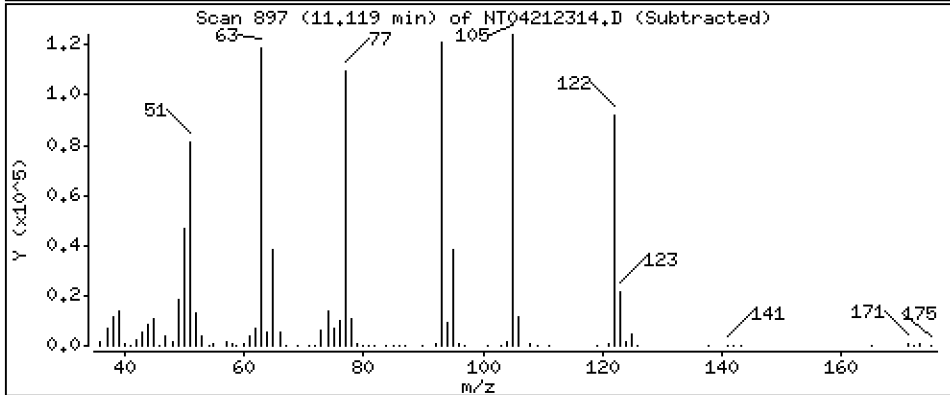
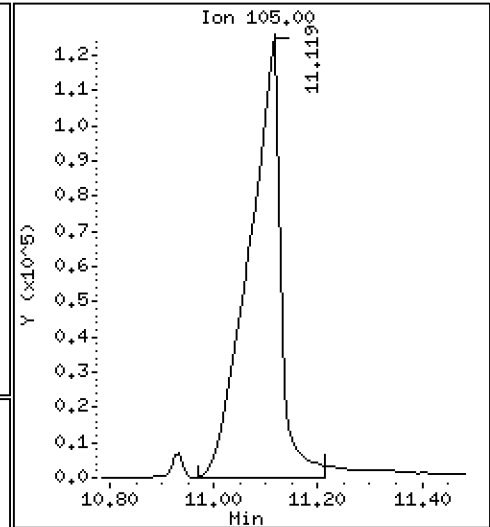
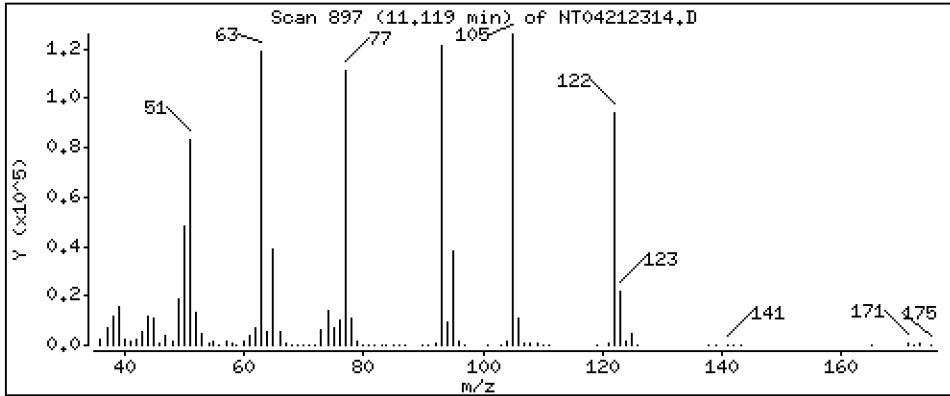
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 6,801 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

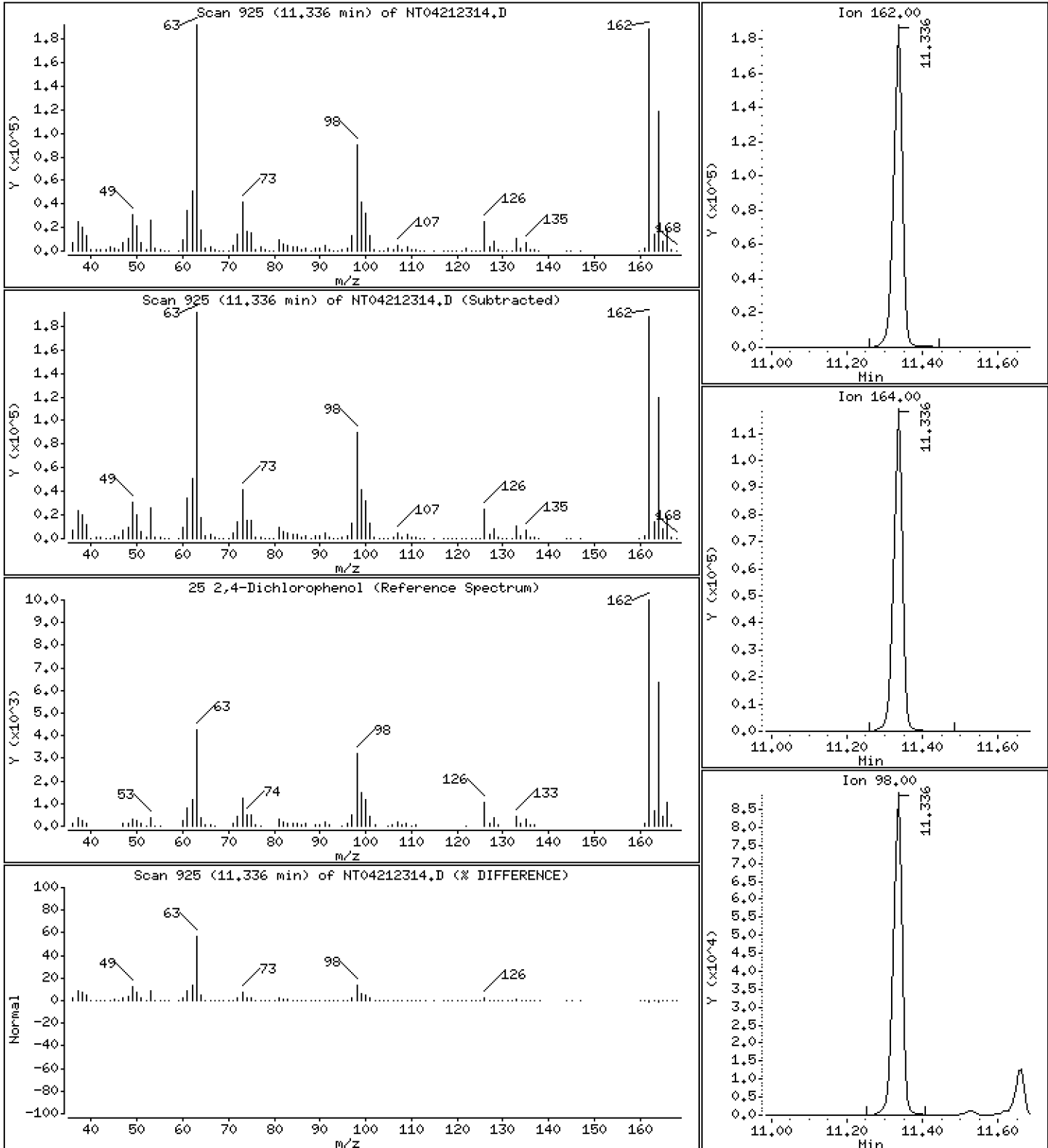
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 3,728 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

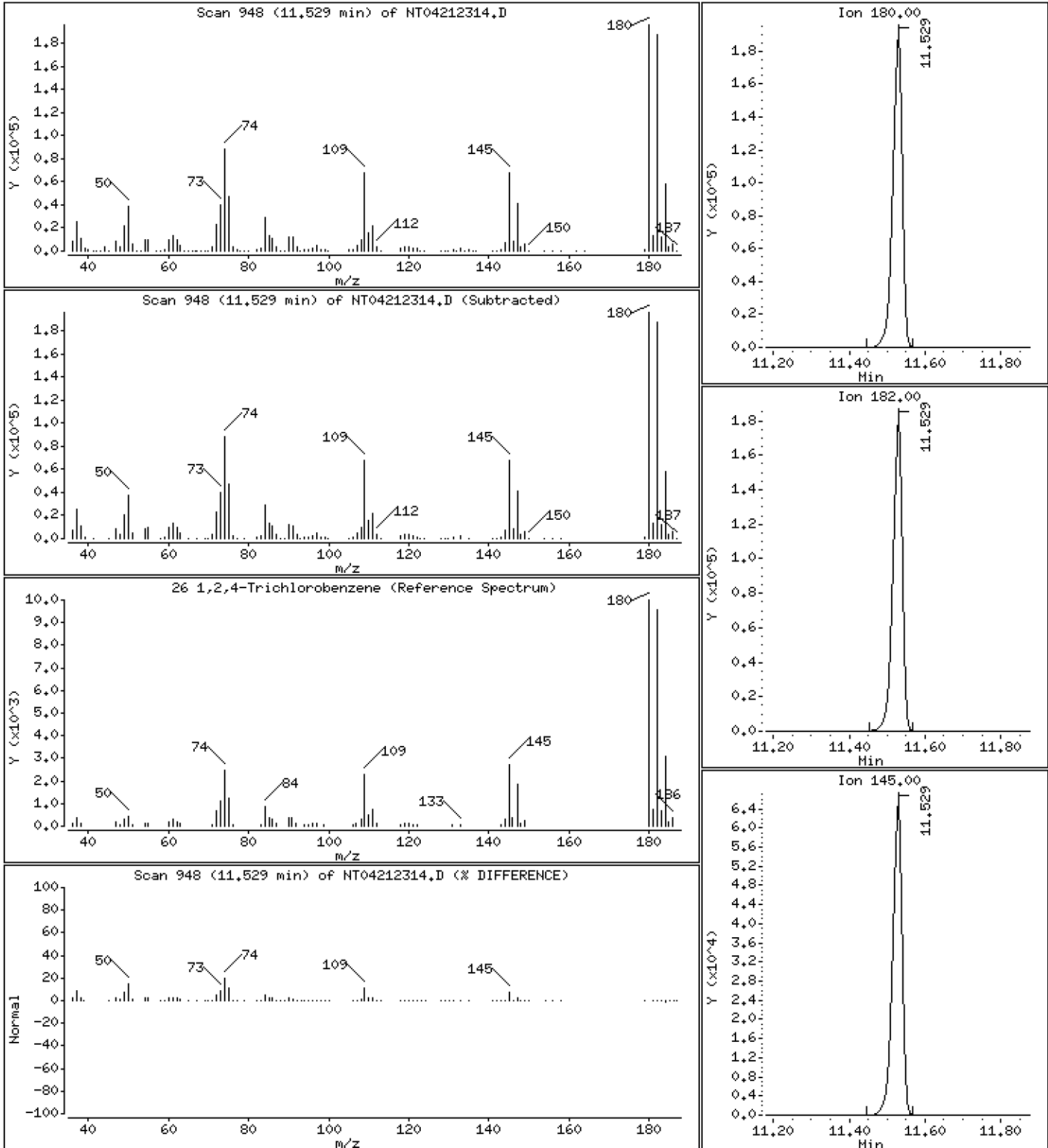
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,536 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

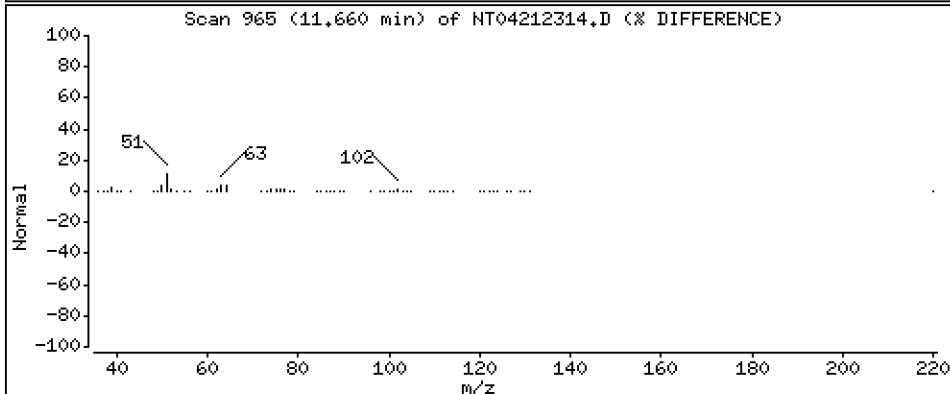
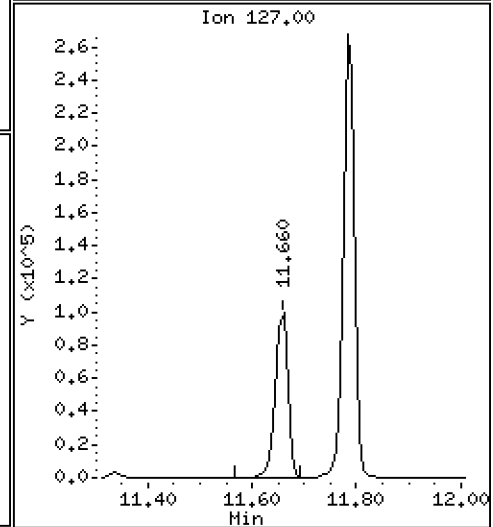
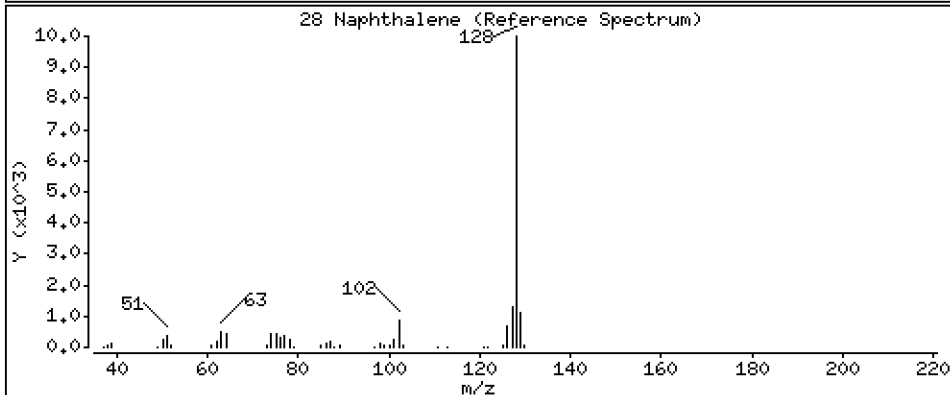
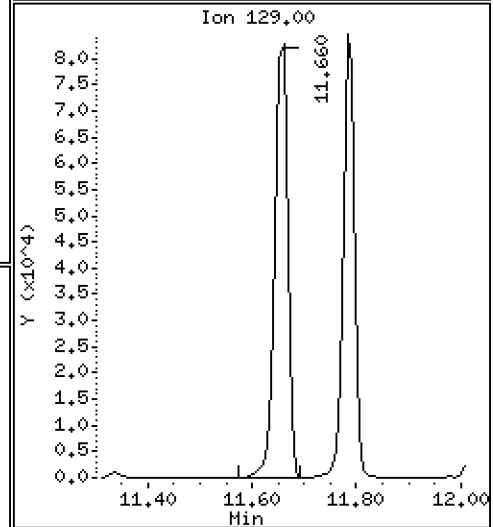
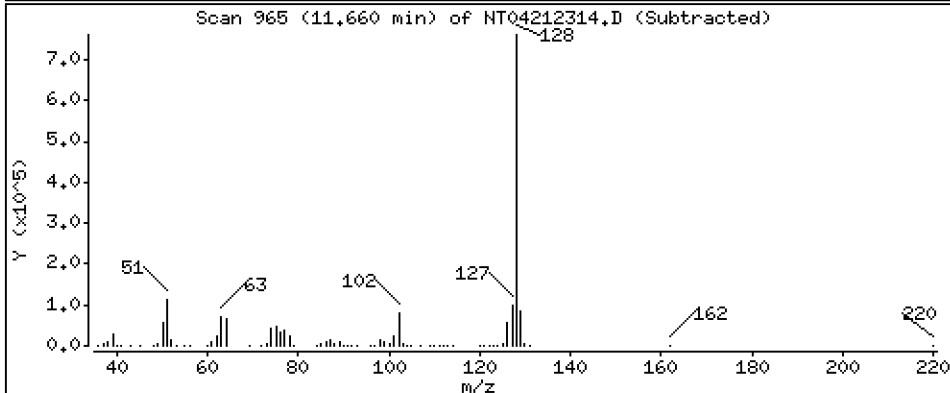
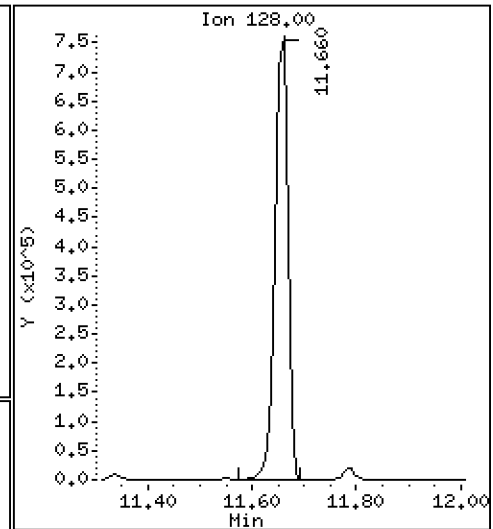
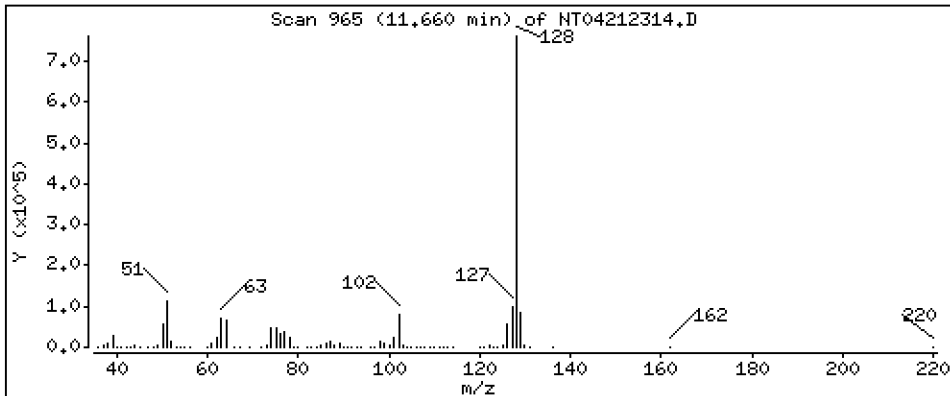
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 4,813 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

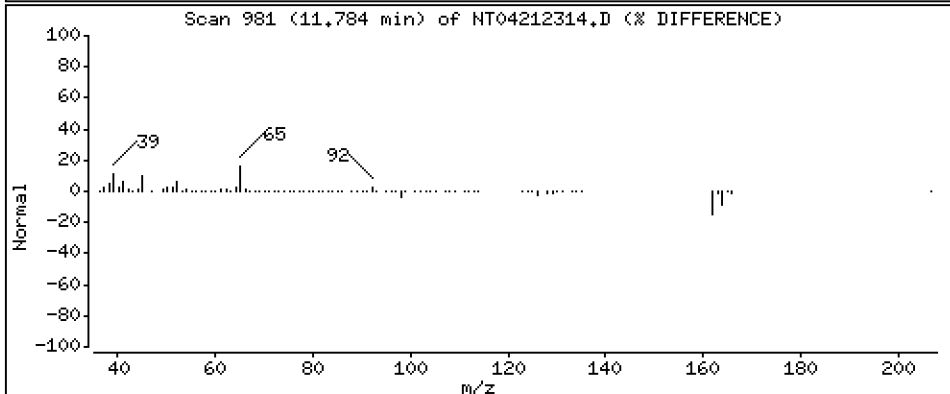
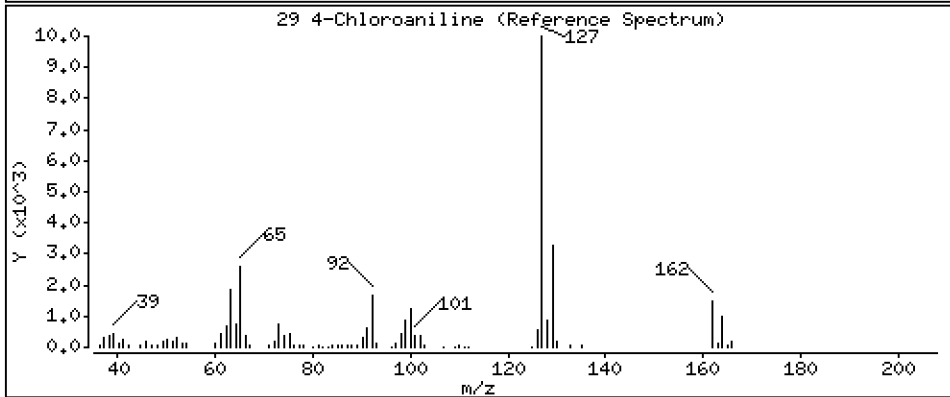
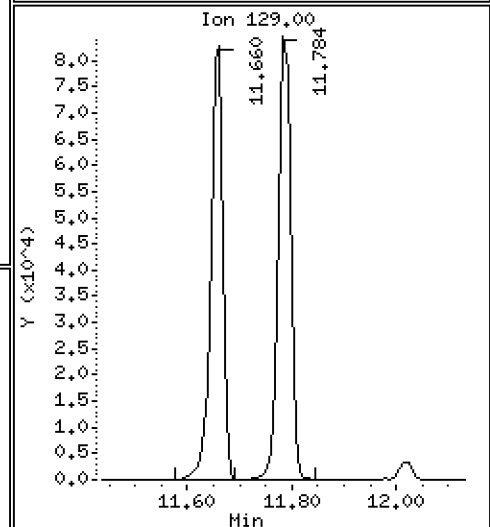
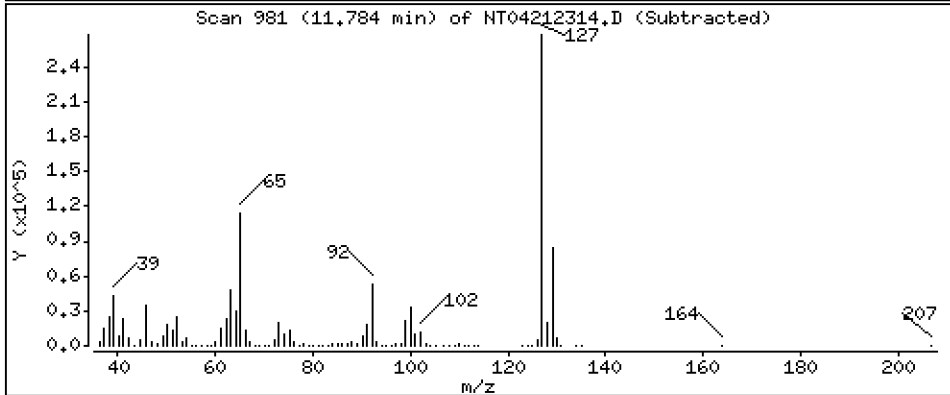
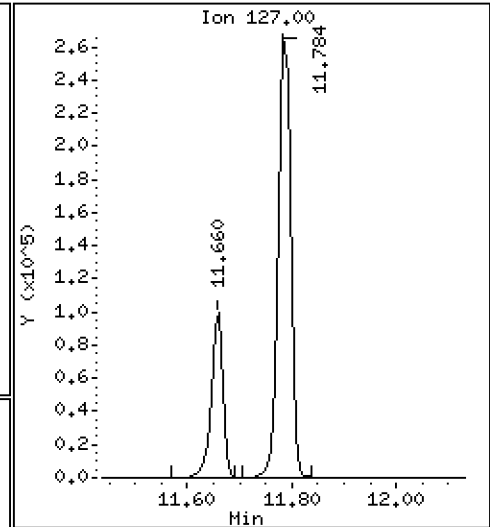
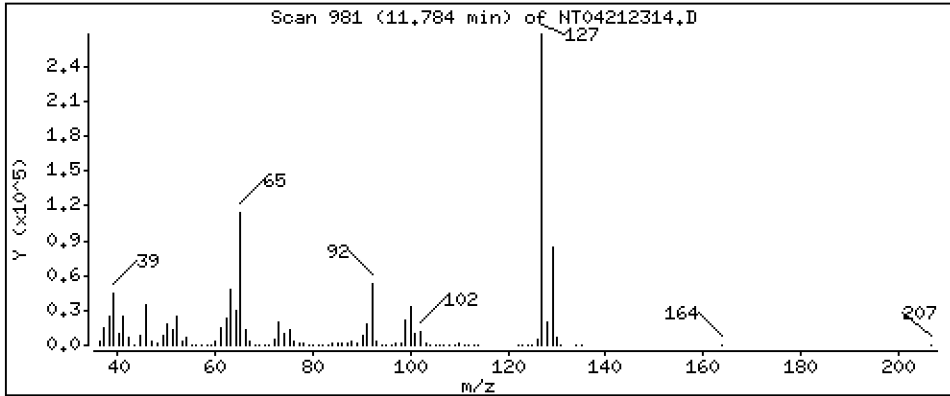
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 3,770 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

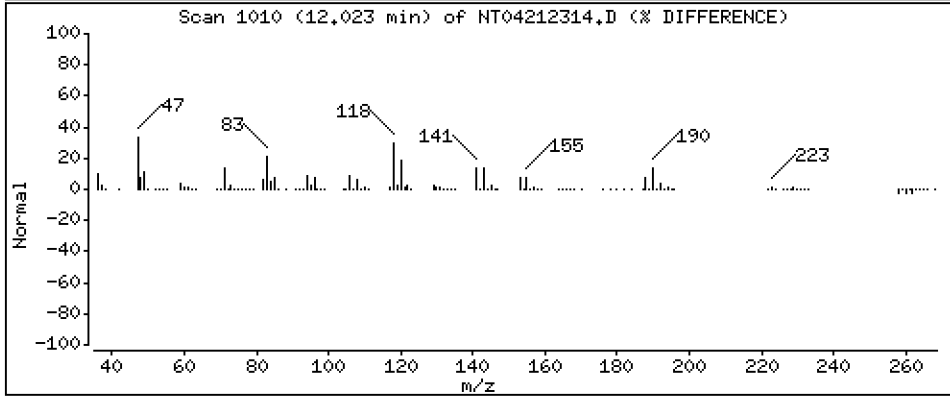
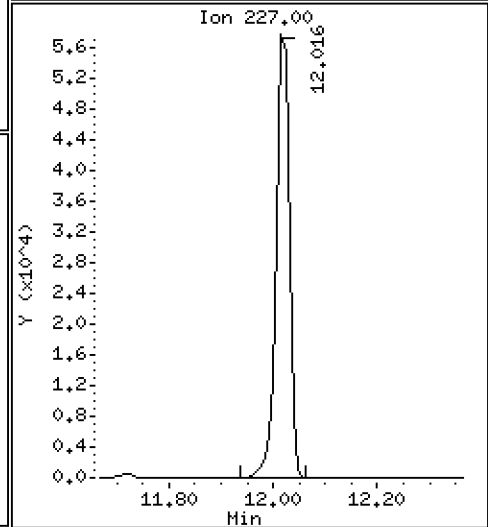
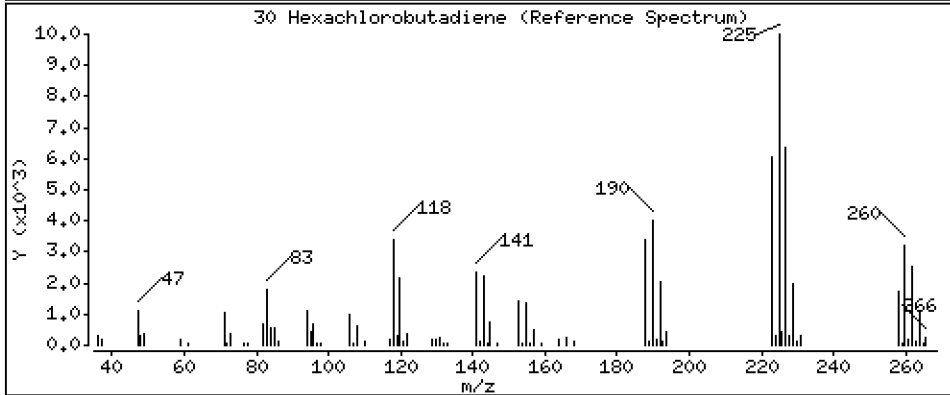
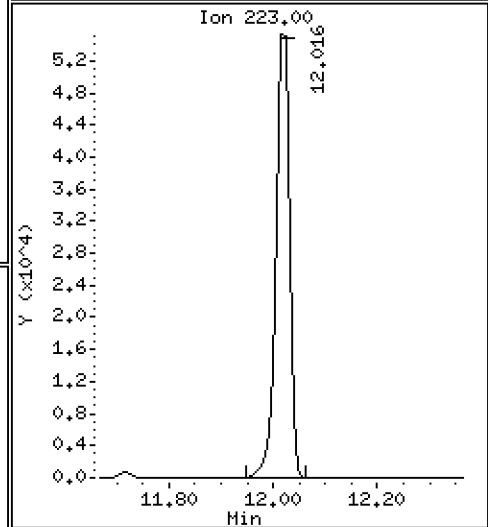
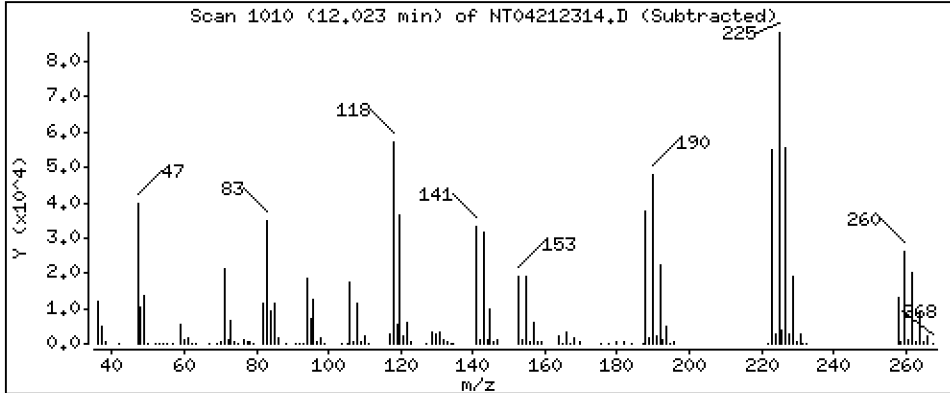
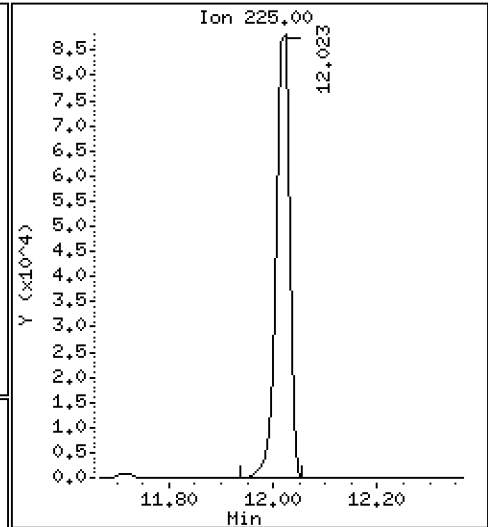
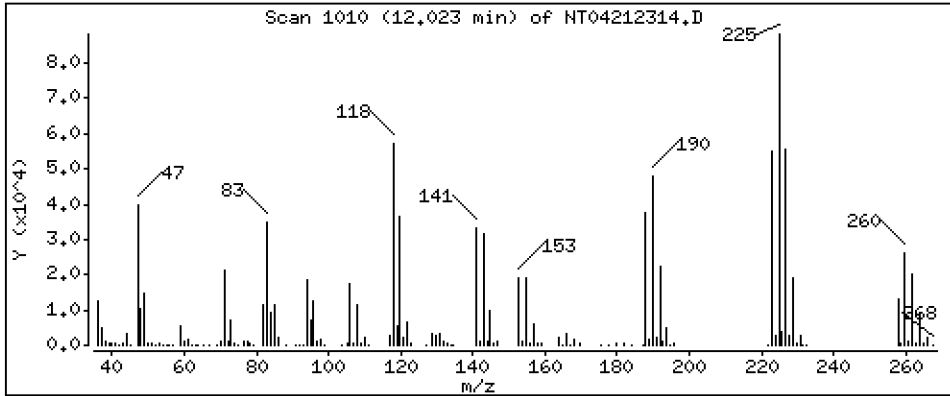
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,665 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

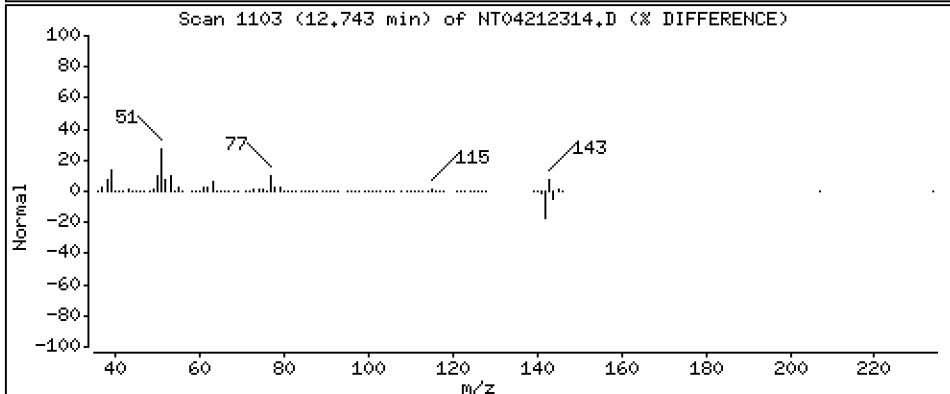
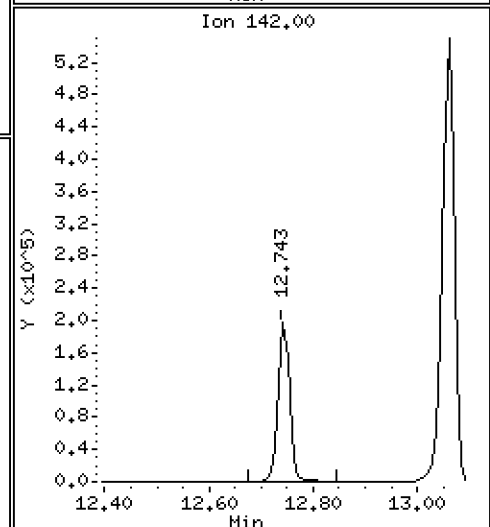
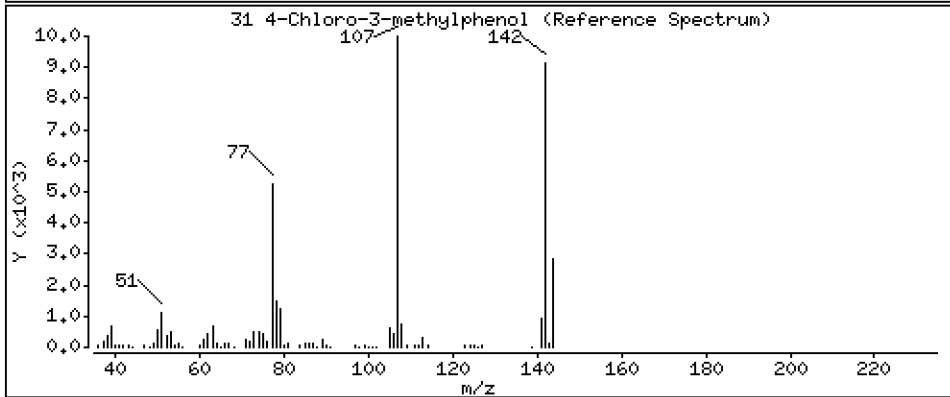
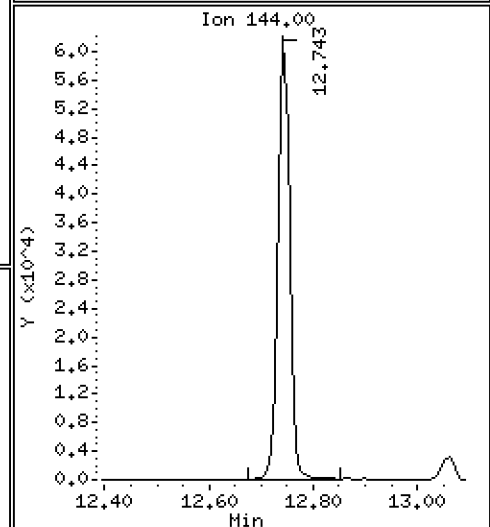
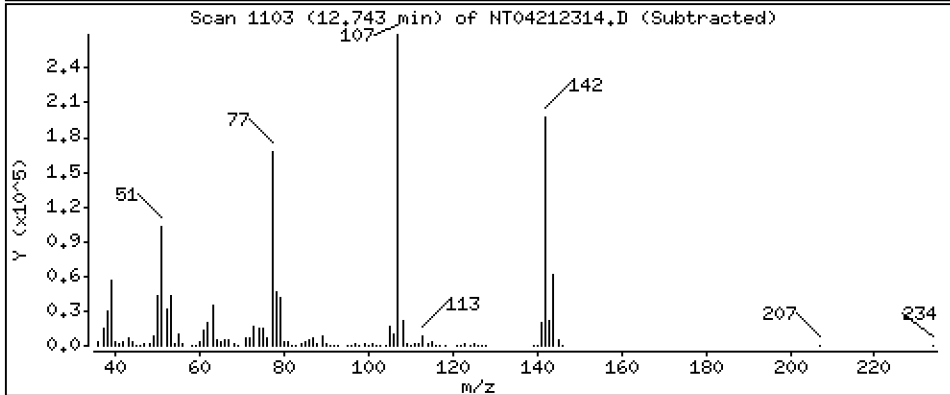
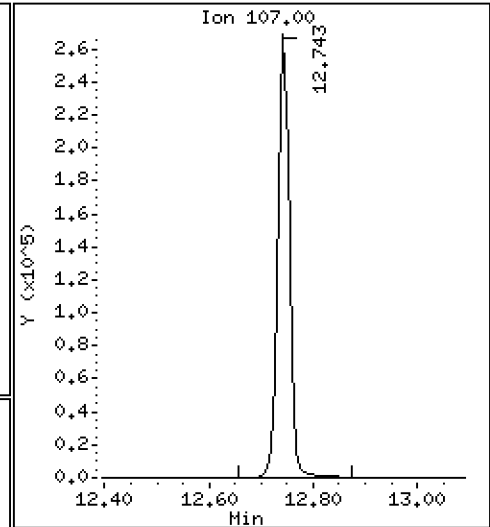
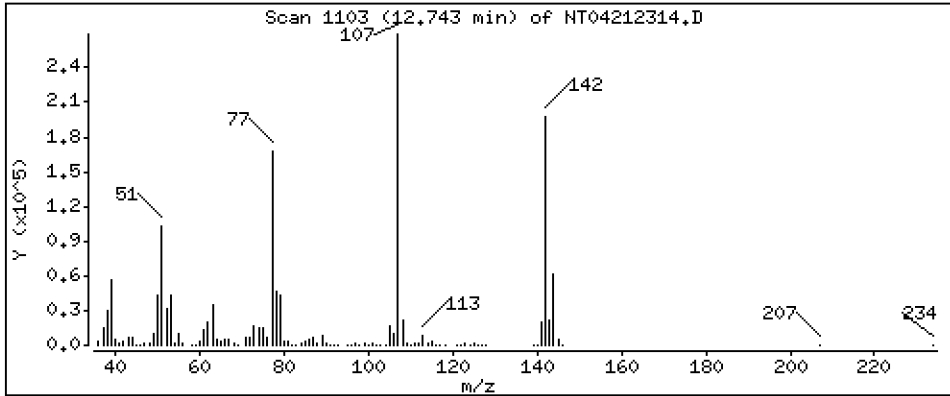
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 4,615 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

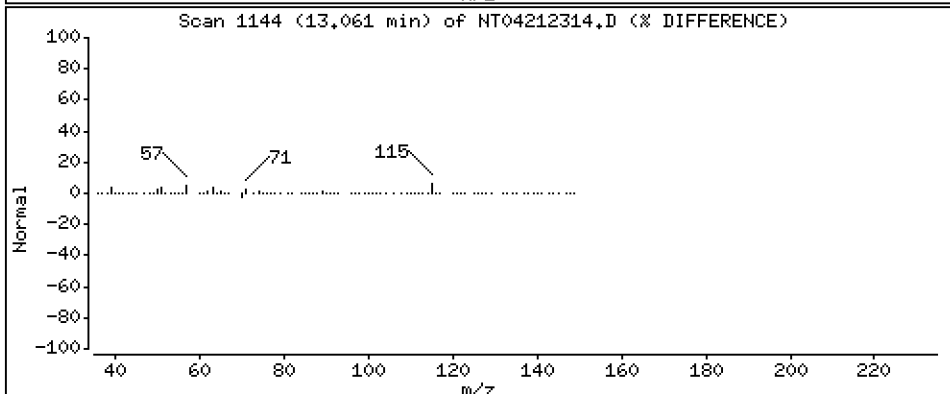
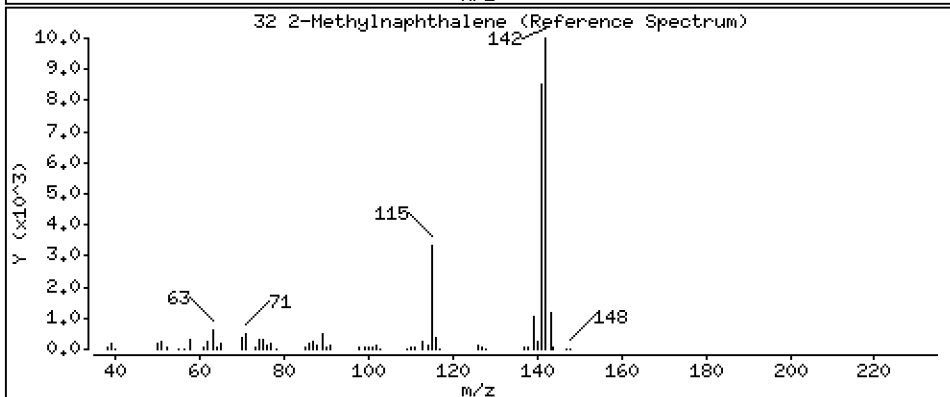
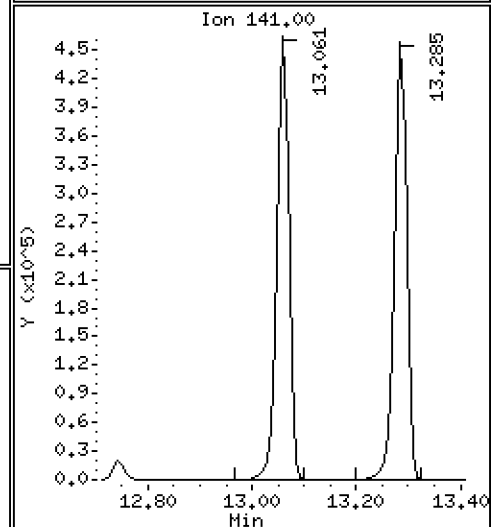
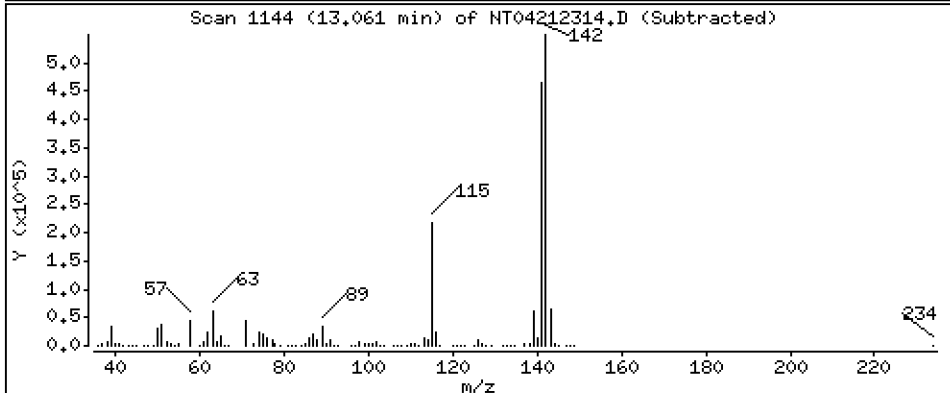
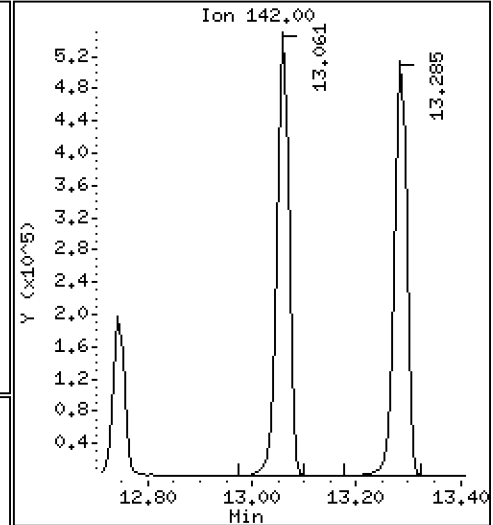
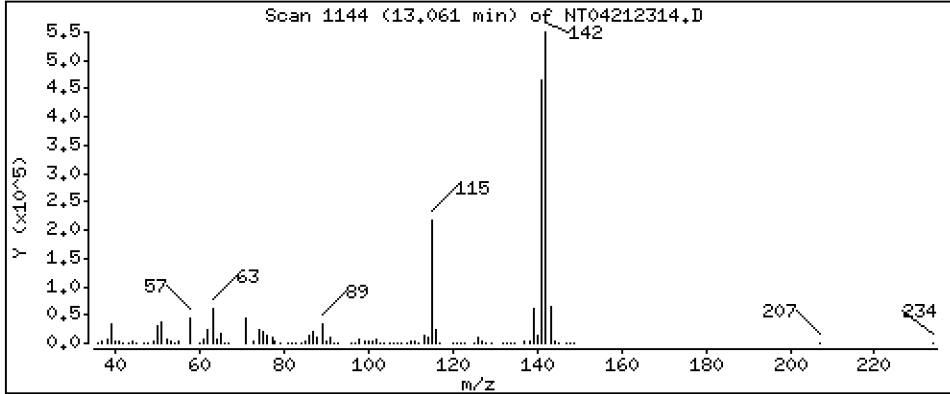
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 4,474 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

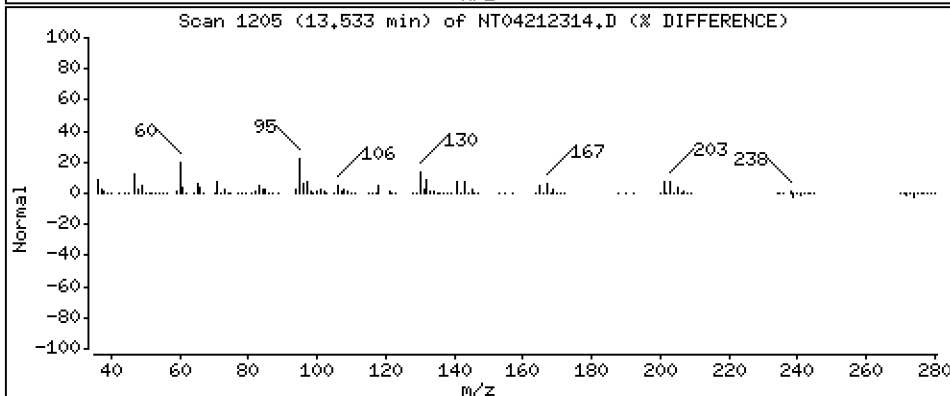
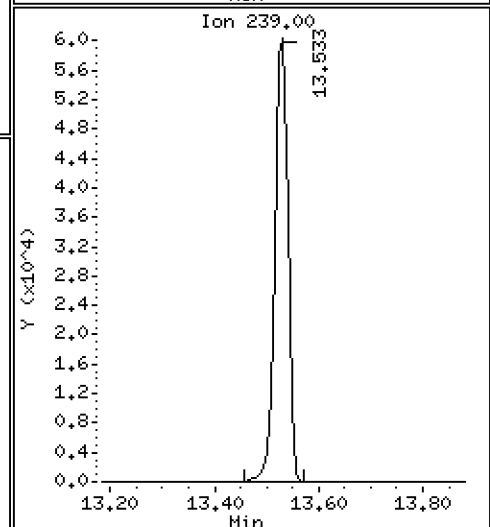
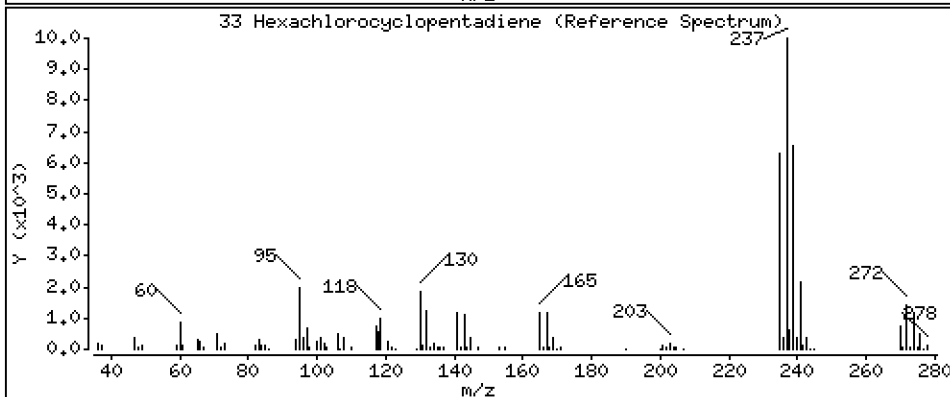
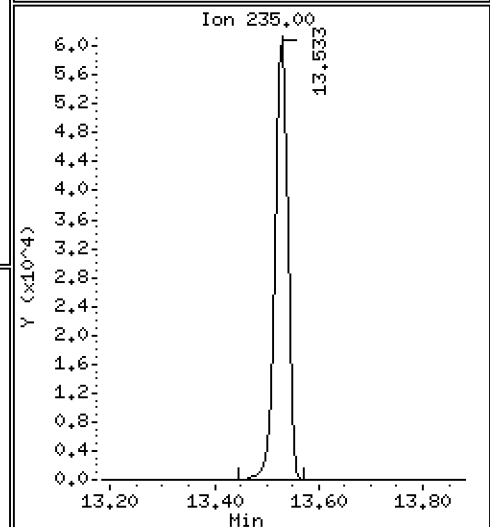
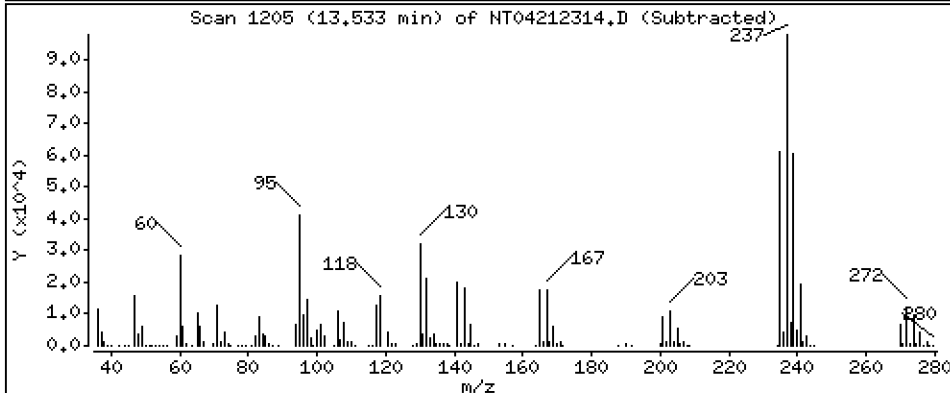
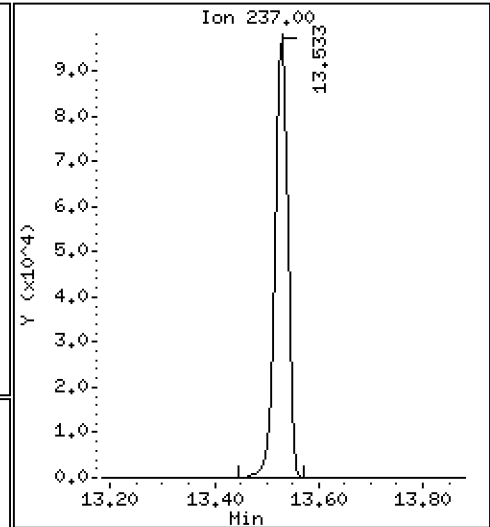
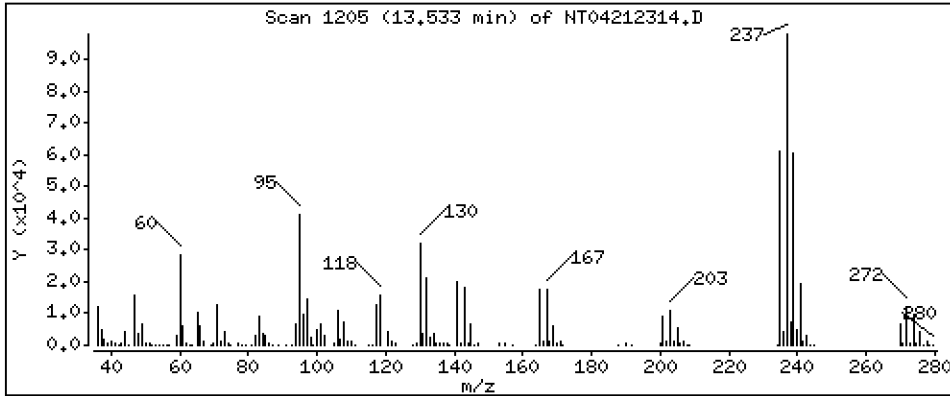
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 4,783 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

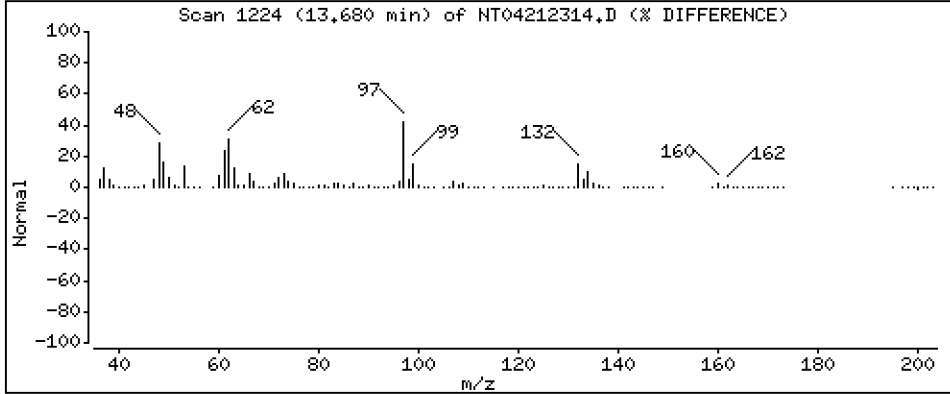
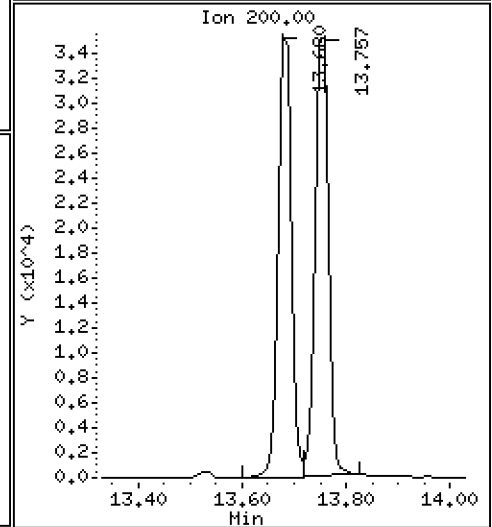
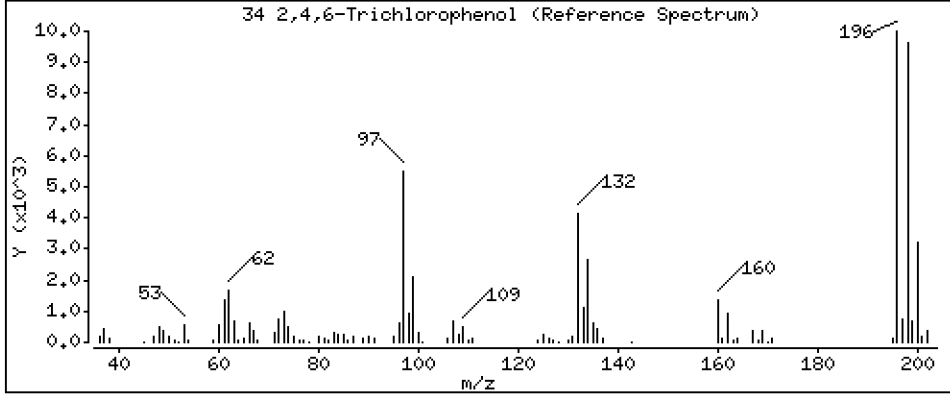
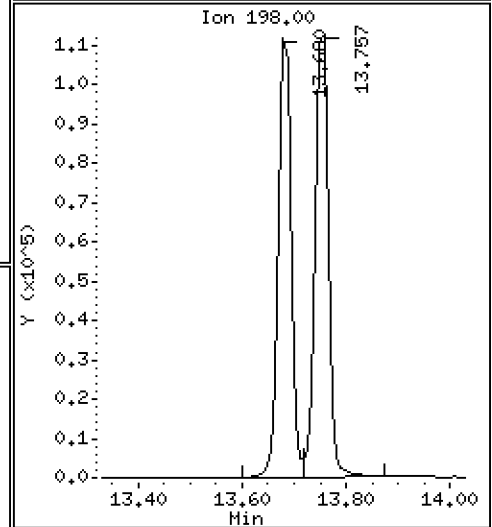
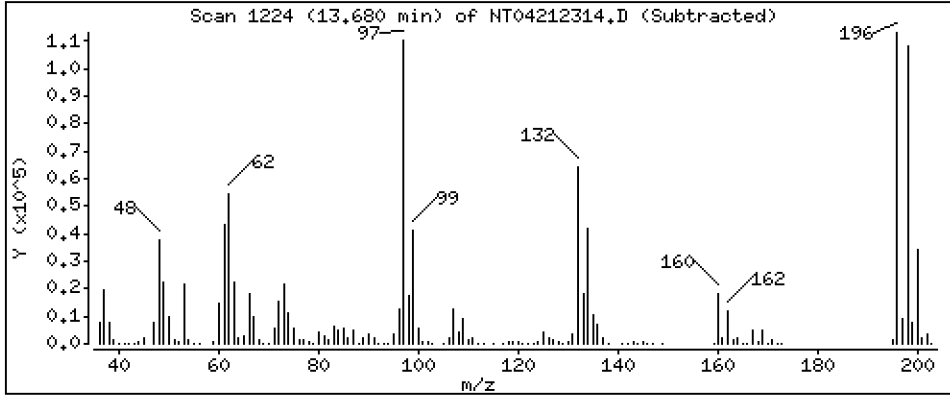
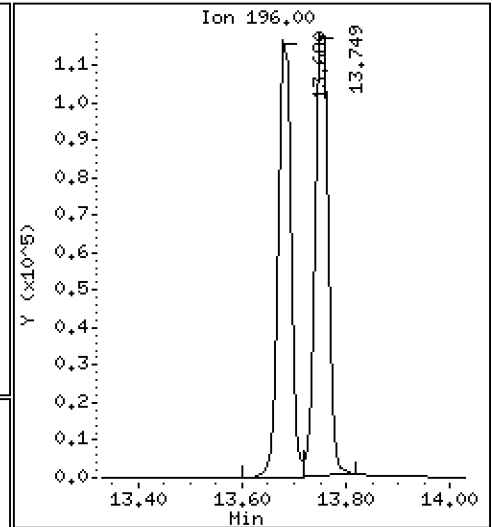
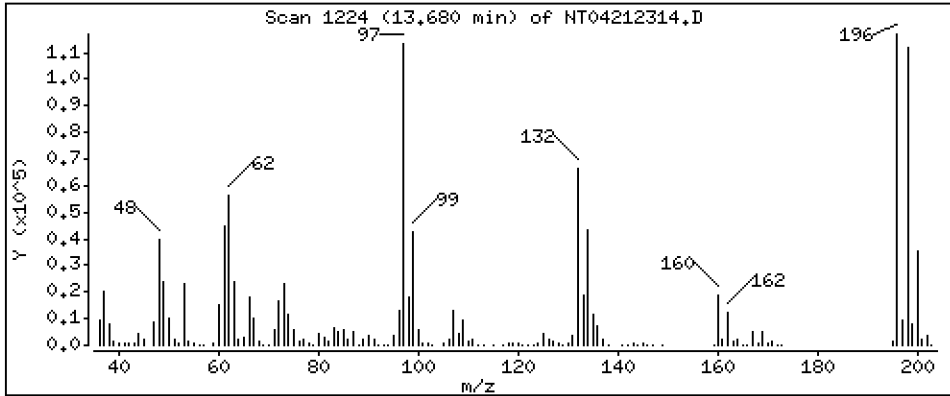
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 4,578 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

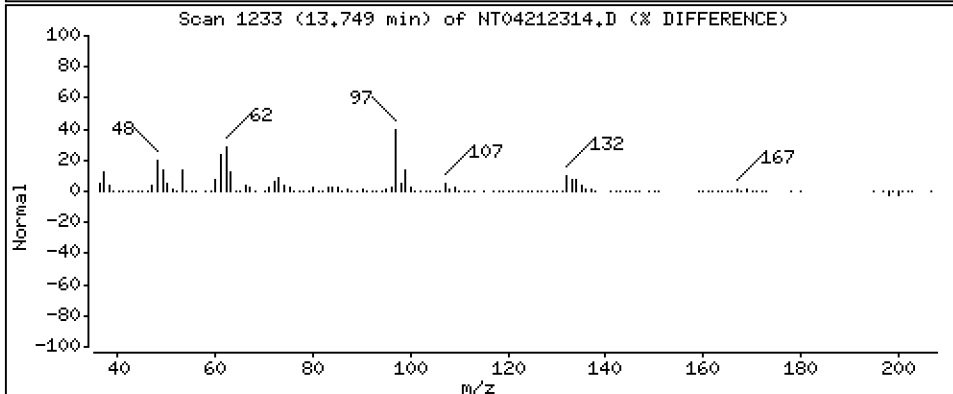
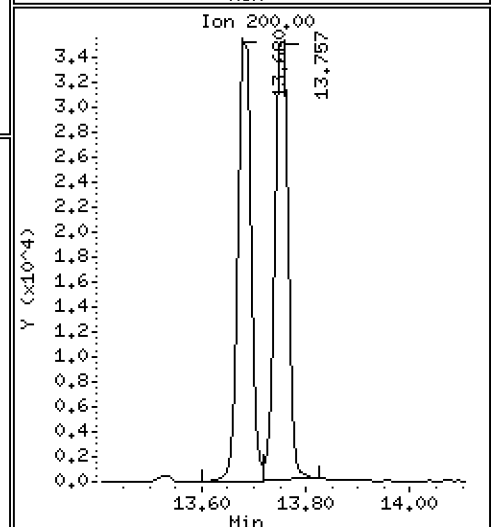
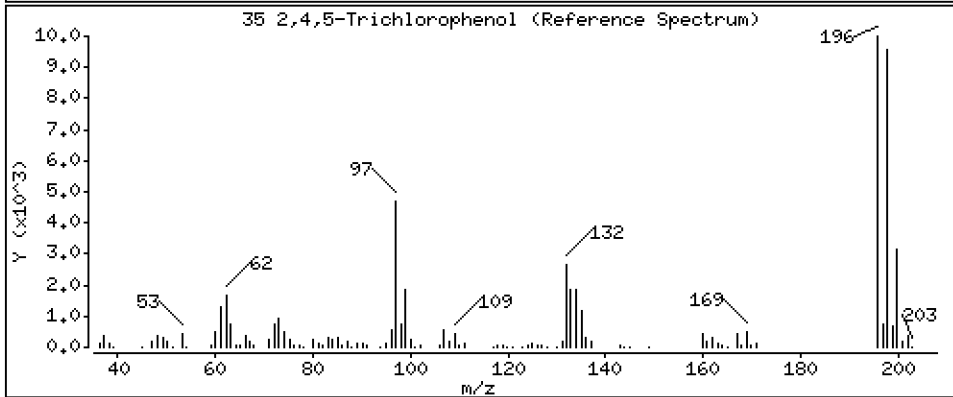
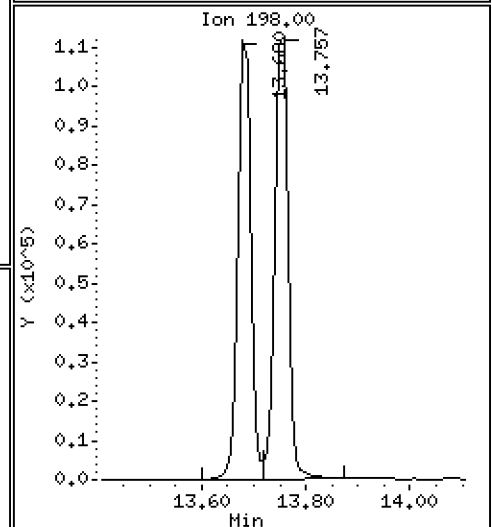
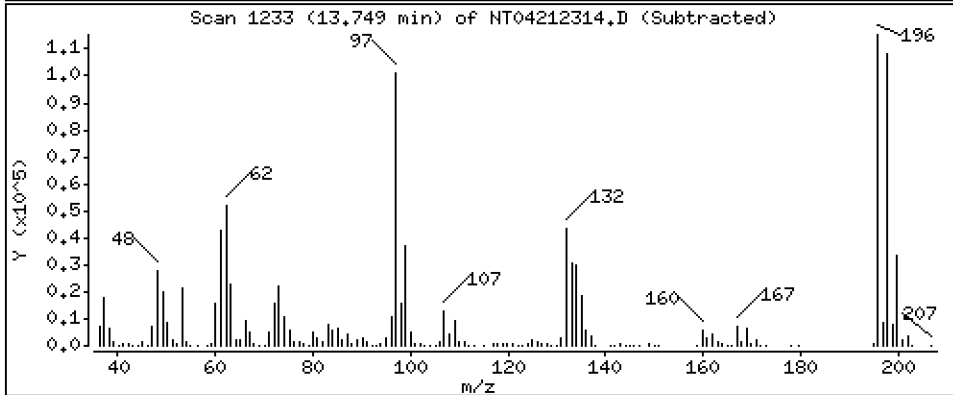
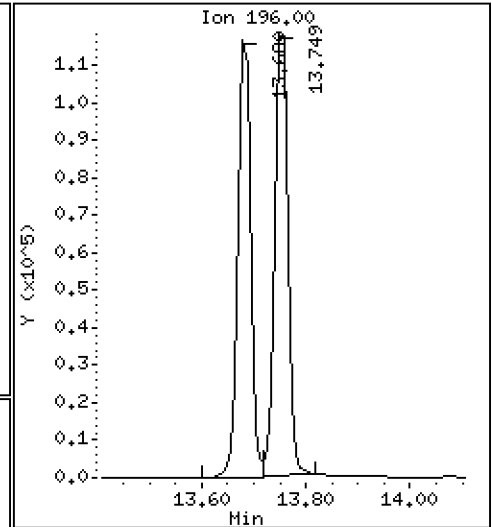
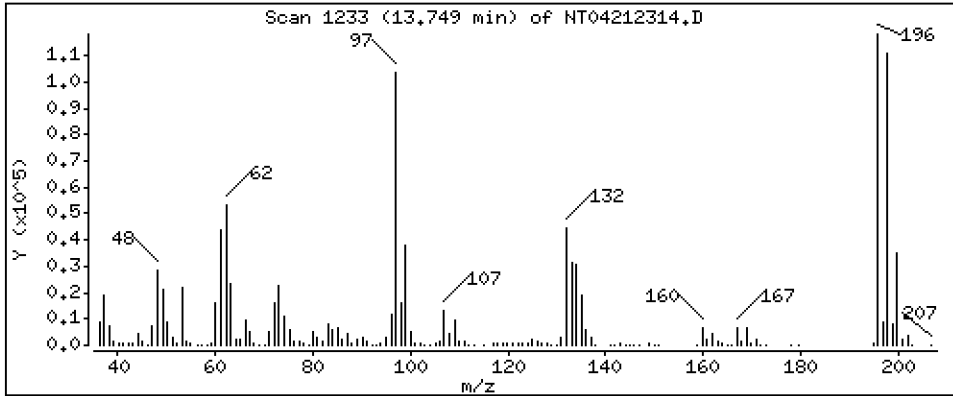
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 4,434 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

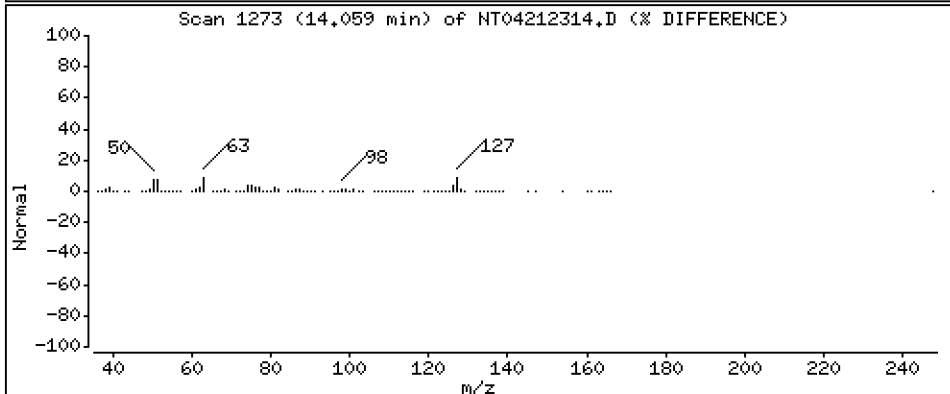
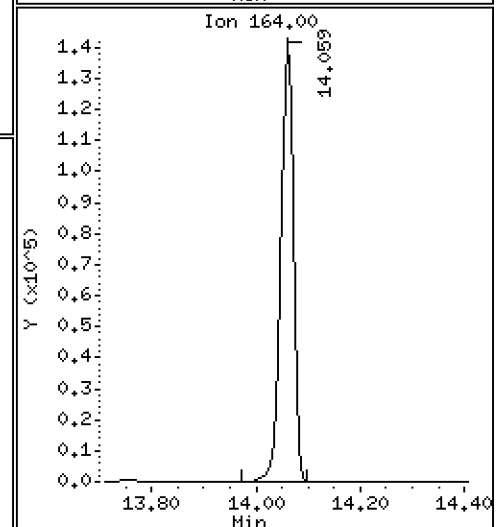
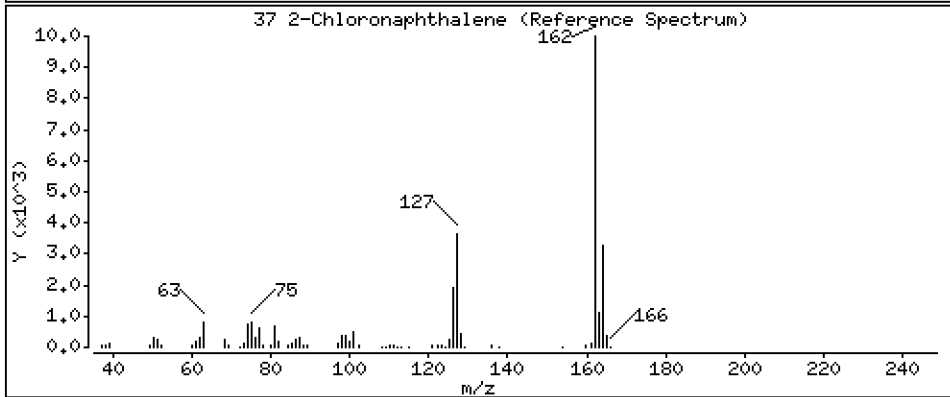
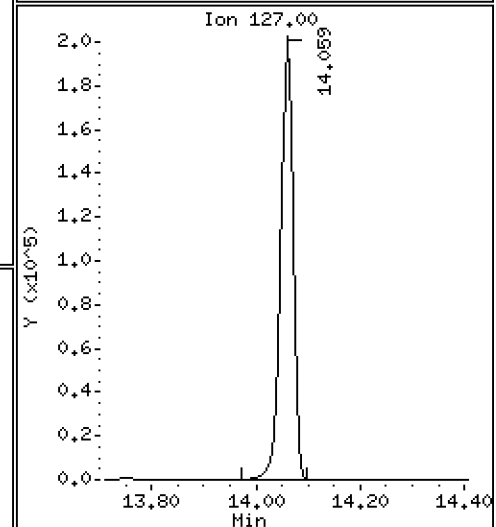
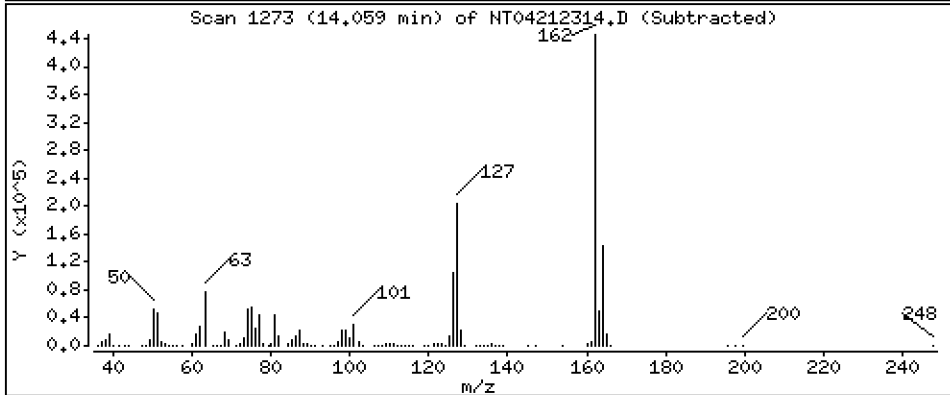
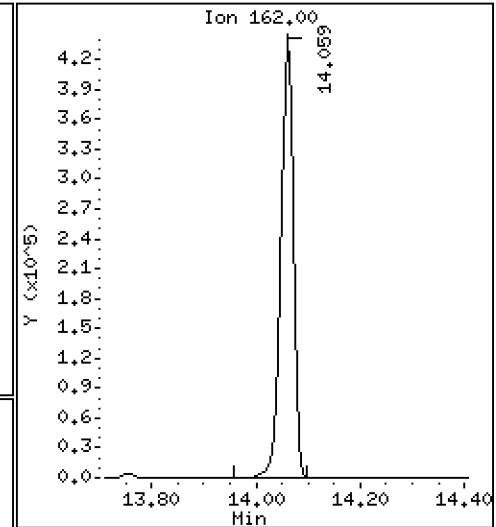
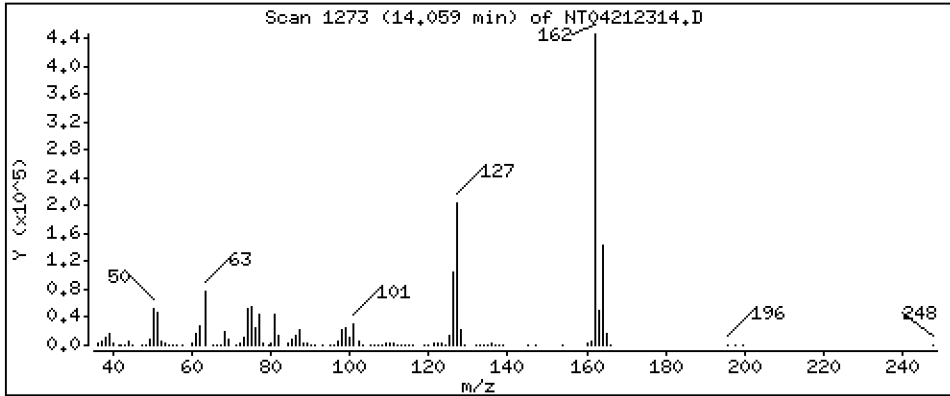
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 4,643 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

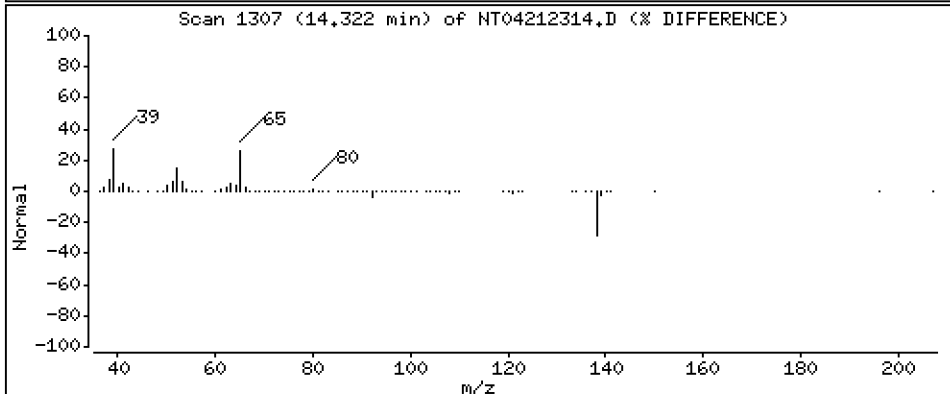
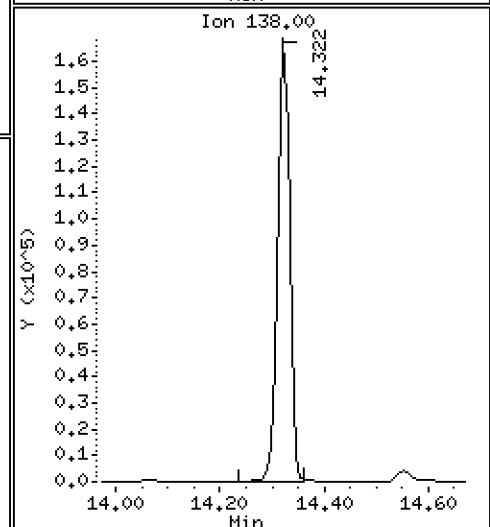
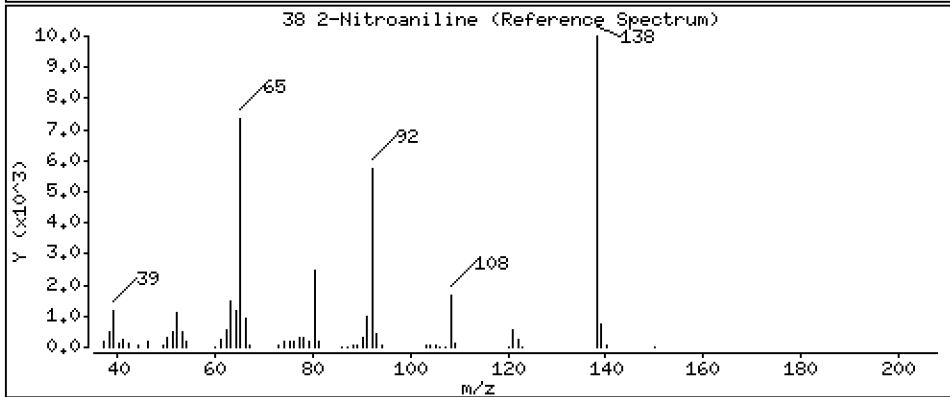
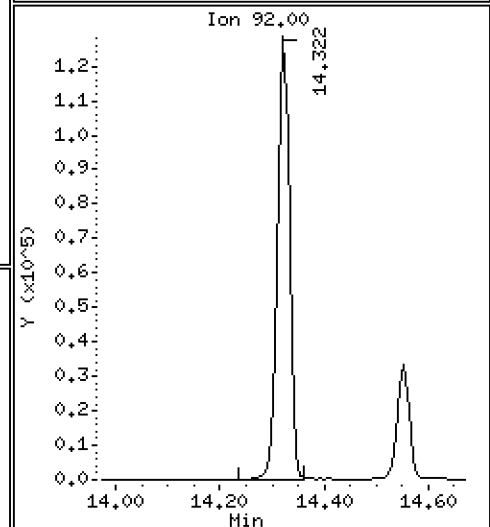
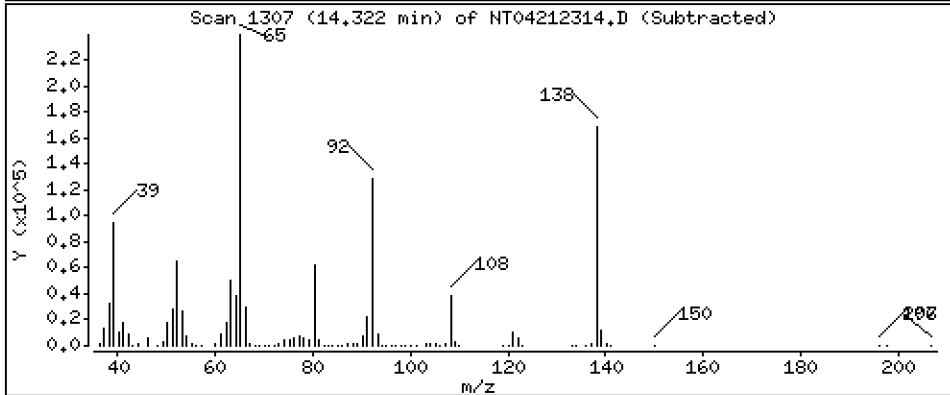
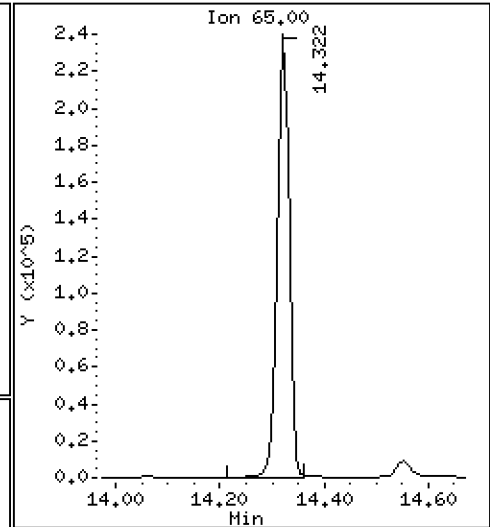
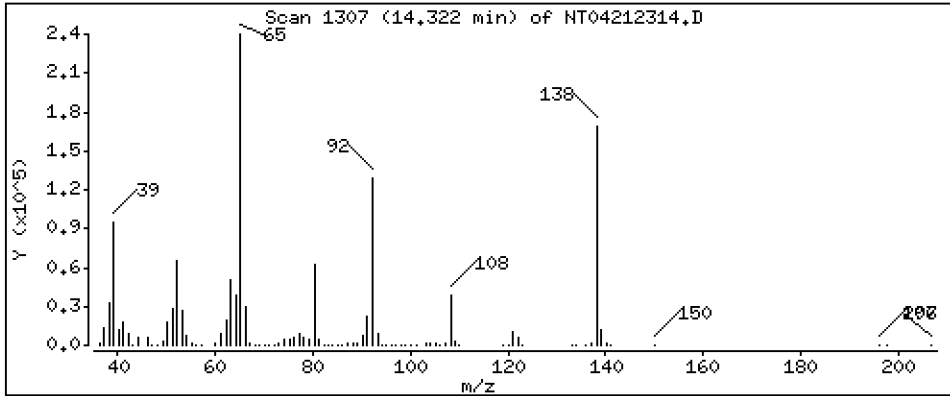
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 4,475 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

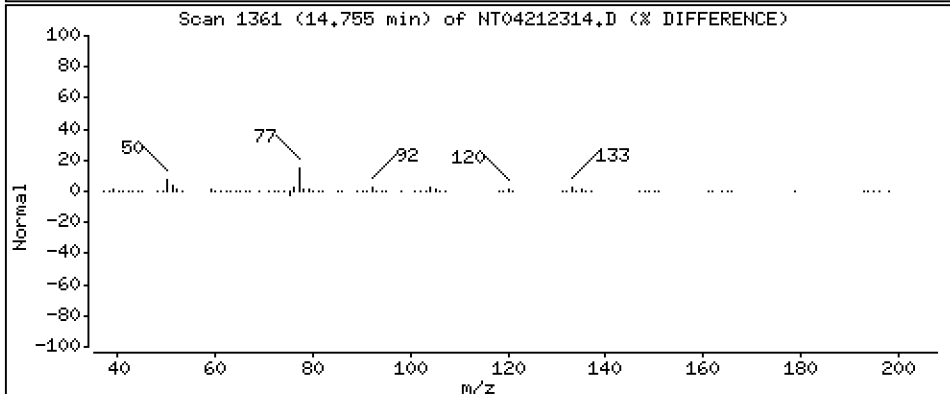
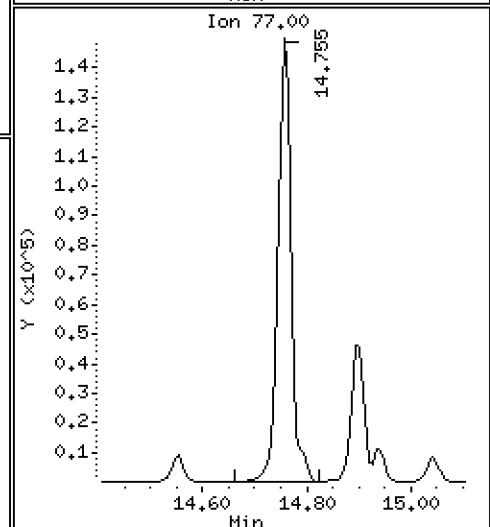
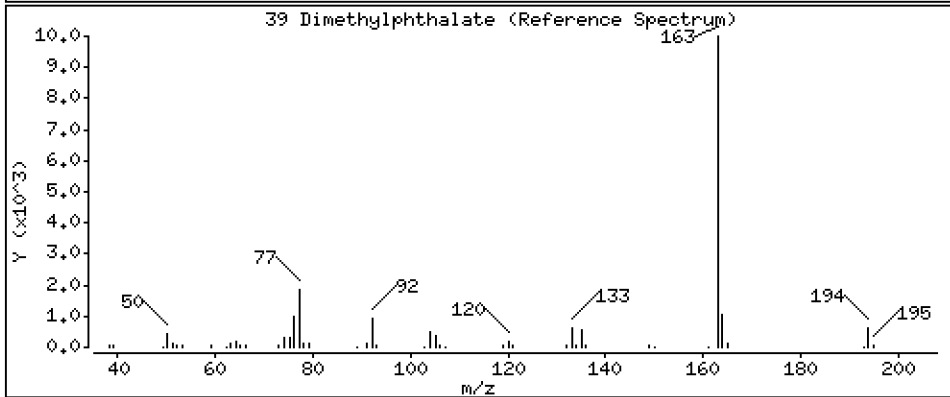
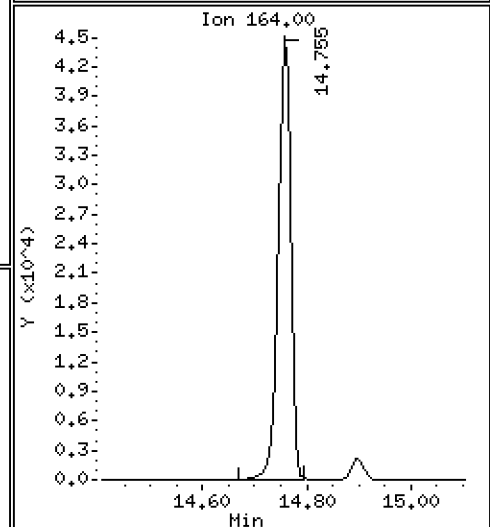
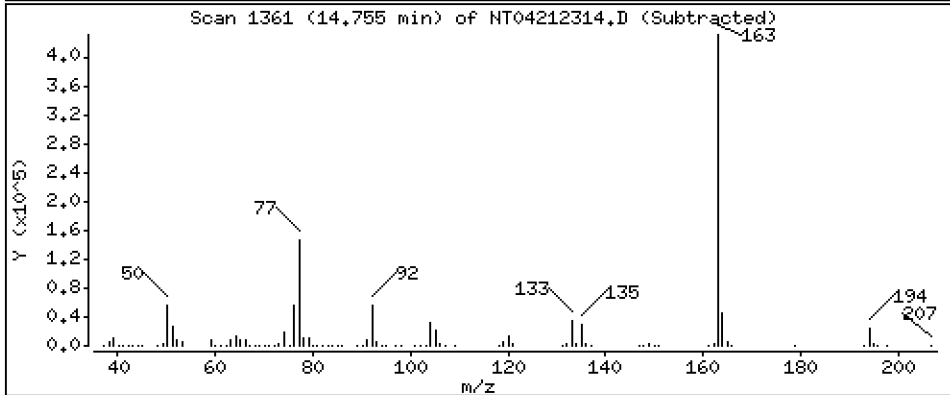
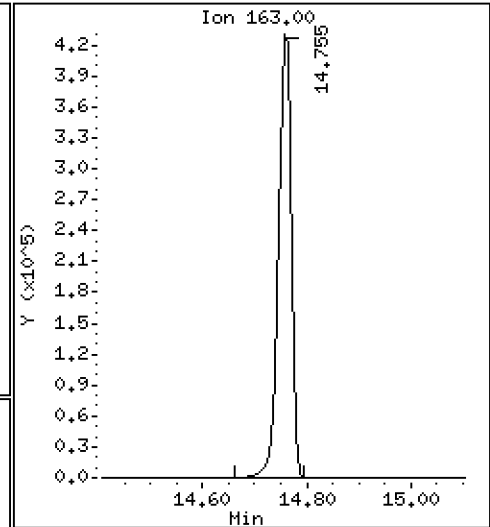
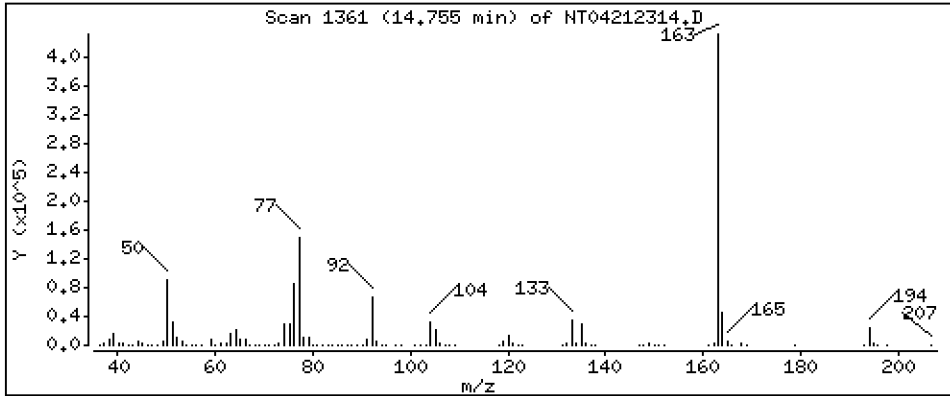
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,554 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

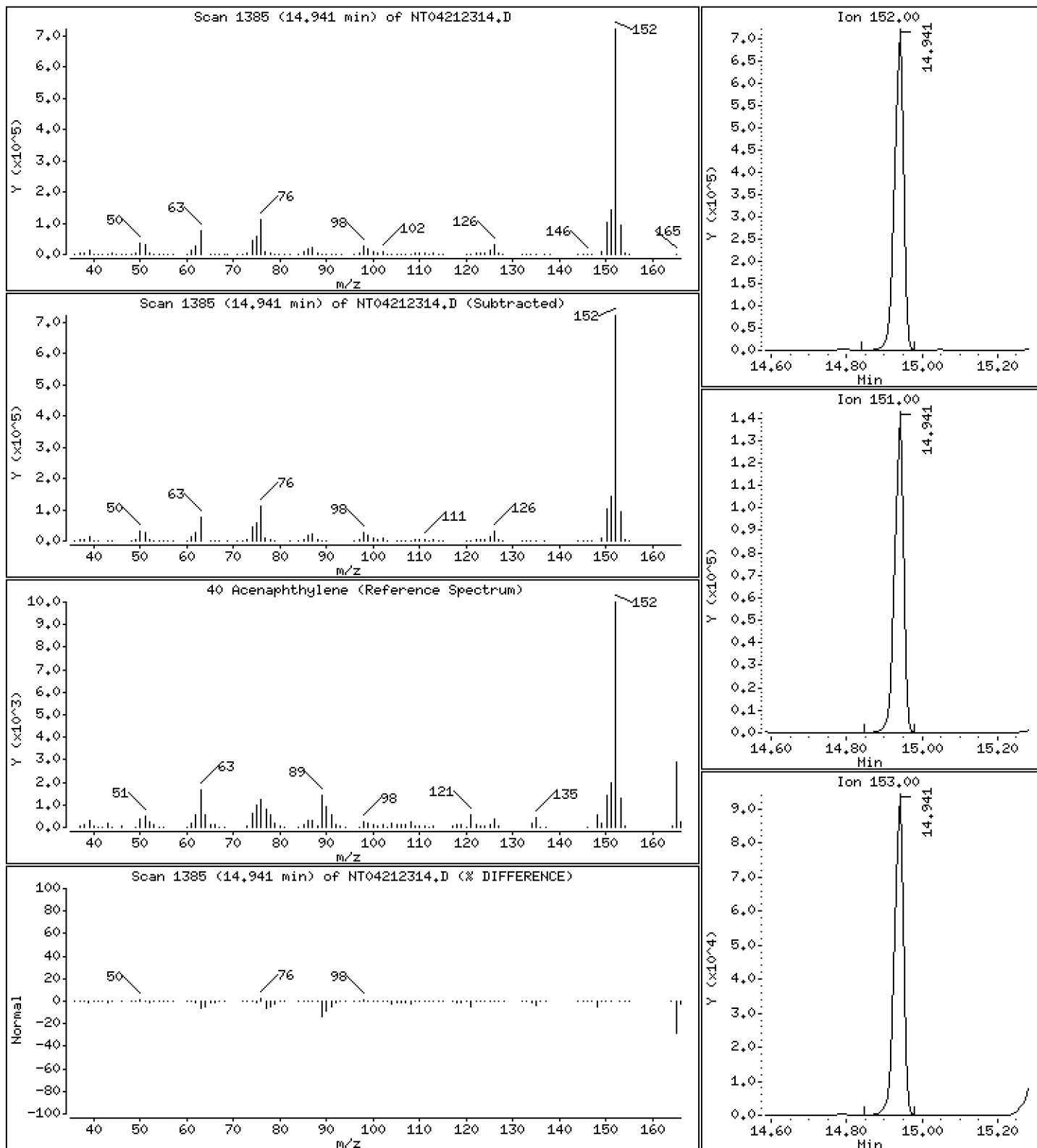
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 4,819 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

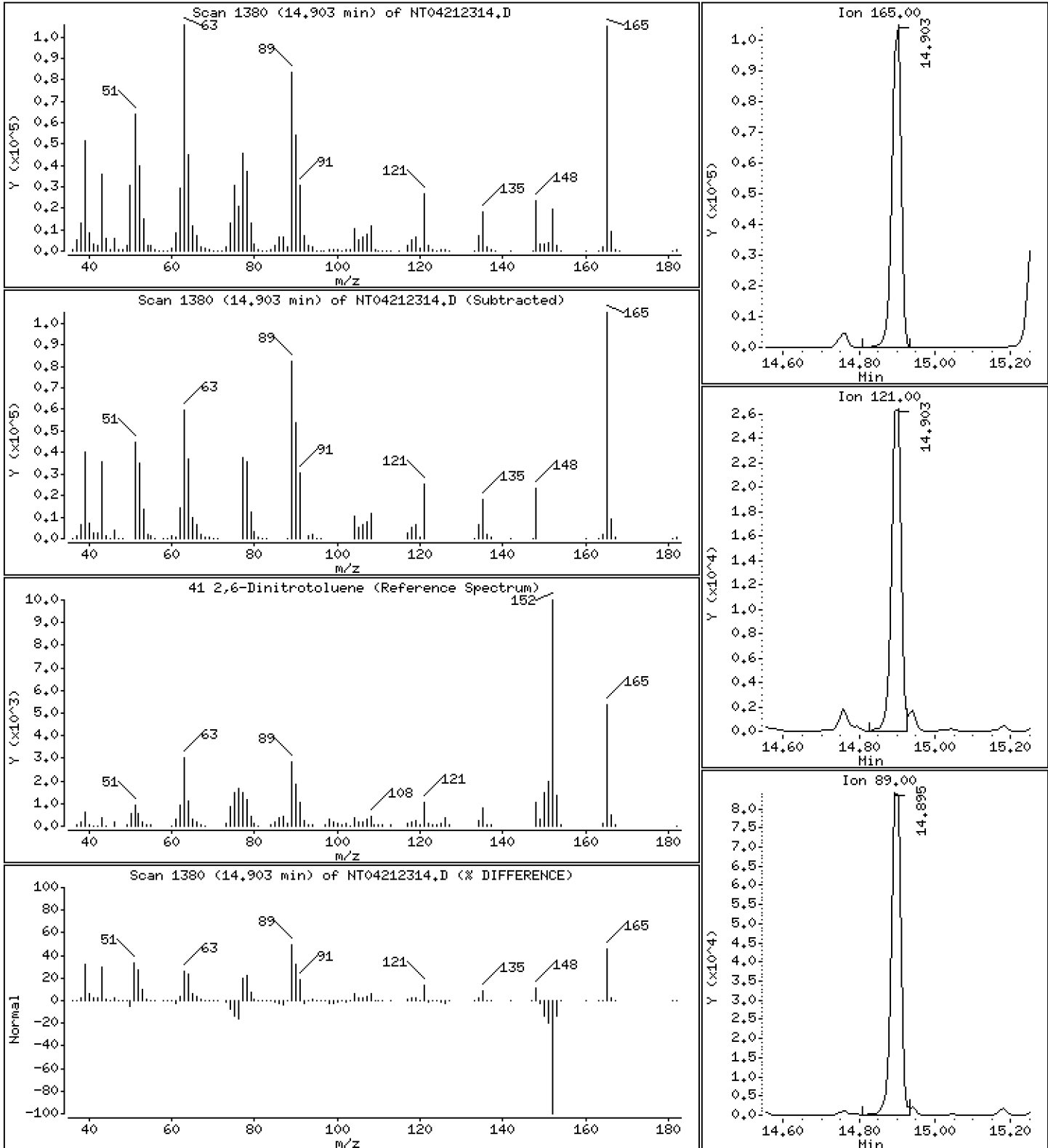
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

41 2,6-Dinitrotoluene

Concentration: 4.676 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

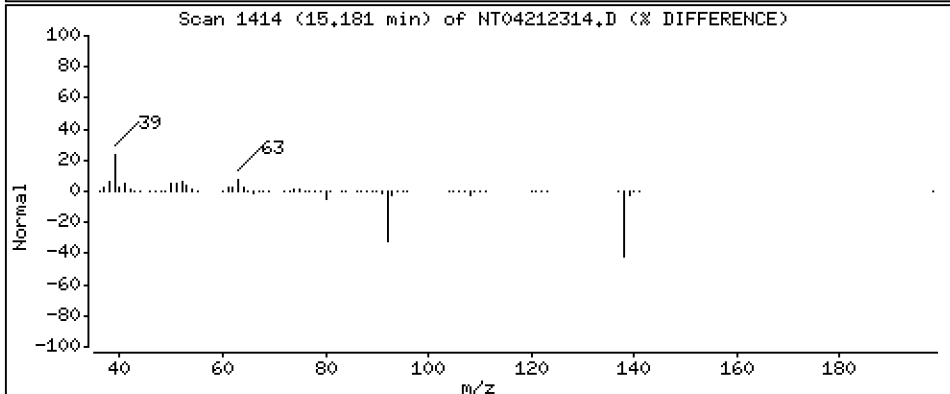
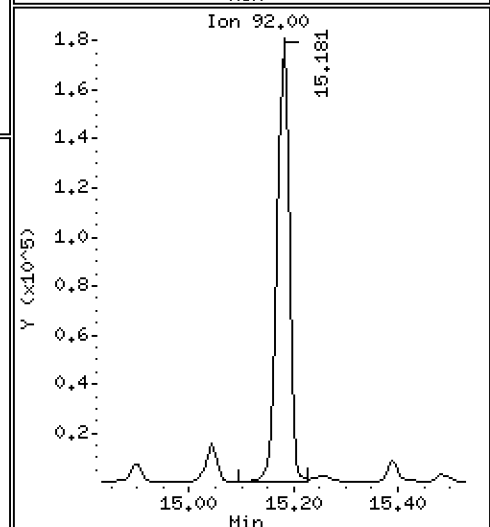
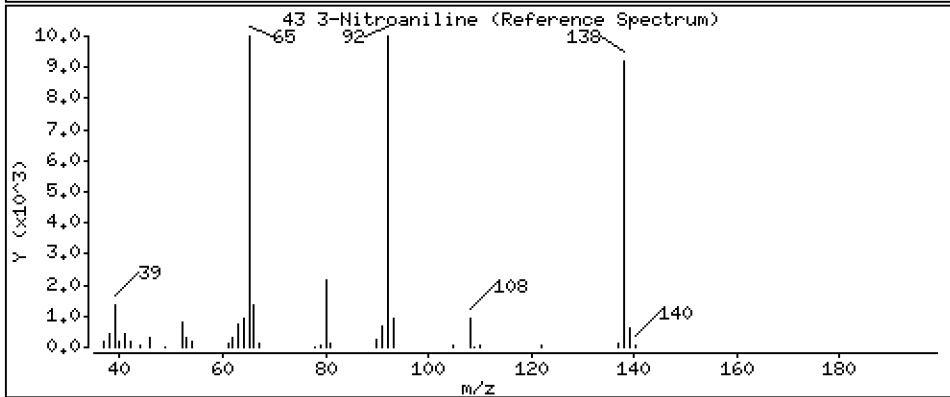
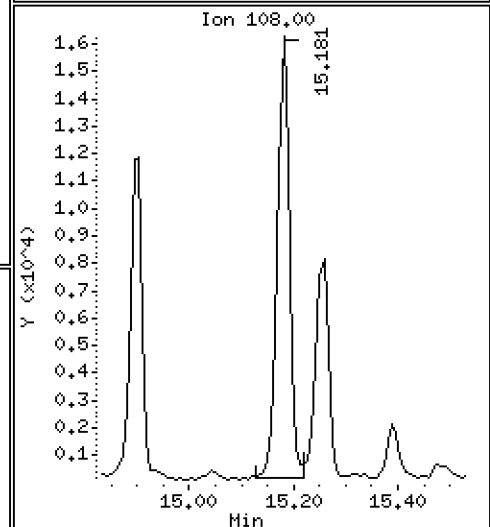
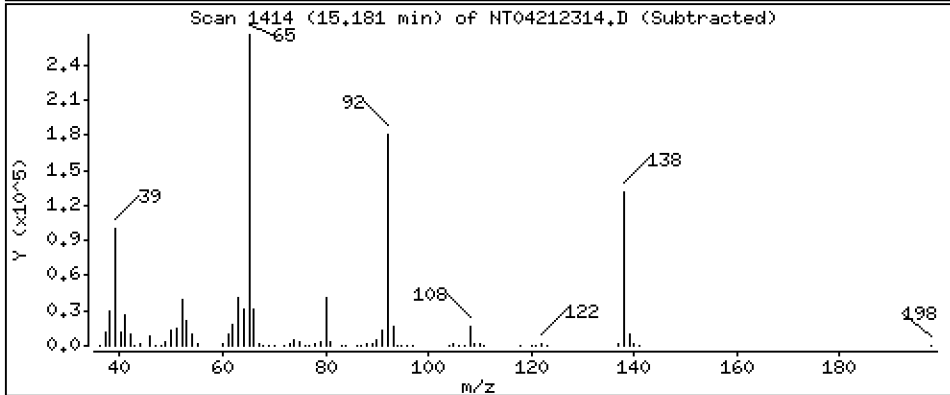
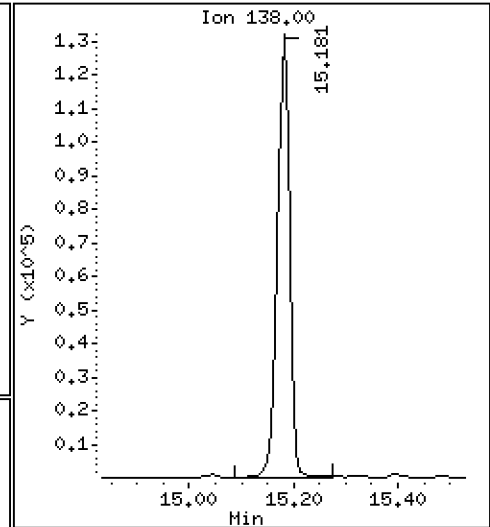
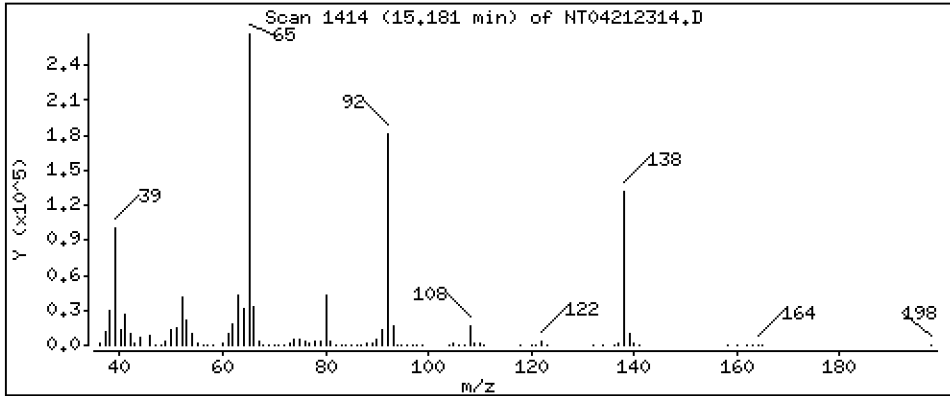
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 4,608 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

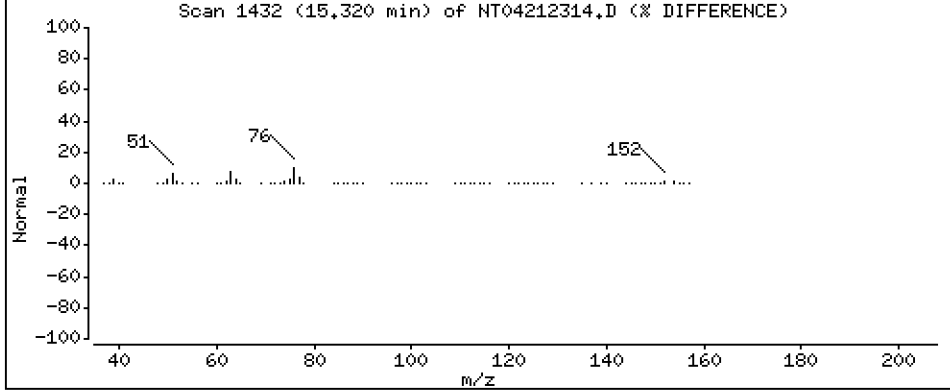
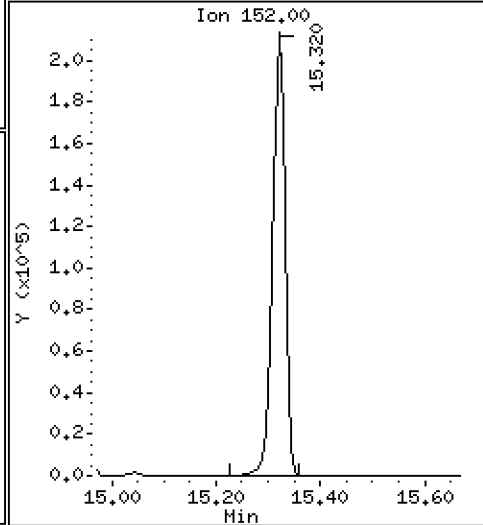
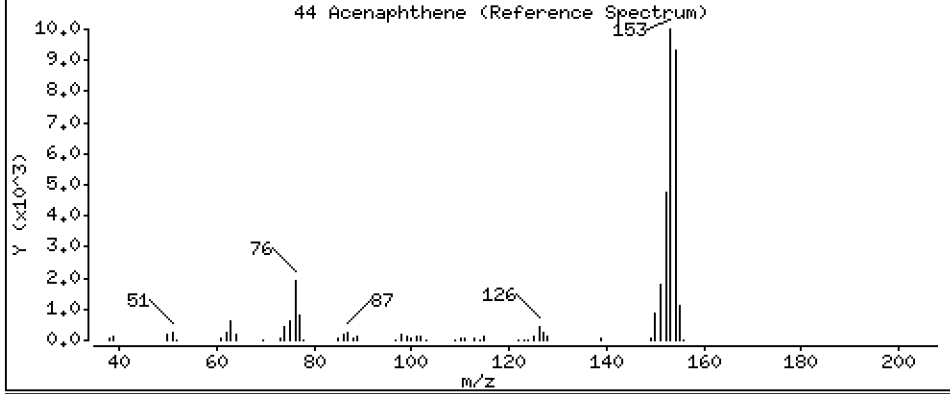
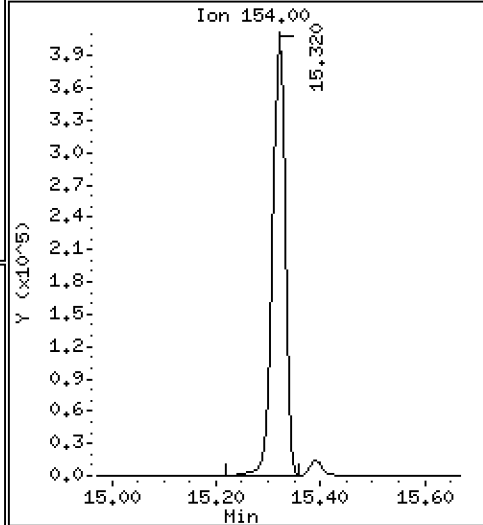
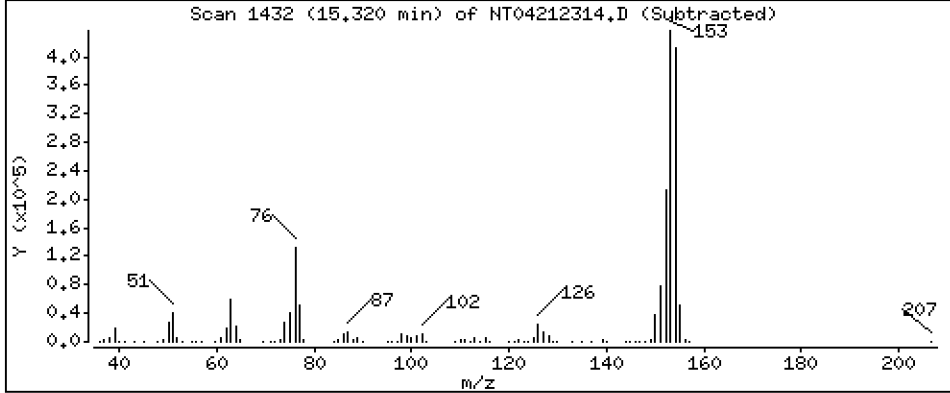
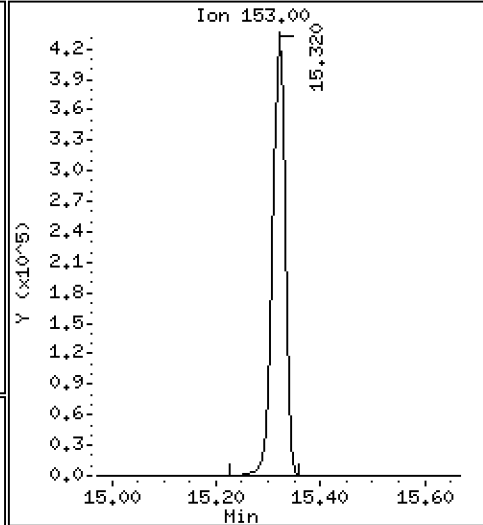
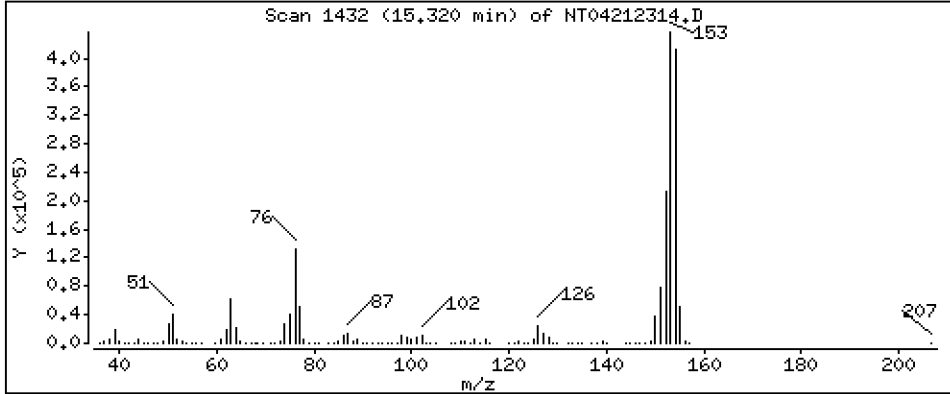
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 4,811 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

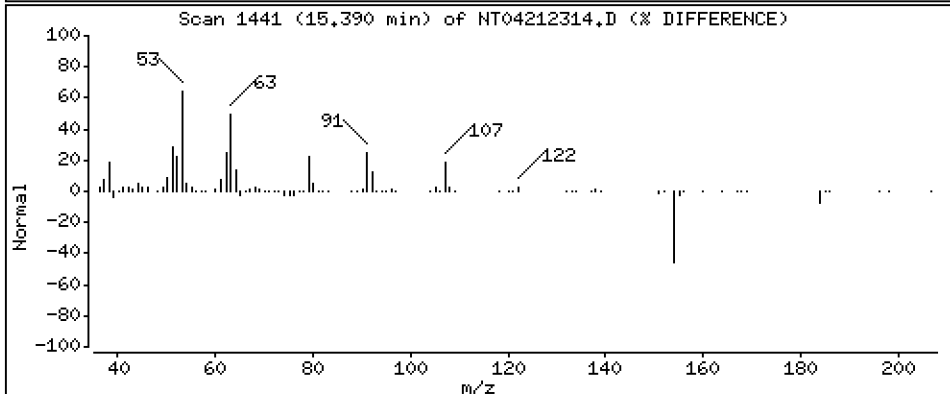
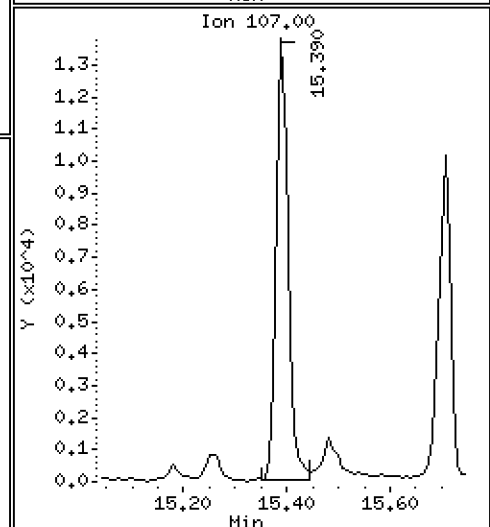
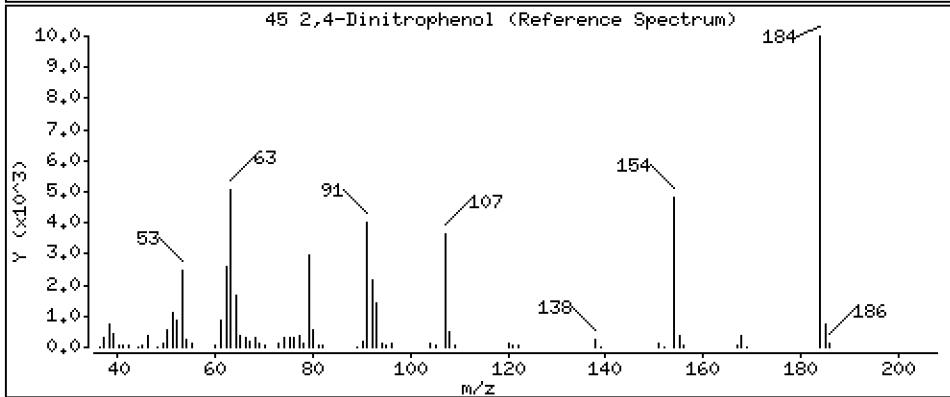
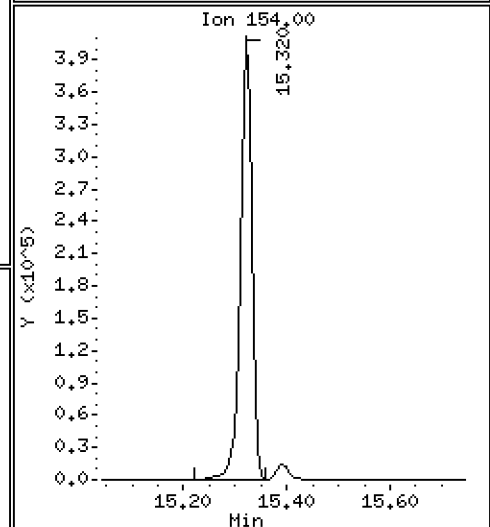
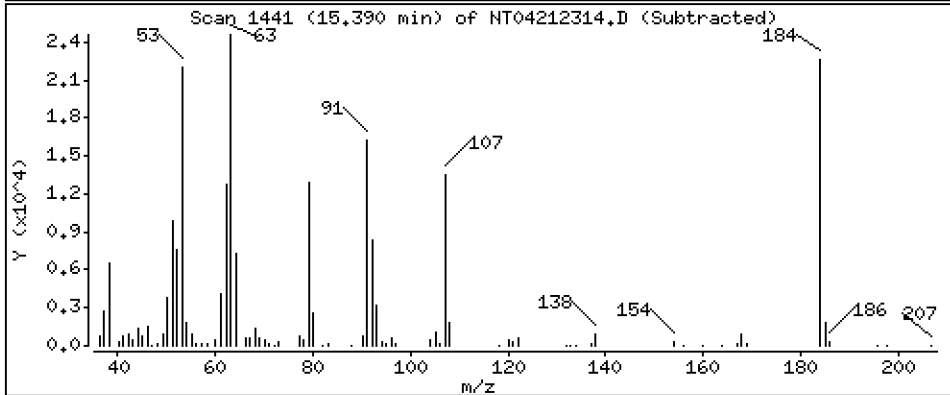
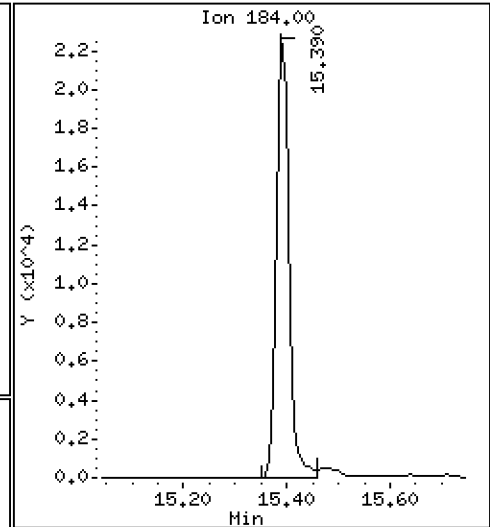
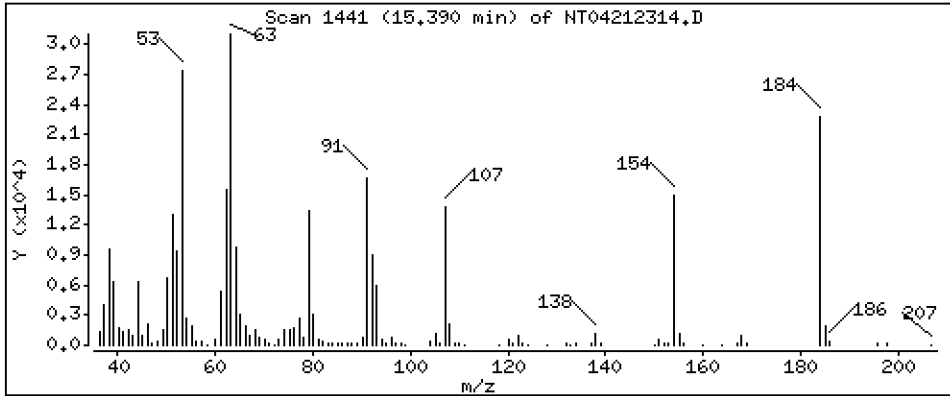
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 1,674 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

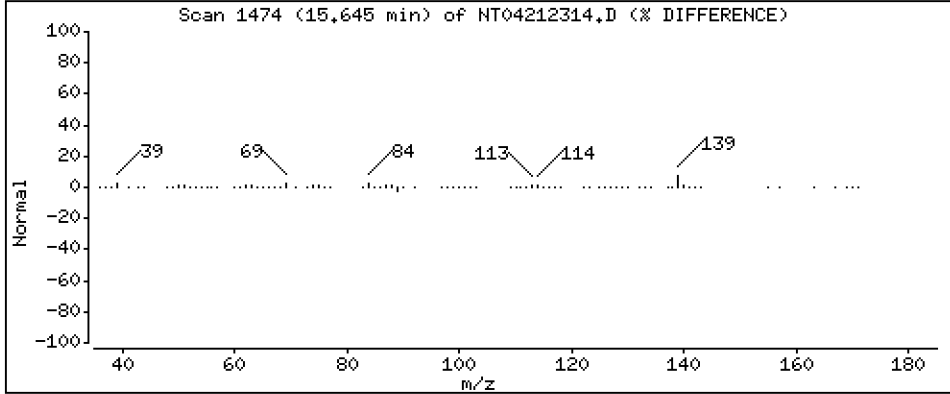
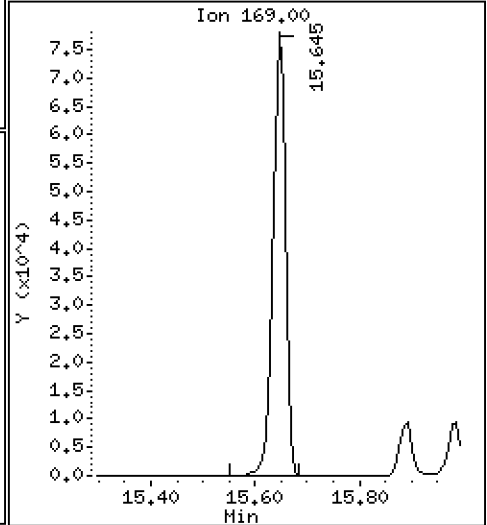
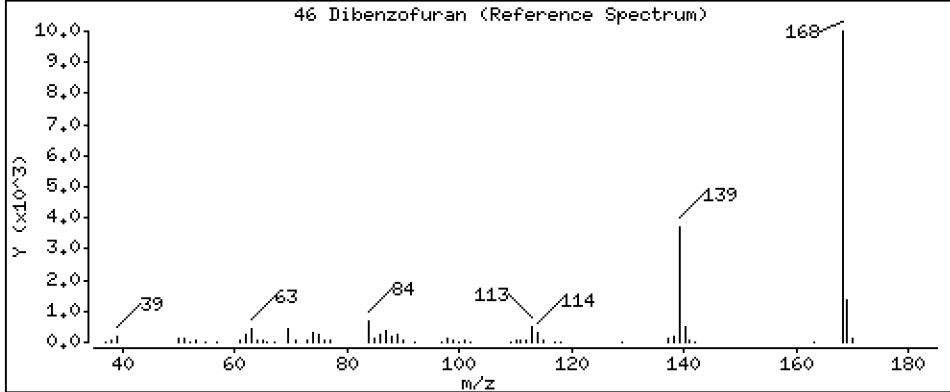
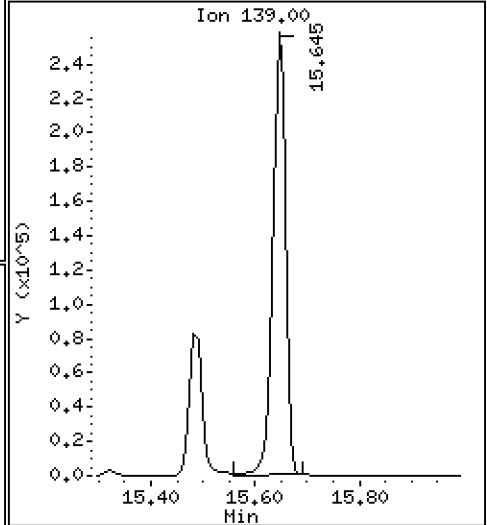
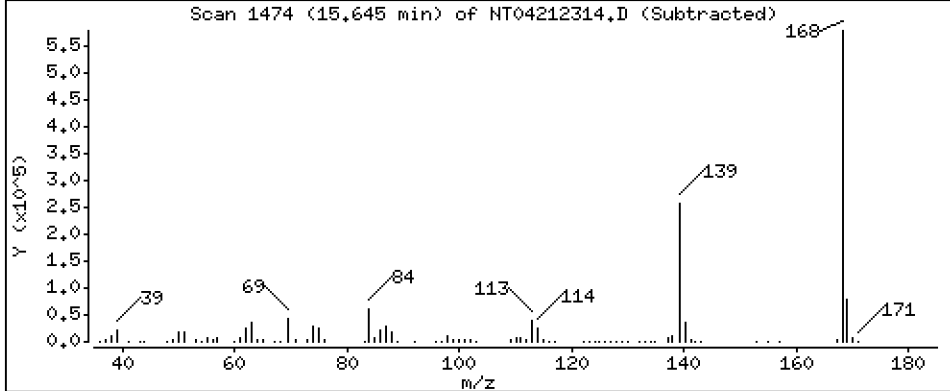
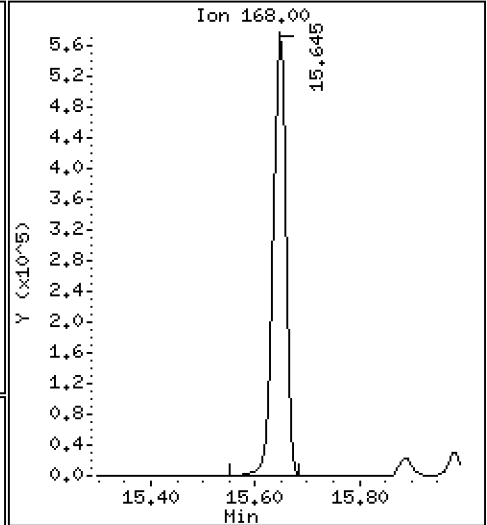
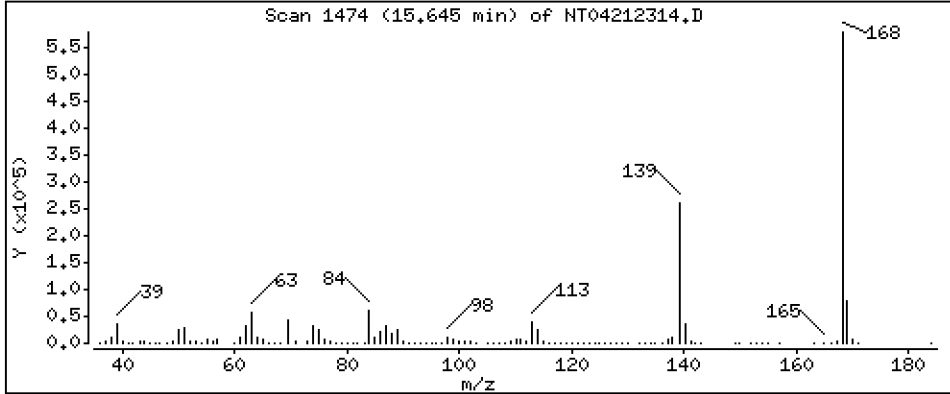
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 4,520 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

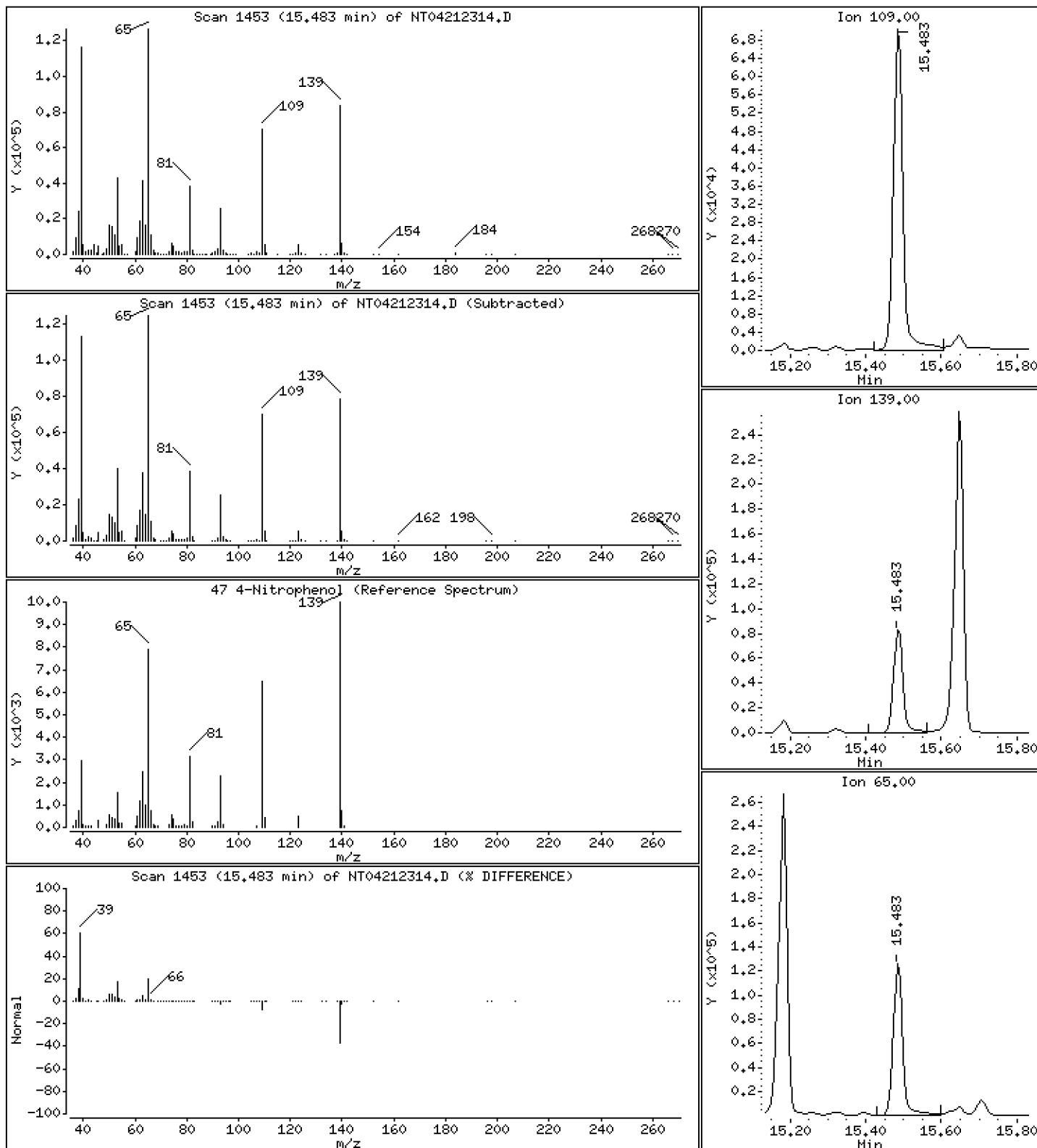
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 4,554 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

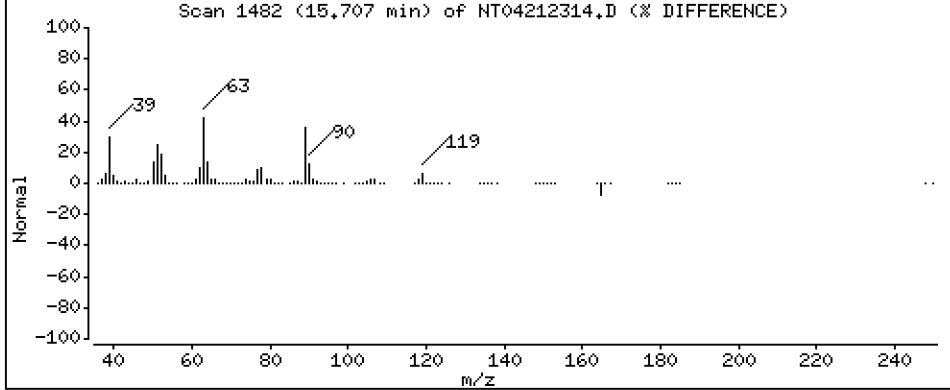
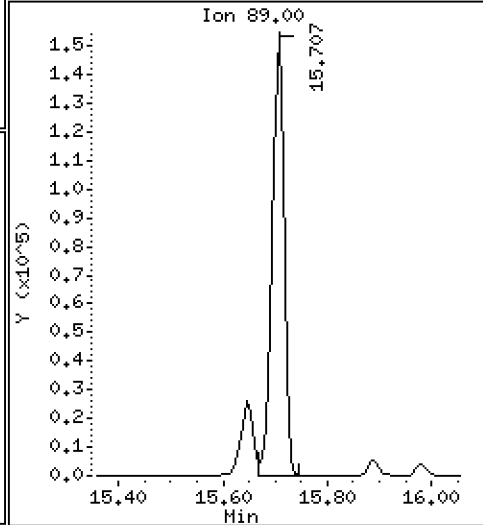
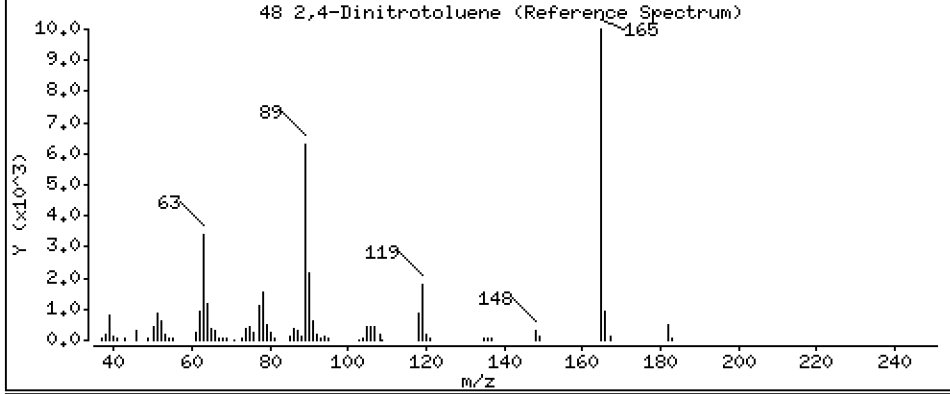
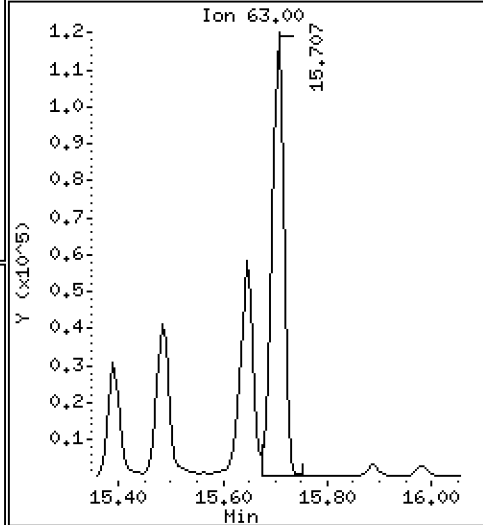
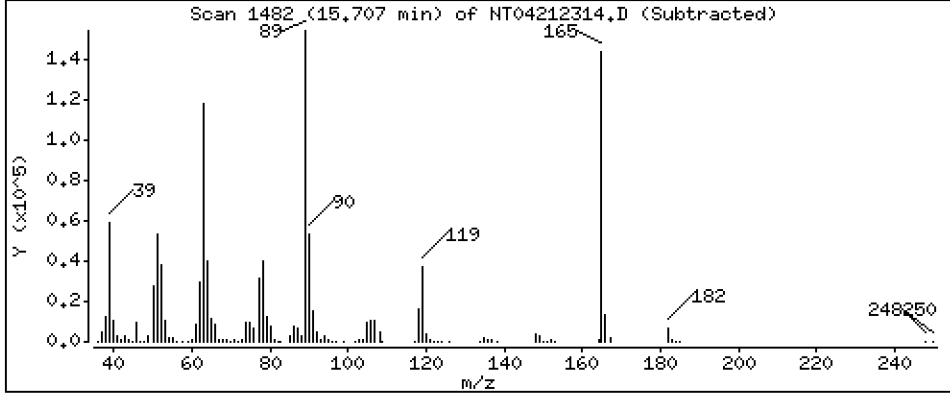
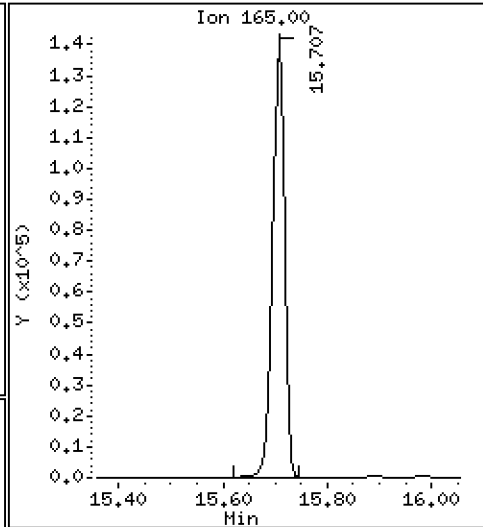
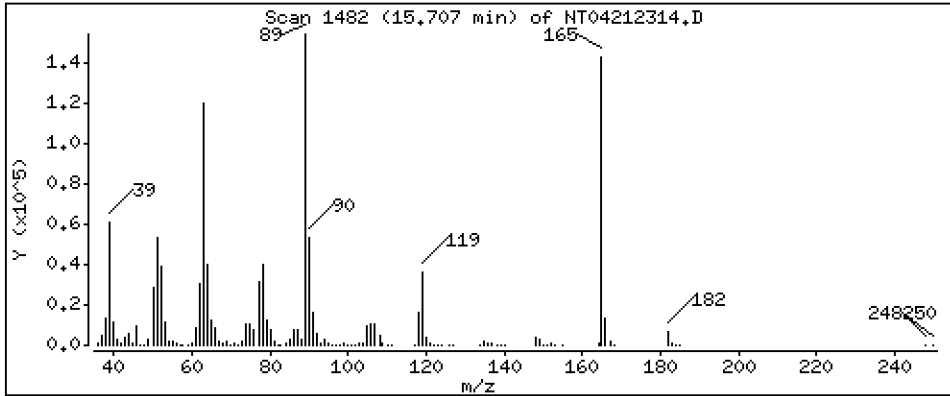
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 4,470 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

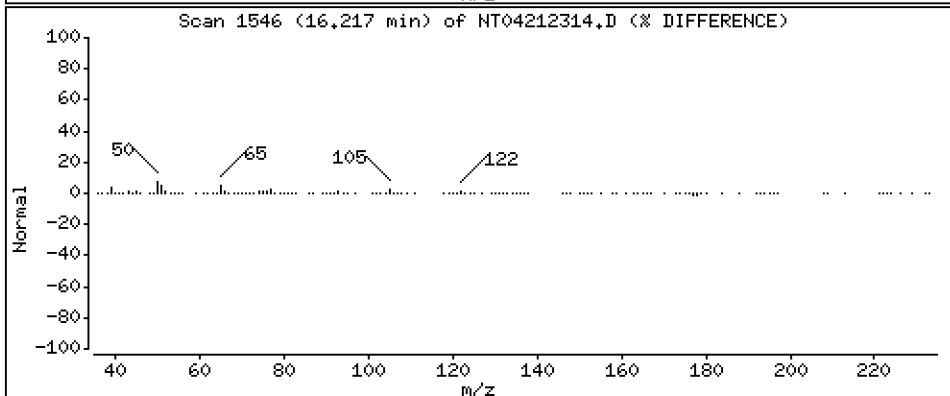
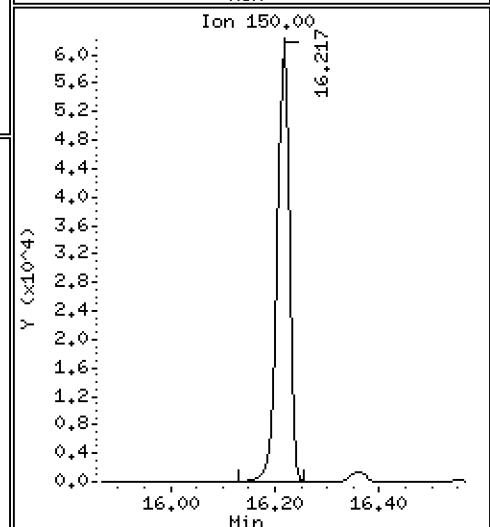
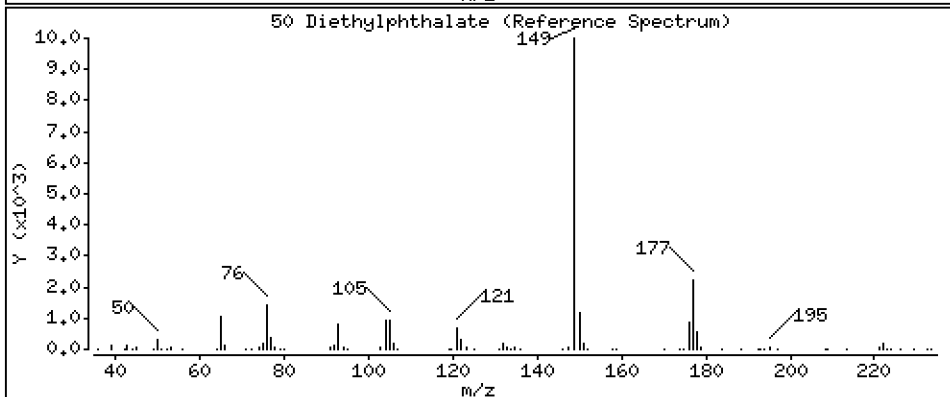
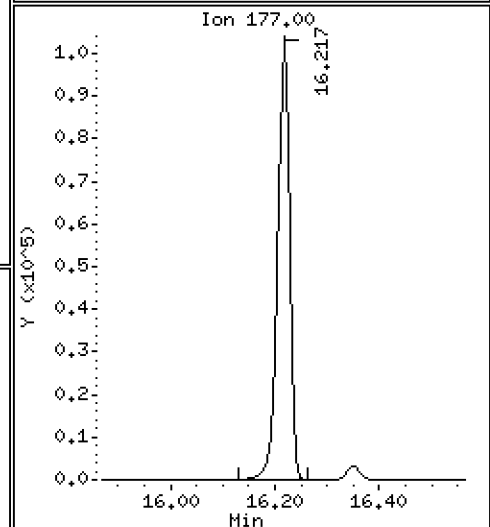
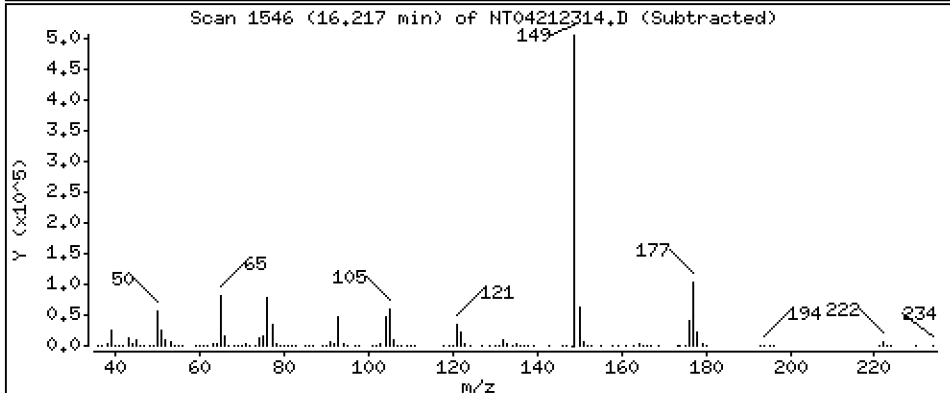
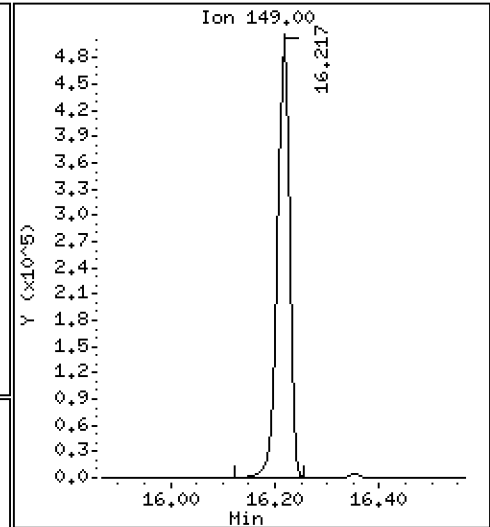
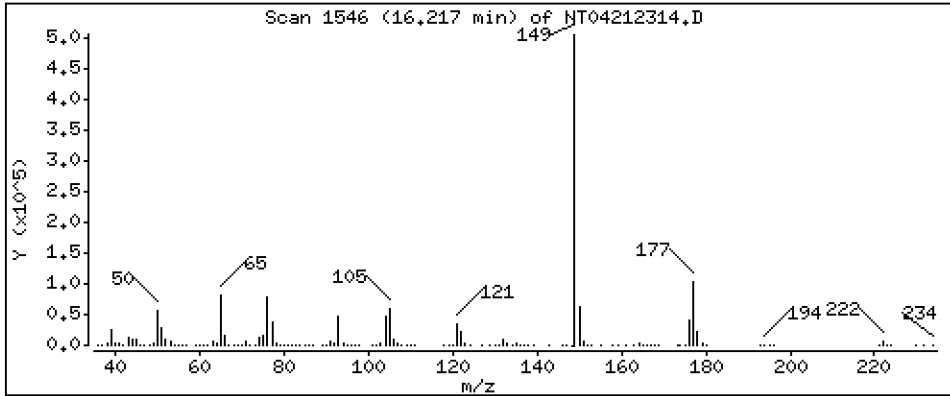
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,575 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

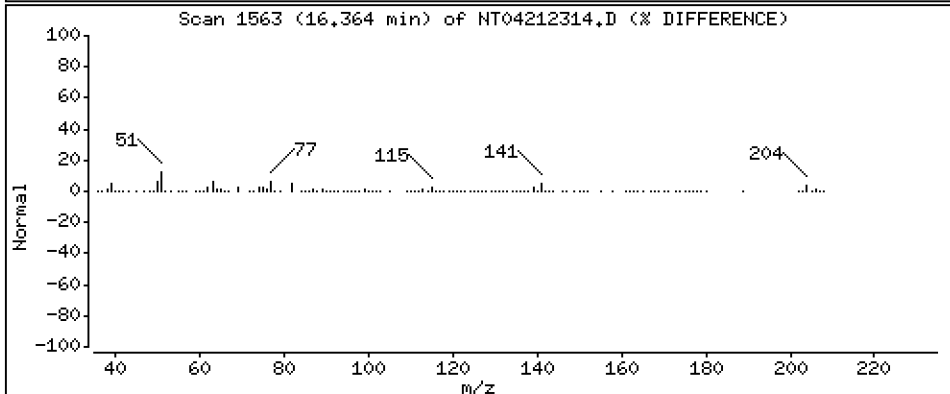
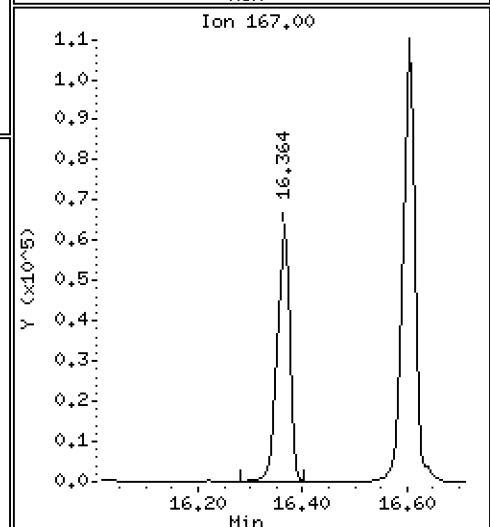
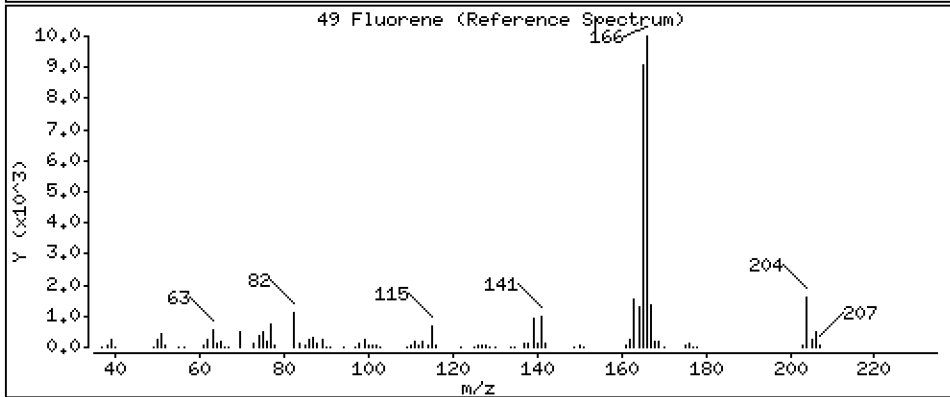
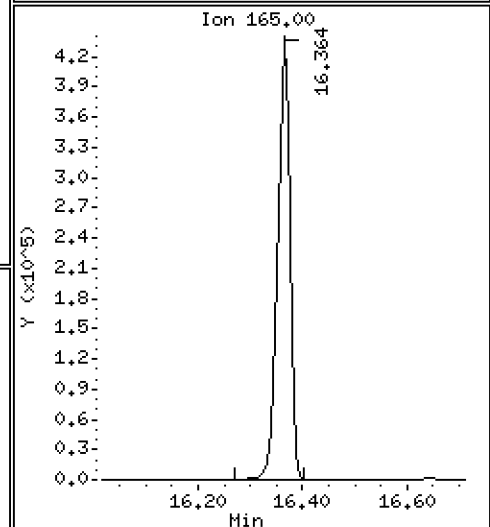
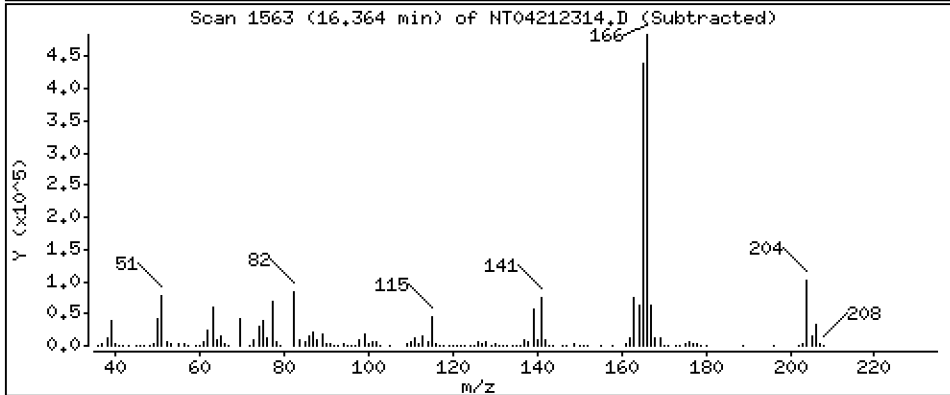
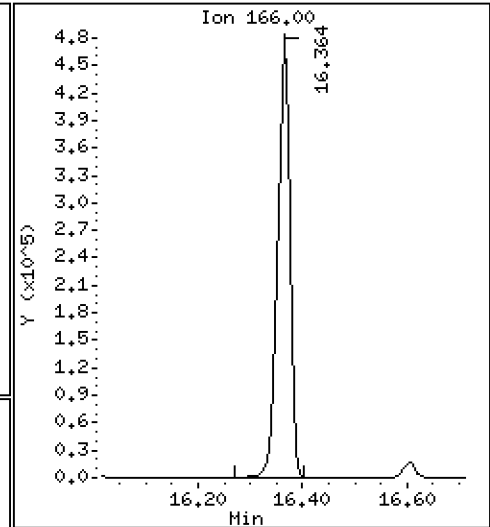
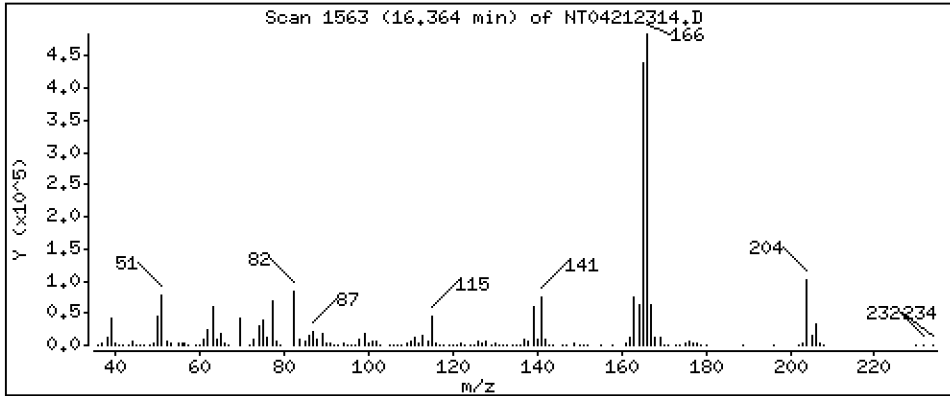
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,780 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

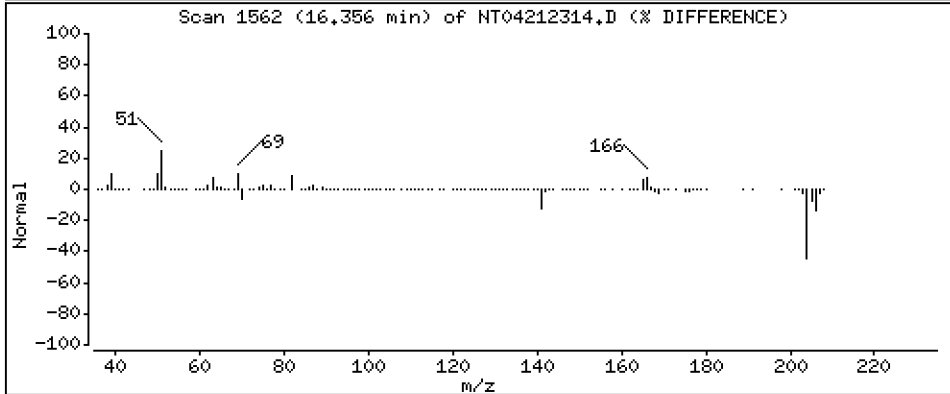
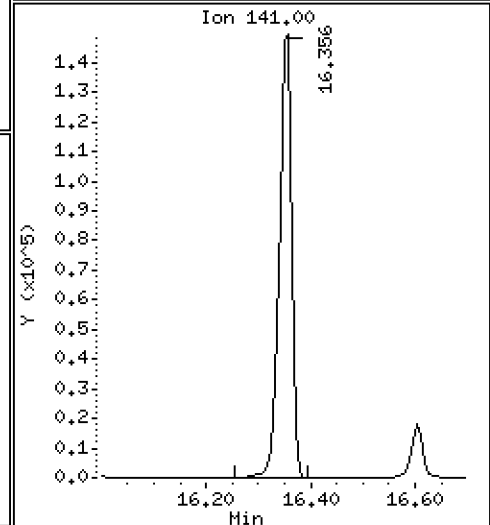
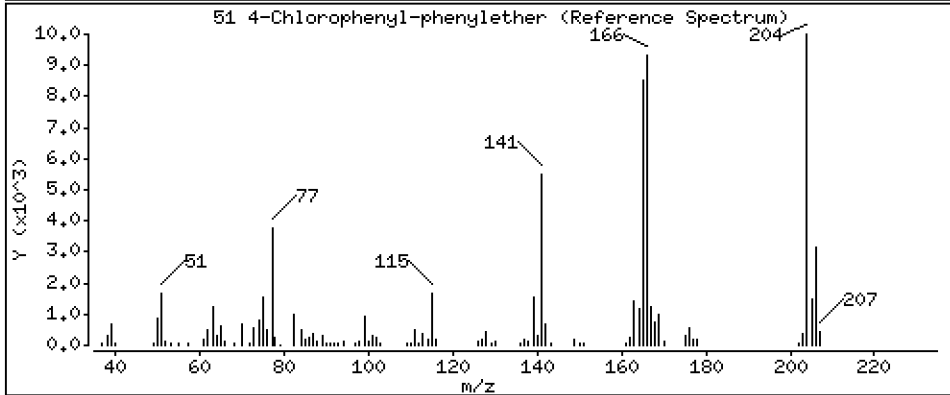
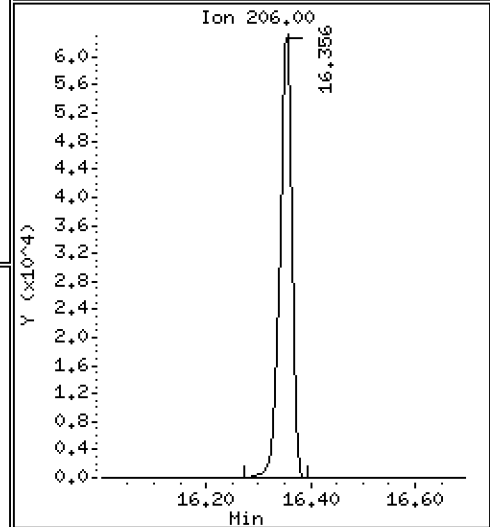
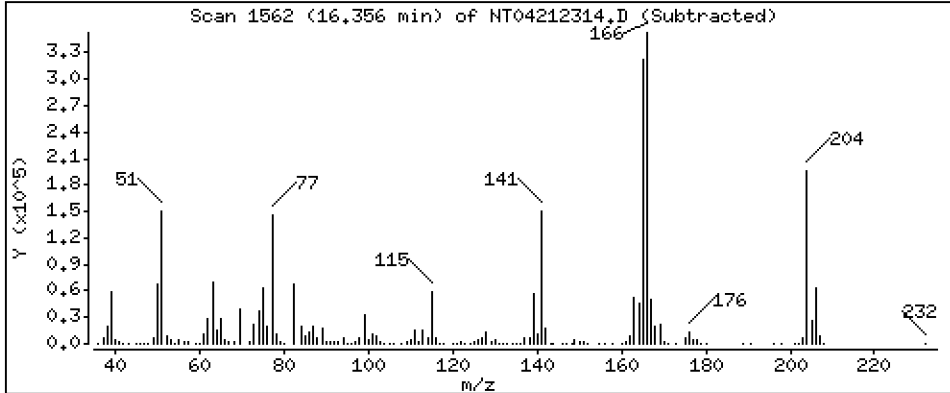
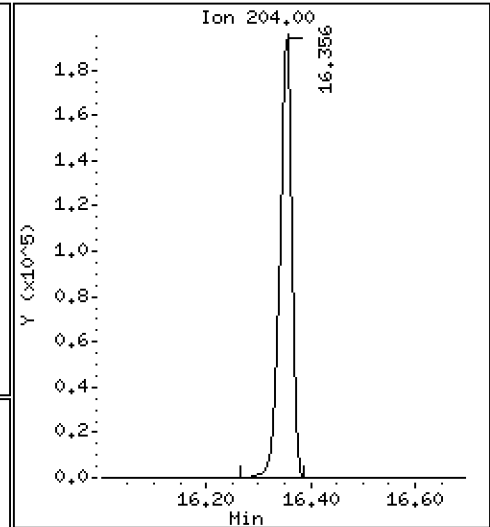
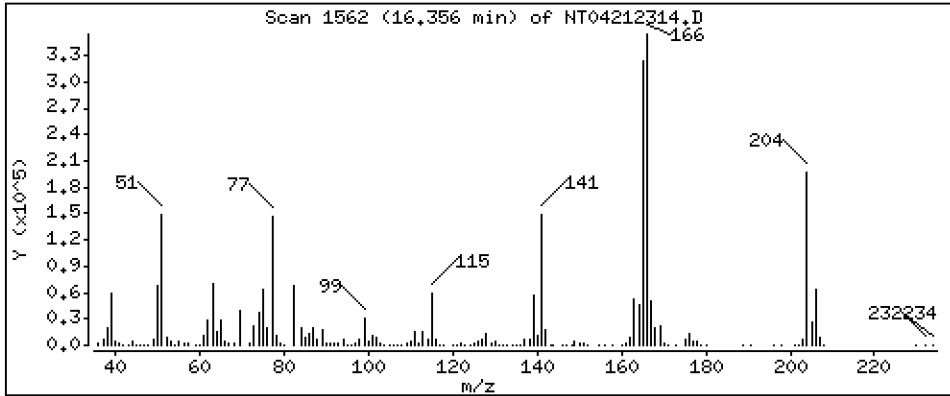
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,758 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

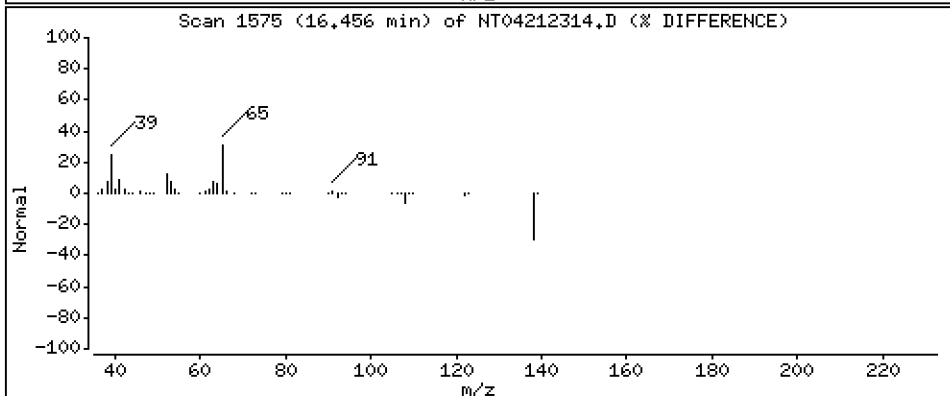
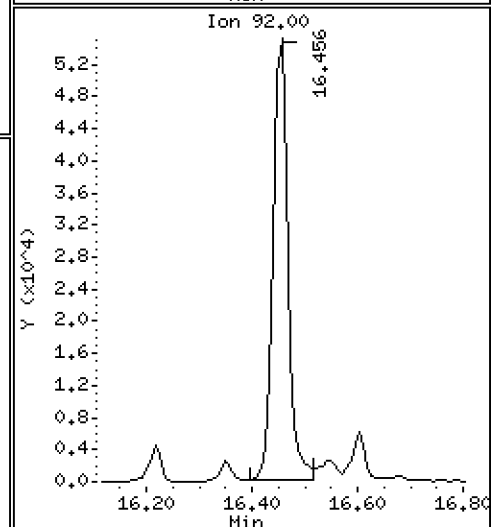
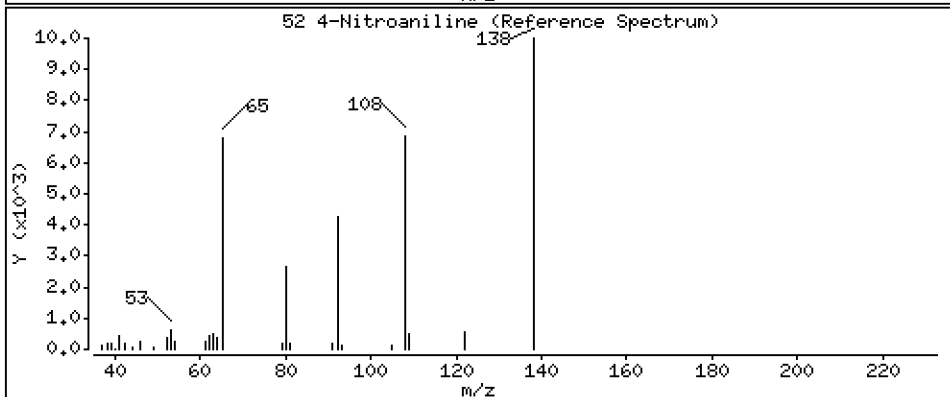
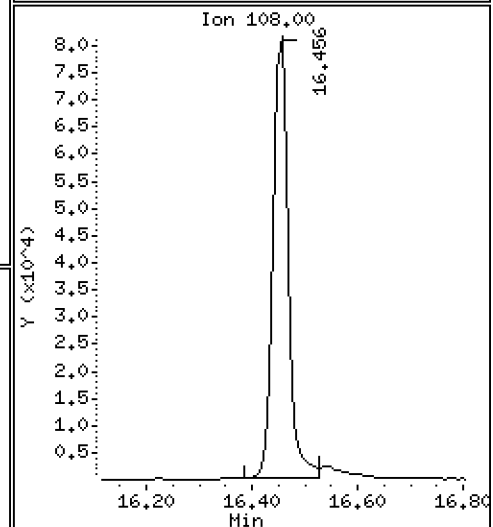
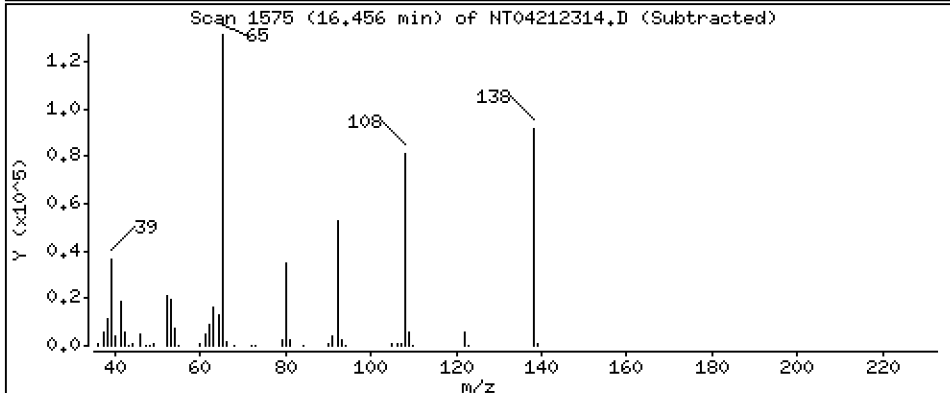
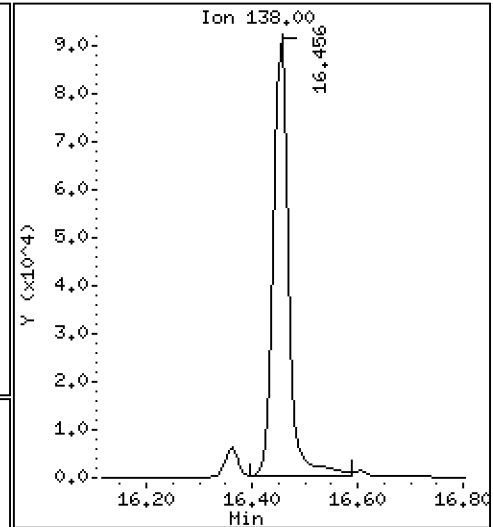
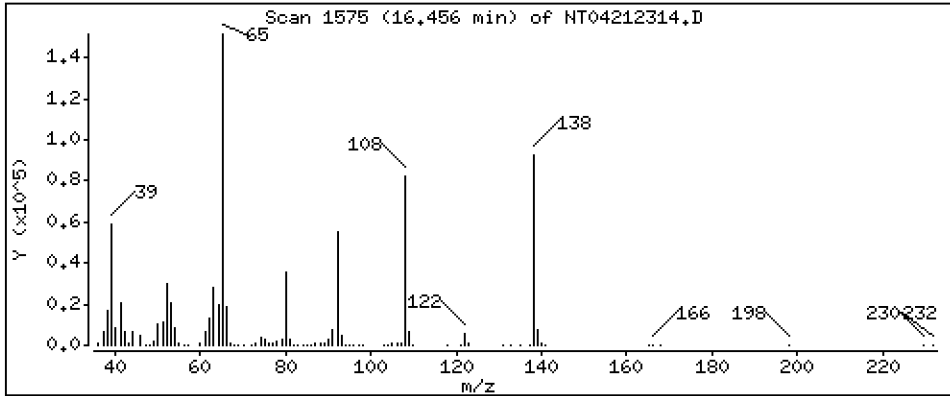
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 4,520 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

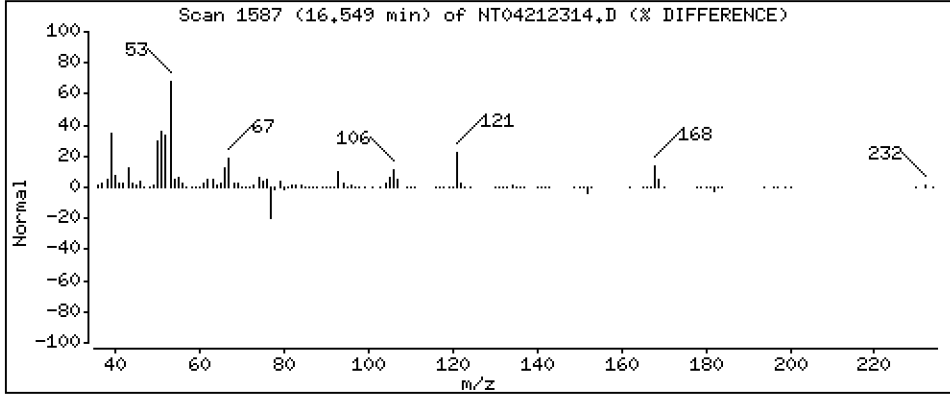
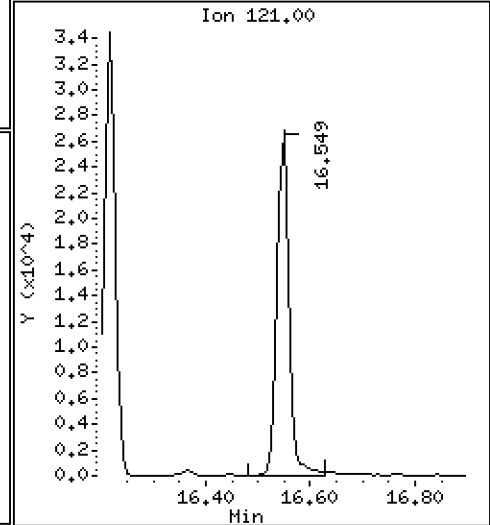
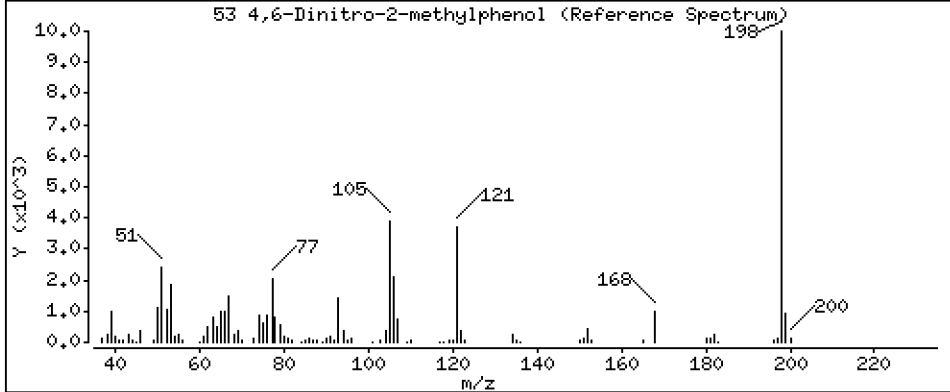
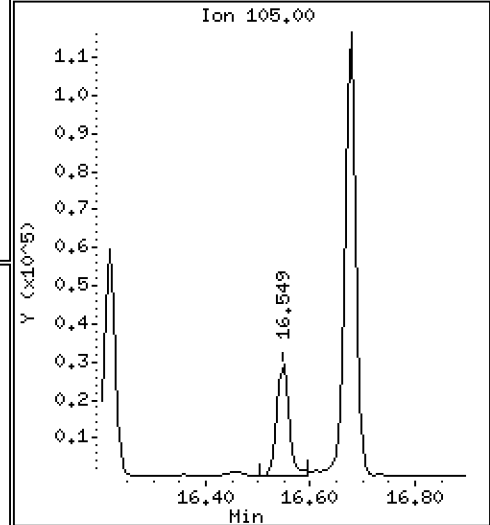
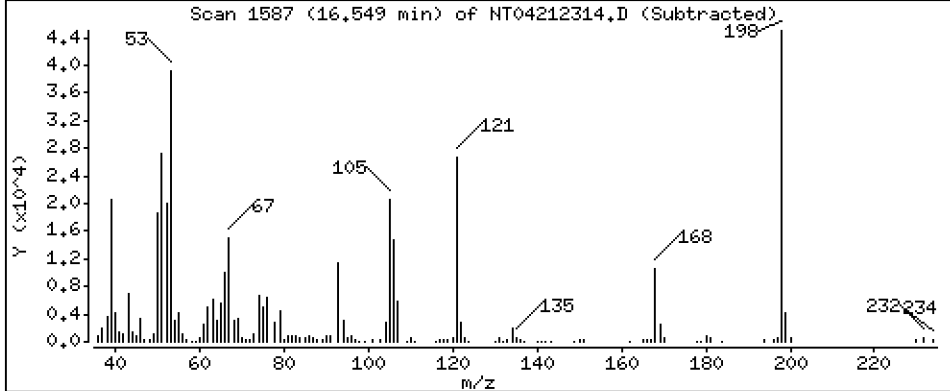
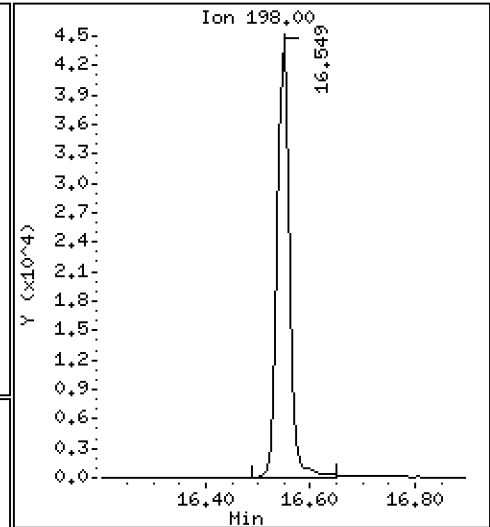
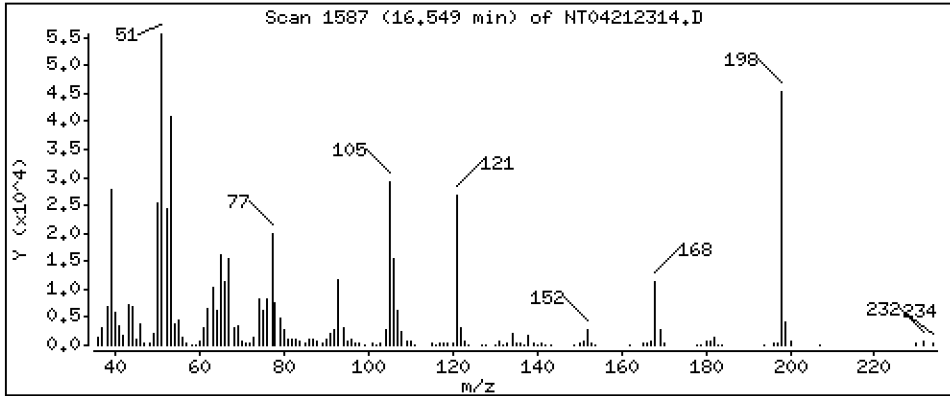
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 3,005 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

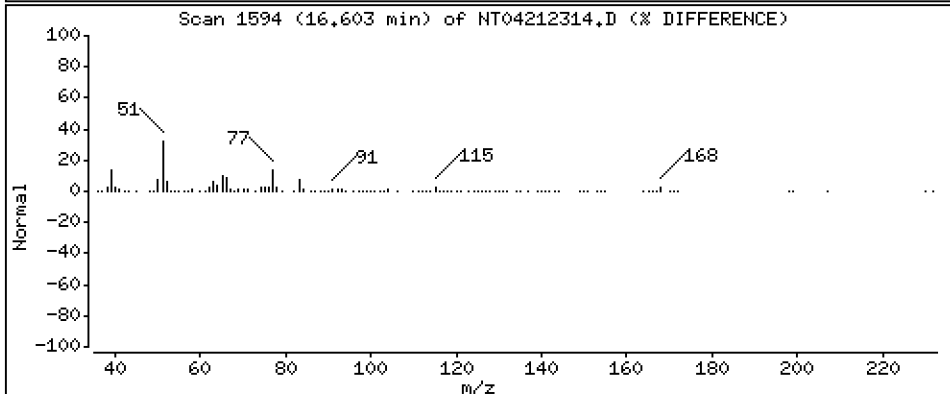
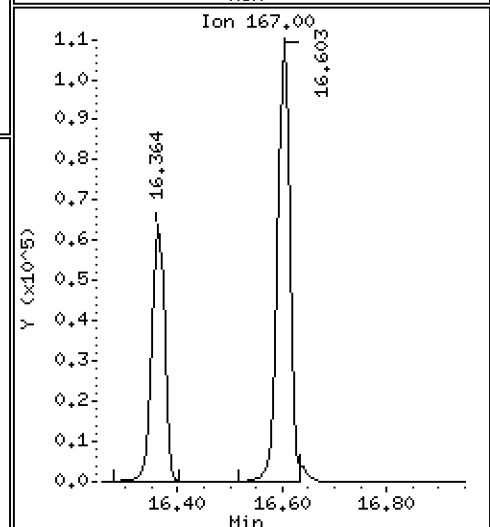
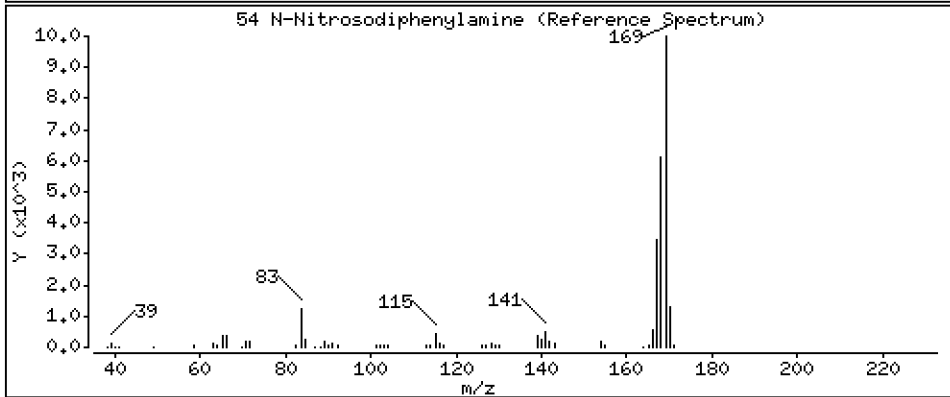
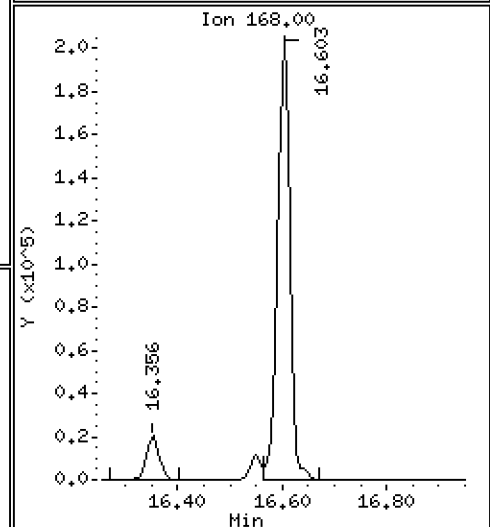
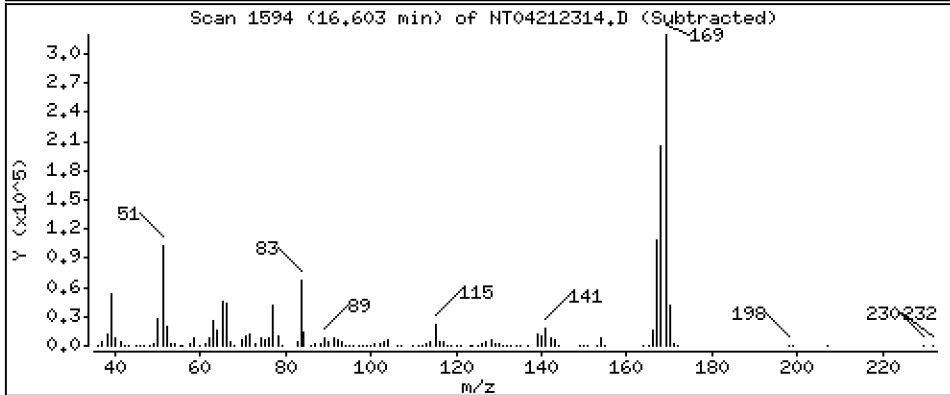
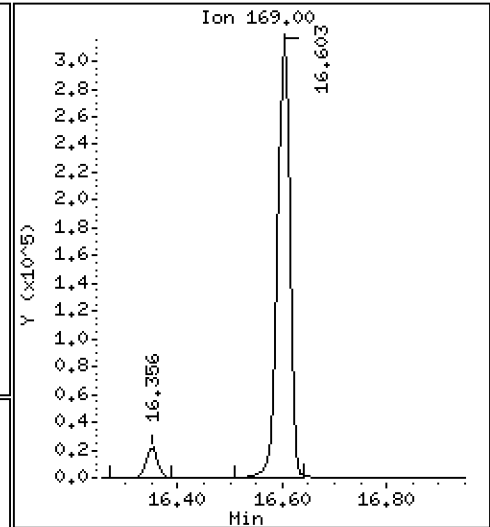
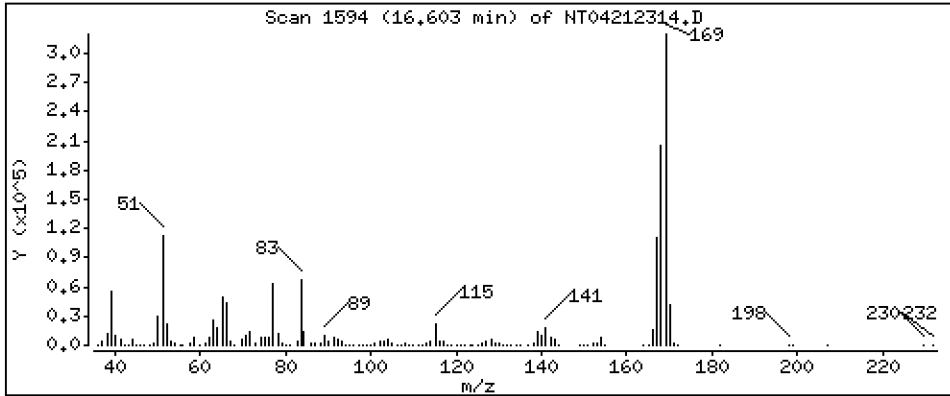
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,748 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

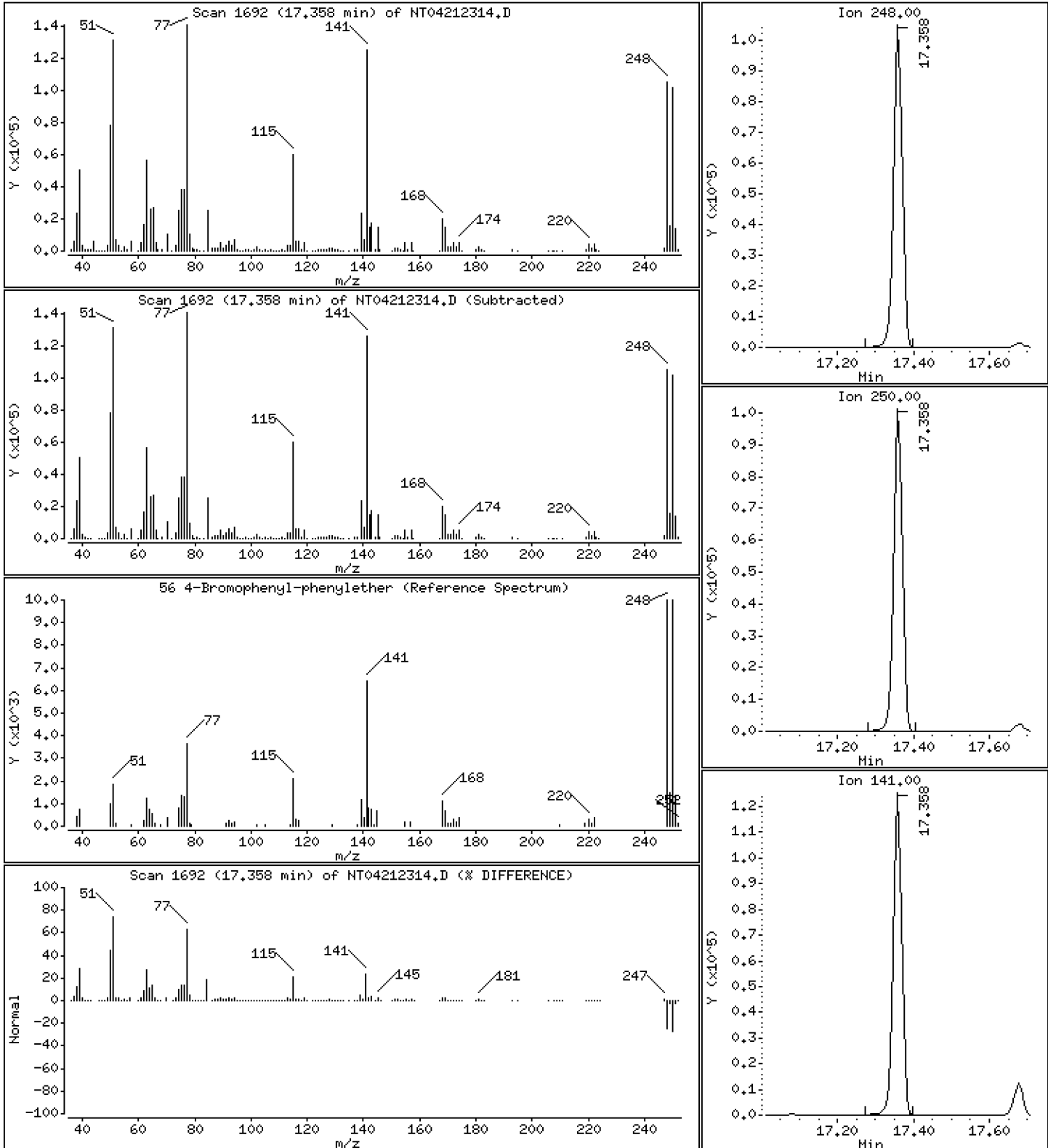
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 4,732 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

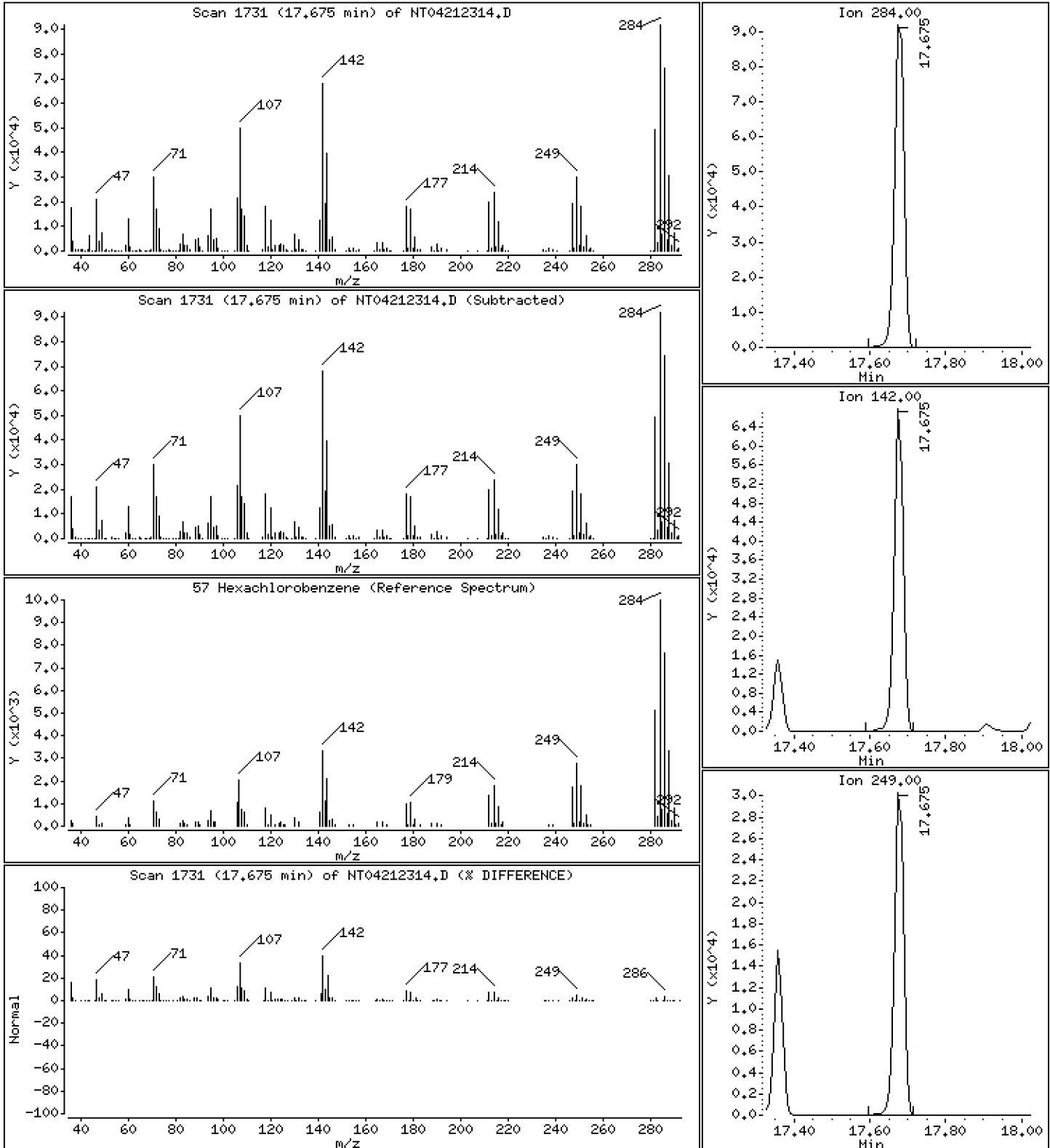
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,367 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

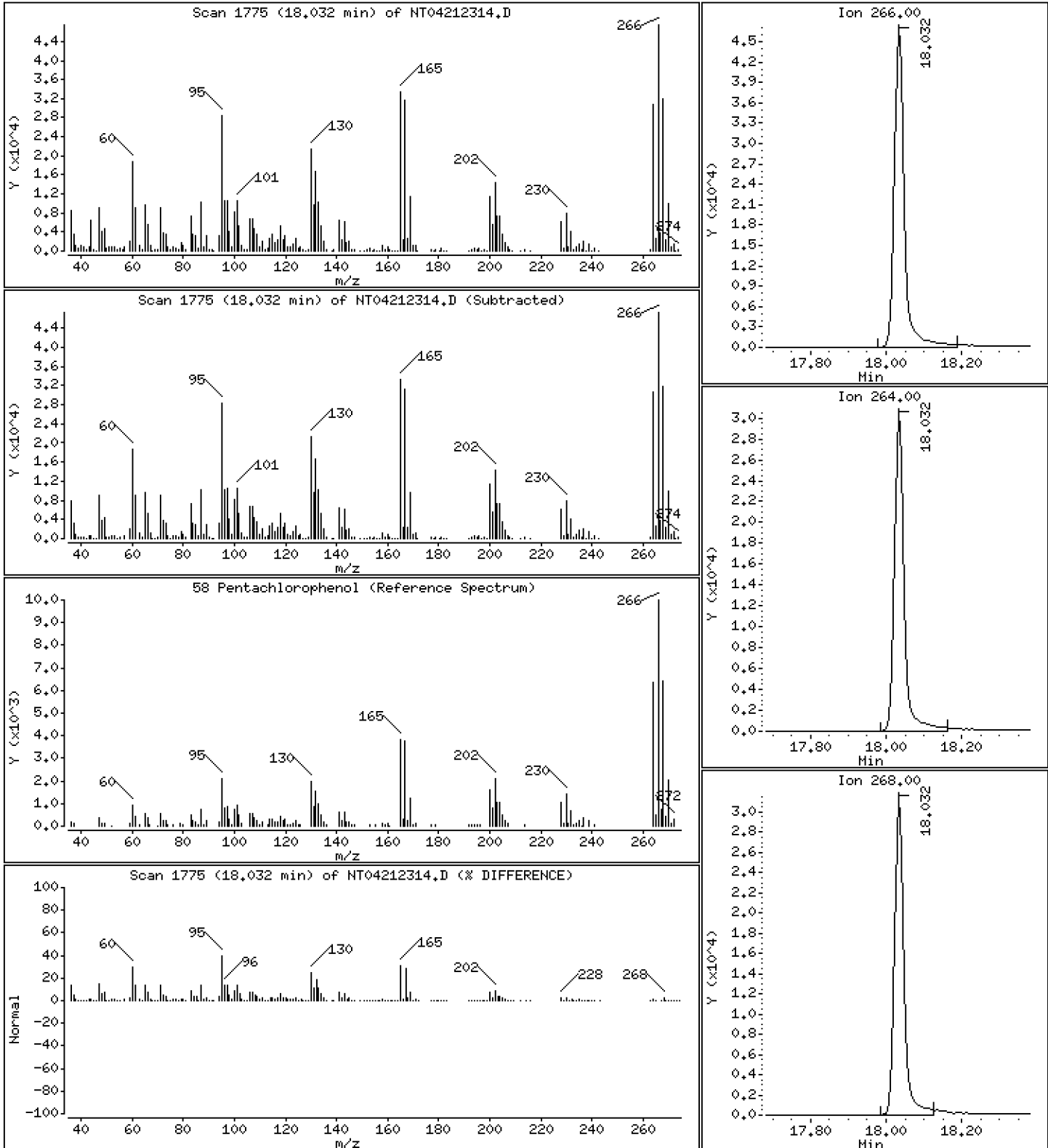
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,741 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

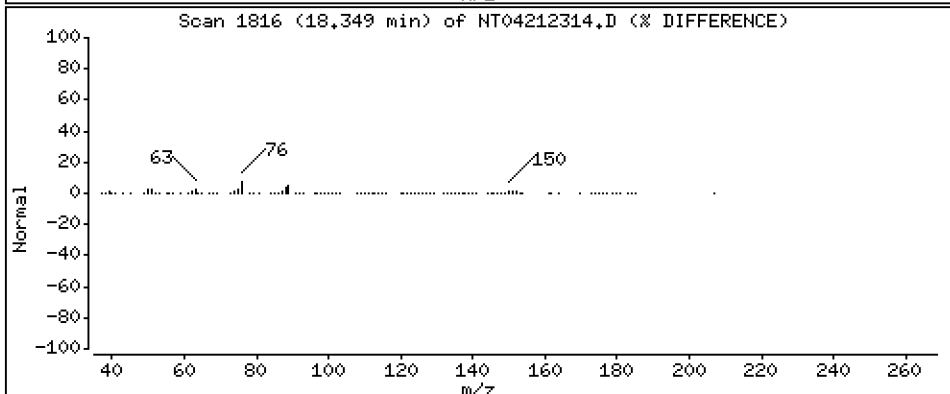
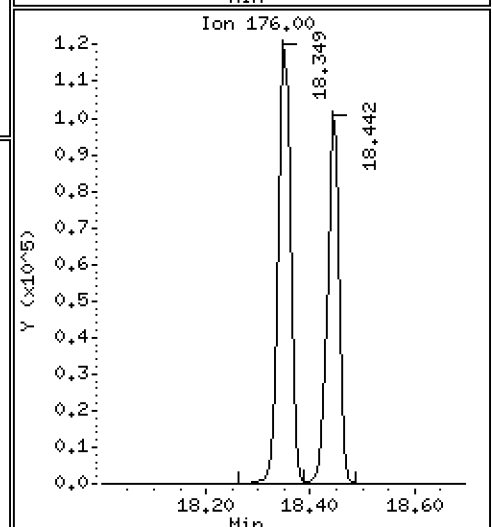
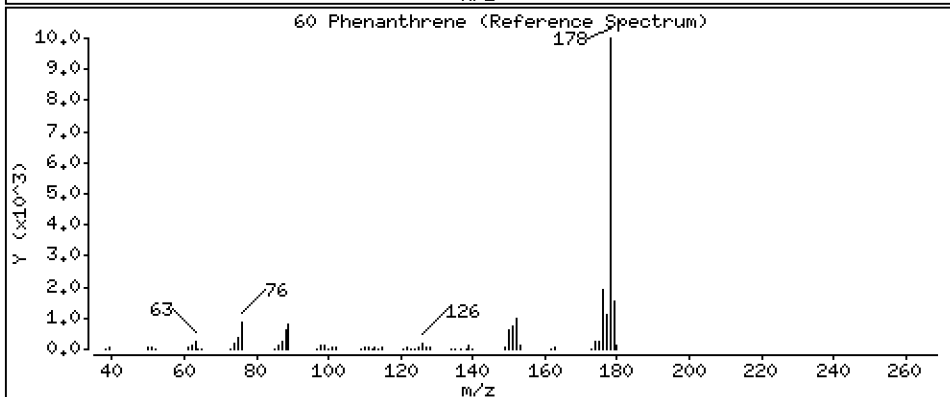
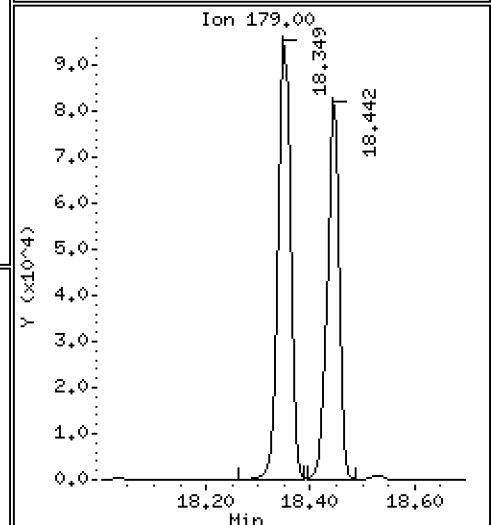
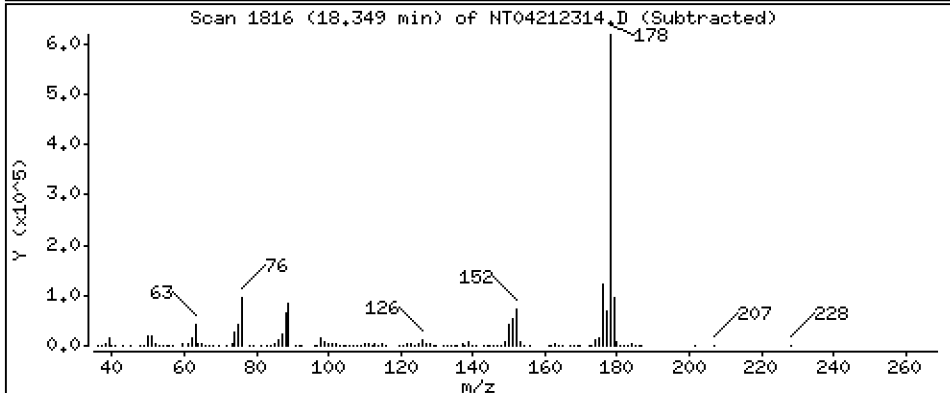
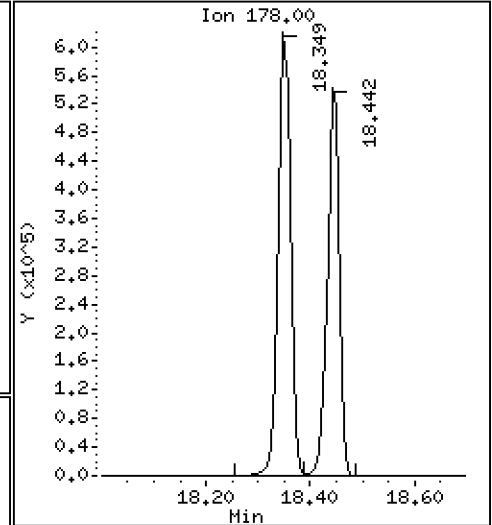
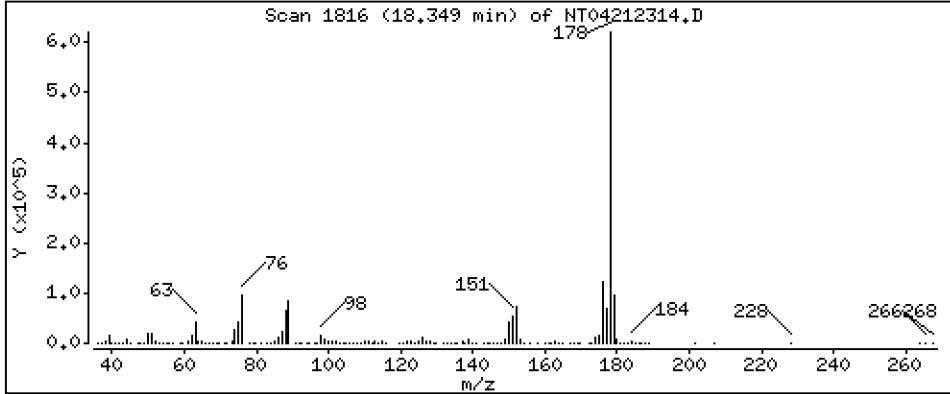
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 4,653 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

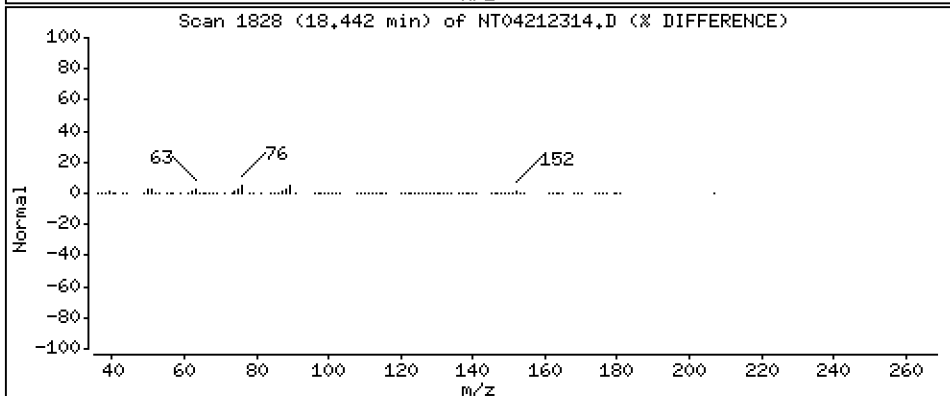
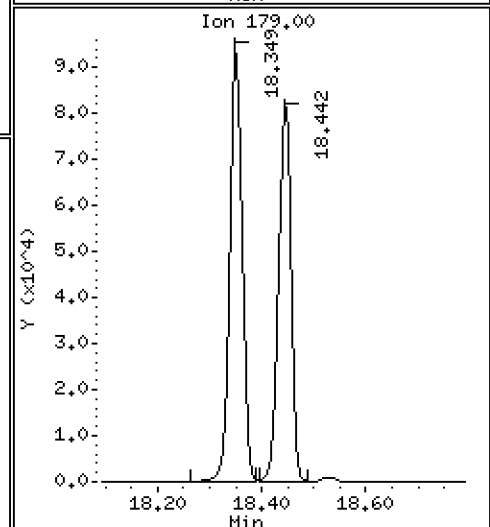
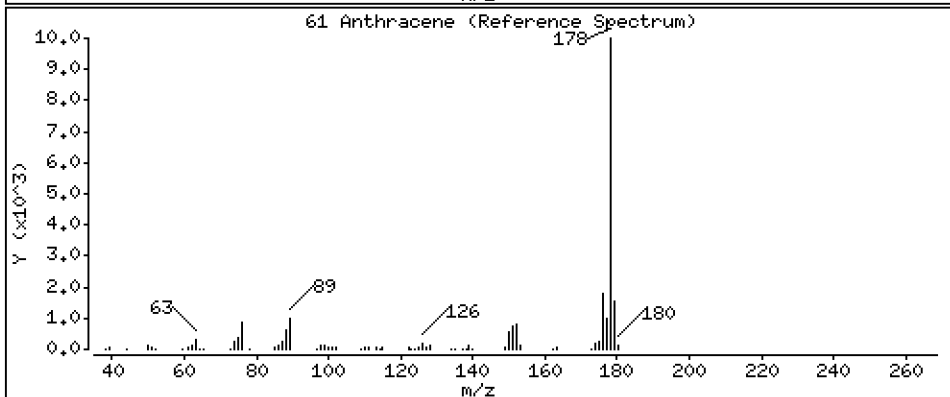
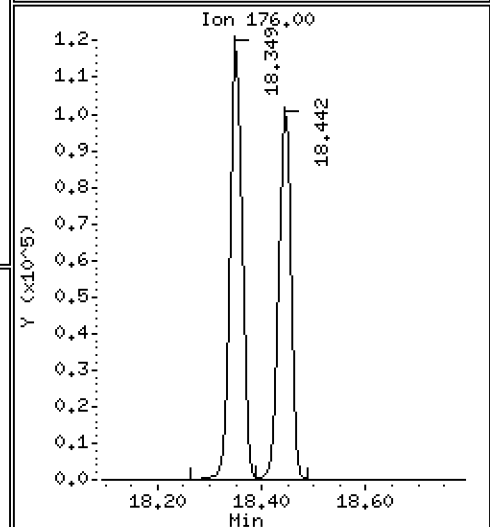
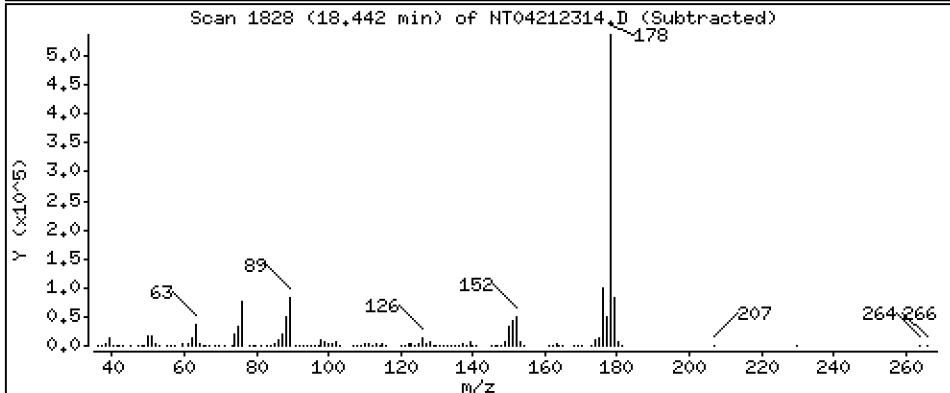
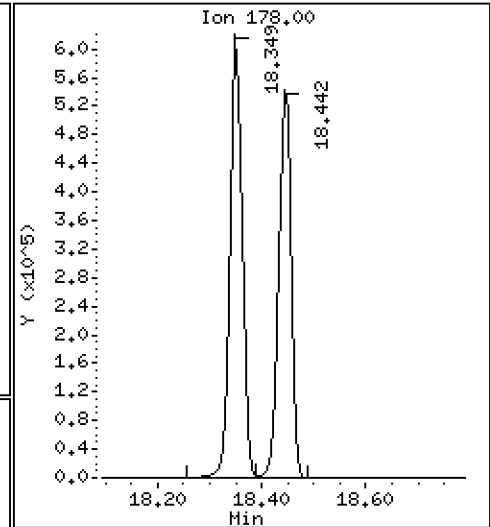
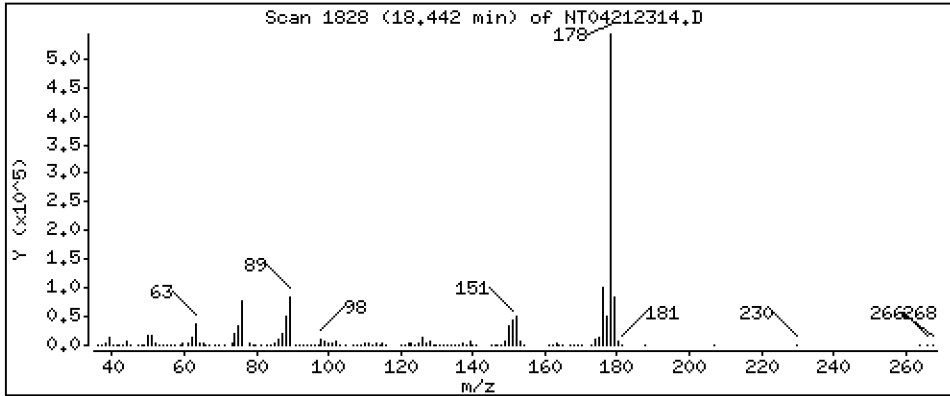
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 4,274 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

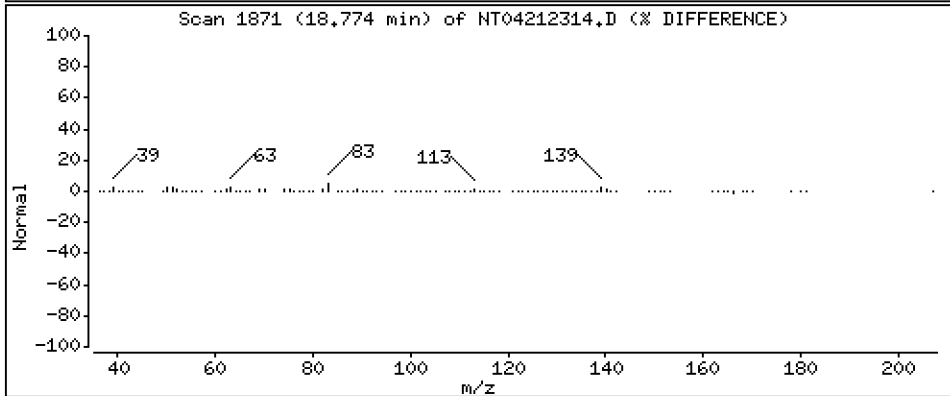
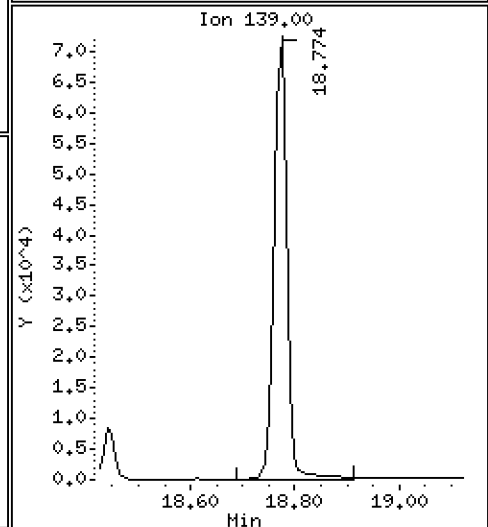
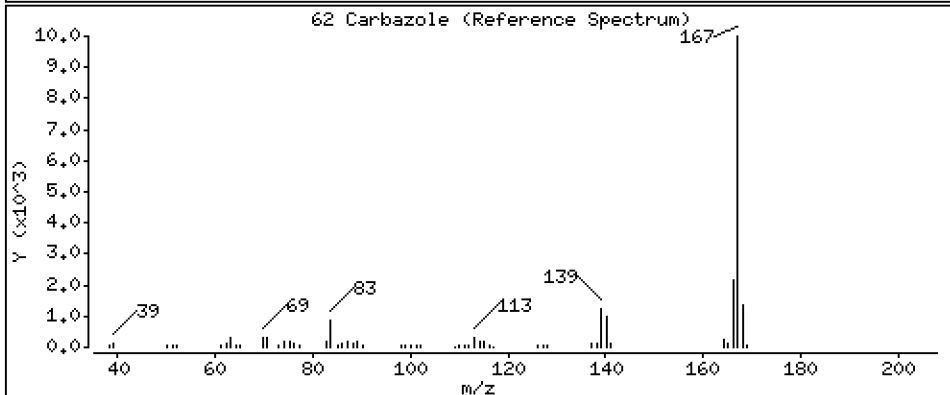
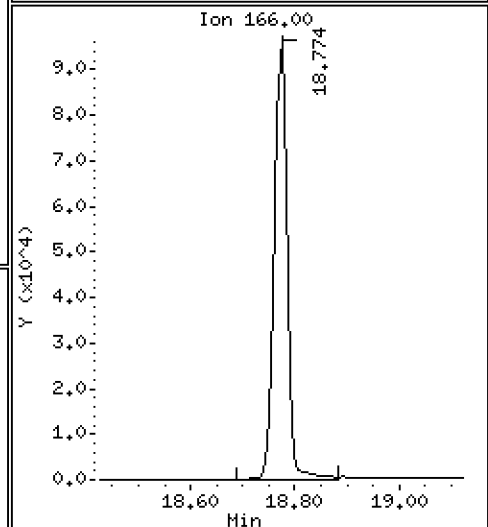
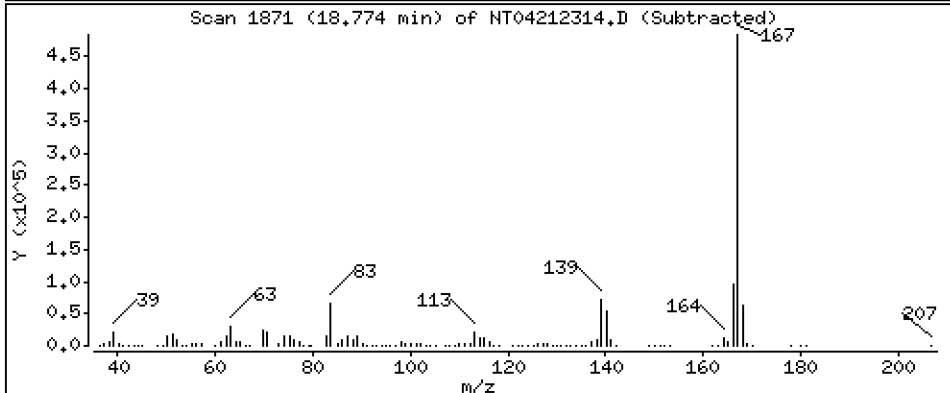
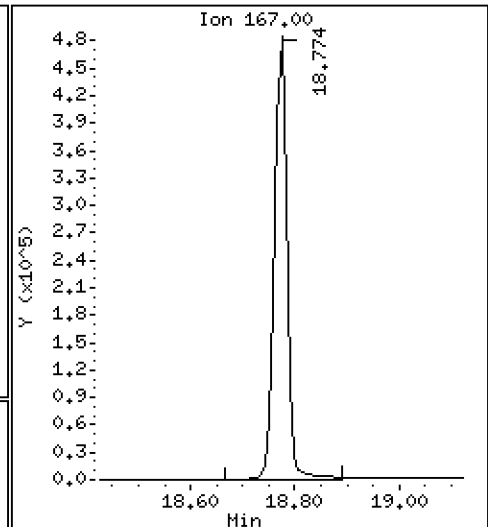
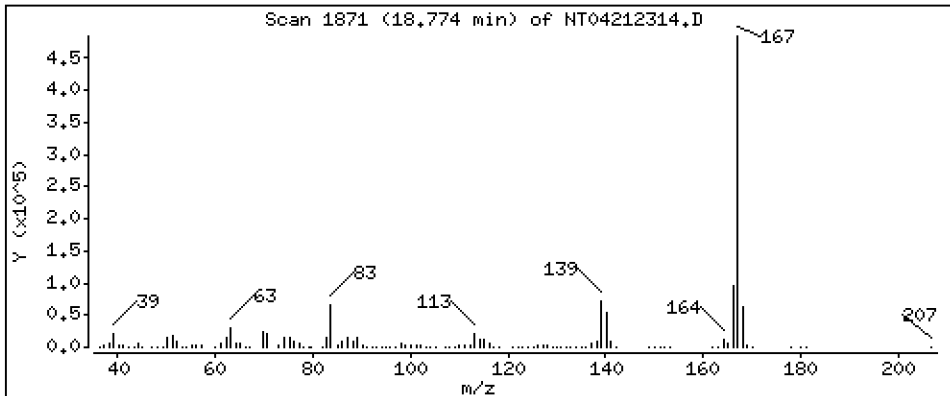
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 4,196 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

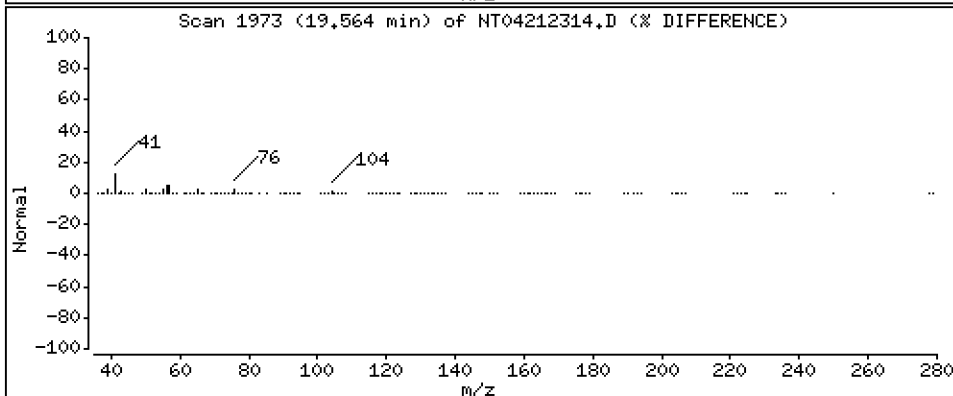
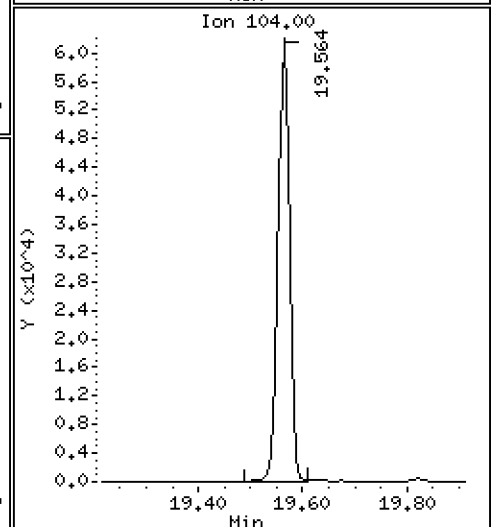
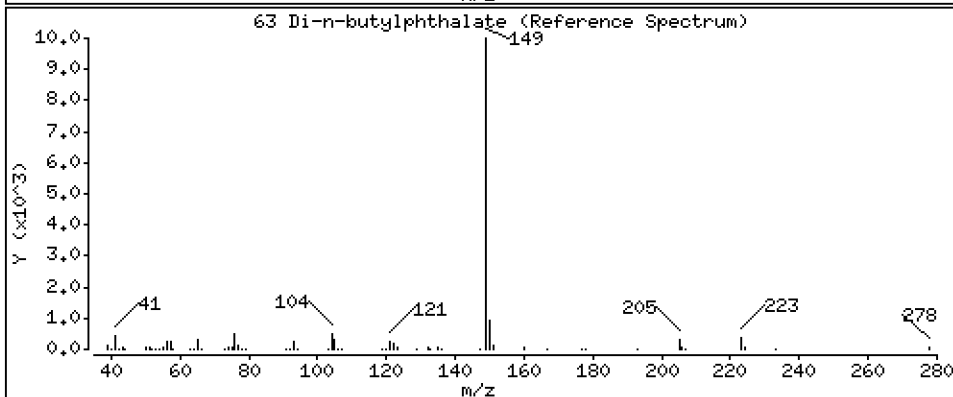
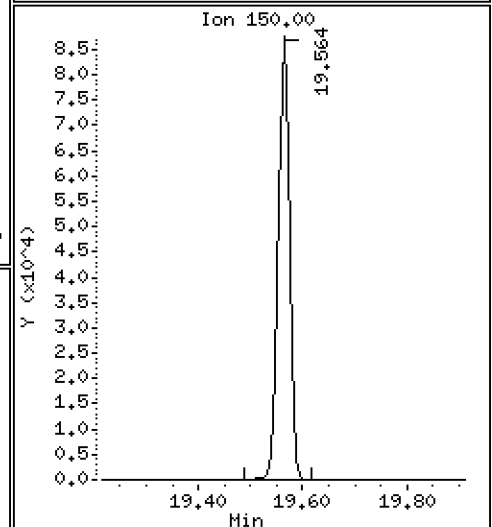
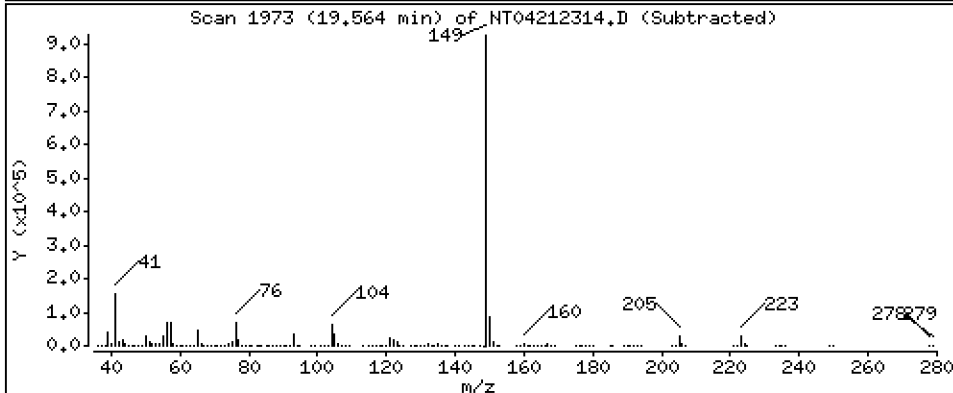
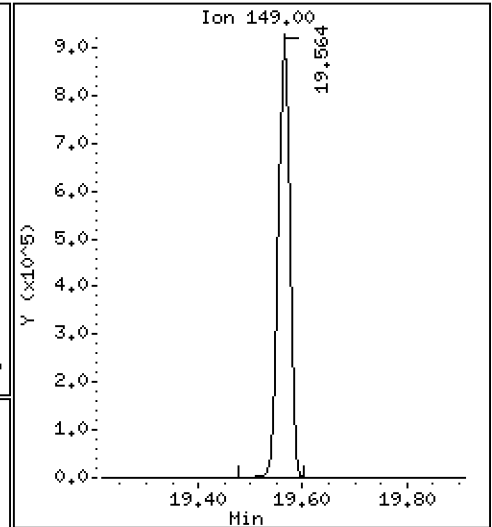
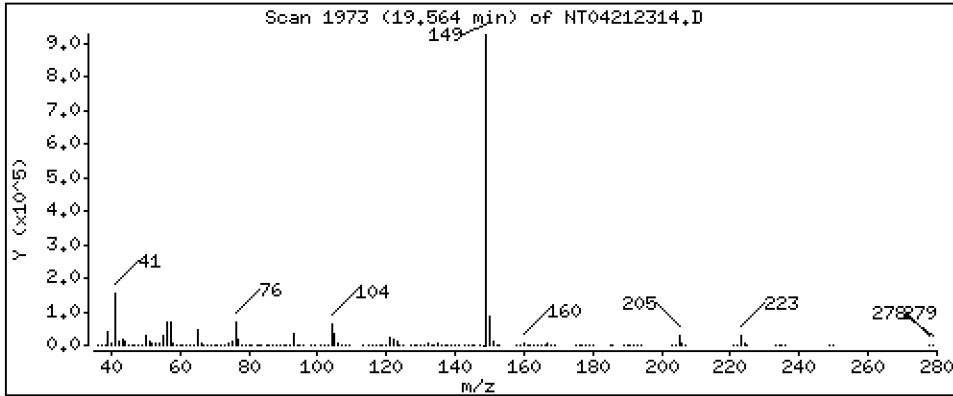
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 4,762 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

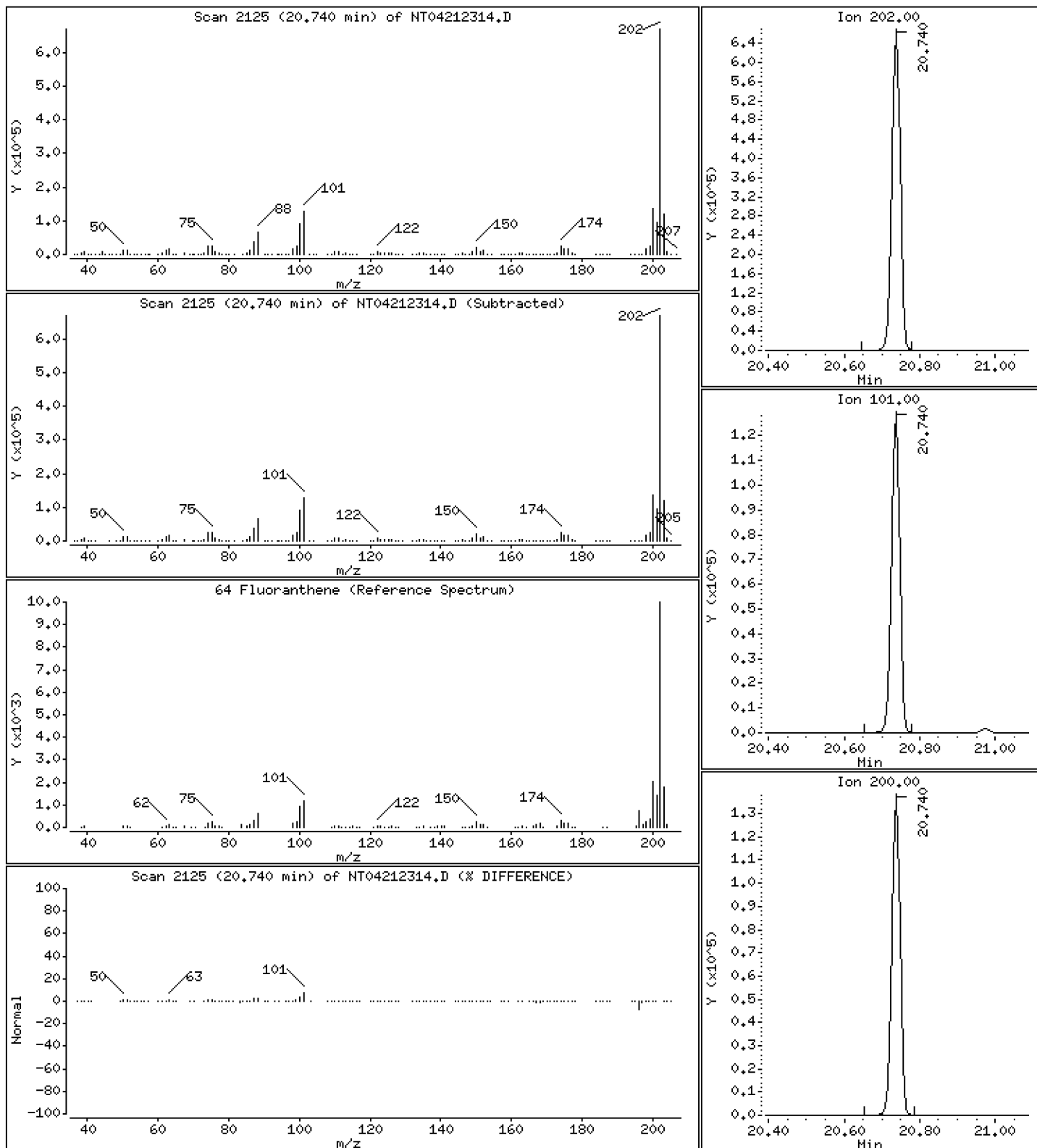
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 5,068 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

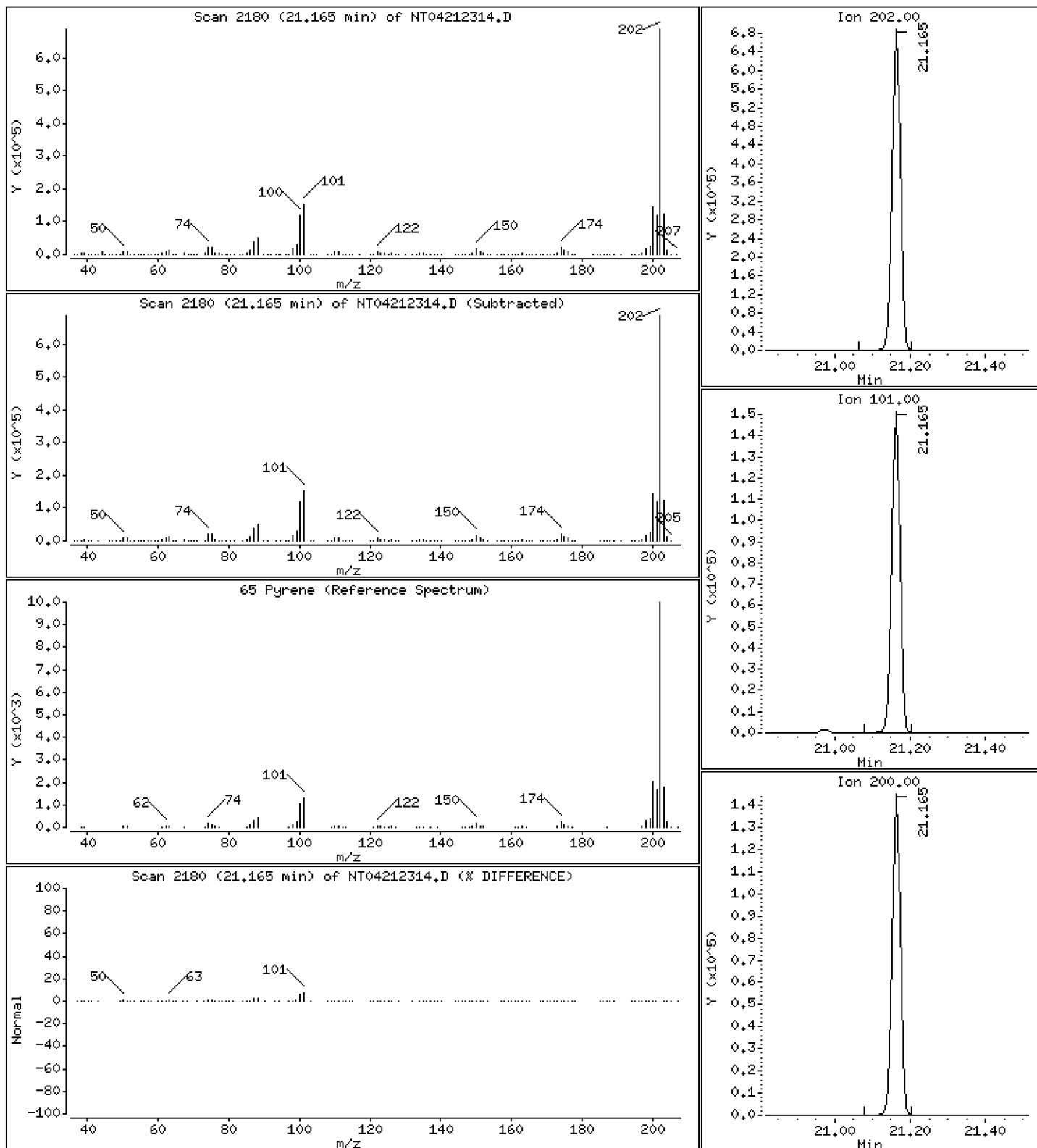
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 4,920 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

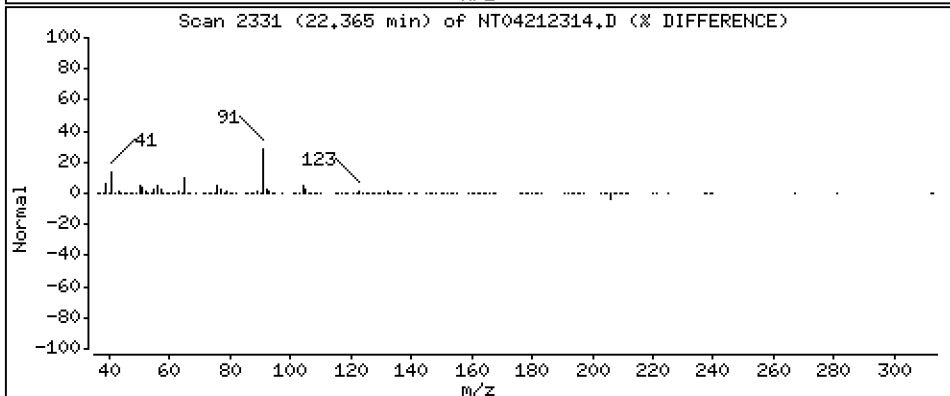
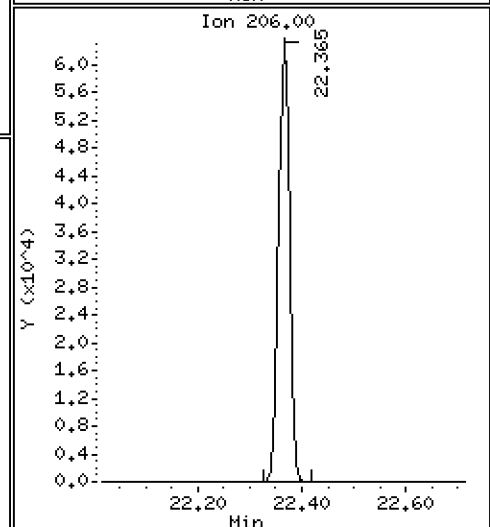
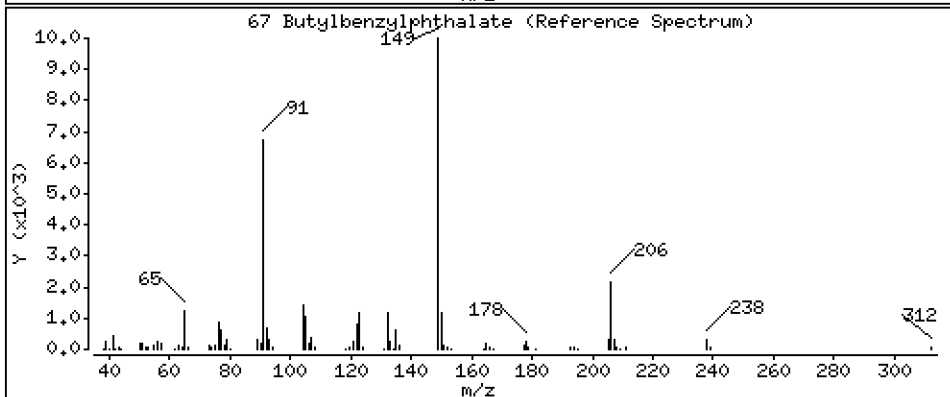
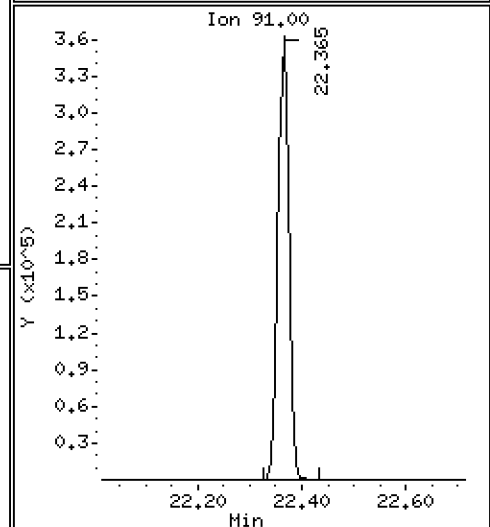
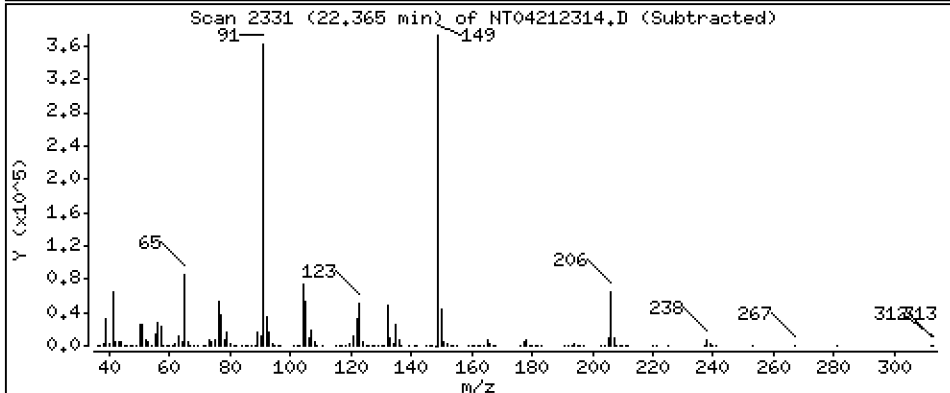
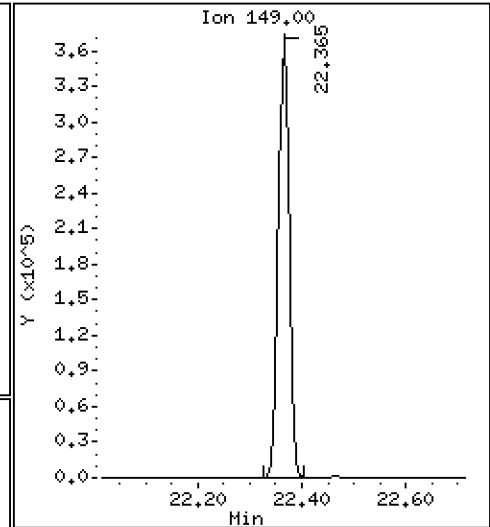
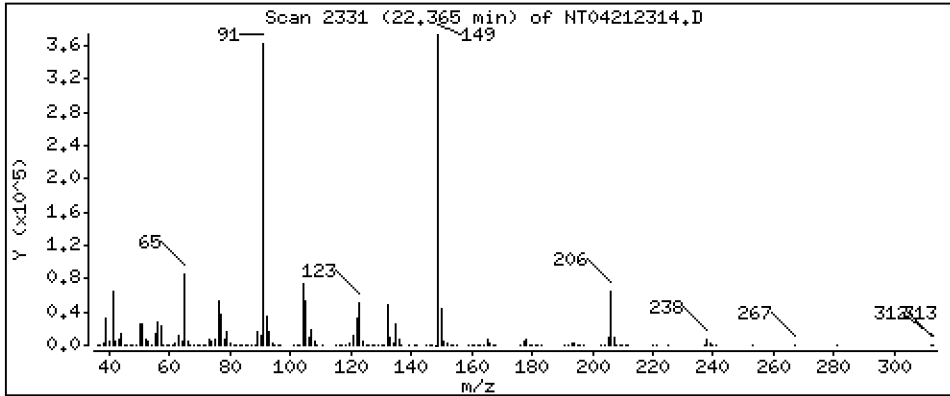
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,291 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

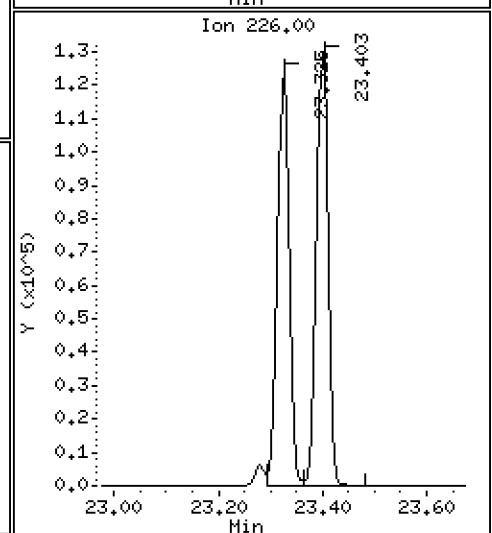
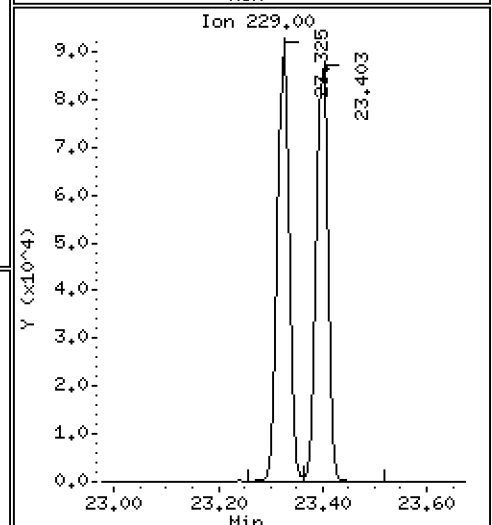
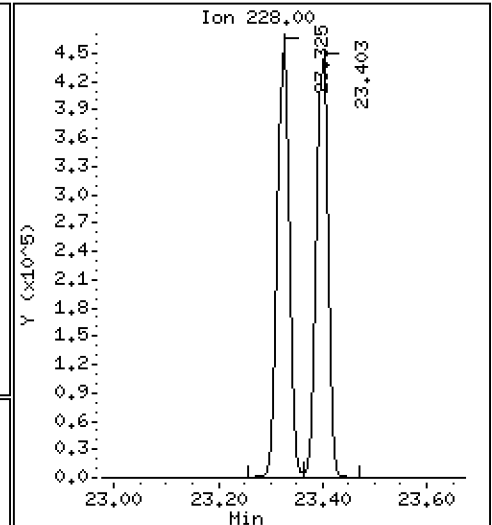
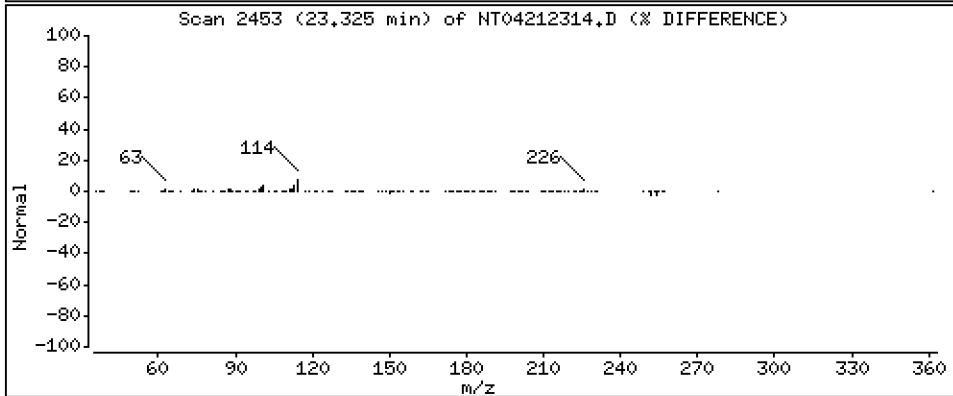
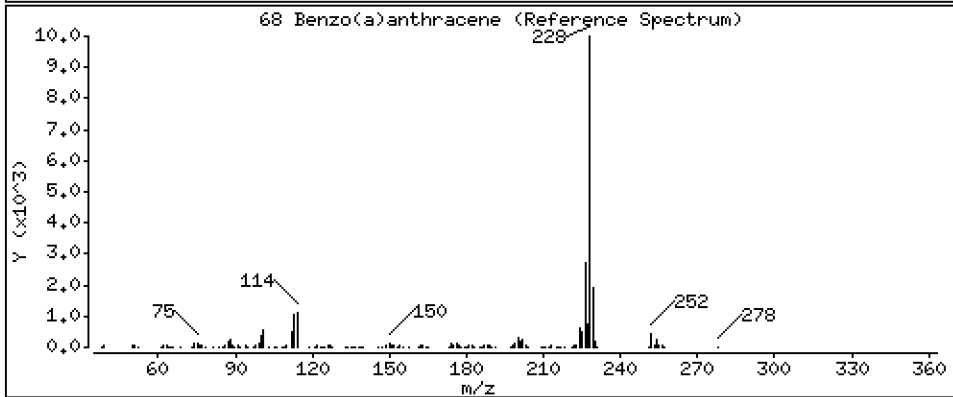
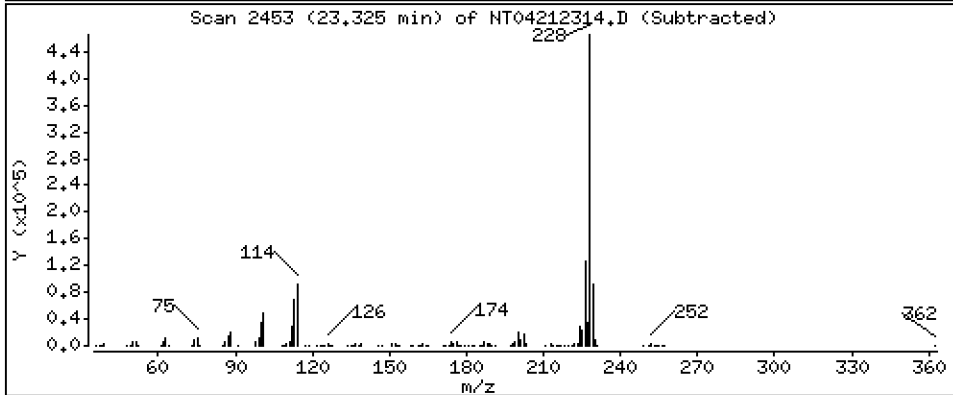
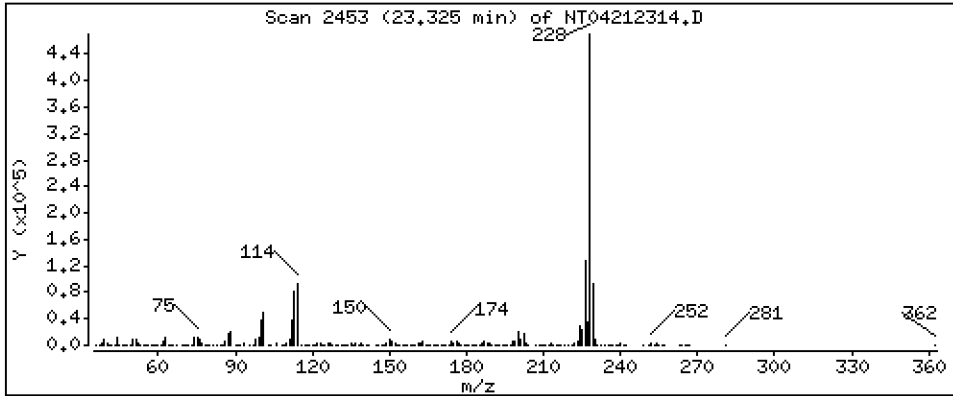
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 4,671 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

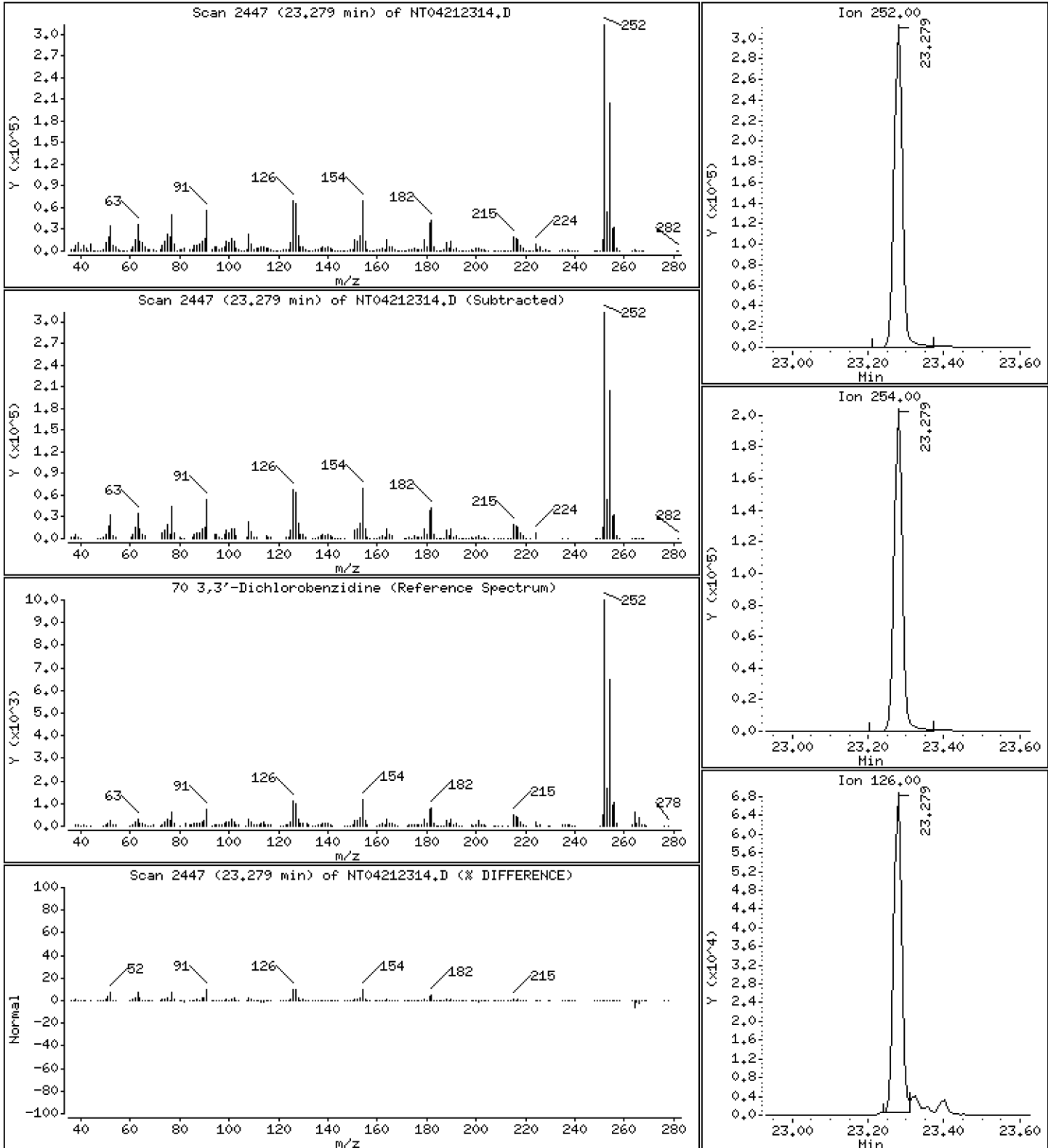
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 9,381 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

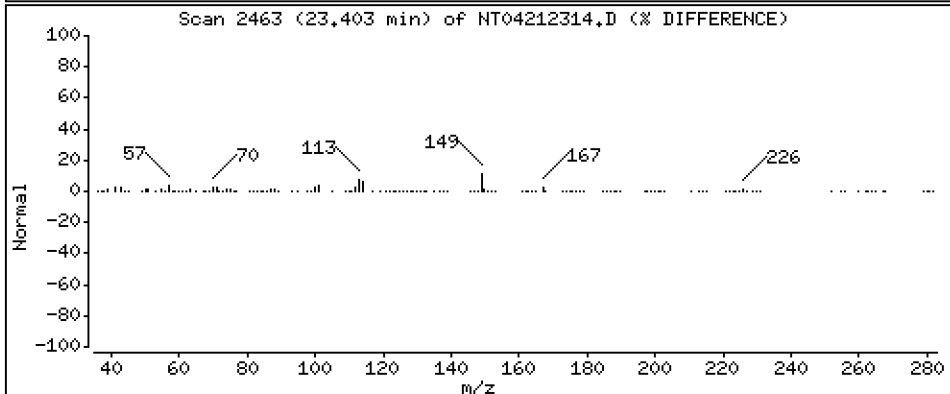
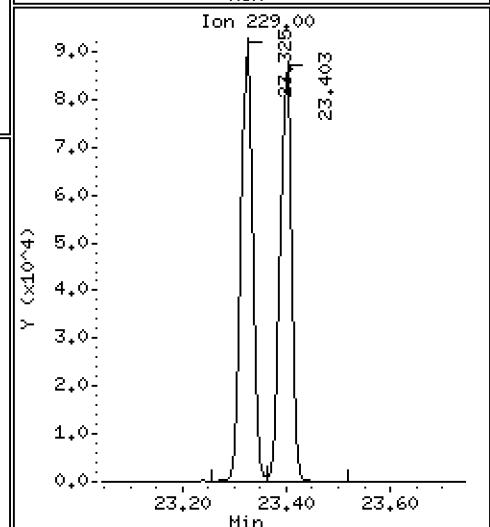
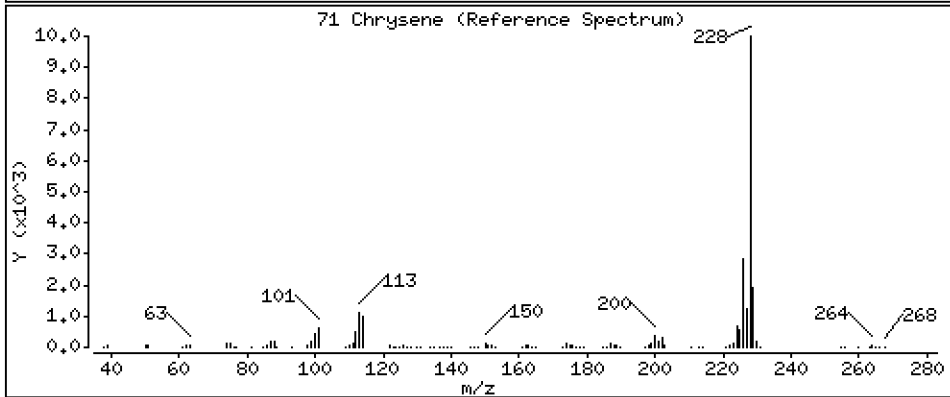
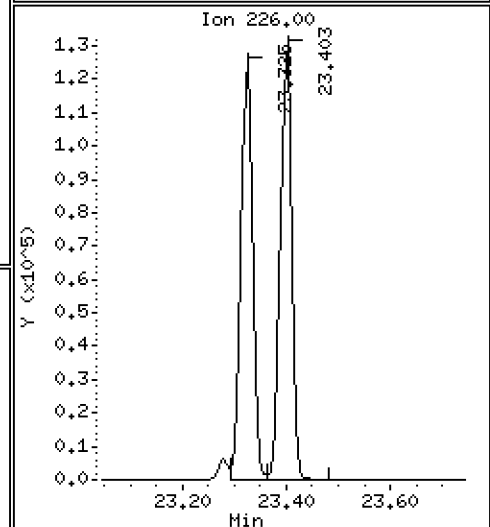
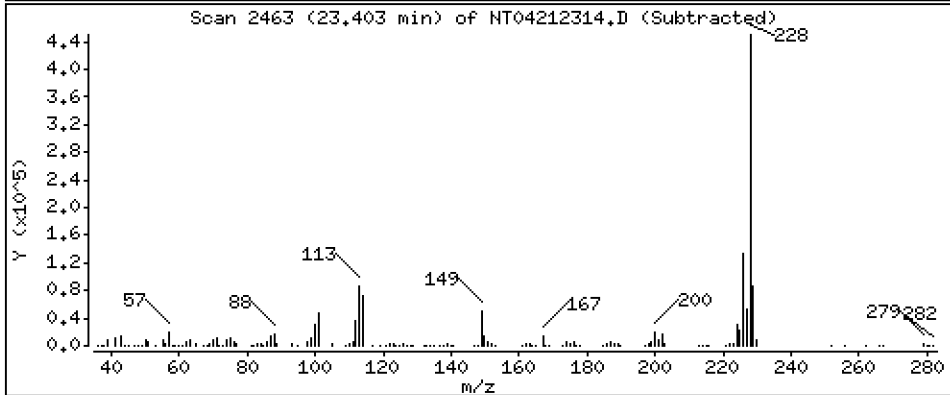
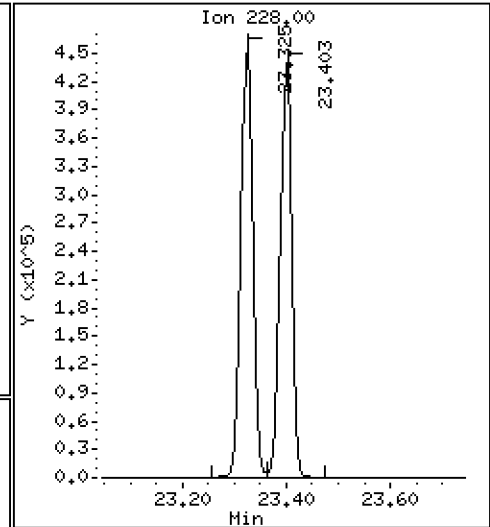
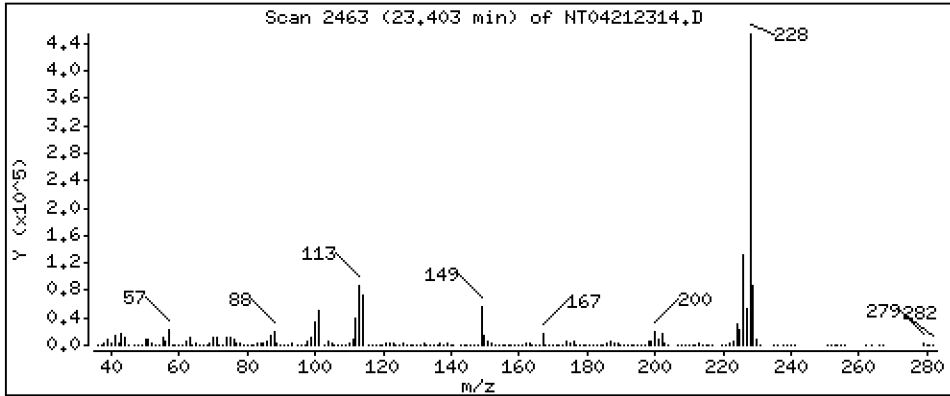
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 4,719 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

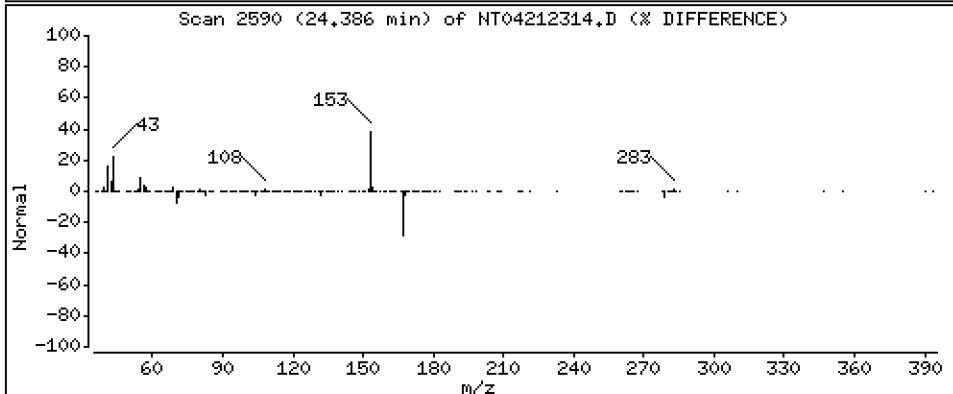
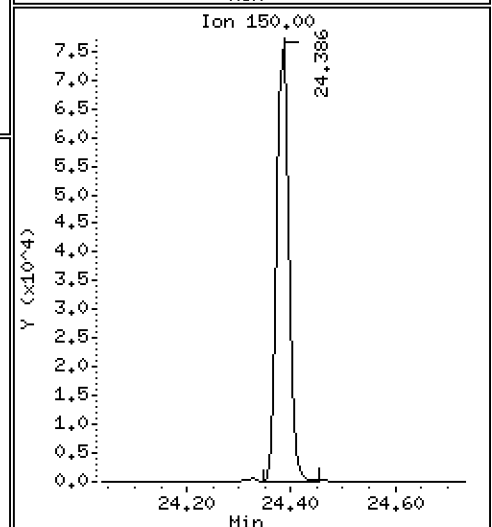
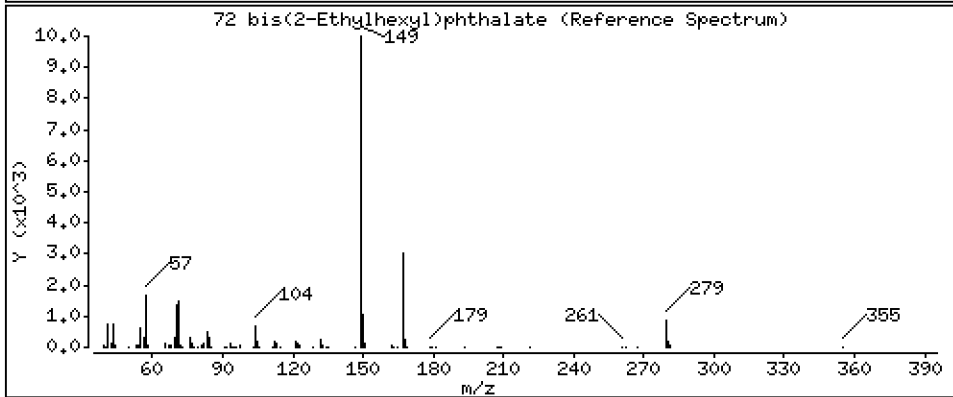
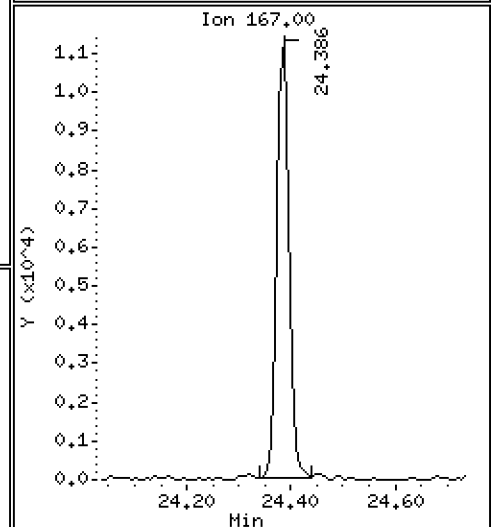
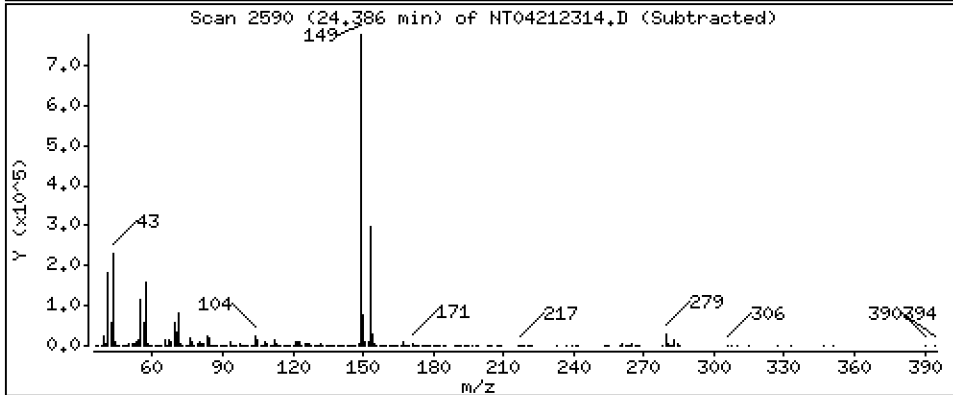
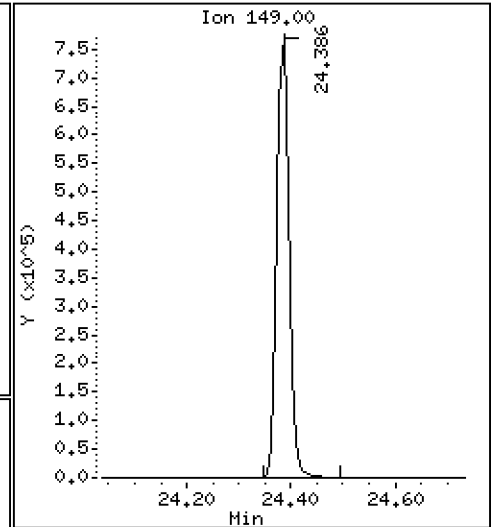
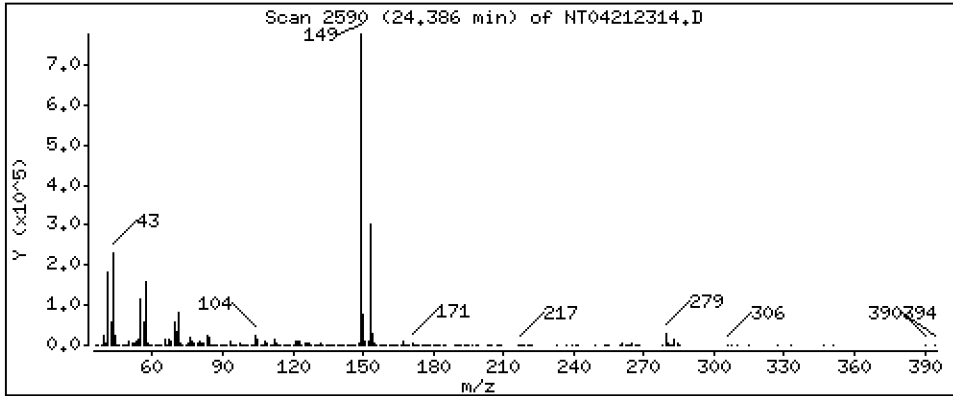
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,893 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

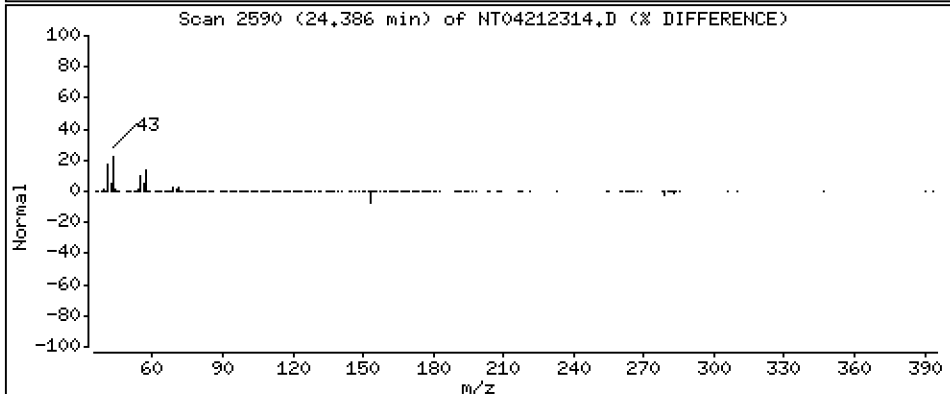
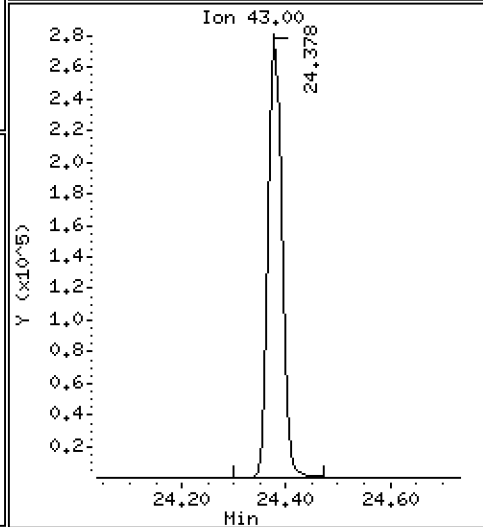
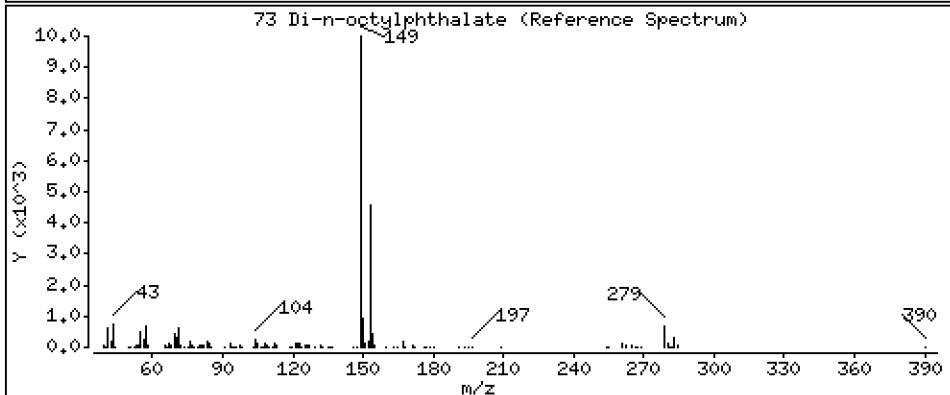
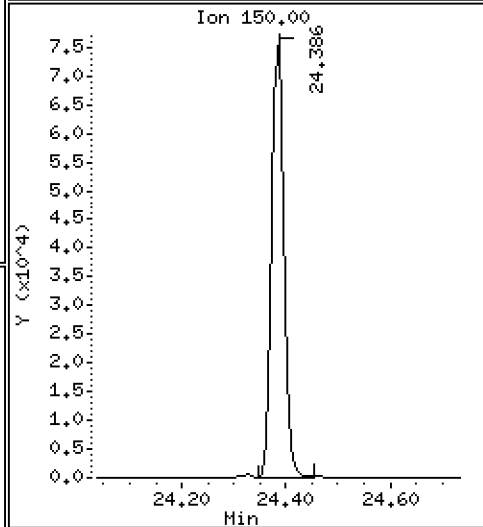
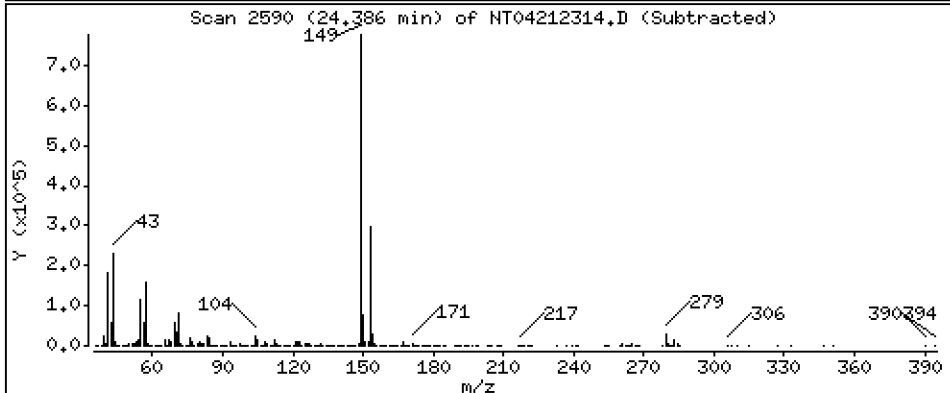
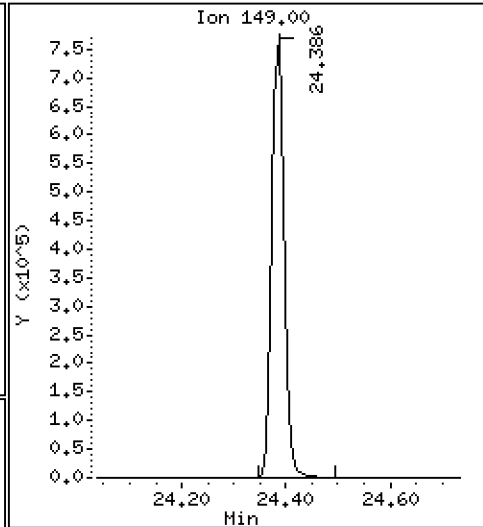
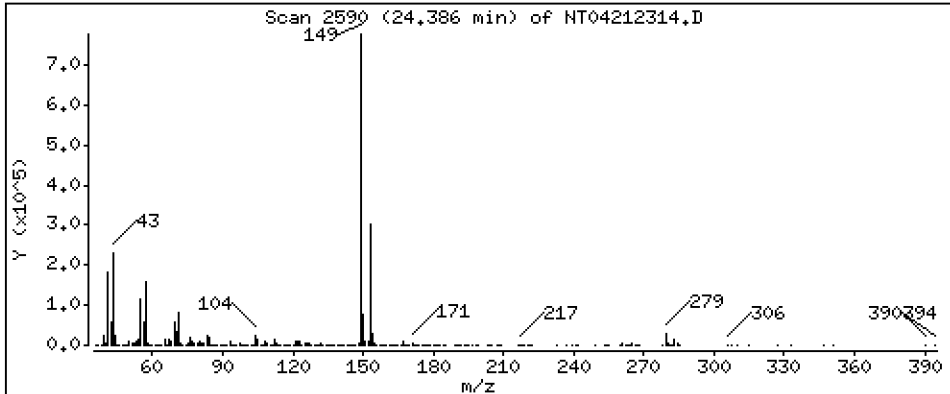
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,893 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

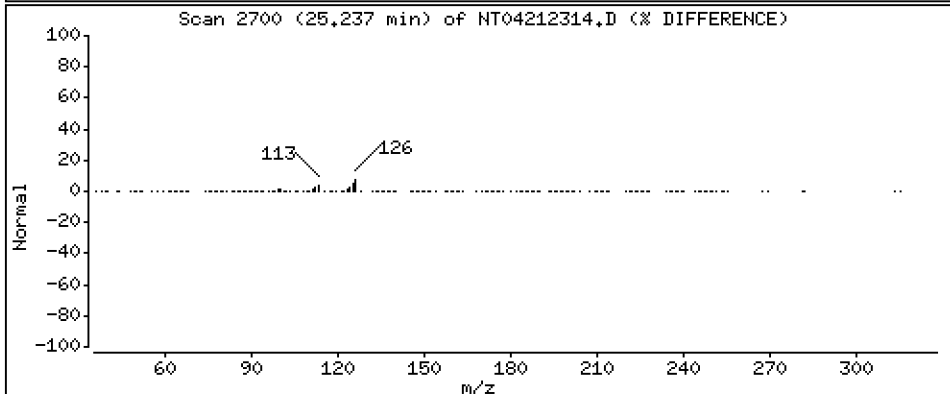
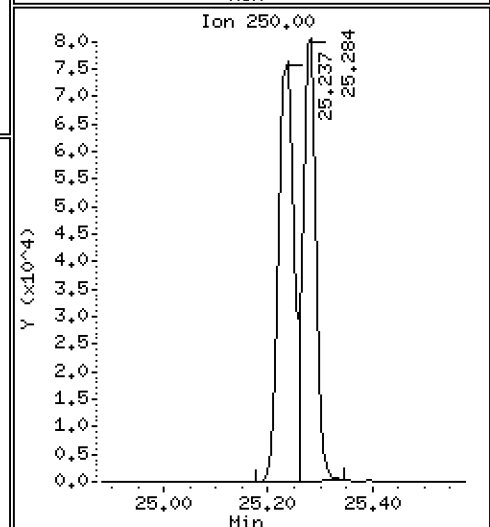
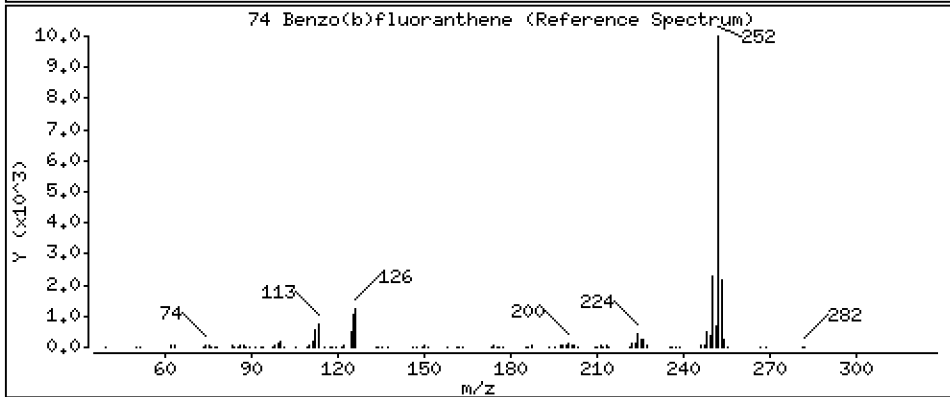
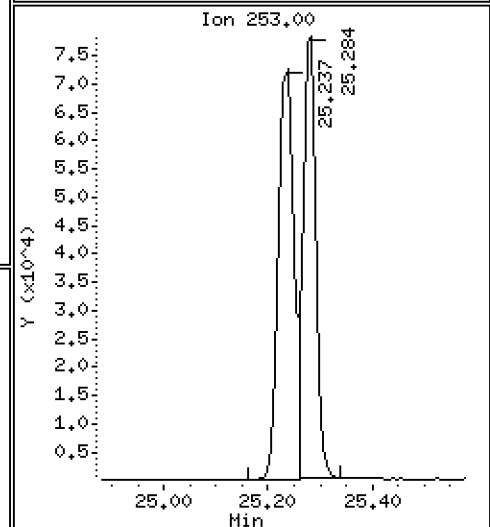
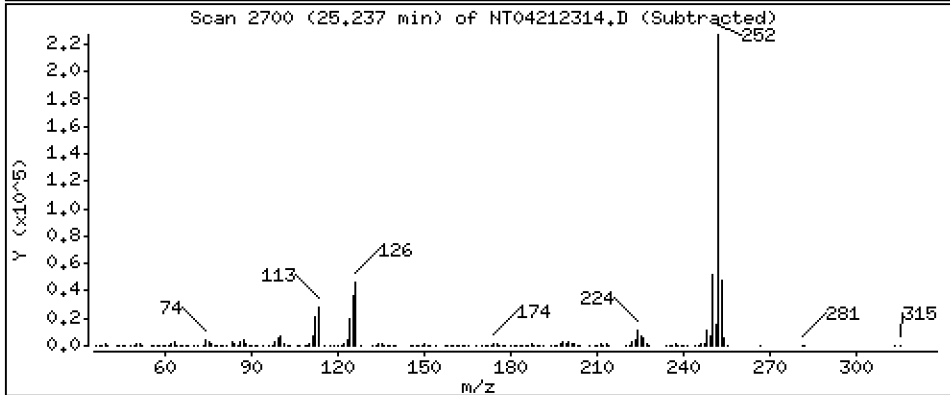
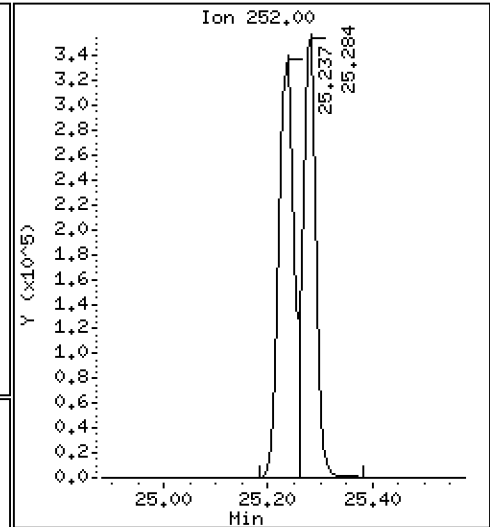
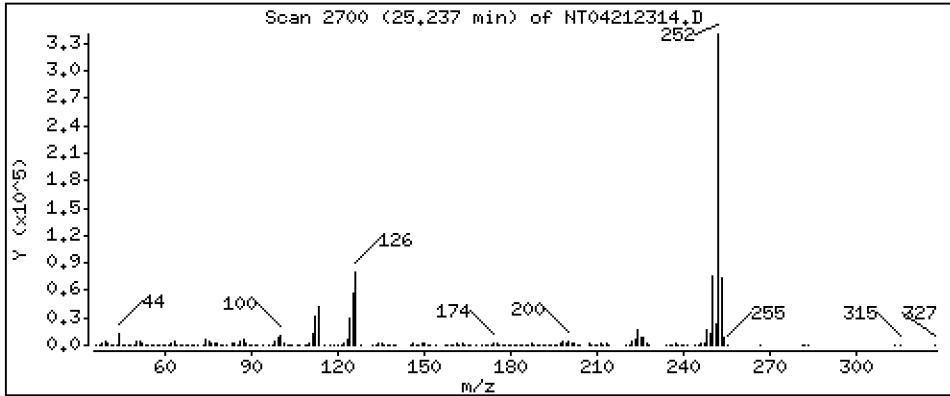
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 4,839 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

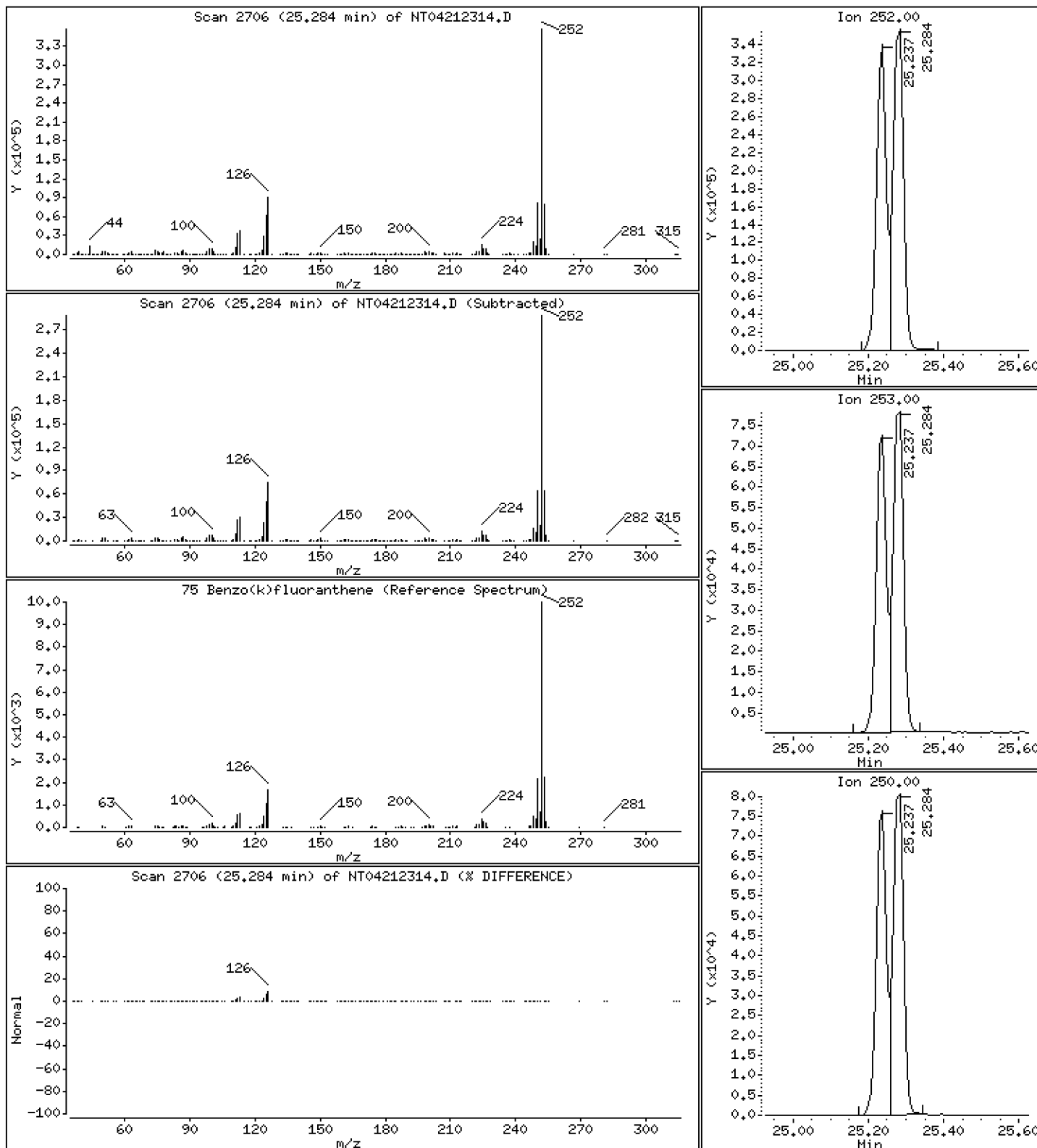
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 4,731 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

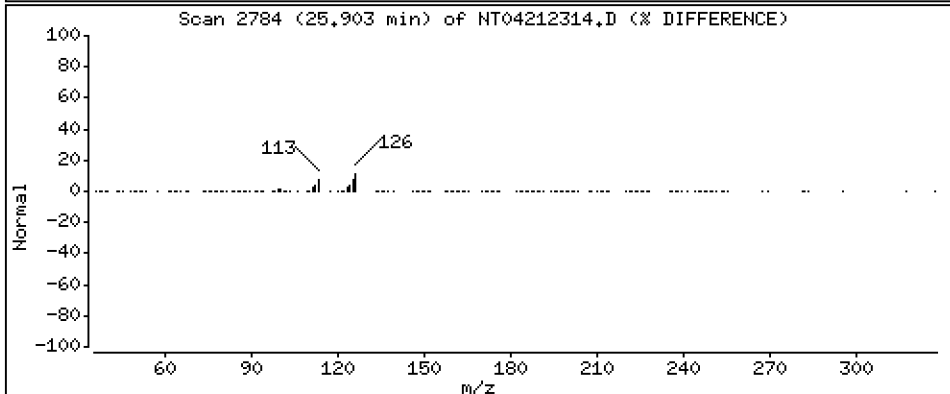
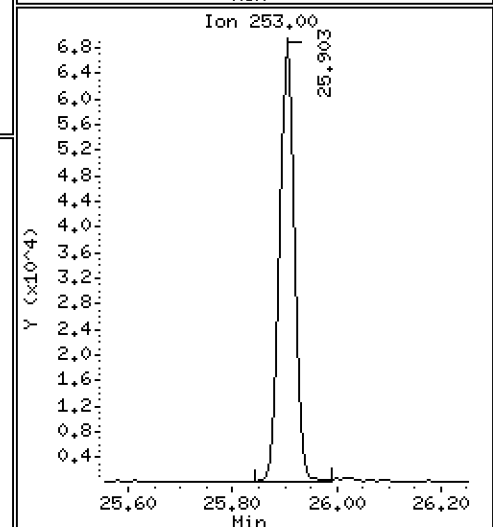
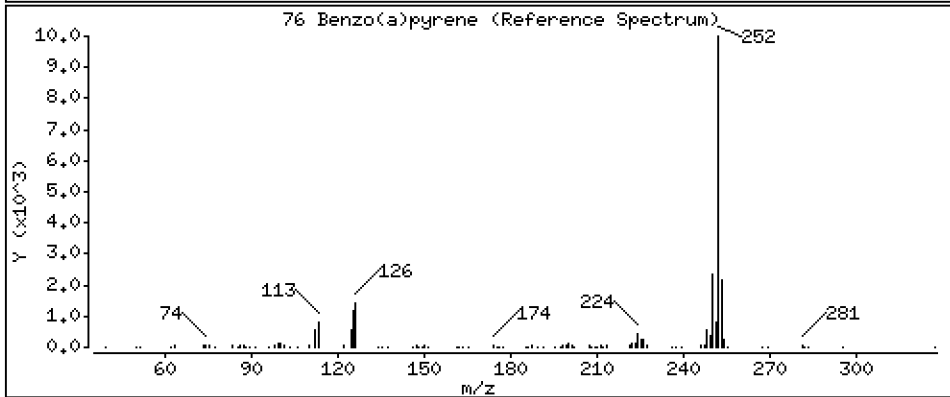
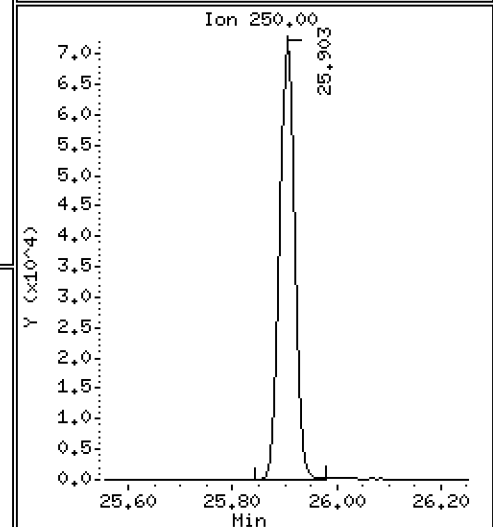
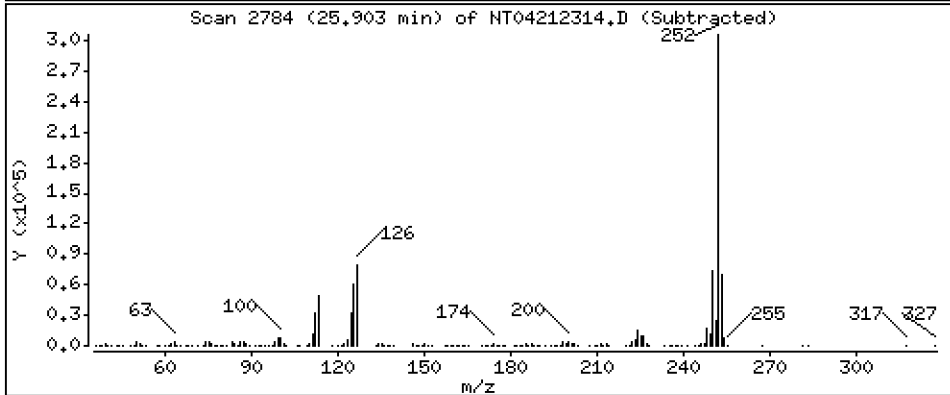
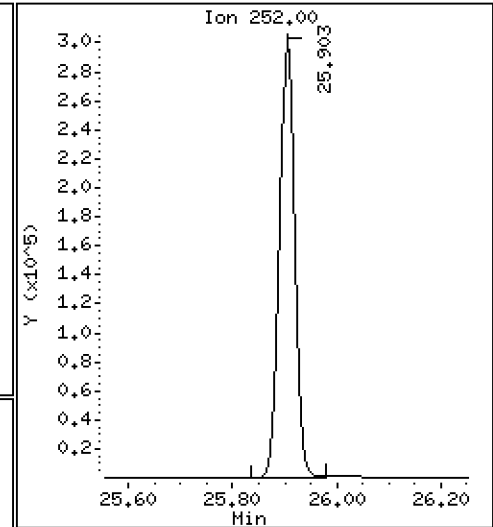
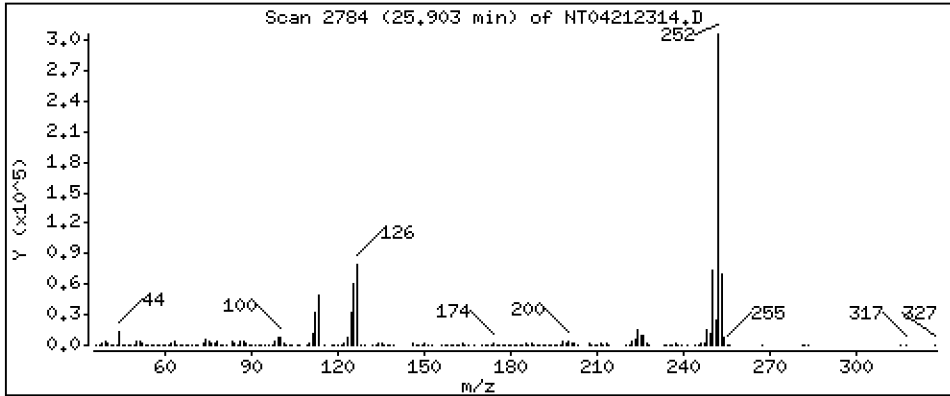
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 4,988 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

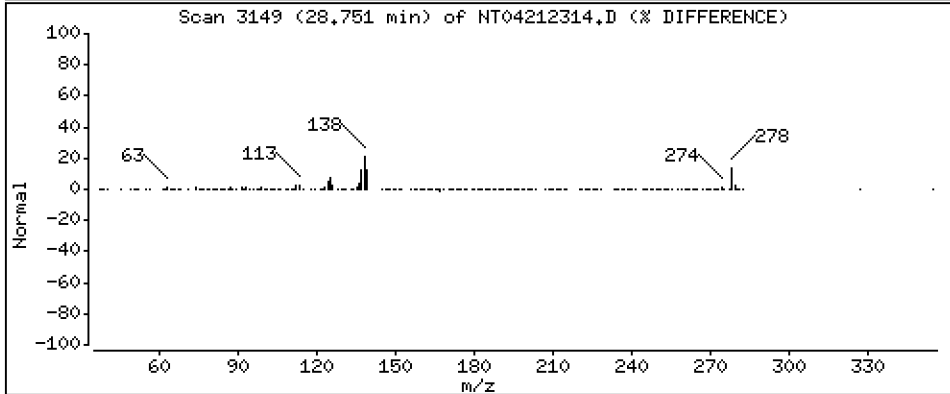
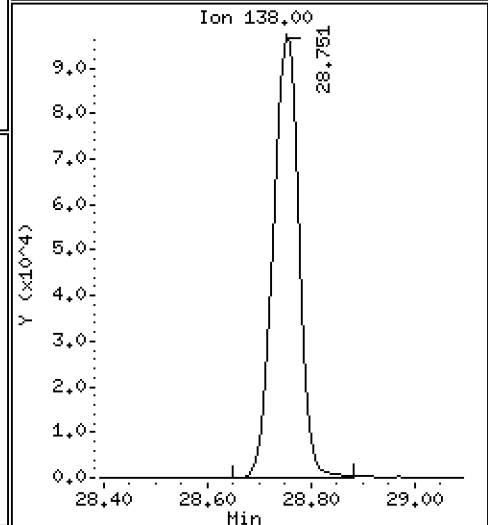
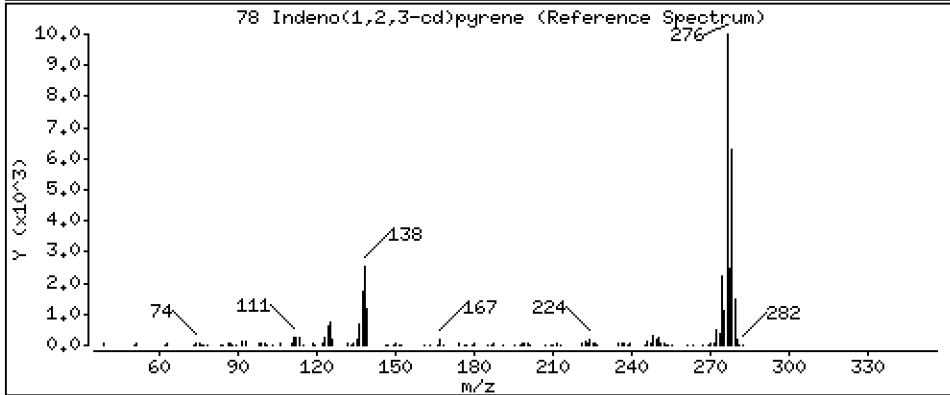
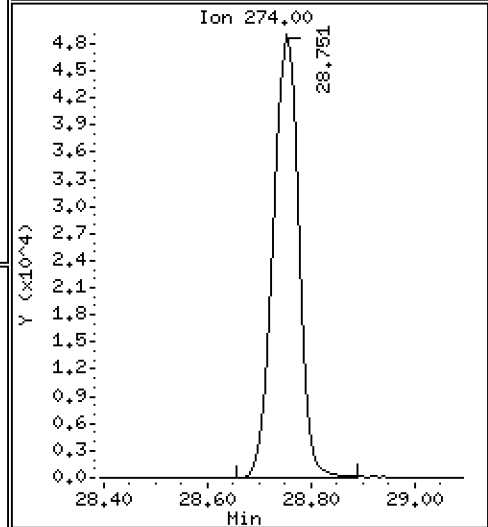
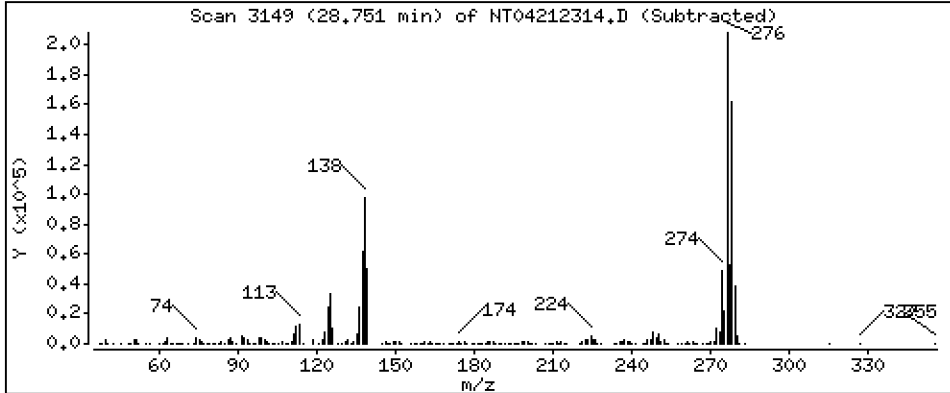
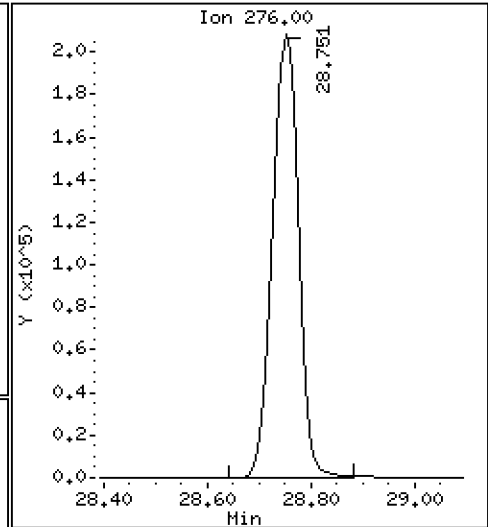
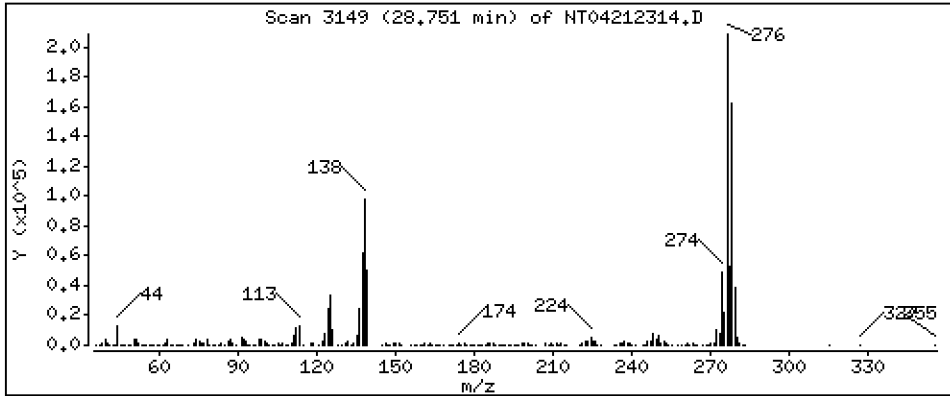
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 4,409 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

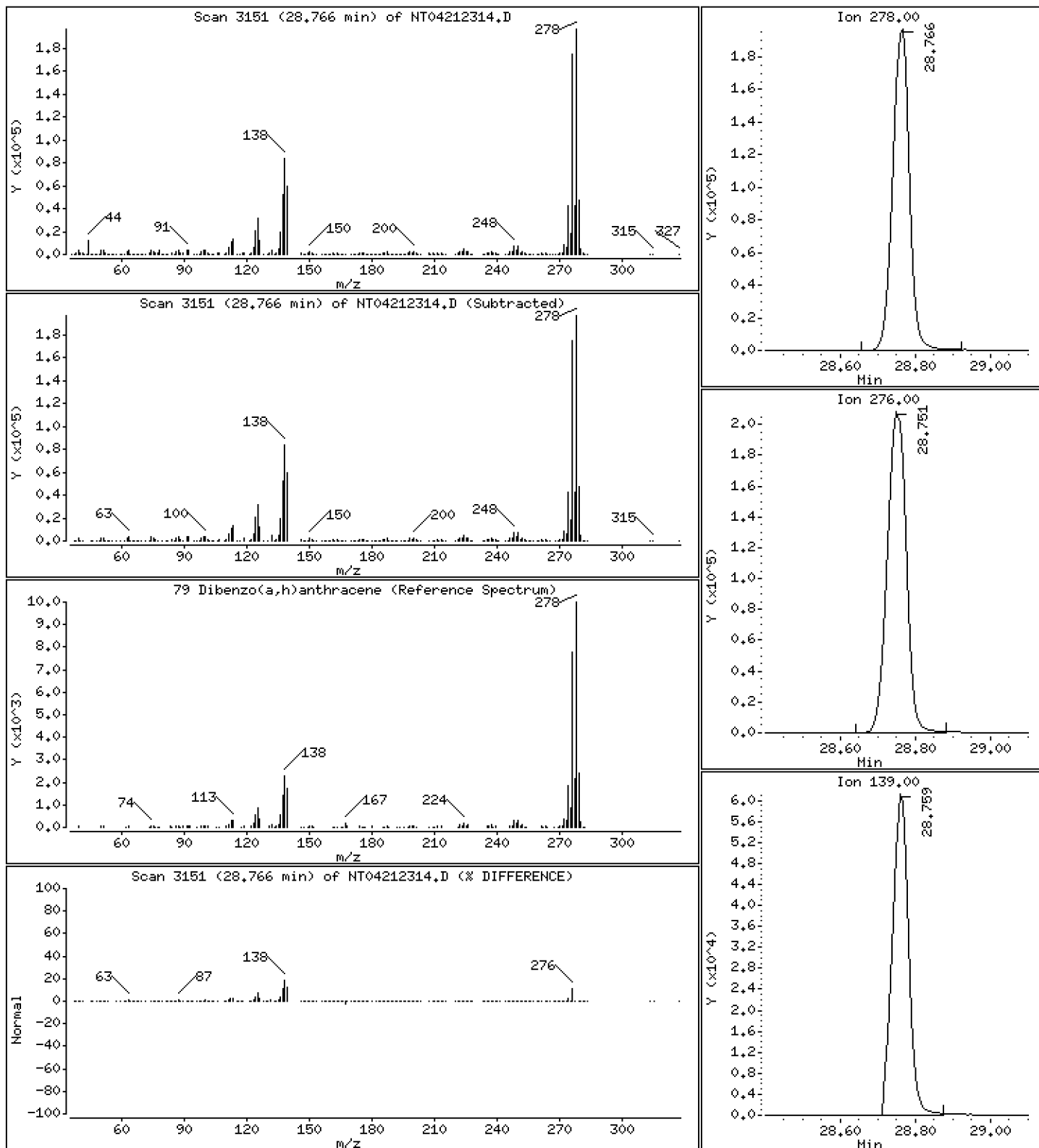
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,457 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

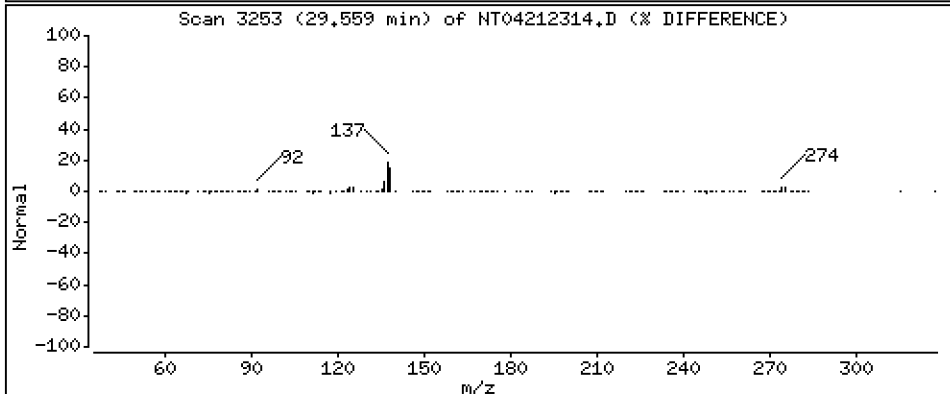
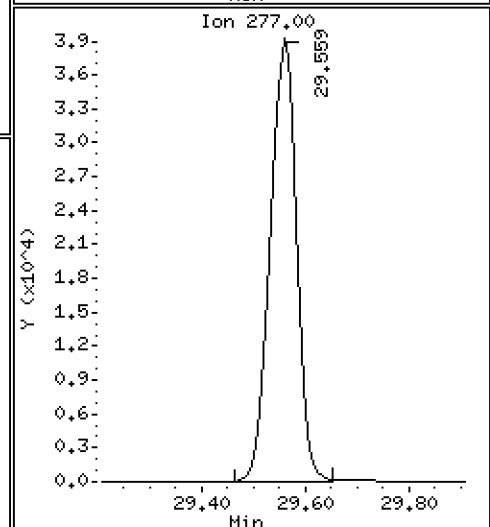
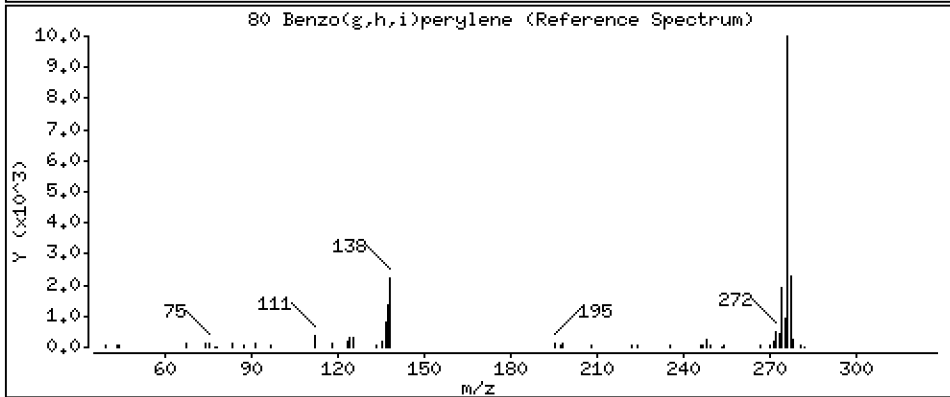
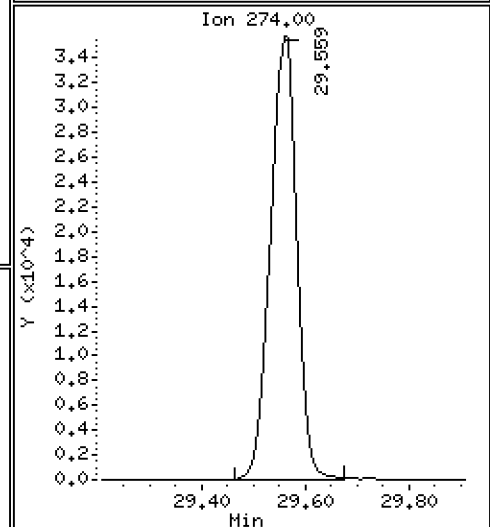
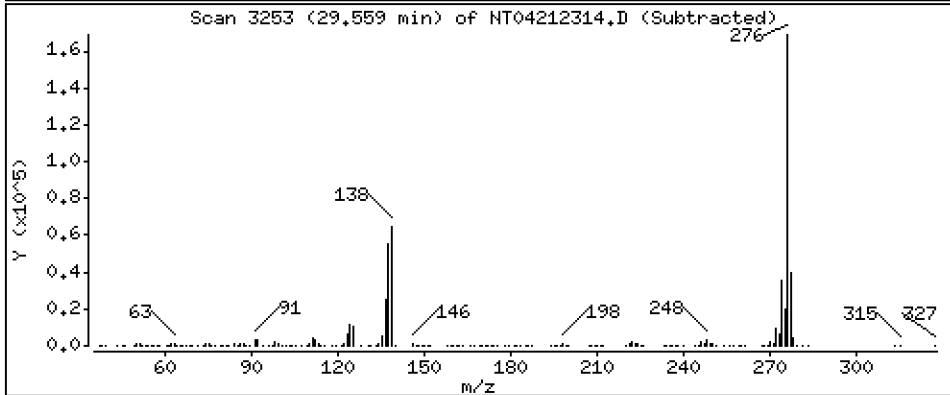
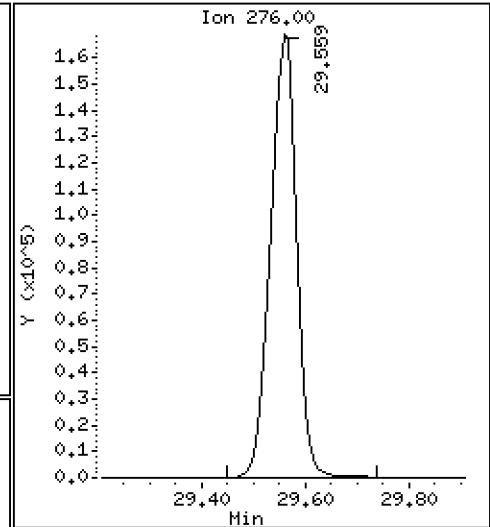
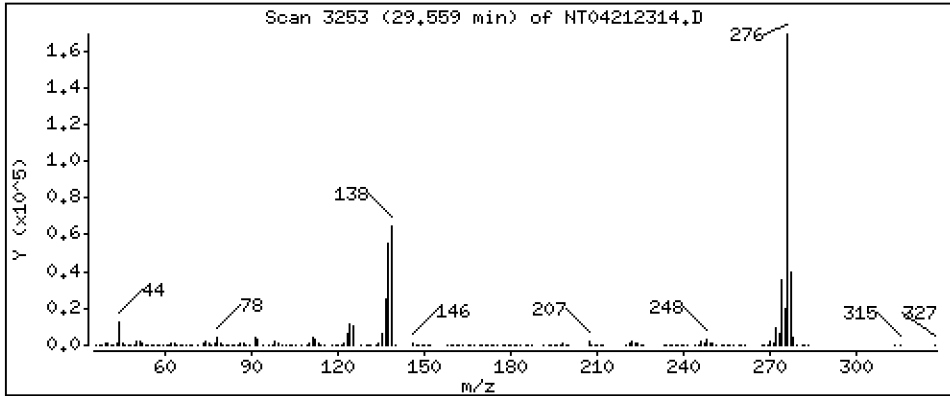
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 4,200 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

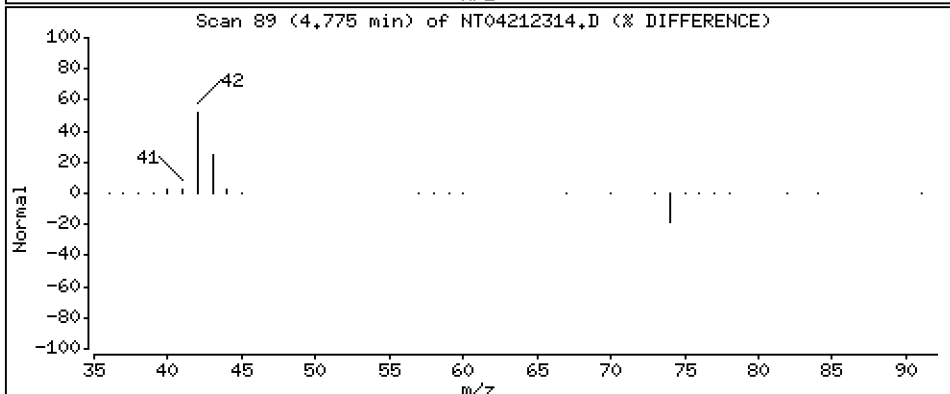
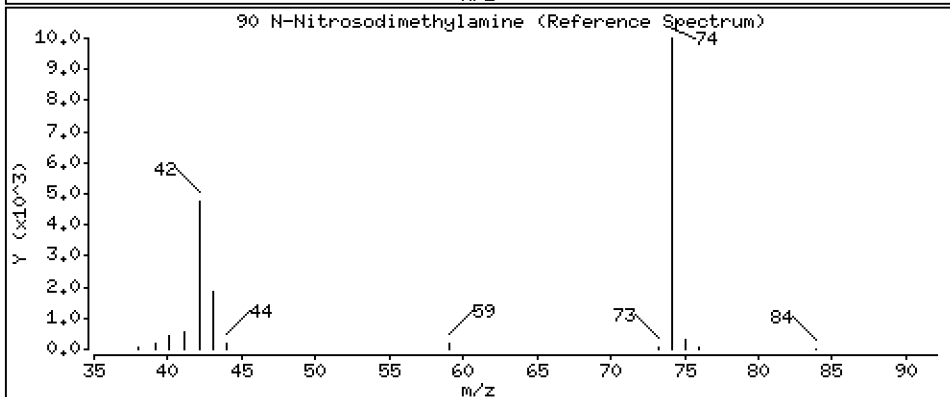
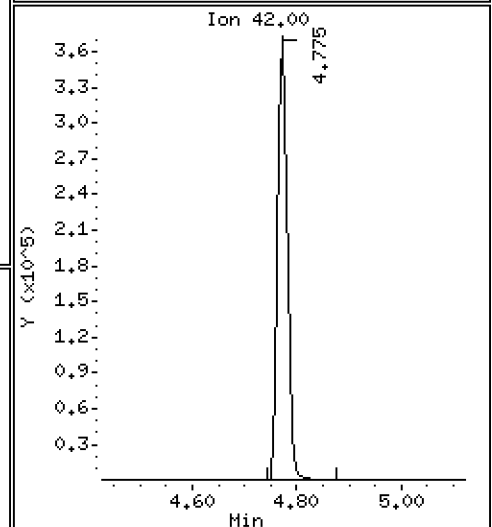
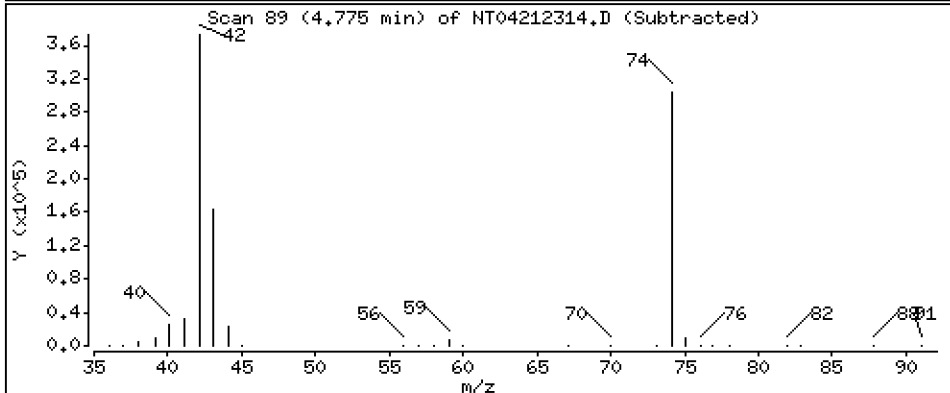
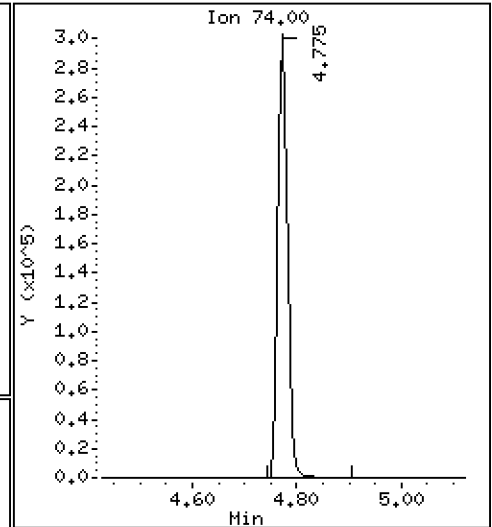
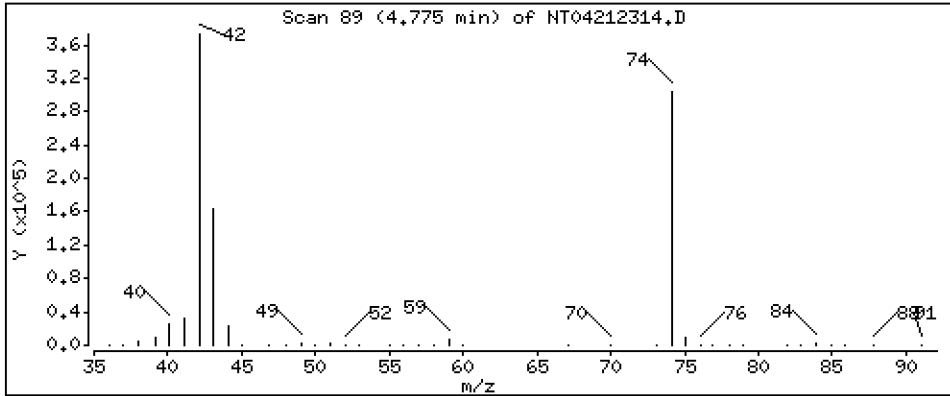
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 5.067 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

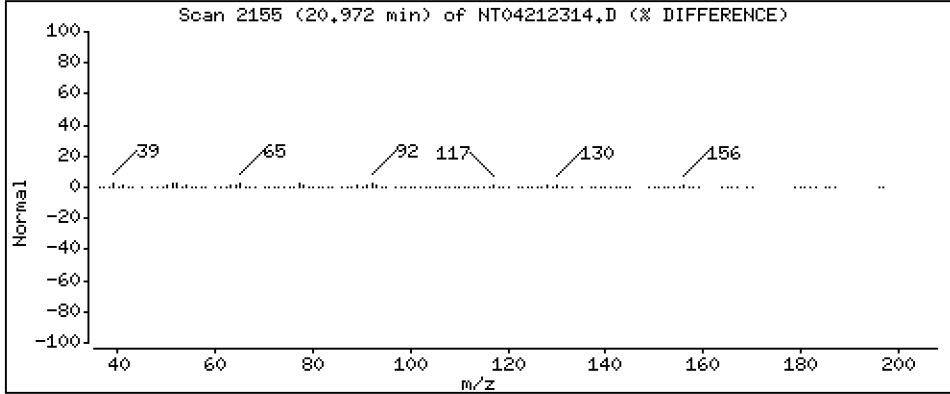
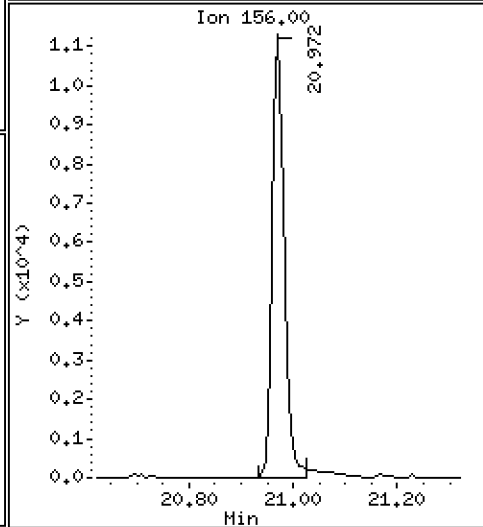
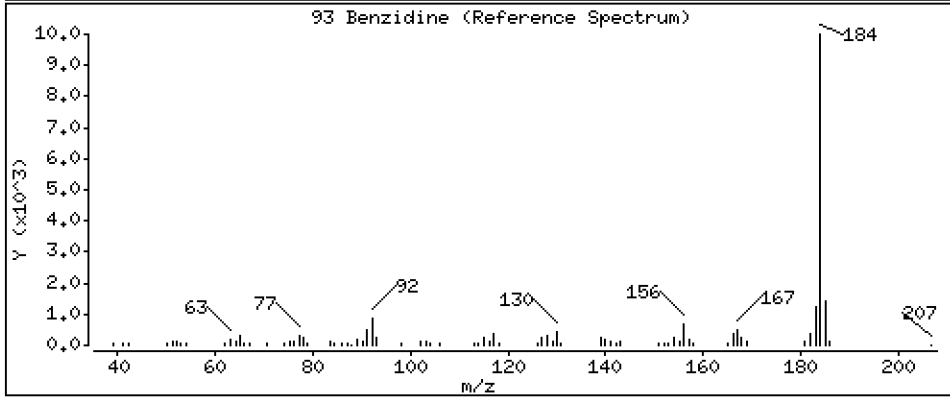
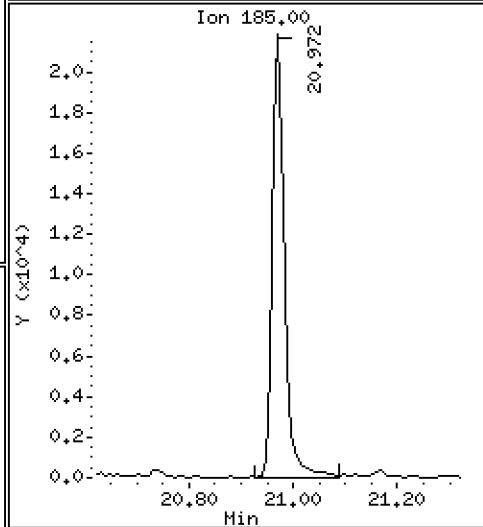
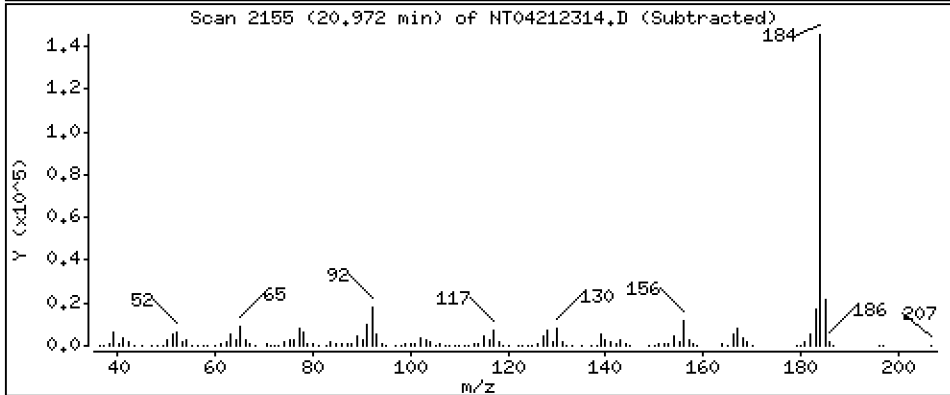
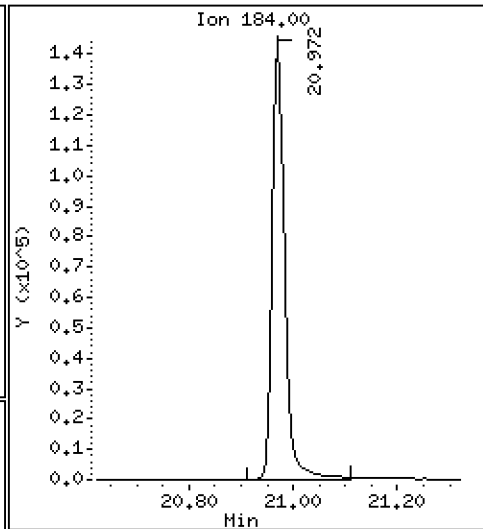
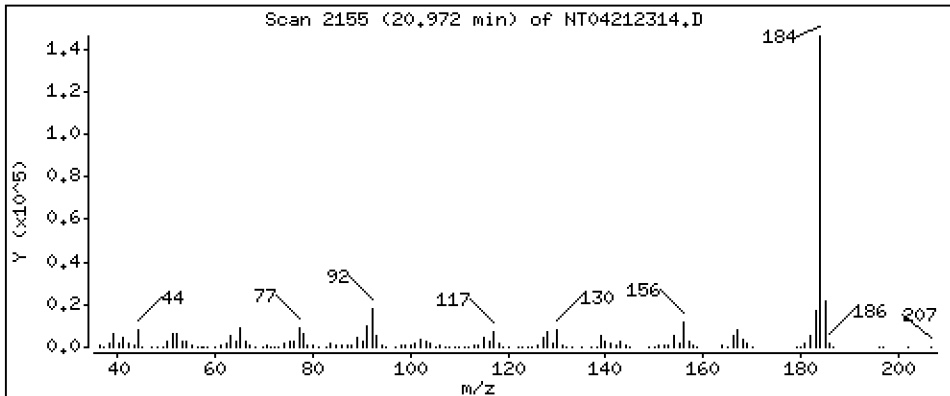
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 2,987 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

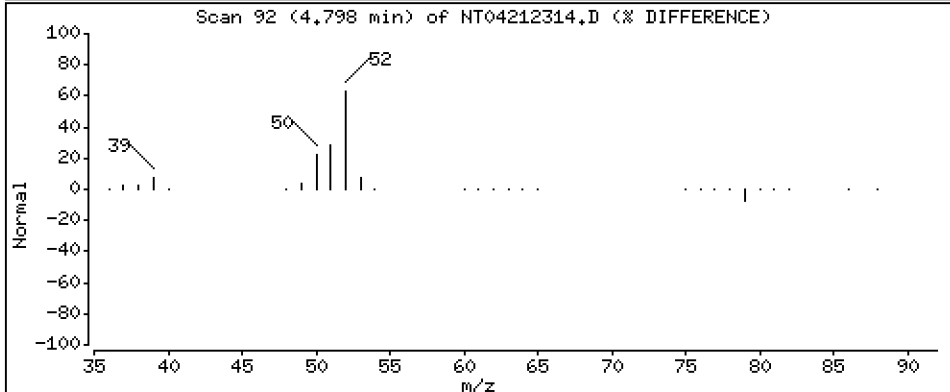
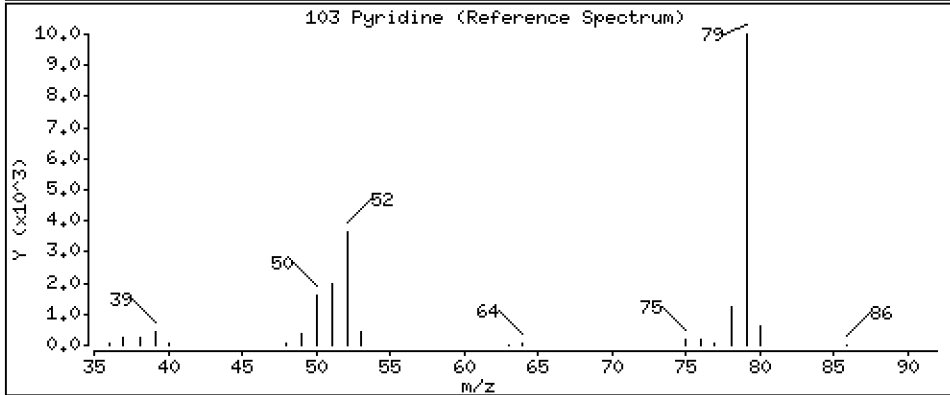
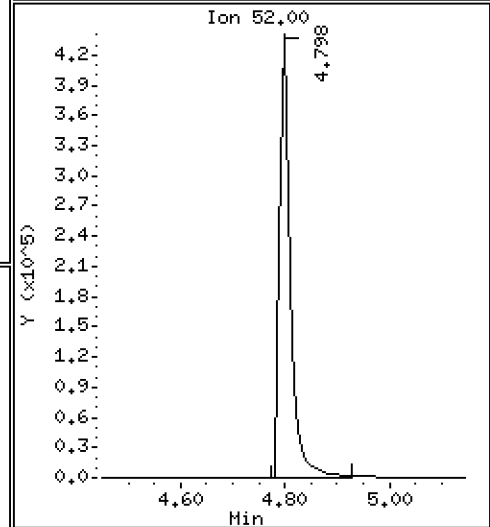
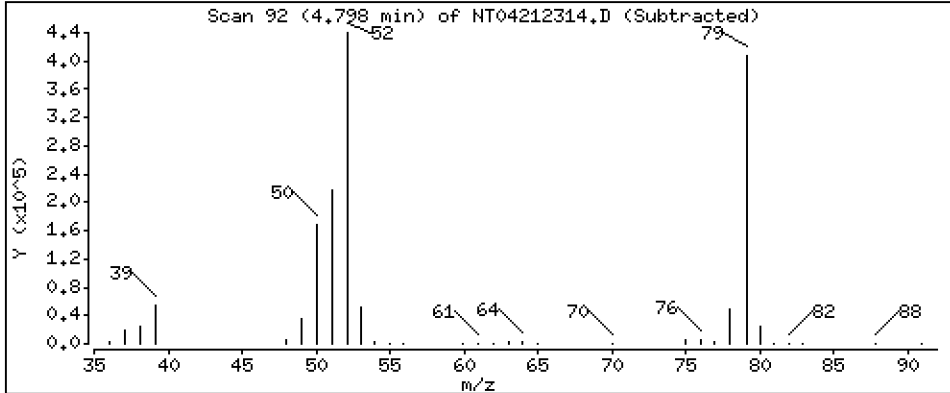
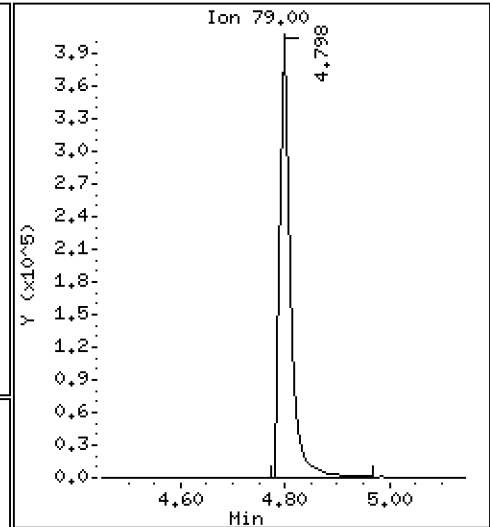
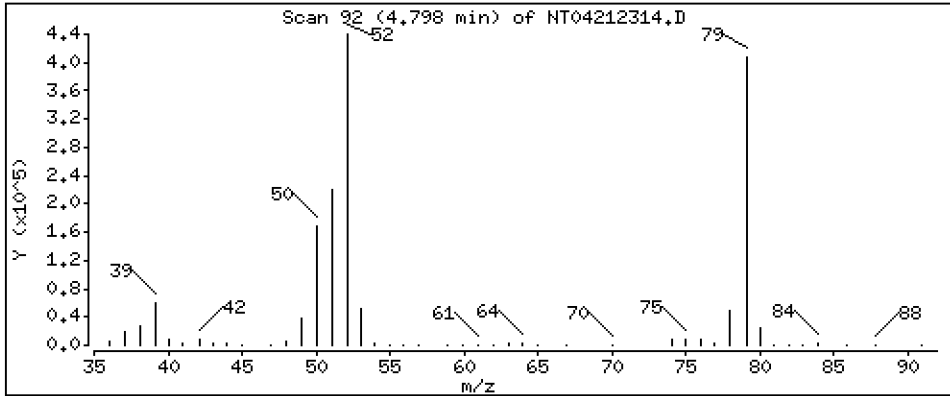
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 2,545 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

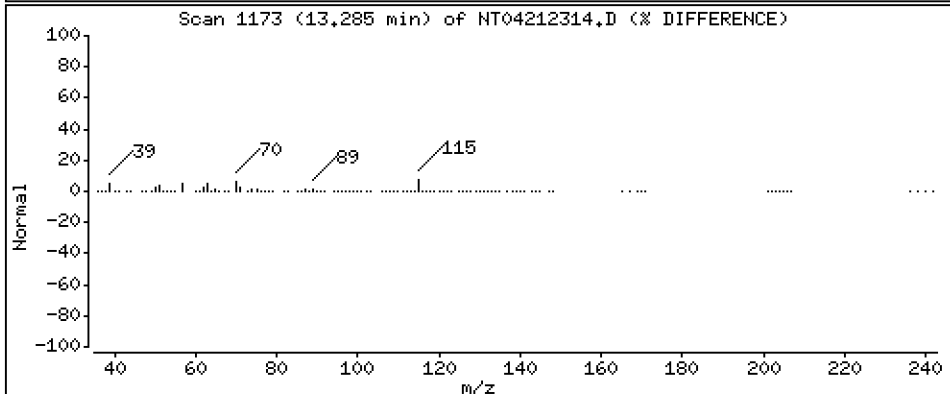
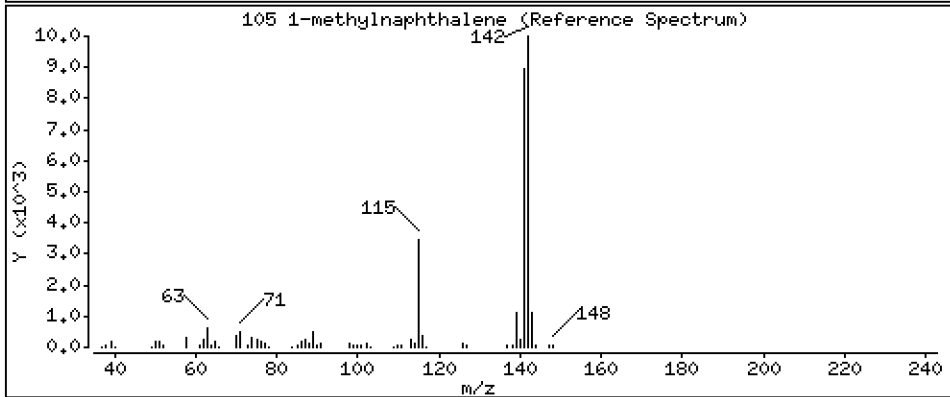
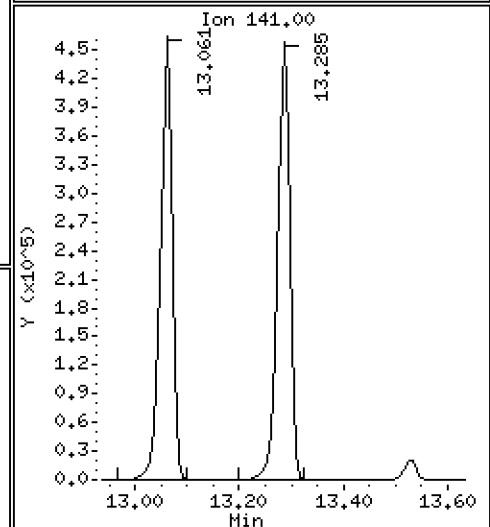
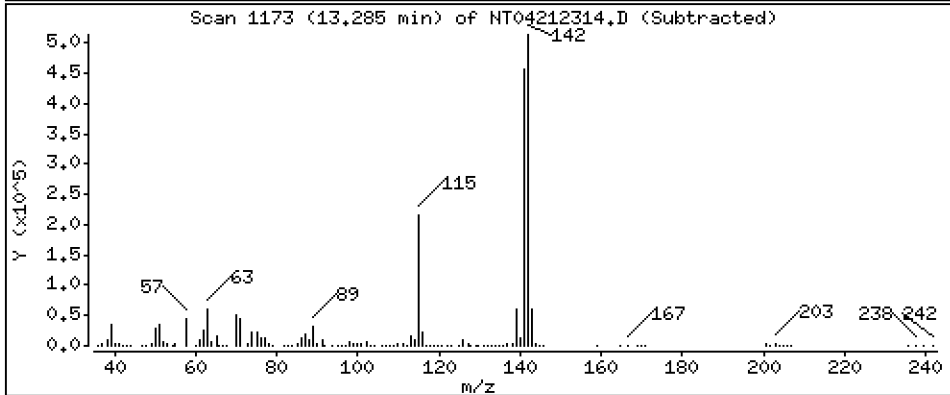
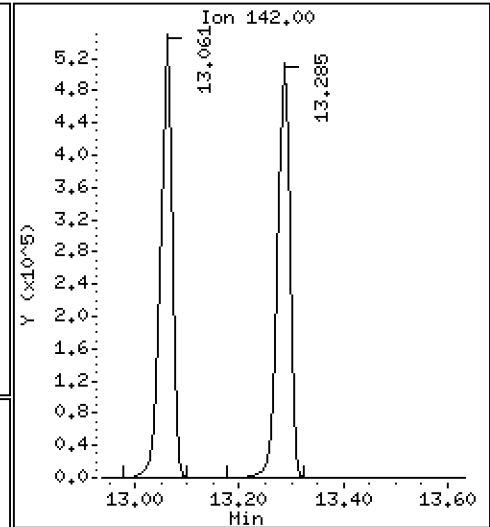
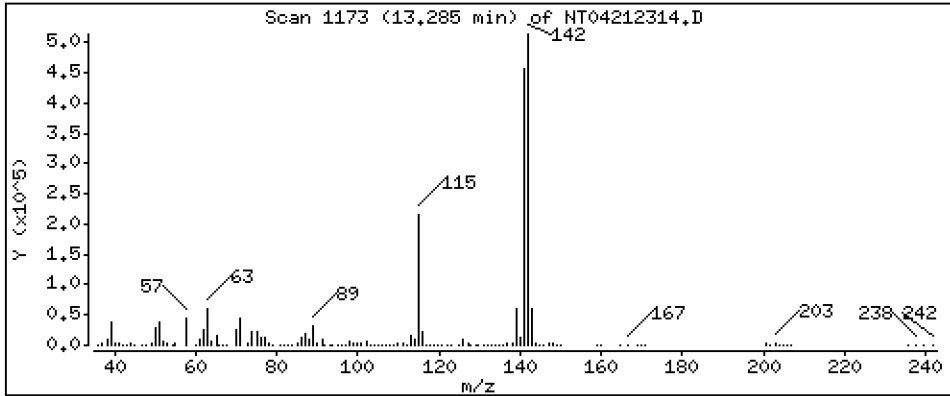
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 4,495 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

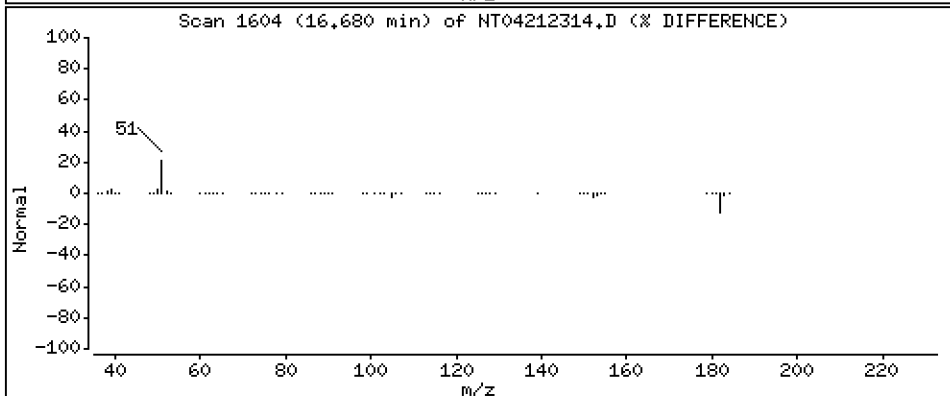
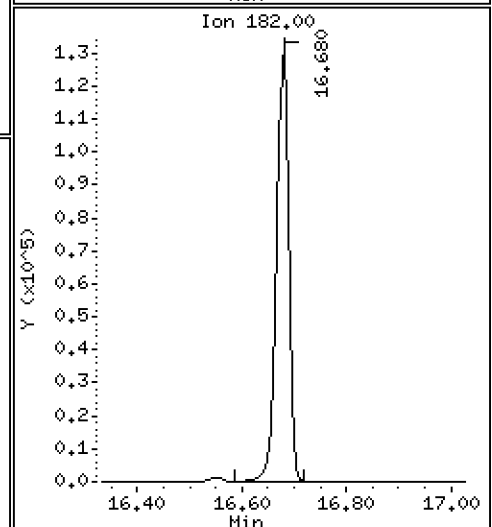
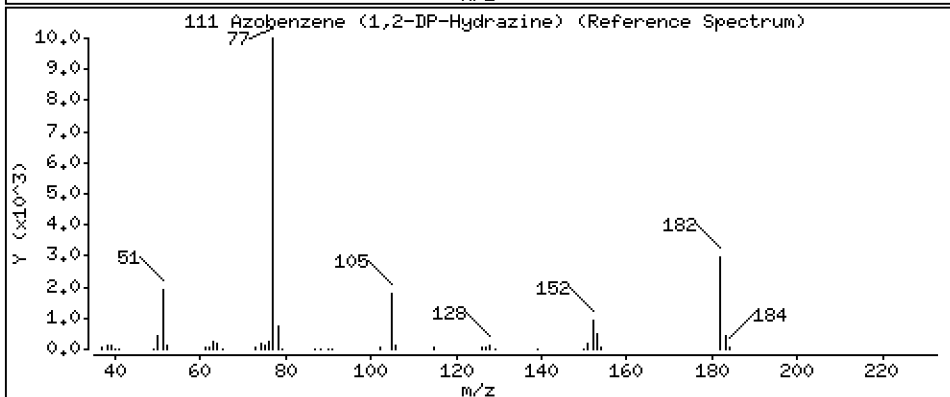
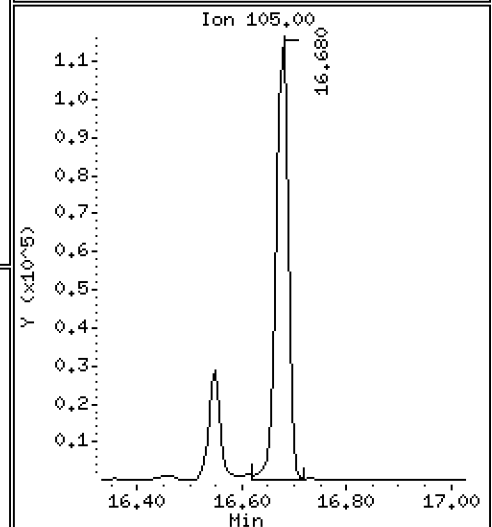
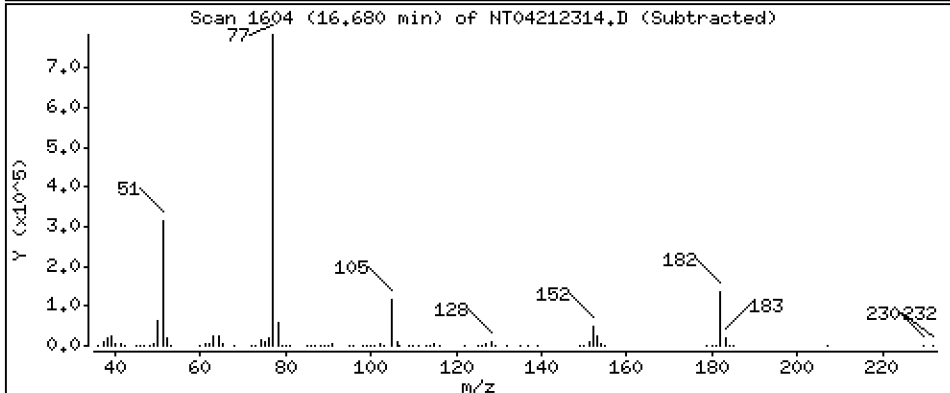
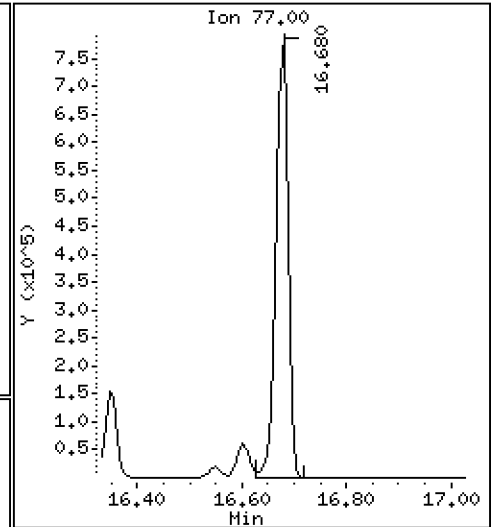
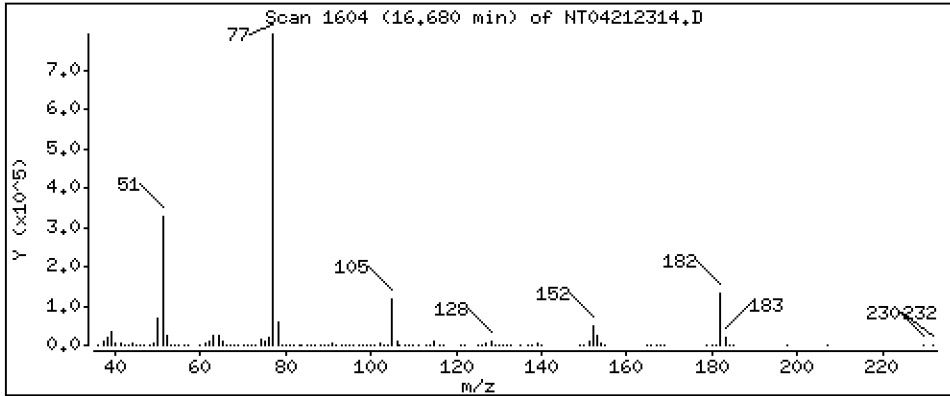
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 4,602 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

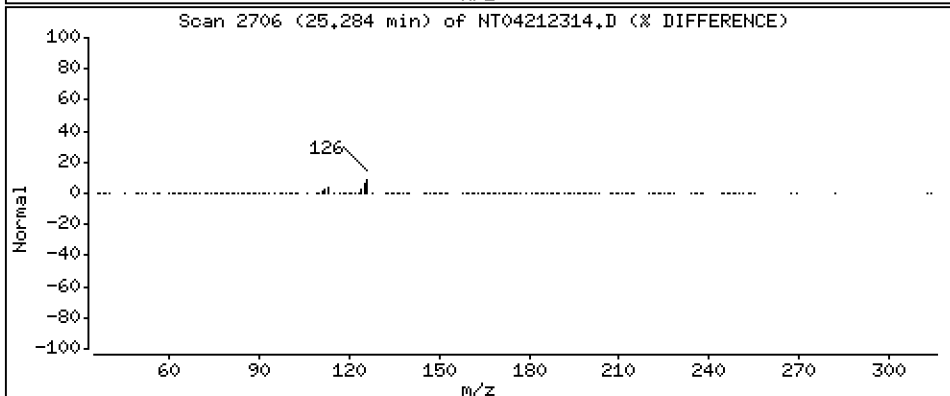
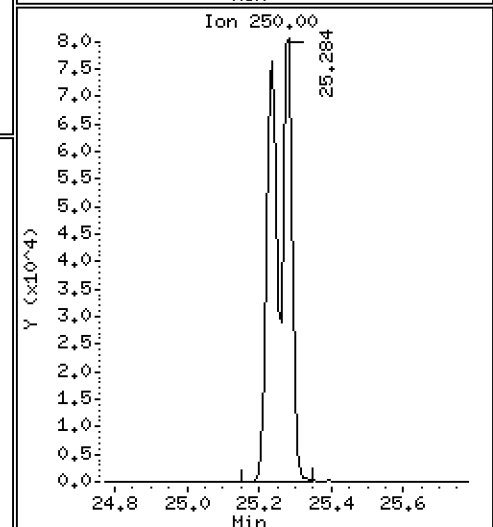
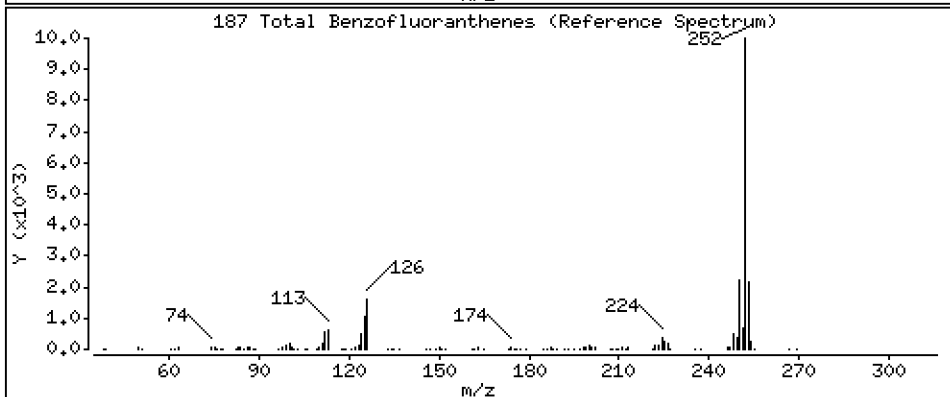
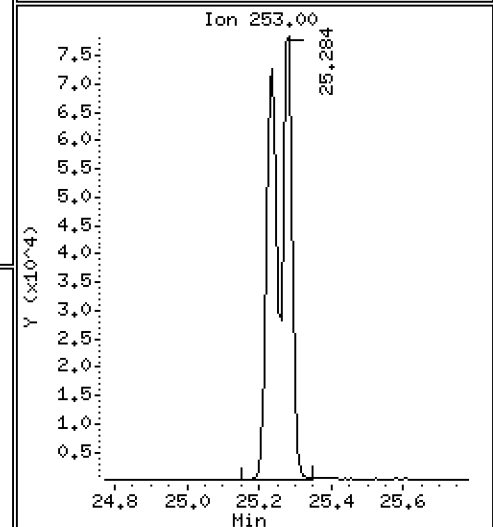
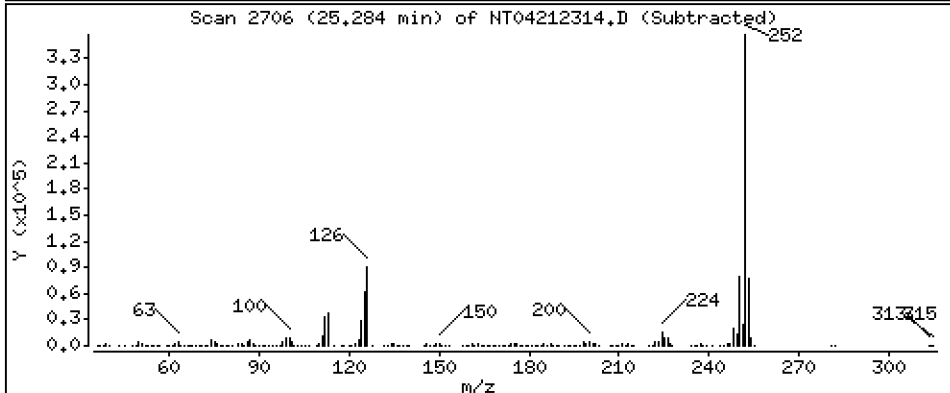
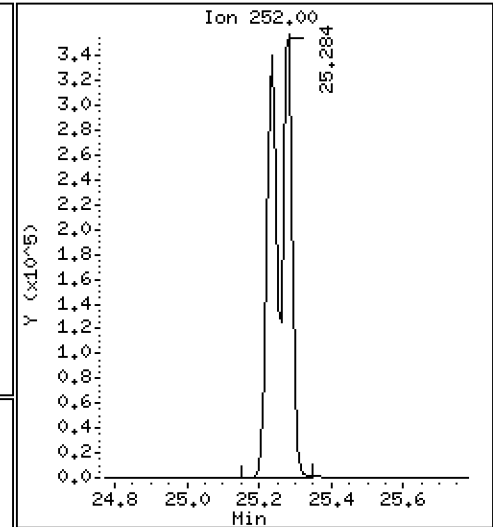
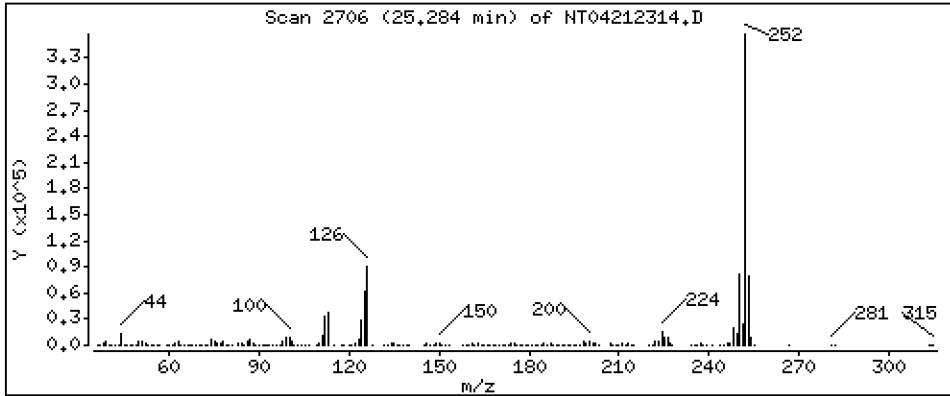
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 9,597 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

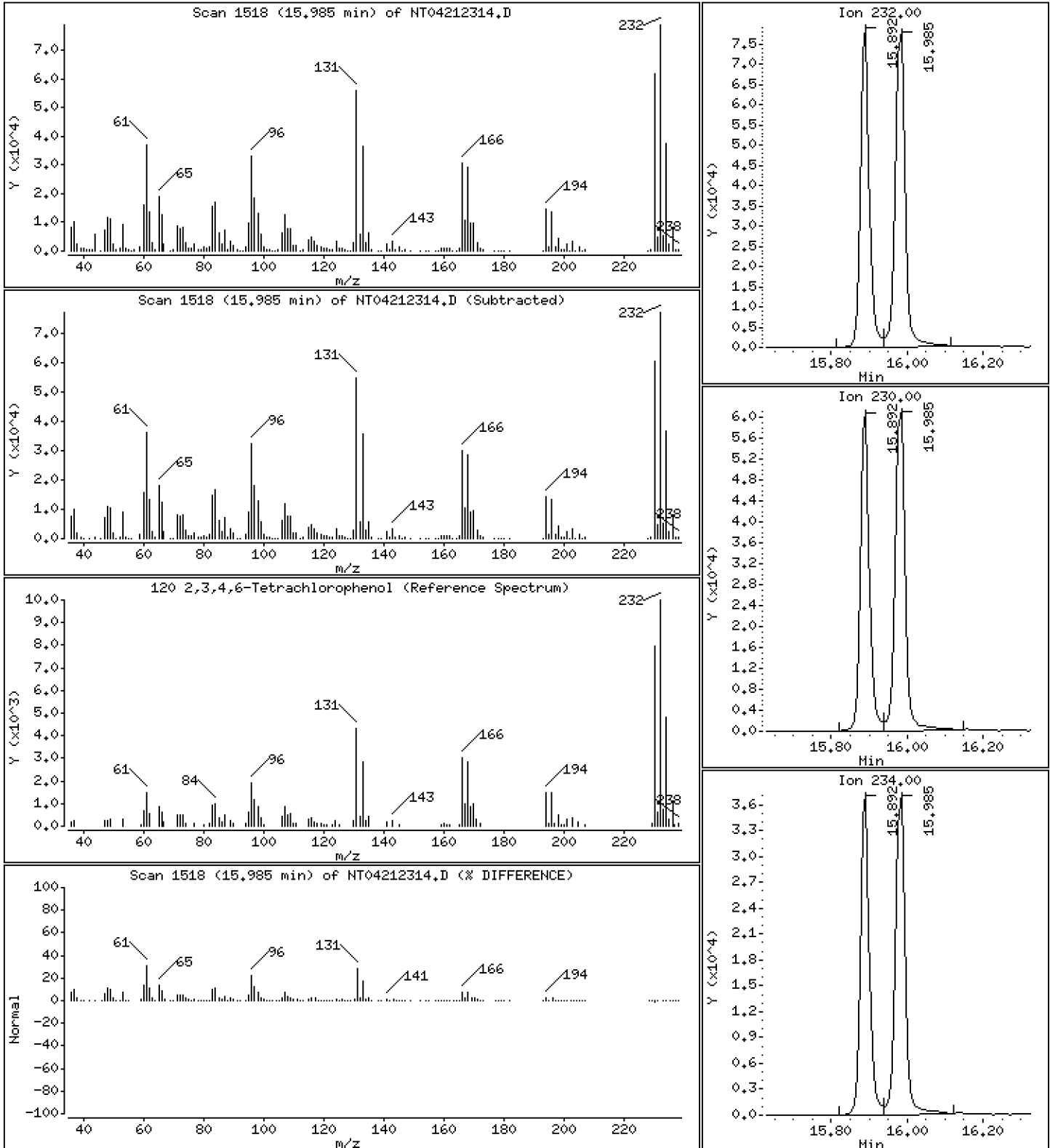
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 3,655 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212314.D  
 Lab Smp Id:  
 Inj Date : 21-APR-2023 21:16 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 11  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
=====	====		====	=====	=====	=====	=====	=====
\$ 1 2-Fluorophenol	112					Compound Not Detected.		
\$ 2 Phenol-d5	99					Compound Not Detected.		
3 Phenol	94		8.482	8.482	(0.931)	586904	4.33062	4.331
\$ 5 2-Chlorophenol-d4	132					Compound Not Detected.		
4 Bis(2-Chloroethyl)ether	93		8.660	8.660	(0.951)	524586	5.06979	5.070
6 2-Chlorophenol	128		8.768	8.775	(0.963)	422724	4.47822	4.478
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.993)	447514	4.73471	4.735
* 8 1,4-Dichlorobenzene-d4	152		9.108	9.108	(1.000)	238265	4.00000	
9 1,4-Dichlorobenzene	146		9.139	9.139	(1.003)	430582	4.77872	4.779
\$ 10 1,2-Dichlorobenzene-d4	152					Compound Not Detected.		
12 1,2-Dichlorobenzene	146		9.504	9.504	(1.043)	426176	4.75363	4.754
11 Benzyl alcohol	108		9.380	9.380	(1.030)	303477	4.90919	4.909
14 2,2'-oxybis(1-Chloropropane)	121		9.683	9.683	(1.063)	153192	5.06154	5.062
13 2-Methylphenol	108		9.605	9.605	(1.055)	379627	4.19884	4.199
17 Hexachloroethane	117		10.094	10.094	(1.108)	209265	4.87164	4.872
16 N-Nitroso-di-n-propylamine	70		9.947	9.947	(1.092)	430688	4.73681	4.737
15 4-Methylphenol	108		9.885	9.877	(1.085)	458285	4.45097	4.451
\$ 18 Nitrobenzene-d5	82					Compound Not Detected.		
19 Nitrobenzene	77		10.249	10.249	(0.883)	591951	4.71455	4.715
20 Isophorone	82		10.699	10.700	(0.921)	1088789	6.31735	6.317 (H)
21 2-Nitrophenol	139		10.886	10.886	(0.937)	229795	3.77910	3.779
22 2,4-Dimethylphenol	107		10.932	10.932	(0.941)	350731	3.70706	3.707
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	597774	5.39628	5.396
24 Benzoic acid	105		11.118	11.134	(0.957)	532824	6.80053	6.801
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	320774	3.72812	3.728
26 1,2,4-Trichlorobenzene	180		11.529	11.529	(0.993)	320315	4.53557	4.536
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	954318	4.00000	
28 Naphthalene	128		11.660	11.660	(1.004)	1234609	4.81308	4.813
29 4-Chloroaniline	127		11.783	11.784	(1.015)	418373	3.76974	3.770
30 Hexachlorobutadiene	225		12.023	12.015	(1.035)	150621	4.66501	4.665
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	390174	4.61478	4.615
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	831319	4.47405	4.474
33 Hexachlorocyclopentadiene	237		13.532	13.532	(0.887)	159262	4.78266	4.783



Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196		13.679	13.679	(0.897)	189916	4.57800	4.578	
35 2,4,5-Trichlorophenol	196		13.749	13.757	(0.901)	195431	4.43440	4.434	
§ 36 2-Fluorobiphenyl	172		Compound Not Detected.						
37 2-Chloronaphthalene	162		14.058	14.058	(0.921)	698393	4.64274	4.643	
38 2-Nitroaniline	65		14.321	14.322	(0.939)	359593	4.47509	4.475	
39 Dimethylphthalate	163		14.755	14.755	(0.967)	706597	4.55357	4.554	
40 Acenaphthylene	152		14.941	14.933	(0.979)	1156951	4.81912	4.819	
41 2,6-Dinitrotoluene	165		14.902	14.902	(0.977)	164516	4.67642	4.676	
* 42 Acenaphthene-d10	164		15.258	15.250	(1.000)	452418	4.00000		
43 3-Nitroaniline	138		15.181	15.181	(0.995)	203689	4.60816	4.608	
44 Acenaphthene	153		15.320	15.320	(1.004)	691934	4.81125	4.811	
45 2,4-Dinitrophenol	184		15.389	15.397	(1.009)	35607	1.67440	1.674	
46 Dibenzofuran	168		15.644	15.644	(1.025)	927906	4.51952	4.520	
47 4-Nitrophenol	109		15.482	15.482	(1.015)	117144	4.55436	4.554	
48 2,4-Dinitrotoluene	165		15.706	15.706	(1.029)	212920	4.47005	4.470	
50 Diethylphthalate	149		16.217	16.217	(1.063)	768389	4.57476	4.575	
49 Fluorene	166		16.363	16.363	(1.072)	868346	4.77950	4.780	
51 4-Chlorophenyl-phenylether	204		16.356	16.348	(1.072)	357571	4.75807	4.758	
52 4-Nitroaniline	138		16.456	16.456	(1.079)	176660	4.51964	4.520	
53 4,6-Dinitro-2-methylphenol	198		16.548	16.548	(0.904)	68829	3.00526	3.005	
54 N-Nitrosodiphenylamine	169		16.602	16.602	(0.907)	493869	4.74847	4.748	
§ 55 2,4,6-Tribromophenol	330		Compound Not Detected.						
56 4-Bromophenyl-phenylether	248		17.358	17.358	(0.948)	161898	4.73244	4.732	
57 Hexachlorobenzene	284		17.675	17.675	(0.966)	151077	4.36687	4.367	
58 Pentachlorophenol	266		18.031	18.031	(0.985)	82309	3.74067	3.741	
* 59 Phenanthrene-d10	188		18.302	18.302	(1.000)	736482	4.00000		
60 Phenanthrene	178		18.348	18.348	(1.003)	968886	4.65282	4.653	
61 Anthracene	178		18.441	18.441	(1.008)	853683	4.27441	4.274	
62 Carbazole	167		18.774	18.774	(1.026)	775527	4.19628	4.196	
63 Di-n-butylphthalate	149		19.563	19.563	(1.069)	1341607	4.76191	4.762	
64 Fluoranthene	202		20.739	20.739	(0.888)	973087	5.06753	5.068	
65 Pyrene	202		21.165	21.165	(0.906)	975738	4.92043	4.920	
§ 66 Terphenyl-d14	244		Compound Not Detected.						
67 Butylbenzylphthalate	149		22.365	22.365	(0.958)	501431	4.29069	4.291	
68 Benzo(a)anthracene	228		23.325	23.325	(0.999)	693668	4.67137	4.671	
* 69 Chrysene-d12	240		23.356	23.356	(1.000)	415993	4.00000		
70 3,3'-Dichlorobenzidine	252		23.278	23.278	(0.997)	446471	9.38140	9.381	
71 Chrysene	228		23.402	23.394	(1.002)	653516	4.71863	4.719	
72 bis(2-Ethylhexyl)phthalate	149		24.385	24.385	(1.000)	1188340	4.89312	4.893	
* 134 Di-n-octylphthalate-d4	153		24.378	24.370	(1.000)	909750	4.00000		
73 Di-n-octylphthalate	149		24.385	24.385	(1.000)	1188340	4.89312	4.893	
74 Benzo(b)fluoranthene	252		25.237	25.229	(0.970)	678474	4.83853	4.839	
75 Benzo(k)fluoranthene	252		25.283	25.276	(0.972)	650971	4.73139	4.731	
76 Benzo(a)pyrene	252		25.903	25.903	(0.996)	591029	4.98760	4.988	
* 77 Perylene-d12	264		26.019	26.027	(1.000)	420543	4.00000		
78 Indeno(1,2,3-cd)pyrene	276		28.750	28.743	(1.105)	722537	4.40939	4.409	
79 Dibenzo(a,h)anthracene	278		28.766	28.750	(1.106)	597382	4.45679	4.457	
80 Benzo(g,h,i)perylene	276		29.558	29.558	(1.136)	582685	4.20046	4.200	
90 N-Nitrosodimethylamine	74		4.774	4.774	(0.524)	362967	5.06652	5.067	
91 Aniline	93		Compound Not Detected.						
93 Benzidine	184		20.971	20.971	(0.898)	226386	2.98741	2.987	
103 Pyridine	79		4.797	4.797	(0.527)	539756	2.54524	2.545	
105 1-methylnaphthalene	142		13.284	13.285	(1.144)	806496	4.49478	4.495	
111 Azobenzene (1,2-DP-Hydrazine)	77		16.679	16.679	(1.093)	1192930	4.60243	4.602	

Compounds	QUANT SIG		CONCENTRATIONS					
	MASS		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
=====	=====		=====	=====	=====	=====	=====	=====
187 Total Benzofluoranthenes	252		25.283	25.276	(0.972)	1274063	9.59749	9.597
120 2,3,4,6-Tetrachlorophenol	232		15.984	15.977	(1.048)	145878	3.65464	3.655

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212314.D Calibration Time: 17:00  
 Lab Smp Id:  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	238265	-0.36
27 Naphthalene-d8	954450	477225	1908900	954318	-0.01
42 Acenaphthene-d10	448699	224350	897398	452418	0.83
59 Phenanthrene-d10	711389	355695	1422778	736482	3.53
69 Chrysene-d12	410209	205105	820418	415993	1.41
134 Di-n-octylphthala	929005	464503	1858010	909750	-2.07
77 Perylene-d12	424249	212125	848498	420543	-0.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.09
27 Naphthalene-d8	11.61	11.11	12.11	11.61	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	-0.00
69 Chrysene-d12	23.36	22.86	23.86	23.36	-0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.38	0.03
77 Perylene-d12	26.03	25.53	26.53	26.02	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212314.D

Lab ID:

nt14.i, ABN.m, 21-APR-2023 21:16

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

\*\* FIRST SURROGATE NOT FOUND. ICAL Check not performed \*\*

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

Data File: \\target\share\chem3\nt14.1\20230421.16\NT04212315.D

Date : 21-APR-2023 21:53

Client ID:

Sample Info: SEQ-ICB1

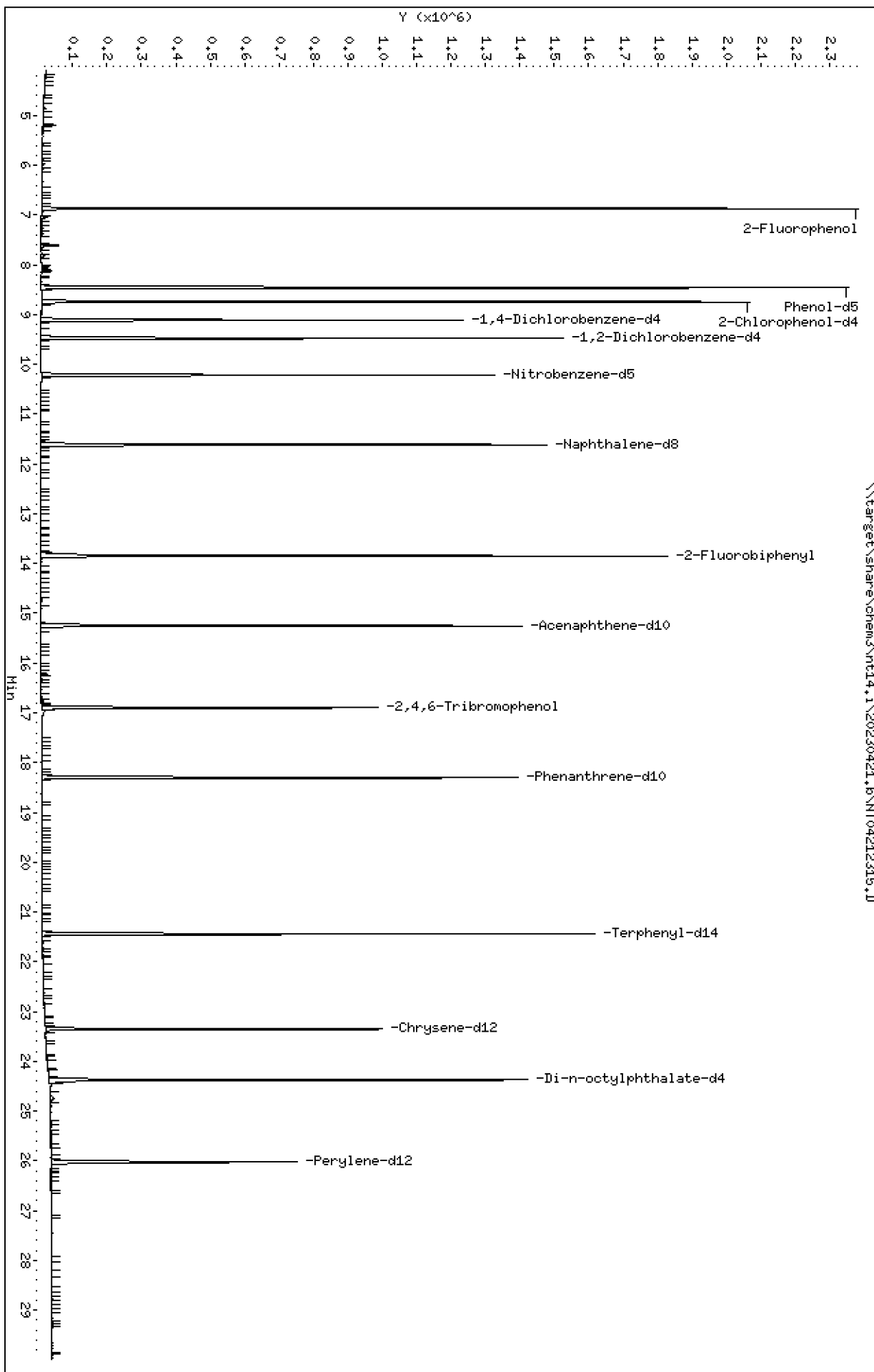
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

\\target\share\chem3\nt14.1\20230421.16\NT04212315.D



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212315.D  
 Lab Smp Id:  
 Inj Date : 21-APR-2023 21:53 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-ICB1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 12  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.867	6.867	(0.754)	699248	7.80826	7.808
\$ 2 Phenol-d5	99		8.459	8.459	(0.929)	1003106	7.98167	7.982
3 Phenol	94		Compound Not Detected.					
\$ 5 2-Chlorophenol-d4	132		8.745	8.745	(0.960)	723449	8.09196	8.092
4 Bis(2-Chloroethyl)ether	93		Compound Not Detected.					
6 2-Chlorophenol	128		Compound Not Detected.					
7 1,3-Dichlorobenzene	146		Compound Not Detected.					
* 8 1,4-Dichlorobenzene-d4	152		9.109	9.108	(1.000)	247630	4.00000	
9 1,4-Dichlorobenzene	146		Compound Not Detected.					
\$ 10 1,2-Dichlorobenzene-d4	152		9.473	9.473	(1.040)	303225	5.35402	5.354
12 1,2-Dichlorobenzene	146		Compound Not Detected.					
11 Benzyl alcohol	108		Compound Not Detected.					
14 2,2'-oxybis(1-Chloropropane)	121		Compound Not Detected.					
13 2-Methylphenol	108		Compound Not Detected.					
17 Hexachloroethane	117		Compound Not Detected.					
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
15 4-Methylphenol	108		Compound Not Detected.					
\$ 18 Nitrobenzene-d5	82		10.218	10.218	(0.880)	645498	5.32553	5.326
19 Nitrobenzene	77		Compound Not Detected.					
20 Isophorone	82		Compound Not Detected.					
21 2-Nitrophenol	139		Compound Not Detected.					
22 2,4-Dimethylphenol	107		Compound Not Detected.					
23 Bis(2-Chloroethoxy)methane	93		Compound Not Detected.					
24 Benzoic acid	105		Compound Not Detected.					
25 2,4-Dichlorophenol	162		Compound Not Detected.					
26 1,2,4-Trichlorobenzene	180		Compound Not Detected.					
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	984847	4.00000	
28 Naphthalene	128		Compound Not Detected.					
29 4-Chloroaniline	127		Compound Not Detected.					
30 Hexachlorobutadiene	225		Compound Not Detected.					
31 4-Chloro-3-methylphenol	107		Compound Not Detected.					
32 2-Methylnaphthalene	142		Compound Not Detected.					
33 Hexachlorocyclopentadiene	237		Compound Not Detected.					

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196							
35 2,4,5-Trichlorophenol	196							
§ 36 2-Fluorobiphenyl	172		13.850	13.849	(0.908)	842459	5.36711	5.367
37 2-Chloronaphthalene	162							
38 2-Nitroaniline	65							
39 Dimethylphthalate	163							
40 Acenaphthylene	152							
41 2,6-Dinitrotoluene	165							
* 42 Acenaphthene-d10	164		15.250	15.250	(1.000)	450660	4.00000	
43 3-Nitroaniline	138							
44 Acenaphthene	153							
45 2,4-Dinitrophenol	184							
46 Dibenzofuran	168							
47 4-Nitrophenol	109							
48 2,4-Dinitrotoluene	165							
50 Diethylphthalate	149							
49 Fluorene	166							
51 4-Chlorophenyl-phenylether	204							
52 4-Nitroaniline	138							
53 4,6-Dinitro-2-methylphenol	198							
54 N-Nitrosodiphenylamine	169							
§ 55 2,4,6-Tribromophenol	330		16.895	16.895	(1.108)	93100	6.28395	6.284
56 4-Bromophenyl-phenylether	248							
57 Hexachlorobenzene	284							
58 Pentachlorophenol	266							
* 59 Phenanthrene-d10	188		18.302	18.302	(1.000)	759650	4.00000	
60 Phenanthrene	178							
61 Anthracene	178							
62 Carbazole	167							
63 Di-n-butylphthalate	149							
64 Fluoranthene	202							
65 Pyrene	202							
§ 66 Terphenyl-d14	244		21.443	21.443	(0.918)	685902	4.93178	4.932
67 Butylbenzylphthalate	149							
68 Benzo(a)anthracene	228							
* 69 Chrysene-d12	240		23.356	23.356	(1.000)	432017	4.00000	
70 3,3'-Dichlorobenzidine	252							
71 Chrysene	228							
72 bis(2-Ethylhexyl)phthalate	149							
* 134 Di-n-octylphthalate-d4	153		24.370	24.370	(1.000)	820994	4.00000	
73 Di-n-octylphthalate	149							
74 Benzo(b)fluoranthene	252							
75 Benzo(k)fluoranthene	252							
76 Benzo(a)pyrene	252							
* 77 Perylene-d12	264		26.019	26.027	(1.000)	424950	4.00000	
78 Indeno(1,2,3-cd)pyrene	276							
79 Dibenzo(a,h)anthracene	278							
80 Benzo(g,h,i)perylene	276							
90 N-Nitrosodimethylamine	74							
91 Aniline	93							
93 Benzidine	184							
103 Pyridine	79							
105 1-methylnaphthalene	142							
111 Azobenzene (1,2-DP-Hydrazine)	77							

Compounds	QUANT MASS	SIG					CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
=====	=====	=====	=====	=====	=====	=====	=====	
187 Total Benzofluoranthenes	252				Compound Not Detected.			
120 2,3,4,6-Tetrachlorophenol	232				Compound Not Detected.			



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212315.D Calibration Time: 17:00  
 Lab Smp Id:  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	247630	3.55
27 Naphthalene-d8	954450	477225	1908900	984847	3.18
42 Acenaphthene-d10	448699	224350	897398	450660	0.44
59 Phenanthrene-d10	711389	355695	1422778	759650	6.78
69 Chrysene-d12	410209	205105	820418	432017	5.32
134 Di-n-octylphthala	929005	464503	1858010	820994	-11.63
77 Perylene-d12	424249	212125	848498	424950	0.17

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.08
27 Naphthalene-d8	11.61	11.11	12.11	11.61	0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.25	-0.05
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	0.00
69 Chrysene-d12	23.36	22.86	23.86	23.36	0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.37	0.00
77 Perylene-d12	26.03	25.53	26.53	26.02	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212315.D

Lab ID:

nt14.i, ABN.m, 21-APR-2023 21:53

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8270E**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00062

**Laboratory ID:** SLD0357-SCV1

**Sequence:** SLD0357

**Sequence Name:** SCV 5.0

**Standard ID:** K010066

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Phenol	5.0000	4.3	-13.4	20.00
bis(2-chloroethyl) ether	5.0000	5.1	1.4	20.00
2-Chlorophenol	5.0000	4.5	-10.4	20.00
1,3-Dichlorobenzene	5.0000	4.7	-5.3	20.00
1,4-Dichlorobenzene	5.0000	4.8	-4.4	20.00
1,2-Dichlorobenzene	5.0000	4.8	-4.9	20.00
Benzyl Alcohol	5.0000	4.9	-1.8	20.00
2,2'-Oxybis(1-chloropropane)	5.0000	5.1	1.2	20.00
2-Methylphenol	5.0000	4.2	-16.0	20.00
Hexachloroethane	5.0000	4.9	-2.6	20.00
N-Nitroso-di-n-Propylamine	5.0000	4.7	-5.3	20.00
4-Methylphenol	5.0000	4.5	-11.0	20.00
Nitrobenzene	5.0000	4.7	-5.7	20.00
Isophorone	5.0000	6.3	26.3 *	20.00
2-Nitrophenol	5.0000	3.8	-24.4 *	20.00
2,4-Dimethylphenol	5.0000	3.7	-25.9 *	20.00
Bis(2-Chloroethoxy)methane	5.0000	5.4	7.9	20.00
2,4-Dichlorophenol	5.0000	3.7	-25.4 *	20.00
1,2,4-Trichlorobenzene	5.0000	4.5	-9.3	20.00
Naphthalene	5.0000	4.8	-3.7	20.00
Benzoic acid	10.0000	6.8	-32.0 *	20.00
4-Chloroaniline	5.0000	3.8	-24.6 *	20.00
Hexachlorobutadiene	5.0000	4.7	-6.7	20.00
4-Chloro-3-Methylphenol	5.0000	4.6	-7.7	20.00
2-Methylnaphthalene	5.0000	4.5	-10.5	20.00
Hexachlorocyclopentadiene	5.0000	4.8	-4.3	20.00
2,4,6-Trichlorophenol	5.0000	4.6	-8.4	20.00
2,4,5-Trichlorophenol	5.0000	4.4	-11.3	20.00
2-Chloronaphthalene	5.0000	4.6	-7.1	20.00
2-Nitroaniline	5.0000	4.5	-10.5	20.00
Acenaphthylene	5.0000	4.8	-3.6	20.00
Dimethylphthalate	5.0000	4.6	-8.9	20.00
2,6-Dinitrotoluene	5.0000	4.7	-6.5	20.00
Acenaphthene	5.0000	4.8	-3.8	20.00



**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8270E**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00062

**Laboratory ID:** SLD0357-SCV1

**Sequence:** SLD0357

**Sequence Name:** SCV 5.0

**Standard ID:** K010066

3-Nitroaniline	5.0000	4.6	-7.8	20.00
2,4-Dinitrophenol	5.0000	1.7	-66.5 *	20.00
Dibenzofuran	5.0000	4.5	-9.6	20.00
4-Nitrophenol	5.0000	4.6	-8.9	20.00
2,4-Dinitrotoluene	5.0000	4.5	-10.6	20.00
Fluorene	5.0000	4.8	-4.4	20.00
4-Chlorophenylphenyl ether	5.0000	4.8	-4.8	20.00
Diethyl phthalate	5.0000	4.6	-8.5	20.00
4-Nitroaniline	5.0000	4.5	-9.6	20.00
4,6-Dinitro-2-methylphenol	5.0000	3.0	-39.9 *	20.00
N-Nitrosodiphenylamine	5.0000	4.7	-5.0	20.00
4-Bromophenyl phenyl ether	5.0000	4.7	-5.4	20.00
Hexachlorobenzene	5.0000	4.4	-12.7	20.00
Pentachlorophenol	5.0000	3.7	-25.2 *	20.00
Phenanthrene	5.0000	4.7	-6.9	20.00
Anthracene	5.0000	4.3	-14.5	20.00
Carbazole	5.0000	4.2	-16.1	20.00
Di-n-Butylphthalate	5.0000	4.8	-4.8	20.00
Fluoranthene	5.0000	5.1	1.4	20.00
Pyrene	5.0000	4.9	-1.6	20.00
Butylbenzylphthalate	5.0000	4.3	-14.2	20.00
Benzo(a)anthracene	5.0000	4.7	-6.6	20.00
3,3'-Dichlorobenzidine	10.000	9.4	-6.2	20.00
Chrysene	5.0000	4.7	-5.6	20.00
bis(2-Ethylhexyl)phthalate	5.0000	4.9	-2.1	20.00
Di-n-Octylphthalate	5.0000	4.9	-2.1	20.00
Benzo(a)fluoranthene, Total	10.000	9.6	-4.0	20.00
Benzo(a)pyrene	5.0000	5.0	-0.2	20.00
Indeno(1,2,3-cd)pyrene	5.0000	4.4	-11.8	20.00
Dibenzo(a,h)anthracene	5.0000	4.5	-10.9	20.00
Benzo(g,h,i)perylene	5.0000	4.2	-16.0	20.00
1-Methylnaphthalene	5.0000	4.5	-10.1	20.00

\* Indicates values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230421.6\NT04212314.D

Date : 21-APR-2023 21:16

Client ID:

Sample Info: SEQ-SCV1

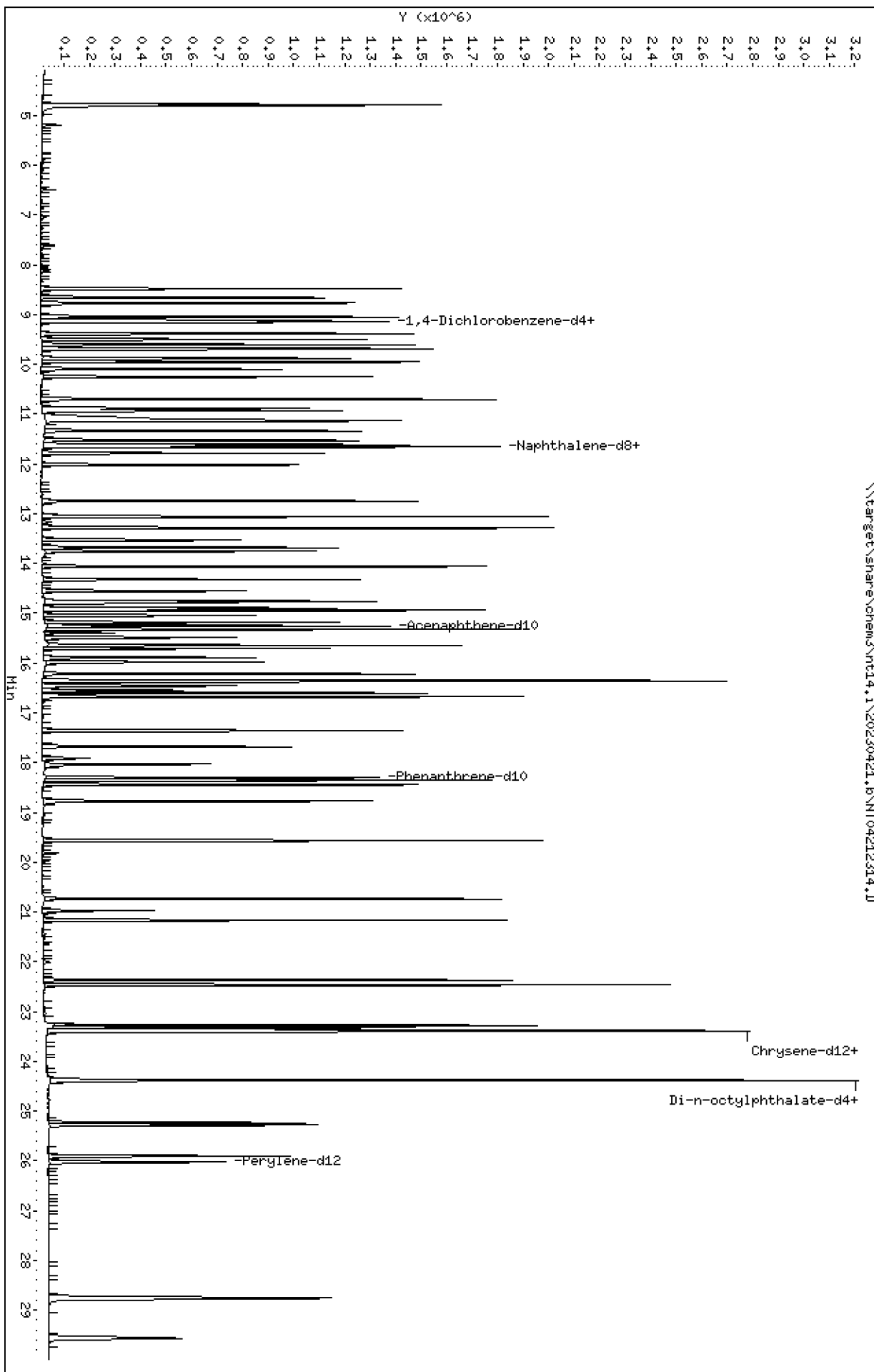
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

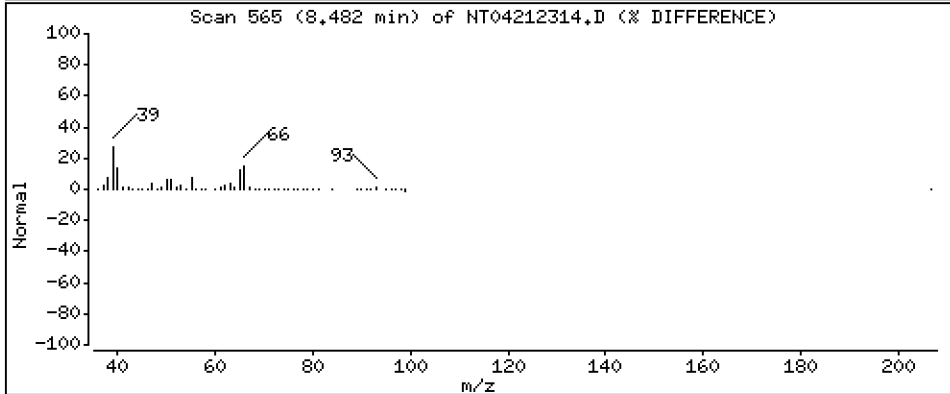
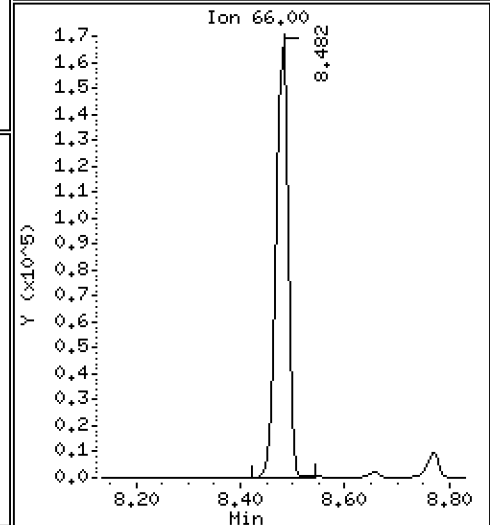
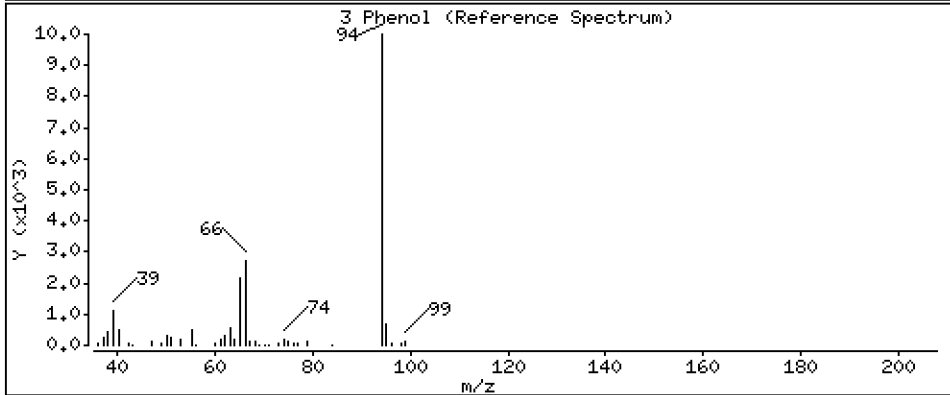
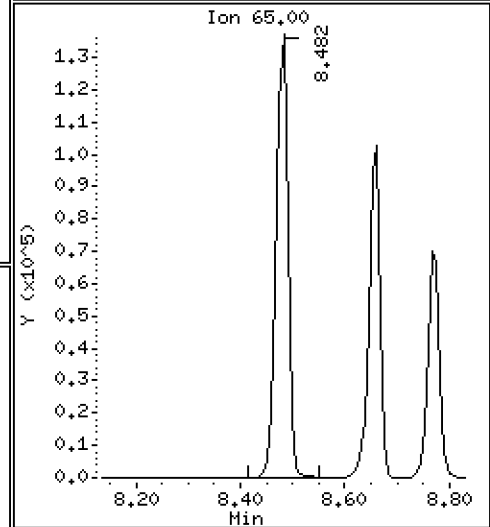
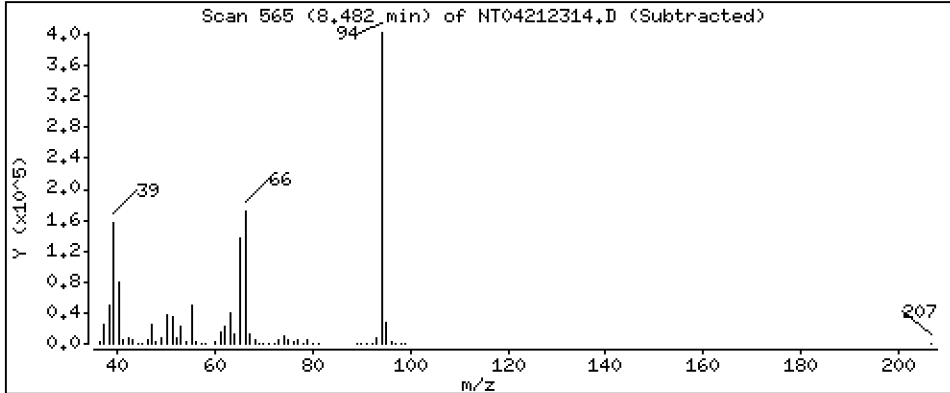
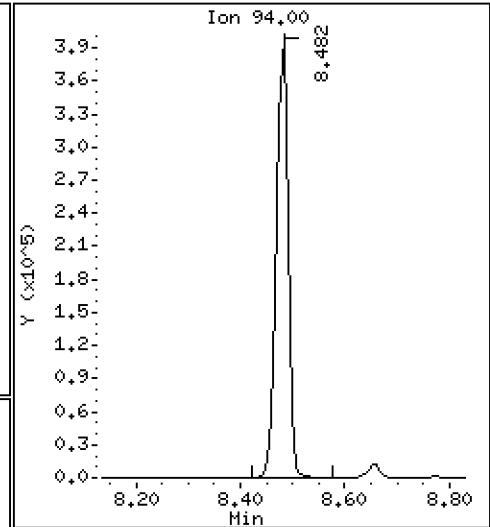
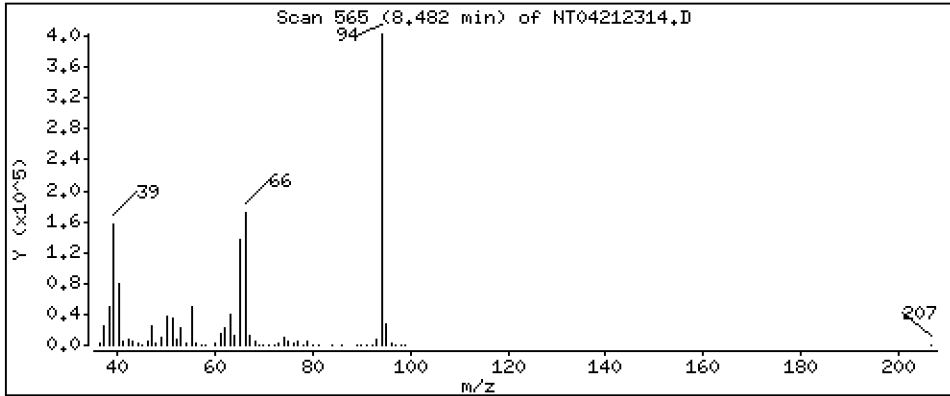
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,331 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

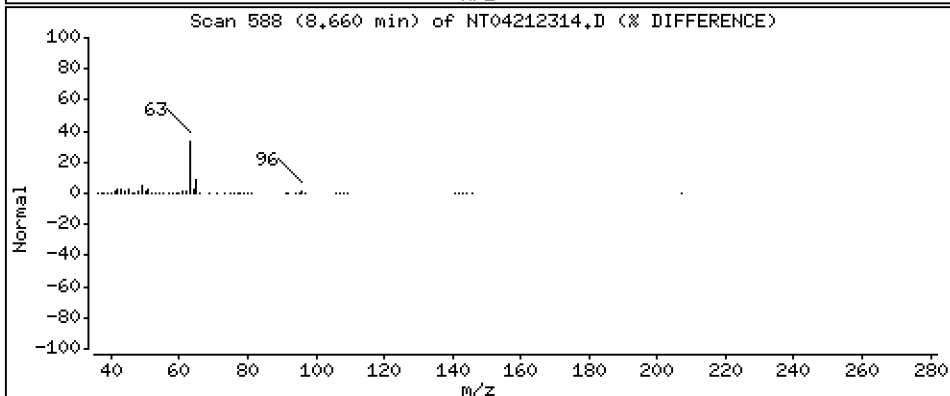
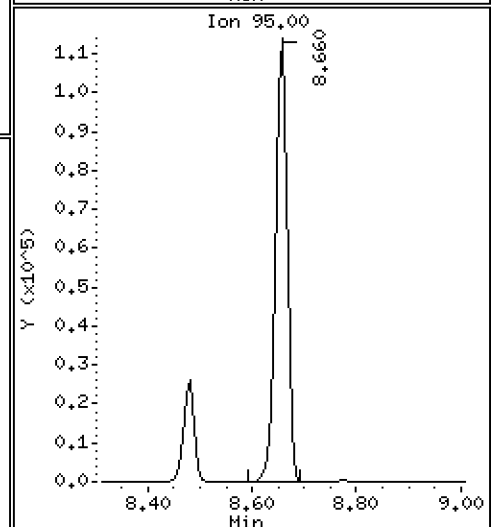
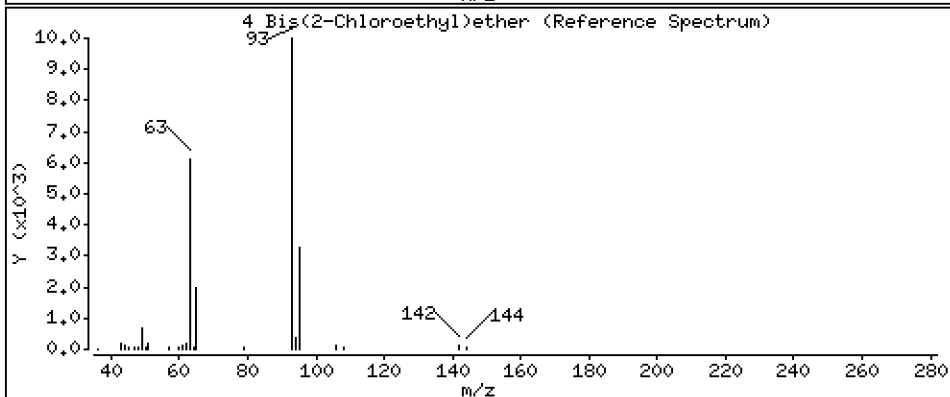
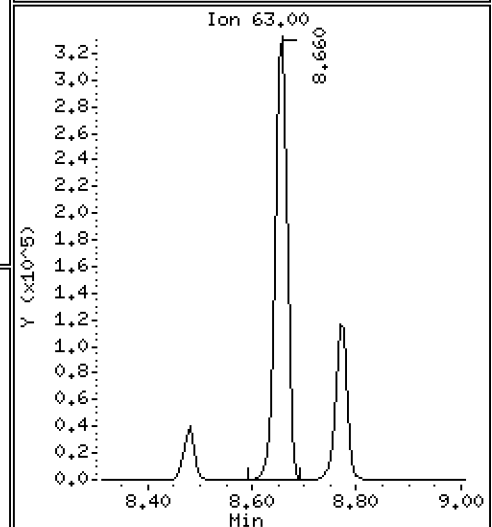
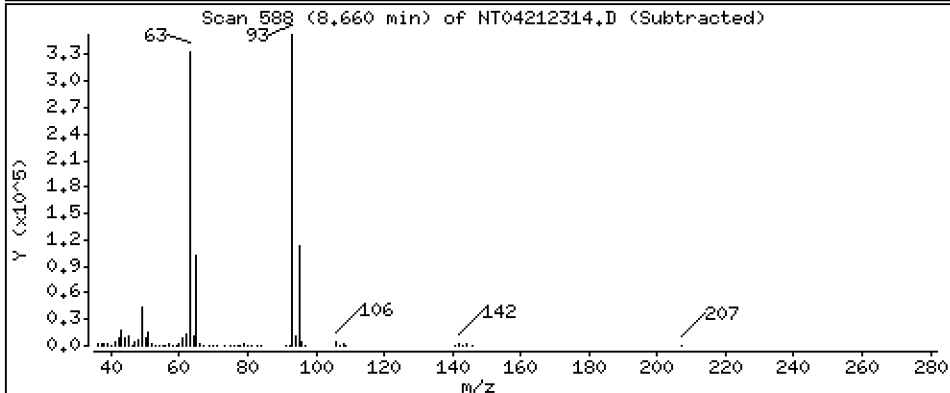
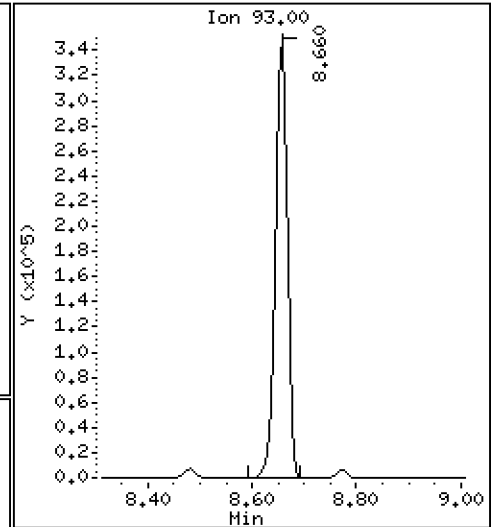
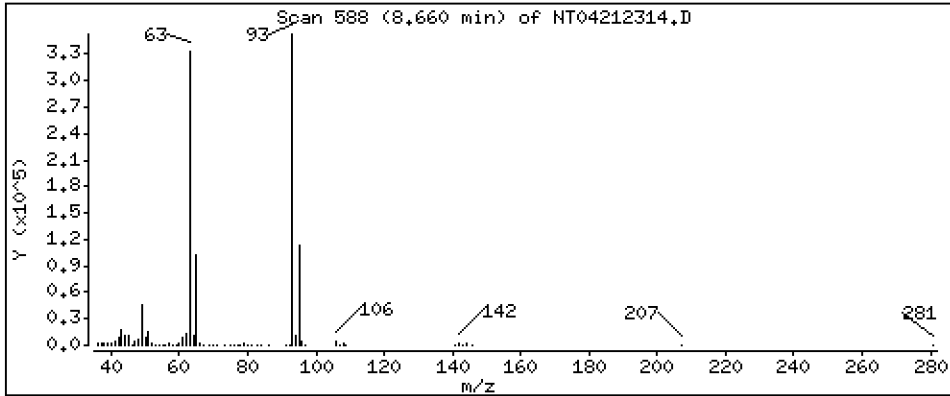
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 5,070 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

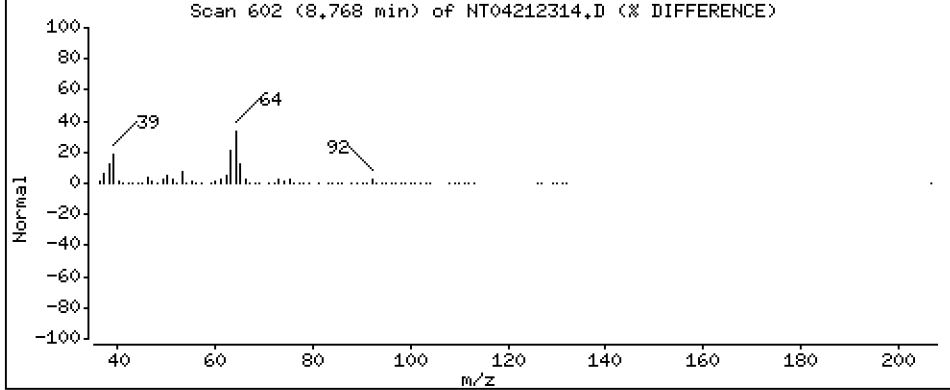
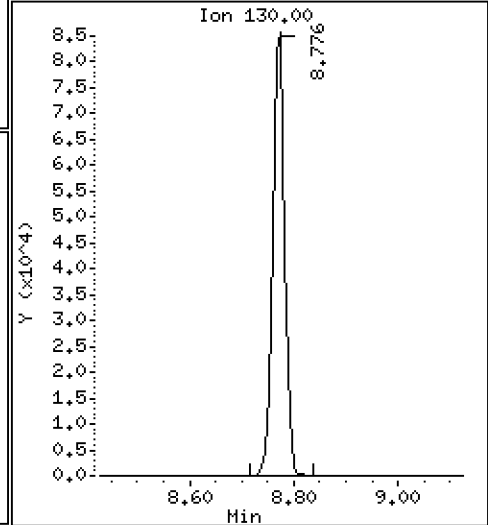
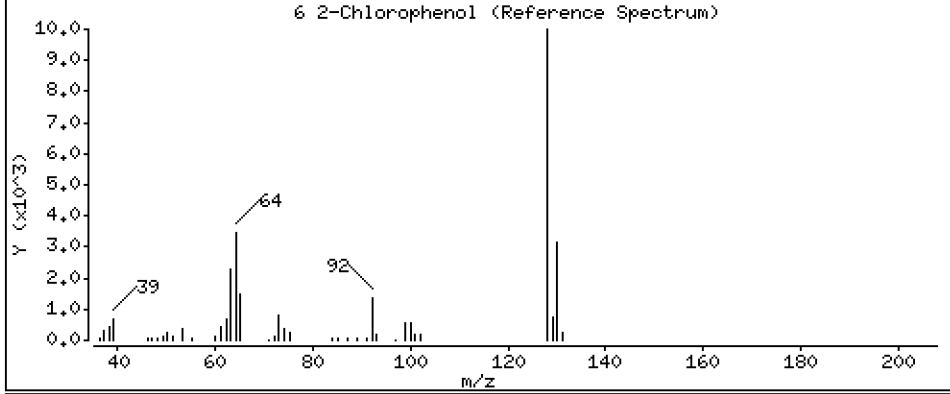
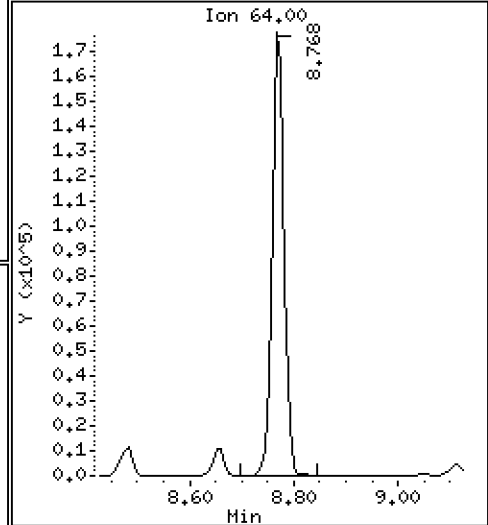
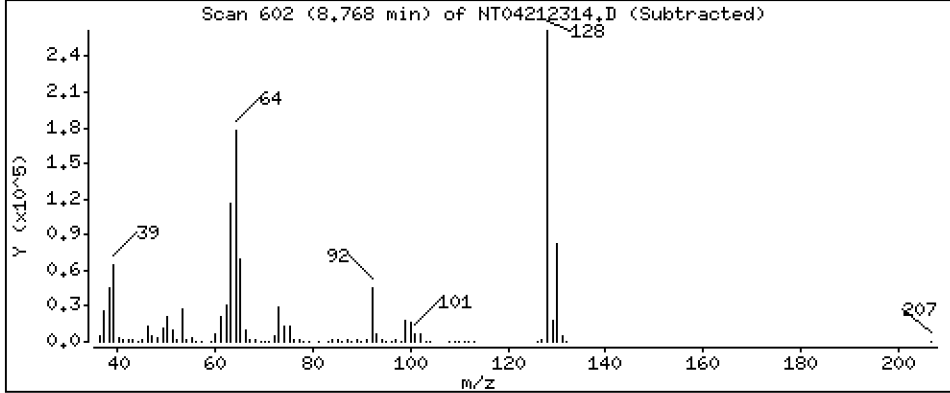
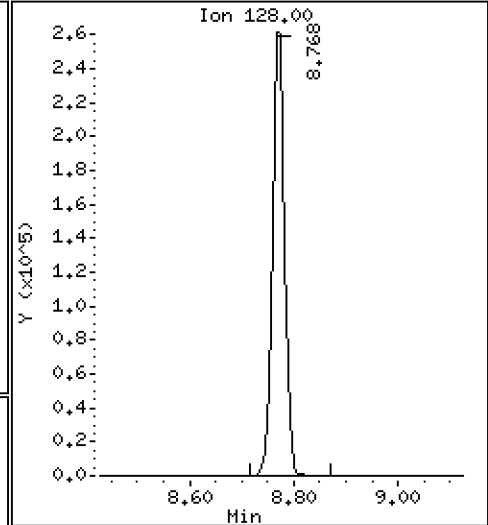
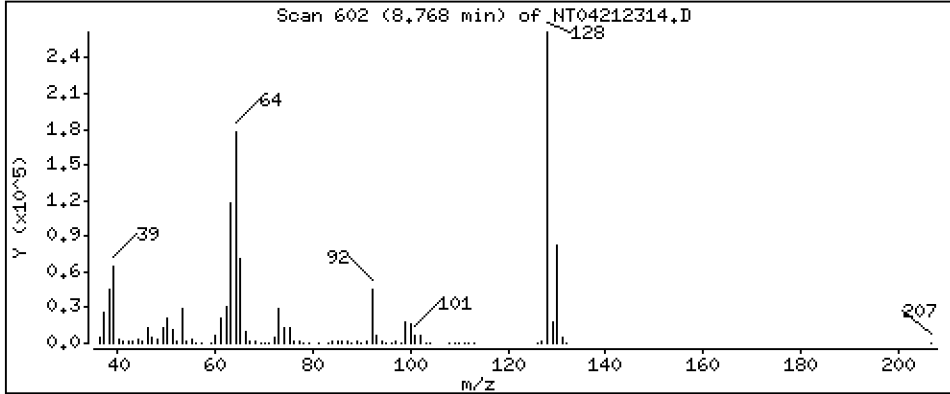
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

6 2-Chlorophenol

Concentration: 4.478 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

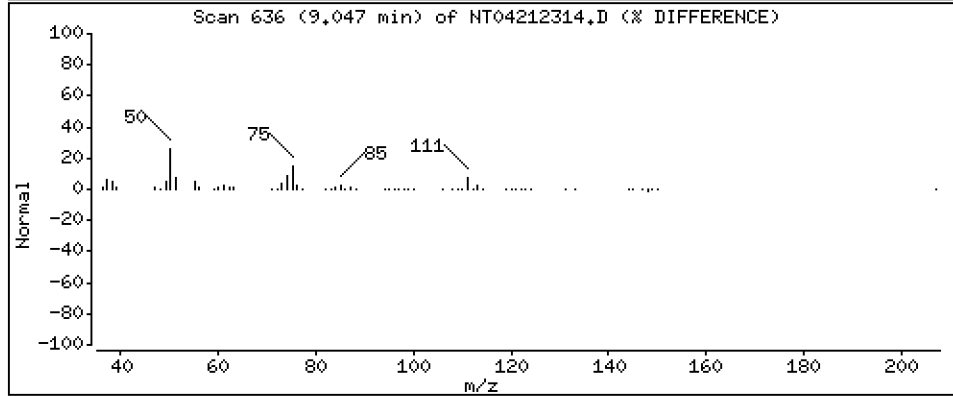
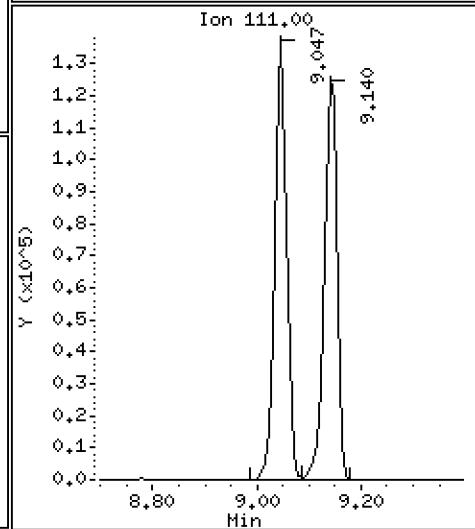
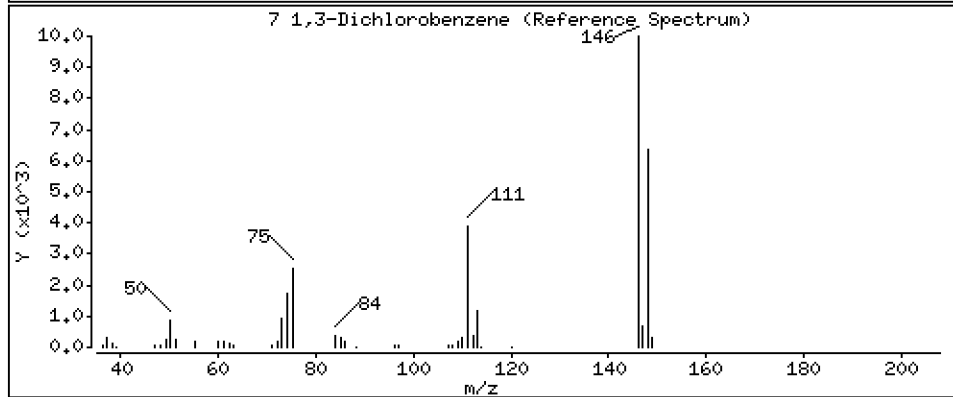
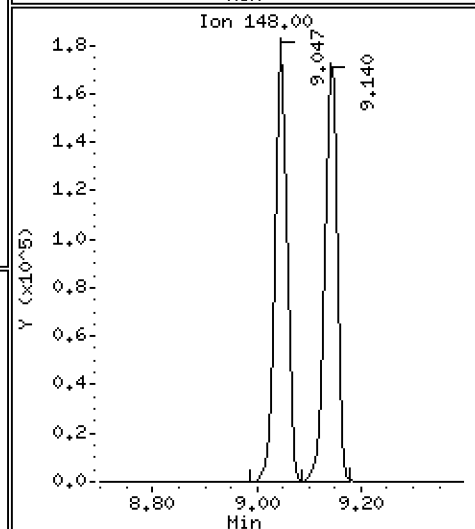
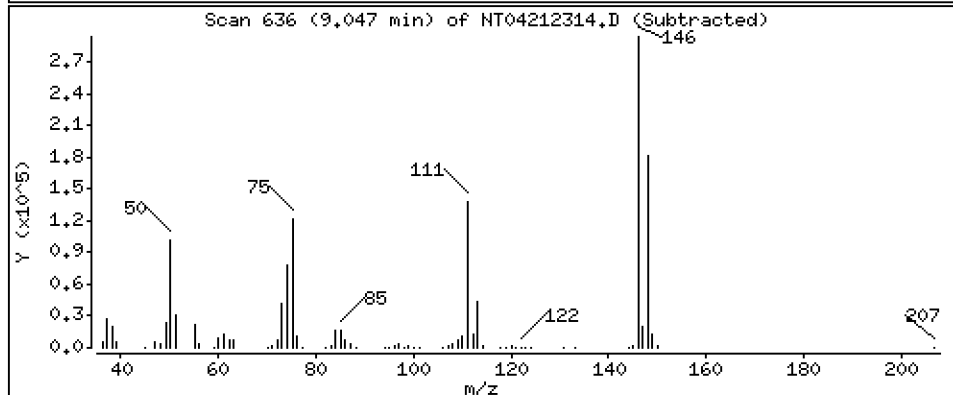
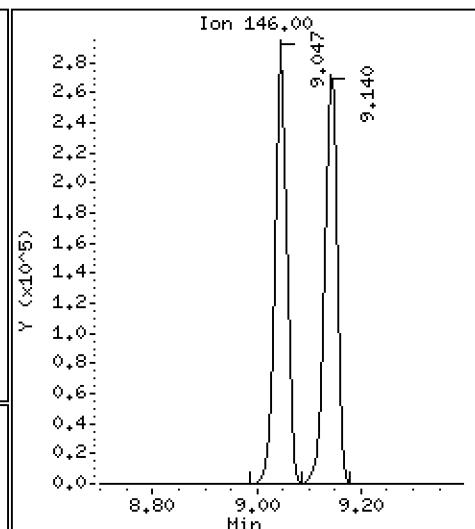
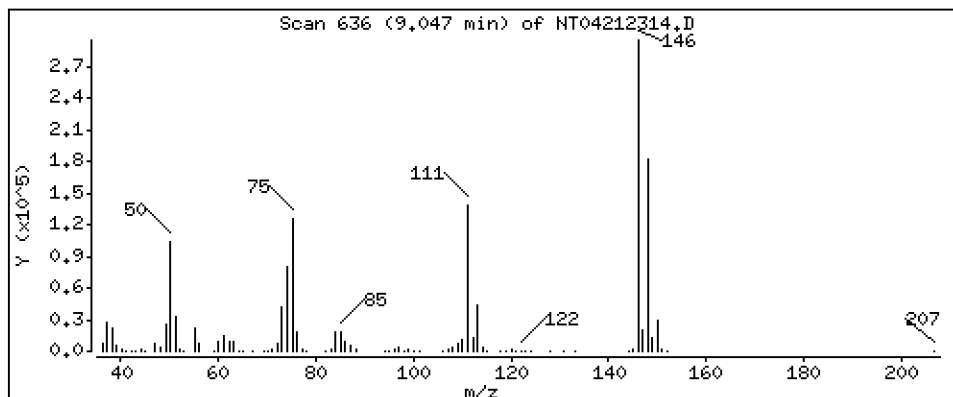
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 4,735 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

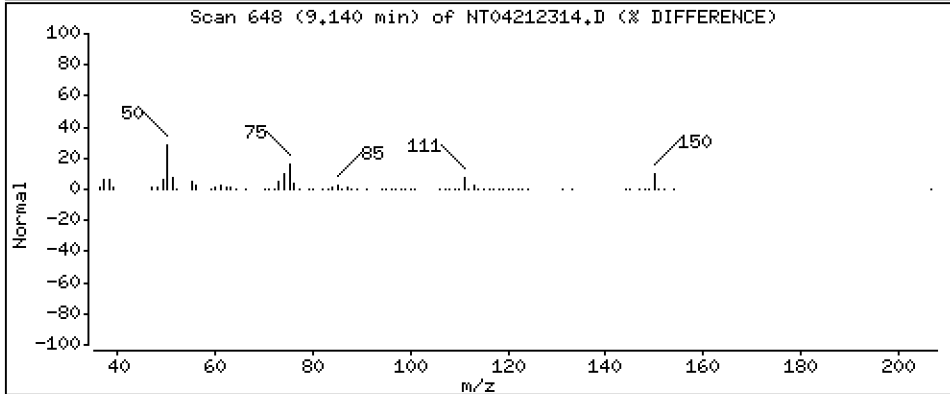
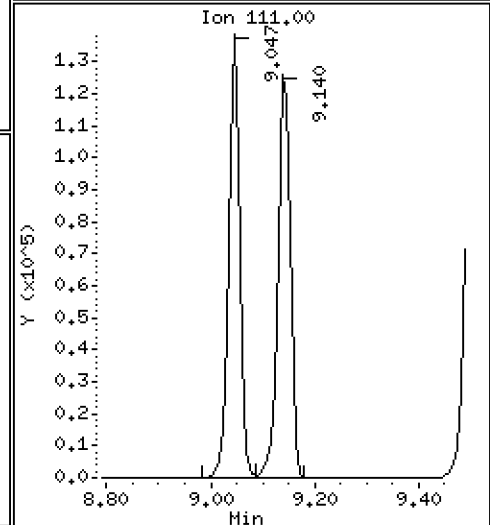
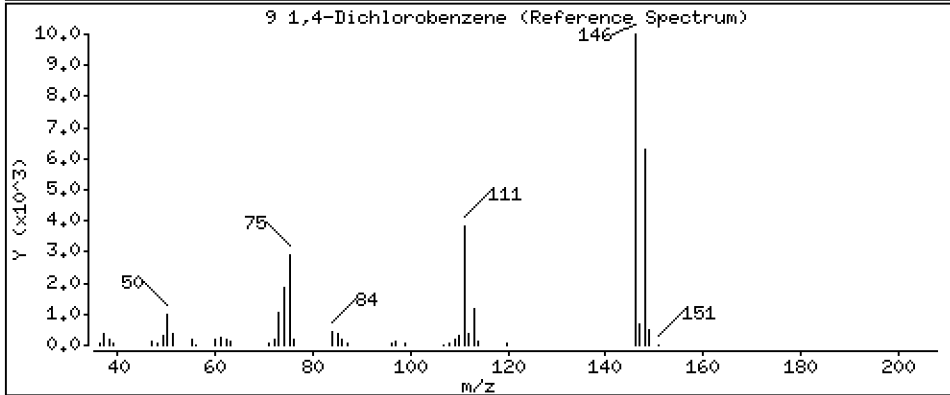
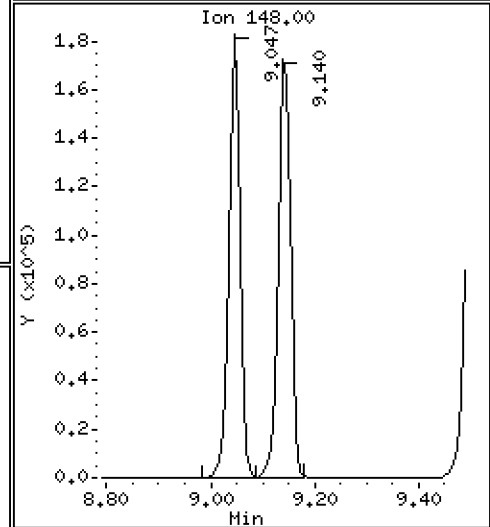
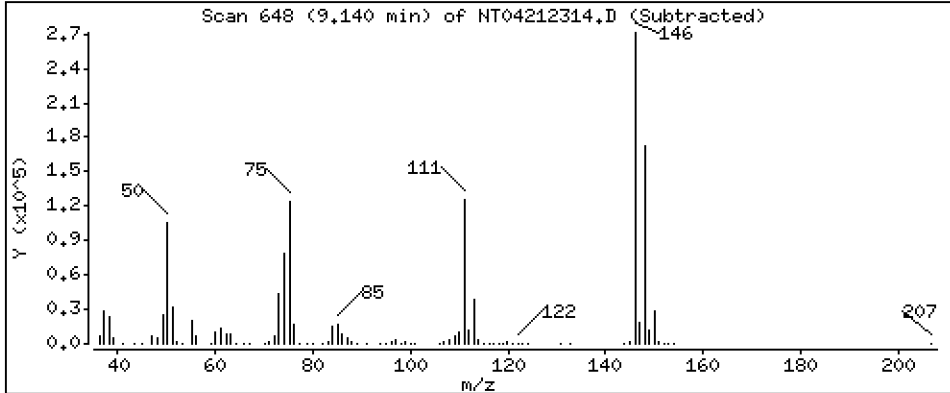
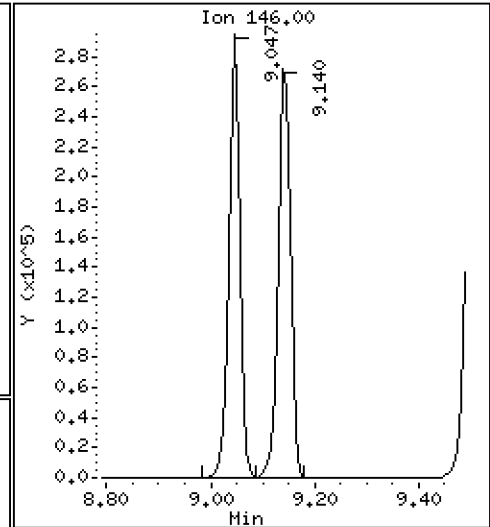
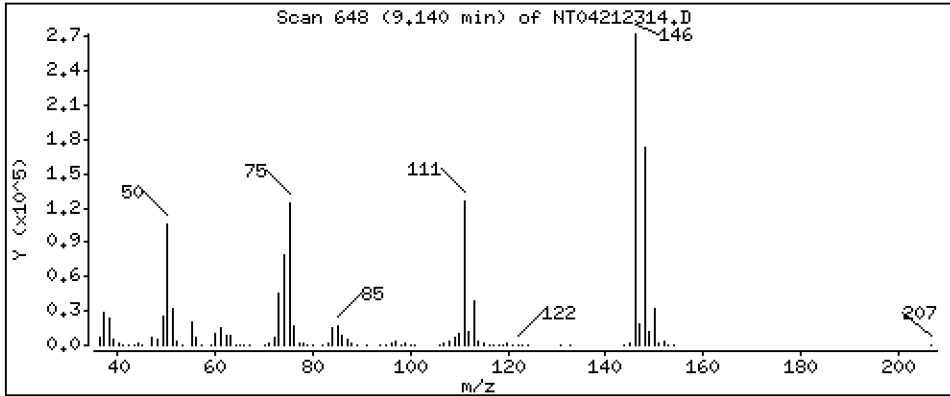
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 4,779 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

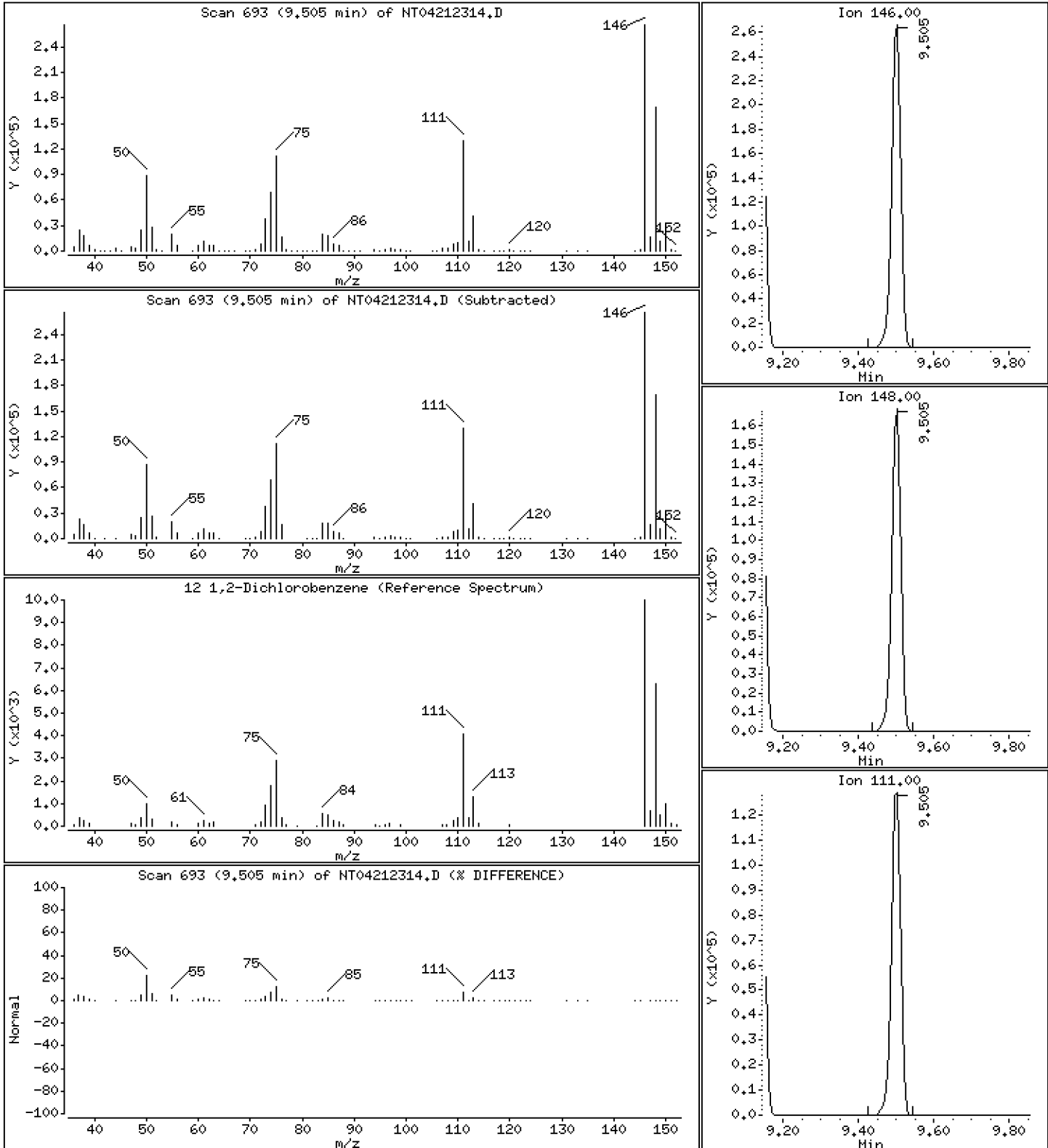
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.754 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

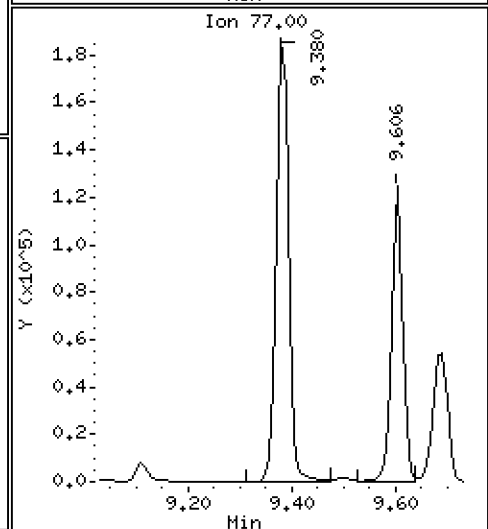
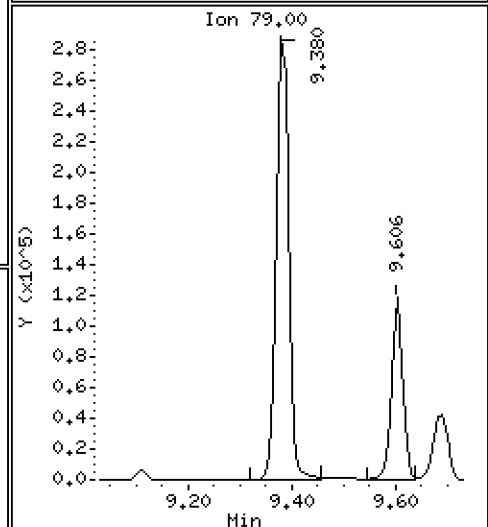
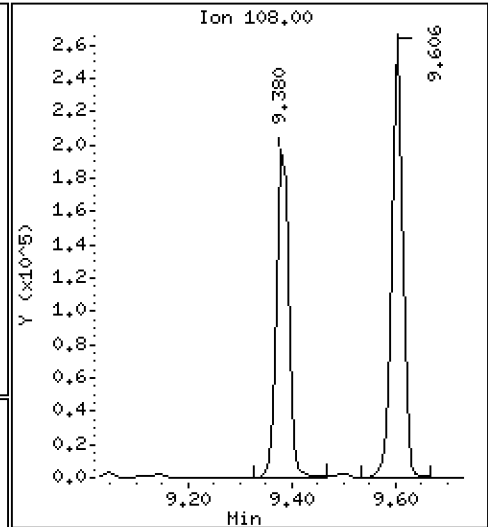
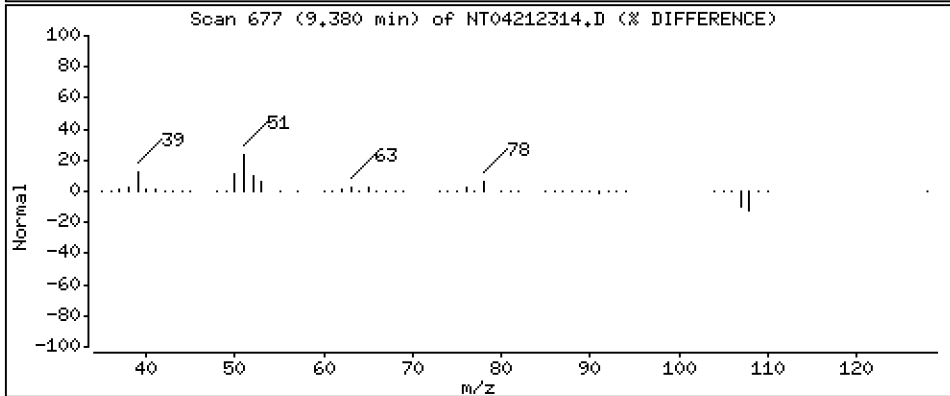
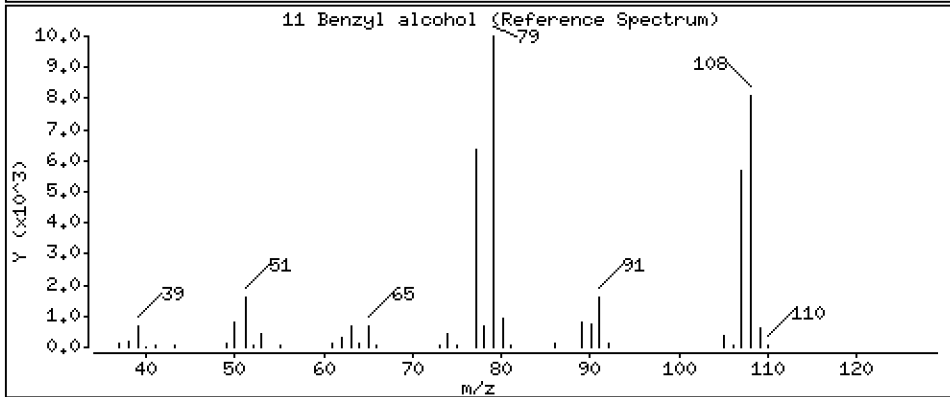
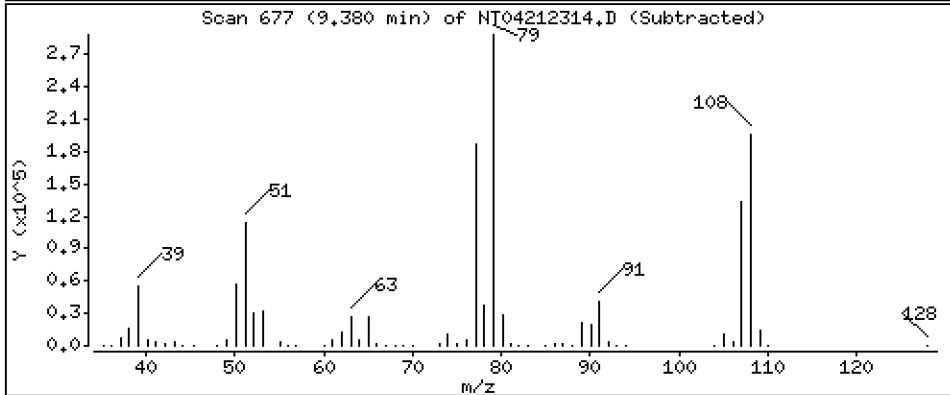
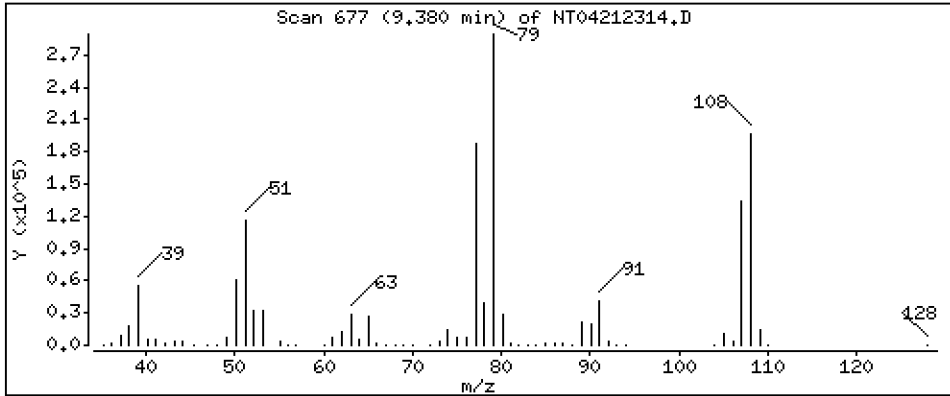
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.909 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

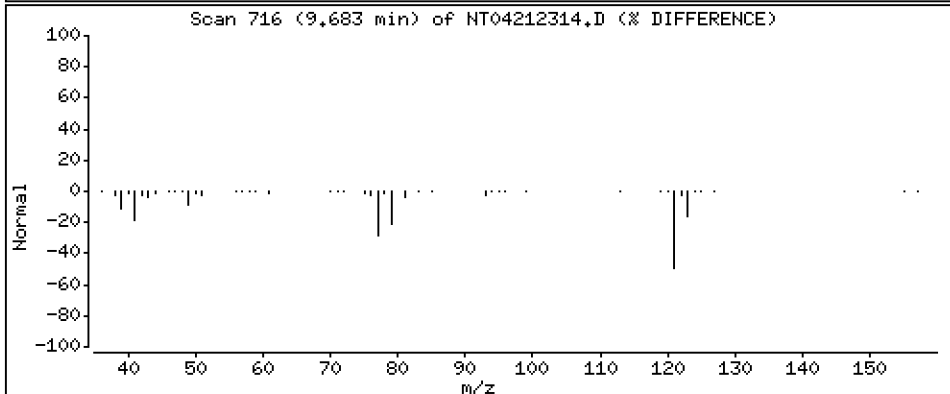
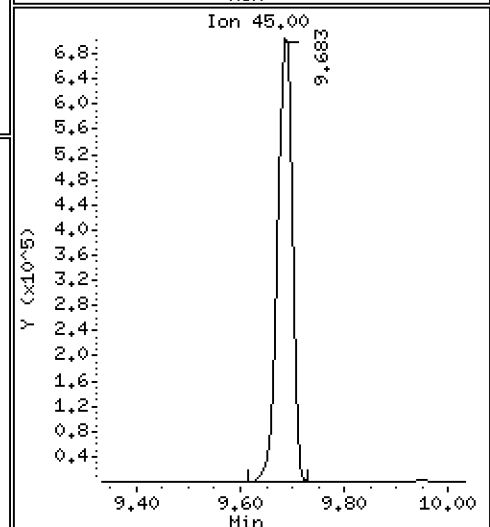
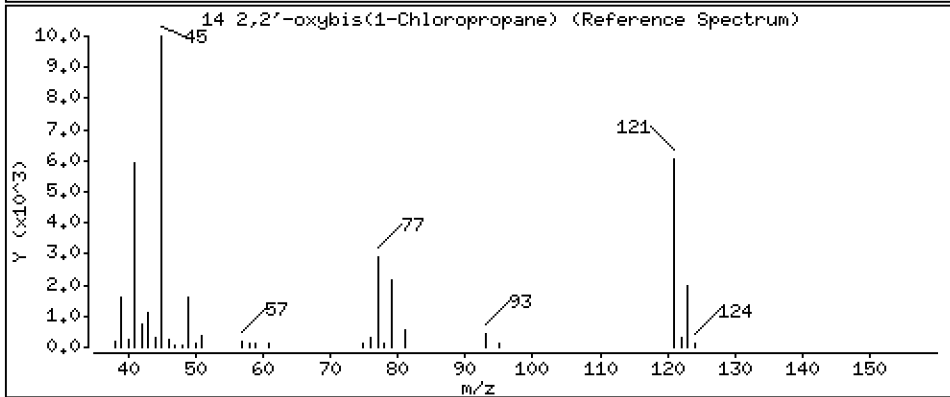
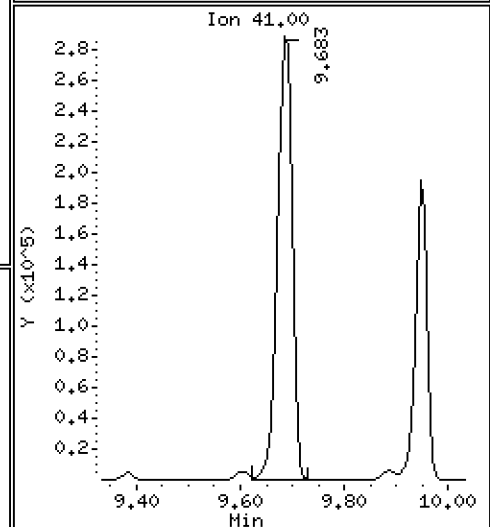
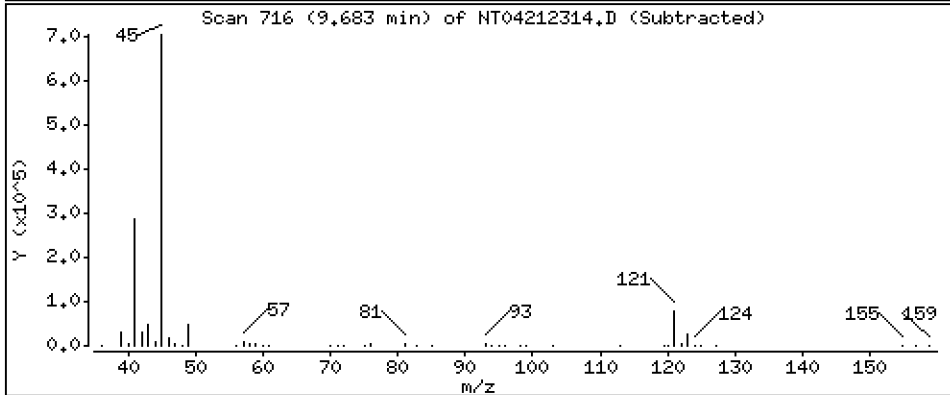
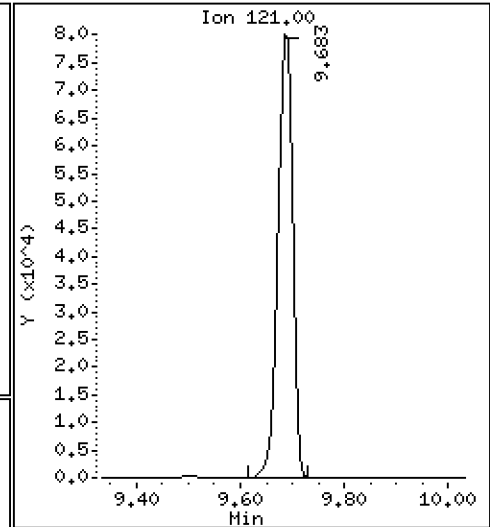
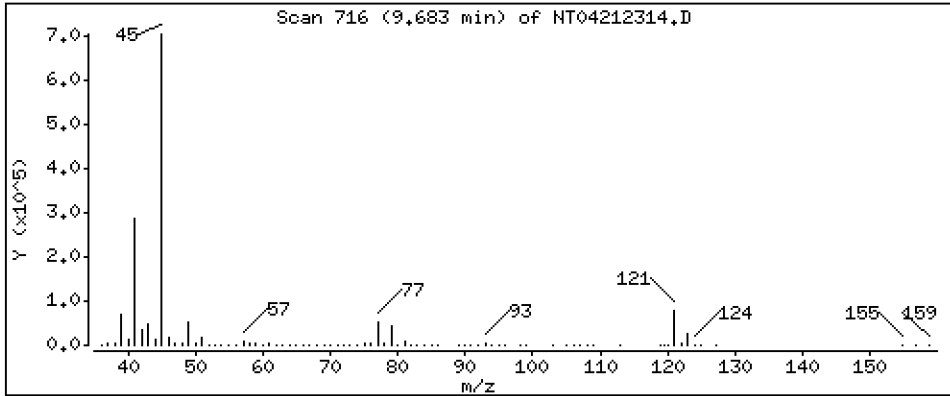
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 5,062 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

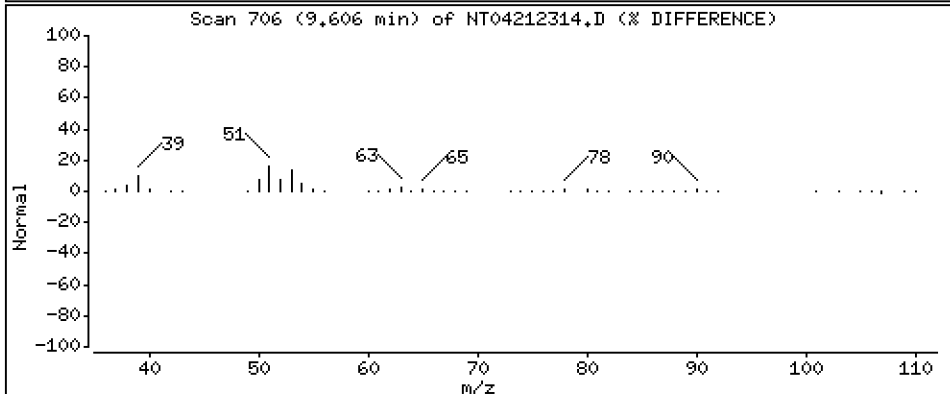
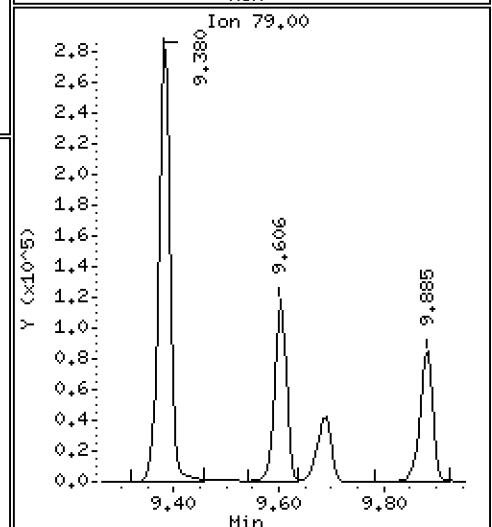
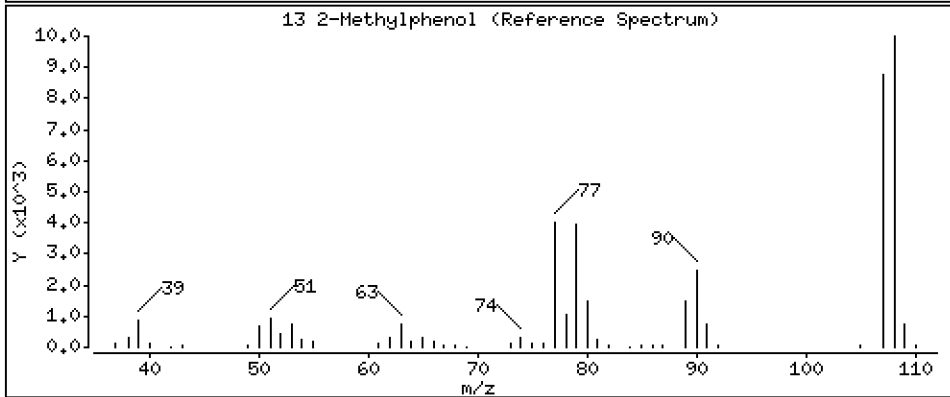
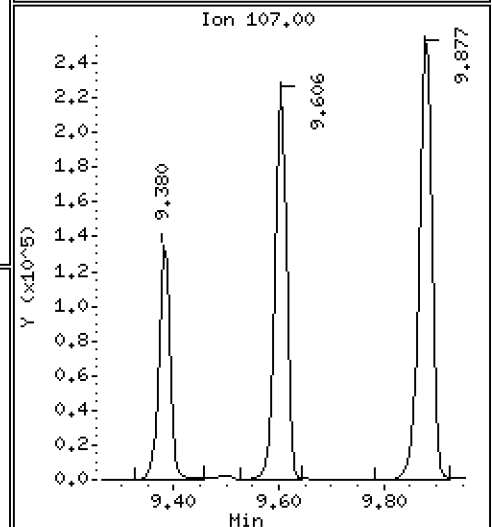
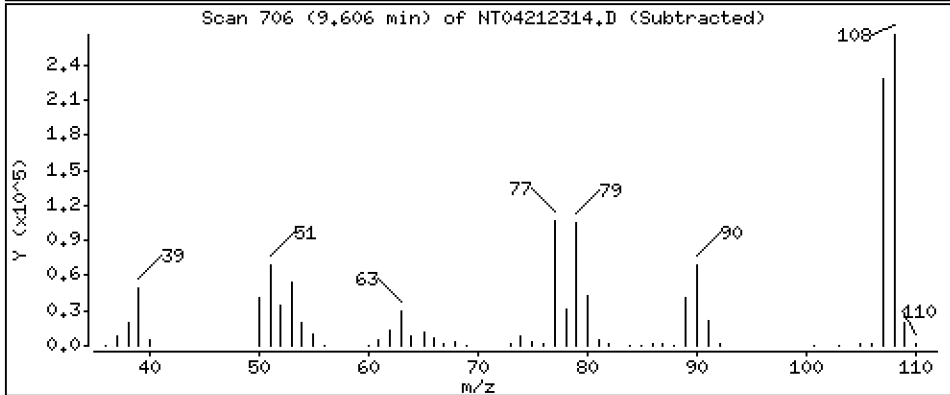
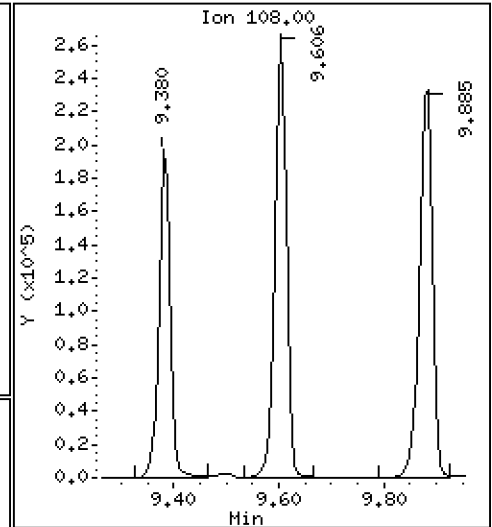
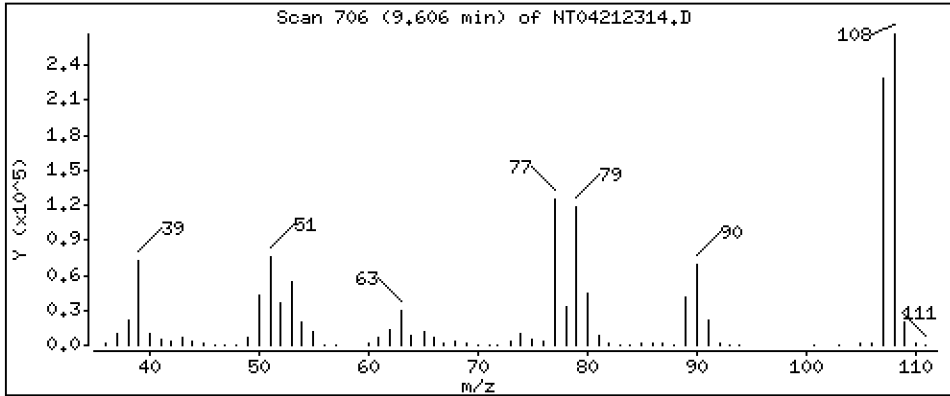
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 4.199 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

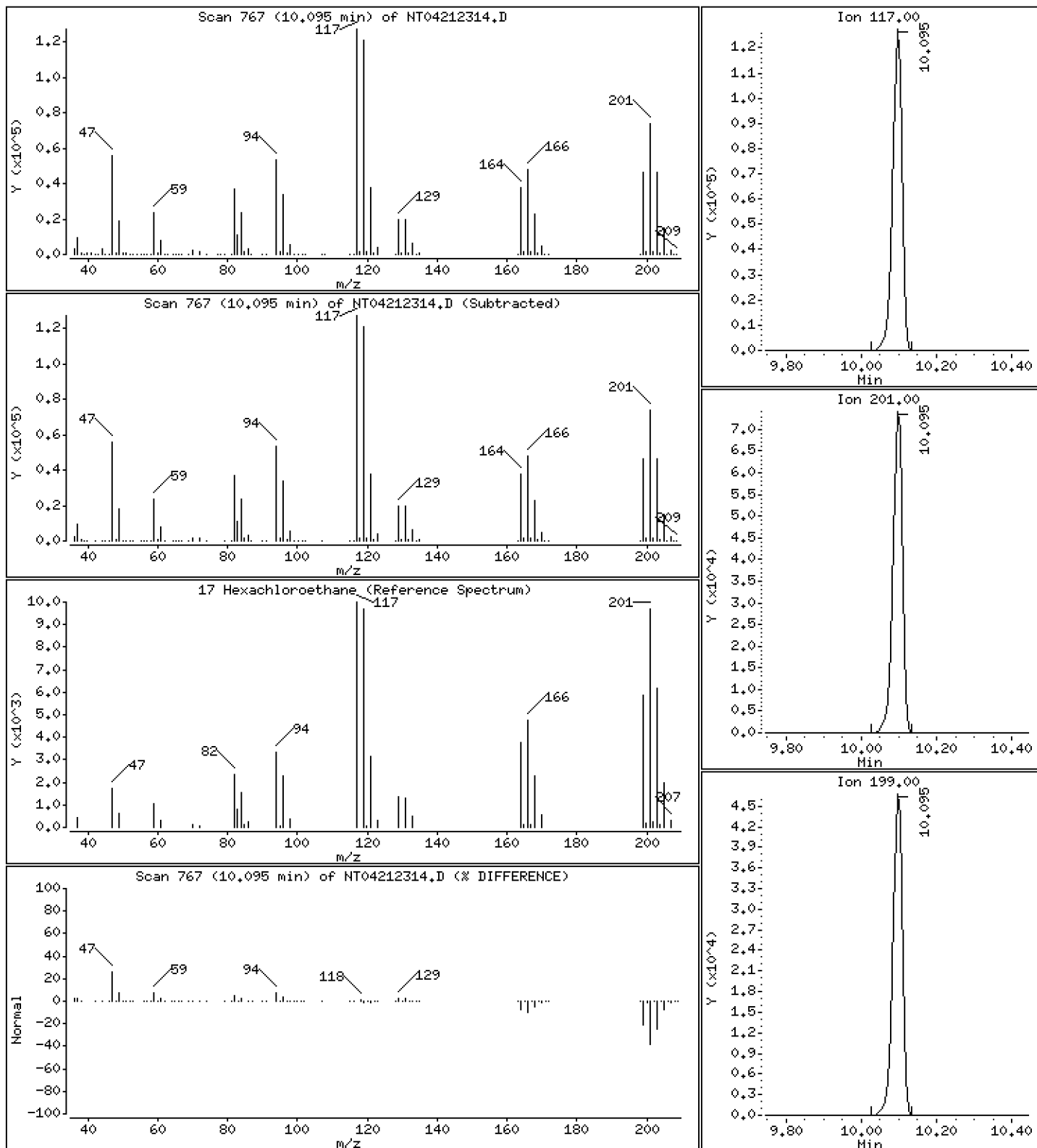
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 4,872 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

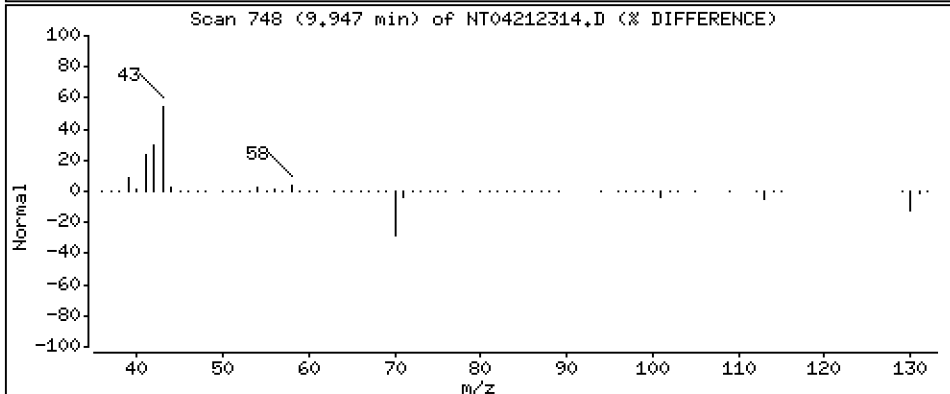
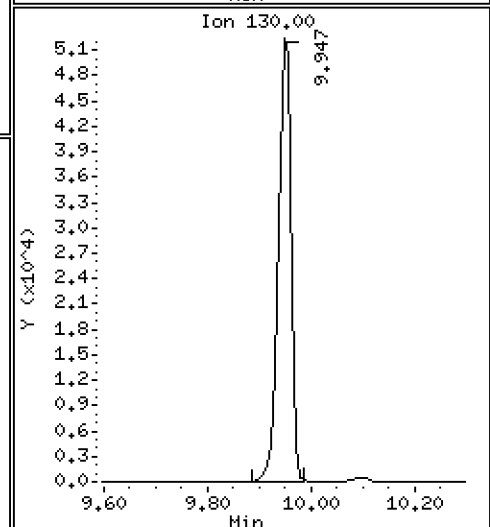
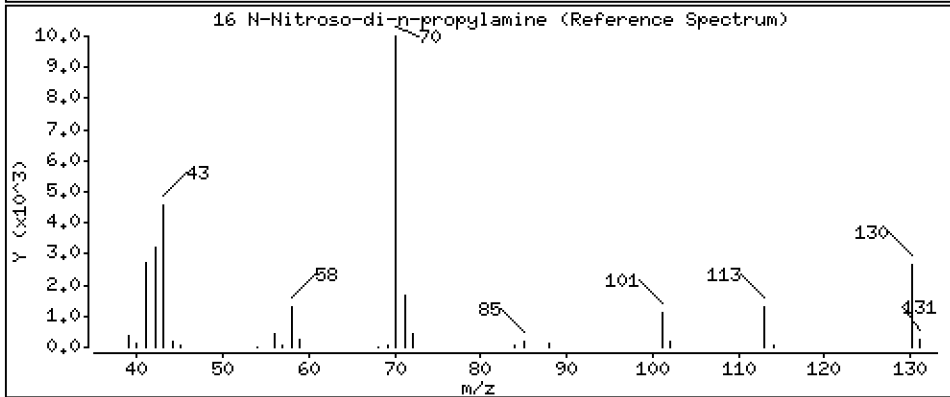
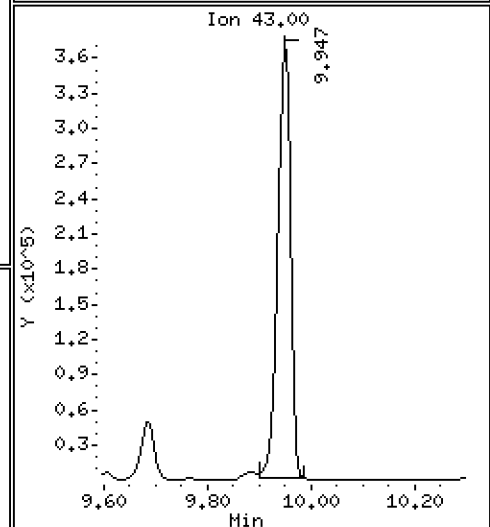
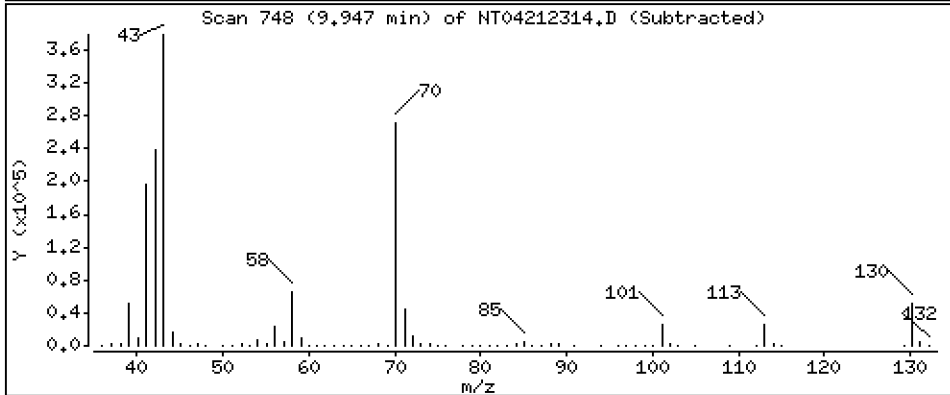
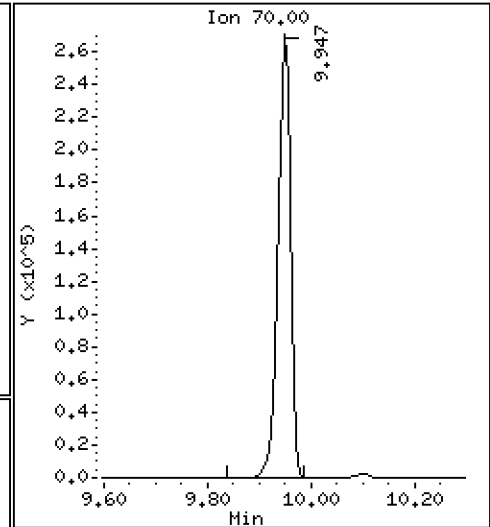
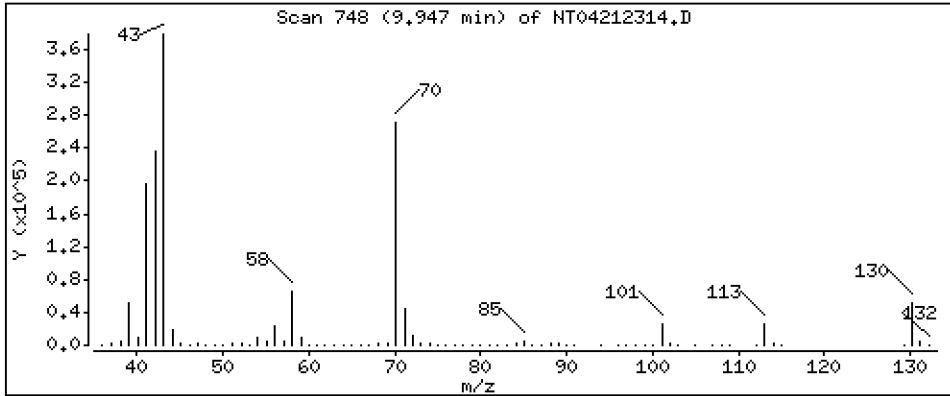
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

16 N-Nitroso-di-n-propylamine

Concentration: 4.737 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

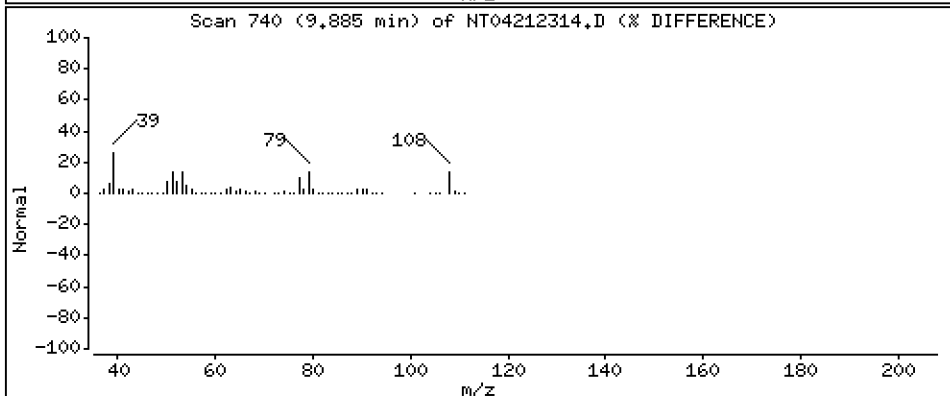
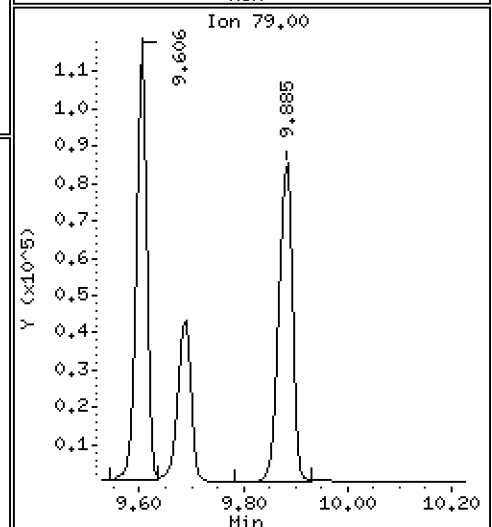
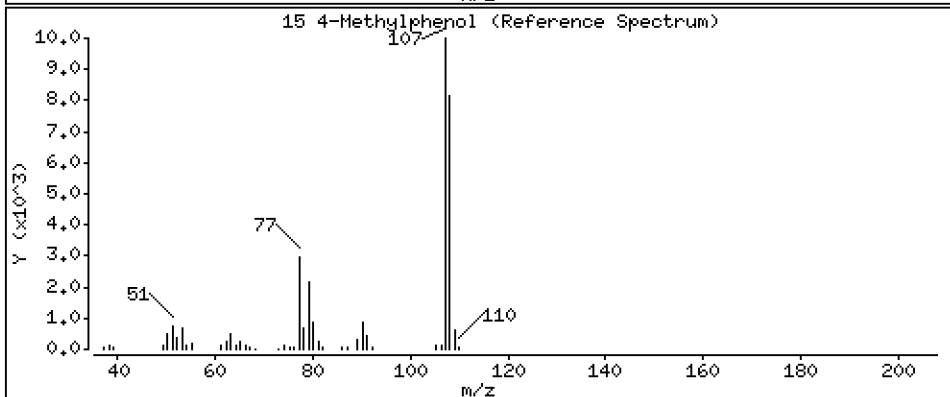
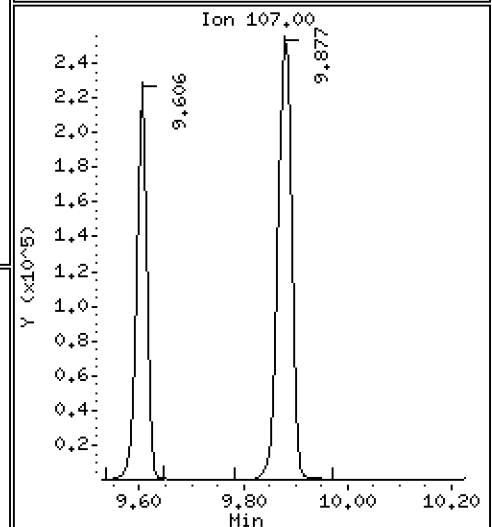
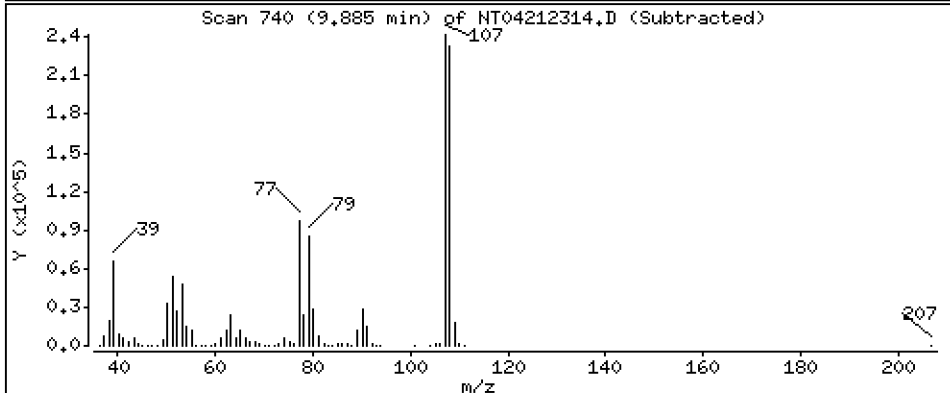
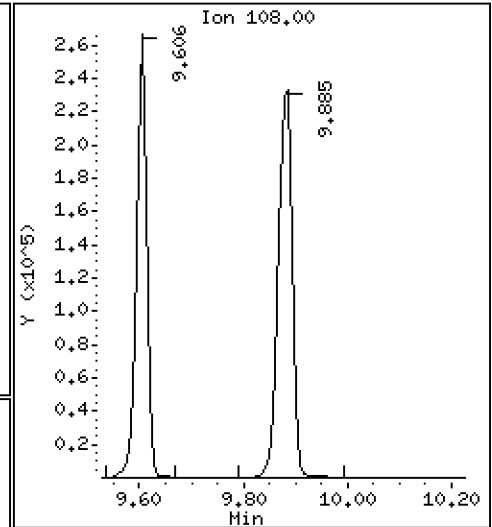
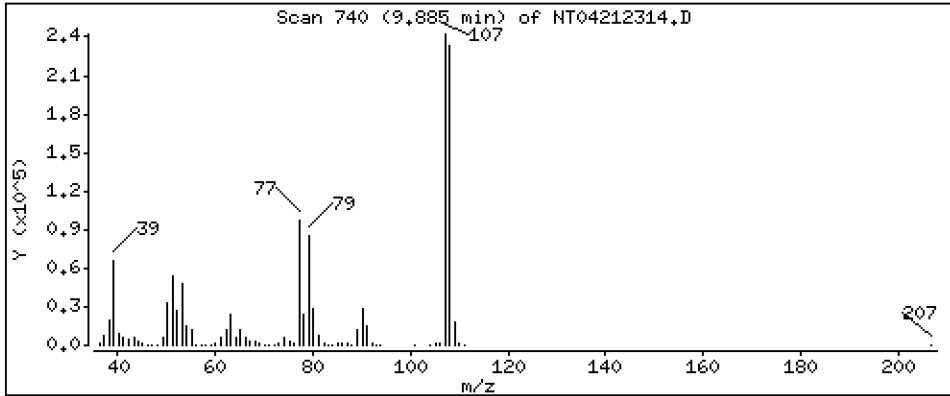
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.451 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

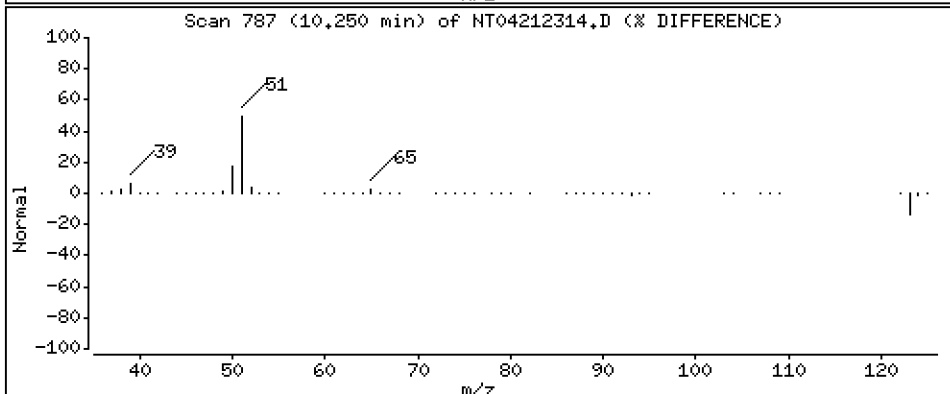
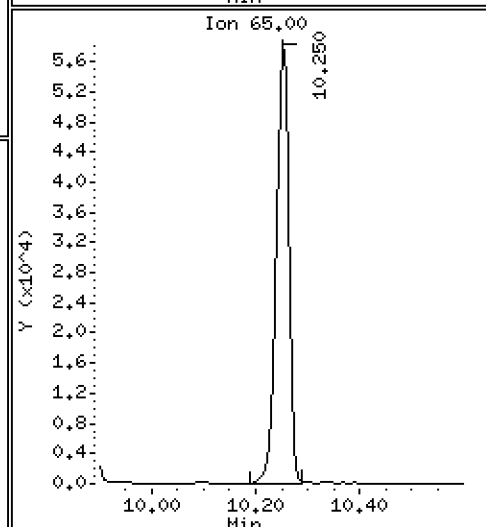
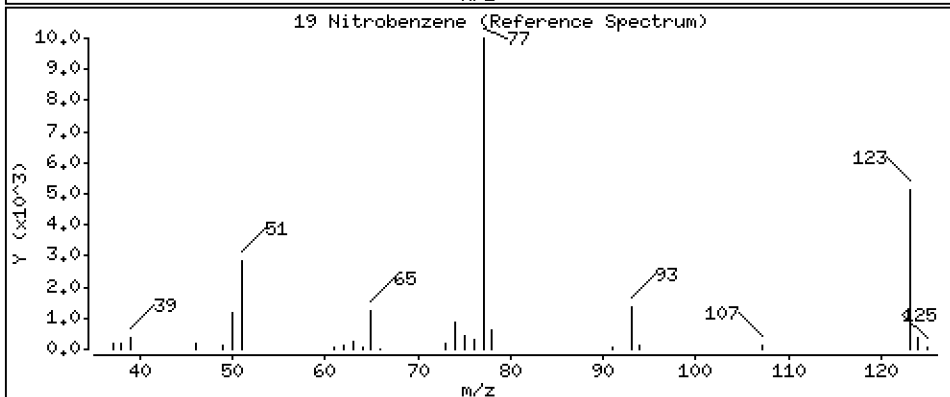
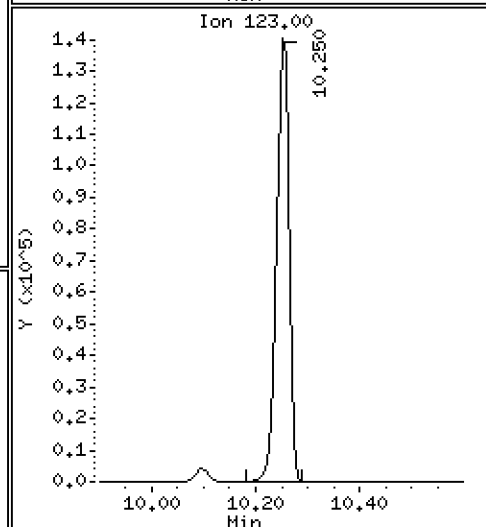
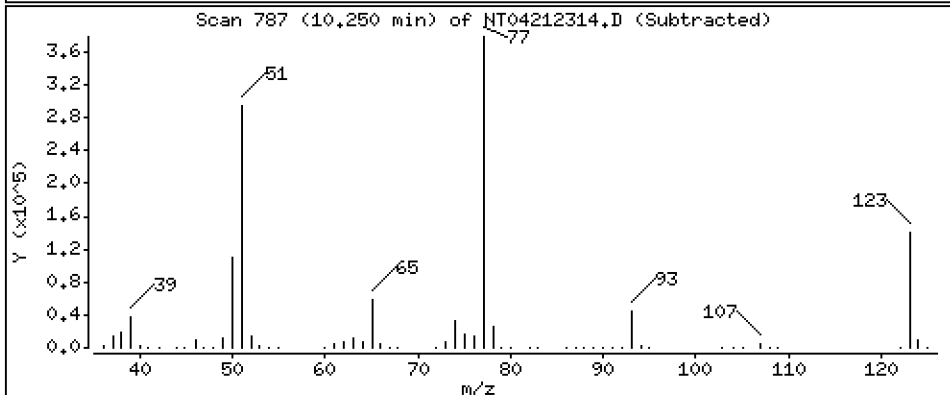
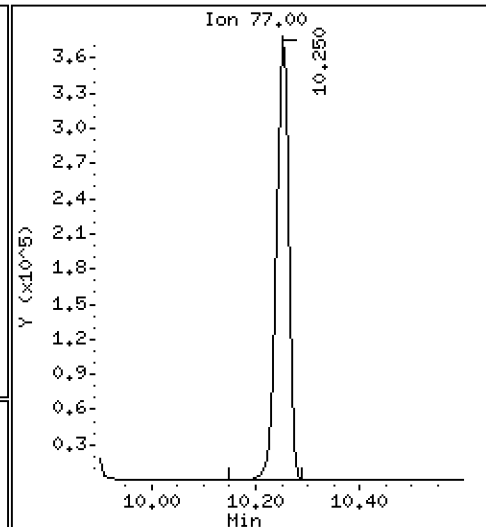
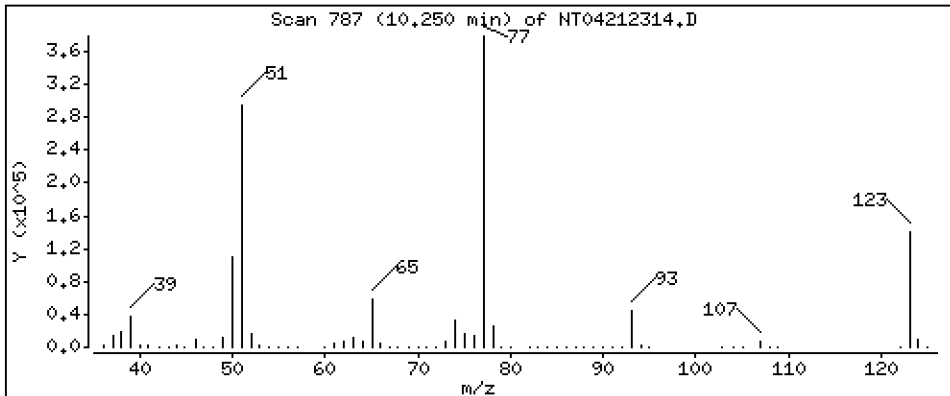
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 4,715 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

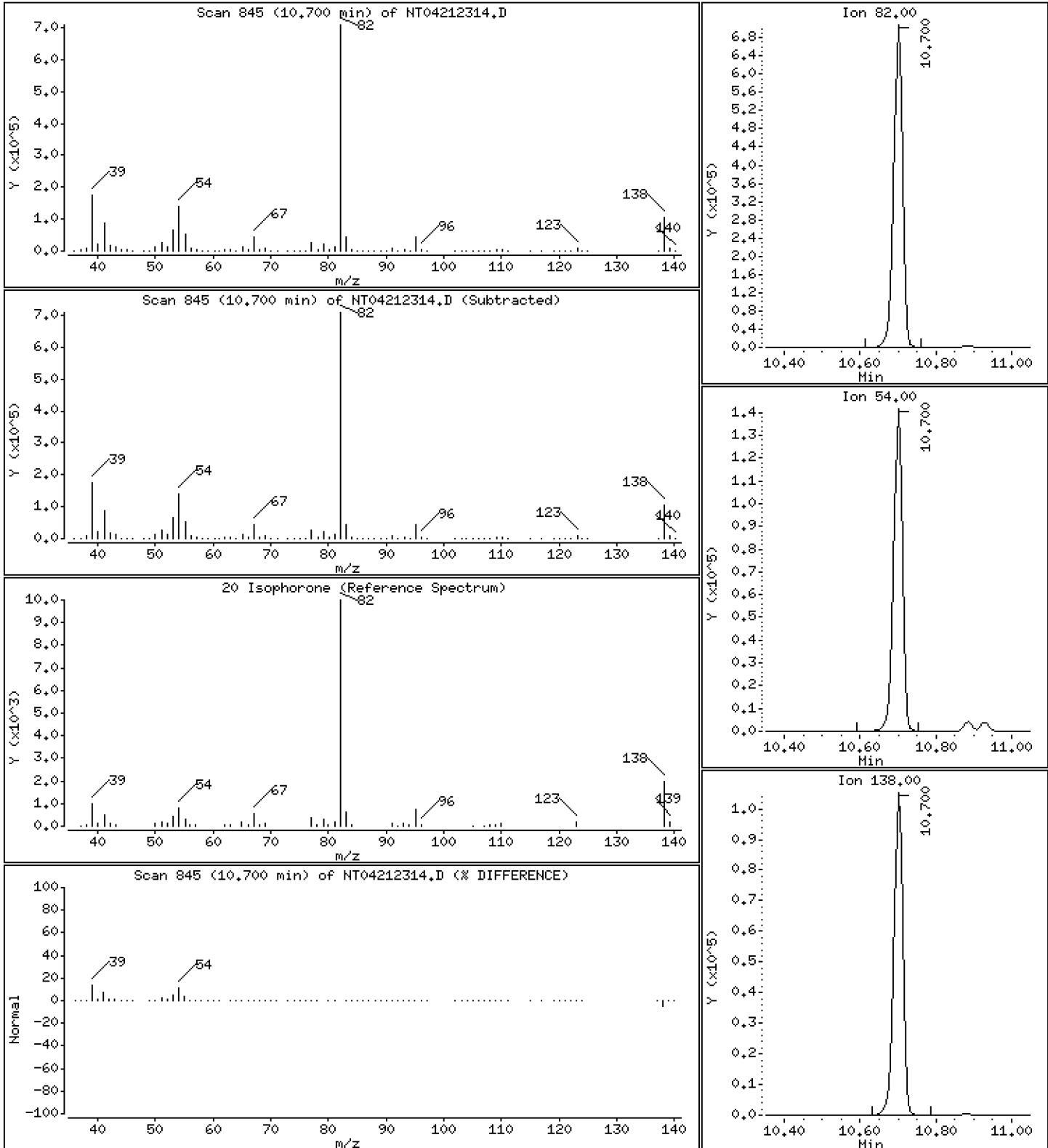
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

20 Isophorone

Concentration: 6.317 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

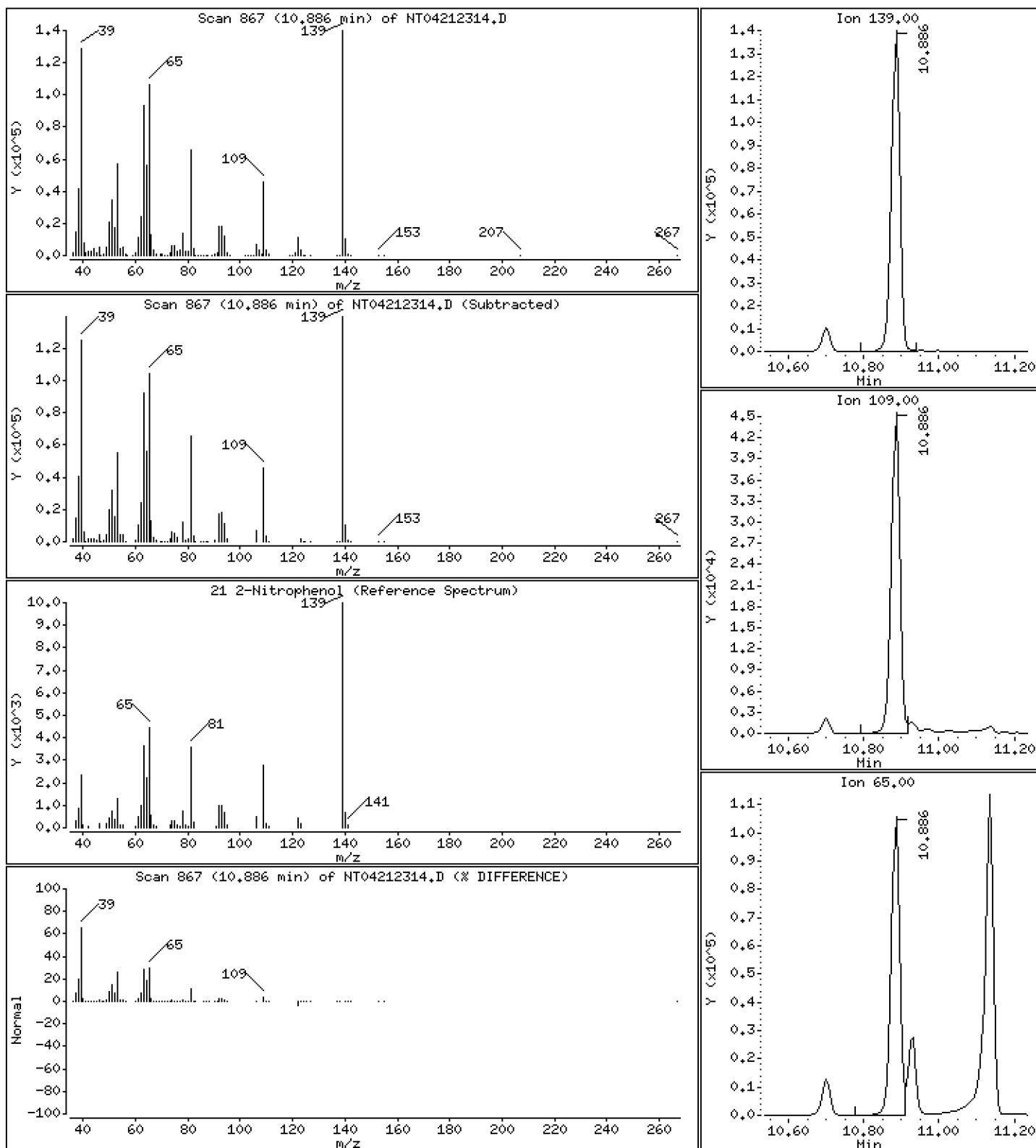
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 3,779 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

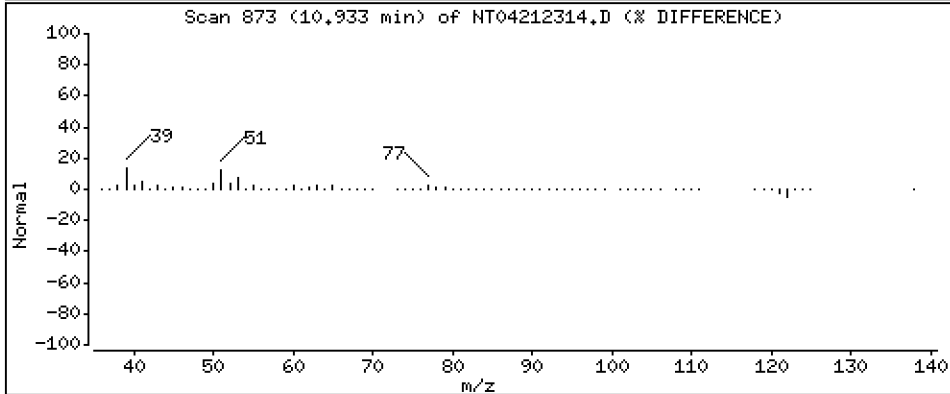
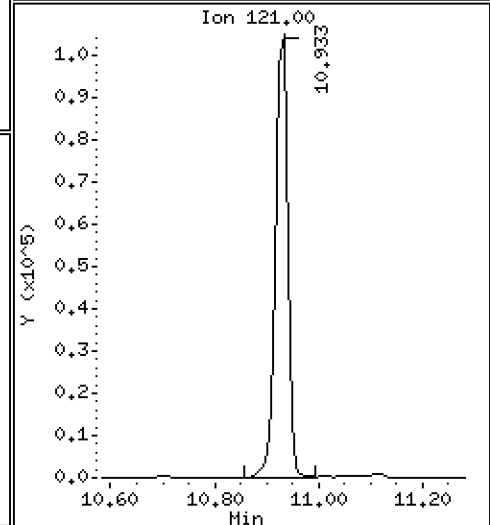
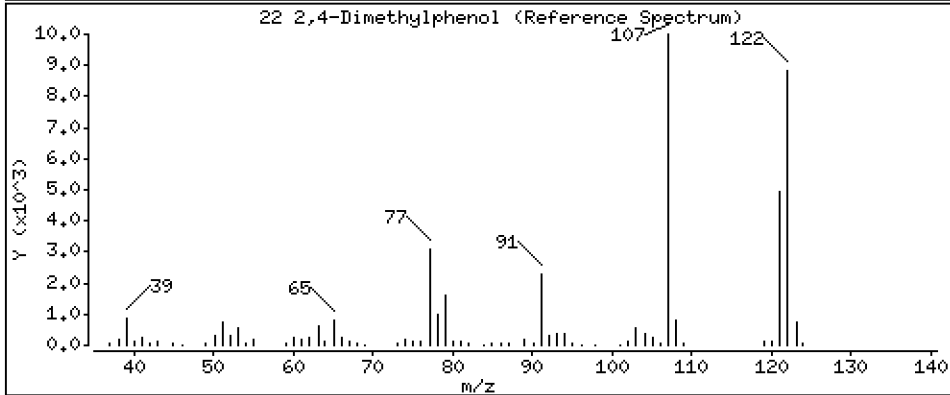
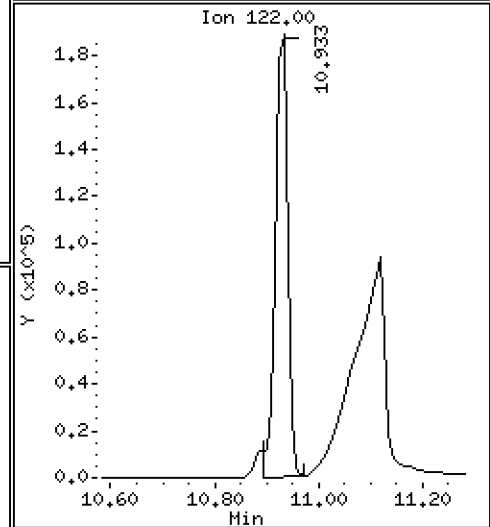
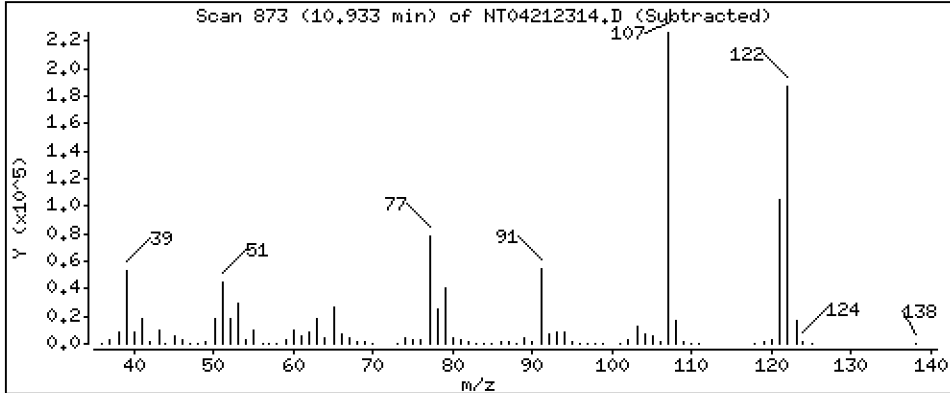
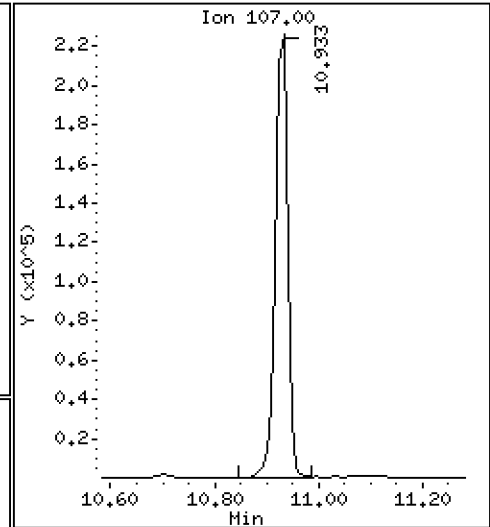
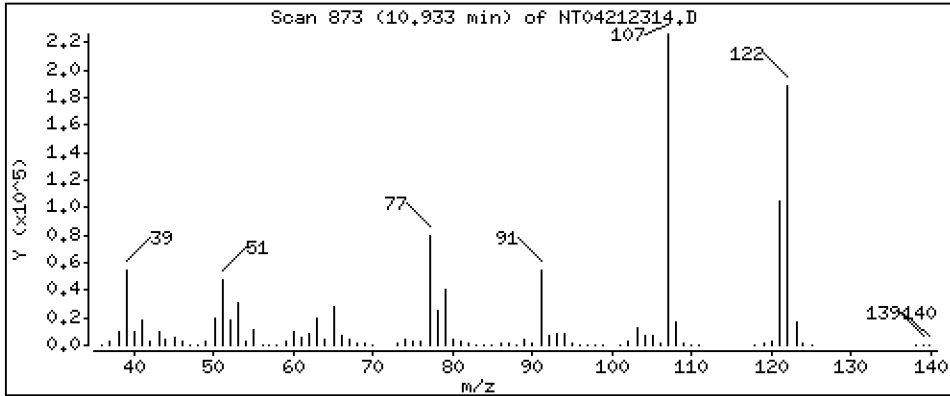
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 3,707 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

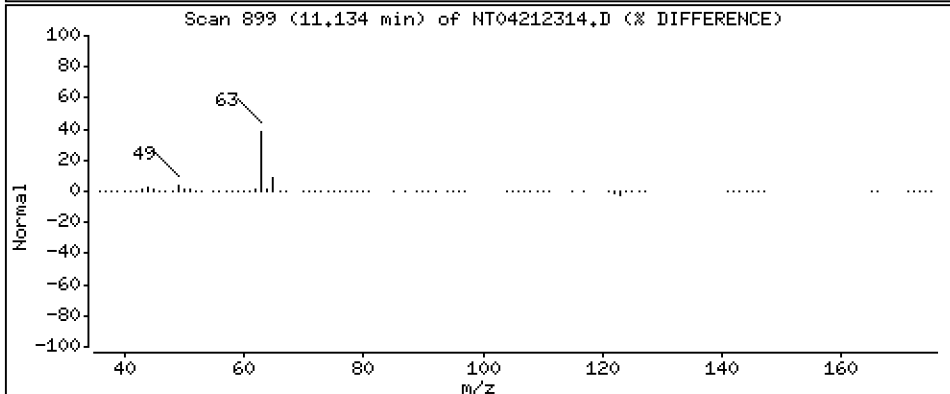
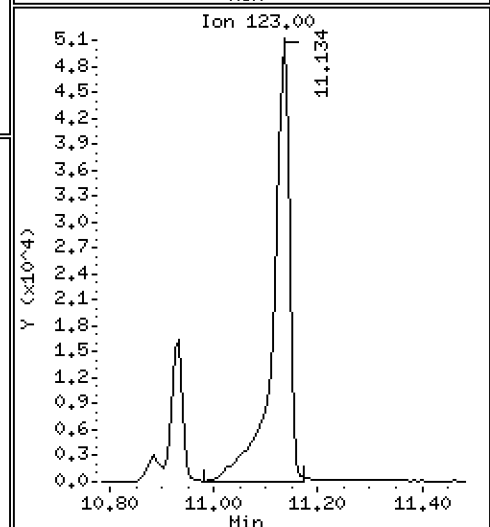
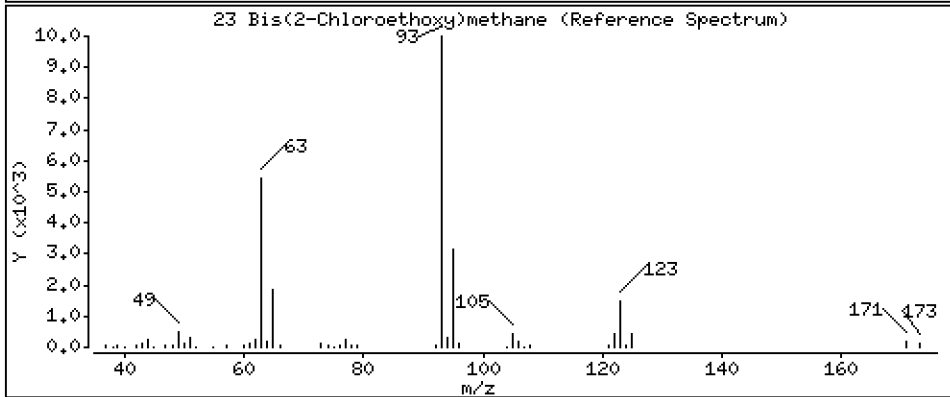
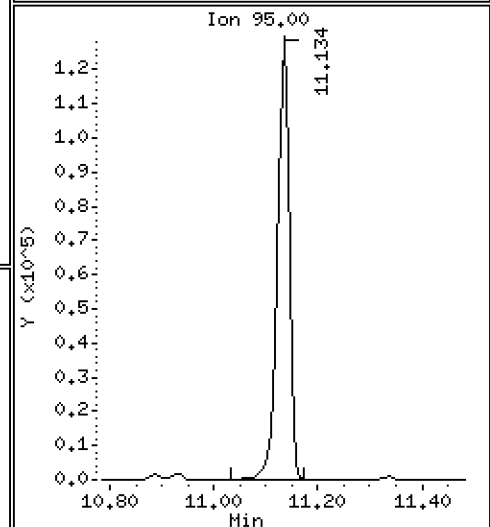
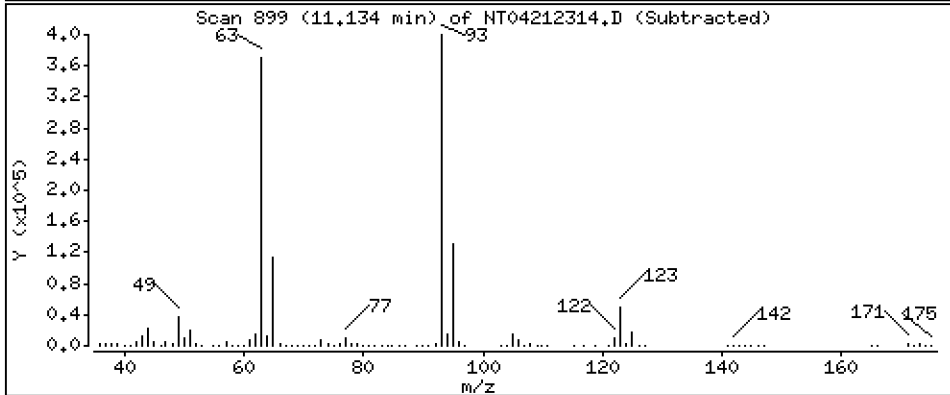
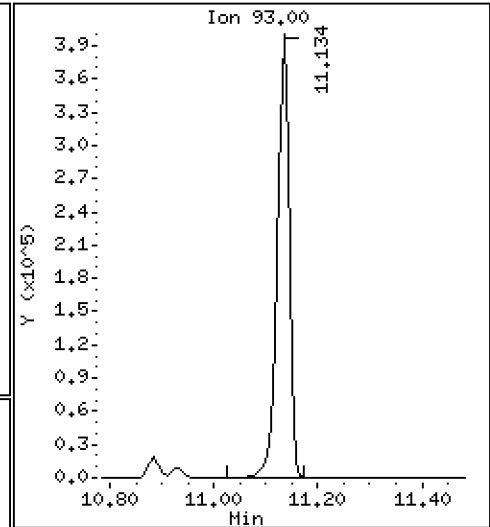
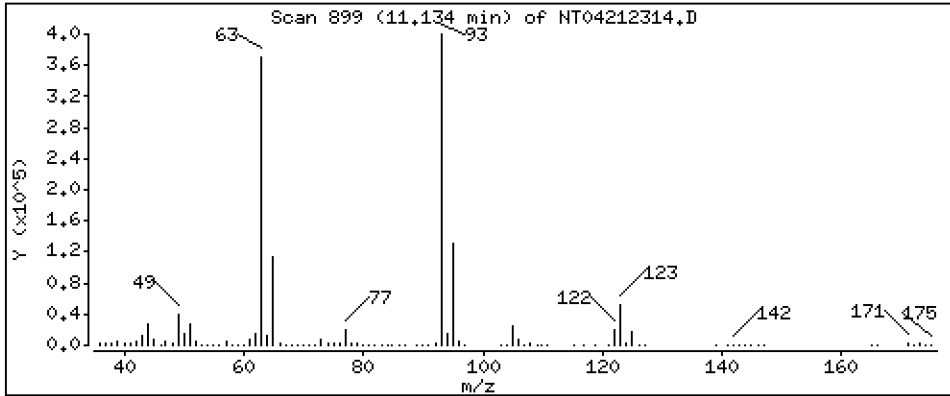
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 5,396 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

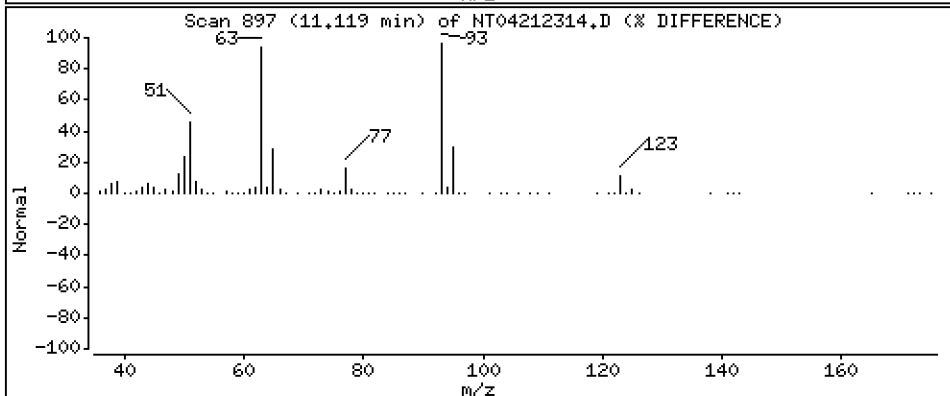
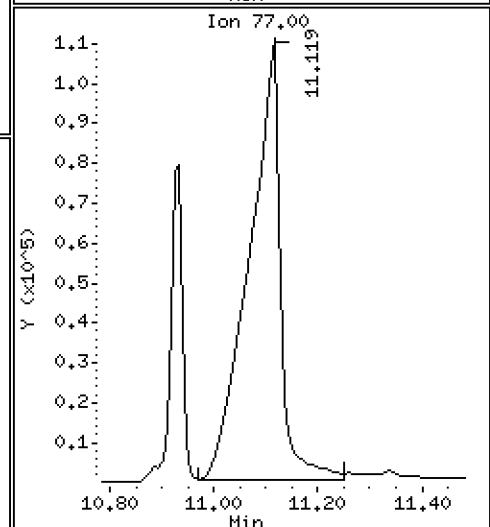
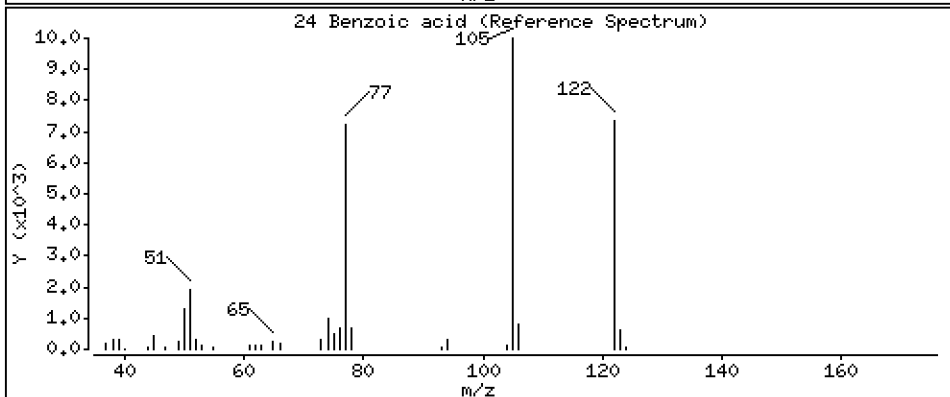
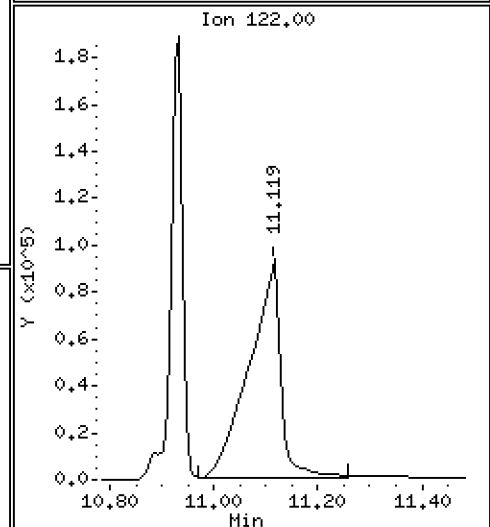
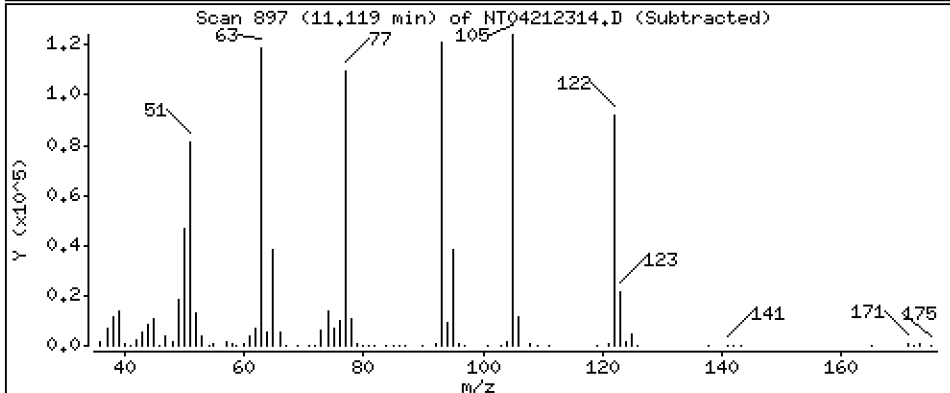
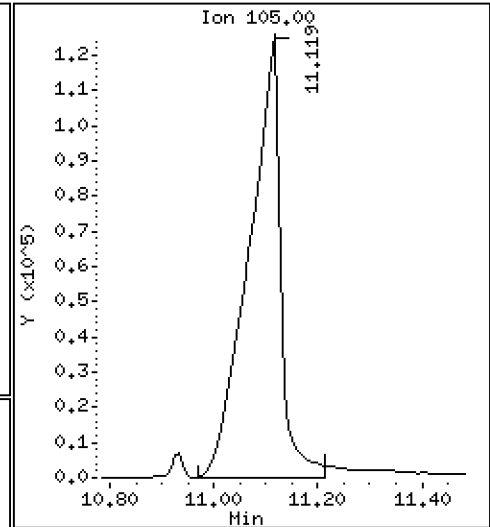
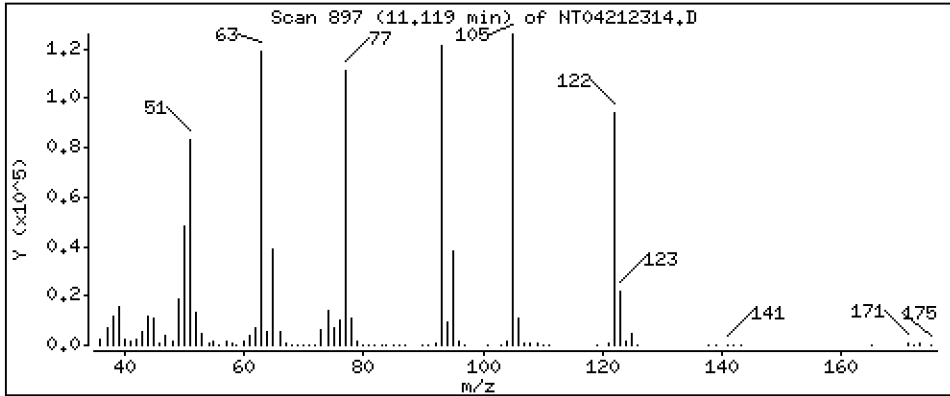
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 6,801 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

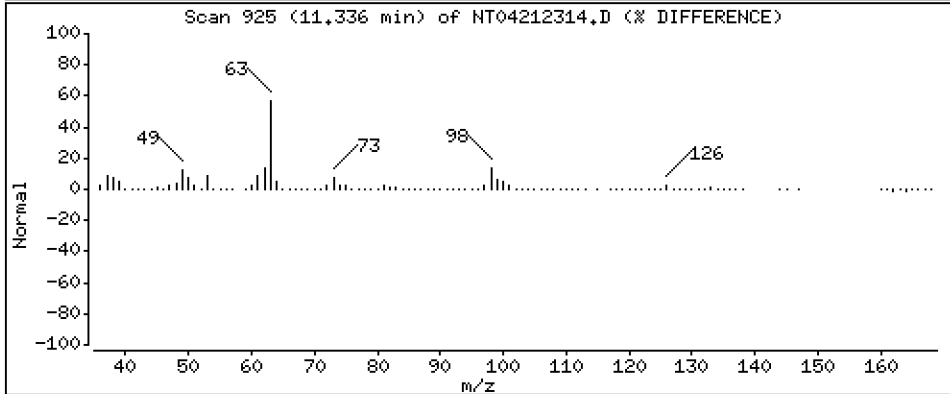
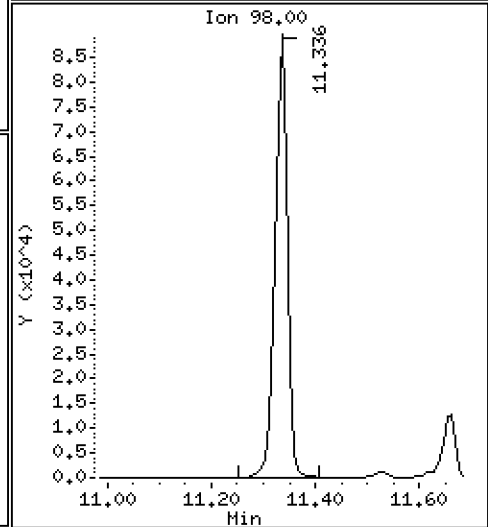
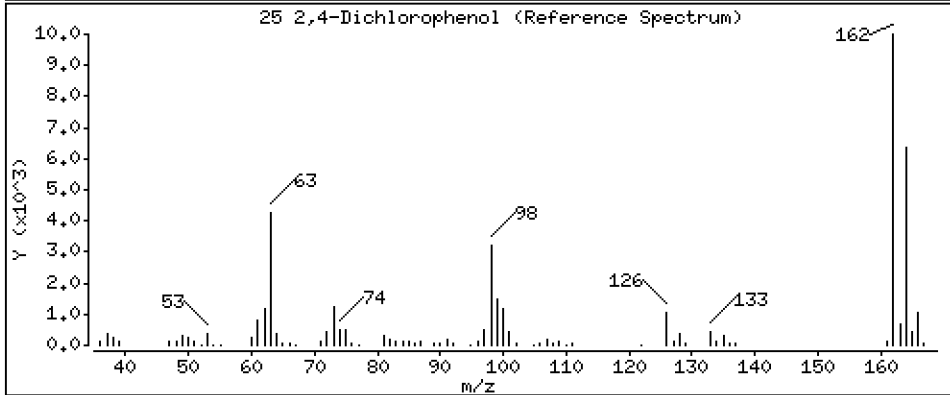
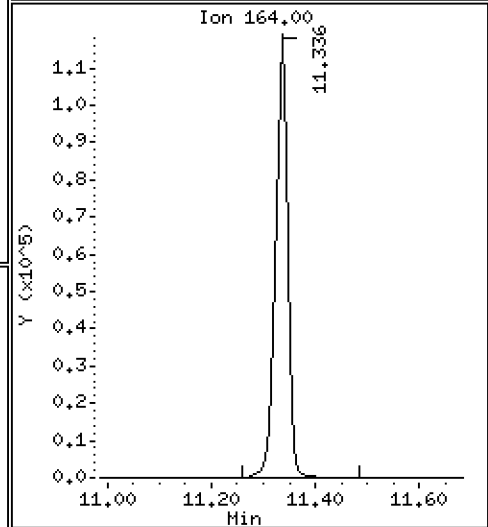
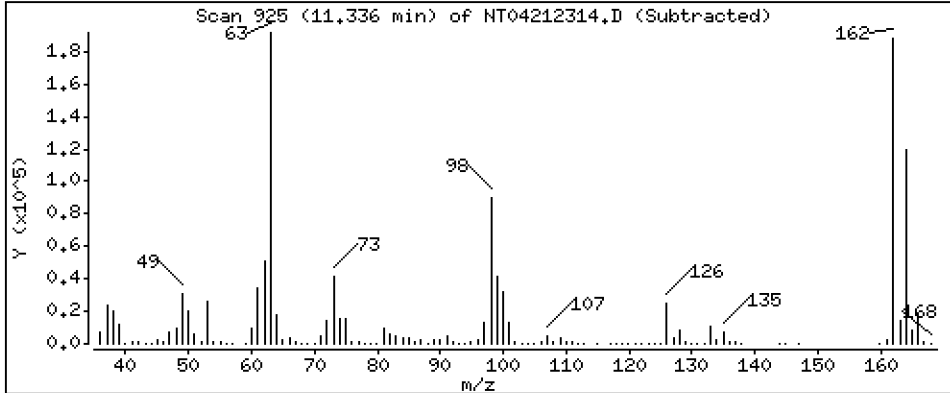
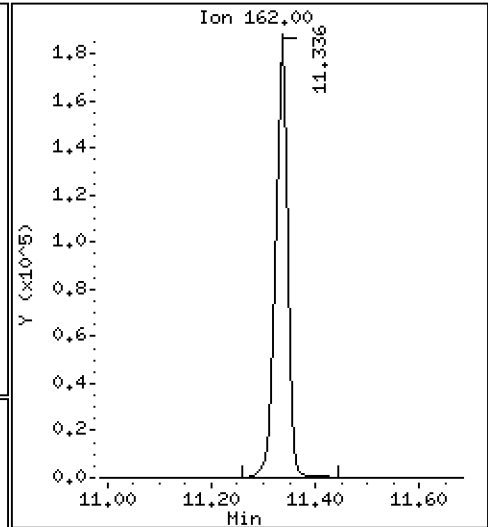
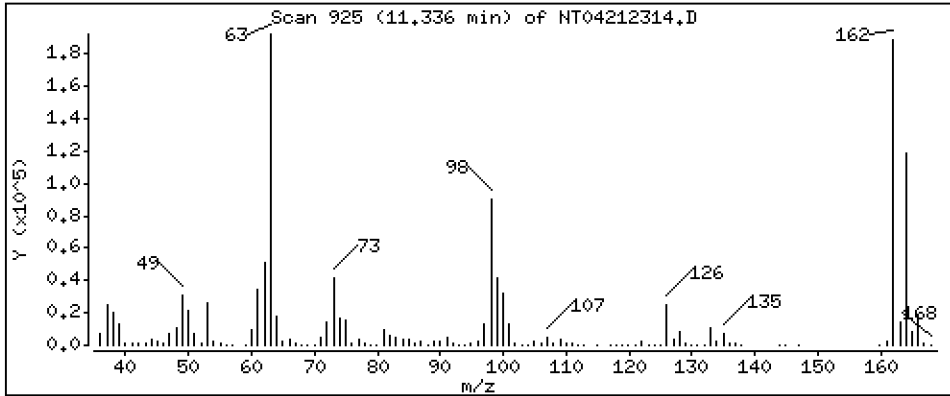
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 3,728 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

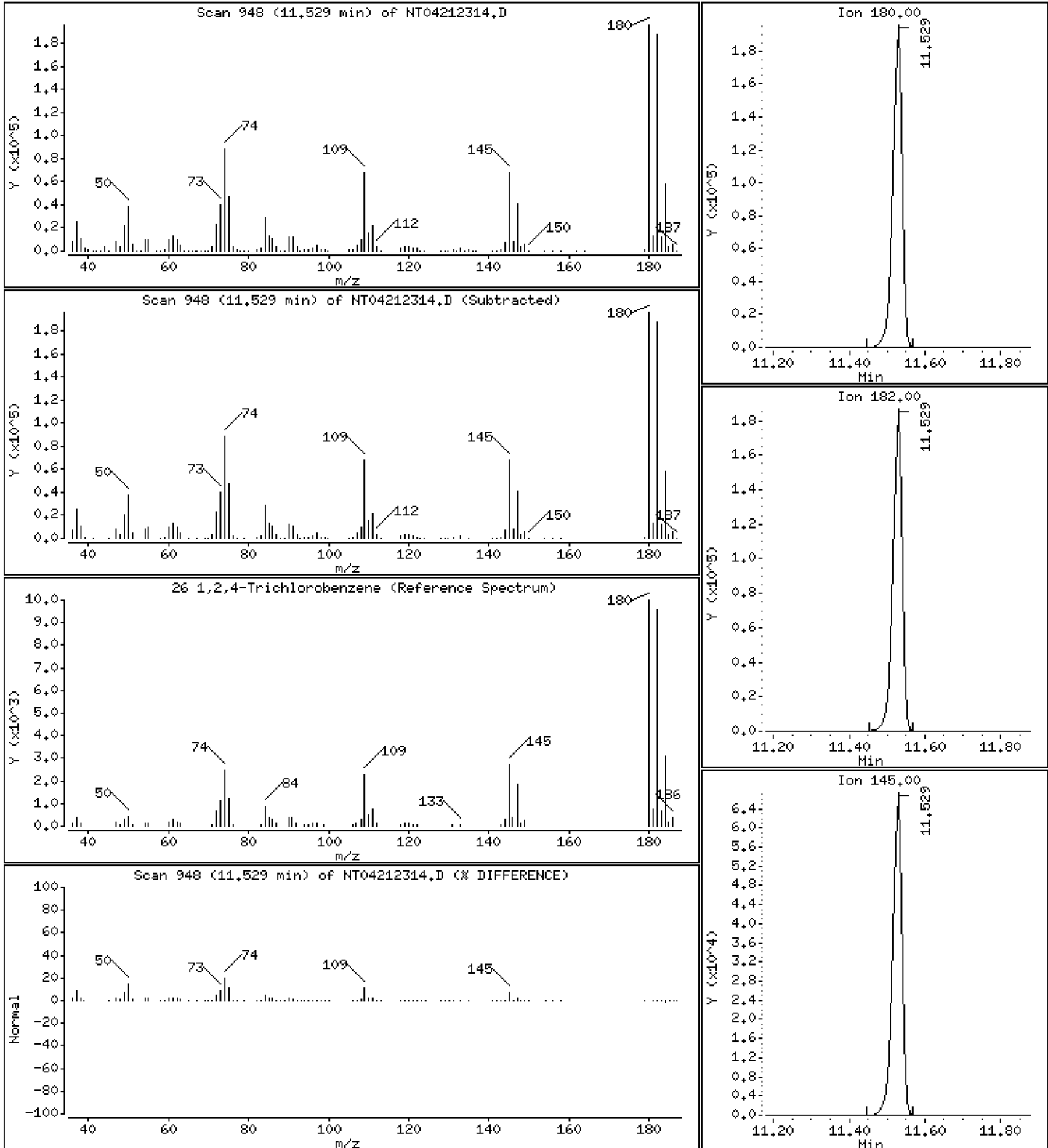
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,536 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

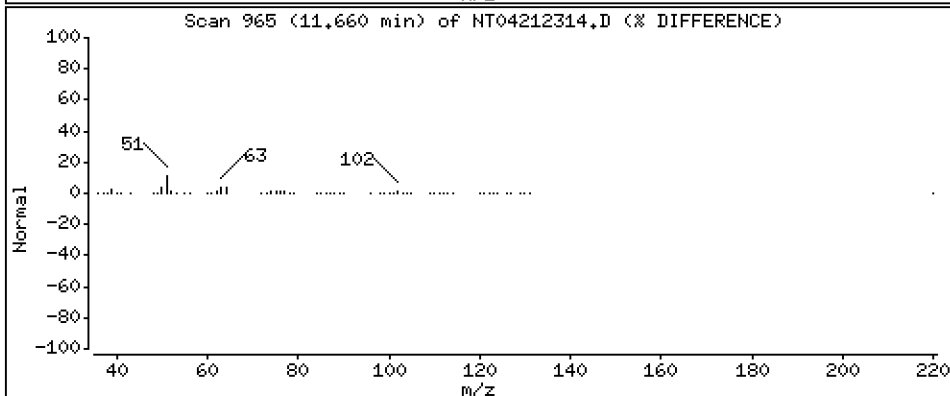
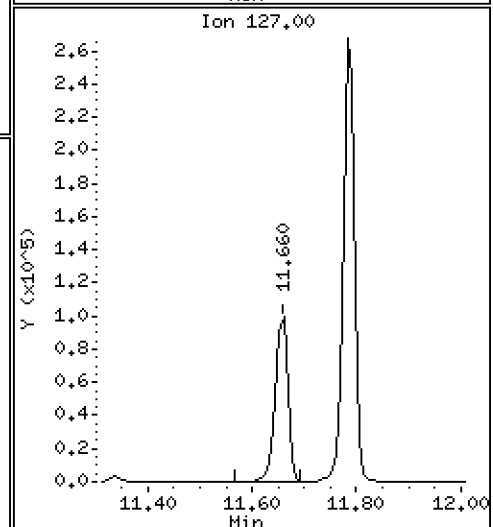
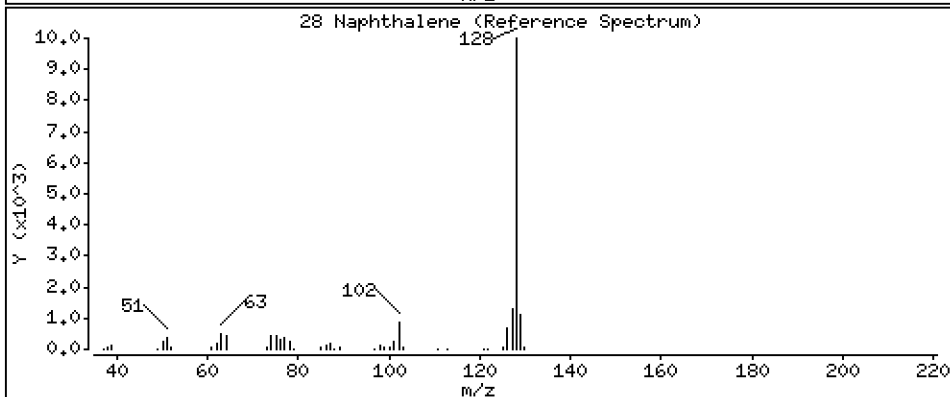
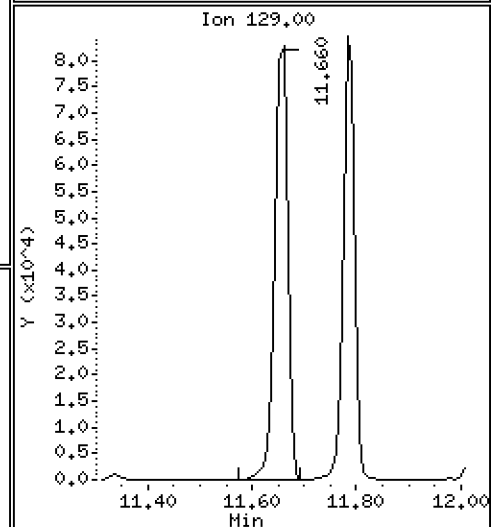
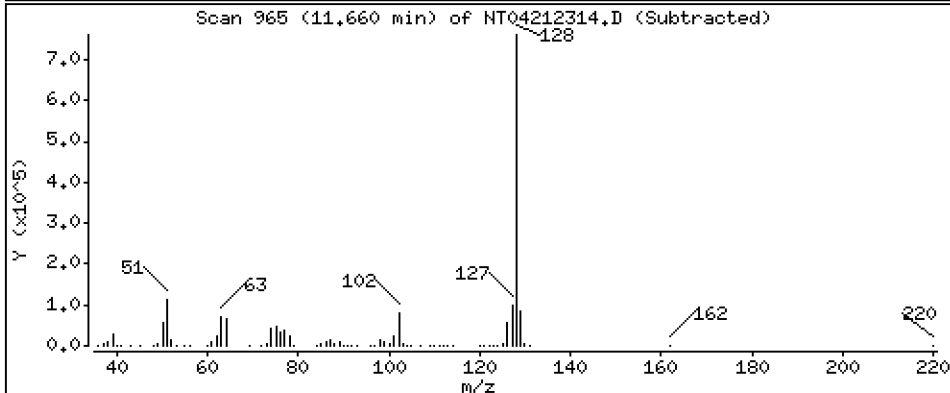
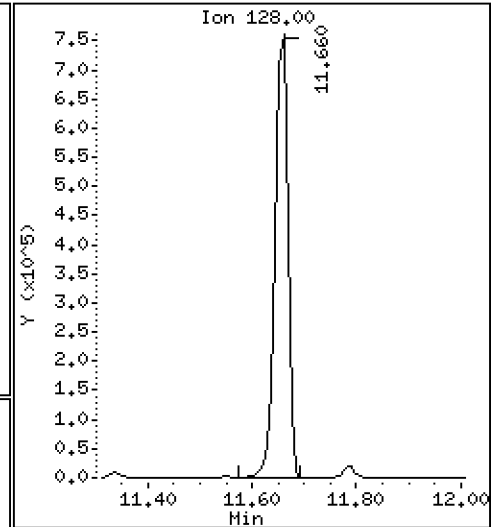
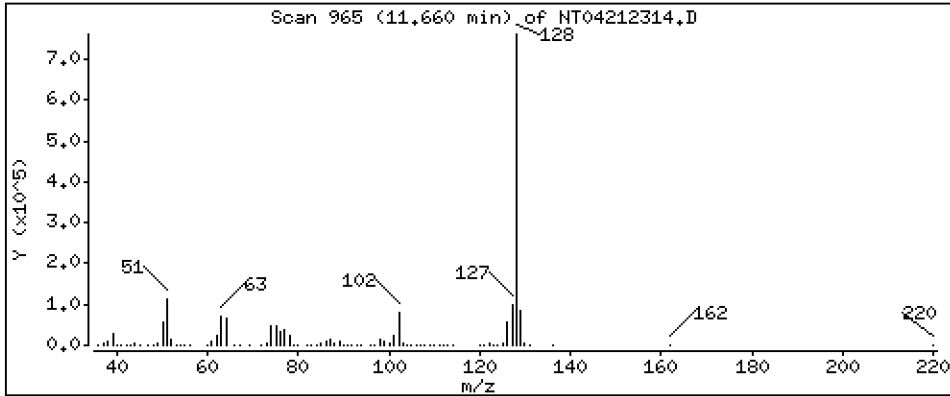
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 4,813 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

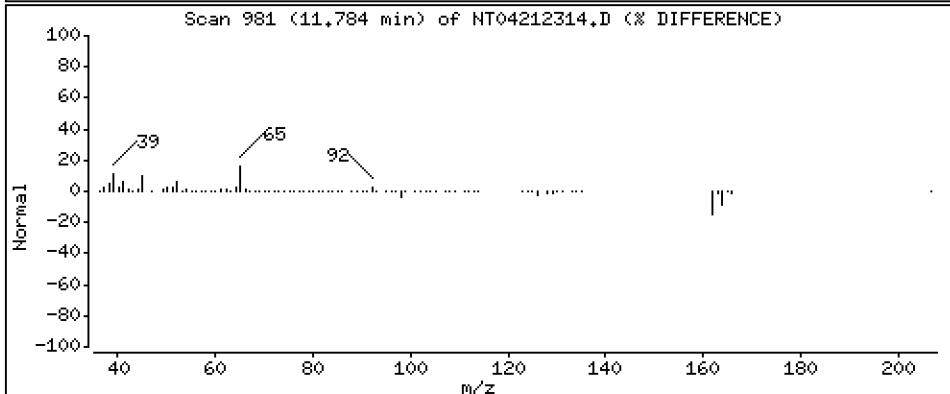
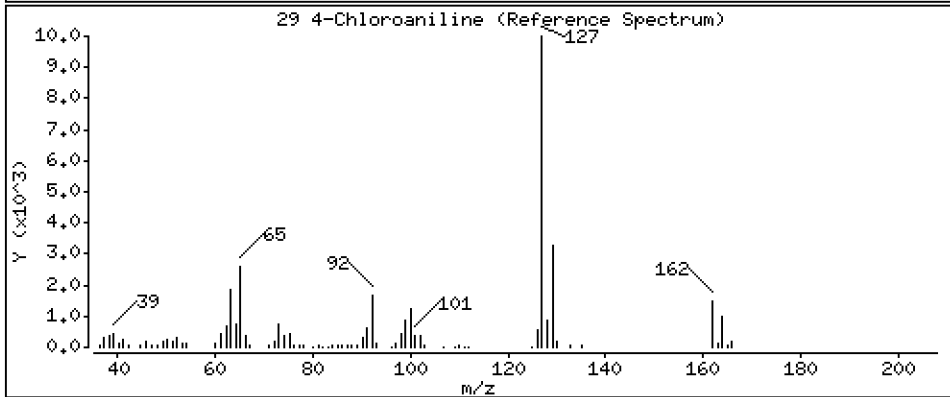
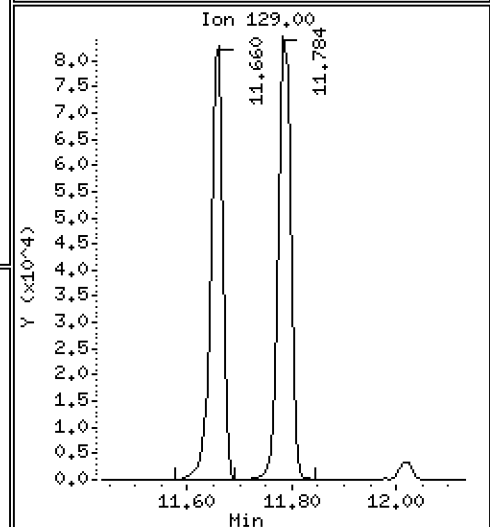
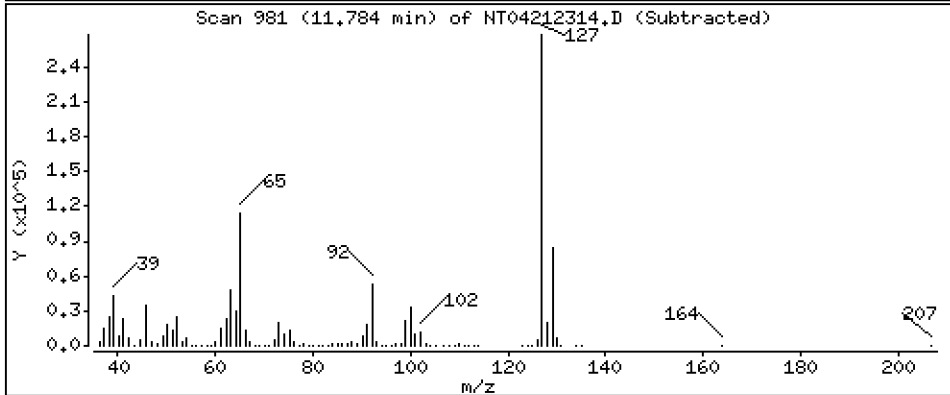
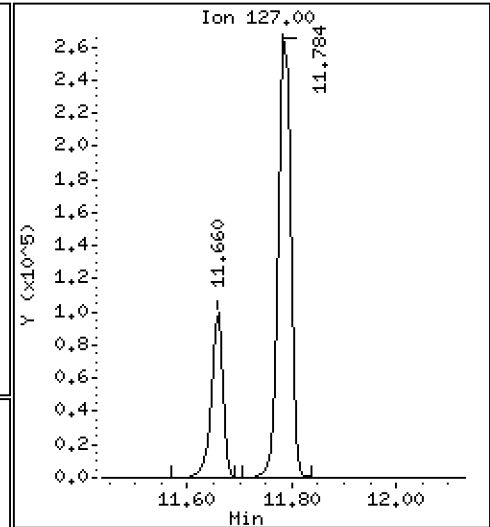
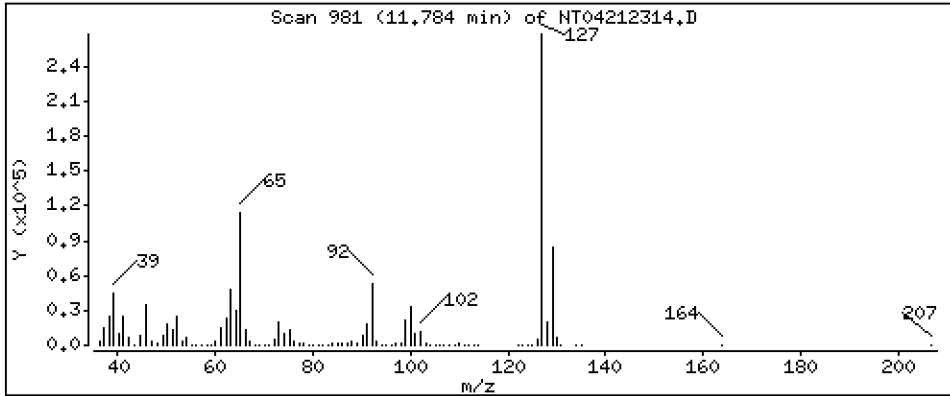
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 3,770 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

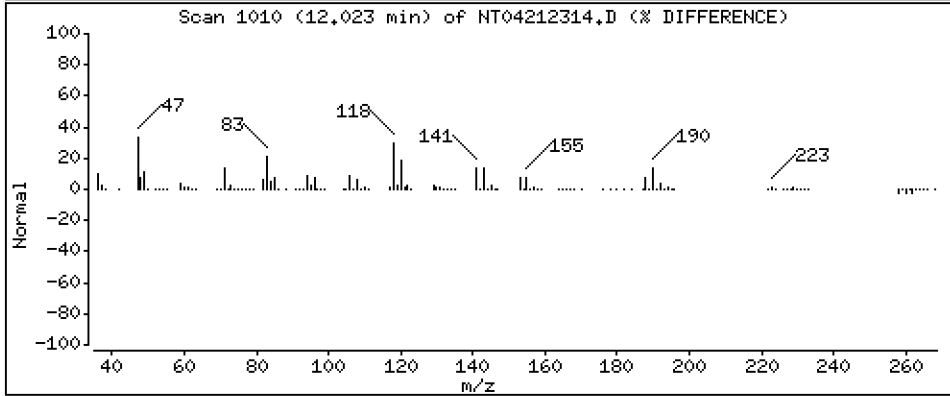
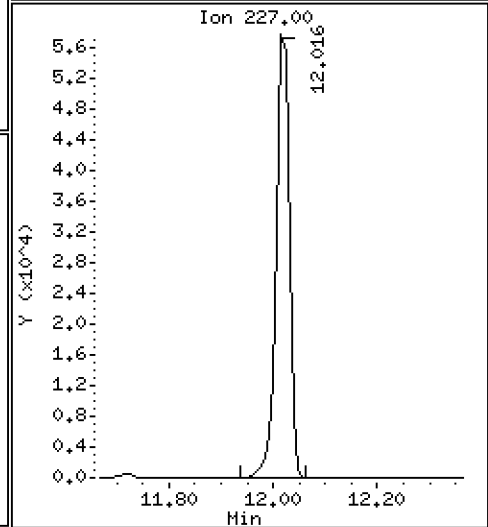
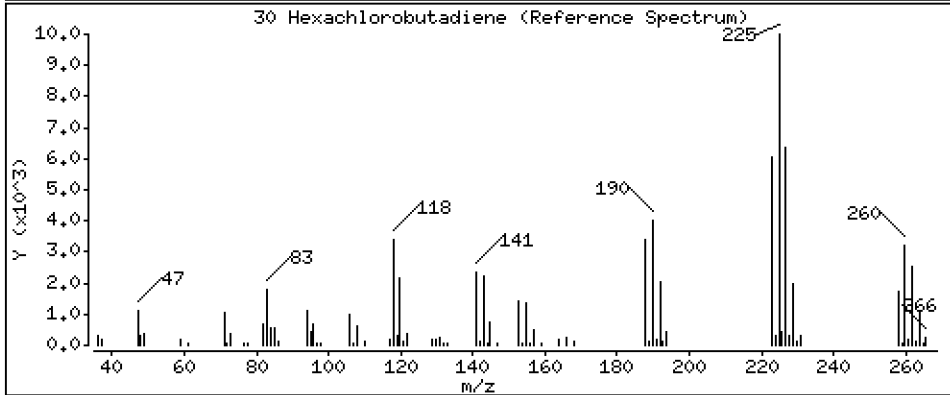
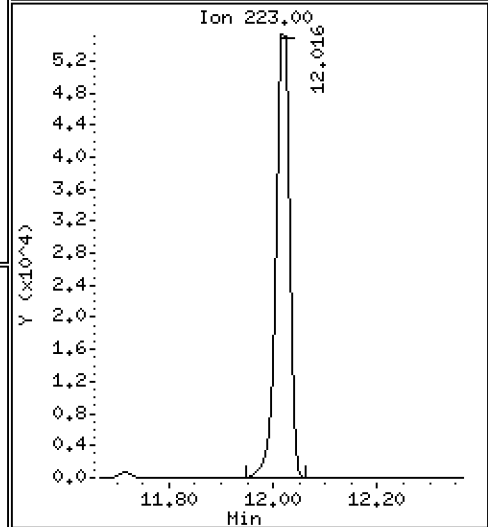
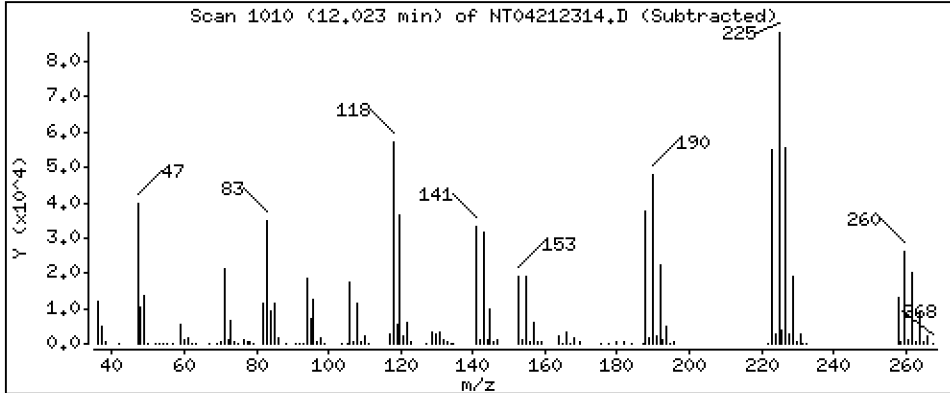
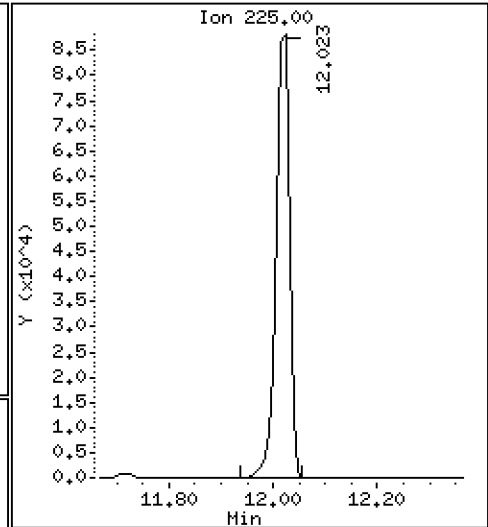
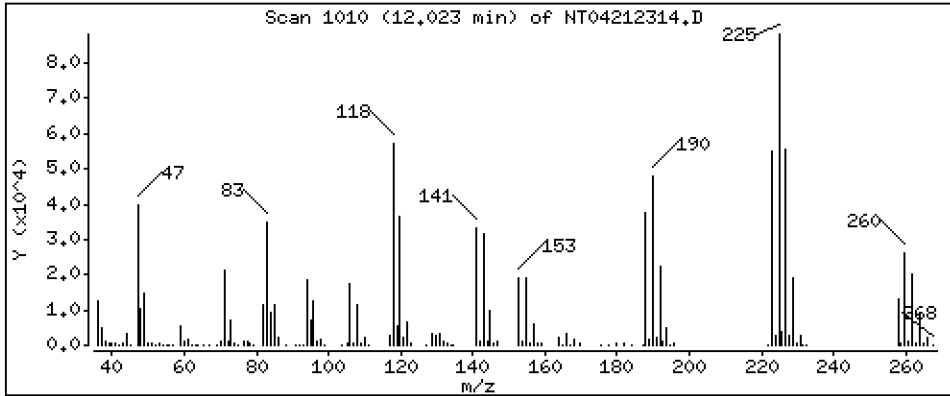
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,665 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

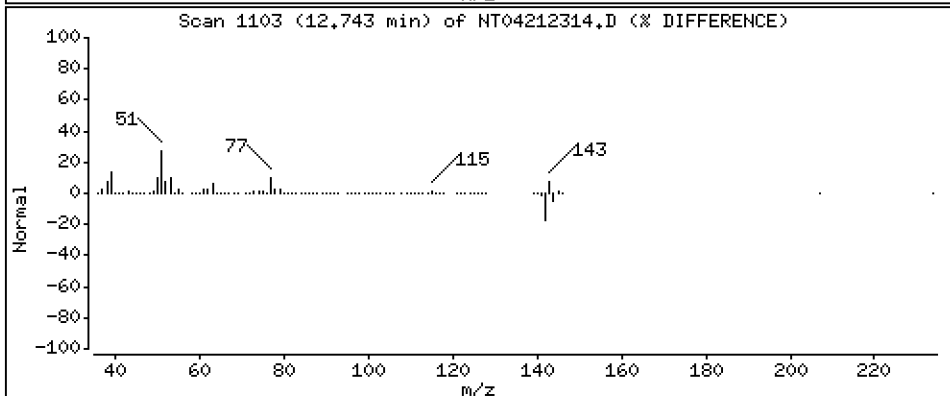
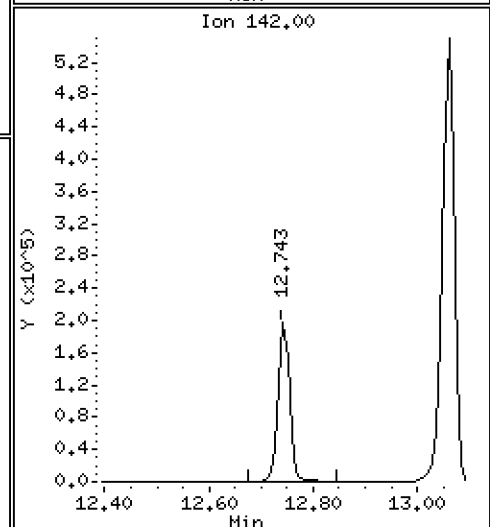
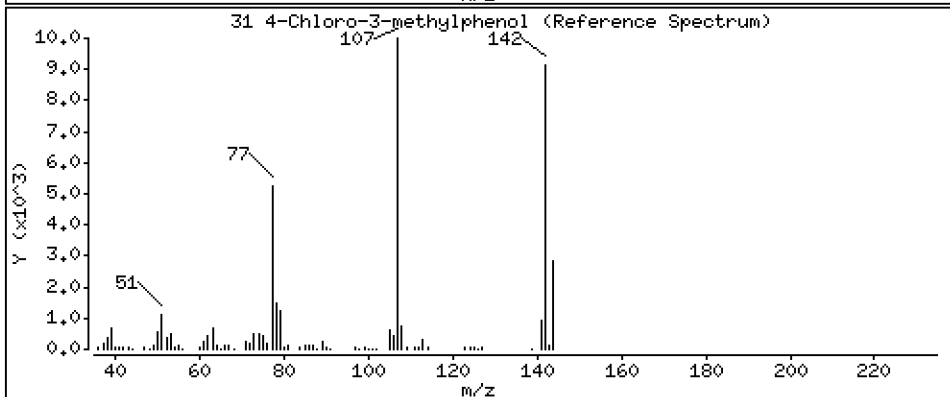
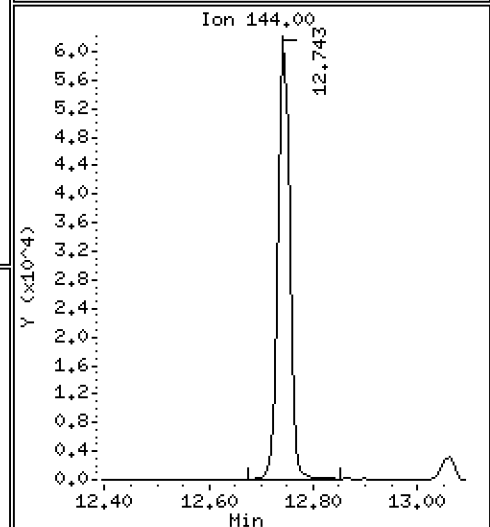
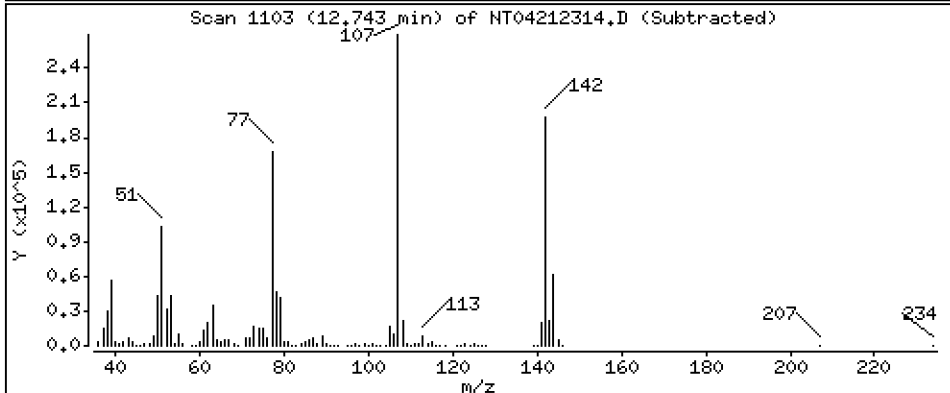
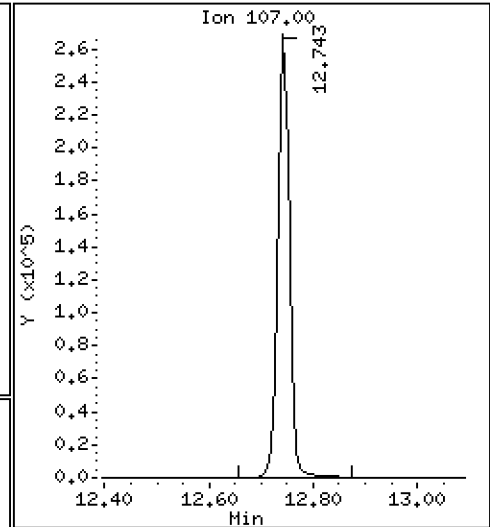
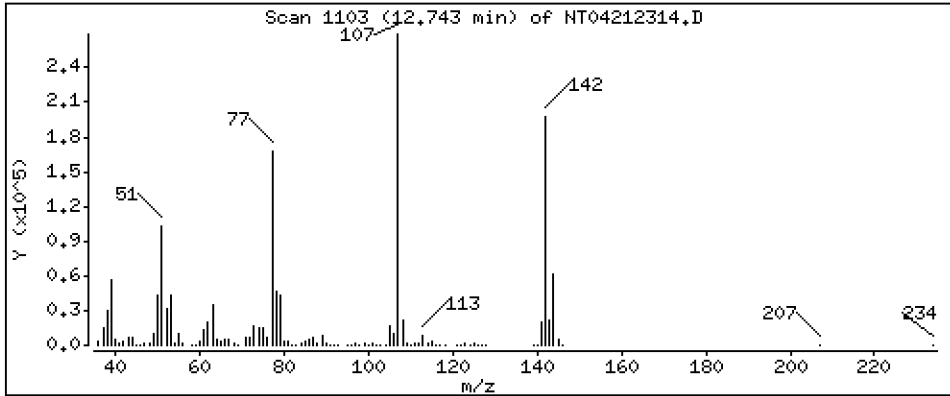
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 4,615 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

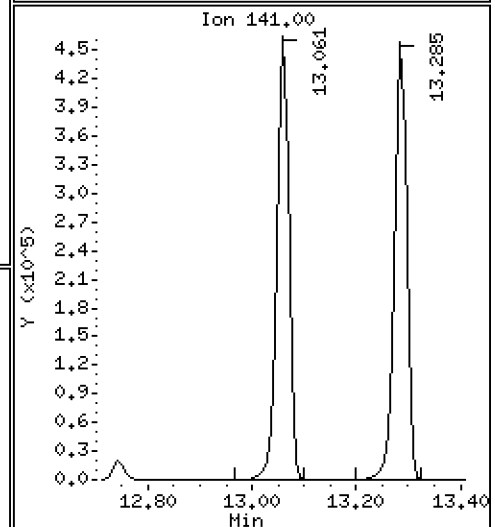
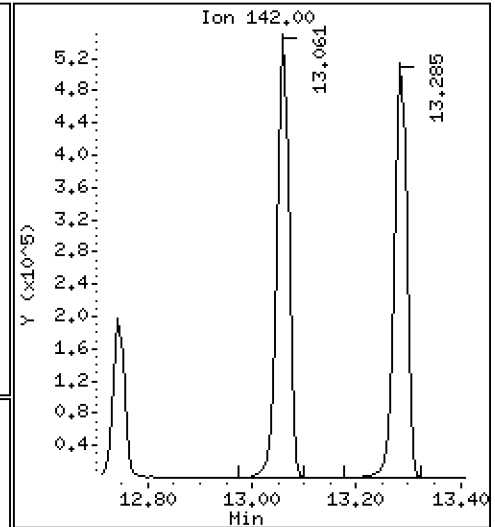
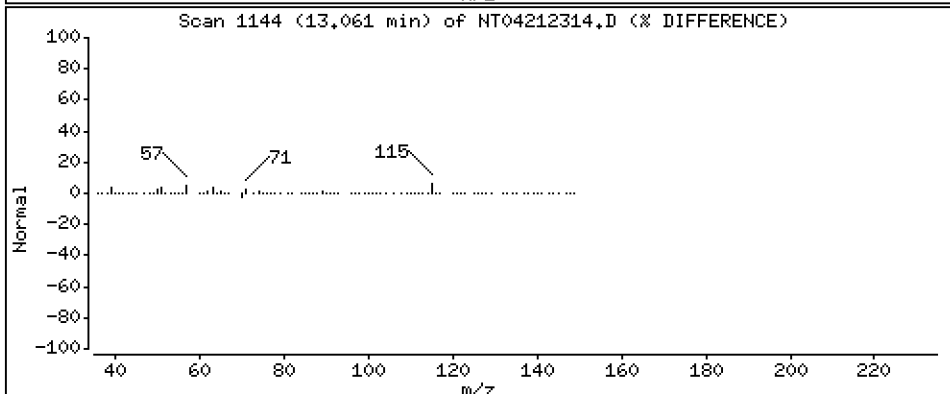
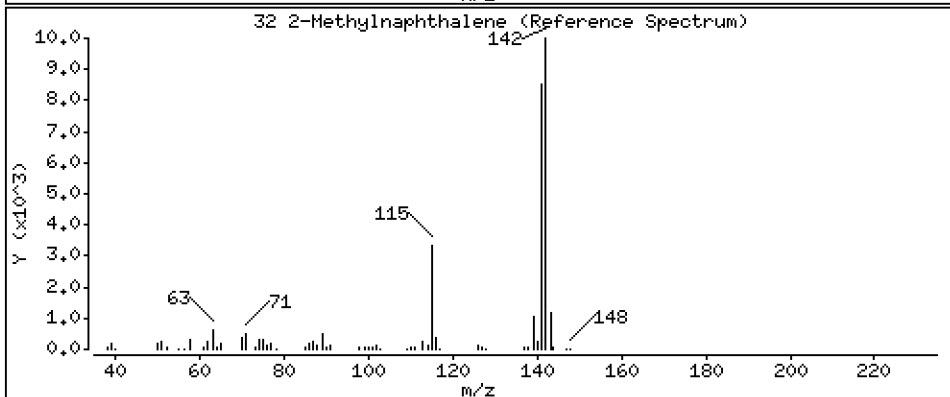
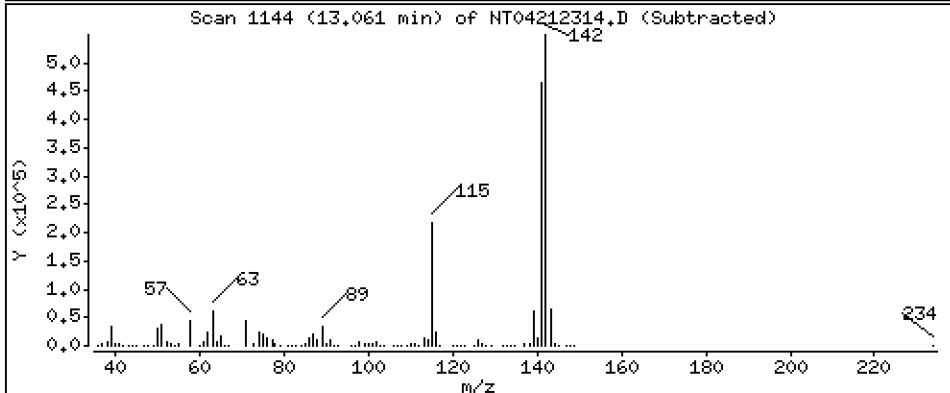
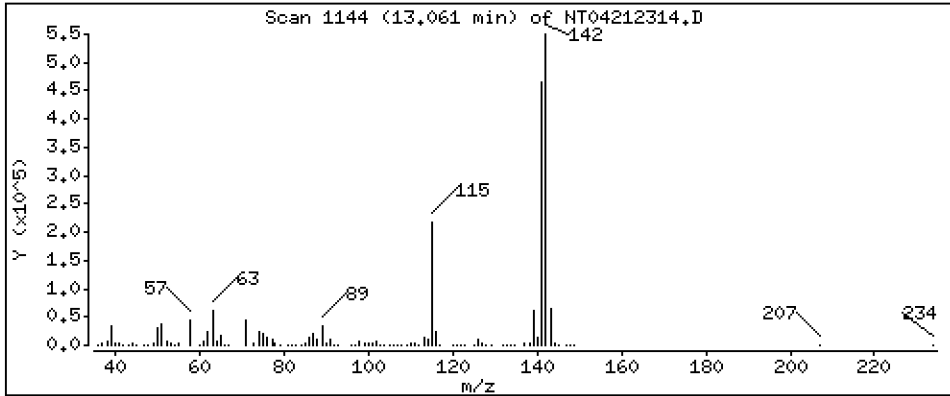
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 4,474 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

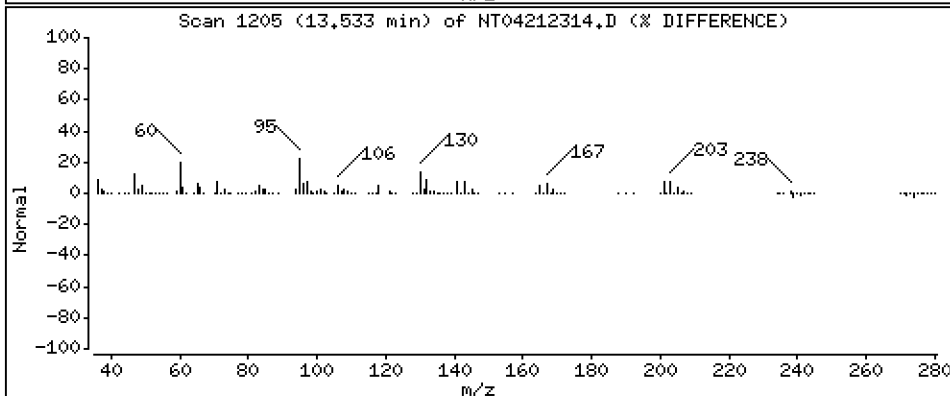
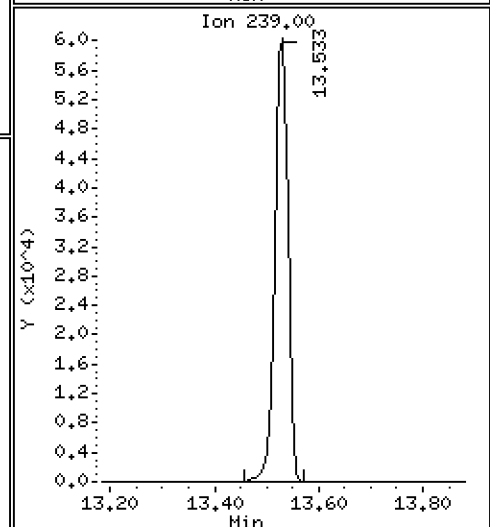
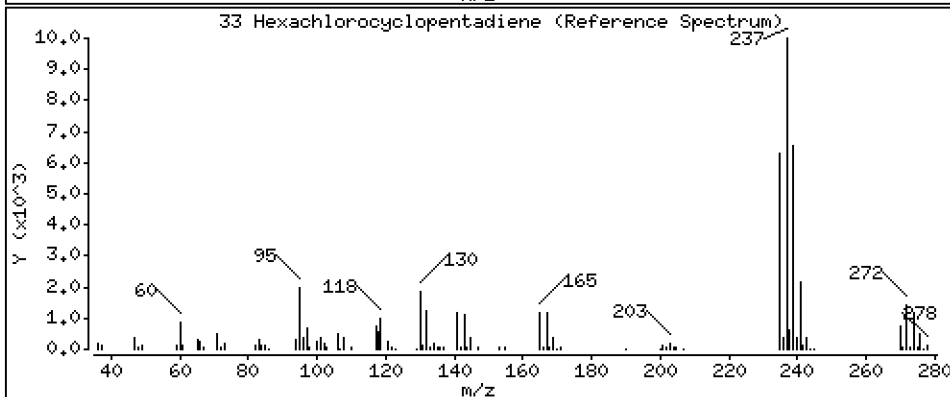
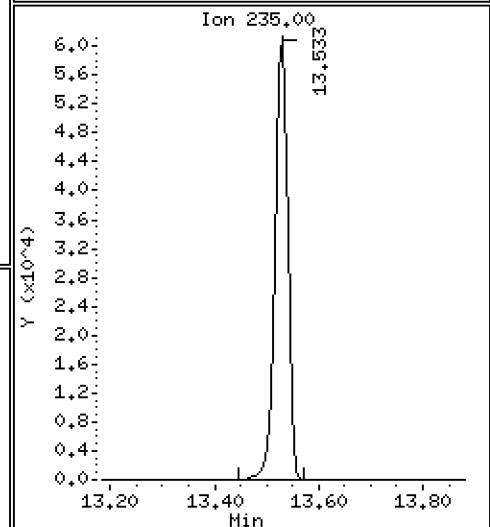
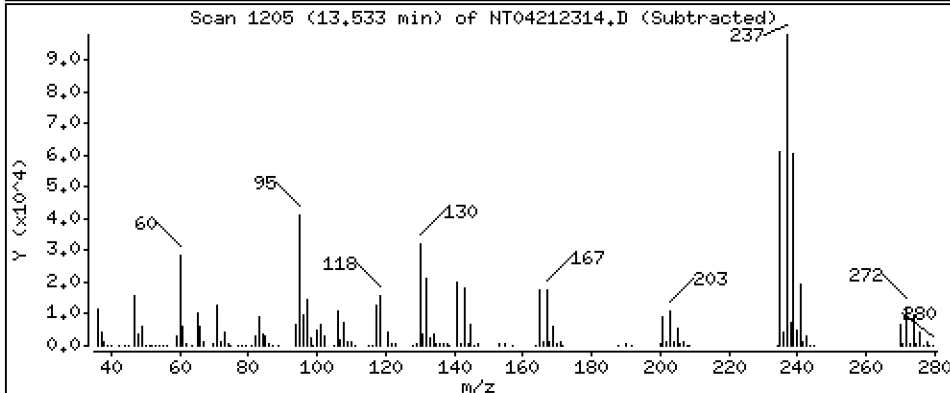
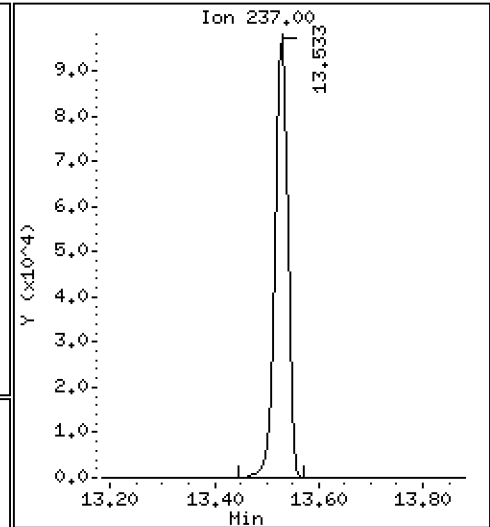
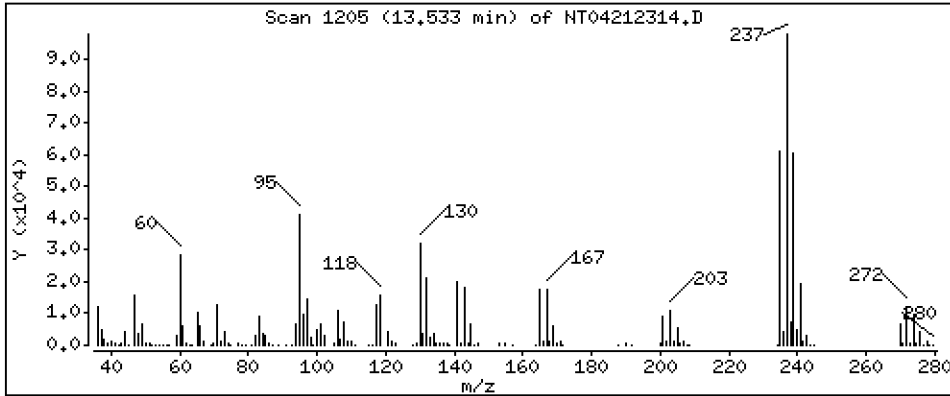
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 4,783 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

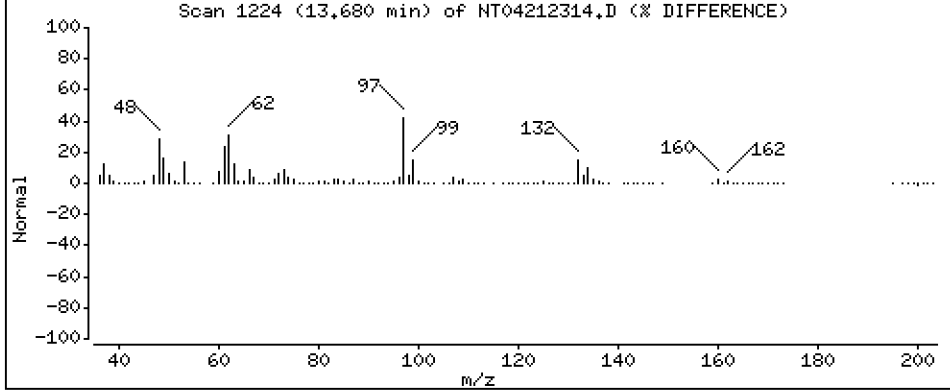
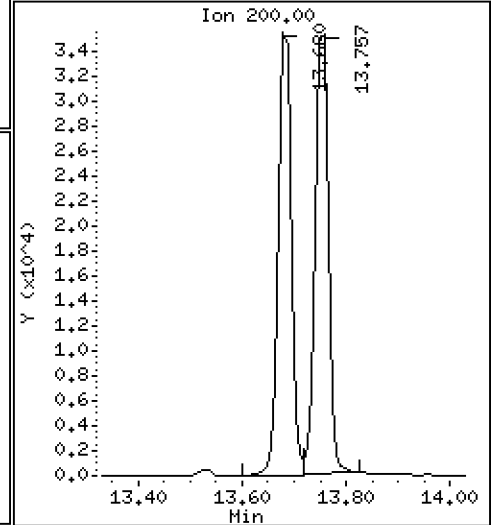
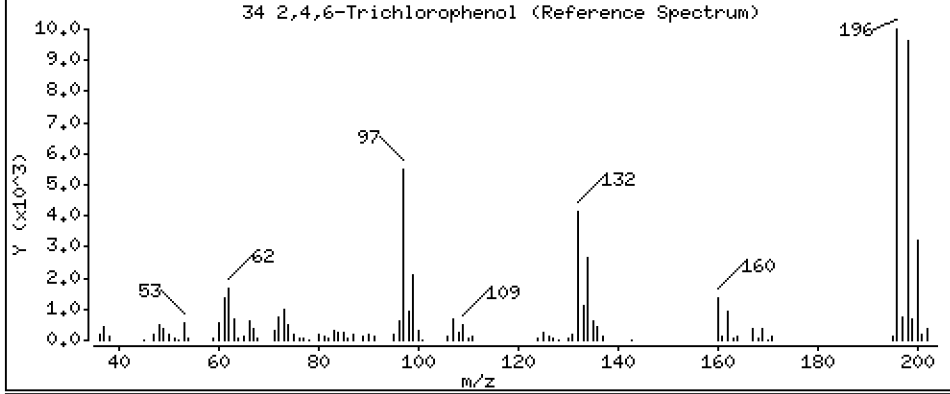
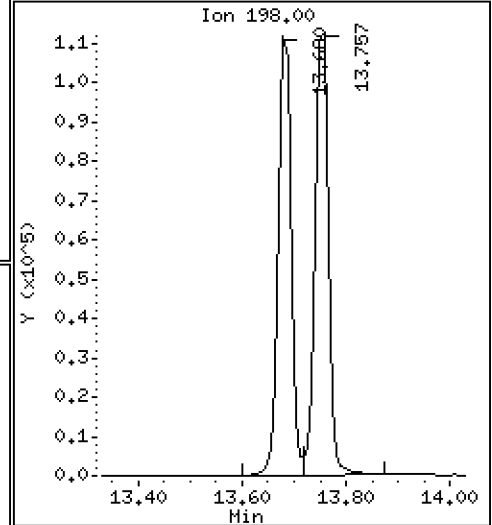
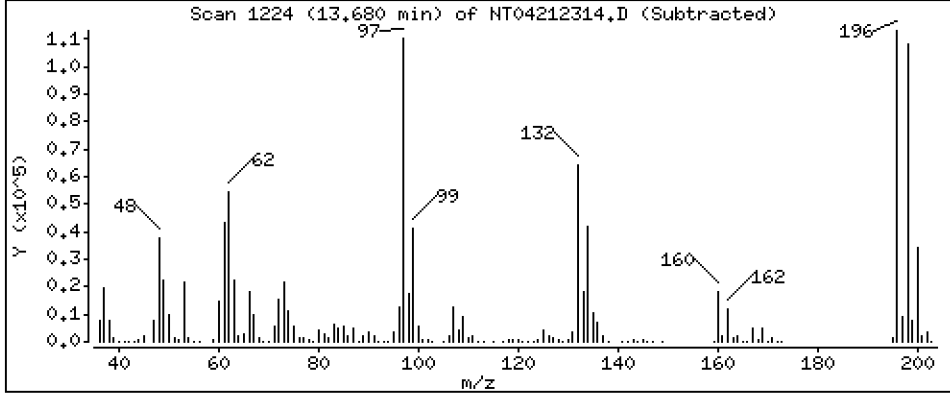
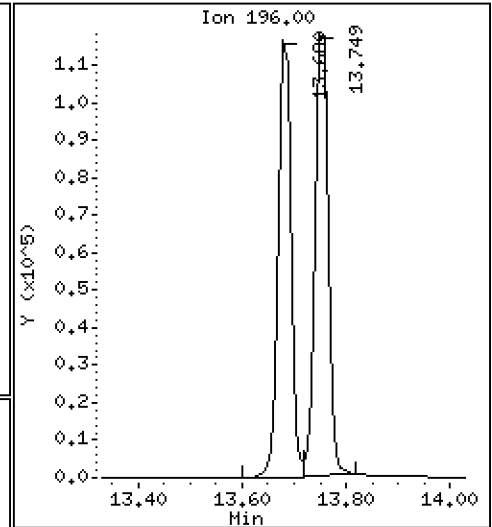
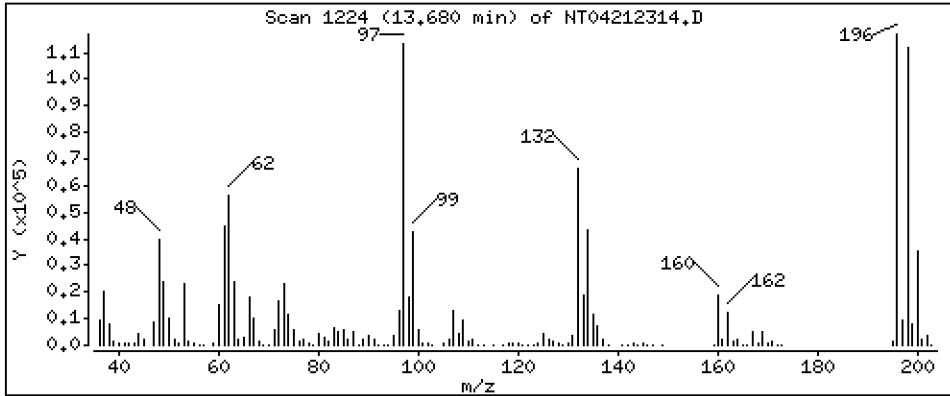
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 4,578 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

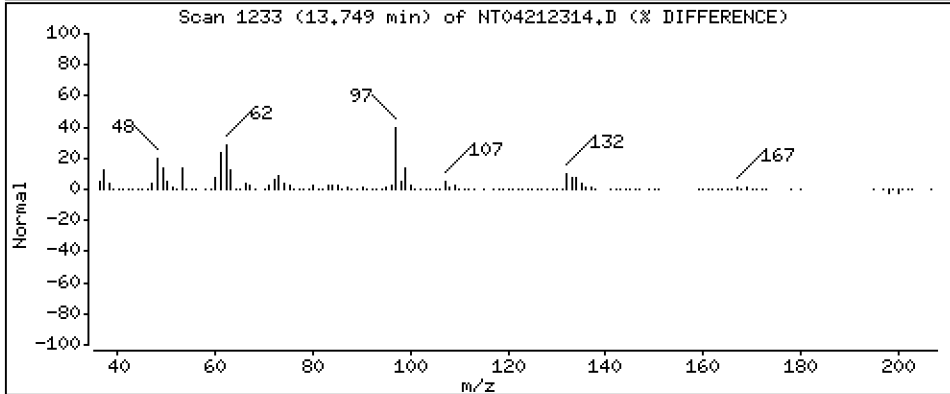
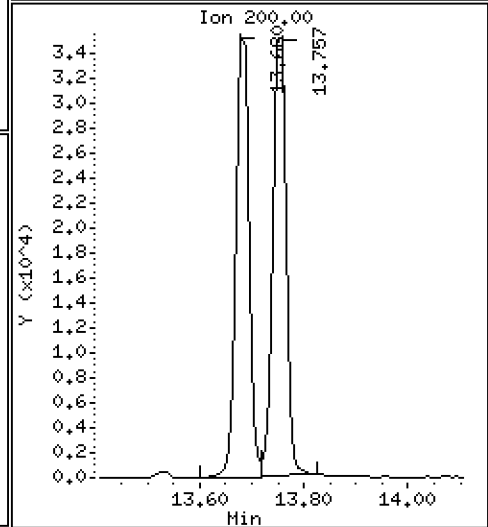
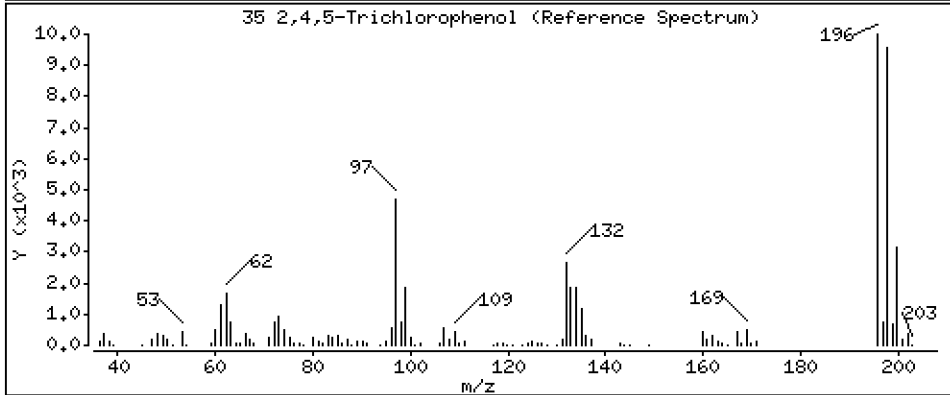
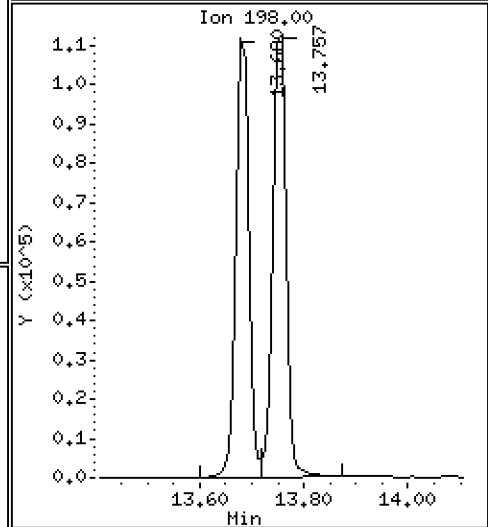
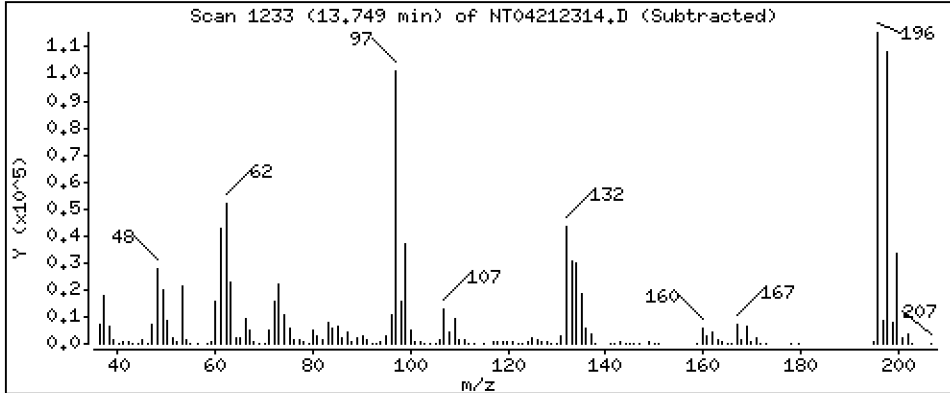
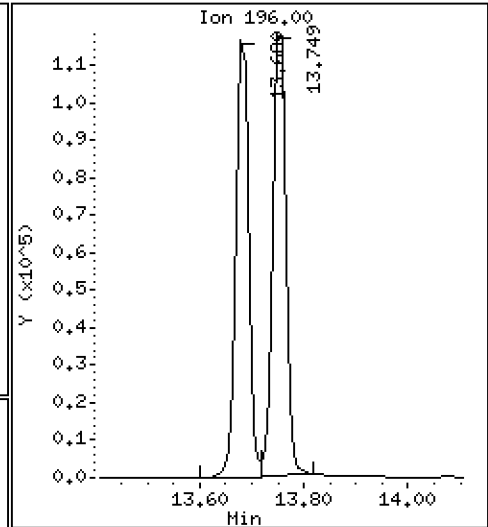
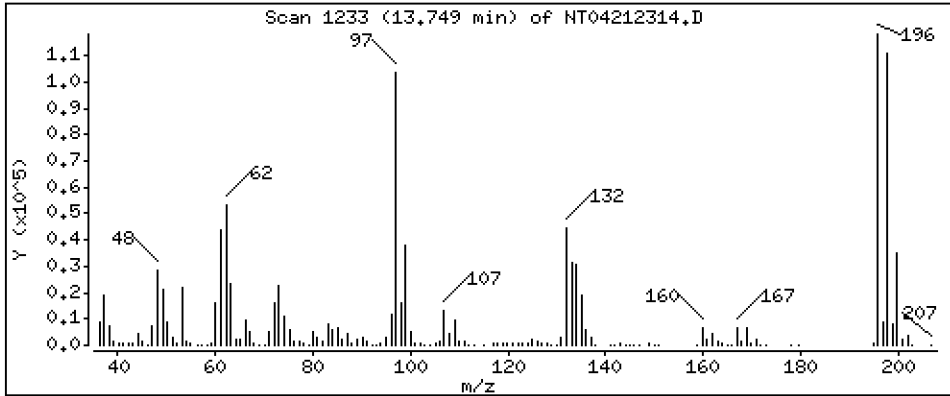
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 4,434 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

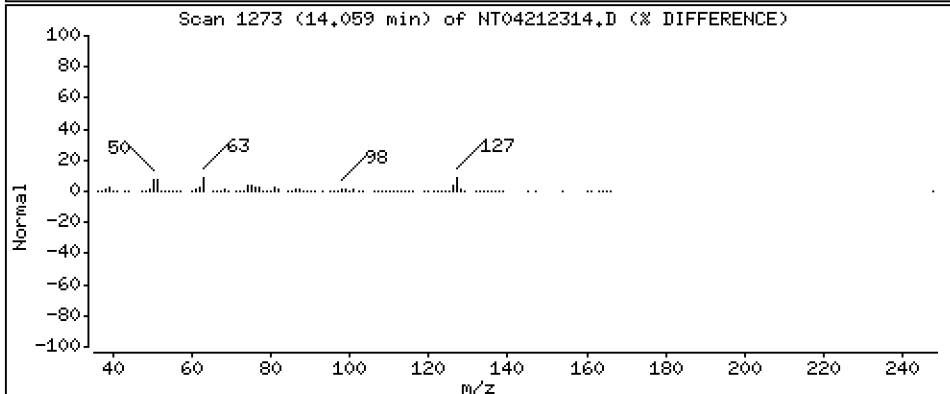
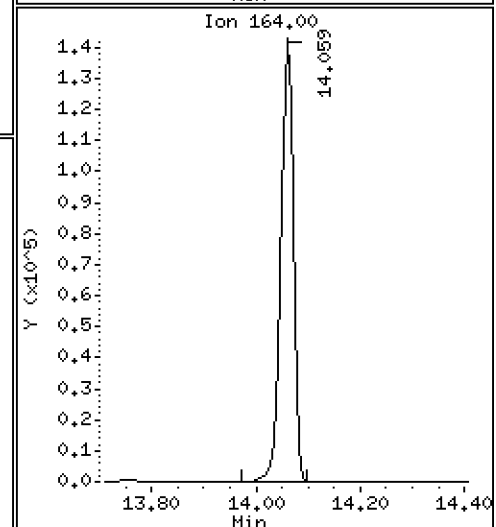
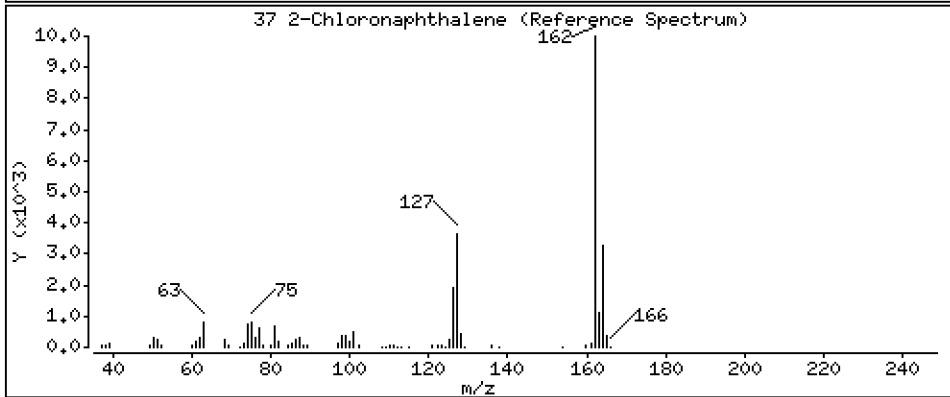
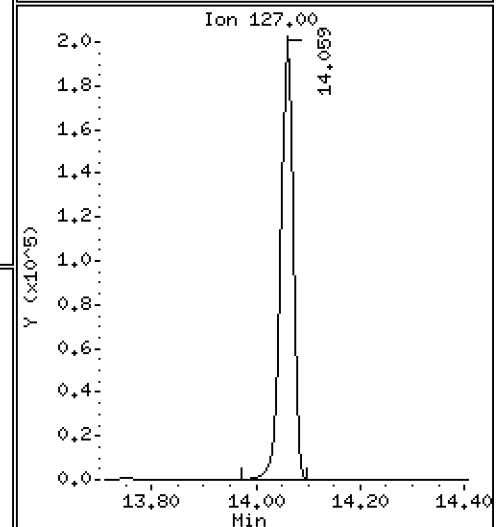
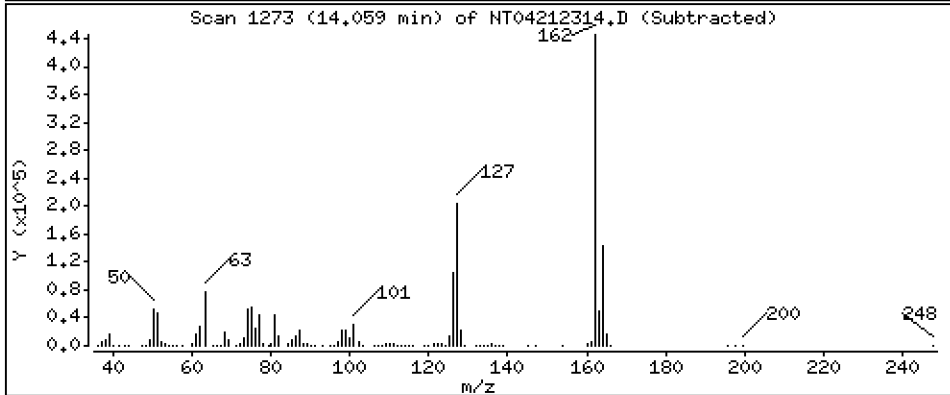
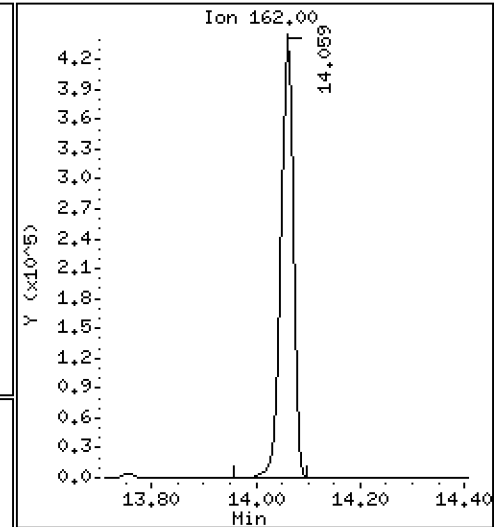
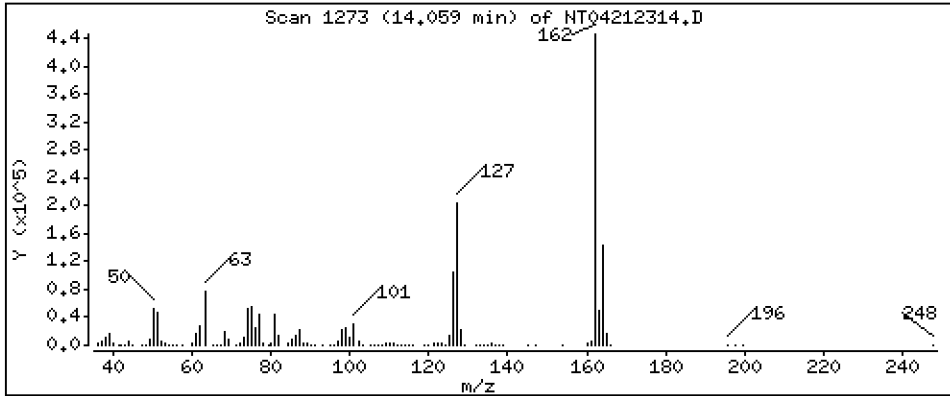
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 4,643 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

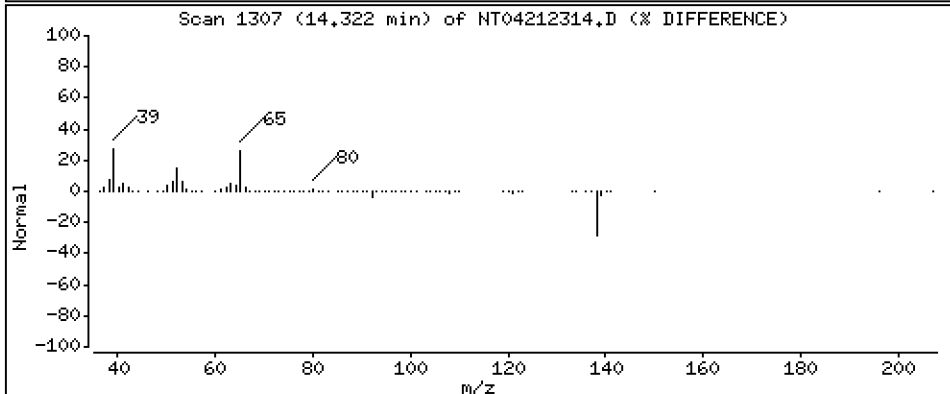
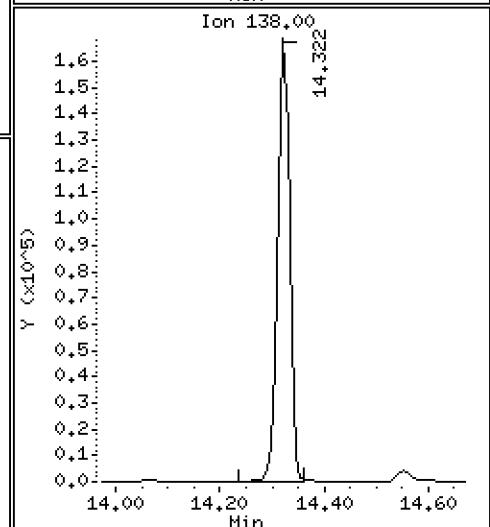
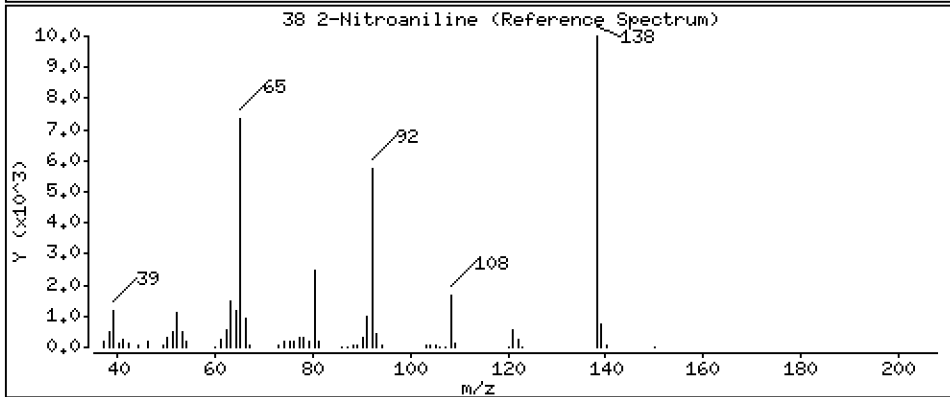
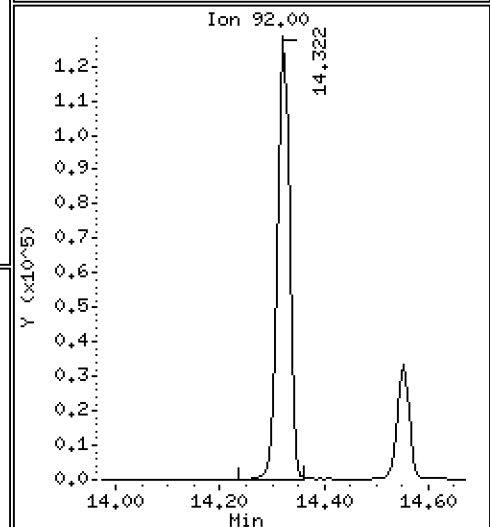
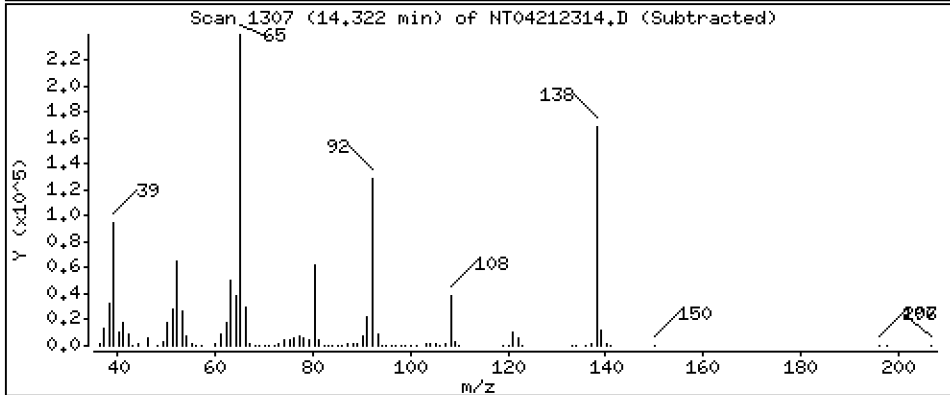
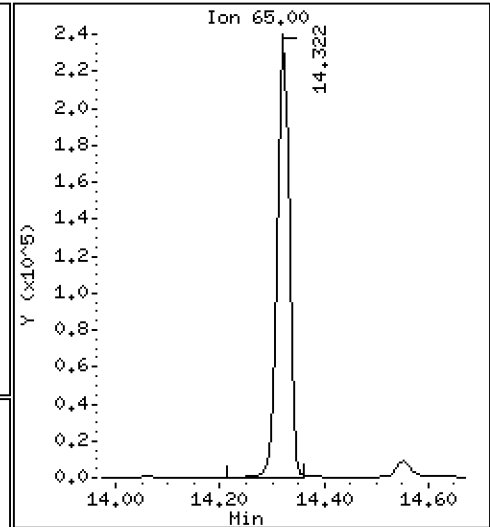
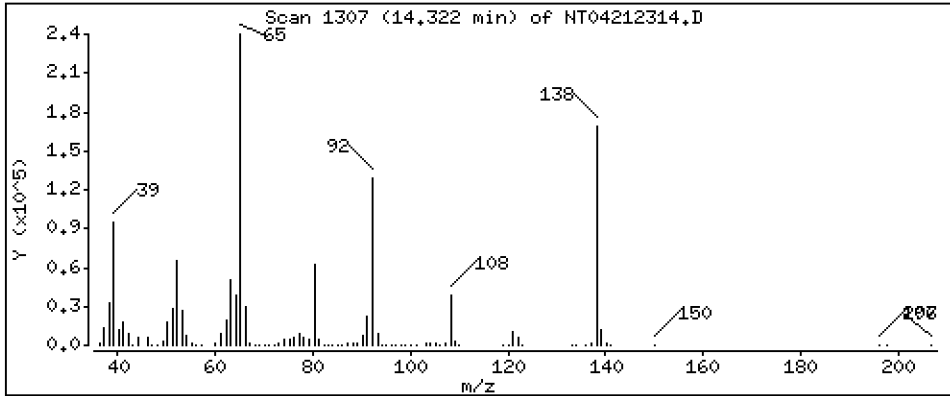
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 4,475 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

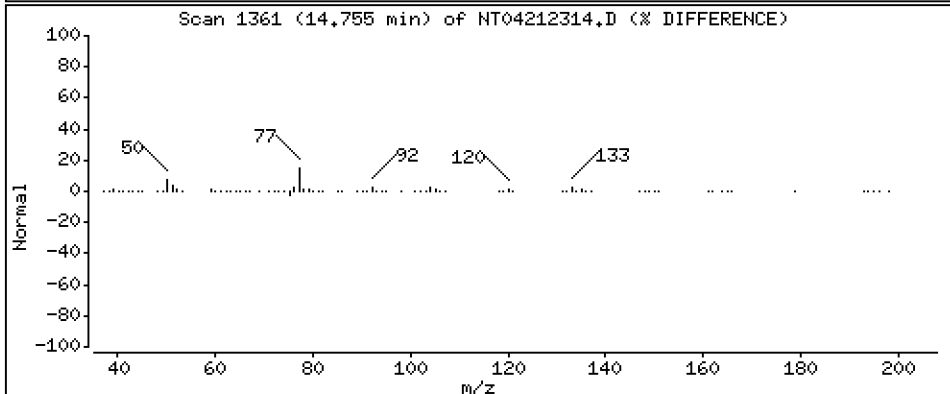
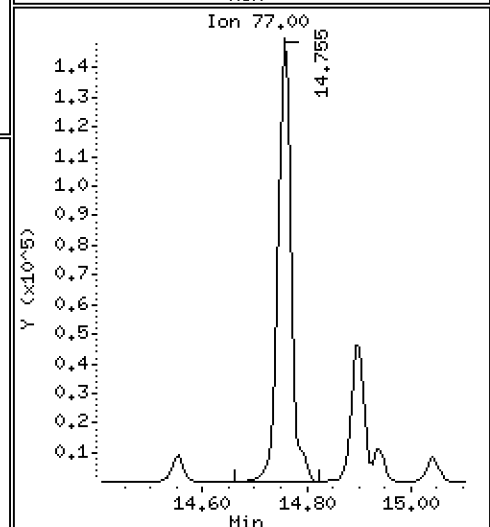
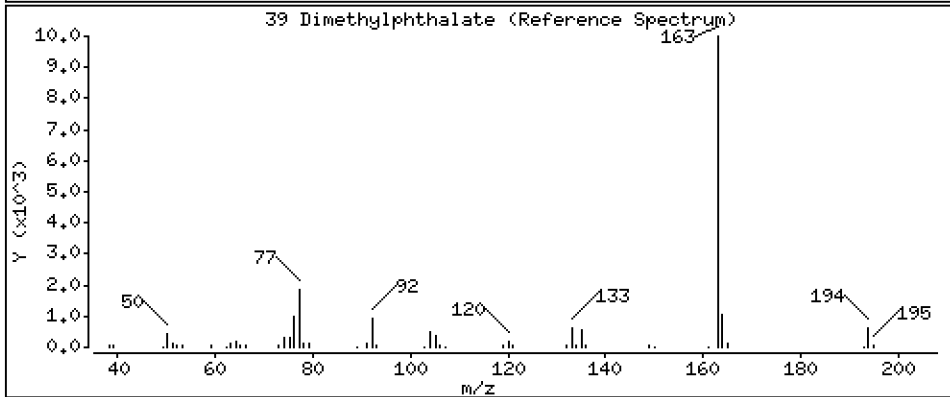
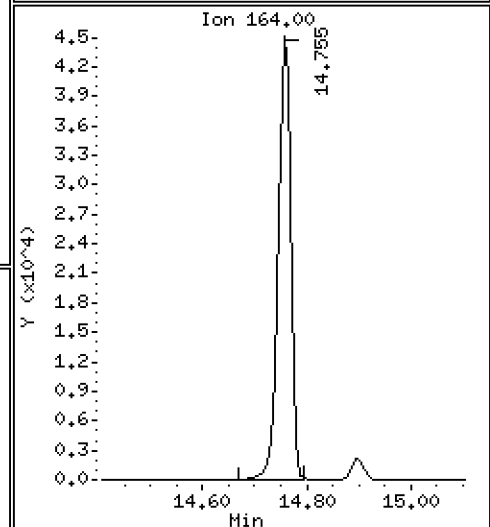
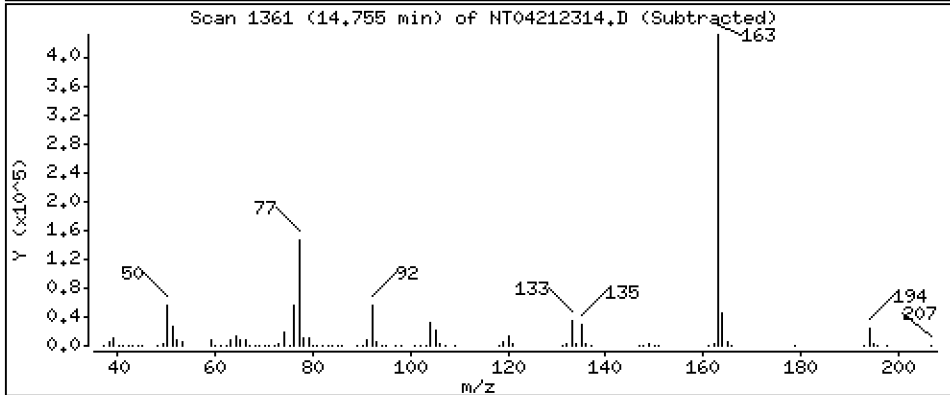
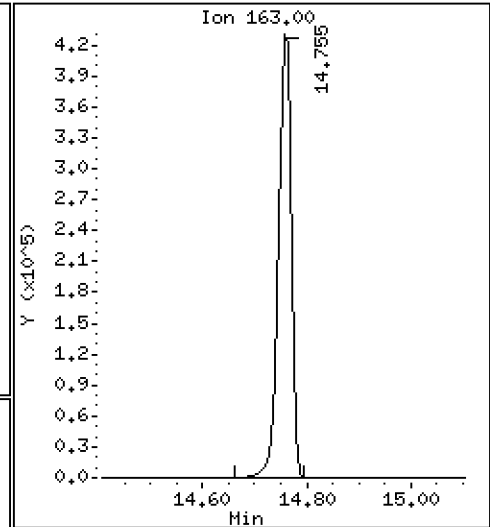
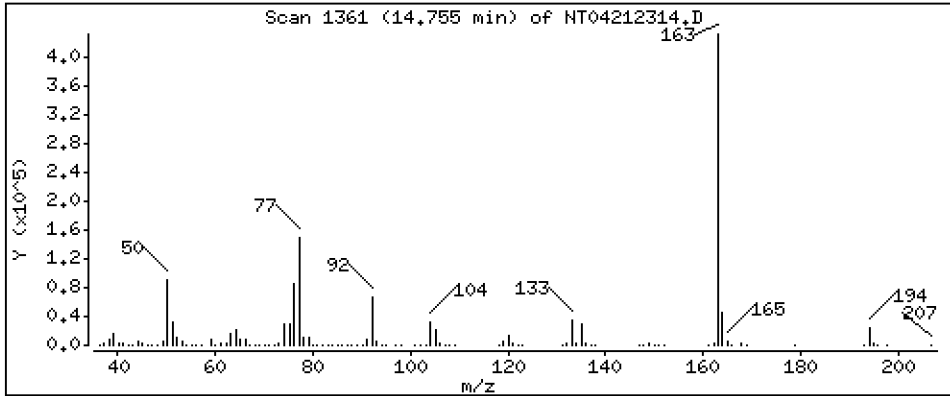
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,554 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

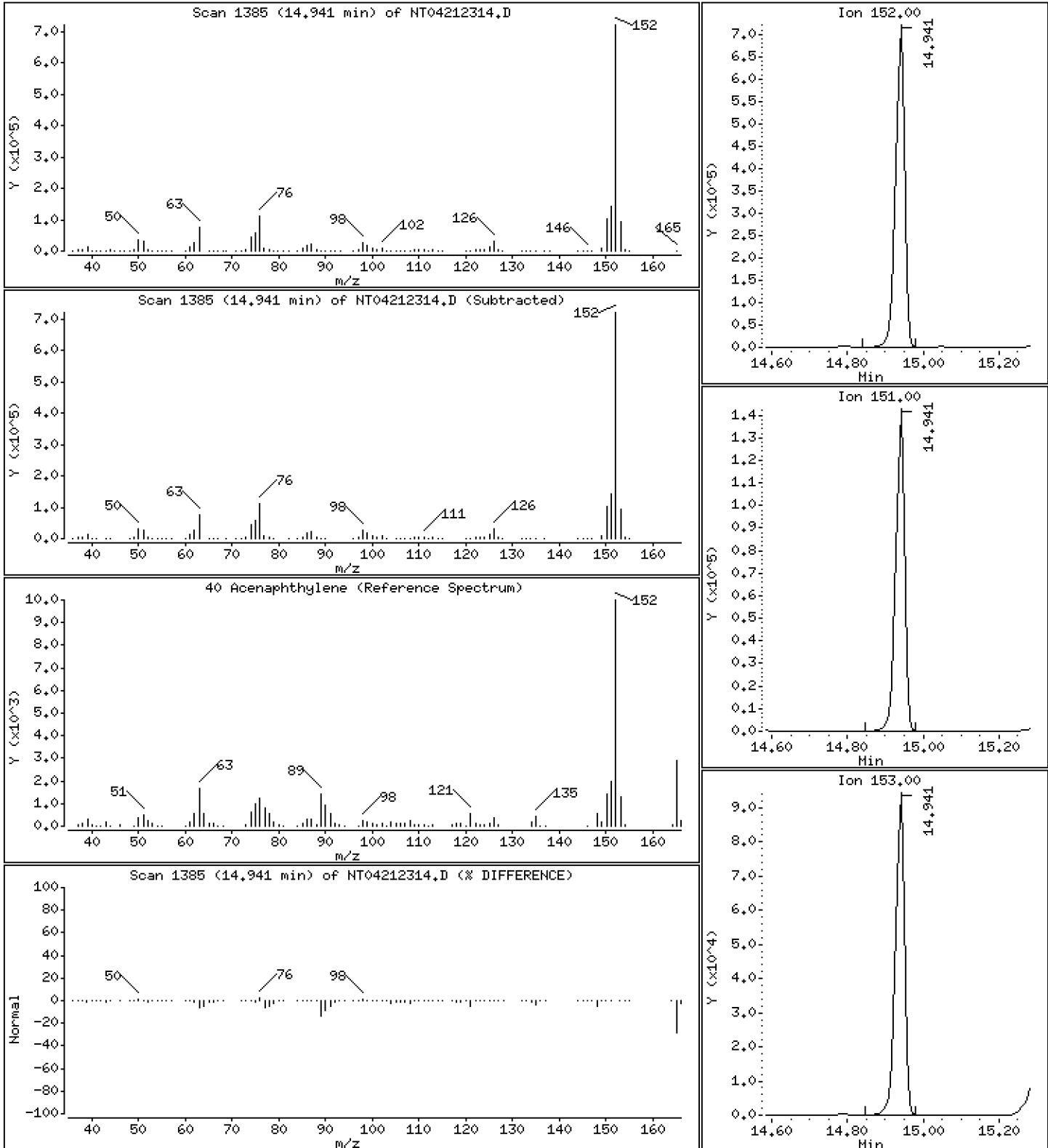
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 4,819 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

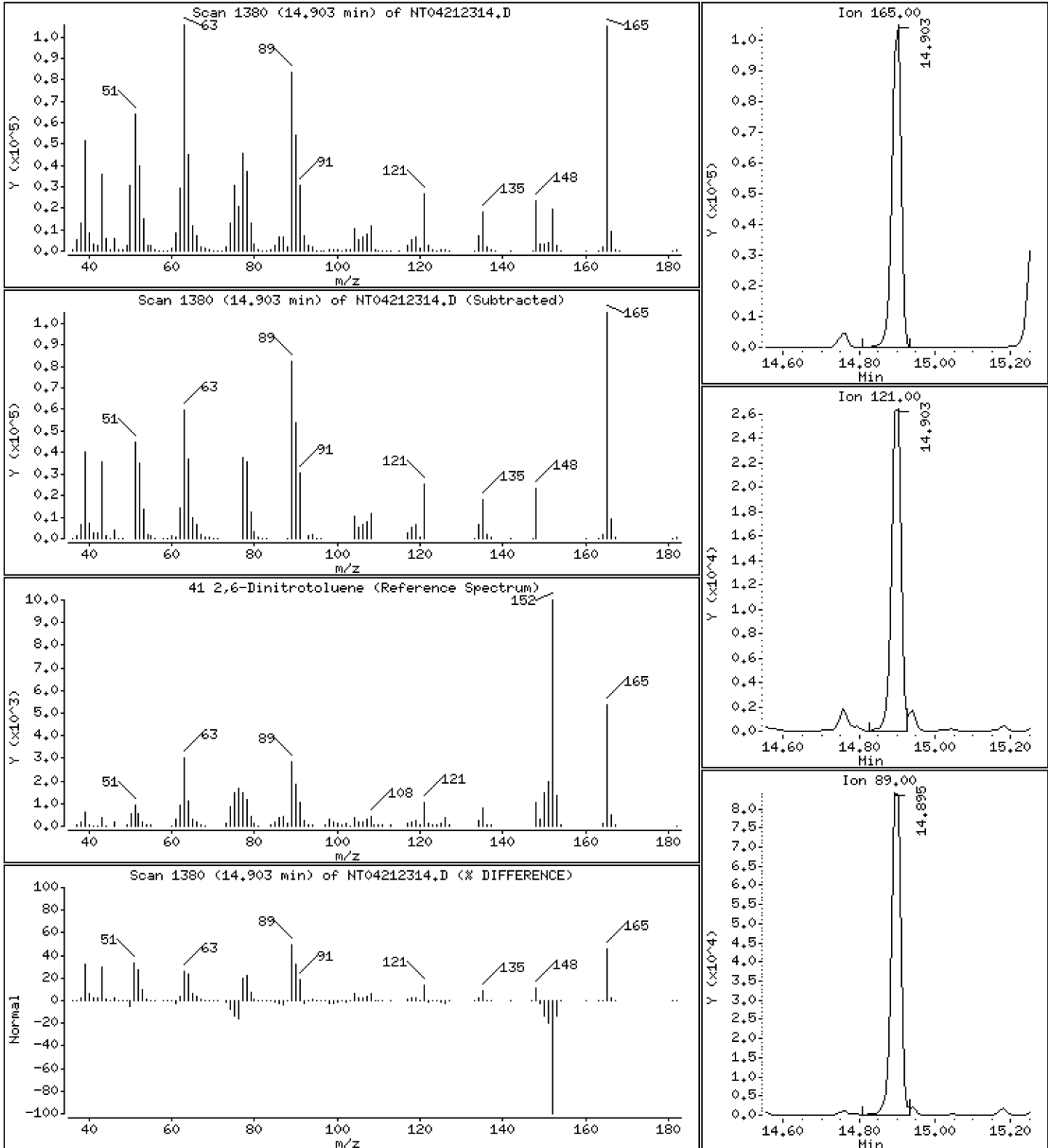
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

41 2,6-Dinitrotoluene

Concentration: 4.676 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

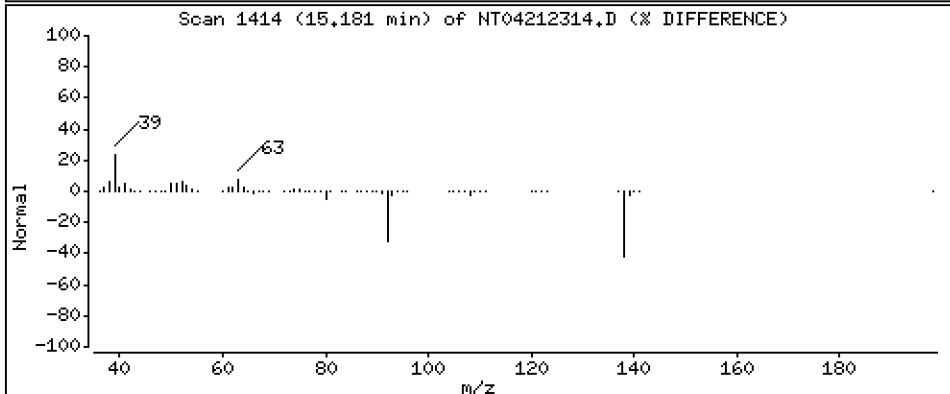
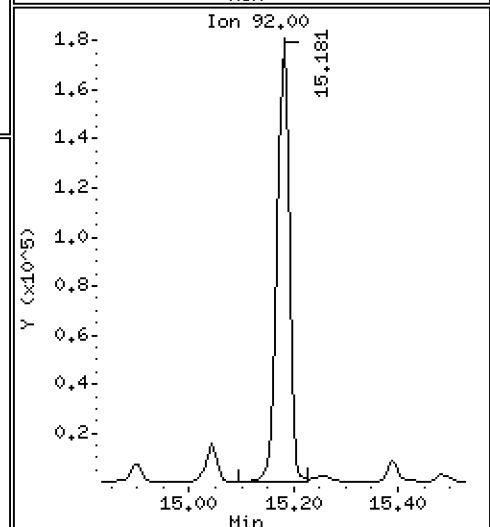
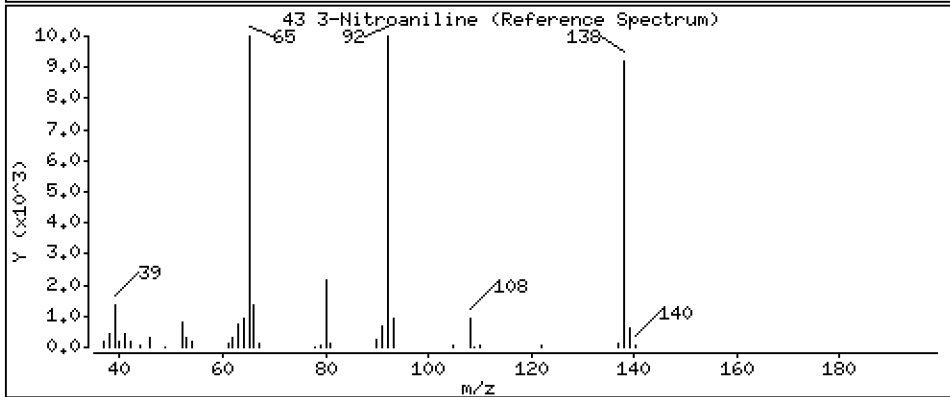
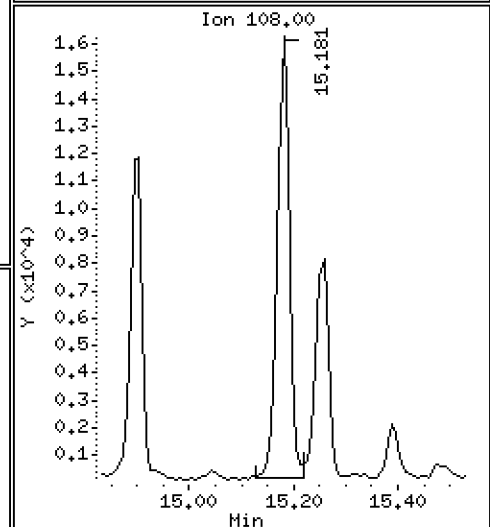
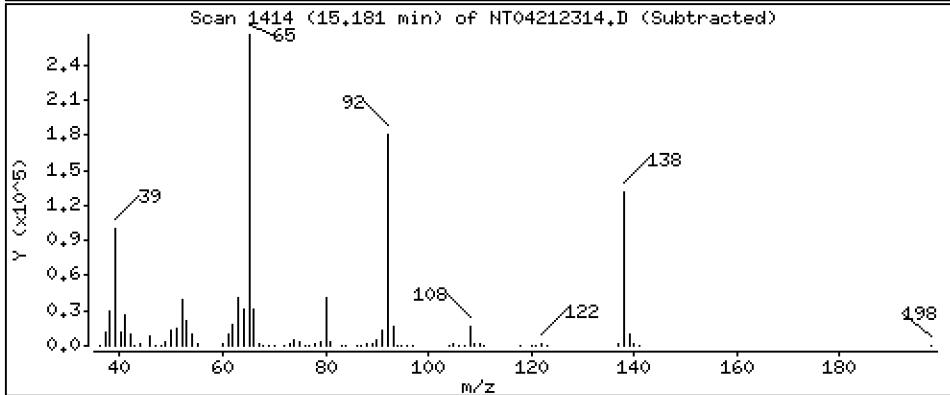
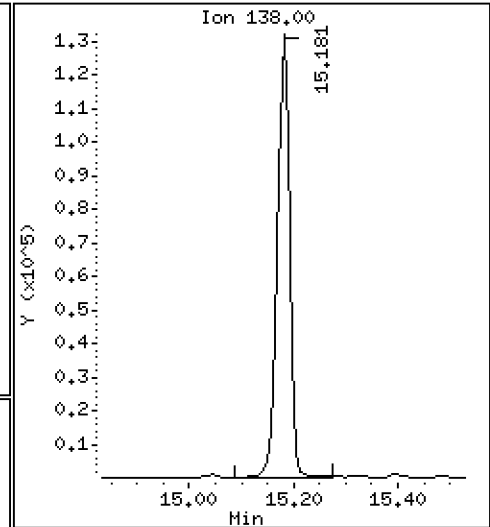
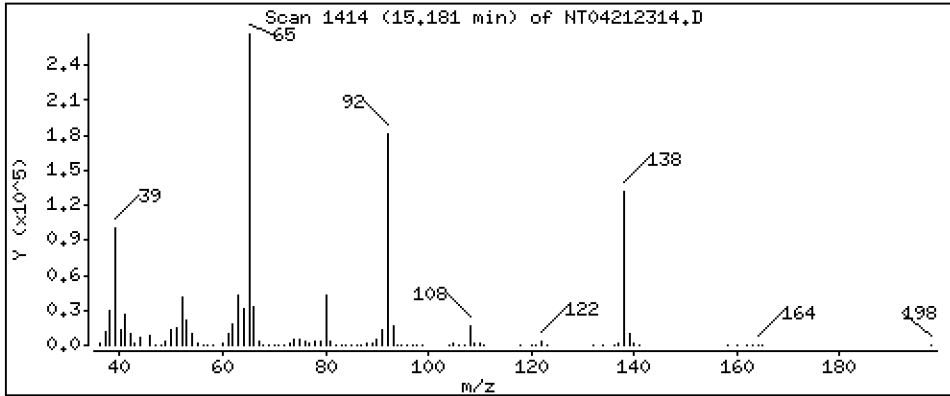
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 4,608 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

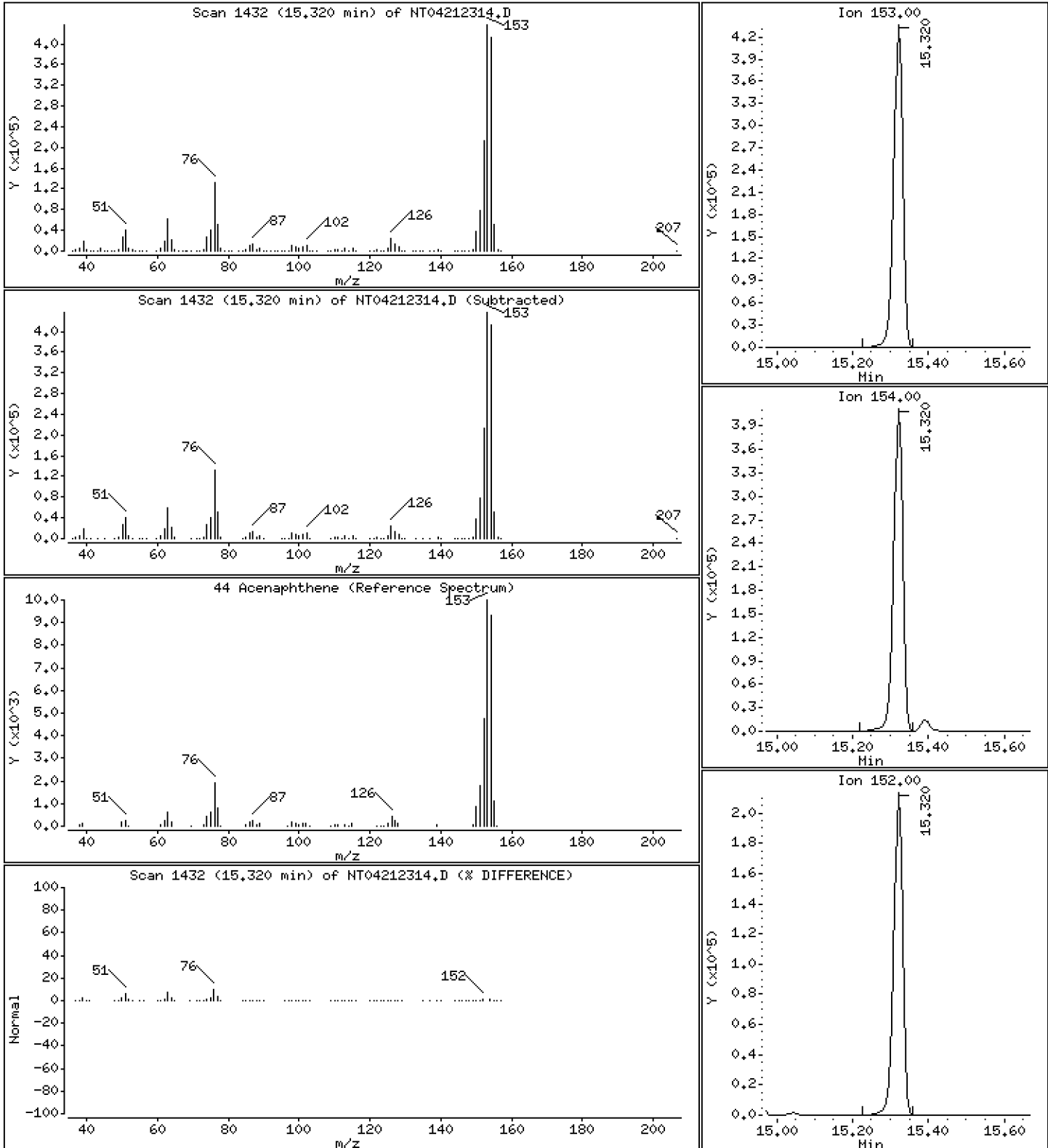
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

44 Acenaphthene

Concentration: 4.811 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

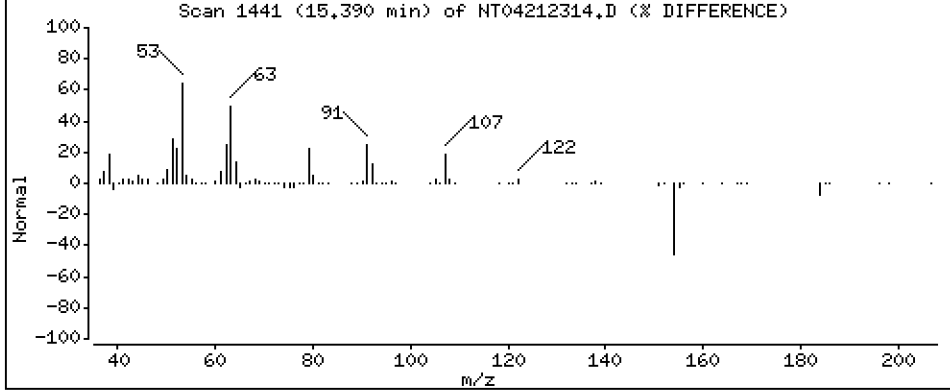
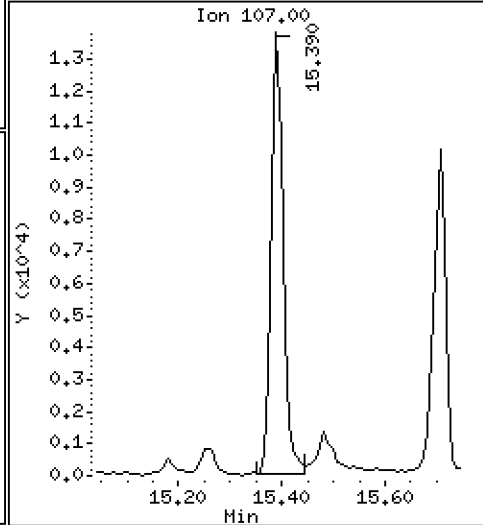
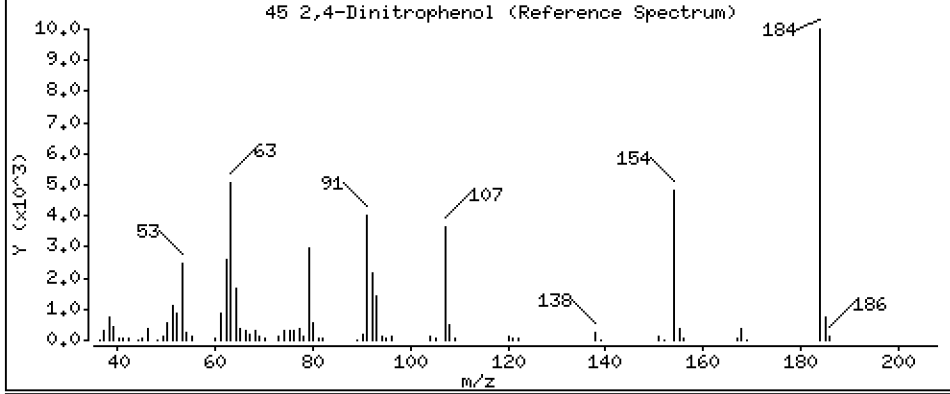
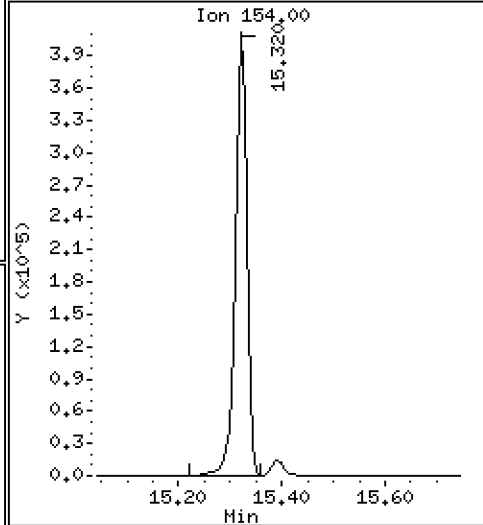
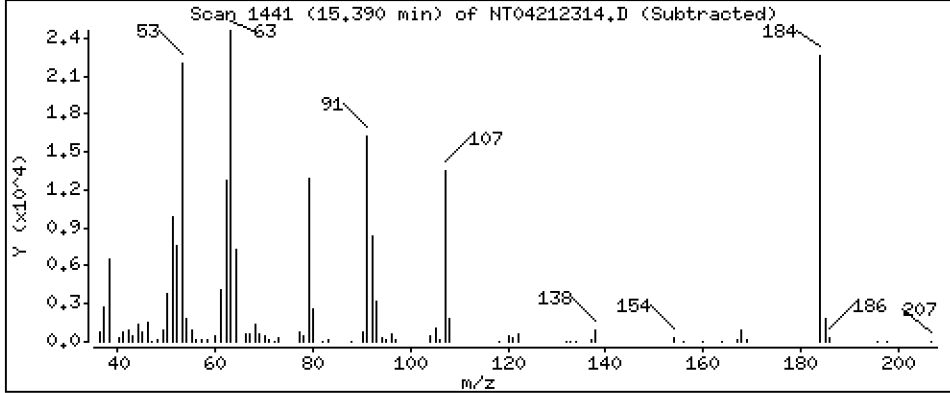
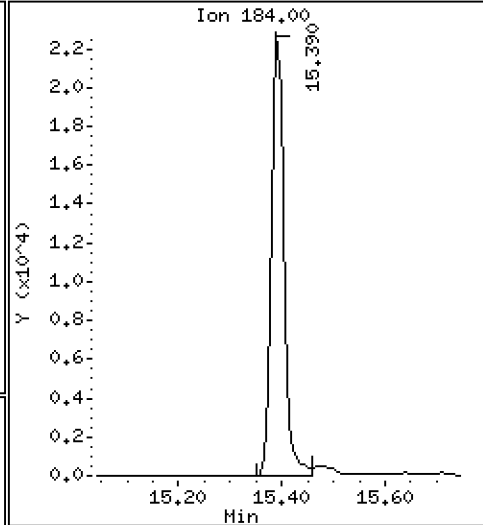
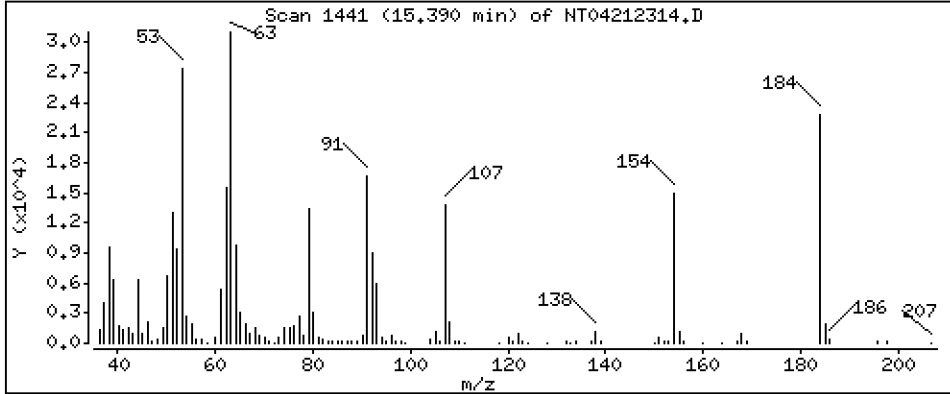
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 1,674 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

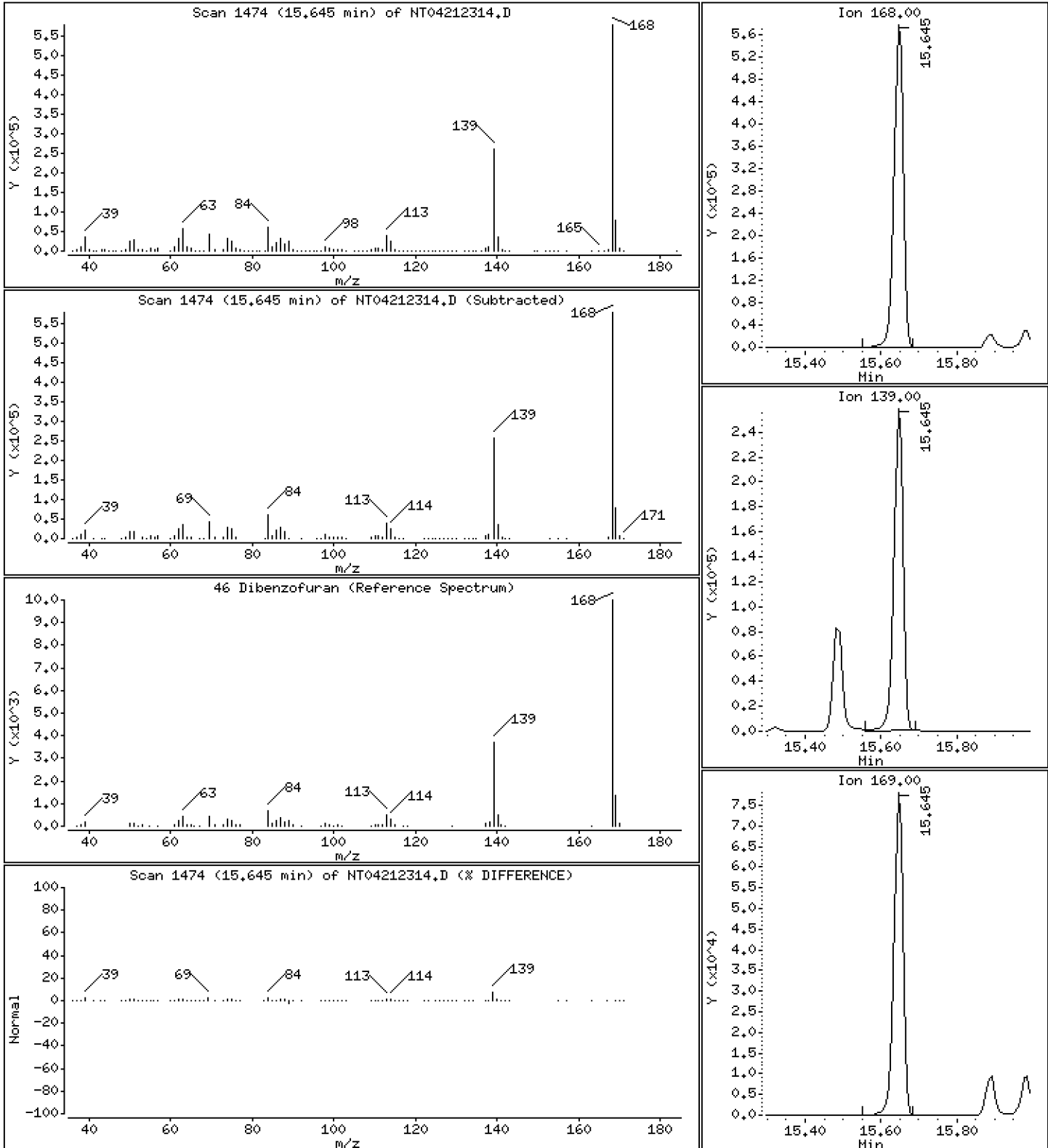
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 4,520 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

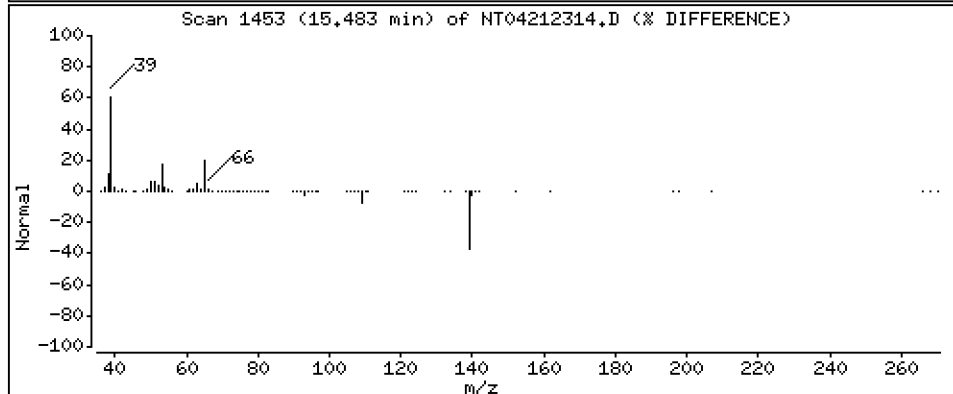
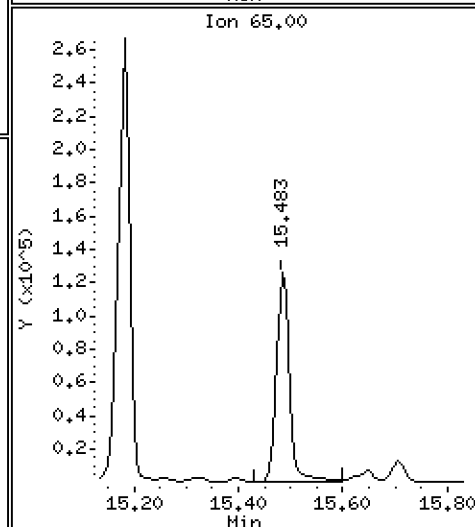
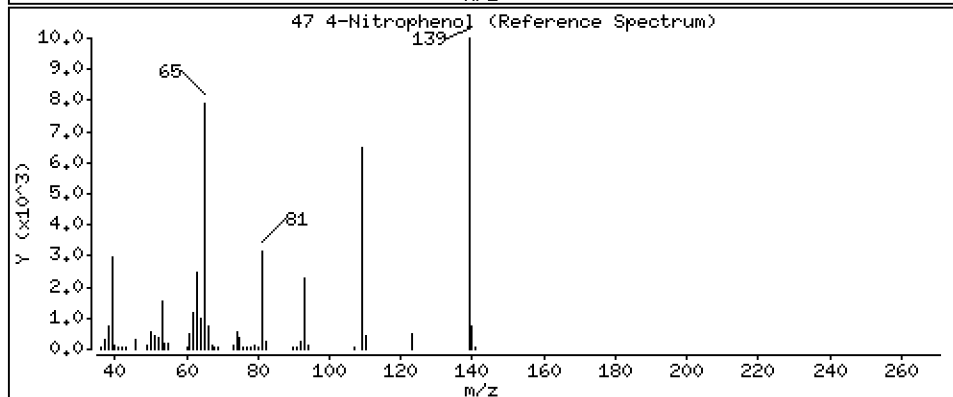
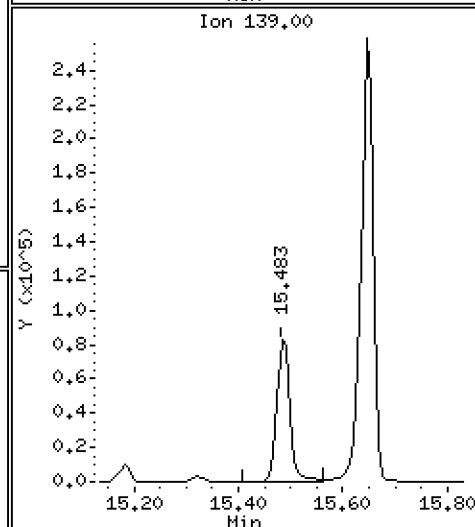
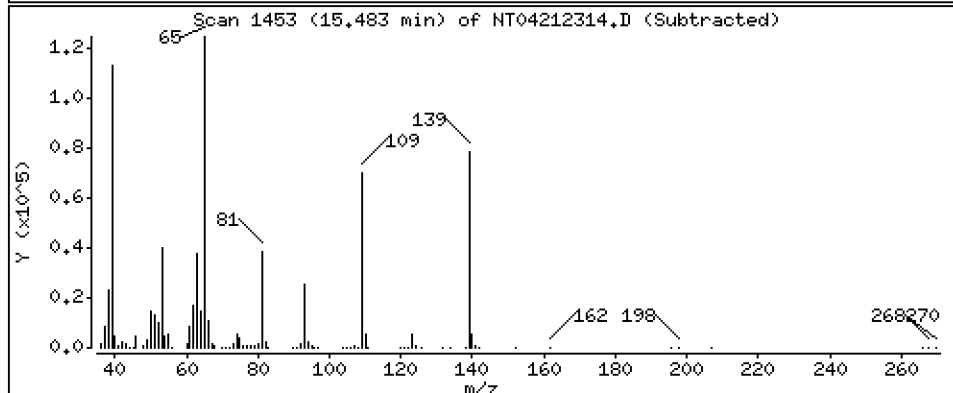
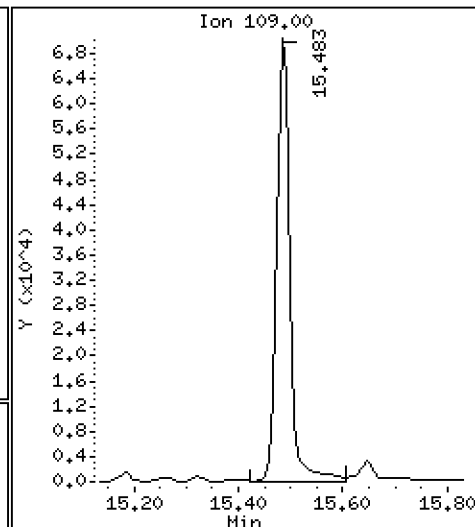
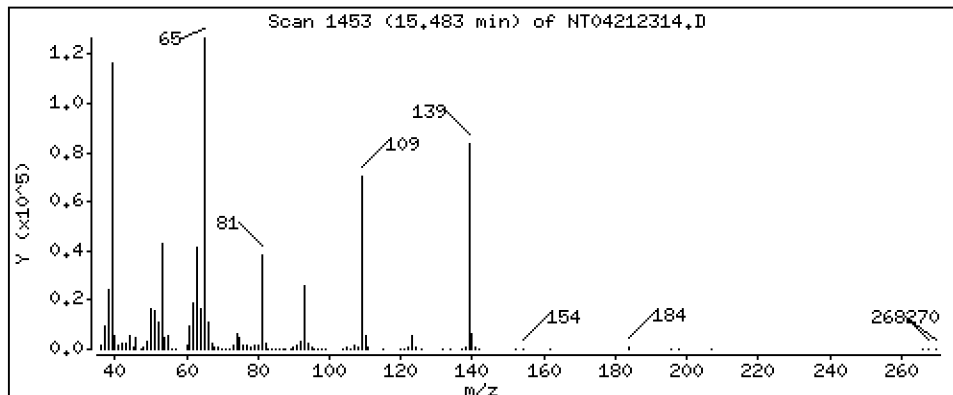
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 4,554 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

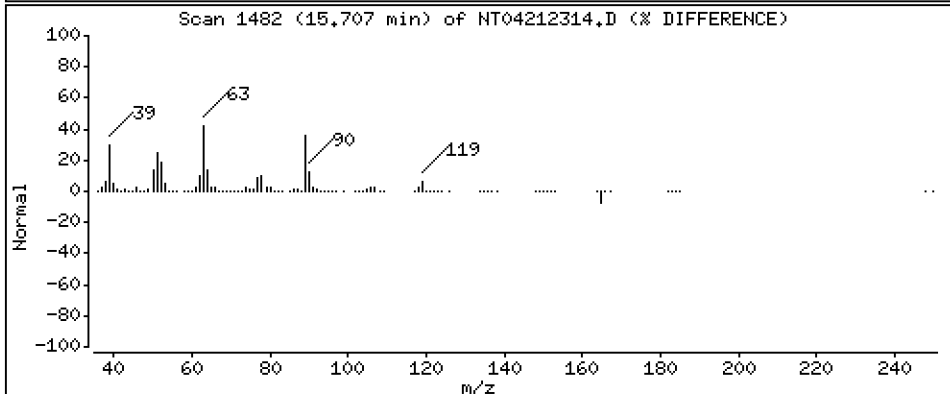
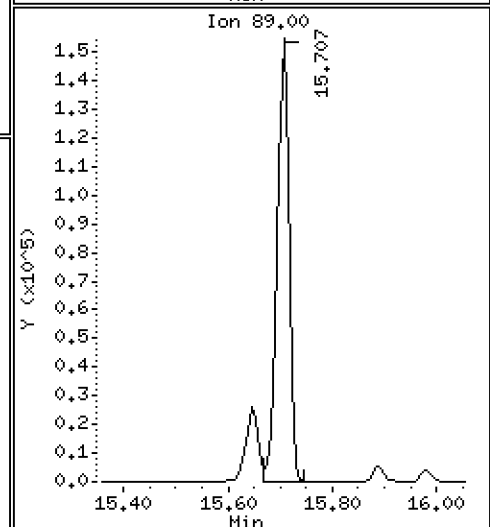
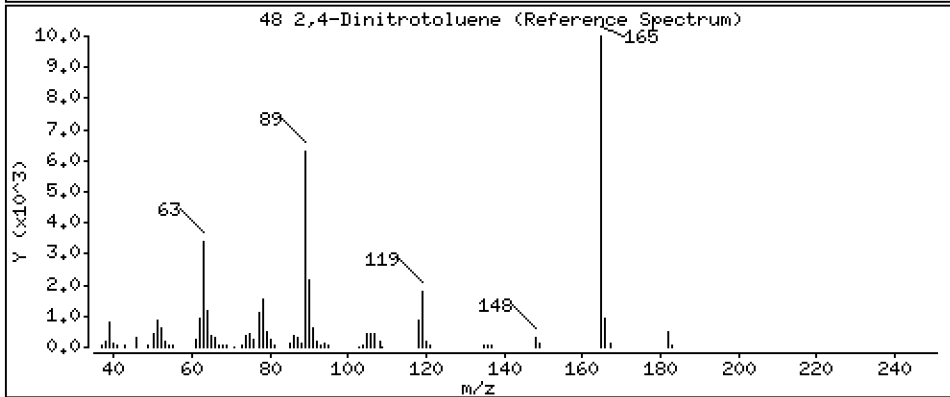
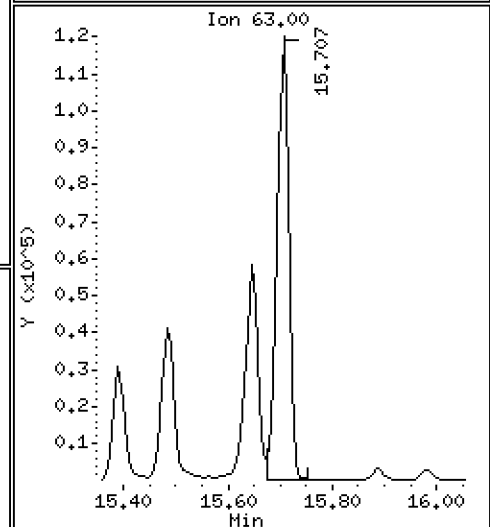
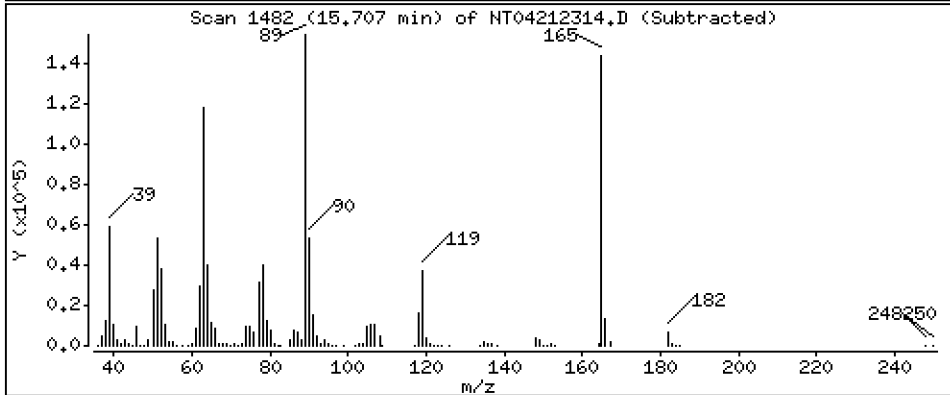
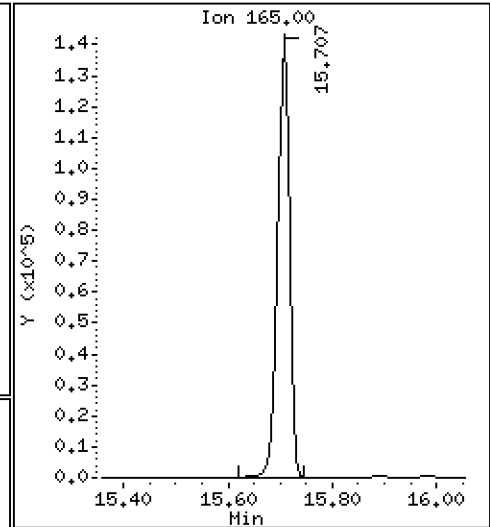
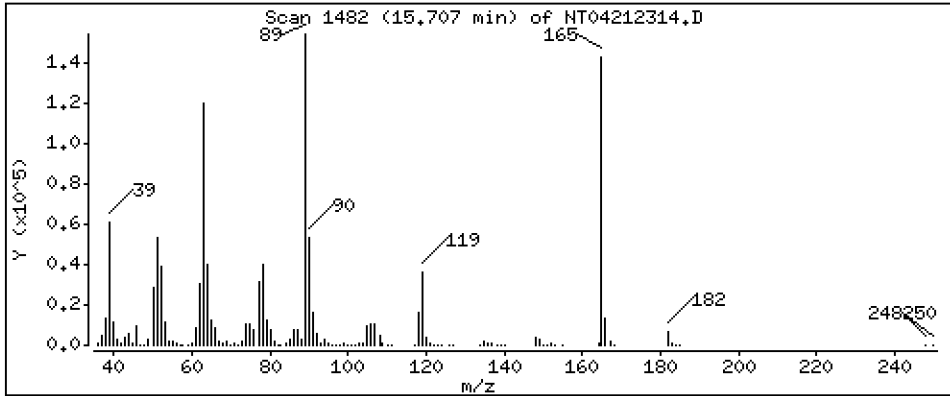
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 4,470 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

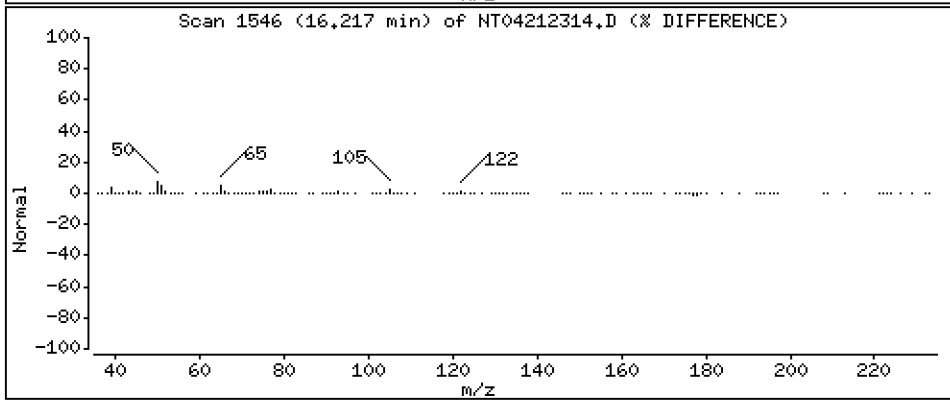
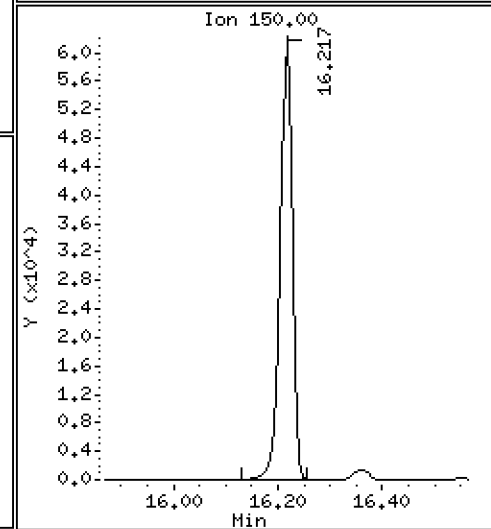
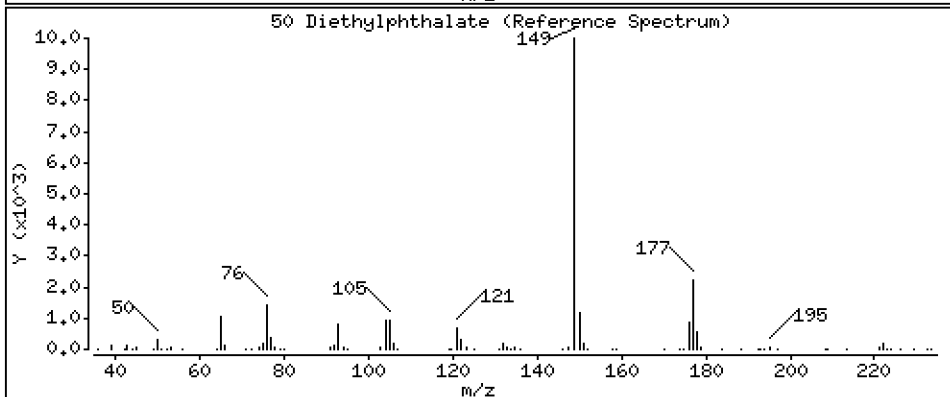
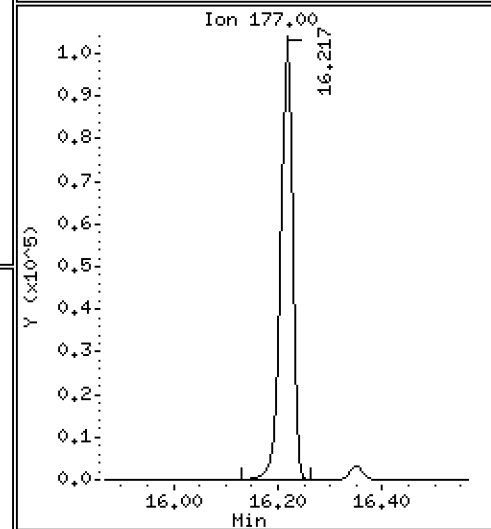
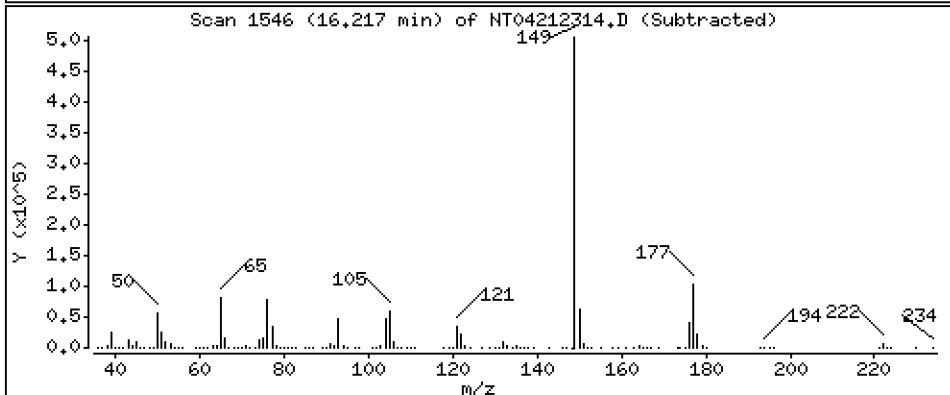
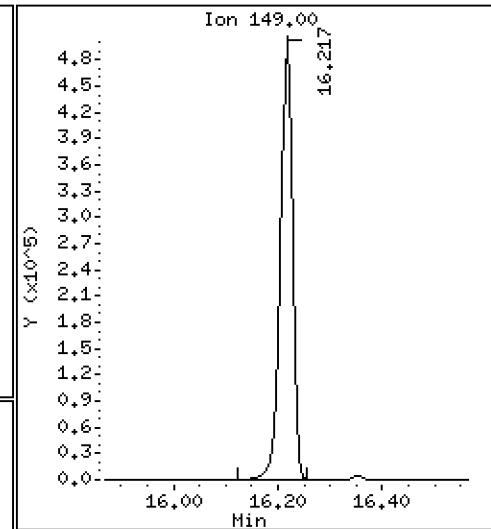
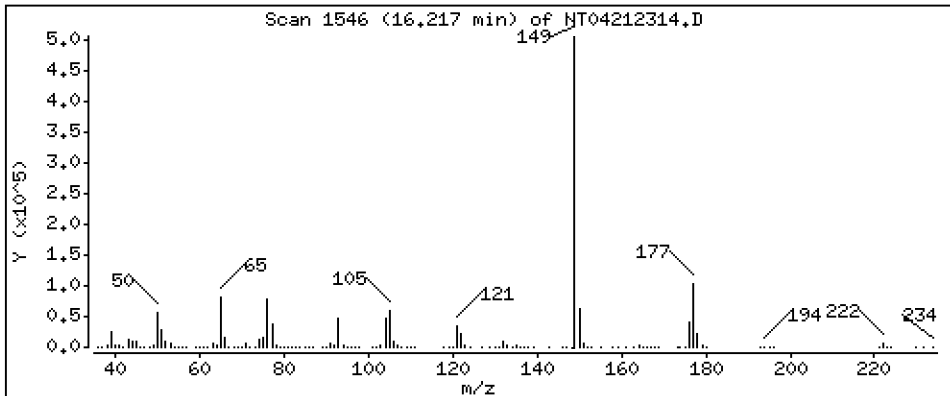
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,575 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

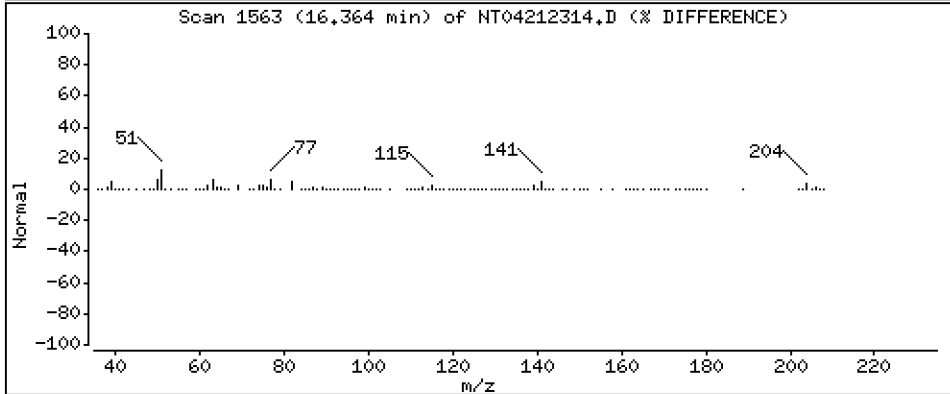
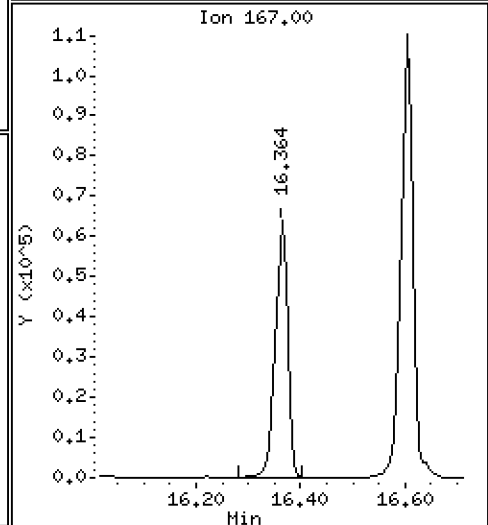
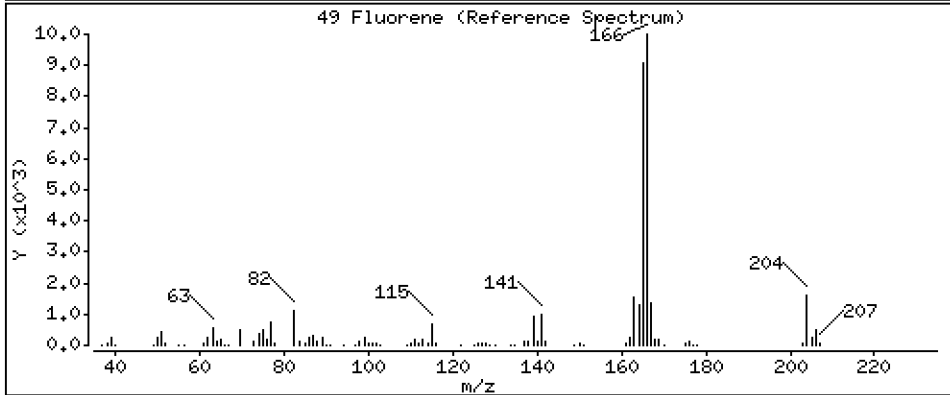
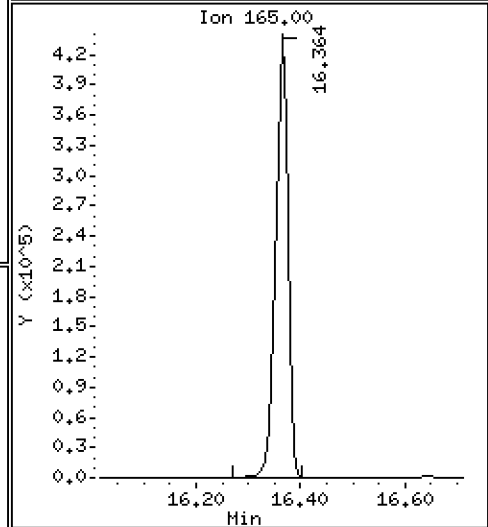
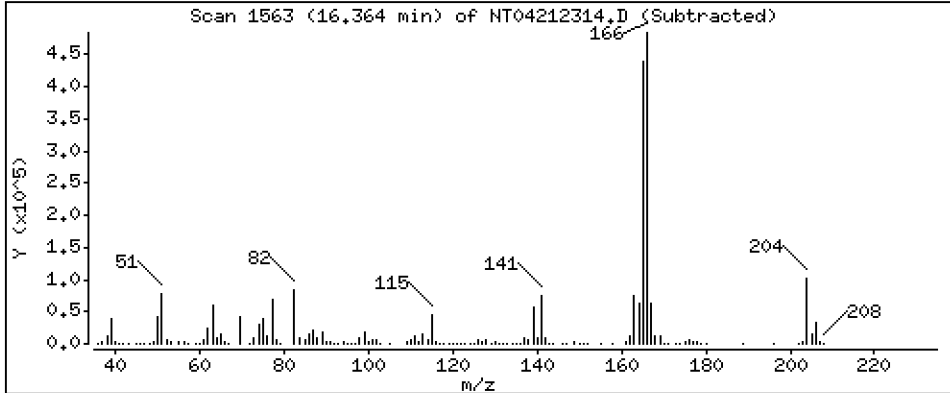
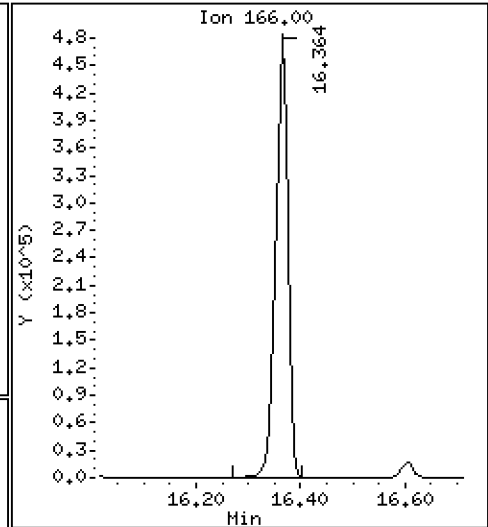
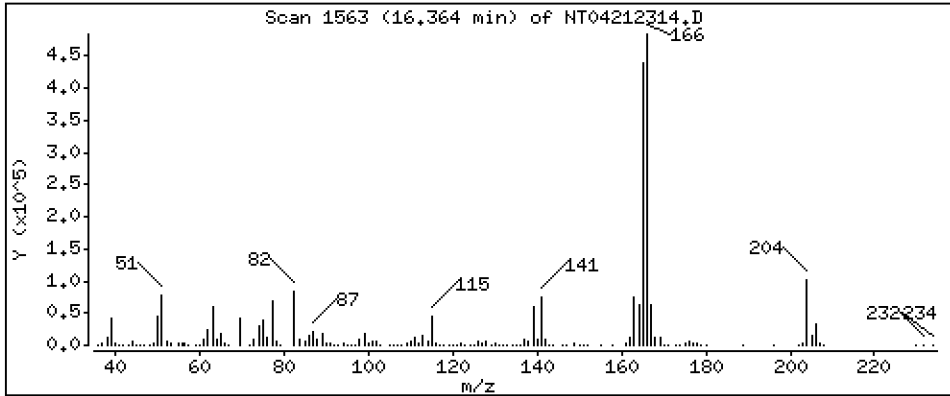
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,780 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

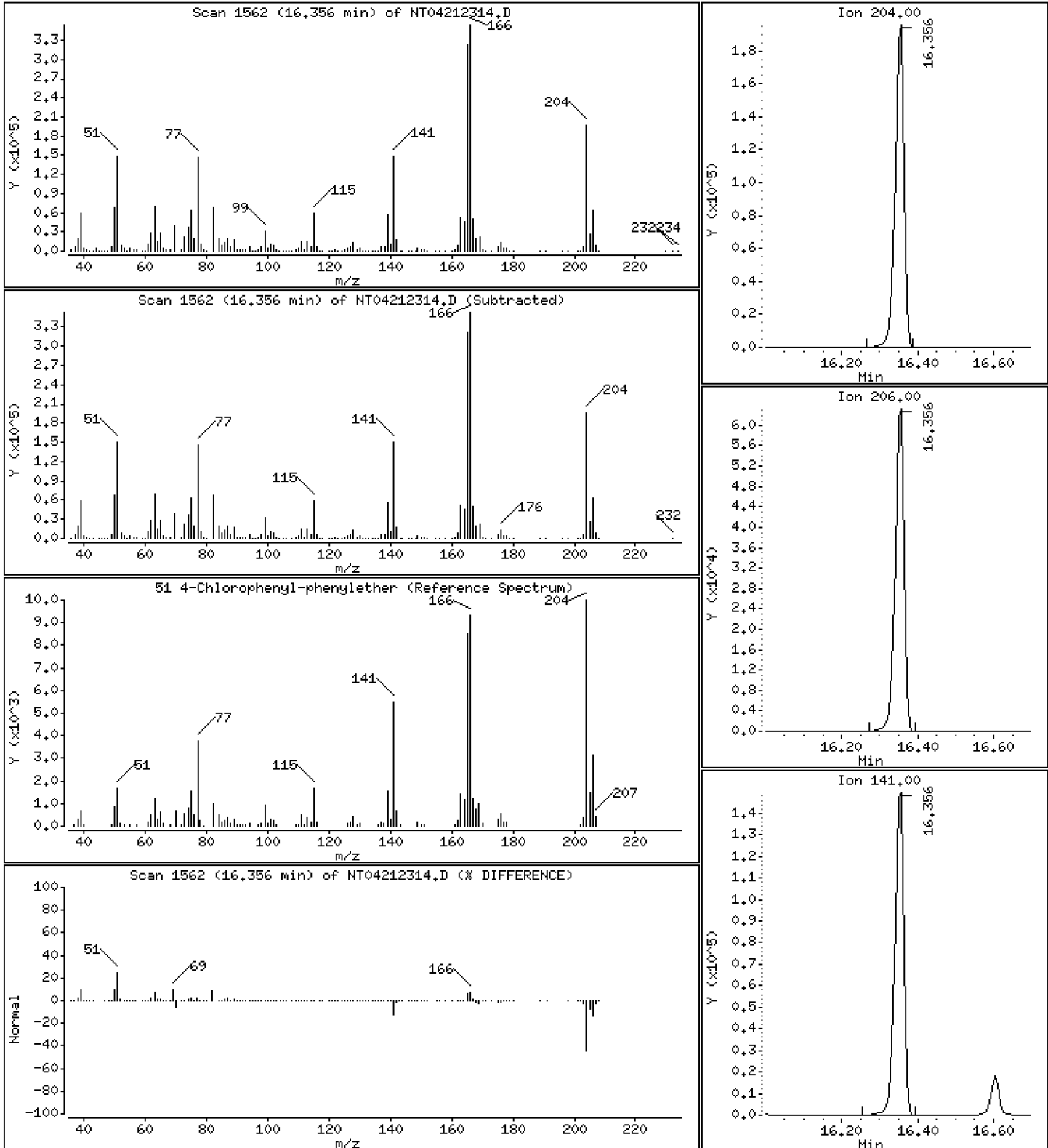
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,758 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

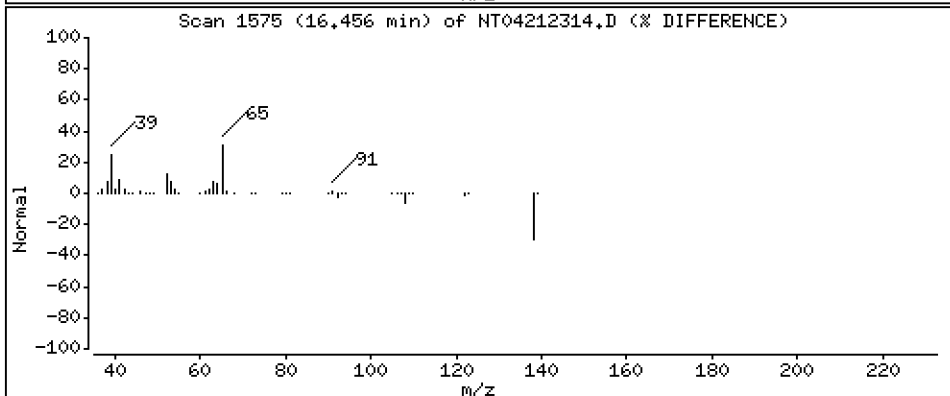
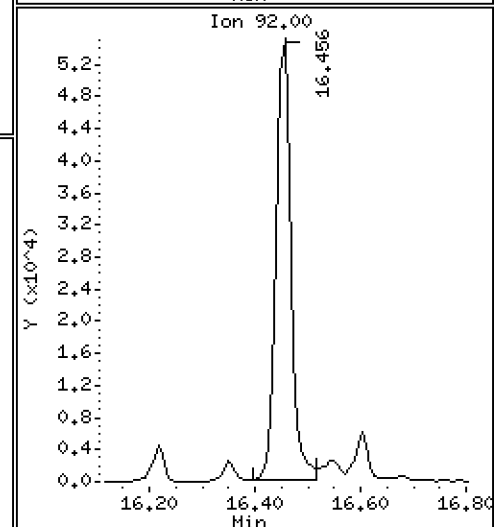
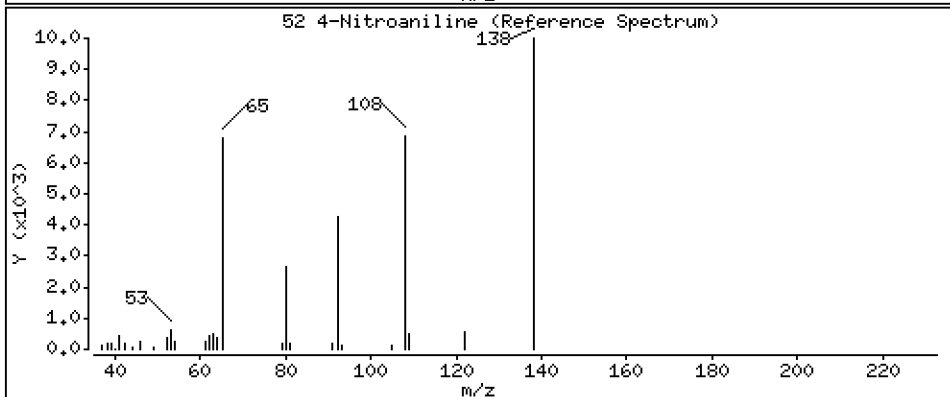
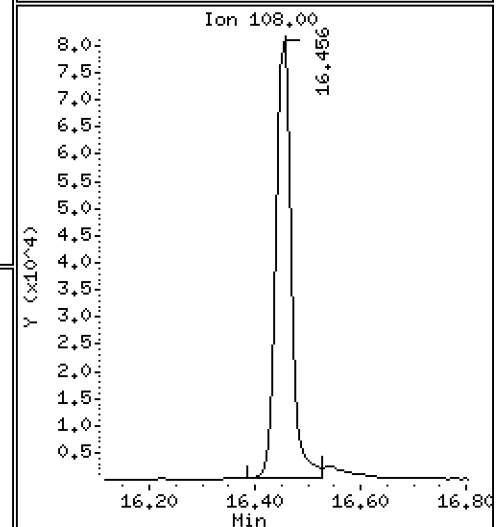
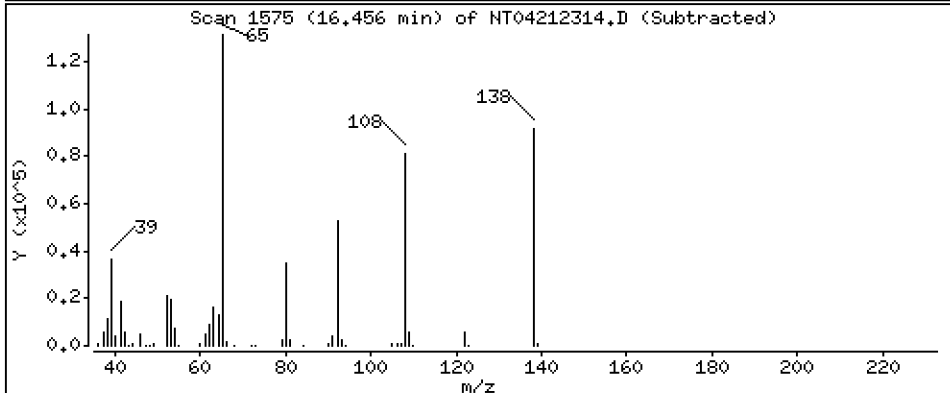
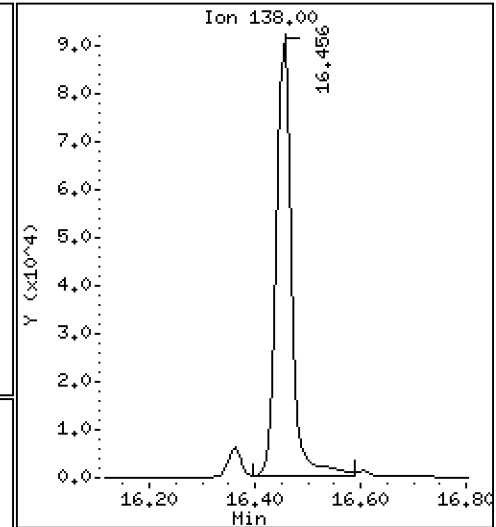
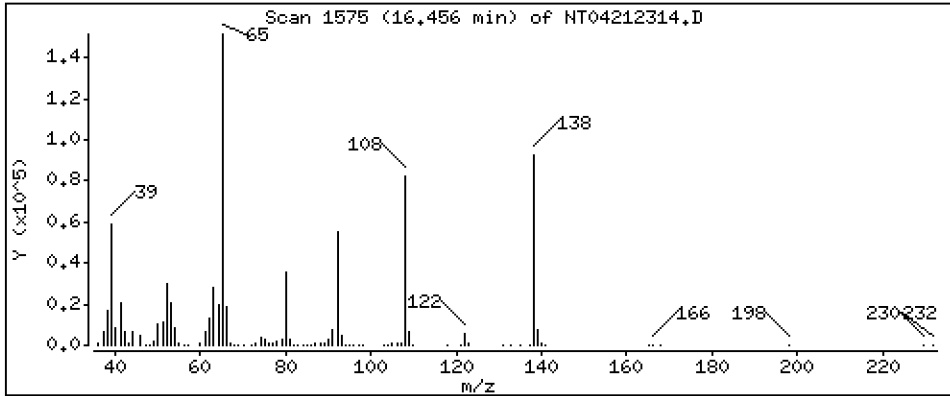
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 4,520 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

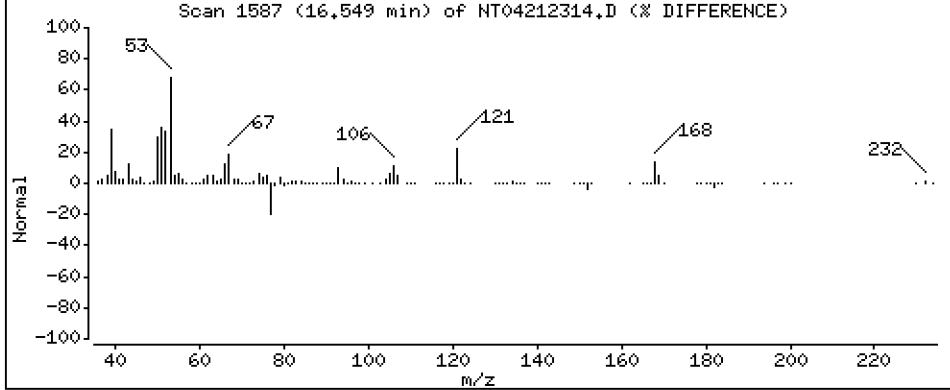
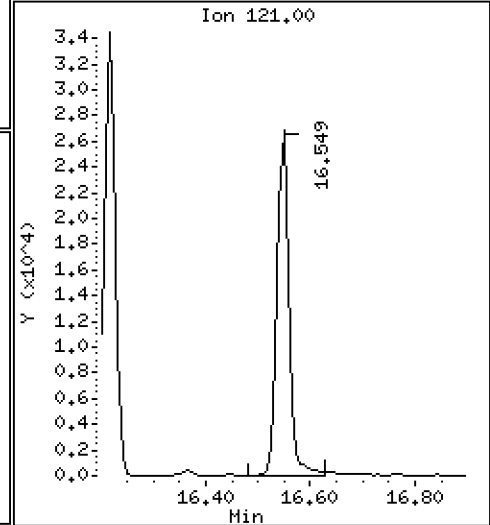
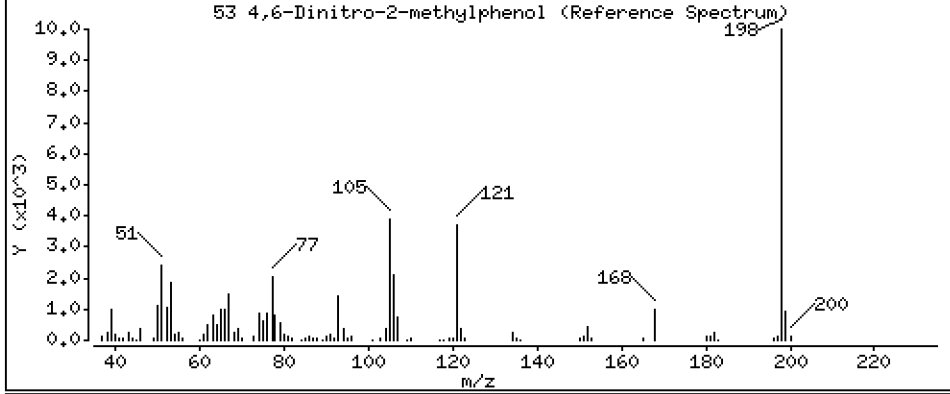
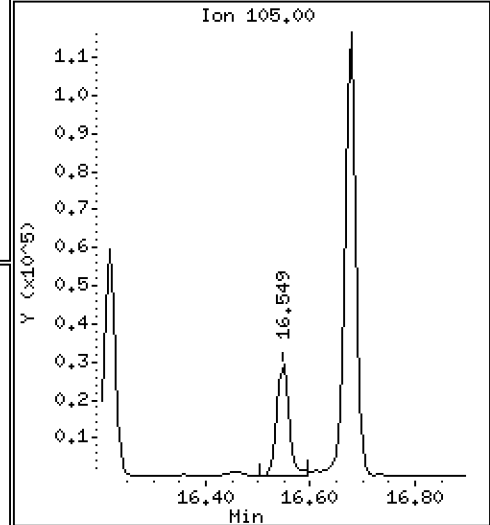
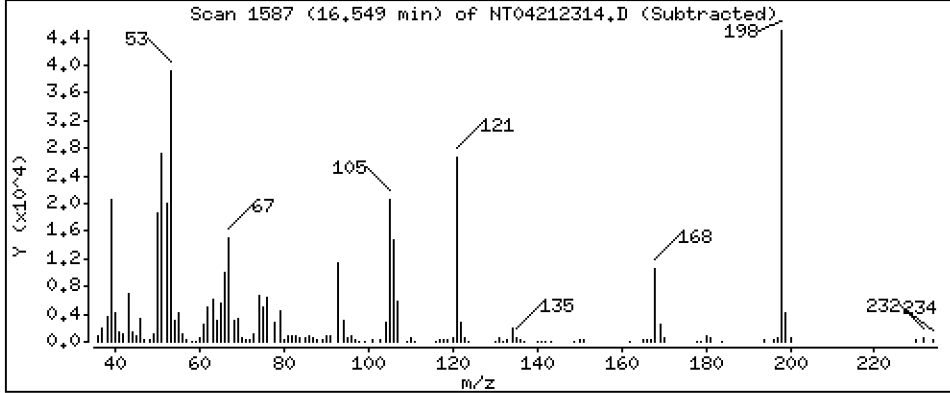
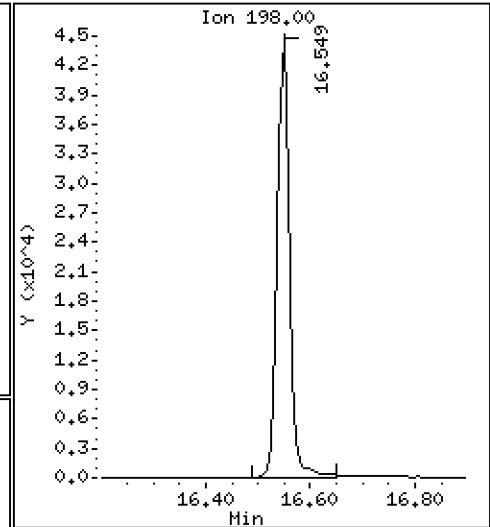
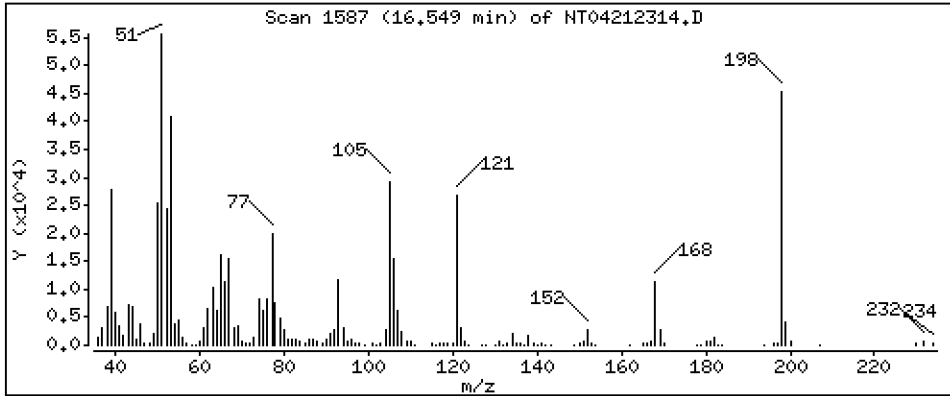
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 3,005 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

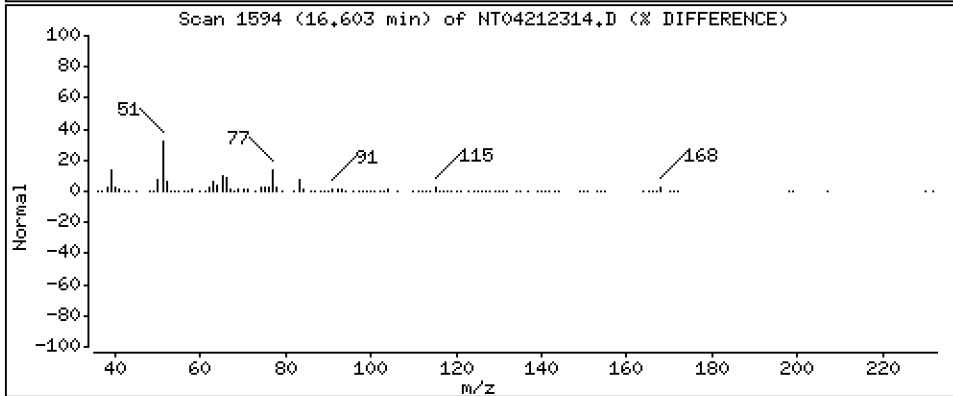
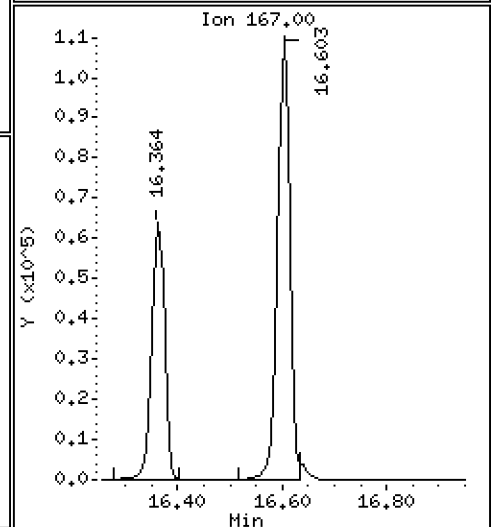
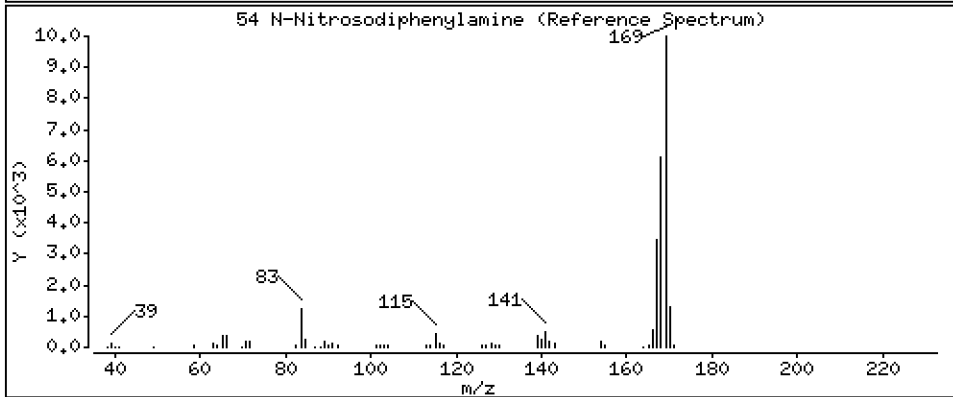
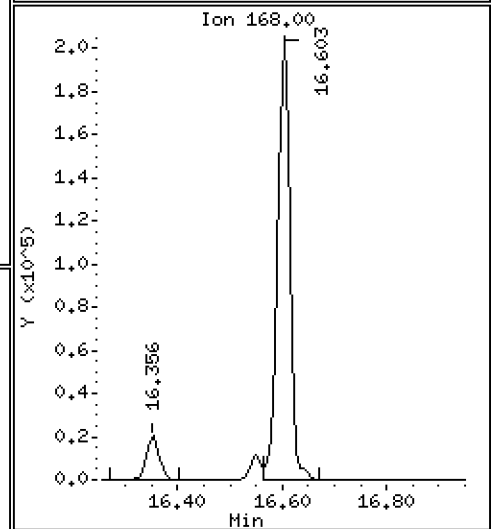
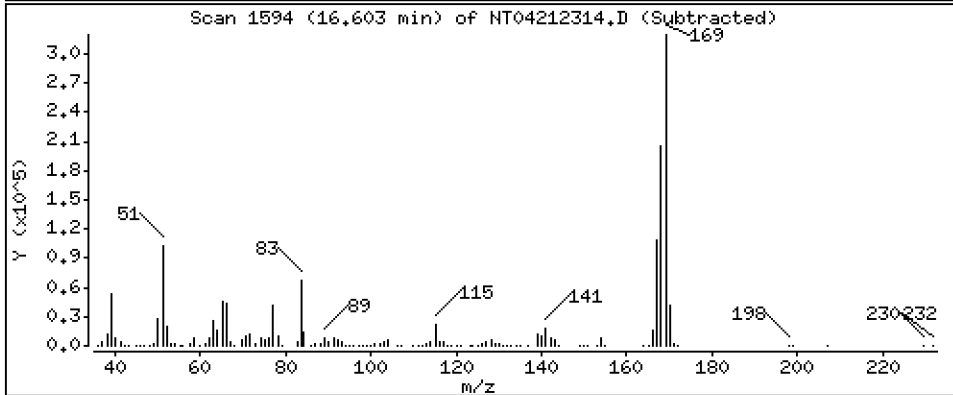
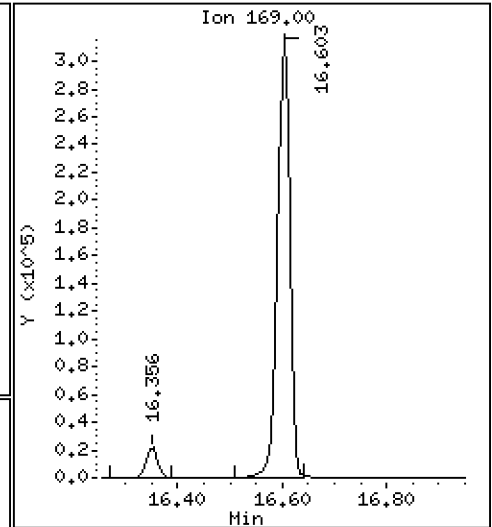
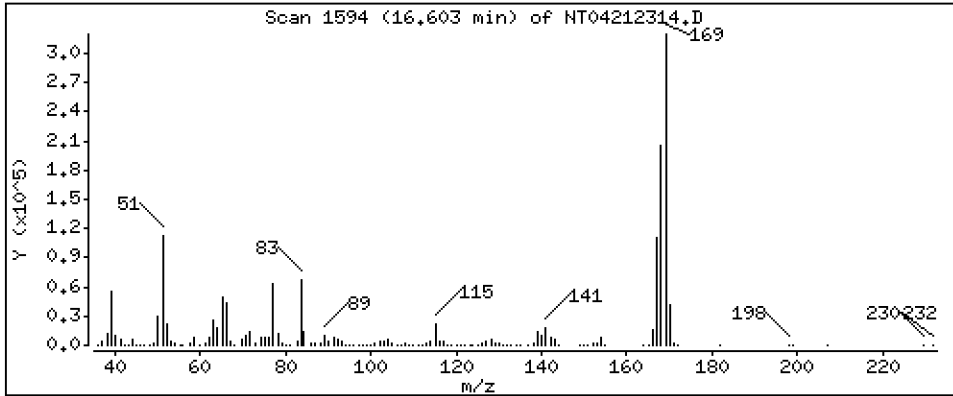
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,748 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

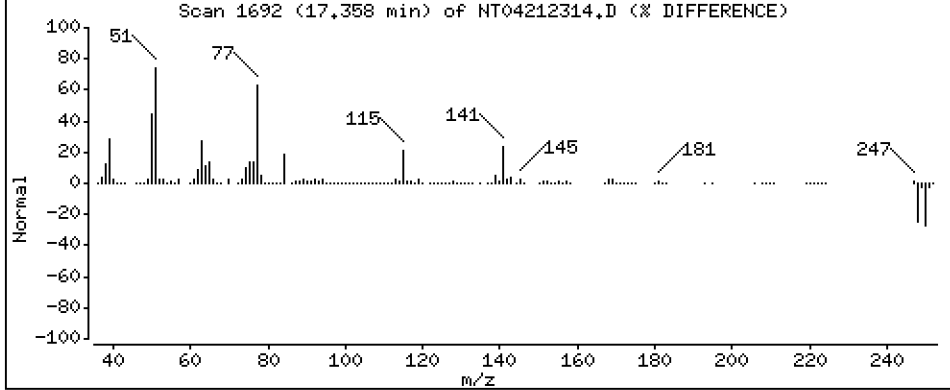
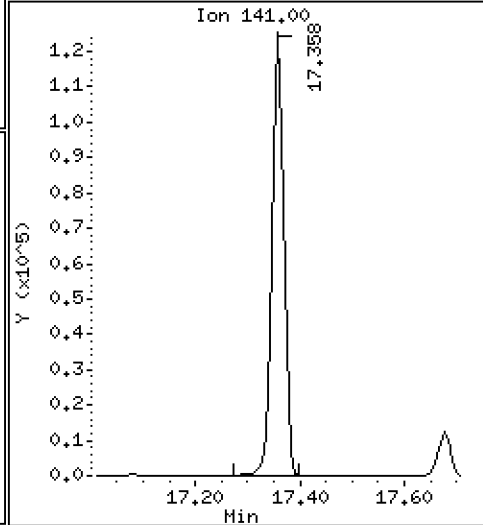
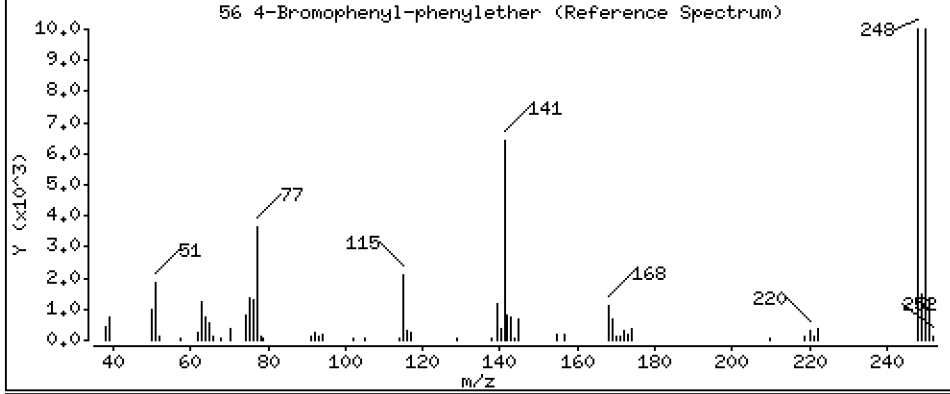
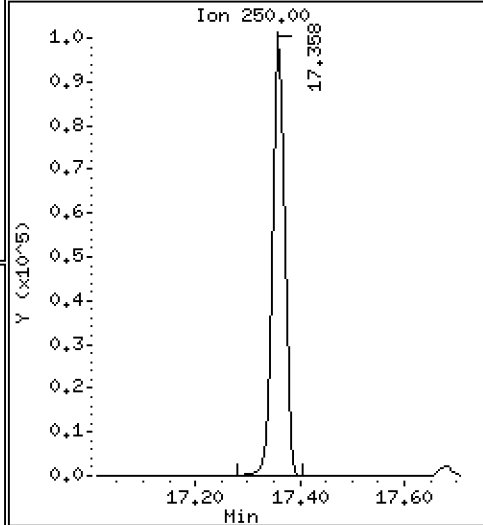
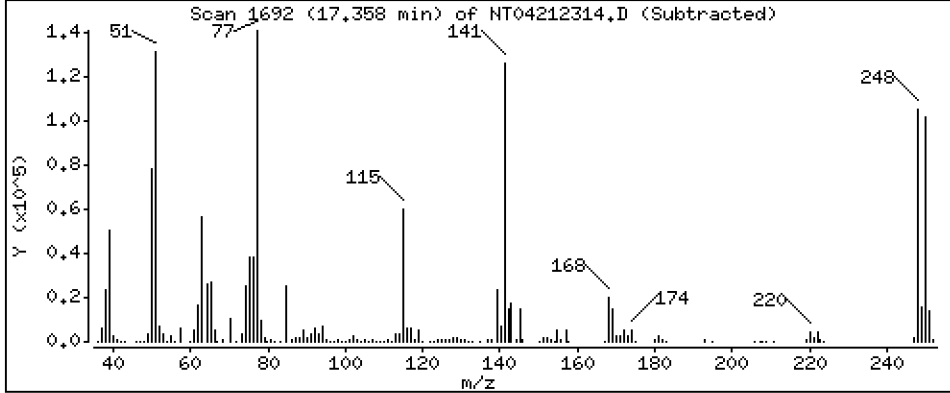
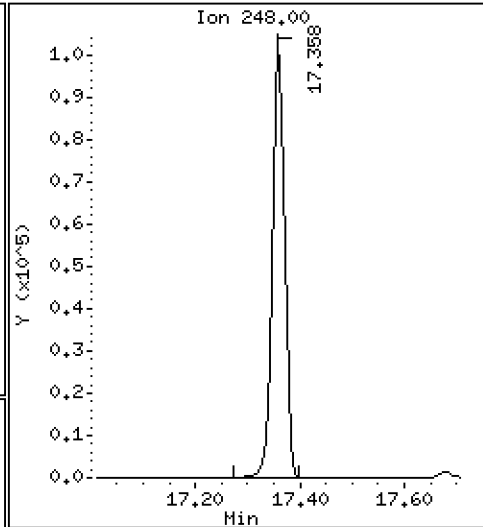
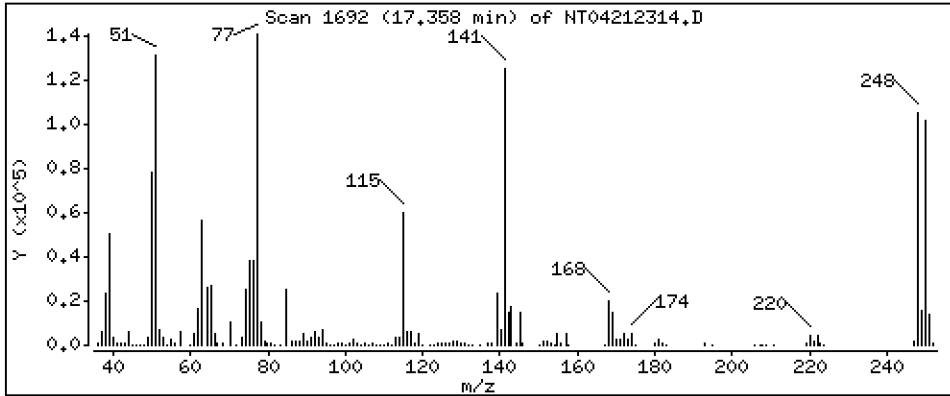
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 4,732 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

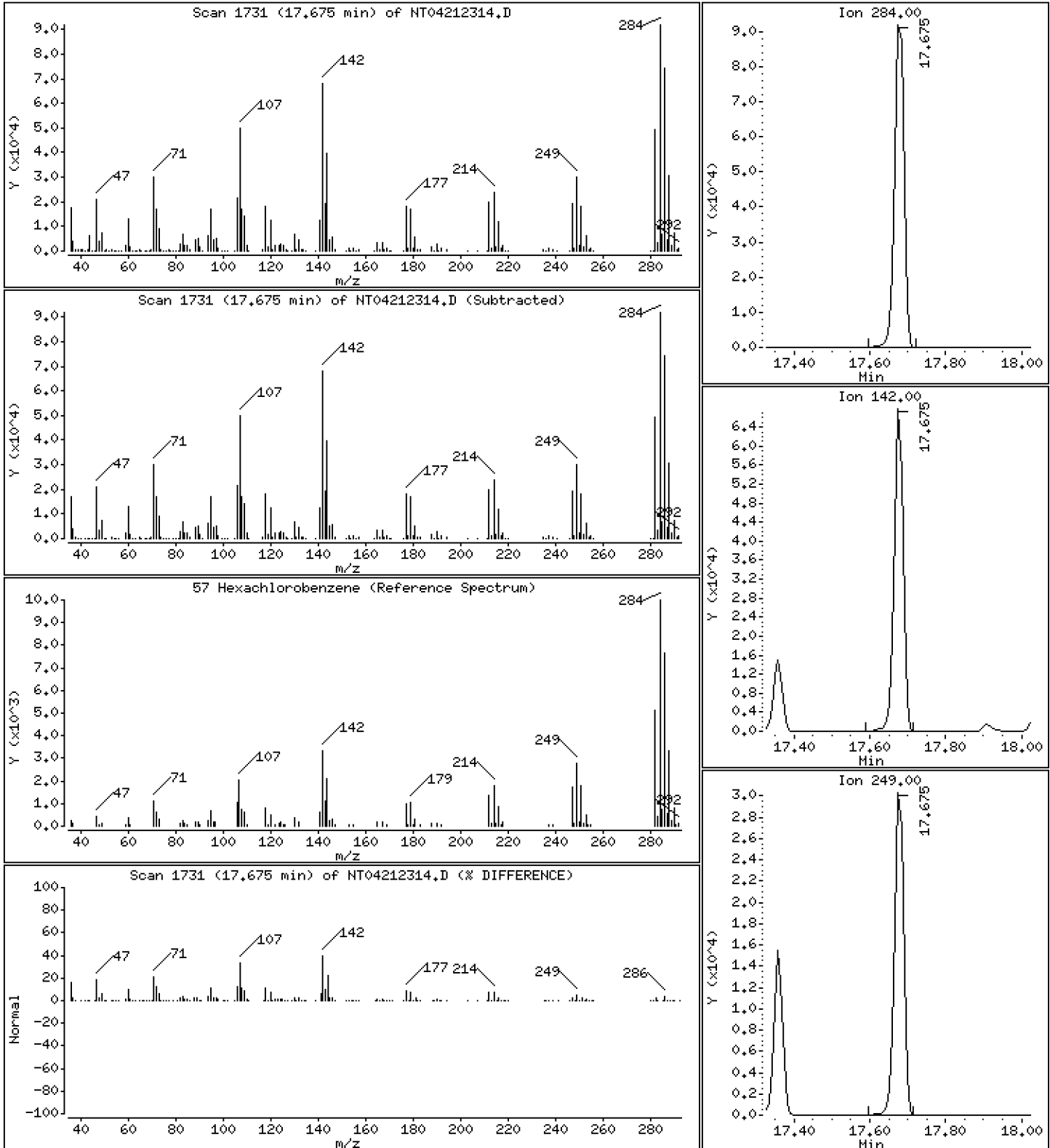
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,367 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

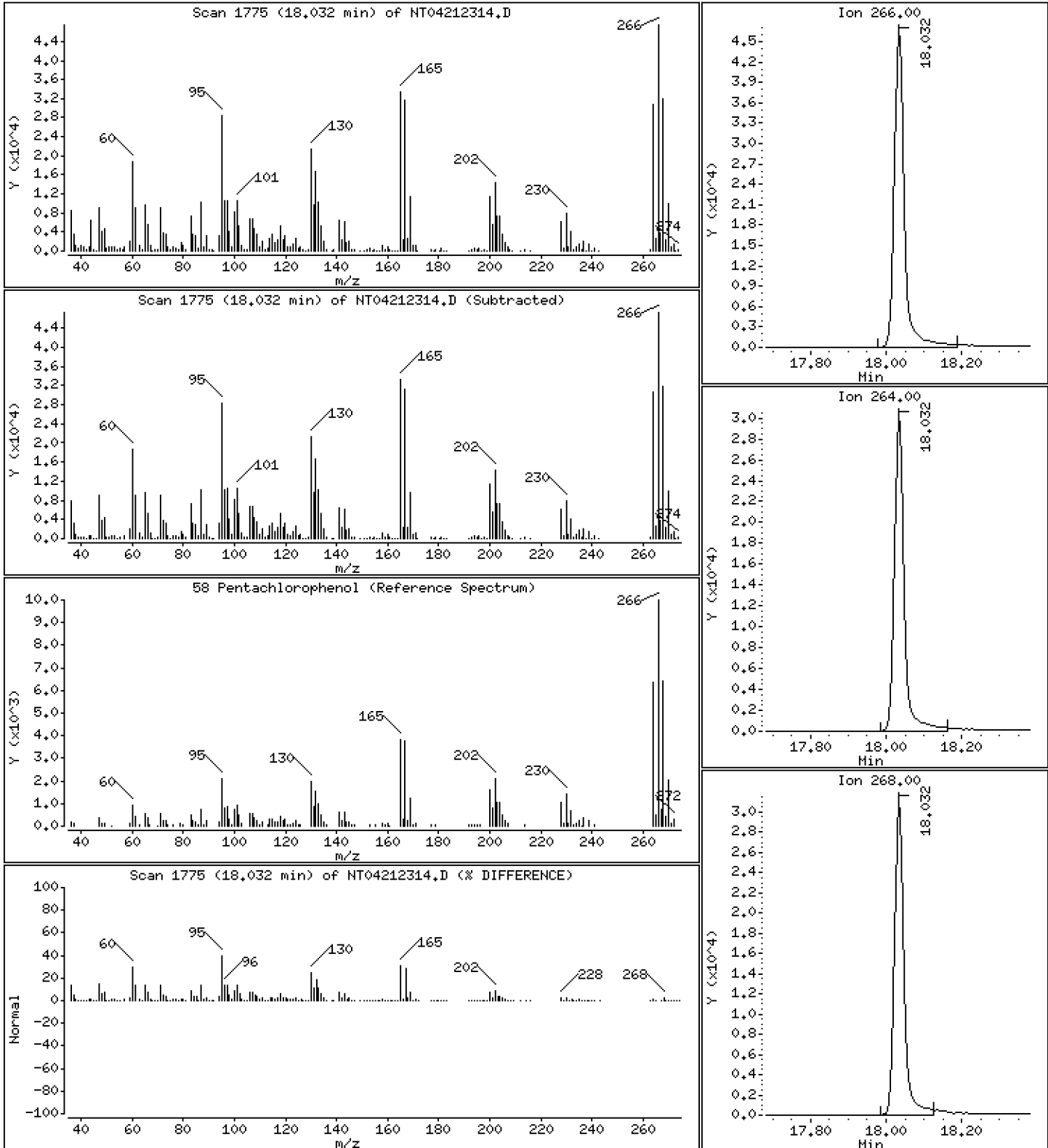
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,741 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

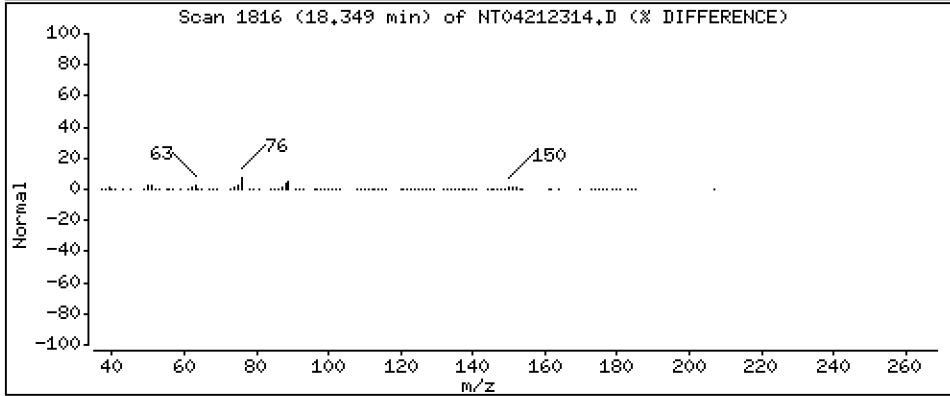
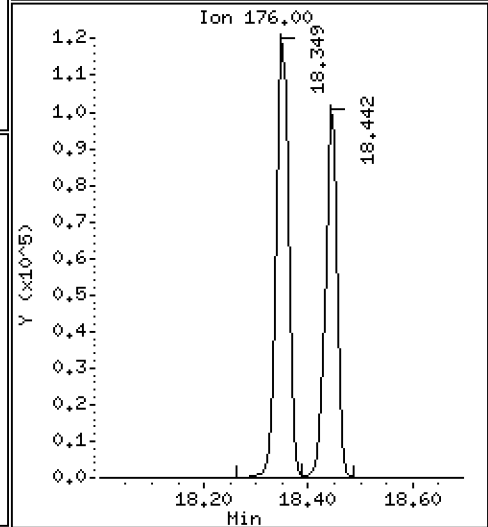
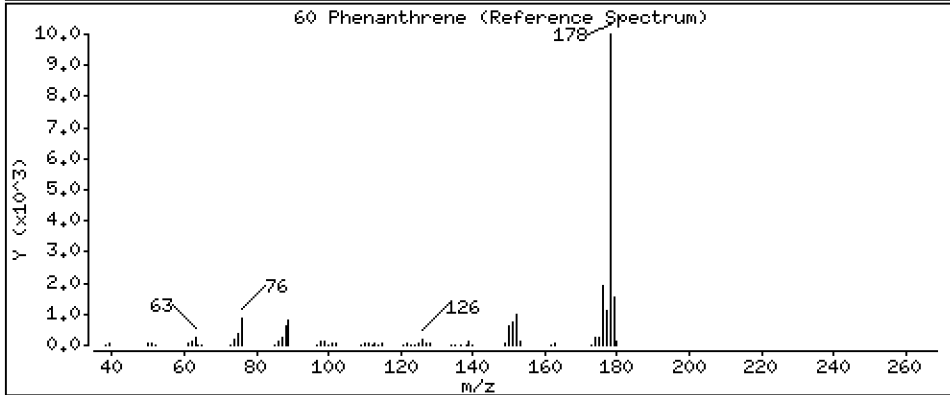
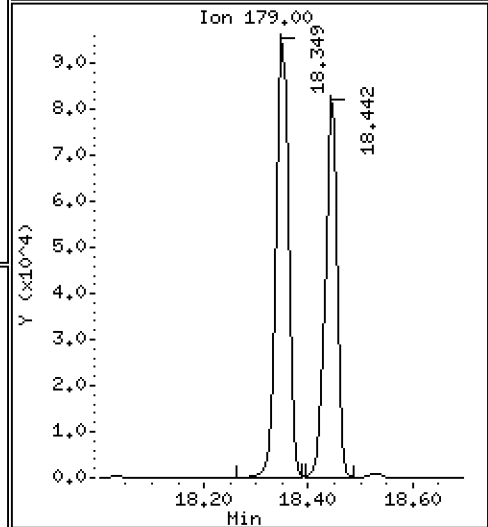
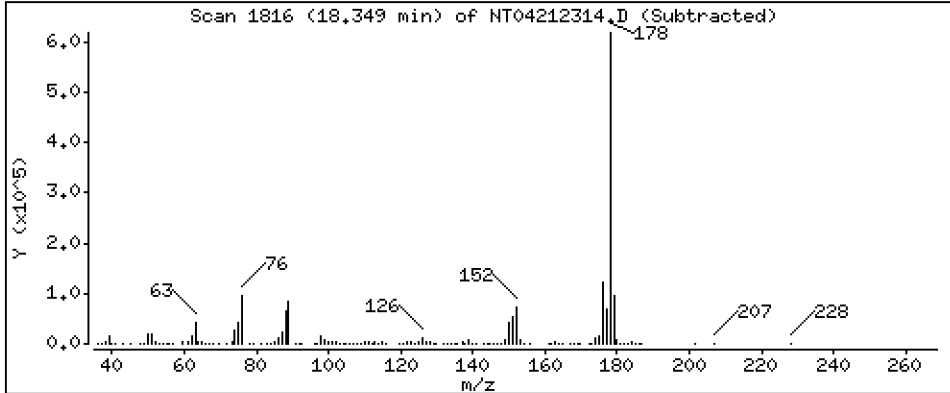
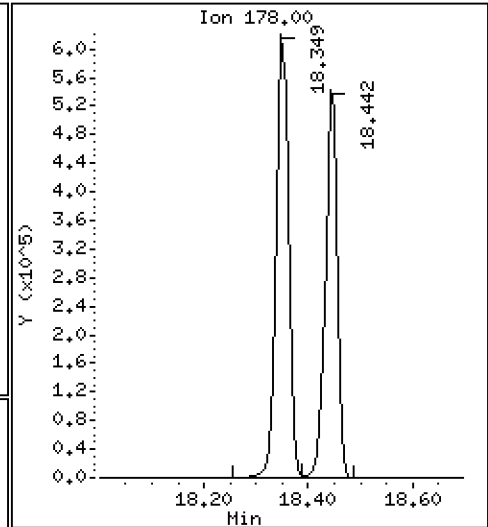
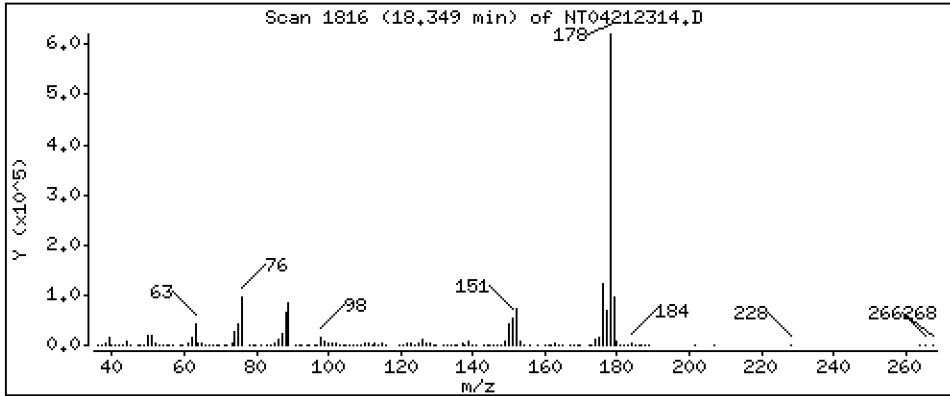
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 4,653 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

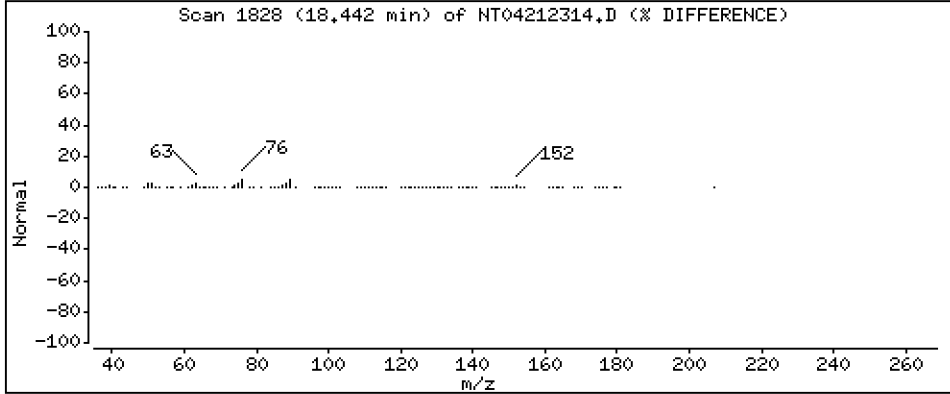
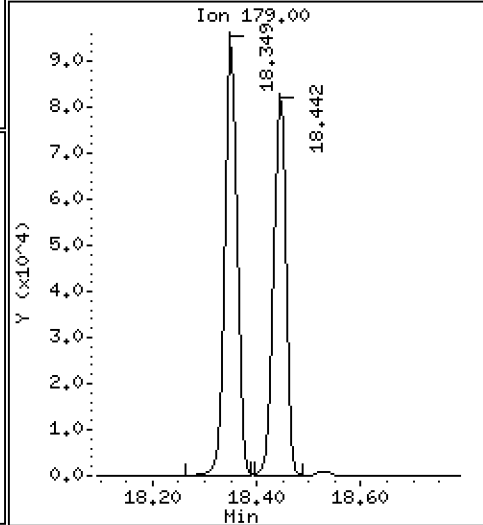
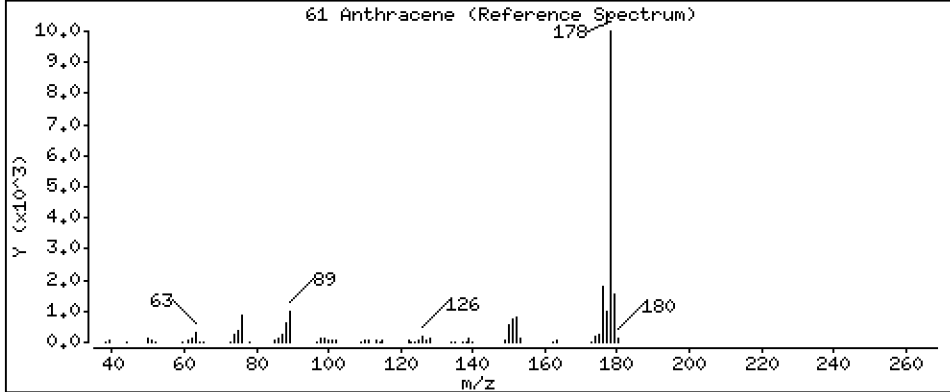
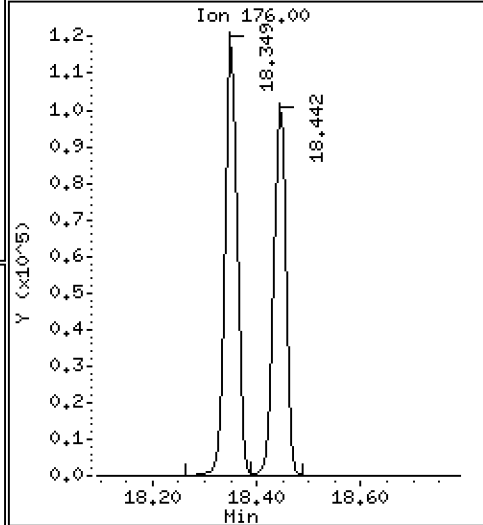
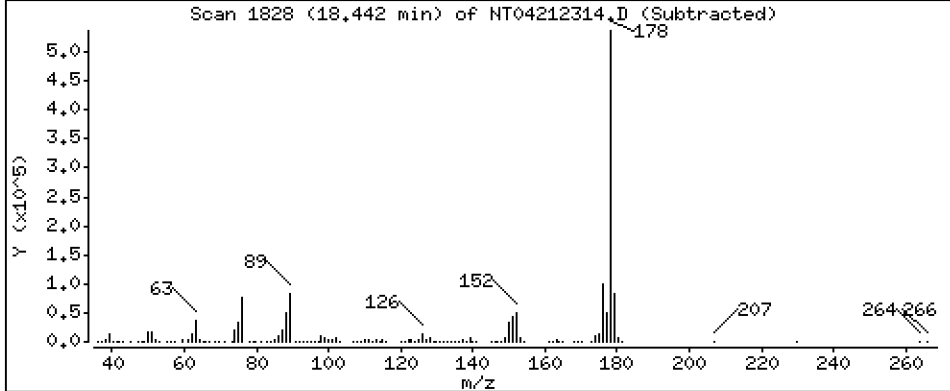
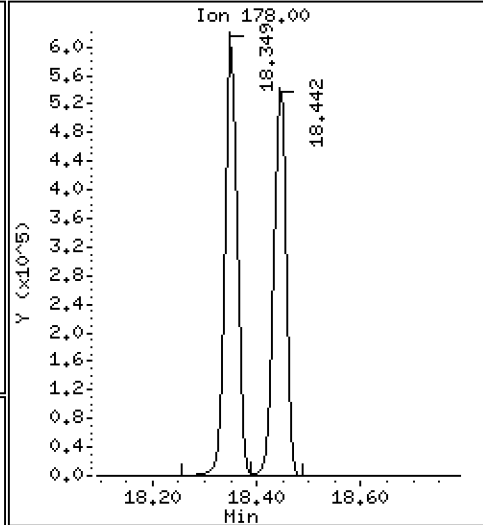
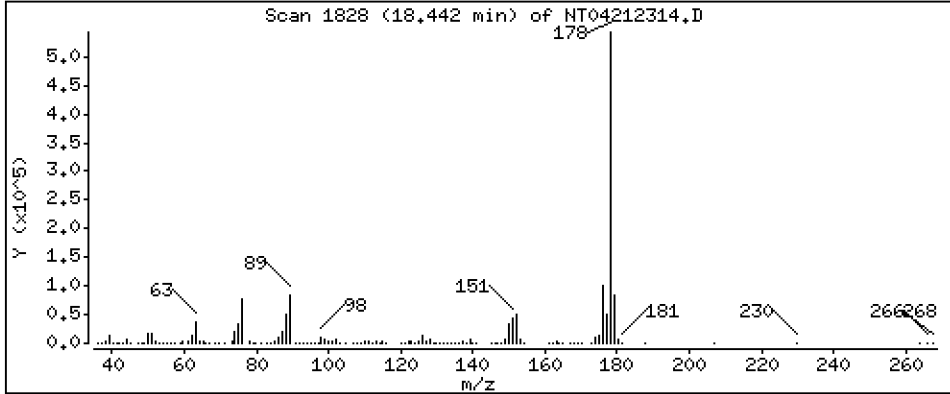
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 4,274 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

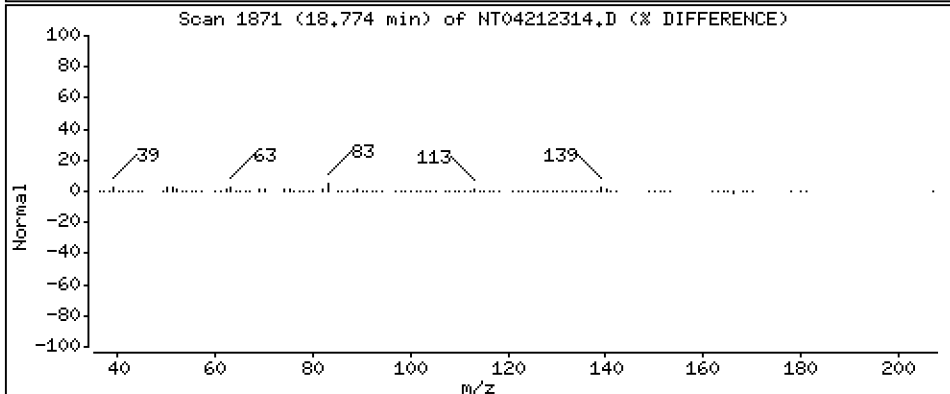
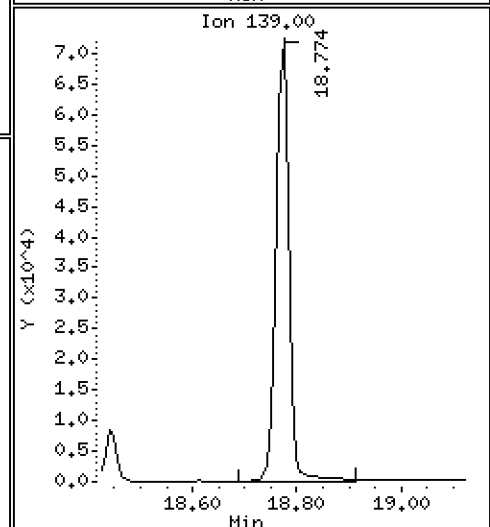
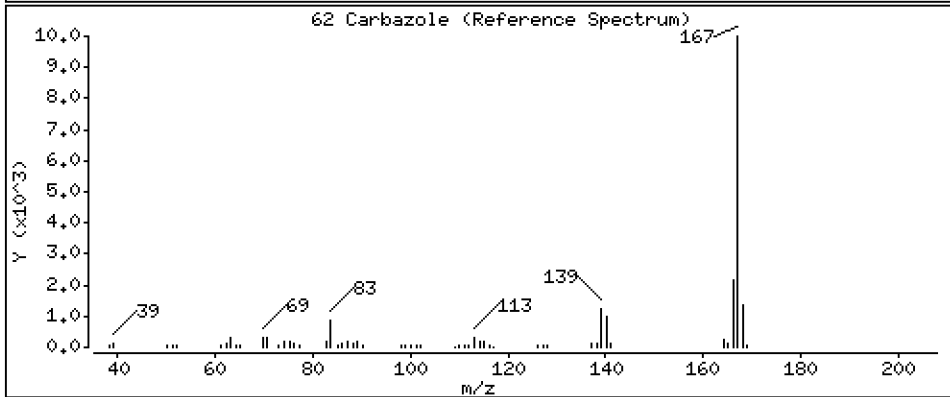
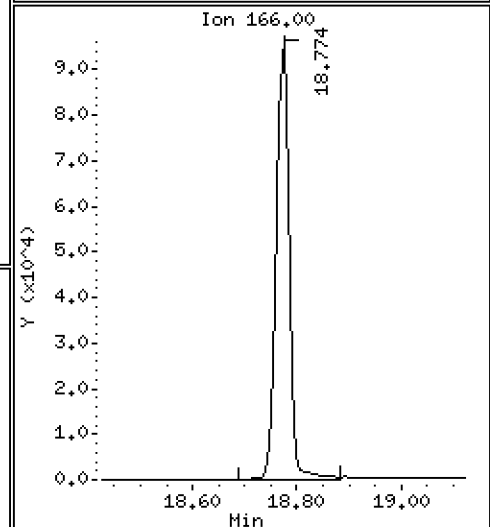
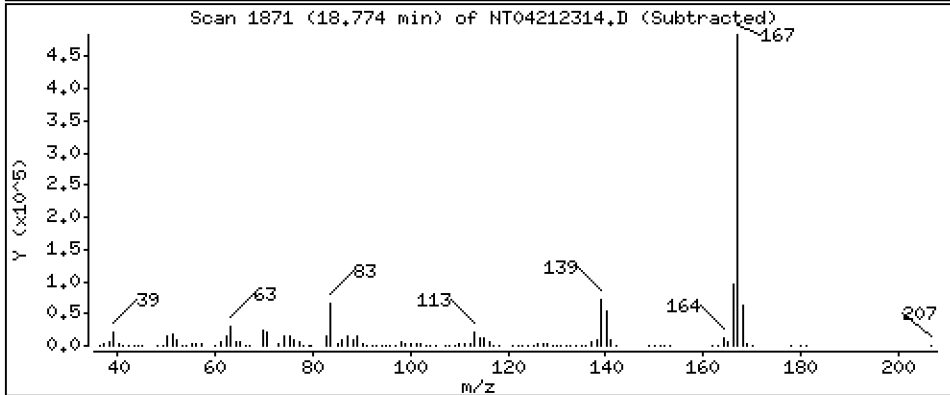
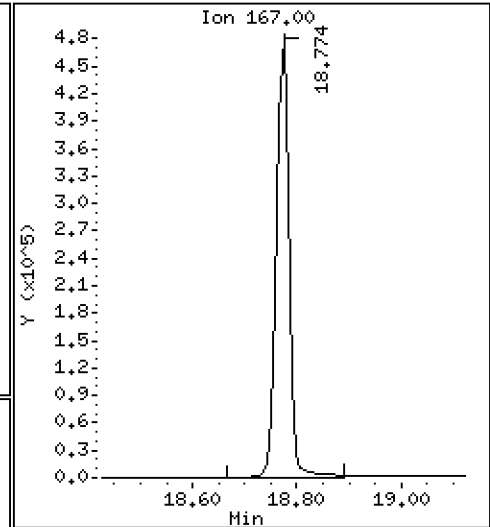
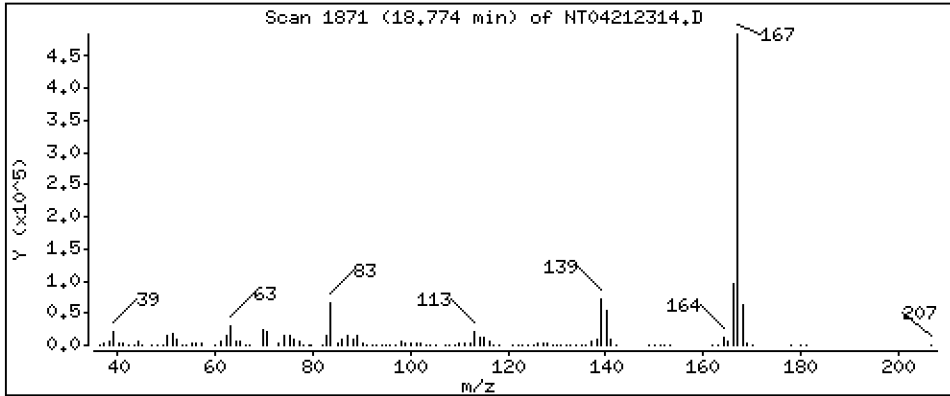
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 4,196 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

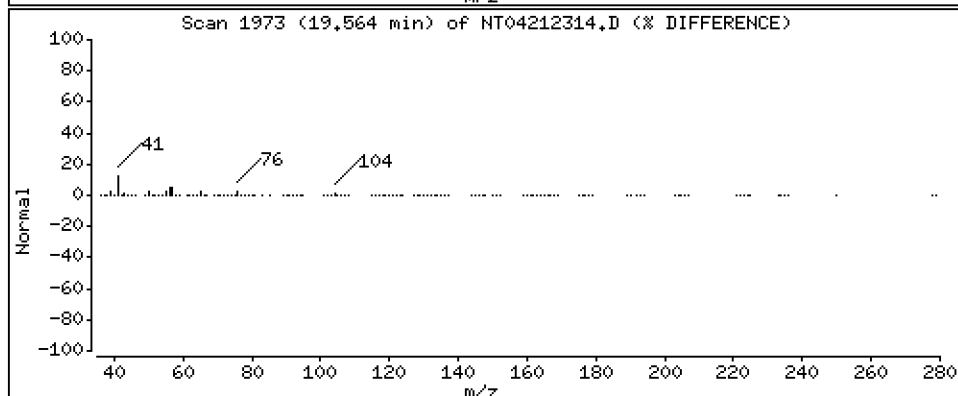
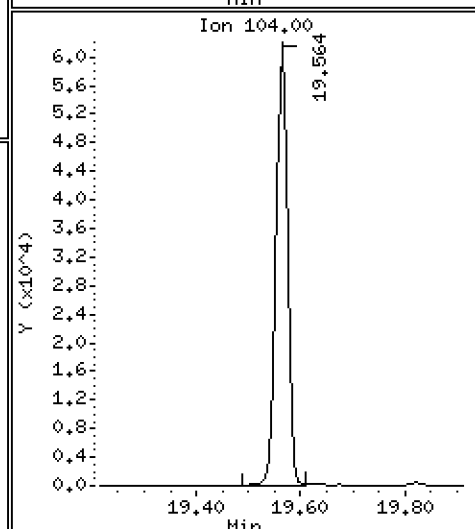
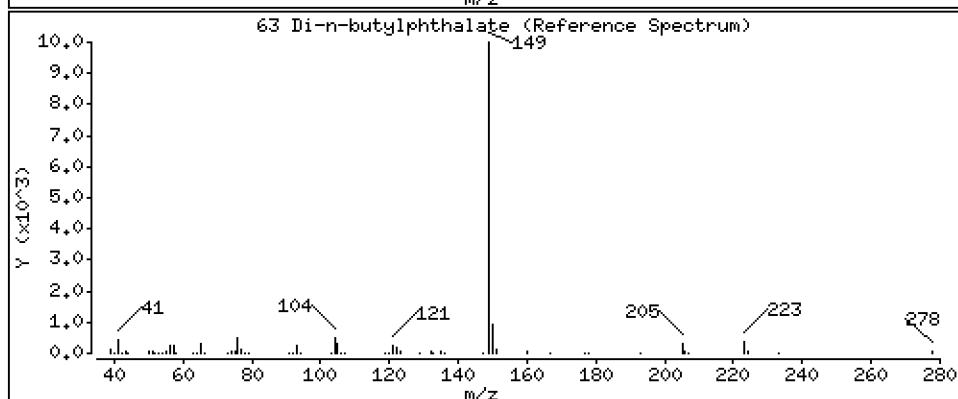
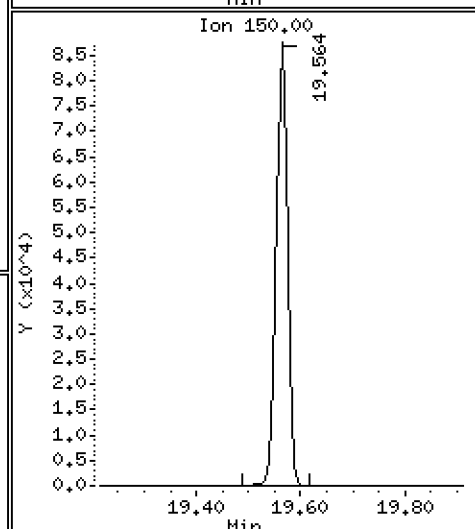
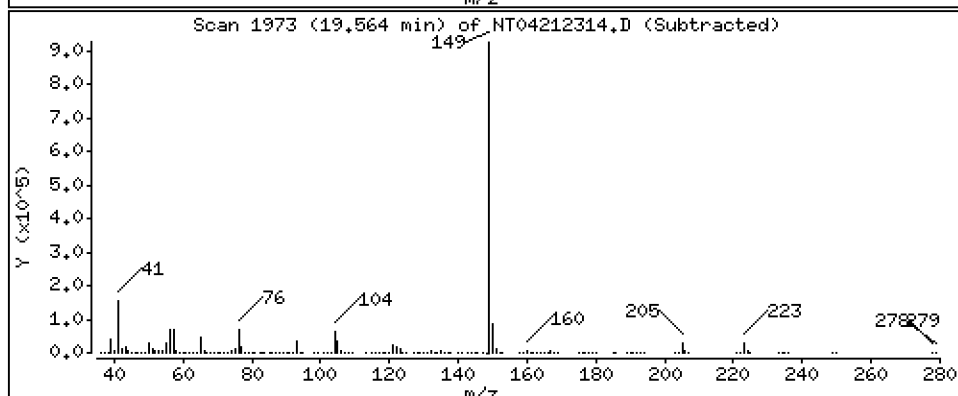
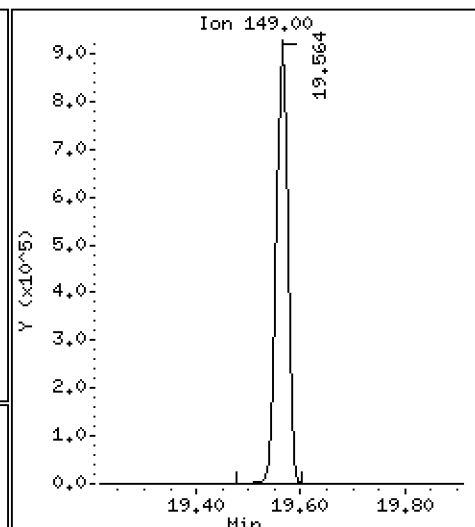
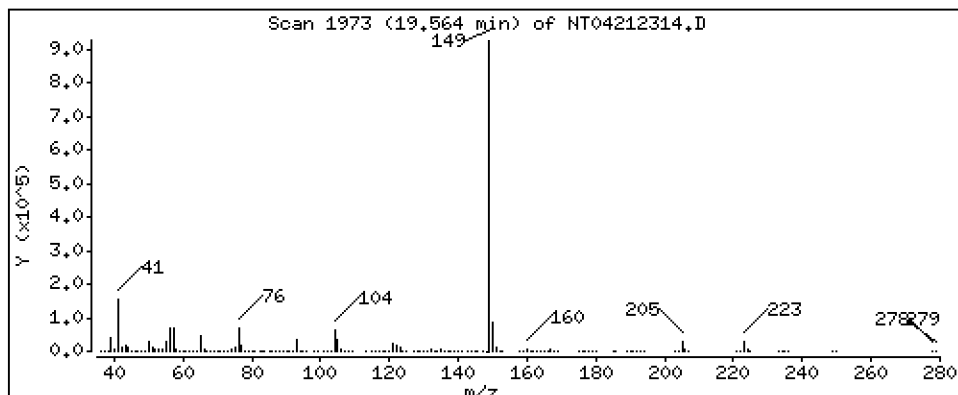
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 4,762 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

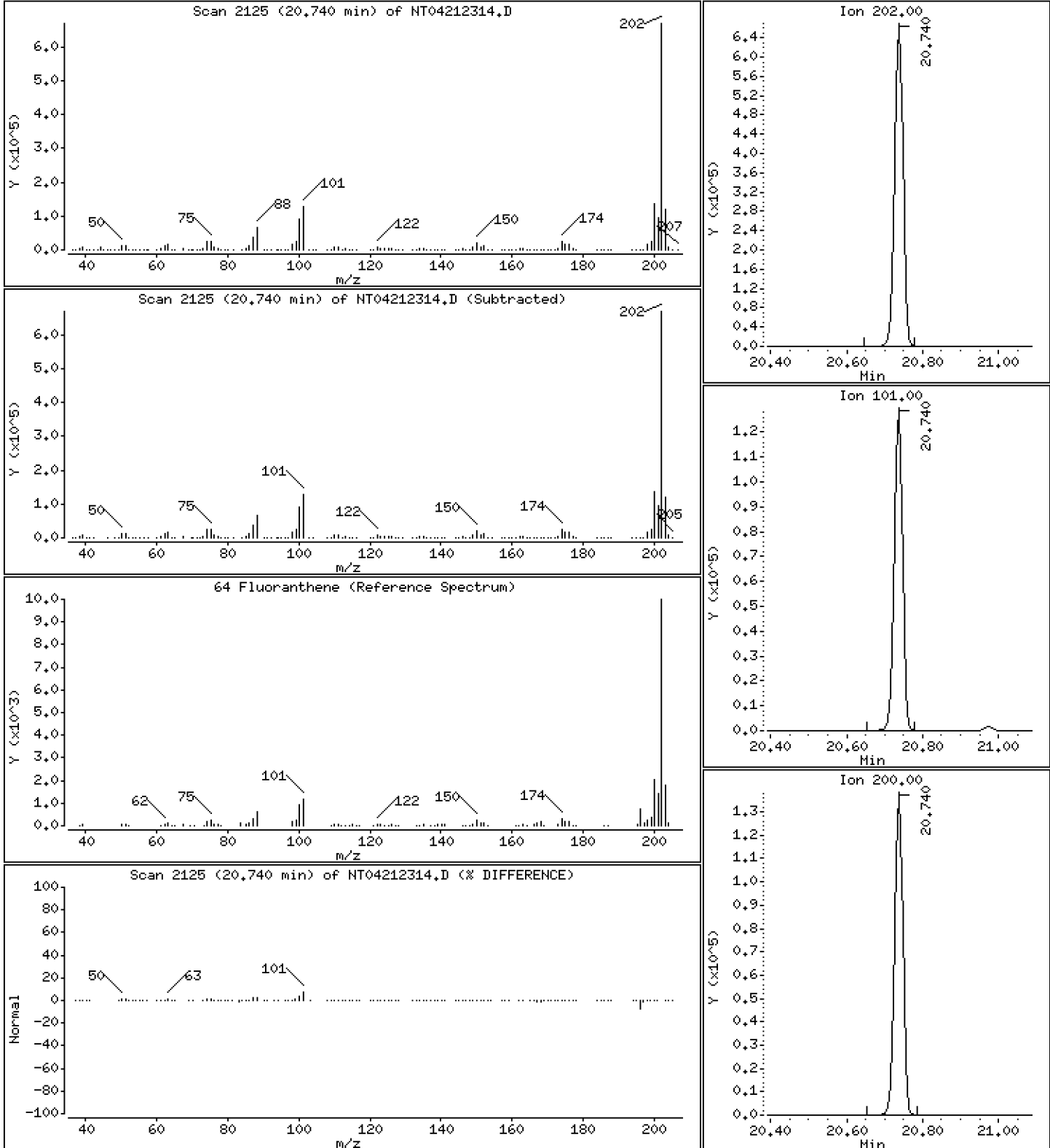
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 5,068 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

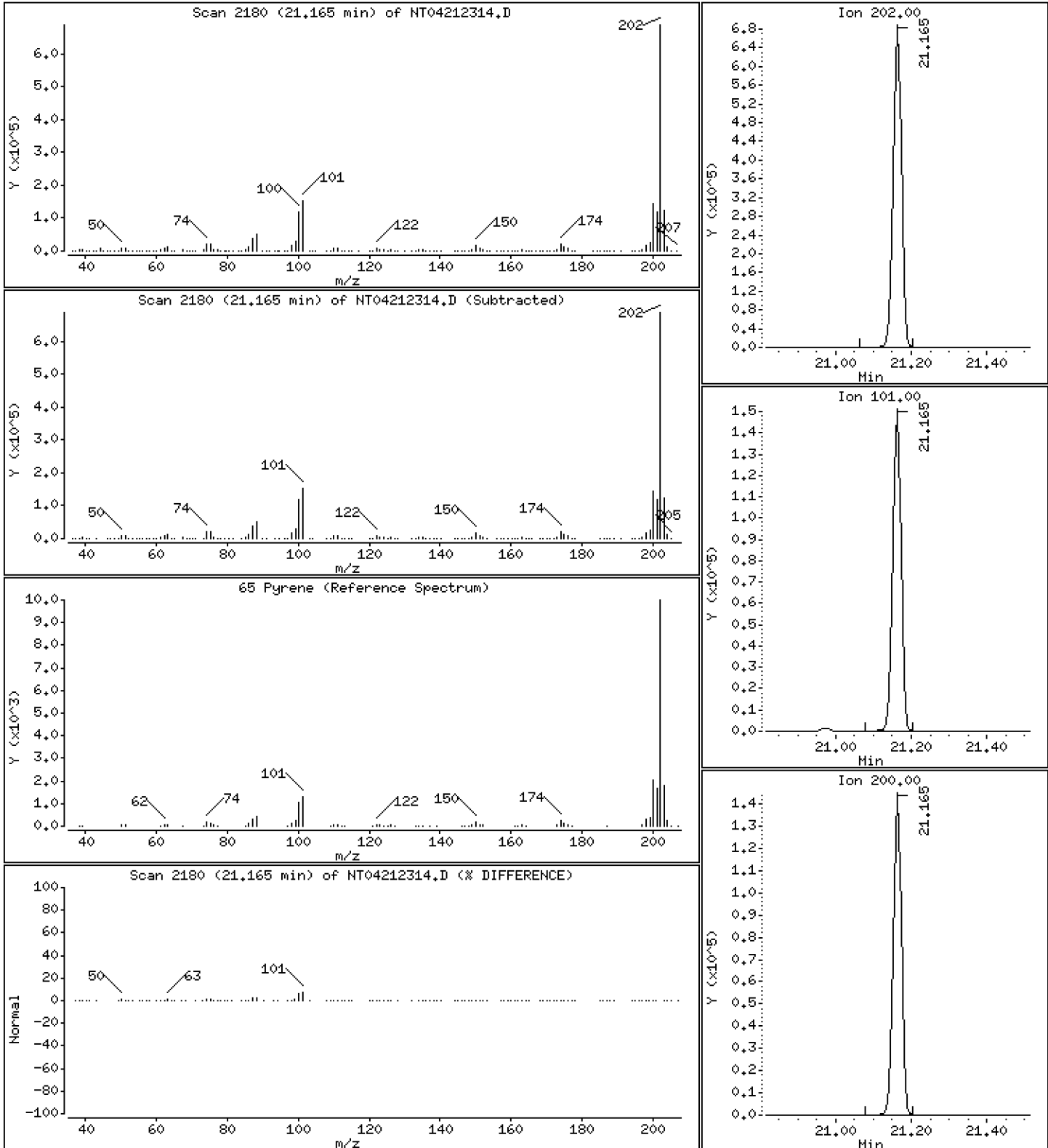
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 4,920 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

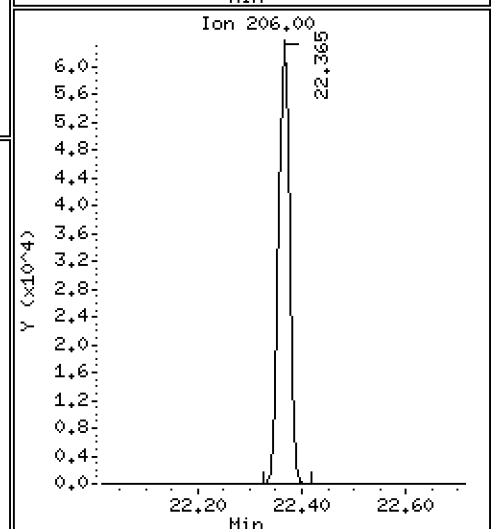
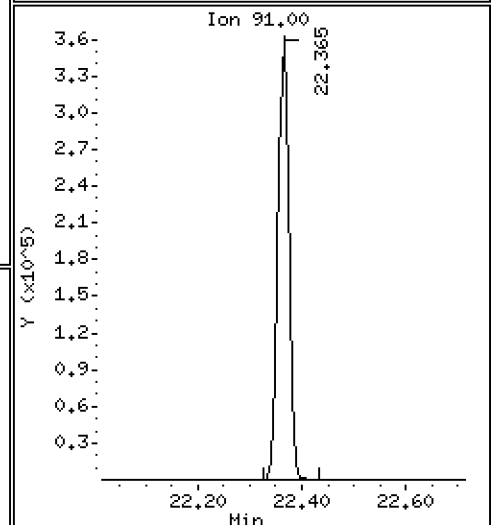
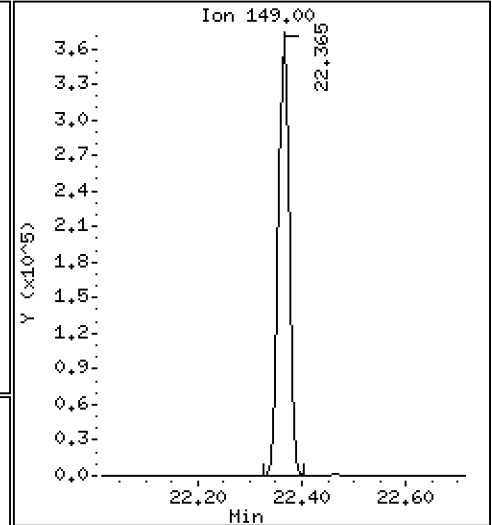
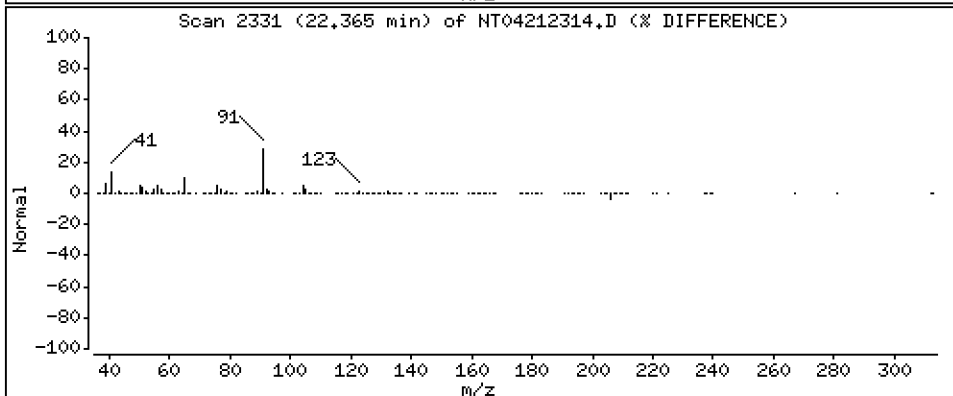
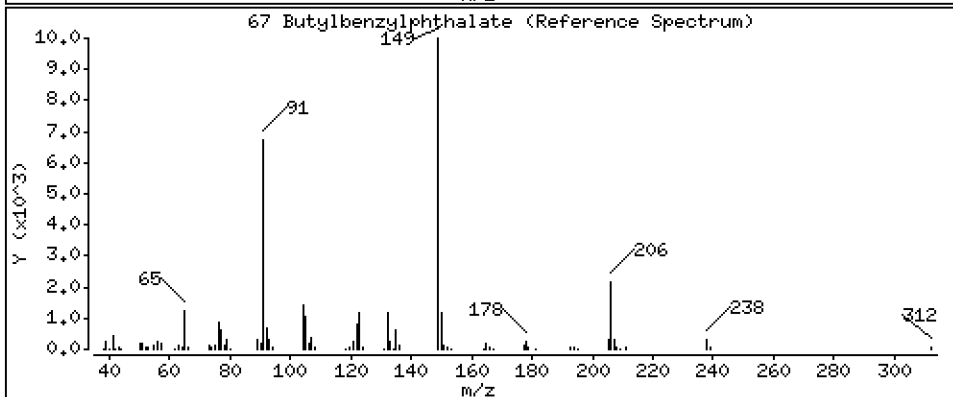
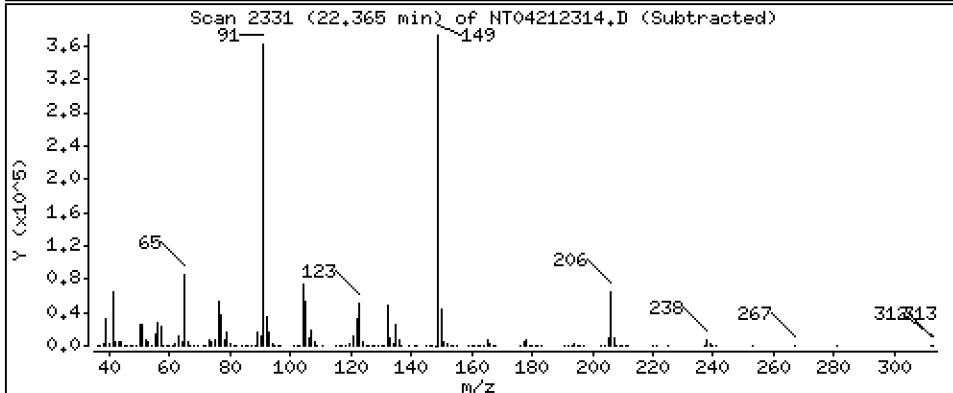
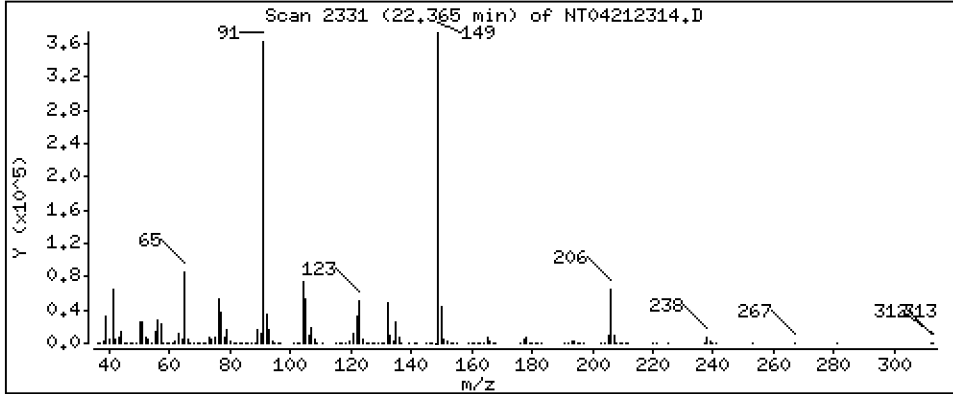
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,291 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

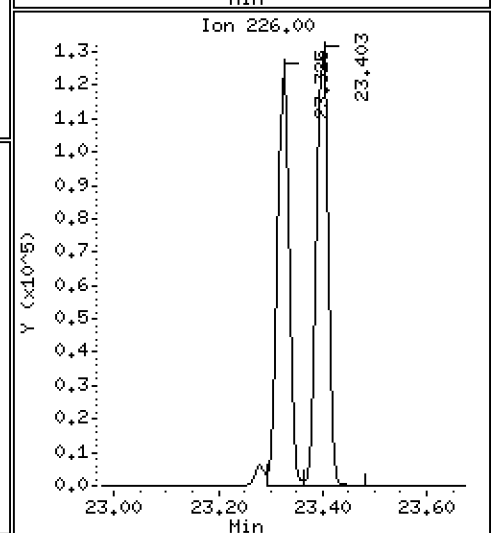
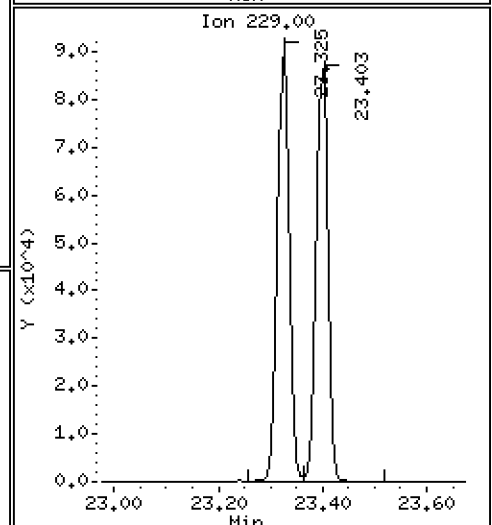
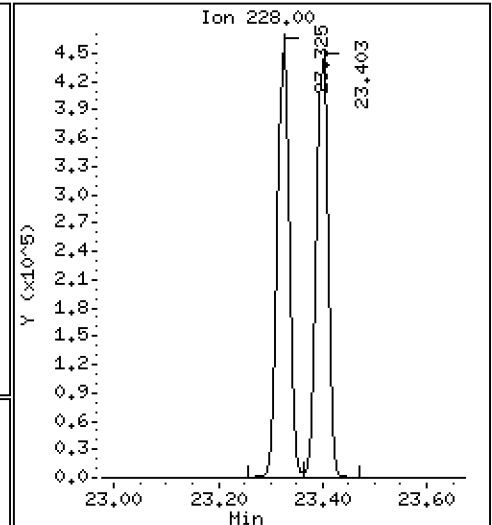
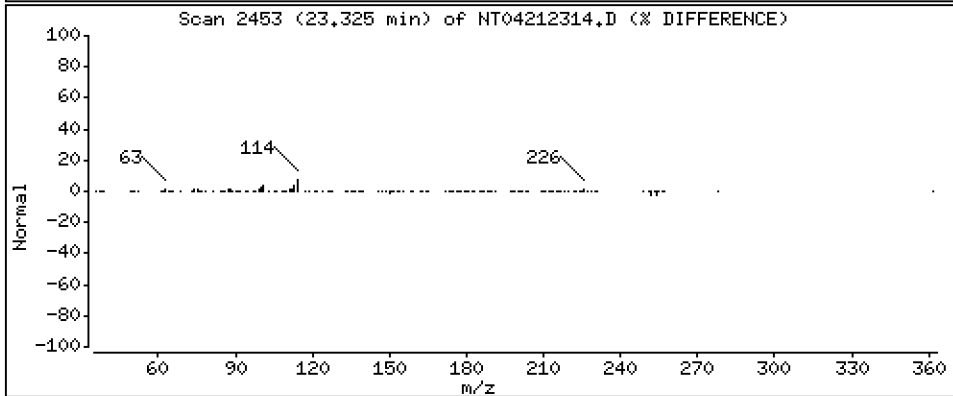
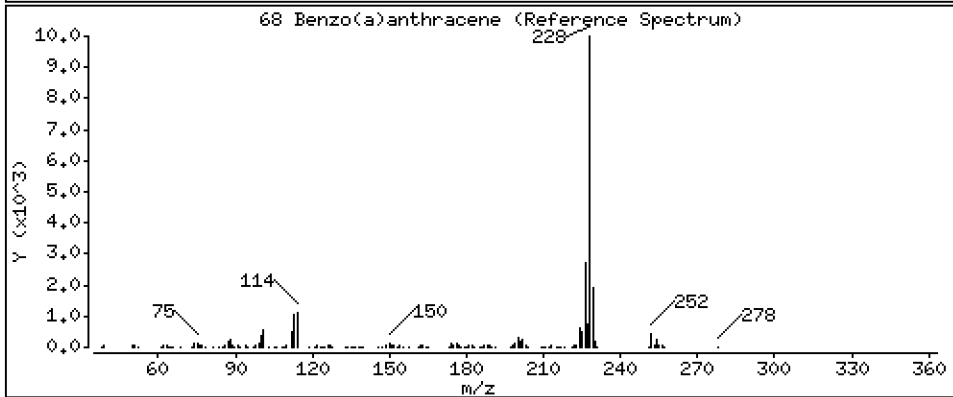
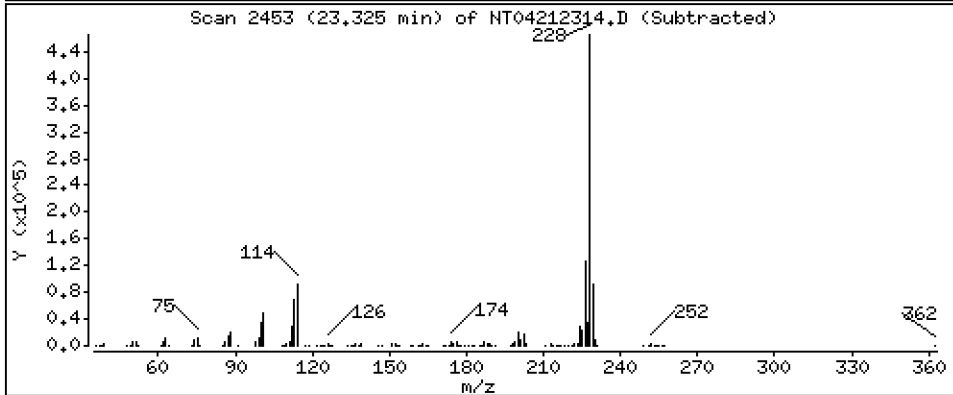
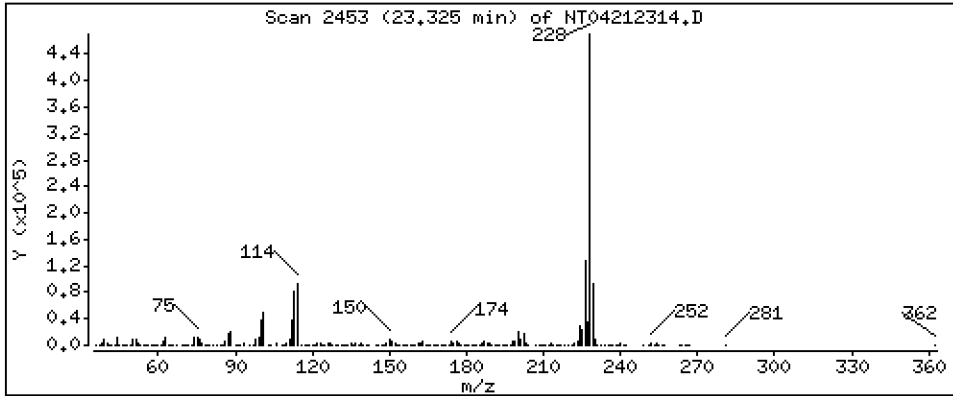
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 4,671 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

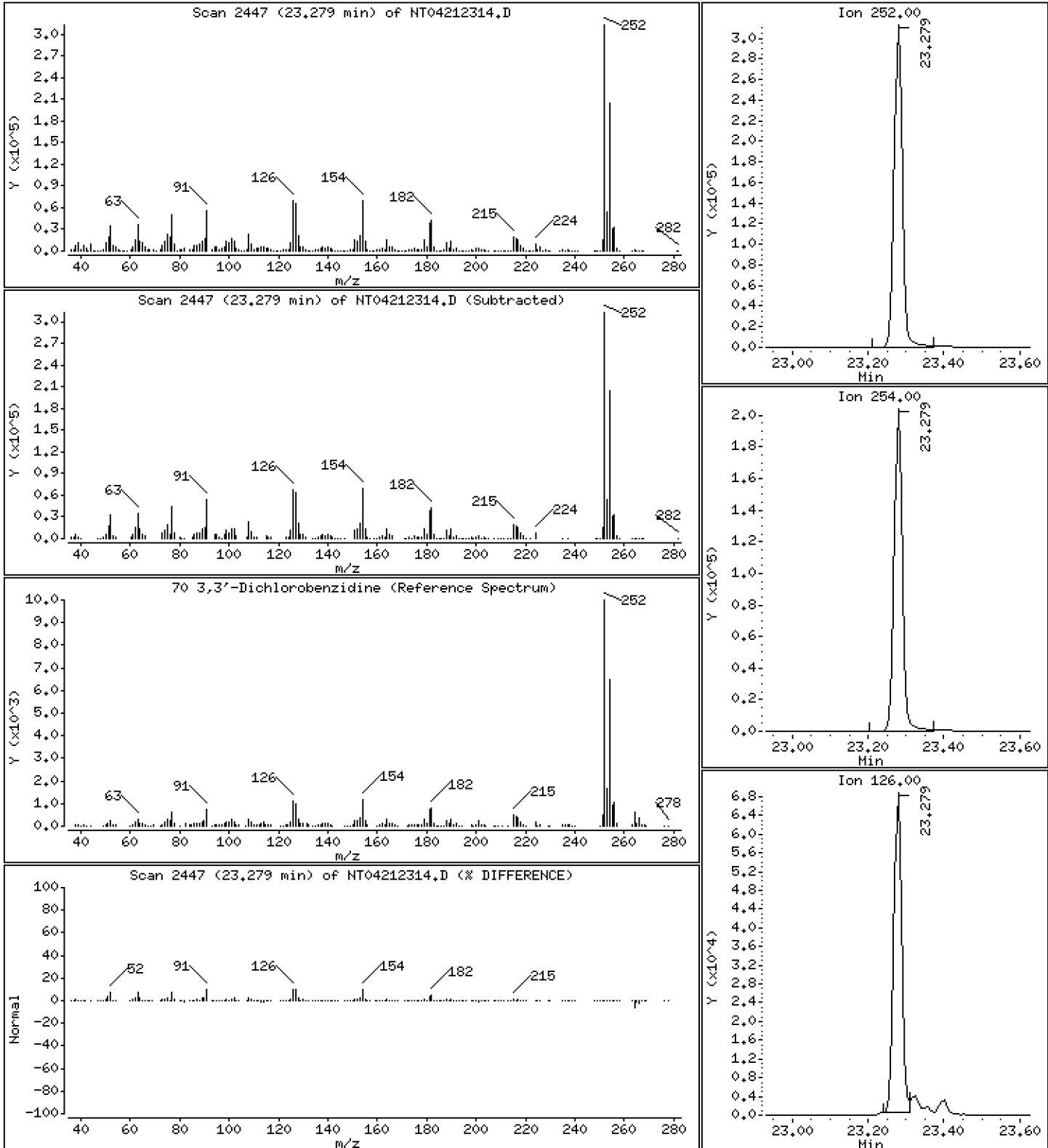
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 9,381 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

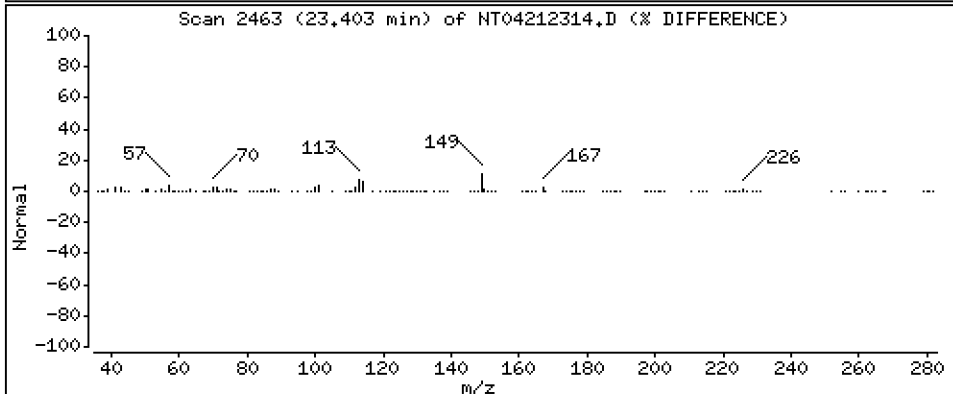
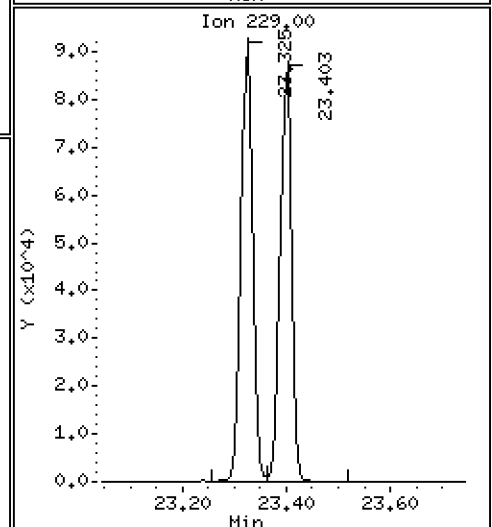
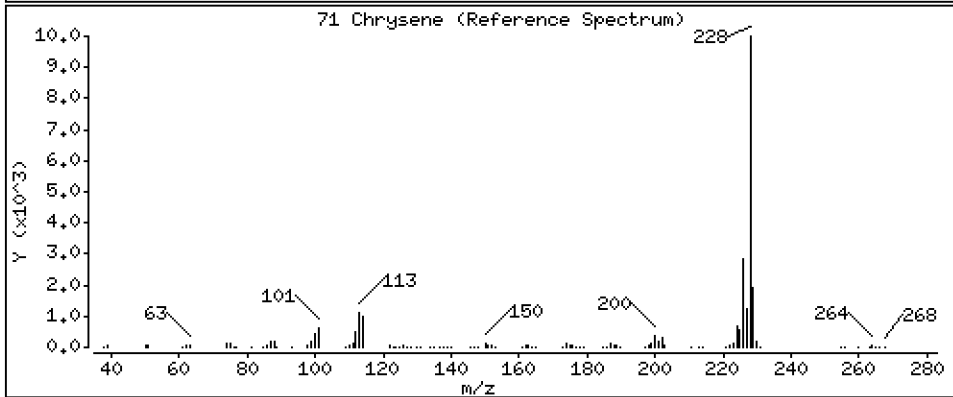
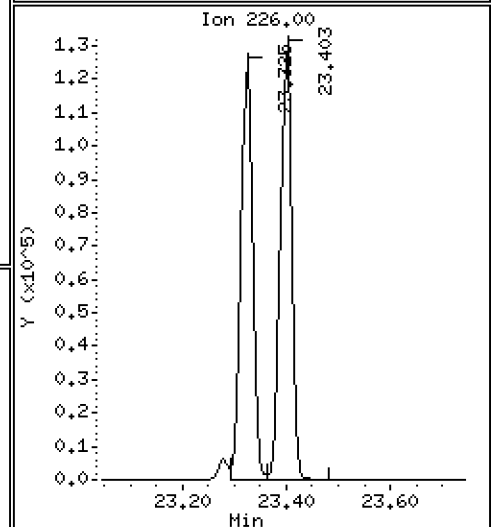
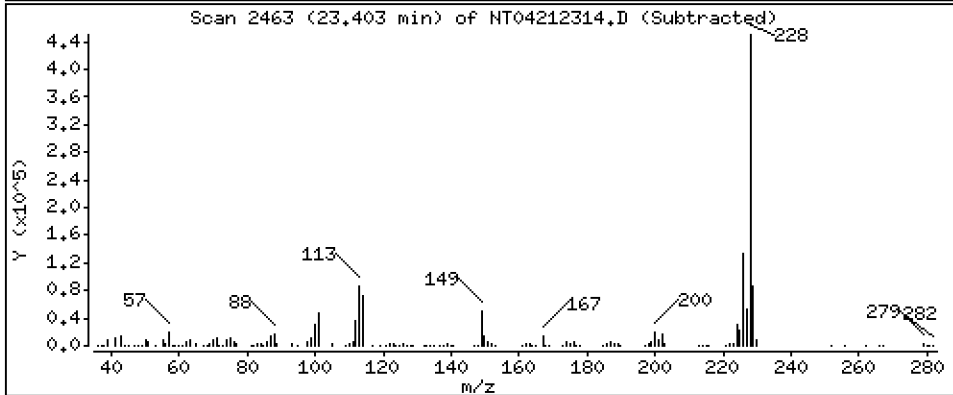
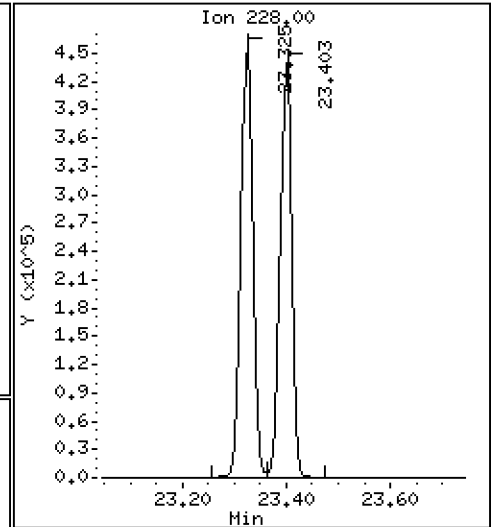
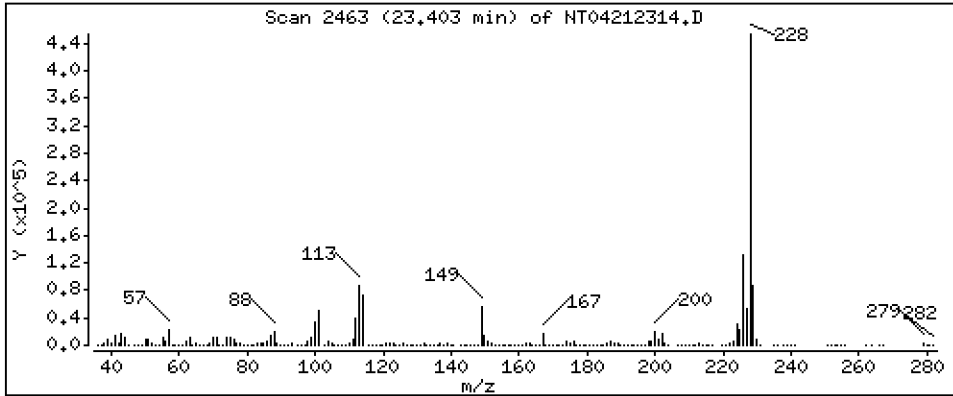
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 4,719 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

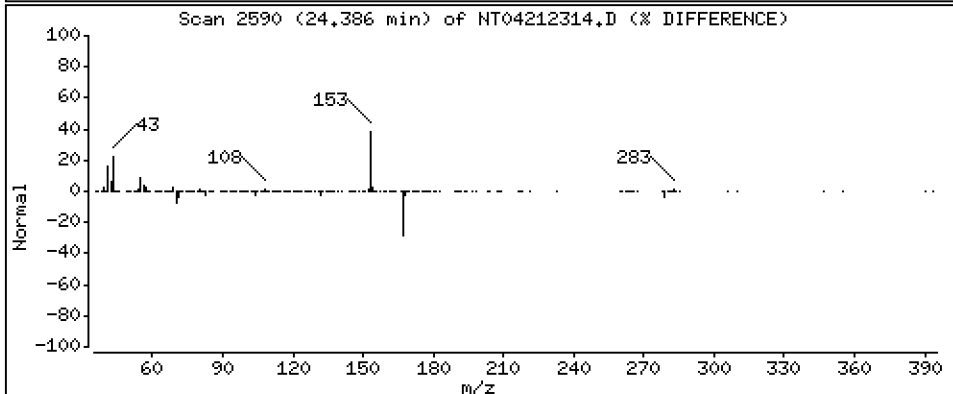
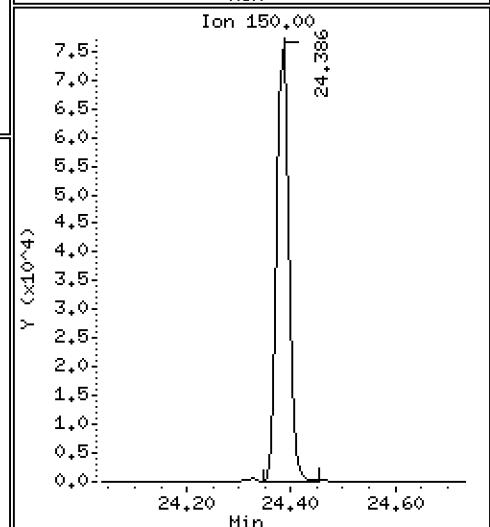
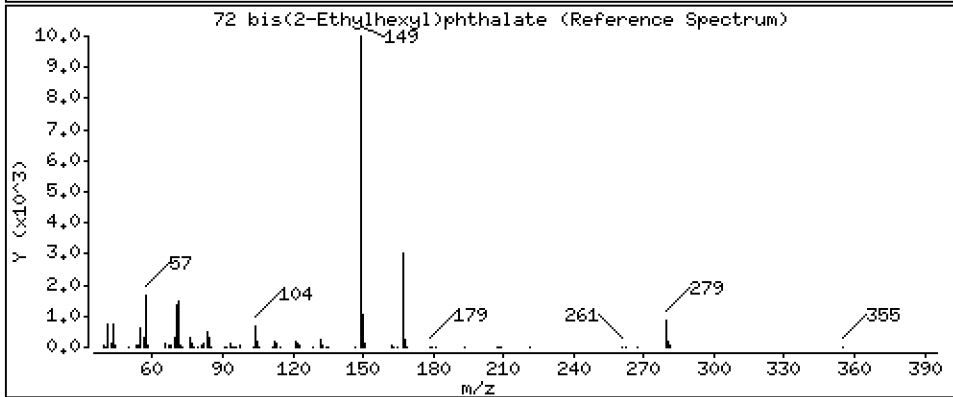
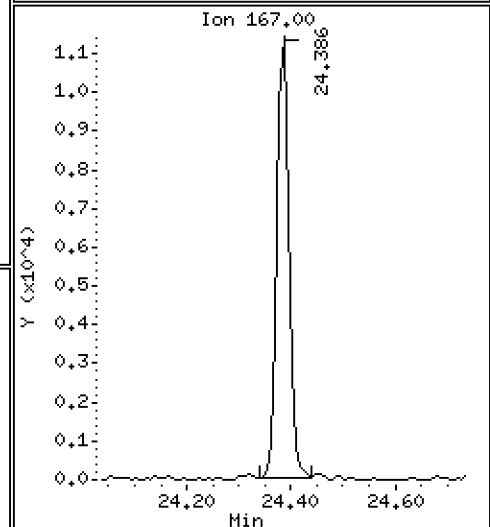
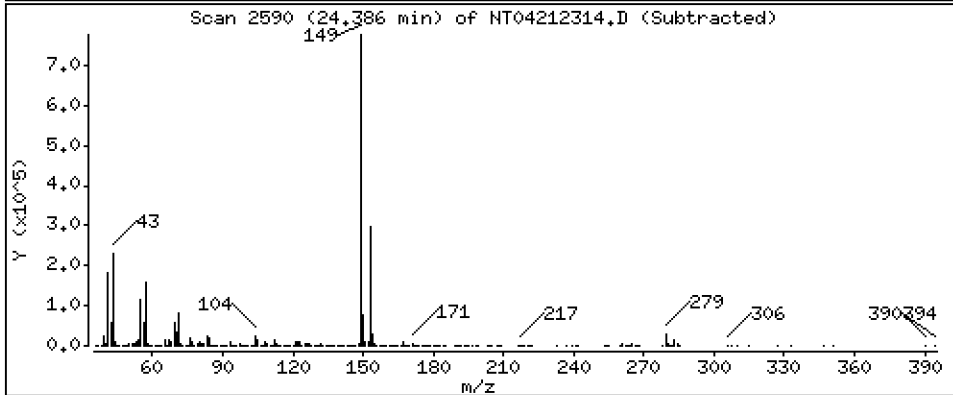
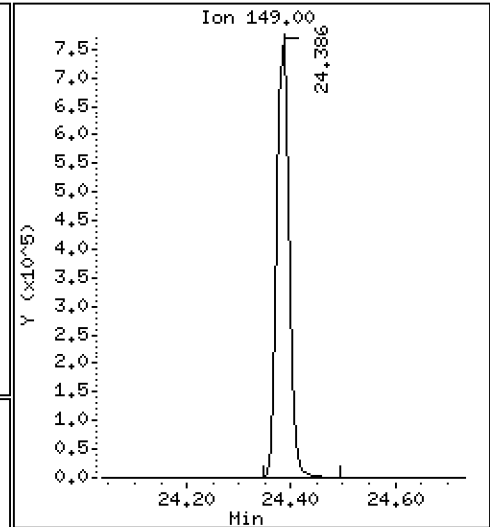
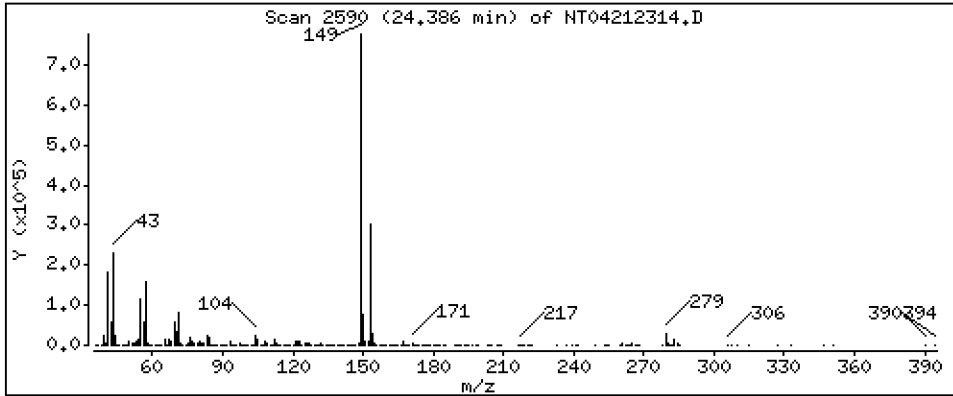
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,893 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

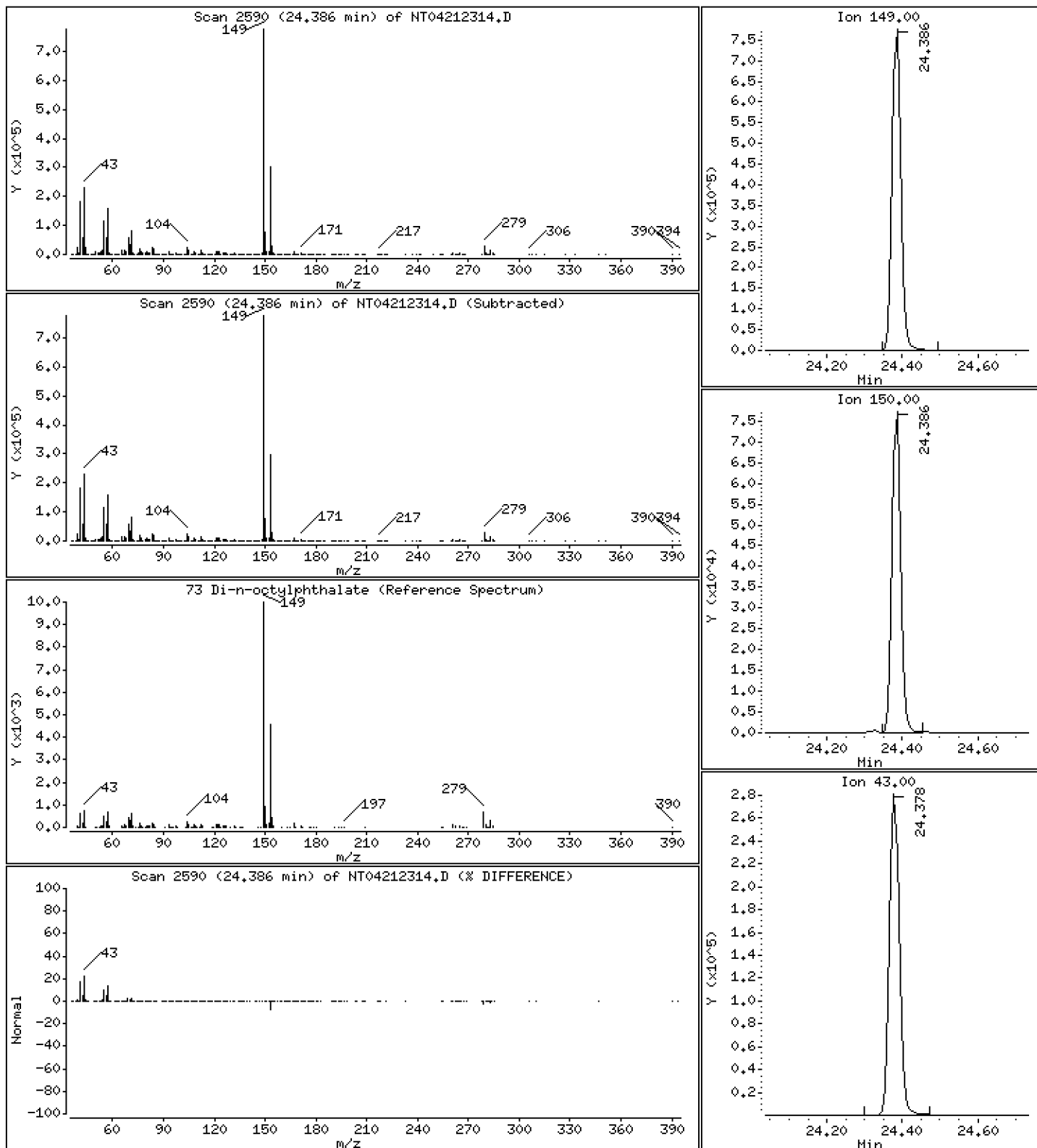
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,893 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

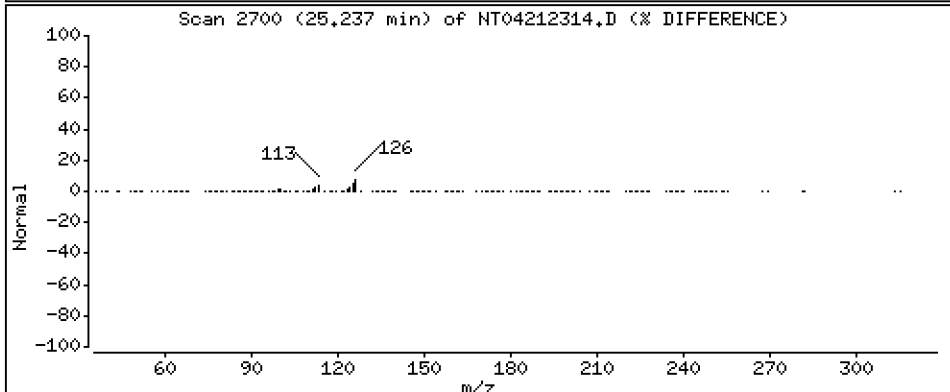
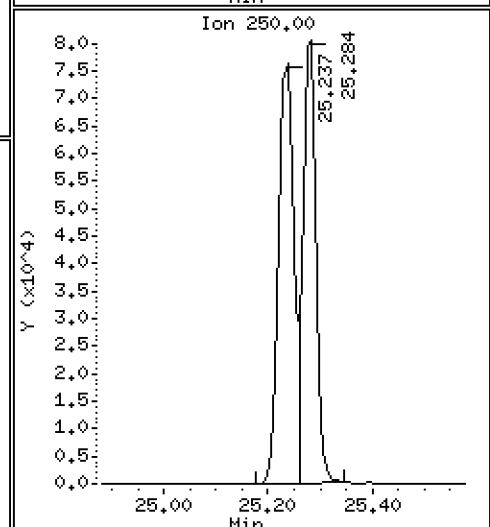
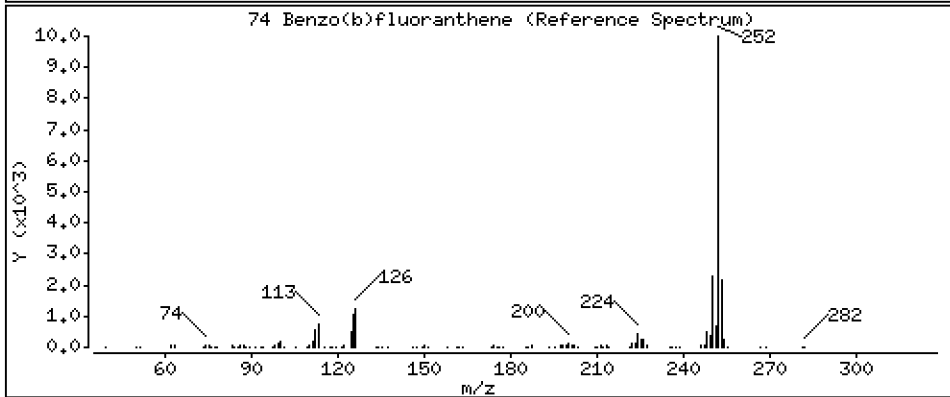
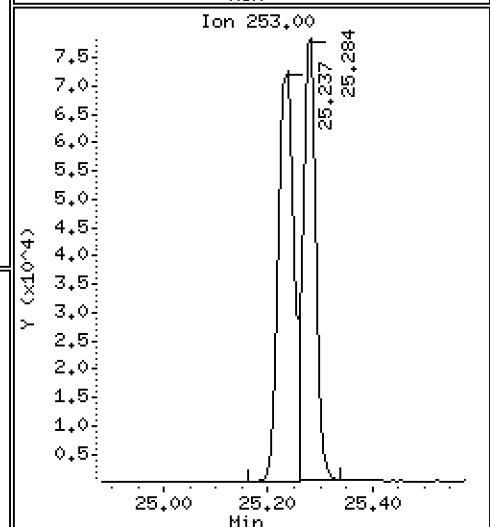
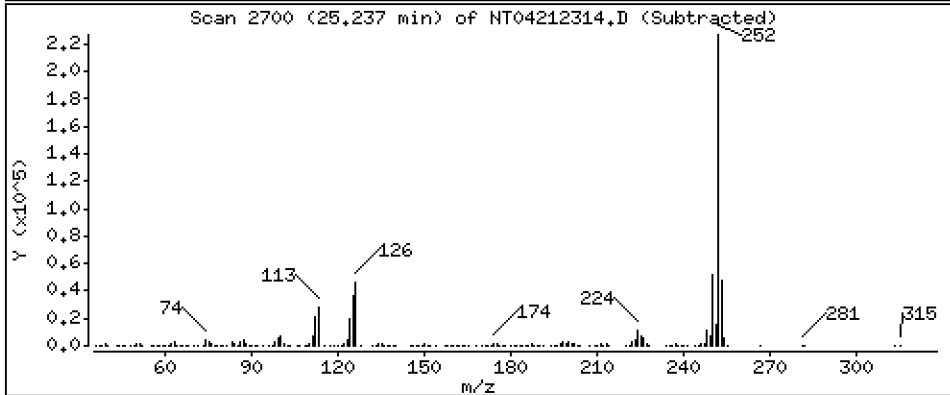
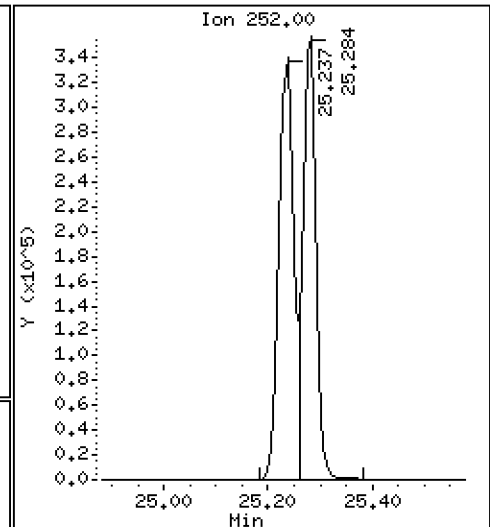
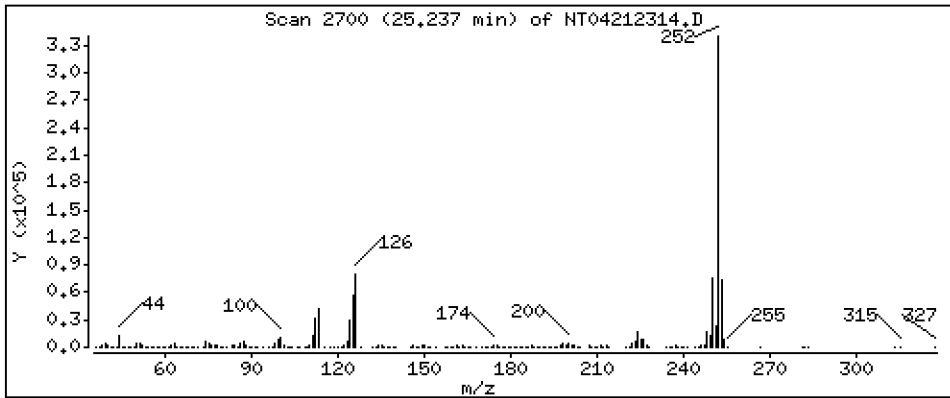
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 4,839 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

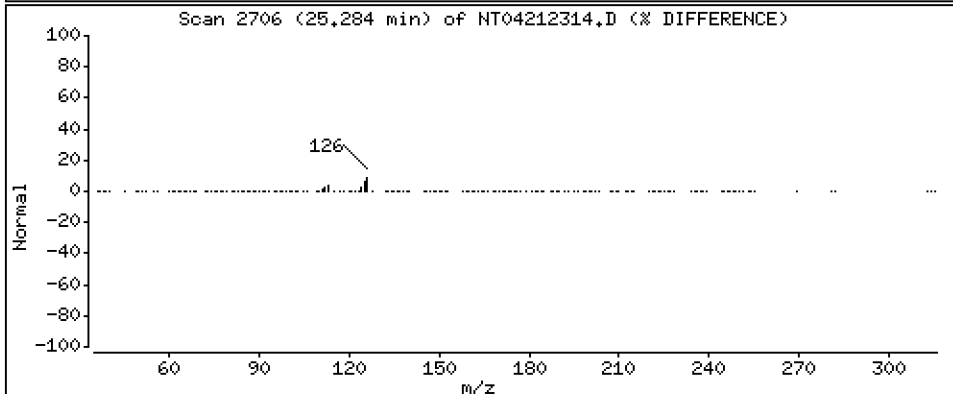
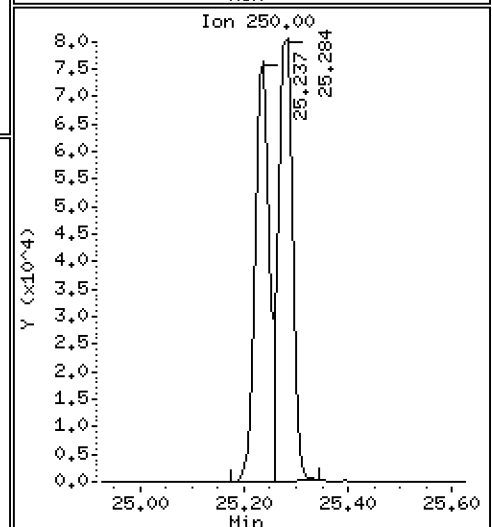
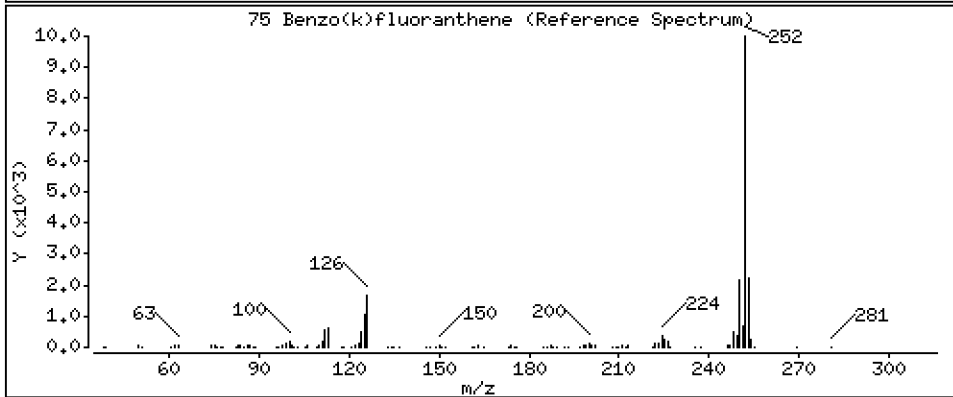
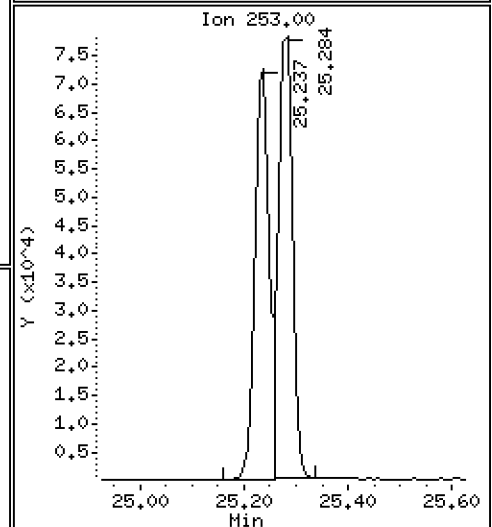
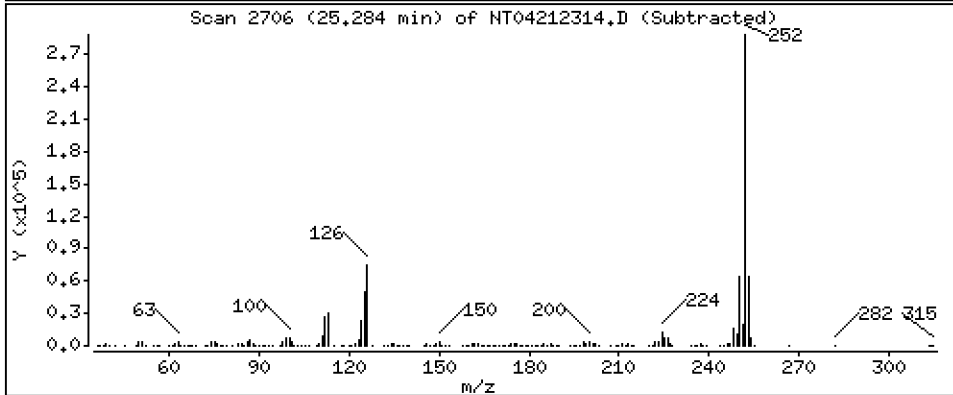
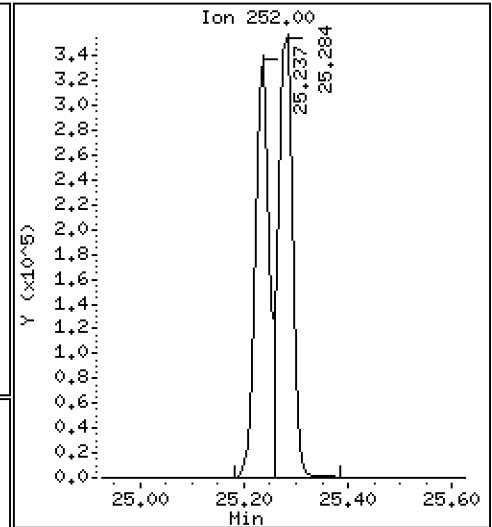
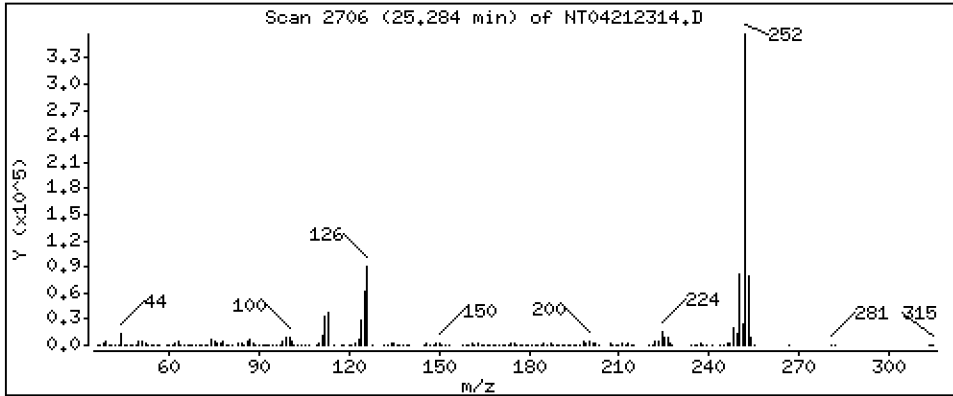
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 4,731 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

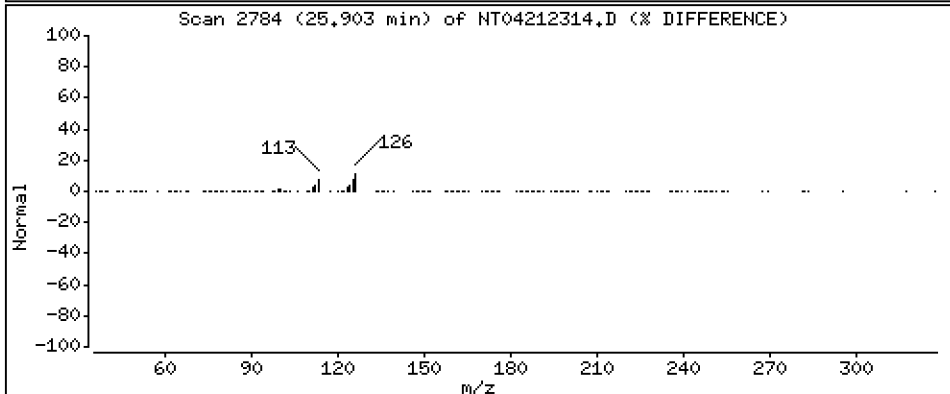
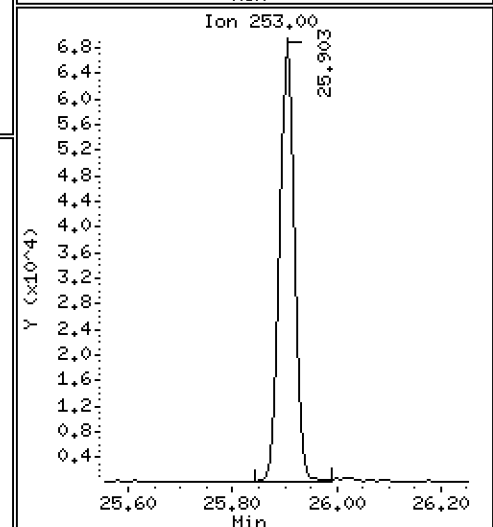
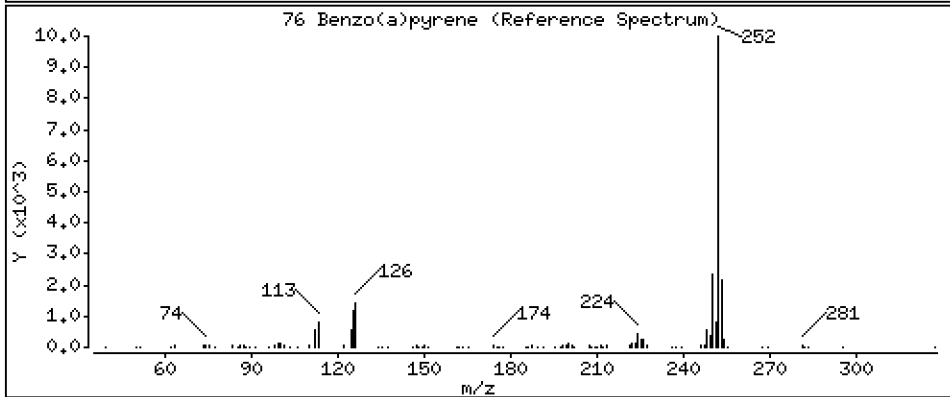
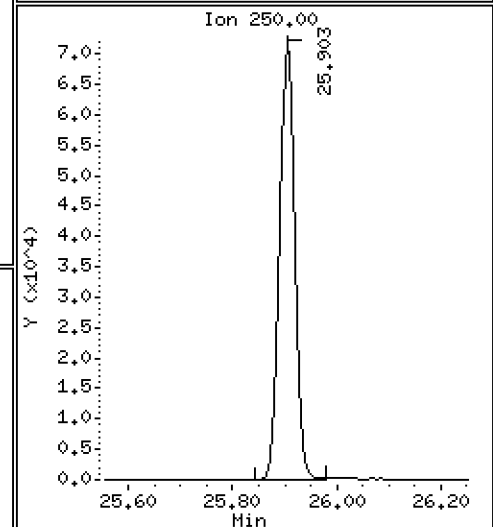
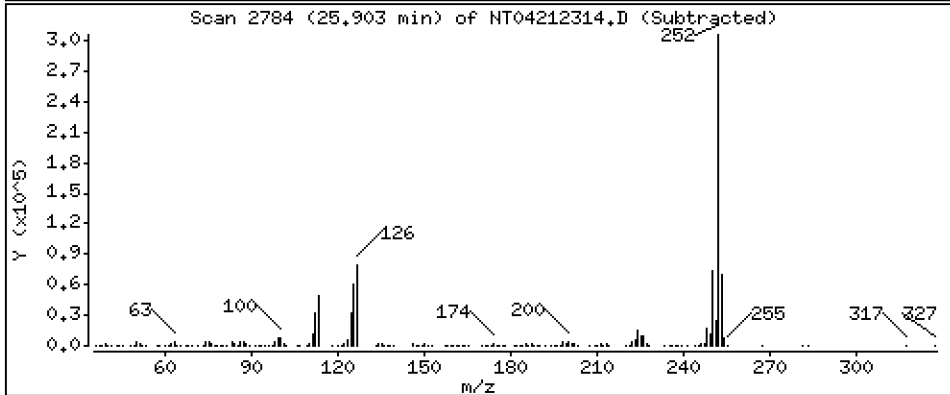
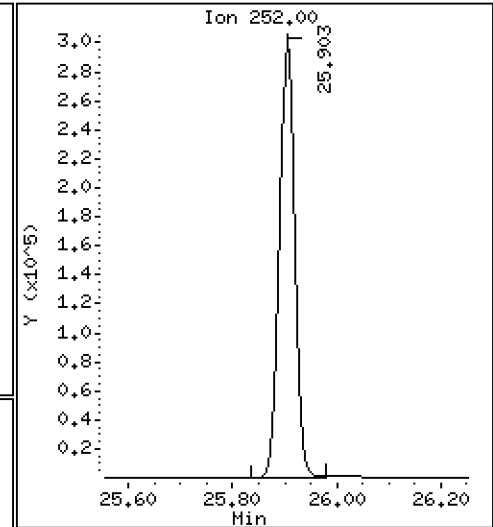
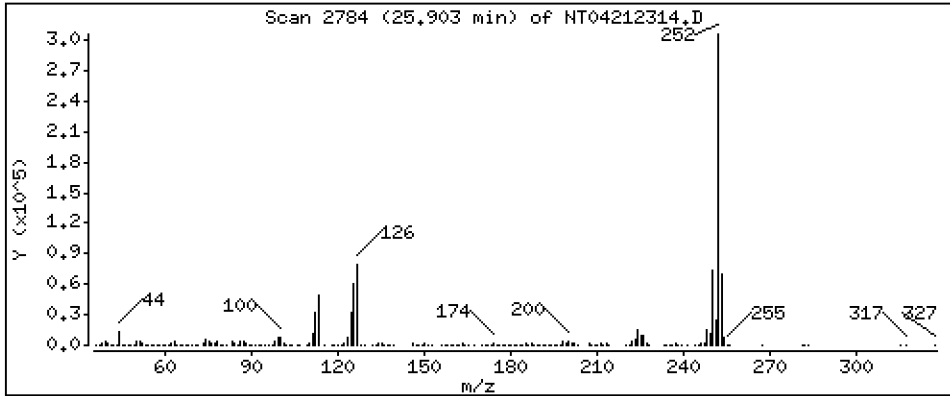
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 4,988 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

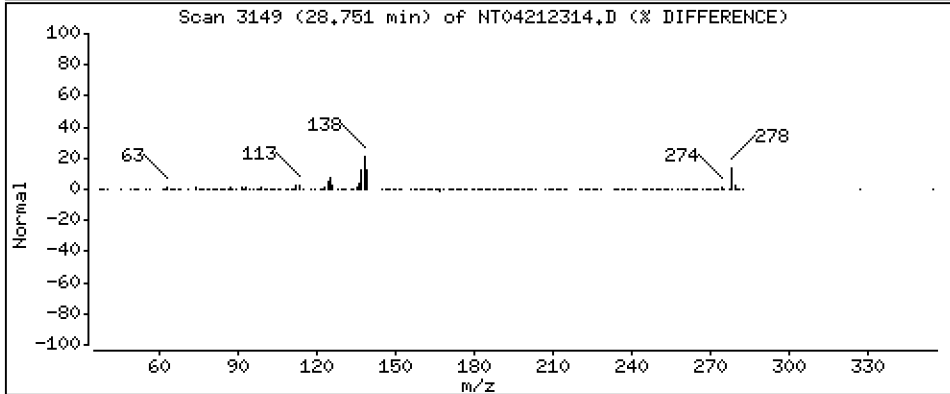
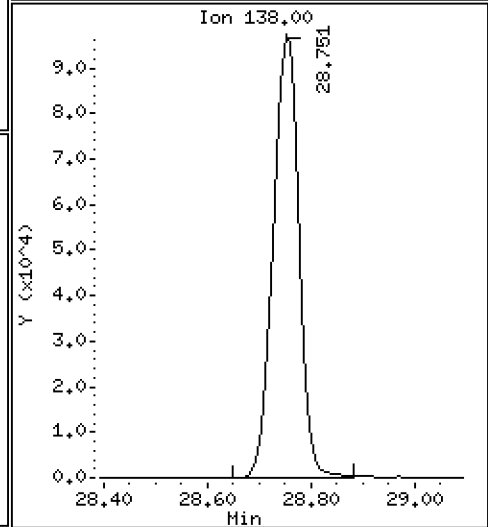
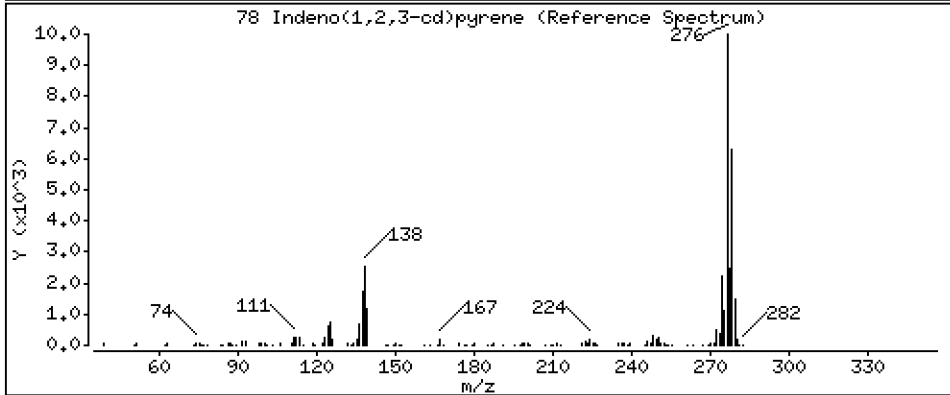
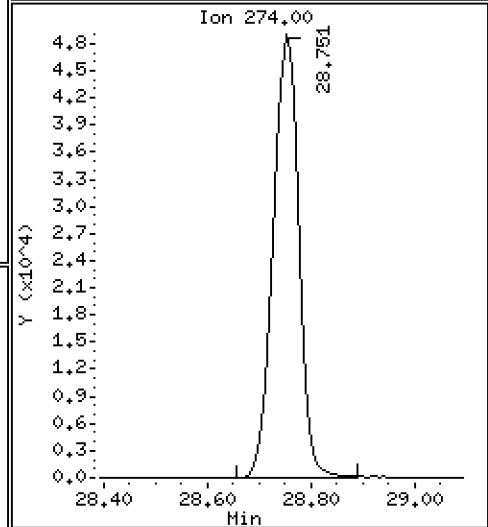
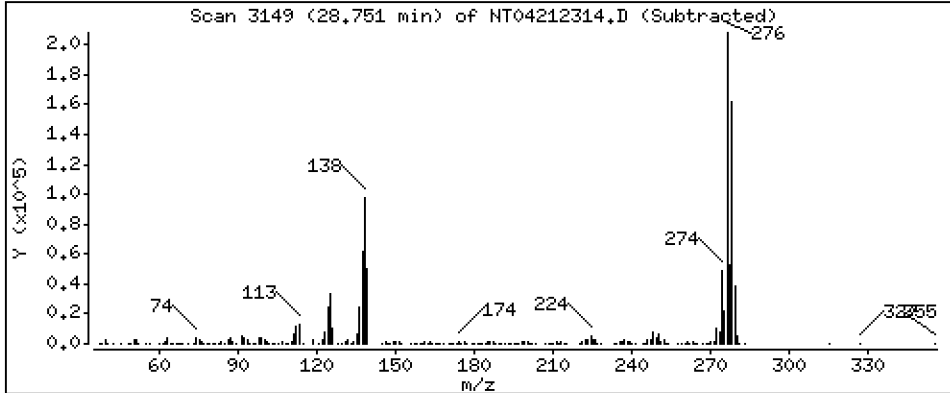
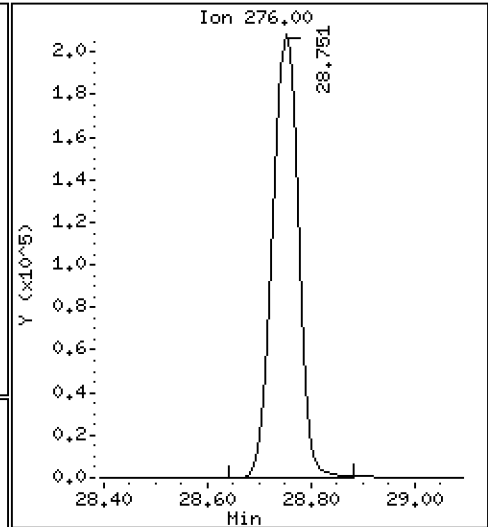
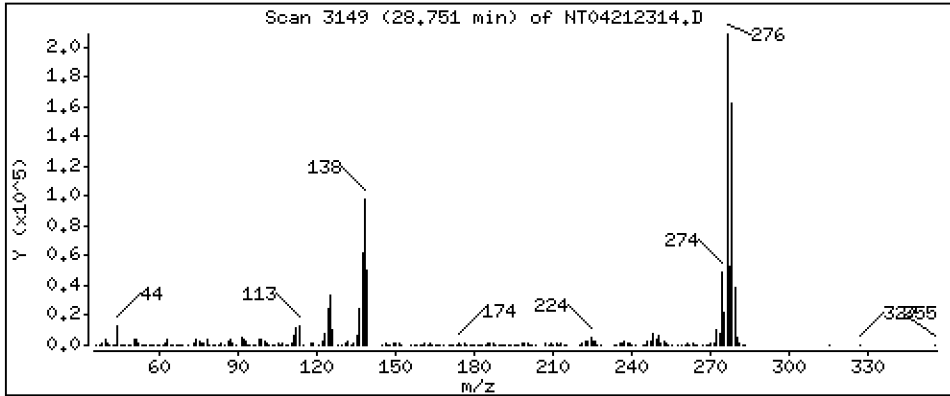
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 4,409 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

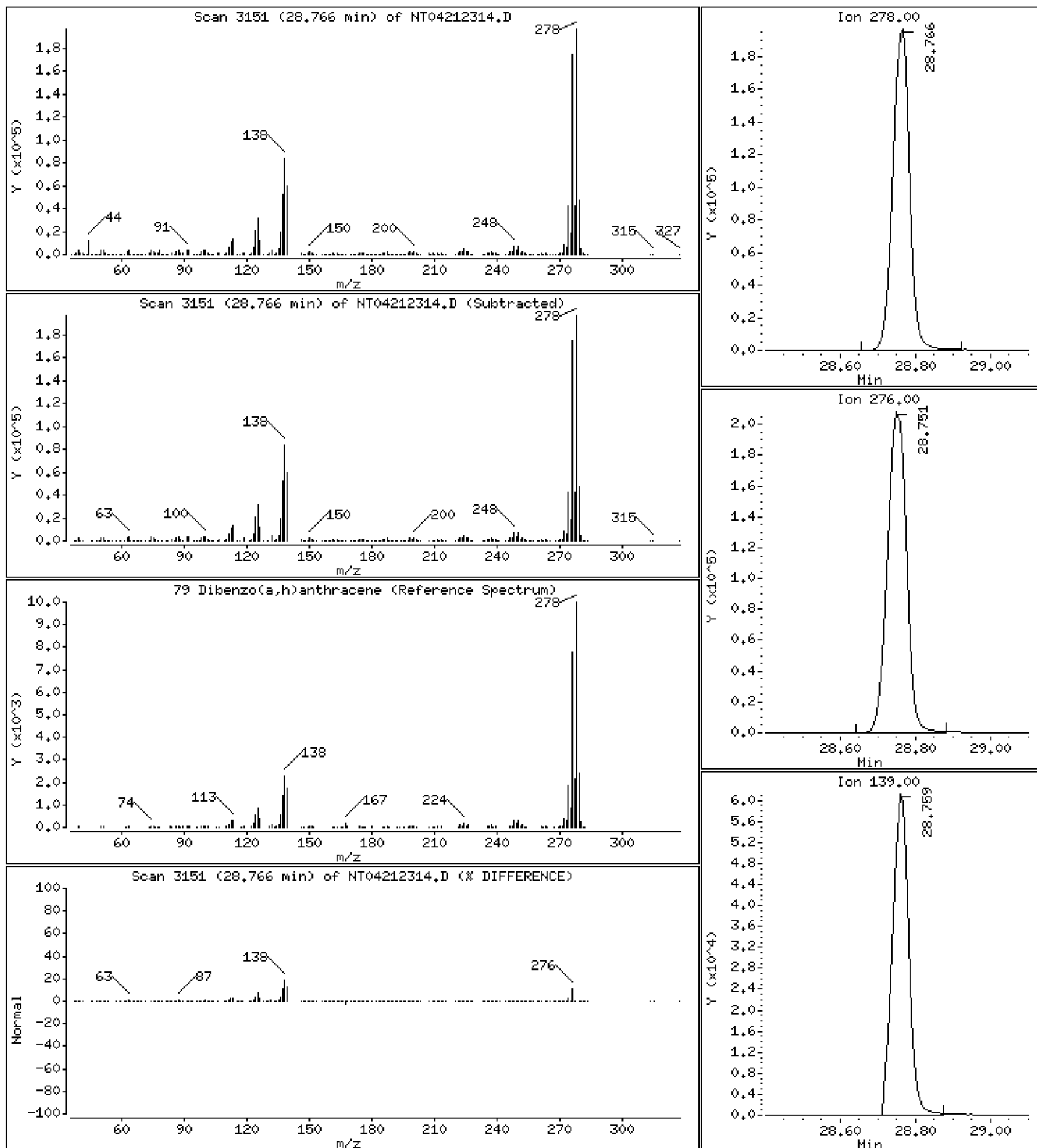
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,457 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

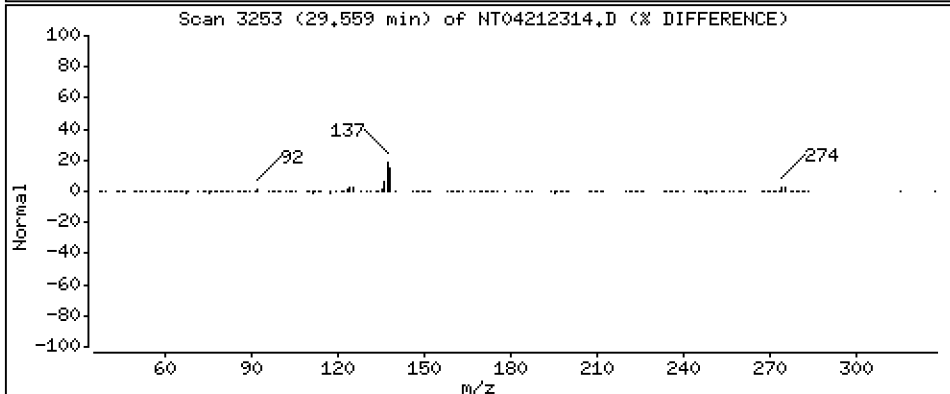
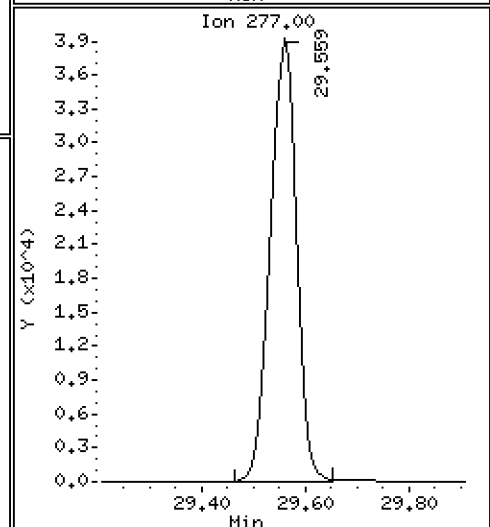
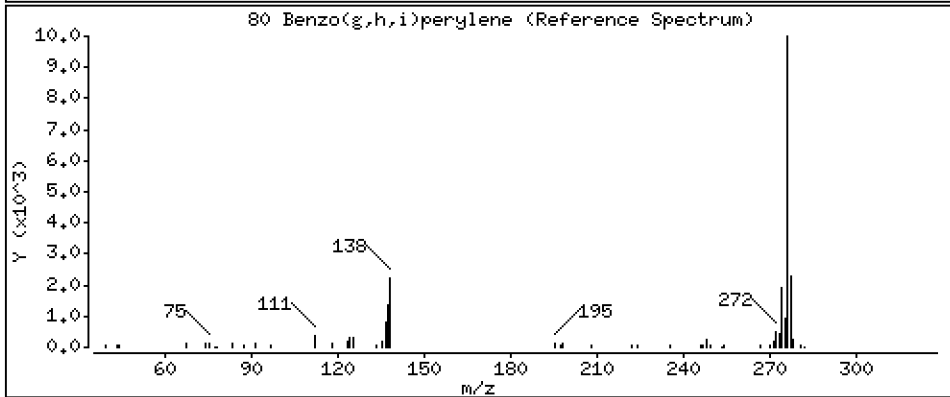
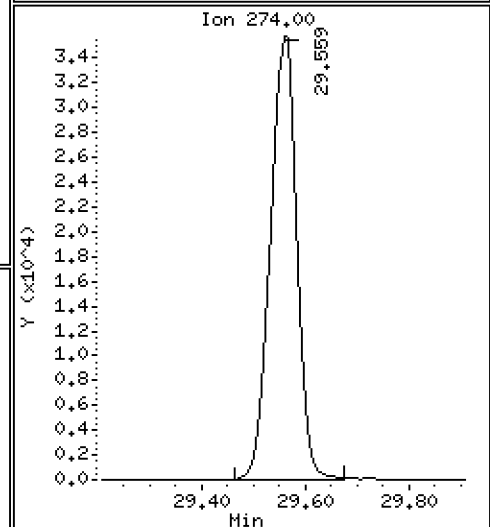
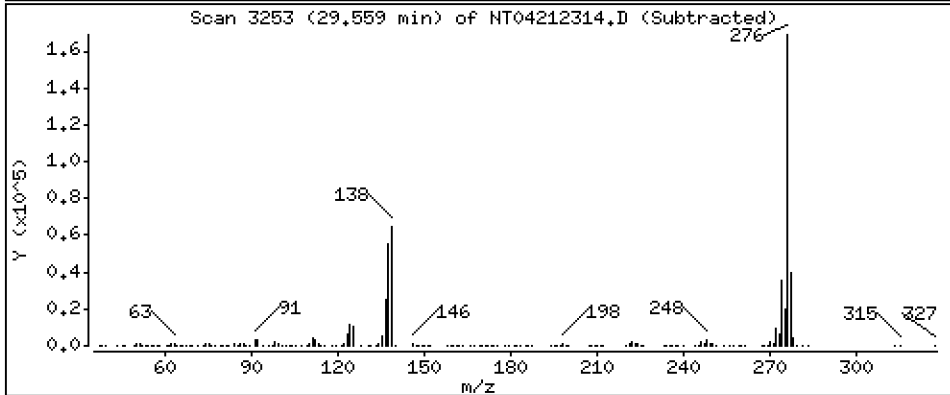
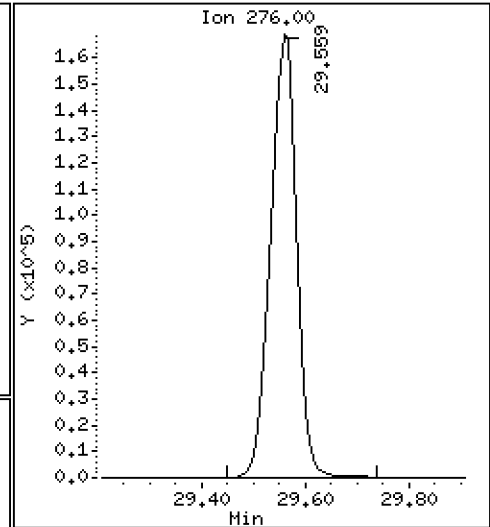
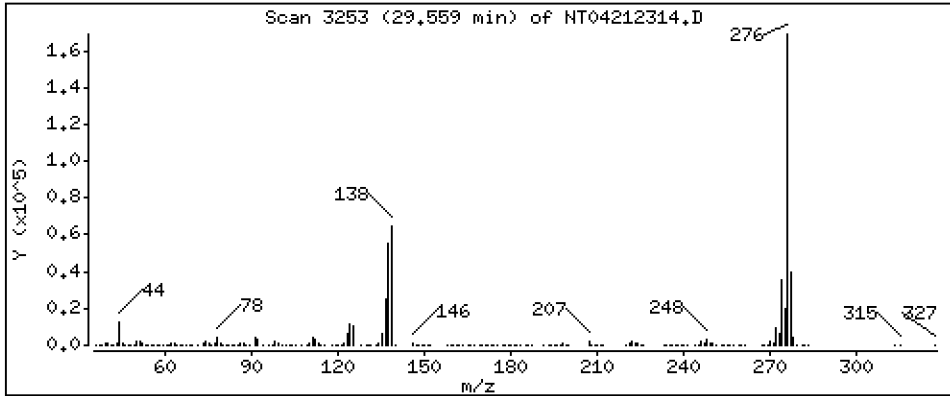
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 4,200 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

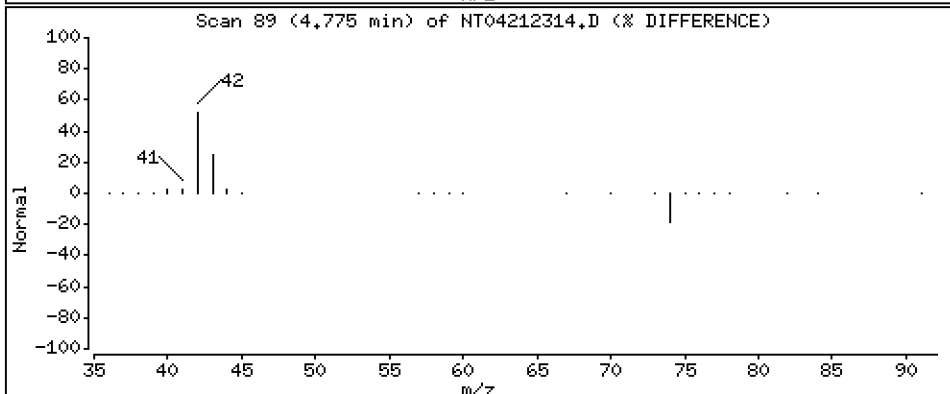
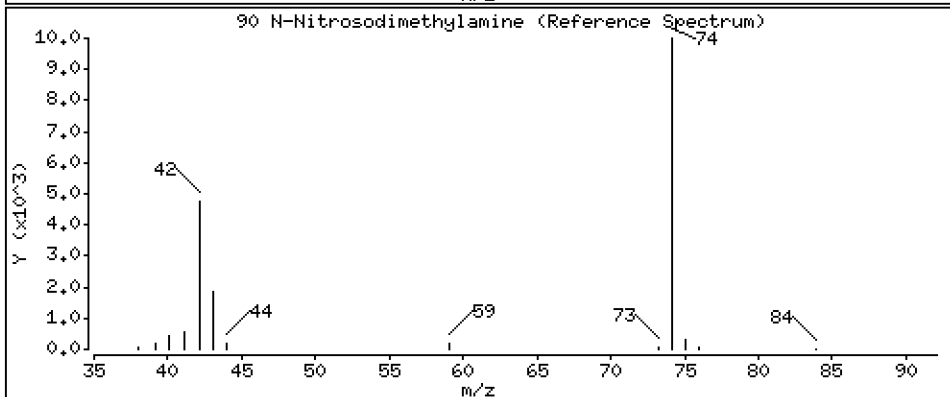
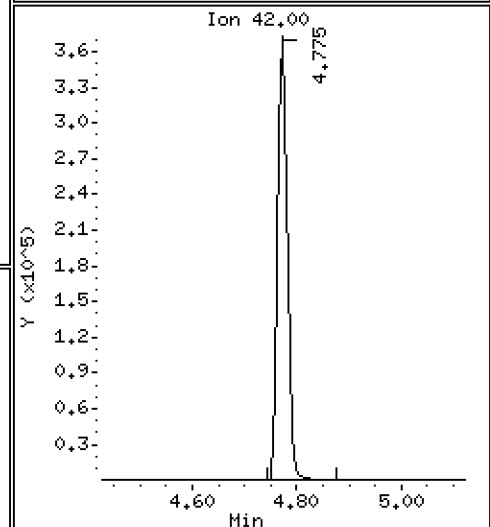
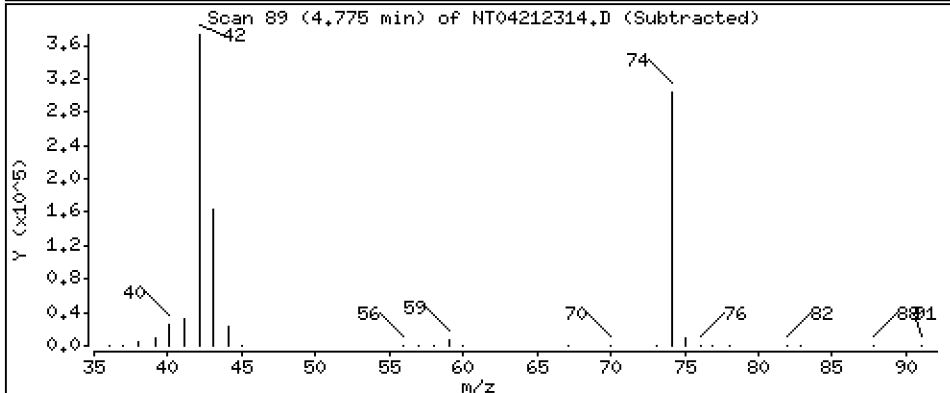
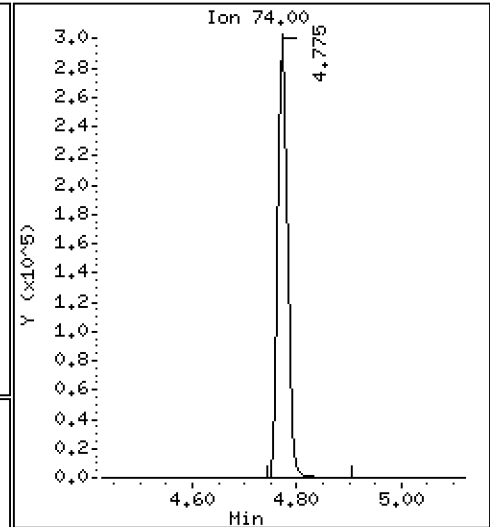
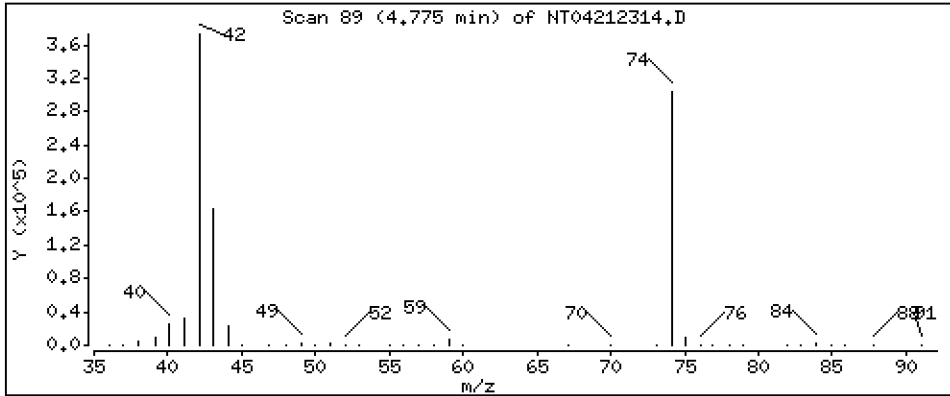
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 5.067 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

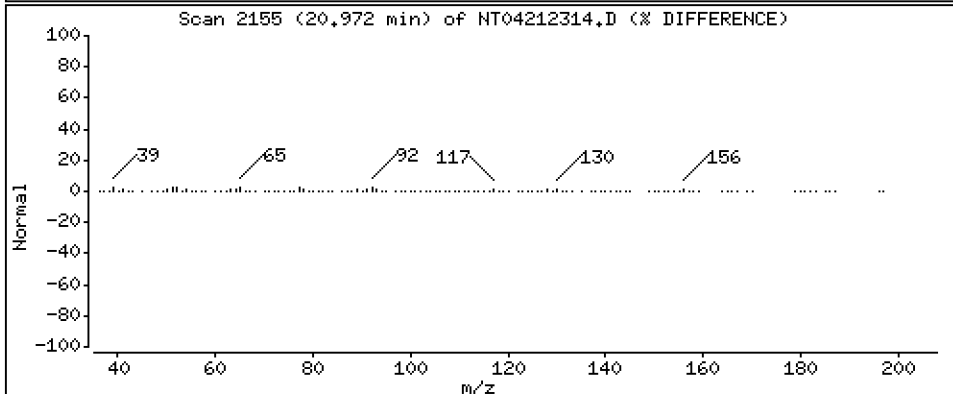
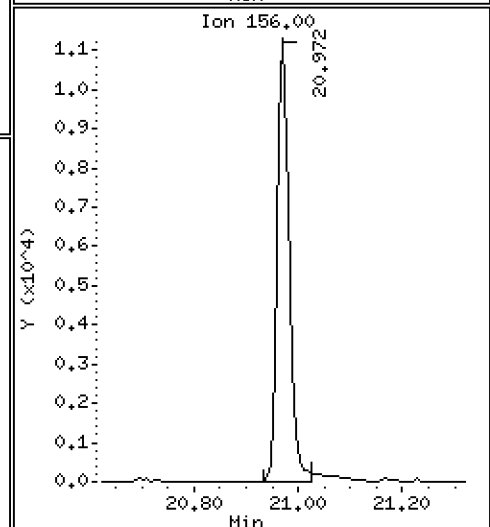
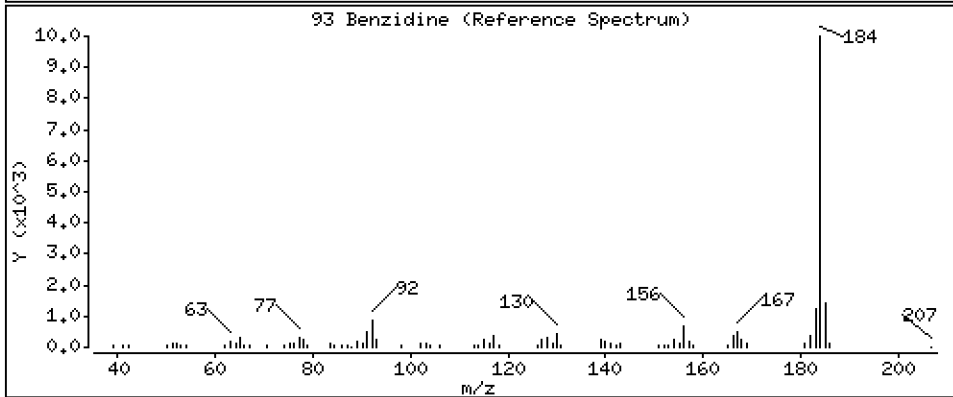
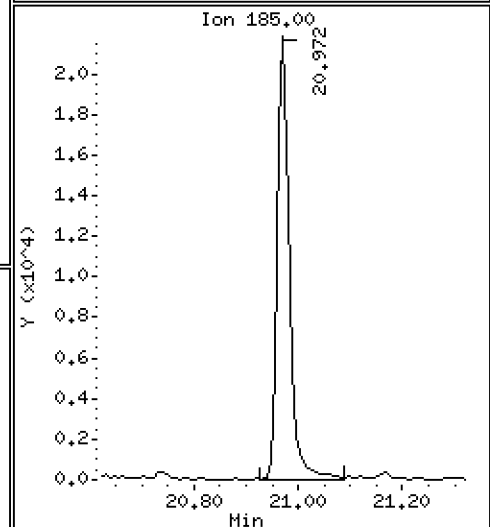
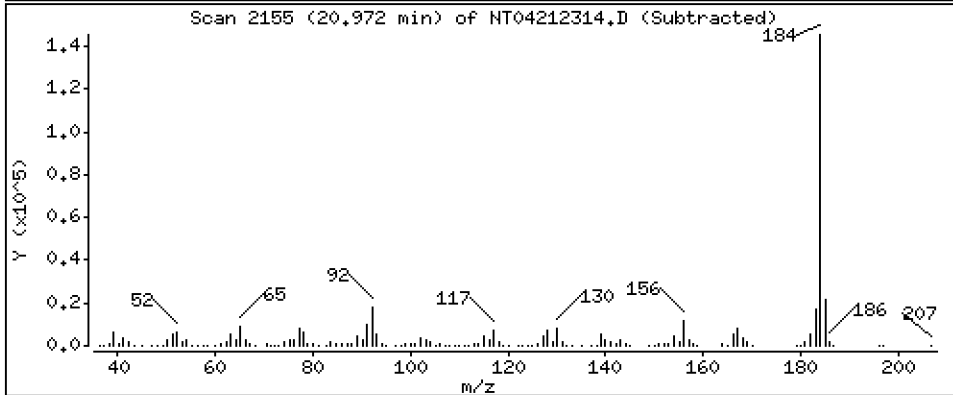
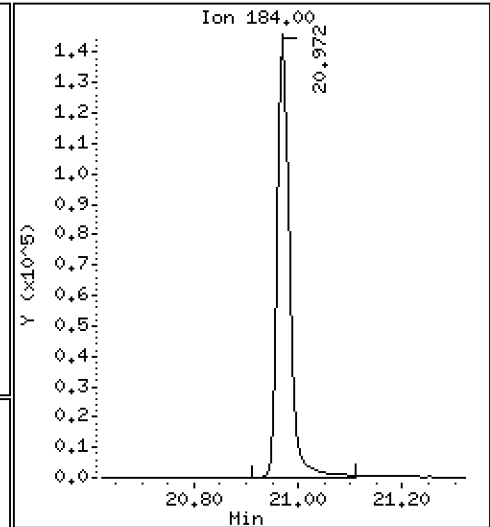
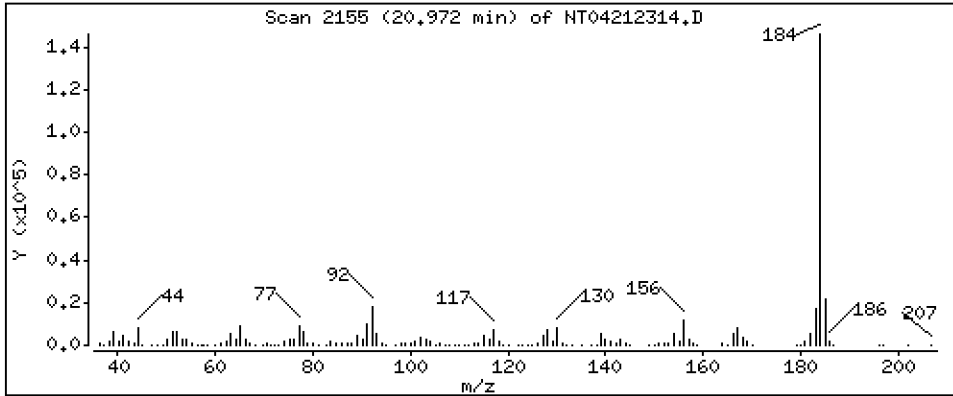
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 2,987 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

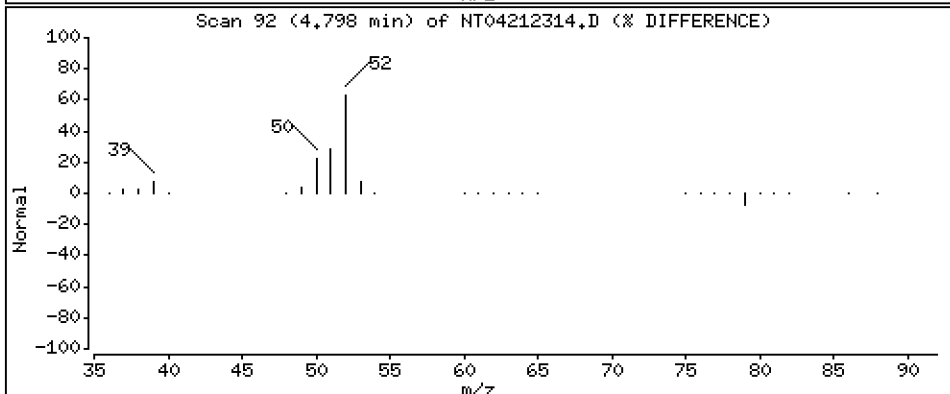
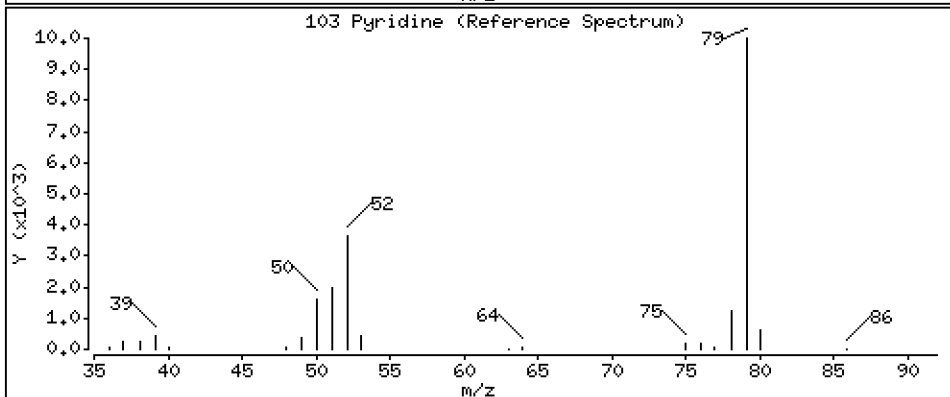
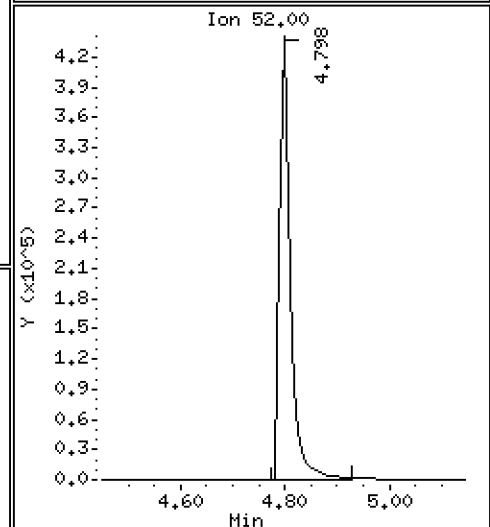
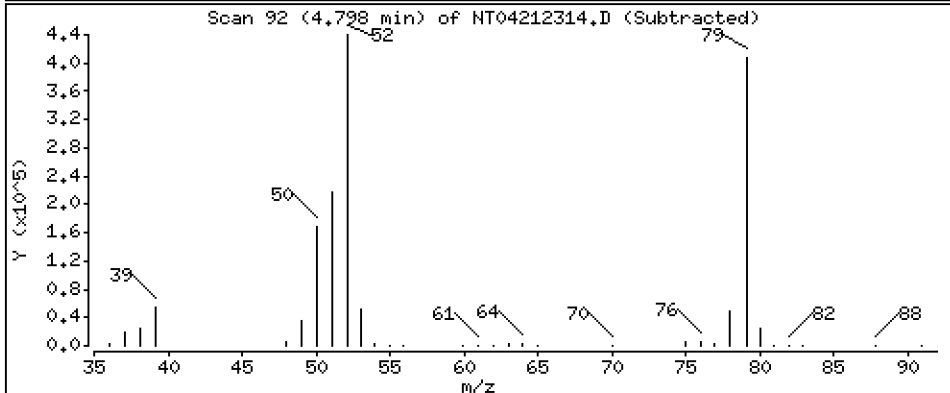
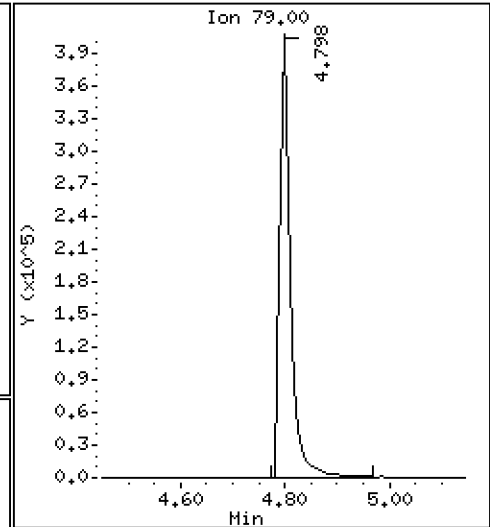
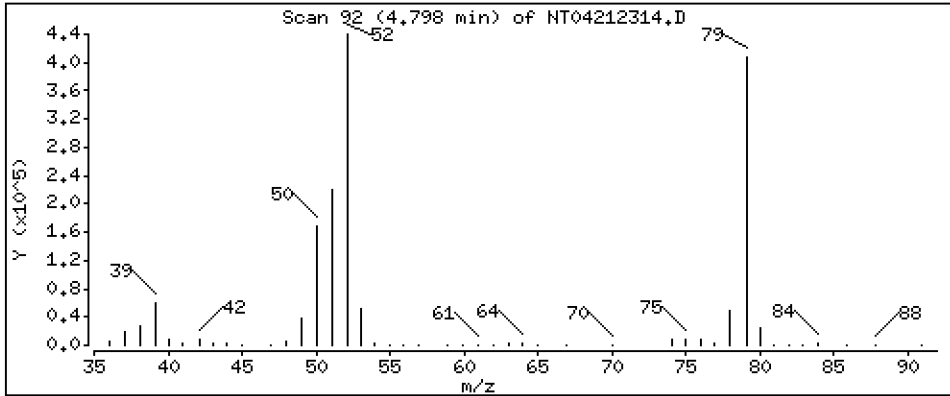
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 2,545 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

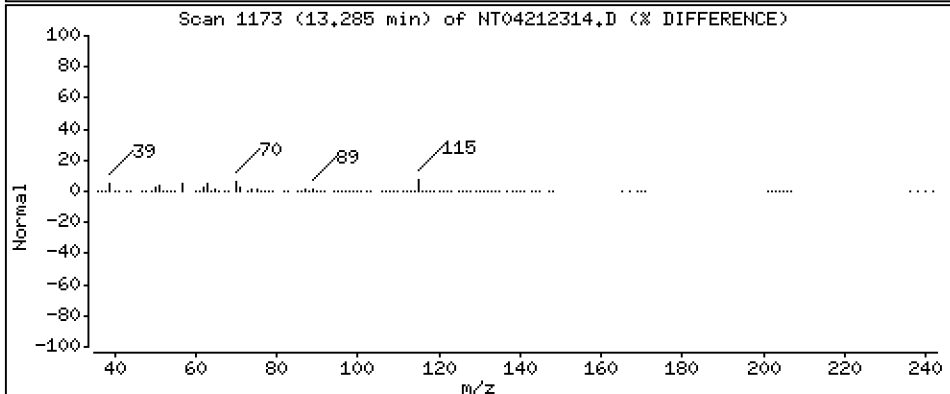
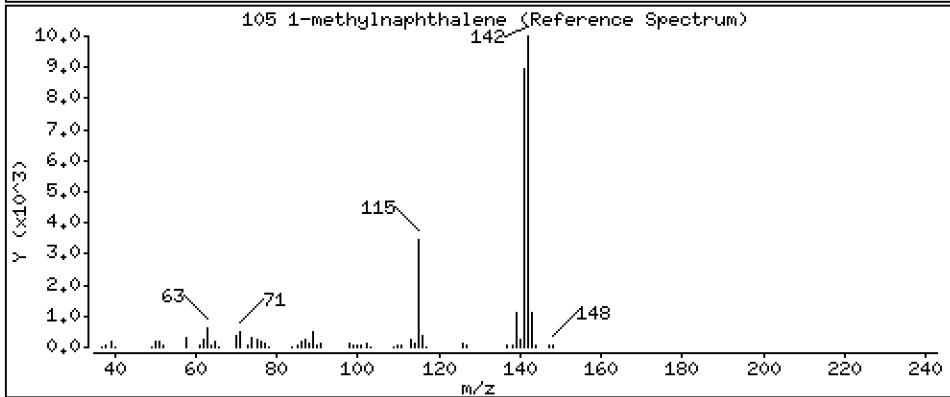
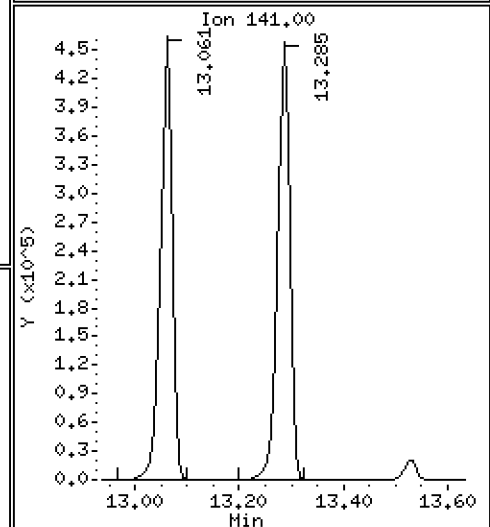
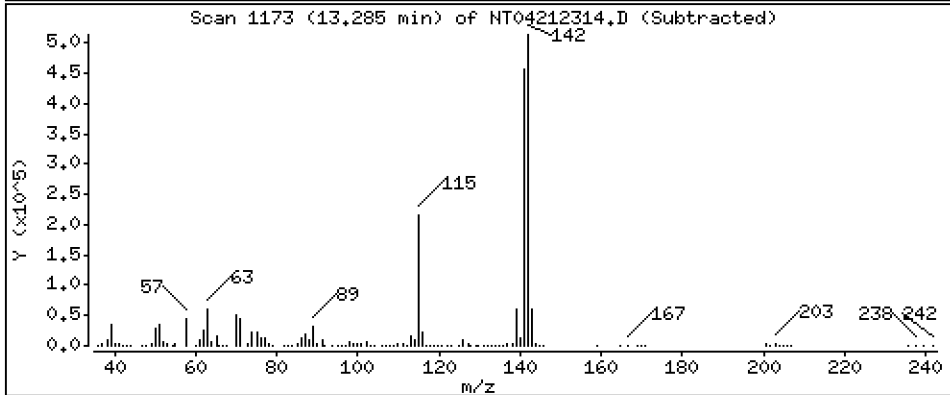
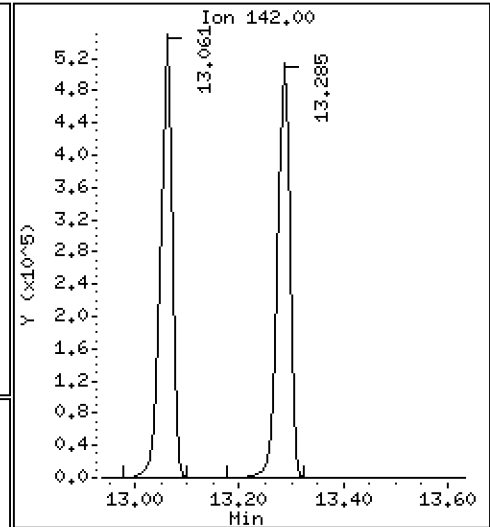
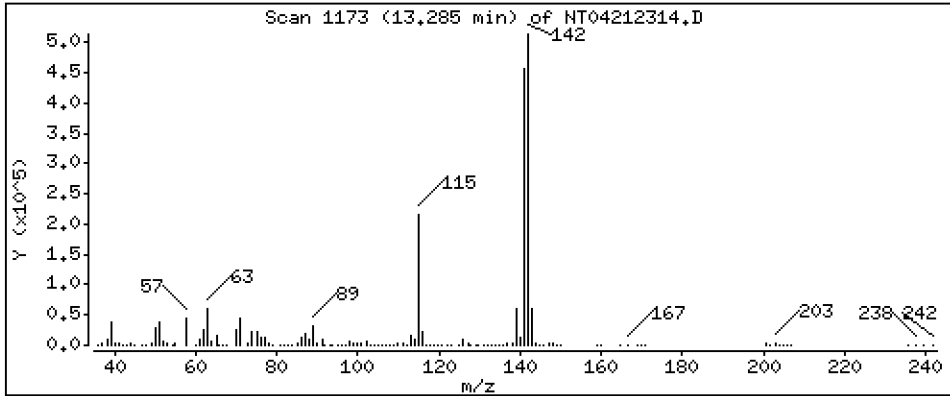
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 4,495 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

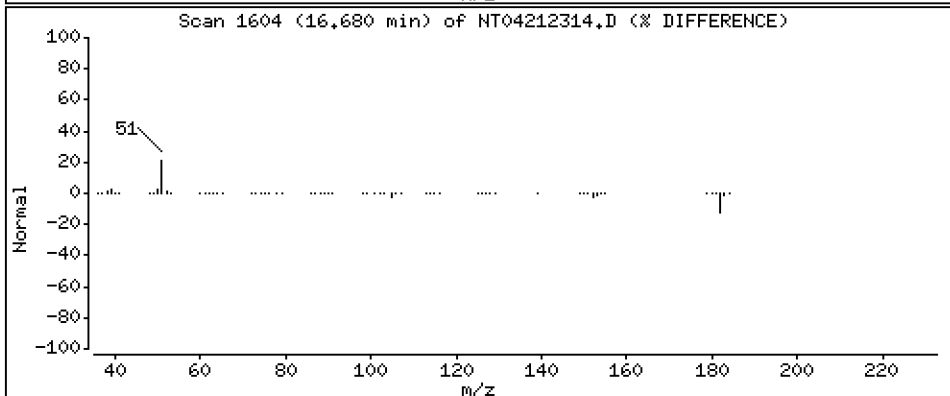
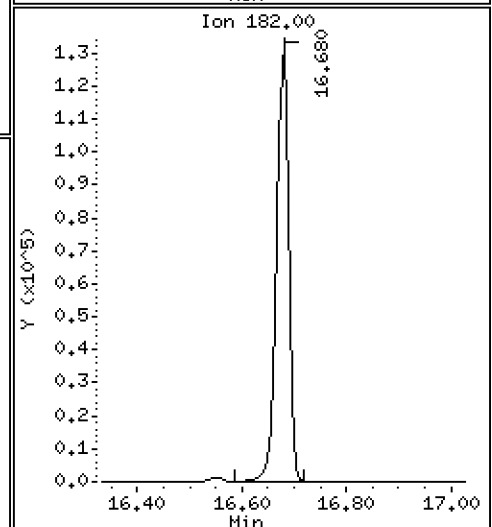
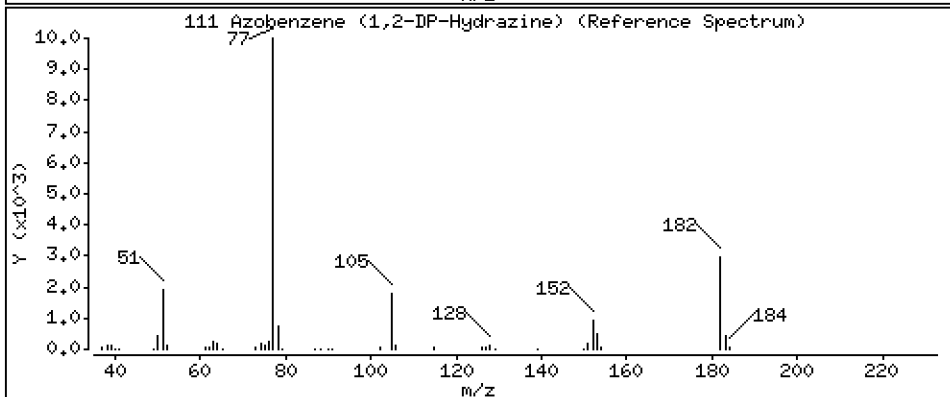
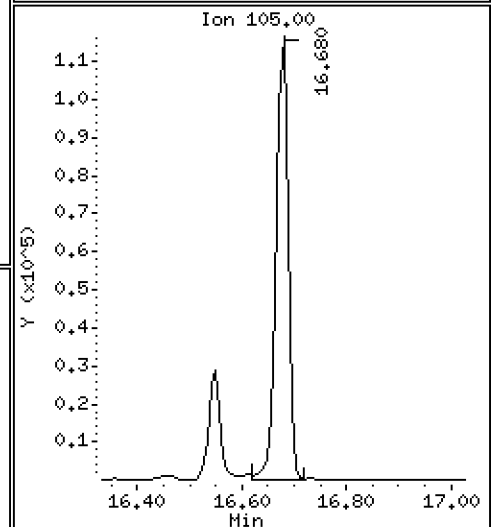
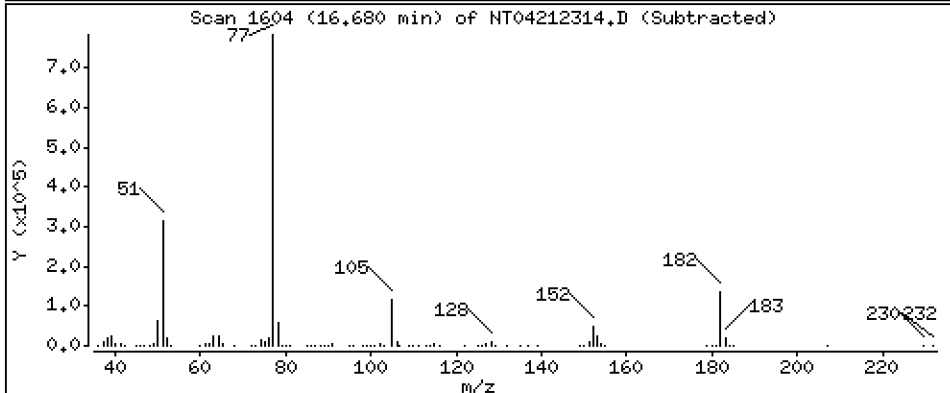
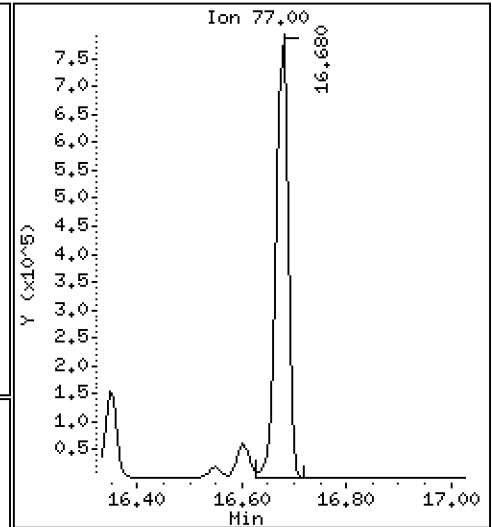
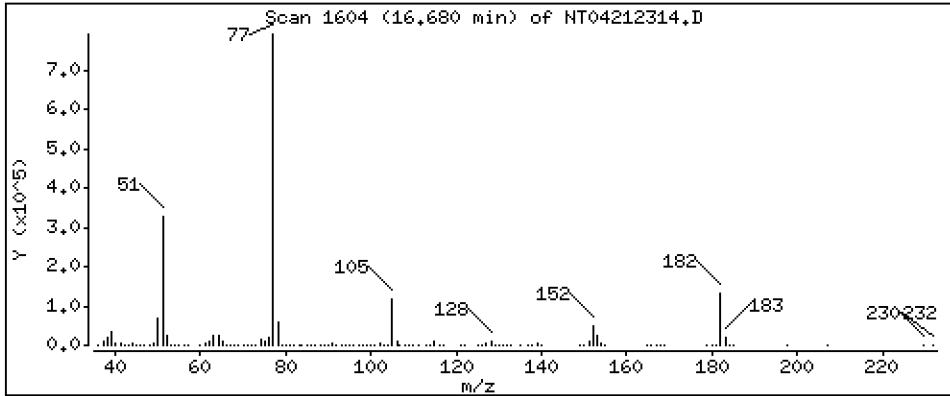
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 4,602 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

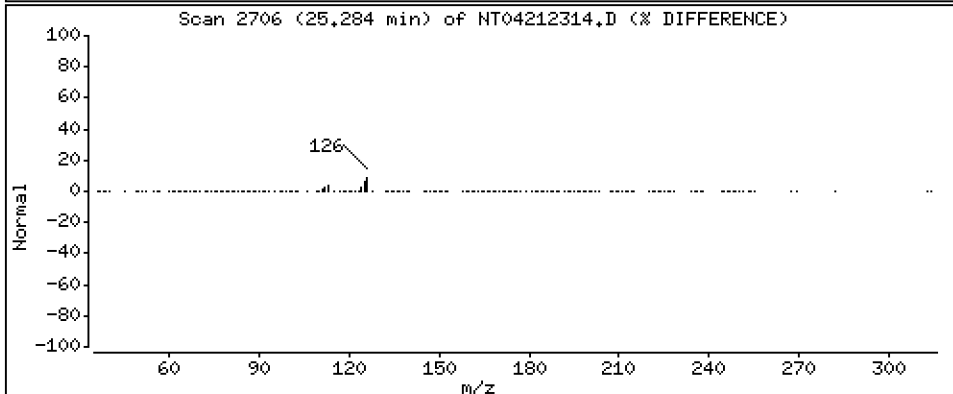
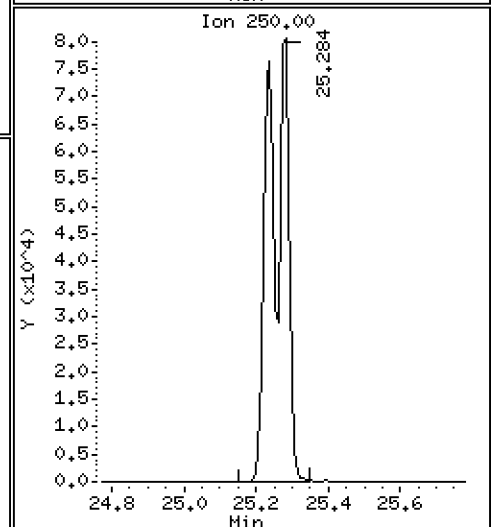
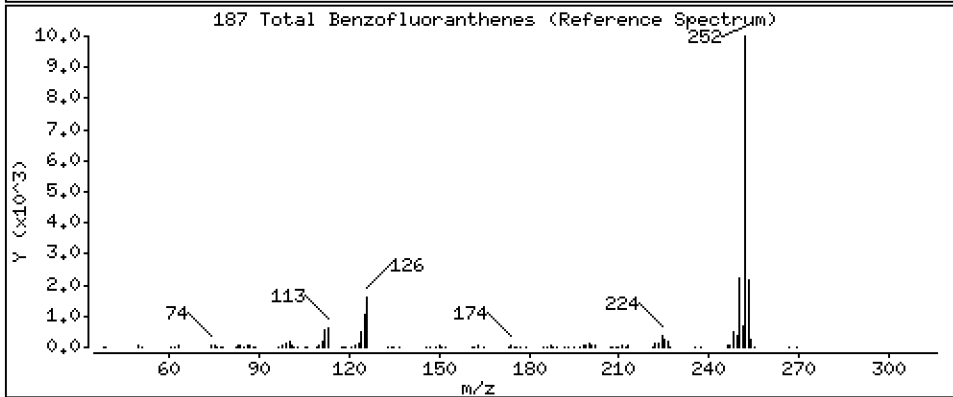
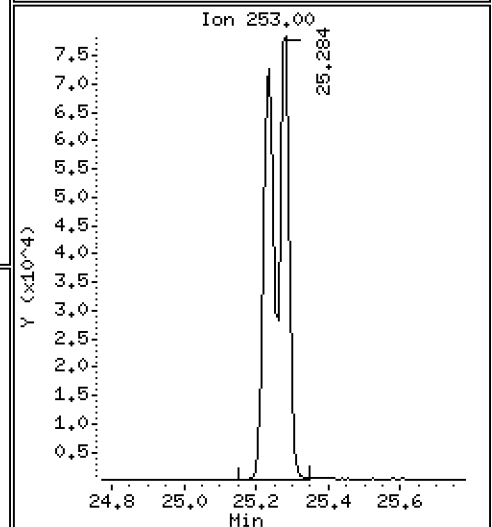
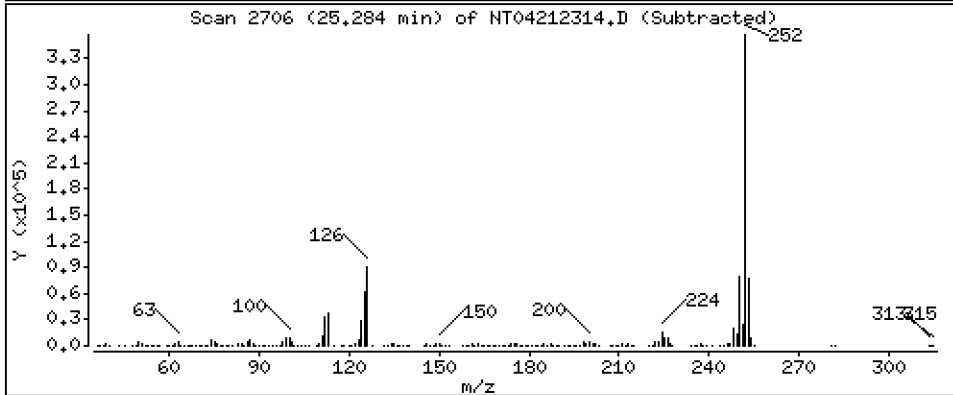
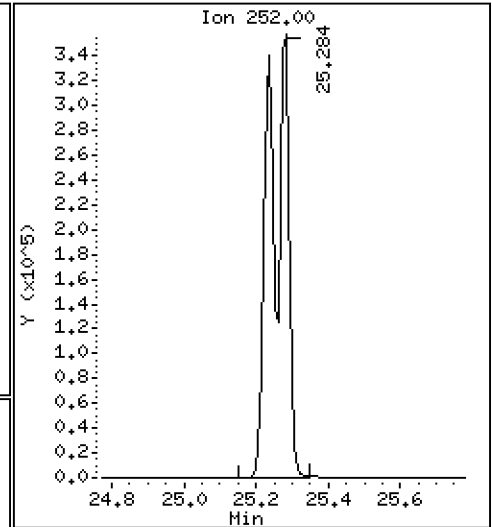
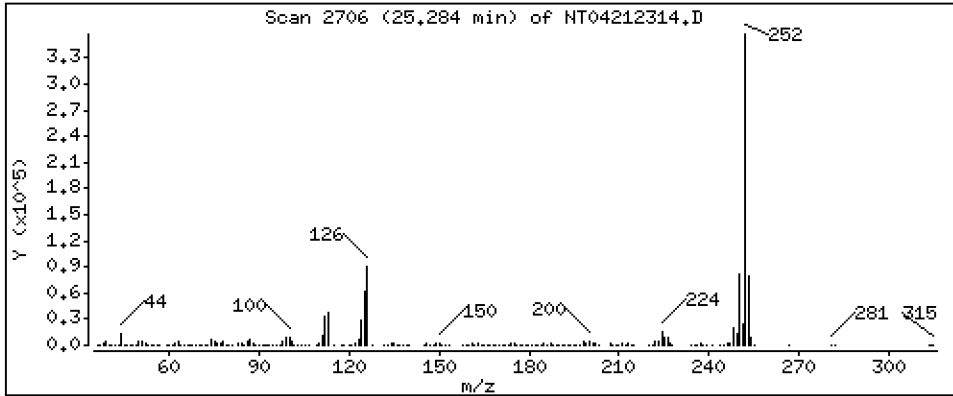
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 9,597 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

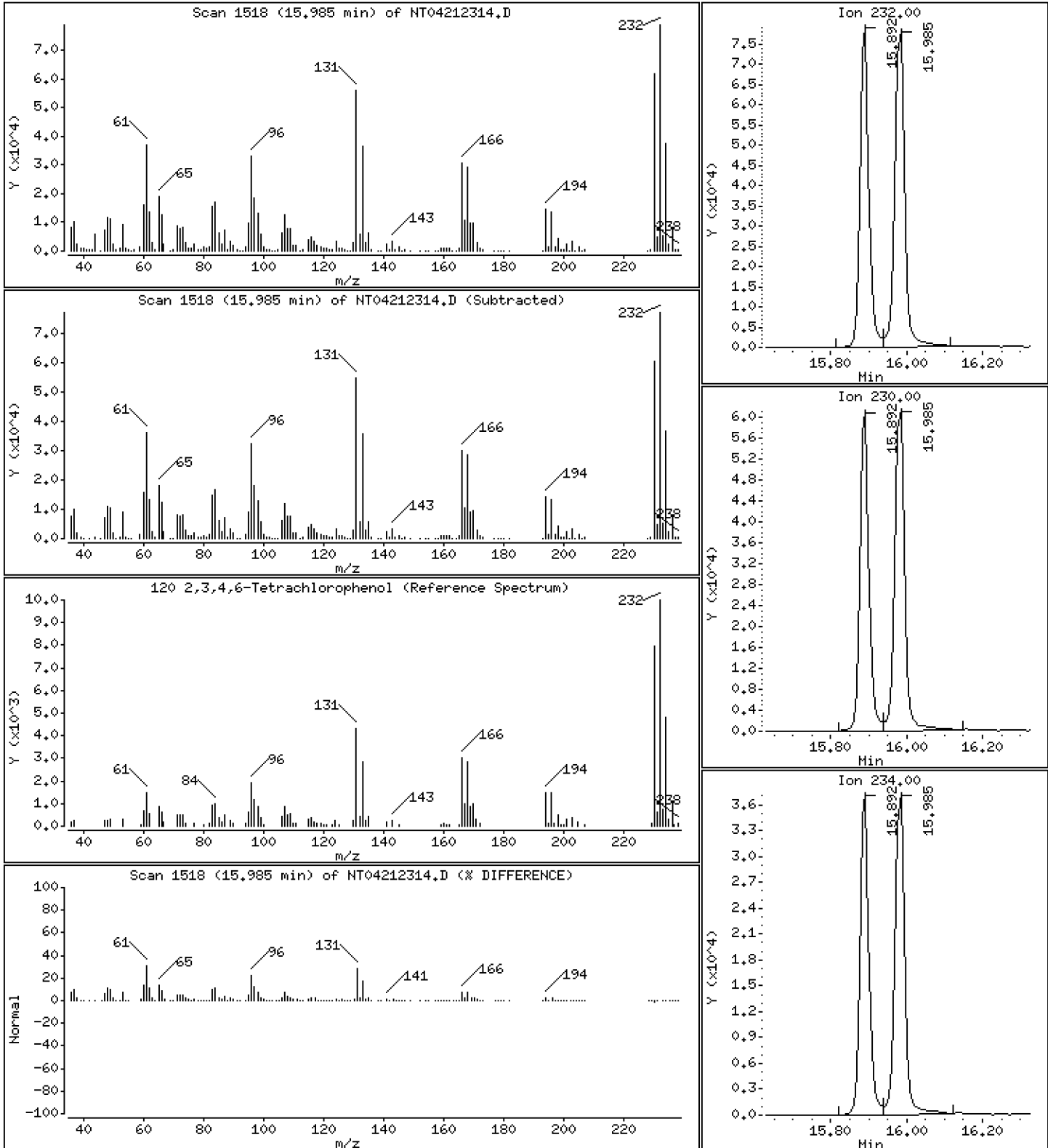
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 3,655 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212314.D  
 Lab Smp Id:  
 Inj Date : 21-APR-2023 21:16 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 11  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
=====	====		====	=====	=====	=====	=====	=====
\$ 1 2-Fluorophenol	112					Compound Not Detected.		
\$ 2 Phenol-d5	99					Compound Not Detected.		
3 Phenol	94		8.482	8.482	(0.931)	586904	4.33062	4.331
\$ 5 2-Chlorophenol-d4	132					Compound Not Detected.		
4 Bis(2-Chloroethyl)ether	93		8.660	8.660	(0.951)	524586	5.06979	5.070
6 2-Chlorophenol	128		8.768	8.775	(0.963)	422724	4.47822	4.478
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.993)	447514	4.73471	4.735
* 8 1,4-Dichlorobenzene-d4	152		9.108	9.108	(1.000)	238265	4.00000	
9 1,4-Dichlorobenzene	146		9.139	9.139	(1.003)	430582	4.77872	4.779
\$ 10 1,2-Dichlorobenzene-d4	152					Compound Not Detected.		
12 1,2-Dichlorobenzene	146		9.504	9.504	(1.043)	426176	4.75363	4.754
11 Benzyl alcohol	108		9.380	9.380	(1.030)	303477	4.90919	4.909
14 2,2'-oxybis(1-Chloropropane)	121		9.683	9.683	(1.063)	153192	5.06154	5.062
13 2-Methylphenol	108		9.605	9.605	(1.055)	379627	4.19884	4.199
17 Hexachloroethane	117		10.094	10.094	(1.108)	209265	4.87164	4.872
16 N-Nitroso-di-n-propylamine	70		9.947	9.947	(1.092)	430688	4.73681	4.737
15 4-Methylphenol	108		9.885	9.877	(1.085)	458285	4.45097	4.451
\$ 18 Nitrobenzene-d5	82					Compound Not Detected.		
19 Nitrobenzene	77		10.249	10.249	(0.883)	591951	4.71455	4.715
20 Isophorone	82		10.699	10.700	(0.921)	1088789	6.31735	6.317 (H)
21 2-Nitrophenol	139		10.886	10.886	(0.937)	229795	3.77910	3.779
22 2,4-Dimethylphenol	107		10.932	10.932	(0.941)	350731	3.70706	3.707
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	597774	5.39628	5.396
24 Benzoic acid	105		11.118	11.134	(0.957)	532824	6.80053	6.801
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	320774	3.72812	3.728
26 1,2,4-Trichlorobenzene	180		11.529	11.529	(0.993)	320315	4.53557	4.536
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	954318	4.00000	
28 Naphthalene	128		11.660	11.660	(1.004)	1234609	4.81308	4.813
29 4-Chloroaniline	127		11.783	11.784	(1.015)	418373	3.76974	3.770
30 Hexachlorobutadiene	225		12.023	12.015	(1.035)	150621	4.66501	4.665
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	390174	4.61478	4.615
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	831319	4.47405	4.474
33 Hexachlorocyclopentadiene	237		13.532	13.532	(0.887)	159262	4.78266	4.783

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196		13.679	13.679	(0.897)	189916	4.57800	4.578	
35 2,4,5-Trichlorophenol	196		13.749	13.757	(0.901)	195431	4.43440	4.434	
§ 36 2-Fluorobiphenyl	172		Compound Not Detected.						
37 2-Chloronaphthalene	162		14.058	14.058	(0.921)	698393	4.64274	4.643	
38 2-Nitroaniline	65		14.321	14.322	(0.939)	359593	4.47509	4.475	
39 Dimethylphthalate	163		14.755	14.755	(0.967)	706597	4.55357	4.554	
40 Acenaphthylene	152		14.941	14.933	(0.979)	1156951	4.81912	4.819	
41 2,6-Dinitrotoluene	165		14.902	14.902	(0.977)	164516	4.67642	4.676	
* 42 Acenaphthene-d10	164		15.258	15.250	(1.000)	452418	4.00000		
43 3-Nitroaniline	138		15.181	15.181	(0.995)	203689	4.60816	4.608	
44 Acenaphthene	153		15.320	15.320	(1.004)	691934	4.81125	4.811	
45 2,4-Dinitrophenol	184		15.389	15.397	(1.009)	35607	1.67440	1.674	
46 Dibenzofuran	168		15.644	15.644	(1.025)	927906	4.51952	4.520	
47 4-Nitrophenol	109		15.482	15.482	(1.015)	117144	4.55436	4.554	
48 2,4-Dinitrotoluene	165		15.706	15.706	(1.029)	212920	4.47005	4.470	
50 Diethylphthalate	149		16.217	16.217	(1.063)	768389	4.57476	4.575	
49 Fluorene	166		16.363	16.363	(1.072)	868346	4.77950	4.780	
51 4-Chlorophenyl-phenylether	204		16.356	16.348	(1.072)	357571	4.75807	4.758	
52 4-Nitroaniline	138		16.456	16.456	(1.079)	176660	4.51964	4.520	
53 4,6-Dinitro-2-methylphenol	198		16.548	16.548	(0.904)	68829	3.00526	3.005	
54 N-Nitrosodiphenylamine	169		16.602	16.602	(0.907)	493869	4.74847	4.748	
§ 55 2,4,6-Tribromophenol	330		Compound Not Detected.						
56 4-Bromophenyl-phenylether	248		17.358	17.358	(0.948)	161898	4.73244	4.732	
57 Hexachlorobenzene	284		17.675	17.675	(0.966)	151077	4.36687	4.367	
58 Pentachlorophenol	266		18.031	18.031	(0.985)	82309	3.74067	3.741	
* 59 Phenanthrene-d10	188		18.302	18.302	(1.000)	736482	4.00000		
60 Phenanthrene	178		18.348	18.348	(1.003)	968886	4.65282	4.653	
61 Anthracene	178		18.441	18.441	(1.008)	853683	4.27441	4.274	
62 Carbazole	167		18.774	18.774	(1.026)	775527	4.19628	4.196	
63 Di-n-butylphthalate	149		19.563	19.563	(1.069)	1341607	4.76191	4.762	
64 Fluoranthene	202		20.739	20.739	(0.888)	973087	5.06753	5.068	
65 Pyrene	202		21.165	21.165	(0.906)	975738	4.92043	4.920	
§ 66 Terphenyl-d14	244		Compound Not Detected.						
67 Butylbenzylphthalate	149		22.365	22.365	(0.958)	501431	4.29069	4.291	
68 Benzo(a)anthracene	228		23.325	23.325	(0.999)	693668	4.67137	4.671	
* 69 Chrysene-d12	240		23.356	23.356	(1.000)	415993	4.00000		
70 3,3'-Dichlorobenzidine	252		23.278	23.278	(0.997)	446471	9.38140	9.381	
71 Chrysene	228		23.402	23.394	(1.002)	653516	4.71863	4.719	
72 bis(2-Ethylhexyl)phthalate	149		24.385	24.385	(1.000)	1188340	4.89312	4.893	
* 134 Di-n-octylphthalate-d4	153		24.378	24.370	(1.000)	909750	4.00000		
73 Di-n-octylphthalate	149		24.385	24.385	(1.000)	1188340	4.89312	4.893	
74 Benzo(b)fluoranthene	252		25.237	25.229	(0.970)	678474	4.83853	4.839	
75 Benzo(k)fluoranthene	252		25.283	25.276	(0.972)	650971	4.73139	4.731	
76 Benzo(a)pyrene	252		25.903	25.903	(0.996)	591029	4.98760	4.988	
* 77 Perylene-d12	264		26.019	26.027	(1.000)	420543	4.00000		
78 Indeno(1,2,3-cd)pyrene	276		28.750	28.743	(1.105)	722537	4.40939	4.409	
79 Dibenzo(a,h)anthracene	278		28.766	28.750	(1.106)	597382	4.45679	4.457	
80 Benzo(g,h,i)perylene	276		29.558	29.558	(1.136)	582685	4.20046	4.200	
90 N-Nitrosodimethylamine	74		4.774	4.774	(0.524)	362967	5.06652	5.067	
91 Aniline	93		Compound Not Detected.						
93 Benzidine	184		20.971	20.971	(0.898)	226386	2.98741	2.987	
103 Pyridine	79		4.797	4.797	(0.527)	539756	2.54524	2.545	
105 1-methylnaphthalene	142		13.284	13.285	(1.144)	806496	4.49478	4.495	
111 Azobenzene (1,2-DP-Hydrazine)	77		16.679	16.679	(1.093)	1192930	4.60243	4.602	



Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.283	25.276	(0.972)	1274063	9.59749	9.597
120 2,3,4,6-Tetrachlorophenol	232	15.984	15.977	(1.048)	145878	3.65464	3.655

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212314.D Calibration Time: 17:00  
 Lab Smp Id:  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	238265	-0.36
27 Naphthalene-d8	954450	477225	1908900	954318	-0.01
42 Acenaphthene-d10	448699	224350	897398	452418	0.83
59 Phenanthrene-d10	711389	355695	1422778	736482	3.53
69 Chrysene-d12	410209	205105	820418	415993	1.41
134 Di-n-octylphthala	929005	464503	1858010	909750	-2.07
77 Perylene-d12	424249	212125	848498	420543	-0.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.09
27 Naphthalene-d8	11.61	11.11	12.11	11.61	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	-0.00
69 Chrysene-d12	23.36	22.86	23.86	23.36	-0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.38	0.03
77 Perylene-d12	26.03	25.53	26.53	26.02	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212314.D

Lab ID:

nt14.i, ABN.m, 21-APR-2023 21:16

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

\*\* FIRST SURROGATE NOT FOUND. ICAL Check not performed \*\*

RRT CHECK

RRT CCV RRT DELTA COMPOUND

---

NONE

RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



**SECOND-SOURCE  
CALIBRATION VERIFICATION**

**EPA 8270E**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00062

**Laboratory ID:** SLD0357-SCV1

**Sequence:** SLD0357

**Standard ID:** K010066

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Phenol	5.0000	4.3	-13.4	20.00
bis(2-chloroethyl) ether	5.0000	5.1	1.4	20.00
2-Chlorophenol	5.0000	4.5	-10.4	20.00
1,3-Dichlorobenzene	5.0000	4.7	-5.3	20.00
1,4-Dichlorobenzene	5.0000	4.8	-4.4	20.00
1,2-Dichlorobenzene	5.0000	4.8	-4.9	20.00
Benzyl Alcohol	5.0000	4.9	-1.8	20.00
2,2'-Oxybis(1-chloropropane)	5.0000	5.1	1.2	20.00
2-Methylphenol	5.0000	4.2	-16.0	20.00
Hexachloroethane	5.0000	4.9	-2.6	20.00
N-Nitroso-di-n-Propylamine	5.0000	4.7	-5.3	20.00
4-Methylphenol	5.0000	4.5	-11.0	20.00
Nitrobenzene	5.0000	4.7	-5.7	20.00
Isophorone	5.0000	6.3	26.3 *	20.00
2-Nitrophenol	5.0000	3.8	-24.4 *	20.00
2,4-Dimethylphenol	5.0000	3.7	-25.9 *	20.00
Bis(2-Chloroethoxy)methane	5.0000	5.4	7.9	20.00
2,4-Dichlorophenol	5.0000	3.7	-25.4 *	20.00
1,2,4-Trichlorobenzene	5.0000	4.5	-9.3	20.00
Naphthalene	5.0000	4.8	-3.7	20.00
Benzoic acid	10.0000	6.8	-32.0 *	20.00
4-Chloroaniline	5.0000	3.8	-24.6 *	20.00
Hexachlorobutadiene	5.0000	4.7	-6.7	20.00
4-Chloro-3-Methylphenol	5.0000	4.6	-7.7	20.00
2-Methylnaphthalene	5.0000	4.5	-10.5	20.00
Hexachlorocyclopentadiene	5.0000	4.8	-4.3	20.00
2,4,6-Trichlorophenol	5.0000	4.6	-8.4	20.00
2,4,5-Trichlorophenol	5.0000	4.4	-11.3	20.00
2-Chloronaphthalene	5.0000	4.6	-7.1	20.00
2-Nitroaniline	5.0000	4.5	-10.5	20.00
Acenaphthylene	5.0000	4.8	-3.6	20.00
Dimethylphthalate	5.0000	4.6	-8.9	20.00



**SECOND-SOURCE  
CALIBRATION VERIFICATION**

**EPA 8270E**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00062

**Laboratory ID:** SLD0357-SCV1

**Sequence:** SLD0357

**Standard ID:** K010066

2,6-Dinitrotoluene	5.0000	4.7	-6.5	20.00
Acenaphthene	5.0000	4.8	-3.8	20.00
3-Nitroaniline	5.0000	4.6	-7.8	20.00
2,4-Dinitrophenol	5.0000	1.7	-66.5 *	20.00
Dibenzofuran	5.0000	4.5	-9.6	20.00
4-Nitrophenol	5.0000	4.6	-8.9	20.00
2,4-Dinitrotoluene	5.0000	4.5	-10.6	20.00
Fluorene	5.0000	4.8	-4.4	20.00
4-Chlorophenylphenyl ether	5.0000	4.8	-4.8	20.00
Diethyl phthalate	5.0000	4.6	-8.5	20.00
4-Nitroaniline	5.0000	4.5	-9.6	20.00
4,6-Dinitro-2-methylphenol	5.0000	3.0	-39.9 *	20.00
N-Nitrosodiphenylamine	5.0000	4.7	-5.0	20.00
4-Bromophenyl phenyl ether	5.0000	4.7	-5.4	20.00
Hexachlorobenzene	5.0000	4.4	-12.7	20.00
Pentachlorophenol	5.0000	3.7	-25.2 *	20.00
Phenanthrene	5.0000	4.7	-6.9	20.00
Anthracene	5.0000	4.3	-14.5	20.00
Carbazole	5.0000	4.2	-16.1	20.00
Di-n-Butylphthalate	5.0000	4.8	-4.8	20.00
Fluoranthene	5.0000	5.1	1.4	20.00
Pyrene	5.0000	4.9	-1.6	20.00
Butylbenzylphthalate	5.0000	4.3	-14.2	20.00
Benzo(a)anthracene	5.0000	4.7	-6.6	20.00
3,3'-Dichlorobenzidine	10.000	9.4	-6.2	20.00
Chrysene	5.0000	4.7	-5.6	20.00
bis(2-Ethylhexyl)phthalate	5.0000	4.9	-2.1	20.00
Di-n-Octylphthalate	5.0000	4.9	-2.1	20.00
Benzo(a)fluoranthene, Total	10.000	9.6	-4.0	20.00
Benzo(a)pyrene	5.0000	5.0	-0.2	20.00
Indeno(1,2,3-cd)pyrene	5.0000	4.4	-11.8	20.00
Dibenzo(a,h)anthracene	5.0000	4.5	-10.9	20.00
Benzo(g,h,i)perylene	5.0000	4.2	-16.0	20.00
1-Methylnaphthalene	5.0000	4.5	-10.1	20.00

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230421.6\NT04212314.D

Date : 21-APR-2023 21:16

Client ID:

Sample Info: SEQ-SCV1

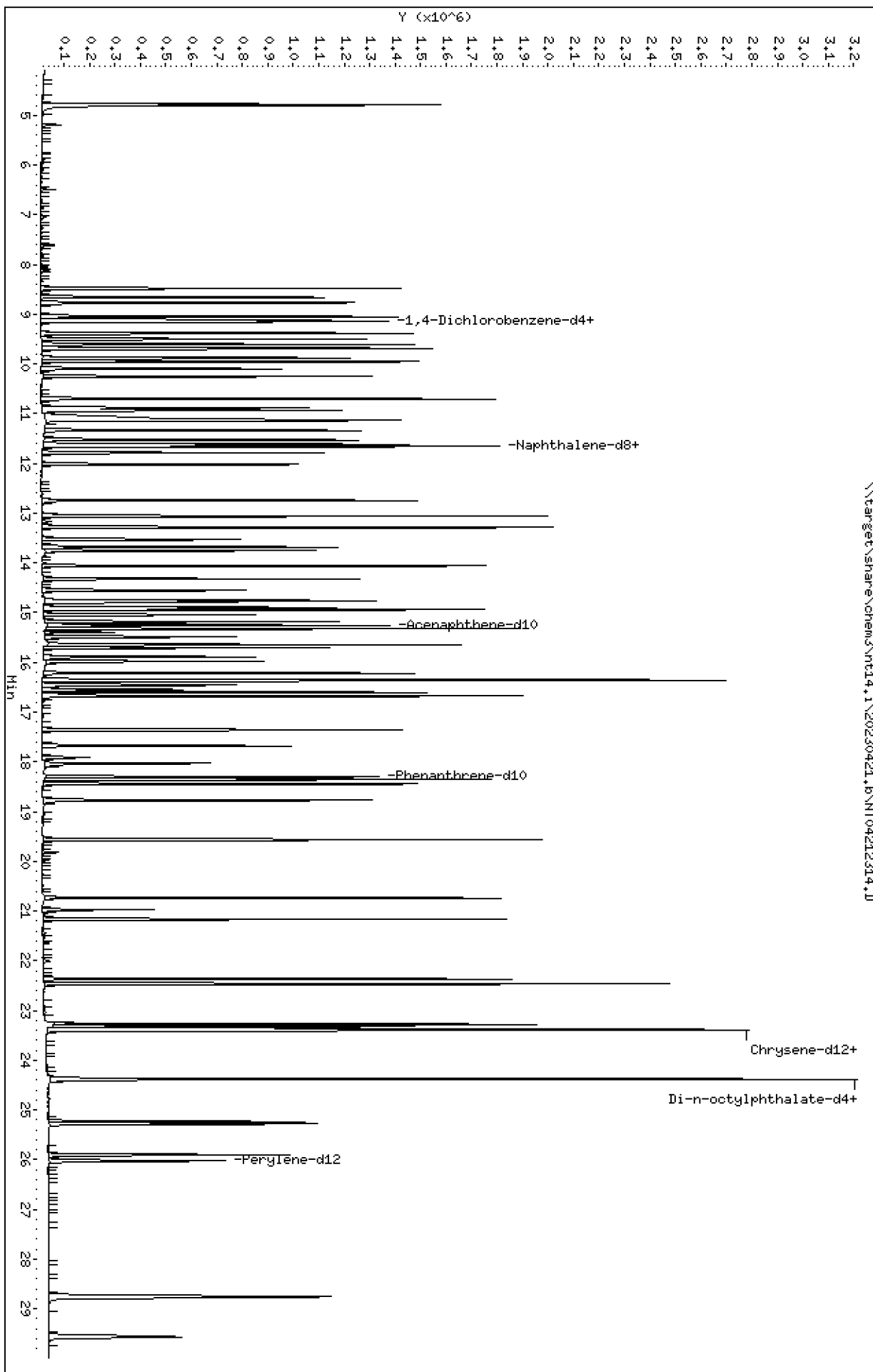
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

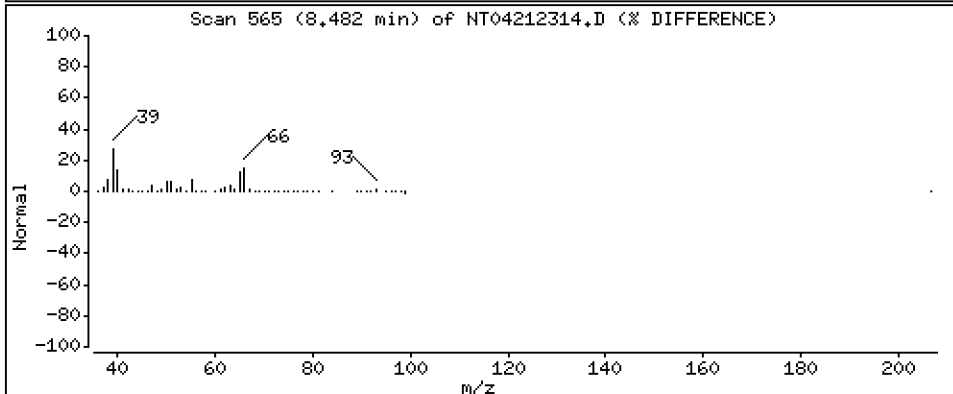
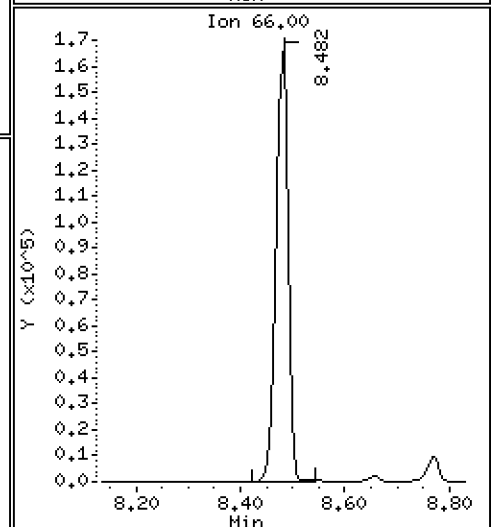
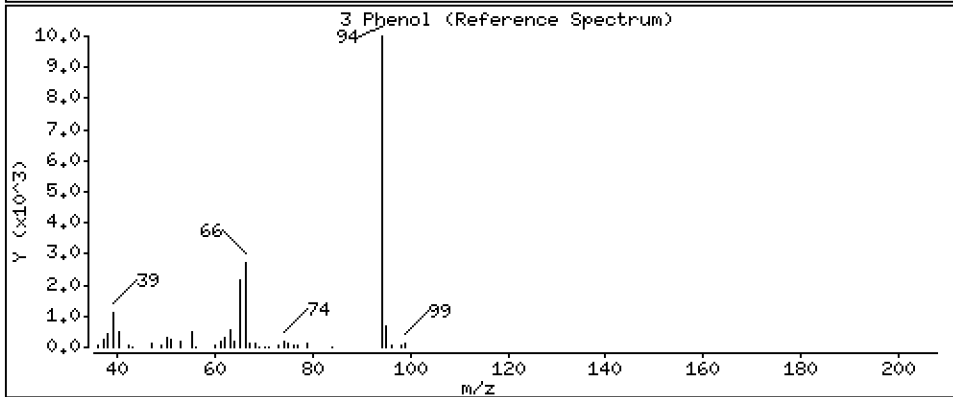
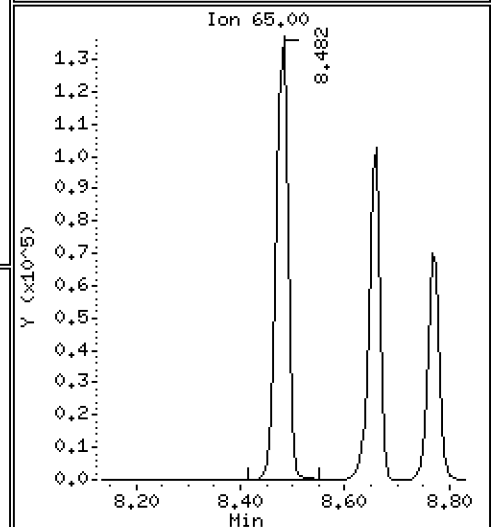
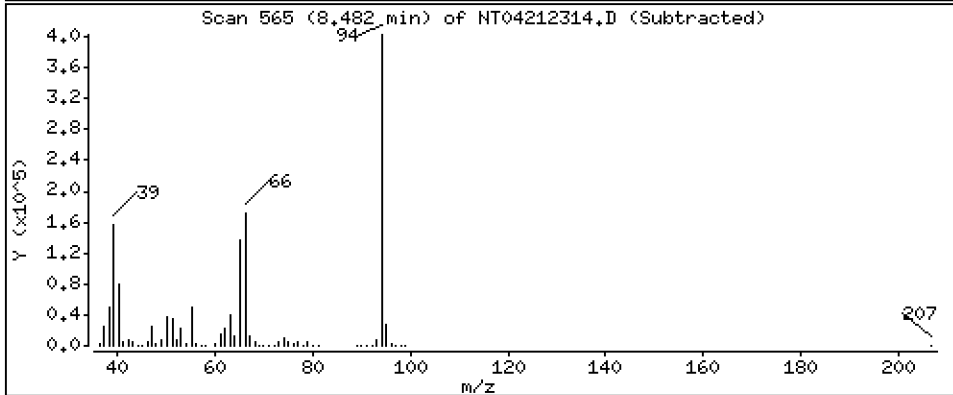
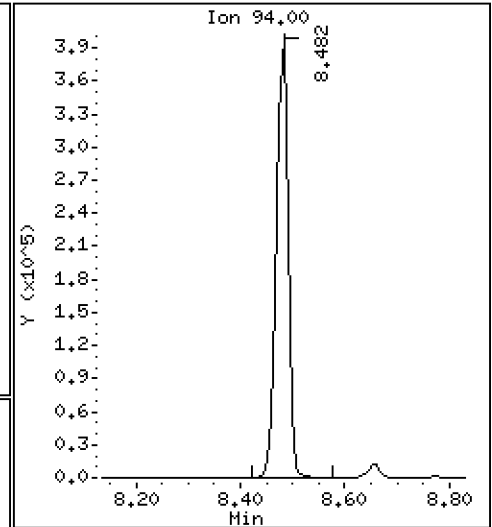
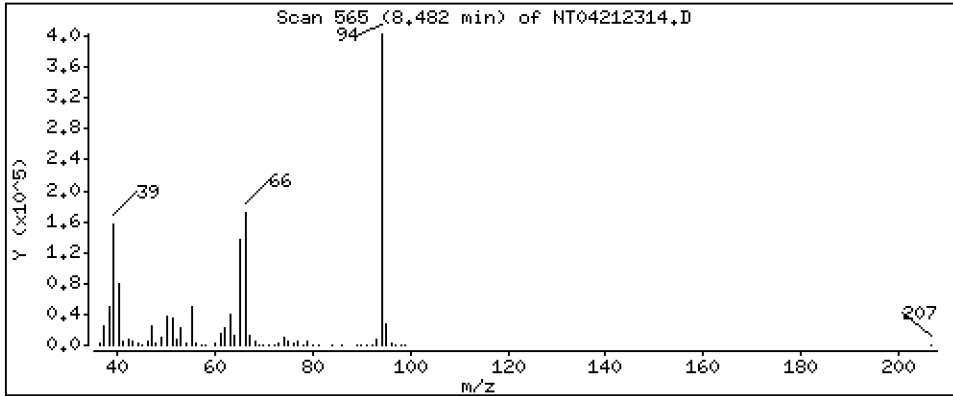
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,331 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

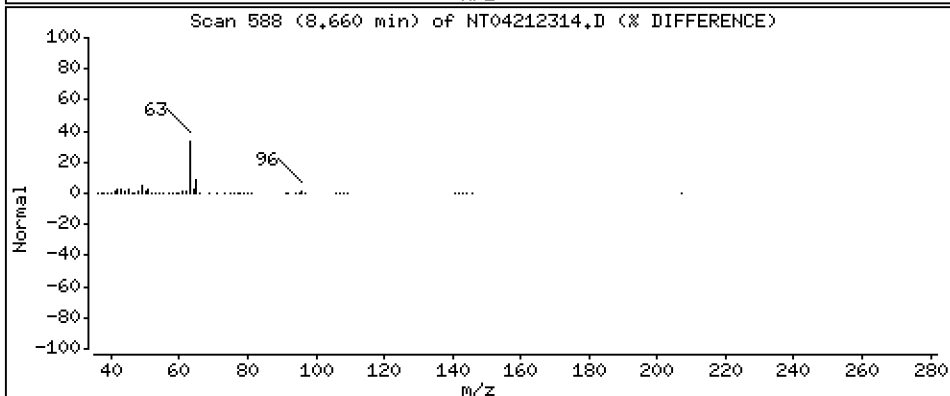
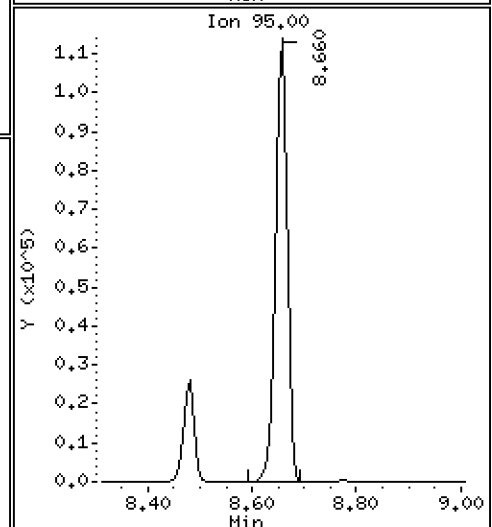
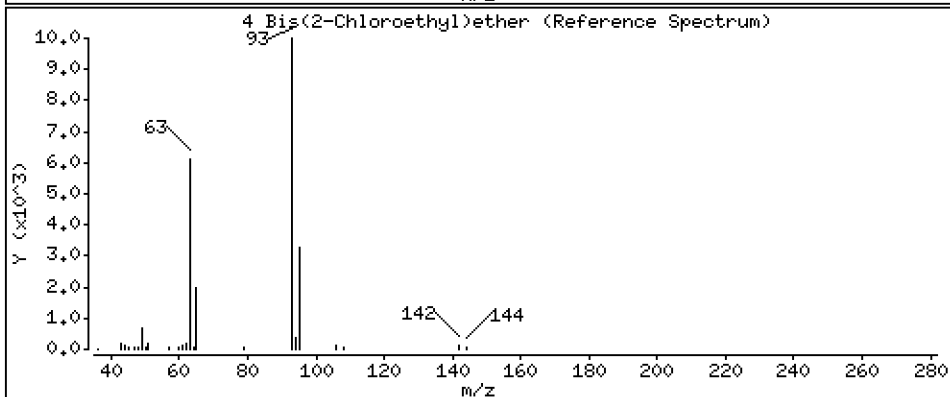
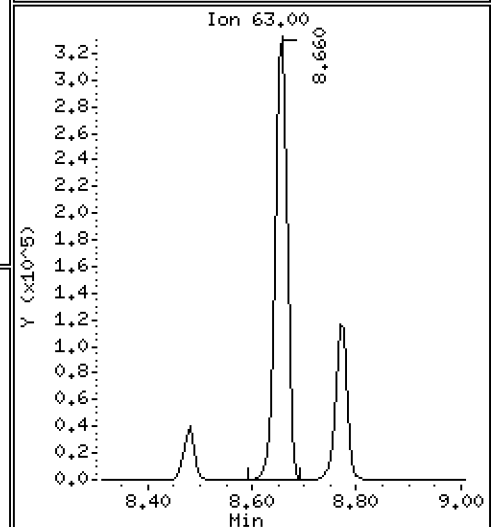
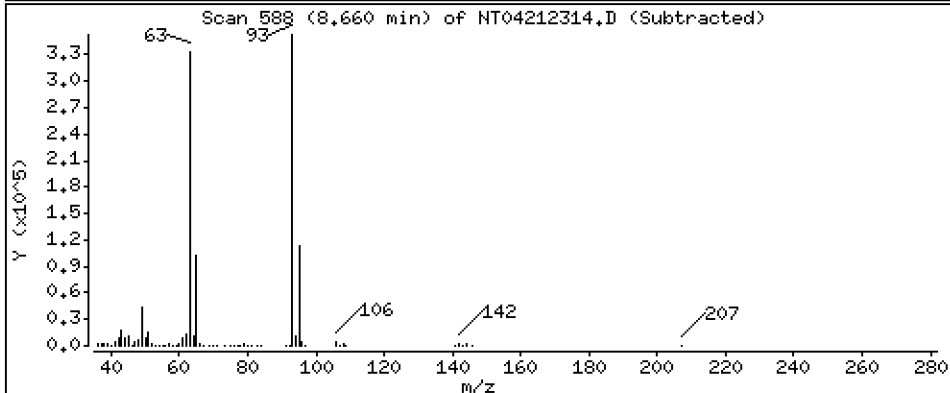
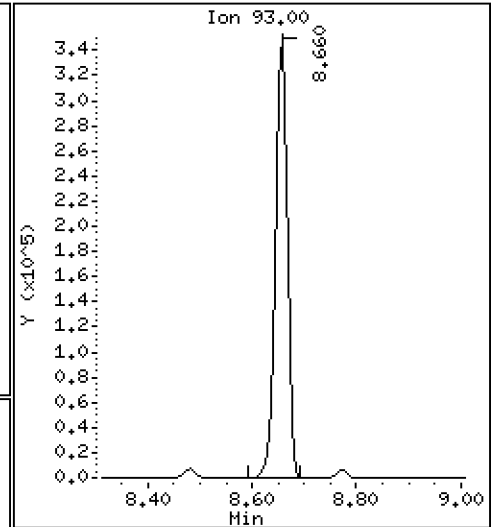
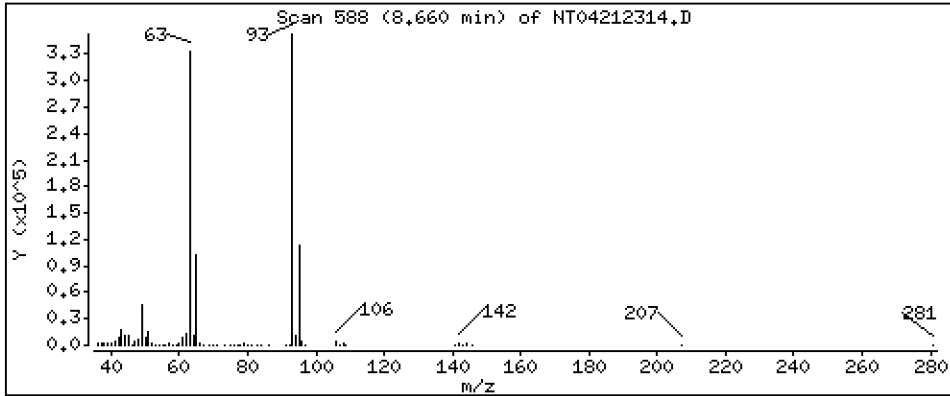
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

4 Bis(2-Chloroethyl)ether

Concentration: 5.070 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

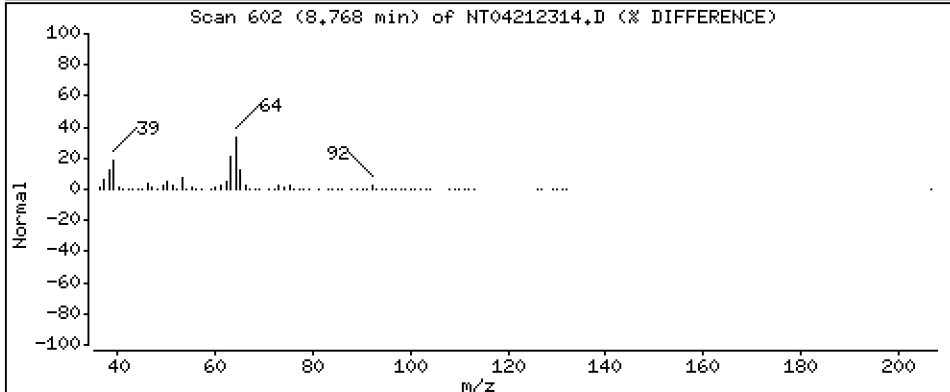
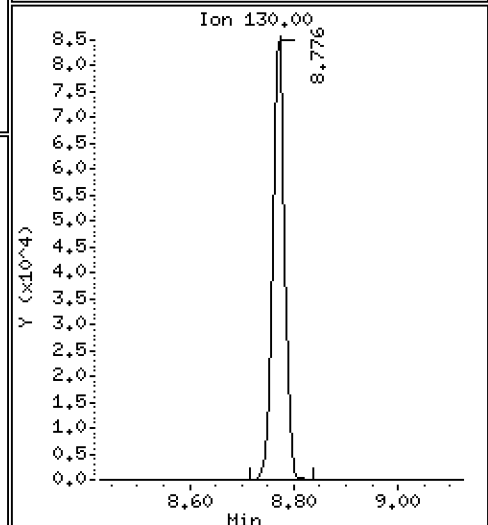
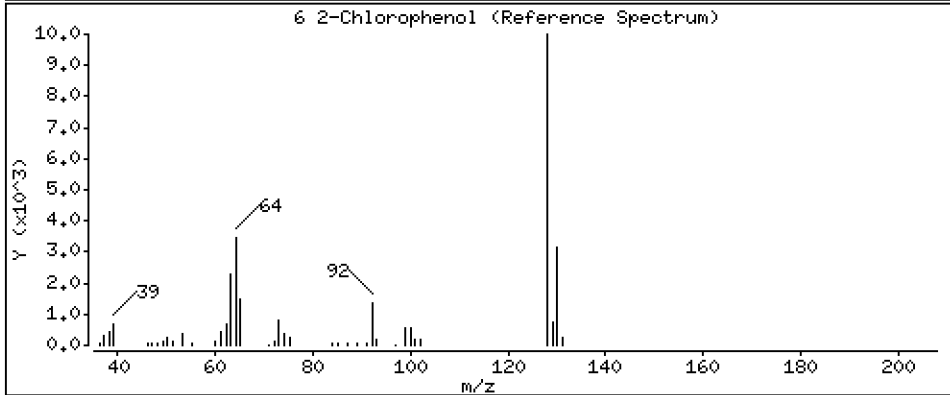
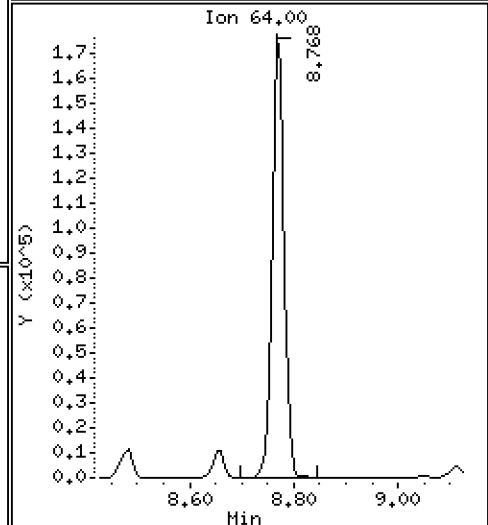
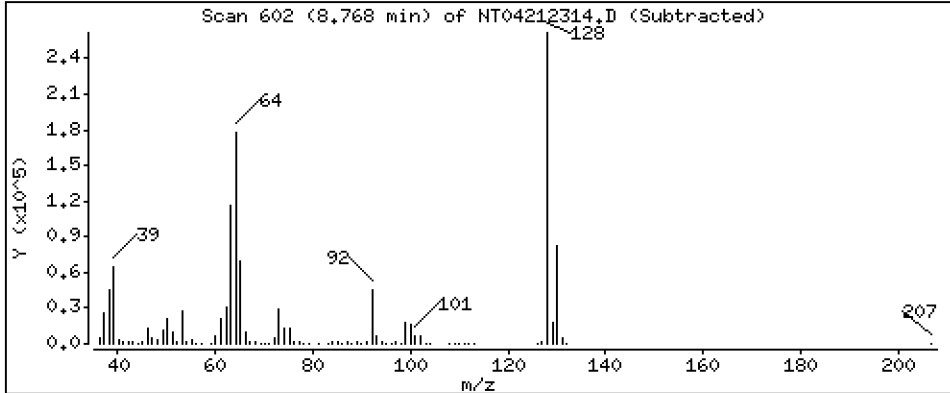
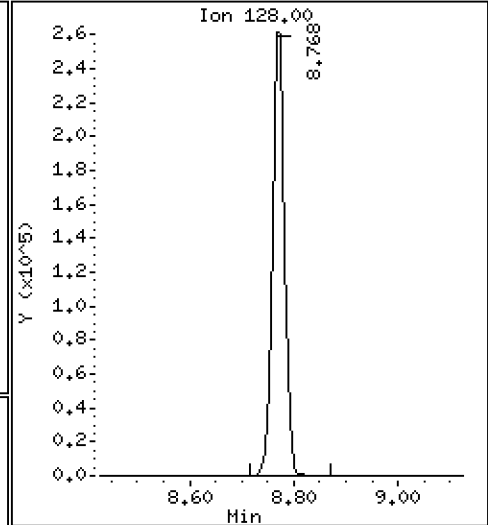
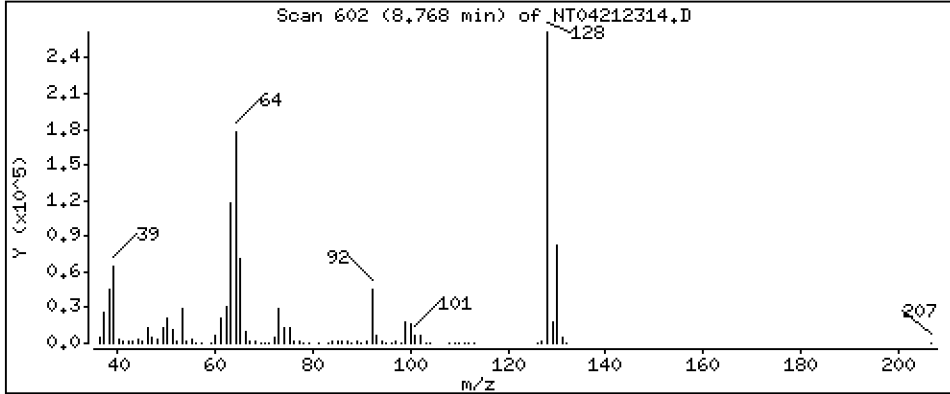
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

6 2-Chlorophenol

Concentration: 4.478 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

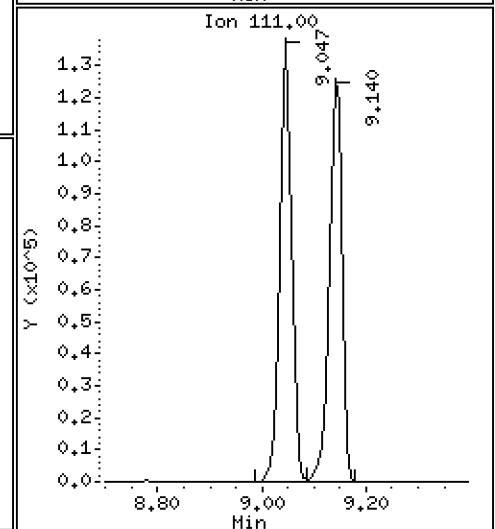
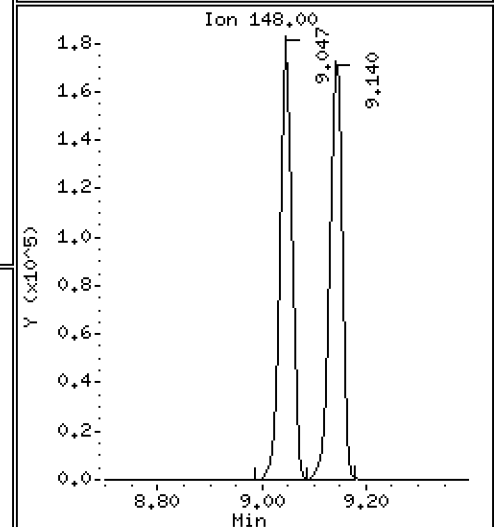
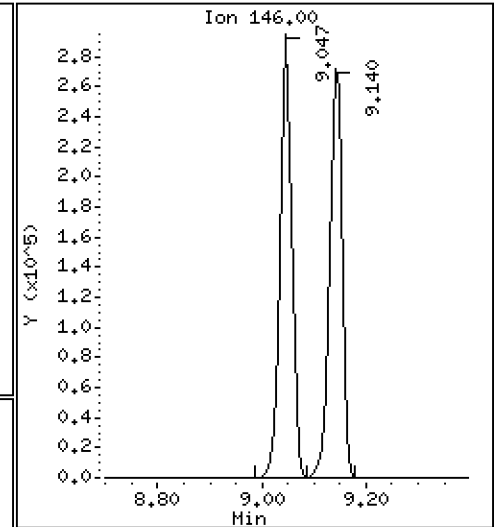
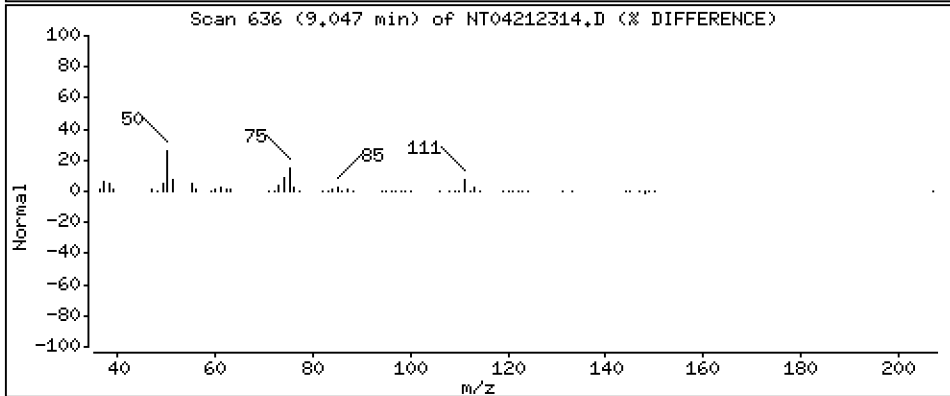
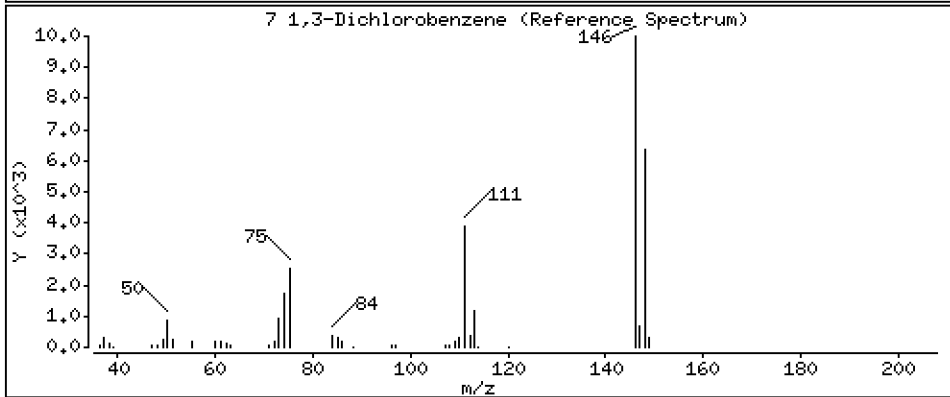
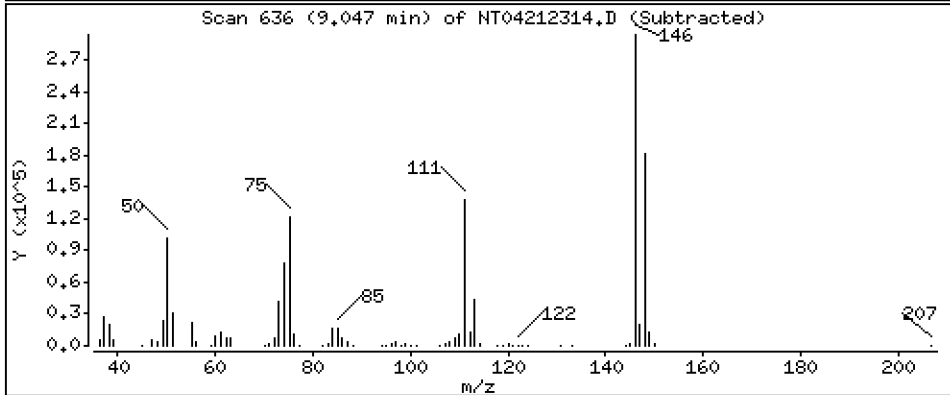
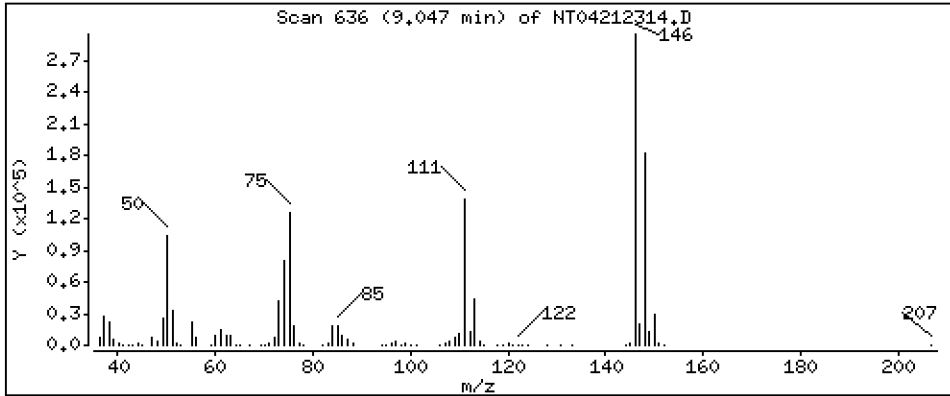
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 4,735 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

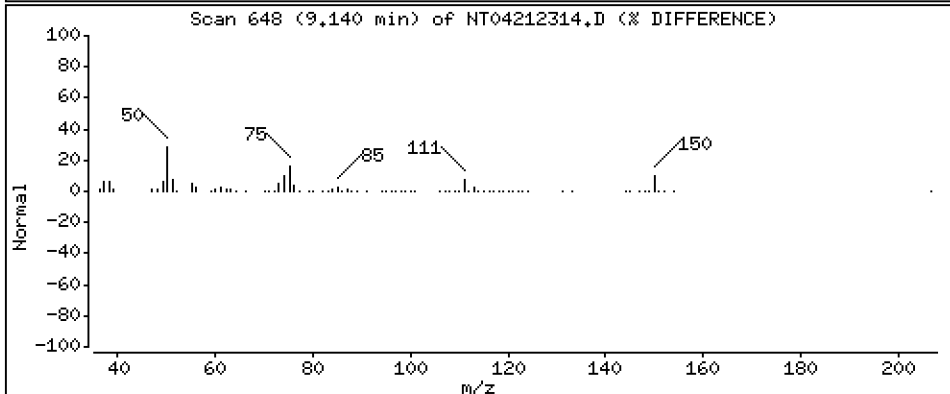
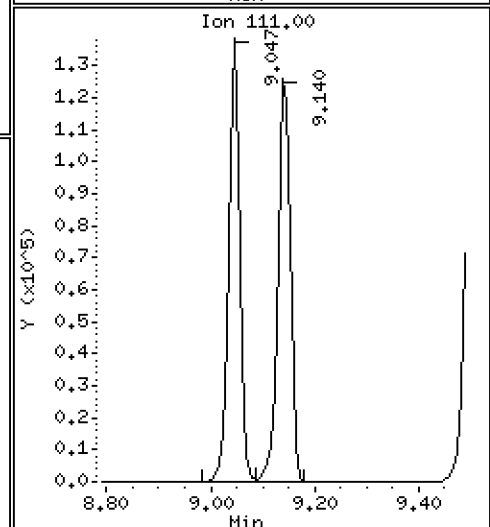
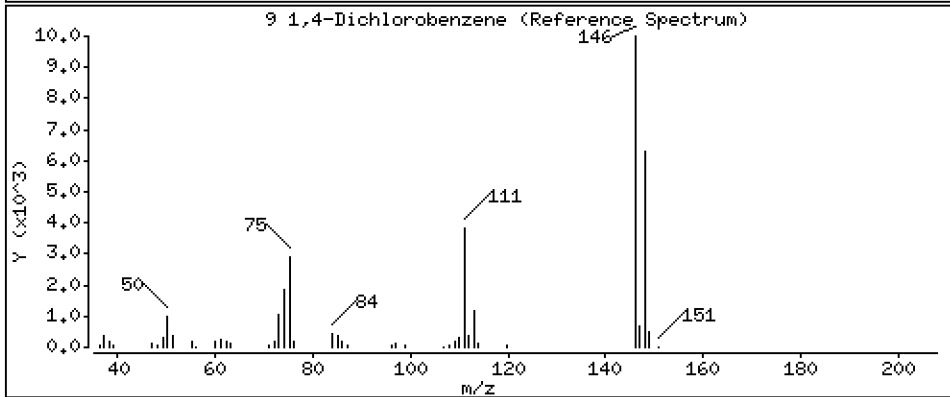
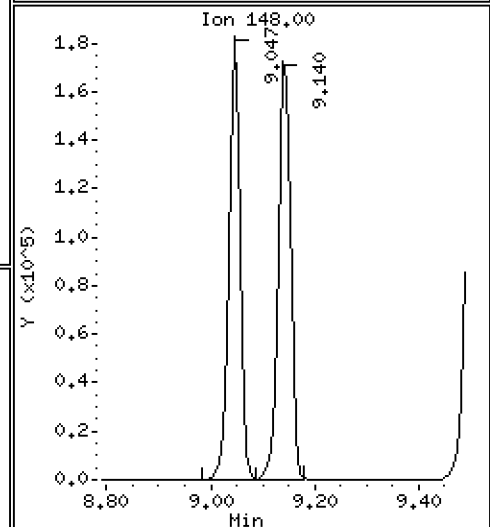
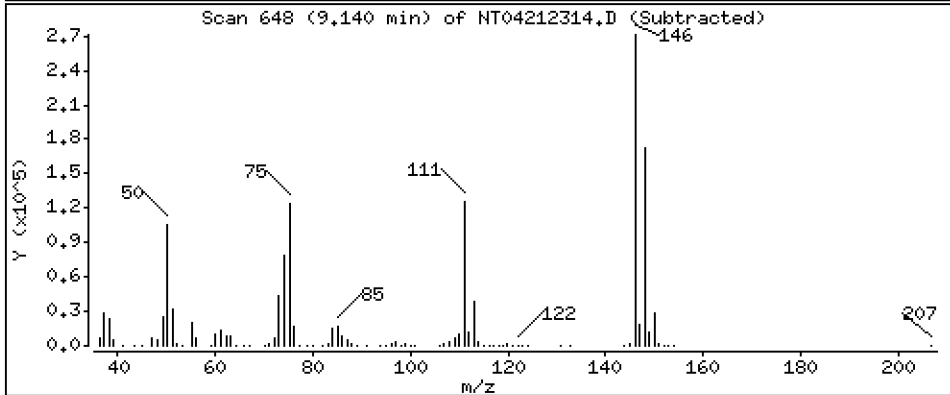
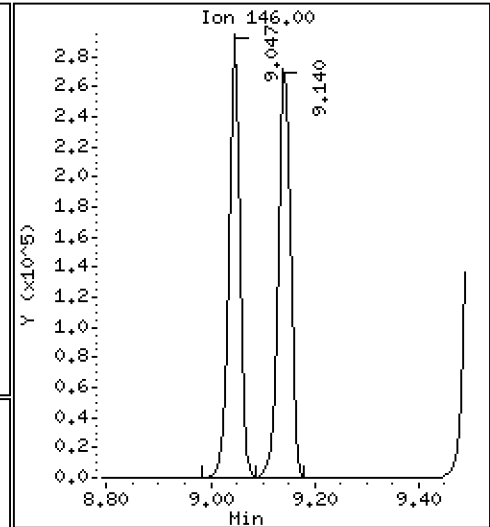
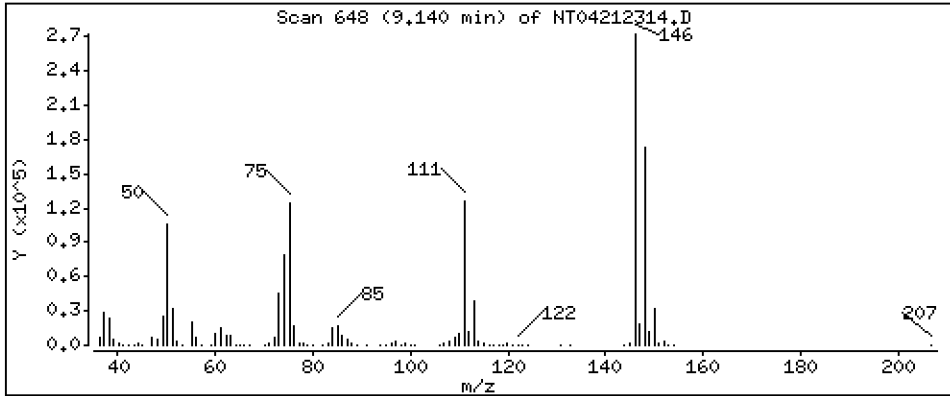
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 4.779 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

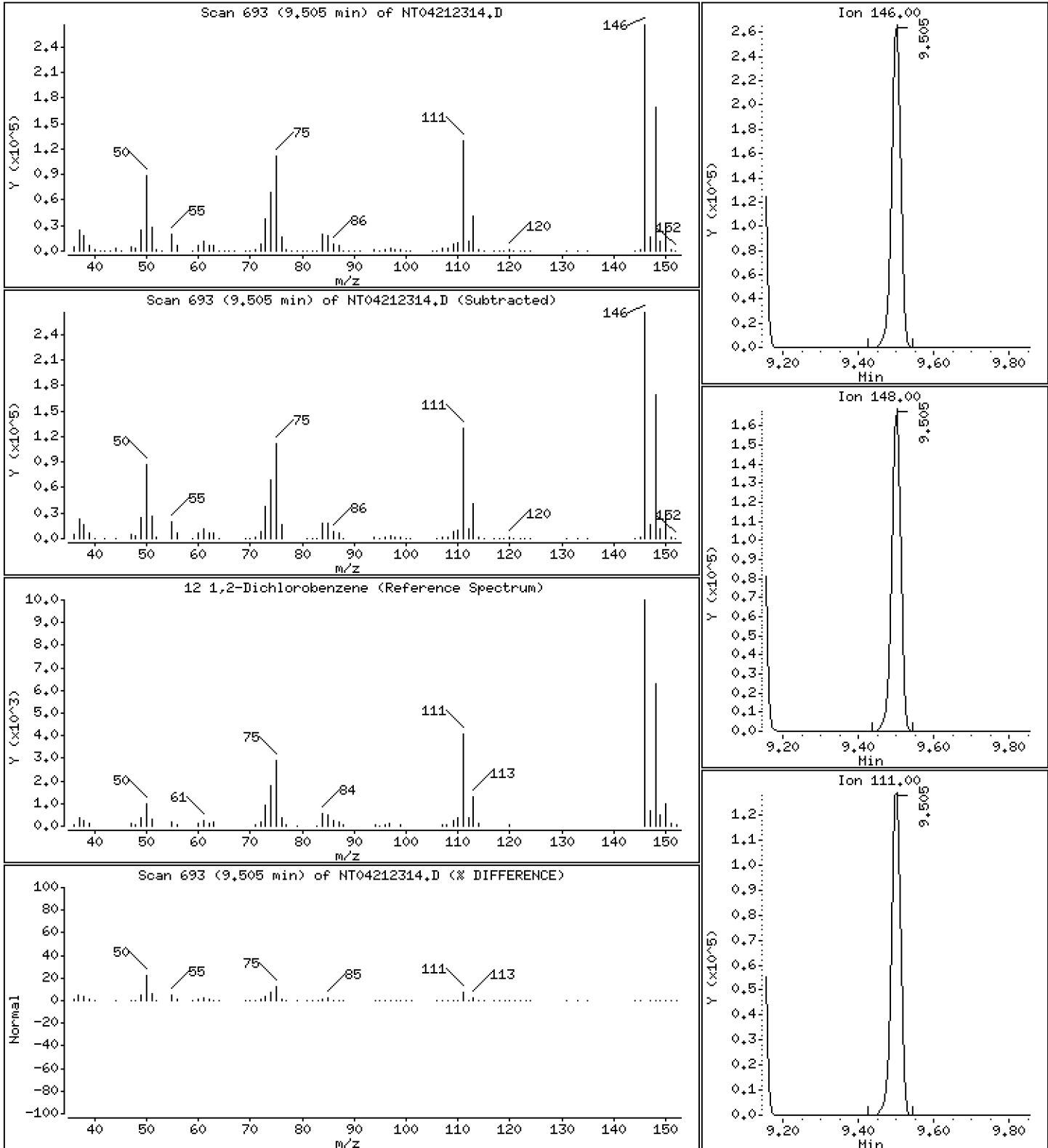
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.754 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

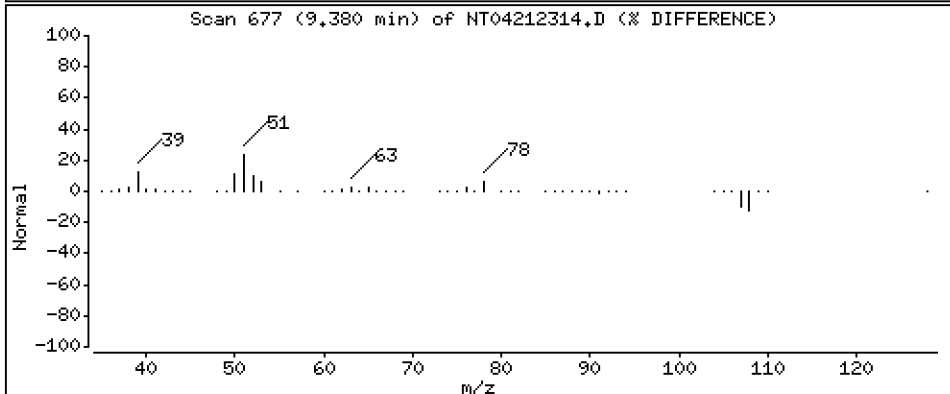
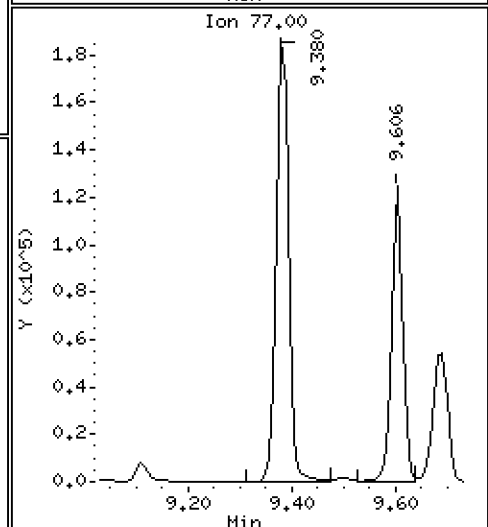
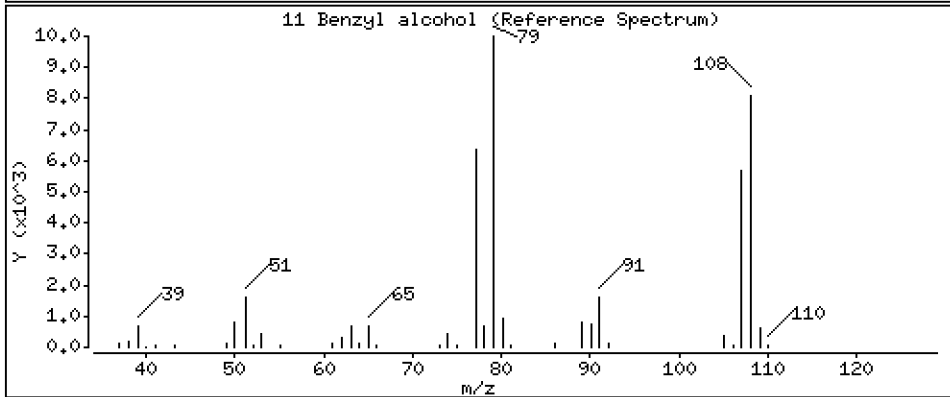
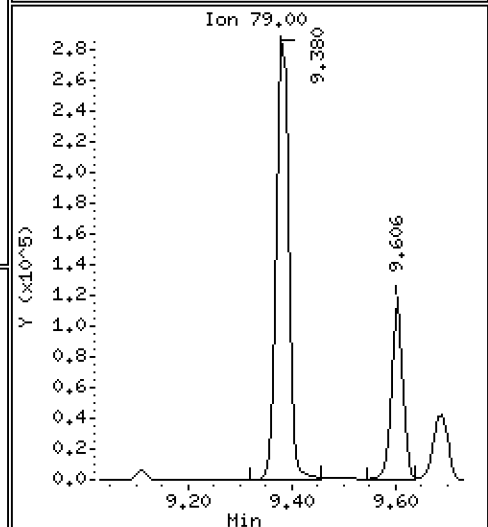
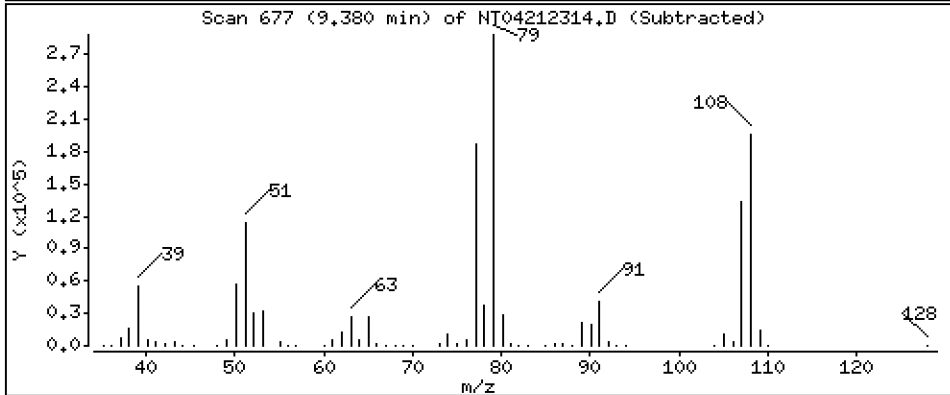
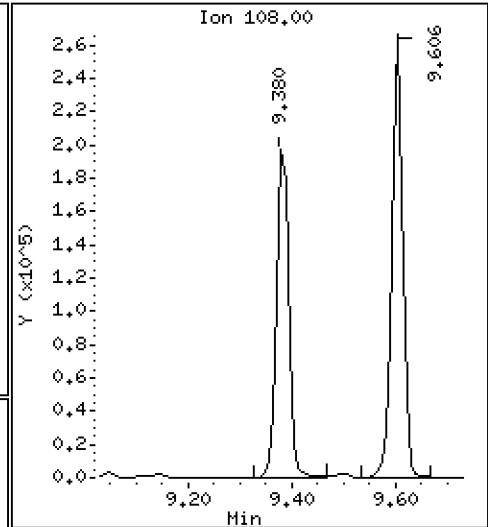
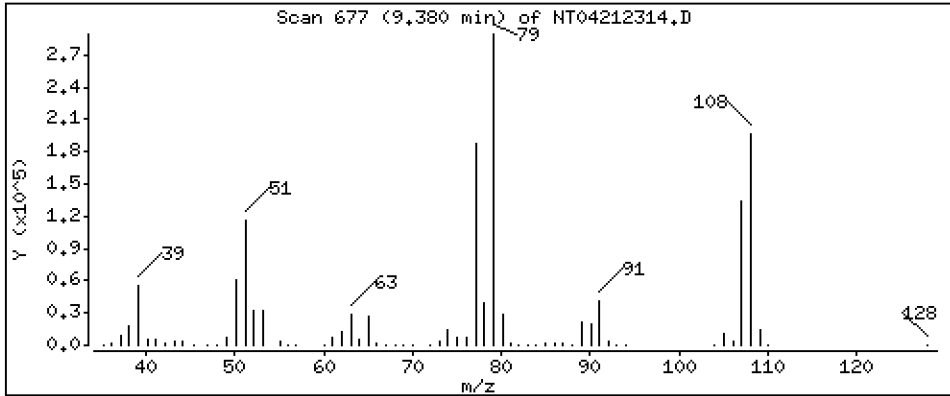
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.909 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

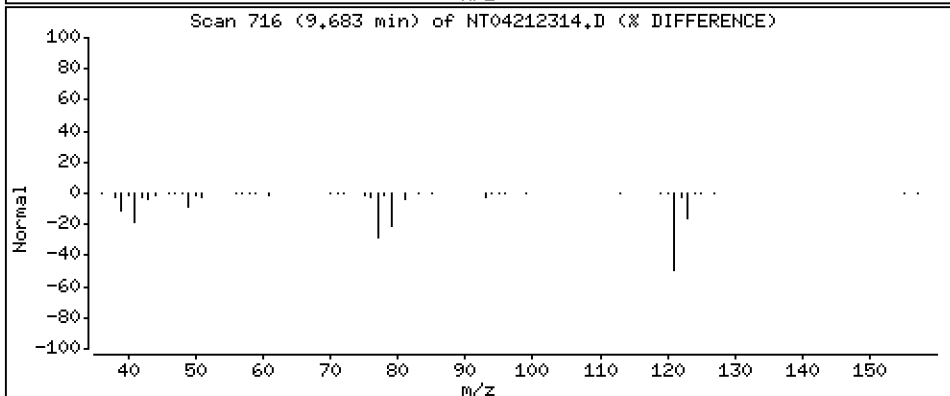
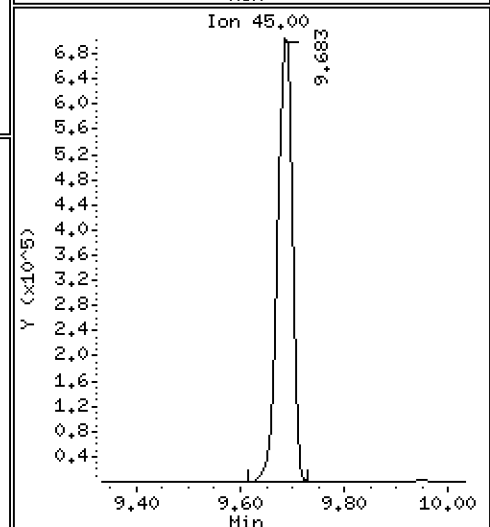
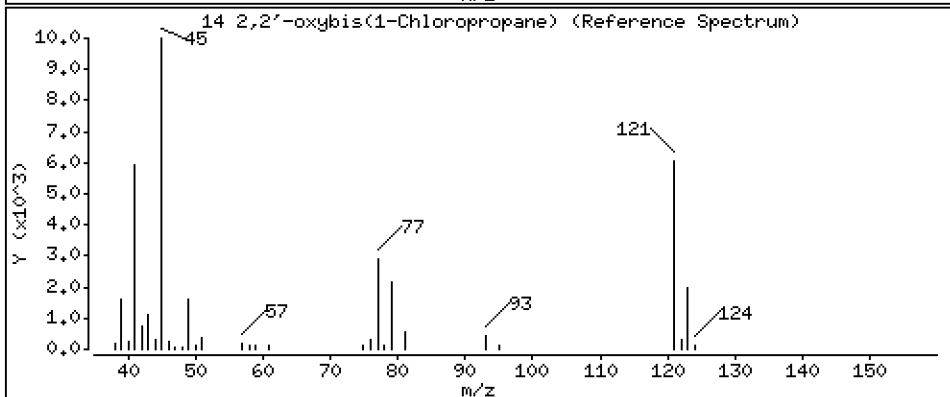
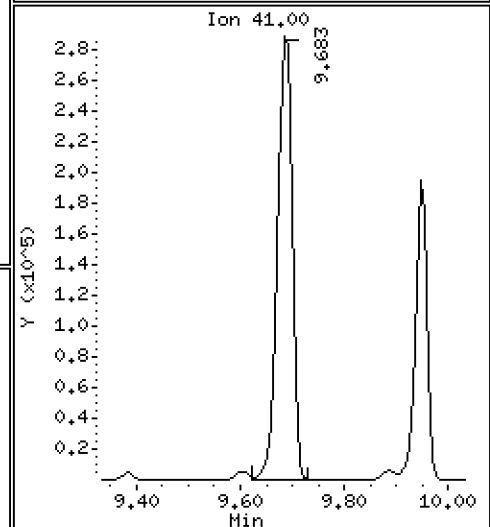
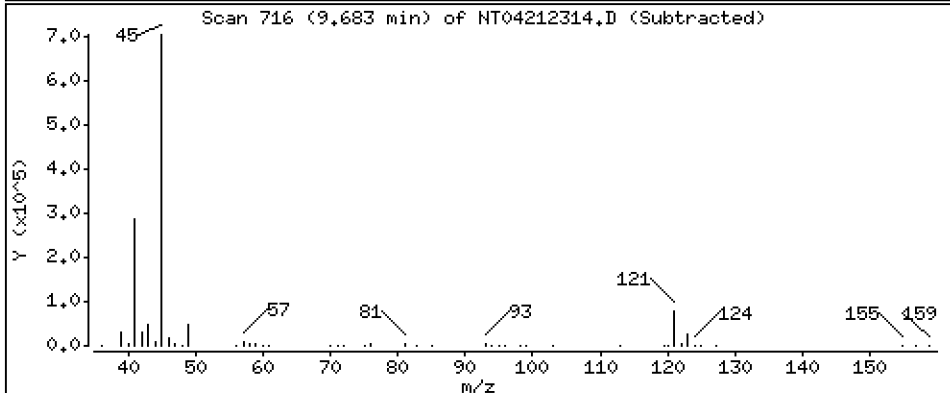
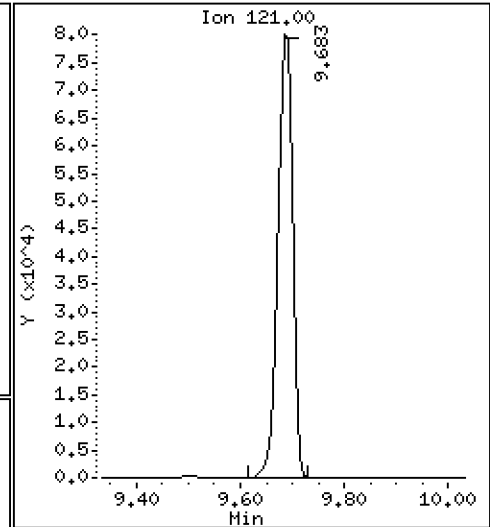
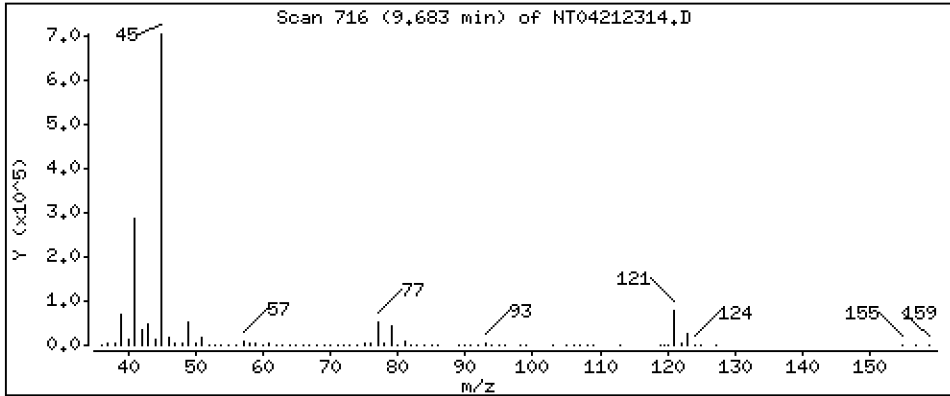
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 5,062 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

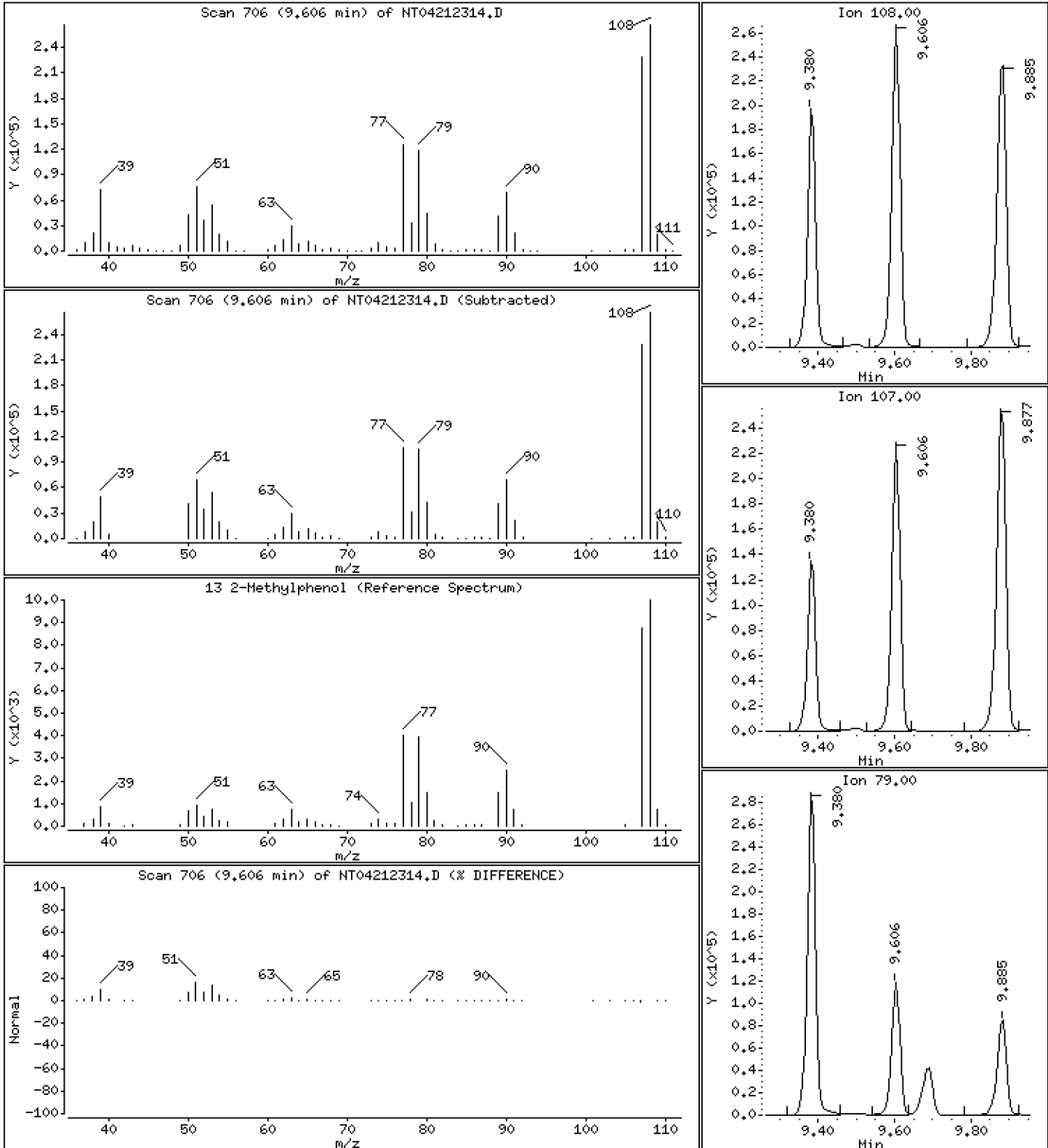
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 4.199 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

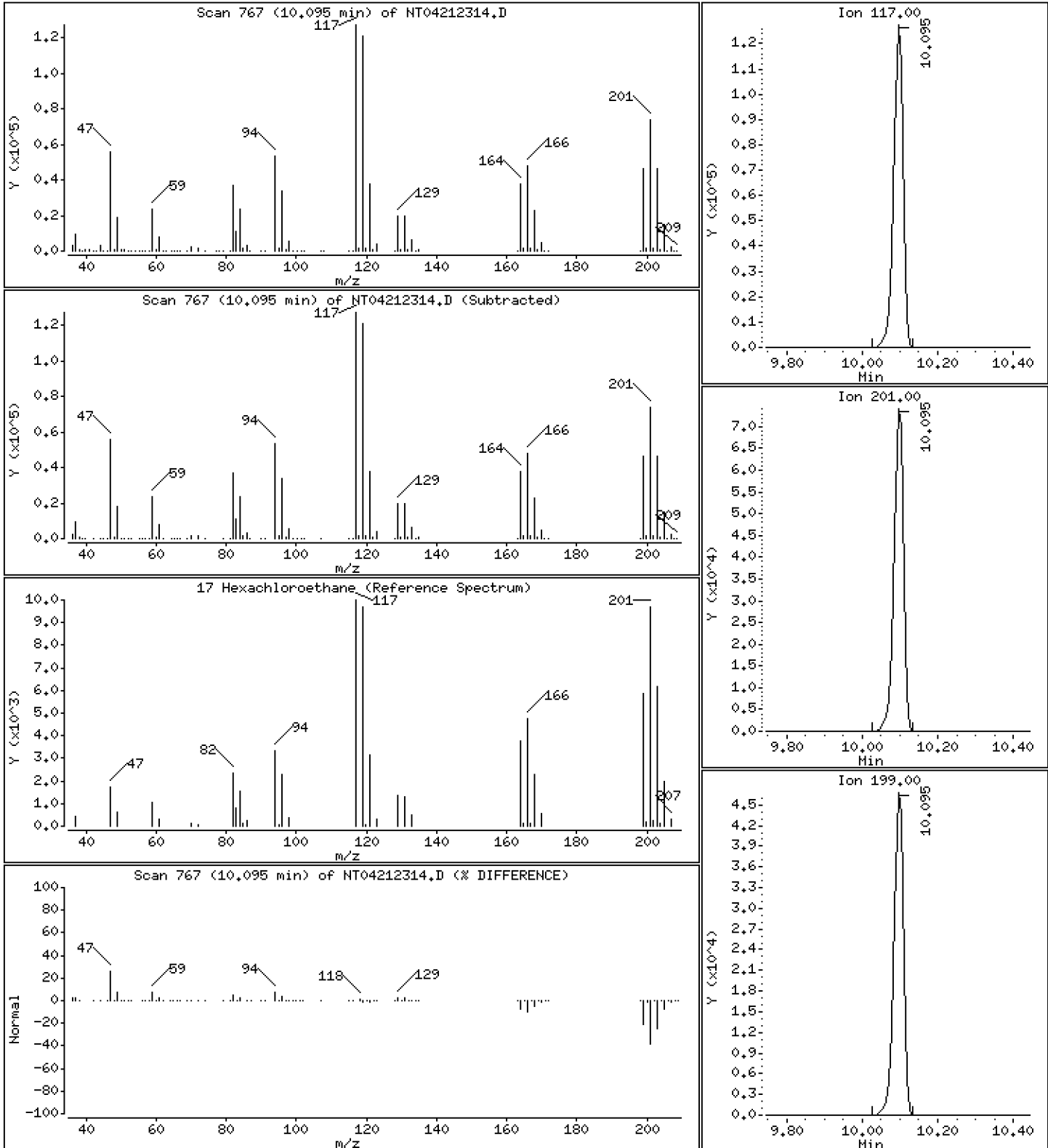
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 4,872 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

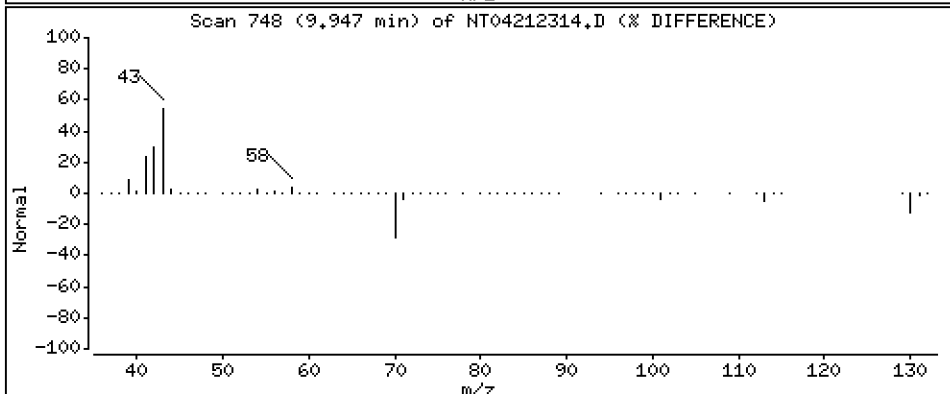
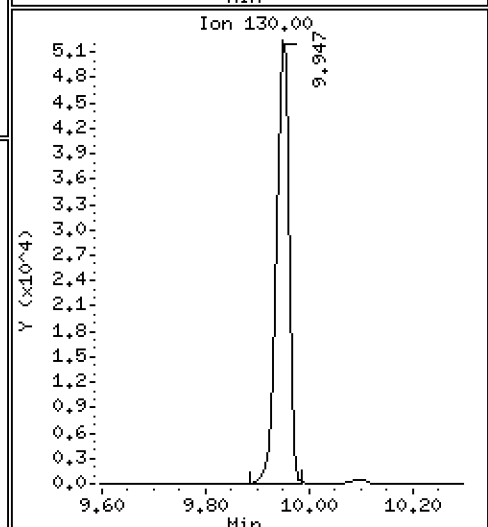
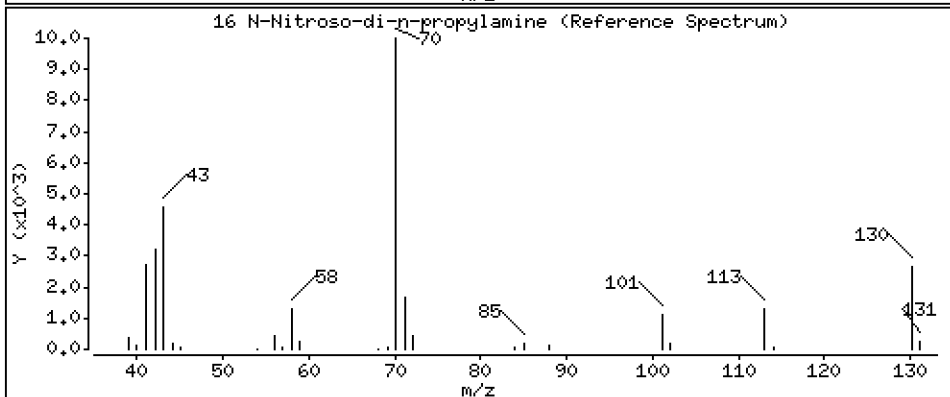
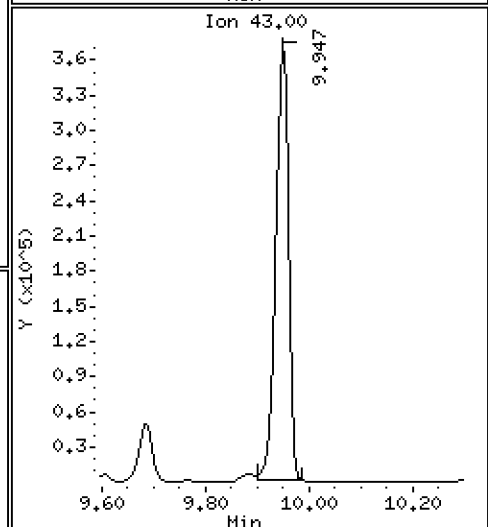
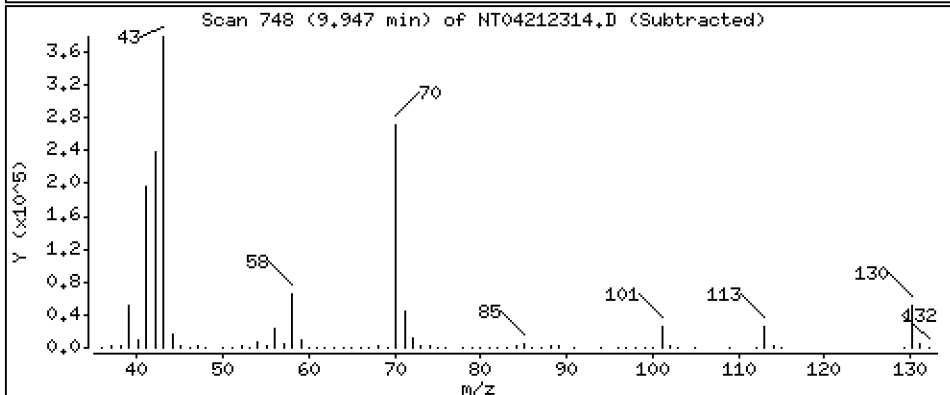
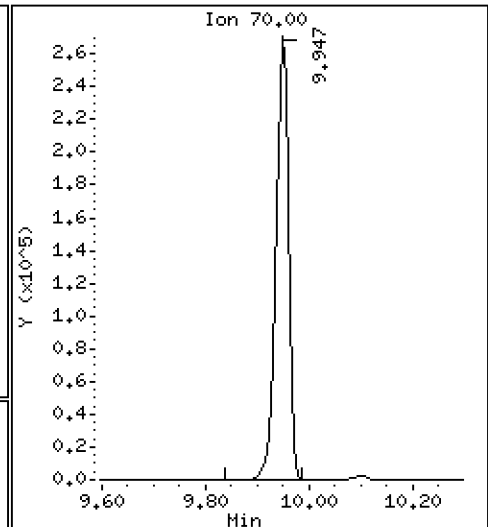
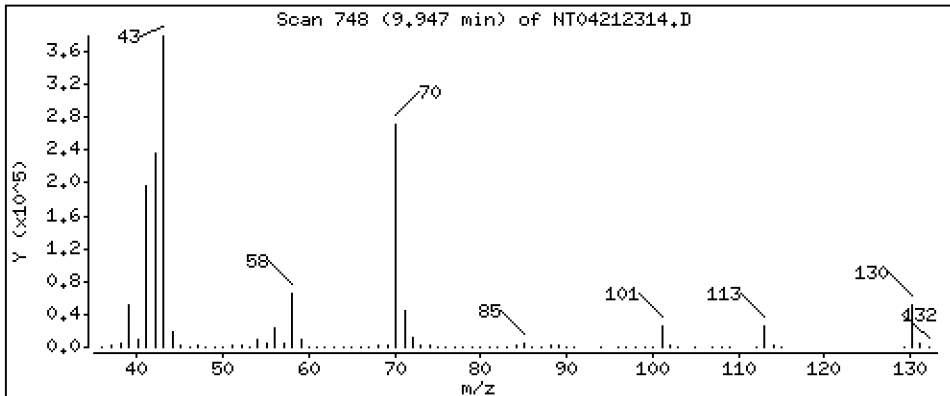
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 4,737 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

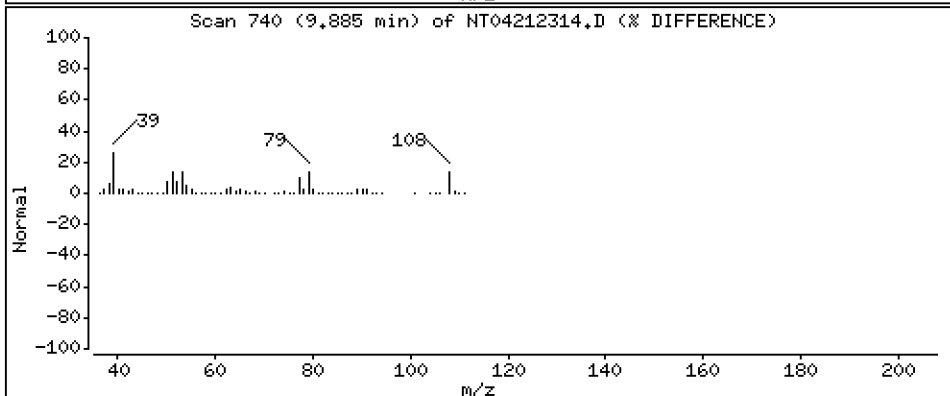
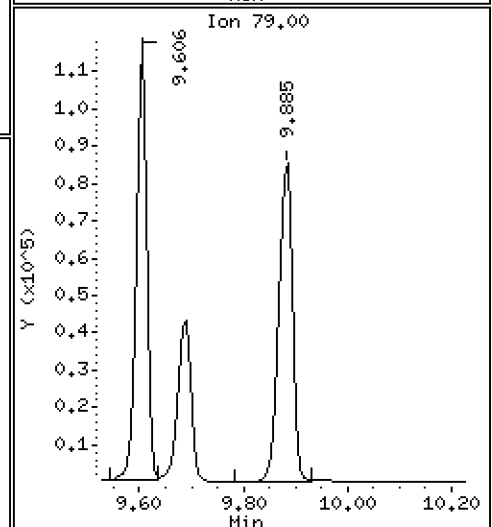
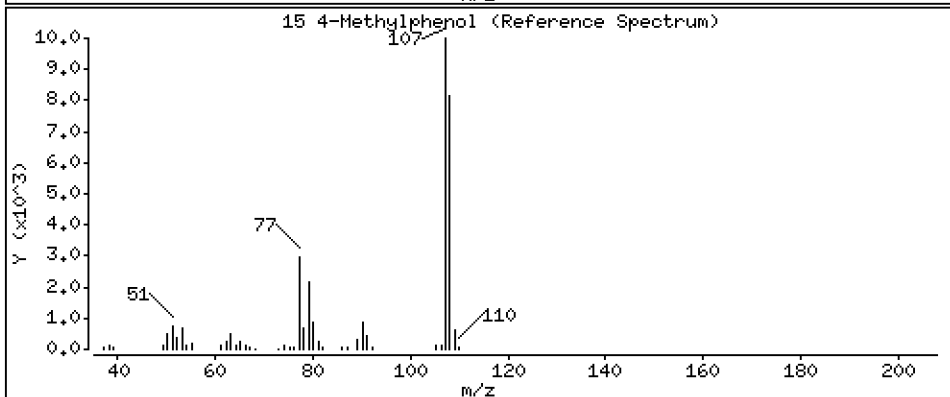
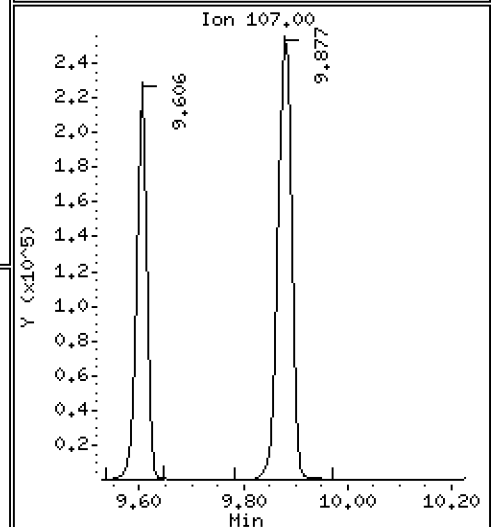
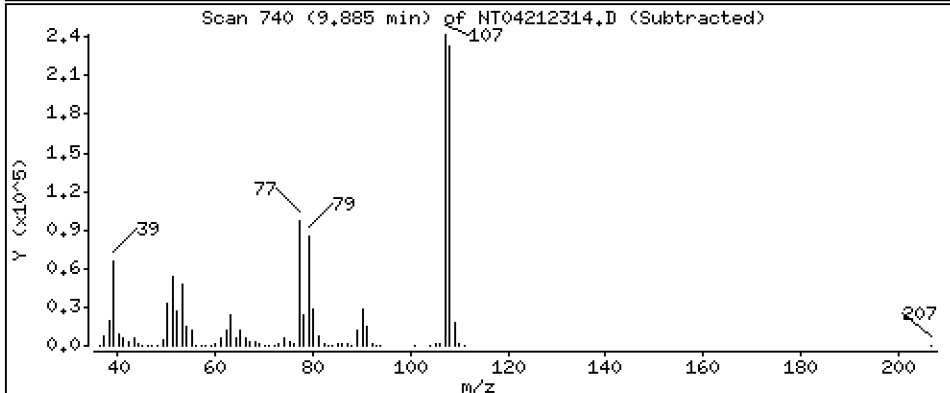
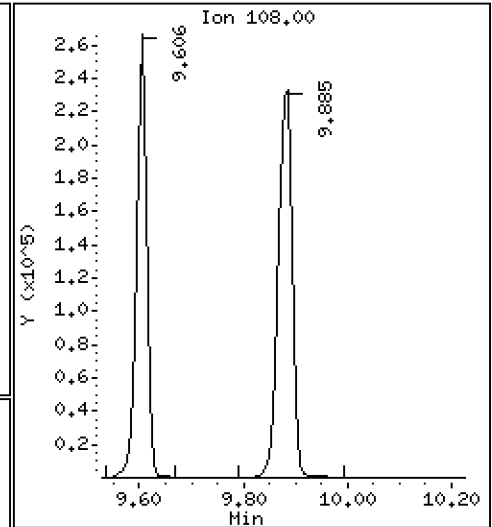
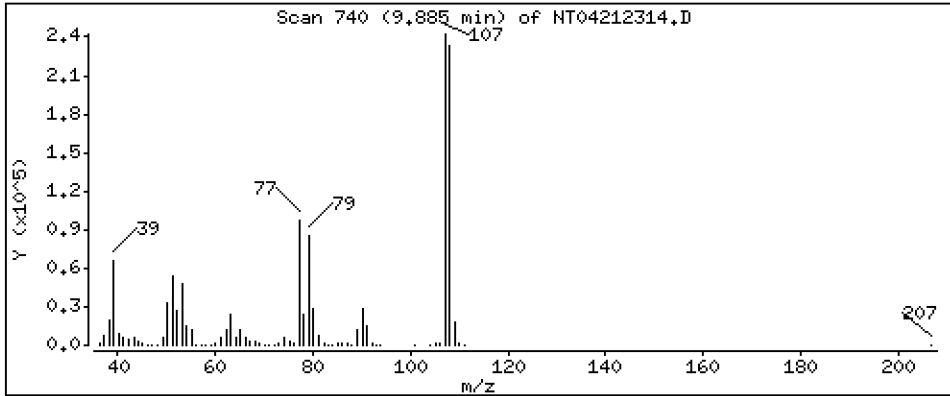
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.451 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

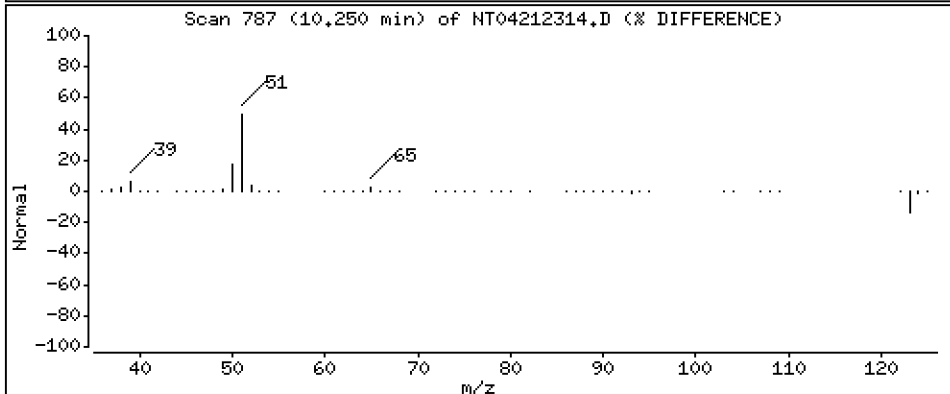
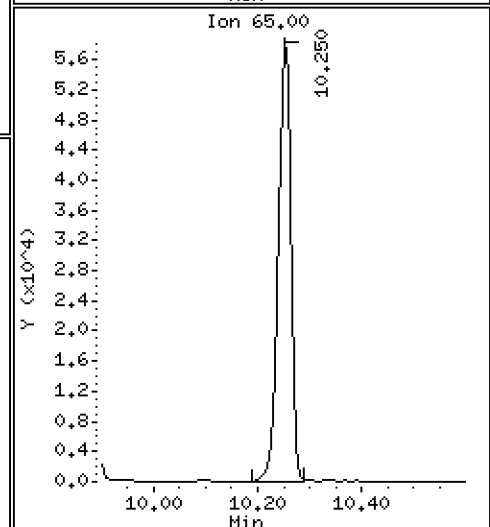
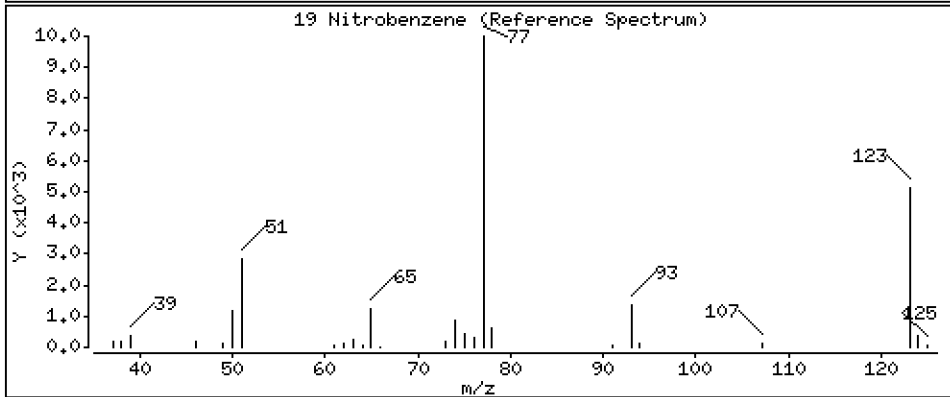
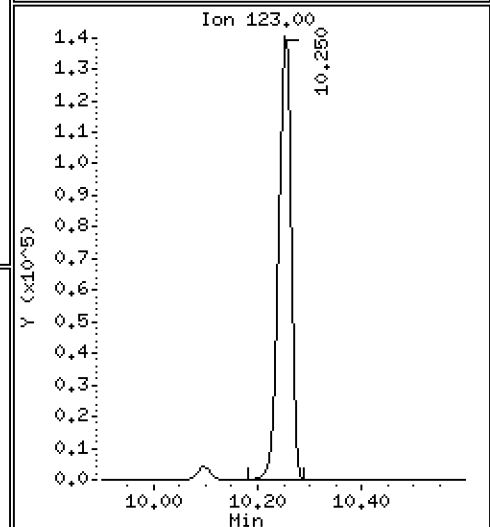
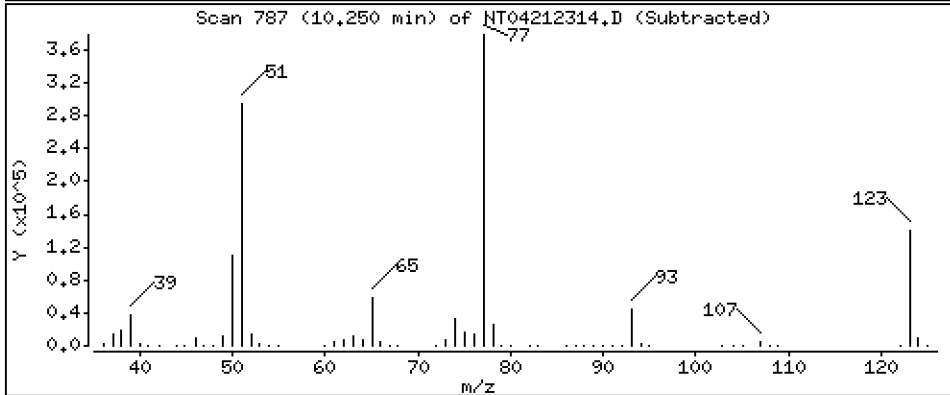
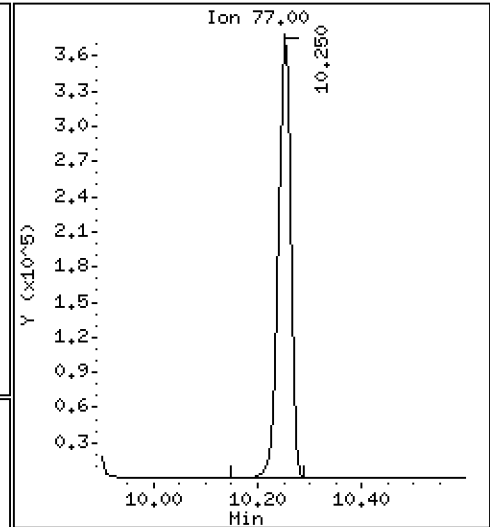
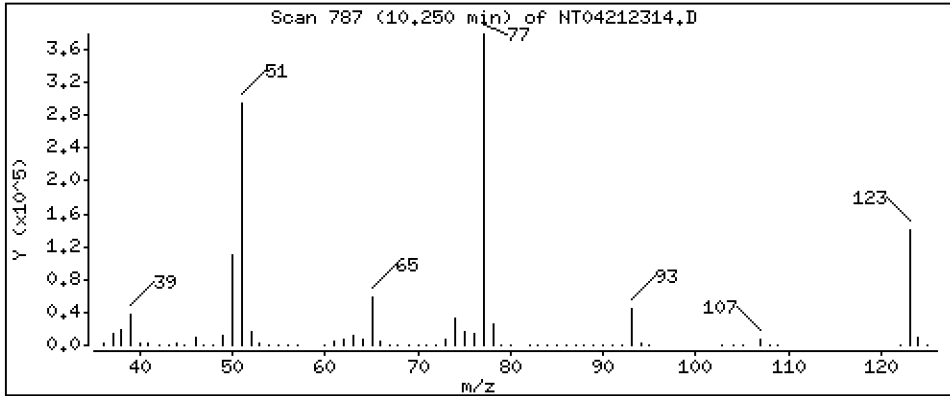
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 4,715 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

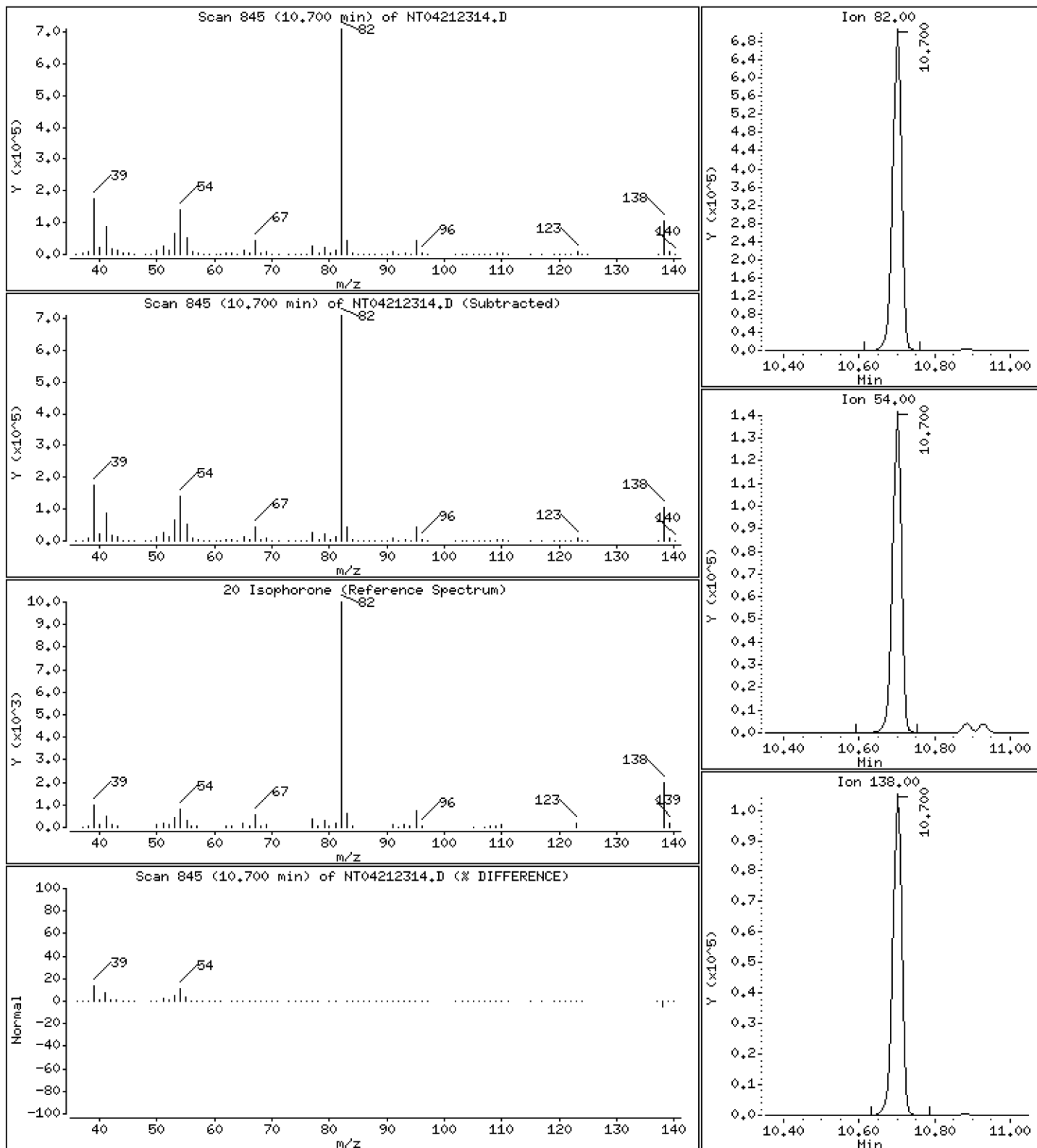
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

20 Isophorone

Concentration: 6.317 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

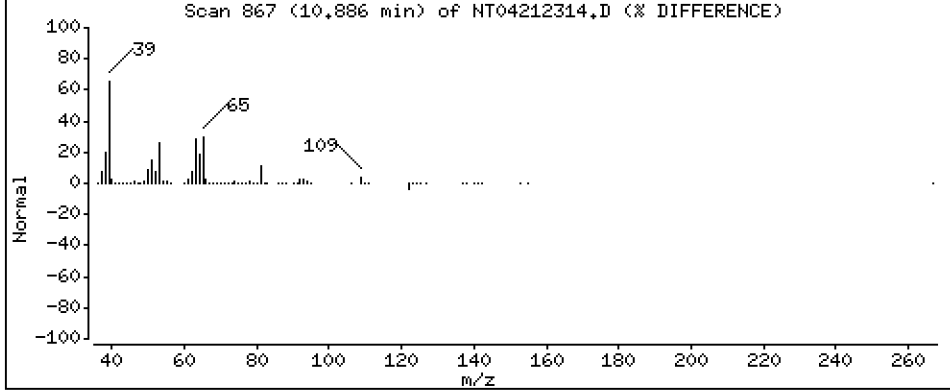
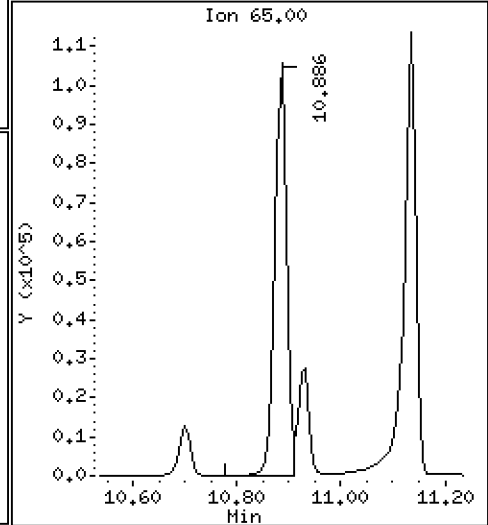
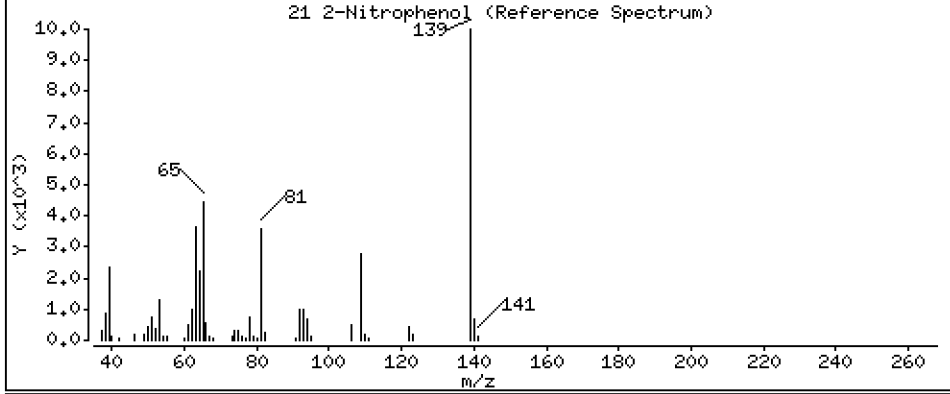
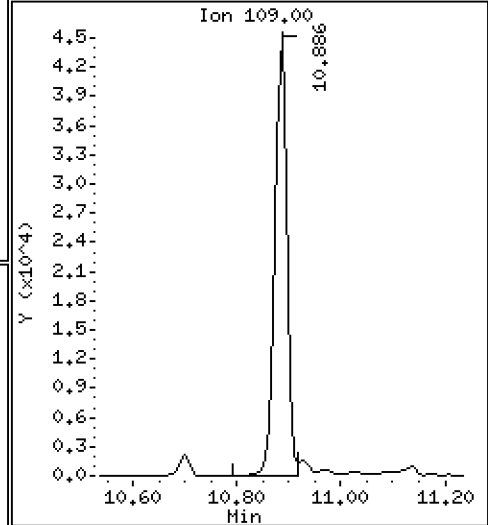
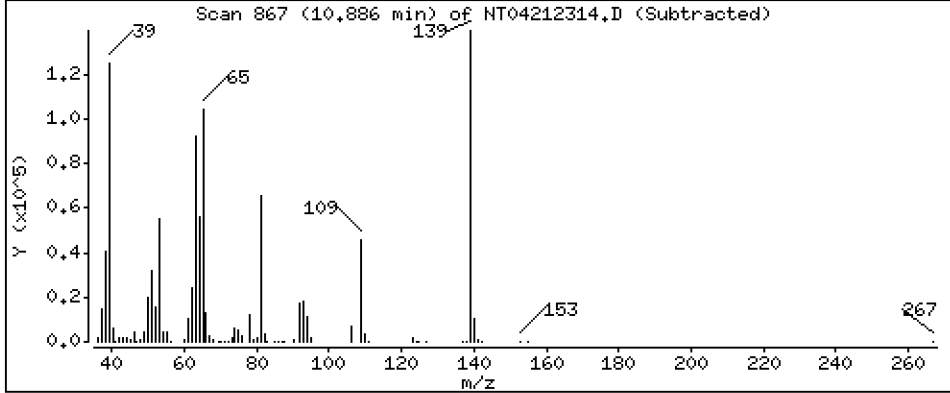
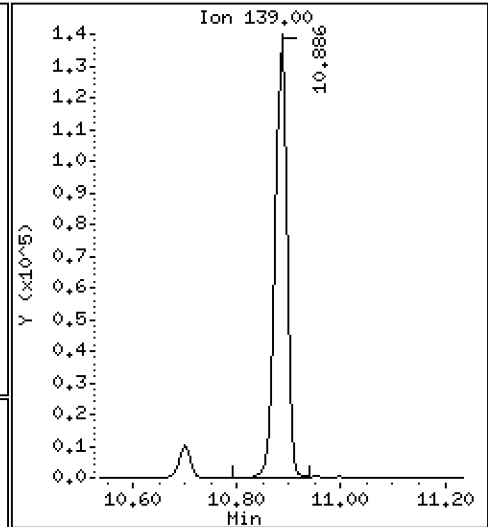
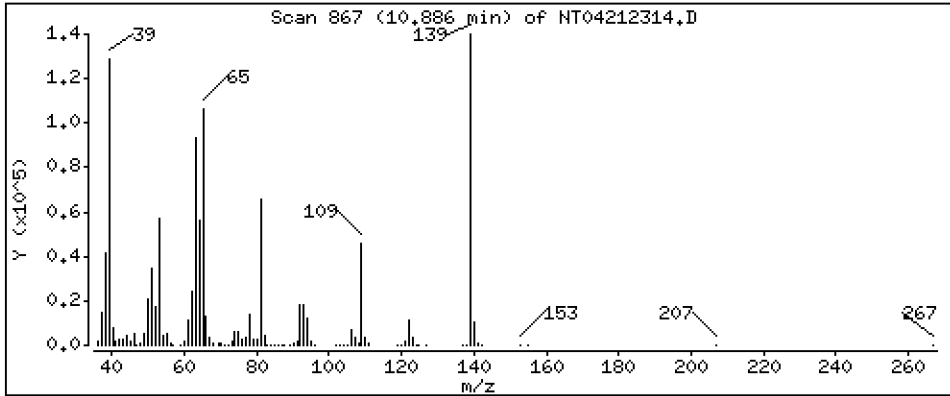
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 3,779 ug/mL



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Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

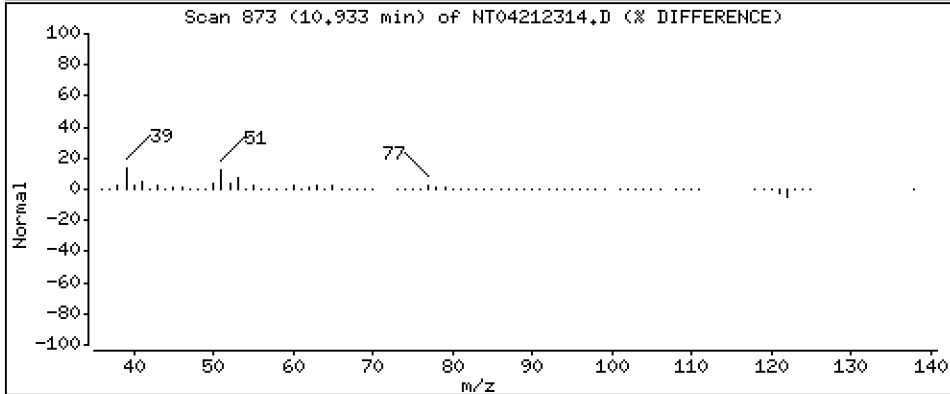
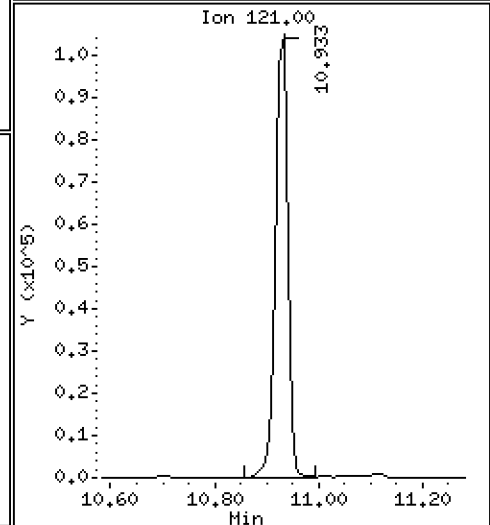
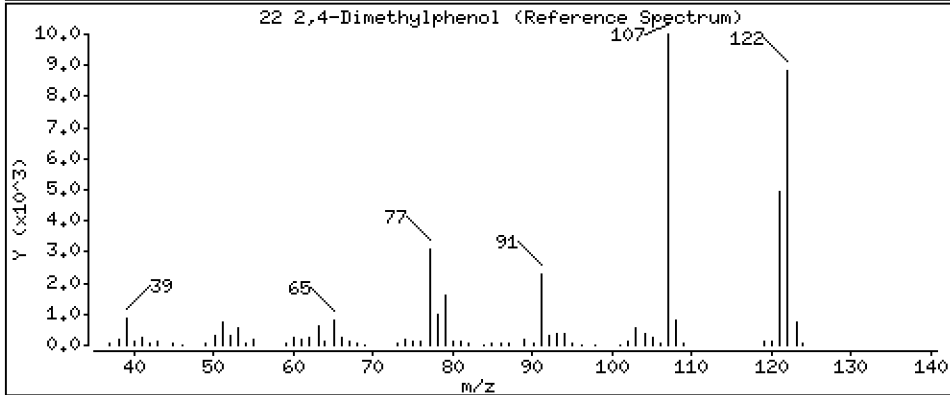
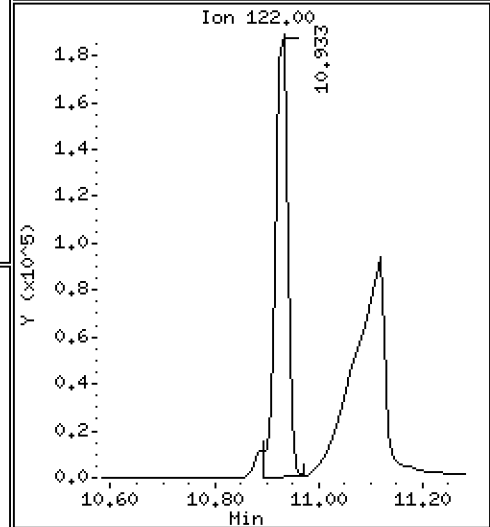
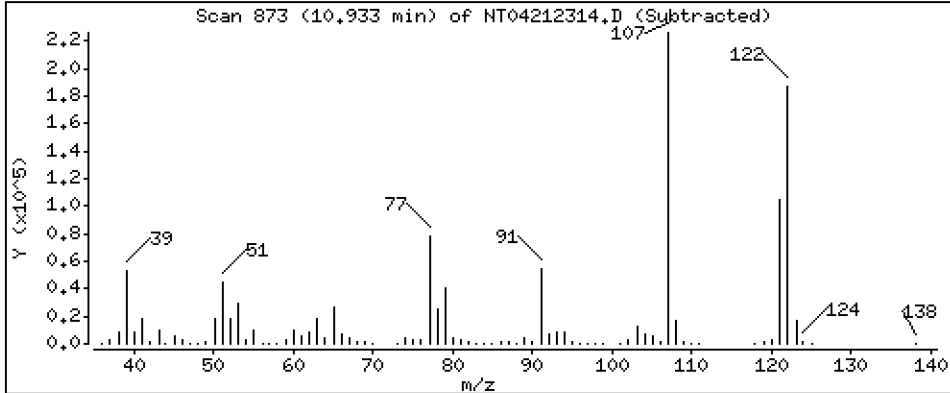
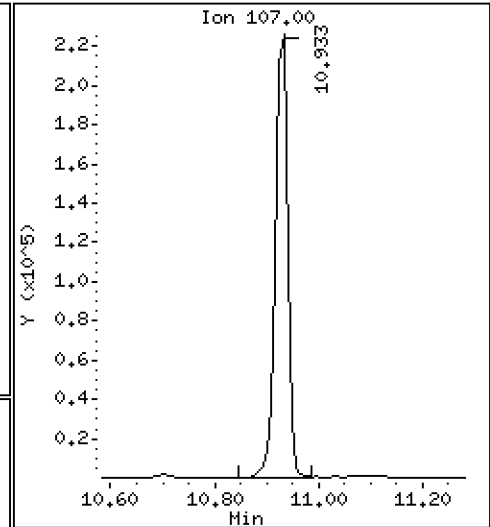
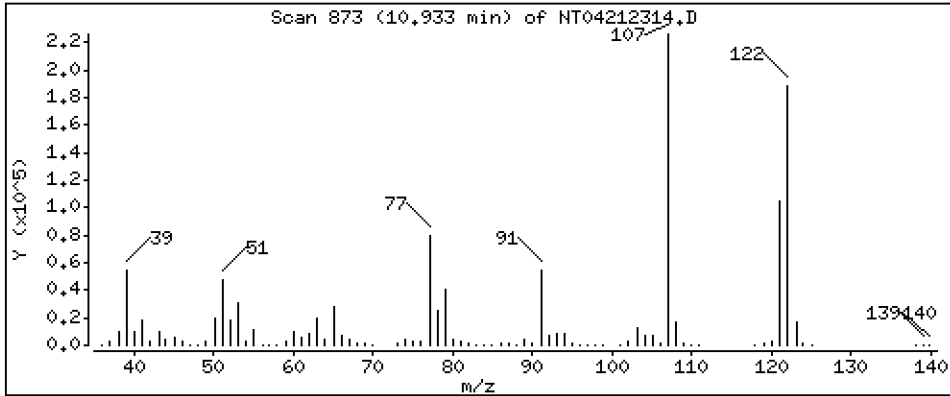
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 3,707 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

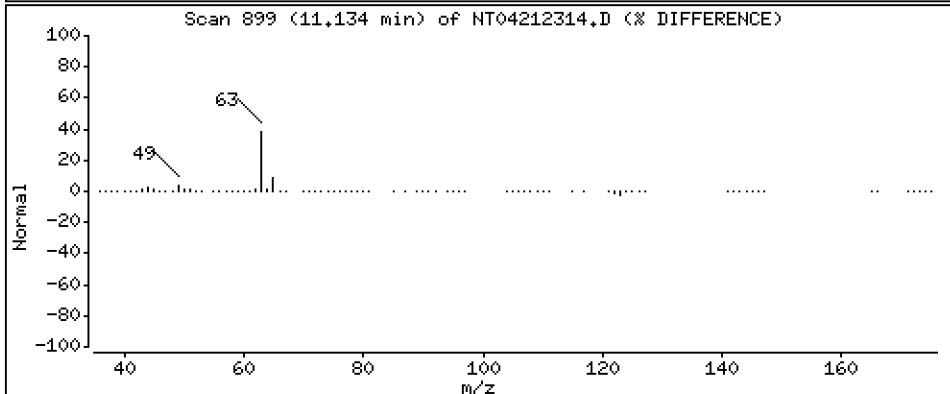
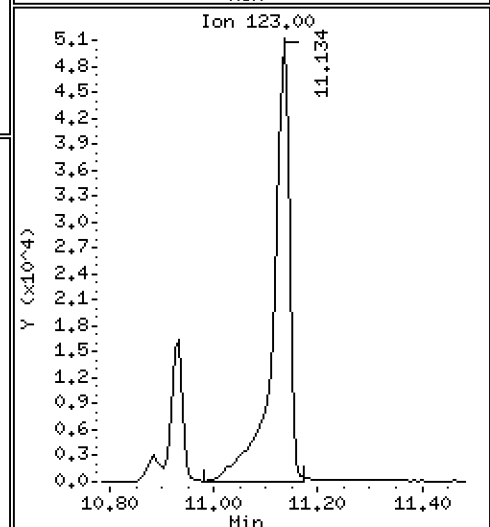
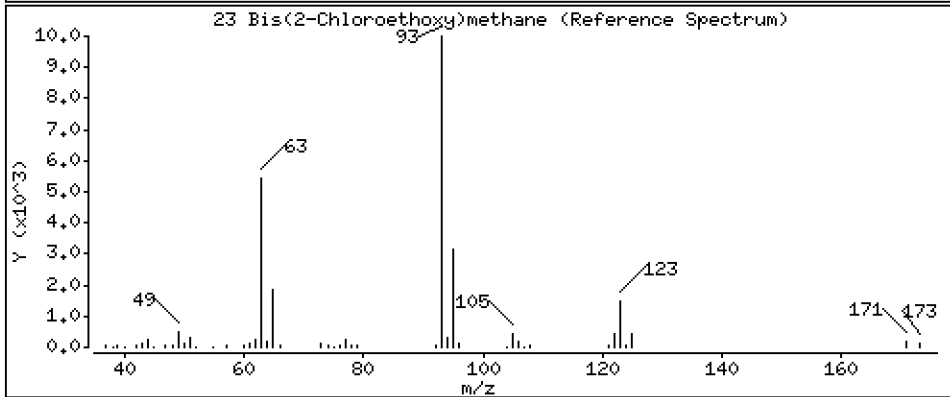
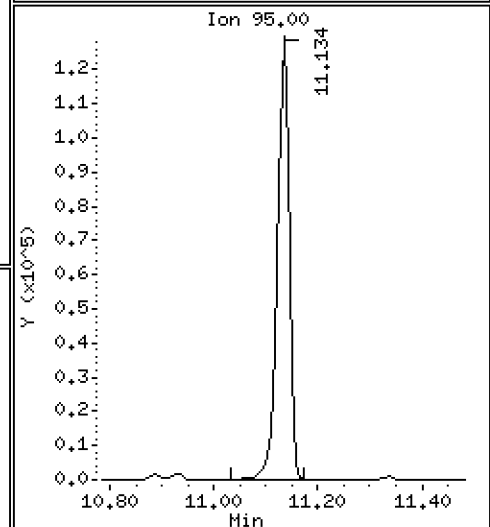
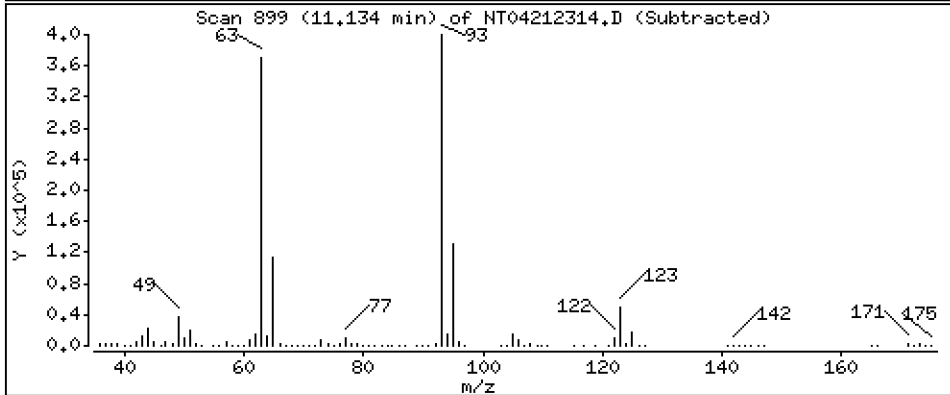
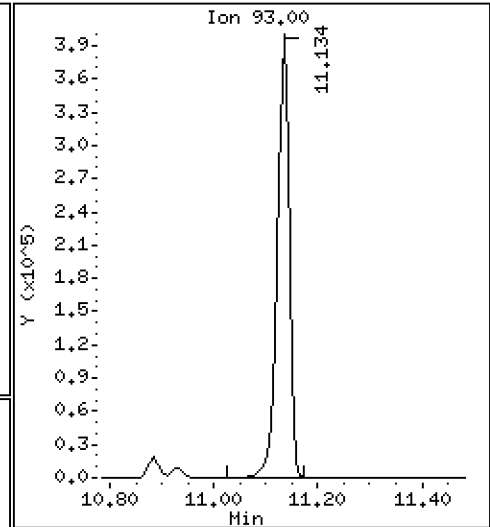
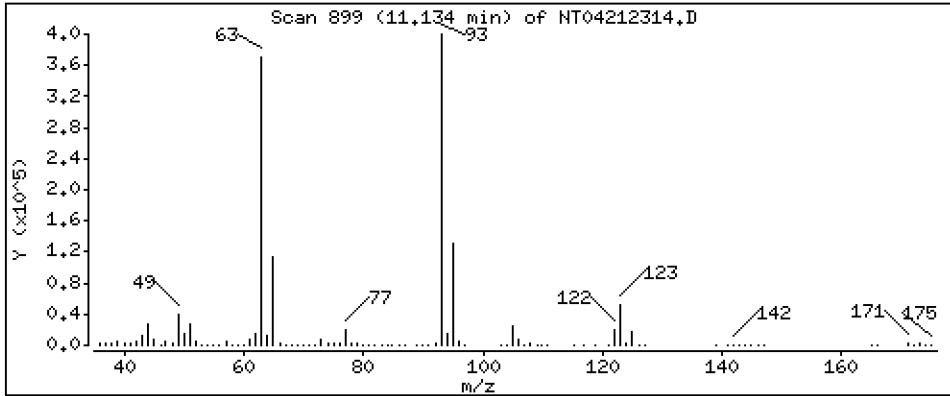
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 5,396 ug/mL



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Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

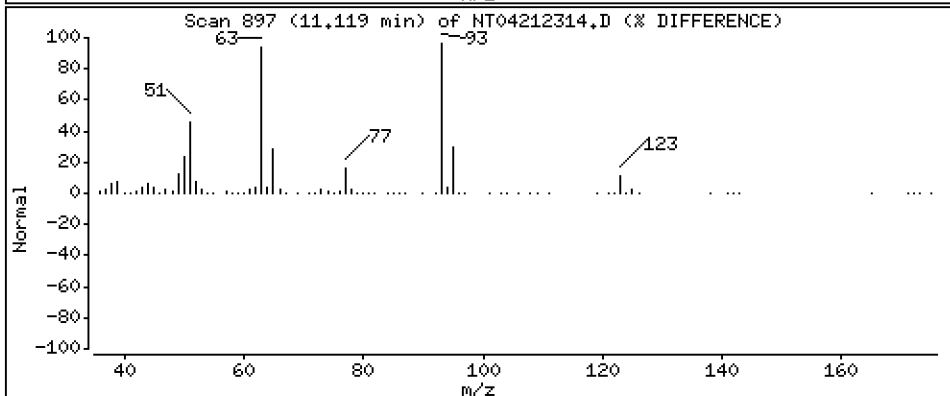
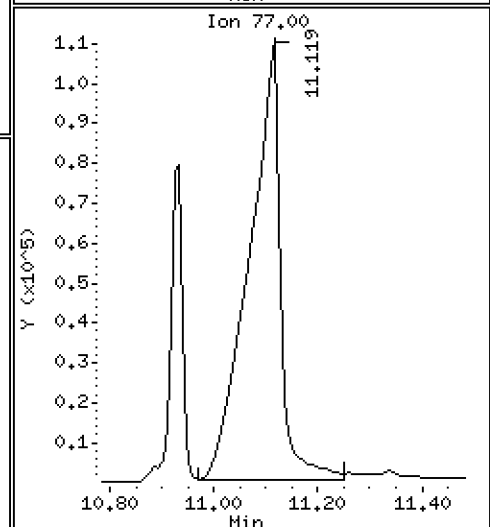
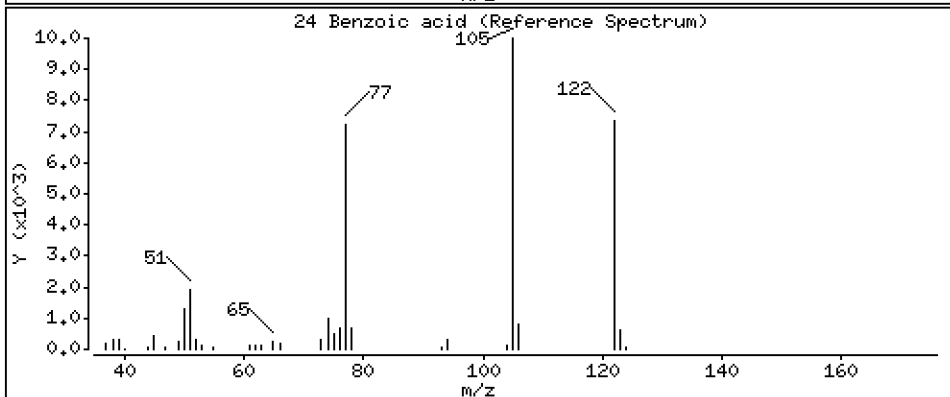
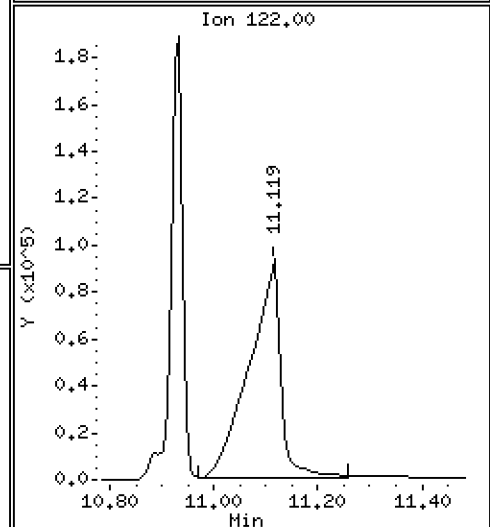
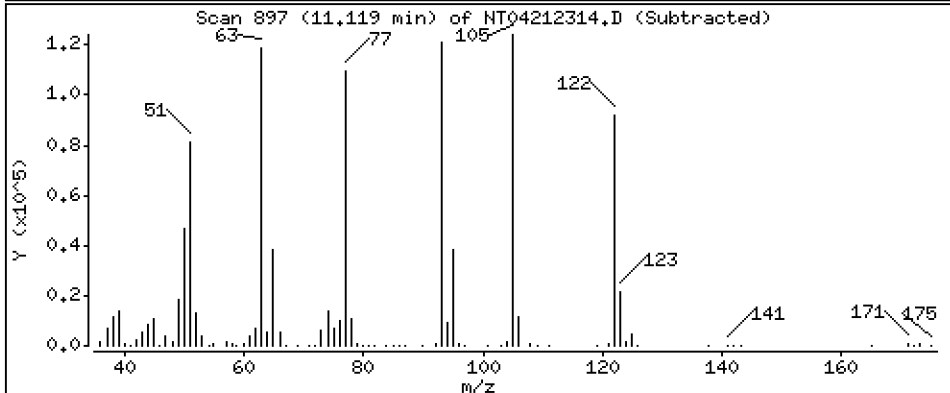
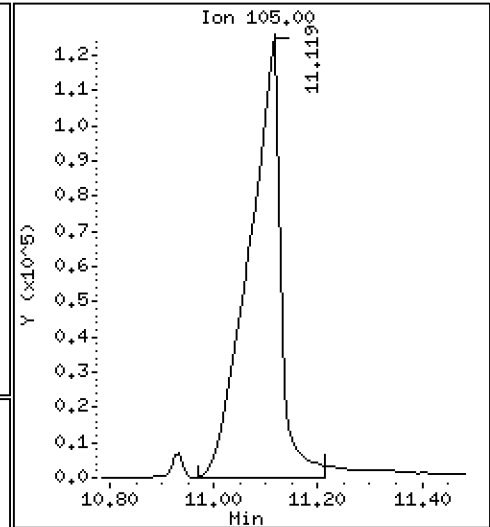
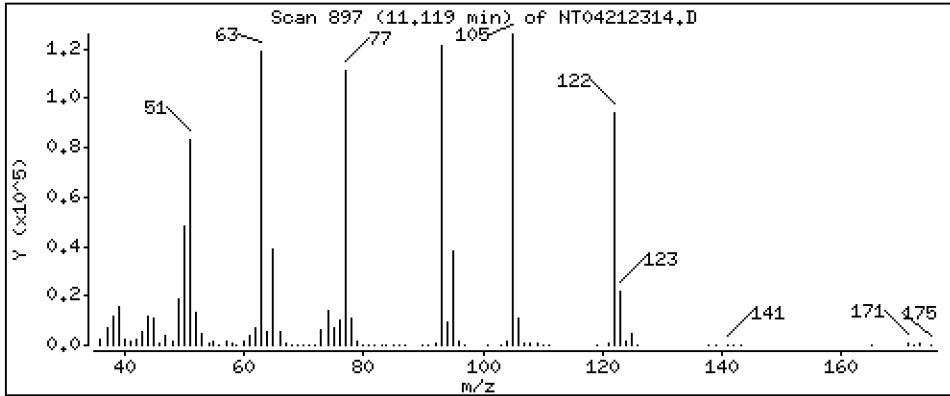
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

24 Benzoic acid

Concentration: 6.801 ug/mL





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Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

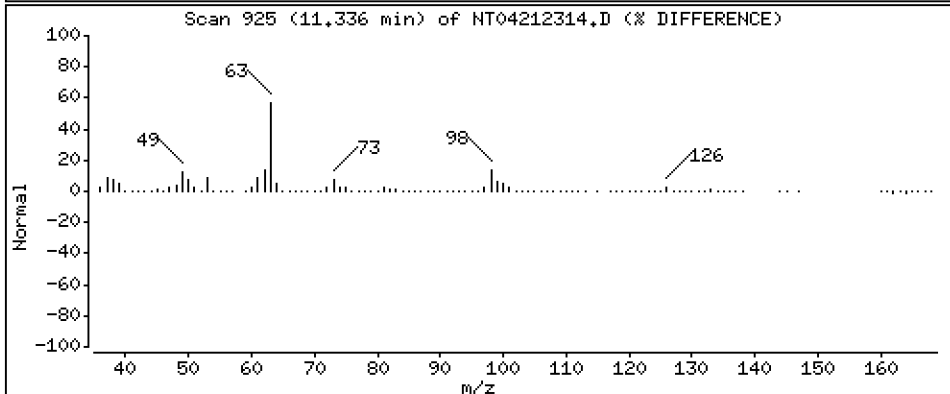
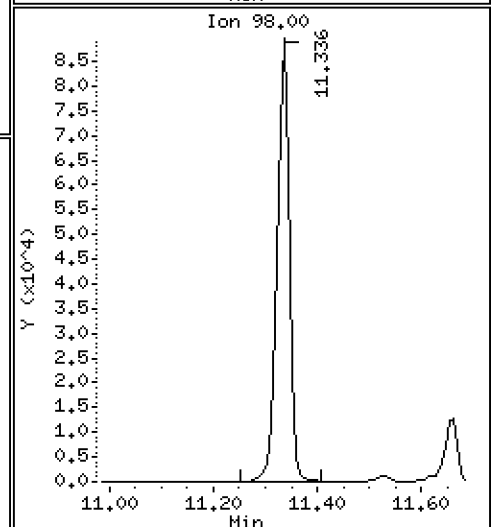
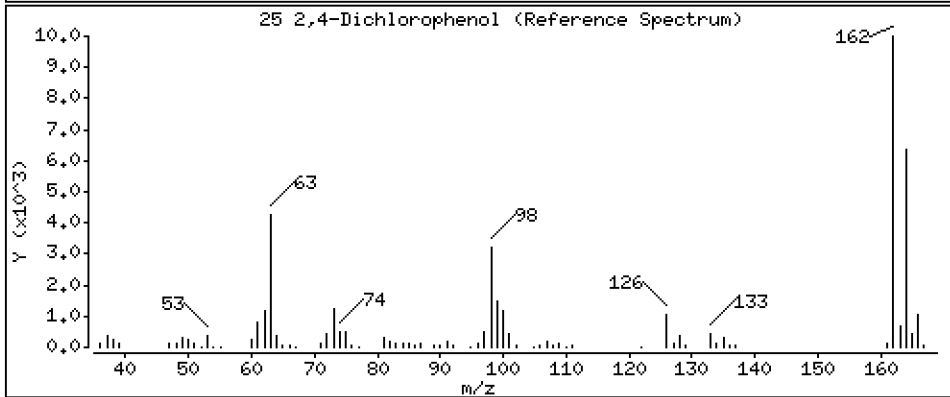
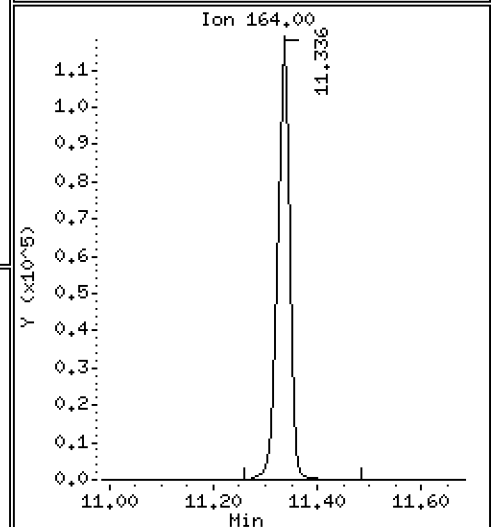
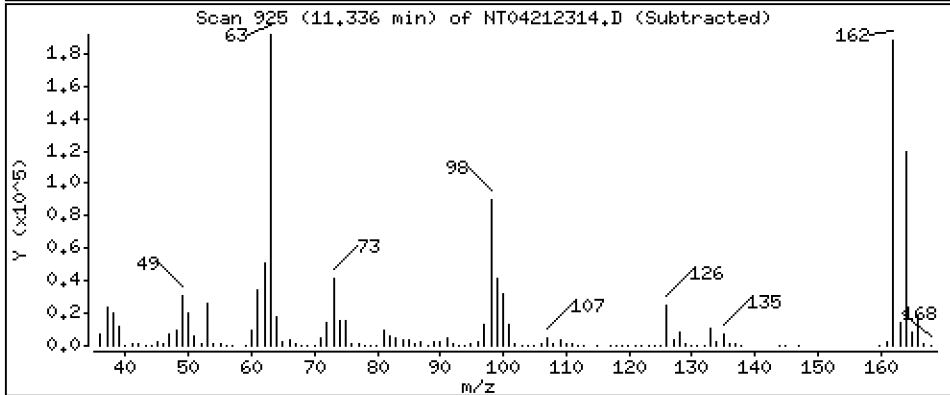
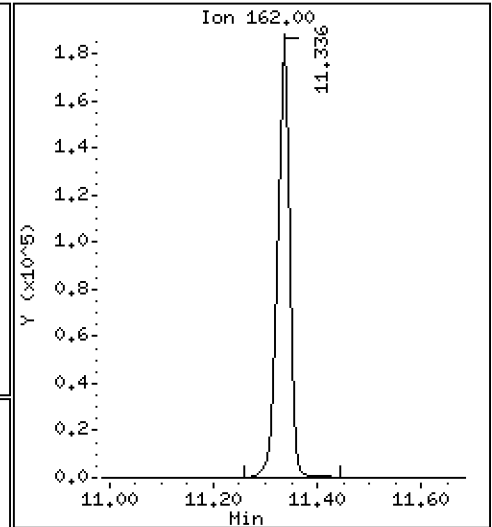
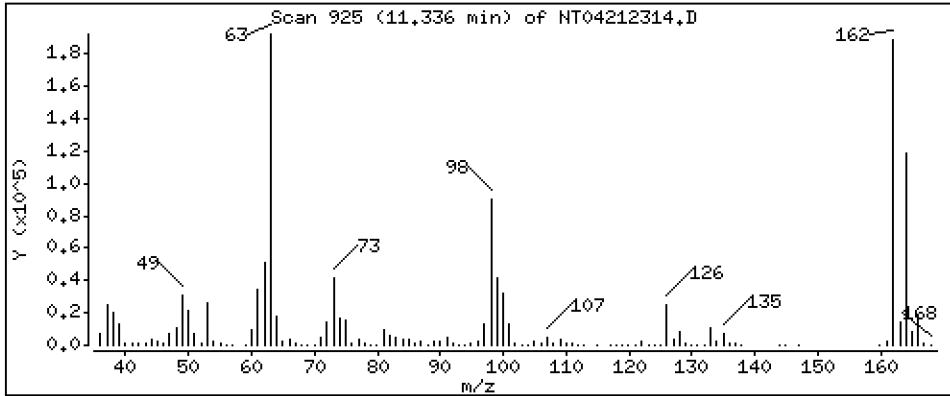
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 3,728 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

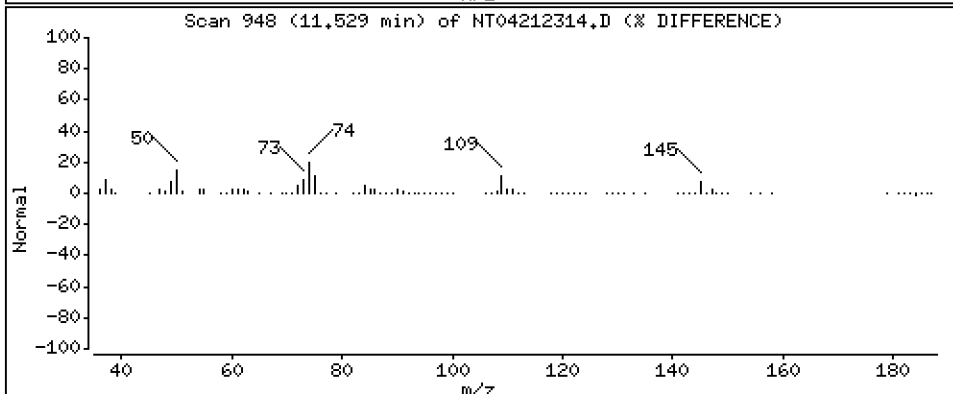
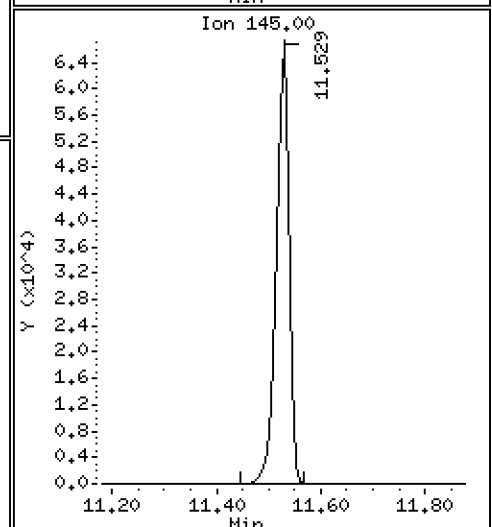
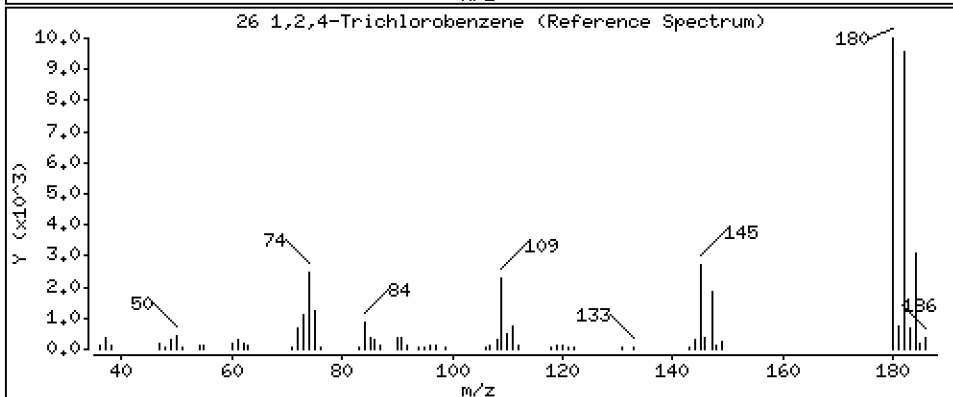
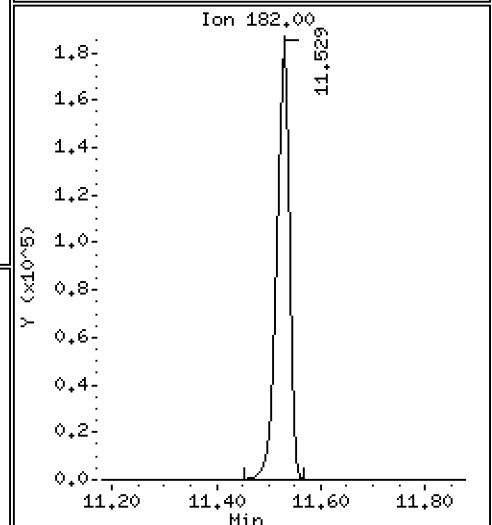
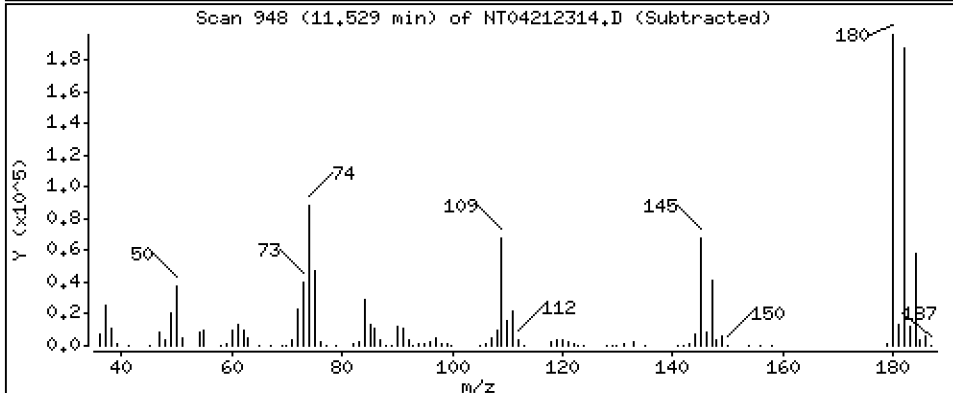
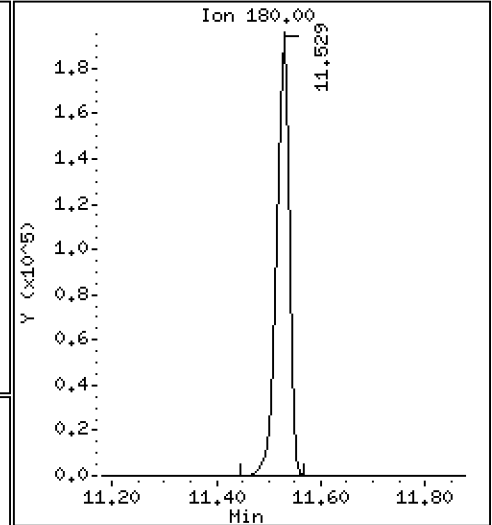
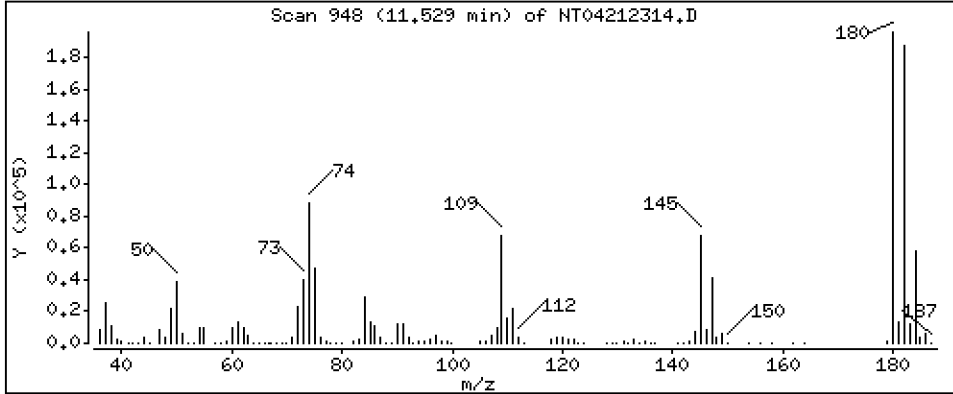
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,536 ug/mL



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Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

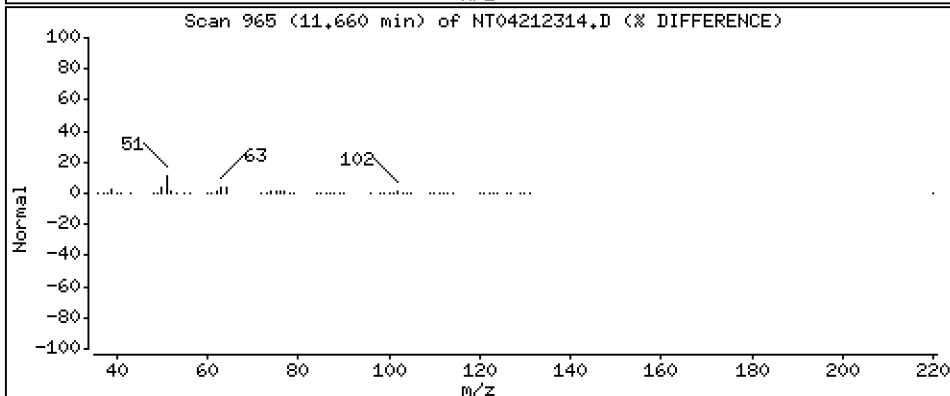
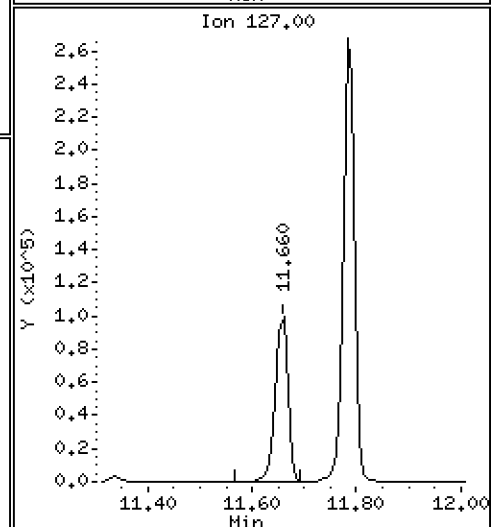
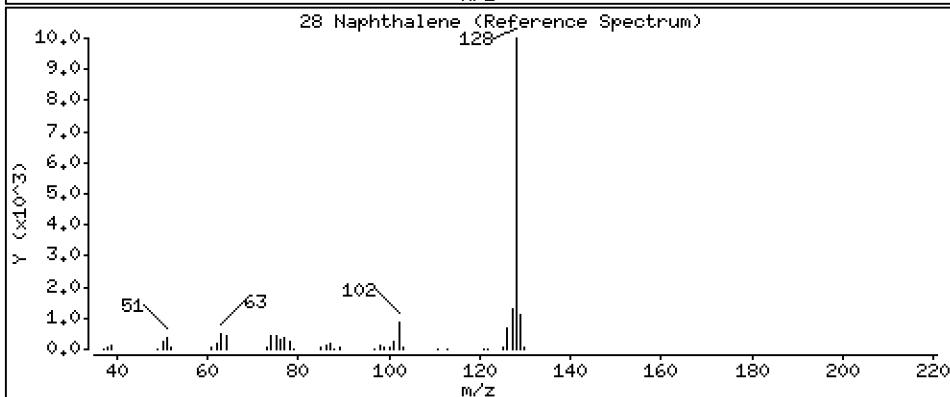
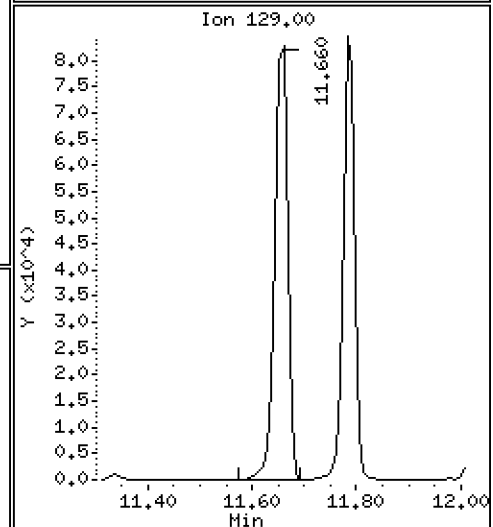
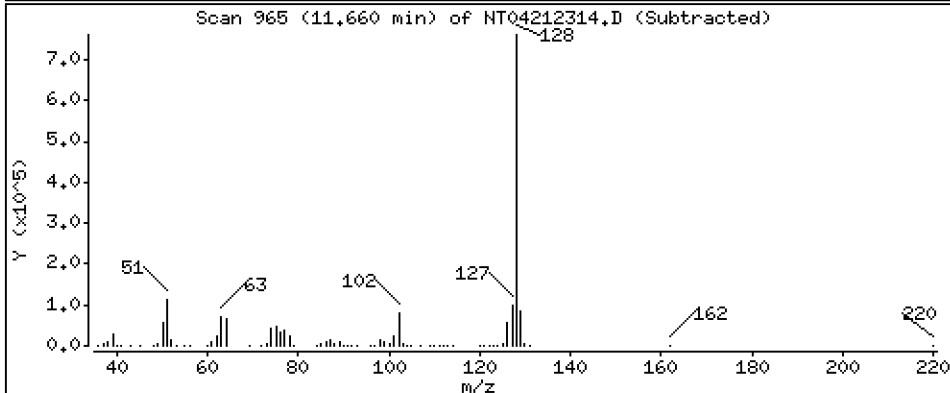
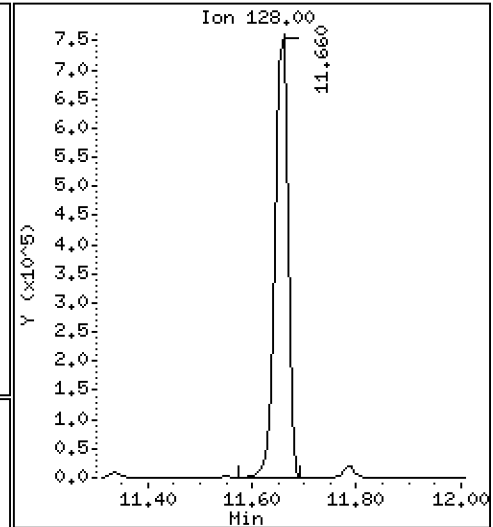
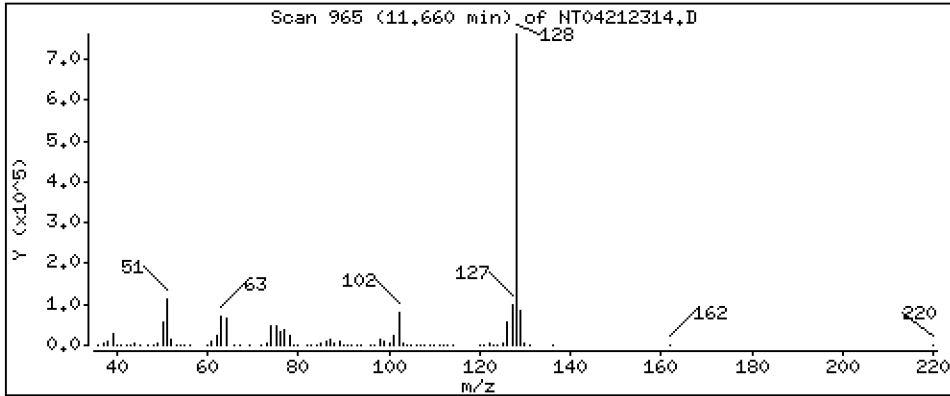
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 4,813 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

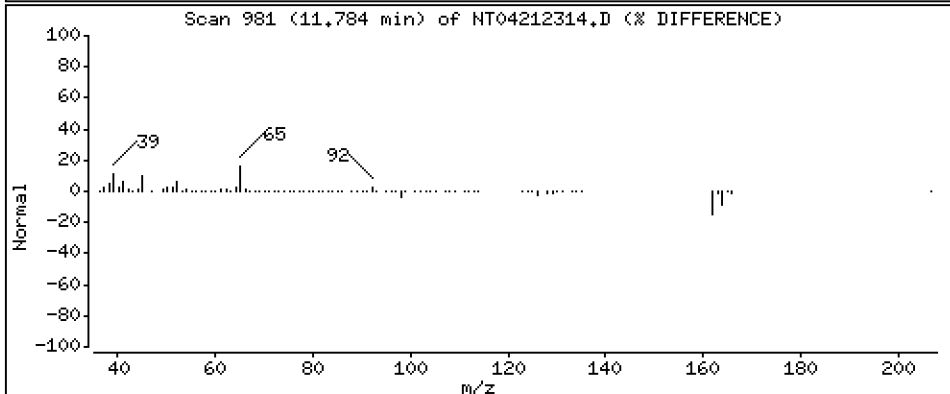
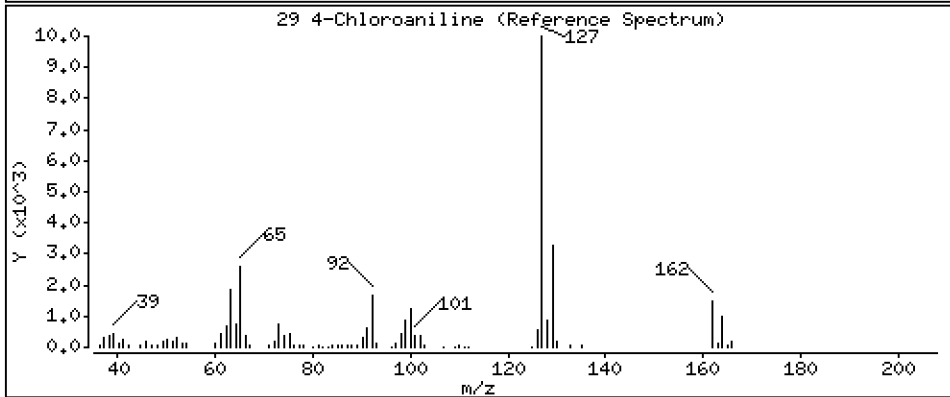
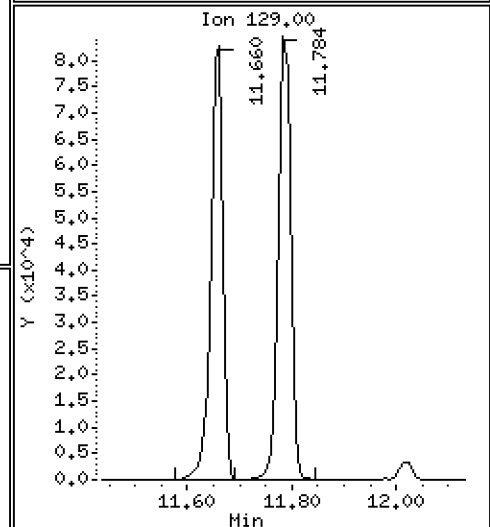
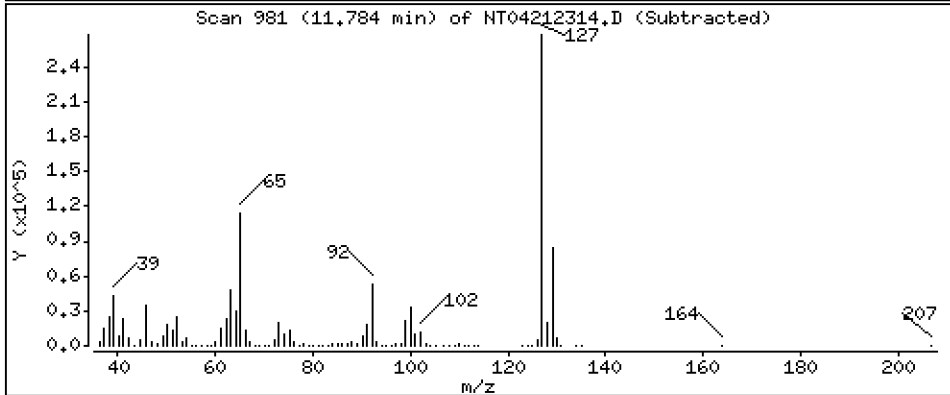
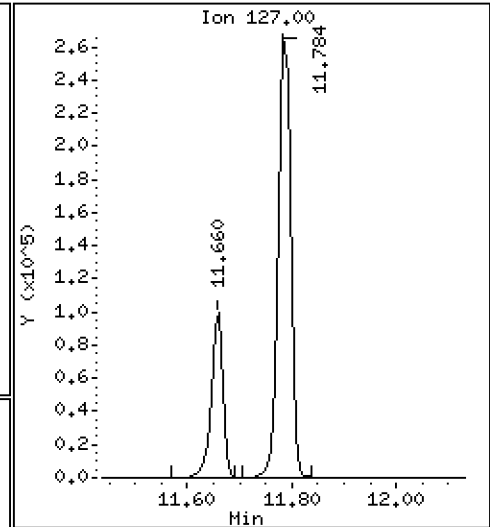
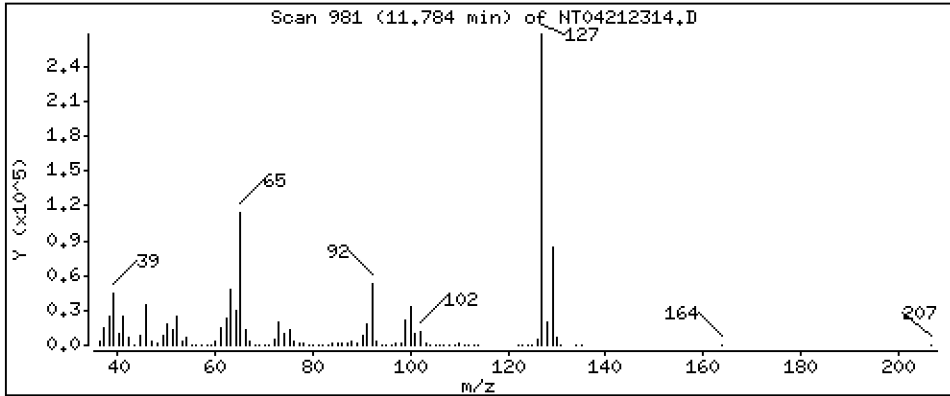
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 3,770 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

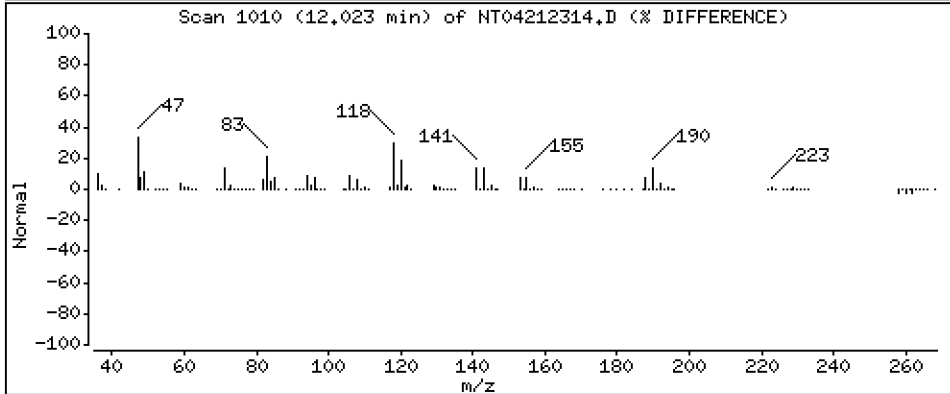
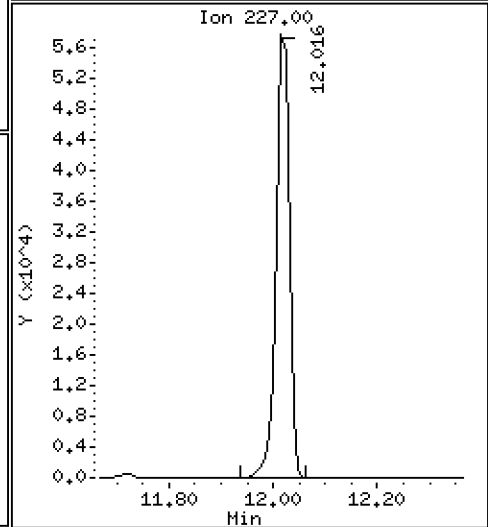
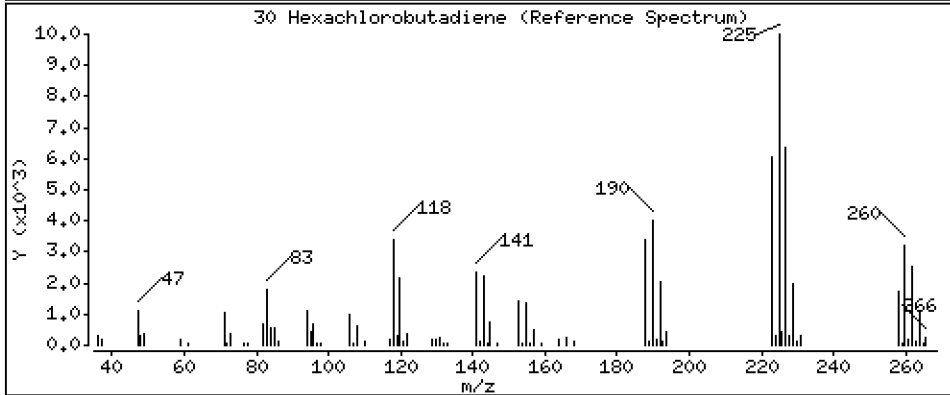
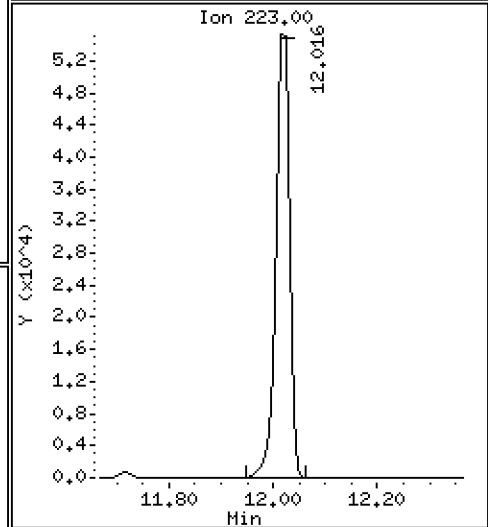
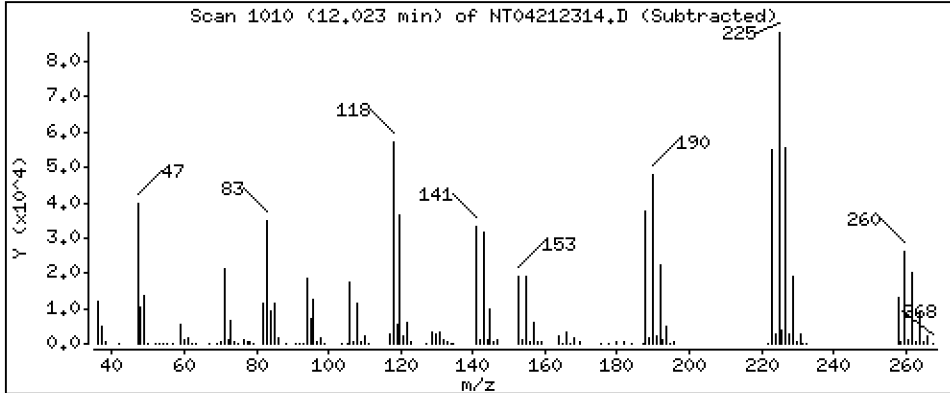
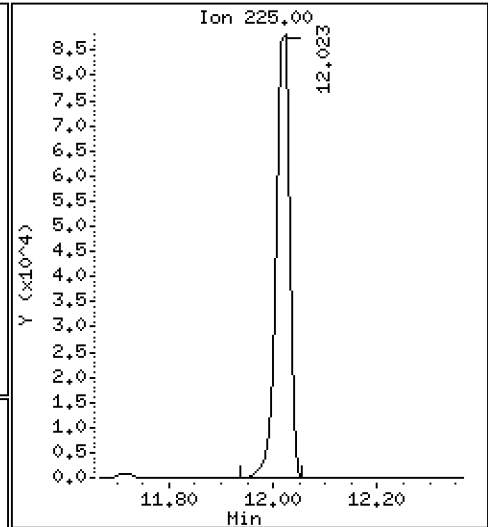
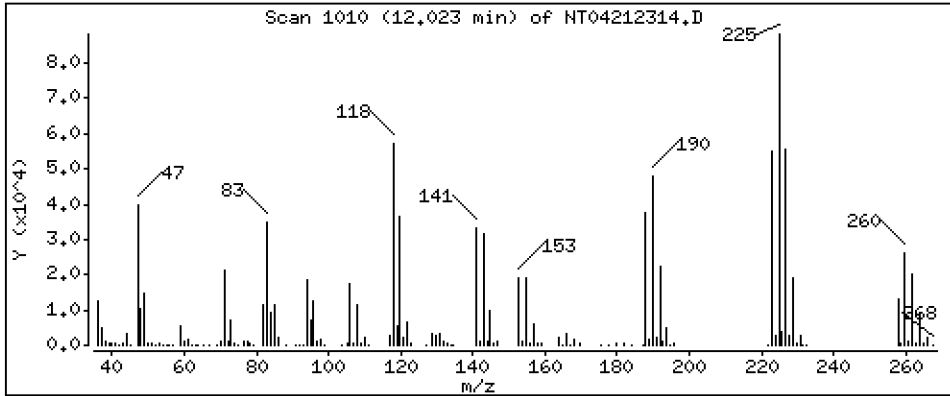
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,665 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

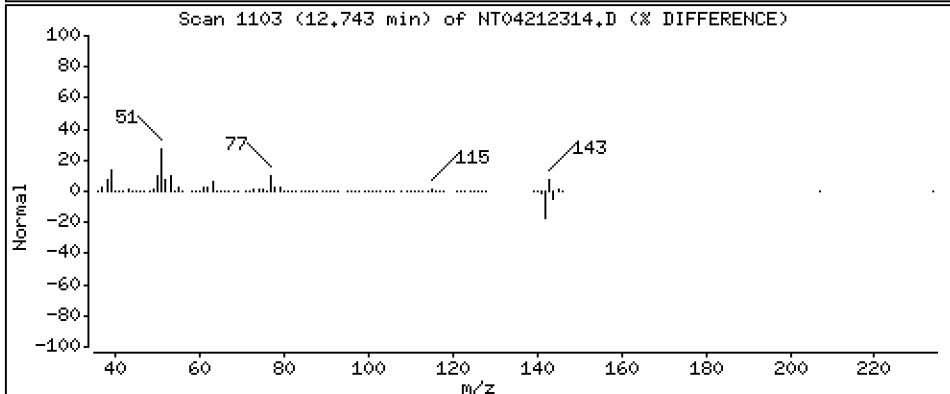
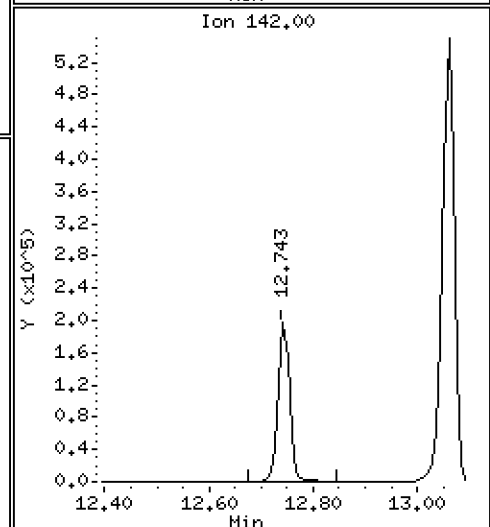
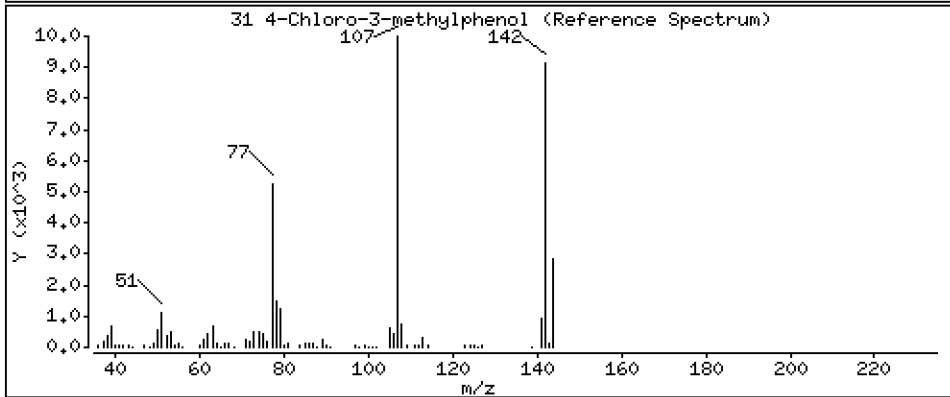
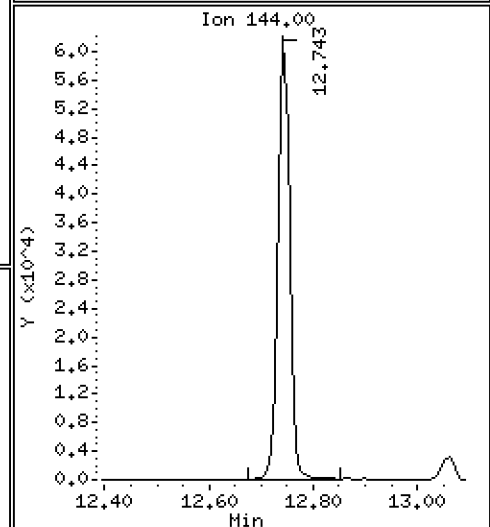
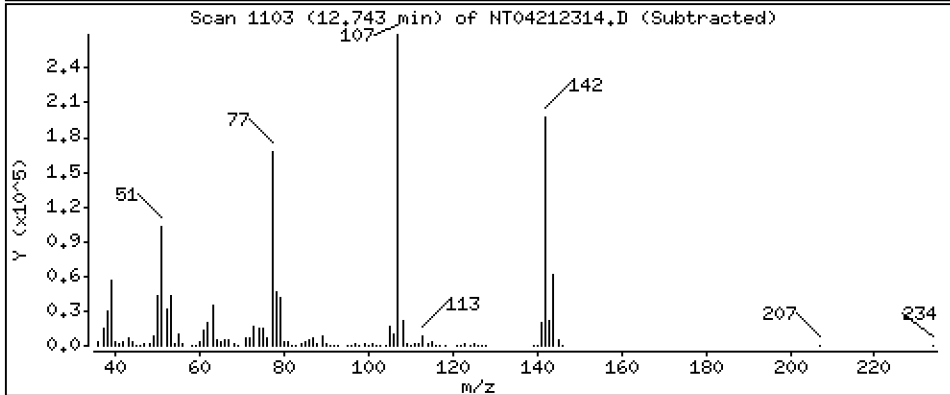
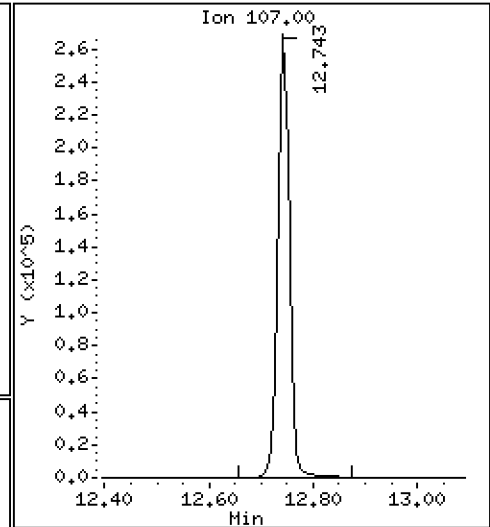
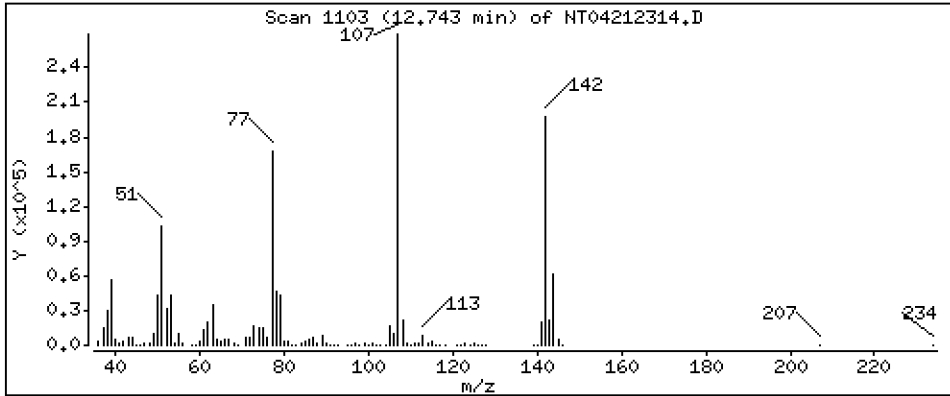
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 4,615 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

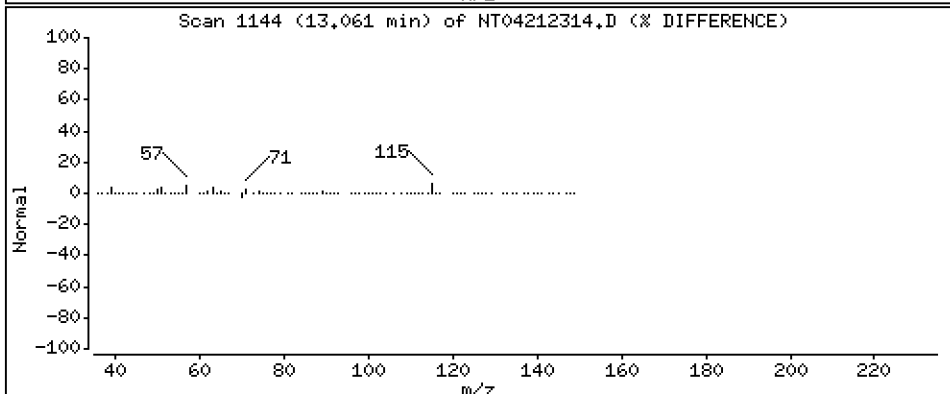
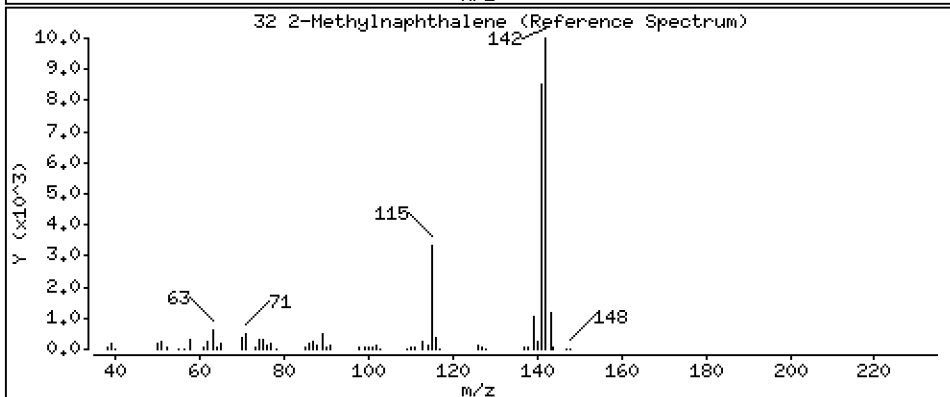
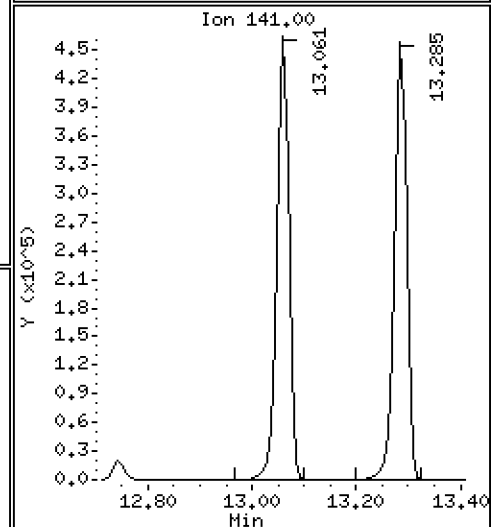
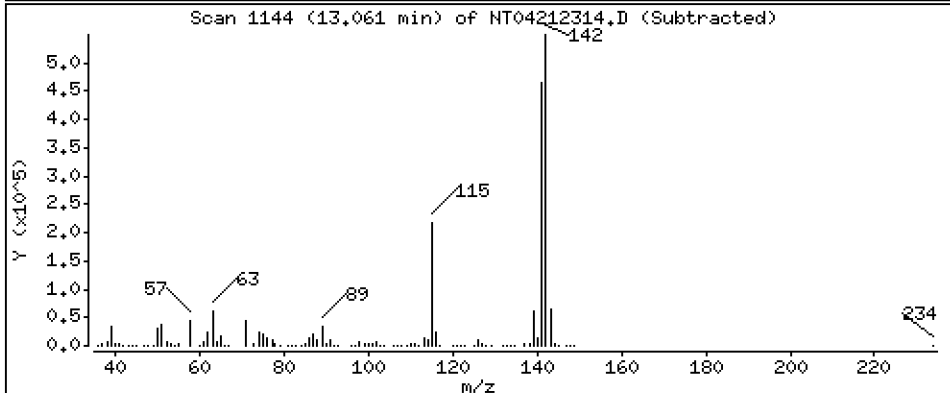
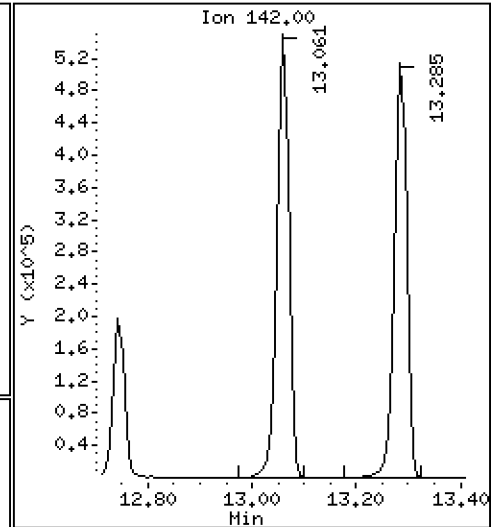
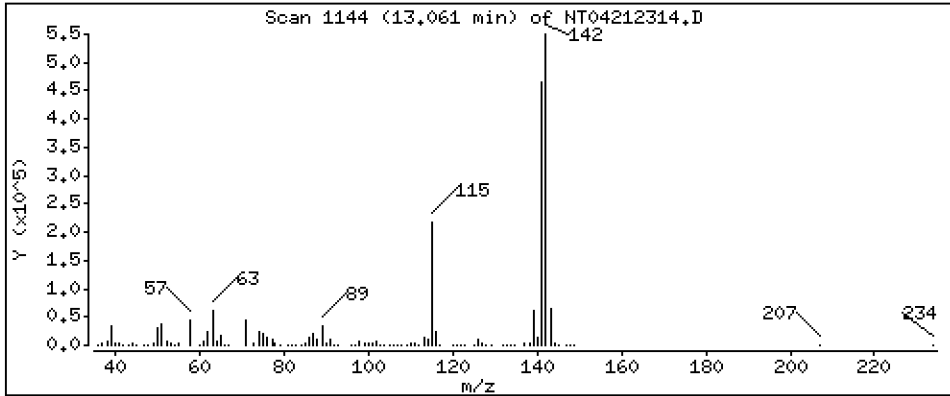
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 4,474 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

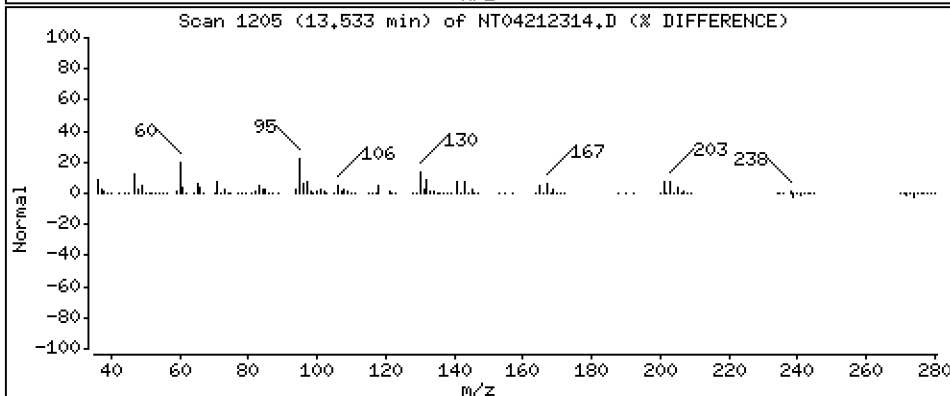
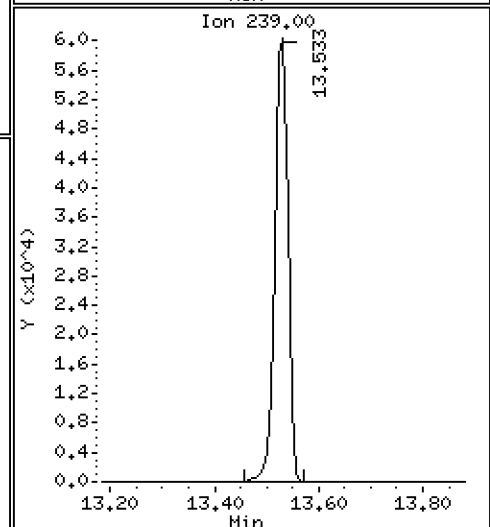
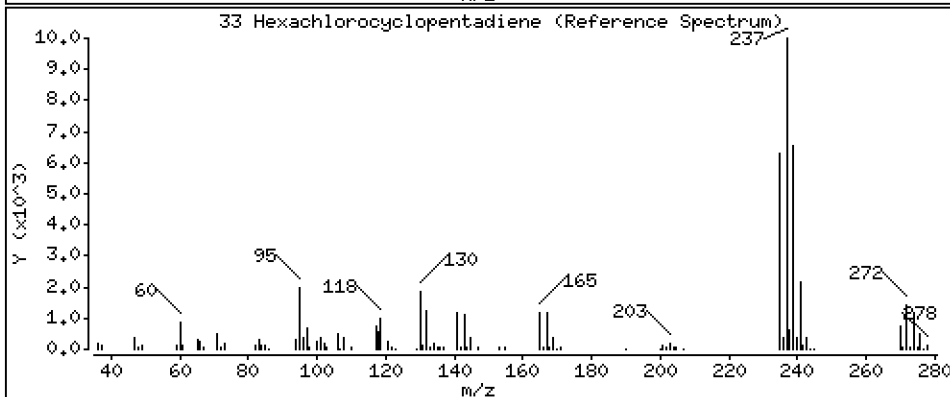
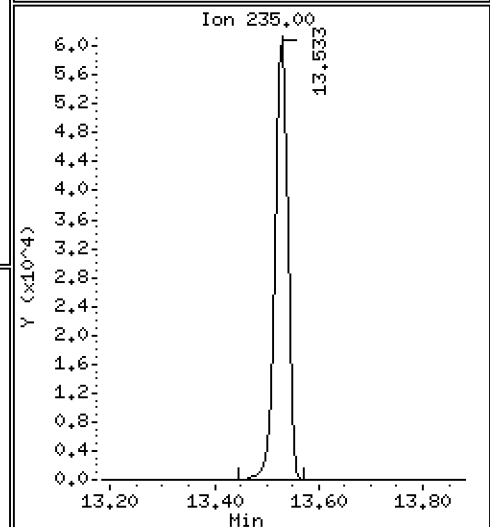
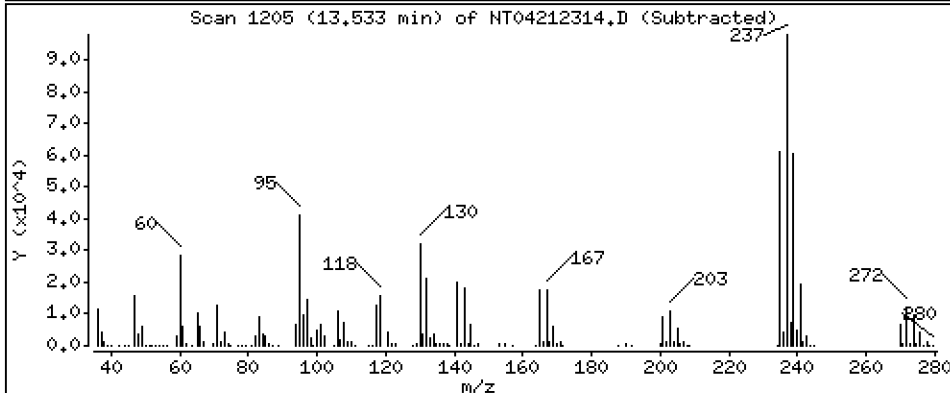
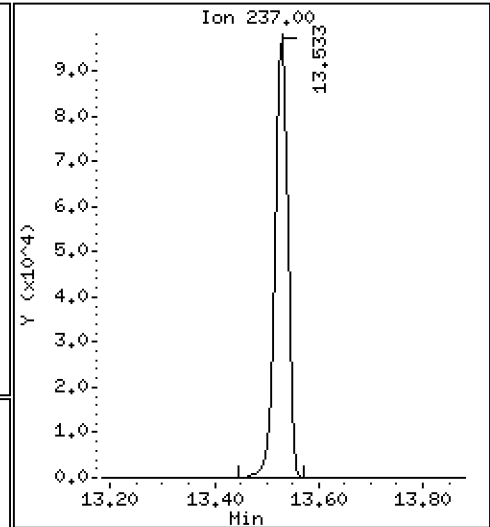
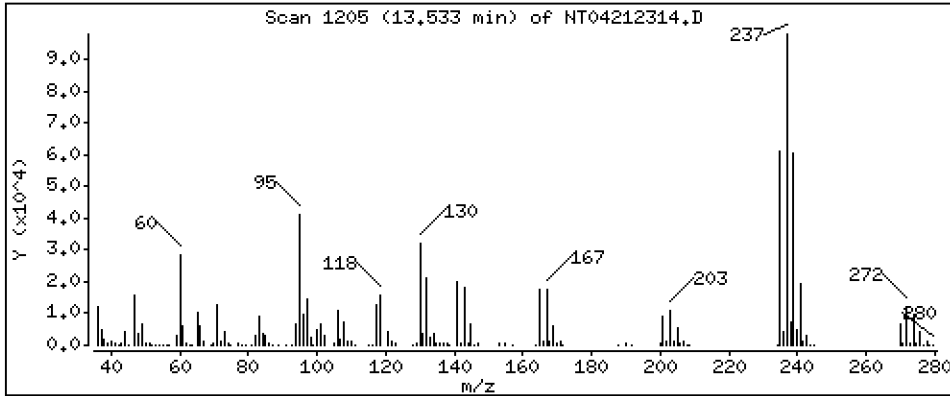
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 4,783 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

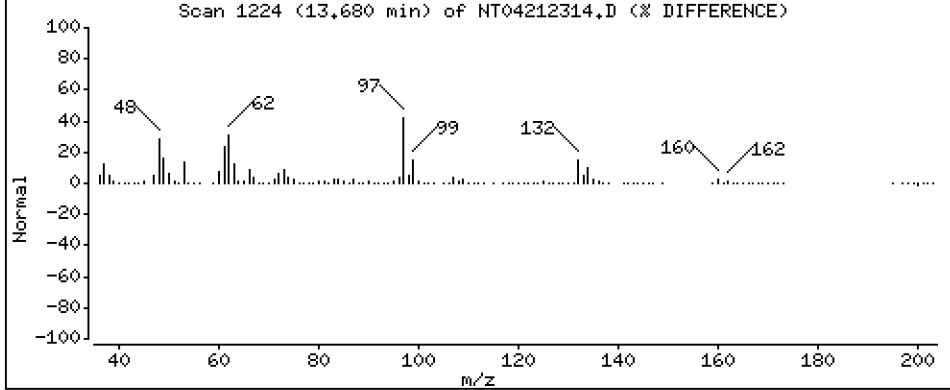
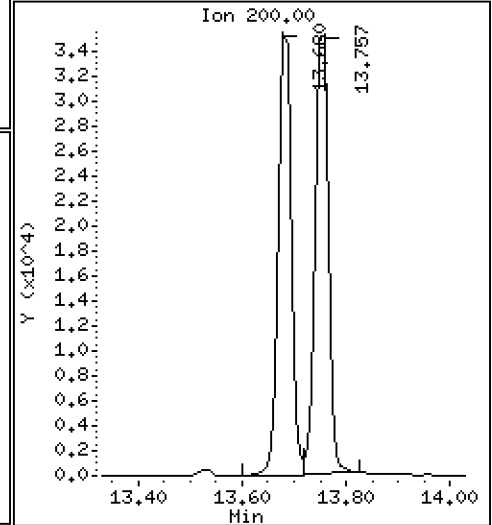
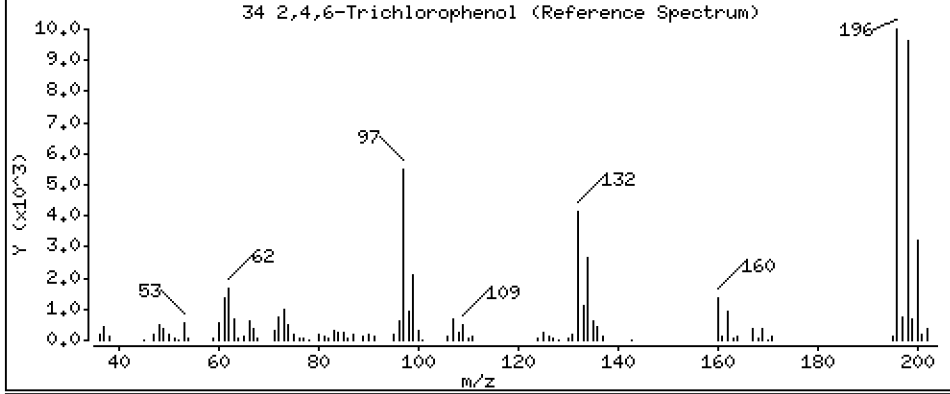
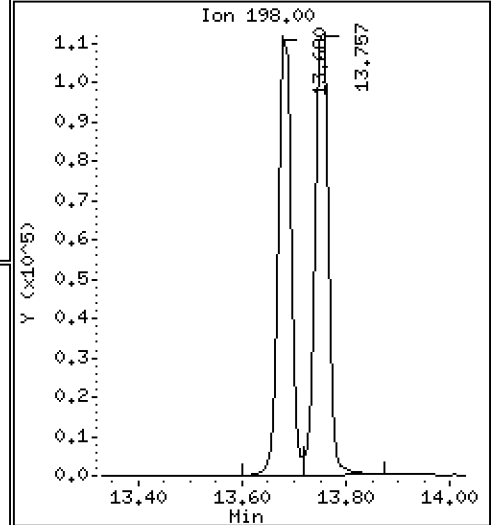
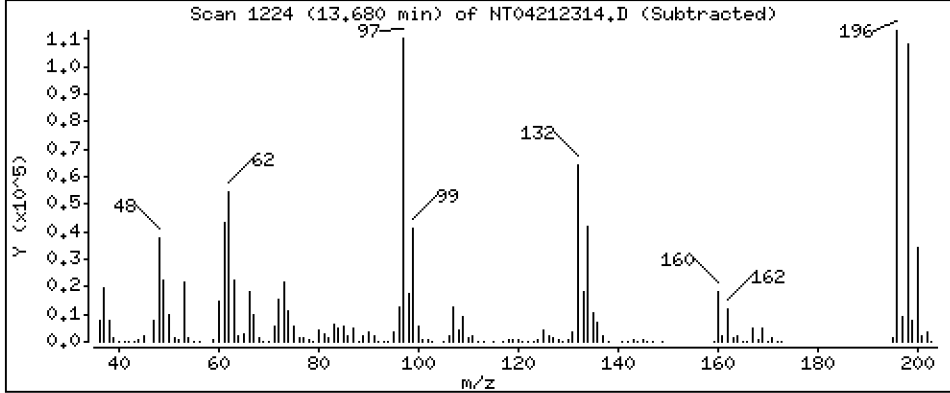
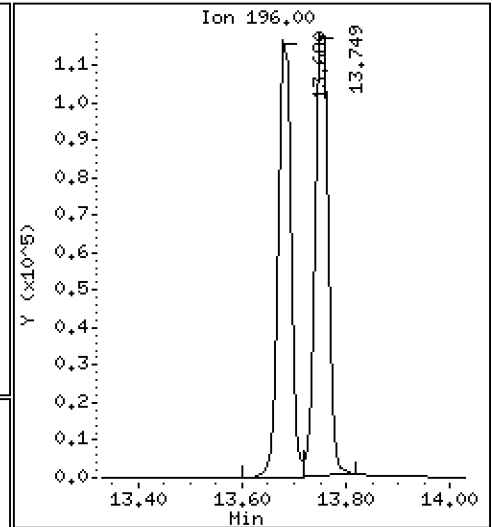
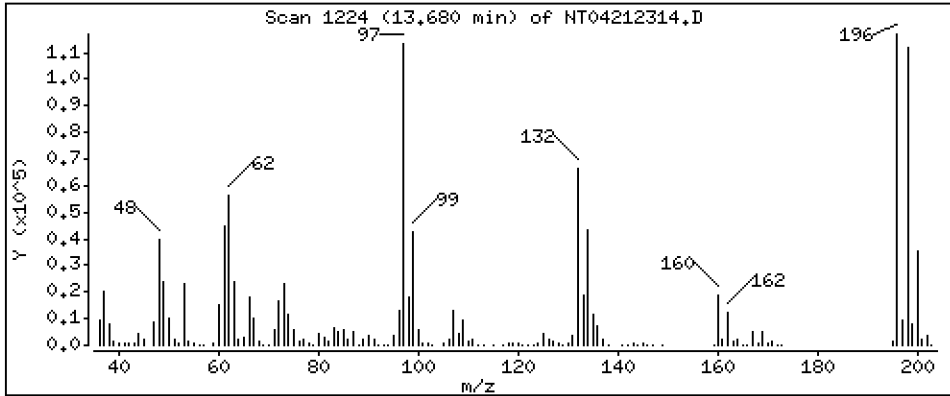
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 4,578 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

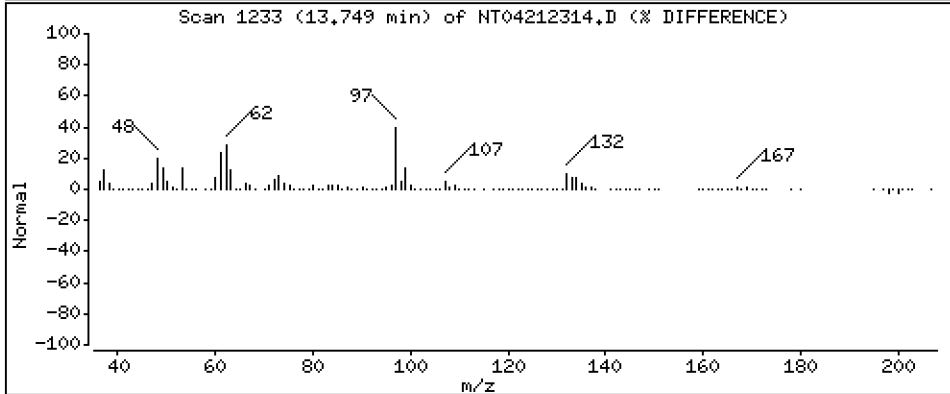
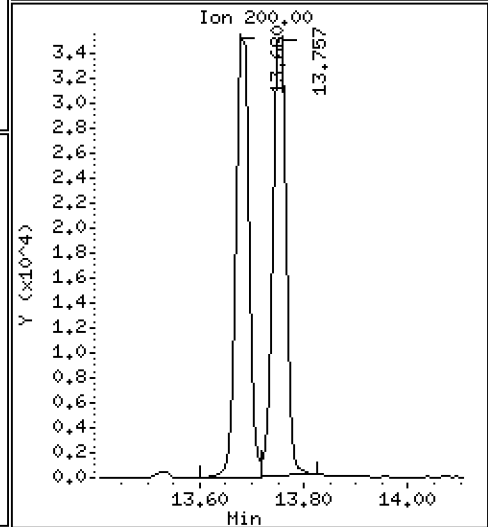
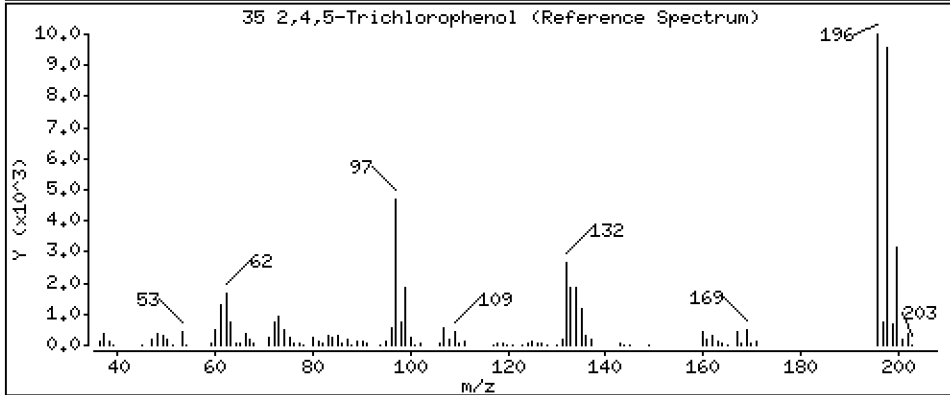
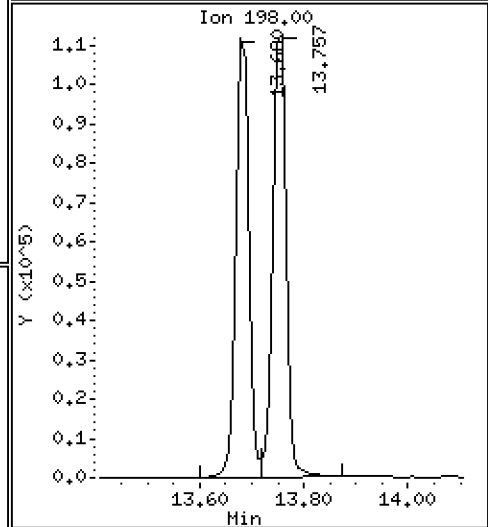
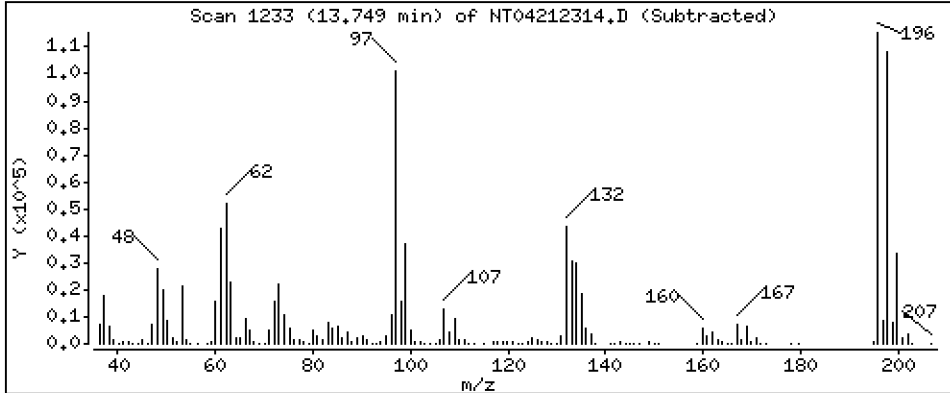
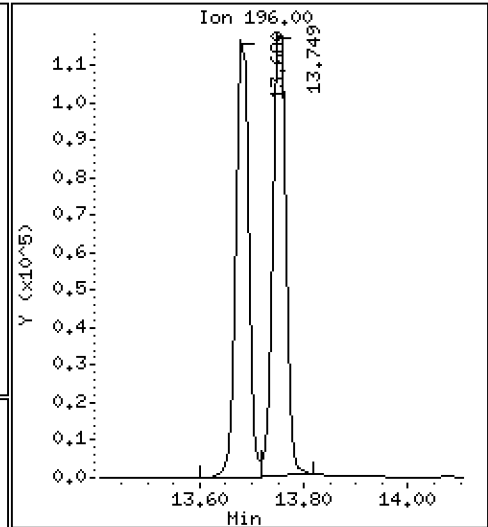
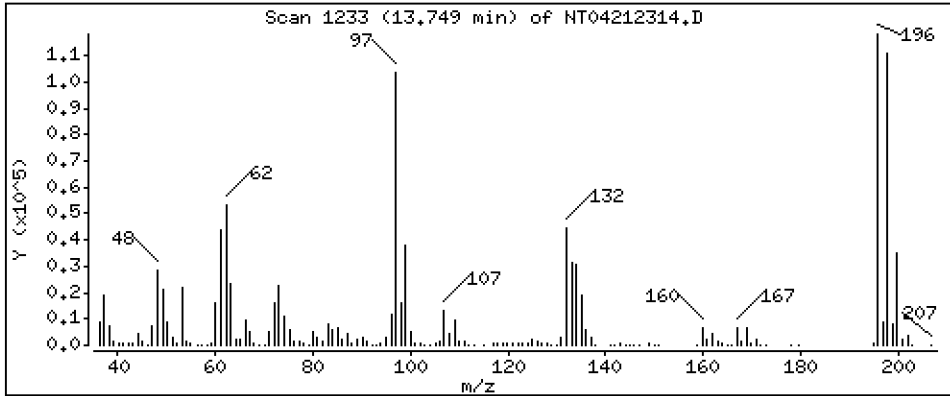
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

35 2,4,5-Trichlorophenol

Concentration: 4.434 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

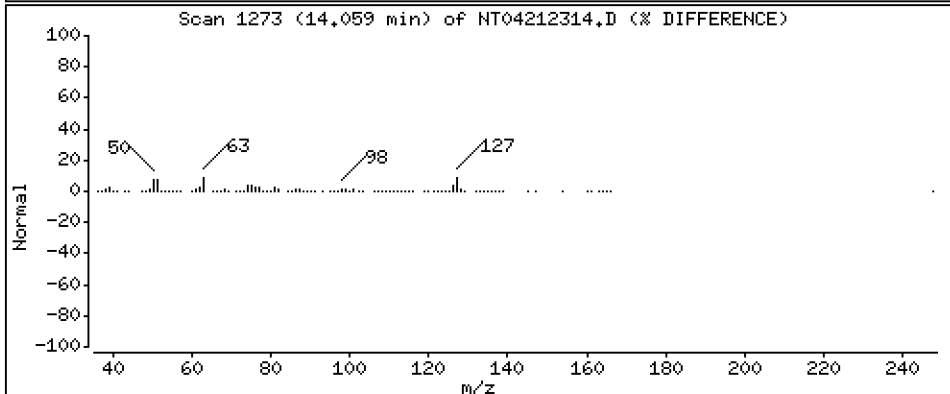
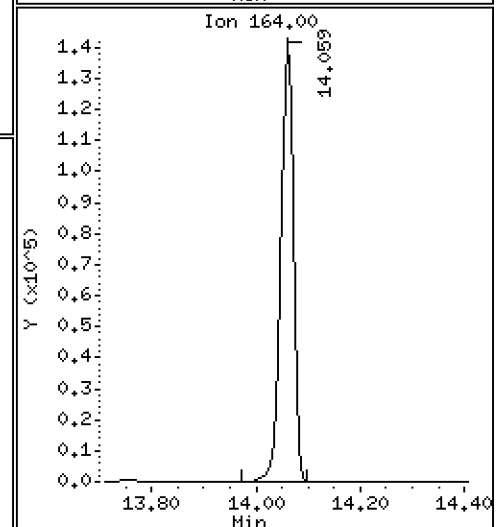
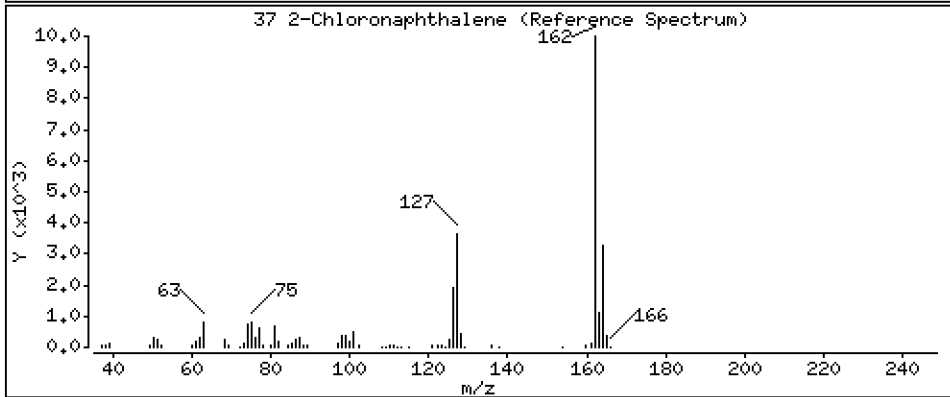
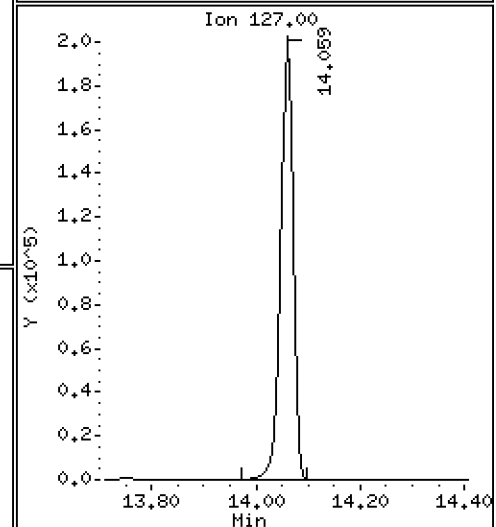
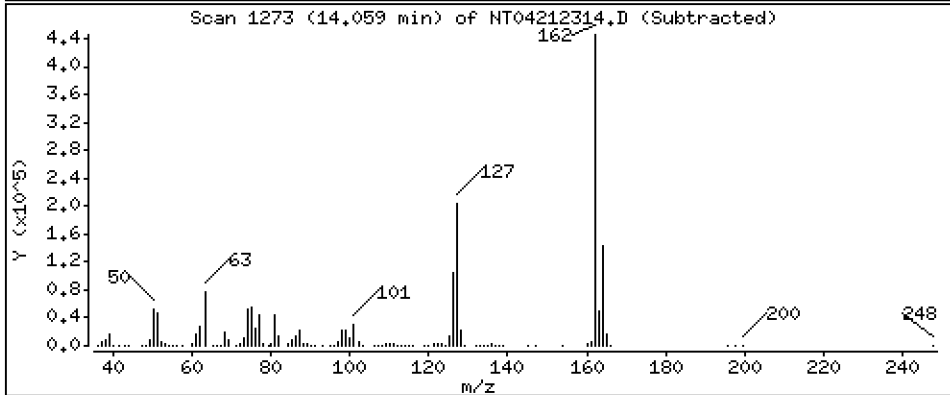
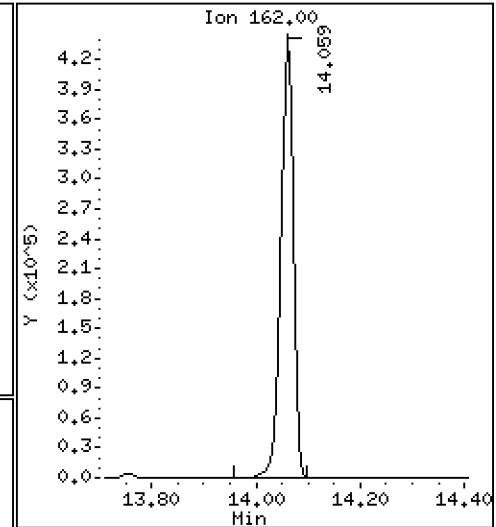
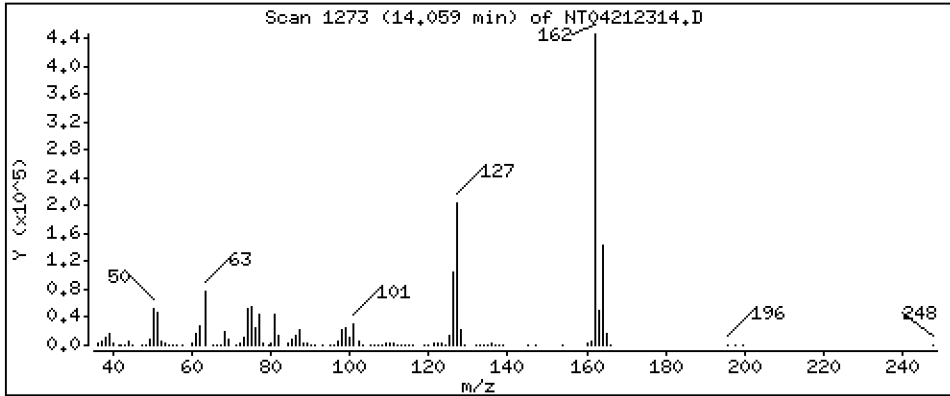
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 4,643 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

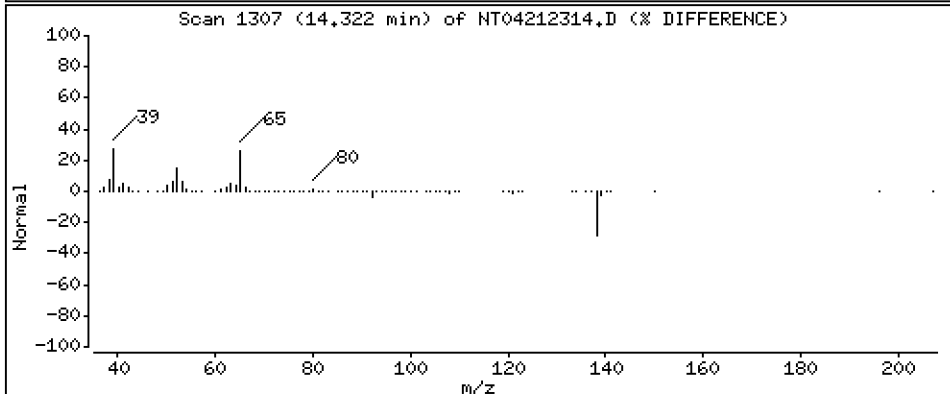
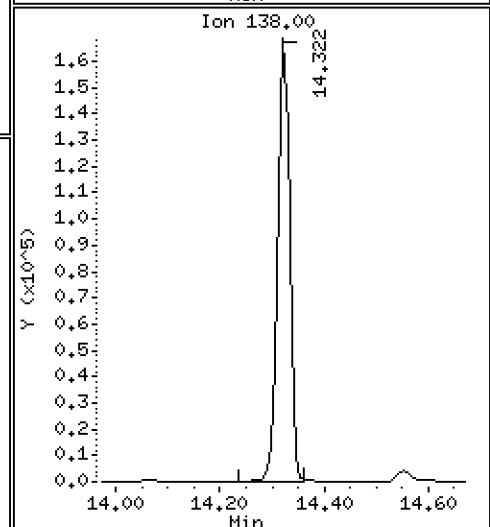
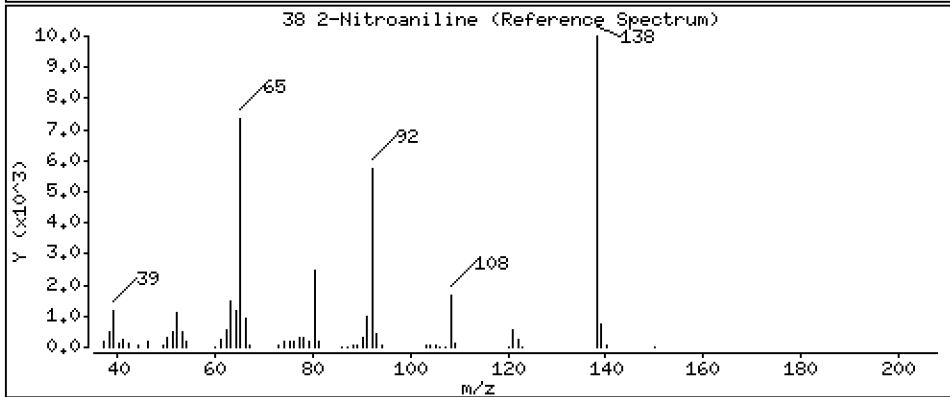
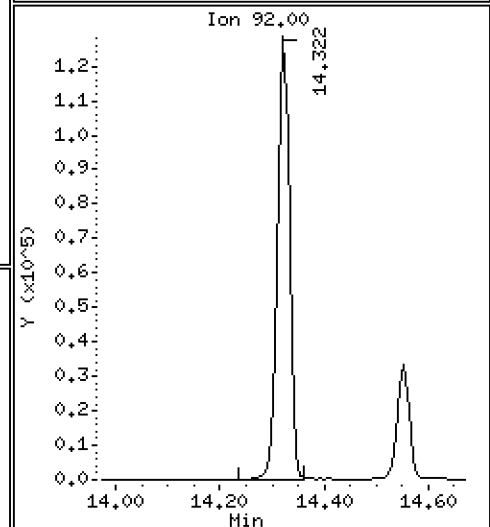
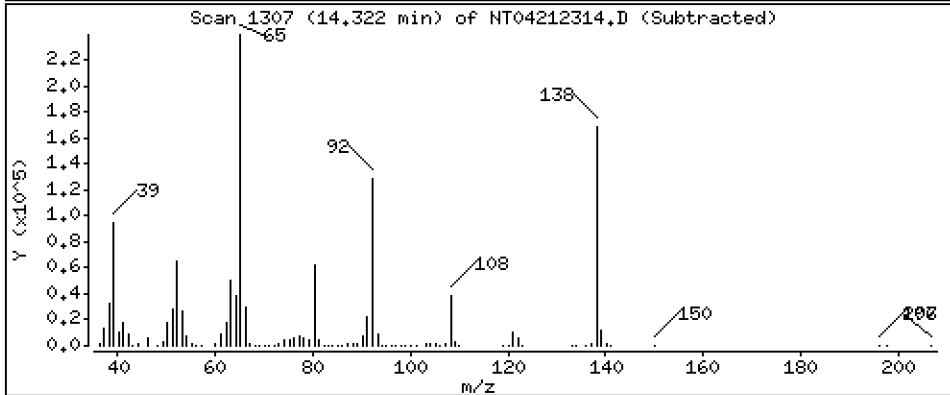
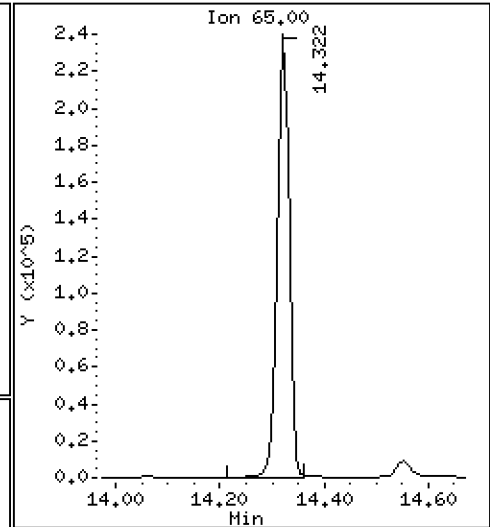
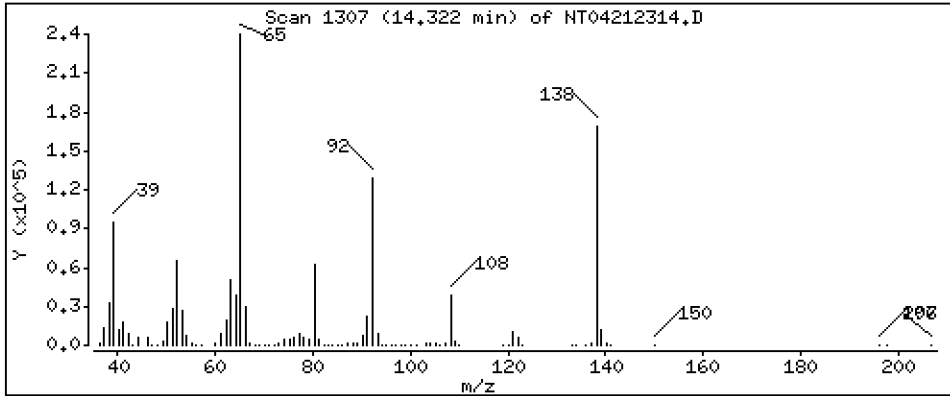
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

38 2-Nitroaniline

Concentration: 4.475 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

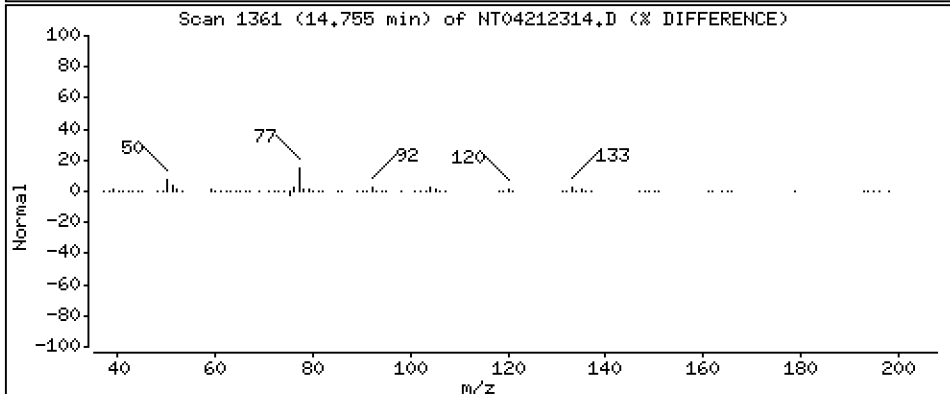
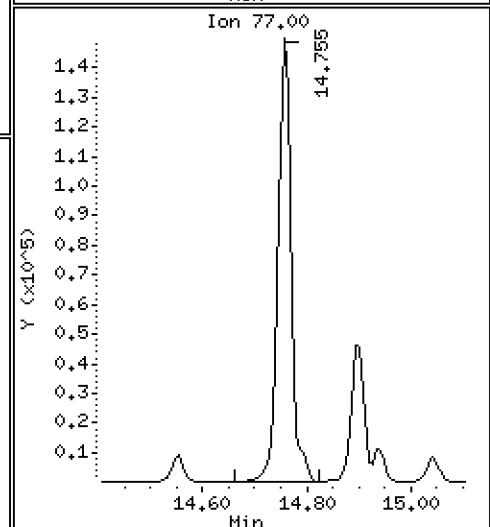
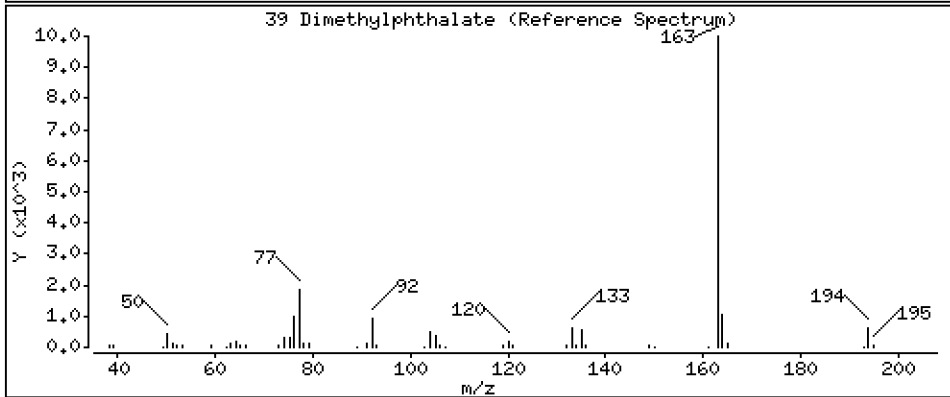
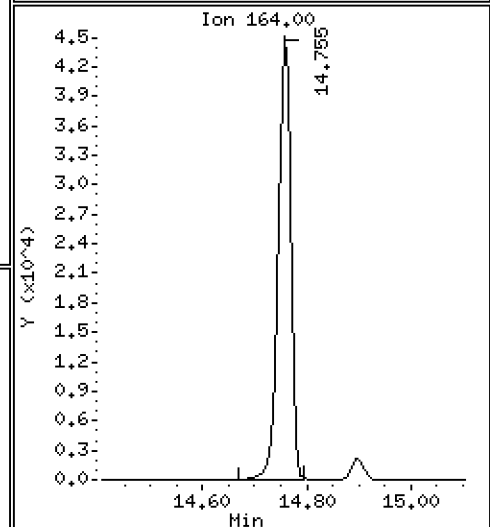
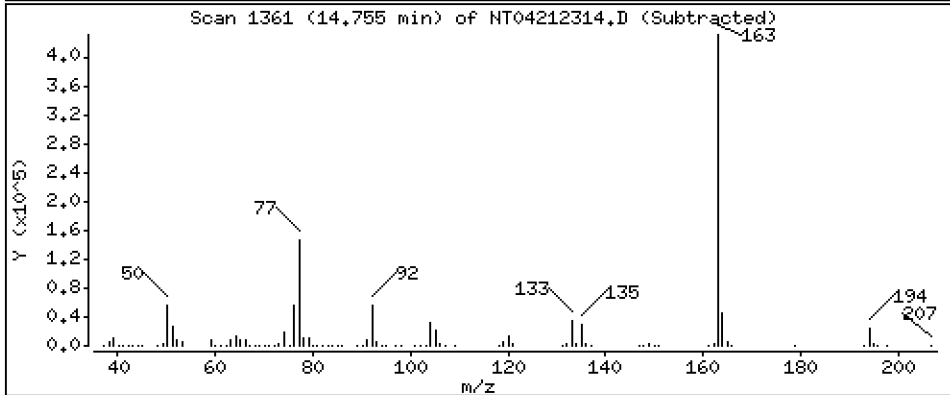
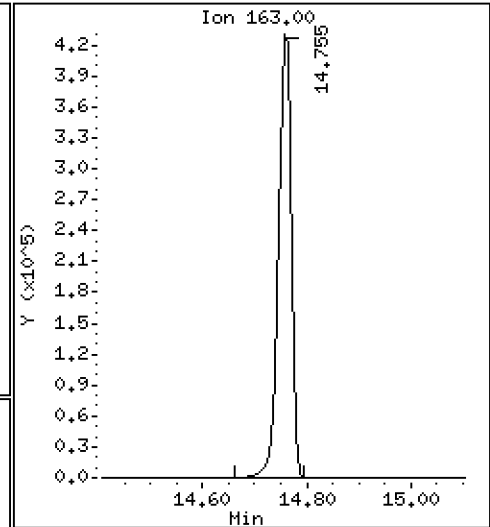
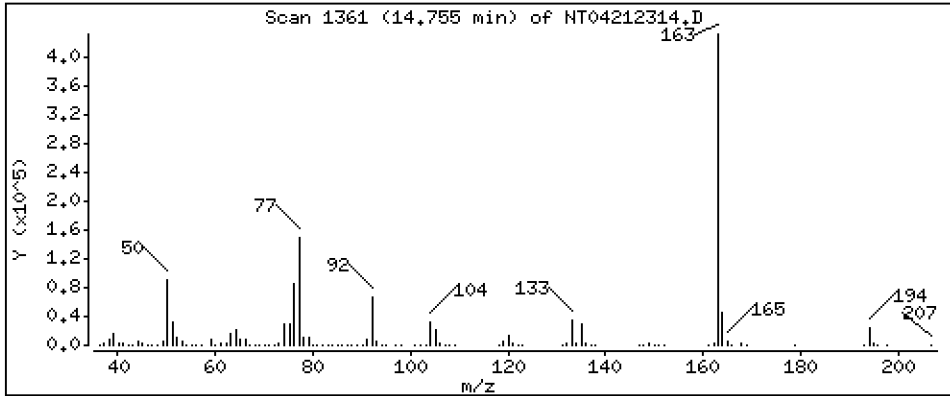
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,554 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

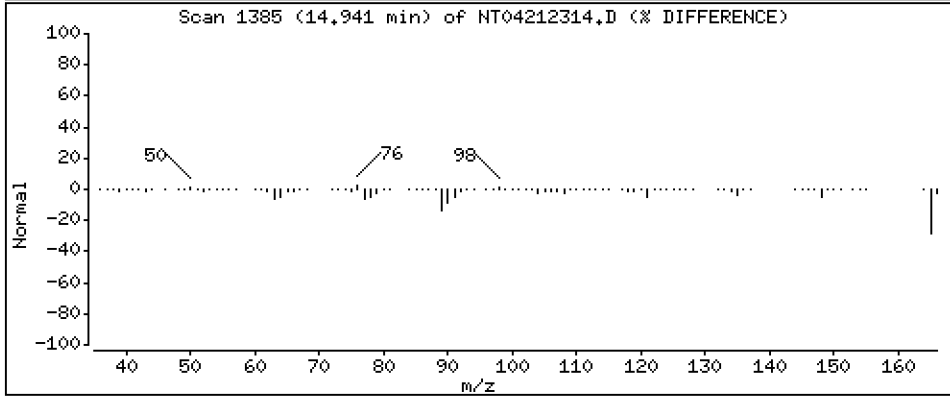
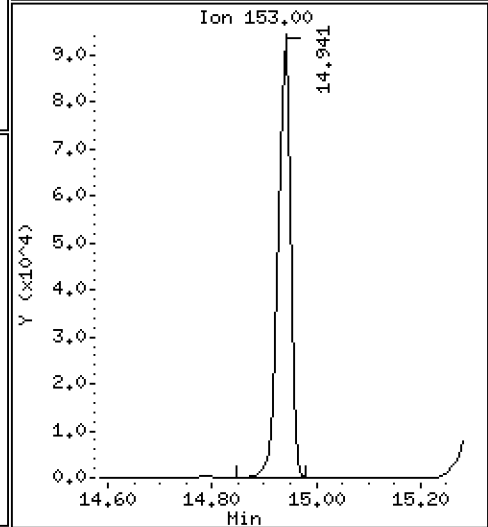
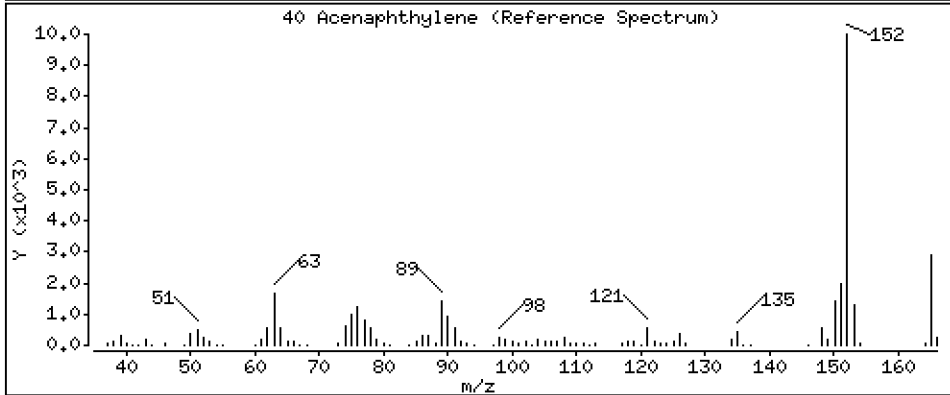
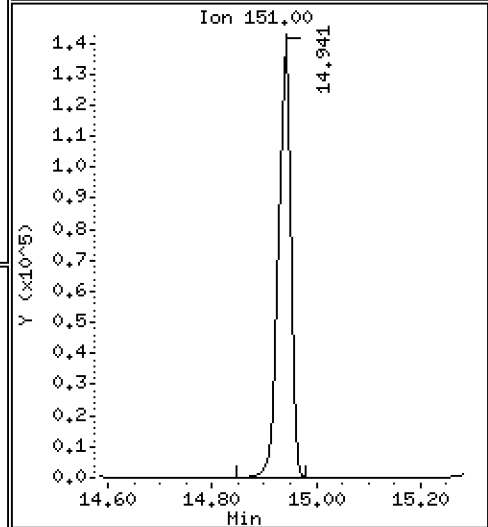
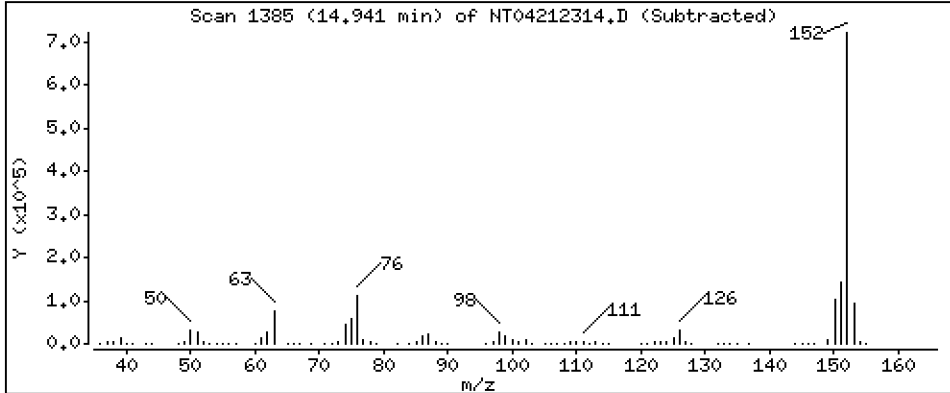
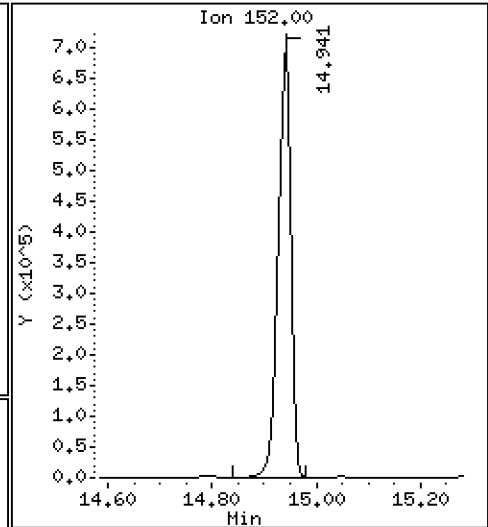
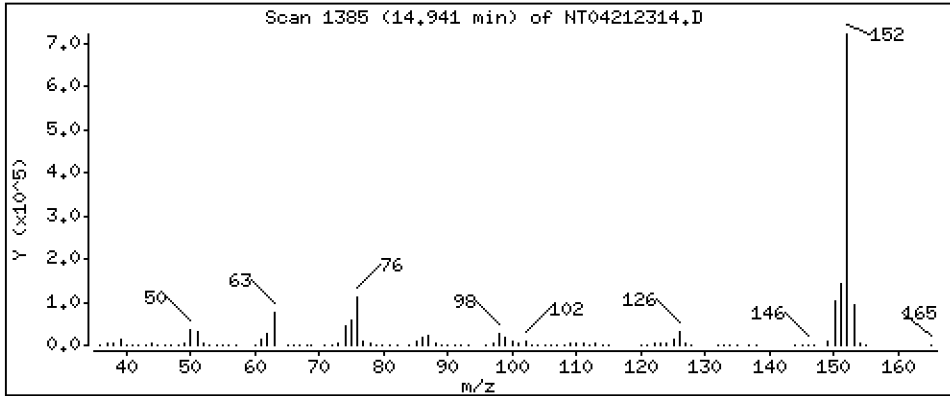
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 4,819 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

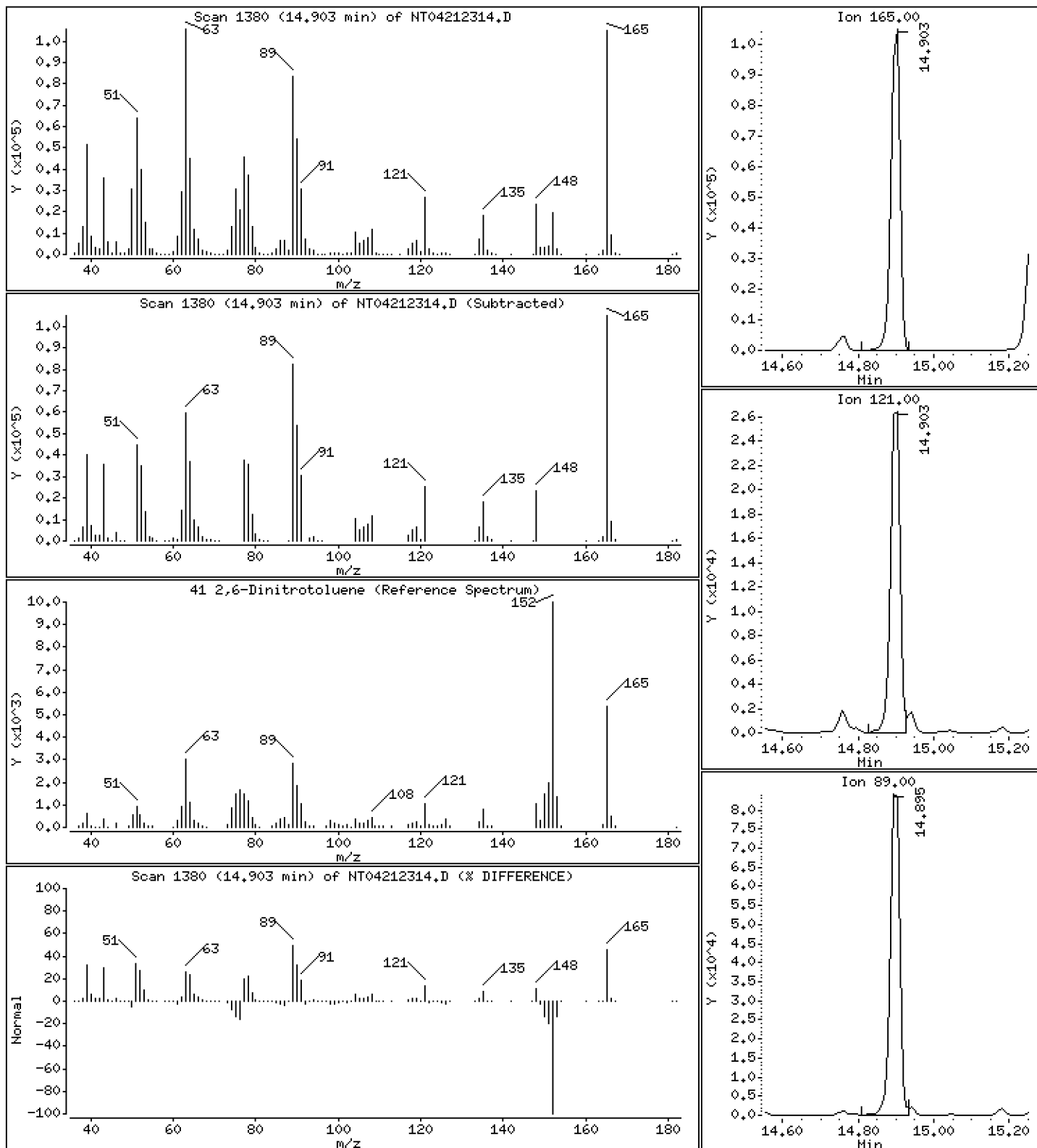
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

41 2,6-Dinitrotoluene

Concentration: 4.676 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

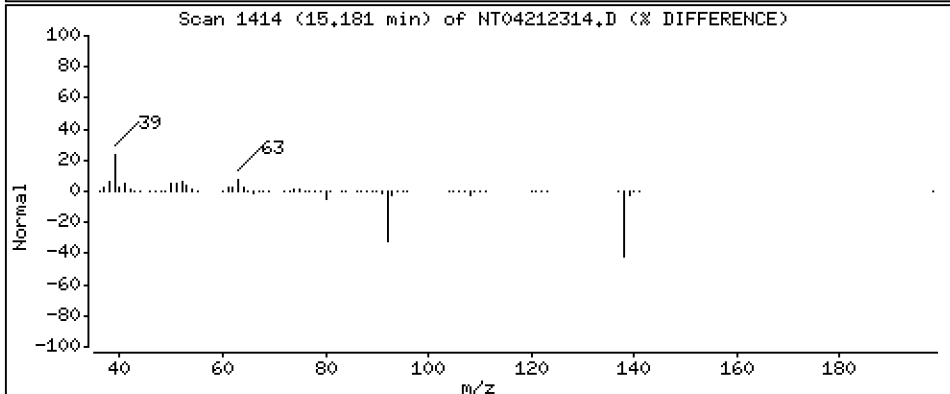
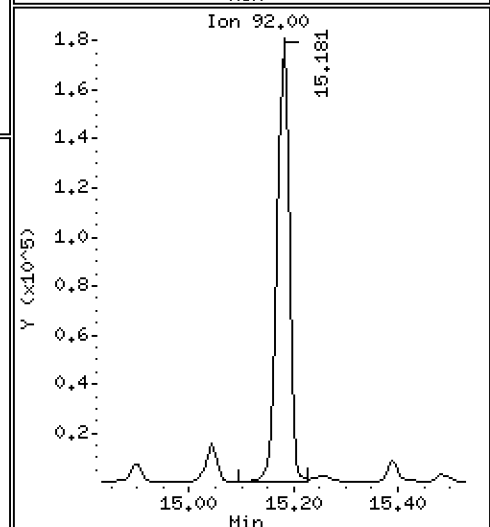
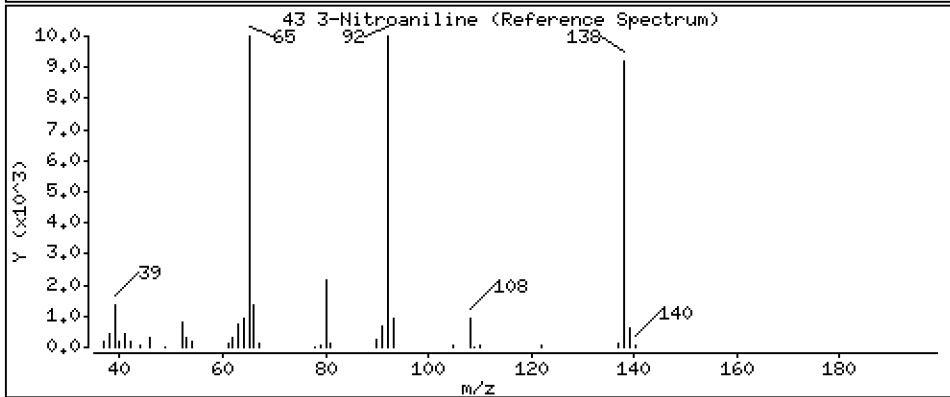
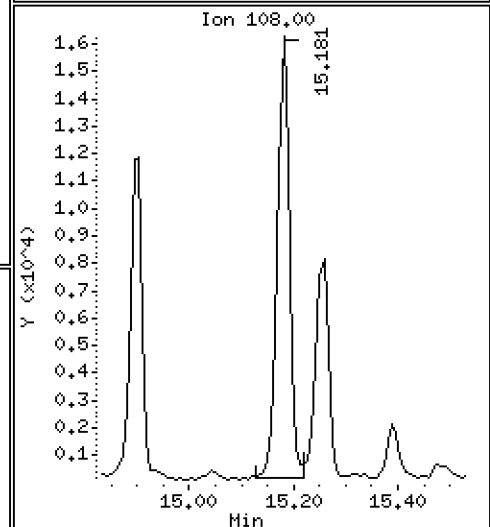
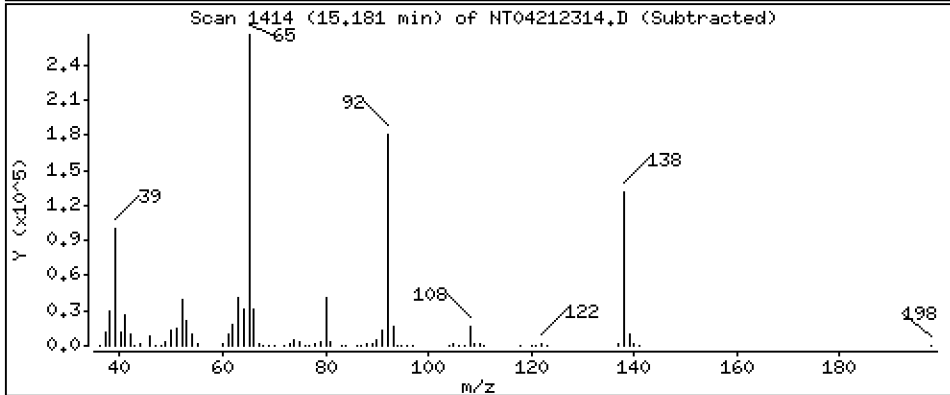
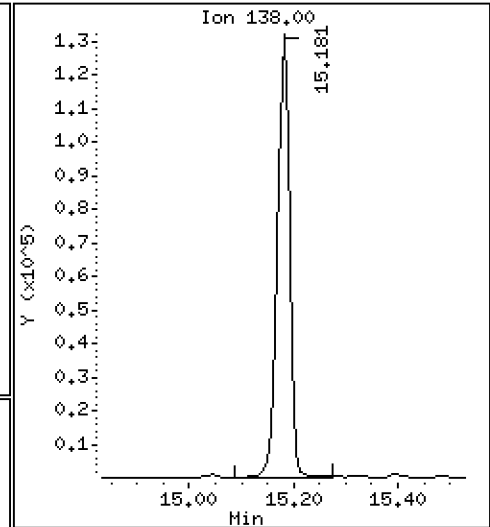
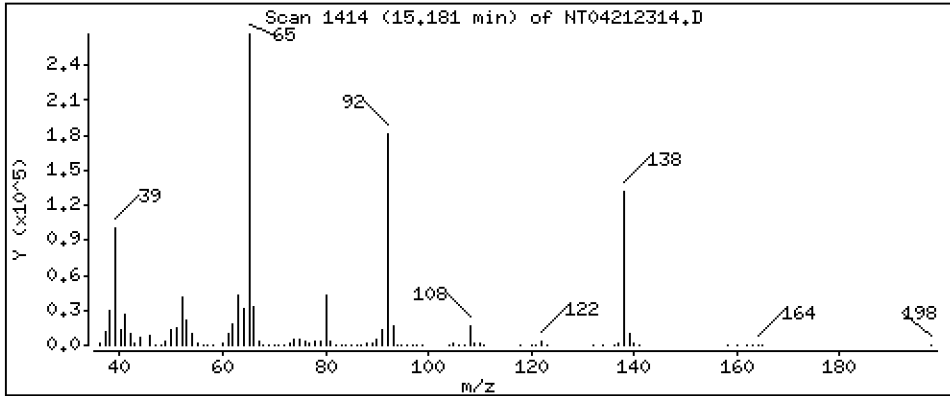
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 4,608 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

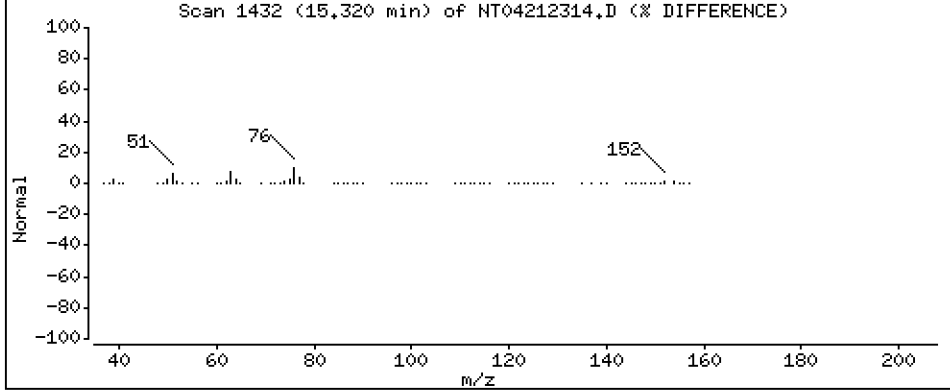
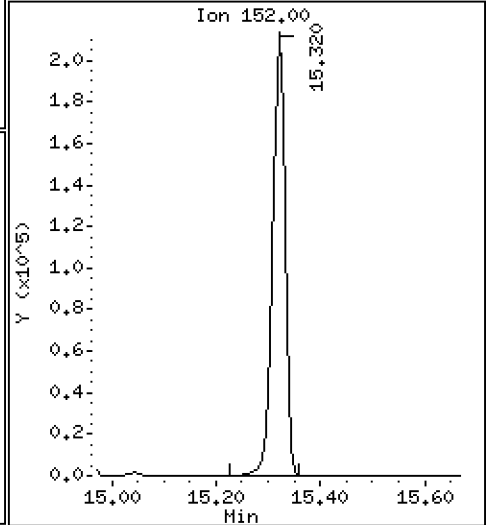
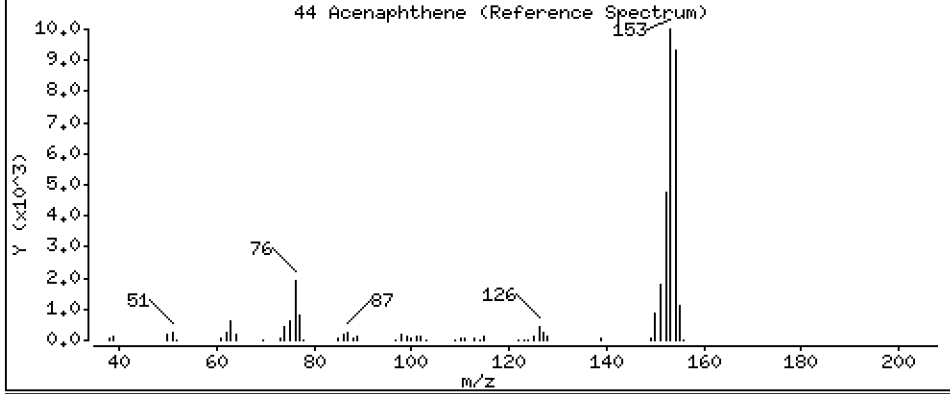
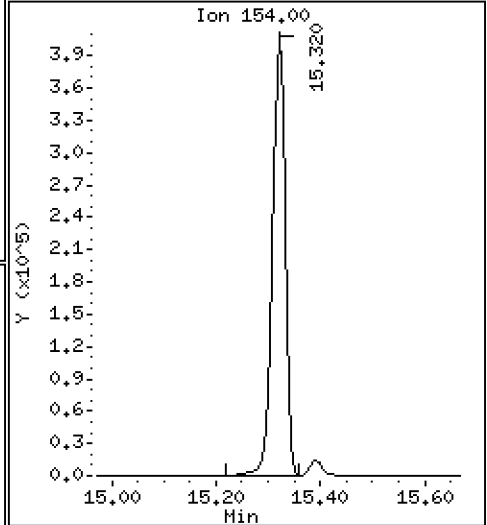
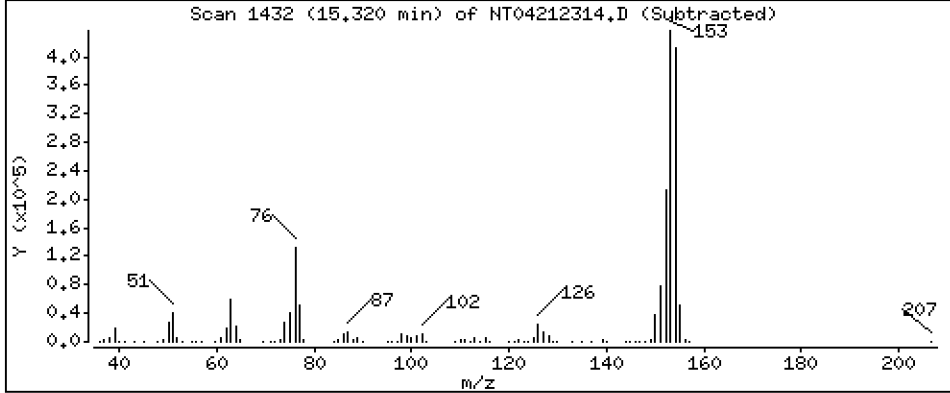
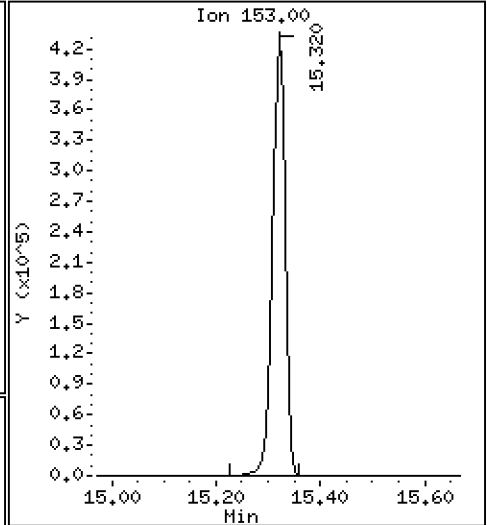
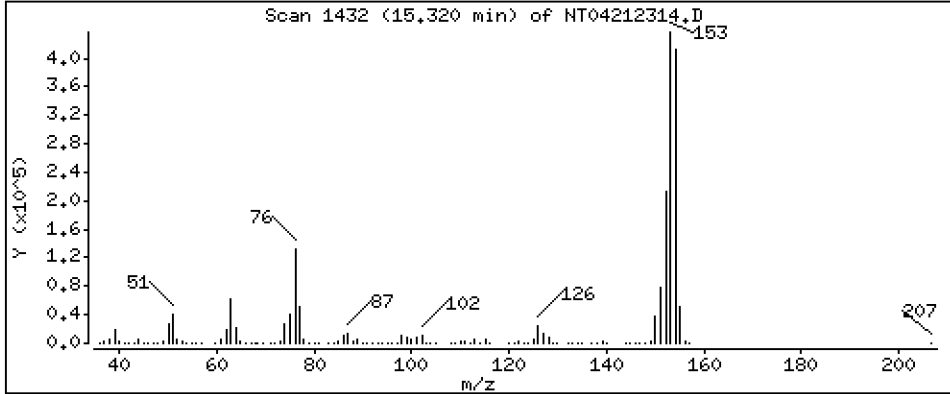
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 4,811 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

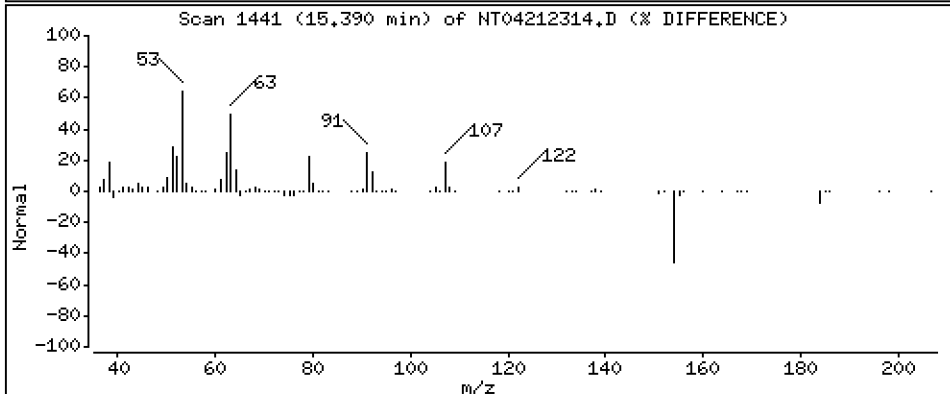
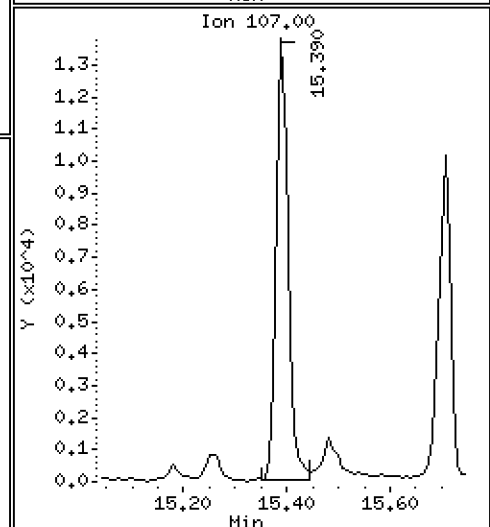
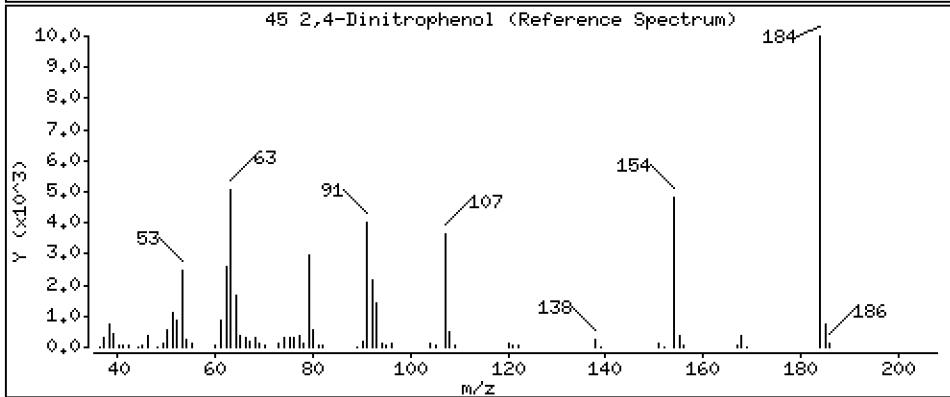
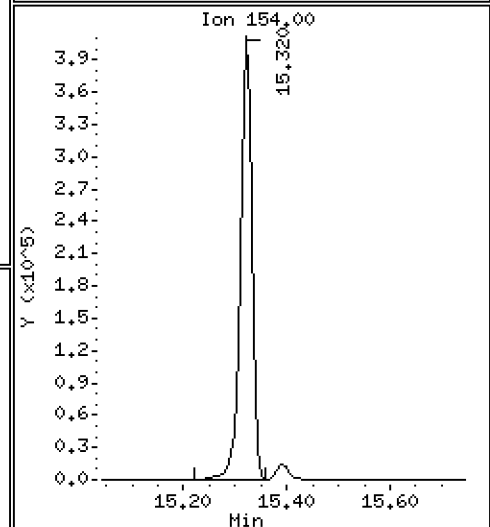
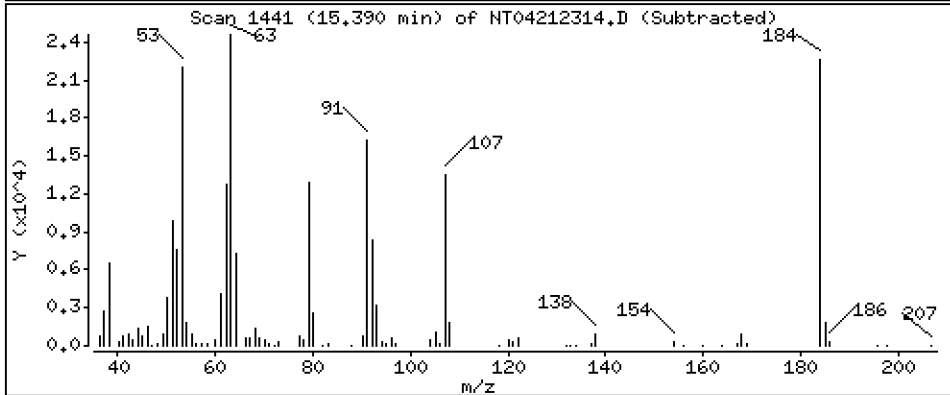
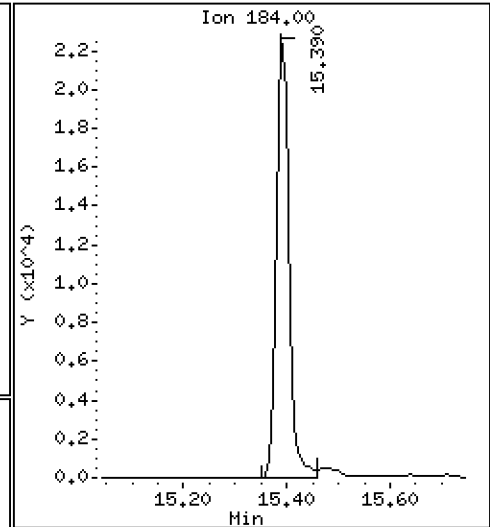
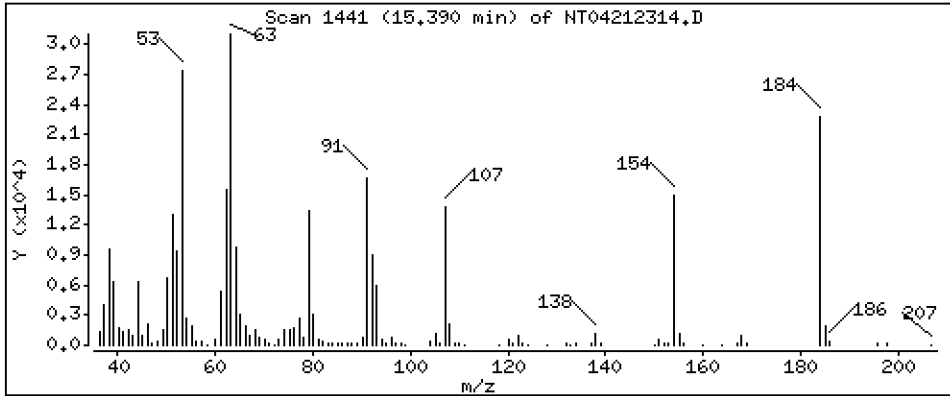
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 1,674 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

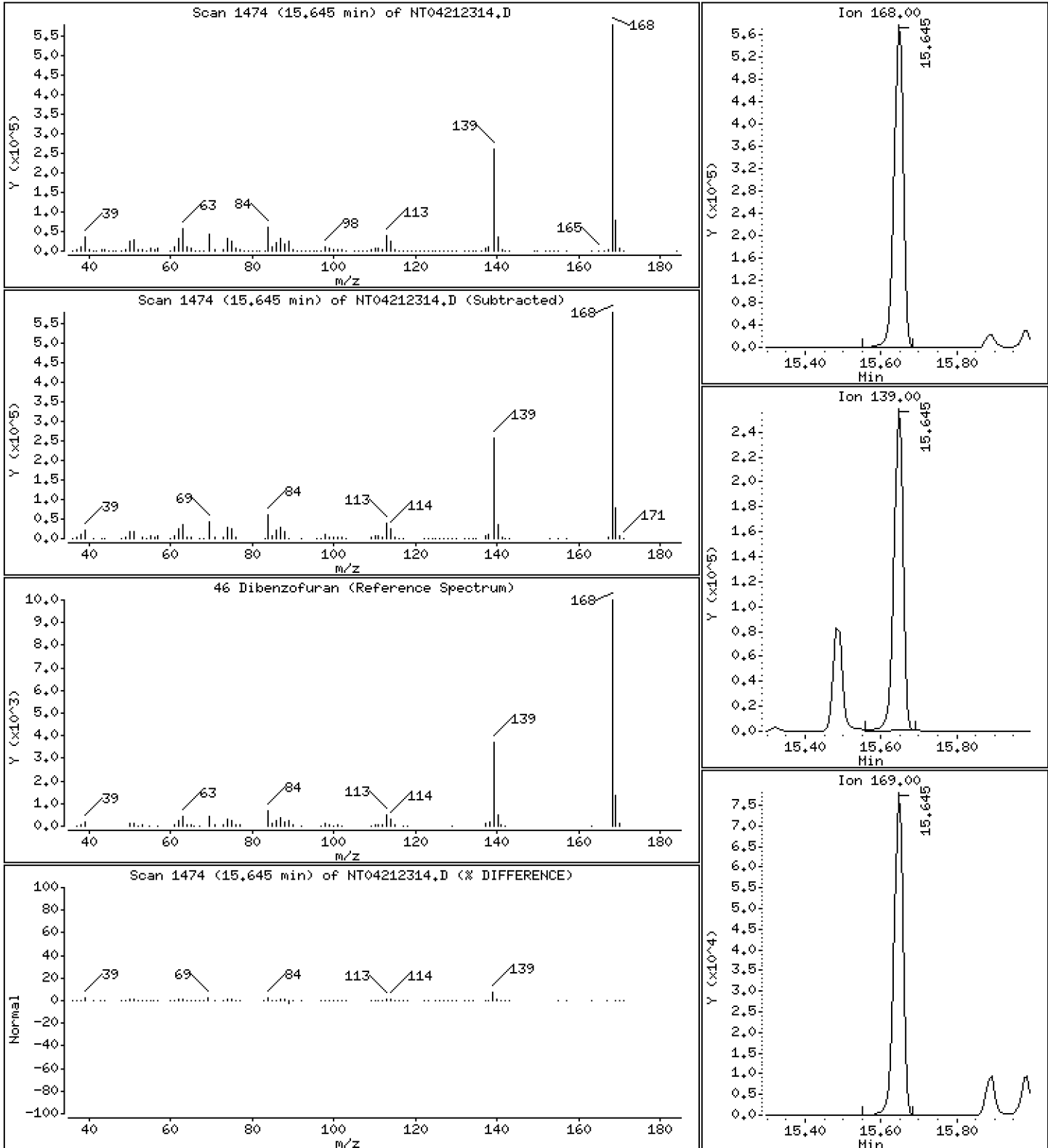
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 4,520 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

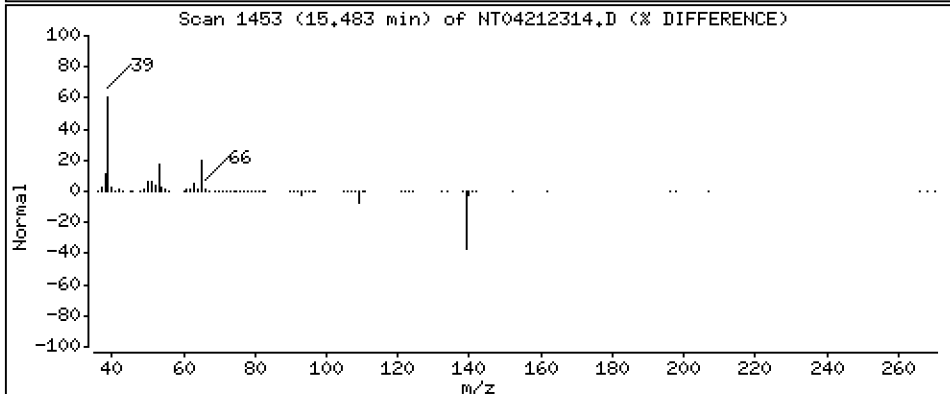
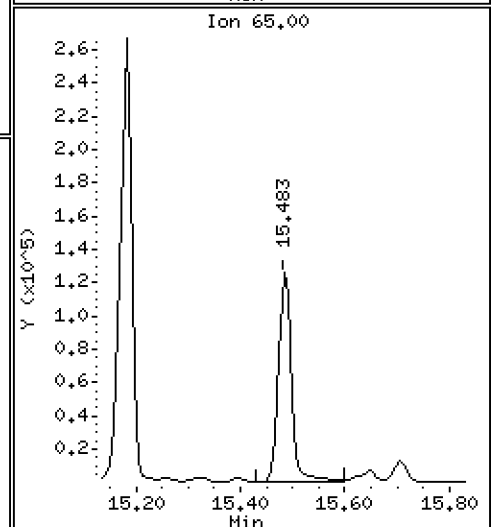
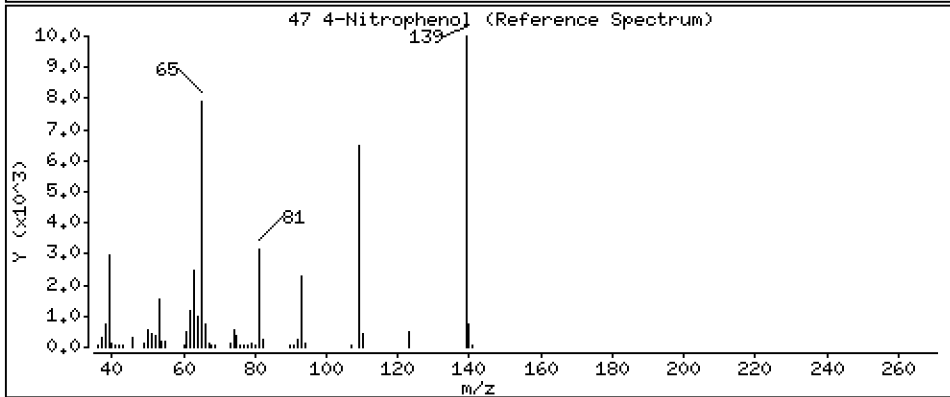
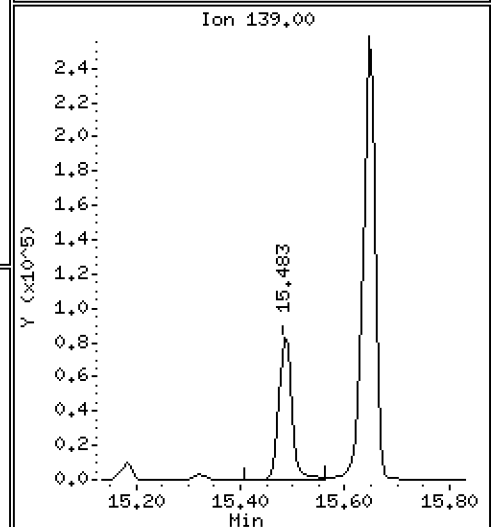
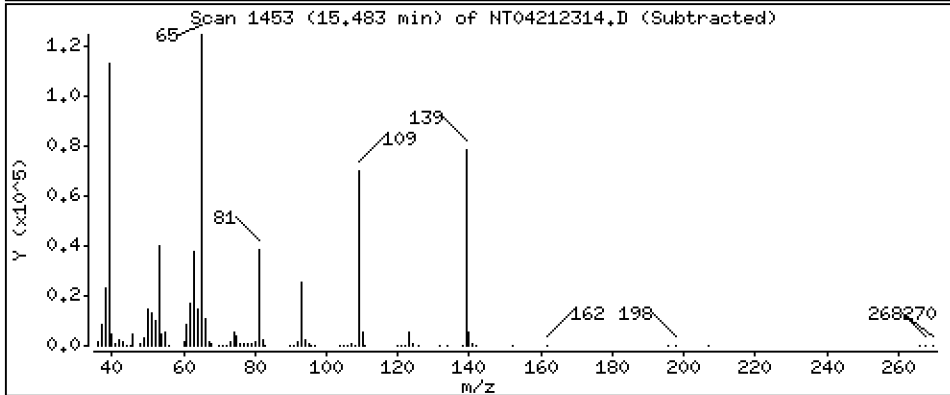
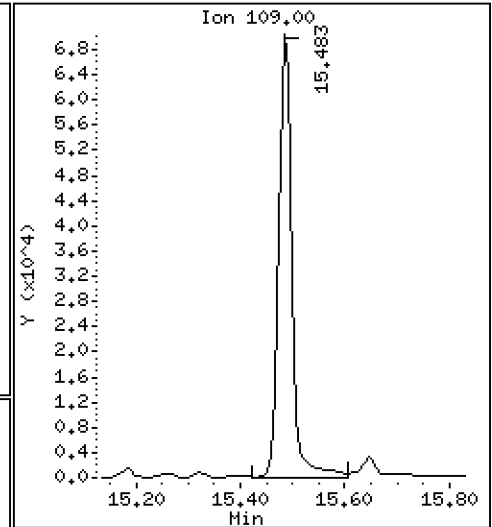
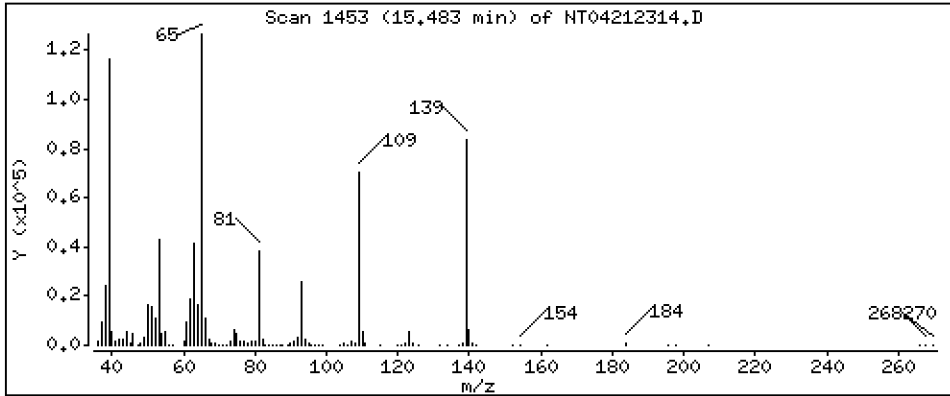
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 4,554 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

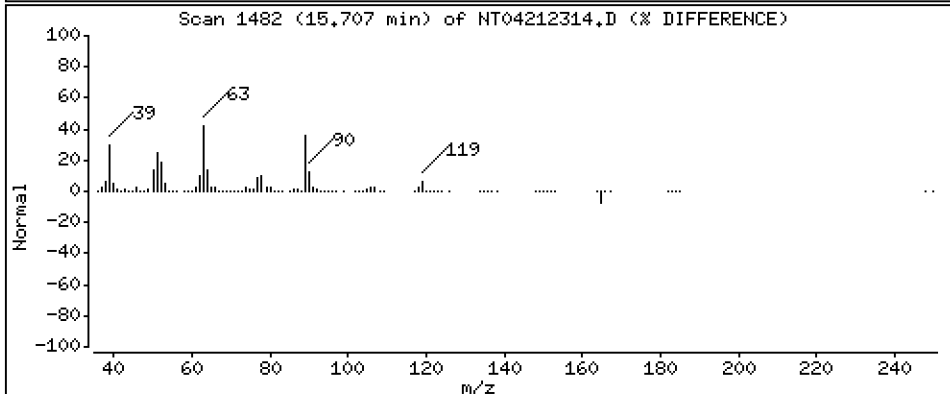
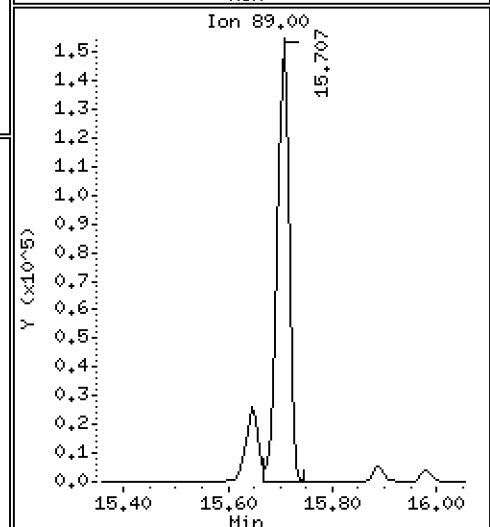
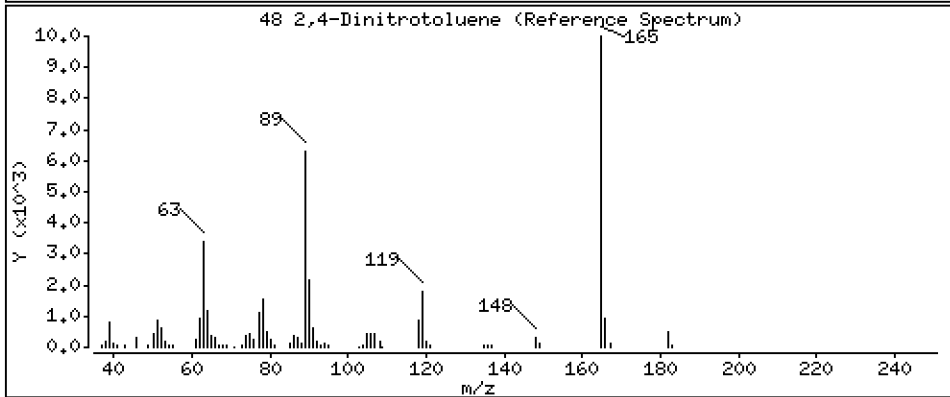
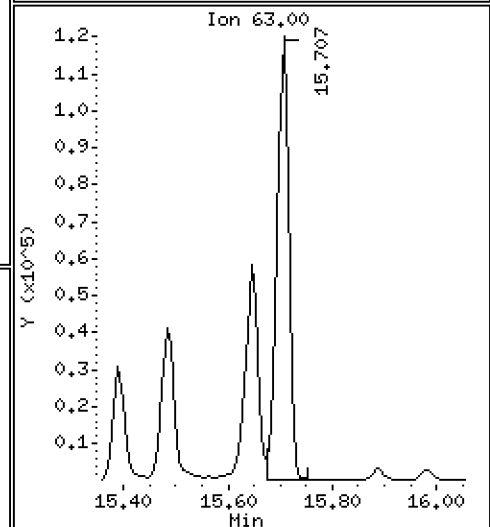
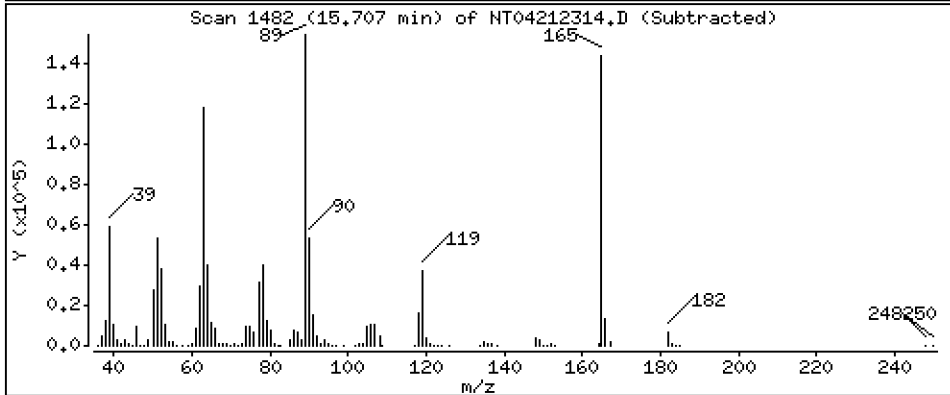
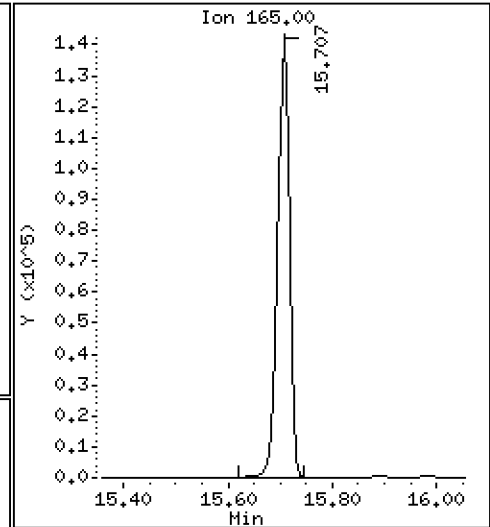
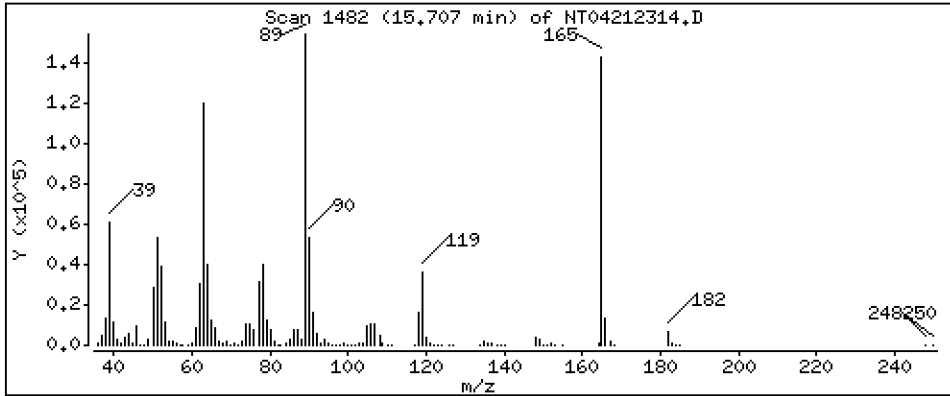
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 4,470 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

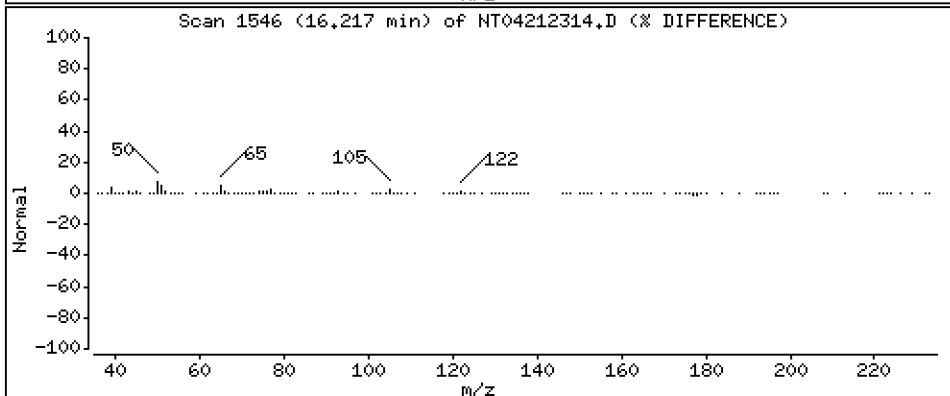
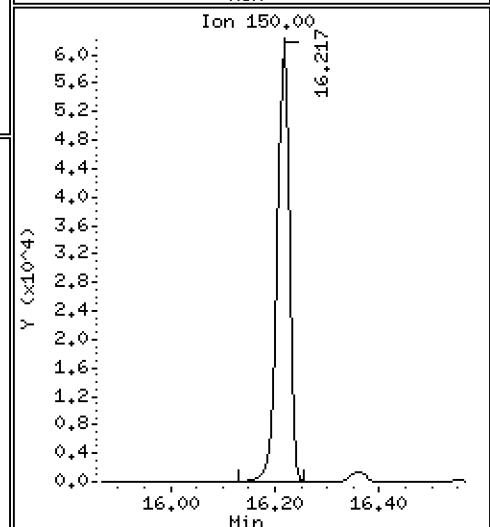
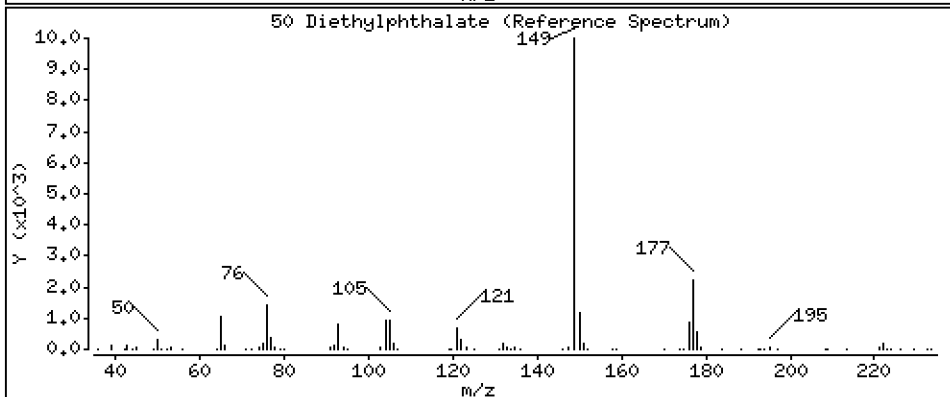
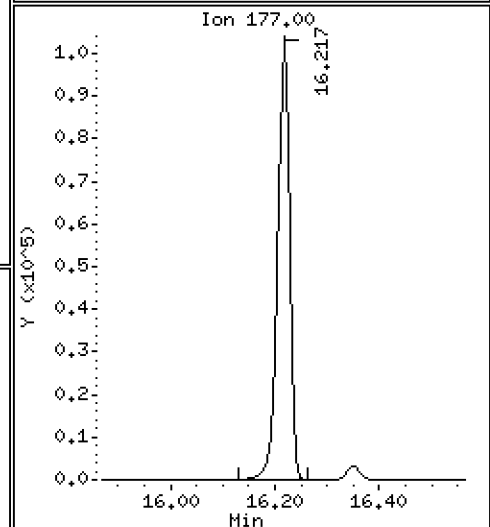
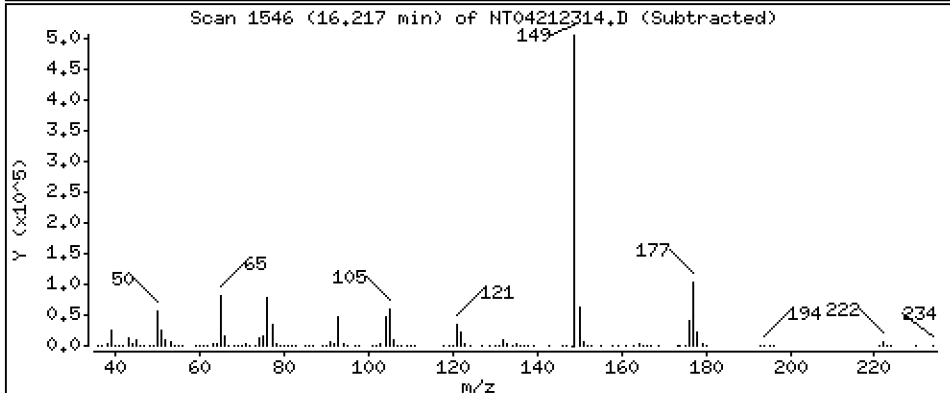
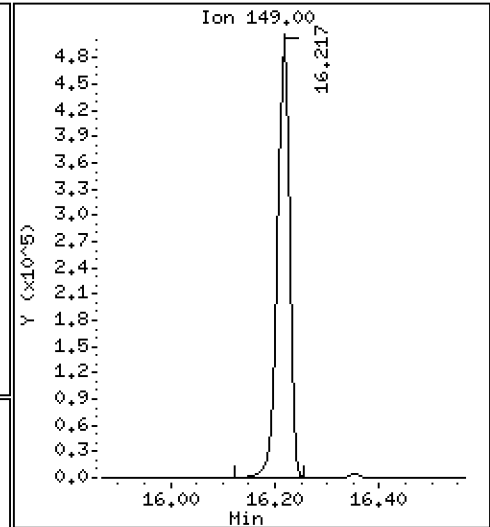
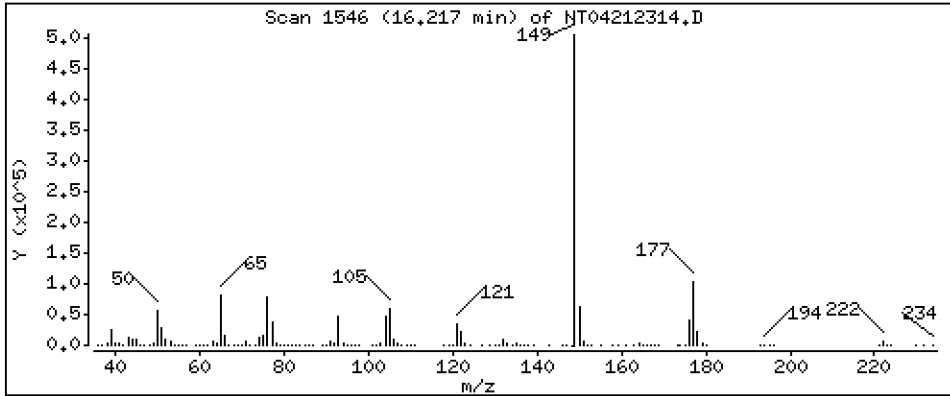
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,575 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

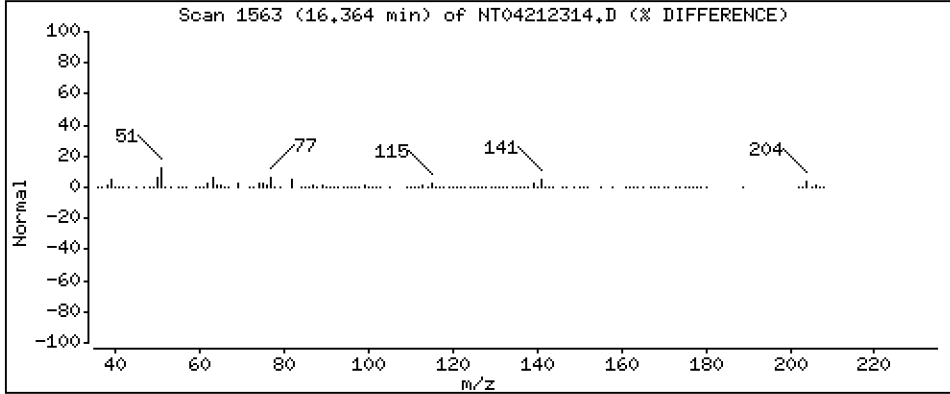
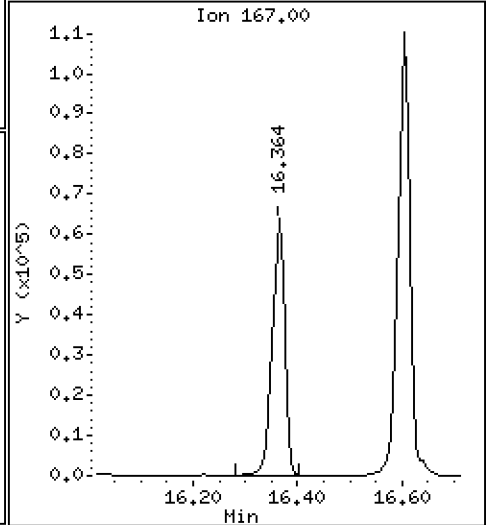
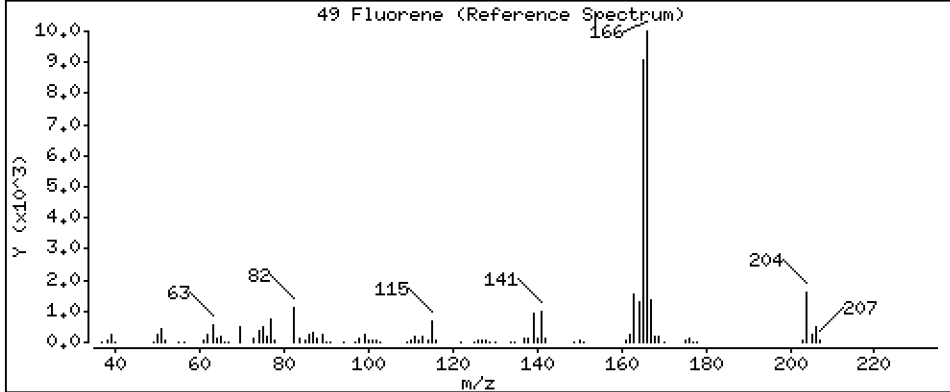
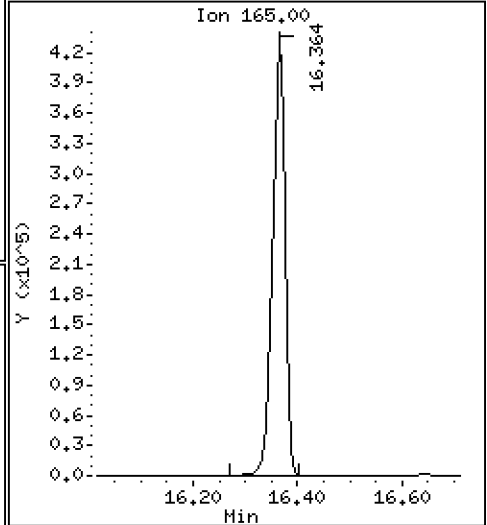
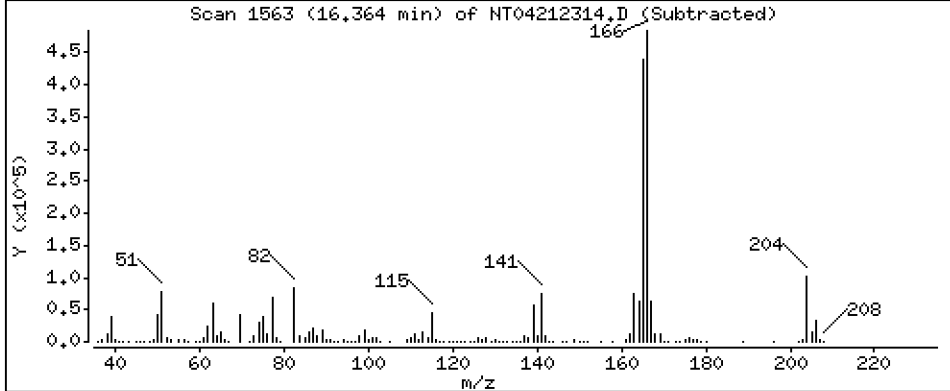
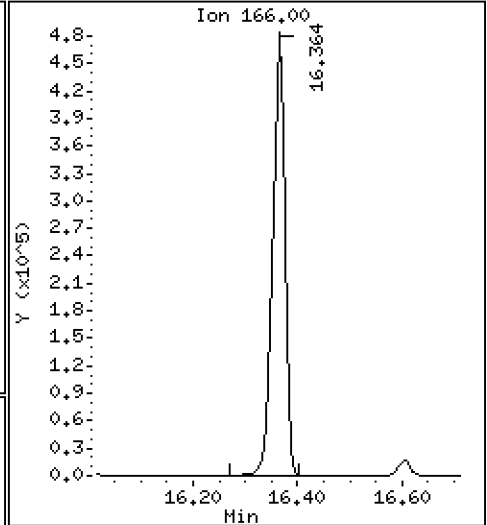
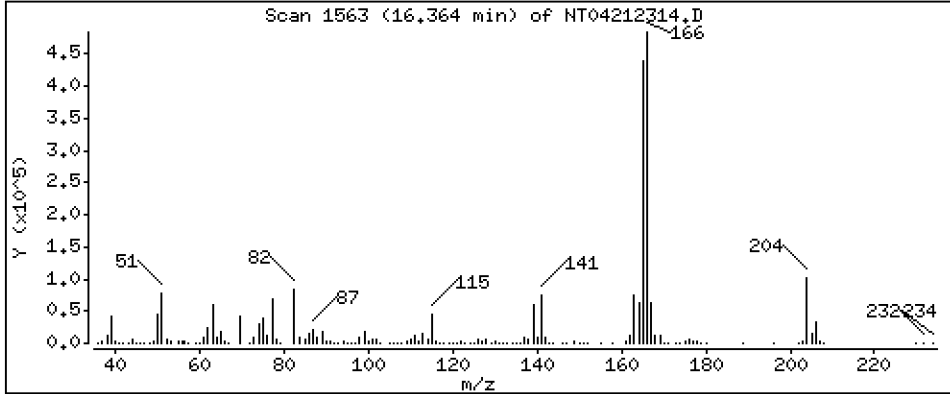
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,780 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

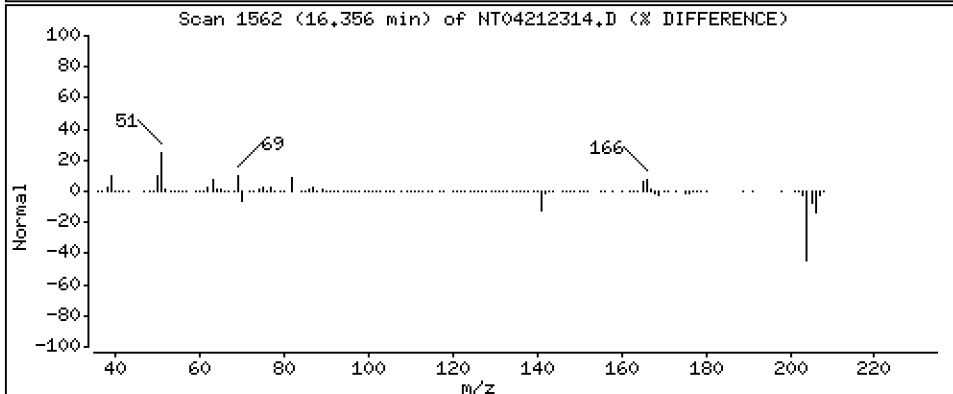
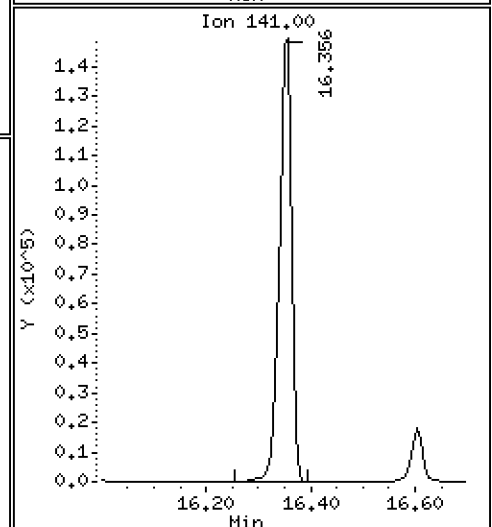
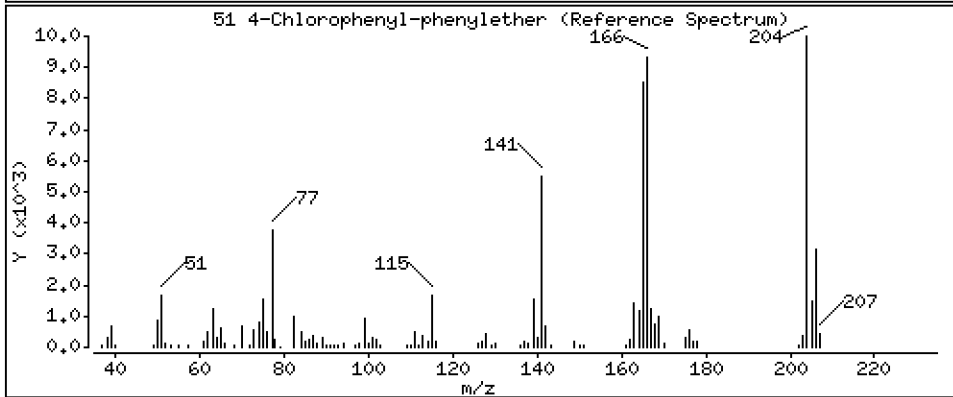
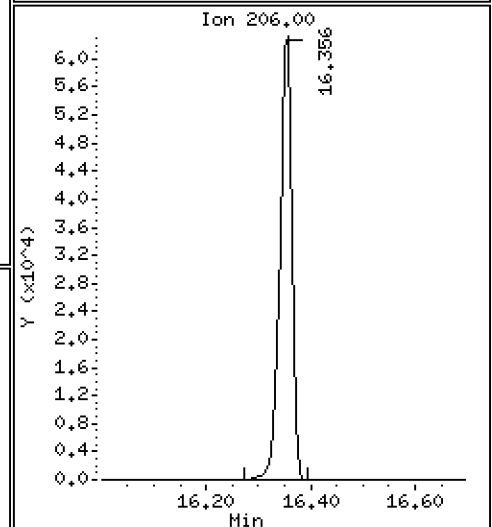
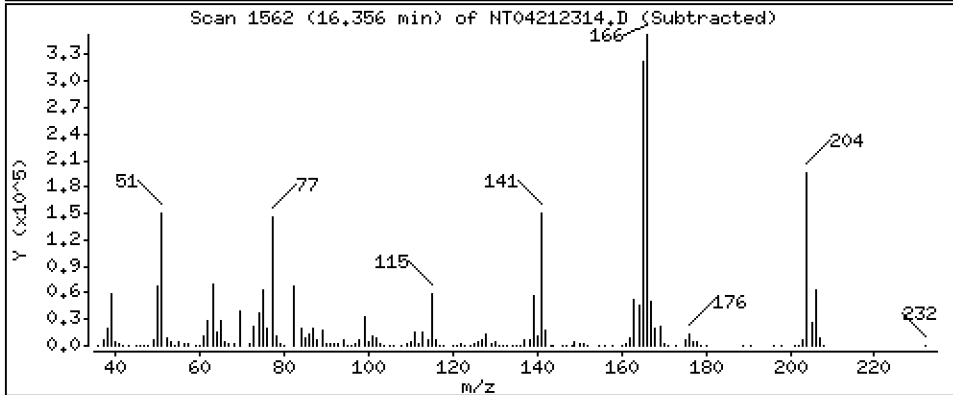
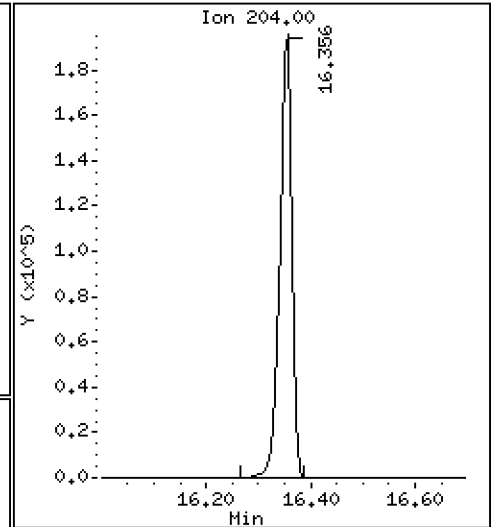
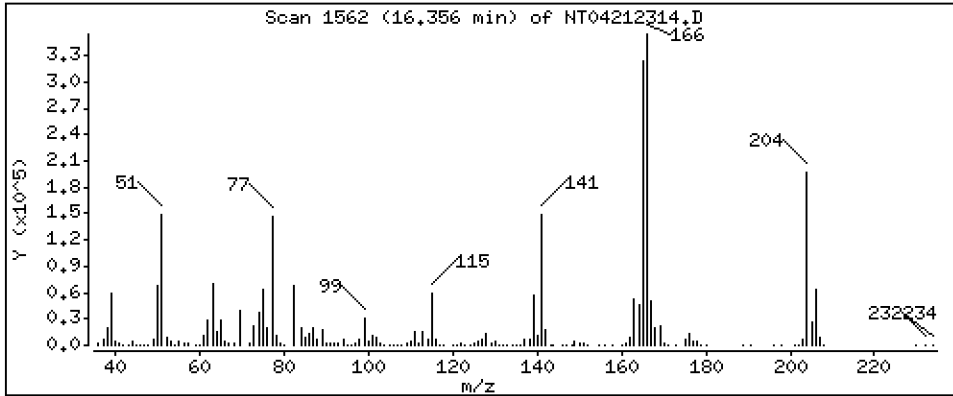
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,758 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

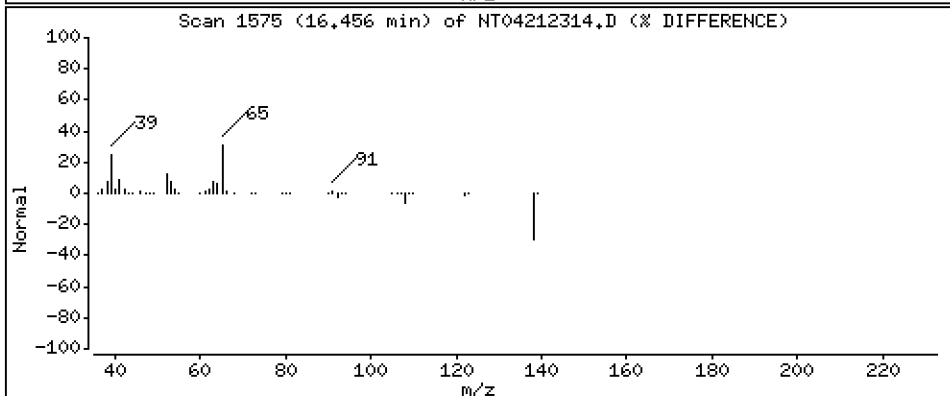
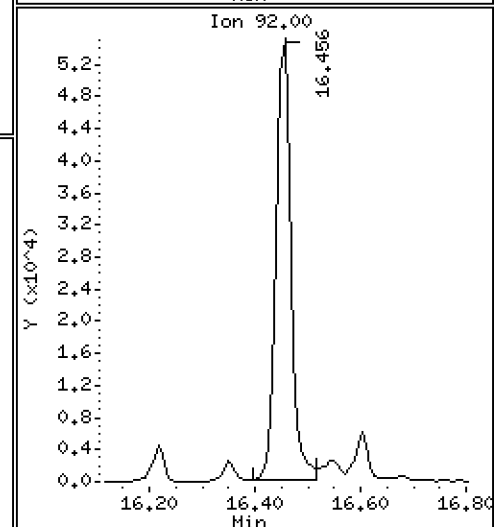
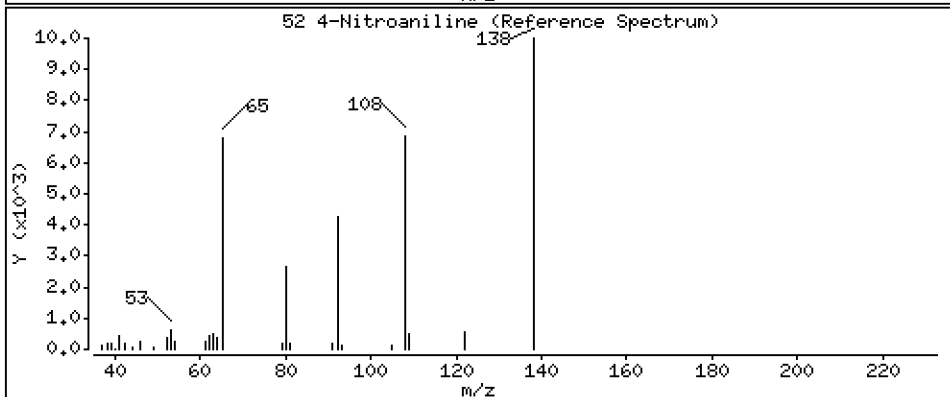
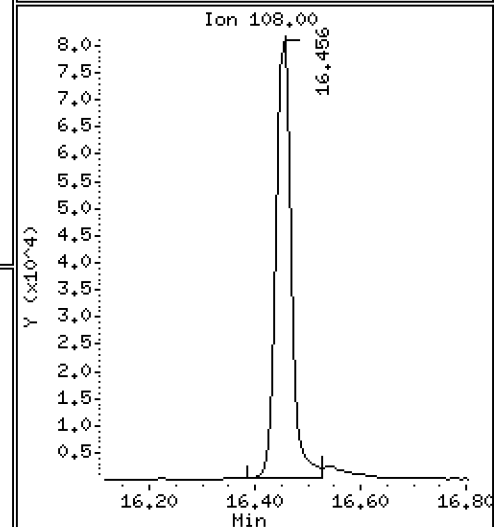
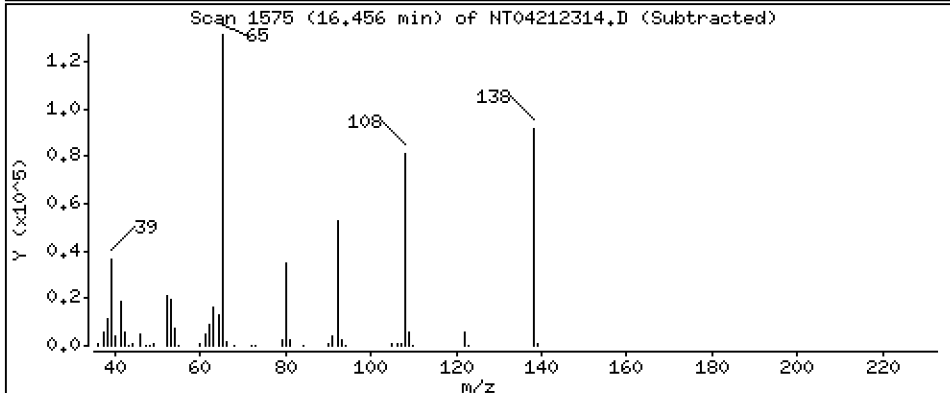
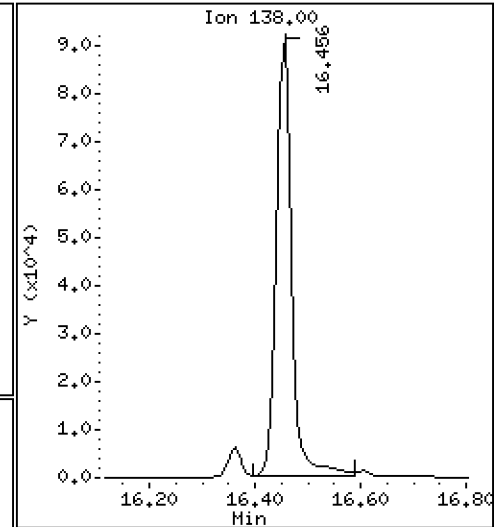
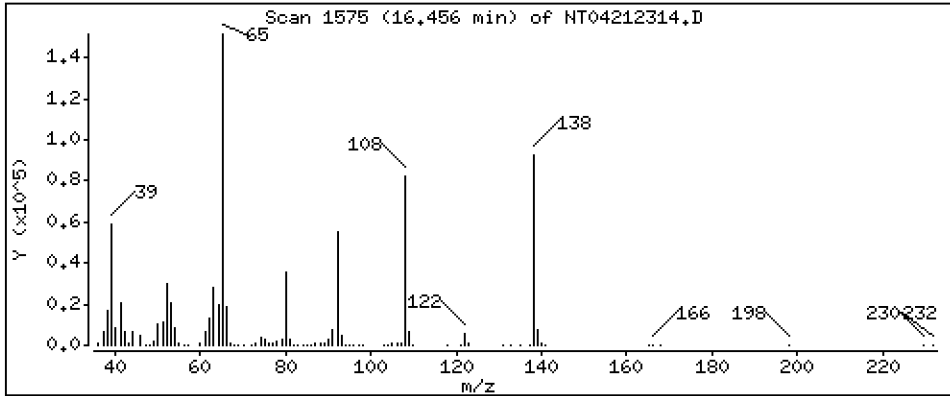
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 4,520 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

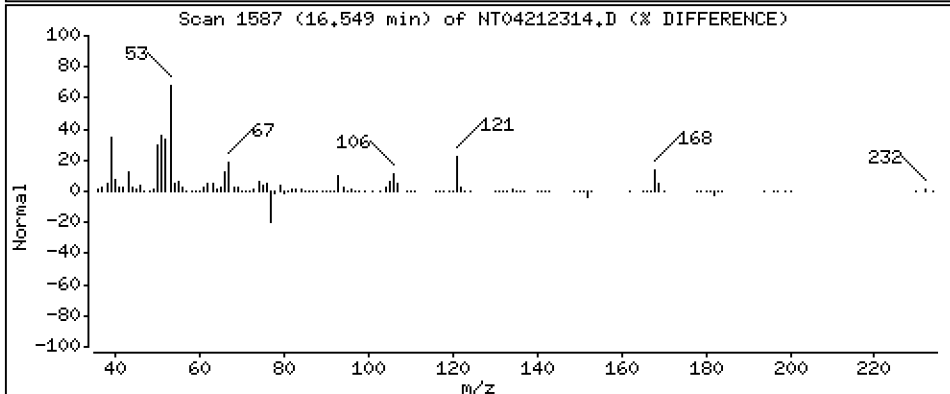
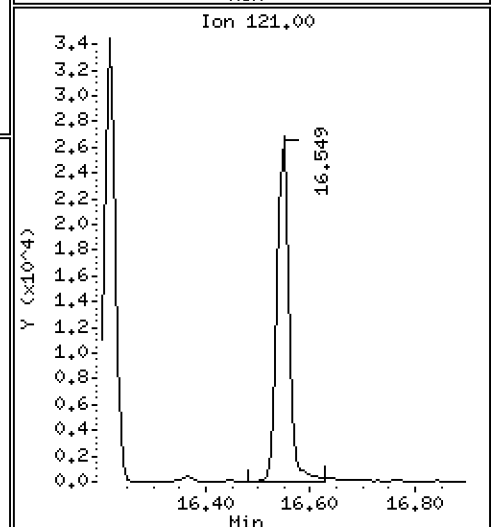
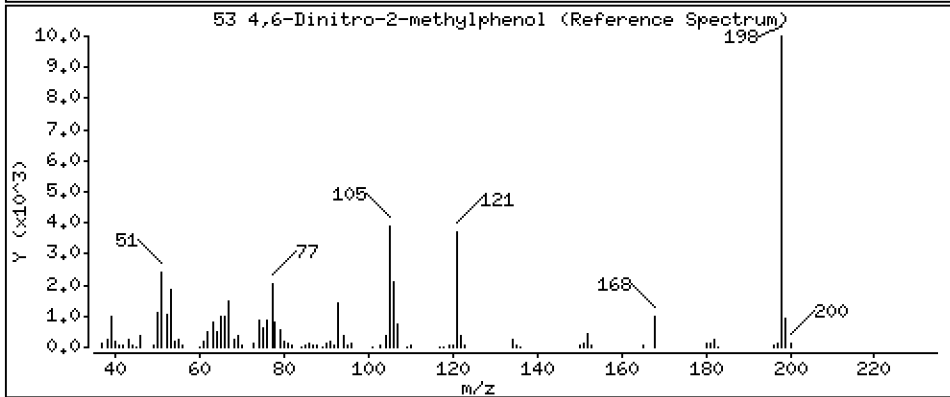
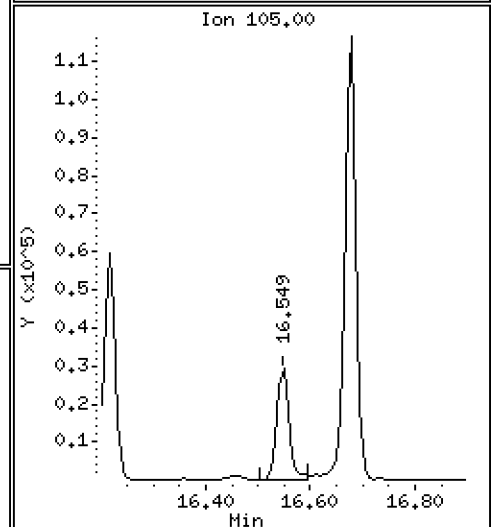
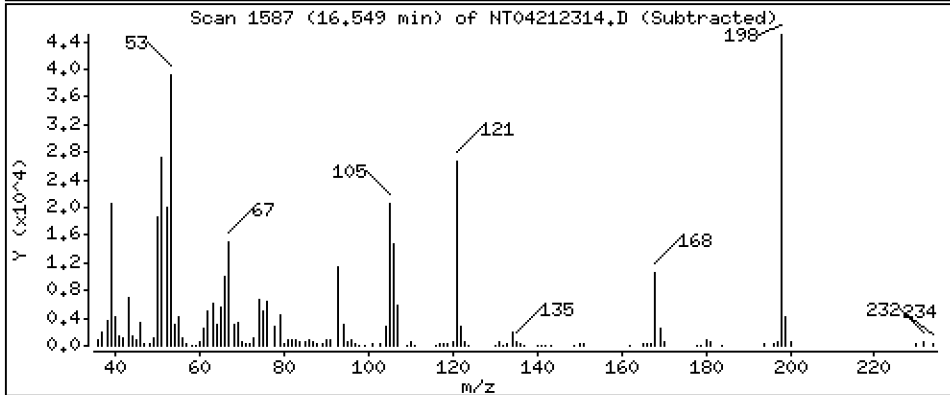
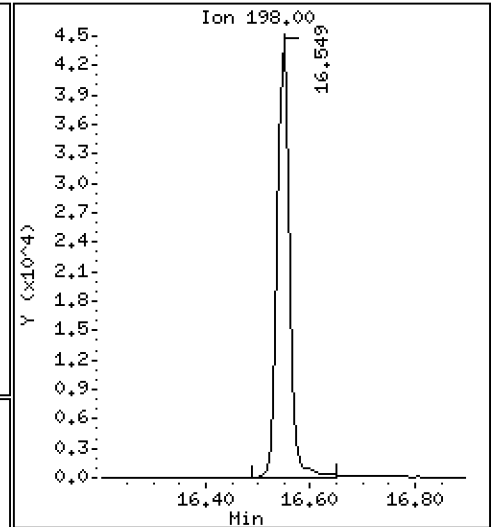
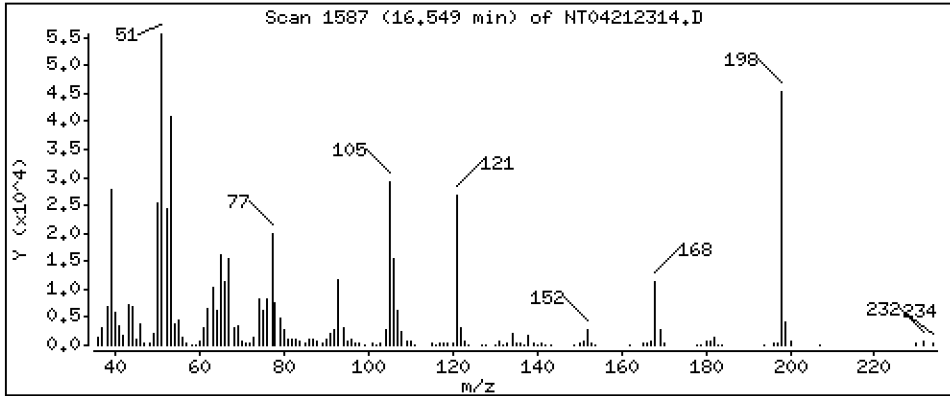
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 3,005 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

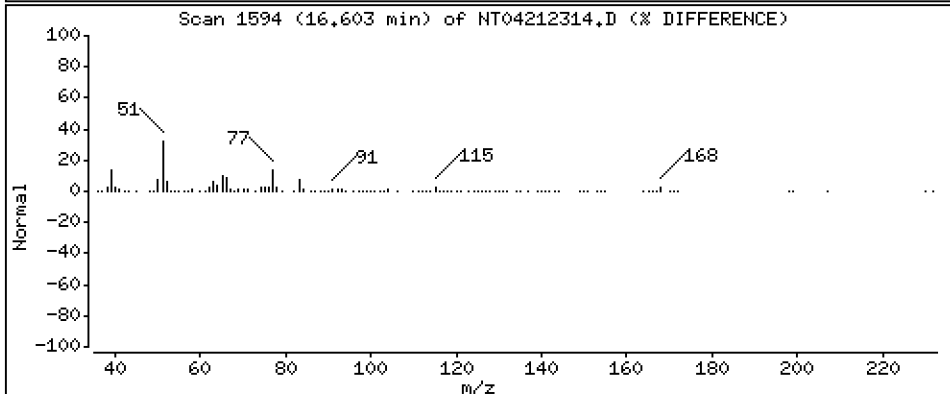
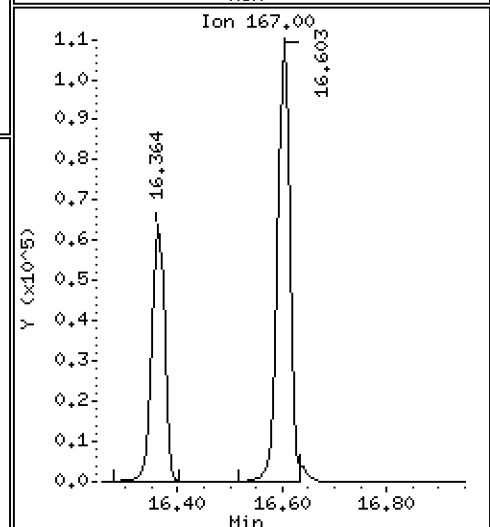
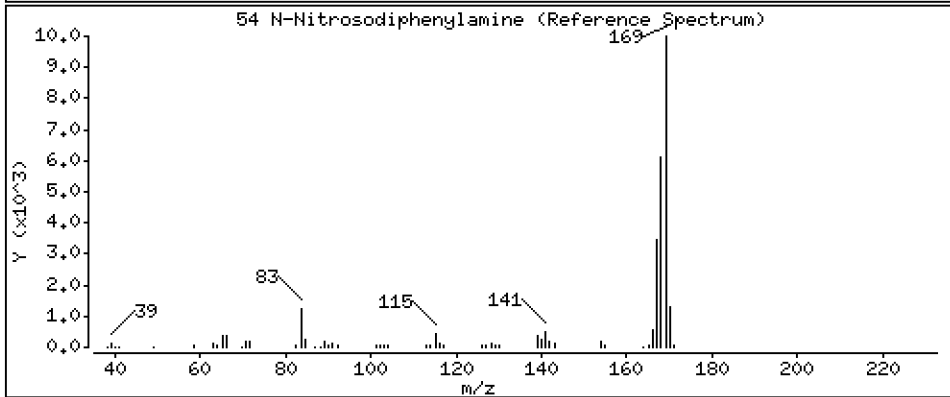
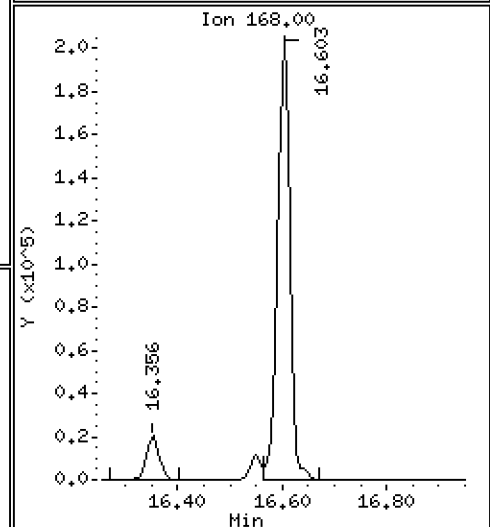
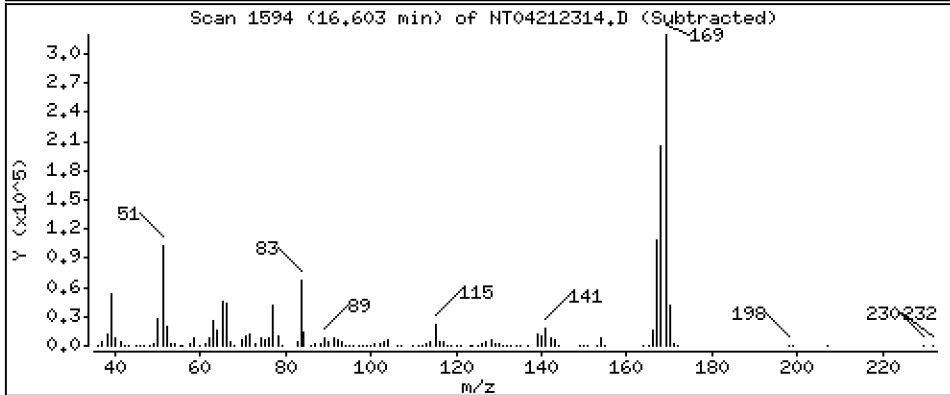
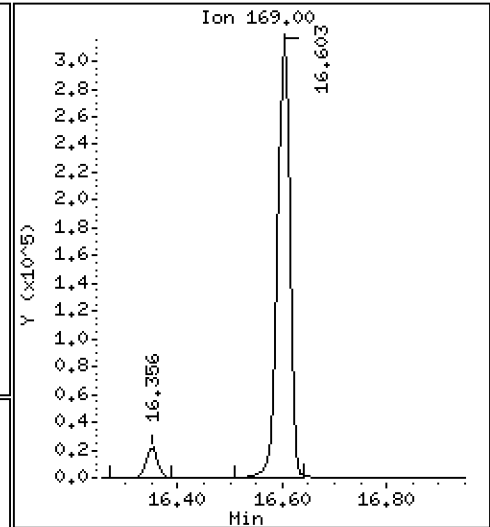
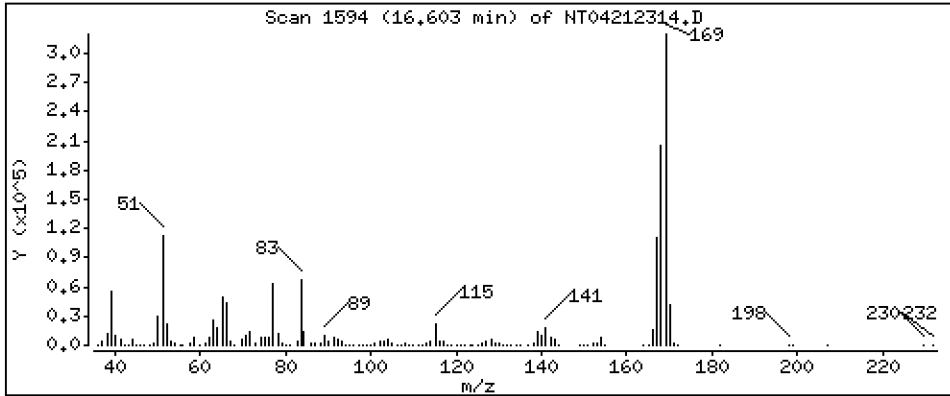
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,748 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

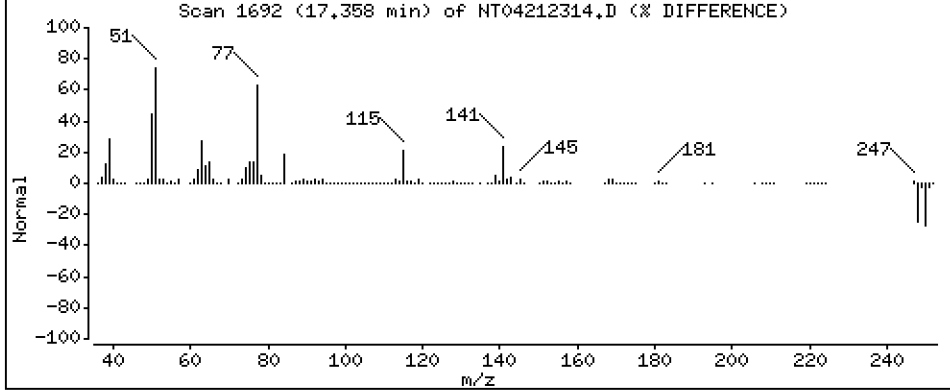
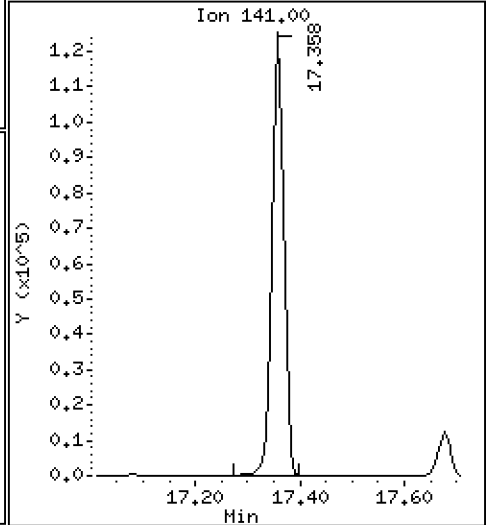
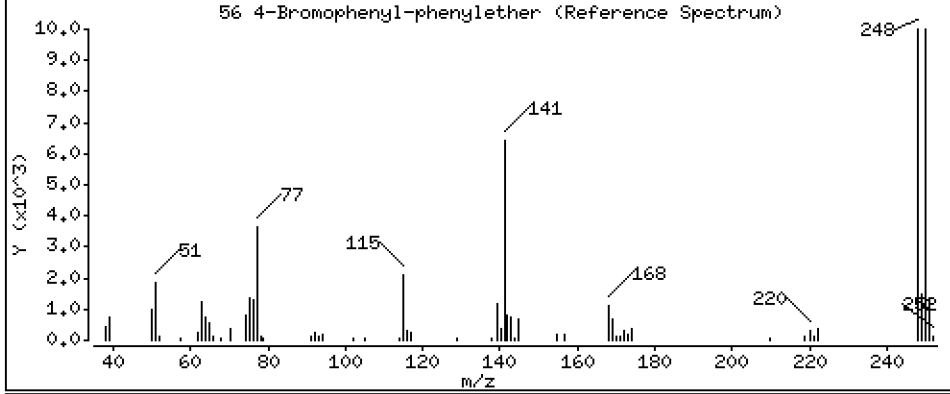
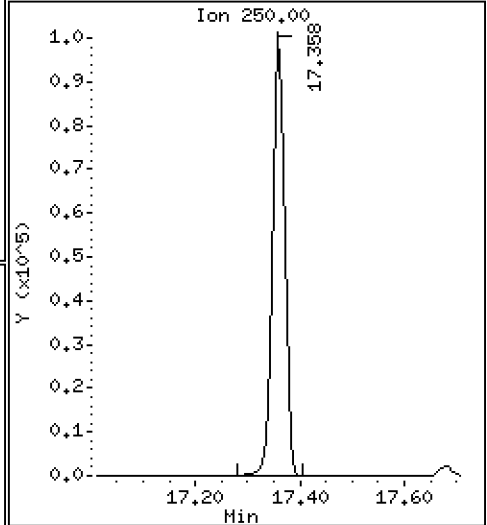
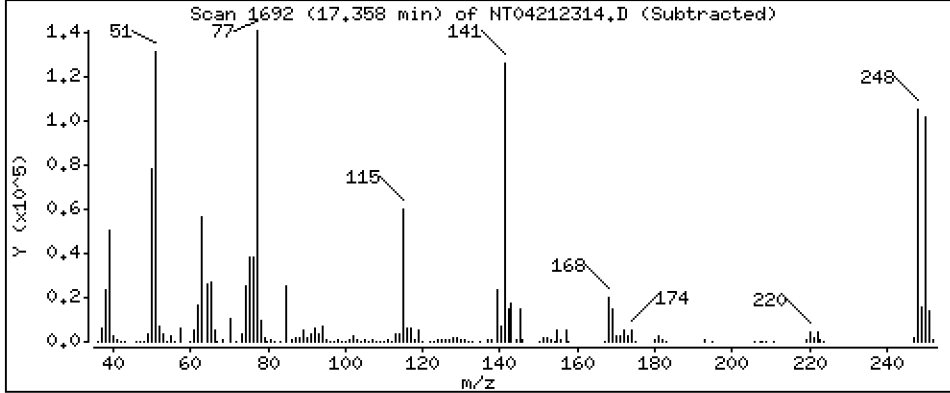
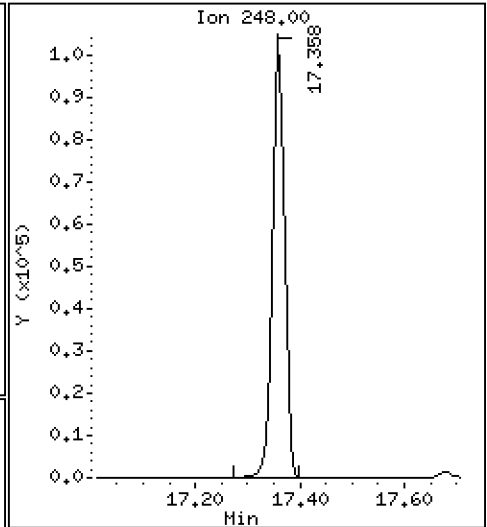
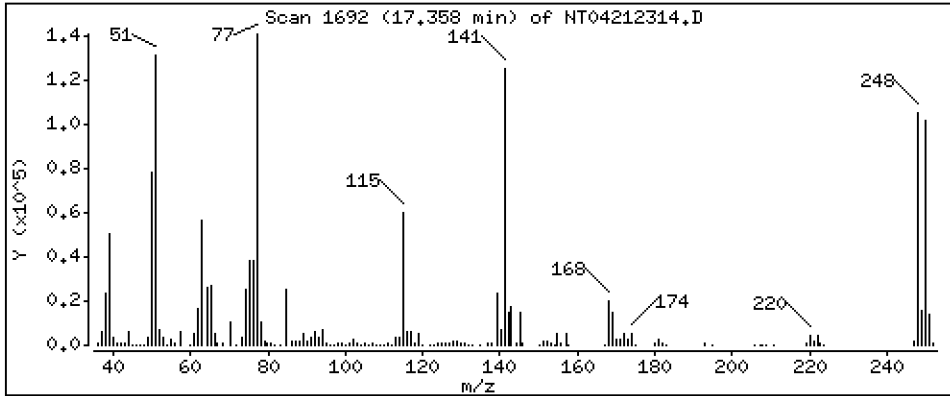
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 4,732 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

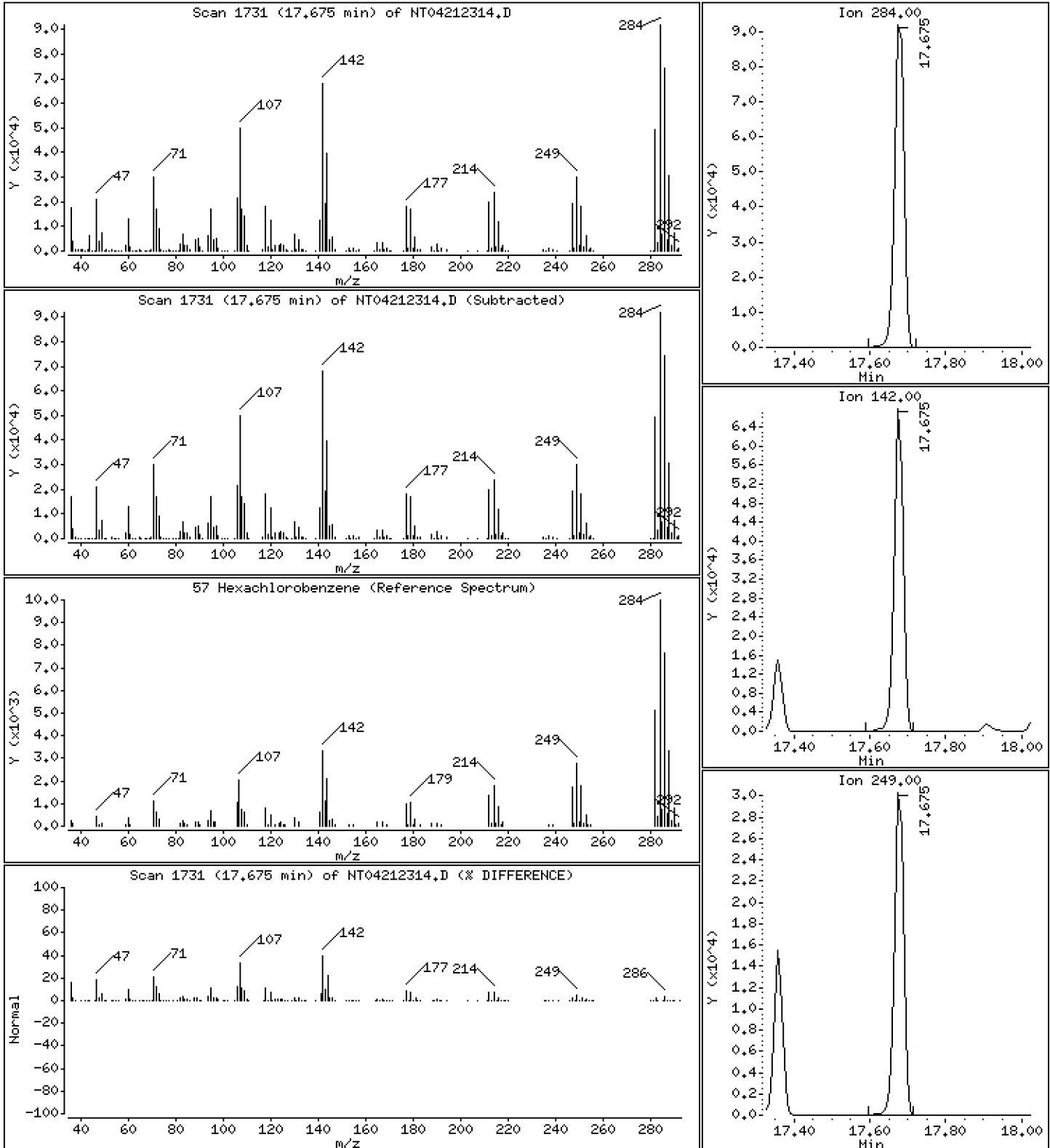
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,367 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

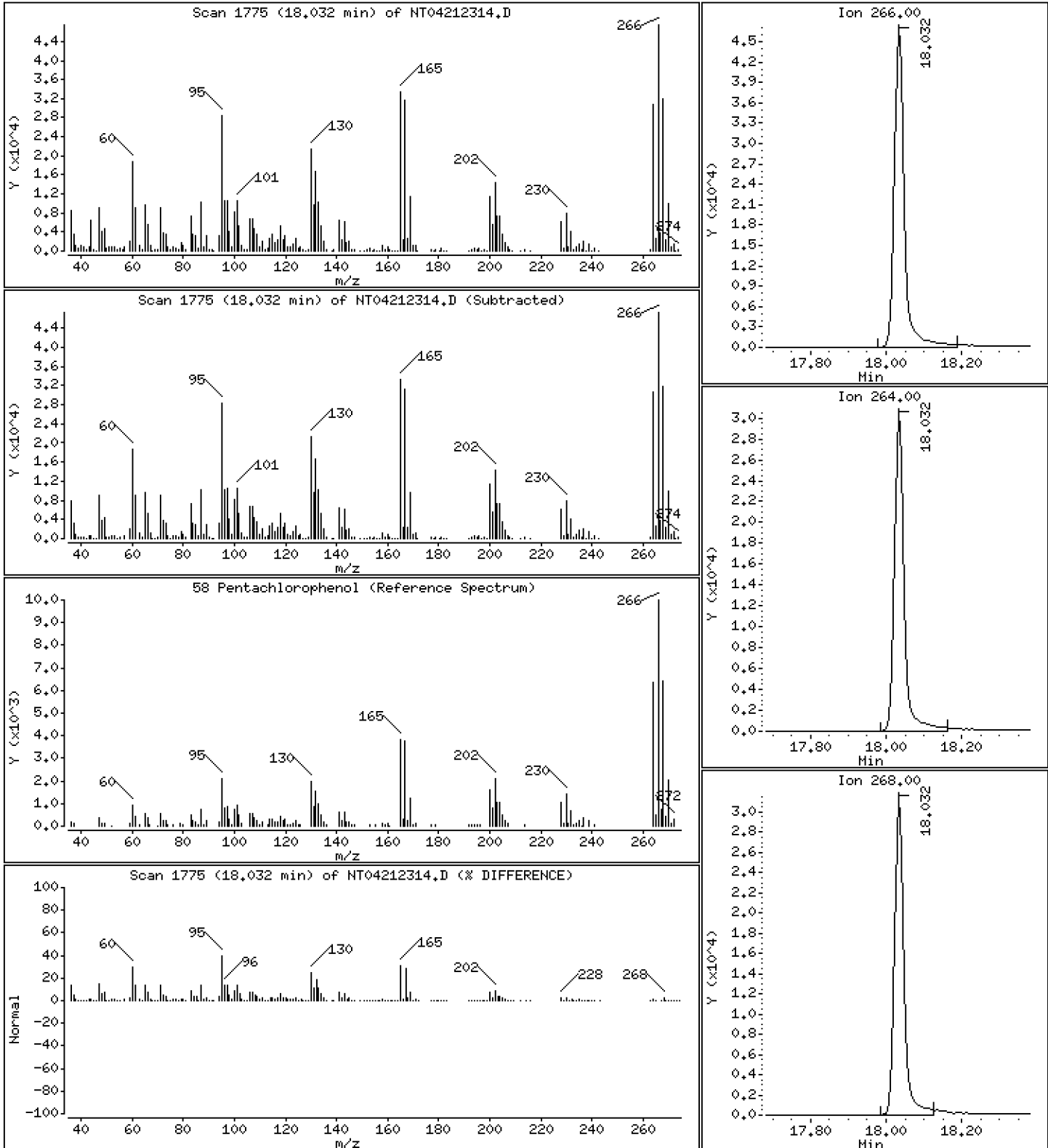
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,741 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

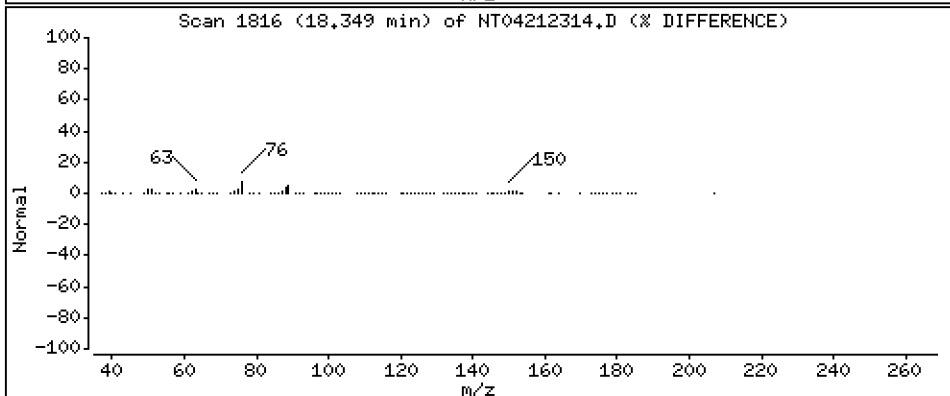
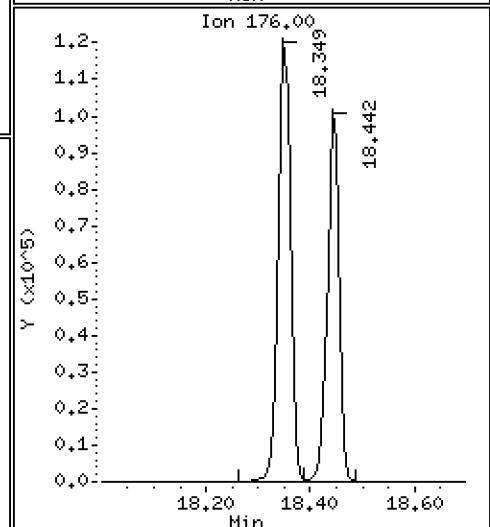
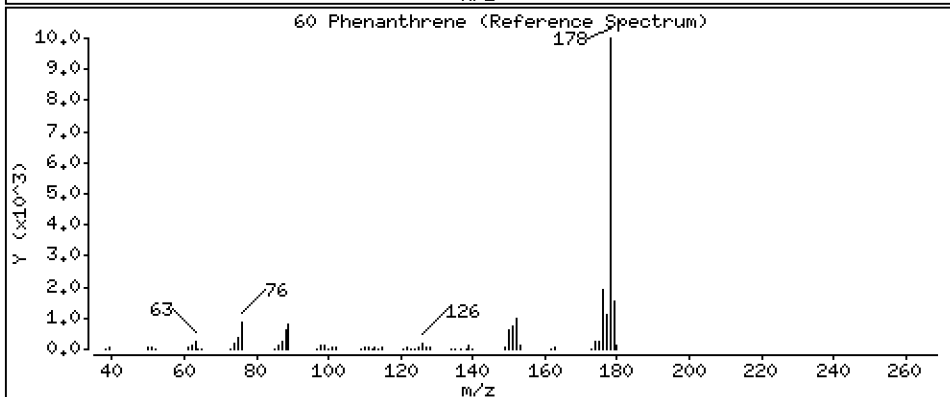
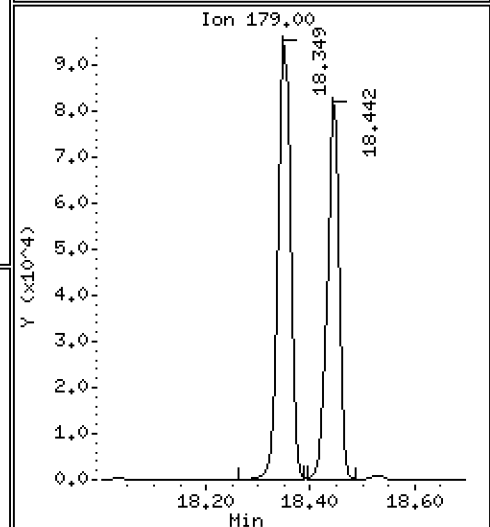
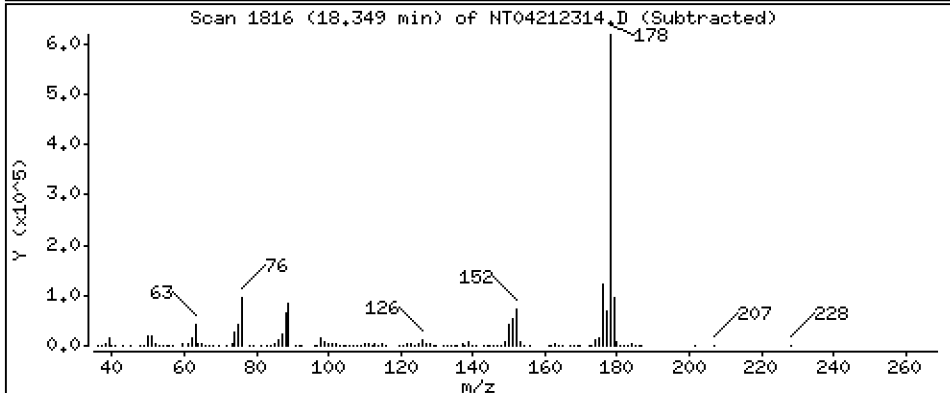
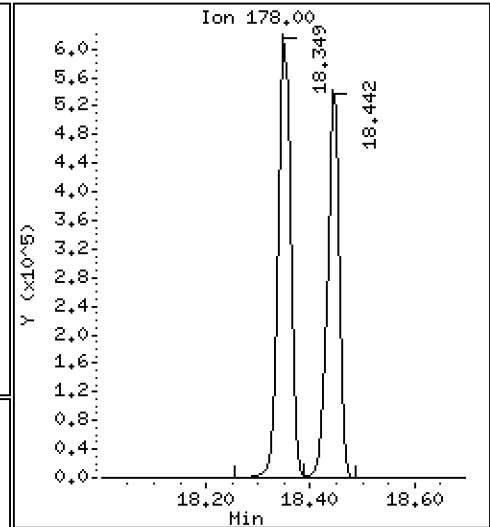
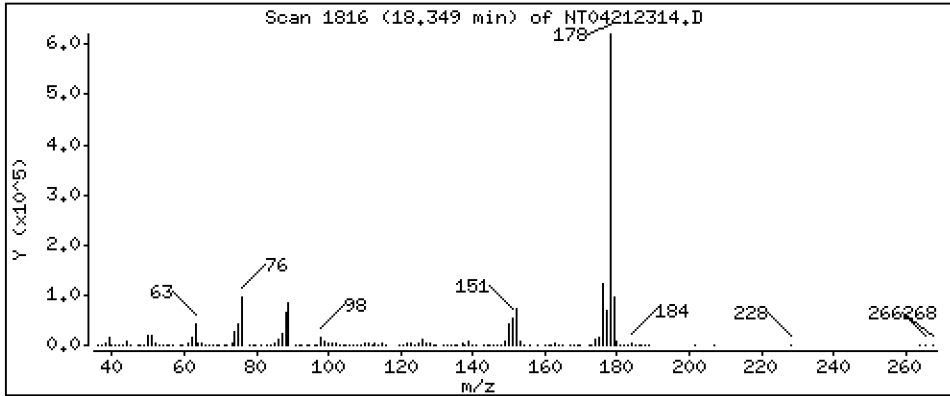
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 4,653 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

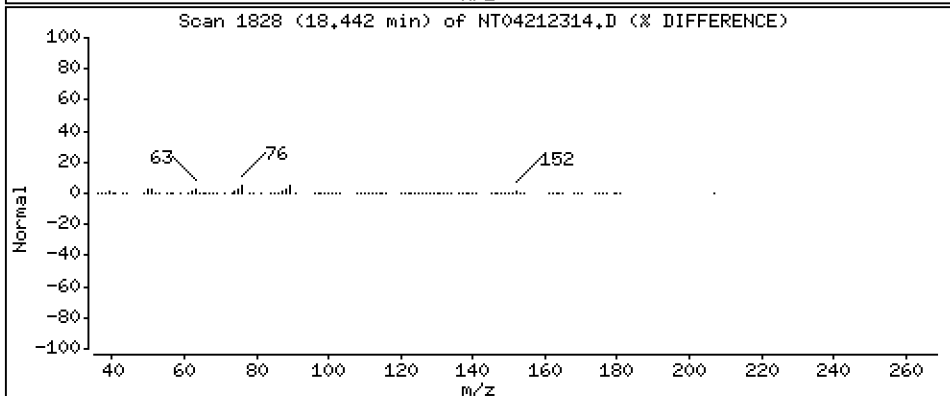
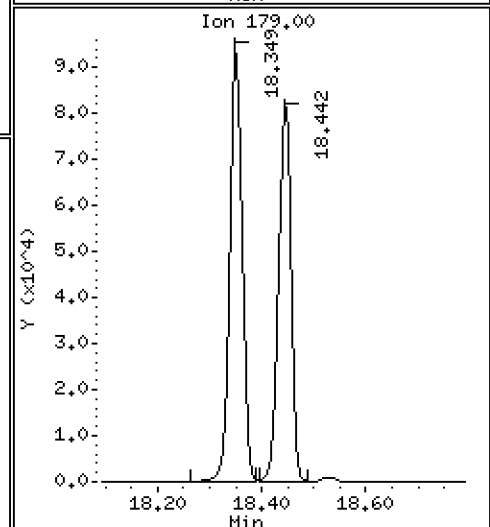
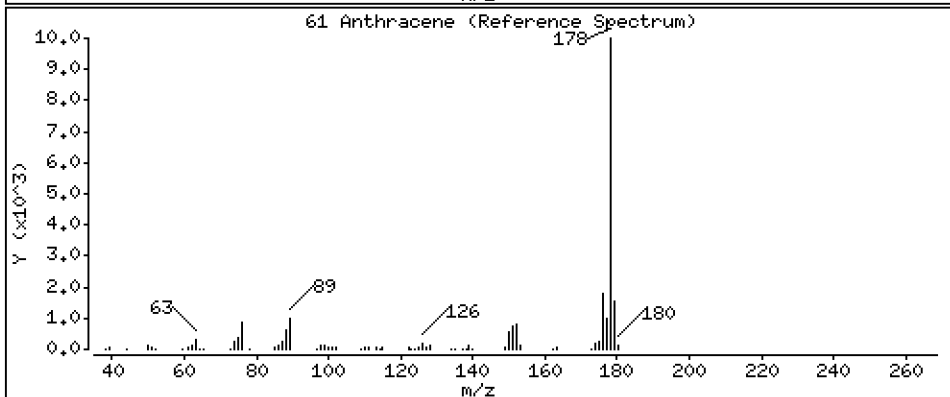
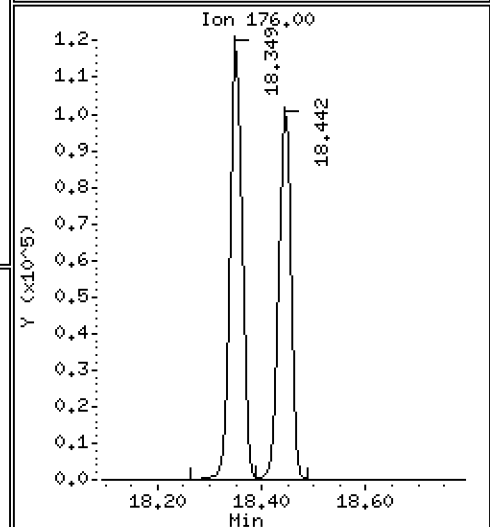
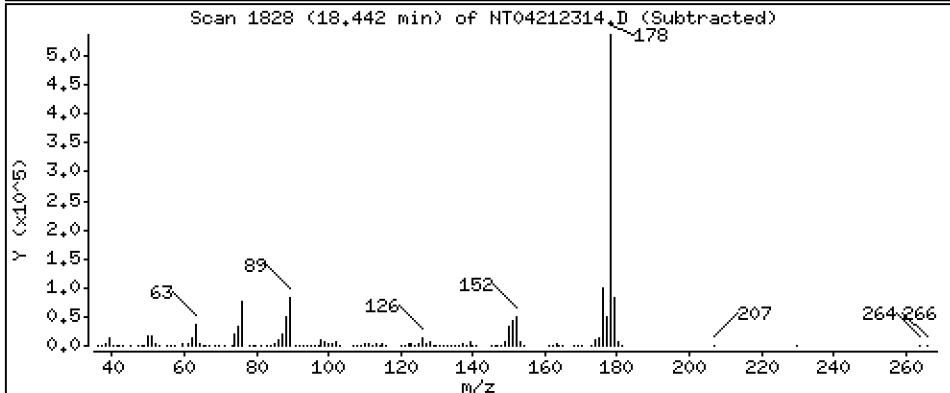
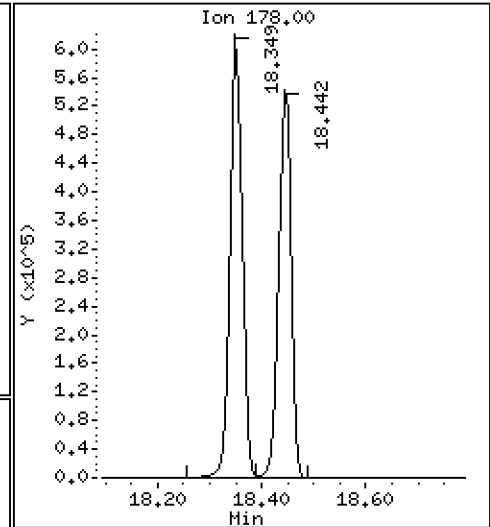
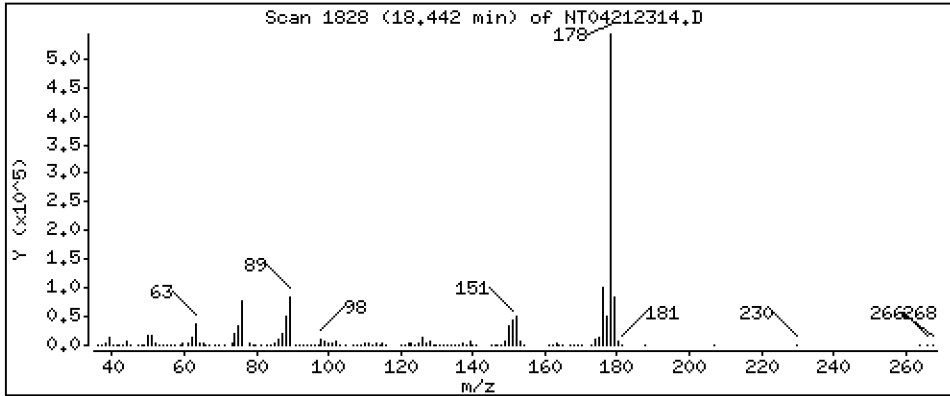
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 4,274 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

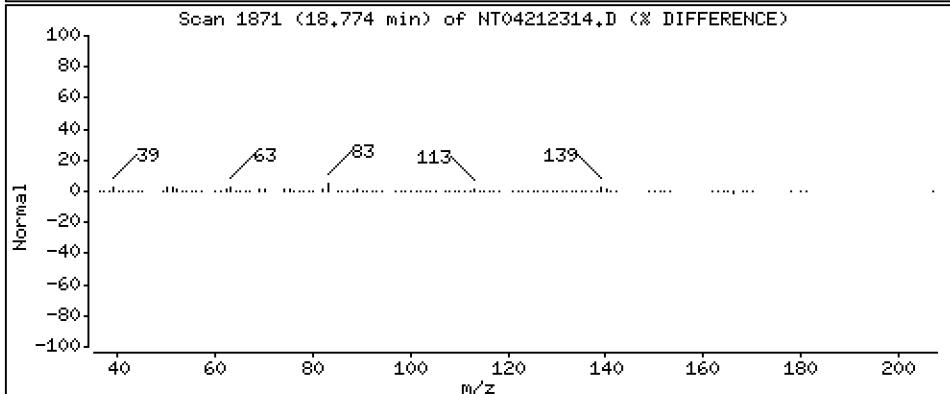
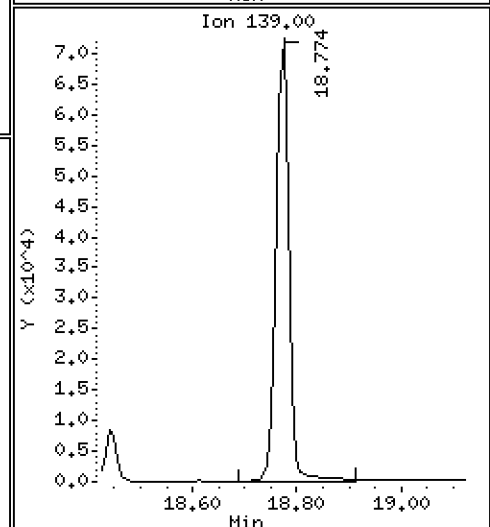
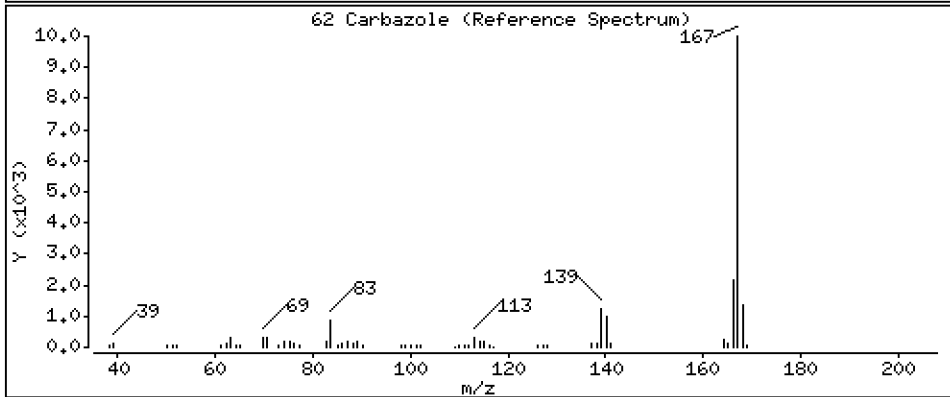
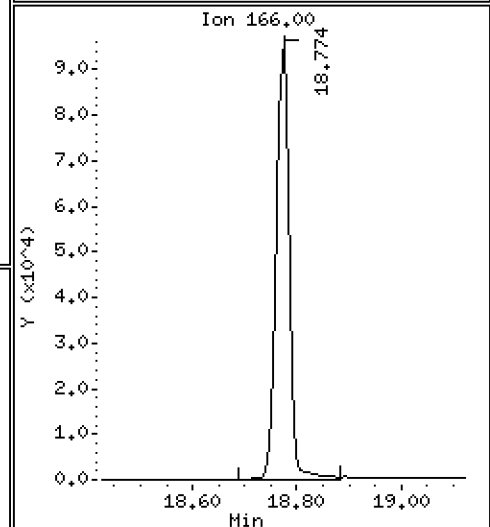
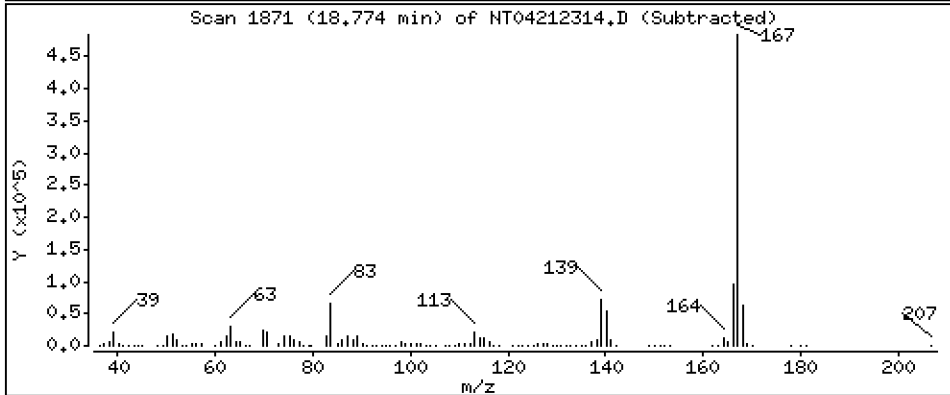
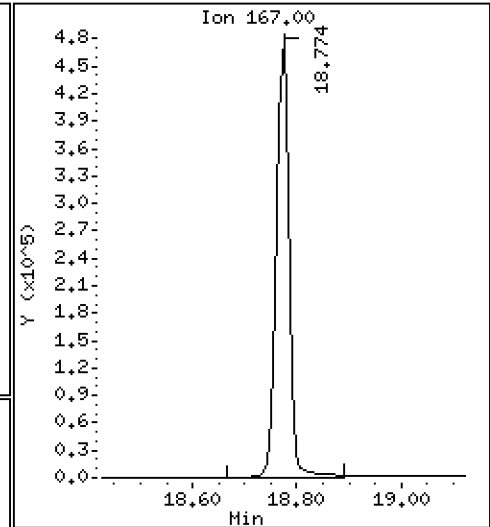
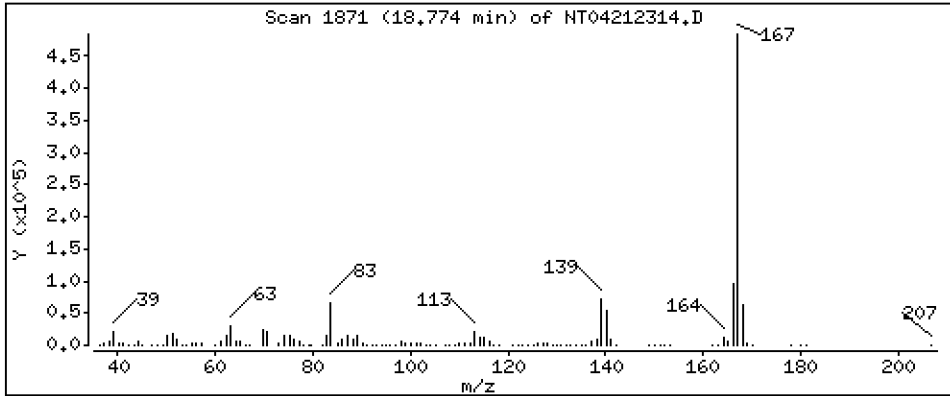
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 4,196 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

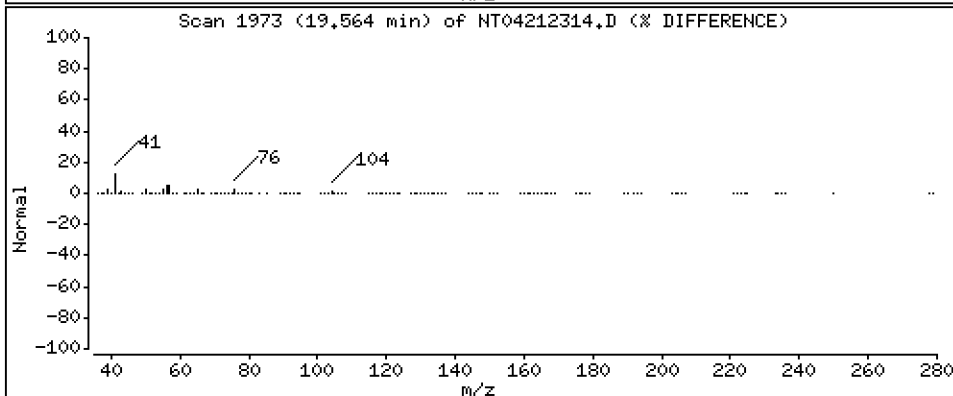
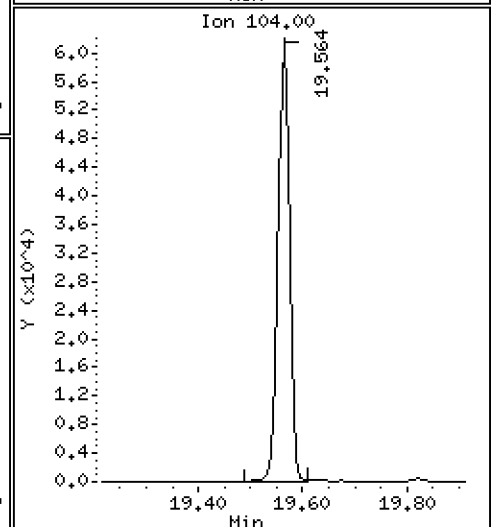
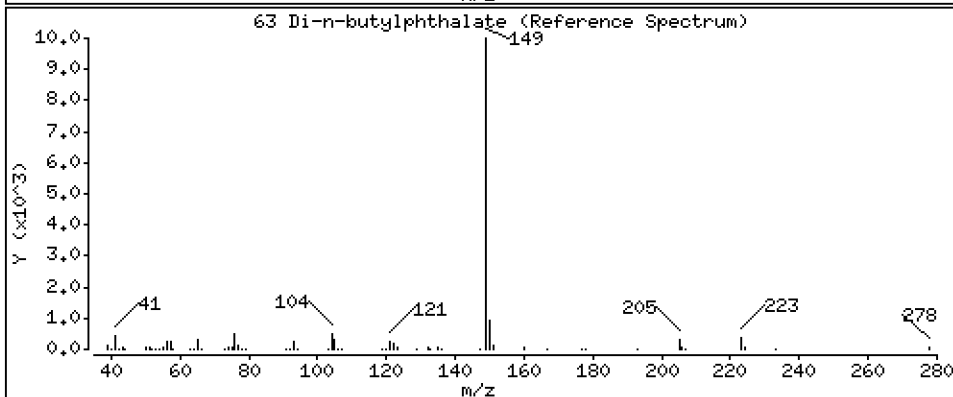
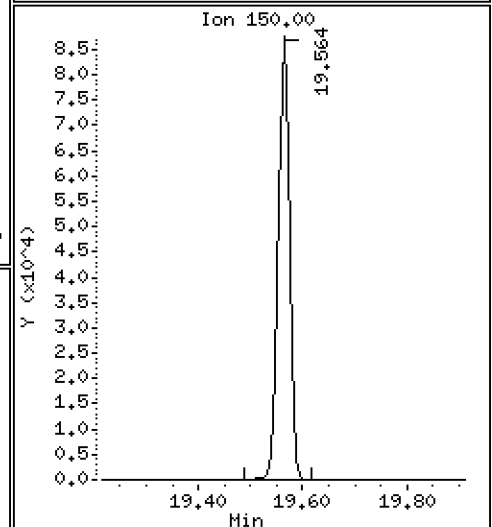
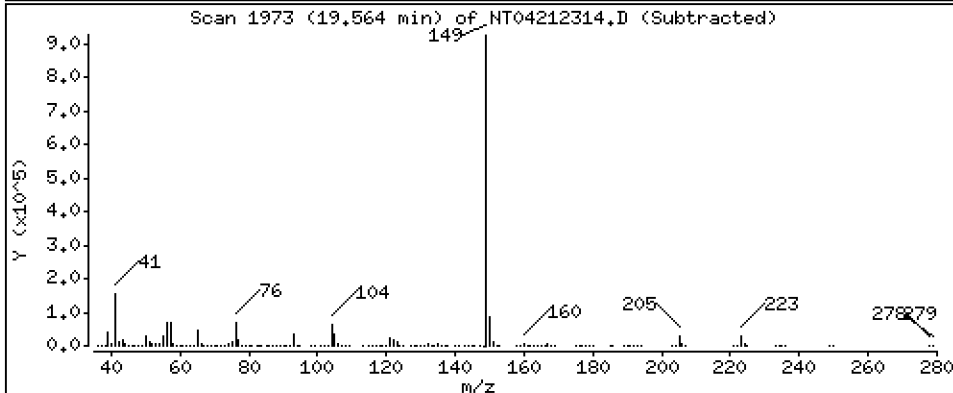
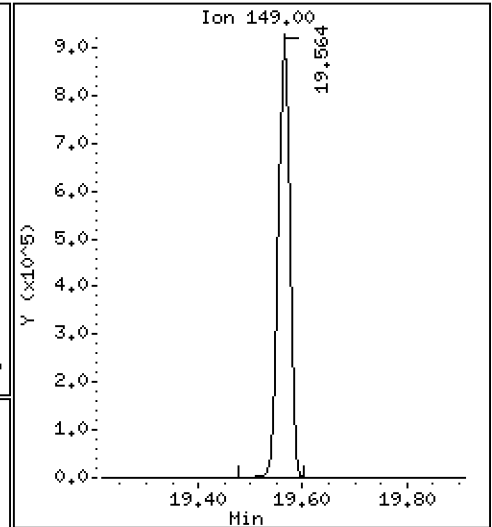
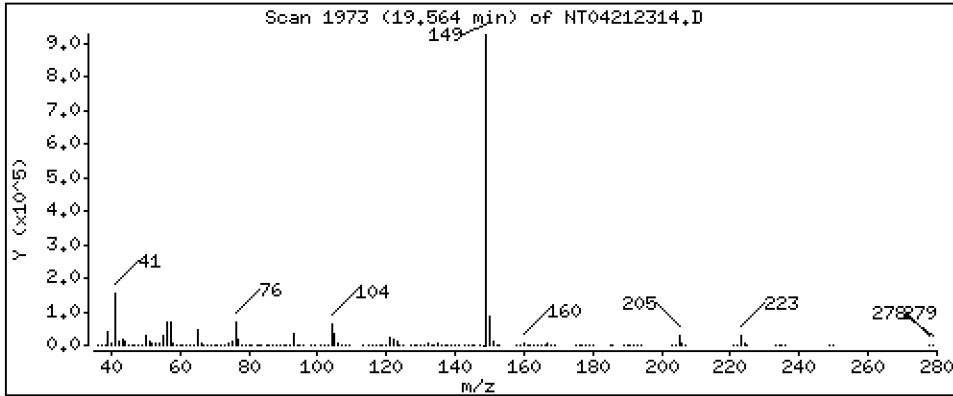
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 4,762 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

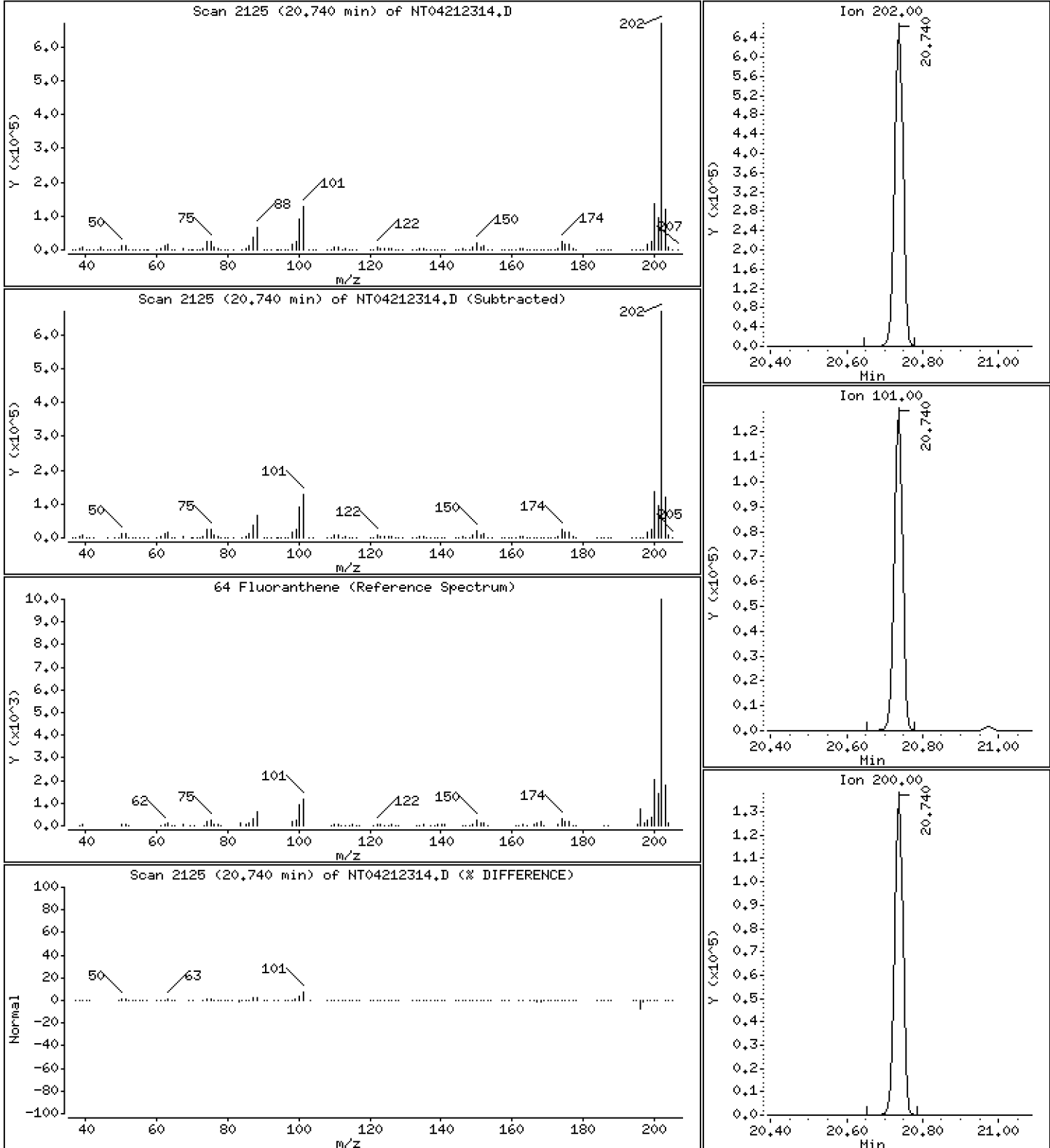
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 5,068 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

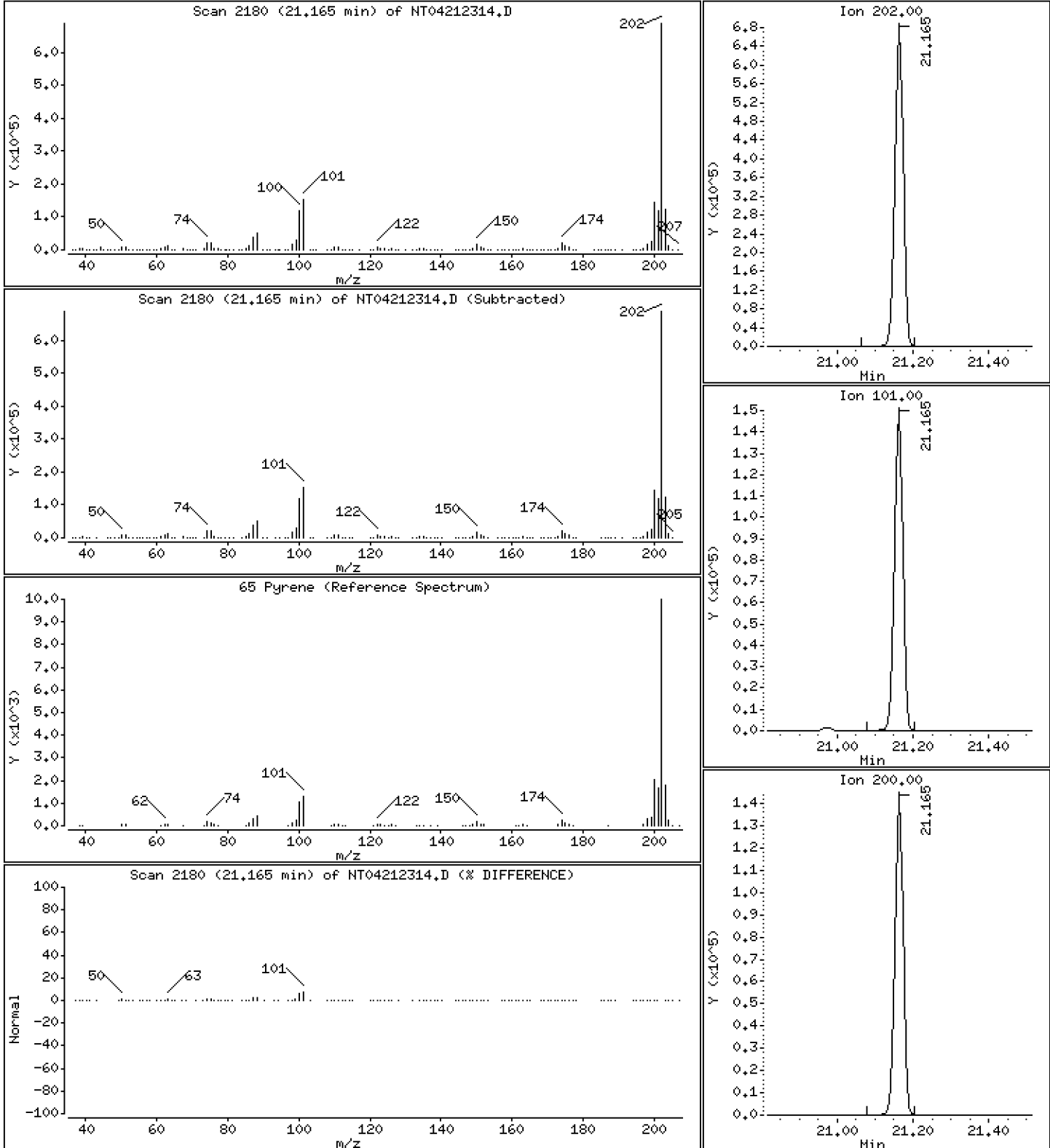
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 4,920 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

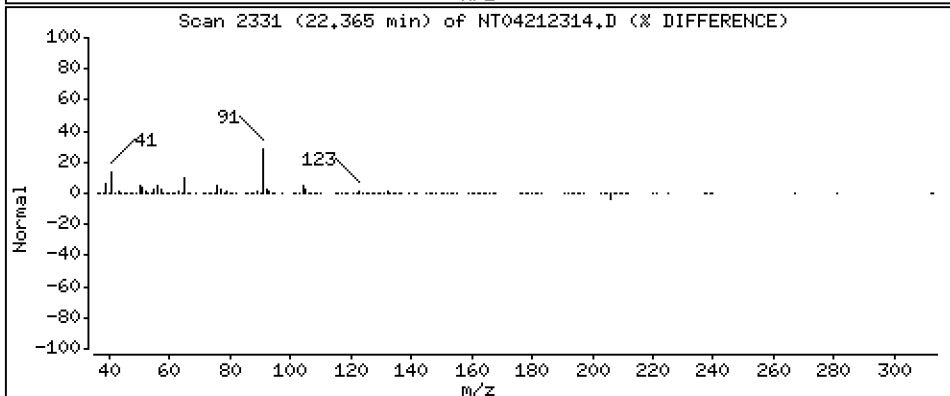
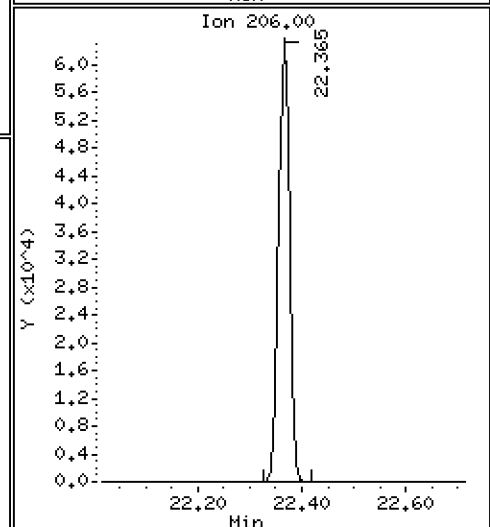
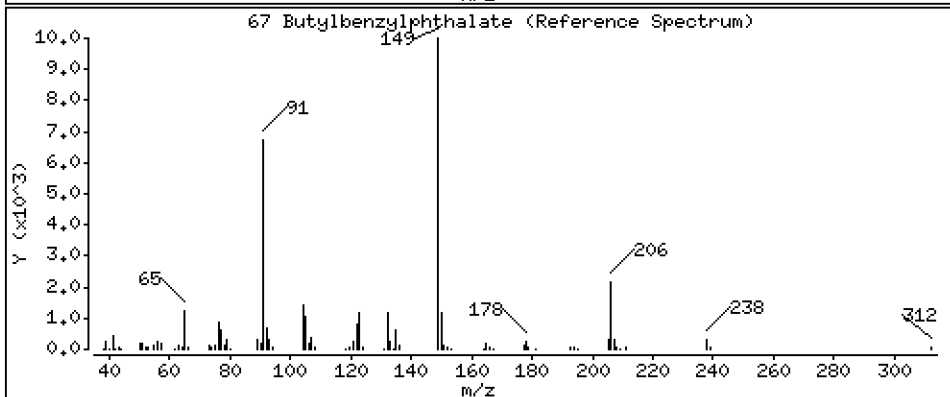
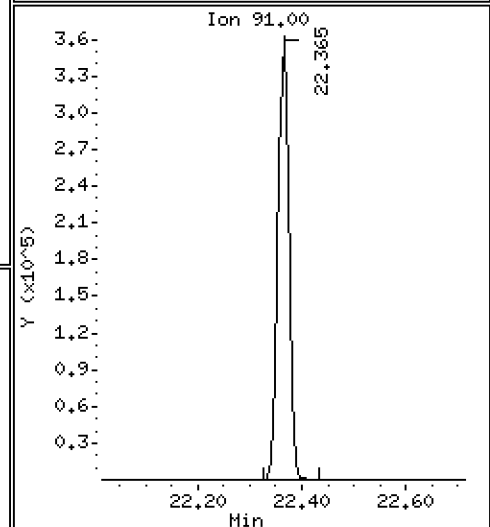
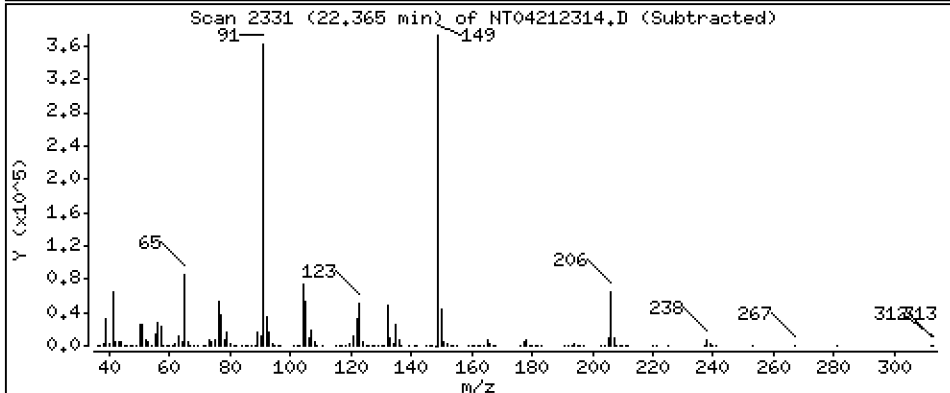
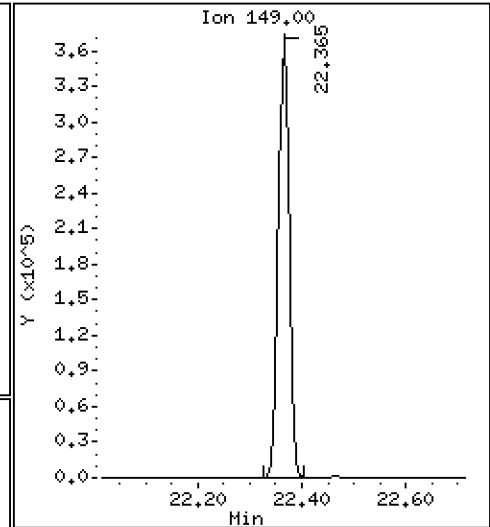
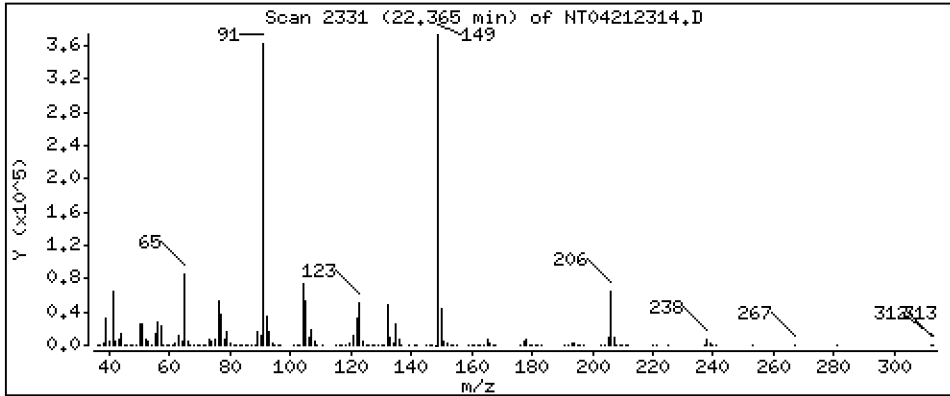
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,291 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

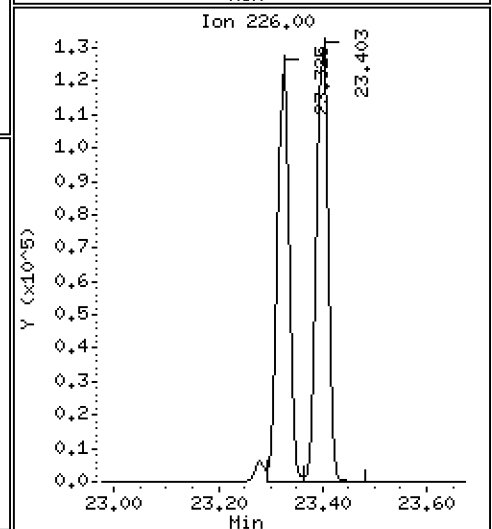
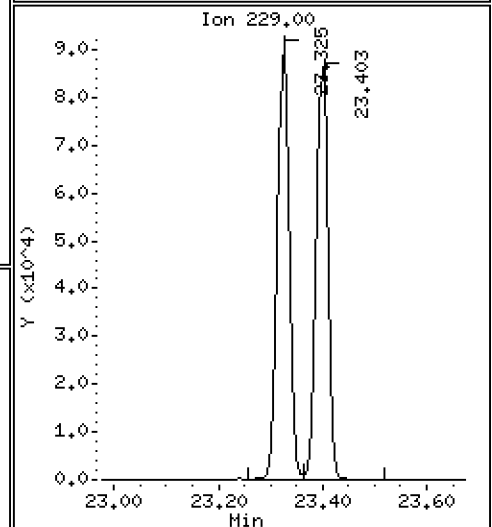
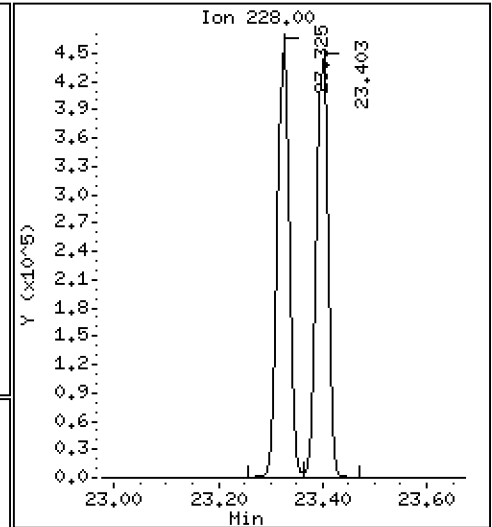
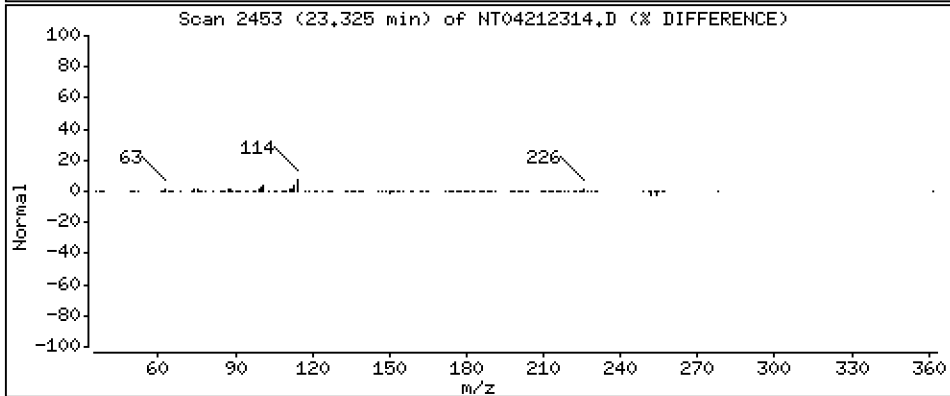
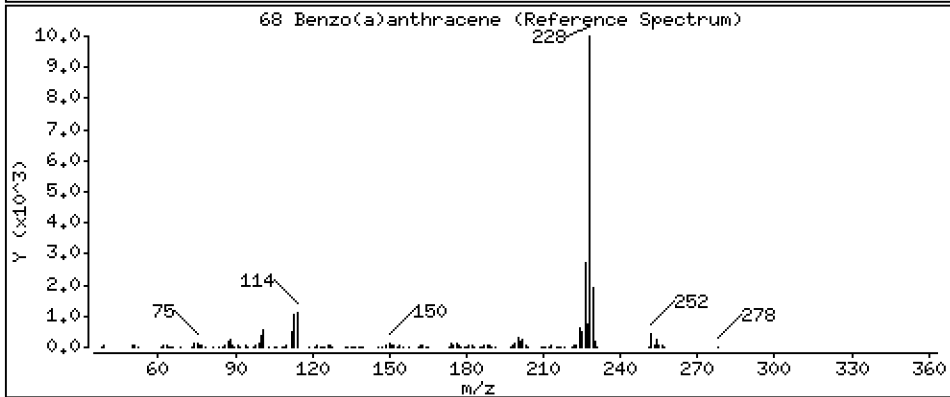
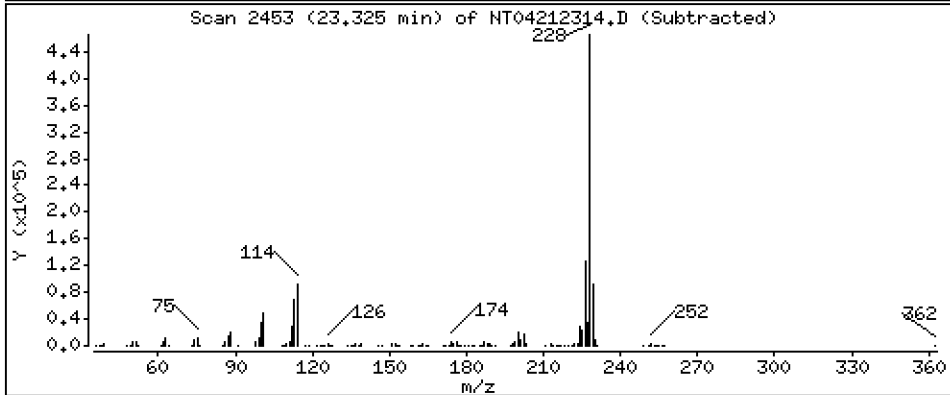
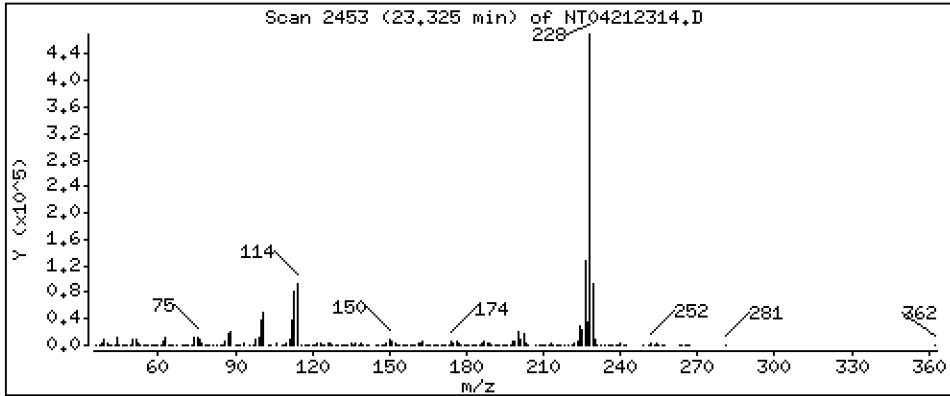
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 4,671 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

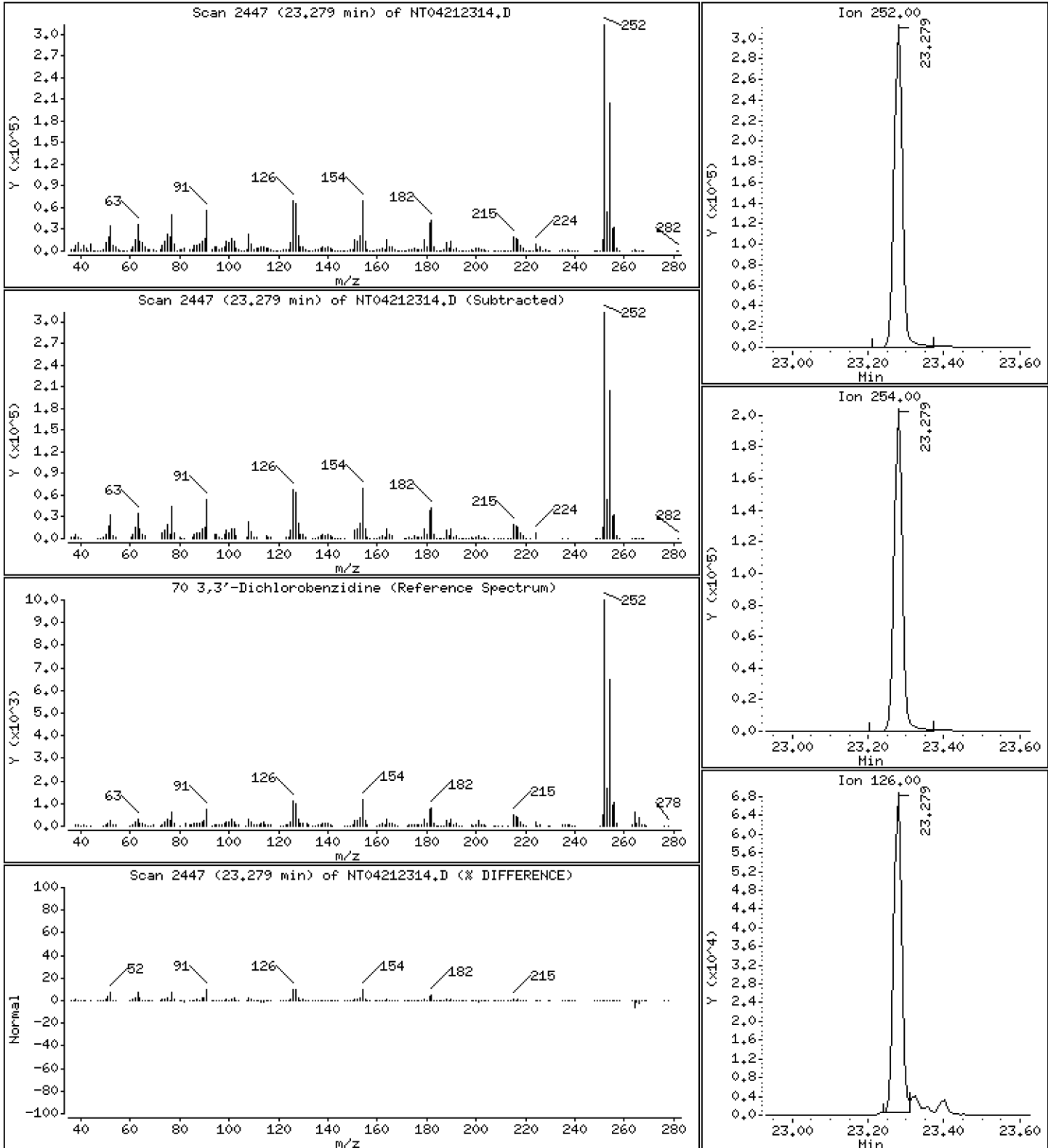
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 9,381 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

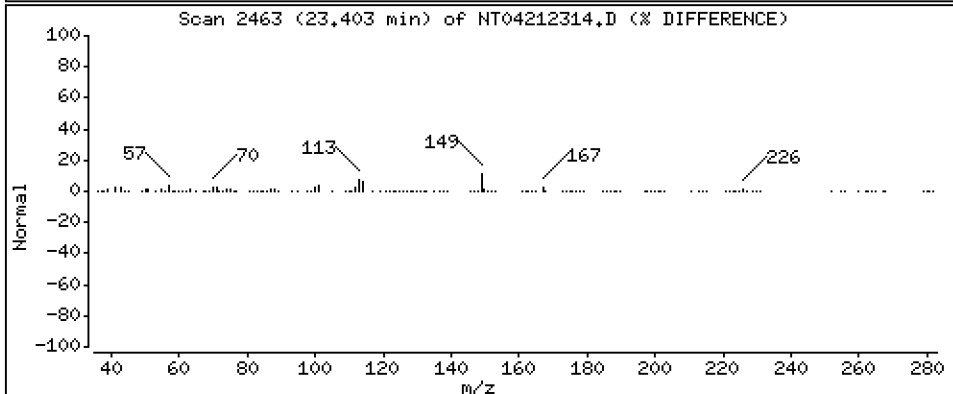
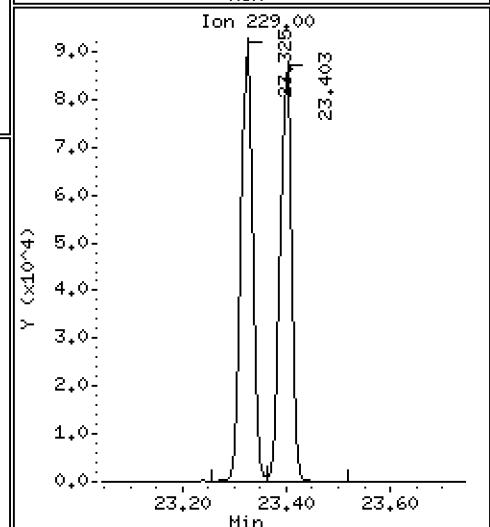
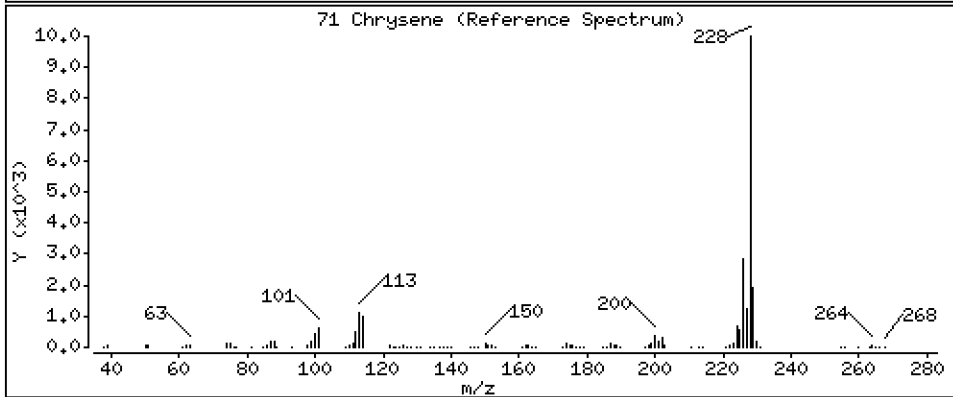
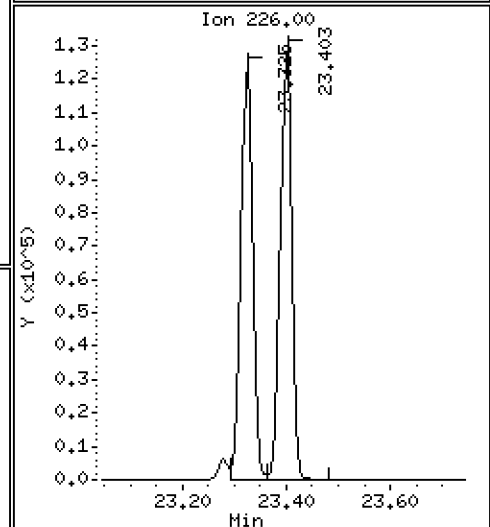
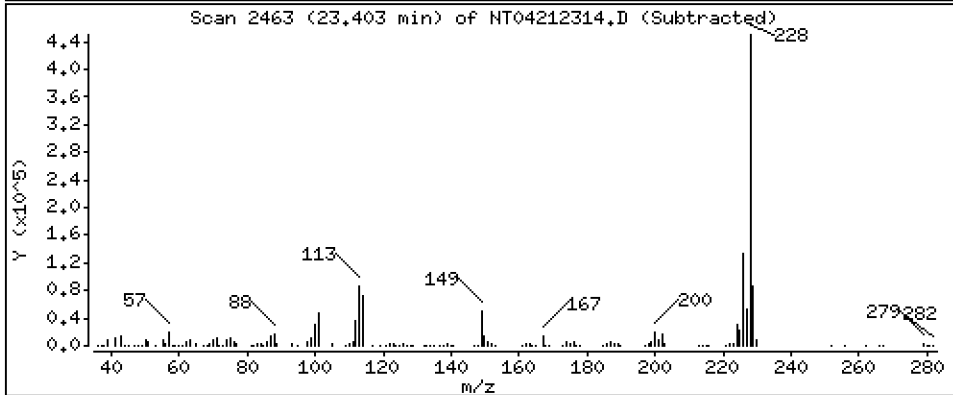
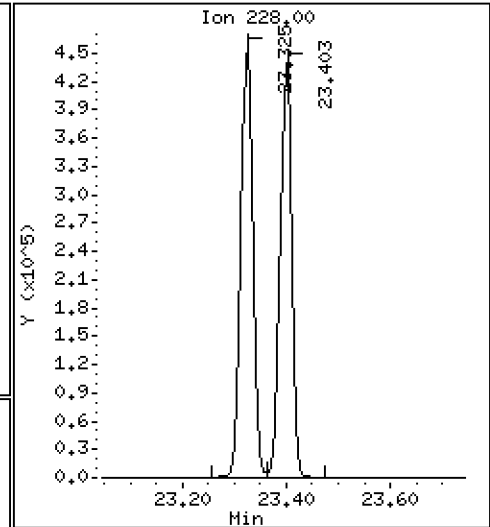
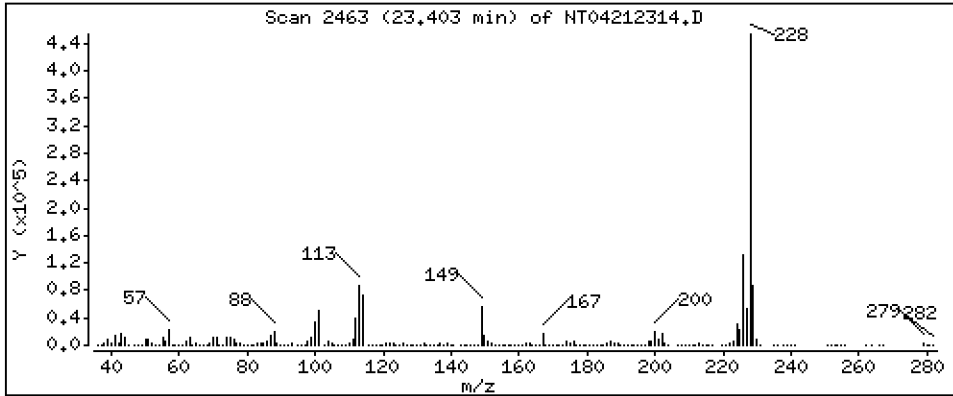
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 4,719 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

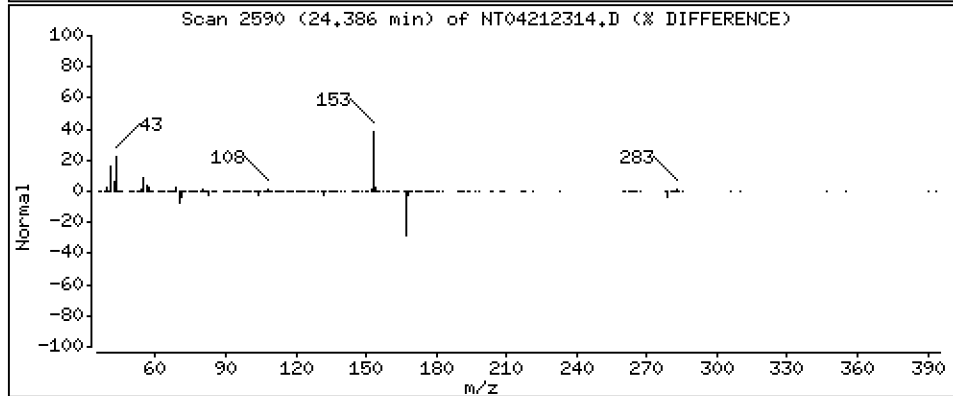
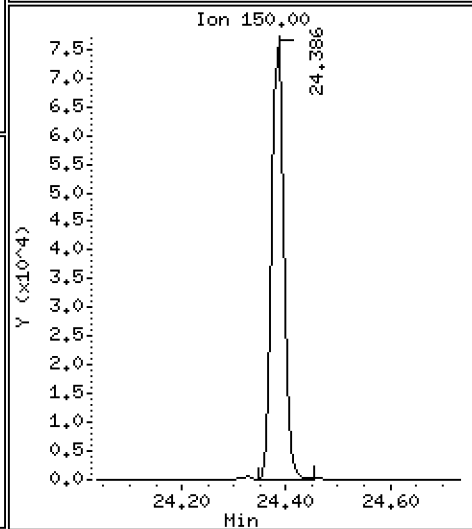
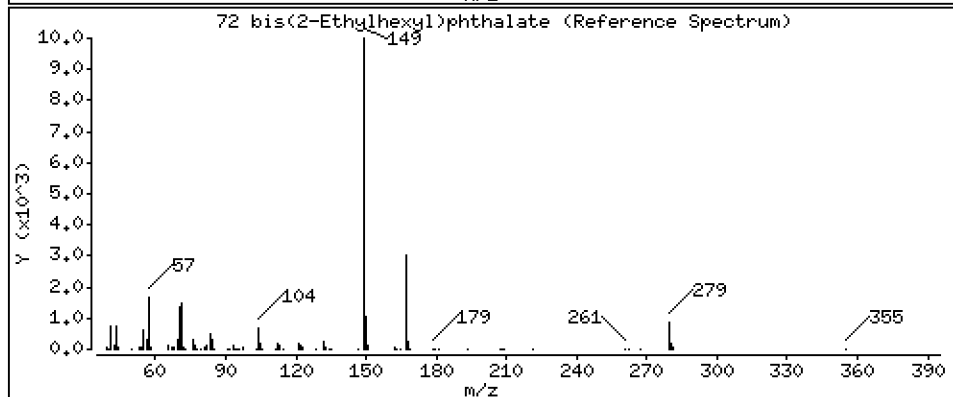
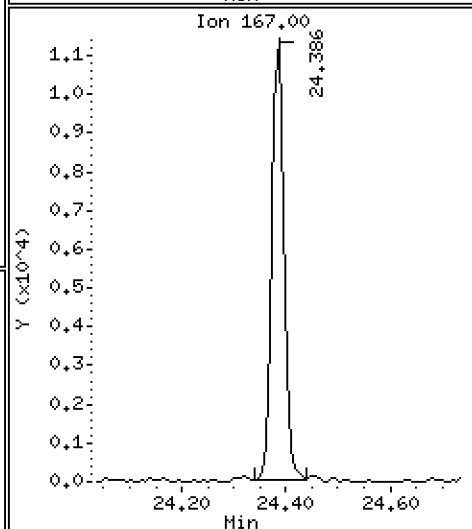
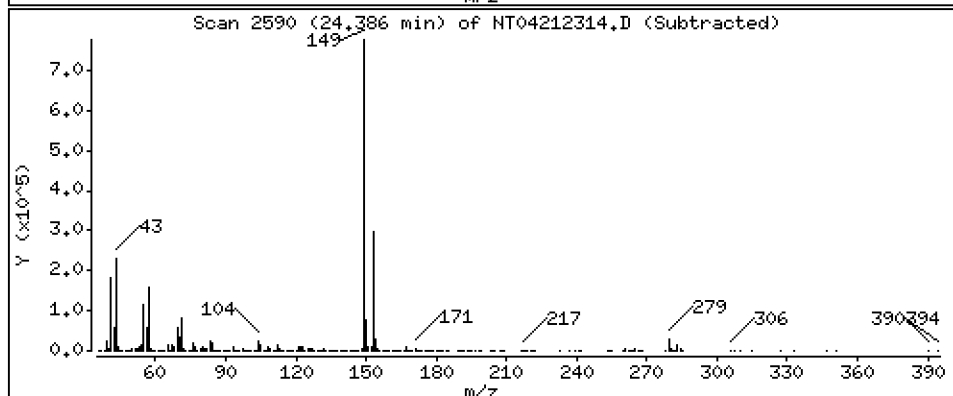
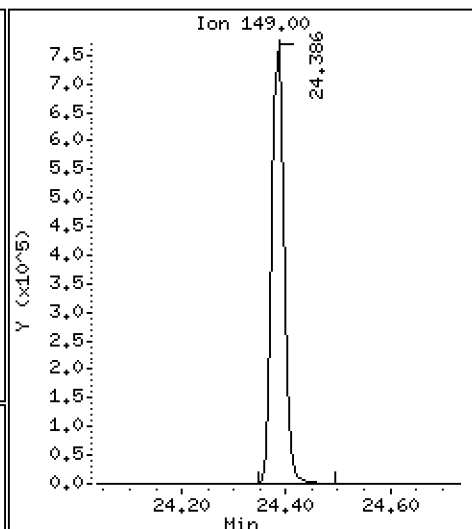
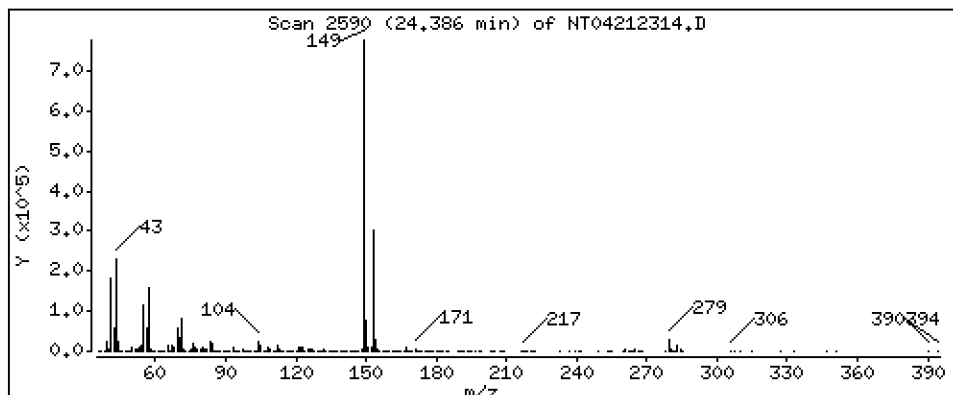
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,893 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

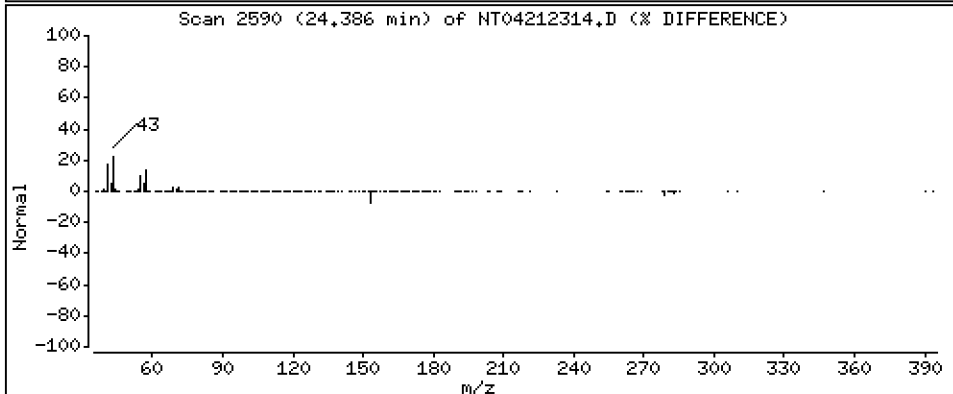
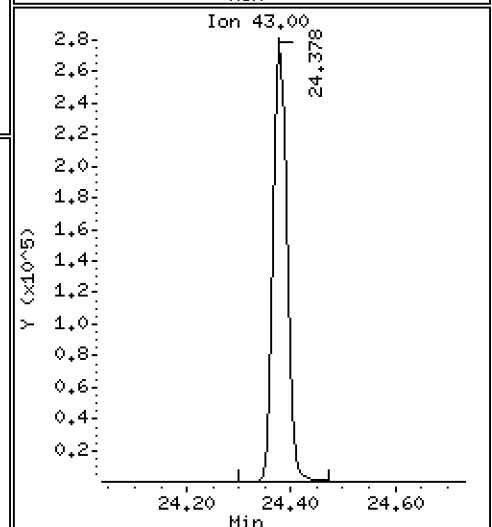
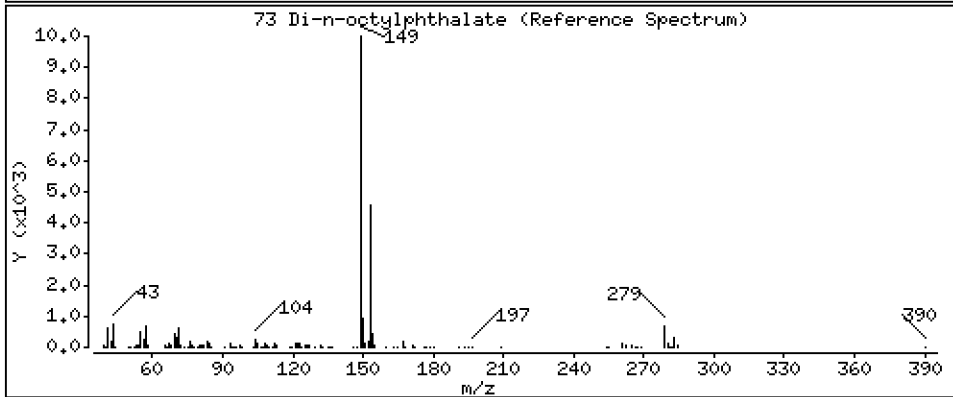
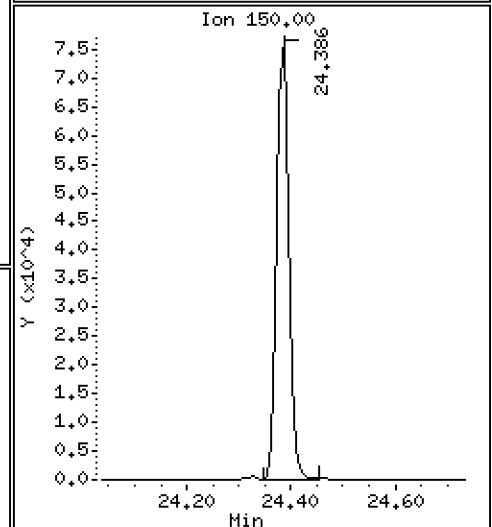
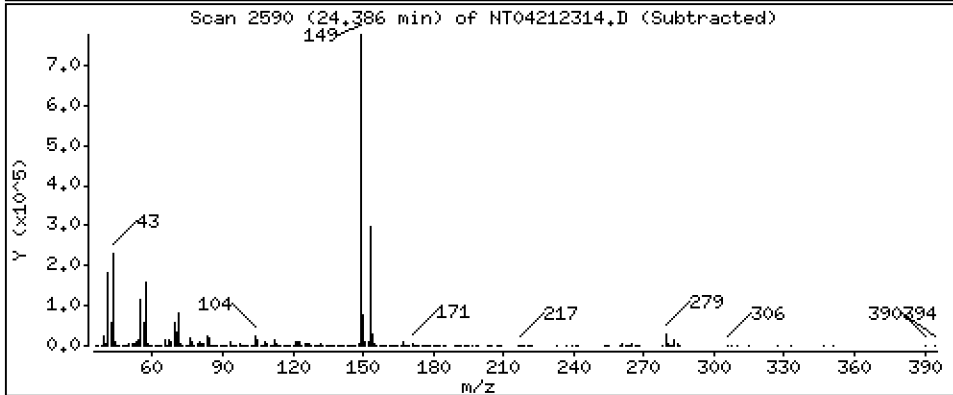
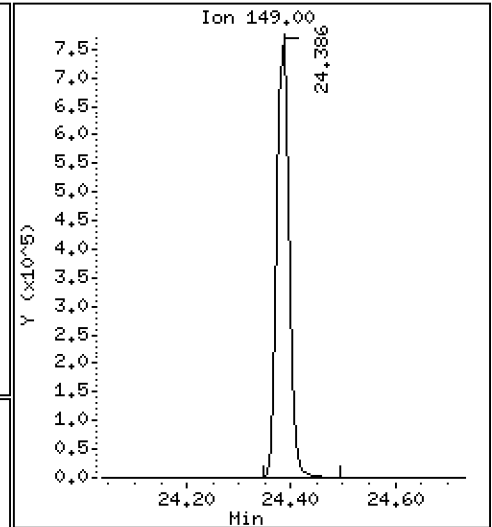
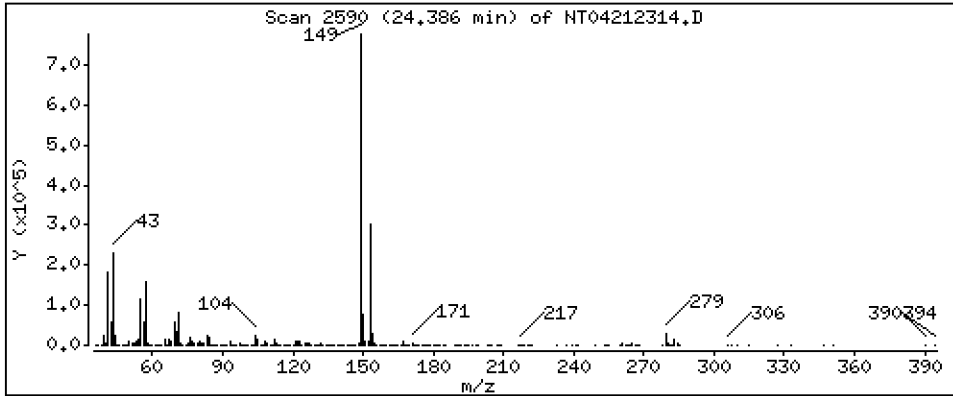
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,893 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

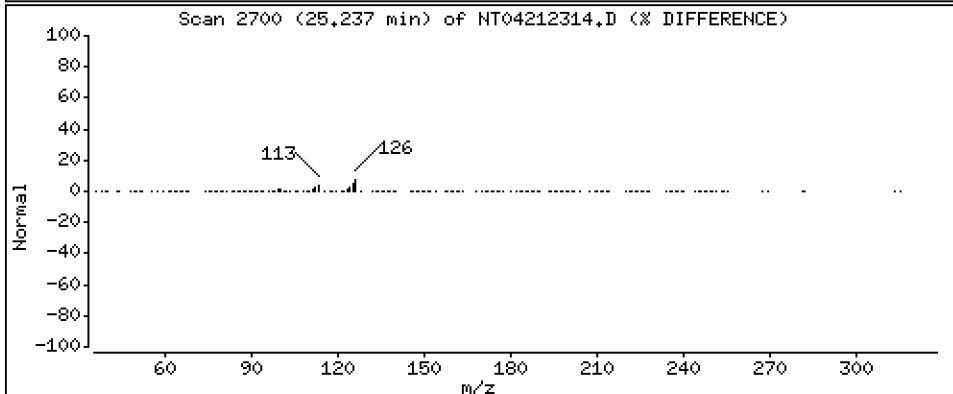
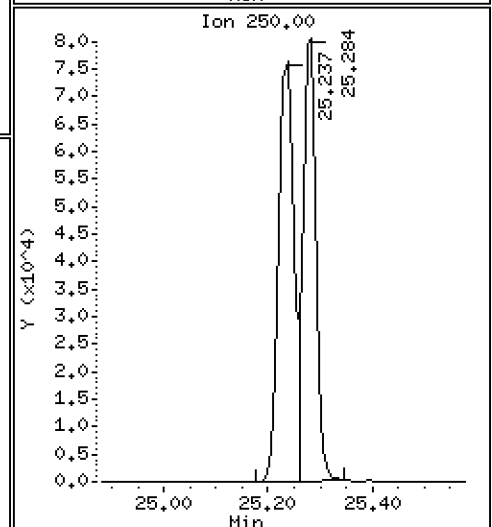
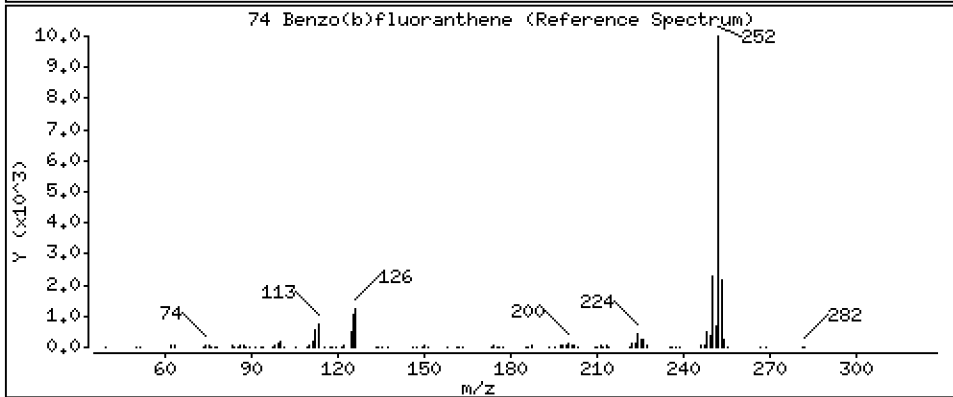
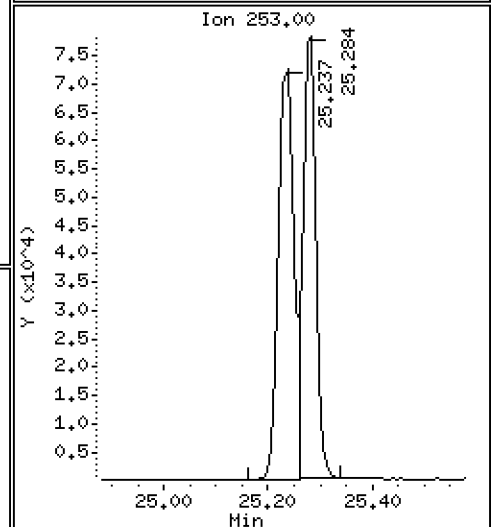
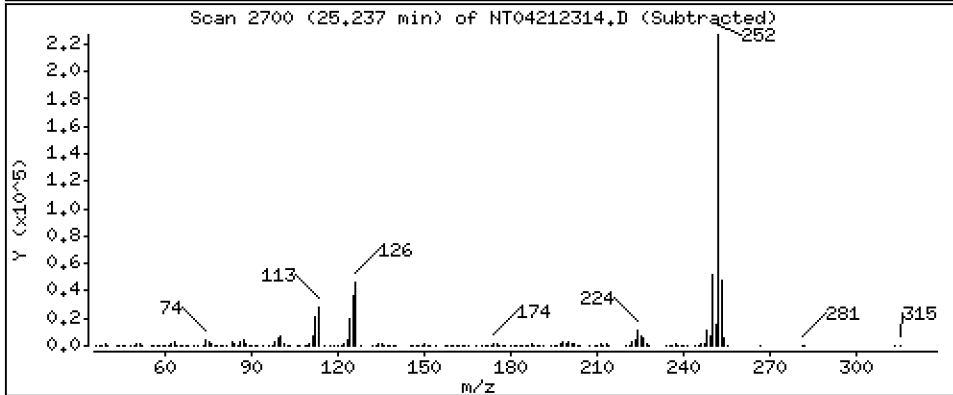
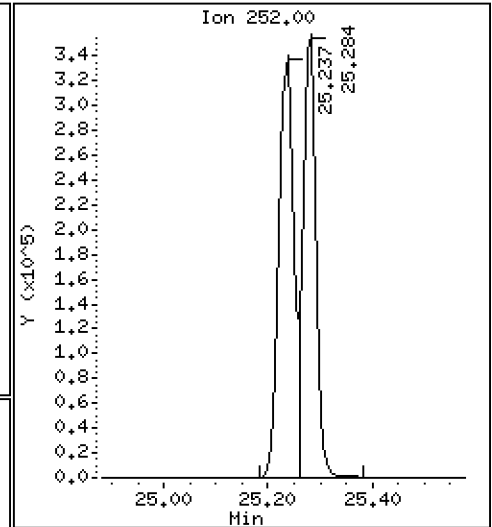
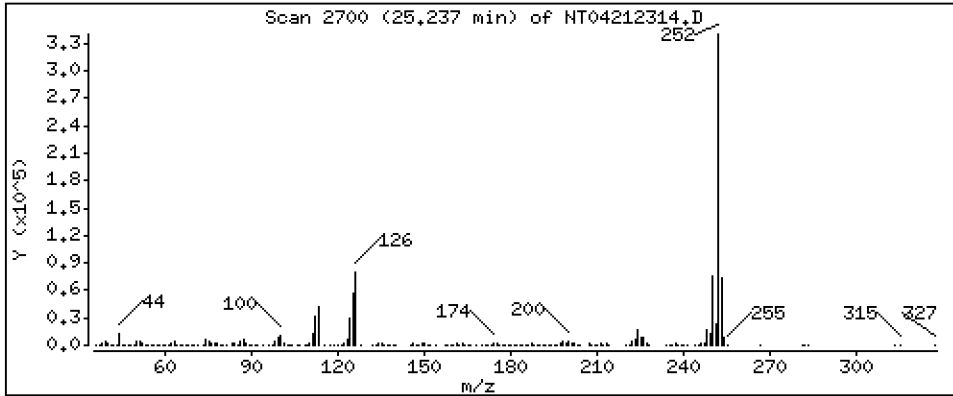
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 4,839 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

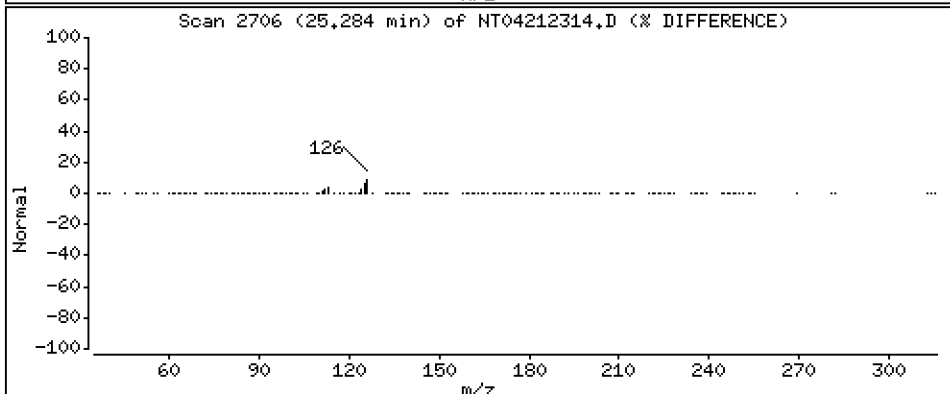
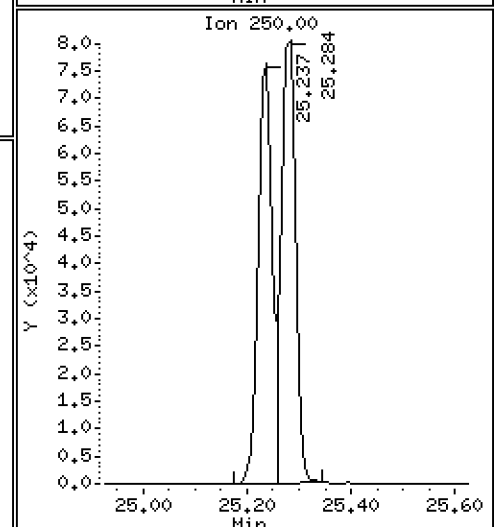
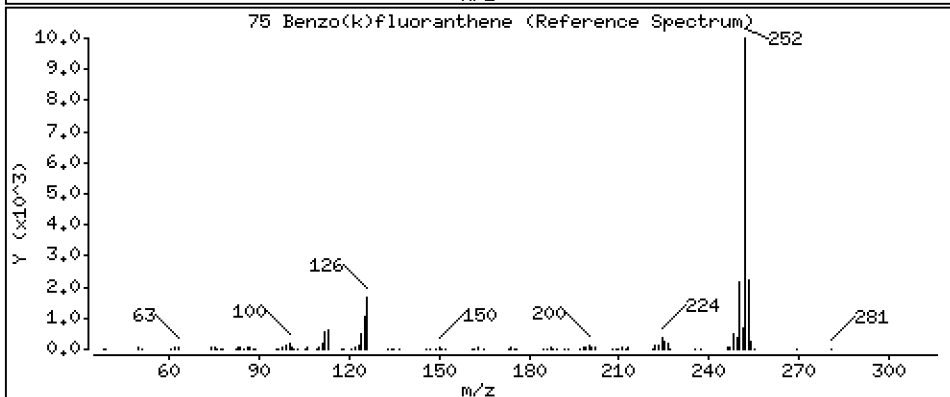
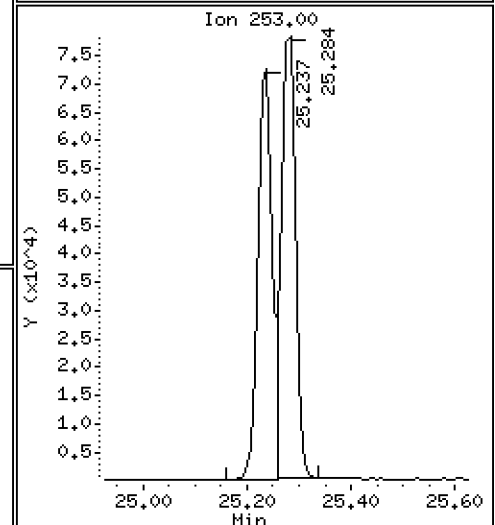
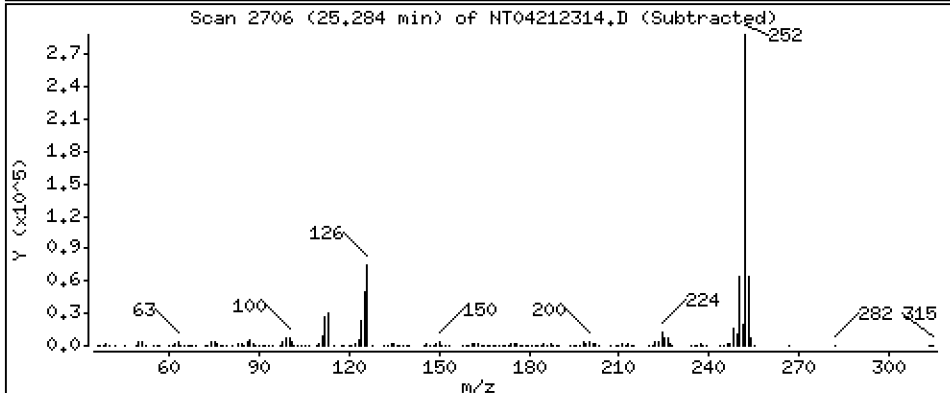
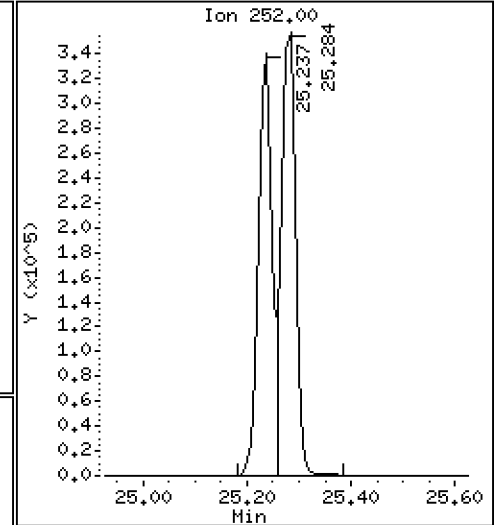
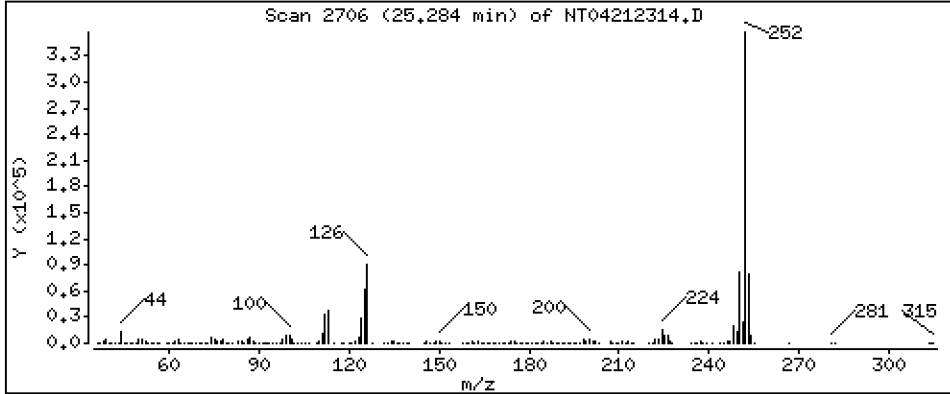
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 4,731 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

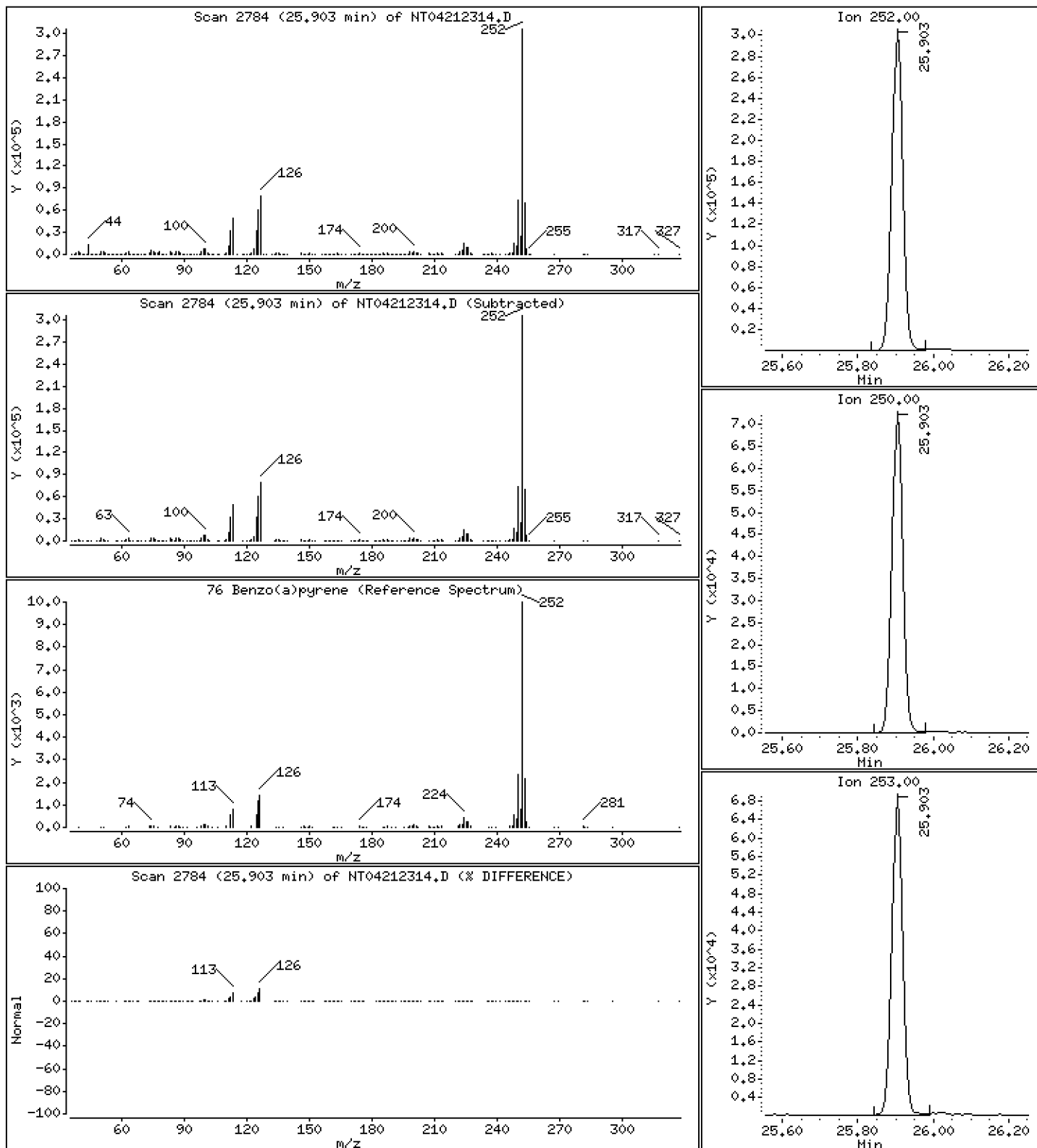
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 4,988 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

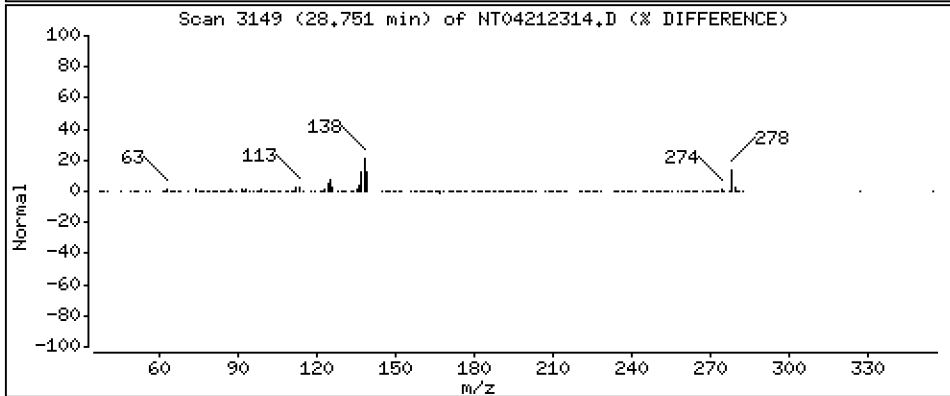
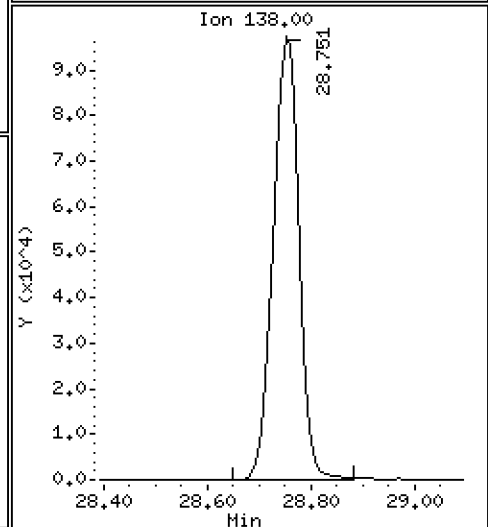
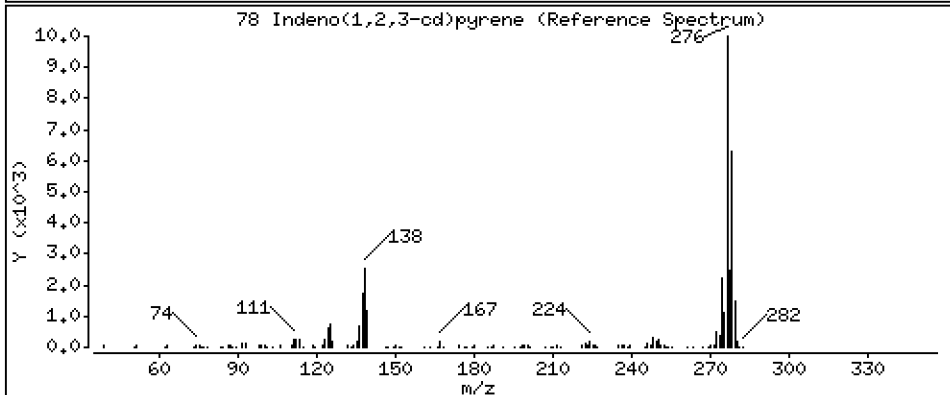
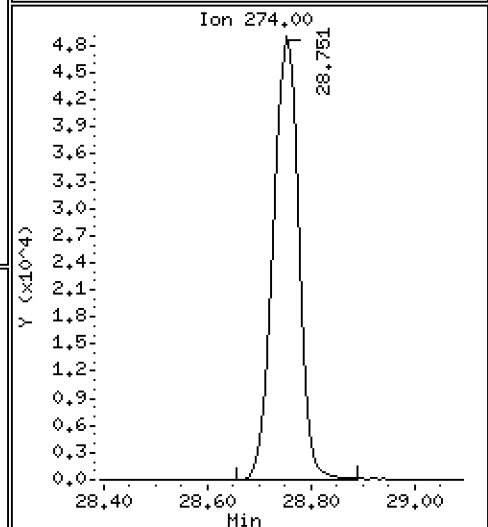
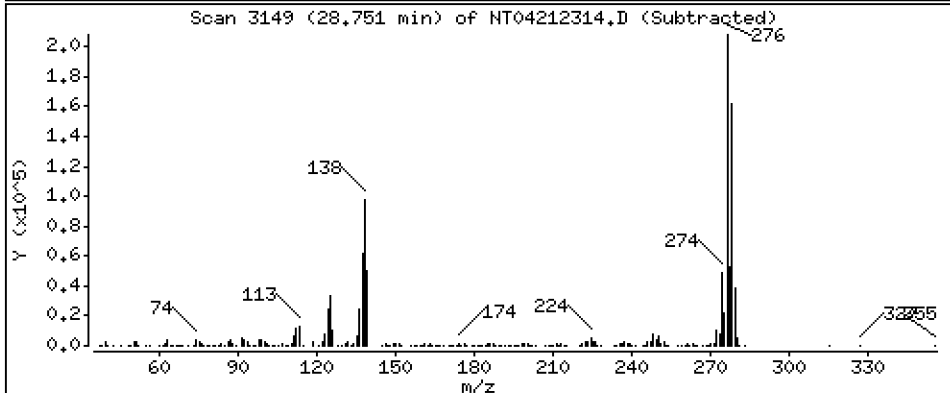
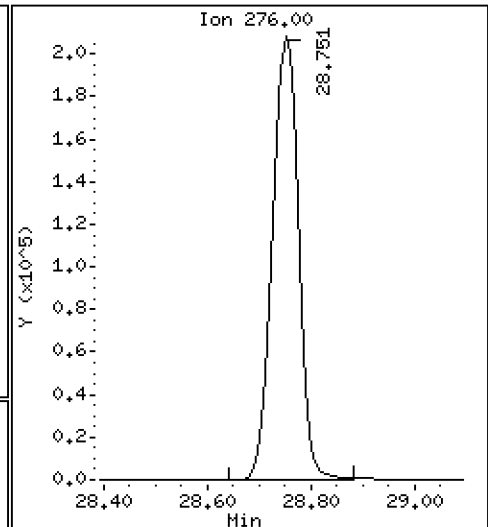
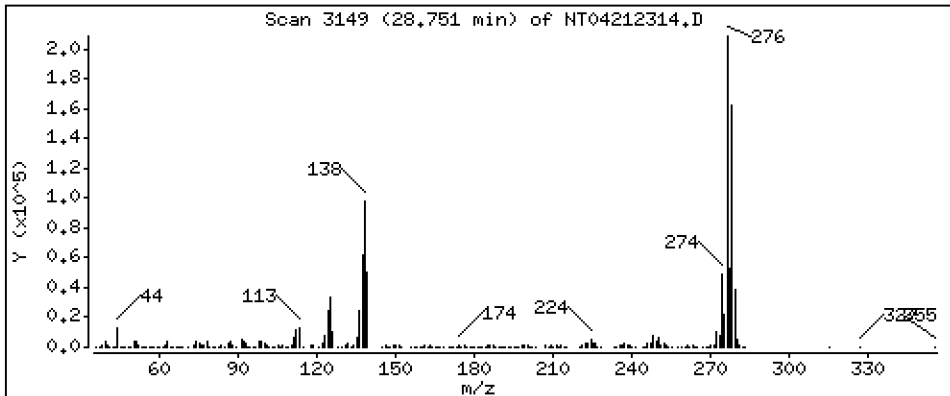
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 4,409 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

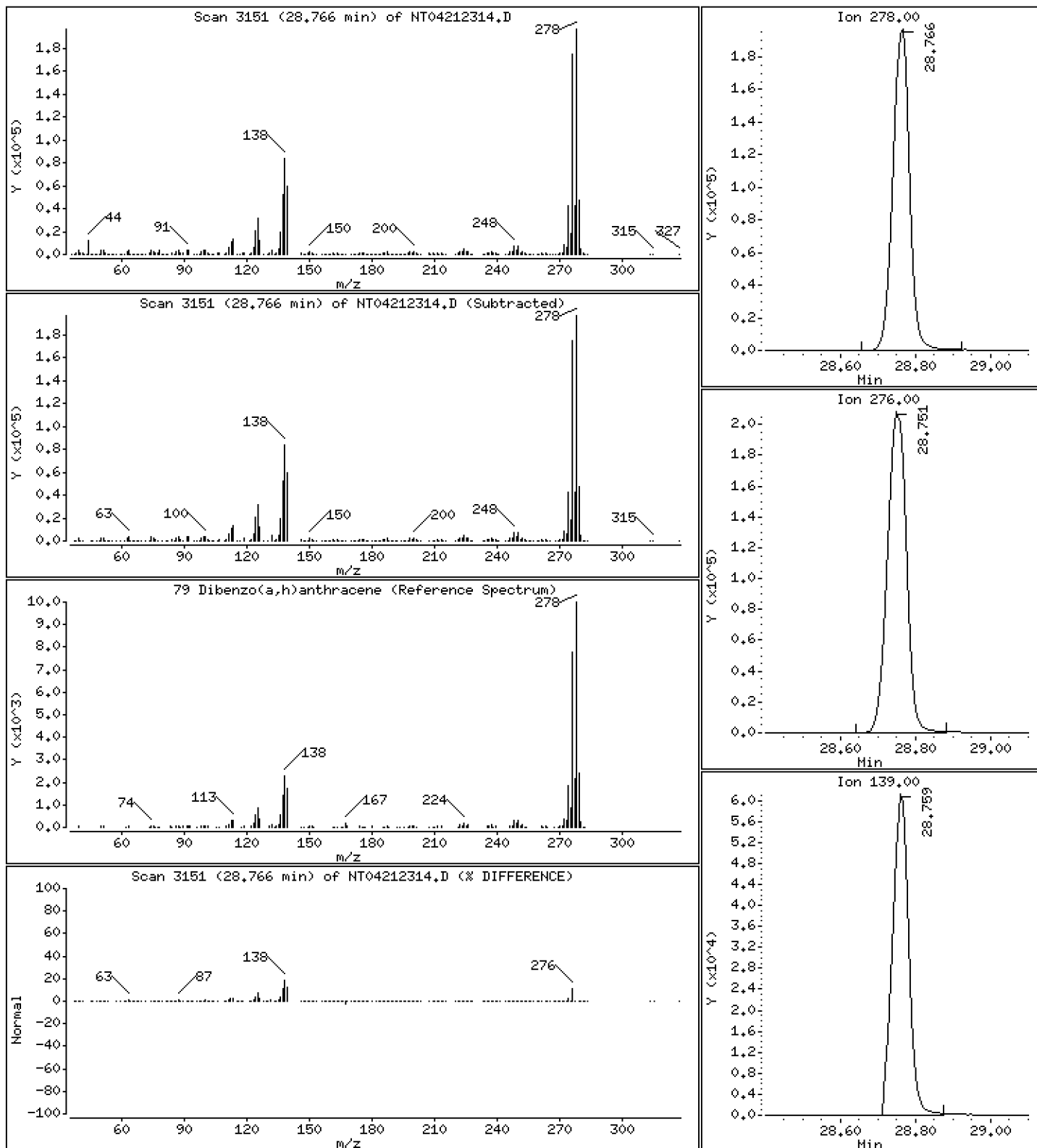
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,457 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

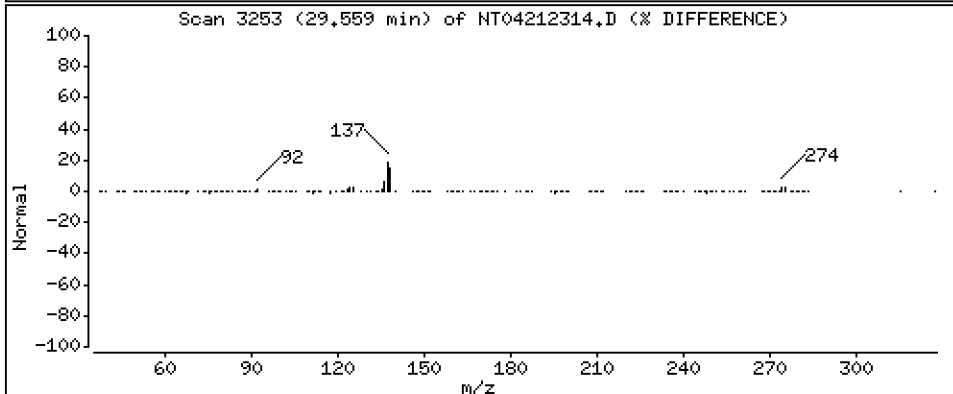
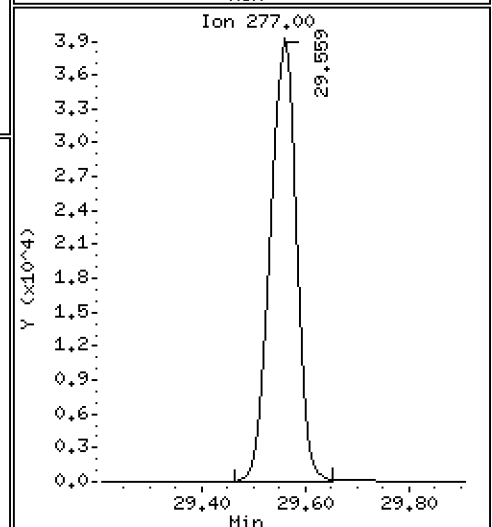
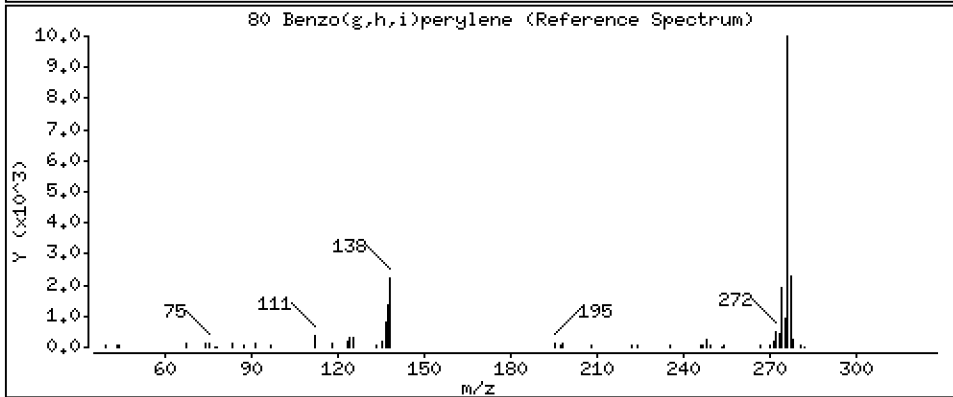
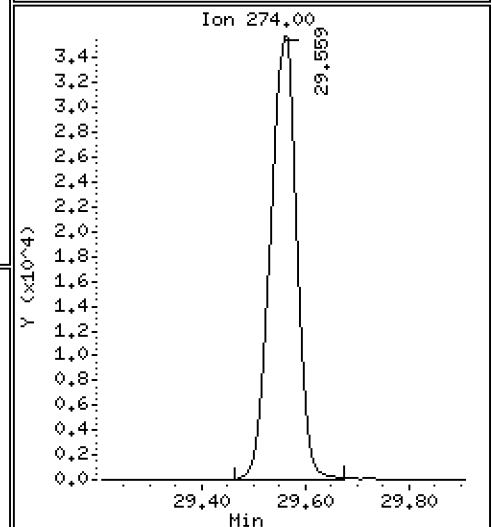
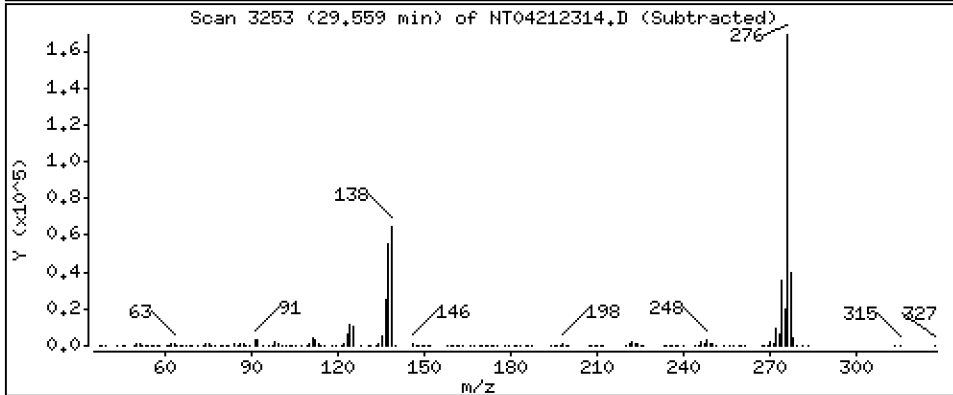
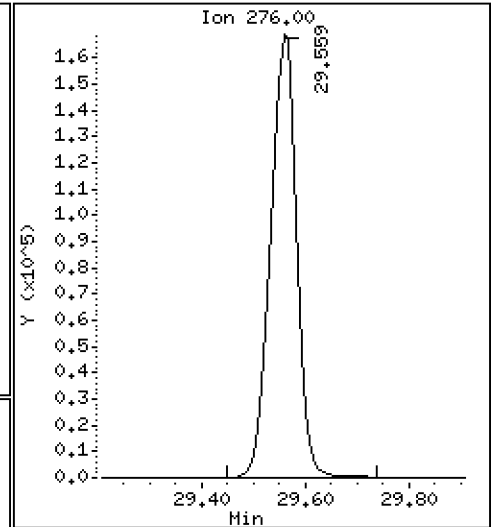
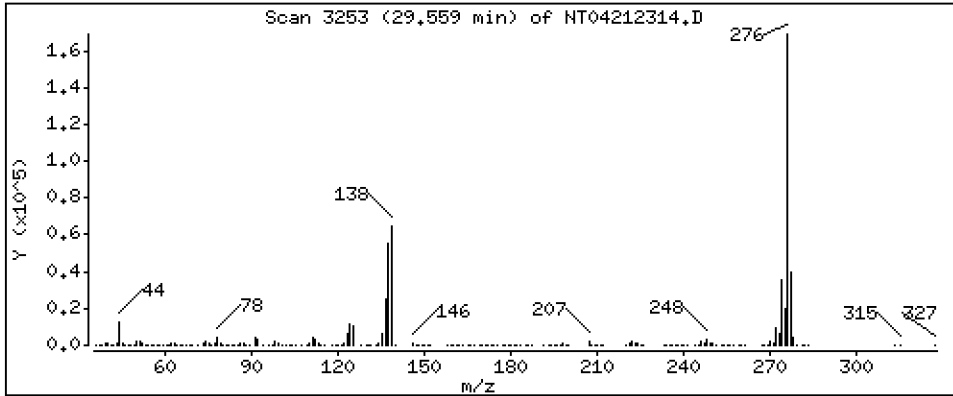
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 4,200 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

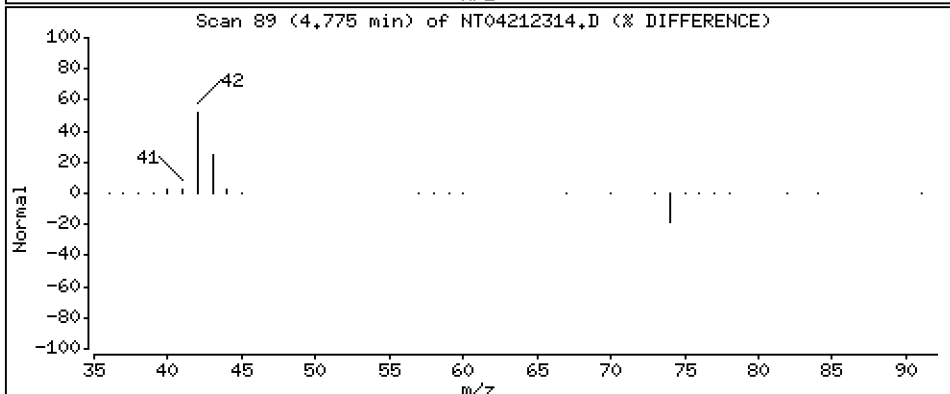
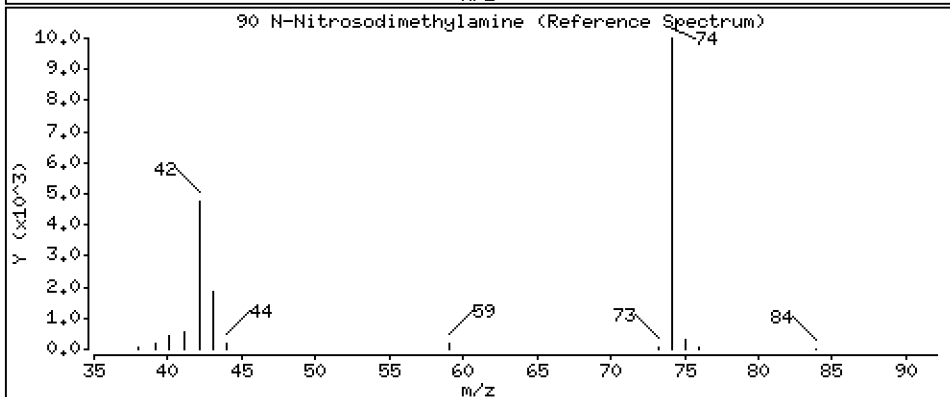
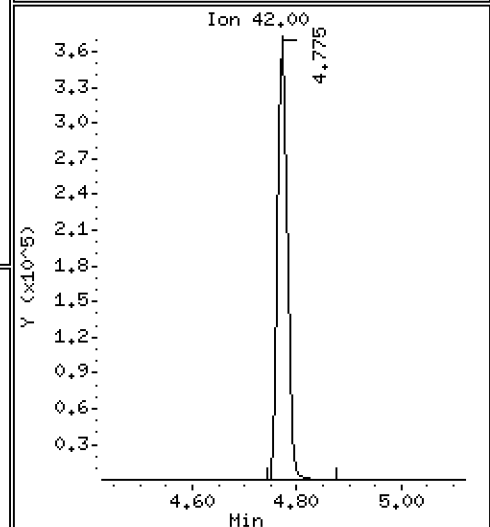
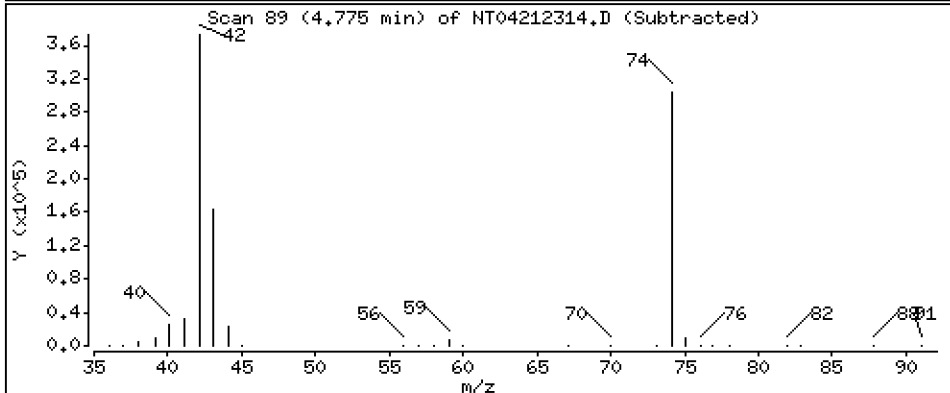
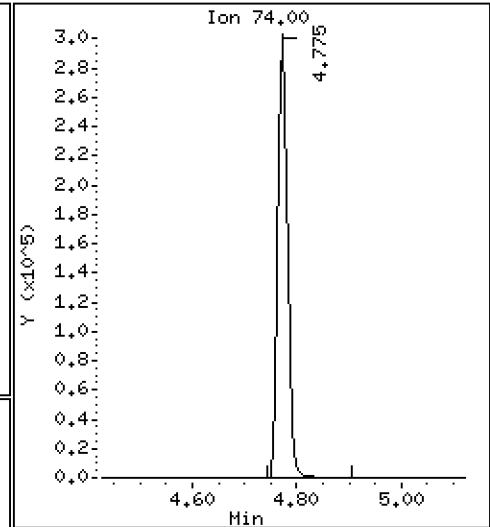
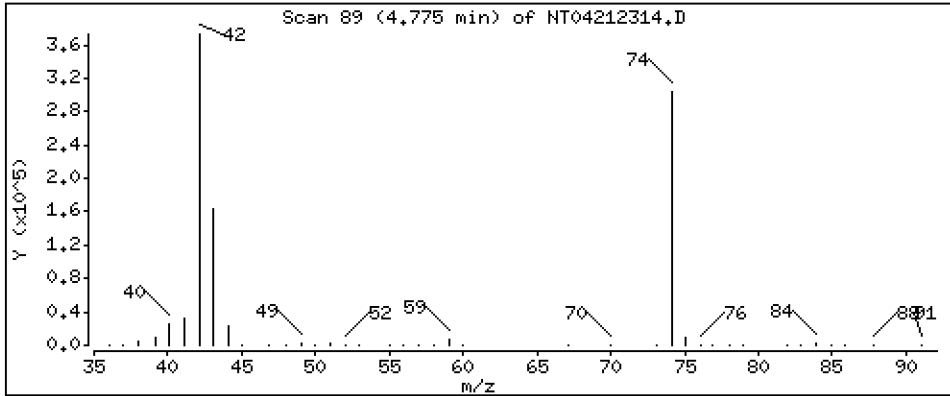
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 5.067 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

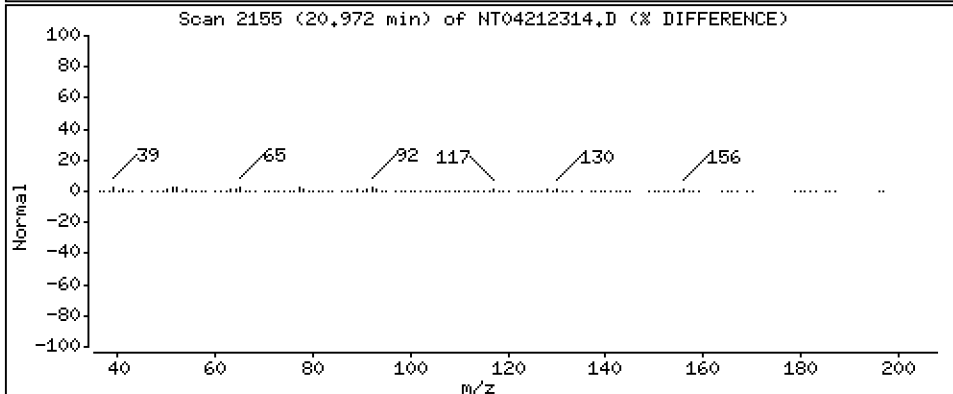
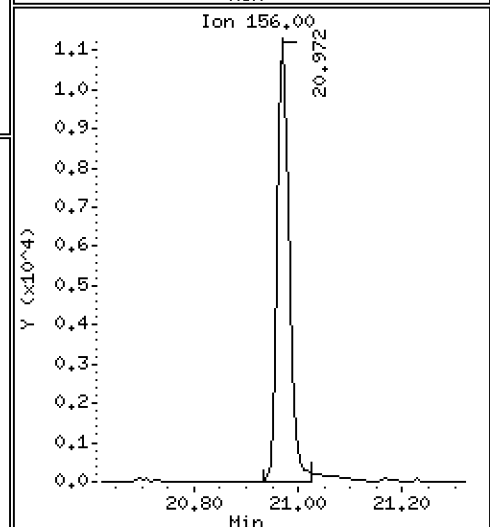
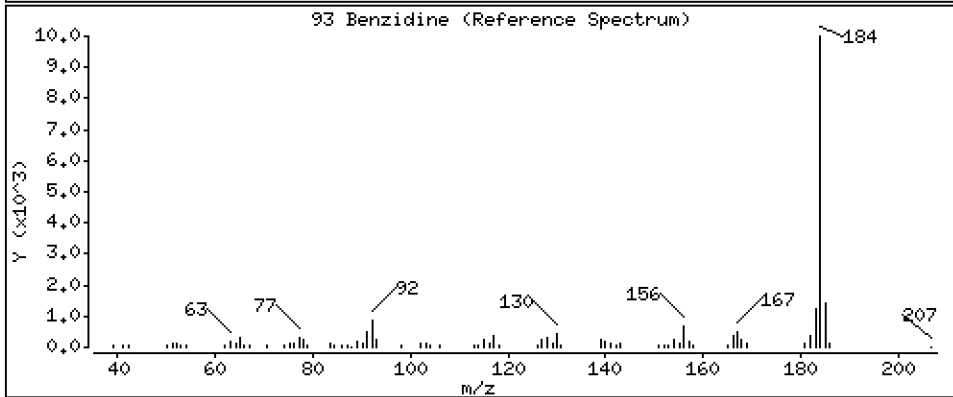
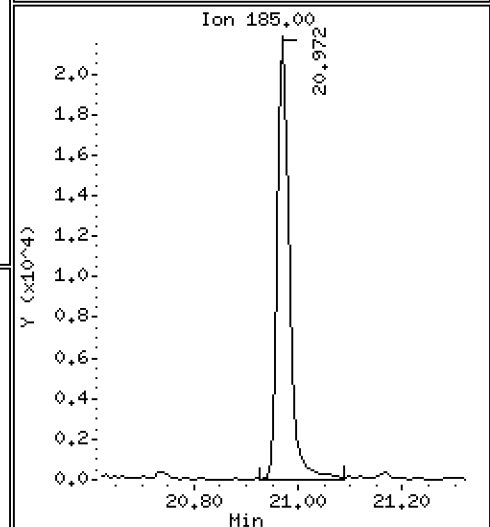
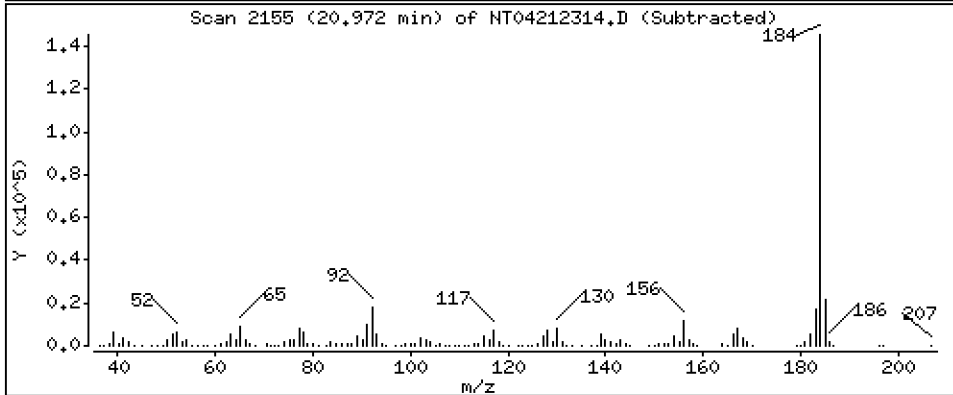
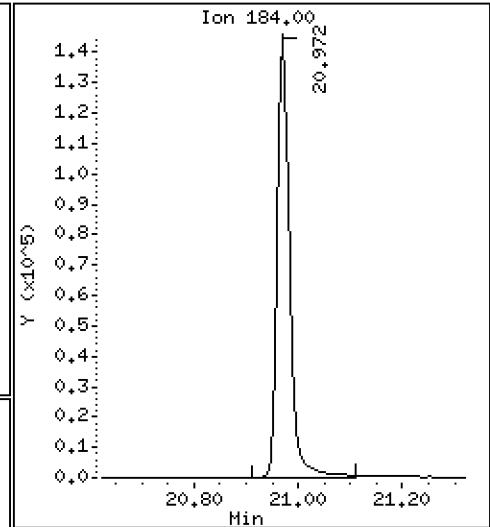
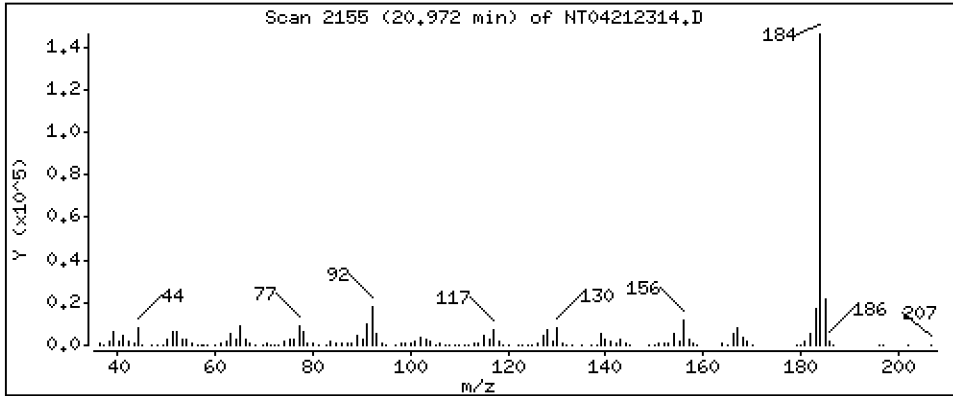
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 2,987 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

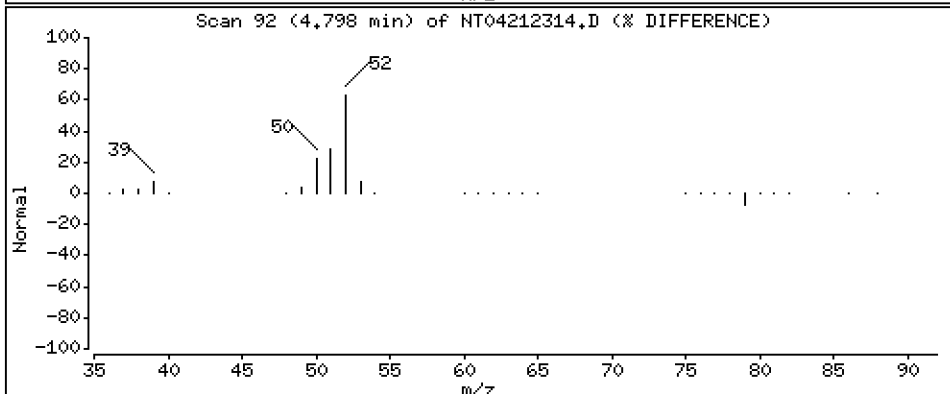
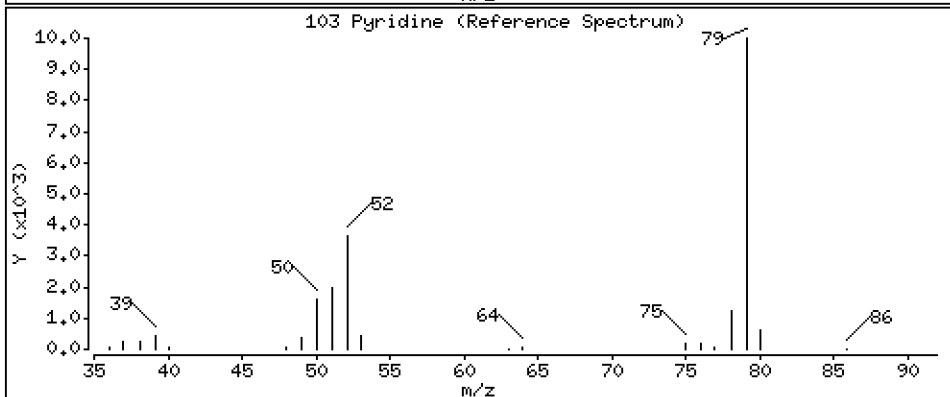
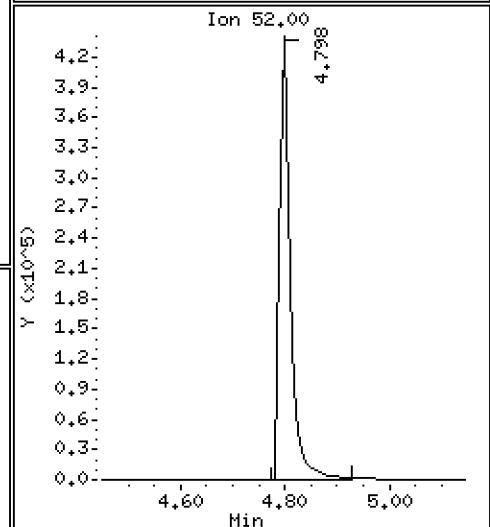
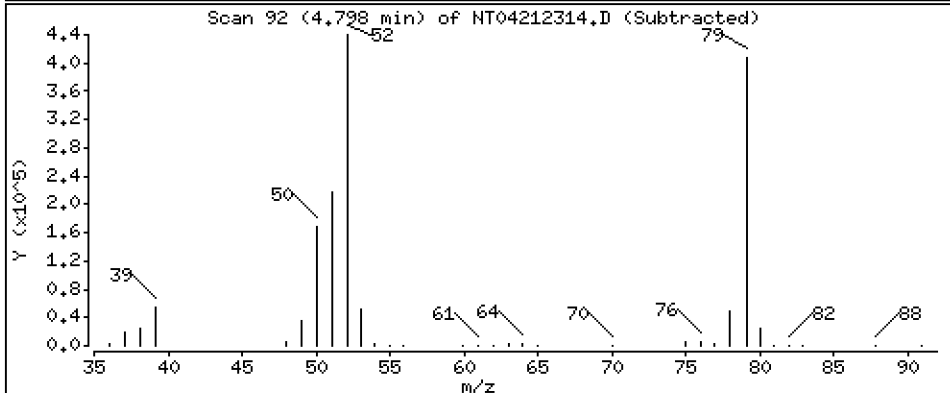
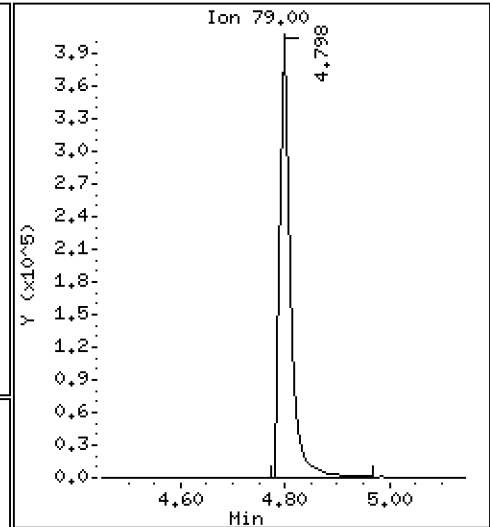
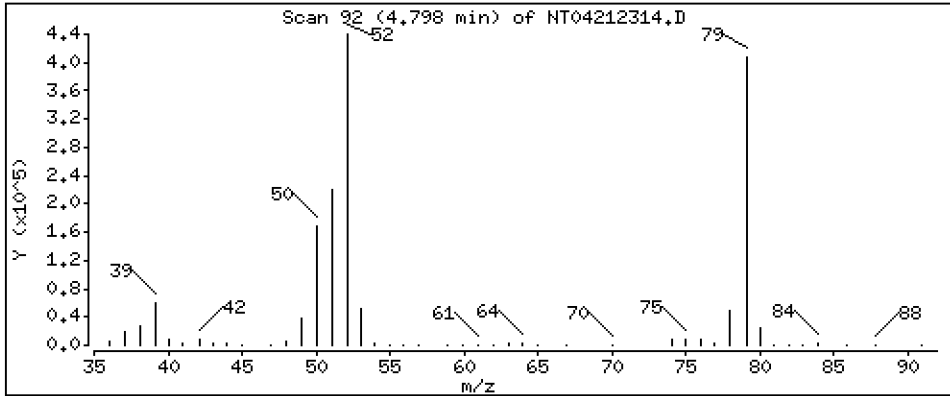
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 2,545 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

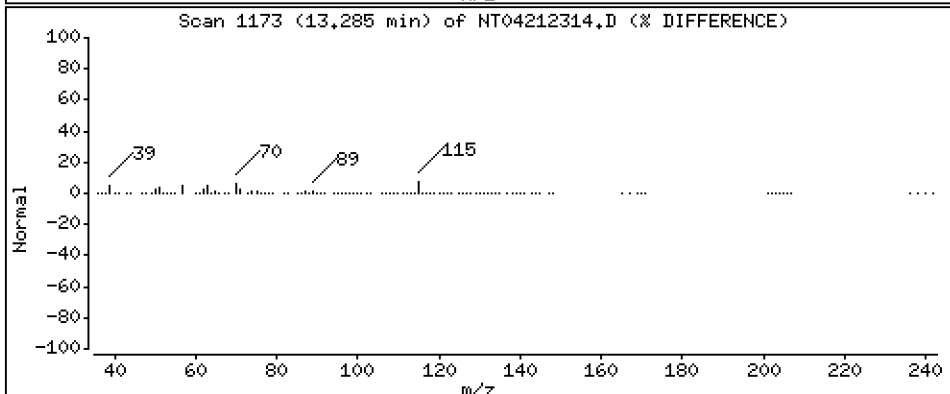
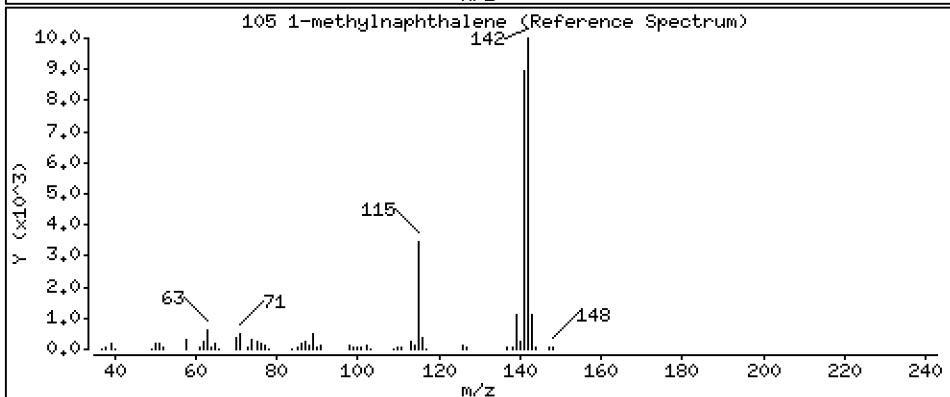
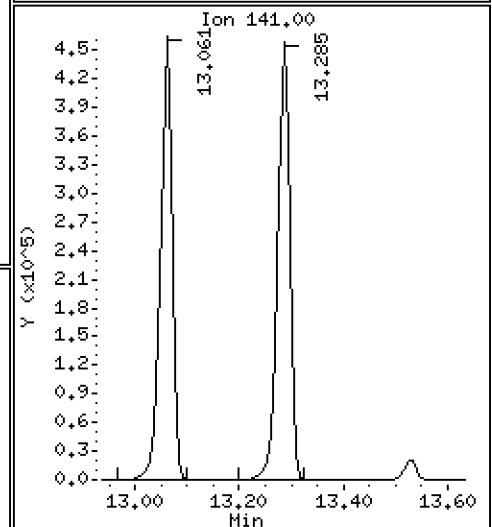
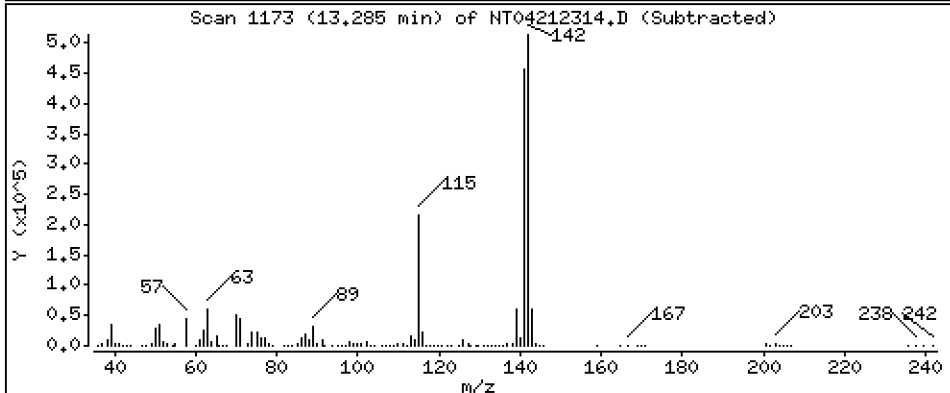
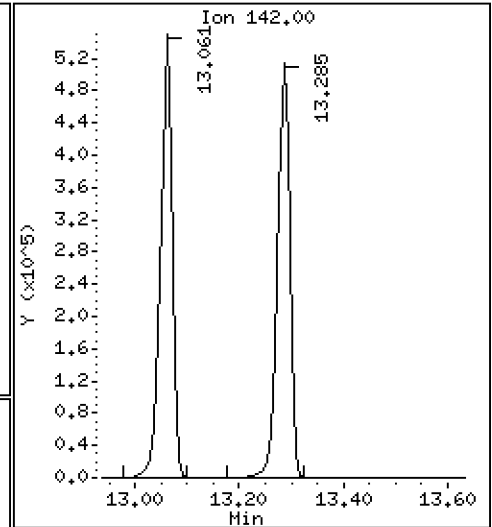
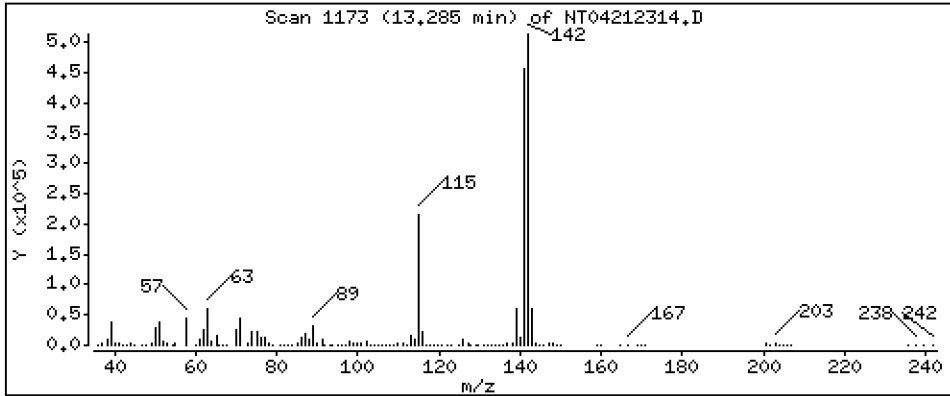
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 4,495 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

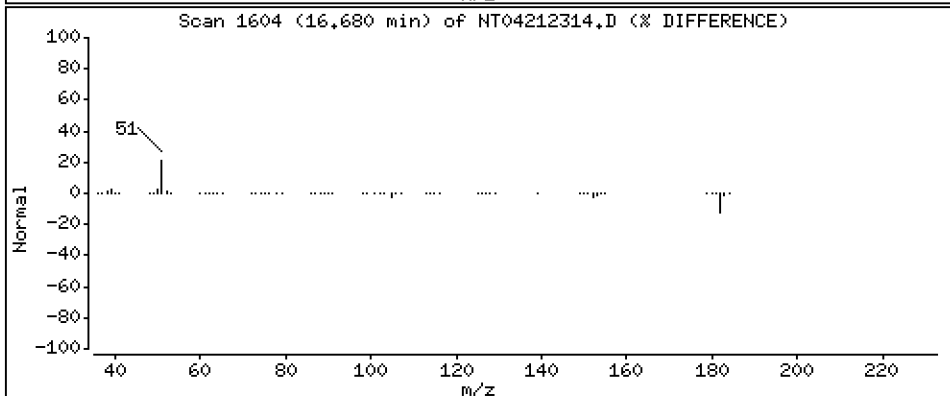
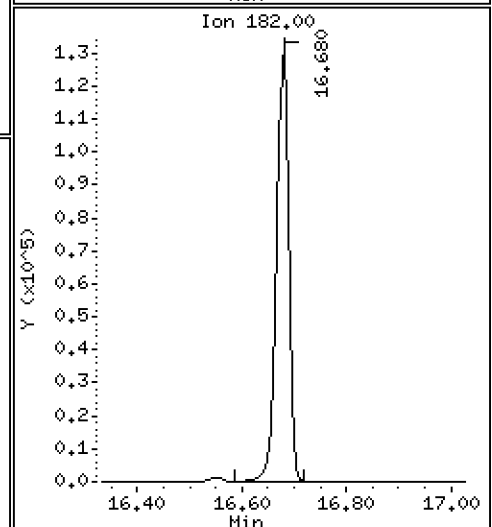
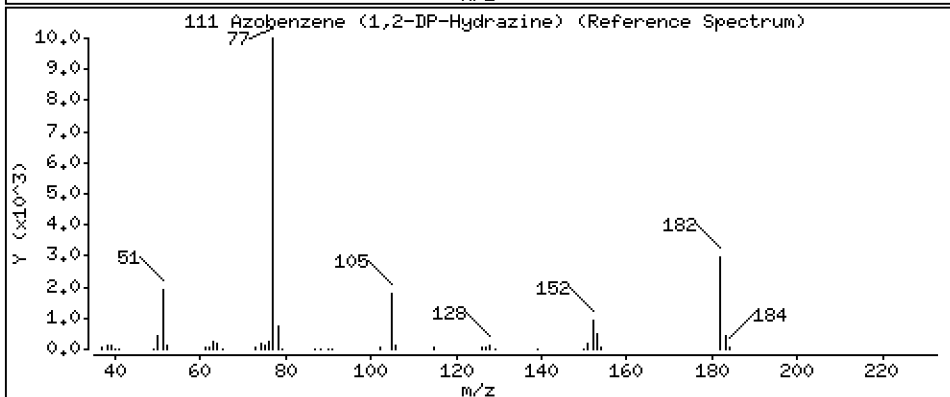
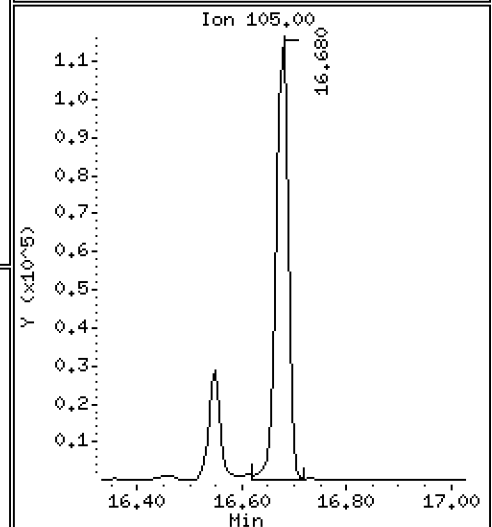
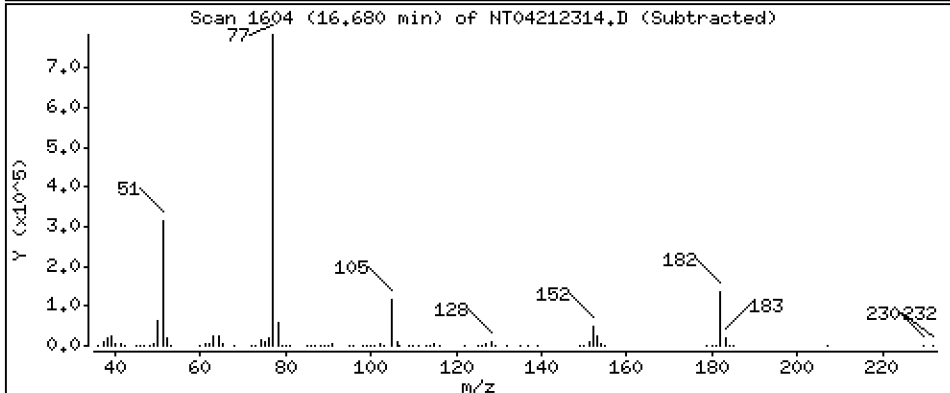
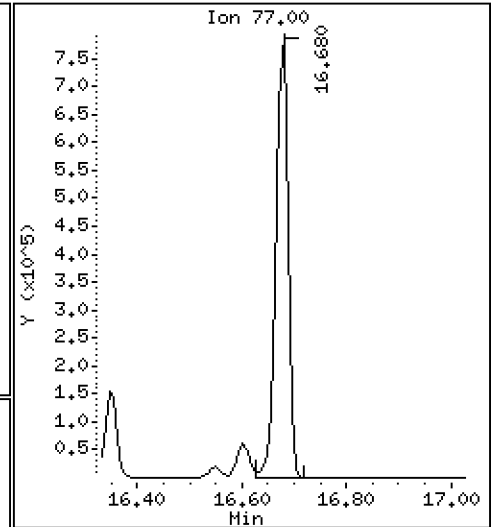
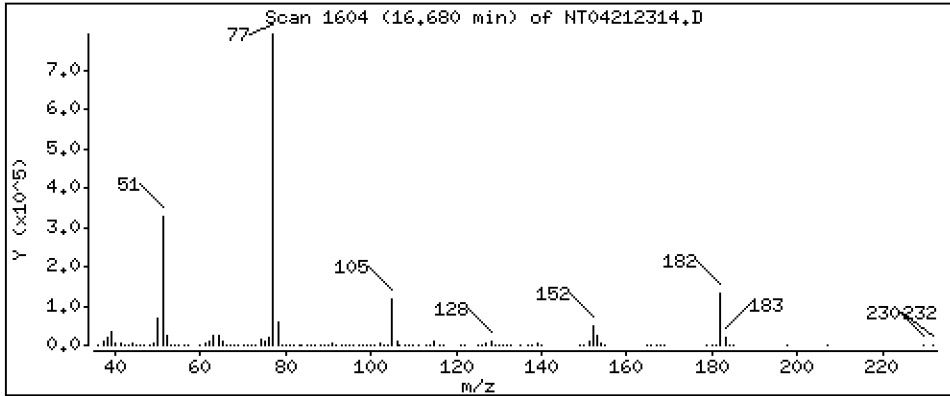
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 4,602 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

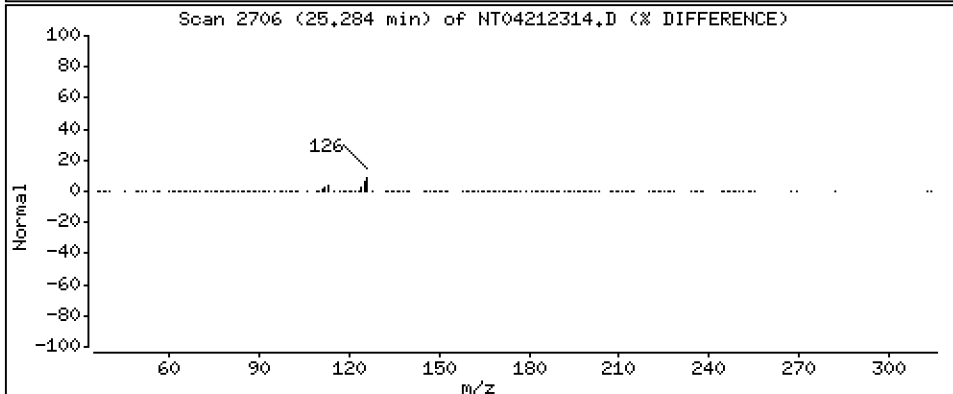
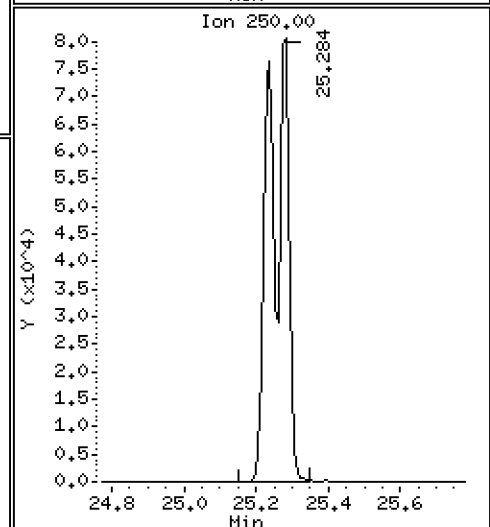
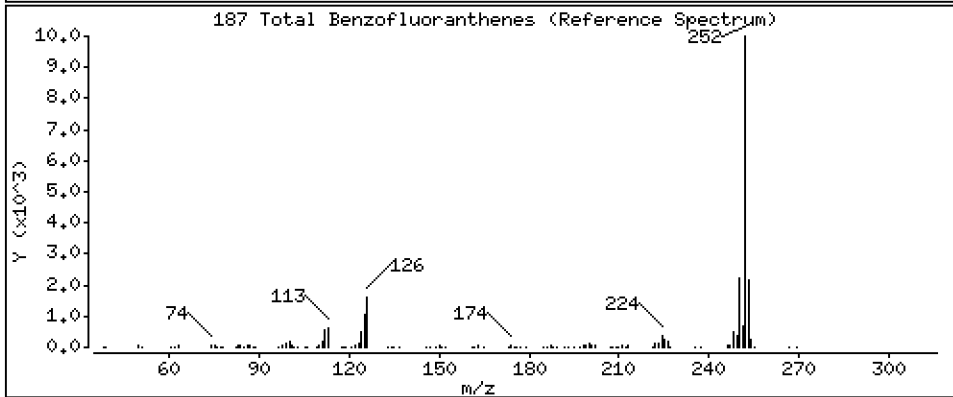
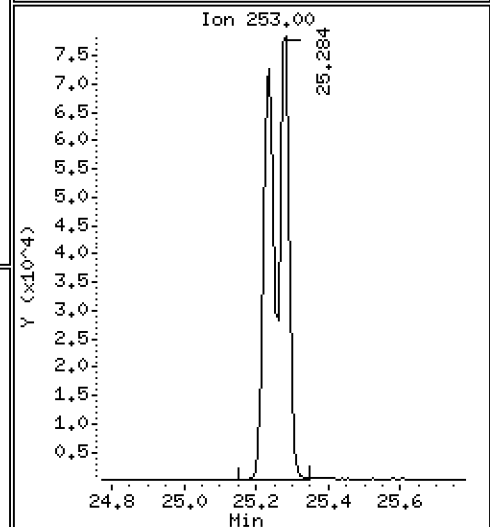
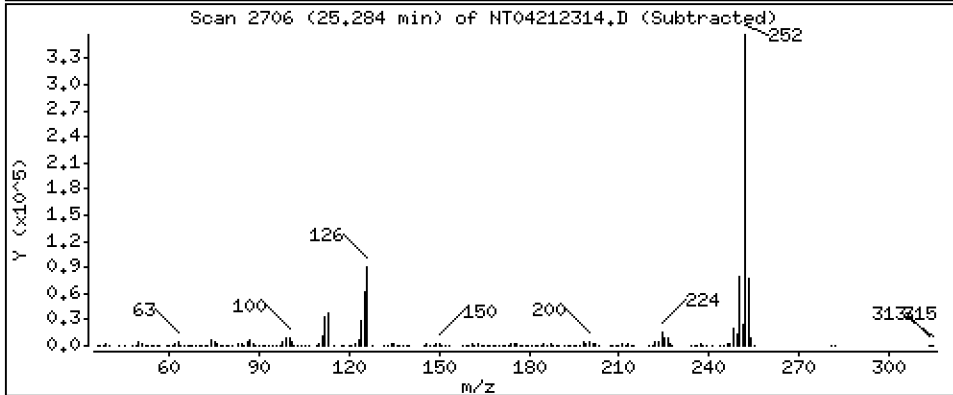
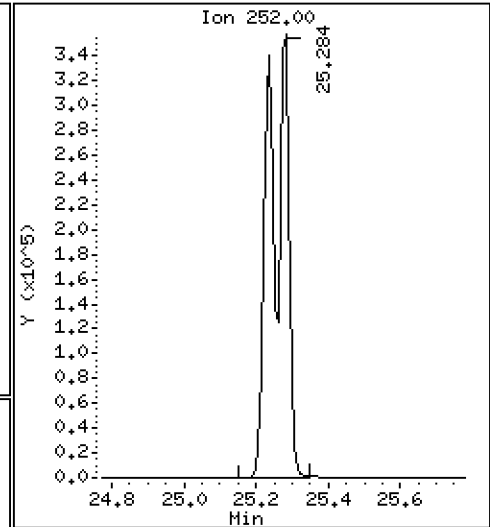
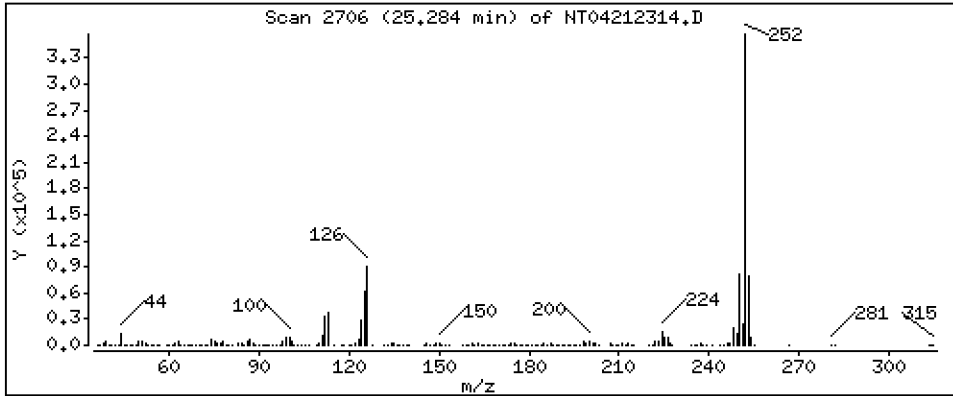
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 9,597 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

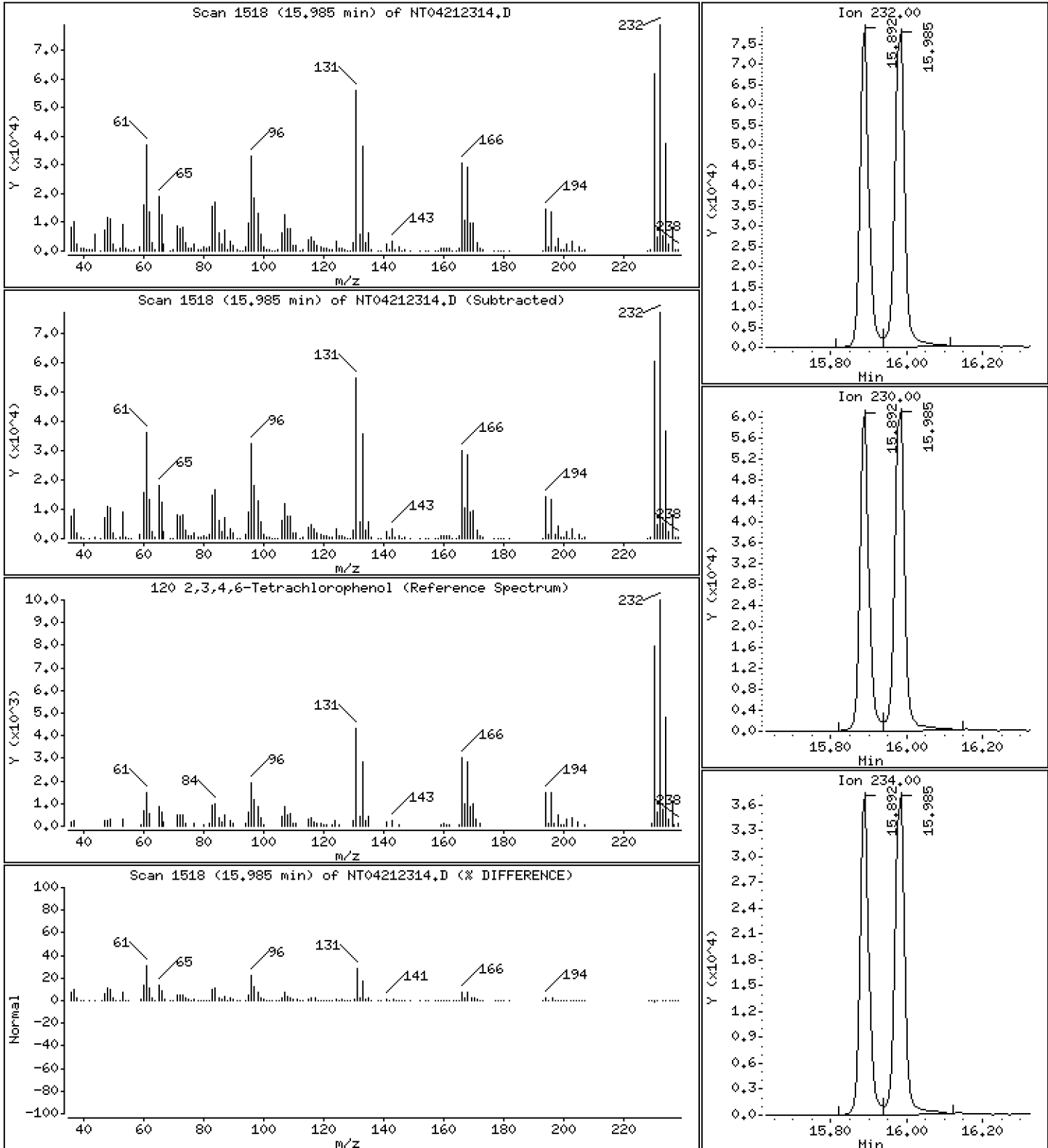
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 3,655 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212314.D  
 Lab Smp Id:  
 Inj Date : 21-APR-2023 21:16 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 11  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
=====	====		====	=====	=====	=====	=====	=====
\$ 1 2-Fluorophenol	112					Compound Not Detected.		
\$ 2 Phenol-d5	99					Compound Not Detected.		
3 Phenol	94		8.482	8.482	(0.931)	586904	4.33062	4.331
\$ 5 2-Chlorophenol-d4	132					Compound Not Detected.		
4 Bis(2-Chloroethyl)ether	93		8.660	8.660	(0.951)	524586	5.06979	5.070
6 2-Chlorophenol	128		8.768	8.775	(0.963)	422724	4.47822	4.478
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.993)	447514	4.73471	4.735
* 8 1,4-Dichlorobenzene-d4	152		9.108	9.108	(1.000)	238265	4.00000	
9 1,4-Dichlorobenzene	146		9.139	9.139	(1.003)	430582	4.77872	4.779
\$ 10 1,2-Dichlorobenzene-d4	152					Compound Not Detected.		
12 1,2-Dichlorobenzene	146		9.504	9.504	(1.043)	426176	4.75363	4.754
11 Benzyl alcohol	108		9.380	9.380	(1.030)	303477	4.90919	4.909
14 2,2'-oxybis(1-Chloropropane)	121		9.683	9.683	(1.063)	153192	5.06154	5.062
13 2-Methylphenol	108		9.605	9.605	(1.055)	379627	4.19884	4.199
17 Hexachloroethane	117		10.094	10.094	(1.108)	209265	4.87164	4.872
16 N-Nitroso-di-n-propylamine	70		9.947	9.947	(1.092)	430688	4.73681	4.737
15 4-Methylphenol	108		9.885	9.877	(1.085)	458285	4.45097	4.451
\$ 18 Nitrobenzene-d5	82					Compound Not Detected.		
19 Nitrobenzene	77		10.249	10.249	(0.883)	591951	4.71455	4.715
20 Isophorone	82		10.699	10.700	(0.921)	1088789	6.31735	6.317 (H)
21 2-Nitrophenol	139		10.886	10.886	(0.937)	229795	3.77910	3.779
22 2,4-Dimethylphenol	107		10.932	10.932	(0.941)	350731	3.70706	3.707
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	597774	5.39628	5.396
24 Benzoic acid	105		11.118	11.134	(0.957)	532824	6.80053	6.801
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	320774	3.72812	3.728
26 1,2,4-Trichlorobenzene	180		11.529	11.529	(0.993)	320315	4.53557	4.536
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	954318	4.00000	
28 Naphthalene	128		11.660	11.660	(1.004)	1234609	4.81308	4.813
29 4-Chloroaniline	127		11.783	11.784	(1.015)	418373	3.76974	3.770
30 Hexachlorobutadiene	225		12.023	12.015	(1.035)	150621	4.66501	4.665
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	390174	4.61478	4.615
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	831319	4.47405	4.474
33 Hexachlorocyclopentadiene	237		13.532	13.532	(0.887)	159262	4.78266	4.783



Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196		13.679	13.679	(0.897)	189916	4.57800	4.578	
35 2,4,5-Trichlorophenol	196		13.749	13.757	(0.901)	195431	4.43440	4.434	
§ 36 2-Fluorobiphenyl	172		Compound Not Detected.						
37 2-Chloronaphthalene	162		14.058	14.058	(0.921)	698393	4.64274	4.643	
38 2-Nitroaniline	65		14.321	14.322	(0.939)	359593	4.47509	4.475	
39 Dimethylphthalate	163		14.755	14.755	(0.967)	706597	4.55357	4.554	
40 Acenaphthylene	152		14.941	14.933	(0.979)	1156951	4.81912	4.819	
41 2,6-Dinitrotoluene	165		14.902	14.902	(0.977)	164516	4.67642	4.676	
* 42 Acenaphthene-d10	164		15.258	15.250	(1.000)	452418	4.00000		
43 3-Nitroaniline	138		15.181	15.181	(0.995)	203689	4.60816	4.608	
44 Acenaphthene	153		15.320	15.320	(1.004)	691934	4.81125	4.811	
45 2,4-Dinitrophenol	184		15.389	15.397	(1.009)	35607	1.67440	1.674	
46 Dibenzofuran	168		15.644	15.644	(1.025)	927906	4.51952	4.520	
47 4-Nitrophenol	109		15.482	15.482	(1.015)	117144	4.55436	4.554	
48 2,4-Dinitrotoluene	165		15.706	15.706	(1.029)	212920	4.47005	4.470	
50 Diethylphthalate	149		16.217	16.217	(1.063)	768389	4.57476	4.575	
49 Fluorene	166		16.363	16.363	(1.072)	868346	4.77950	4.780	
51 4-Chlorophenyl-phenylether	204		16.356	16.348	(1.072)	357571	4.75807	4.758	
52 4-Nitroaniline	138		16.456	16.456	(1.079)	176660	4.51964	4.520	
53 4,6-Dinitro-2-methylphenol	198		16.548	16.548	(0.904)	68829	3.00526	3.005	
54 N-Nitrosodiphenylamine	169		16.602	16.602	(0.907)	493869	4.74847	4.748	
§ 55 2,4,6-Tribromophenol	330		Compound Not Detected.						
56 4-Bromophenyl-phenylether	248		17.358	17.358	(0.948)	161898	4.73244	4.732	
57 Hexachlorobenzene	284		17.675	17.675	(0.966)	151077	4.36687	4.367	
58 Pentachlorophenol	266		18.031	18.031	(0.985)	82309	3.74067	3.741	
* 59 Phenanthrene-d10	188		18.302	18.302	(1.000)	736482	4.00000		
60 Phenanthrene	178		18.348	18.348	(1.003)	968886	4.65282	4.653	
61 Anthracene	178		18.441	18.441	(1.008)	853683	4.27441	4.274	
62 Carbazole	167		18.774	18.774	(1.026)	775527	4.19628	4.196	
63 Di-n-butylphthalate	149		19.563	19.563	(1.069)	1341607	4.76191	4.762	
64 Fluoranthene	202		20.739	20.739	(0.888)	973087	5.06753	5.068	
65 Pyrene	202		21.165	21.165	(0.906)	975738	4.92043	4.920	
§ 66 Terphenyl-d14	244		Compound Not Detected.						
67 Butylbenzylphthalate	149		22.365	22.365	(0.958)	501431	4.29069	4.291	
68 Benzo(a)anthracene	228		23.325	23.325	(0.999)	693668	4.67137	4.671	
* 69 Chrysene-d12	240		23.356	23.356	(1.000)	415993	4.00000		
70 3,3'-Dichlorobenzidine	252		23.278	23.278	(0.997)	446471	9.38140	9.381	
71 Chrysene	228		23.402	23.394	(1.002)	653516	4.71863	4.719	
72 bis(2-Ethylhexyl)phthalate	149		24.385	24.385	(1.000)	1188340	4.89312	4.893	
* 134 Di-n-octylphthalate-d4	153		24.378	24.370	(1.000)	909750	4.00000		
73 Di-n-octylphthalate	149		24.385	24.385	(1.000)	1188340	4.89312	4.893	
74 Benzo(b)fluoranthene	252		25.237	25.229	(0.970)	678474	4.83853	4.839	
75 Benzo(k)fluoranthene	252		25.283	25.276	(0.972)	650971	4.73139	4.731	
76 Benzo(a)pyrene	252		25.903	25.903	(0.996)	591029	4.98760	4.988	
* 77 Perylene-d12	264		26.019	26.027	(1.000)	420543	4.00000		
78 Indeno(1,2,3-cd)pyrene	276		28.750	28.743	(1.105)	722537	4.40939	4.409	
79 Dibenzo(a,h)anthracene	278		28.766	28.750	(1.106)	597382	4.45679	4.457	
80 Benzo(g,h,i)perylene	276		29.558	29.558	(1.136)	582685	4.20046	4.200	
90 N-Nitrosodimethylamine	74		4.774	4.774	(0.524)	362967	5.06652	5.067	
91 Aniline	93		Compound Not Detected.						
93 Benzidine	184		20.971	20.971	(0.898)	226386	2.98741	2.987	
103 Pyridine	79		4.797	4.797	(0.527)	539756	2.54524	2.545	
105 1-methylnaphthalene	142		13.284	13.285	(1.144)	806496	4.49478	4.495	
111 Azobenzene (1,2-DP-Hydrazine)	77		16.679	16.679	(1.093)	1192930	4.60243	4.602	

Compounds	QUANT SIG		CONCENTRATIONS					
	MASS		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
=====	=====		=====	=====	=====	=====	=====	=====
187 Total Benzofluoranthenes	252		25.283	25.276	(0.972)	1274063	9.59749	9.597
120 2,3,4,6-Tetrachlorophenol	232		15.984	15.977	(1.048)	145878	3.65464	3.655

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212314.D Calibration Time: 17:00  
 Lab Smp Id:  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	238265	-0.36
27 Naphthalene-d8	954450	477225	1908900	954318	-0.01
42 Acenaphthene-d10	448699	224350	897398	452418	0.83
59 Phenanthrene-d10	711389	355695	1422778	736482	3.53
69 Chrysene-d12	410209	205105	820418	415993	1.41
134 Di-n-octylphthala	929005	464503	1858010	909750	-2.07
77 Perylene-d12	424249	212125	848498	420543	-0.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.09
27 Naphthalene-d8	11.61	11.11	12.11	11.61	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	-0.00
69 Chrysene-d12	23.36	22.86	23.86	23.36	-0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.38	0.03
77 Perylene-d12	26.03	25.53	26.53	26.02	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212314.D

Lab ID:

nt14.i, ABN.m, 21-APR-2023 21:16

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

\*\* FIRST SURROGATE NOT FOUND. ICAL Check not performed \*\*

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



**LOW-CONCENTRATION  
CALIBRATION VERIFICATION  
EPA 8270E**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00062

**Laboratory ID:** SLE0024-LCV1

**Sequence:** SLE0024

**Standard ID:** K011106

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Phenol	0.50000	0.5	5.2	50.00
4-Methylphenol	0.50000	0.5	-3.0	50.00
Naphthalene	0.50000	0.5	0.5	50.00
2-Methylnaphthalene	0.50000	0.5	-7.6	50.00
Acenaphthylene	0.50000	0.5	2.4	50.00
Dimethylphthalate	0.50000	0.5	-1.1	50.00
Acenaphthene	0.50000	0.5	0.4	50.00
Dibenzofuran	0.50000	0.5	-3.0	50.00
Fluorene	0.50000	0.5	0.4	50.00
Phenanthrene	0.50000	0.5	0.5	50.00
Anthracene	0.50000	0.5	-2.8	50.00
Fluoranthene	0.50000	0.5	-9.5	50.00
Pyrene	0.50000	0.5	-9.3	50.00
Butylbenzylphthalate	0.50000	0.3	-33.9	50.00
Benzo(a)anthracene	0.50000	0.5	3.8	50.00
Chrysene	0.50000	0.5	1.6	50.00
bis(2-Ethylhexyl)phthalate	0.50000	0.5	-4.4	50.00
Benzo(a)fluoranthene, Total	1.0000	1.0	1.9	50.00
Benzo(a)pyrene	0.50000	0.5	0.02	50.00
Indeno(1,2,3-cd)pyrene	0.50000	0.4	-17.2	50.00
Dibenzo(a,h)anthracene	0.50000	0.4	-15.4	50.00
Benzo(g,h,i)perylene	0.50000	0.4	-18.4	50.00
2-Fluorophenol	0.75000	0.807	7.6	50.00
Phenol-d5	0.75000	0.759	1.3	50.00
2-Chlorophenol-d4	0.75000	0.782	4.3	50.00
1,2-Dichlorobenzene-d4	0.50000	0.533	6.6	50.00
Nitrobenzene-d5	0.50000	0.488	-2.4	50.00
2-Fluorobiphenyl	0.50000	0.528	5.6	50.00
2,4,6-Tribromophenol	0.75000	0.600	-20.1	50.00



**LOW-CONCENTRATION  
CALIBRATION VERIFICATION  
EPA 8270E**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00062

**Laboratory ID:** SLE0024-LCV1

**Sequence:** SLE0024

**Standard ID:** K011106

p-Terphenyl-d14	0.50000	0.391	-21.8	50.00
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\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012303.D

Date: 01-May-2023 15:45

Client ID:

Sample Info: SLE0024-LCW1

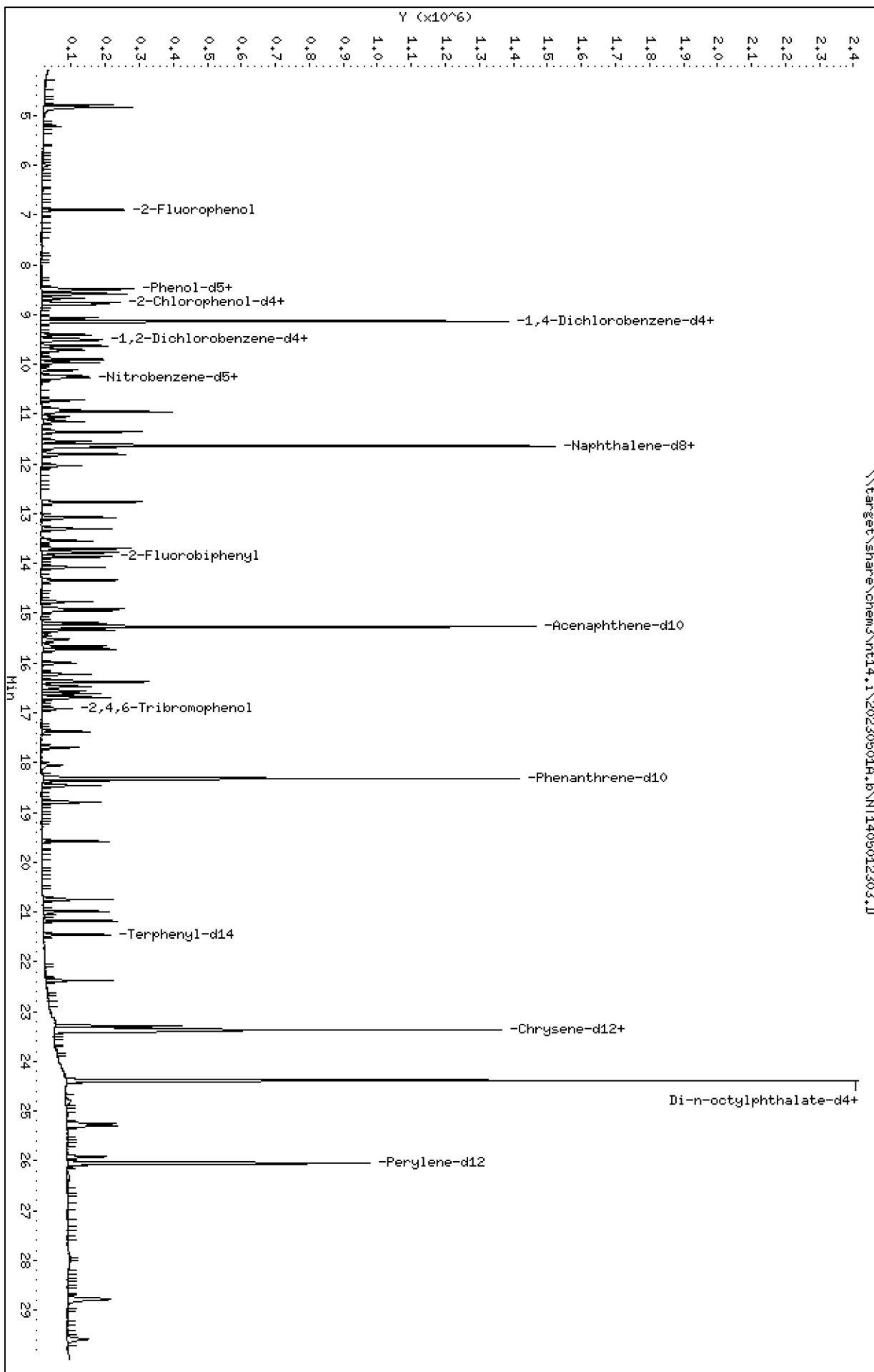
Instrument: nt14.1

Operator: USD

Column diameter: 0.25

Column phase: ZB-5msi

\\target\share\chem3\nt14.1\20230501A.B\NT1405012303.D



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

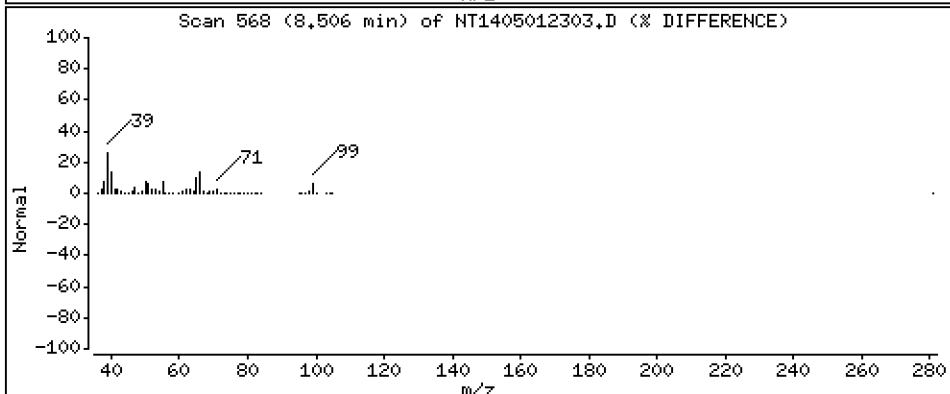
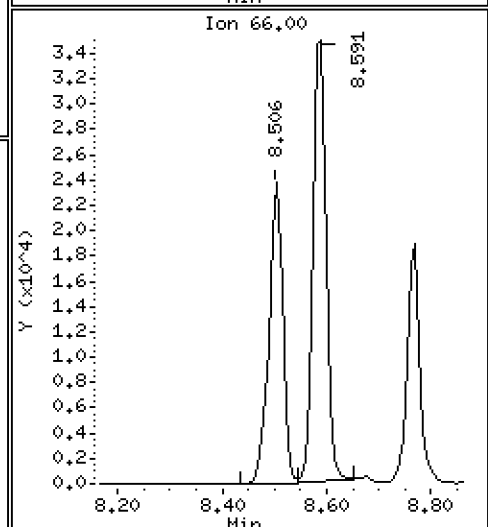
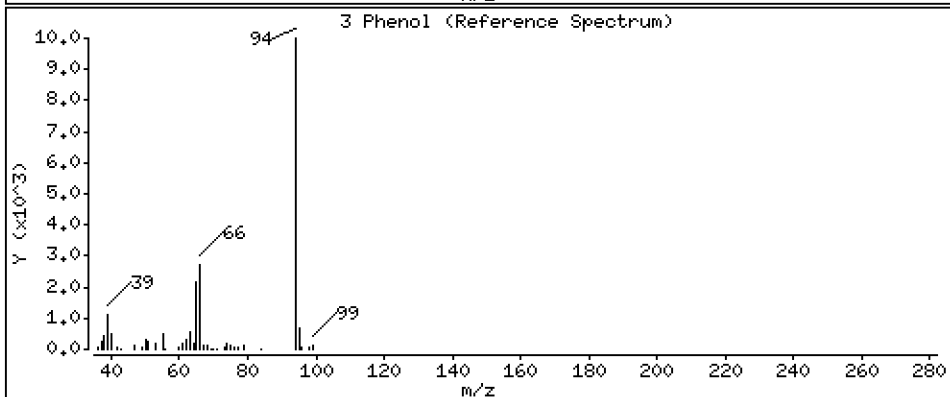
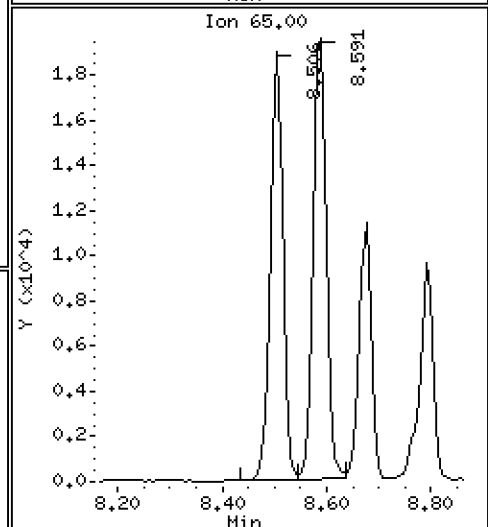
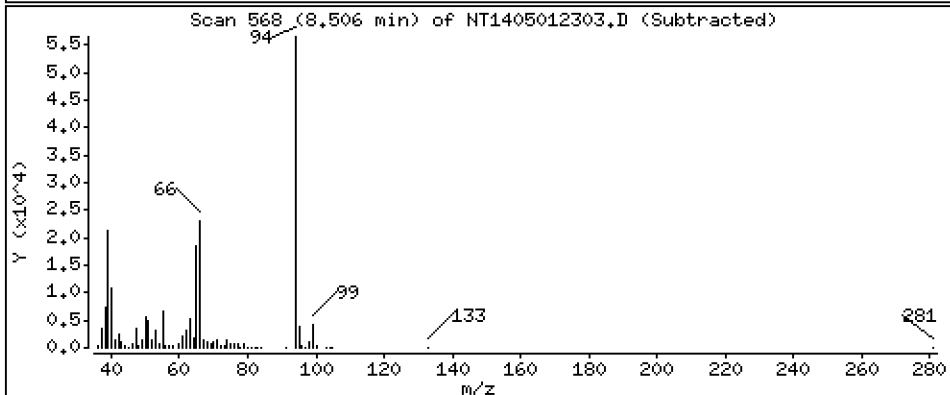
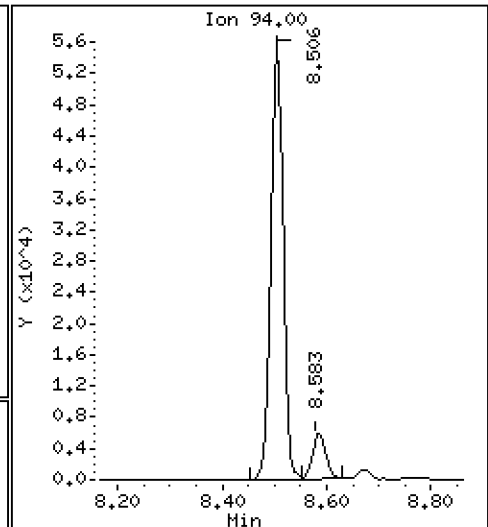
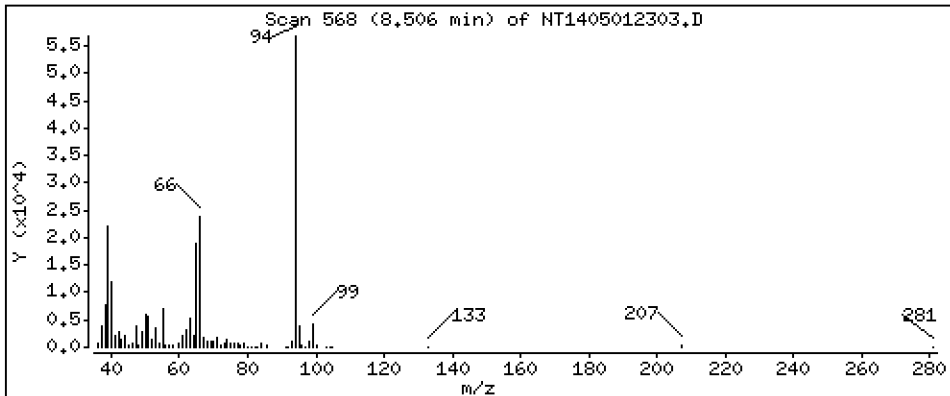
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,5258 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

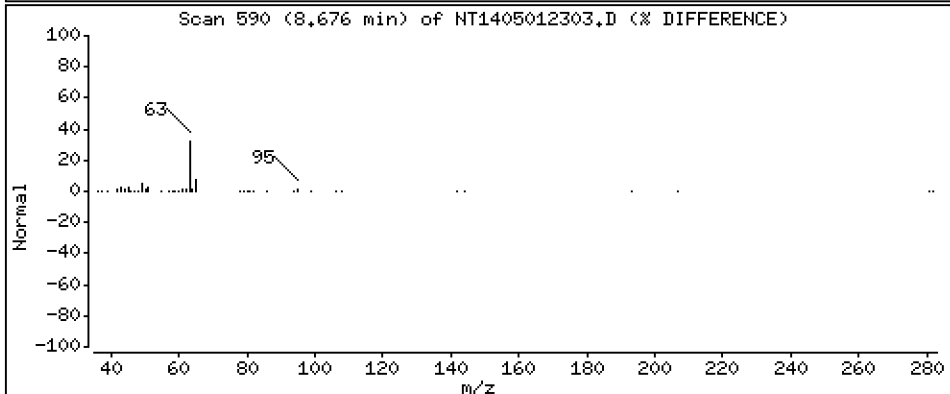
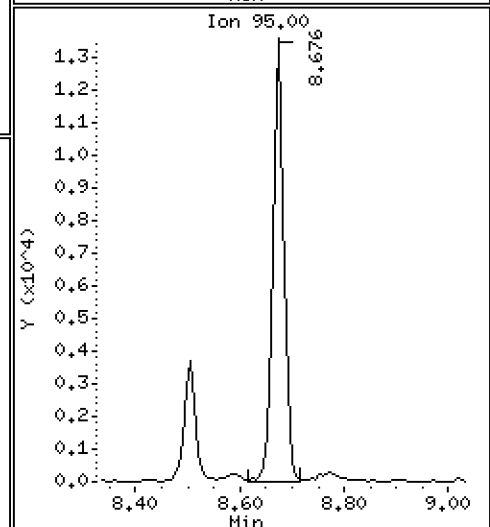
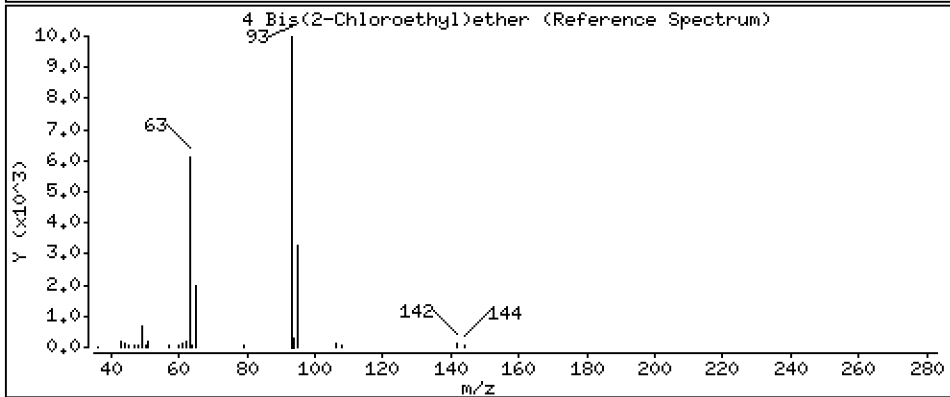
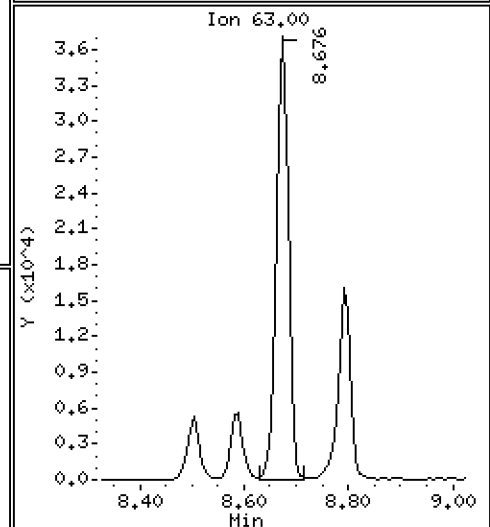
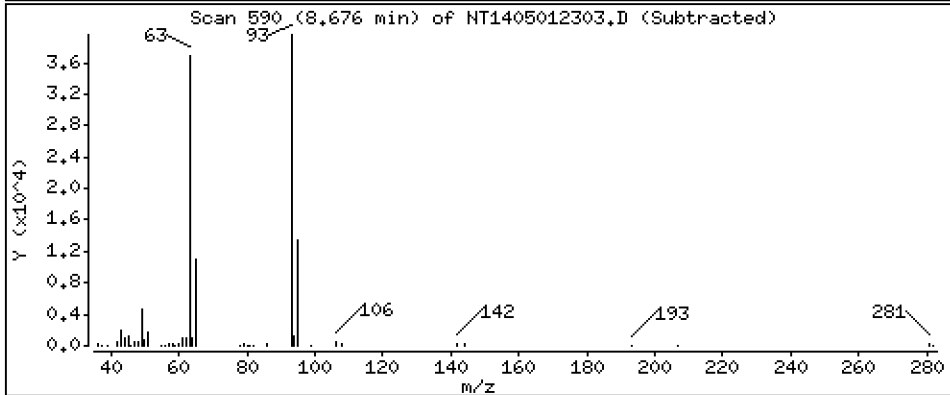
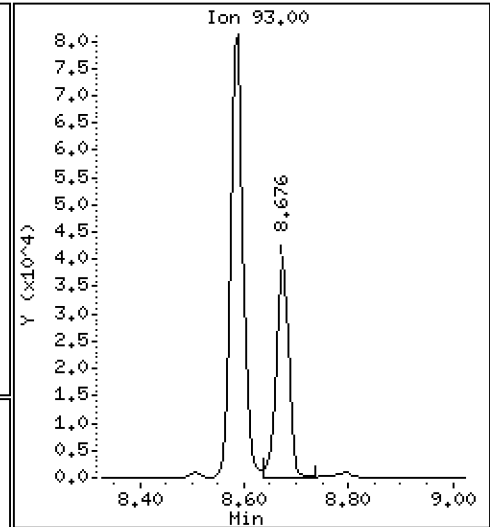
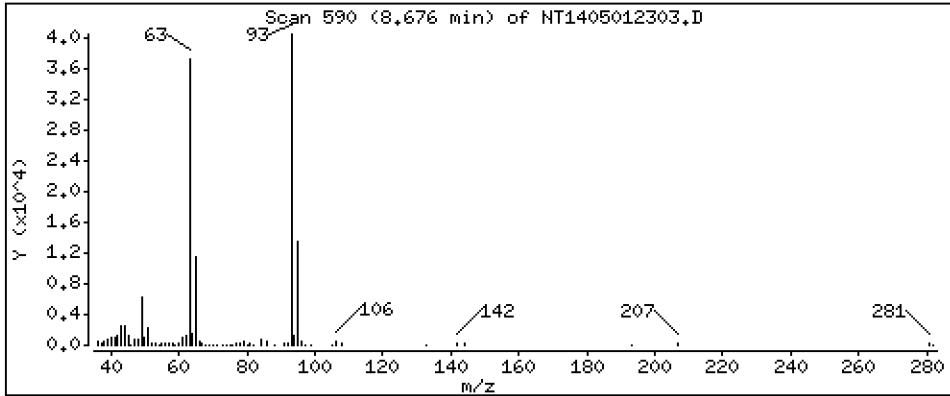
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 0,4982 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

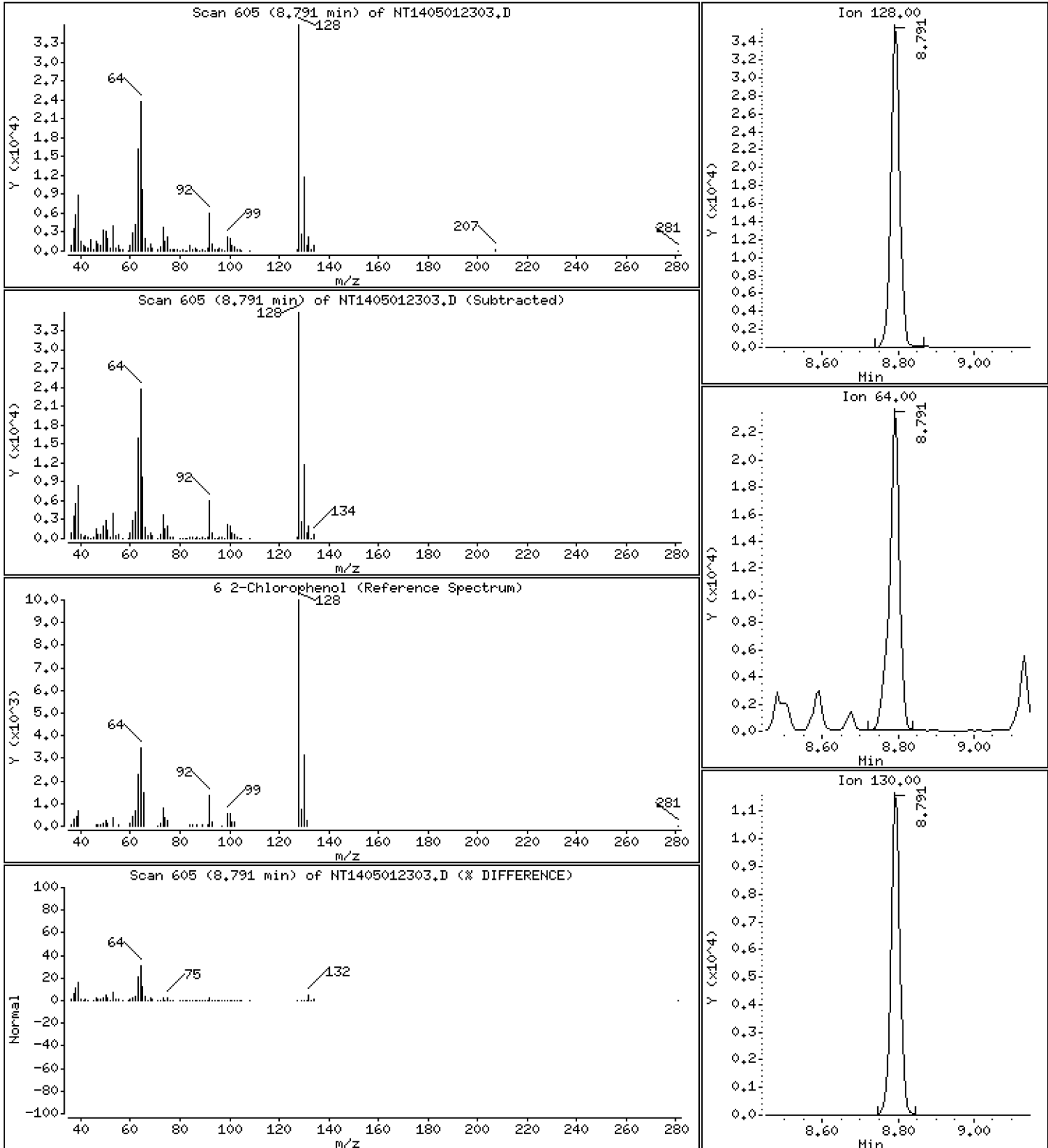
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 0,5193 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

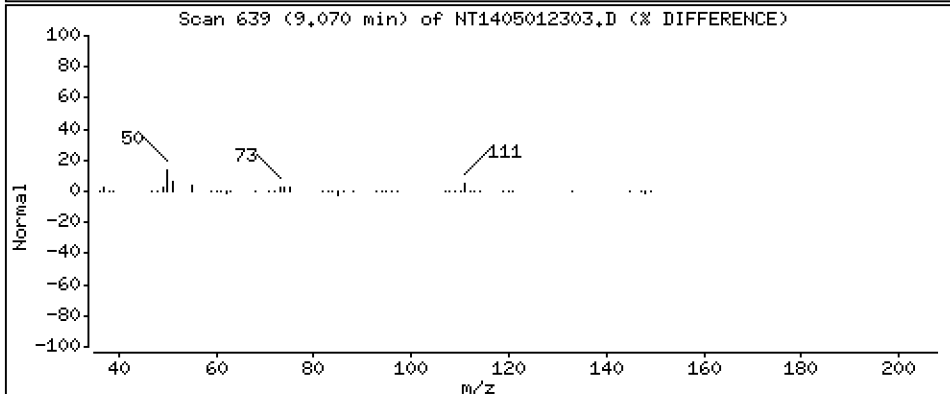
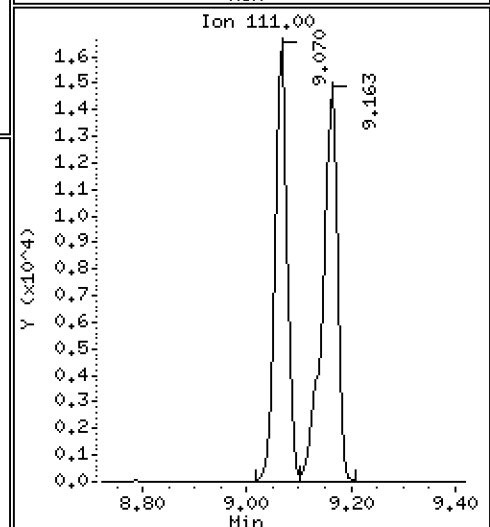
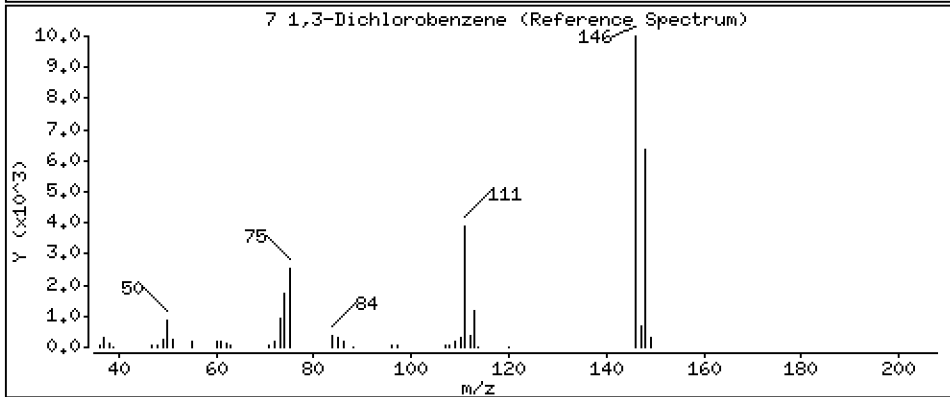
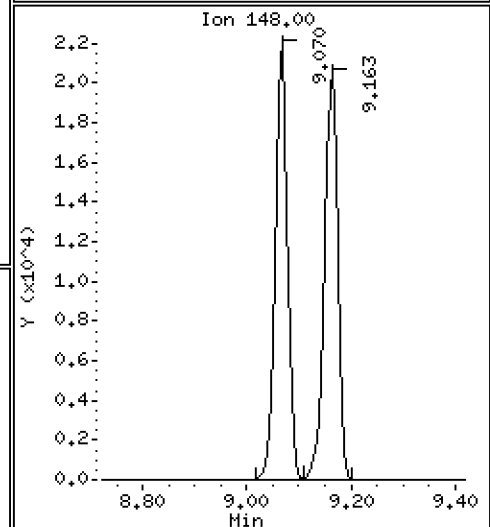
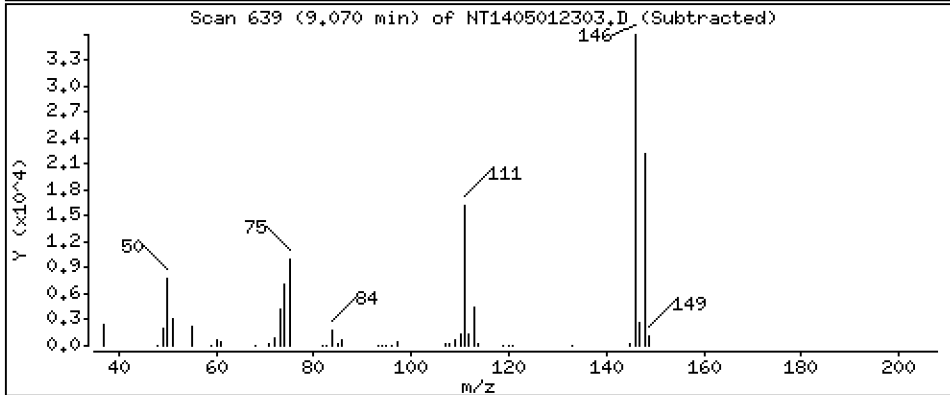
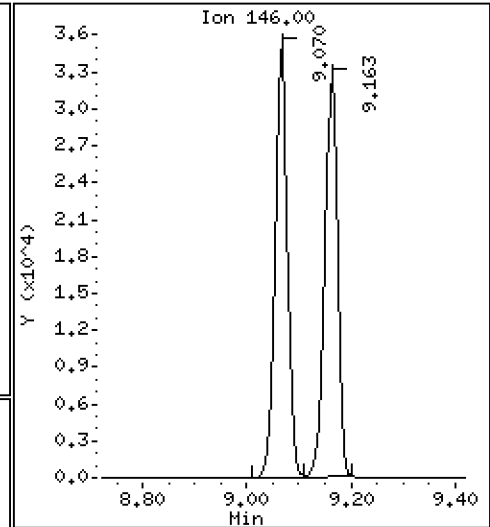
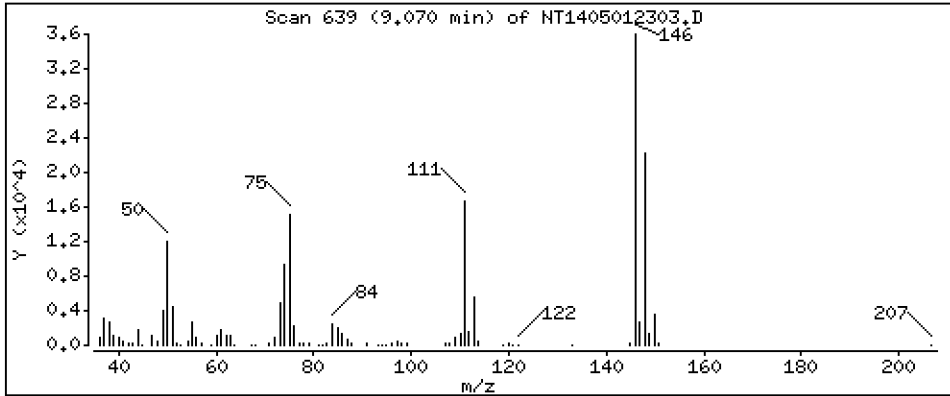
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

7 1,3-Dichlorobenzene

Concentration: 0.5078 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

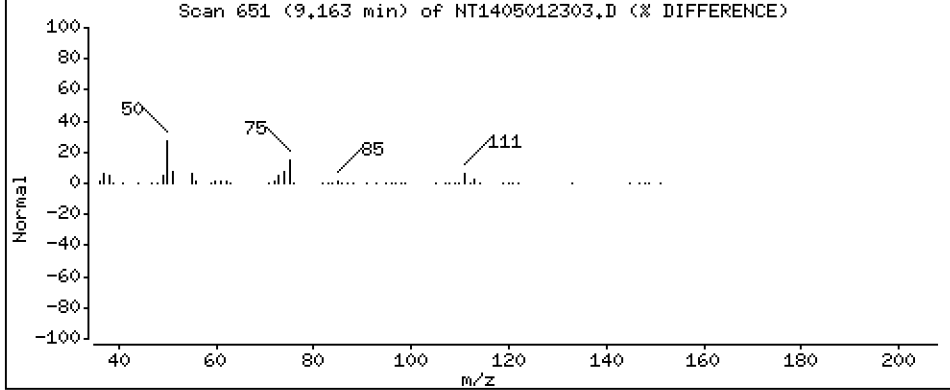
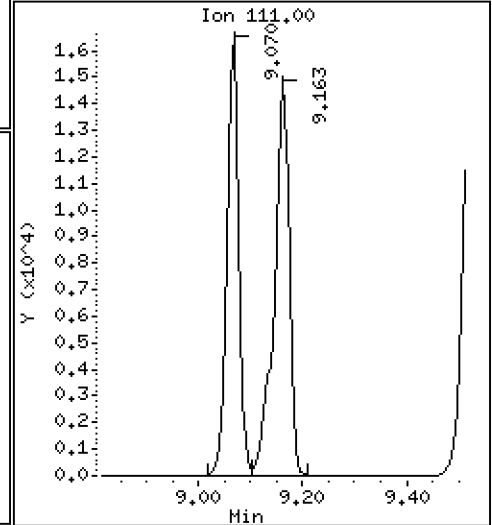
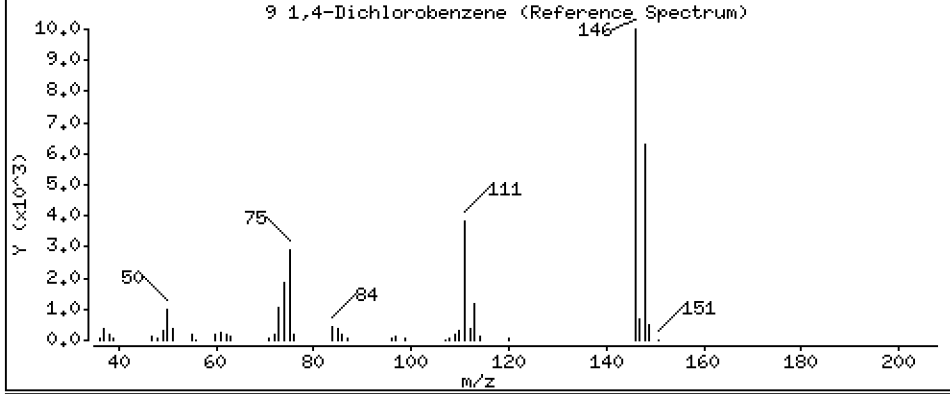
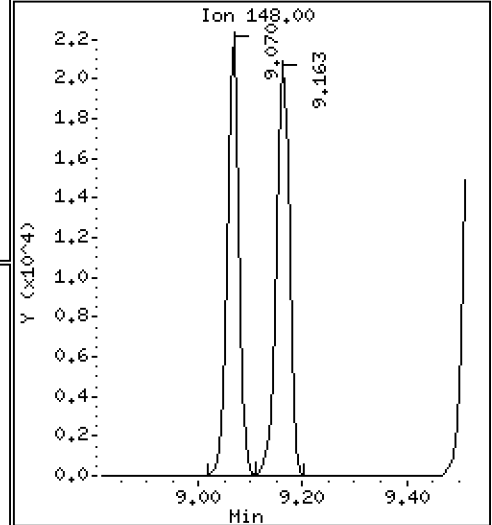
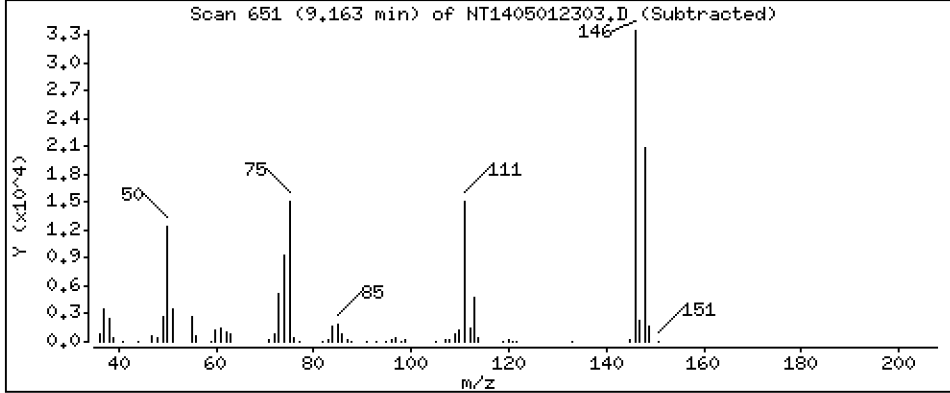
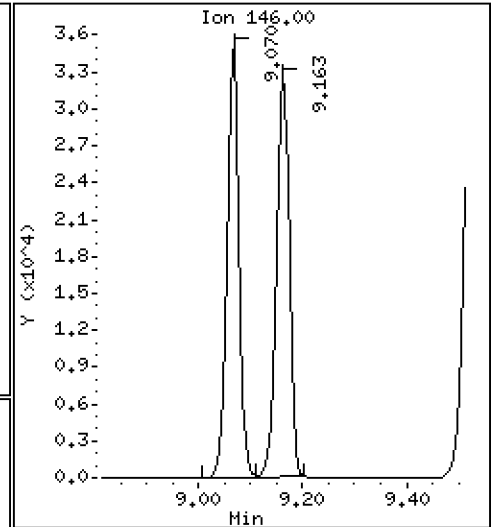
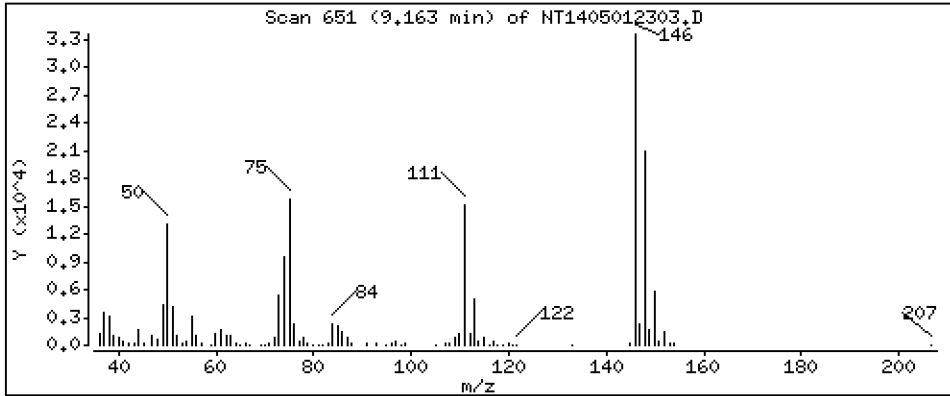
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 0.4915 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

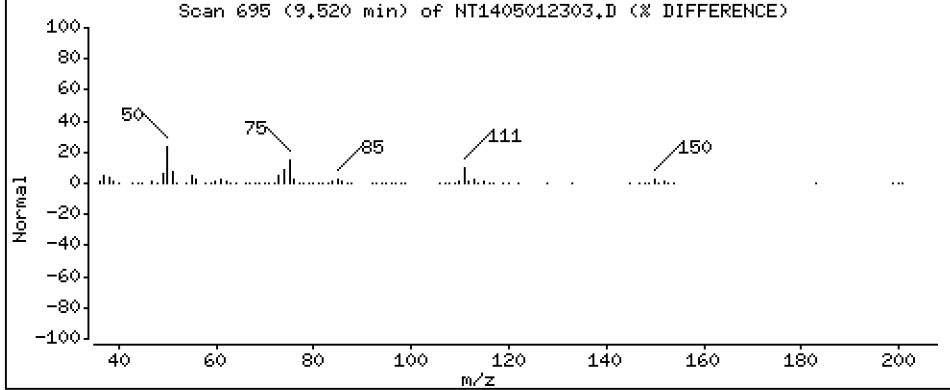
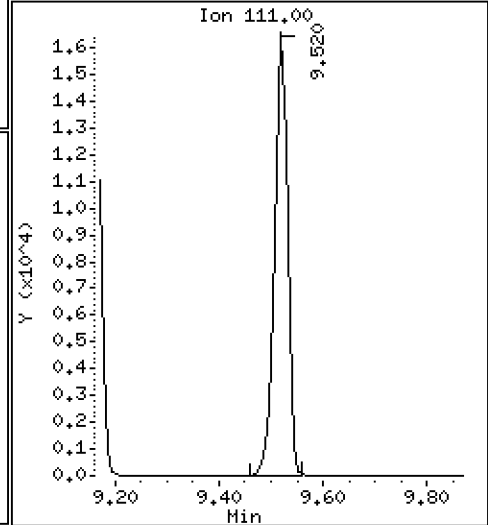
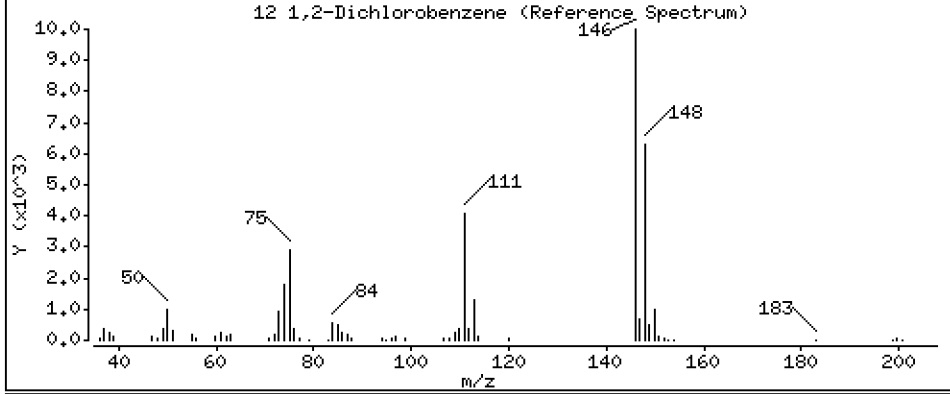
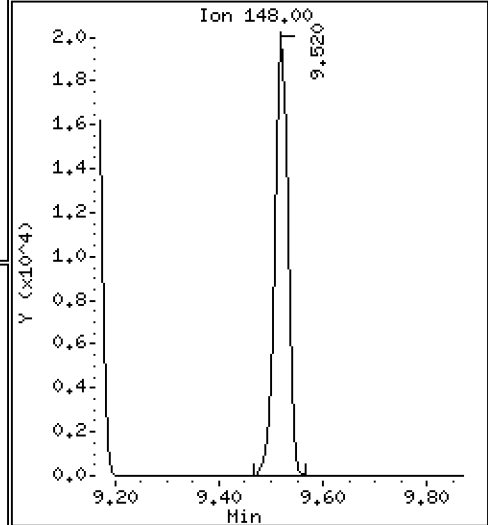
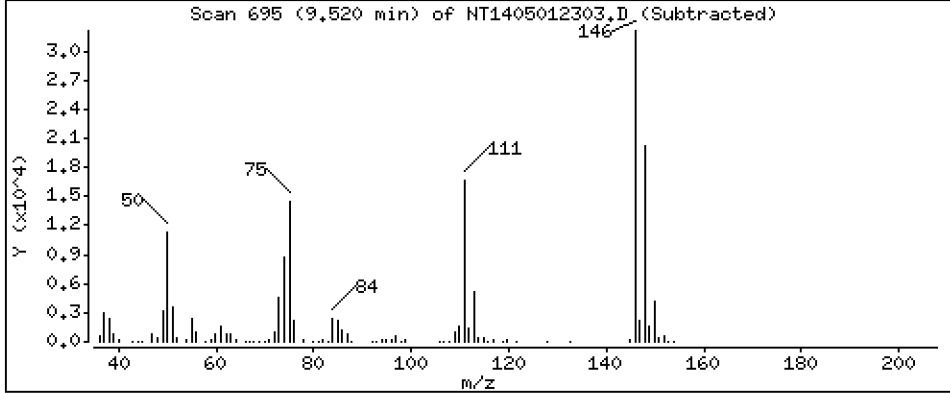
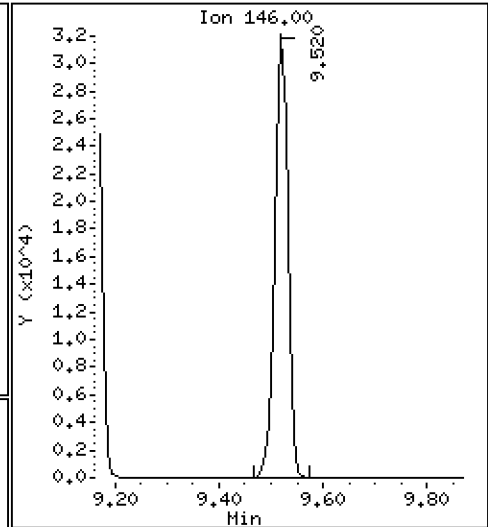
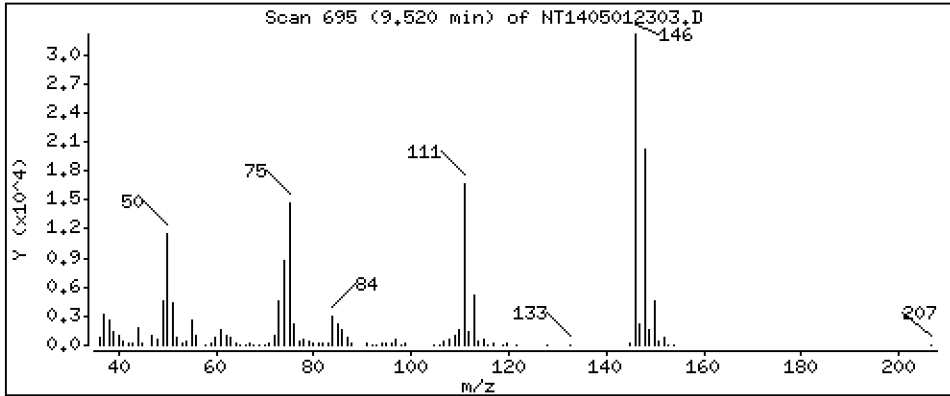
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 0.4937 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

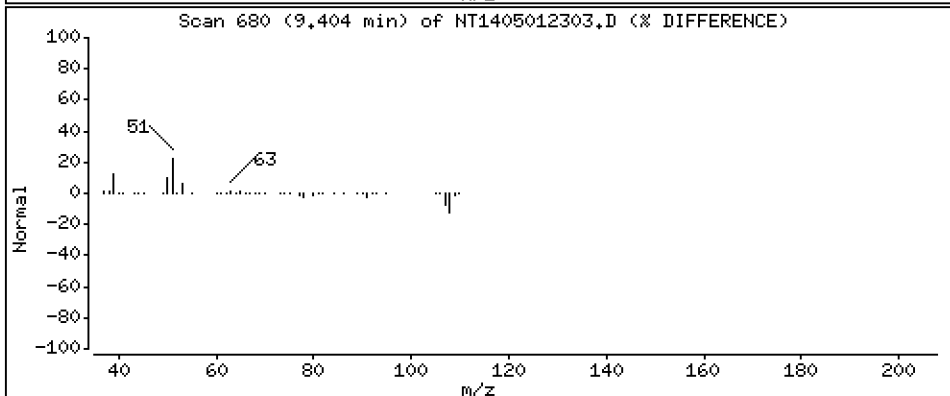
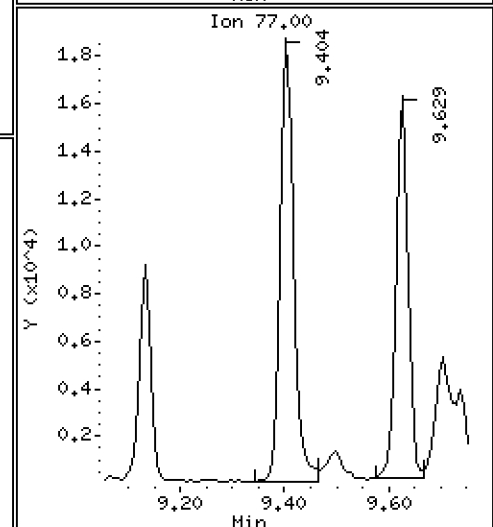
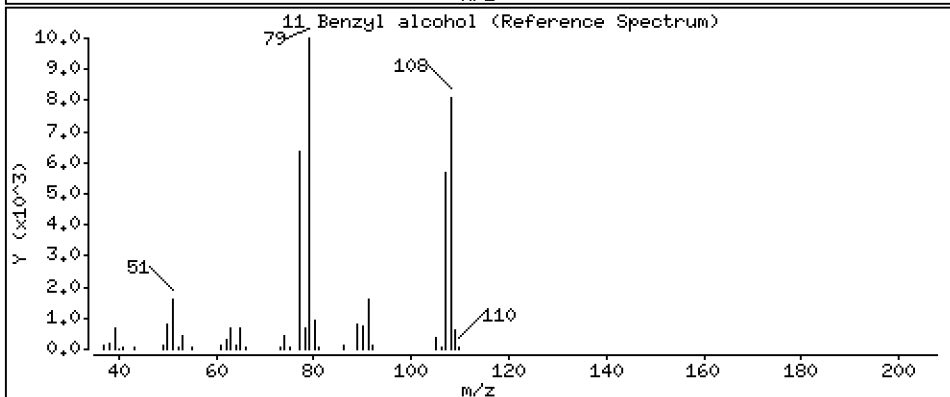
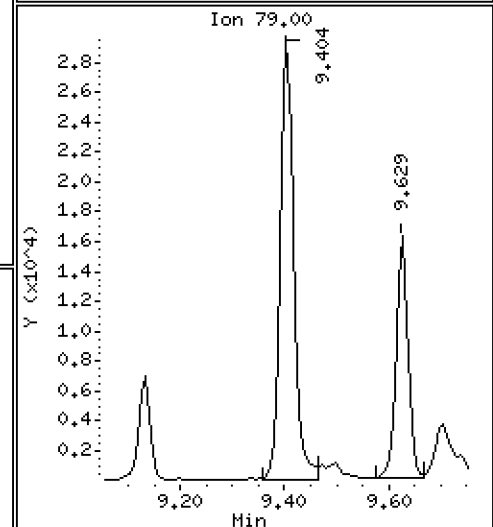
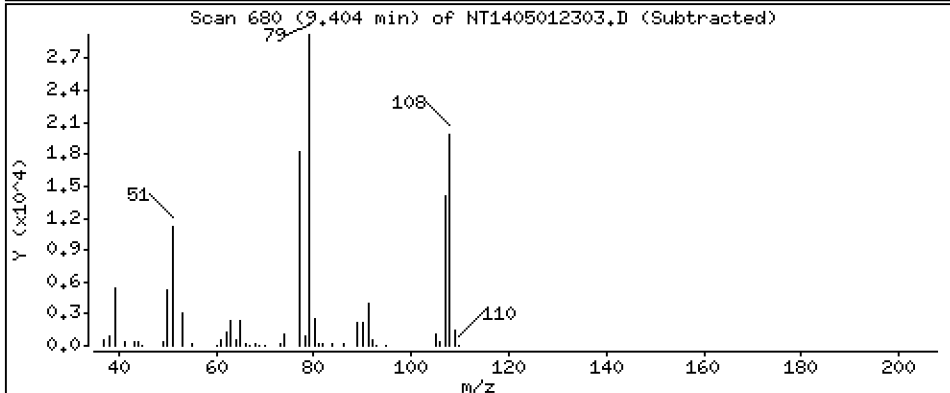
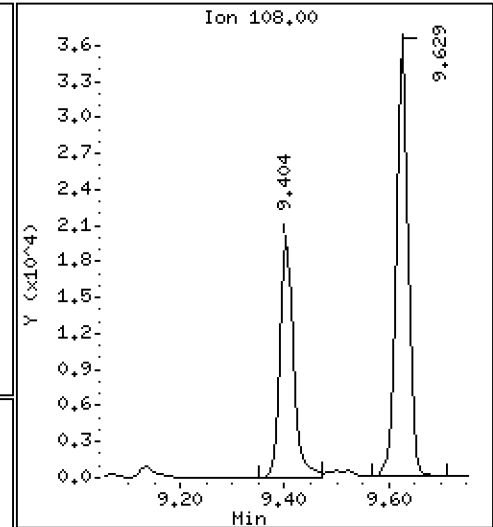
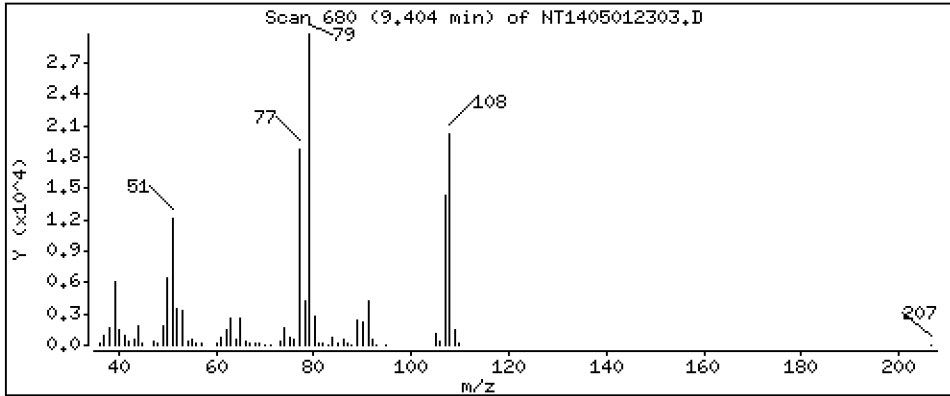
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 0.4649 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

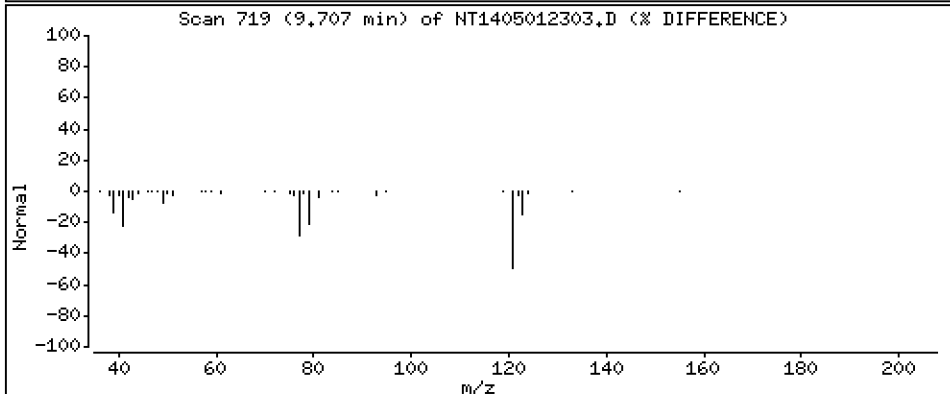
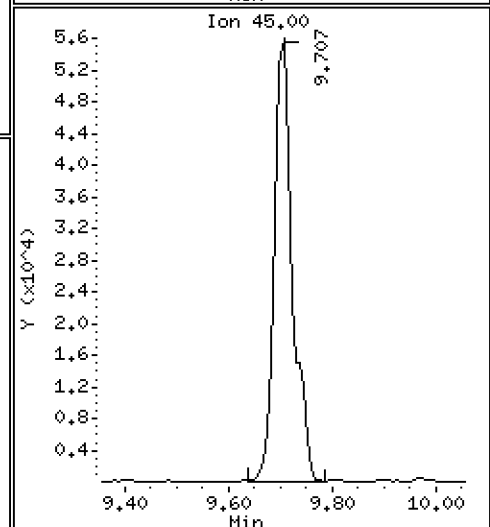
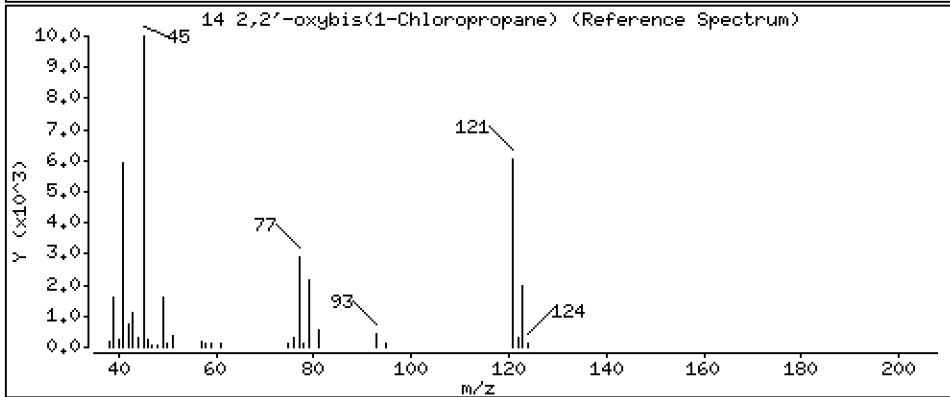
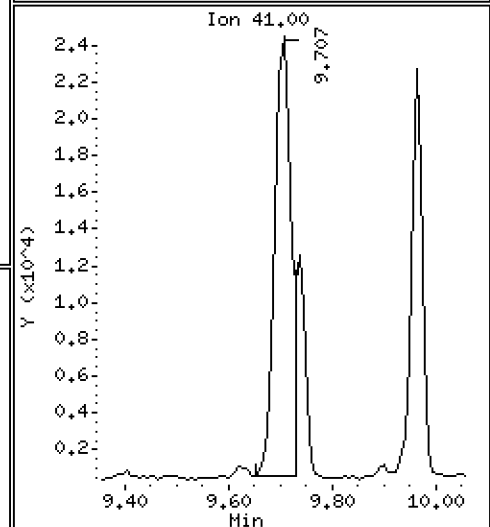
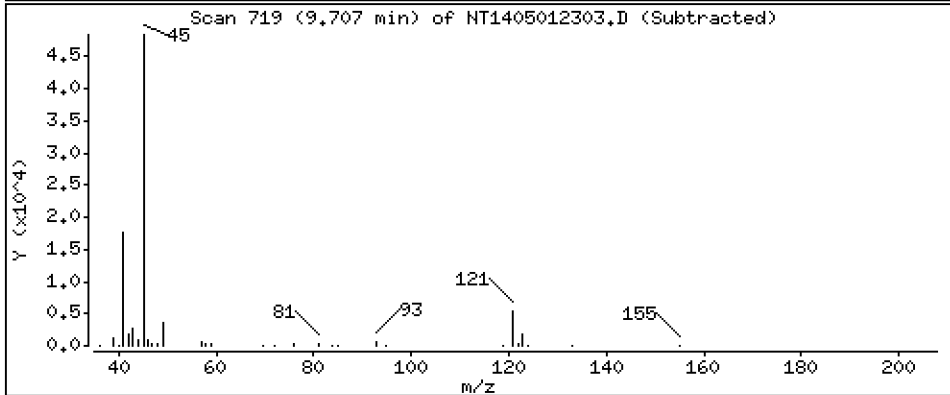
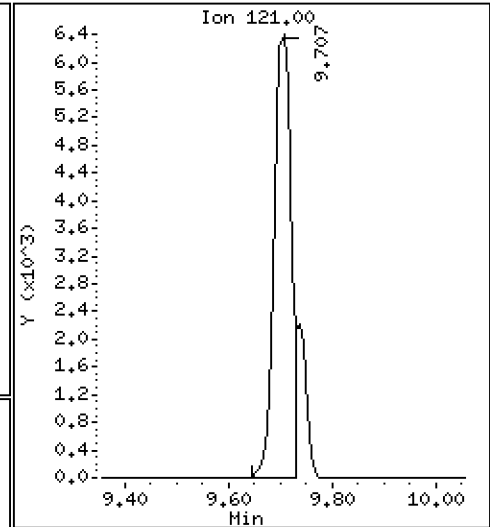
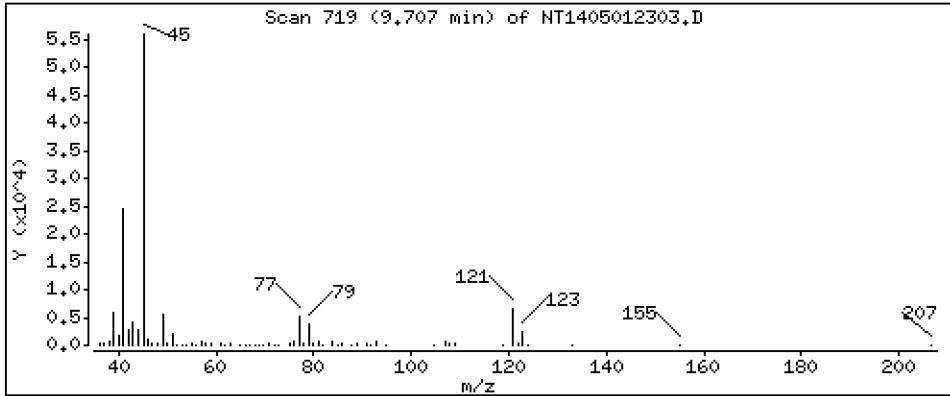
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 0,3925 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

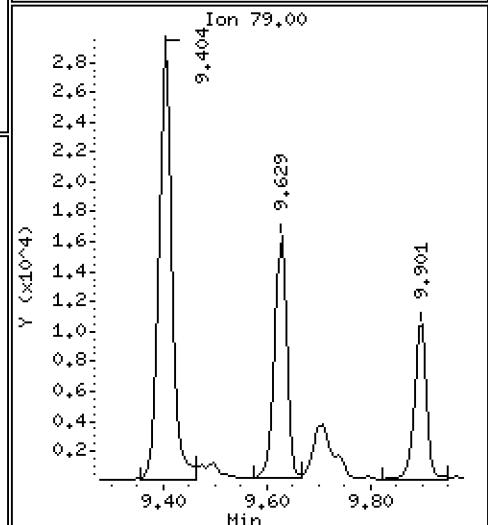
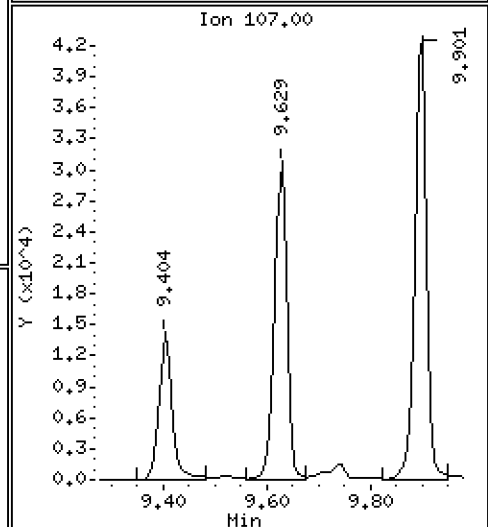
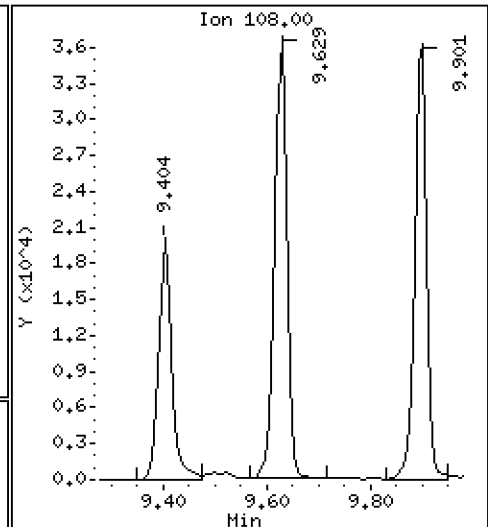
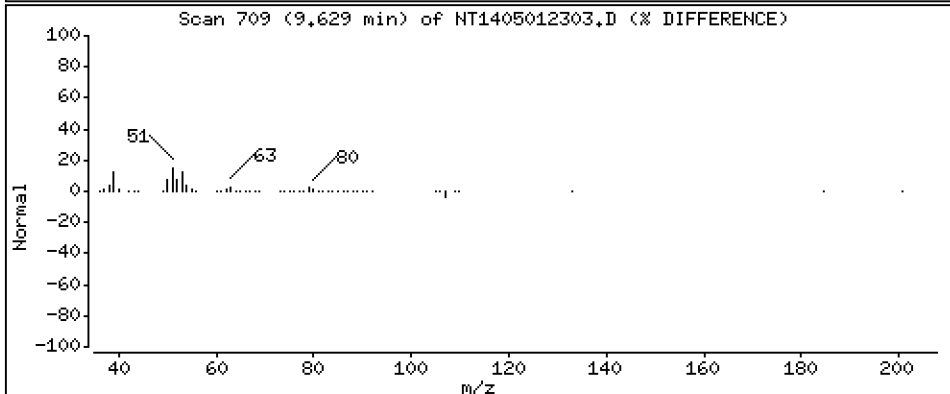
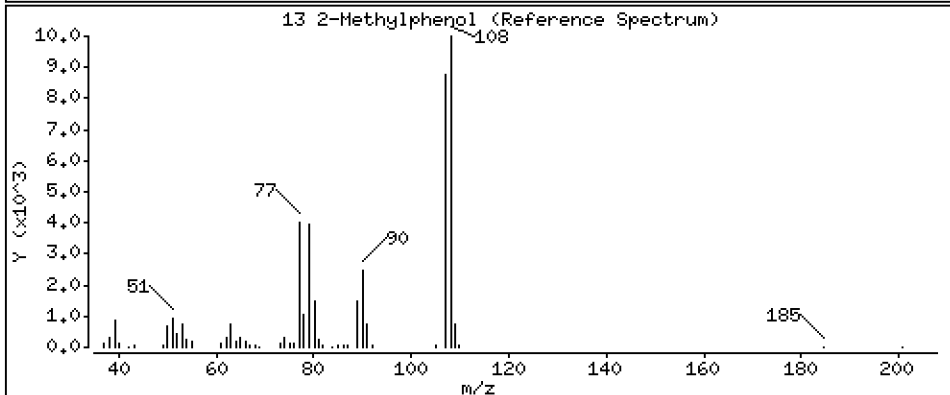
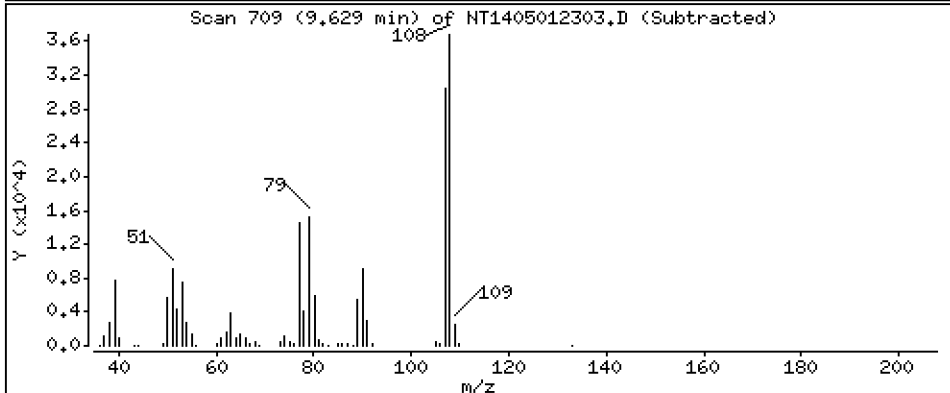
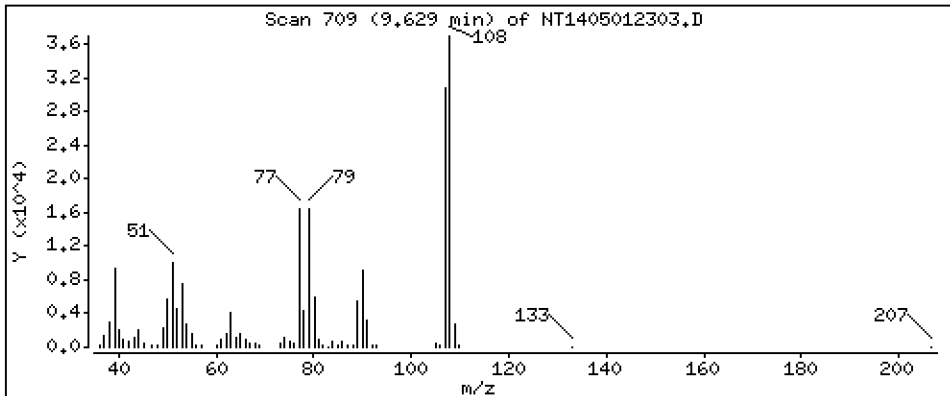
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 0.5246 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

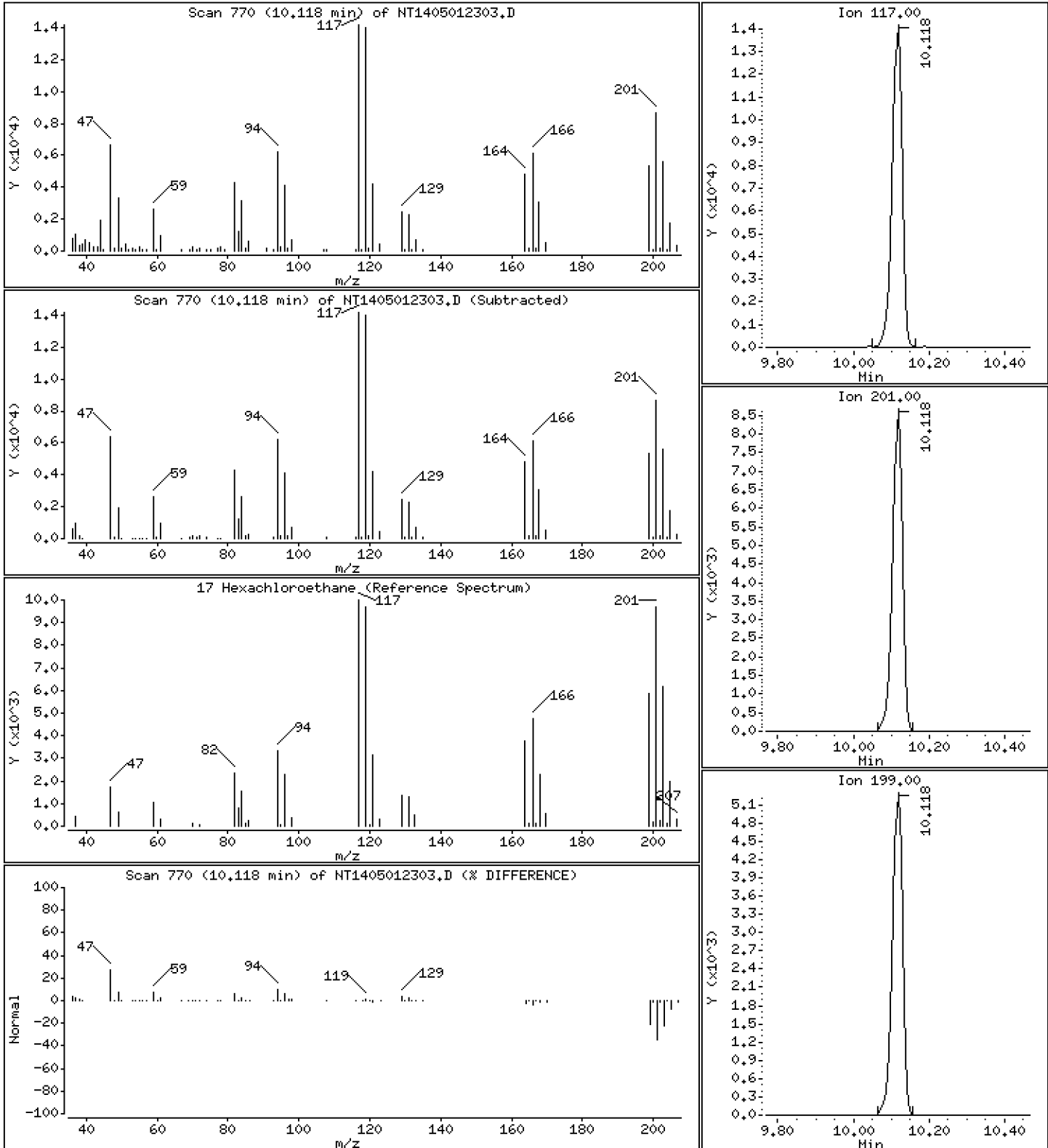
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

17 Hexachloroethane

Concentration: 0.4849 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

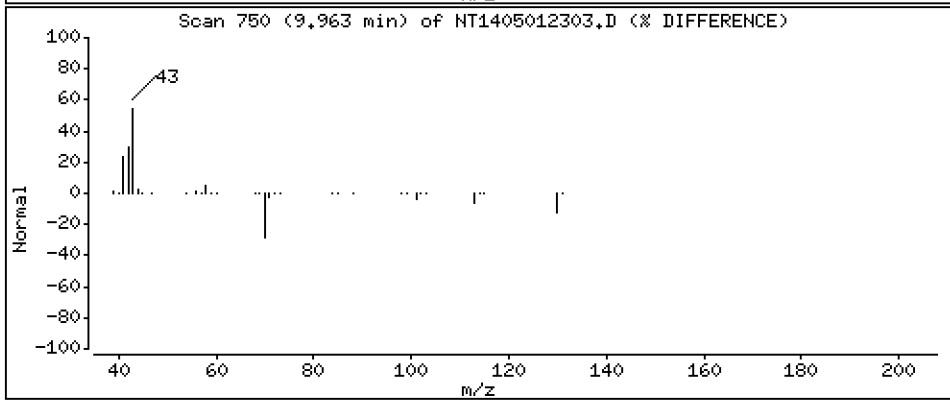
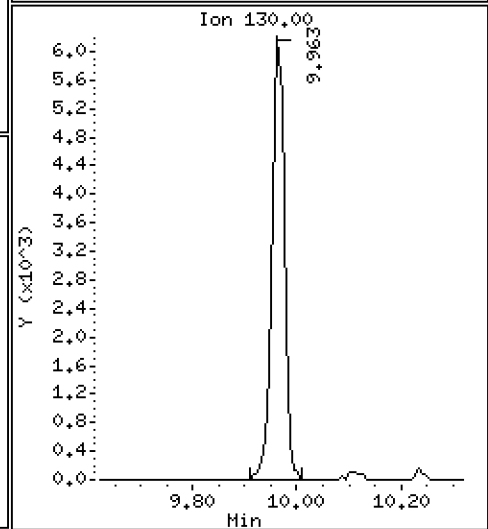
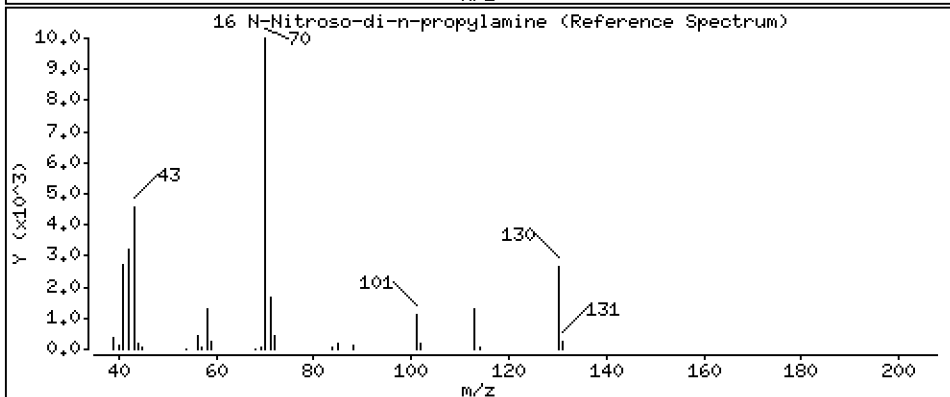
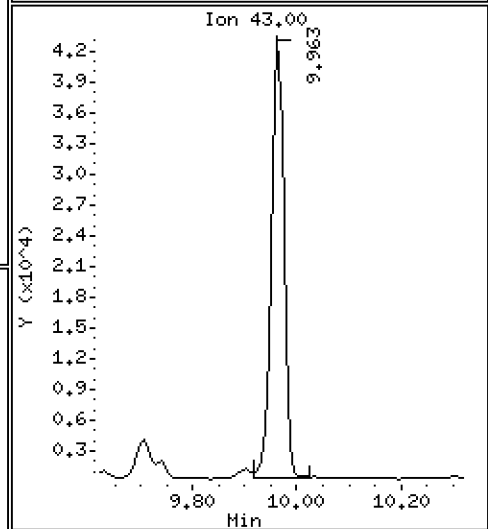
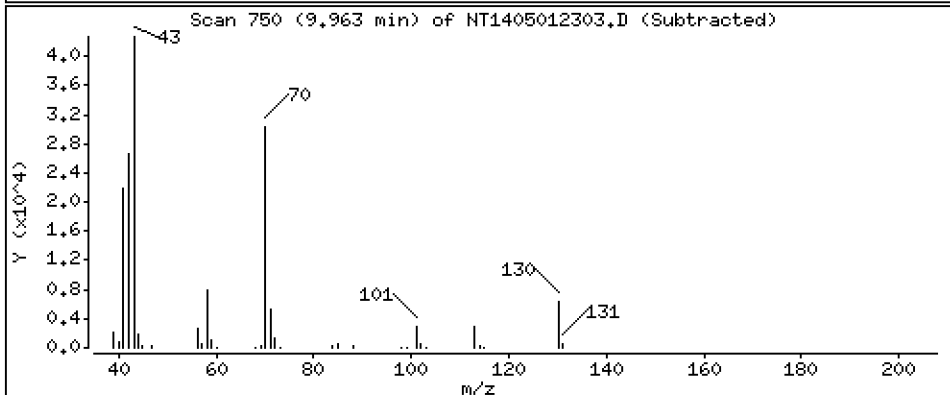
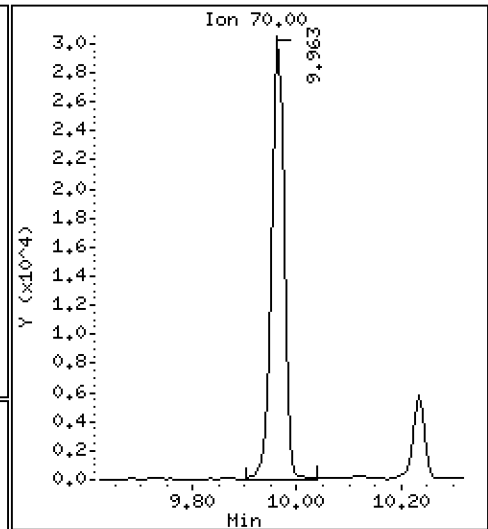
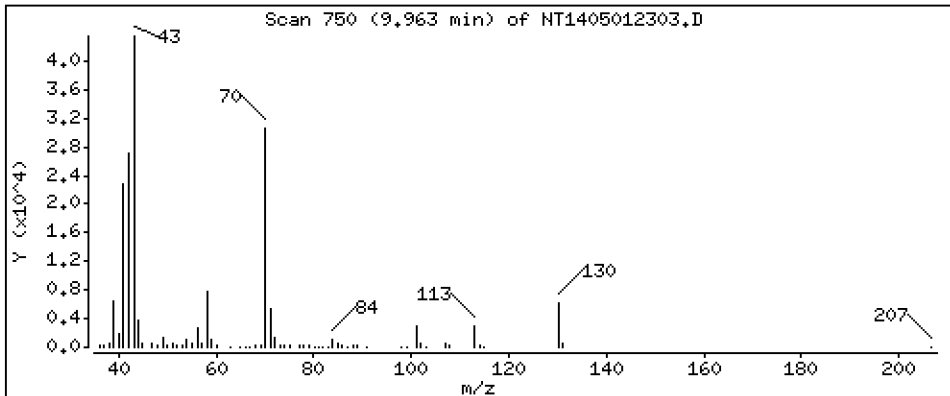
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 0,4444 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

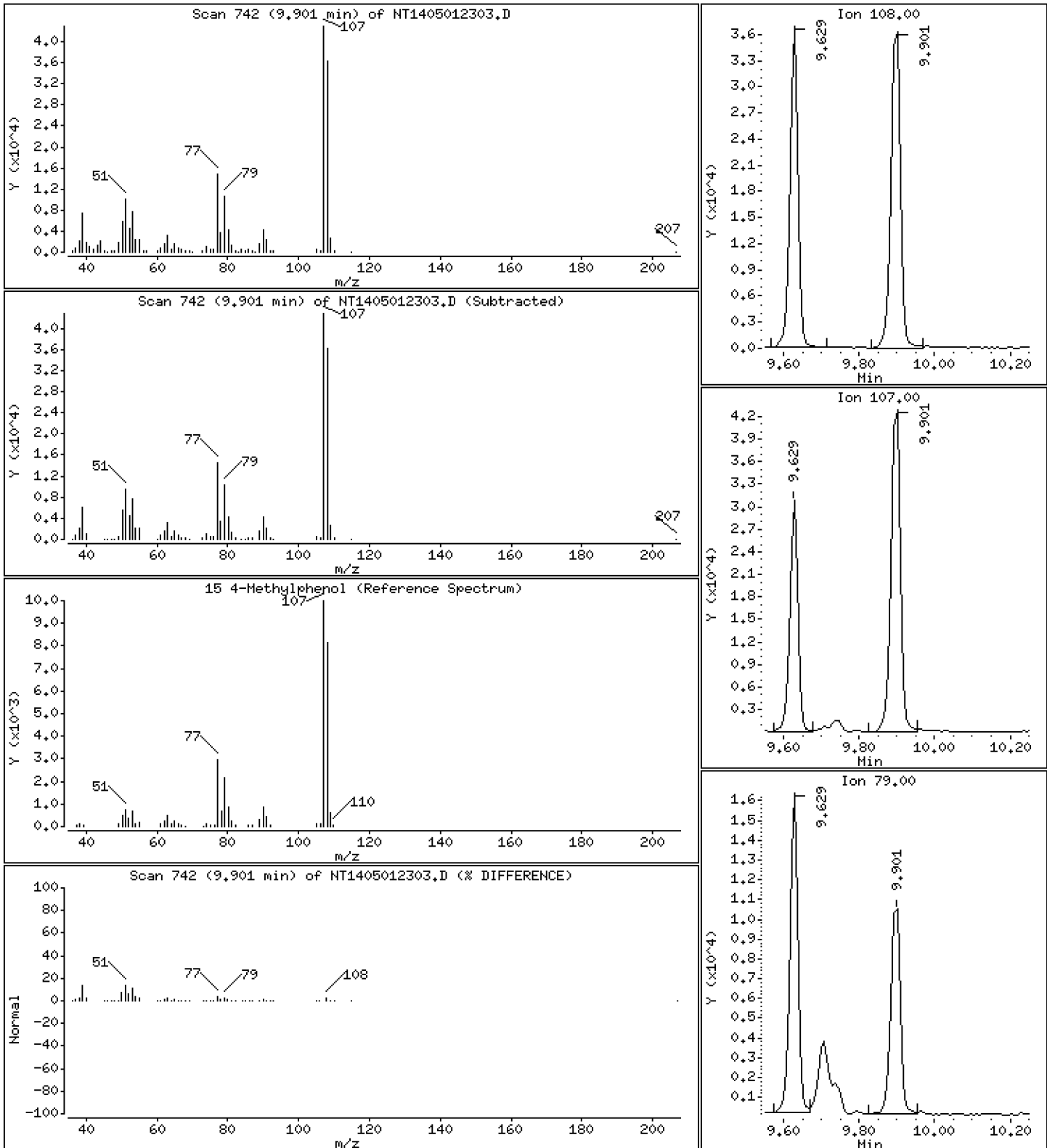
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 0,4850 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

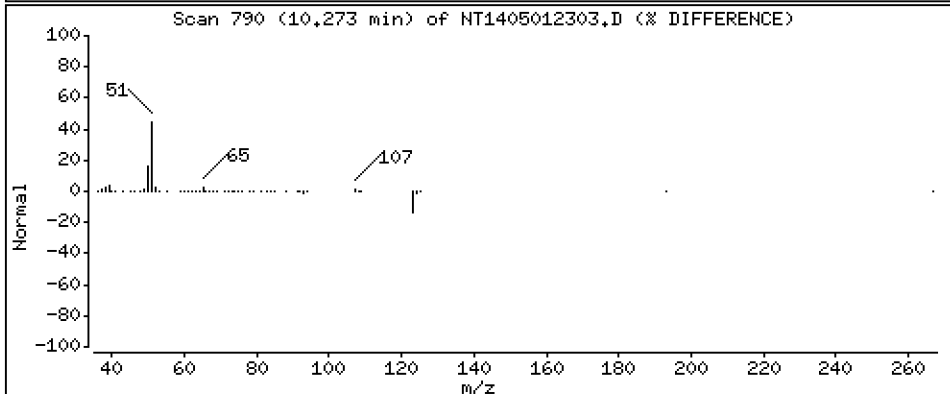
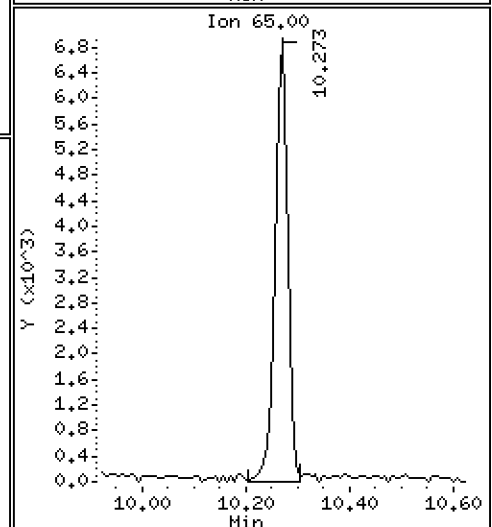
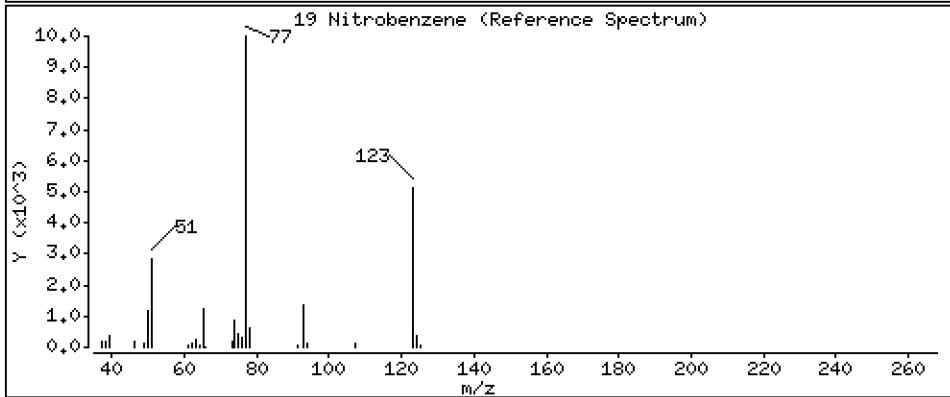
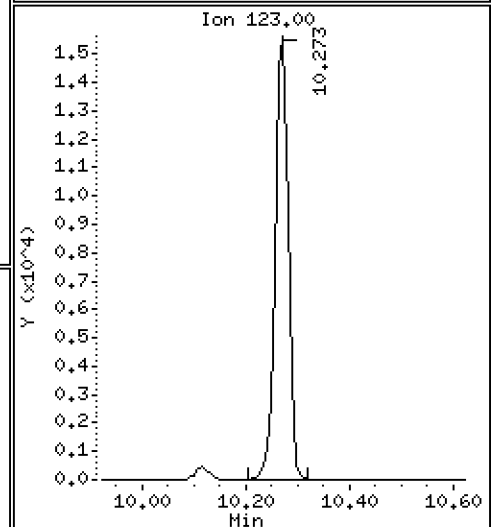
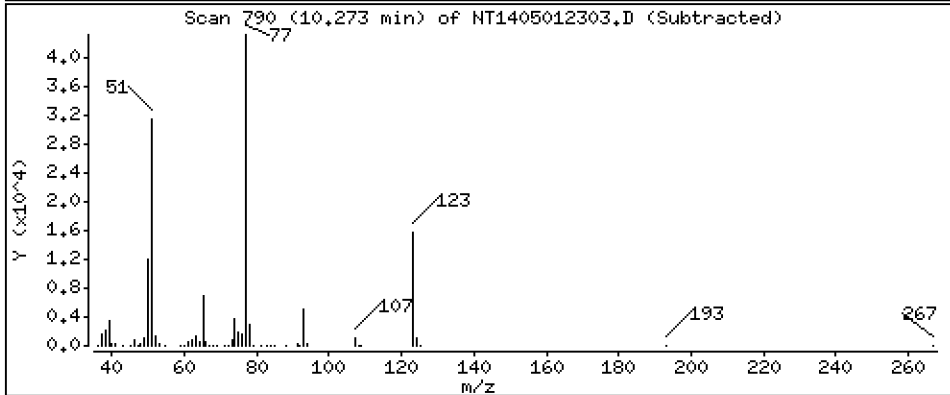
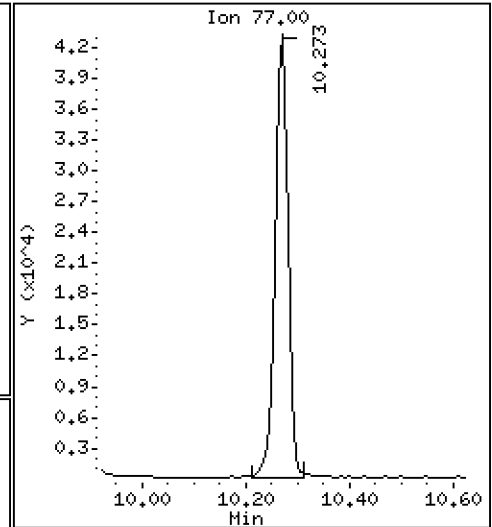
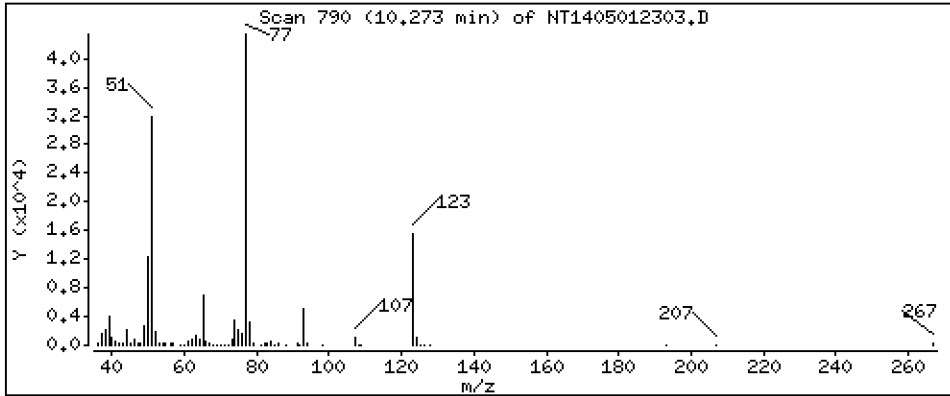
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 0,4770 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

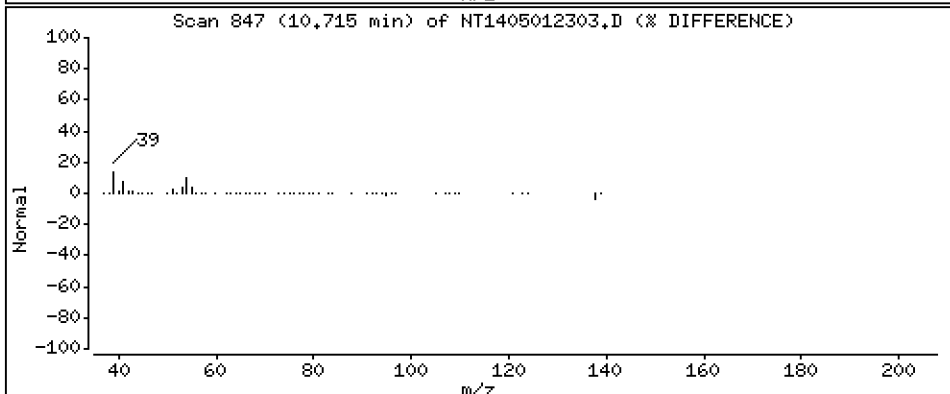
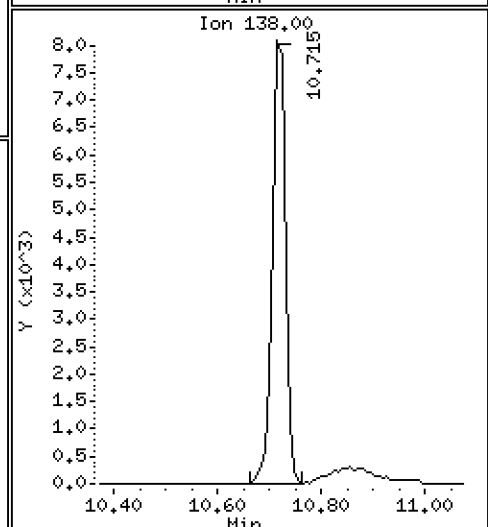
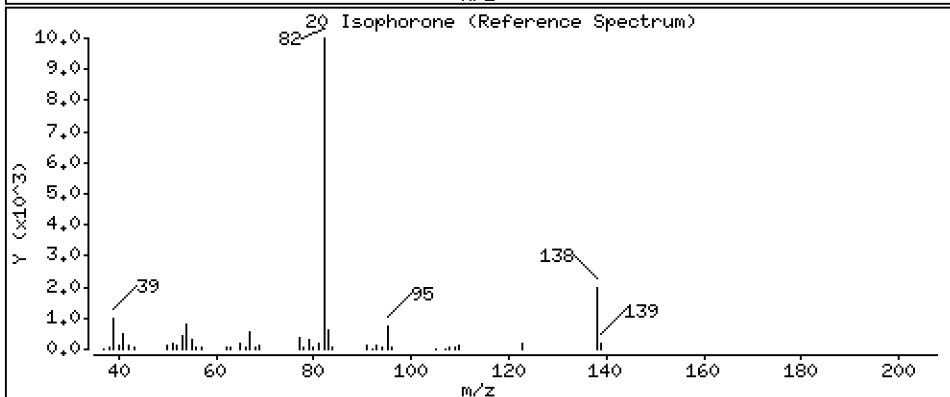
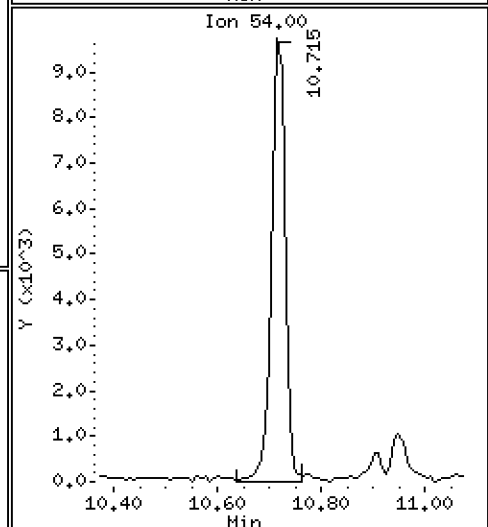
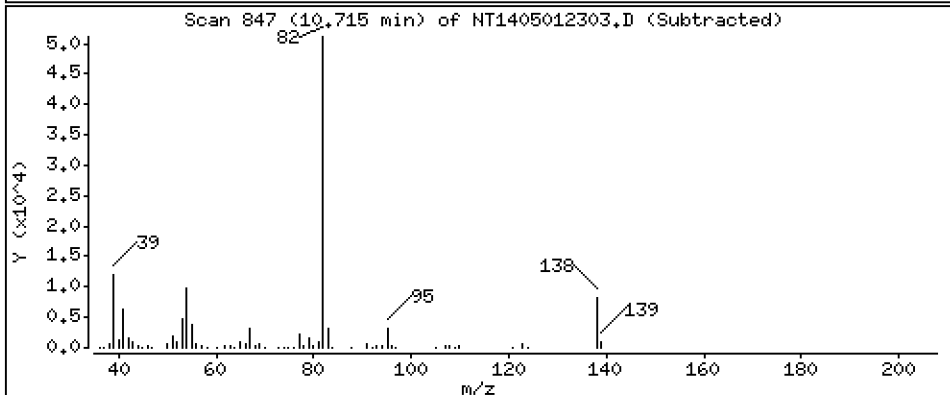
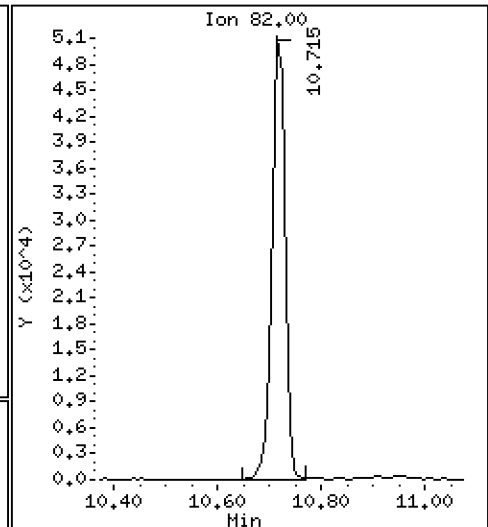
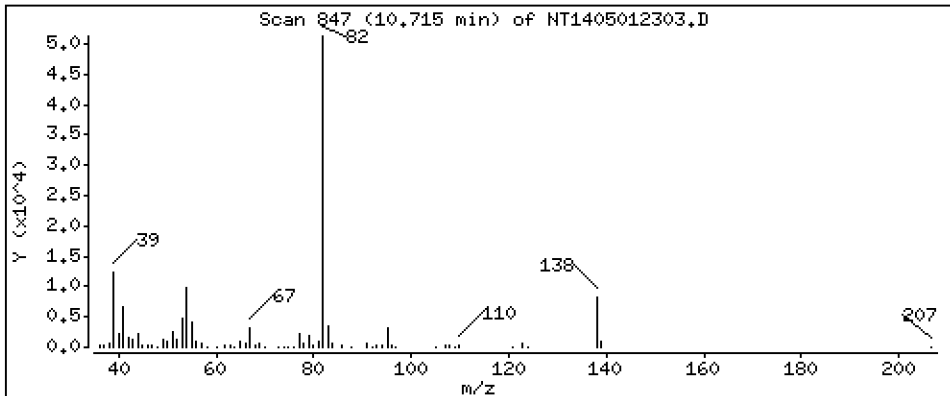
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 0,4177 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

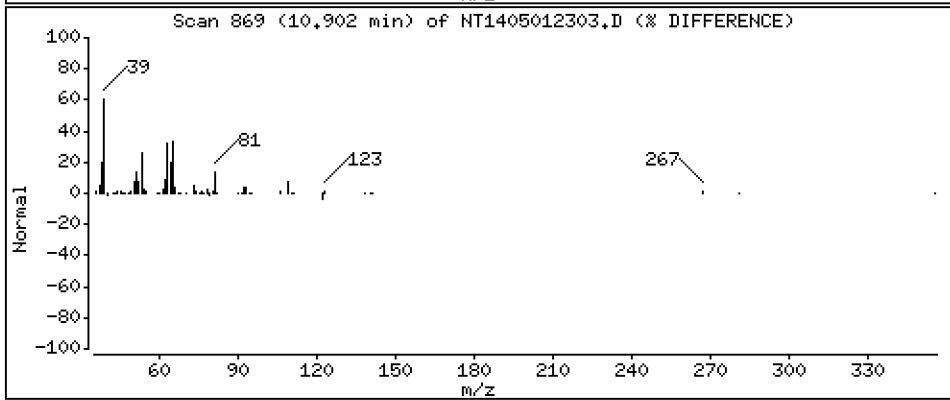
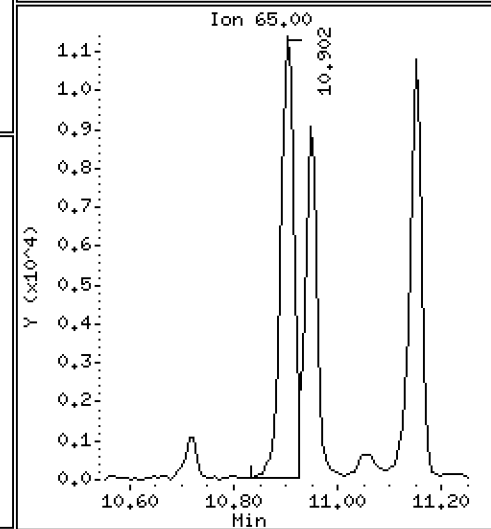
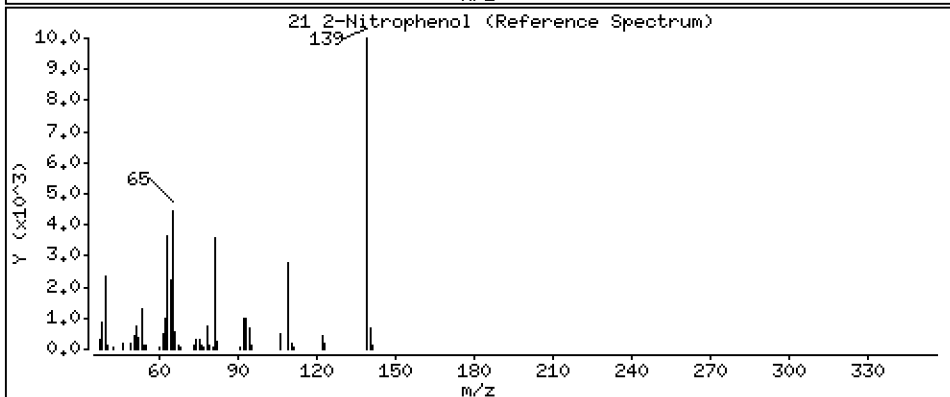
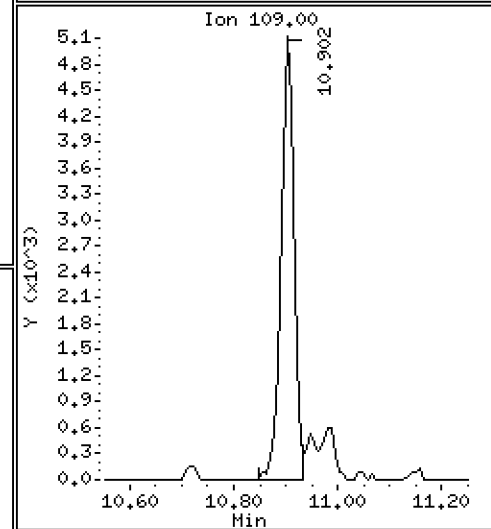
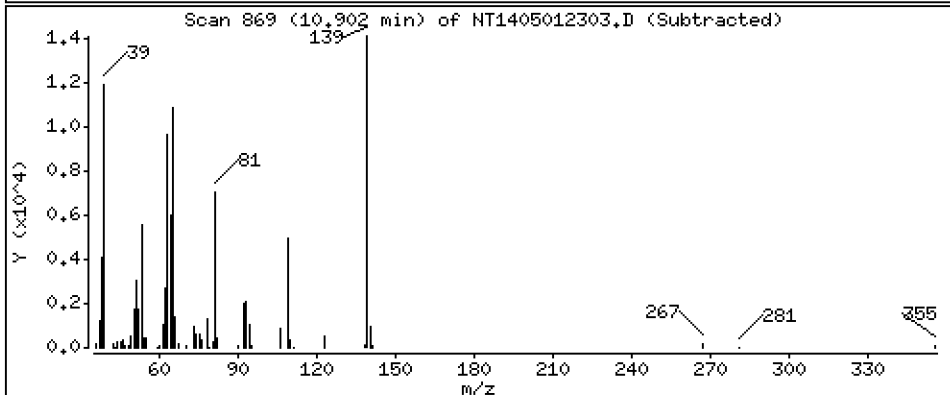
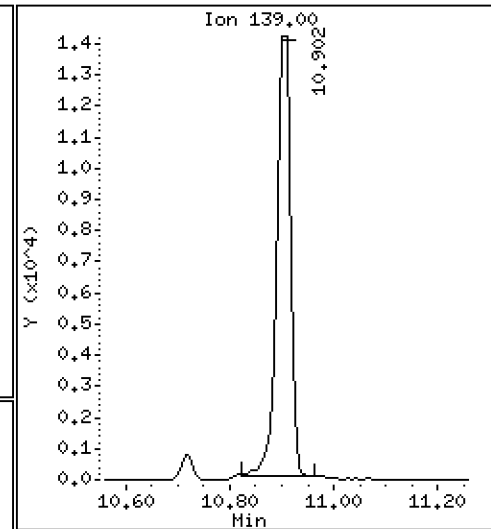
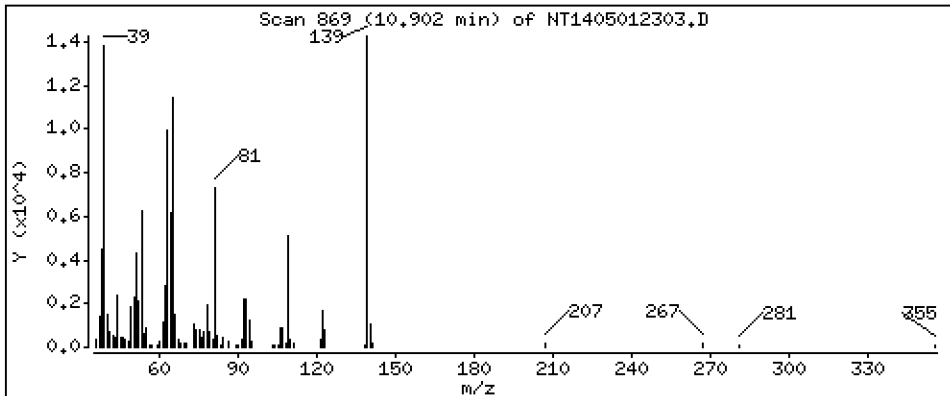
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 0,3217 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

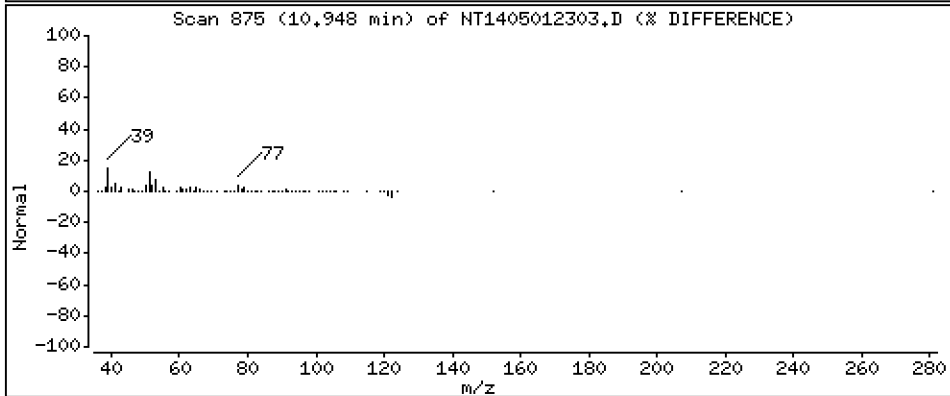
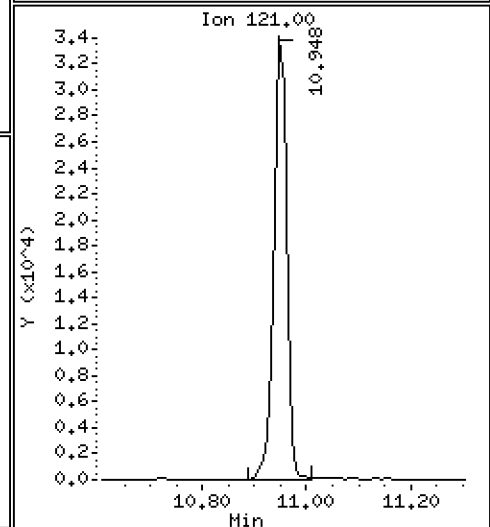
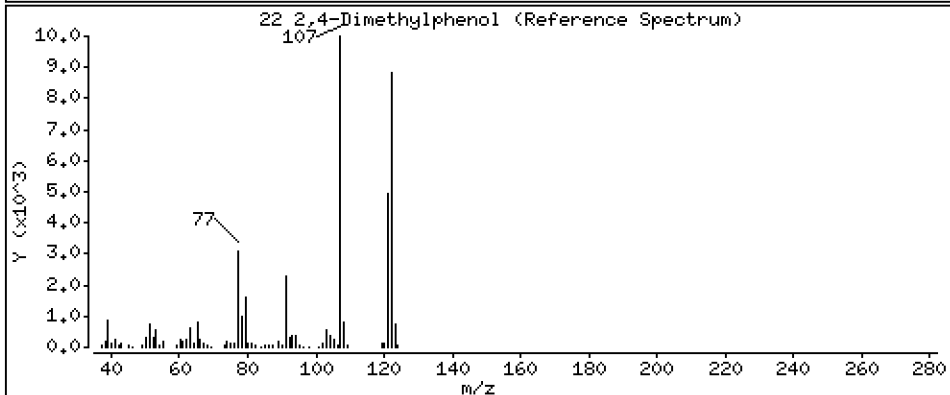
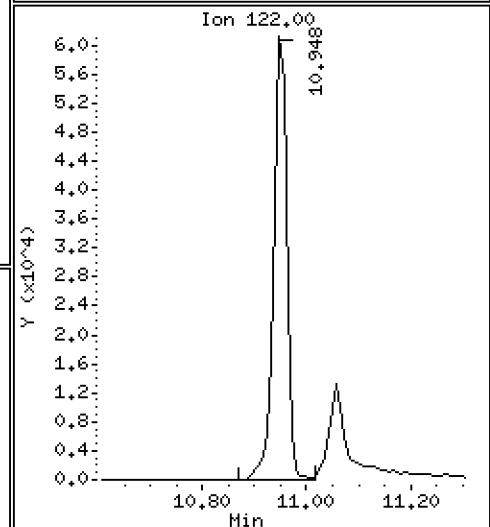
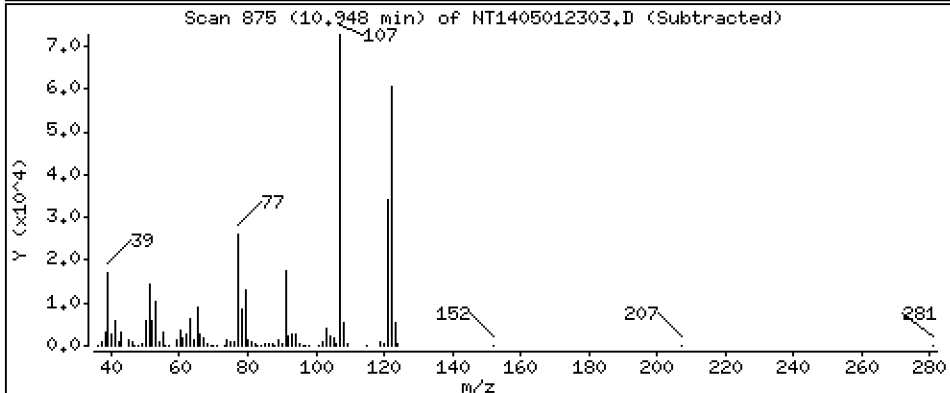
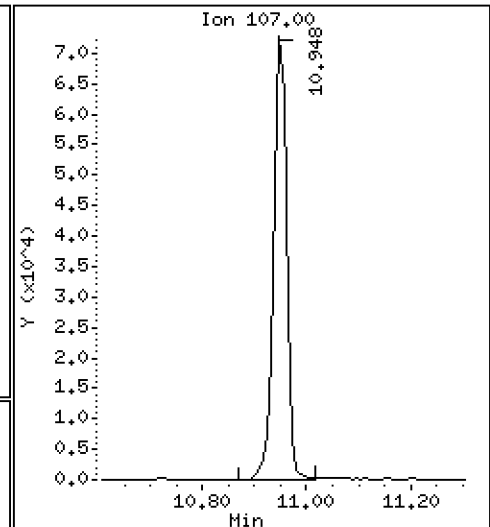
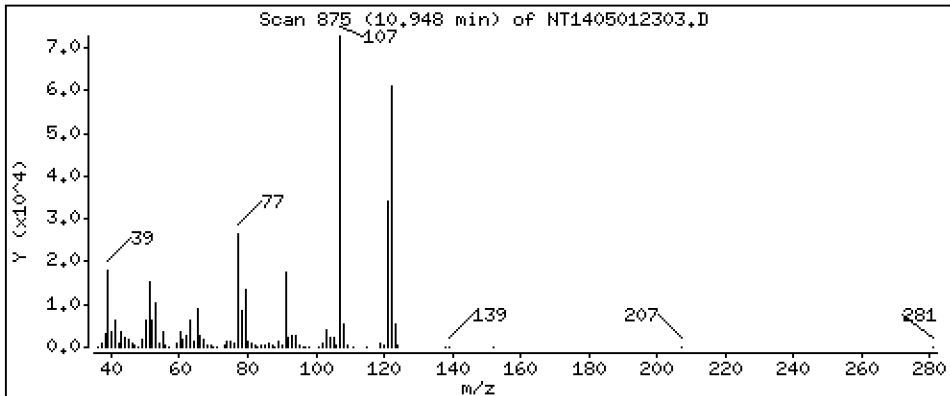
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 1.074 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

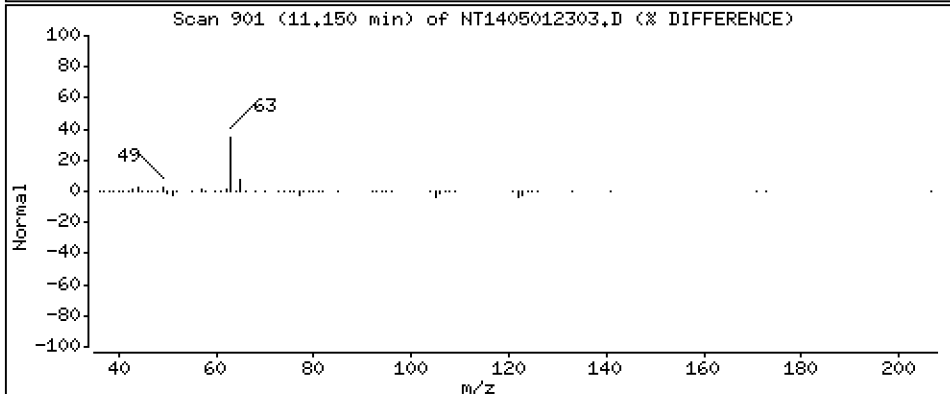
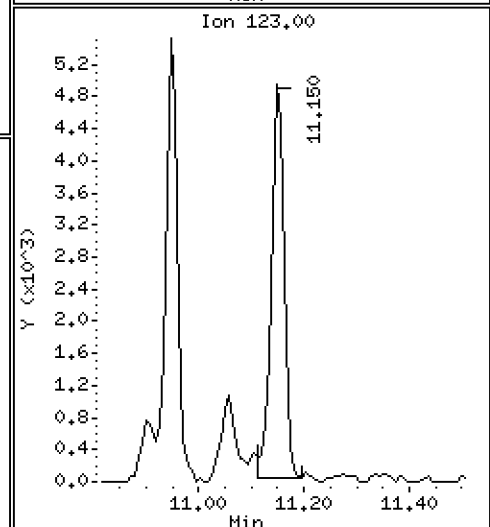
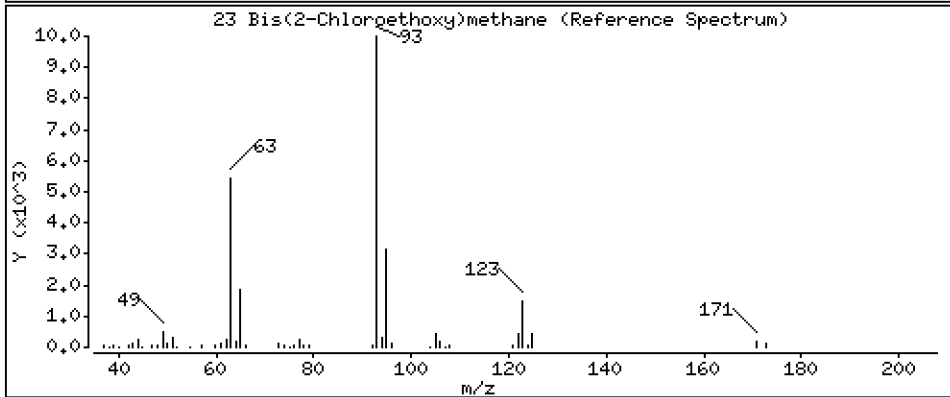
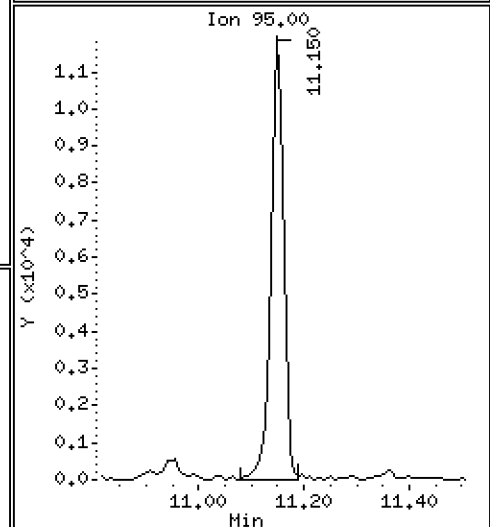
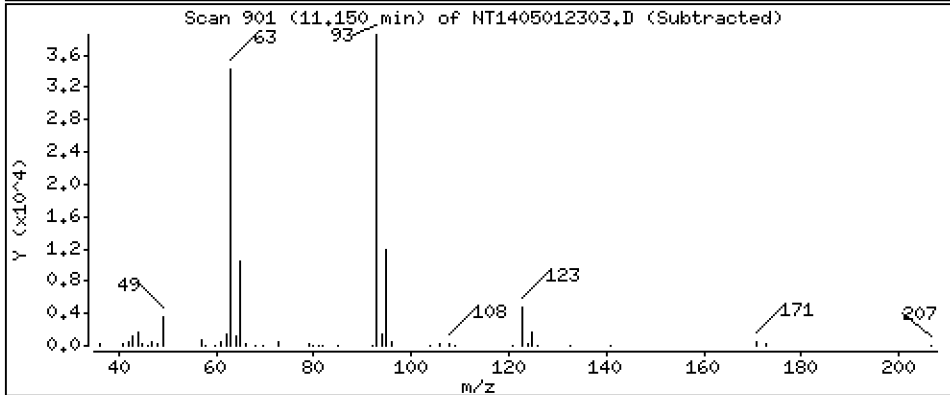
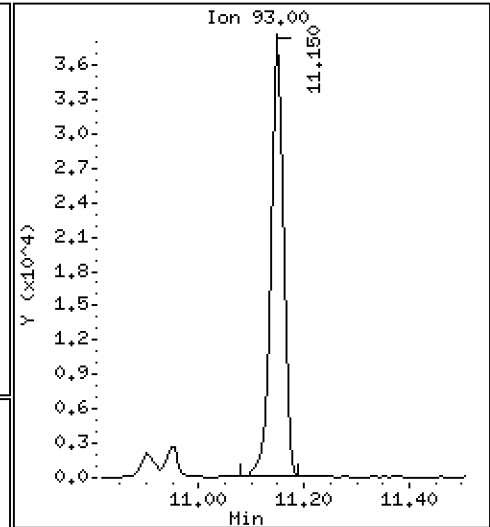
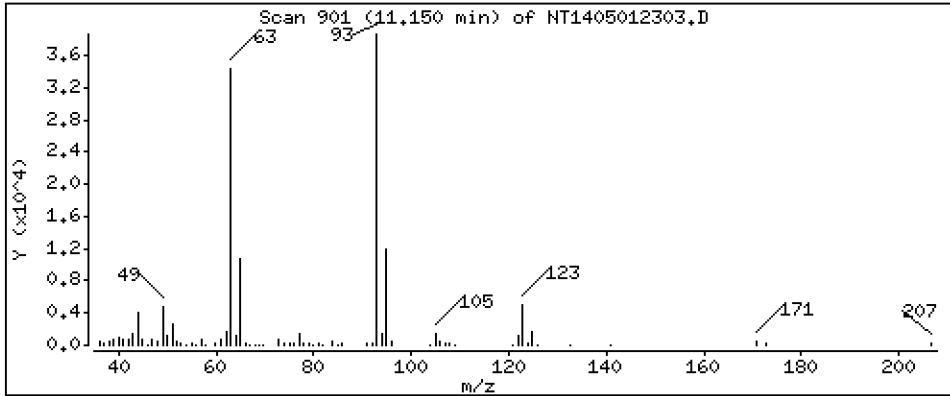
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 0,4819 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

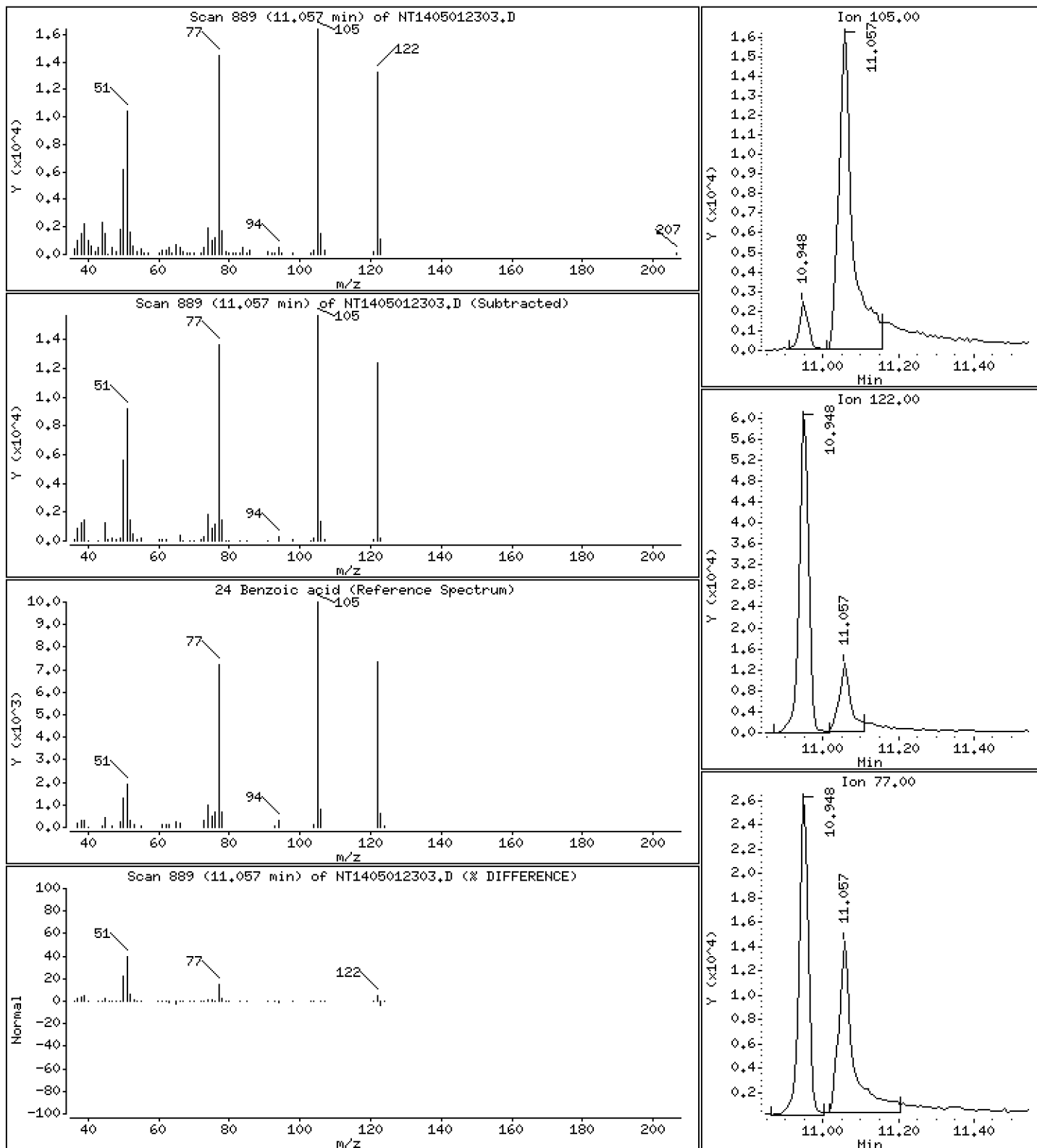
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 0,4649 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

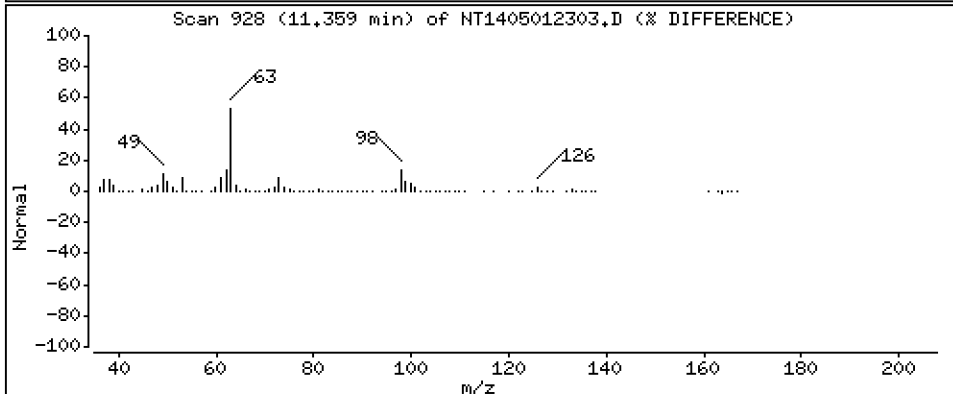
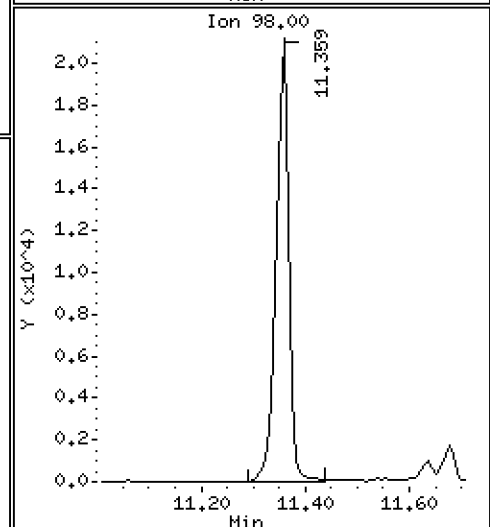
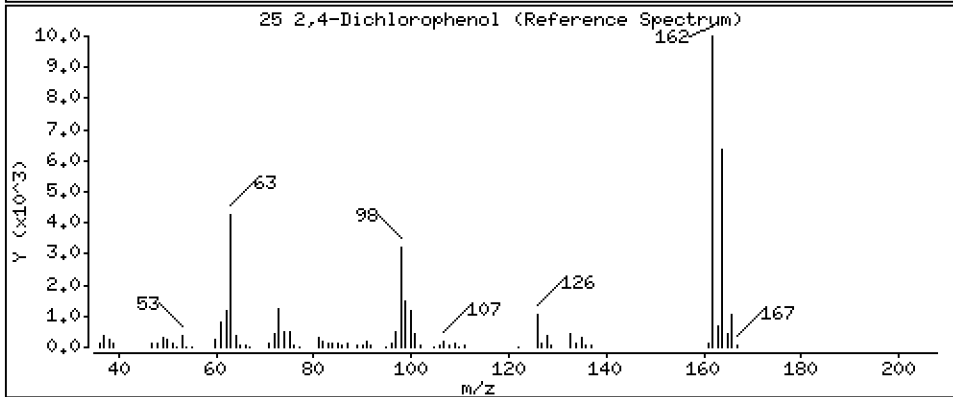
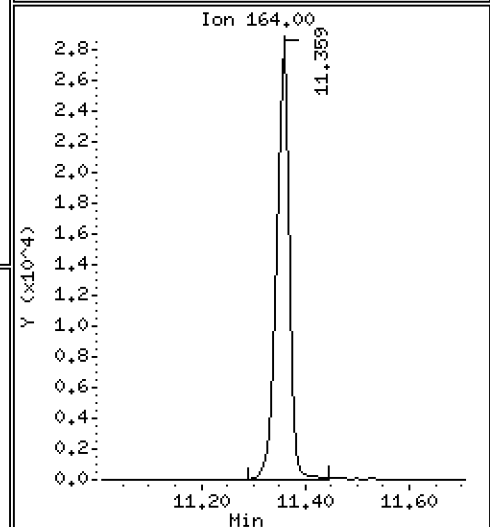
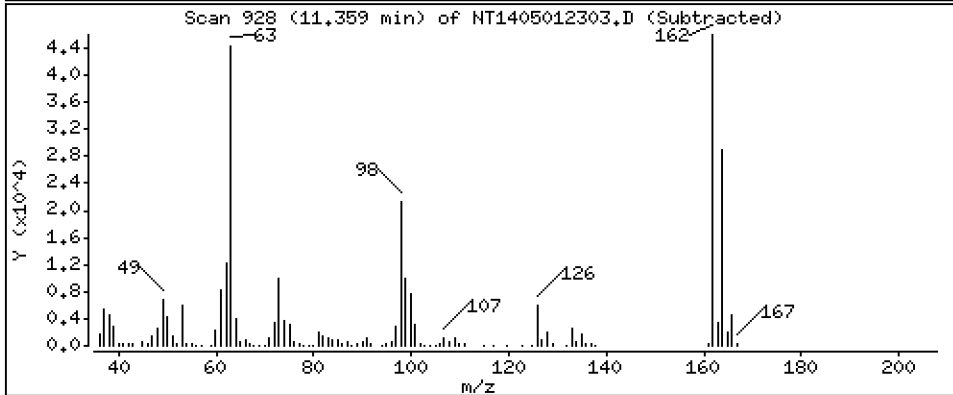
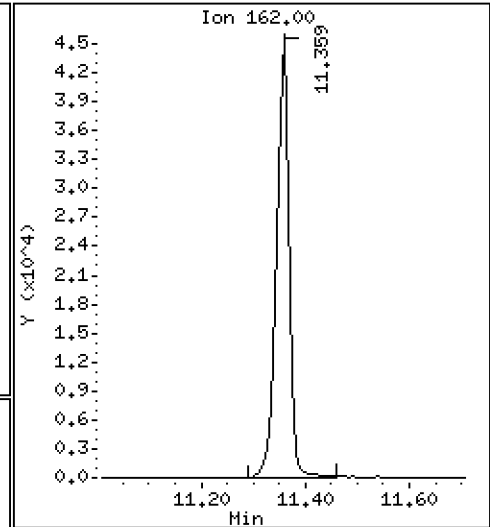
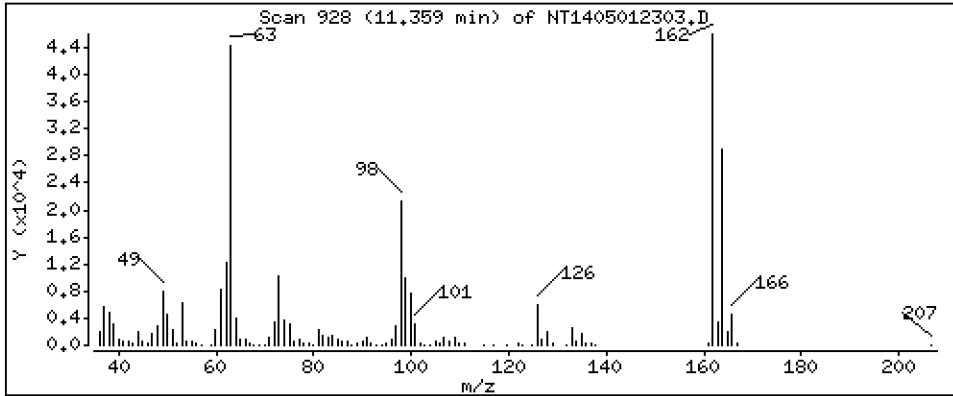
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 0,7497 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

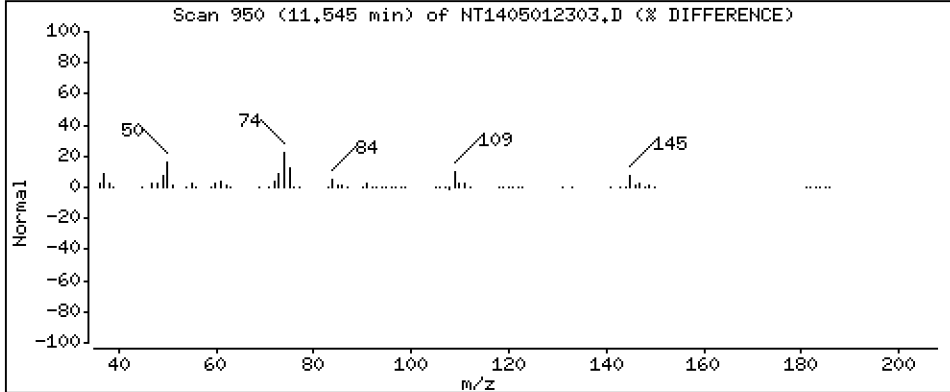
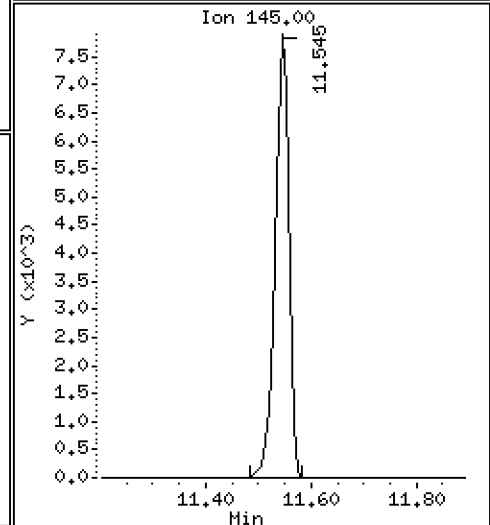
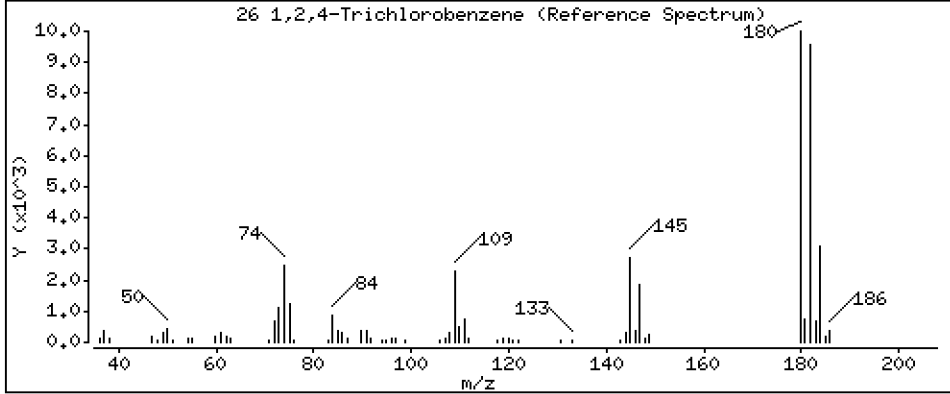
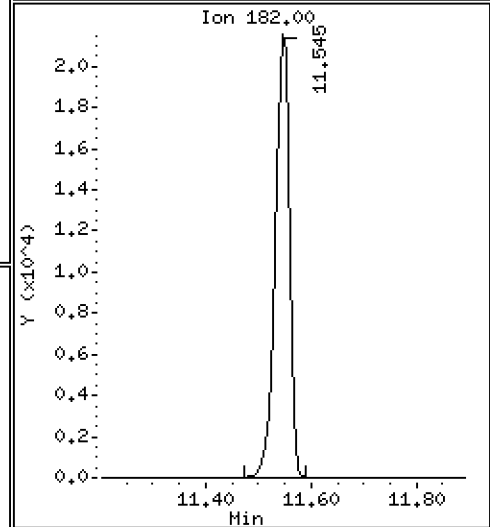
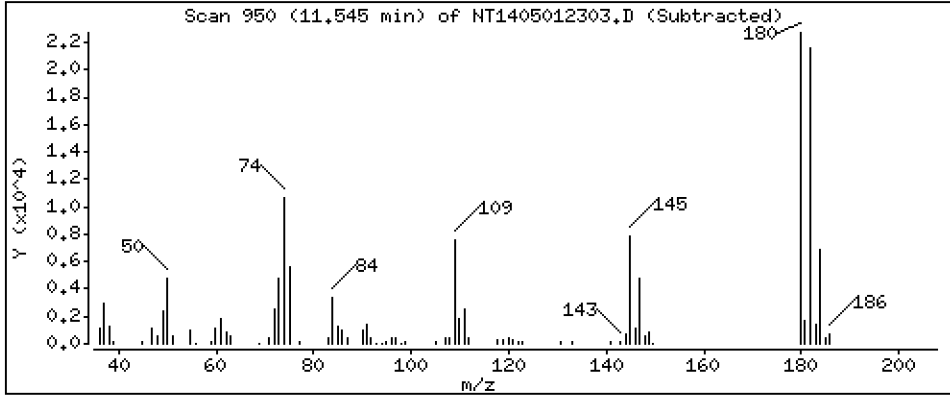
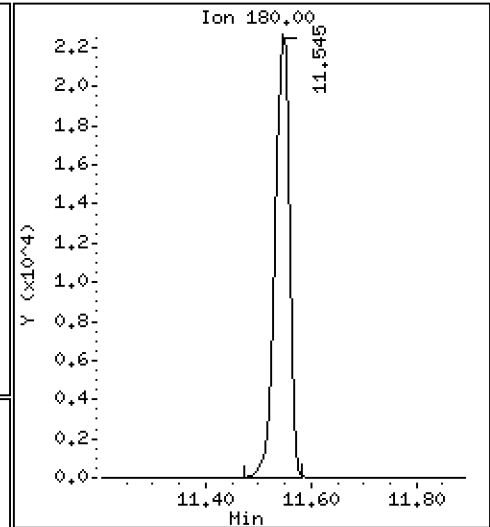
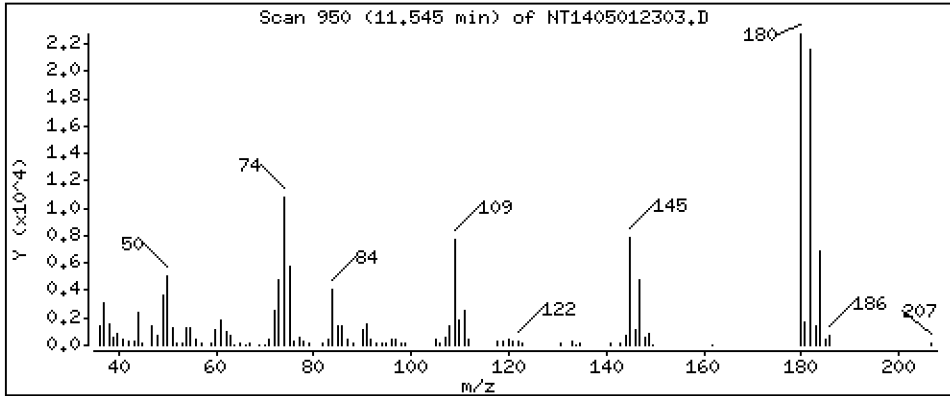
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 0,5049 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

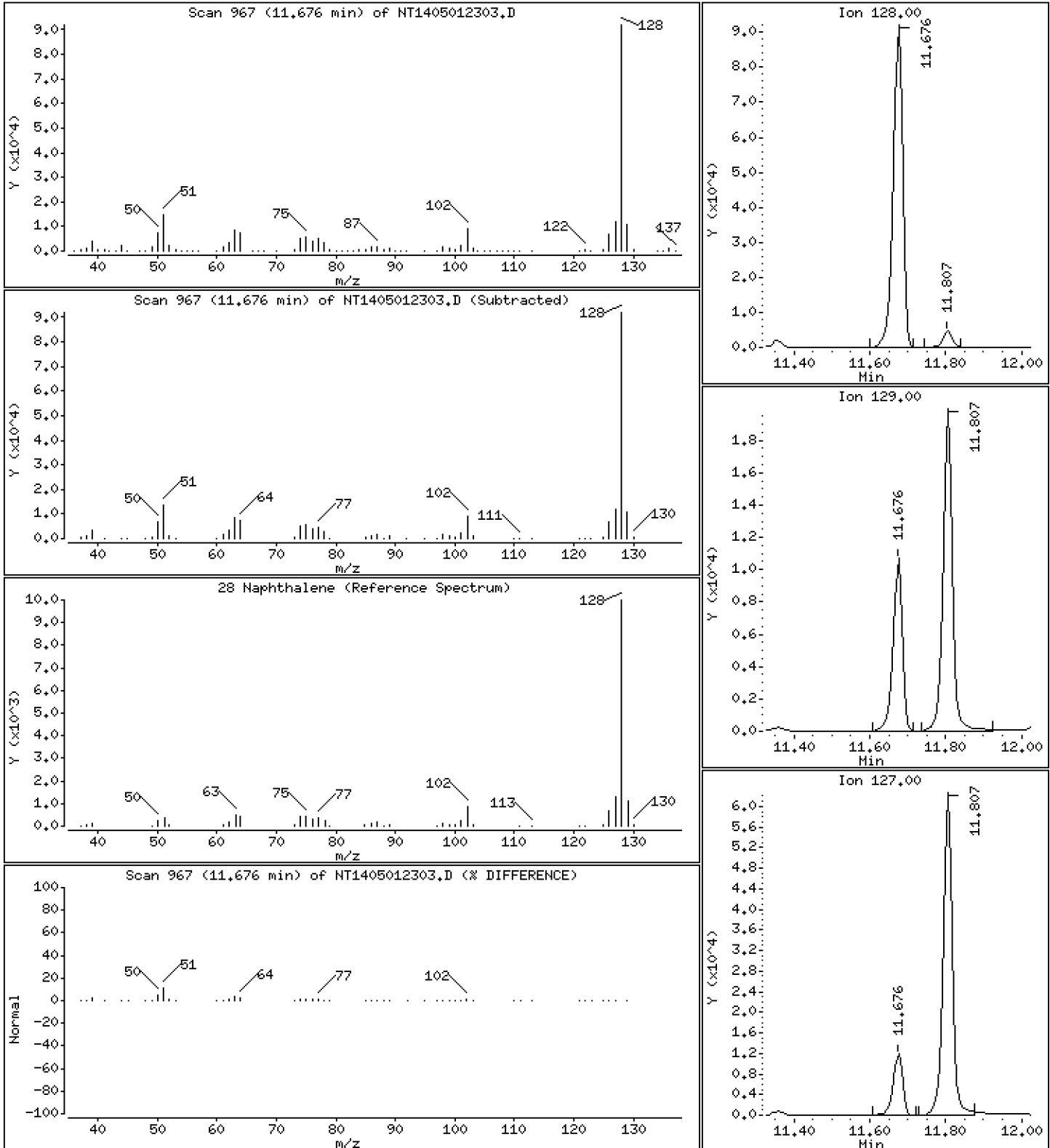
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 0,5025 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

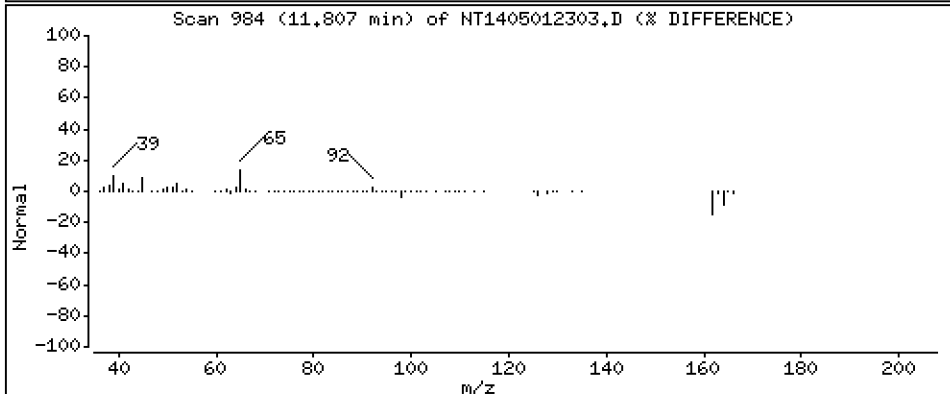
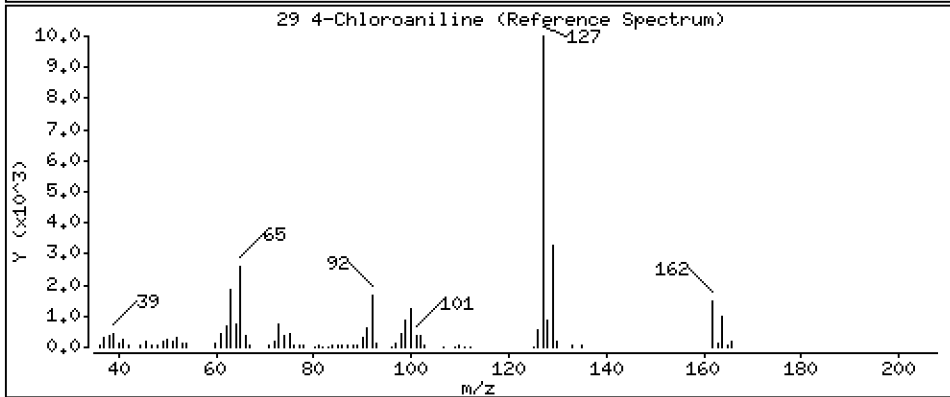
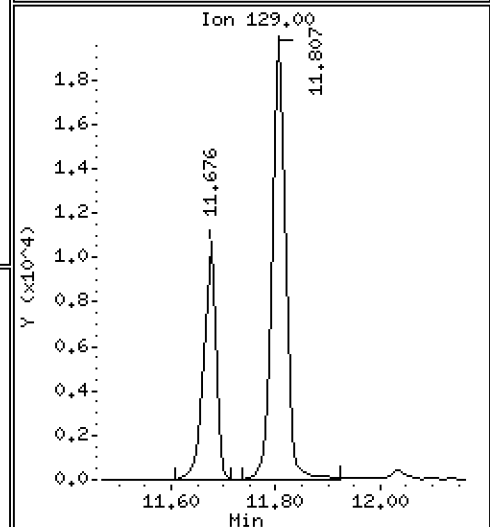
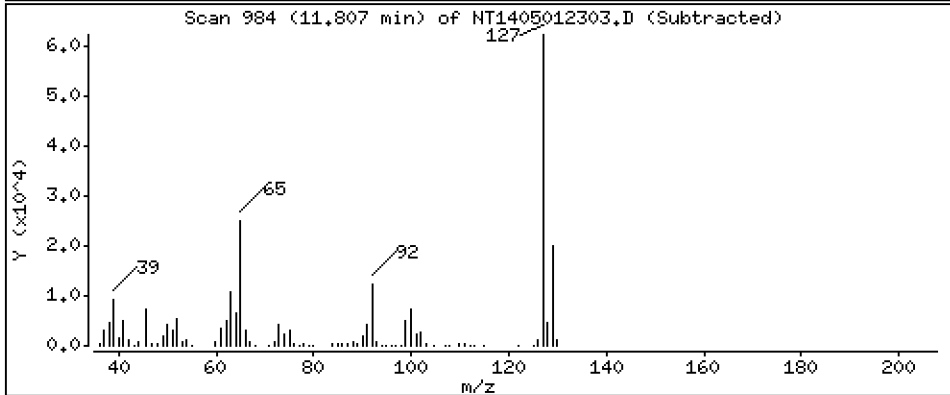
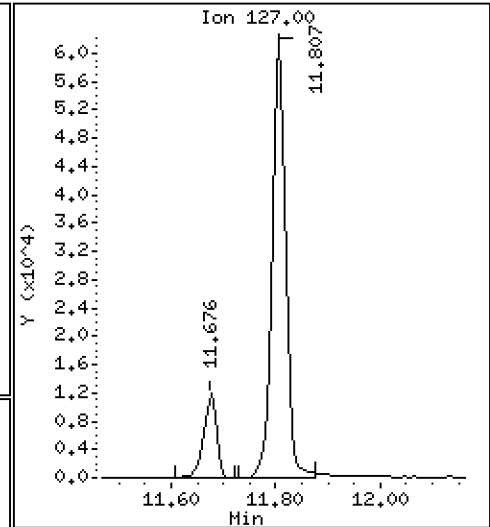
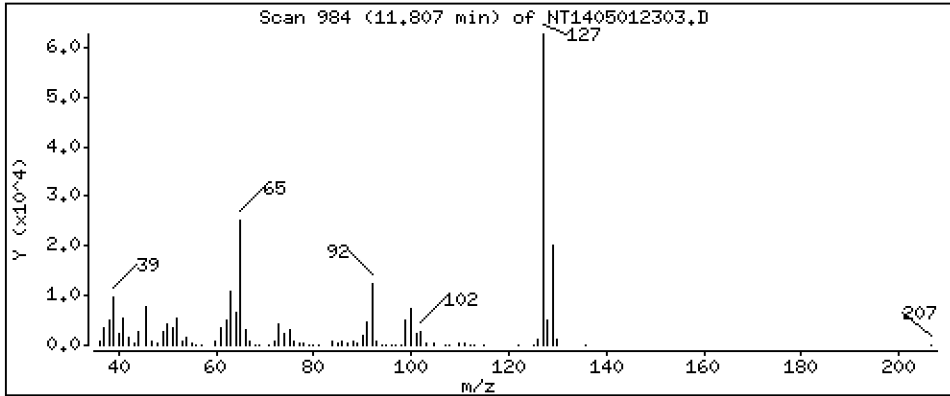
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 0,8371 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

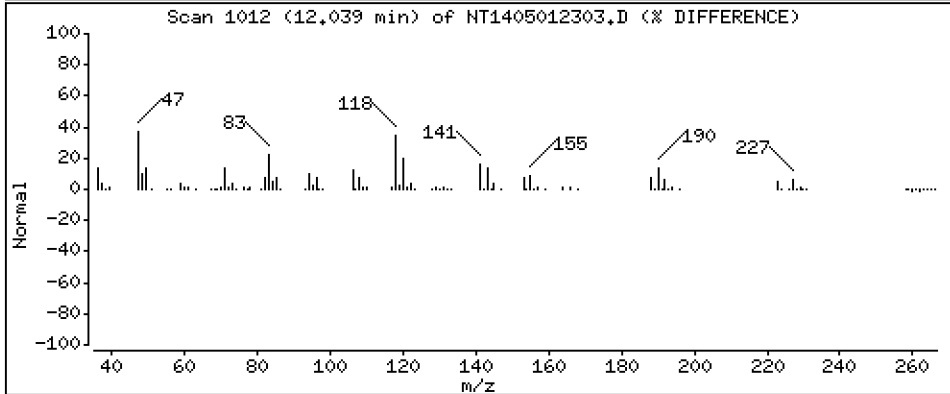
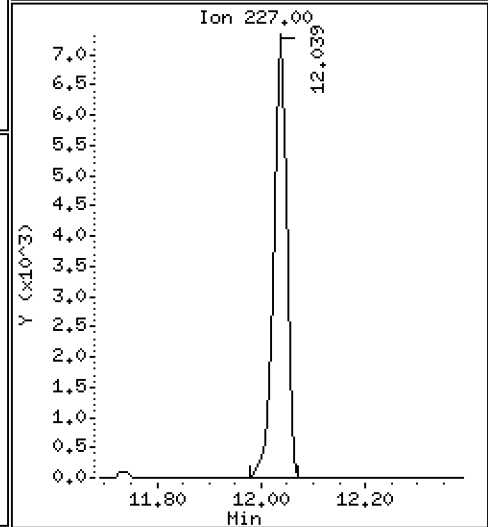
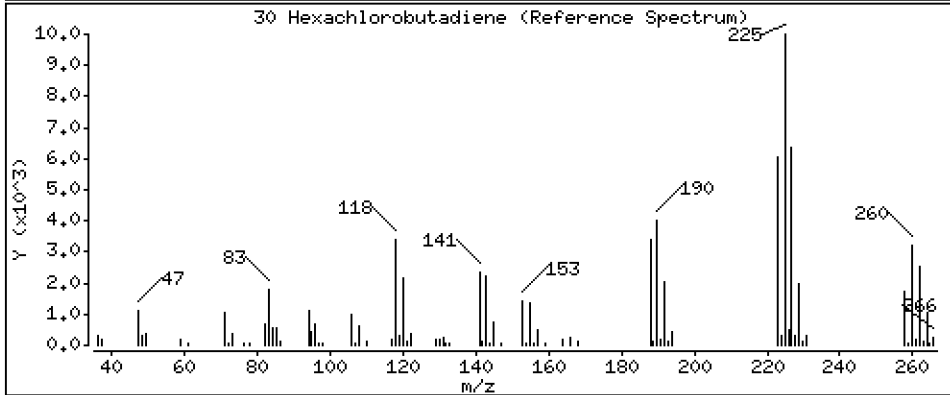
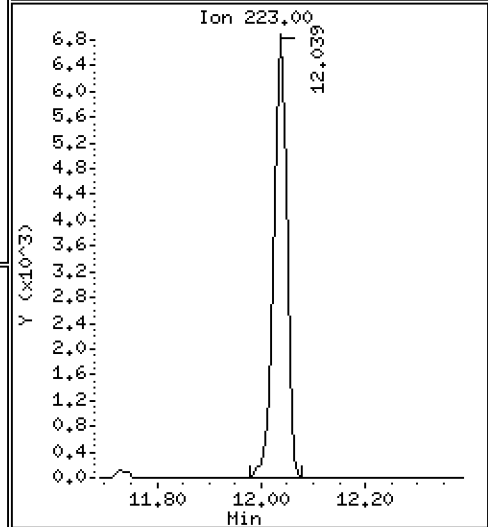
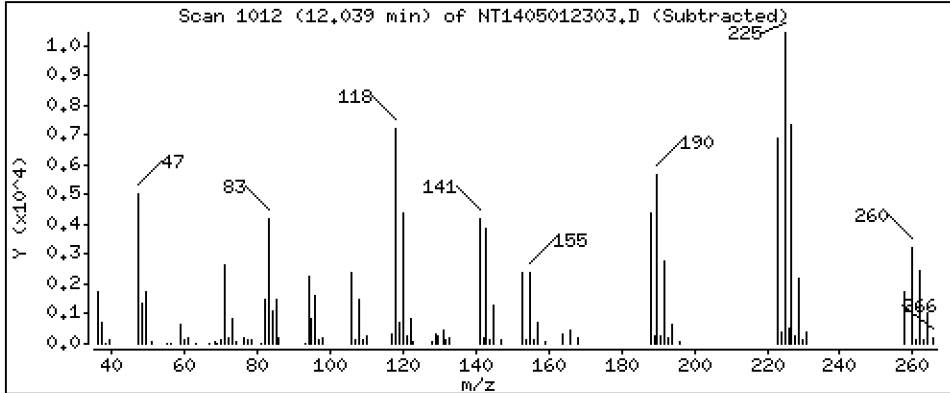
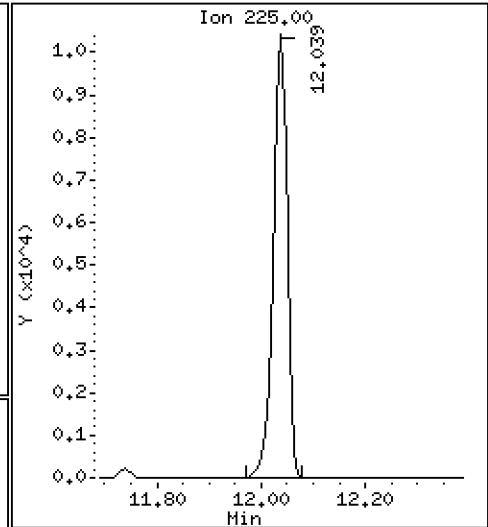
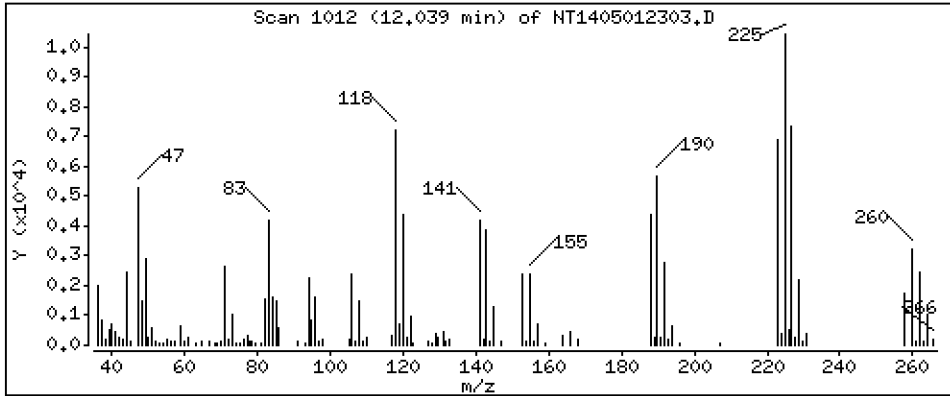
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 0,4867 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

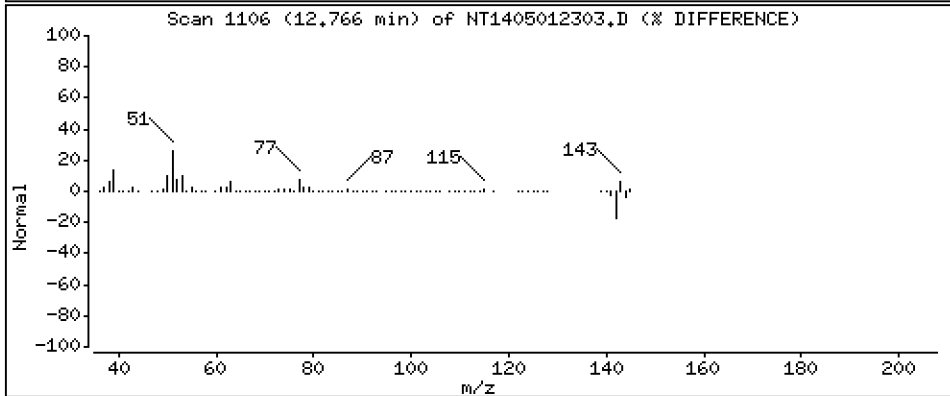
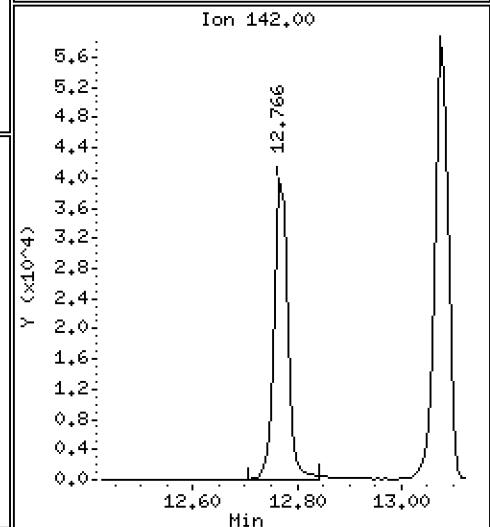
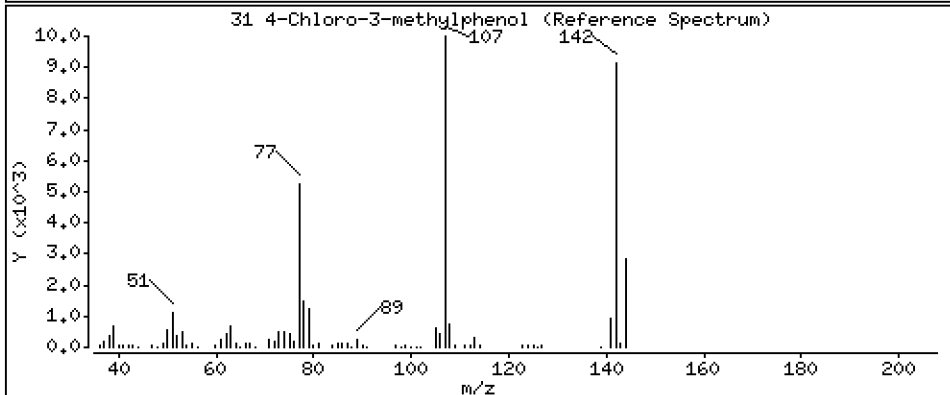
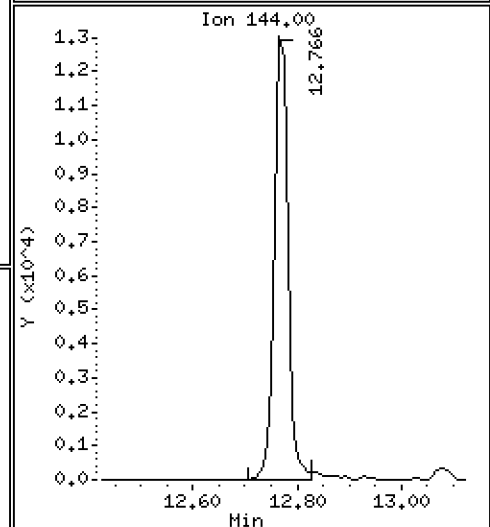
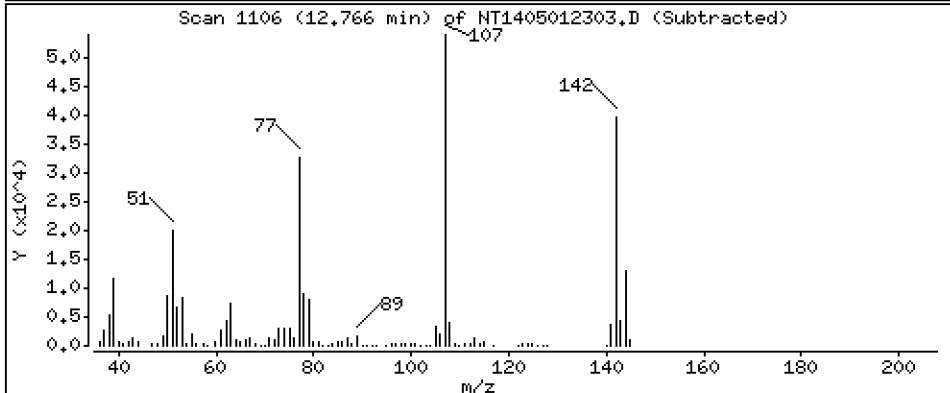
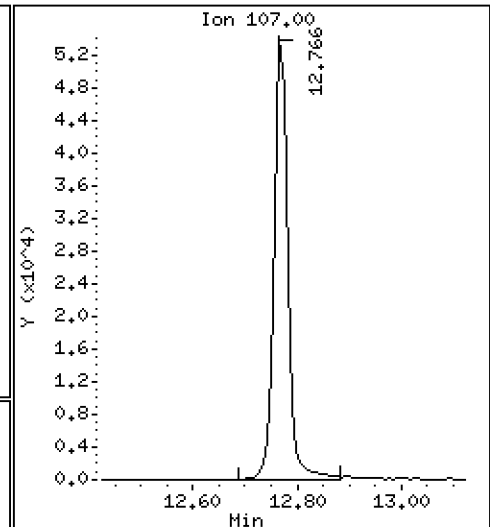
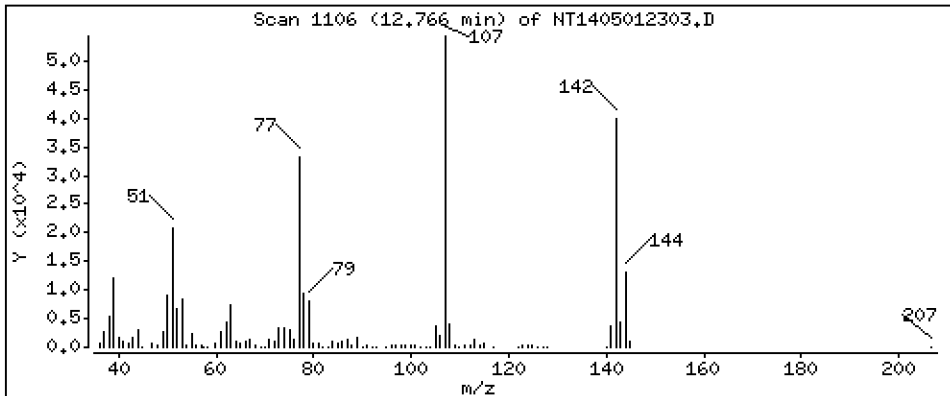
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

31 4-Chloro-3-methylphenol

Concentration: 0.9513 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

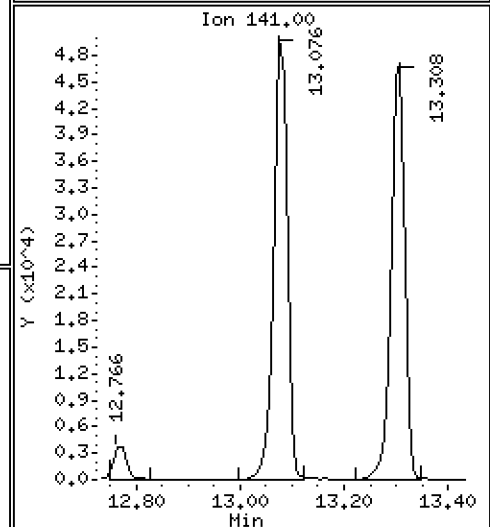
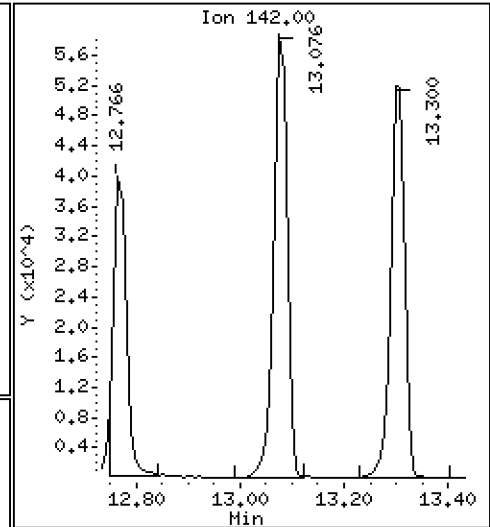
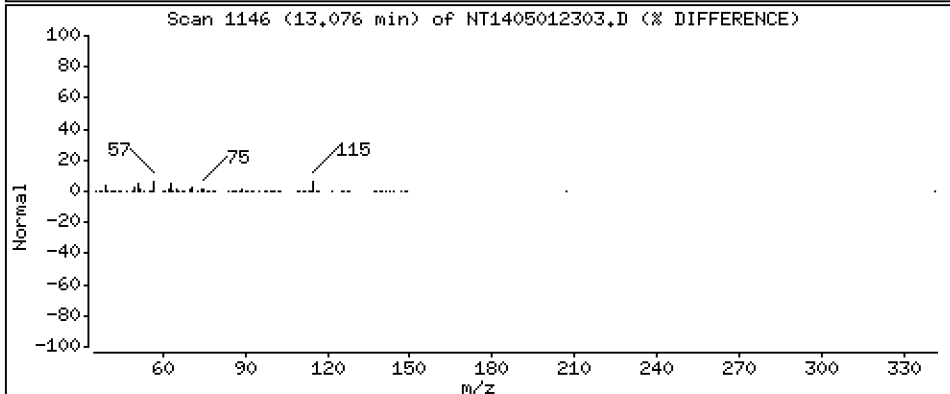
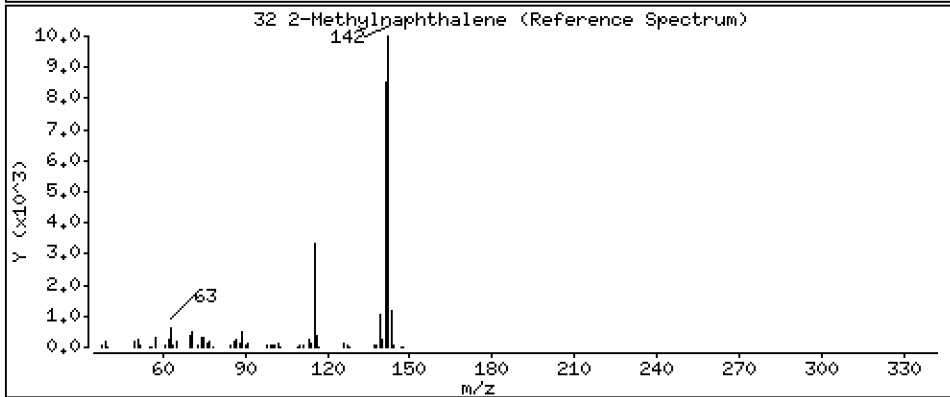
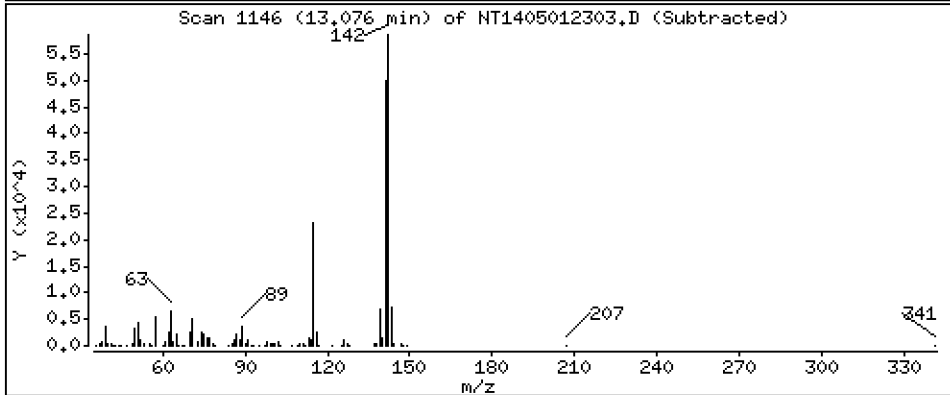
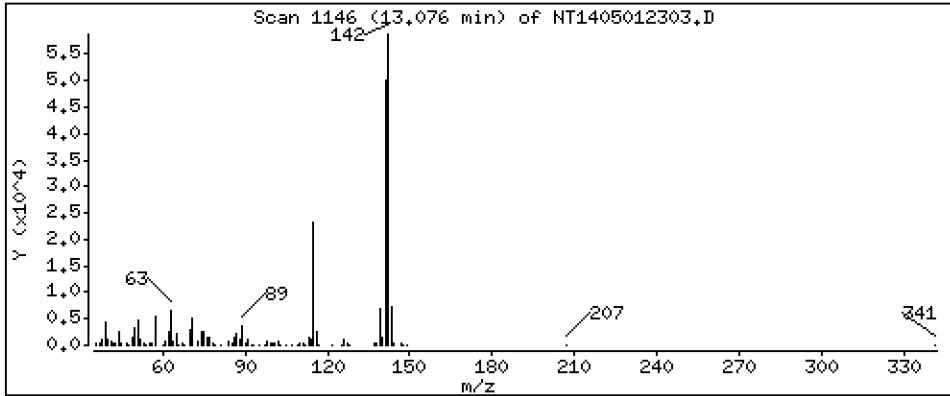
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 0,4618 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

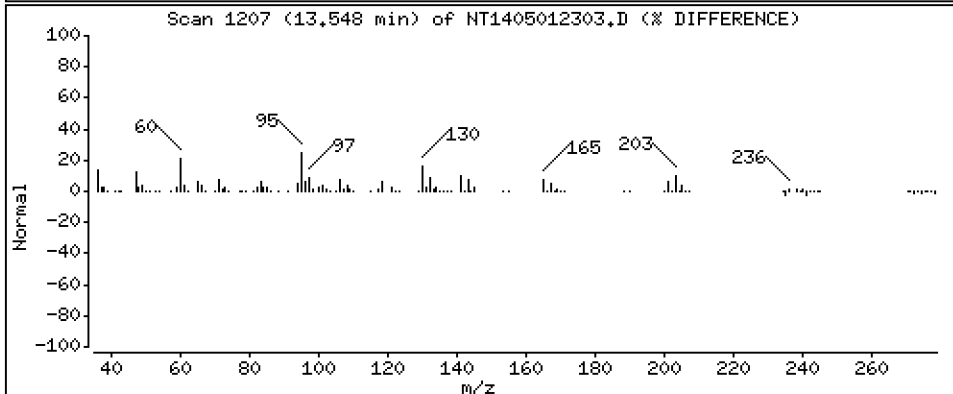
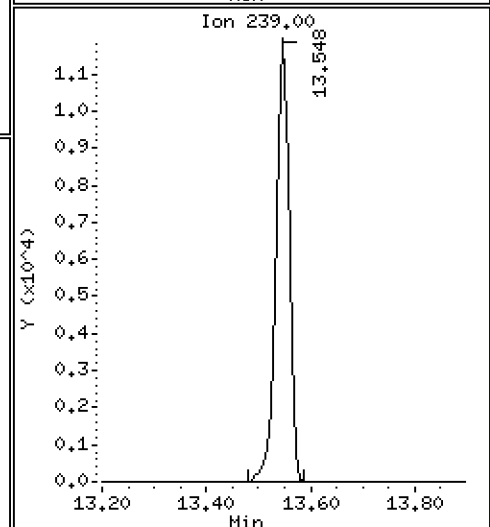
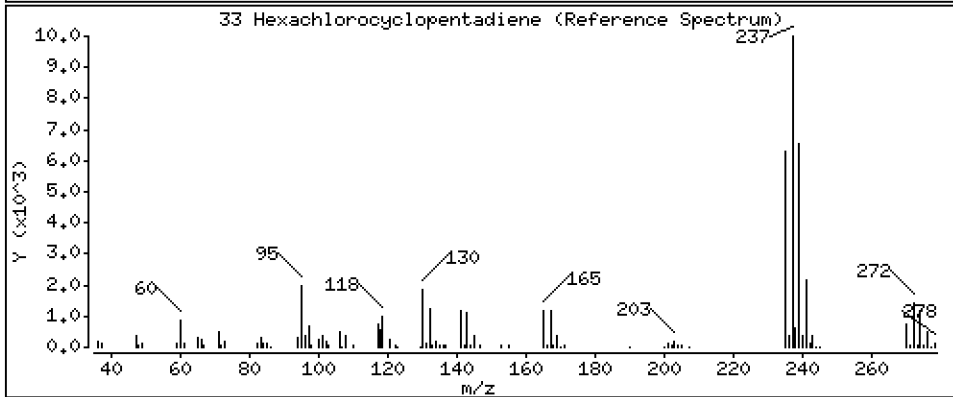
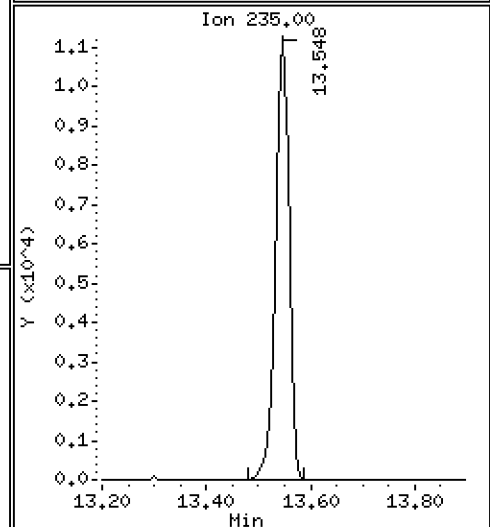
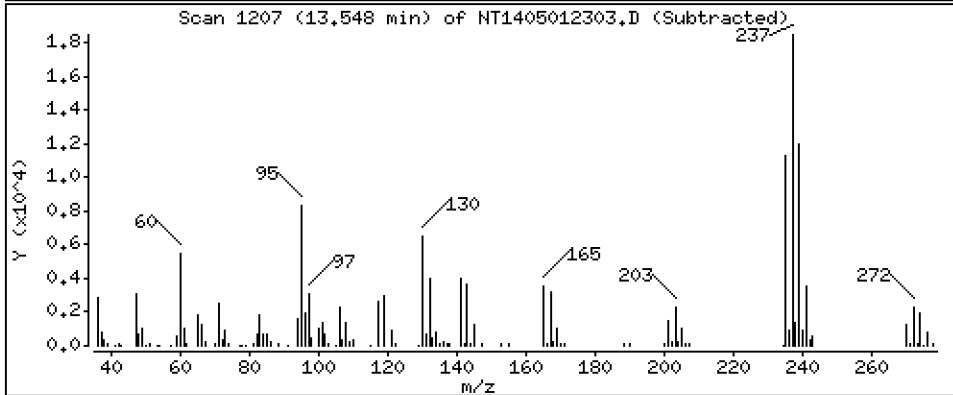
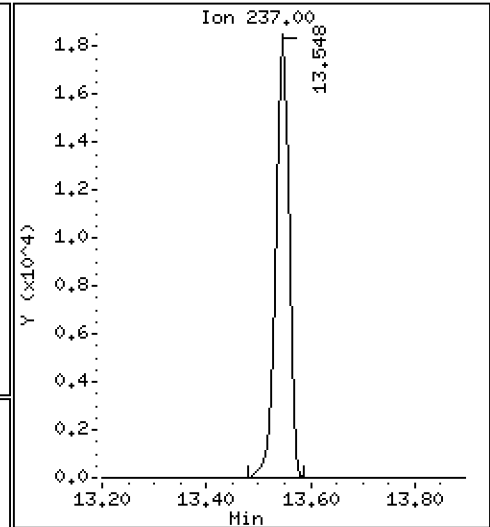
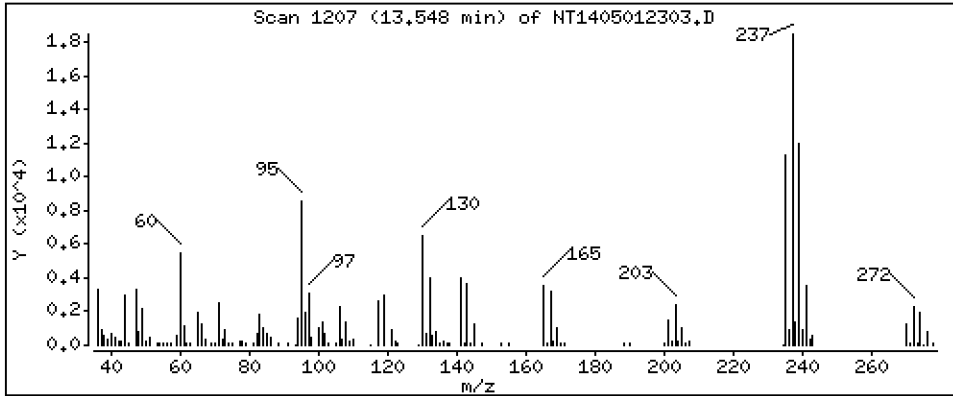
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

33 Hexachlorocyclopentadiene

Concentration: 0.8082 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

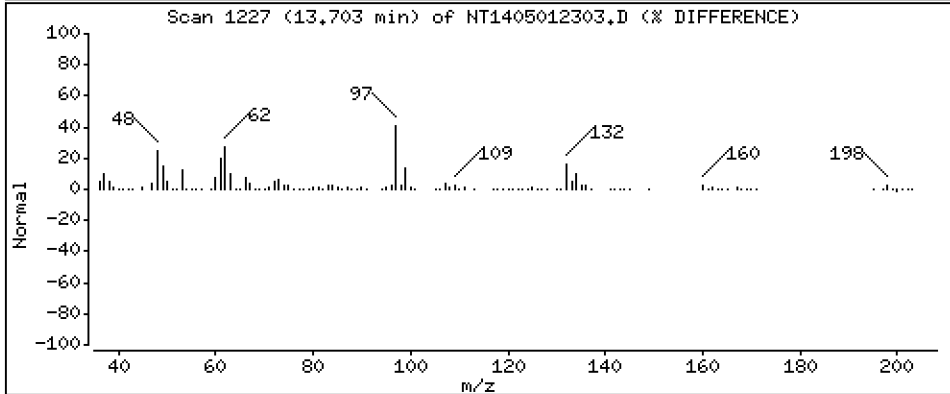
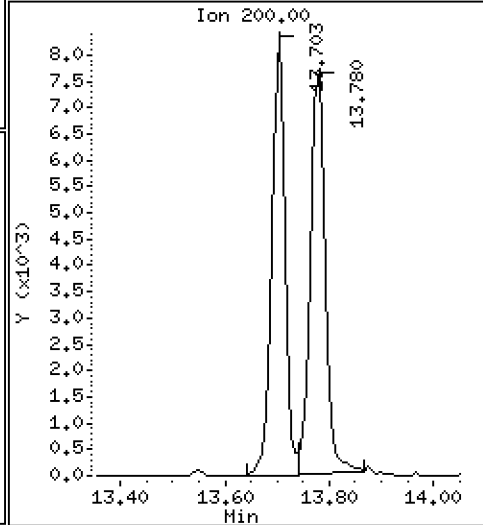
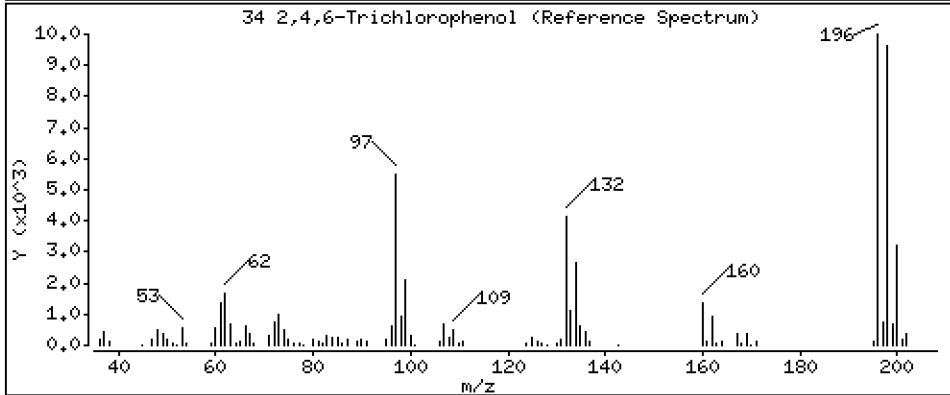
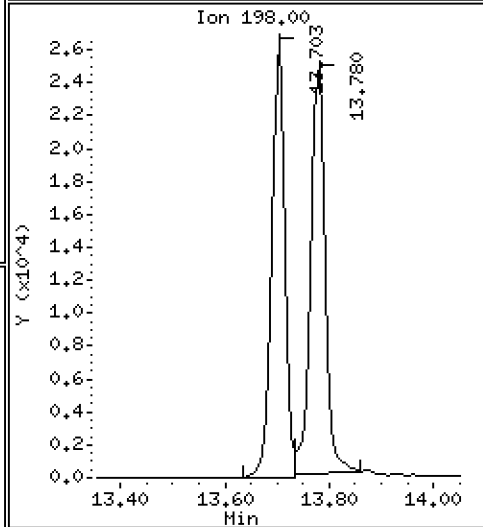
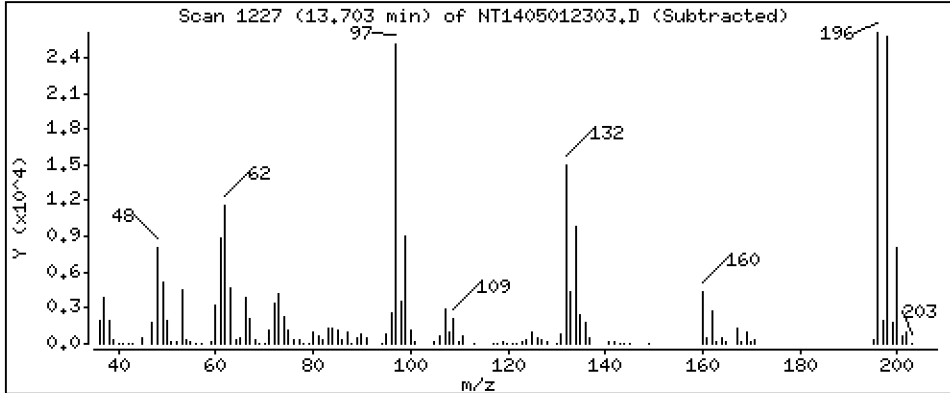
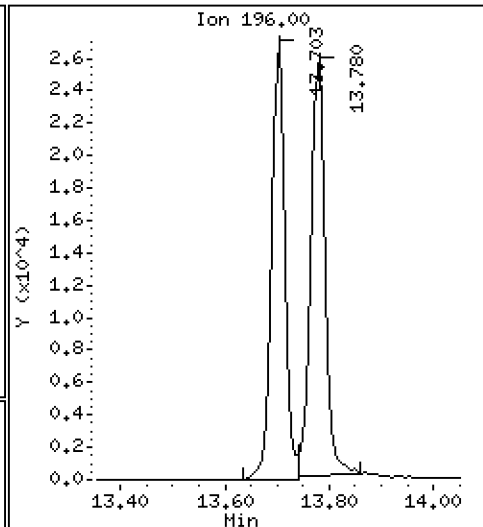
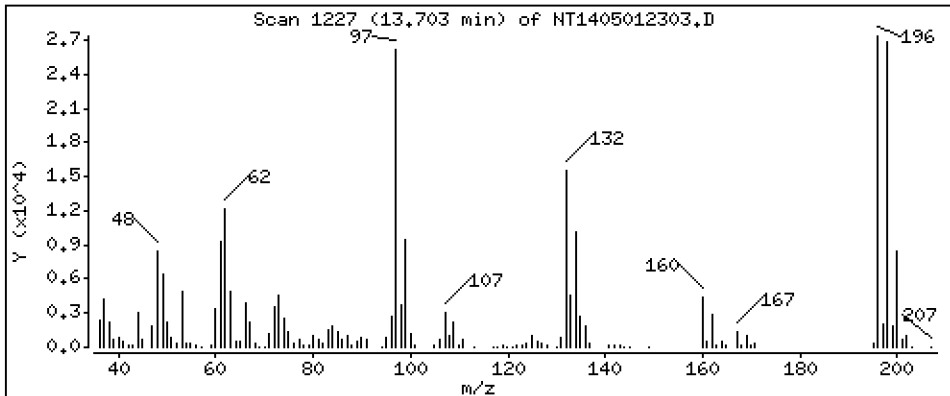
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 0,9607 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

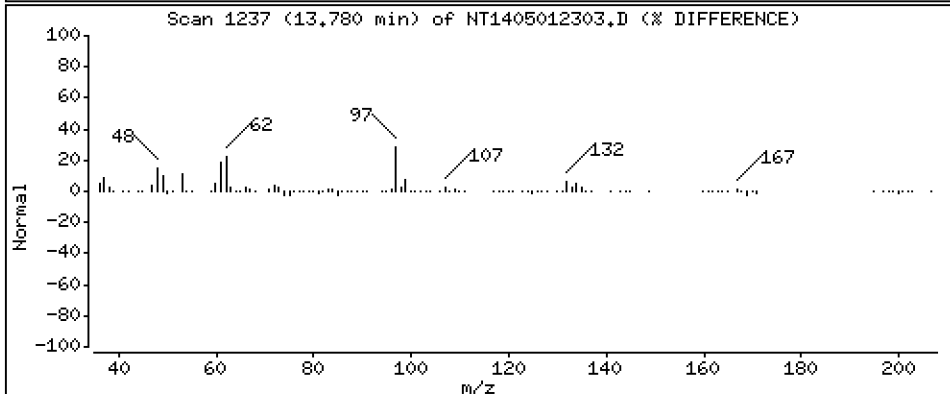
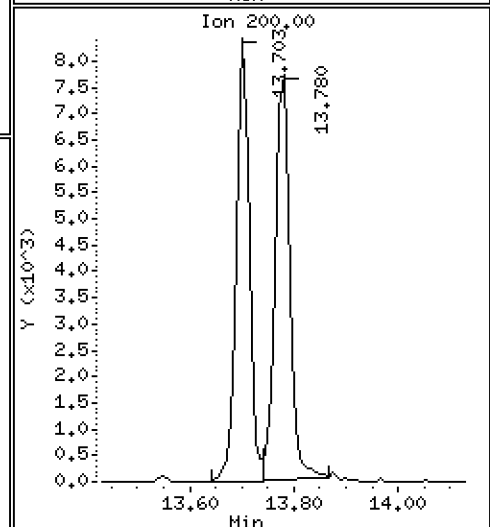
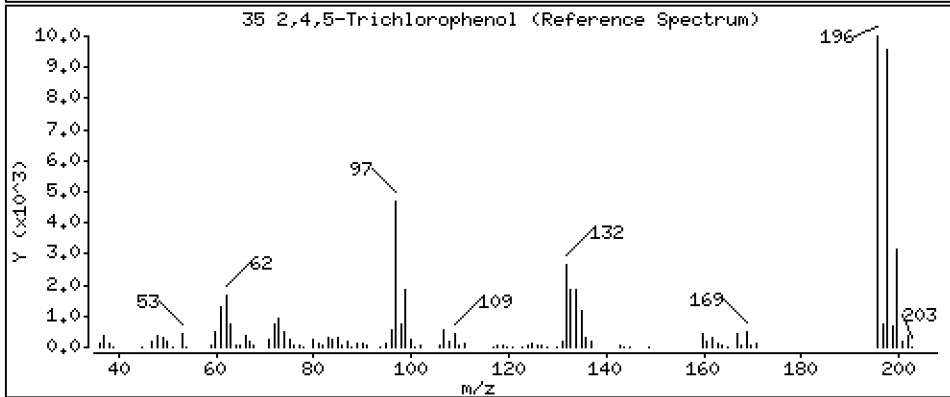
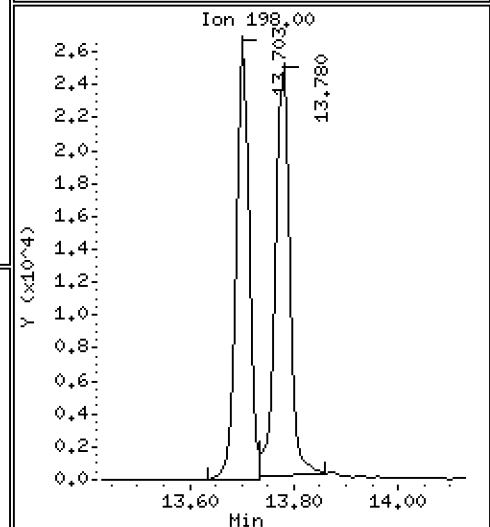
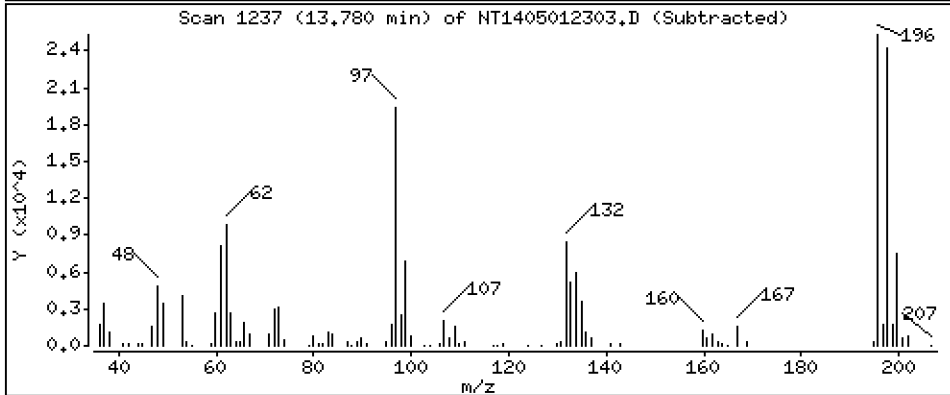
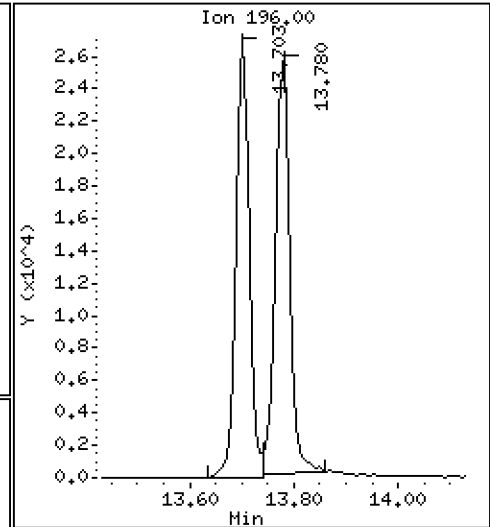
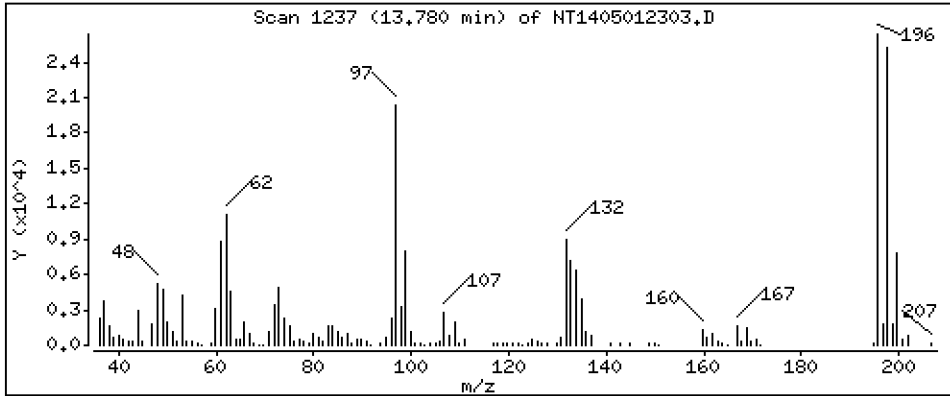
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

35 2,4,5-Trichlorophenol

Concentration: 0.9269 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

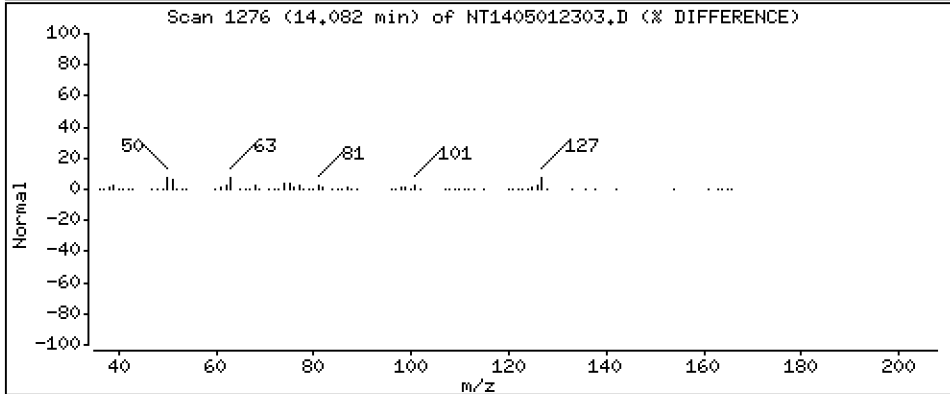
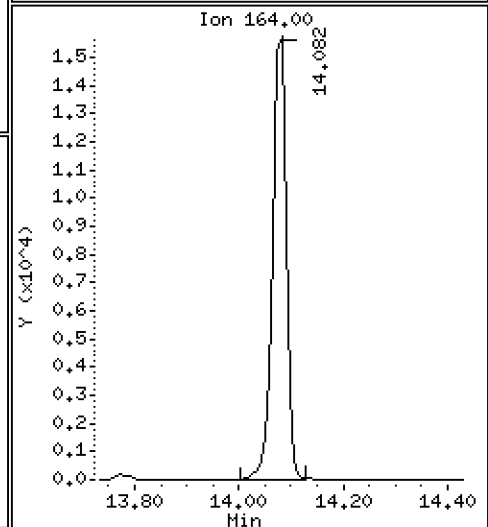
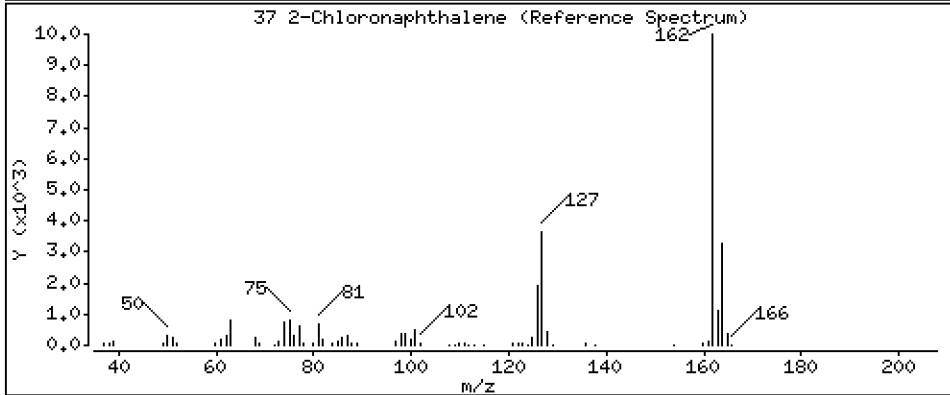
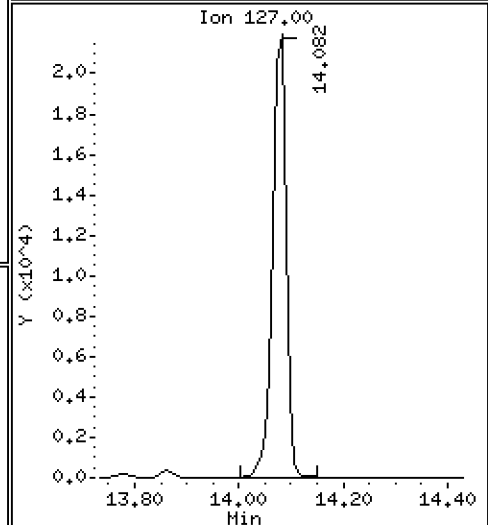
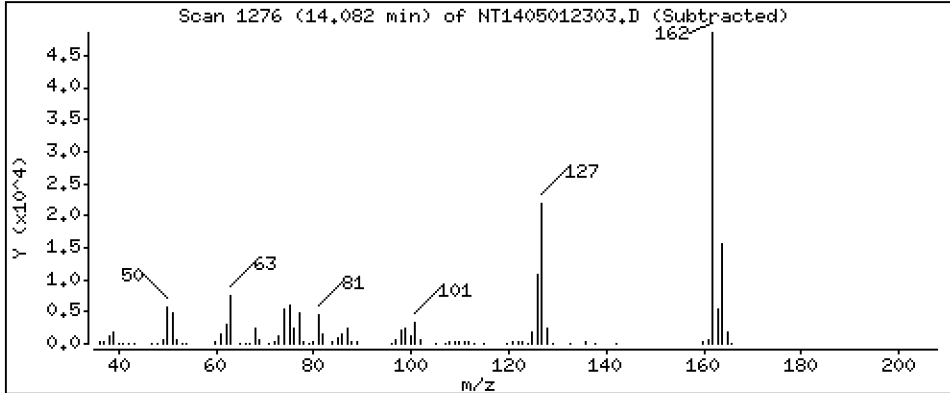
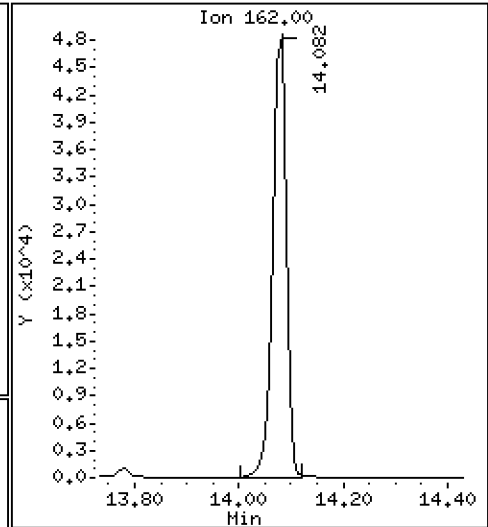
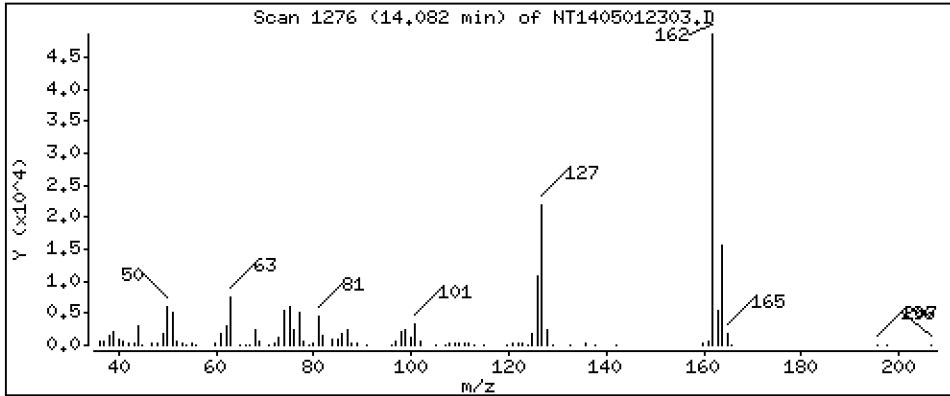
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 0,4844 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

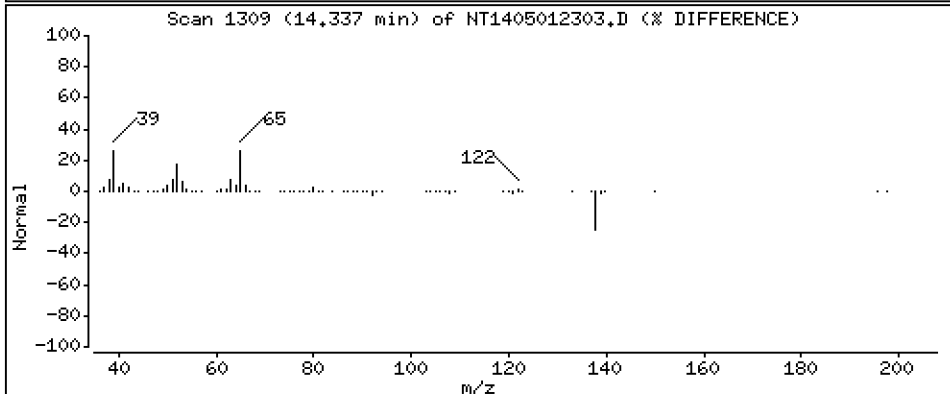
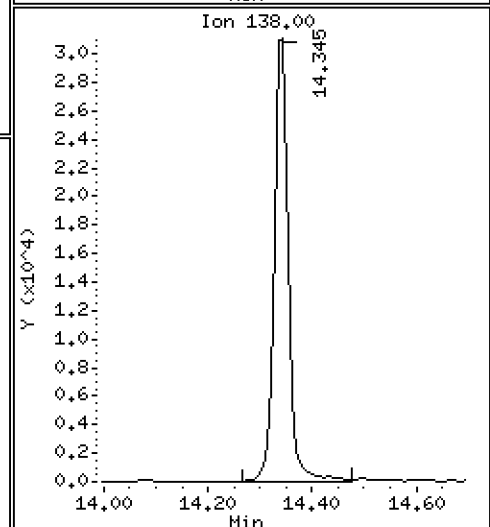
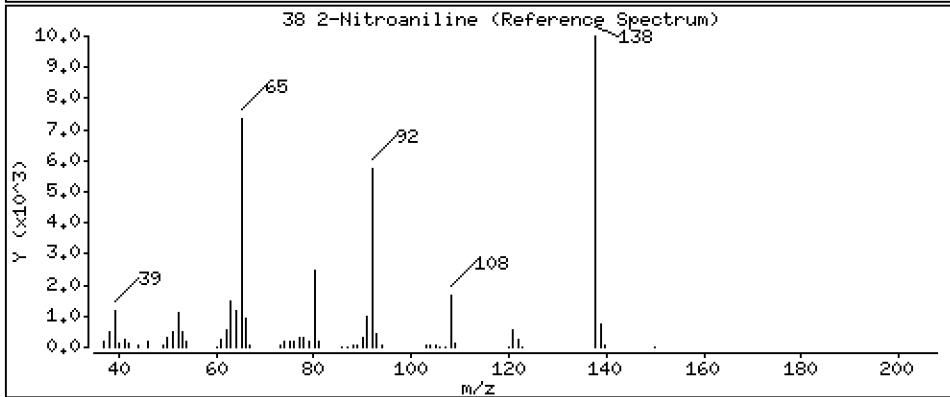
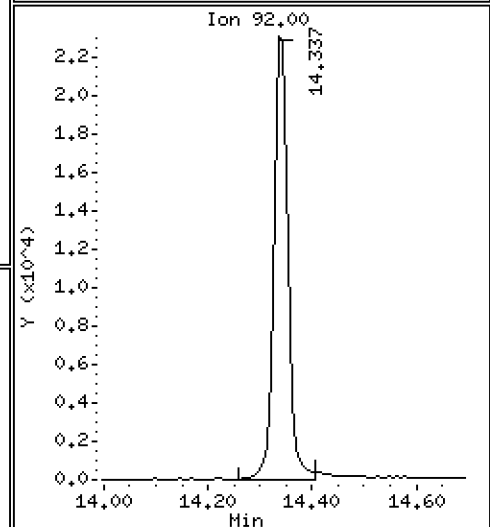
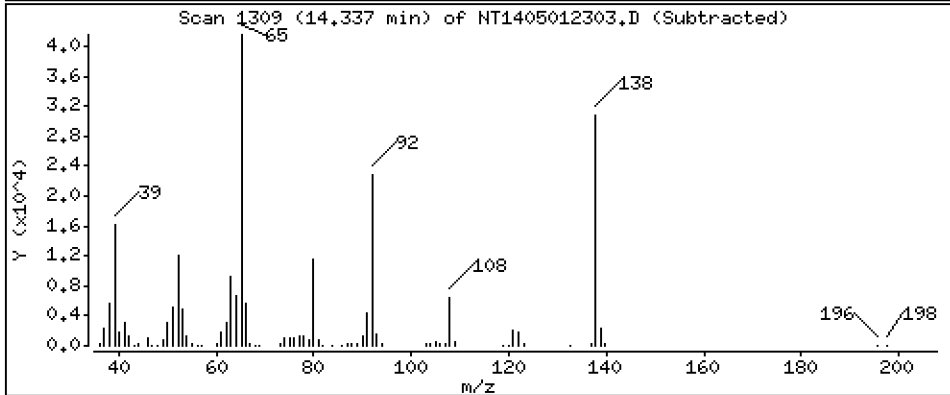
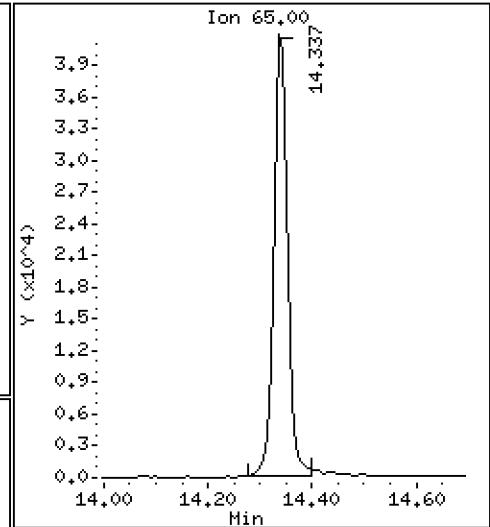
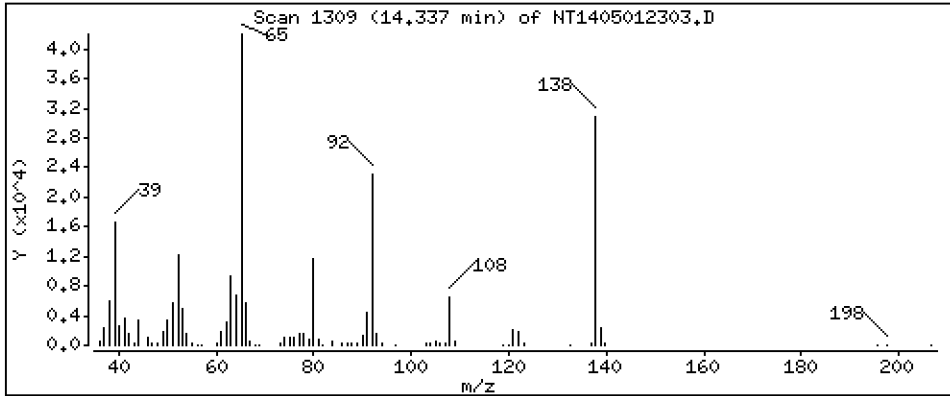
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 0,7968 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

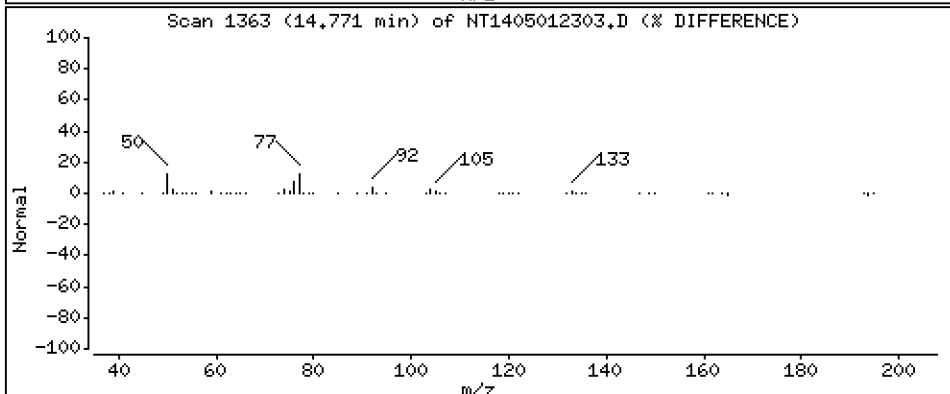
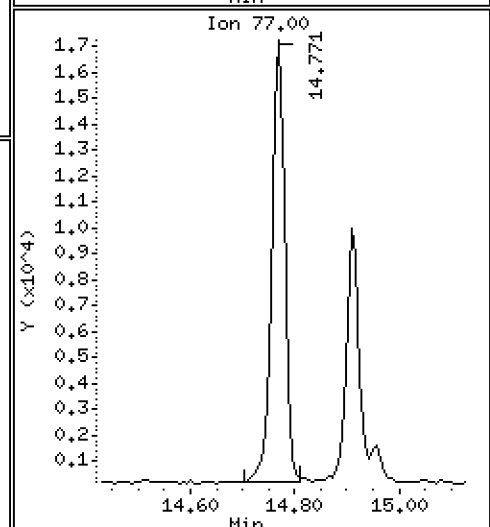
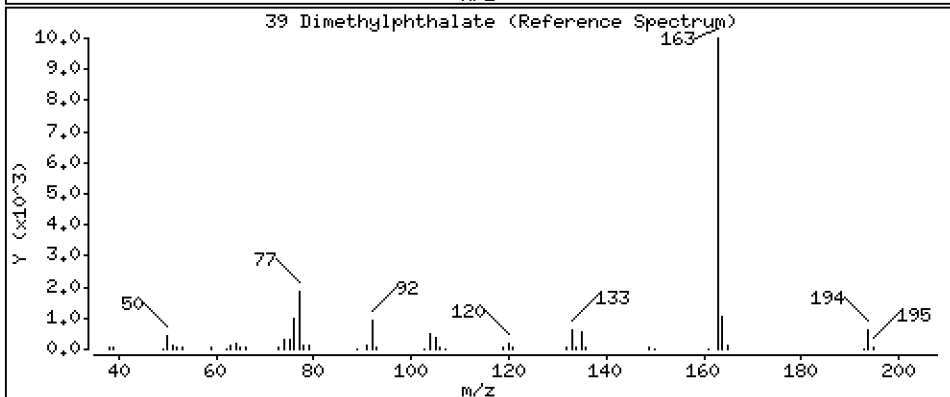
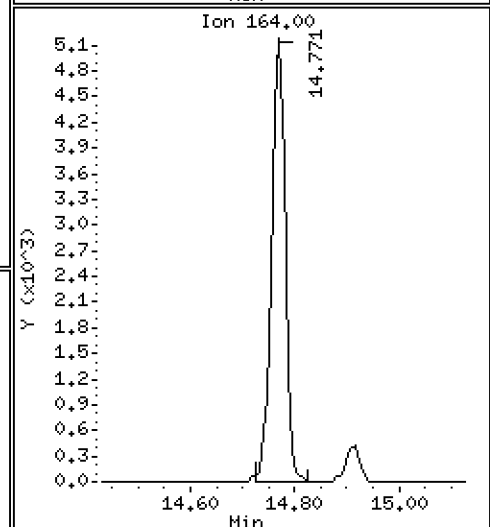
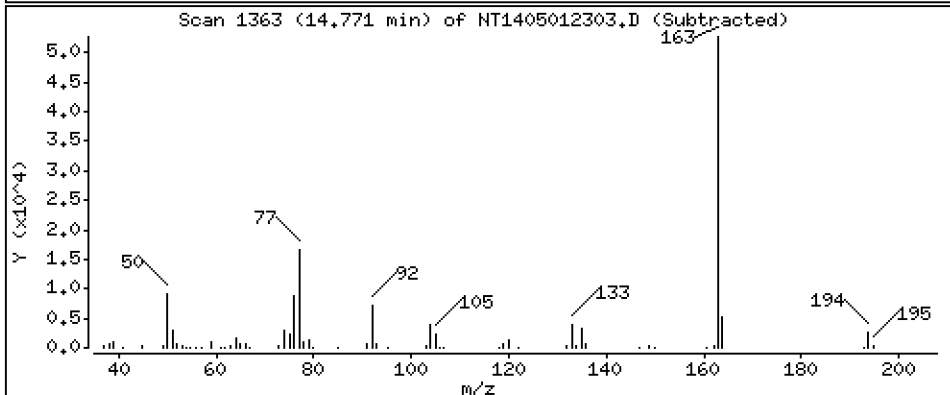
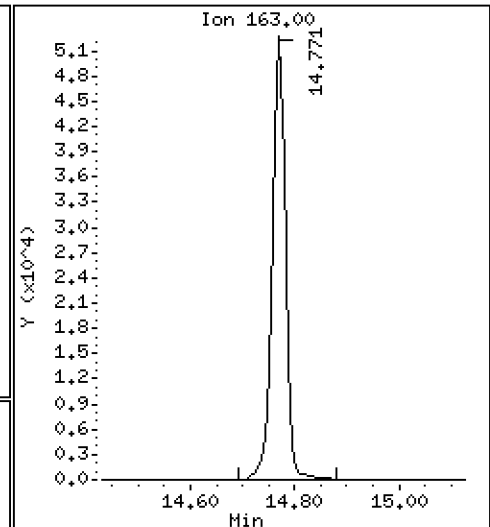
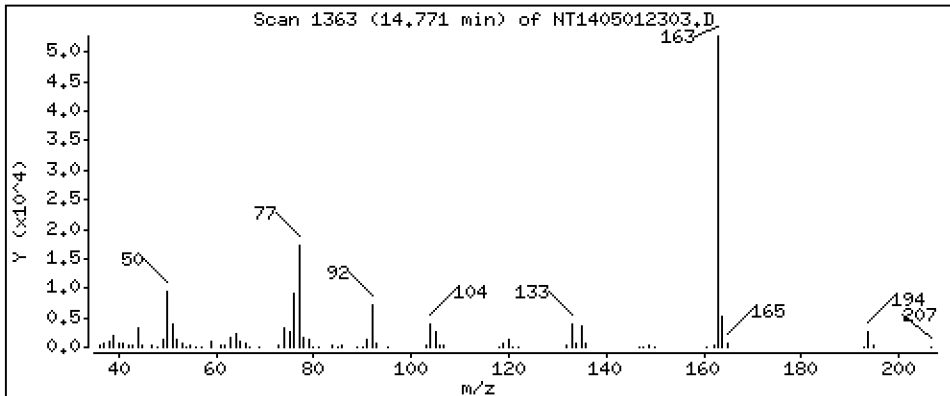
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

39 Dimethylphthalate

Concentration: 0.4945 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

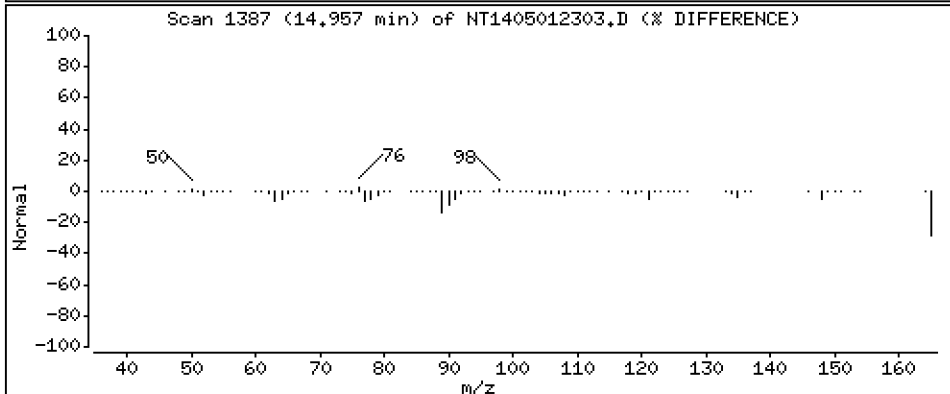
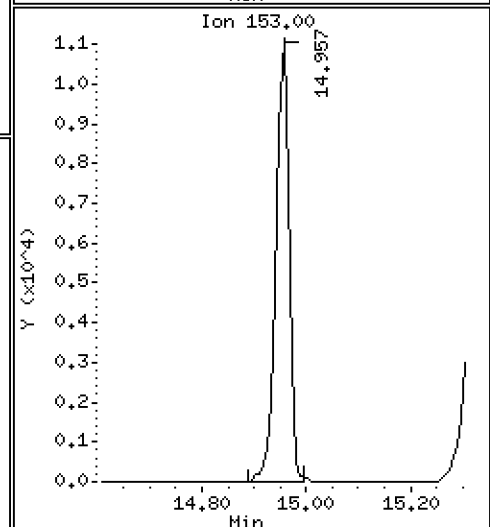
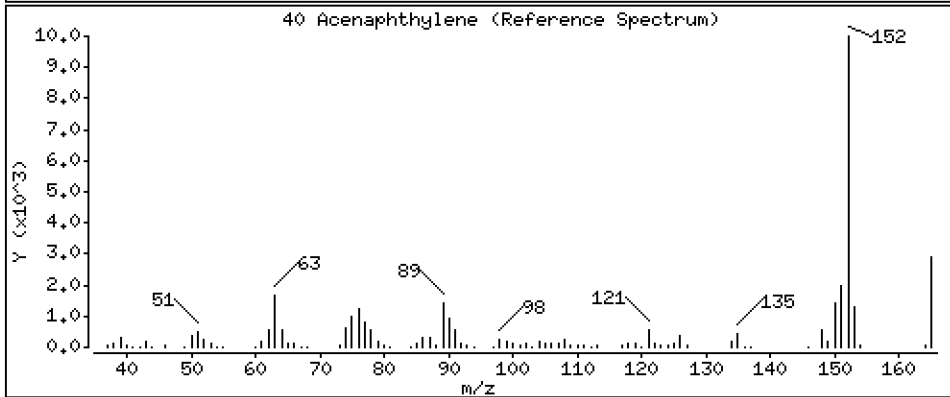
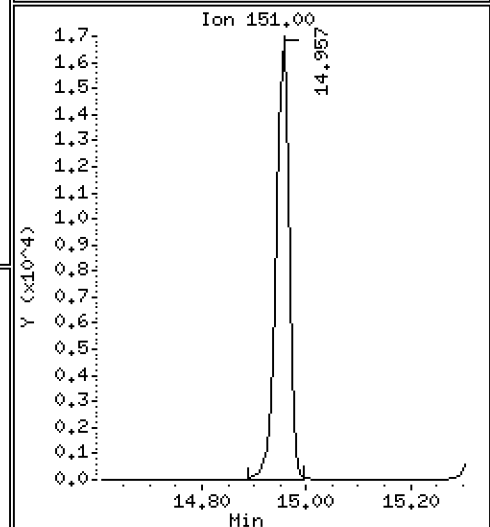
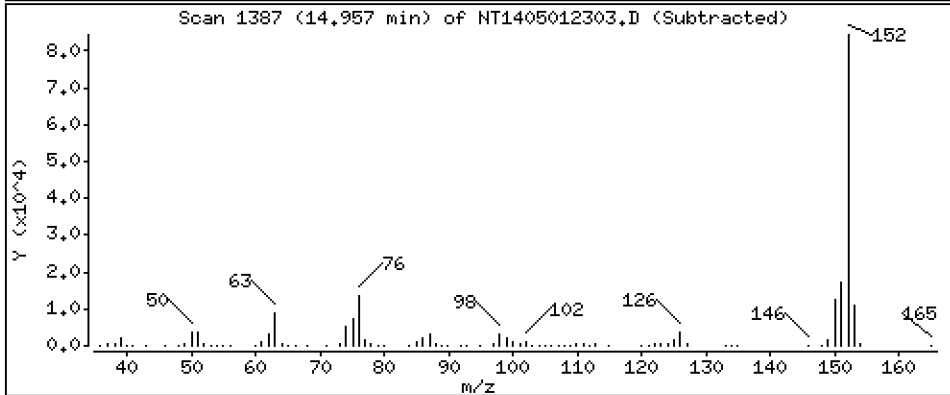
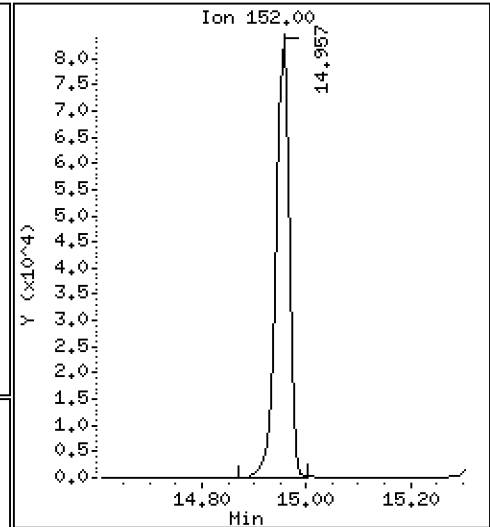
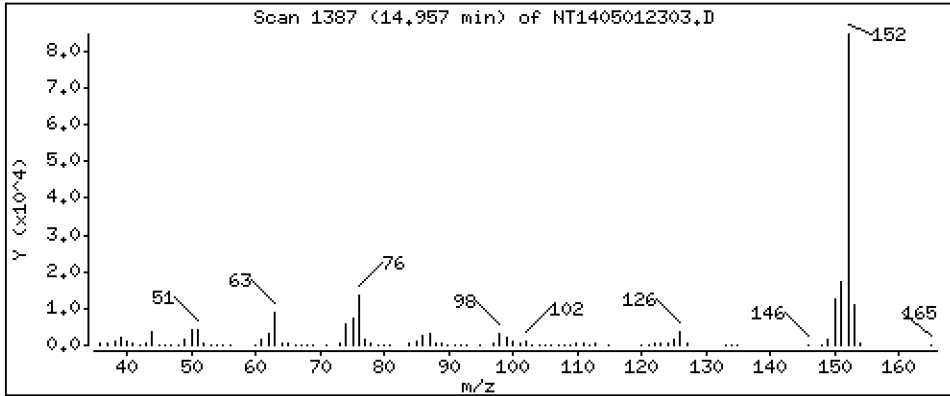
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

40 Acenaphthylene

Concentration: 0.5121 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

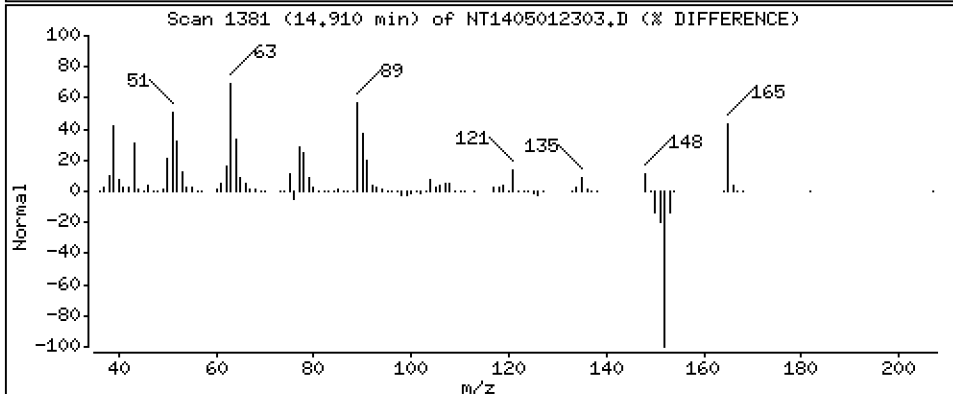
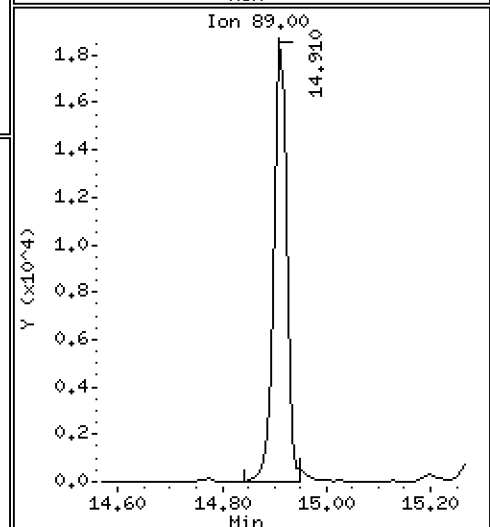
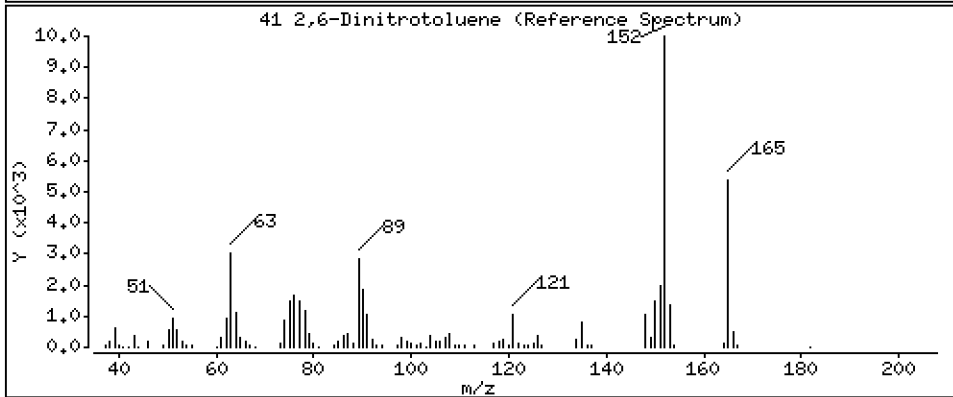
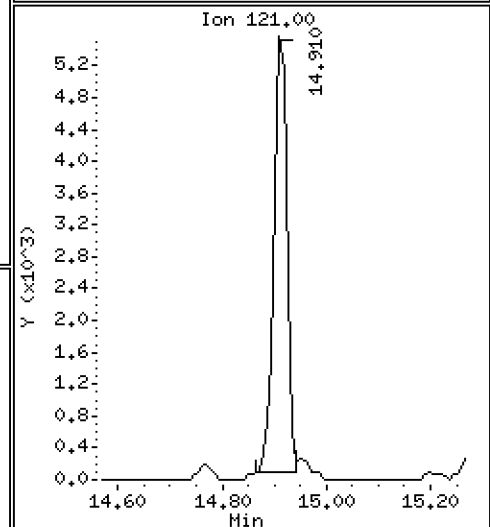
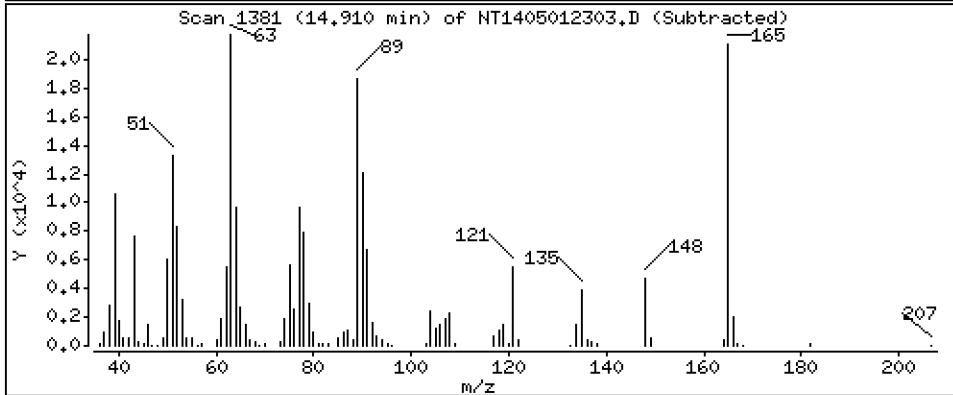
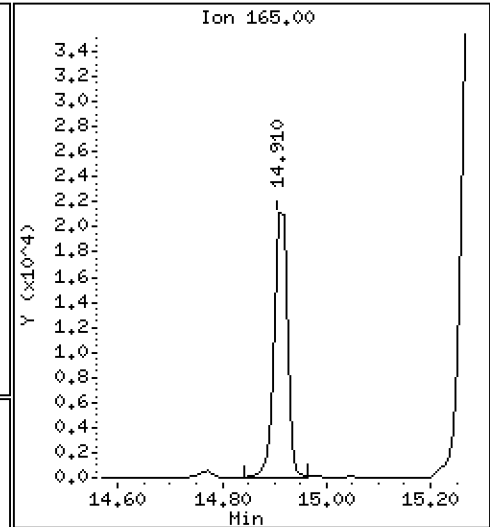
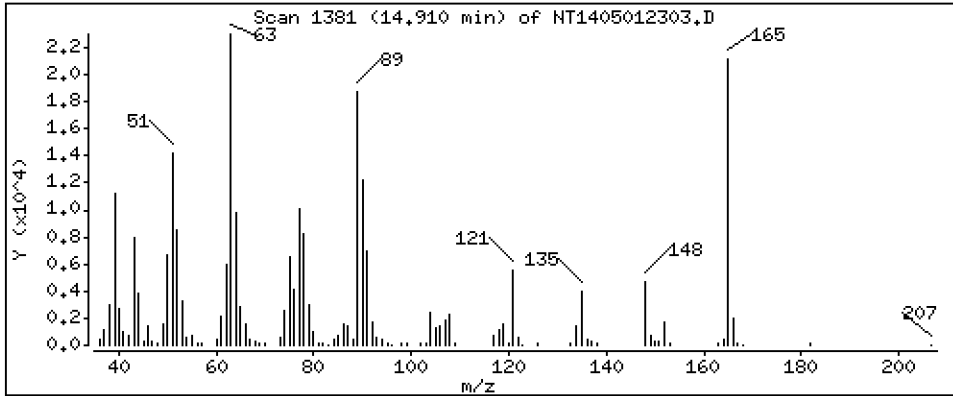
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

41 2,6-Dinitrotoluene

Concentration: 0.8913 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

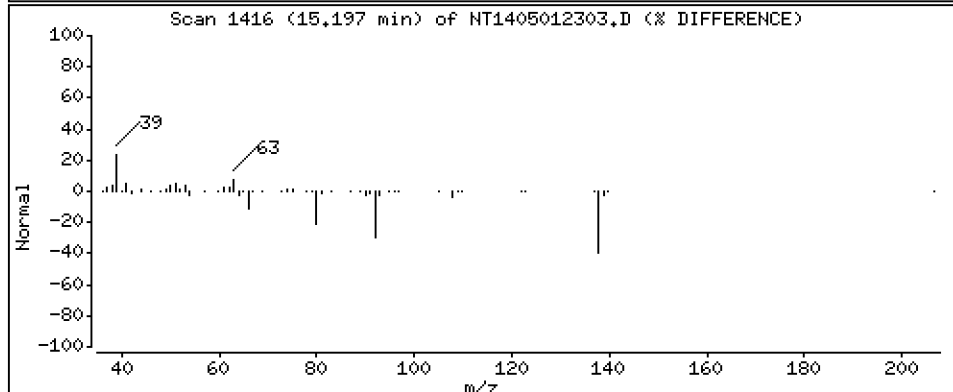
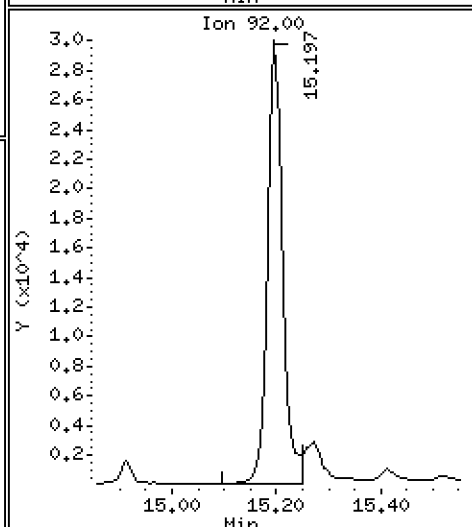
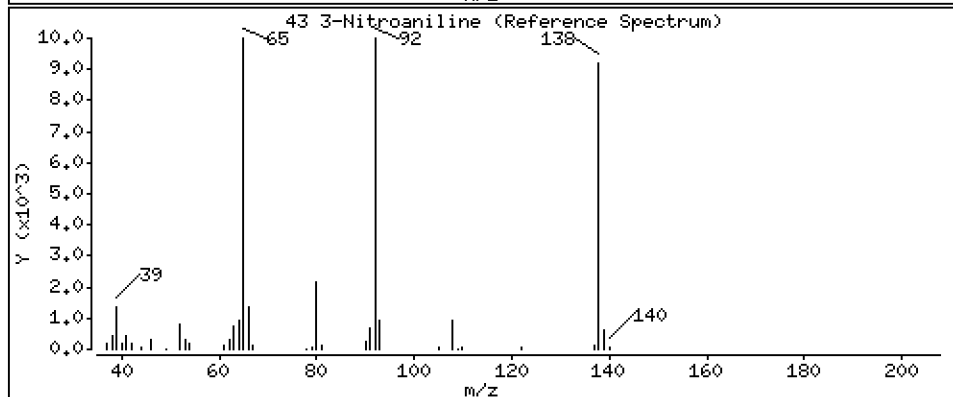
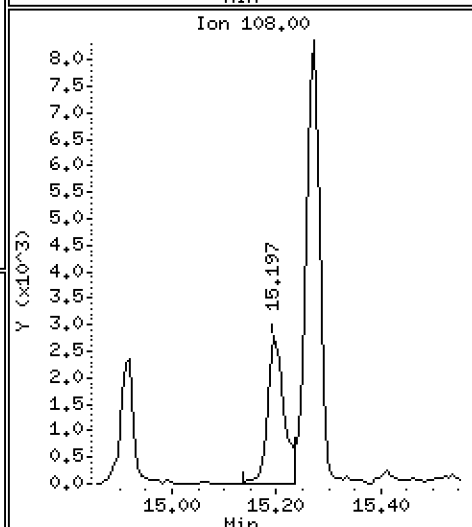
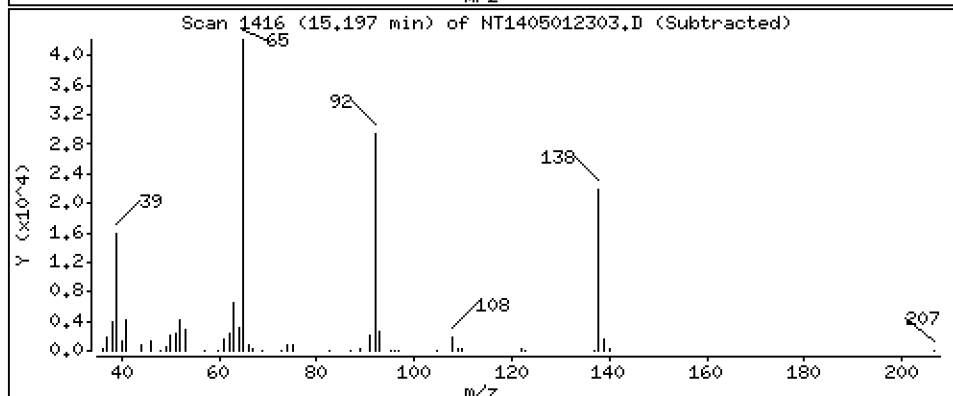
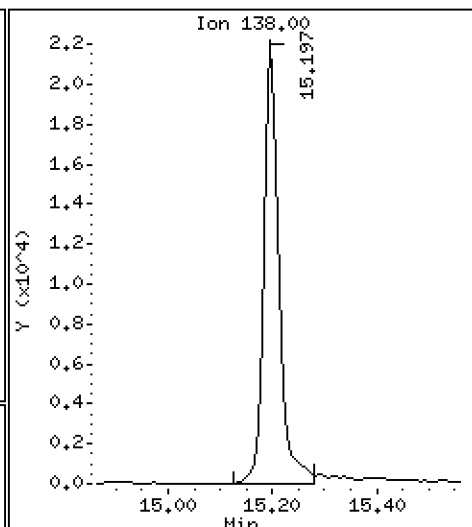
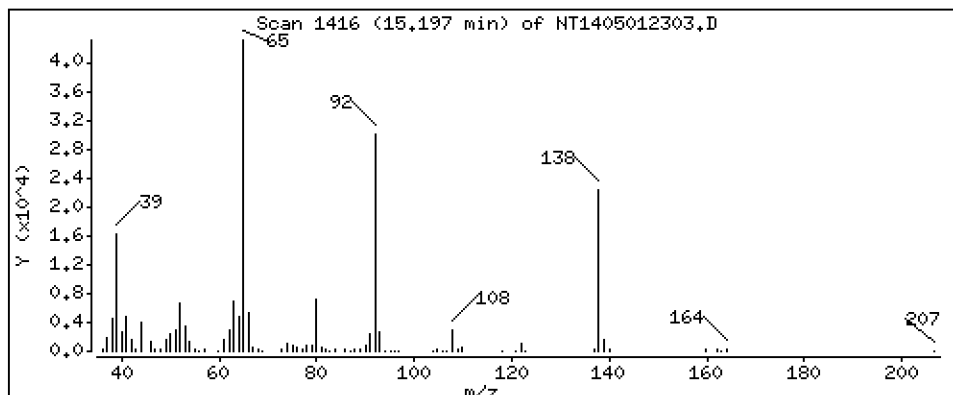
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 0,8540 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

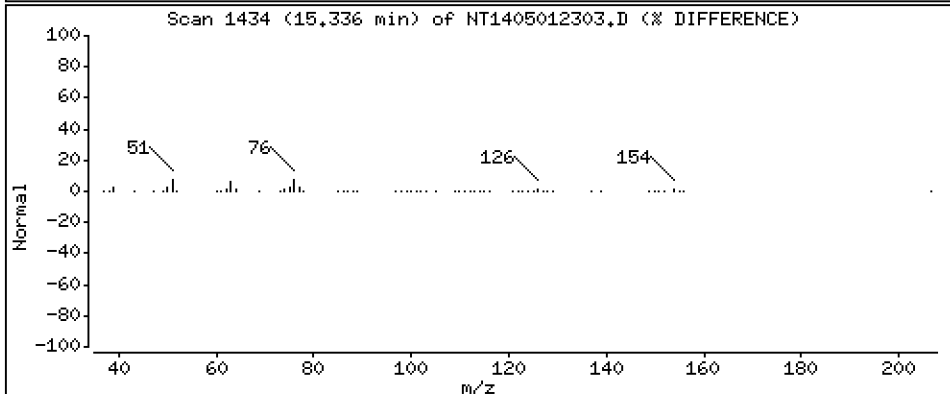
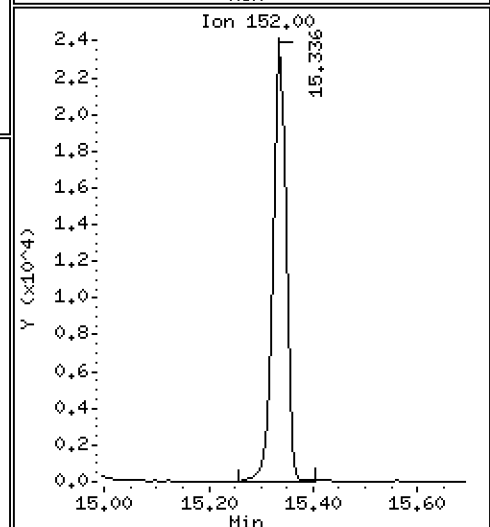
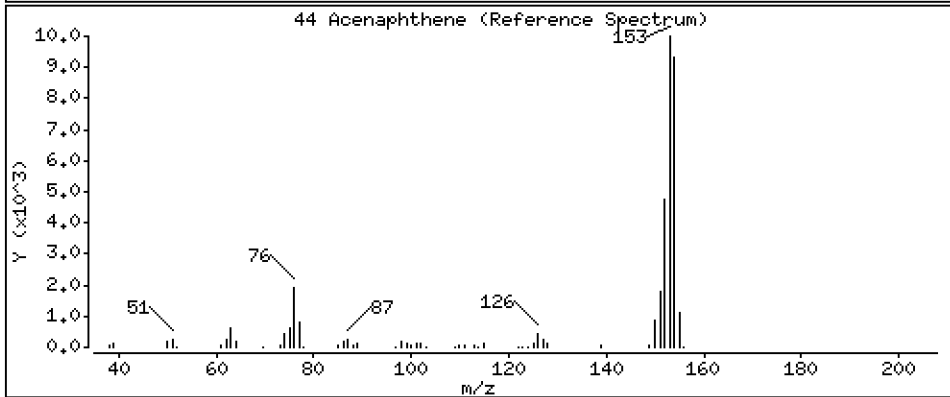
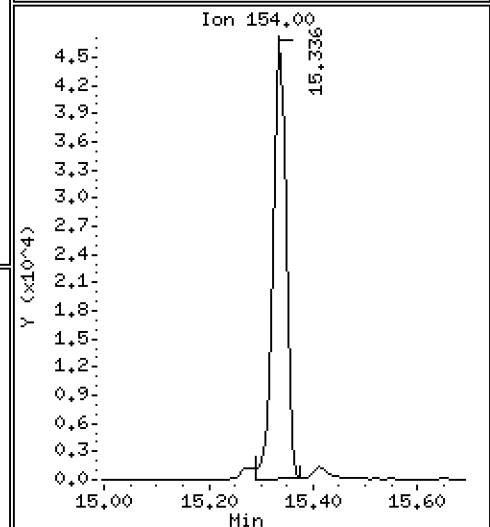
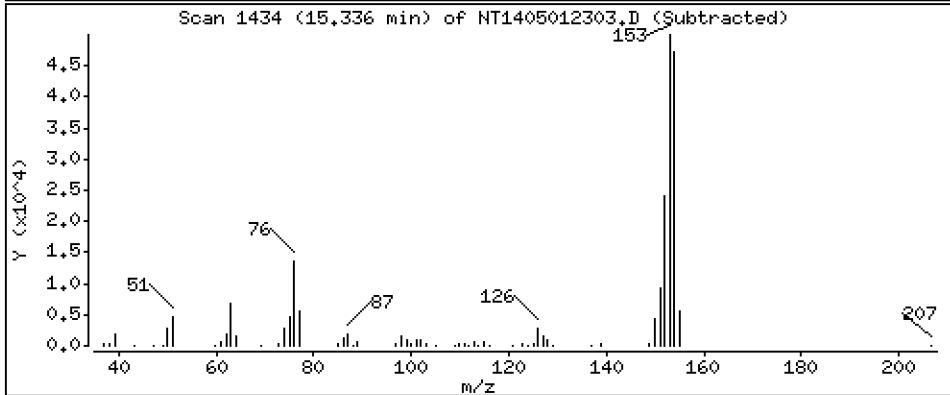
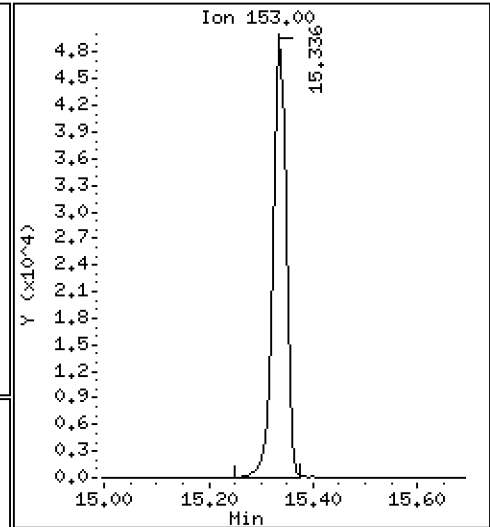
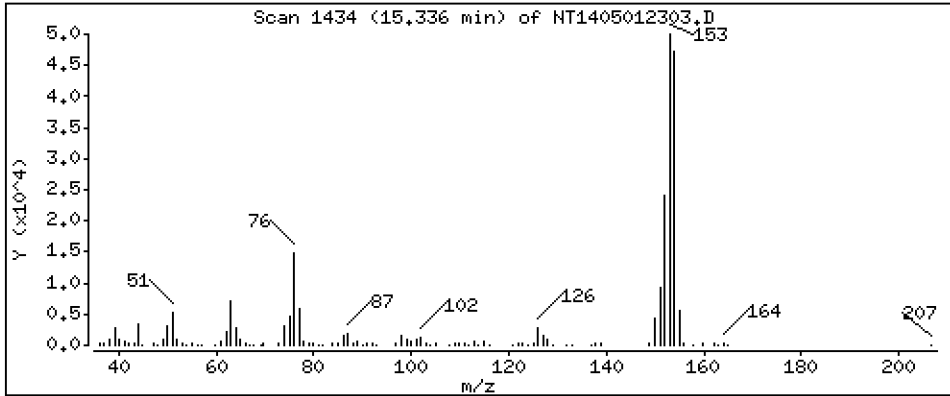
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 0,5017 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

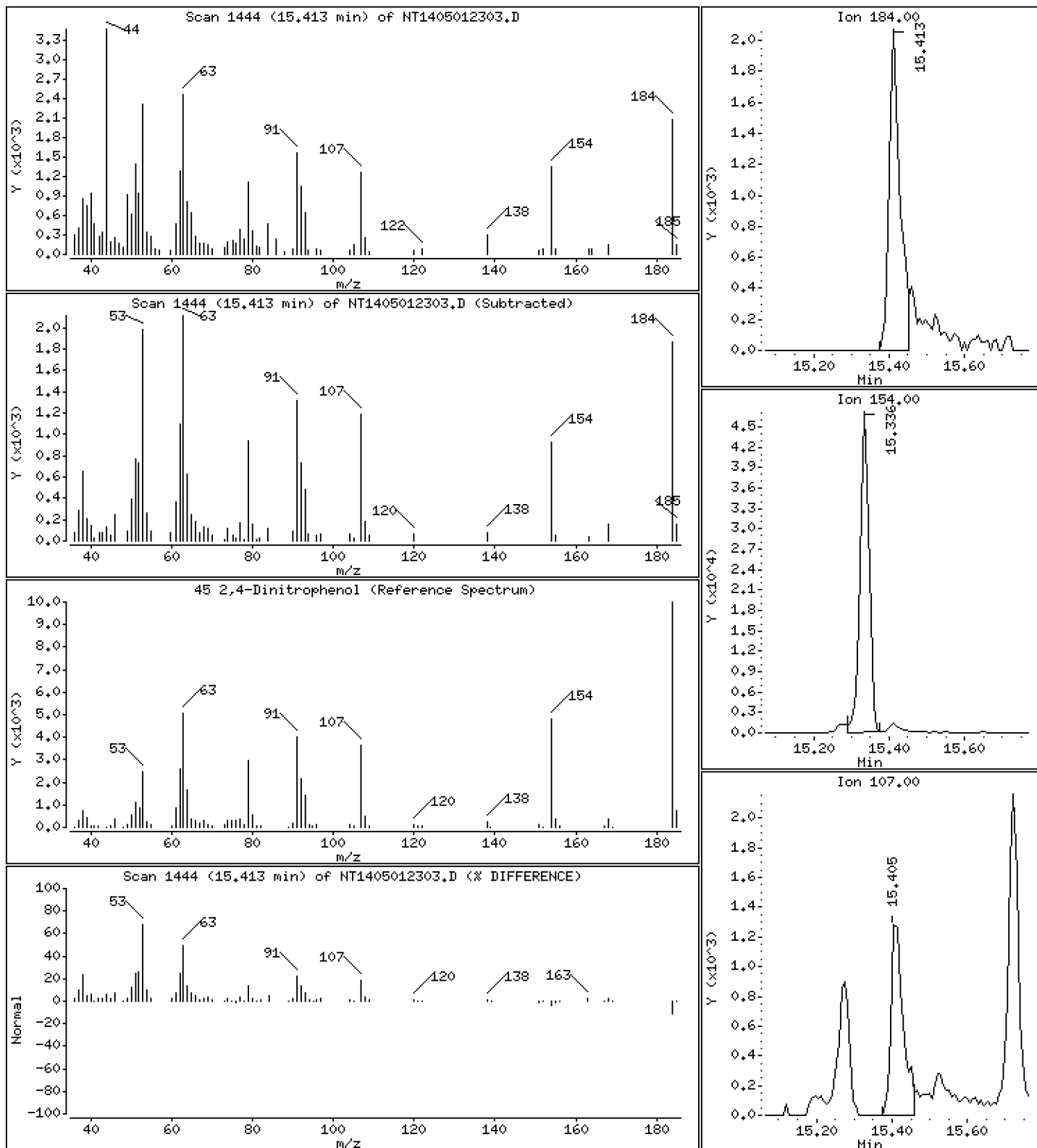
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 0,1663 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

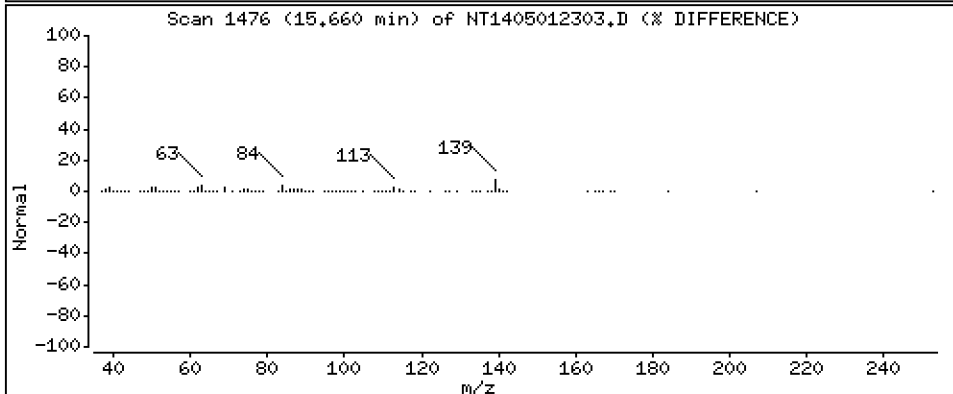
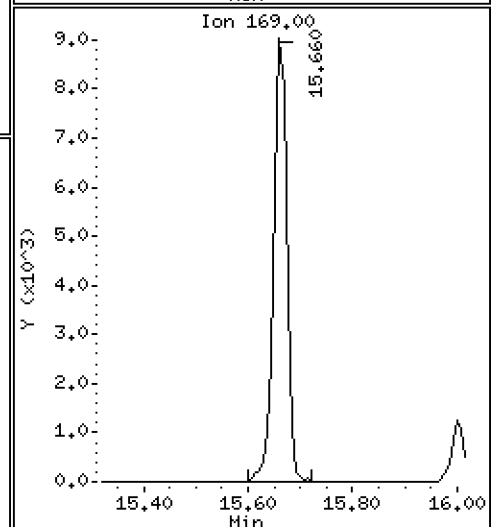
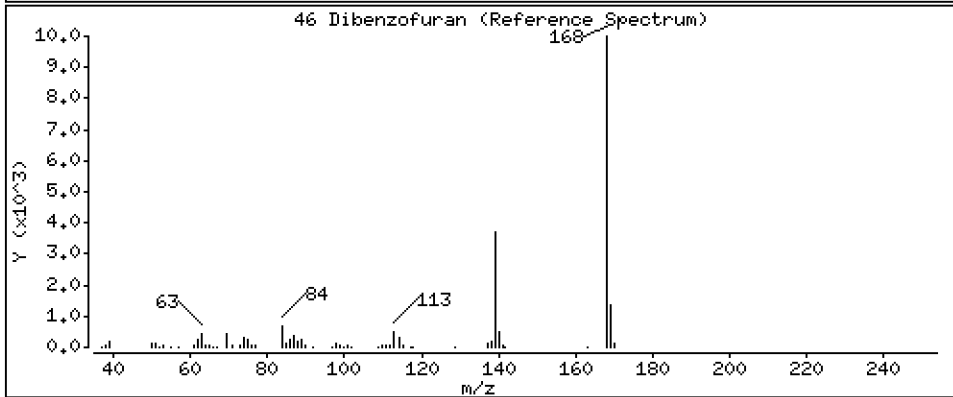
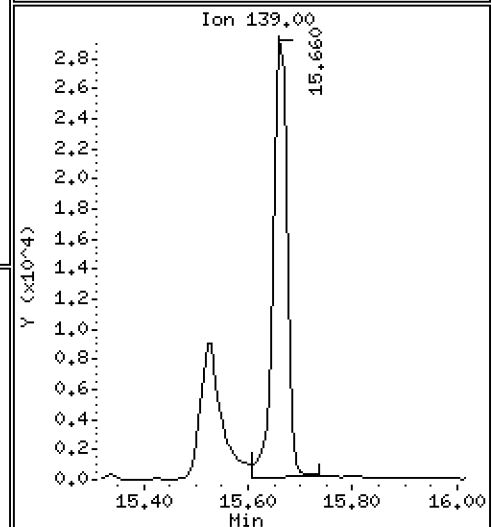
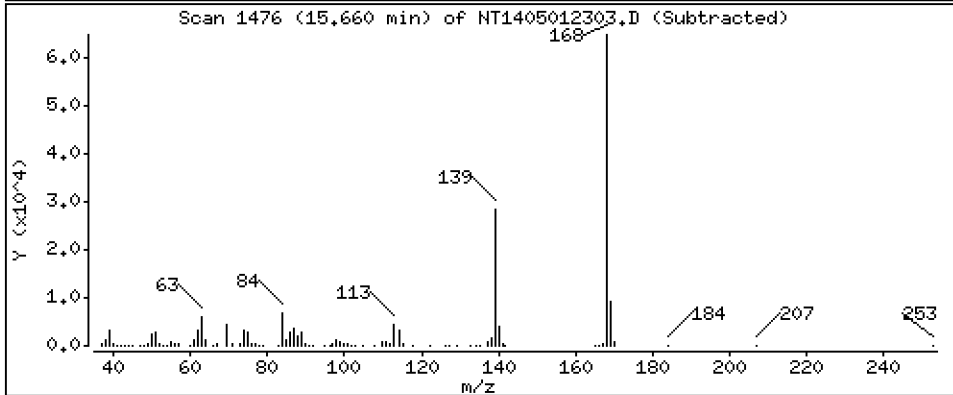
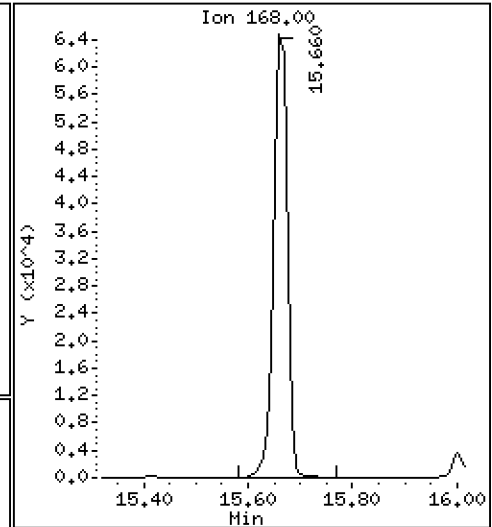
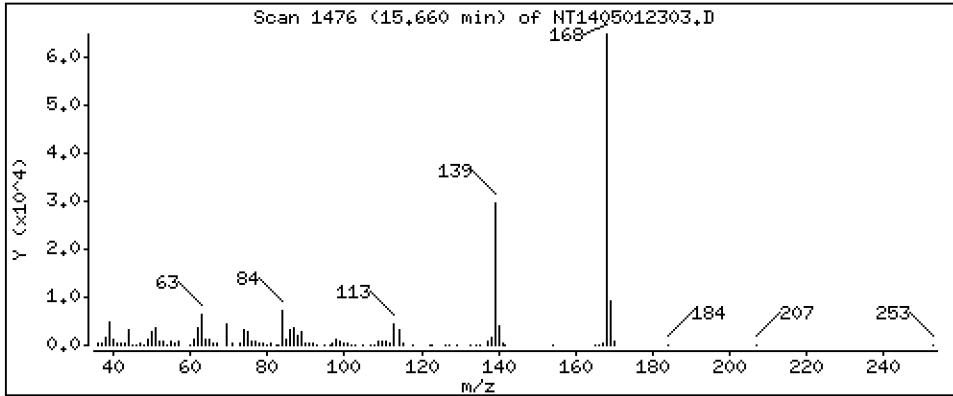
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 0,4850 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

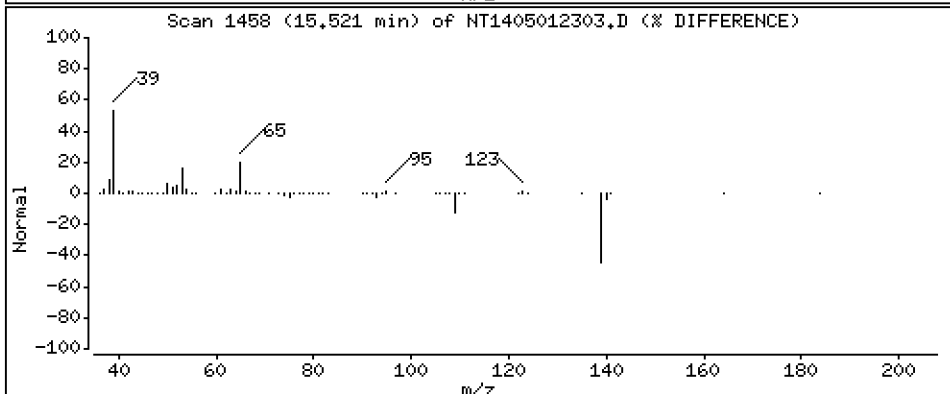
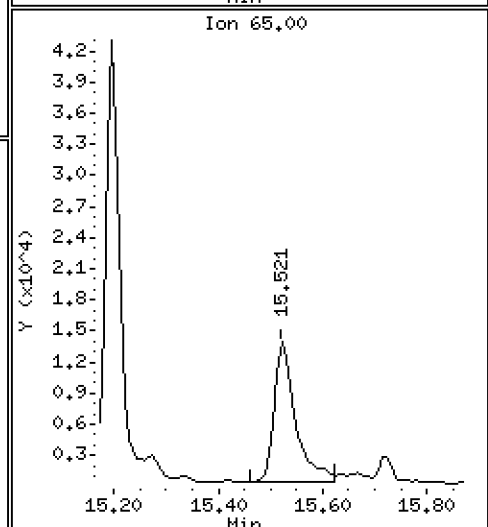
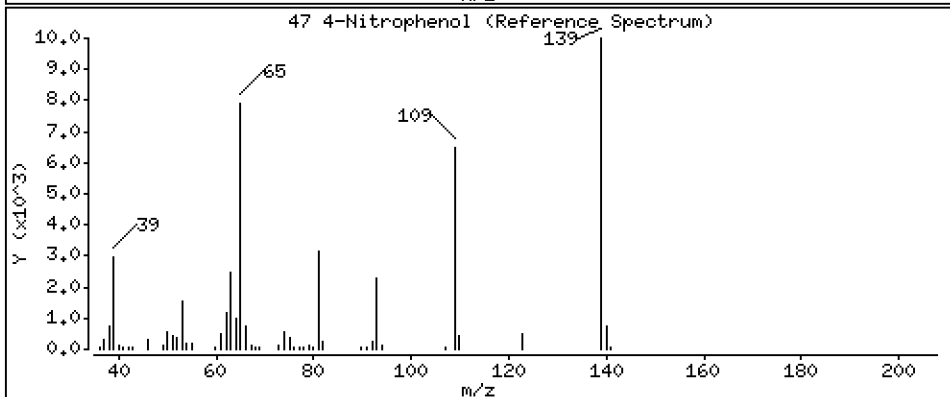
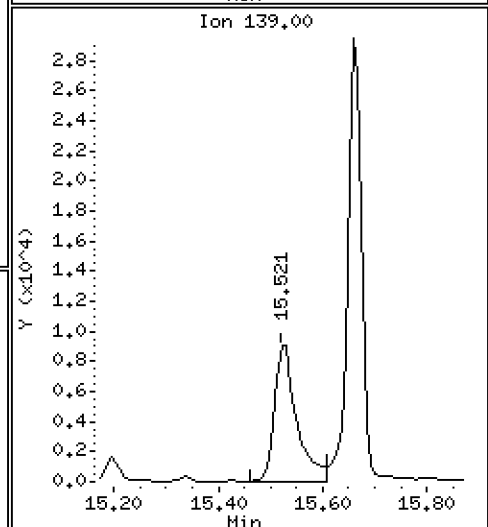
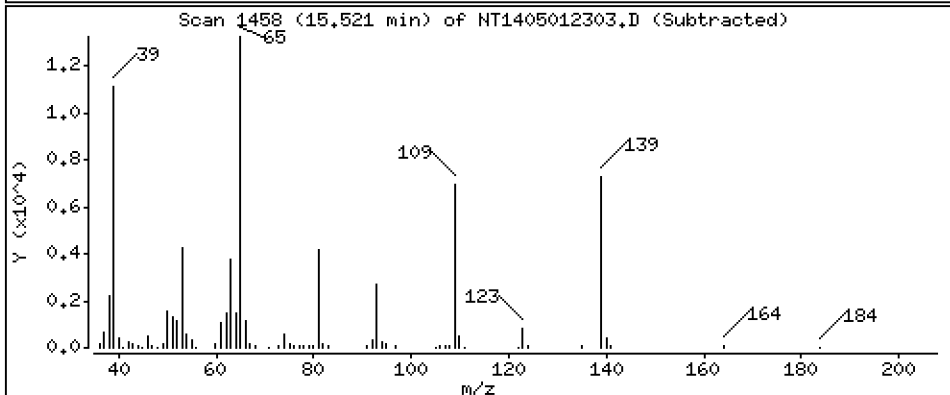
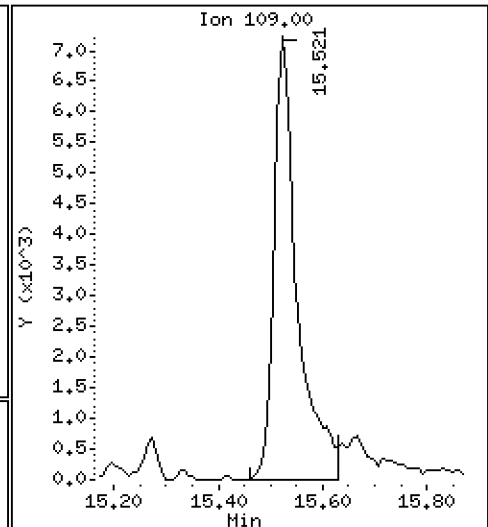
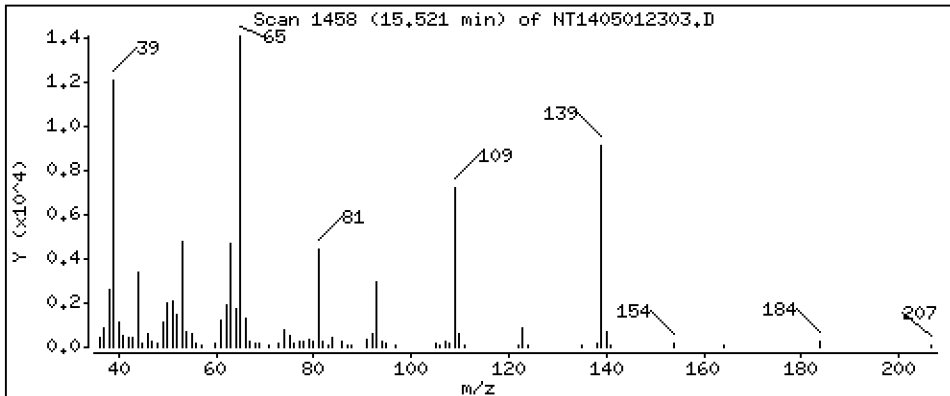
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 0,7460 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

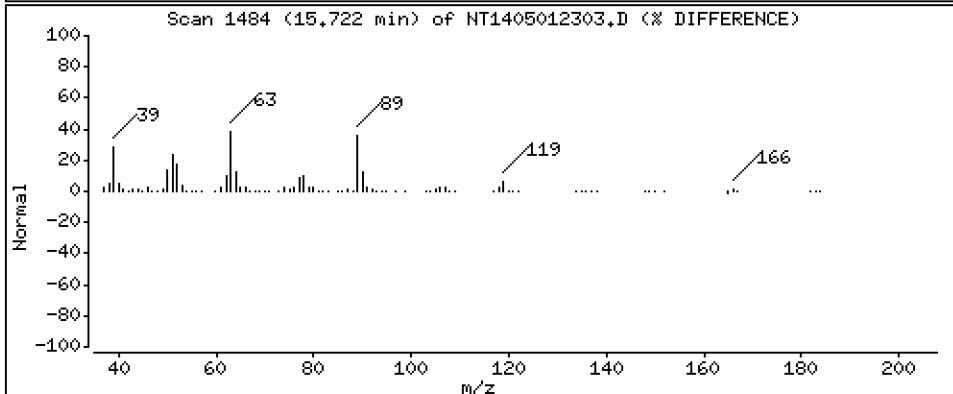
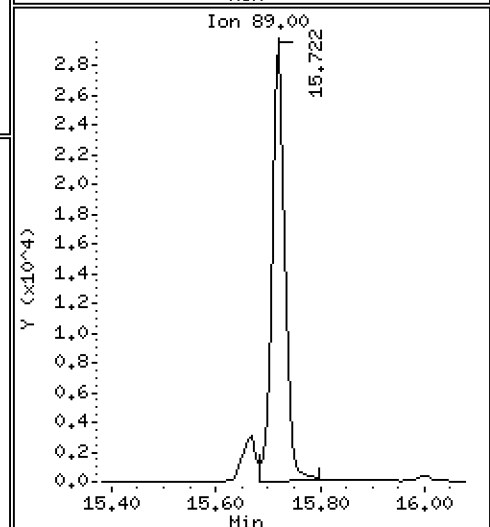
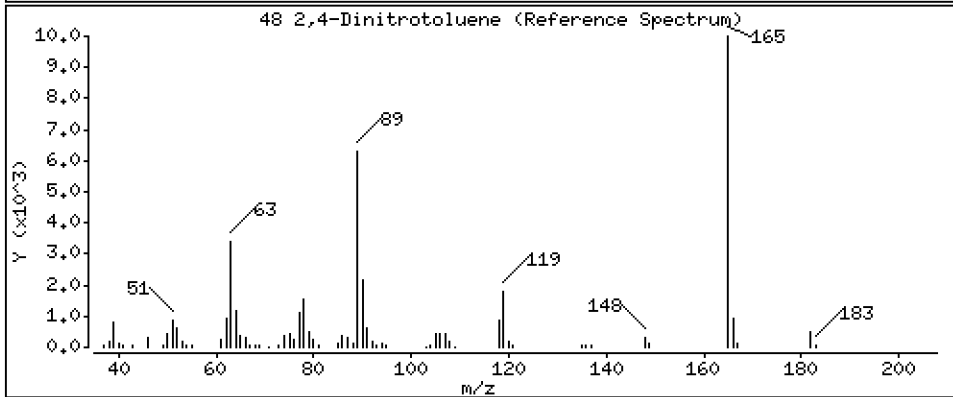
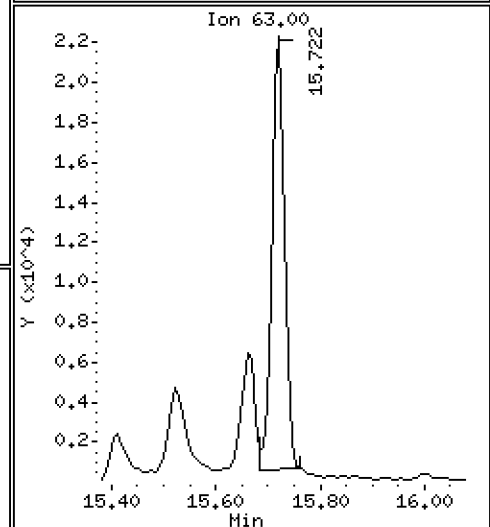
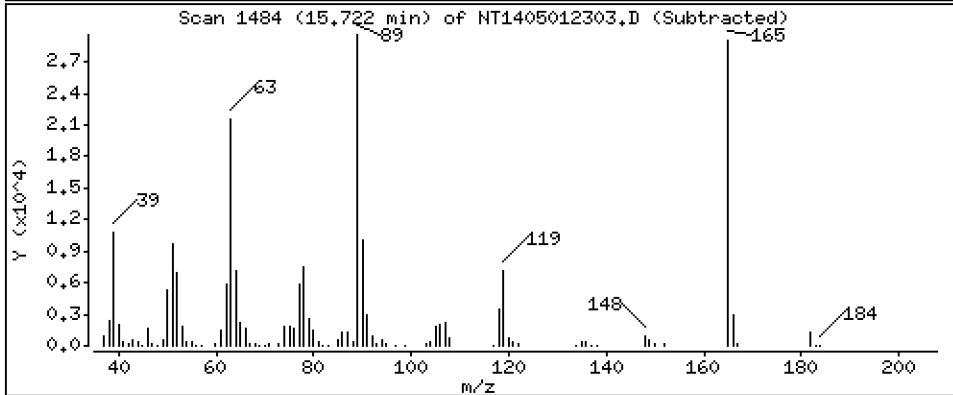
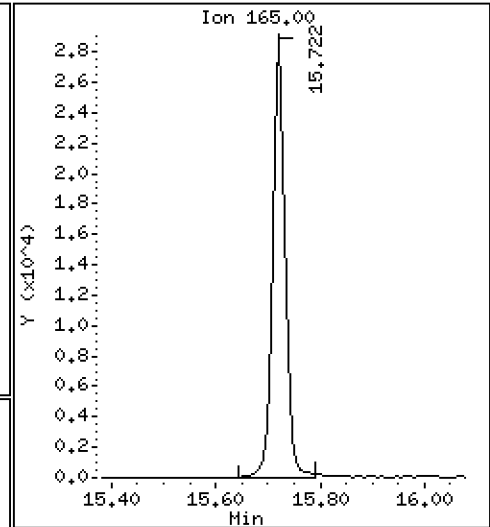
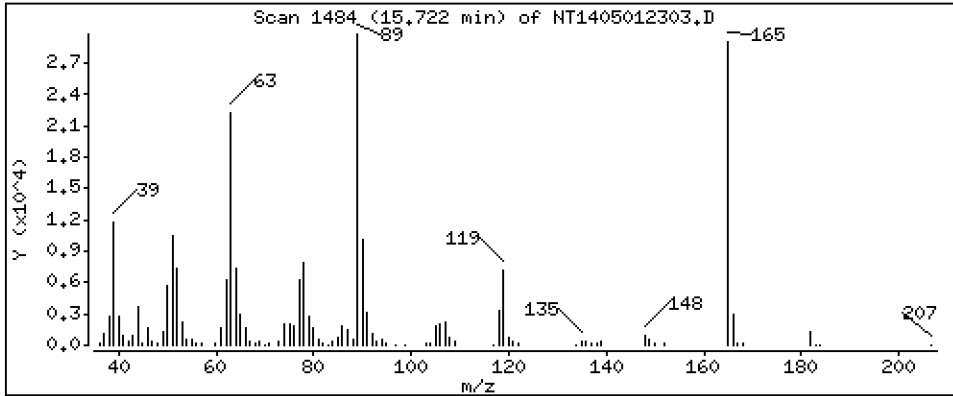
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

48 2,4-Dinitrotoluene

Concentration: 0.8595 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

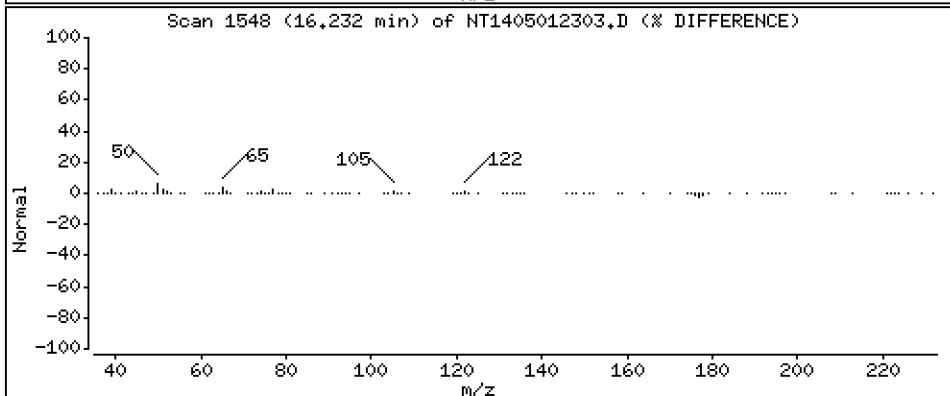
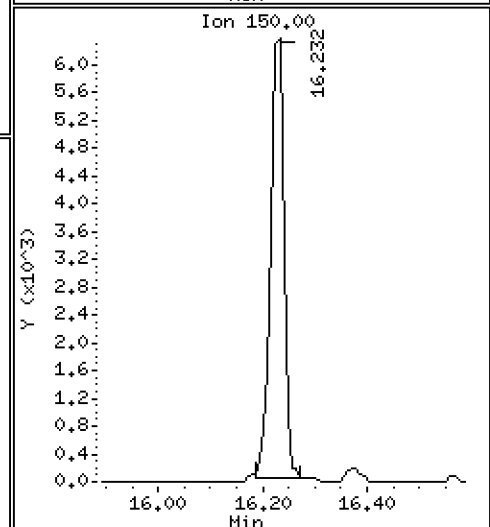
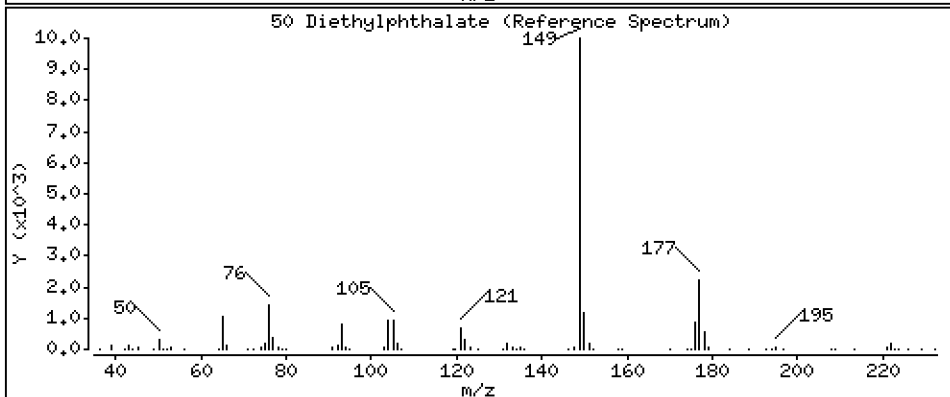
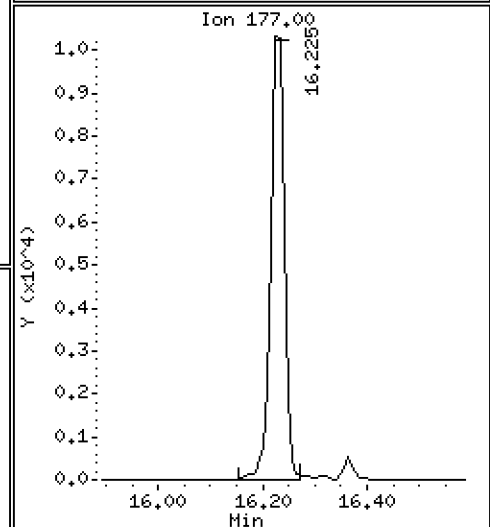
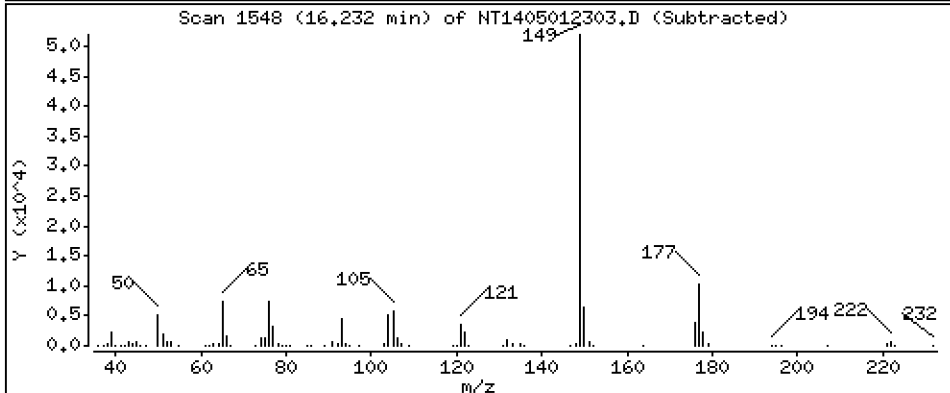
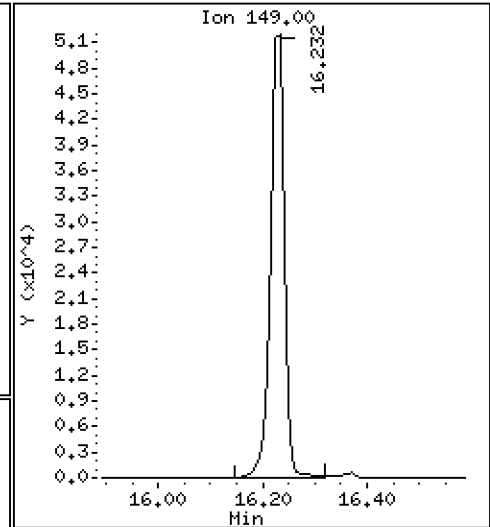
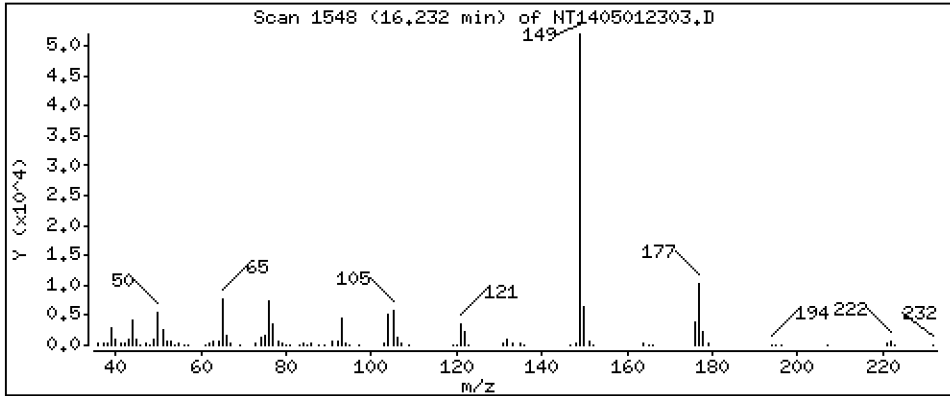
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

50 Diethylphthalate

Concentration: 0.5127 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

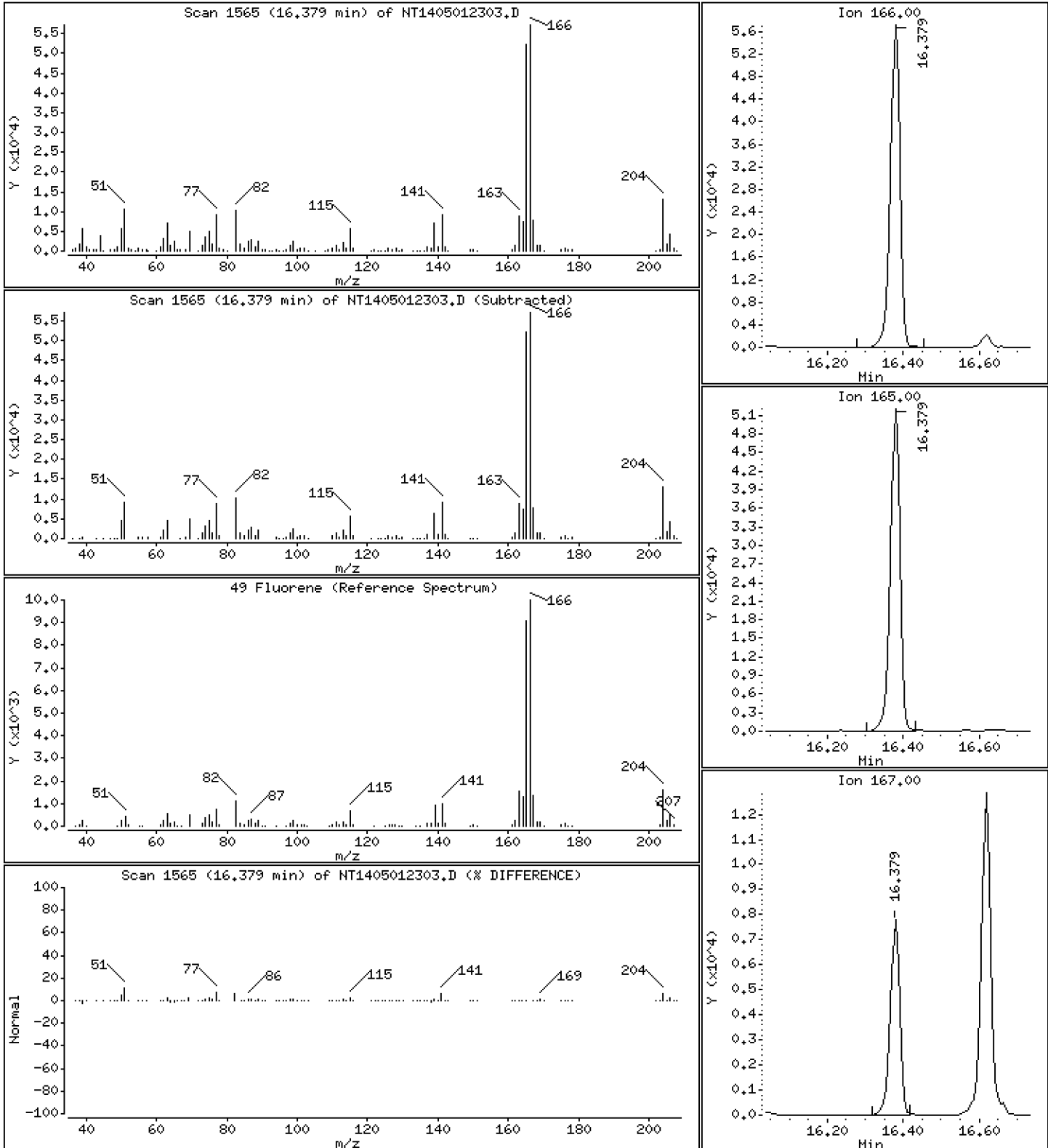
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 0,5018 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

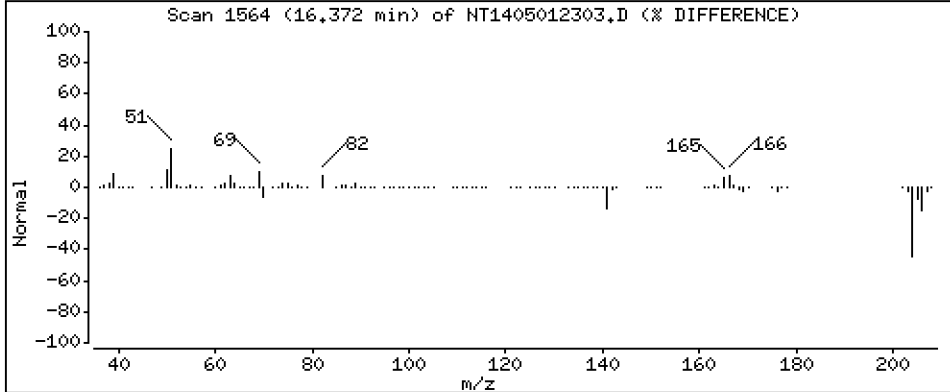
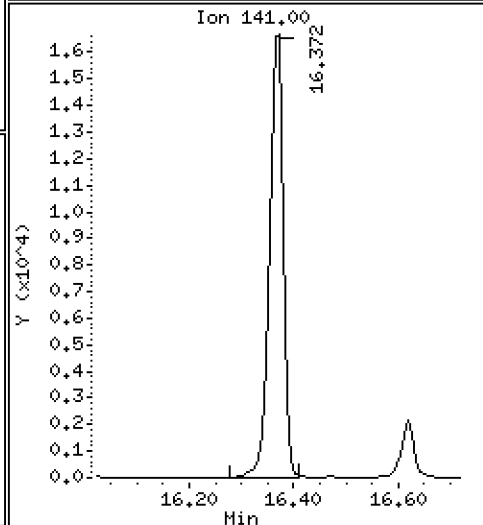
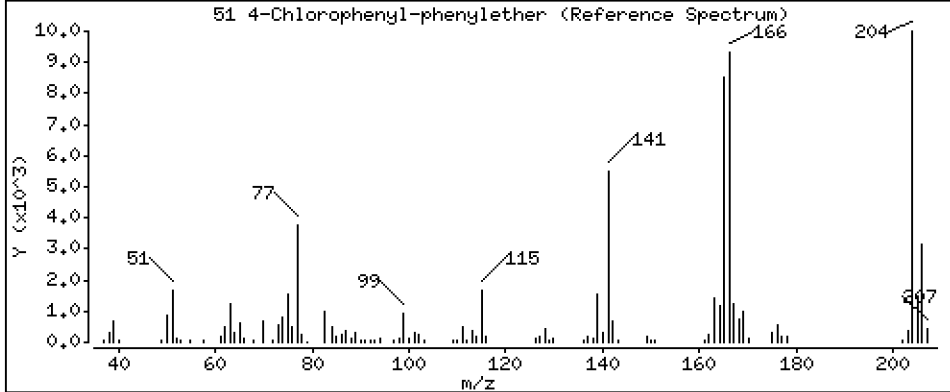
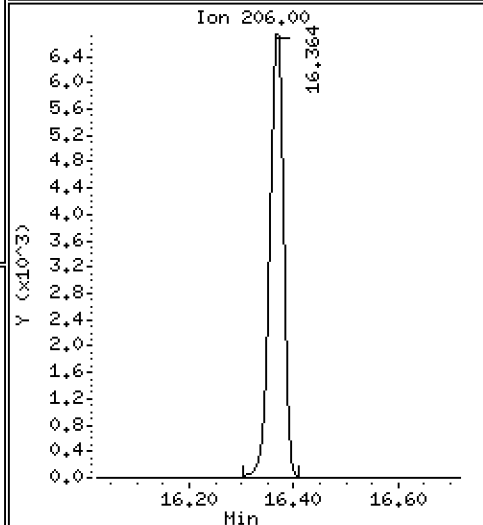
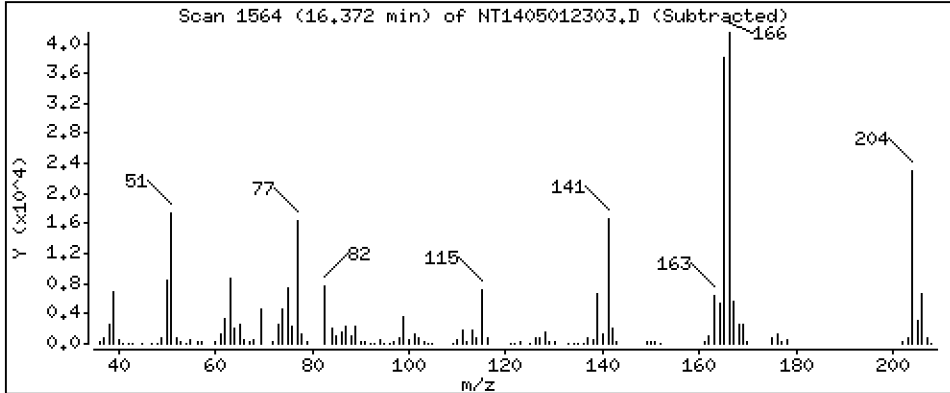
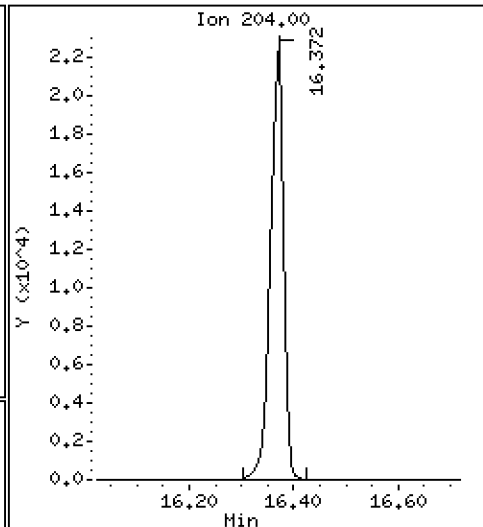
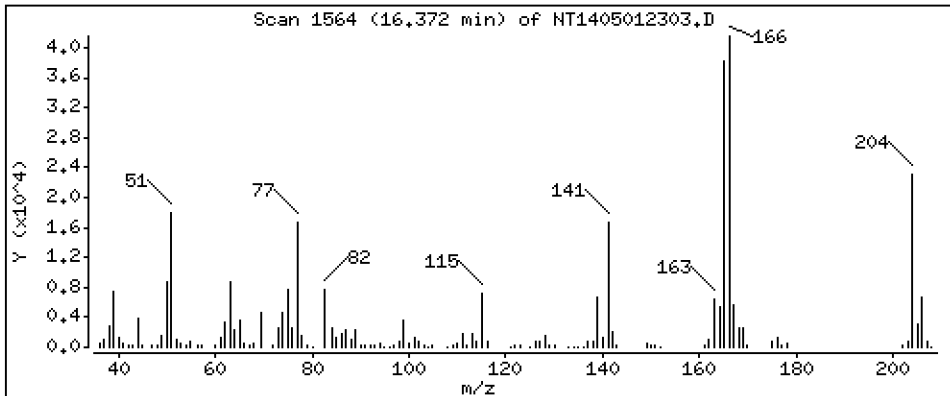
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 0,4383 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

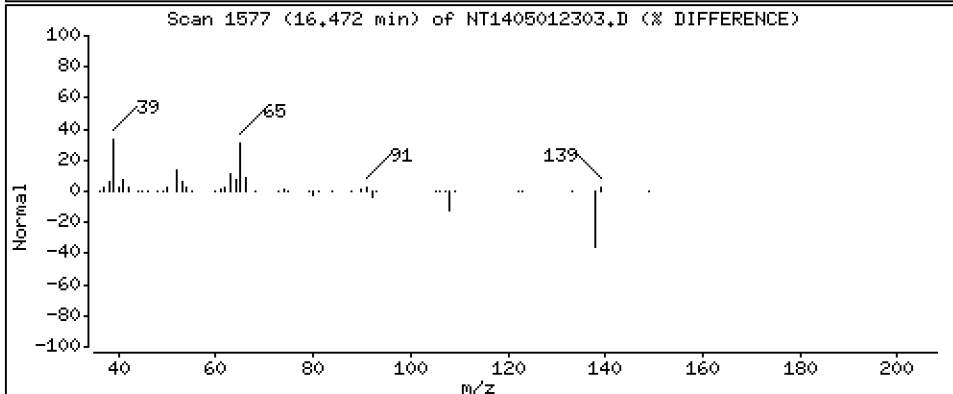
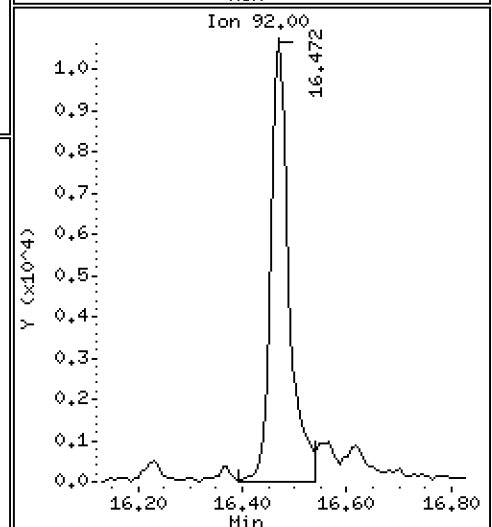
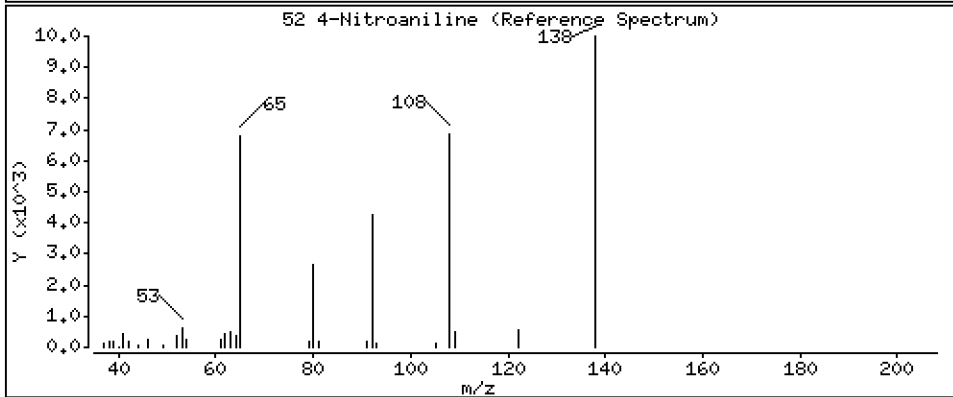
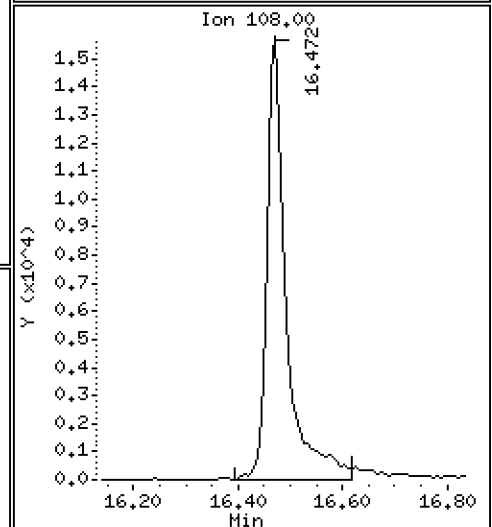
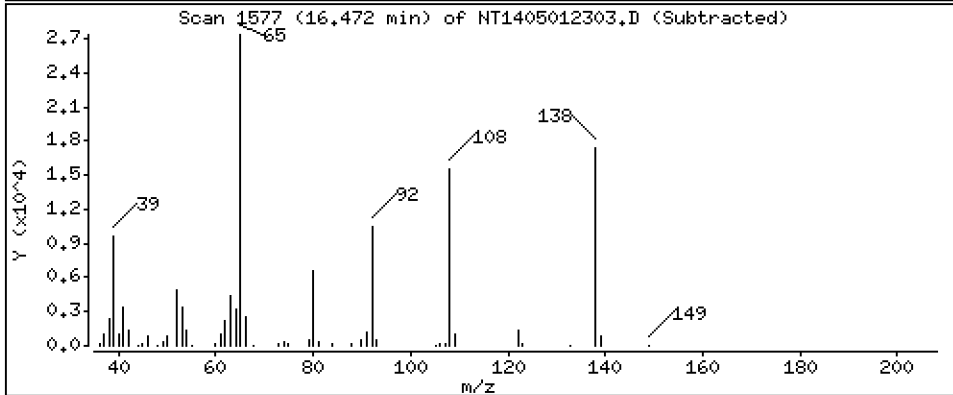
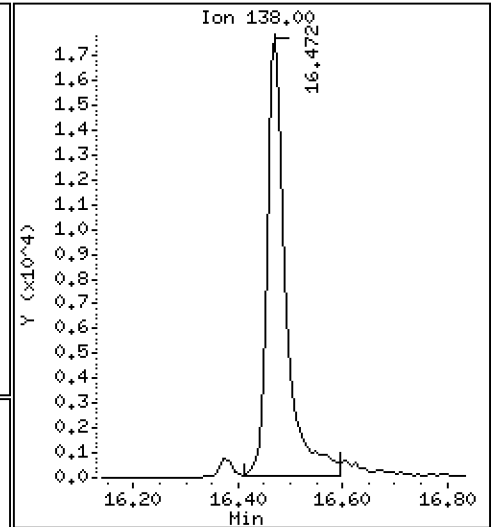
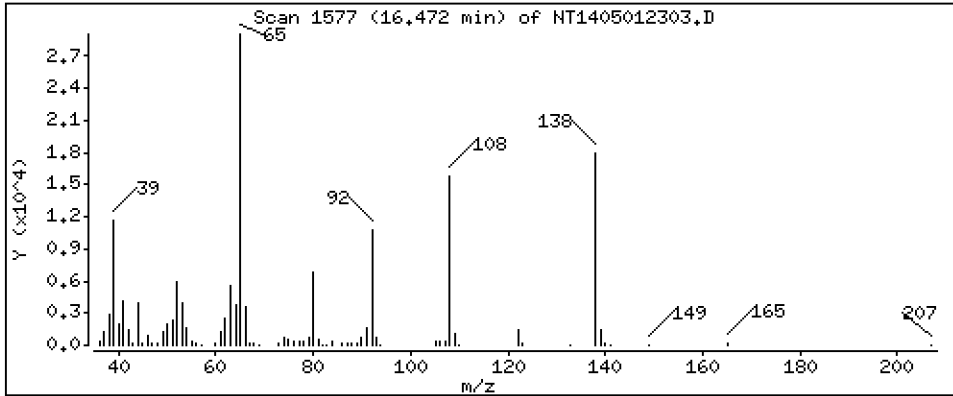
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

52 4-Nitroaniline

Concentration: 0.9597 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

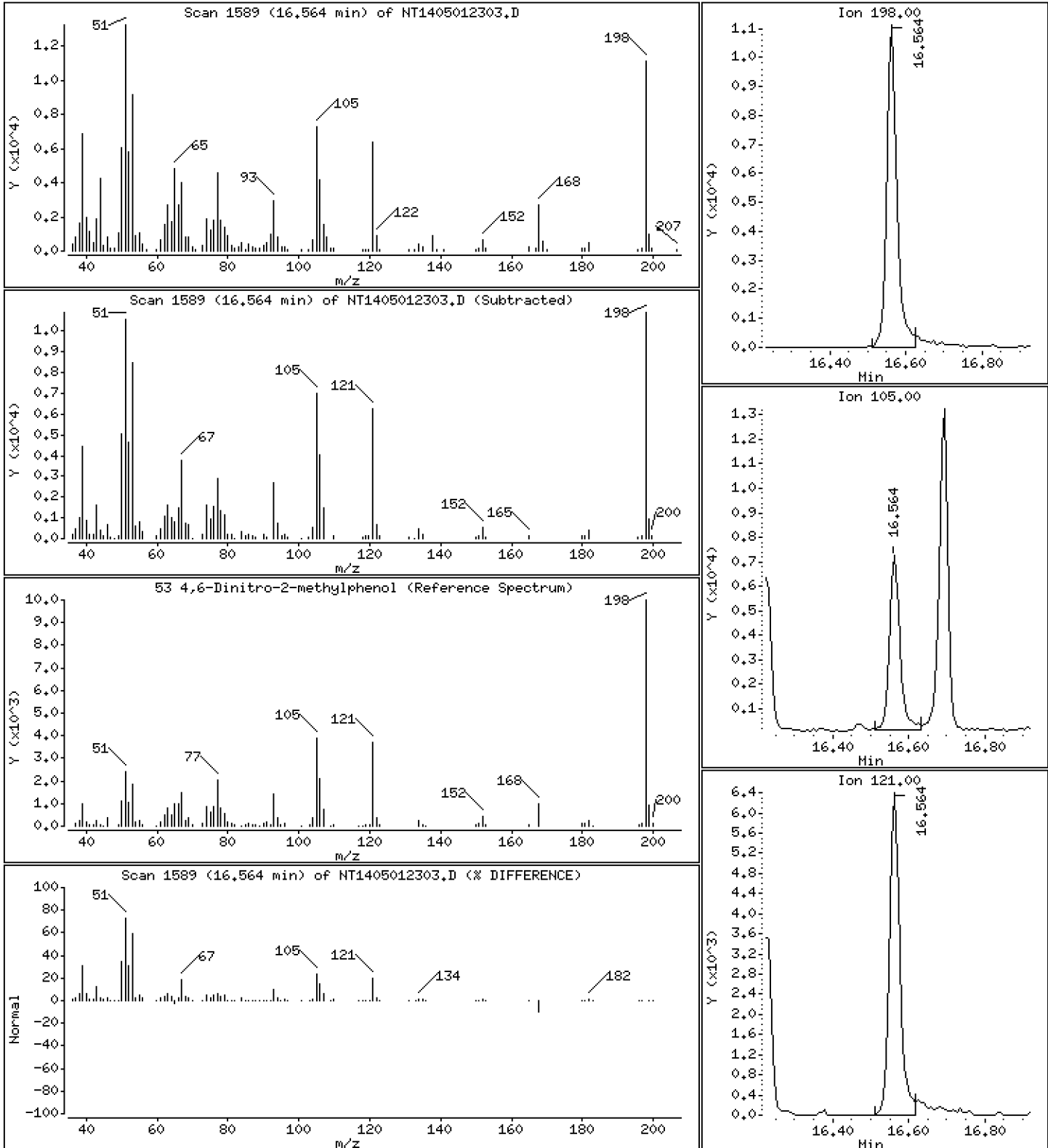
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 0,7384 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

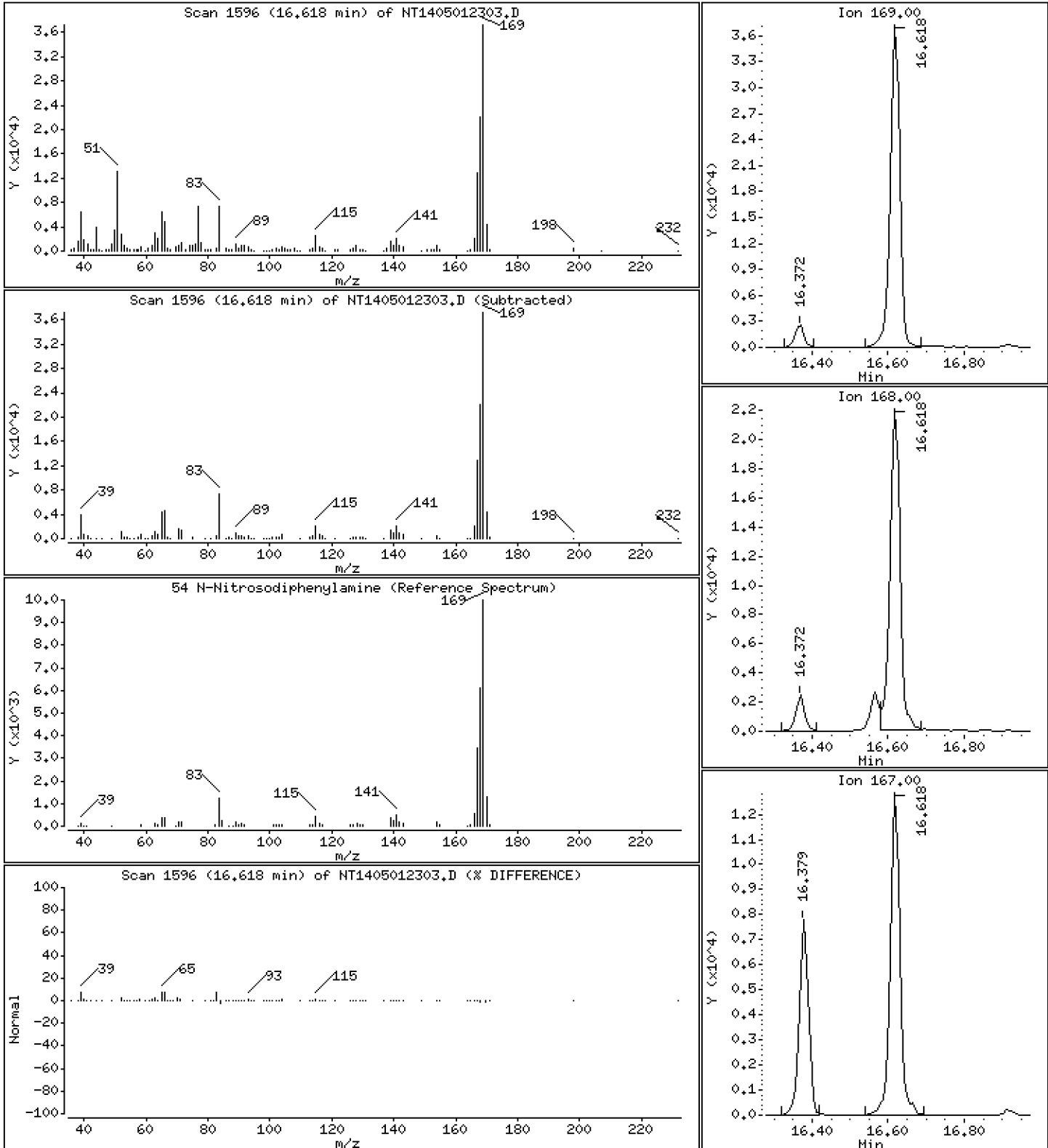
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

54 N-Nitrosodiphenylamine

Concentration: 0.4929 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

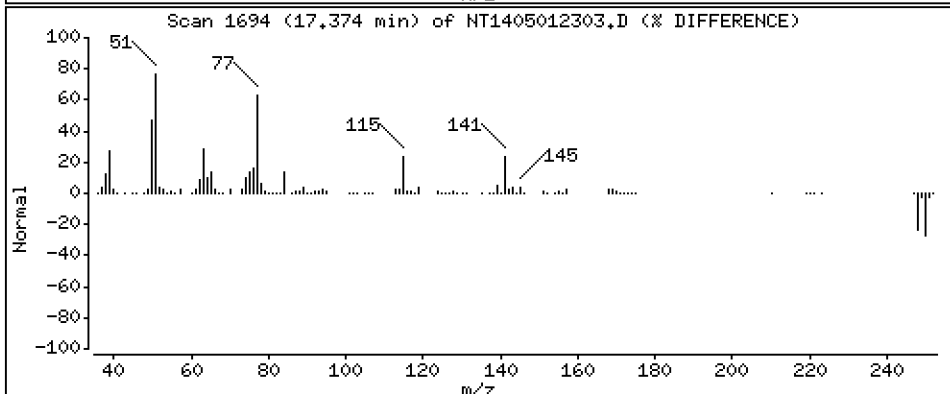
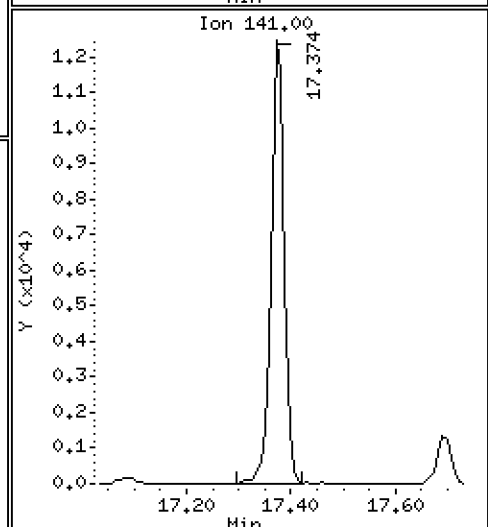
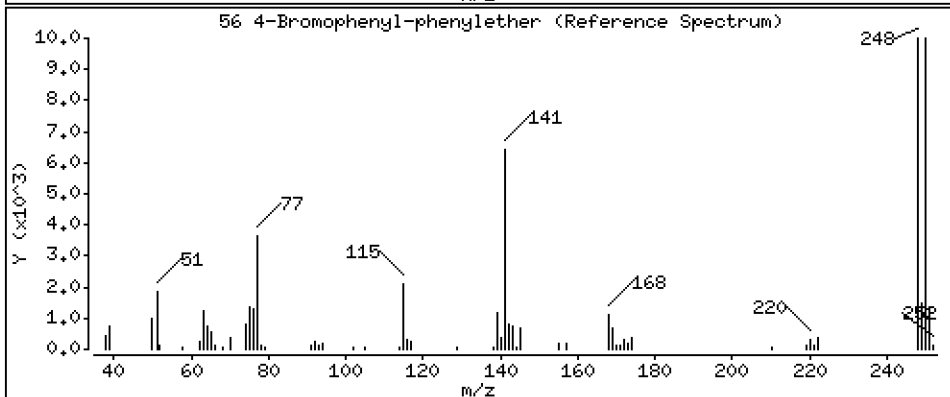
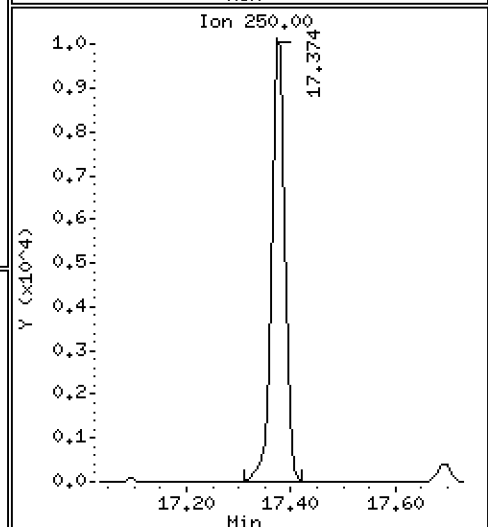
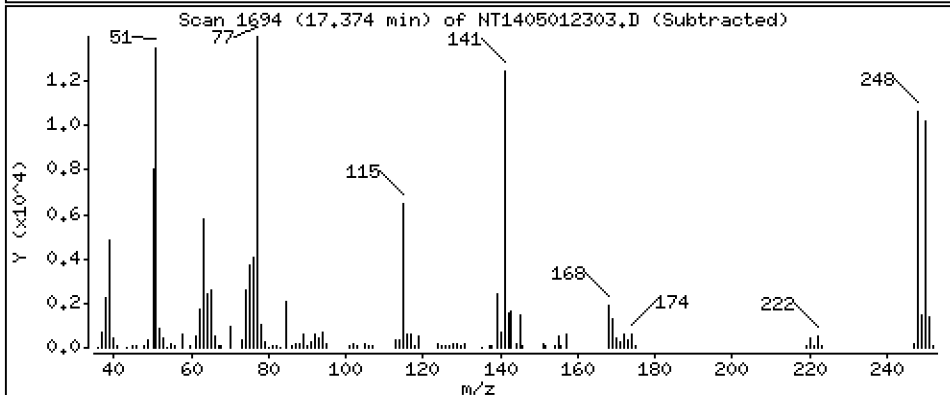
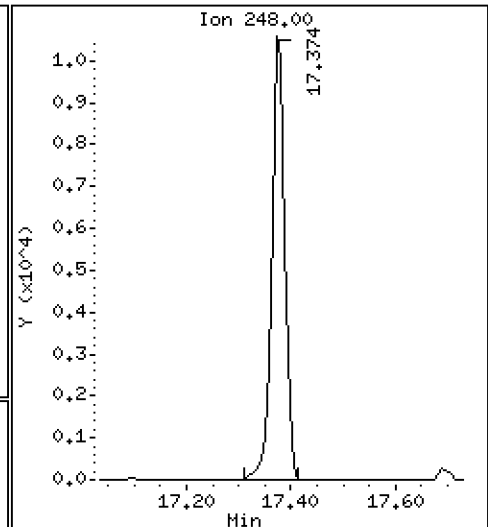
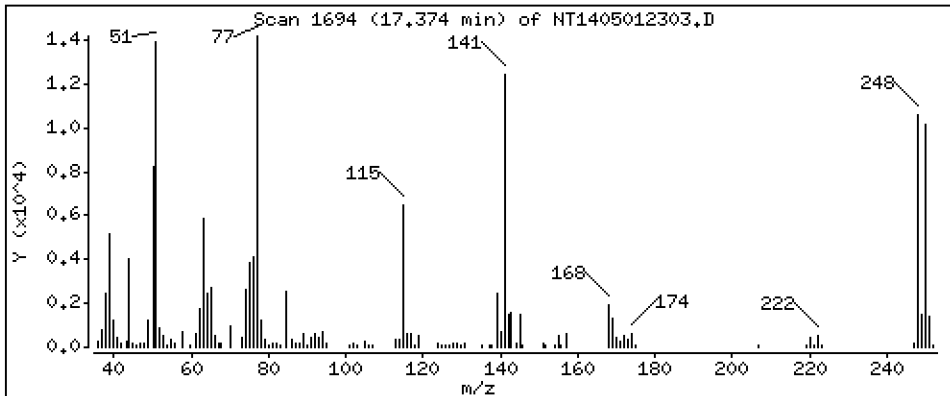
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

Concentration: 0.4422 ug/mL

56 4-Bromophenyl-phenylether



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

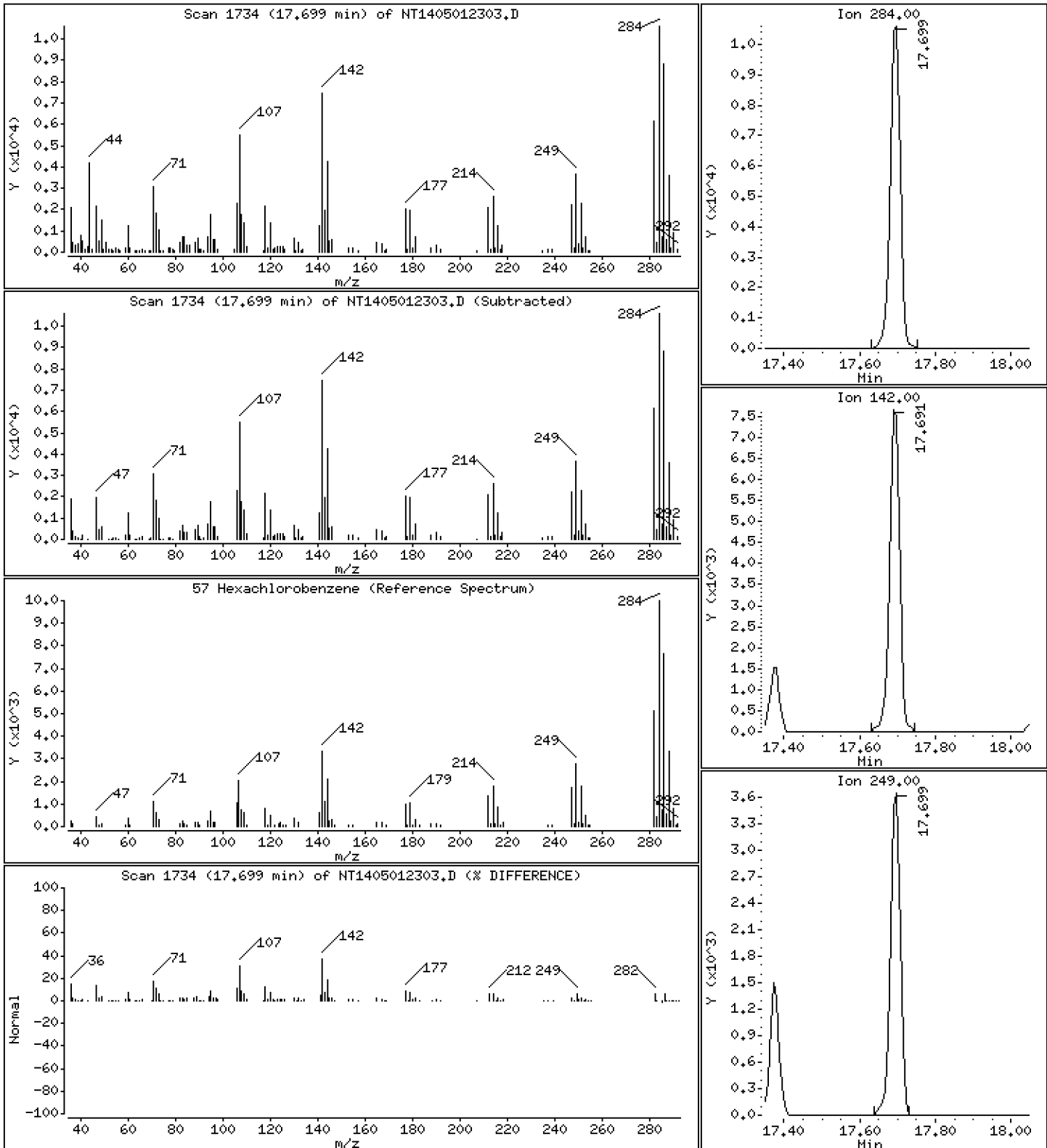
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

57 Hexachlorobenzene

Concentration: 0.4527 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

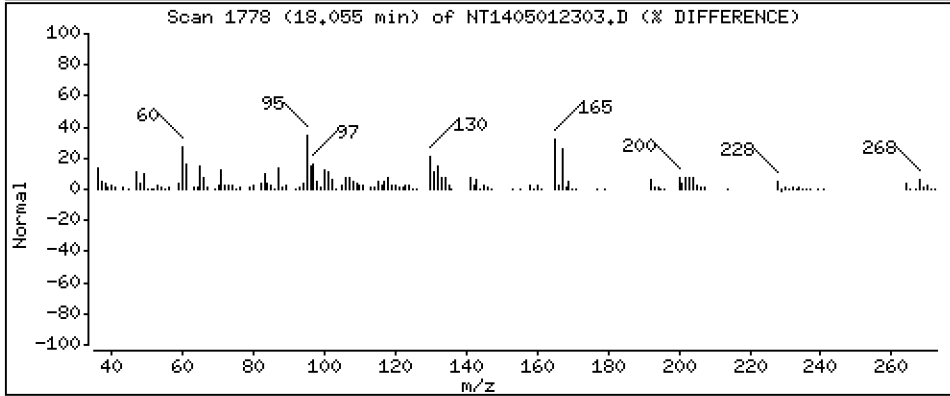
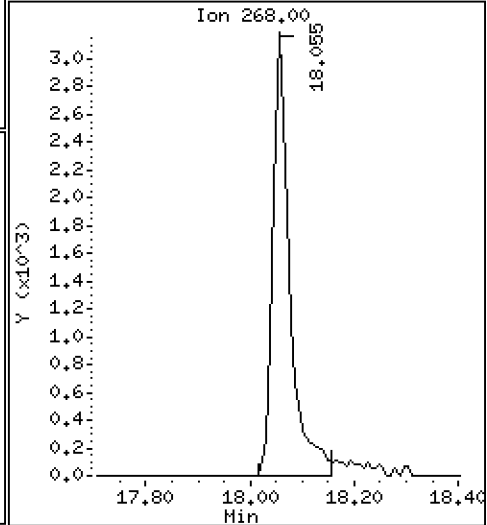
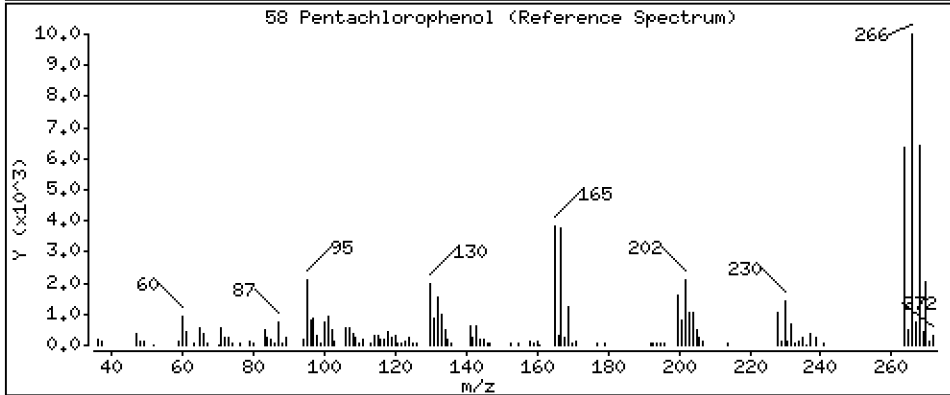
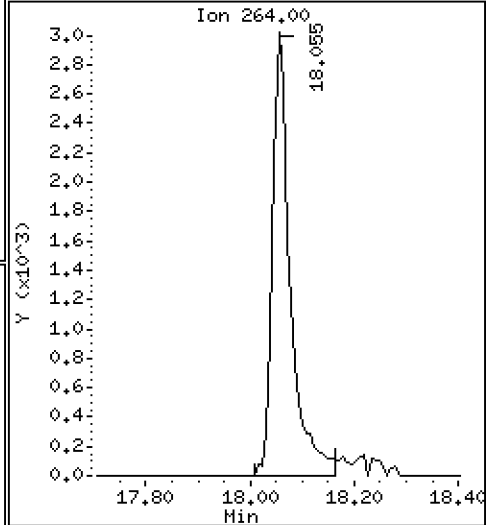
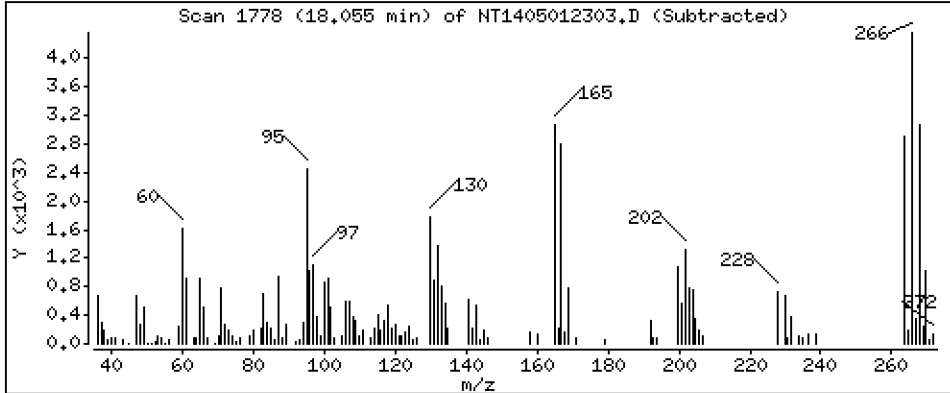
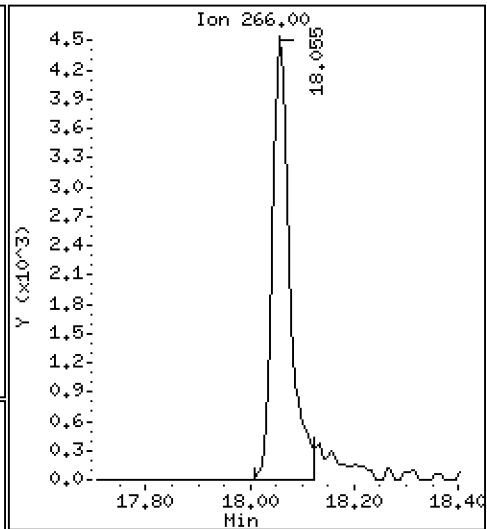
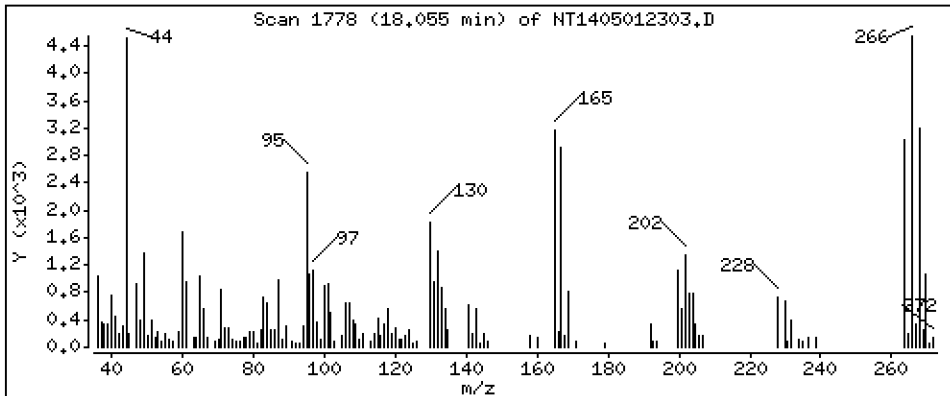
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 0,3906 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

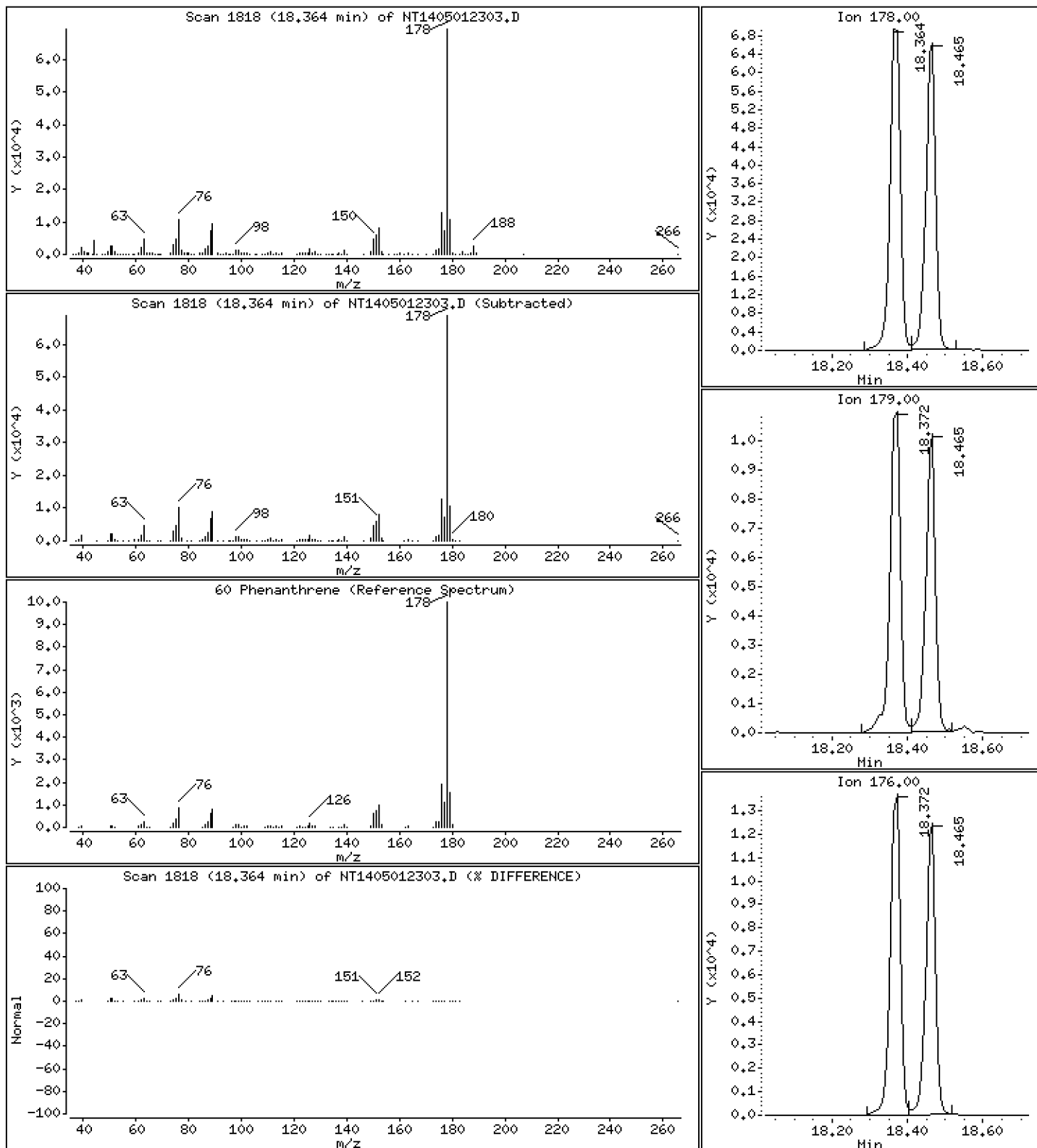
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 0,5023 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

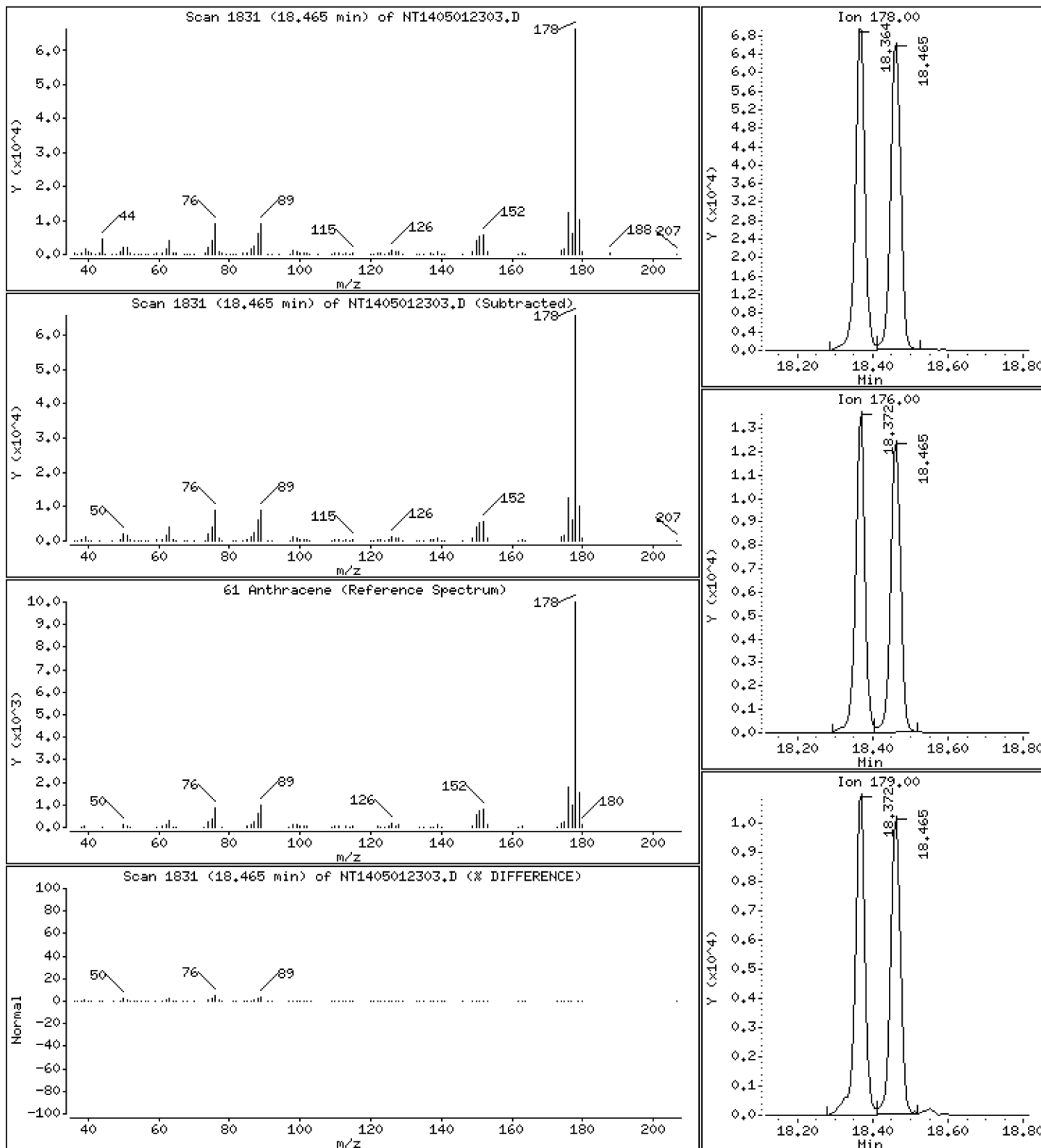
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 0,4862 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

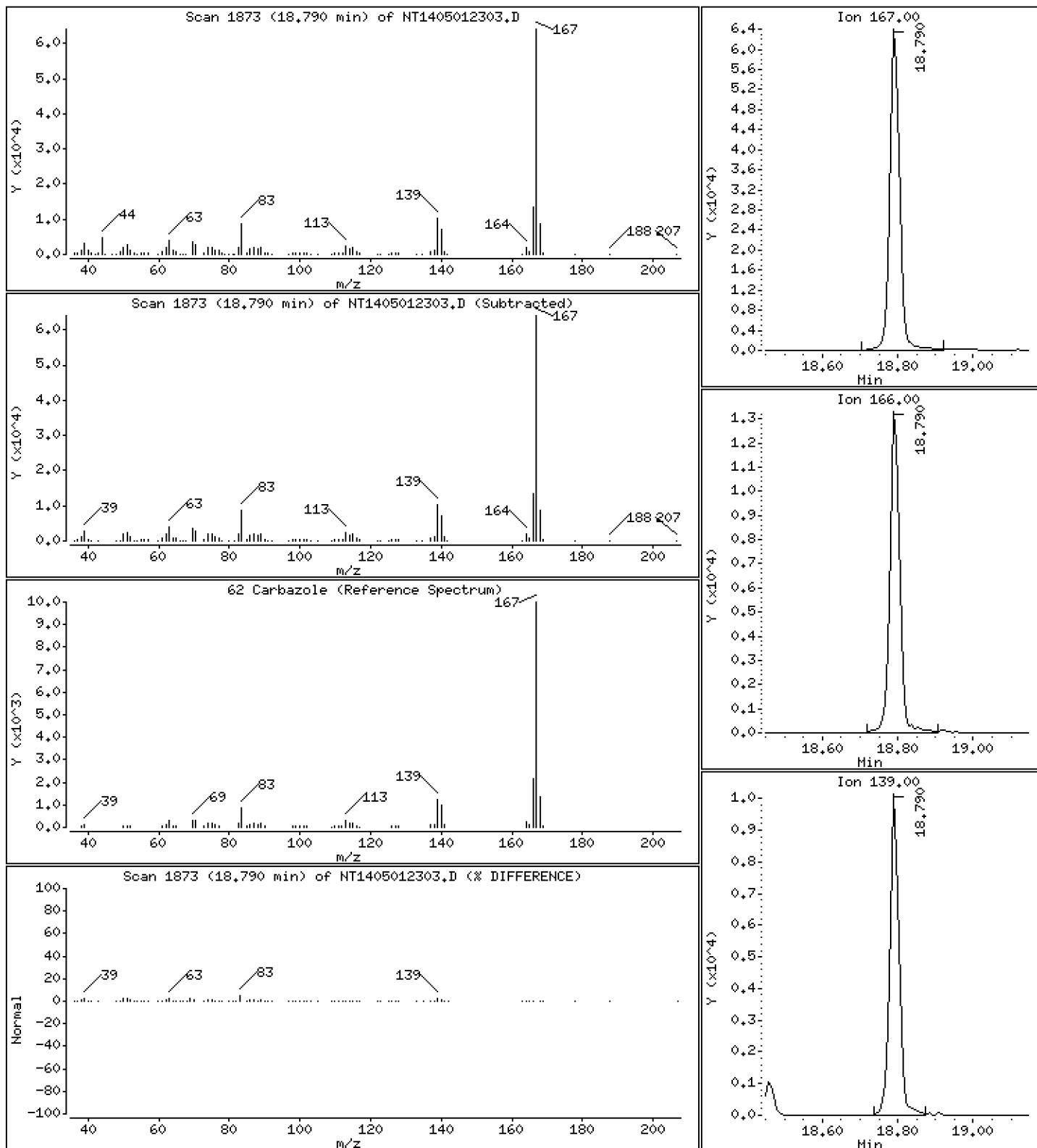
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 0,5024 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

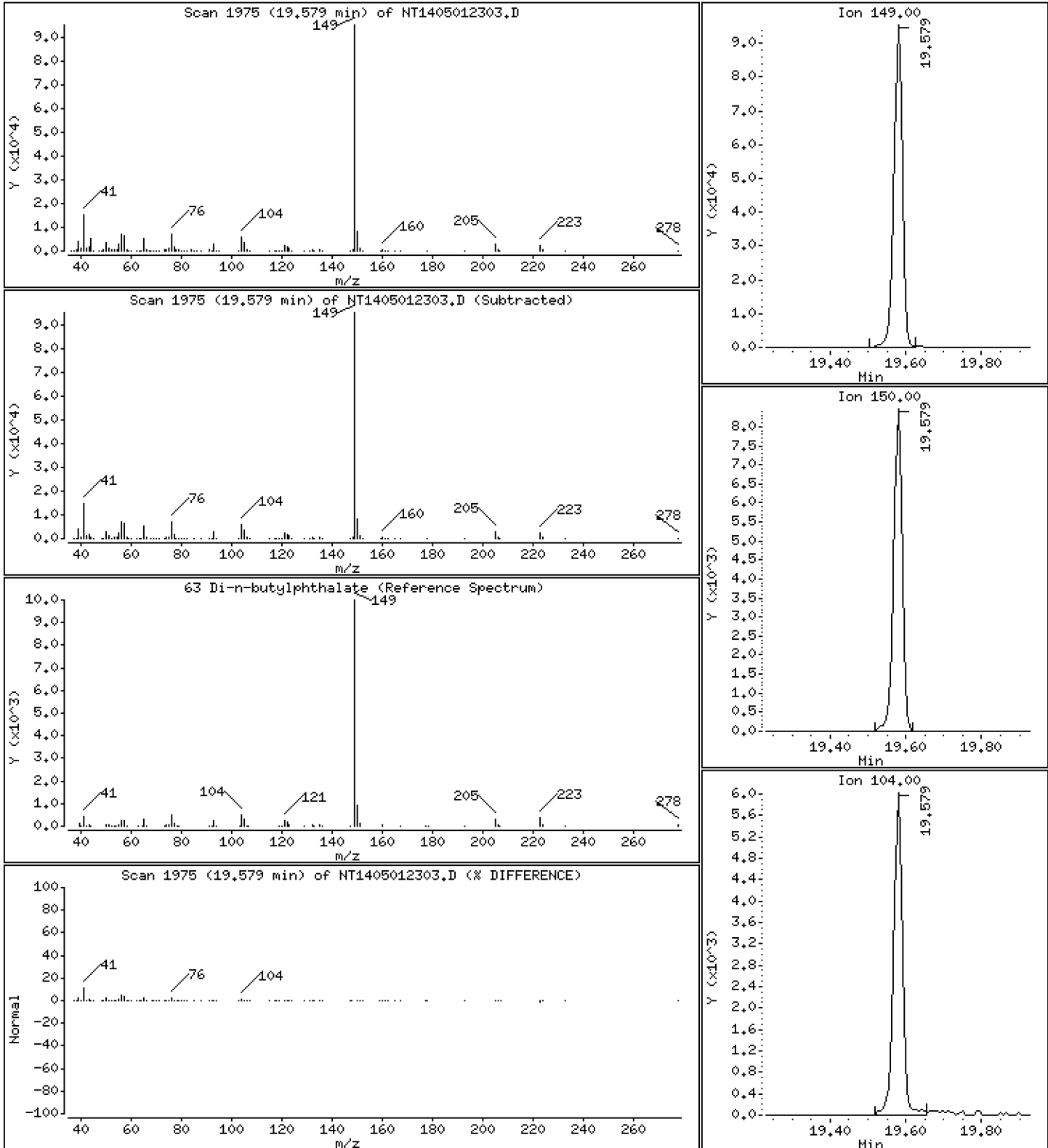
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 0,4099 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

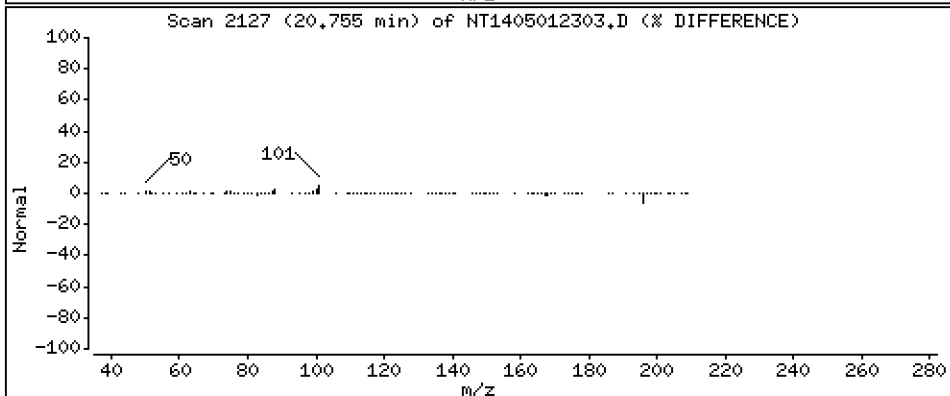
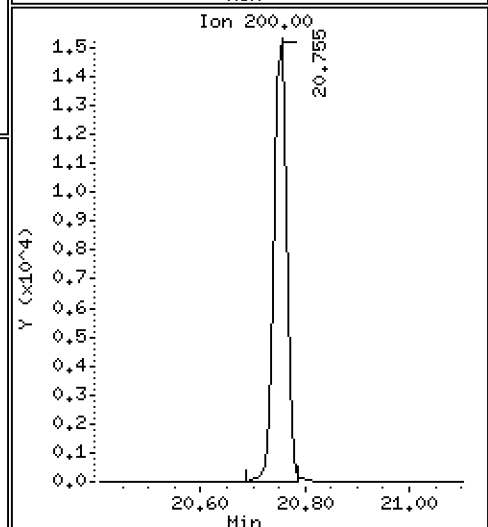
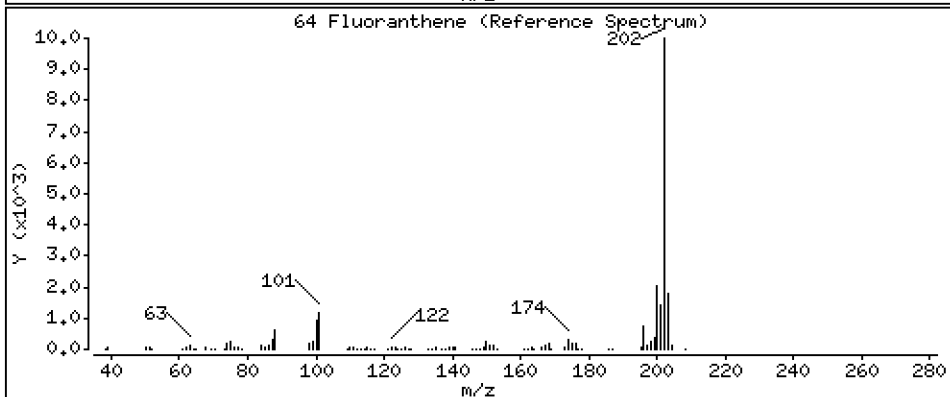
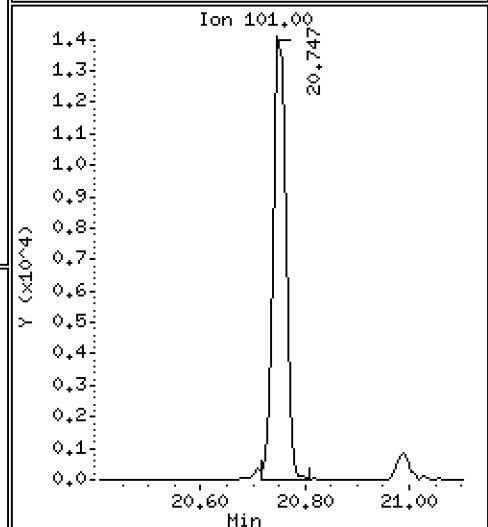
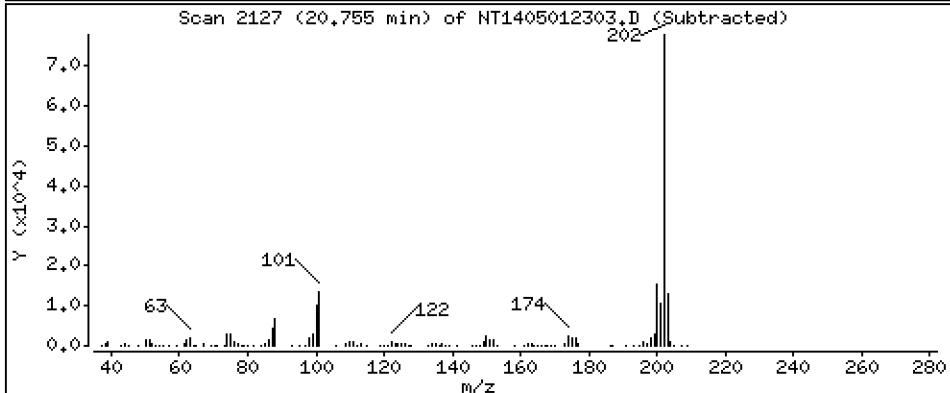
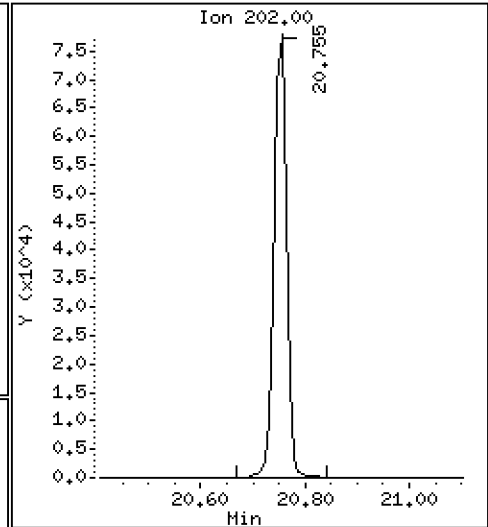
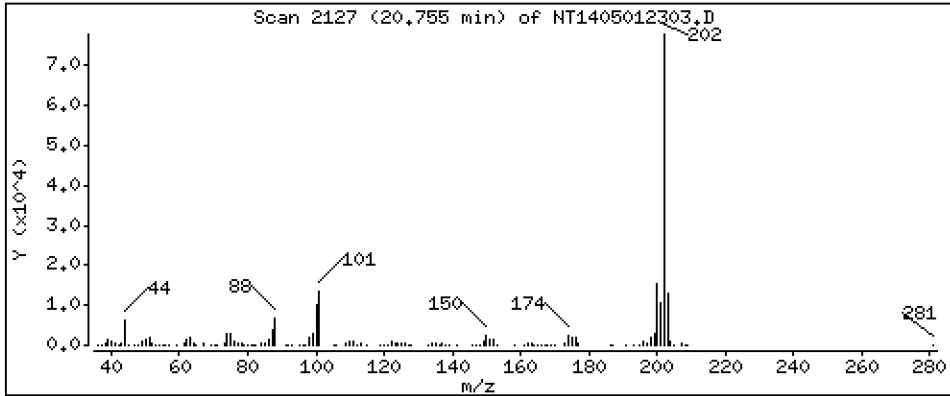
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 0,4524 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

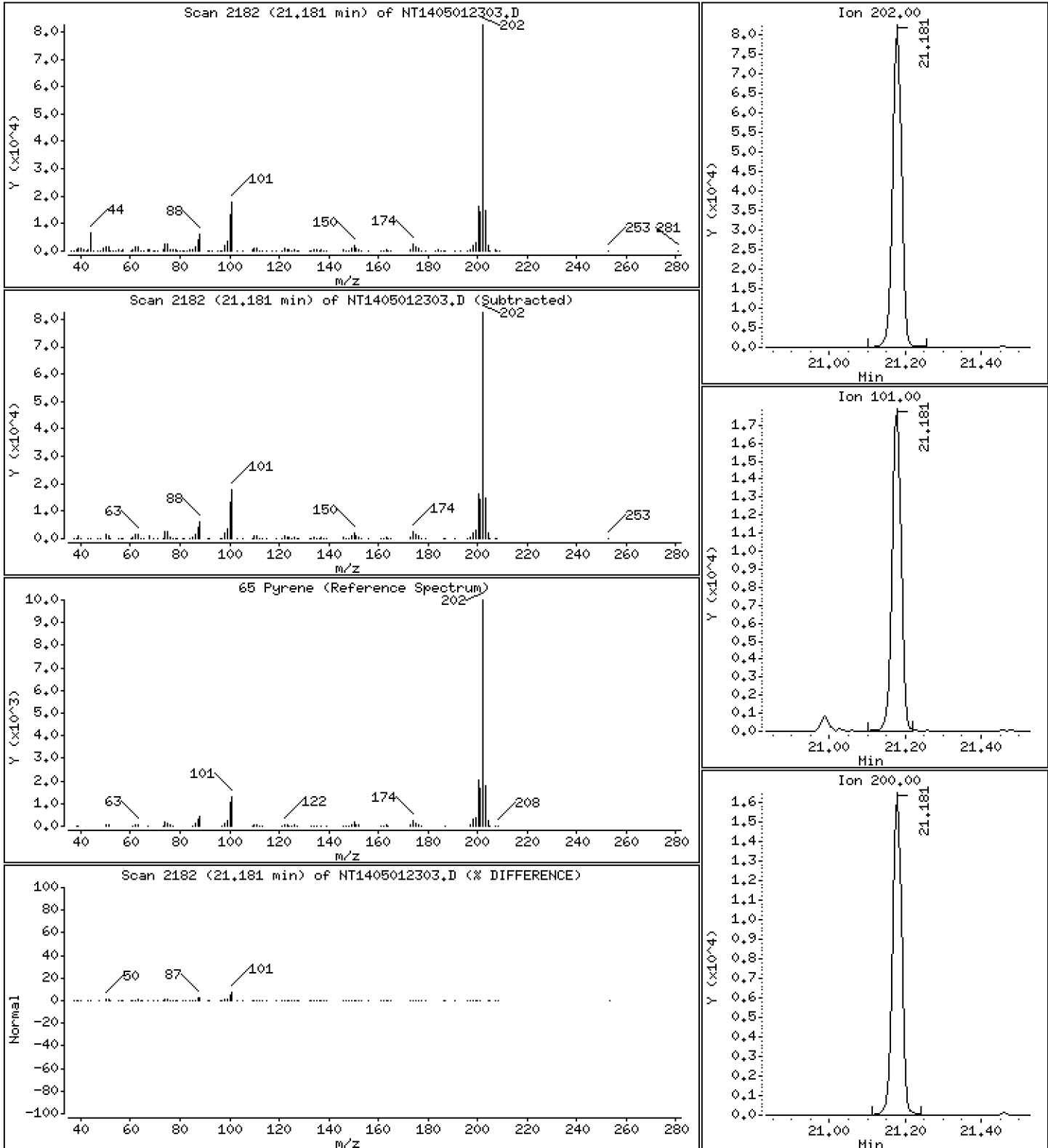
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 0,4533 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

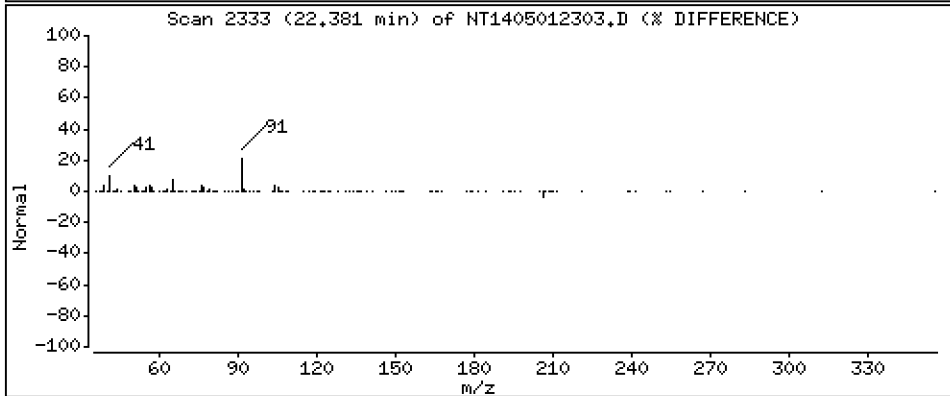
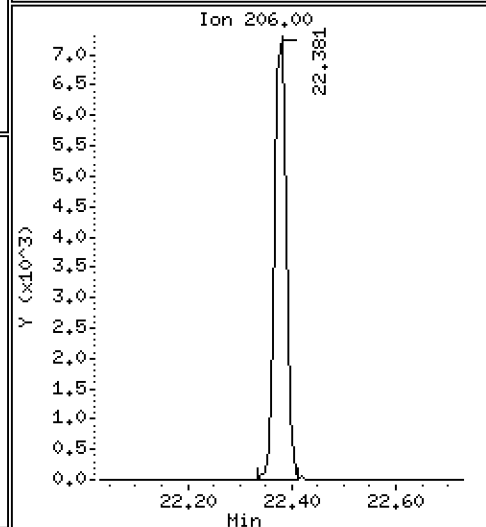
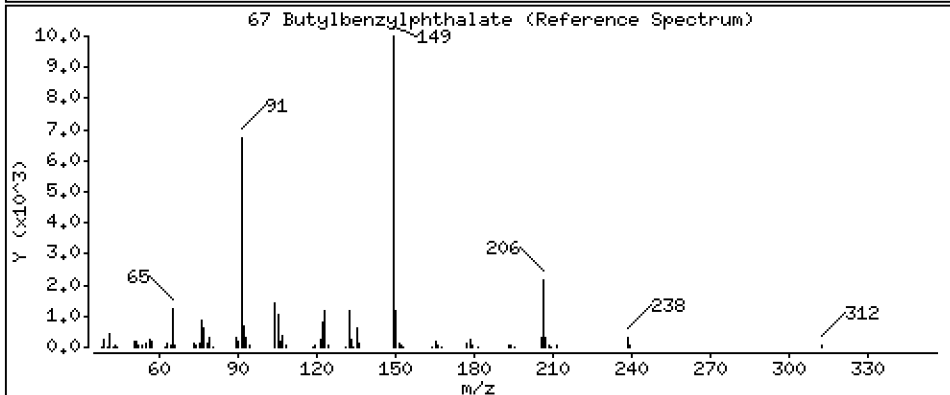
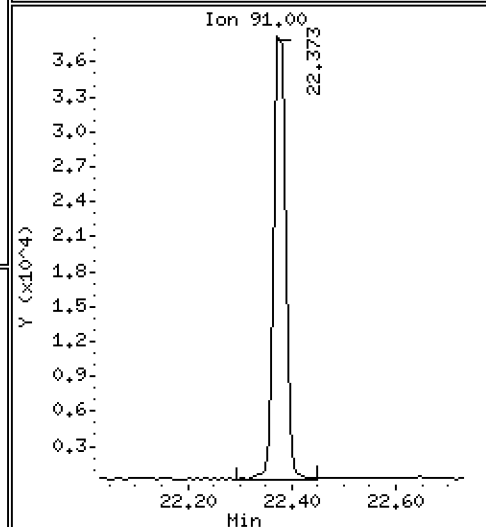
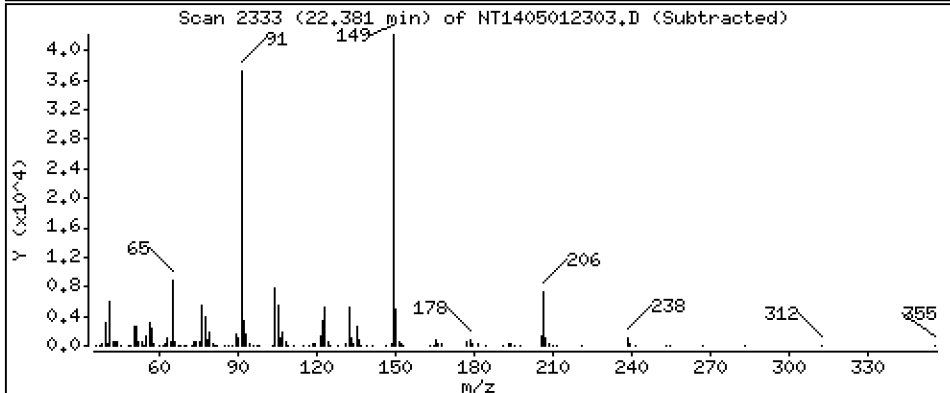
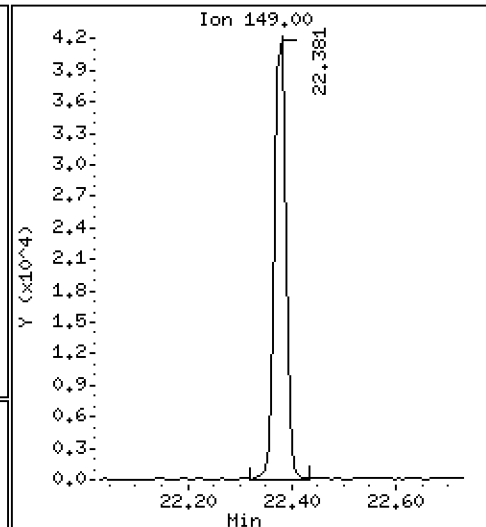
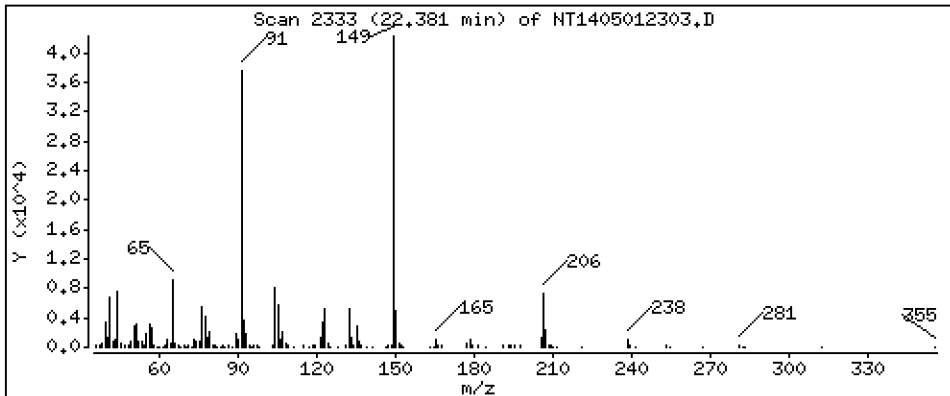
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,3307 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

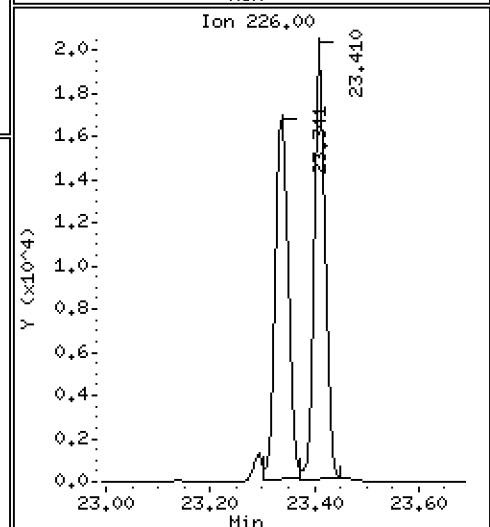
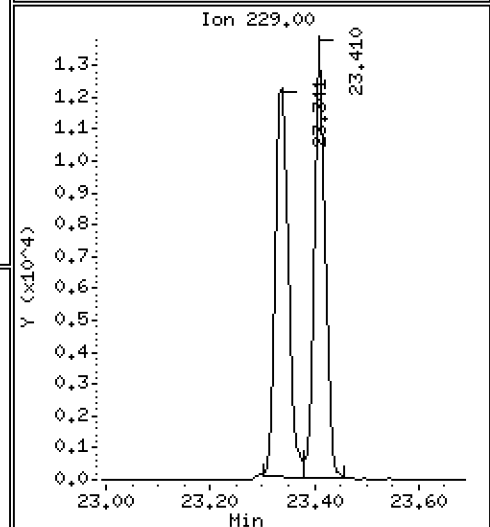
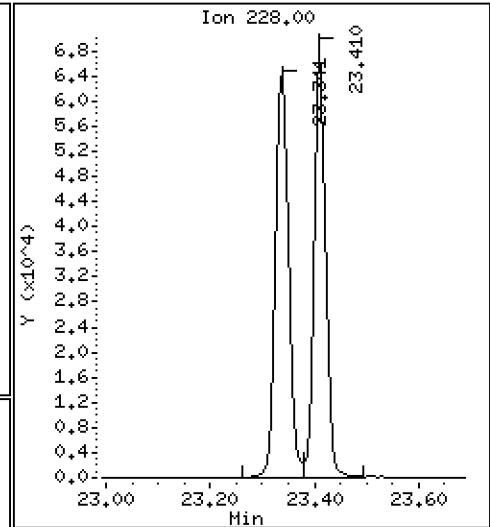
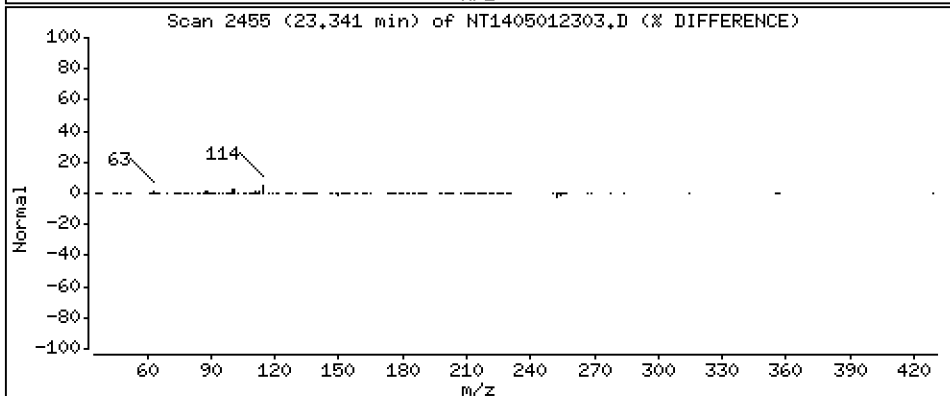
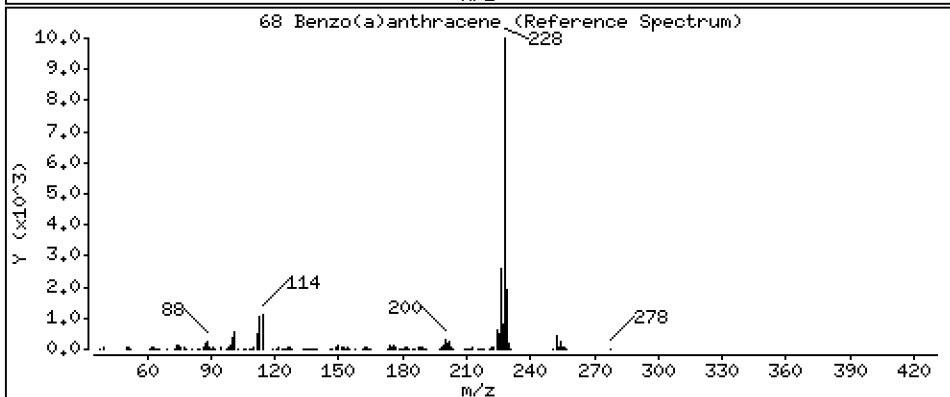
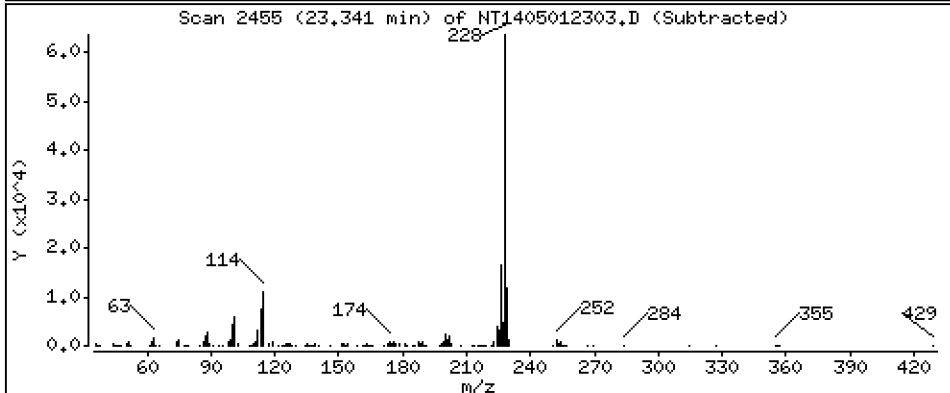
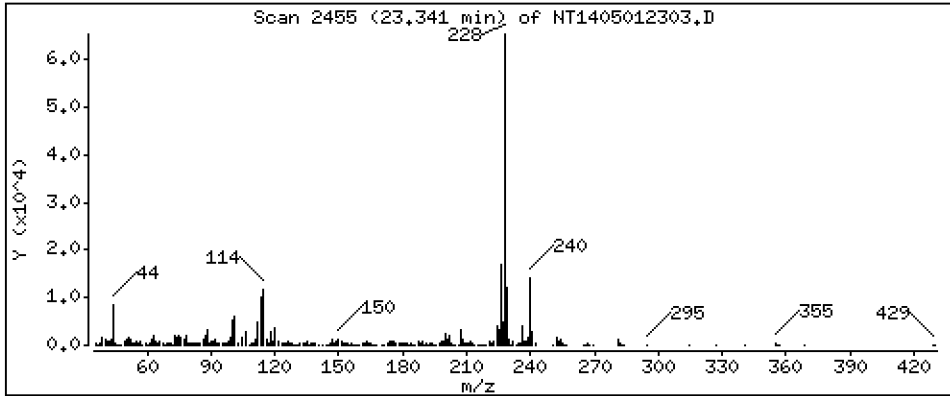
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 0,5188 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

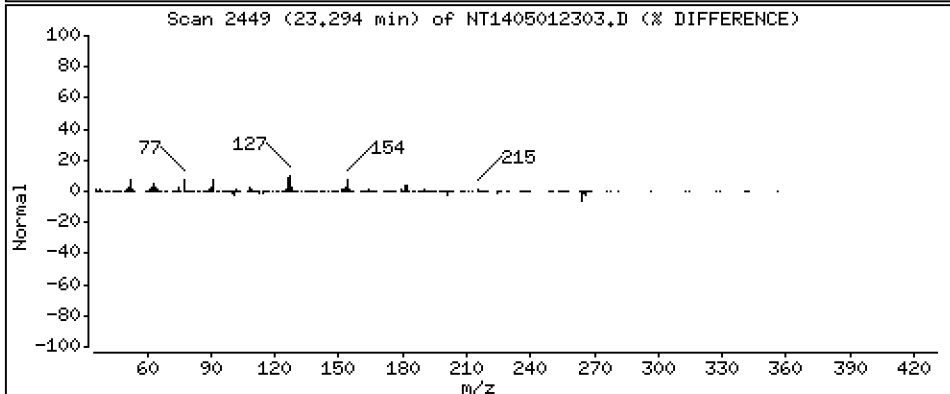
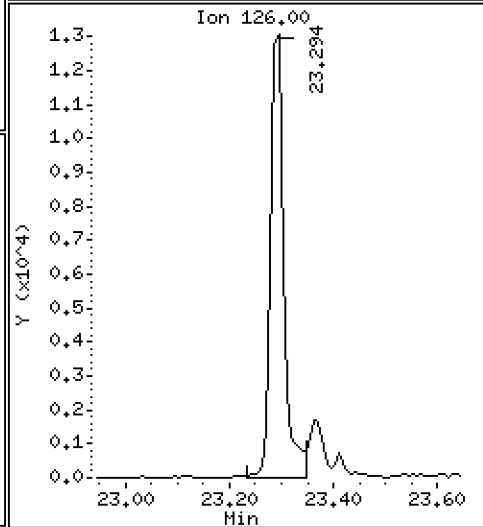
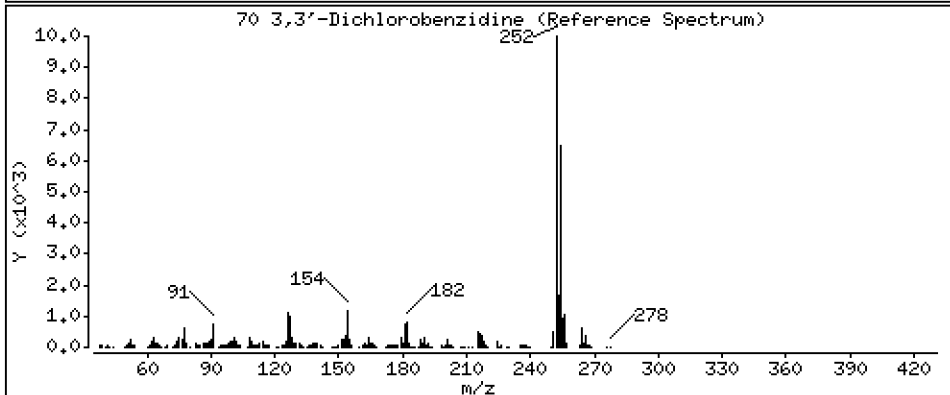
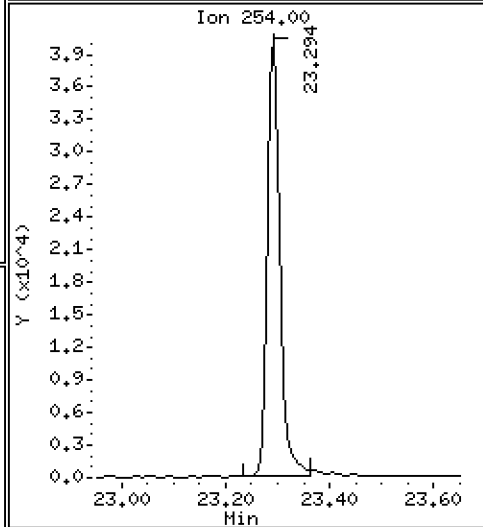
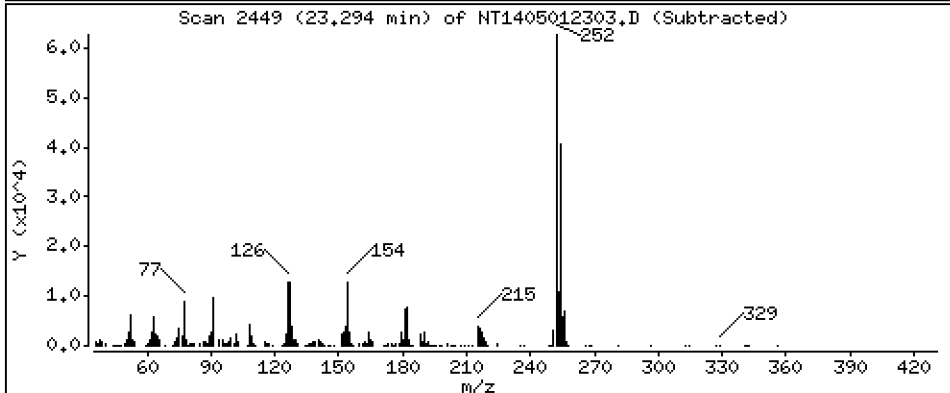
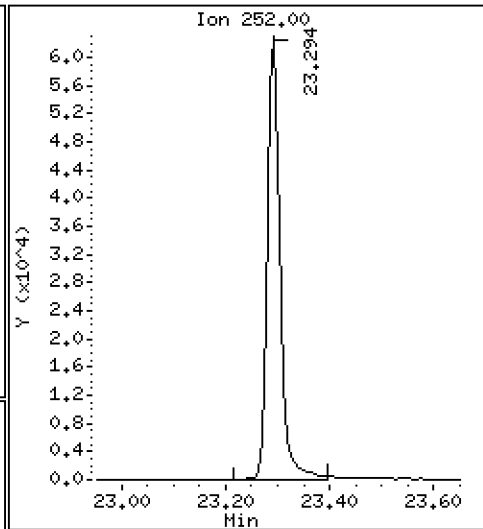
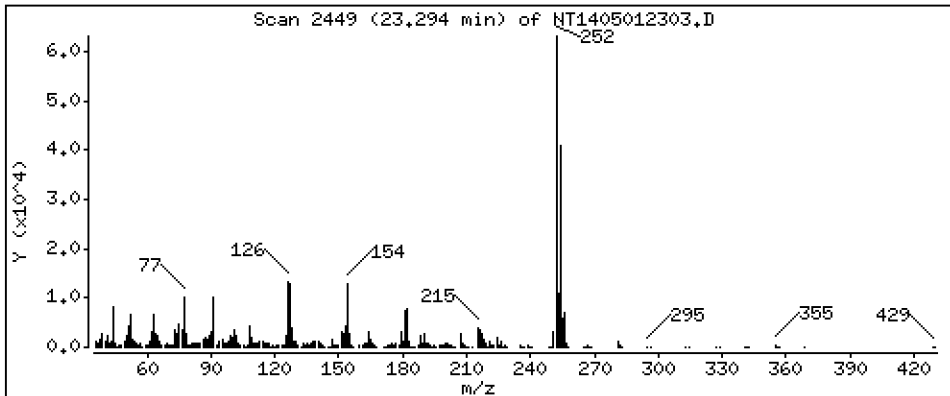
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 1,495 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

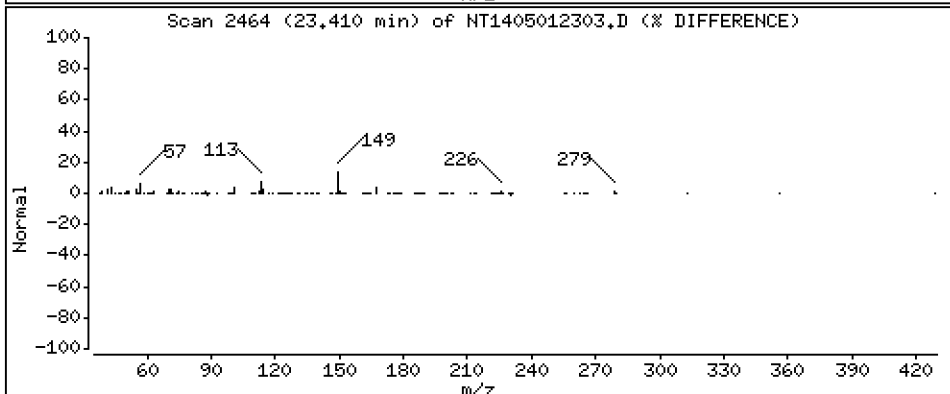
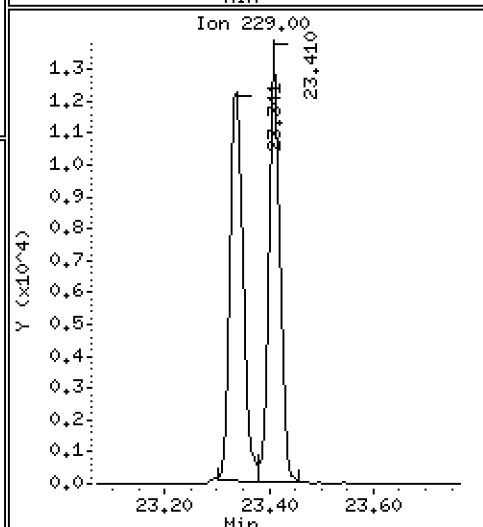
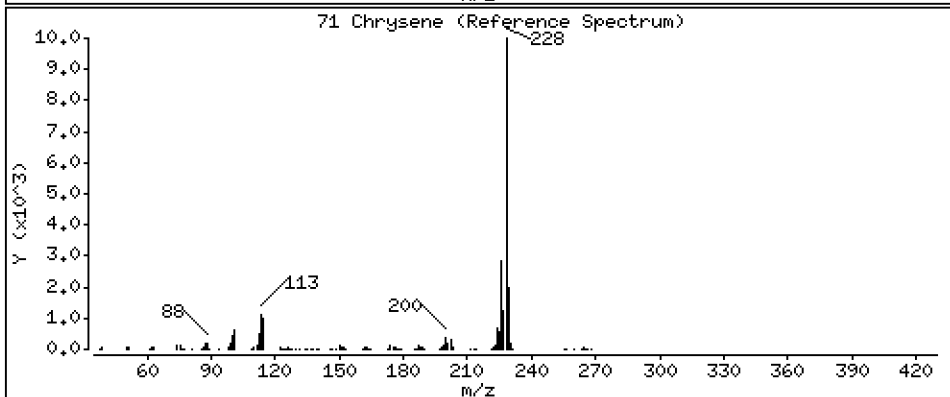
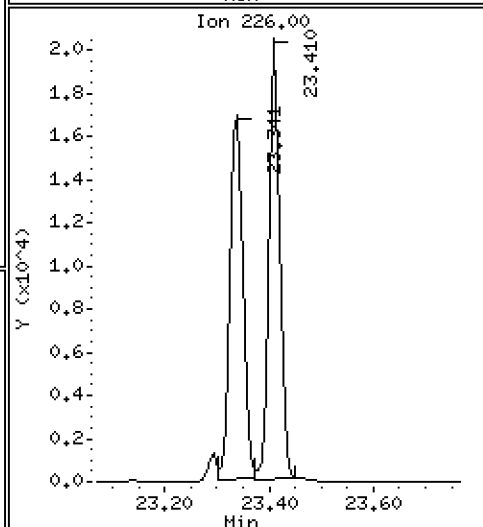
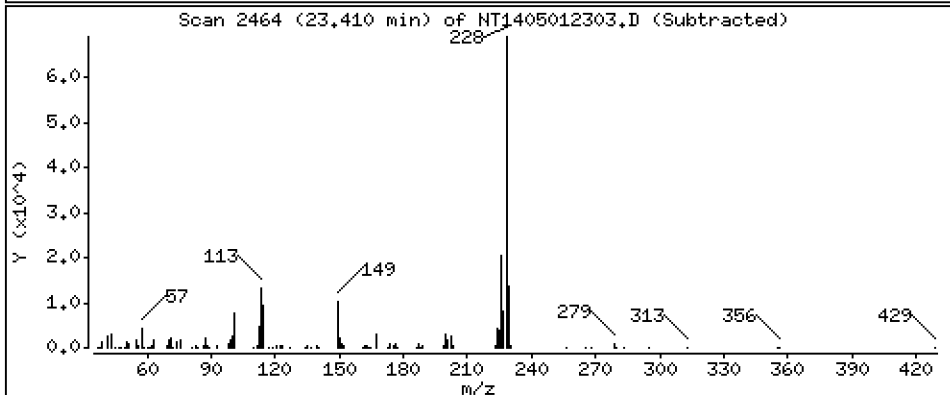
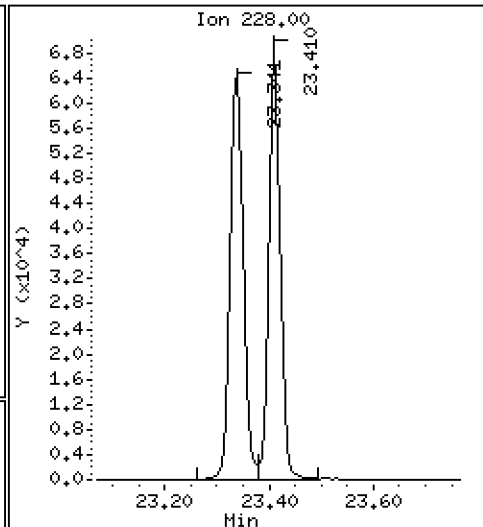
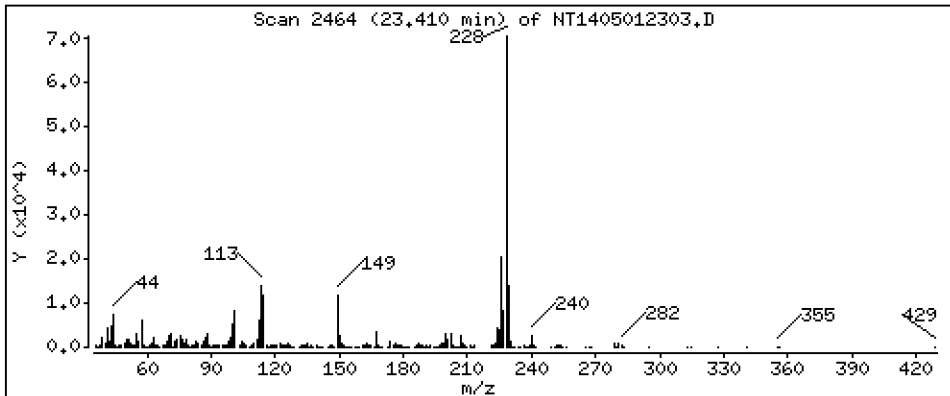
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 0,5079 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

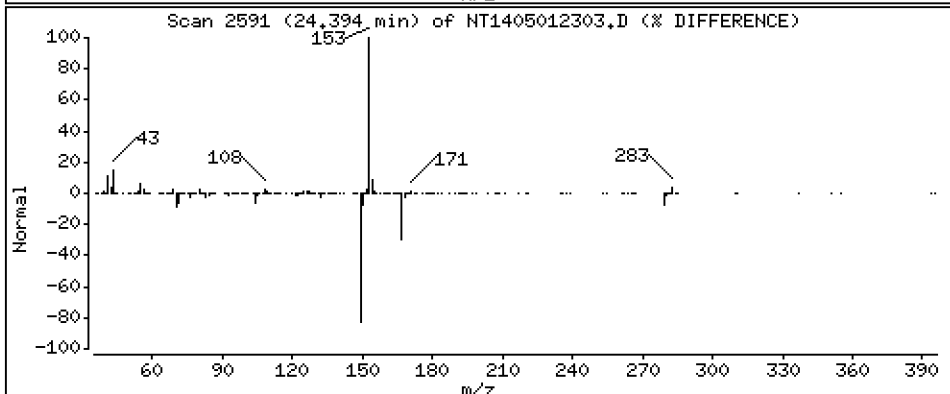
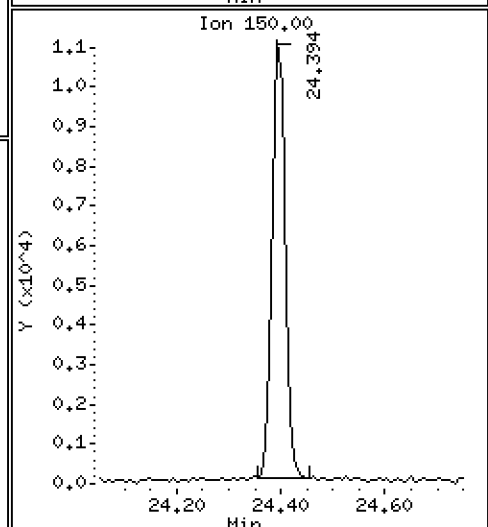
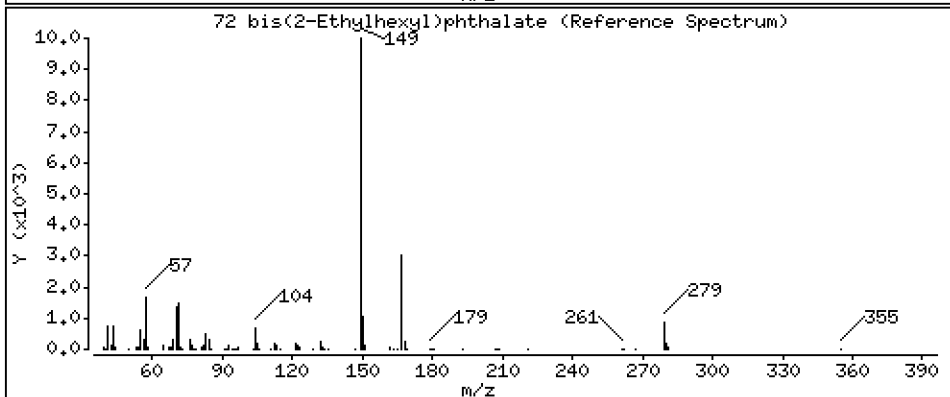
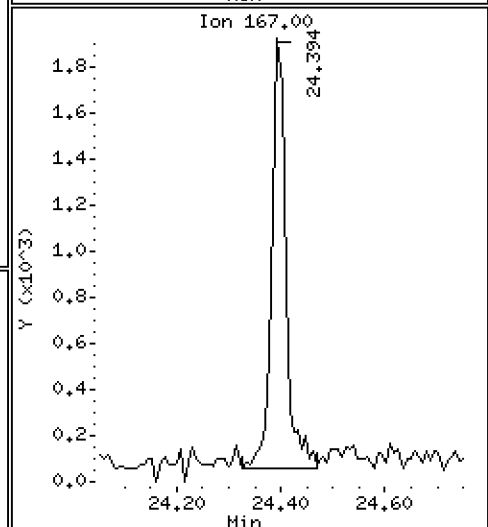
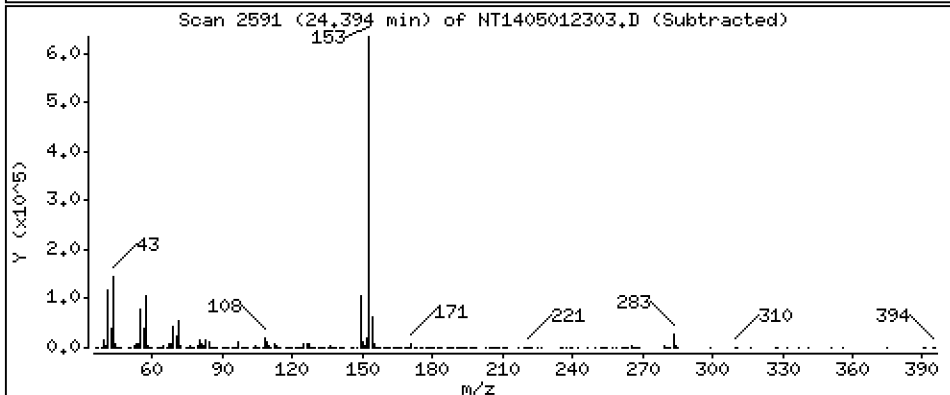
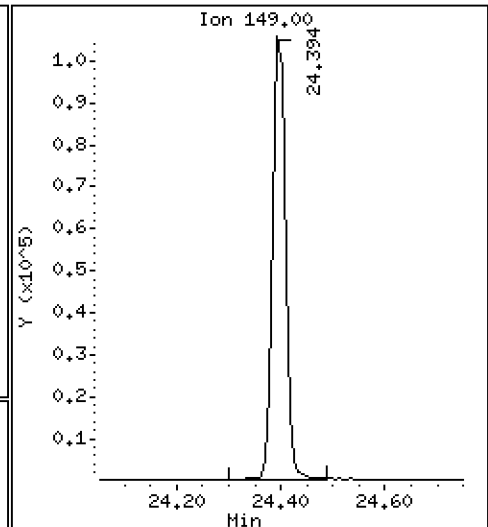
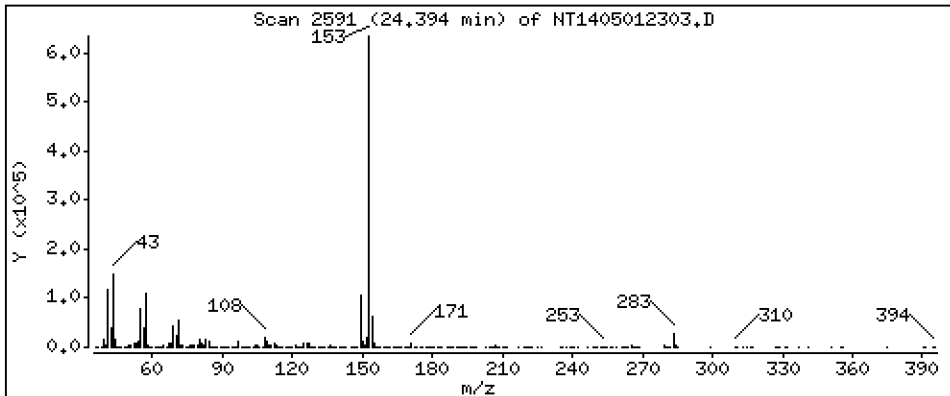
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 0,4778 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

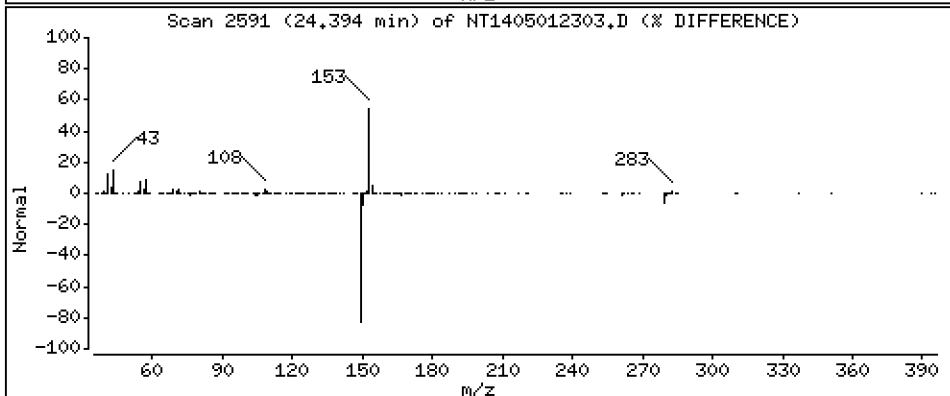
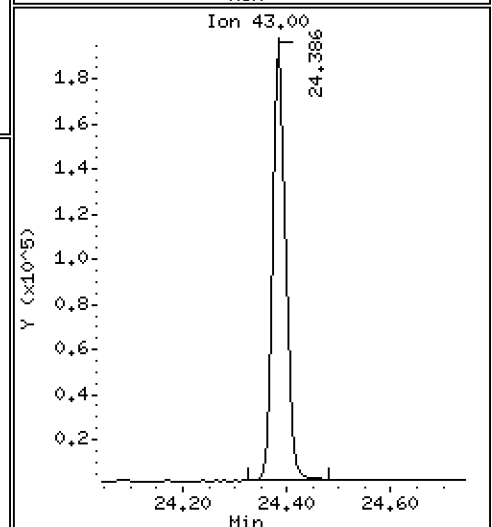
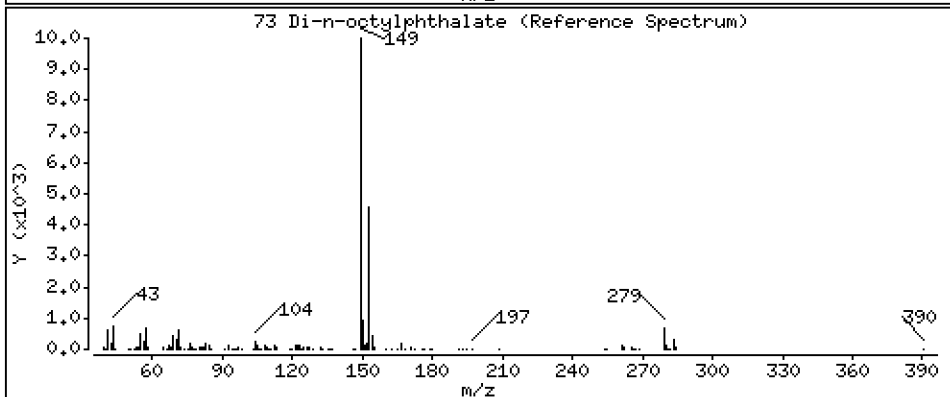
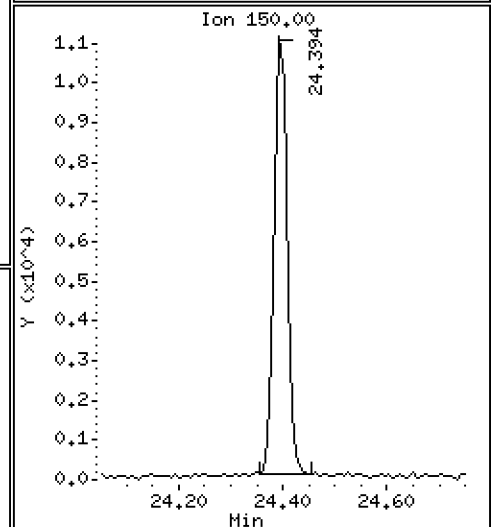
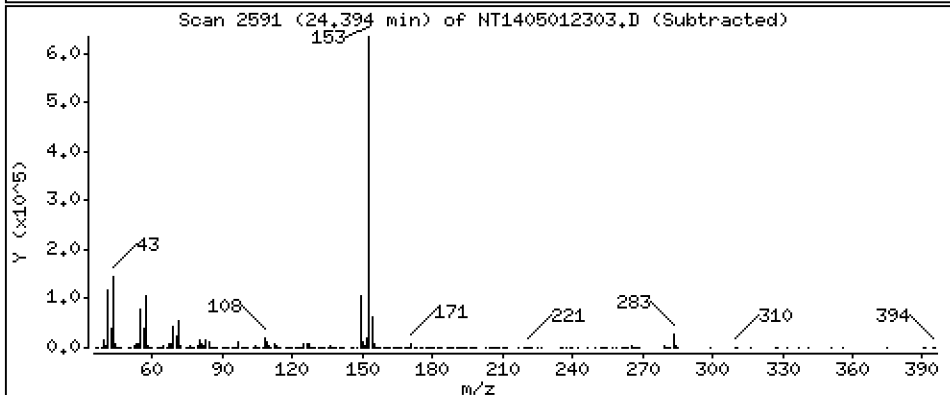
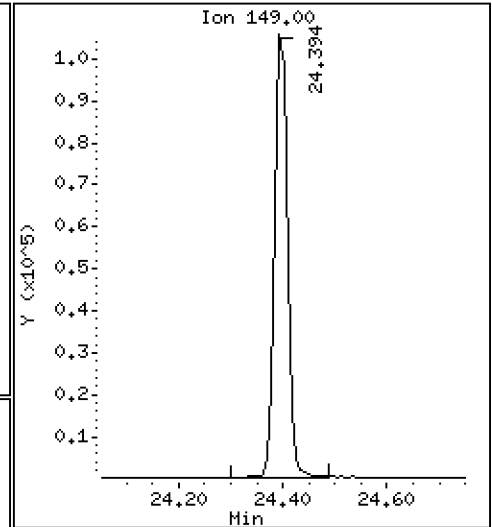
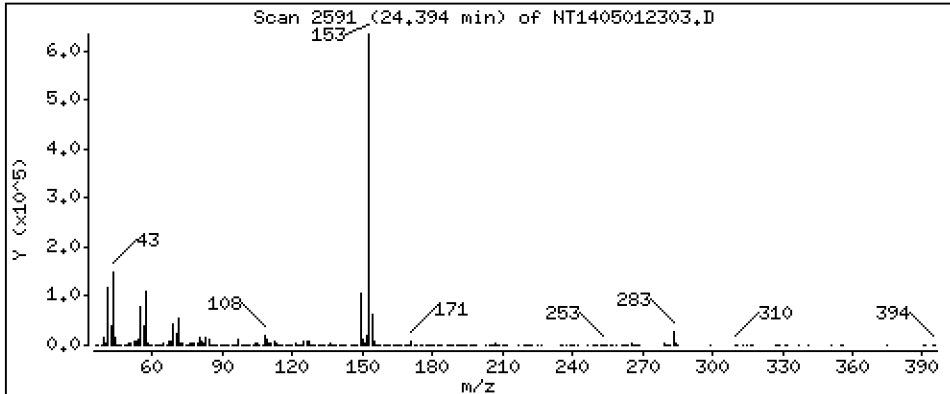
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

73 Di-n-octylphthalate

Concentration: 0.4778 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

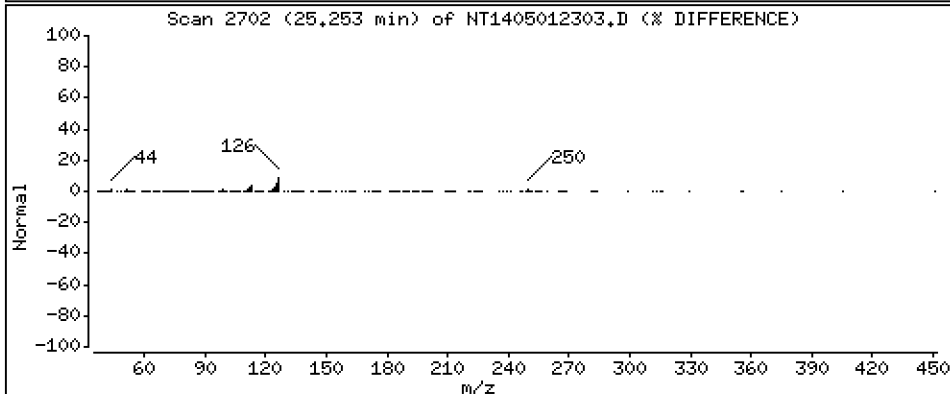
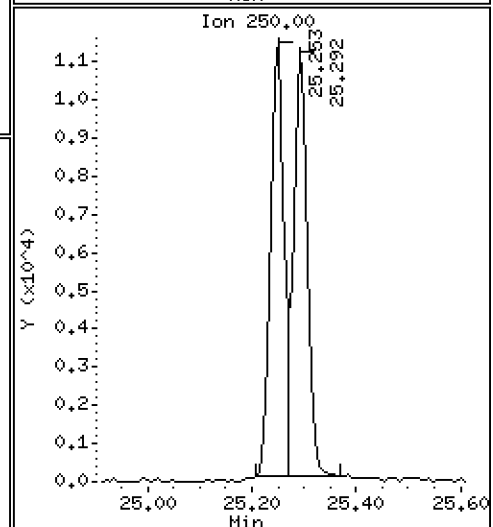
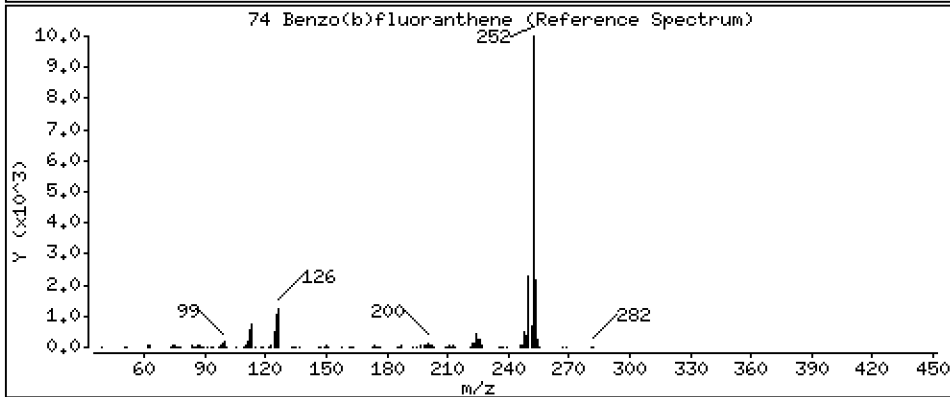
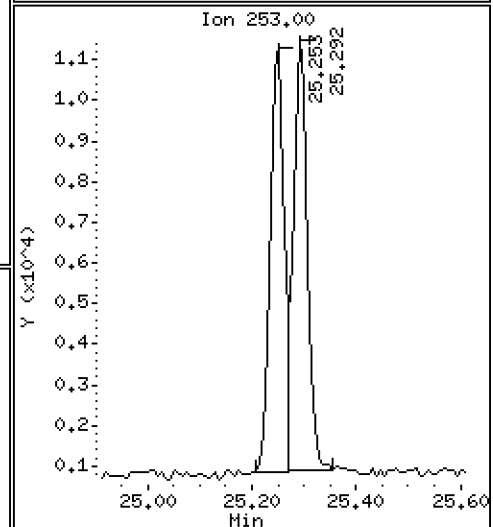
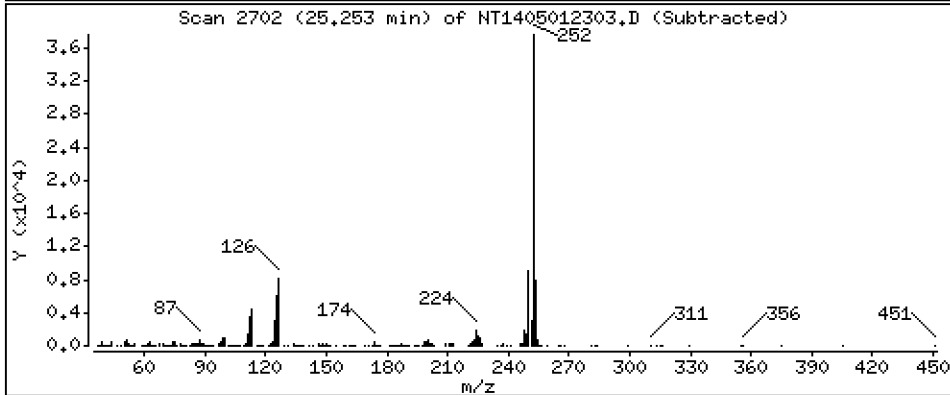
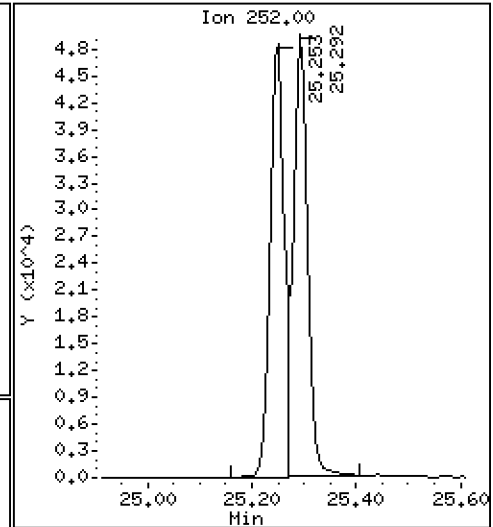
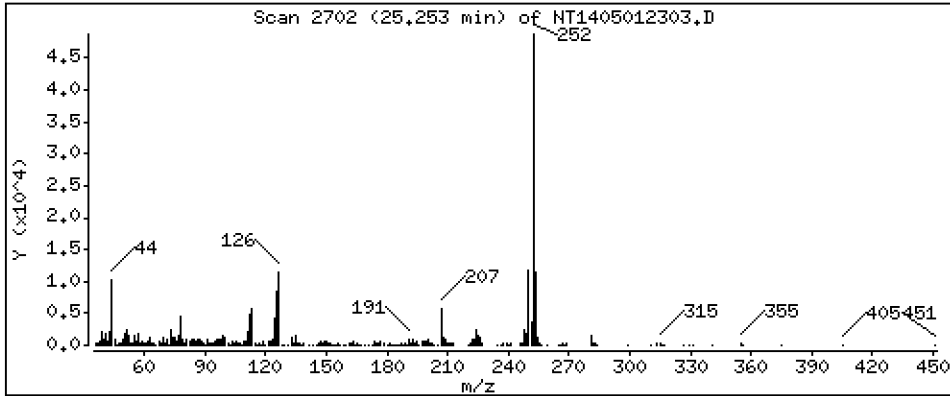
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 0,4769 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

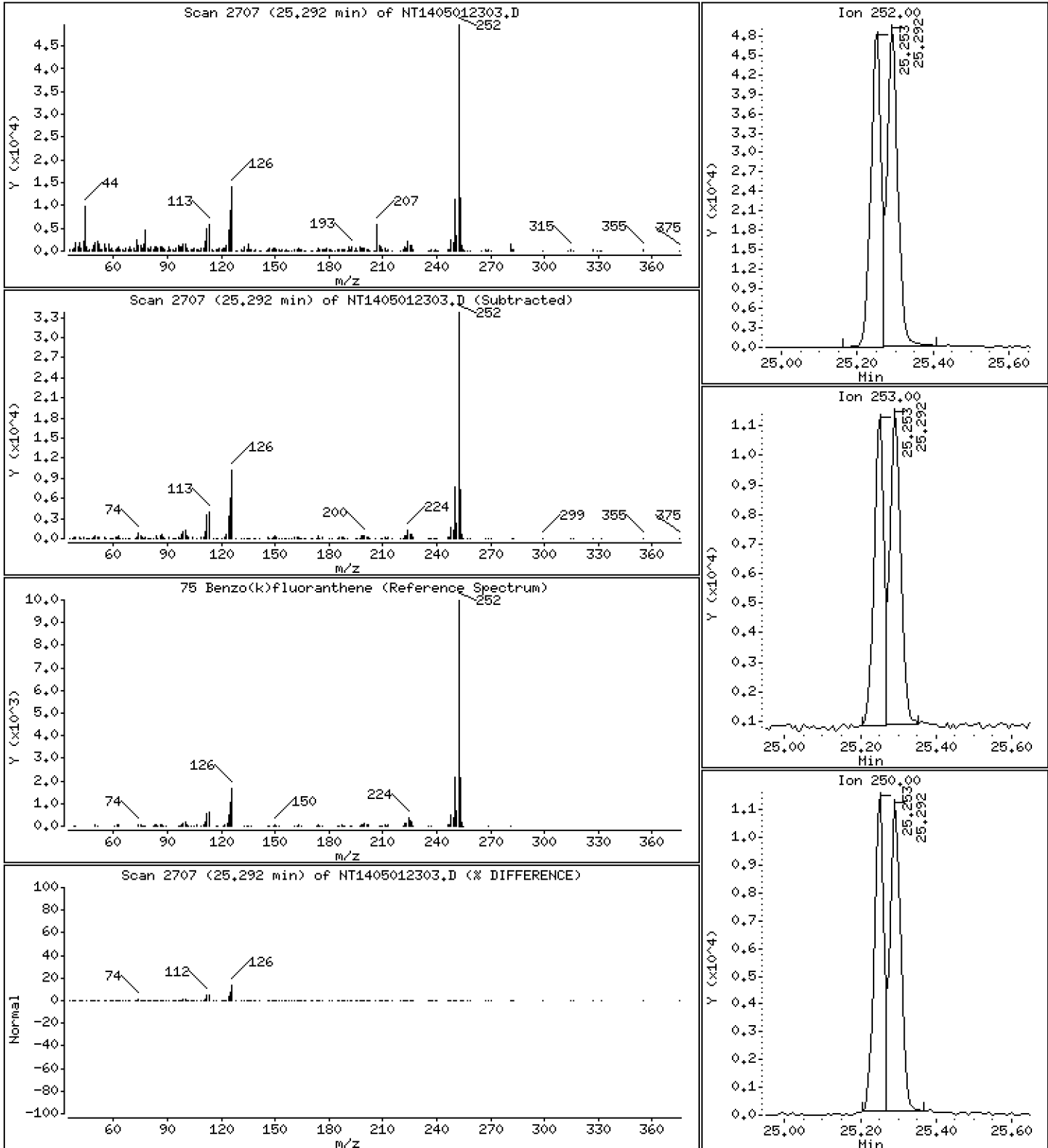
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 0,5417 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

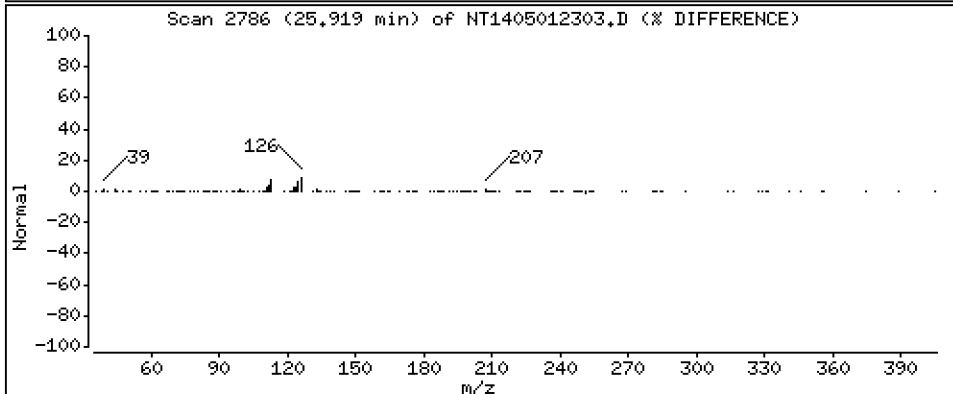
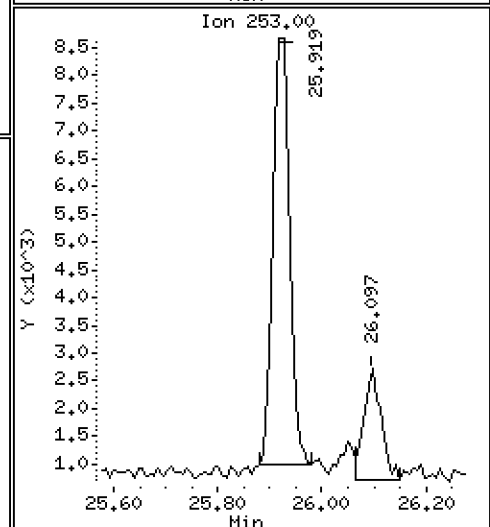
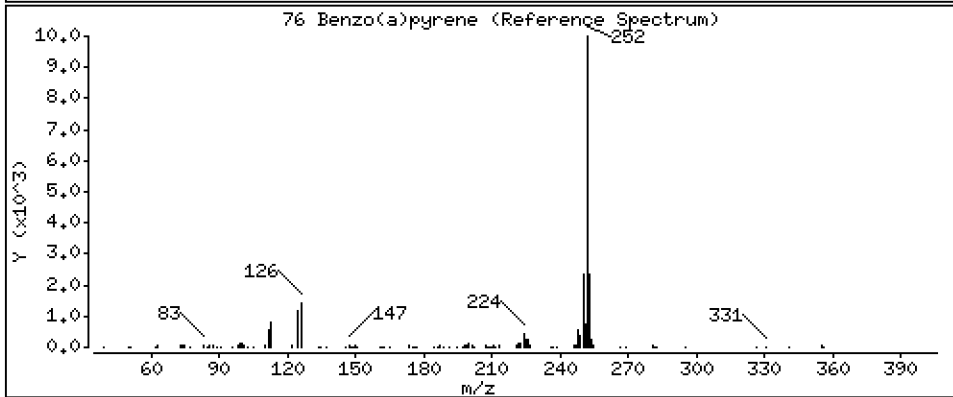
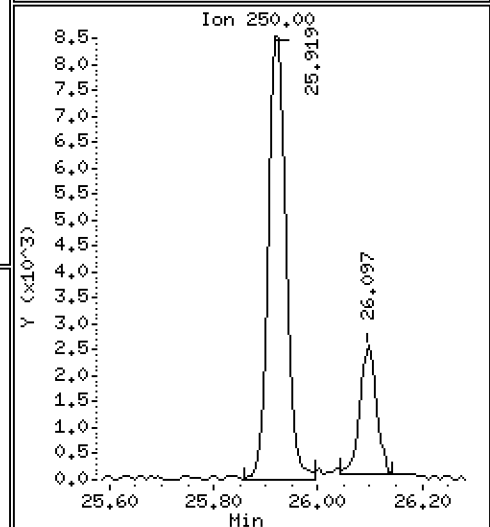
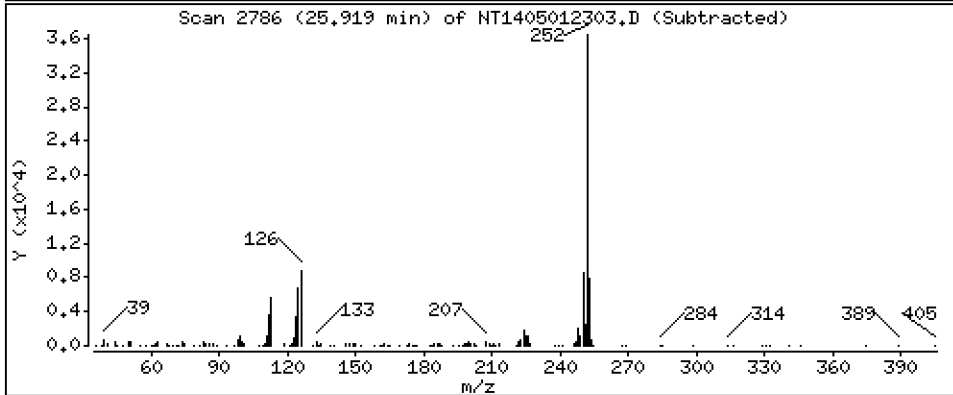
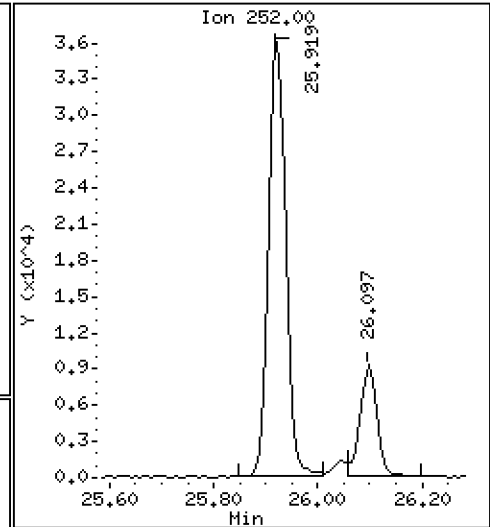
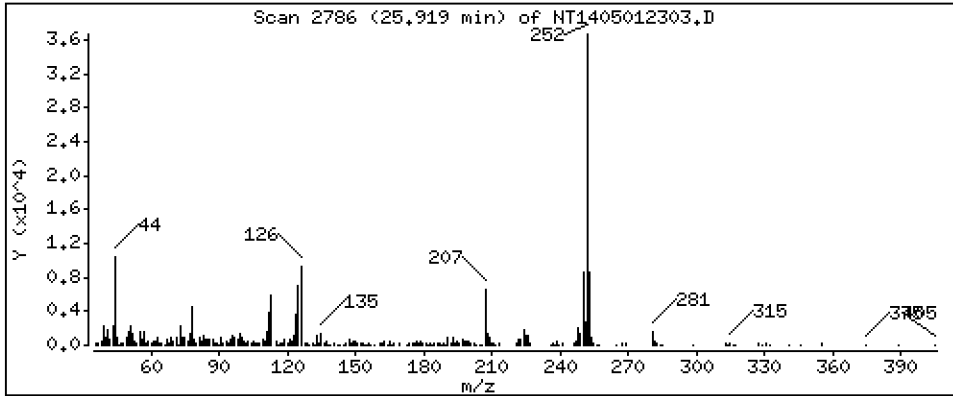
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 0,5001 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

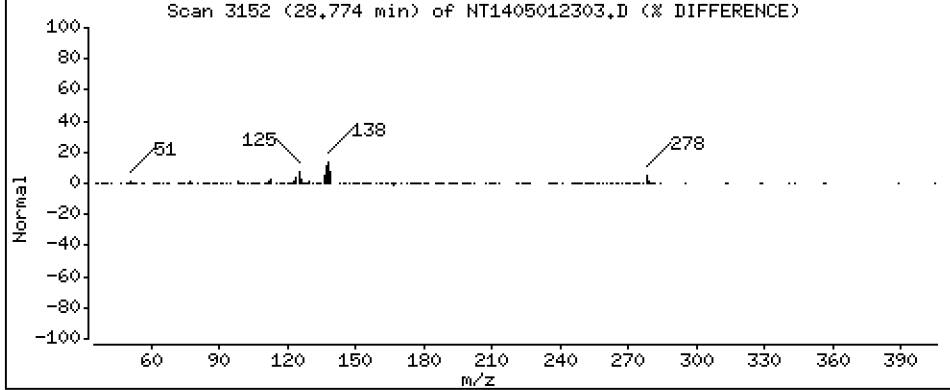
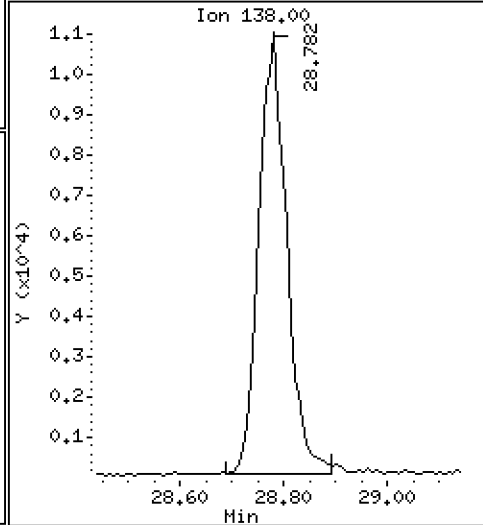
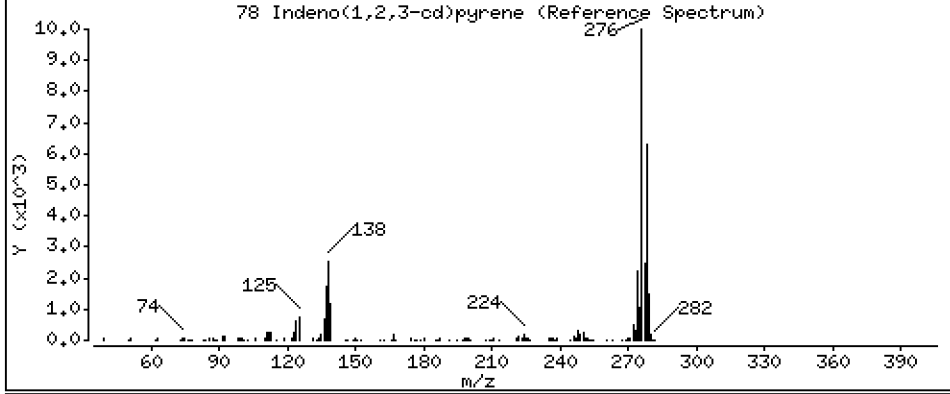
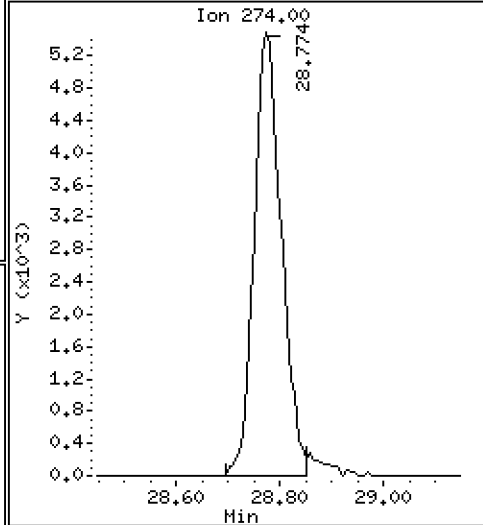
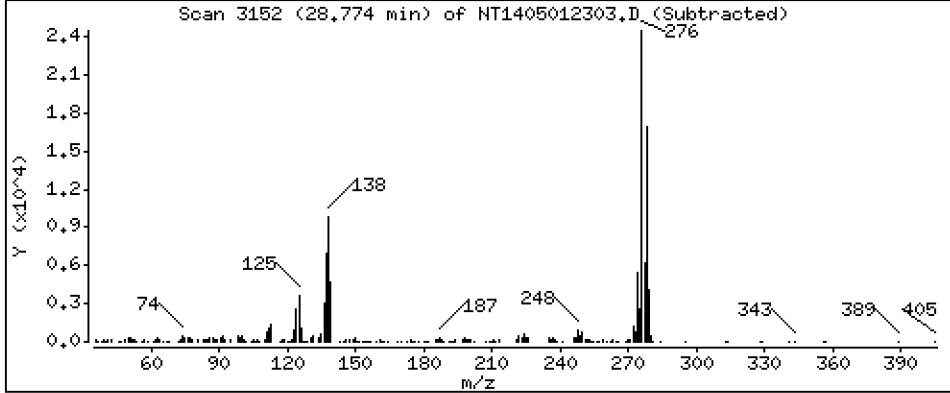
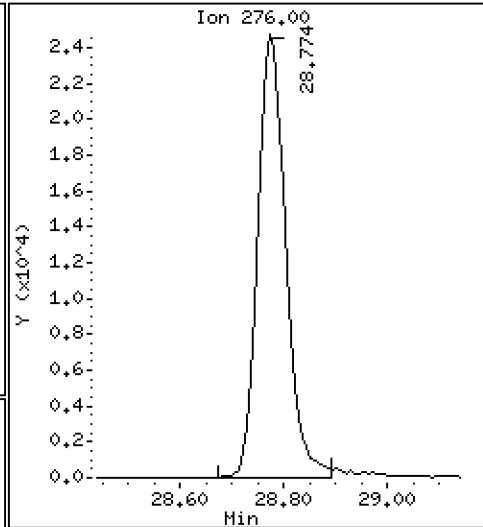
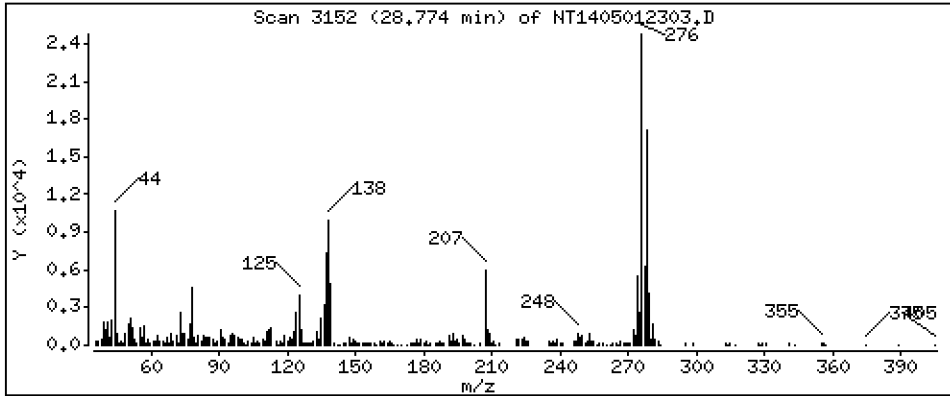
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 0,4142 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

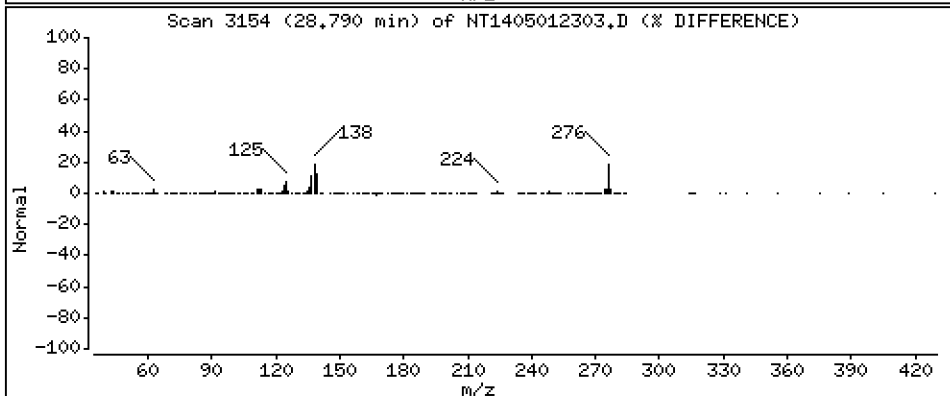
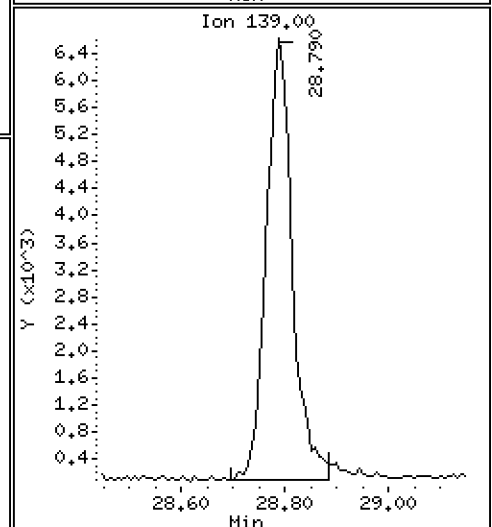
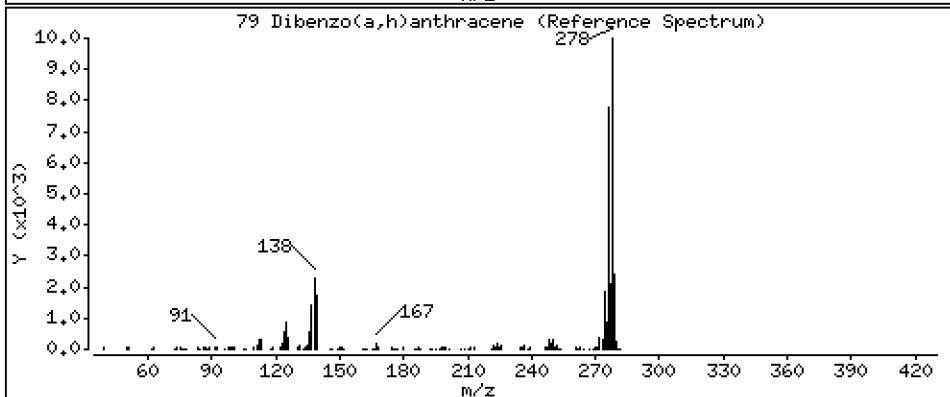
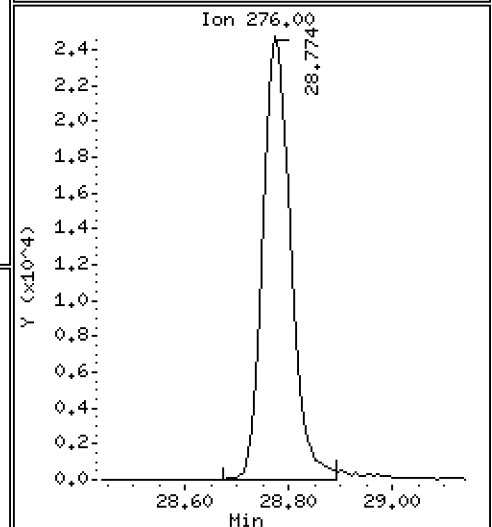
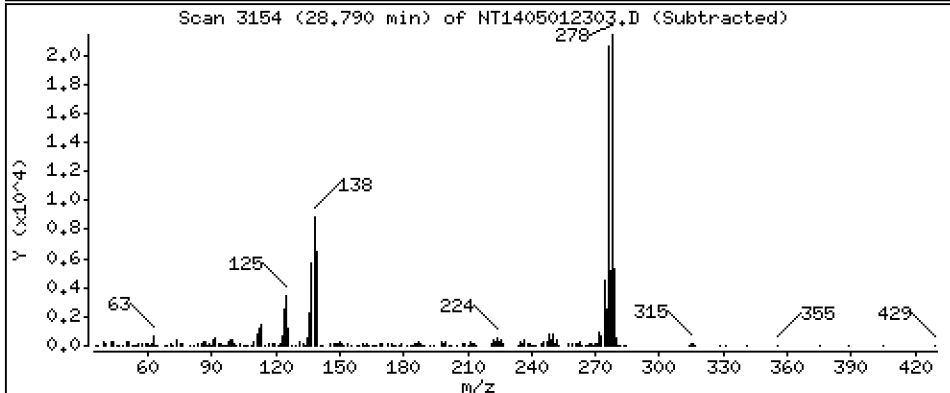
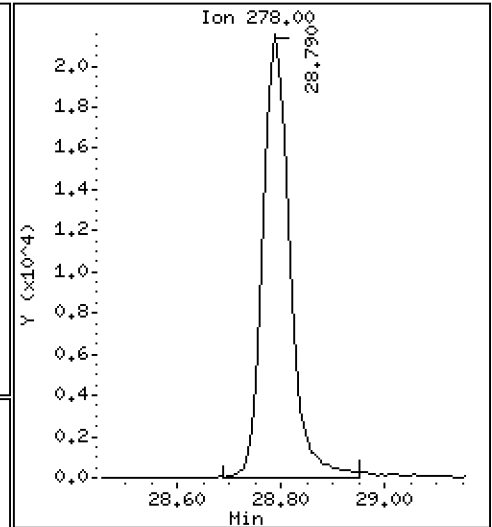
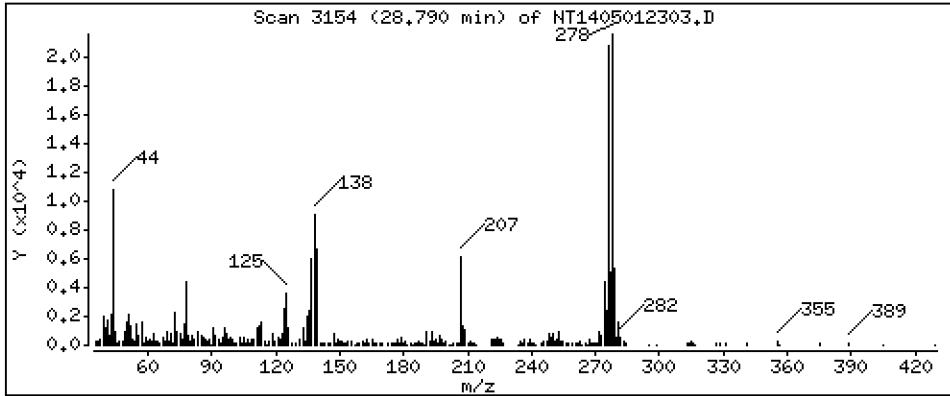
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,4230 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

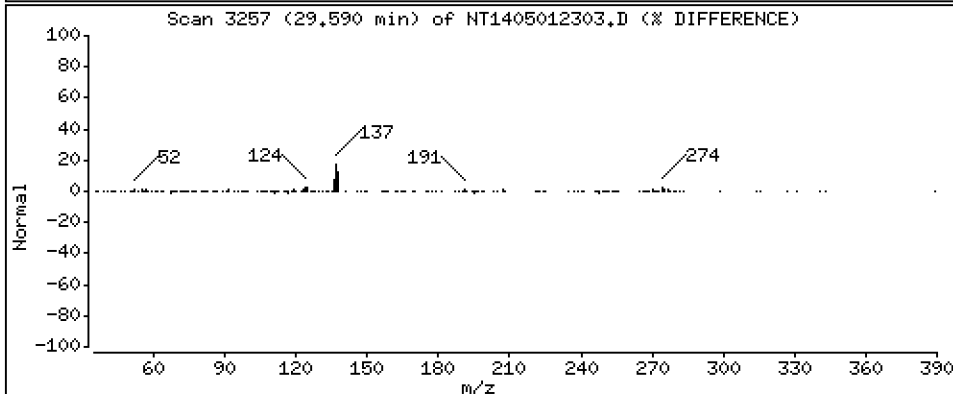
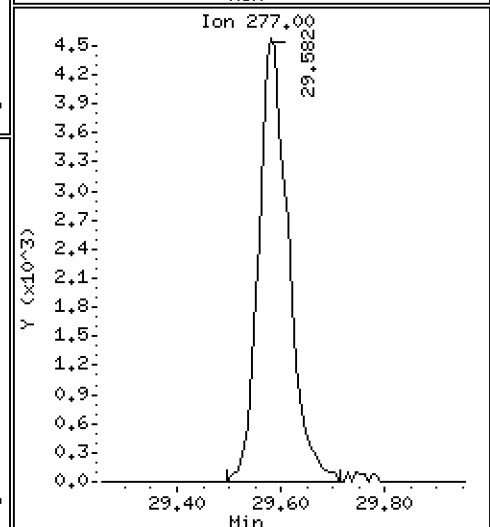
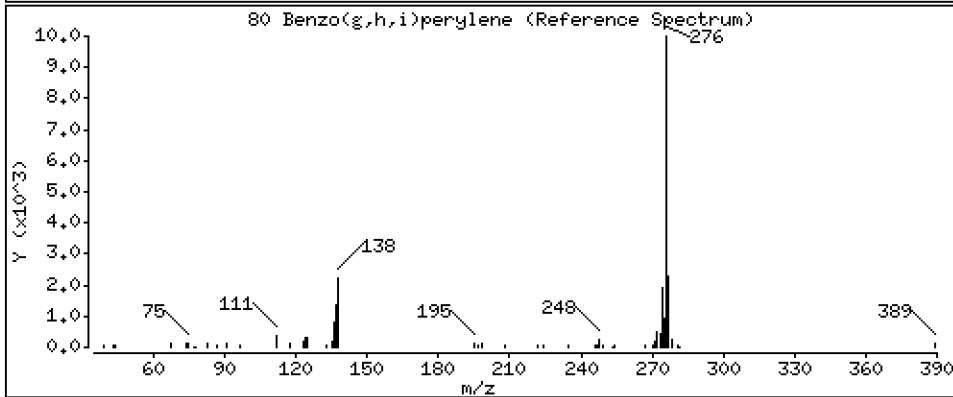
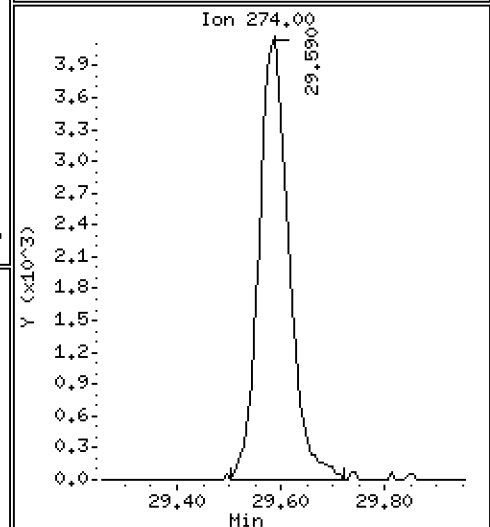
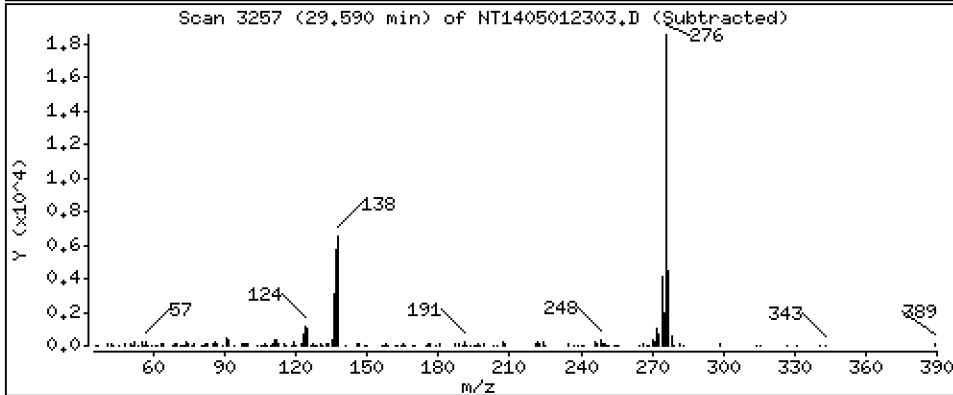
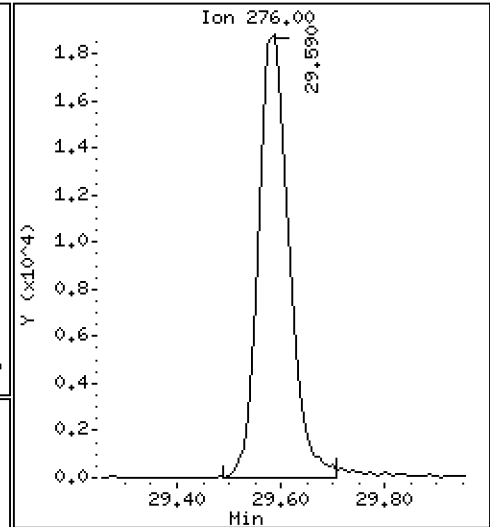
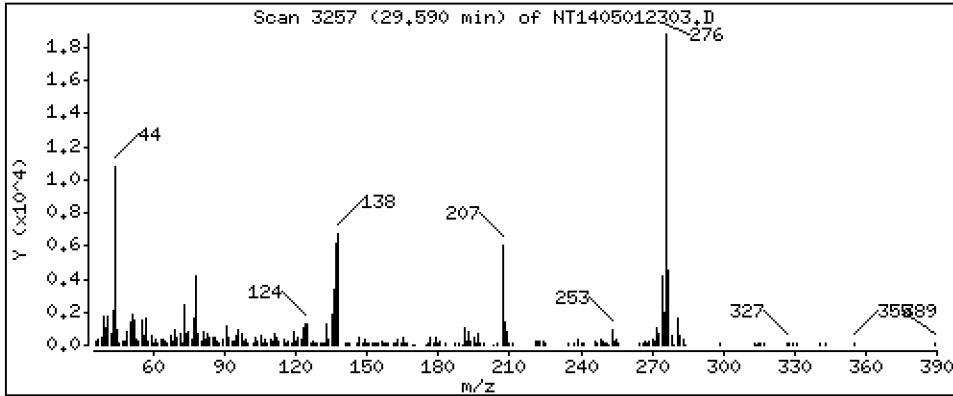
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 0,4080 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

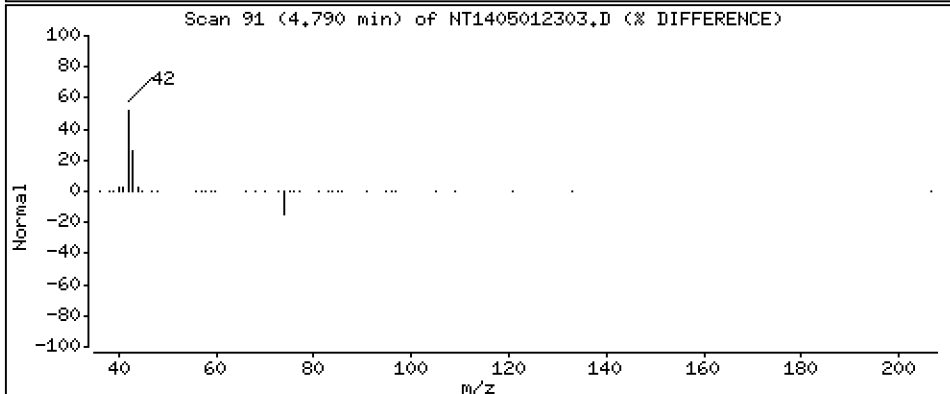
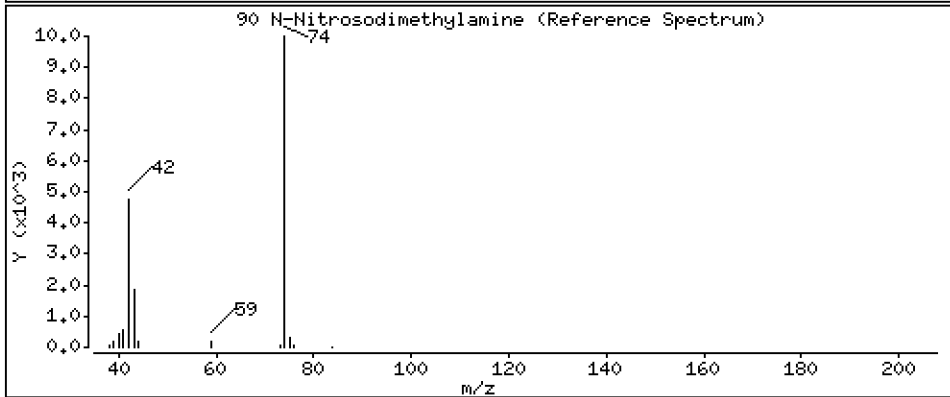
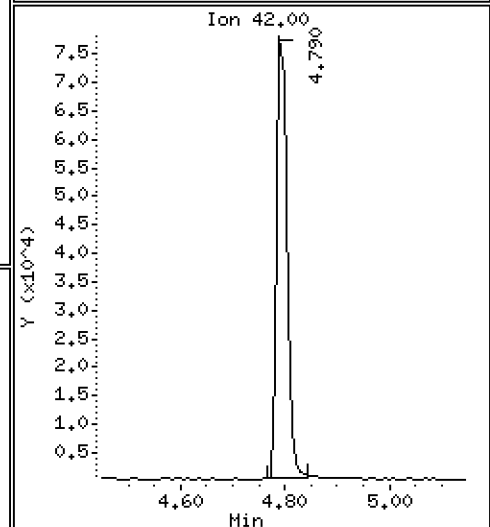
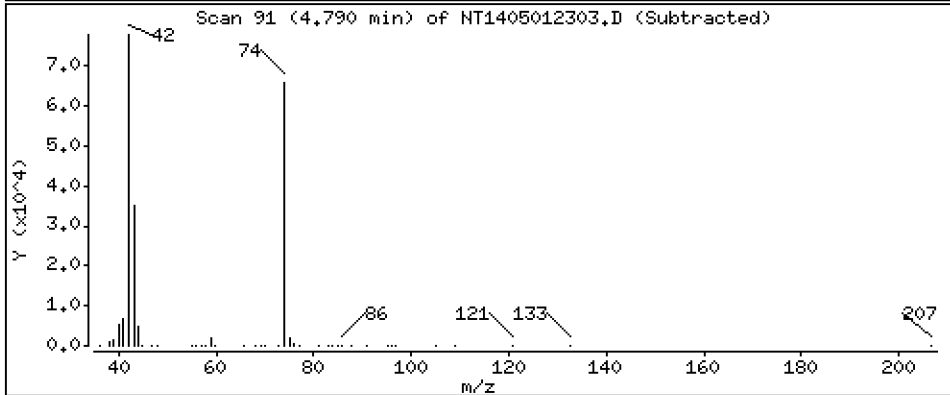
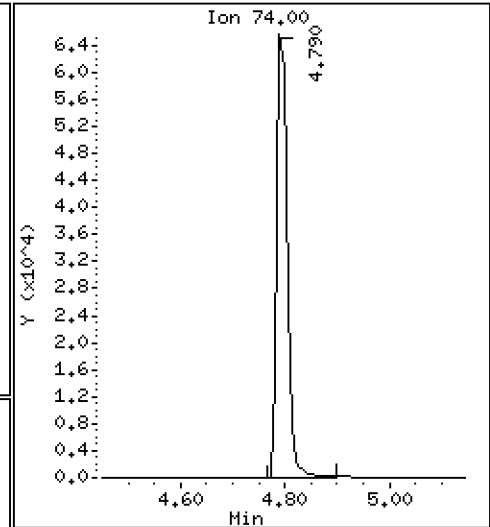
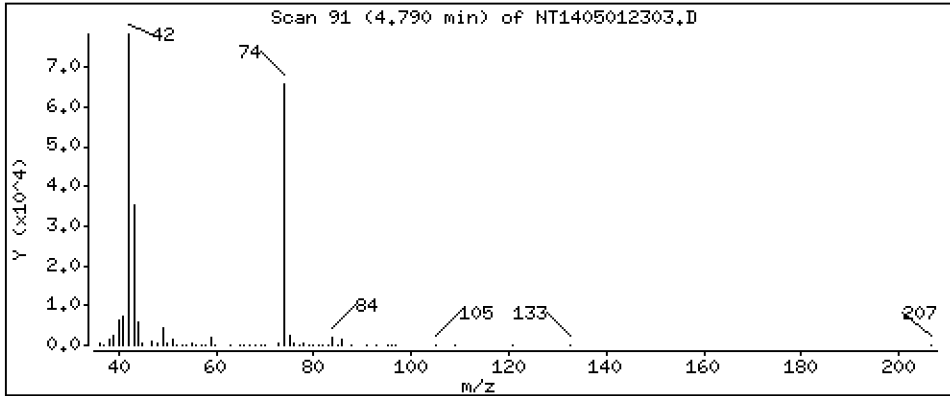
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 0,9801 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

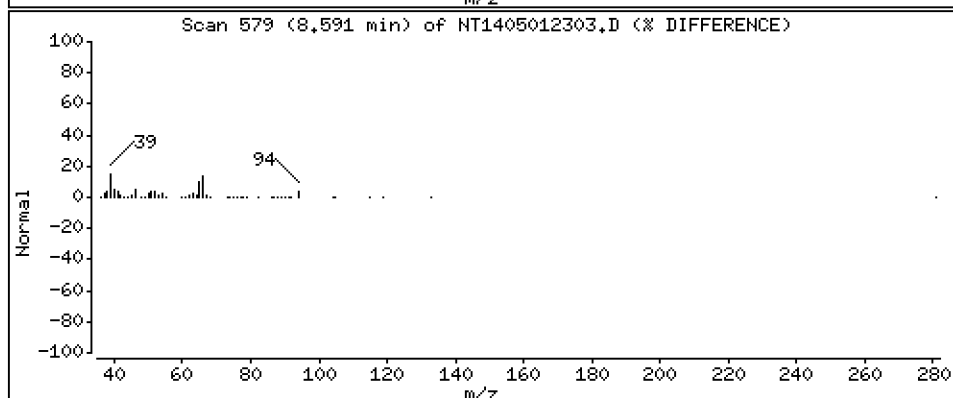
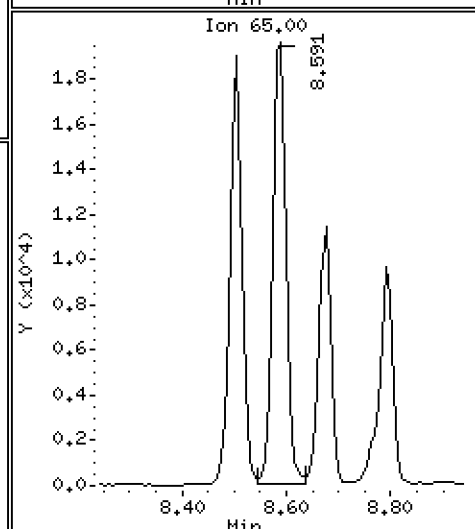
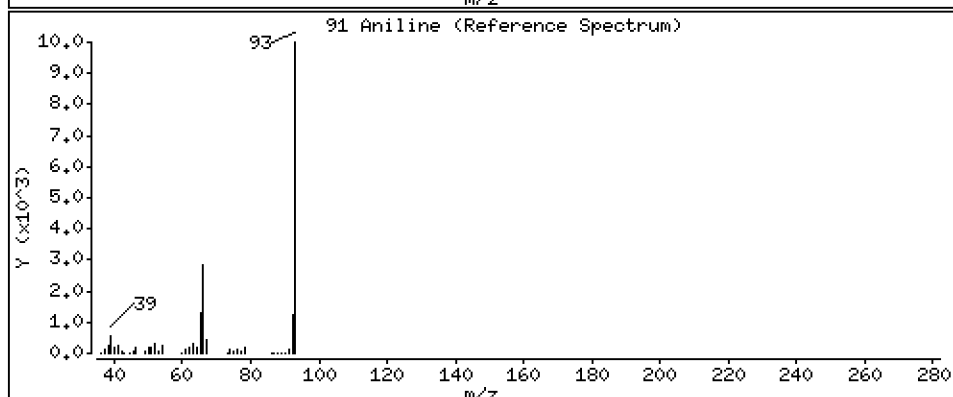
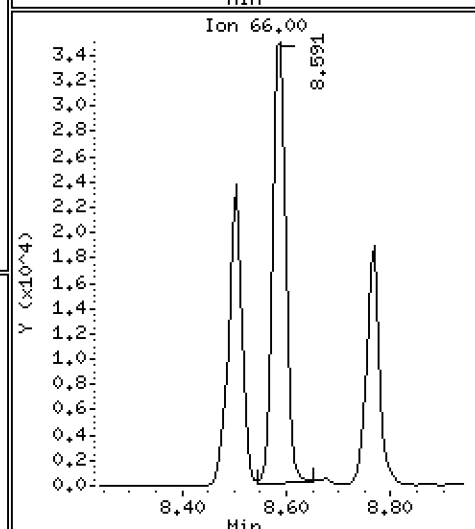
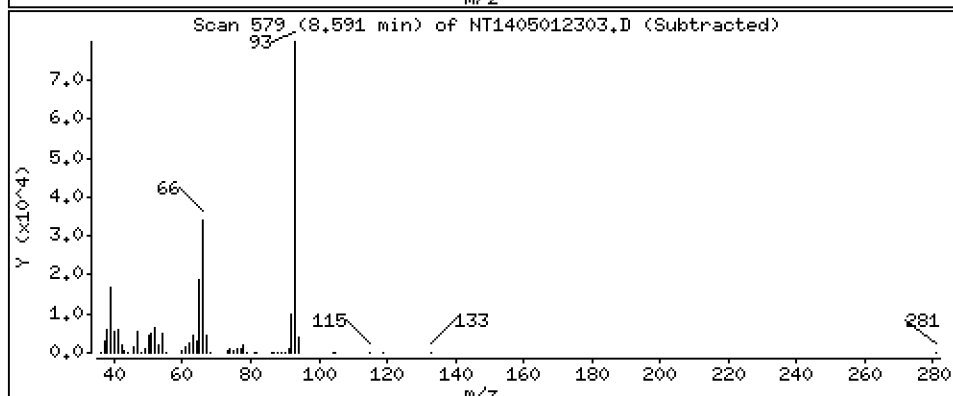
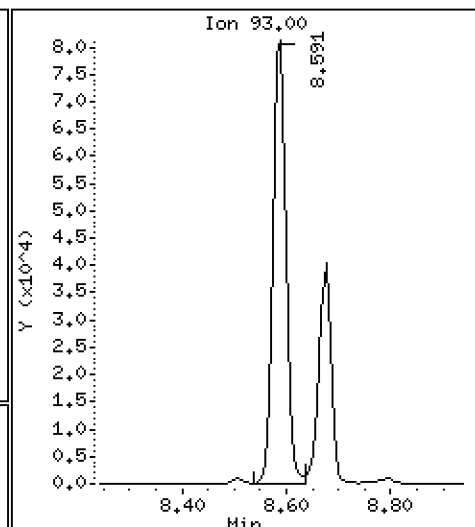
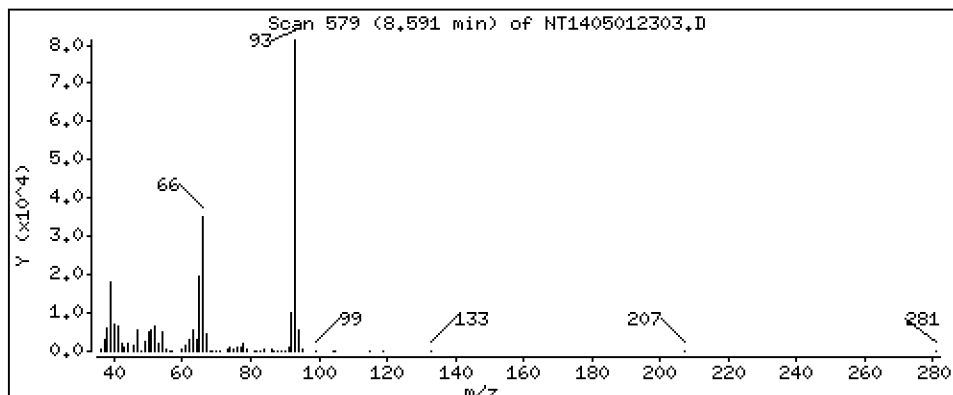
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

91 Aniline

Concentration: 0,9139 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

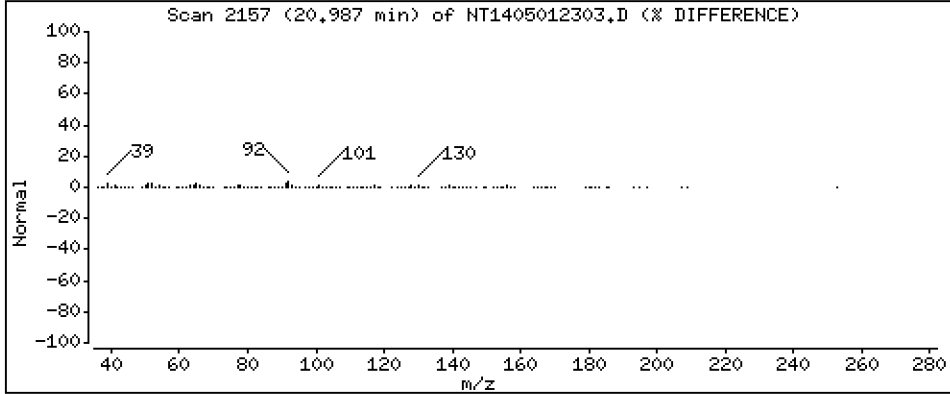
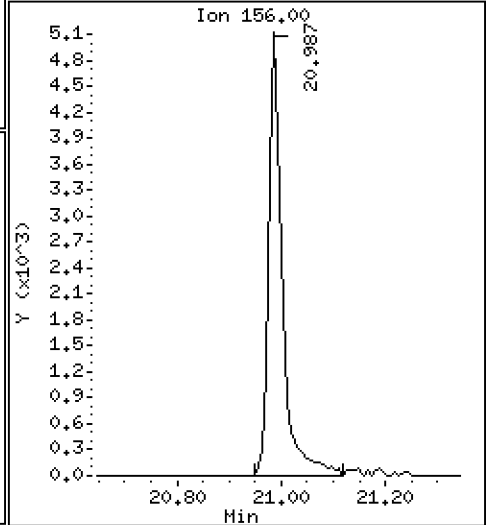
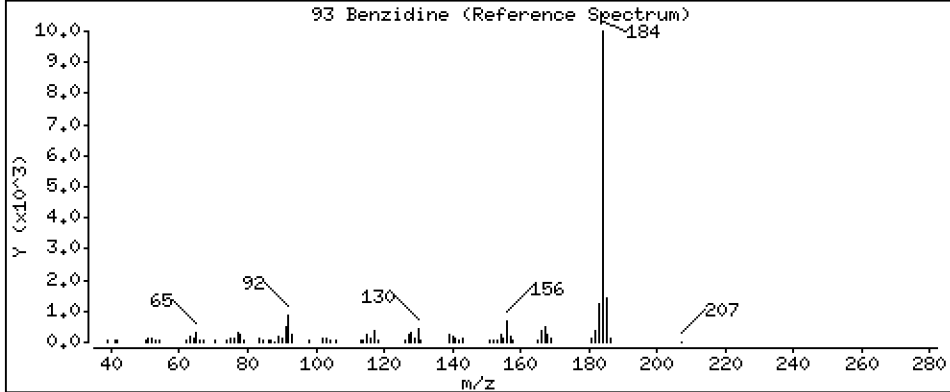
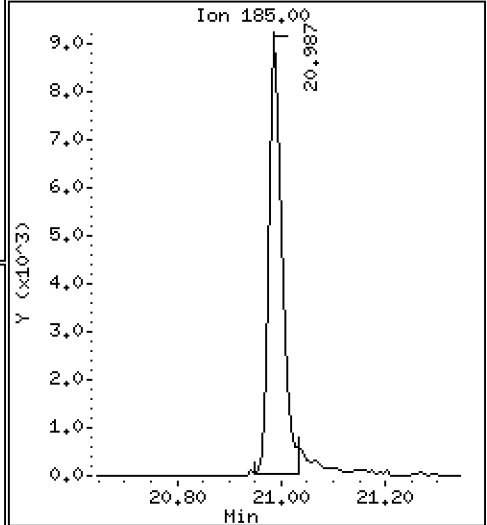
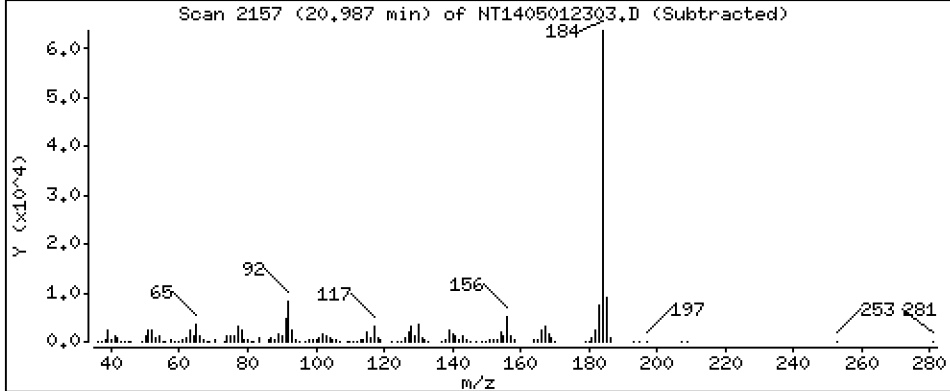
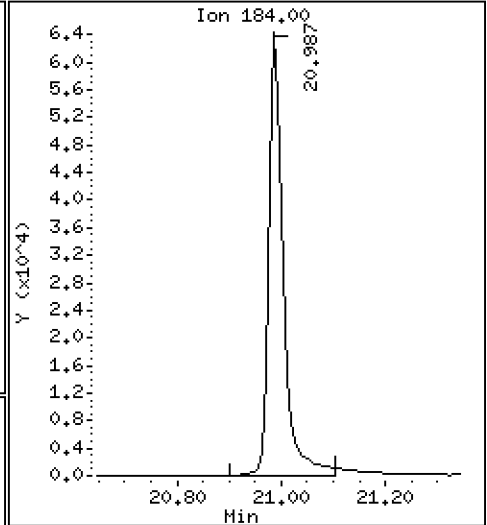
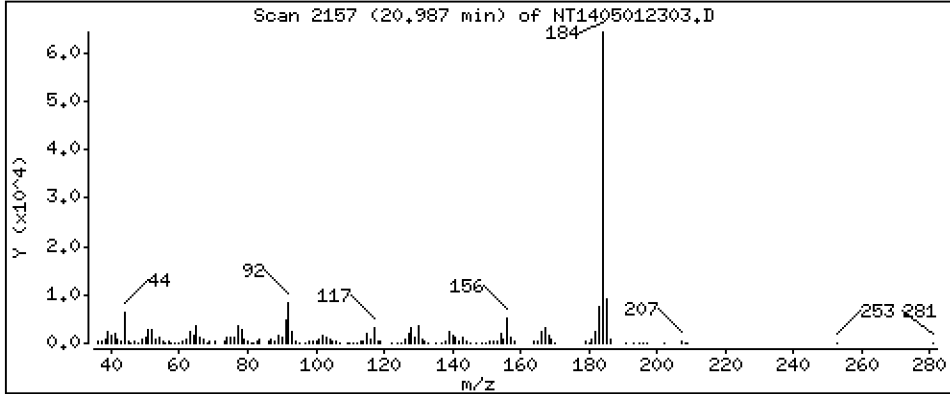
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 1,118 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

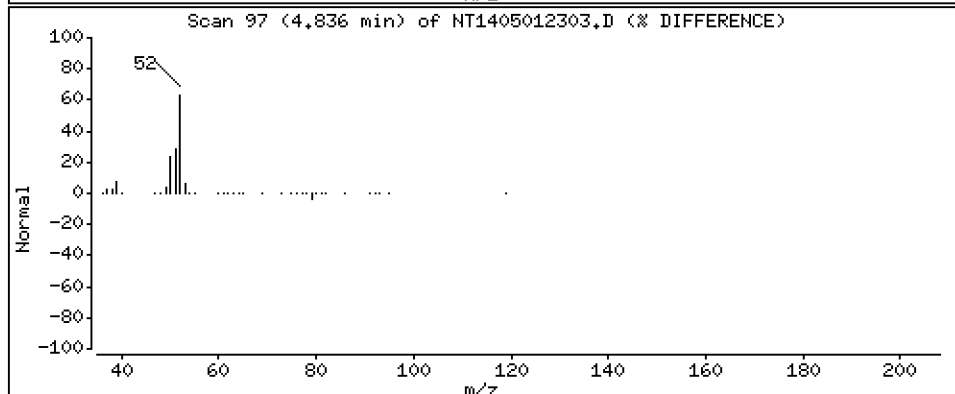
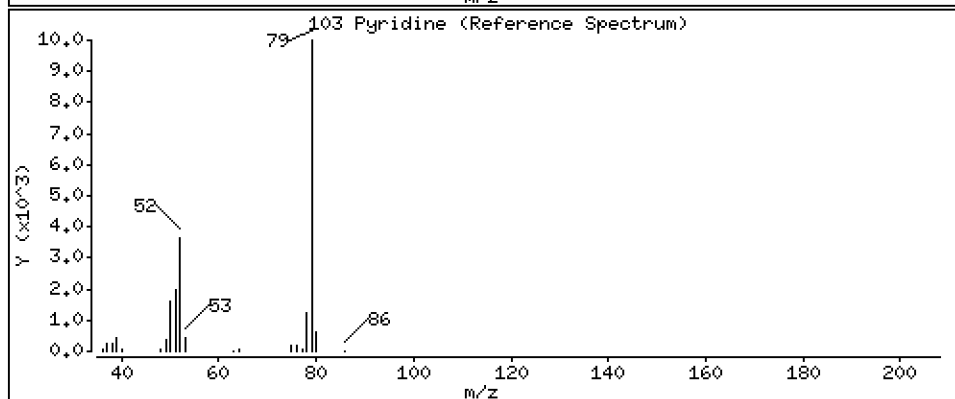
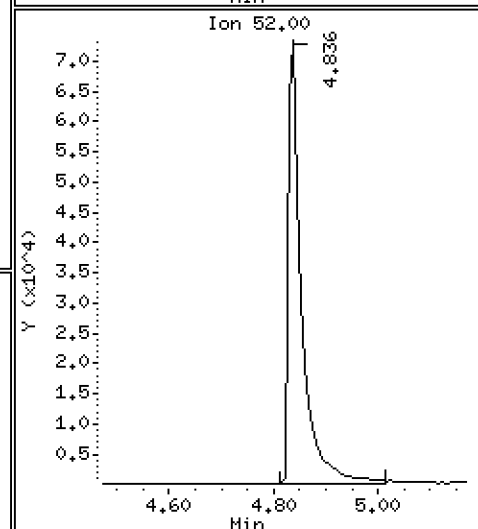
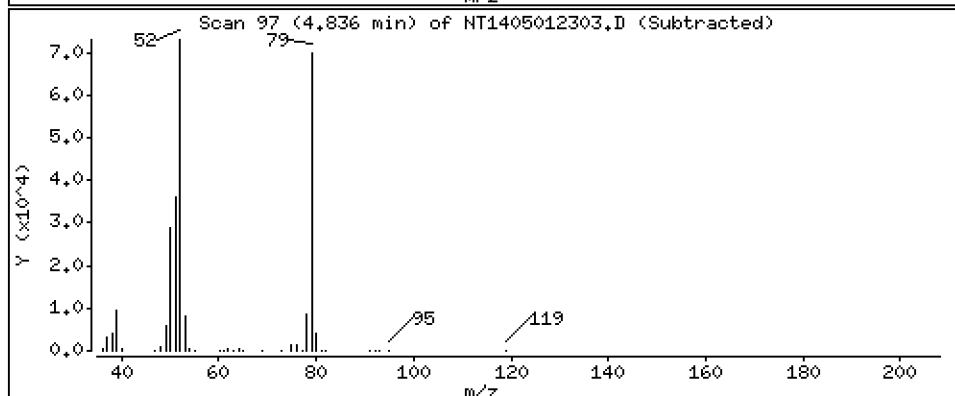
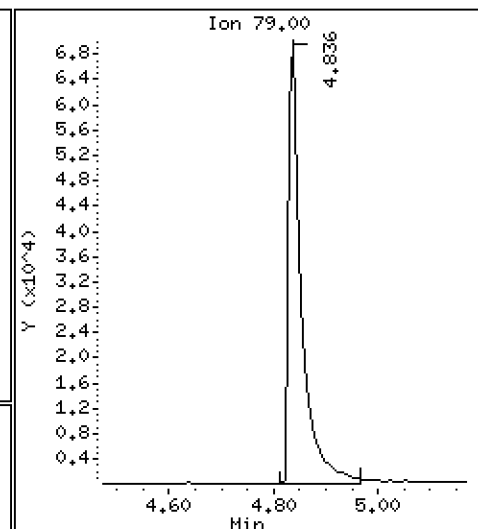
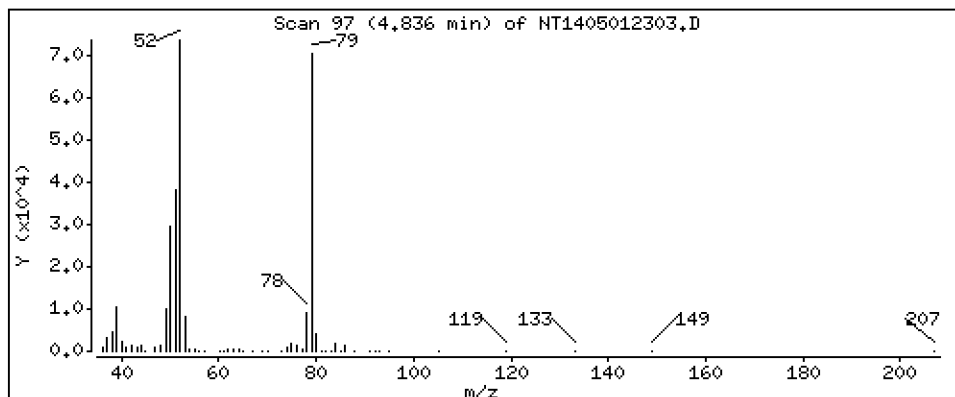
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

103 Pyridine

Concentration: 0.5011 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

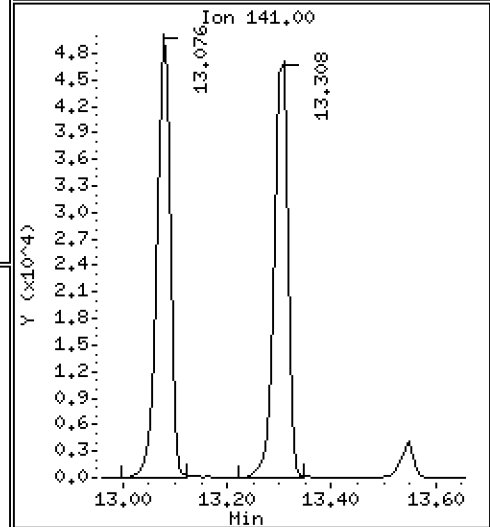
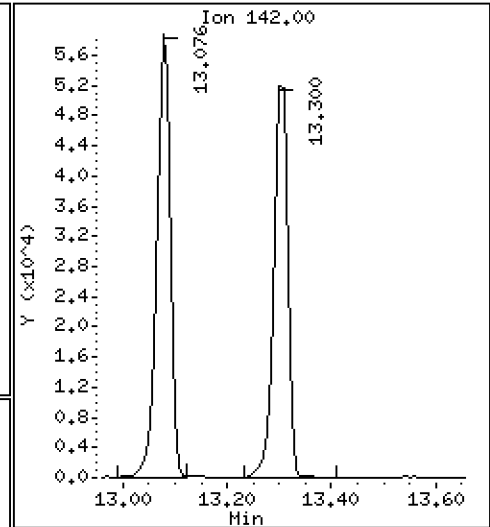
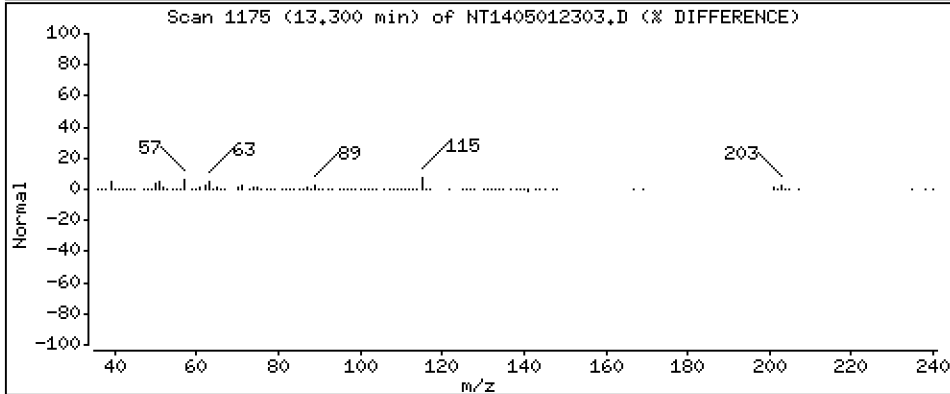
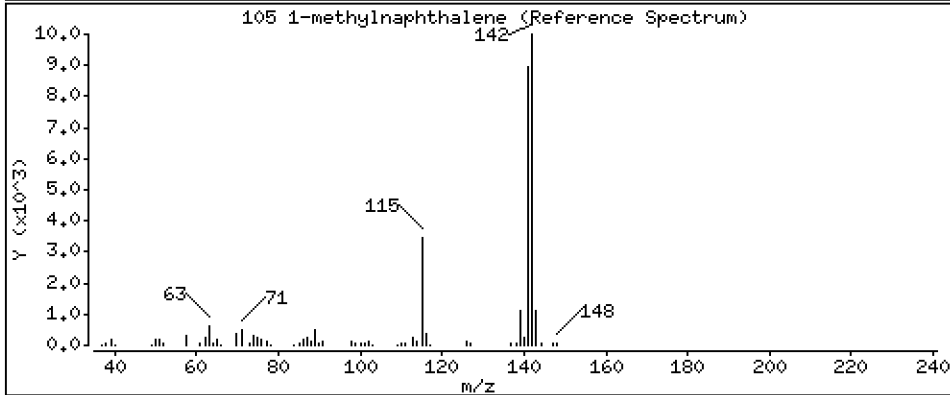
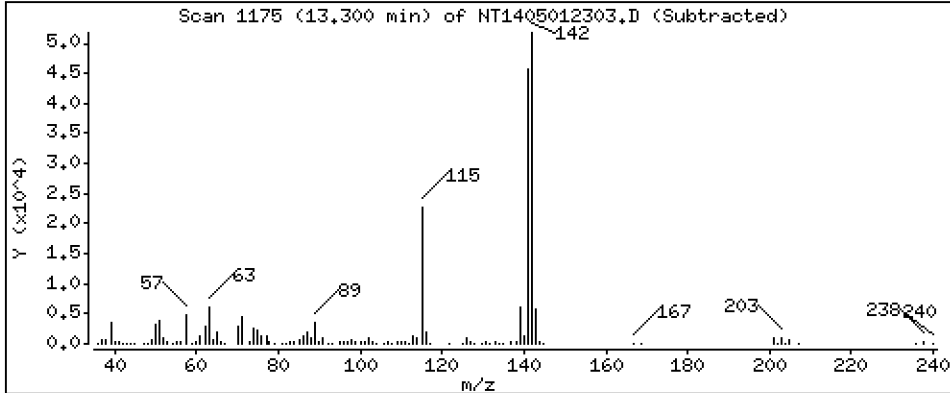
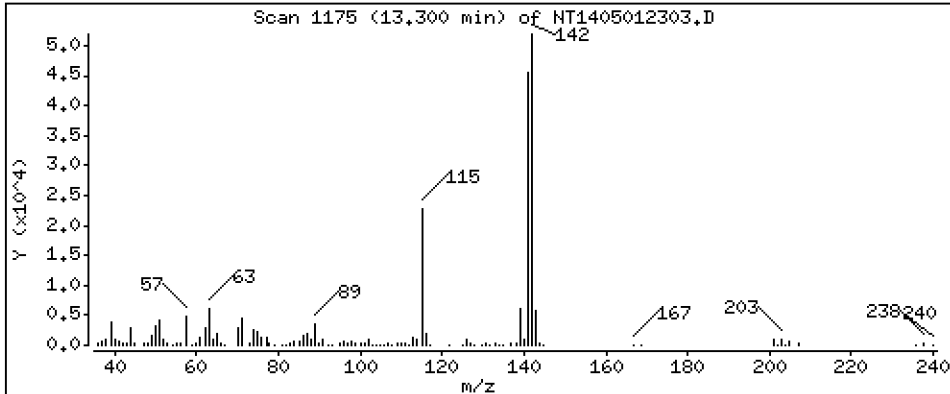
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 0,4398 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

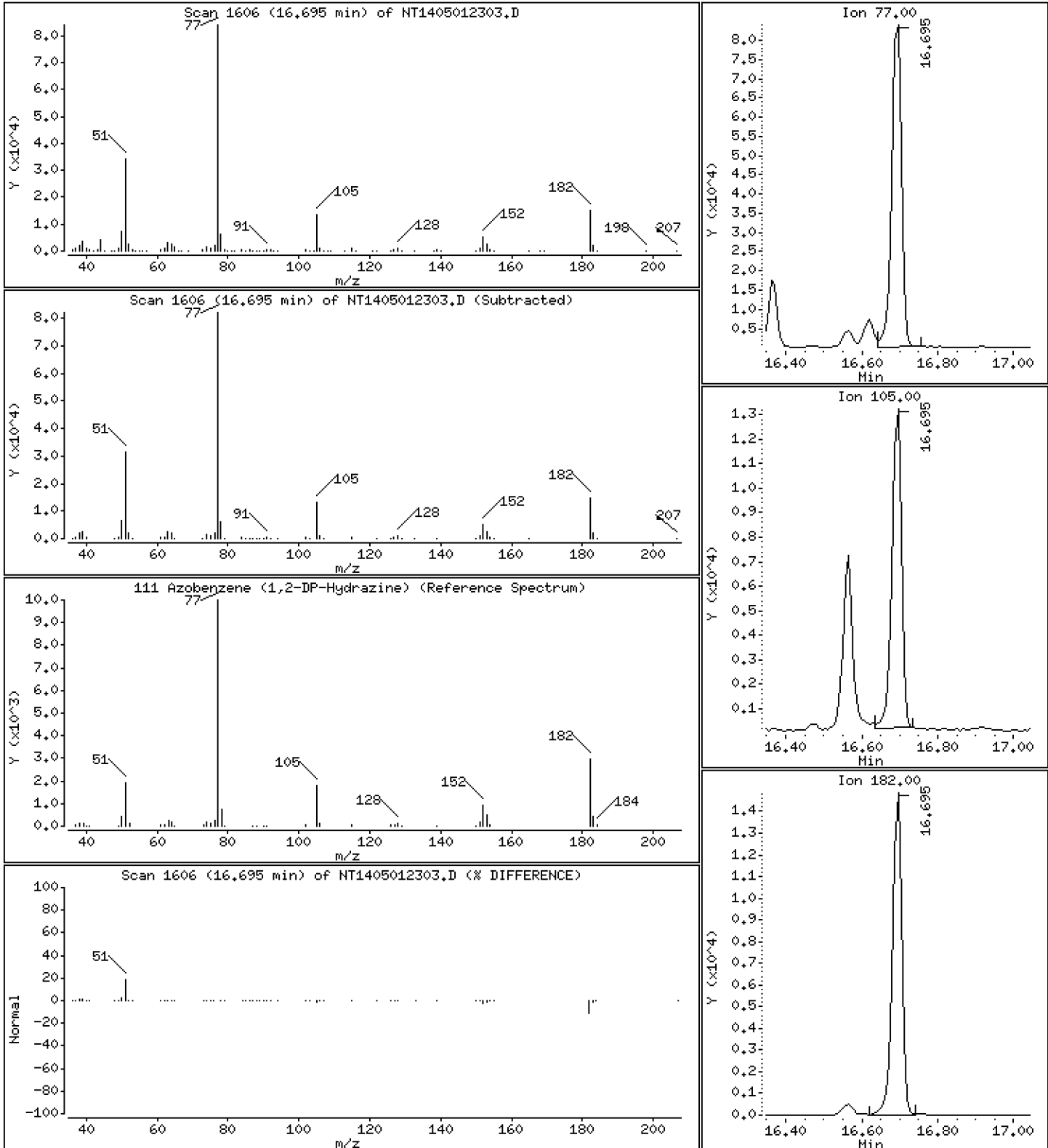
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 0,4761 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

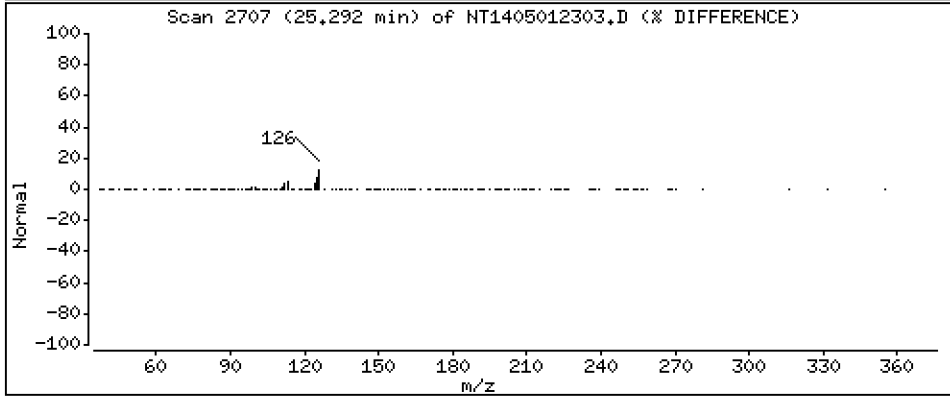
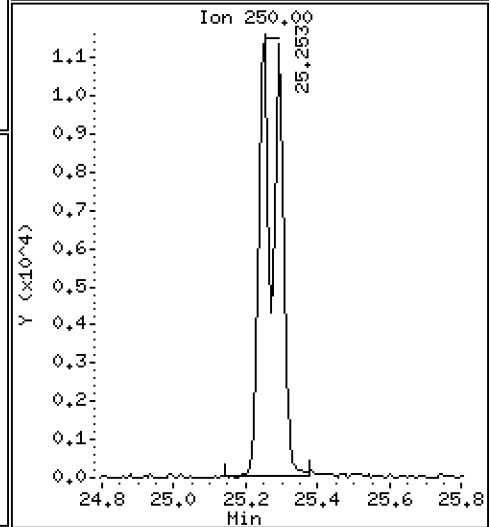
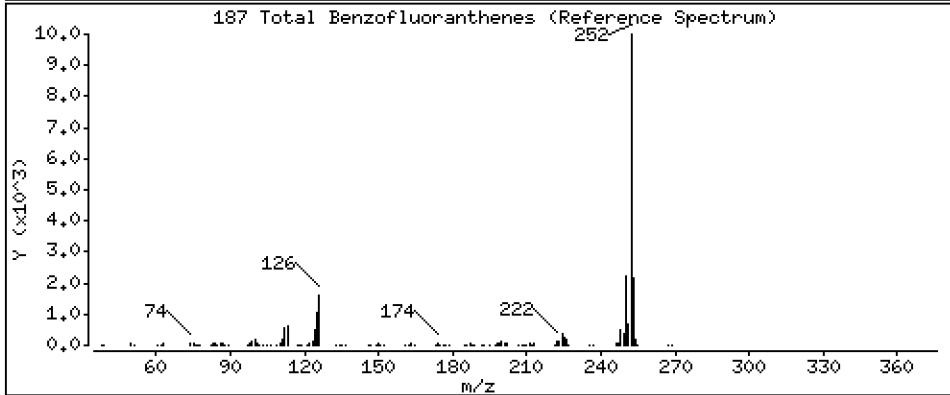
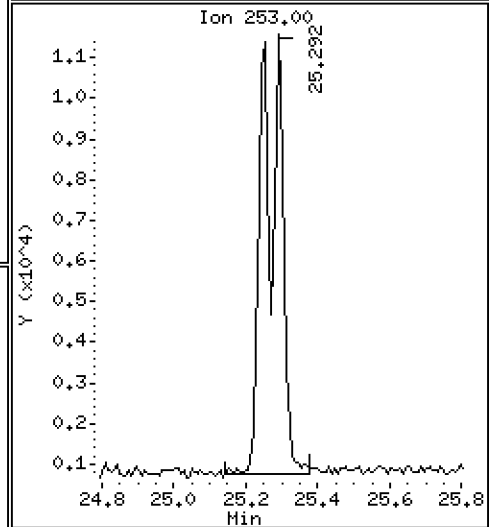
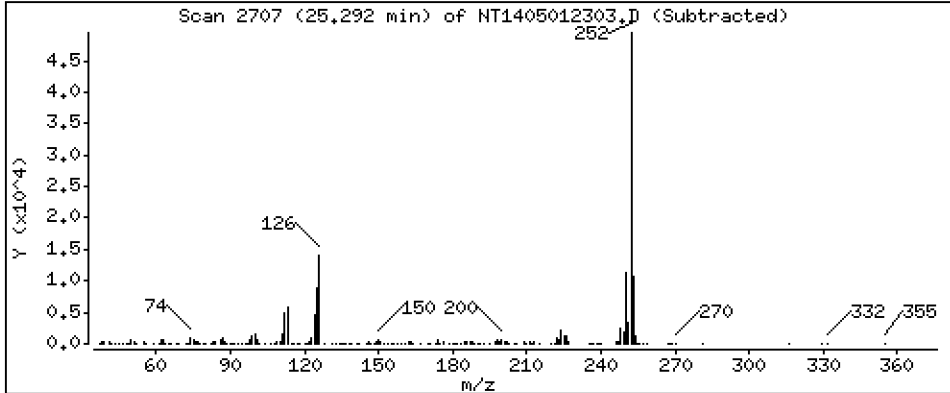
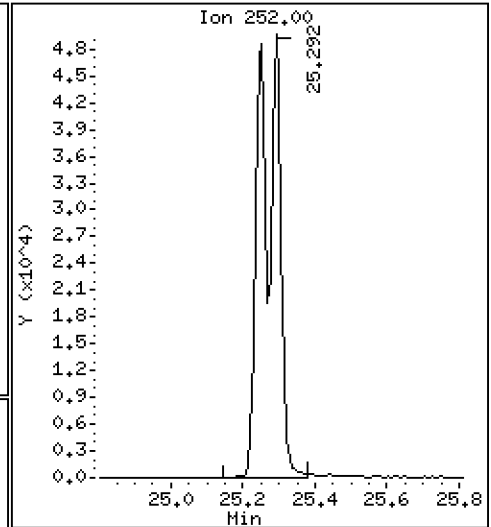
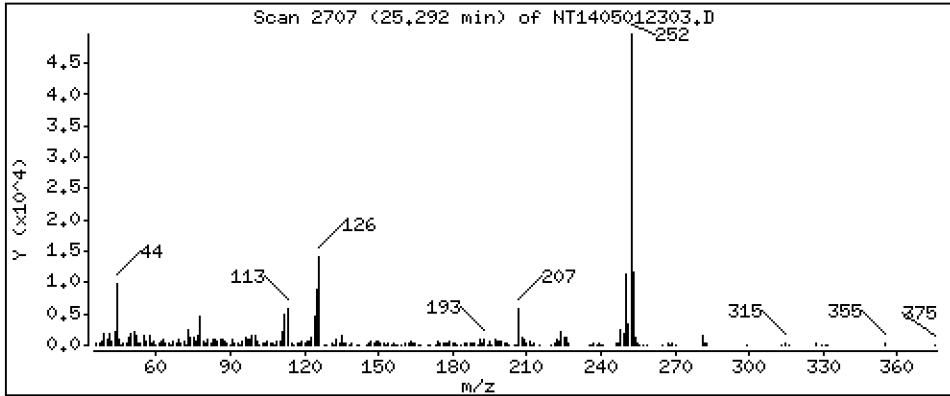
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 1,019 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

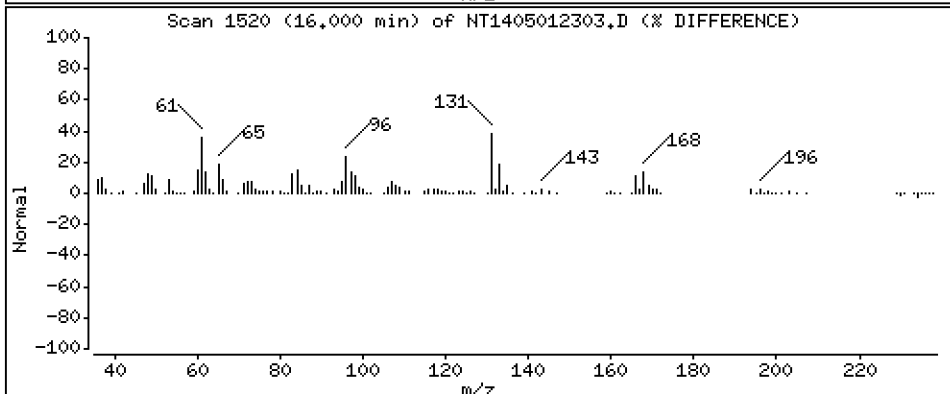
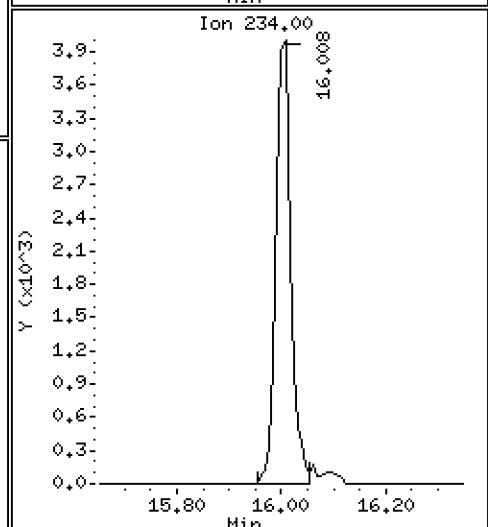
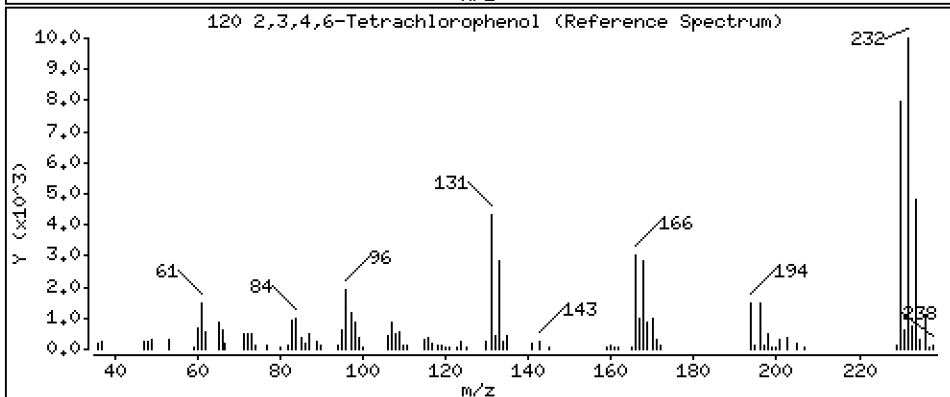
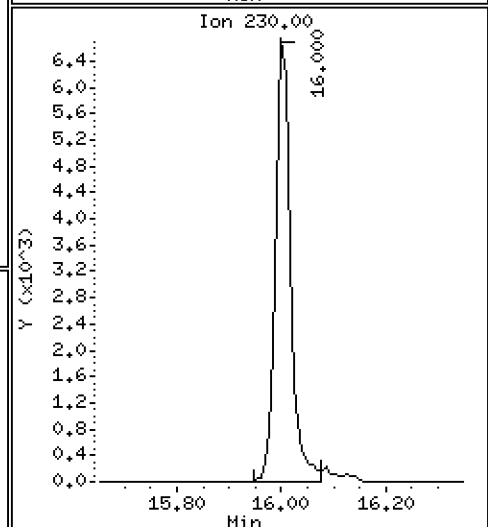
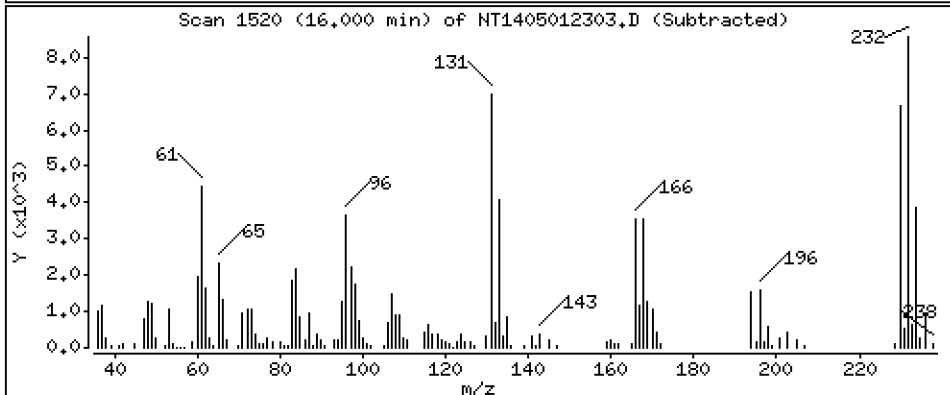
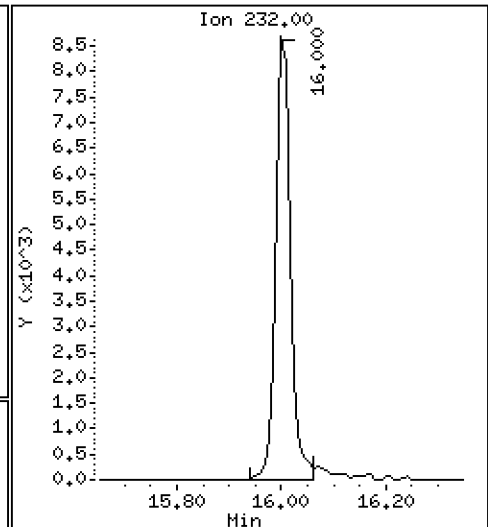
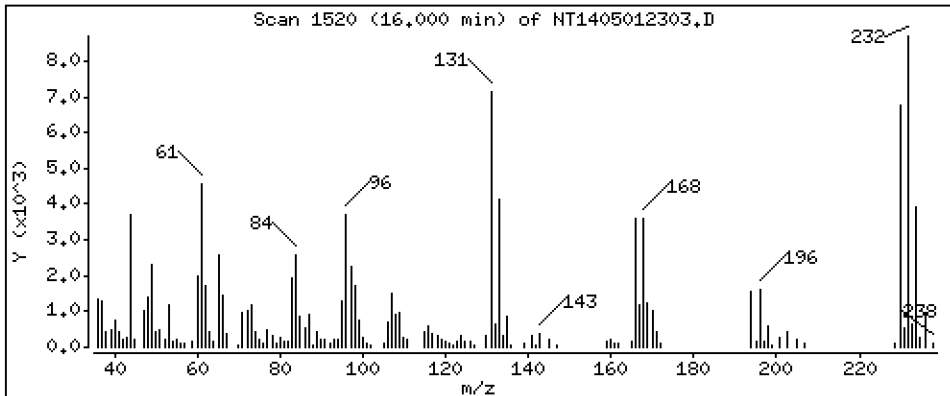
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 0,3538 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012303.D  
 Lab Smp Id: SLE0024-LCV1  
 Inj Date : 01-MAY-2023 15:45 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0024-LCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 3  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.898	6.898	(0.755)	83153	0.80716	0.8072
\$ 2 Phenol-d5	99		8.482	8.490	(0.929)	109802	0.75948	0.7595
3 Phenol	94		8.505	8.513	(0.931)	85199	0.52582	0.5258
\$ 5 2-Chlorophenol-d4	132		8.768	8.768	(0.960)	80419	0.78193	0.7819
4 Bis(2-Chloroethyl)ether	93		8.675	8.675	(0.950)	61631	0.49819	0.4982
6 2-Chlorophenol	128		8.791	8.799	(0.963)	58610	0.51932	0.5193
7 1,3-Dichlorobenzene	146		9.070	9.070	(0.993)	57385	0.50781	0.5078
* 8 1,4-Dichlorobenzene-d4	152		9.132	9.132	(1.000)	284867	4.00000	
9 1,4-Dichlorobenzene	146		9.163	9.163	(1.003)	52950	0.49152	0.4915
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.040)	34718	0.53288	0.5329
12 1,2-Dichlorobenzene	146		9.520	9.520	(1.042)	52916	0.49368	0.4937
11 Benzyl alcohol	108		9.403	9.403	(1.030)	34364	0.46495	0.4649
14 2,2'-oxybis(1-Chloropropane)	121		9.706	9.706	(1.063)	14202	0.39248	0.3925
13 2-Methylphenol	108		9.628	9.629	(1.054)	56707	0.52460	0.5246
17 Hexachloroethane	117		10.117	10.118	(1.108)	24903	0.48490	0.4849
16 N-Nitroso-di-n-propylamine	70		9.962	9.970	(1.091)	48307	0.44438	0.4444
15 4-Methylphenol	108		9.900	9.900	(1.084)	59704	0.48500	0.4850
\$ 18 Nitrobenzene-d5	82		10.234	10.242	(0.879)	67235	0.48791	0.4879
19 Nitrobenzene	77		10.273	10.273	(0.883)	70266	0.47698	0.4770
20 Isophorone	82		10.715	10.723	(0.921)	84473	0.41775	0.4177
21 2-Nitrophenol	139		10.901	10.909	(0.937)	24902	0.32171	0.3217
22 2,4-Dimethylphenol	107		10.948	10.955	(0.941)	119215	1.07397	1.074
23 Bis(2-Chloroethoxy)methane	93		11.149	11.157	(0.958)	62637	0.48194	0.4819
24 Benzoic acid	105		11.056	11.196	(0.950)	42738	0.46492	0.4649
25 2,4-Dichlorophenol	162		11.359	11.359	(0.976)	81494	0.74968	0.7497
26 1,2,4-Trichlorobenzene	180		11.544	11.552	(0.992)	41838	0.50493	0.5049
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1119668	4.00000	
28 Naphthalene	128		11.675	11.675	(1.003)	151231	0.50250	0.5025
29 4-Chloroaniline	127		11.807	11.814	(1.015)	108999	0.83709	0.8371
30 Hexachlorobutadiene	225		12.038	12.039	(1.035)	18438	0.48673	0.4867
31 4-Chloro-3-methylphenol	107		12.766	12.774	(1.097)	94370	0.95133	0.9513
32 2-Methylnaphthalene	142		13.076	13.083	(1.124)	100675	0.46181	0.4618
33 Hexachlorocyclopentadiene	237		13.548	13.548	(0.887)	30928	0.80817	0.8082

Compounds	QUANT SIG					CONCENTRATIONS	
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.702	13.702	(0.897)	45802	0.96071	0.9607
35 2,4,5-Trichlorophenol	196	13.780	13.780	(0.902)	46948	0.92694	0.9269
§ 36 2-Fluorobiphenyl	172	13.865	13.865	(0.908)	95630	0.52807	0.5281
37 2-Chloronaphthalene	162	14.082	14.082	(0.922)	83732	0.48435	0.4844
38 2-Nitroaniline	65	14.337	14.345	(0.939)	73583	0.79682	0.7968
39 Dimethylphthalate	163	14.770	14.778	(0.967)	88179	0.49447	0.4945
40 Acenaphthylene	152	14.956	14.956	(0.979)	141289	0.51210	0.5121
41 2,6-Dinitrotoluene	165	14.910	14.918	(0.976)	36034	0.89127	0.8913
* 42 Acenaphthene-d10	164	15.273	15.273	(1.000)	519932	4.00000	
43 3-Nitroaniline	138	15.196	15.212	(0.995)	43380	0.85397	0.8540
44 Acenaphthene	153	15.335	15.343	(1.004)	82928	0.50175	0.5017
45 2,4-Dinitrophenol	184	15.412	15.420	(1.009)	4065	0.16633	0.1663
46 Dibenzofuran	168	15.660	15.668	(1.025)	114444	0.48504	0.4850
47 4-Nitrophenol	109	15.521	15.521	(1.016)	22051	0.74598	0.7460
48 2,4-Dinitrotoluene	165	15.722	15.729	(1.029)	47049	0.85949	0.8595
50 Diethylphthalate	149	16.232	16.240	(1.063)	98961	0.51268	0.5127
49 Fluorene	166	16.379	16.386	(1.072)	104763	0.50175	0.5018
51 4-Chlorophenyl-phenylether	204	16.371	16.371	(1.072)	37851	0.43827	0.4383
52 4-Nitroaniline	138	16.471	16.487	(1.078)	43112	0.95975	0.9597
53 4,6-Dinitro-2-methylphenol	198	16.564	16.579	(0.904)	20382	0.73838	0.7384
54 N-Nitrosodiphenylamine	169	16.618	16.626	(0.907)	61785	0.49289	0.4929
§ 55 2,4,6-Tribromophenol	330	16.918	16.919	(1.108)	10248	0.59955	0.5995
56 4-Bromophenyl-phenylether	248	17.373	17.381	(0.948)	18233	0.44220	0.4422
57 Hexachlorobenzene	284	17.698	17.698	(0.966)	18877	0.45272	0.4527
58 Pentachlorophenol	266	18.054	18.054	(0.985)	10359	0.39061	0.3906
* 59 Phenanthrene-d10	188	18.325	18.325	(1.000)	887647	4.00000	
60 Phenanthrene	178	18.364	18.372	(1.002)	126073	0.50233	0.5023
61 Anthracene	178	18.464	18.464	(1.008)	117042	0.48623	0.4862
62 Carbazole	167	18.789	18.797	(1.025)	111917	0.50244	0.5024
63 Di-n-butylphthalate	149	19.578	19.579	(1.068)	139181	0.40988	0.4099
64 Fluoranthene	202	20.755	20.755	(0.888)	123657	0.45236	0.4524
65 Pyrene	202	21.180	21.180	(0.906)	127957	0.45327	0.4533
§ 66 Terphenyl-d14	244	21.459	21.459	(0.918)	85065	0.39093	0.3909
67 Butylbenzylphthalate	149	22.380	22.380	(0.958)	60205	0.33065	0.3307
68 Benzo(a)anthracene	228	23.340	23.340	(0.999)	109659	0.51875	0.5188
* 69 Chrysene-d12	240	23.371	23.371	(1.000)	592191	4.00000	
70 3,3'-Dichlorobenzidine	252	23.294	23.302	(0.997)	101272	1.49482	1.495
71 Chrysene	228	23.410	23.418	(1.002)	100145	0.50794	0.5079
72 bis(2-Ethylhexyl)phthalate	149	24.393	24.401	(1.000)	171841	0.47785	0.4778
* 134 Di-n-octylphthalate-d4	153	24.385	24.385	(1.000)	1347119	4.00000	
73 Di-n-octylphthalate	149	24.393	24.401	(1.000)	171841	0.47785	0.4778
74 Benzo(b)fluoranthene	252	25.252	25.260	(0.970)	91940	0.47689	0.4769
75 Benzo(k)fluoranthene	252	25.291	25.307	(0.971)	102478	0.54174	0.5417
76 Benzo(a)pyrene	252	25.918	25.934	(0.995)	81477	0.50009	0.5001
* 77 Perylene-d12	264	26.042	26.050	(1.000)	578202	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.774	28.789	(1.105)	93326	0.41424	0.4142
79 Dibenzo(a,h)anthracene	278	28.789	28.805	(1.105)	77963	0.42305	0.4230
80 Benzo(g,h,i)perylene	276	29.589	29.605	(1.136)	77822	0.40803	0.4080
90 N-Nitrosodimethylamine	74	4.790	4.797	(0.525)	83952	0.98015	0.9801
91 Aniline	93	8.590	8.590	(0.941)	134384	0.91392	0.9139
93 Benzidine	184	20.987	20.994	(0.898)	120575	1.11770	1.118
103 Pyridine	79	4.836	4.821	(0.530)	127062	0.50115	0.5011
105 1-methylnaphthalene	142	13.300	13.308	(1.143)	92577	0.43976	0.4398
111 Azobenzene (1,2-DP-Hydrazine)	77	16.695	16.695	(1.093)	141827	0.47613	0.4761

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.291	25.307	(0.971)	186053	1.01938	1.019
120 2,3,4,6-Tetrachlorophenol	232	16.000	16.000	(1.048)	16231	0.35383	0.3538

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012303.D Calibration Time: 15:06  
 Lab Smp Id: SLE0024-LCV1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	284867	3.97
27 Naphthalene-d8	1103207	551604	2206414	1119668	1.49
42 Acenaphthene-d10	520358	260179	1040716	519932	-0.08
59 Phenanthrene-d10	882575	441288	1765150	887647	0.57
69 Chrysene-d12	600619	300310	1201238	592191	-1.40
134 Di-n-octylphthala	1445631	722816	2891262	1347119	-6.81
77 Perylene-d12	570040	285020	1140080	578202	1.43

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.13	-0.00
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.33	17.83	18.83	18.33	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.37	-0.00
134 Di-n-octylphthala	24.39	23.89	24.89	24.39	-0.00
77 Perylene-d12	26.05	25.55	26.55	26.04	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012303.D

Lab ID: SLE0024-LCV1  
nt14.i, ABN.m, 01-MAY-2023 15:45

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.950	0.962	-0.0120	Benzoic acid

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



**LOW-CONCENTRATION  
CALIBRATION VERIFICATION  
EPA 8270E**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00062

**Laboratory ID:** SLE0049-LCV1

**Sequence:** SLE0049

**Standard ID:** K011106

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Phenol	0.50000	0.4	-11.3	50.00
4-Methylphenol	0.50000	0.4	-16.1	50.00
Naphthalene	0.50000	0.5	0.8	50.00
2-Methylnaphthalene	0.50000	0.5	-6.4	50.00
Acenaphthylene	0.50000	0.6	13.1	50.00
Dimethylphthalate	0.50000	0.5	-0.04	50.00
Acenaphthene	0.50000	0.5	0.7	50.00
Dibenzofuran	0.50000	0.5	-3.2	50.00
Fluorene	0.50000	0.5	-8.6	50.00
Phenanthrene	0.50000	0.5	0.2	50.00
Anthracene	0.50000	0.5	-1.0	50.00
Fluoranthene	0.50000	0.5	1.0	50.00
Pyrene	0.50000	0.5	0.5	50.00
Butylbenzylphthalate	0.50000	0.4	-21.0	50.00
Benzo(a)anthracene	0.50000	0.5	3.1	50.00
Chrysene	0.50000	0.5	1.5	50.00
bis(2-Ethylhexyl)phthalate	0.50000	0.5	-5.3	50.00
Benzo(a)fluoranthene, Total	1.0000	1.0	3.6	50.00
Benzo(a)pyrene	0.50000	0.5	5.7	50.00
Indeno(1,2,3-cd)pyrene	0.50000	0.4	-25.8	50.00
Dibenzo(a,h)anthracene	0.50000	0.4	-22.9	50.00
Benzo(g,h,i)perylene	0.50000	0.3	-31.8	50.00
2-Fluorophenol	0.75000	0.709	-5.5	50.00
Phenol-d5	0.75000	0.672	-10.4	50.00
2-Chlorophenol-d4	0.75000	0.716	-4.6	50.00
1,2-Dichlorobenzene-d4	0.50000	0.512	2.4	50.00
Nitrobenzene-d5	0.50000	0.474	-5.2	50.00
2-Fluorobiphenyl	0.50000	0.522	4.3	50.00
2,4,6-Tribromophenol	0.75000	0.492	-34.4	50.00



**LOW-CONCENTRATION  
CALIBRATION VERIFICATION  
EPA 8270E**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00062

**Laboratory ID:** SLE0049-LCV1

**Sequence:** SLE0049

**Standard ID:** K011106

p-Terphenyl-d14	0.50000	0.436	-12.9	50.00
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\* Values outside of QC limits



Data File: \\target\share\chem3\nt14,1\20230502,b\NT1405022303.D

Date: 02-May-2023 15:05

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Sample Info: SLE0049-LCW1

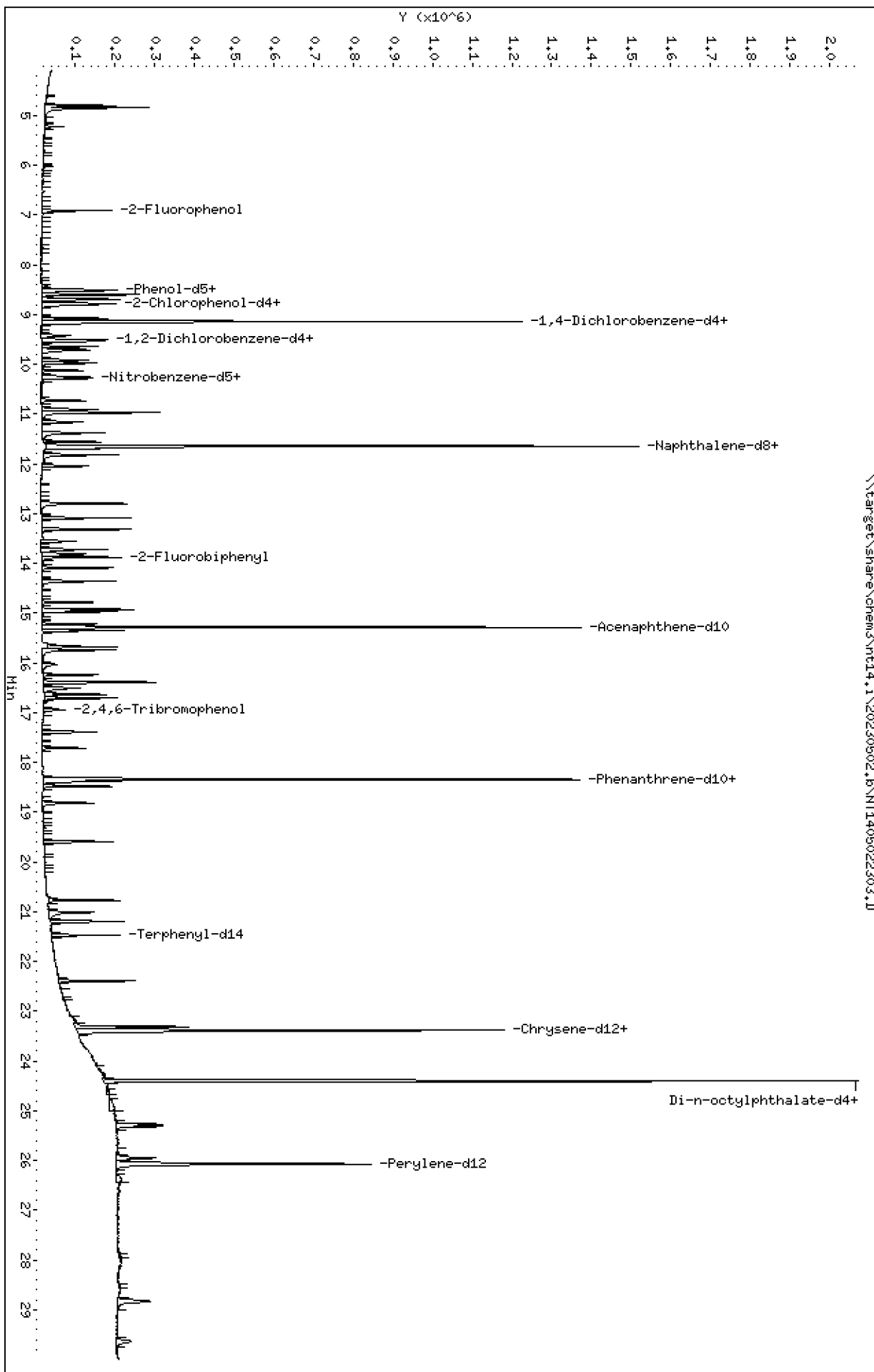
Column phase: ZB-5msi

Instrument: nt14,1

Operator: USD

Column diameter: 0.25

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Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

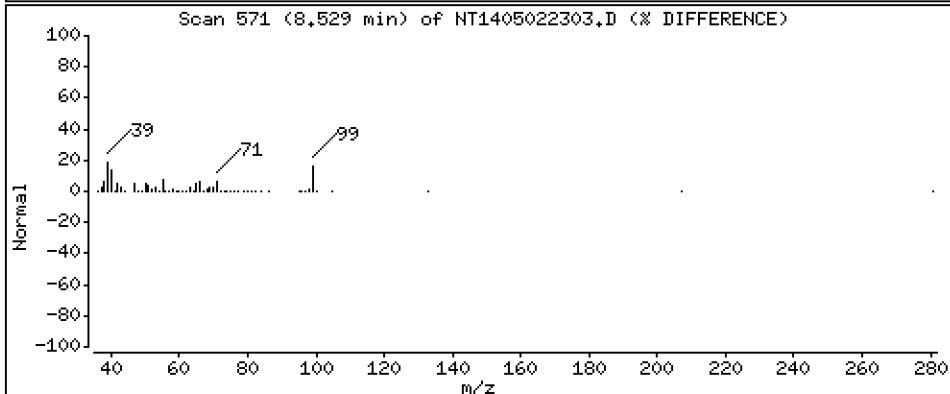
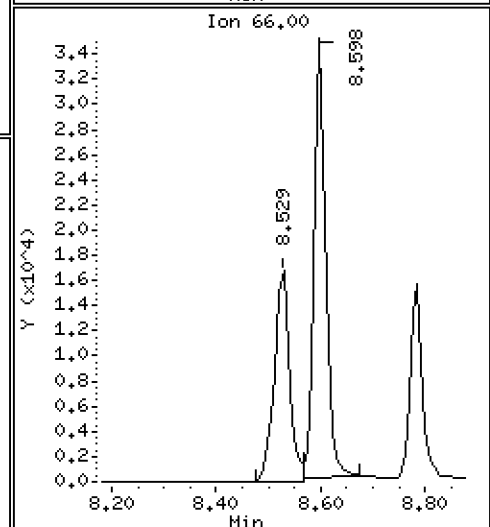
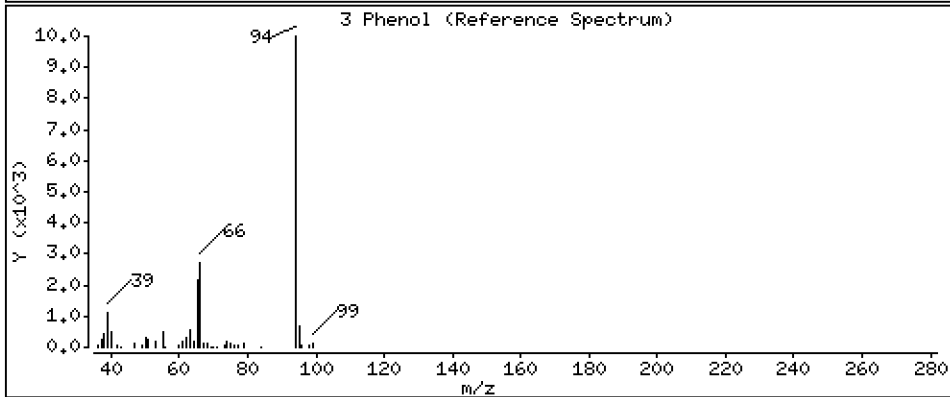
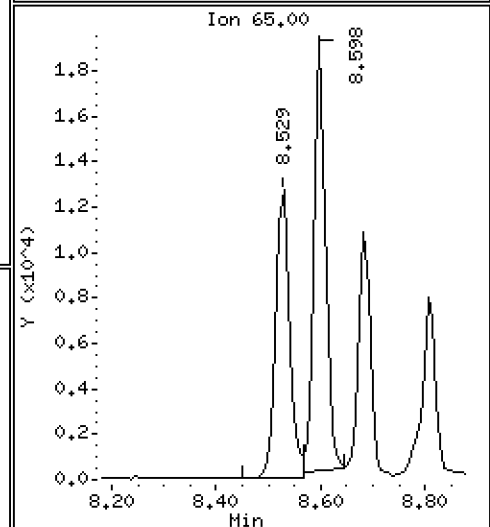
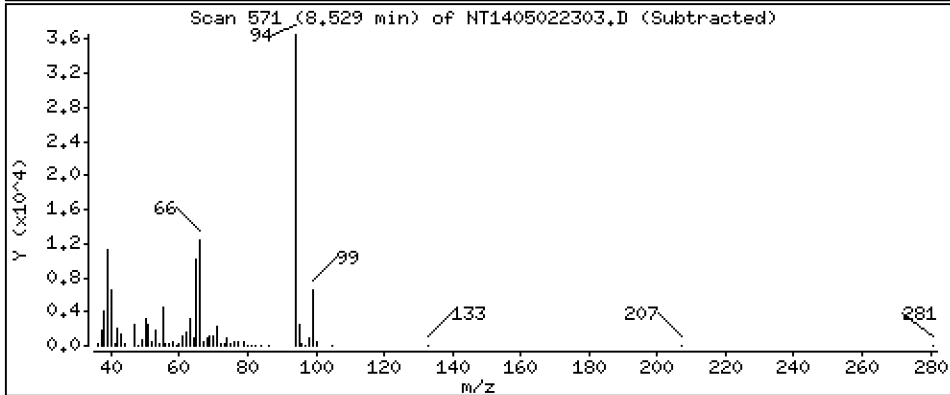
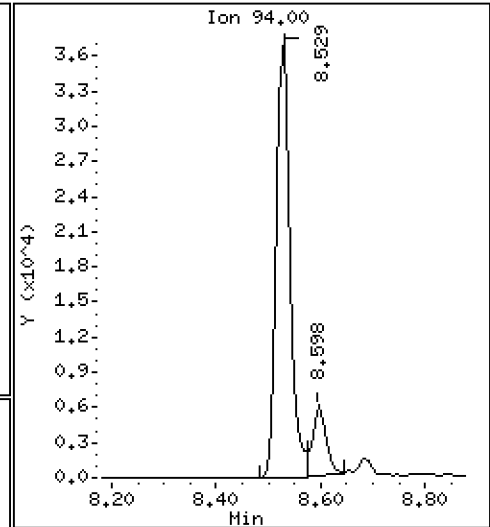
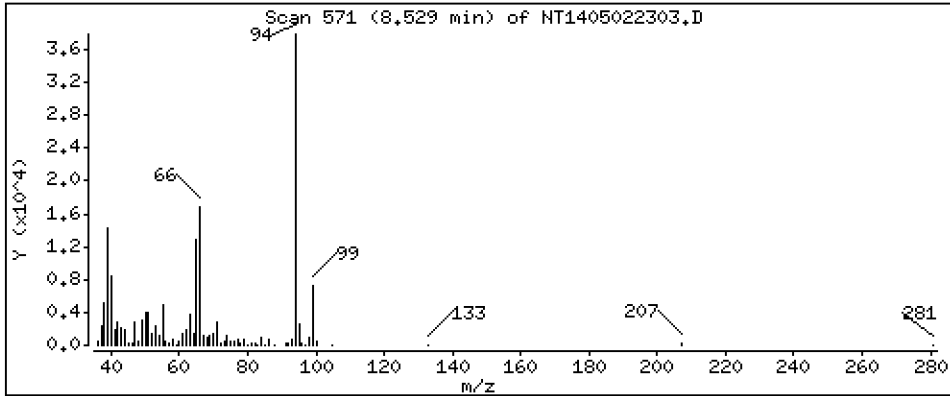
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,4436 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

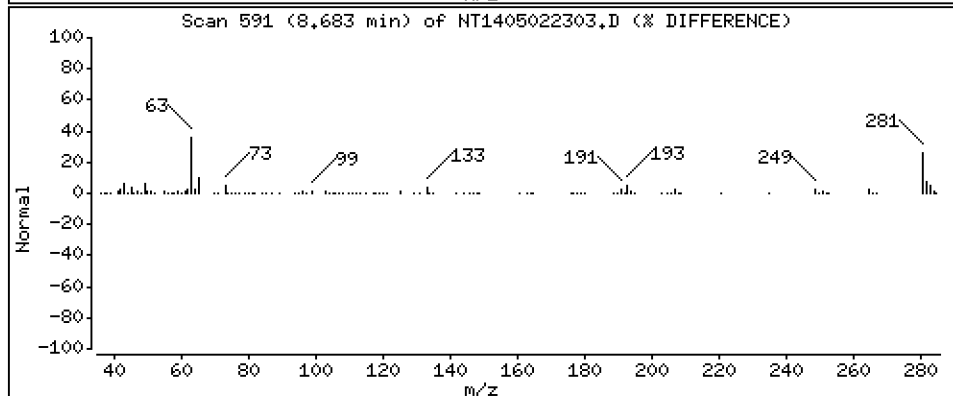
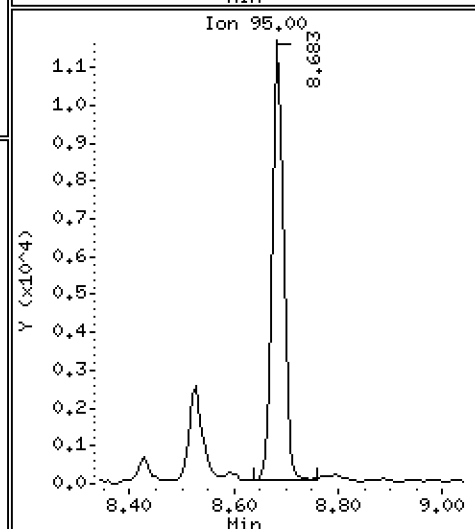
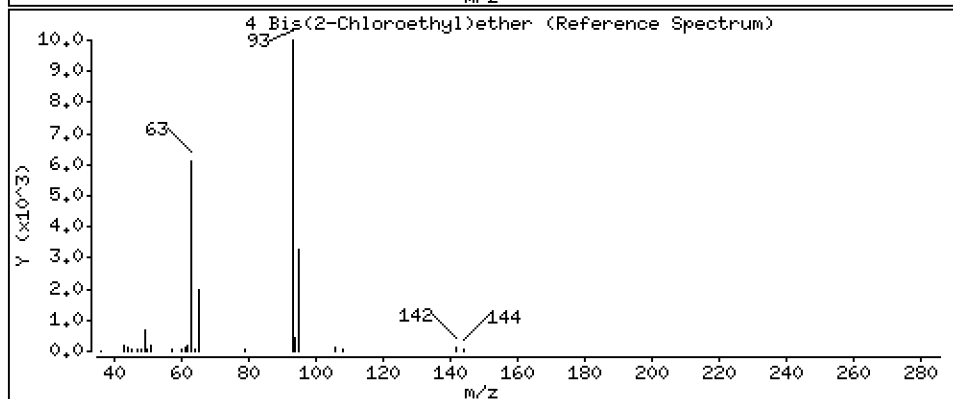
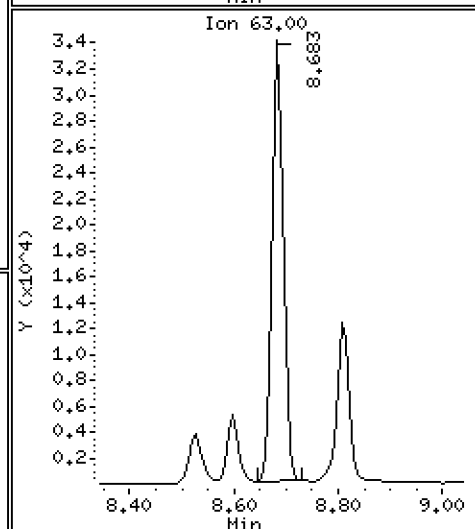
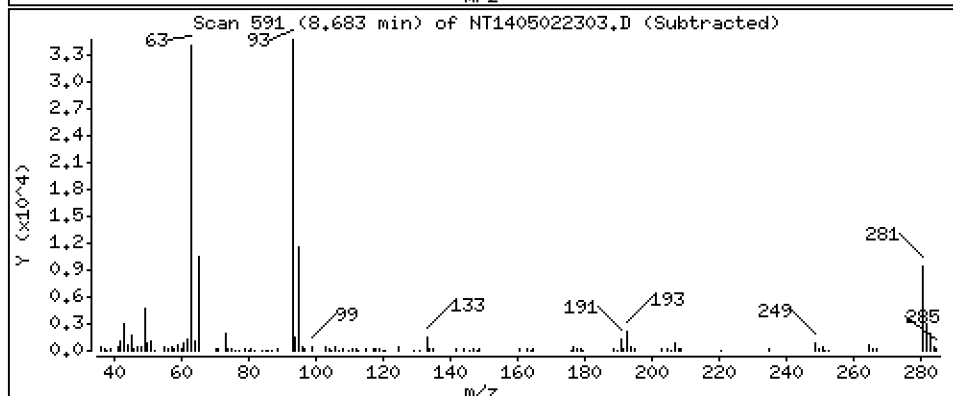
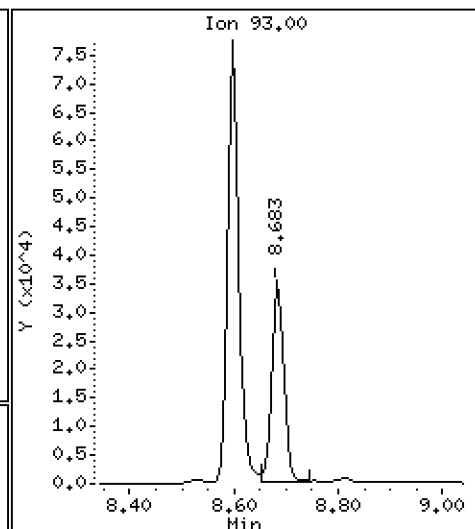
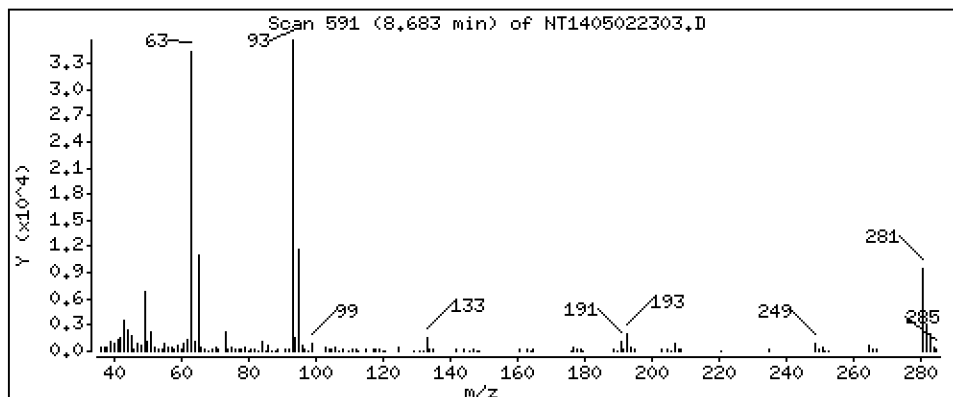
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 0,4830 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

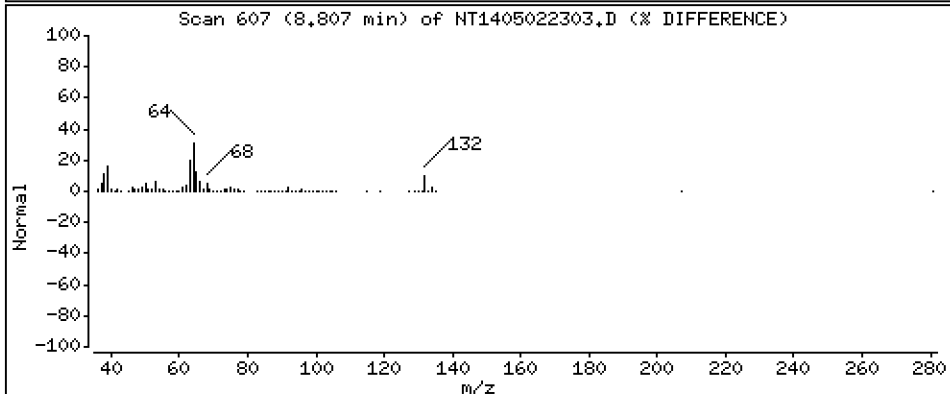
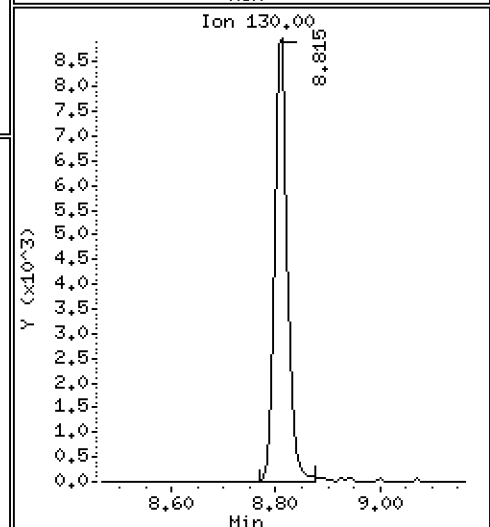
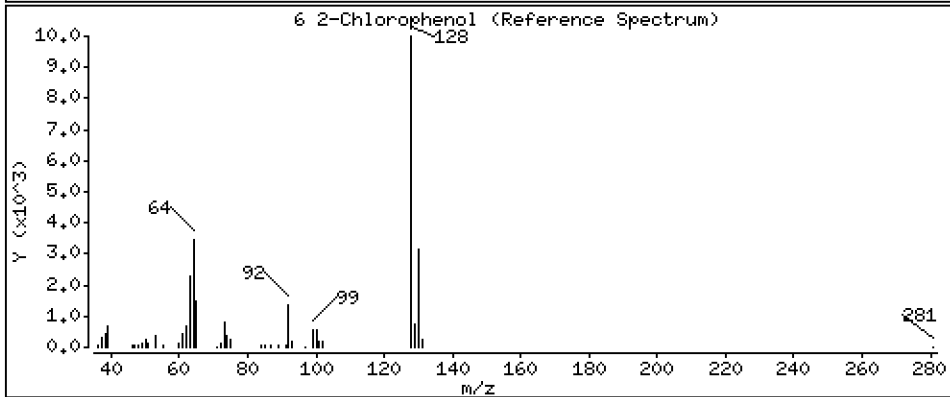
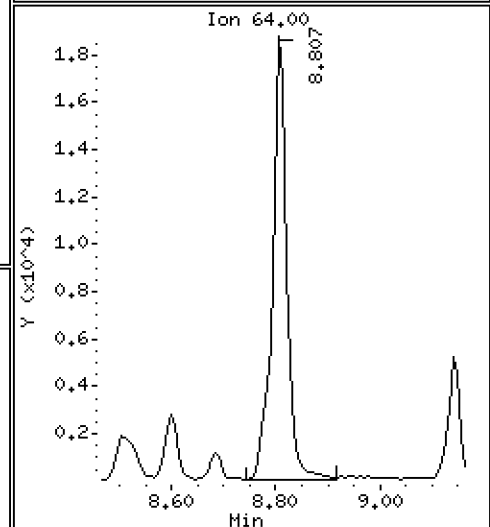
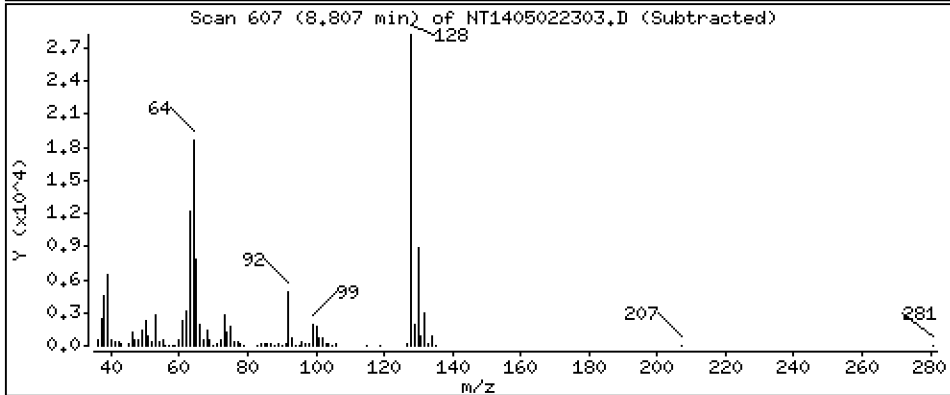
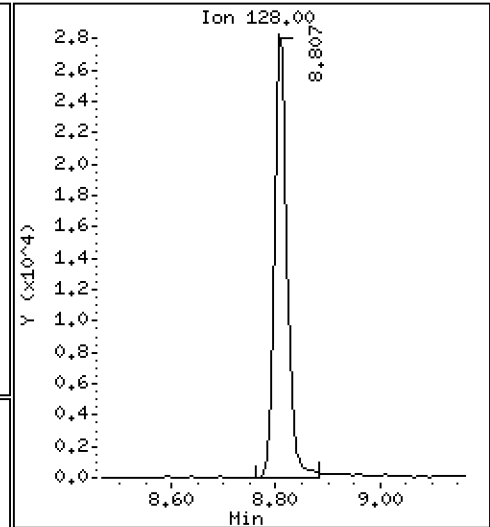
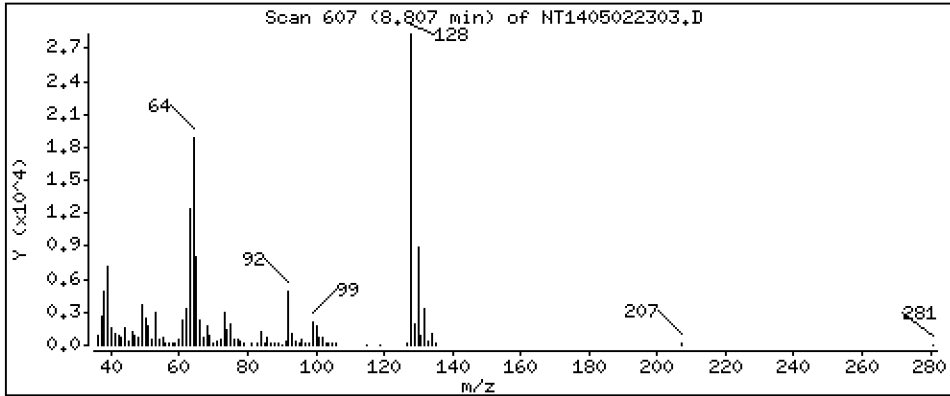
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 0,4681 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

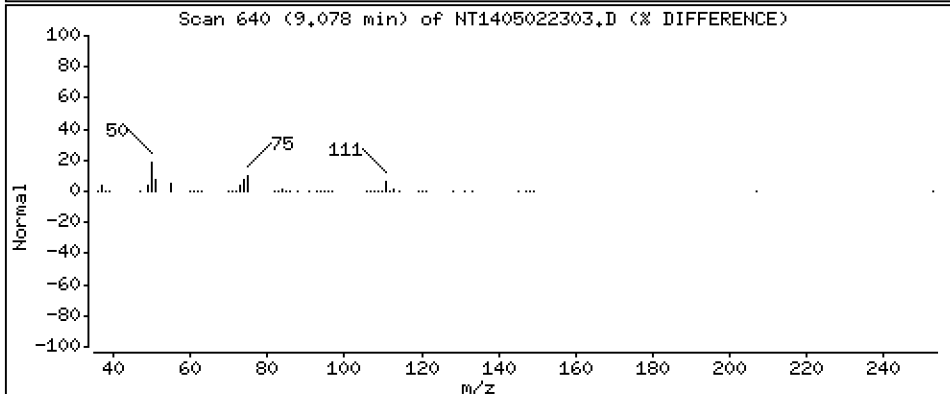
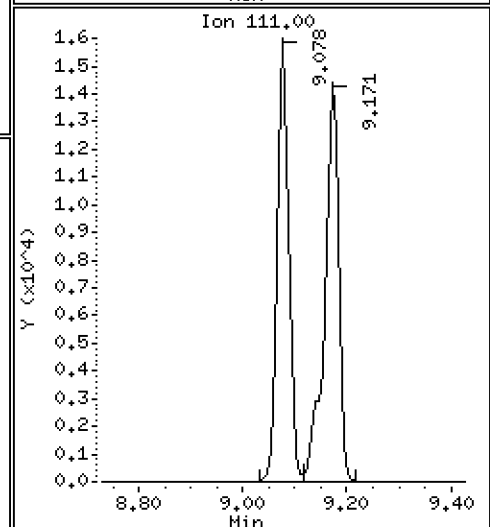
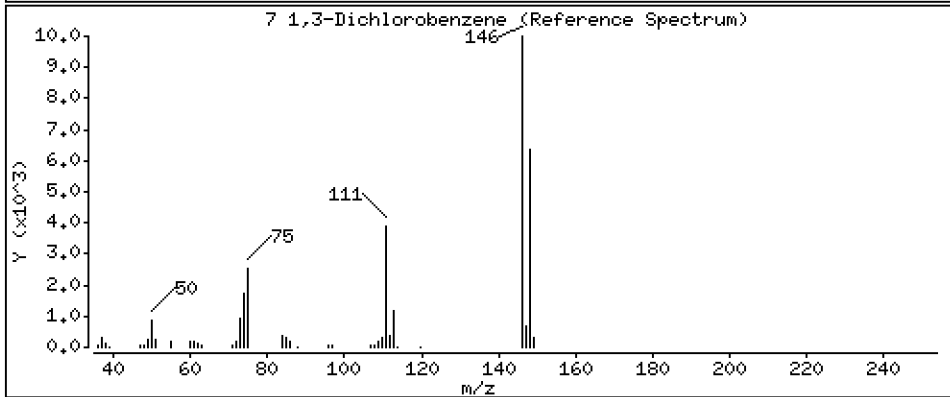
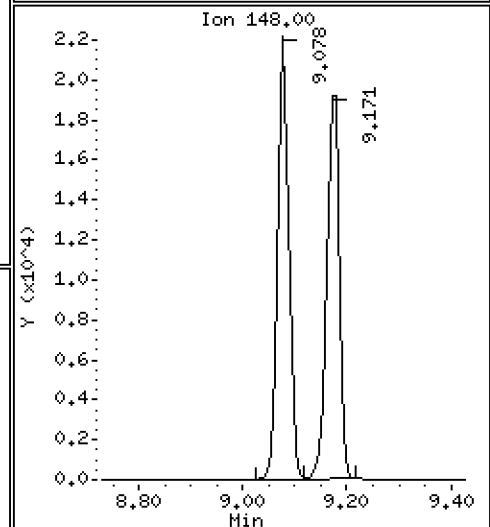
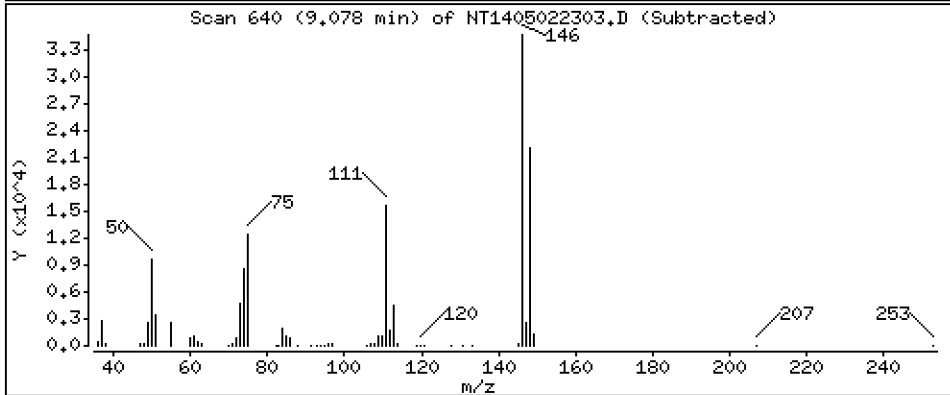
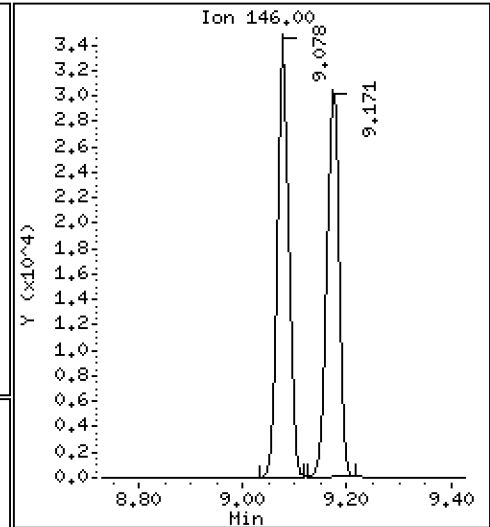
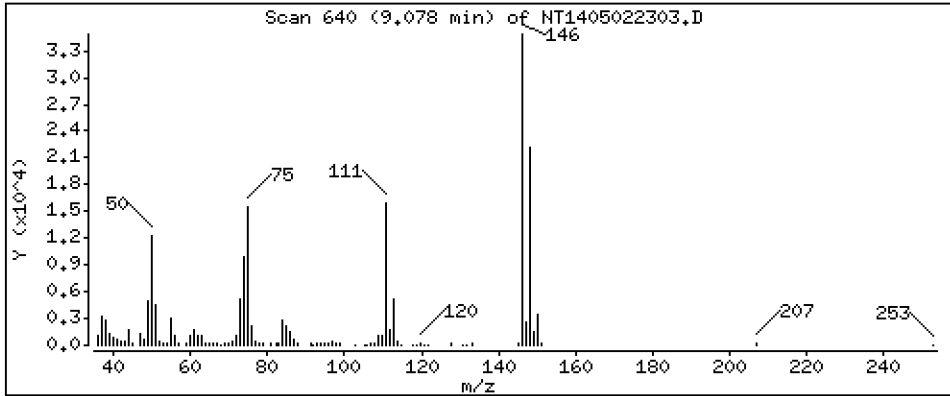
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,4973 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

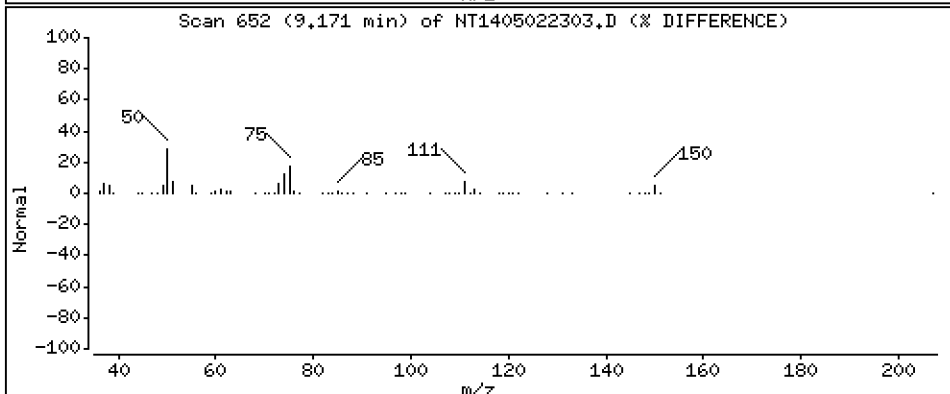
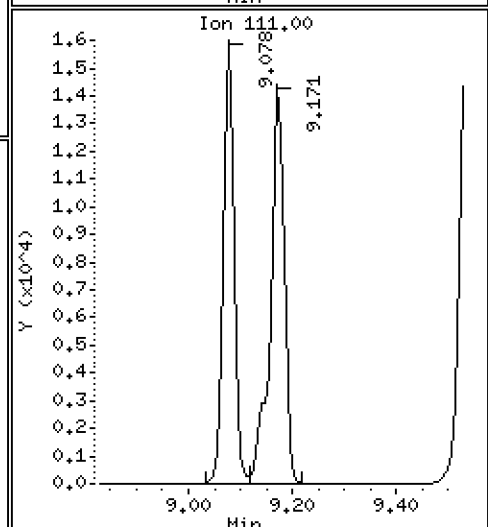
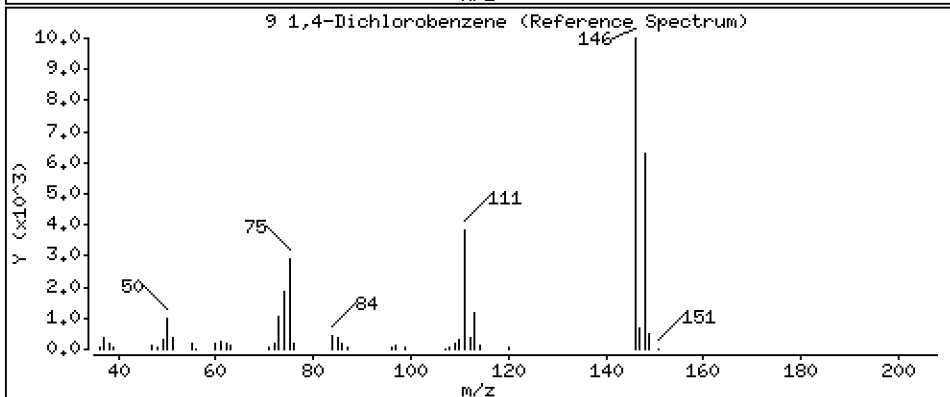
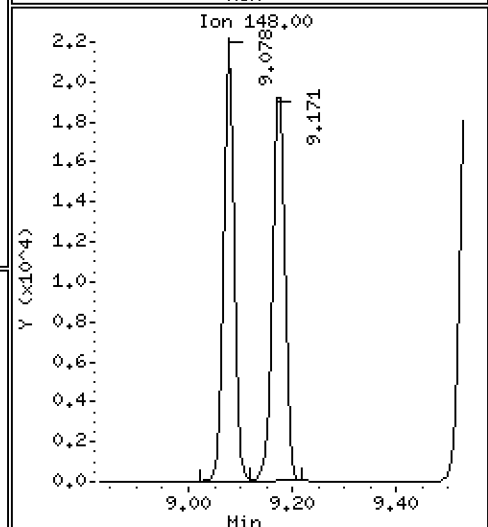
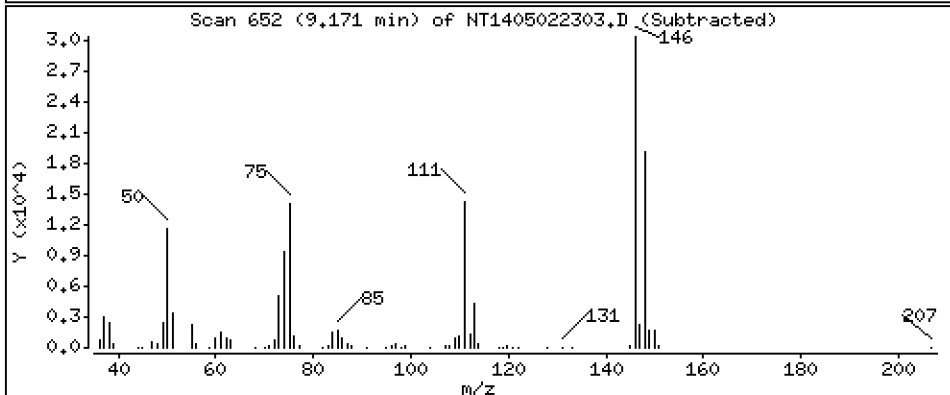
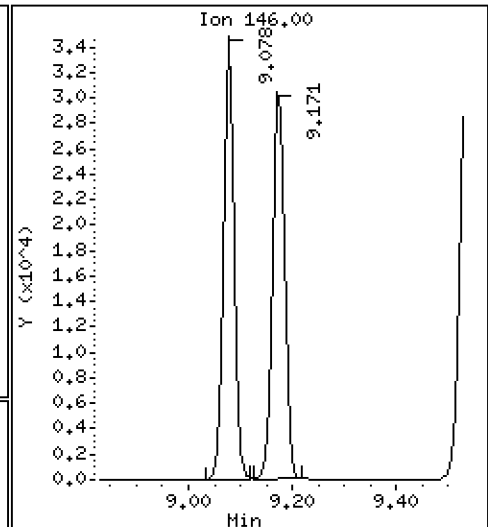
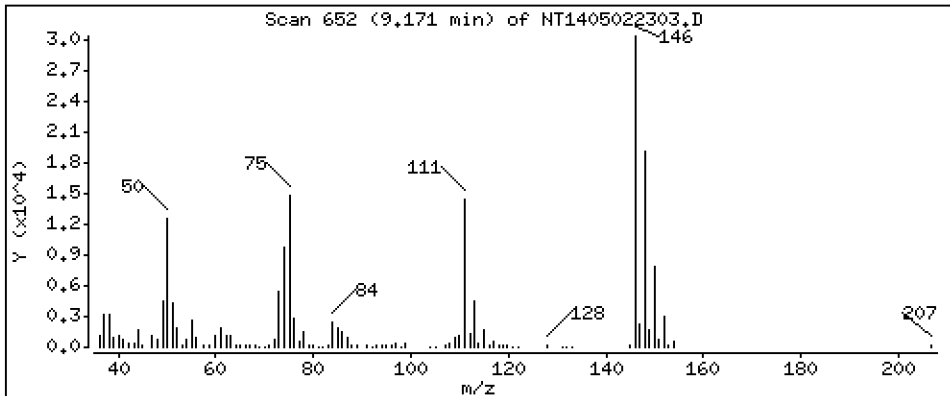
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 0.4830 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

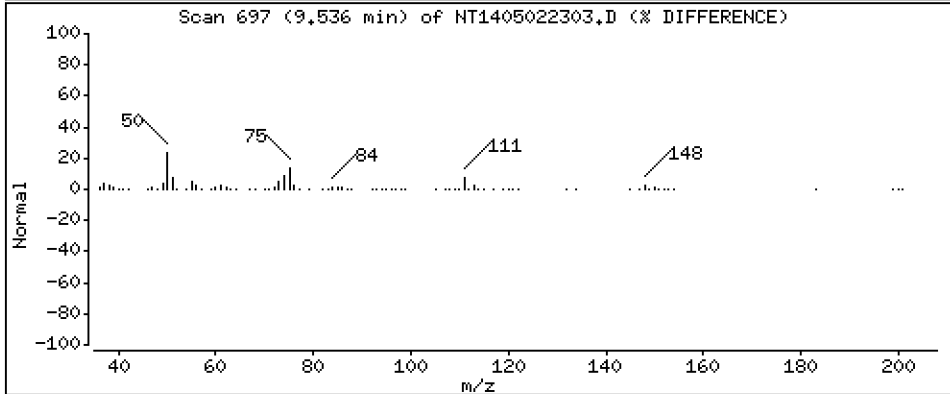
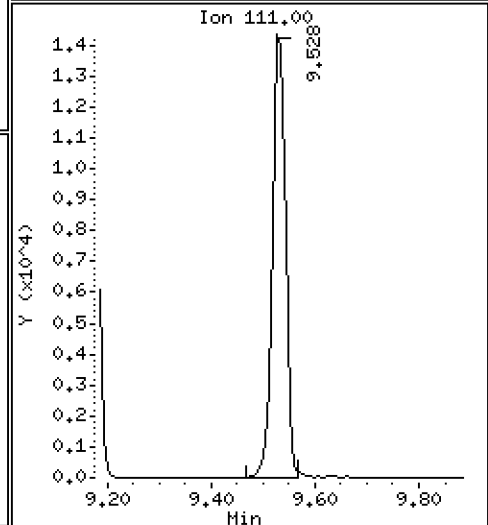
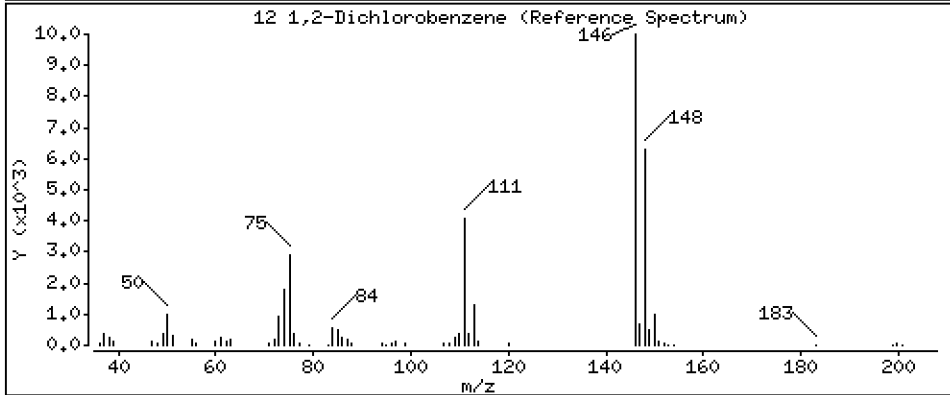
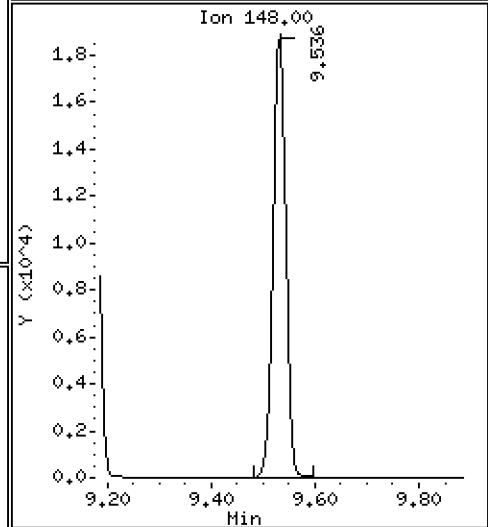
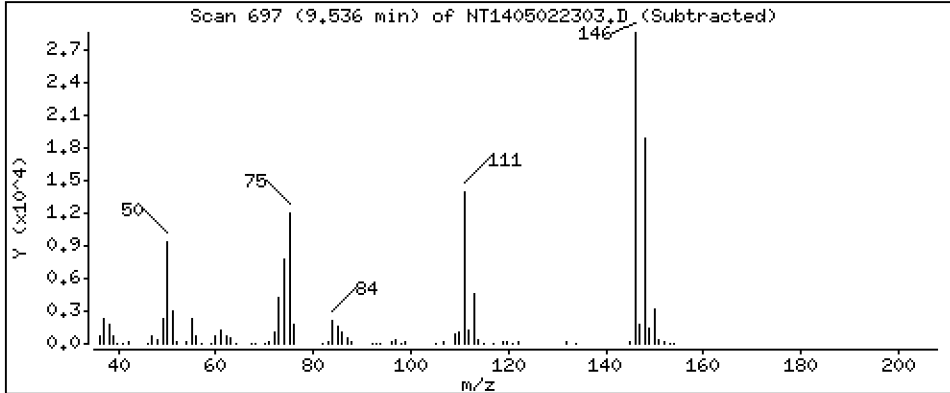
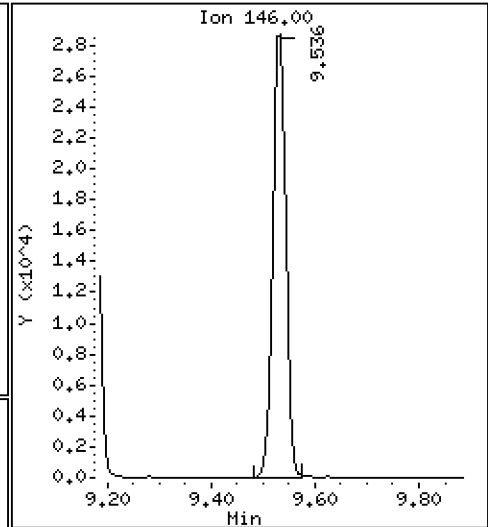
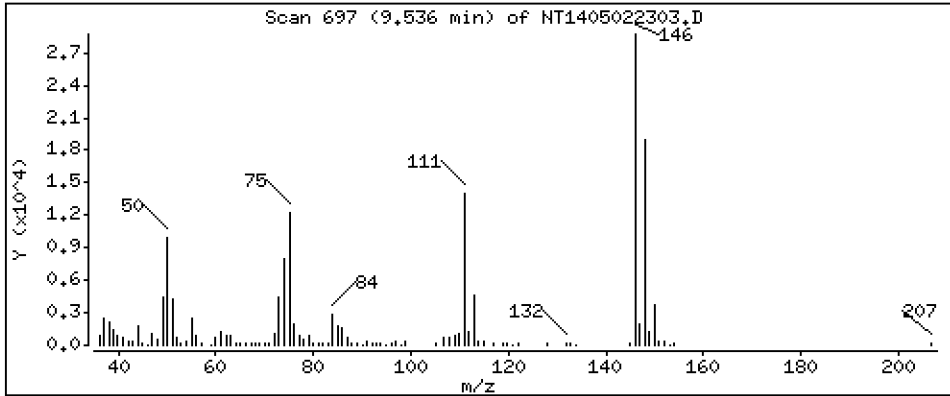
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 0.4932 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

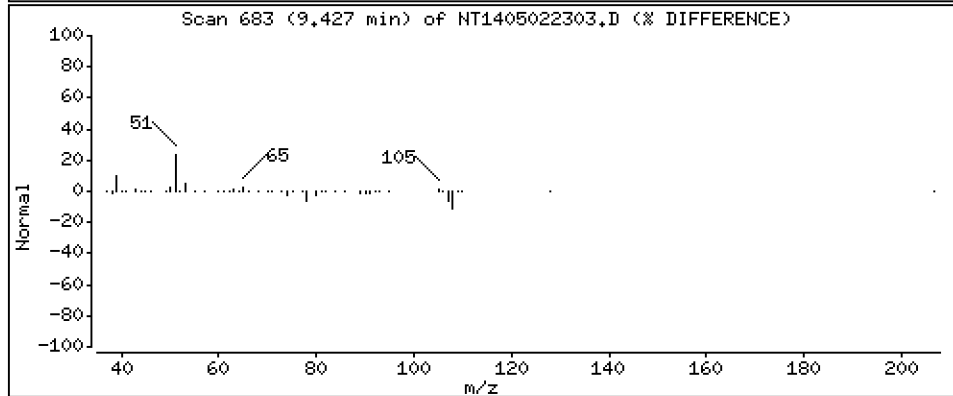
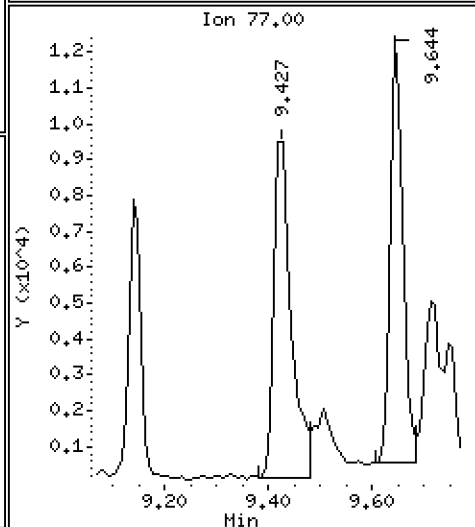
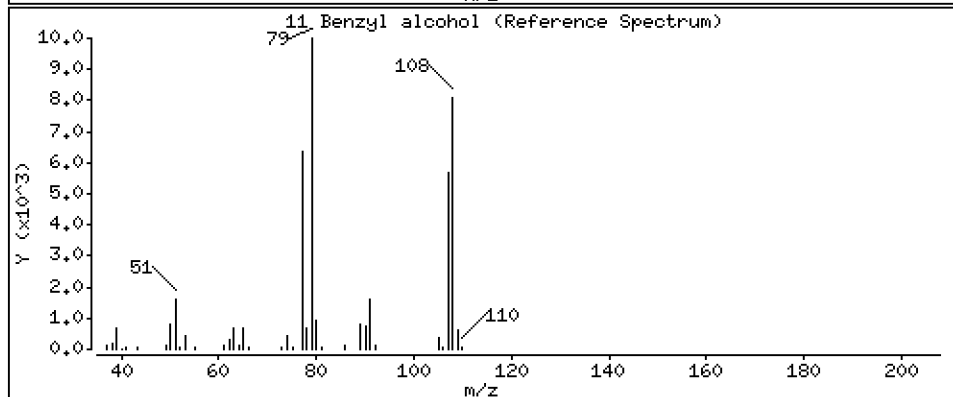
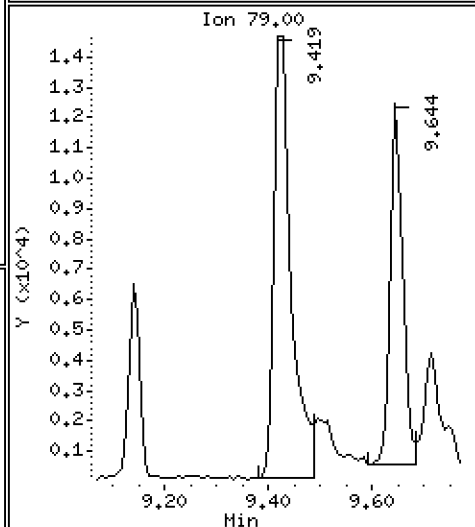
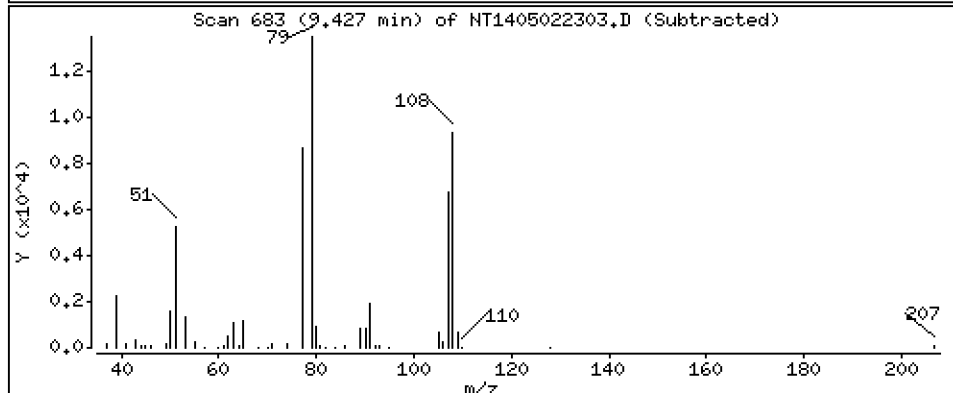
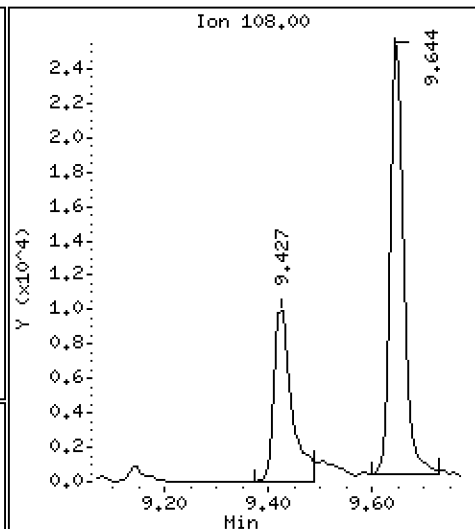
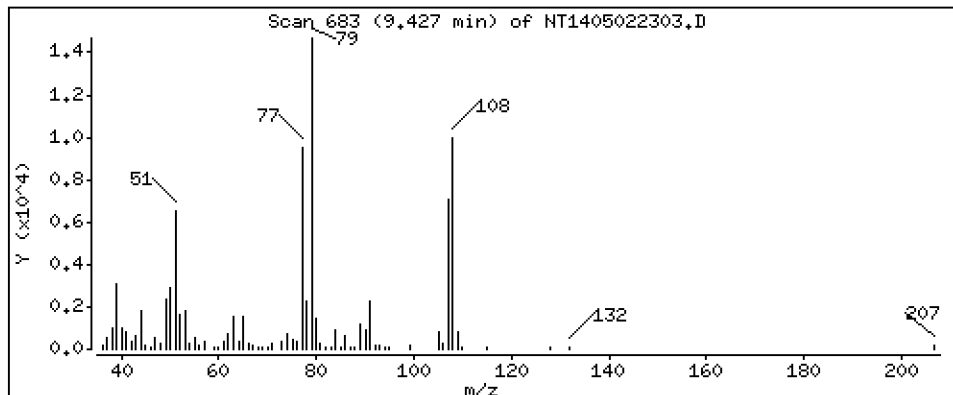
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

11 Benzyl alcohol

Concentration: 0,3457 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

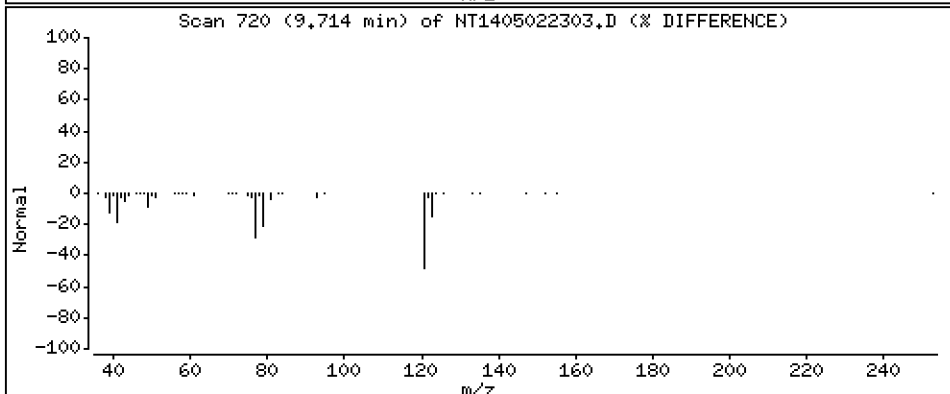
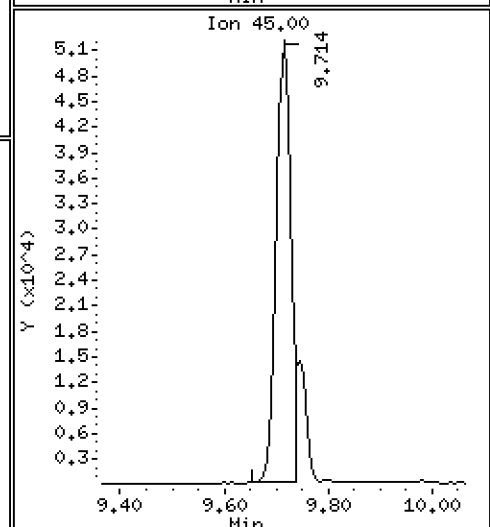
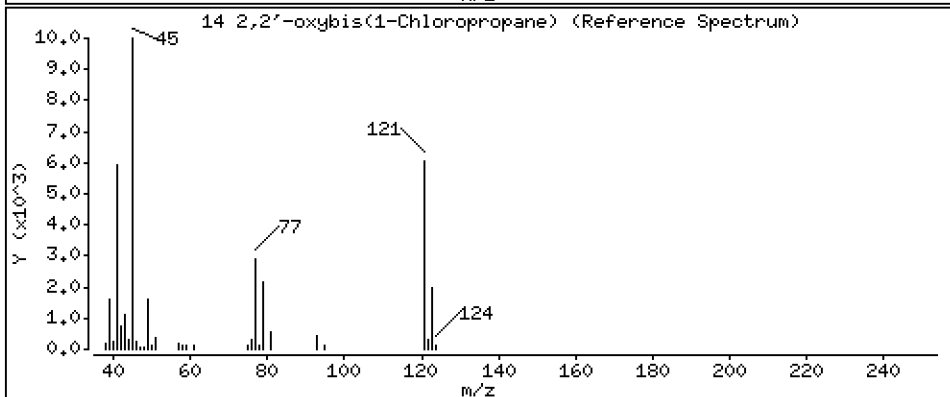
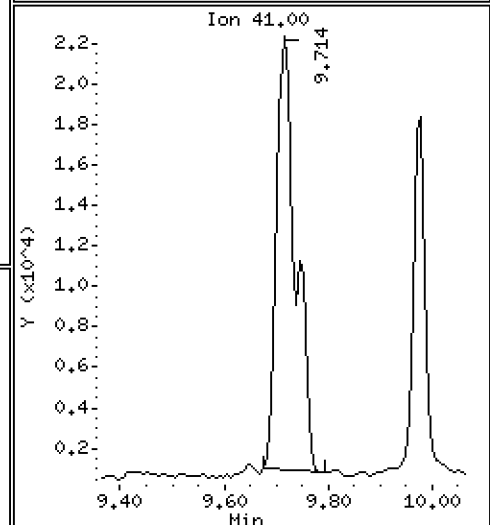
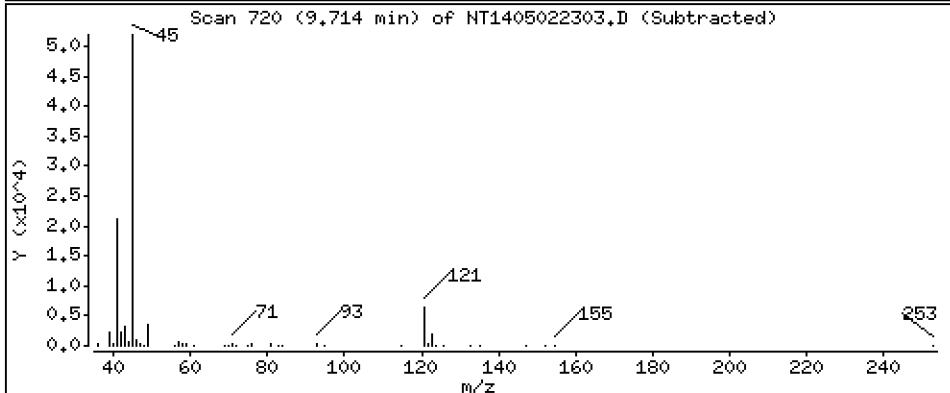
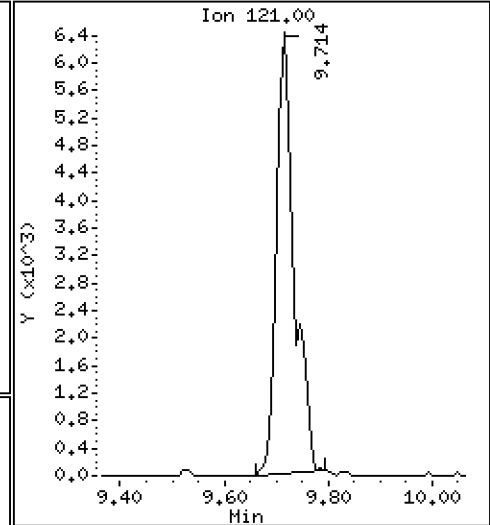
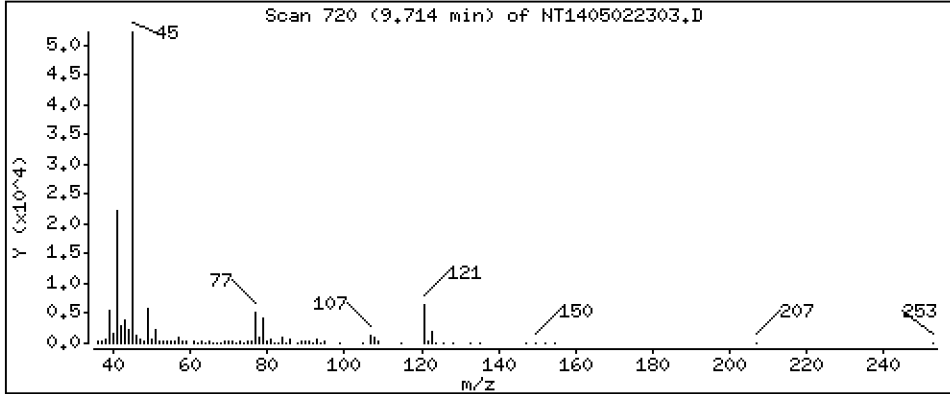
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 0,4483 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

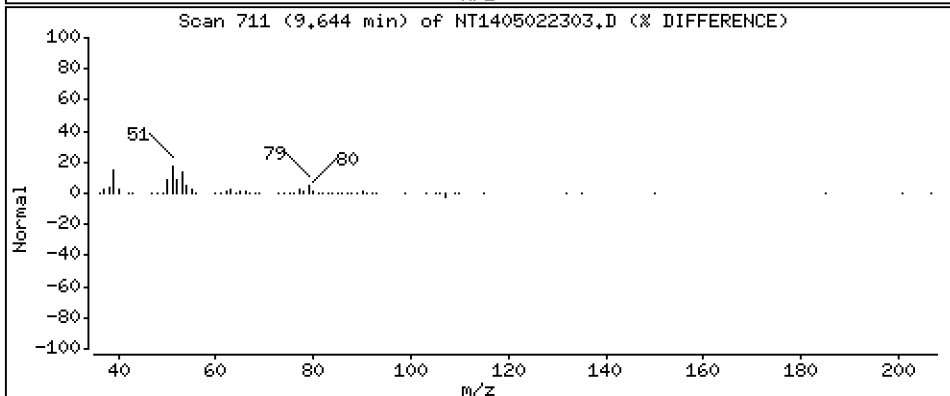
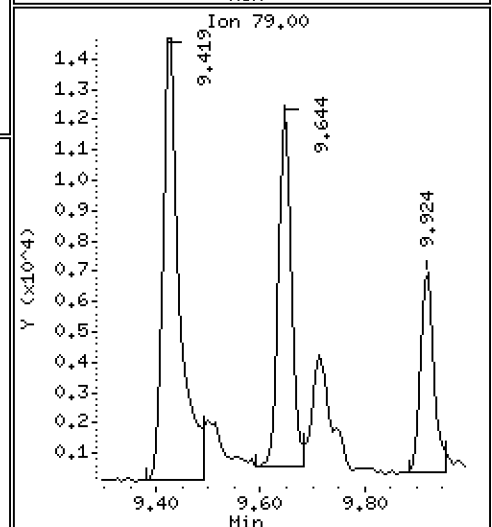
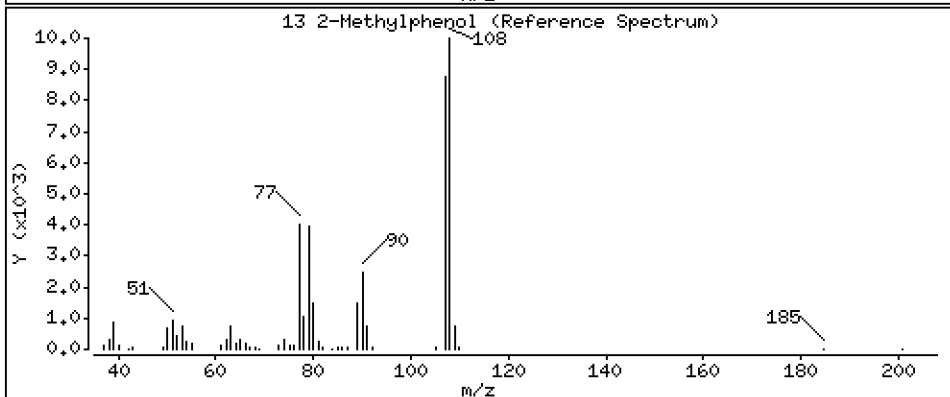
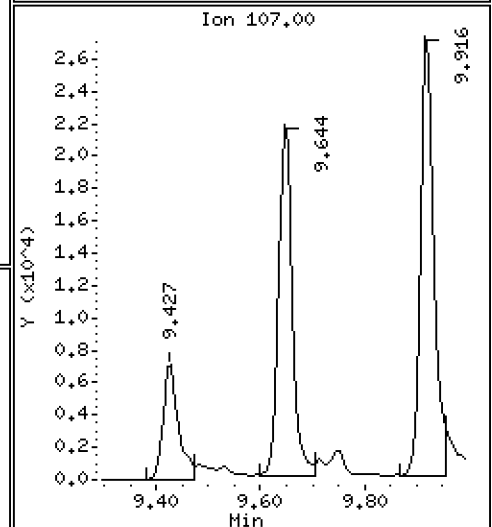
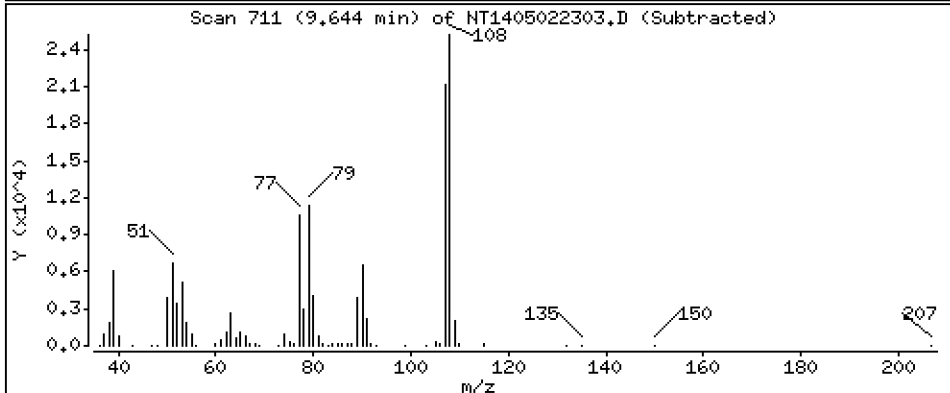
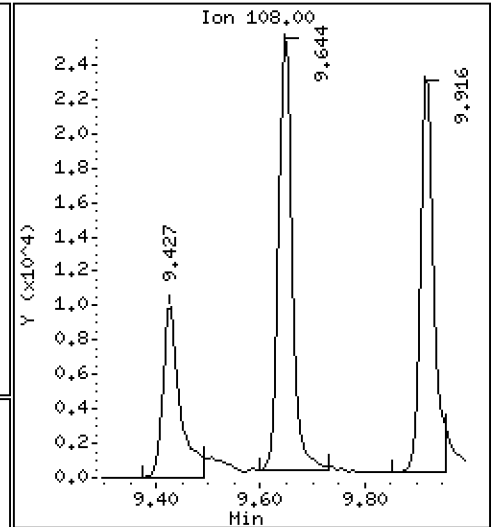
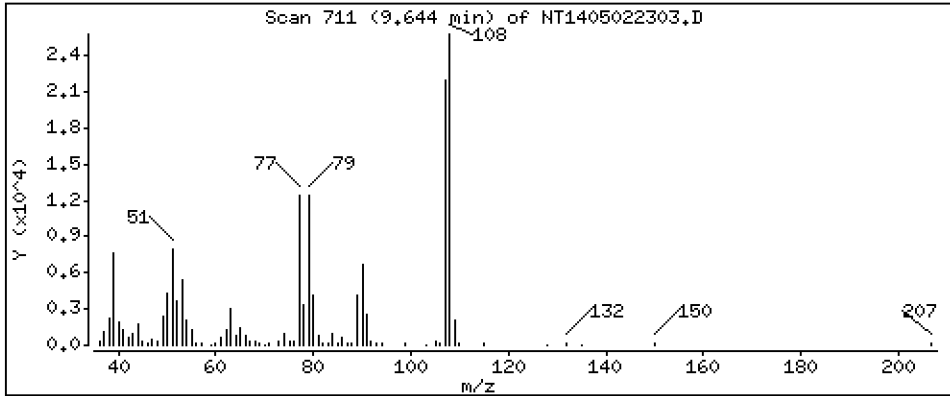
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 0.4501 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

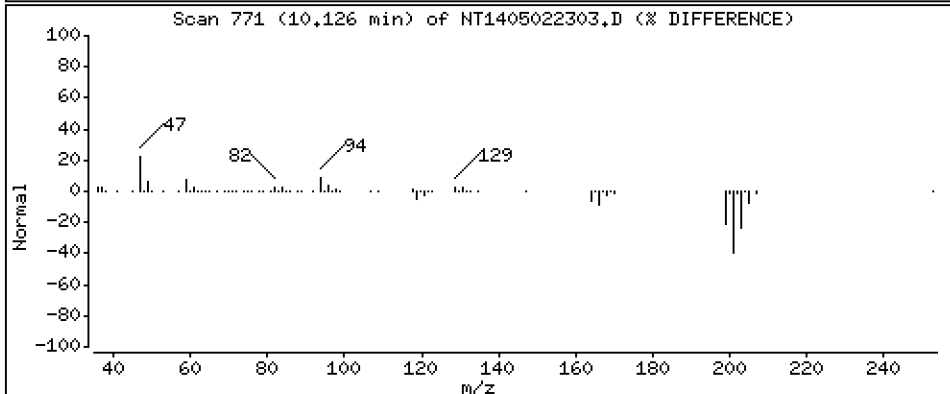
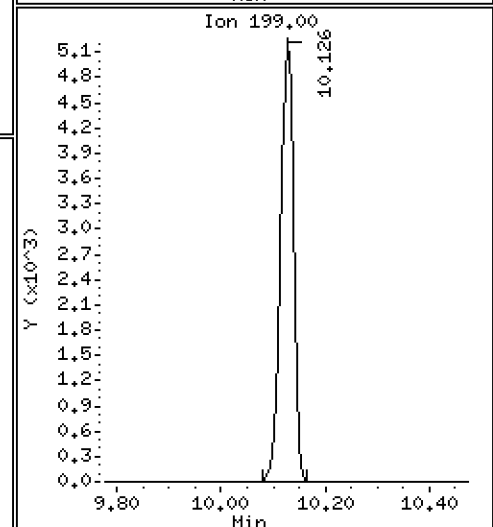
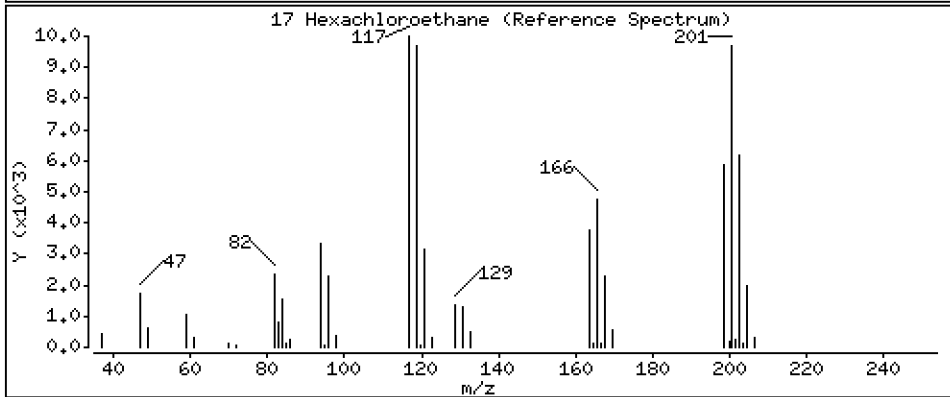
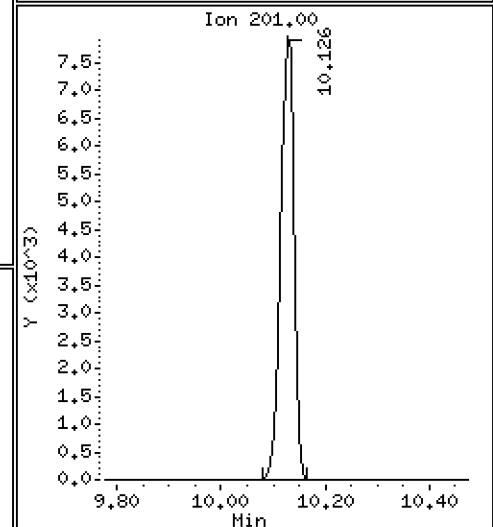
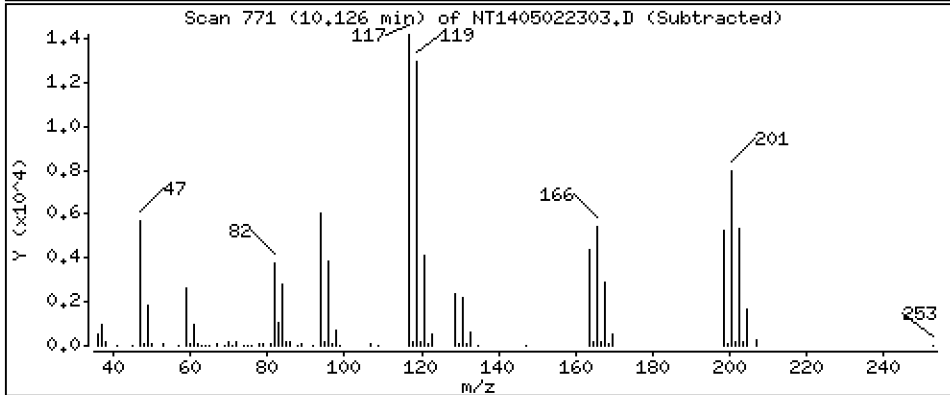
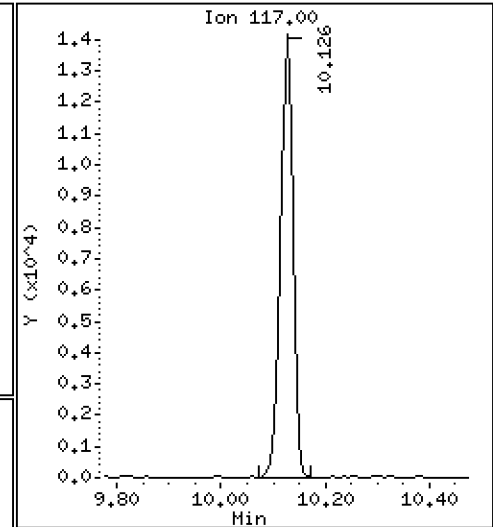
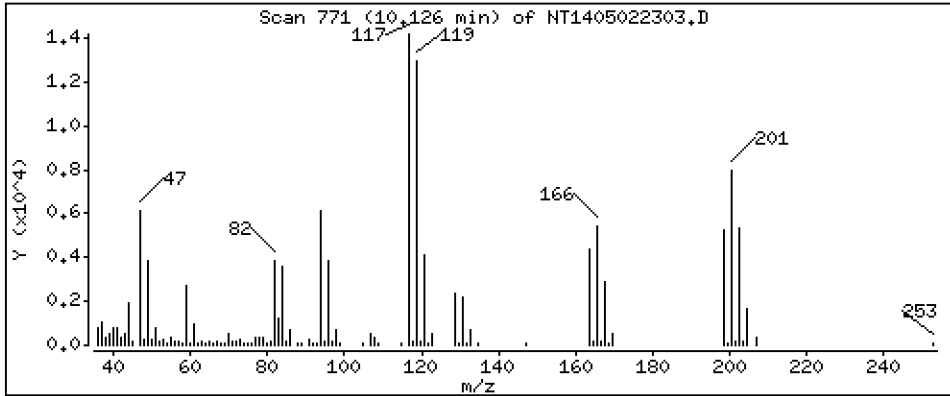
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 0,4847 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

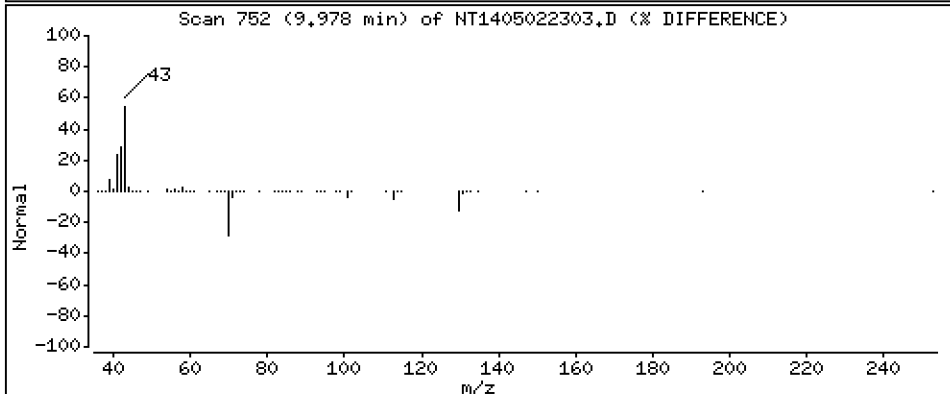
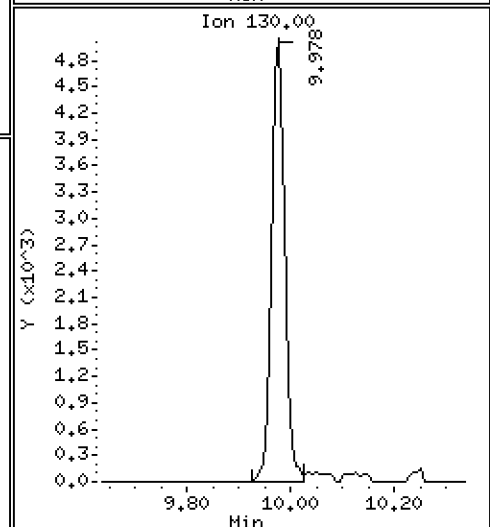
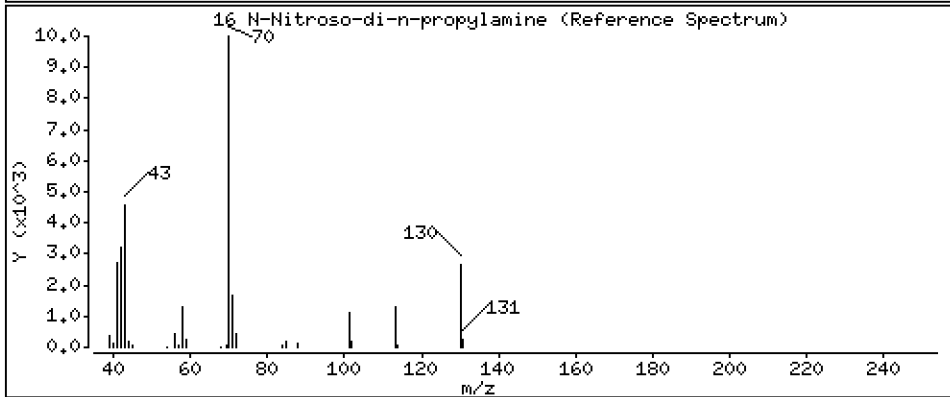
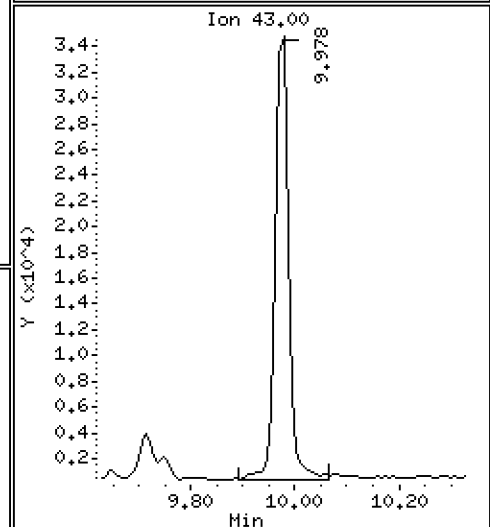
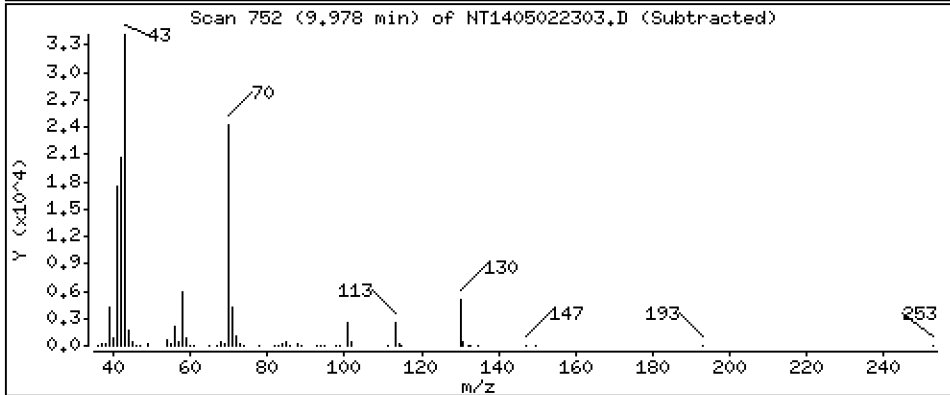
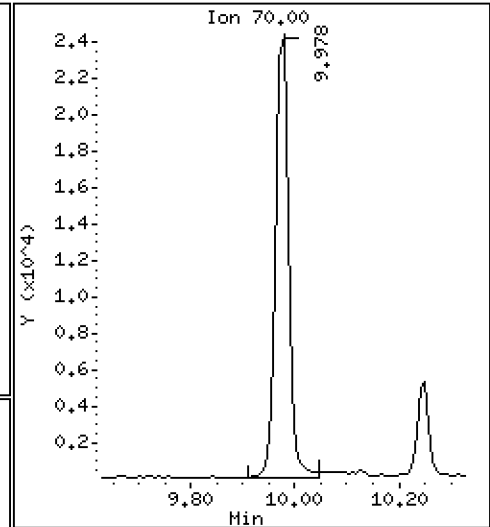
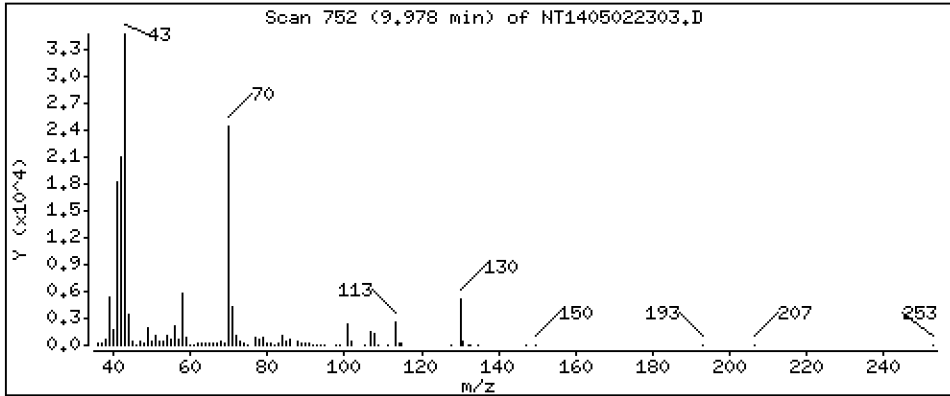
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 0,4112 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

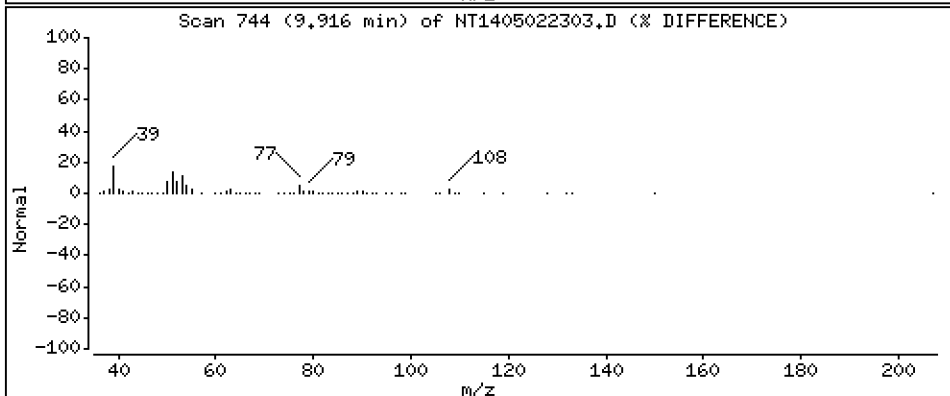
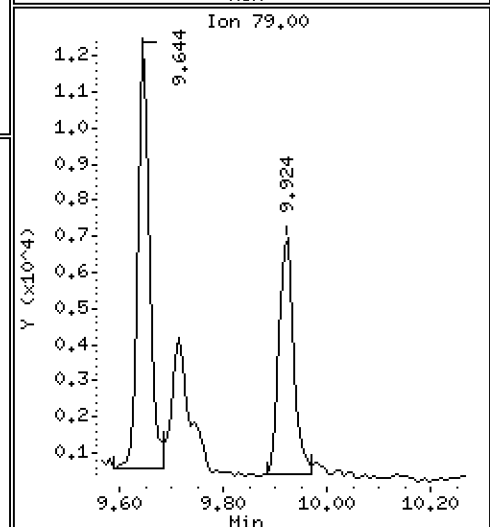
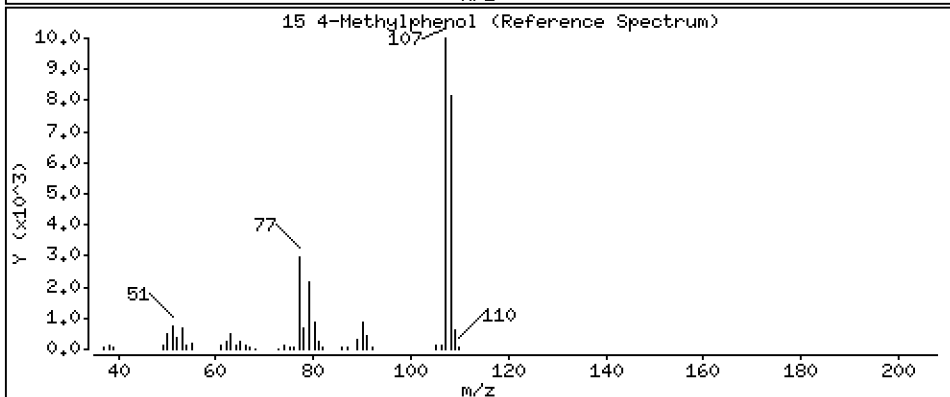
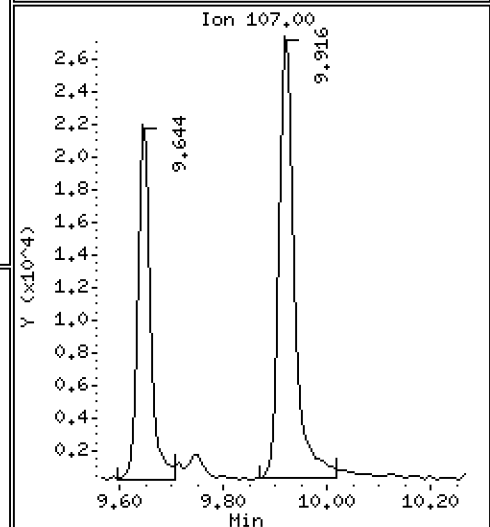
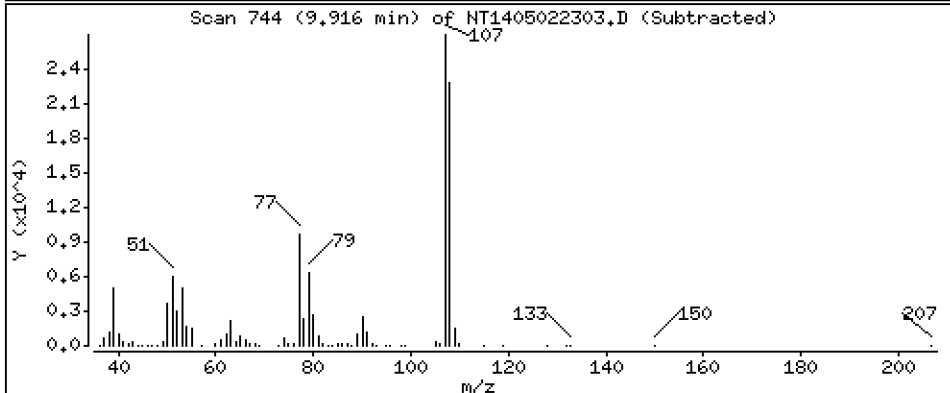
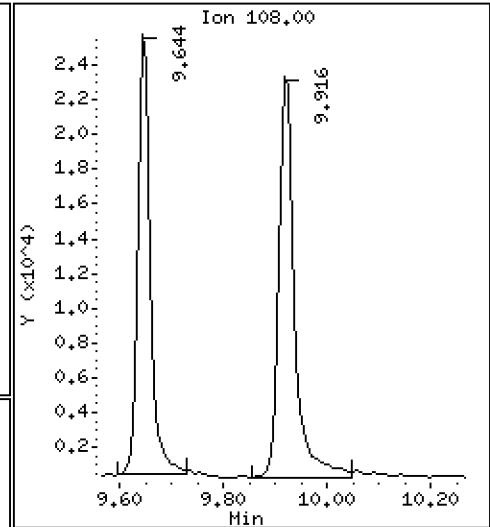
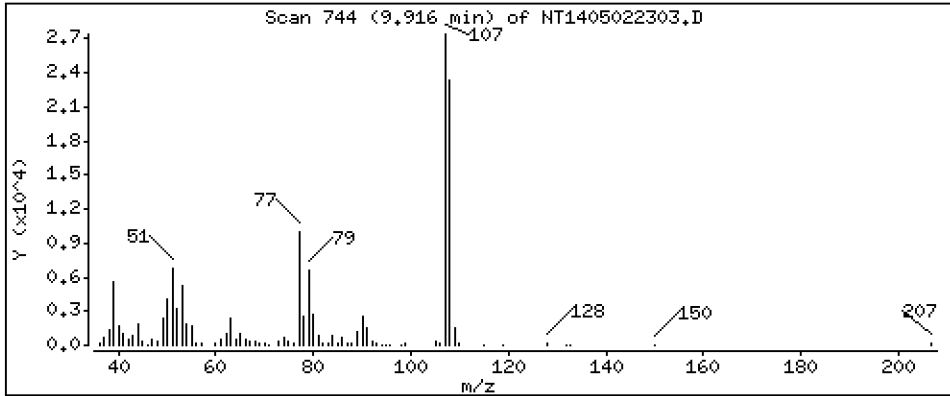
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 0.4196 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

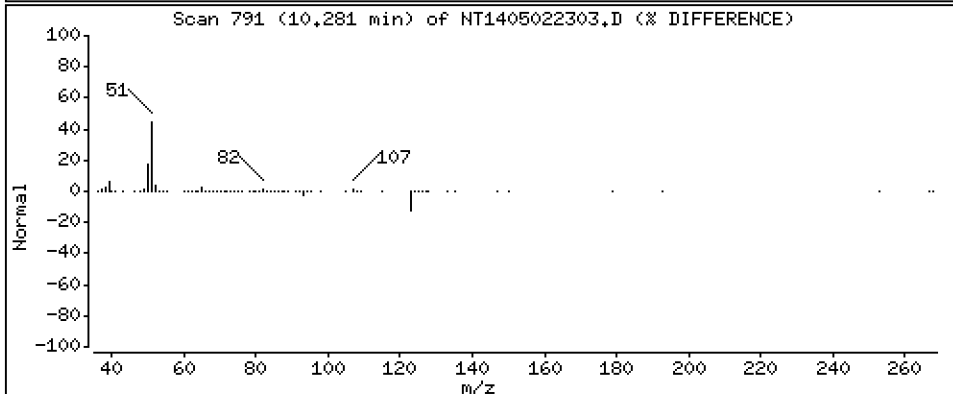
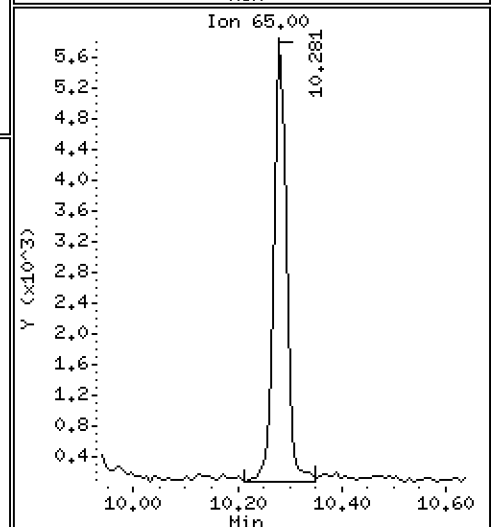
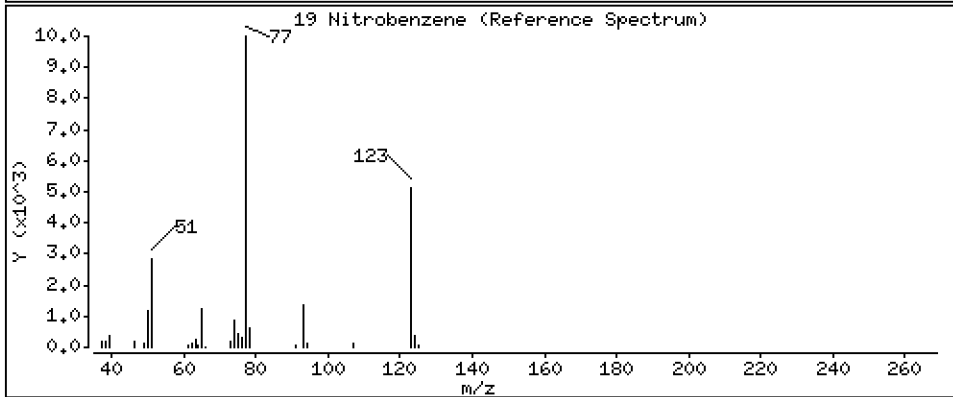
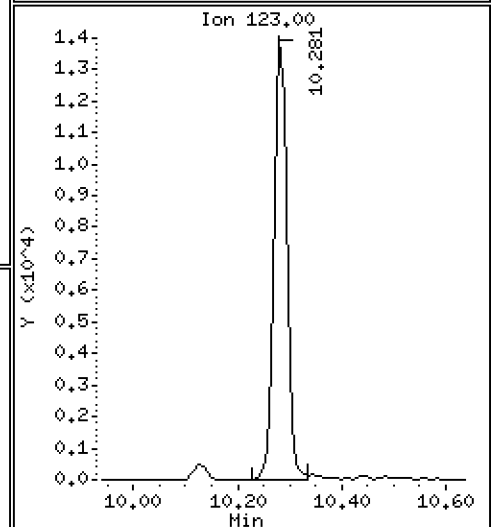
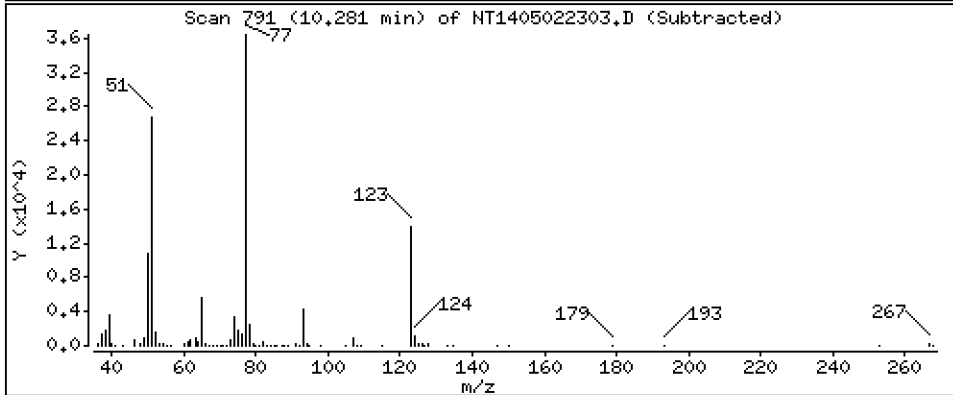
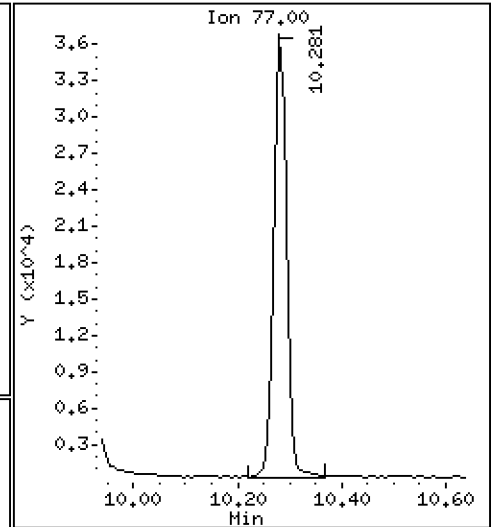
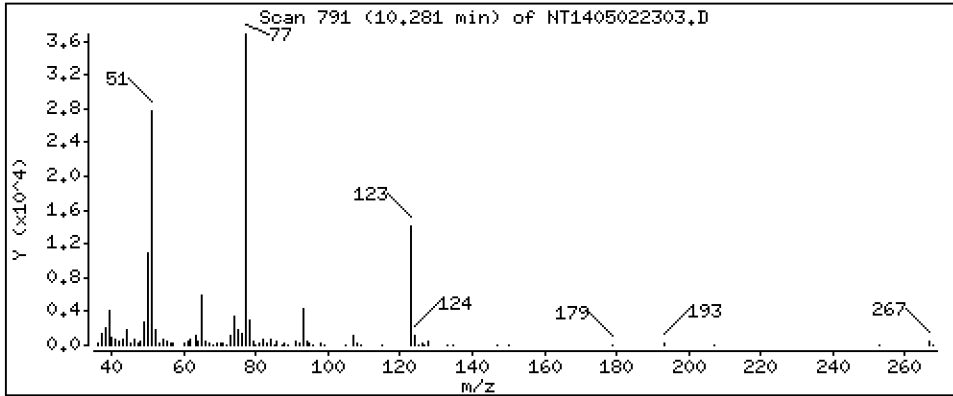
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

Concentration: 0,4515 ug/mL

19 Nitrobenzene



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

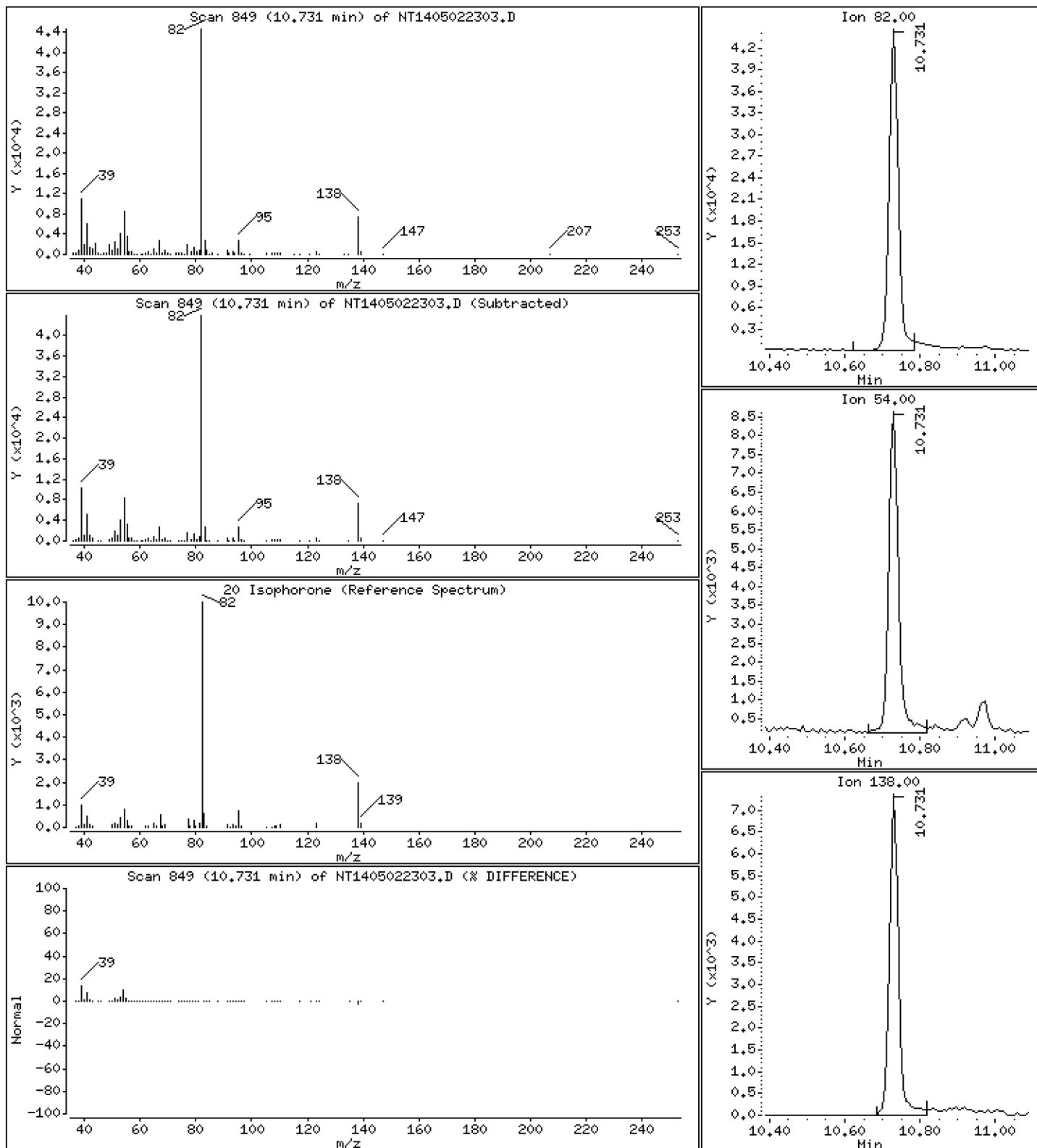
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 0,3988 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

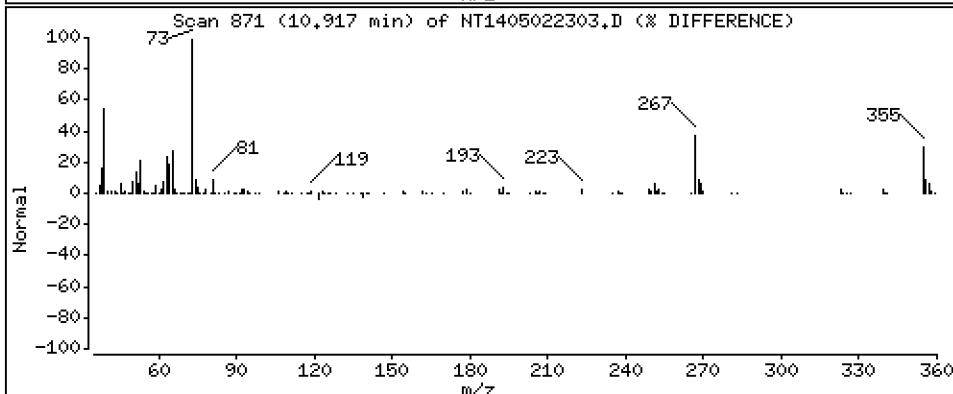
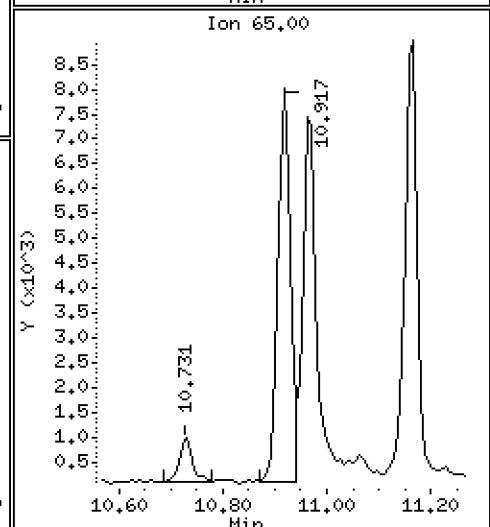
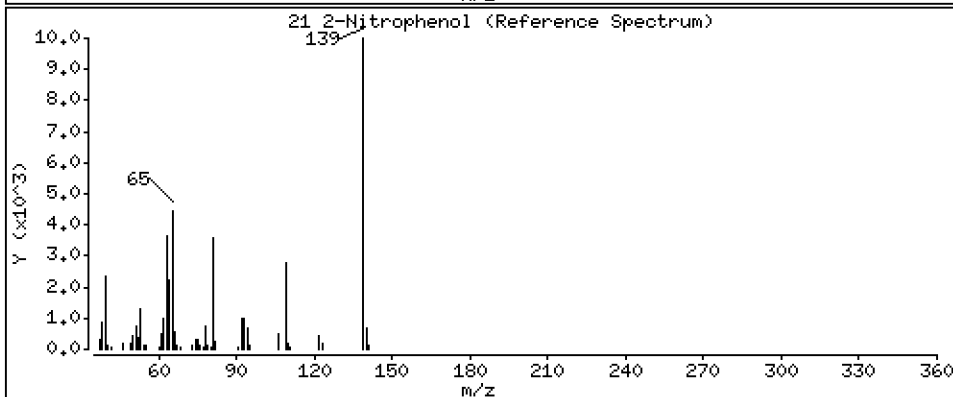
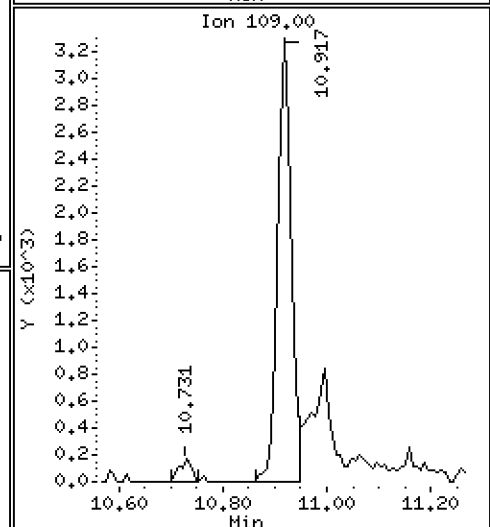
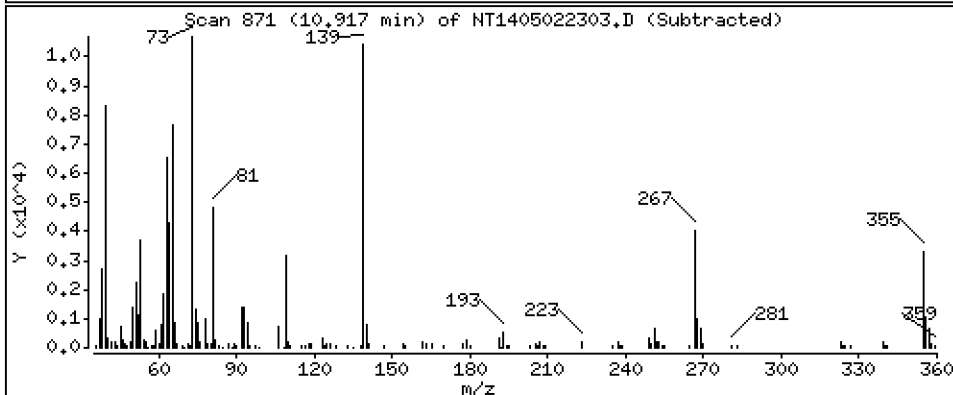
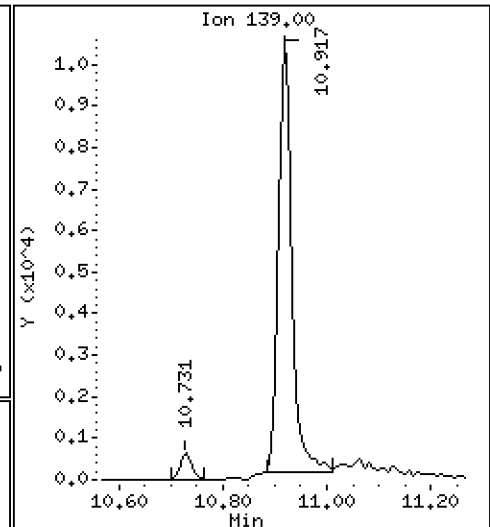
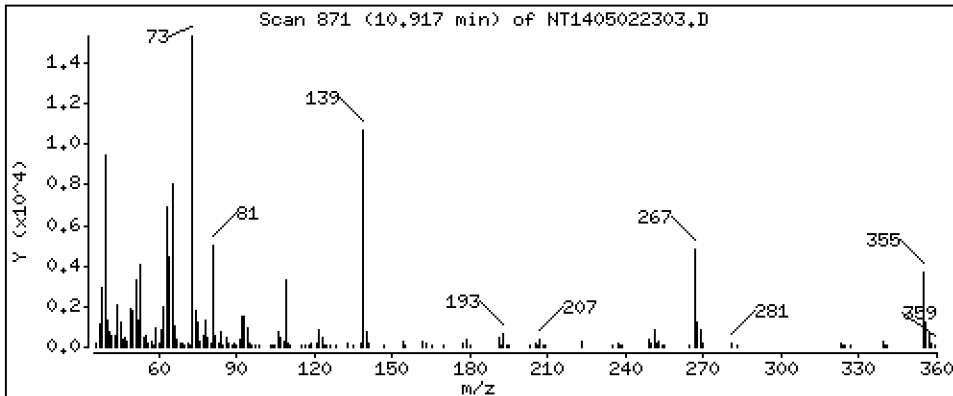
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 0,2560 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

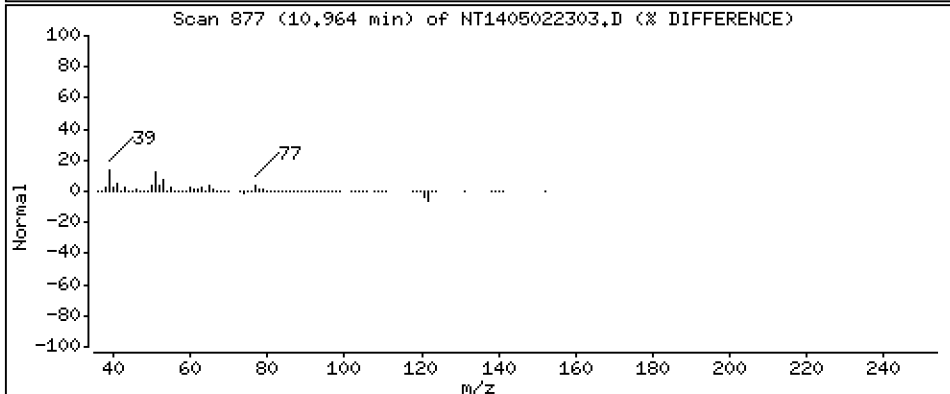
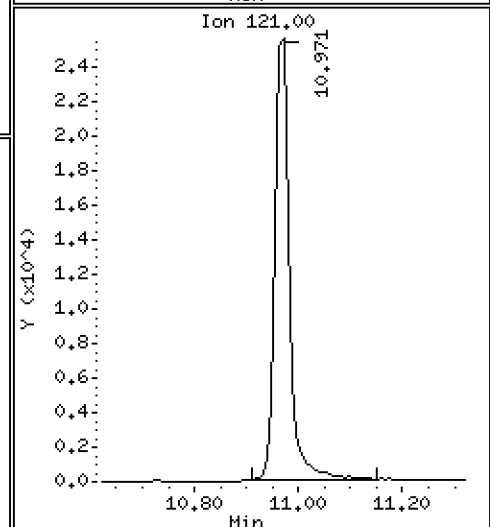
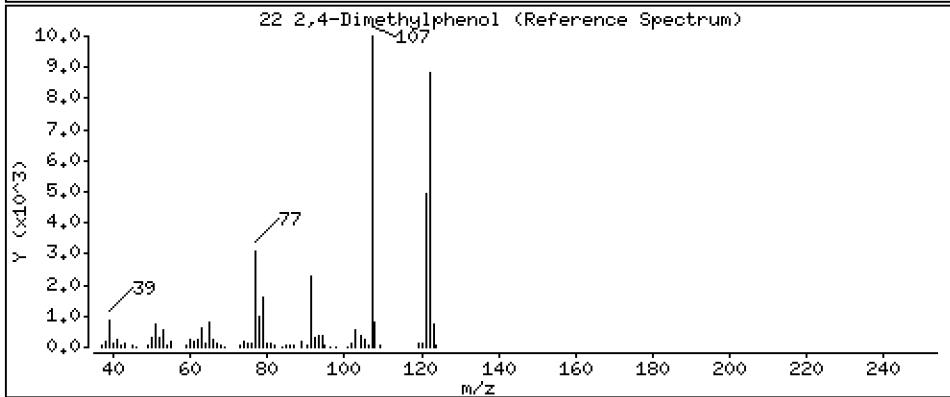
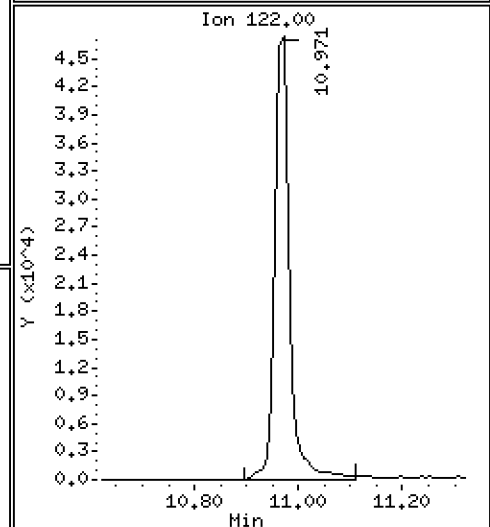
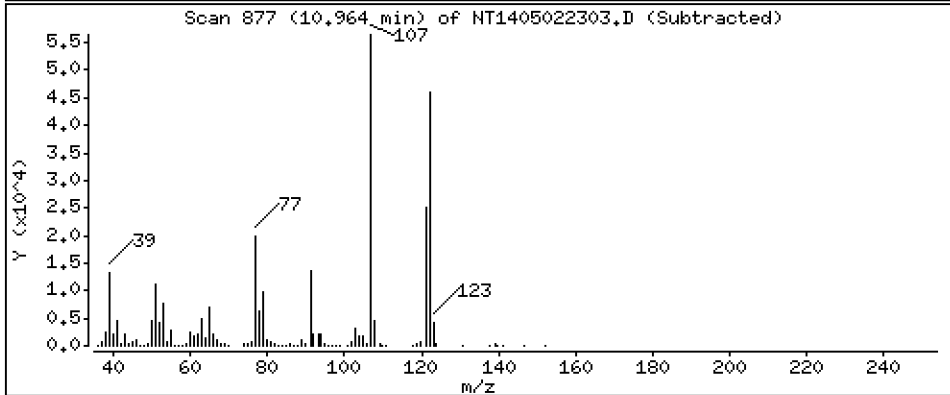
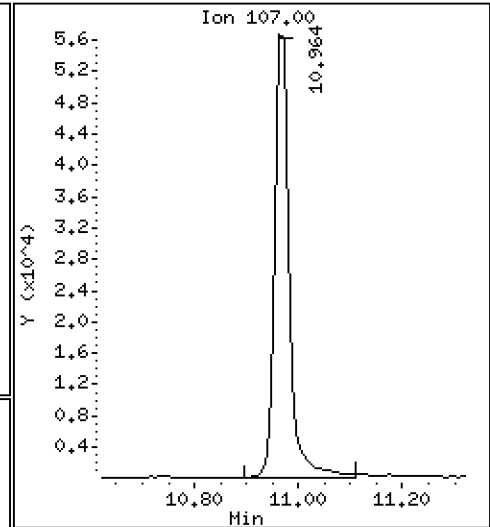
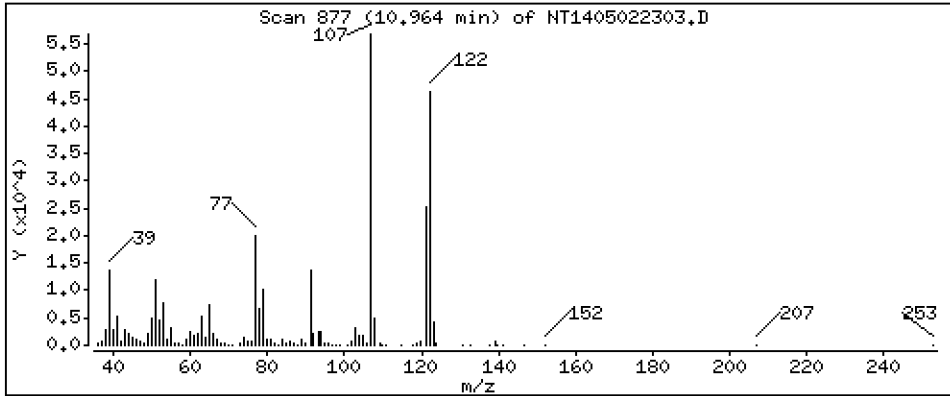
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 1,066 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

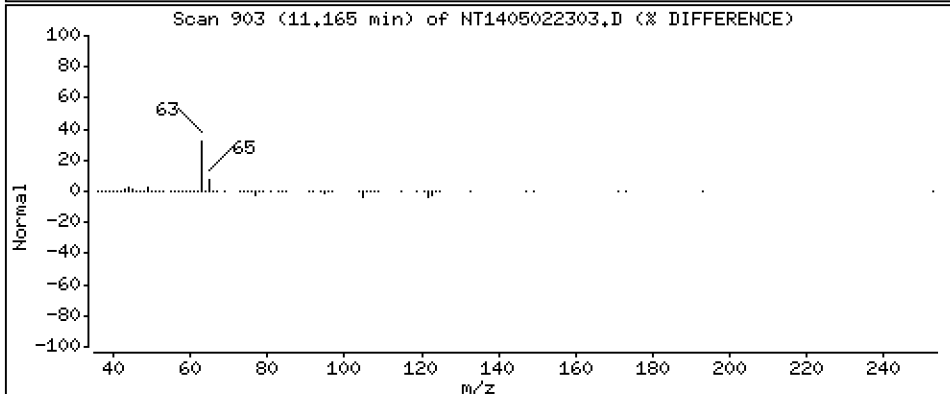
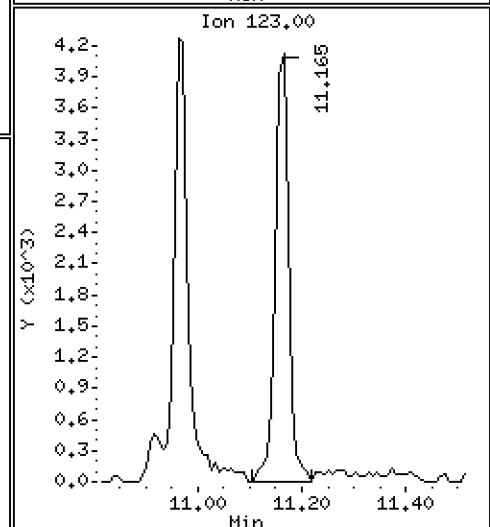
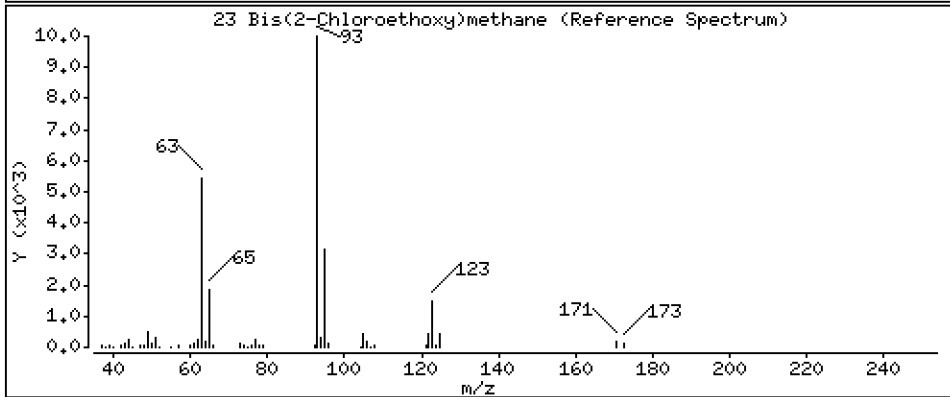
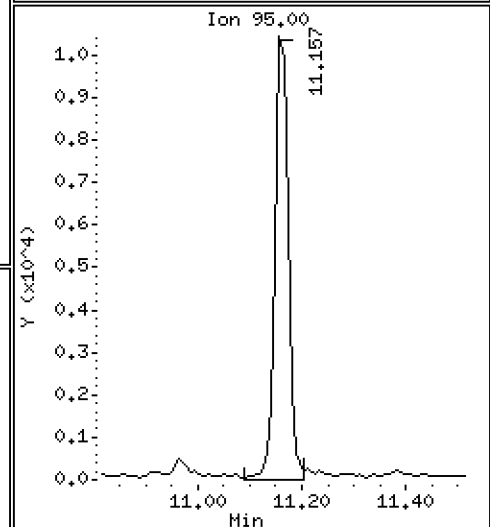
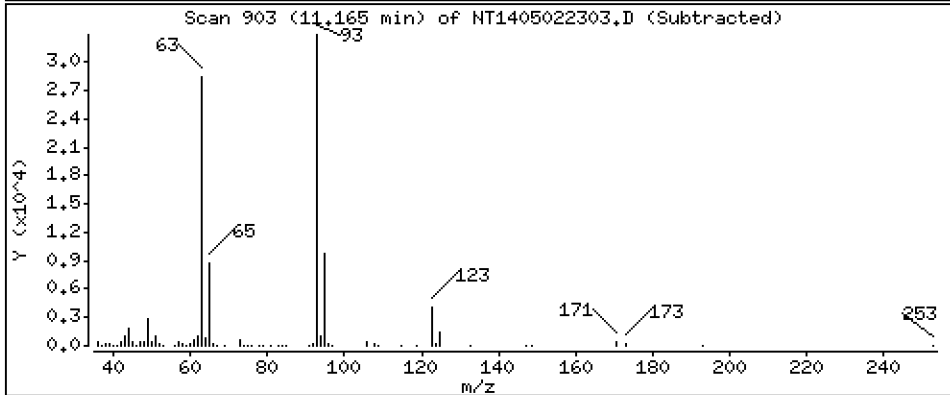
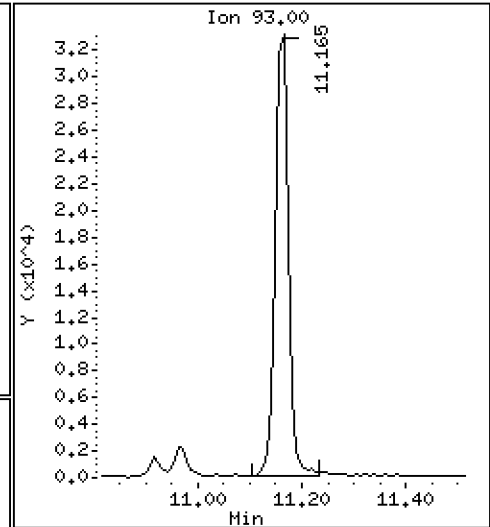
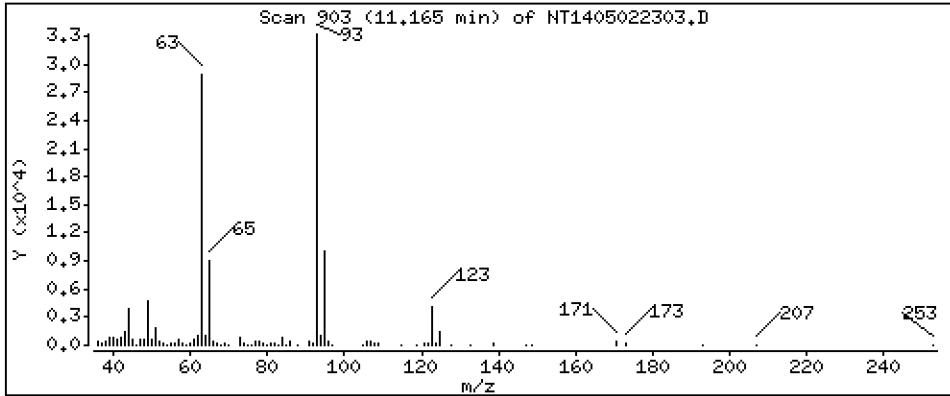
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 0,4703 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

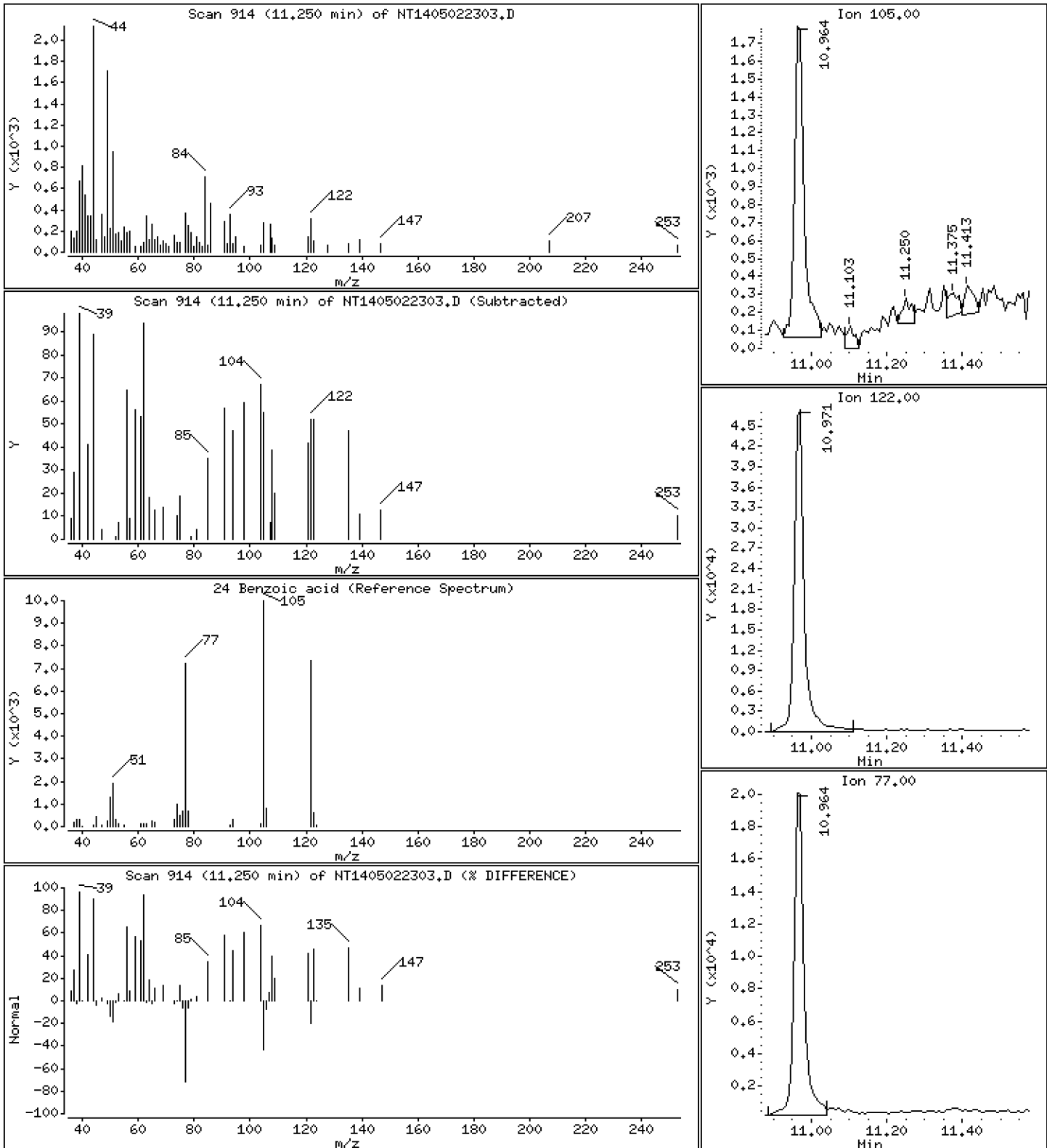
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 0,003004 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

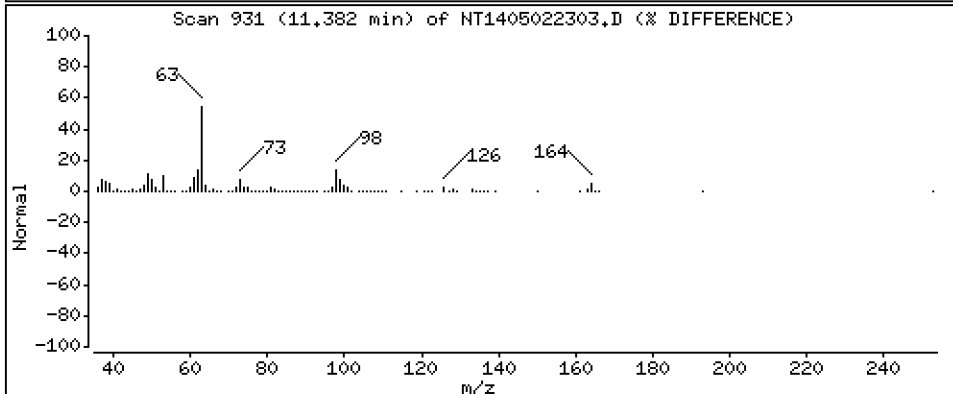
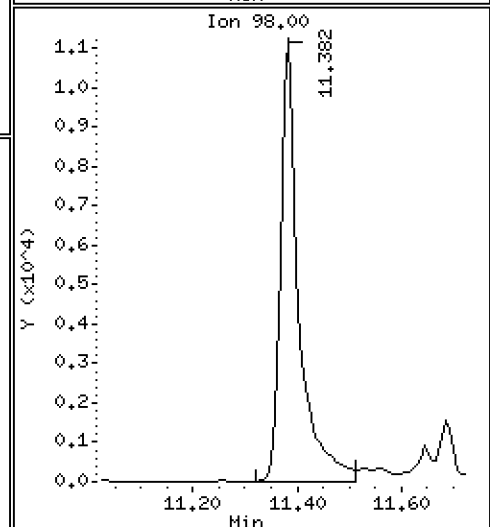
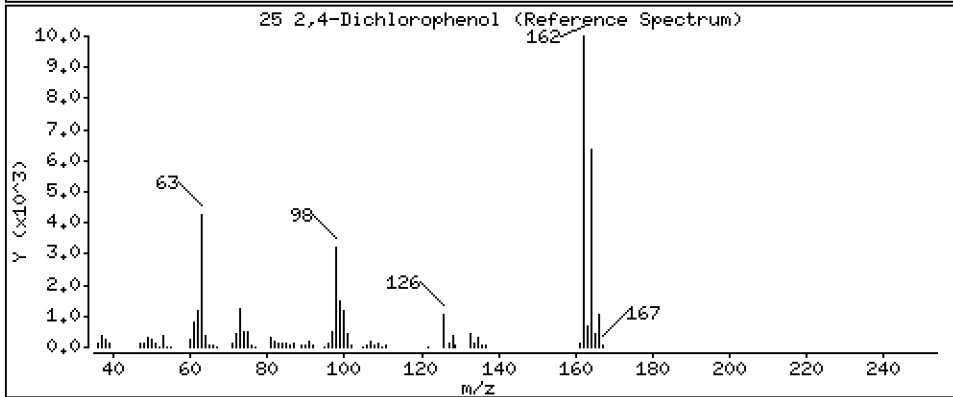
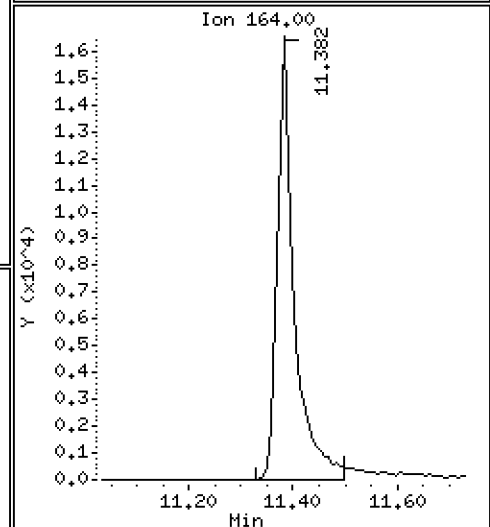
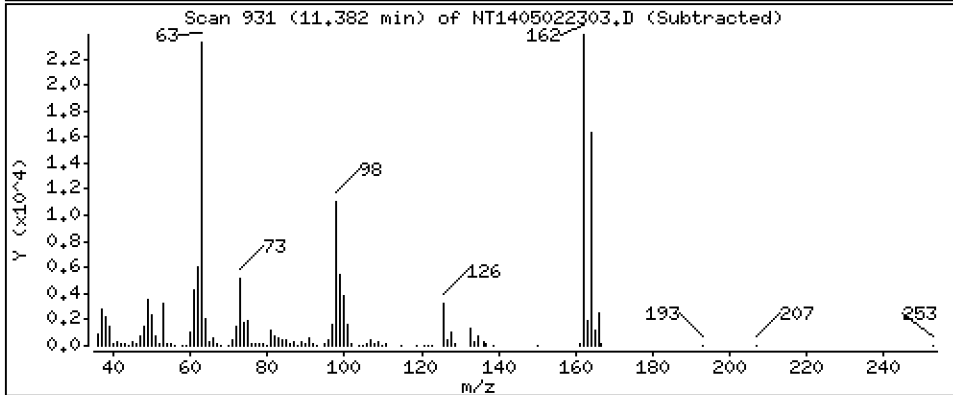
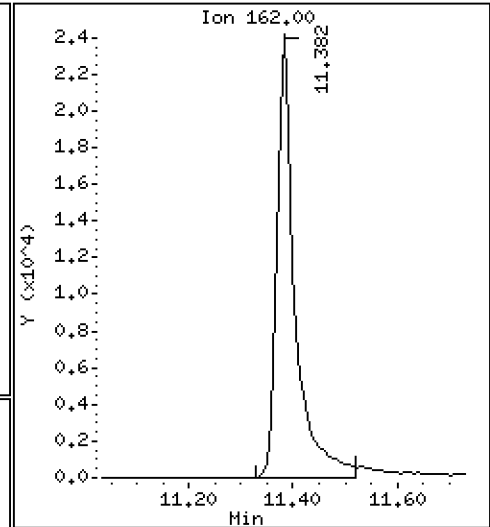
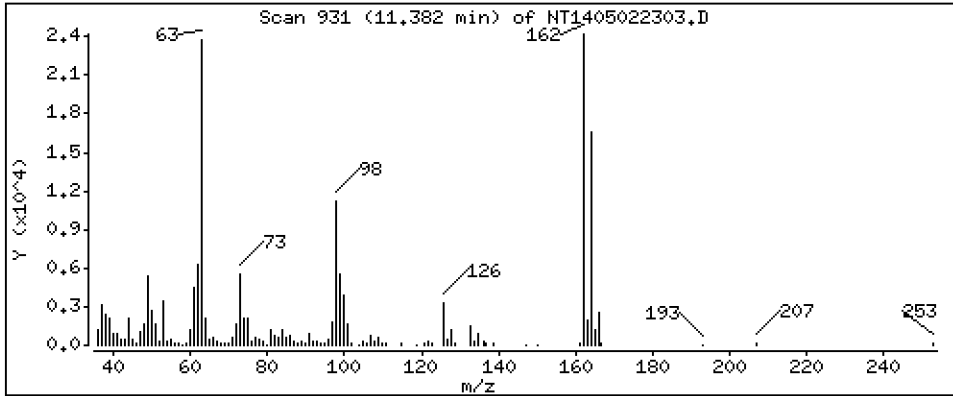
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 0,5970 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

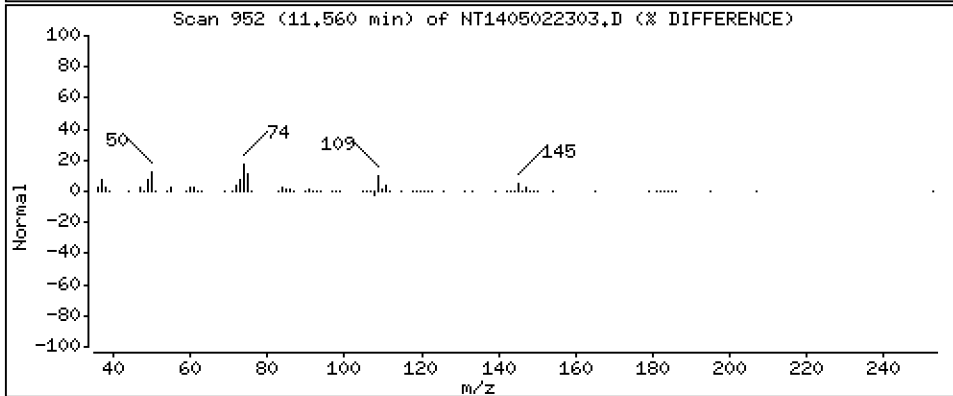
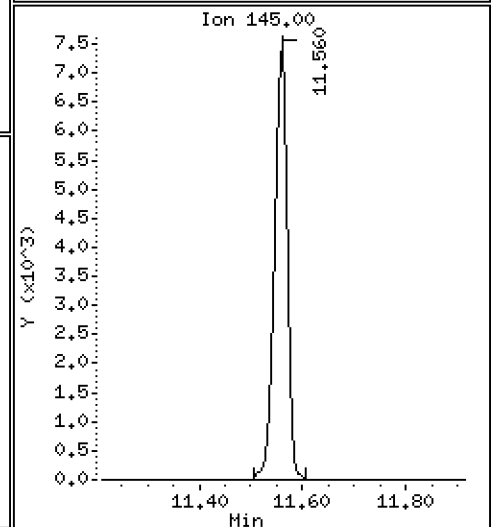
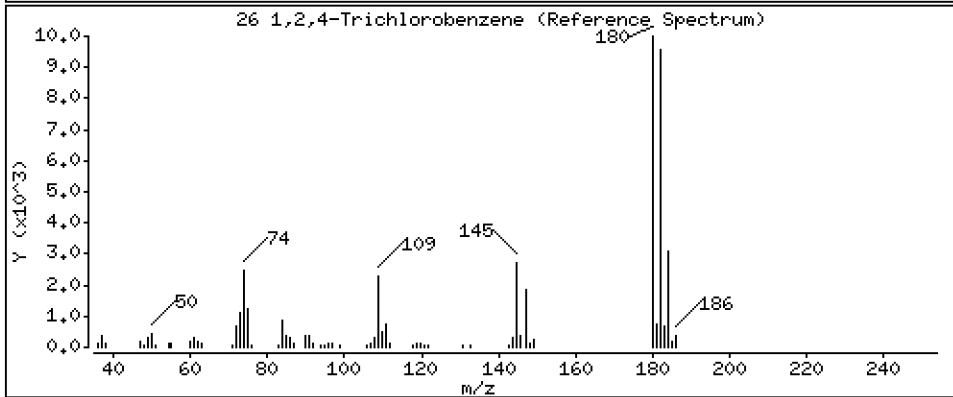
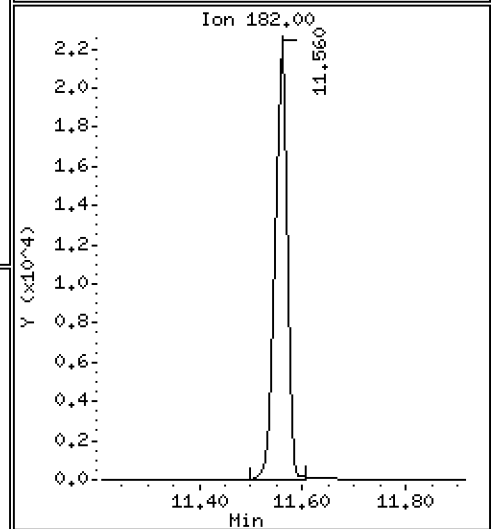
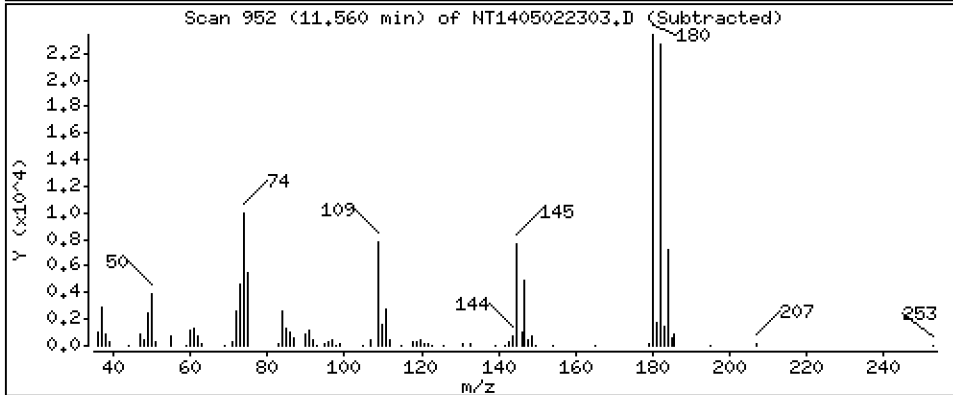
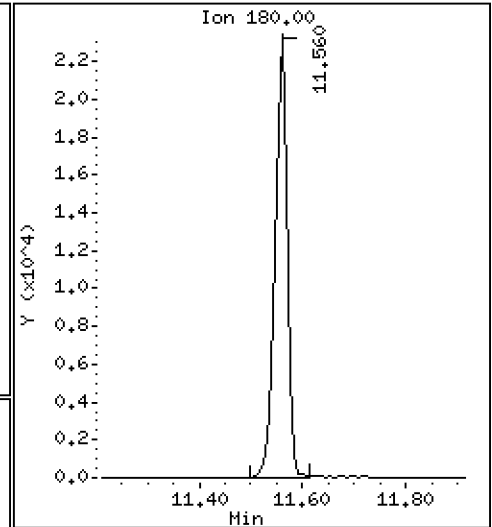
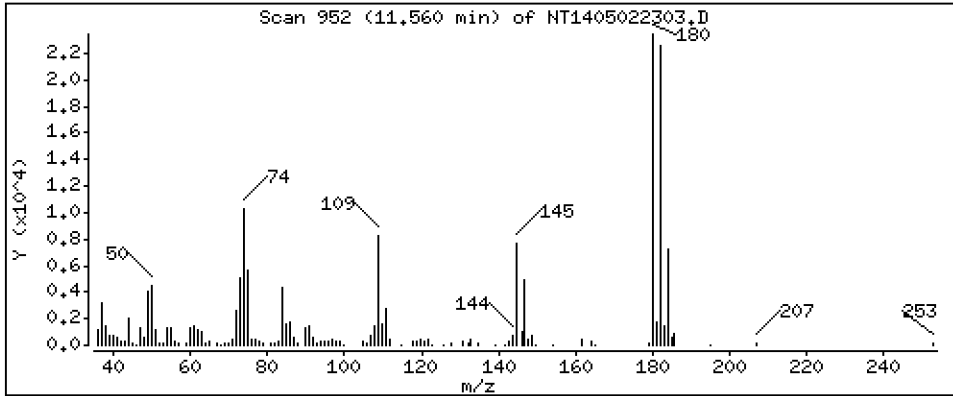
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 0,4918 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

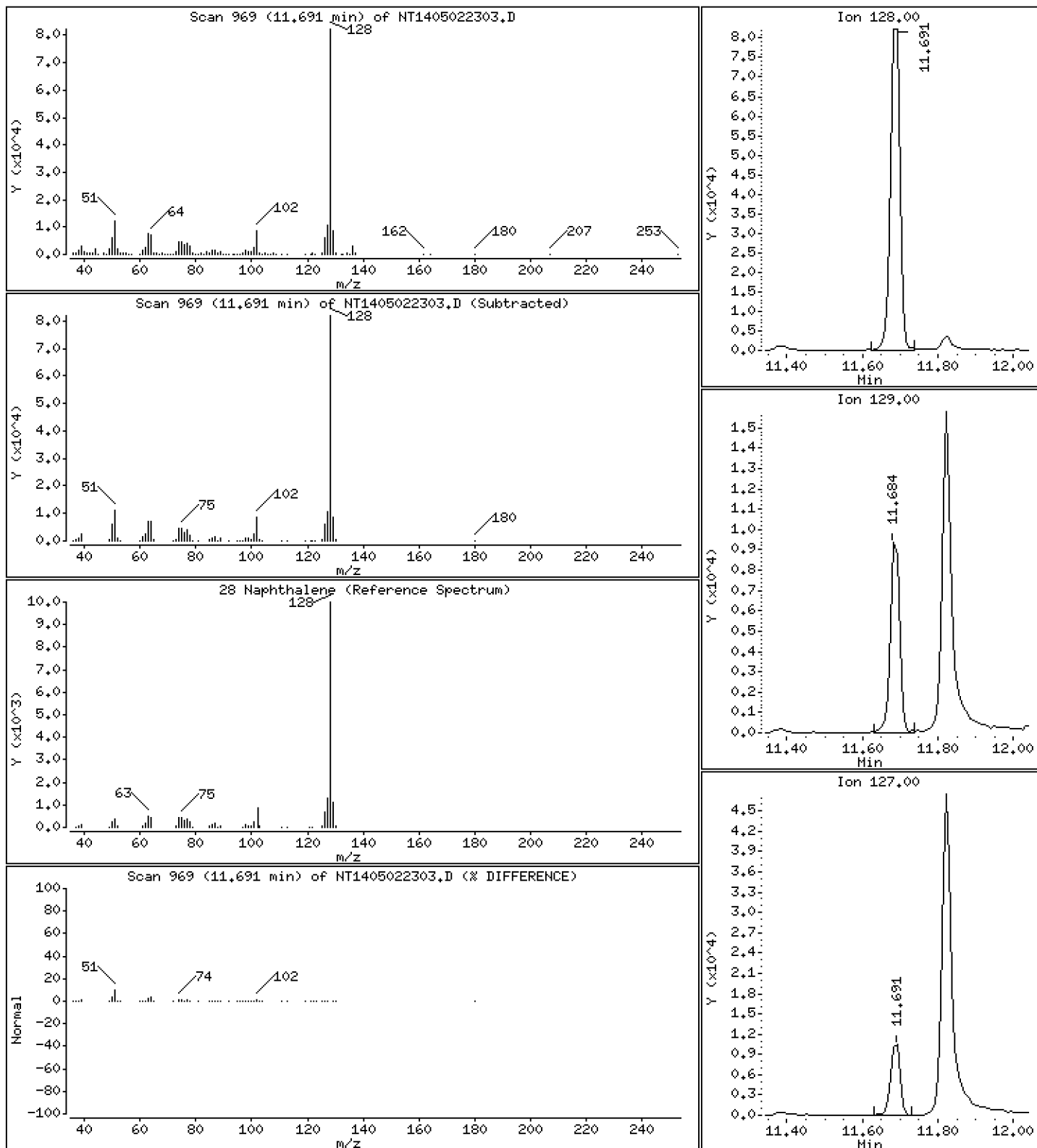
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 0,5038 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

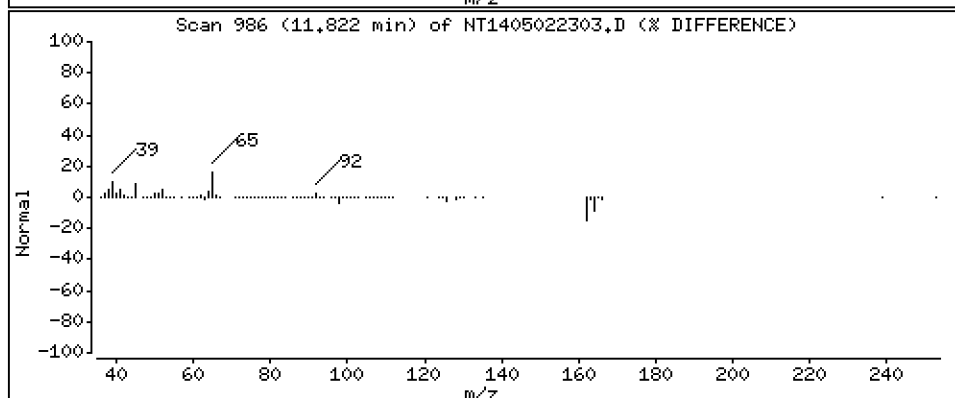
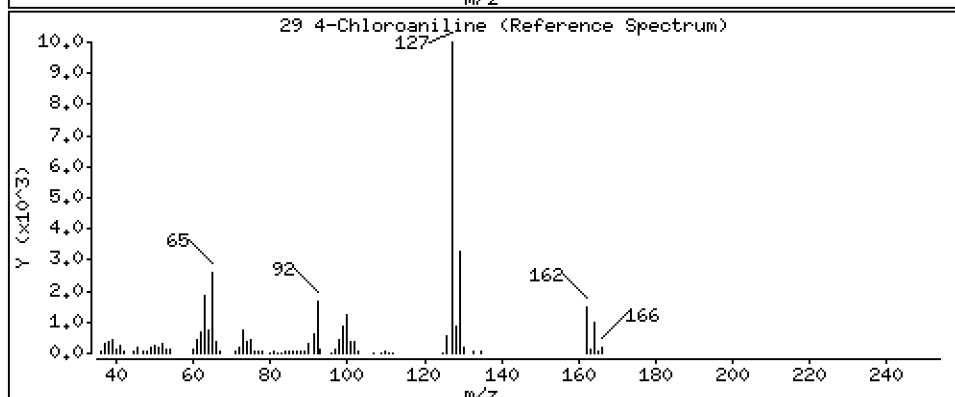
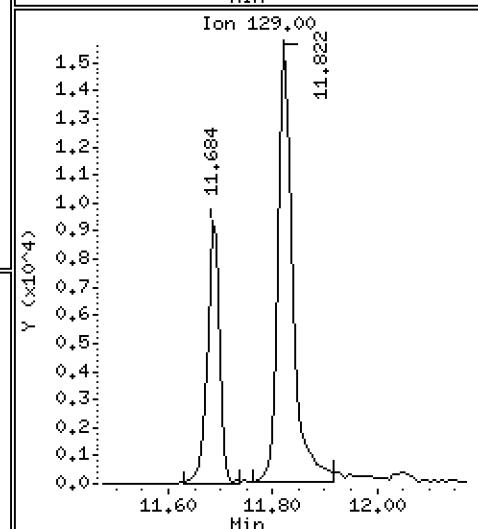
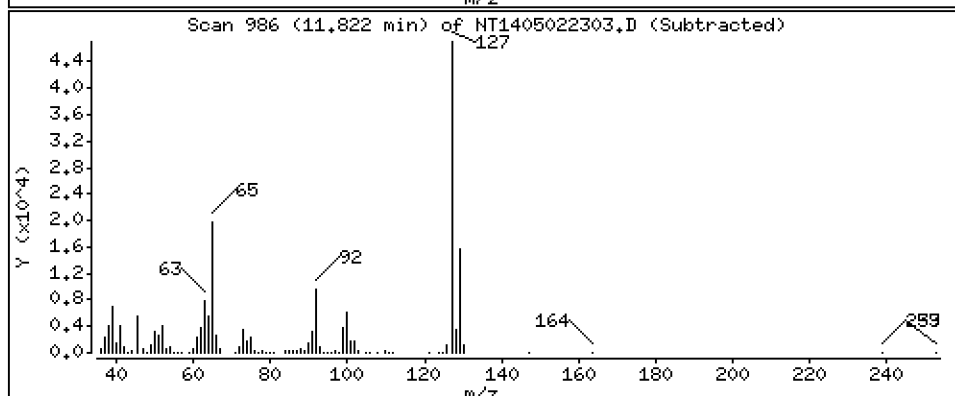
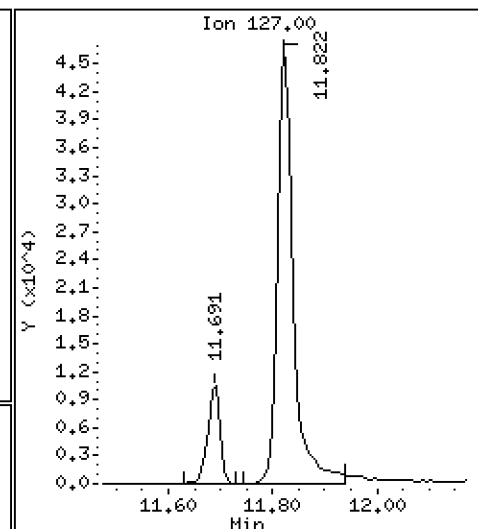
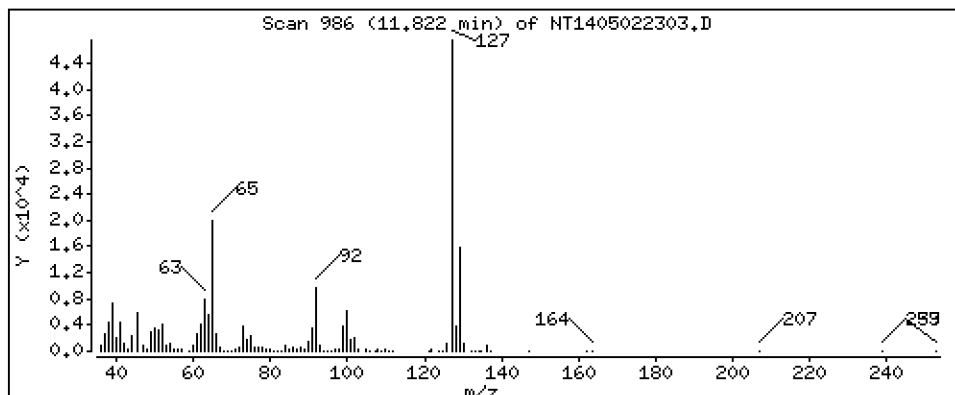
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 0,8632 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

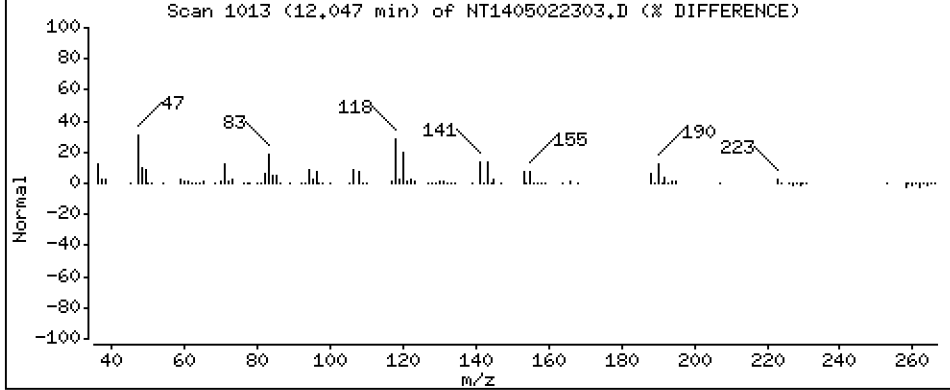
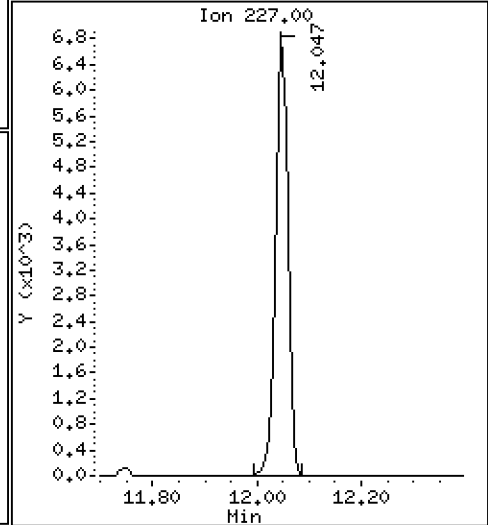
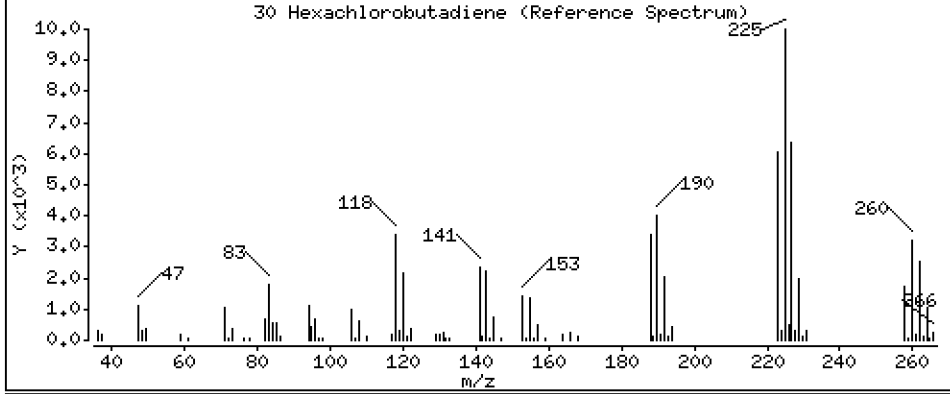
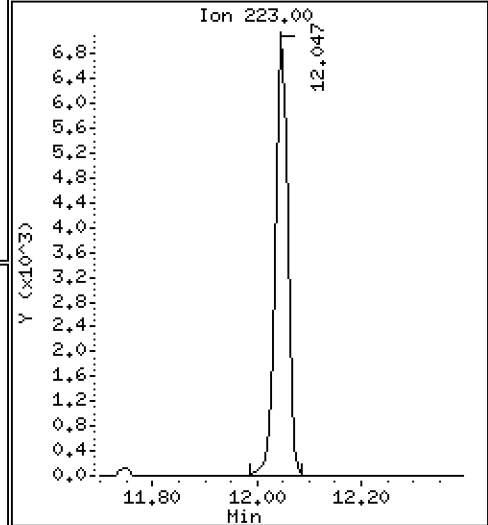
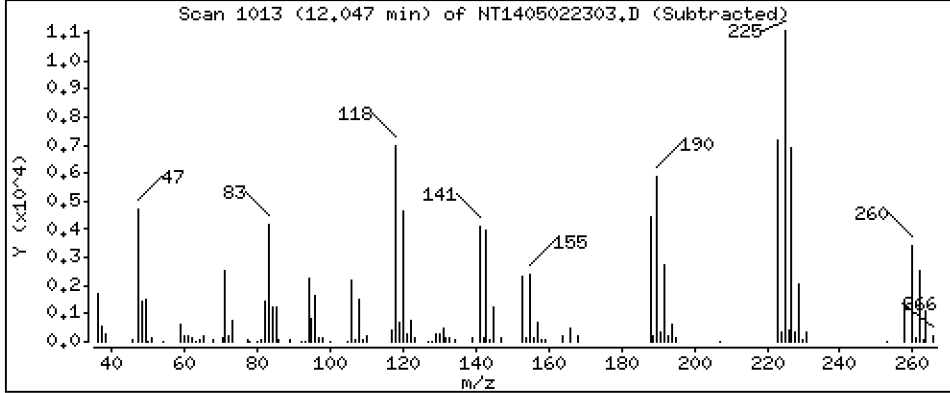
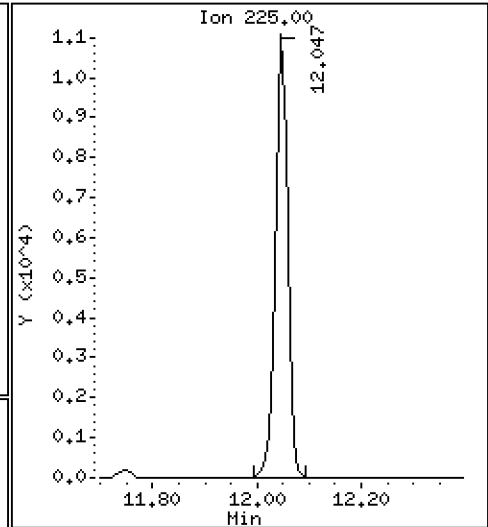
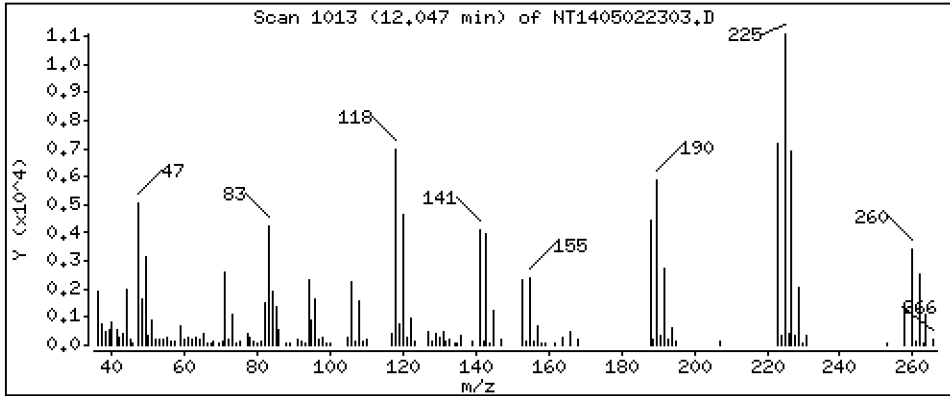
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 0,5007 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

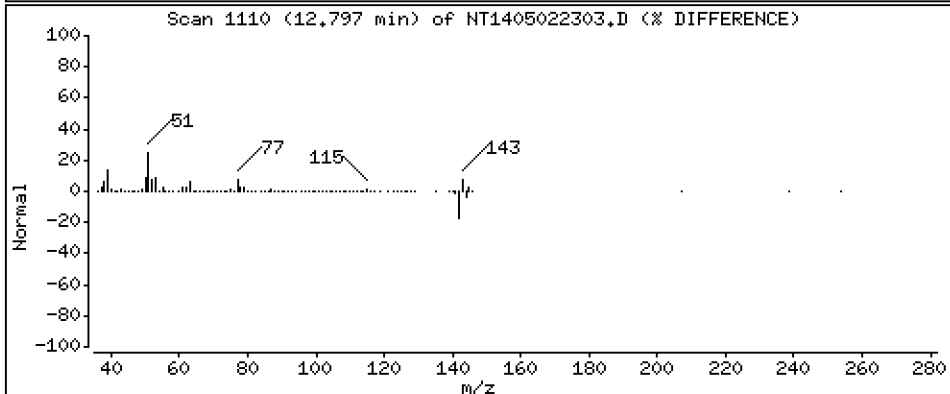
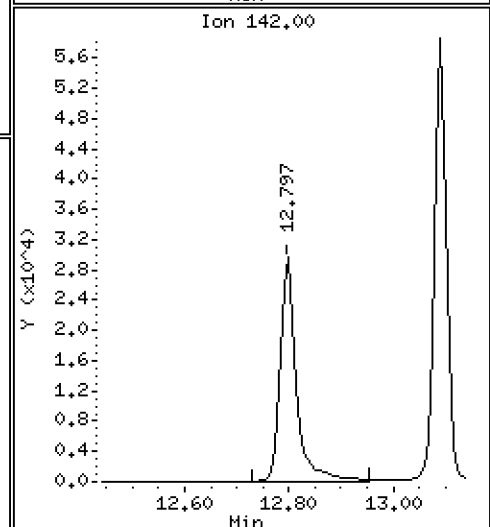
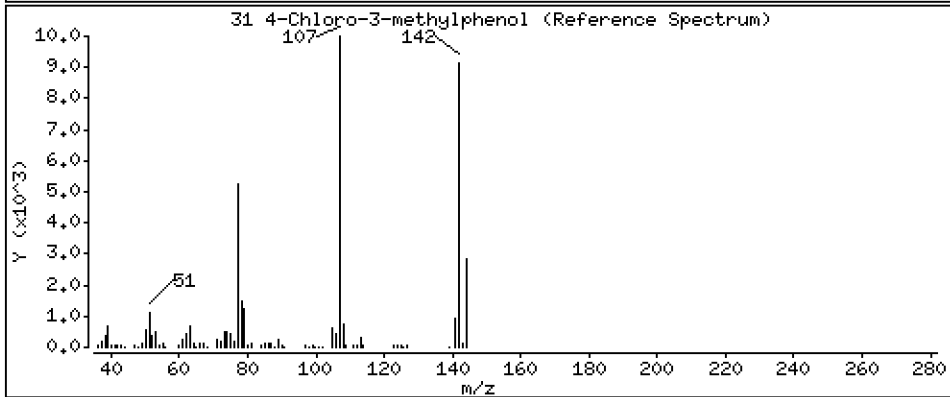
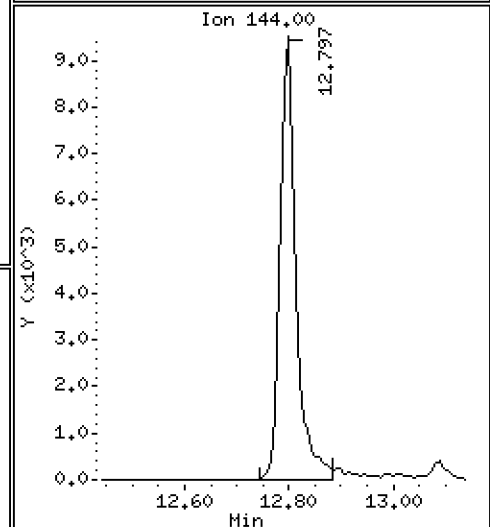
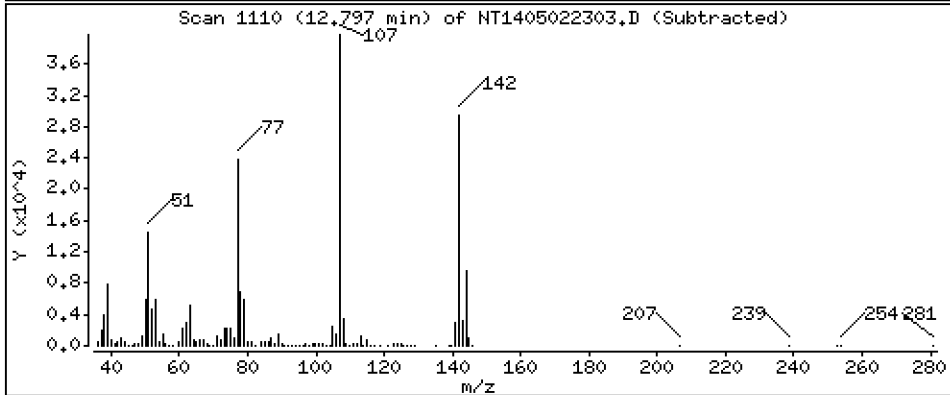
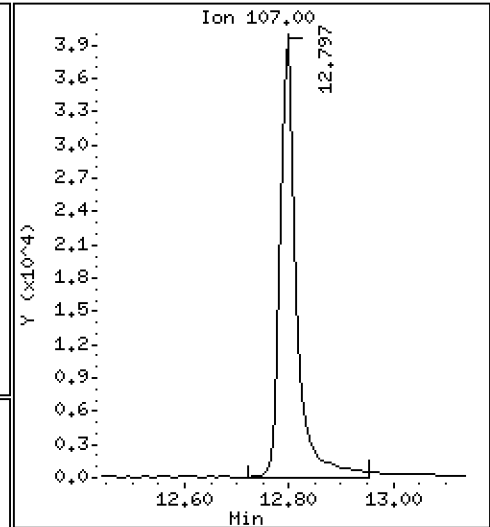
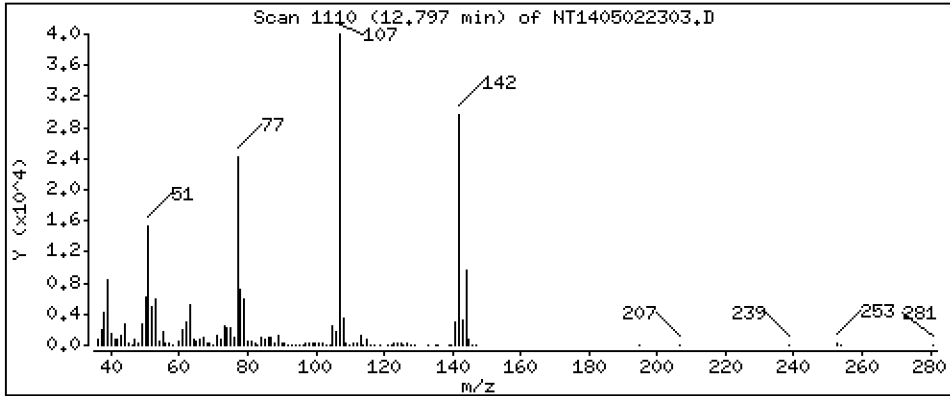
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 0,9505 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

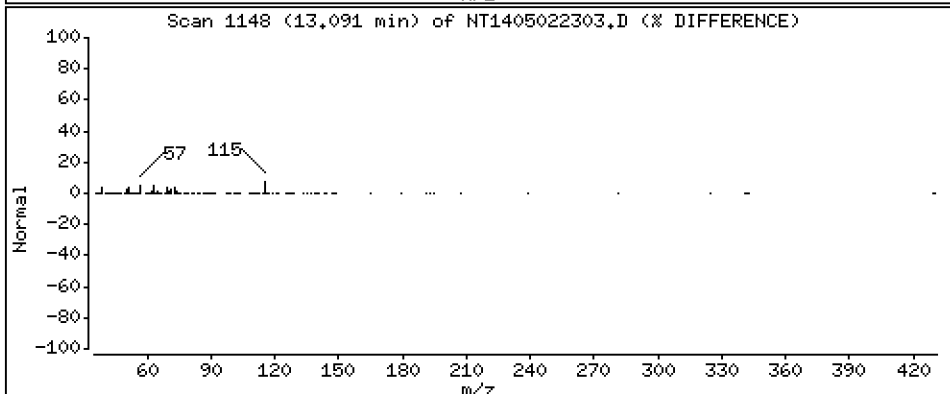
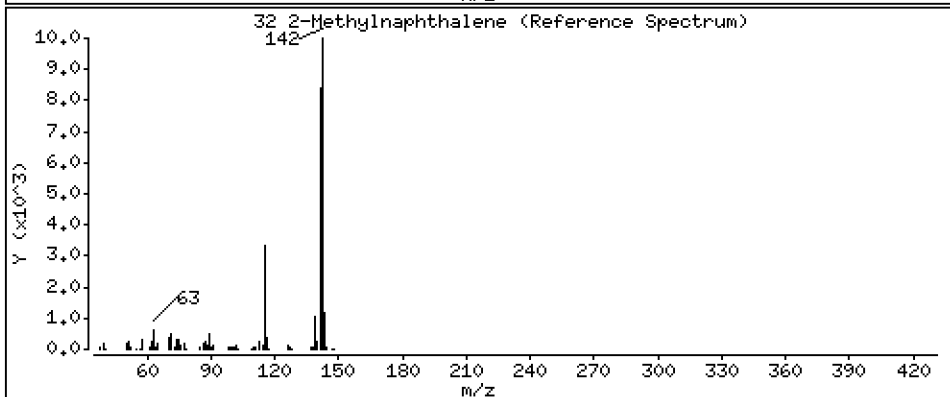
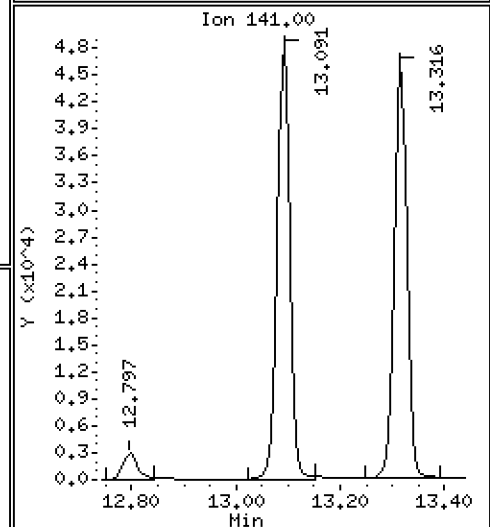
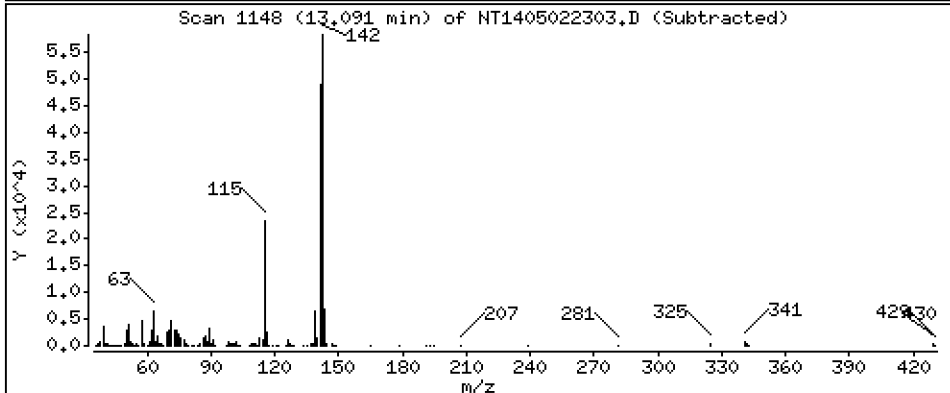
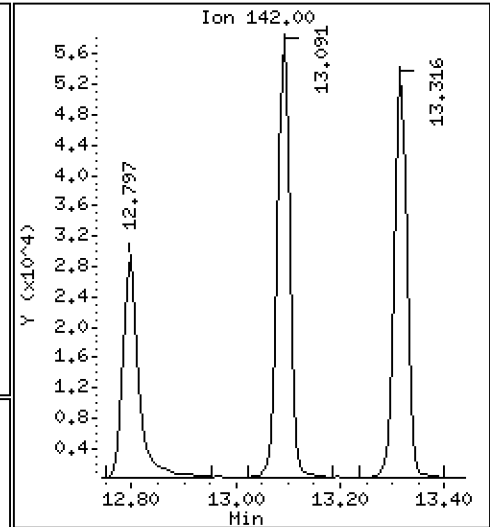
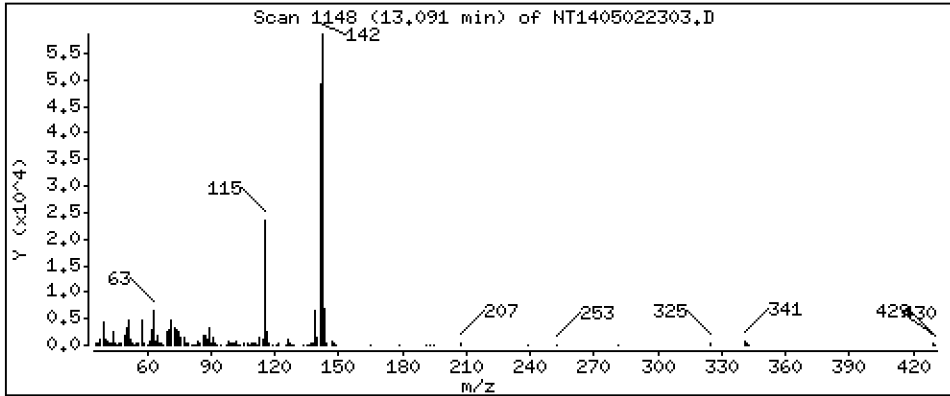
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 0,4679 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

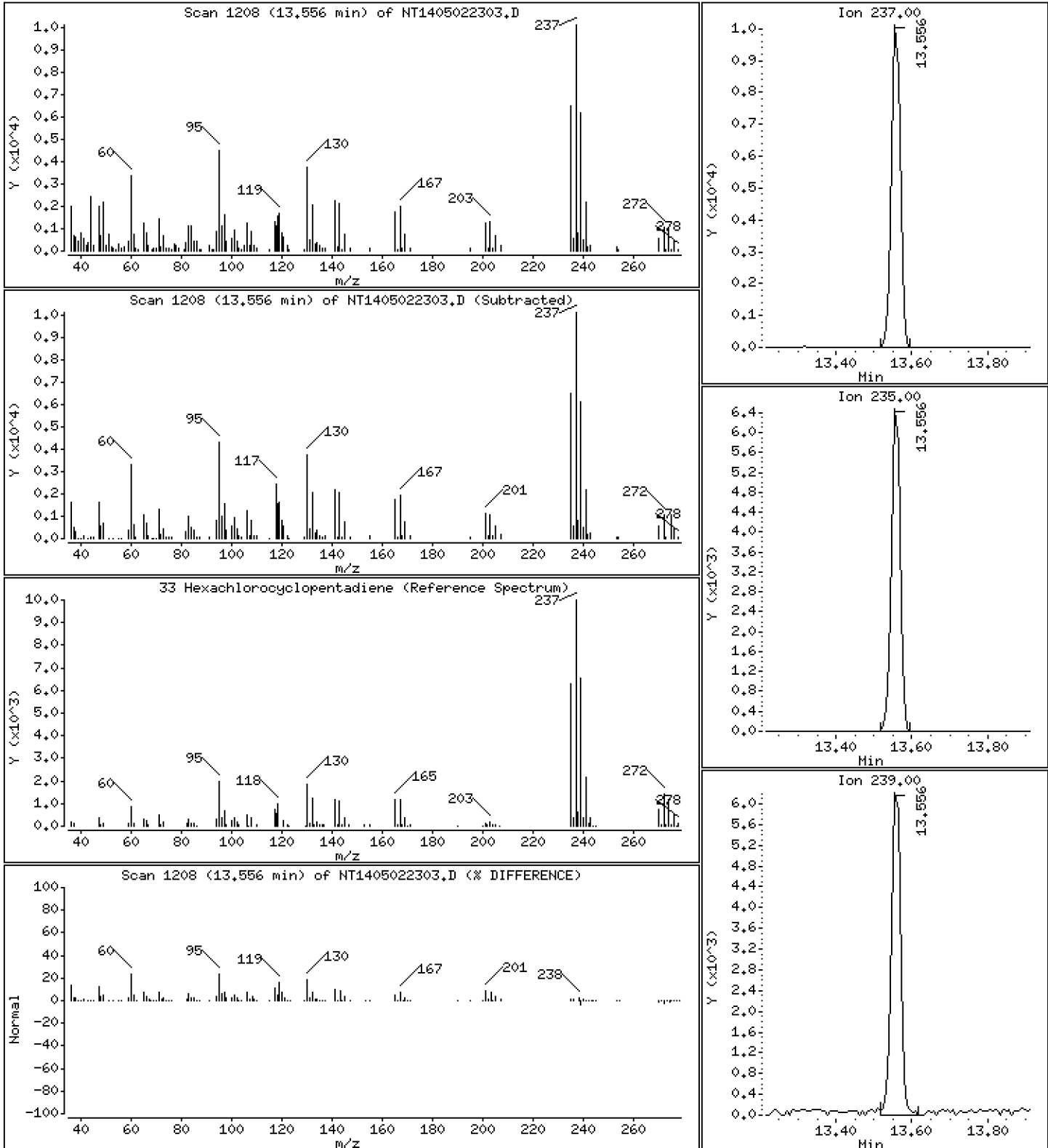
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

33 Hexachlorocyclopentadiene

Concentration: 0.4421 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

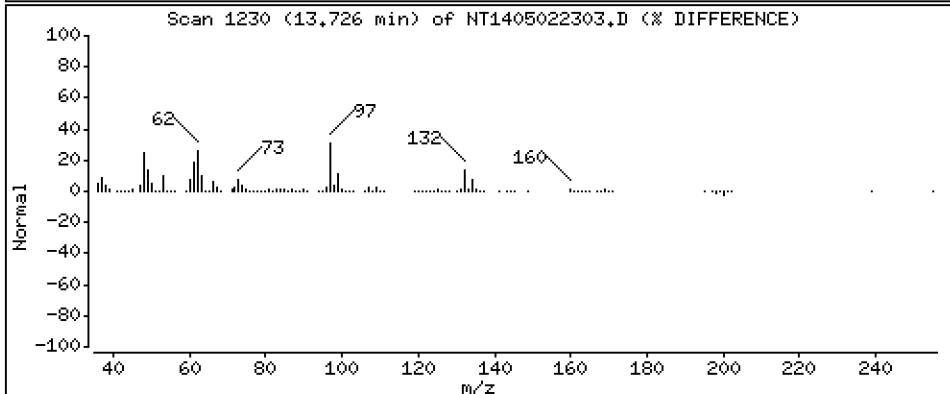
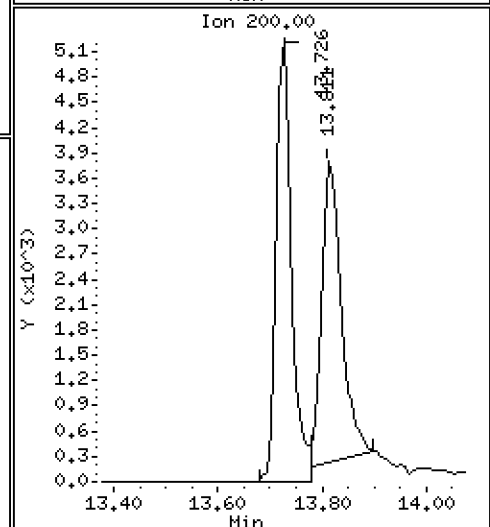
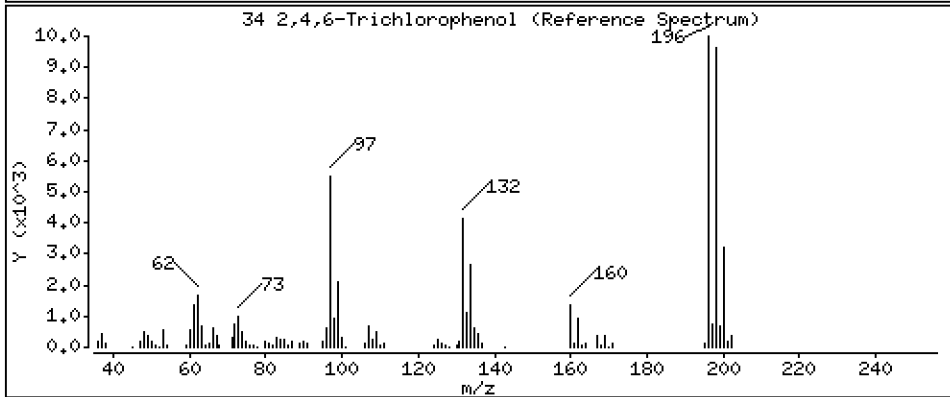
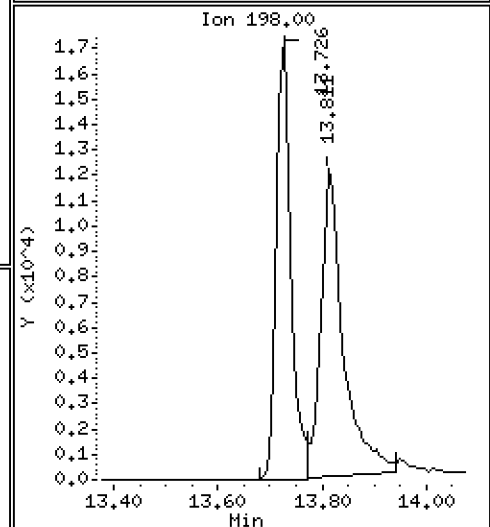
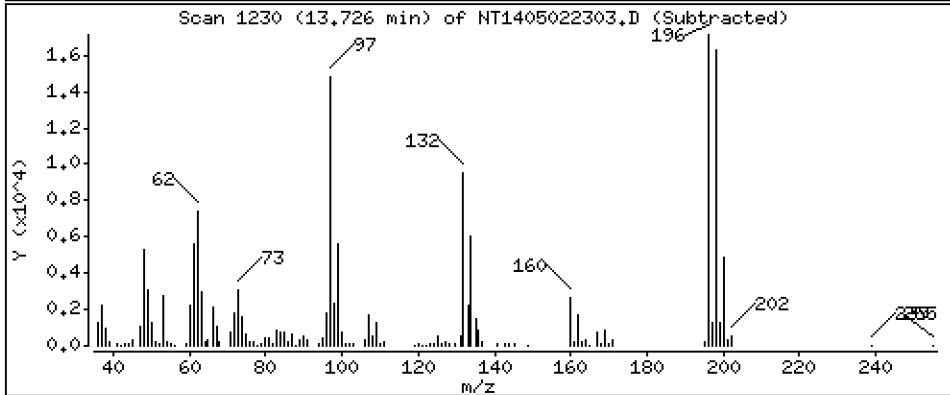
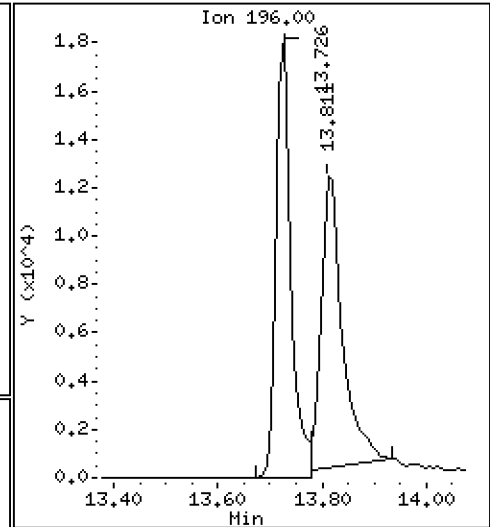
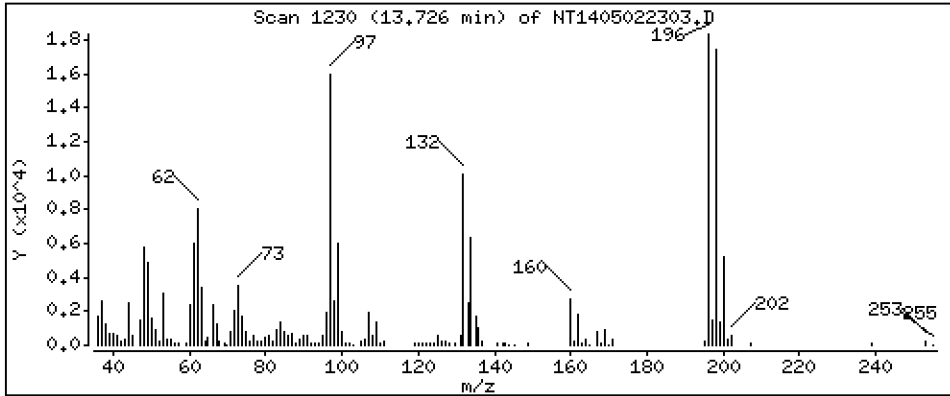
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 0,7974 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

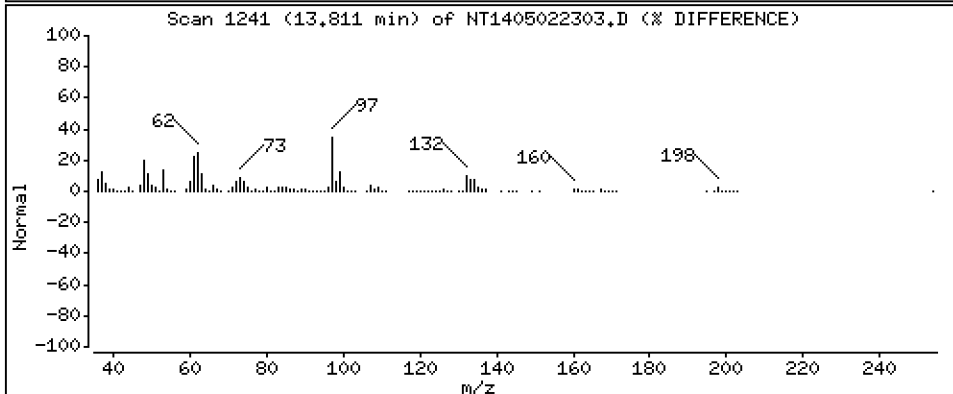
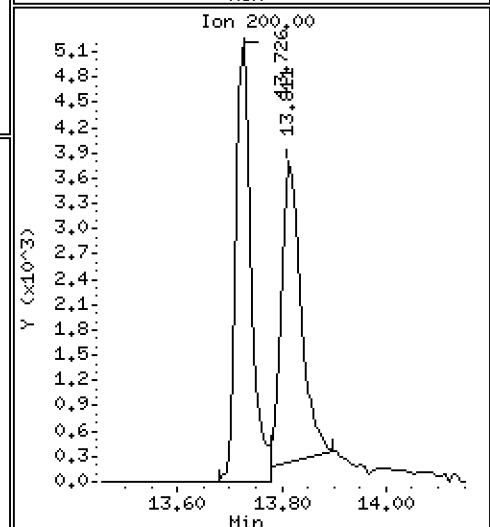
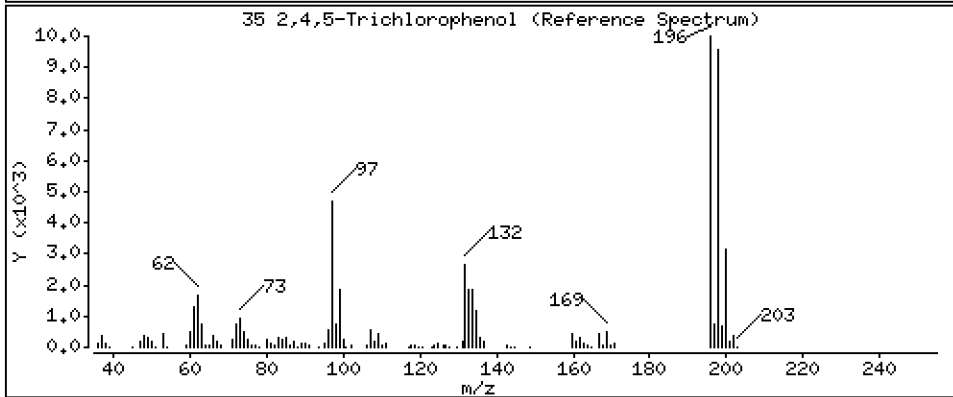
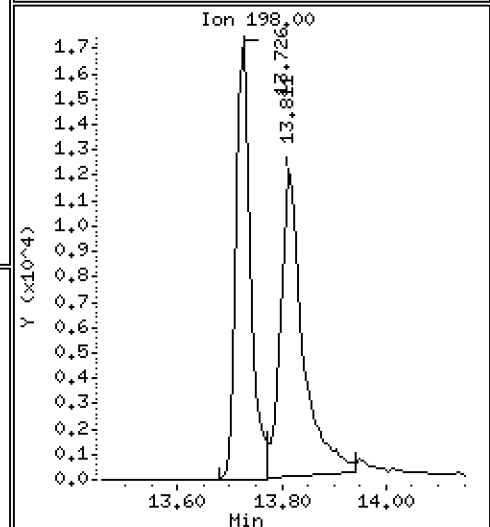
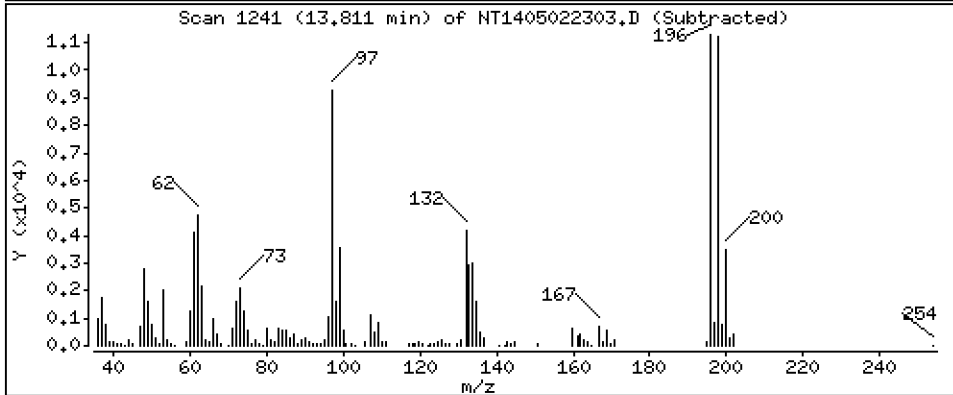
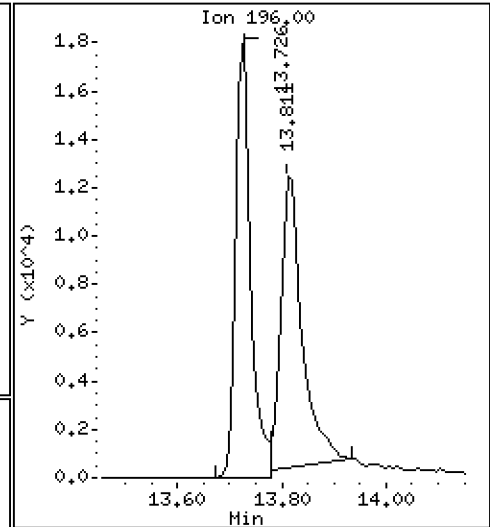
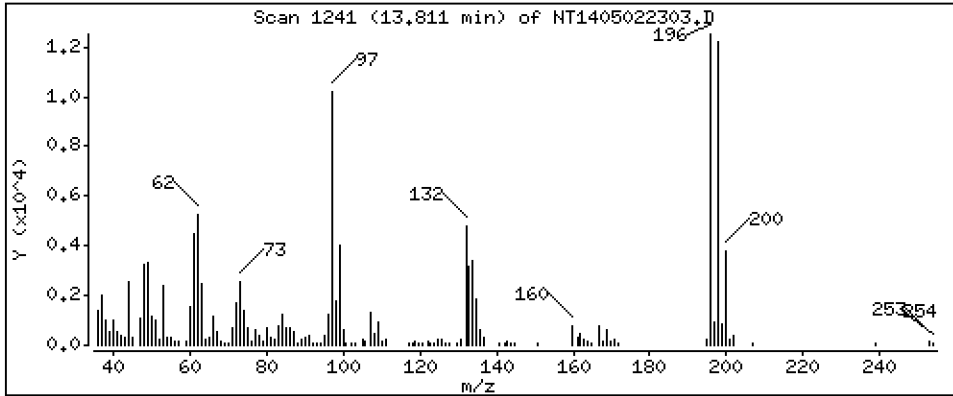
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 0,7361 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

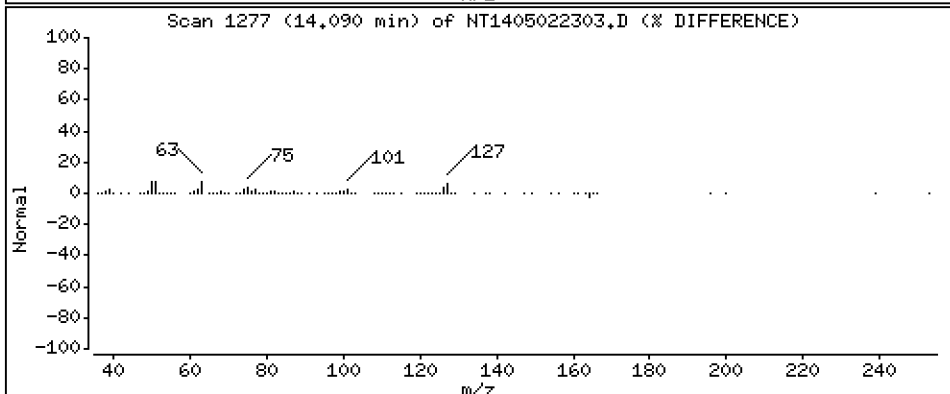
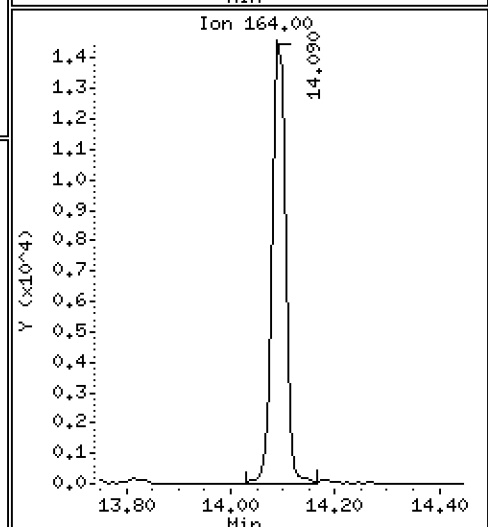
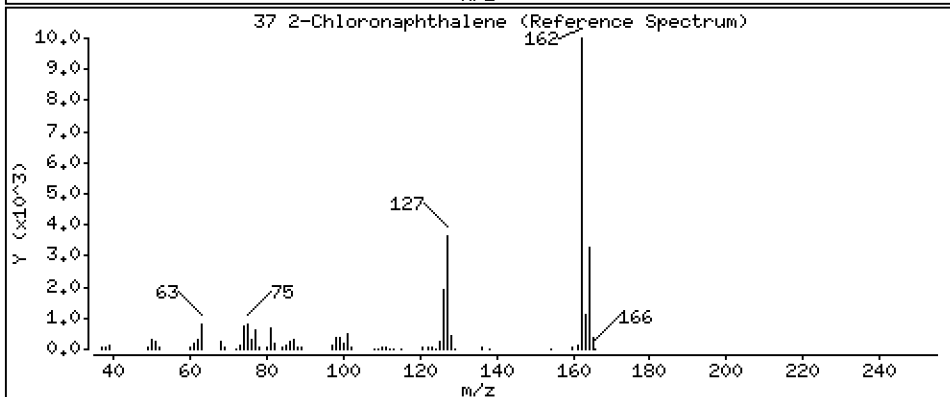
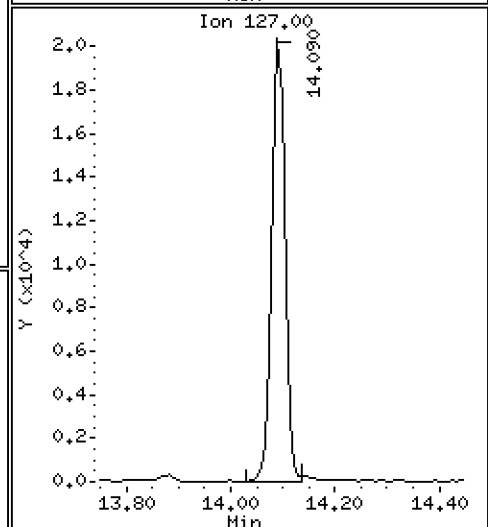
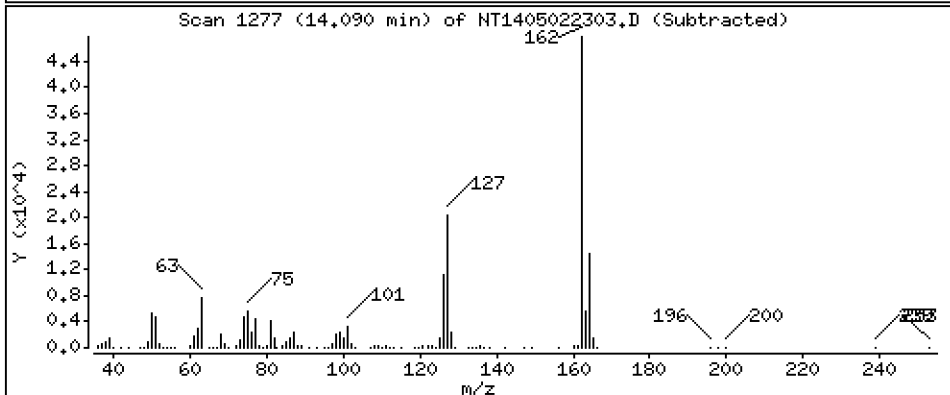
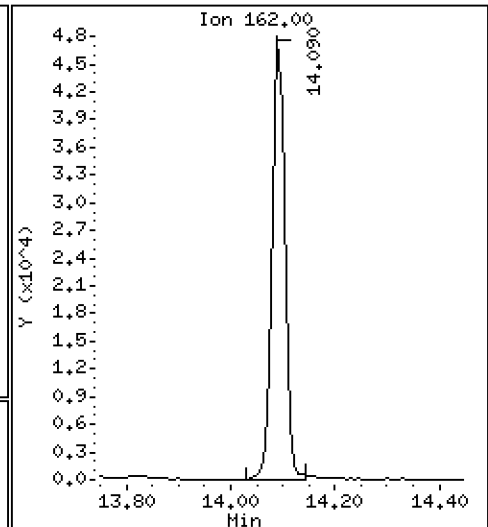
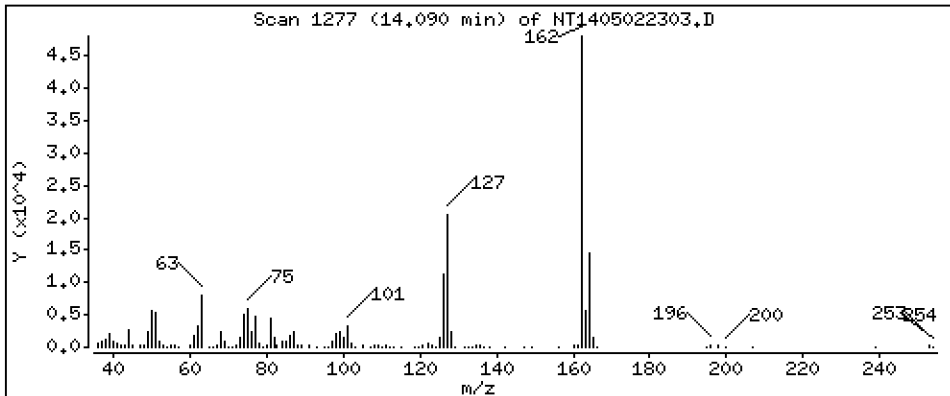
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 0,4797 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

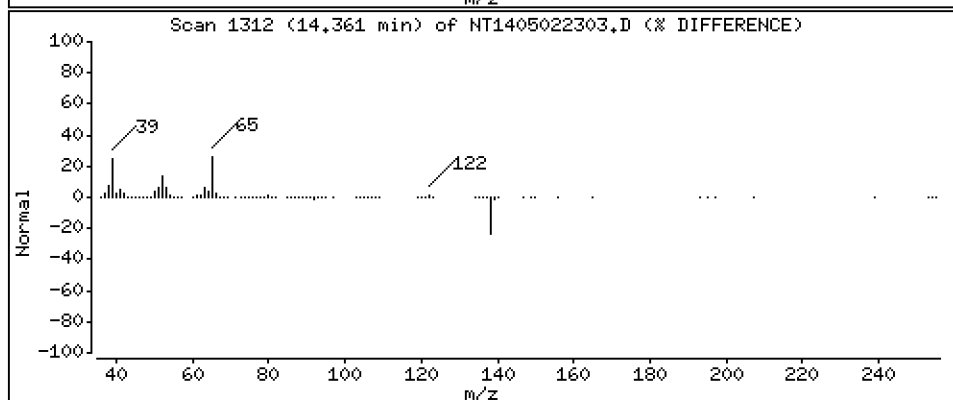
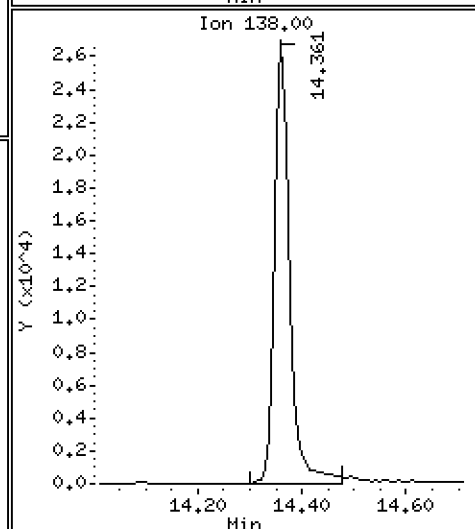
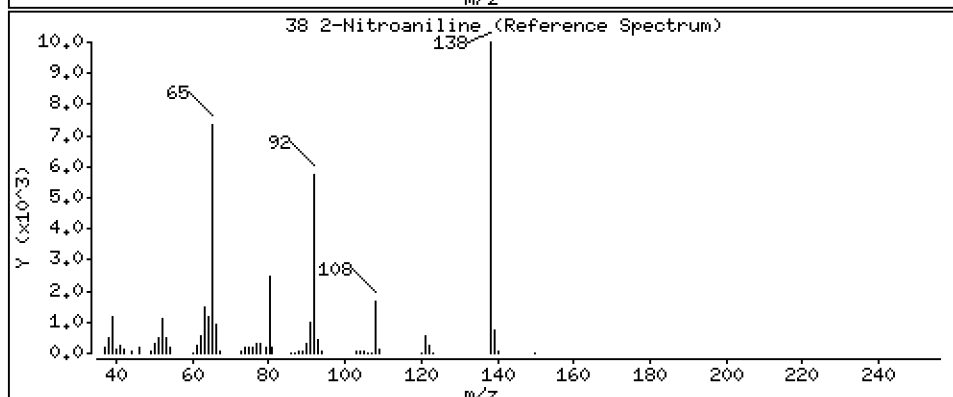
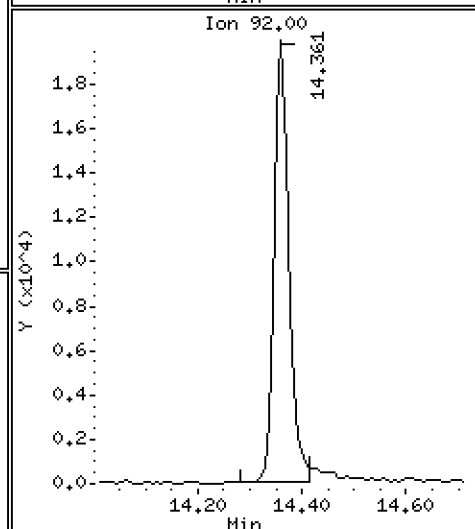
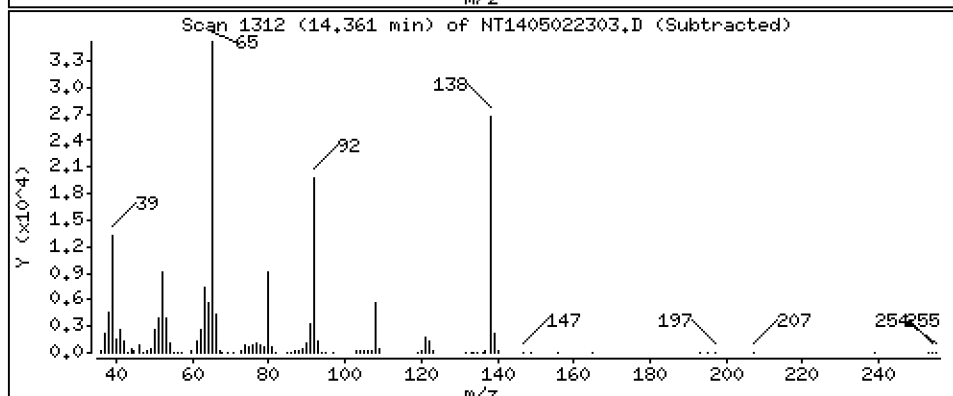
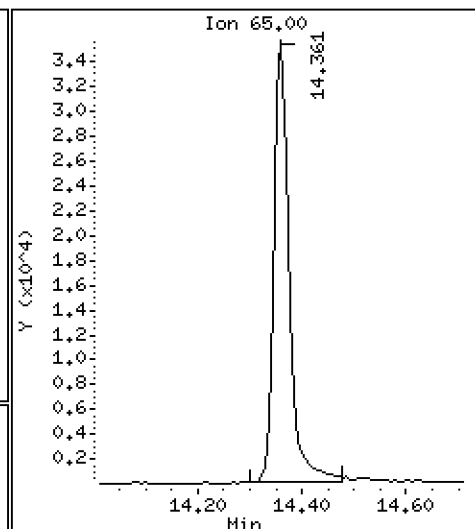
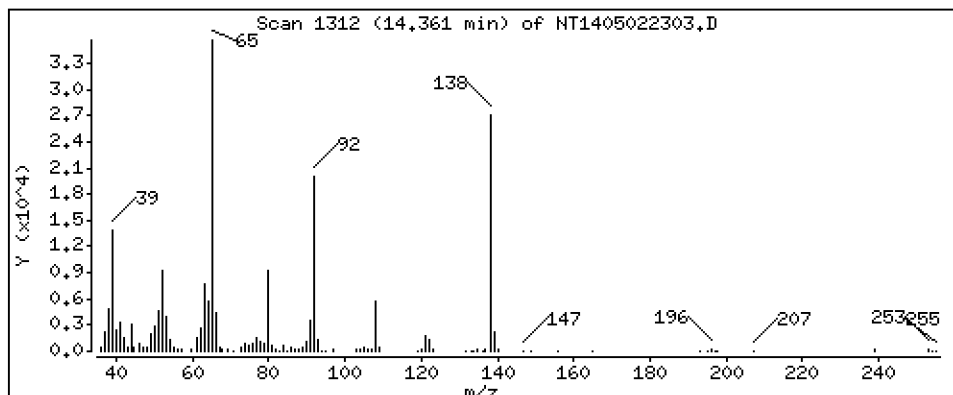
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 0,8188 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

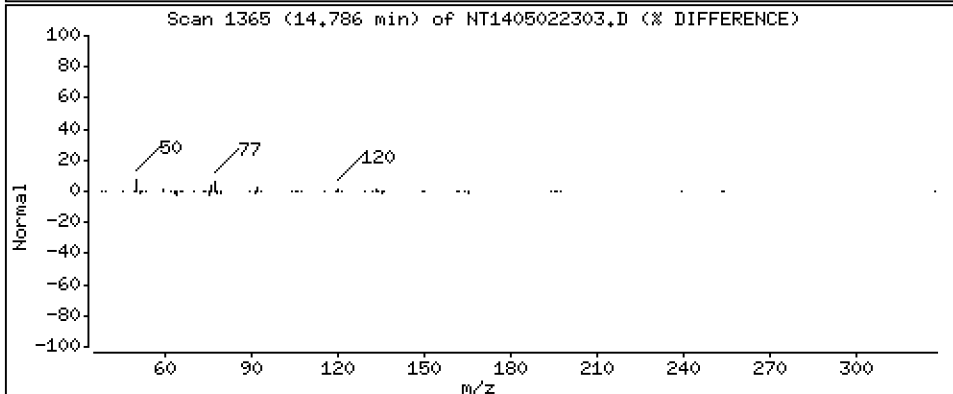
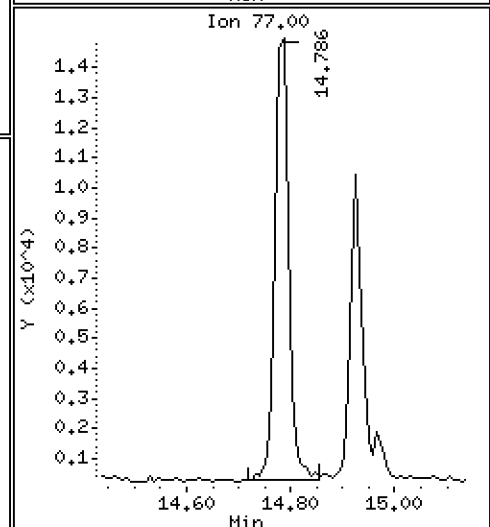
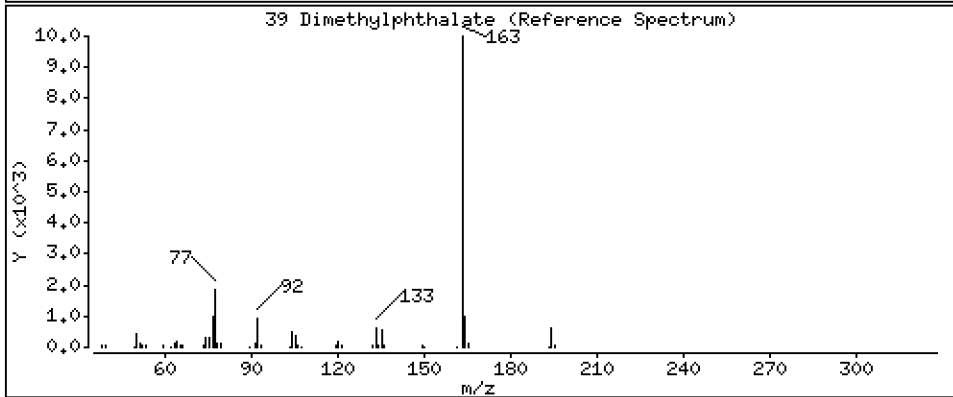
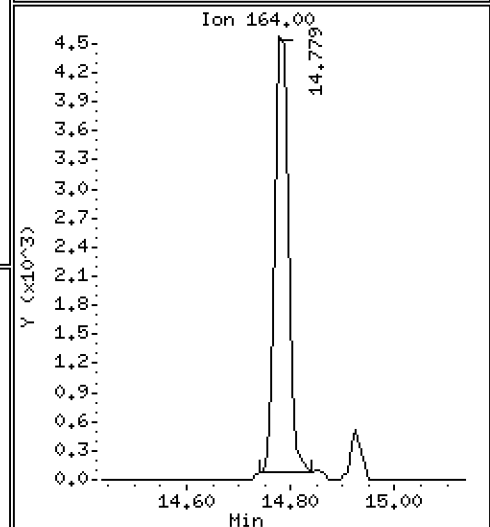
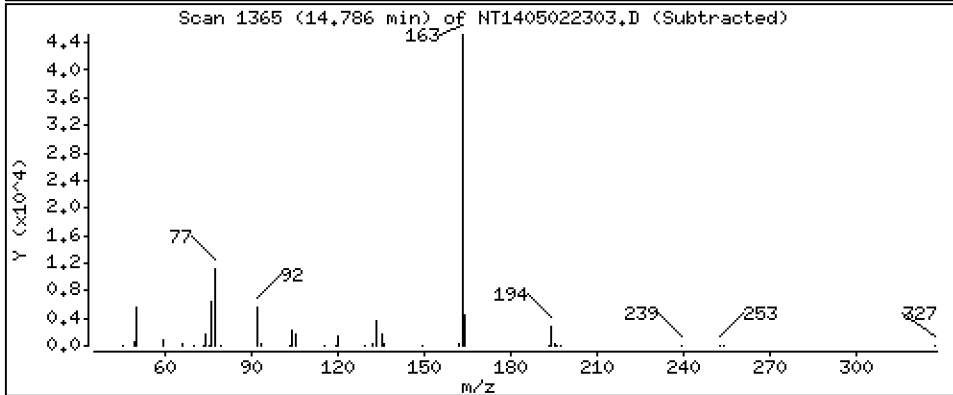
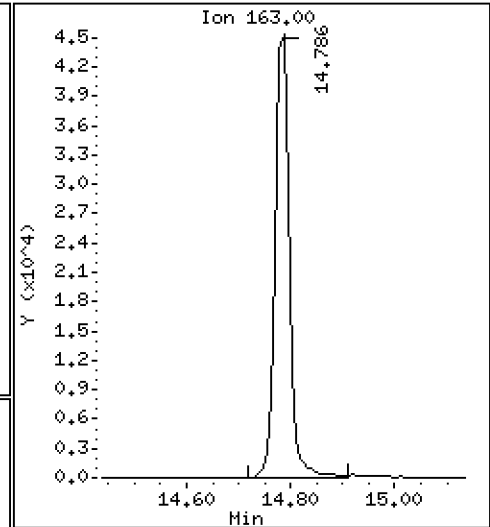
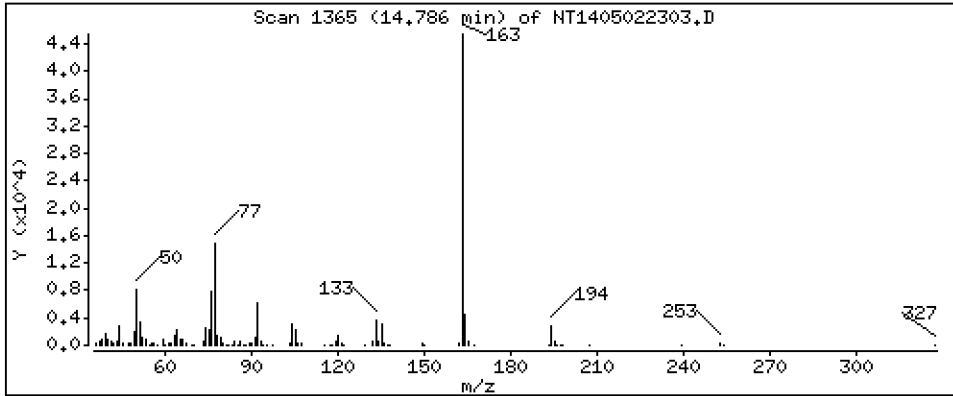
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 0,4998 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

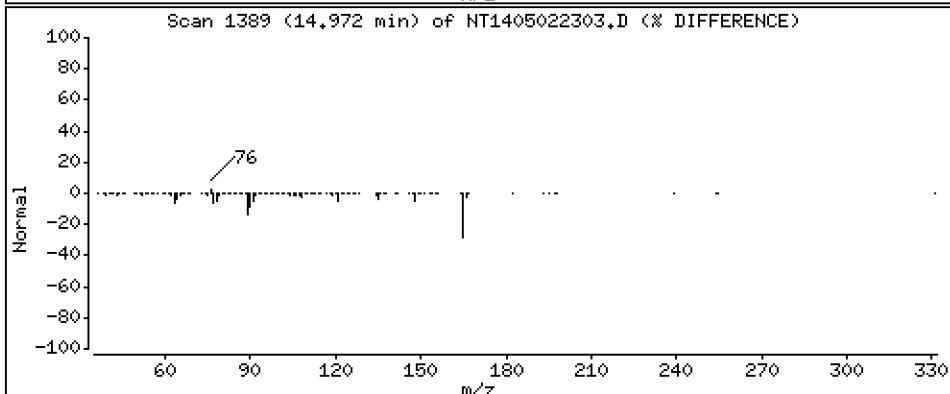
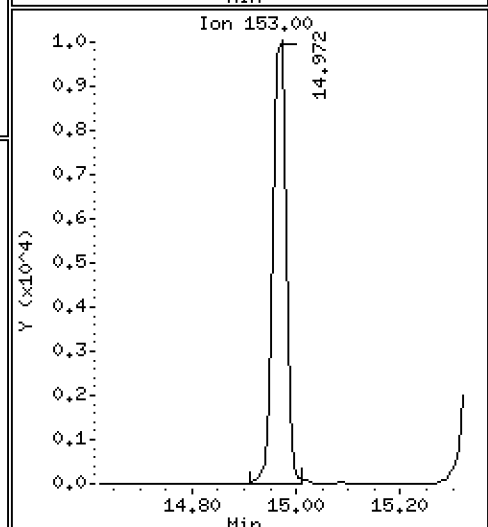
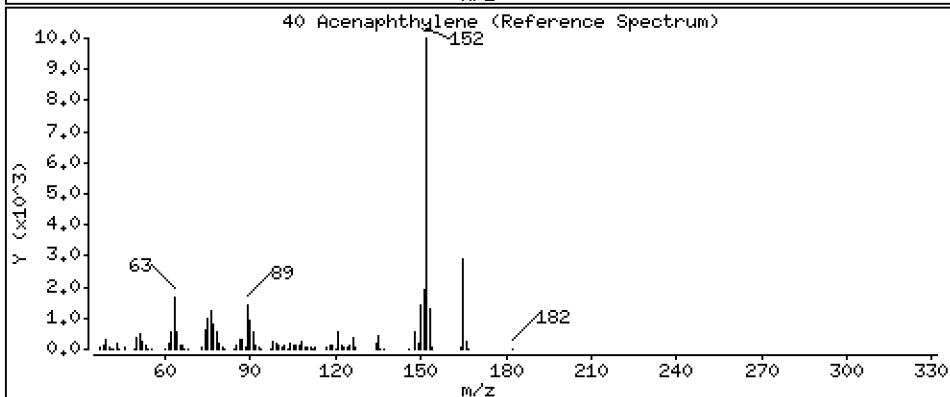
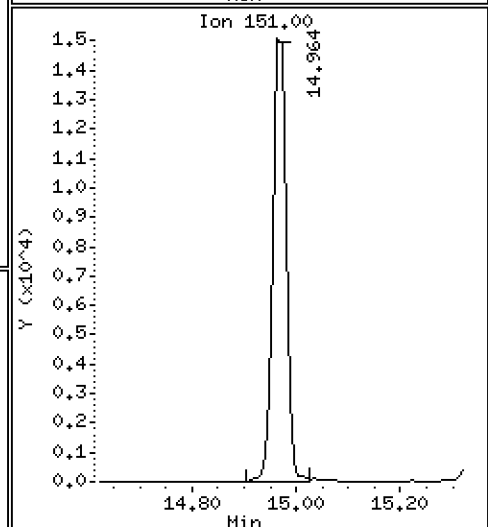
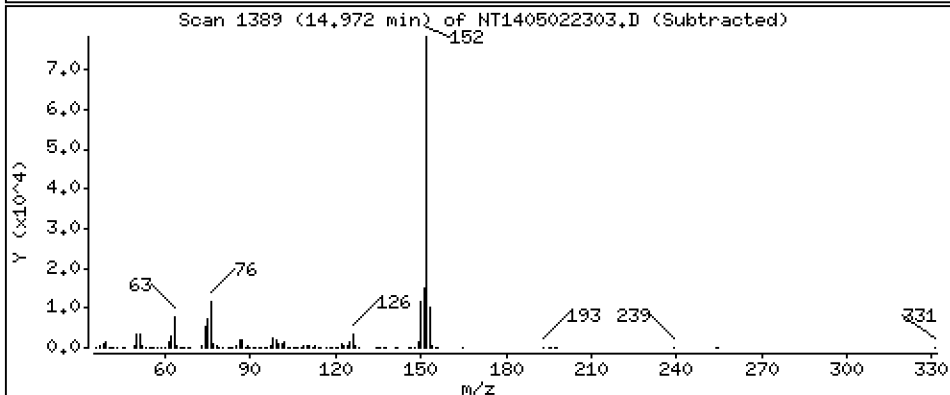
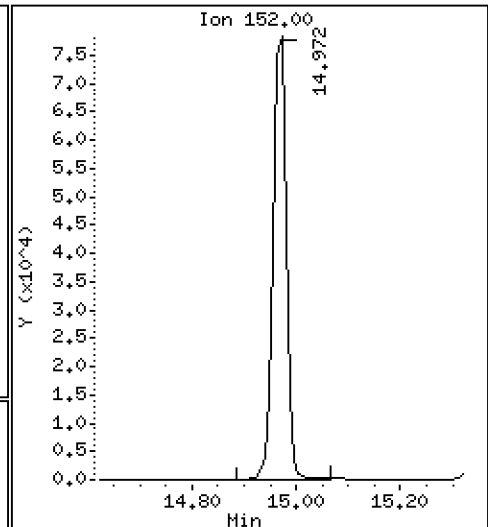
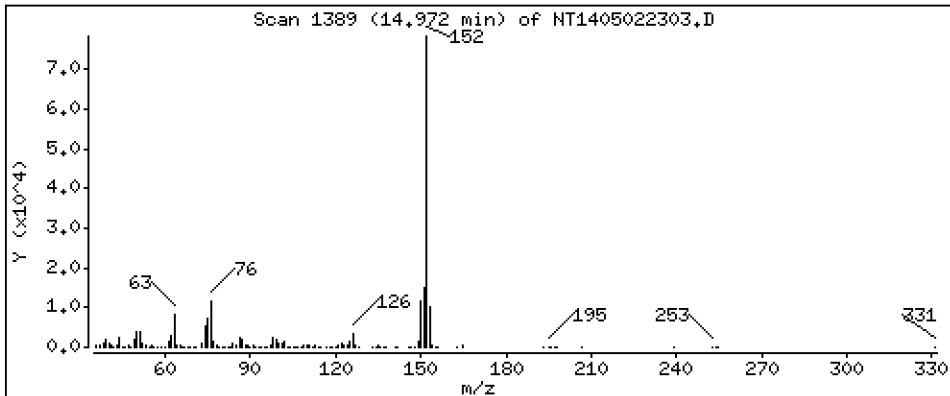
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 0,5657 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

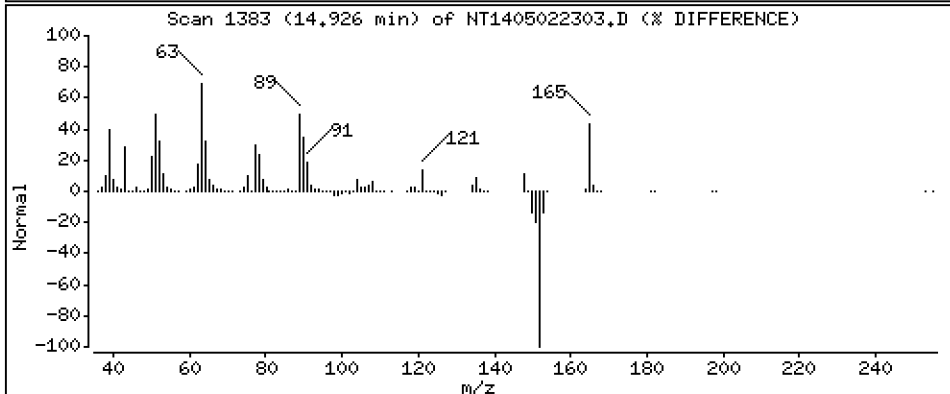
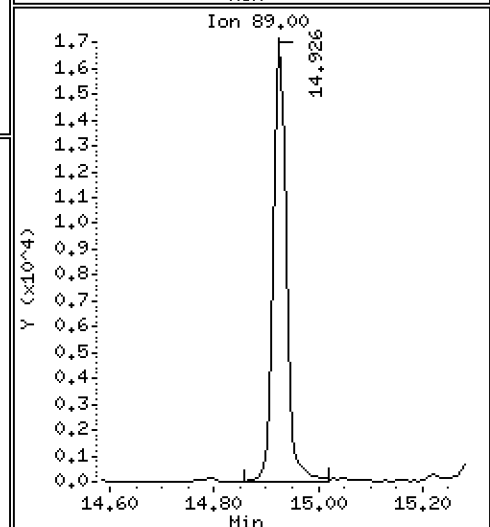
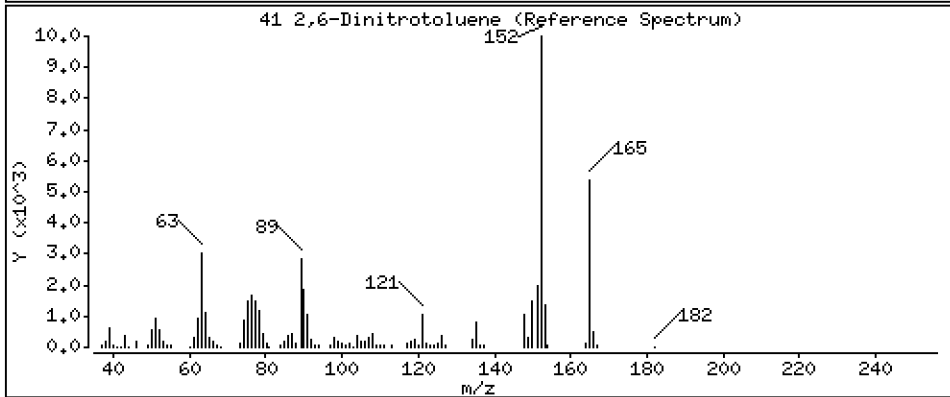
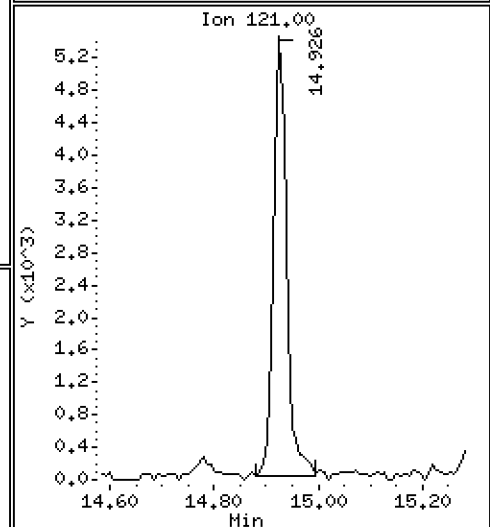
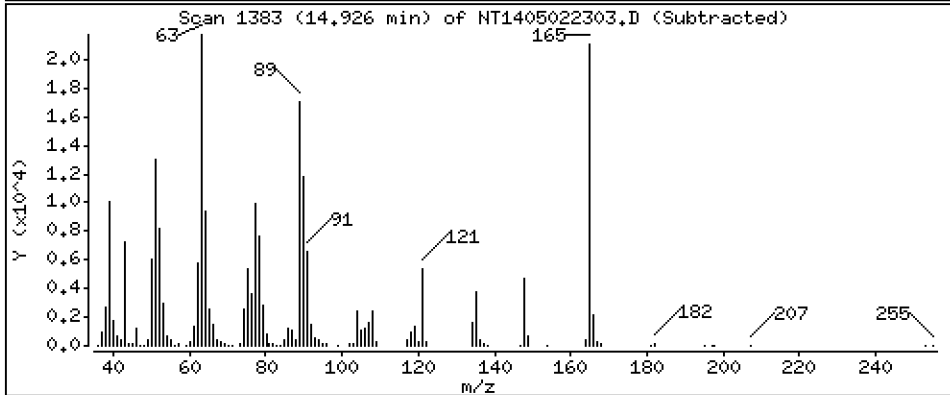
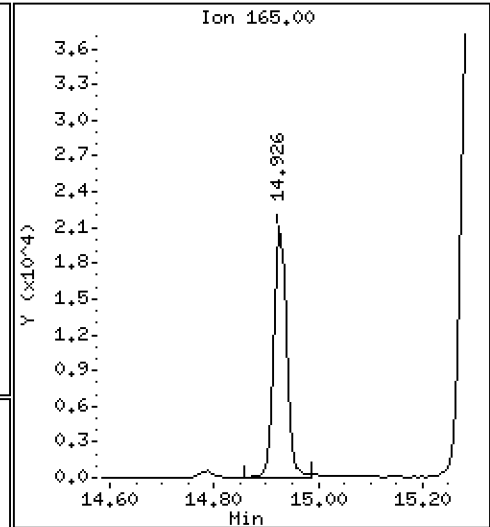
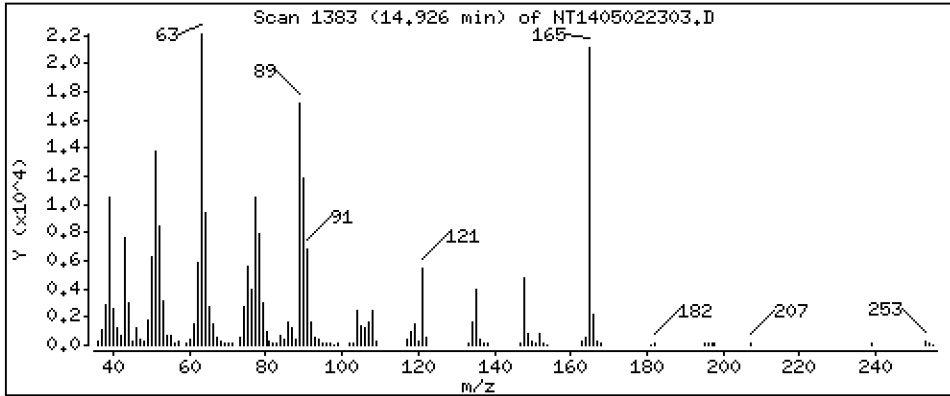
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

41 2,6-Dinitrotoluene

Concentration: 0,9063 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

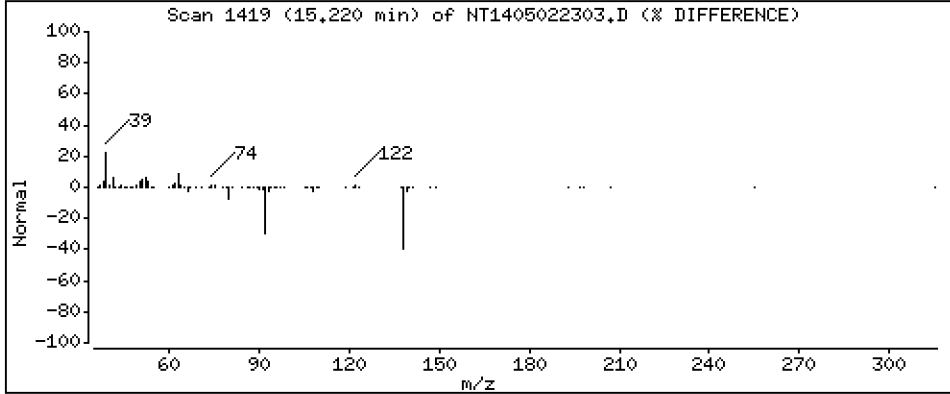
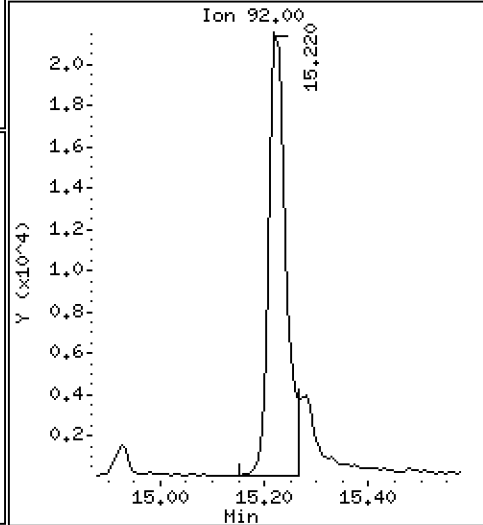
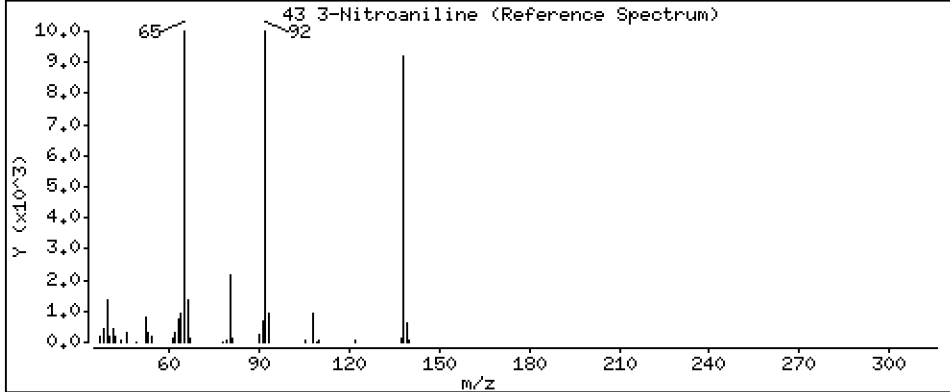
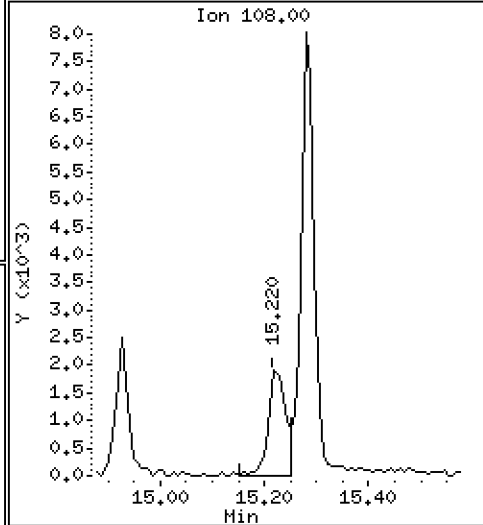
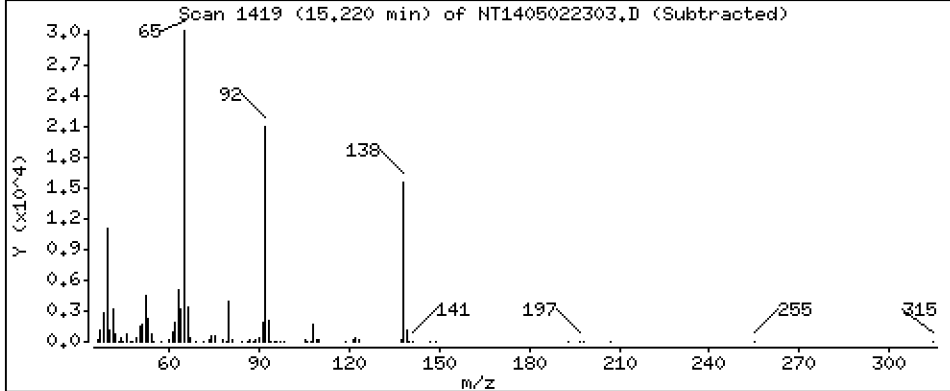
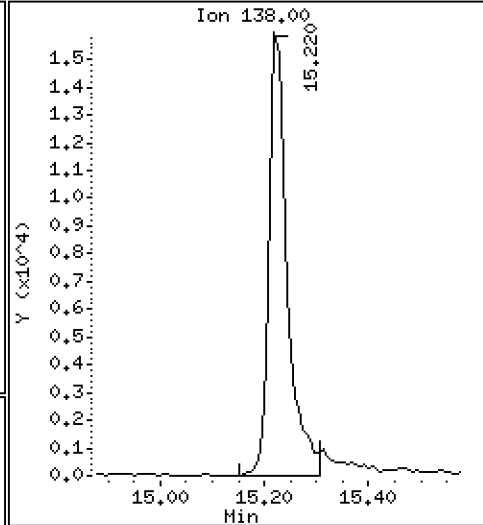
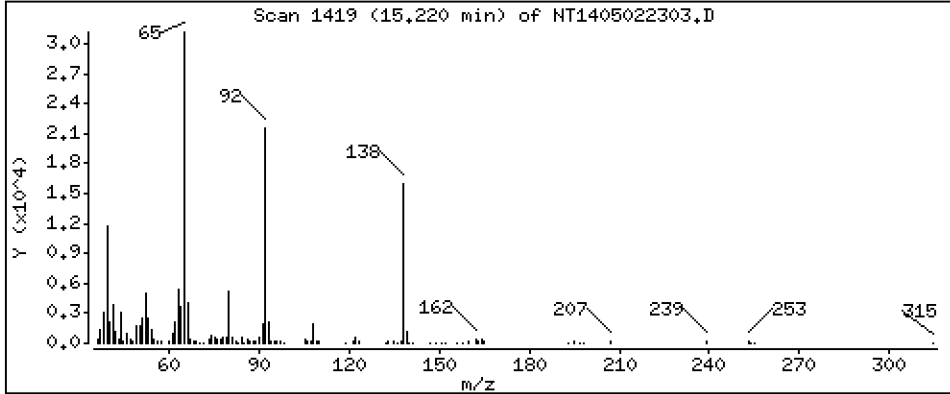
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 0,8091 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

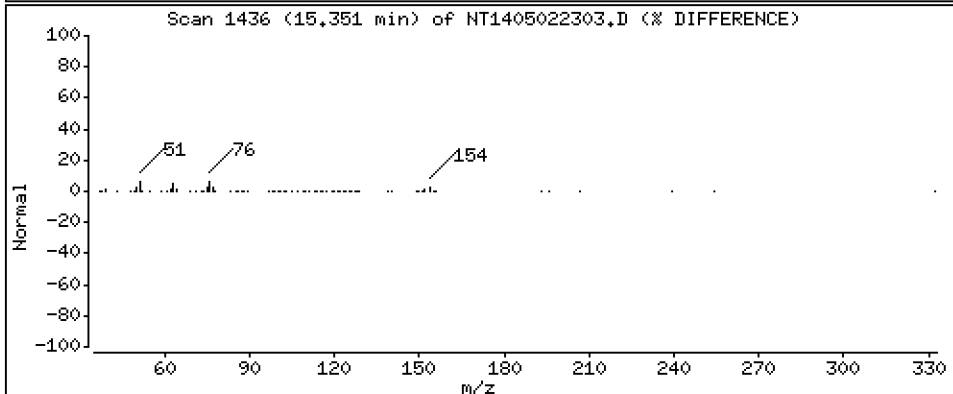
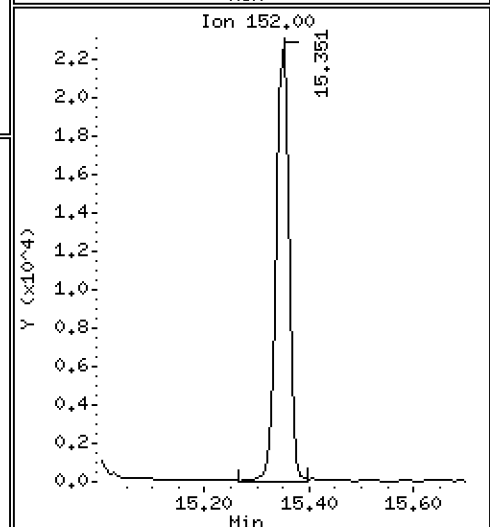
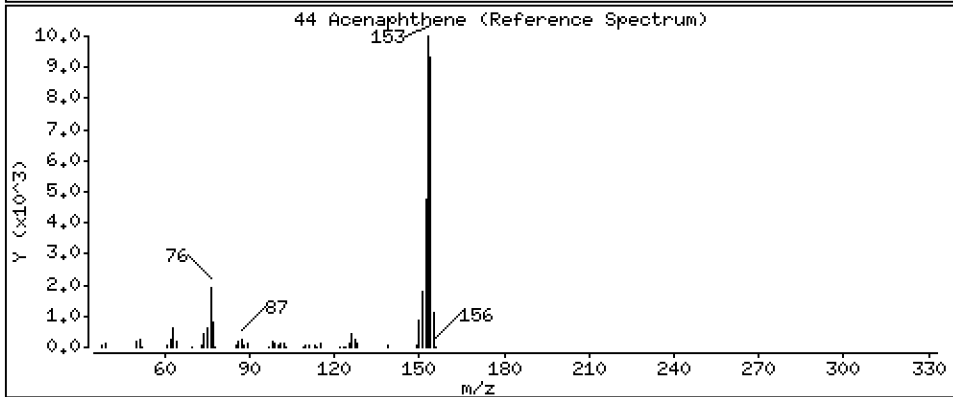
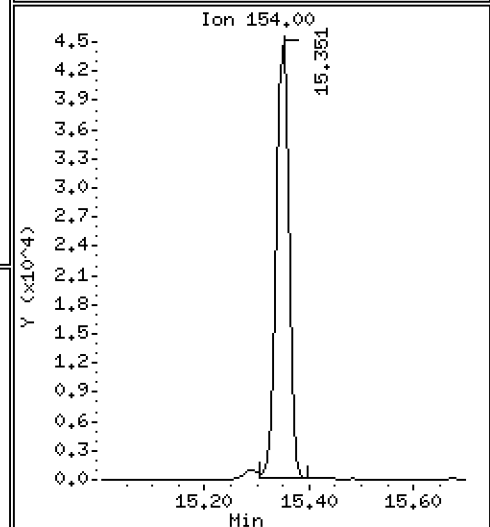
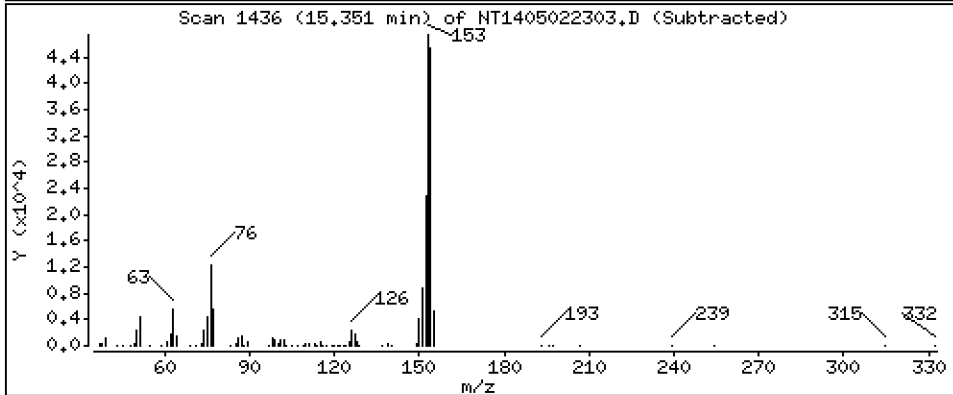
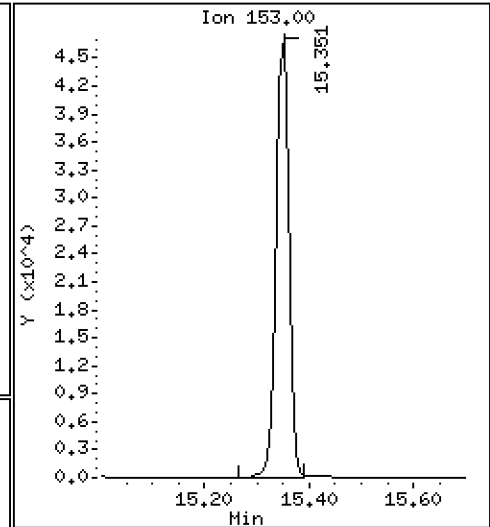
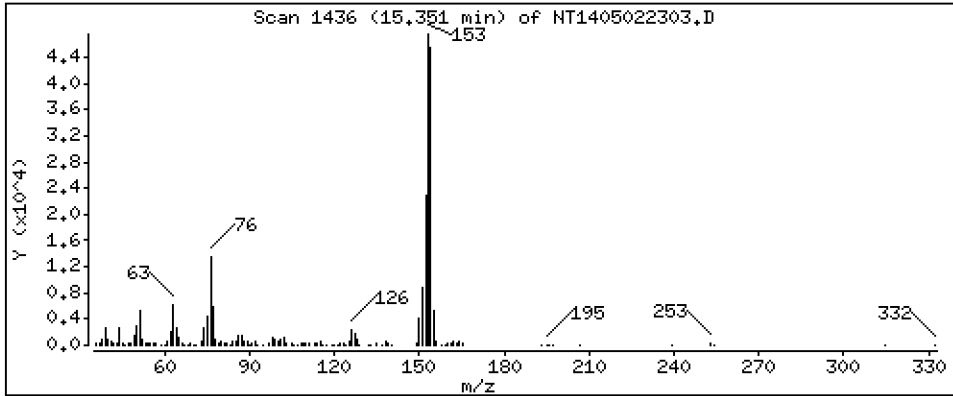
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 0,5034 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

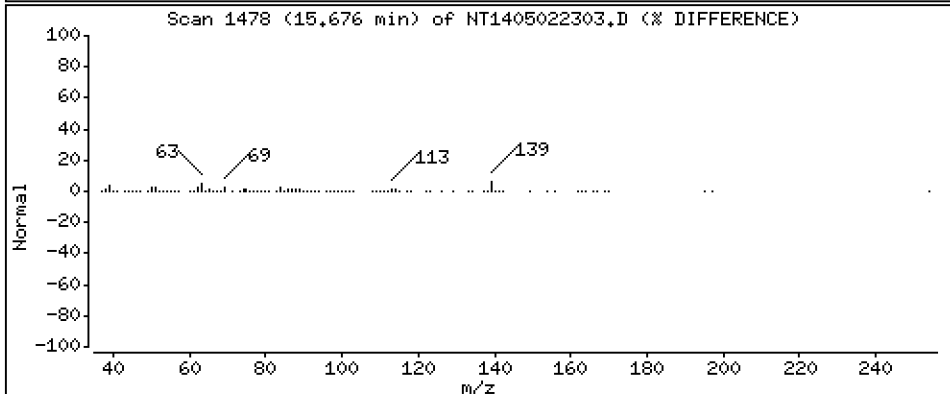
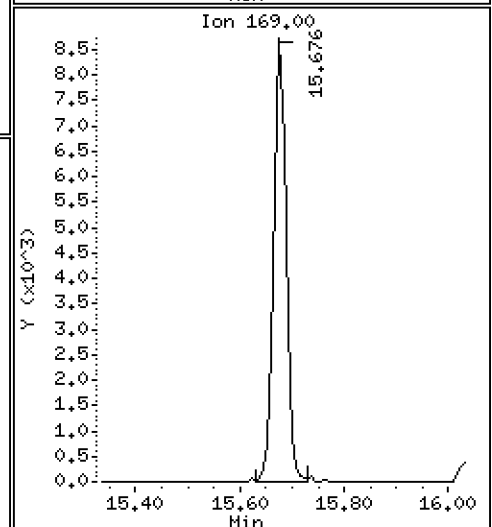
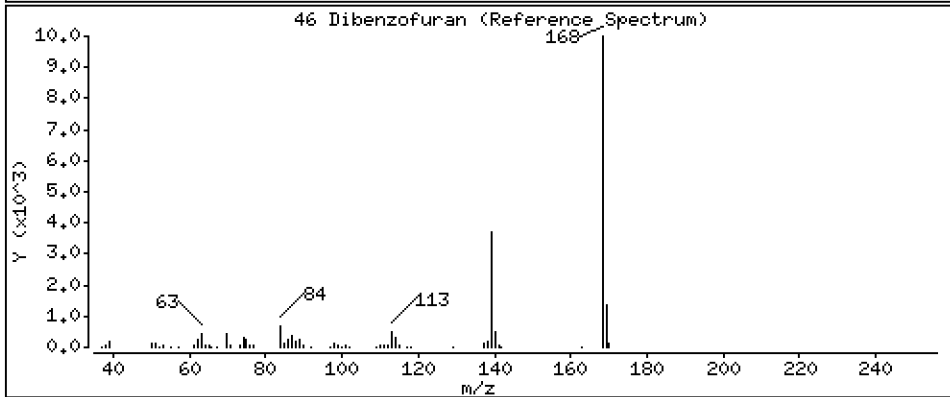
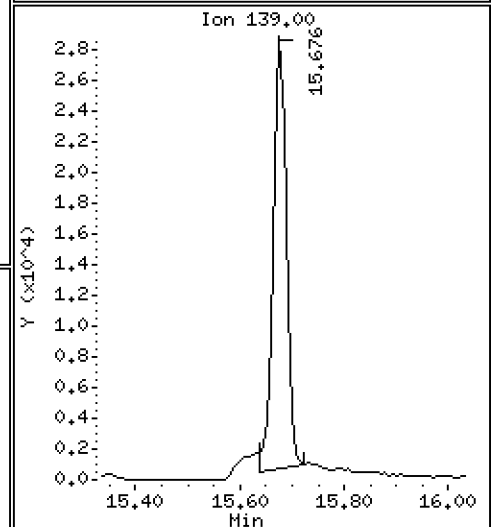
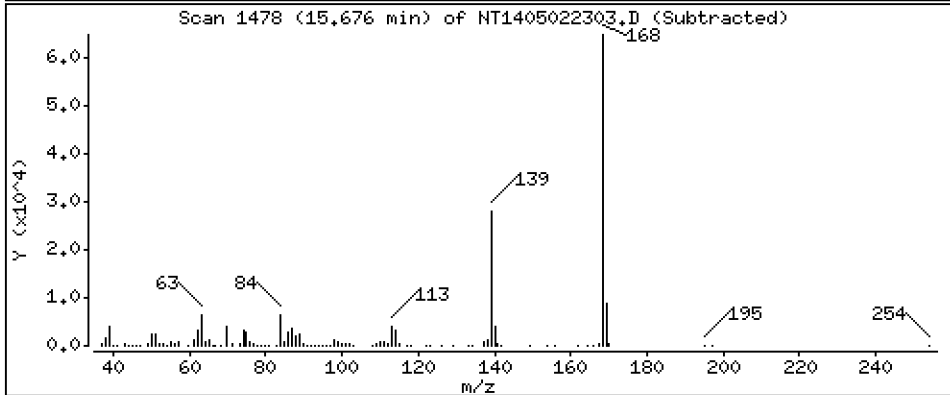
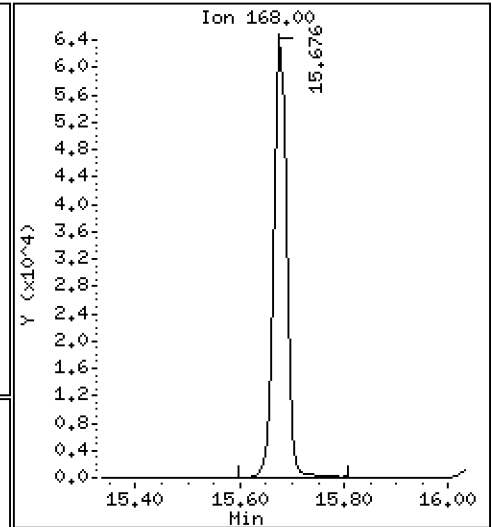
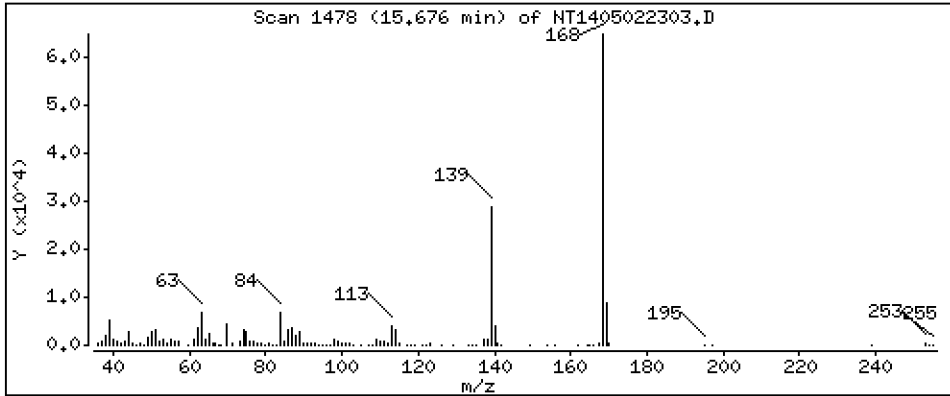
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 0,4839 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

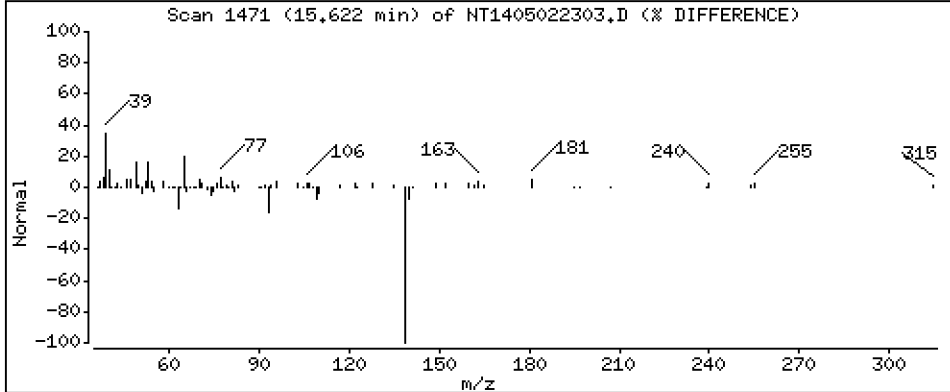
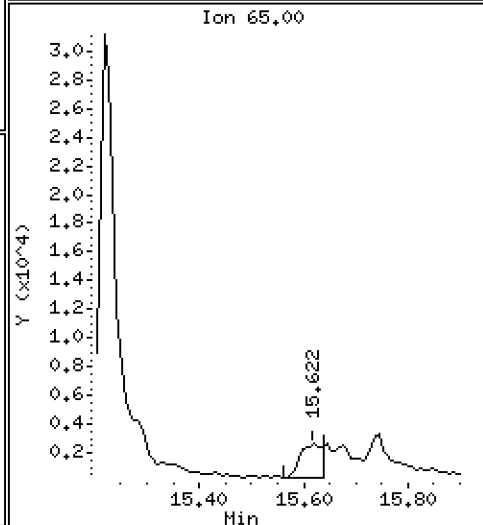
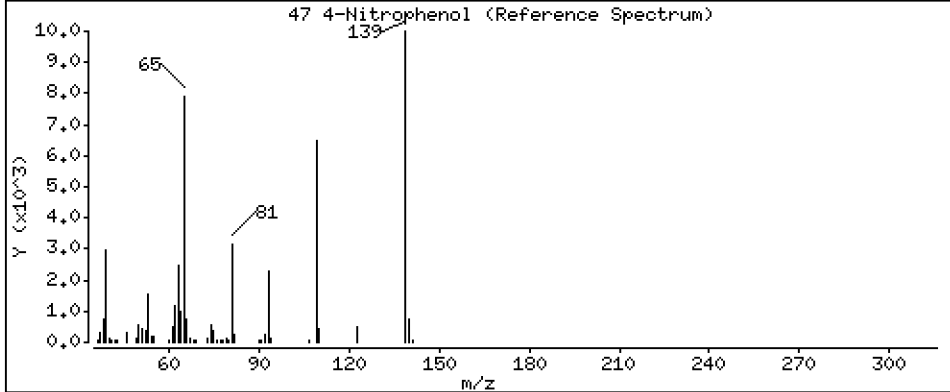
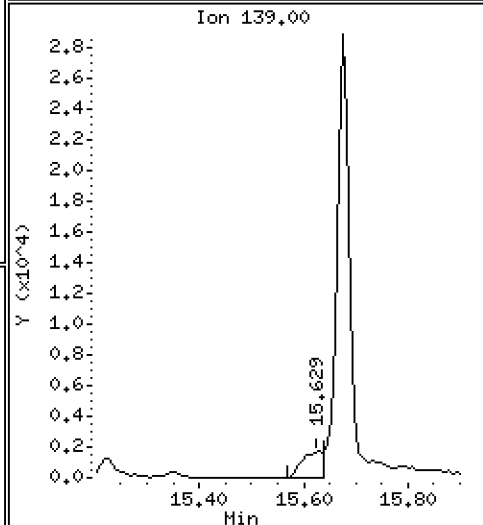
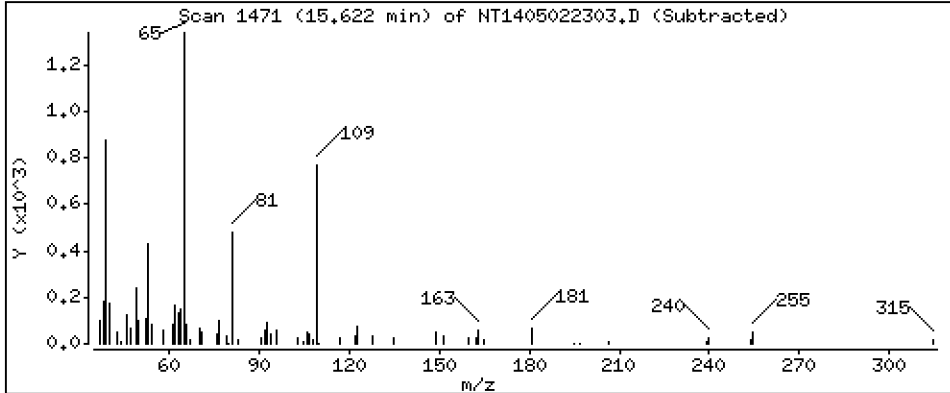
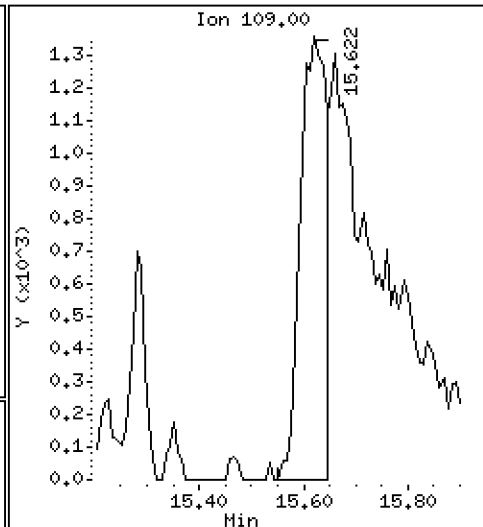
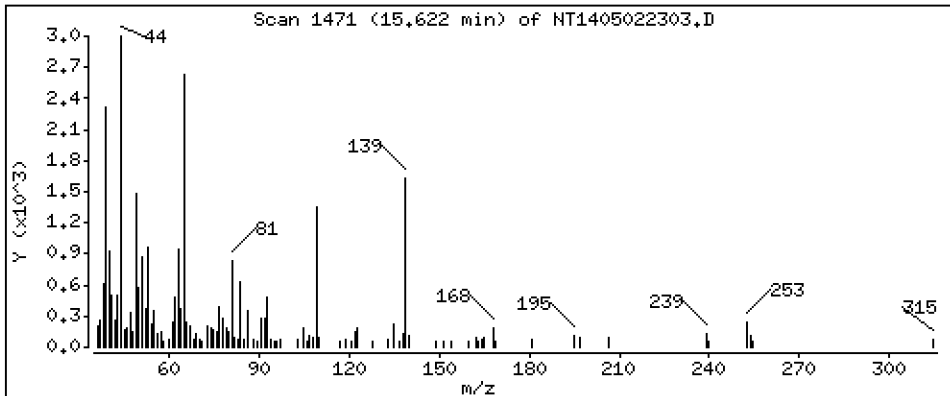
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 0,1700 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

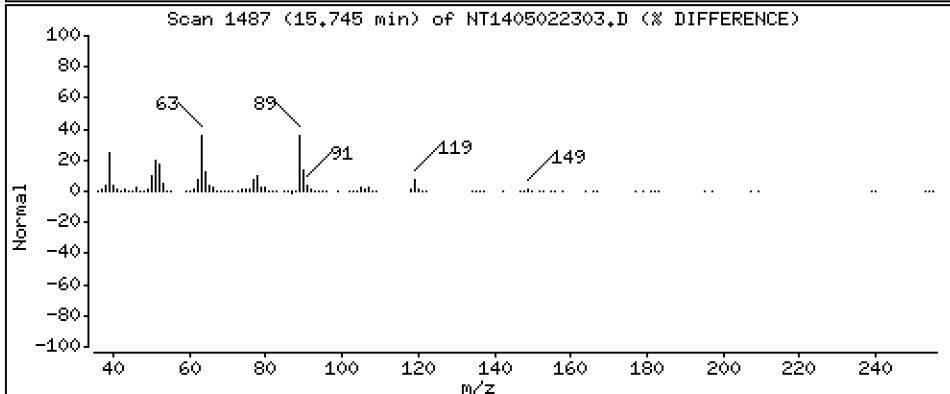
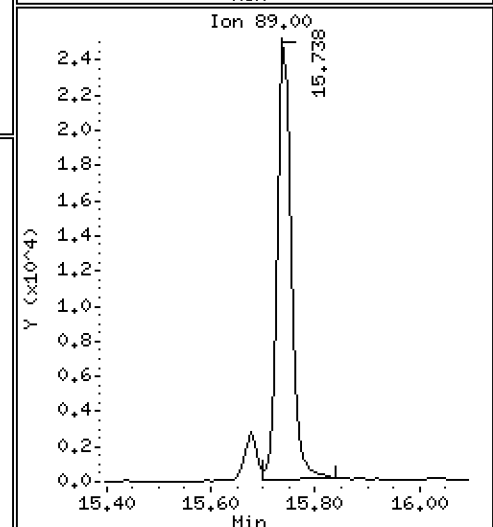
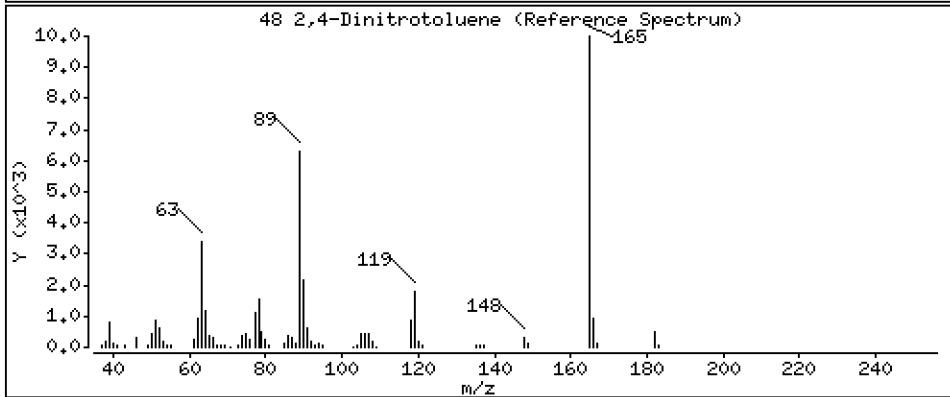
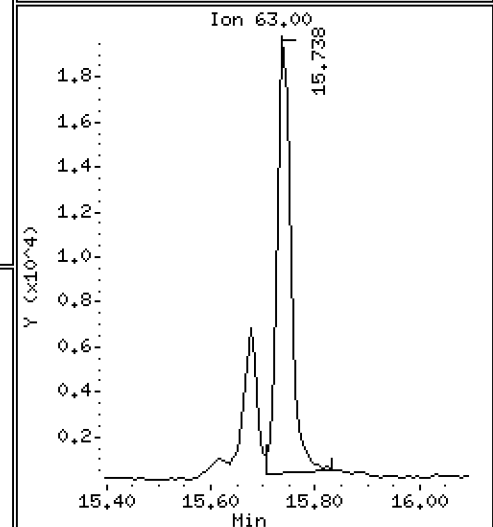
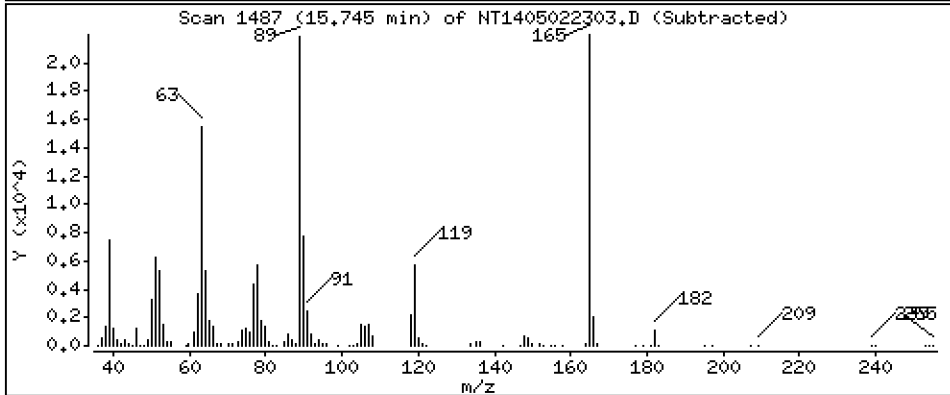
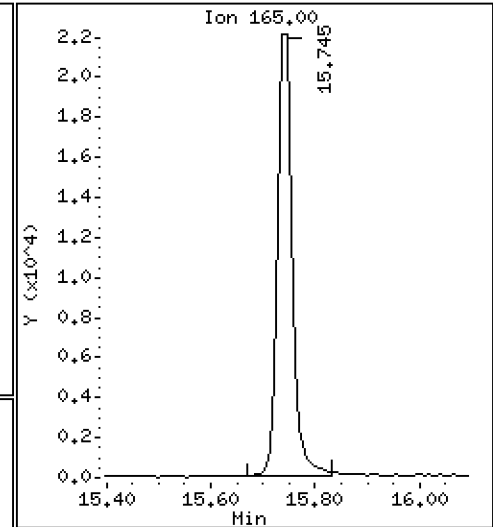
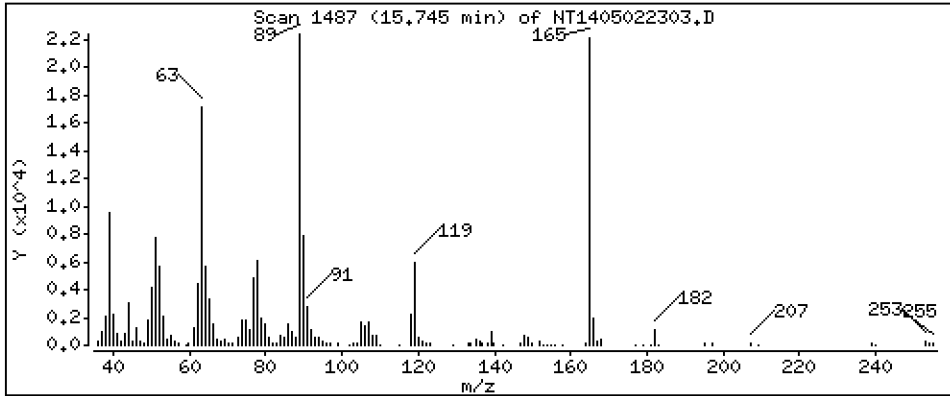
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 0,8309 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

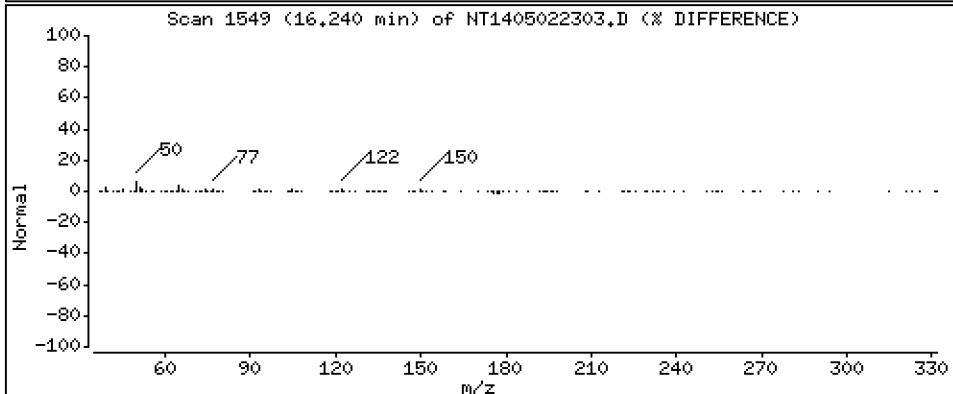
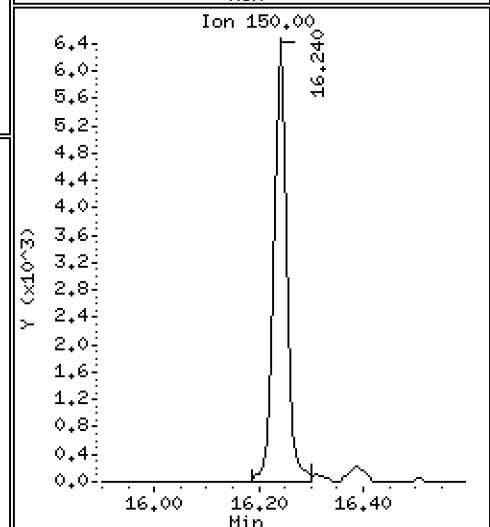
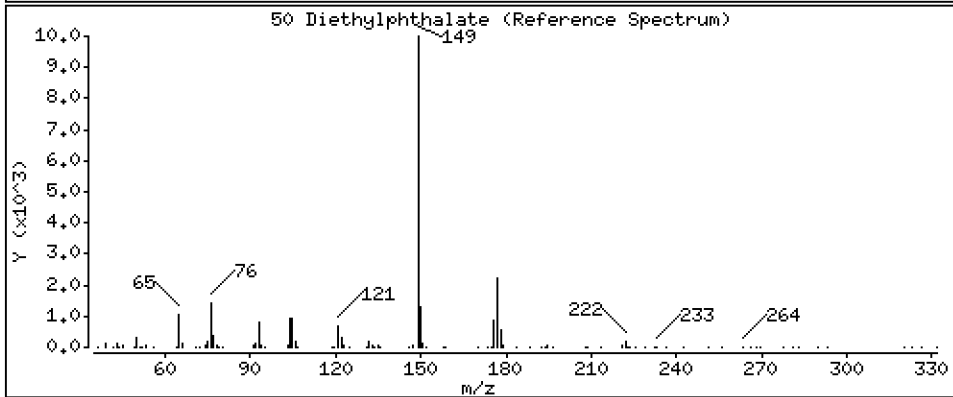
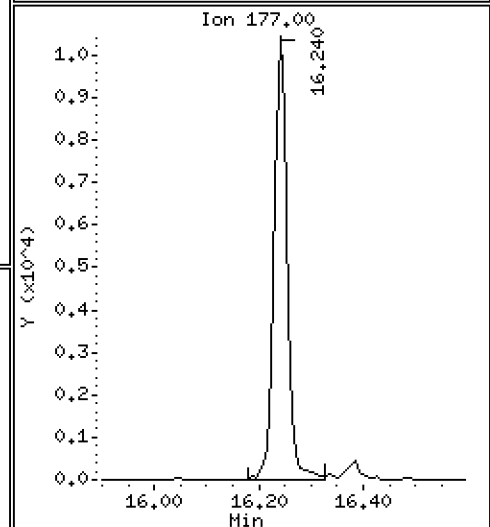
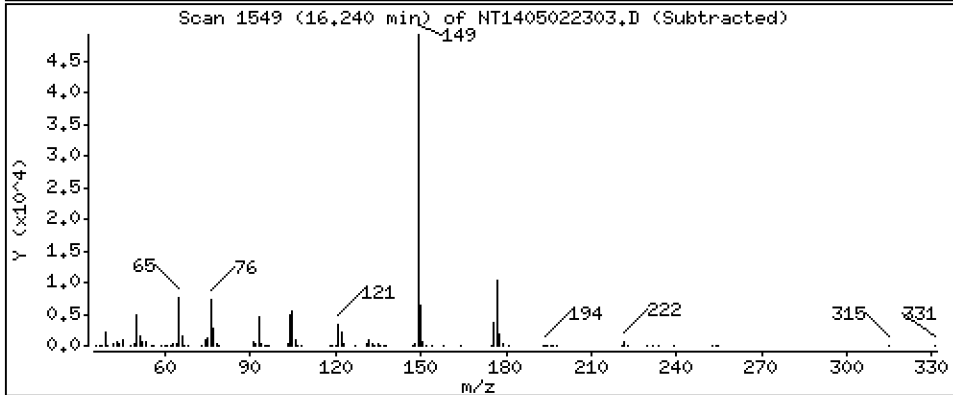
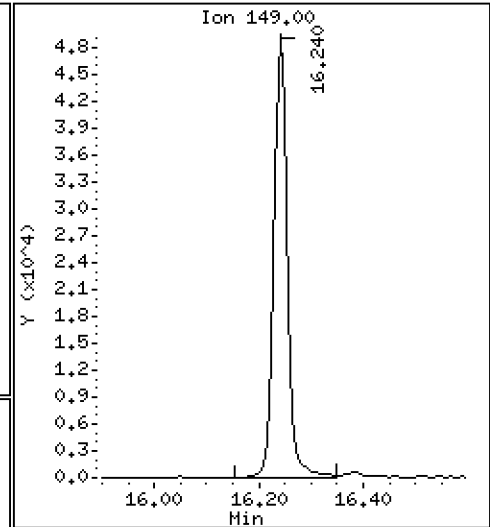
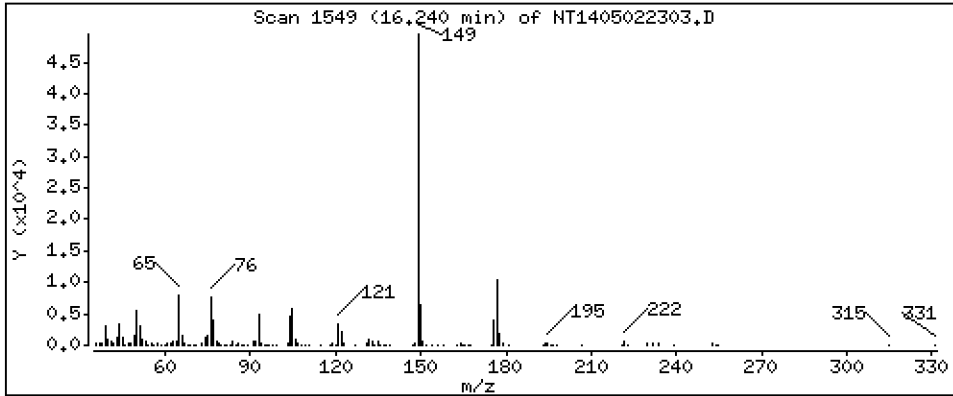
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,5039 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

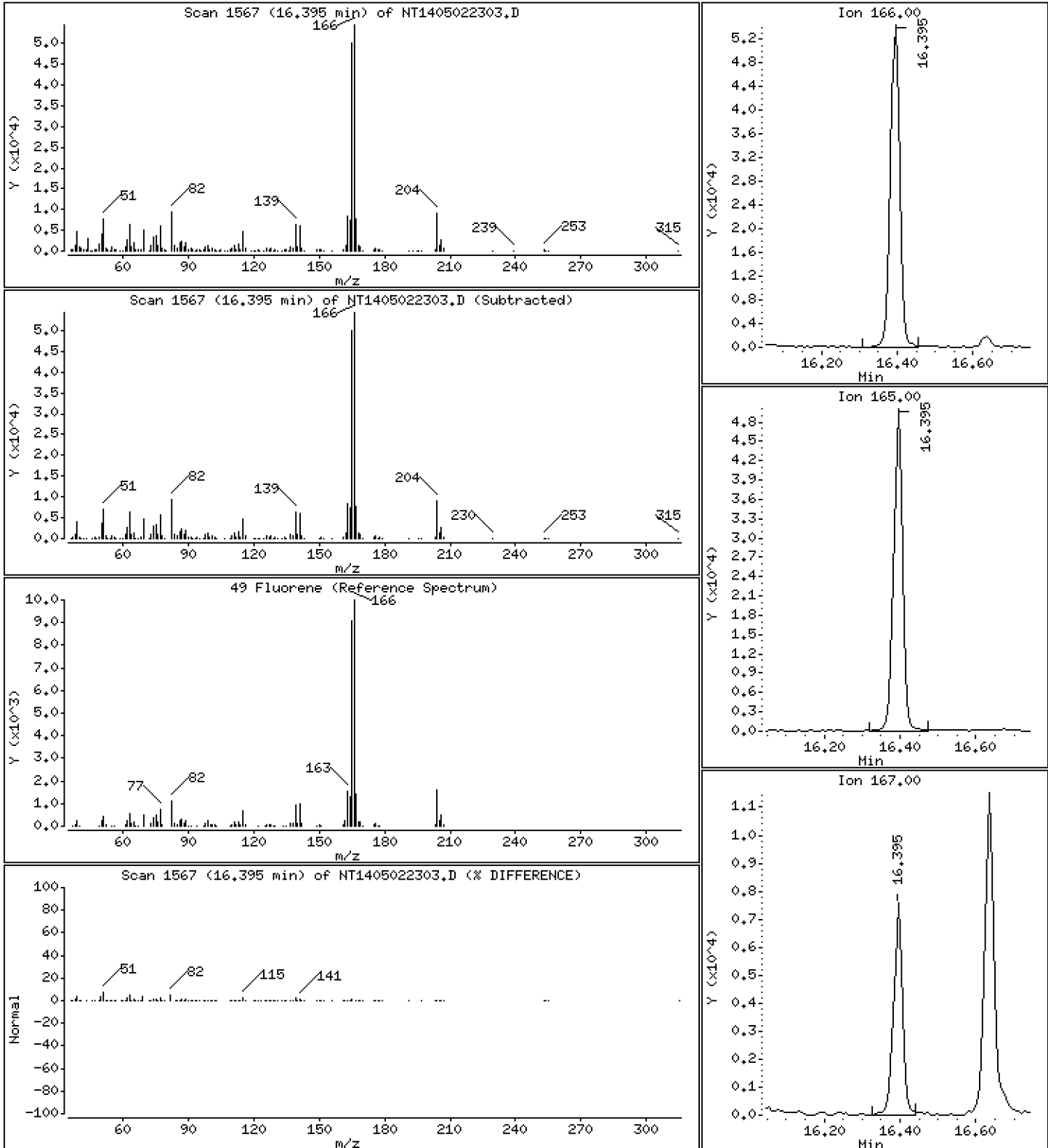
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 0,4572 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

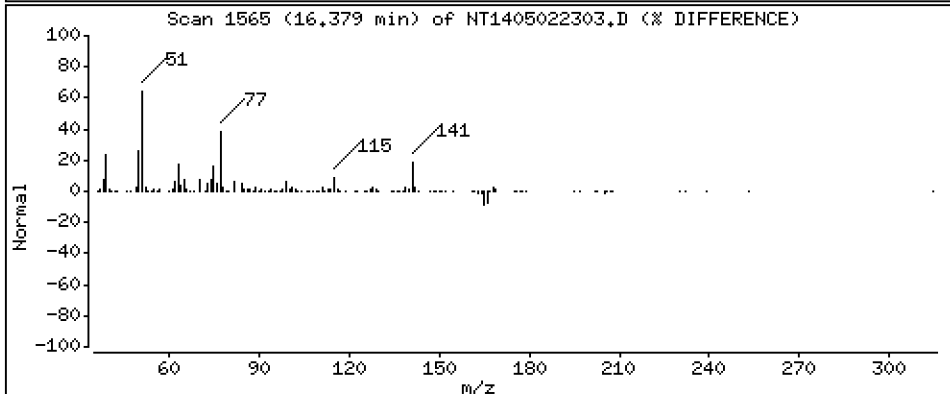
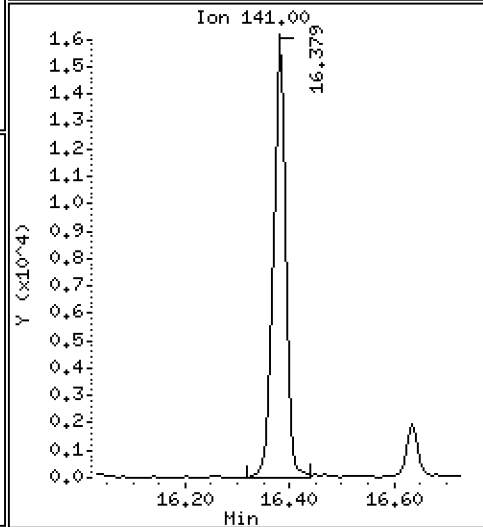
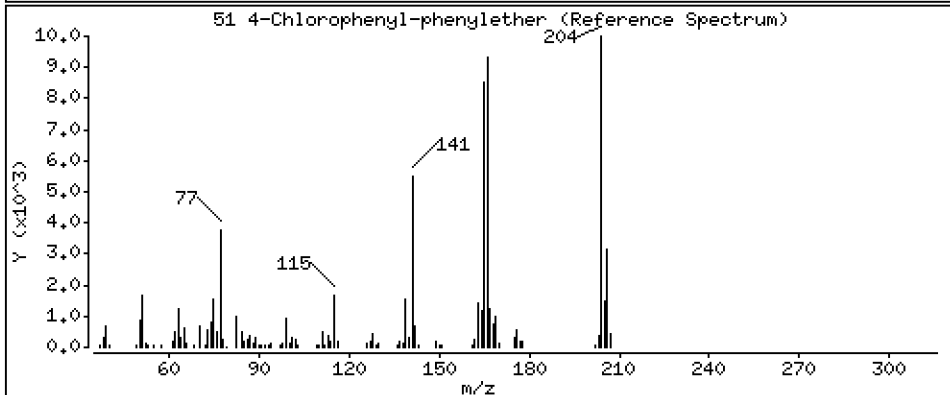
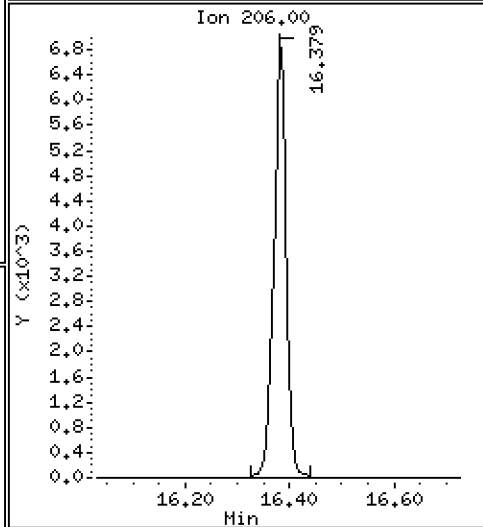
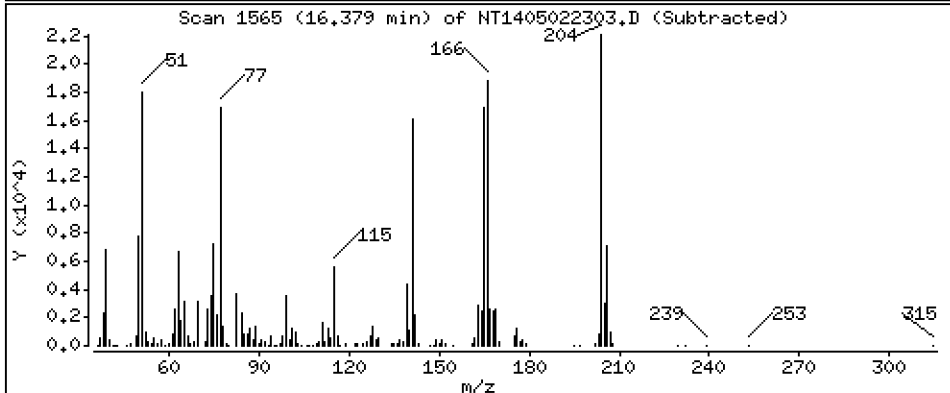
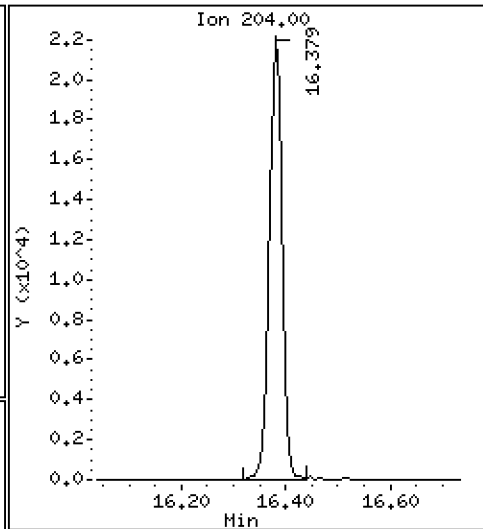
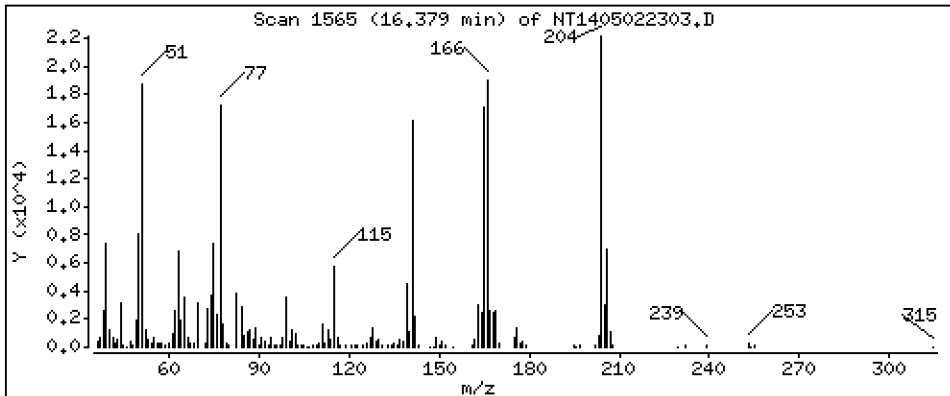
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 0,4476 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

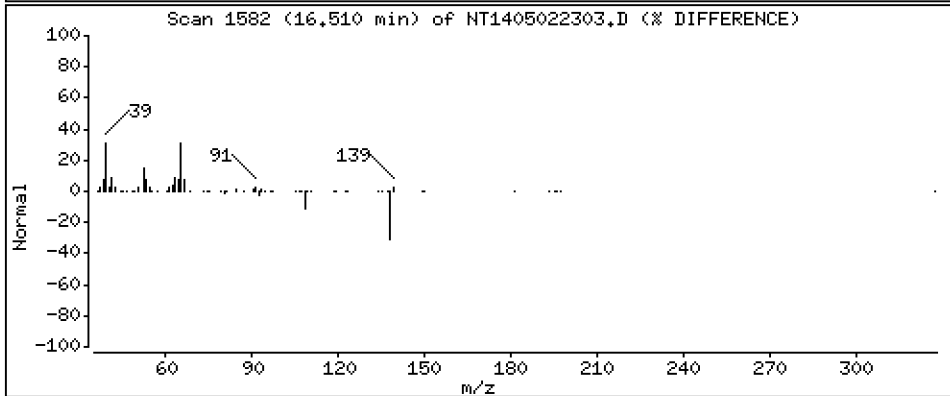
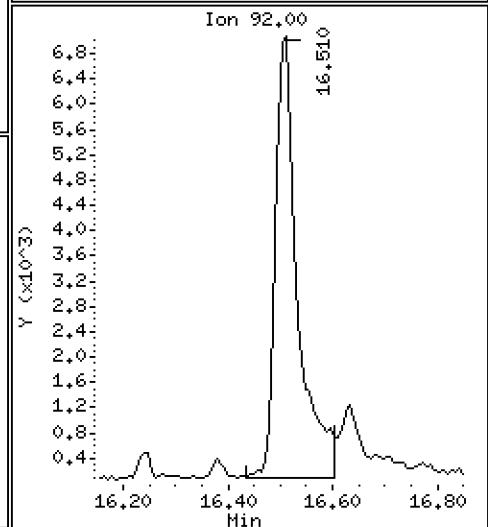
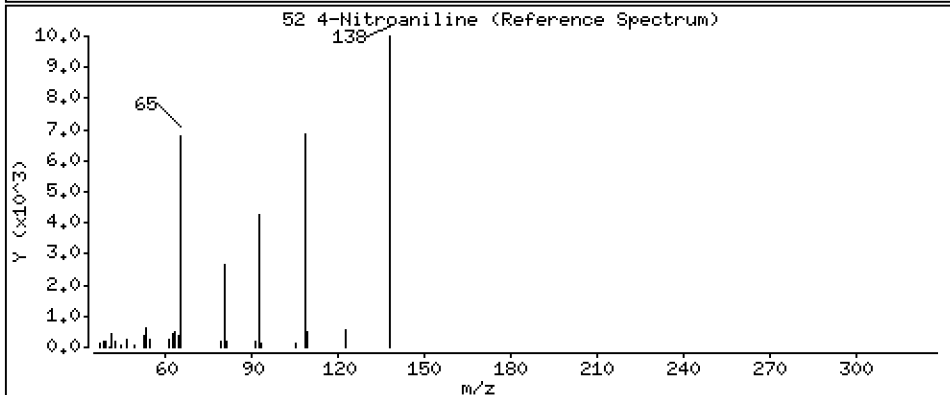
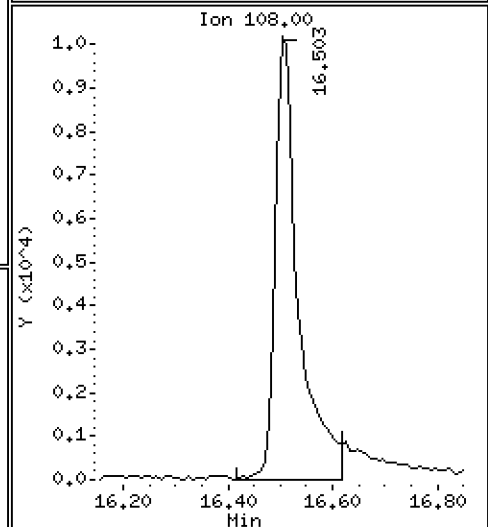
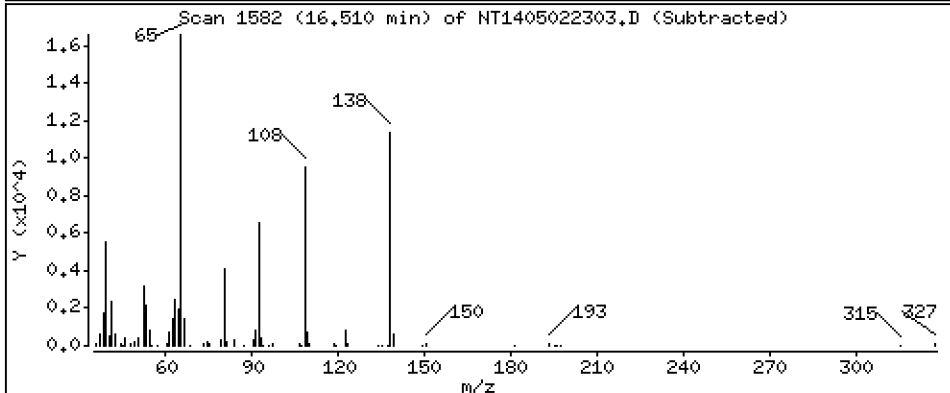
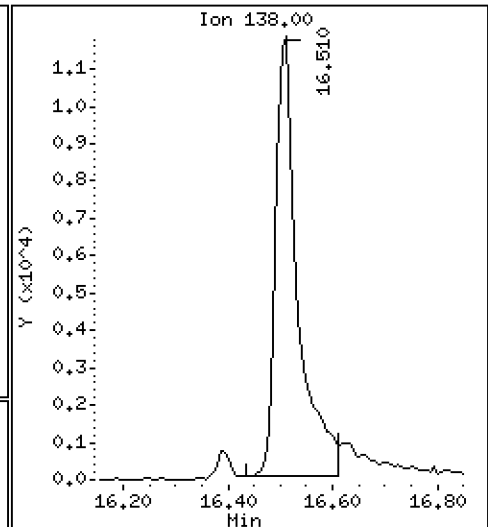
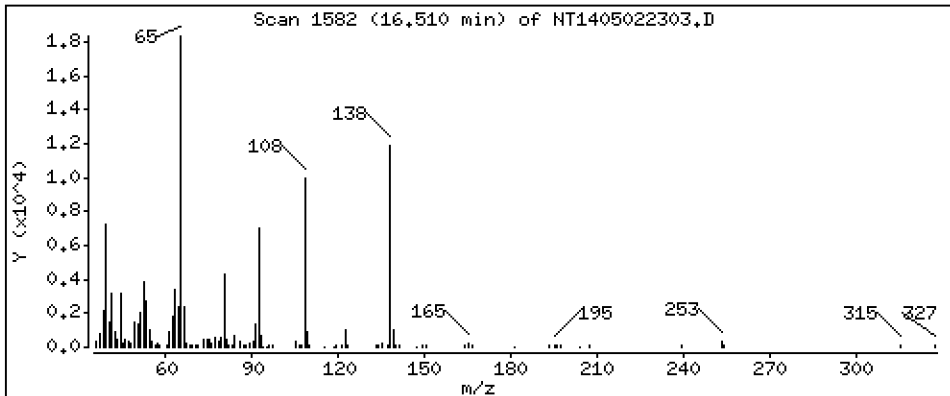
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 0,8370 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

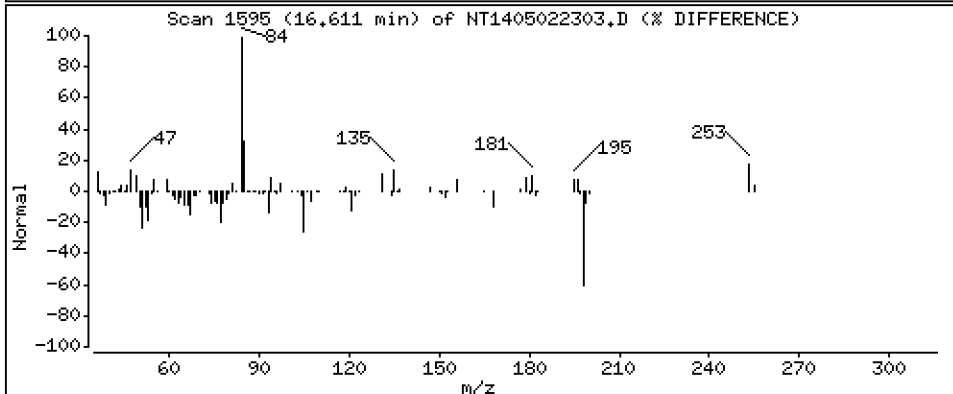
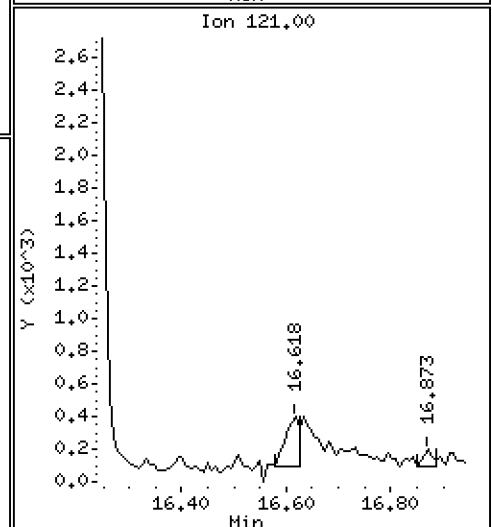
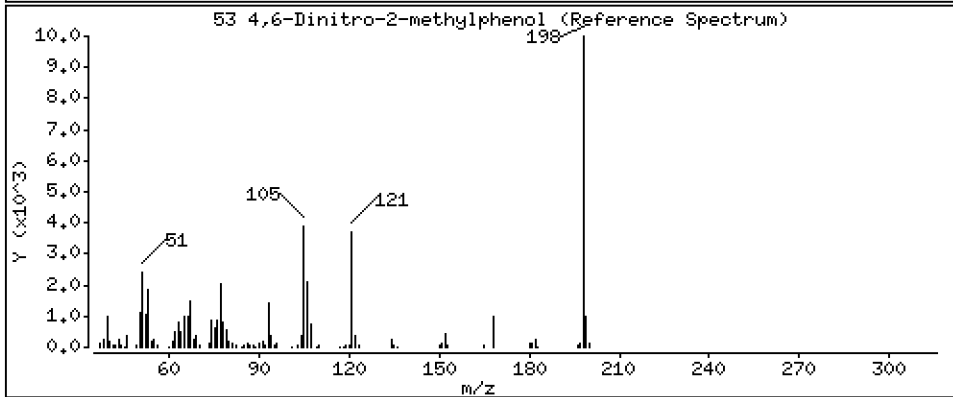
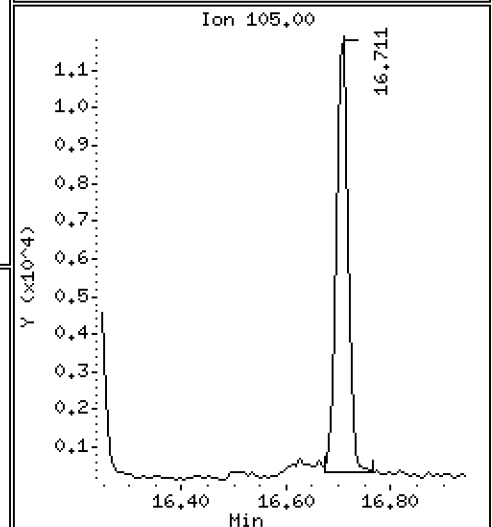
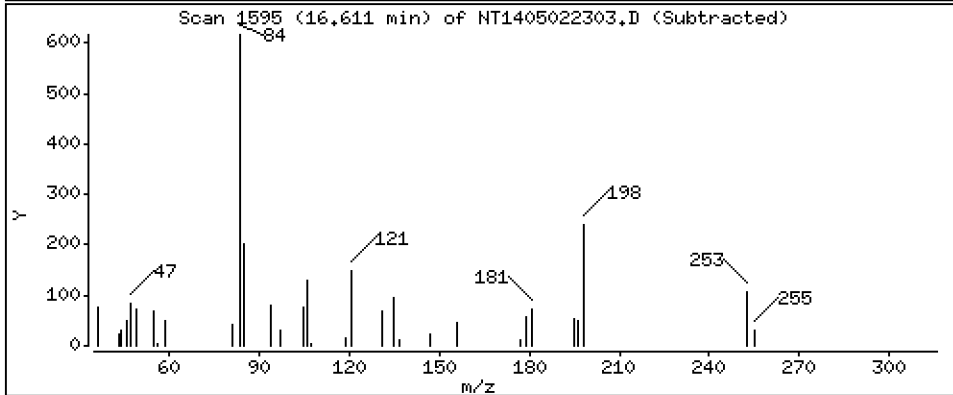
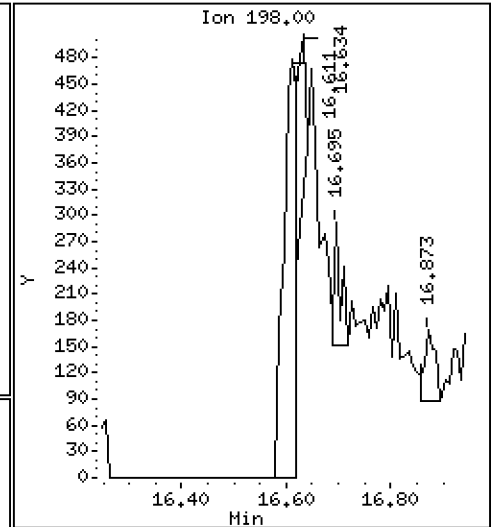
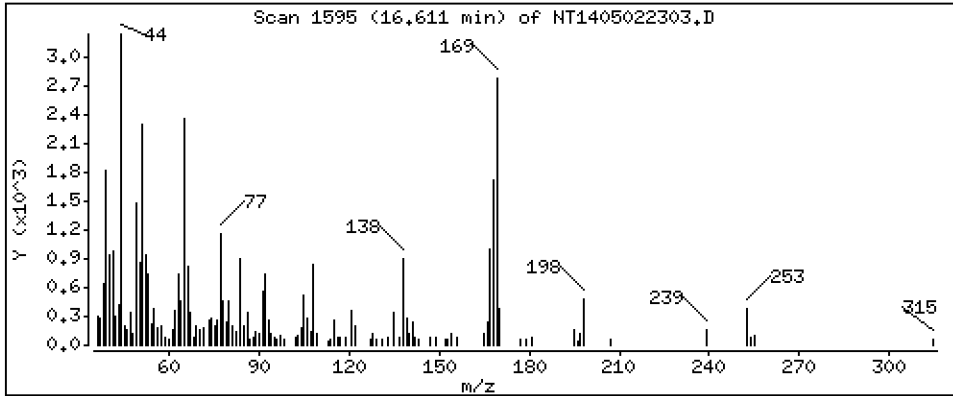
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 0,03247 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

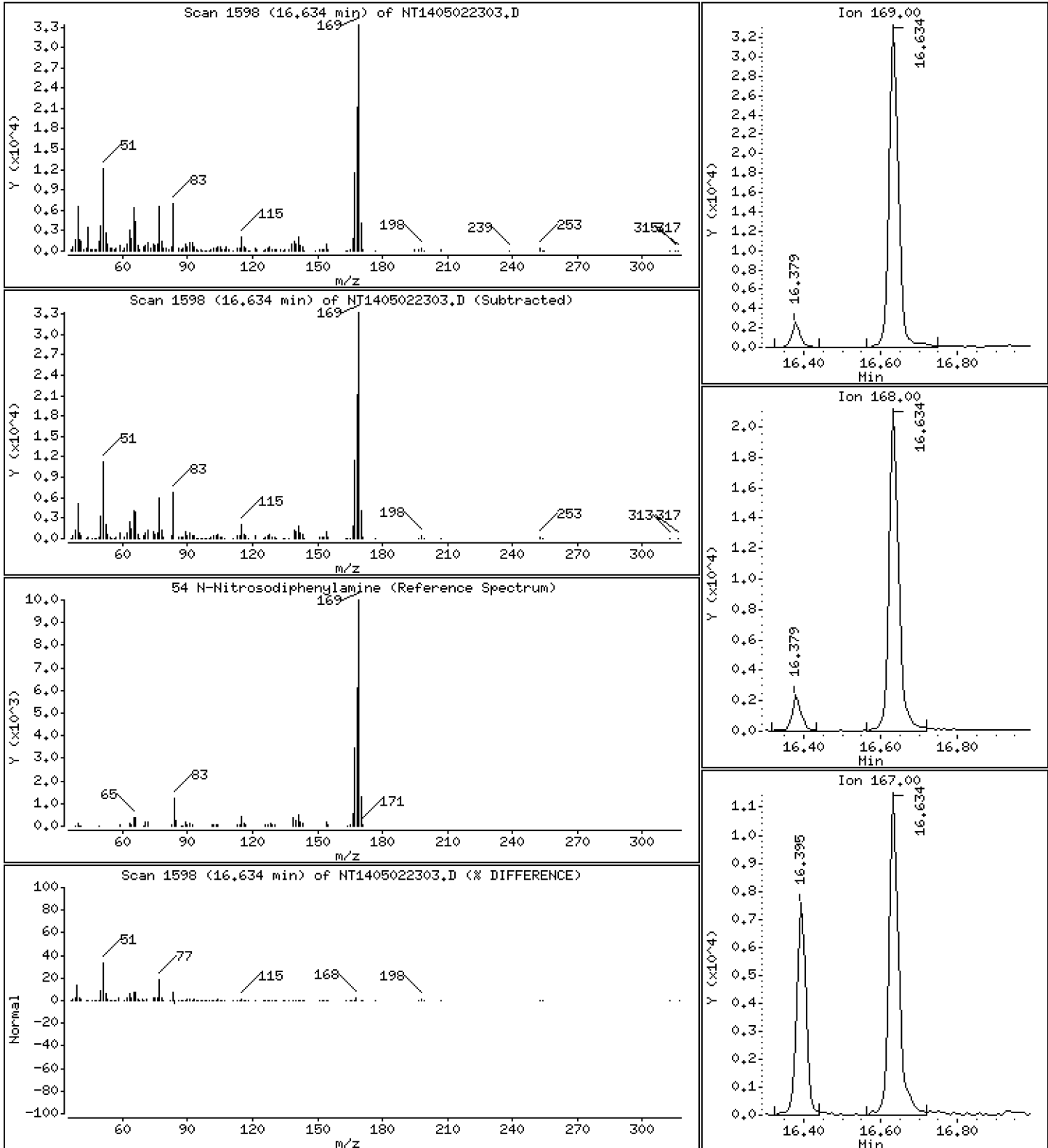
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 0,4812 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

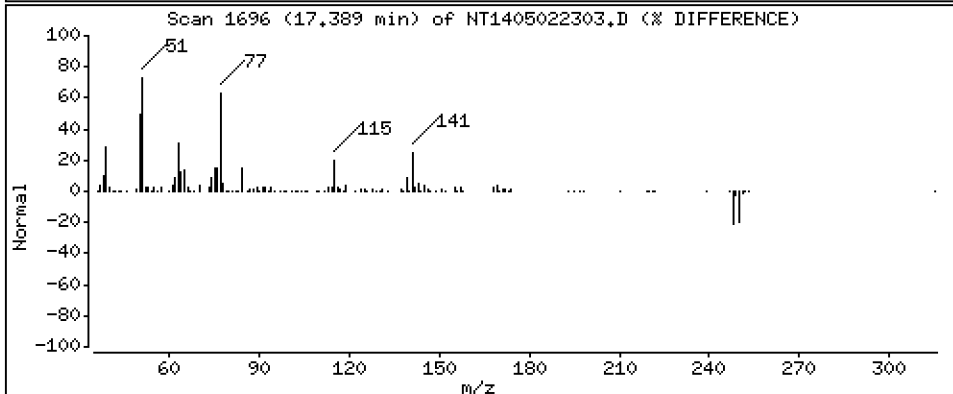
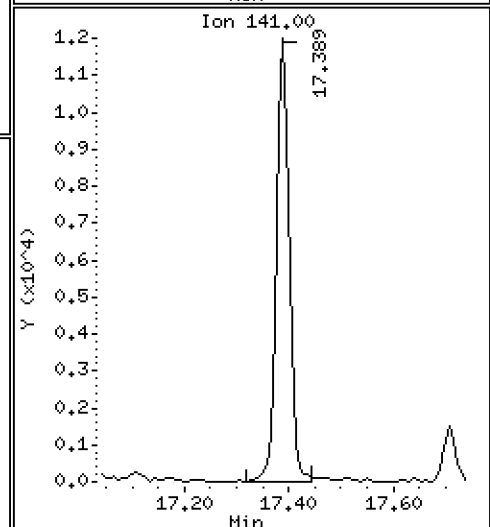
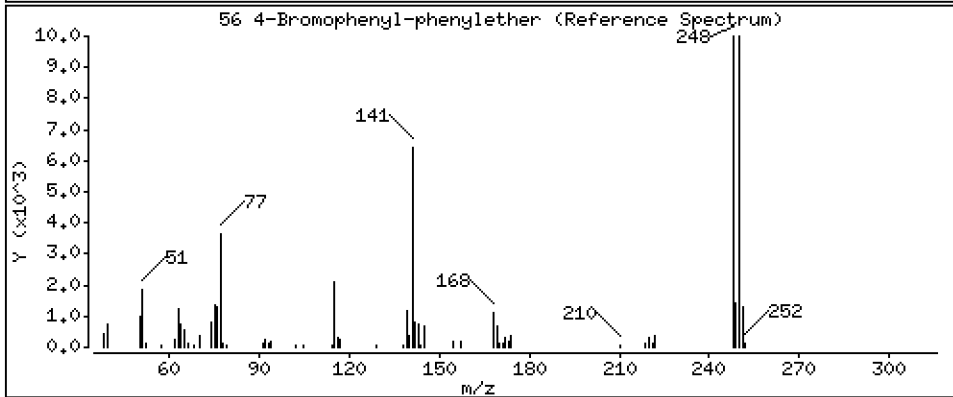
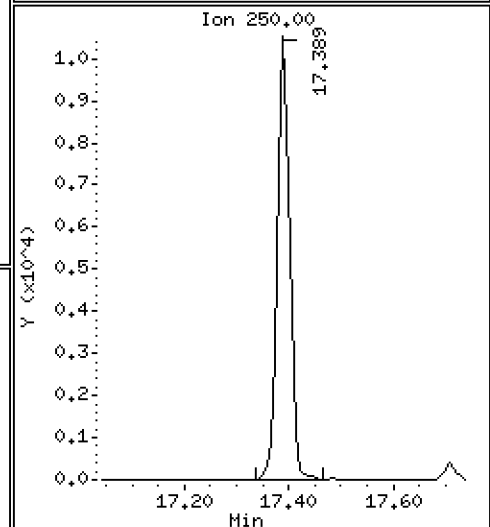
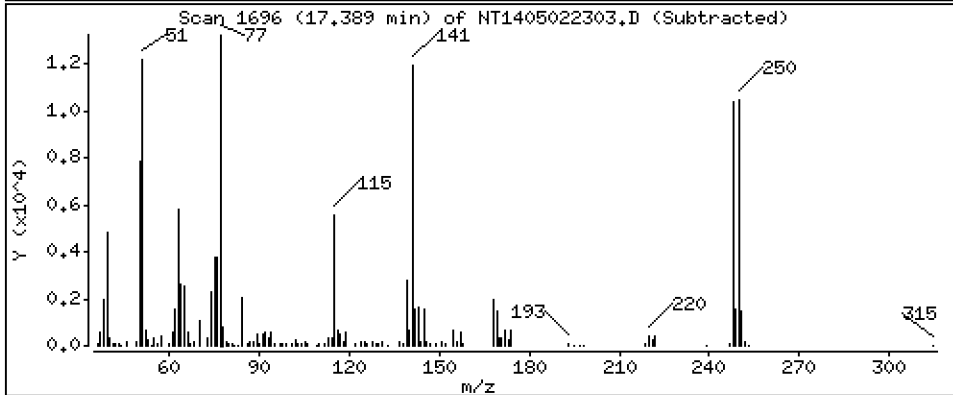
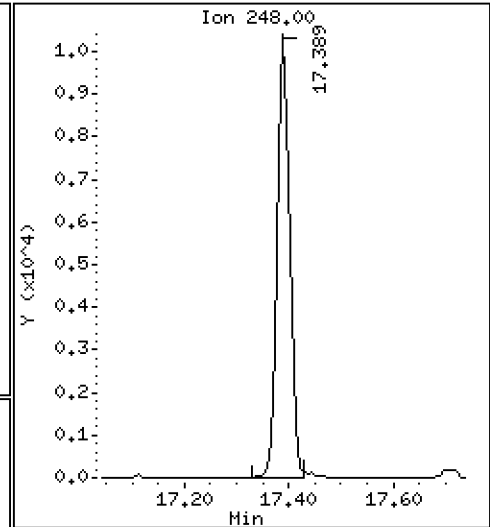
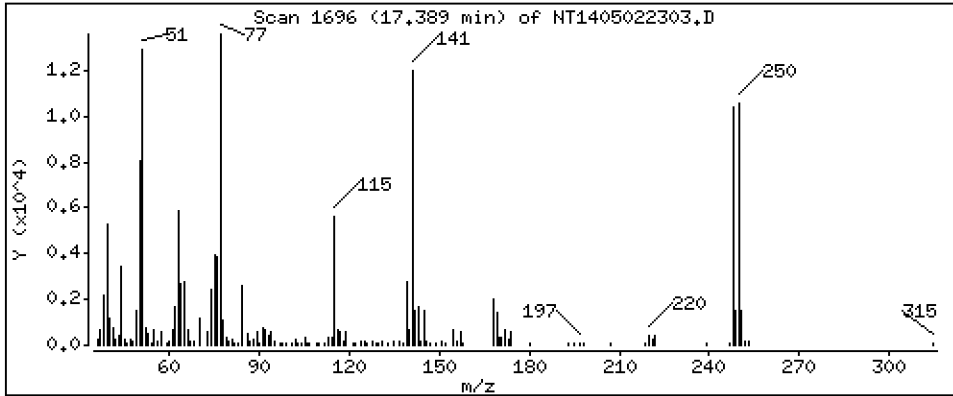
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 0,4399 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

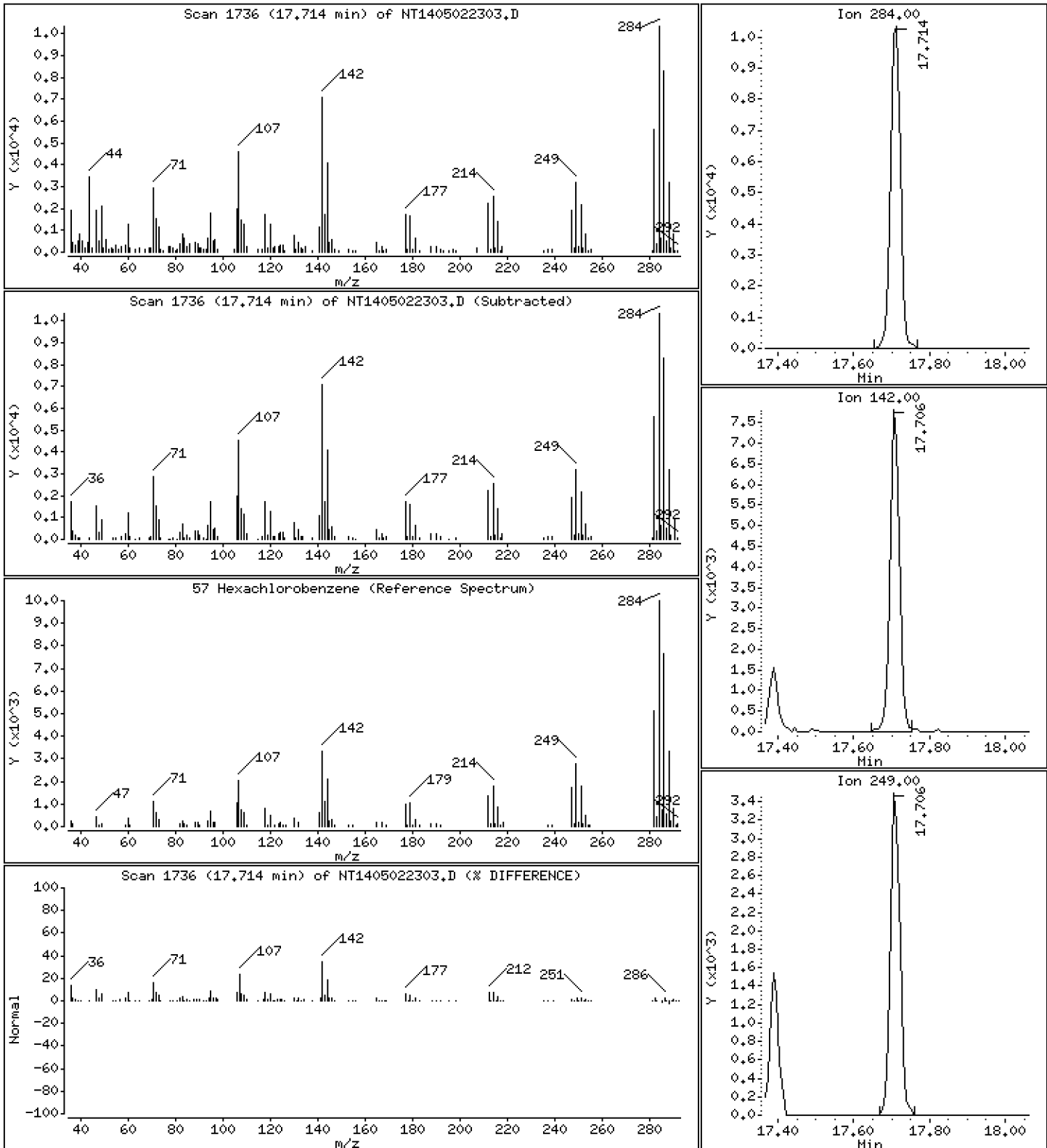
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 0,4671 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

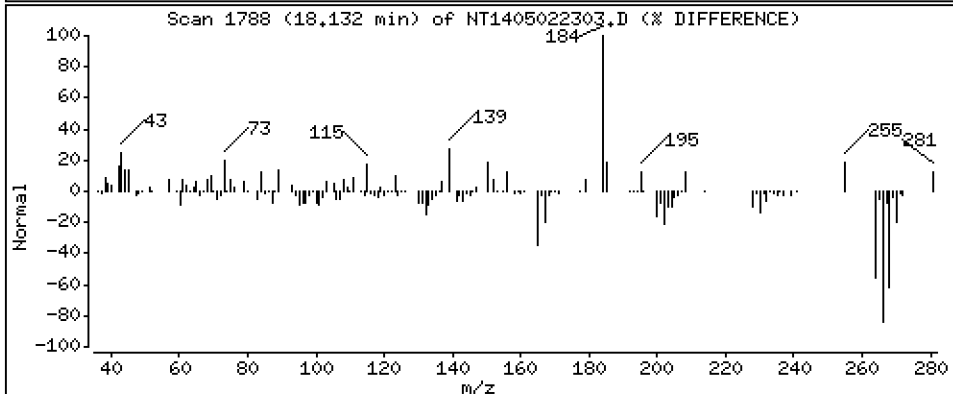
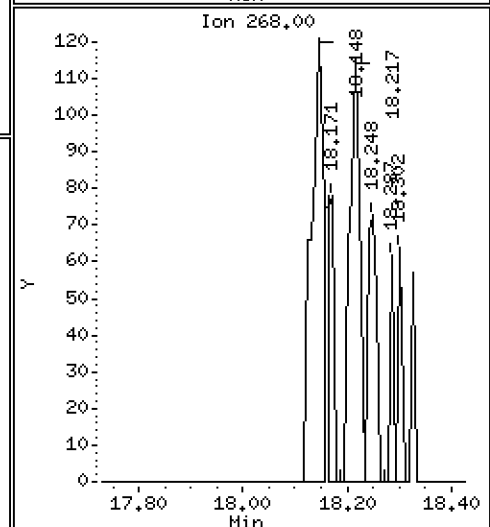
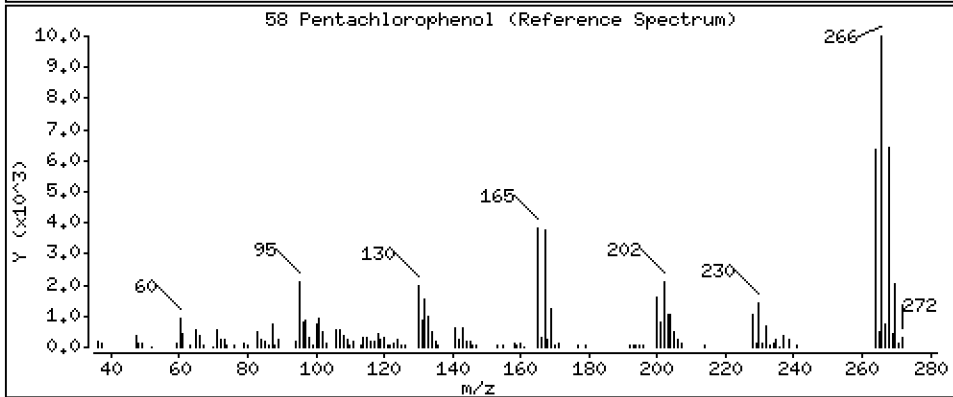
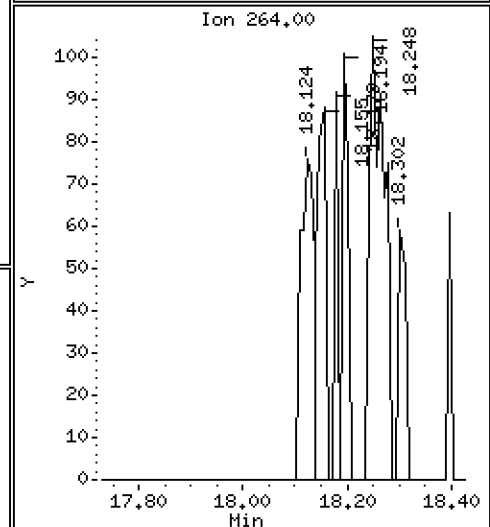
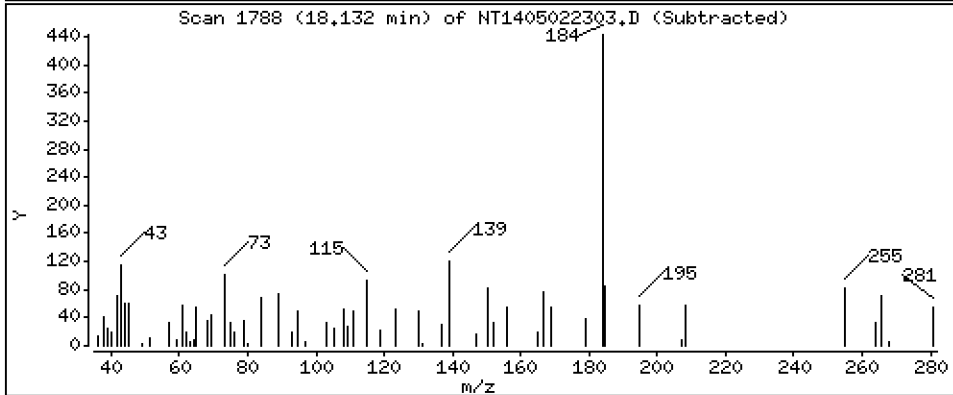
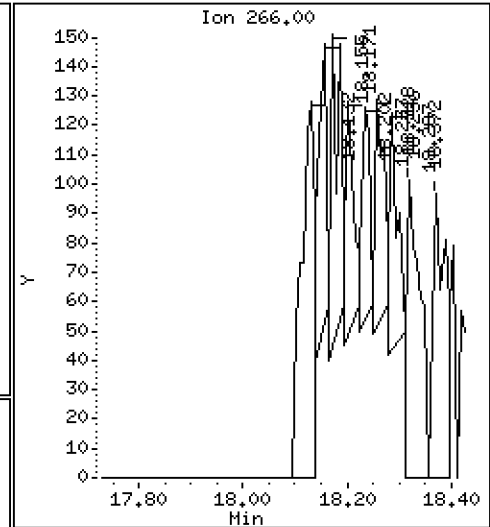
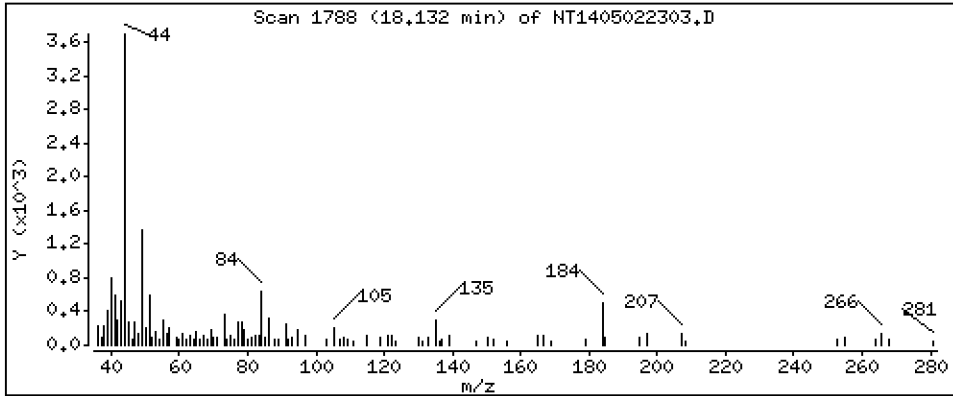
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 0,01006 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

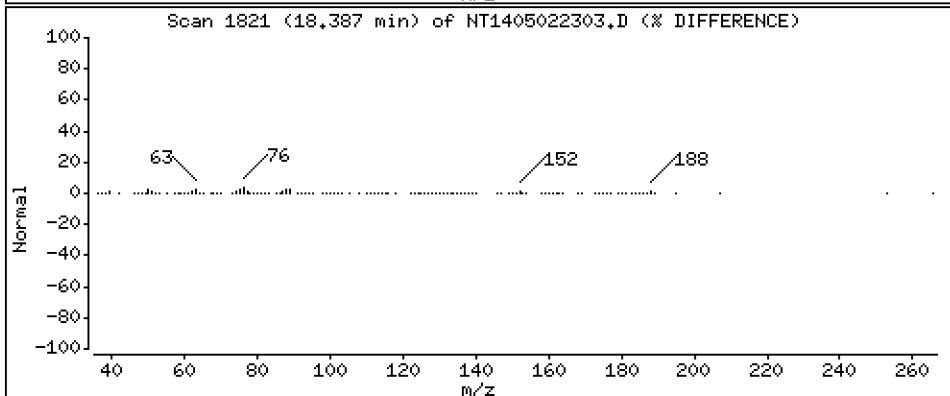
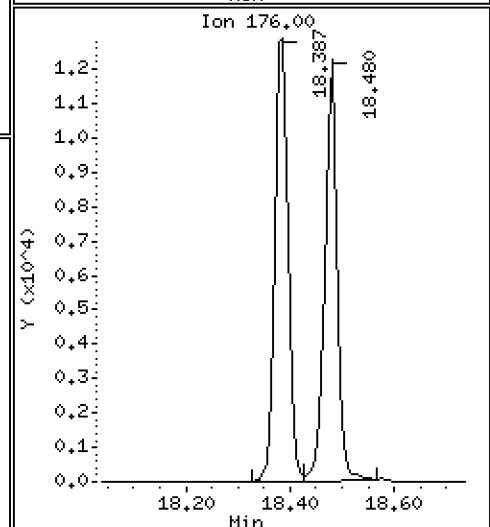
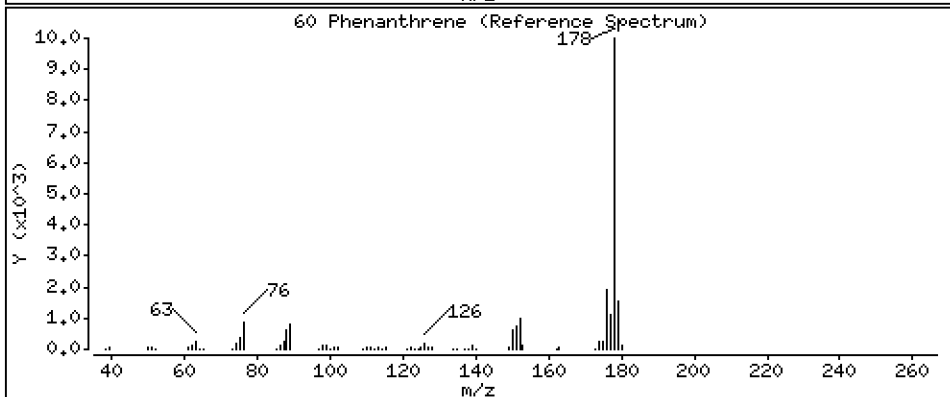
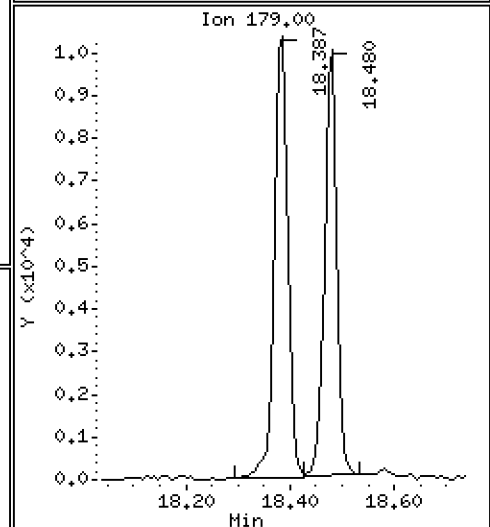
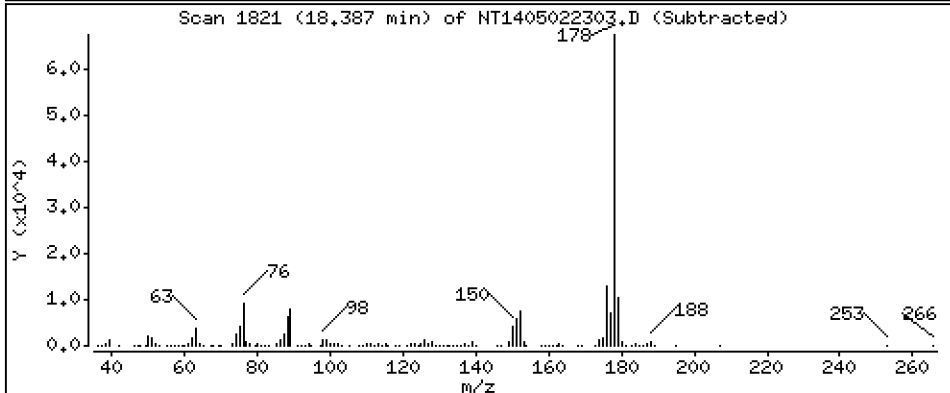
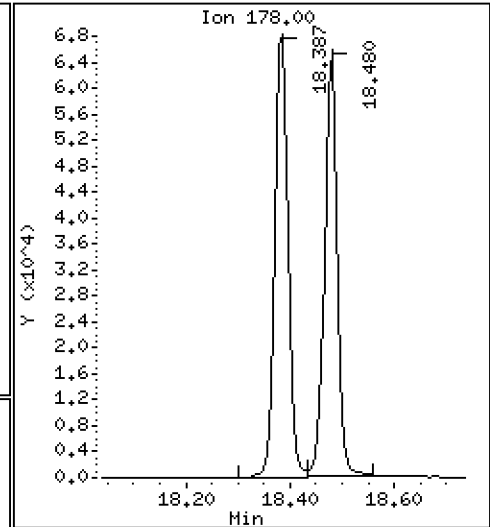
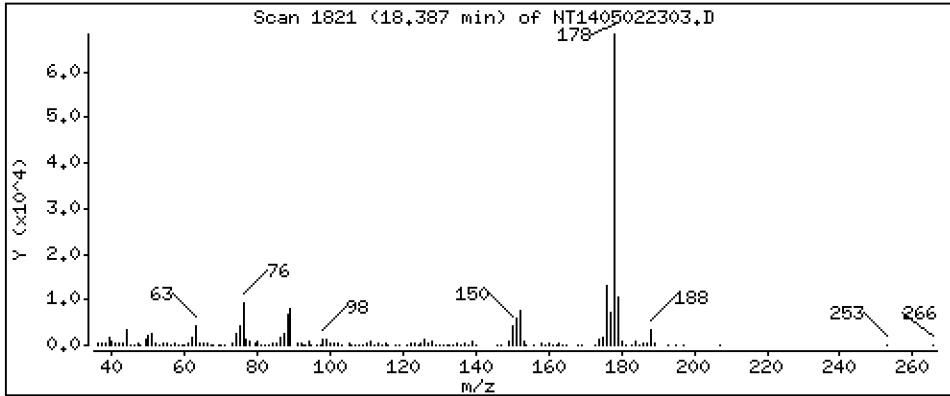
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 0,5009 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

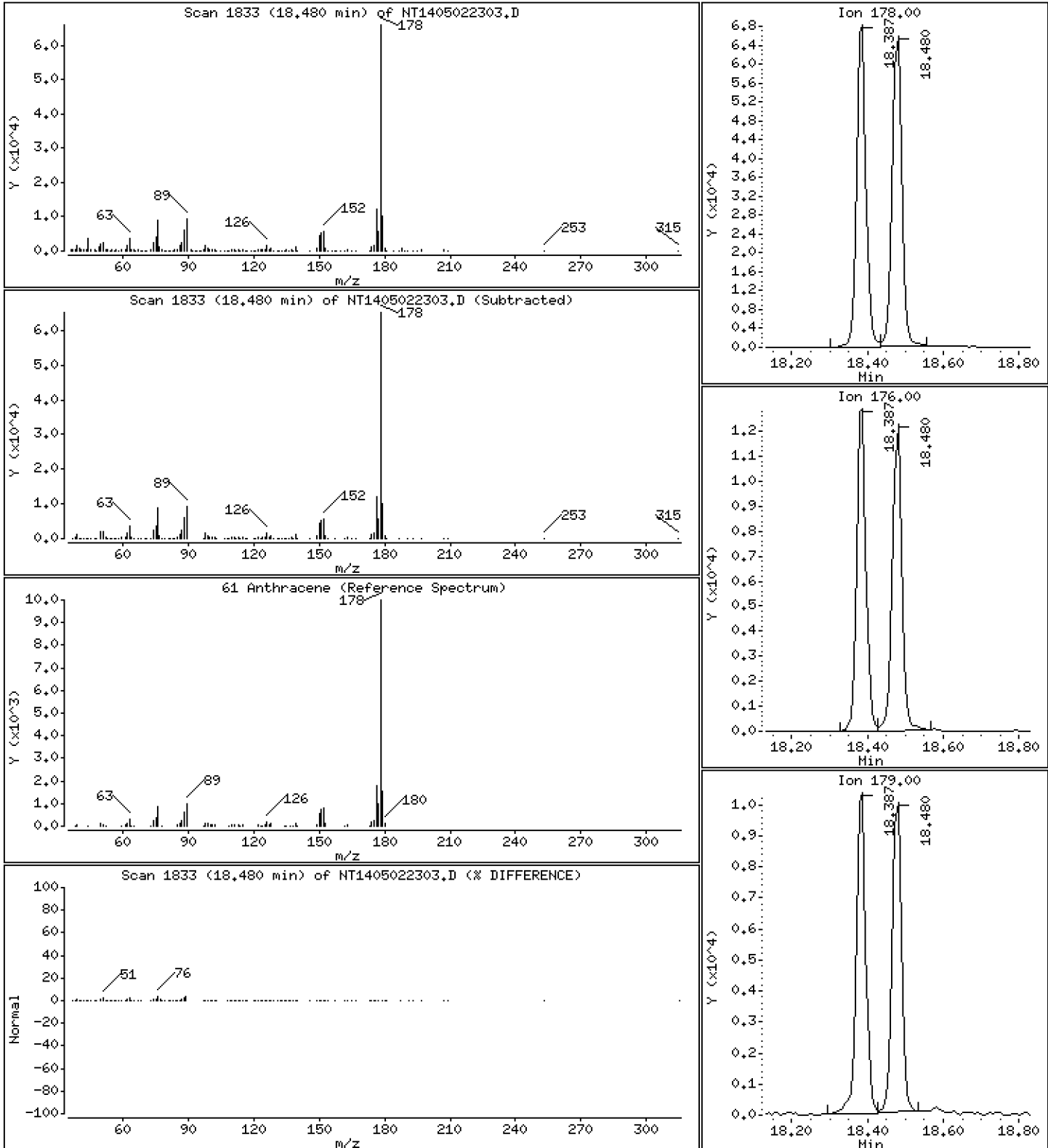
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 0,4948 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

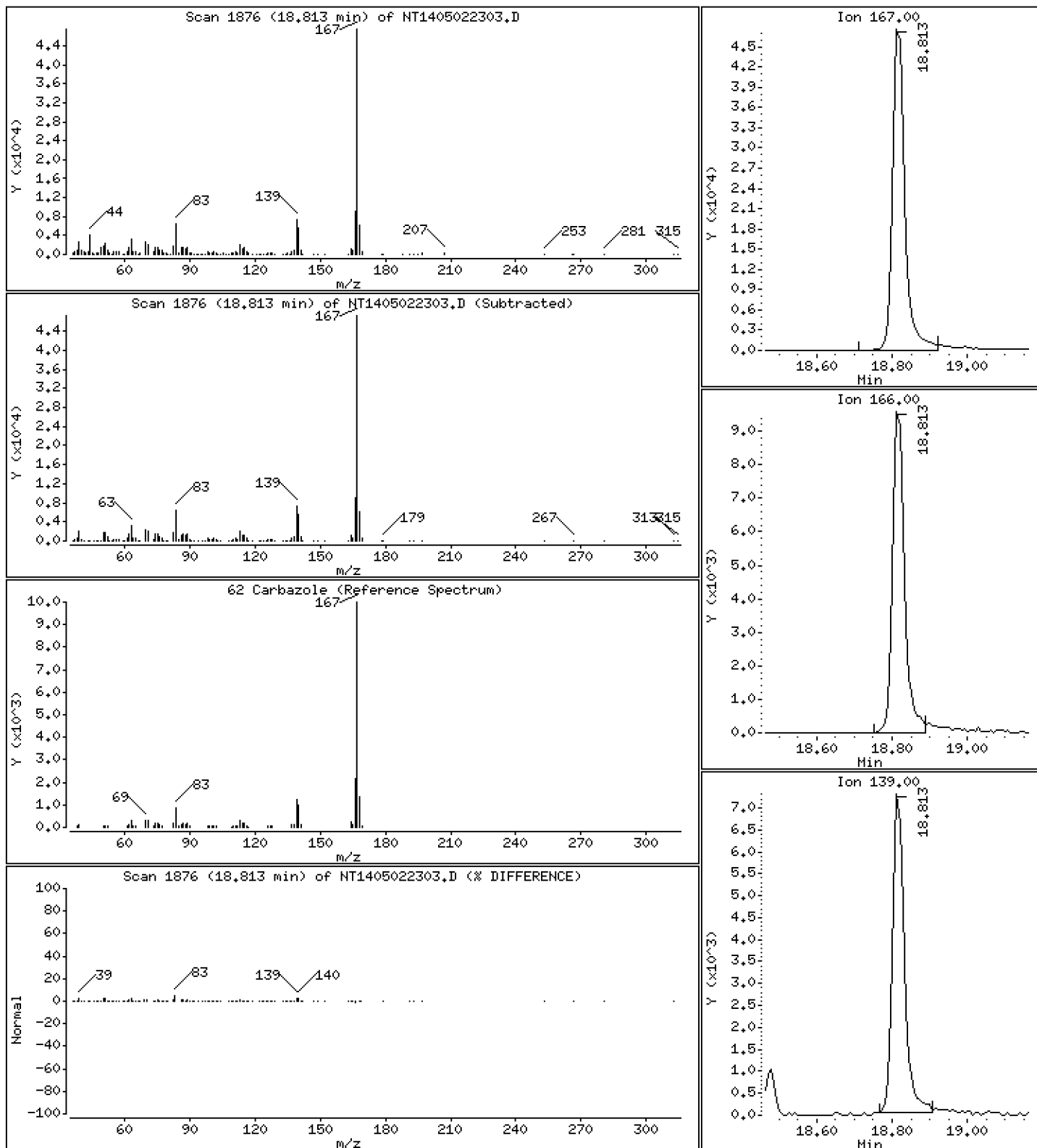
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 0,5032 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

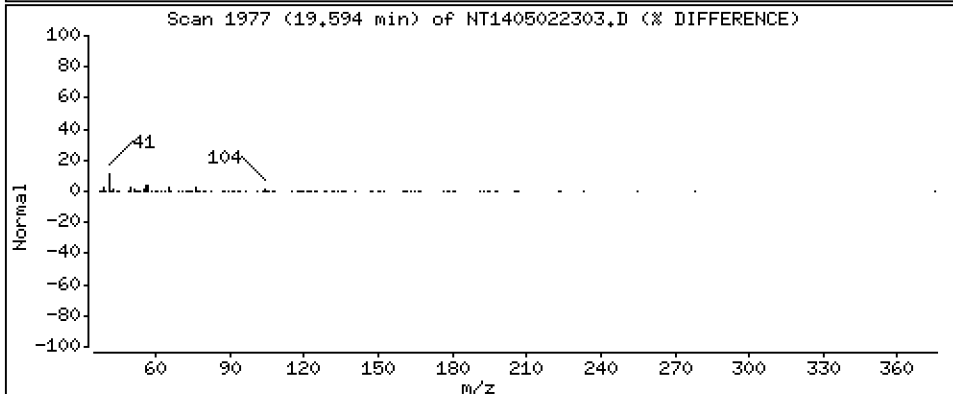
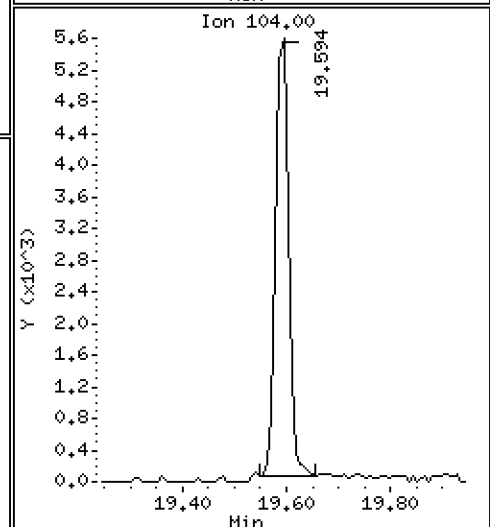
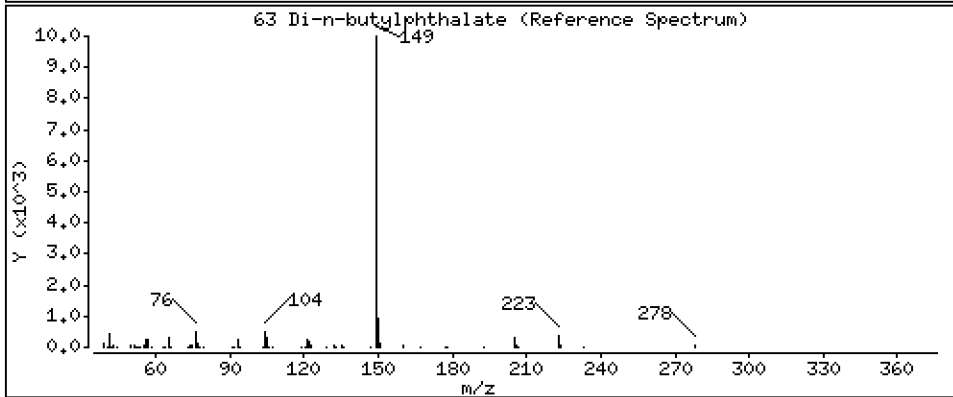
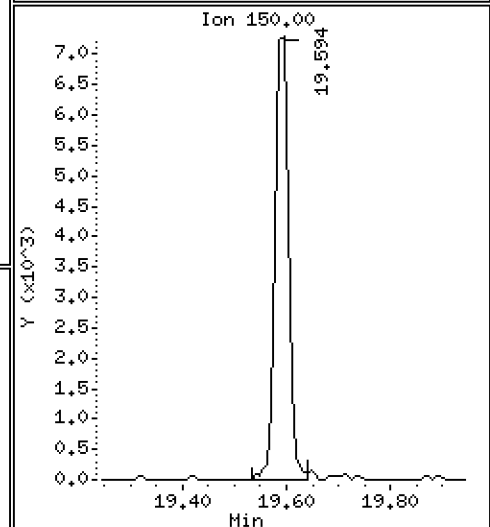
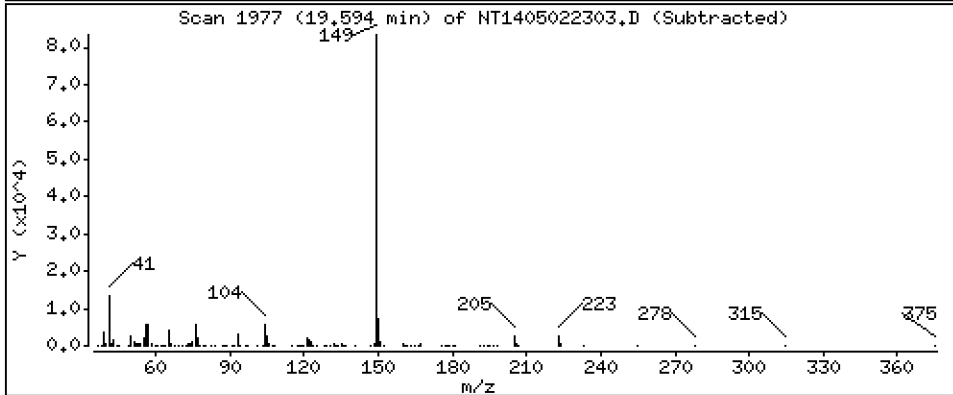
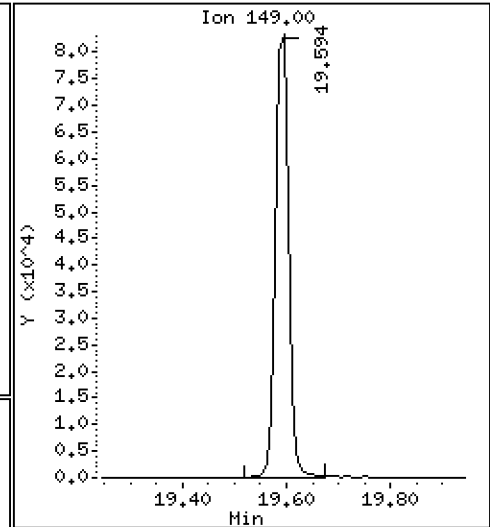
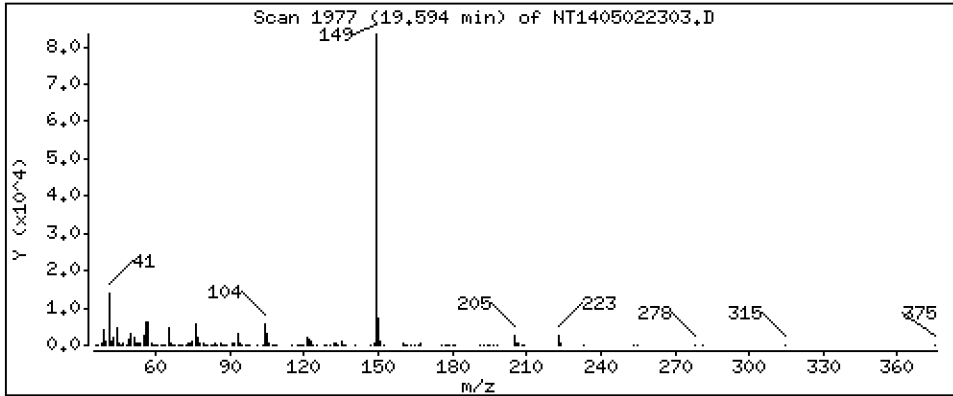
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 0,4401 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

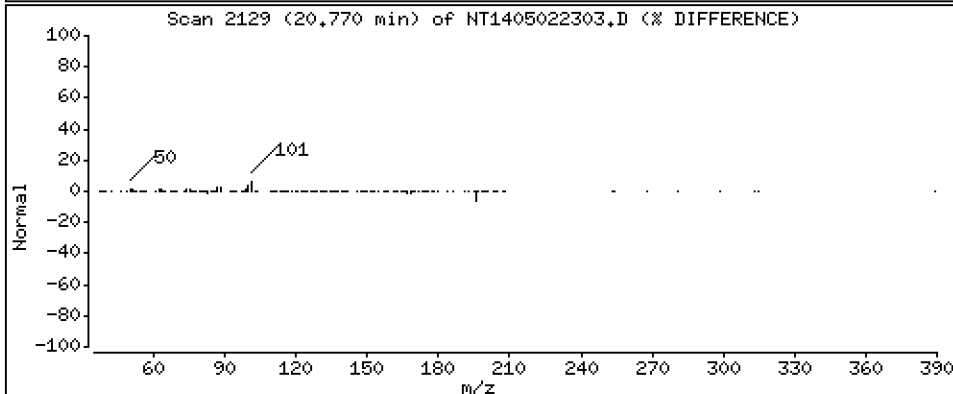
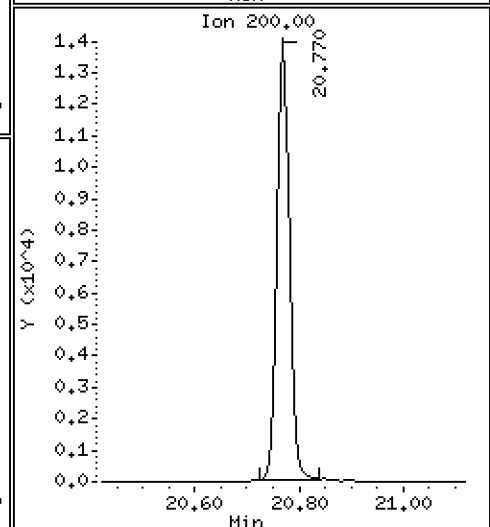
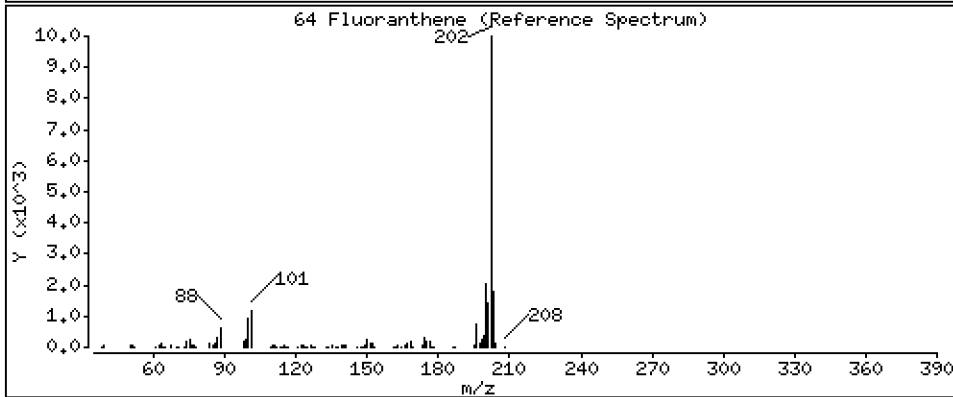
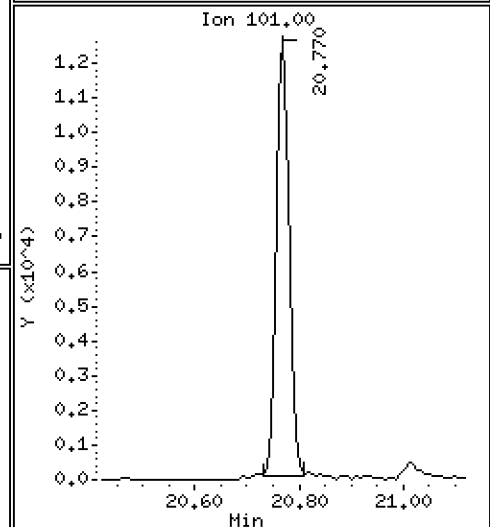
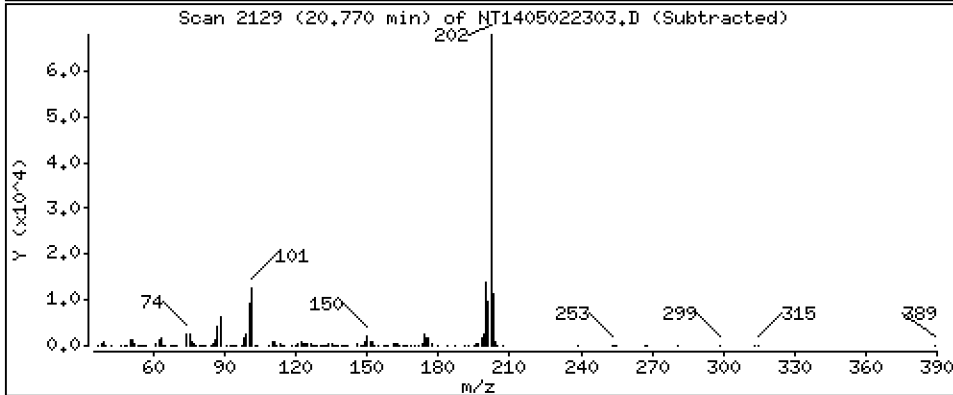
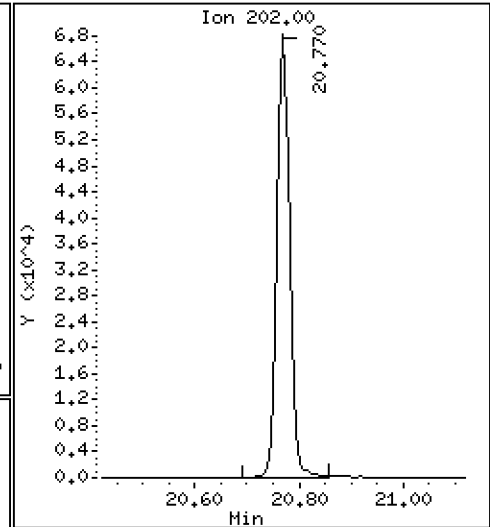
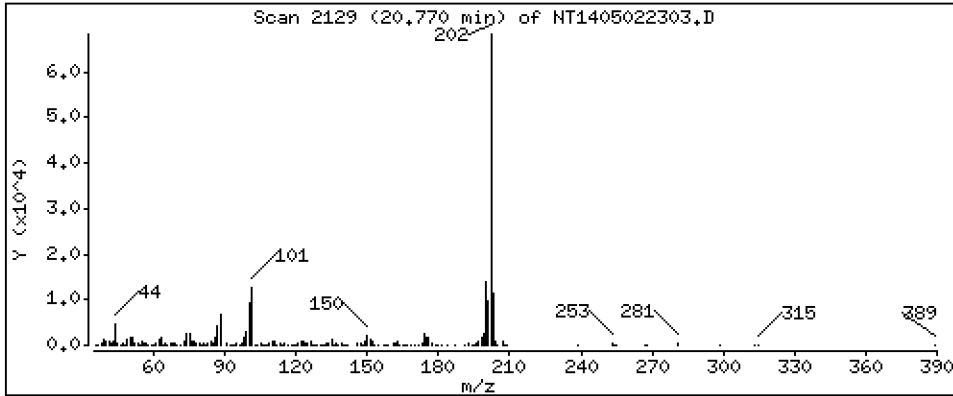
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 0,5051 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

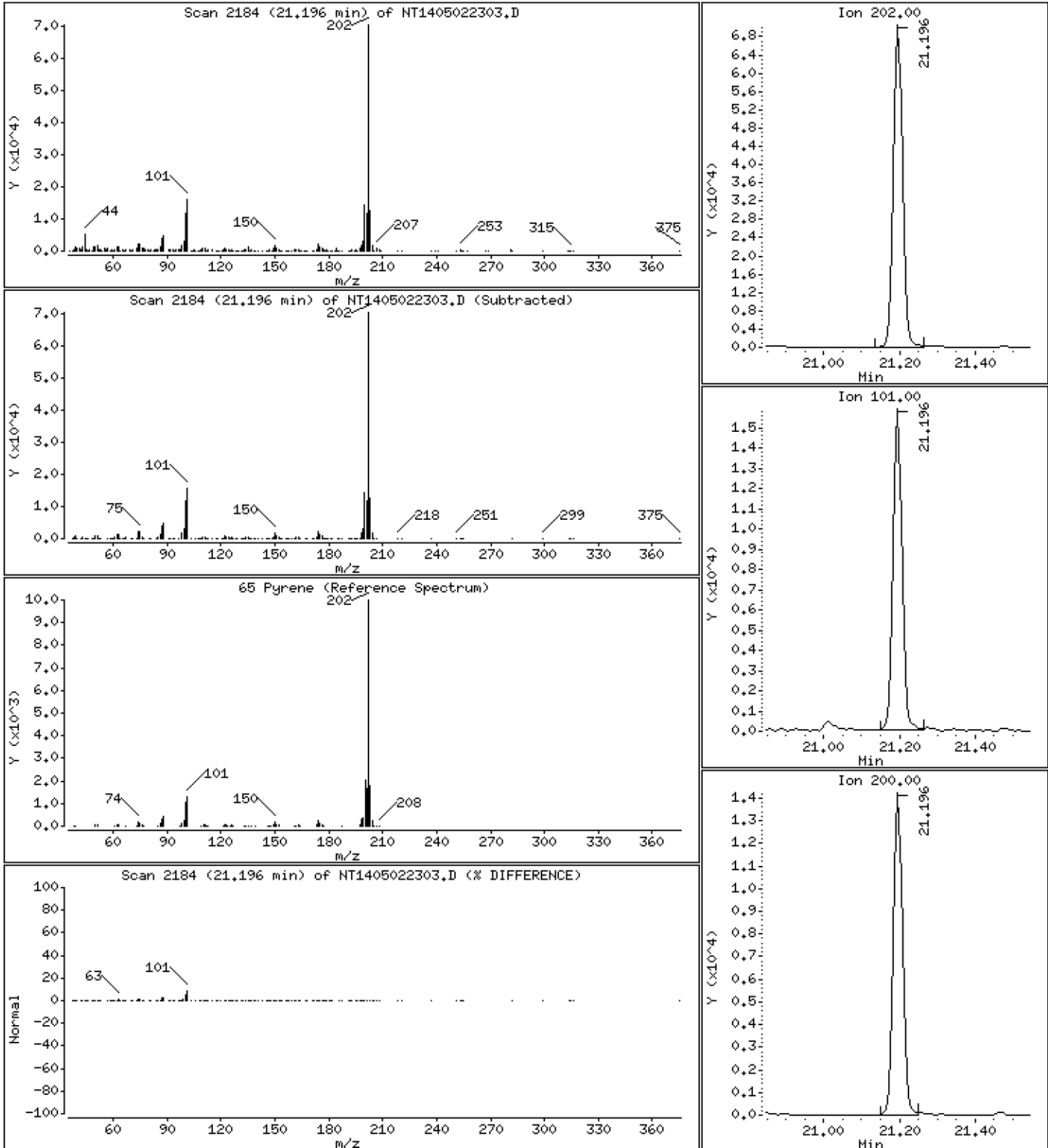
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 0,5024 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

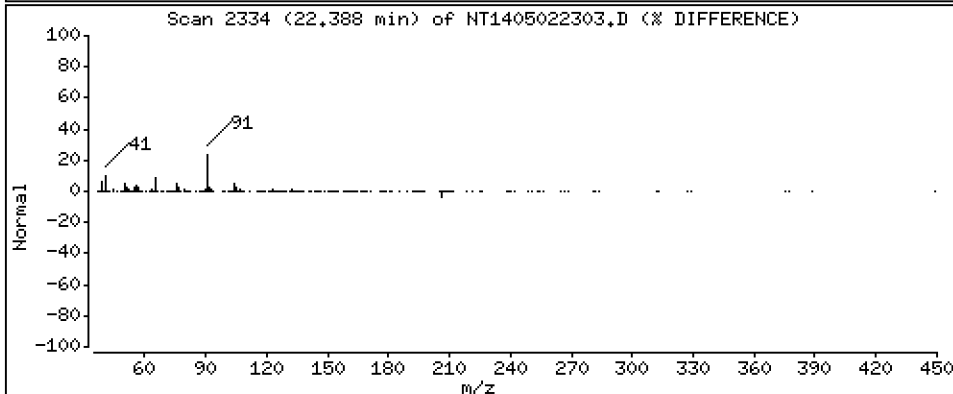
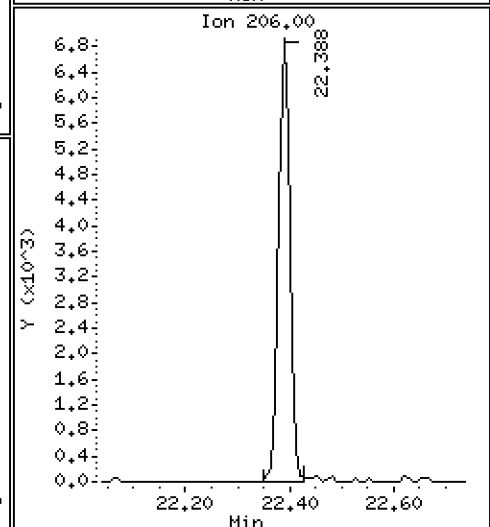
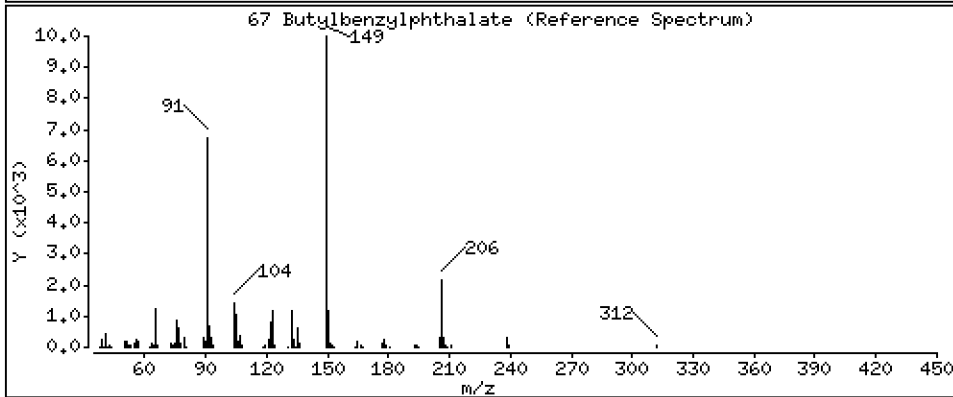
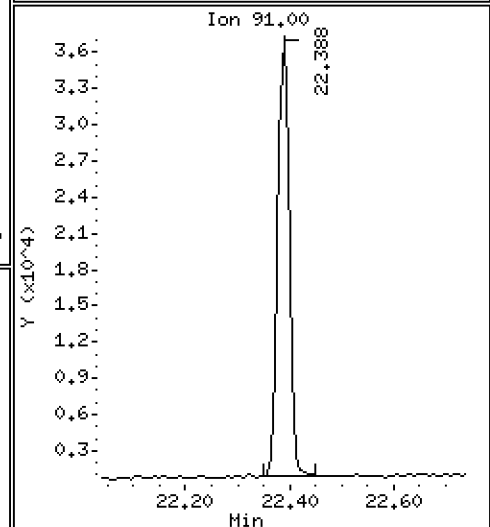
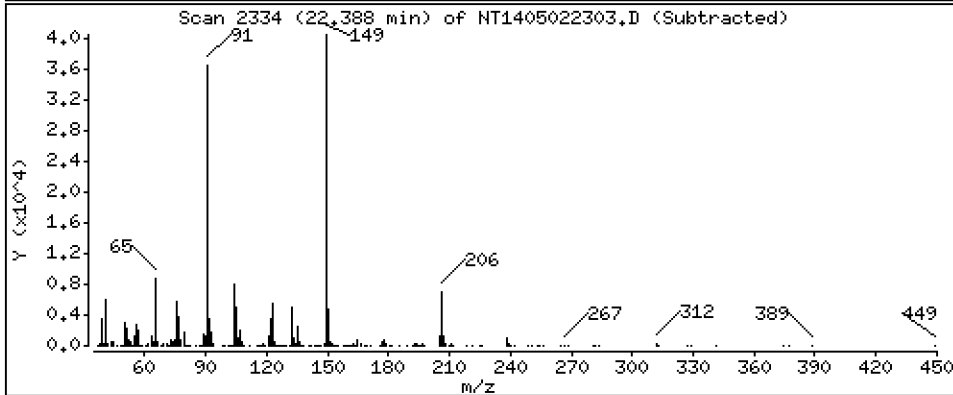
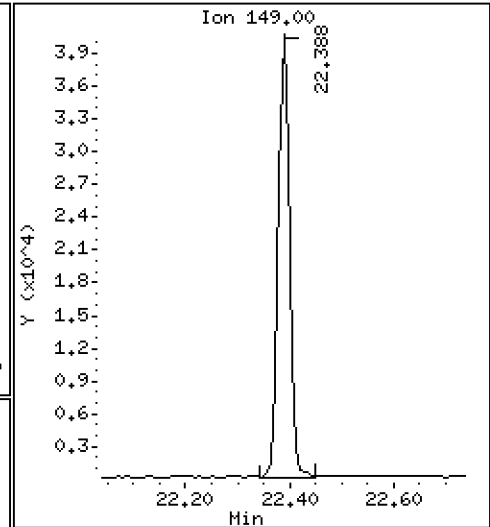
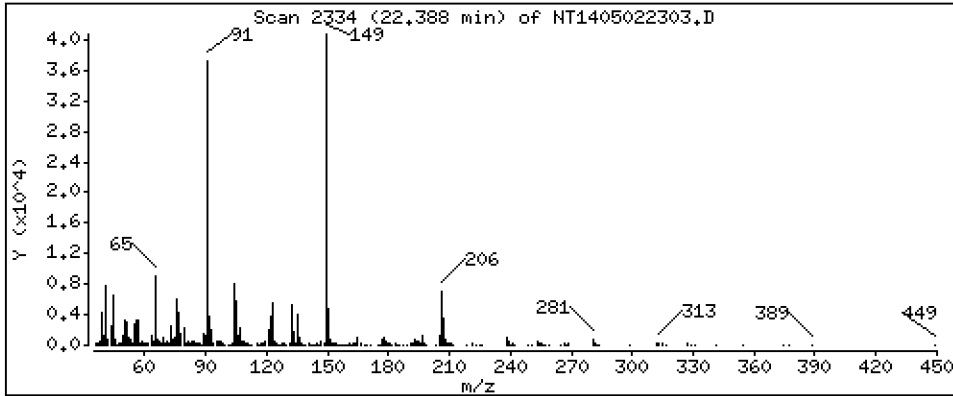
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,3950 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

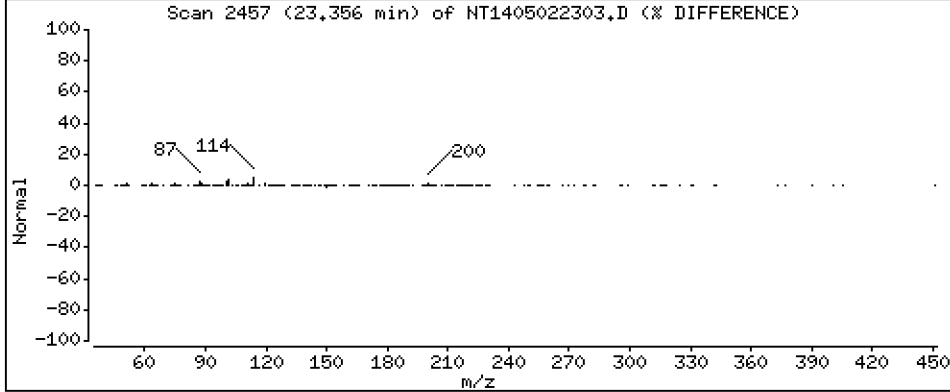
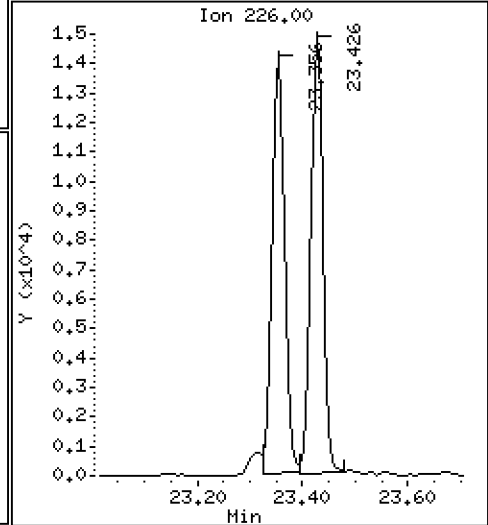
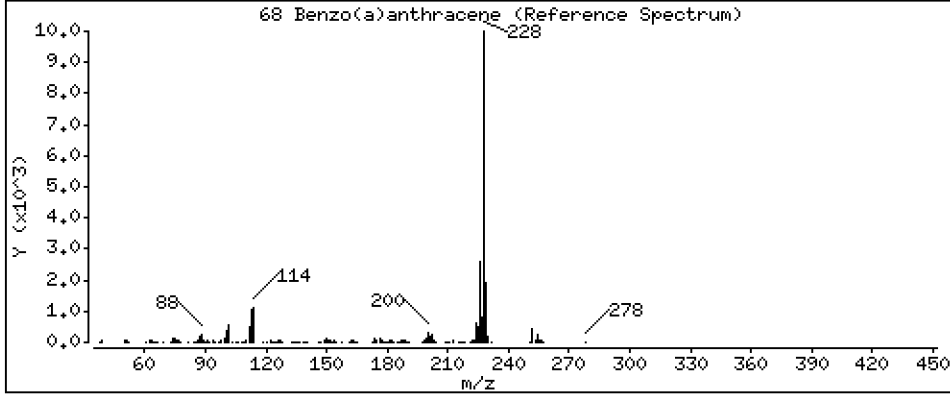
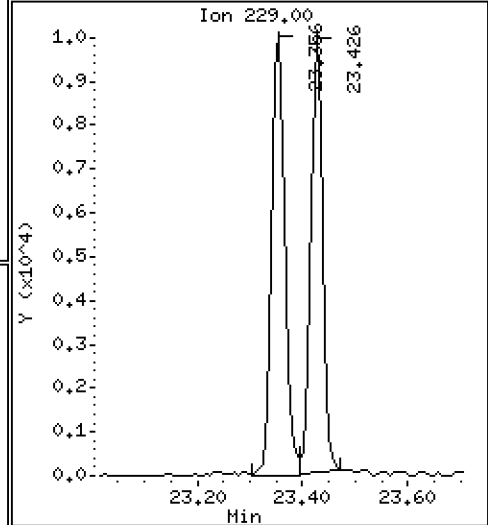
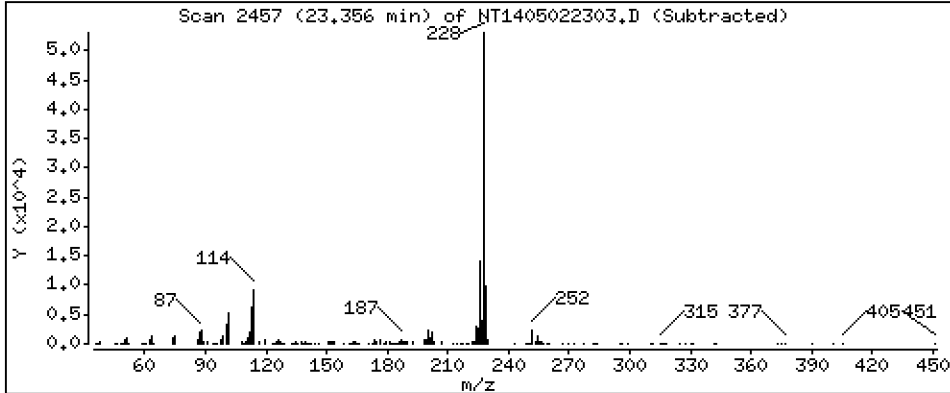
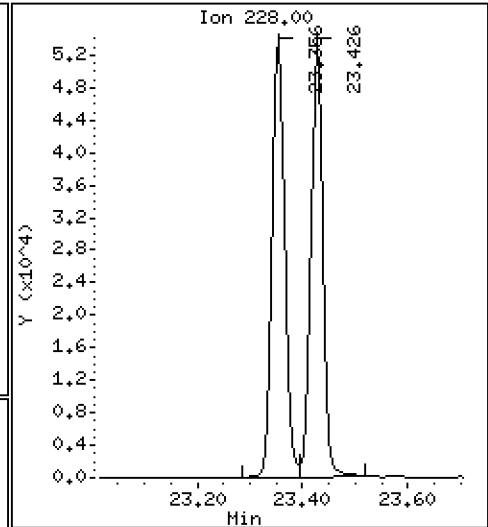
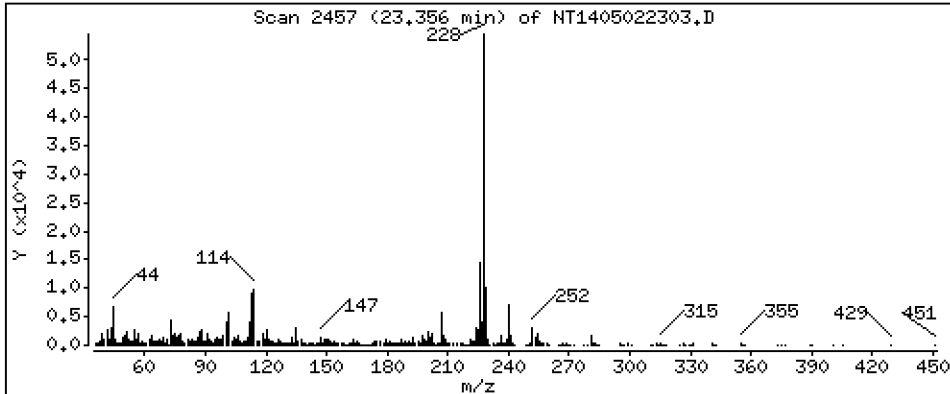
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 0,5156 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

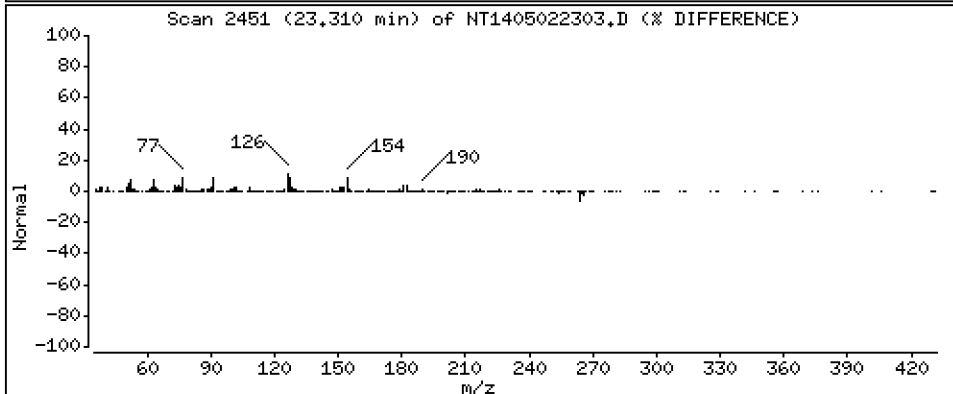
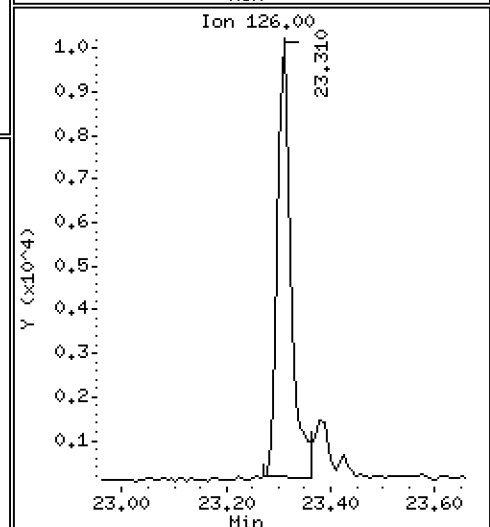
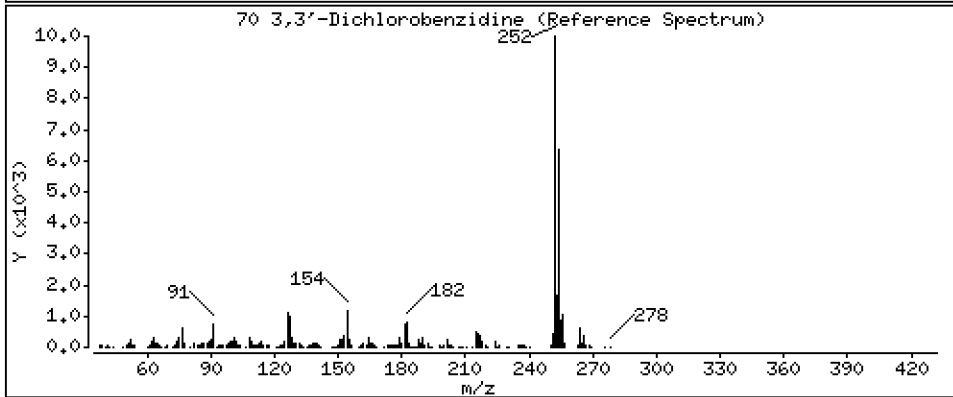
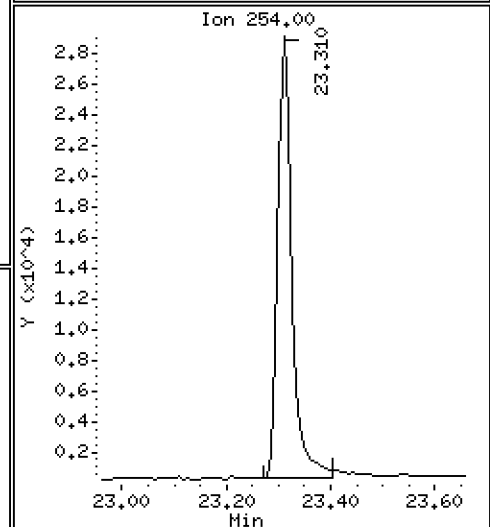
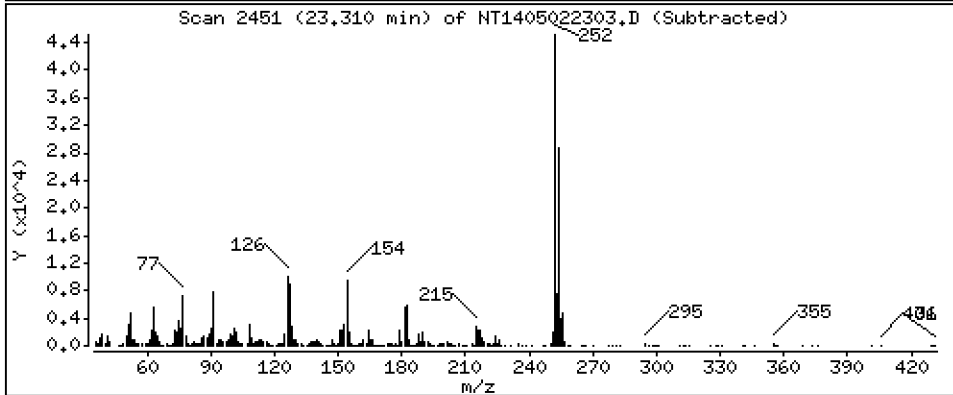
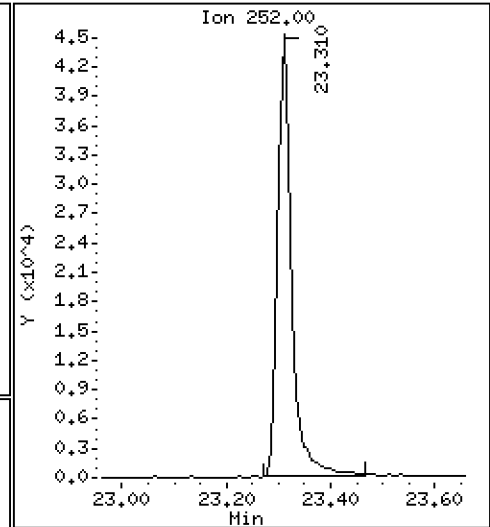
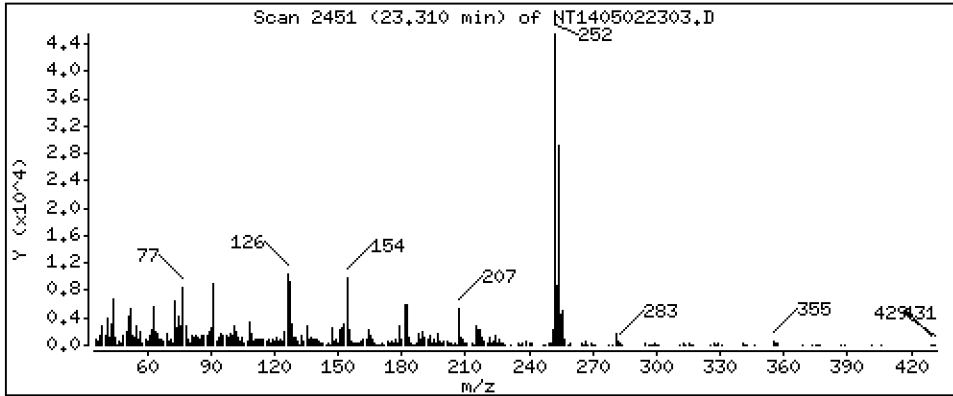
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 1,467 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

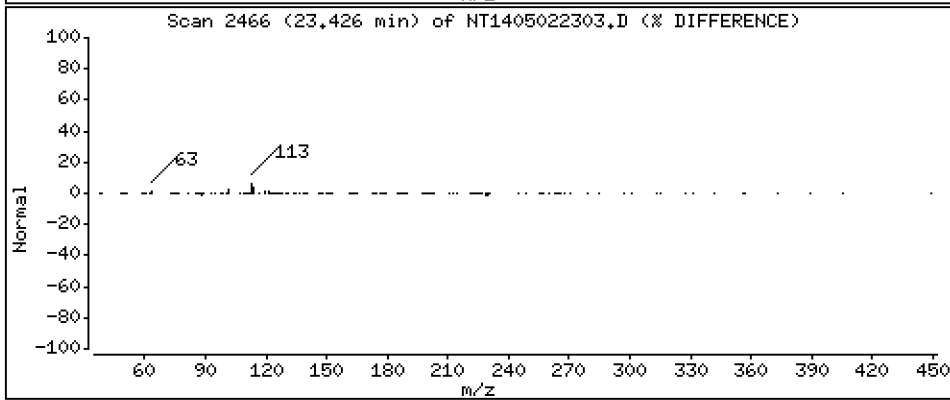
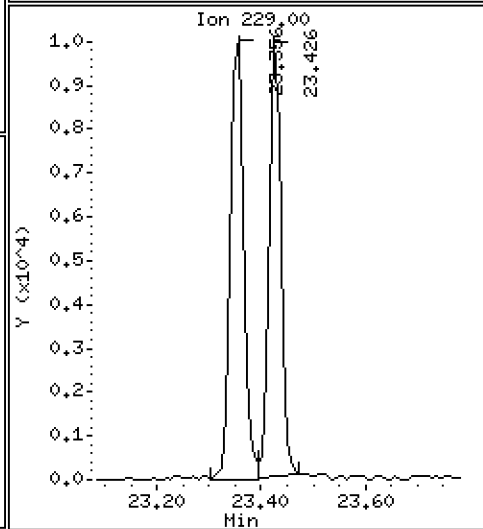
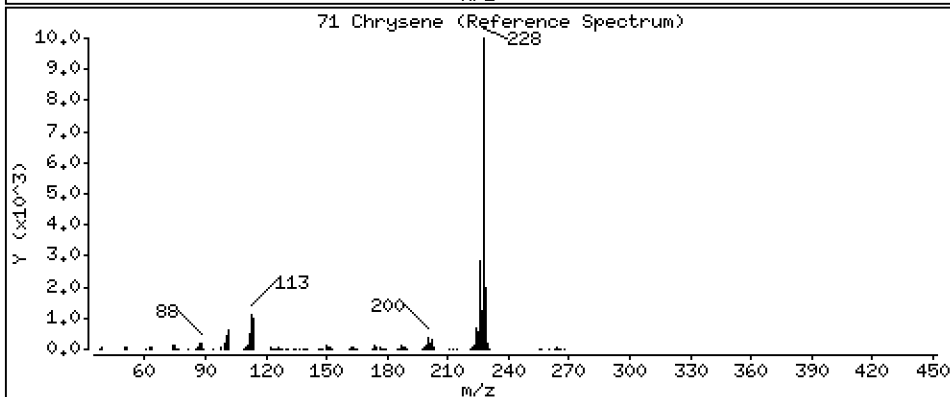
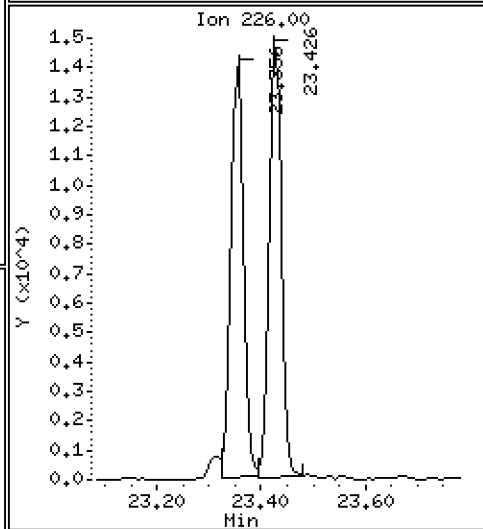
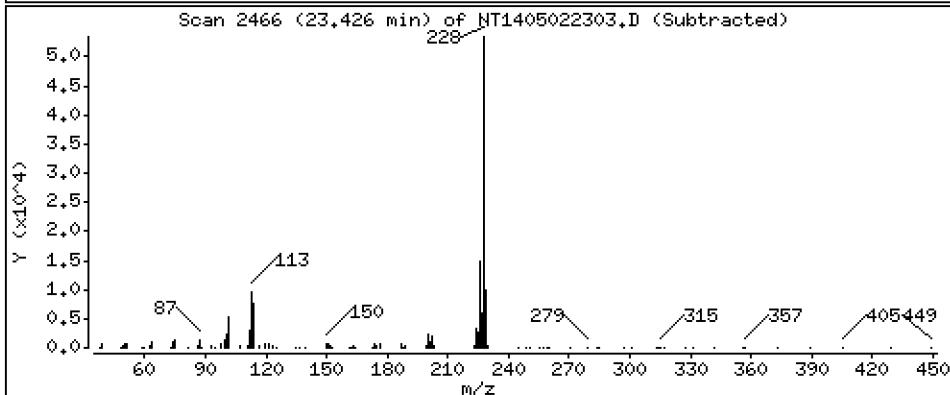
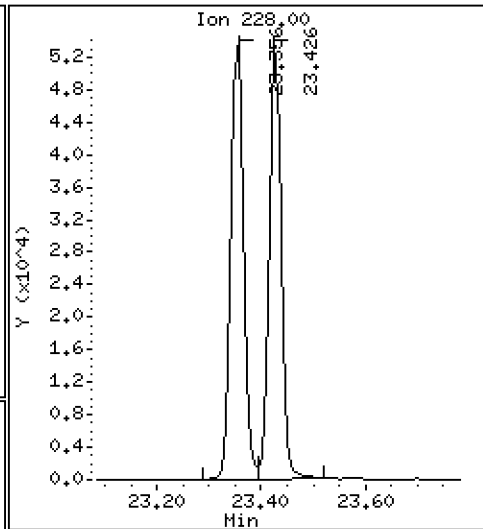
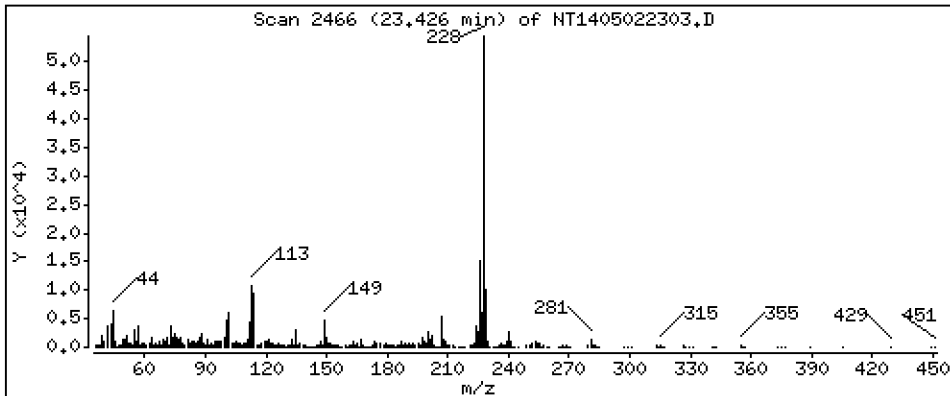
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 0,5076 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

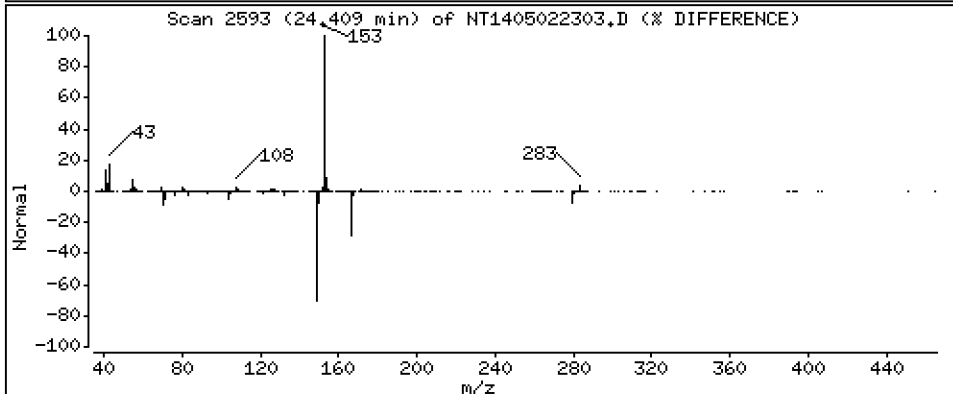
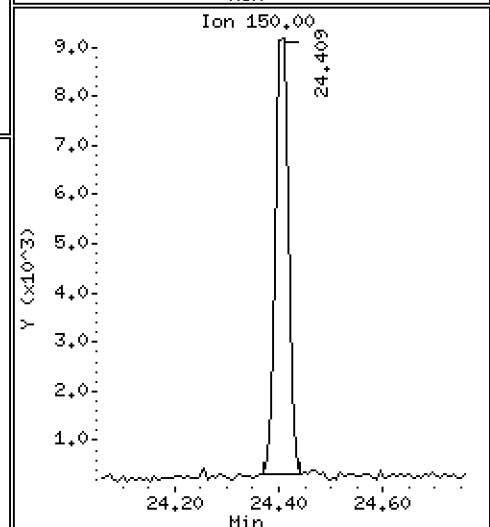
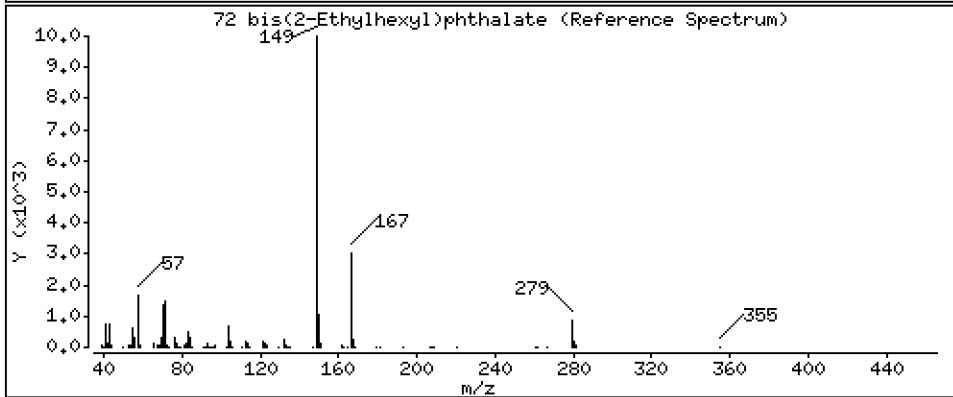
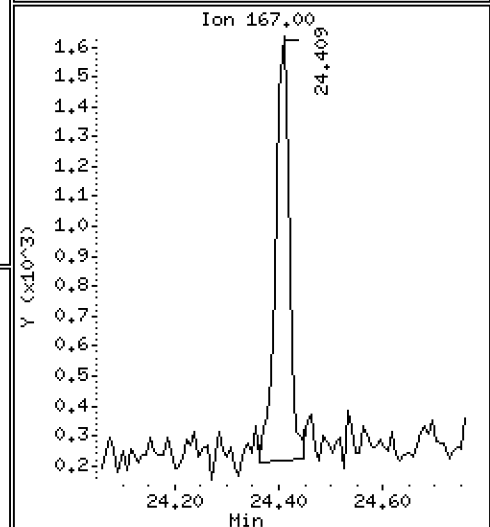
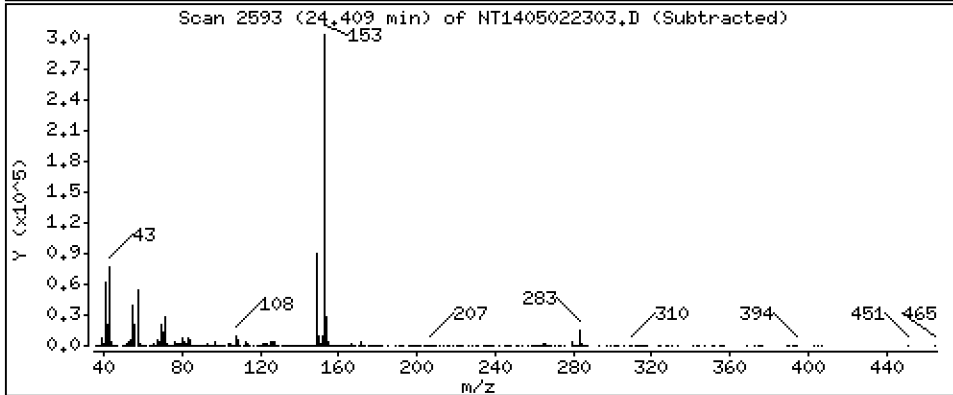
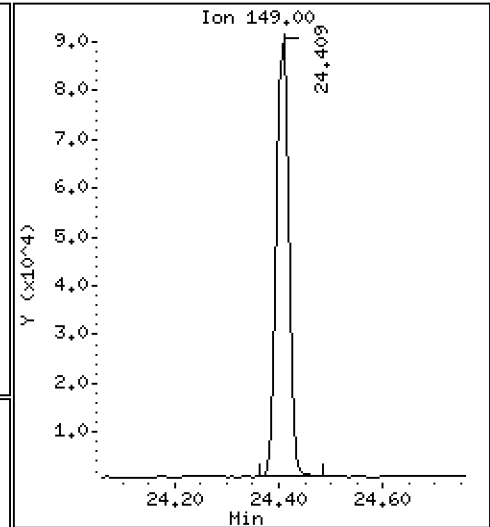
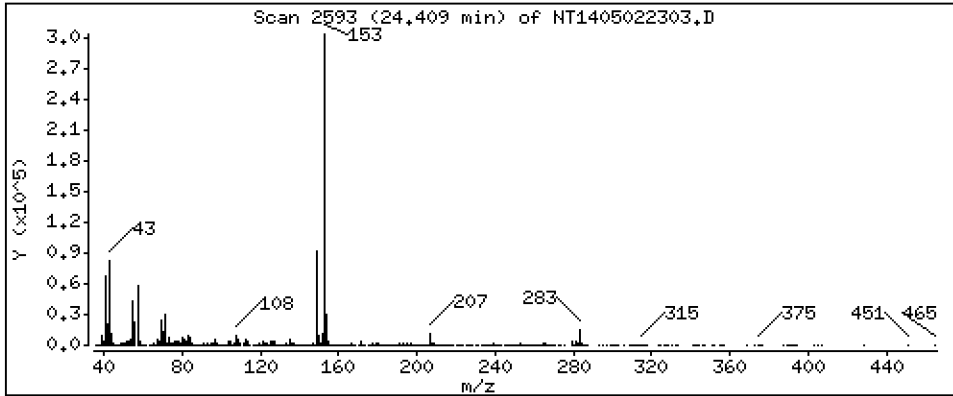
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 0,4735 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

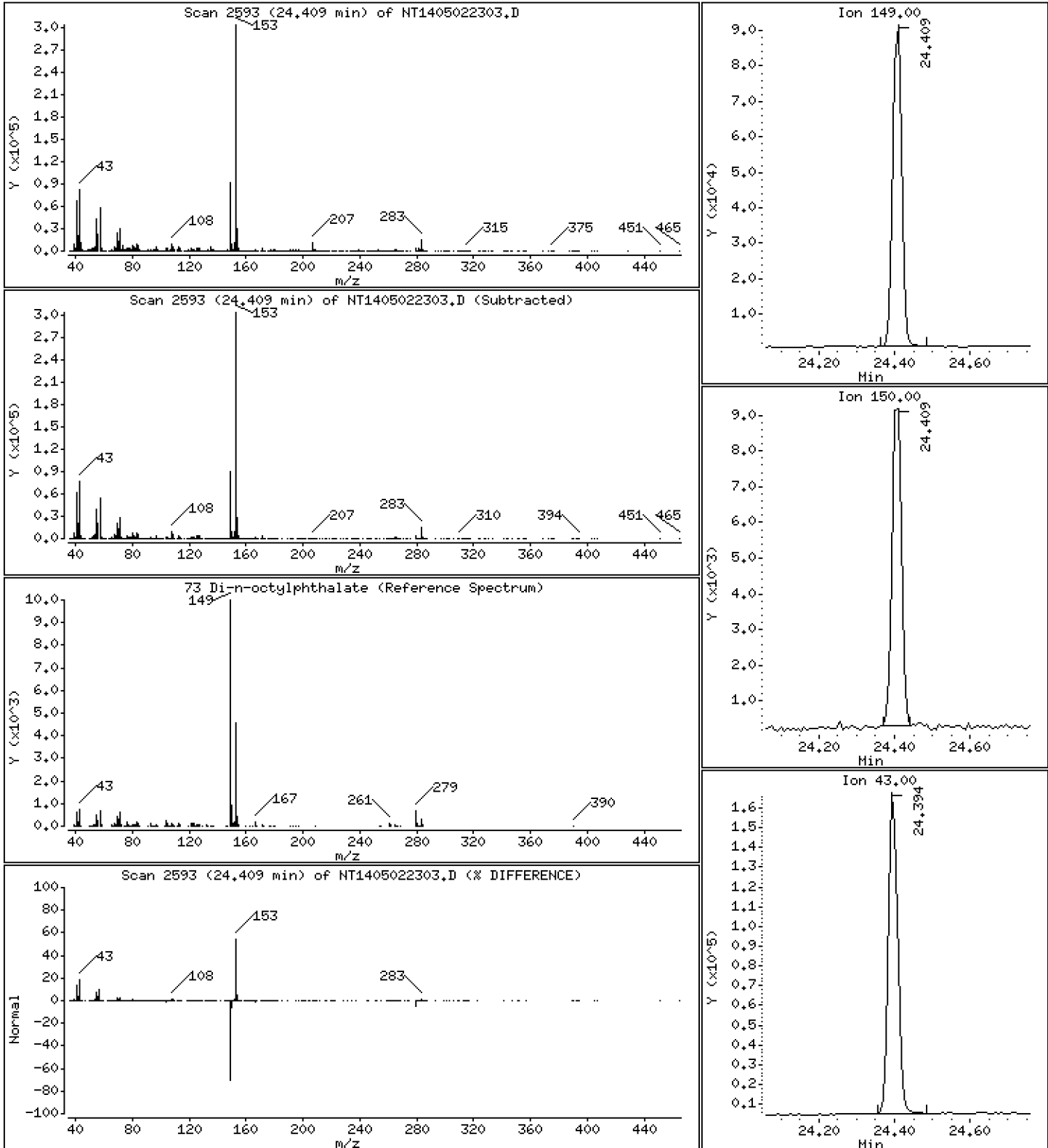
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 0,4735 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

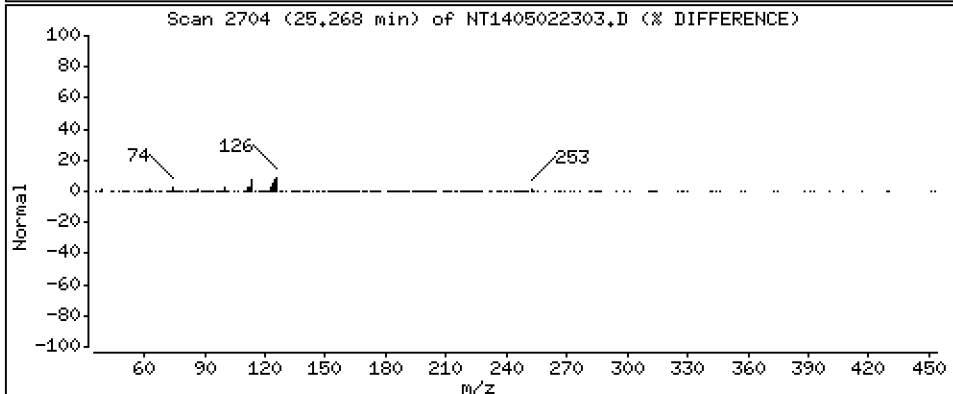
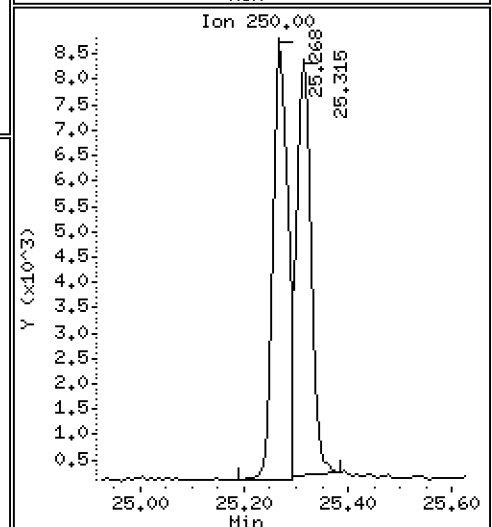
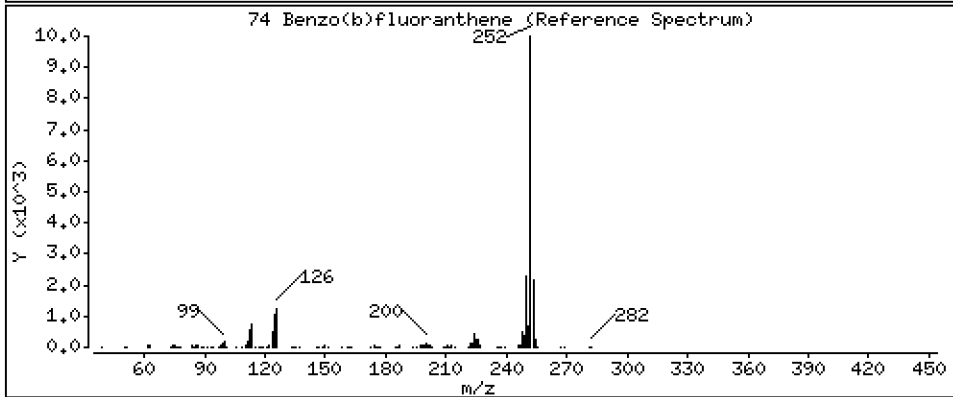
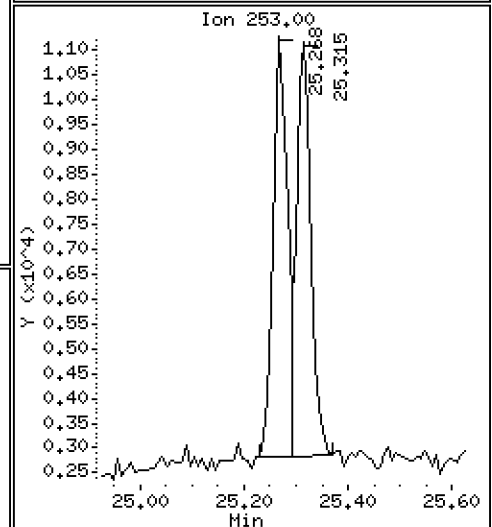
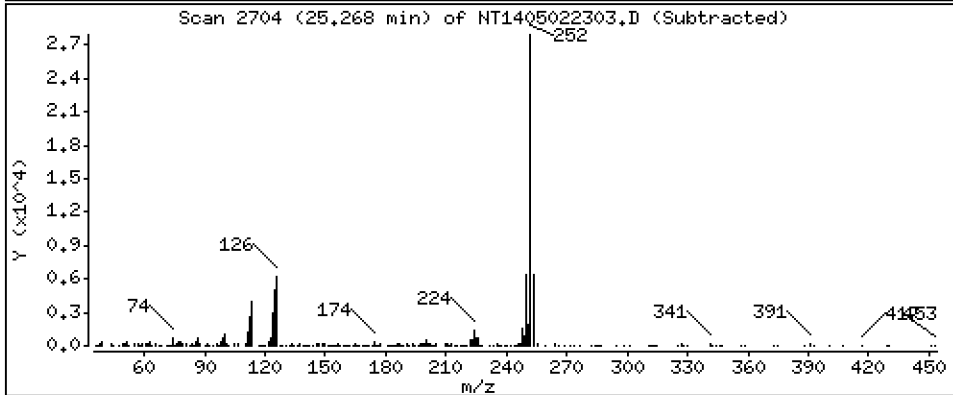
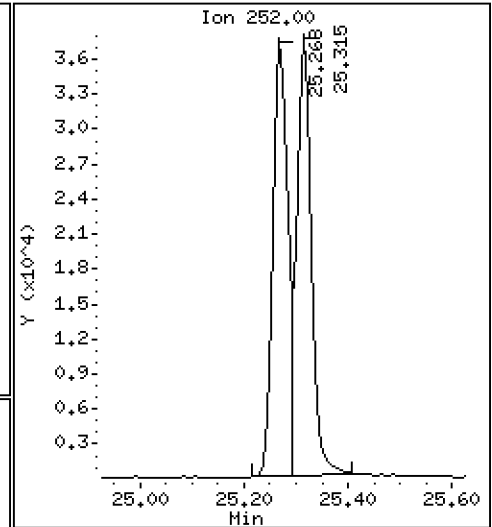
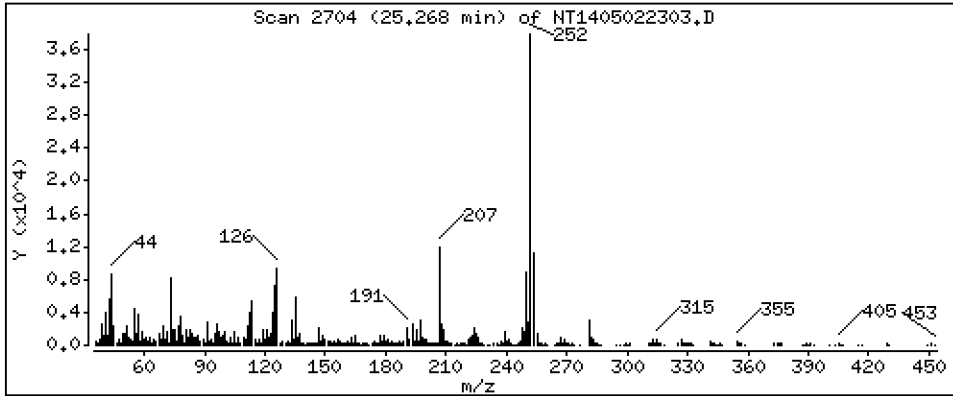
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 0,4883 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

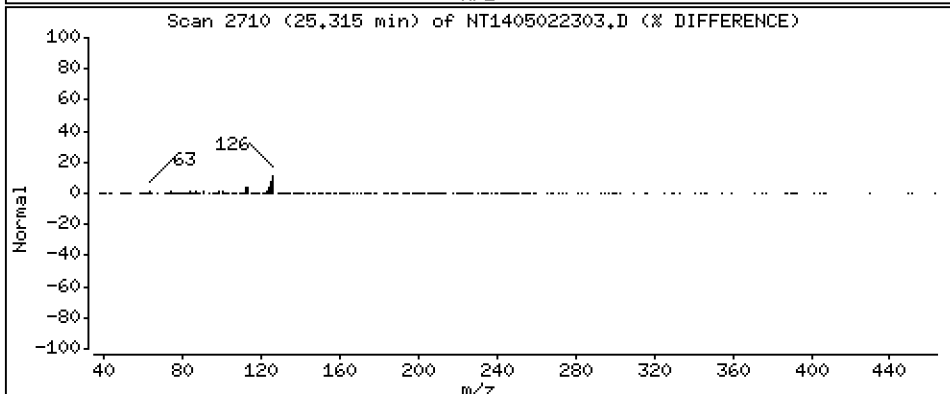
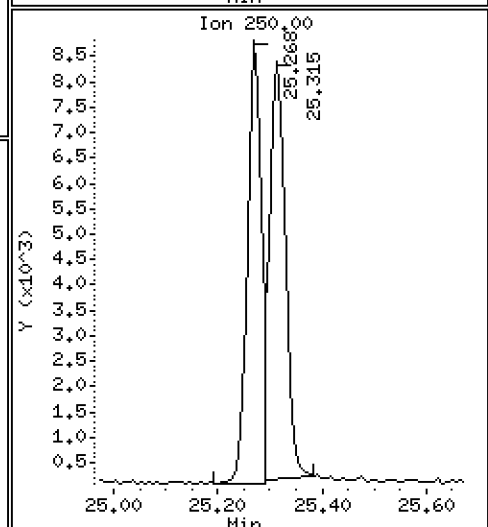
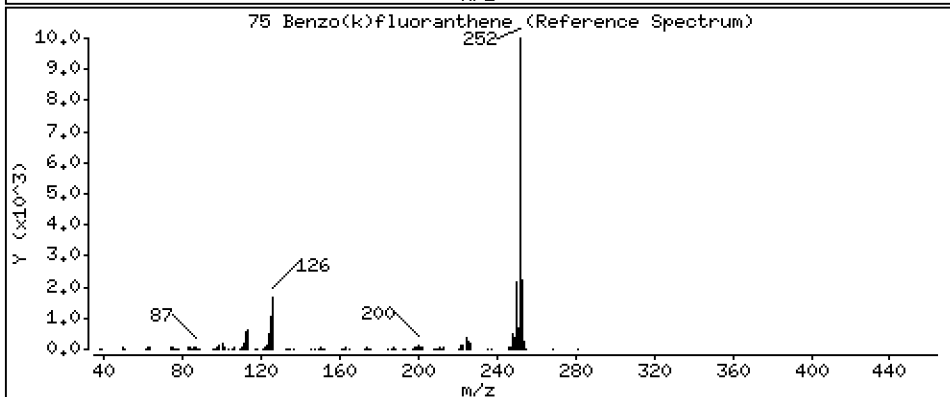
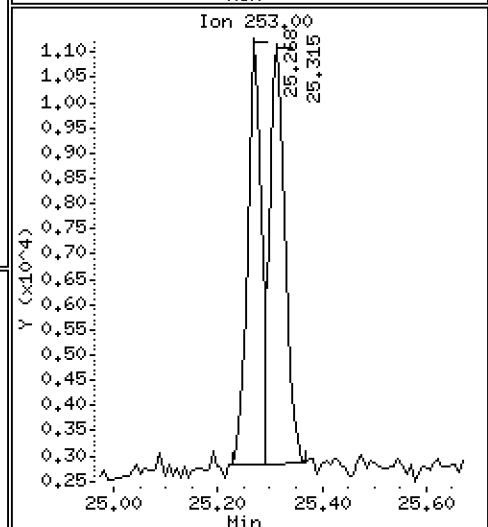
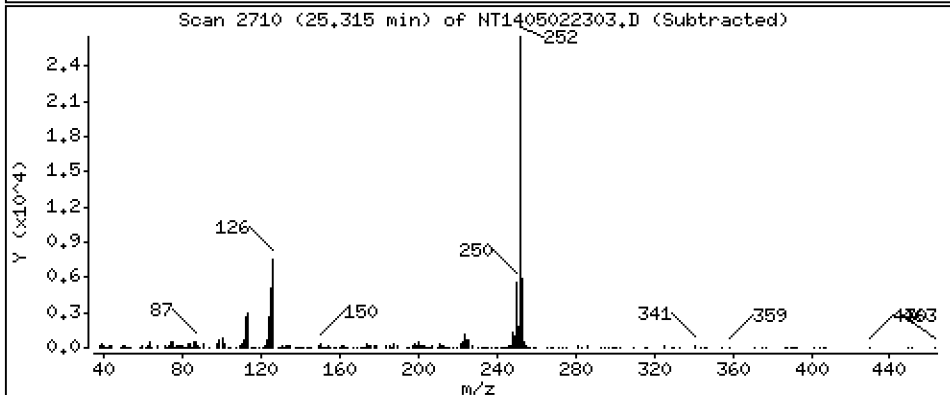
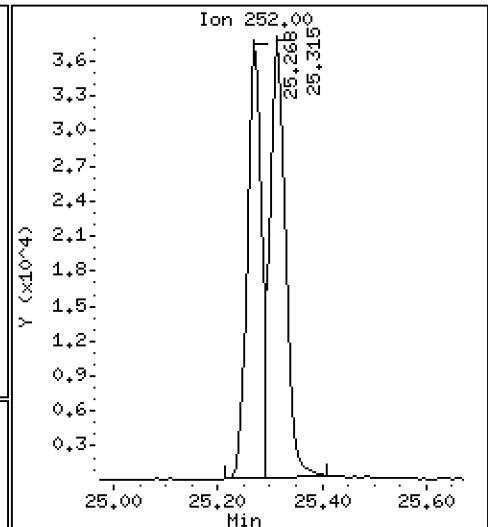
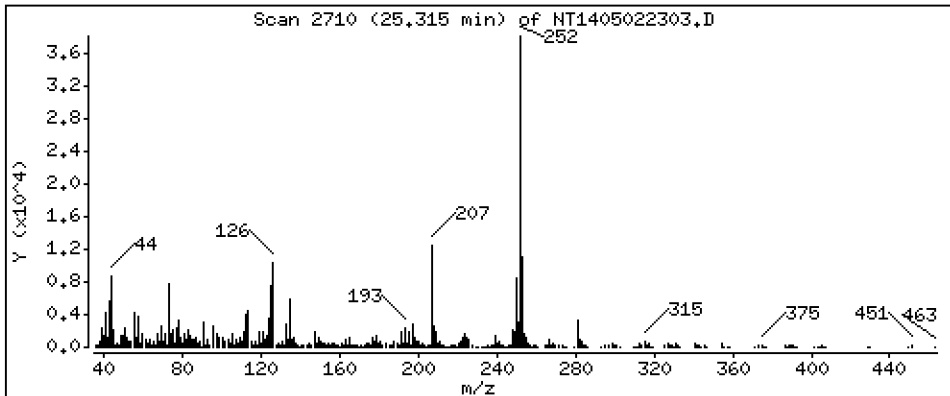
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 0,5399 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

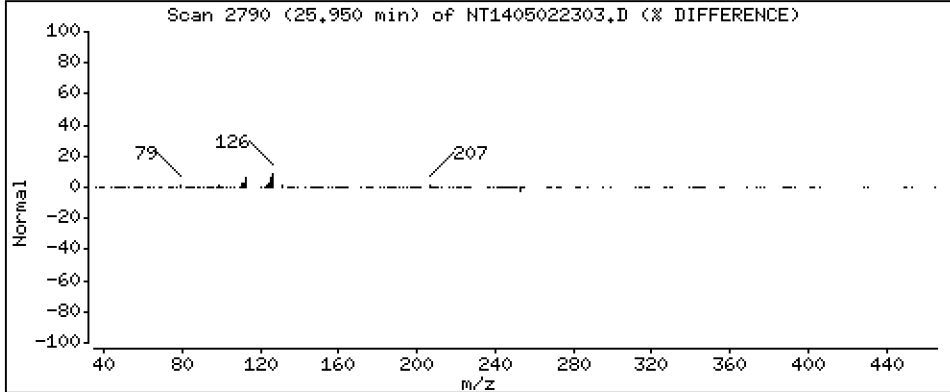
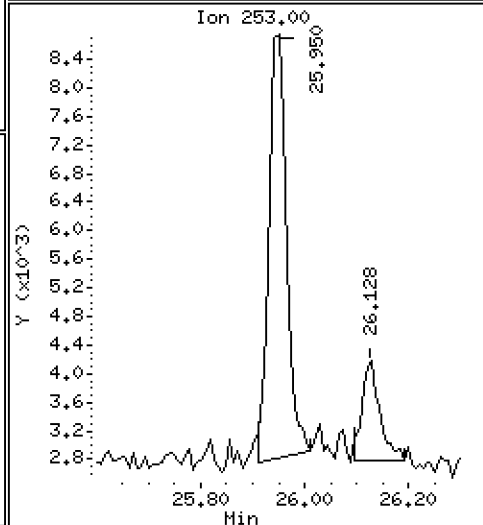
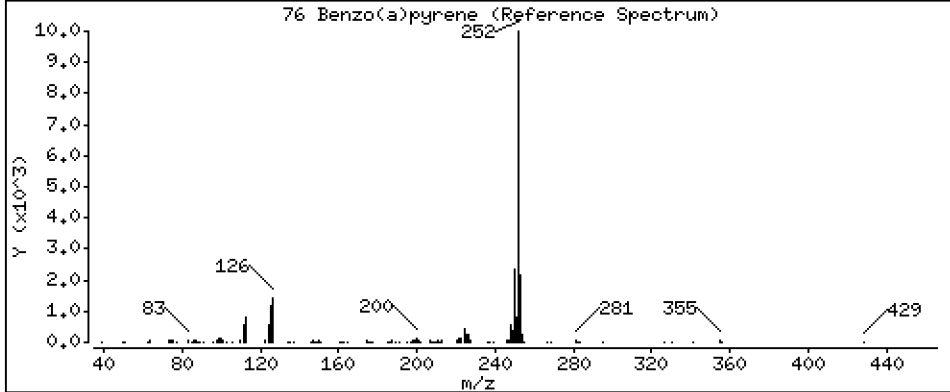
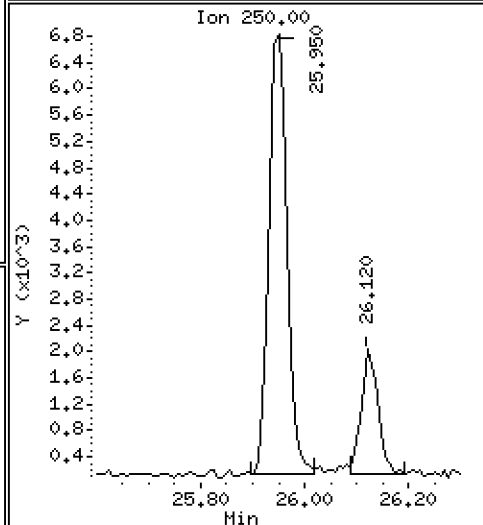
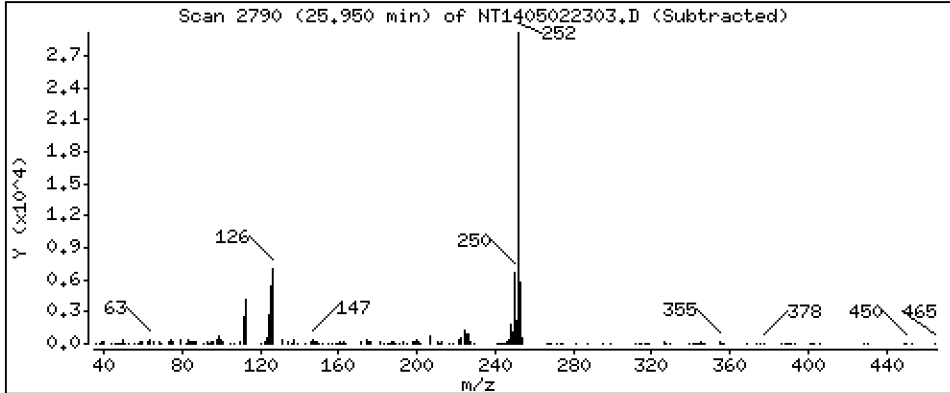
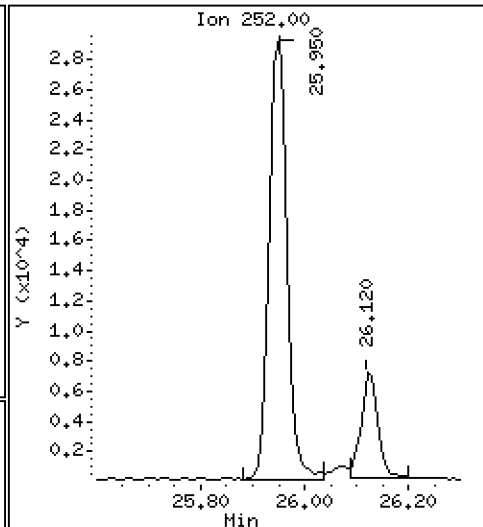
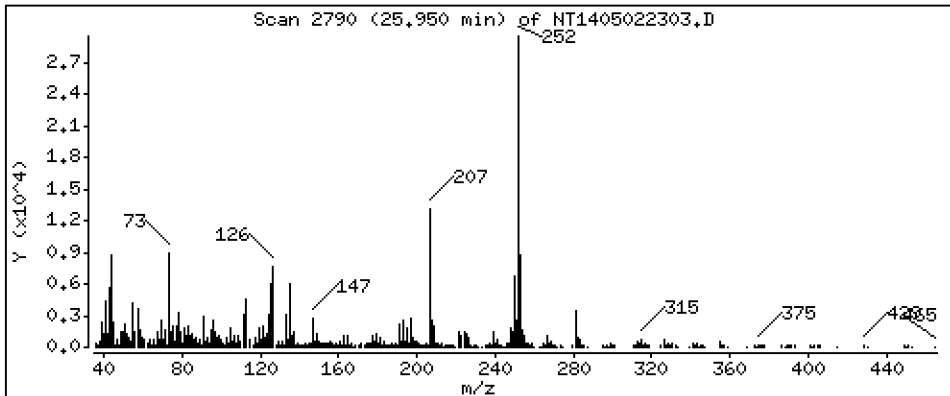
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 0,5287 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

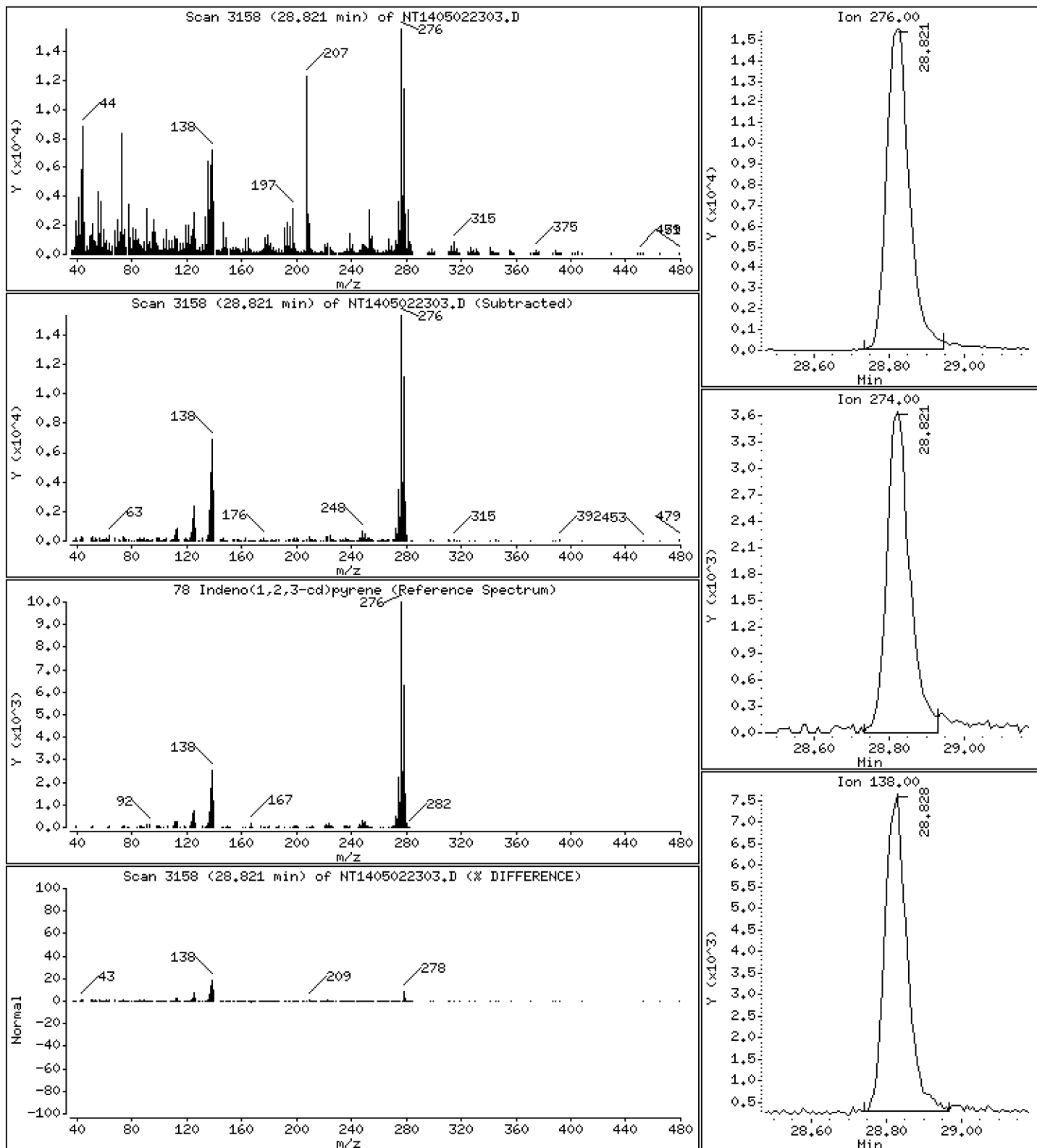
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 0,3709 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

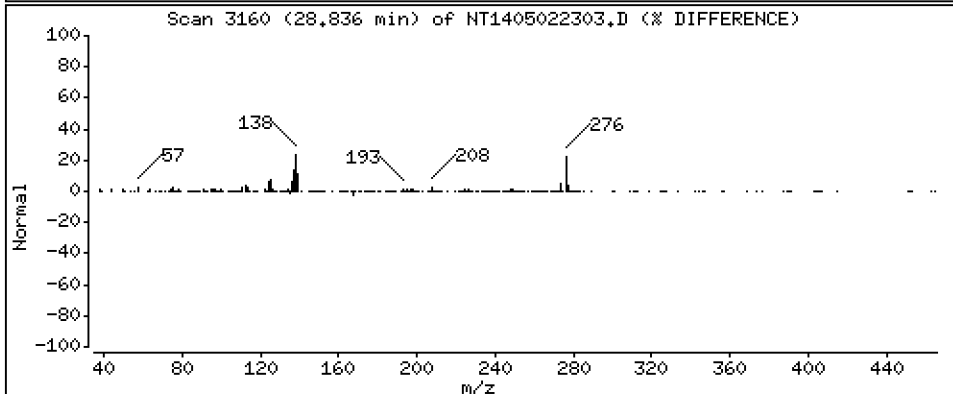
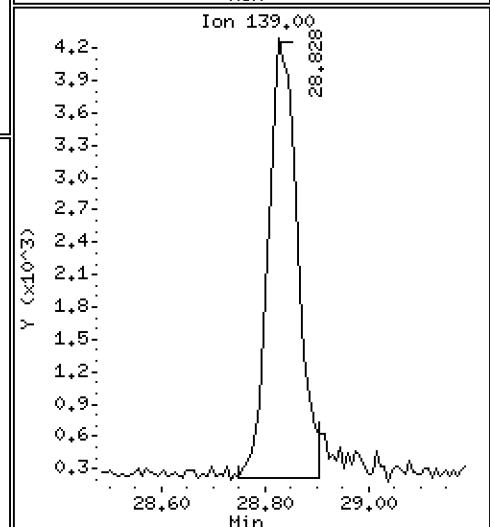
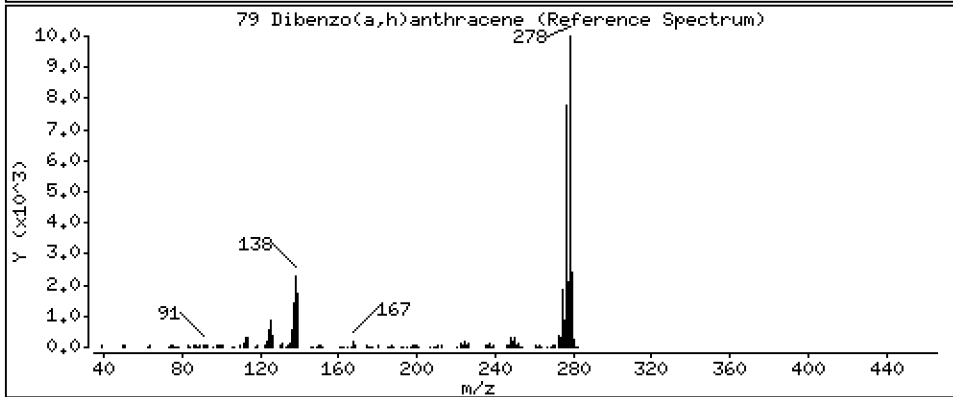
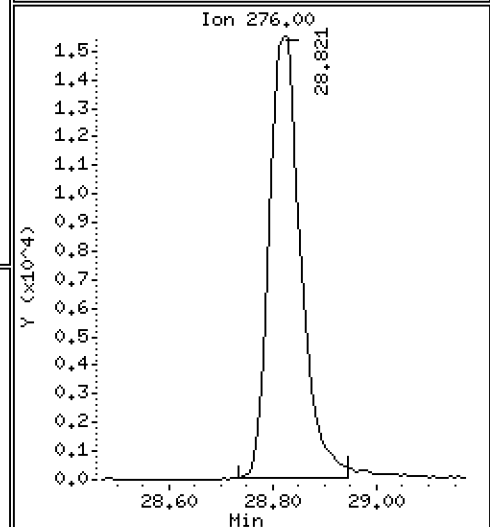
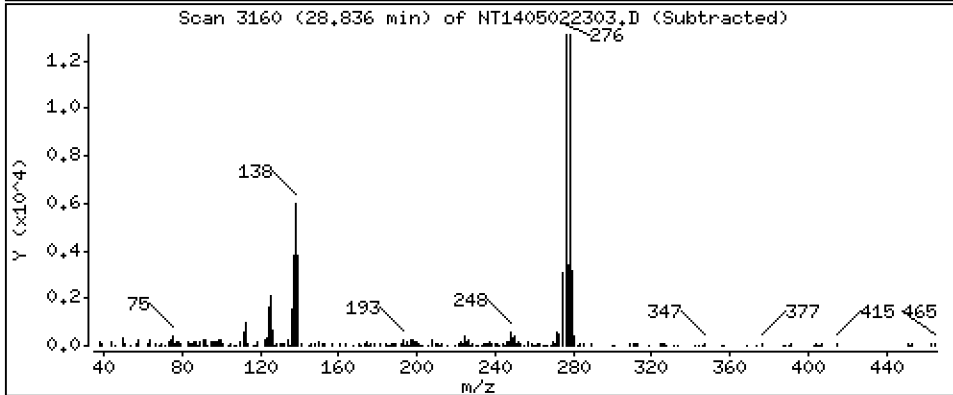
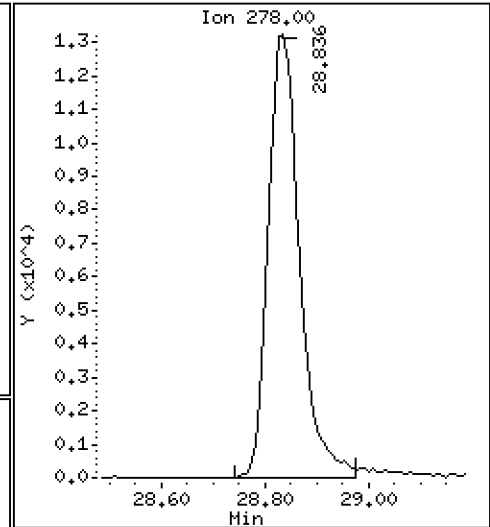
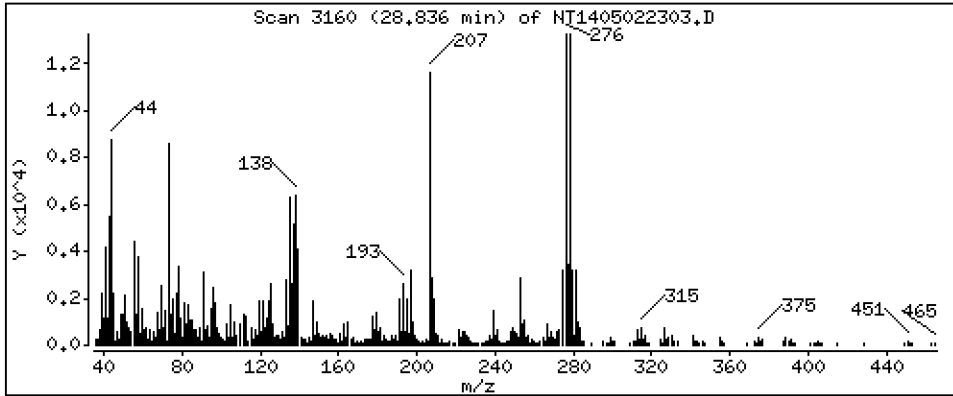
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,3857 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

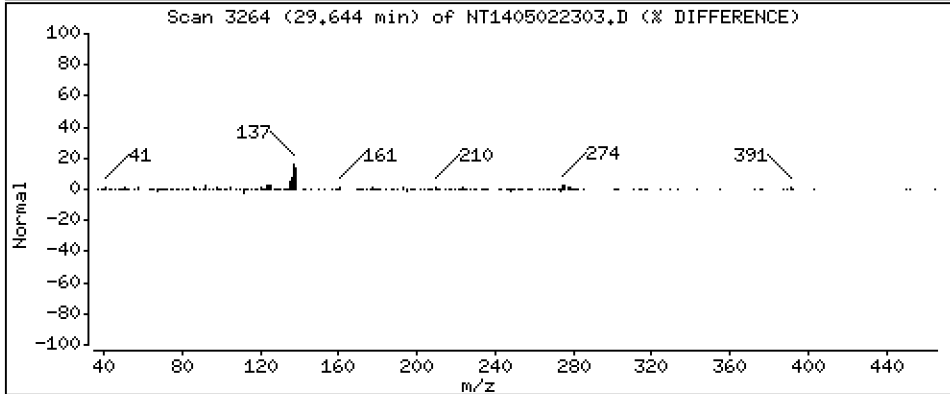
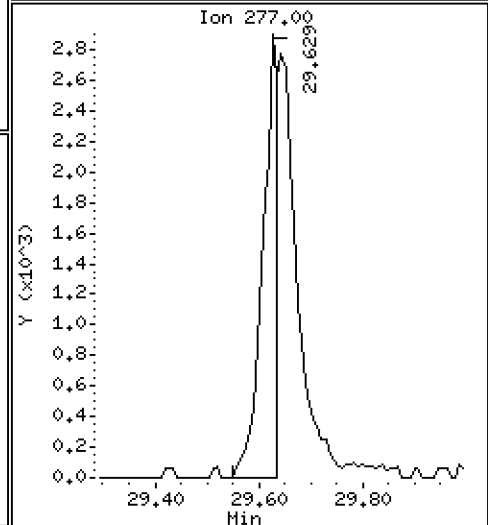
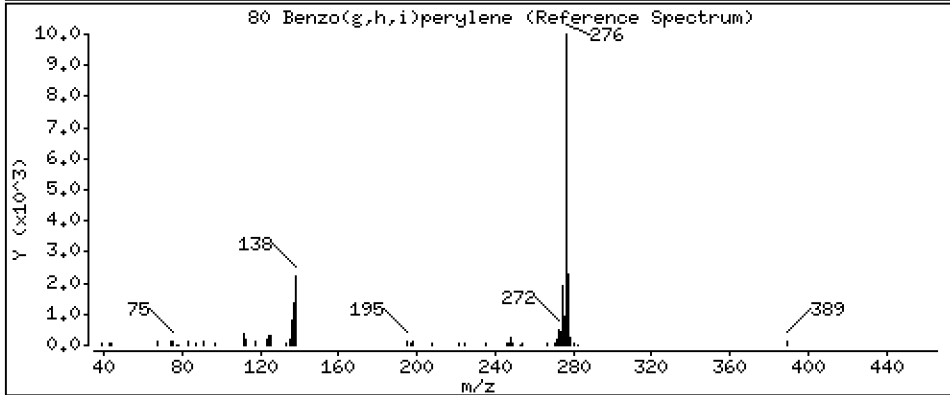
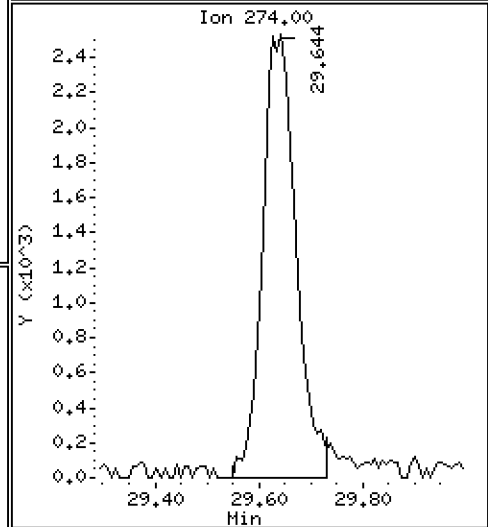
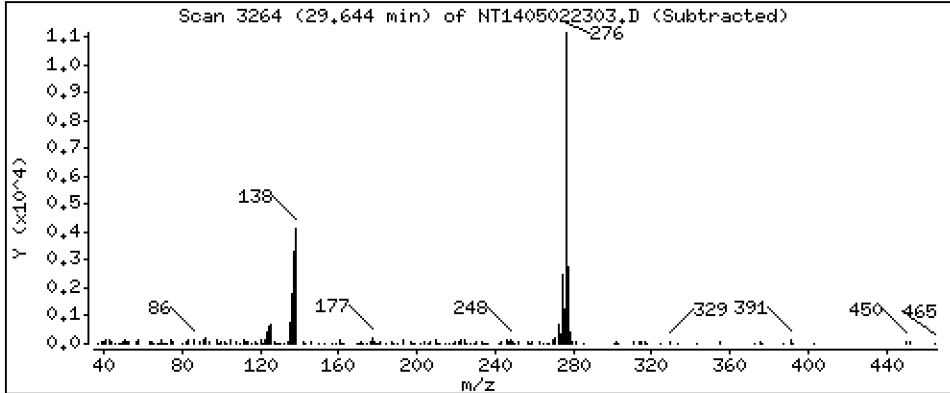
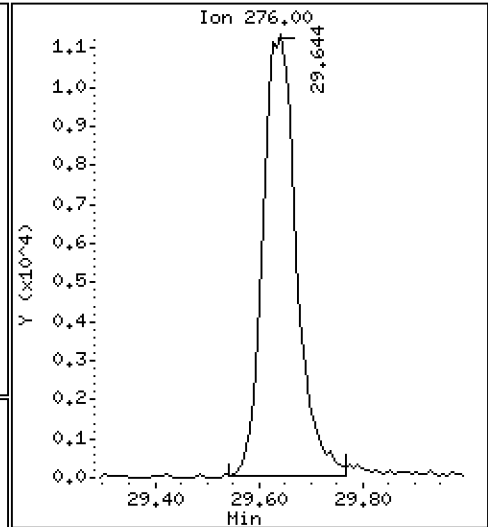
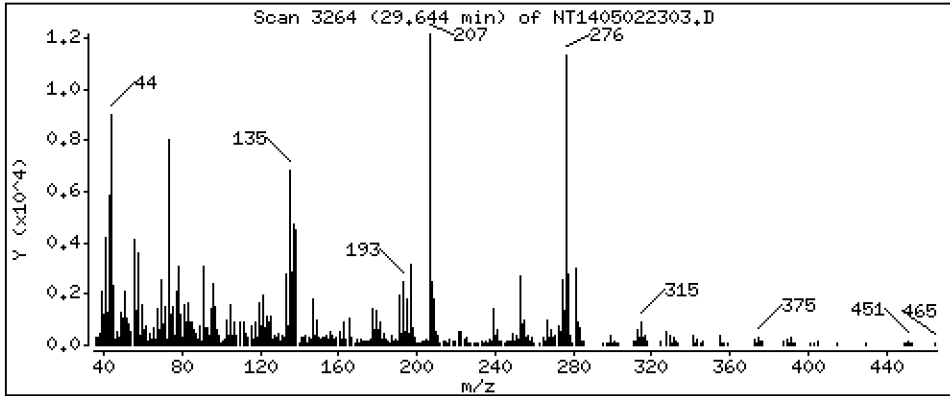
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 0,3410 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

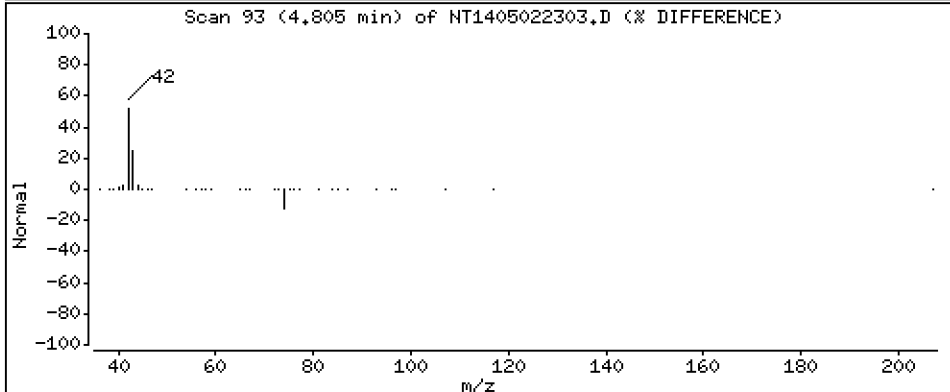
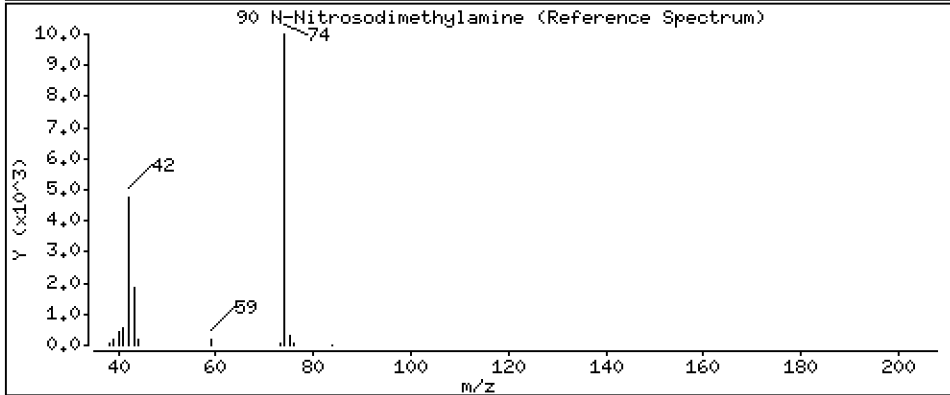
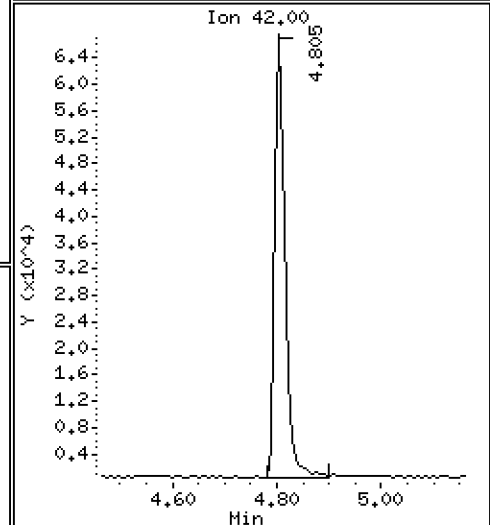
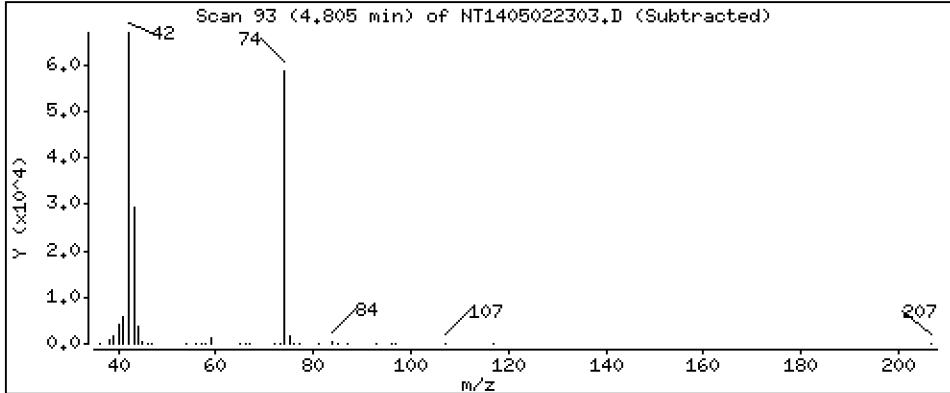
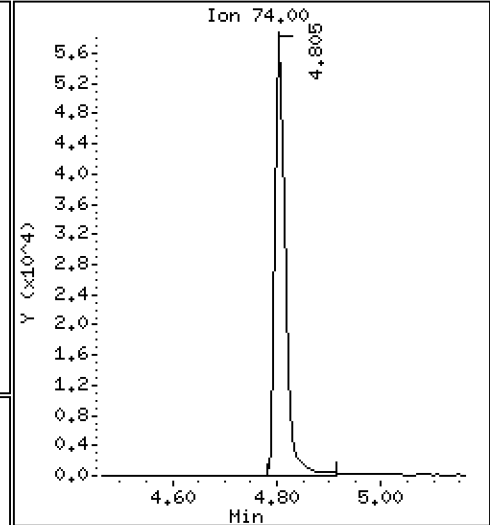
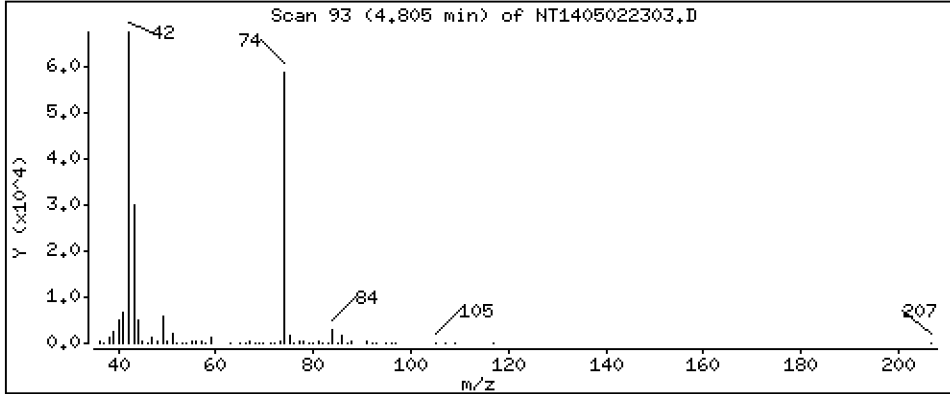
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 0,9603 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

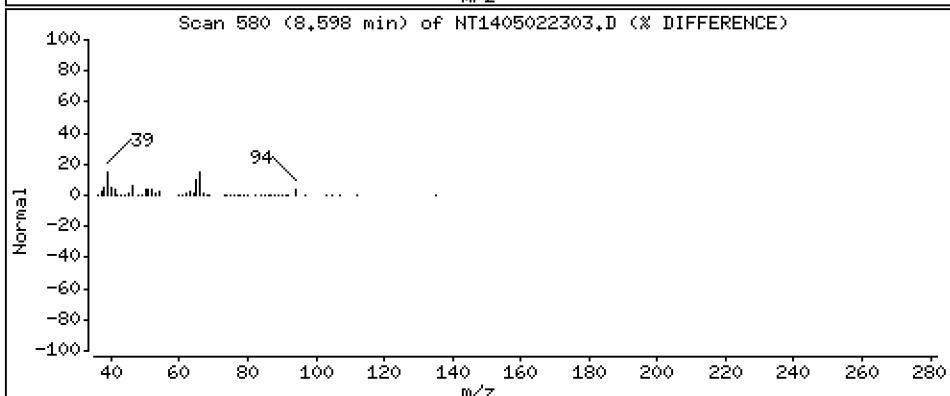
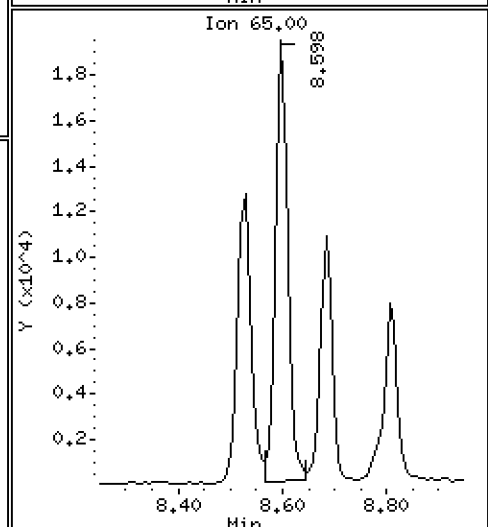
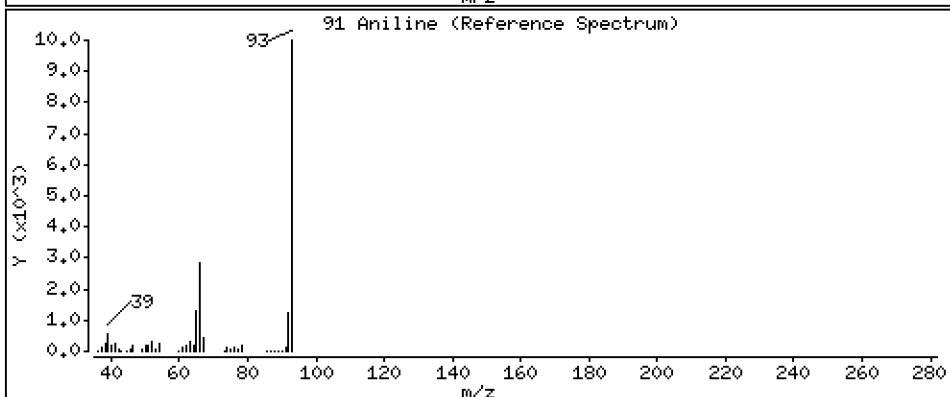
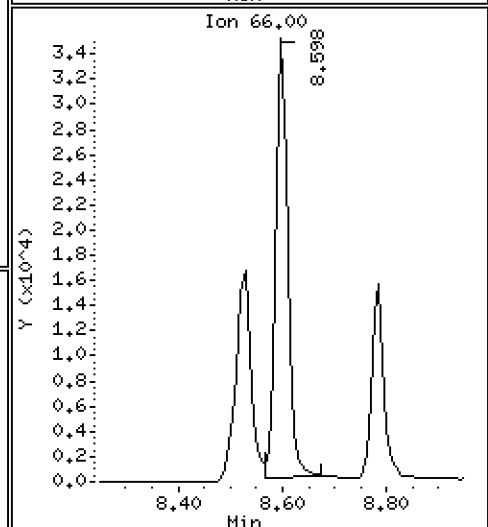
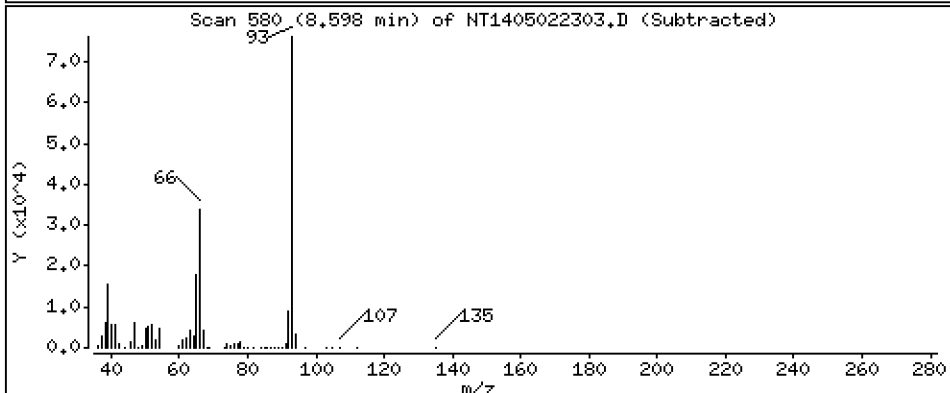
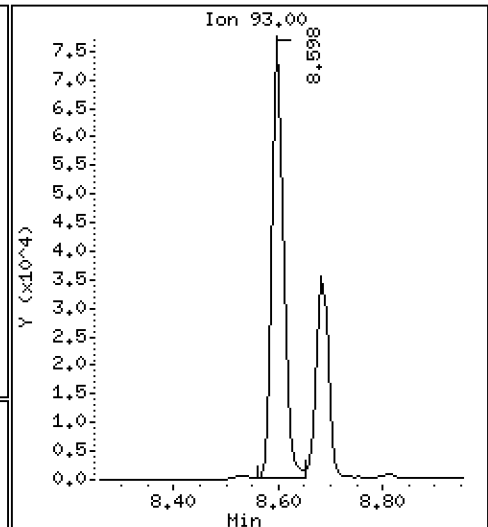
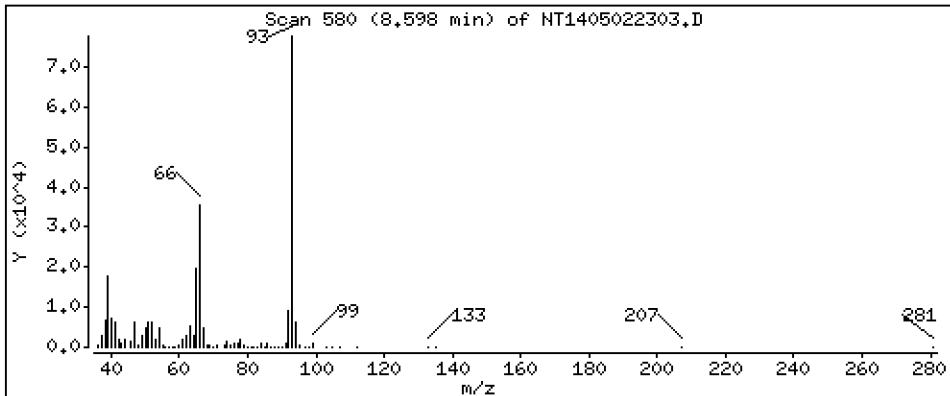
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

91 Aniline

Concentration: 0,8772 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

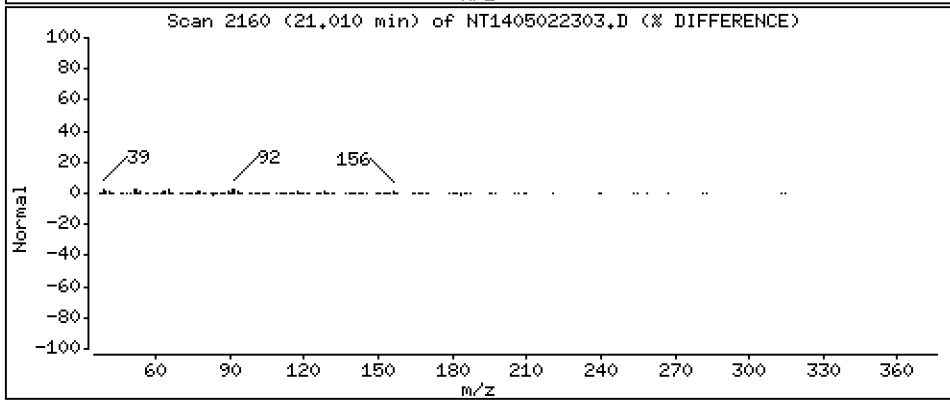
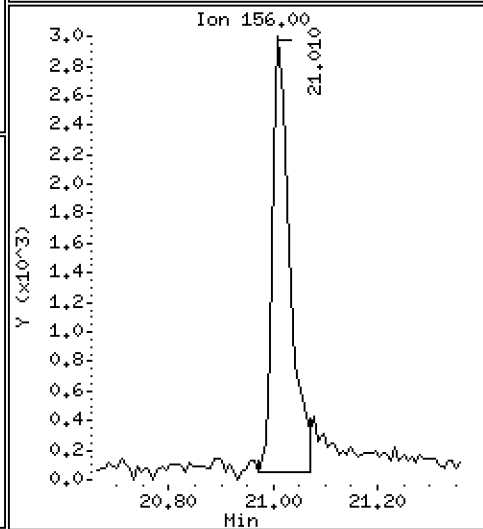
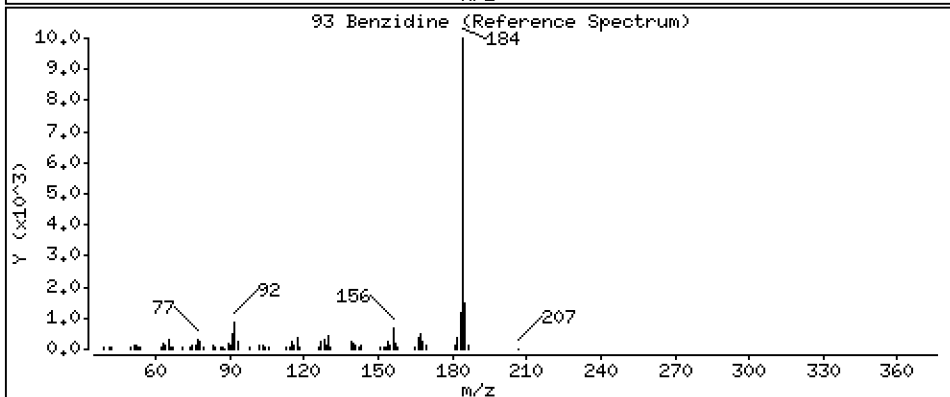
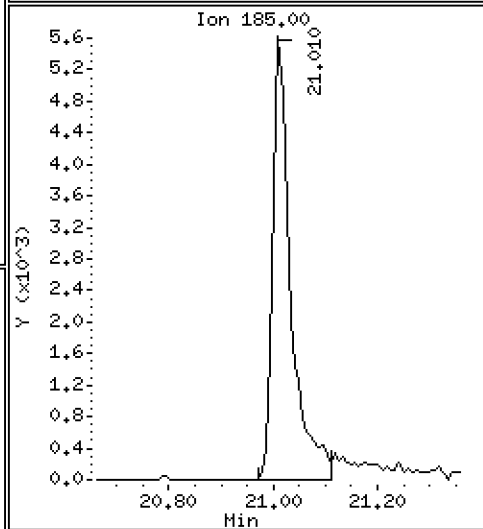
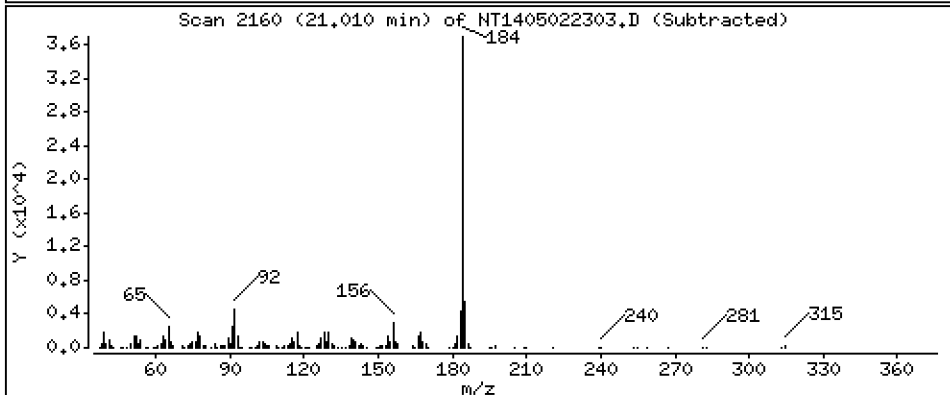
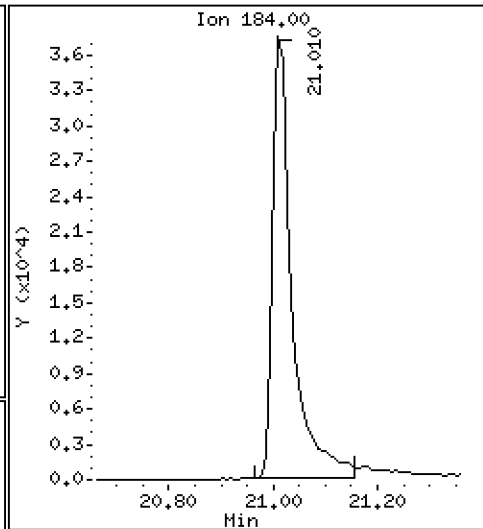
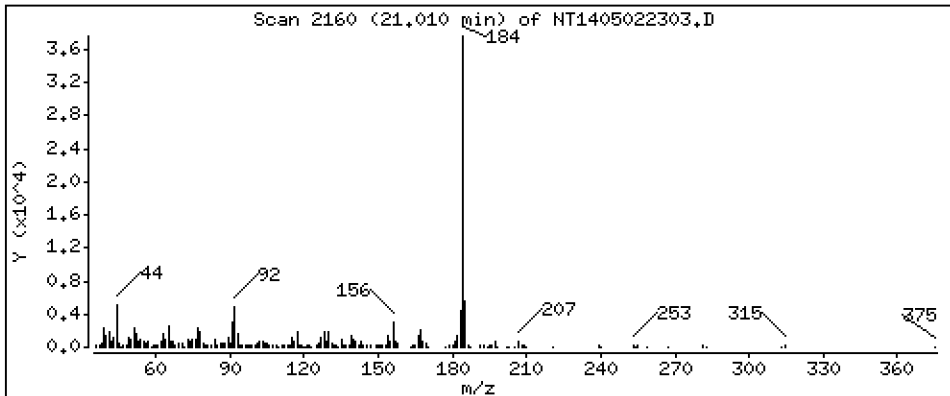
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 1,091 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

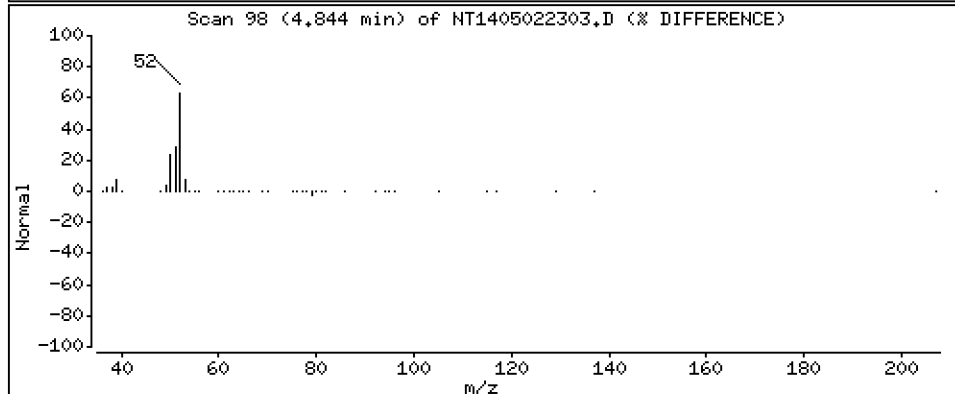
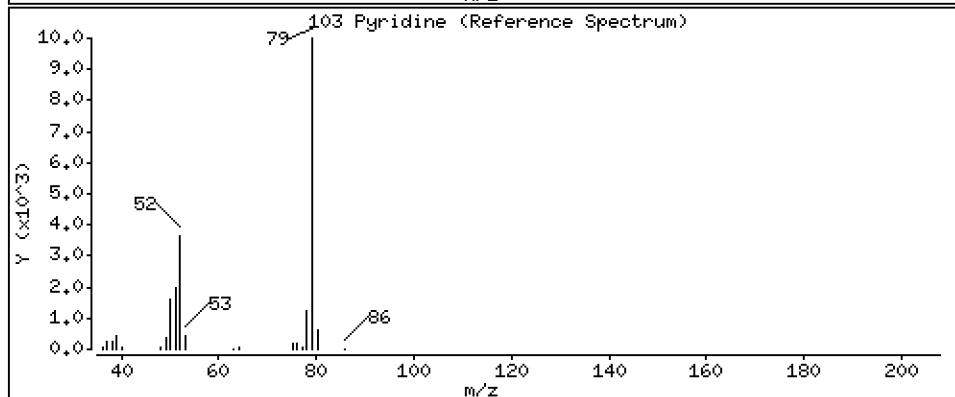
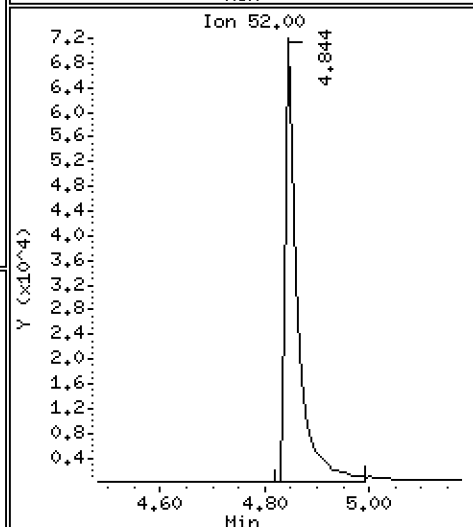
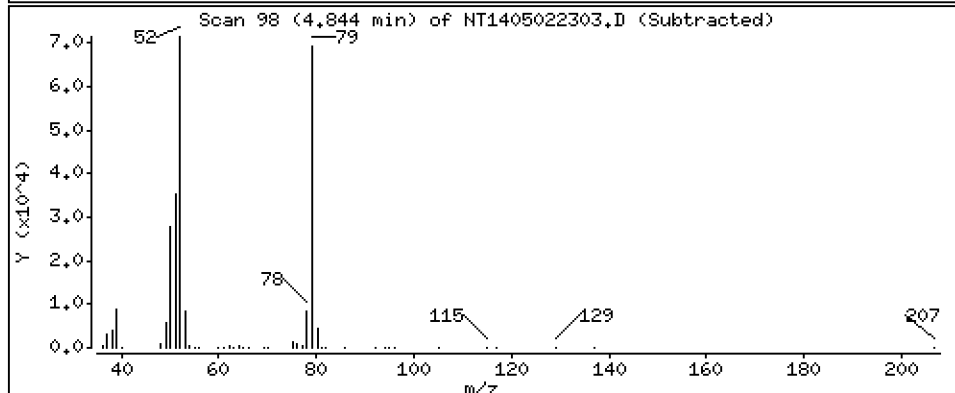
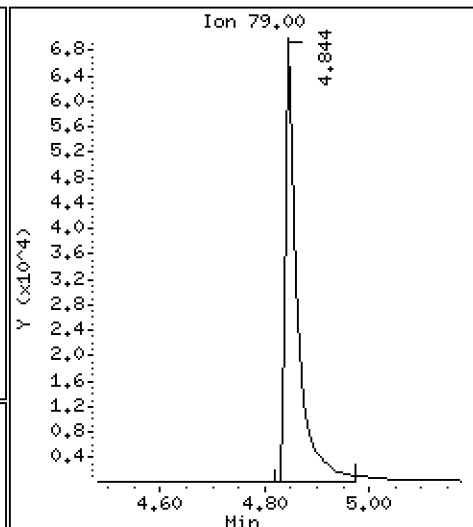
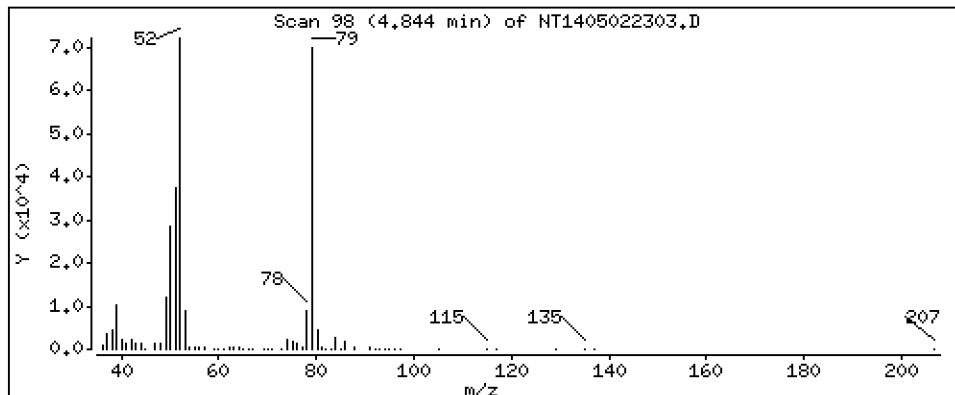
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,5036 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

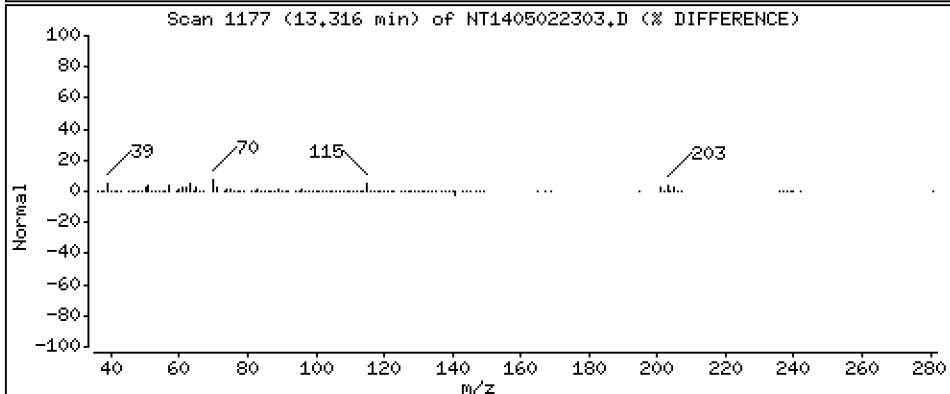
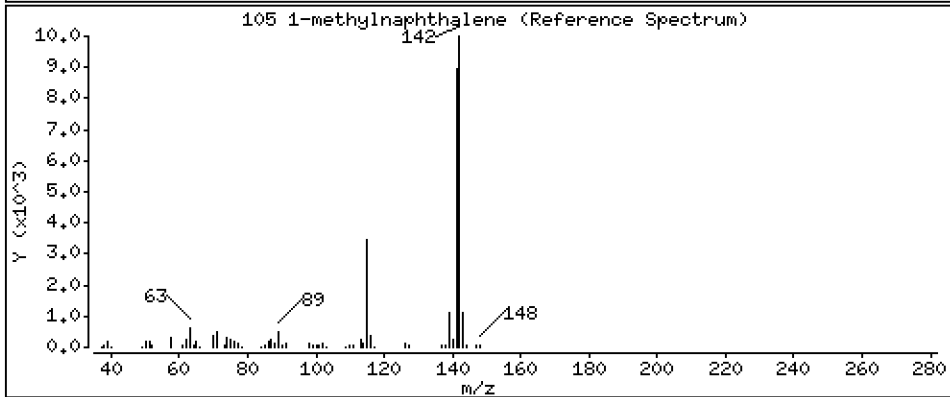
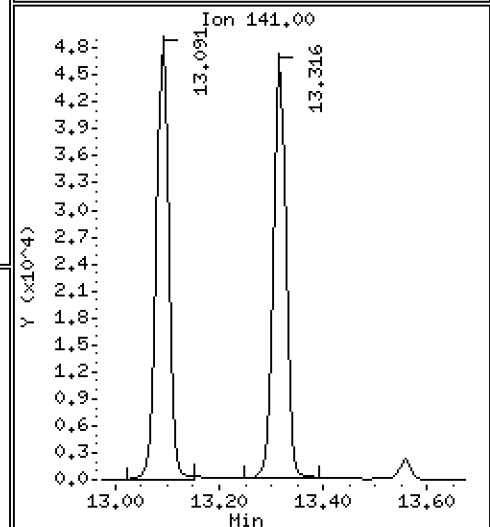
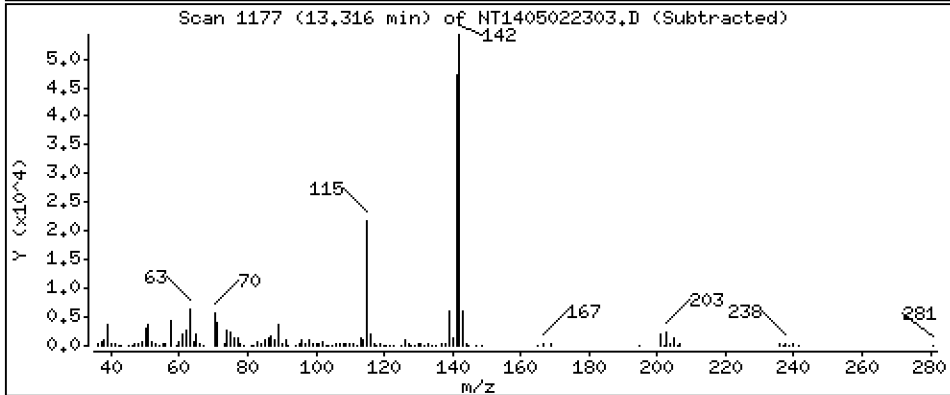
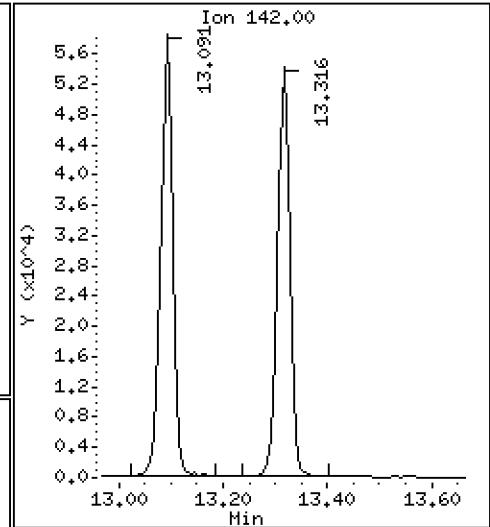
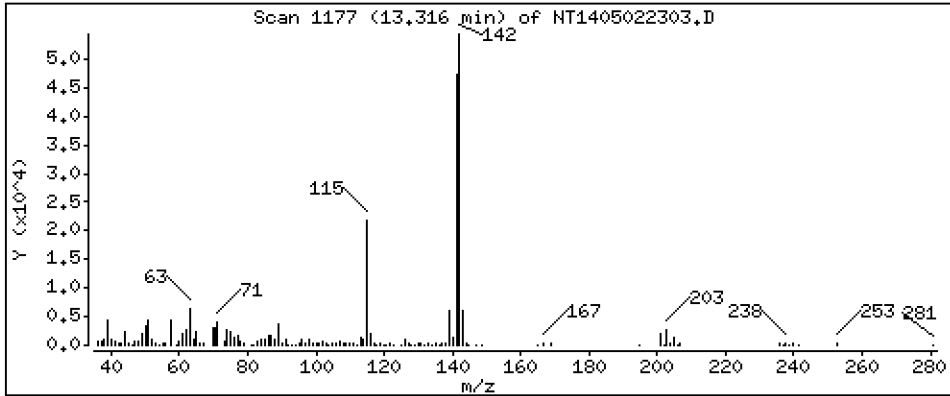
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 0,4510 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

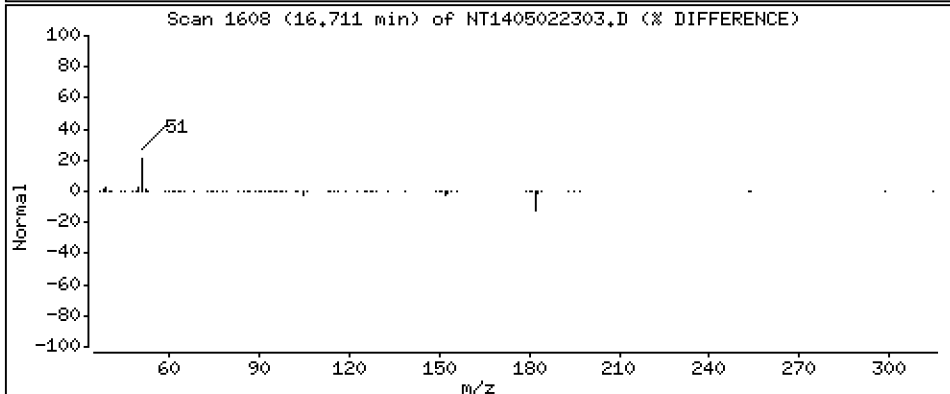
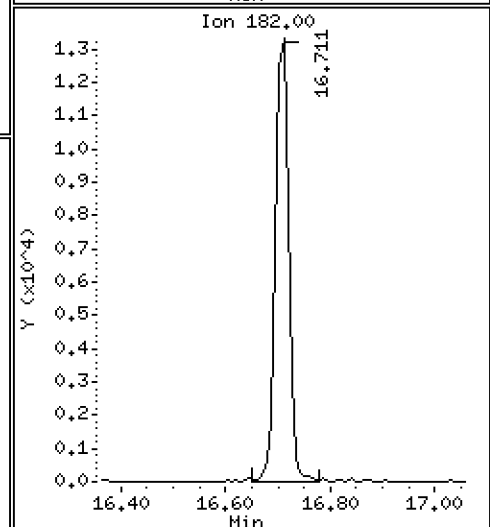
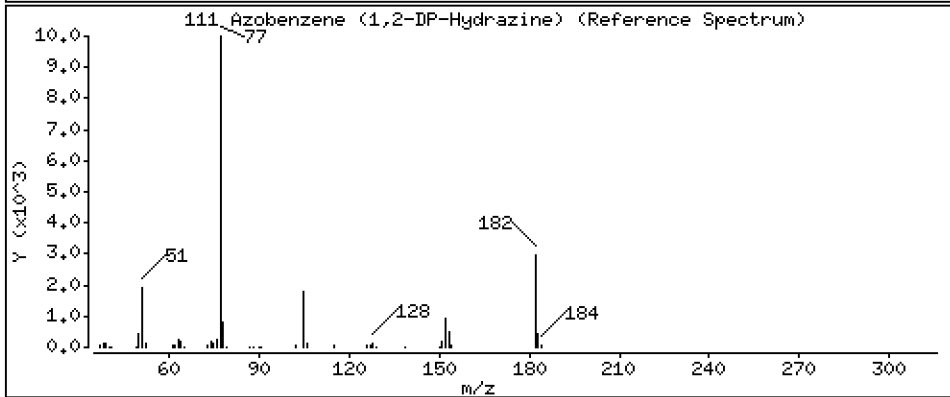
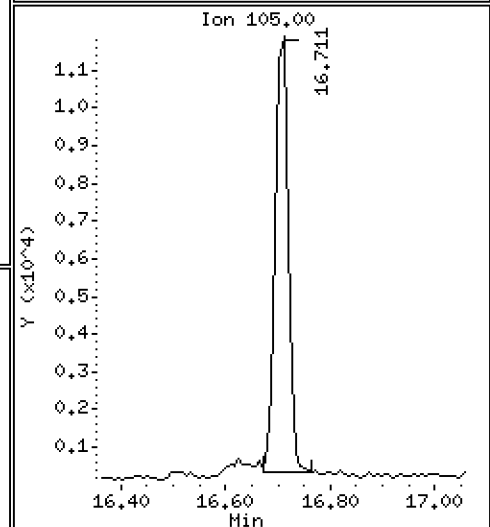
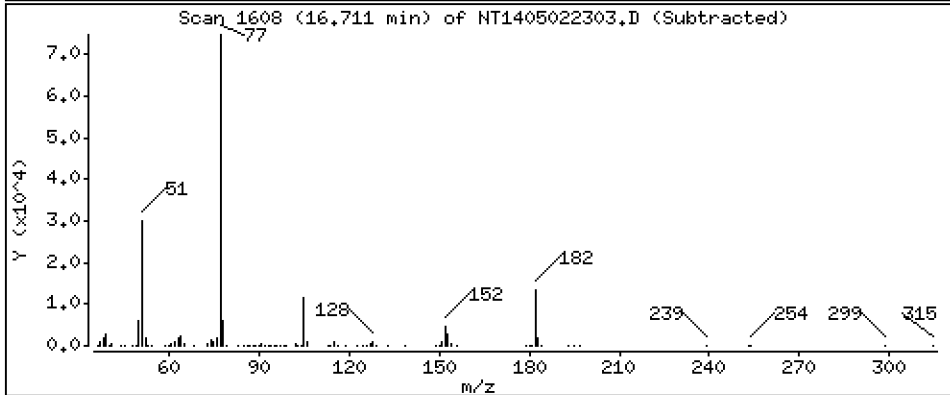
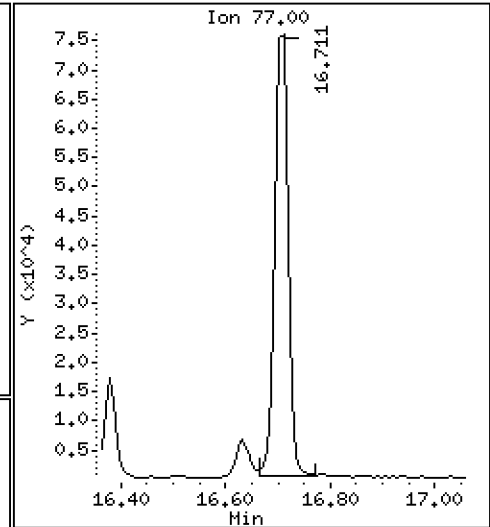
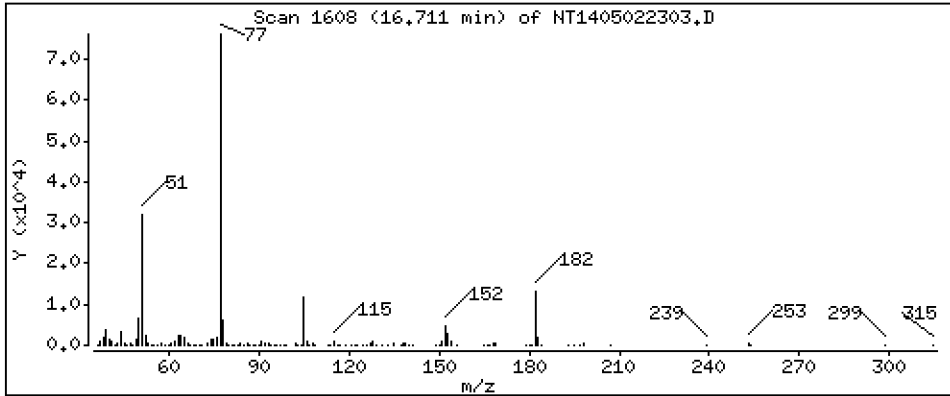
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 0,4638 ug/mL







Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

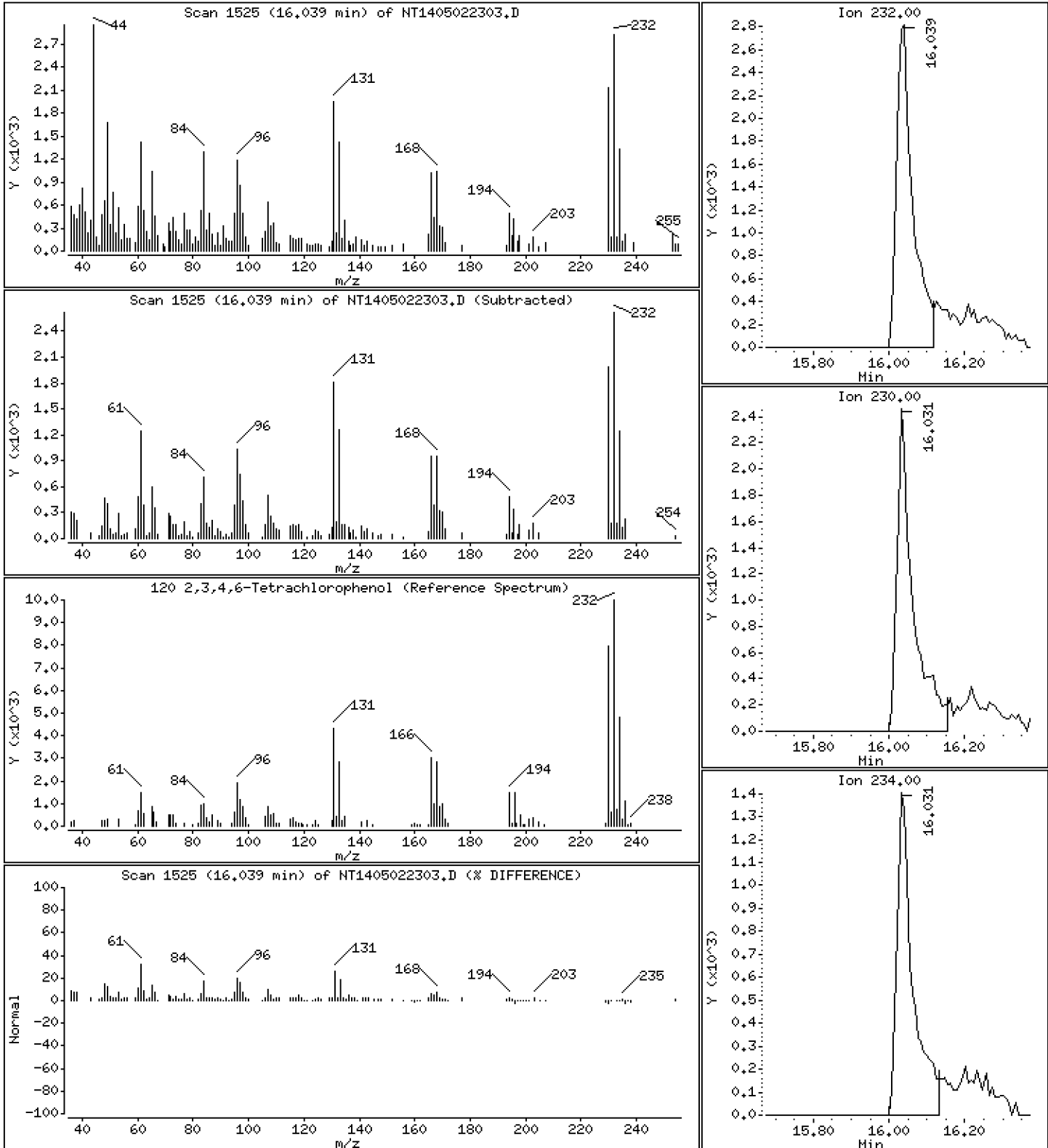
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 0,2198 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230502.b\NT1405022303.D  
 Lab Smp Id: SLE0049-LCV1  
 Inj Date : 02-MAY-2023 15:05 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0049-LCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Meth Date : 03-May-2023 12:20 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 3  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.914	6.914	(0.756)	66102	0.70870	0.7087
\$ 2 Phenol-d5	99		8.505	8.505	(0.931)	88009	0.67236	0.6724
3 Phenol	94		8.528	8.528	(0.933)	65077	0.44360	0.4436
\$ 5 2-Chlorophenol-d4	132		8.783	8.783	(0.961)	66634	0.71559	0.7156
4 Bis(2-Chloroethyl)ether	93		8.683	8.690	(0.950)	54096	0.48297	0.4830
6 2-Chlorophenol	128		8.806	8.814	(0.964)	47834	0.46813	0.4681
7 1,3-Dichlorobenzene	146		9.077	9.077	(0.993)	50877	0.49727	0.4973
* 8 1,4-Dichlorobenzene-d4	152		9.139	9.147	(1.000)	257916	4.00000	
9 1,4-Dichlorobenzene	146		9.170	9.178	(1.003)	47107	0.48297	0.4830
\$ 10 1,2-Dichlorobenzene-d4	152		9.504	9.504	(1.040)	30196	0.51191	0.5119
12 1,2-Dichlorobenzene	146		9.535	9.535	(1.043)	47867	0.49324	0.4932
11 Benzyl alcohol	108		9.427	9.419	(1.031)	23133	0.34570	0.3457
14 2,2'-oxybis(1-Chloropropane)	121		9.714	9.714	(1.063)	14686	0.44826	0.4483 (M)
13 2-Methylphenol	108		9.644	9.644	(1.055)	44046	0.45005	0.4501
17 Hexachloroethane	117		10.125	10.125	(1.108)	22539	0.48472	0.4847
16 N-Nitroso-di-n-propylamine	70		9.978	9.978	(1.092)	40473	0.41122	0.4112
15 4-Methylphenol	108		9.916	9.916	(1.085)	46765	0.41959	0.4196
\$ 18 Nitrobenzene-d5	82		10.249	10.249	(0.880)	58430	0.47405	0.4741
19 Nitrobenzene	77		10.280	10.288	(0.883)	59496	0.45153	0.4515
20 Isophorone	82		10.730	10.738	(0.922)	72134	0.39882	0.3988
21 2-Nitrophenol	139		10.917	10.917	(0.938)	17753	0.25596	0.2560
22 2,4-Dimethylphenol	107		10.963	10.971	(0.941)	105870	1.06629	1.066
23 Bis(2-Chloroethoxy)methane	93		11.165	11.165	(0.959)	54678	0.47035	0.4703
24 Benzoic acid	105		11.250	11.227	(0.966)	247	0.00300	0.003004
25 2,4-Dichlorophenol	162		11.382	11.382	(0.977)	58294	0.59699	0.5970
26 1,2,4-Trichlorobenzene	180		11.560	11.559	(0.993)	36451	0.49183	0.4918
* 27 Naphthalene-d8	136		11.644	11.652	(1.000)	1001489	4.00000	
28 Naphthalene	128		11.691	11.691	(1.004)	135616	0.50379	0.5038
29 4-Chloroaniline	127		11.822	11.822	(1.015)	100534	0.86319	0.8632
30 Hexachlorobutadiene	225		12.046	12.046	(1.035)	16966	0.50072	0.5007
31 4-Chloro-3-methylphenol	107		12.797	12.789	(1.099)	84334	0.95048	0.9505
32 2-Methylnaphthalene	142		13.091	13.091	(1.124)	91241	0.46792	0.4679
33 Hexachlorocyclopentadiene	237		13.555	13.563	(0.887)	15549	0.44212	0.4421

Compounds	QUANT SIG					CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)	
34 2,4,6-Trichlorophenol	196	13.726	13.726	(0.898)	34937	0.79741	0.7974	
35 2,4,5-Trichlorophenol	196	13.811	13.803	(0.904)	34263	0.73612	0.7361	
§ 36 2-Fluorobiphenyl	172	13.873	13.880	(0.908)	86820	0.52168	0.5217	
37 2-Chloronaphthalene	162	14.089	14.097	(0.922)	76206	0.47967	0.4797	
38 2-Nitroaniline	65	14.360	14.360	(0.940)	69490	0.81883	0.8188	
39 Dimethylphthalate	163	14.786	14.786	(0.968)	81906	0.49978	0.4998	
40 Acenaphthylene	152	14.972	14.972	(0.980)	143442	0.56573	0.5657	
41 2,6-Dinitrotoluene	165	14.925	14.933	(0.977)	33675	0.90634	0.9063	
* 42 Acenaphthene-d10	164	15.281	15.289	(1.000)	477815	4.00000		
43 3-Nitroaniline	138	15.219	15.227	(0.996)	37773	0.80914	0.8091	
44 Acenaphthene	153	15.351	15.351	(1.005)	76455	0.50336	0.5034	
45 2,4-Dinitrophenol	184	Compound Not Detected.						
46 Dibenzofuran	168	15.675	15.683	(1.026)	104934	0.48393	0.4839	
47 4-Nitrophenol	109	15.621	15.552	(1.022)	4617	0.16996	0.1700	
48 2,4-Dinitrotoluene	165	15.745	15.745	(1.030)	41799	0.83089	0.8309	
50 Diethylphthalate	149	16.240	16.247	(1.063)	89389	0.50391	0.5039	
49 Fluorene	166	16.394	16.402	(1.073)	87735	0.45724	0.4572	
51 4-Chlorophenyl-phenylether	204	16.379	16.386	(1.072)	35527	0.44762	0.4476	
52 4-Nitroaniline	138	16.510	16.502	(1.080)	34551	0.83696	0.8370	
53 4,6-Dinitro-2-methylphenol	198	16.610	16.595	(0.906)	830	0.03247	0.03247	
54 N-Nitrosodiphenylamine	169	16.633	16.641	(0.907)	55852	0.48119	0.4812	
§ 55 2,4,6-Tribromophenol	330	16.942	16.942	(1.109)	7734	0.49235	0.4924	
56 4-Bromophenyl-phenylether	248	17.389	17.389	(0.948)	16794	0.43988	0.4399	
57 Hexachlorobenzene	284	17.714	17.714	(0.966)	18034	0.46709	0.4671	
58 Pentachlorophenol	266	18.132	18.077	(0.989)	247	0.01006	0.01006	
* 59 Phenanthrene-d10	188	18.341	18.341	(1.000)	821905	4.00000		
60 Phenanthrene	178	18.387	18.387	(1.003)	116407	0.50091	0.5009	
61 Anthracene	178	18.480	18.480	(1.008)	110288	0.49482	0.4948	
62 Carbazole	167	18.813	18.812	(1.026)	103780	0.50318	0.5032	
63 Di-n-butylphthalate	149	19.594	19.594	(1.068)	138366	0.44007	0.4401	
64 Fluoranthene	202	20.770	20.770	(0.888)	110079	0.50510	0.5051	
65 Pyrene	202	21.195	21.195	(0.906)	113073	0.50240	0.5024	
§ 66 Terphenyl-d14	244	21.474	21.474	(0.918)	75451	0.43562	0.4356	
67 Butylbenzylphthalate	149	22.388	22.388	(0.957)	57251	0.39505	0.3950	
68 Benzo(a)anthracene	228	23.356	23.356	(0.999)	86898	0.51562	0.5156	
* 69 Chrysene-d12	240	23.387	23.387	(1.000)	472130	4.00000		
70 3,3'-Dichlorobenzidine	252	23.309	23.309	(0.997)	79251	1.46725	1.467	
71 Chrysene	228	23.425	23.433	(1.002)	79787	0.50759	0.5076	
72 bis(2-Ethylhexyl)phthalate	149	24.409	24.409	(1.001)	140567	0.47349	0.4735	
* 134 Di-n-octylphthalate-d4	153	24.393	24.401	(1.000)	1112088	4.00000		
73 Di-n-octylphthalate	149	24.409	24.409	(1.001)	140567	0.47349	0.4735	
74 Benzo(b)fluoranthene	252	25.268	25.276	(0.969)	73552	0.48829	0.4883	
75 Benzo(k)fluoranthene	252	25.314	25.322	(0.971)	79796	0.53990	0.5399	
76 Benzo(a)pyrene	252	25.949	25.949	(0.996)	67297	0.52867	0.5287	
* 77 Perylene-d12	264	26.065	26.073	(1.000)	451756	4.00000		
78 Indeno(1,2,3-cd)pyrene	276	28.820	28.820	(1.106)	65288	0.37090	0.3709	
79 Dibenzo(a,h)anthracene	278	28.836	28.836	(1.106)	55540	0.38573	0.3857	
80 Benzo(g,h,i)perylene	276	29.644	29.644	(1.137)	50815	0.34101	0.3410	
90 N-Nitrosodimethylamine	74	4.805	4.813	(0.526)	74470	0.96030	0.9603	
91 Aniline	93	8.598	8.605	(0.941)	116784	0.87722	0.8772	
93 Benzidine	184	21.010	21.010	(0.898)	93806	1.09069	1.091	
103 Pyridine	79	4.844	4.828	(0.530)	115607	0.50361	0.5036	
105 1-methylnaphthalene	142	13.315	13.315	(1.143)	84923	0.45100	0.4510	
111 Azobenzene (1,2-DP-Hydrazine)	77	16.710	16.710	(1.094)	126956	0.46377	0.4638	

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.314	25.322	(0.971)	147775	1.03627	1.036
120 2,3,4,6-Tetrachlorophenol	232	16.039	16.023	(1.050)	9268	0.21985	0.2198

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 02-MAY-2023  
 Lab File ID: NT1405022303.D Calibration Time: 14:28  
 Lab Smp Id: SLE0049-LCV1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	246356	123178	492712	257916	4.69
27 Naphthalene-d8	988717	494359	1977434	1001489	1.29
42 Acenaphthene-d10	475022	237511	950044	477815	0.59
59 Phenanthrene-d10	791082	395541	1582164	821905	3.90
69 Chrysene-d12	470889	235445	941778	472130	0.26
134 Di-n-octylphthala	1158641	579321	2317282	1112088	-4.02
77 Perylene-d12	463245	231623	926490	451756	-2.48

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.15	8.65	9.65	9.14	-0.08
27 Naphthalene-d8	11.65	11.15	12.15	11.64	-0.07
42 Acenaphthene-d10	15.29	14.79	15.79	15.28	-0.05
59 Phenanthrene-d10	18.34	17.84	18.84	18.34	0.00
69 Chrysene-d12	23.39	22.89	23.89	23.39	0.00
134 Di-n-octylphthala	24.40	23.90	24.90	24.39	-0.03
77 Perylene-d12	26.07	25.57	26.57	26.07	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405022303.D

Lab ID: SLE0049-LCV1  
nt14.i, ABN.m, 02-MAY-2023 15:05

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.022	1.017	0.0051	4-Nitrophenol

RRT check based on Ccal File: NT1405022302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

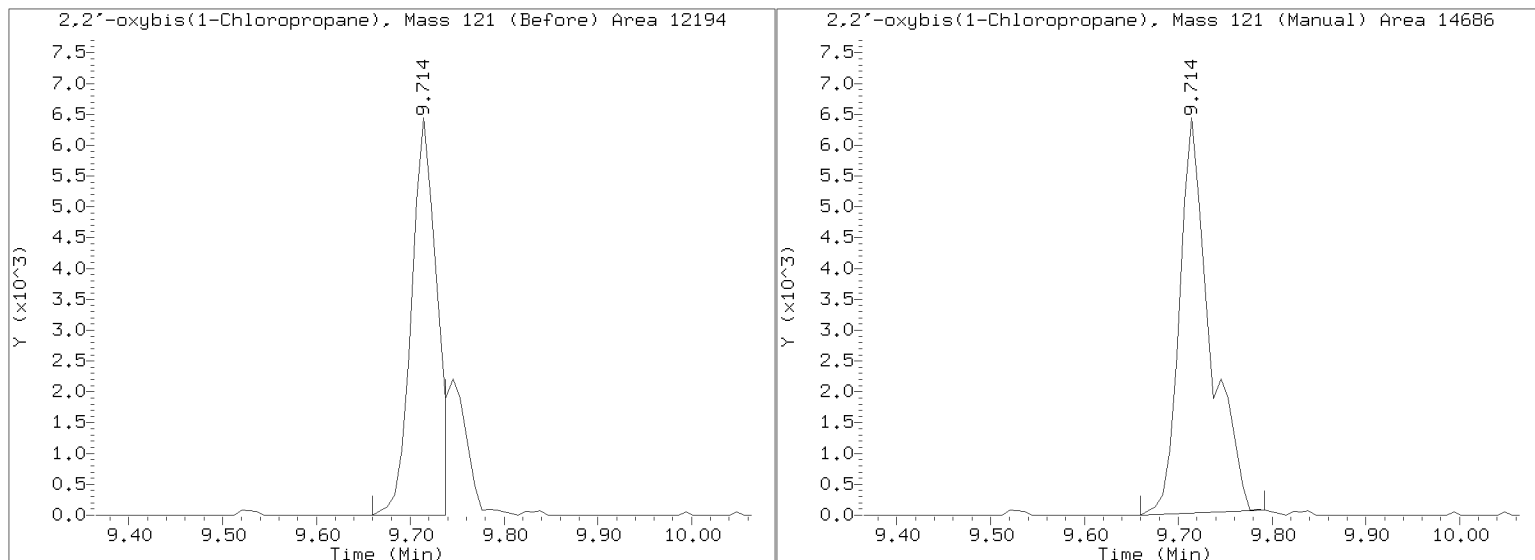
# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230502.b/NT1405022303.D

Injection Date: 02-MAY-2023 15:05

Lab ID: SLE0049-LCV1 Client ID:

Report Date: 05/03/2023 12:20



**APPROVED**

*By Deenay Dunmore at 12:23 pm, May 03, 2023*





**INITIAL CALIBRATION CHECK**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: NT14

Calibration: GD00062

Lab File ID: NT1405012302.D

Calibration Date: 04/21/2023

Sequence: SLE0024

Injection Date: 05/01/23

Lab Sample ID: SLE0024-ICV1

Injection Time: 15:06

Sequence Name: Initial Cal Check

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Phenol	A	5.0000	5.3	2.2751850	2.4254140		6.6	+/-20
4-Methylphenol	A	5.0000	5.1	1.7285470	1.7694020		2.4	+/-20
Naphthalene	A	5.0000	5.2	1.0751590	1.1136520		3.6	+/-20
2-Methylnaphthalene	A	5.0000	5.0	0.7788139	0.7749762		-0.5	+/-20
Acenaphthylene	A	5.0000	5.3	2.1225980	2.2409620		5.6	+/-20
Dimethylphthalate	A	5.0000	4.9	1.3719560	1.3496020		-1.6	+/-20
Acenaphthene	A	5.0000	5.3	1.2715320	1.3469510		5.9	+/-20
Dibenzofuran	A	5.0000	5.0	1.8152320	1.8129090		-0.1	+/-20
Fluorene	A	5.0000	5.4	1.6063130	1.7225		7.2	+/-20
Phenanthrene	A	5.0000	5.3	1.1309770	1.1942090		5.6	+/-20
Anthracene	A	5.0000	5.4	1.0847210	1.1779690		8.6	+/-20
Fluoranthene	A	5.0000	5.1	1.8464150	1.8707300		1.3	+/-20
Pyrene	A	5.0000	4.9	1.9067960	1.8798860		-1.4	+/-20
Butylbenzylphthalate	A	5.0000	4.2	0.9308079	0.9465355		-15.9	+/-20
Benzo(a)anthracene	A	5.0000	5.5	1.4278450	1.5728350		10.2	+/-20
Chrysene	A	5.0000	5.5	1.3317250	1.4643200		10.0	+/-20
bis(2-Ethylhexyl)phthalate	A	5.0000	4.8	1.0678070	1.0222140		-4.3	+/-20
Benzo(a)fluoranthene, Total	A	10.0000	11.5	1.2626500	1.4569900		15.4	+/-20
Benzo(a)pyrene	A	5.0000	5.8	1.1271120	1.2965060		15.0	+/-20
Indeno(1,2,3-cd)pyrene	A	5.0000	4.8	1.3992660	1.4829910		-4.9	+/-20
Dibenzo(a,h)anthracene	A	5.0000	4.8	1.1627800	1.2222990		-4.1	+/-20
Benzo(g,h,i)perylene	A	5.0000	4.6	1.1488320	1.2242900		-7.2	+/-20
2-Fluorophenol	A	7.5000	8.15	1.4465510	1.5725010		8.7	+/-20
Phenol-d5	A	7.5000	8.22	2.0300630	2.2253180		9.6	+/-20
2-Chlorophenol-d4	A	7.5000	8.24	1.4441450	1.5862240		9.8	+/-20
1,2-Dichlorobenzene-d4	A	5.0000	5.44	0.9148326	0.9950706		8.8	+/-20
Nitrobenzene-d5	A	5.0000	5.34	0.4922929	0.5259691		6.8	+/-20
2-Fluorobiphenyl	A	5.0000	5.36	1.3932180	1.4921650		7.1	+/-20
2,4,6-Tribromophenol	A	7.5000	7.93	0.1113678	0.1390868		5.8	+/-20
p-Terphenyl-d14	A	5.0000	4.57	1.1921270	1.1869810		-8.6	+/-20

\* Values outside of QC limits



**INITIAL CALIBRATION CHECK**  
**EPA 8270E**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>NT14</u>	Calibration:	<u>GD00062</u>
Lab File ID:	<u>NT1405012302.D</u>	Calibration Date:	<u>04/21/2023</u>
Sequence:	<u>SLE0024</u>	Injection Date:	<u>05/01/23</u>
Lab Sample ID:	<u>SLE0024-ICV1</u>	Injection Time:	<u>15:06</u>
Sequence Name:	<u>Initial Cal Check</u>		

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
1,4-Dichlorobenzene-d4	A	4.0000	4.0	64469.2500	1.0000		0.0	
Naphthalene-d8	A	4.0000	4.0	251993.3000	1.0000			
Acenaphthene-d10	A	4.0000	4.0	120261.1000	1.0000		0.0	
Phenanthrene-d10	A	4.0000	4.0	194378.5000	1.0000		0.0	
Chrysene-d12	A	4.0000	4.0	113081.4000	1.0000		0.0	
Di-n-Octylphthalate-d4	A	4.0000	4.0	246945.0000	1.0000		0.0	
Perylene-d12	A	4.0000	4.0	115804.8000	1.0000		0.0	

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012302.D

Date : 01-May-2023 15:06

Client ID:

Sample Info: SLE0024-ICW1

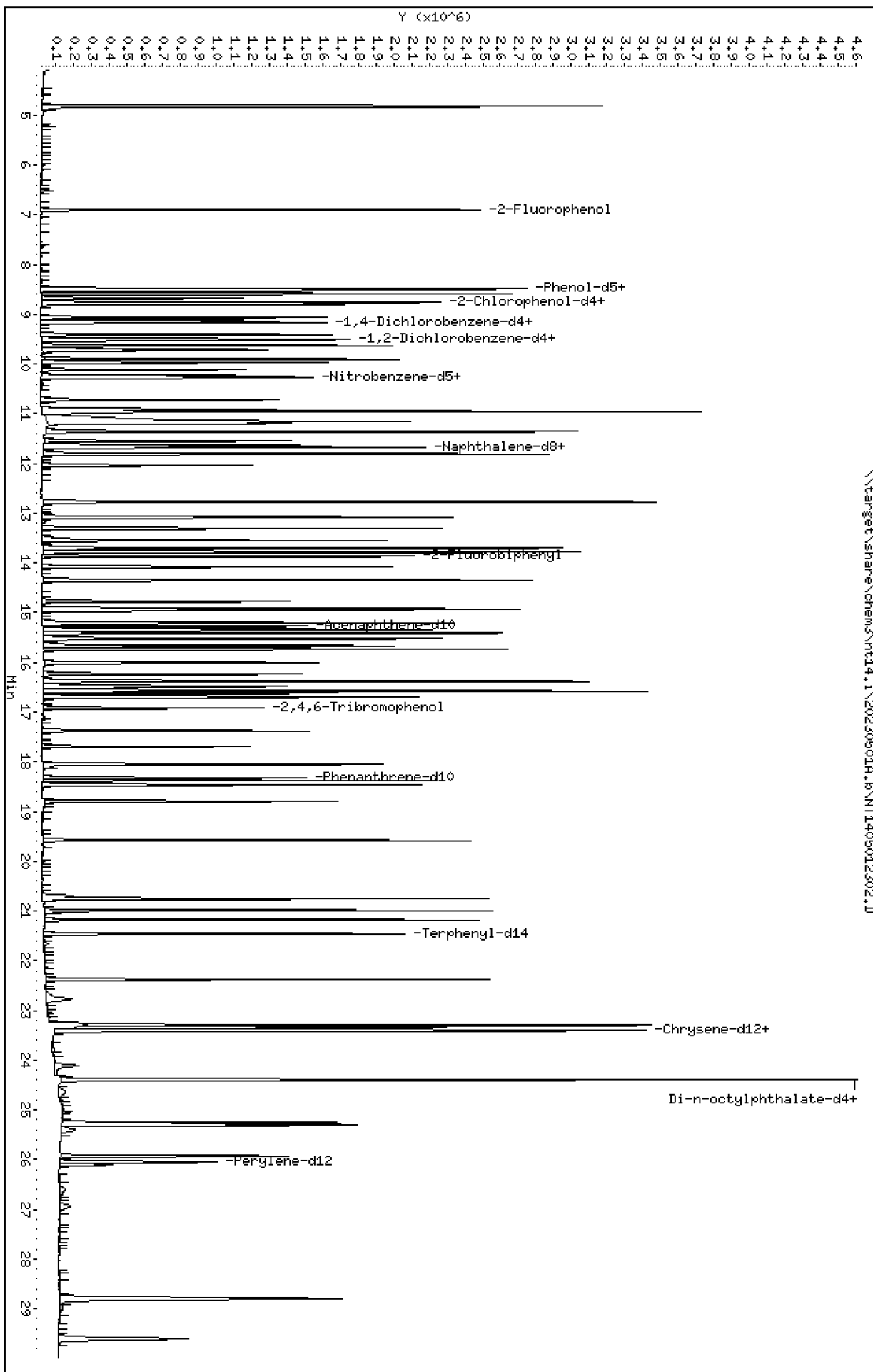
Instrument: nt14.1

Column phase: ZB-5msi

Operator: JSD

Column diameter: 0.25

\\target\share\chem3\nt14.1\20230501A.B\NT1405012302.D



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012302.D  
 Lab Smp Id: SLE0024-ICV1  
 Inj Date : 01-MAY-2023 15:06 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0024-ICV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 2 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/mL)	ON-COL (ug/mL)
\$ 1 2-Fluorophenol	112		6.898	6.898	(0.755)	807840	7.50000	8.153
\$ 2 Phenol-d5	99		8.490	8.490	(0.930)	1143211	7.50000	8.221
3 Phenol	94		8.513	8.513	(0.932)	830671	5.00000	5.330
\$ 5 2-Chlorophenol-d4	132		8.768	8.768	(0.960)	814890	7.50000	8.238
4 Bis(2-Chloroethyl)ether	93		8.675	8.675	(0.950)	580447	5.00000	4.878
6 2-Chlorophenol	128		8.799	8.799	(0.964)	644991	5.00000	5.942
7 1,3-Dichlorobenzene	146		9.070	9.070	(0.993)	544347	5.00000	5.008
* 8 1,4-Dichlorobenzene-d4	152		9.132	9.132	(1.000)	273989	4.00000	
9 1,4-Dichlorobenzene	146		9.163	9.163	(1.003)	519449	5.00000	5.013
\$ 10 1,2-Dichlorobenzene-d4	152		9.497	9.497	(1.040)	340798	5.00000	5.439
12 1,2-Dichlorobenzene	146		9.520	9.520	(1.042)	520073	5.00000	5.045
11 Benzyl alcohol	108		9.403	9.403	(1.030)	377884	5.00000	5.316
14 2,2'-oxybis(1-Chloropropane)	121		9.706	9.706	(1.063)	136154	5.00000	3.912
13 2-Methylphenol	108		9.629	9.629	(1.054)	566228	5.00000	5.446
17 Hexachloroethane	117		10.118	10.118	(1.108)	256413	5.00000	5.191
16 N-Nitroso-di-n-propylamine	70		9.970	9.970	(1.092)	496067	5.00000	4.745
15 4-Methylphenol	108		9.900	9.900	(1.084)	605996	5.00000	5.118
\$ 18 Nitrobenzene-d5	82		10.242	10.242	(0.880)	725316	5.00000	5.342
19 Nitrobenzene	77		10.273	10.273	(0.883)	712828	5.00000	4.911
20 Isophorone	82		10.723	10.723	(0.921)	1018160	5.00000	5.110
21 2-Nitrophenol	139		10.909	10.909	(0.937)	306443	5.00000	4.417
22 2,4-Dimethylphenol	107		10.955	10.955	(0.941)	1179612	10.0000	10.79
23 Bis(2-Chloroethoxy)methane	93		11.157	11.157	(0.959)	614810	5.00000	4.801
24 Benzoic acid	105		11.196	11.196	(0.962)	1486467	20.0000	16.41
25 2,4-Dichlorophenol	162		11.359	11.359	(0.976)	856864	10.0000	9.643
26 1,2,4-Trichlorobenzene	180		11.552	11.552	(0.993)	400013	5.00000	4.900
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1103207	4.00000	
28 Naphthalene	128		11.675	11.675	(1.003)	1535736	5.00000	5.179
29 4-Chloroaniline	127		11.814	11.814	(1.015)	1331594	10.0000	10.38
30 Hexachlorobutadiene	225		12.039	12.039	(1.035)	185946	5.00000	4.982
31 4-Chloro-3-methylphenol	107		12.774	12.774	(1.098)	1071216	10.0000	10.96
32 2-Methylnaphthalene	142		13.083	13.083	(1.124)	1068699	5.00000	4.975
33 Hexachlorocyclopentadiene	237		13.548	13.548	(0.887)	418090	10.0000	10.92

Compounds	QUANT SIG			AMOUNTS			
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.702	13.702	(0.897)	541567	10.0000	11.35
35 2,4,5-Trichlorophenol	196	13.780	13.780	(0.902)	594923	10.0000	11.74
§ 36 2-Fluorobiphenyl	172	13.865	13.865	(0.908)	970575	5.00000	5.355
37 2-Chloronaphthalene	162	14.082	14.082	(0.922)	868214	5.00000	5.018
38 2-Nitroaniline	65	14.345	14.345	(0.939)	921588	10.0000	9.972
39 Dimethylphthalate	163	14.778	14.778	(0.968)	877845	5.00000	4.919
40 Acenaphthylene	152	14.956	14.956	(0.979)	1457628	5.00000	5.279
41 2,6-Dinitrotoluene	165	14.918	14.918	(0.977)	422074	10.0000	10.43
* 42 Acenaphthene-d10	164	15.273	15.273	(1.000)	520358	4.00000	
43 3-Nitroaniline	138	15.212	15.212	(0.996)	542563	10.0000	10.67
44 Acenaphthene	153	15.343	15.343	(1.005)	876121	5.00000	5.297
45 2,4-Dinitrophenol	184	15.420	15.420	(1.010)	436851	20.0000	17.86
46 Dibenzofuran	168	15.668	15.668	(1.026)	1179202	5.00000	4.994
47 4-Nitrophenol	109	15.521	15.521	(1.016)	362834	10.0000	12.26
48 2,4-Dinitrotoluene	165	15.729	15.729	(1.030)	593080	10.0000	10.83
50 Diethylphthalate	149	16.240	16.240	(1.063)	921126	5.00000	4.768
49 Fluorene	166	16.386	16.386	(1.073)	1120396	5.00000	5.362
51 4-Chlorophenyl-phenylether	204	16.371	16.371	(1.072)	438713	5.00000	5.076
52 4-Nitroaniline	138	16.487	16.487	(1.079)	541207	10.0000	12.04
53 4,6-Dinitro-2-methylphenol	198	16.579	16.579	(0.905)	566966	20.0000	20.66
54 N-Nitrosodiphenylamine	169	16.626	16.626	(0.907)	613485	5.00000	4.922
§ 55 2,4,6-Tribromophenol	330	16.919	16.919	(1.108)	135703	7.50000	7.933
56 4-Bromophenyl-phenylether	248	17.381	17.381	(0.948)	204252	5.00000	4.982
57 Hexachlorobenzene	284	17.698	17.698	(0.966)	199930	5.00000	4.822
58 Pentachlorophenol	266	18.054	18.054	(0.985)	263538	10.0000	9.994
* 59 Phenanthrene-d10	188	18.325	18.325	(1.000)	882575	4.00000	
60 Phenanthrene	178	18.372	18.372	(1.003)	1317474	5.00000	5.280
61 Anthracene	178	18.464	18.464	(1.008)	1299558	5.00000	5.430
62 Carbazole	167	18.797	18.797	(1.026)	1140288	5.00000	5.149
63 Di-n-butylphthalate	149	19.579	19.579	(1.068)	1712441	5.00000	5.072
64 Fluoranthene	202	20.755	20.755	(0.888)	1404495	5.00000	5.066
65 Pyrene	202	21.180	21.180	(0.906)	1411369	5.00000	4.929
§ 66 Terphenyl-d14	244	21.459	21.459	(0.918)	891154	5.00000	4.568
67 Butylbenzylphthalate	149	22.380	22.380	(0.958)	710634	5.00000	4.204
68 Benzo(a)anthracene	228	23.340	23.340	(0.999)	1180843	5.00000	5.508
* 69 Chrysene-d12	240	23.371	23.371	(1.000)	600619	4.00000	
70 3,3'-Dichlorobenzidine	252	23.302	23.302	(0.997)	953750	15.0000	13.88
71 Chrysene	228	23.418	23.418	(1.002)	1099373	5.00000	5.498
72 bis(2-Ethylhexyl)phthalate	149	24.401	24.401	(1.001)	1847180	5.00000	4.787
* 134 Di-n-octylphthalate-d4	153	24.385	24.385	(1.000)	1445631	4.00000	
73 Di-n-octylphthalate	149	24.401	24.401	(1.001)	1847180	5.00000	4.787
74 Benzo(b)fluoranthene	252	25.260	25.260	(0.970)	1027310	5.00000	5.405
75 Benzo(k)fluoranthene	252	25.307	25.307	(0.971)	1148300	5.00000	6.157
76 Benzo(a)pyrene	252	25.934	25.934	(0.996)	923825	5.00000	5.751
* 77 Perylene-d12	264	26.050	26.050	(1.000)	570040	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.789	28.789	(1.105)	1056705	5.00000	4.757
79 Dibenzo(a,h)anthracene	278	28.805	28.805	(1.106)	870949	5.00000	4.794
80 Benzo(g,h,i)perylene	276	29.605	29.605	(1.136)	872368	5.00000	4.639
90 N-Nitrosodimethylamine	74	4.797	4.797	(0.525)	799506	10.0000	9.705
91 Aniline	93	8.590	8.590	(0.941)	1370824	10.0000	9.693
93 Benzidine	184	20.994	20.994	(0.898)	1399146	10.0000	12.79
103 Pyridine	79	4.821	4.821	(0.528)	1193374	5.00000	4.894
105 1-methylnaphthalene	142	13.308	13.308	(1.144)	969019	5.00000	4.672
111 Azobenzene (1,2-DP-Hydrazine)	77	16.695	16.695	(1.093)	1450892	5.00000	4.867

Compounds	QUANT SIG		AMOUNTS					
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	=====		=====	=====	=====	=====	=====	=====
187 Total Benzofluoranthenes	252		25.307	25.307	(0.971)	2076357	10.0000	11.54
120 2,3,4,6-Tetrachlorophenol	232		16.000	16.000	(1.048)	234899	5.00000	5.117

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012302.D Calibration Time: 13:35  
 Lab Smp Id: SLE0024-ICV1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	273989	0.00
27 Naphthalene-d8	1103207	551604	2206414	1103207	0.00
42 Acenaphthene-d10	520358	260179	1040716	520358	0.00
59 Phenanthrene-d10	882575	441288	1765150	882575	0.00
69 Chrysene-d12	600619	300310	1201238	600619	0.00
134 Di-n-octylphthala	1445631	722816	2891262	1445631	0.00
77 Perylene-d12	570040	285020	1140080	570040	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.13	0.00
27 Naphthalene-d8	11.64	11.14	12.14	11.64	0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	0.00
59 Phenanthrene-d10	18.33	17.83	18.83	18.33	0.00
69 Chrysene-d12	23.37	22.87	23.87	23.37	0.00
134 Di-n-octylphthala	24.39	23.89	24.89	24.39	0.00
77 Perylene-d12	26.05	25.55	26.55	26.05	0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012302.D

Lab ID: SLE0024-ICV1  
nt14.i, ABN.m, 01-MAY-2023 15:06

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

No RRT check. Ccal file.

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230501A.b

Instrument: nt14.i Date: 01-MAY-2023 Method: ABN.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R <sup>2</sup>
-----	
NO Q-FLAGS	
-----	

ICV CAL: NT1405012302.D 01-MAY-2023 15:06

Compound	%D
-----	
2,2'-oxybis(1-Chloropropane)	-21.76
4-Nitrophenol	22.6
Benzo(k)fluoranthene	23.15
Benzidine	27.9
-----	



INITIAL CALIBRATION CHECK  
EPA 8270E

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: NT14

Calibration: GD00062

Lab File ID: NT1405022302.D

Calibration Date: 04/21/2023

Sequence: SLE0049

Injection Date: 05/02/23

Lab Sample ID: SLE0049-ICV1

Injection Time: 14:28

Sequence Name: Initial Cal Check

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Phenol	A	5.0000	5.3	2.2751850	2.3964120		5.3	+/-20
4-Methylphenol	A	5.0000	5.1	1.7285470	1.7598370		1.8	+/-20
Naphthalene	A	5.0000	5.3	1.0751590	1.1363360		5.7	+/-20
2-Methylnaphthalene	A	5.0000	5.0	0.7788139	0.7825090		0.5	+/-20
Acenaphthylene	A	5.0000	5.3	2.1225980	2.2342810		5.3	+/-20
Dimethylphthalate	A	5.0000	4.9	1.3719560	1.3571770		-1.1	+/-20
Acenaphthene	A	5.0000	5.3	1.2715320	1.3467960		5.9	+/-20
Dibenzofuran	A	5.0000	5.0	1.8152320	1.8161950		0.06	+/-20
Fluorene	A	5.0000	4.8	1.6063130	1.5370020		-4.3	+/-20
Phenanthrene	A	5.0000	5.3	1.1309770	1.2074100		6.8	+/-20
Anthracene	A	5.0000	5.5	1.0847210	1.2010810		10.7	+/-20
Fluoranthene	A	5.0000	5.5	1.8464150	2.0406980		10.5	+/-20
Pyrene	A	5.0000	5.8	1.9067960	2.2121700		16.0	+/-20
Butylbenzylphthalate	A	5.0000	4.7	0.9308079	1.0406560		-6.7	+/-20
Benzo(a)anthracene	A	5.0000	5.4	1.4278450	1.5531560		8.8	+/-20
Chrysene	A	5.0000	5.4	1.3317250	1.4498060		8.9	+/-20
bis(2-Ethylhexyl)phthalate	A	5.0000	4.8	1.0678070	1.0217530		-4.3	+/-20
Benzo(a)fluoranthene, Total	A	10.0000	11.3	1.2626500	1.4301320		13.3	+/-20
Benzo(a)pyrene	A	5.0000	5.7	1.1271120	1.2802060		13.6	+/-20
Indeno(1,2,3-cd)pyrene	A	5.0000	4.2	1.3992660	1.3013660		-16.5	+/-20
Dibenzo(a,h)anthracene	A	5.0000	4.3	1.1627800	1.0992080		-13.8	+/-20
Benzo(g,h,i)perylene	A	5.0000	3.7	1.1488320	0.9794817		-25.8	+/-20 *
2-Fluorophenol	A	7.5000	7.97	1.4465510	1.5374820		6.3	+/-20
Phenol-d5	A	7.5000	8.15	2.0300630	2.2047080		8.6	+/-20
2-Chlorophenol-d4	A	7.5000	8.14	1.4441450	1.5672		8.5	+/-20
1,2-Dichlorobenzene-d4	A	5.0000	5.44	0.9148326	0.9952232		8.8	+/-20
Nitrobenzene-d5	A	5.0000	5.40	0.4922929	0.5319249		8.1	+/-20
2-Fluorobiphenyl	A	5.0000	5.43	1.3932180	1.5119620		8.5	+/-20
2,4,6-Tribromophenol	A	7.5000	7.77	0.1113678	0.1362867		3.6	+/-20
p-Terphenyl-d14	A	5.0000	5.16	1.1921270	1.3214650		3.2	+/-20

\* Values outside of QC limits



**INITIAL CALIBRATION CHECK**  
**EPA 8270E**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>NT14</u>	Calibration:	<u>GD00062</u>
Lab File ID:	<u>NT1405022302.D</u>	Calibration Date:	<u>04/21/2023</u>
Sequence:	<u>SLE0049</u>	Injection Date:	<u>05/02/23</u>
Lab Sample ID:	<u>SLE0049-ICV1</u>	Injection Time:	<u>14:28</u>
Sequence Name:	<u>Initial Cal Check</u>		

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
1,4-Dichlorobenzene-d4	A	4.0000	4.0	64469.2500	1.0000		0.0	
Naphthalene-d8	A	4.0000	4.0	251993.3000	1.0000			
Acenaphthene-d10	A	4.0000	4.0	120261.1000	1.0000		0.0	
Phenanthrene-d10	A	4.0000	4.0	194378.5000	1.0000		0.0	
Chrysene-d12	A	4.0000	4.0	113081.4000	1.0000		0.0	
Di-n-Octylphthalate-d4	A	4.0000	4.0	246945.0000	1.0000		0.0	
Perylene-d12	A	4.0000	4.0	115804.8000	1.0000		0.0	

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14,1\20230502,1\NT1405022302.D

Date: 02-May-2023 14:28

Client ID:

Sample Info: SLE0049-ICW1

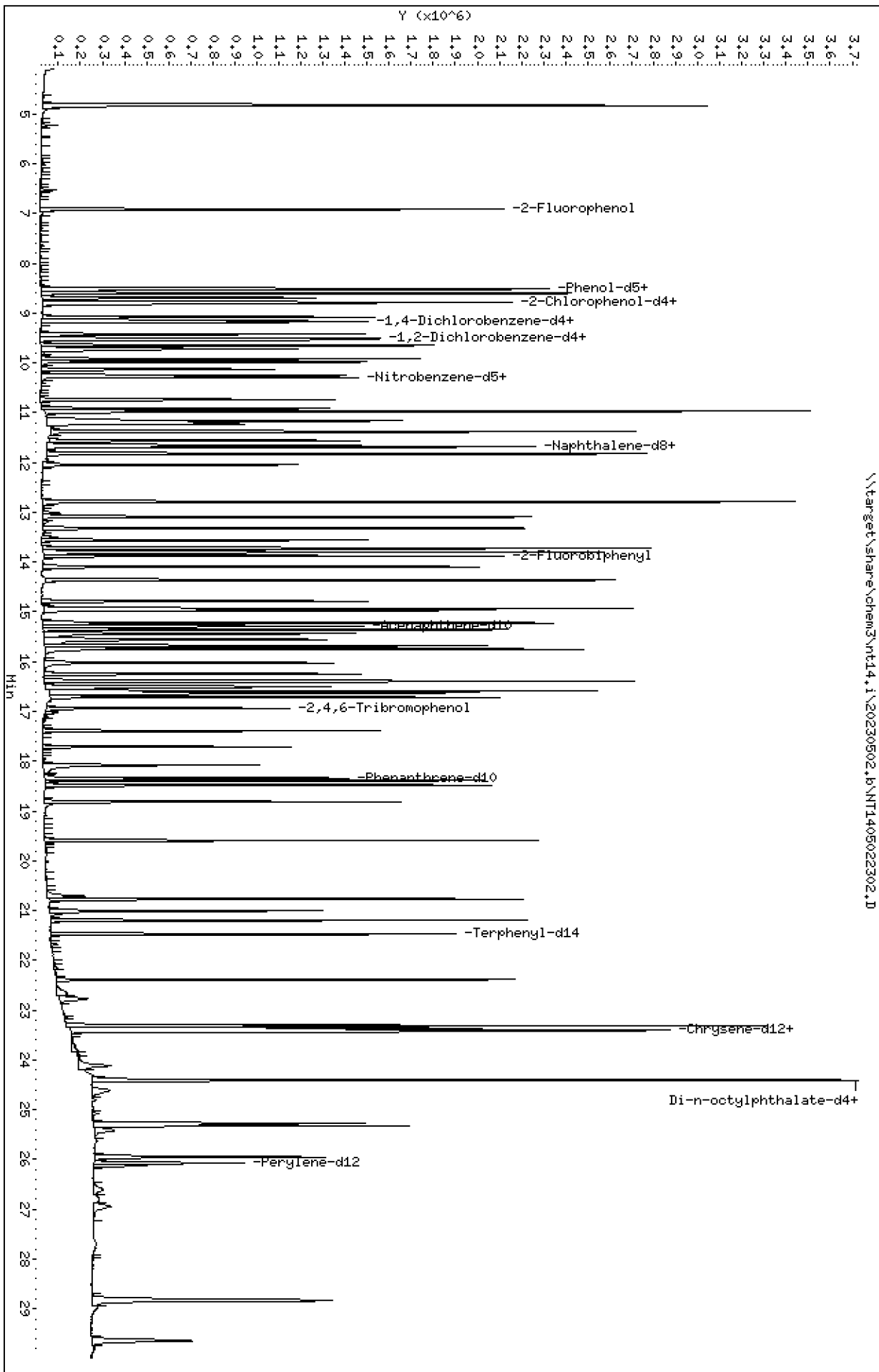
Column phase: ZB-5msi

Instrument: nt14,1

Operator: USD

Column diameter: 0.25

\\target\share\chem3\nt14,1\20230502,1\NT1405022302.D



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230502.b\NT1405022302.D  
 Lab Smp Id: SLE0049-ICV1  
 Inj Date : 02-MAY-2023 14:28 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0049-ICV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Meth Date : 03-May-2023 12:20 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 2 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/mL)	ON-COL (ug/mL)
\$ 1 2-Fluorophenol	112		6.914	6.914	(0.756)	710190	7.50000	7.971
\$ 2 Phenol-d5	99		8.505	8.505	(0.930)	1018393	7.50000	8.145
3 Phenol	94		8.528	8.528	(0.932)	737963	5.00000	5.266
\$ 5 2-Chlorophenol-d4	132		8.783	8.783	(0.960)	723917	7.50000	8.139
4 Bis(2-Chloroethyl)ether	93		8.690	8.690	(0.950)	521657	5.00000	4.876
6 2-Chlorophenol	128		8.814	8.814	(0.964)	563085	5.00000	5.769
7 1,3-Dichlorobenzene	146		9.077	9.077	(0.992)	490121	5.00000	5.015
* 8 1,4-Dichlorobenzene-d4	152		9.147	9.147	(1.000)	246356	4.00000	
9 1,4-Dichlorobenzene	146		9.178	9.178	(1.003)	468734	5.00000	5.031
\$ 10 1,2-Dichlorobenzene-d4	152		9.504	9.504	(1.039)	306474	5.00000	5.439
12 1,2-Dichlorobenzene	146		9.535	9.535	(1.042)	466662	5.00000	5.034
11 Benzyl alcohol	108		9.419	9.419	(1.030)	326418	5.00000	5.107
14 2,2'-oxybis(1-Chloropropane)	121		9.714	9.714	(1.062)	157012	5.00000	5.017 (M)
13 2-Methylphenol	108		9.644	9.644	(1.054)	503177	5.00000	5.383
17 Hexachloroethane	117		10.125	10.125	(1.107)	229986	5.00000	5.178
16 N-Nitroso-di-n-propylamine	70		9.978	9.978	(1.091)	444764	5.00000	4.731
15 4-Methylphenol	108		9.916	9.916	(1.084)	541933	5.00000	5.091
\$ 18 Nitrobenzene-d5	82		10.249	10.249	(0.880)	657404	5.00000	5.403
19 Nitrobenzene	77		10.288	10.288	(0.883)	647153	5.00000	4.975
20 Isophorone	82		10.738	10.738	(0.922)	925706	5.00000	5.184
21 2-Nitrophenol	139		10.917	10.917	(0.937)	273410	5.00000	4.396
22 2,4-Dimethylphenol	107		10.971	10.971	(0.942)	1052572	10.0000	10.74
23 Bis(2-Chloroethoxy)methane	93		11.165	11.165	(0.958)	566704	5.00000	4.938
24 Benzoic acid	105		11.227	11.227	(0.963)	863113	20.0000	10.63
25 2,4-Dichlorophenol	162		11.382	11.382	(0.977)	761859	10.0000	9.552
26 1,2,4-Trichlorobenzene	180		11.559	11.559	(0.992)	362479	5.00000	4.954
* 27 Naphthalene-d8	136		11.652	11.652	(1.000)	988717	4.00000	
28 Naphthalene	128		11.691	11.691	(1.003)	1404394	5.00000	5.285
29 4-Chloroaniline	127		11.822	11.822	(1.015)	1215710	10.0000	10.57
30 Hexachlorobutadiene	225		12.046	12.046	(1.034)	170354	5.00000	5.093
31 4-Chloro-3-methylphenol	107		12.789	12.789	(1.098)	983356	10.0000	11.23
32 2-Methylnaphthalene	142		13.091	13.091	(1.123)	967100	5.00000	5.024
33 Hexachlorocyclopentadiene	237		13.563	13.563	(0.887)	320293	10.0000	9.161

Compounds	QUANT SIG			AMOUNTS			
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.726	13.726	(0.898)	482585	10.0000	11.08
35 2,4,5-Trichlorophenol	196	13.803	13.803	(0.903)	530221	10.0000	11.46
§ 36 2-Fluorobiphenyl	172	13.880	13.880	(0.908)	897769	5.00000	5.426
37 2-Chloronaphthalene	162	14.097	14.097	(0.922)	796564	5.00000	5.043
38 2-Nitroaniline	65	14.360	14.360	(0.939)	841326	10.0000	9.972
39 Dimethylphthalate	163	14.786	14.786	(0.967)	805861	5.00000	4.946
40 Acenaphthylene	152	14.972	14.972	(0.979)	1326666	5.00000	5.263
41 2,6-Dinitrotoluene	165	14.933	14.933	(0.977)	382246	10.0000	10.35
* 42 Acenaphthene-d10	164	15.289	15.289	(1.000)	475022	4.00000	
43 3-Nitroaniline	138	15.227	15.227	(0.996)	488252	10.0000	10.52
44 Acenaphthene	153	15.351	15.351	(1.004)	799697	5.00000	5.296
45 2,4-Dinitrophenol	184	15.436	15.436	(1.010)	222798	20.0000	9.978
46 Dibenzofuran	168	15.683	15.683	(1.026)	1078416	5.00000	5.003
47 4-Nitrophenol	109	15.552	15.552	(1.017)	258708	10.0000	9.580
48 2,4-Dinitrotoluene	165	15.745	15.745	(1.030)	535244	10.0000	10.70
50 Diethylphthalate	149	16.247	16.247	(1.063)	928227	5.00000	5.263
49 Fluorene	166	16.402	16.402	(1.073)	912637	5.00000	4.784
51 4-Chlorophenyl-phenylether	204	16.386	16.386	(1.072)	351706	5.00000	4.457
52 4-Nitroaniline	138	16.502	16.502	(1.079)	459222	10.0000	11.19
53 4,6-Dinitro-2-methylphenol	198	16.595	16.595	(0.905)	393786	20.0000	16.01
54 N-Nitrosodiphenylamine	169	16.641	16.641	(0.907)	557271	5.00000	4.988
§ 55 2,4,6-Tribromophenol	330	16.942	16.942	(1.108)	121386	7.50000	7.773
56 4-Bromophenyl-phenylether	248	17.389	17.389	(0.948)	187087	5.00000	5.091
57 Hexachlorobenzene	284	17.714	17.714	(0.966)	182154	5.00000	4.902
58 Pentachlorophenol	266	18.077	18.077	(0.986)	153939	10.0000	6.513
* 59 Phenanthrene-d10	188	18.341	18.341	(1.000)	791082	4.00000	
60 Phenanthrene	178	18.387	18.387	(1.003)	1193950	5.00000	5.338
61 Anthracene	178	18.480	18.480	(1.008)	1187692	5.00000	5.536
62 Carbazole	167	18.812	18.812	(1.026)	1072918	5.00000	5.405
63 Di-n-butylphthalate	149	19.594	19.594	(1.068)	1559082	5.00000	5.152
64 Fluoranthene	202	20.770	20.770	(0.888)	1201178	5.00000	5.526
65 Pyrene	202	21.195	21.195	(0.906)	1302108	5.00000	5.801
§ 66 Terphenyl-d14	244	21.474	21.474	(0.918)	777829	5.00000	5.159
67 Butylbenzylphthalate	149	22.388	22.388	(0.957)	612542	5.00000	4.665
68 Benzo(a)anthracene	228	23.356	23.356	(0.999)	914205	5.00000	5.439
* 69 Chrysene-d12	240	23.387	23.387	(1.000)	470889	4.00000	
70 3,3'-Dichlorobenzidine	252	23.309	23.309	(0.997)	853665	15.0000	15.85
71 Chrysene	228	23.433	23.433	(1.002)	853372	5.00000	5.443
72 bis(2-Ethylhexyl)phthalate	149	24.409	24.409	(1.000)	1479806	5.00000	4.784
* 134 Di-n-octylphthalate-d4	153	24.401	24.401	(1.000)	1158641	4.00000	
73 Di-n-octylphthalate	149	24.409	24.409	(1.000)	1479806	5.00000	4.784
74 Benzo(b)fluoranthene	252	25.276	25.276	(0.969)	847941	5.00000	5.490
75 Benzo(k)fluoranthene	252	25.322	25.322	(0.971)	951027	5.00000	6.275
76 Benzo(a)pyrene	252	25.949	25.949	(0.995)	741311	5.00000	5.679
* 77 Perylene-d12	264	26.073	26.073	(1.000)	463245	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.820	28.820	(1.105)	753564	5.00000	4.175
79 Dibenzo(a,h)anthracene	278	28.836	28.836	(1.106)	636503	5.00000	4.311
80 Benzo(g,h,i)perylene	276	29.644	29.644	(1.137)	567175	5.00000	3.712
90 N-Nitrosodimethylamine	74	4.813	4.813	(0.526)	717197	10.0000	9.682
91 Aniline	93	8.605	8.605	(0.941)	1259710	10.0000	9.906
93 Benzidine	184	21.010	21.010	(0.898)	813499	10.0000	9.484
103 Pyridine	79	4.828	4.828	(0.528)	1081638	5.00000	4.933
105 1-methylnaphthalene	142	13.315	13.315	(1.143)	889806	5.00000	4.787
111 Azobenzene (1,2-DP-Hydrazine)	77	16.710	16.710	(1.093)	1321736	5.00000	4.857

Compounds	QUANT SIG						AMOUNTS	
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
187 Total Benzofluoranthenes	252		25.322	25.322	(0.971)	1656254	10.0000	11.33
120 2,3,4,6-Tetrachlorophenol	232		16.023	16.023	(1.048)	216838	5.00000	5.174

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 02-MAY-2023  
 Lab File ID: NT1405022302.D Calibration Time: 14:28  
 Lab Smp Id: SLE0049-ICV1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	246356	123178	492712	246356	0.00
27 Naphthalene-d8	988717	494359	1977434	988717	0.00
42 Acenaphthene-d10	475022	237511	950044	475022	0.00
59 Phenanthrene-d10	791082	395541	1582164	791082	0.00
69 Chrysene-d12	470889	235445	941778	470889	0.00
134 Di-n-octylphthala	1158641	579321	2317282	1158641	0.00
77 Perylene-d12	463245	231623	926490	463245	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.15	8.65	9.65	9.15	0.00
27 Naphthalene-d8	11.65	11.15	12.15	11.65	0.00
42 Acenaphthene-d10	15.29	14.79	15.79	15.29	0.00
59 Phenanthrene-d10	18.34	17.84	18.84	18.34	0.00
69 Chrysene-d12	23.39	22.89	23.89	23.39	0.00
134 Di-n-octylphthala	24.40	23.90	24.90	24.40	0.00
77 Perylene-d12	26.07	25.57	26.57	26.07	0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



REVIEW SUMMARY FOR FILE - NT1405022302.D

Lab ID: SLE0049-ICV1  
nt14.i, ABN.m, 02-MAY-2023 14:28

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

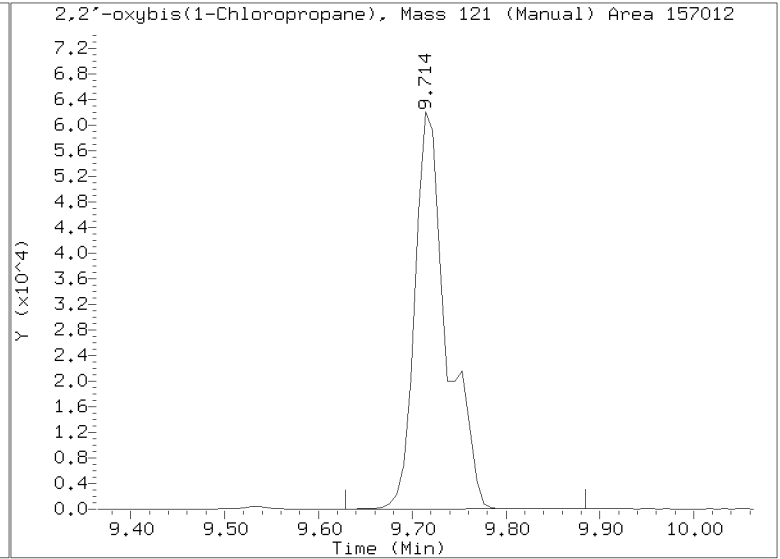
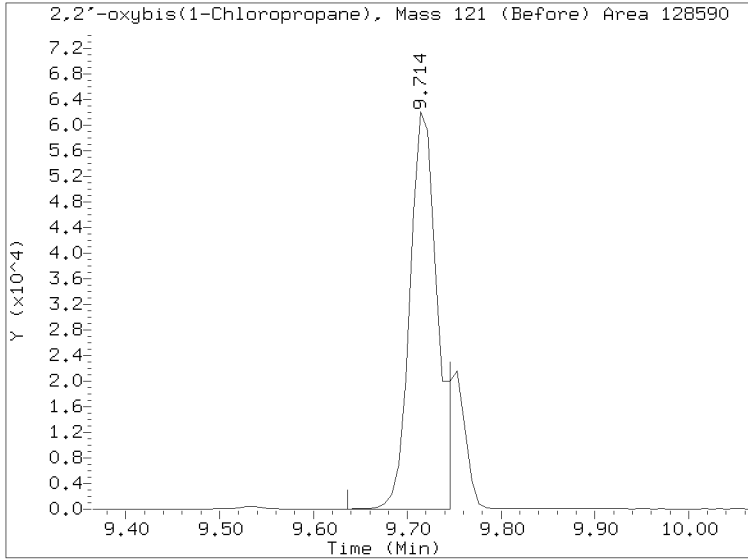
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On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230502.b/NT1405022302.D  
Injection Date: 02-MAY-2023 14:28  
Lab ID:SLE0049-ICV1 Client ID:  
Report Date: 05/03/2023 12:20



**APPROVED**

By Deenay Dunmore at 12:24 pm, May 03, 2023

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230502.b

Instrument: nt14.i Date: 02-MAY-2023 Method: ABN.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R <sup>2</sup>
-----	
NO Q-FLAGS	
-----	

ICV CAL: NT1405022302.D 02-MAY-2023 14:28

Compound	%D
-----	
Benzoic acid	-46.8
2,4-Dinitrophenol	-50.1
Pentachlorophenol	-34.9
Benzo(k)fluoranthene	25.50
Benzo(g,h,i)perylene	-25.8
-----	



SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8270E

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: NT14

Calibration: GD00062

Lab File ID: NT04212314.D

Calibration Date: 04/21/2023

Sequence: SLD0357

Injection Date: 04/21/23

Lab Sample ID: SLD0357-SCV1

Injection Time: 21:16

Sequence Name: SCV 5.0

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Phenol	A	5.0000	4.3	2.2751850	1.9705920		-13.4	+/-20
bis(2-chloroethyl) ether	A	5.0000	5.1	1.7371050	1.7613530		1.4	+/-20
2-Chlorophenol	A	5.0000	4.5	1.5847160	1.4193410		-10.4	+/-20
1,3-Dichlorobenzene	A	5.0000	4.7	1.5867680	1.5025760		-5.3	+/-20
1,4-Dichlorobenzene	A	5.0000	4.8	1.5126700	1.4457250		-4.4	+/-20
1,2-Dichlorobenzene	A	5.0000	4.8	1.5050920	1.4309310		-4.9	+/-20
Benzyl Alcohol	A	5.0000	4.9	1.0378050	1.0189560		-1.8	+/-20
2,2'-Oxybis(1-chloropropane)	A	5.0000	5.1	0.5081044	0.5143584		1.2	+/-20
2-Methylphenol	A	5.0000	4.2	1.5178440	1.2746380		-16.0	+/-20
Hexachloroethane	A	5.0000	4.9	0.7211424	0.7026294		-2.6	+/-20
N-Nitroso-di-n-Propylamine	A	5.0000	4.7	1.5264270	1.4460810		-5.3	+/-20
4-Methylphenol	A	5.0000	4.5	1.7285470	1.5387400		-11.0	+/-20
Nitrobenzene	A	5.0000	4.7	0.5262744	0.4962296		-5.7	+/-20
Isophorone	A	5.0000	6.3	0.7223970	0.9127264		26.3	+/-20 *
2-Nitrophenol	A	5.0000	3.8	0.1931545	0.1926360		-24.4	+/-20 *
2,4-Dimethylphenol	A	5.0000	3.7	0.3965622	0.2940160		-25.9	+/-20 *
Bis(2-Chloroethoxy)methane	A	5.0000	5.4	0.4643114	0.5011110		7.9	+/-20
2,4-Dichlorophenol	A	5.0000	3.7	0.2719576	0.2689032		-25.4	+/-20 *
1,2,4-Trichlorobenzene	A	5.0000	4.5	0.2960138	0.2685185		-9.3	+/-20
Naphthalene	A	5.0000	4.8	1.0751590	1.0349670		-3.7	+/-20
Benzoic acid	A	10.000	6.8	0.2535745	0.2233318		-32.0	+/-20 *
4-Chloroaniline	A	5.0000	3.8	0.4651777	0.3507200		-24.6	+/-20 *
Hexachlorobutadiene	A	5.0000	4.7	0.1353317	0.1262648		-6.7	+/-20
4-Chloro-3-Methylphenol	A	5.0000	4.6	0.3543842	0.3270809		-7.7	+/-20
2-Methylnaphthalene	A	5.0000	4.5	0.7788139	0.6968906		-10.5	+/-20
Hexachlorocyclopentadiene	A	5.0000	4.8	0.2944169	0.2816192		-4.3	+/-20
2,4,6-Trichlorophenol	A	5.0000	4.6	0.3667802	0.3358240		-8.4	+/-20
2,4,5-Trichlorophenol	A	5.0000	4.4	0.3896539	0.3455760		-11.3	+/-20
2-Chloronaphthalene	A	5.0000	4.6	1.3299810	1.2349520		-7.1	+/-20
2-Nitroaniline	A	5.0000	4.5	0.7104430	0.6358598		-10.5	+/-20
Acenaphthylene	A	5.0000	4.8	2.1225980	2.0458090		-3.6	+/-20
Dimethylphthalate	A	5.0000	4.6	1.3719560	1.2494590		-8.9	+/-20
2,6-Dinitrotoluene	A	5.0000	4.7	0.3110389	0.2909097		-6.5	+/-20

\* Values outside of QC limits



**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: NT14

Calibration: GD00062

Lab File ID: NT04212314.D

Calibration Date: 04/21/2023

Sequence: SLD0357

Injection Date: 04/21/23

Lab Sample ID: SLD0357-SCV1

Injection Time: 21:16

Sequence Name: SCV 5.0

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Acenaphthene	A	5.0000	4.8	1.2715320	1.2235300		-3.8	+/-20
3-Nitroaniline	A	5.0000	4.6	0.3908054	0.3601784		-7.8	+/-20
2,4-Dinitrophenol	A	5.0000	1.7	0.1134901	0.0629630		-66.5	+/-20 *
Dibenzofuran	A	5.0000	4.5	1.8152320	1.6407940		-9.6	+/-20
4-Nitrophenol	A	5.0000	4.6	0.1984752	0.2071430		-8.9	+/-20
2,4-Dinitrotoluene	A	5.0000	4.5	0.4211377	0.3765014		-10.6	+/-20
Fluorene	A	5.0000	4.8	1.6063130	1.5354760		-4.4	+/-20
4-Chlorophenylphenyl ether	A	5.0000	4.8	0.6644338	0.6322843		-4.8	+/-20
Diethyl phthalate	A	5.0000	4.6	1.4850210	1.3587240		-8.5	+/-20
4-Nitroaniline	A	5.0000	4.5	0.3455847	0.3123837		-9.6	+/-20
4,6-Dinitro-2-methylphenol	A	5.0000	3.0	0.0891357	0.0747652		-39.9	+/-20 *
N-Nitrosodiphenylamine	A	5.0000	4.7	0.5648799	0.5364628		-5.0	+/-20
4-Bromophenyl phenyl ether	A	5.0000	4.7	0.1858037	0.1758609		-5.4	+/-20
Hexachlorobenzene	A	5.0000	4.4	0.1878998	0.1641067		-12.7	+/-20
Pentachlorophenol	A	5.0000	3.7	0.0907012	0.0894078		-25.2	+/-20 *
Phenanthrene	A	5.0000	4.7	1.1309770	1.0524480		-6.9	+/-20
Anthracene	A	5.0000	4.3	1.0847210	0.9273090		-14.5	+/-20
Carbazole	A	5.0000	4.2	1.0037620	0.8424124		-16.1	+/-20
Di-n-Butylphthalate	A	5.0000	4.8	1.4678200	1.4573140		-4.8	+/-20
Fluoranthene	A	5.0000	5.1	1.8464150	1.8713530		1.4	+/-20
Pyrene	A	5.0000	4.9	1.9067960	1.8764510		-1.6	+/-20
Butylbenzylphthalate	A	5.0000	4.3	0.9308079	0.9643066		-14.2	+/-20
Benzo(a)anthracene	A	5.0000	4.7	1.4278450	1.3339990		-6.6	+/-20
3,3'-Dichlorobenzidine	A	10.000	9.4	0.4576145	0.4293063		-6.2	+/-20
Chrysene	A	5.0000	4.7	1.3317250	1.2567830		-5.6	+/-20
bis(2-Ethylhexyl)phthalate	A	5.0000	4.9	1.0678070	1.0449820		-2.1	+/-20
Di-n-Octylphthalate	A	5.0000	4.9	1.0678070	1.0449820		-2.1	+/-20
Benzo(a)fluoranthene, Total	A	10.000	9.6	1.2626500	1.2118270		-4.0	+/-20
Benzo(a)pyrene	A	5.0000	5.0	1.1271120	1.1243160		-0.2	+/-20
Indeno(1,2,3-cd)pyrene	A	5.0000	4.4	1.3992660	1.3744840		-11.8	+/-20
Dibenzo(a,h)anthracene	A	5.0000	4.5	1.1627800	1.1364010		-10.9	+/-20
Benzo(g,h,i)perylene	A	5.0000	4.2	1.1488320	1.1084430		-16.0	+/-20
1-Methylnaphthalene	A	5.0000	4.5	0.7520738	0.6760816		-10.1	+/-20

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230421.6\NT04212314.D

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Sample Info: SEQ-SCV1

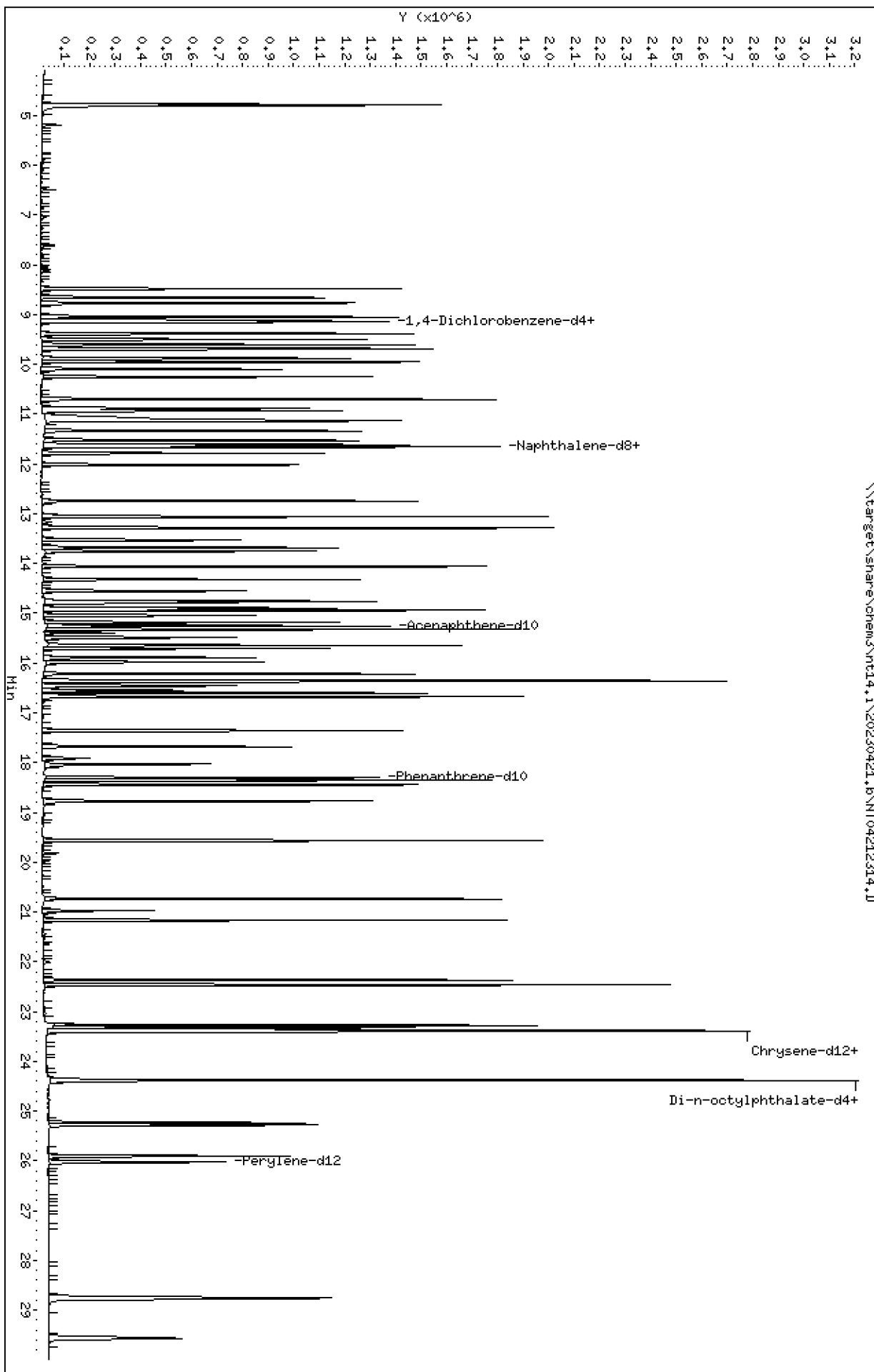
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

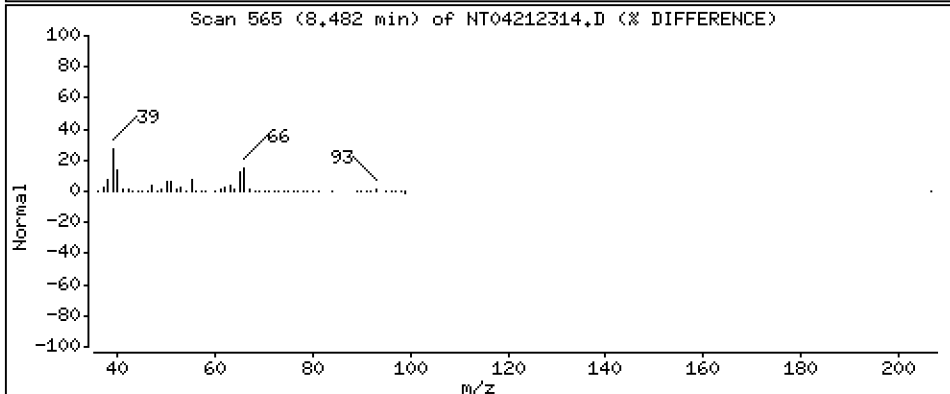
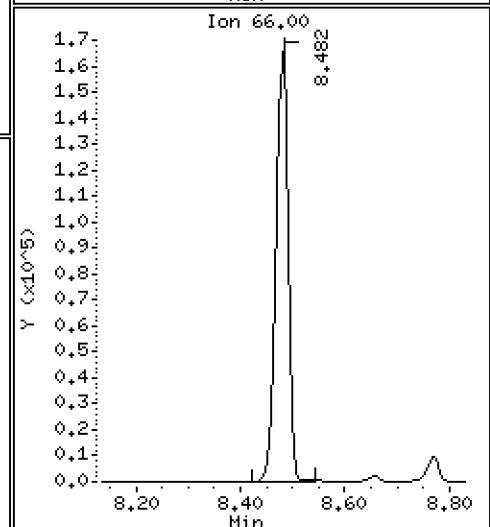
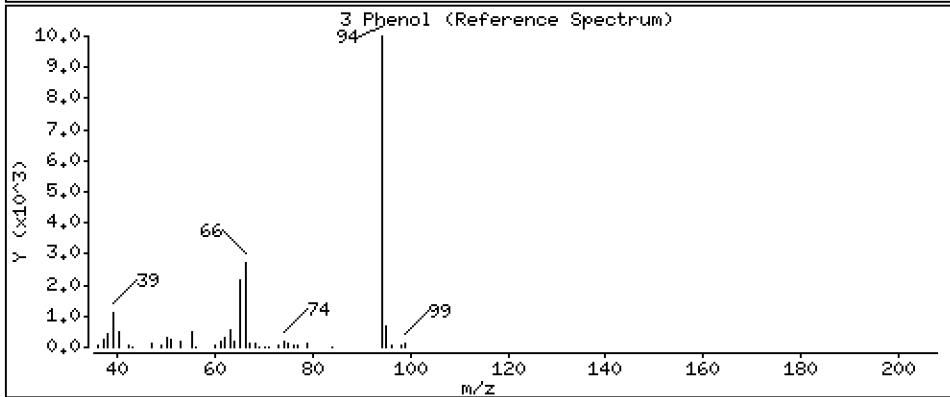
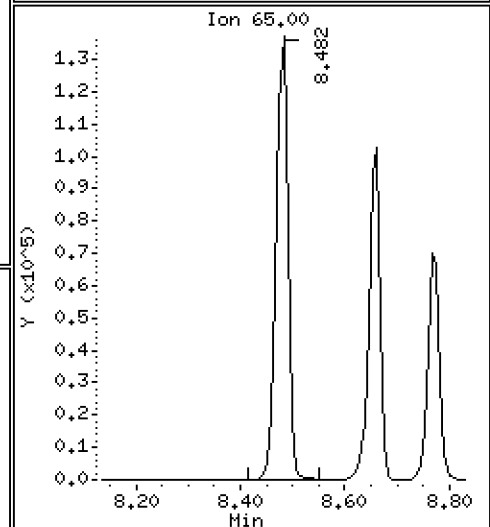
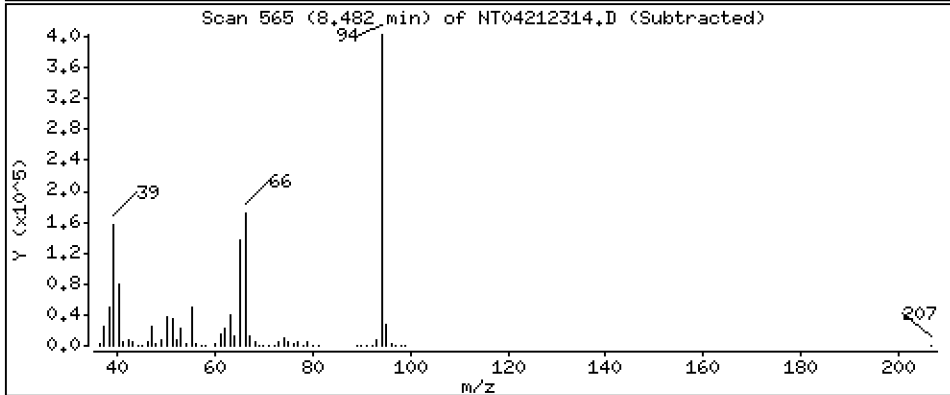
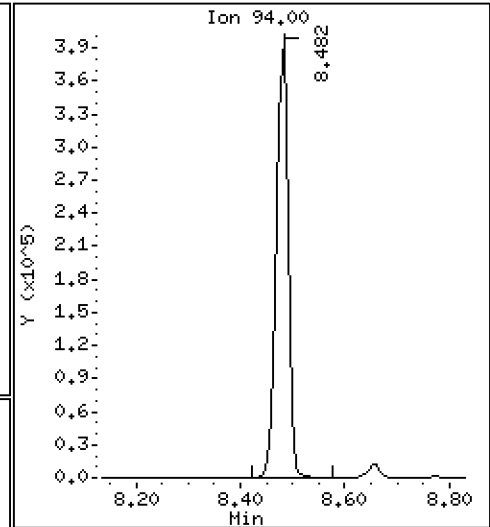
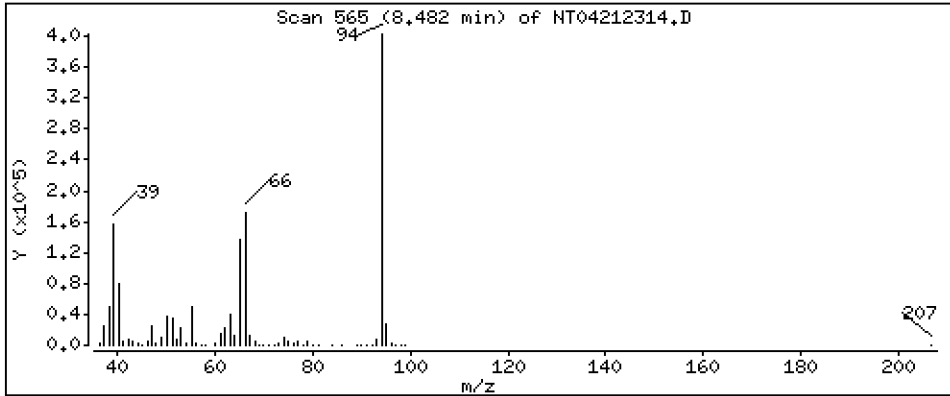
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,331 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

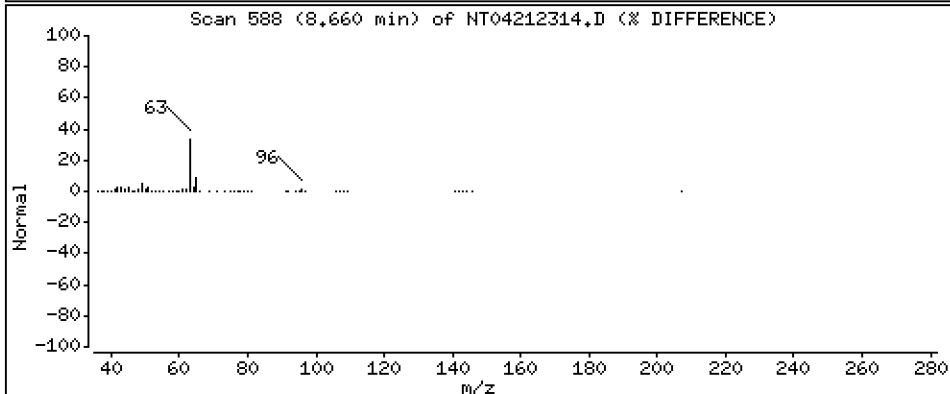
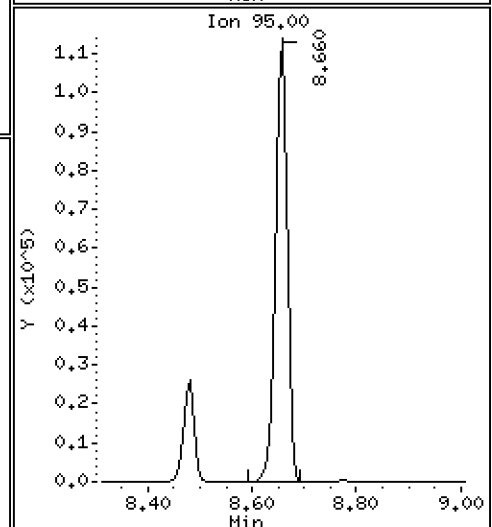
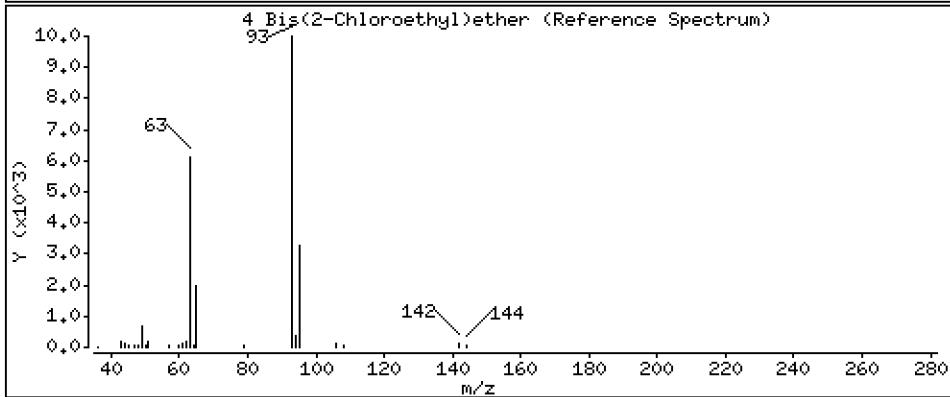
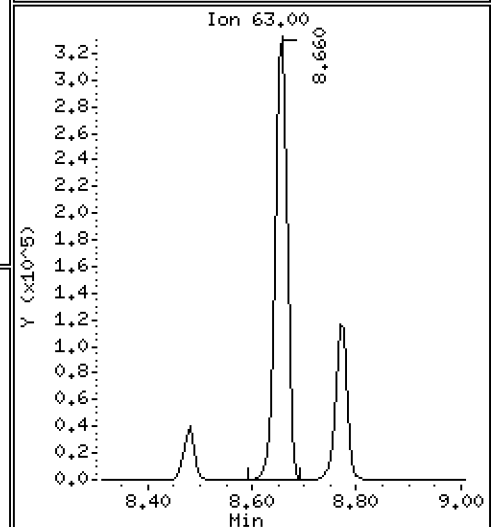
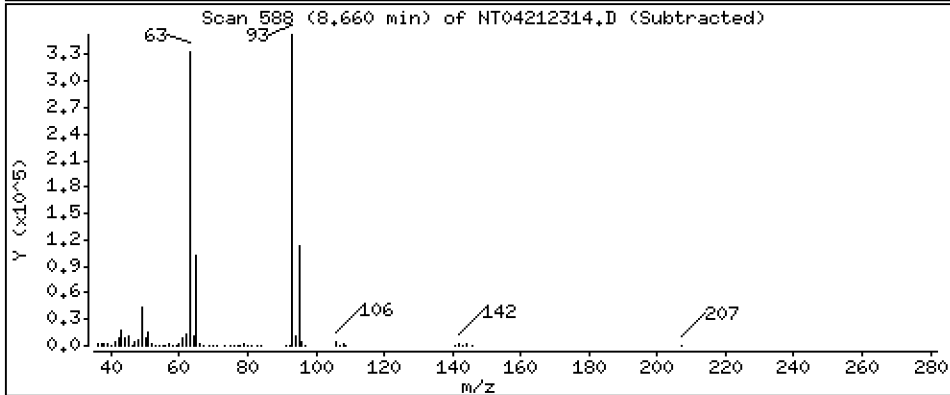
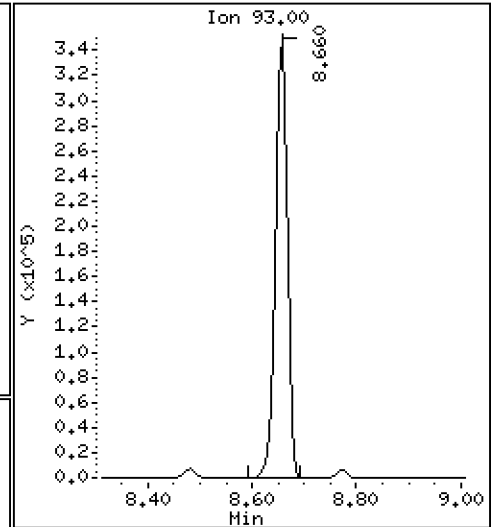
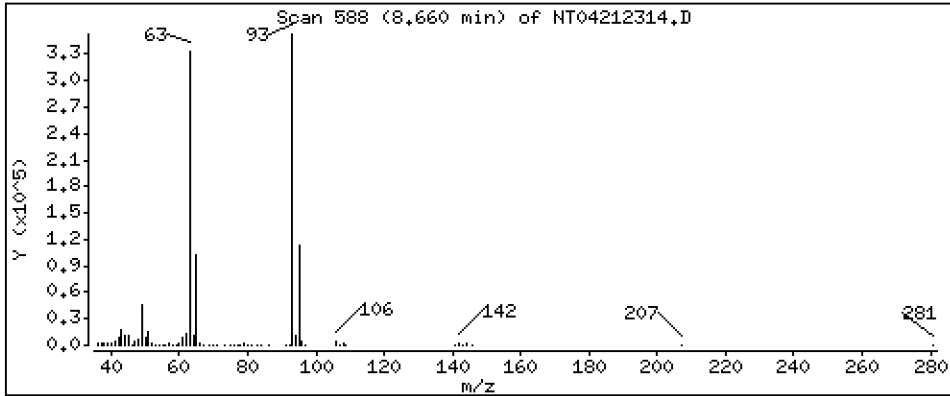
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 5,070 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

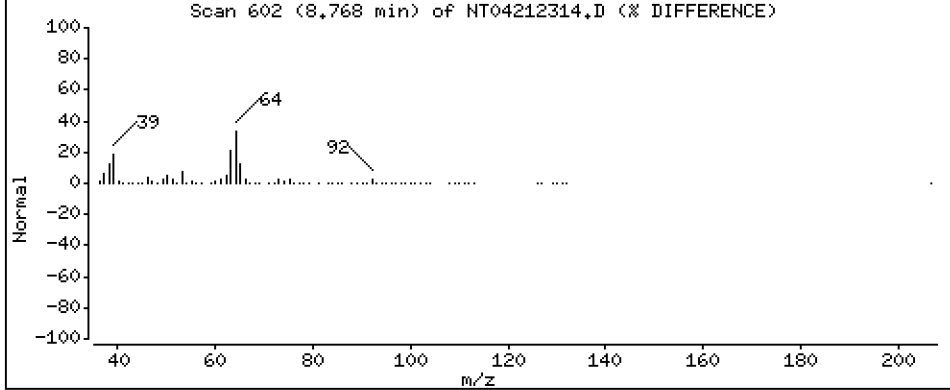
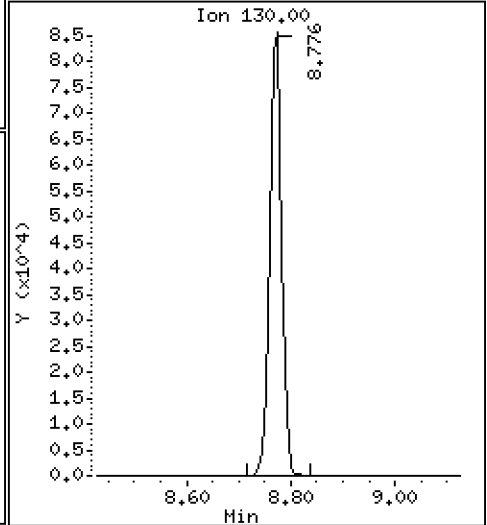
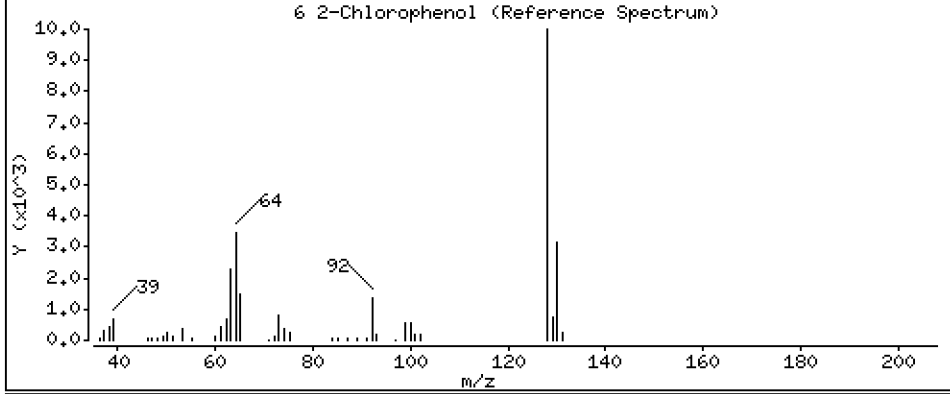
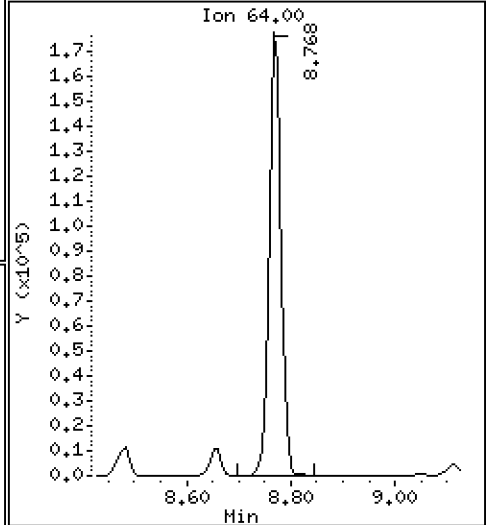
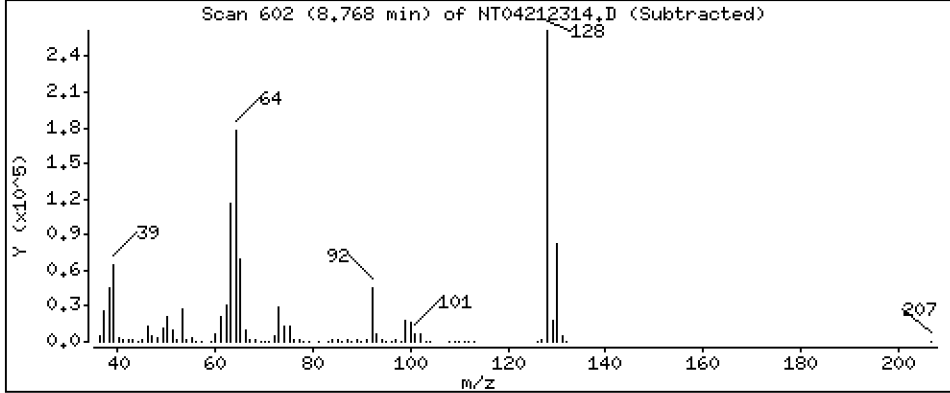
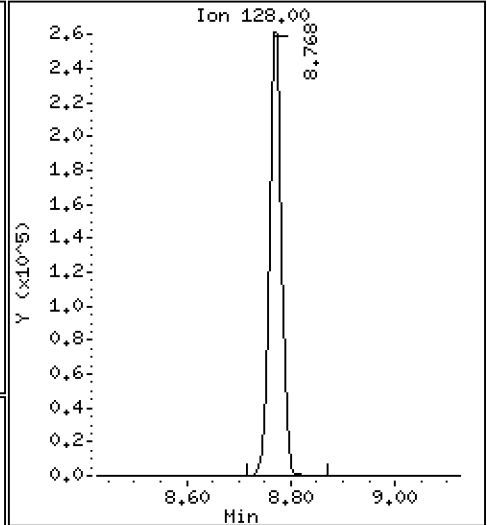
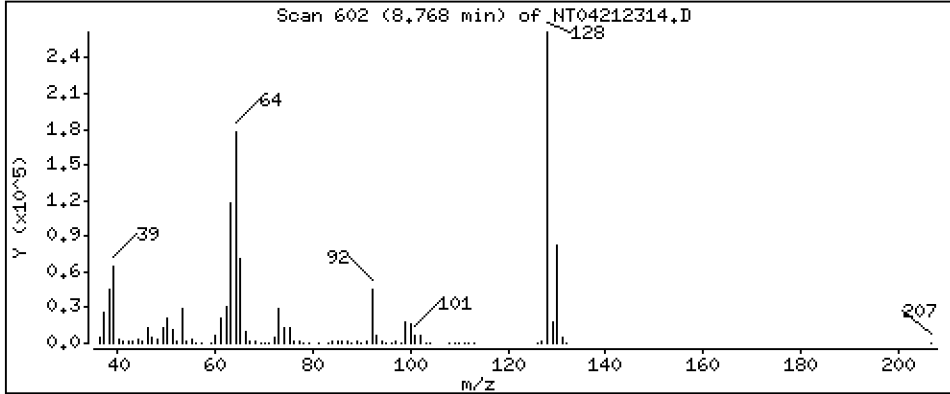
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

6 2-Chlorophenol

Concentration: 4.478 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

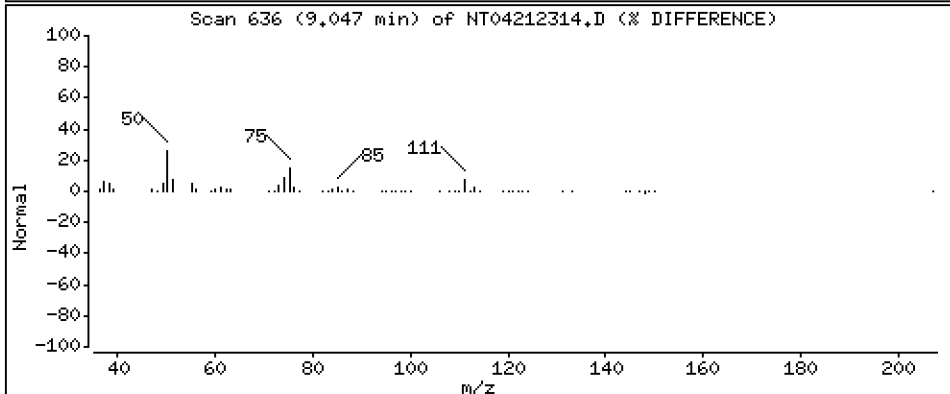
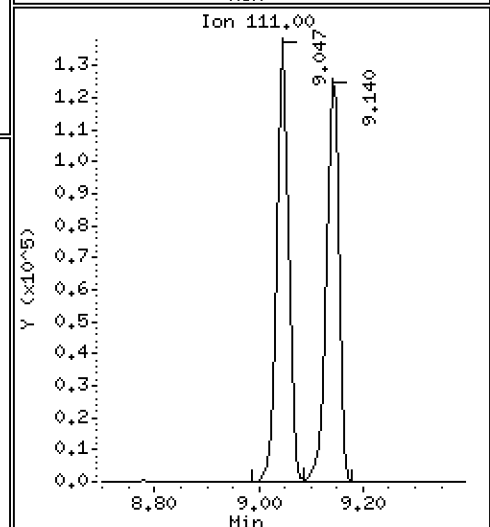
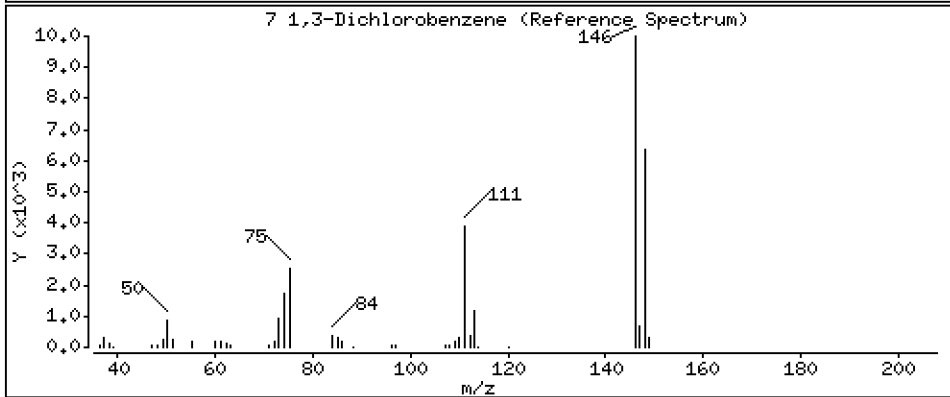
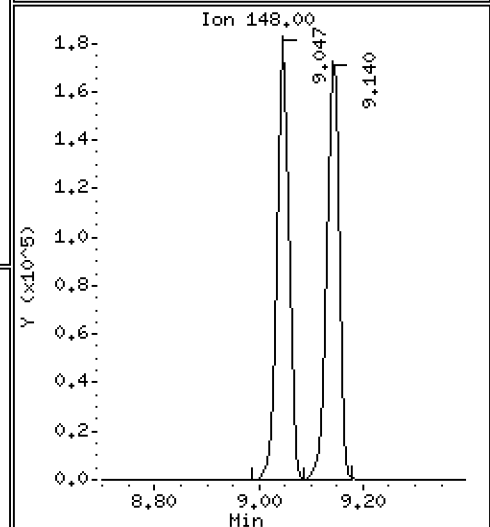
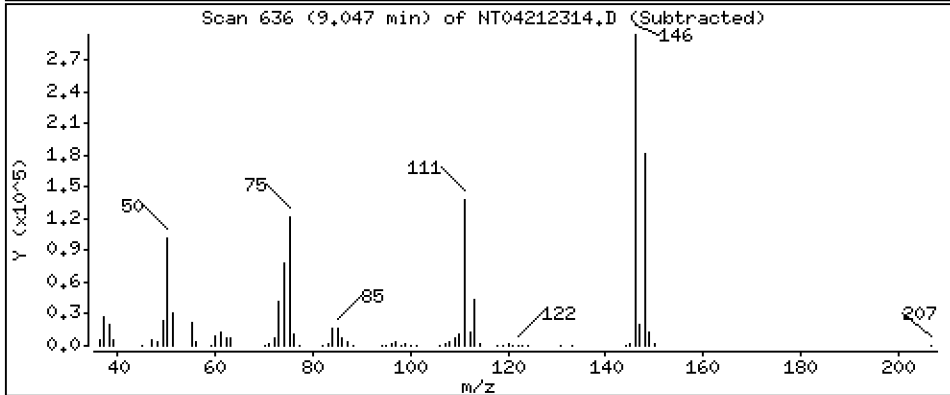
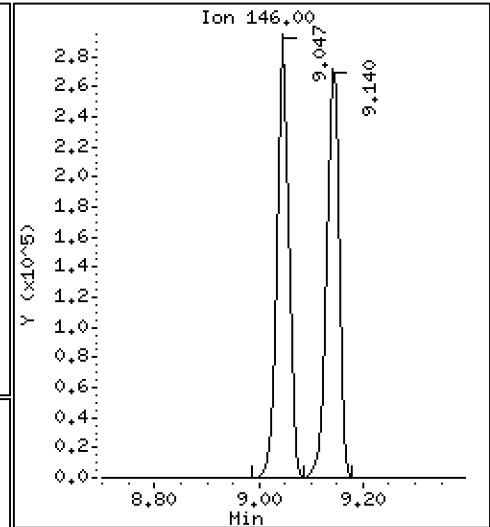
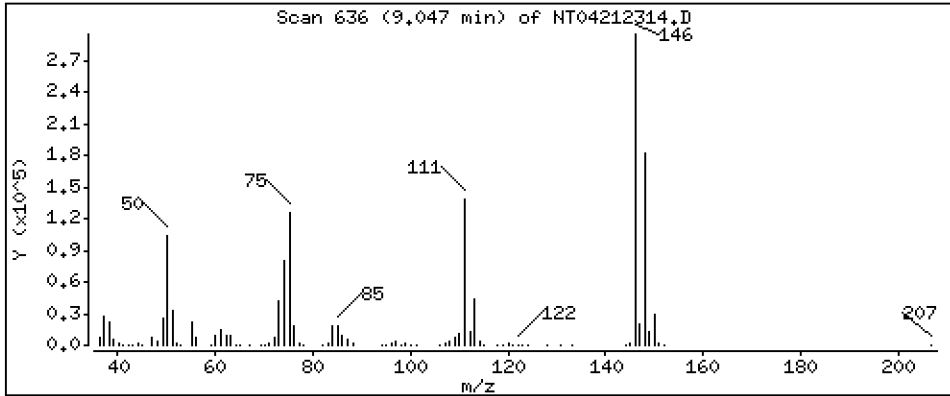
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 4,735 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

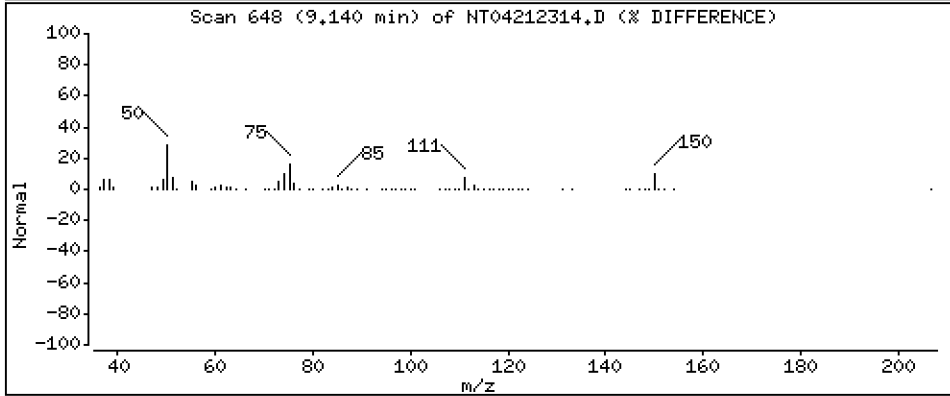
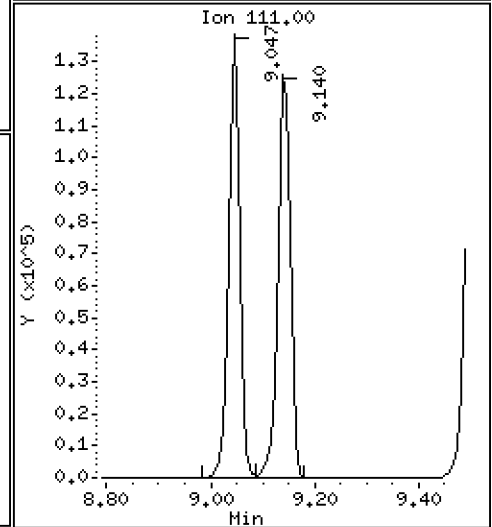
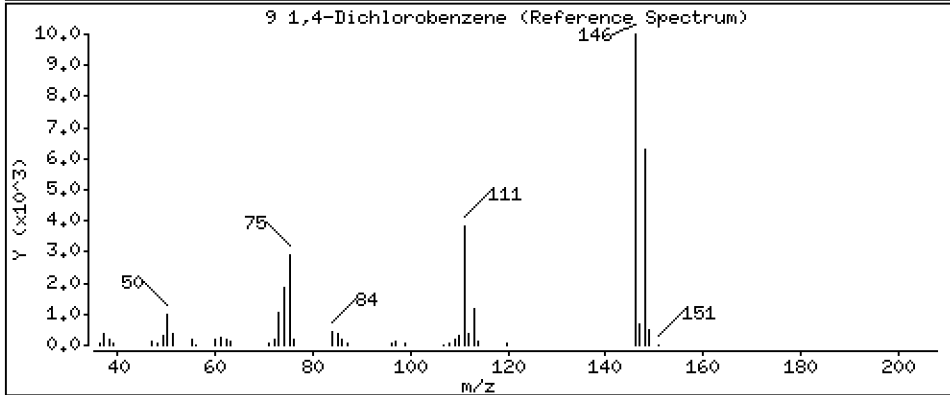
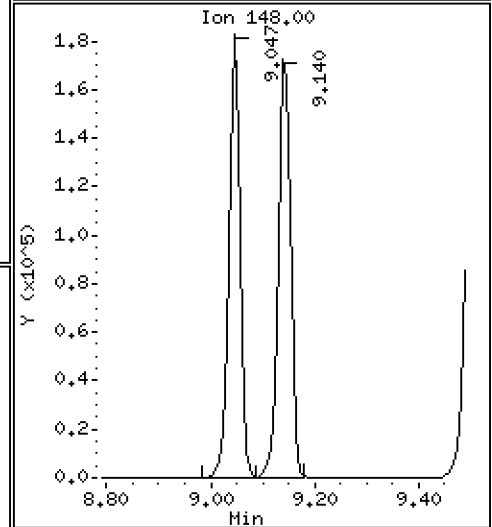
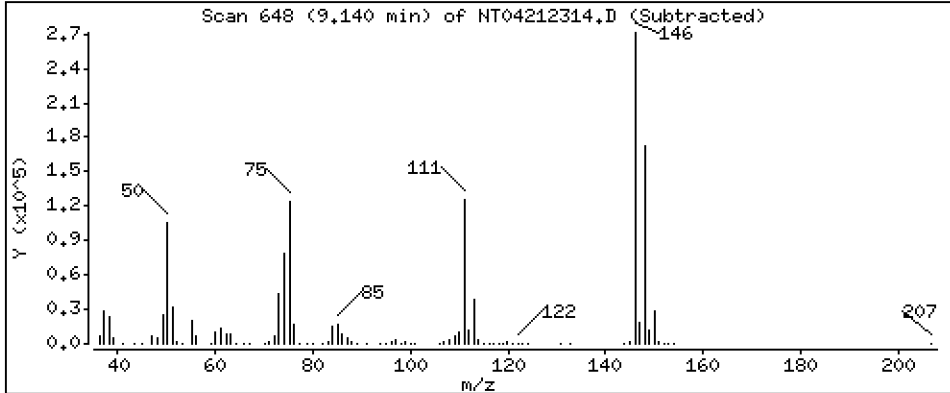
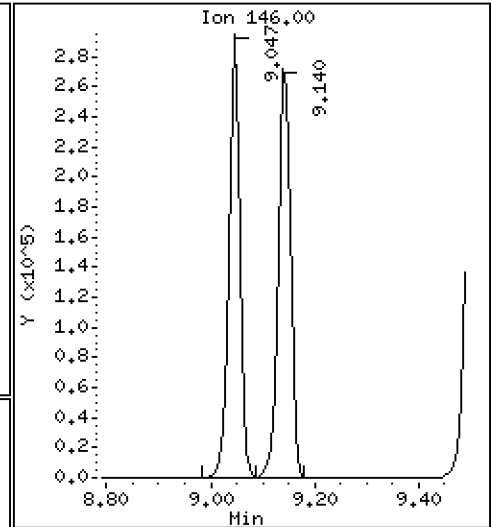
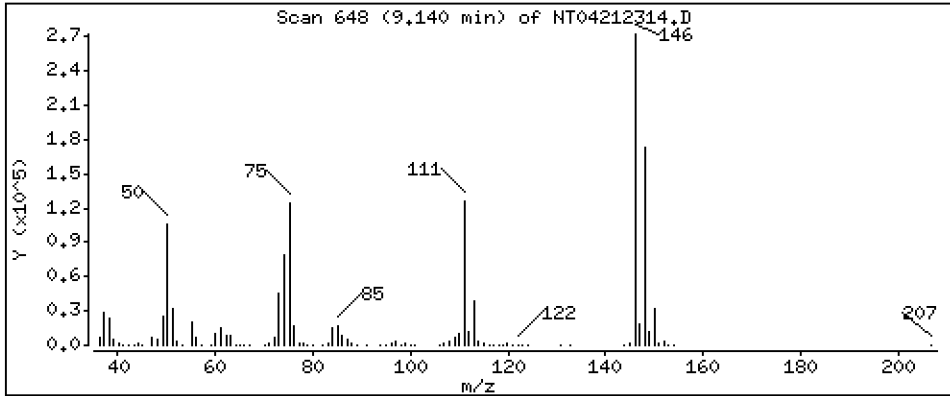
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 4.779 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

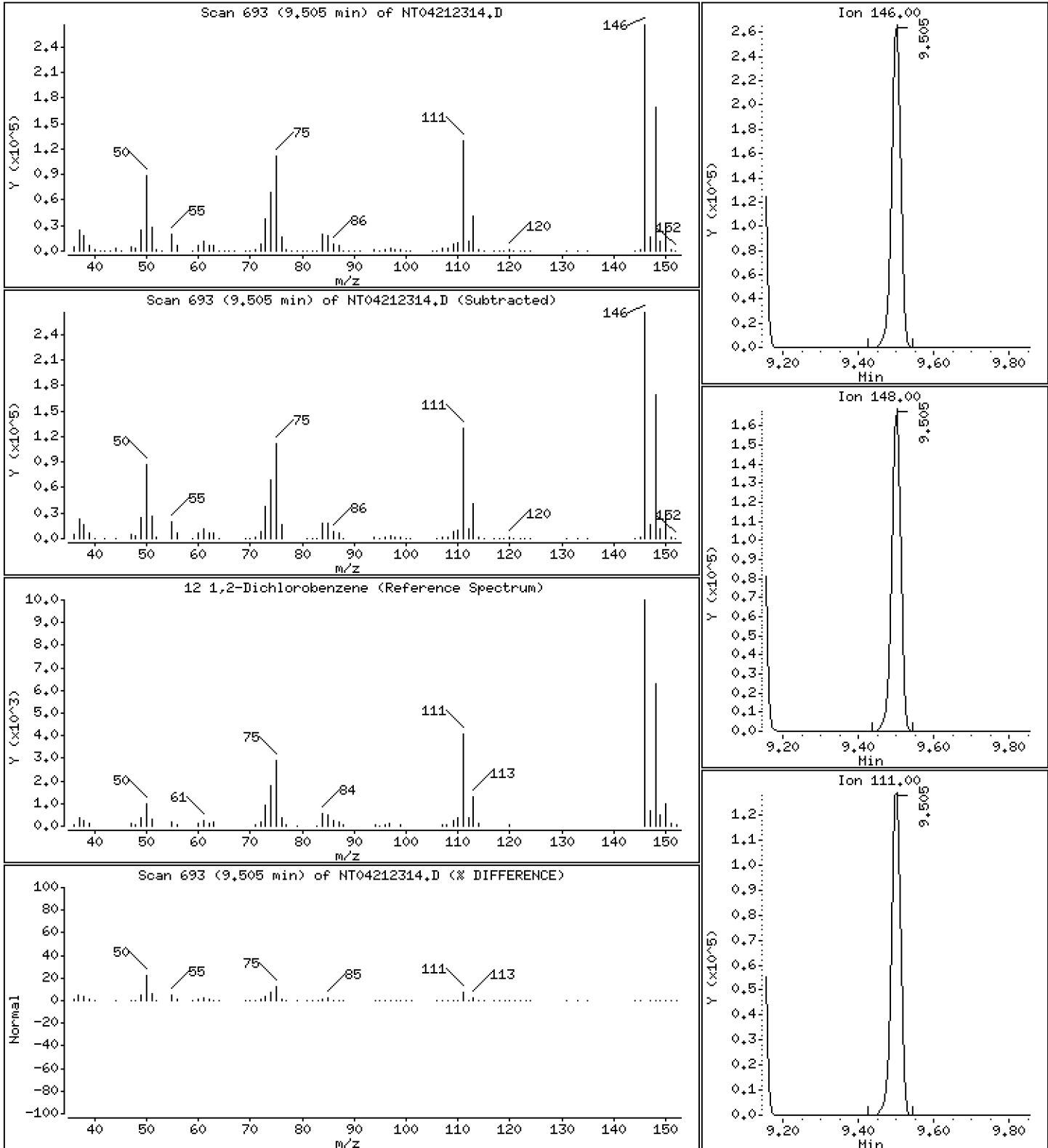
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.754 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

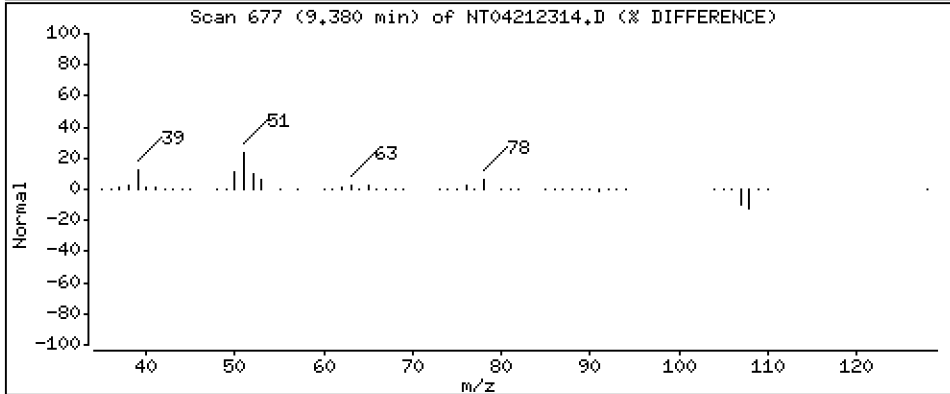
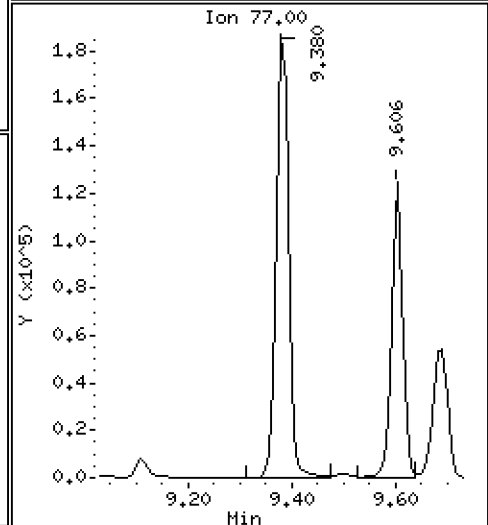
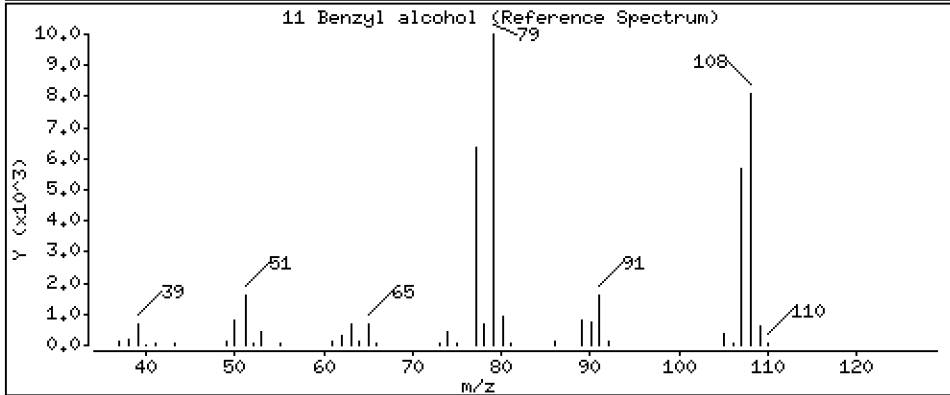
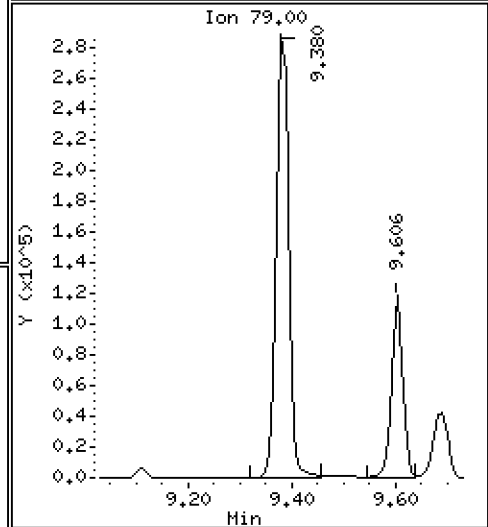
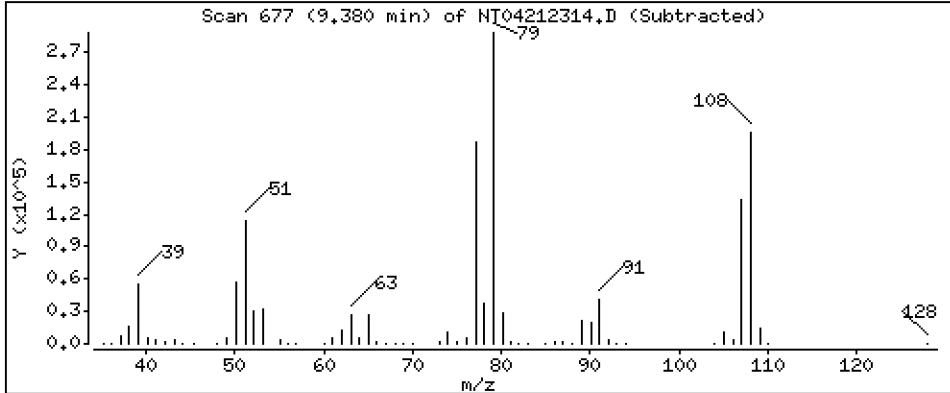
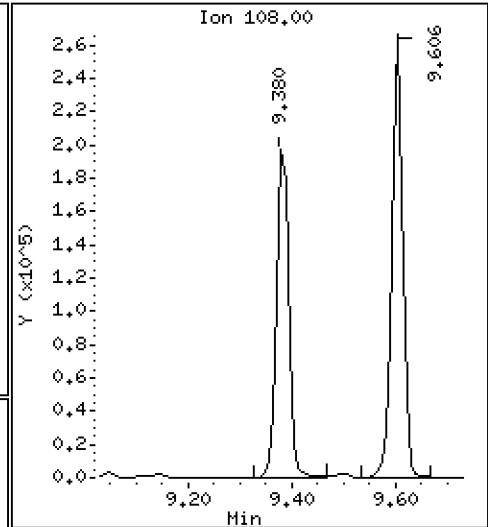
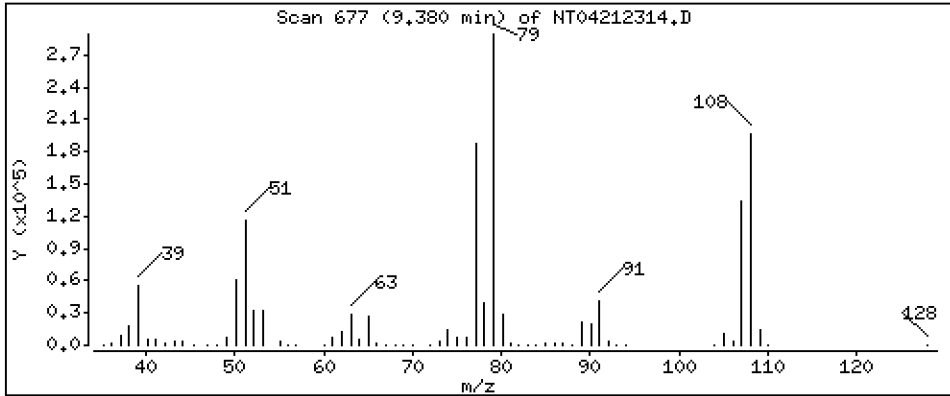
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.909 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

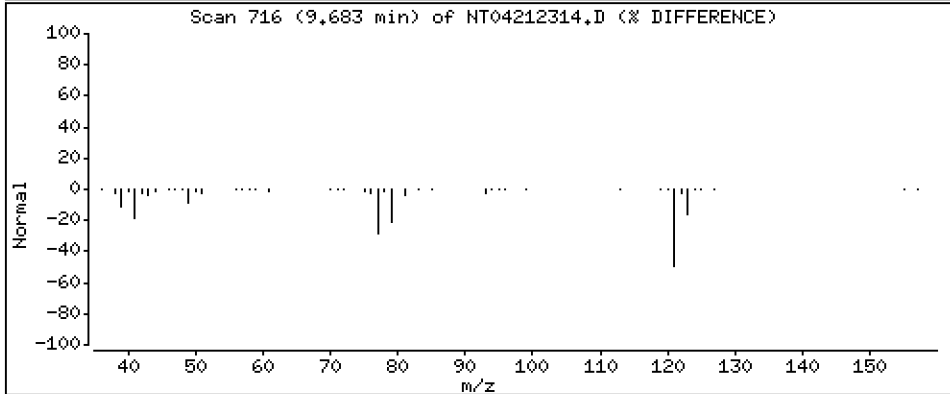
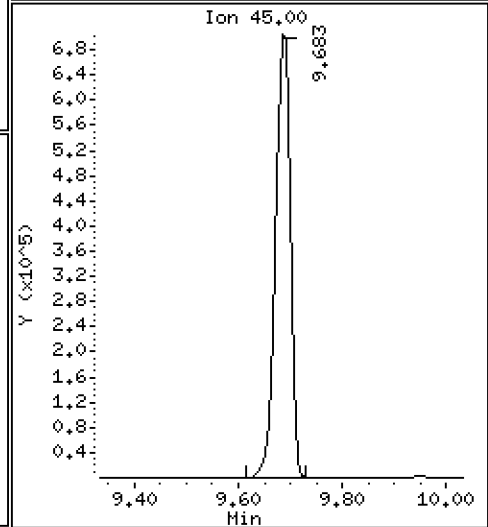
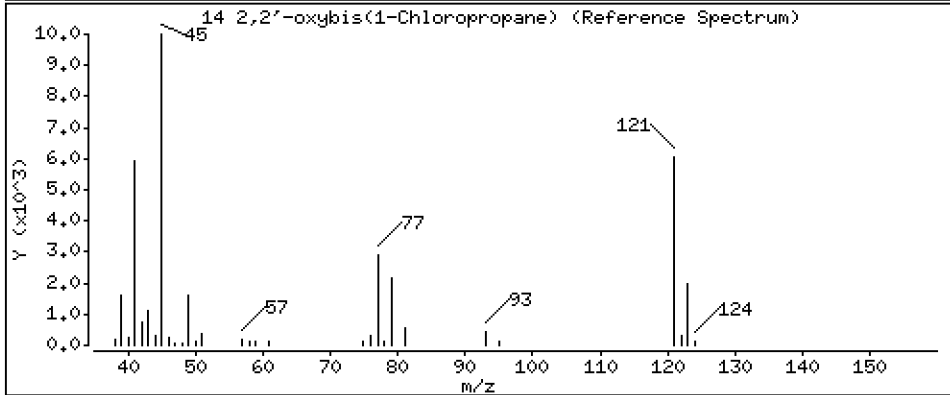
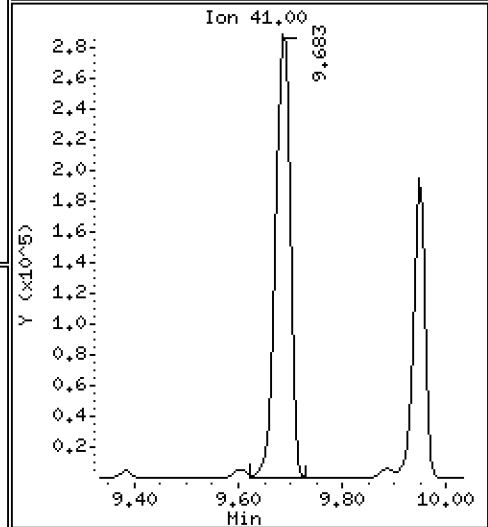
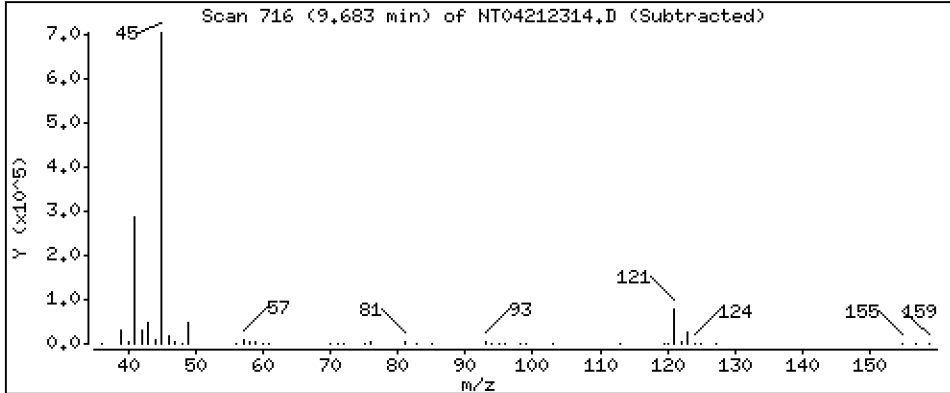
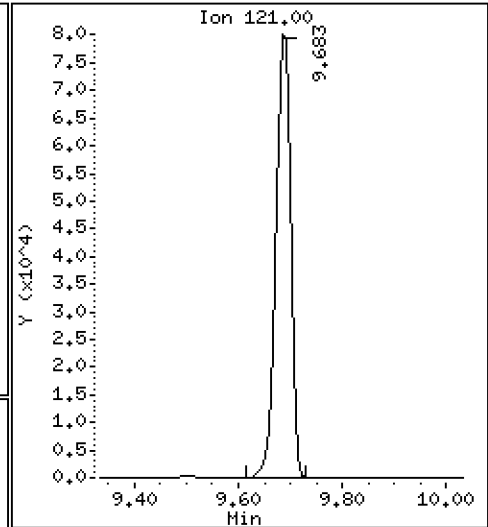
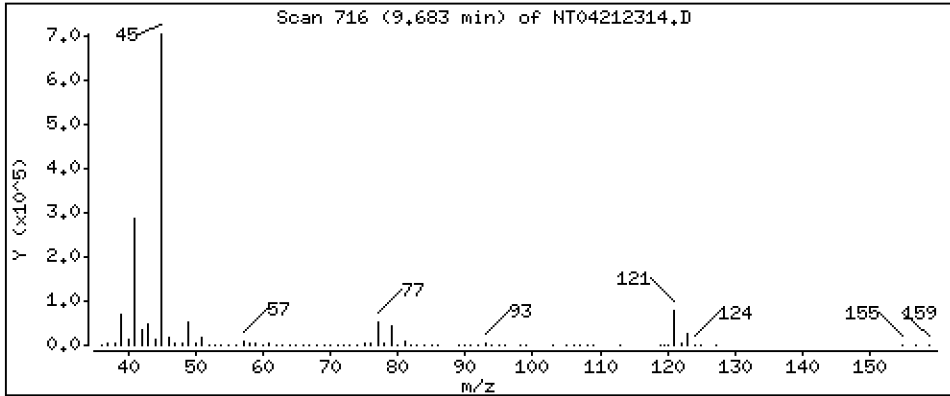
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 5,062 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

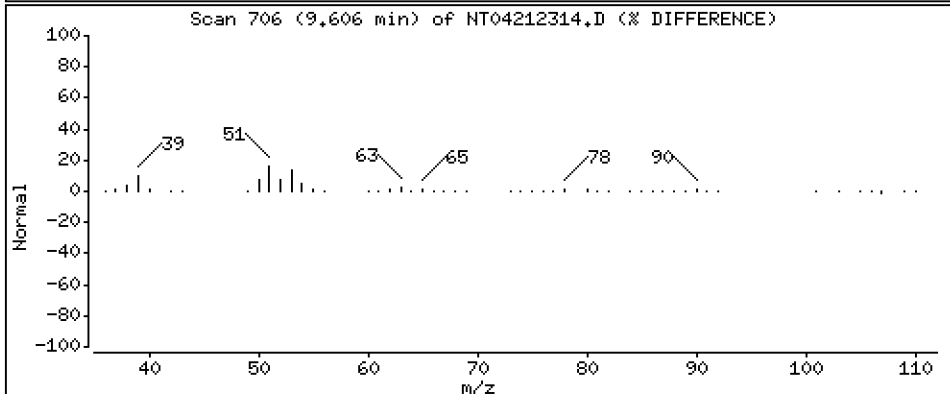
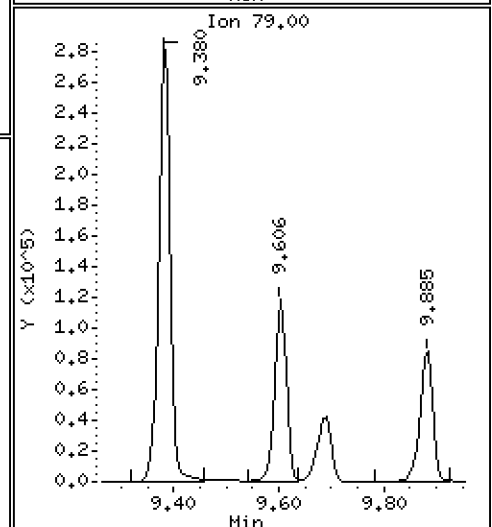
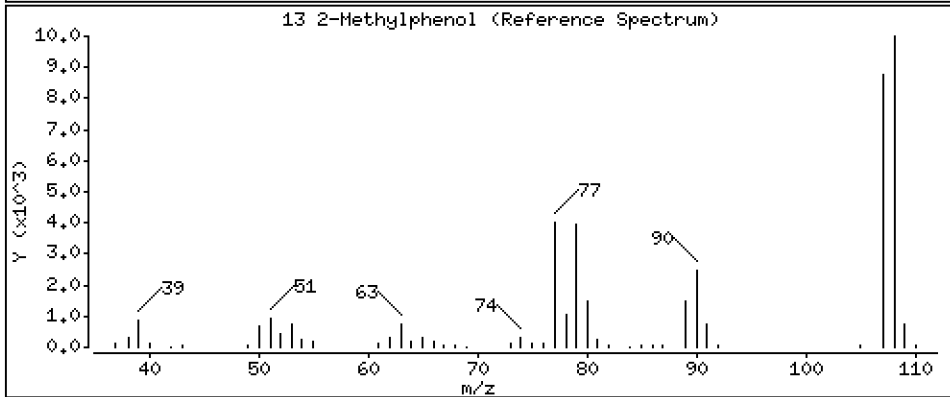
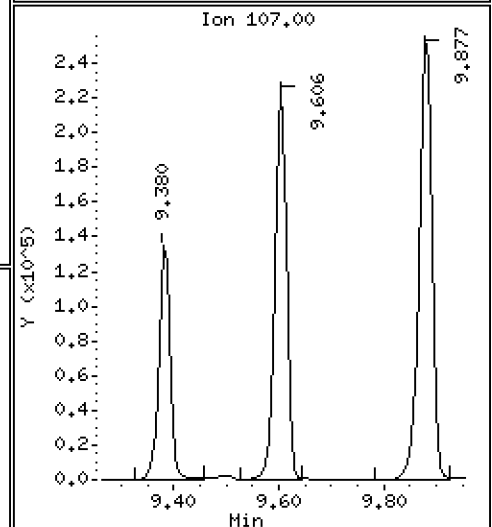
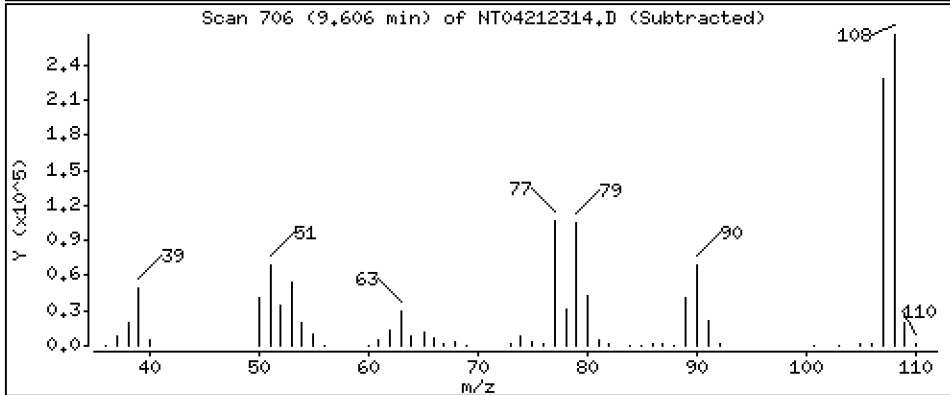
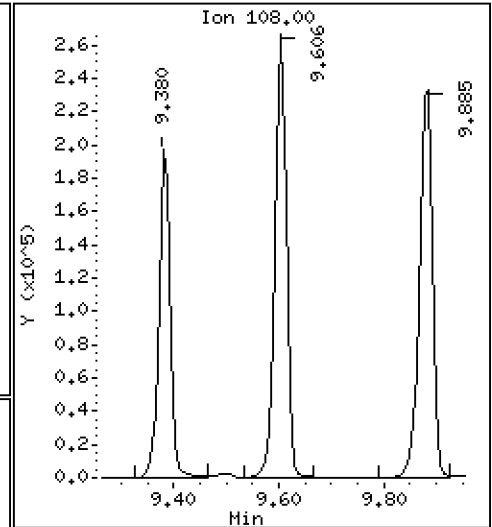
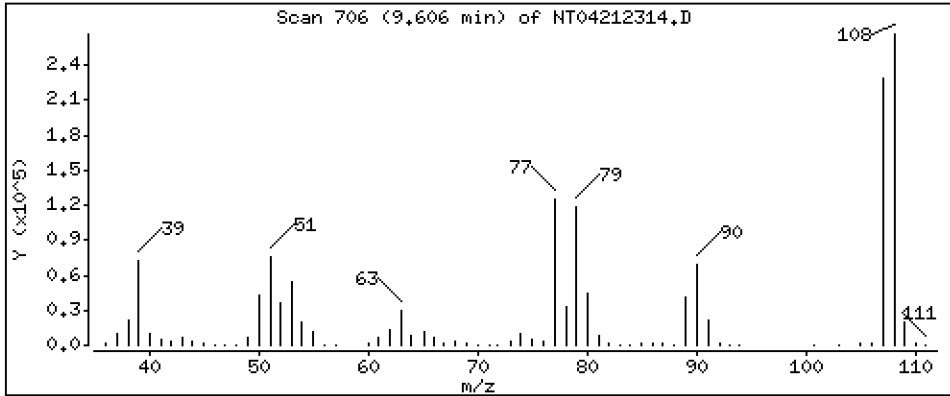
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 4.199 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

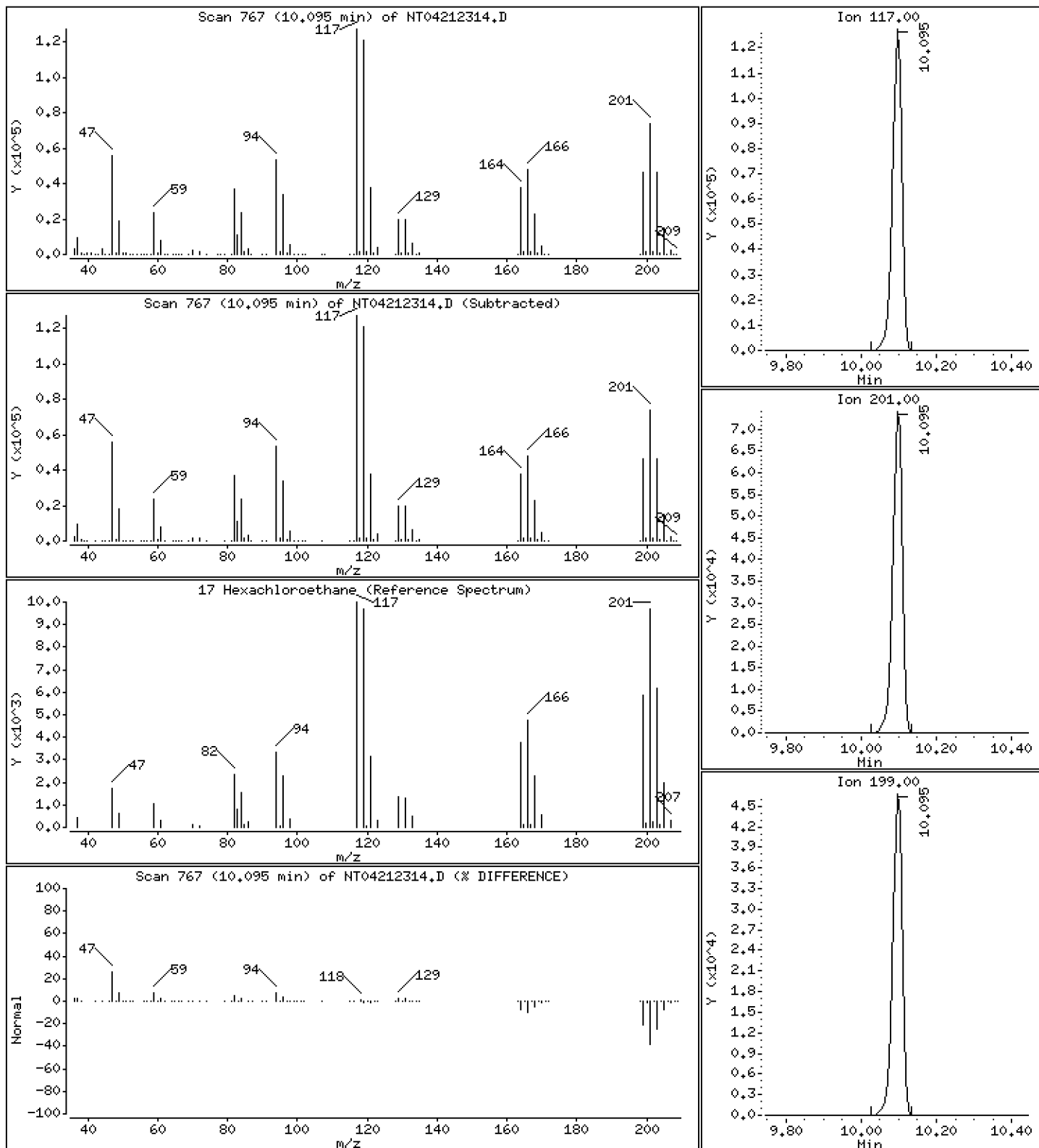
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 4,872 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

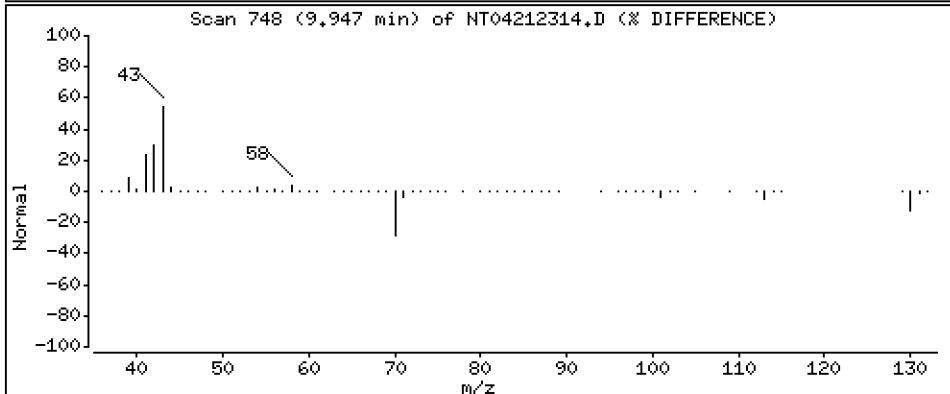
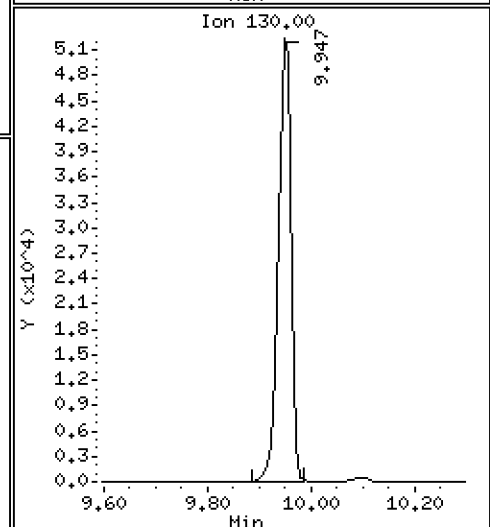
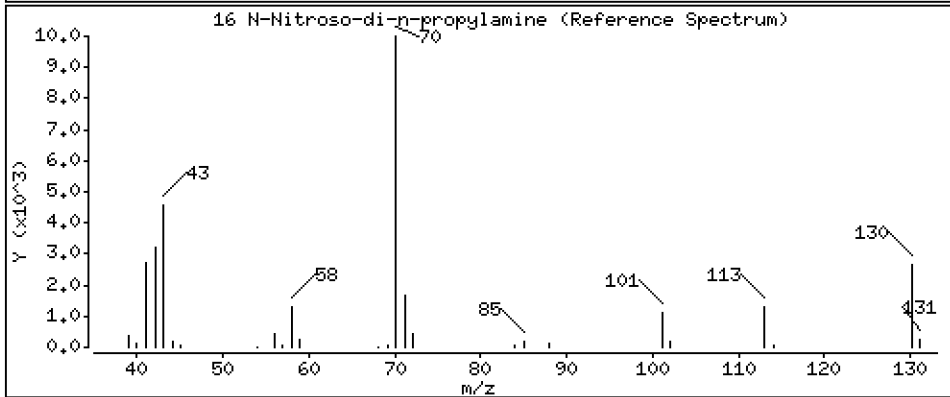
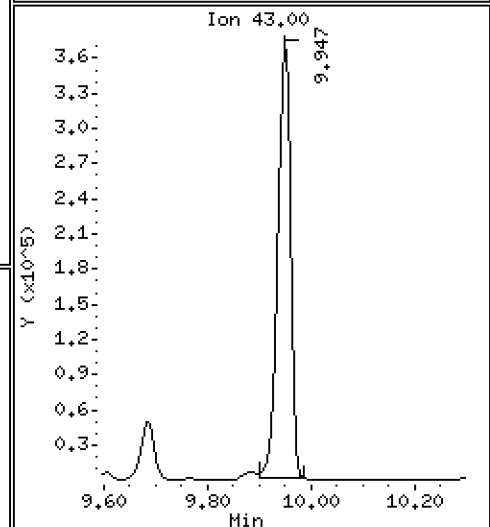
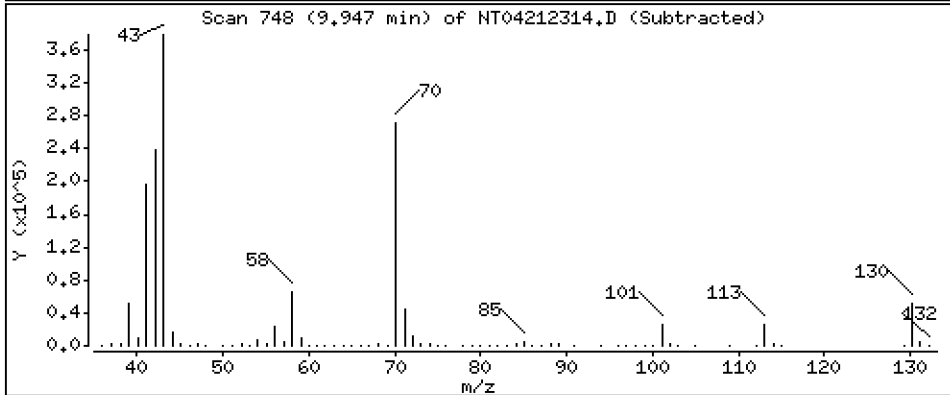
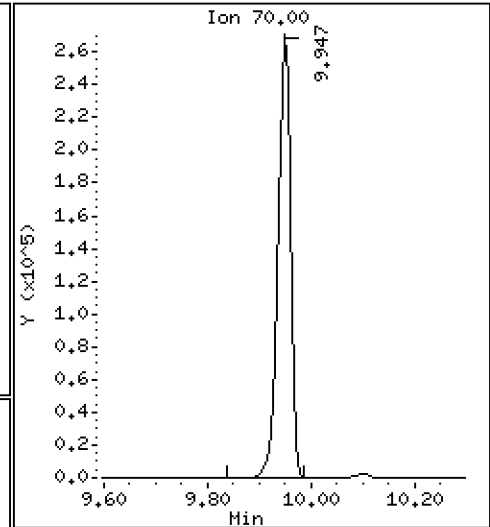
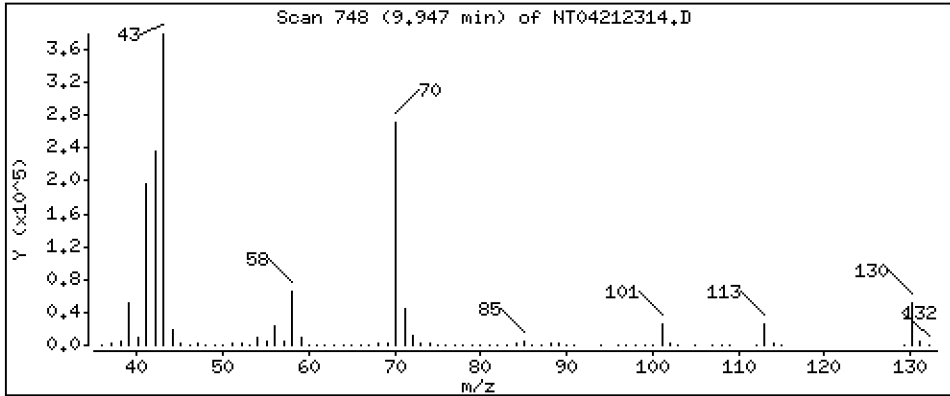
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

16 N-Nitroso-di-n-propylamine

Concentration: 4.737 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

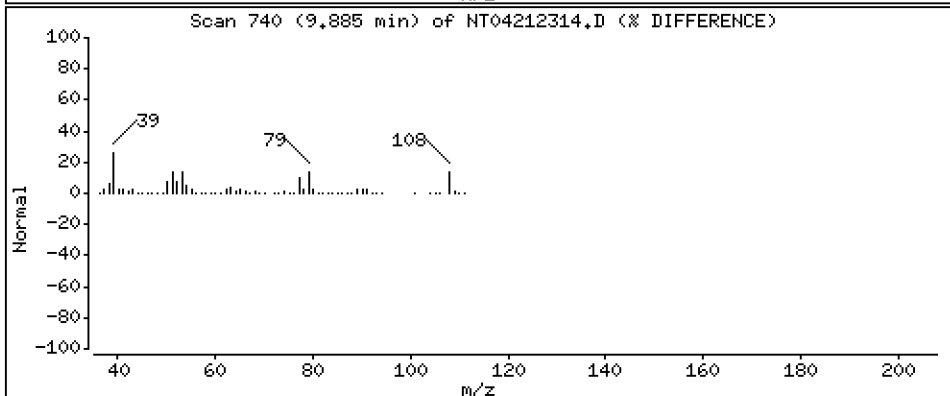
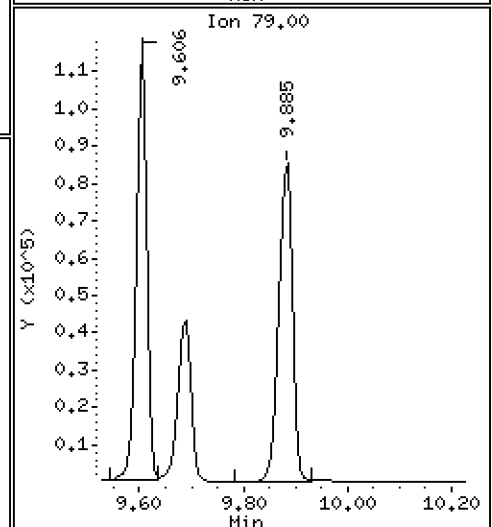
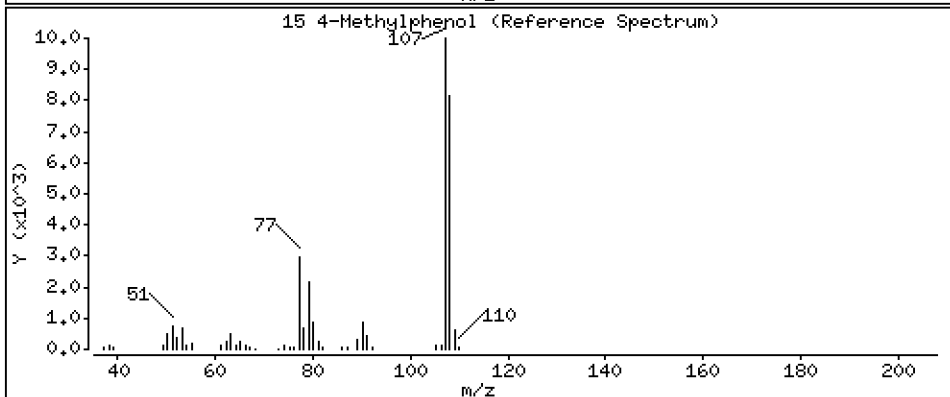
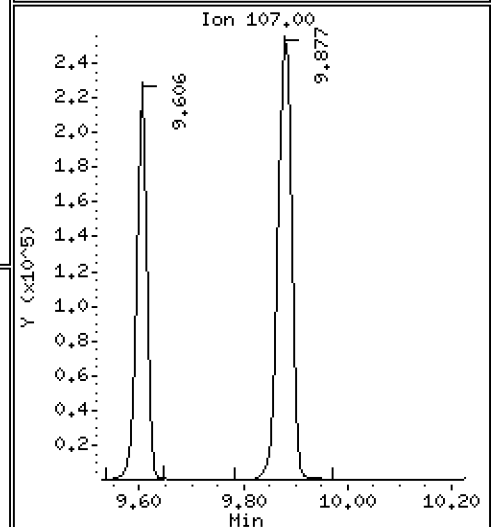
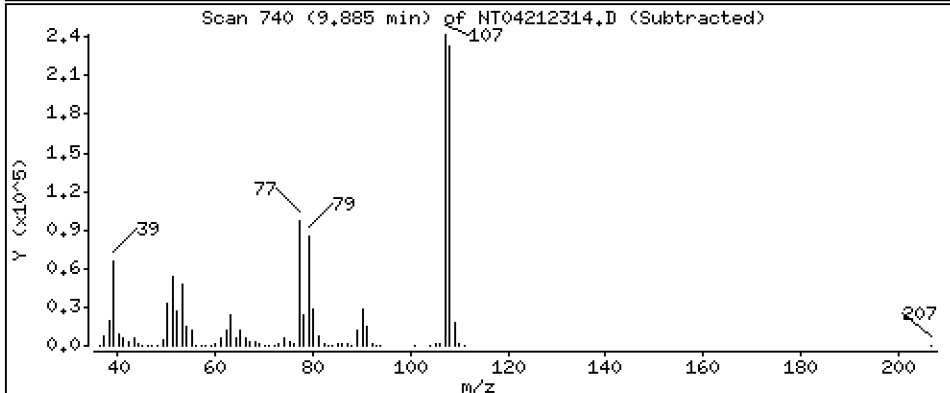
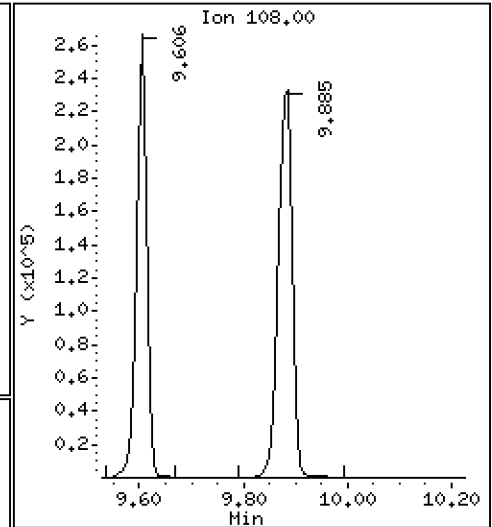
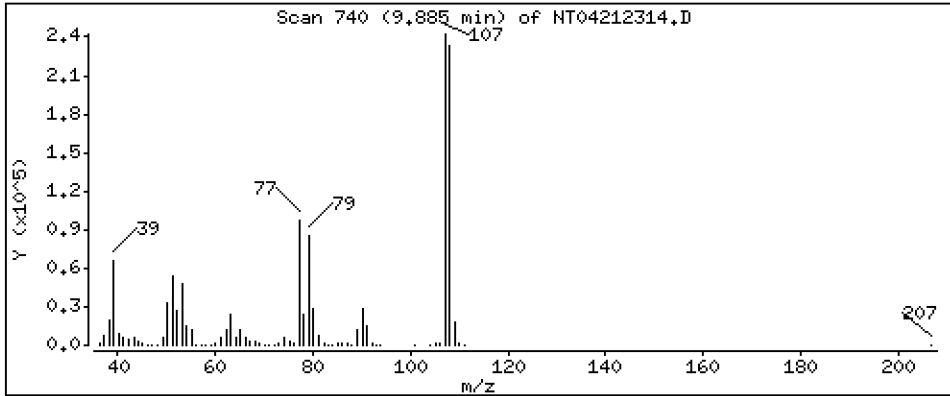
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.451 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

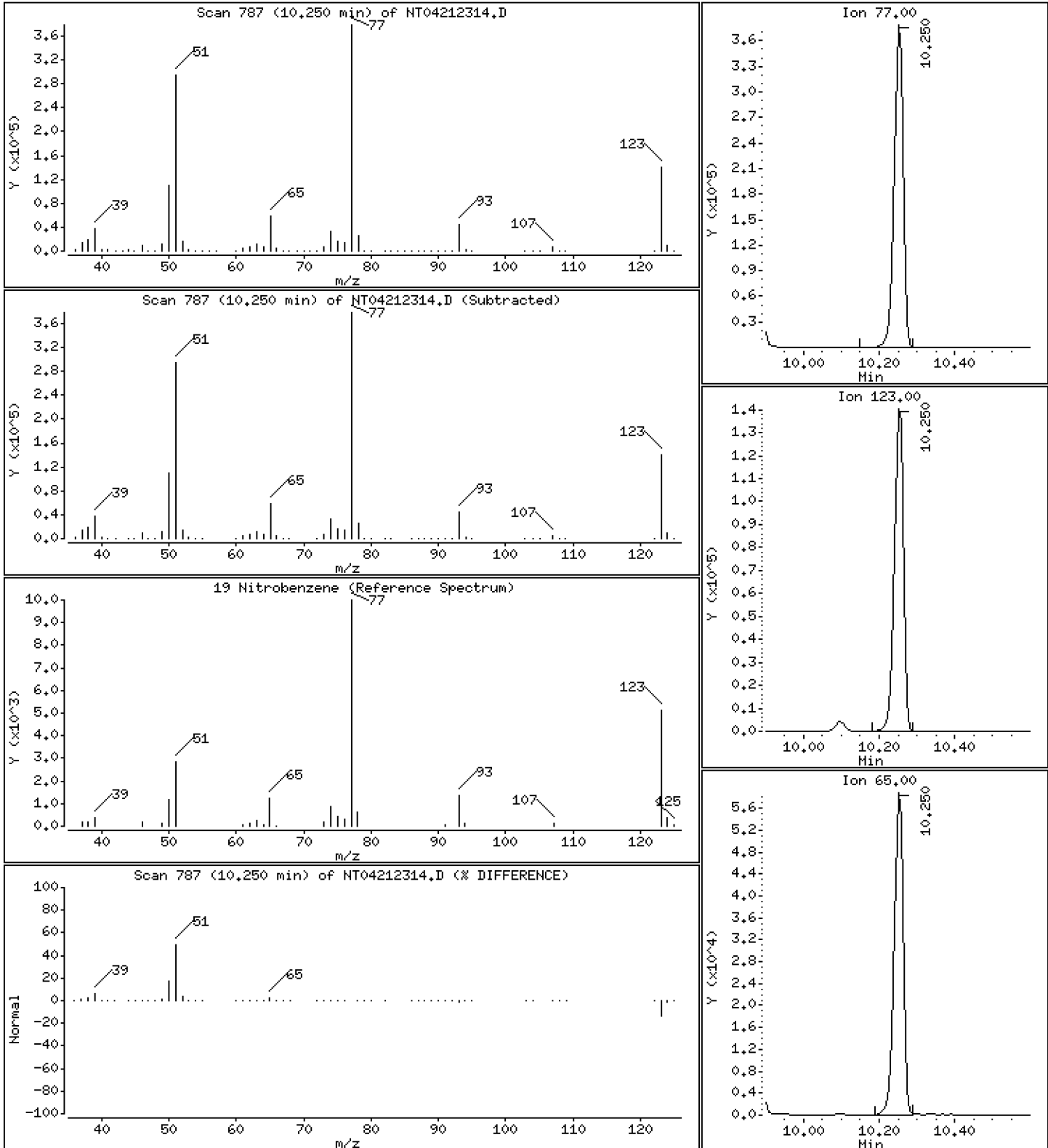
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 4,715 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

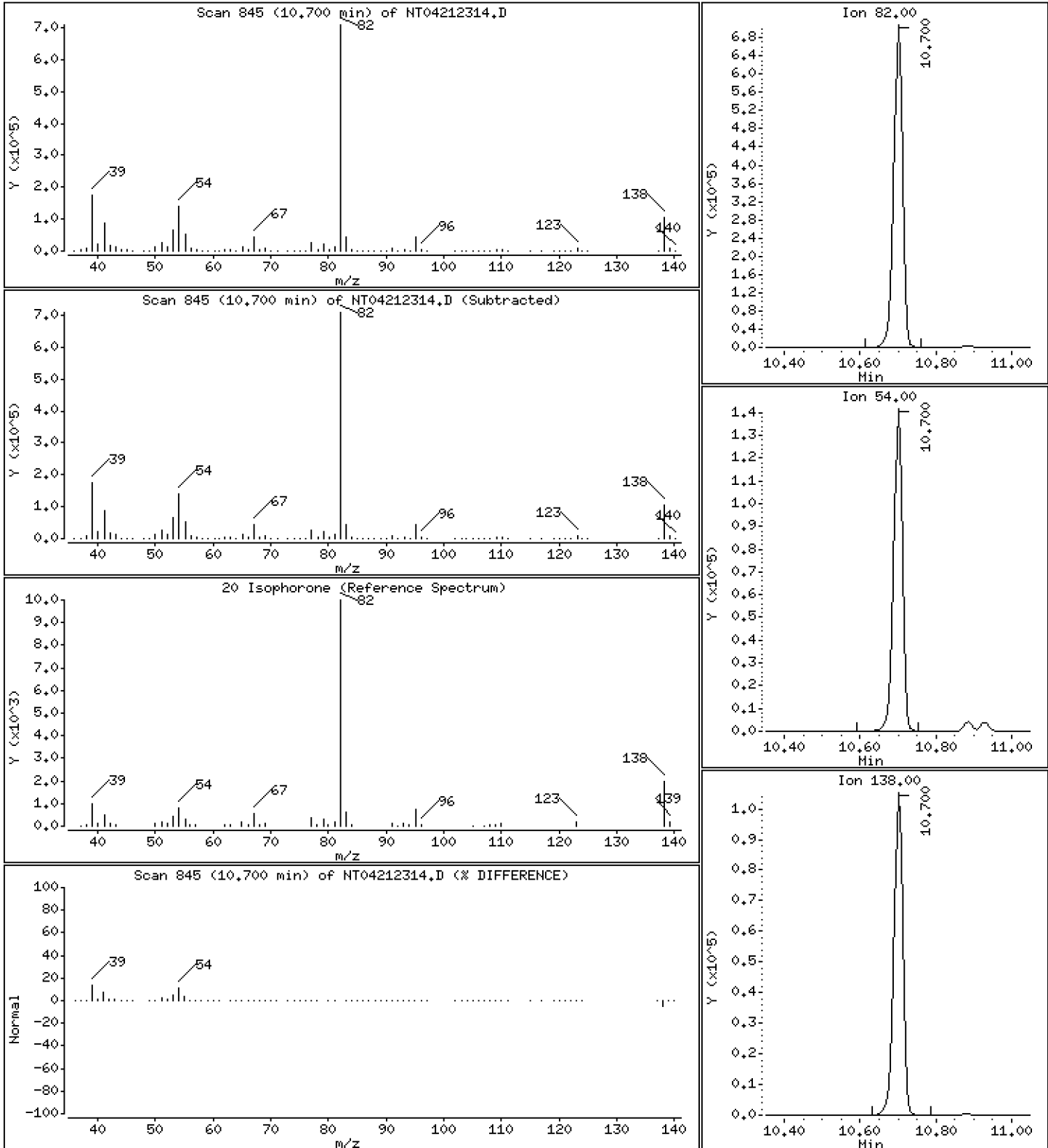
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 6,317 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

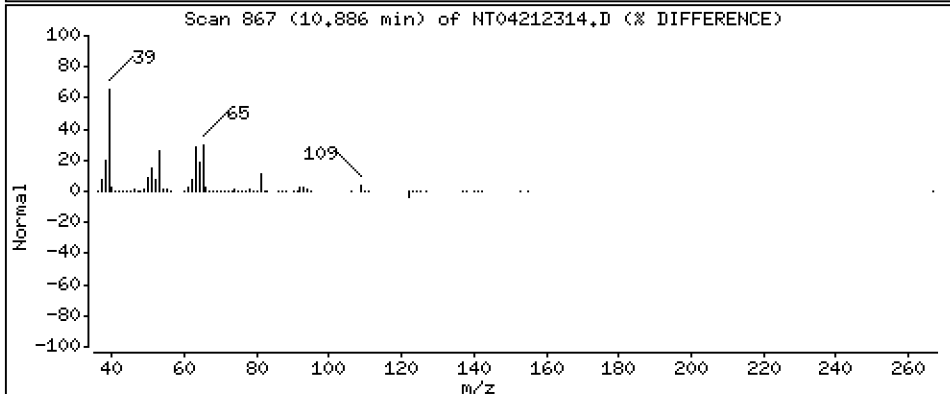
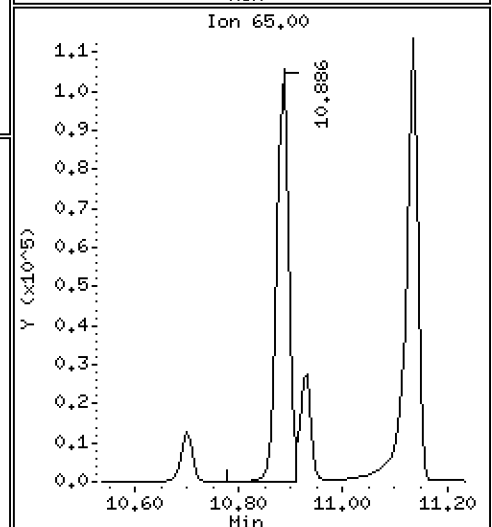
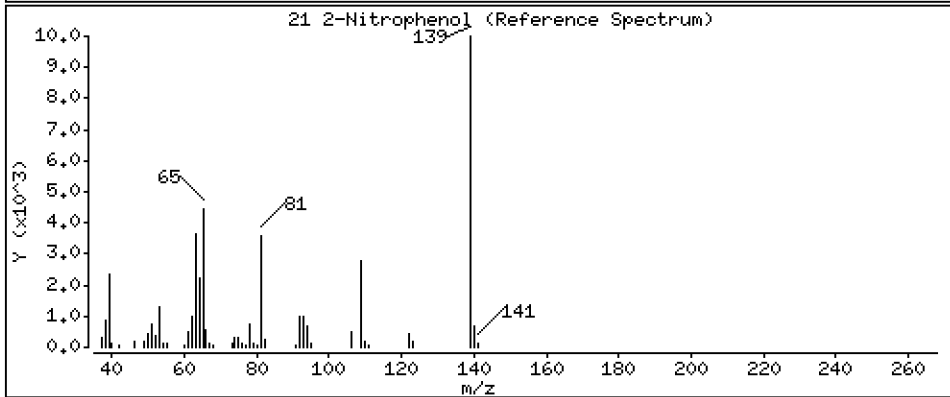
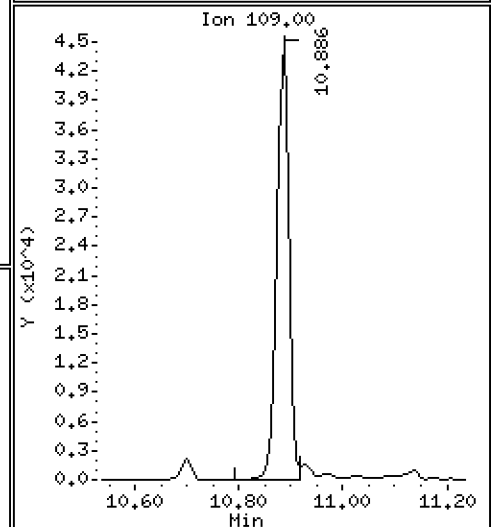
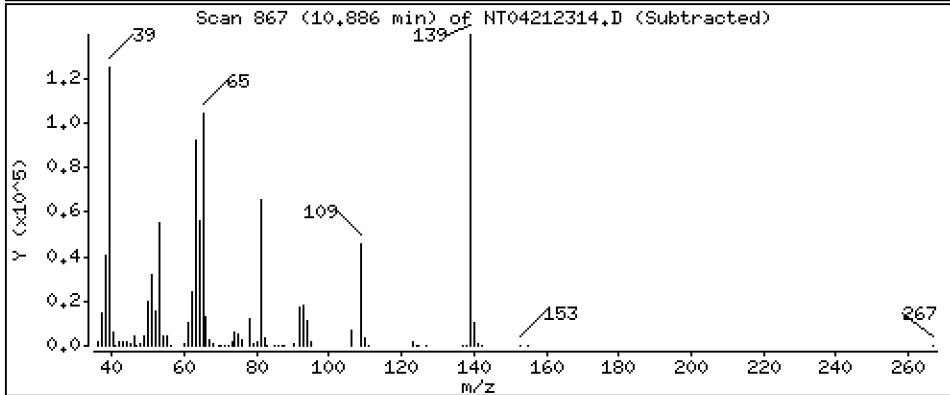
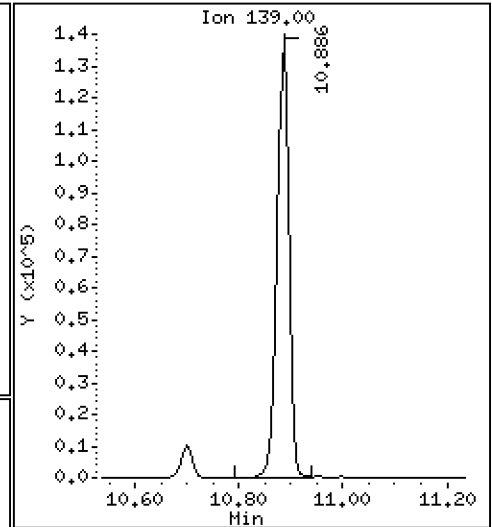
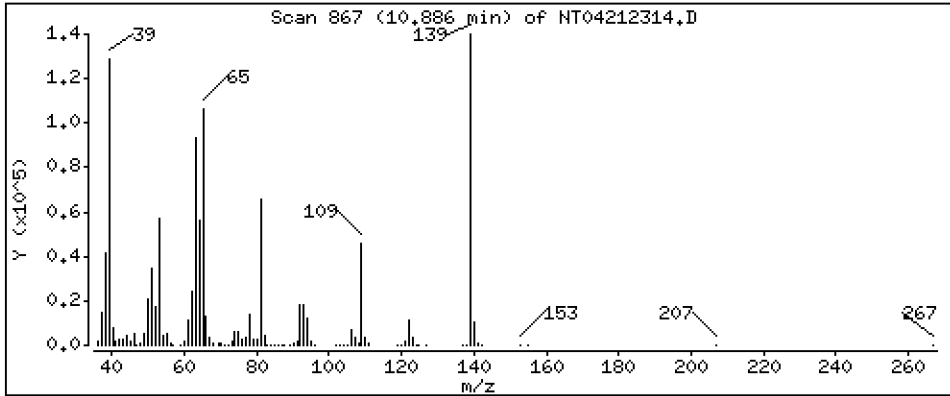
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 3,779 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

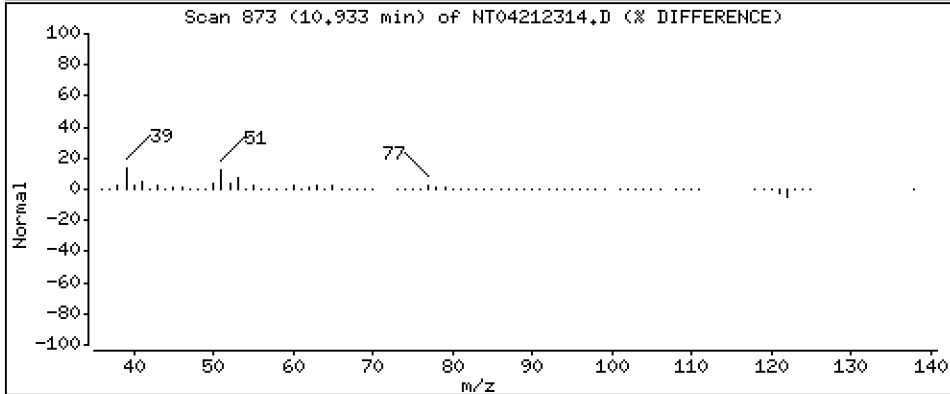
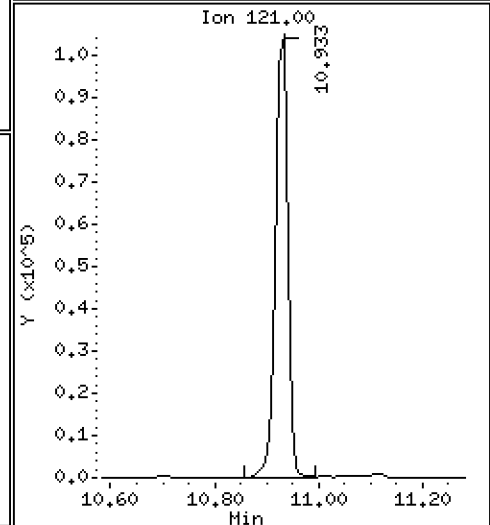
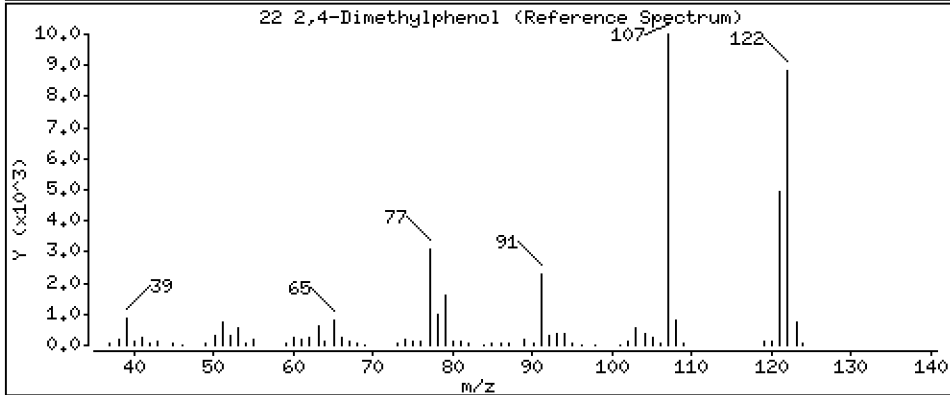
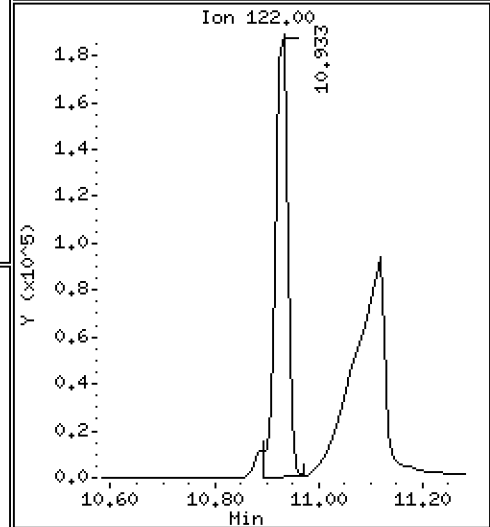
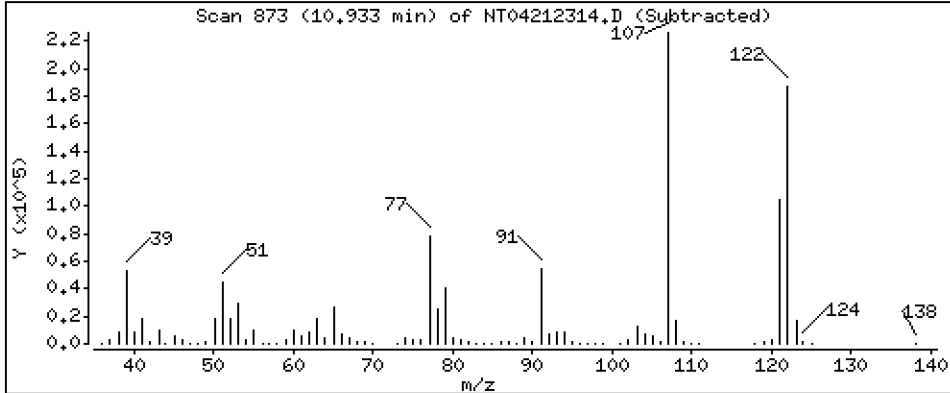
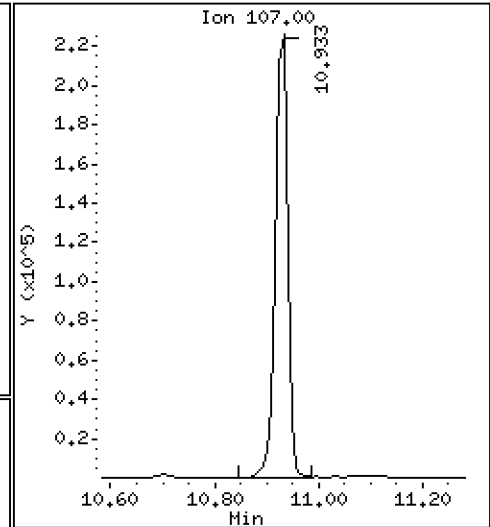
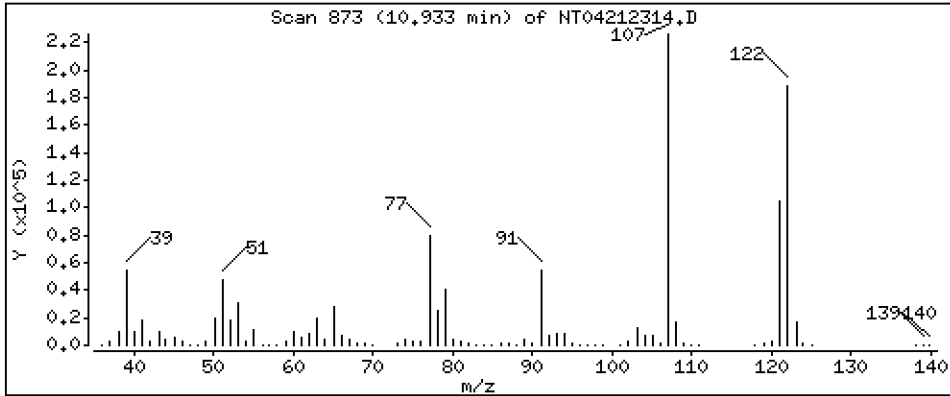
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 3,707 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

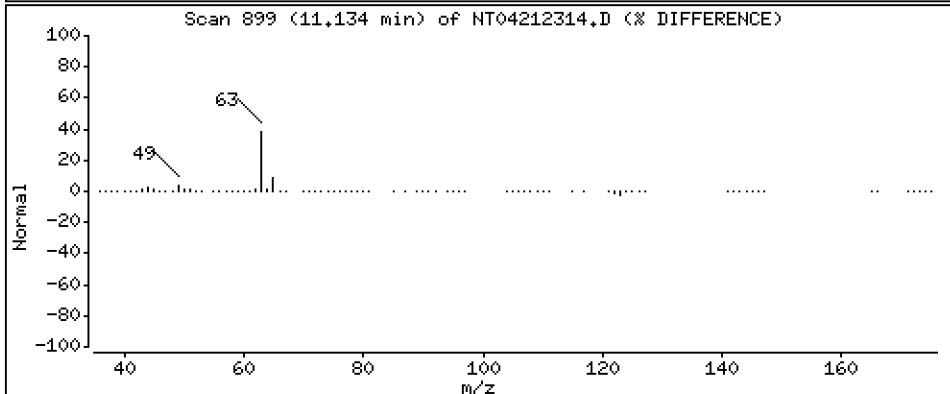
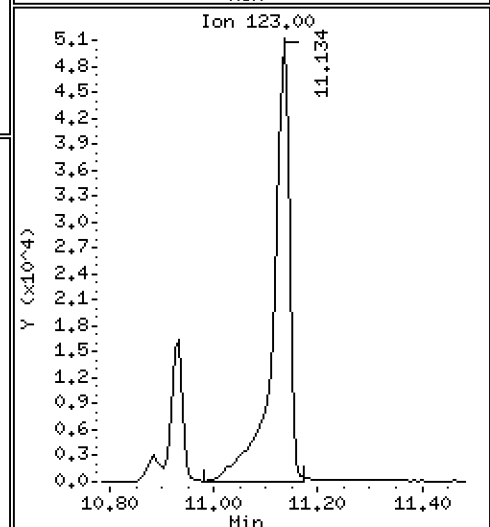
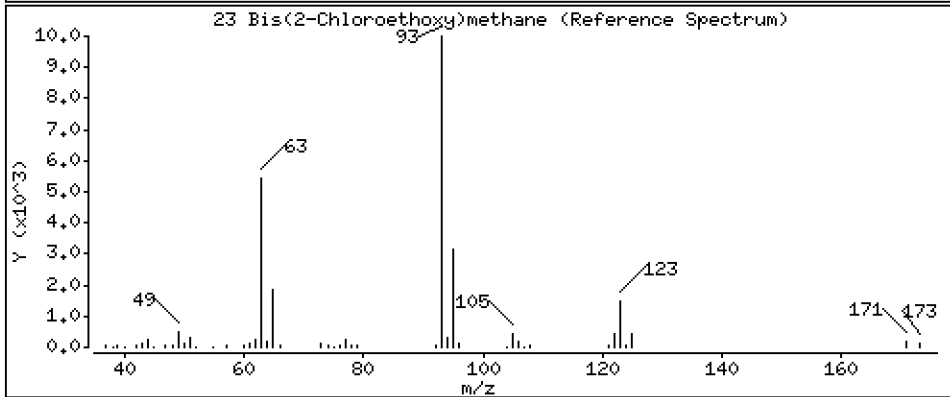
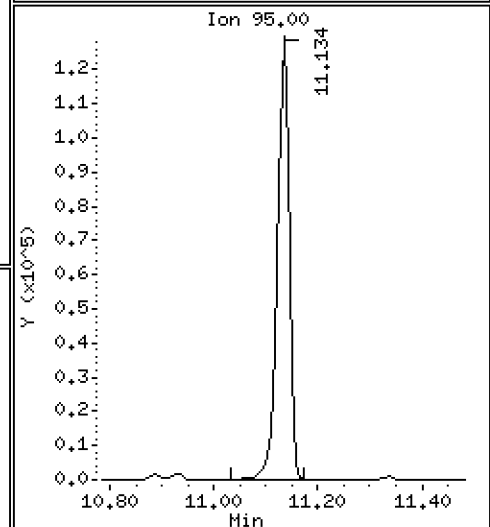
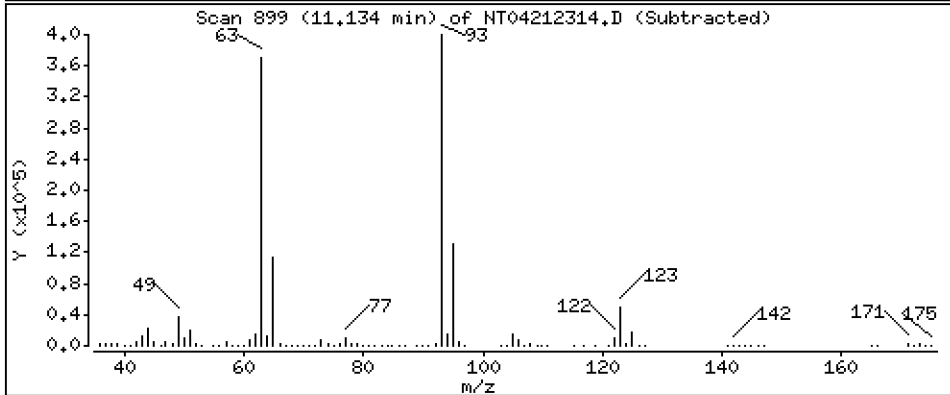
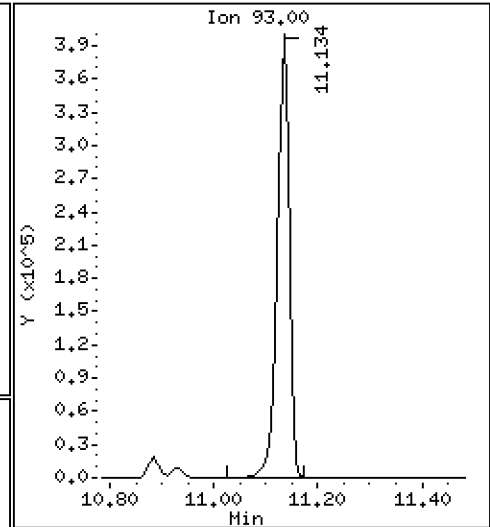
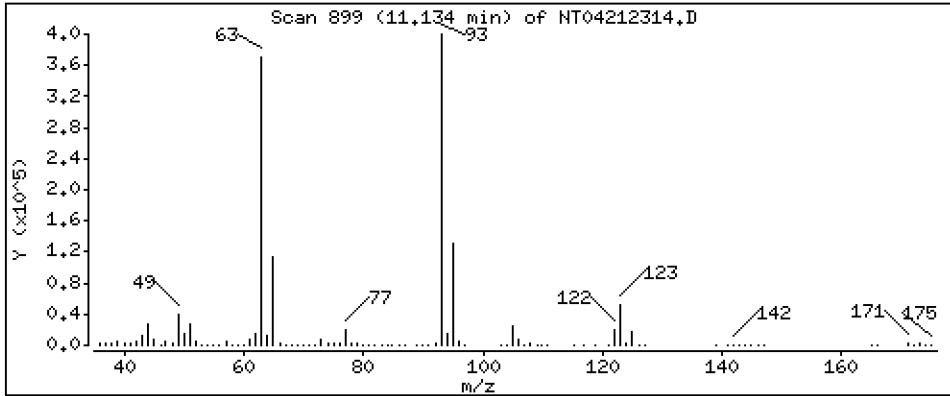
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 5,396 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

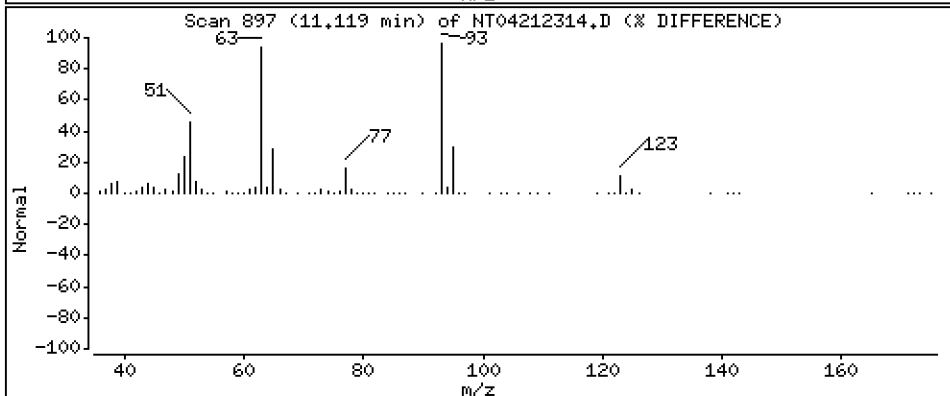
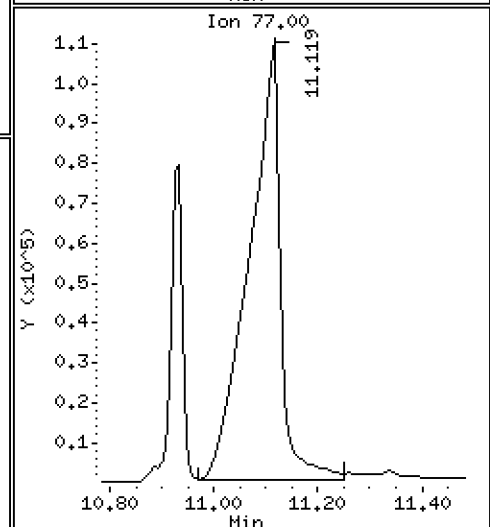
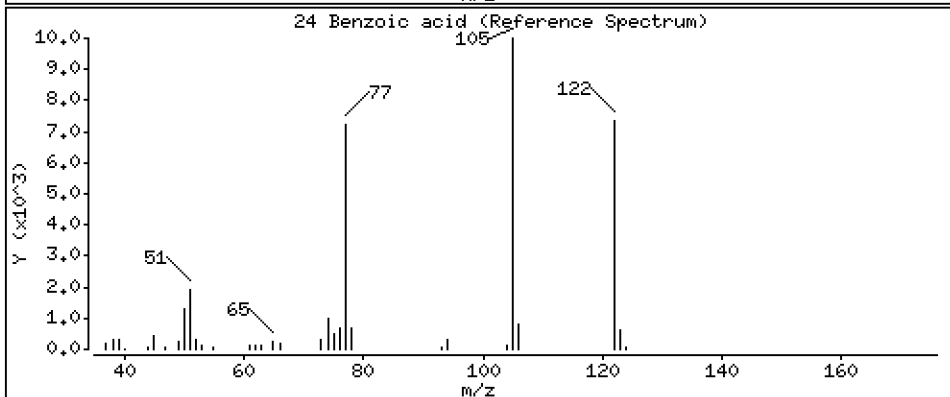
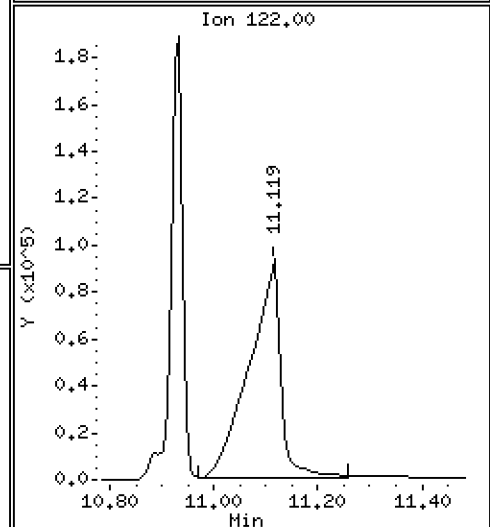
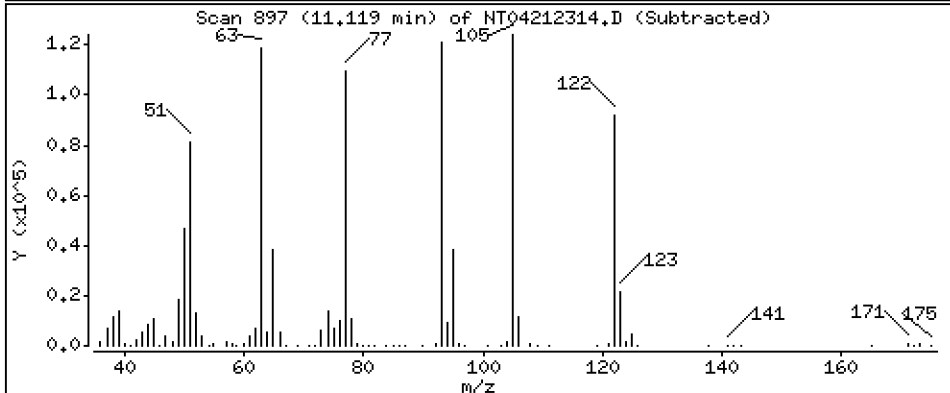
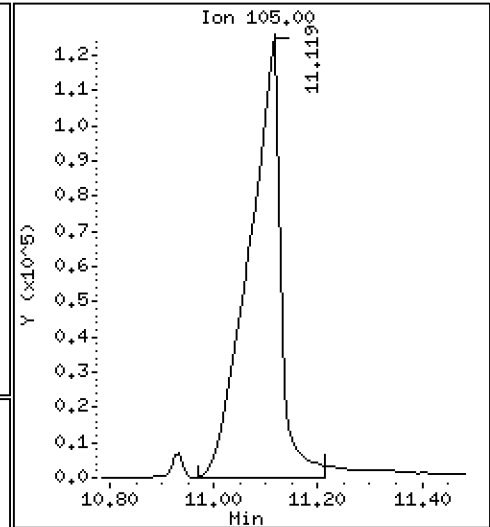
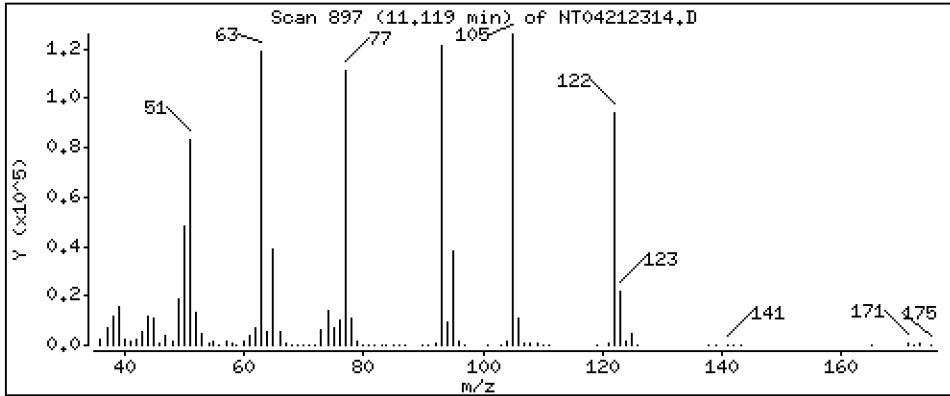
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

24 Benzoic acid

Concentration: 6.801 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

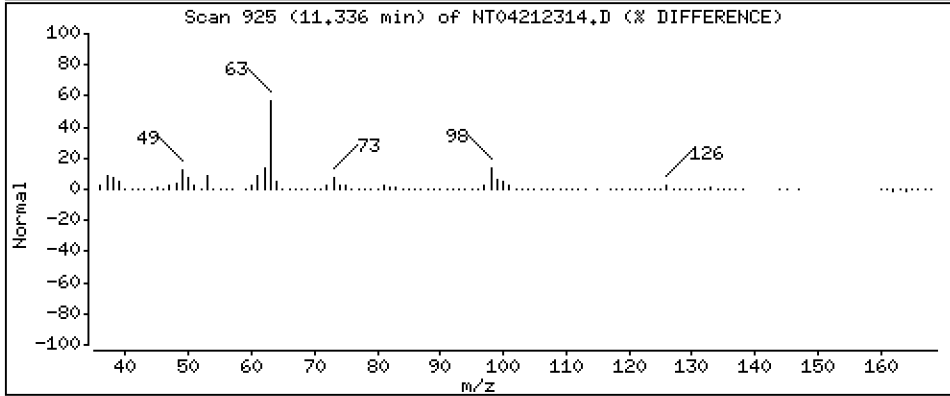
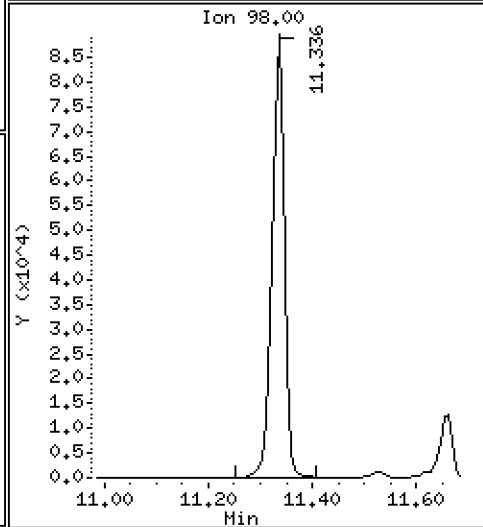
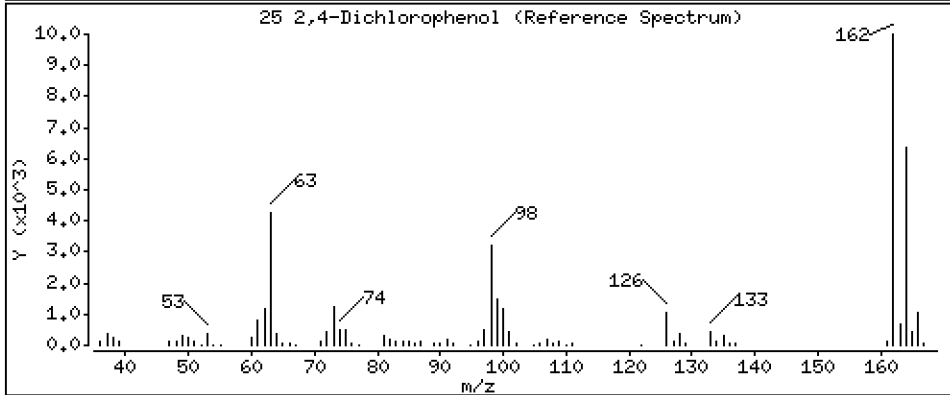
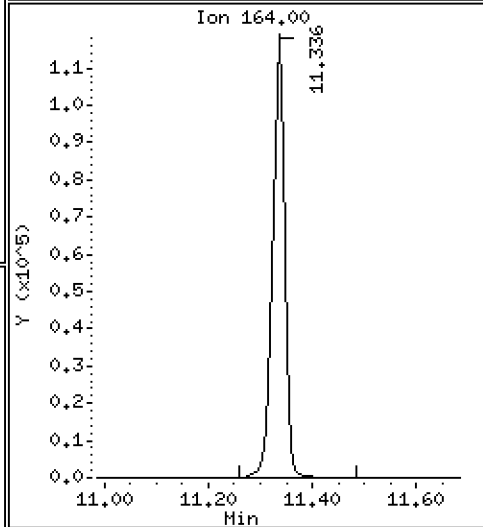
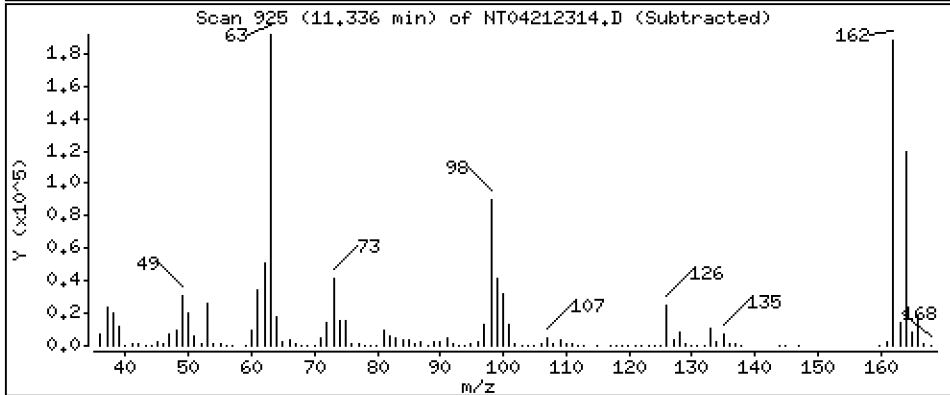
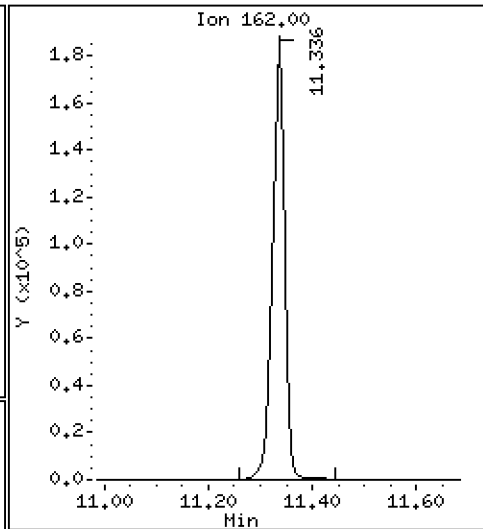
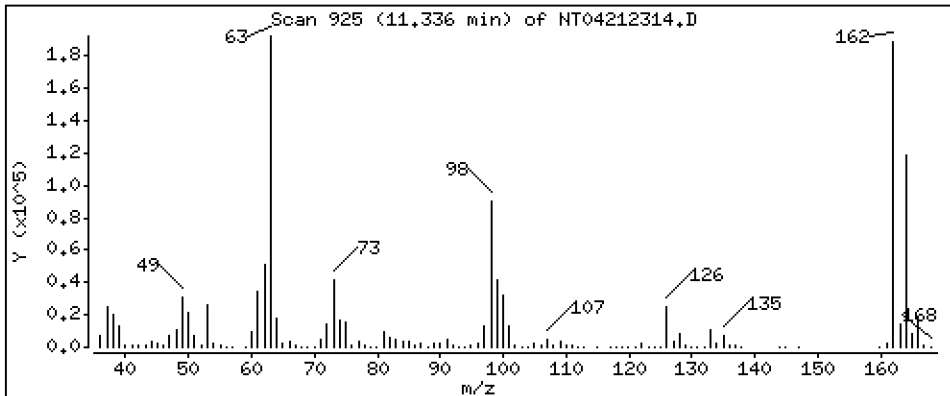
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 3,728 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

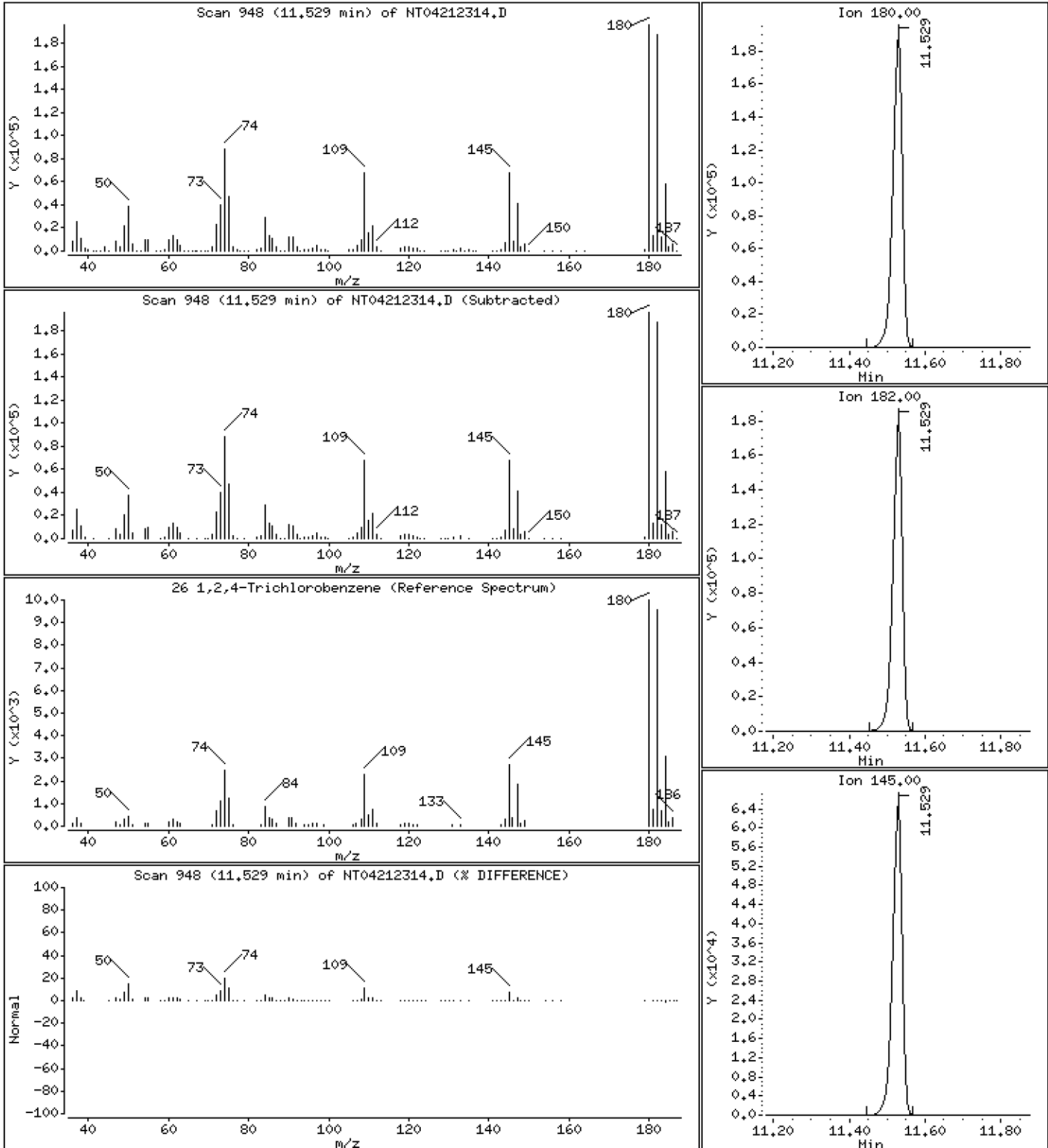
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,536 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

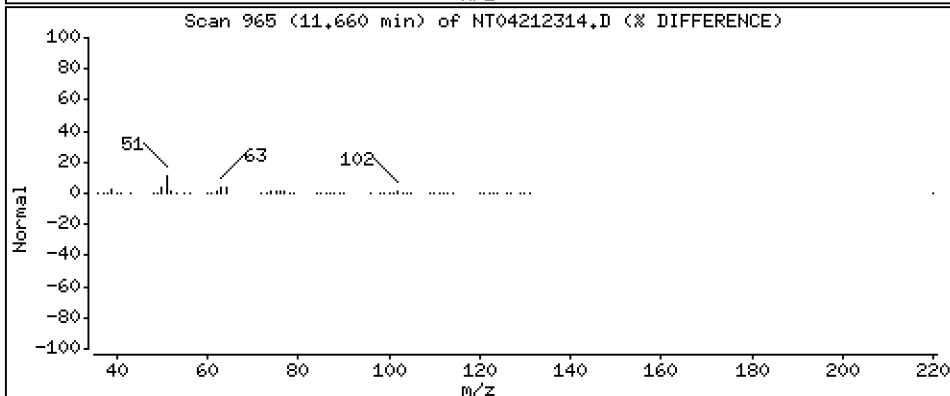
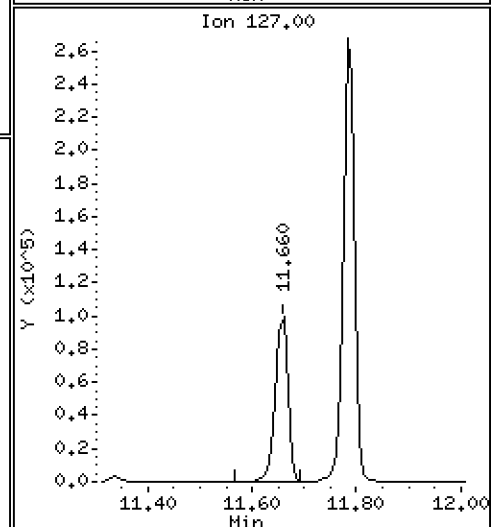
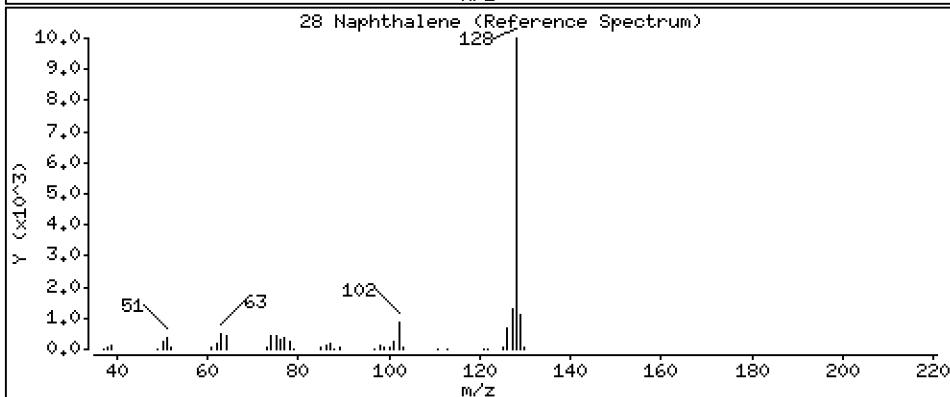
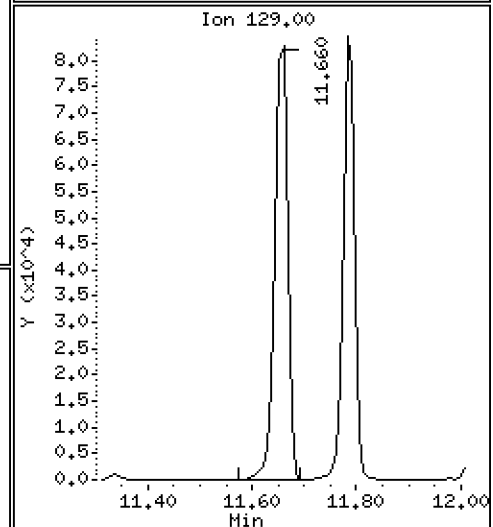
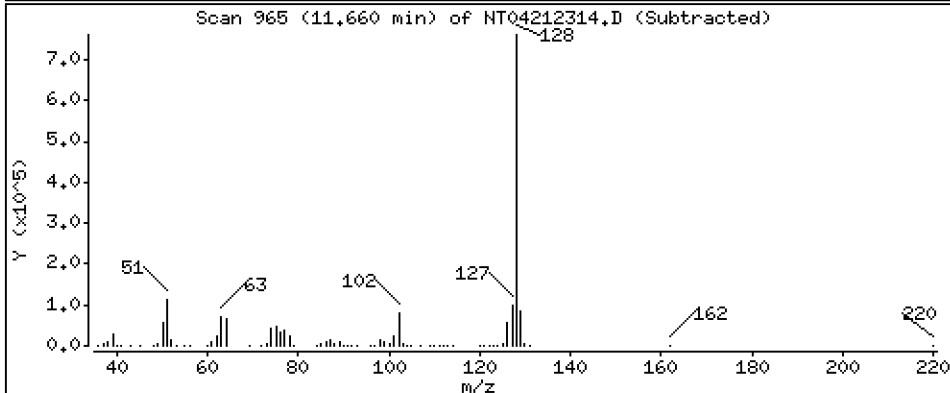
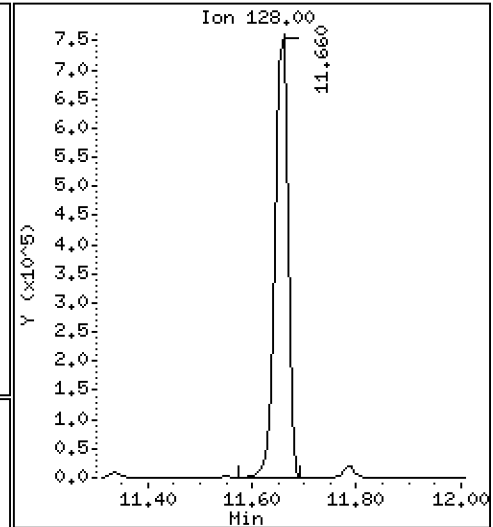
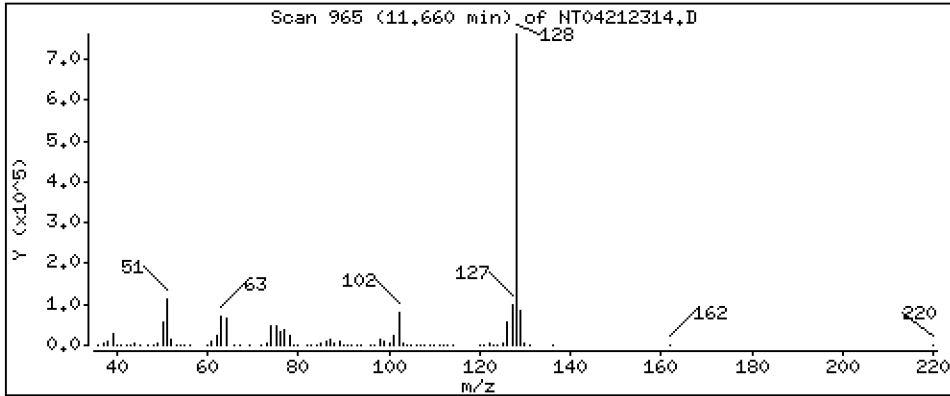
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

28 Naphthalene

Concentration: 4.813 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

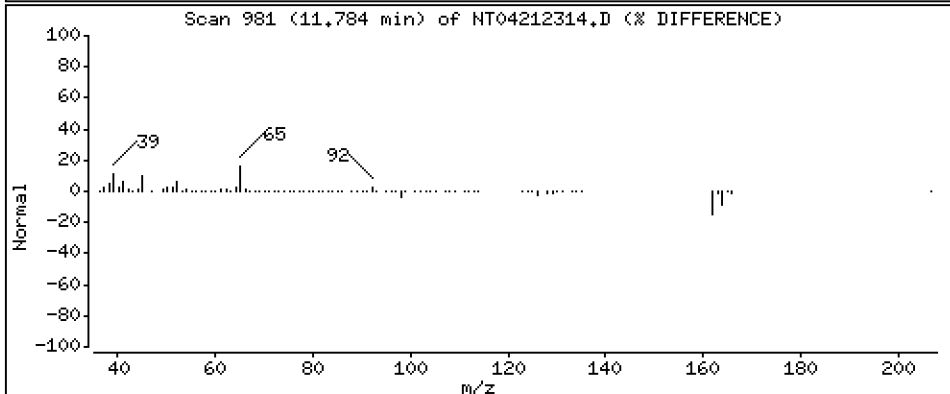
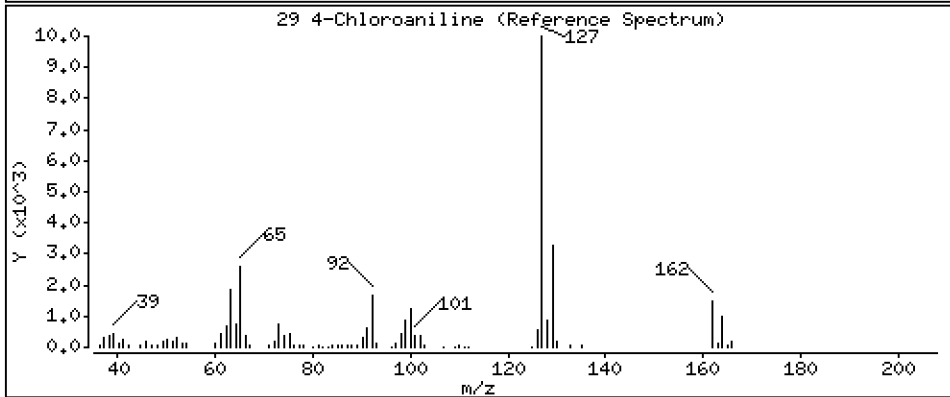
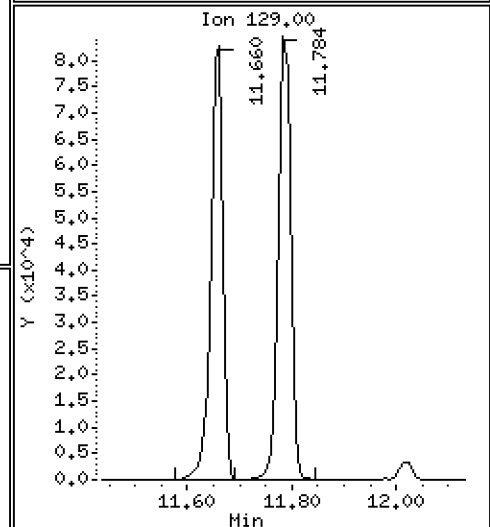
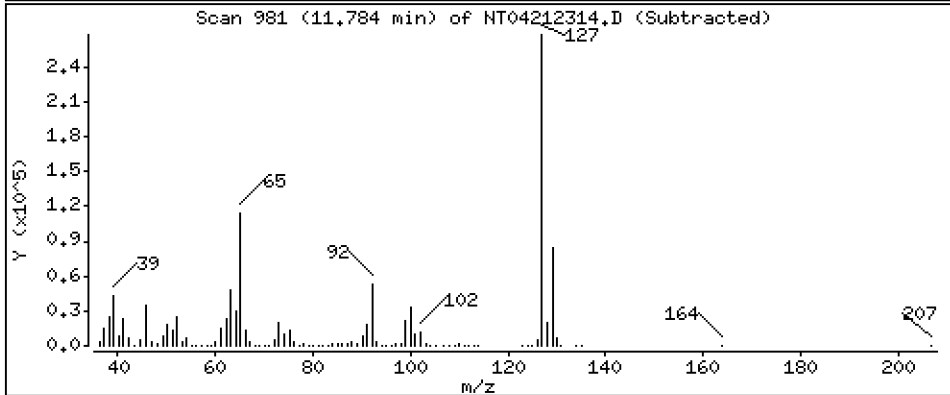
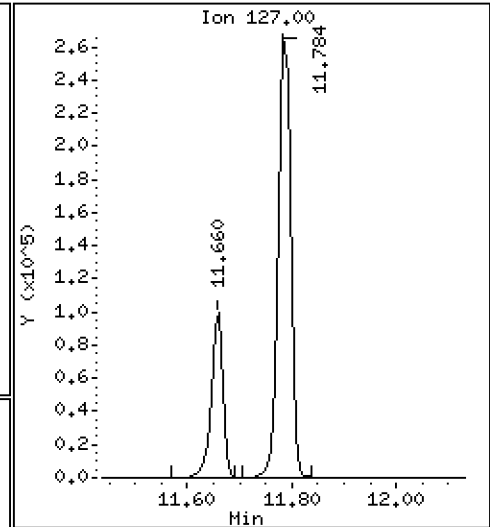
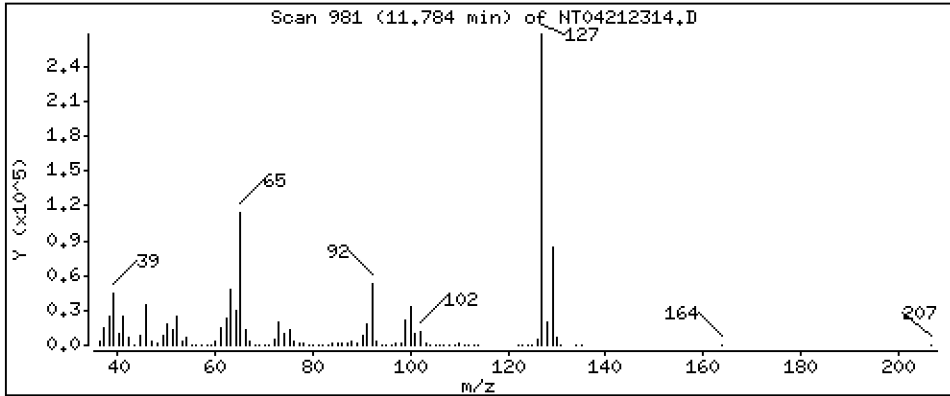
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 3,770 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

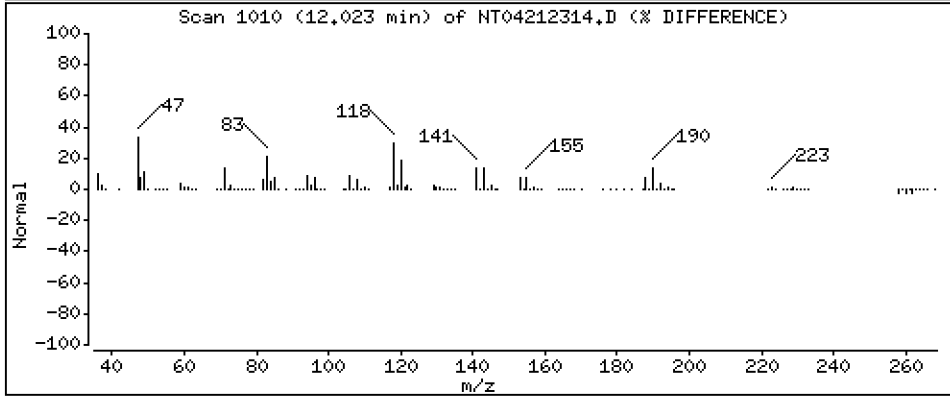
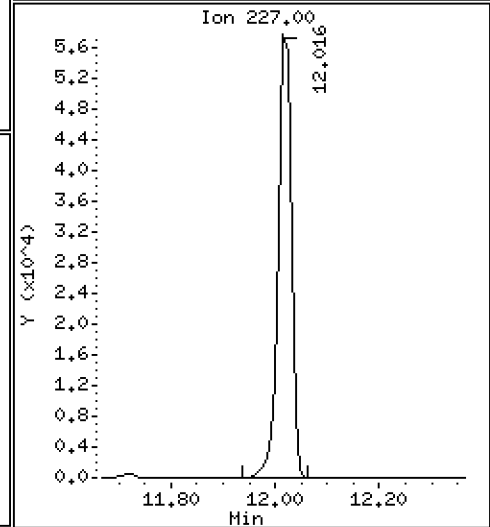
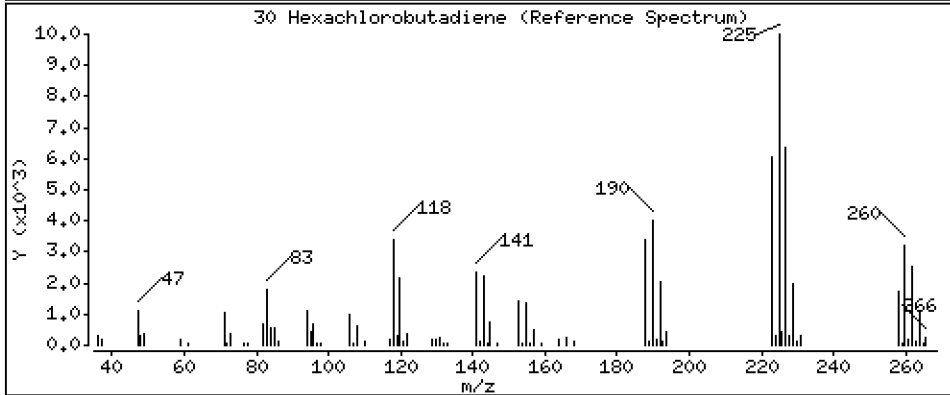
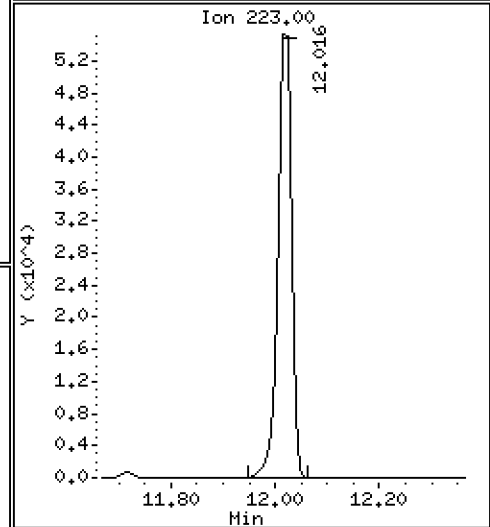
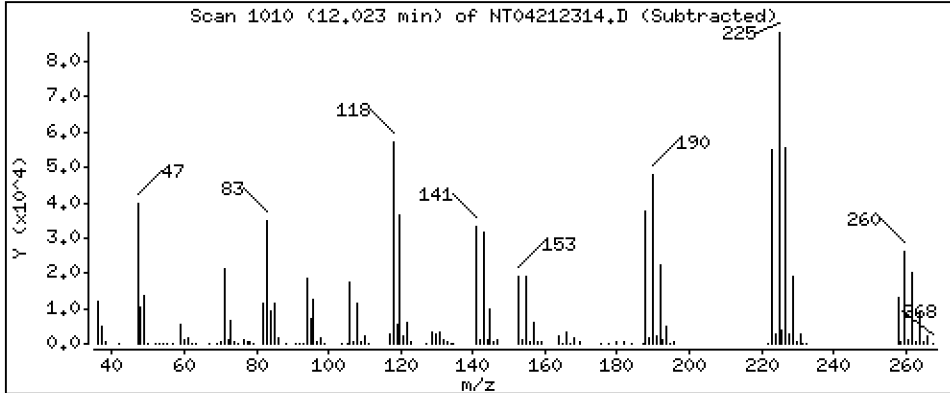
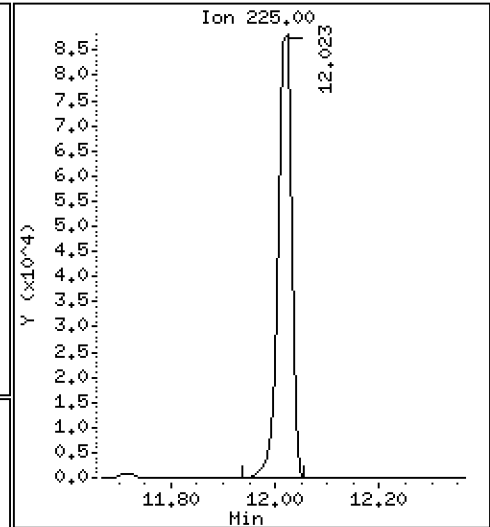
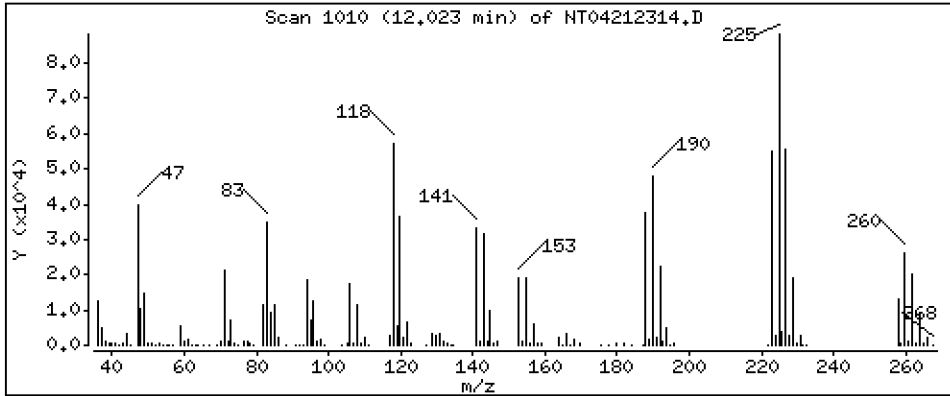
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,665 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

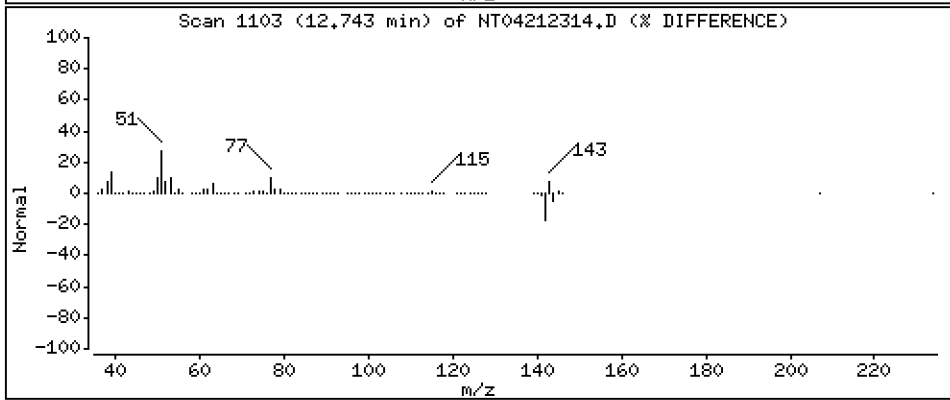
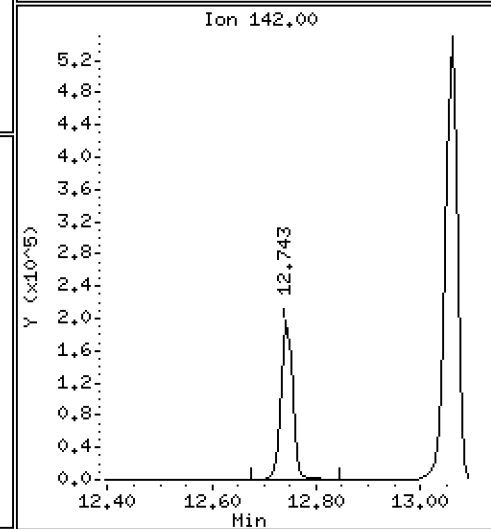
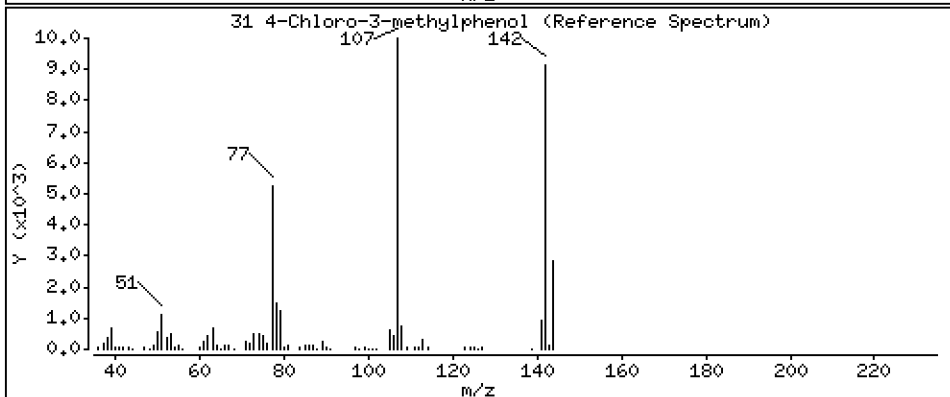
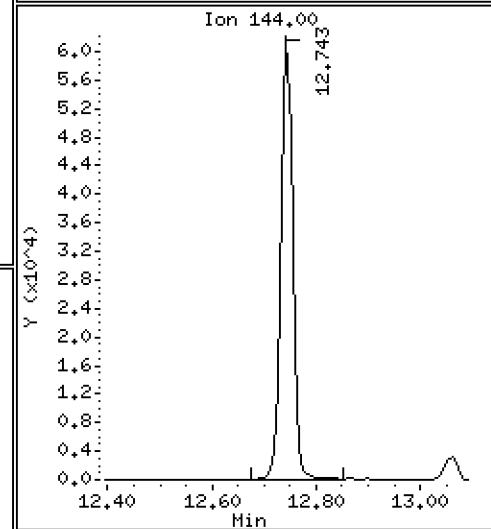
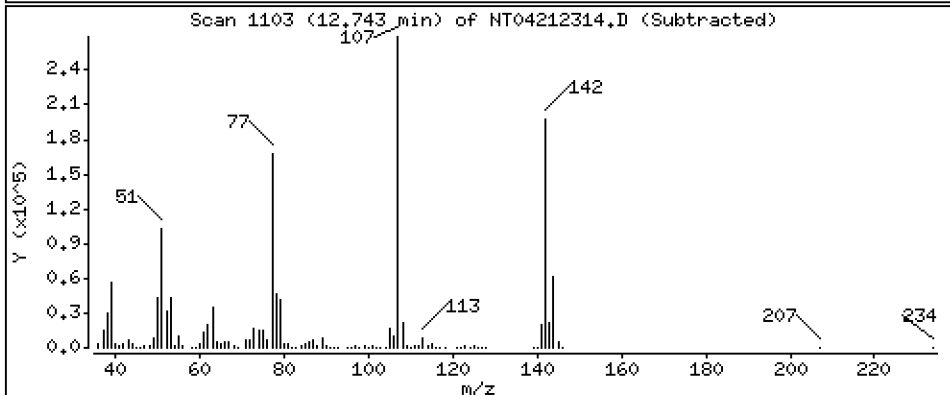
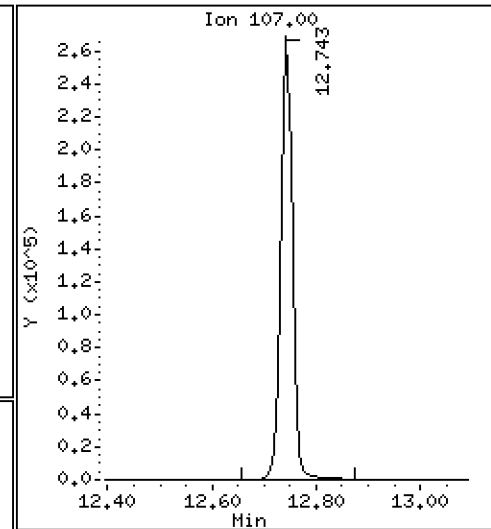
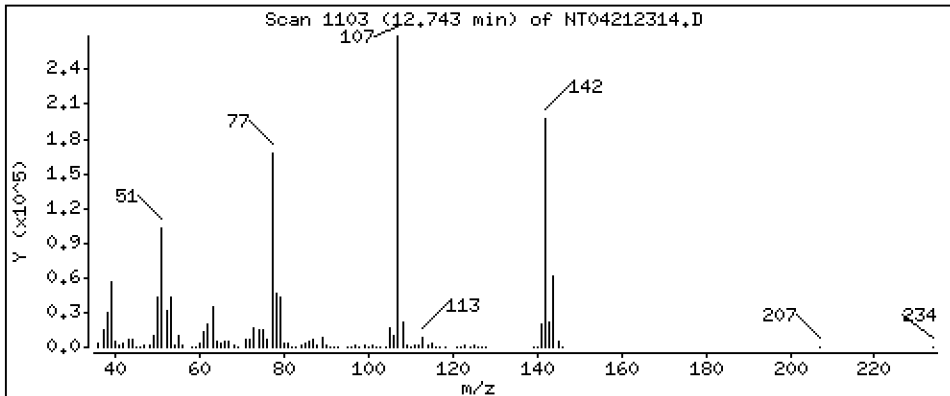
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 4,615 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

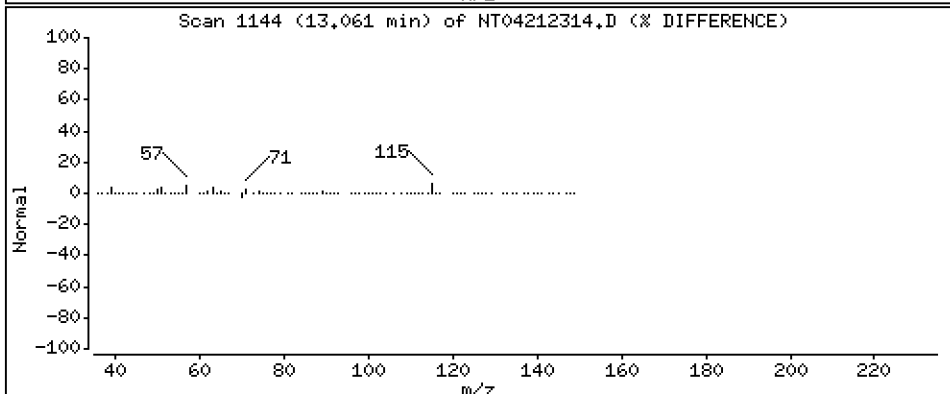
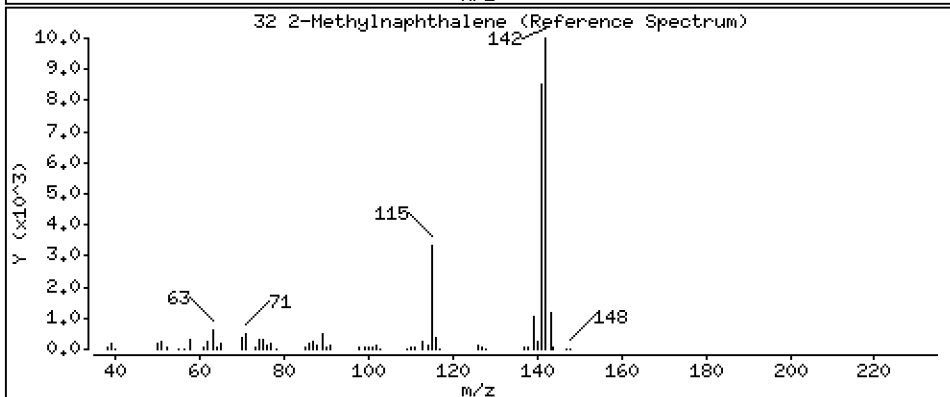
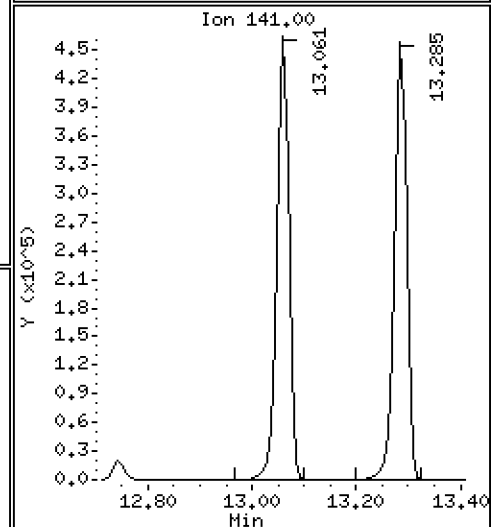
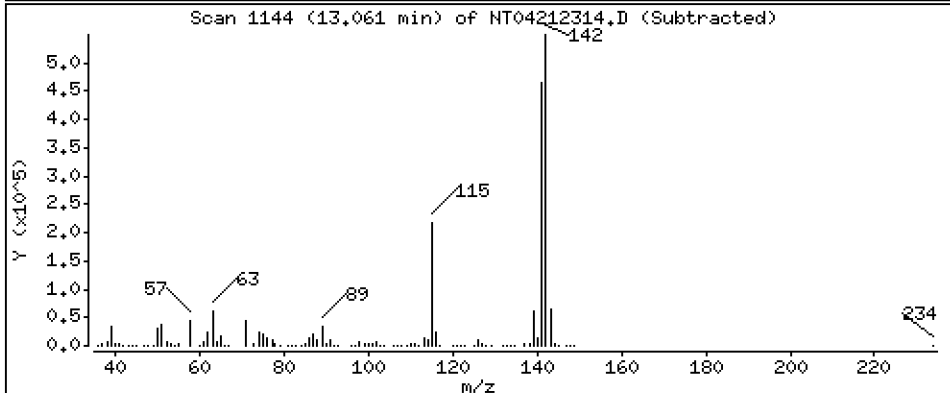
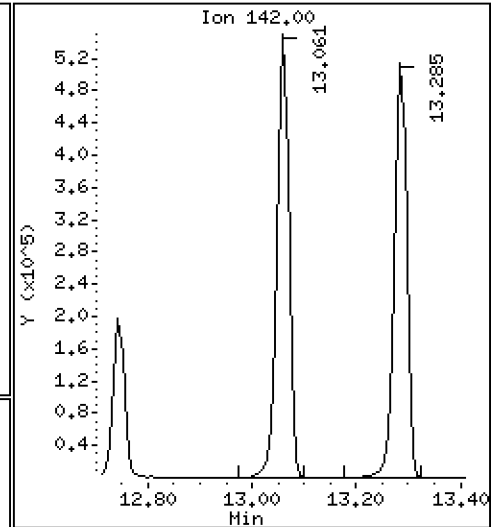
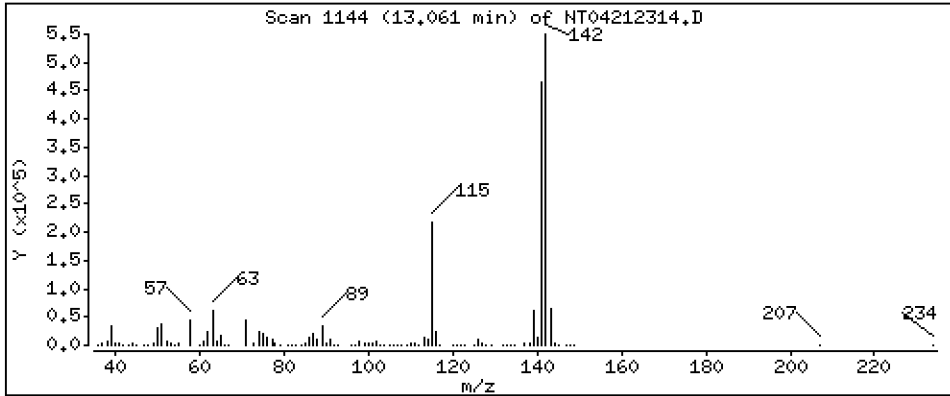
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 4,474 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

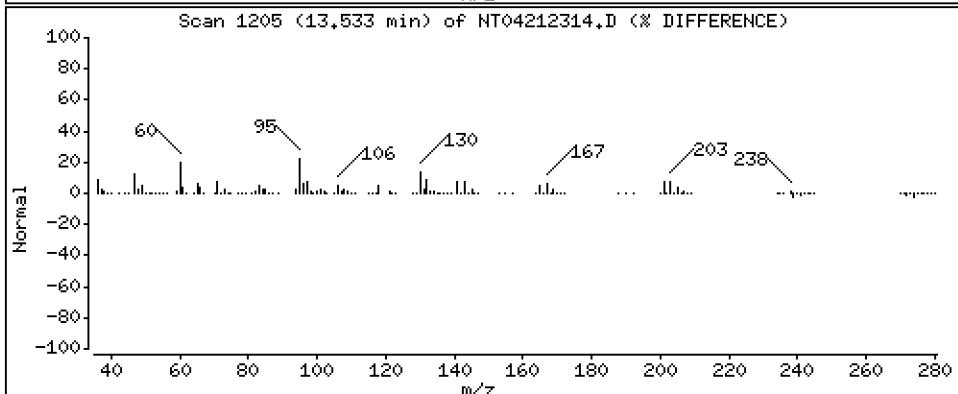
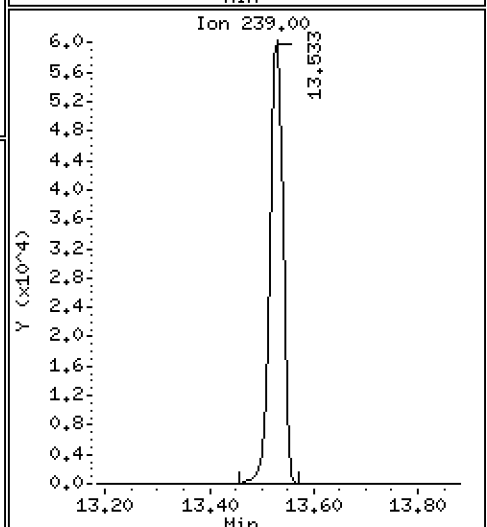
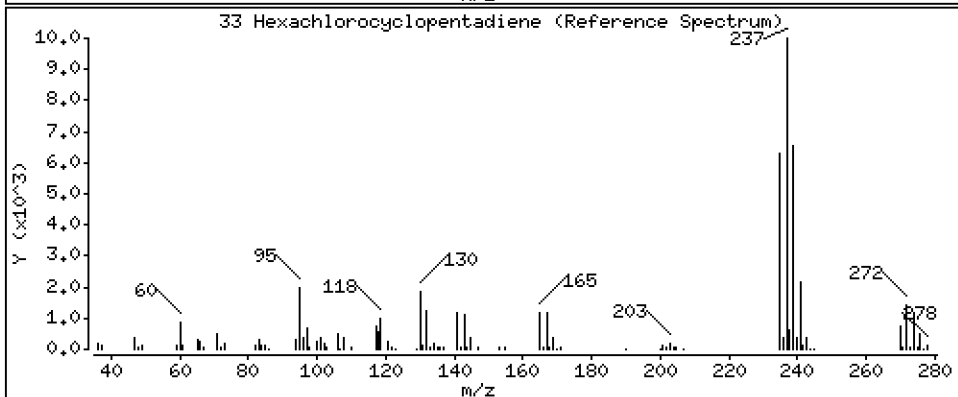
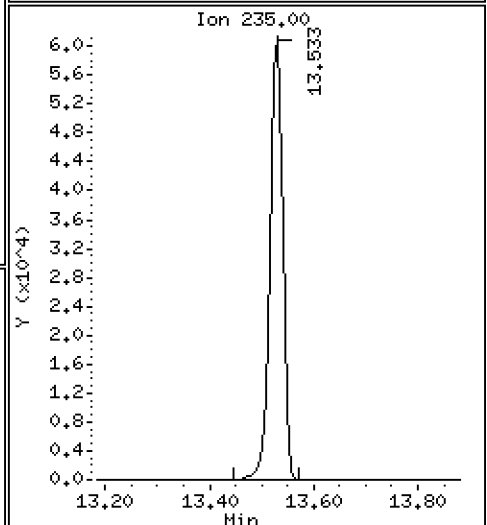
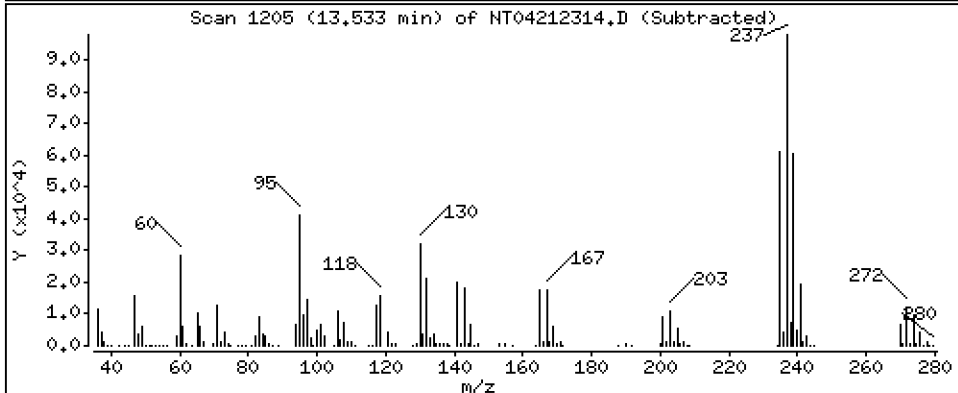
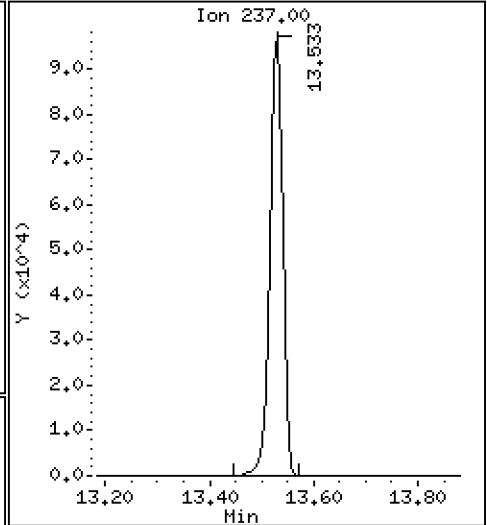
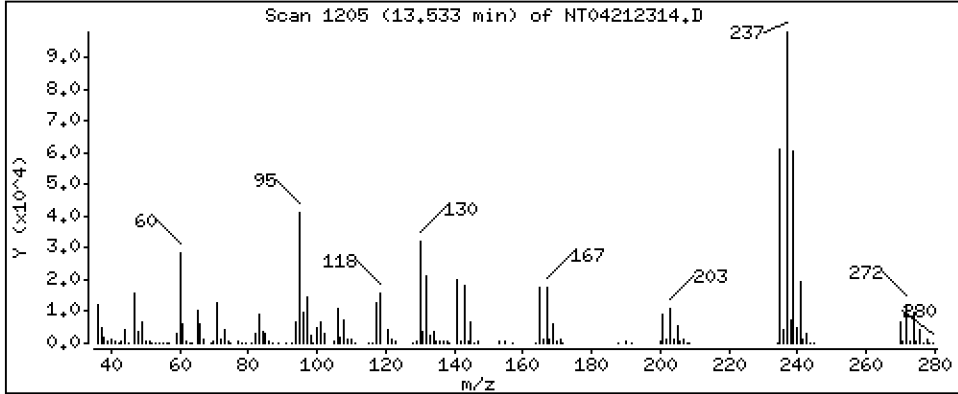
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 4,783 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

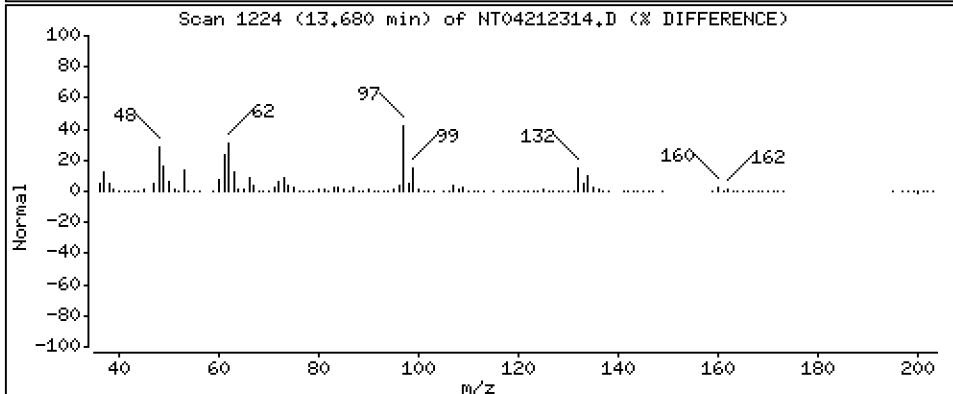
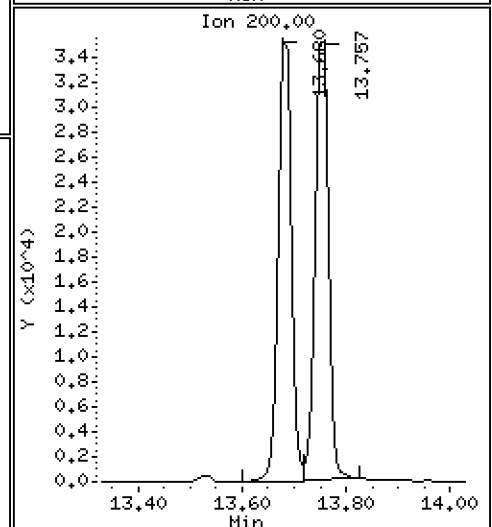
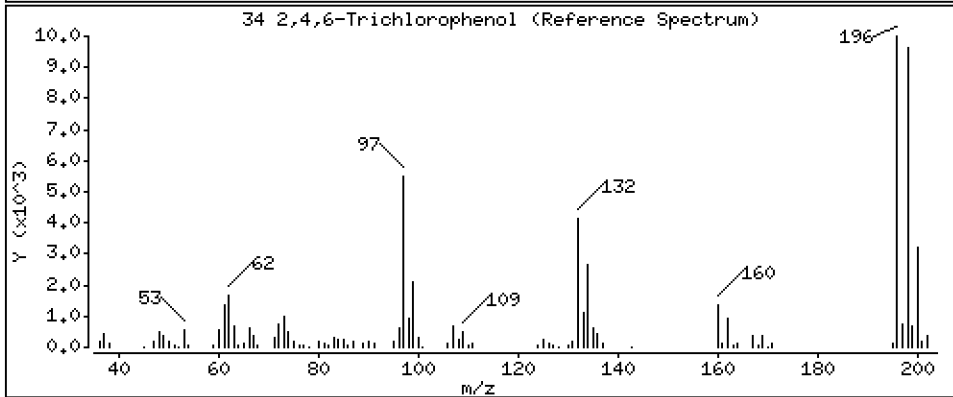
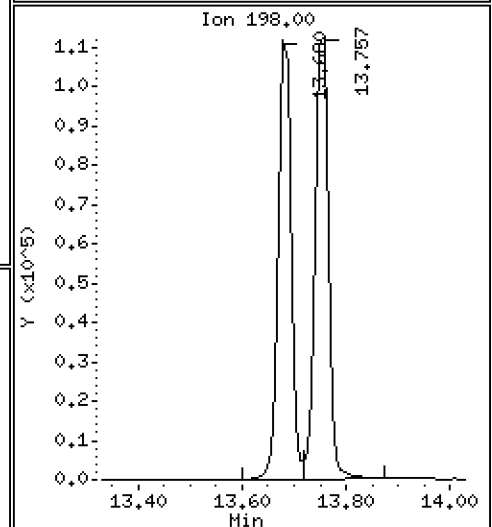
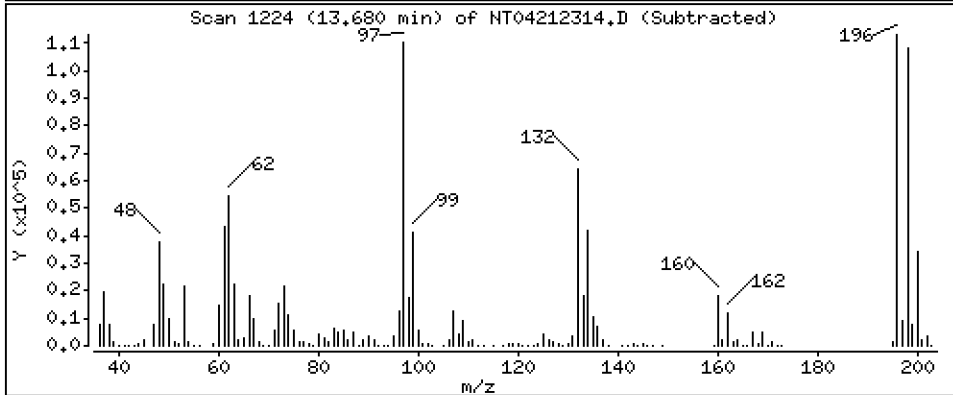
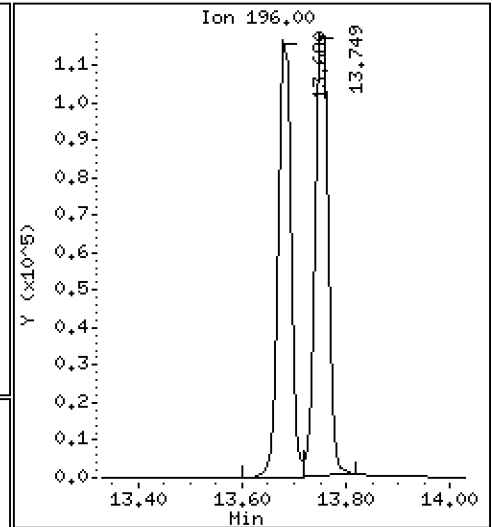
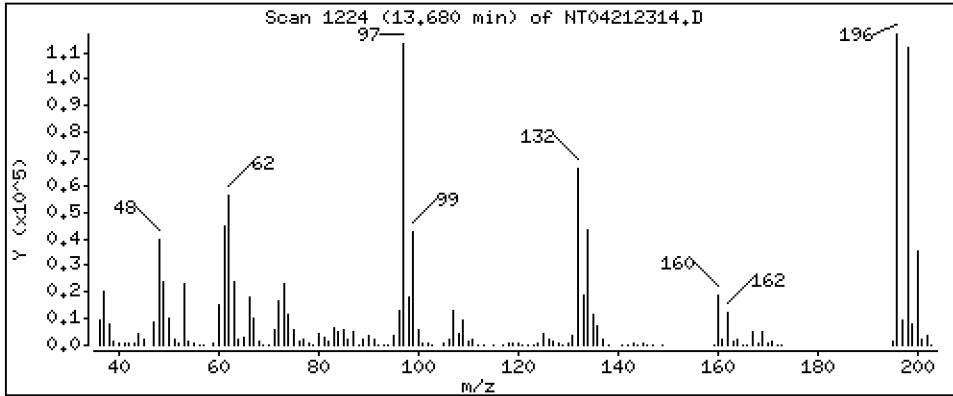
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 4,578 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

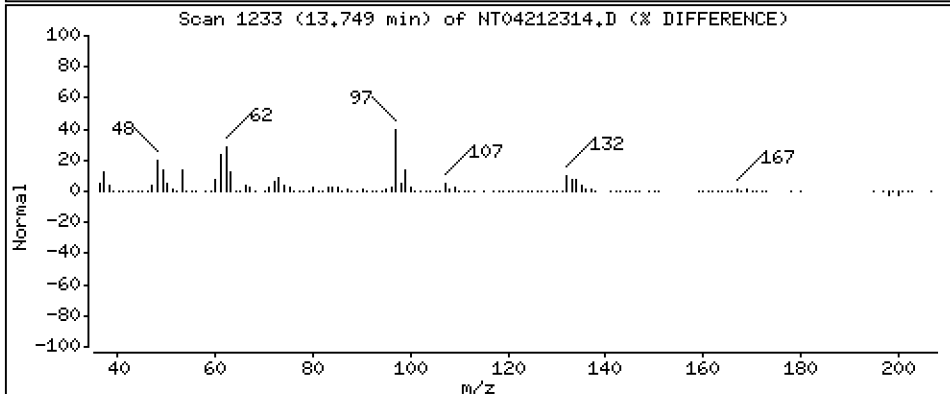
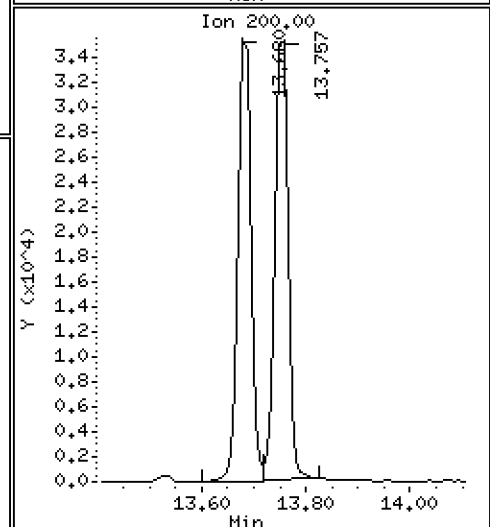
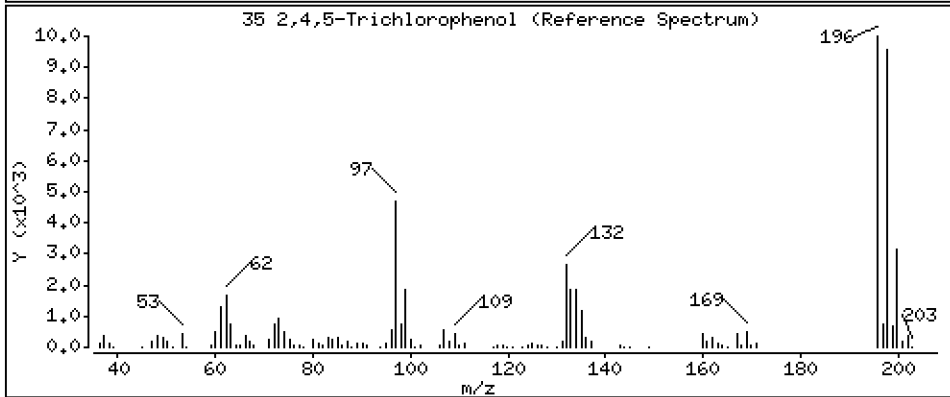
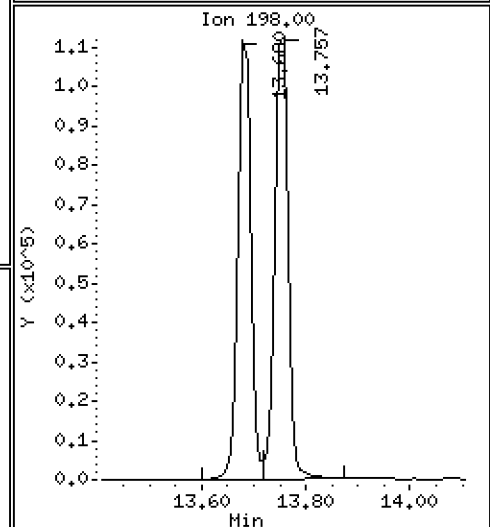
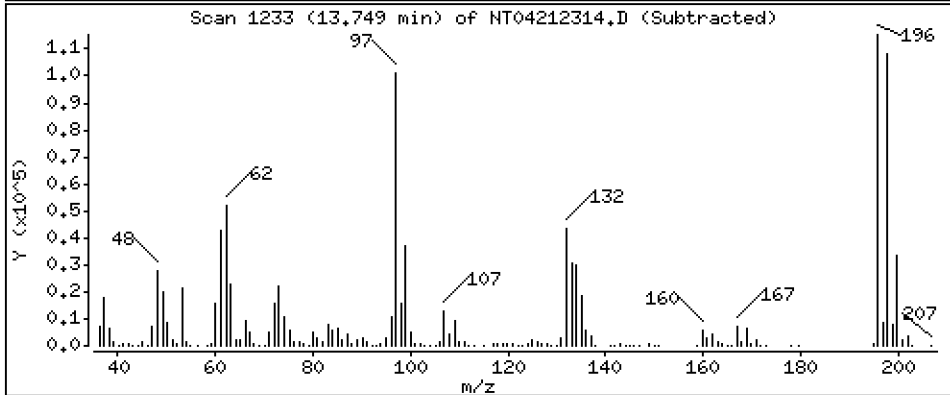
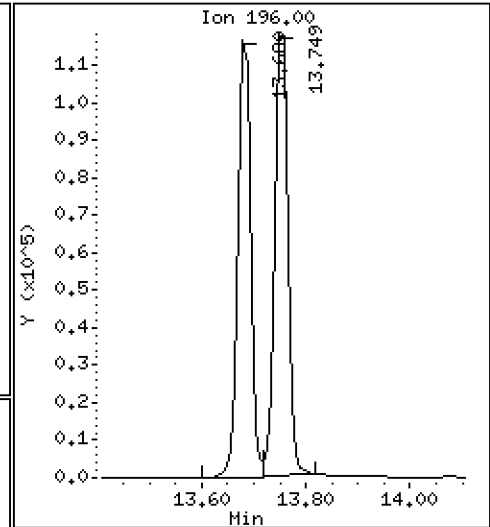
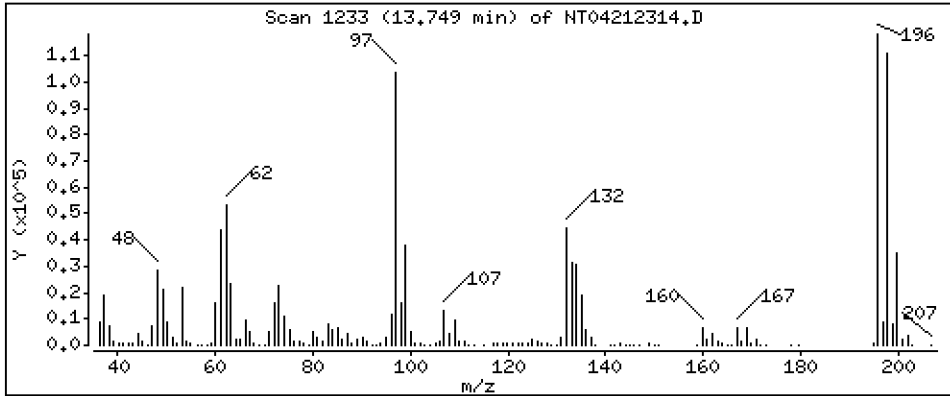
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 4,434 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

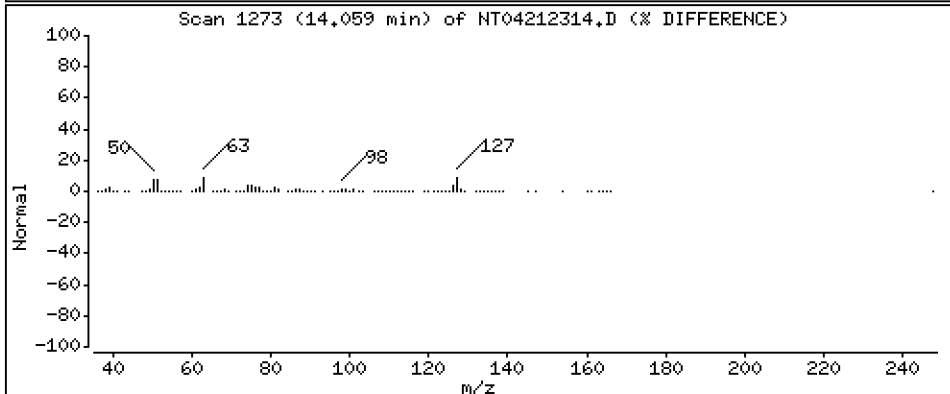
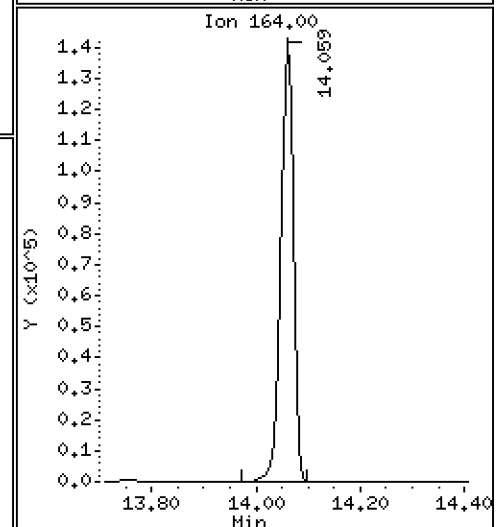
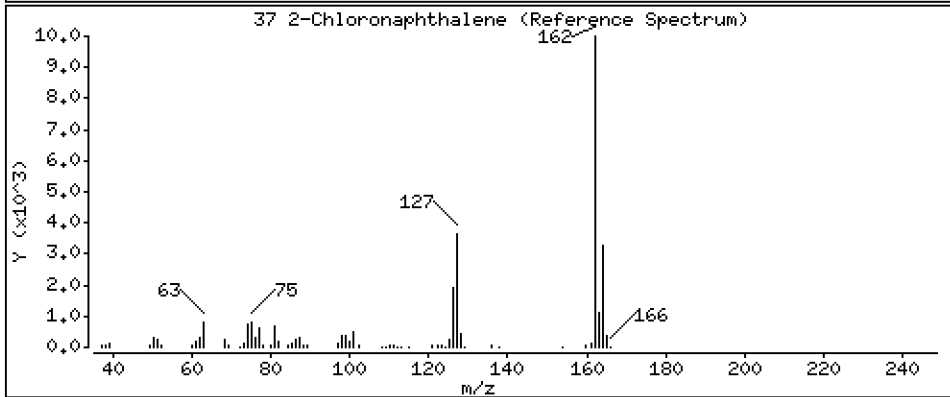
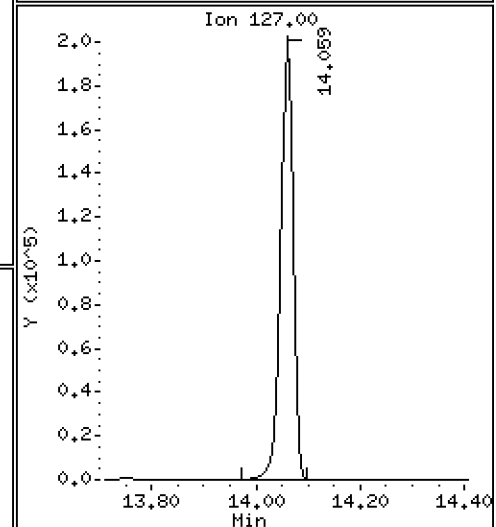
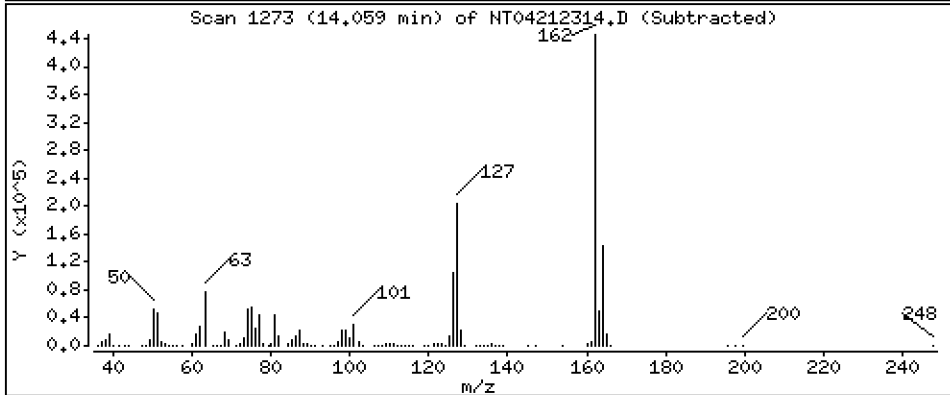
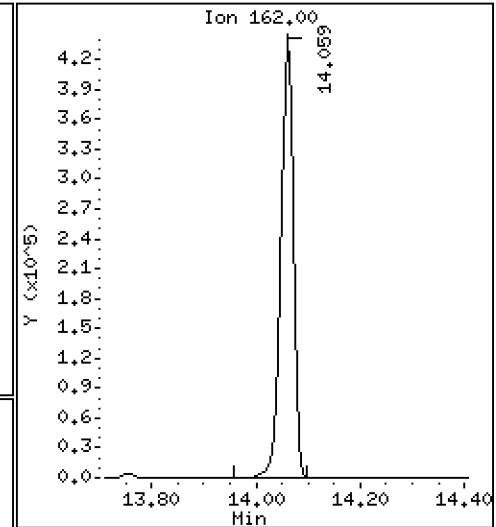
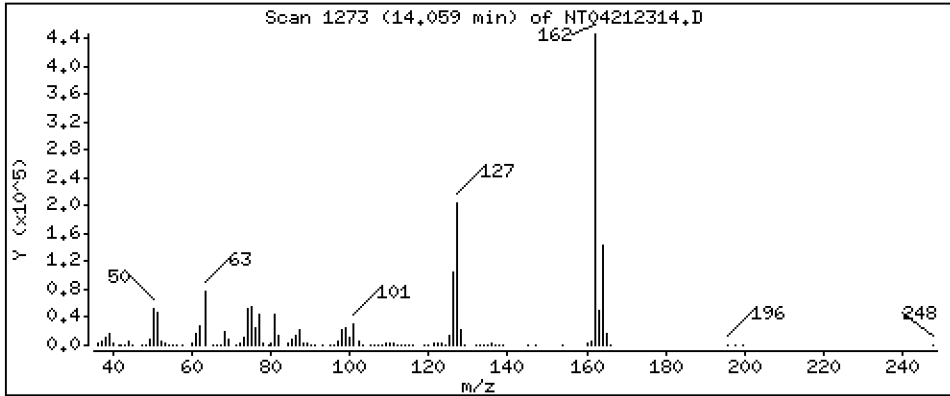
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 4,643 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

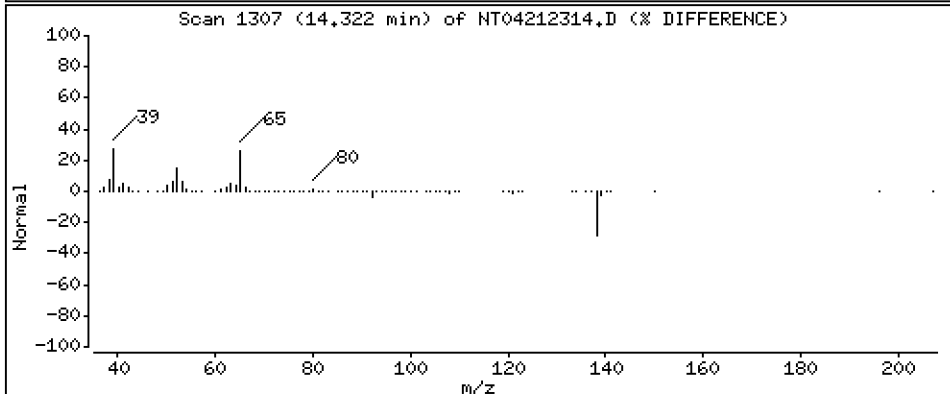
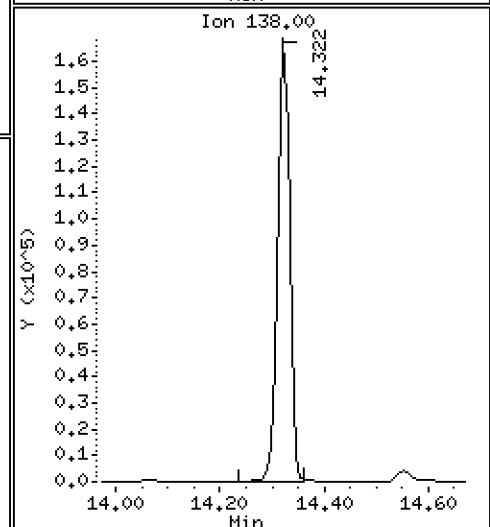
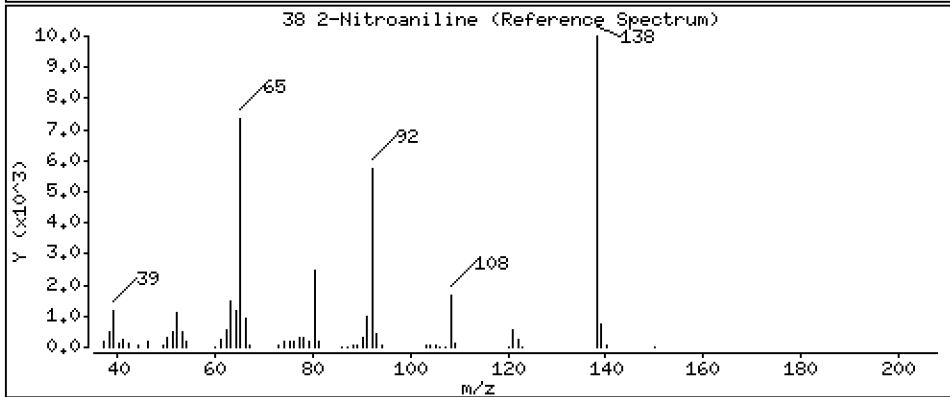
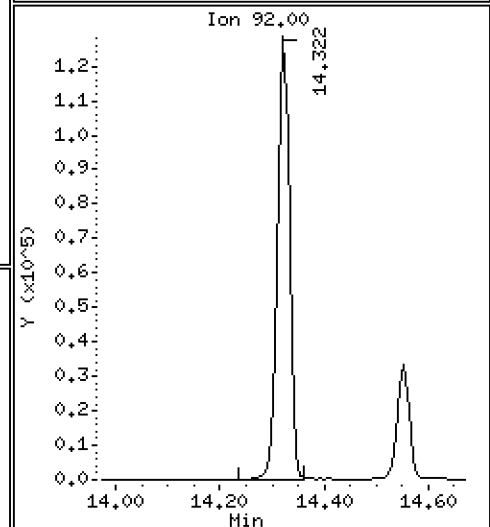
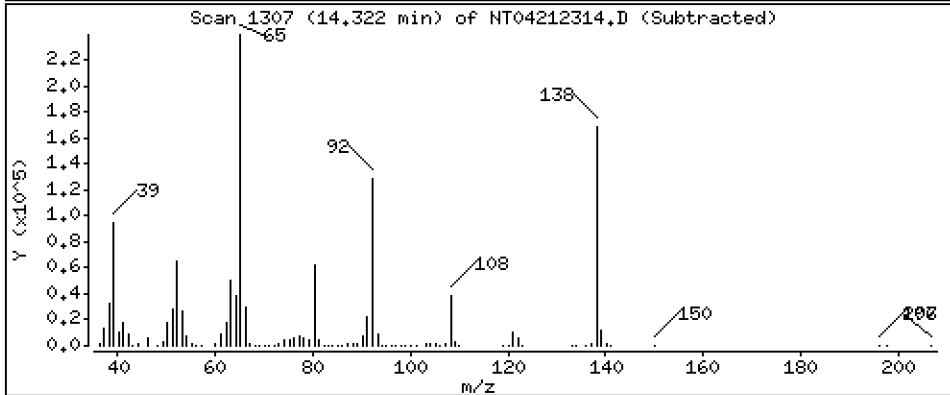
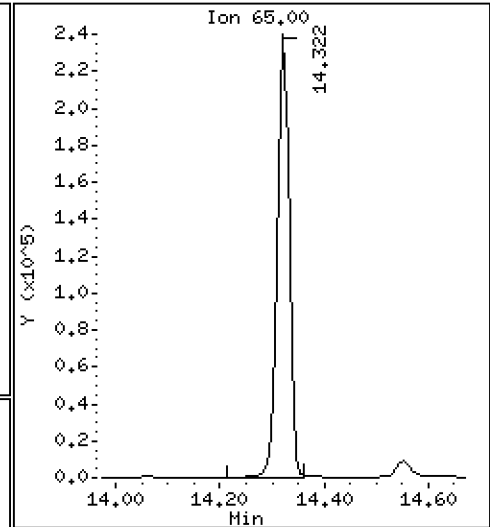
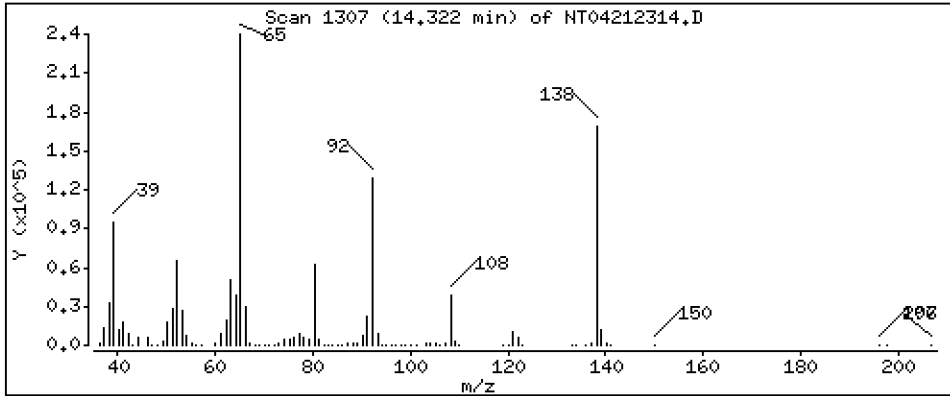
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 4,475 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

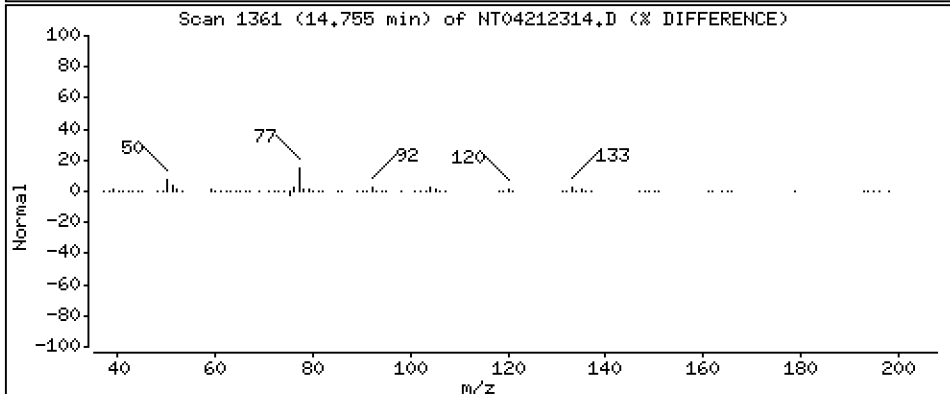
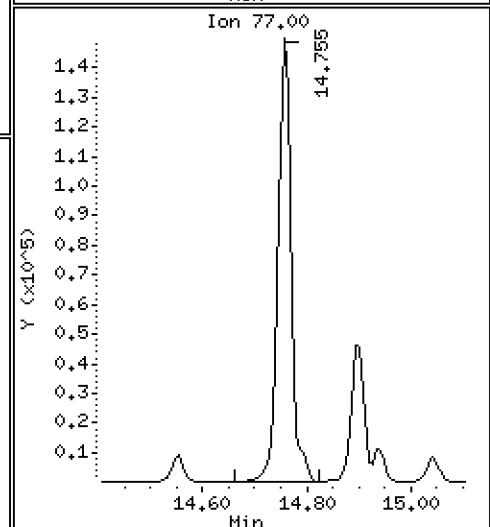
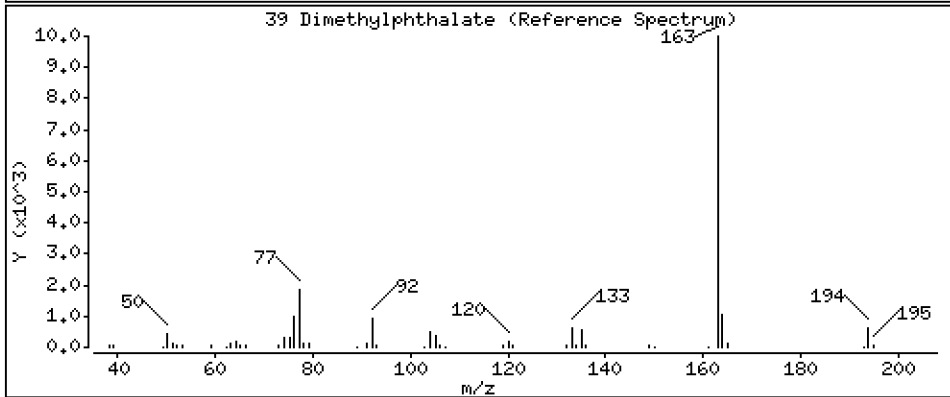
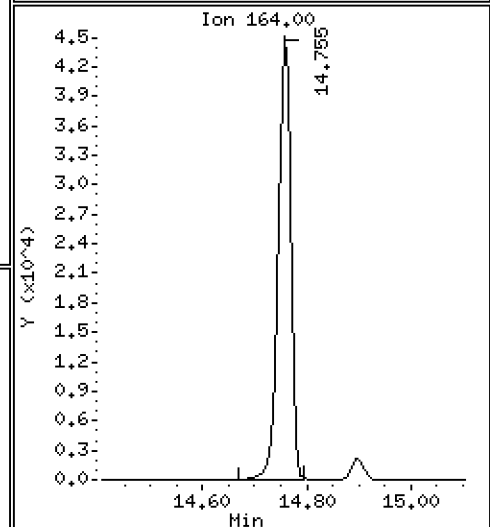
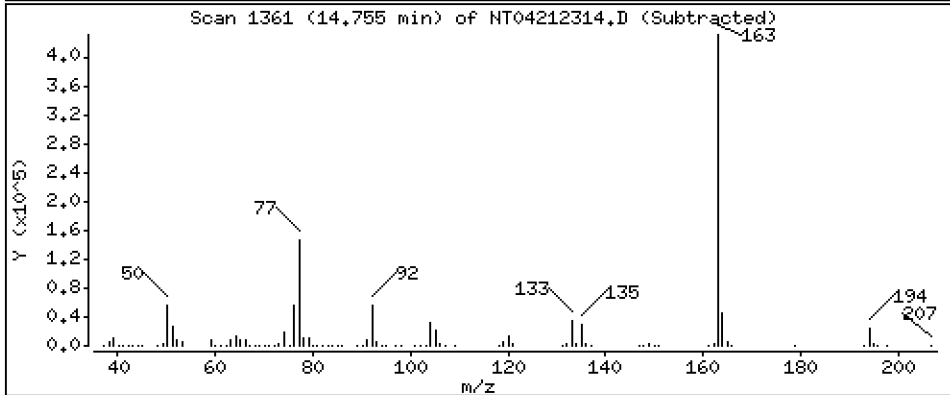
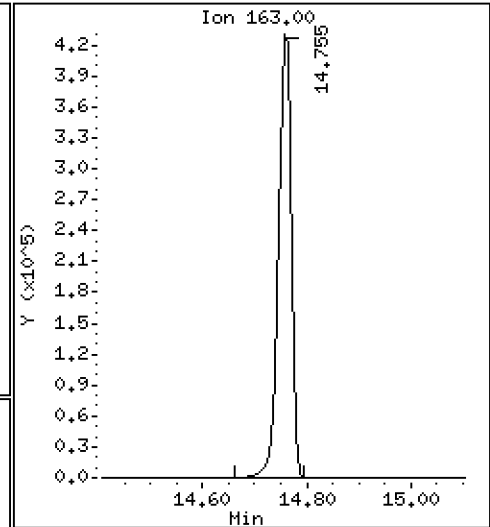
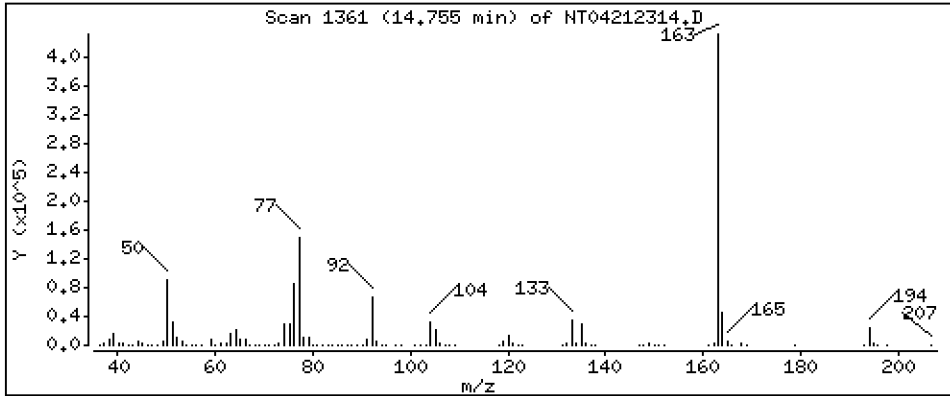
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,554 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

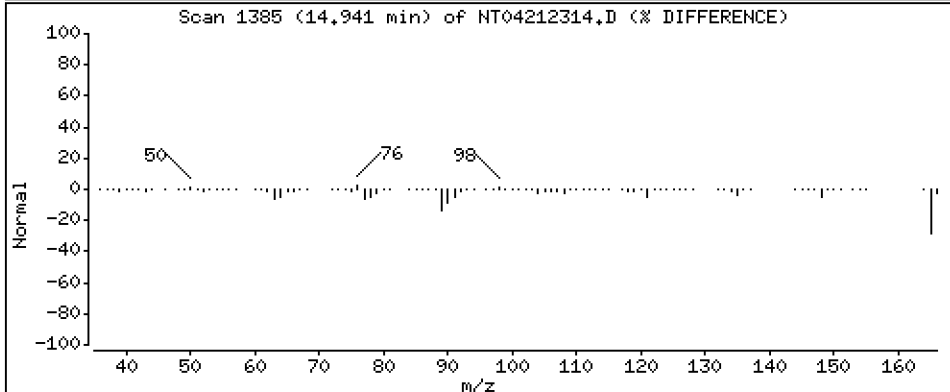
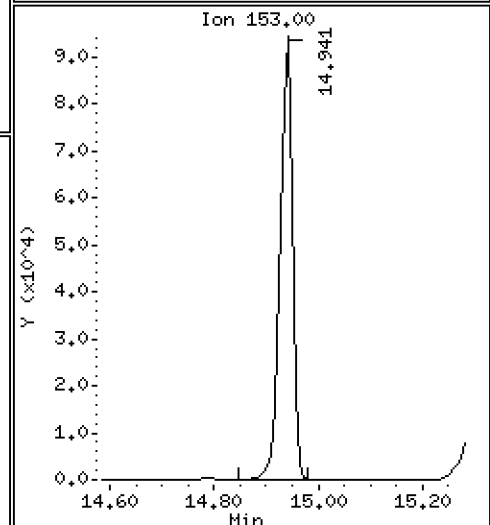
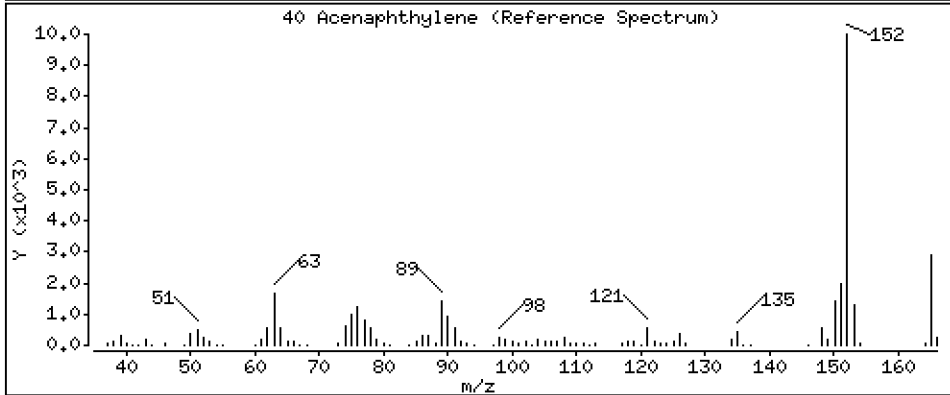
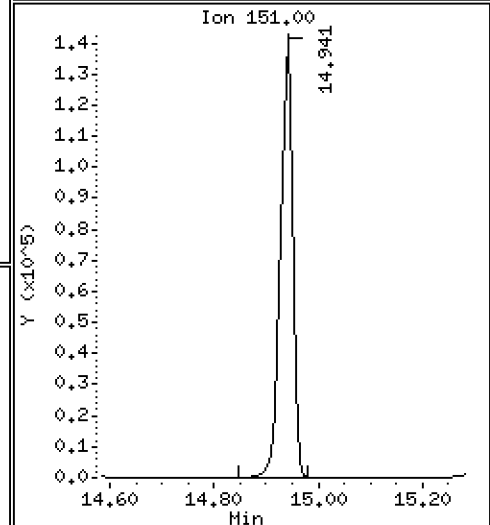
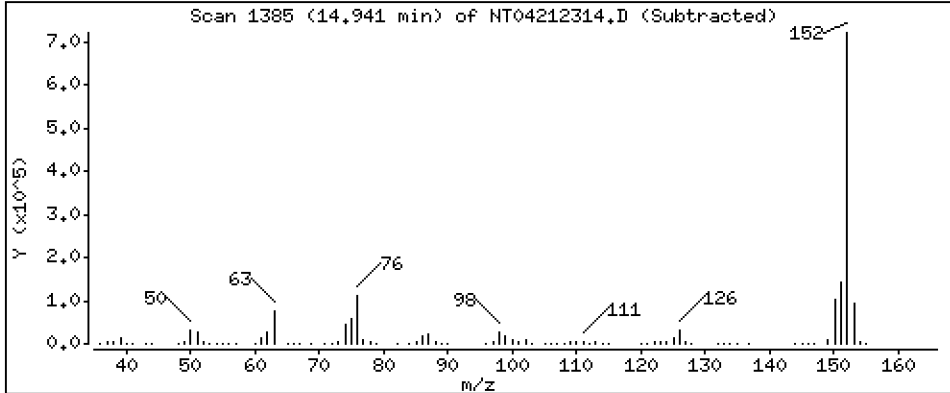
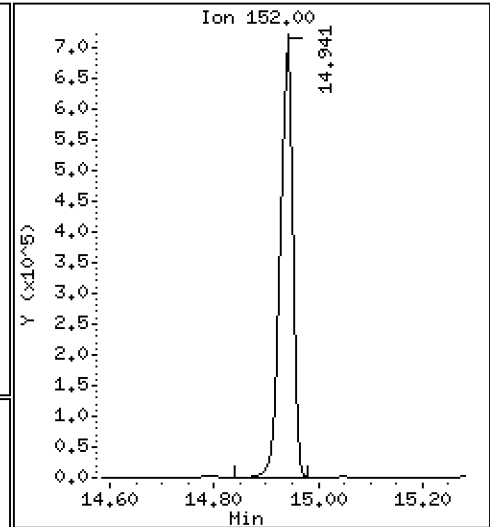
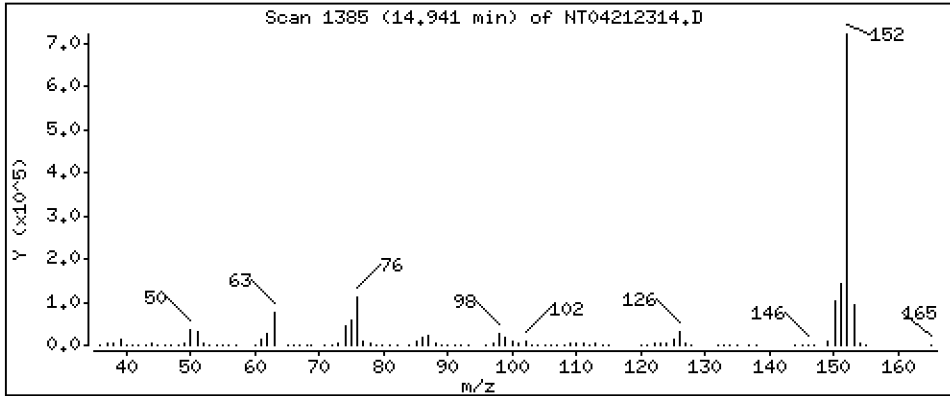
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 4,819 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

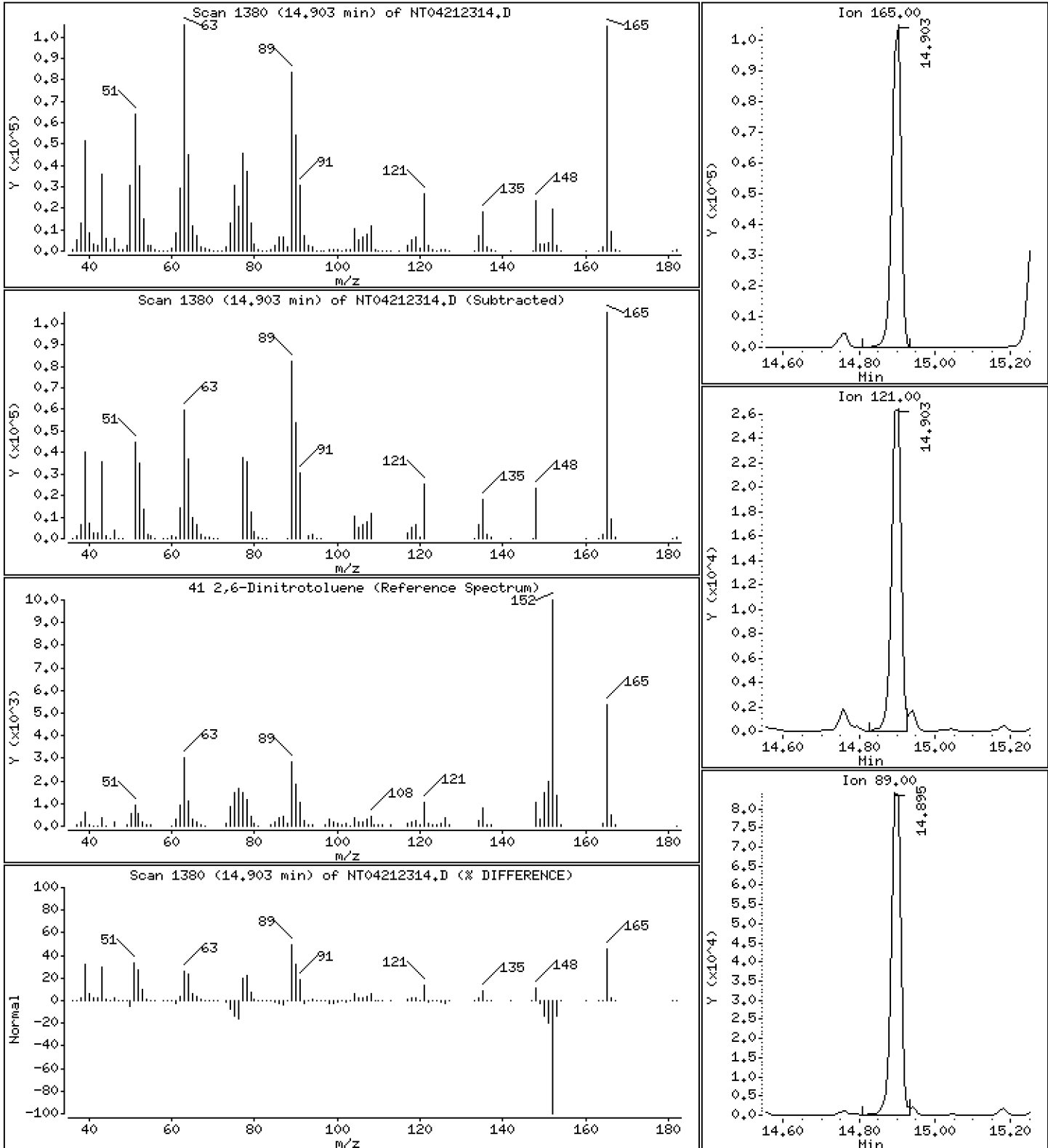
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

41 2,6-Dinitrotoluene

Concentration: 4.676 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

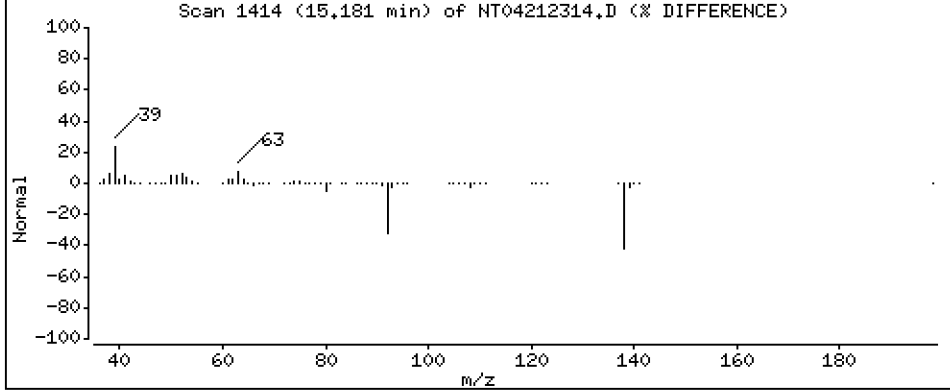
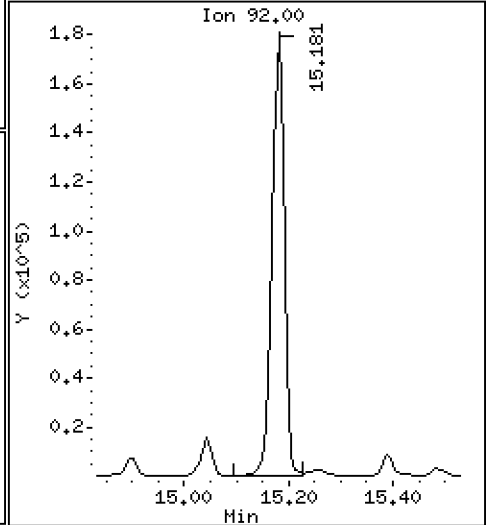
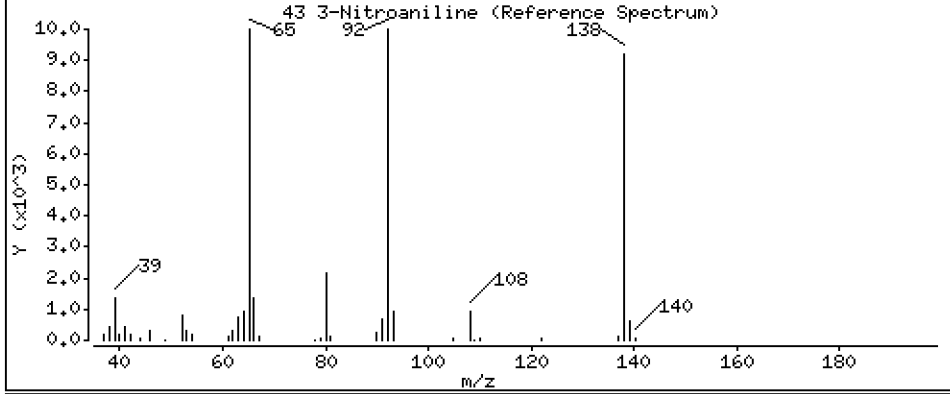
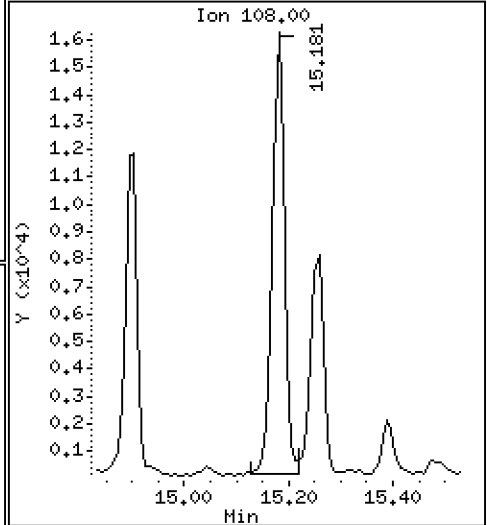
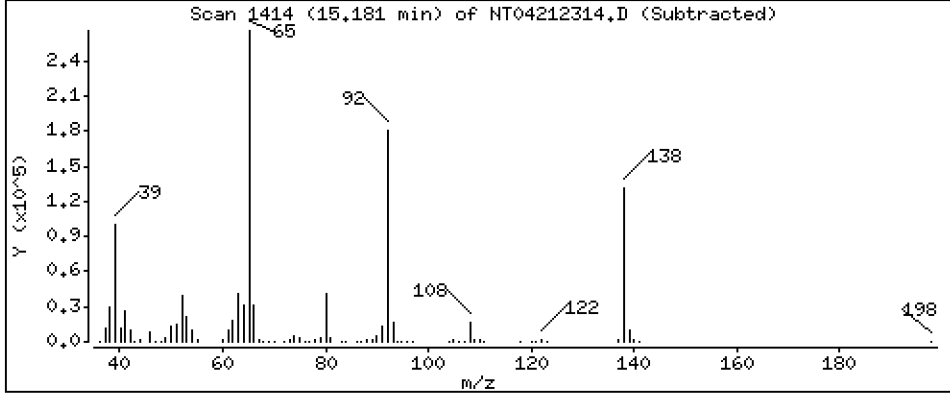
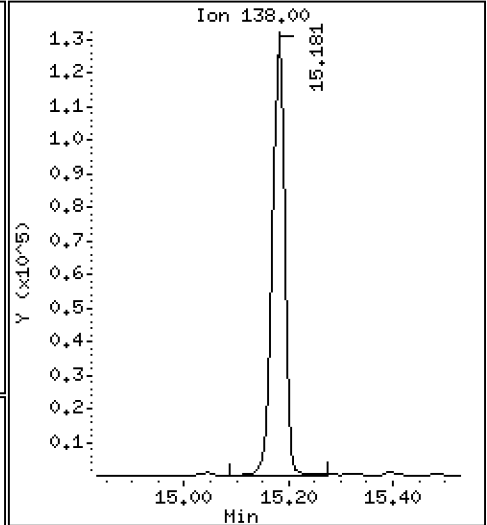
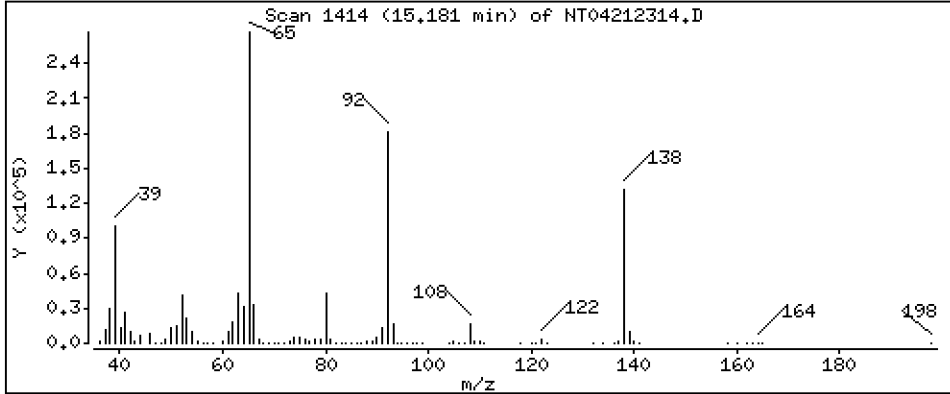
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 4,608 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

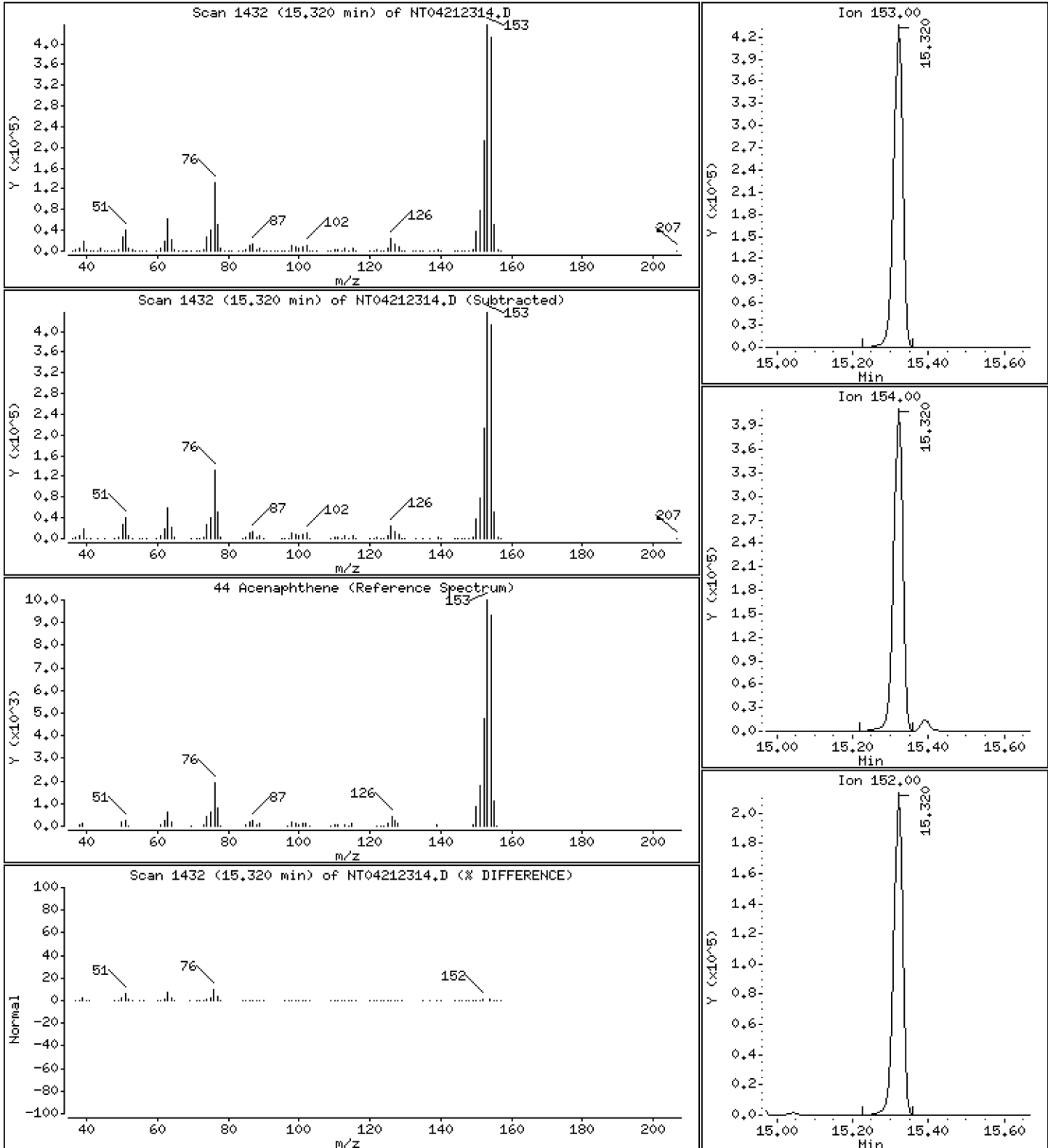
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 4,811 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

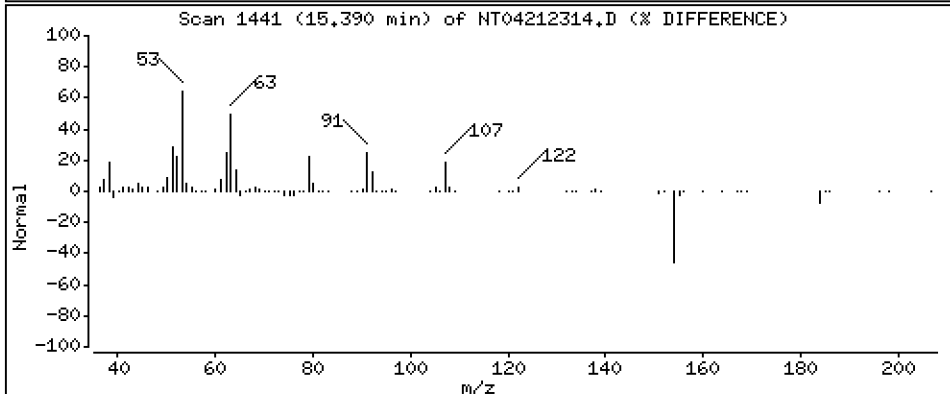
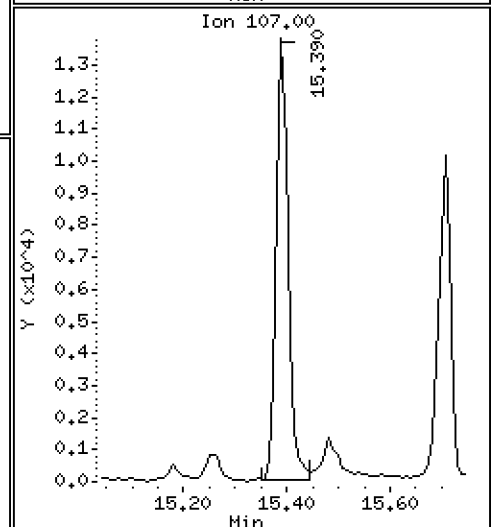
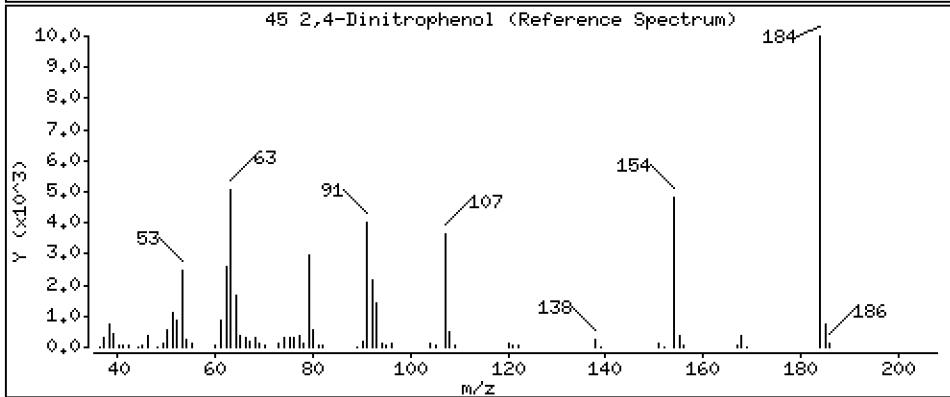
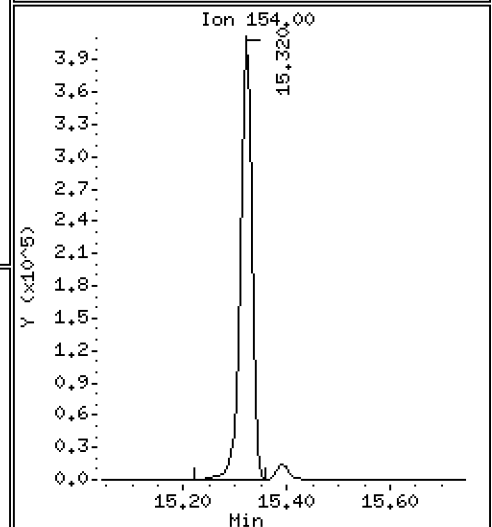
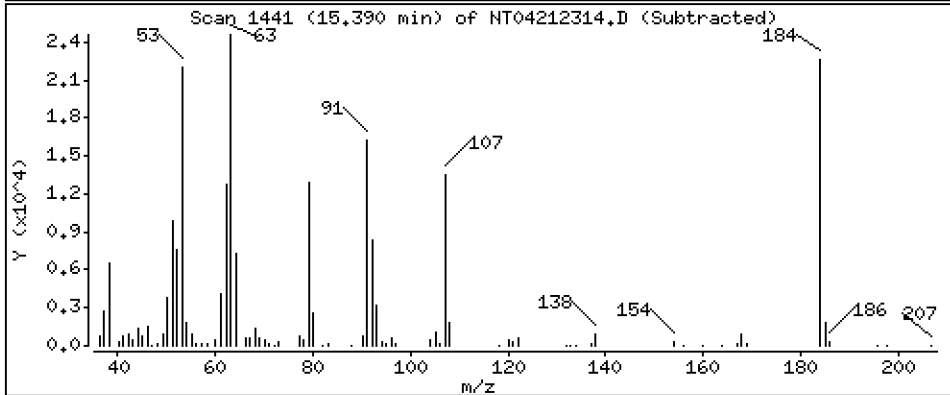
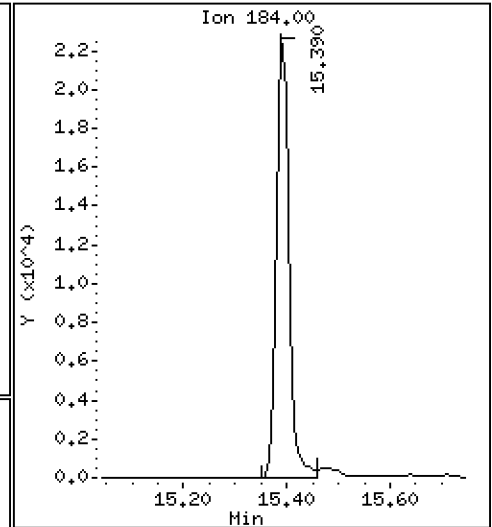
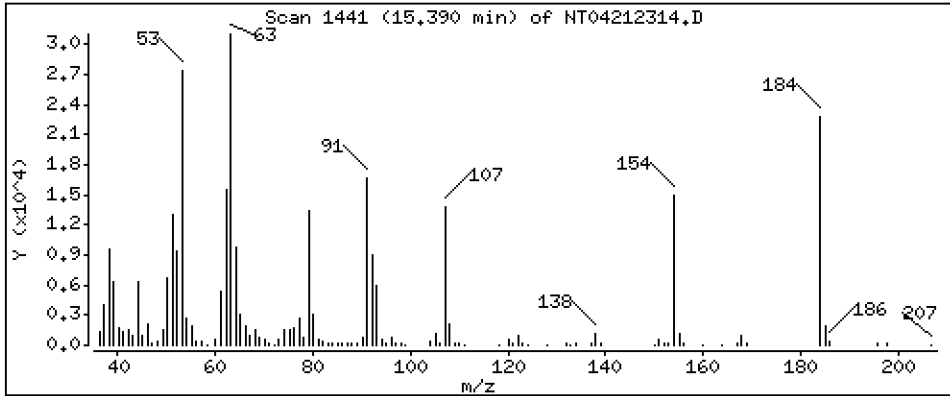
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 1,674 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

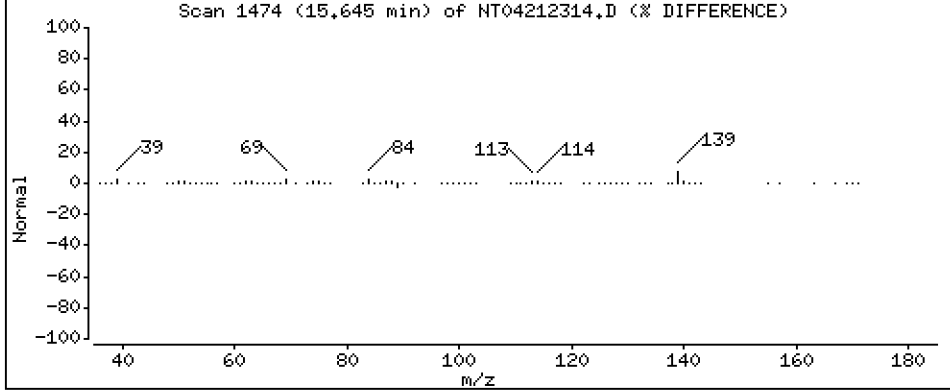
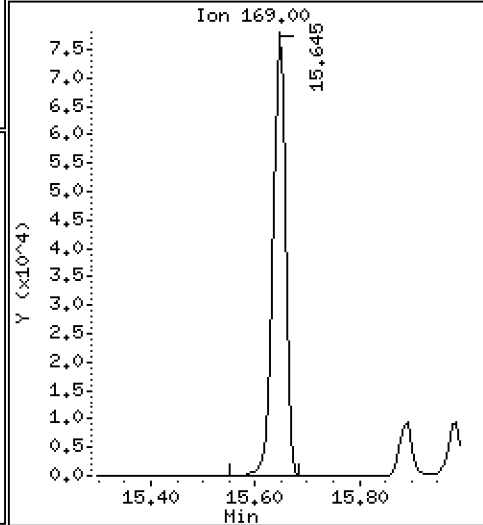
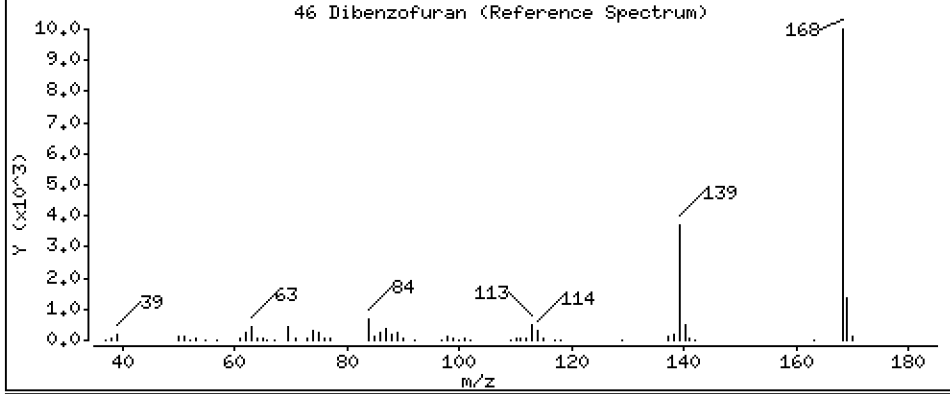
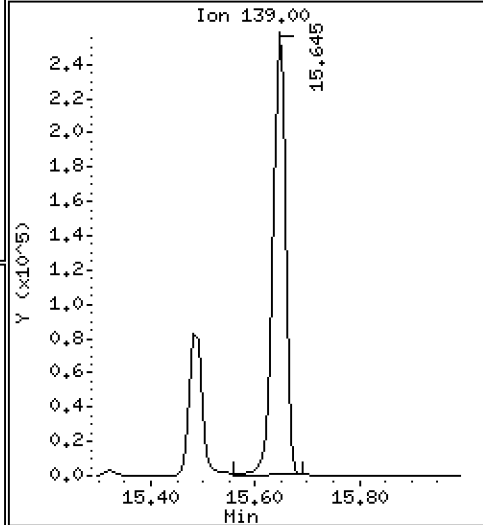
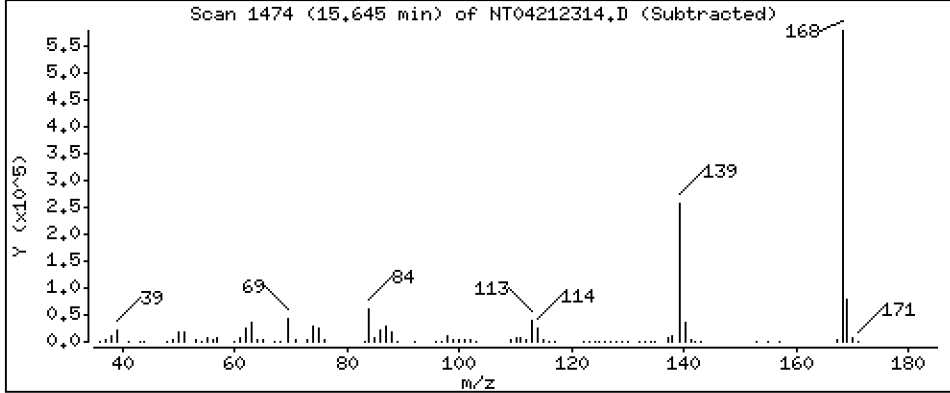
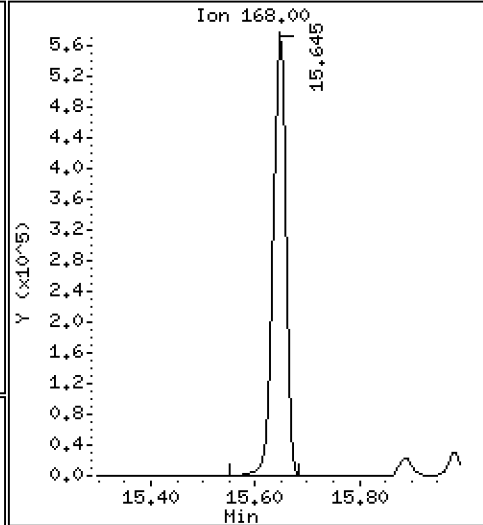
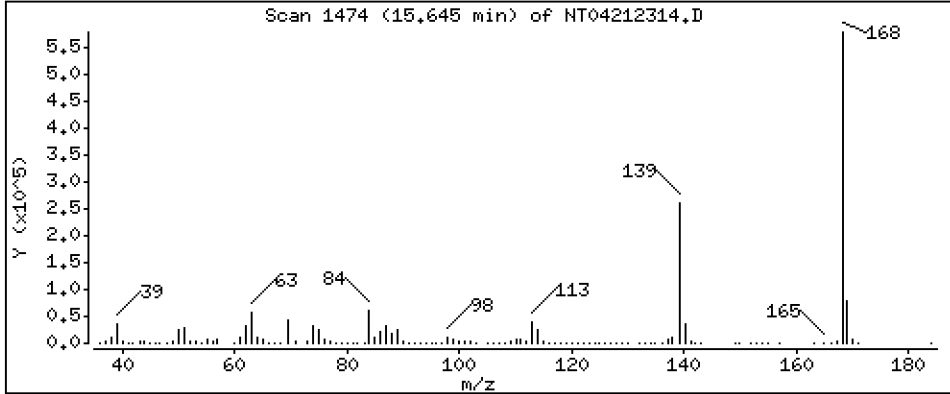
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 4,520 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

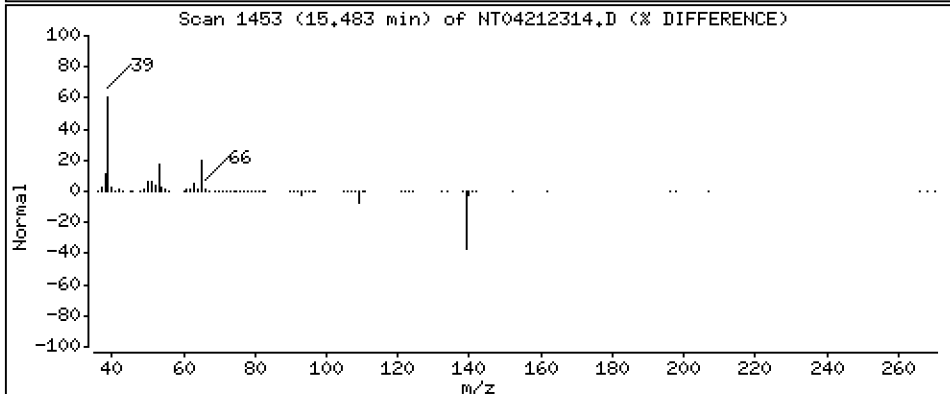
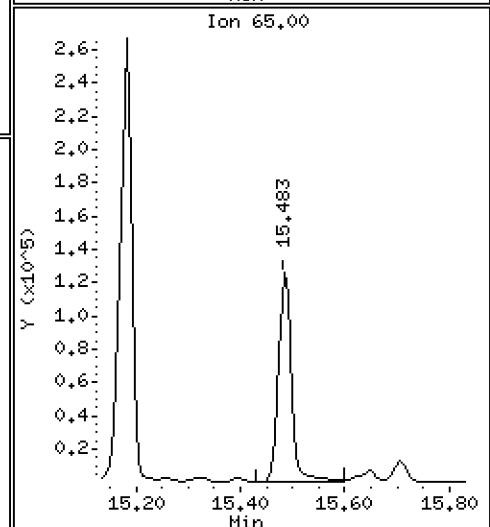
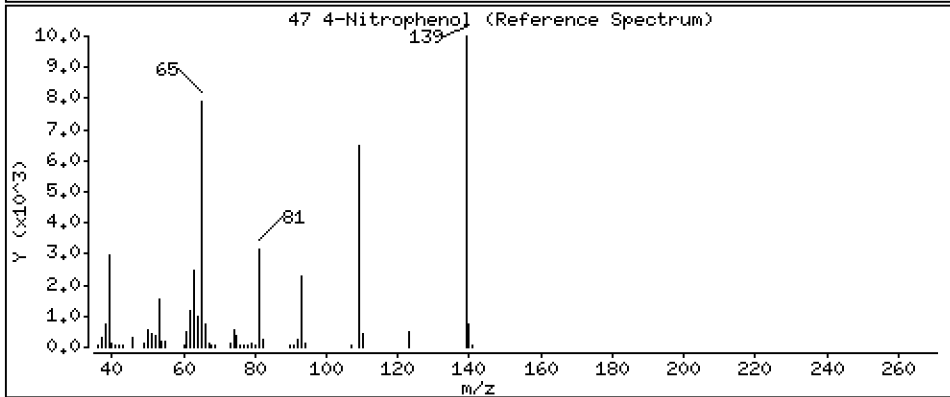
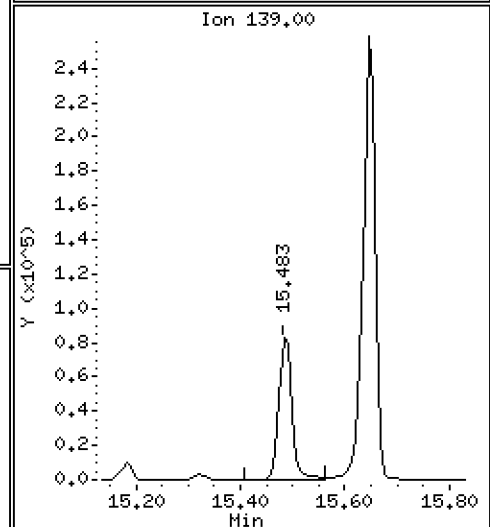
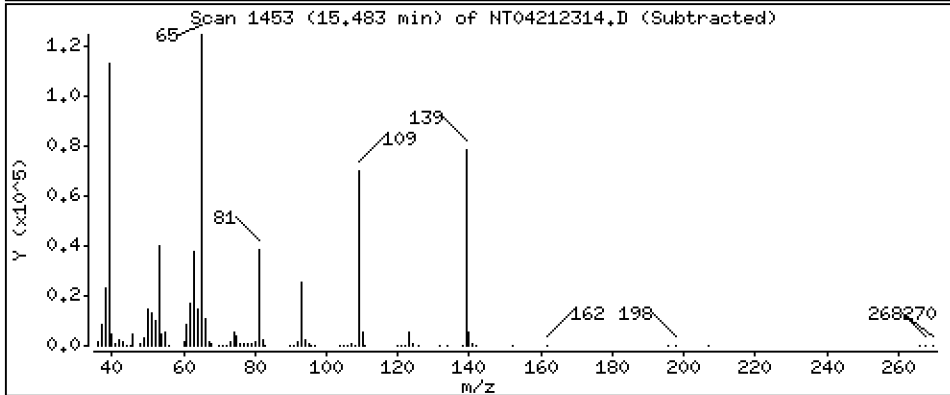
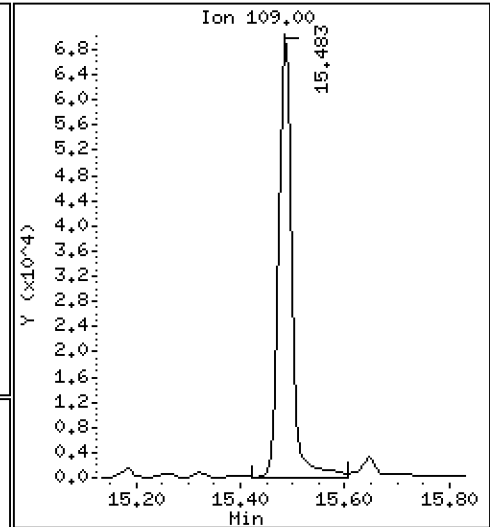
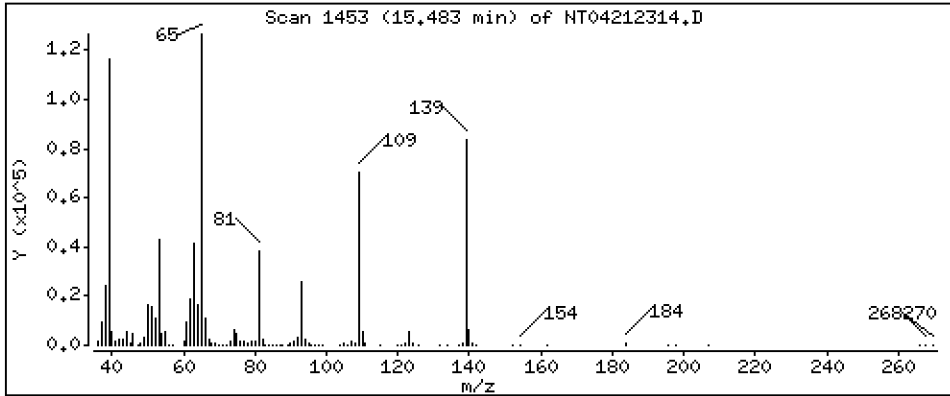
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 4,554 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

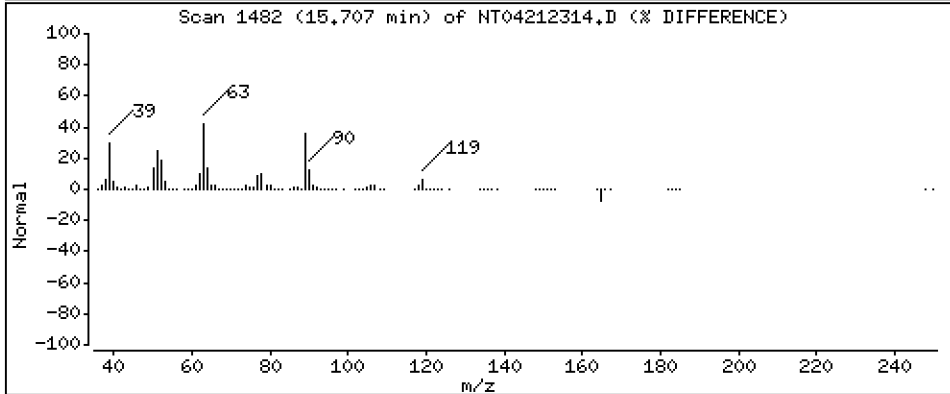
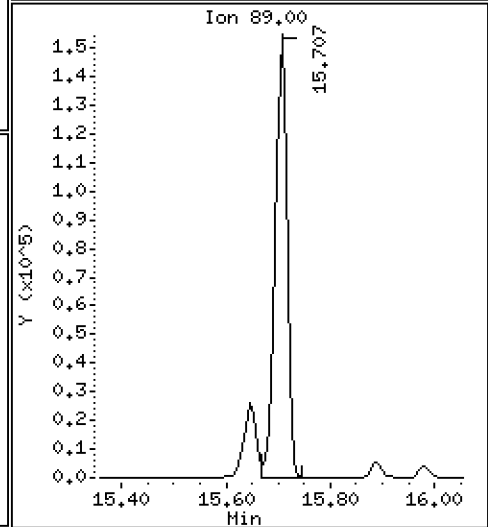
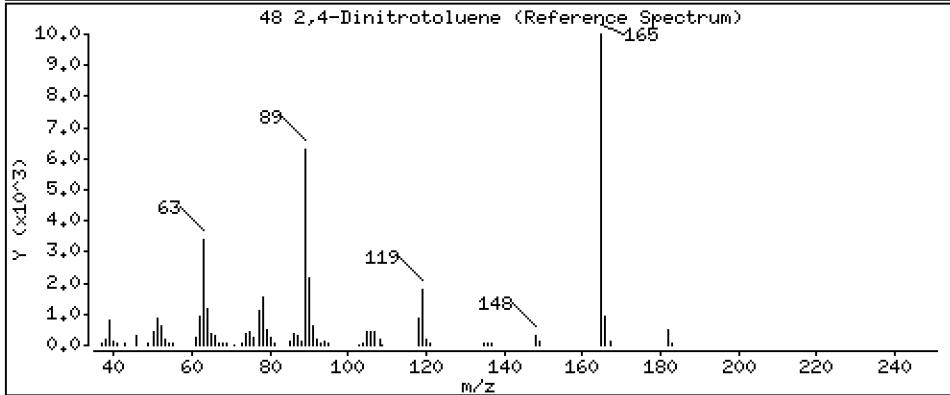
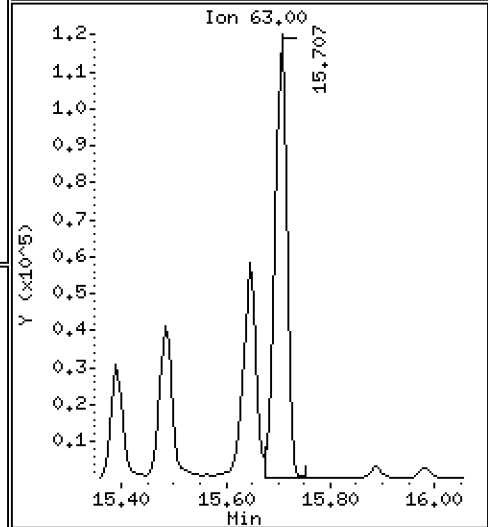
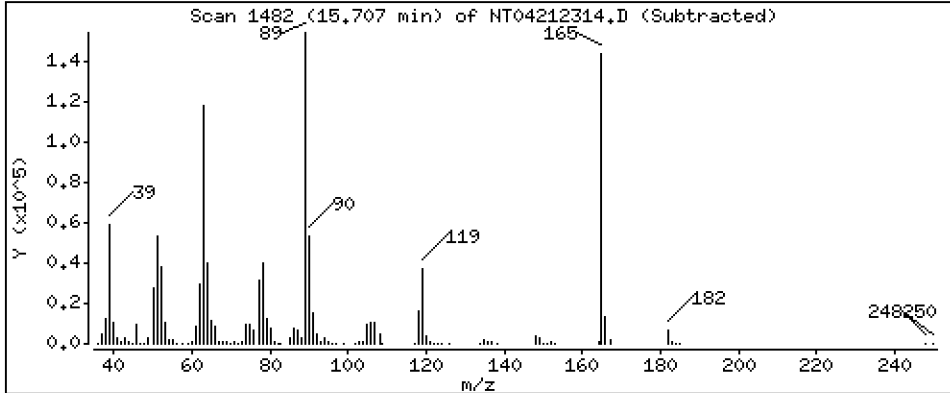
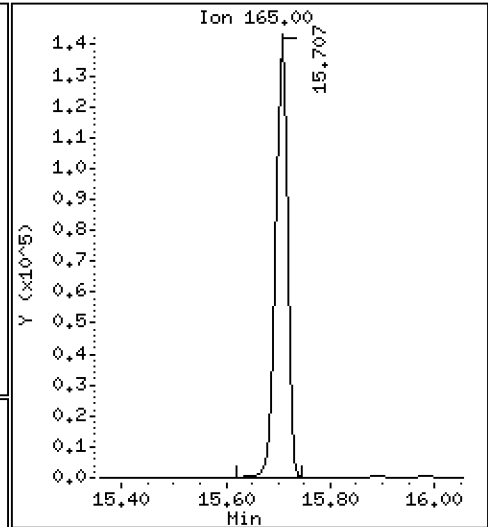
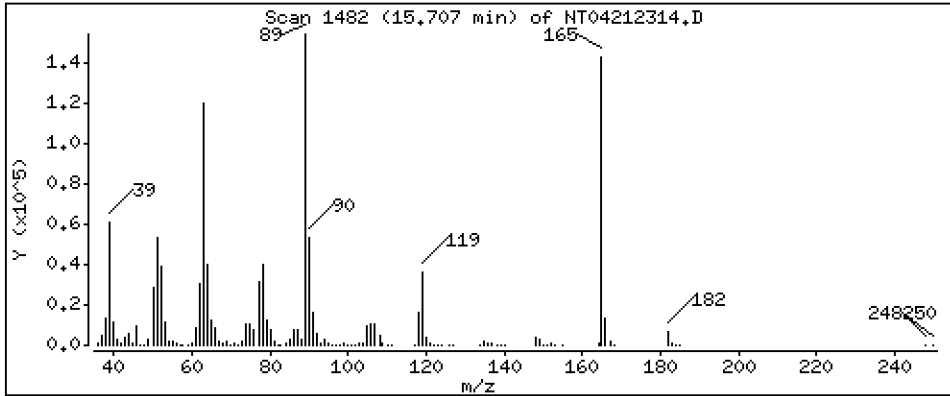
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 4,470 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

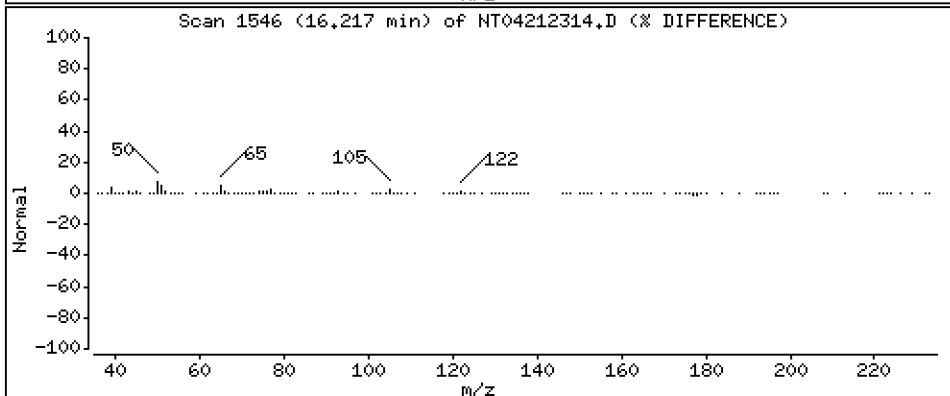
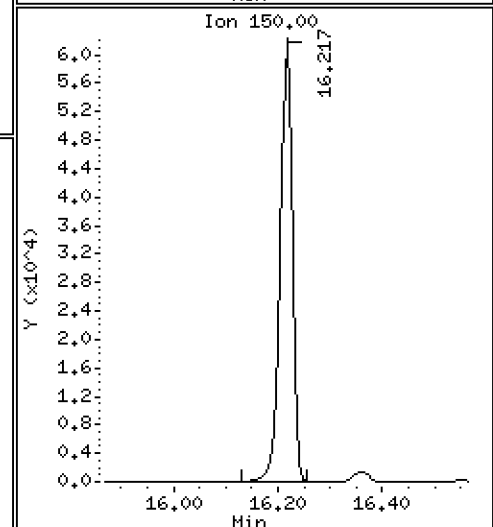
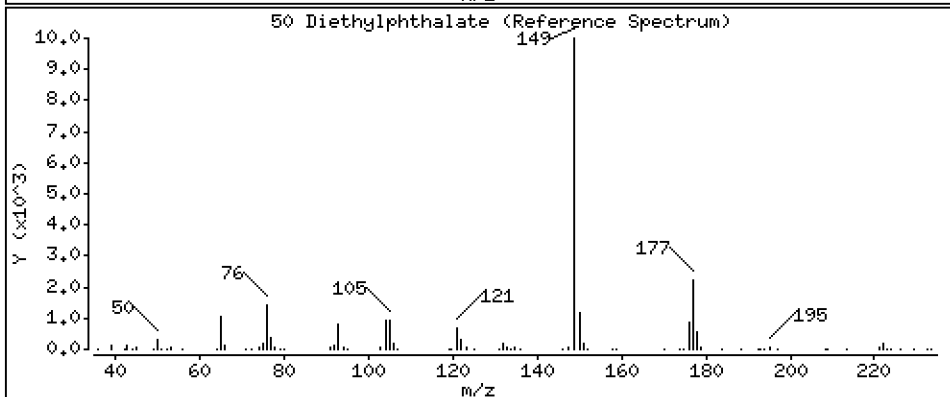
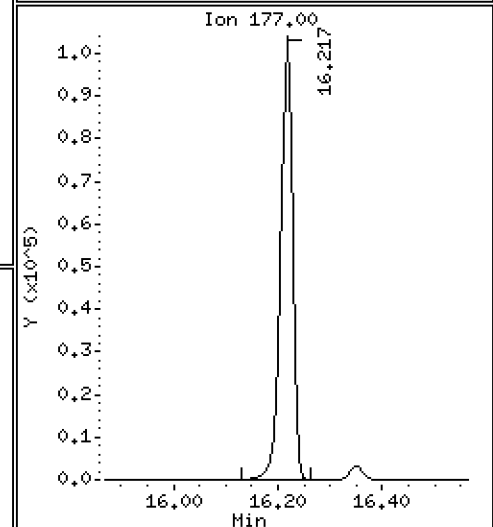
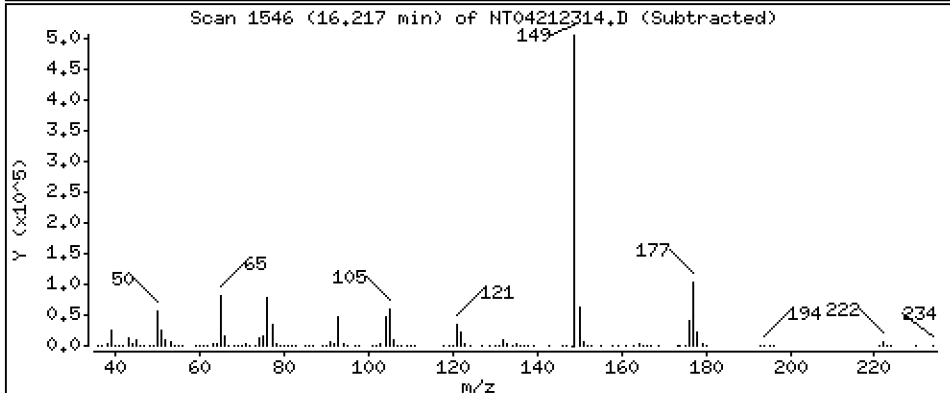
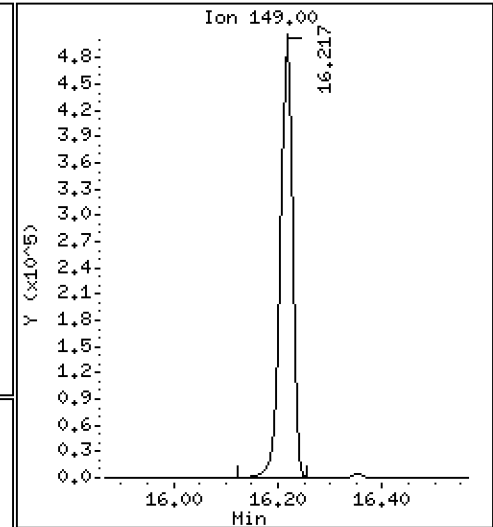
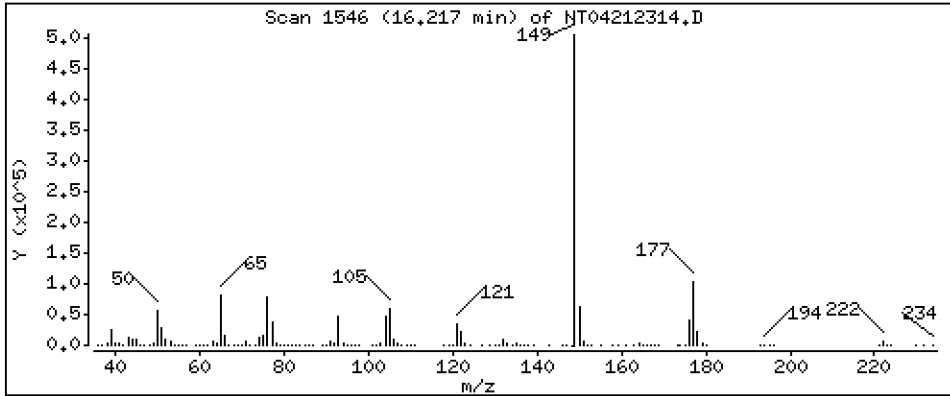
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,575 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

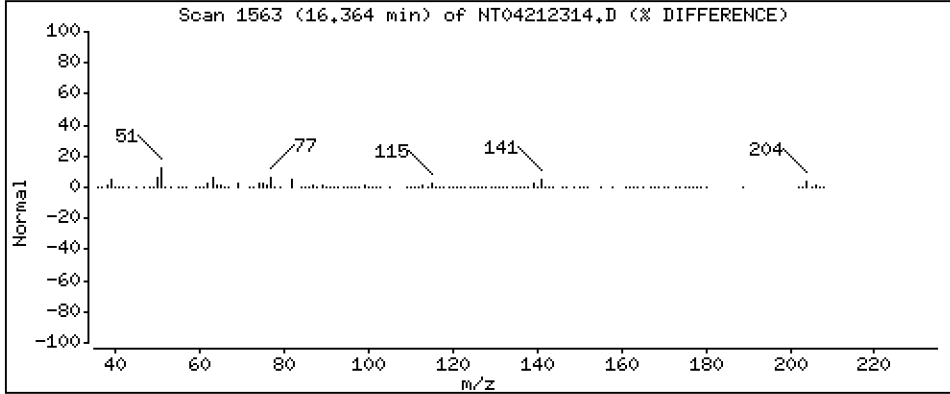
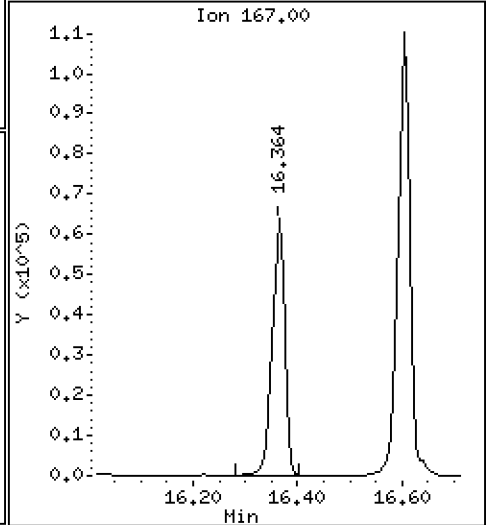
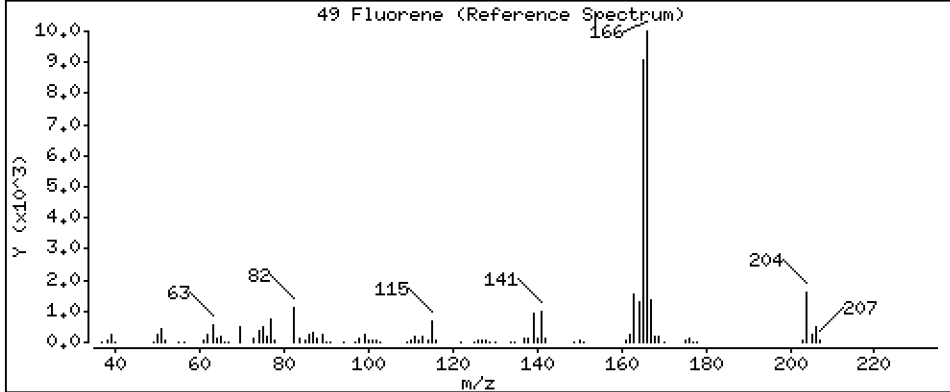
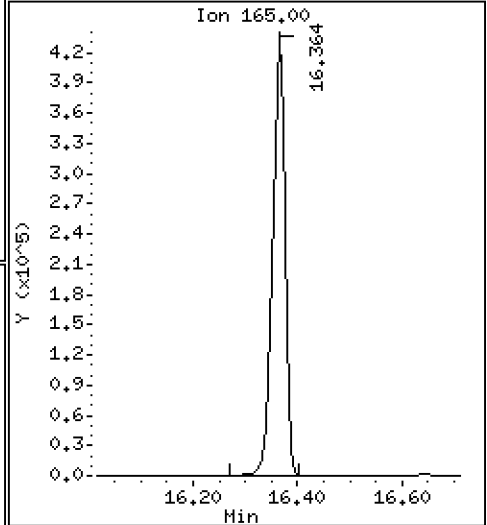
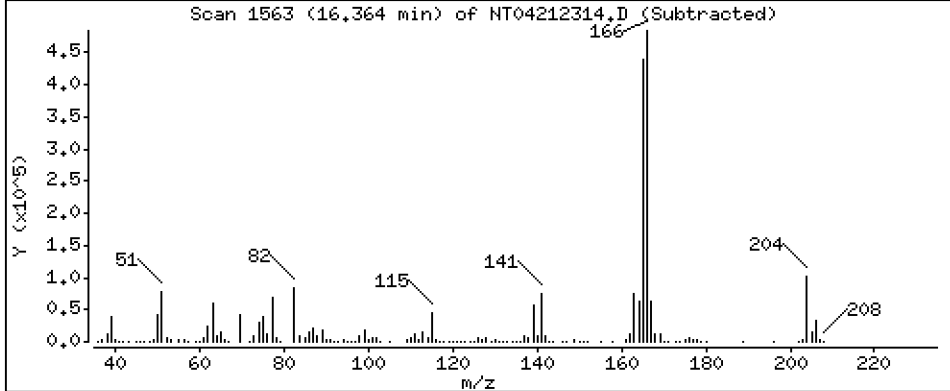
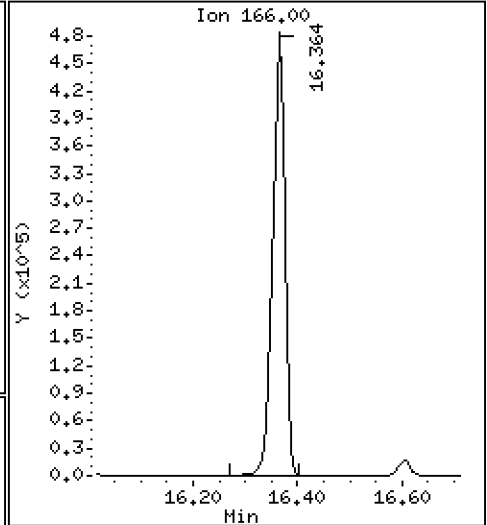
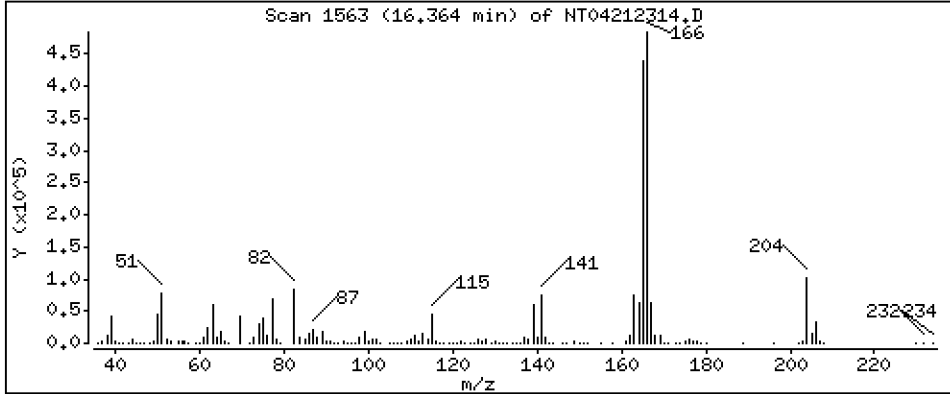
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,780 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

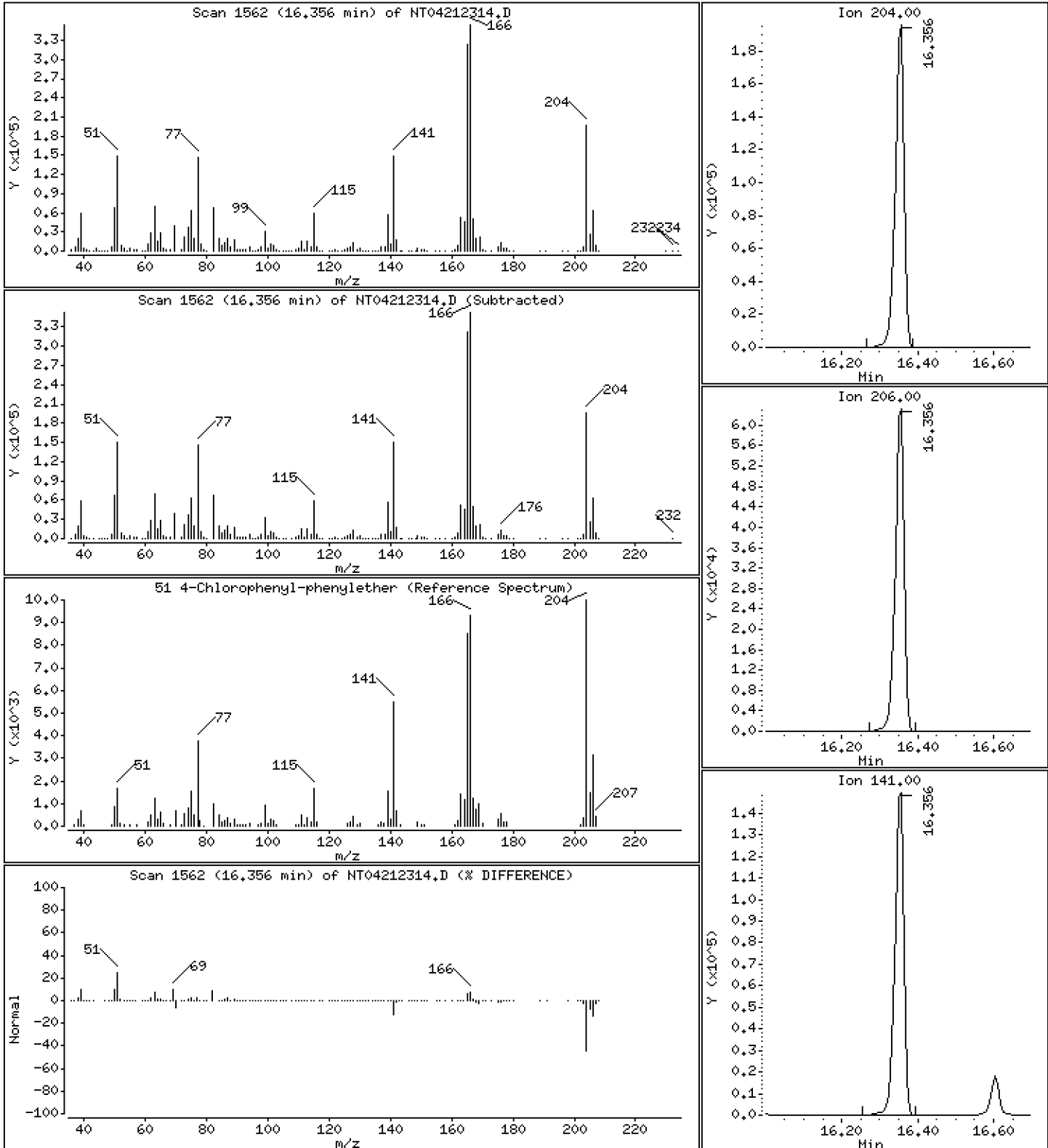
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,758 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

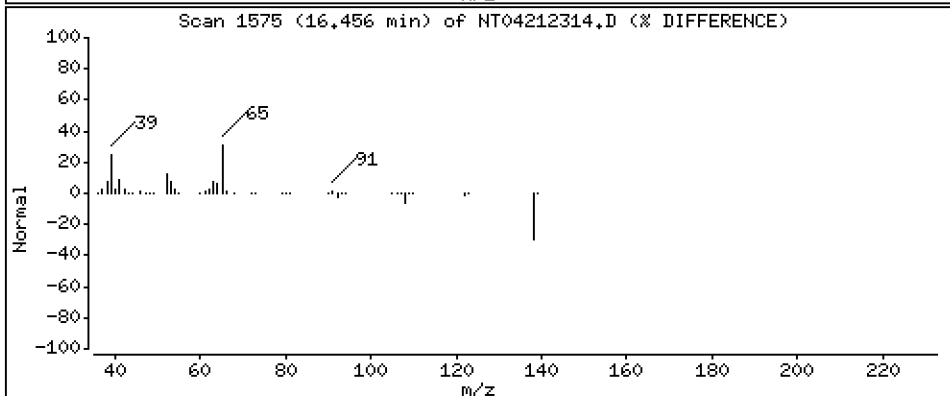
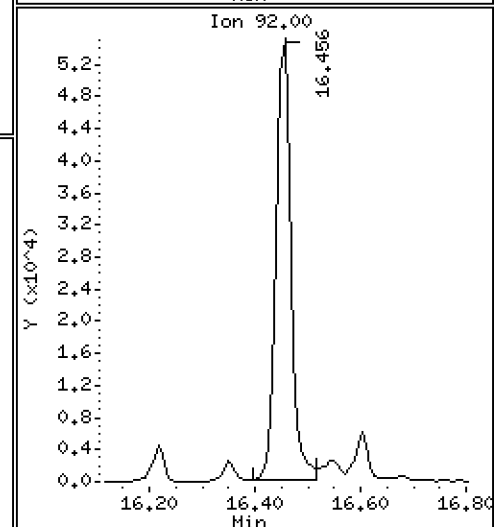
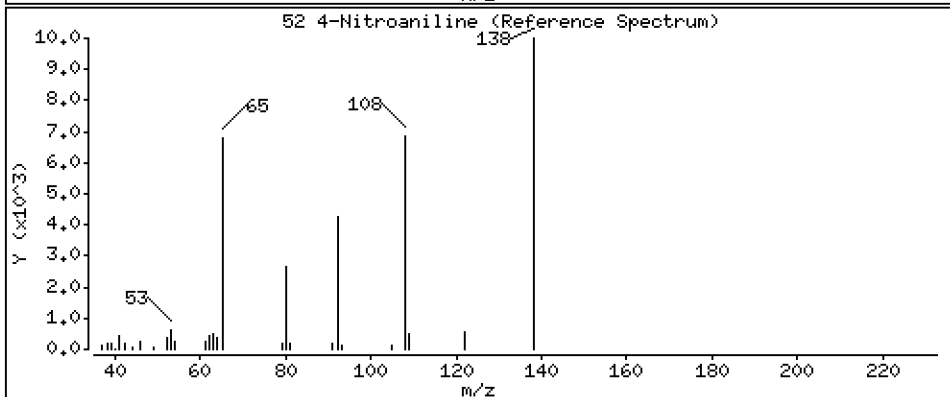
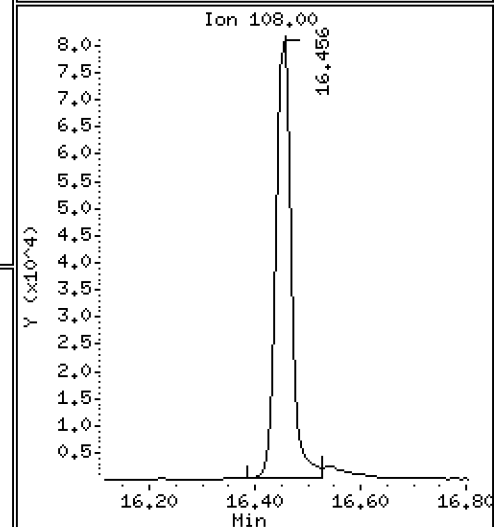
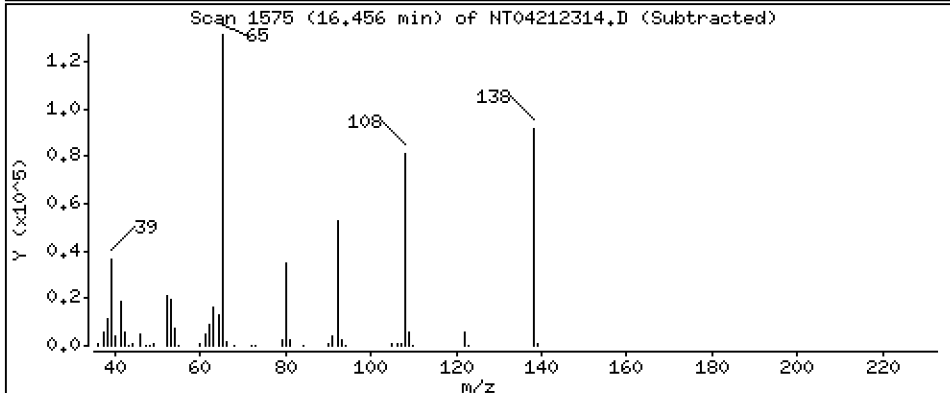
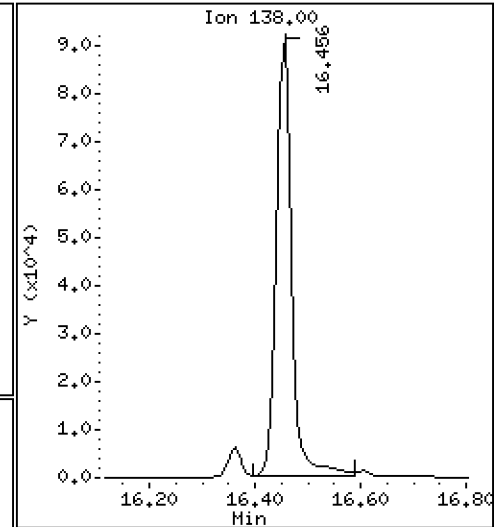
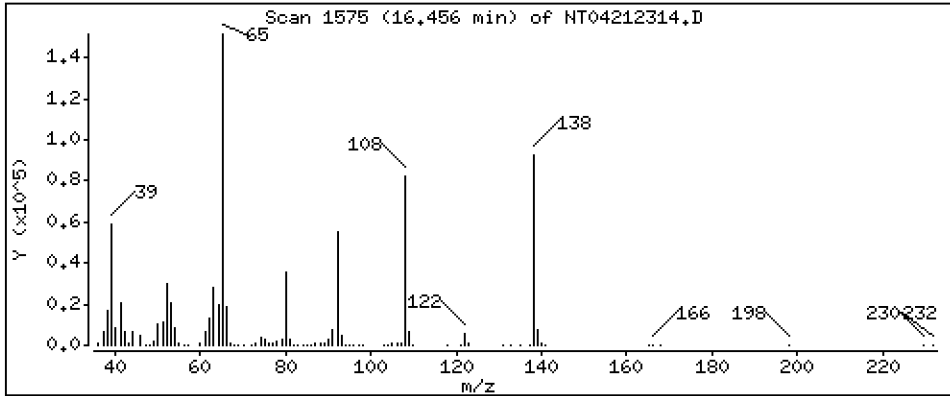
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 4,520 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

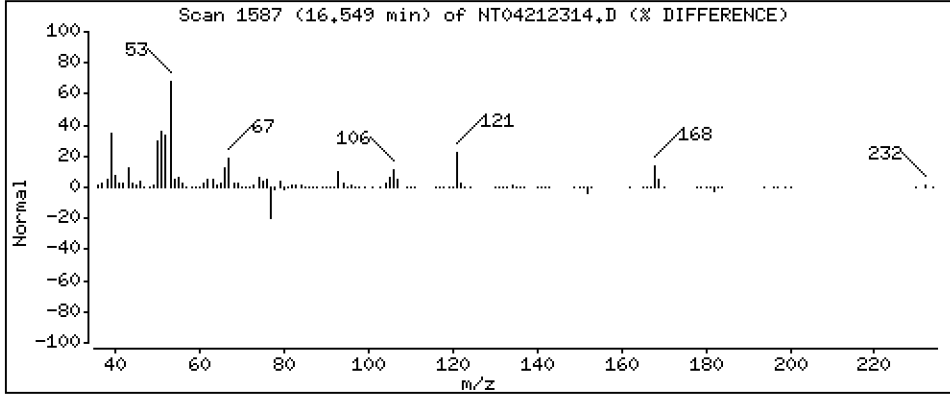
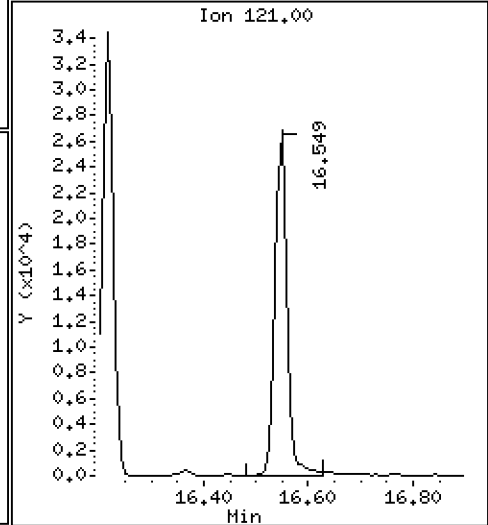
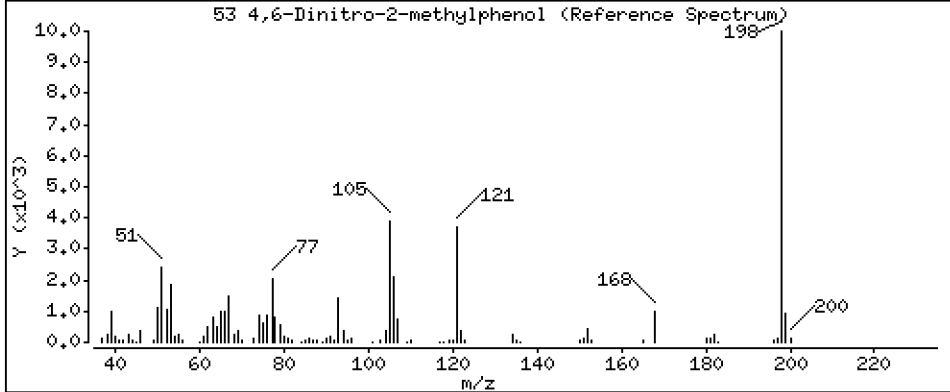
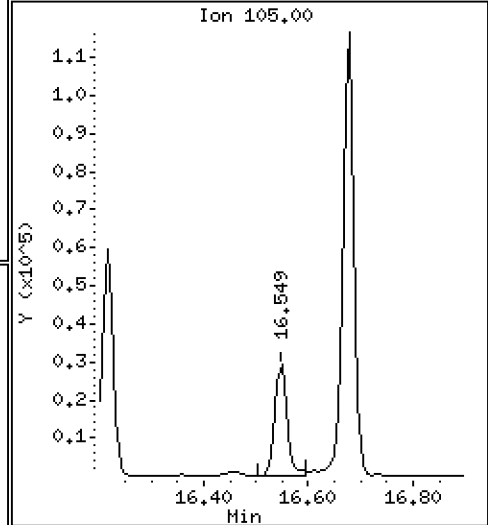
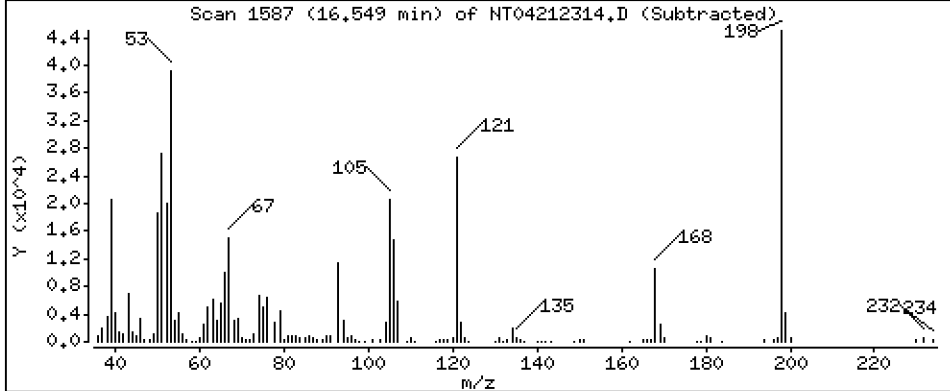
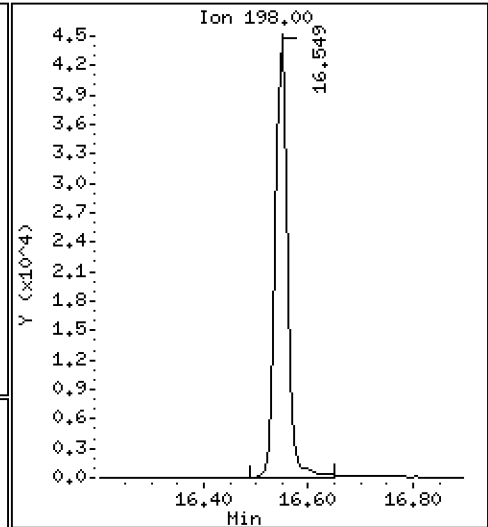
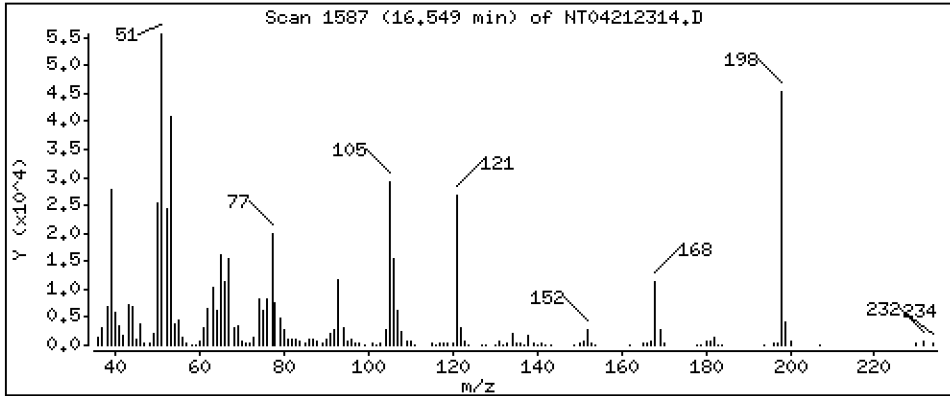
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 3,005 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

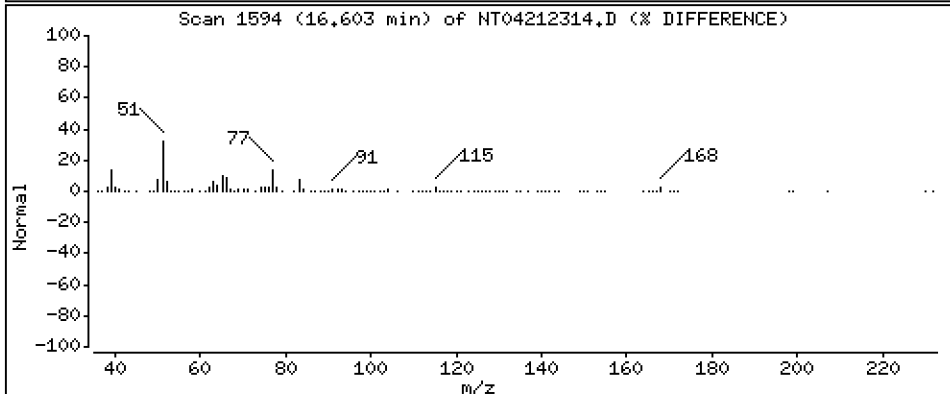
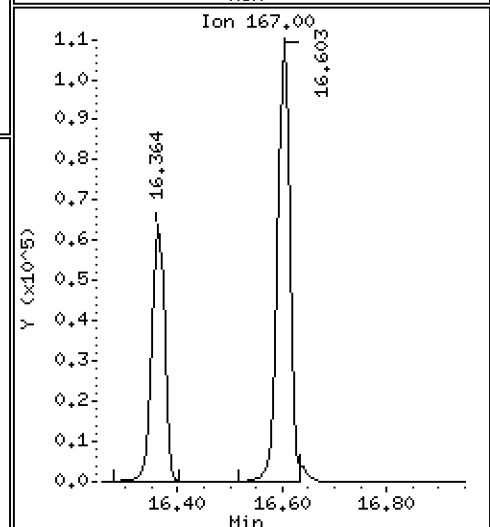
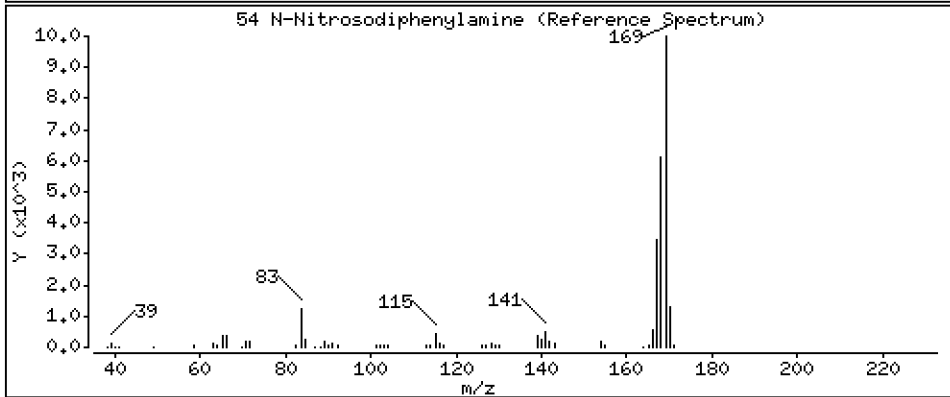
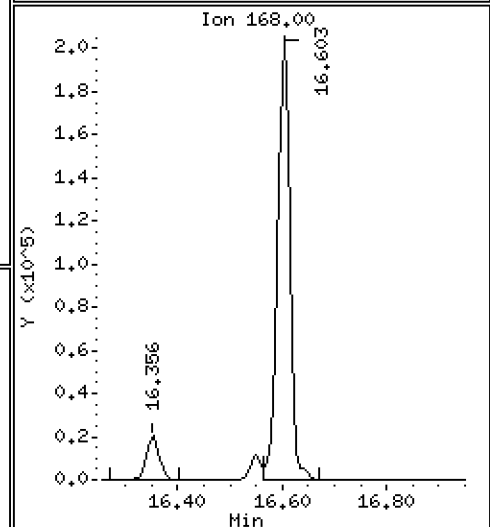
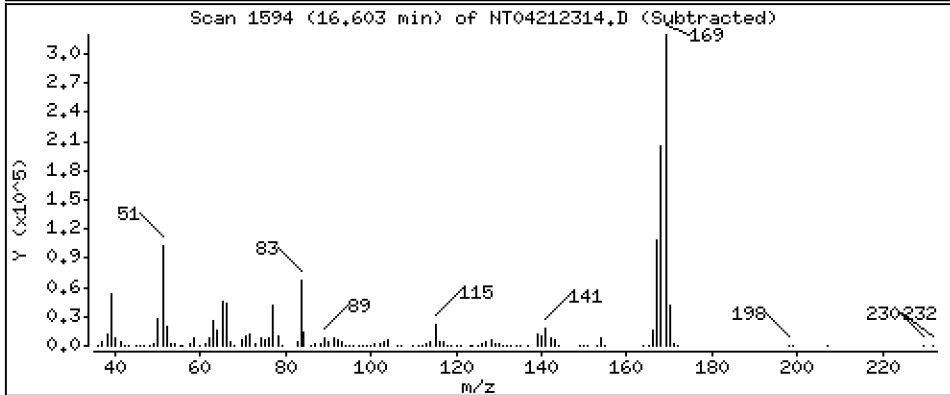
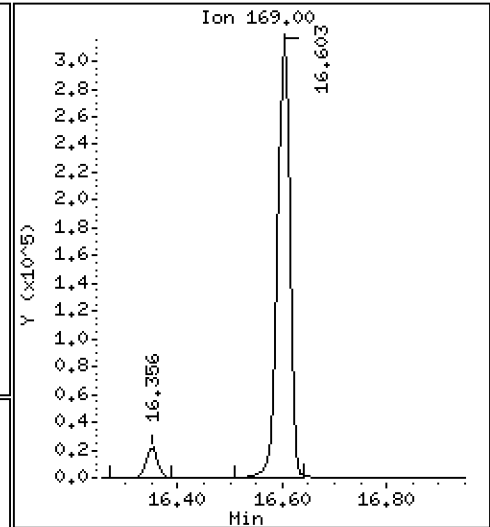
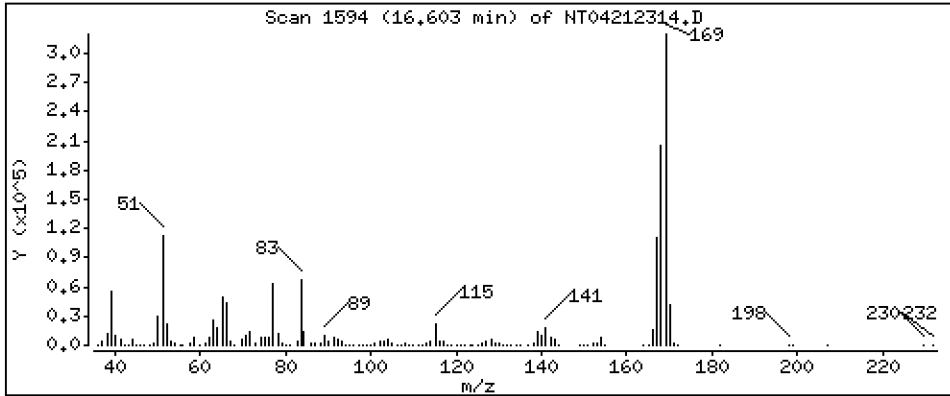
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,748 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

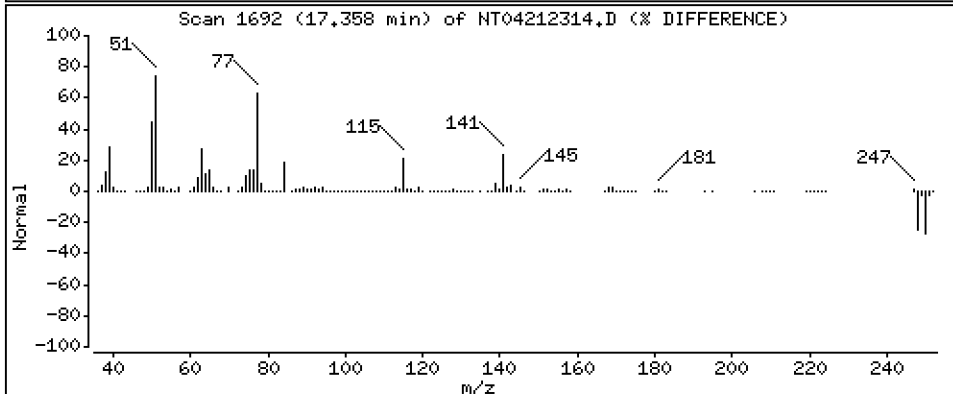
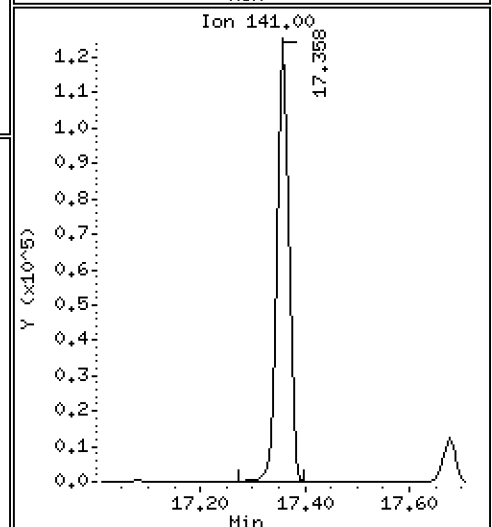
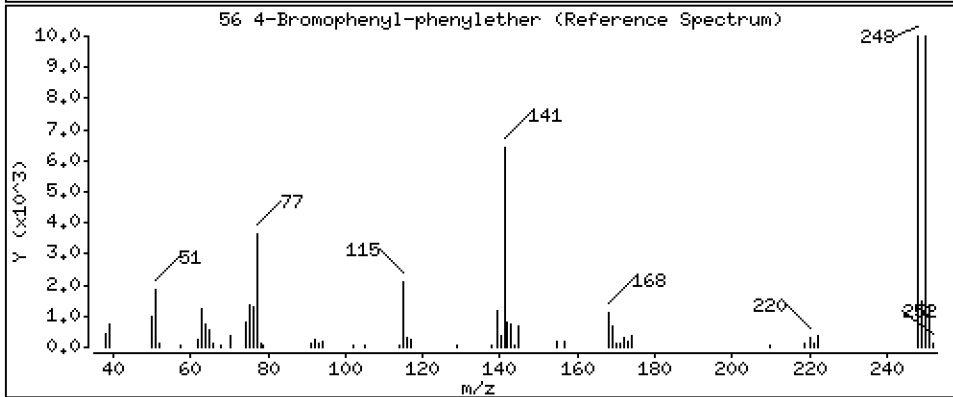
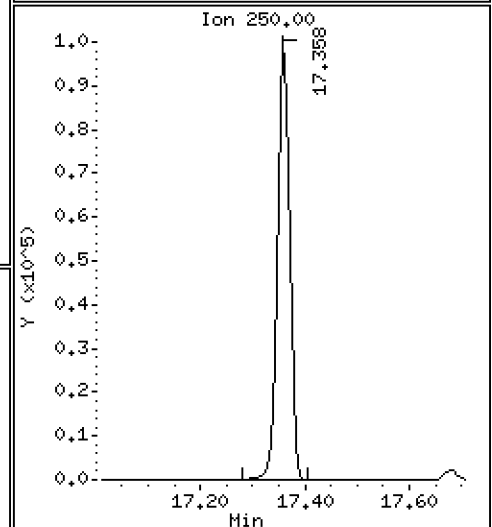
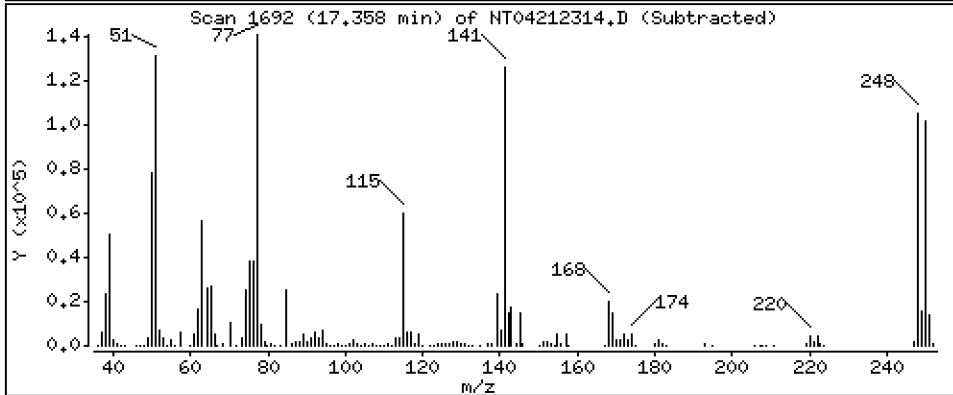
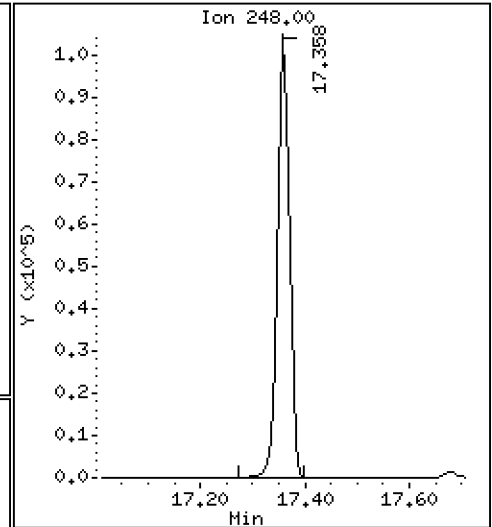
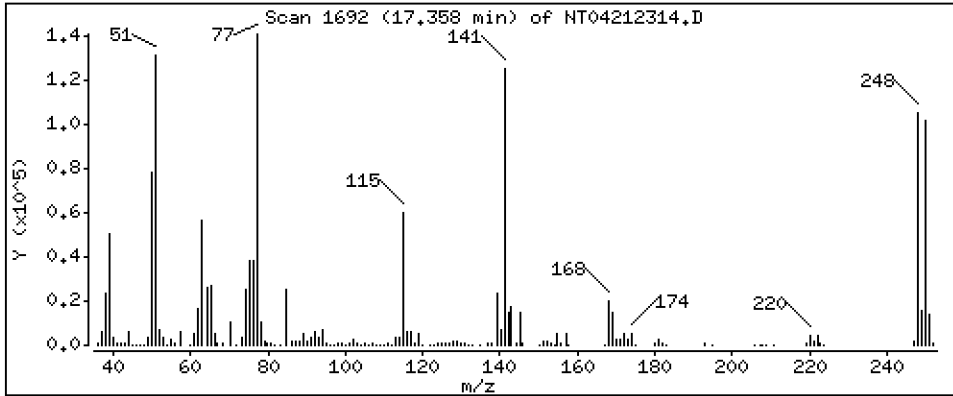
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 4,732 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

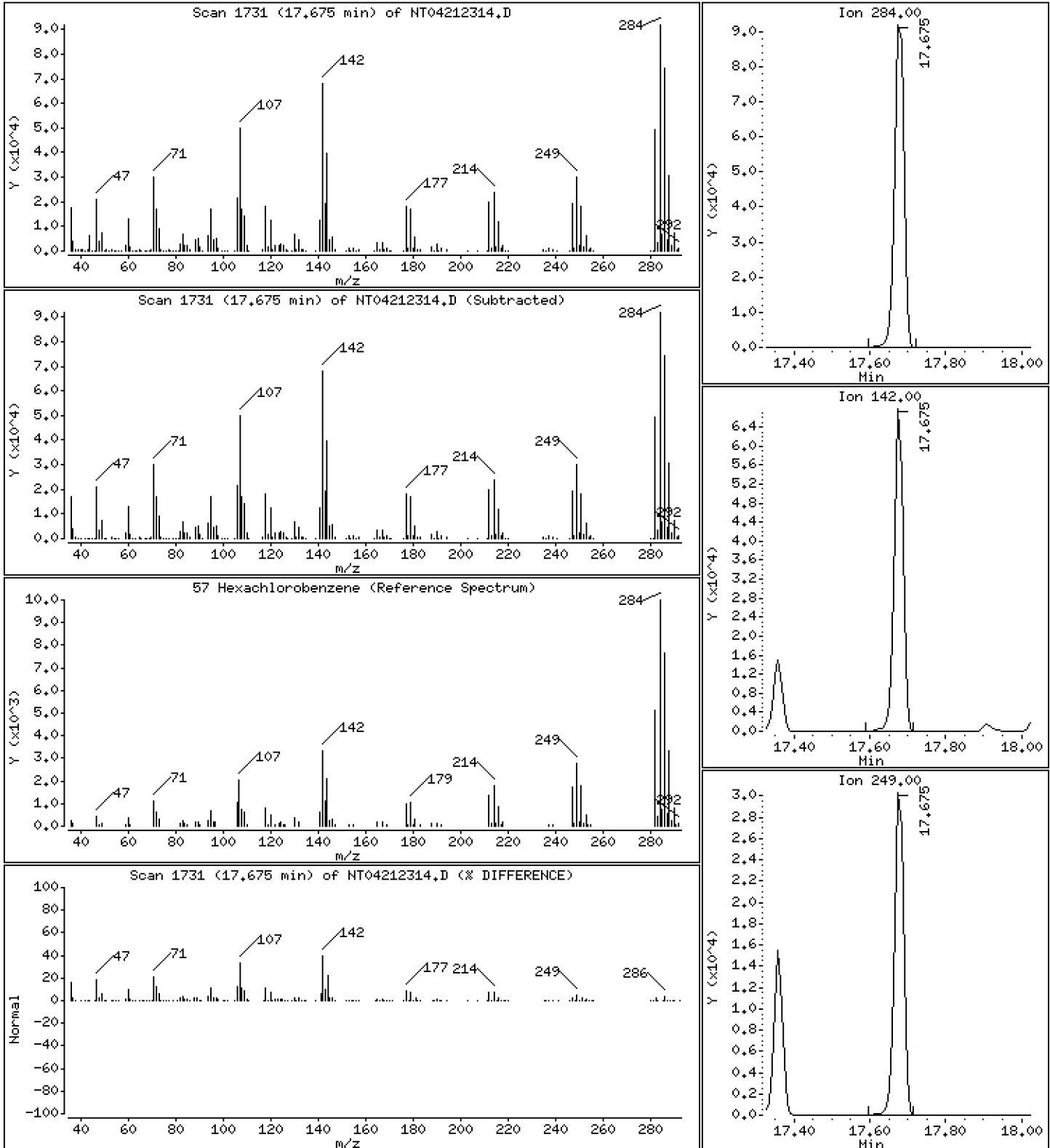
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

57 Hexachlorobenzene

Concentration: 4.367 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

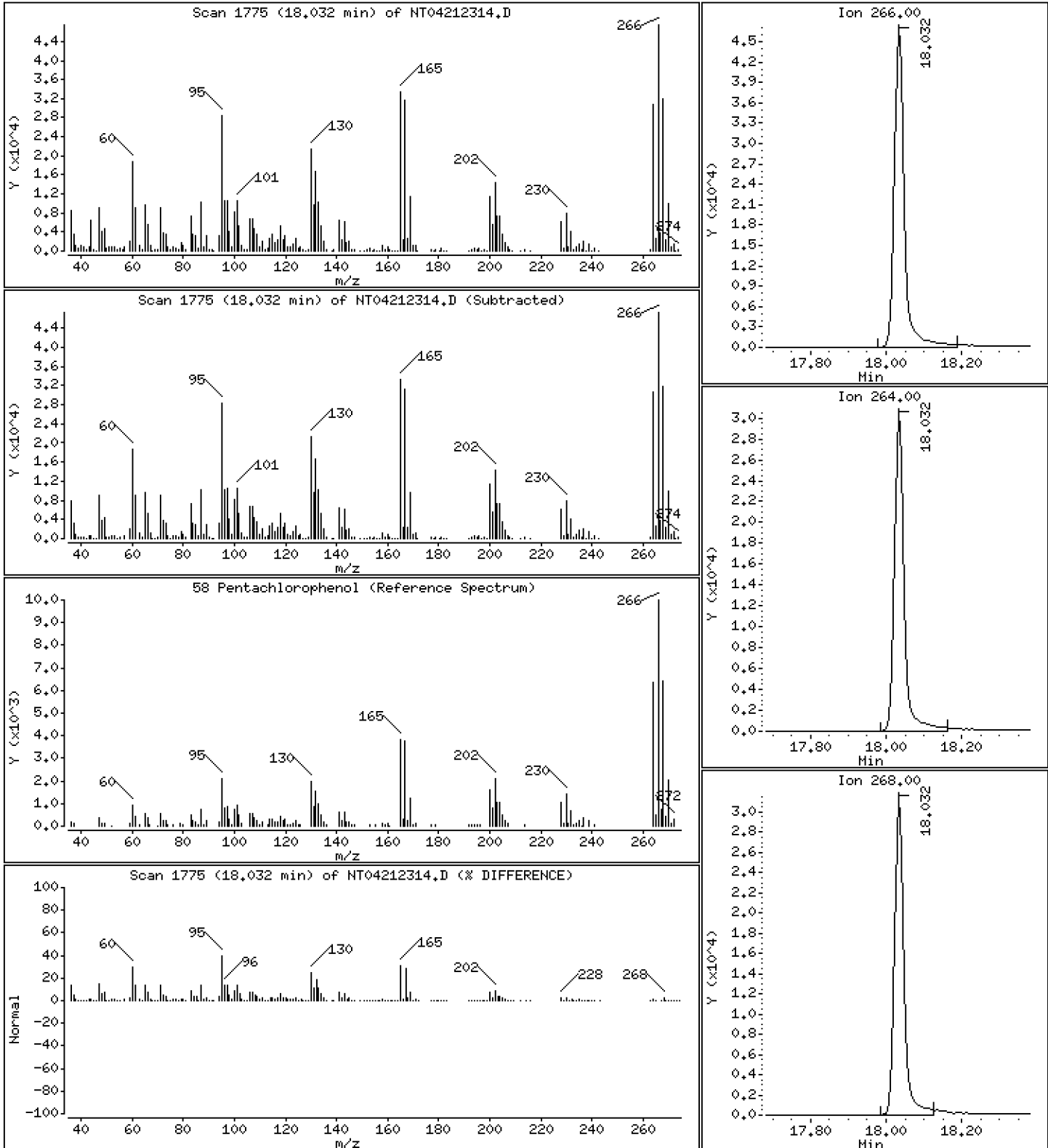
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,741 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

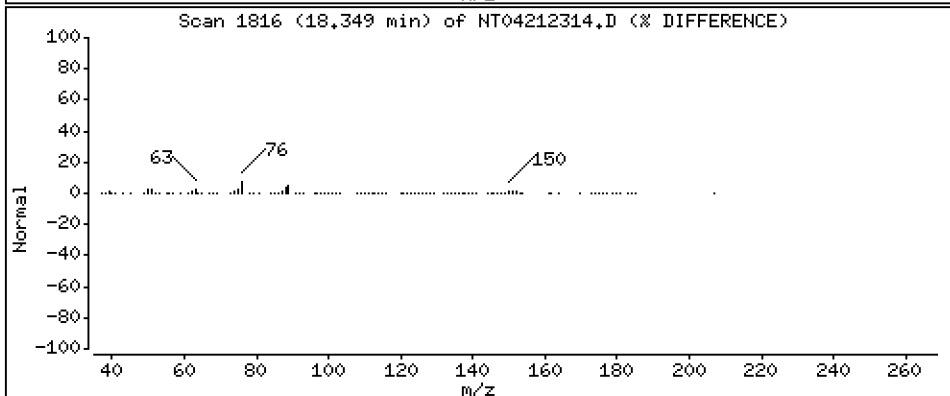
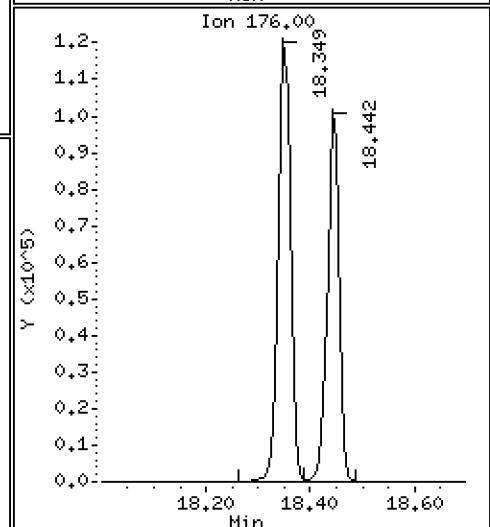
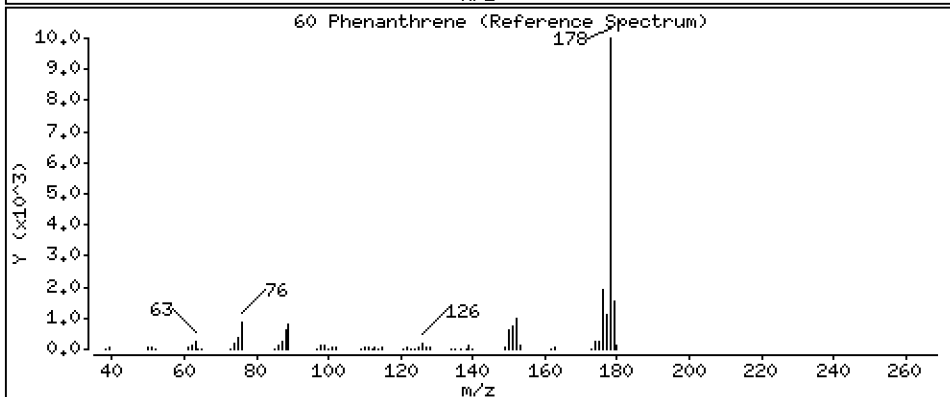
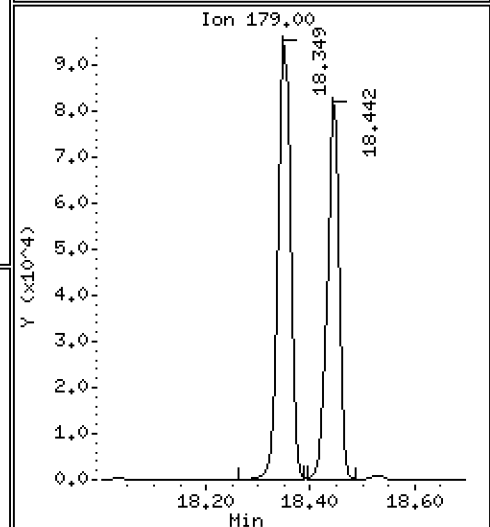
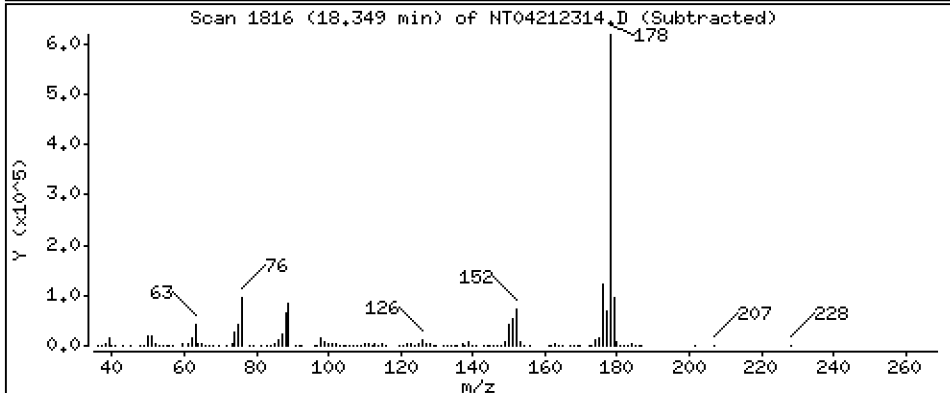
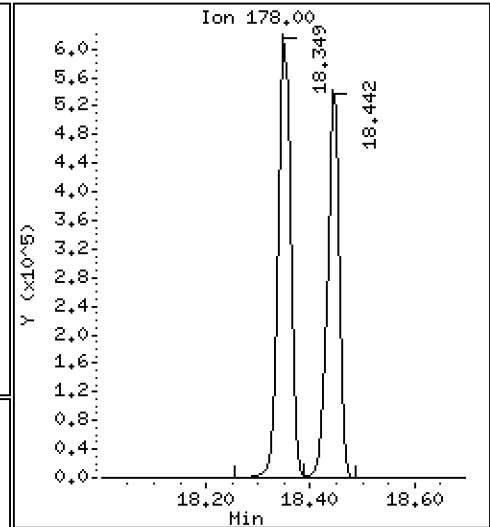
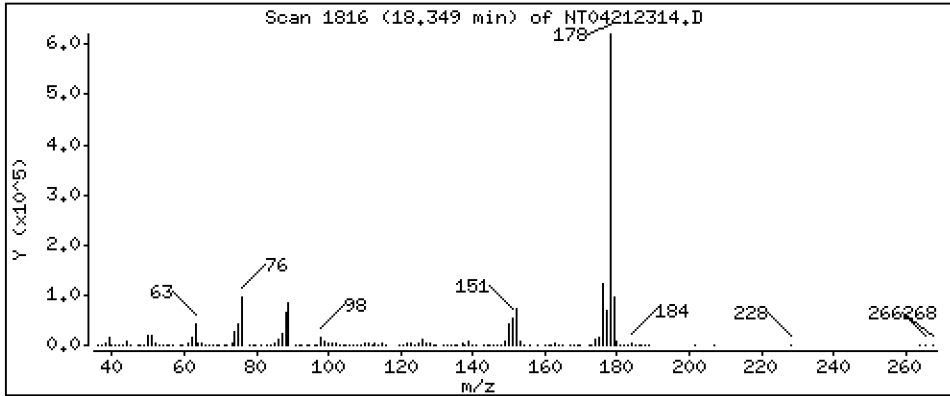
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 4,653 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

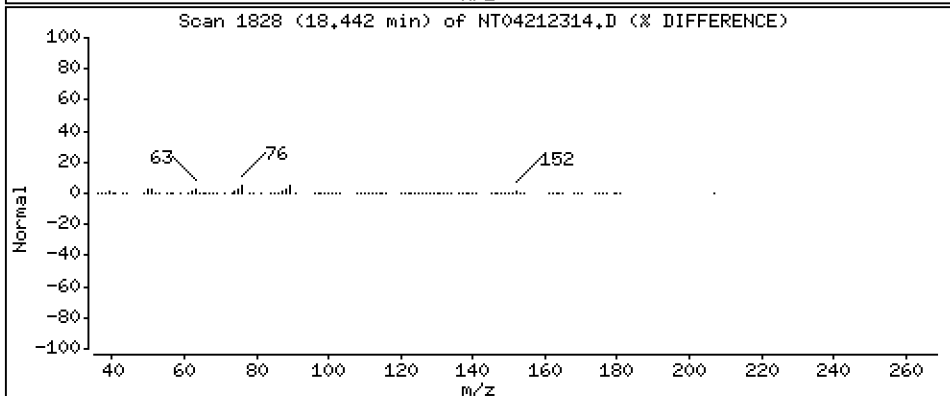
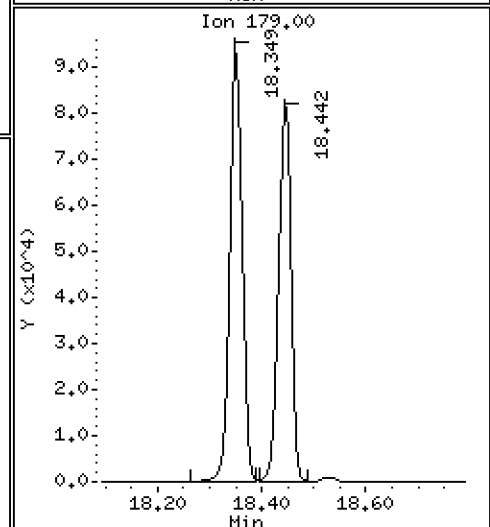
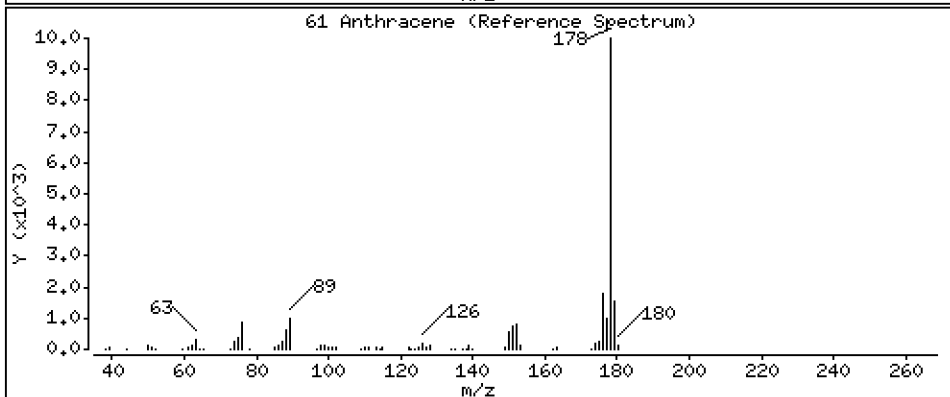
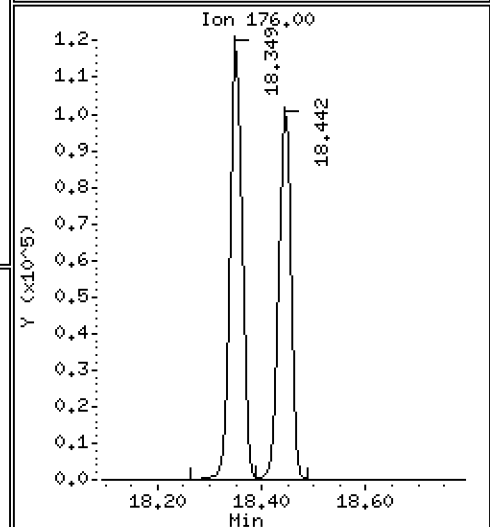
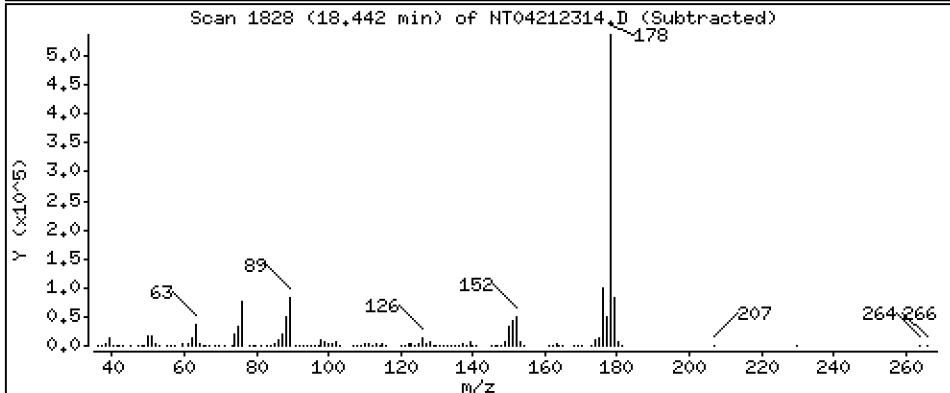
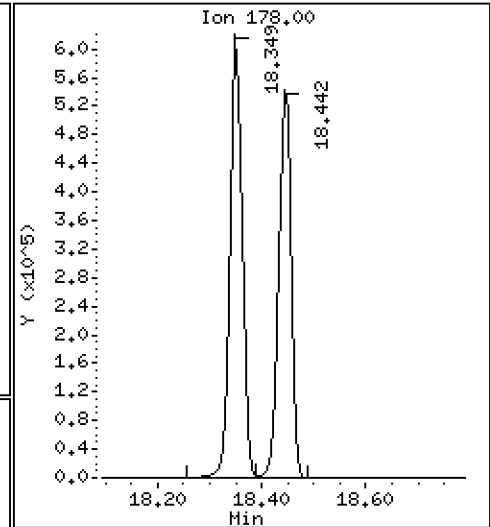
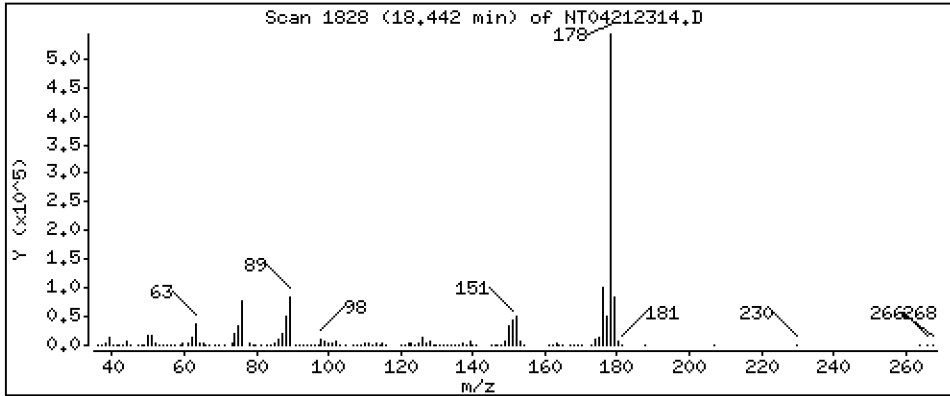
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 4,274 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

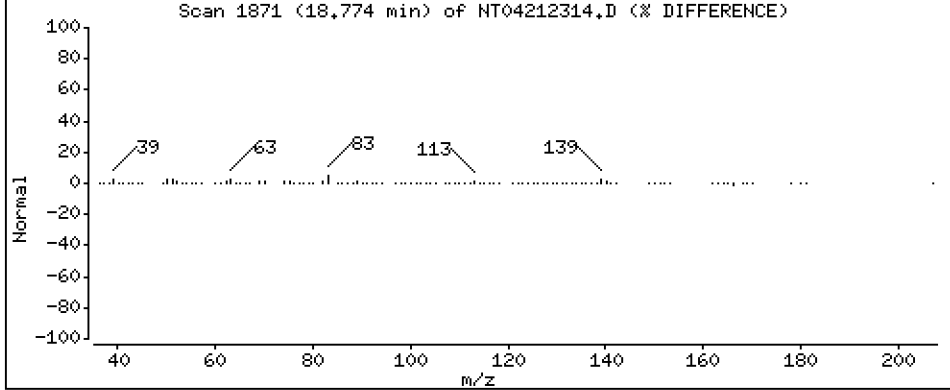
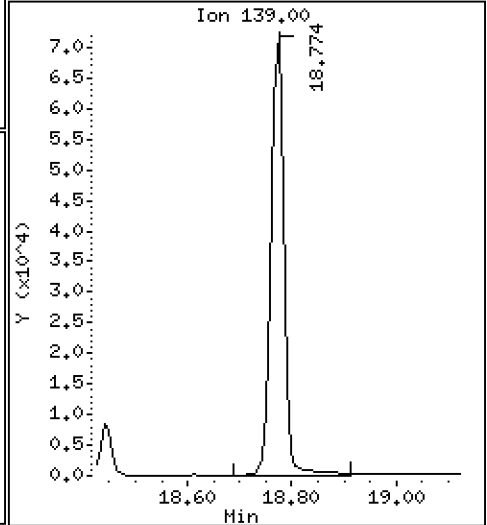
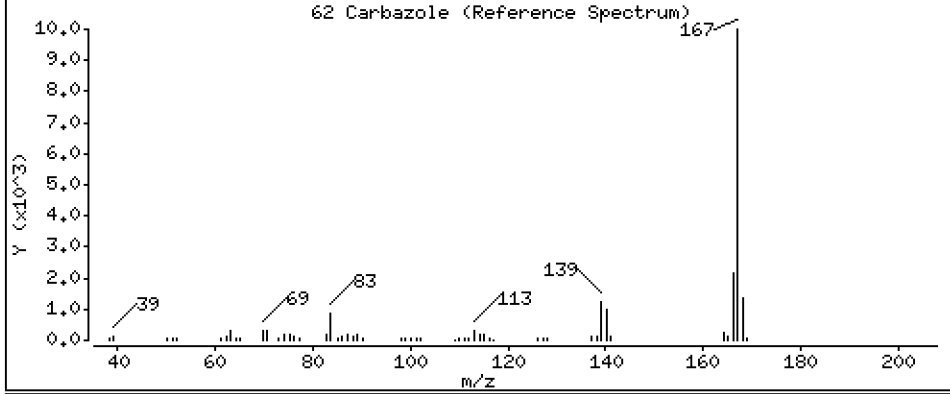
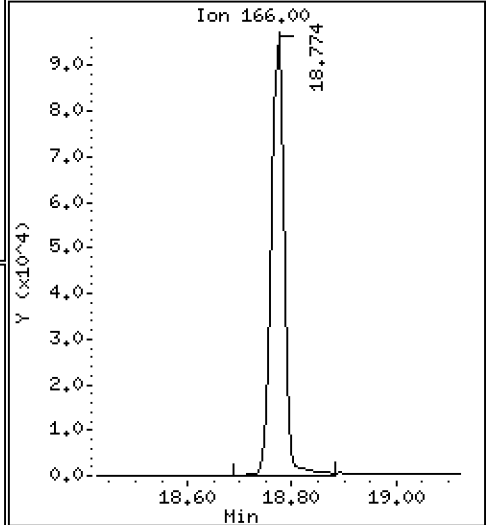
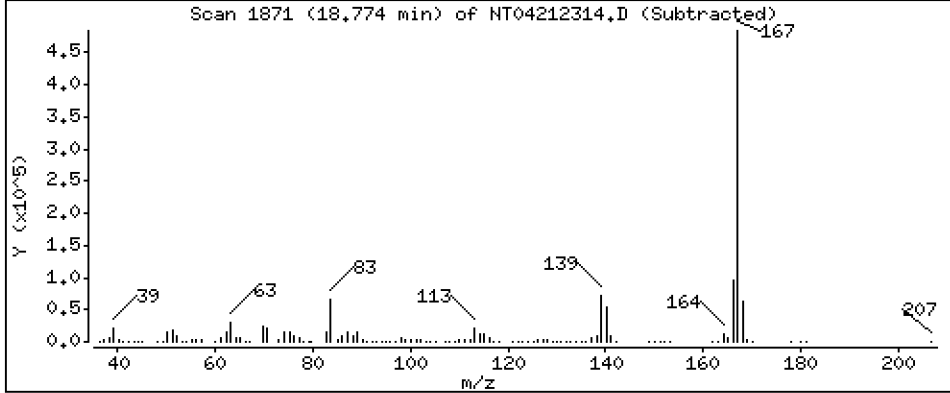
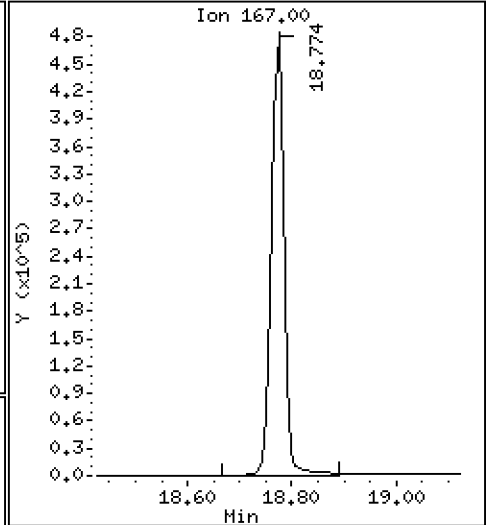
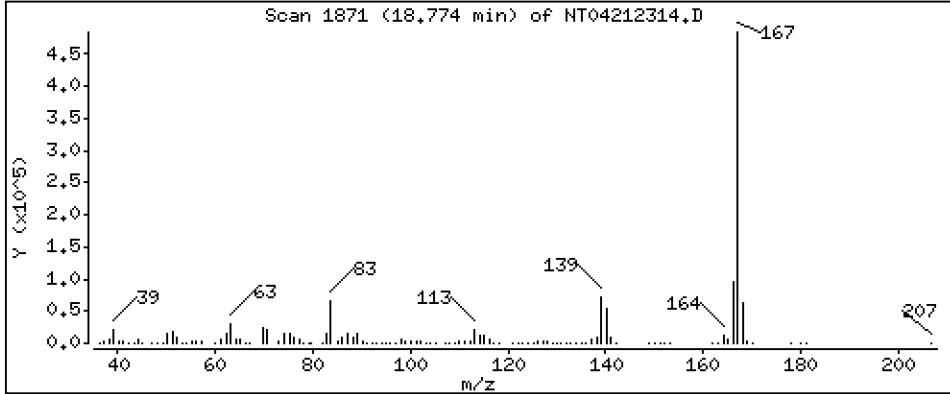
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 4,196 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

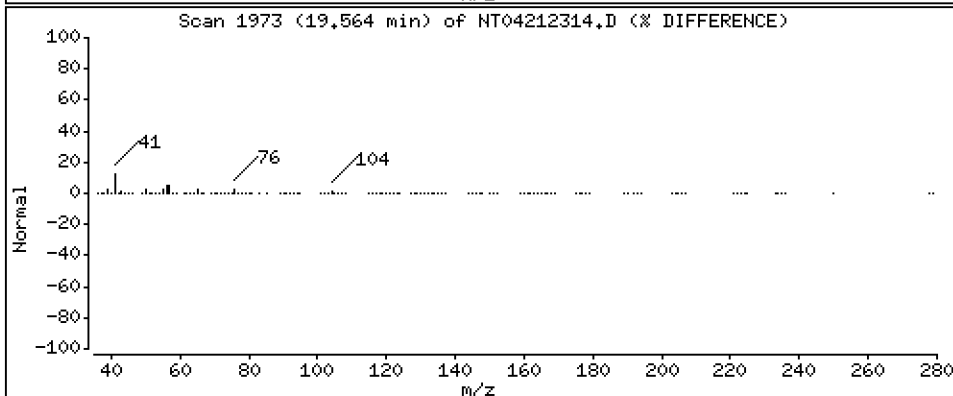
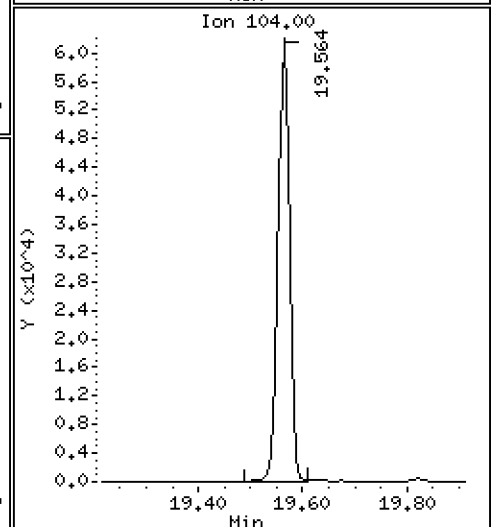
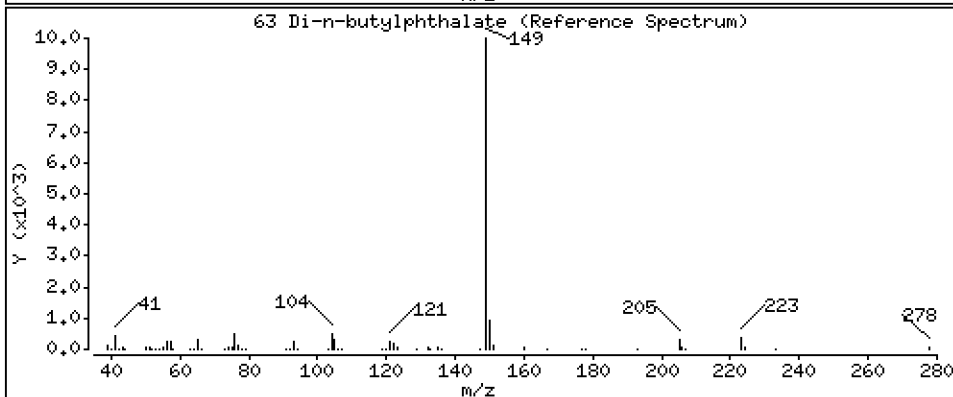
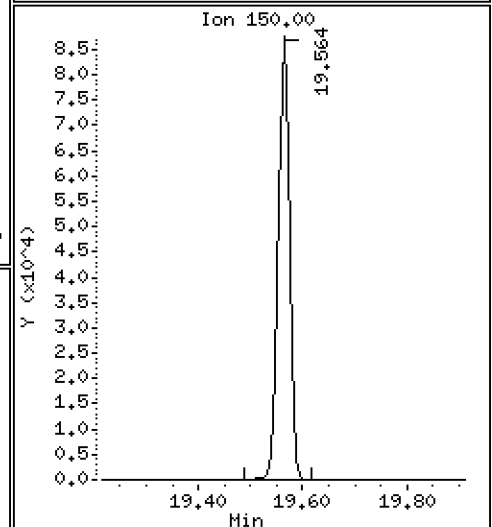
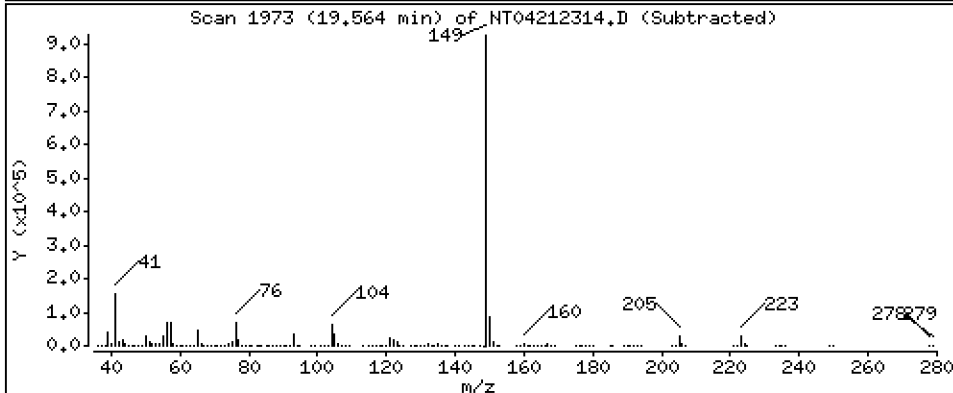
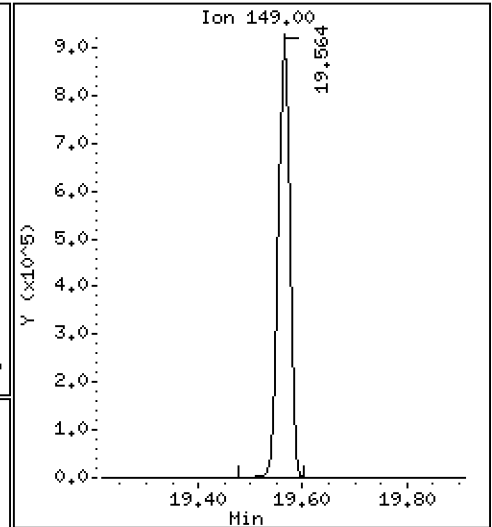
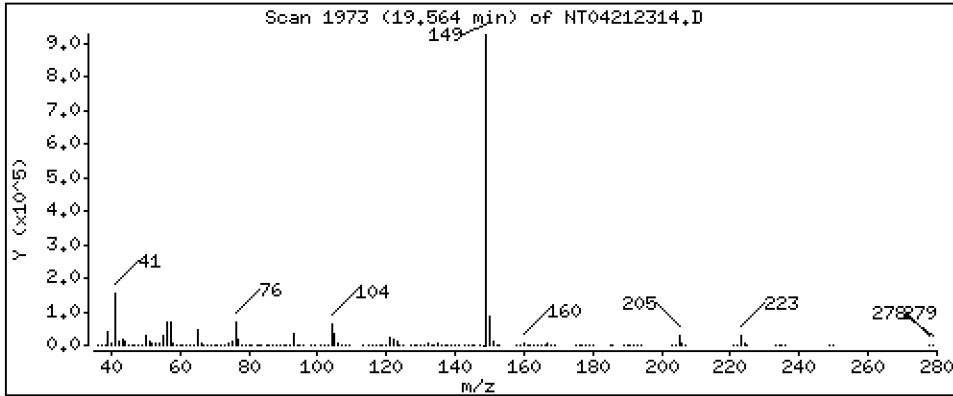
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 4,762 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

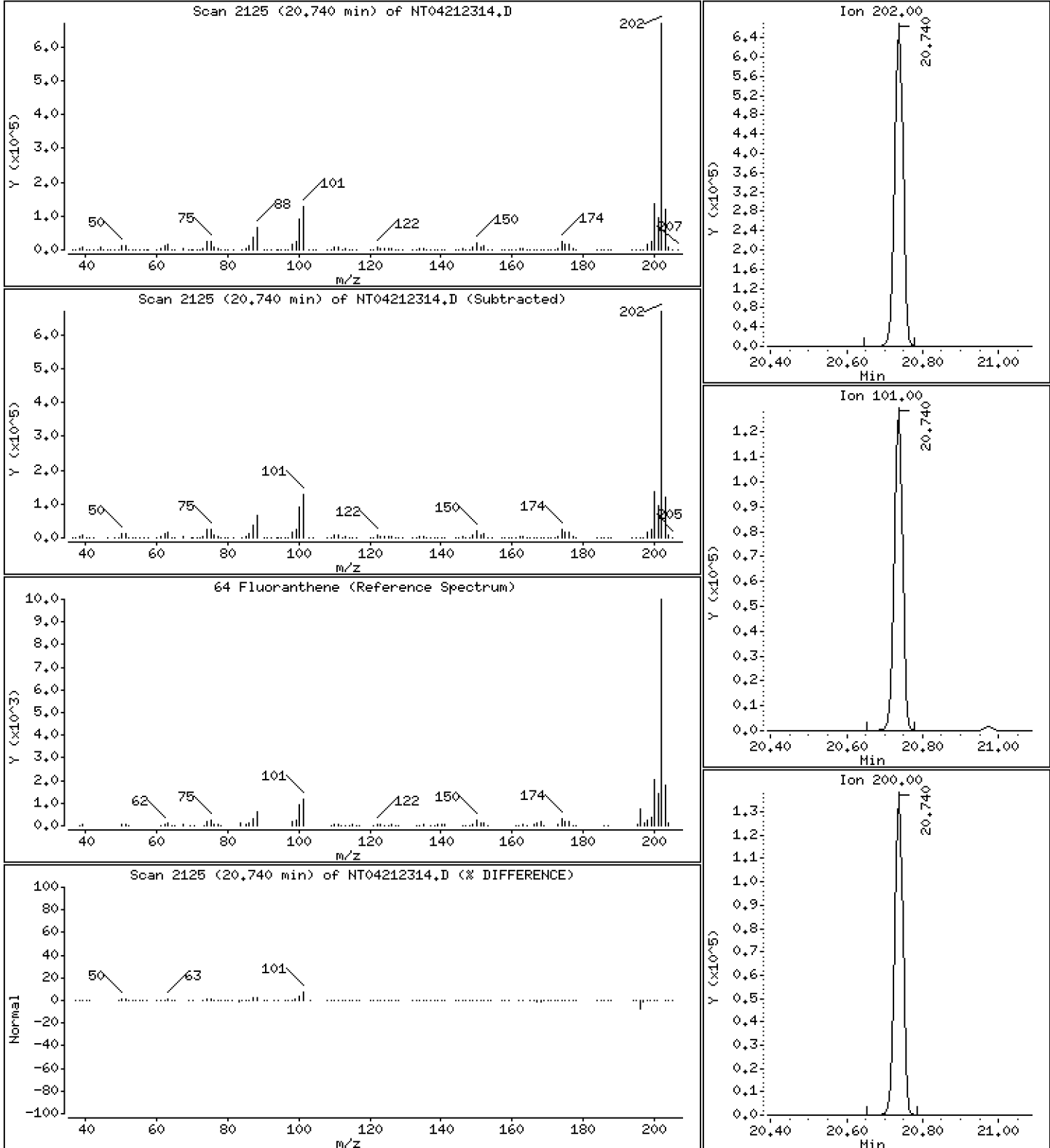
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 5,068 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

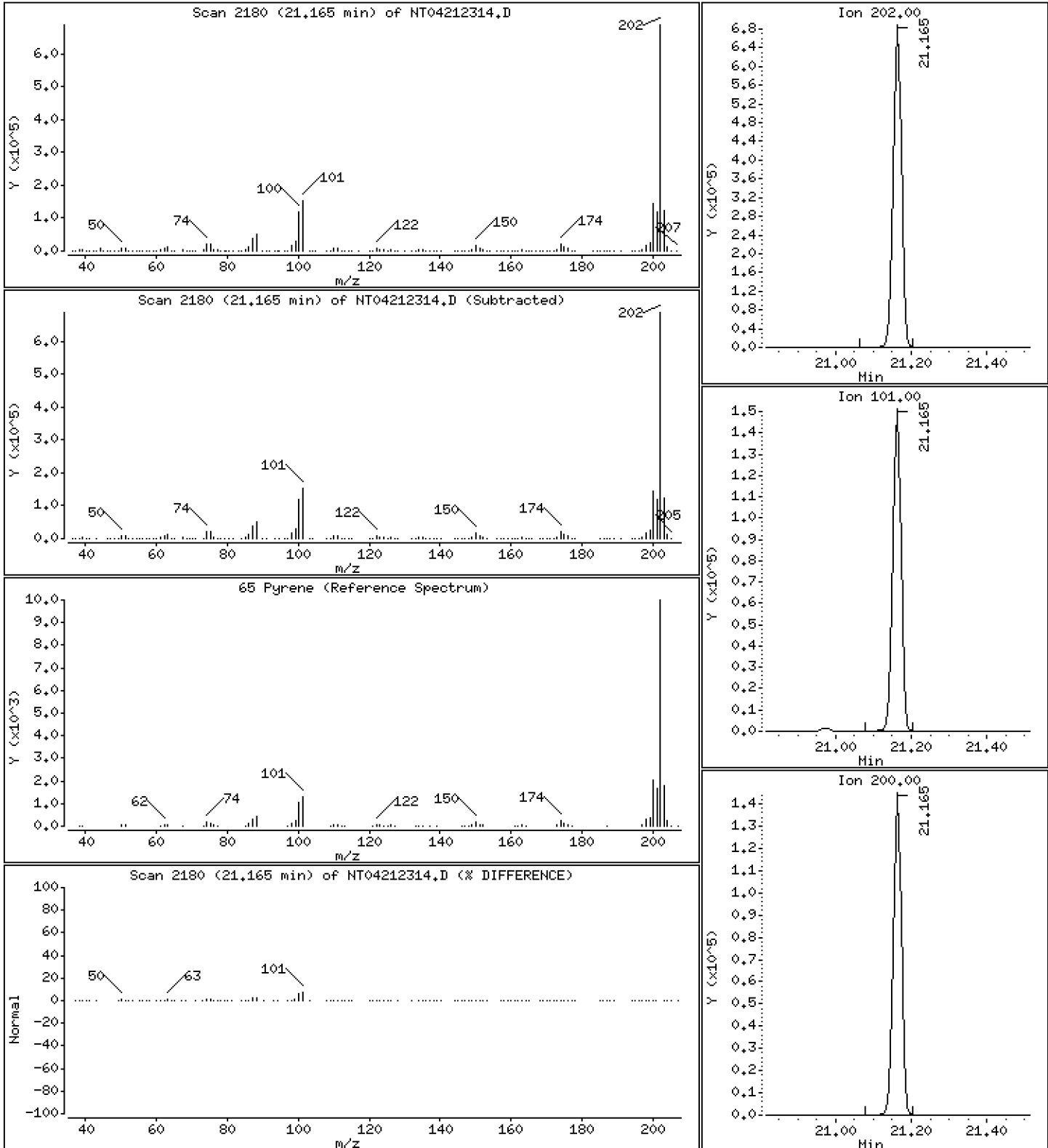
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 4,920 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

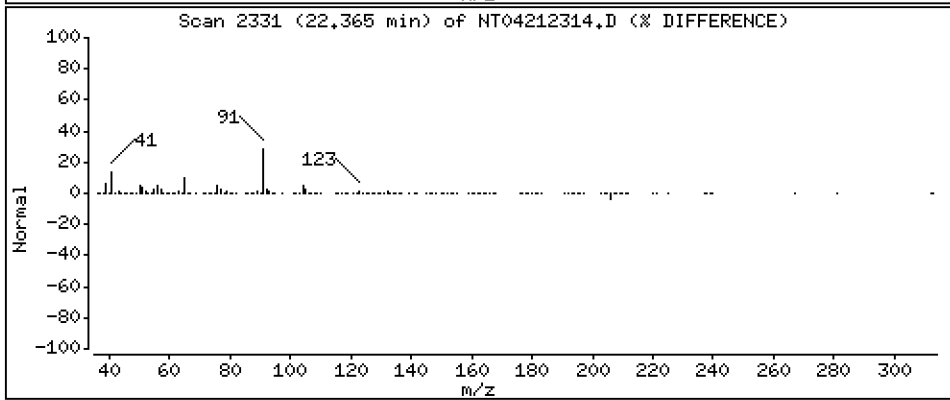
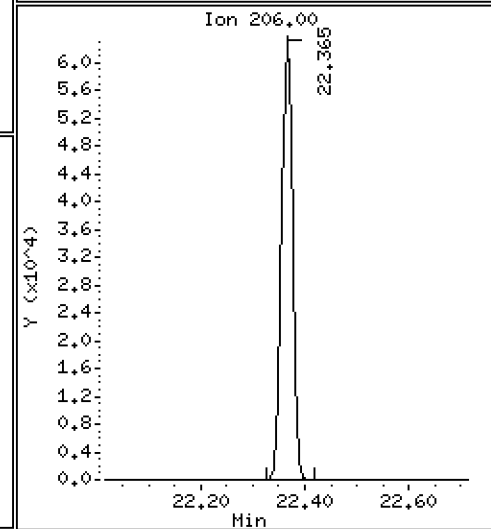
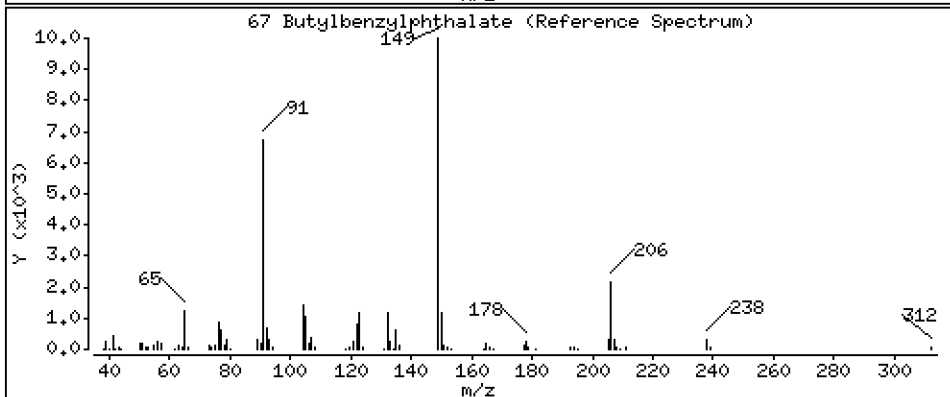
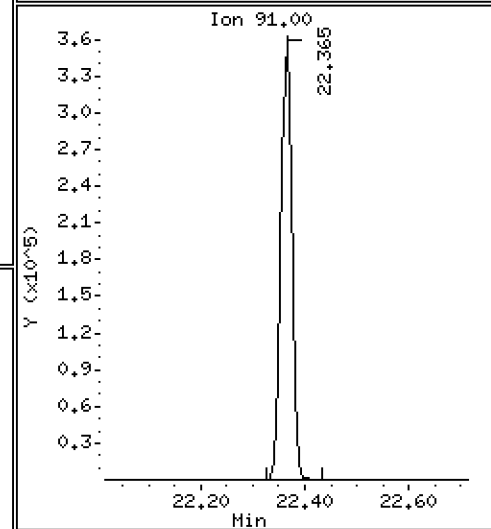
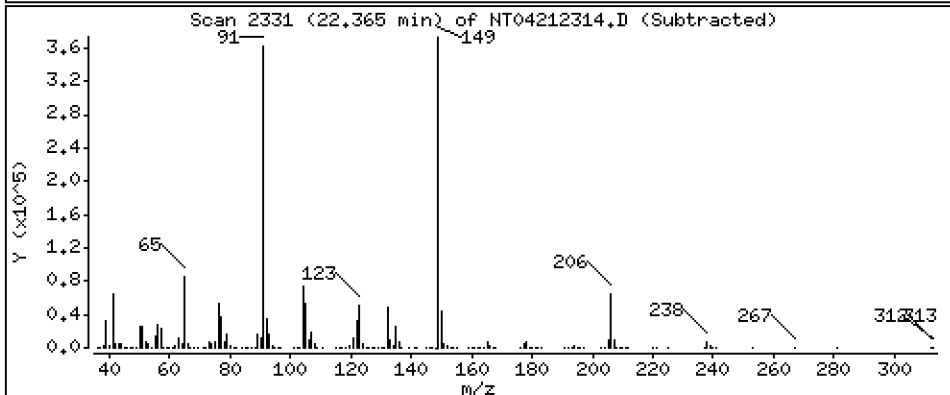
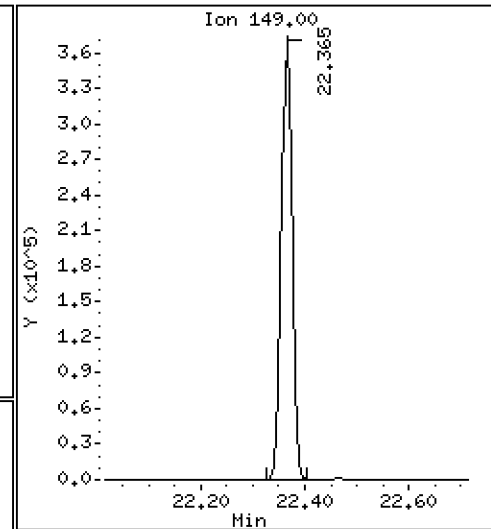
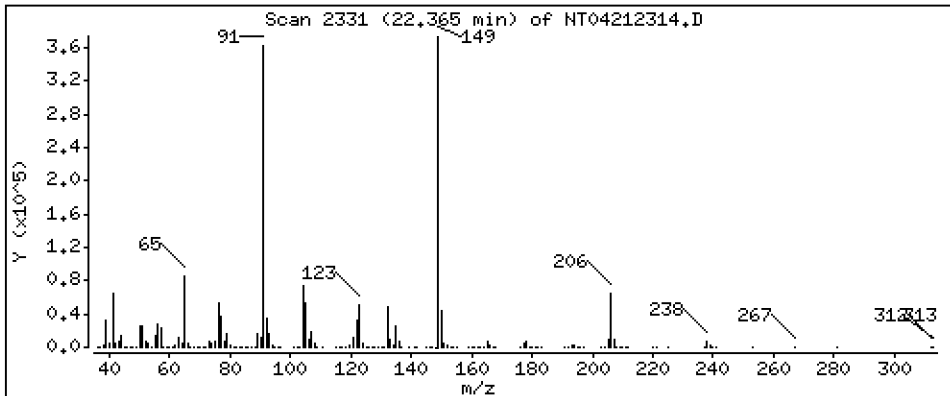
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,291 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

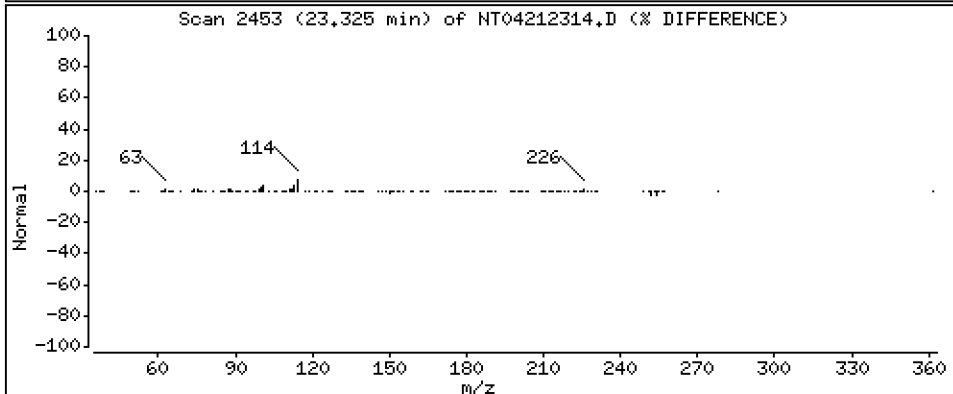
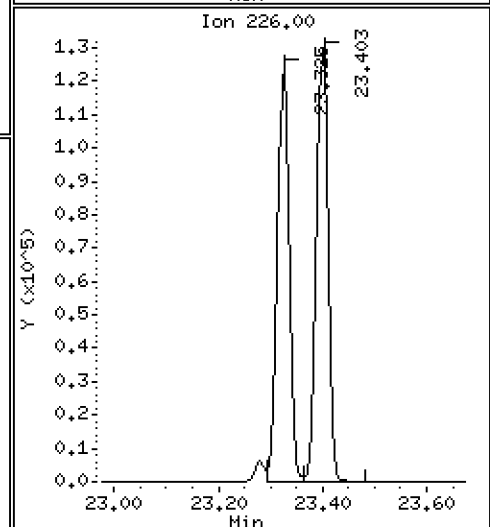
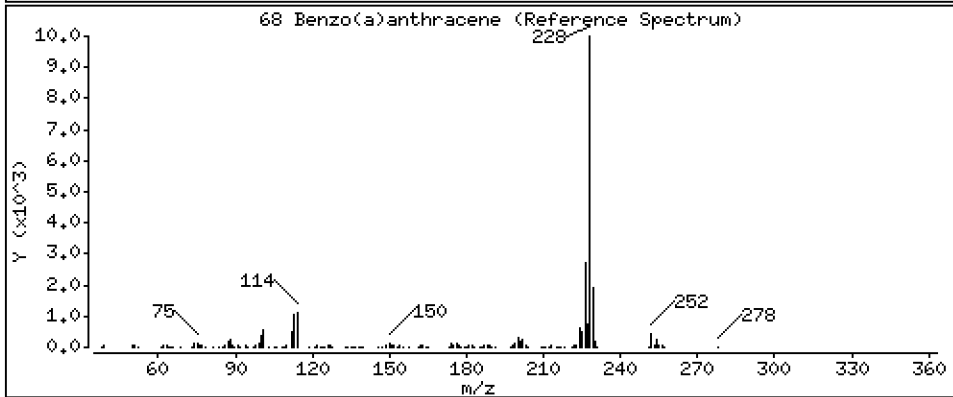
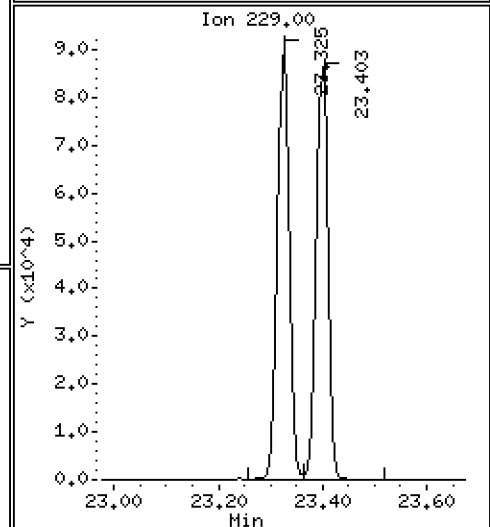
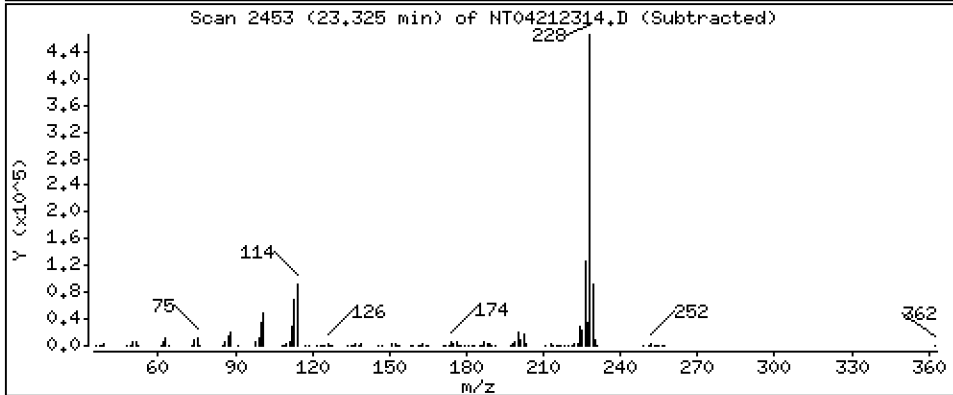
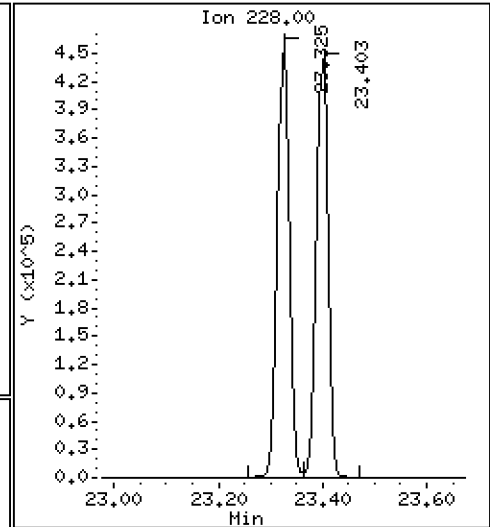
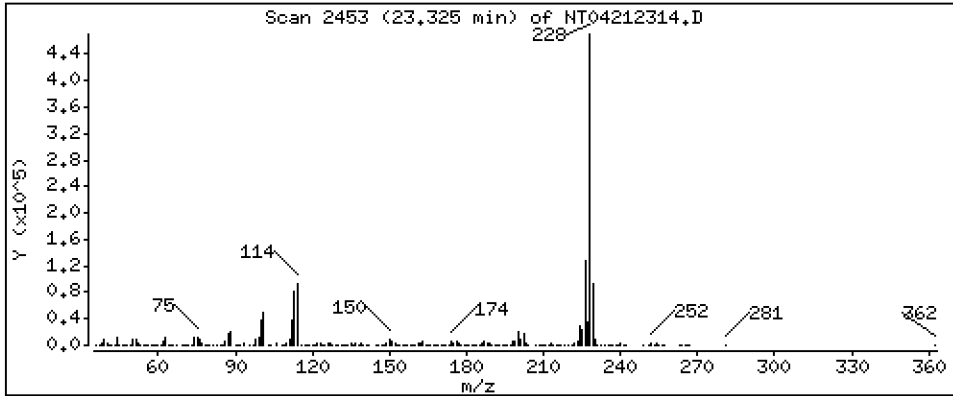
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 4,671 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

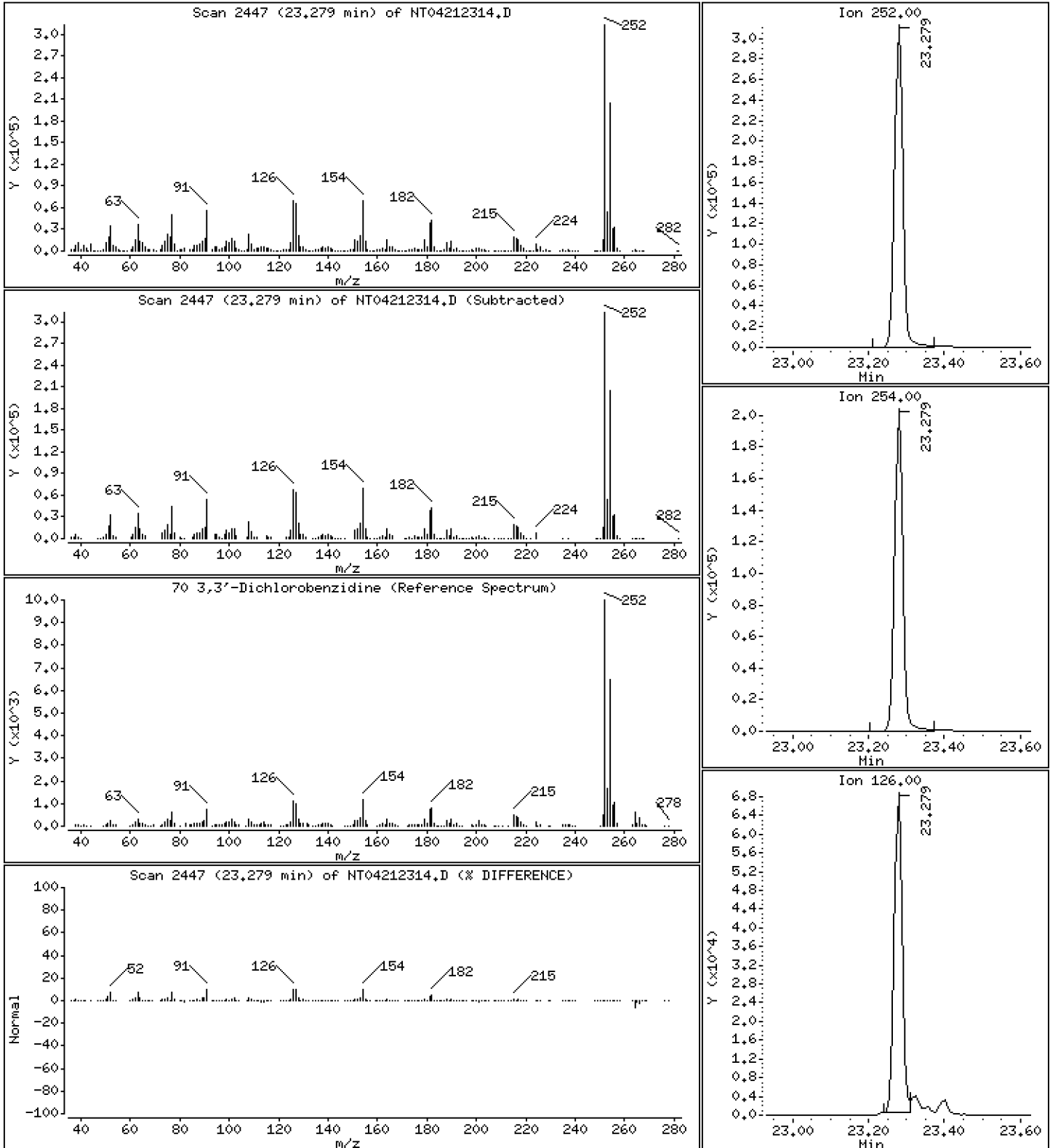
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 9,381 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

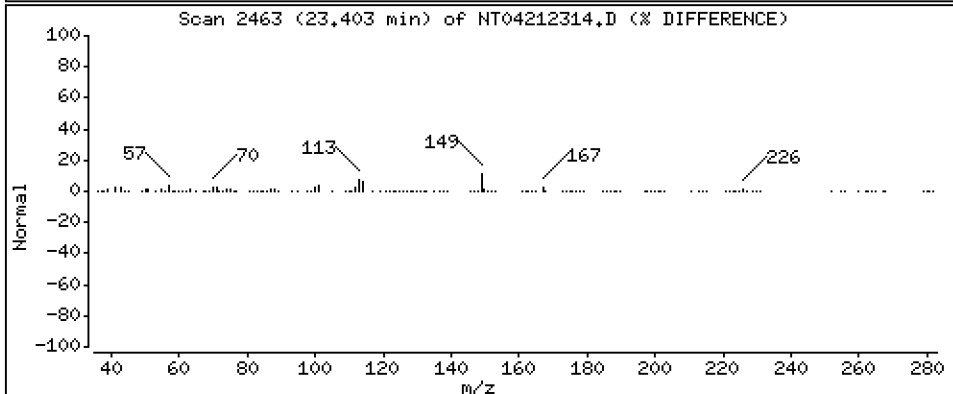
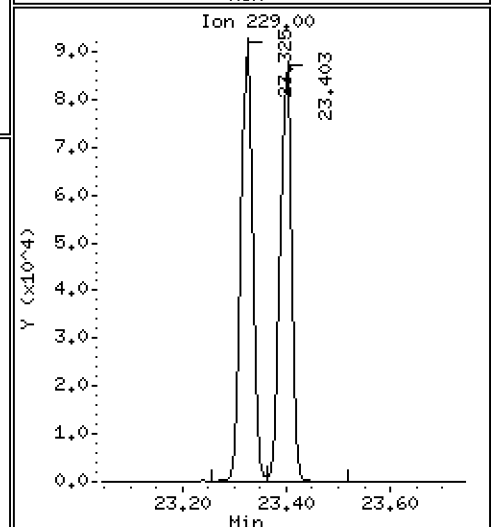
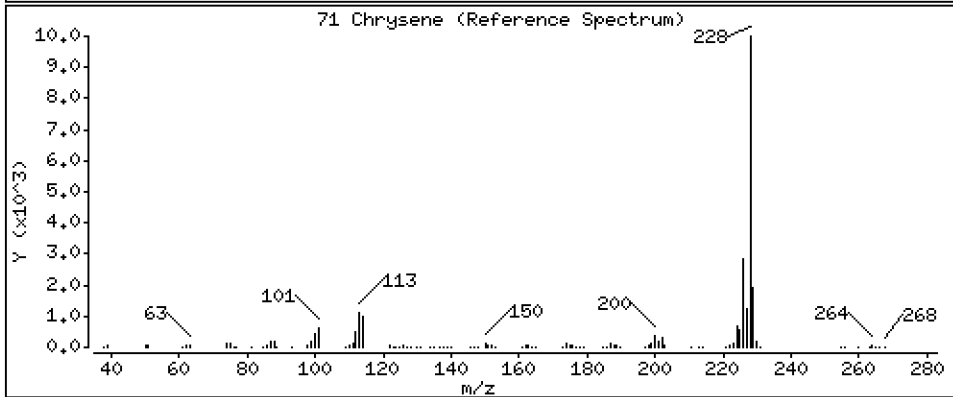
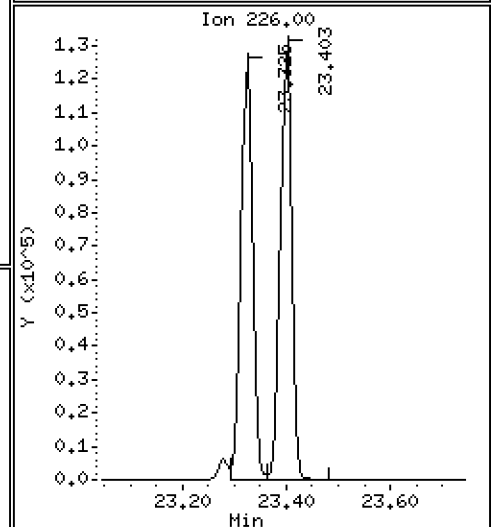
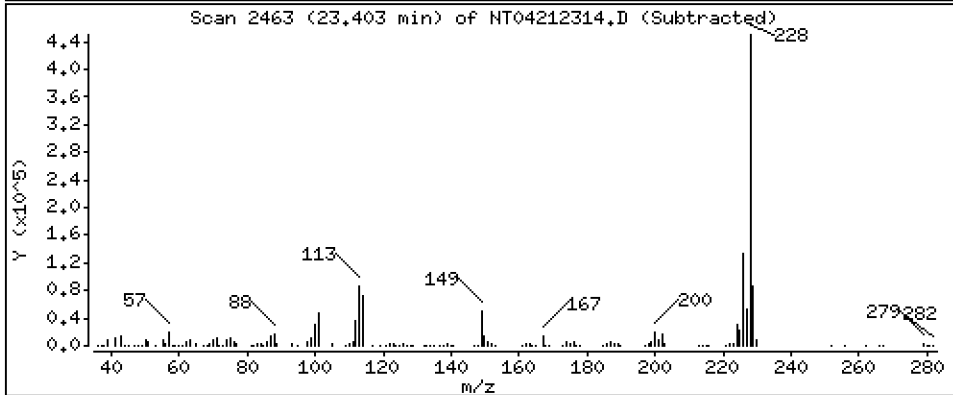
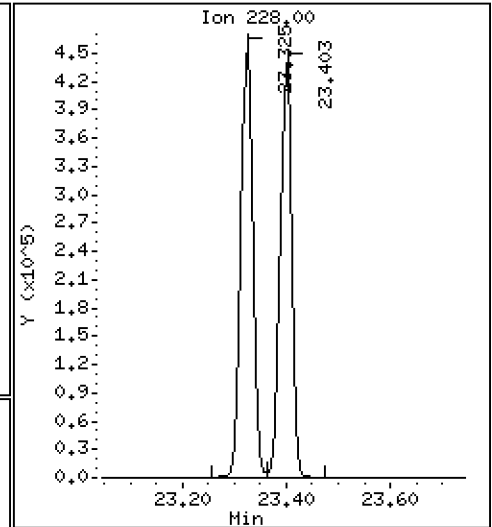
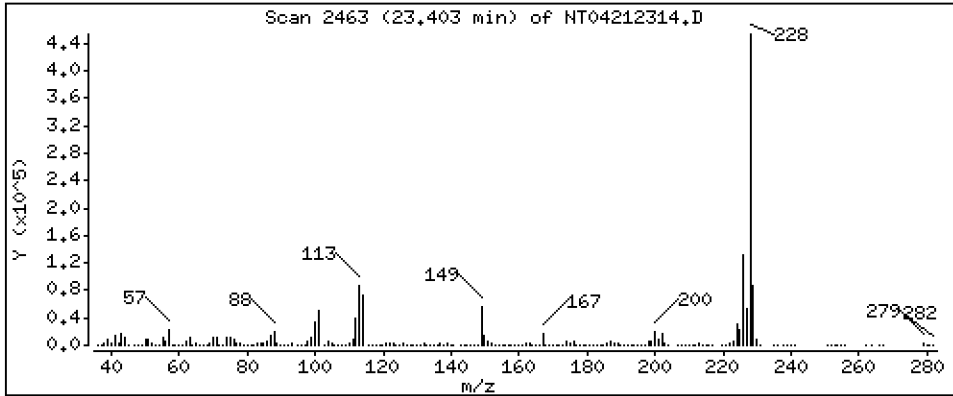
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 4,719 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

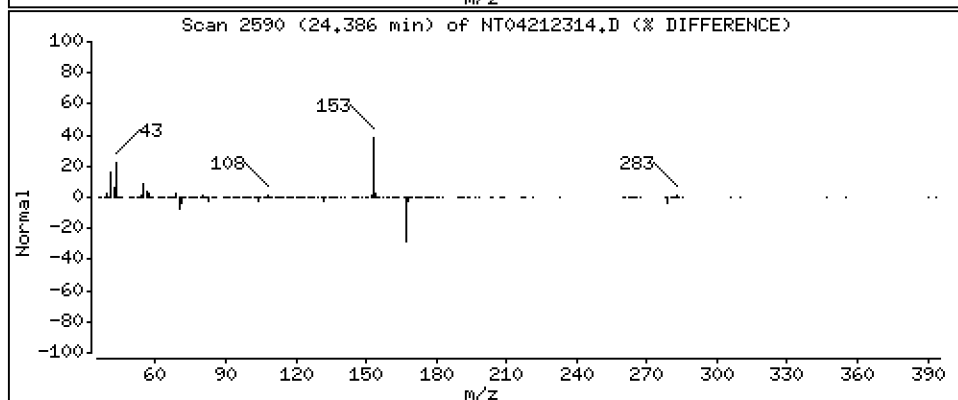
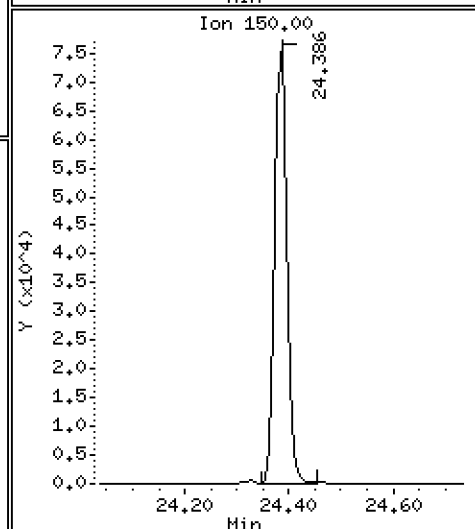
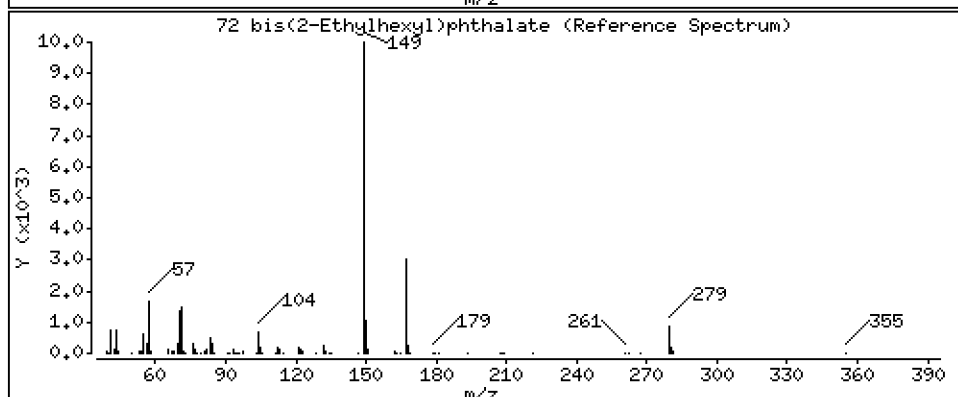
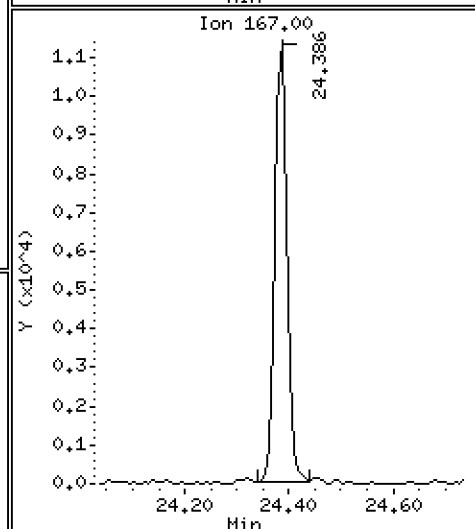
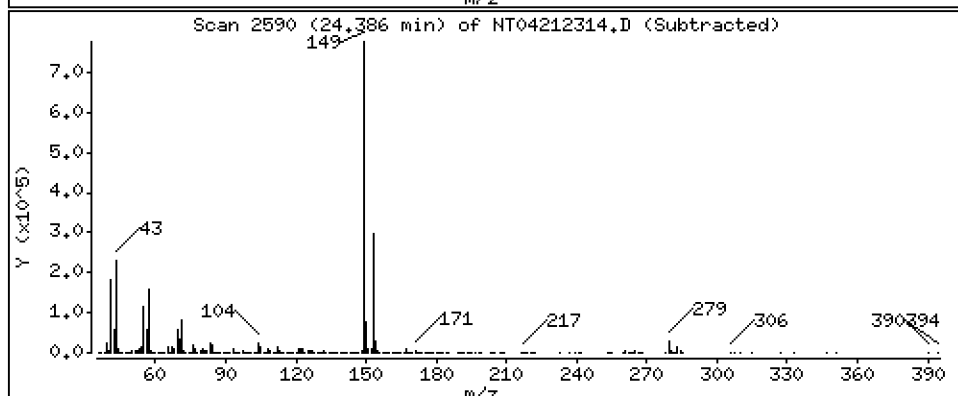
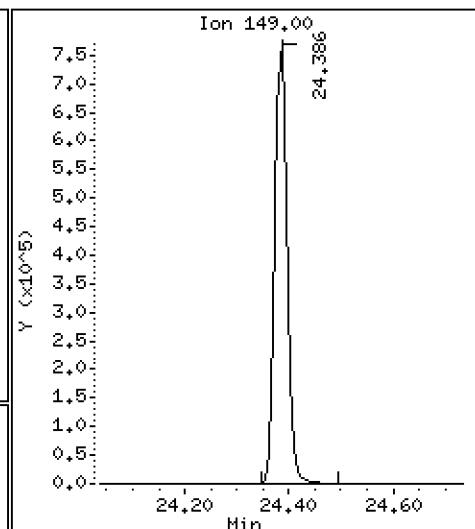
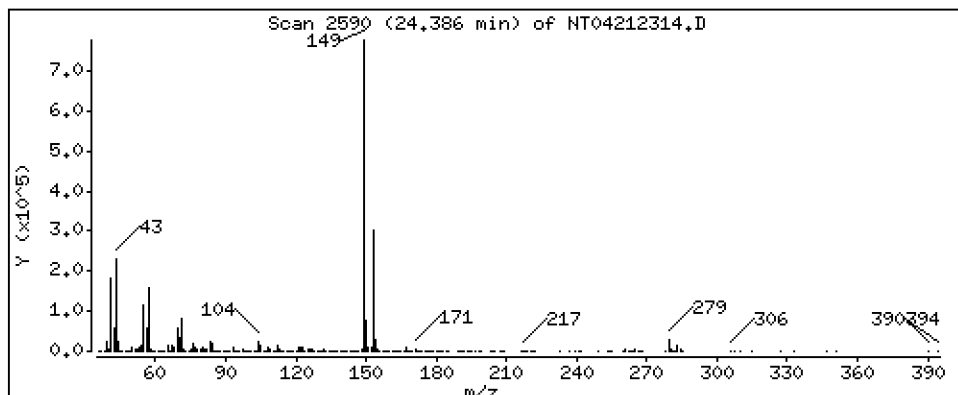
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,893 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

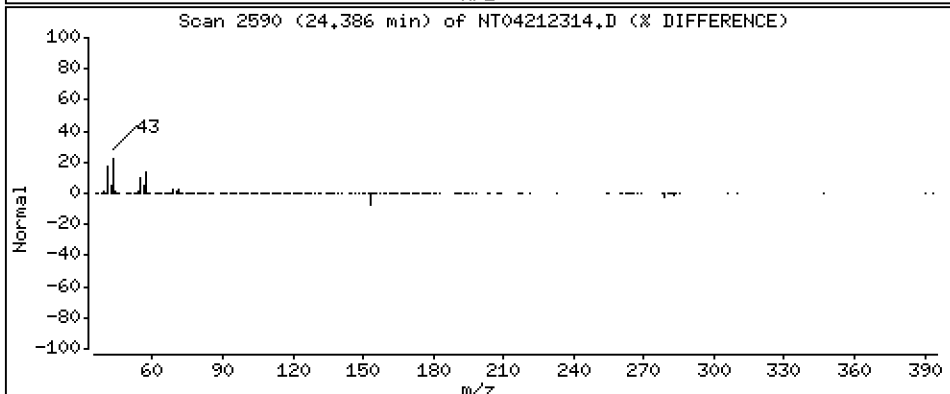
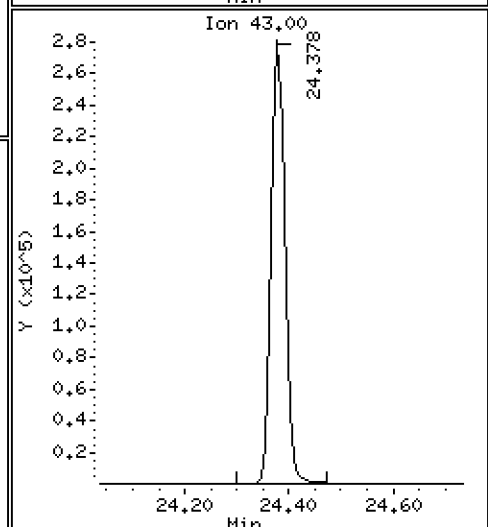
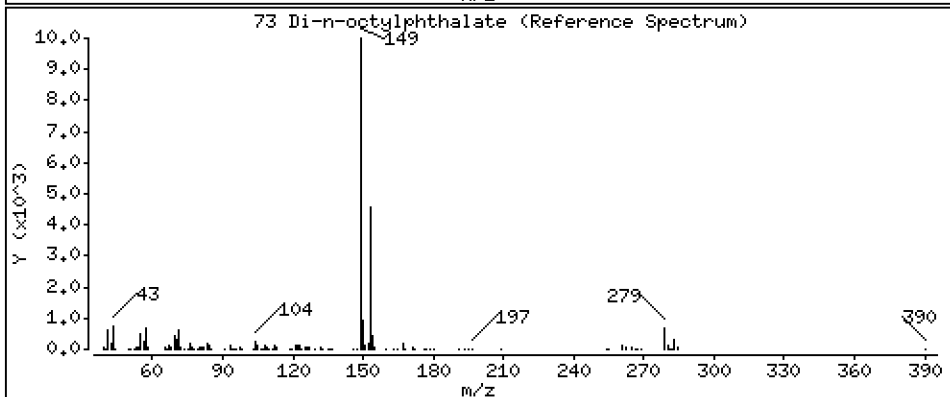
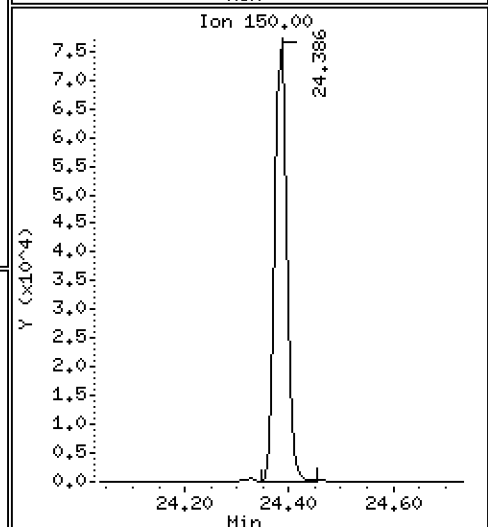
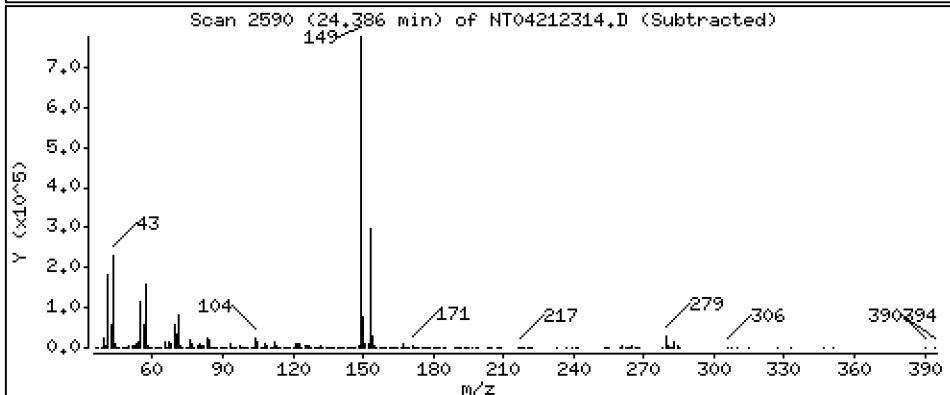
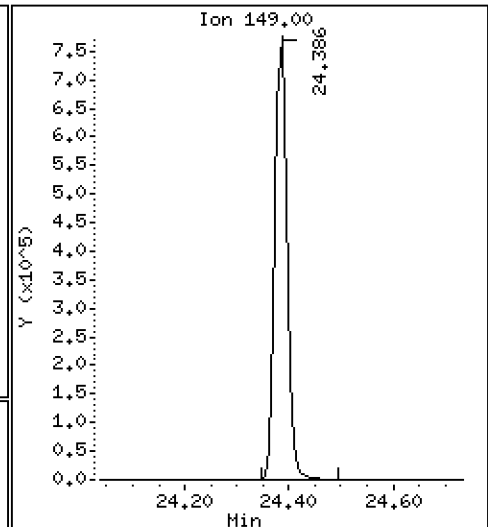
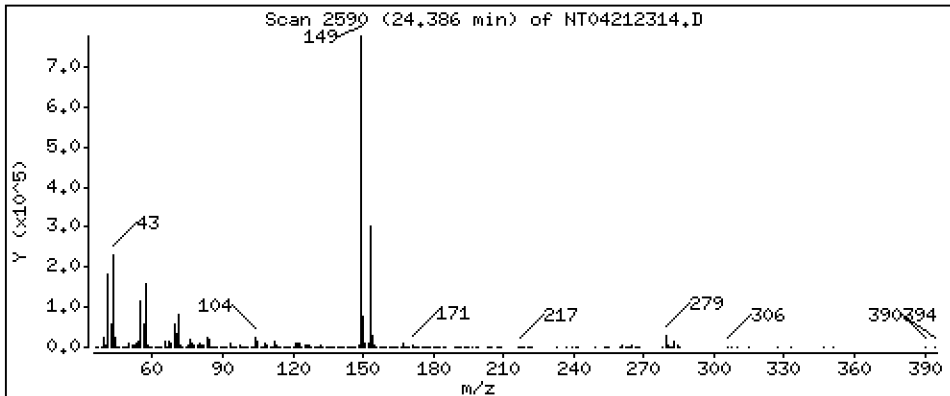
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,893 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

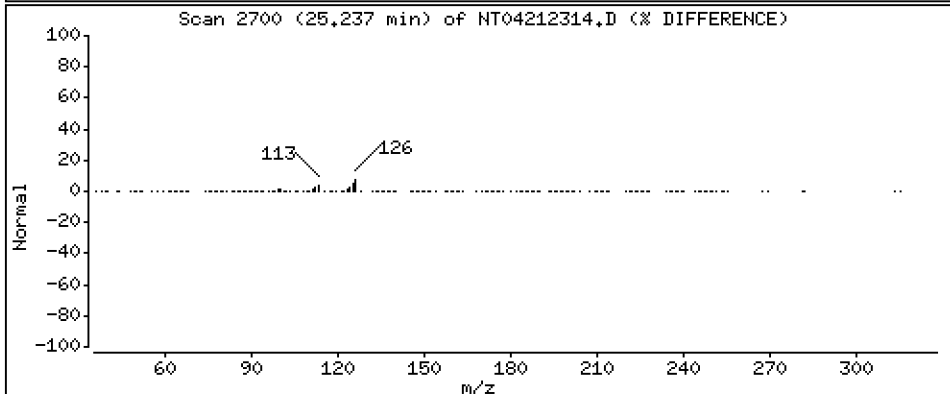
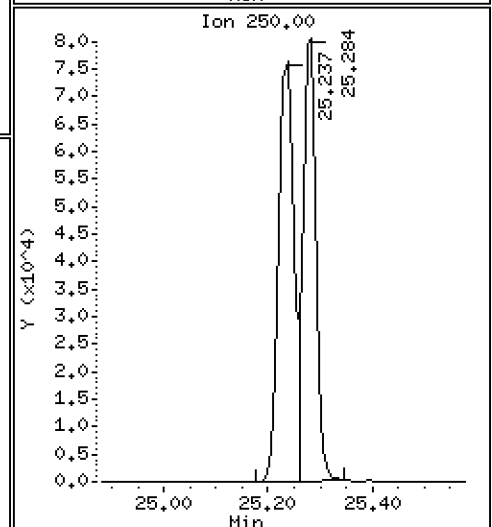
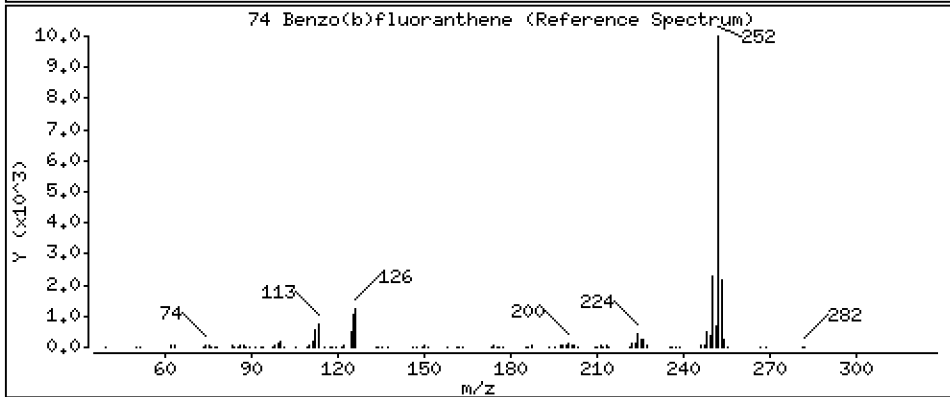
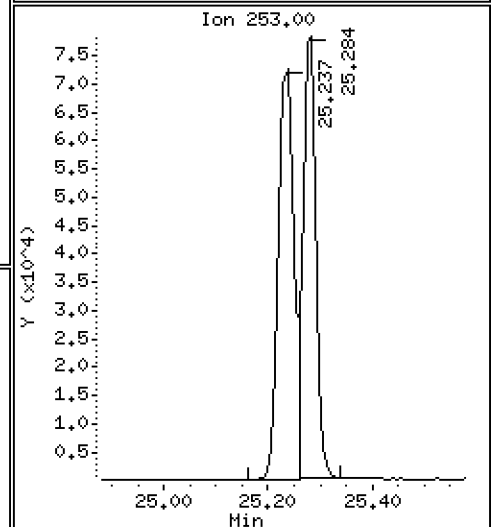
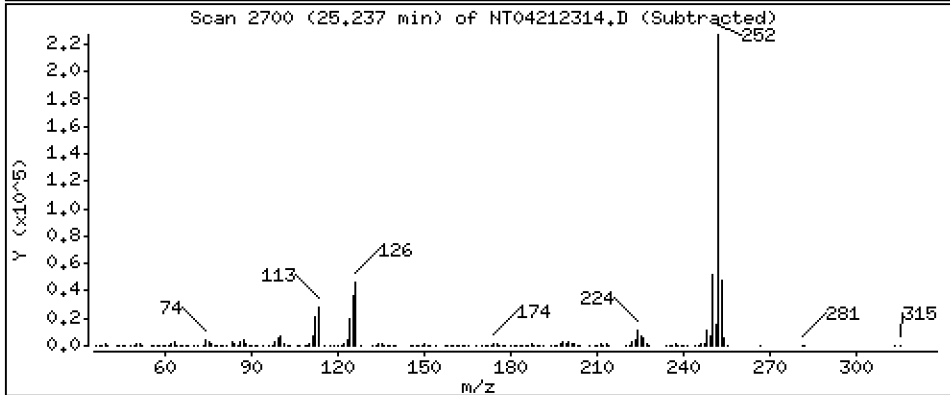
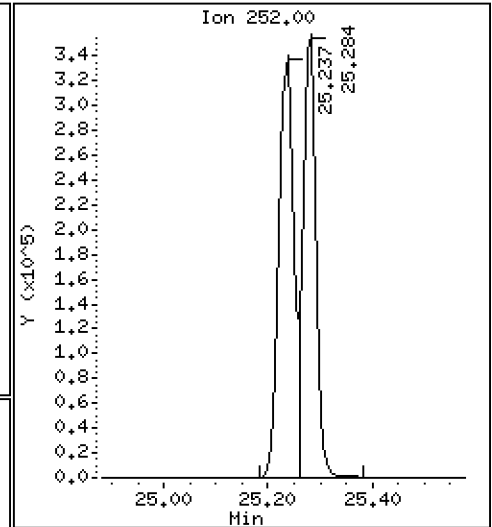
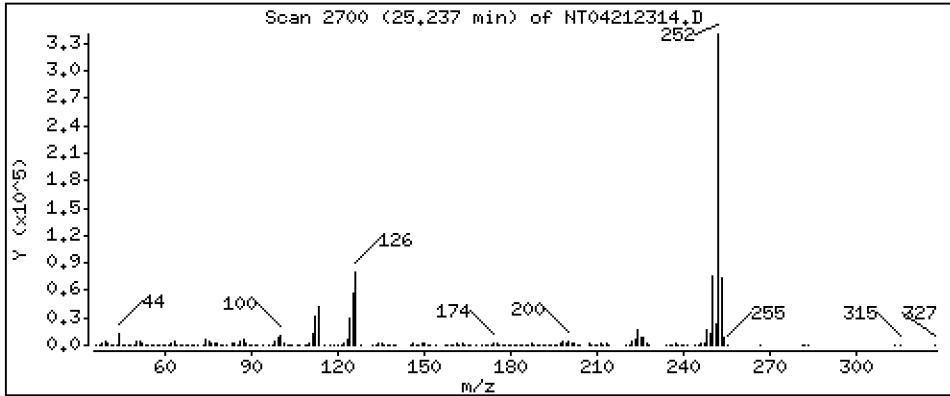
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 4,839 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

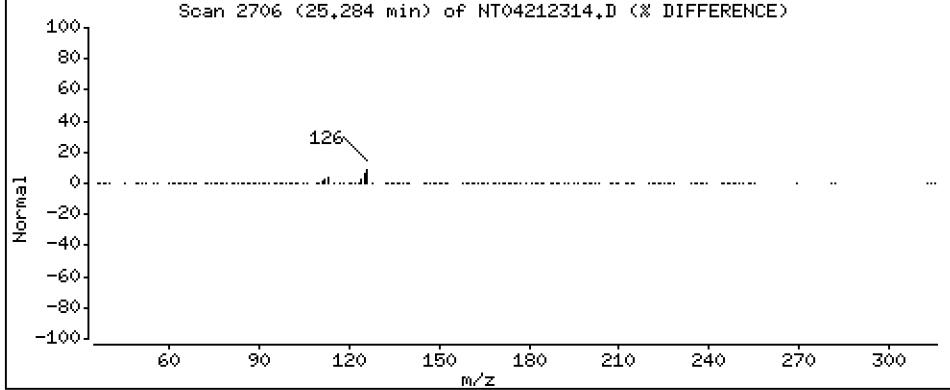
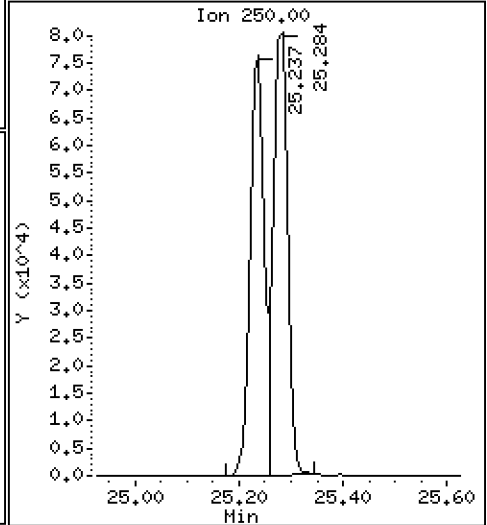
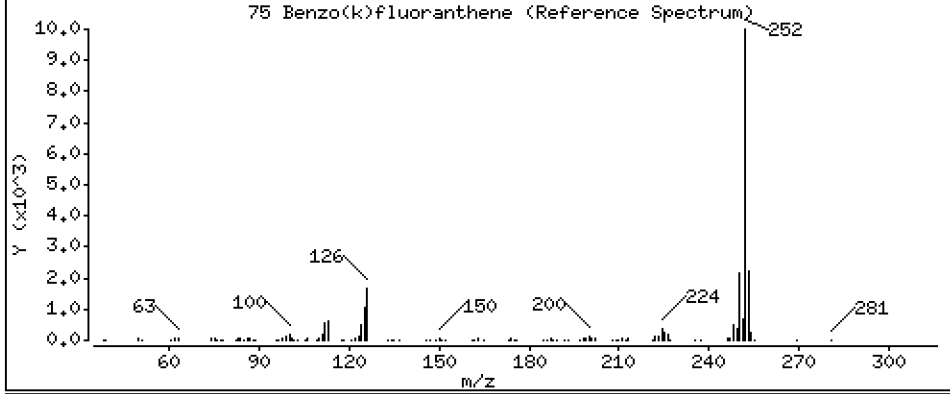
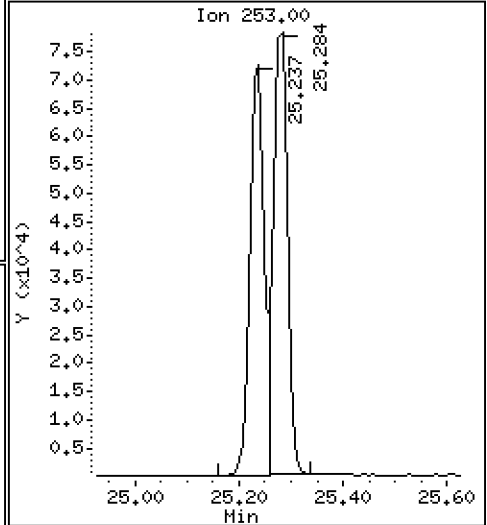
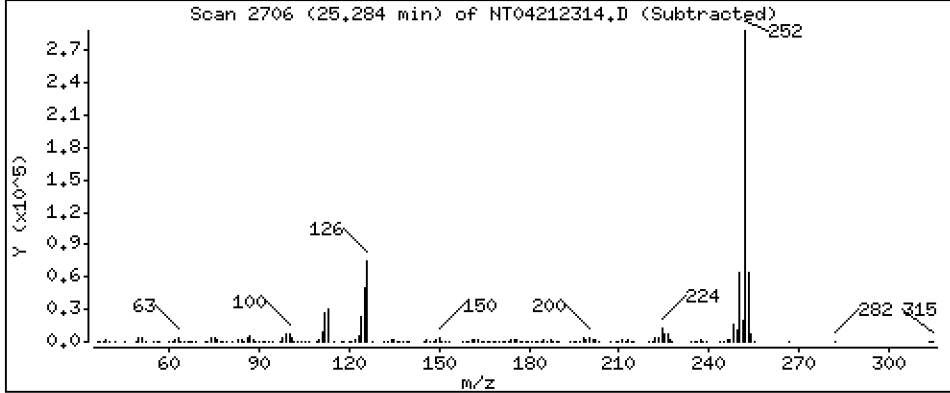
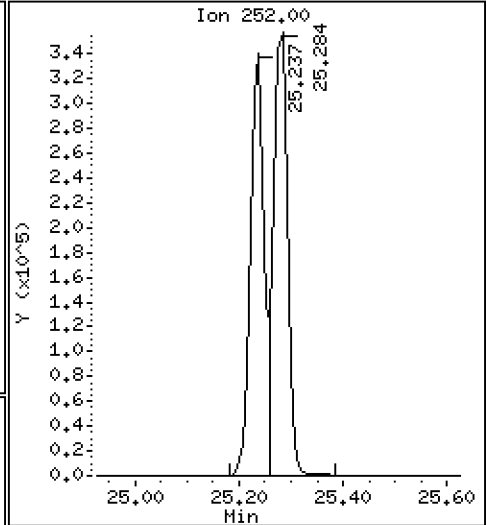
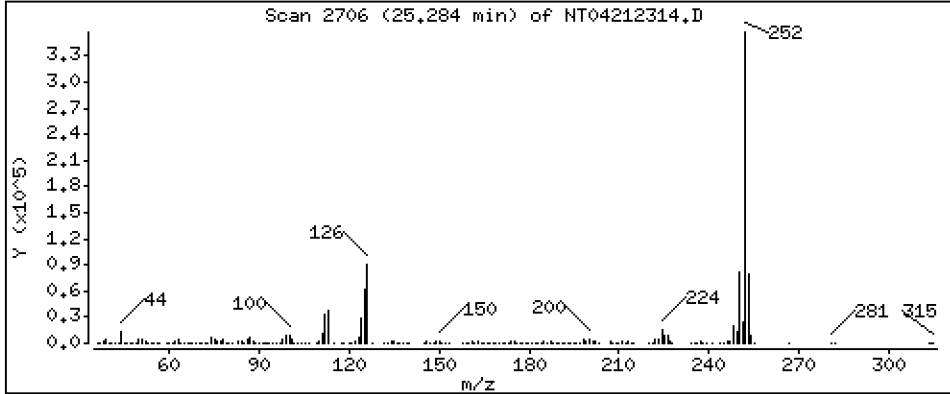
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 4,731 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

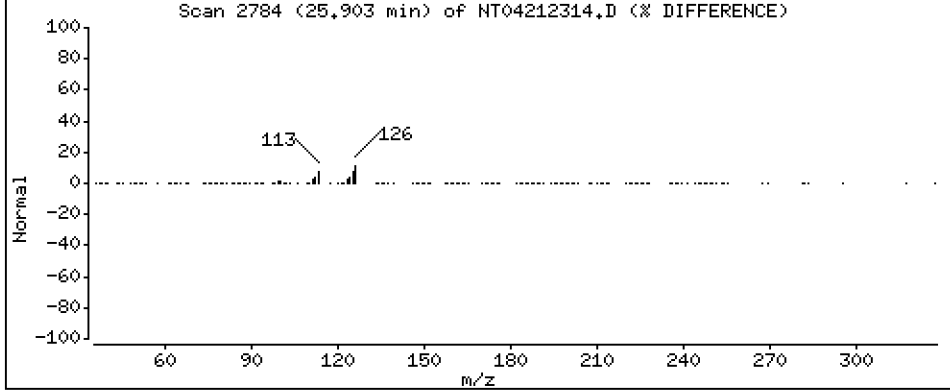
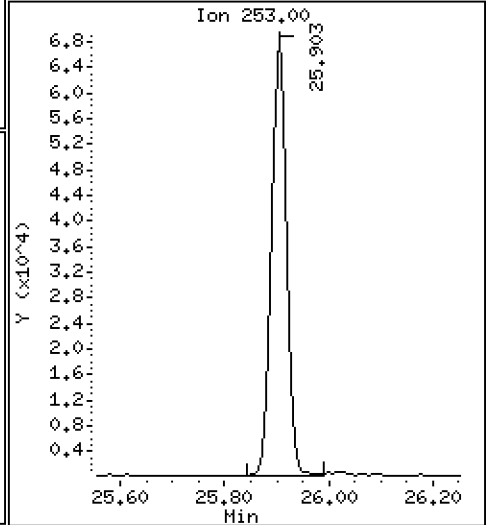
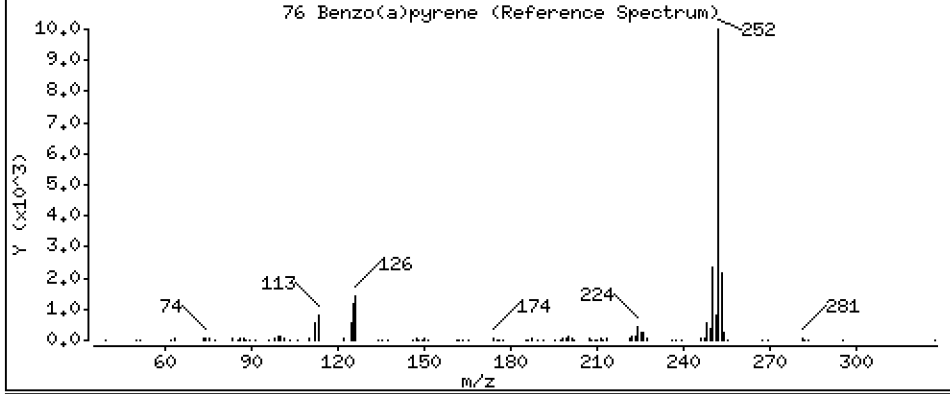
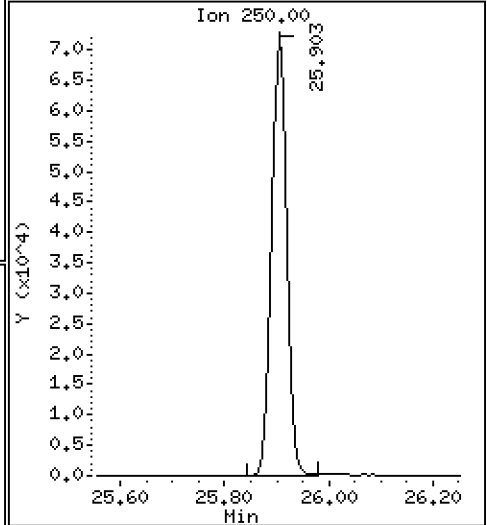
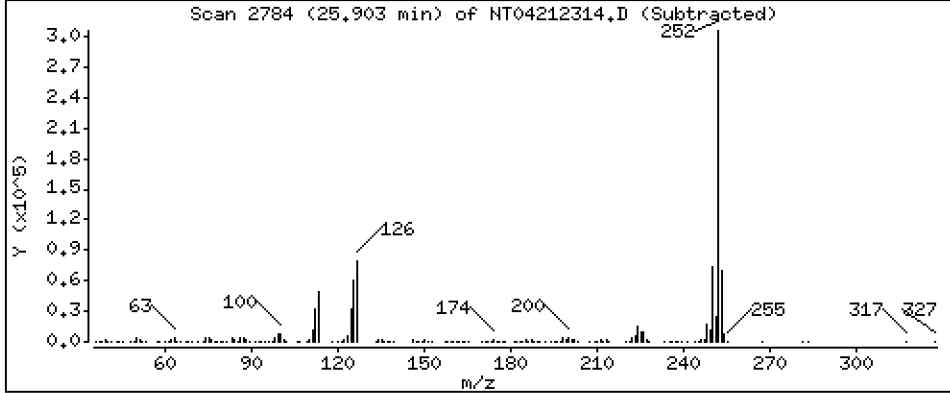
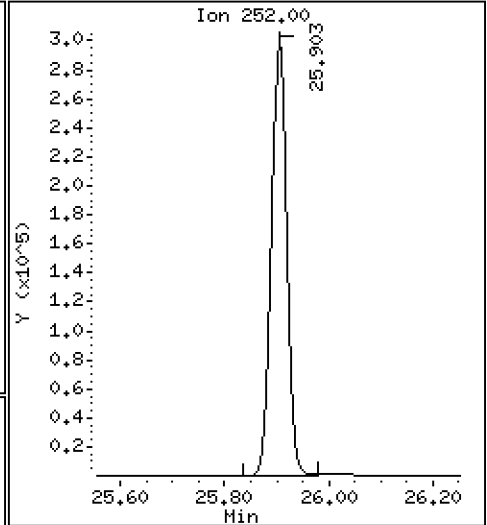
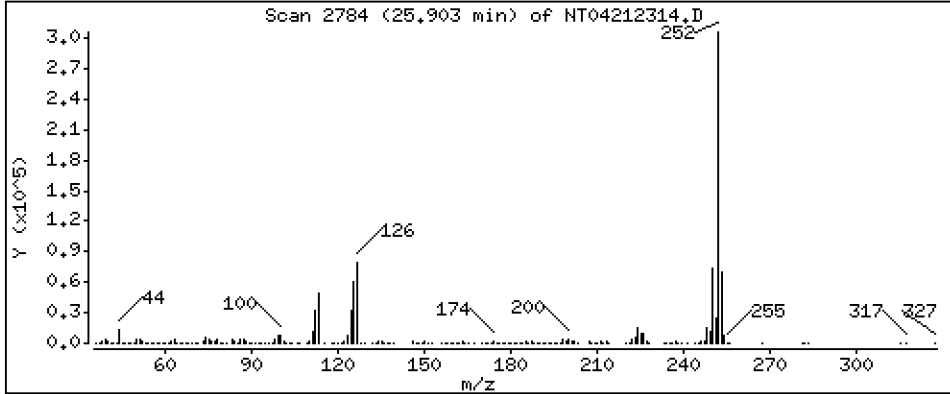
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 4,988 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

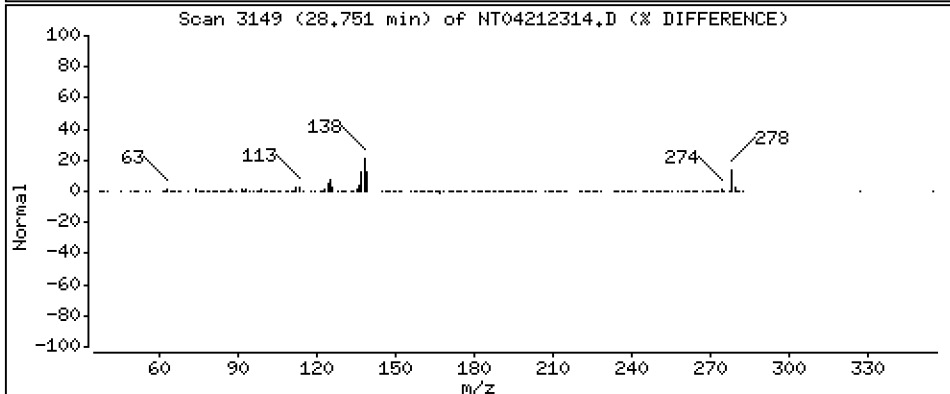
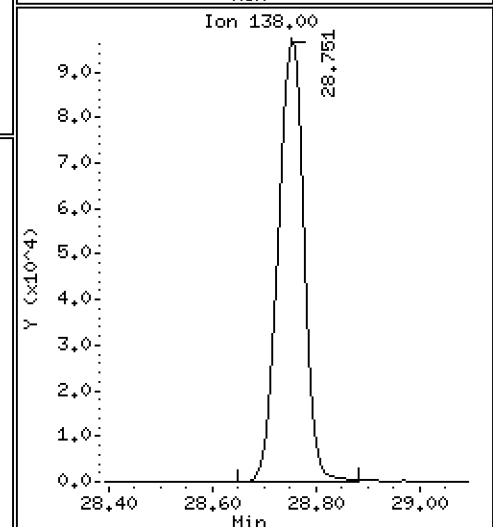
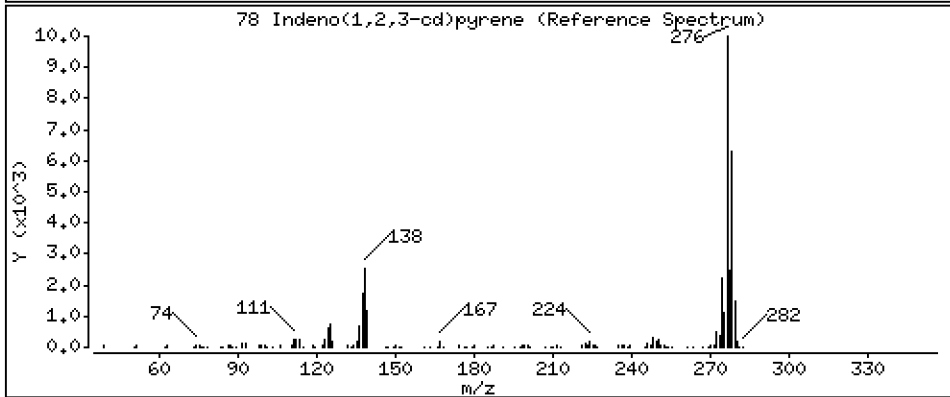
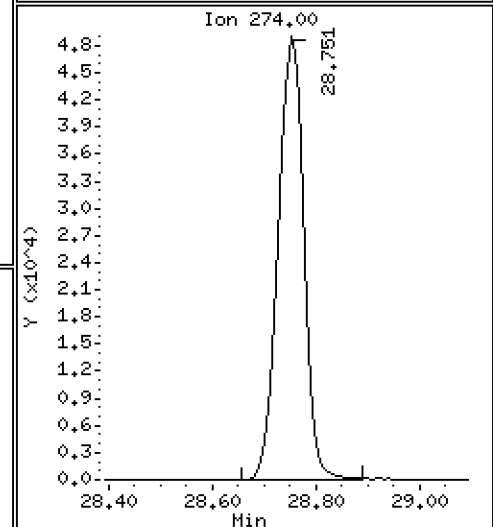
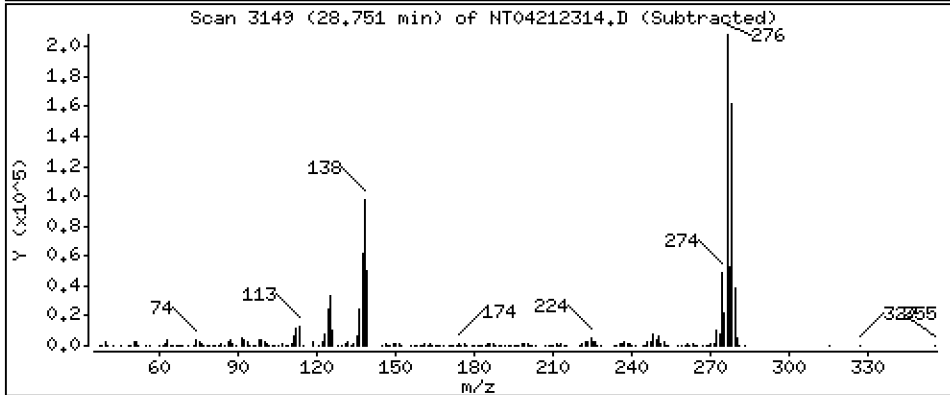
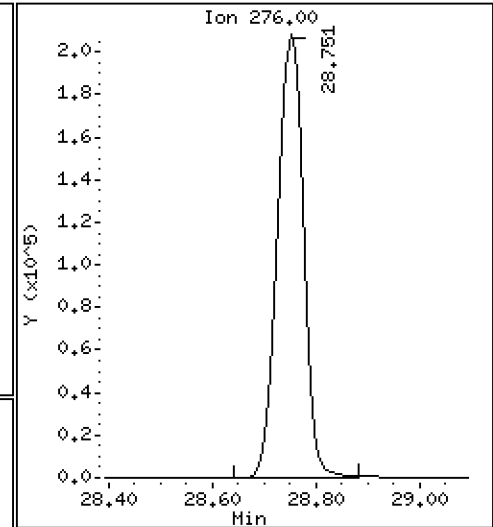
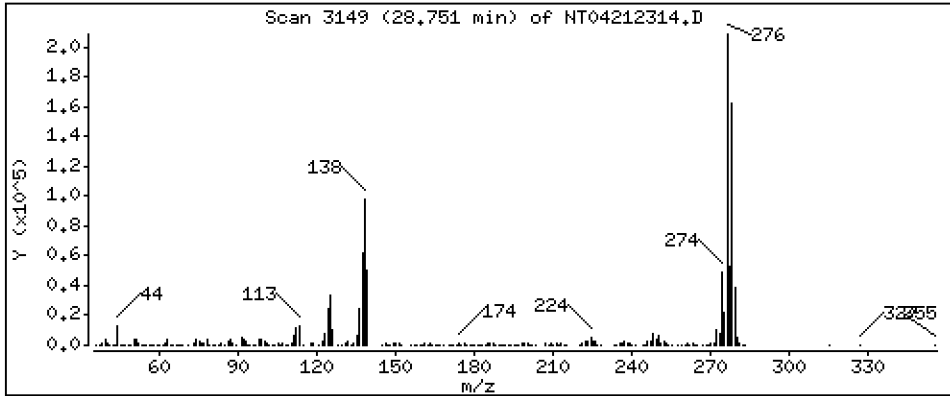
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 4,409 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

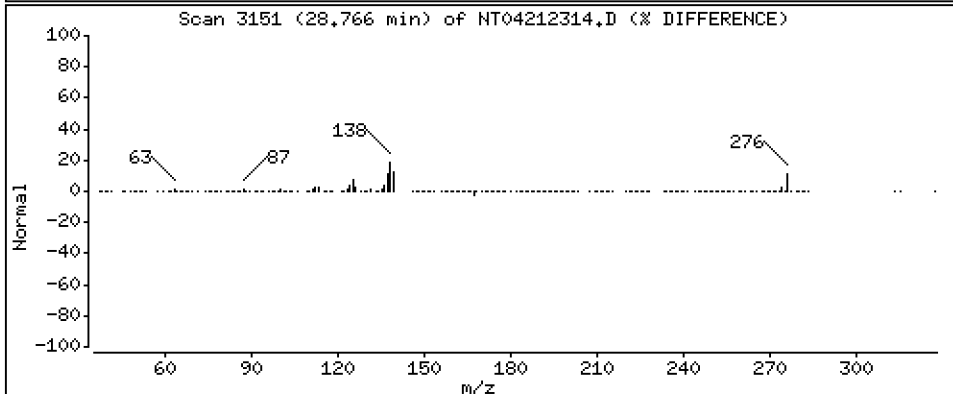
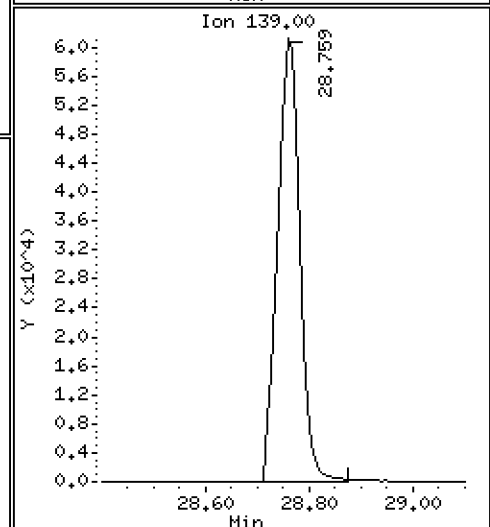
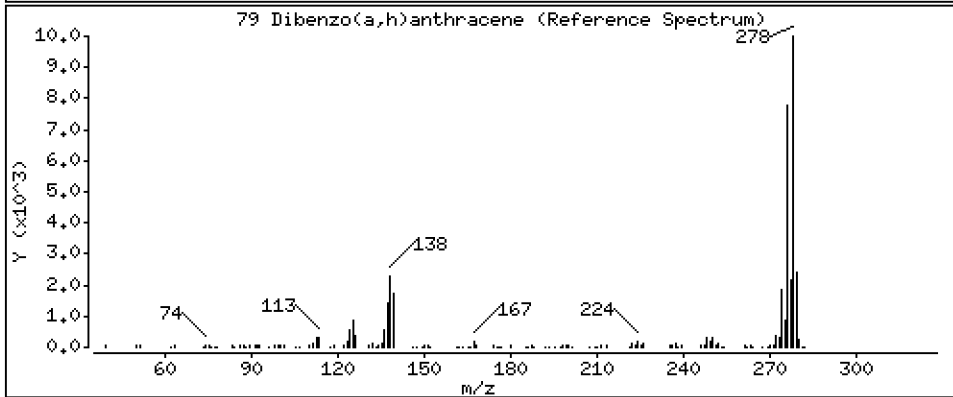
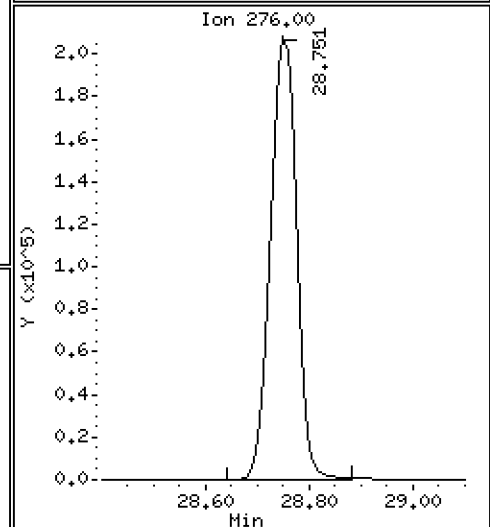
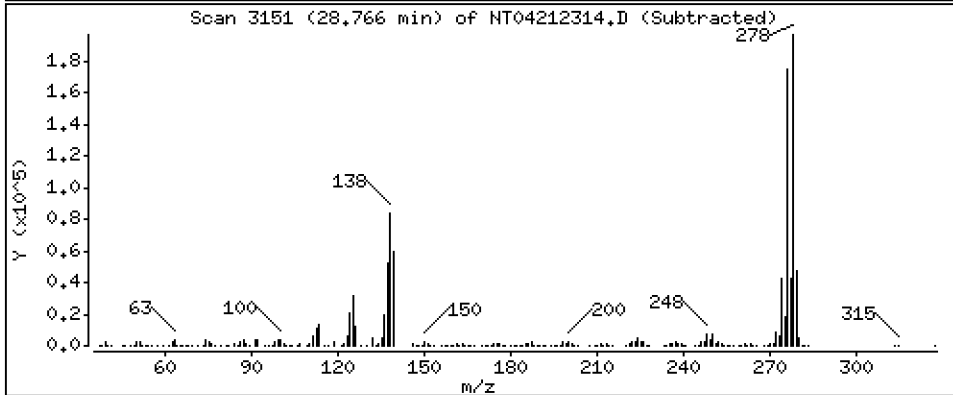
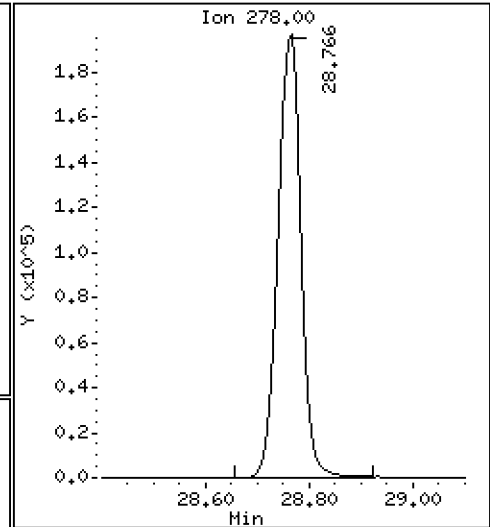
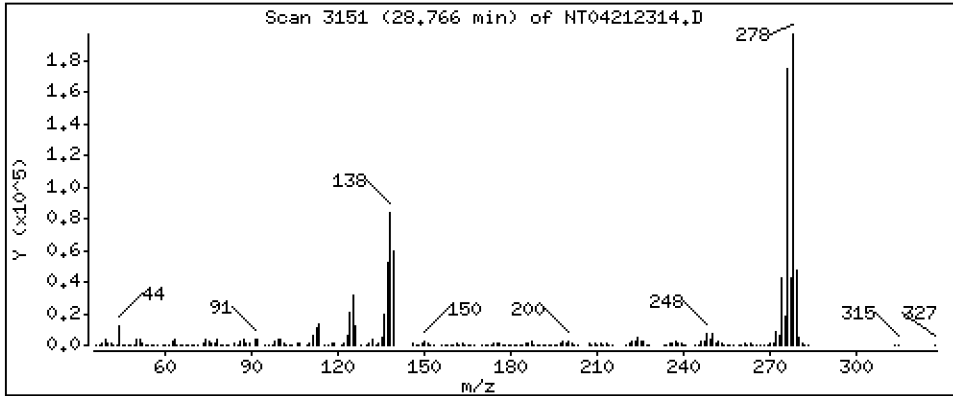
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,457 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

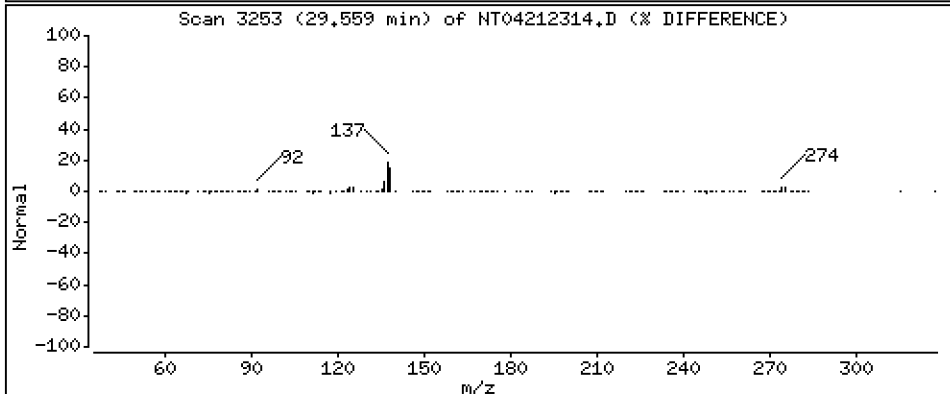
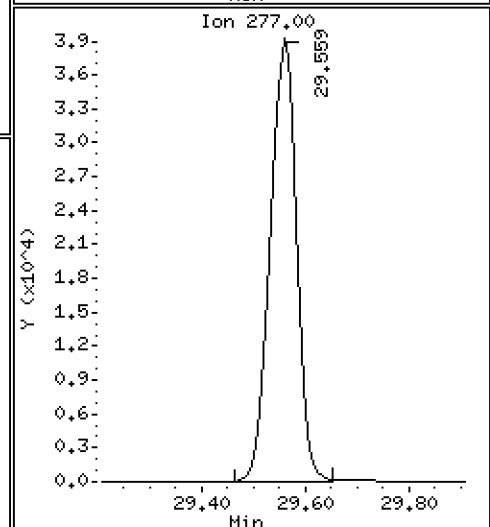
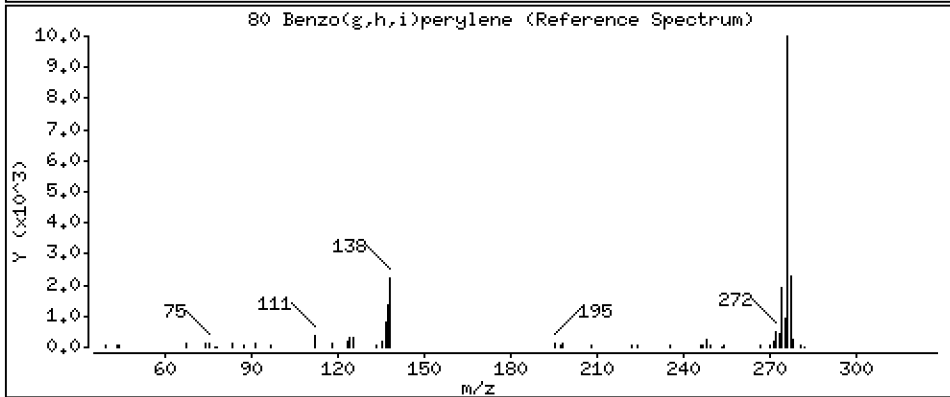
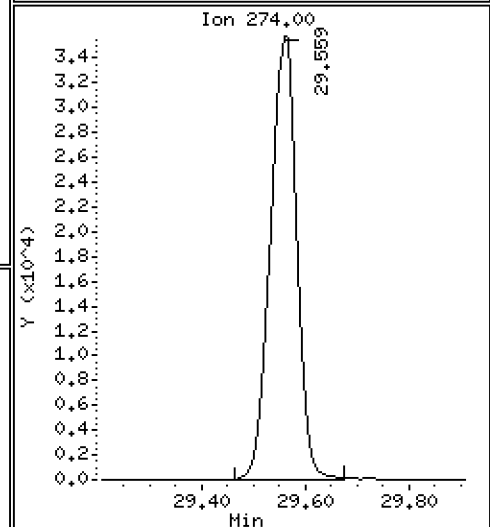
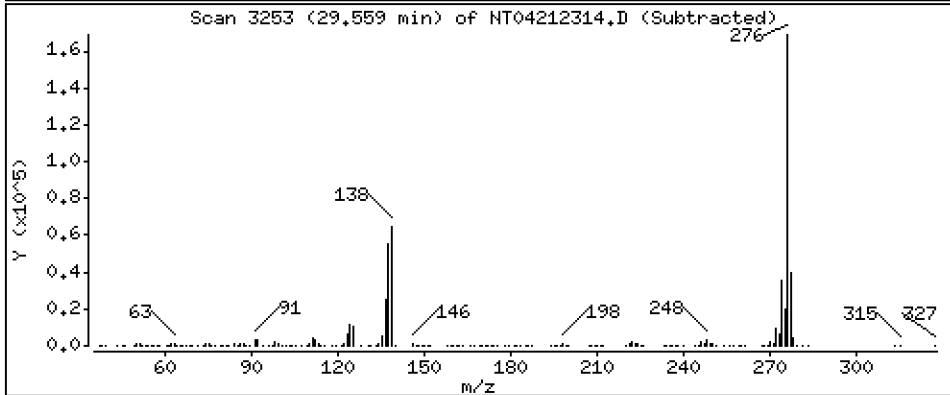
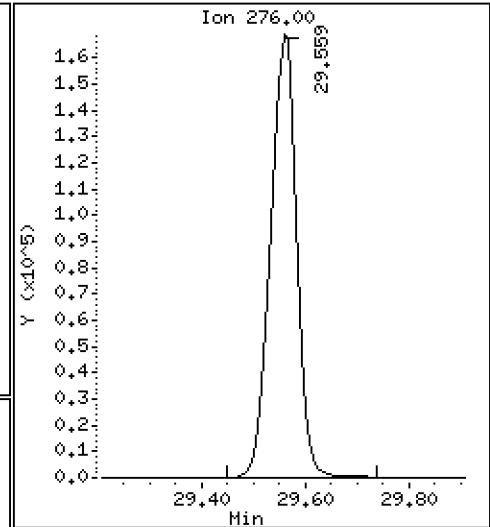
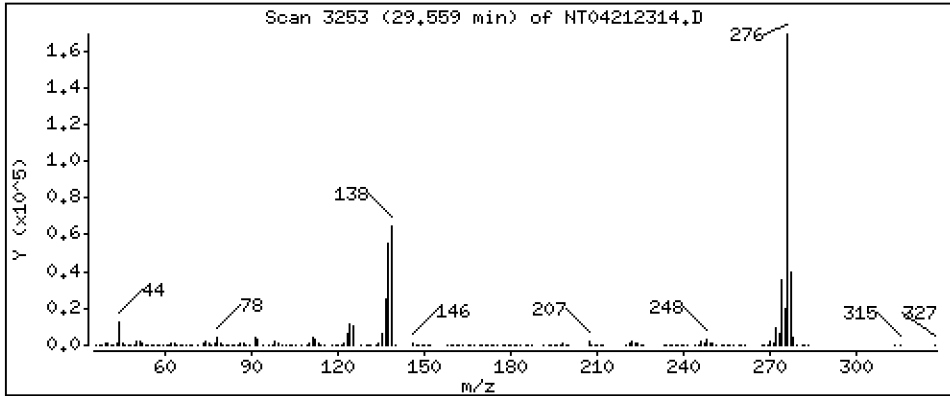
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 4,200 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

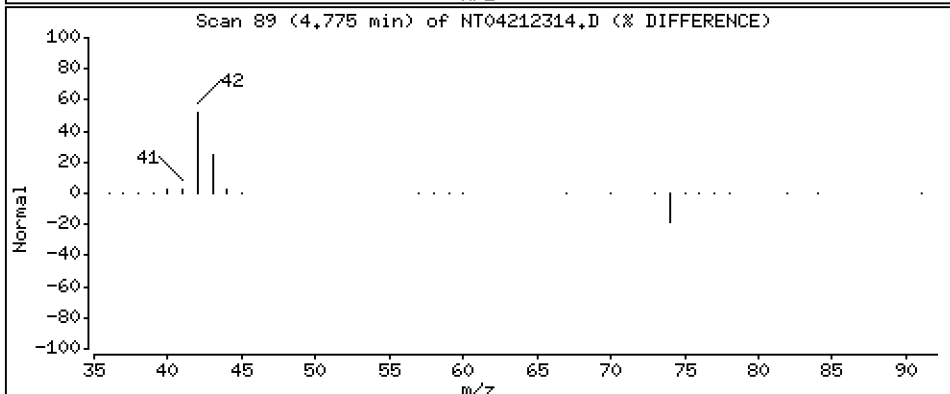
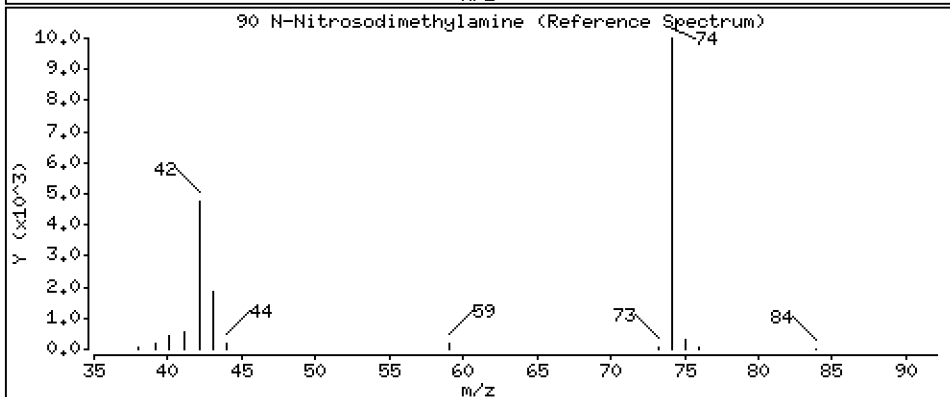
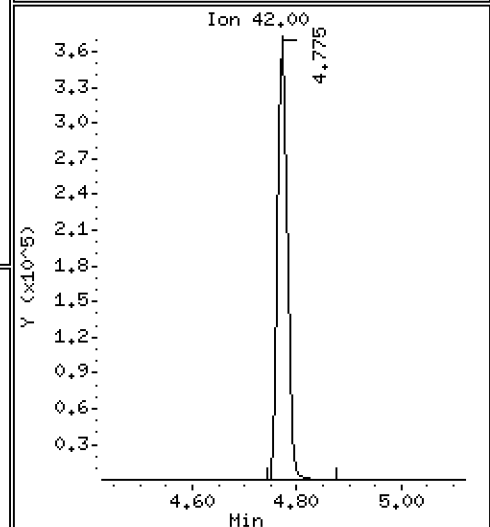
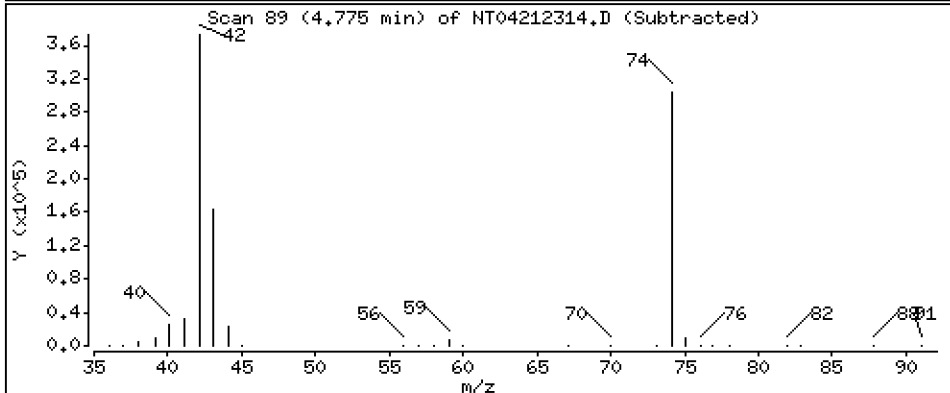
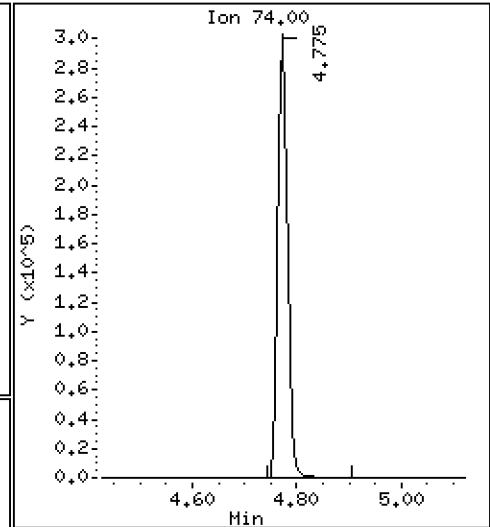
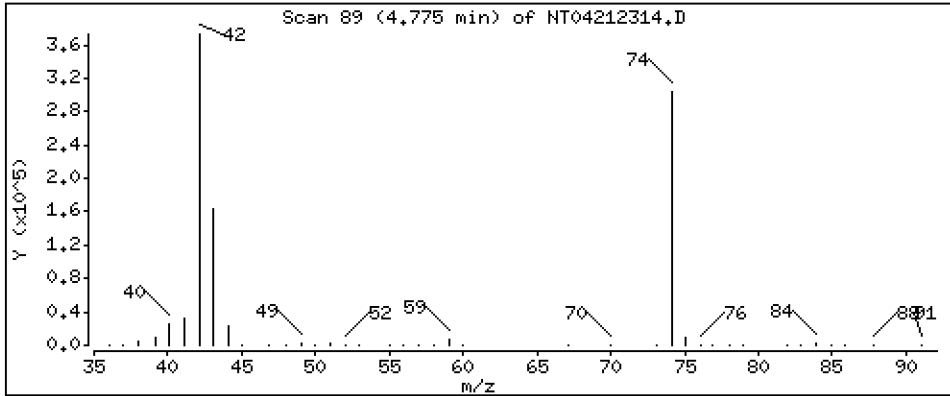
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 5.067 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

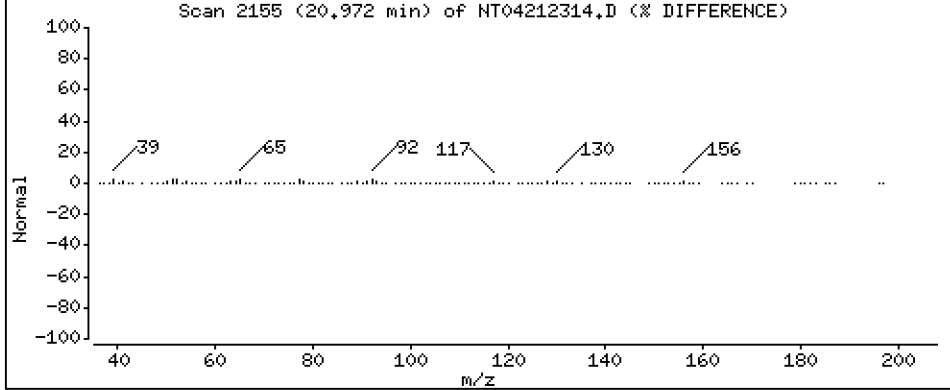
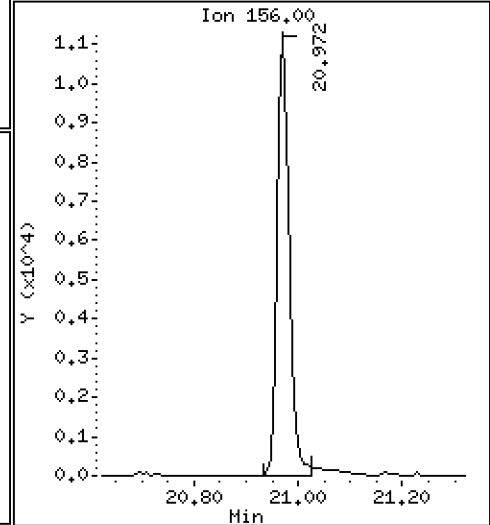
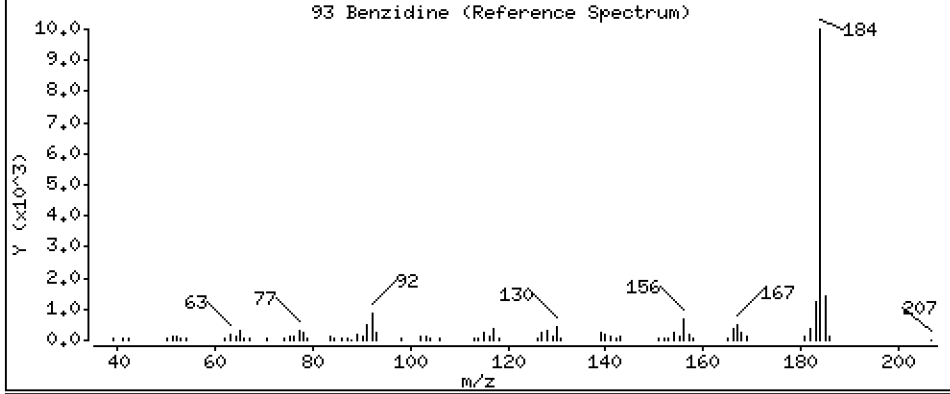
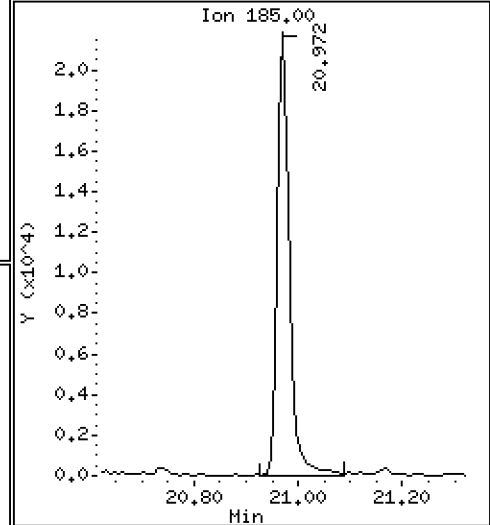
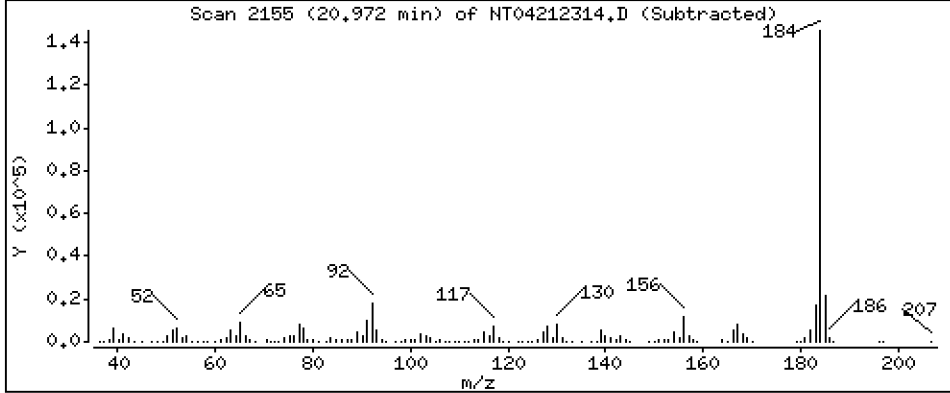
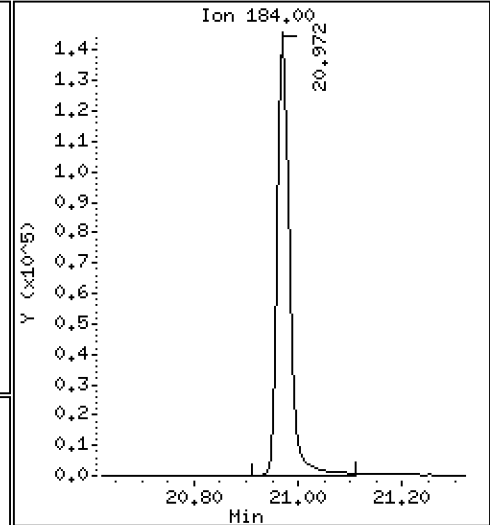
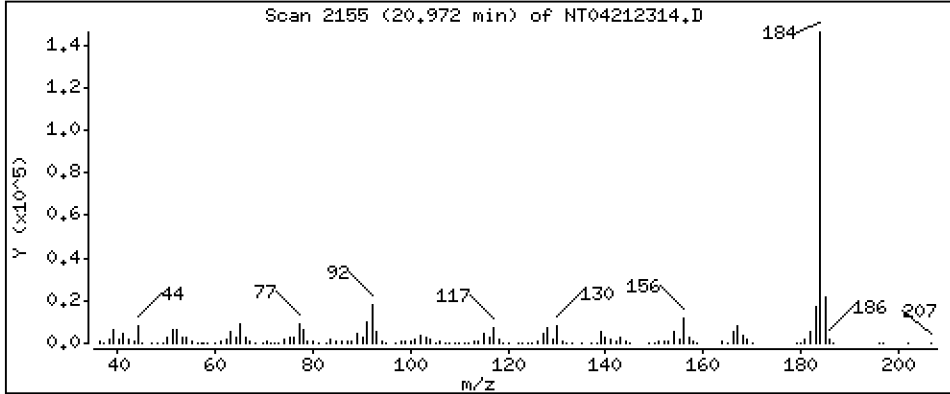
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 2,987 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

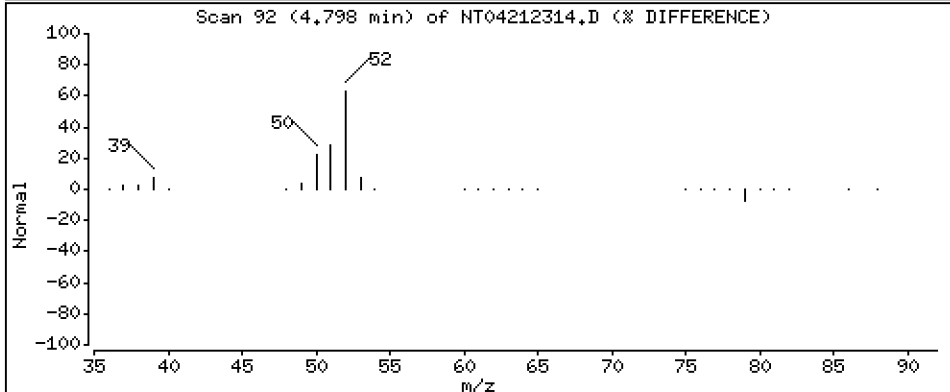
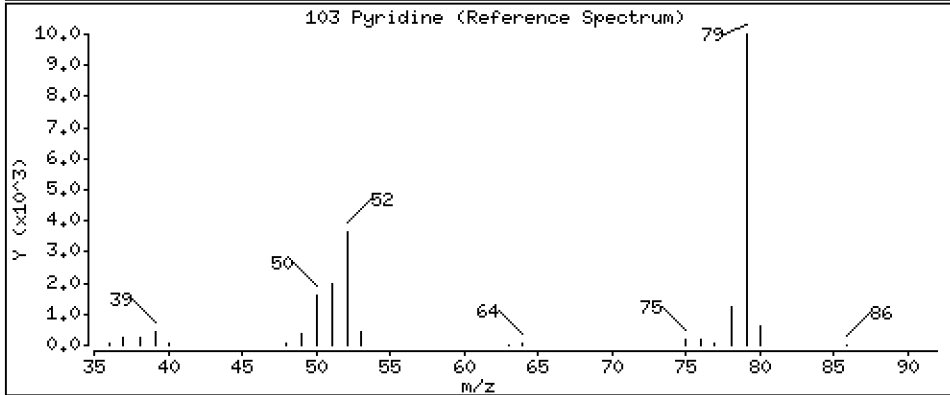
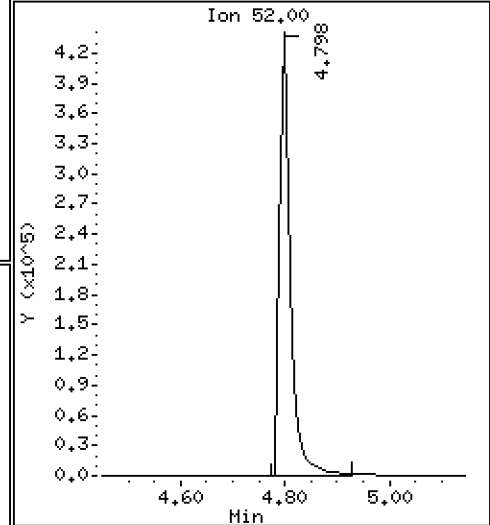
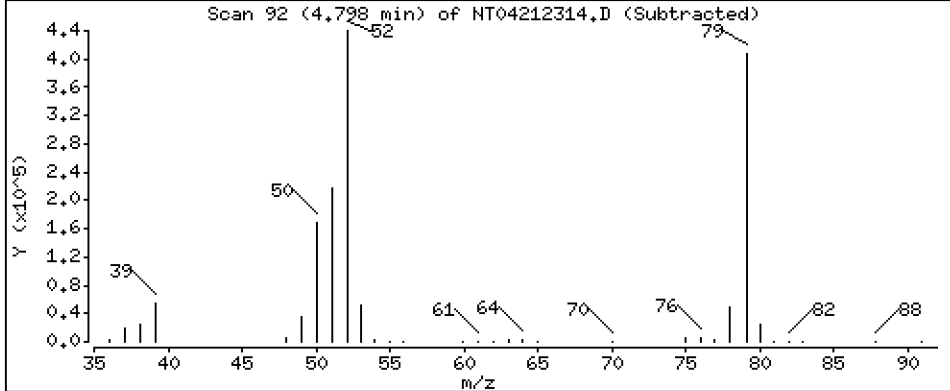
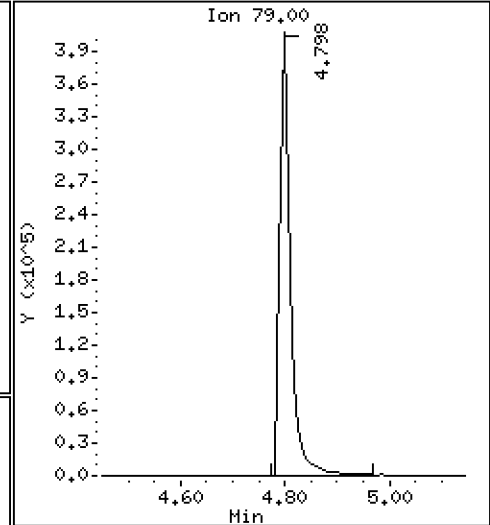
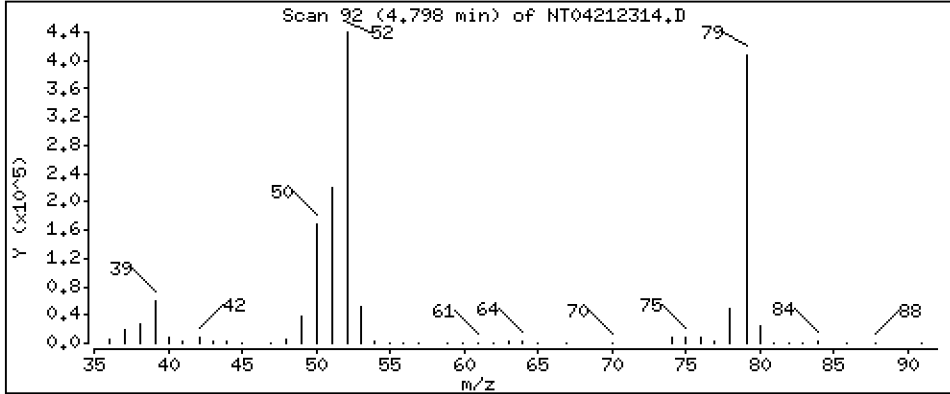
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 2,545 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

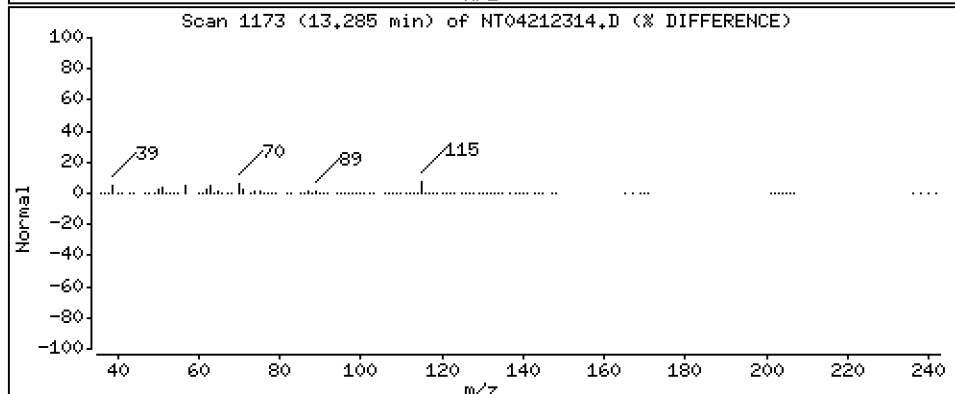
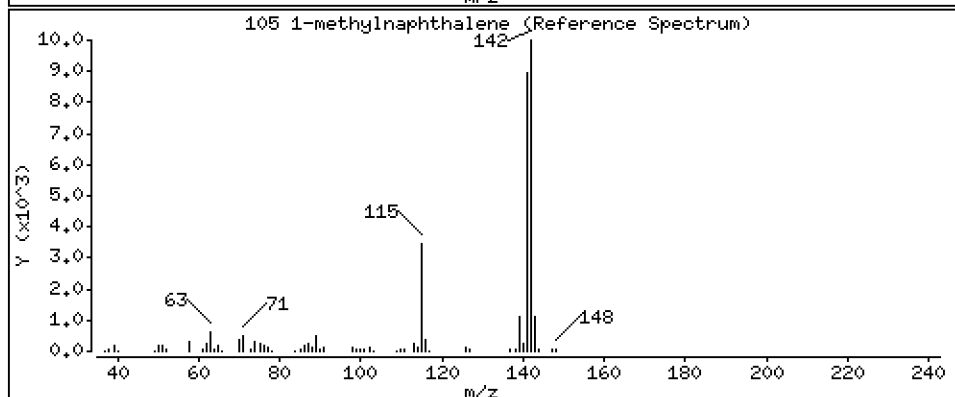
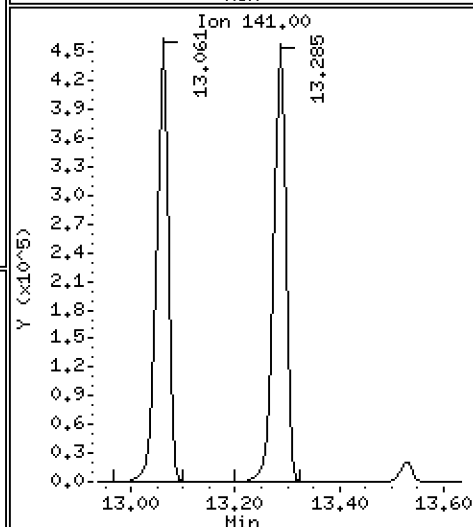
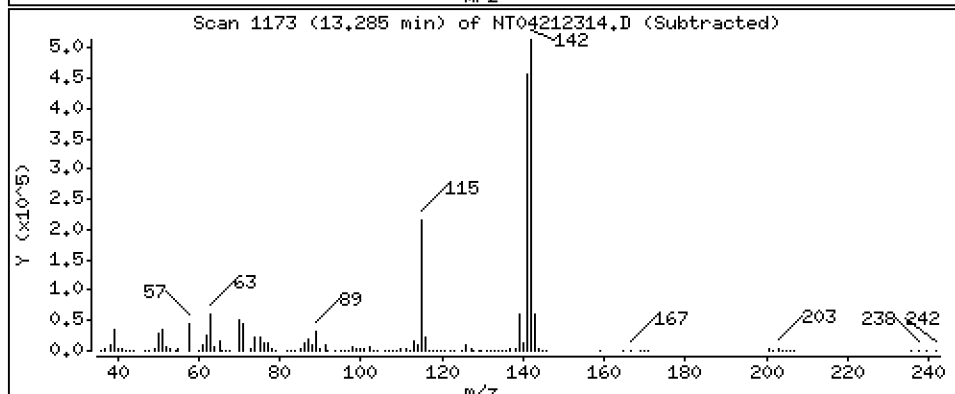
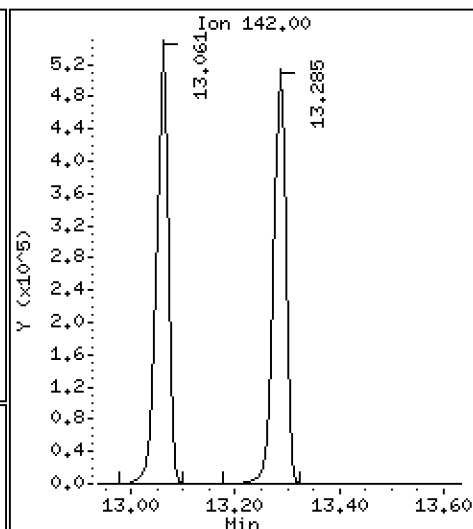
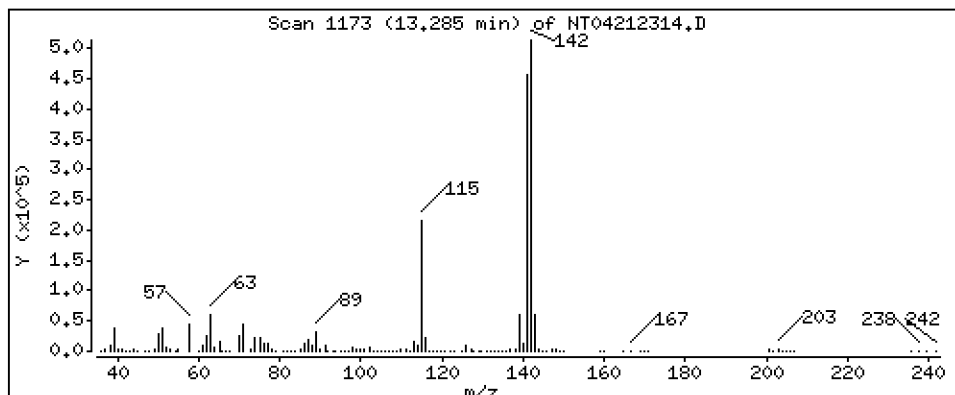
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 4,495 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

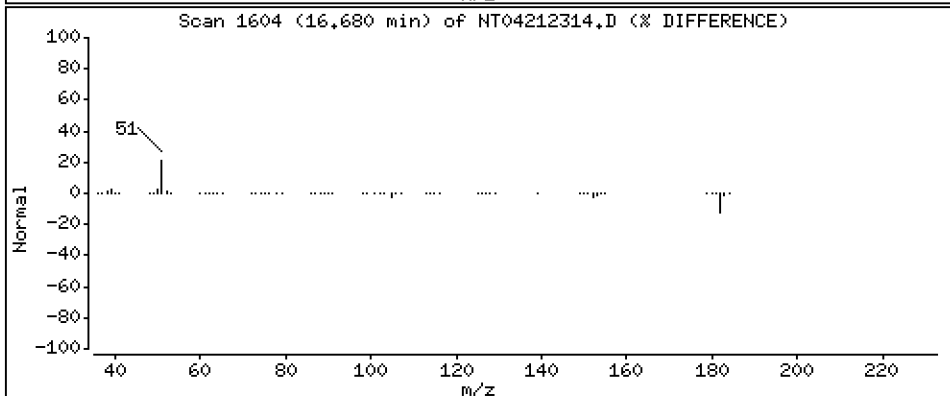
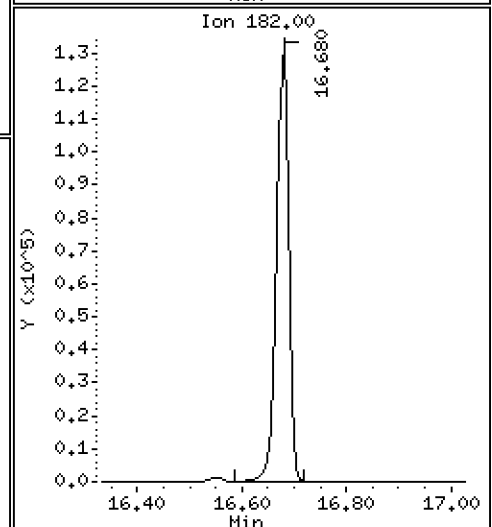
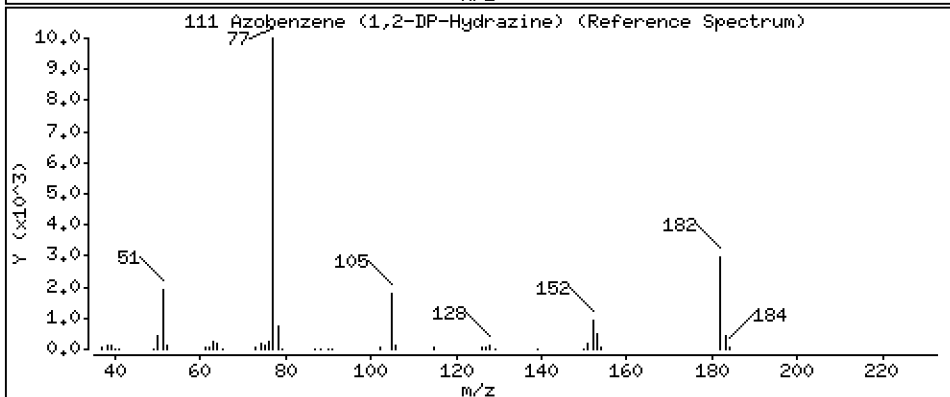
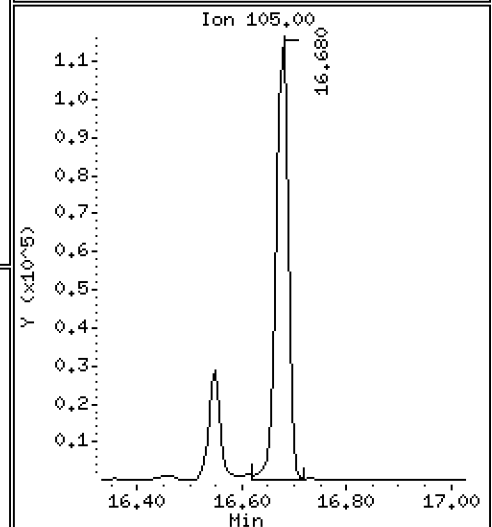
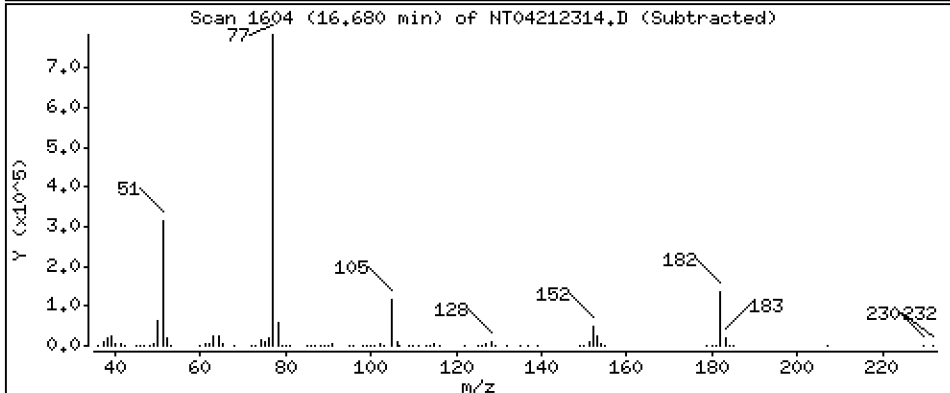
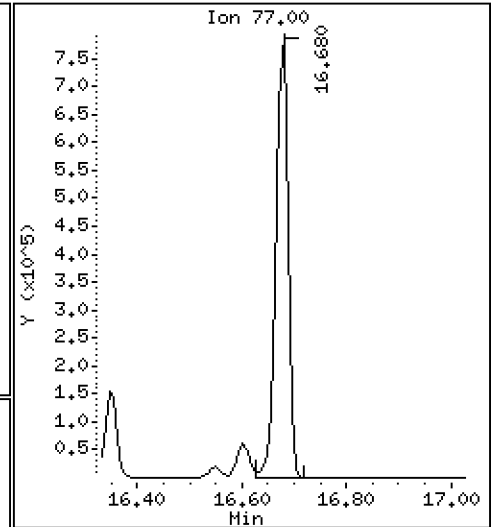
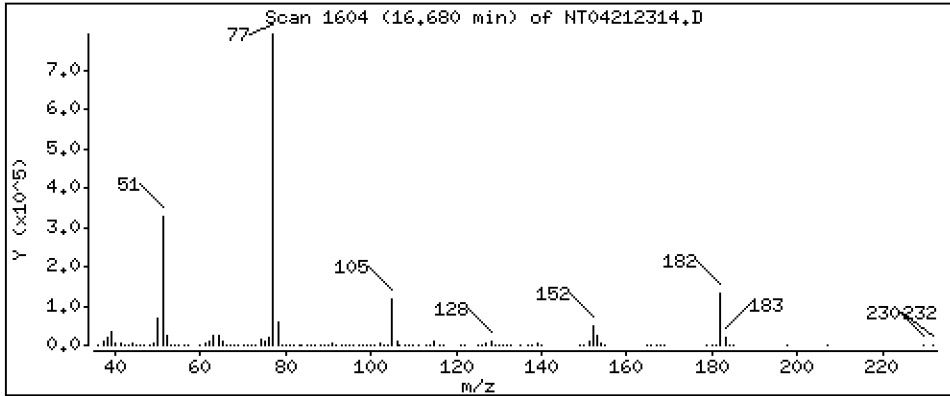
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 4,602 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

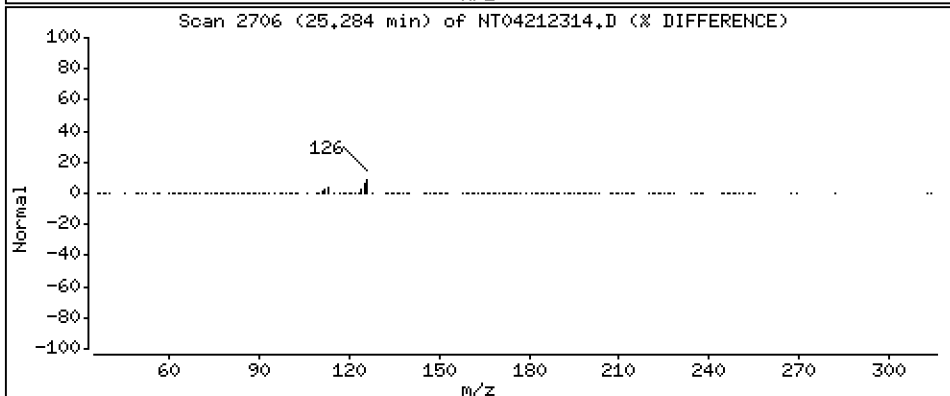
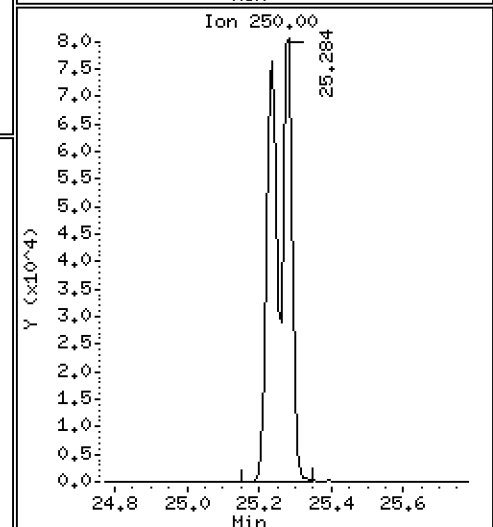
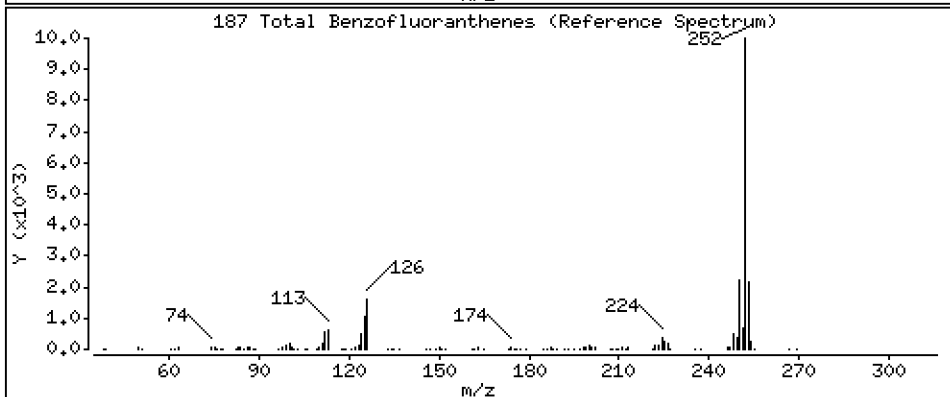
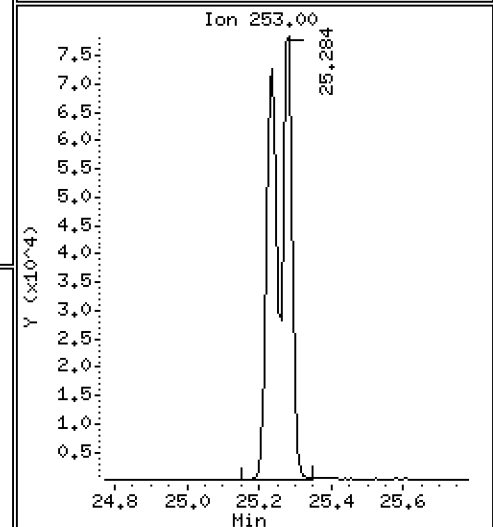
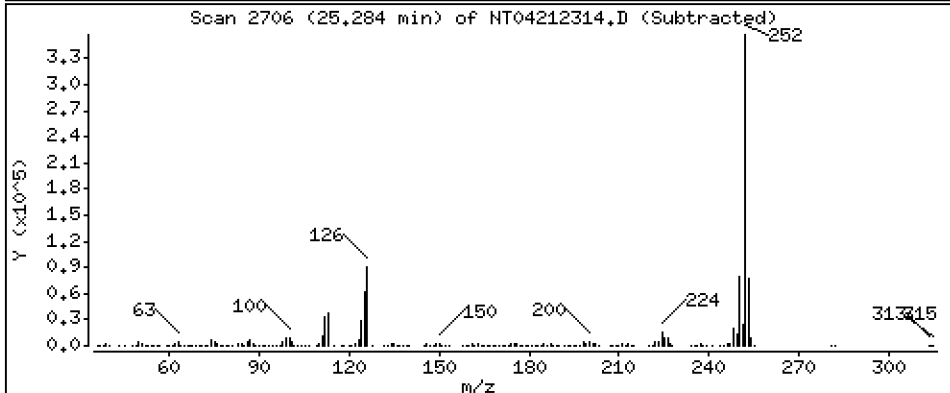
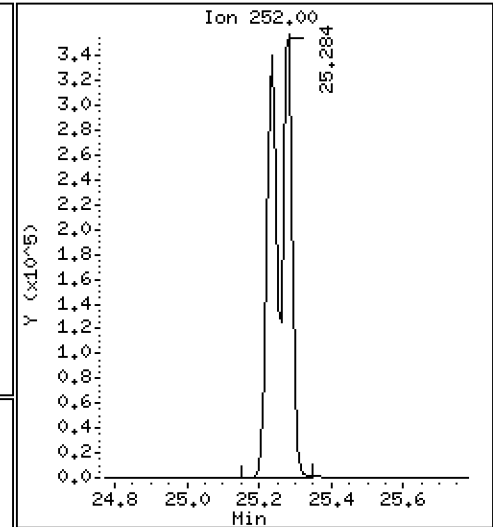
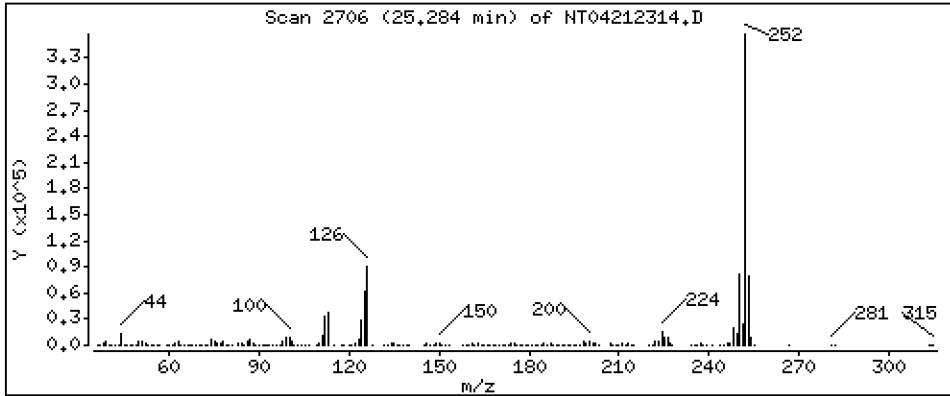
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 9,597 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

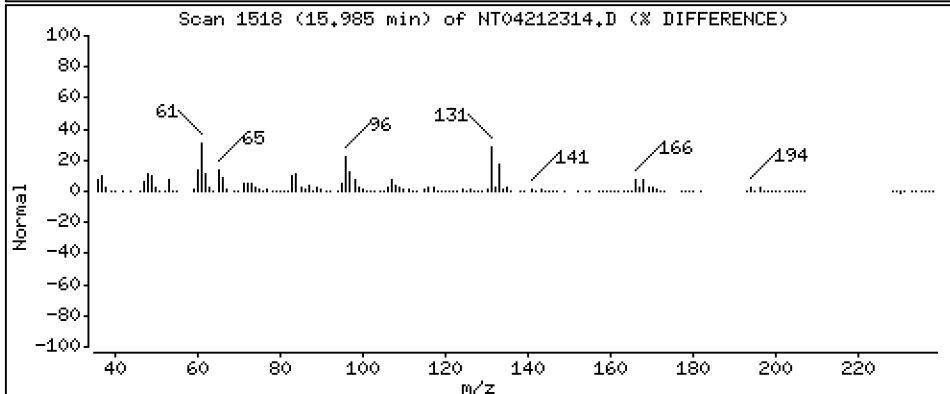
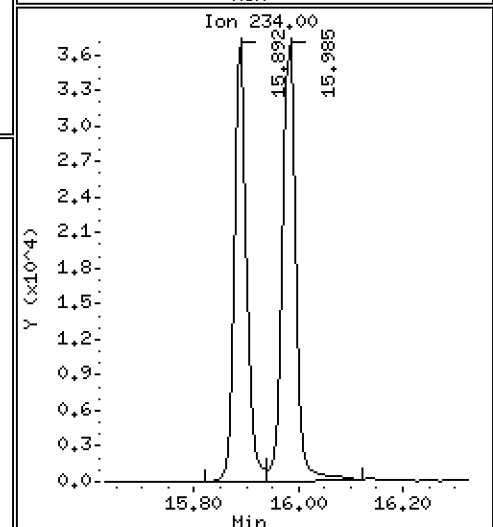
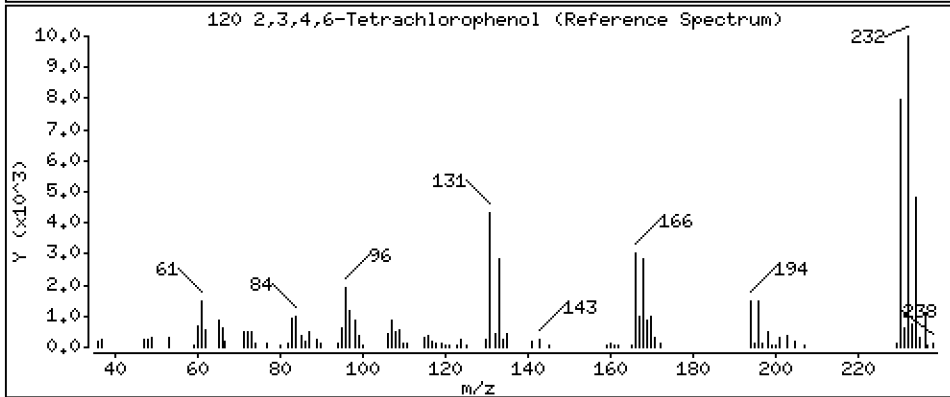
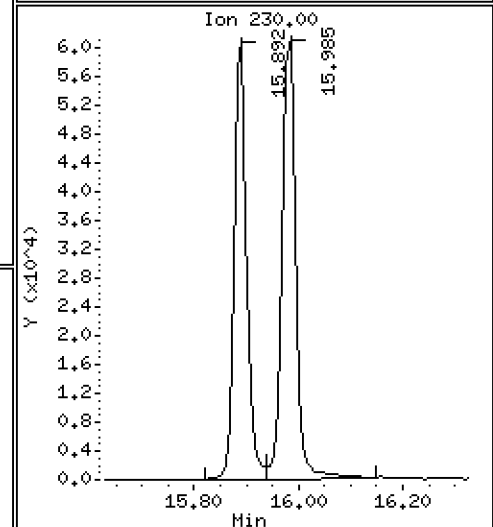
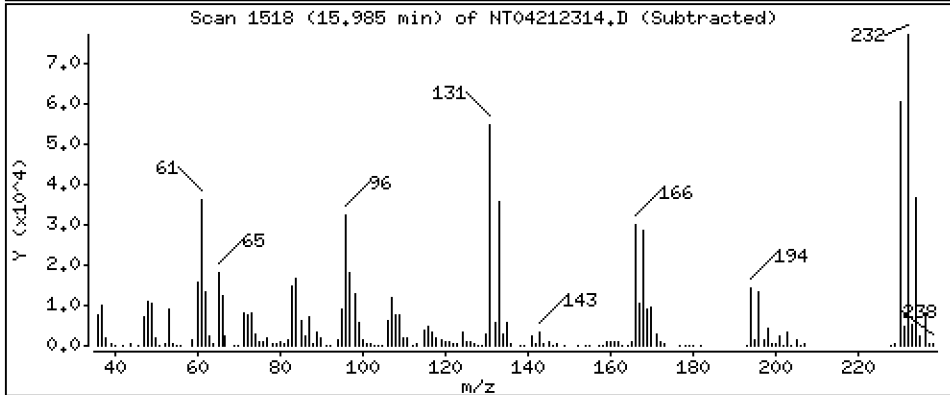
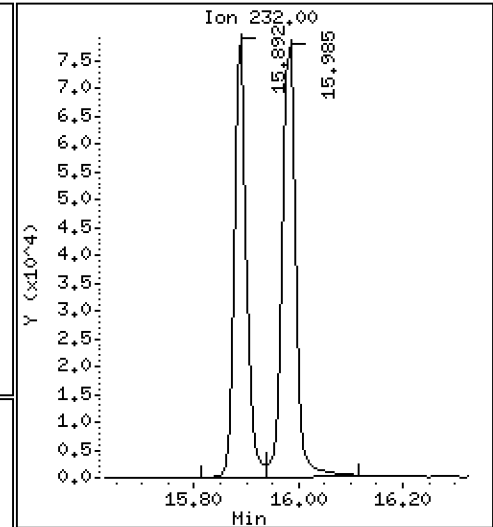
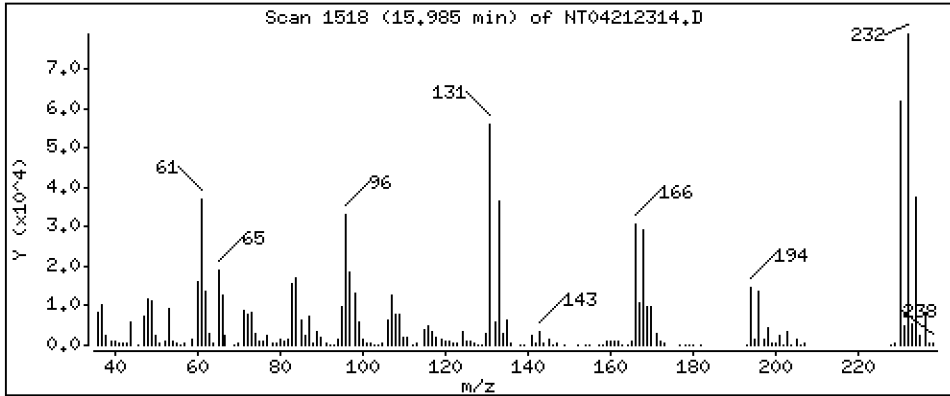
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 3,655 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230421.b\NT04212314.D  
 Lab Smp Id:  
 Inj Date : 21-APR-2023 21:16 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Meth Date : 26-Apr-2023 10:02 van Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 11  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
=====	====		====	=====	=====	=====	=====	=====
\$ 1 2-Fluorophenol	112					Compound Not Detected.		
\$ 2 Phenol-d5	99					Compound Not Detected.		
3 Phenol	94		8.482	8.482	(0.931)	586904	4.33062	4.331
\$ 5 2-Chlorophenol-d4	132					Compound Not Detected.		
4 Bis(2-Chloroethyl)ether	93		8.660	8.660	(0.951)	524586	5.06979	5.070
6 2-Chlorophenol	128		8.768	8.775	(0.963)	422724	4.47822	4.478
7 1,3-Dichlorobenzene	146		9.046	9.046	(0.993)	447514	4.73471	4.735
* 8 1,4-Dichlorobenzene-d4	152		9.108	9.108	(1.000)	238265	4.00000	
9 1,4-Dichlorobenzene	146		9.139	9.139	(1.003)	430582	4.77872	4.779
\$ 10 1,2-Dichlorobenzene-d4	152					Compound Not Detected.		
12 1,2-Dichlorobenzene	146		9.504	9.504	(1.043)	426176	4.75363	4.754
11 Benzyl alcohol	108		9.380	9.380	(1.030)	303477	4.90919	4.909
14 2,2'-oxybis(1-Chloropropane)	121		9.683	9.683	(1.063)	153192	5.06154	5.062
13 2-Methylphenol	108		9.605	9.605	(1.055)	379627	4.19884	4.199
17 Hexachloroethane	117		10.094	10.094	(1.108)	209265	4.87164	4.872
16 N-Nitroso-di-n-propylamine	70		9.947	9.947	(1.092)	430688	4.73681	4.737
15 4-Methylphenol	108		9.885	9.877	(1.085)	458285	4.45097	4.451
\$ 18 Nitrobenzene-d5	82					Compound Not Detected.		
19 Nitrobenzene	77		10.249	10.249	(0.883)	591951	4.71455	4.715
20 Isophorone	82		10.699	10.700	(0.921)	1088789	6.31735	6.317 (H)
21 2-Nitrophenol	139		10.886	10.886	(0.937)	229795	3.77910	3.779
22 2,4-Dimethylphenol	107		10.932	10.932	(0.941)	350731	3.70706	3.707
23 Bis(2-Chloroethoxy)methane	93		11.134	11.134	(0.959)	597774	5.39628	5.396
24 Benzoic acid	105		11.118	11.134	(0.957)	532824	6.80053	6.801
25 2,4-Dichlorophenol	162		11.335	11.335	(0.976)	320774	3.72812	3.728
26 1,2,4-Trichlorobenzene	180		11.529	11.529	(0.993)	320315	4.53557	4.536
* 27 Naphthalene-d8	136		11.614	11.614	(1.000)	954318	4.00000	
28 Naphthalene	128		11.660	11.660	(1.004)	1234609	4.81308	4.813
29 4-Chloroaniline	127		11.783	11.784	(1.015)	418373	3.76974	3.770
30 Hexachlorobutadiene	225		12.023	12.015	(1.035)	150621	4.66501	4.665
31 4-Chloro-3-methylphenol	107		12.743	12.743	(1.097)	390174	4.61478	4.615
32 2-Methylnaphthalene	142		13.060	13.060	(1.125)	831319	4.47405	4.474
33 Hexachlorocyclopentadiene	237		13.532	13.532	(0.887)	159262	4.78266	4.783



Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196		13.679	13.679	(0.897)	189916	4.57800	4.578	
35 2,4,5-Trichlorophenol	196		13.749	13.757	(0.901)	195431	4.43440	4.434	
§ 36 2-Fluorobiphenyl	172		Compound Not Detected.						
37 2-Chloronaphthalene	162		14.058	14.058	(0.921)	698393	4.64274	4.643	
38 2-Nitroaniline	65		14.321	14.322	(0.939)	359593	4.47509	4.475	
39 Dimethylphthalate	163		14.755	14.755	(0.967)	706597	4.55357	4.554	
40 Acenaphthylene	152		14.941	14.933	(0.979)	1156951	4.81912	4.819	
41 2,6-Dinitrotoluene	165		14.902	14.902	(0.977)	164516	4.67642	4.676	
* 42 Acenaphthene-d10	164		15.258	15.250	(1.000)	452418	4.00000		
43 3-Nitroaniline	138		15.181	15.181	(0.995)	203689	4.60816	4.608	
44 Acenaphthene	153		15.320	15.320	(1.004)	691934	4.81125	4.811	
45 2,4-Dinitrophenol	184		15.389	15.397	(1.009)	35607	1.67440	1.674	
46 Dibenzofuran	168		15.644	15.644	(1.025)	927906	4.51952	4.520	
47 4-Nitrophenol	109		15.482	15.482	(1.015)	117144	4.55436	4.554	
48 2,4-Dinitrotoluene	165		15.706	15.706	(1.029)	212920	4.47005	4.470	
50 Diethylphthalate	149		16.217	16.217	(1.063)	768389	4.57476	4.575	
49 Fluorene	166		16.363	16.363	(1.072)	868346	4.77950	4.780	
51 4-Chlorophenyl-phenylether	204		16.356	16.348	(1.072)	357571	4.75807	4.758	
52 4-Nitroaniline	138		16.456	16.456	(1.079)	176660	4.51964	4.520	
53 4,6-Dinitro-2-methylphenol	198		16.548	16.548	(0.904)	68829	3.00526	3.005	
54 N-Nitrosodiphenylamine	169		16.602	16.602	(0.907)	493869	4.74847	4.748	
§ 55 2,4,6-Tribromophenol	330		Compound Not Detected.						
56 4-Bromophenyl-phenylether	248		17.358	17.358	(0.948)	161898	4.73244	4.732	
57 Hexachlorobenzene	284		17.675	17.675	(0.966)	151077	4.36687	4.367	
58 Pentachlorophenol	266		18.031	18.031	(0.985)	82309	3.74067	3.741	
* 59 Phenanthrene-d10	188		18.302	18.302	(1.000)	736482	4.00000		
60 Phenanthrene	178		18.348	18.348	(1.003)	968886	4.65282	4.653	
61 Anthracene	178		18.441	18.441	(1.008)	853683	4.27441	4.274	
62 Carbazole	167		18.774	18.774	(1.026)	775527	4.19628	4.196	
63 Di-n-butylphthalate	149		19.563	19.563	(1.069)	1341607	4.76191	4.762	
64 Fluoranthene	202		20.739	20.739	(0.888)	973087	5.06753	5.068	
65 Pyrene	202		21.165	21.165	(0.906)	975738	4.92043	4.920	
§ 66 Terphenyl-d14	244		Compound Not Detected.						
67 Butylbenzylphthalate	149		22.365	22.365	(0.958)	501431	4.29069	4.291	
68 Benzo(a)anthracene	228		23.325	23.325	(0.999)	693668	4.67137	4.671	
* 69 Chrysene-d12	240		23.356	23.356	(1.000)	415993	4.00000		
70 3,3'-Dichlorobenzidine	252		23.278	23.278	(0.997)	446471	9.38140	9.381	
71 Chrysene	228		23.402	23.394	(1.002)	653516	4.71863	4.719	
72 bis(2-Ethylhexyl)phthalate	149		24.385	24.385	(1.000)	1188340	4.89312	4.893	
* 134 Di-n-octylphthalate-d4	153		24.378	24.370	(1.000)	909750	4.00000		
73 Di-n-octylphthalate	149		24.385	24.385	(1.000)	1188340	4.89312	4.893	
74 Benzo(b)fluoranthene	252		25.237	25.229	(0.970)	678474	4.83853	4.839	
75 Benzo(k)fluoranthene	252		25.283	25.276	(0.972)	650971	4.73139	4.731	
76 Benzo(a)pyrene	252		25.903	25.903	(0.996)	591029	4.98760	4.988	
* 77 Perylene-d12	264		26.019	26.027	(1.000)	420543	4.00000		
78 Indeno(1,2,3-cd)pyrene	276		28.750	28.743	(1.105)	722537	4.40939	4.409	
79 Dibenzo(a,h)anthracene	278		28.766	28.750	(1.106)	597382	4.45679	4.457	
80 Benzo(g,h,i)perylene	276		29.558	29.558	(1.136)	582685	4.20046	4.200	
90 N-Nitrosodimethylamine	74		4.774	4.774	(0.524)	362967	5.06652	5.067	
91 Aniline	93		Compound Not Detected.						
93 Benzidine	184		20.971	20.971	(0.898)	226386	2.98741	2.987	
103 Pyridine	79		4.797	4.797	(0.527)	539756	2.54524	2.545	
105 1-methylnaphthalene	142		13.284	13.285	(1.144)	806496	4.49478	4.495	
111 Azobenzene (1,2-DP-Hydrazine)	77		16.679	16.679	(1.093)	1192930	4.60243	4.602	

Compounds	QUANT SIG		CONCENTRATIONS					
	MASS		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
=====	=====		=====	=====	=====	=====	=====	=====
187 Total Benzofluoranthenes	252		25.283	25.276	(0.972)	1274063	9.59749	9.597
120 2,3,4,6-Tetrachlorophenol	232		15.984	15.977	(1.048)	145878	3.65464	3.655

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 21-APR-2023  
 Lab File ID: NT04212314.D Calibration Time: 17:00  
 Lab Smp Id:  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	239131	119566	478262	238265	-0.36
27 Naphthalene-d8	954450	477225	1908900	954318	-0.01
42 Acenaphthene-d10	448699	224350	897398	452418	0.83
59 Phenanthrene-d10	711389	355695	1422778	736482	3.53
69 Chrysene-d12	410209	205105	820418	415993	1.41
134 Di-n-octylphthala	929005	464503	1858010	909750	-2.07
77 Perylene-d12	424249	212125	848498	420543	-0.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.12	8.62	9.62	9.11	-0.09
27 Naphthalene-d8	11.61	11.11	12.11	11.61	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.30	17.80	18.80	18.30	-0.00
69 Chrysene-d12	23.36	22.86	23.86	23.36	-0.00
134 Di-n-octylphthala	24.37	23.87	24.87	24.38	0.03
77 Perylene-d12	26.03	25.53	26.53	26.02	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212314.D

Lab ID:

nt14.i, ABN.m, 21-APR-2023 21:16

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

\*\* FIRST SURROGATE NOT FOUND. ICAL Check not performed \*\*

RRT CHECK

RRT CCV RRT DELTA COMPOUND

---

NONE

RRT check based on Ccal File: NT04212308.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



CONTINUING CALIBRATION CHECK  
EPA 8270E

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: NT14

Calibration: GD00062

Lab File ID: NT1405012317.D

Calibration Date: 04/21/2023

Sequence: SLE0024

Injection Date: 05/02/23

Lab Sample ID: SLE0024-CCV1

Injection Time: 00:21

Sequence Name: Calibration Check

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Phenol	A	5.0000	5.3	2.2751850	2.3960010		5.3	+/-50
4-Methylphenol	A	5.0000	5.1	1.7285470	1.7753380		2.7	+/-50
Naphthalene	A	5.0000	5.3	1.0751590	1.1323660		5.3	+/-50
2-Methylnaphthalene	A	5.0000	5.0	0.7788139	0.7839264		0.7	+/-50
Acenaphthylene	A	5.0000	5.3	2.1225980	2.2520120		6.1	+/-50
Dimethylphthalate	A	5.0000	5.0	1.3719560	1.3724150		0.03	+/-50
Acenaphthene	A	5.0000	5.3	1.2715320	1.3535720		6.5	+/-50
Dibenzofuran	A	5.0000	5.0	1.8152320	1.8236230		0.5	+/-50
Fluorene	A	5.0000	4.8	1.6063130	1.5425310		-4.0	+/-50
Phenanthrene	A	5.0000	5.3	1.1309770	1.2077760		6.8	+/-50
Anthracene	A	5.0000	5.5	1.0847210	1.2015790		10.8	+/-50
Fluoranthene	A	5.0000	5.0	1.8464150	1.8350370		-0.6	+/-50
Pyrene	A	5.0000	5.1	1.9067960	1.9615610		2.9	+/-50
Butylbenzylphthalate	A	5.0000	4.4	0.9308079	0.9767399		-13.0	+/-50
Benzo(a)anthracene	A	5.0000	5.3	1.4278450	1.5153020		6.1	+/-50
Chrysene	A	5.0000	5.4	1.3317250	1.4491110		8.8	+/-50
bis(2-Ethylhexyl)phthalate	A	5.0000	4.7	1.0678070	1.0035160		-6.0	+/-50
Benzo(a)fluoranthene, Total	A	10.0000	12.2	1.2626500	1.5463560		22.5	+/-50
Benzo(a)pyrene	A	5.0000	5.8	1.1271120	1.3021060		15.5	+/-50
Indeno(1,2,3-cd)pyrene	A	5.0000	2.7	1.3992660	0.8519465		-45.3	+/-50
Dibenzo(a,h)anthracene	A	5.0000	3.1	1.1627800	0.7782550		-39.0	+/-50
Benzo(g,h,i)perylene	A	5.0000	2.1	1.1488320	0.5467593		-58.6	+/-50 *
2-Fluorophenol	A	7.5000	8.07	1.4465510	1.5563490		7.6	+/-50
Phenol-d5	A	7.5000	8.20	2.0300630	2.2195250		9.3	+/-50
2-Chlorophenol-d4	A	7.5000	8.11	1.4441450	1.5618320		8.1	+/-50
1,2-Dichlorobenzene-d4	A	5.0000	5.37	0.9148326	0.9833082		7.5	+/-50
Nitrobenzene-d5	A	5.0000	5.49	0.4922929	0.5405626		9.8	+/-50
2-Fluorobiphenyl	A	5.0000	5.47	1.3932180	1.5231890		9.3	+/-50
2,4,6-Tribromophenol	A	7.5000	8.08	0.1113678	0.1417039		7.8	+/-50
p-Terphenyl-d14	A	5.0000	4.57	1.1921270	1.1877240		-8.6	+/-50

\* Values outside of QC limits

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012317.D

Date: 02-May-2023 00:21

Client ID:

Sample Info: SLE0024-CCW1

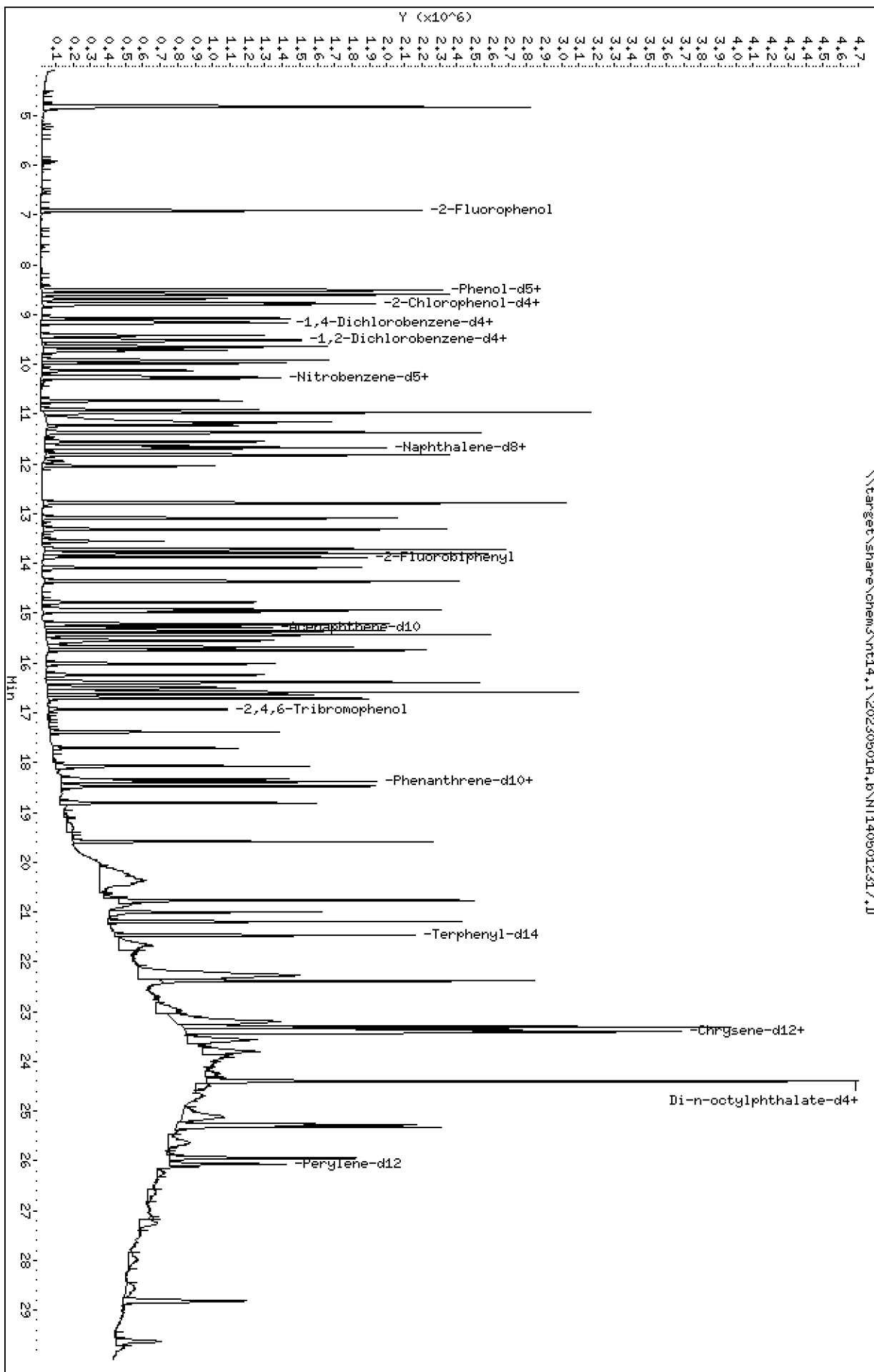
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JSD

Column diameter: 0.25

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Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

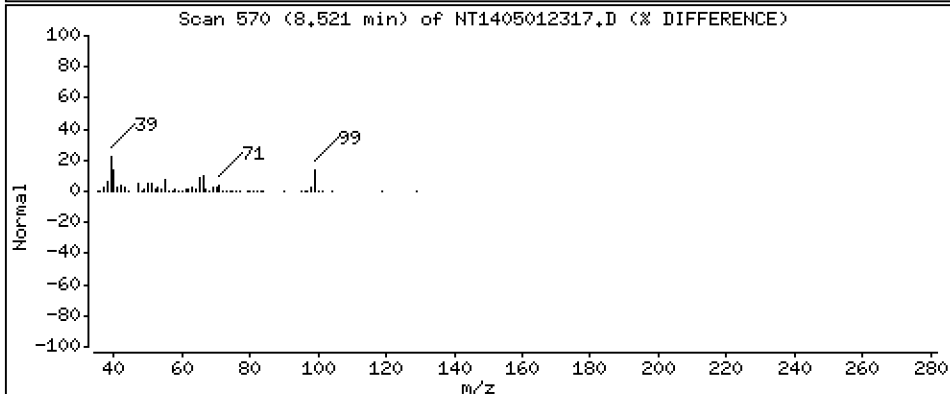
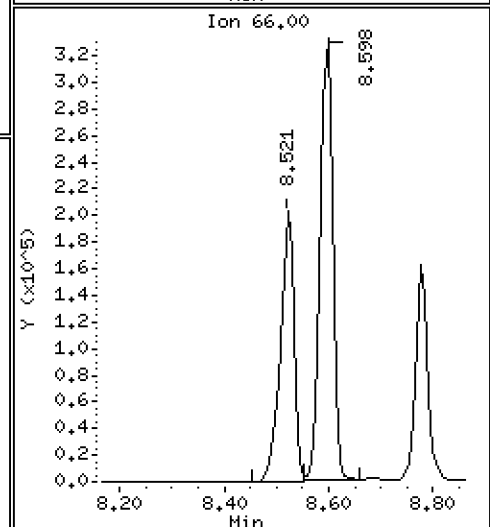
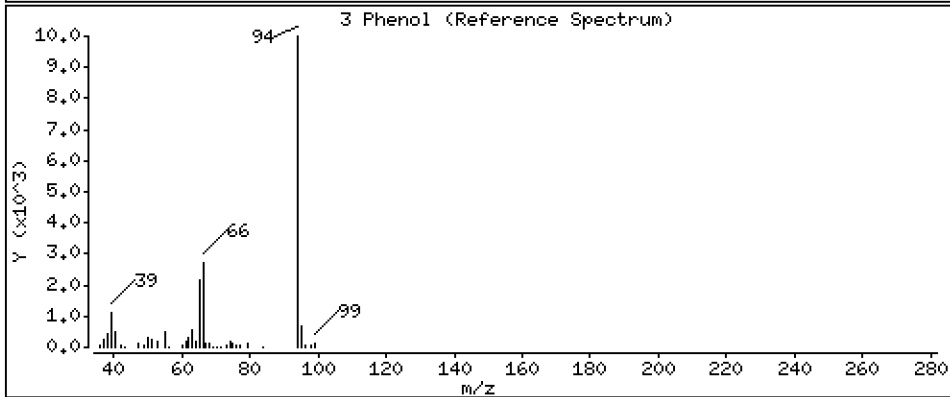
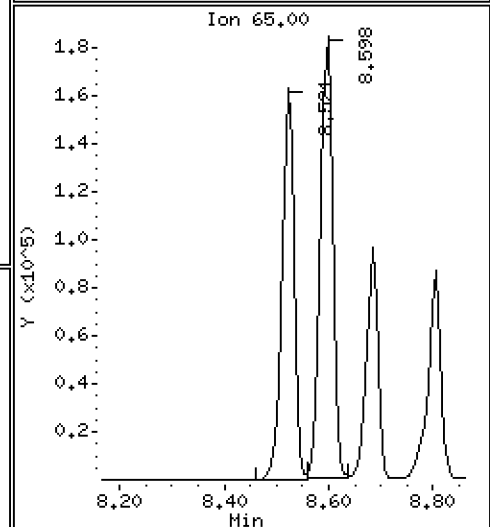
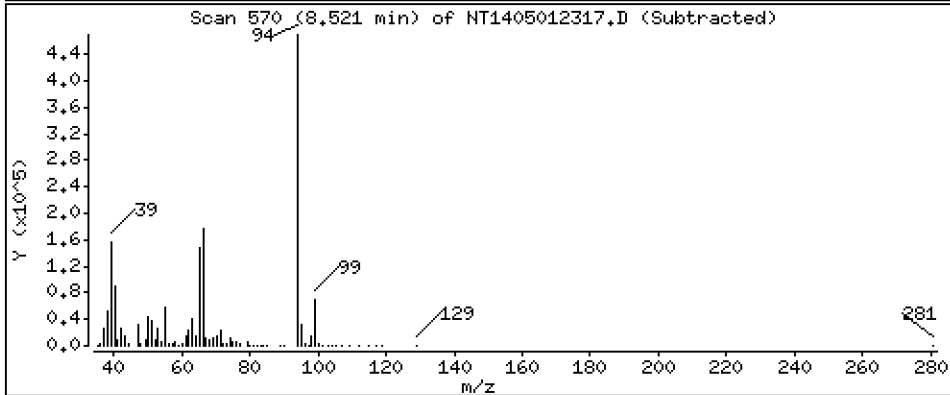
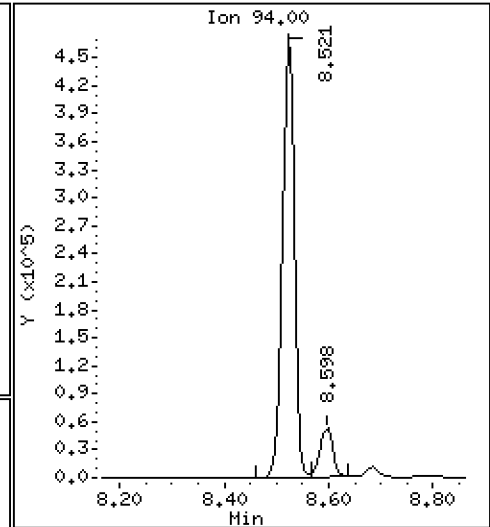
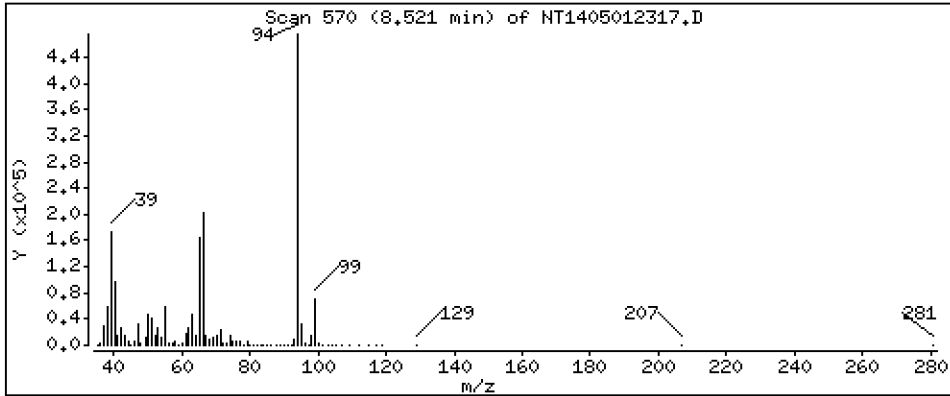
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 5,266 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

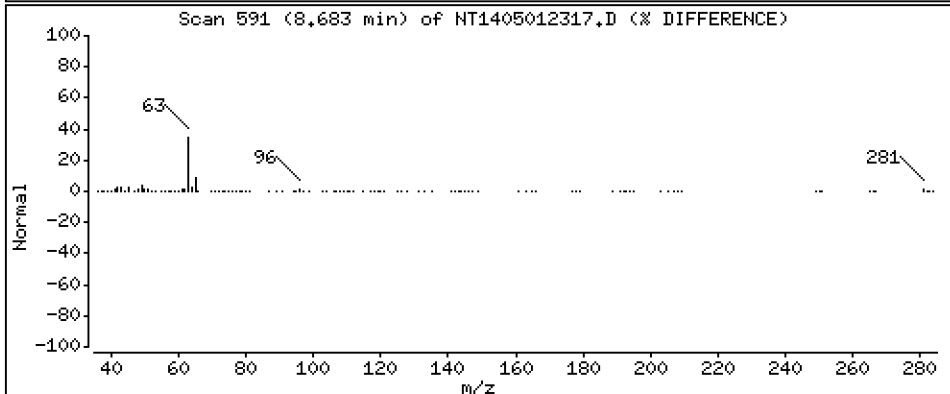
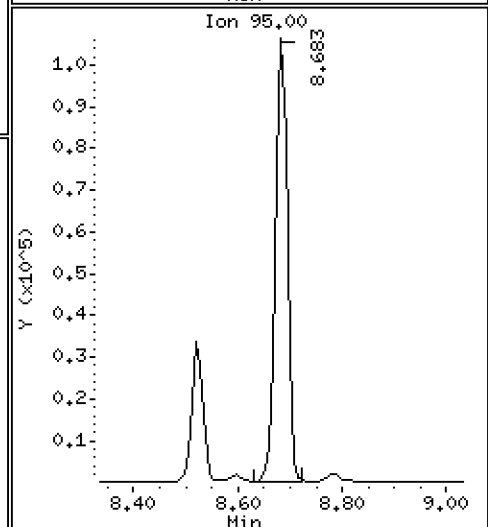
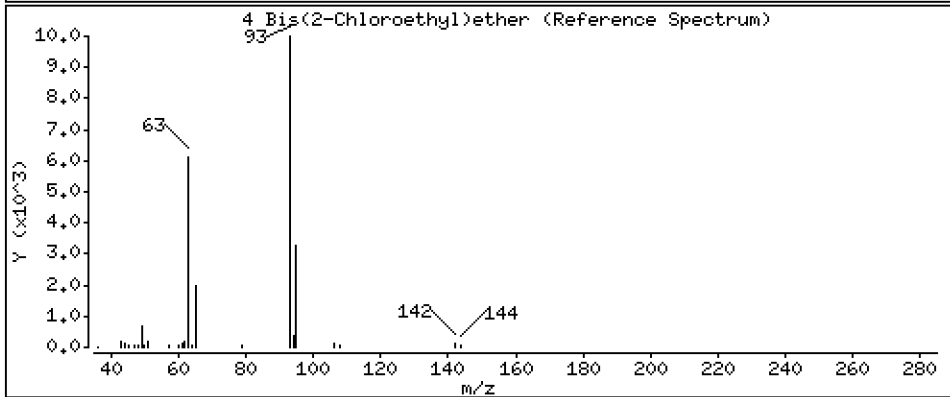
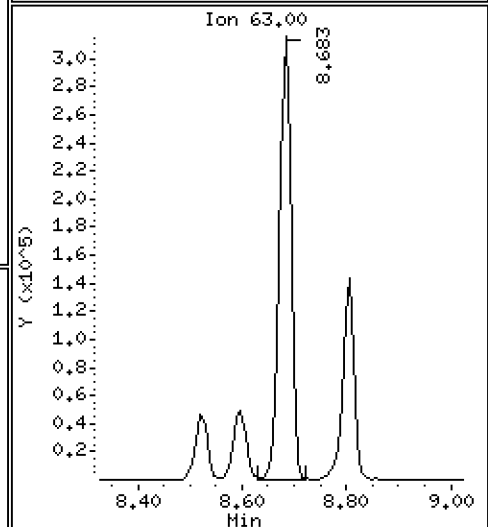
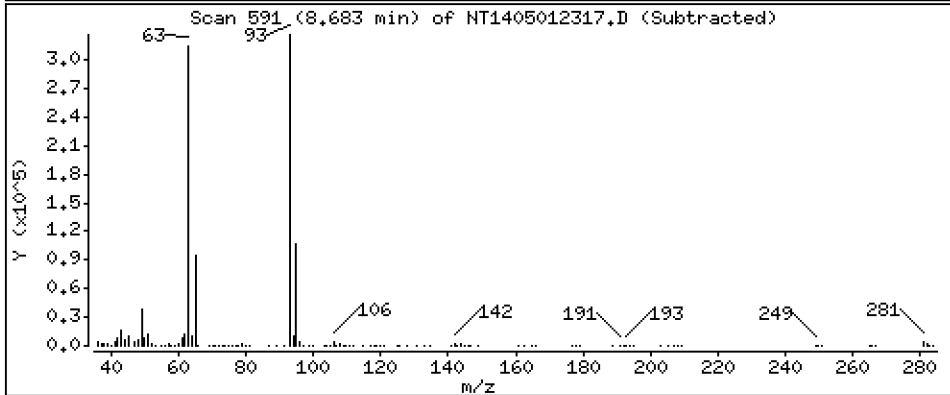
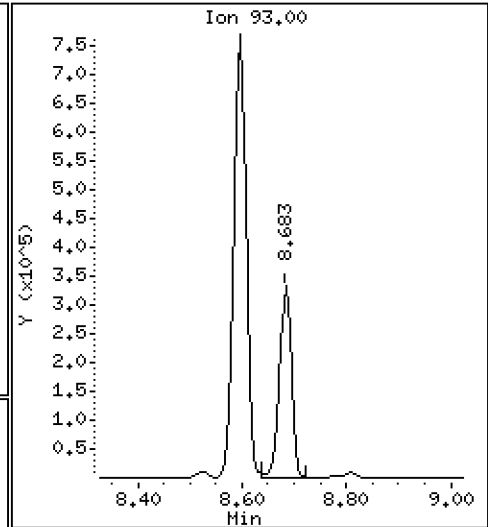
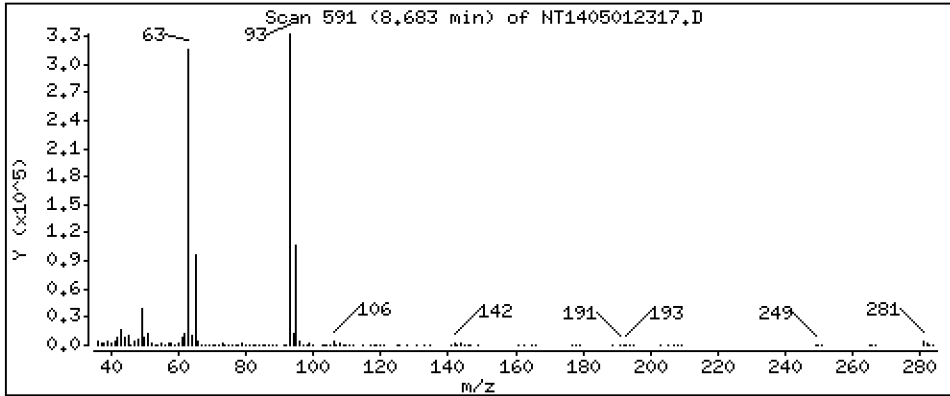
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 4,845 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

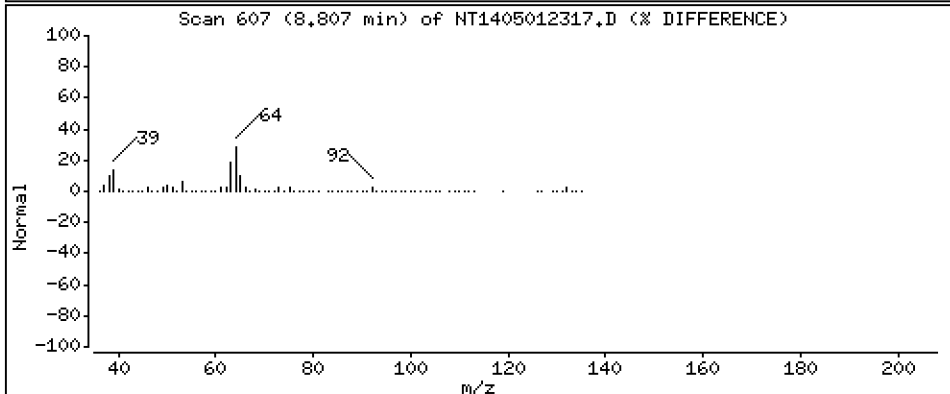
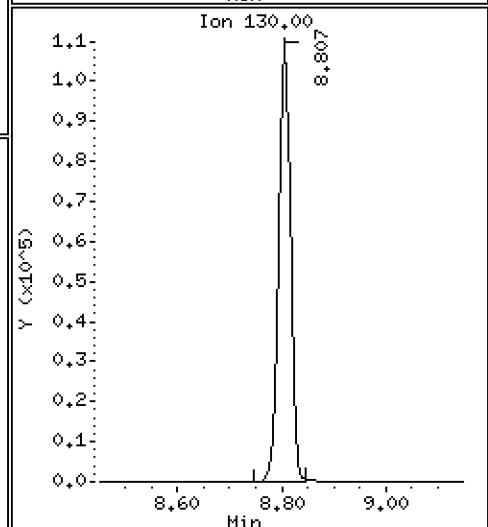
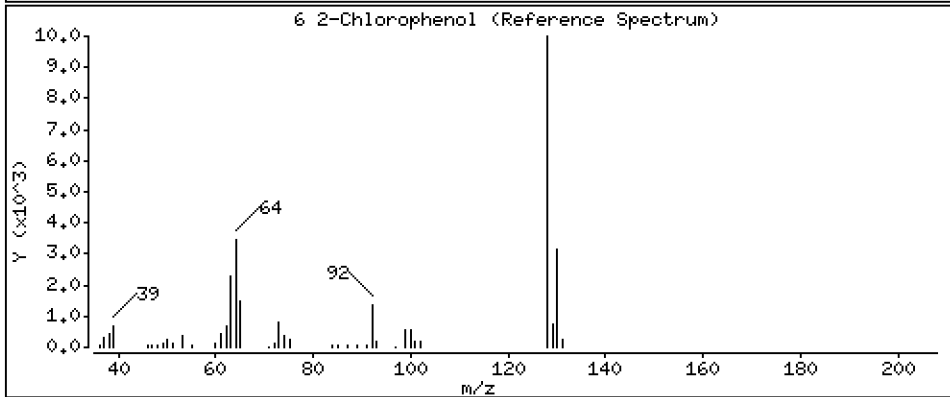
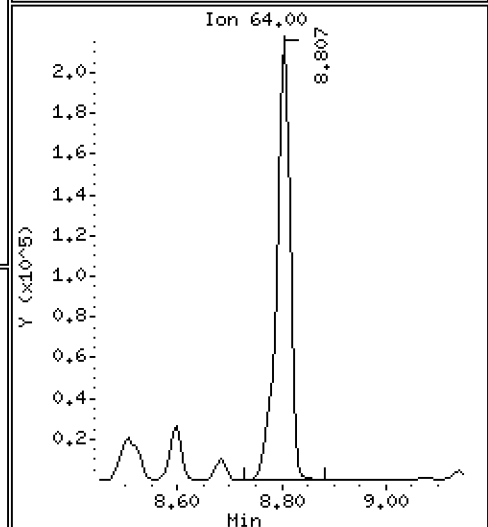
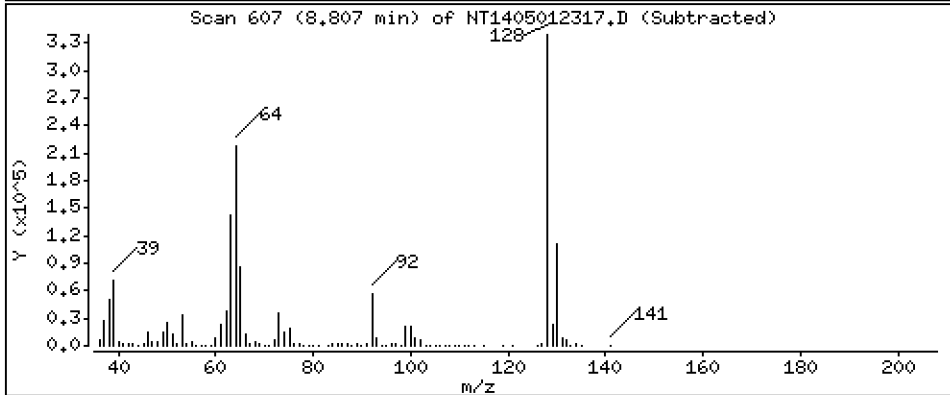
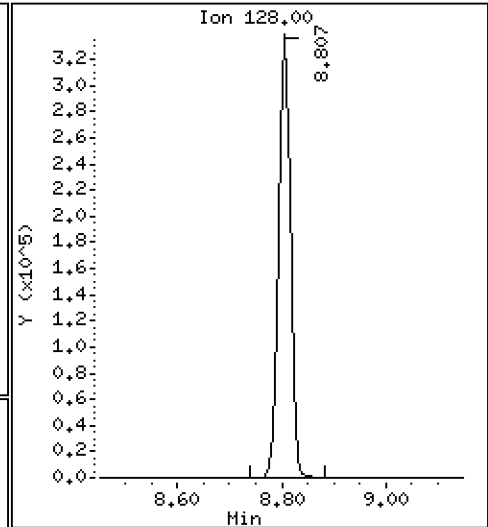
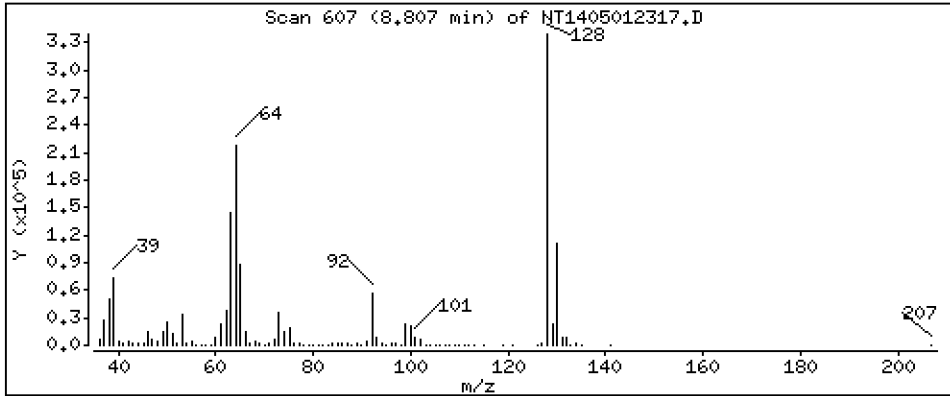
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 5,374 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

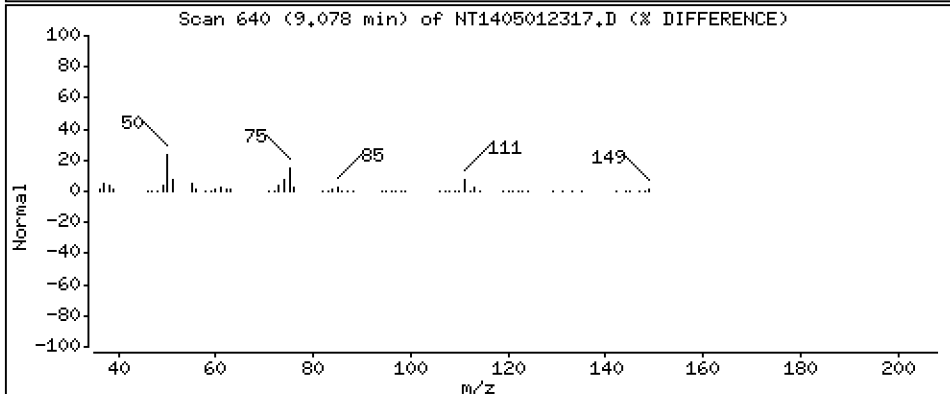
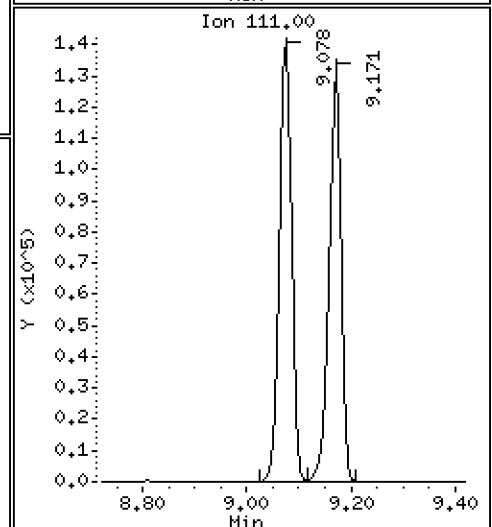
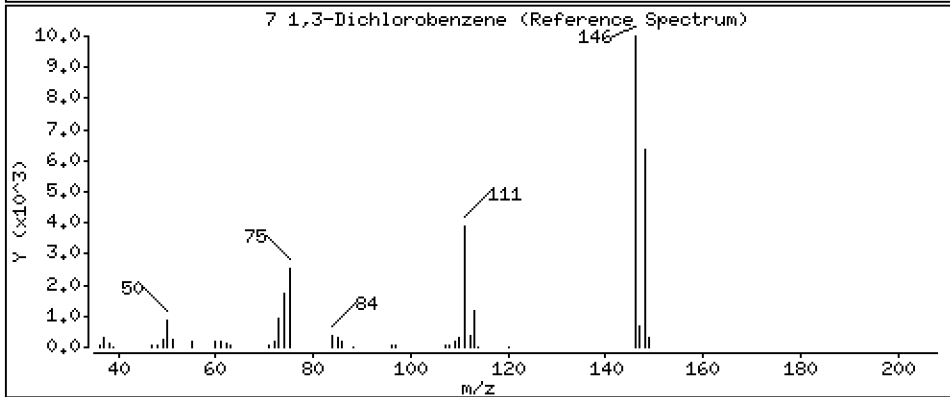
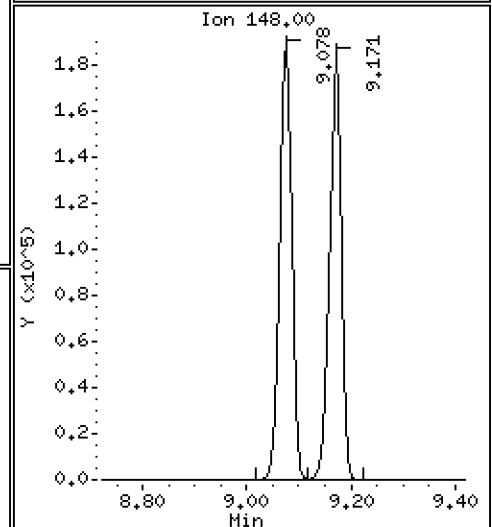
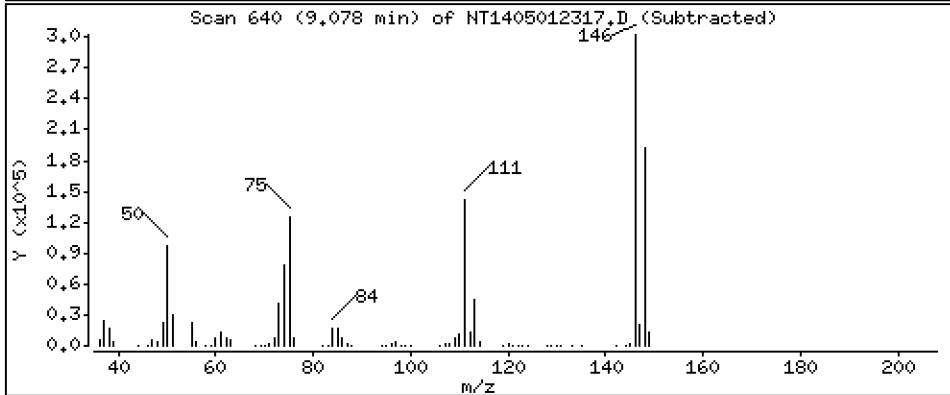
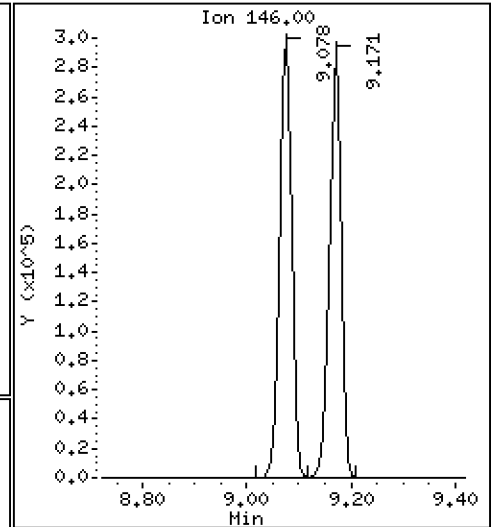
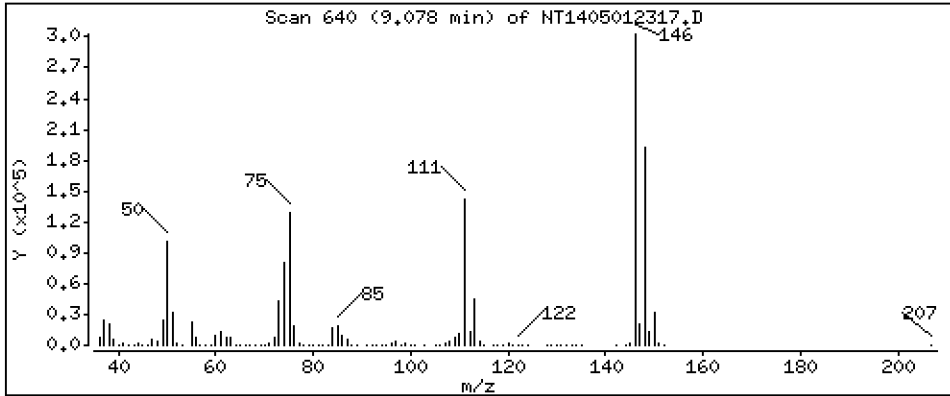
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

7 1,3-Dichlorobenzene

Concentration: 4.936 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

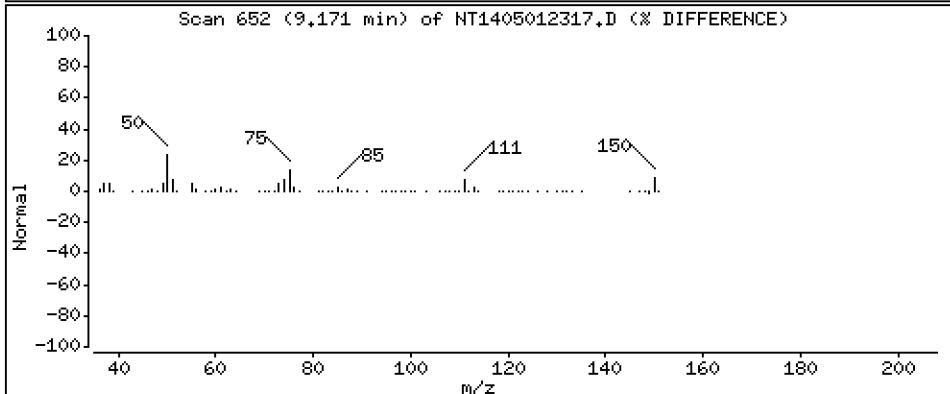
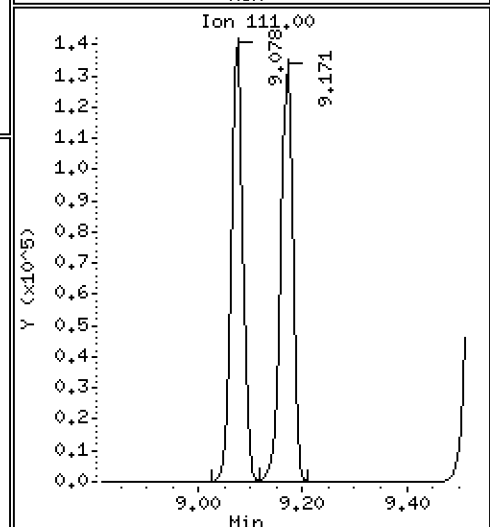
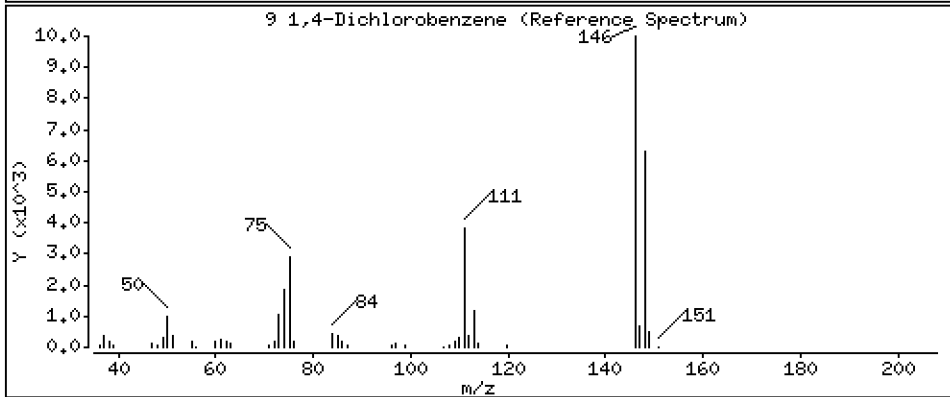
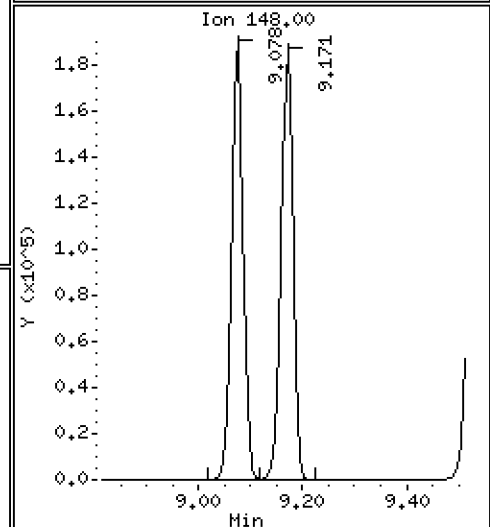
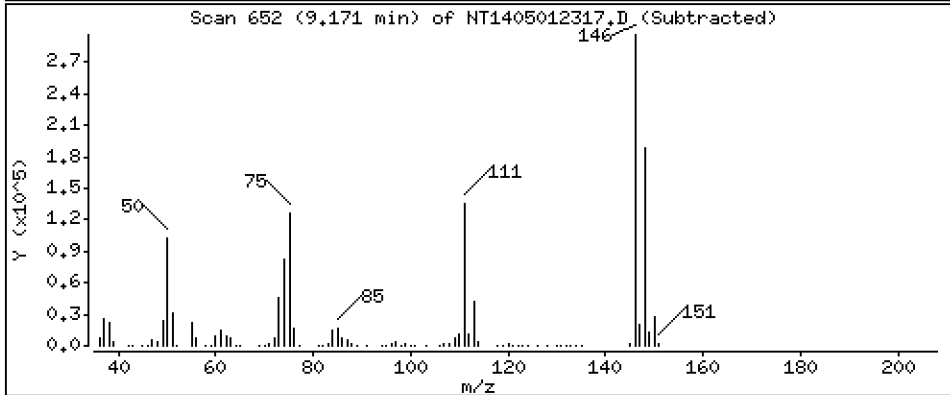
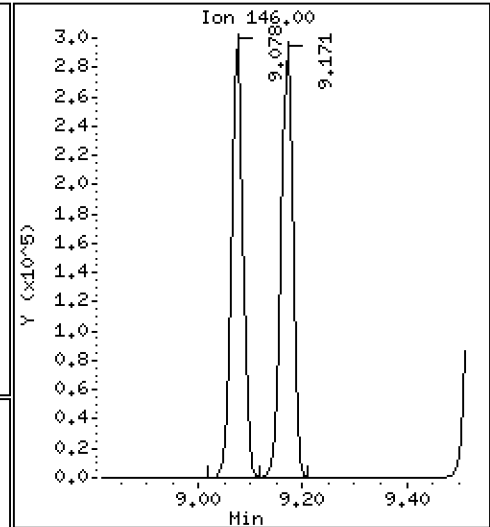
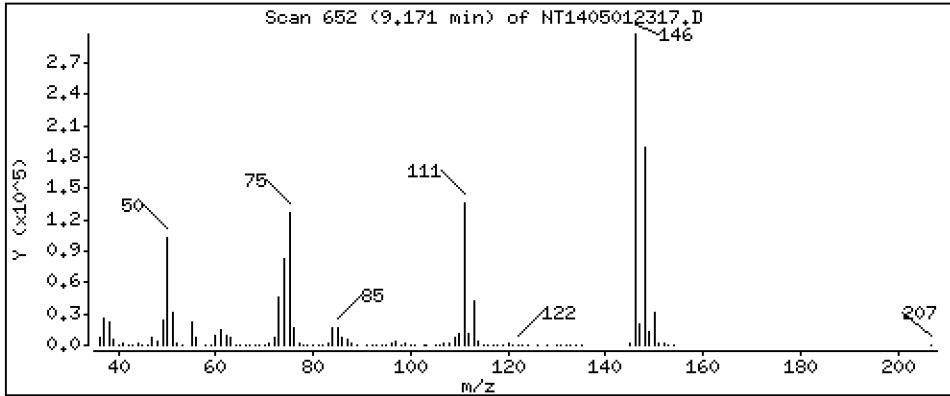
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 4.956 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

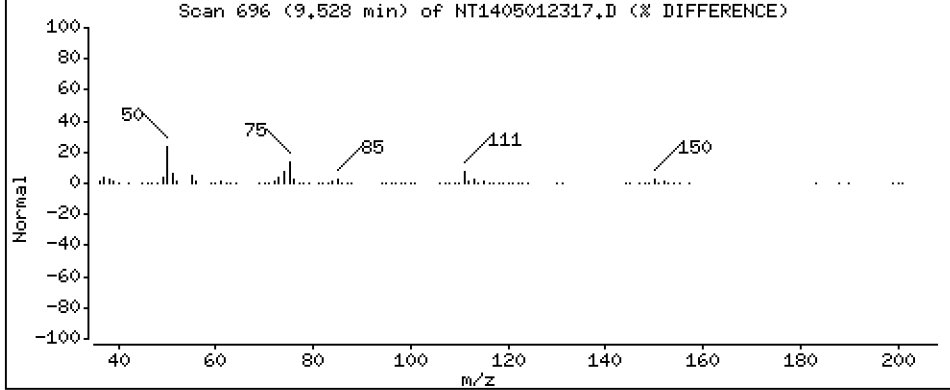
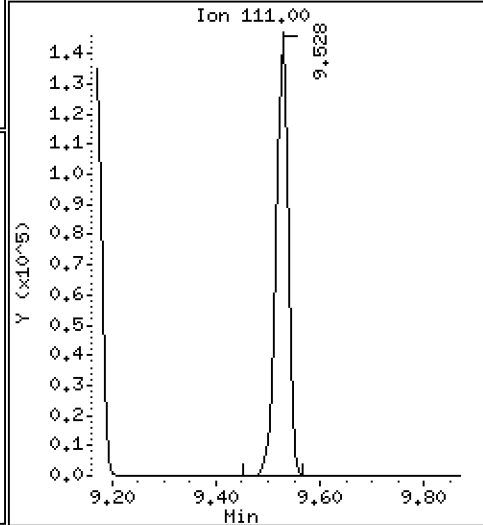
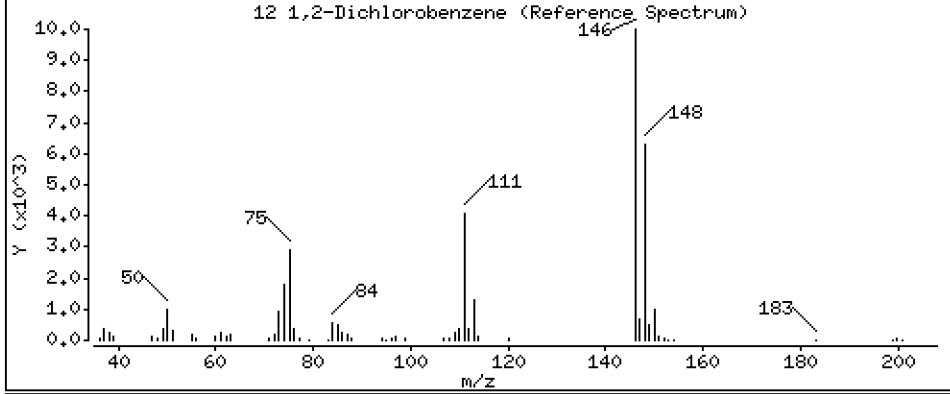
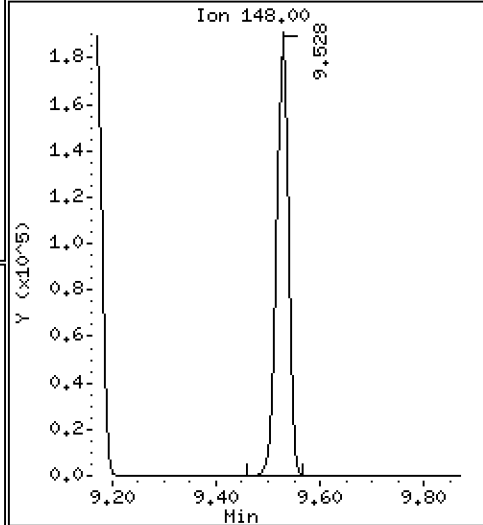
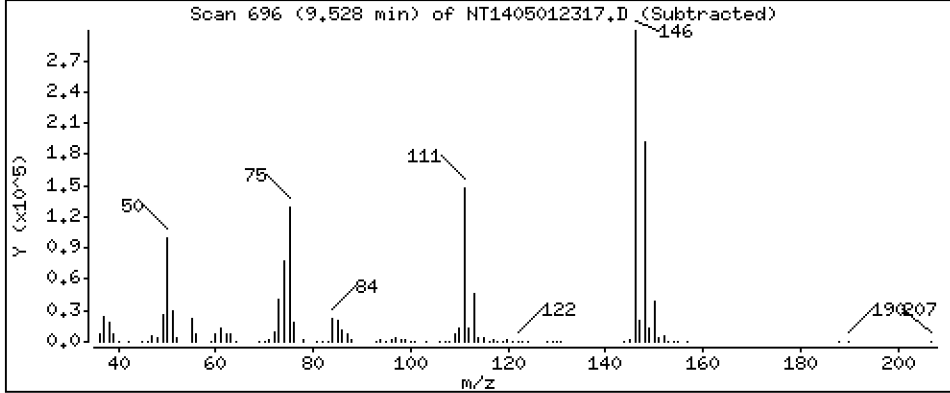
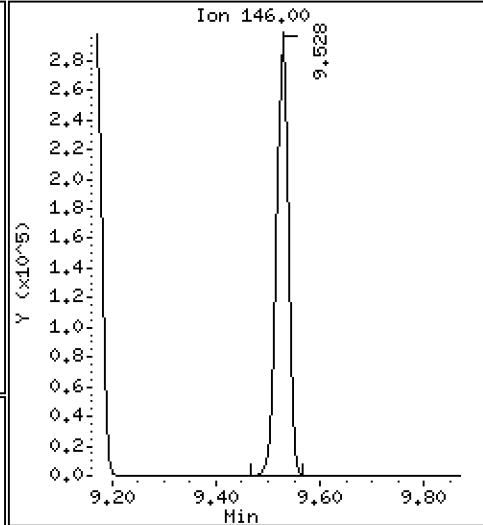
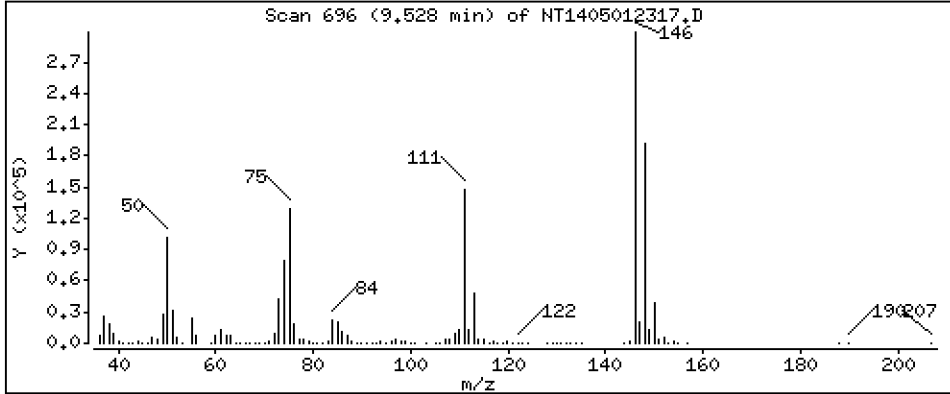
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.999 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

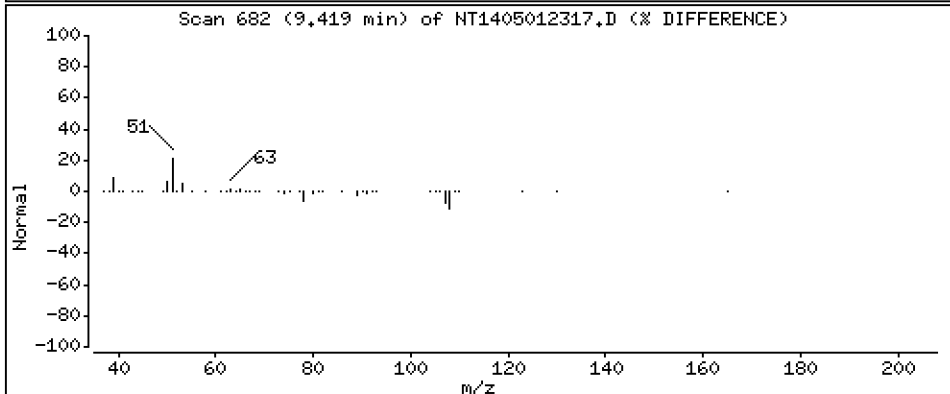
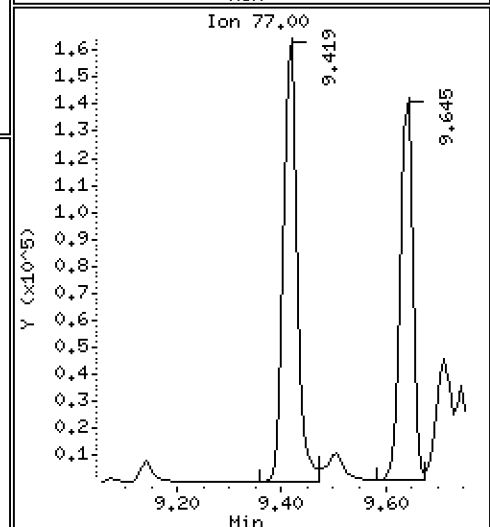
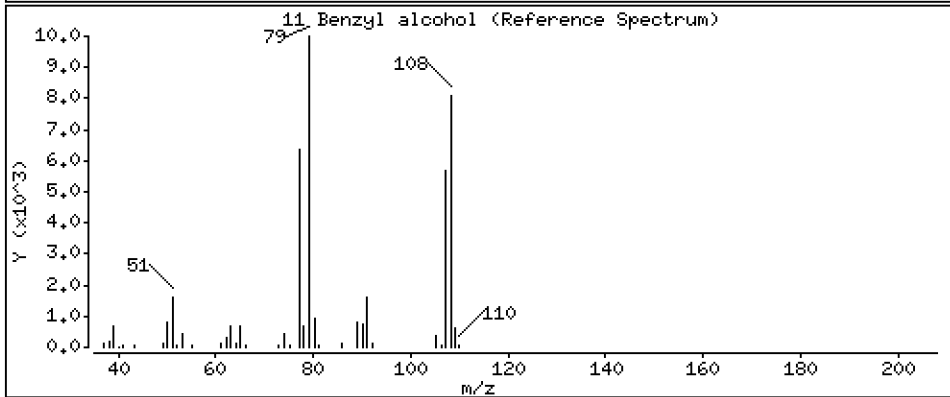
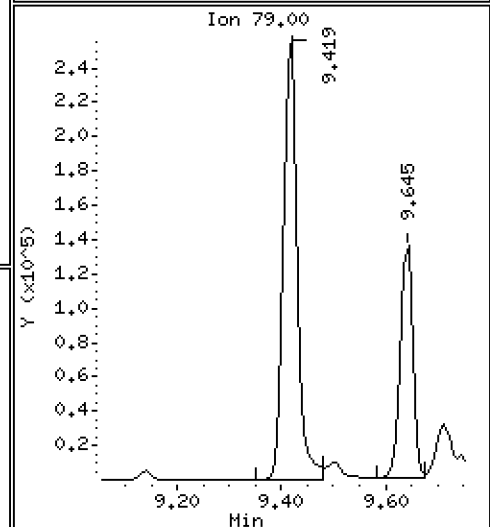
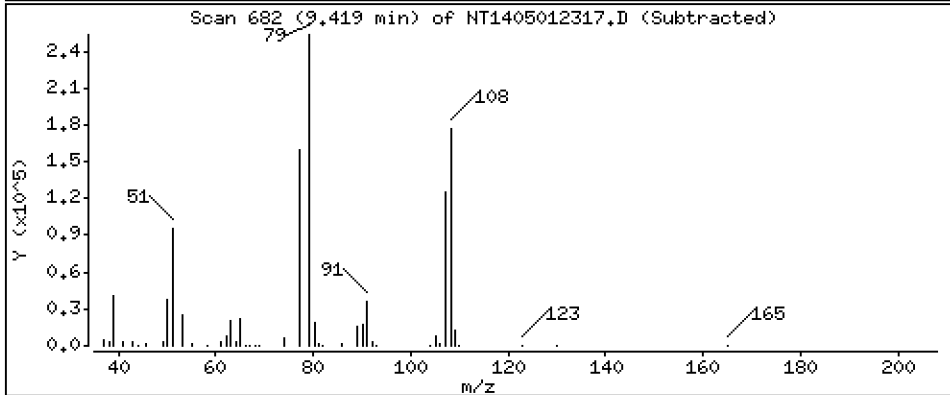
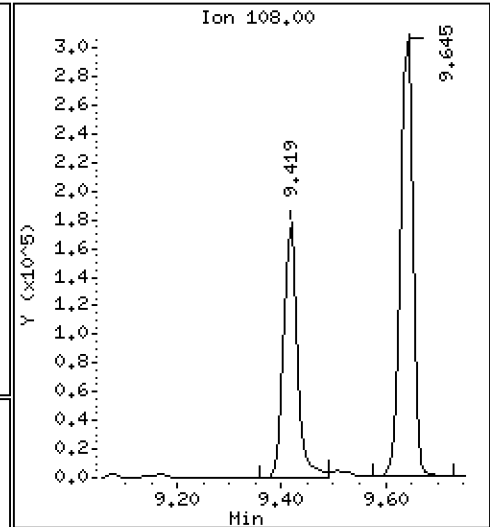
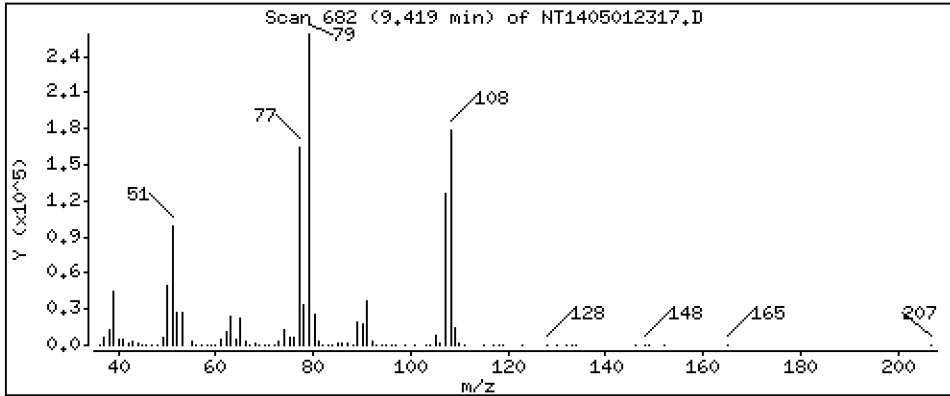
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 5,194 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

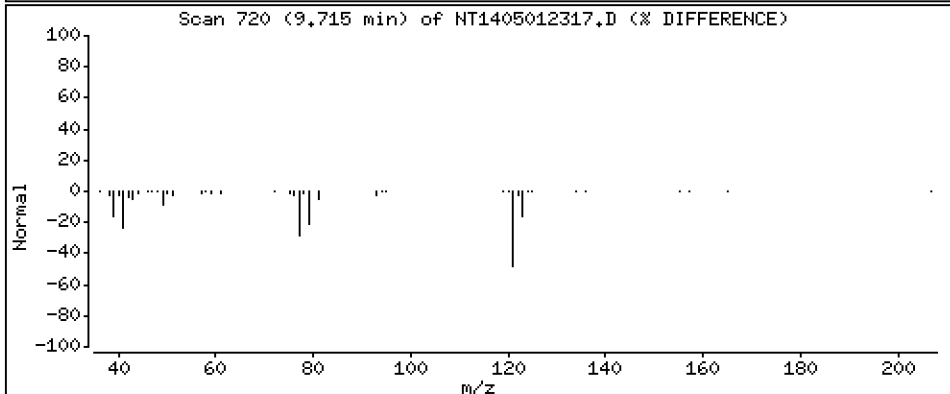
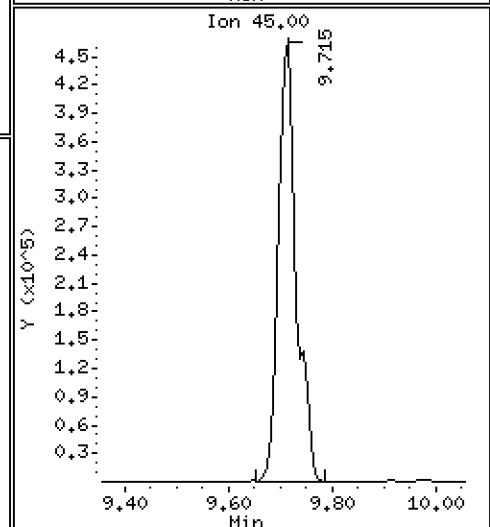
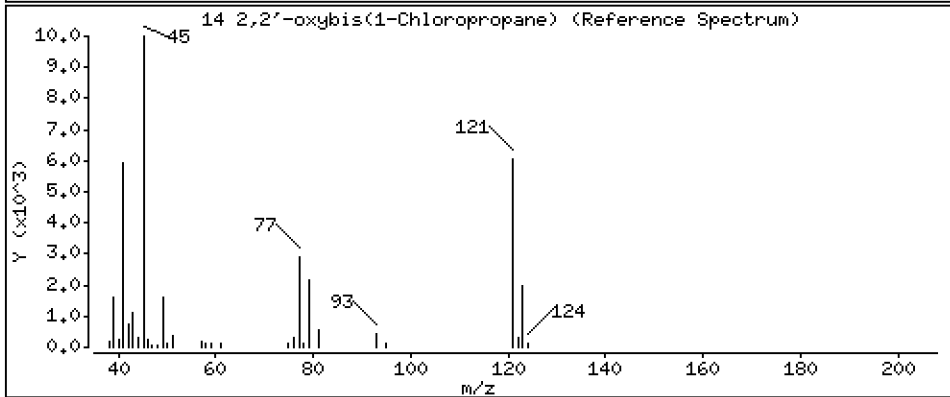
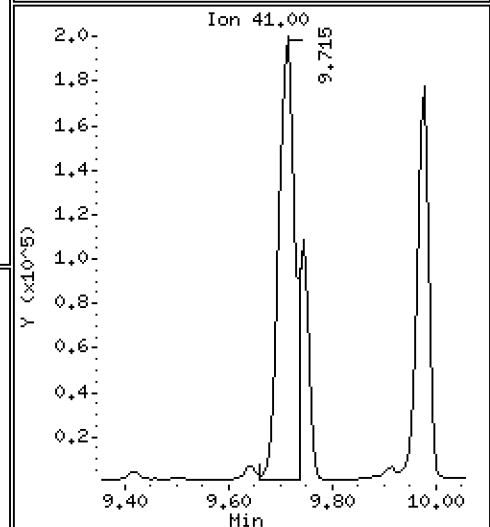
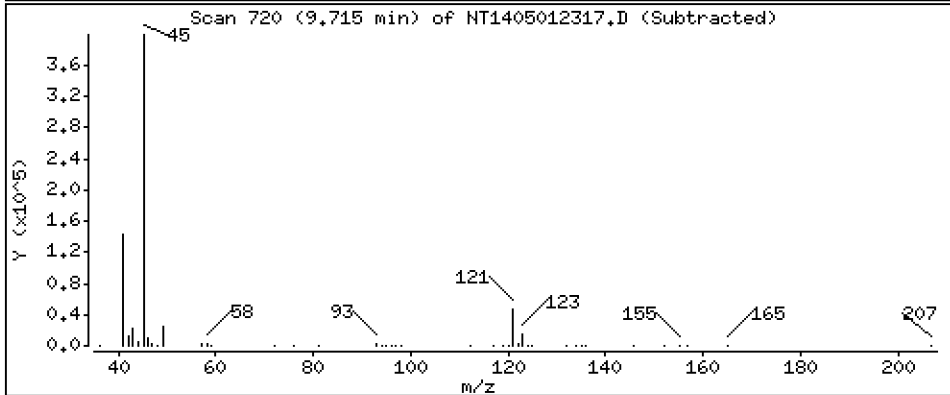
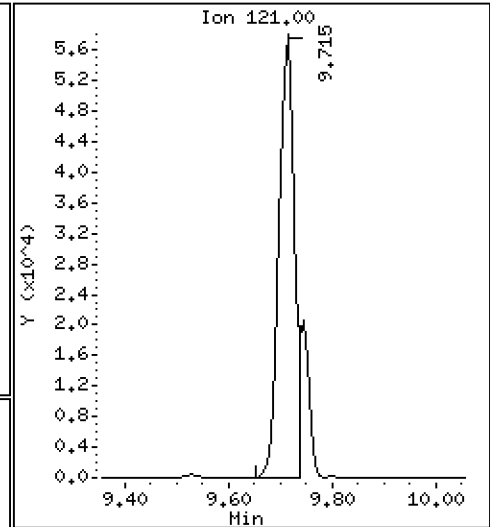
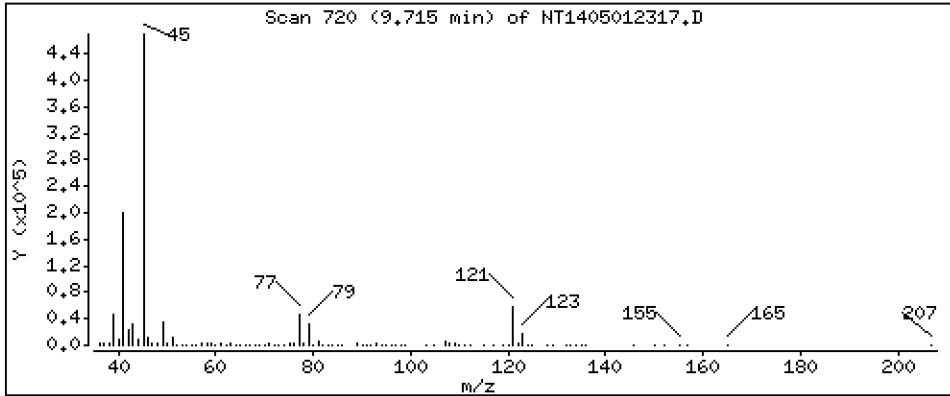
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 3,950 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

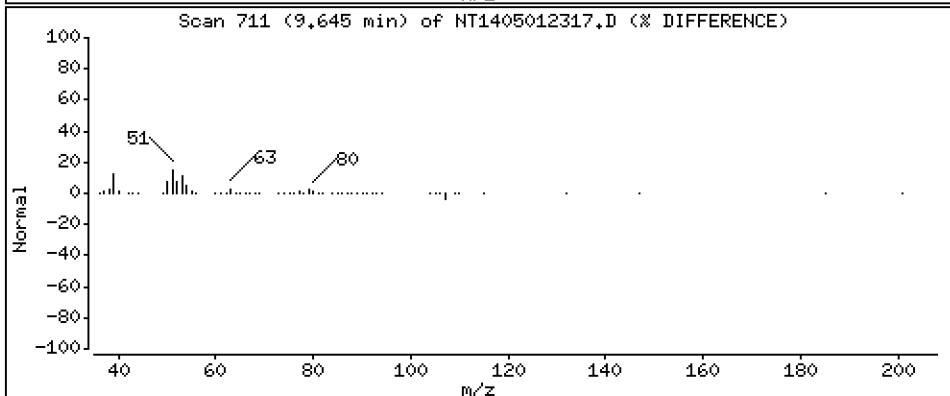
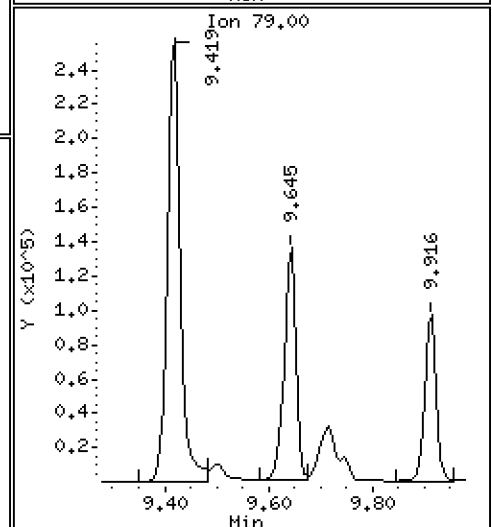
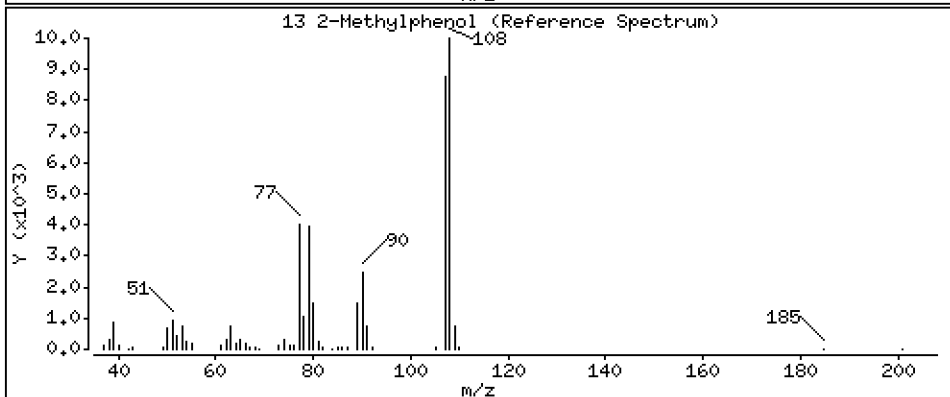
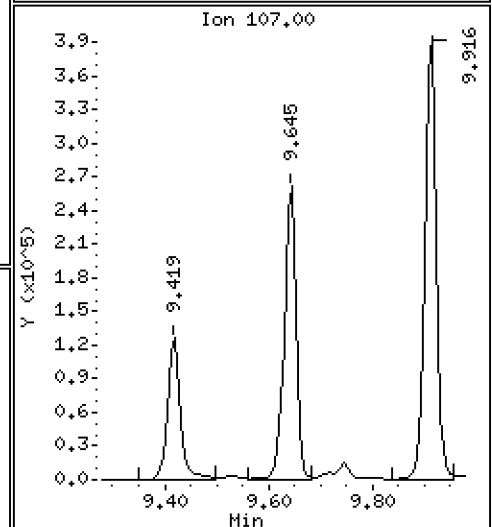
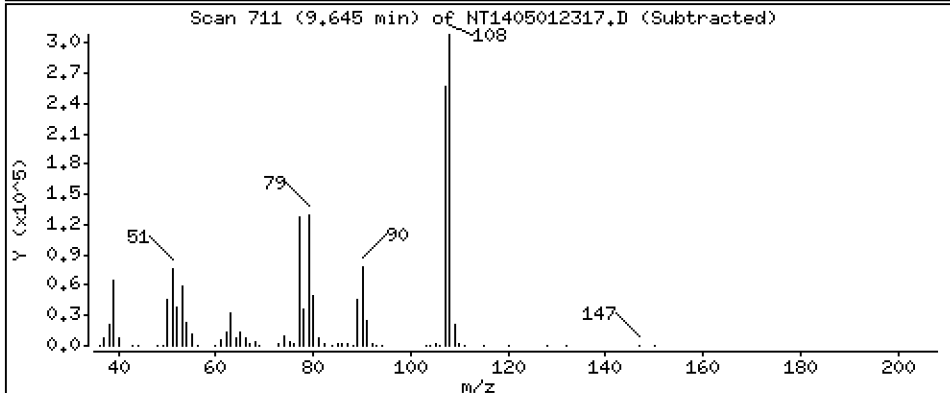
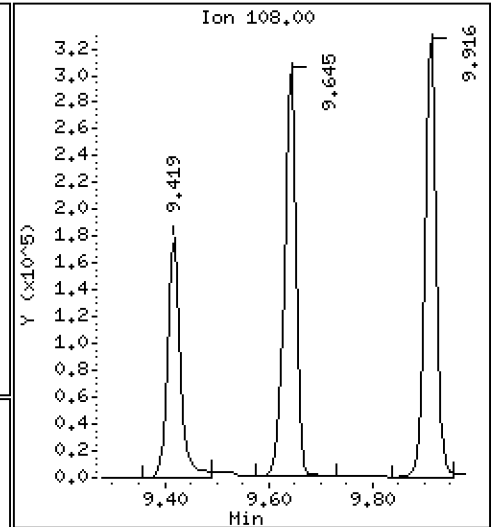
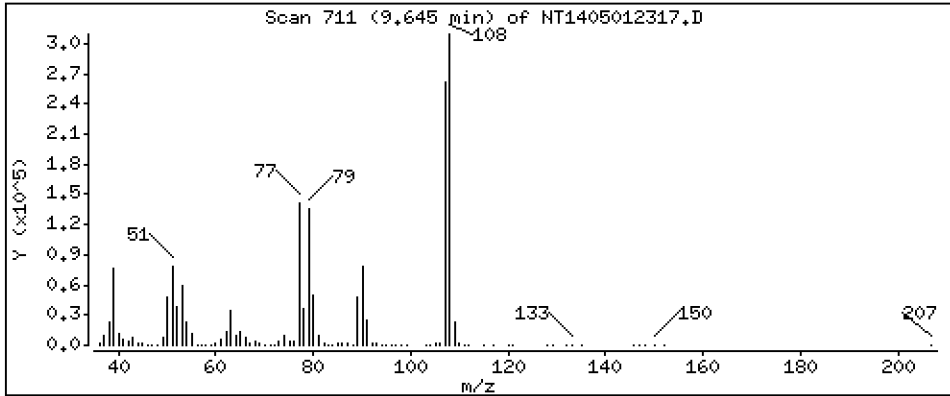
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 5.423 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

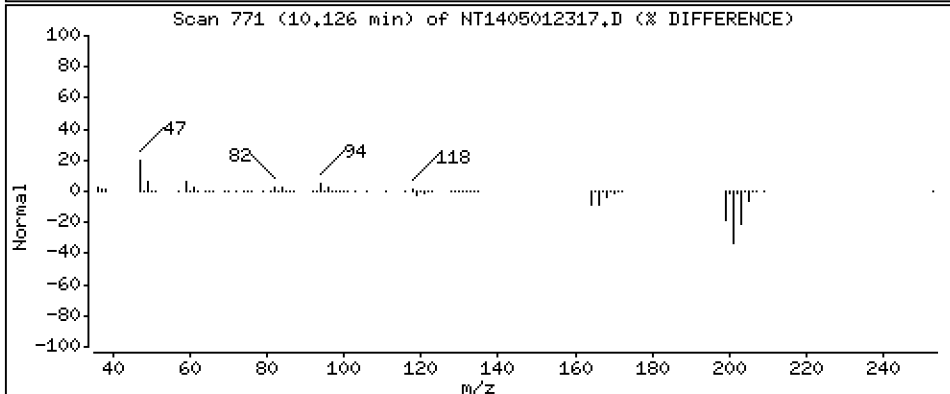
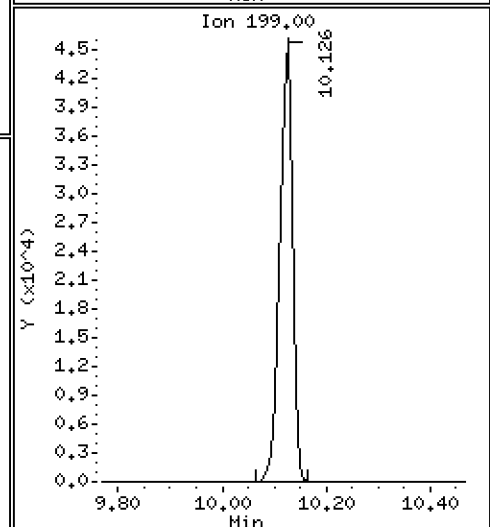
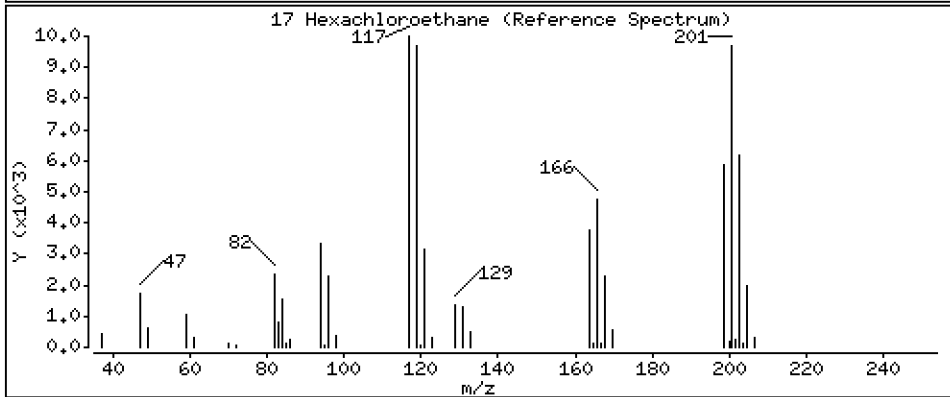
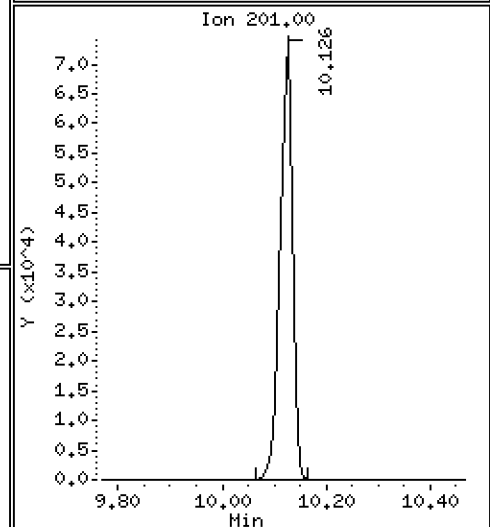
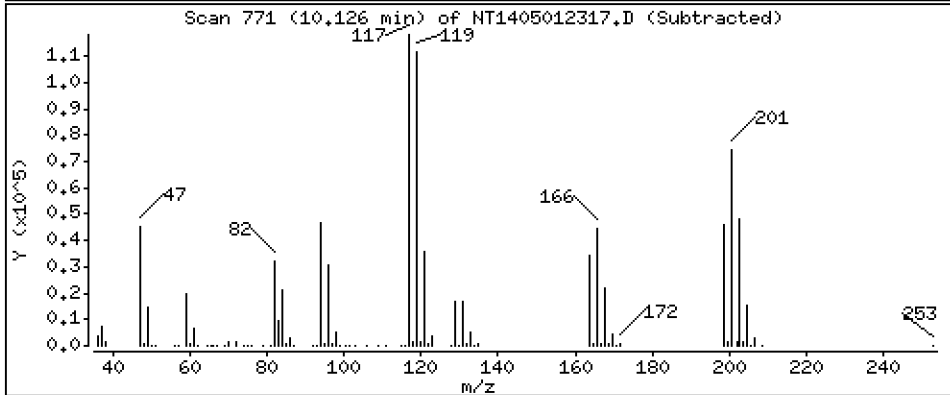
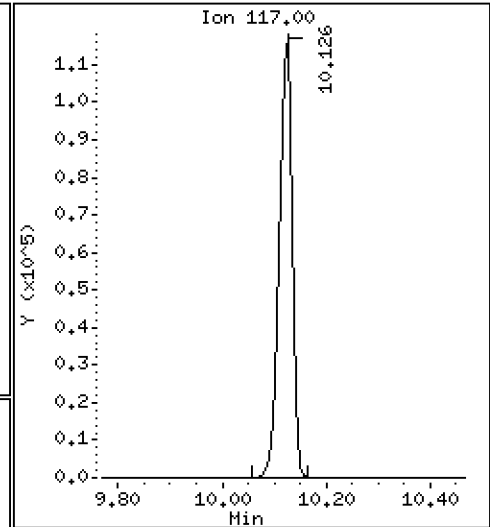
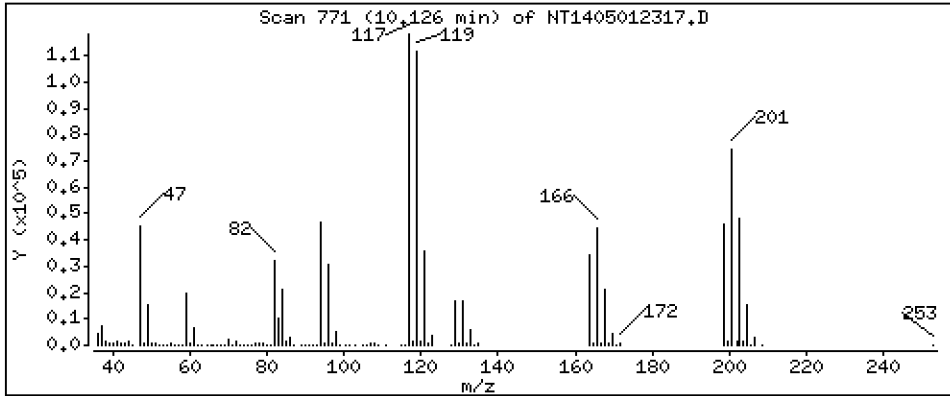
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 4,582 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

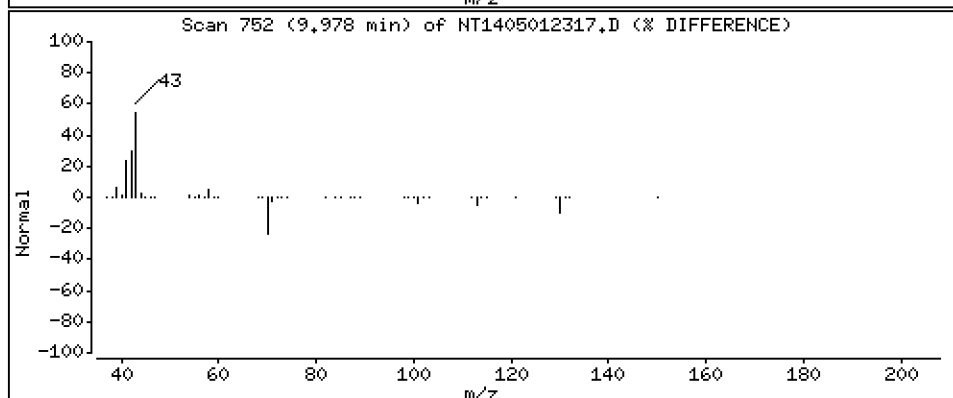
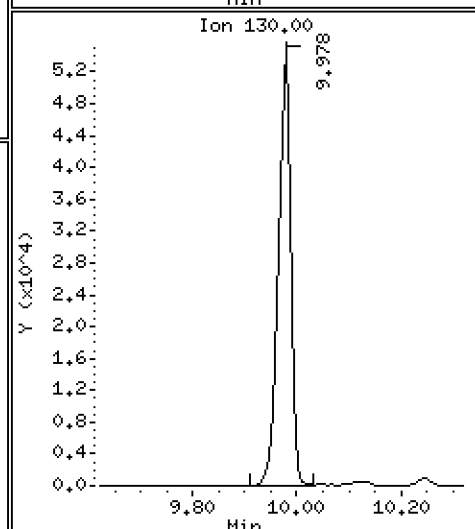
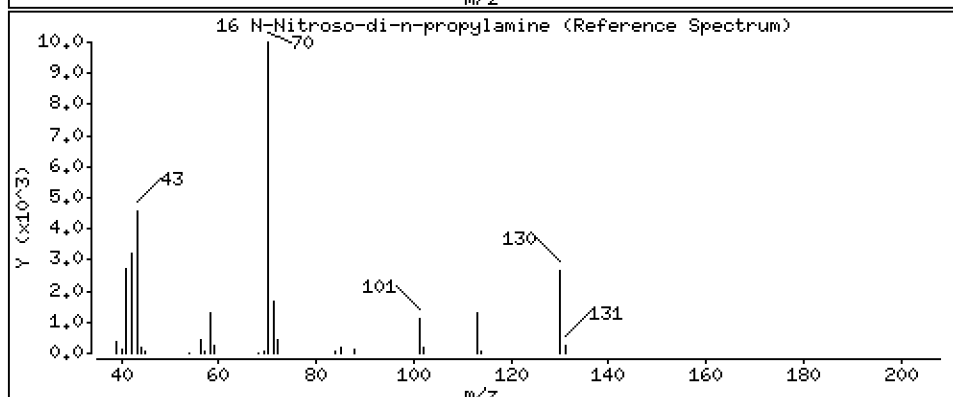
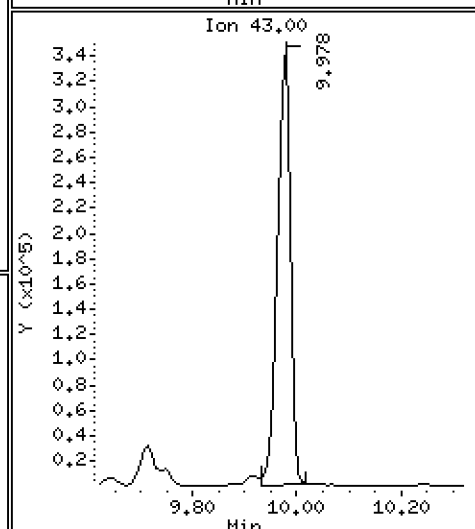
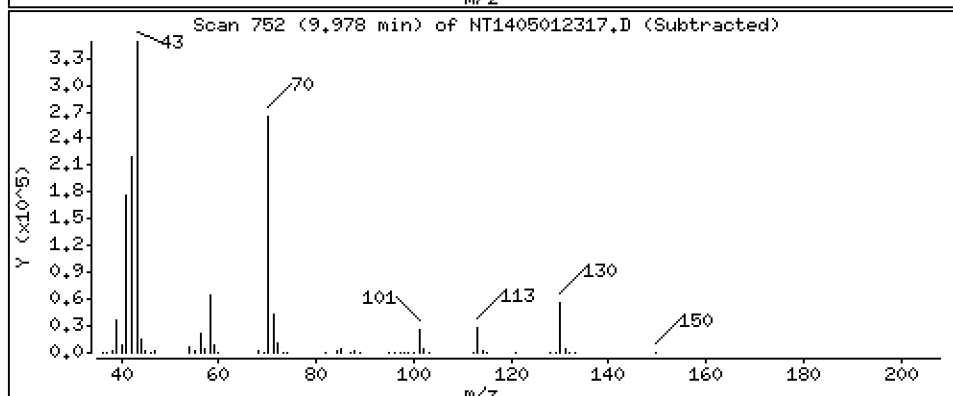
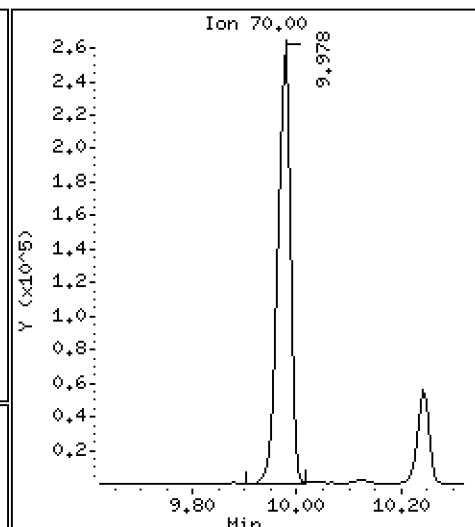
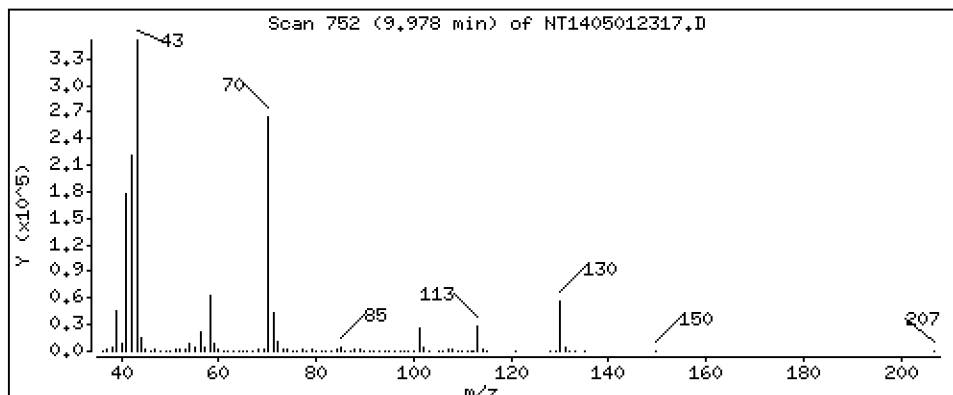
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 4,726 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

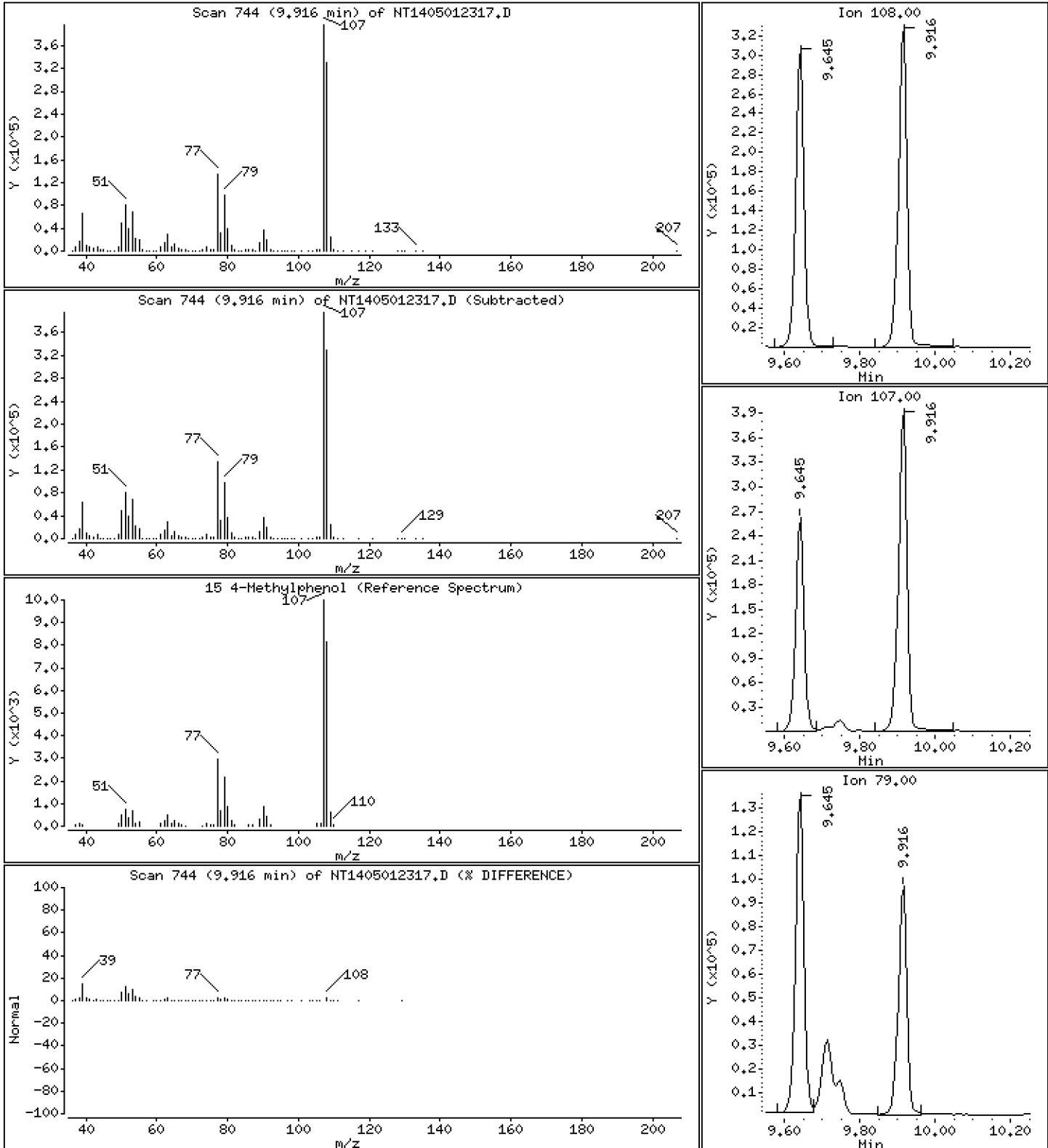
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 5,135 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

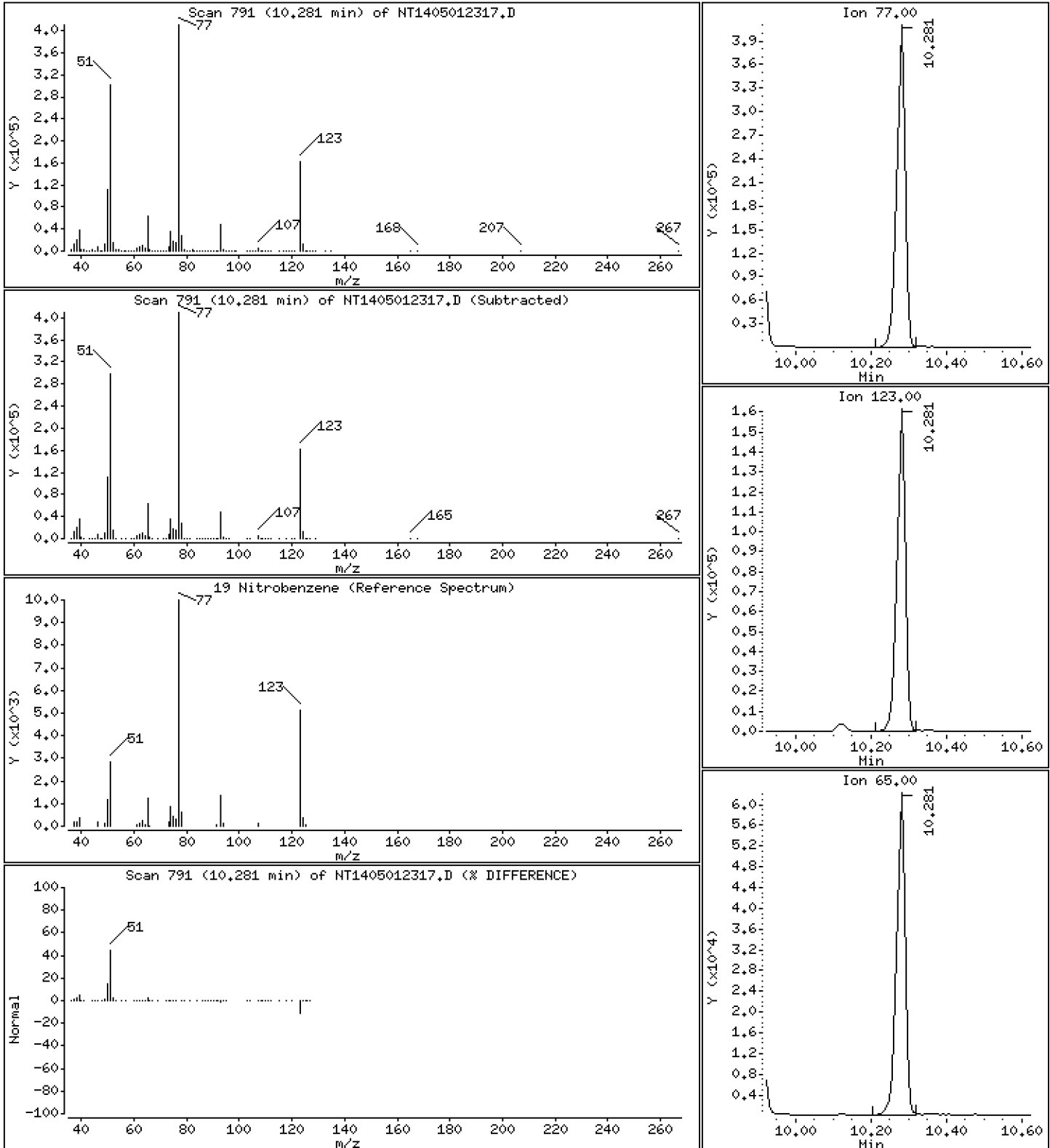
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 5,004 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

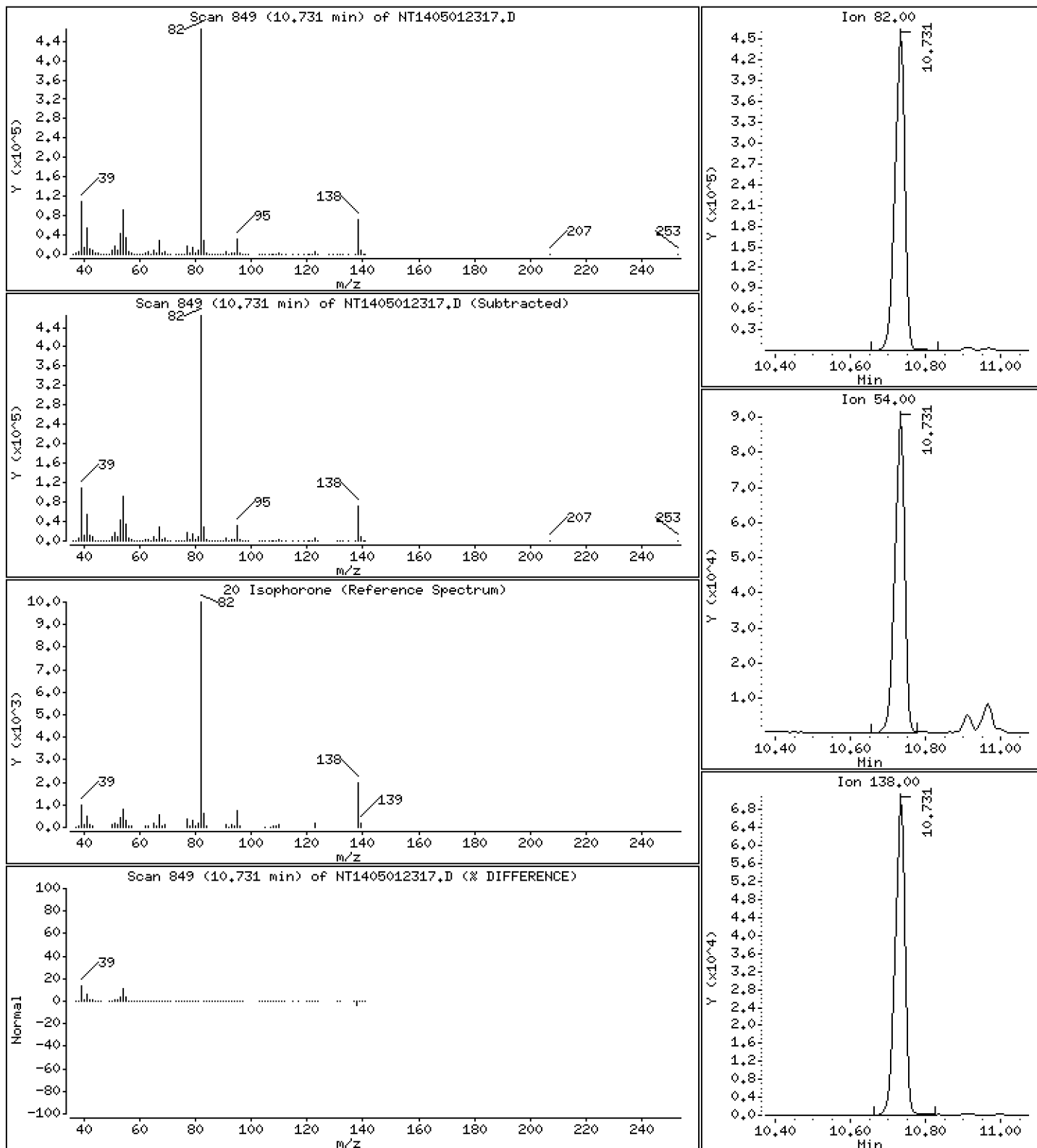
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 5,314 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

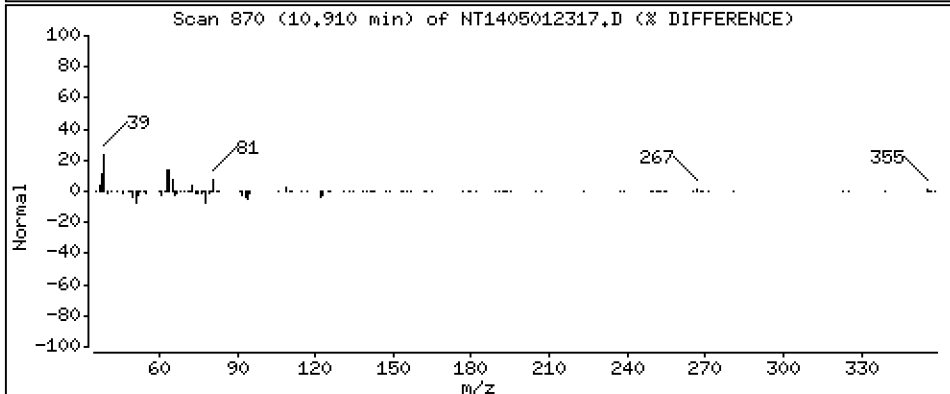
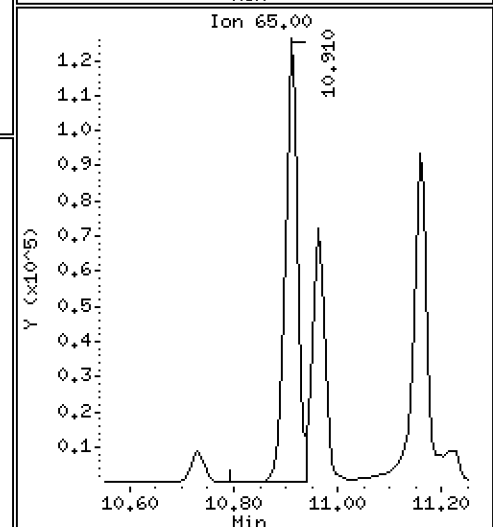
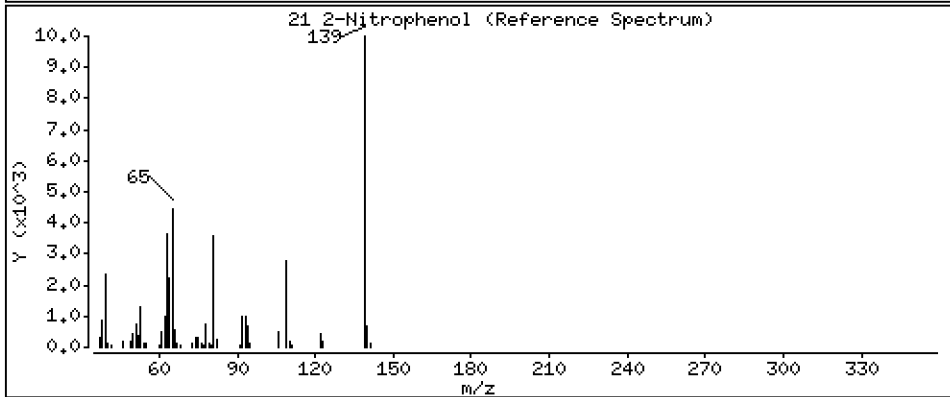
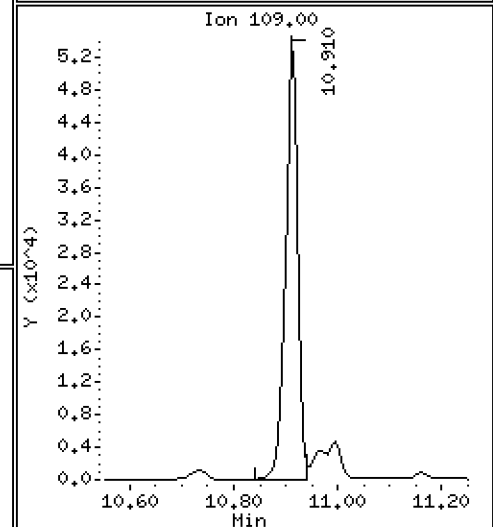
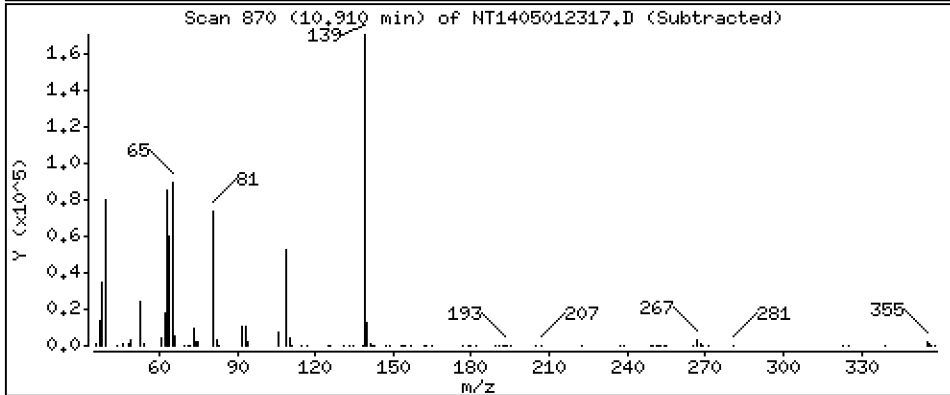
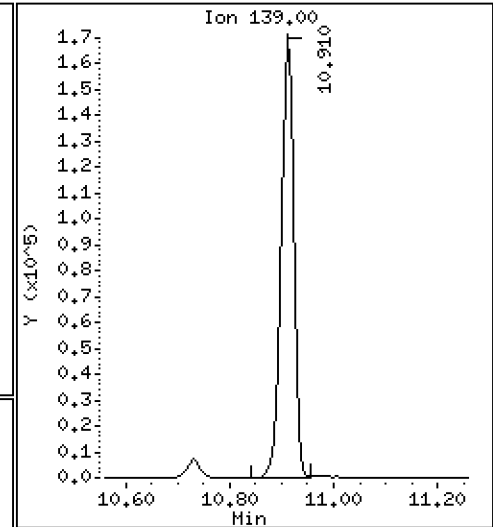
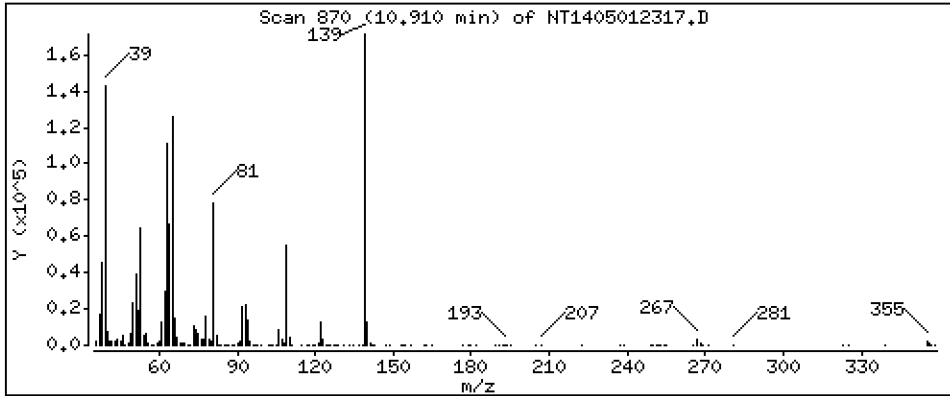
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 4,654 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

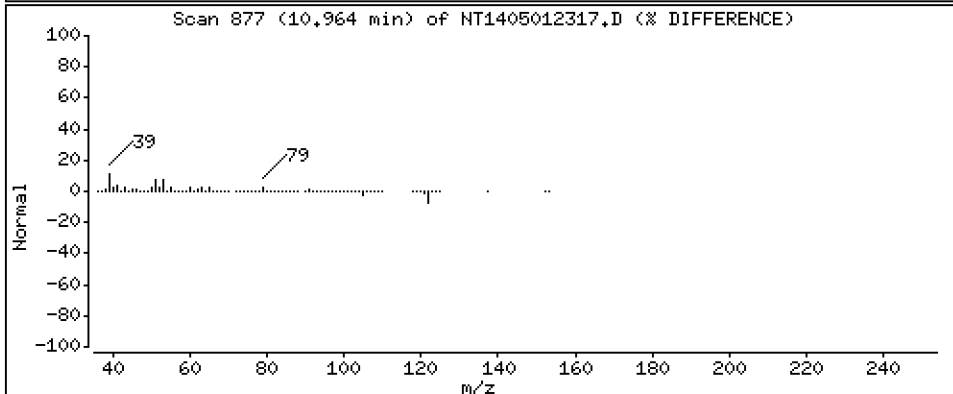
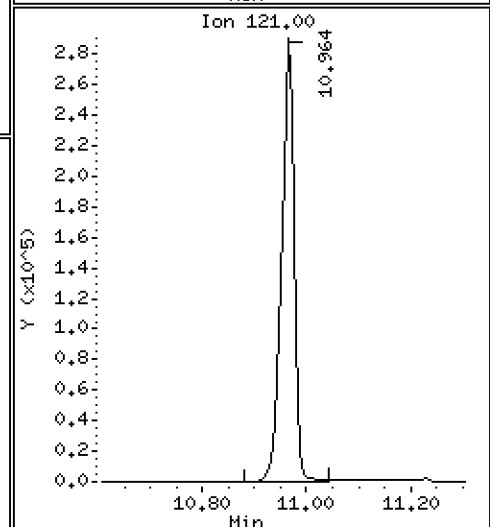
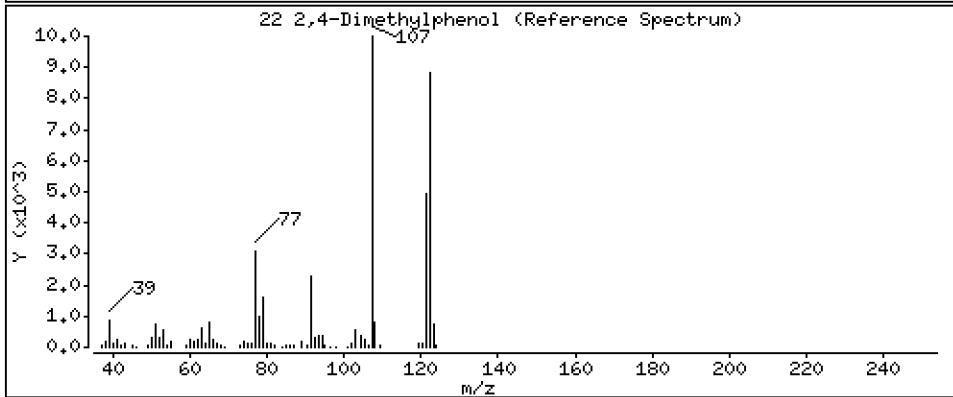
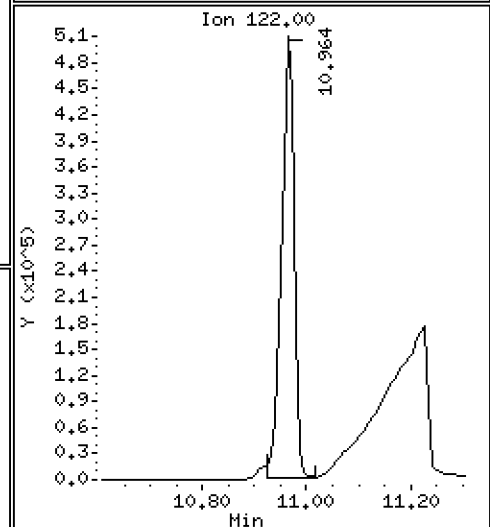
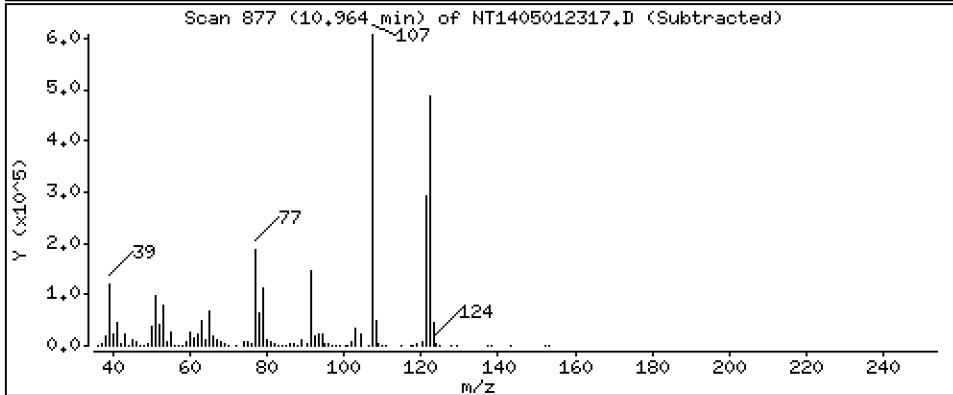
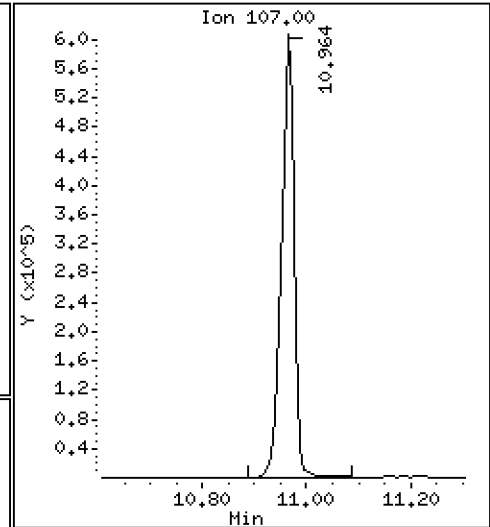
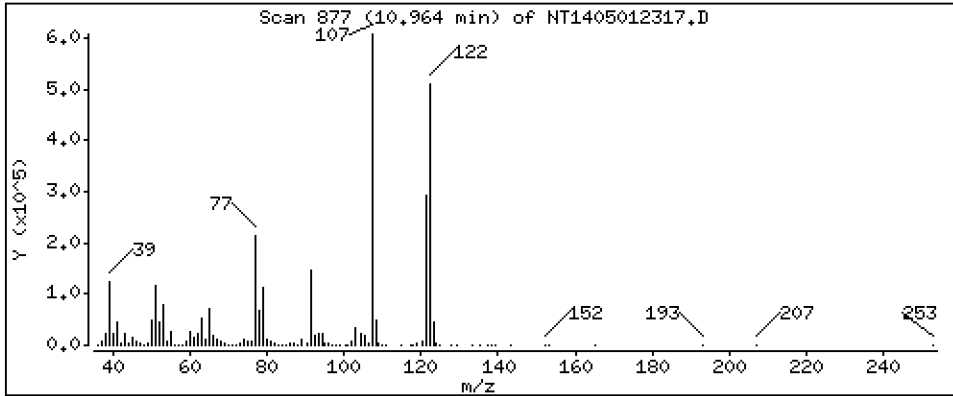
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 10,91 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

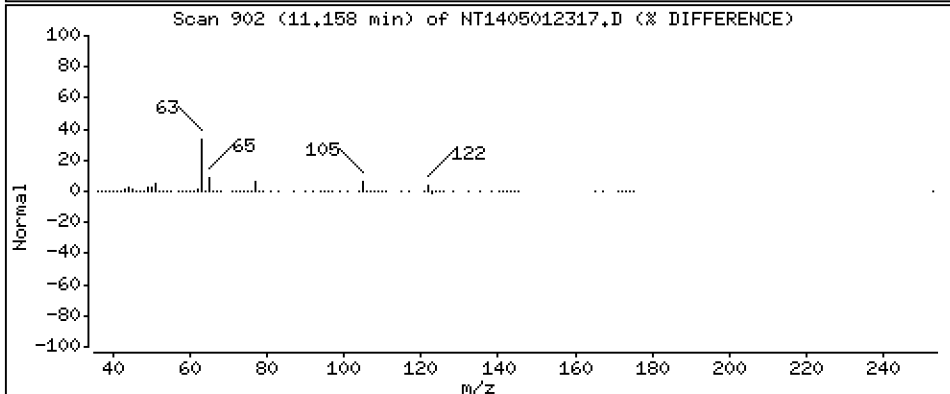
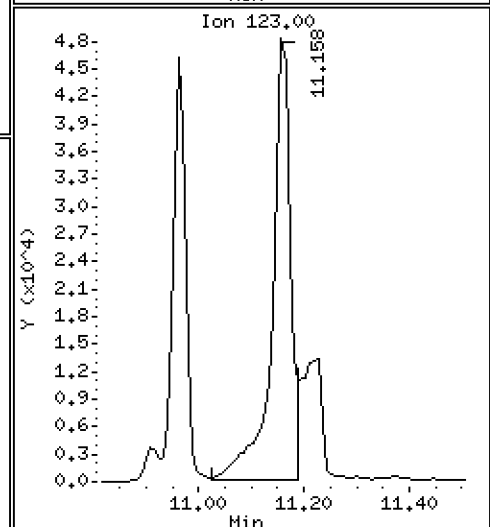
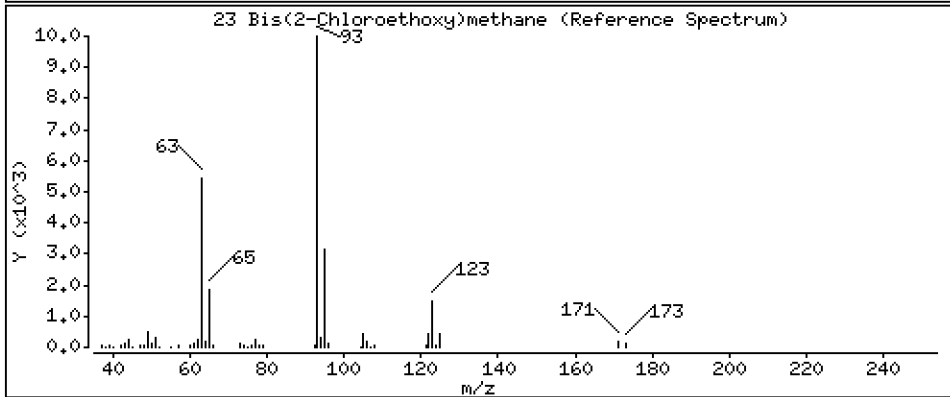
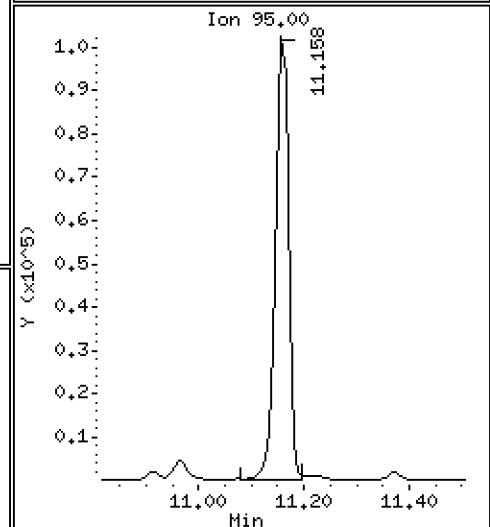
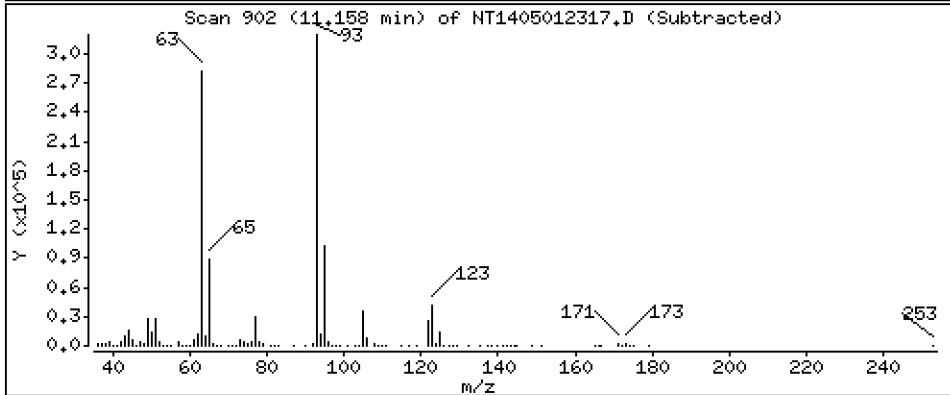
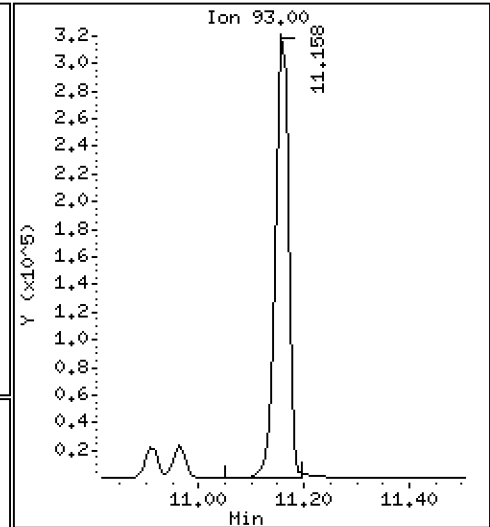
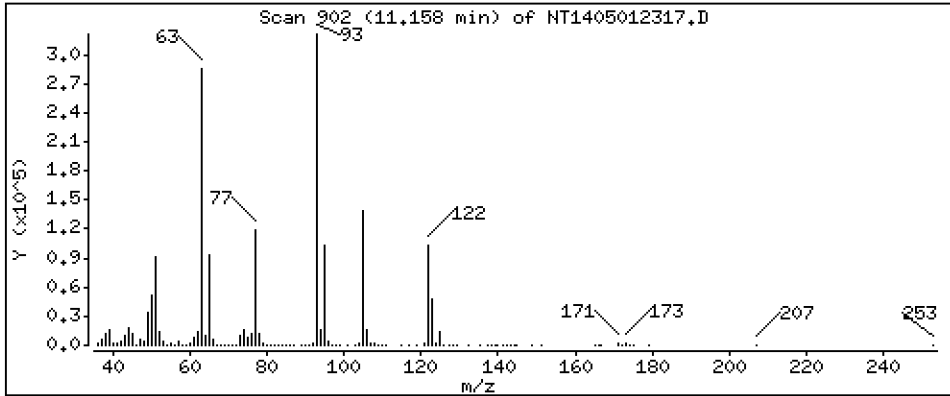
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

23 Bis(2-Chloroethoxy)methane

Concentration: 4.874 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

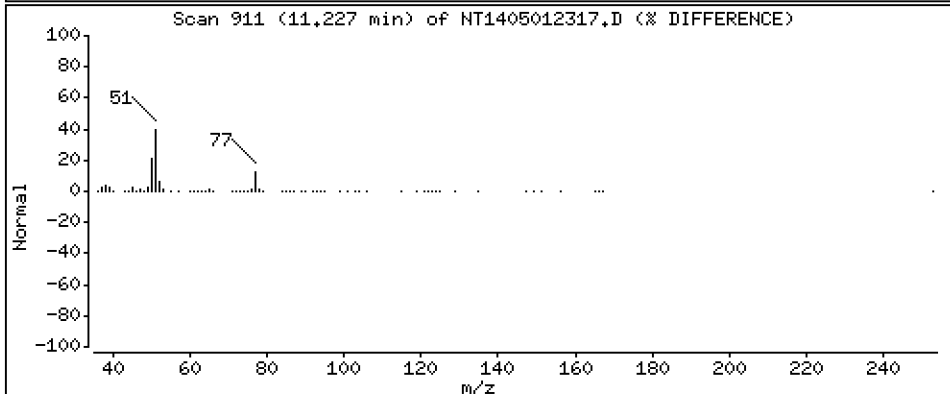
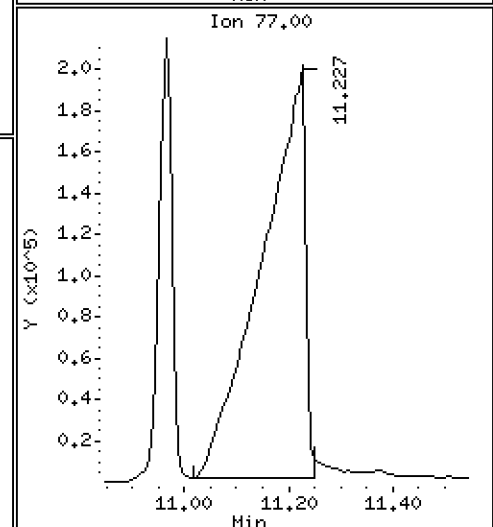
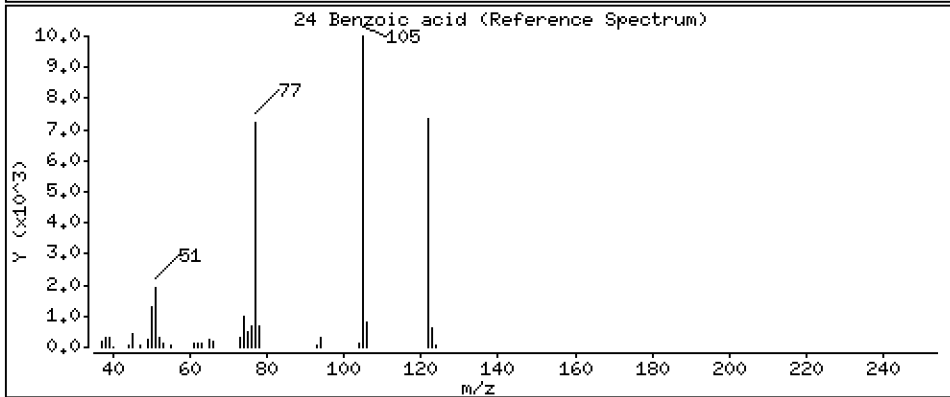
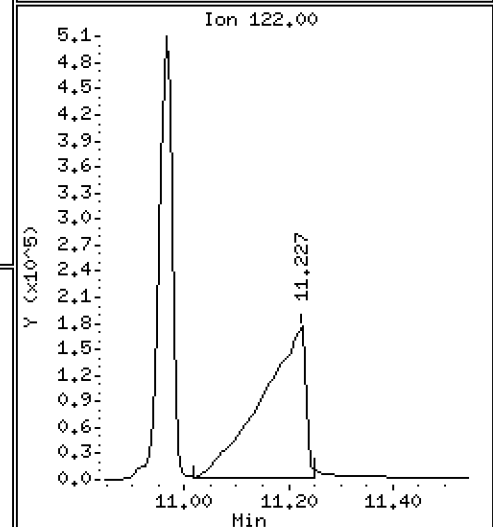
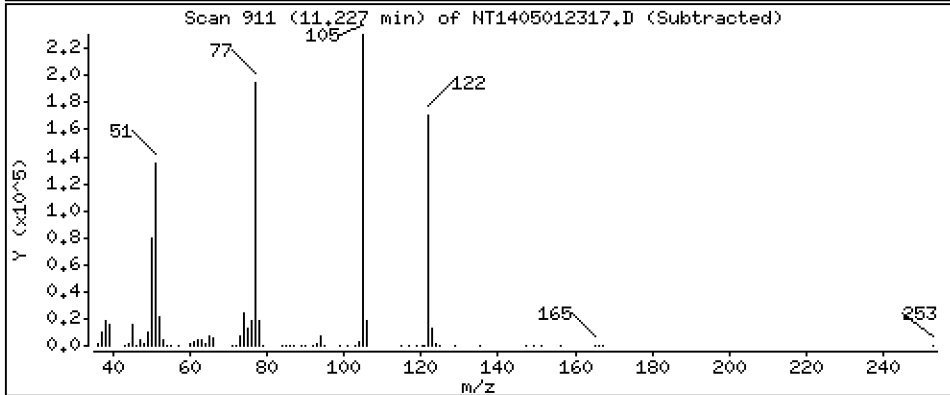
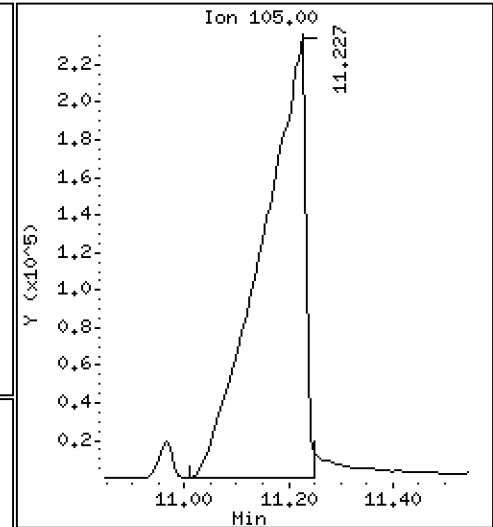
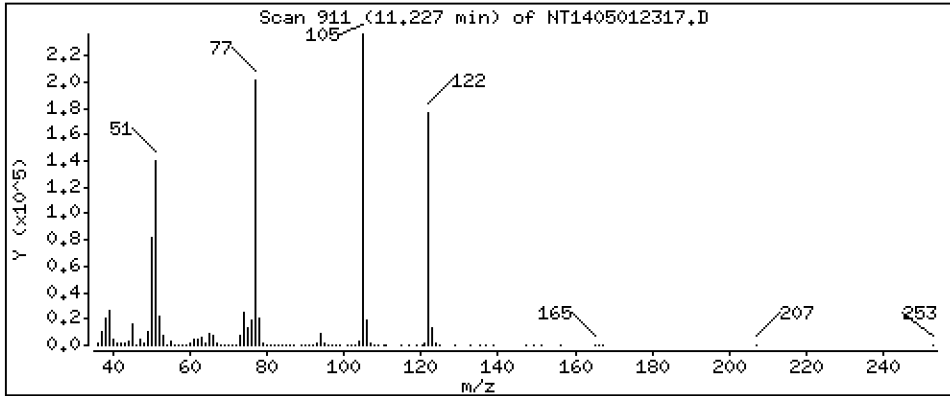
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 17,91 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

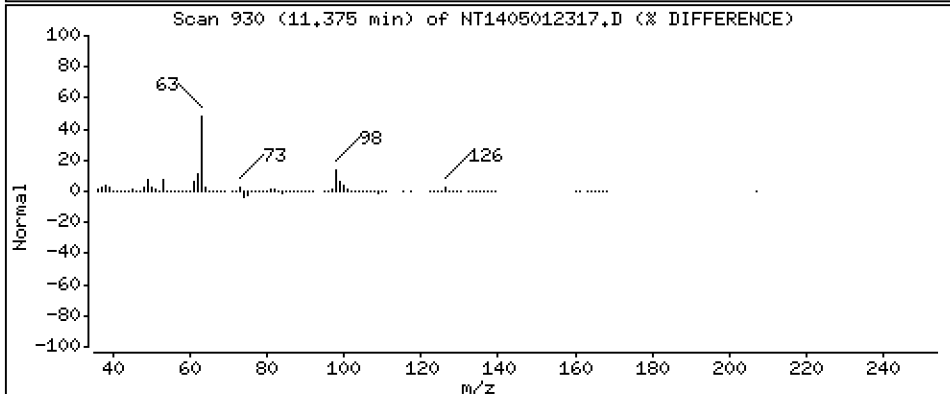
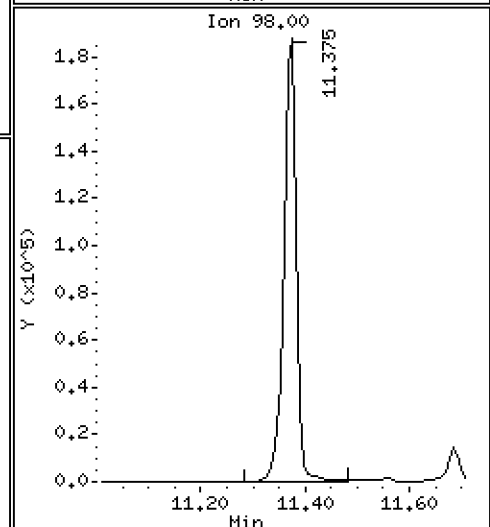
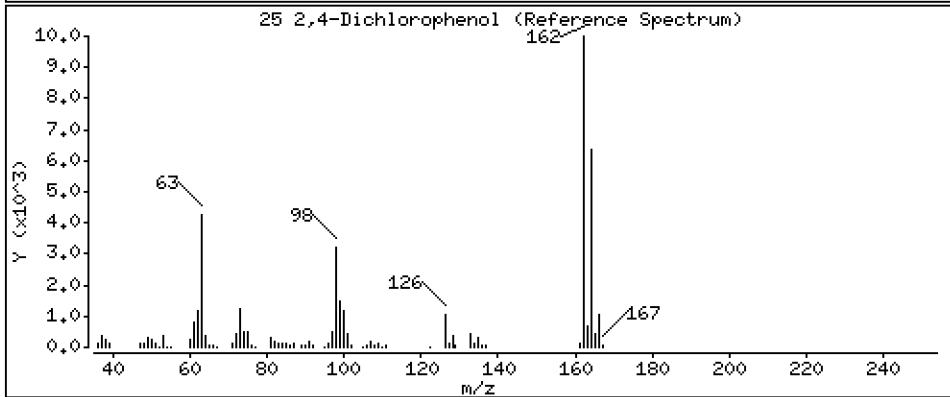
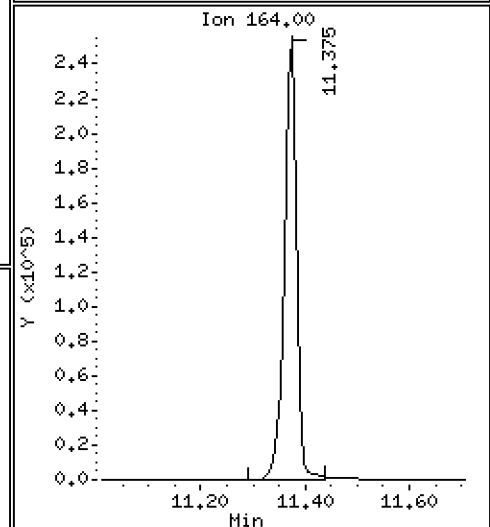
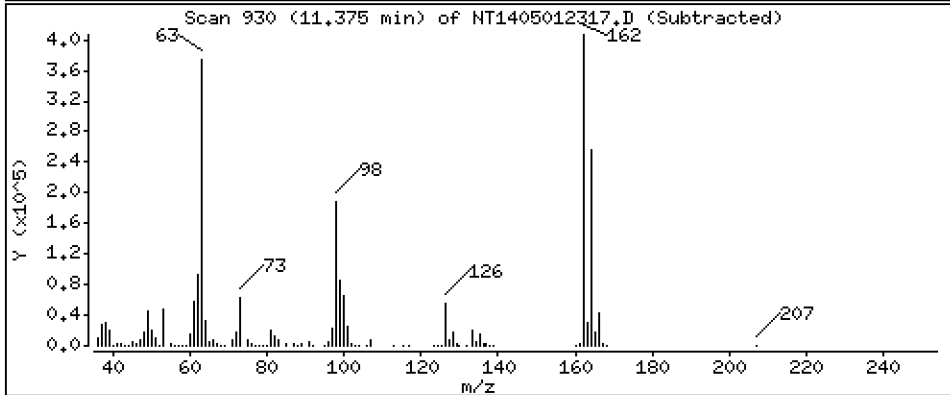
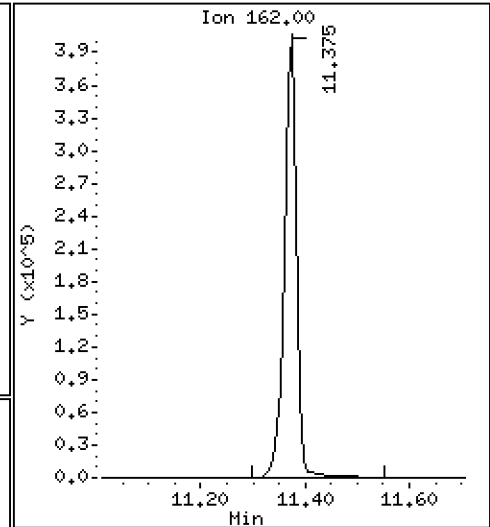
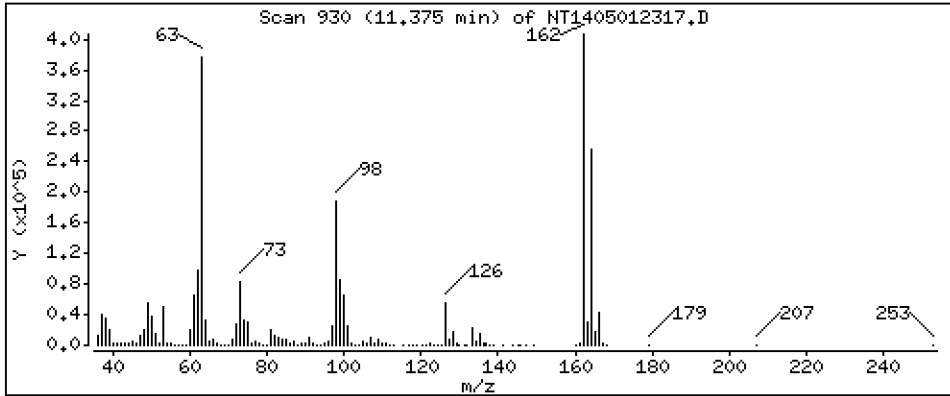
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 9,559 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

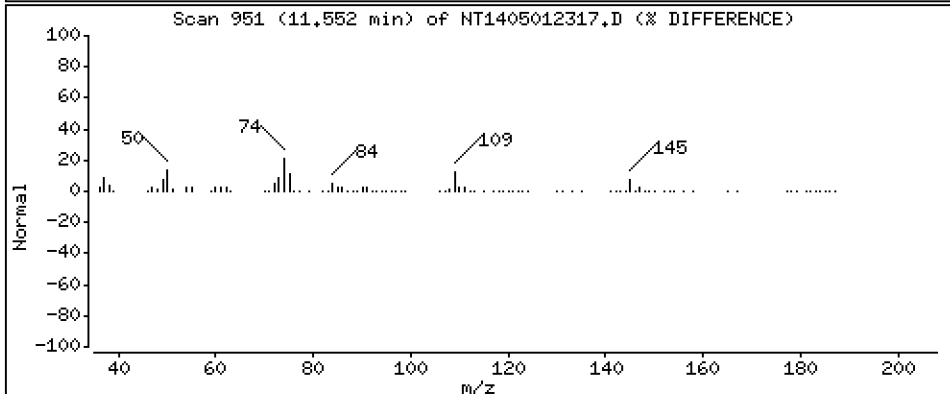
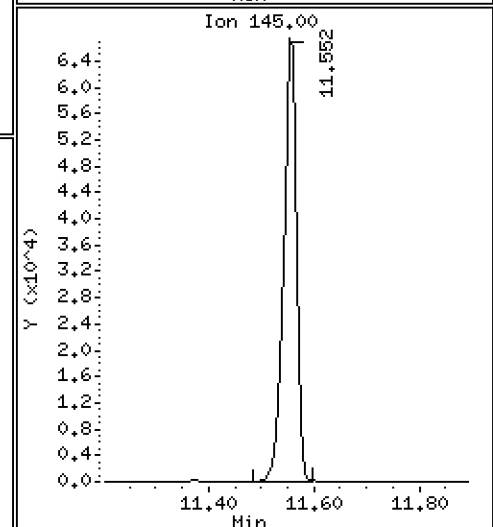
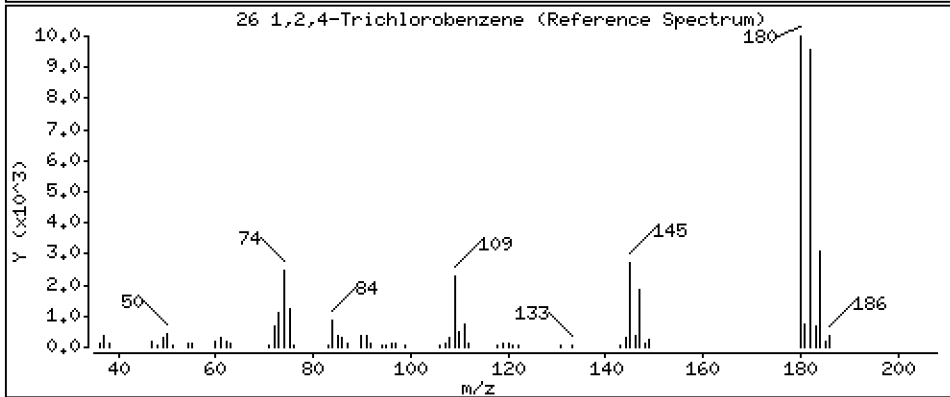
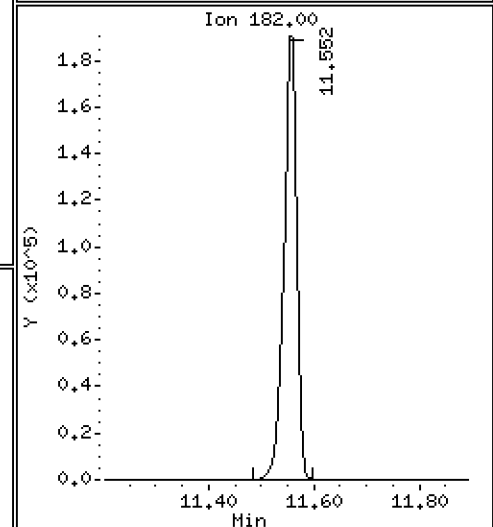
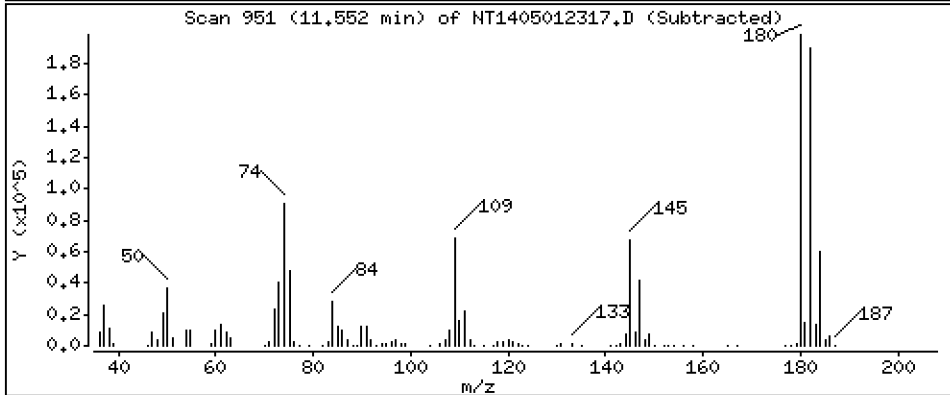
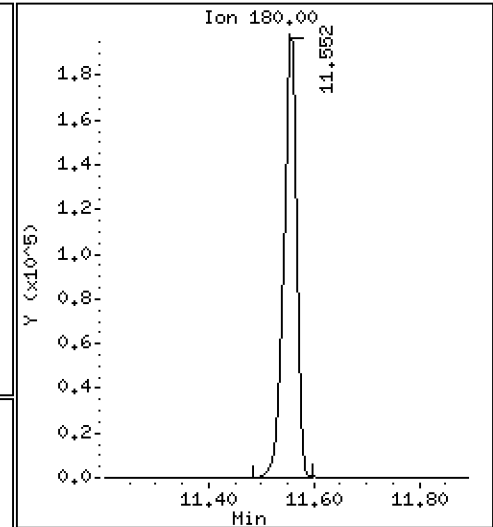
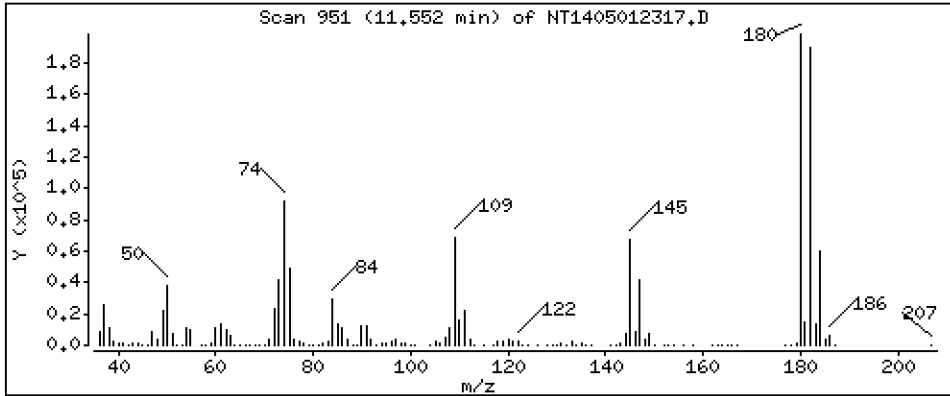
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,894 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

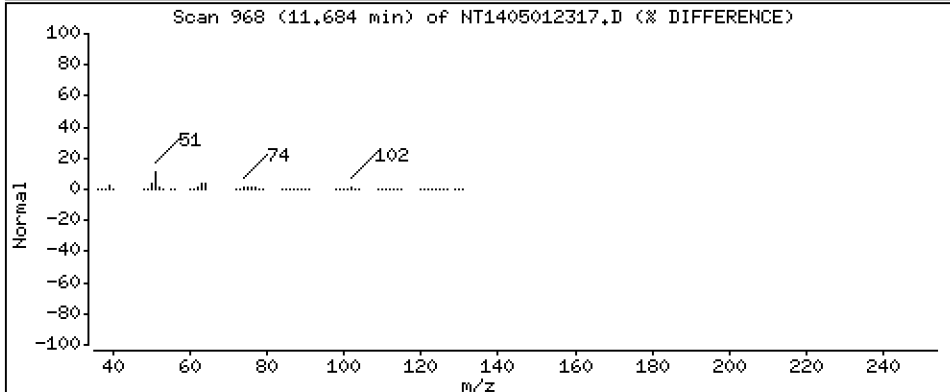
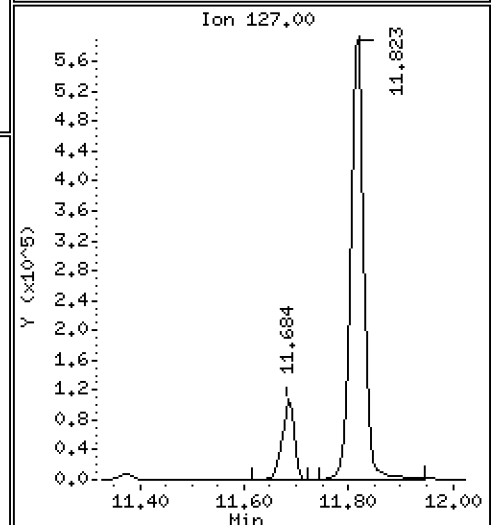
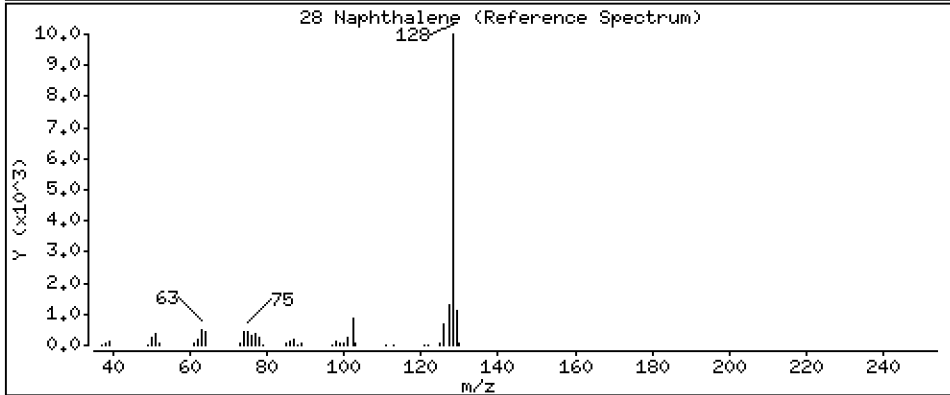
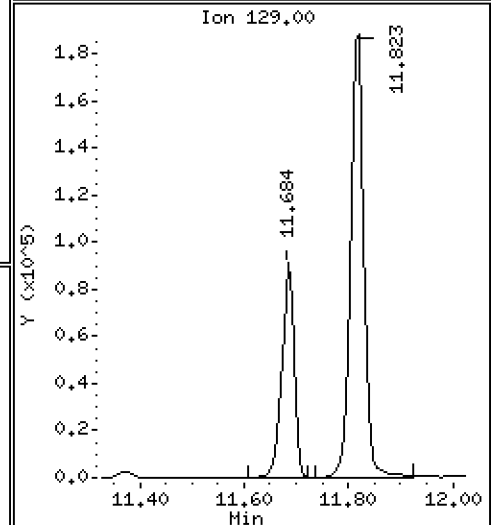
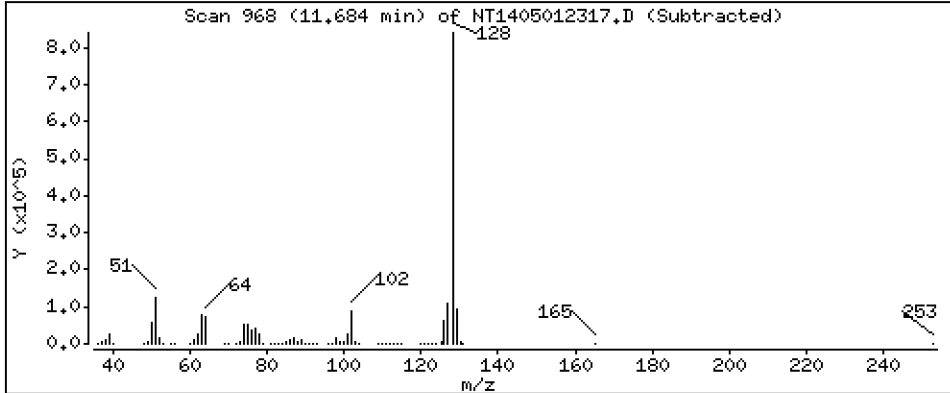
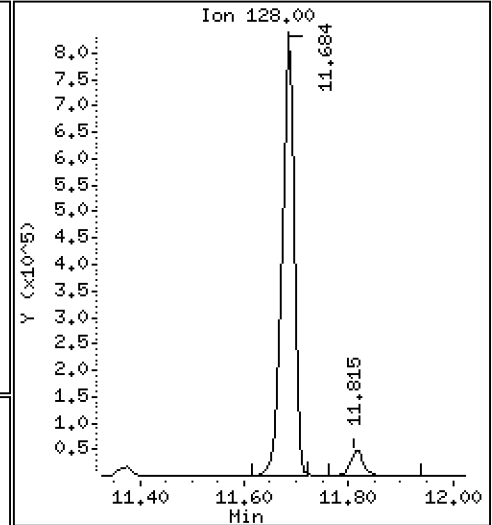
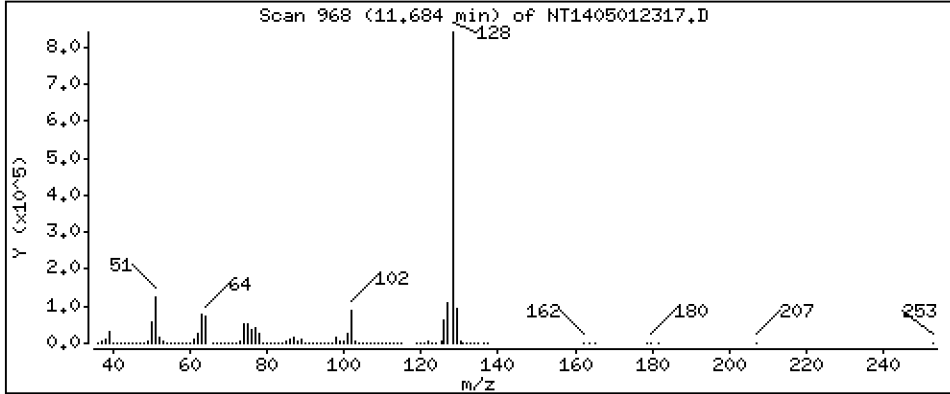
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

28 Naphthalene

Concentration: 5.266 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

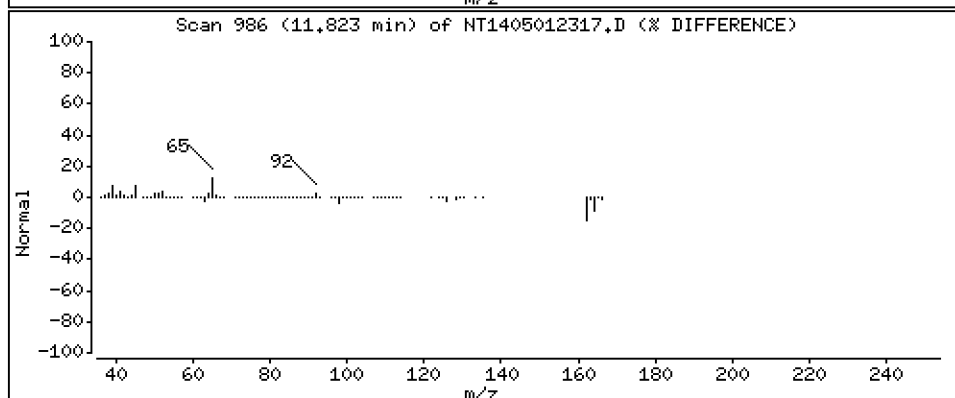
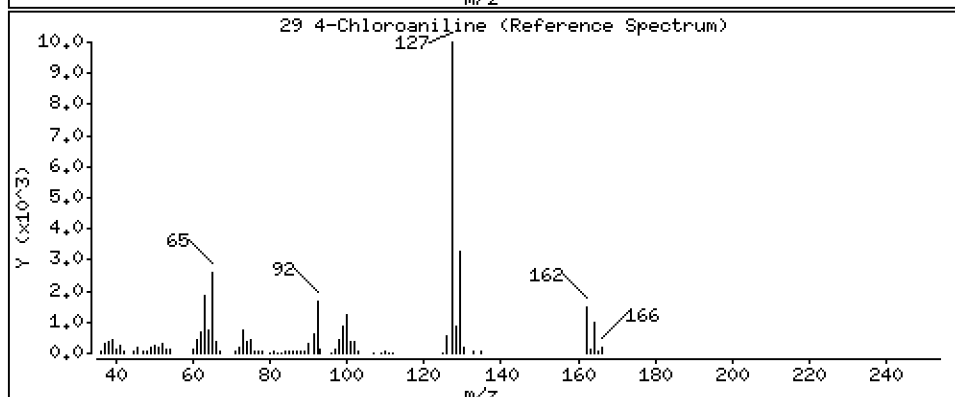
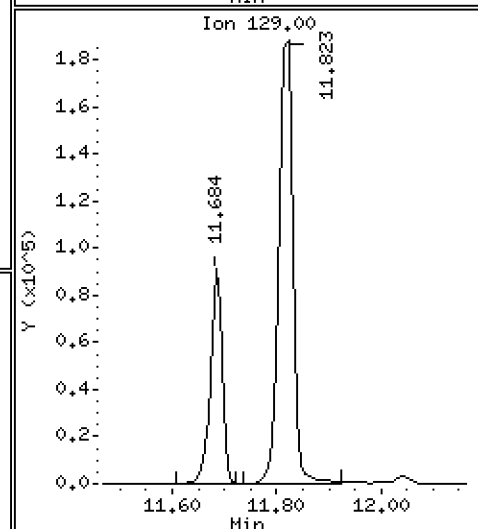
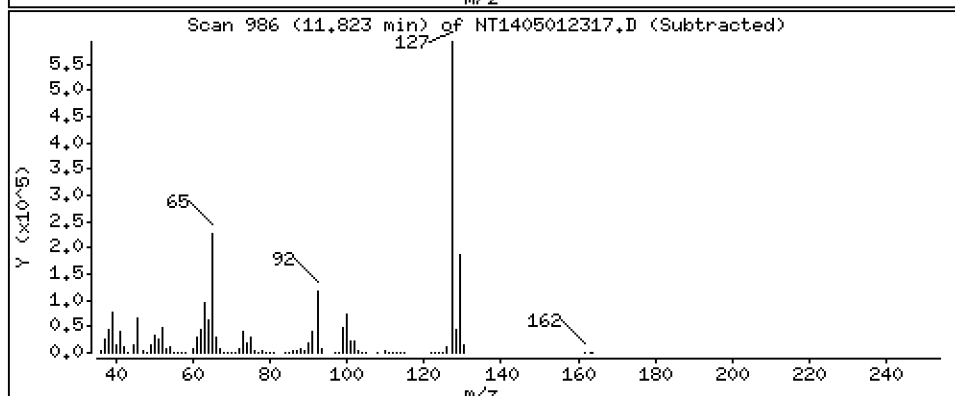
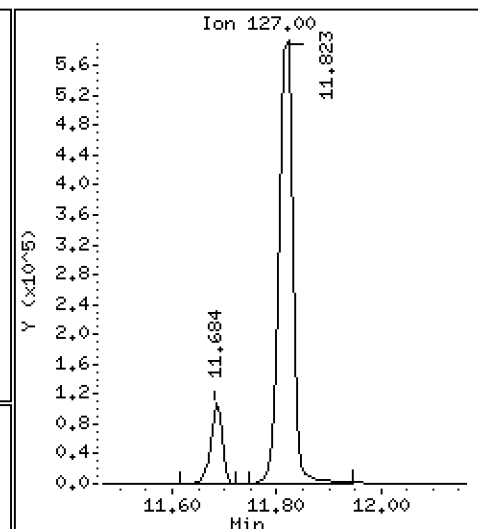
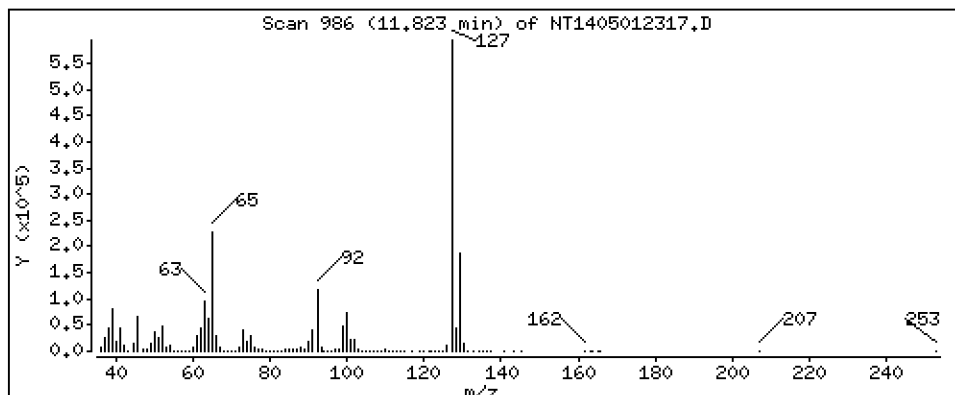
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 10,40 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

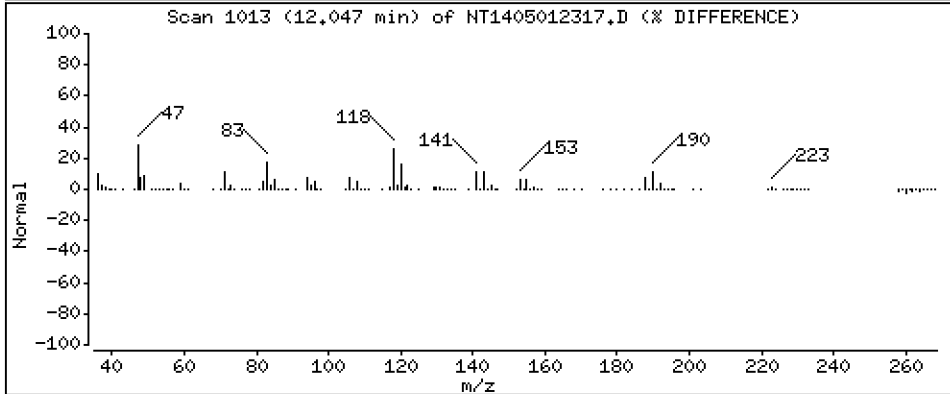
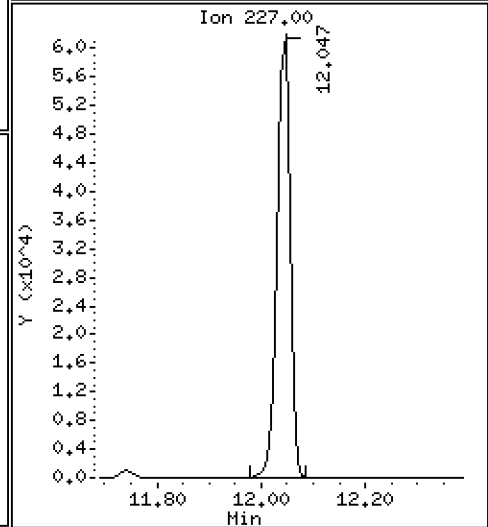
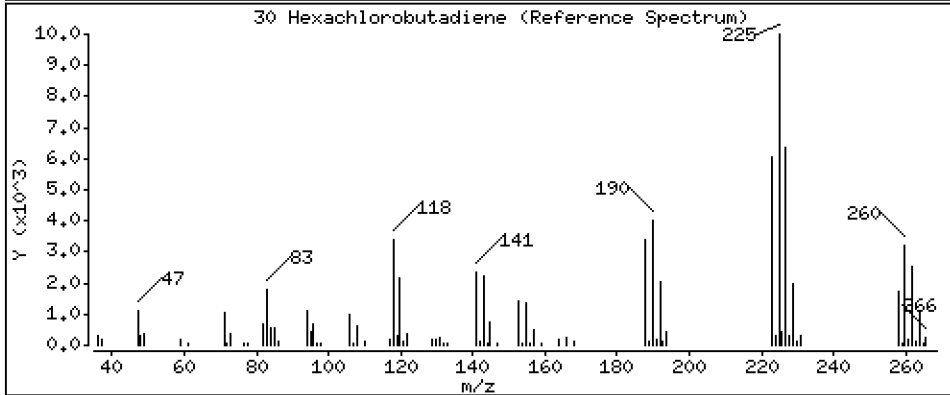
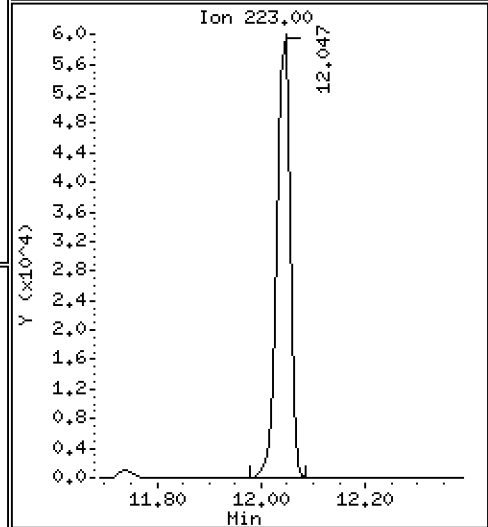
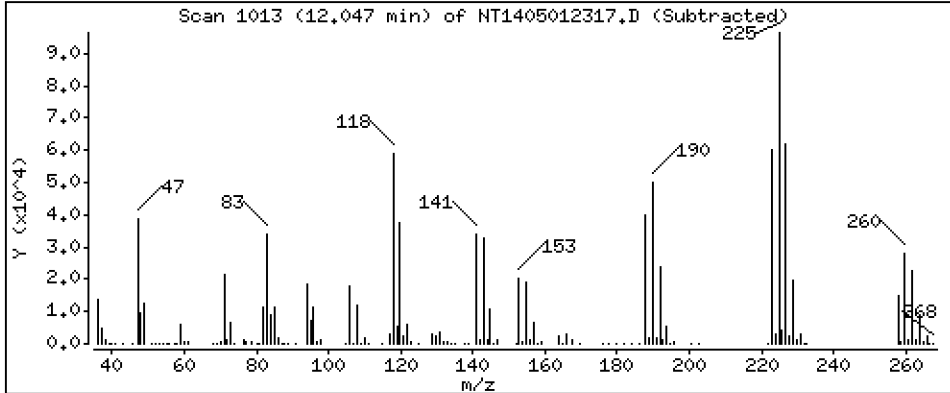
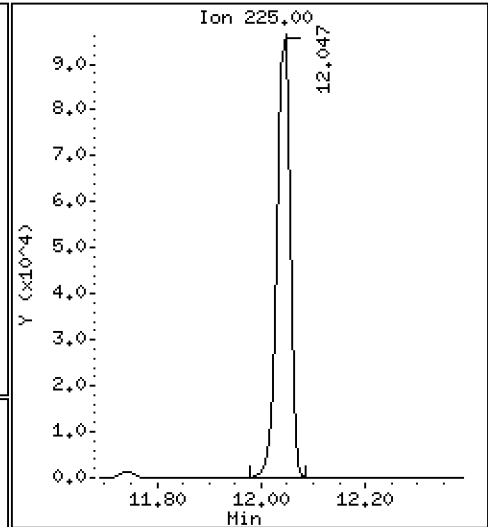
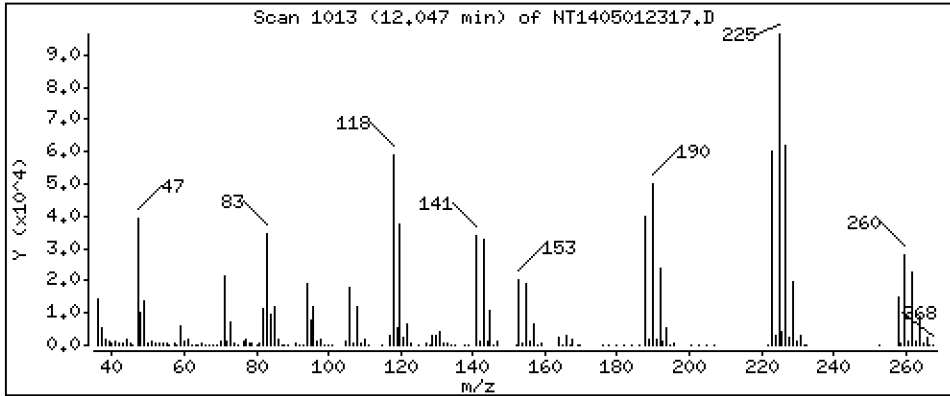
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 5,076 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

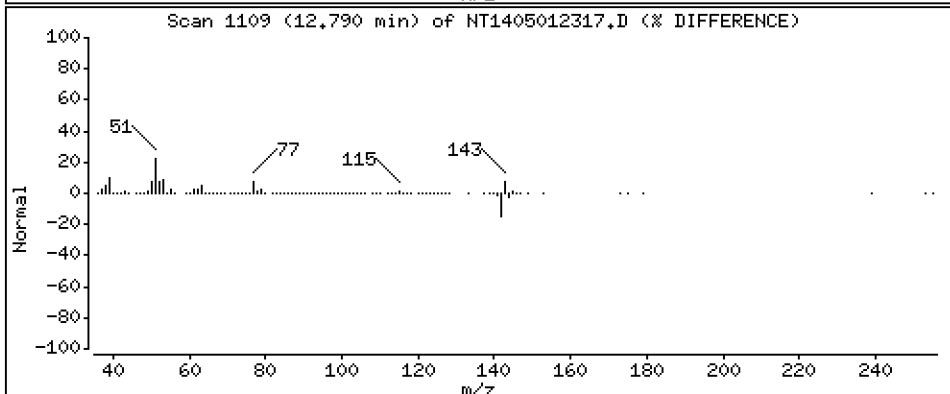
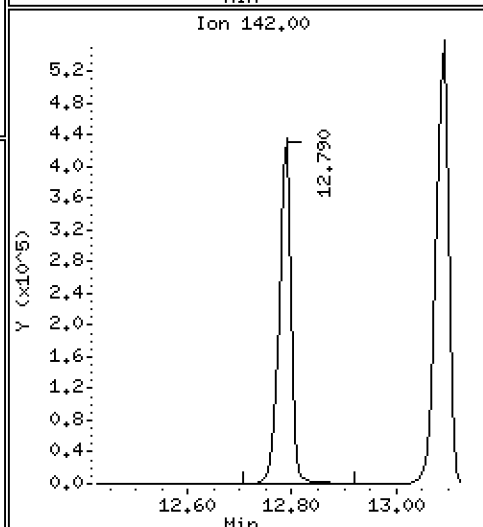
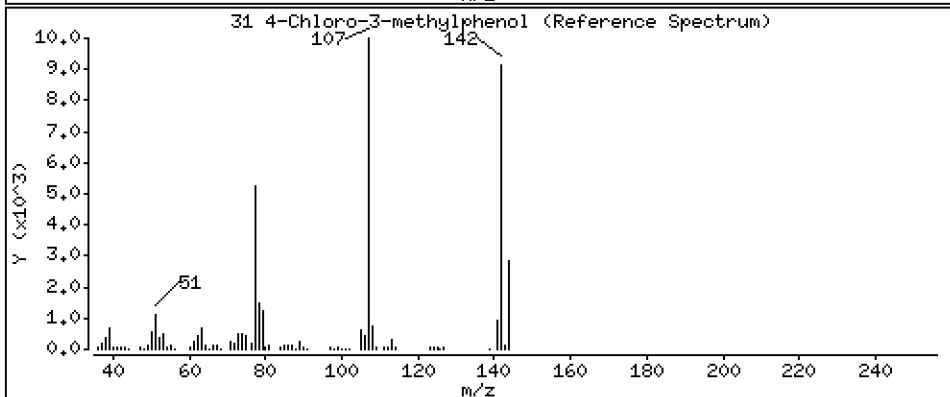
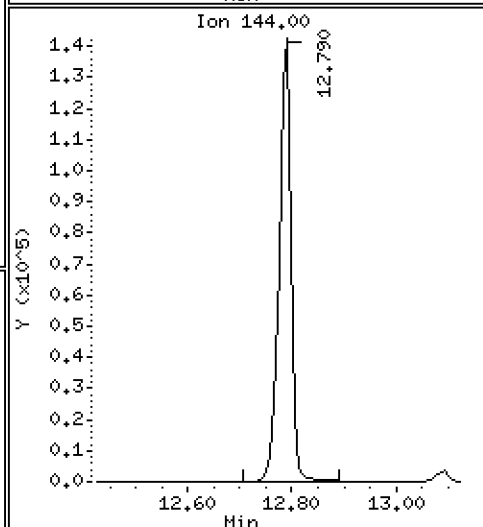
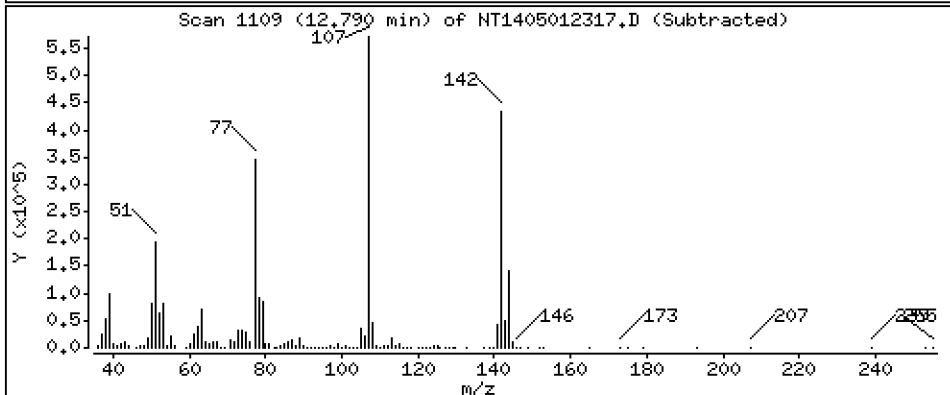
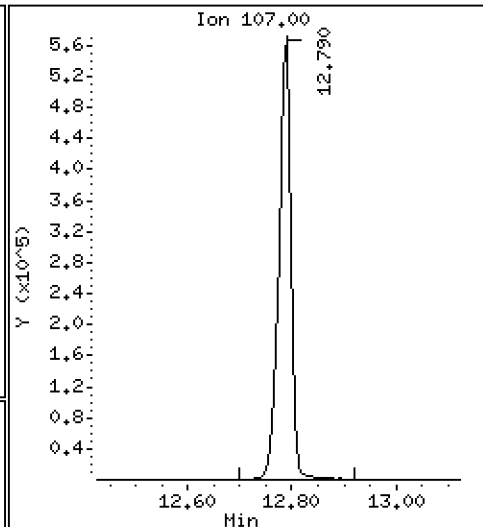
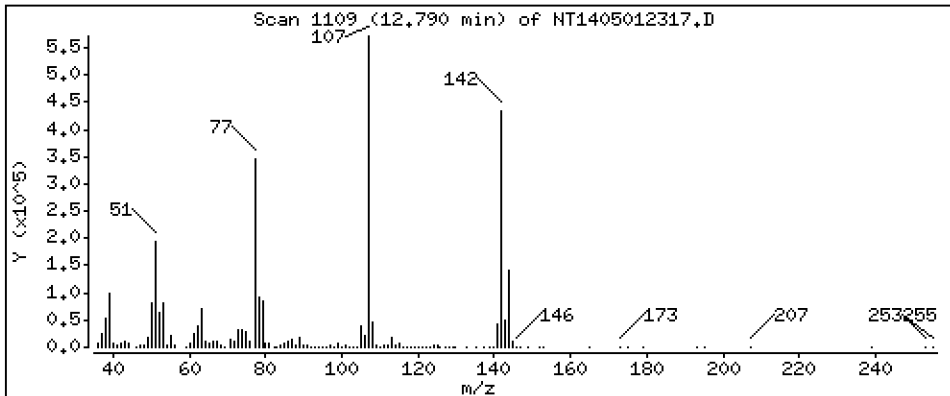
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 11,18 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

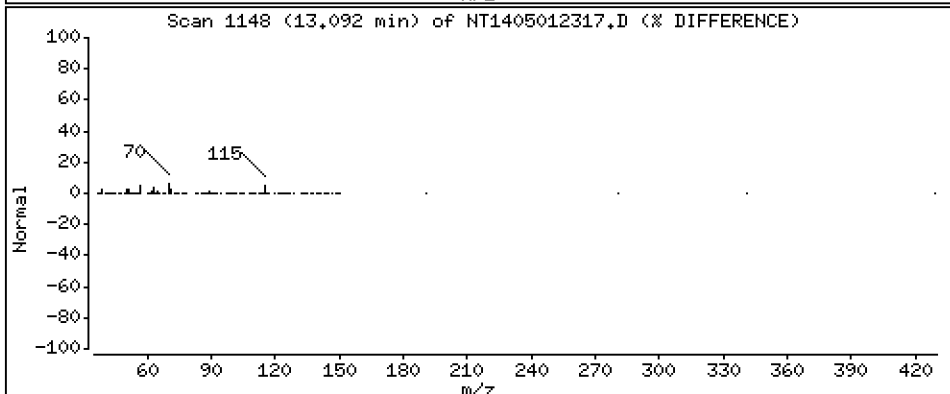
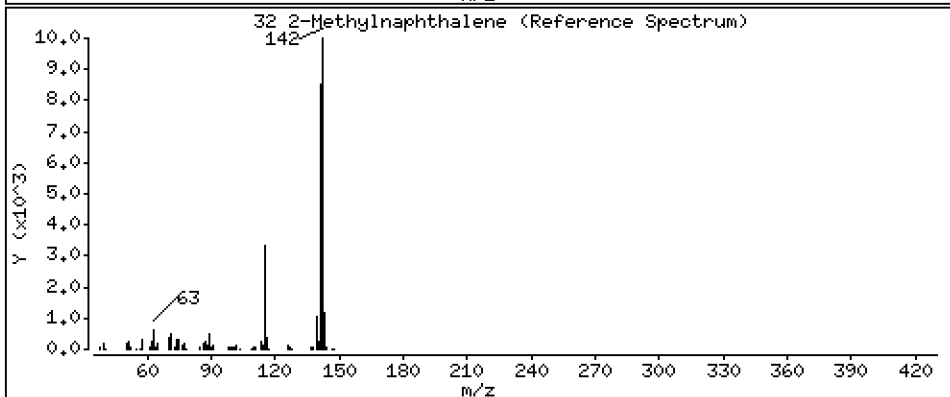
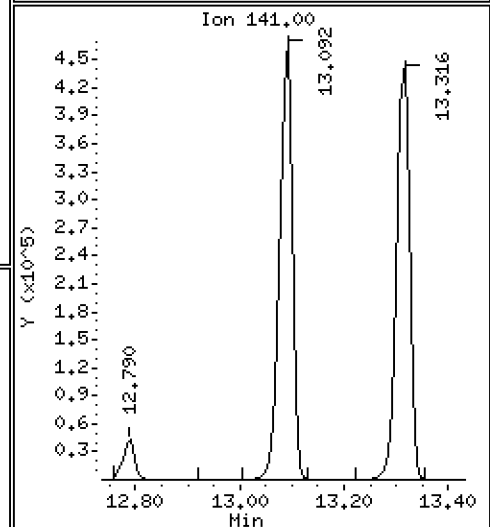
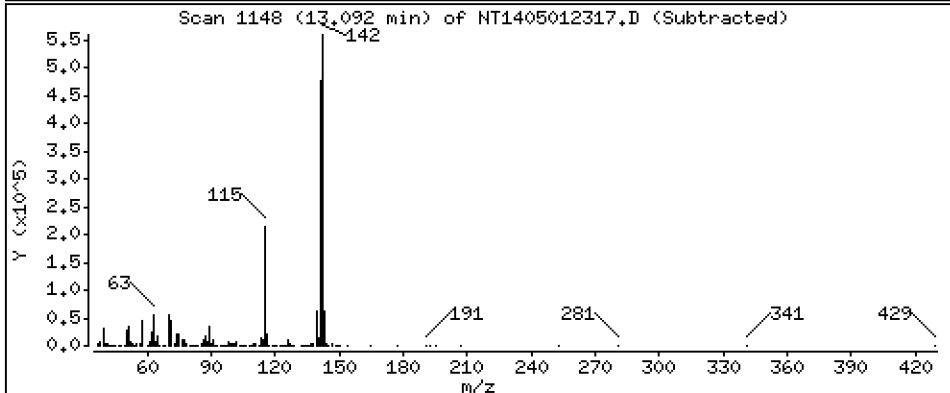
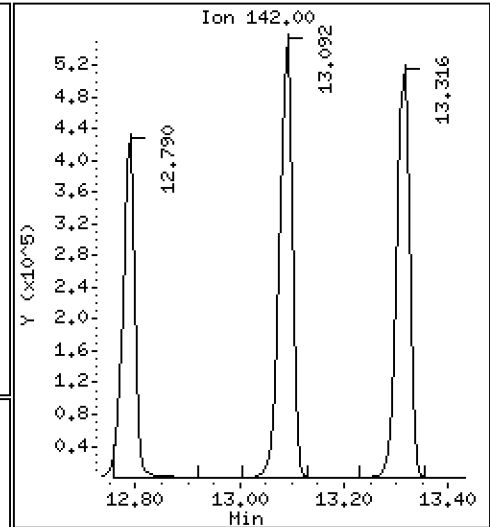
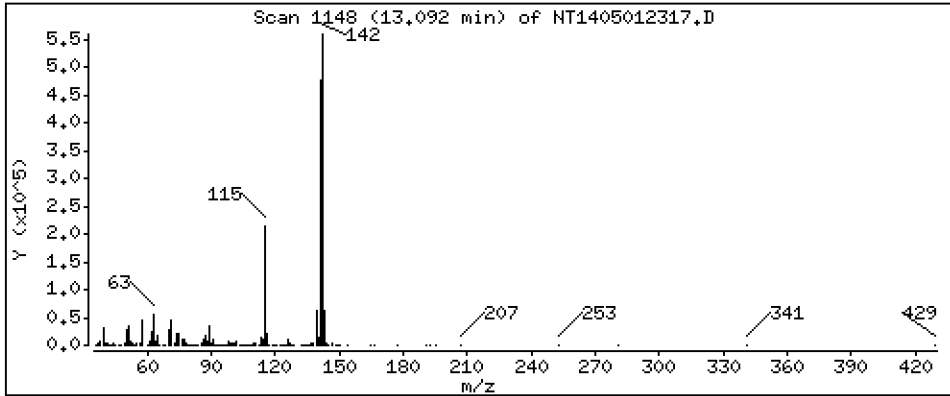
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 5,033 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

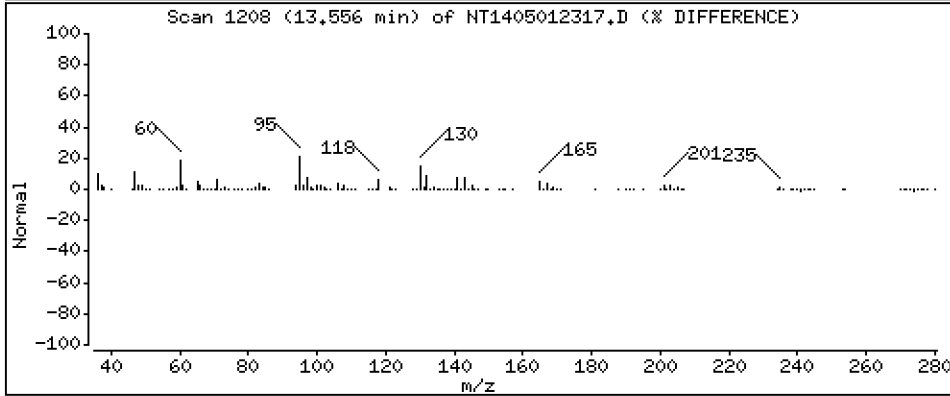
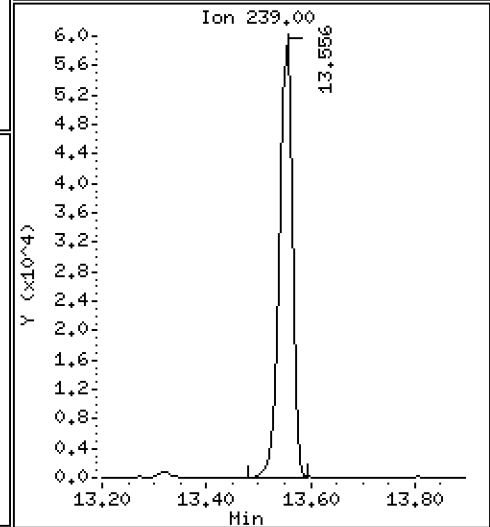
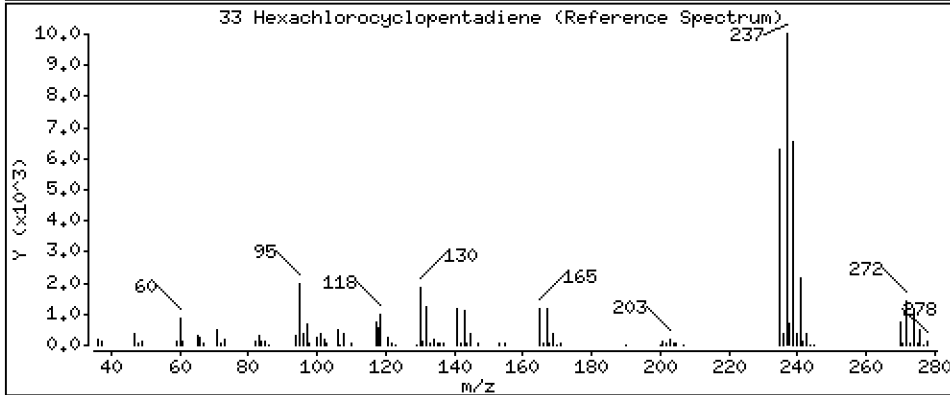
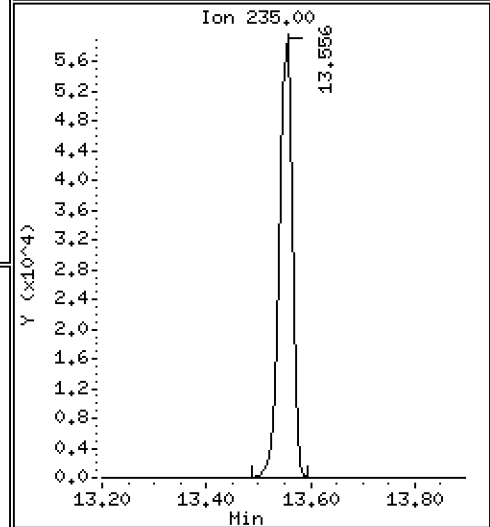
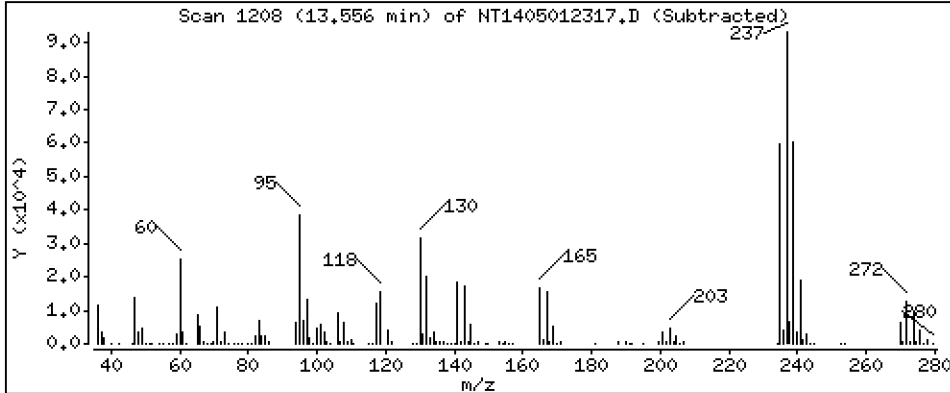
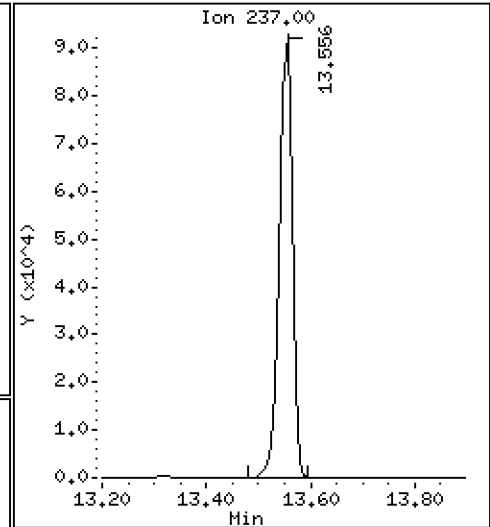
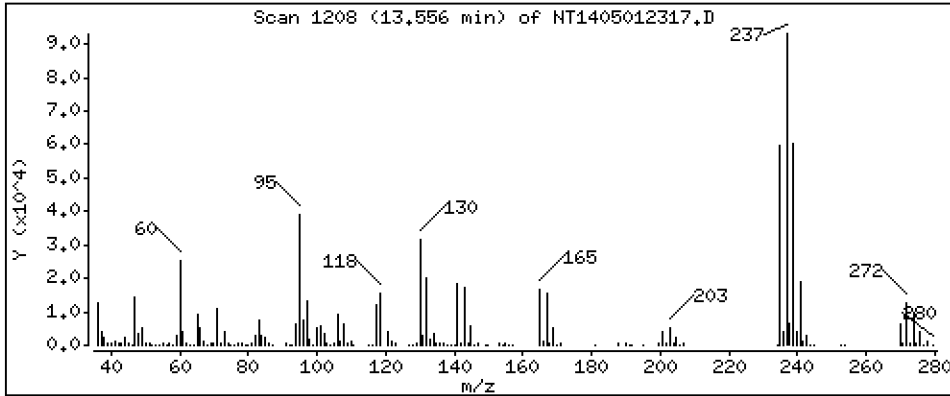
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 4,660 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

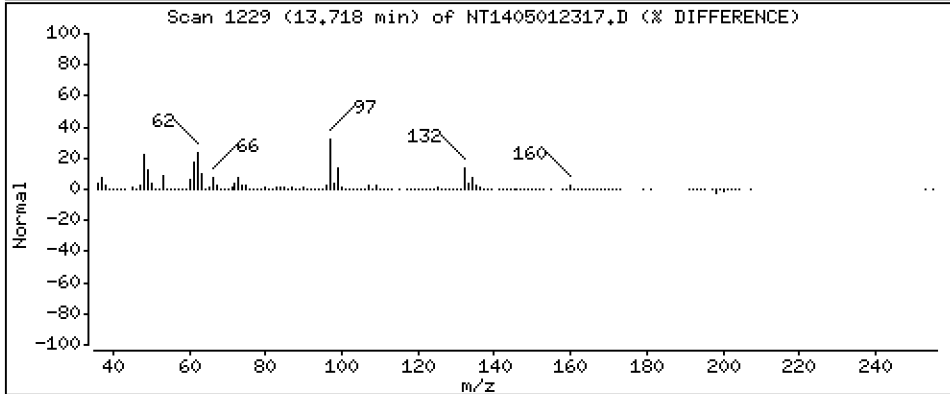
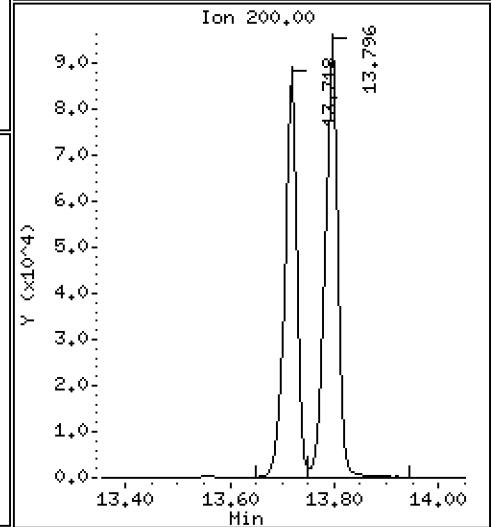
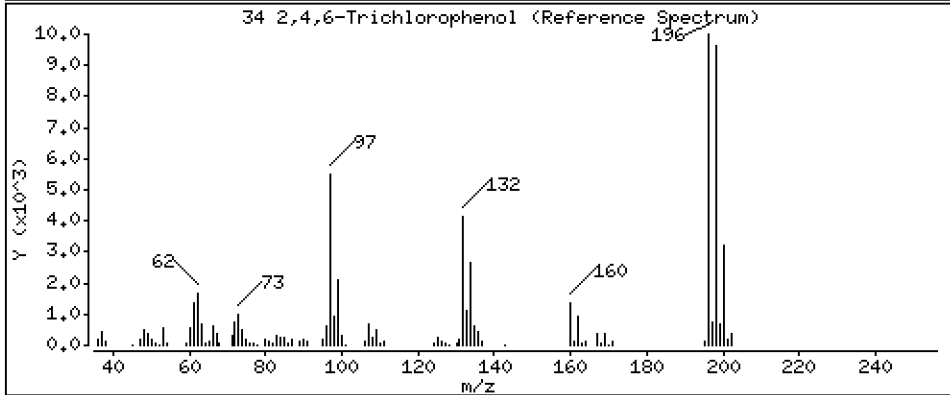
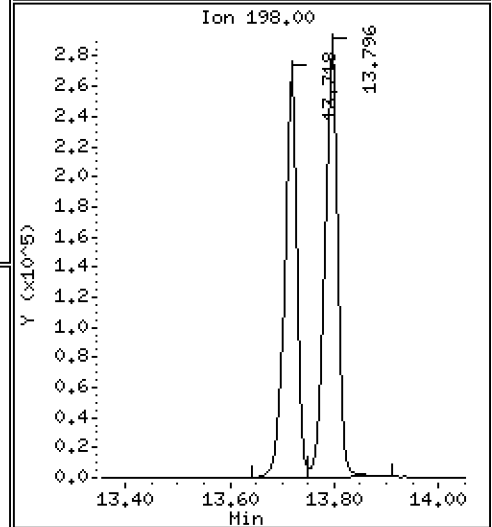
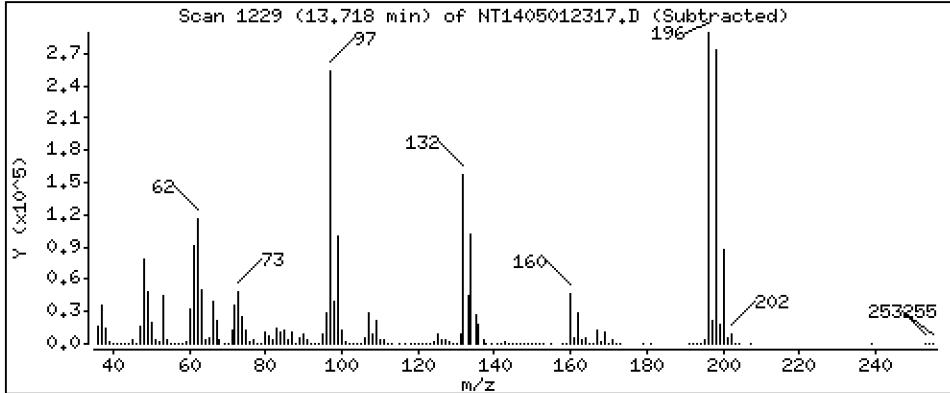
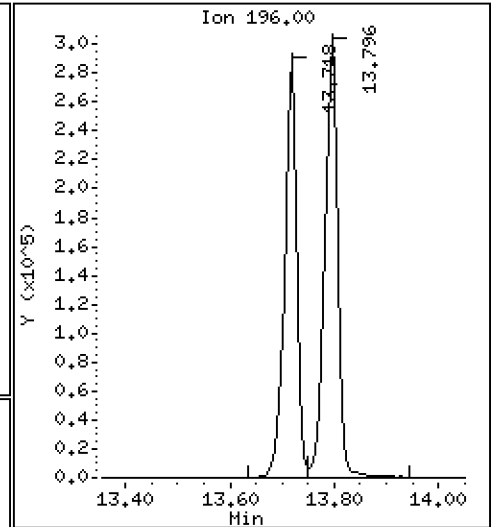
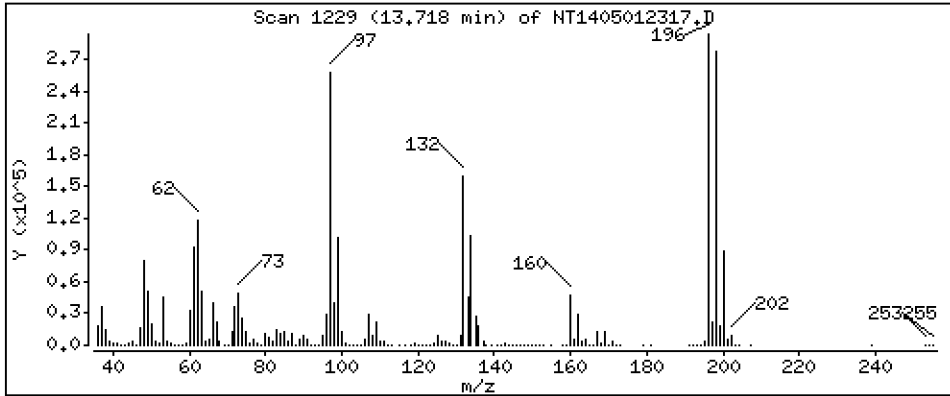
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 11,49 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

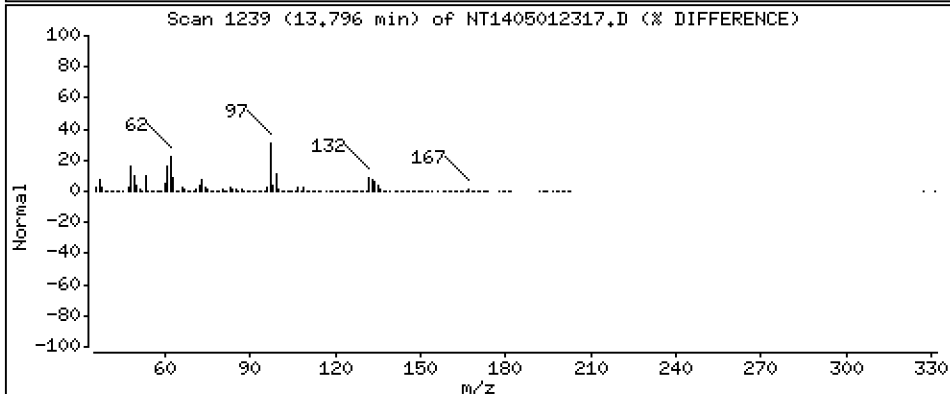
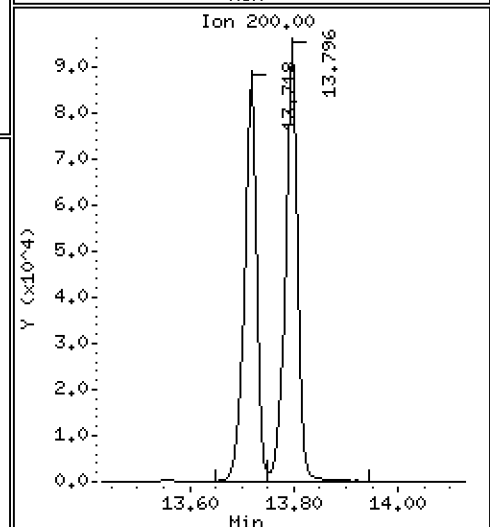
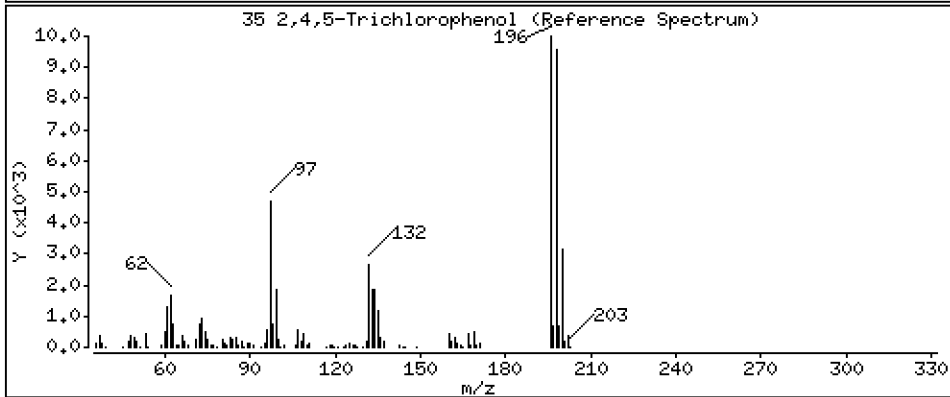
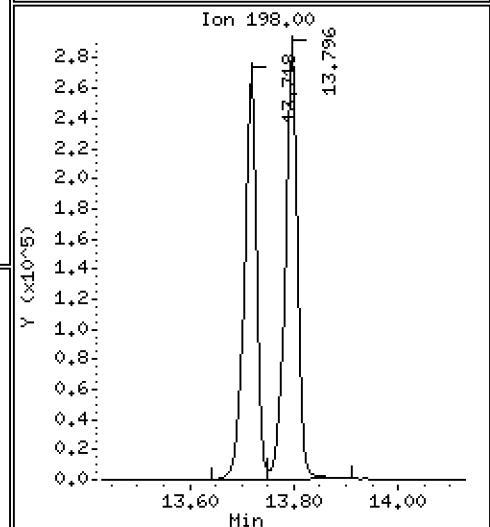
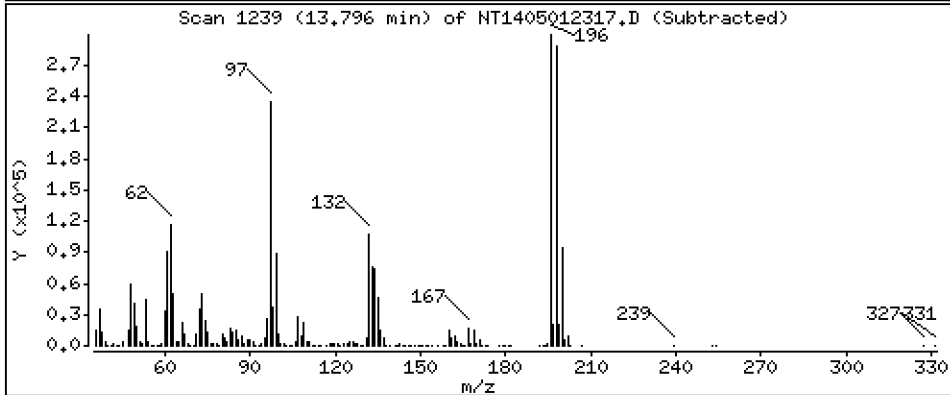
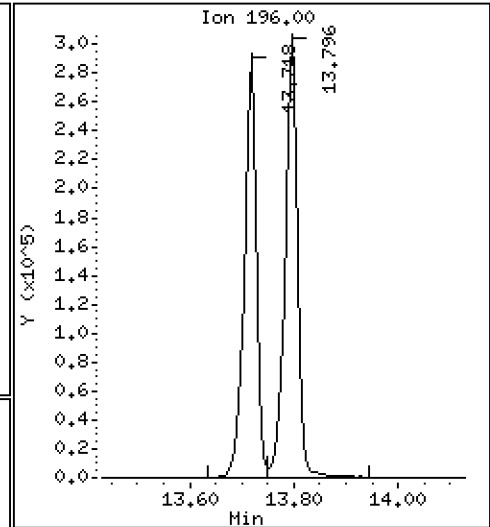
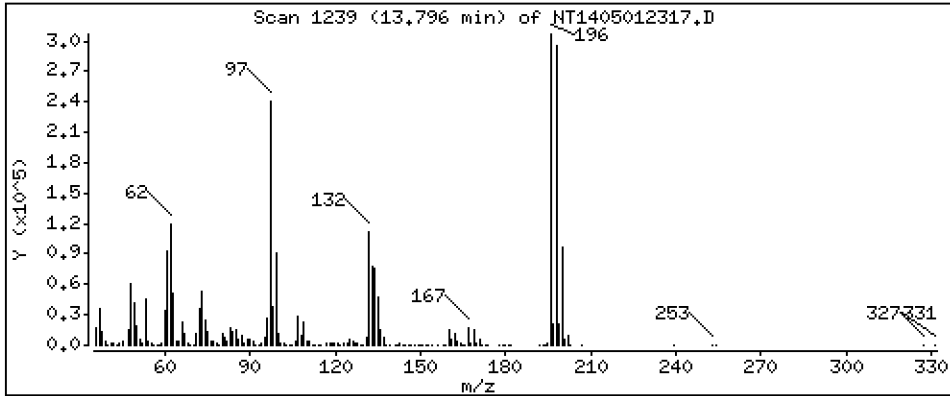
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 11,74 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

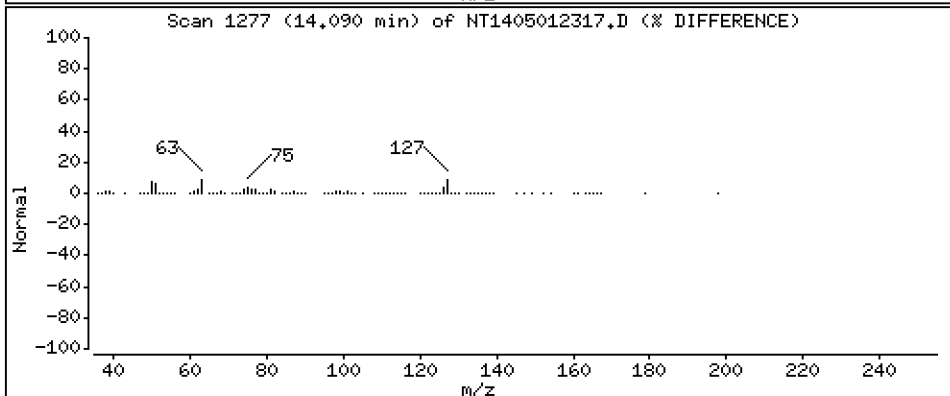
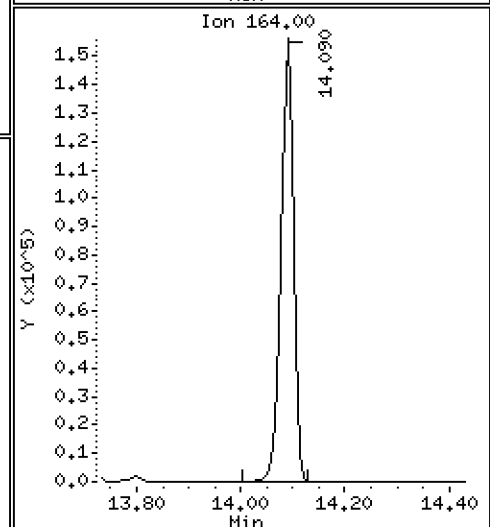
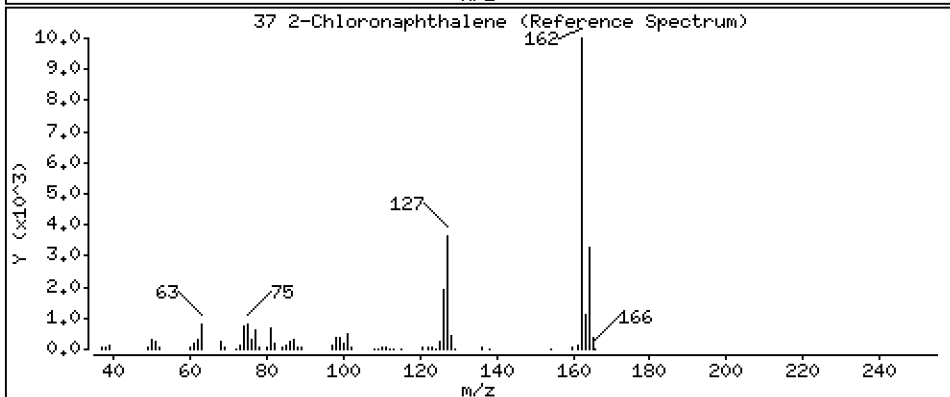
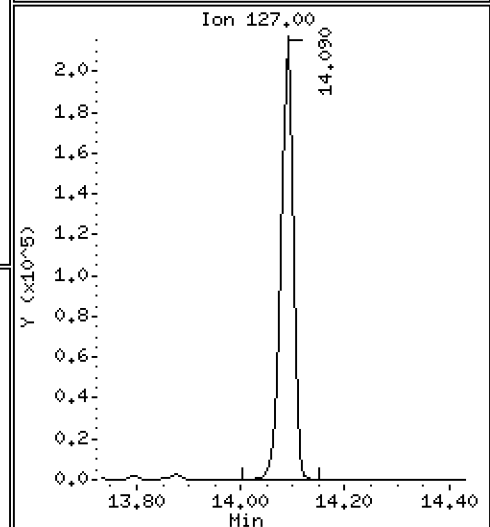
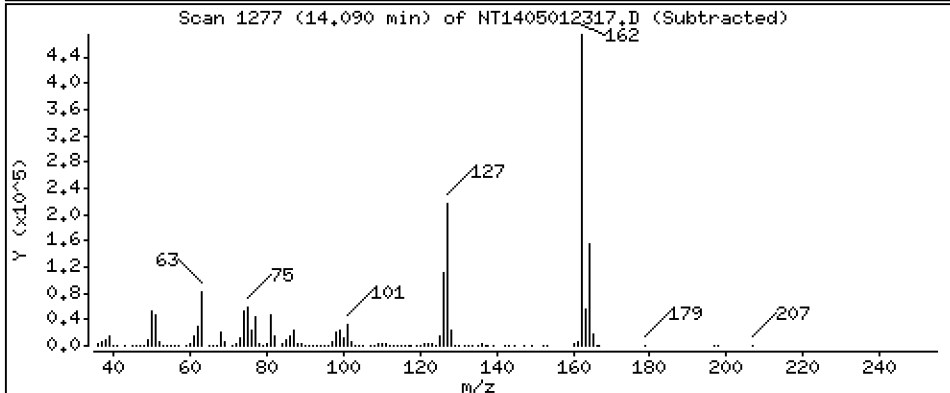
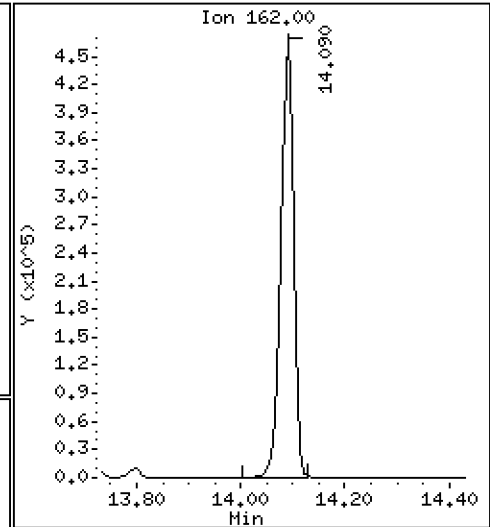
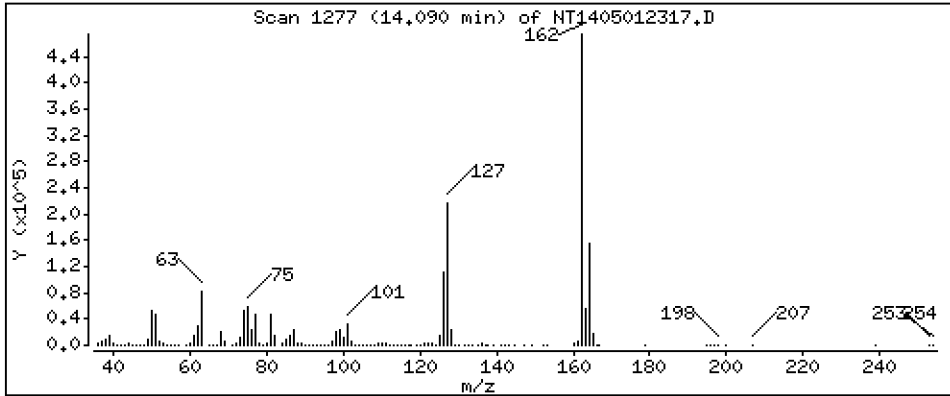
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 5,067 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

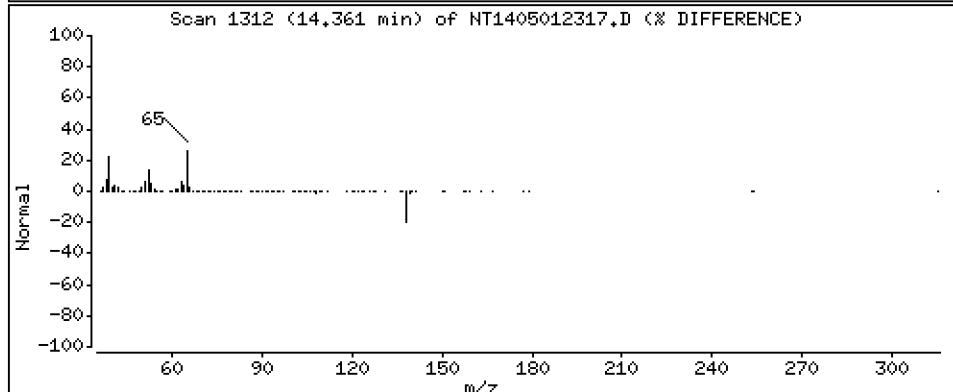
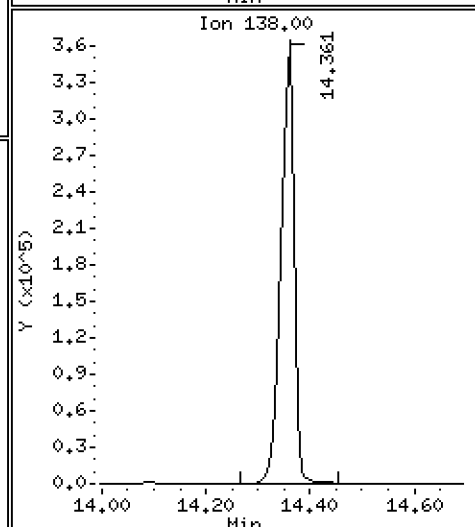
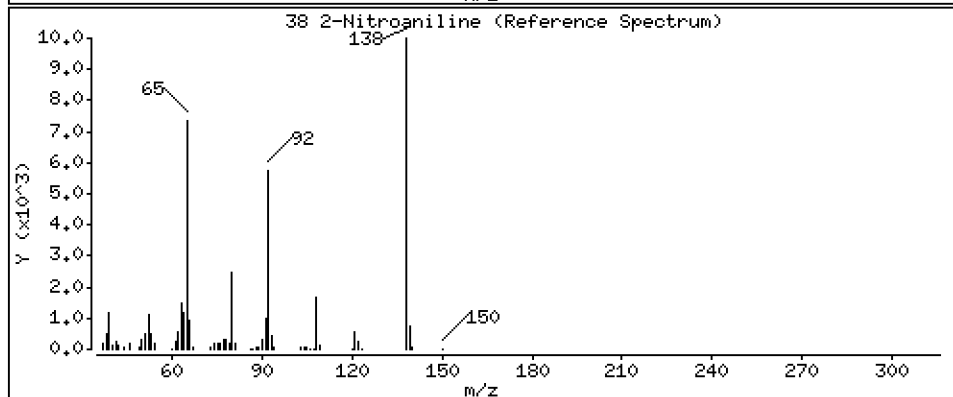
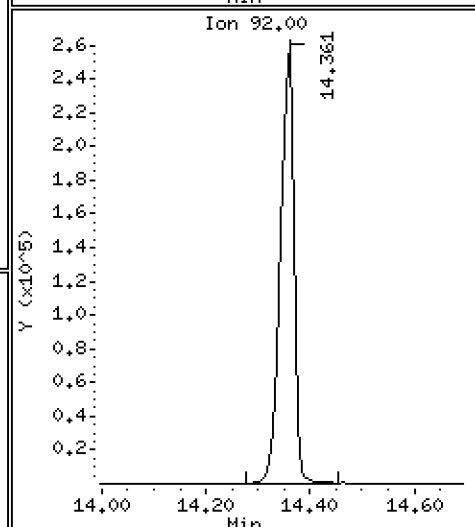
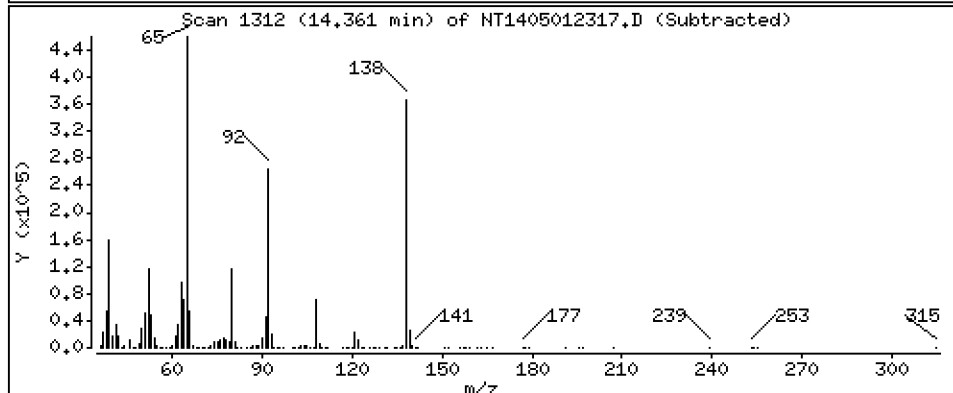
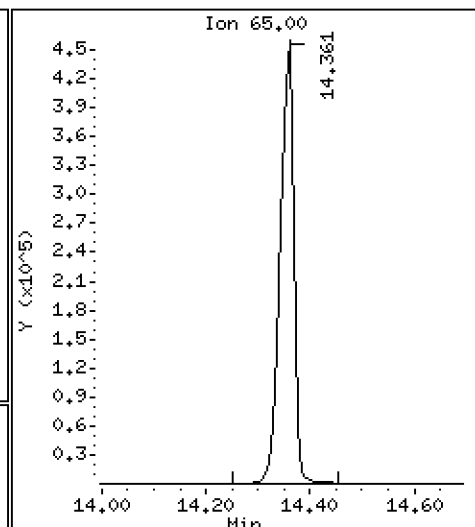
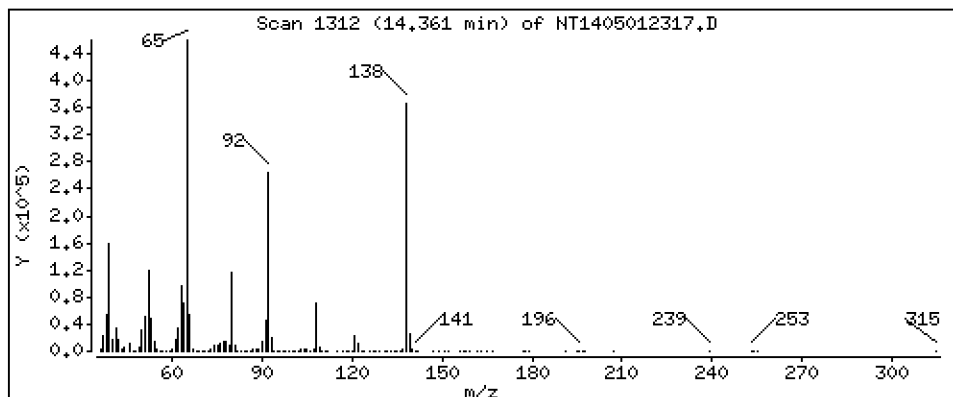
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 10,17 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

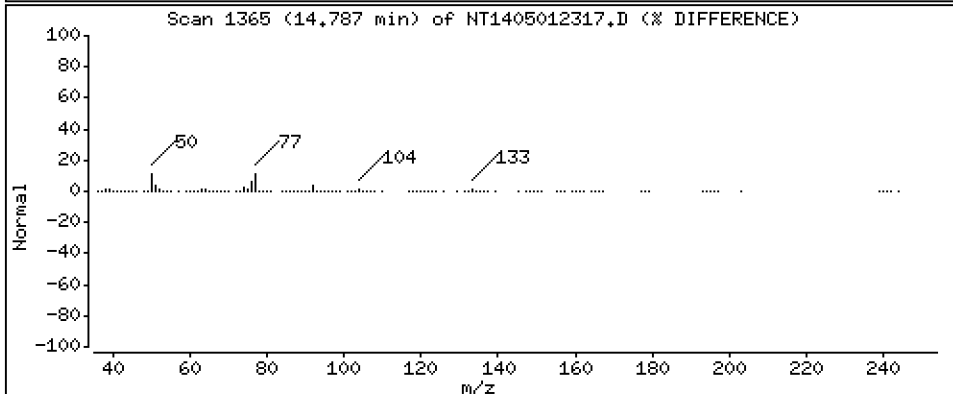
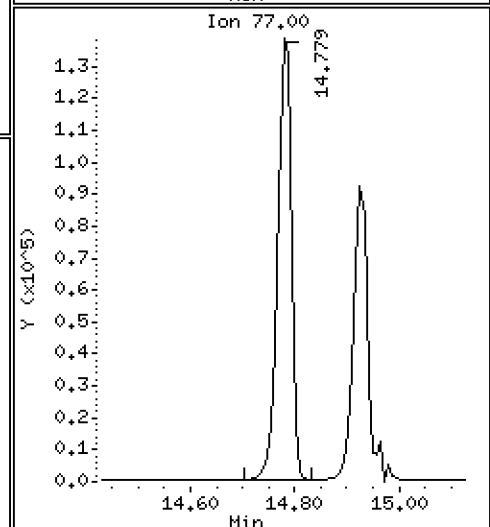
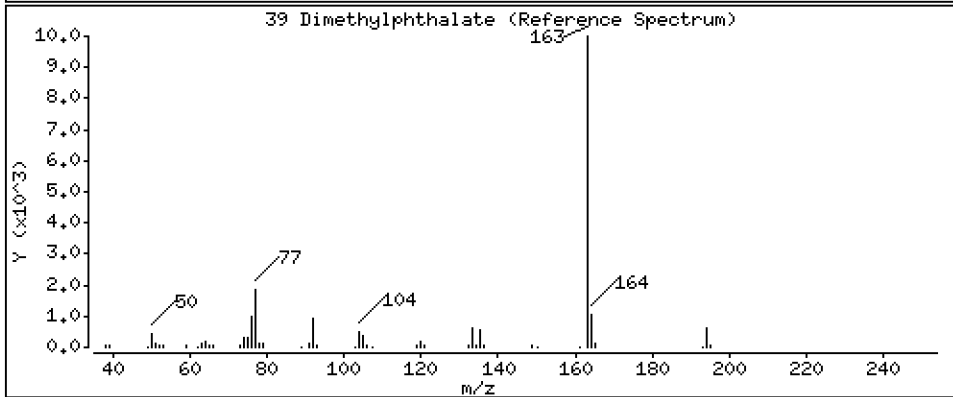
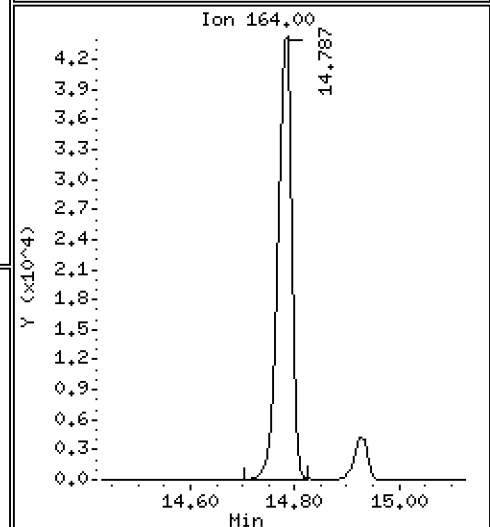
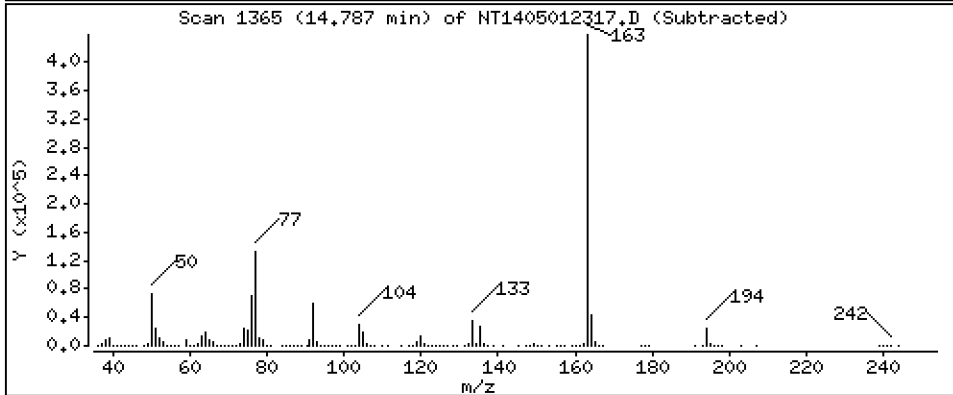
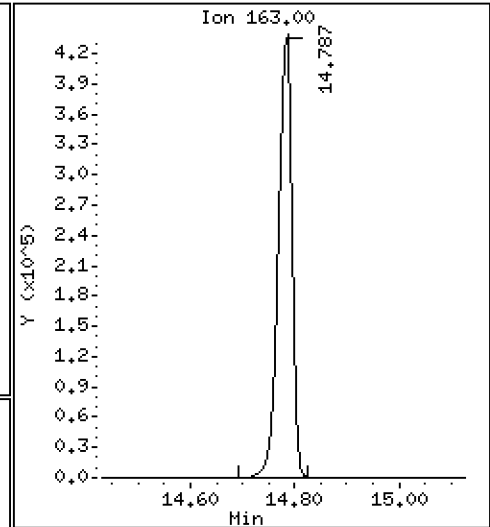
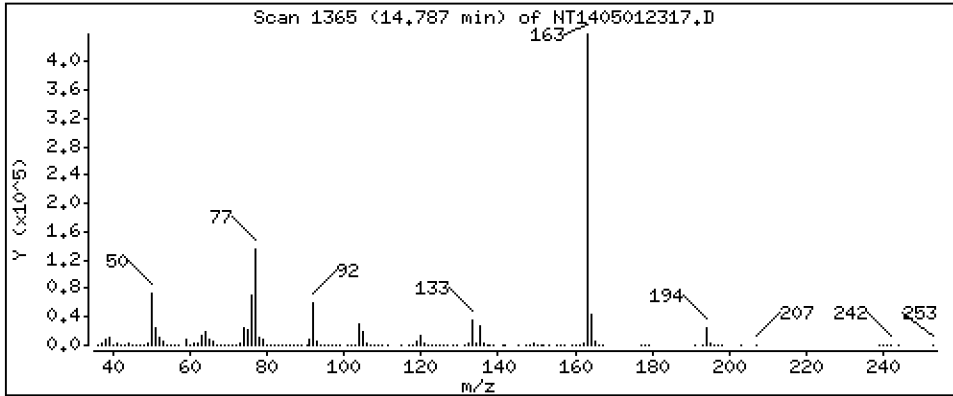
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 5,002 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

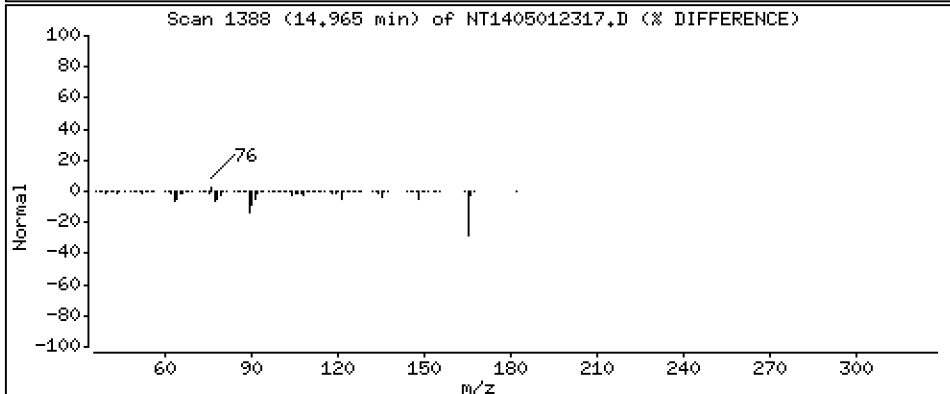
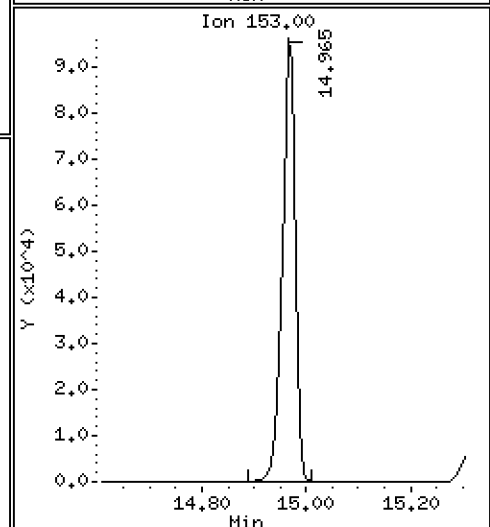
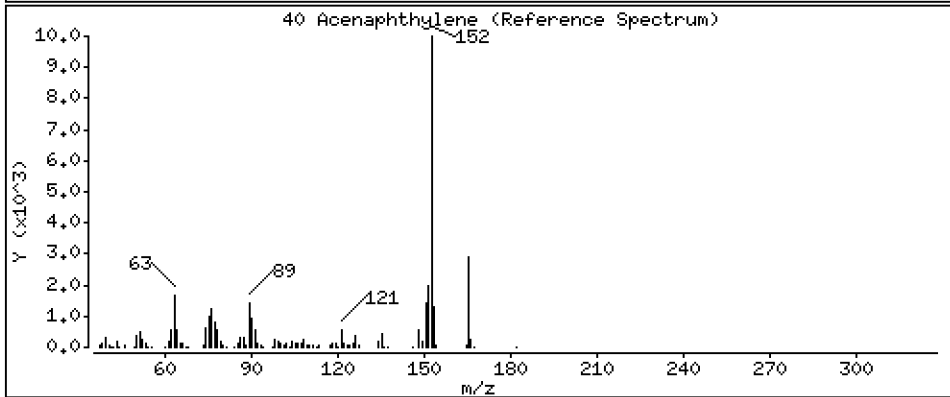
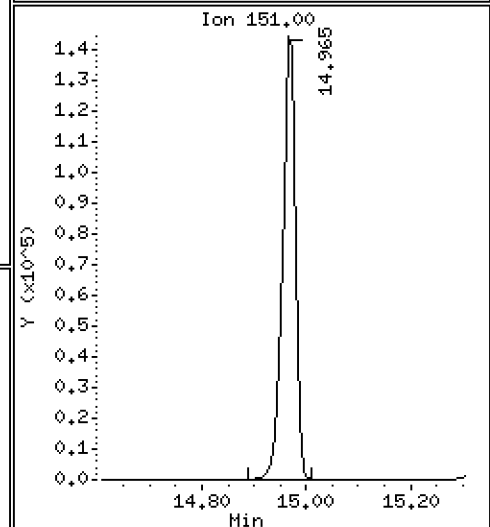
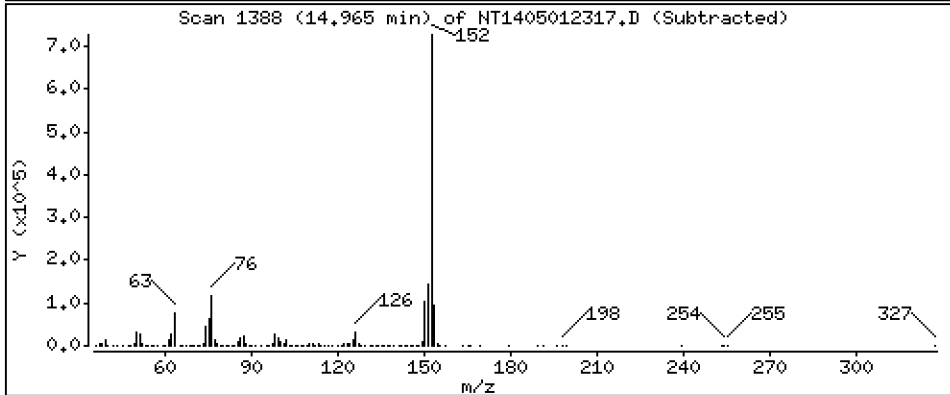
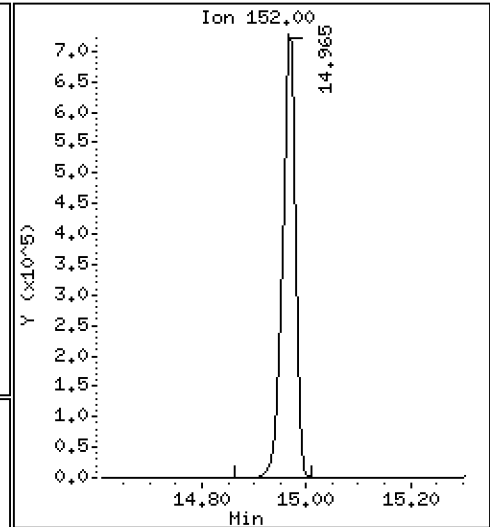
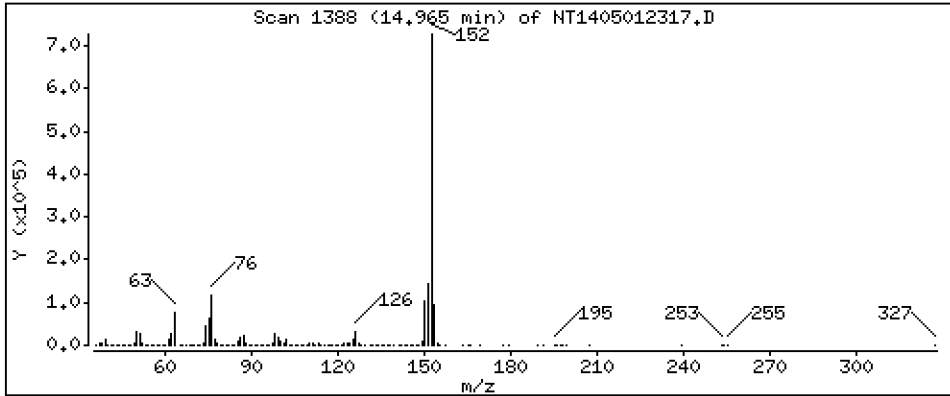
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 5,305 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

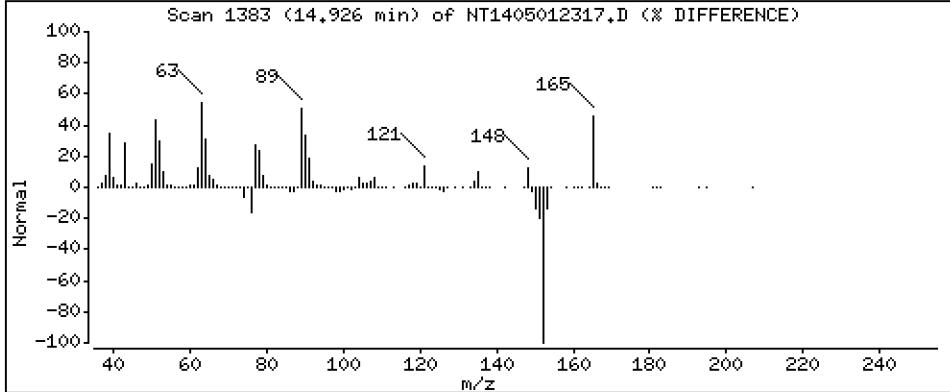
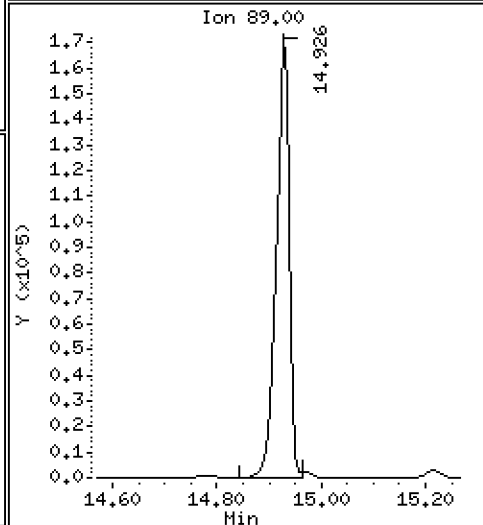
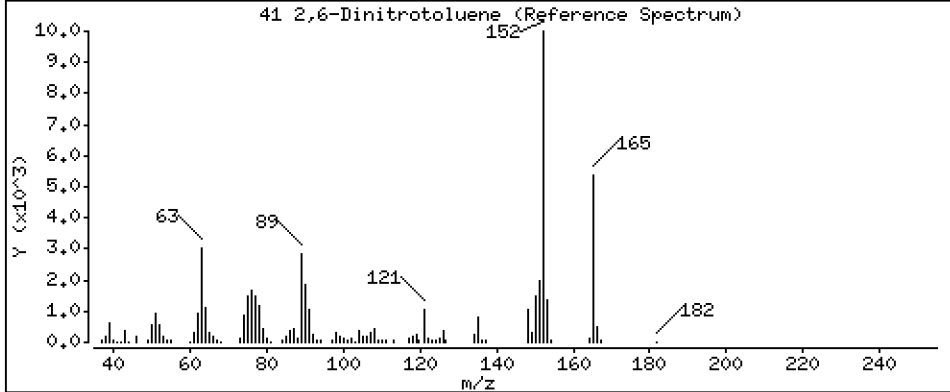
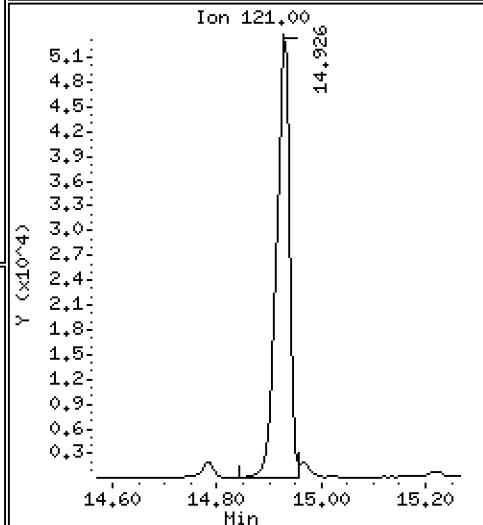
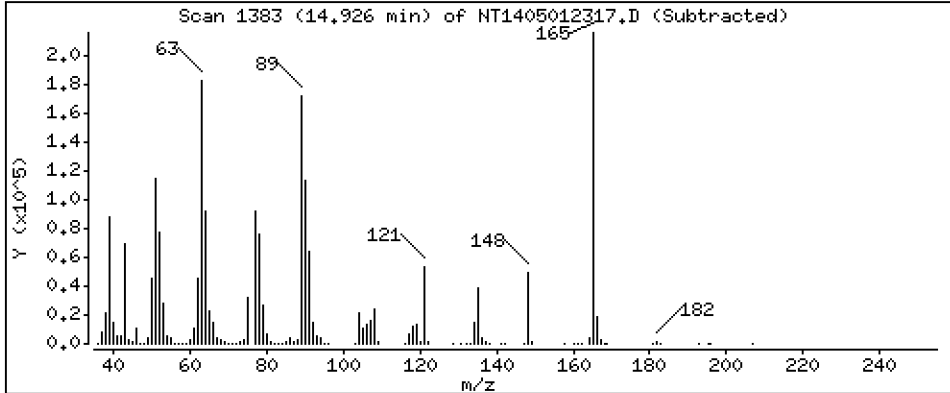
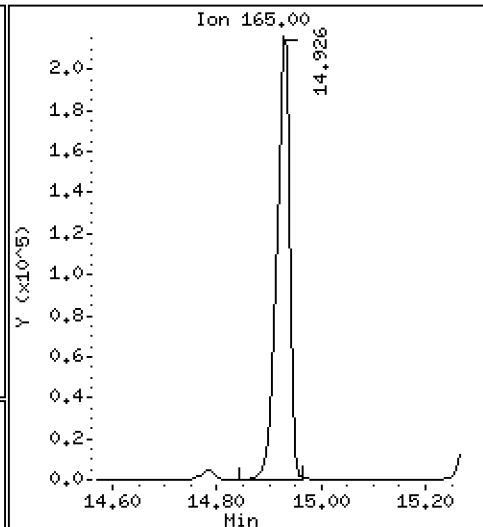
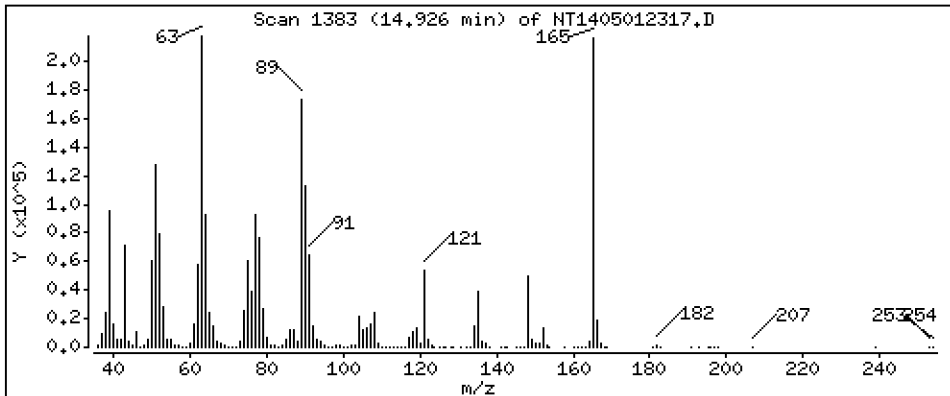
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

41 2,6-Dinitrotoluene

Concentration: 10.62 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

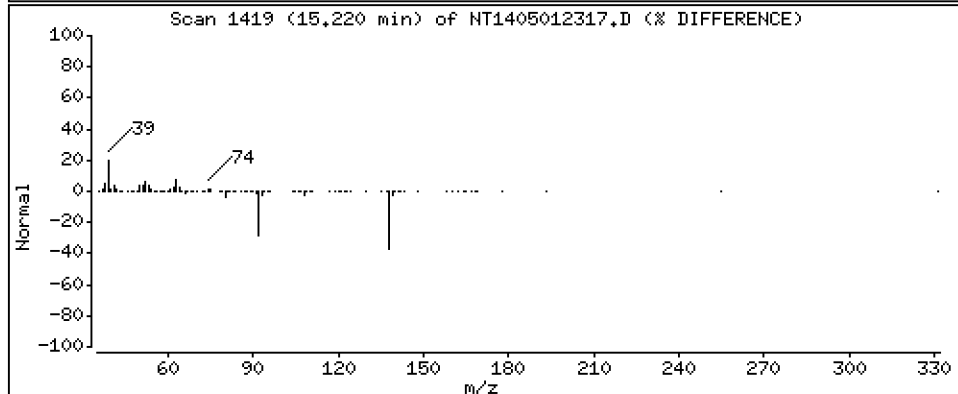
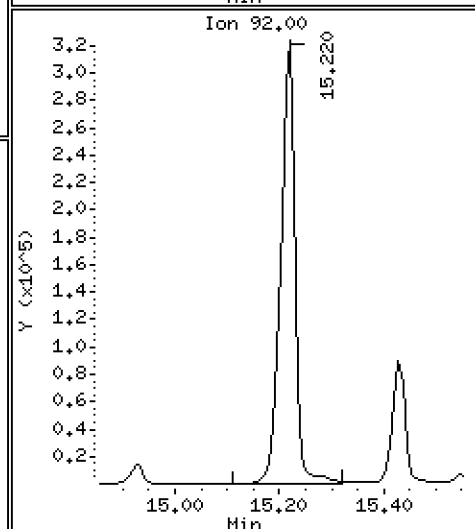
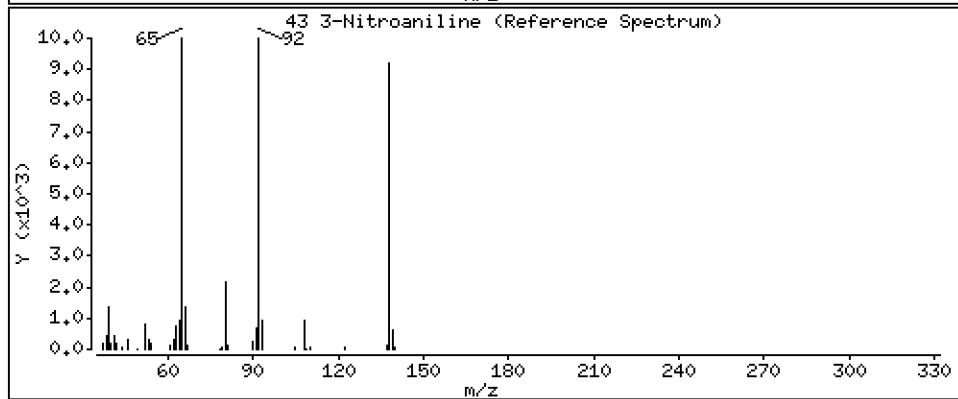
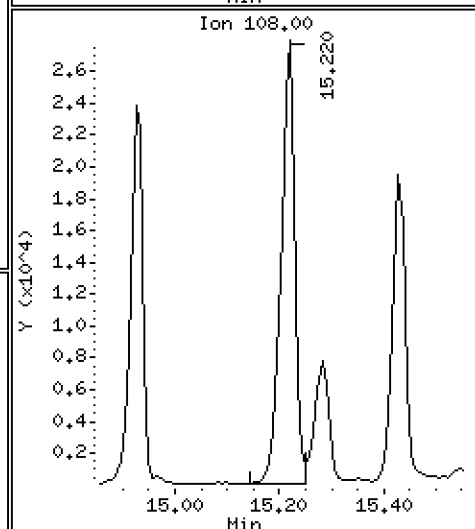
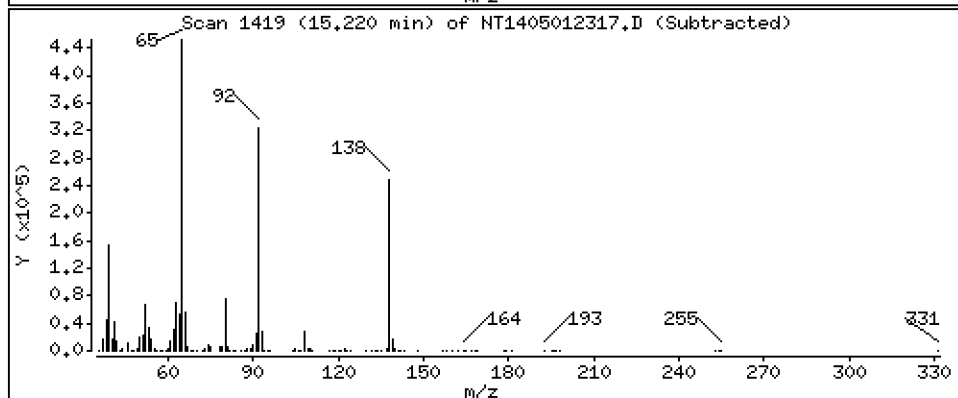
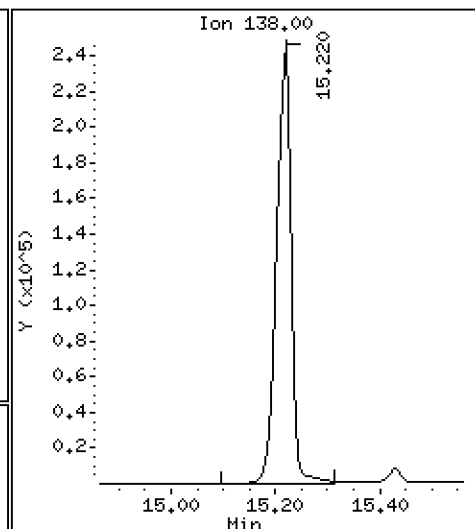
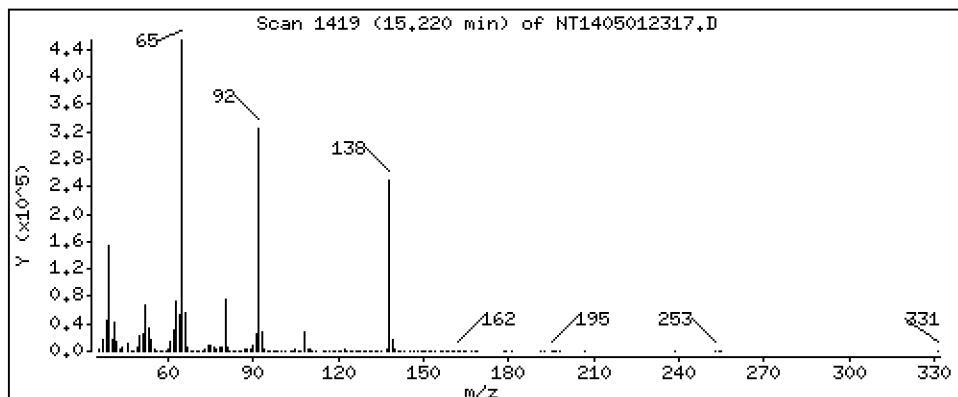
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 10,62 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

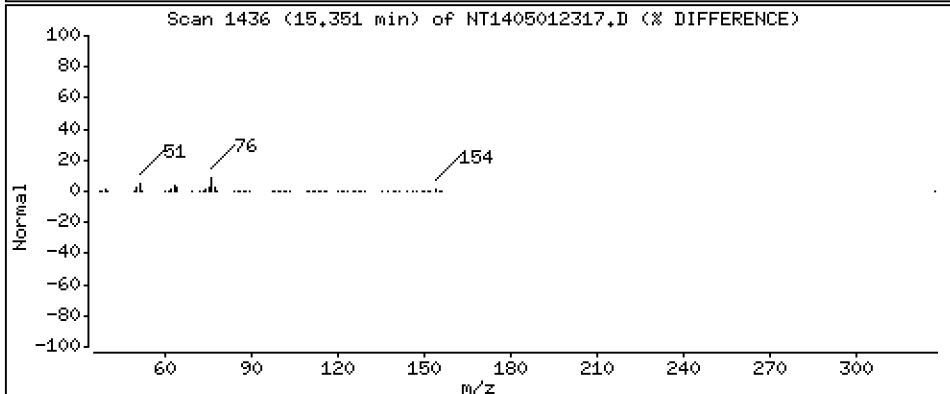
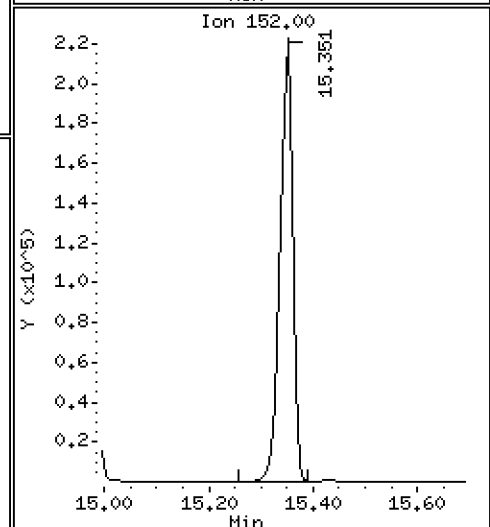
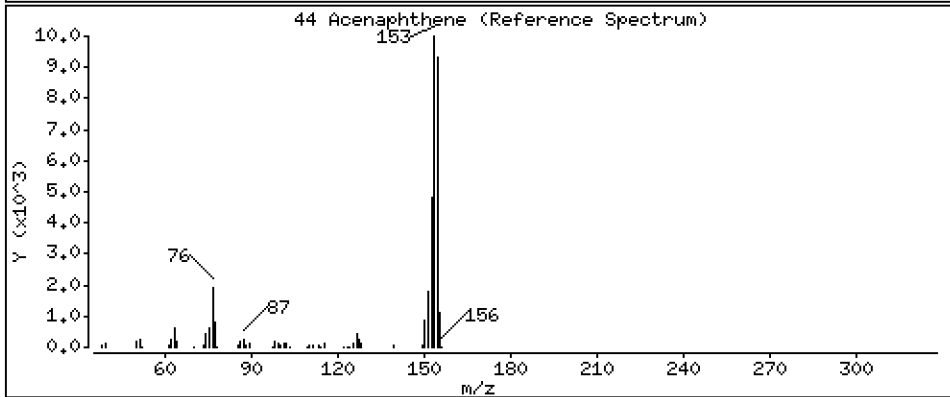
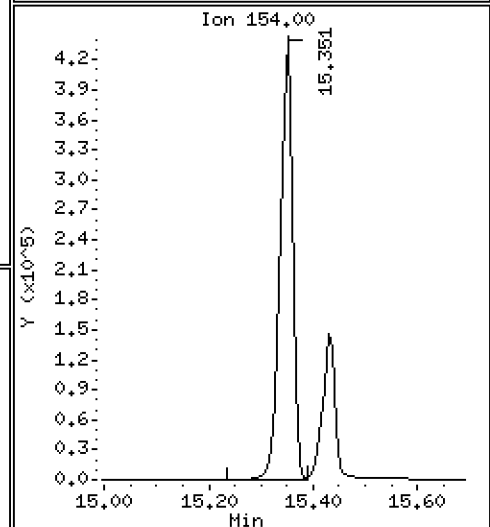
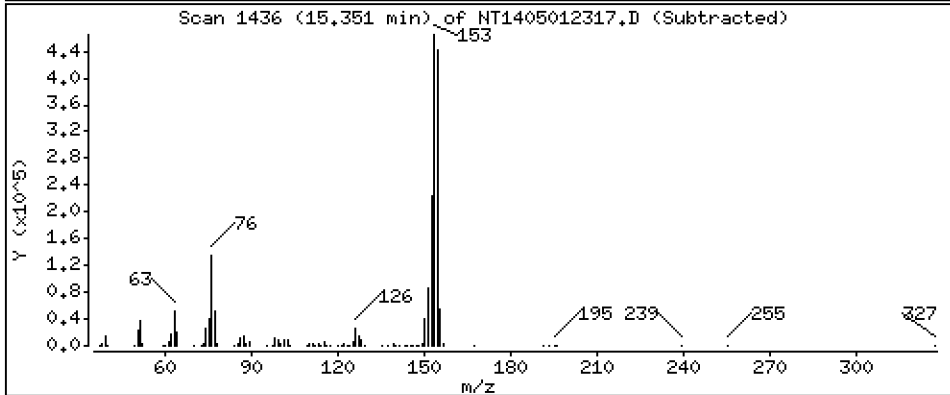
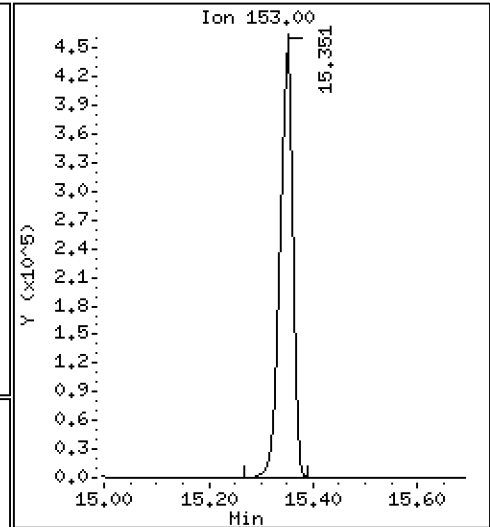
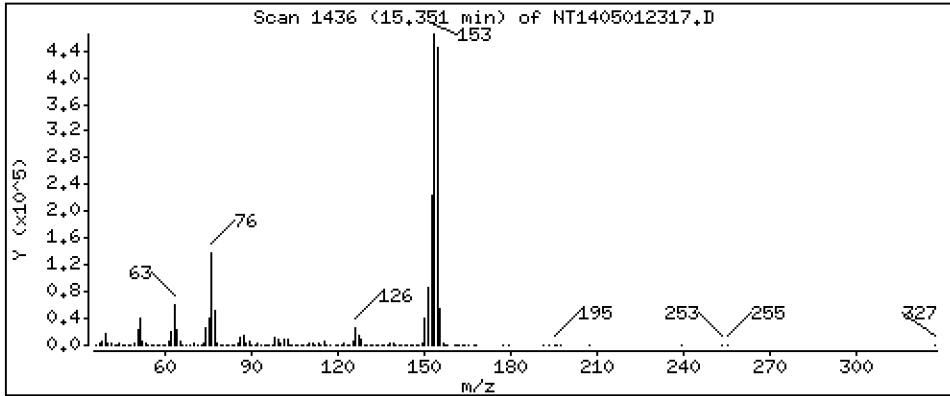
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 5,323 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

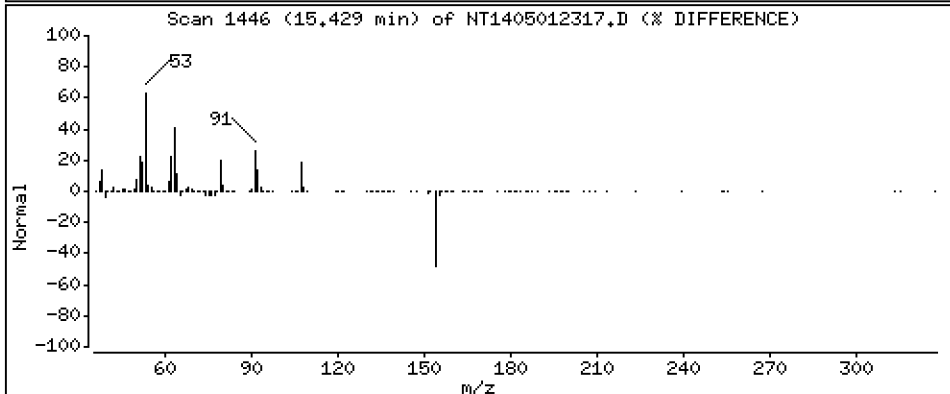
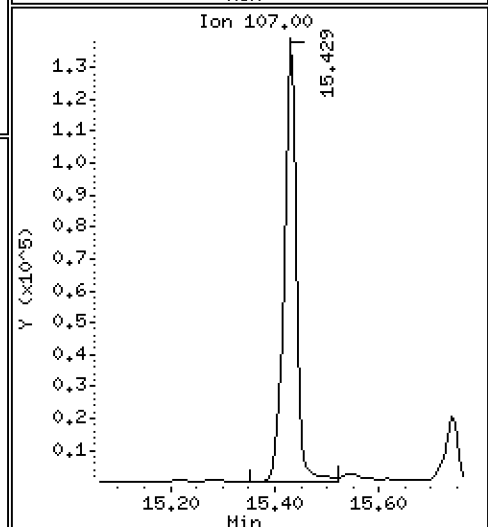
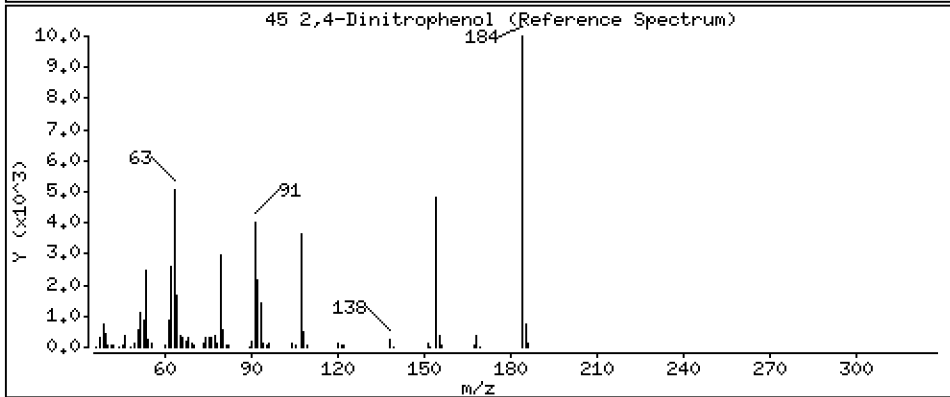
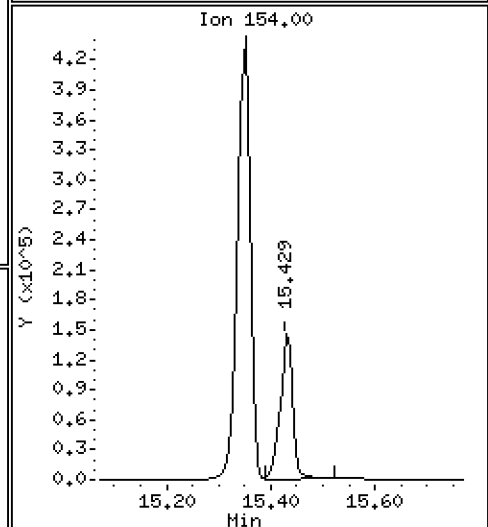
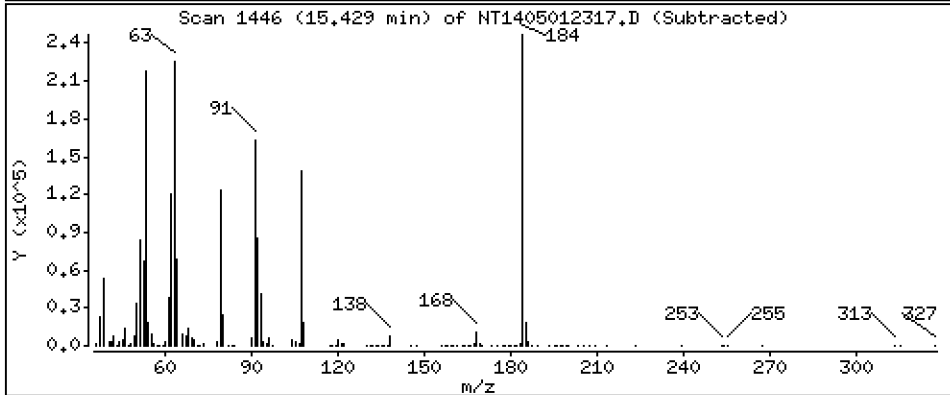
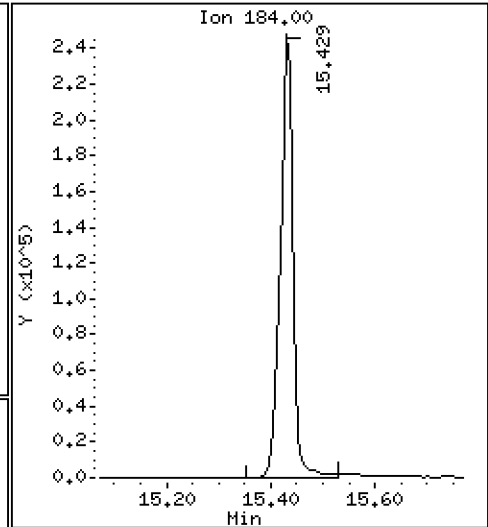
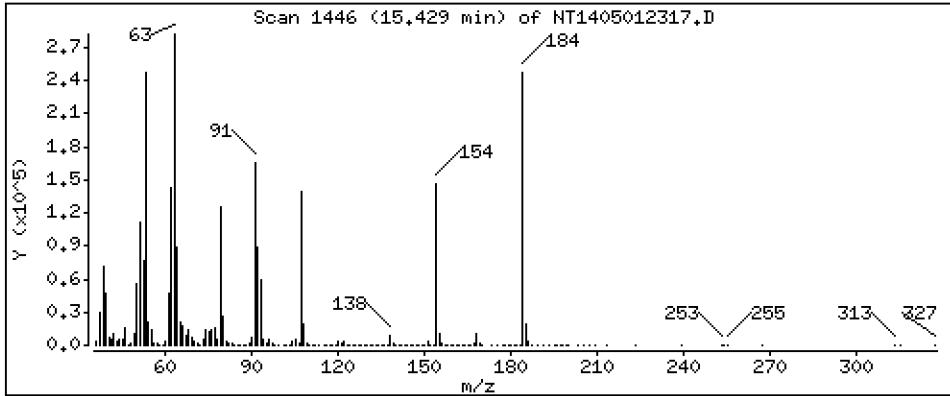
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 19,77 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

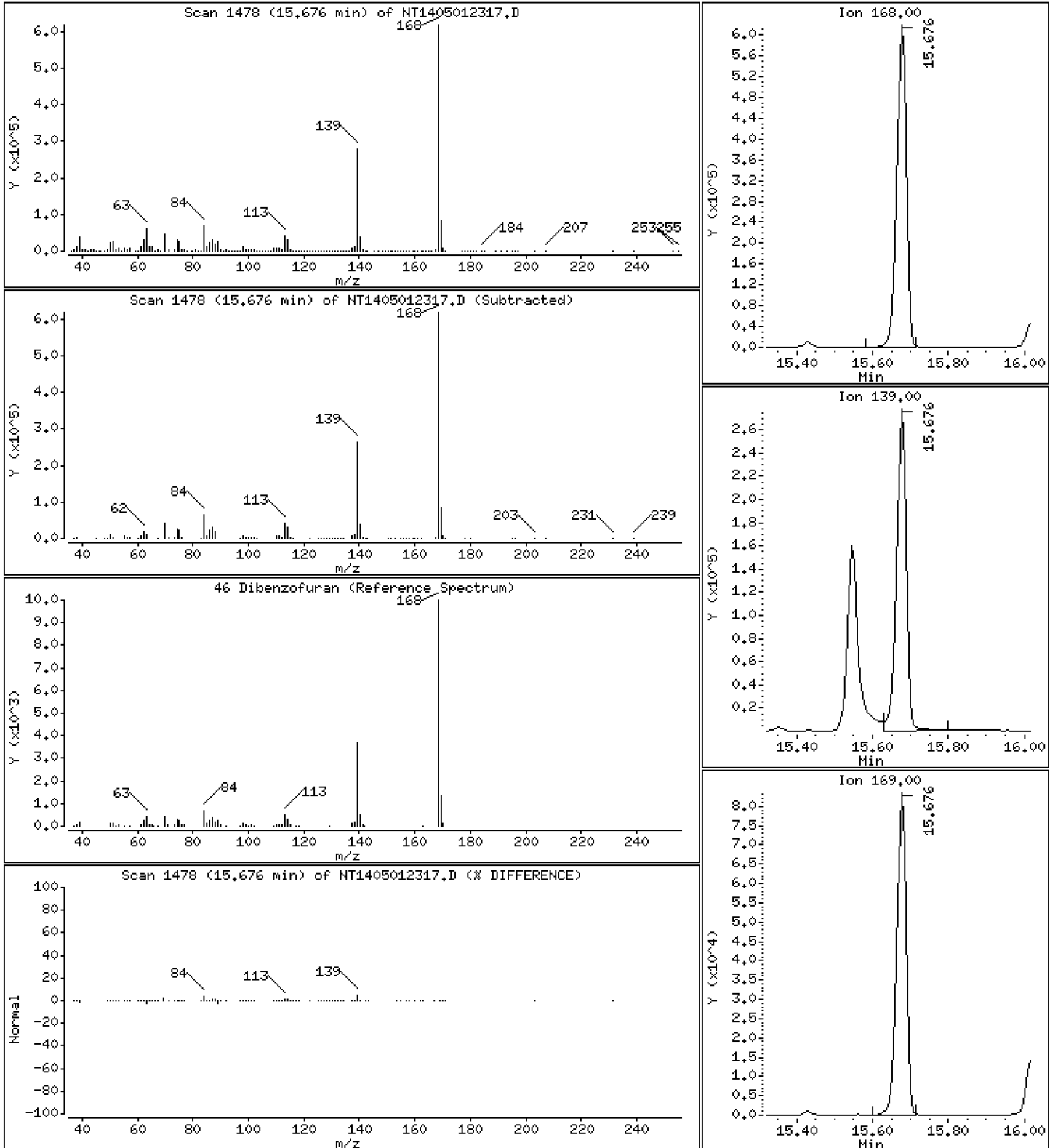
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 5,023 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

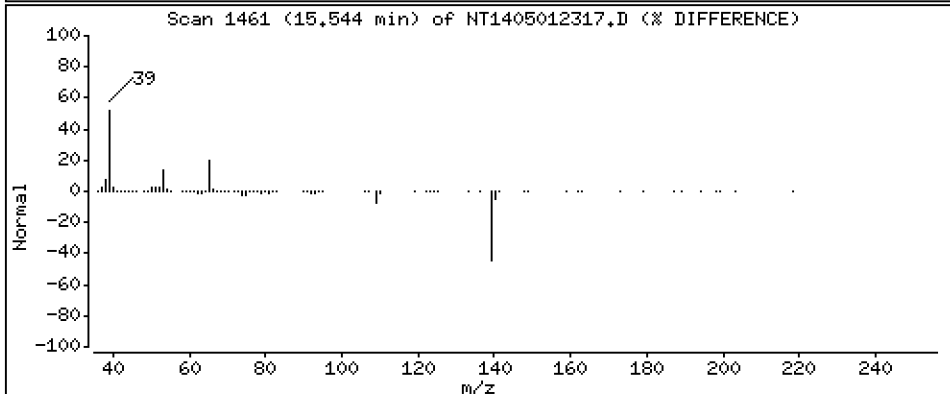
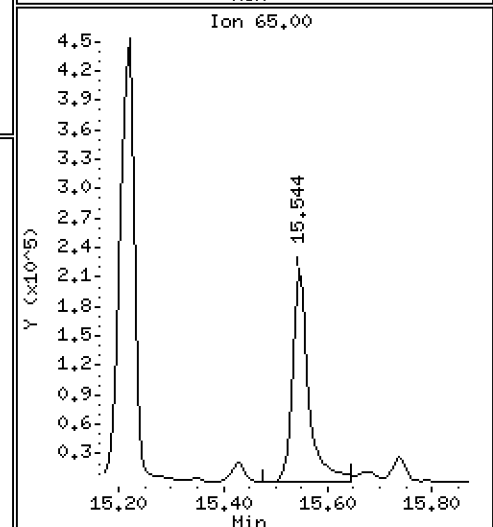
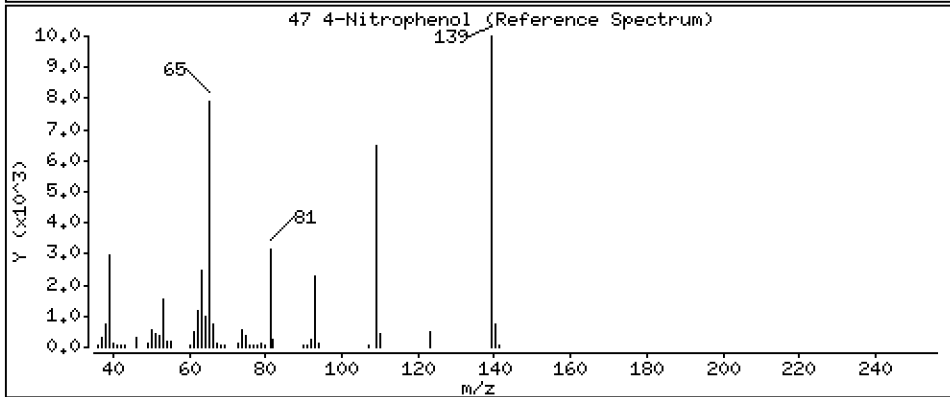
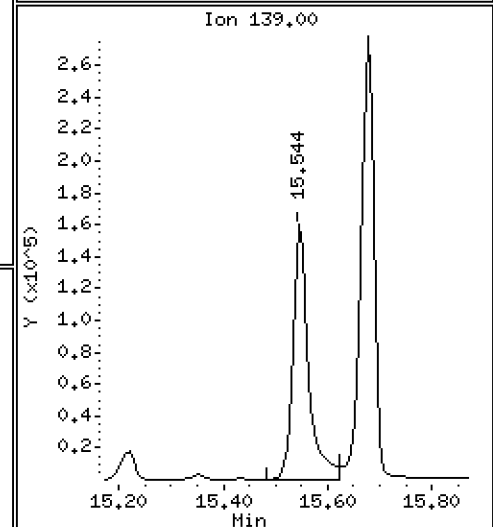
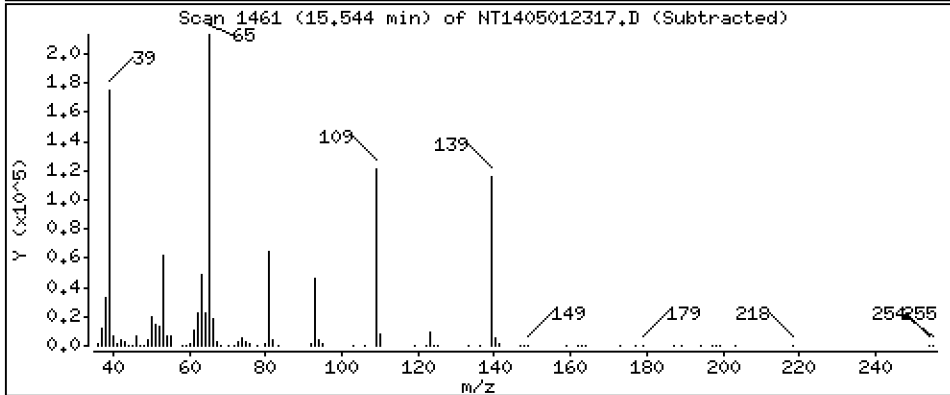
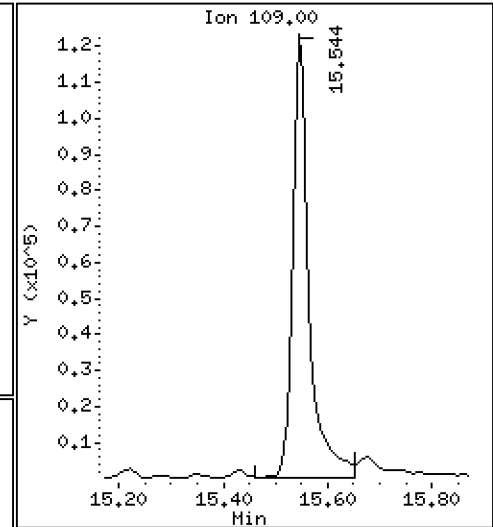
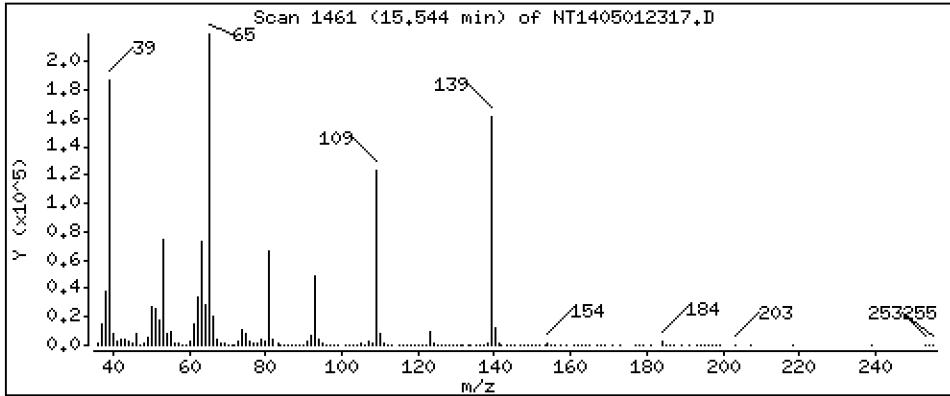
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 10,83 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

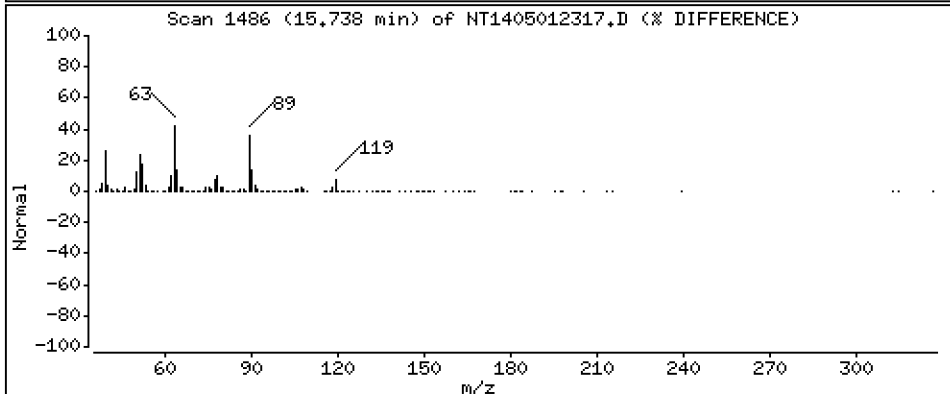
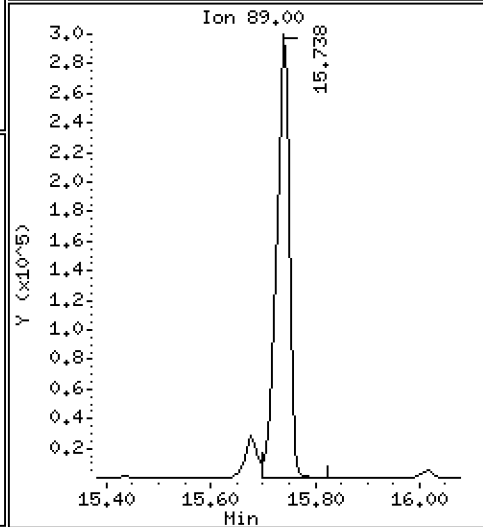
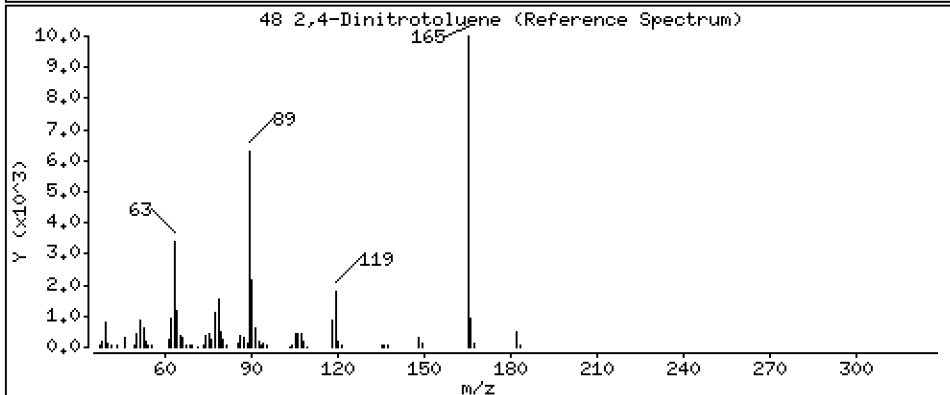
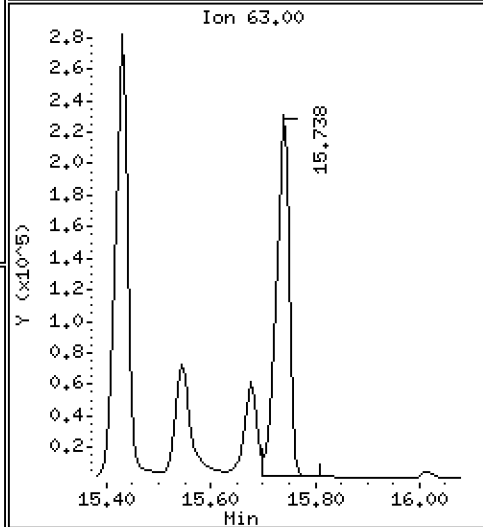
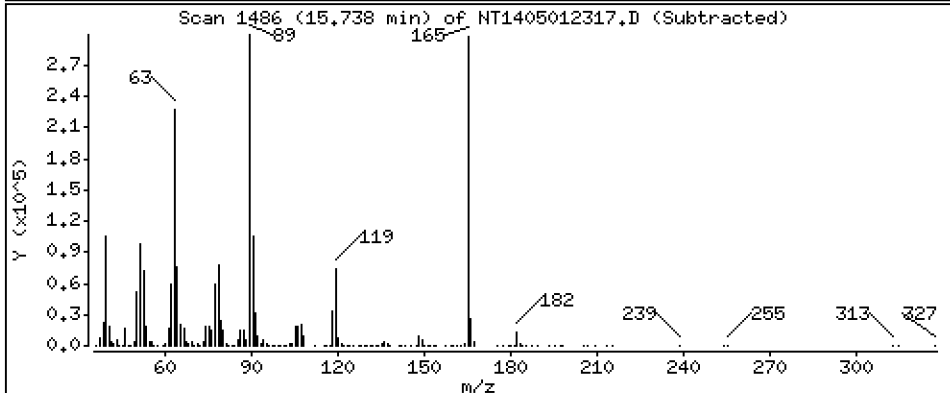
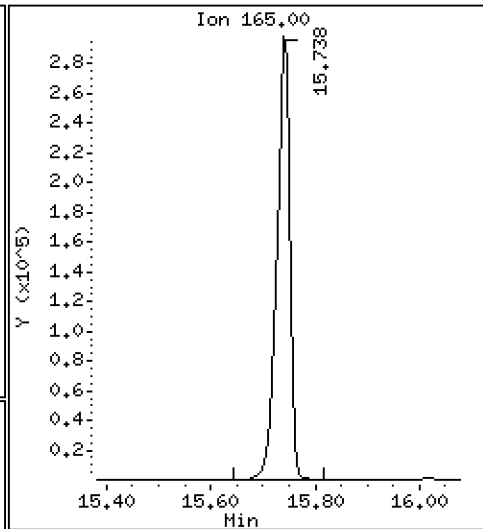
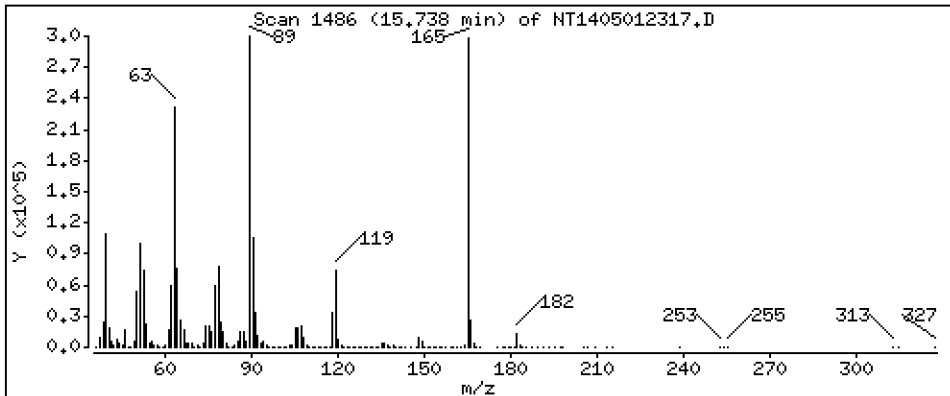
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 10,86 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

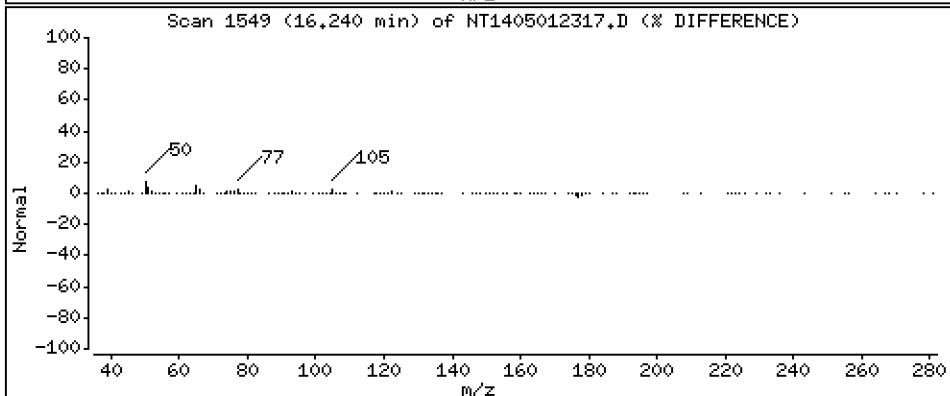
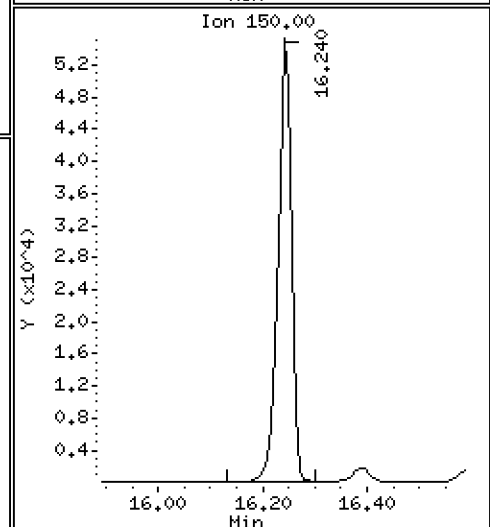
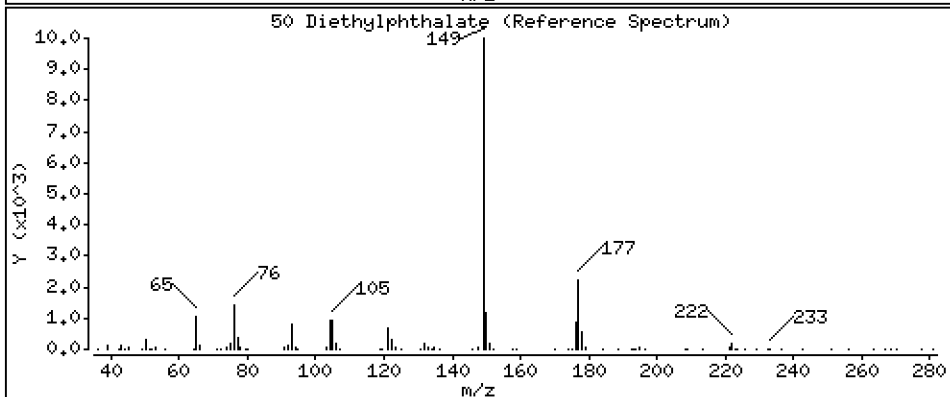
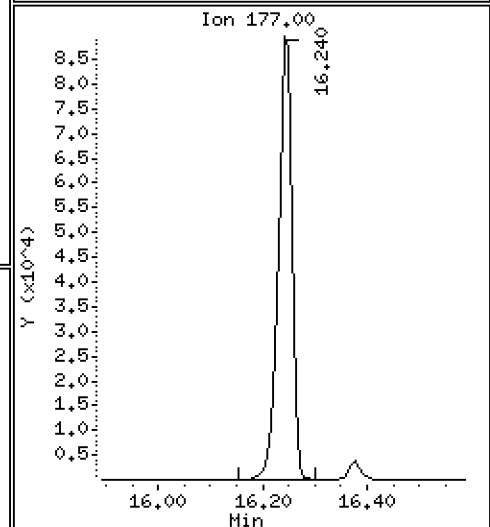
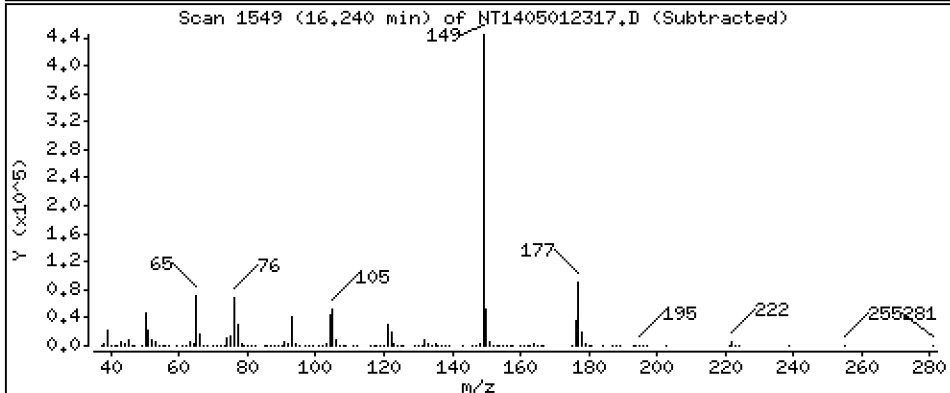
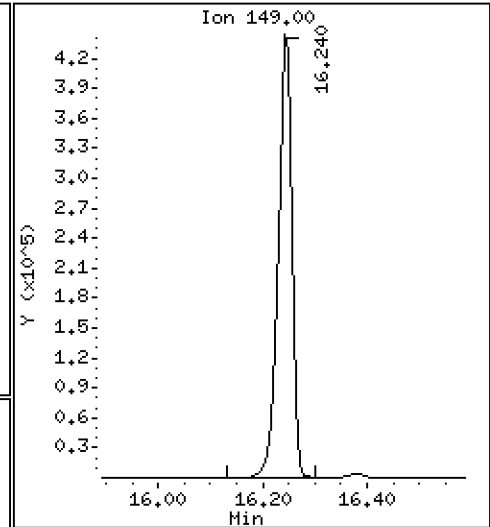
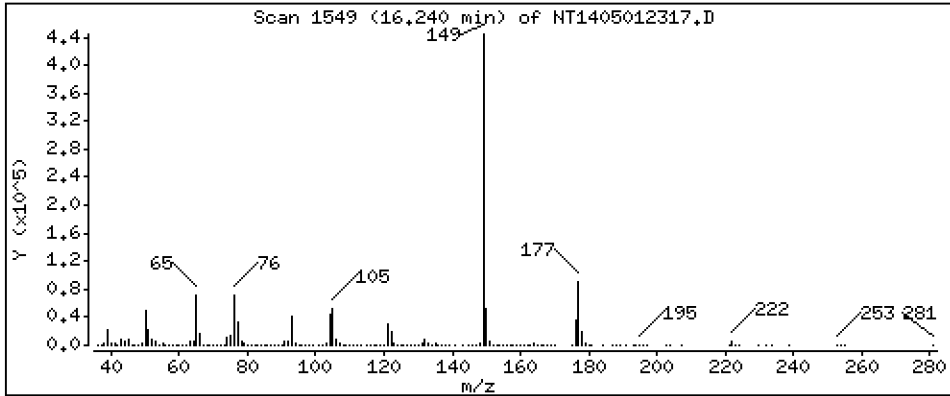
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 5,344 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

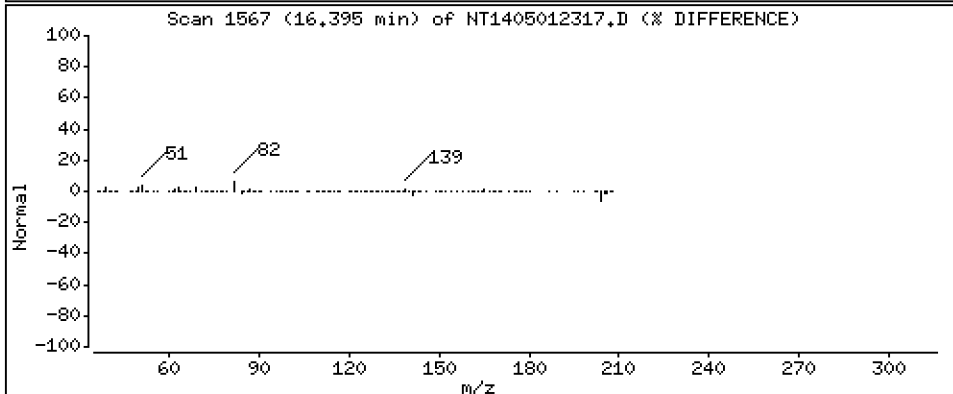
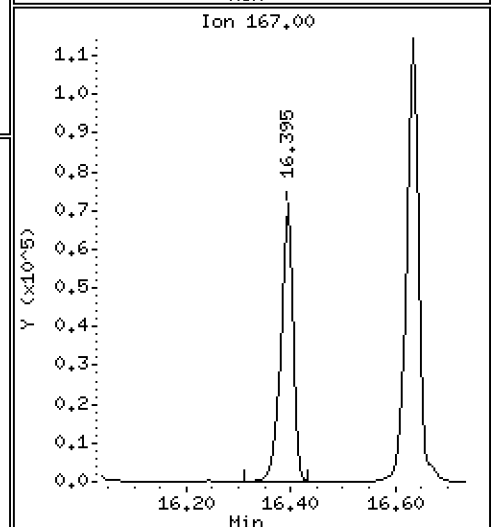
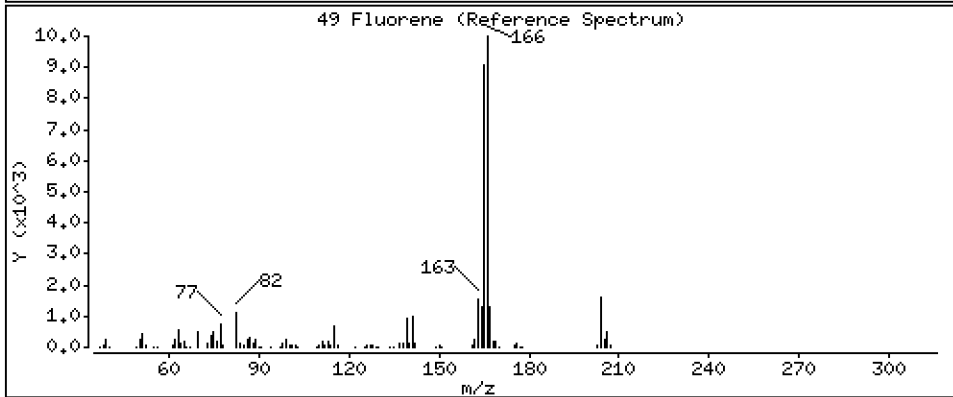
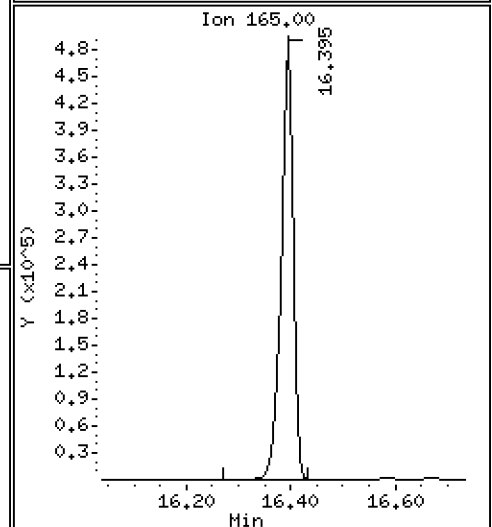
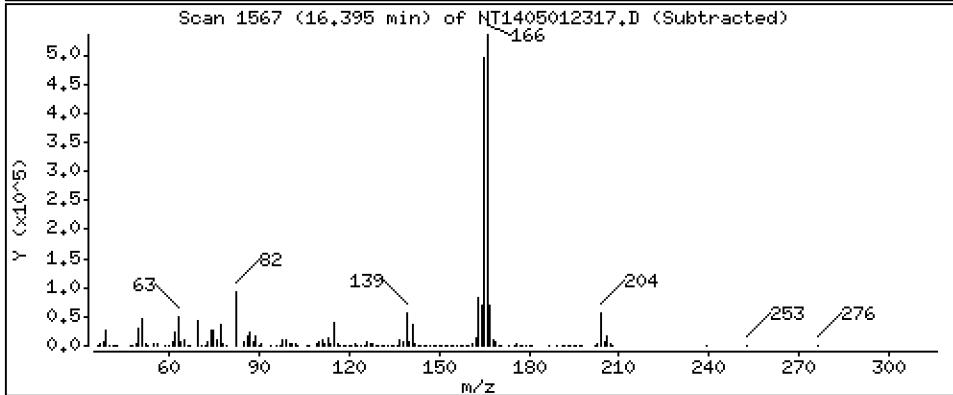
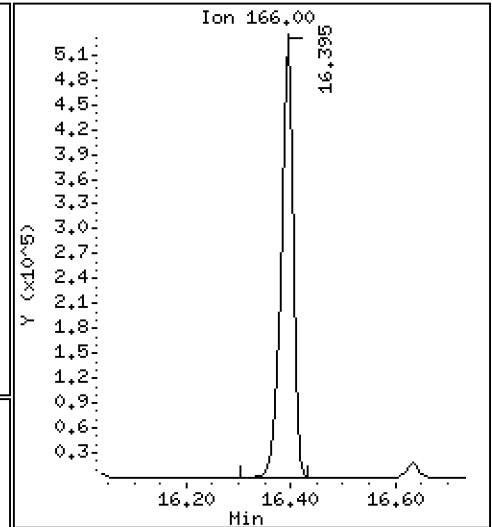
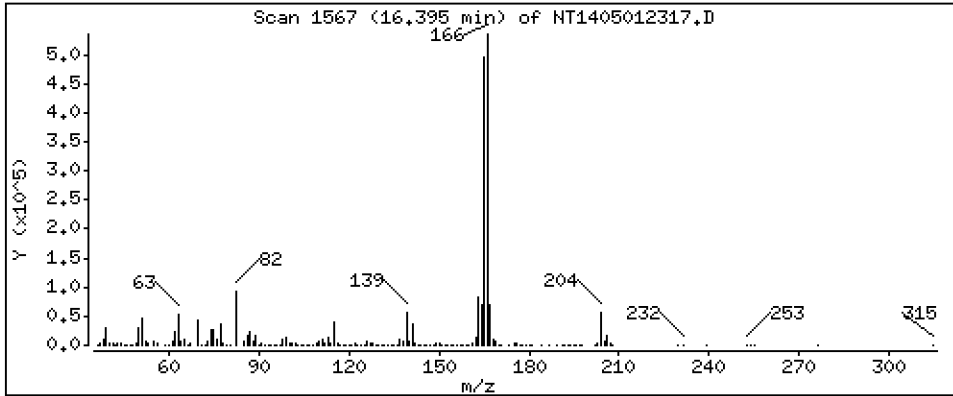
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

49 Fluorene

Concentration: 4.801 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

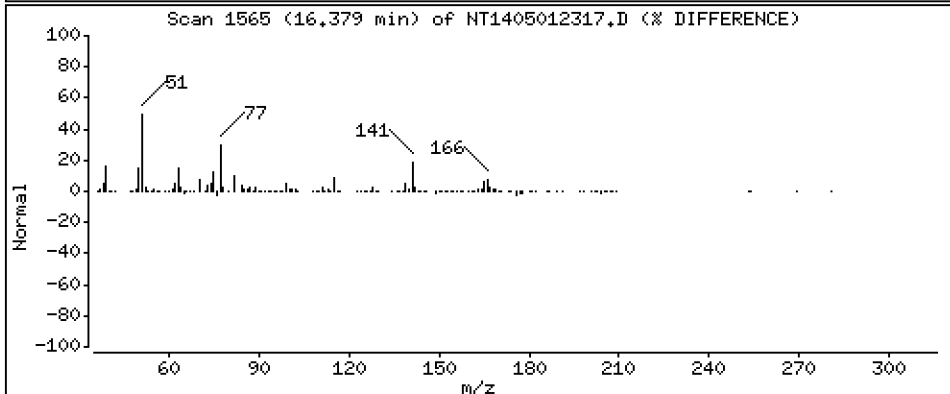
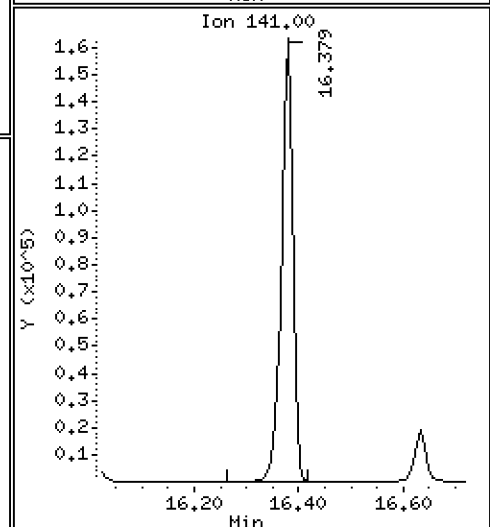
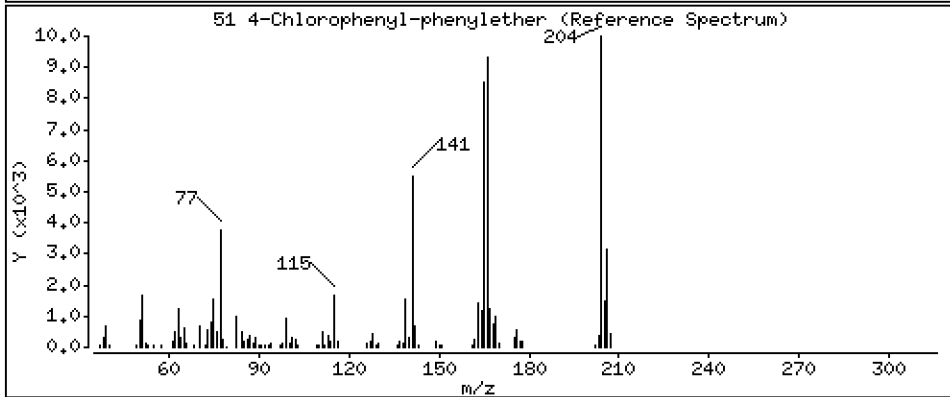
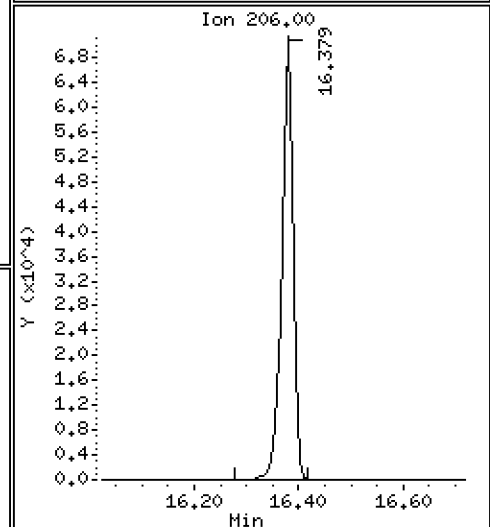
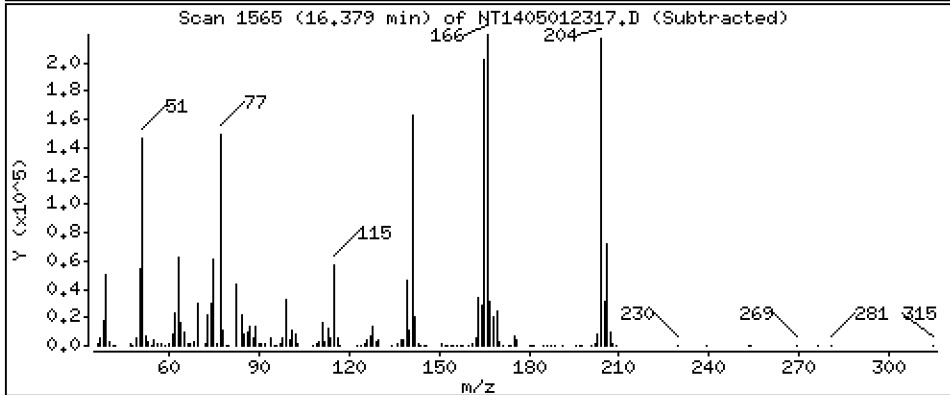
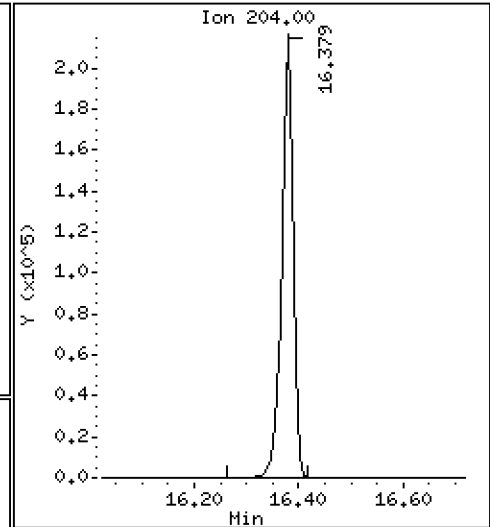
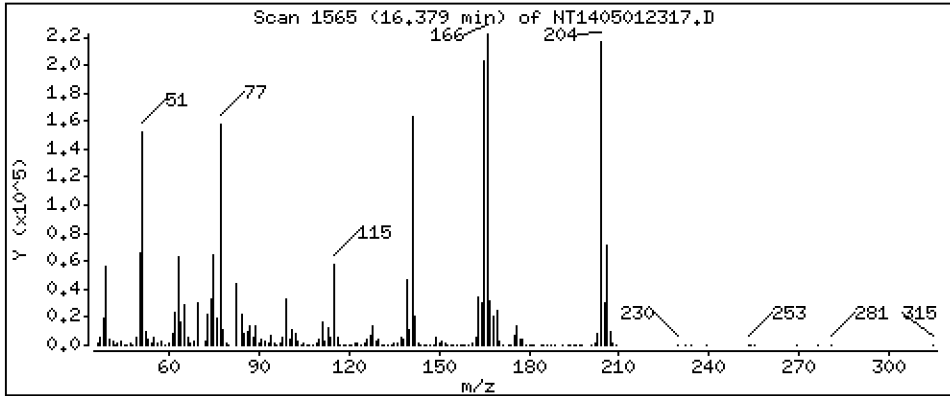
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 4,966 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

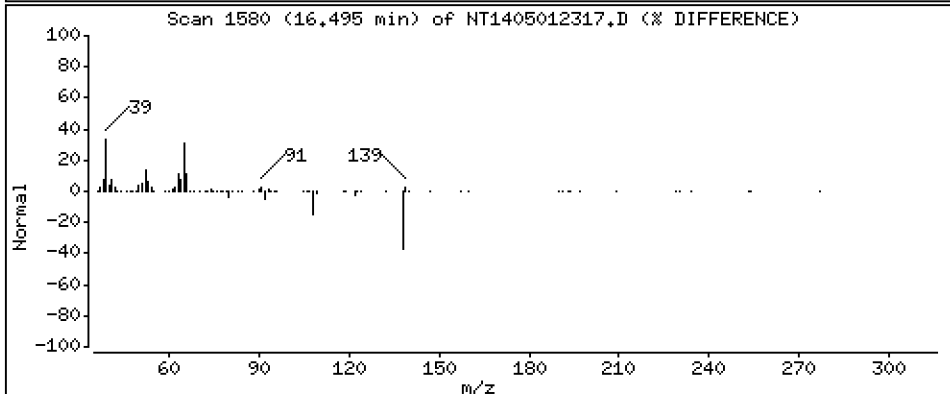
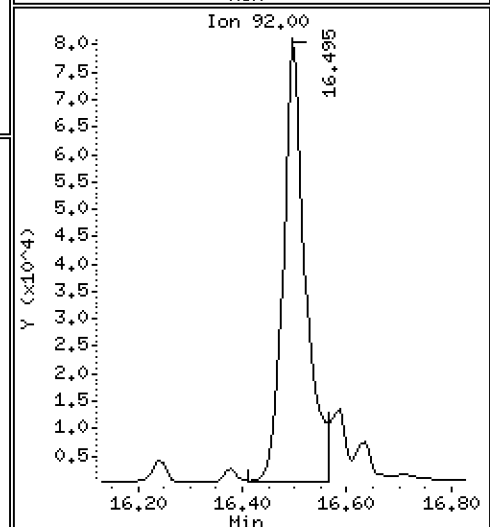
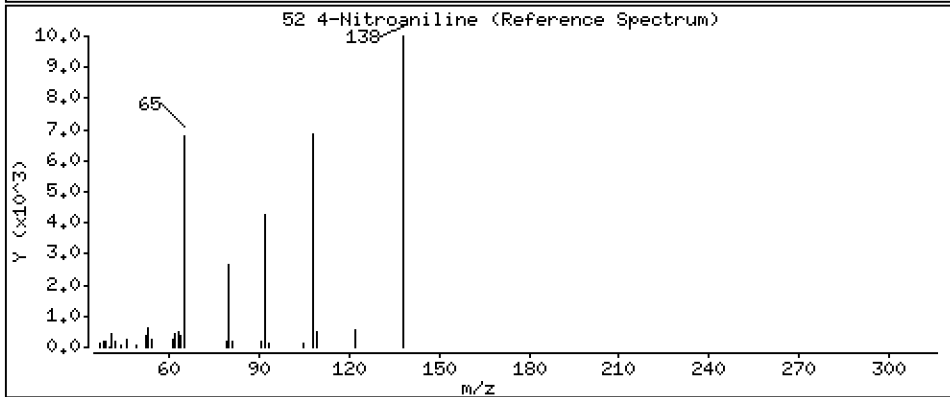
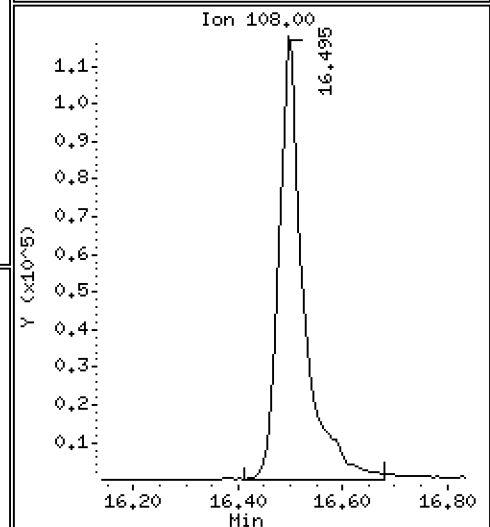
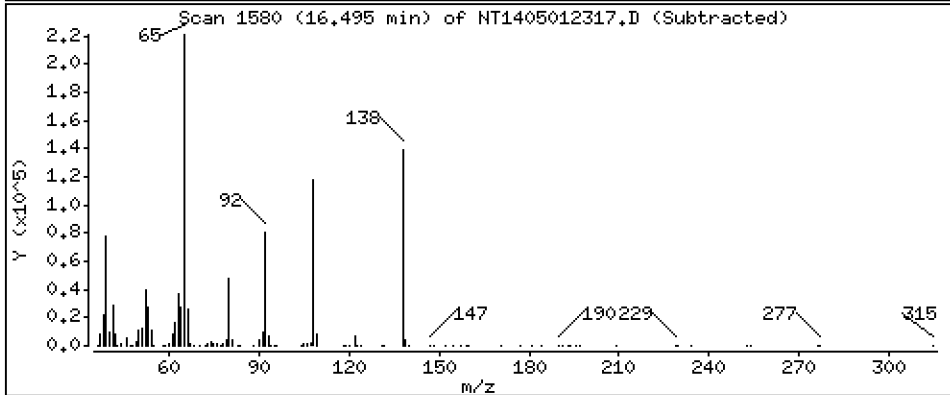
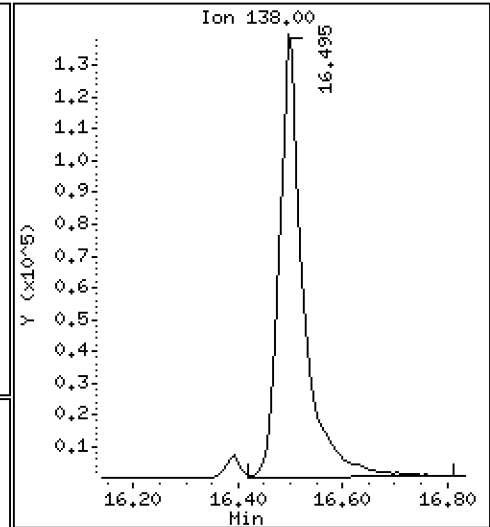
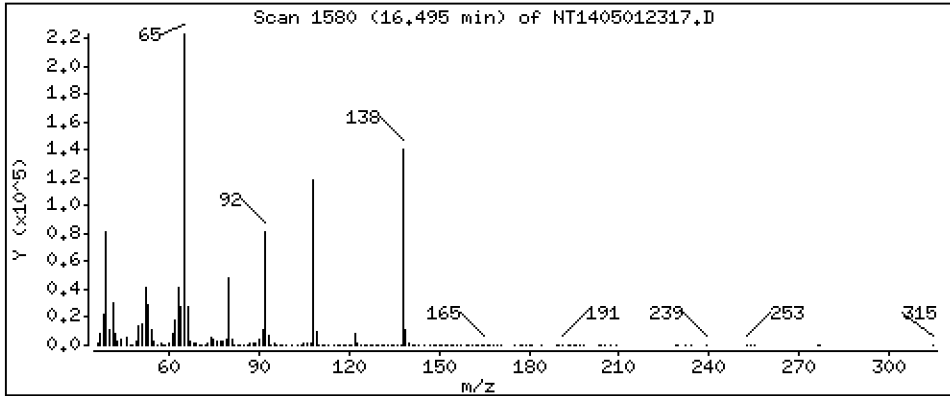
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 11,53 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

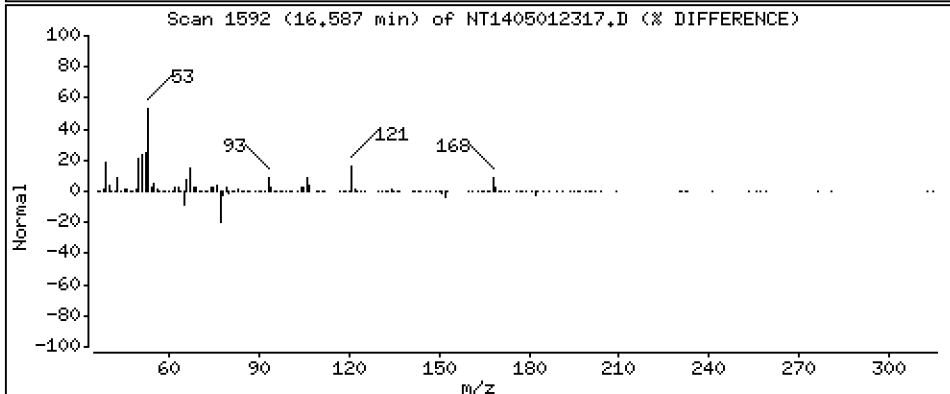
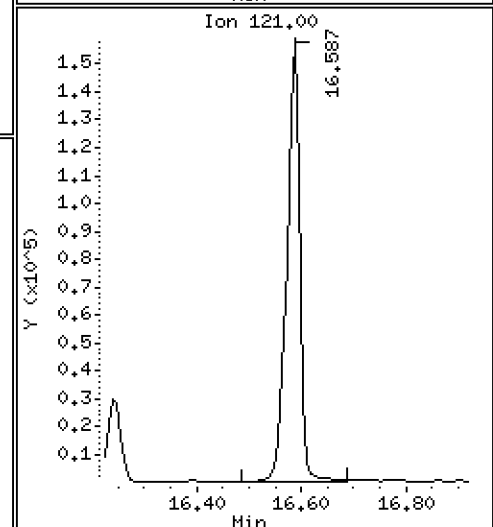
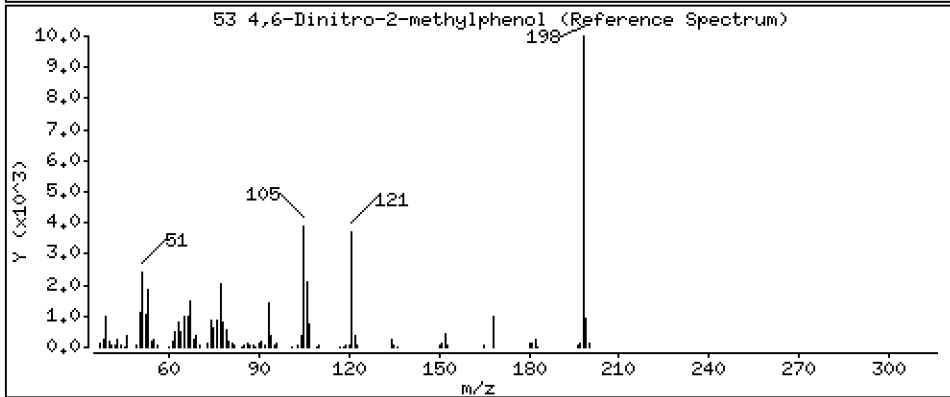
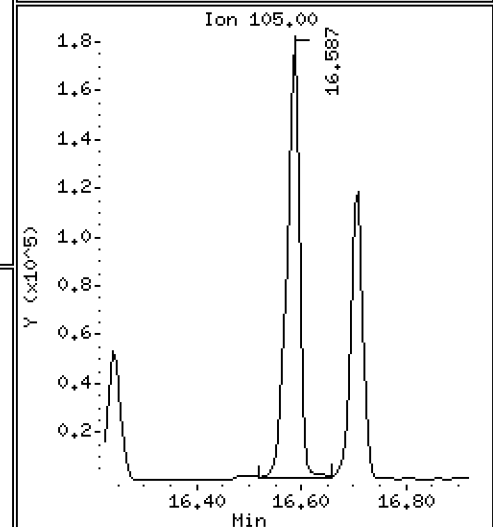
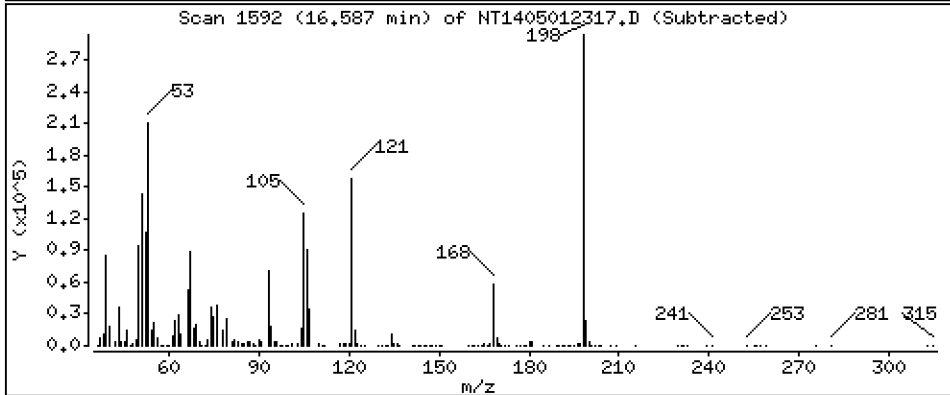
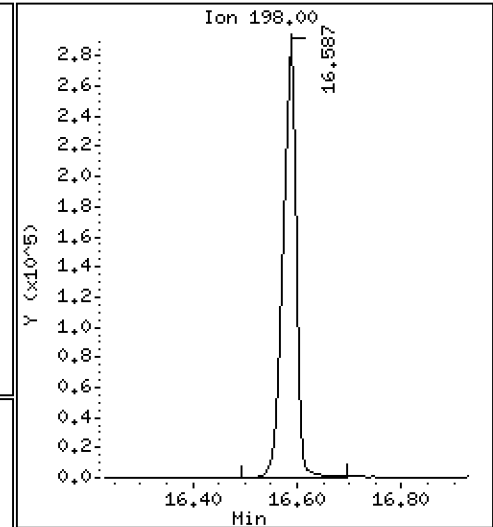
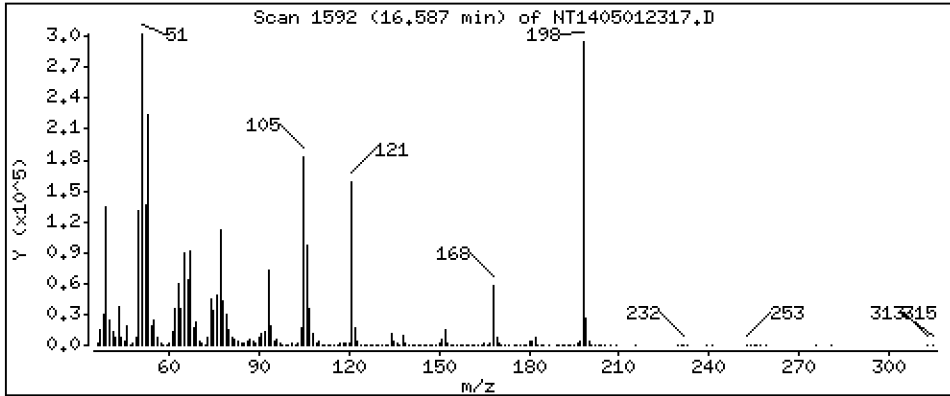
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 21,06 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

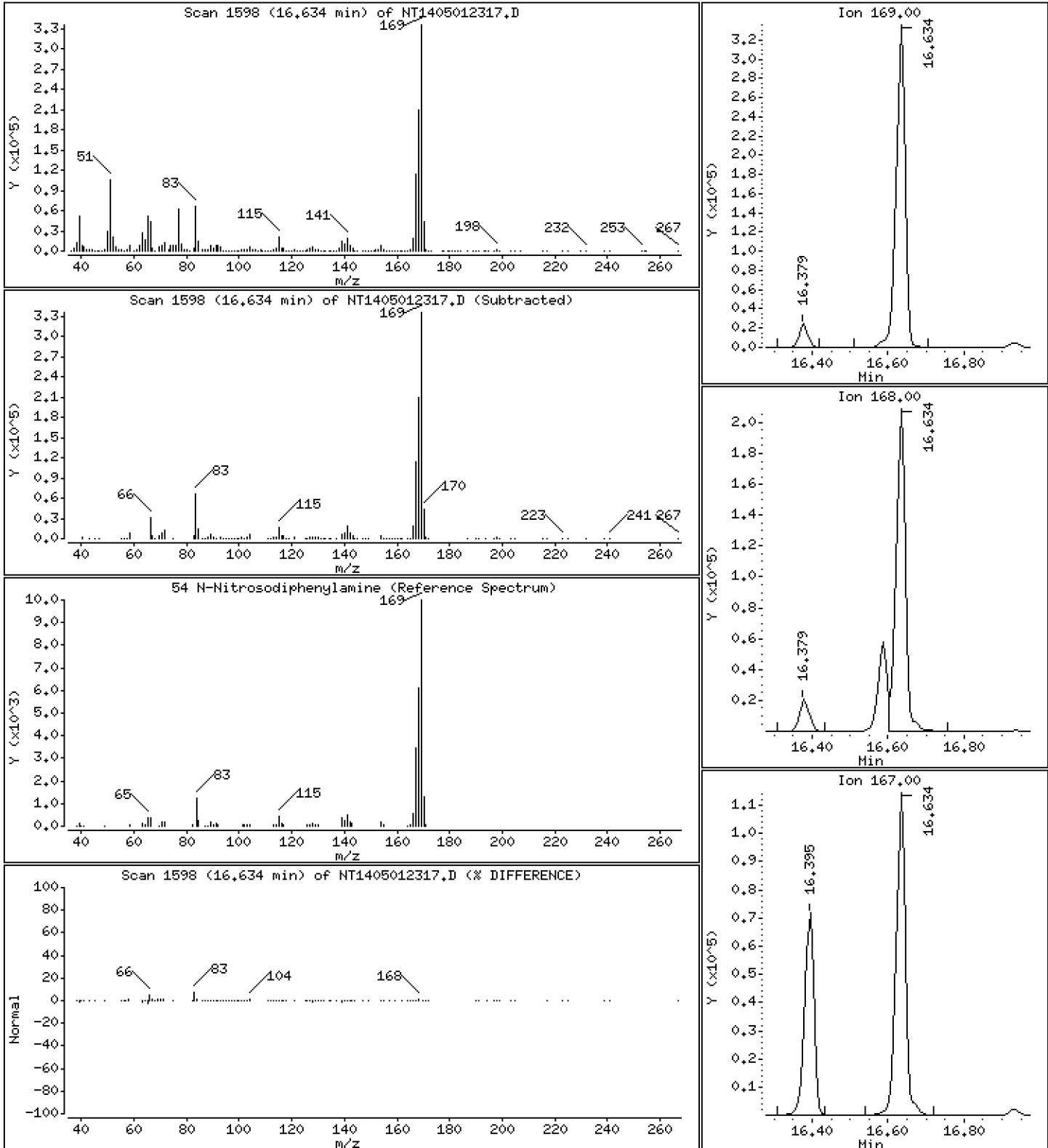
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 5,057 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

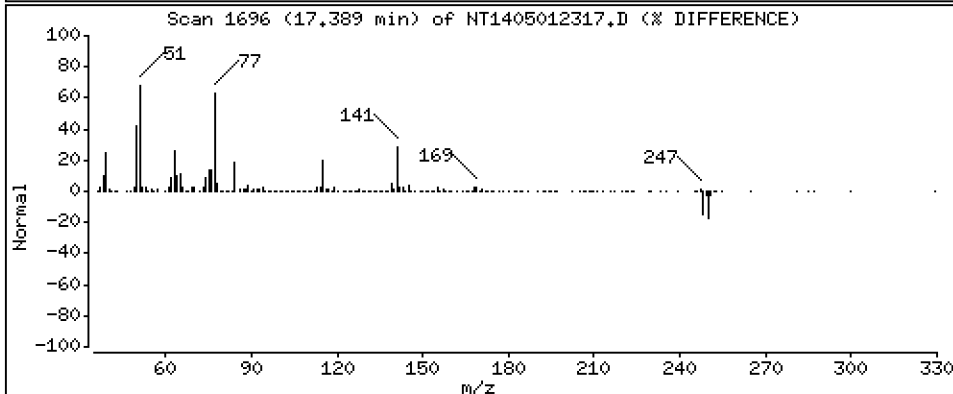
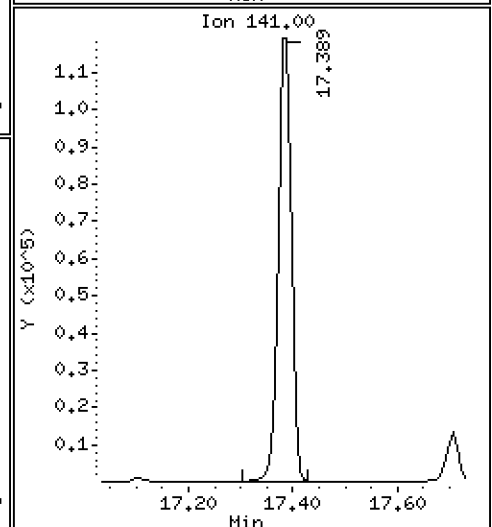
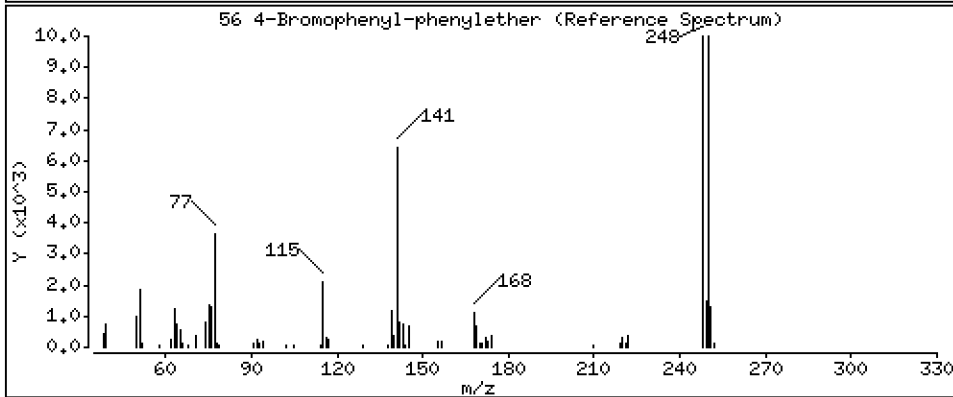
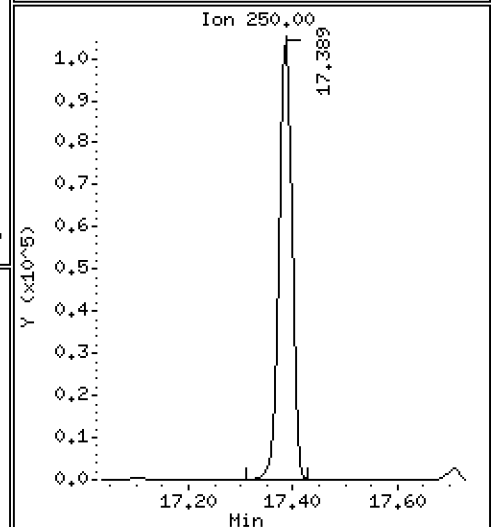
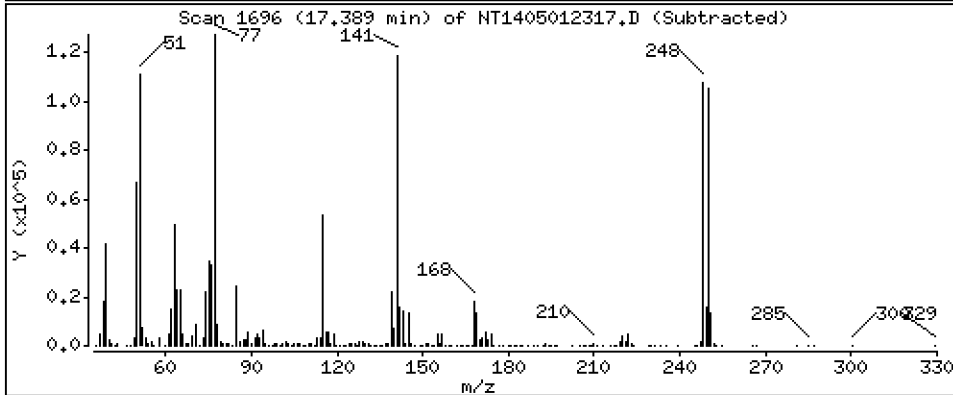
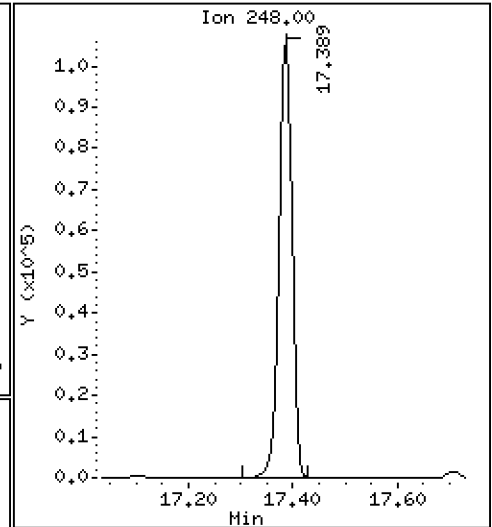
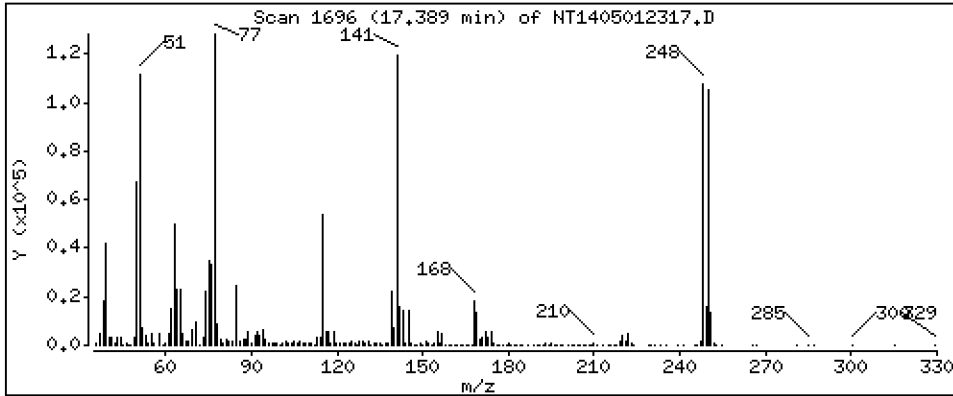
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 4,987 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

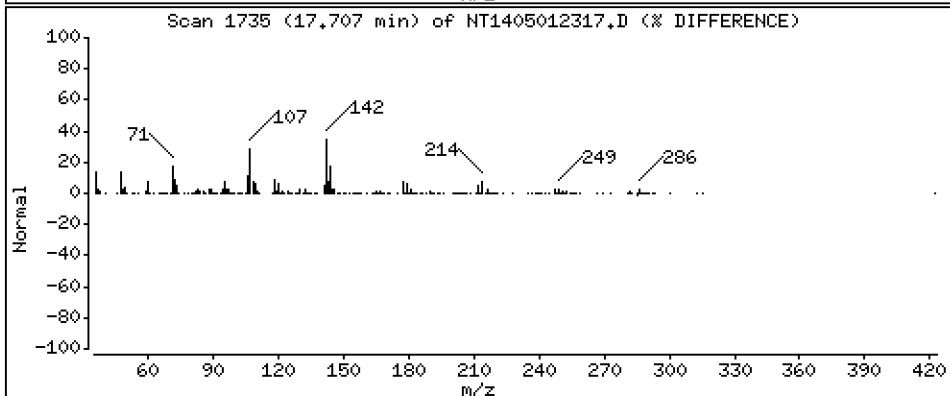
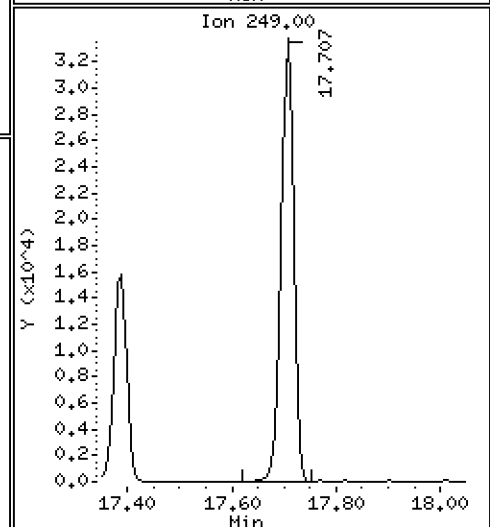
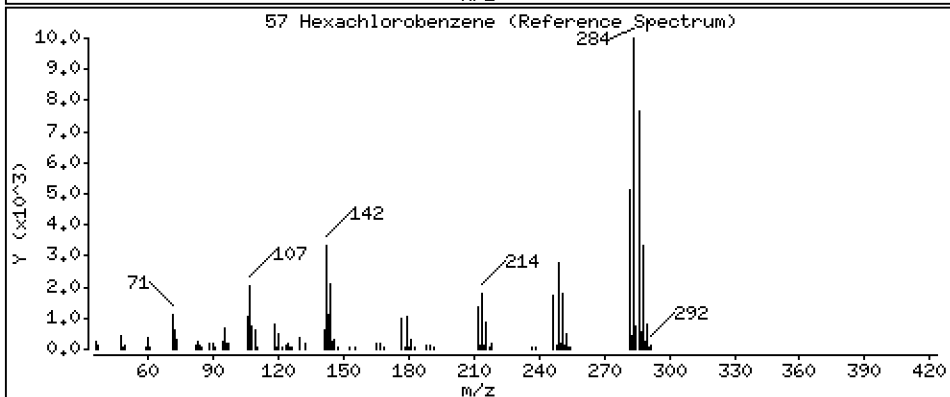
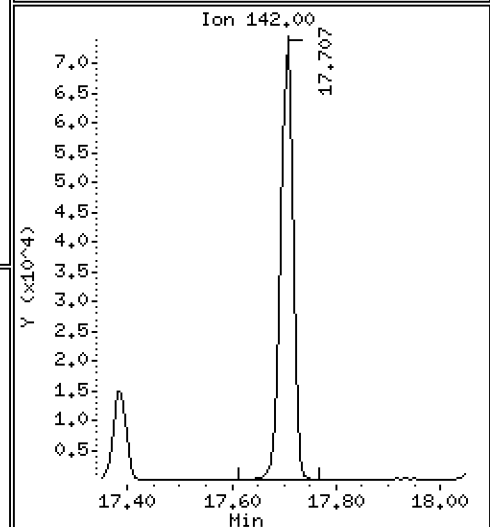
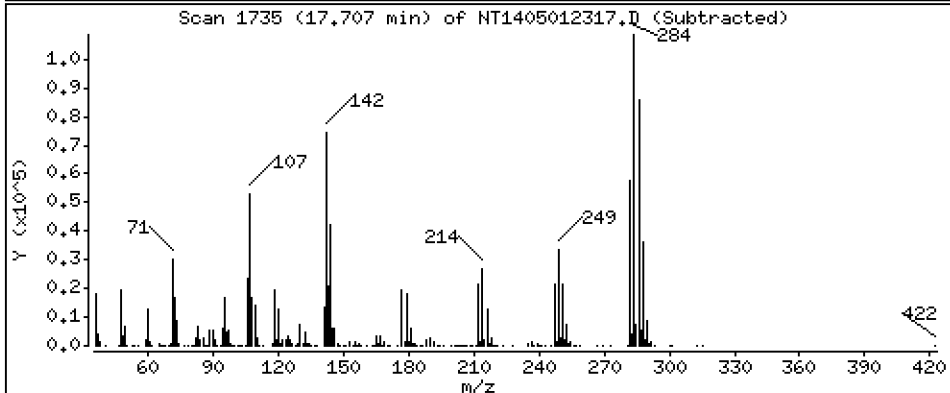
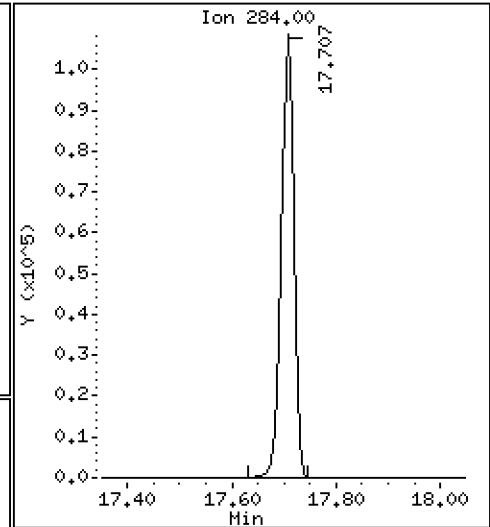
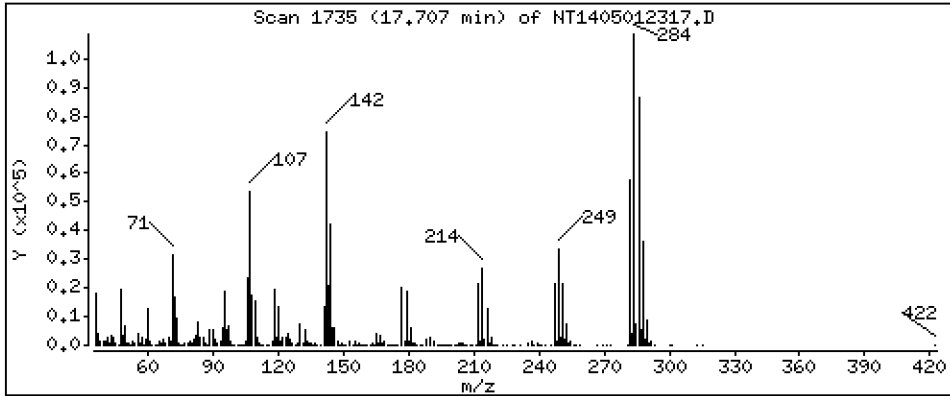
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,828 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

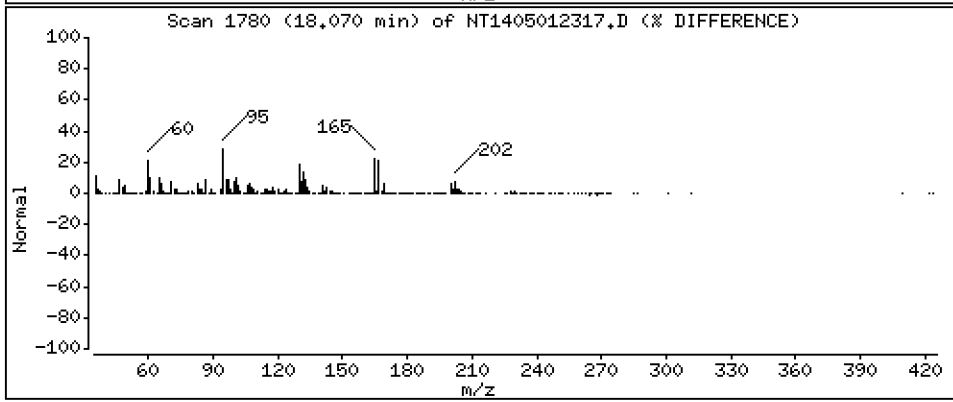
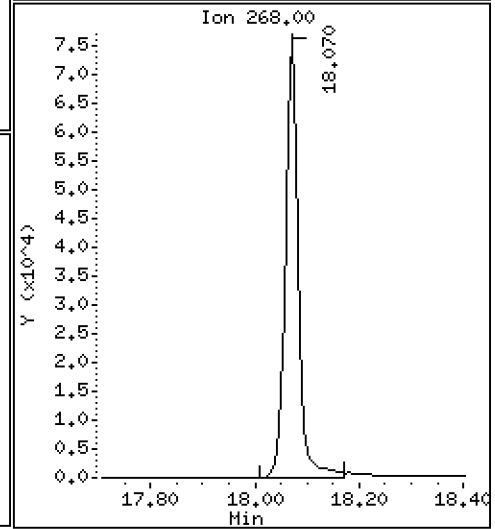
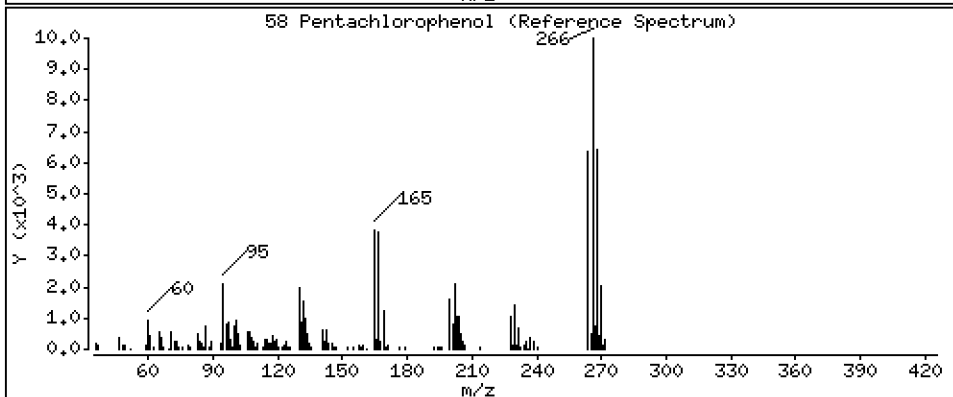
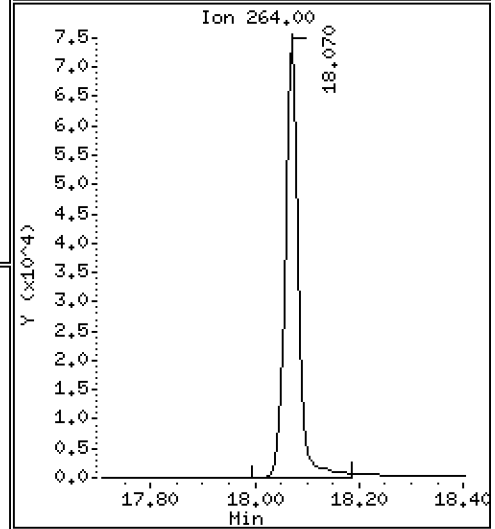
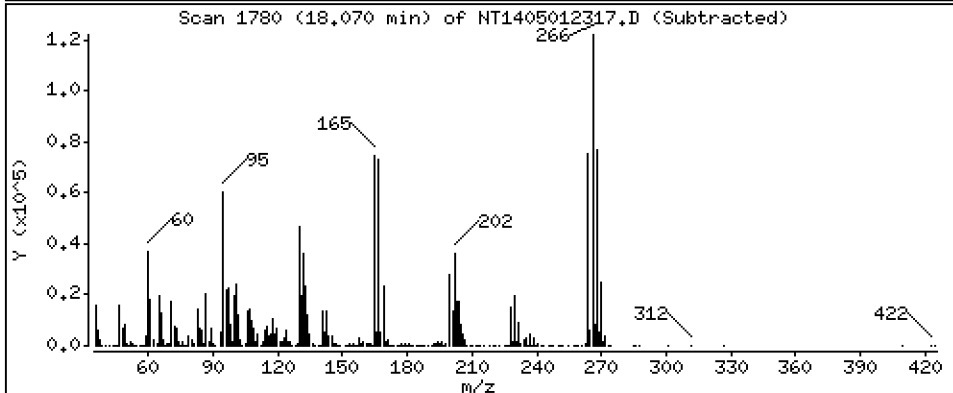
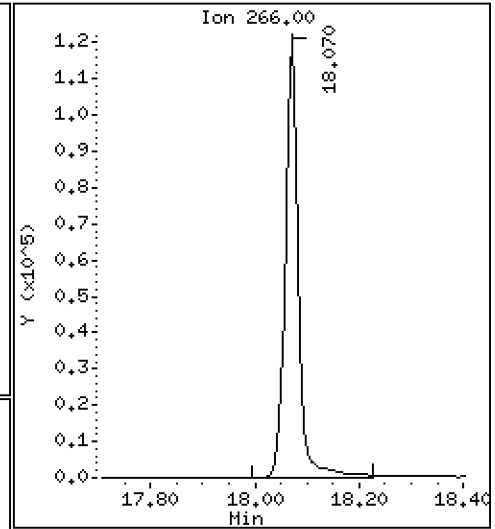
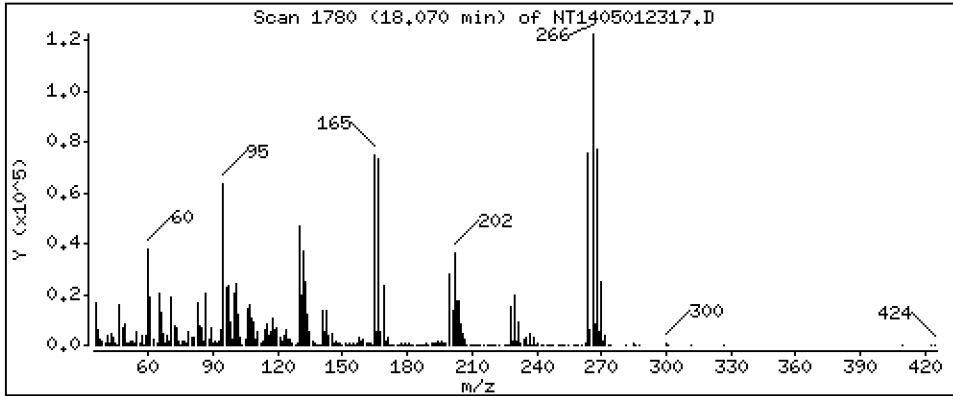
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 9,487 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

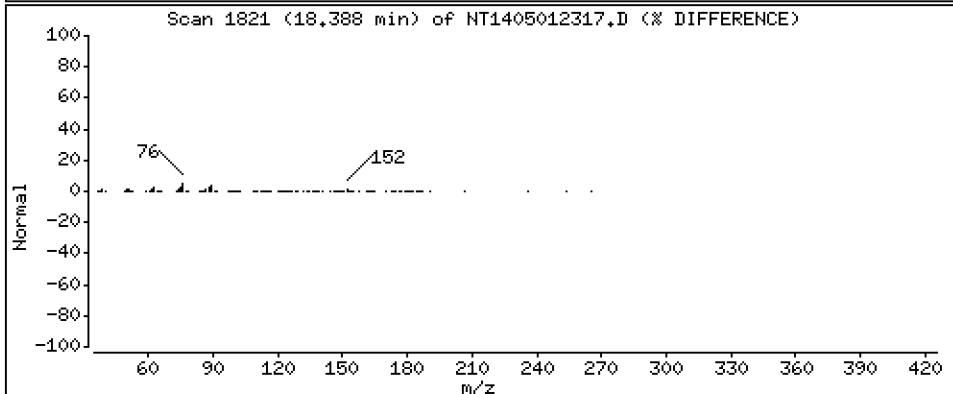
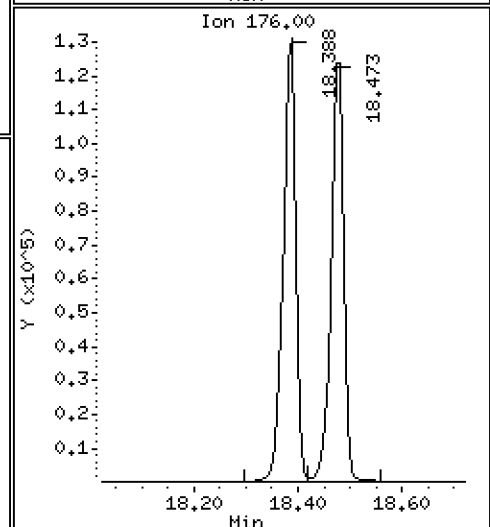
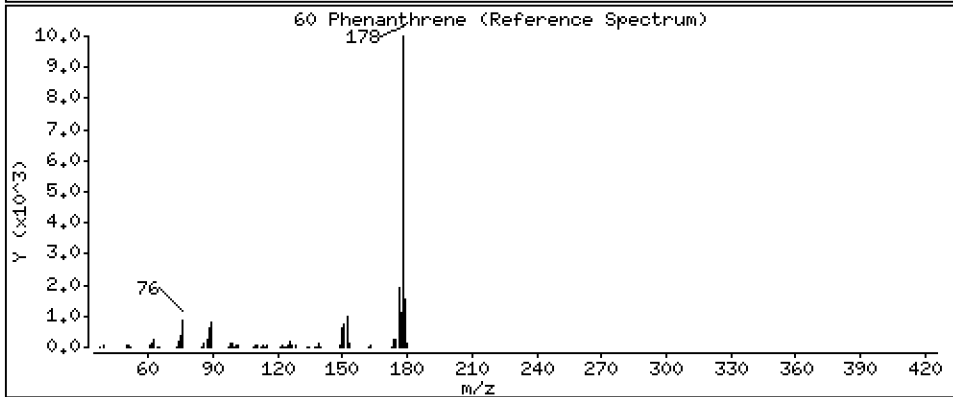
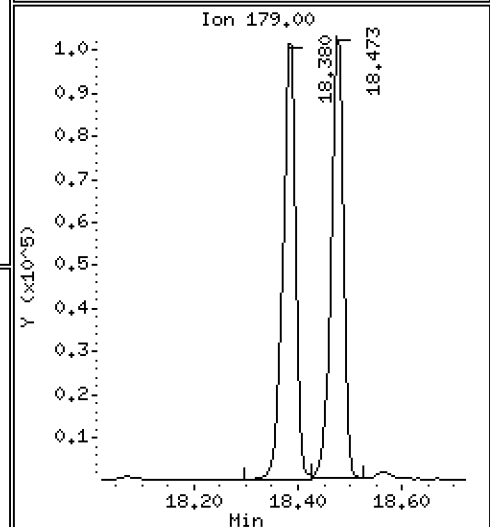
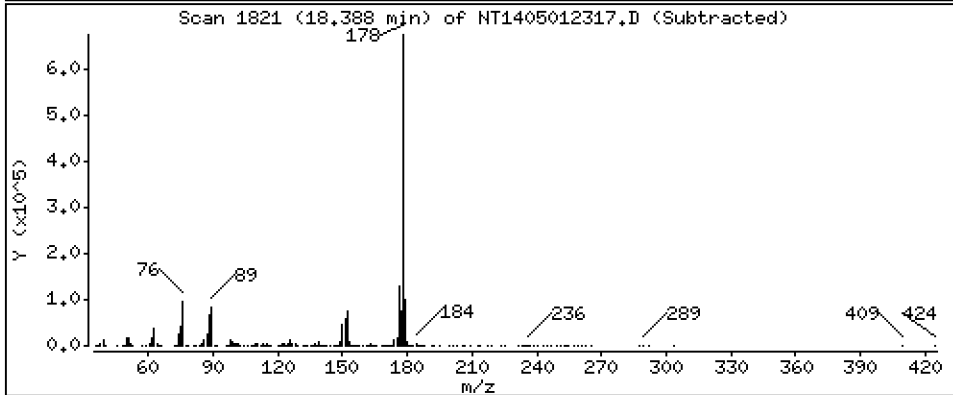
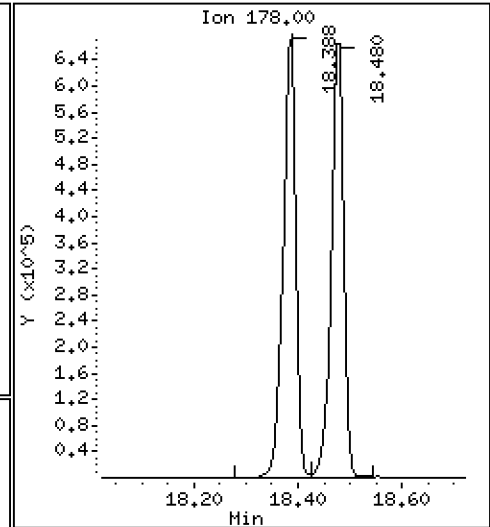
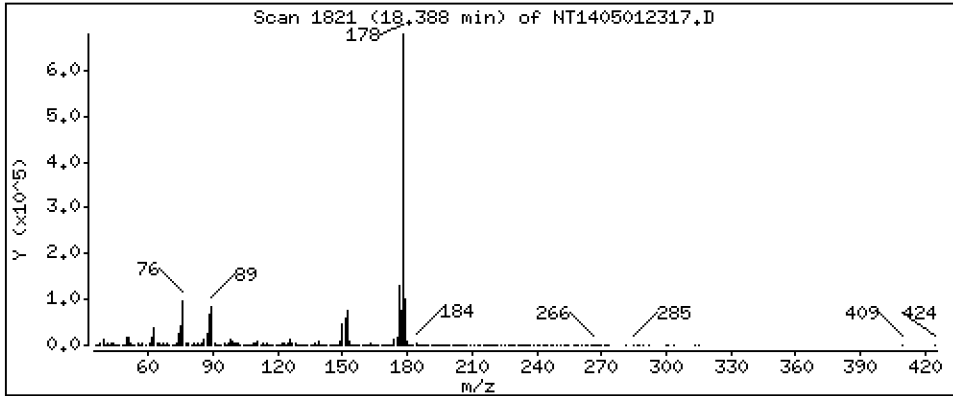
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 5,340 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

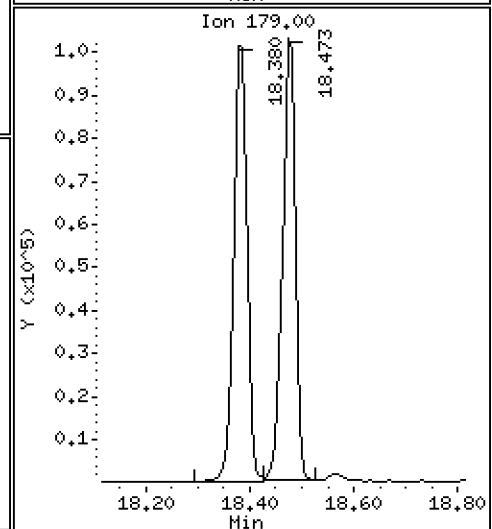
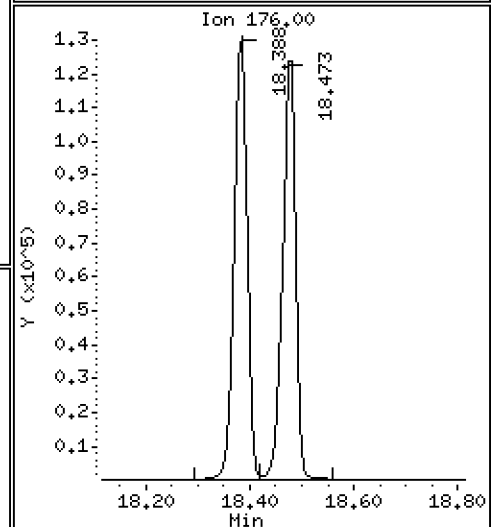
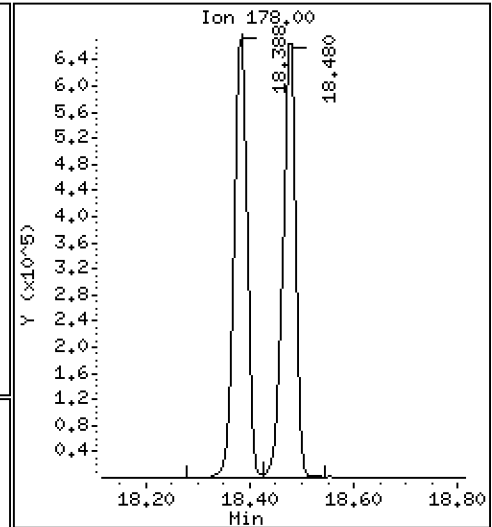
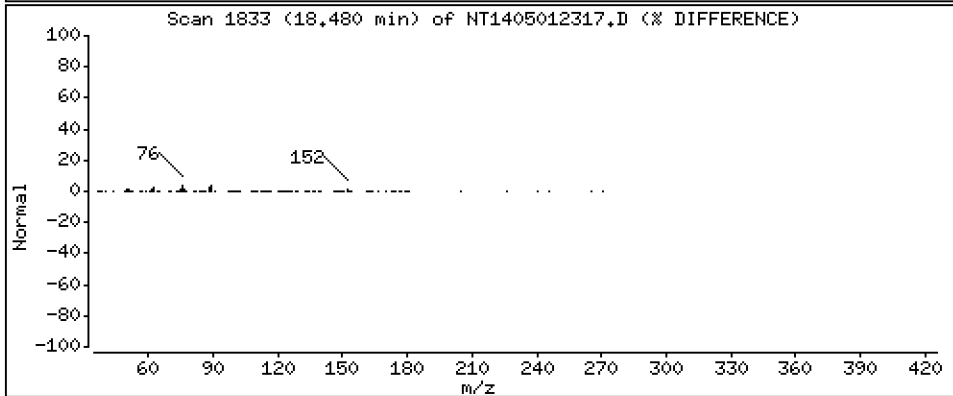
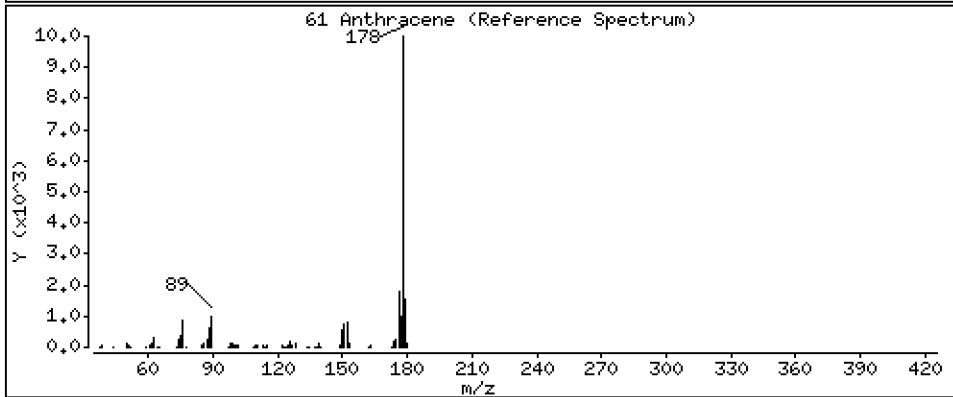
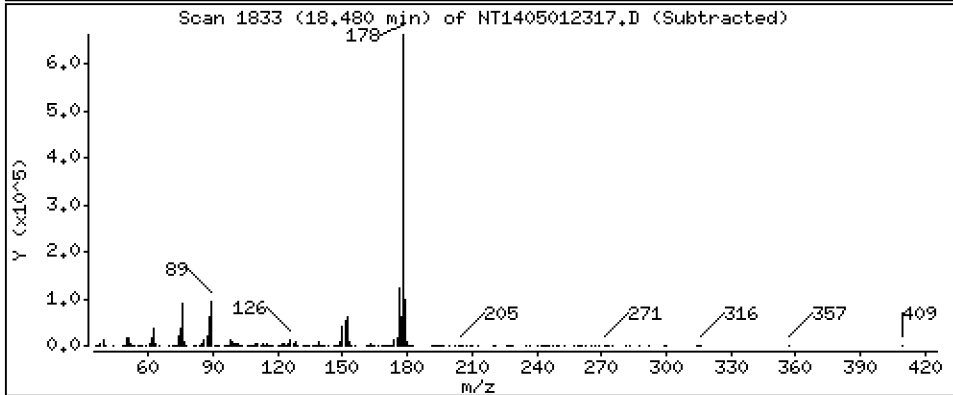
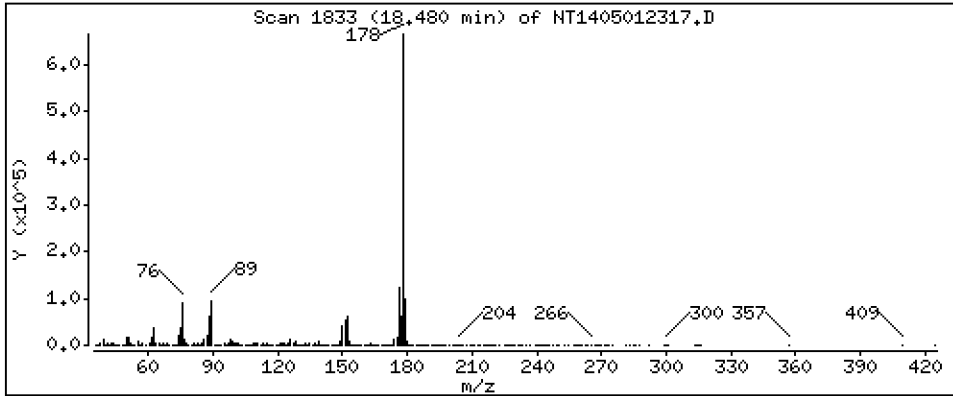
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 5,539 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

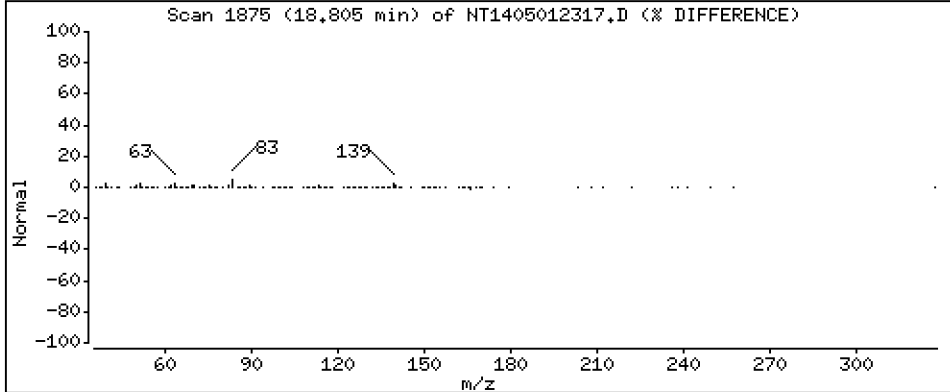
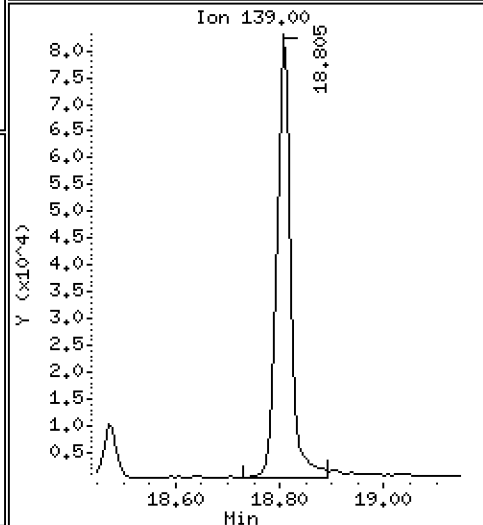
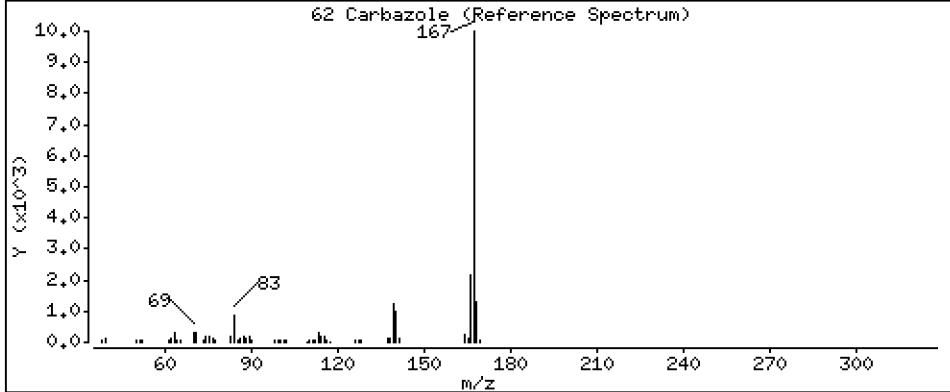
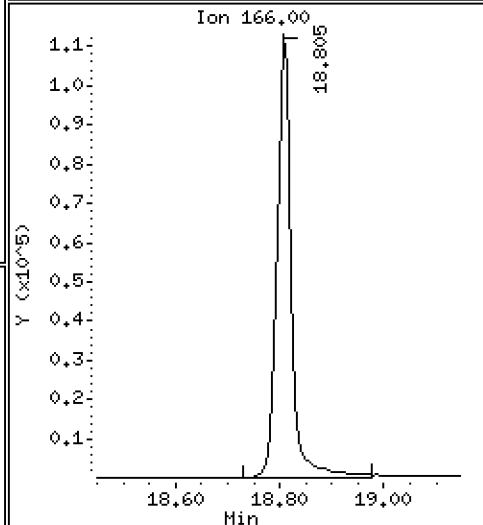
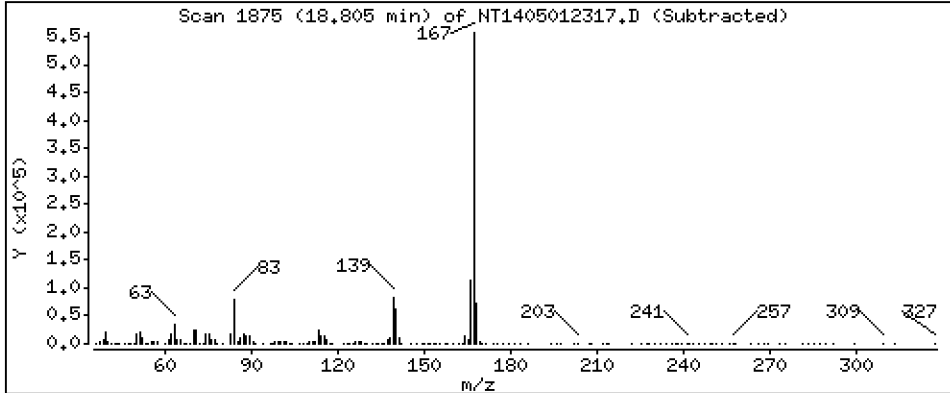
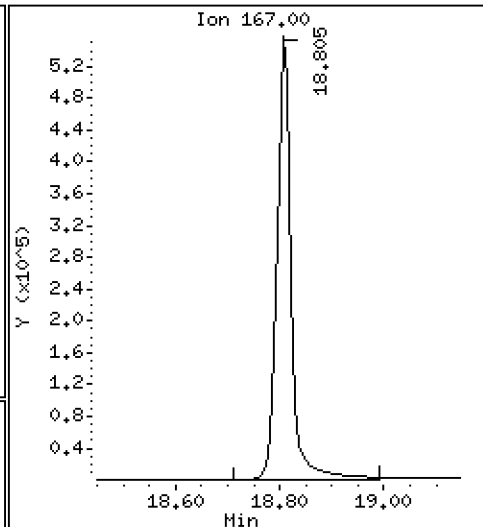
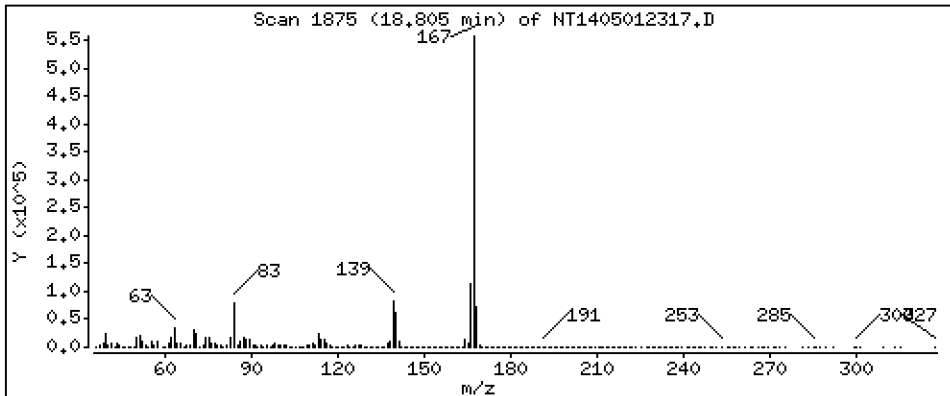
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 5,491 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

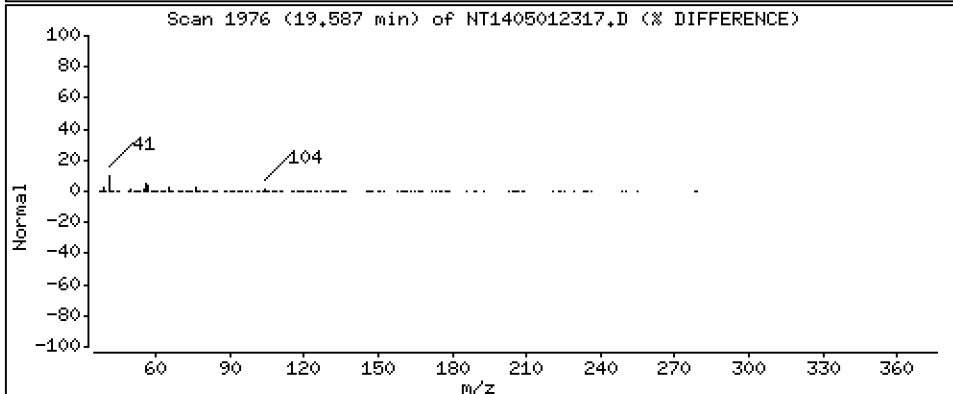
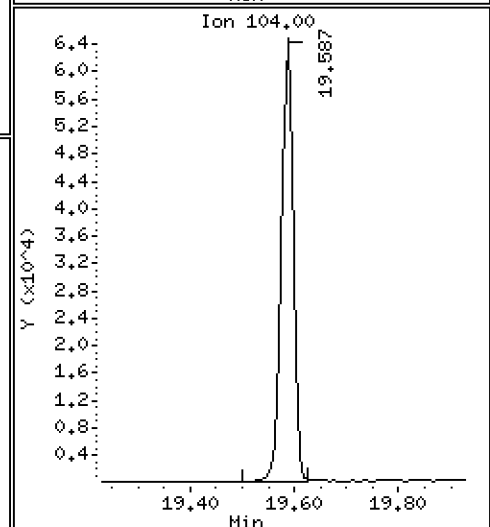
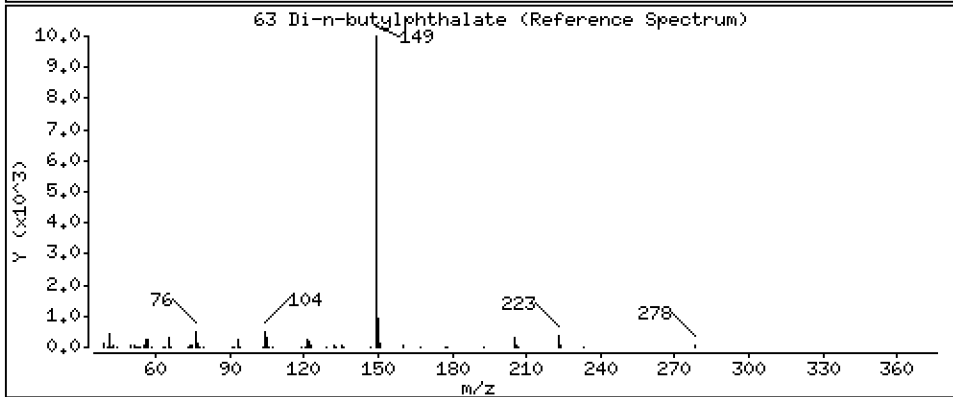
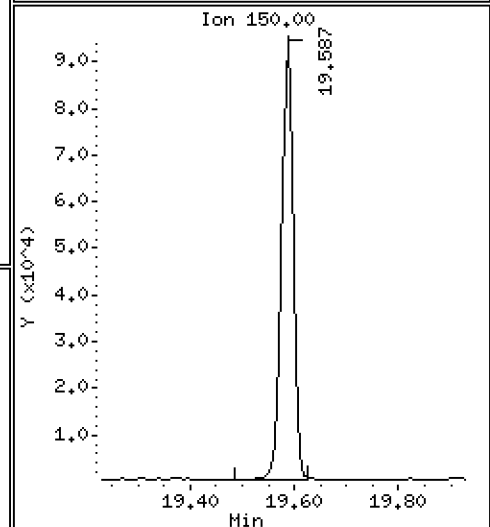
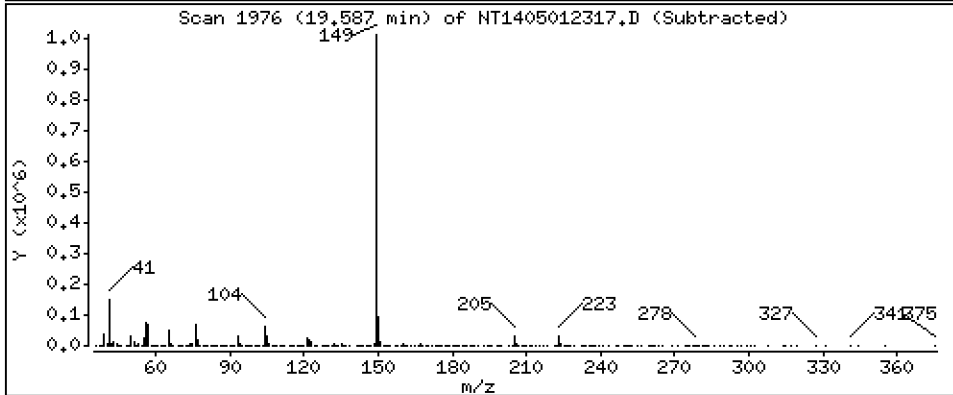
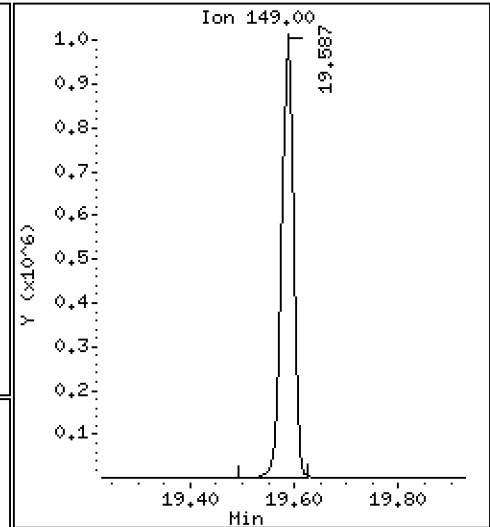
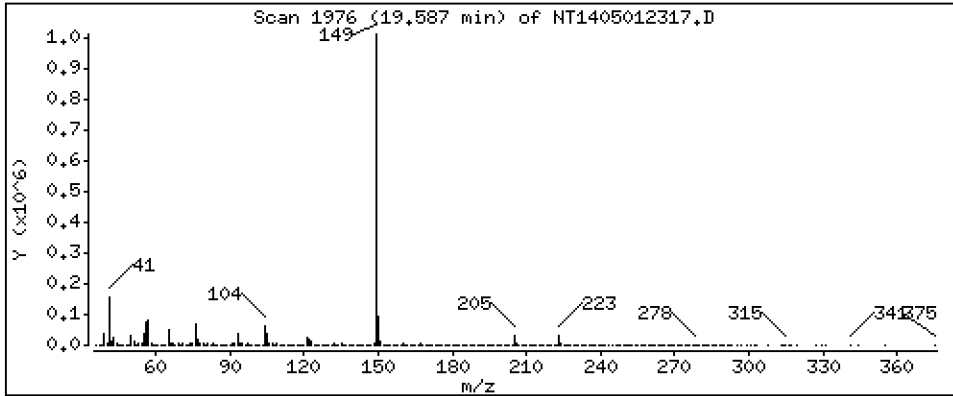
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 5,198 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

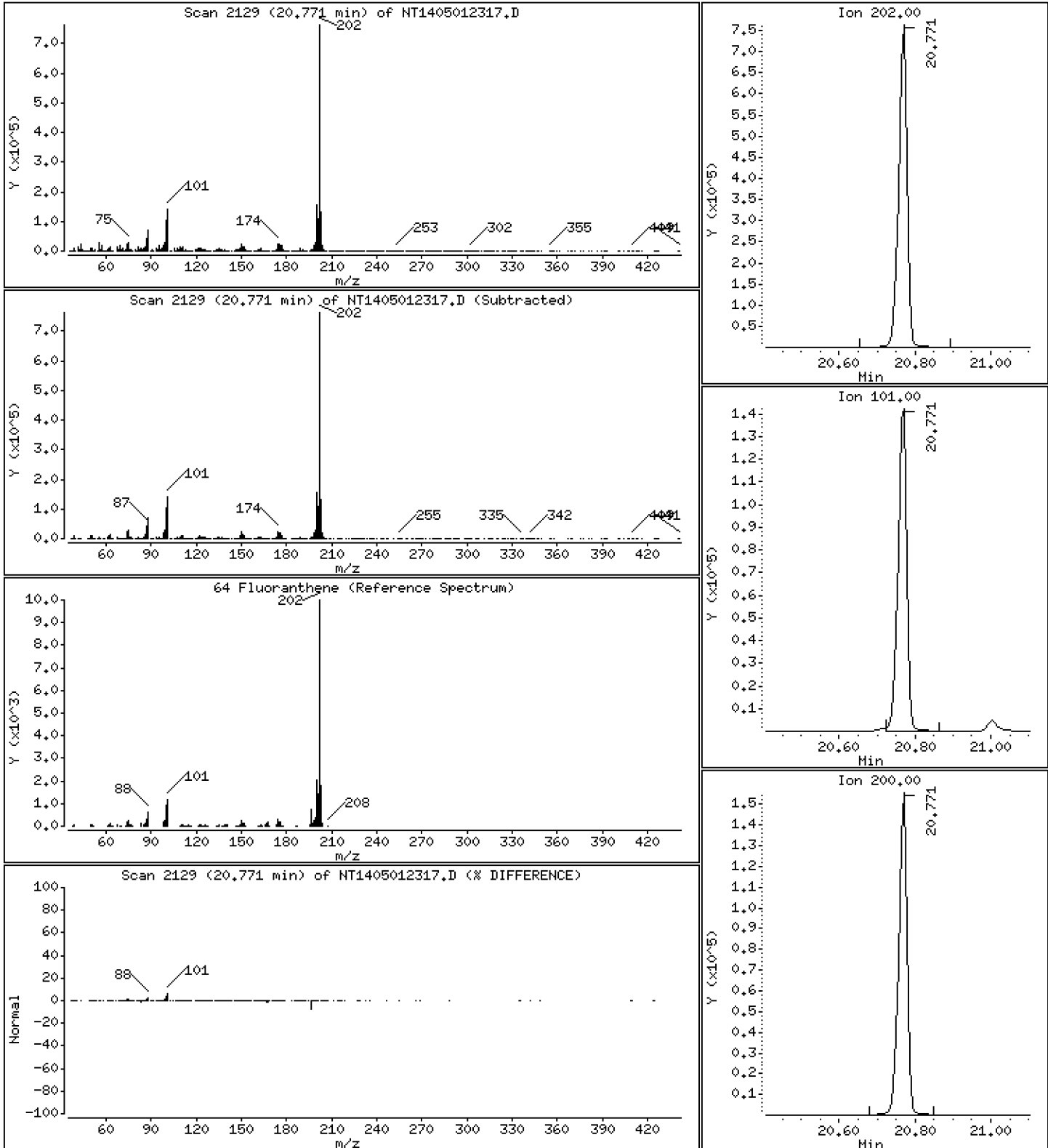
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 4,969 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

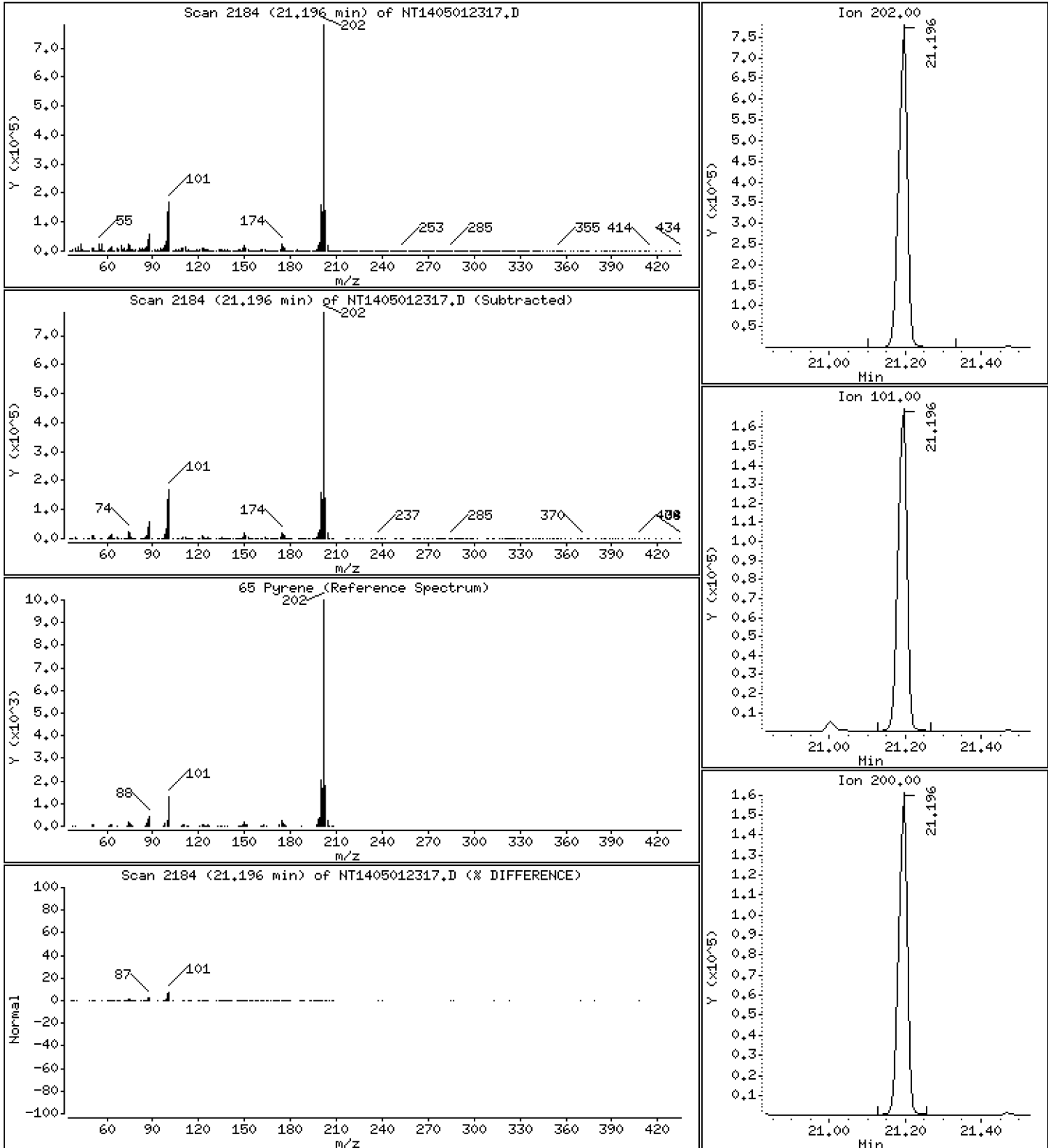
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 5,144 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

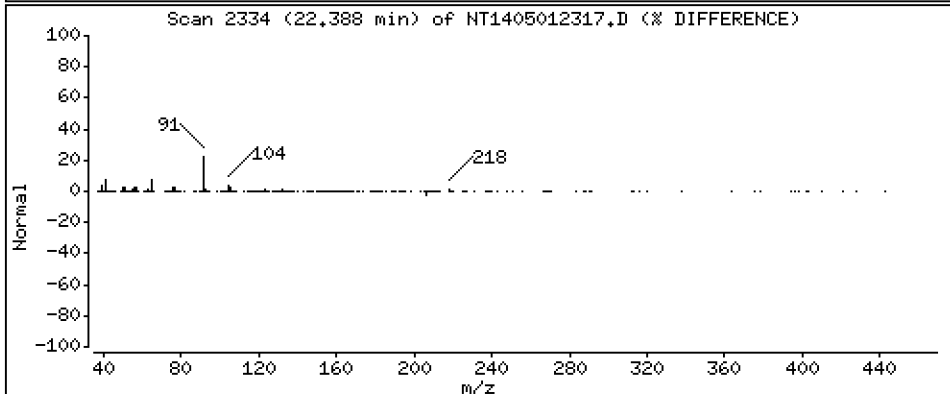
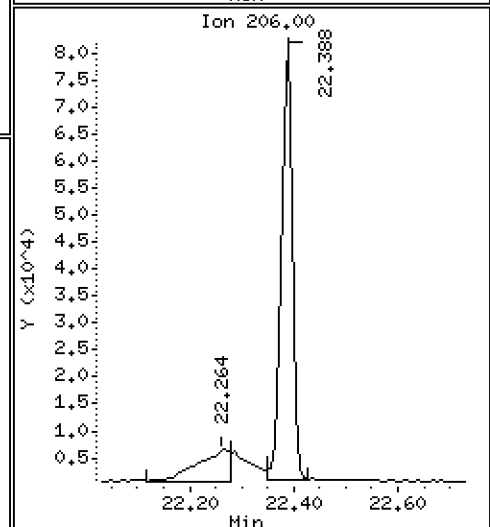
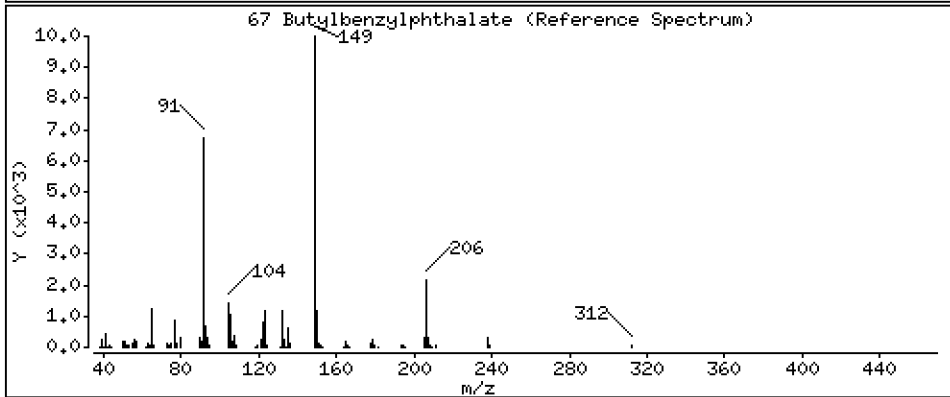
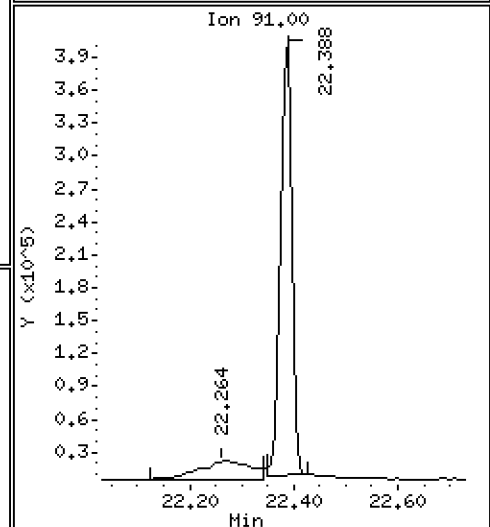
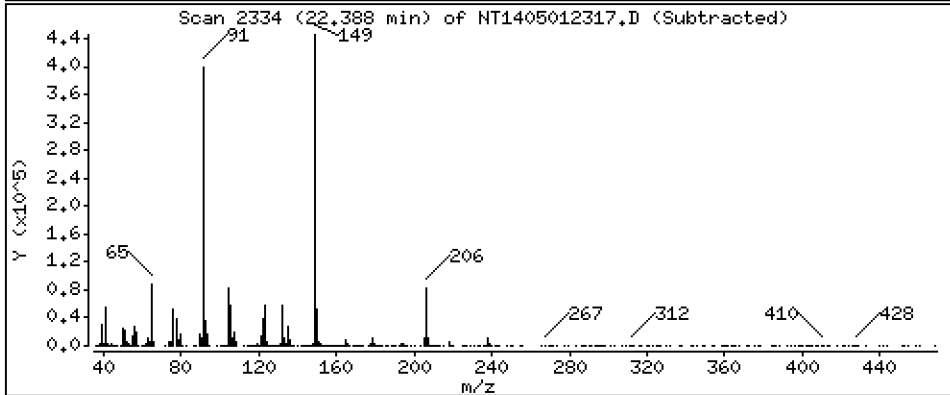
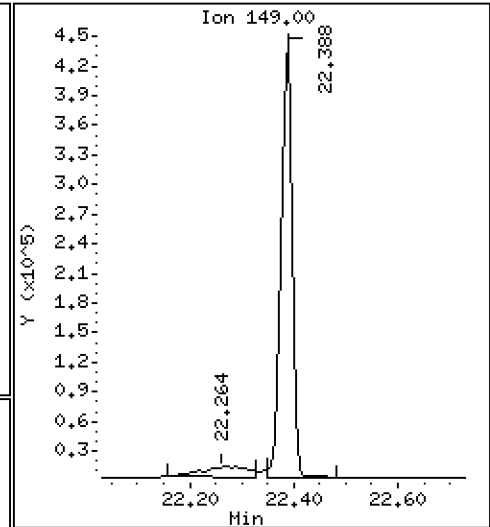
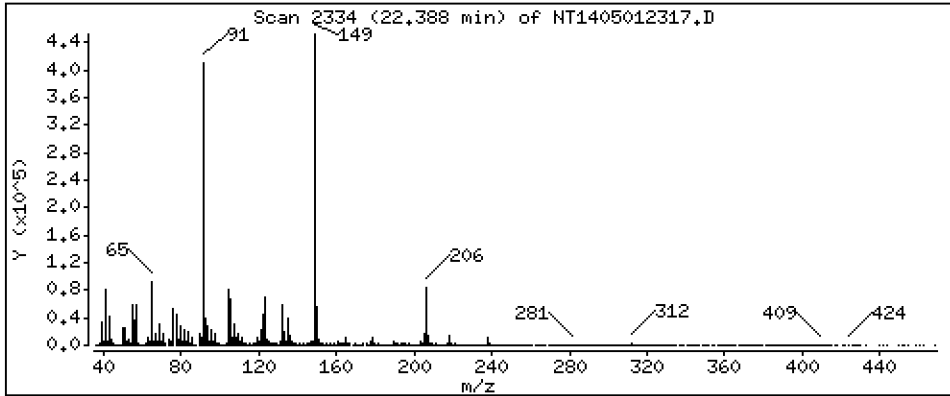
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,351 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

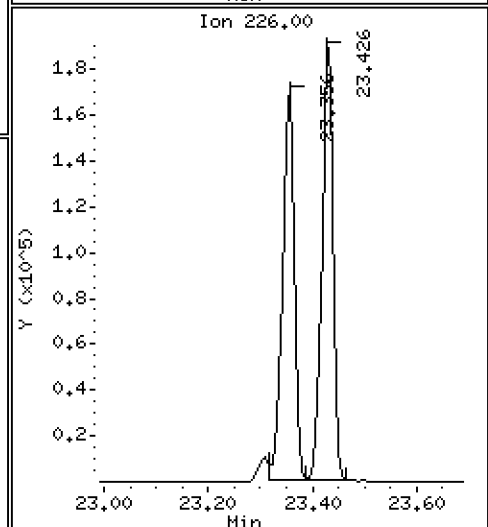
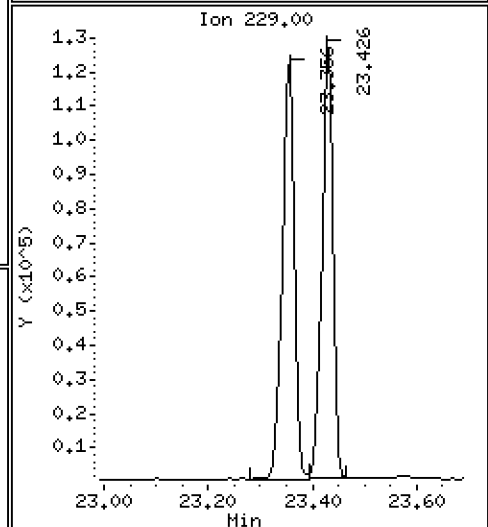
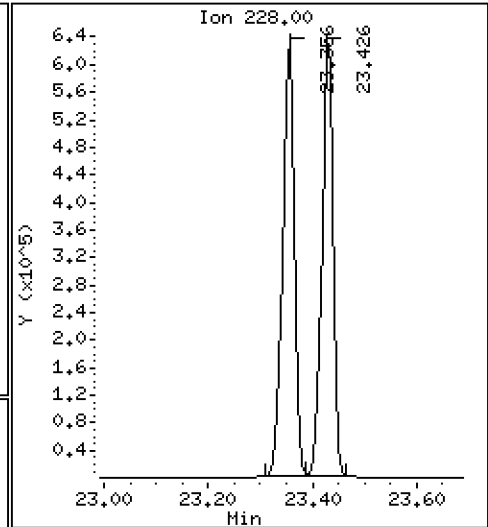
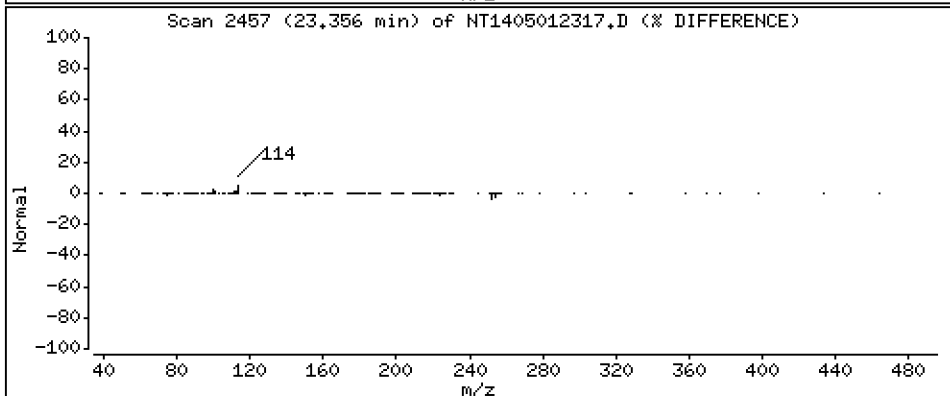
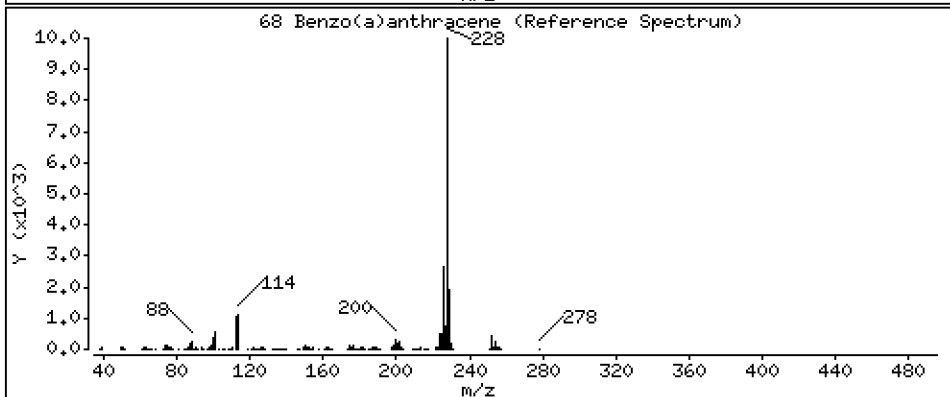
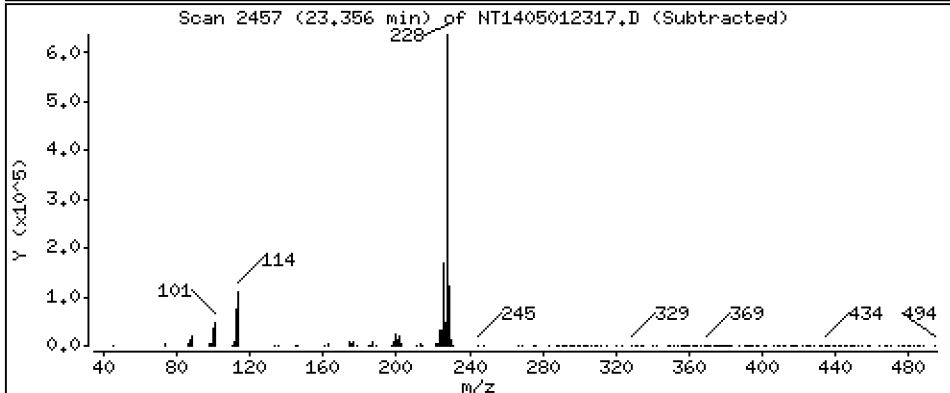
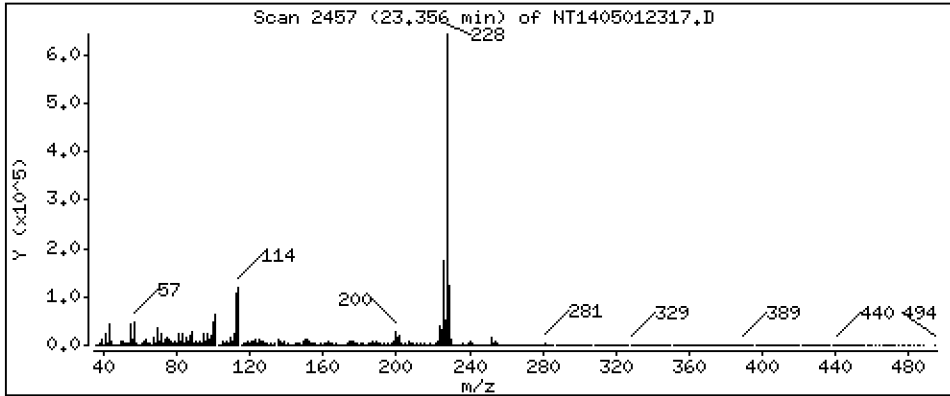
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 5,306 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

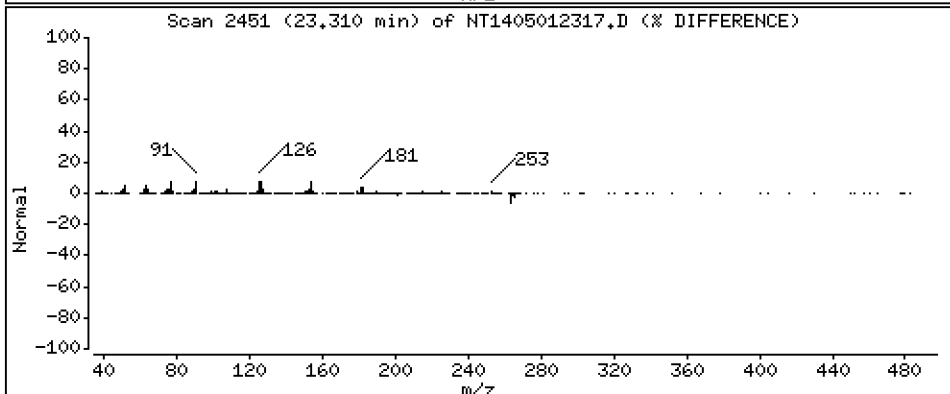
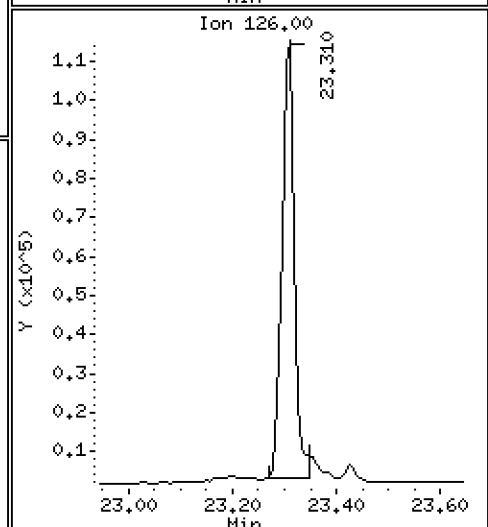
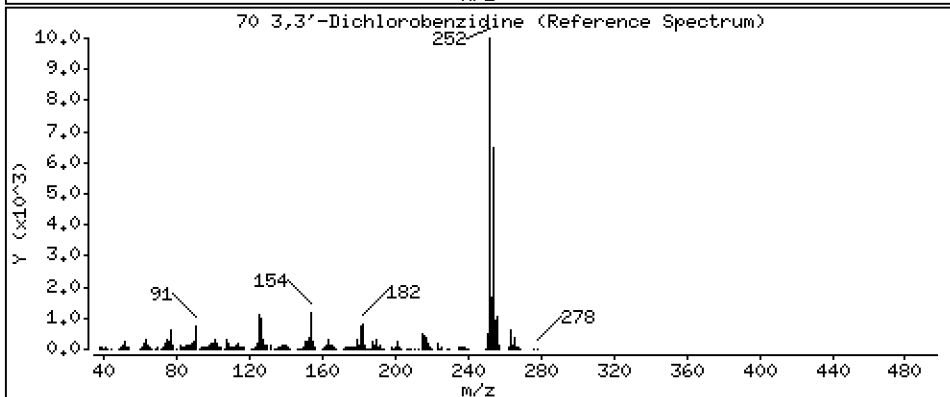
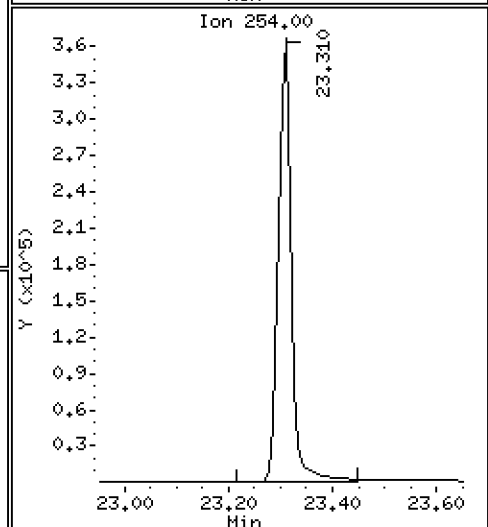
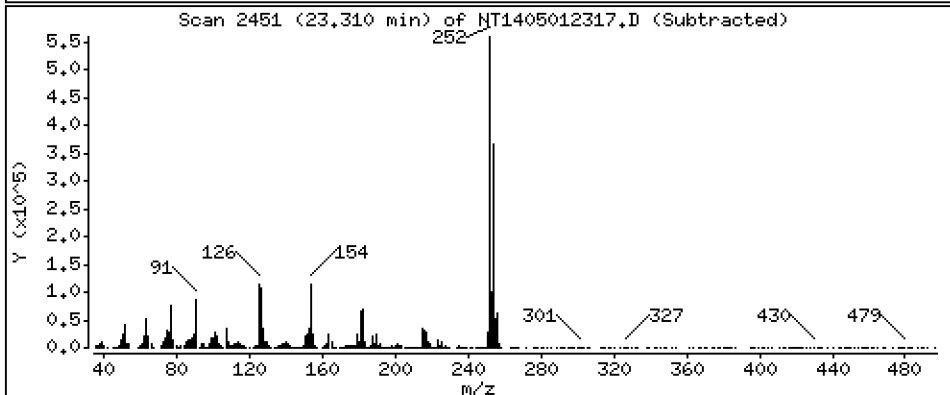
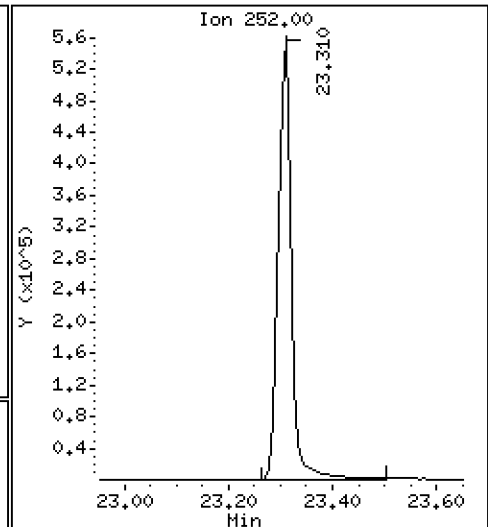
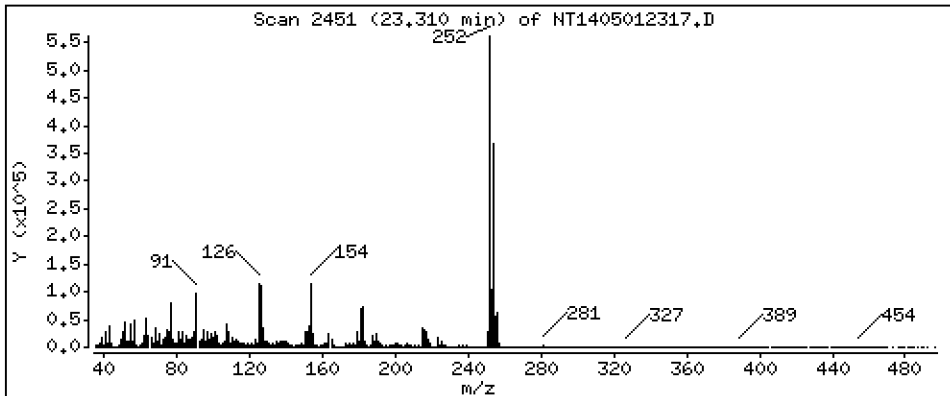
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 15,69 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

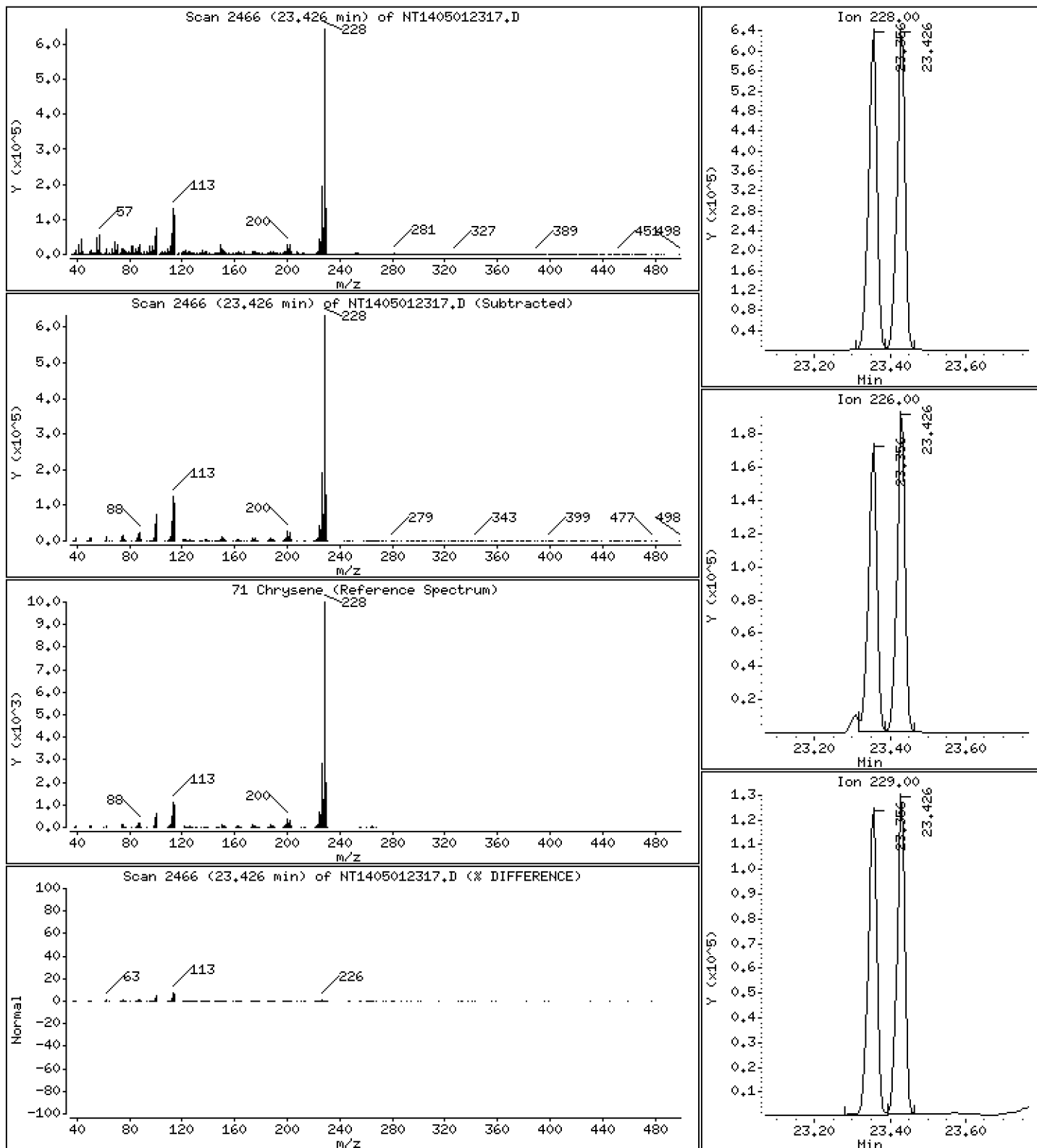
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 5,441 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

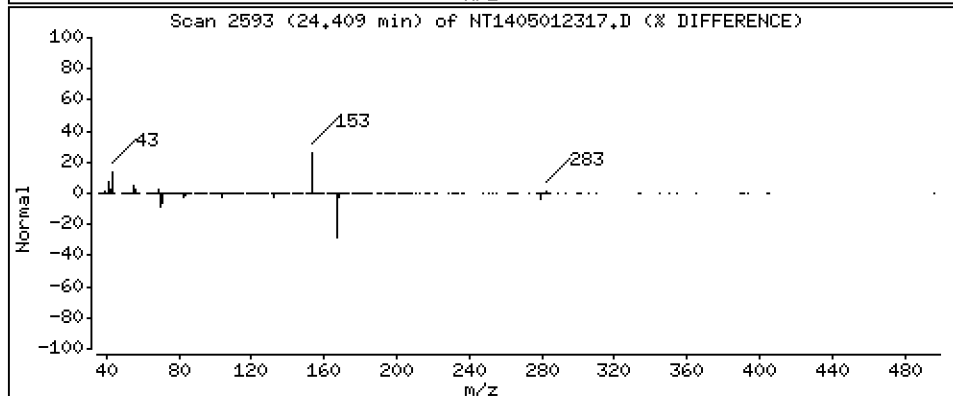
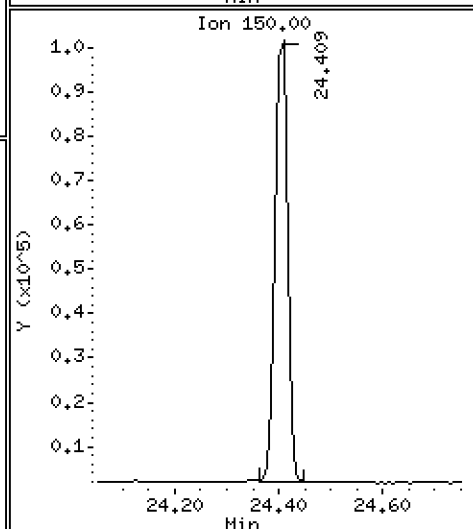
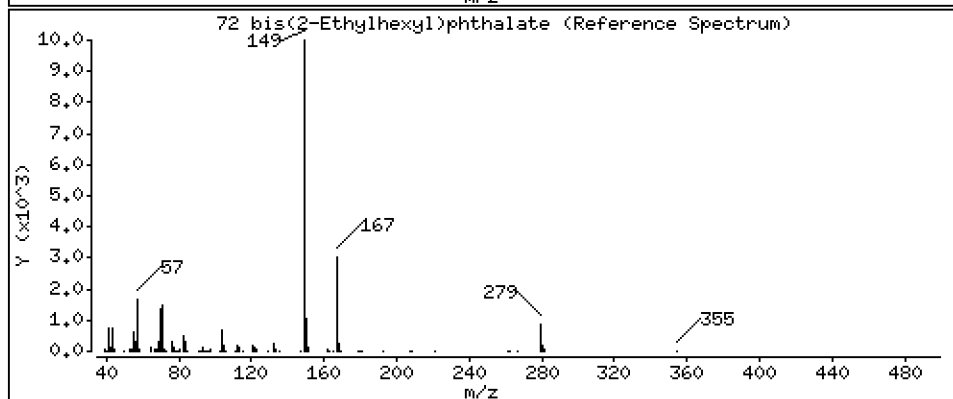
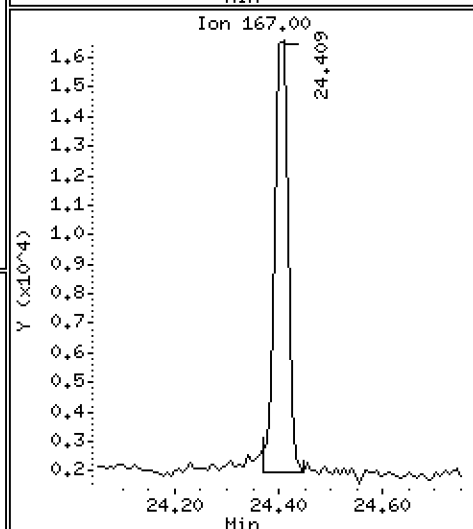
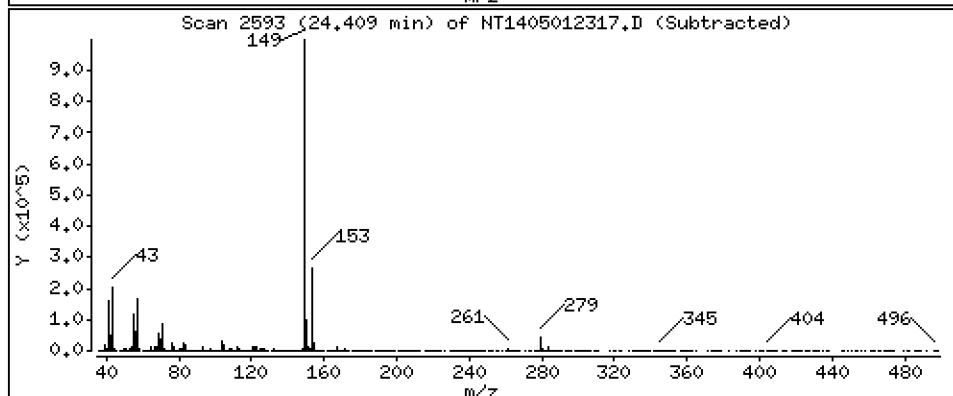
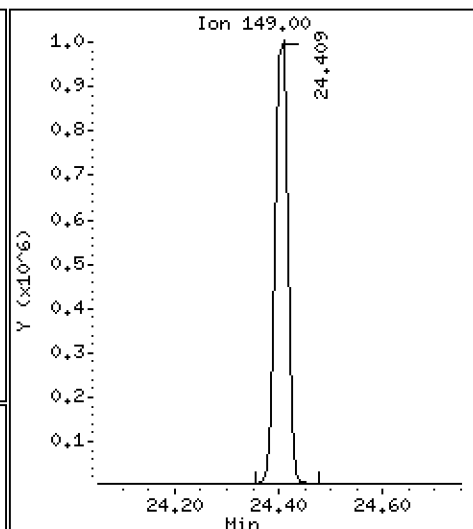
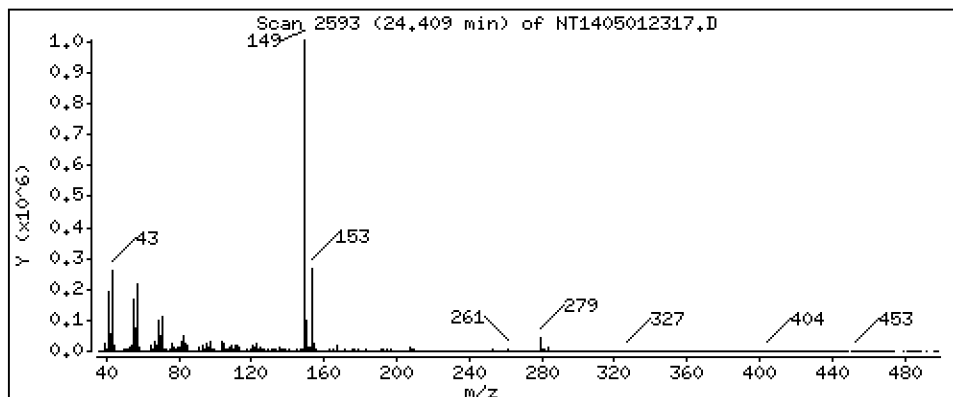
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,699 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

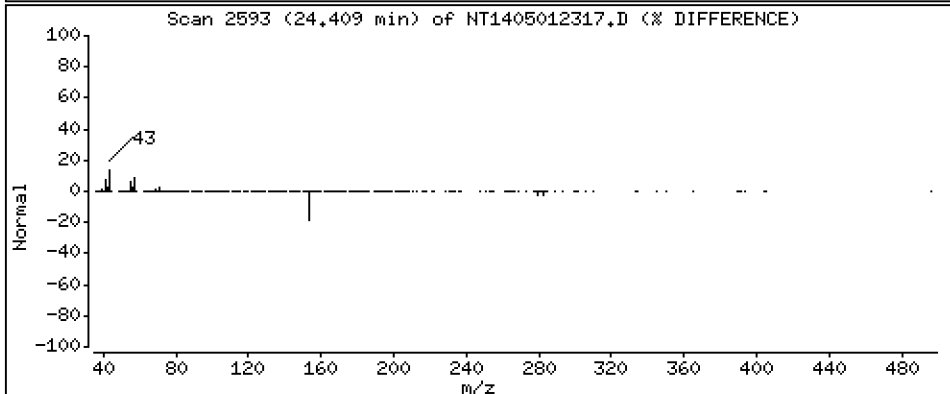
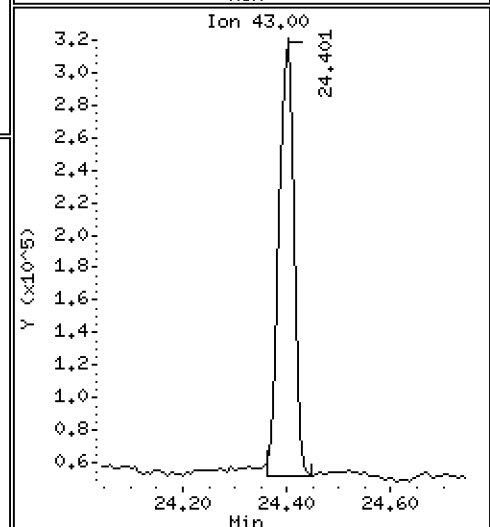
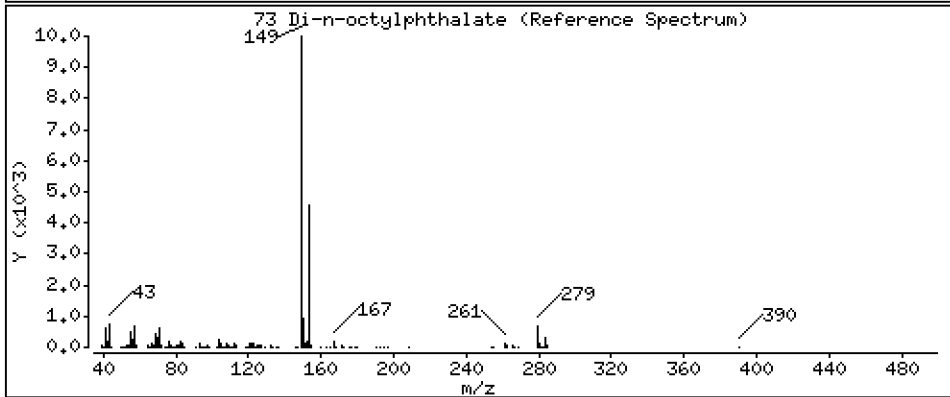
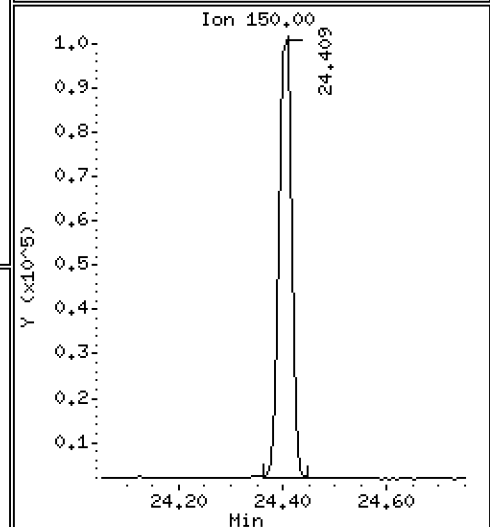
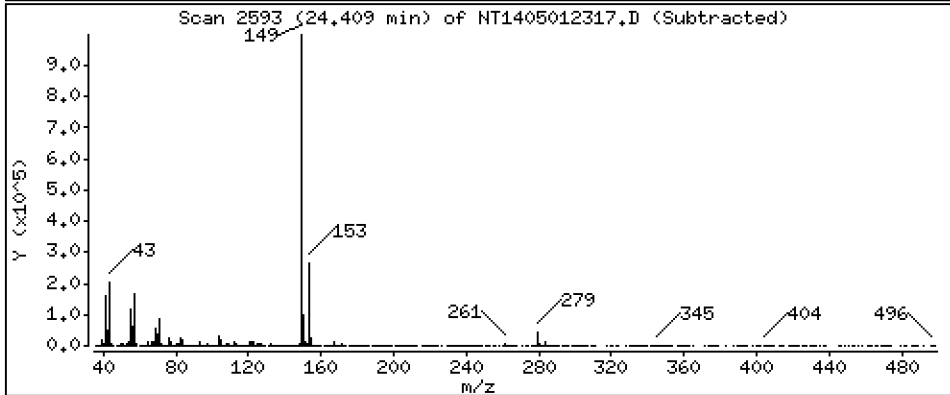
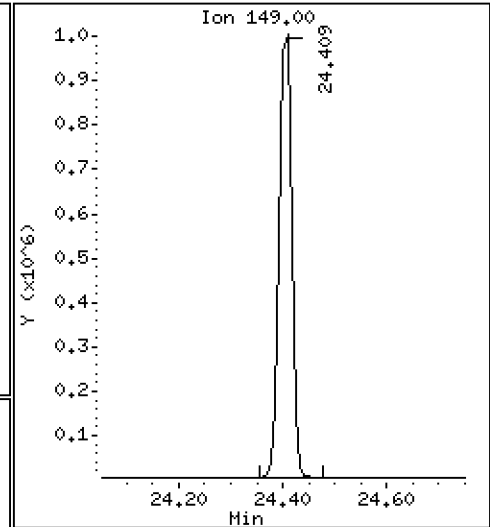
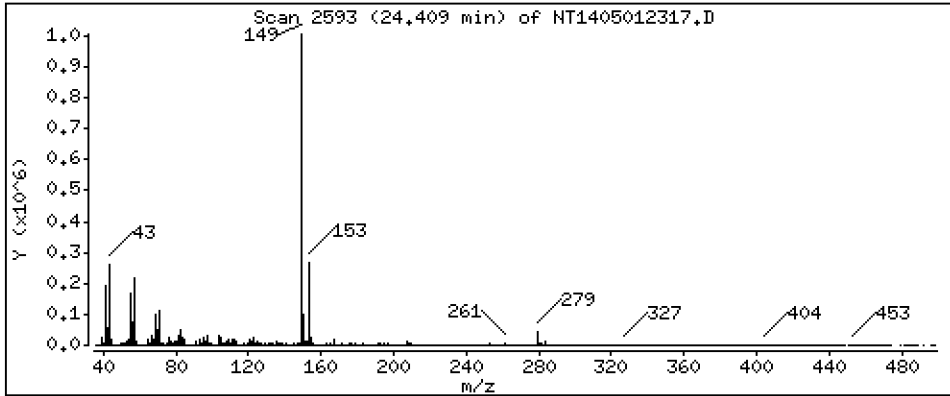
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,699 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

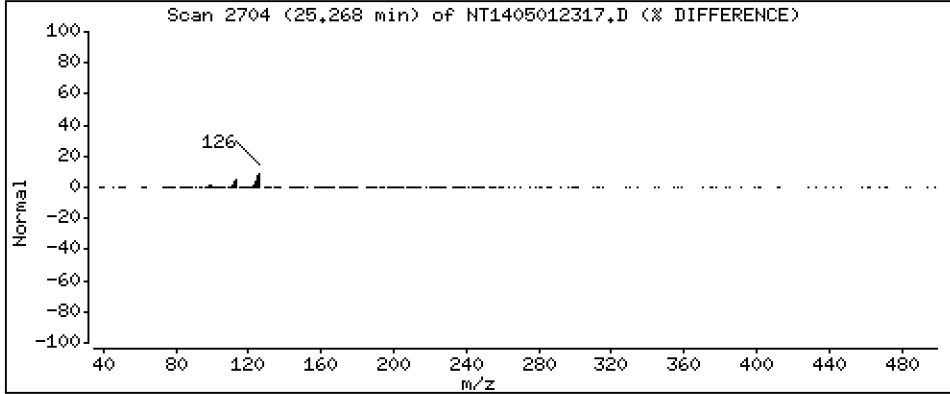
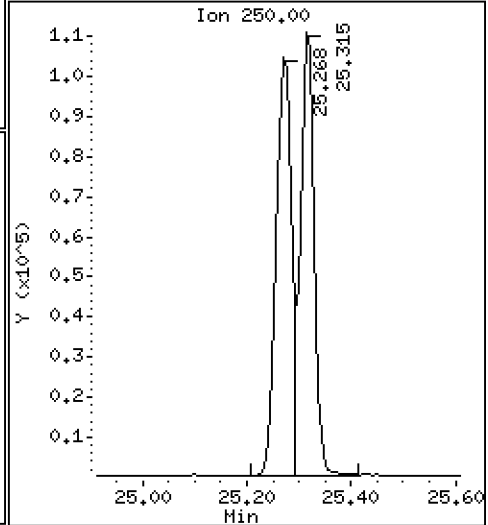
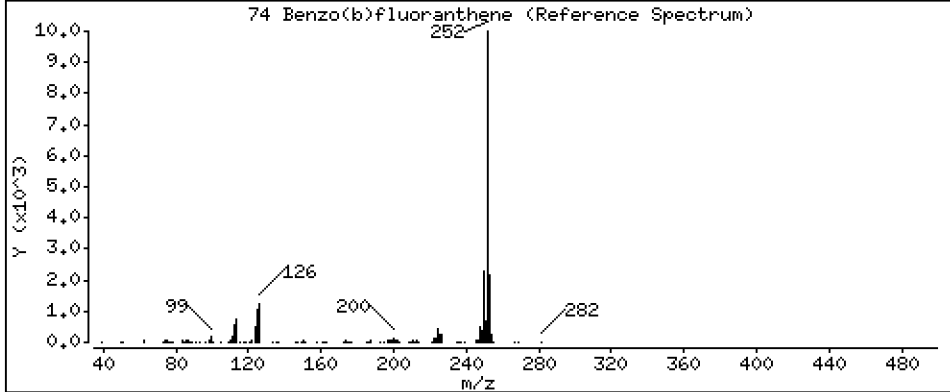
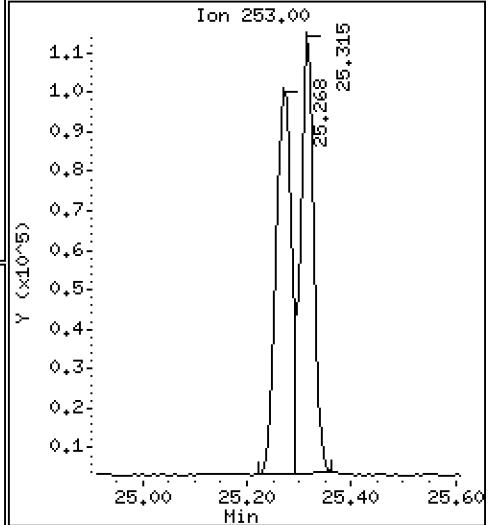
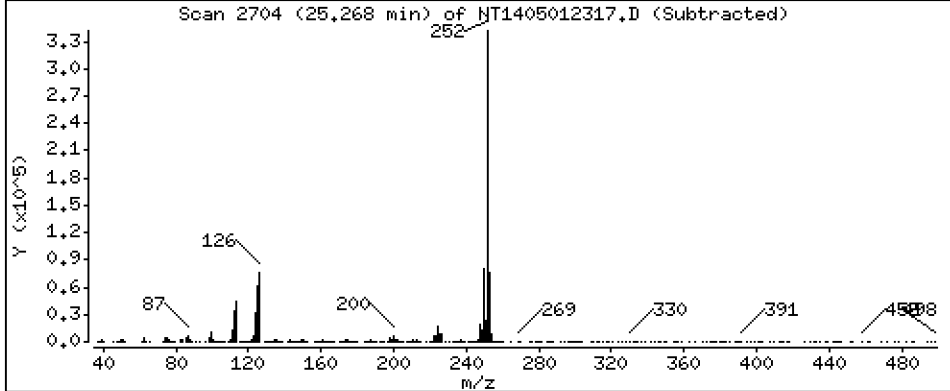
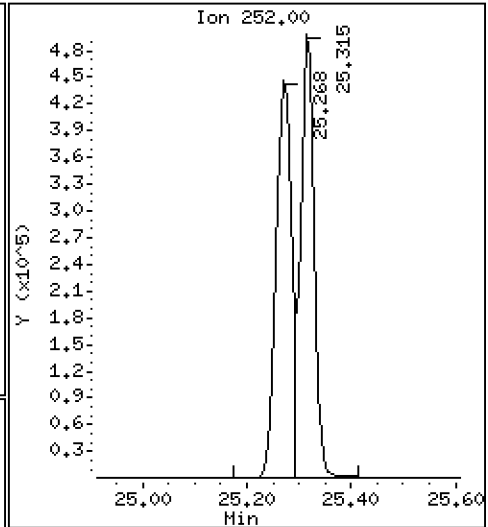
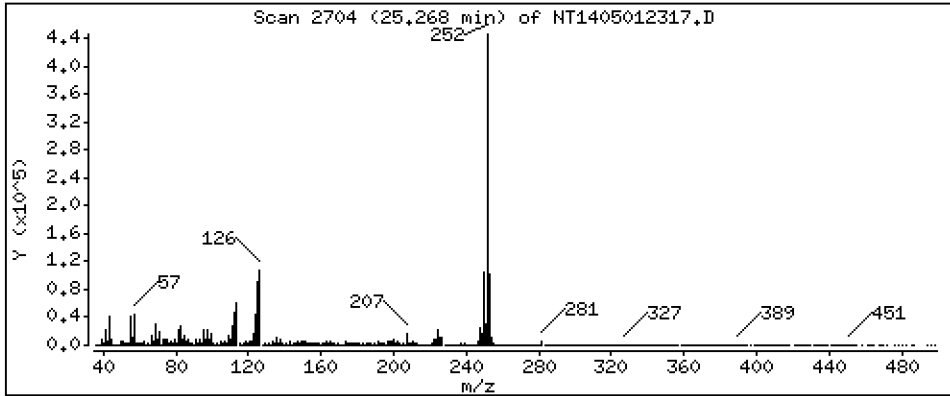
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 5,796 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

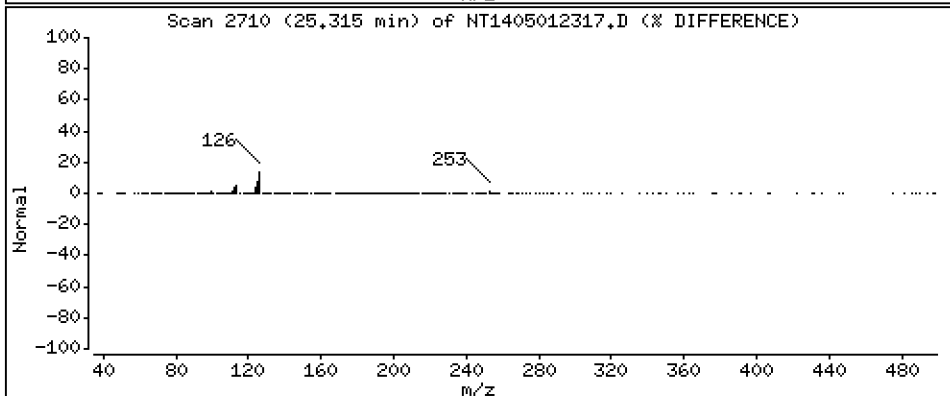
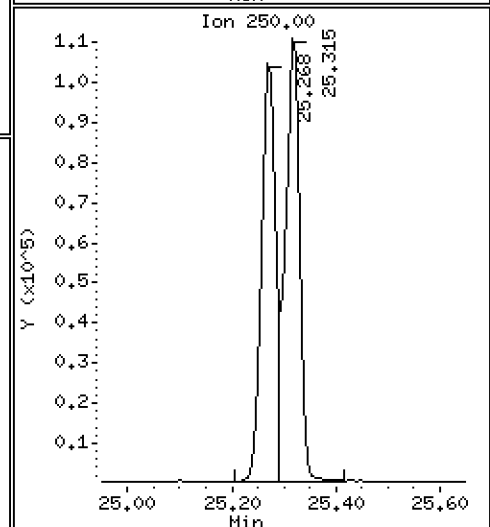
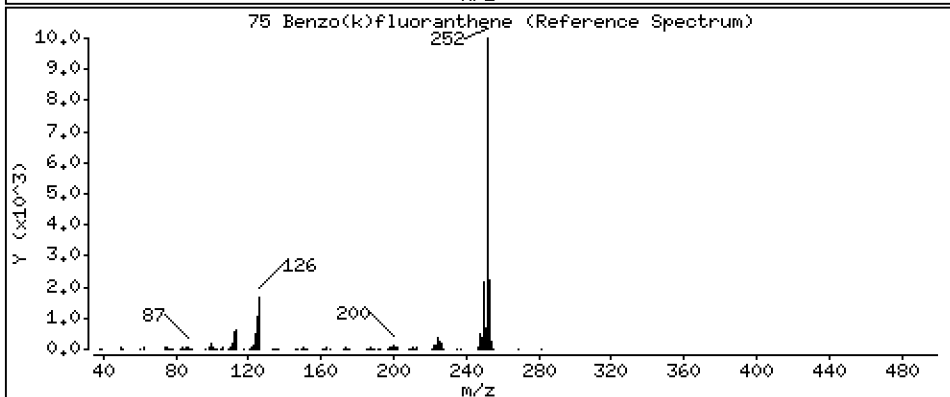
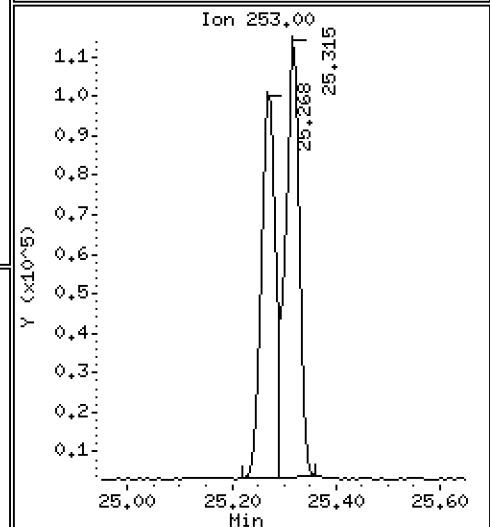
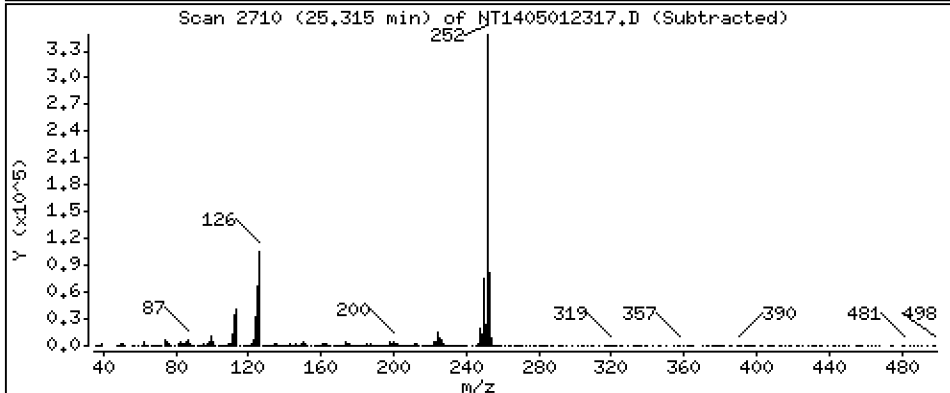
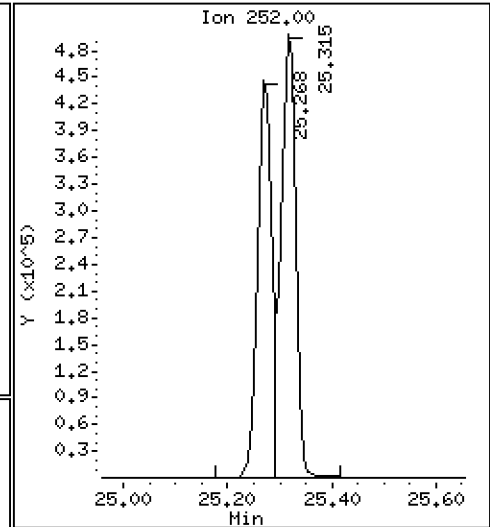
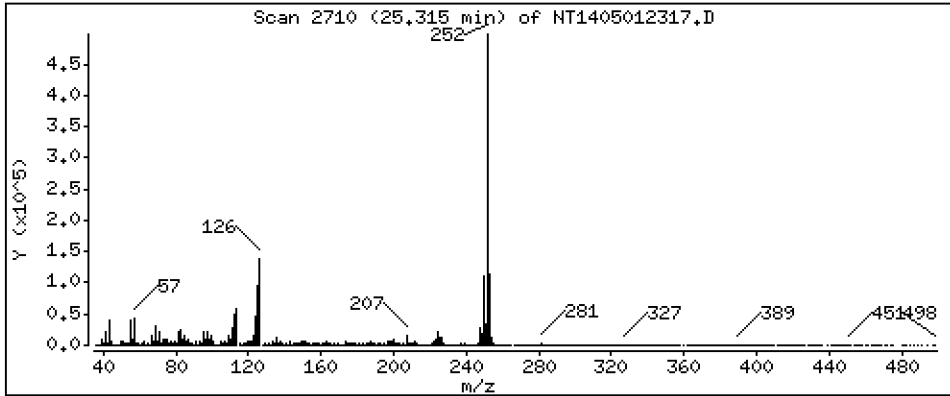
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 6,425 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

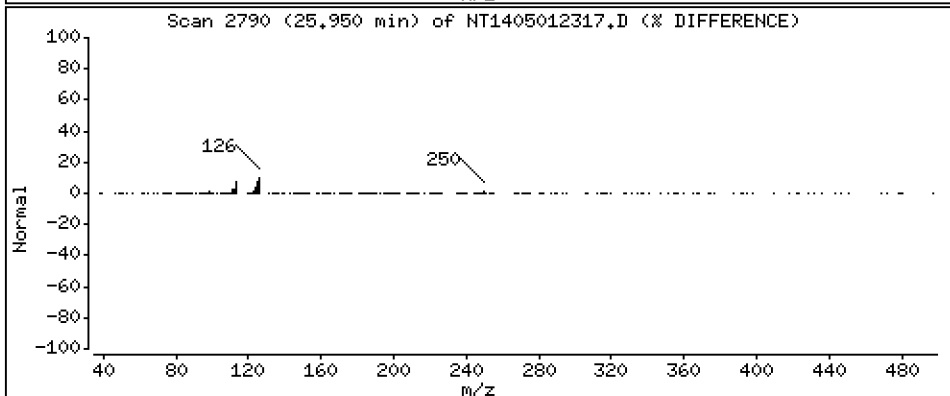
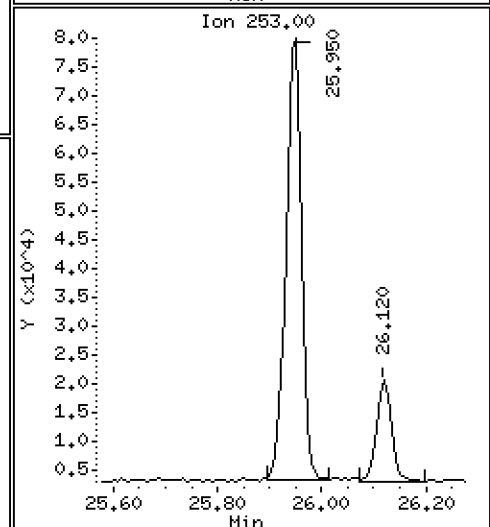
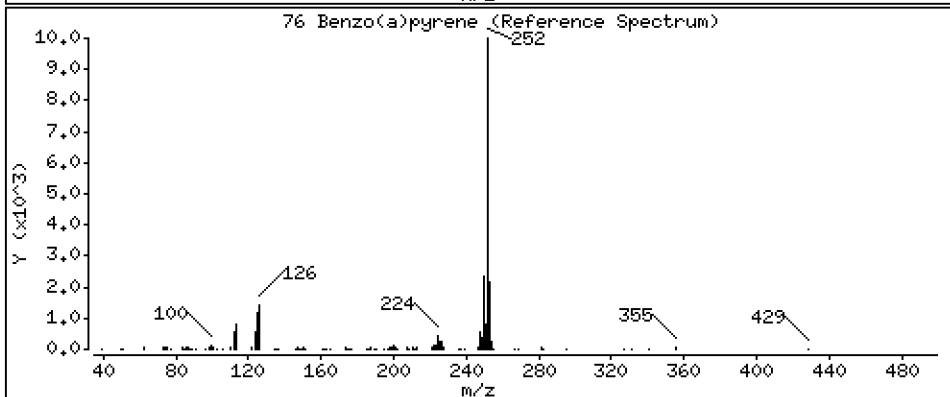
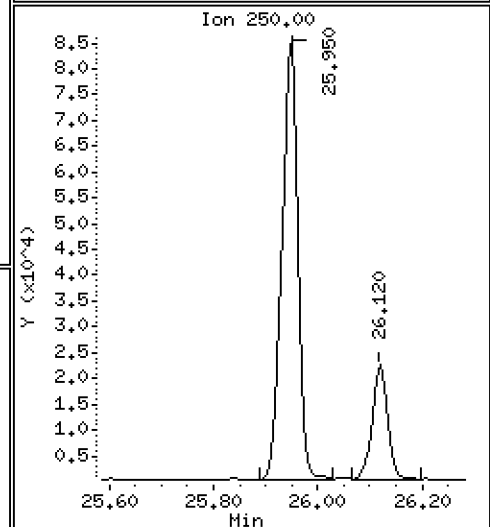
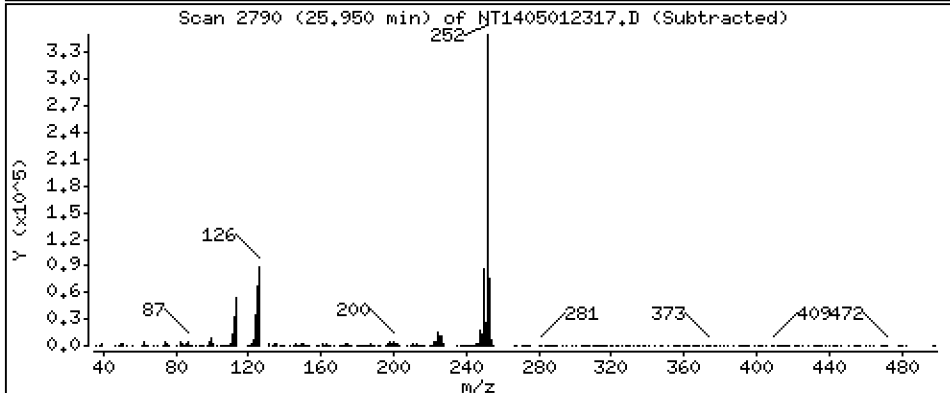
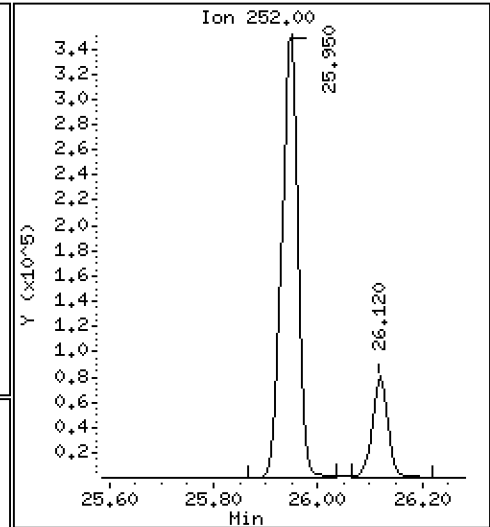
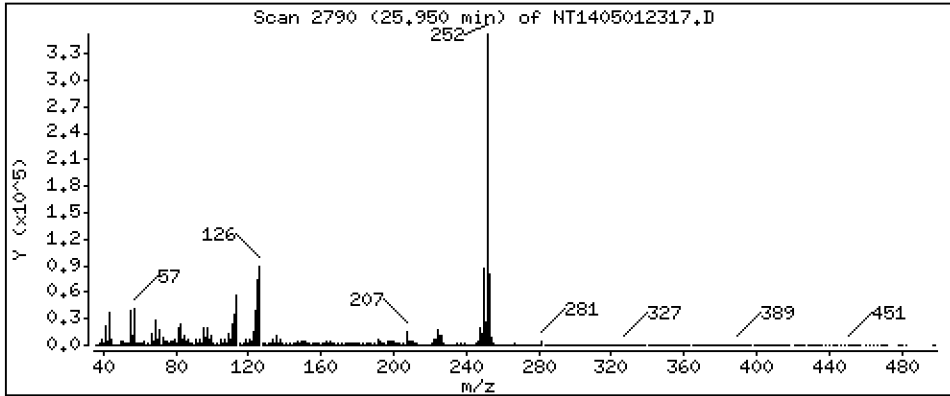
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 5,776 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

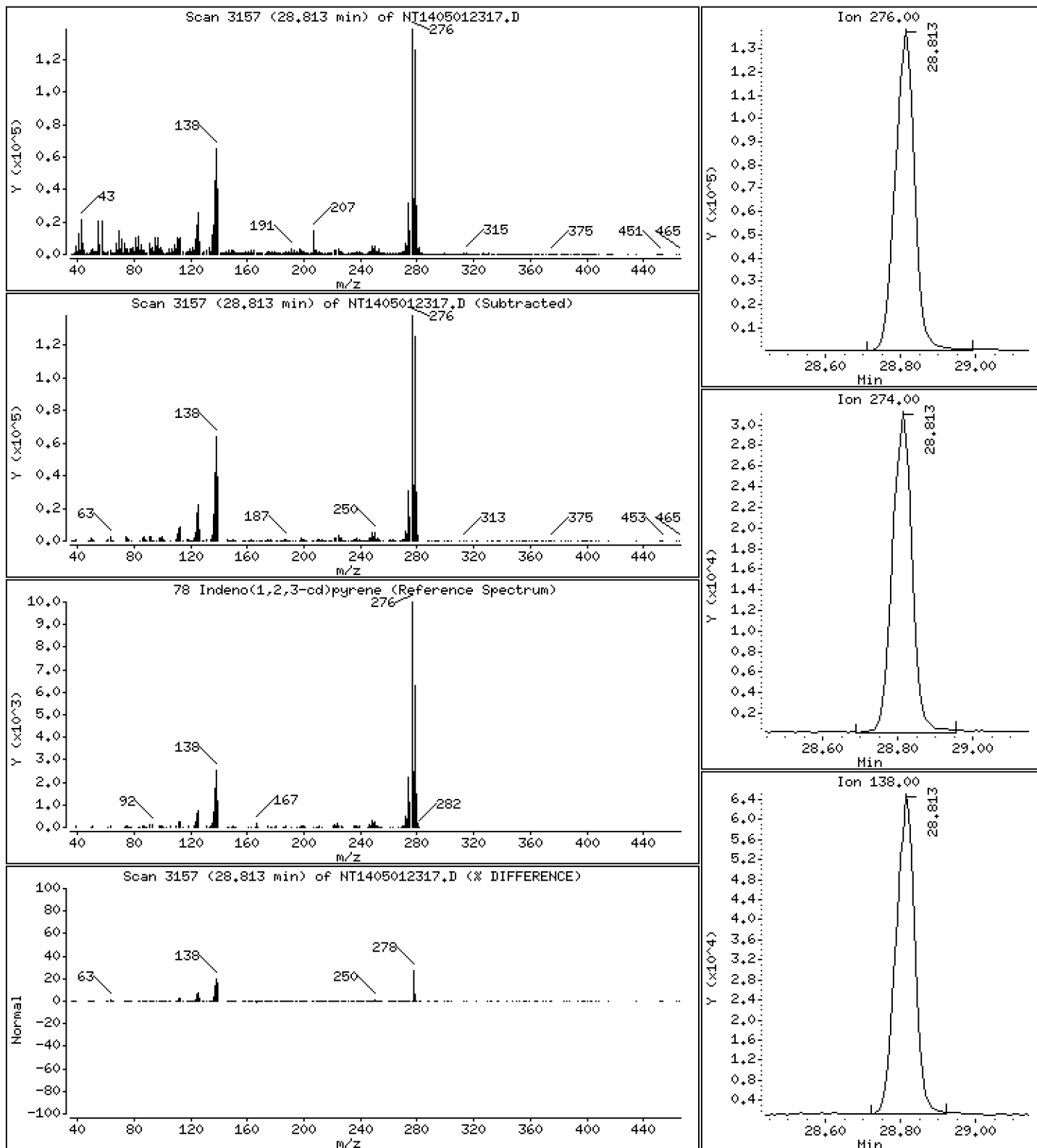
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 2,733 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

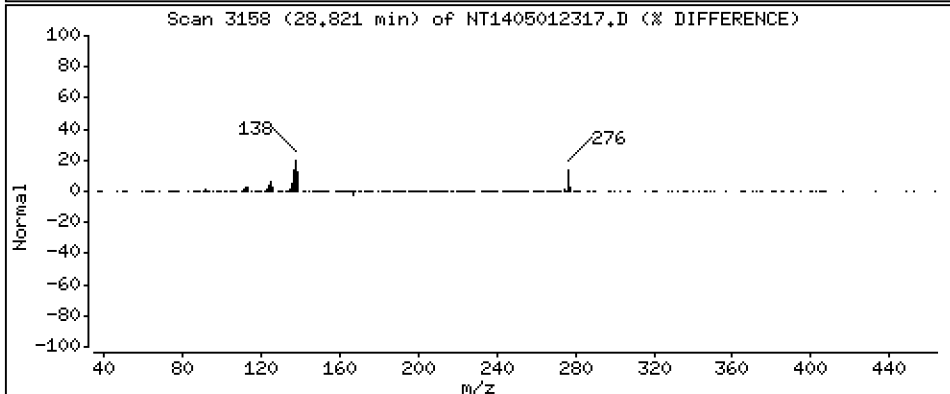
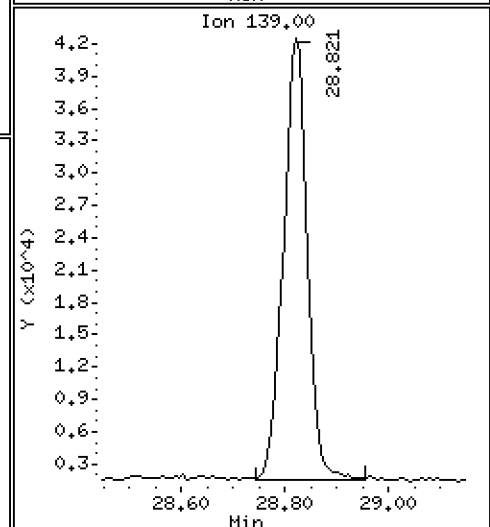
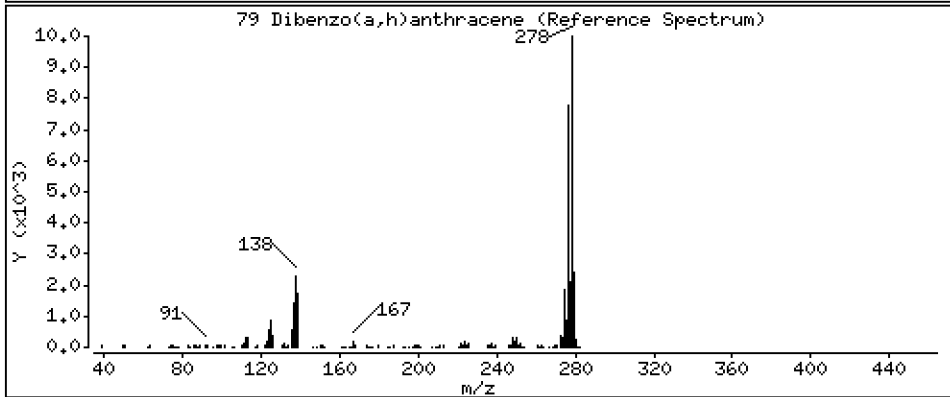
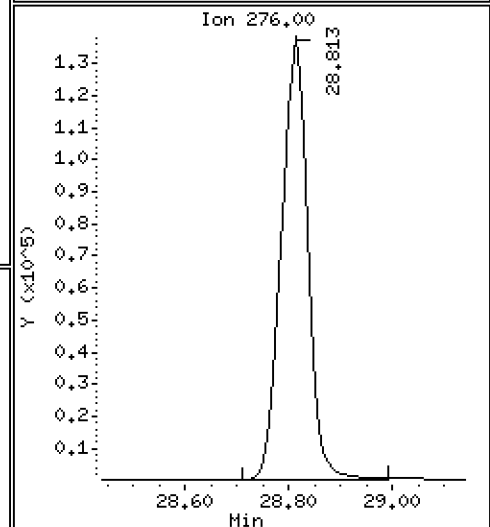
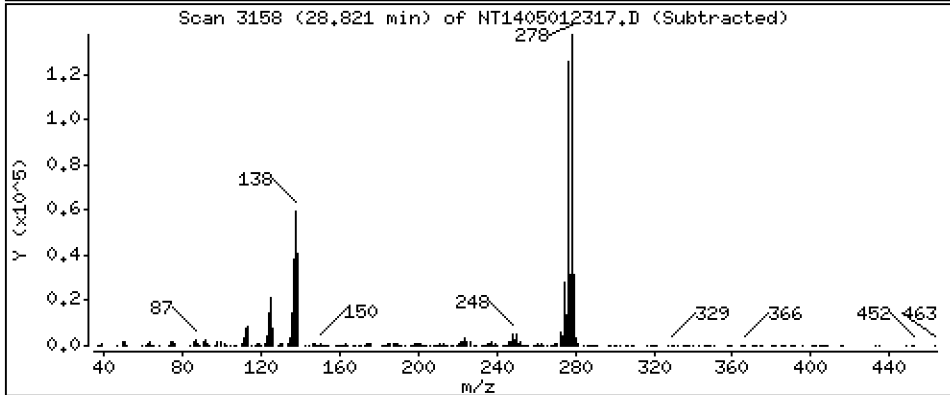
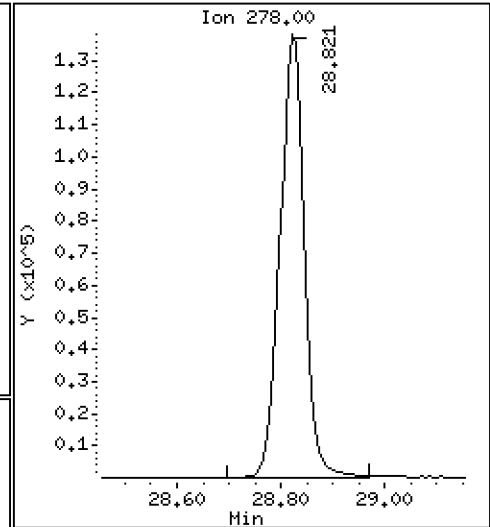
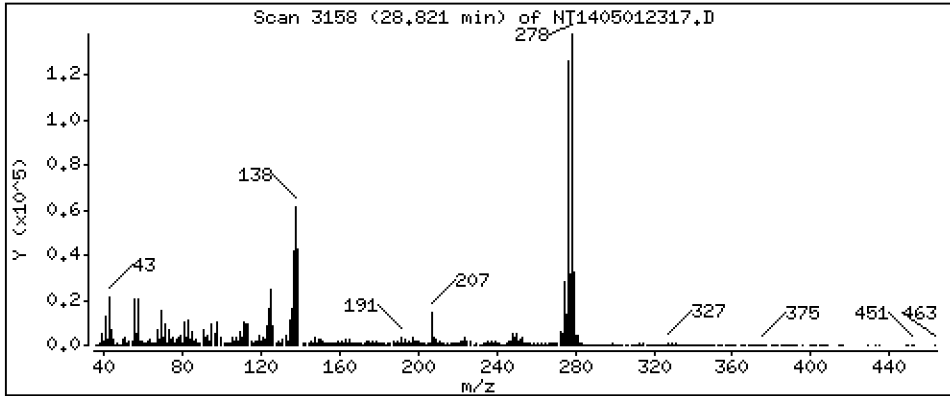
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 3,052 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

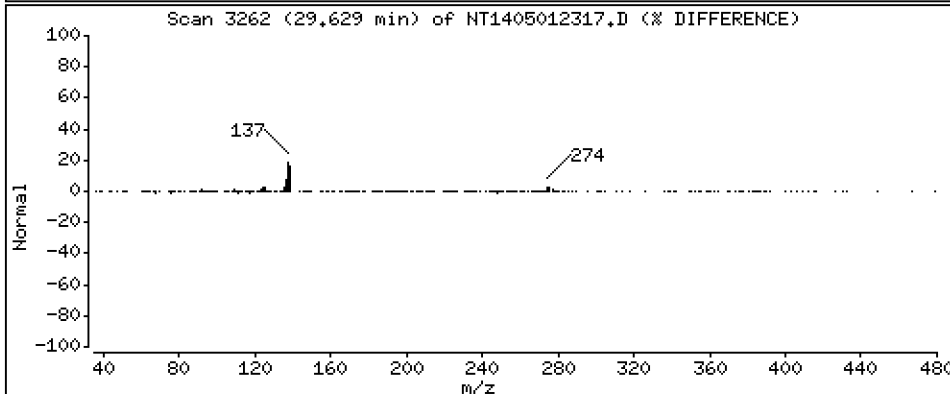
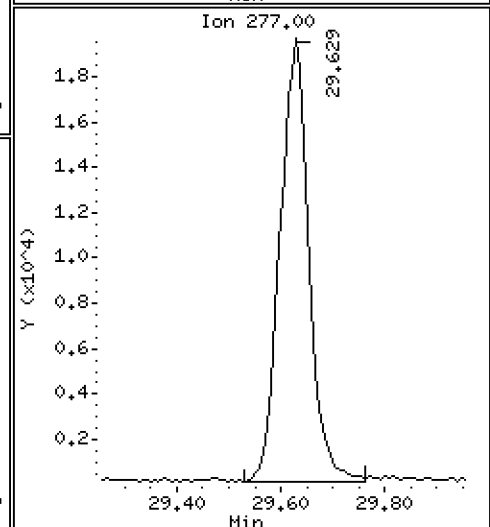
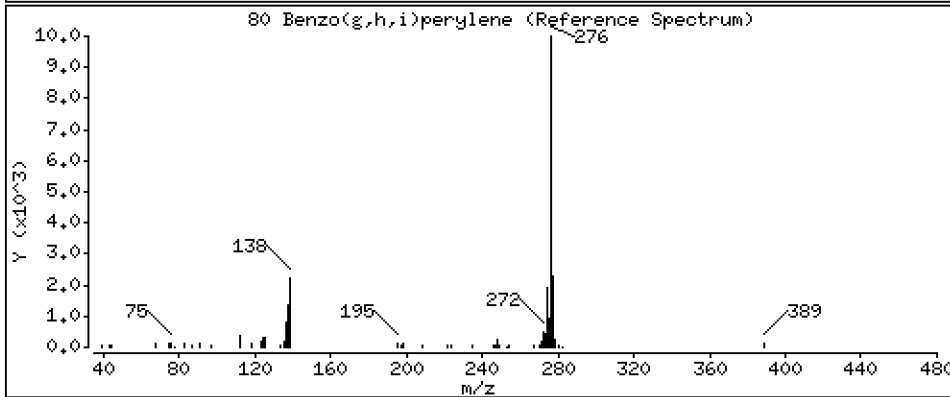
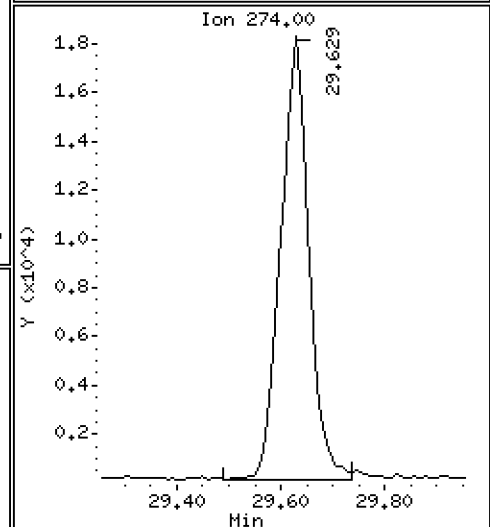
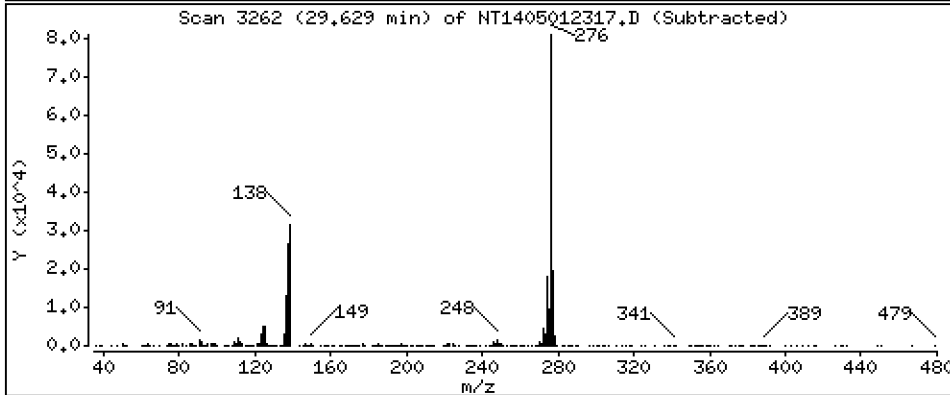
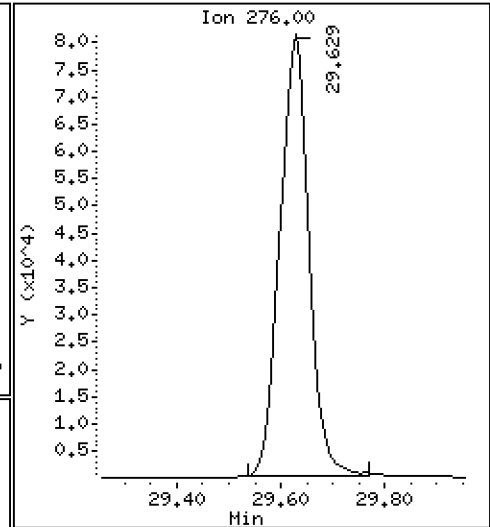
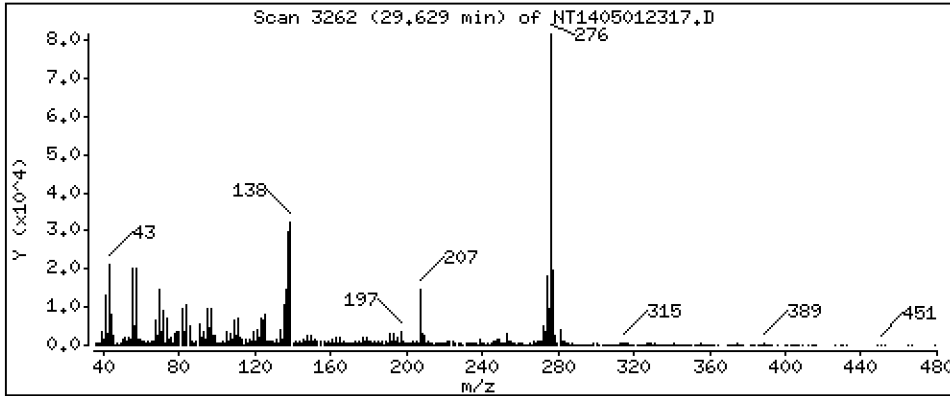
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 2,072 ug/mL





Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

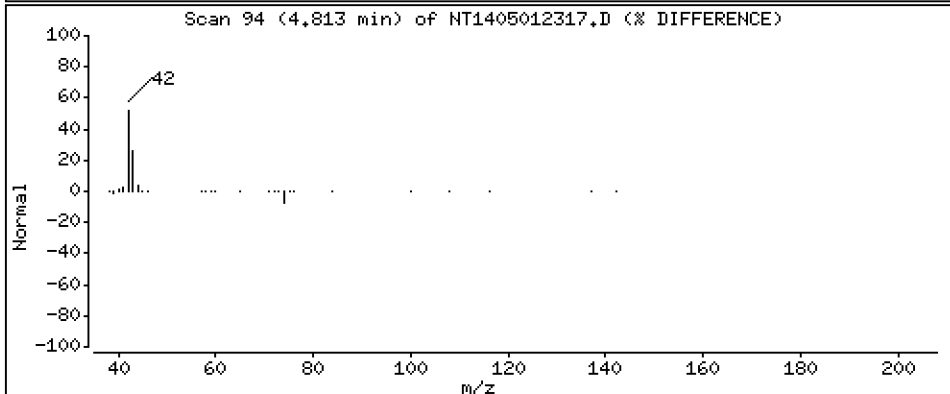
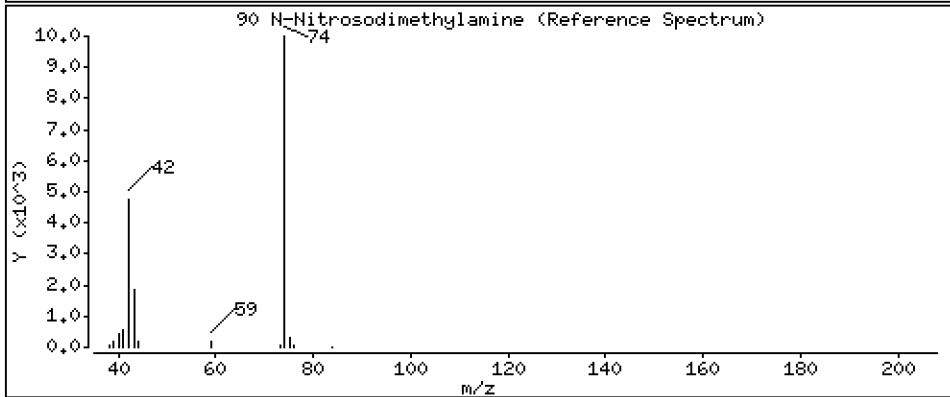
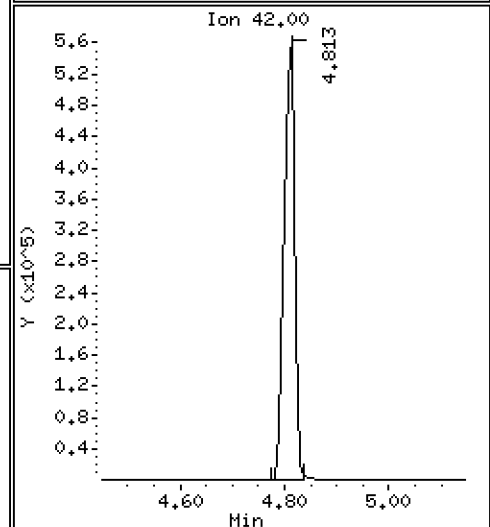
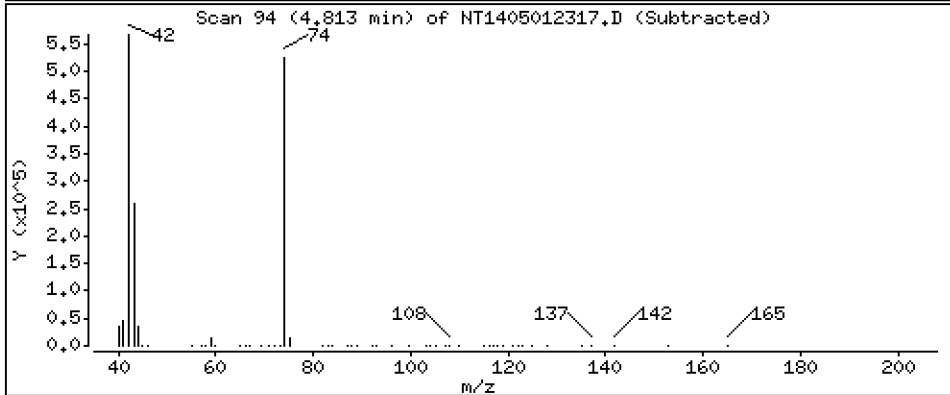
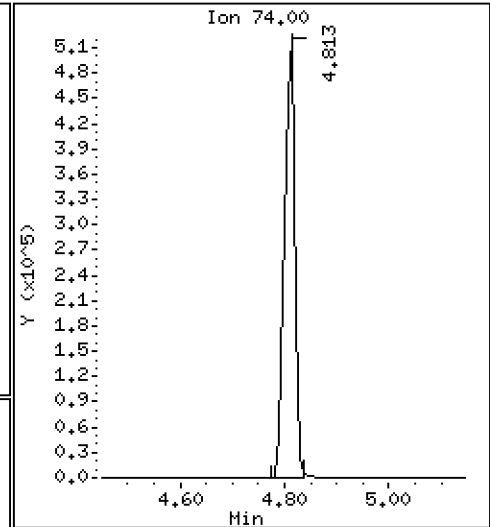
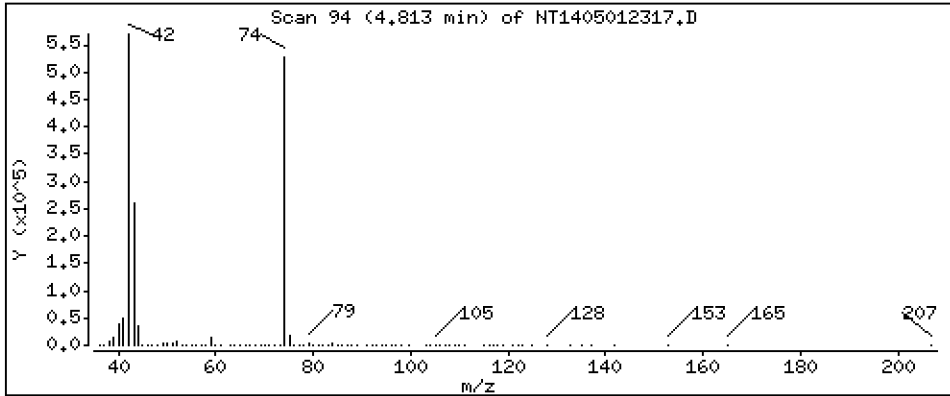
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 9.589 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

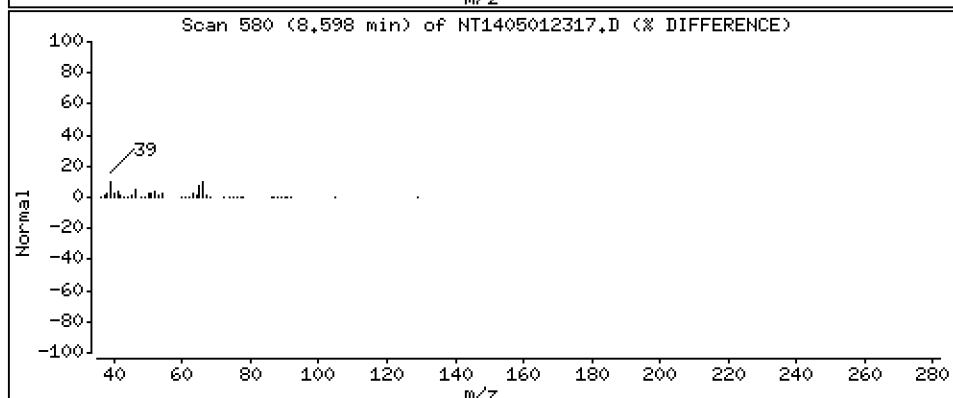
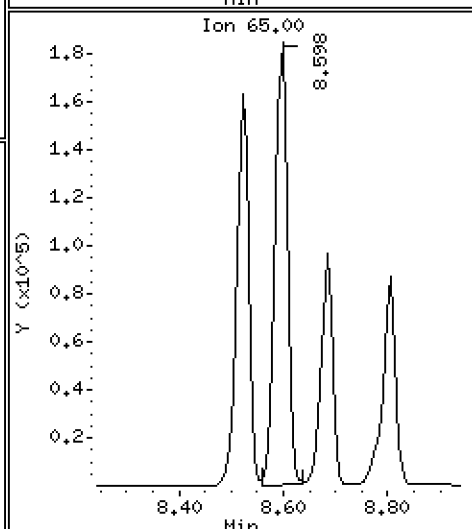
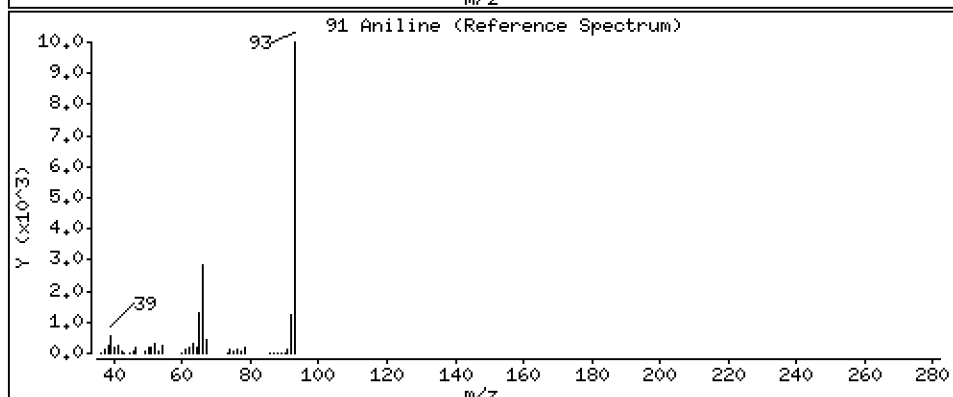
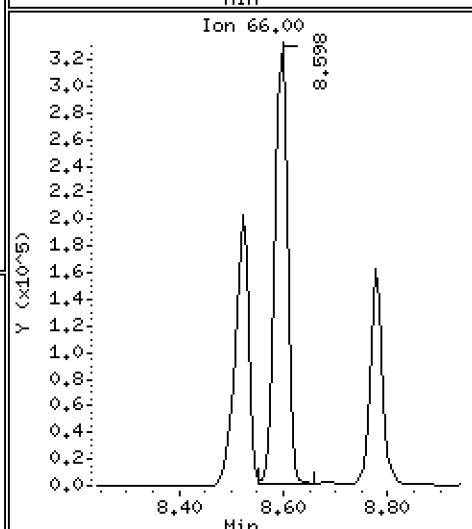
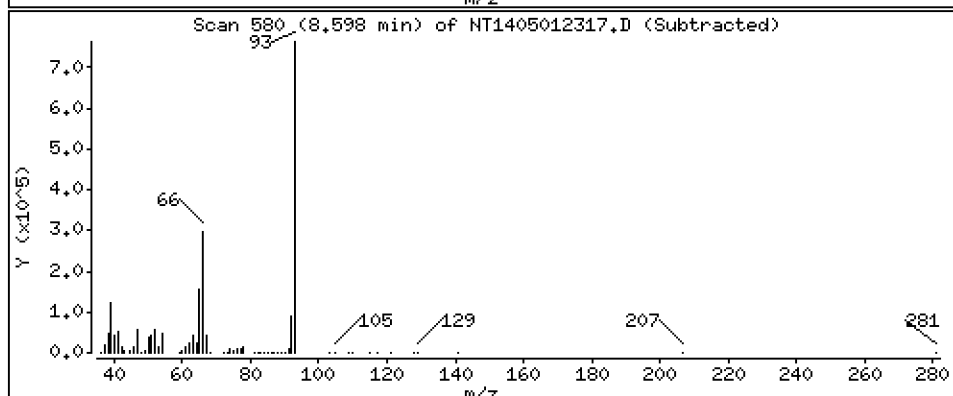
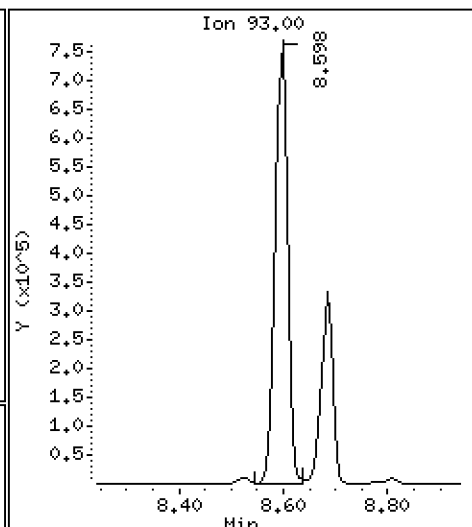
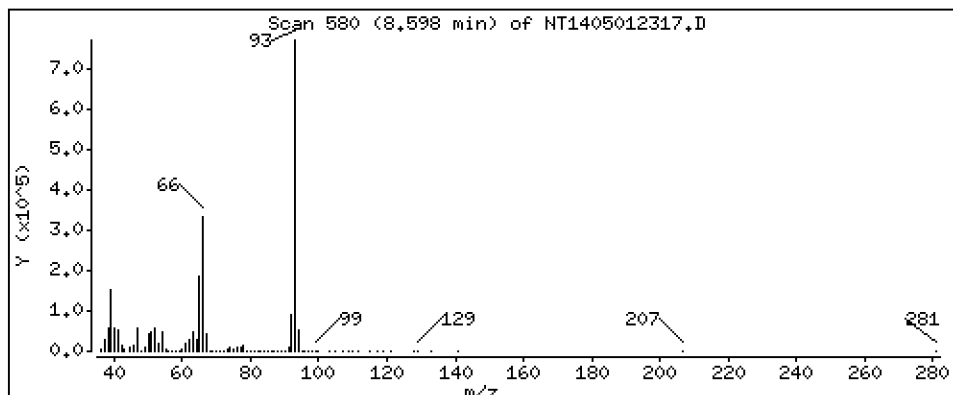
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

91 Aniline

Concentration: 9,831 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

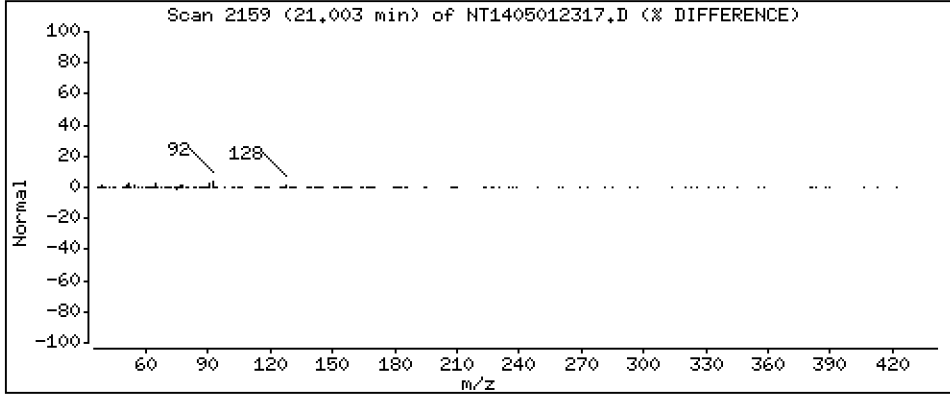
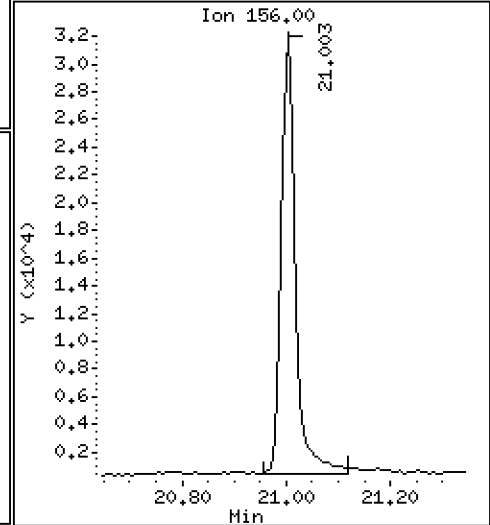
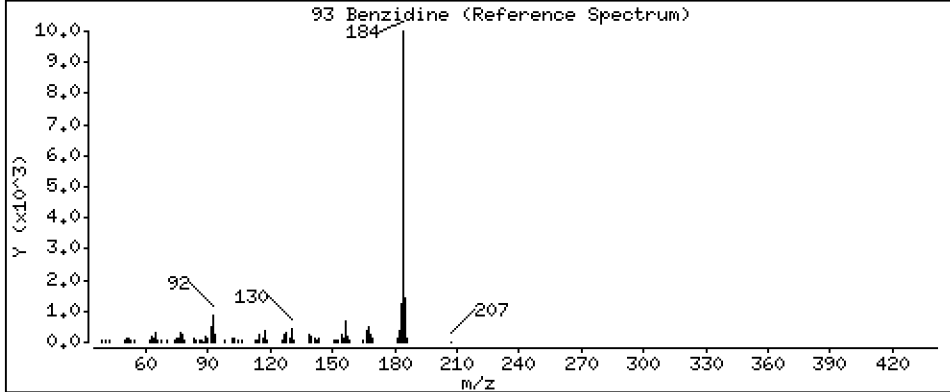
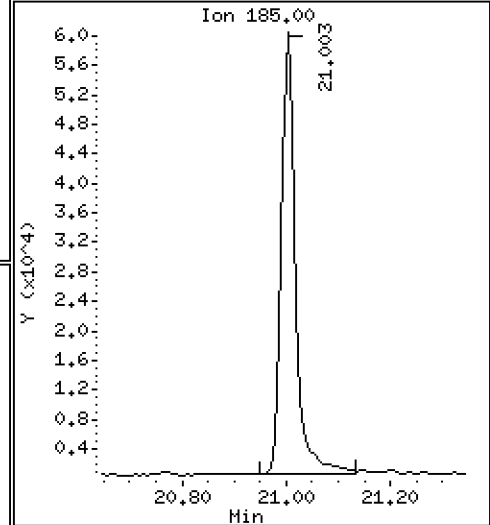
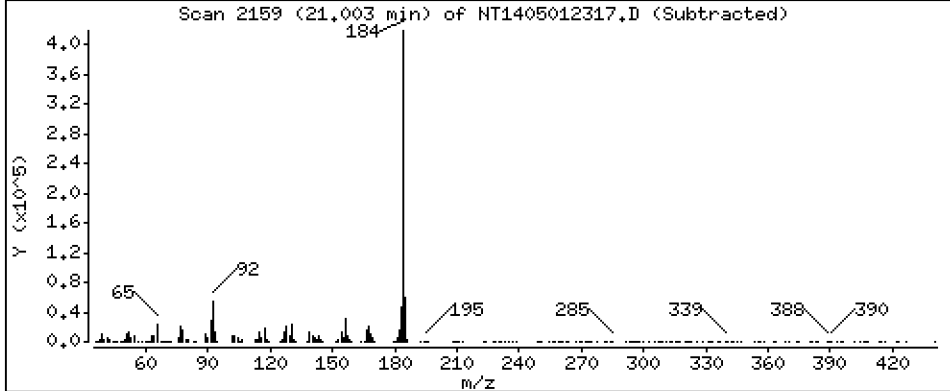
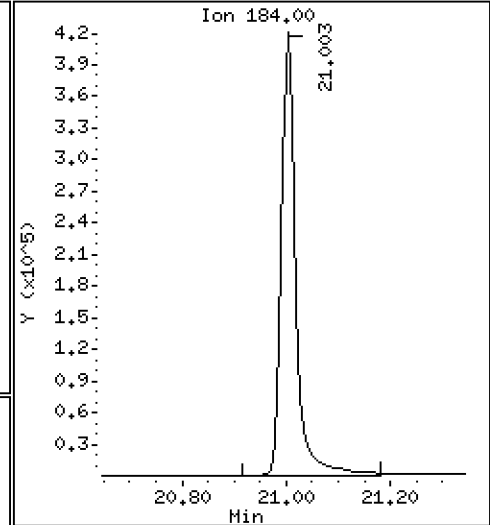
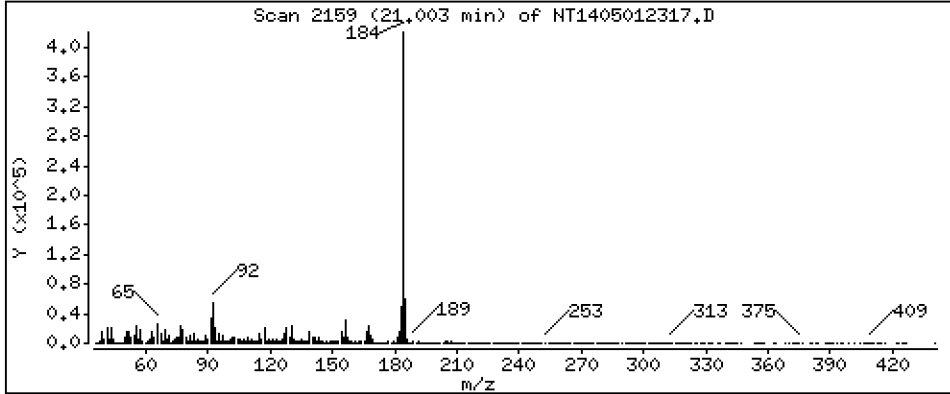
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 8,175 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

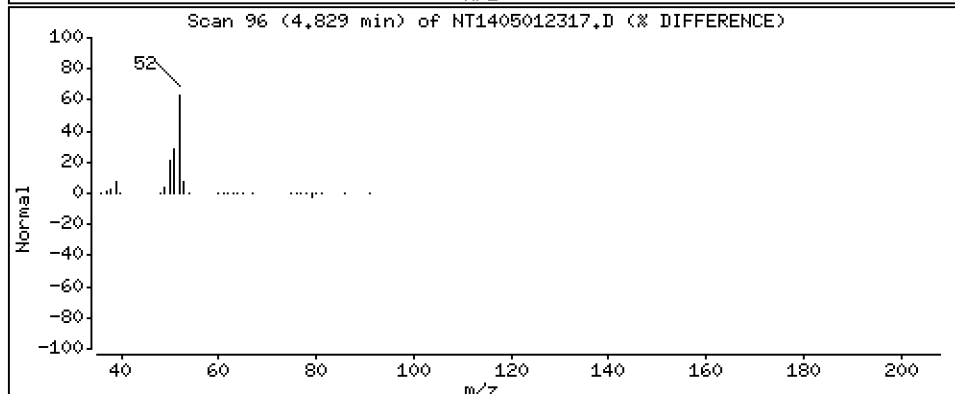
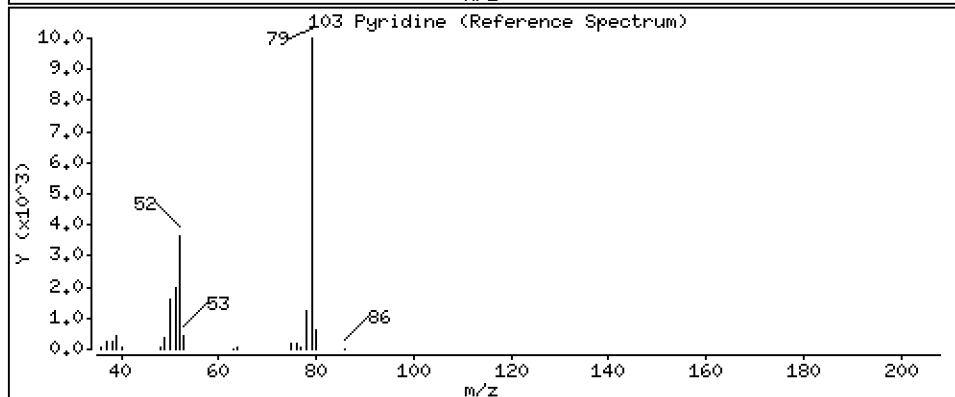
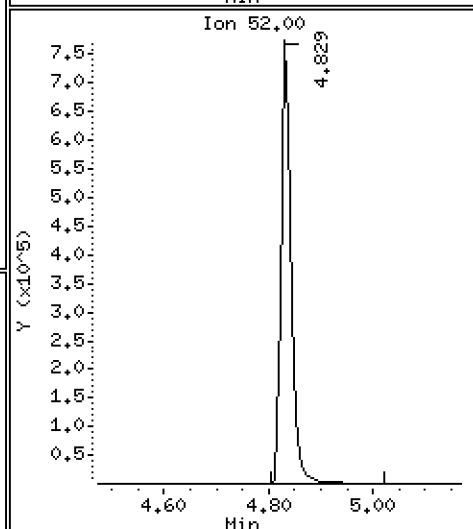
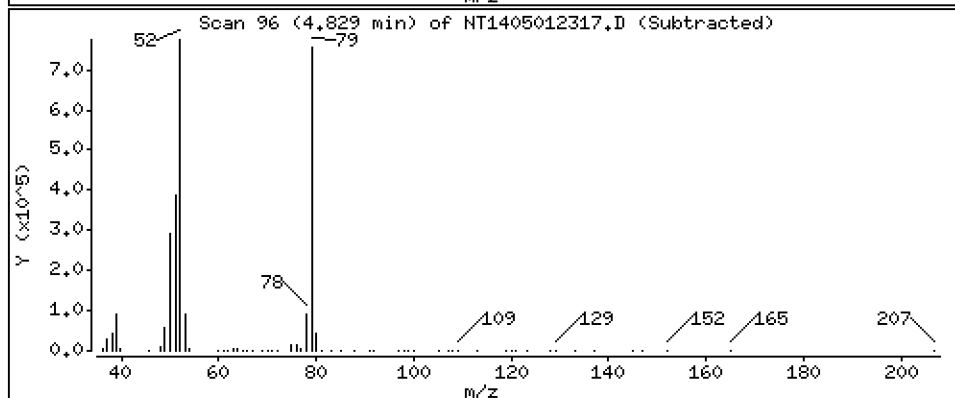
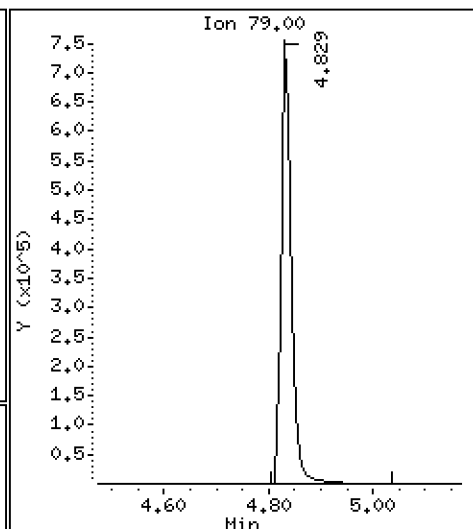
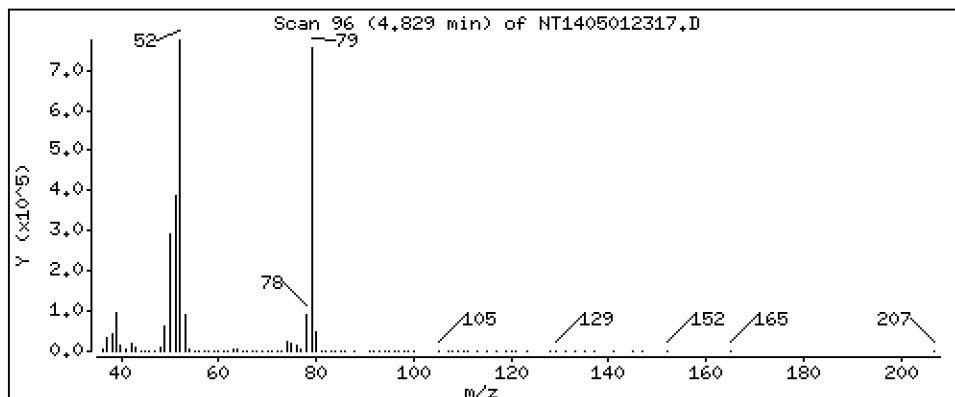
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 4,894 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

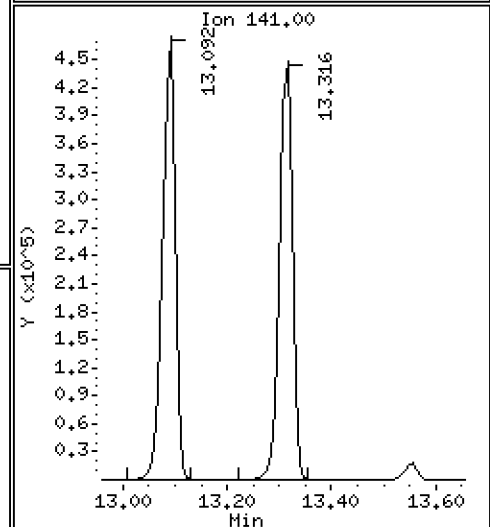
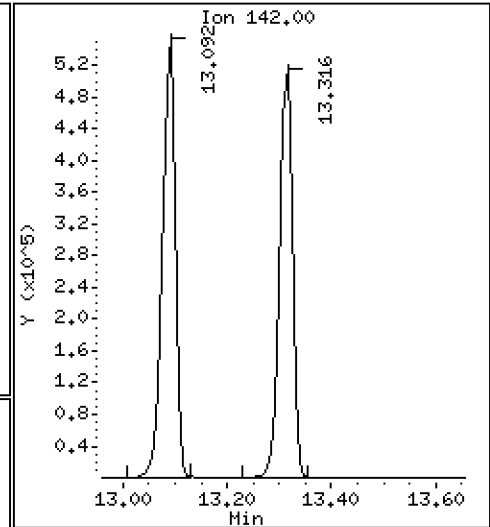
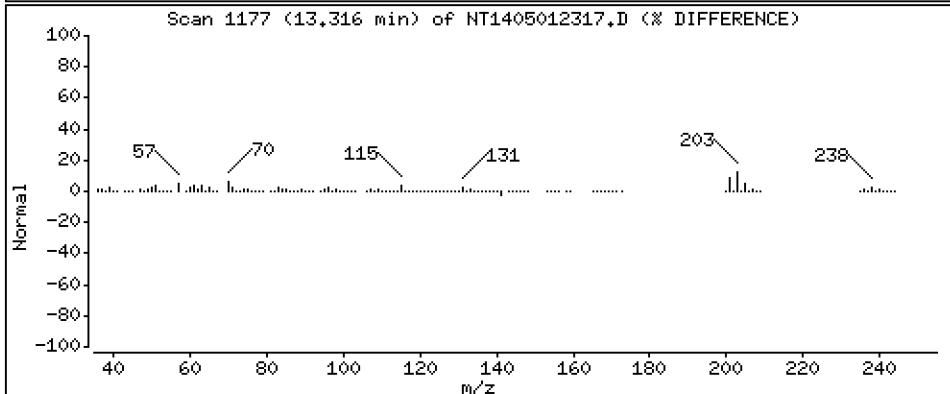
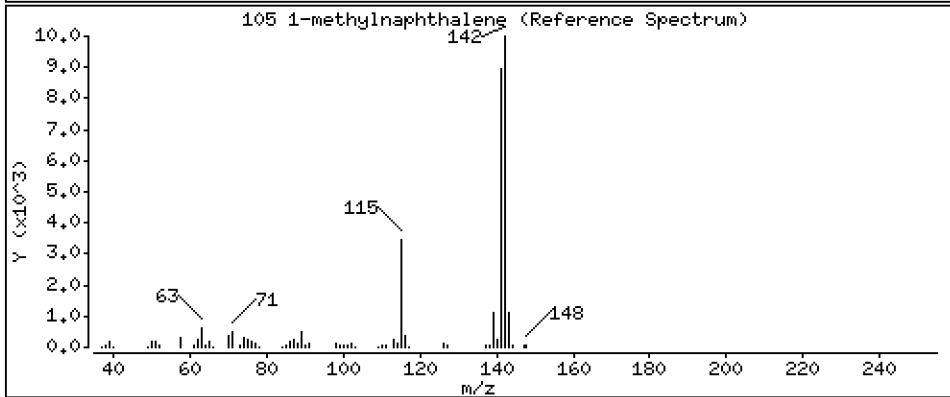
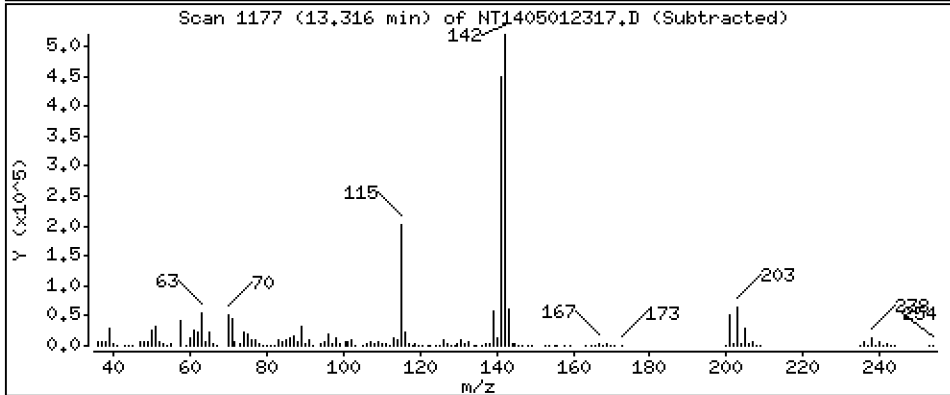
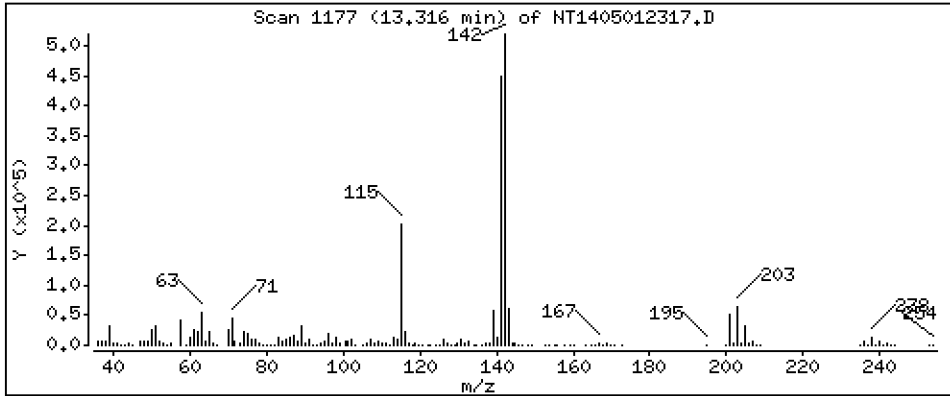
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 4,807 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

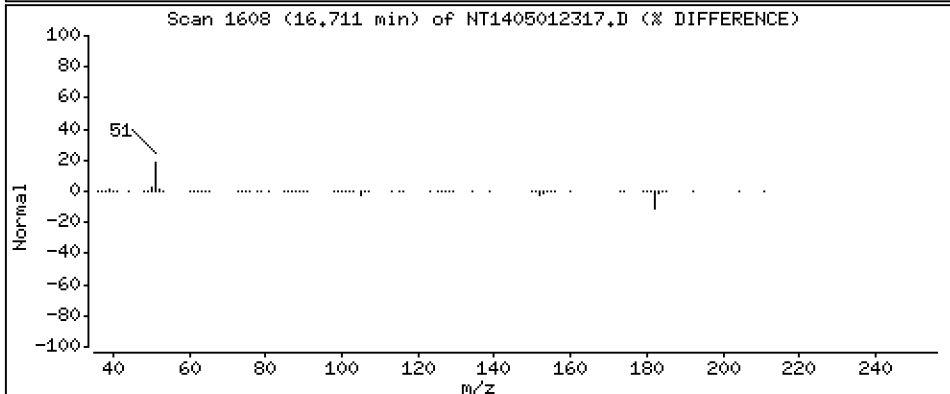
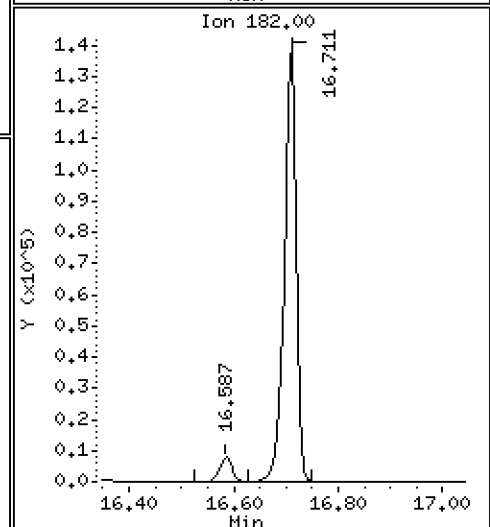
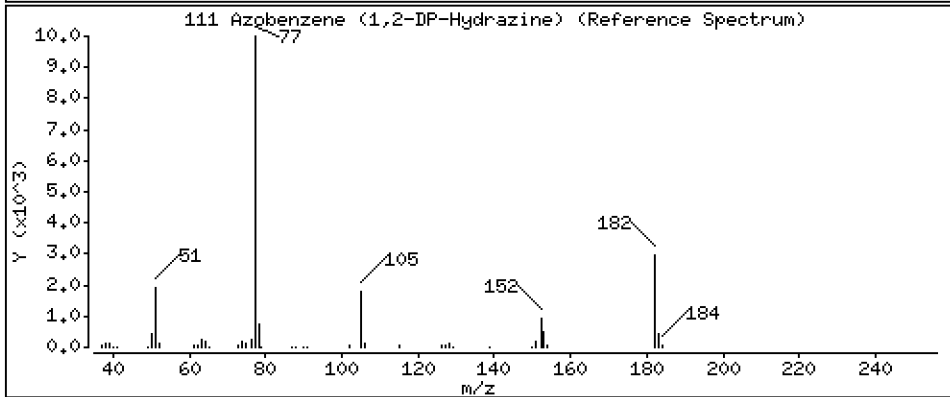
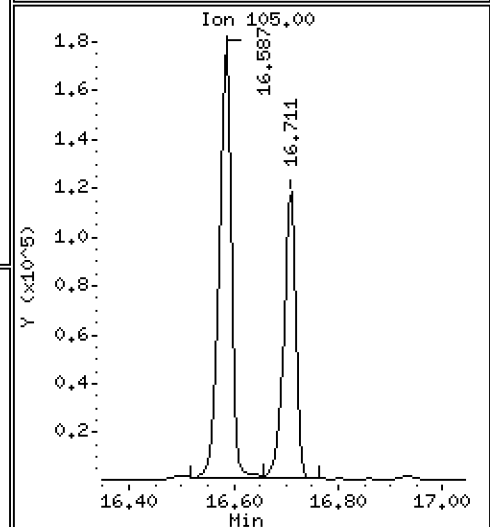
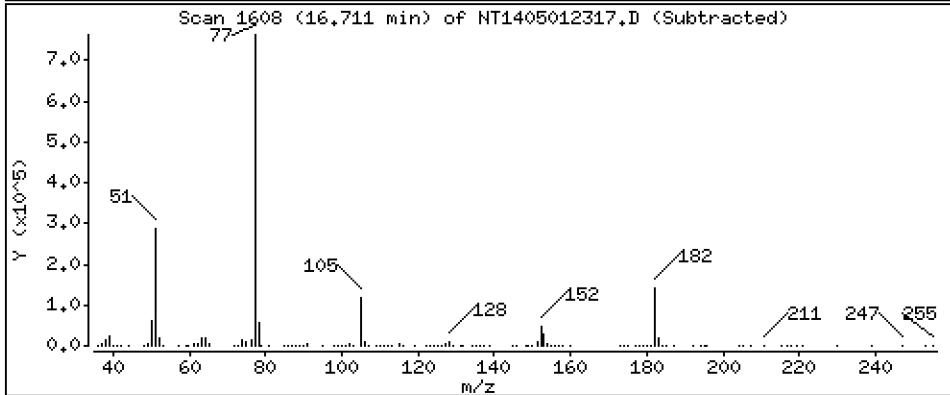
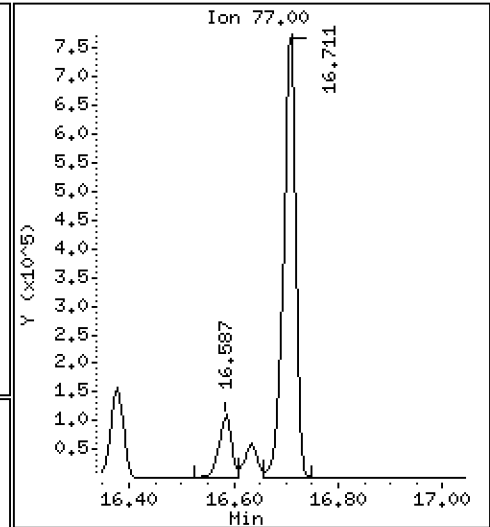
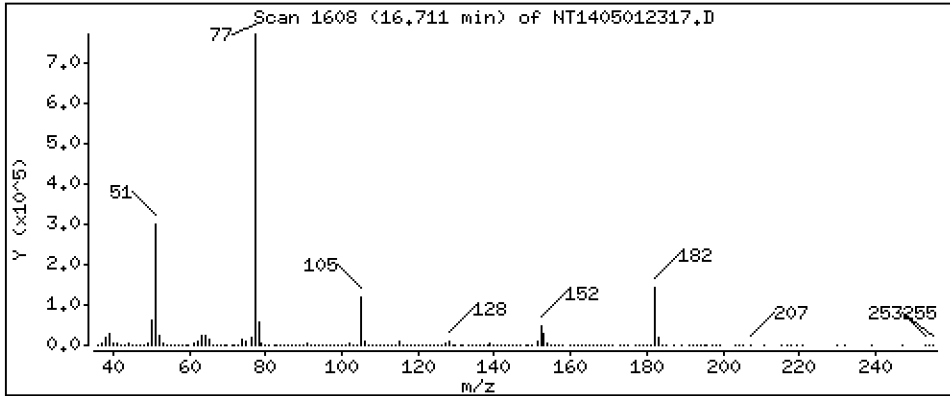
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 4,911 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

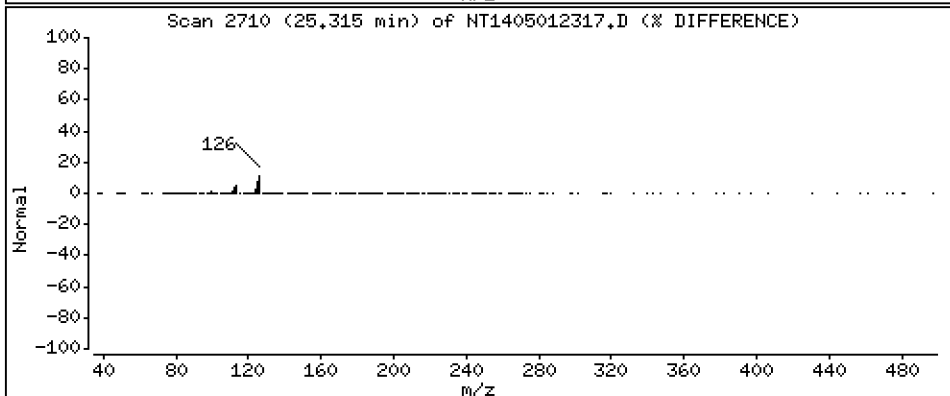
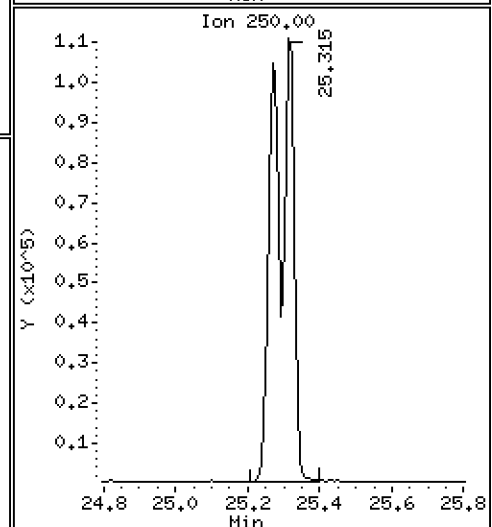
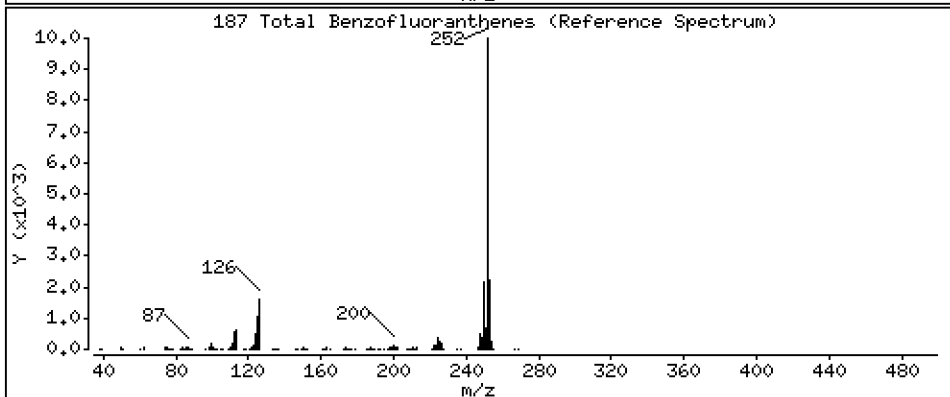
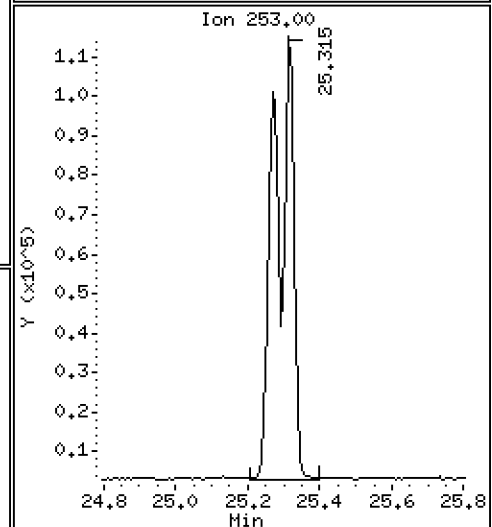
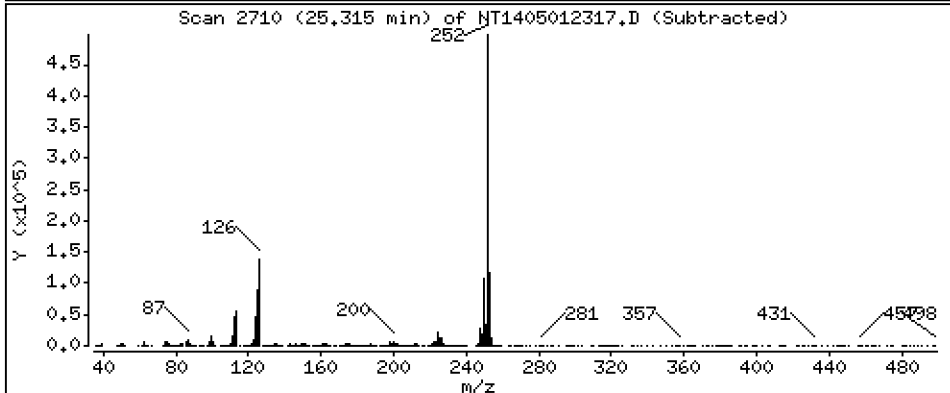
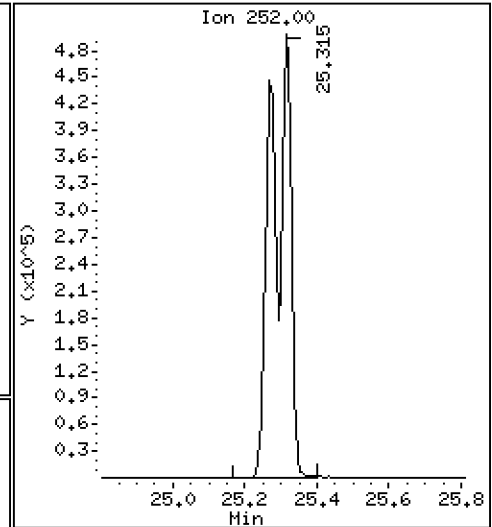
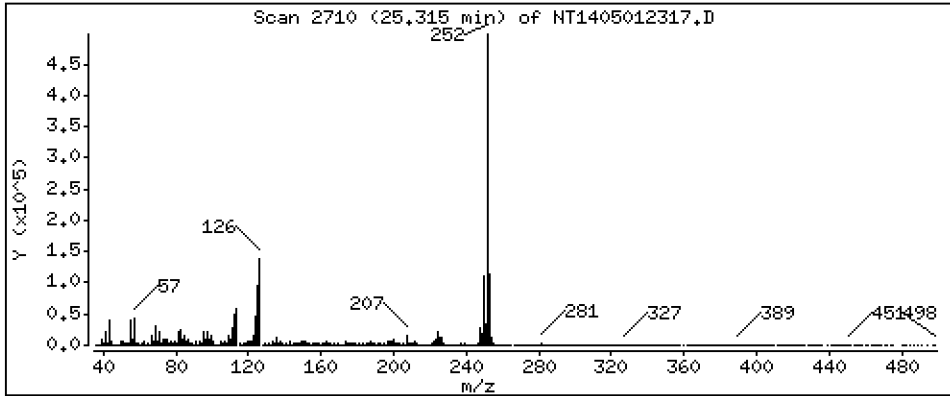
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 12,25 ug/mL



Date : 02-MAY-2023 00:21

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-CCV1

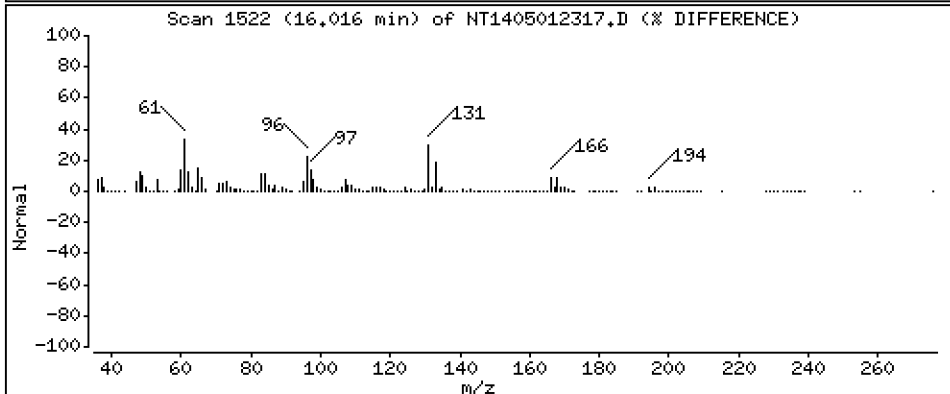
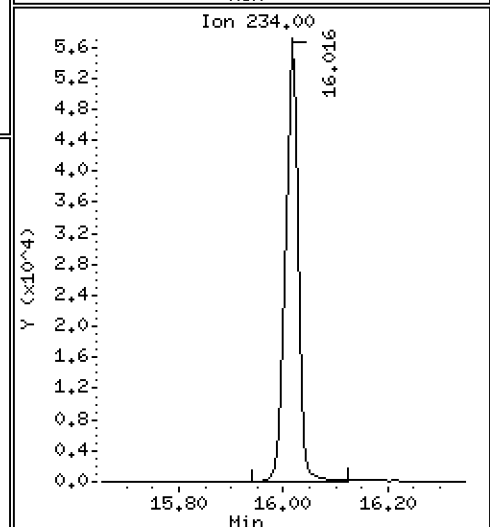
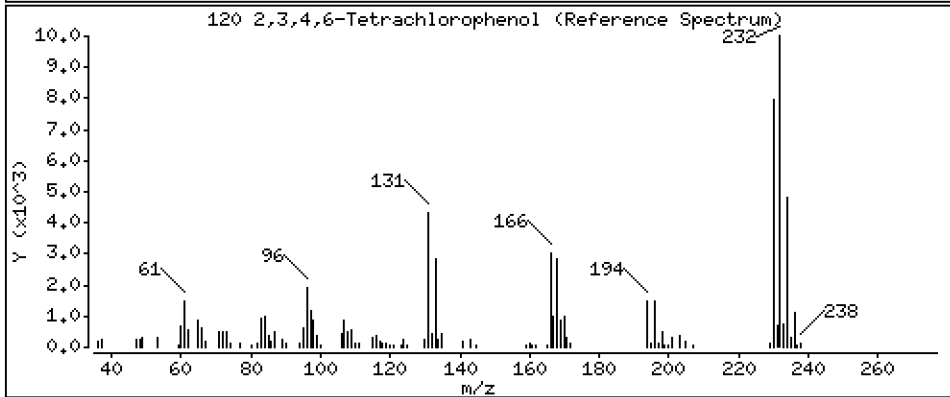
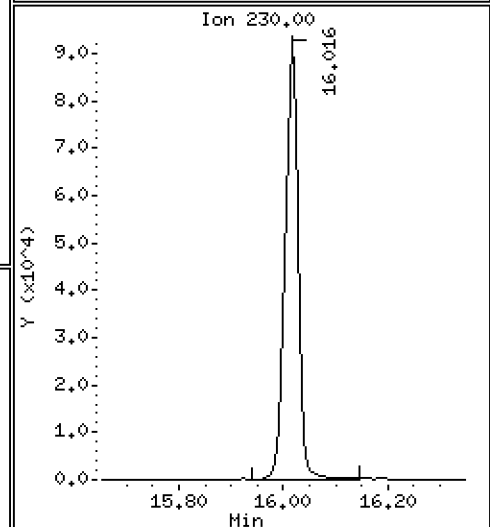
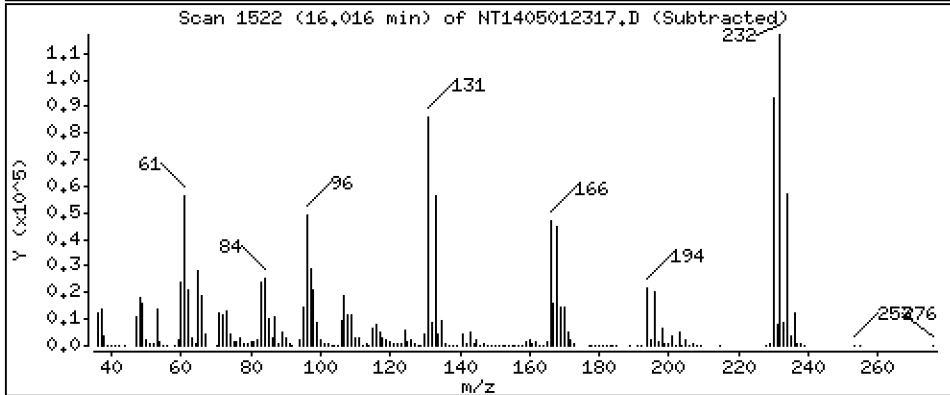
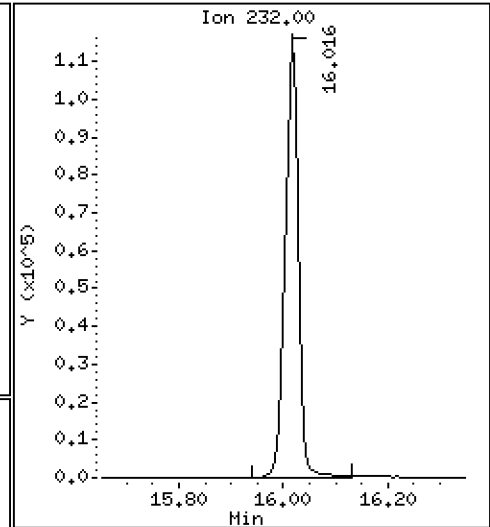
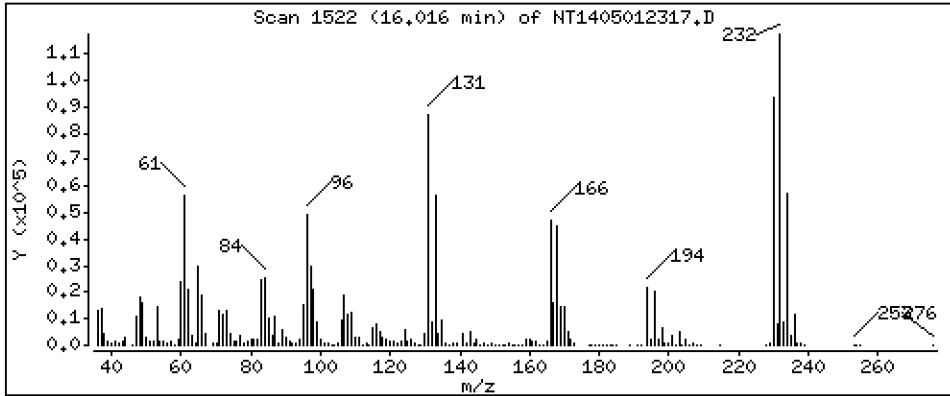
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 5,493 ug/mL





ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012317.D  
 Lab Smp Id: SLE0024-CCV1  
 Inj Date : 02-MAY-2023 00:21 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0024-CCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 2  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.906	6.898	(0.756)	687170	8.06928	8.069
\$ 2 Phenol-d5	99		8.505	8.490	(0.931)	979980	8.19996	8.200
3 Phenol	94		8.521	8.513	(0.932)	705266	5.26551	5.266
\$ 5 2-Chlorophenol-d4	132		8.776	8.768	(0.960)	689591	8.11120	8.111
4 Bis(2-Chloroethyl)ether	93		8.683	8.675	(0.950)	495517	4.84548	4.845
6 2-Chlorophenol	128		8.806	8.799	(0.964)	501327	5.37370	5.374
7 1,3-Dichlorobenzene	146		9.077	9.070	(0.993)	461127	4.93641	4.936
* 8 1,4-Dichlorobenzene-d4	152		9.140	9.132	(1.000)	235481	4.00000	
9 1,4-Dichlorobenzene	146		9.171	9.163	(1.003)	441313	4.95572	4.956
\$ 10 1,2-Dichlorobenzene-d4	152		9.504	9.497	(1.040)	289438	5.37425	5.374
12 1,2-Dichlorobenzene	146		9.528	9.520	(1.042)	442911	4.99871	4.999
11 Benzyl alcohol	108		9.419	9.403	(1.031)	317353	5.19434	5.194
14 2,2'-oxybis(1-Chloropropane)	121		9.714	9.706	(1.063)	118151	3.94992	3.950
13 2-Methylphenol	108		9.644	9.629	(1.055)	484568	5.42290	5.423
17 Hexachloroethane	117		10.125	10.118	(1.108)	194523	4.58199	4.582
16 N-Nitroso-di-n-propylamine	70		9.978	9.970	(1.092)	424724	4.72645	4.726
15 4-Methylphenol	108		9.916	9.900	(1.085)	522573	5.13535	5.135
\$ 18 Nitrobenzene-d5	82		10.242	10.242	(0.880)	632690	5.49025	5.490
19 Nitrobenzene	77		10.281	10.273	(0.883)	616404	5.00355	5.004
20 Isophorone	82		10.731	10.723	(0.922)	898639	5.31416	5.314
21 2-Nitrophenol	139		10.909	10.909	(0.937)	272717	4.65374	4.654
22 2,4-Dimethylphenol	107		10.963	10.955	(0.941)	1013055	10.9131	10.91
23 Bis(2-Chloroethoxy)methane	93		11.157	11.157	(0.958)	529723	4.87376	4.874
24 Benzoic acid	105		11.227	11.196	(0.964)	1376935	17.9115	17.91
25 2,4-Dichlorophenol	162		11.374	11.359	(0.977)	721956	9.55938	9.559
26 1,2,4-Trichlorobenzene	180		11.552	11.552	(0.992)	339118	4.89400	4.894
* 27 Naphthalene-d8	136		11.645	11.637	(1.000)	936343	4.00000	
28 Naphthalene	128		11.683	11.675	(1.003)	1325354	5.26604	5.266
29 4-Chloroaniline	127		11.822	11.814	(1.015)	1132677	10.4019	10.40
30 Hexachlorobutadiene	225		12.046	12.039	(1.035)	160797	5.07579	5.076
31 4-Chloro-3-methylphenol	107		12.789	12.774	(1.098)	927358	11.1789	11.18
32 2-Methylnaphthalene	142		13.091	13.083	(1.124)	917530	5.03282	5.033
33 Hexachlorocyclopentadiene	237		13.555	13.548	(0.887)	153031	4.65994	4.660

Compounds	QUANT SIG			CONCENTRATIONS			
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.718	13.702	(0.898)	470210	11.4934	11.49
35 2,4,5-Trichlorophenol	196	13.795	13.780	(0.903)	510391	11.7432	11.74
§ 36 2-Fluorobiphenyl	172	13.873	13.865	(0.908)	849494	5.46644	5.466
37 2-Chloronaphthalene	162	14.089	14.082	(0.922)	751709	5.06720	5.067
38 2-Nitroaniline	65	14.360	14.345	(0.940)	806216	10.1739	10.17
39 Dimethylphthalate	163	14.786	14.778	(0.968)	765406	5.00167	5.002
40 Acenaphthylene	152	14.964	14.956	(0.979)	1255964	5.30485	5.305
41 2,6-Dinitrotoluene	165	14.925	14.918	(0.977)	368536	10.6225	10.62
* 42 Acenaphthene-d10	164	15.281	15.273	(1.000)	446166	4.00000	
43 3-Nitroaniline	138	15.219	15.212	(0.996)	462857	10.6182	10.62
44 Acenaphthene	153	15.351	15.343	(1.005)	754897	5.32260	5.323
45 2,4-Dinitrophenol	184	15.428	15.420	(1.010)	414603	19.7697	19.77
46 Dibenzofuran	168	15.675	15.668	(1.026)	1017048	5.02311	5.023
47 4-Nitrophenol	109	15.544	15.521	(1.017)	274603	10.8257	10.83
48 2,4-Dinitrotoluene	165	15.737	15.729	(1.030)	510312	10.8636	10.86
50 Diethylphthalate	149	16.240	16.240	(1.063)	885245	5.34434	5.344
49 Fluorene	166	16.394	16.386	(1.073)	860281	4.80146	4.801
51 4-Chlorophenyl-phenylether	204	16.379	16.371	(1.072)	368012	4.96562	4.966
52 4-Nitroaniline	138	16.494	16.487	(1.079)	444551	11.5327	11.53
53 4,6-Dinitro-2-methylphenol	198	16.587	16.579	(0.905)	495813	21.0589	21.06
54 N-Nitrosodiphenylamine	169	16.633	16.626	(0.907)	540667	5.05682	5.057
§ 55 2,4,6-Tribromophenol	330	16.934	16.919	(1.108)	118544	8.08194	8.082
56 4-Bromophenyl-phenylether	248	17.389	17.381	(0.949)	175375	4.98675	4.987
57 Hexachlorobenzene	284	17.706	17.698	(0.966)	171706	4.82795	4.828
58 Pentachlorophenol	266	18.070	18.054	(0.986)	214585	9.48653	9.487
* 59 Phenanthrene-d10	188	18.333	18.325	(1.000)	757105	4.00000	
60 Phenanthrene	178	18.387	18.372	(1.003)	1143017	5.33953	5.340
61 Anthracene	178	18.480	18.464	(1.008)	1137152	5.53866	5.539
62 Carbazole	167	18.805	18.797	(1.026)	1043225	5.49100	5.491
63 Di-n-butylphthalate	149	19.586	19.579	(1.068)	1505578	5.19835	5.198
64 Fluoranthene	202	20.770	20.755	(0.888)	1188923	4.96919	4.969
65 Pyrene	202	21.196	21.180	(0.907)	1270898	5.14361	5.144
§ 66 Terphenyl-d14	244	21.466	21.459	(0.918)	769528	4.57102	4.571
67 Butylbenzylphthalate	149	22.388	22.380	(0.958)	632831	4.35129	4.351
68 Benzo(a)anthracene	228	23.356	23.340	(0.999)	981766	5.30626	5.306
* 69 Chrysene-d12	240	23.379	23.371	(1.000)	518321	4.00000	
70 3,3'-Dichlorobenzidine	252	23.309	23.302	(0.997)	930571	15.6932	15.69
71 Chrysene	228	23.425	23.418	(1.002)	938881	5.44073	5.441
72 bis(2-Ethylhexyl)phthalate	149	24.409	24.401	(1.001)	1580018	4.69896	4.699
* 134 Di-n-octylphthalate-d4	153	24.393	24.385	(1.000)	1259586	4.00000	
73 Di-n-octylphthalate	149	24.409	24.401	(1.001)	1580018	4.69896	4.699
74 Benzo(b)fluoranthene	252	25.268	25.260	(0.969)	897198	5.79641	5.796
75 Benzo(k)fluoranthene	252	25.314	25.307	(0.971)	975821	6.42522	6.425
76 Benzo(a)pyrene	252	25.949	25.934	(0.996)	755573	5.77629	5.776
* 77 Perylene-d12	264	26.066	26.050	(1.000)	464216	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.813	28.789	(1.105)	494359	2.73307	2.733
79 Dibenzo(a,h)anthracene	278	28.820	28.805	(1.106)	451598	3.05220	3.052
80 Benzo(g,h,i)perylene	276	29.628	29.605	(1.137)	317268	2.07195	2.072
90 N-Nitrosodimethylamine	74	4.813	4.797	(0.527)	678964	9.58946	9.589
91 Aniline	93	8.598	8.590	(0.941)	1194943	9.83094	9.831
93 Benzidine	184	21.002	20.994	(0.898)	771901	8.17512	8.175
103 Pyridine	79	4.828	4.821	(0.528)	1025646	4.89365	4.894
105 1-methylnaphthalene	142	13.316	13.308	(1.143)	846239	4.80682	4.807
111 Azobenzene (1,2-DP-Hydrazine)	77	16.710	16.695	(1.094)	1255211	4.91058	4.911

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.314	25.307	(0.971)	1794608	12.2469	12.25
120 2,3,4,6-Tetrachlorophenol	232	16.016	16.000	(1.048)	216247	5.49349	5.493

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012317.D Calibration Time: 15:06  
 Lab Smp Id: SLE0024-CCV1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	235481	-14.05
27 Naphthalene-d8	1103207	551604	2206414	936343	-15.13
42 Acenaphthene-d10	520358	260179	1040716	446166	-14.26
59 Phenanthrene-d10	882575	441288	1765150	757105	-14.22
69 Chrysene-d12	600619	300310	1201238	518321	-13.70
134 Di-n-octylphthala	1445631	722816	2891262	1259586	-12.87
77 Perylene-d12	570040	285020	1140080	464216	-18.56

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.14	0.09
27 Naphthalene-d8	11.64	11.14	12.14	11.65	0.07
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.33	17.83	18.83	18.33	0.04
69 Chrysene-d12	23.37	22.87	23.87	23.38	0.03
134 Di-n-octylphthala	24.39	23.89	24.89	24.39	0.03
77 Perylene-d12	26.05	25.55	26.55	26.07	0.06

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012317.D

Lab ID: SLE0024-CCV1  
nt14.i, ABN.m, 02-MAY-2023 00:21

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



**LOW-CONCENTRATION  
CONTINUING CALIBRATION CHECK  
EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: NT14

Calibration: GD00062

Lab File ID: NT1405012303.D

Calibration Date: 04/21/2023

Sequence: SLE0024

Injection Date: 05/01/23

Lab Sample ID: SLE0024-LCV1

Injection Time: 15:45

Sequence Name: ABN 0.5

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Phenol	A	0.50000	0.5	2.2751850	2.3926670		5.2	+/-50
4-Methylphenol	A	0.50000	0.5	1.7285470	1.6766840		-3.0	+/-50
Naphthalene	A	0.50000	0.5	1.0751590	1.0805420		0.5	+/-50
2-Methylnaphthalene	A	0.50000	0.5	0.7788139	0.7193204		-7.6	+/-50
Acenaphthylene	A	0.50000	0.5	2.1225980	2.1739610		2.4	+/-50
Dimethylphthalate	A	0.50000	0.5	1.3719560	1.3567770		-1.1	+/-50
Acenaphthene	A	0.50000	0.5	1.2715320	1.2759820		0.4	+/-50
Dibenzofuran	A	0.50000	0.5	1.8152320	1.7609070		-3.0	+/-50
Fluorene	A	0.50000	0.5	1.6063130	1.6119490		0.4	+/-50
Phenanthrene	A	0.50000	0.5	1.1309770	1.1362440		0.5	+/-50
Anthracene	A	0.50000	0.5	1.0847210	1.0548520		-2.8	+/-50
Fluoranthene	A	0.50000	0.5	1.8464150	1.6705020		-9.5	+/-50
Pyrene	A	0.50000	0.5	1.9067960	1.7285910		-9.3	+/-50
Butylbenzylphthalate	A	0.50000	0.3	0.9308079	0.8133187		-33.9	+/-50
Benzo(a)anthracene	A	0.50000	0.5	1.4278450	1.4814000		3.8	+/-50
Chrysene	A	0.50000	0.5	1.3317250	1.3528740		1.6	+/-50
bis(2-Ethylhexyl)phthalate	A	0.50000	0.5	1.0678070	1.0204950		-4.4	+/-50
Benzo(a)fluoranthene, Total	A	1.00000	1.0	1.2626500	1.2871140		1.9	+/-50
Benzo(a)pyrene	A	0.50000	0.5	1.1271120	1.1273150		0.02	+/-50
Indeno(1,2,3-cd)pyrene	A	0.50000	0.4	1.3992660	1.2912580		-17.2	+/-50
Dibenzo(a,h)anthracene	A	0.50000	0.4	1.1627800	1.0786960		-15.4	+/-50
Benzo(g,h,i)perylene	A	0.50000	0.4	1.1488320	1.0767450		-18.4	+/-50
2-Fluorophenol	A	0.75000	0.807	1.4465510	1.5568060		7.6	+/-50
Phenol-d5	A	0.75000	0.759	2.0300630	2.0557340		1.3	+/-50
2-Chlorophenol-d4	A	0.75000	0.782	1.4441450	1.5056200		4.3	+/-50
1,2-Dichlorobenzene-d4	A	0.50000	0.533	0.9148326	0.9749953		6.6	+/-50
Nitrobenzene-d5	A	0.50000	0.488	0.4922929	0.4803924		-2.4	+/-50
2-Fluorobiphenyl	A	0.50000	0.528	1.3932180	1.4714230		5.6	+/-50
2,4,6-Tribromophenol	A	0.75000	0.600	0.1113678	0.1051214		-20.1	+/-50
p-Terphenyl-d14	A	0.50000	0.391	1.1921270	1.1491560		-21.8	+/-50

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012303.D

Date: 01-May-2023 15:45

Client ID:

Sample Info: SLE0024-LCW1

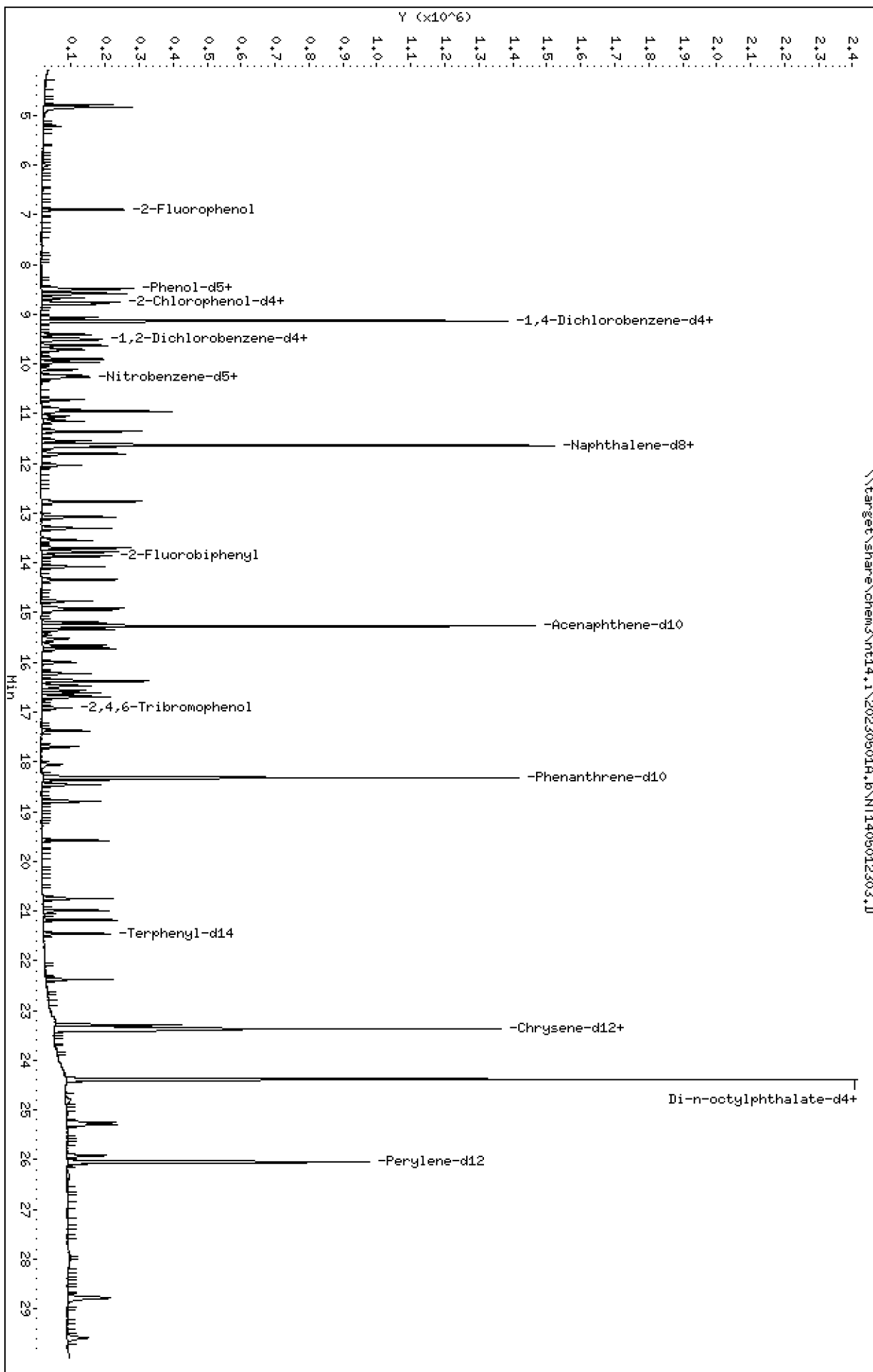
Instrument: nt14.1

Operator: USD

Column diameter: 0.25

Column phase: ZB-5msi

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Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

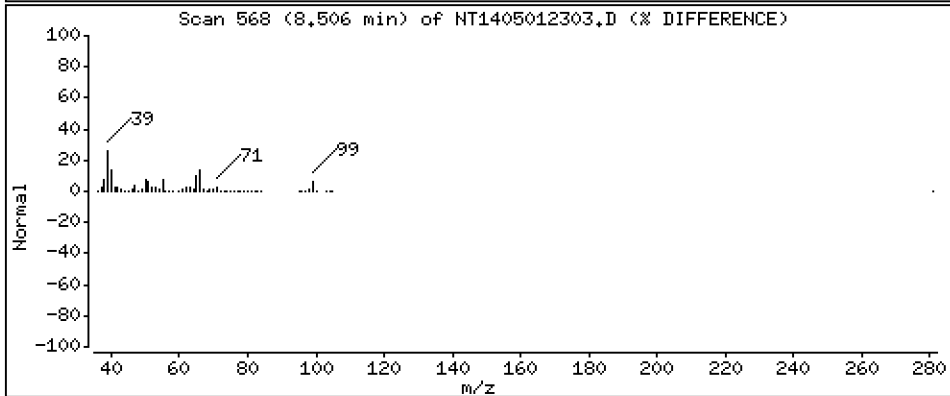
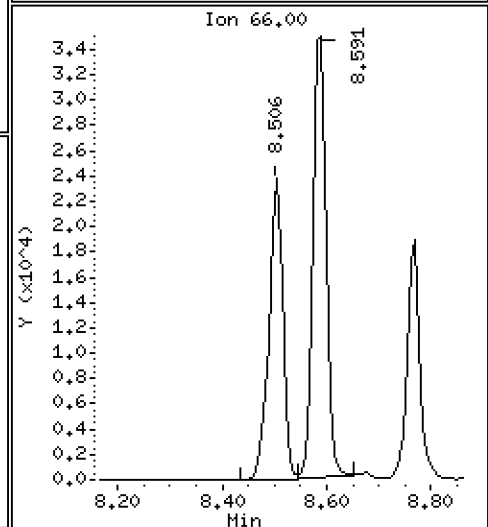
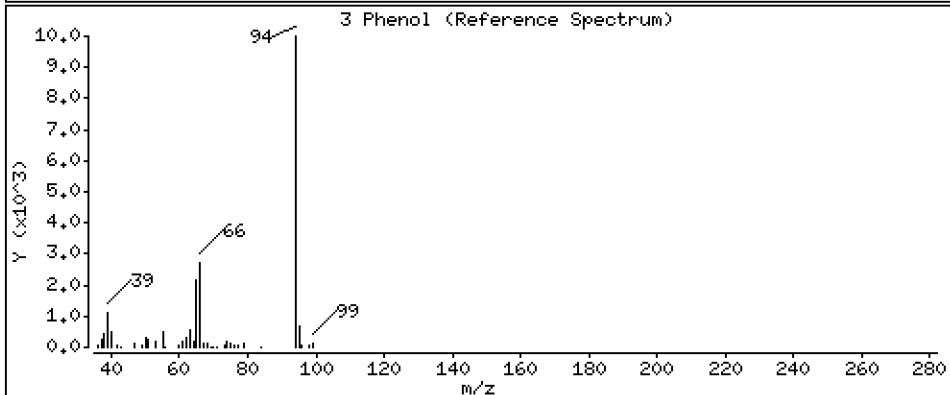
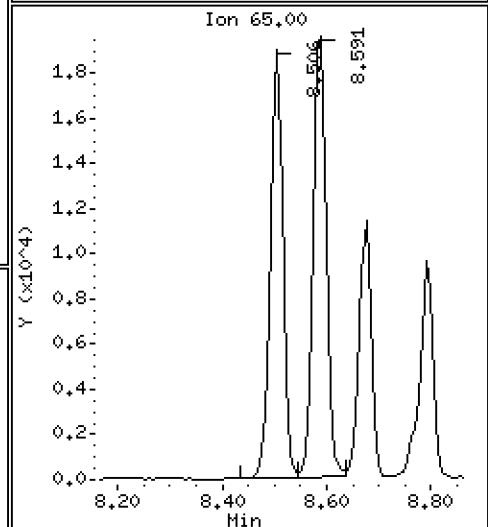
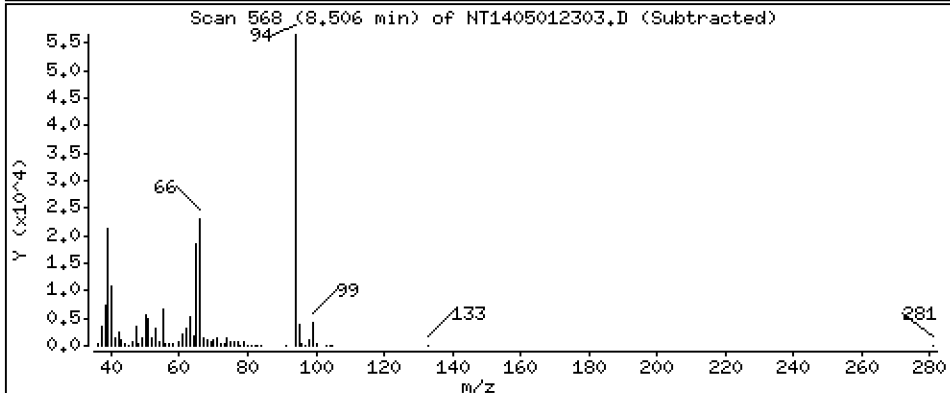
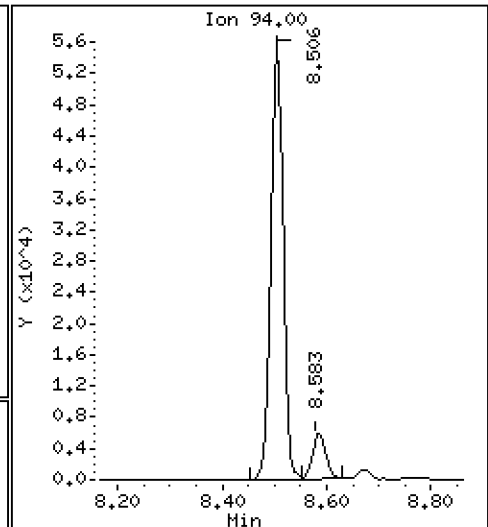
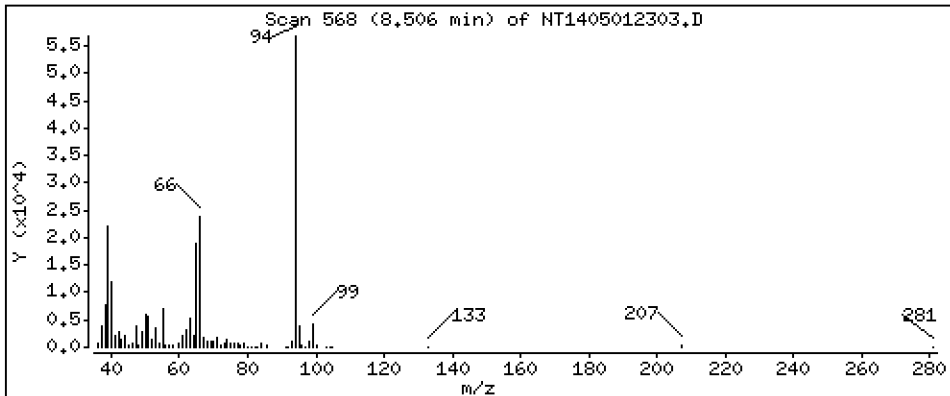
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,5258 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

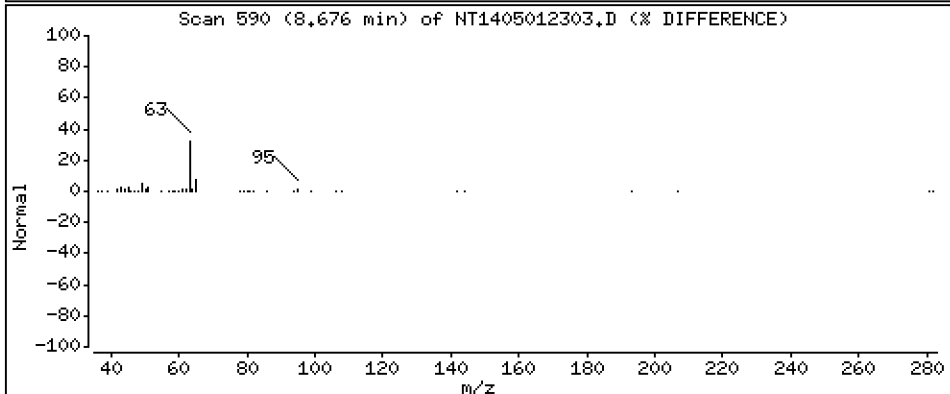
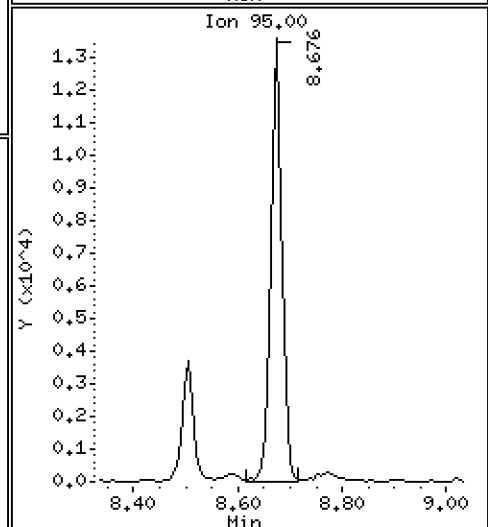
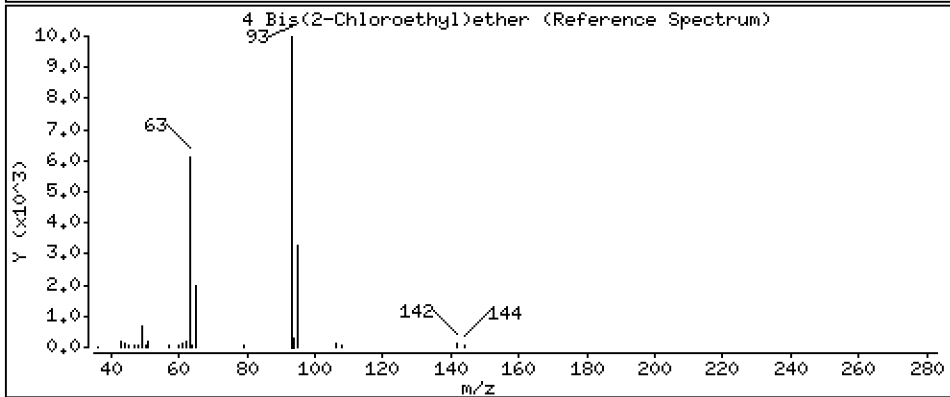
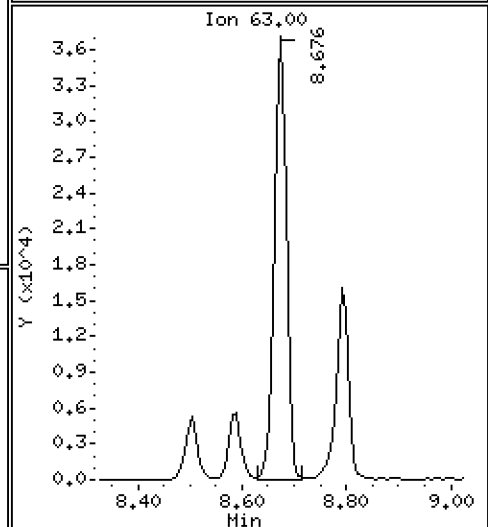
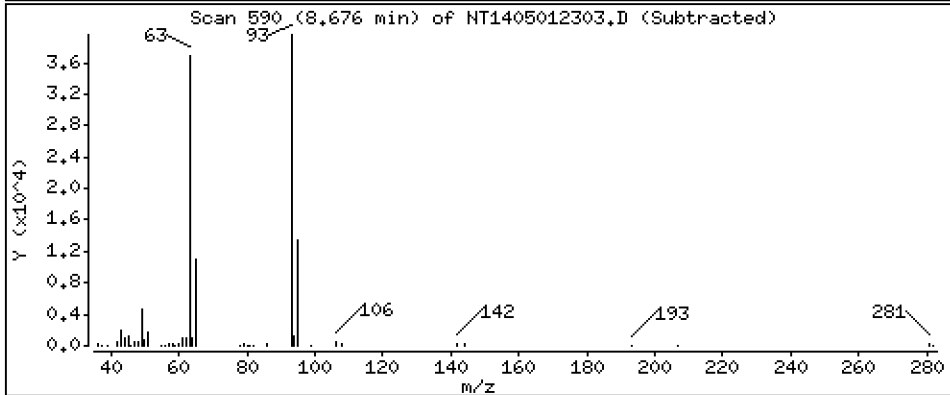
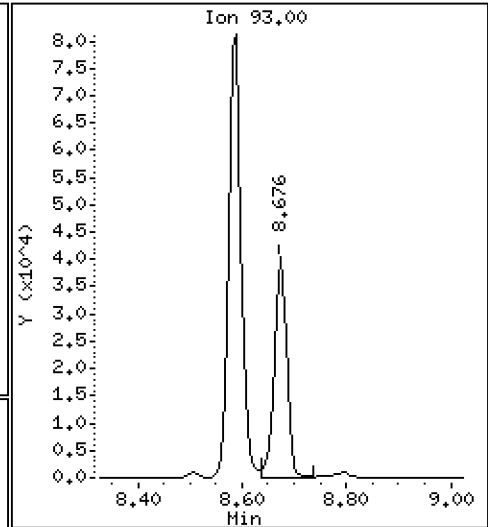
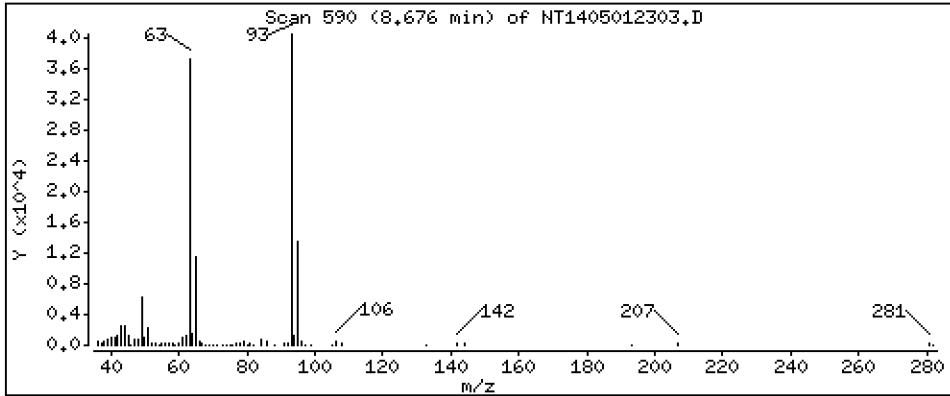
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 0,4982 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

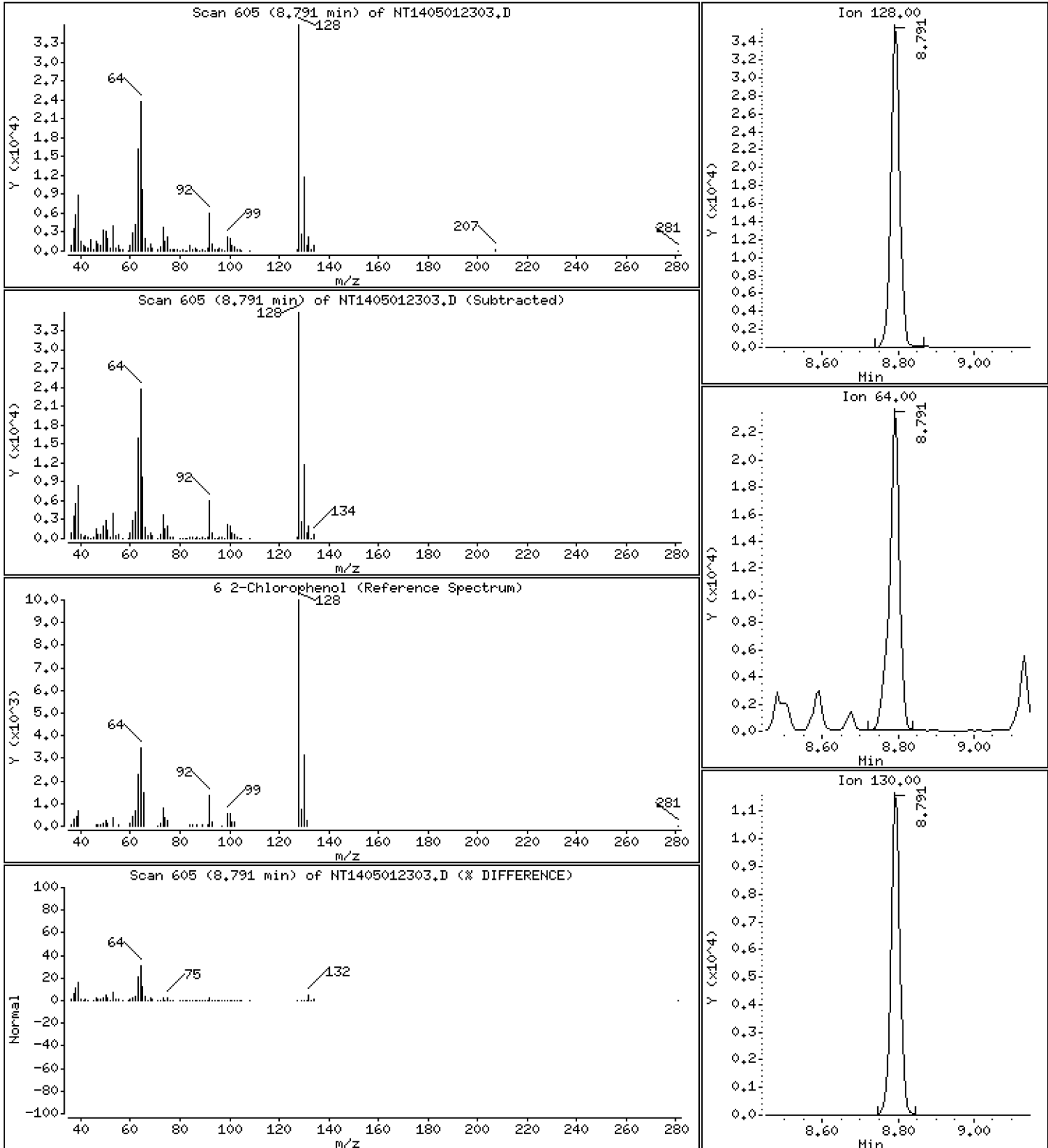
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 0,5193 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

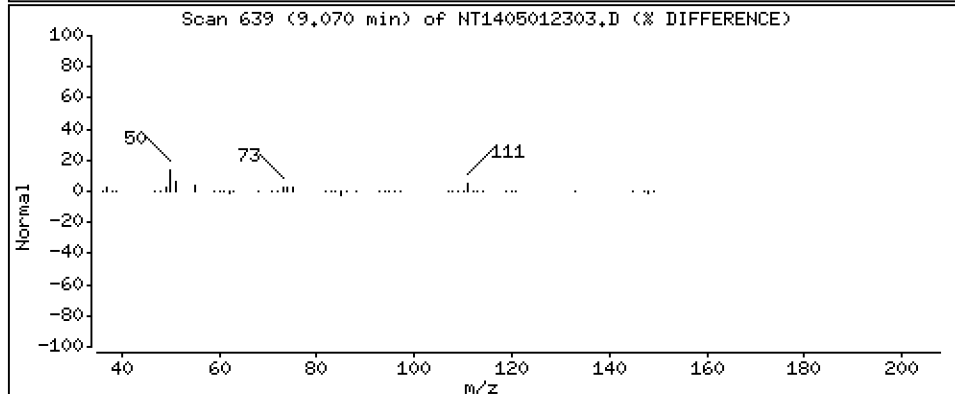
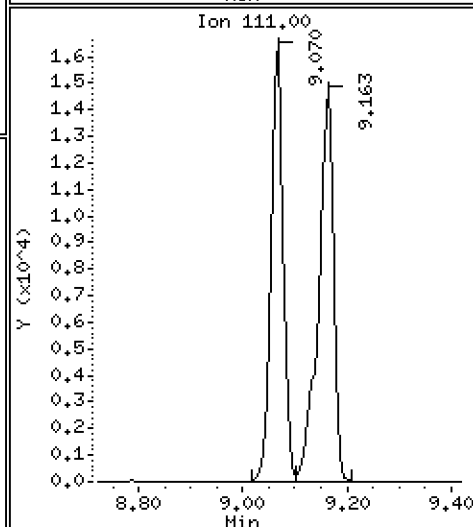
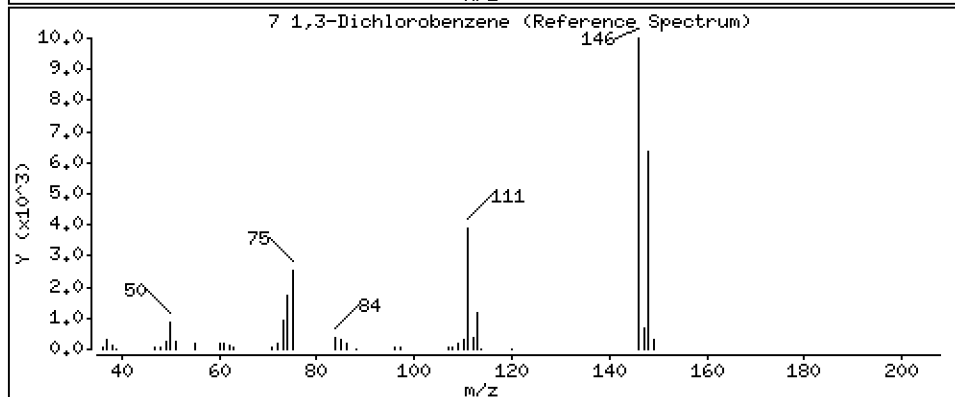
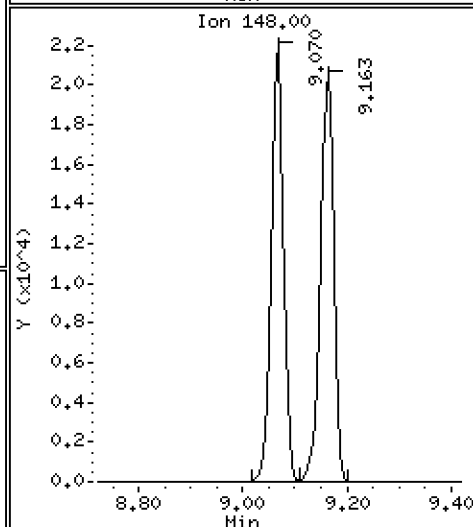
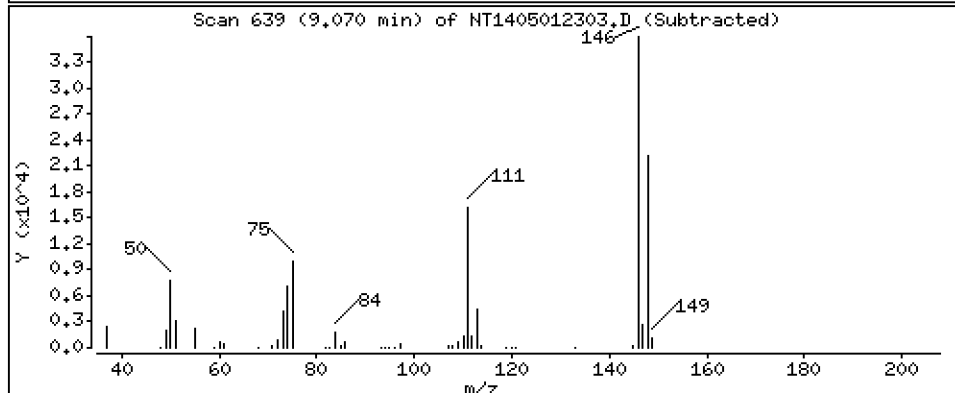
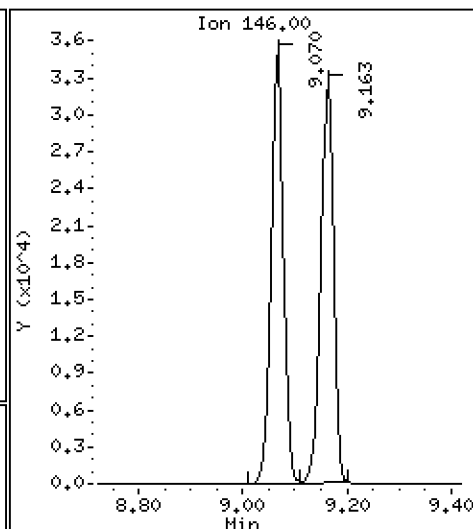
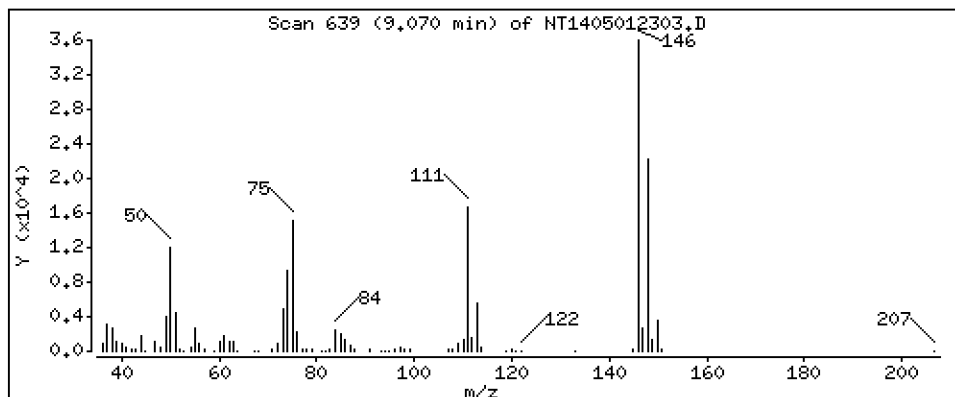
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,5078 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

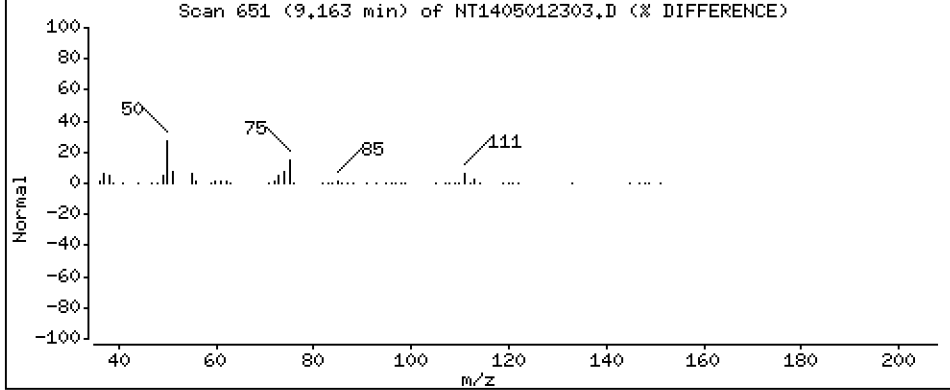
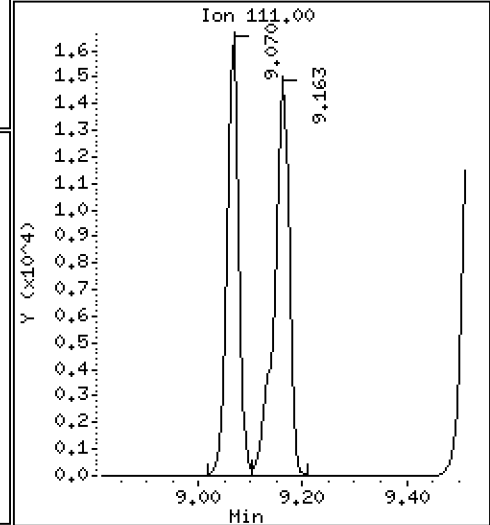
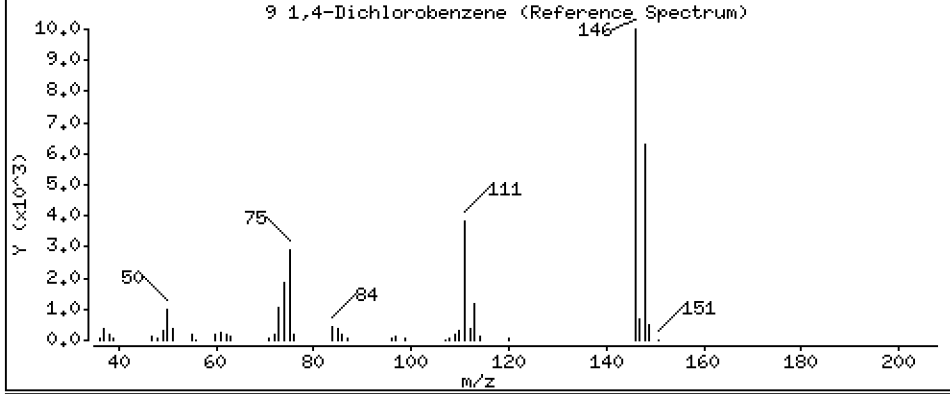
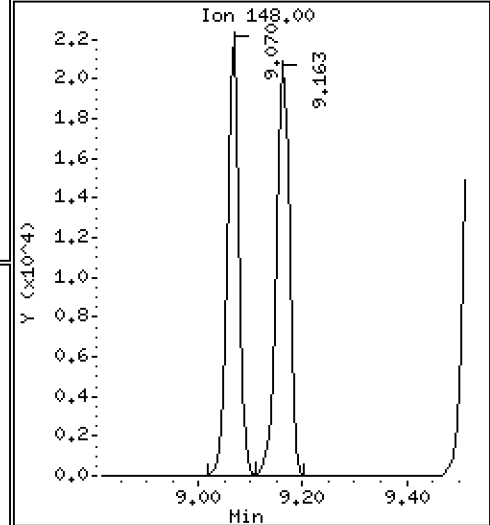
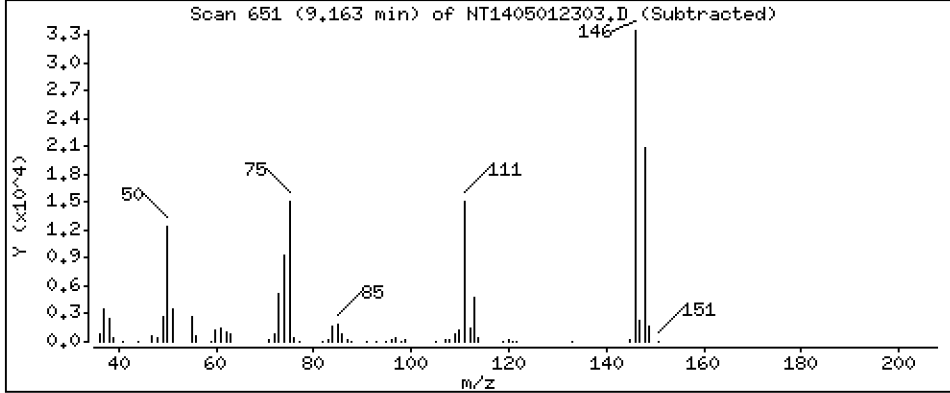
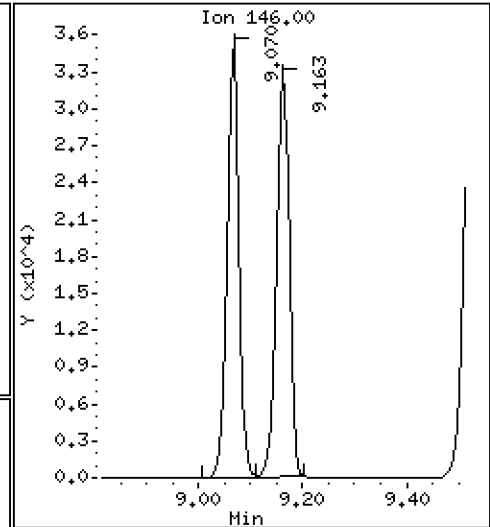
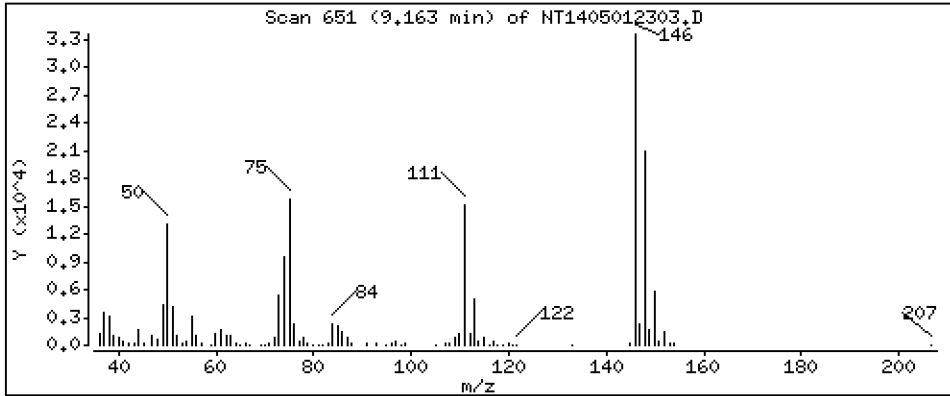
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 0.4915 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

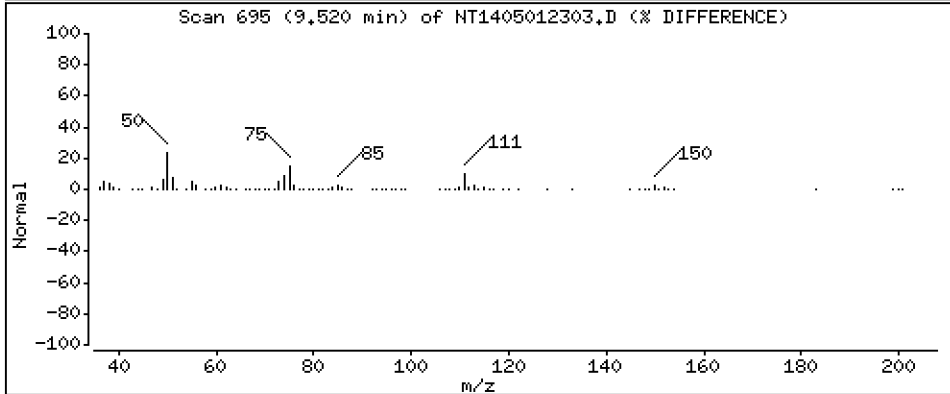
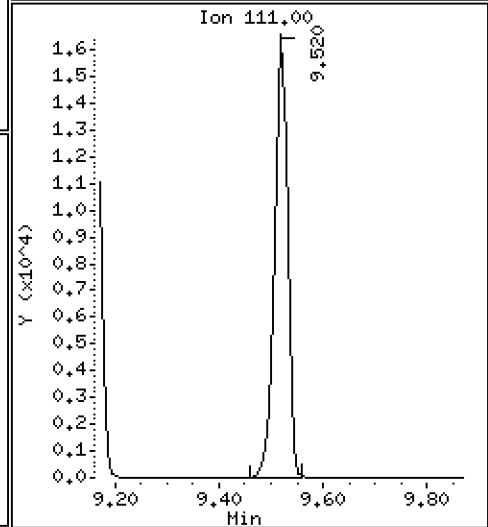
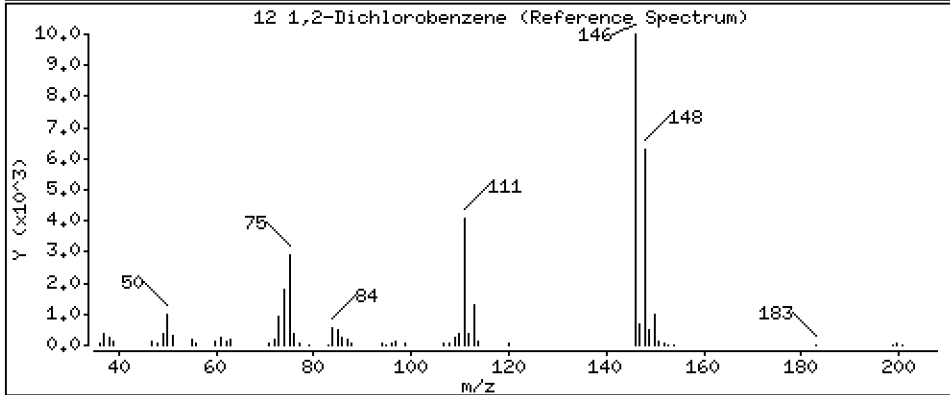
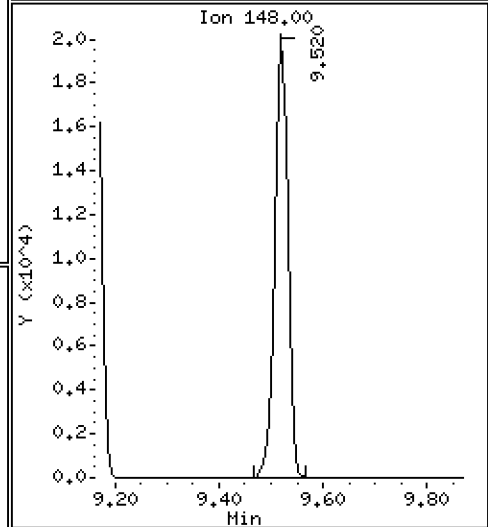
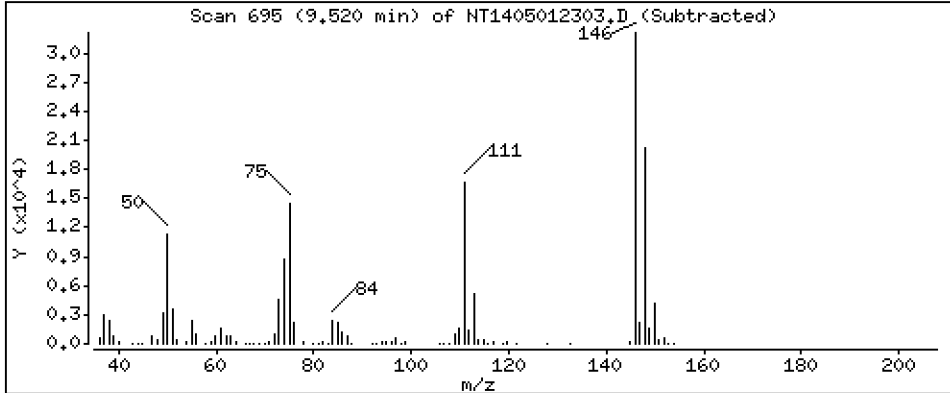
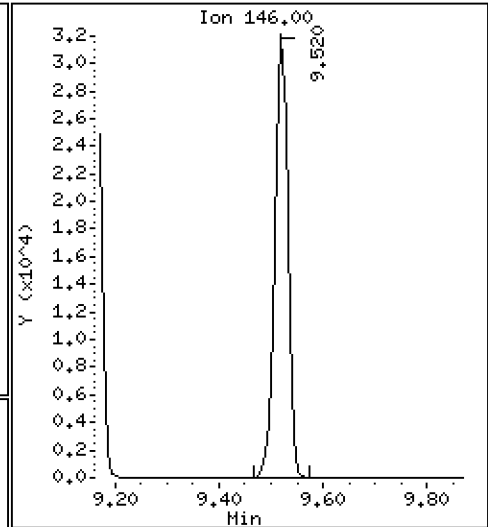
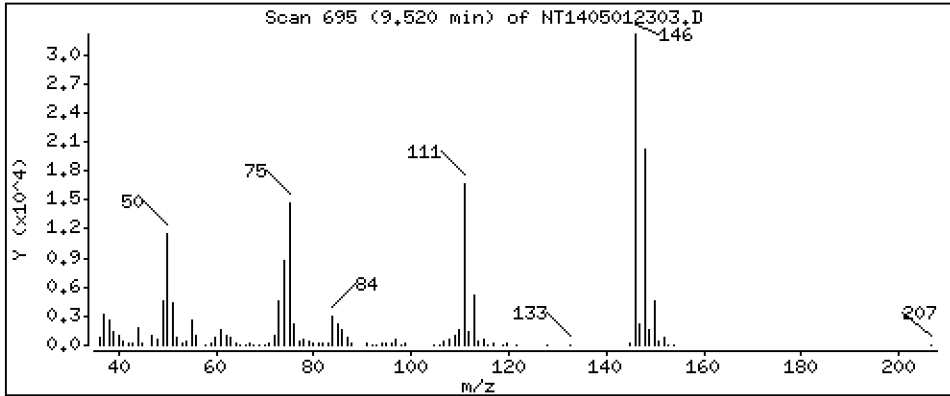
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 0.4937 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

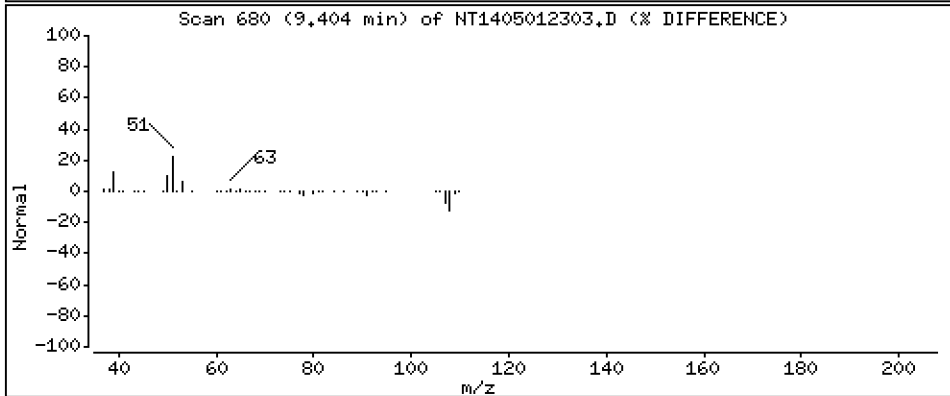
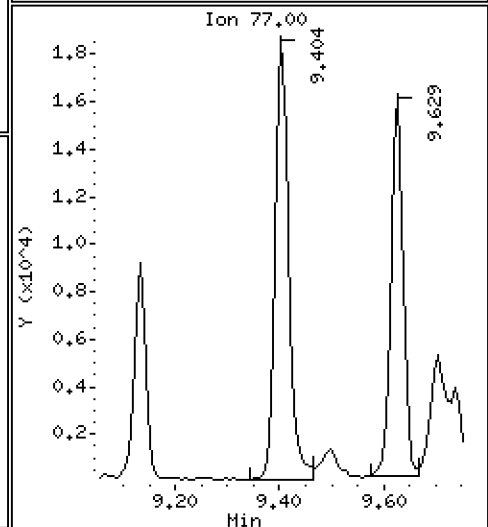
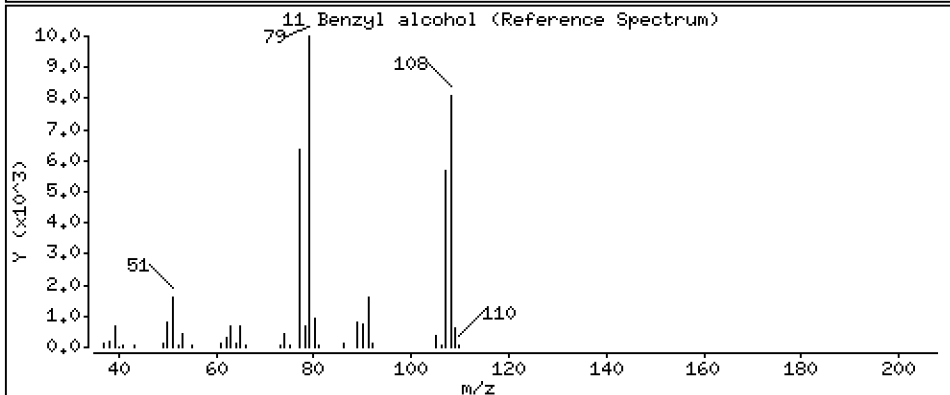
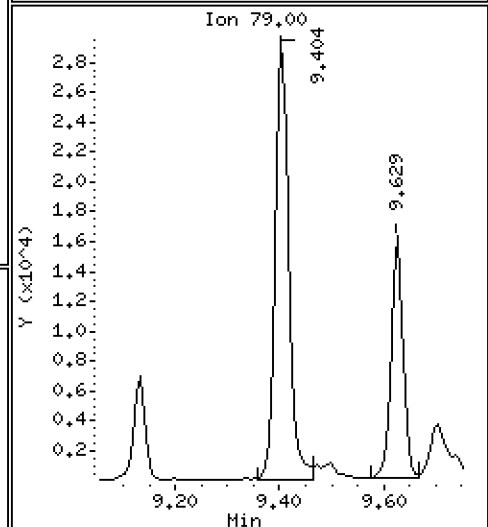
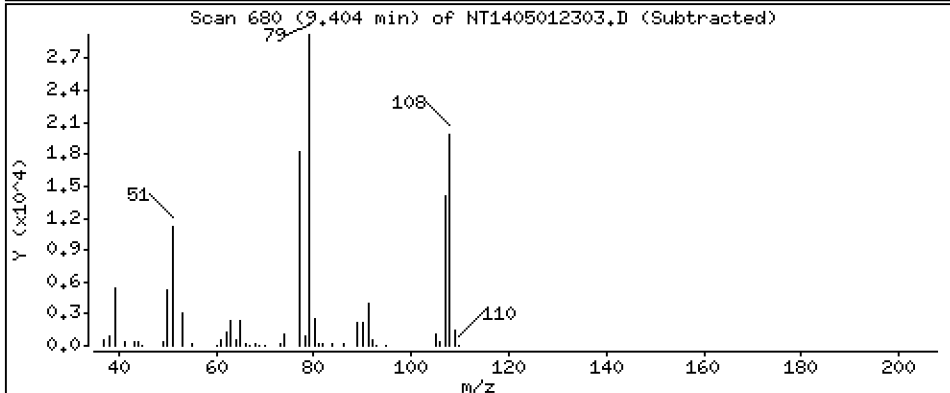
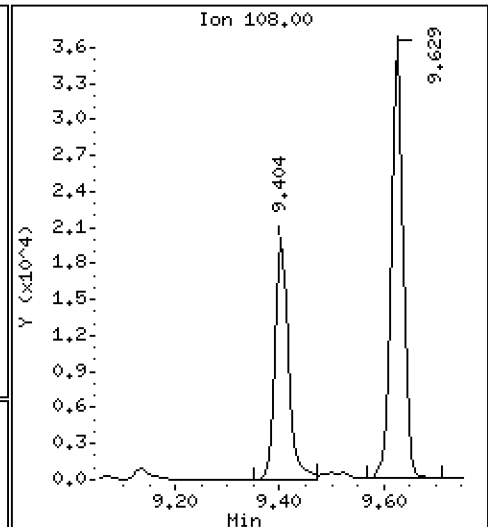
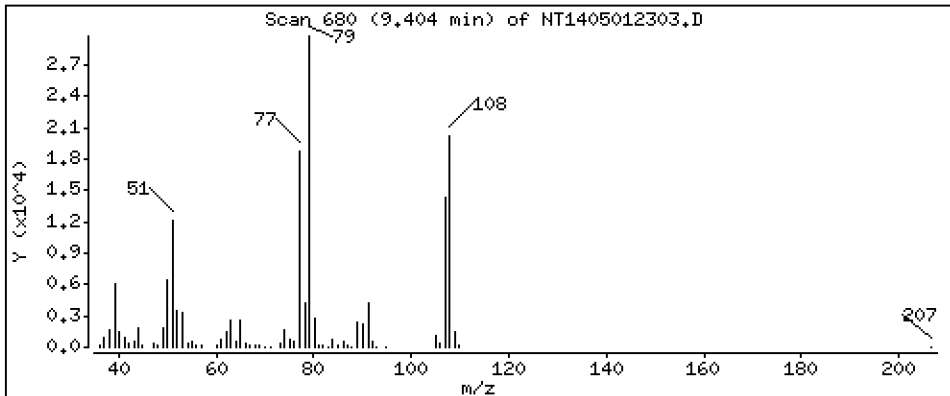
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 0.4649 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

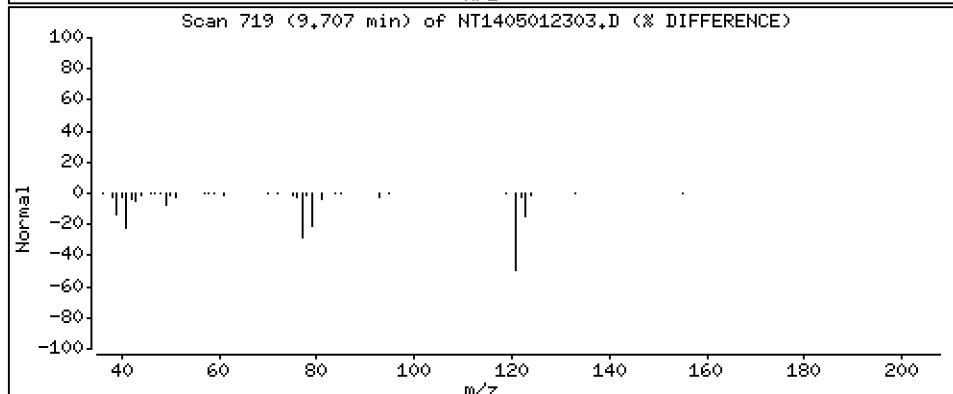
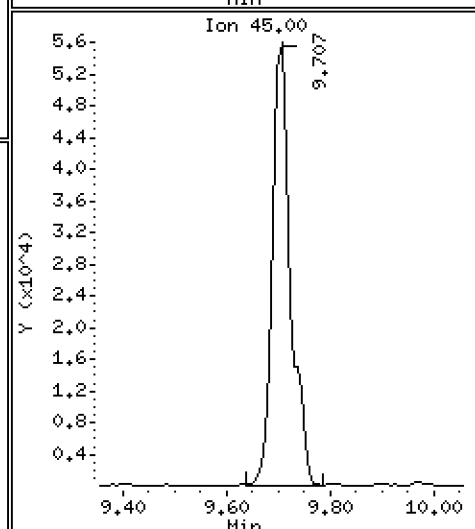
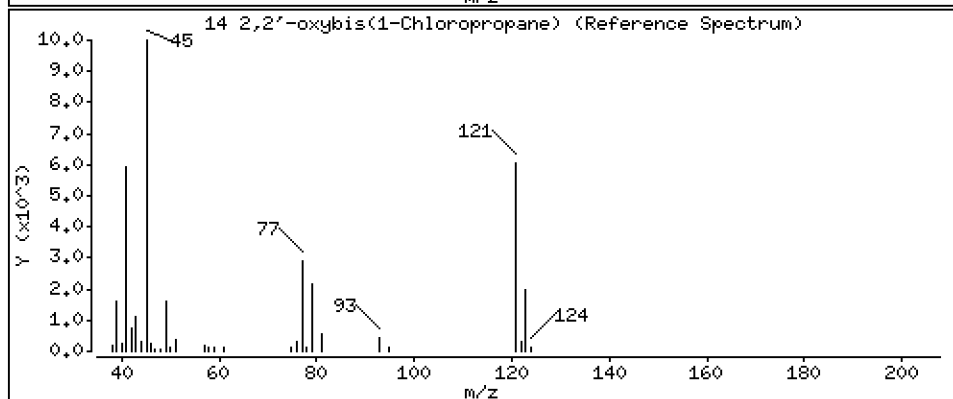
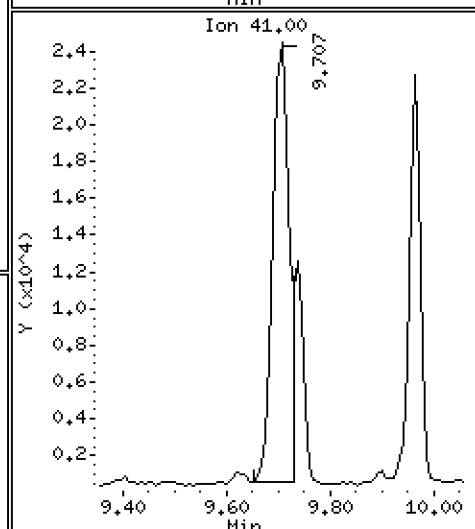
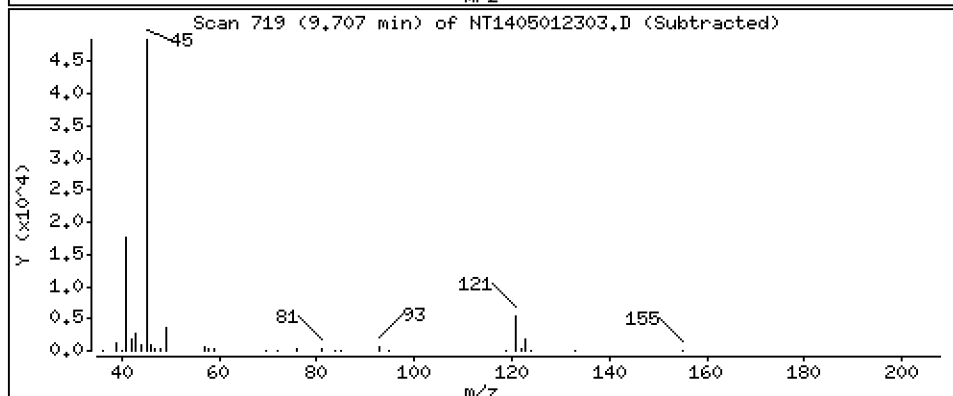
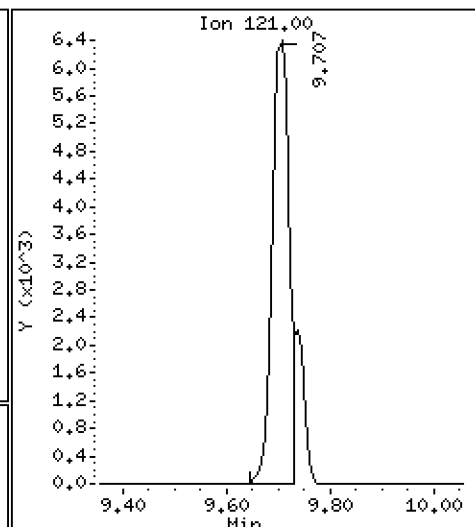
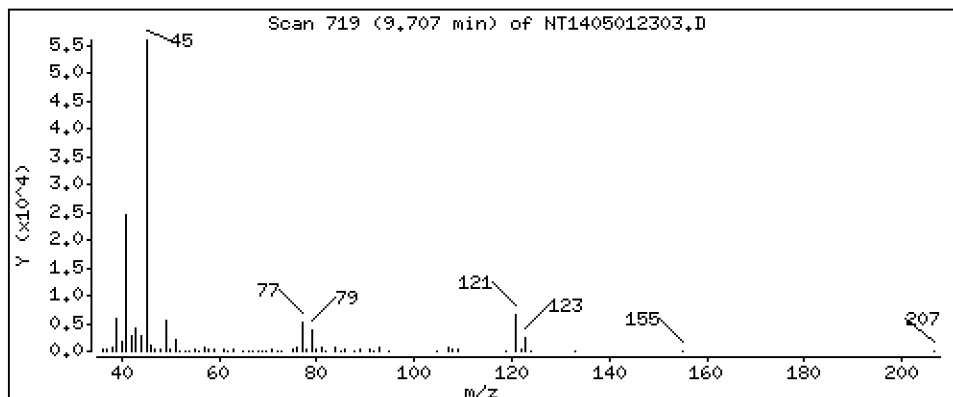
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 0,3925 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

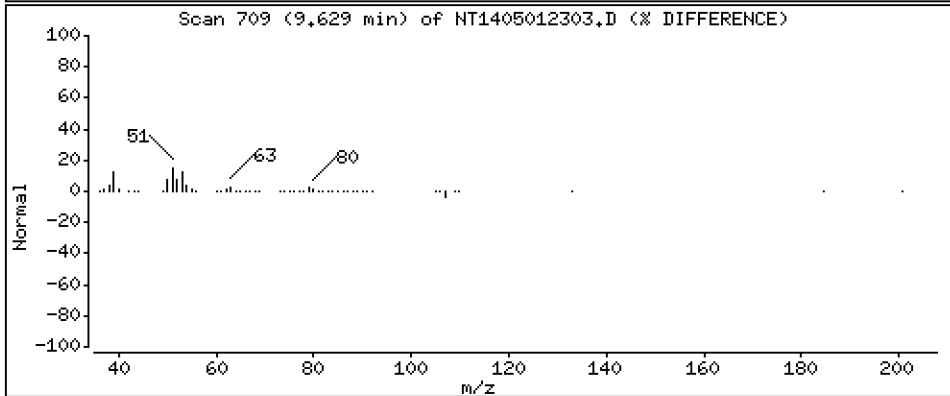
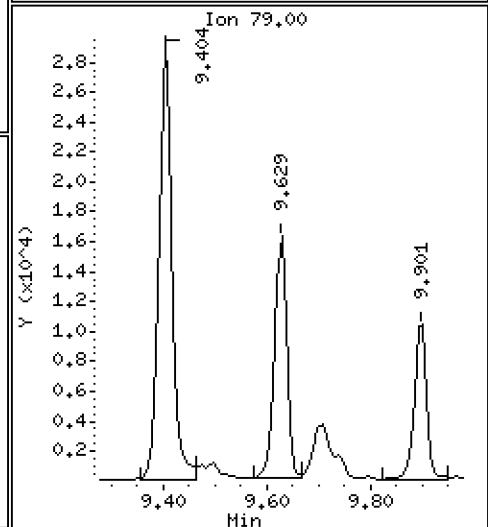
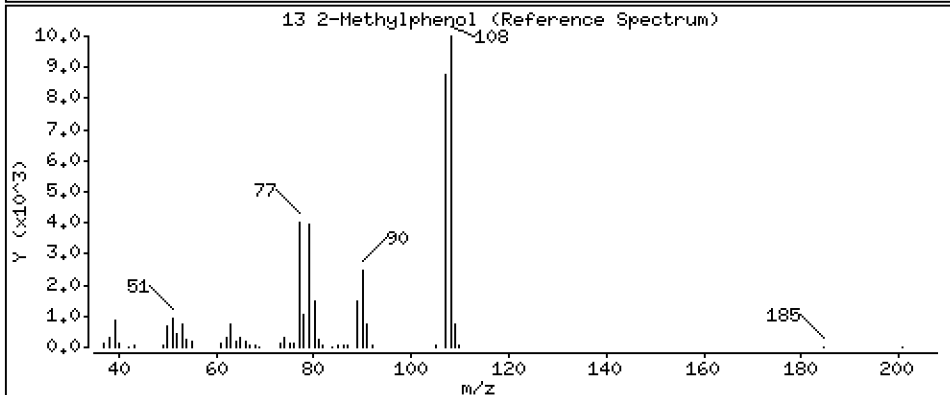
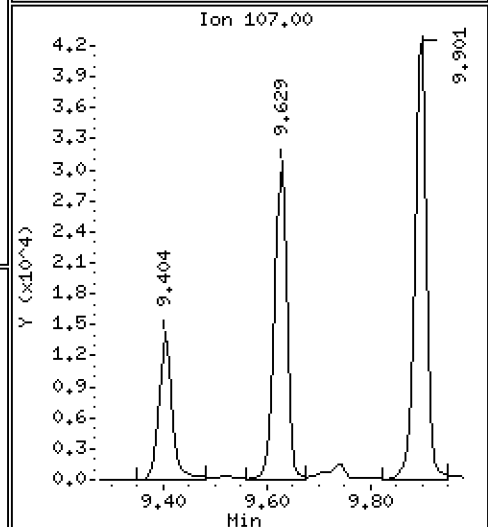
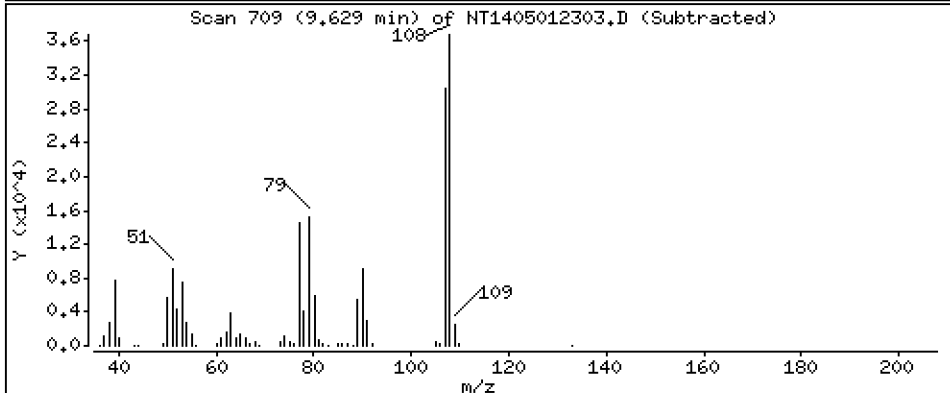
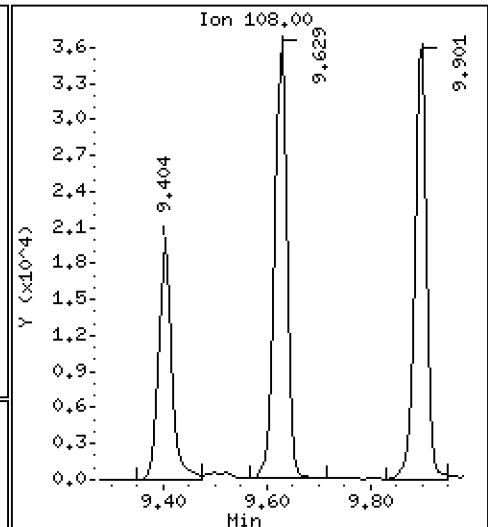
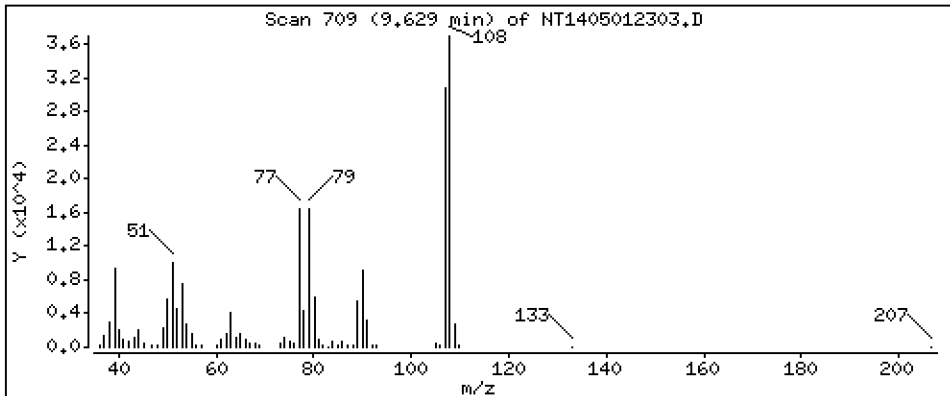
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 0.5246 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

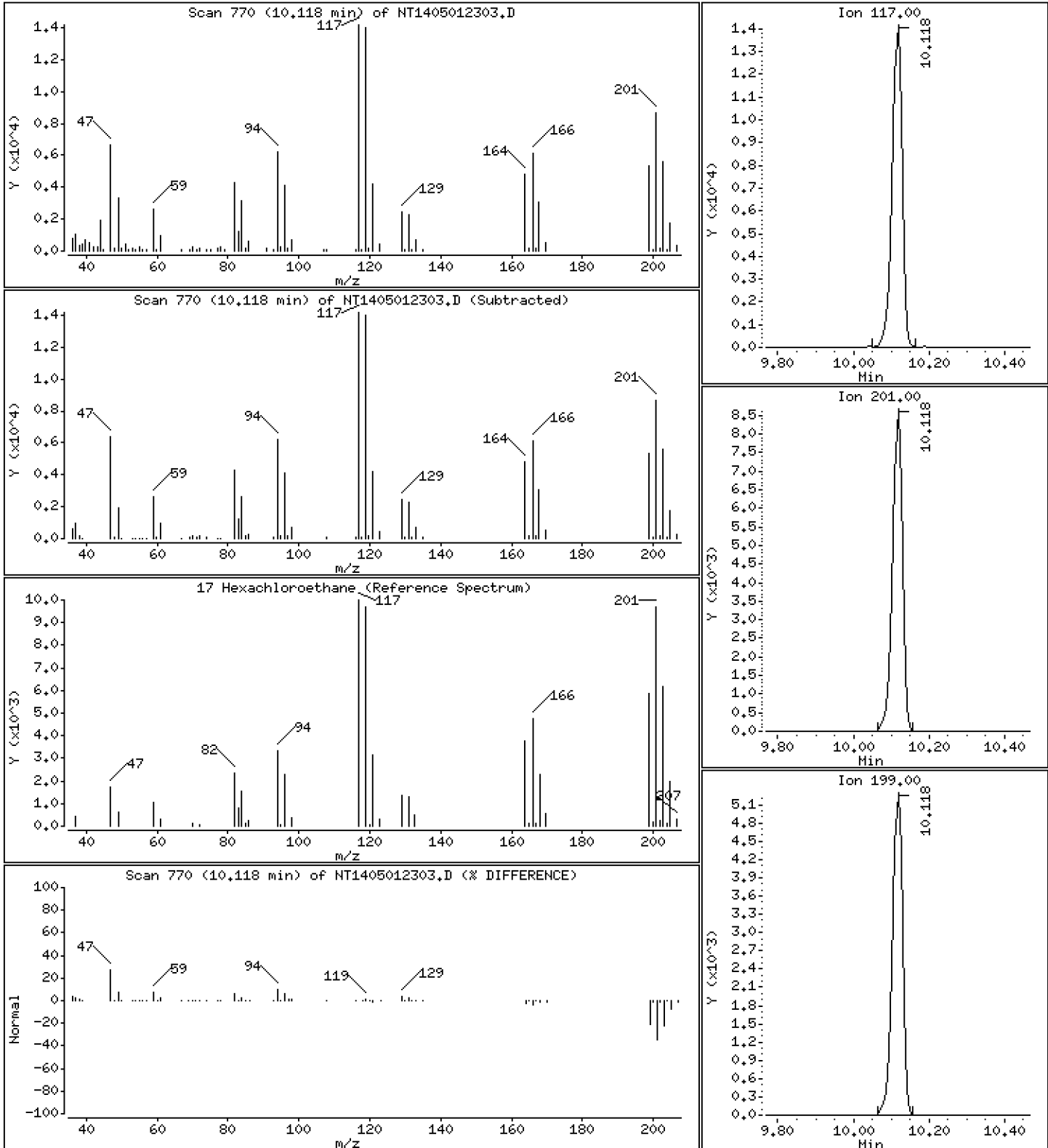
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

17 Hexachloroethane

Concentration: 0.4849 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

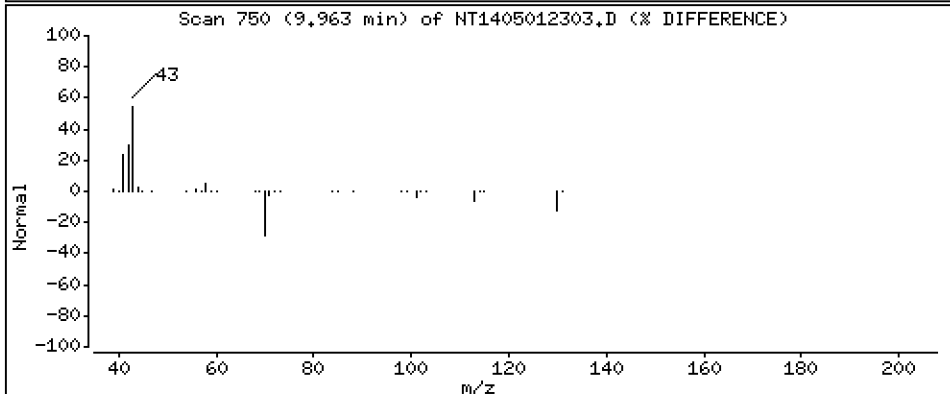
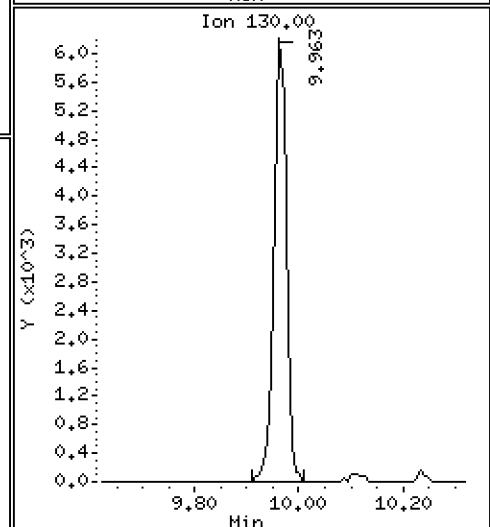
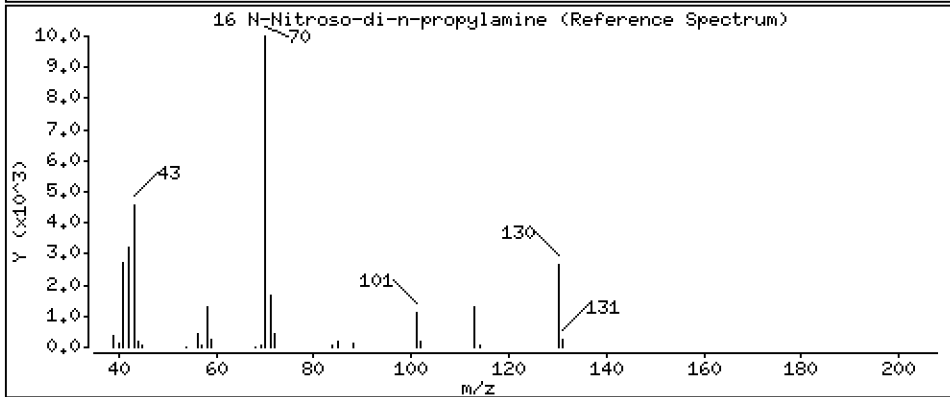
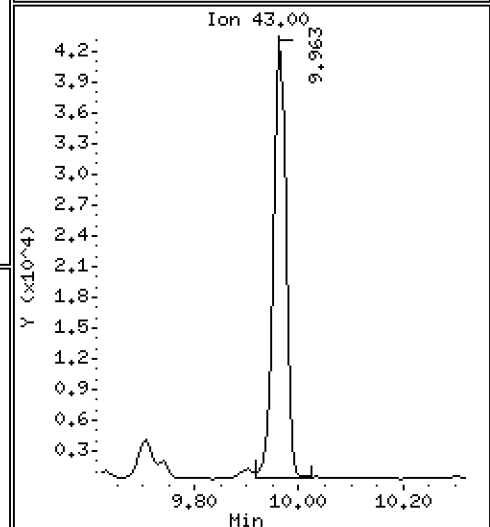
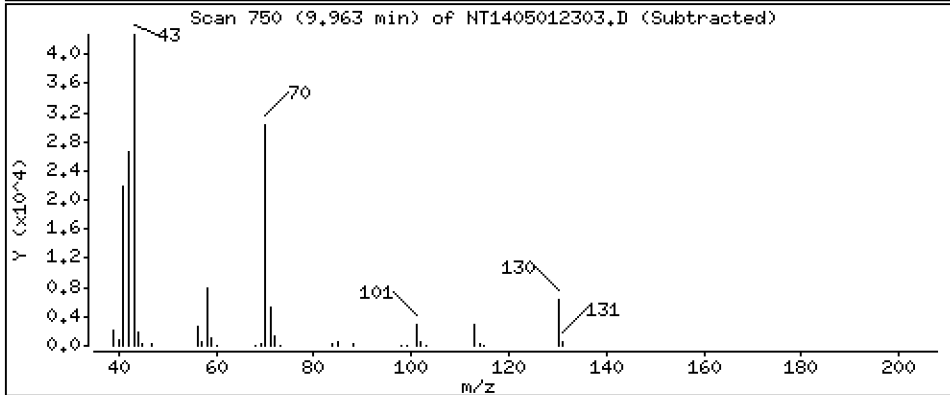
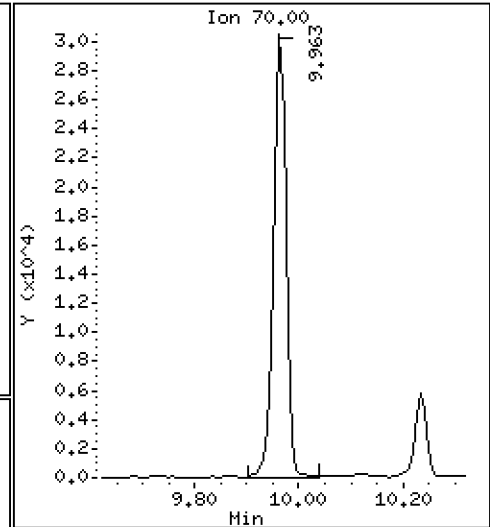
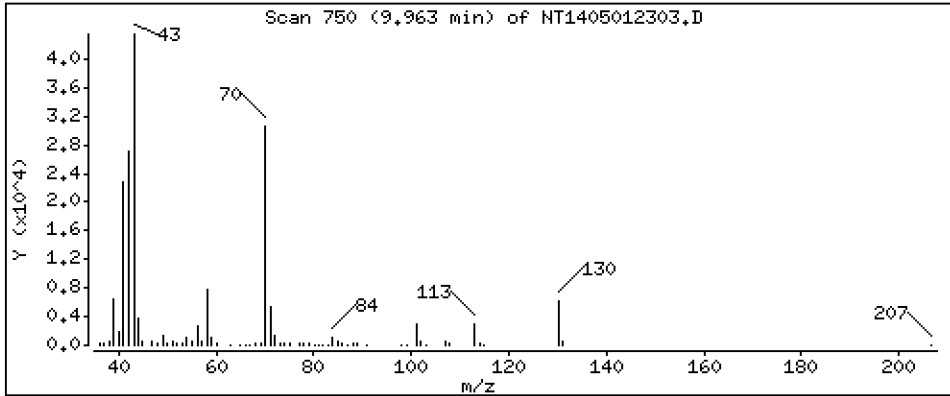
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 0,4444 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

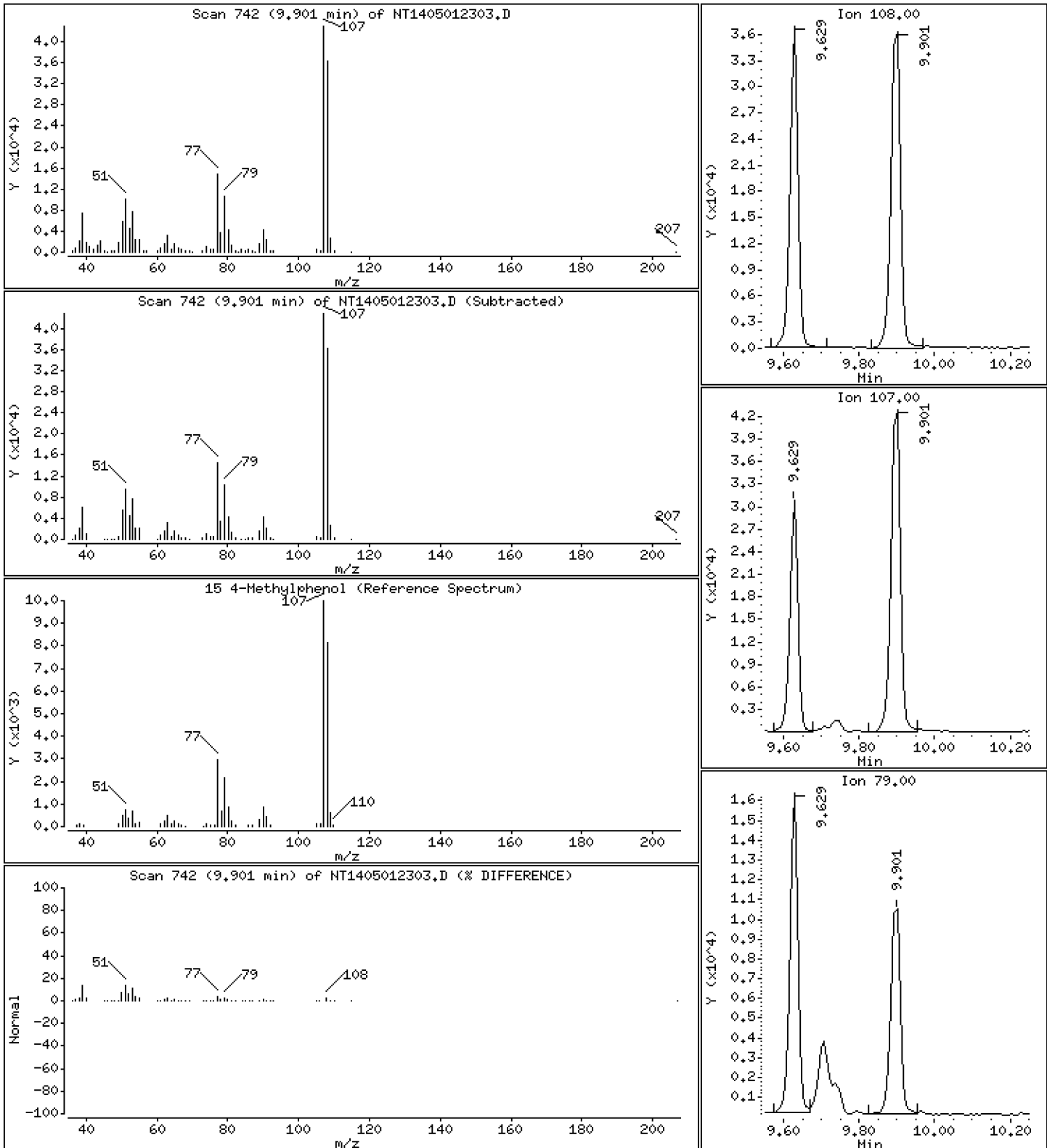
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 0,4850 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

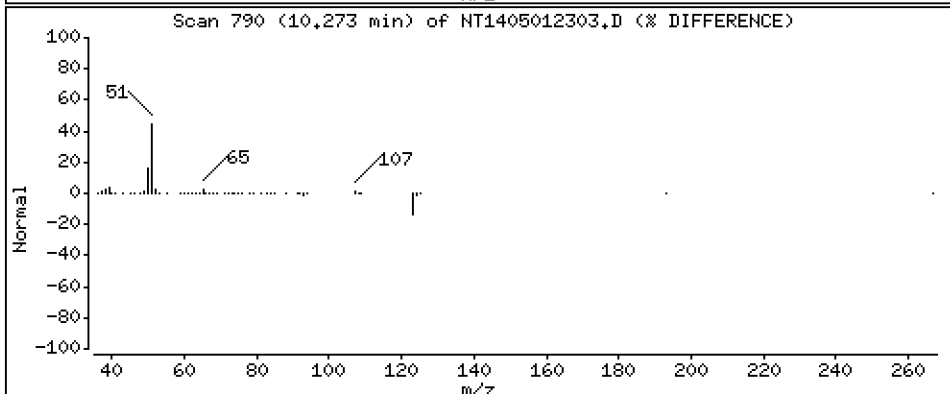
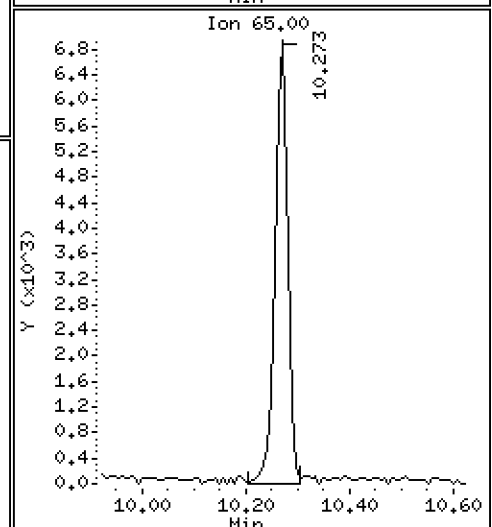
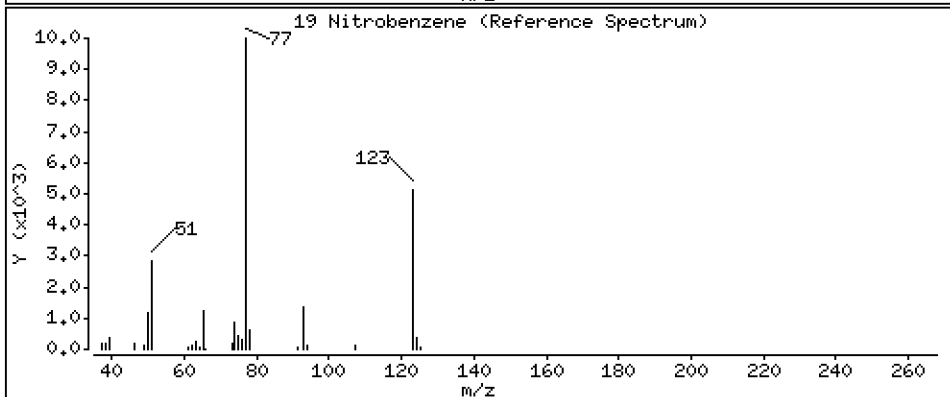
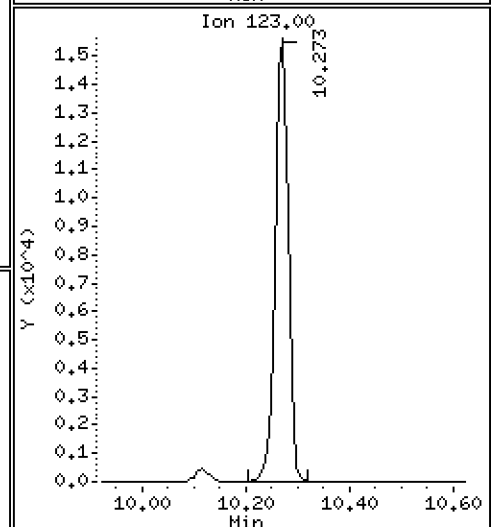
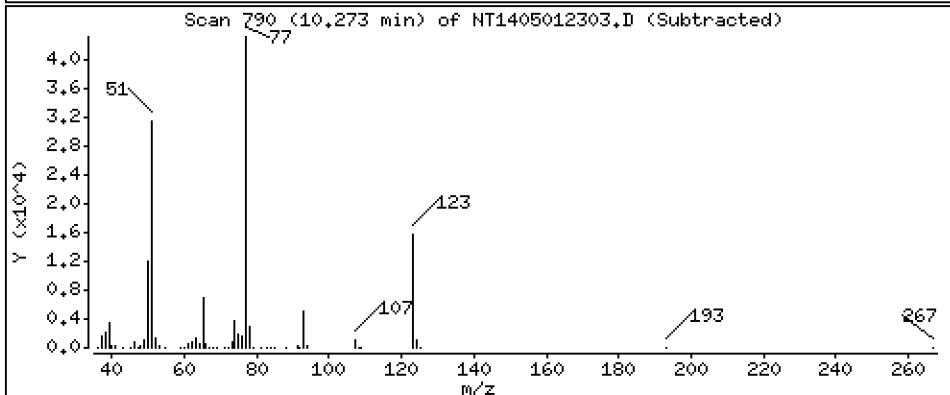
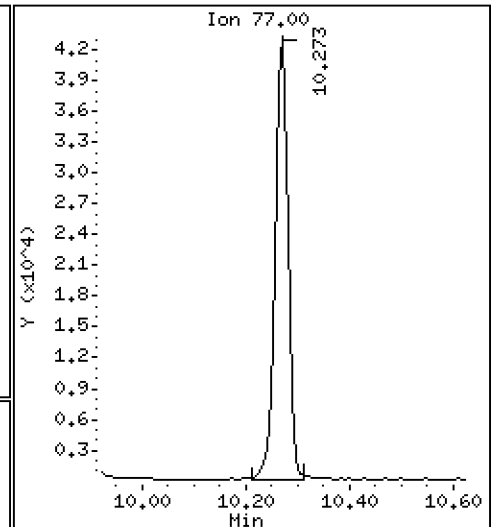
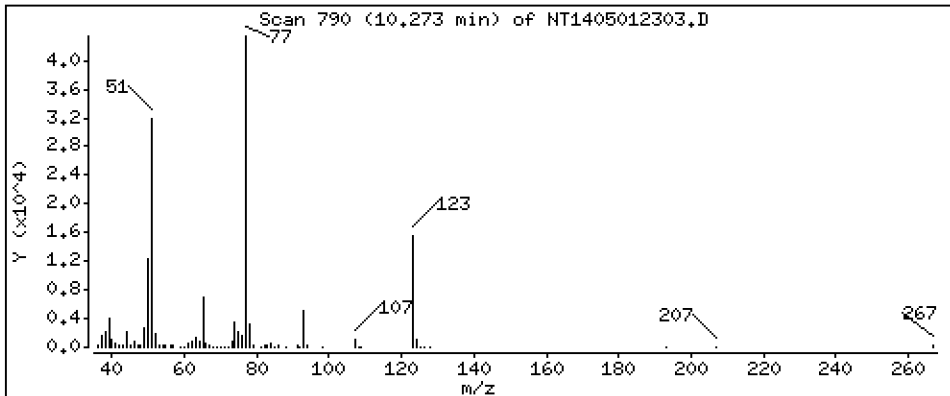
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 0,4770 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

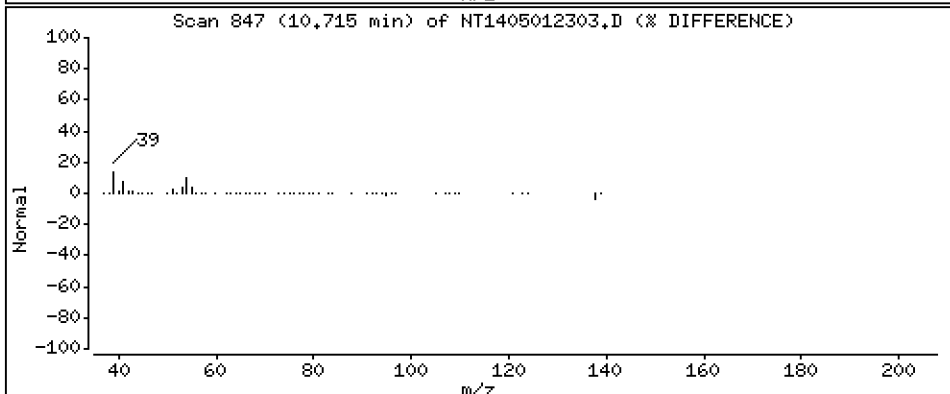
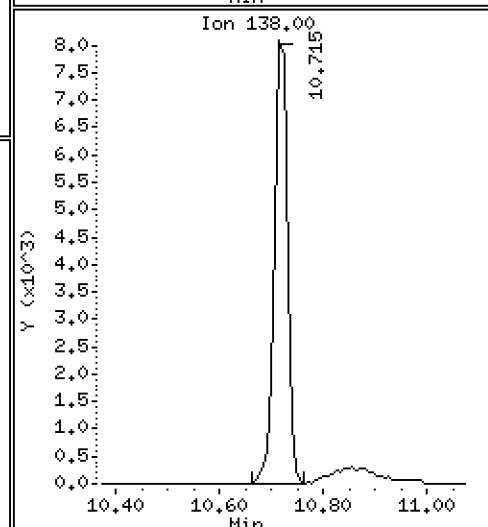
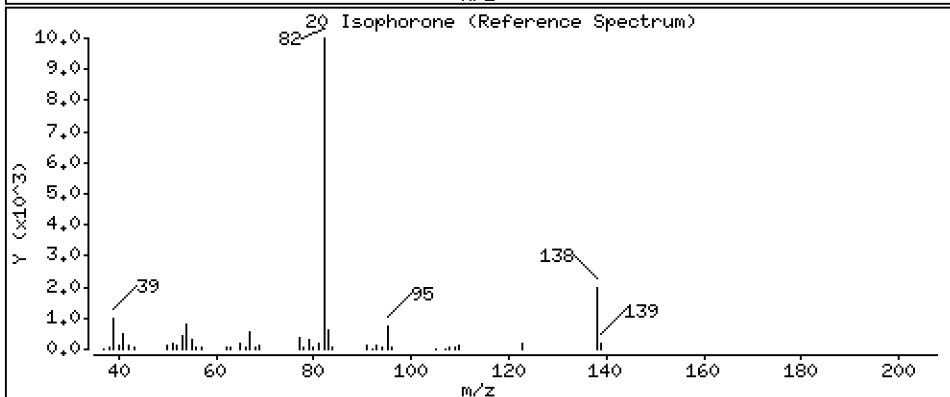
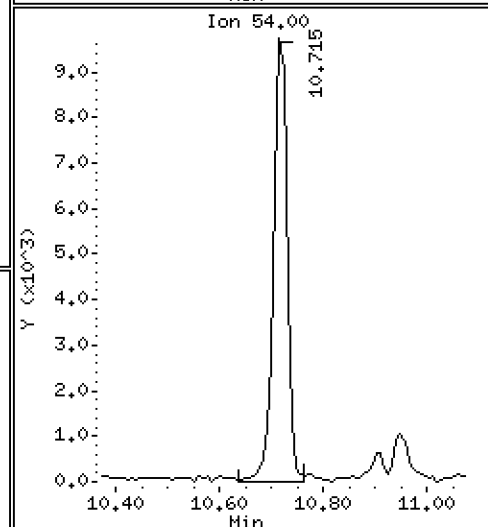
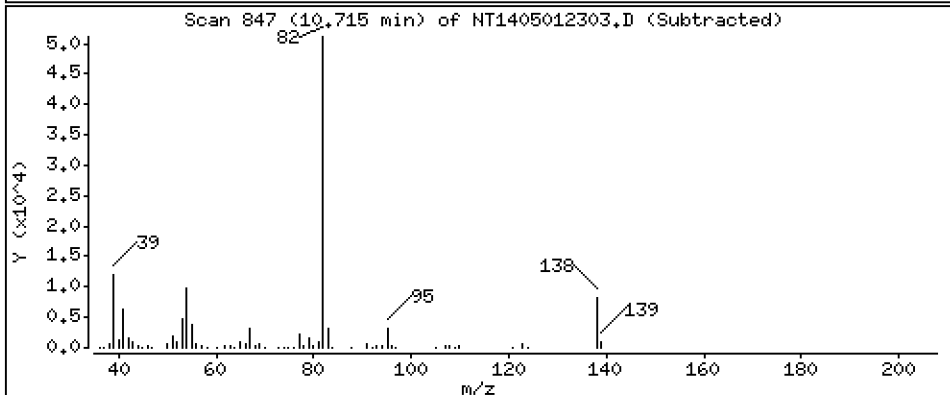
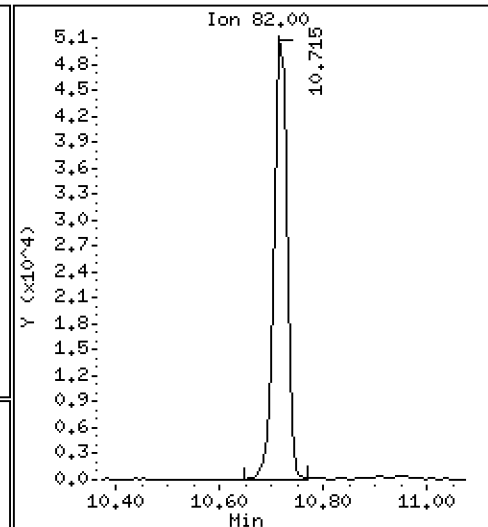
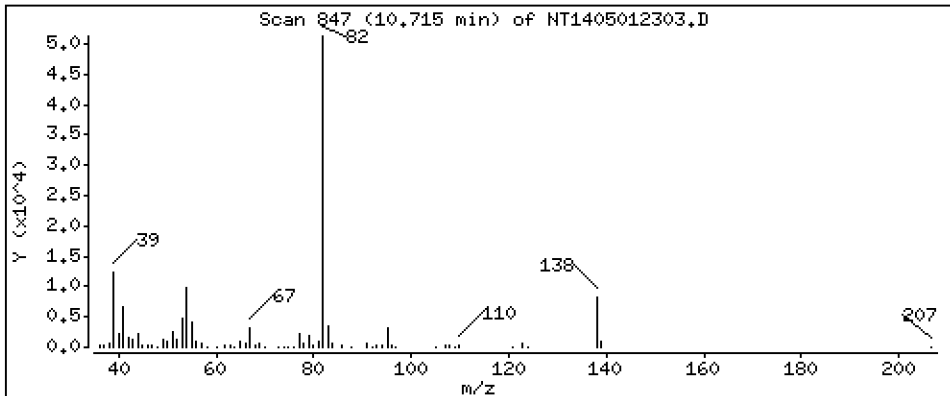
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 0,4177 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

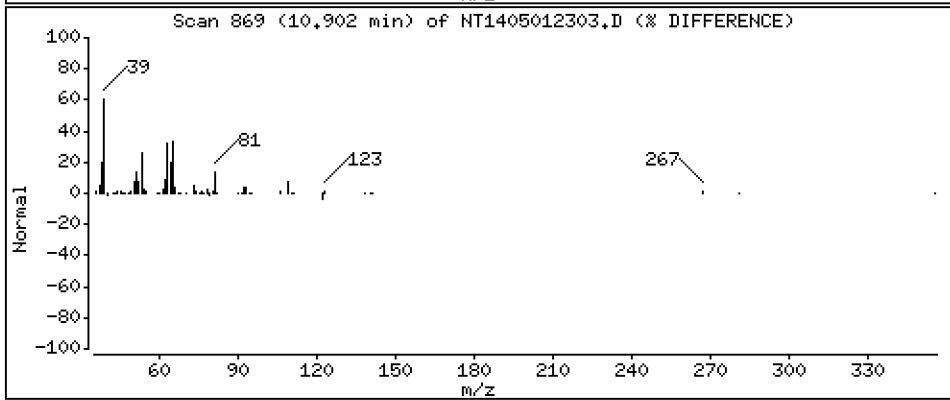
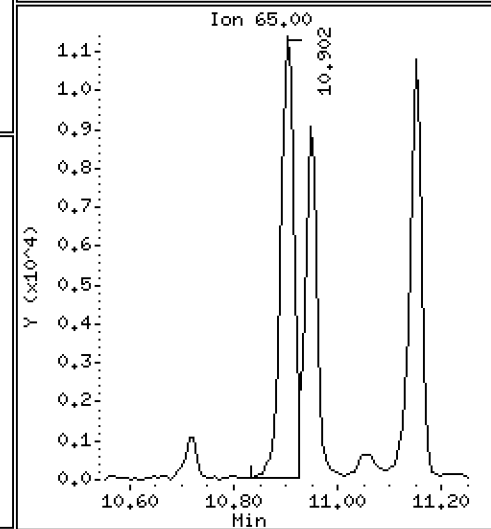
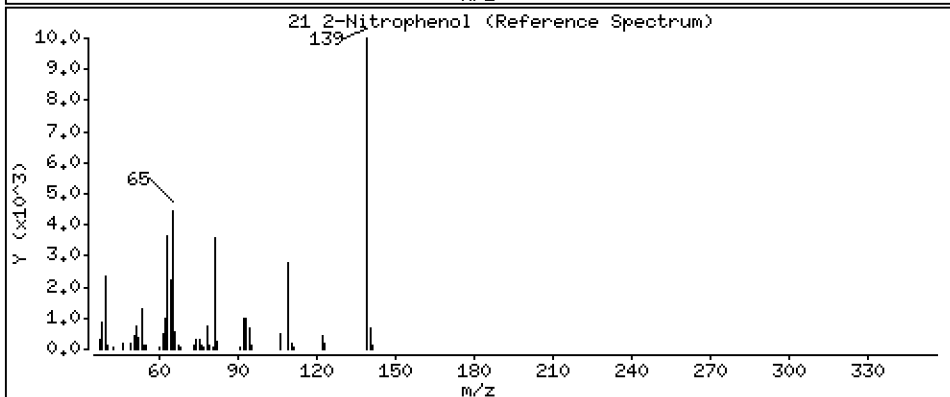
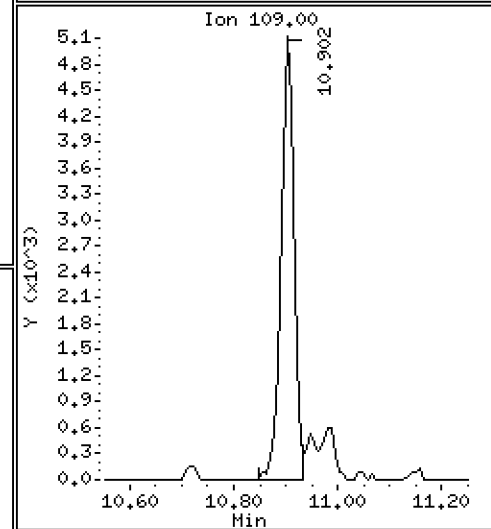
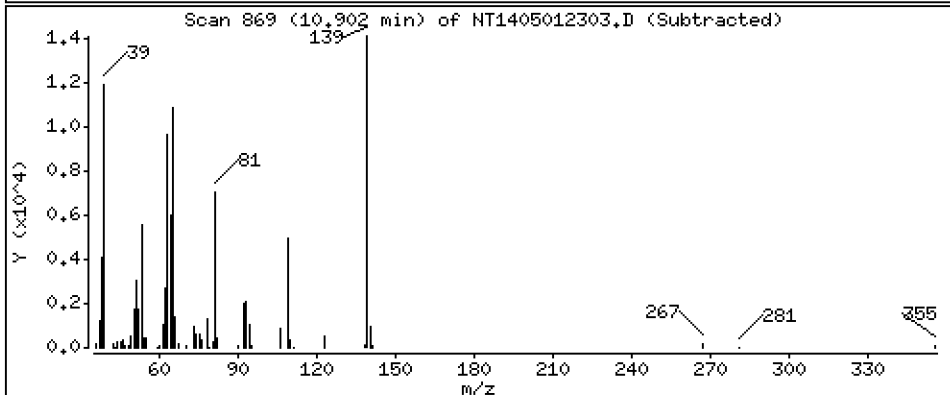
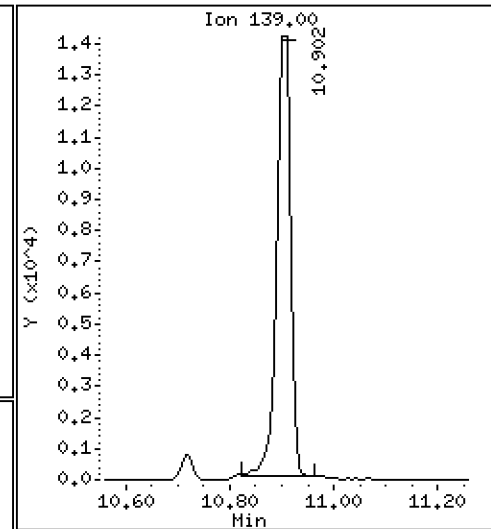
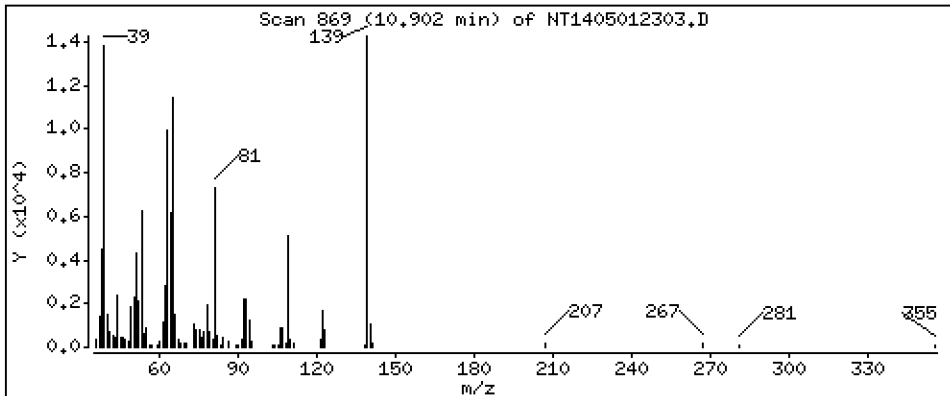
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 0,3217 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

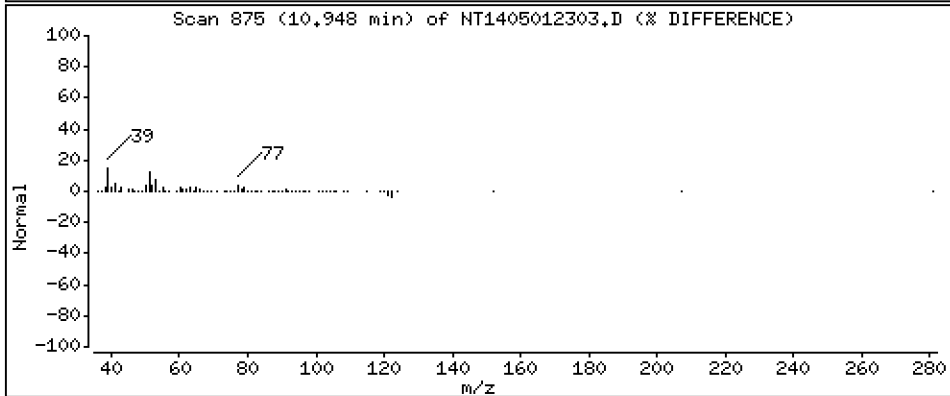
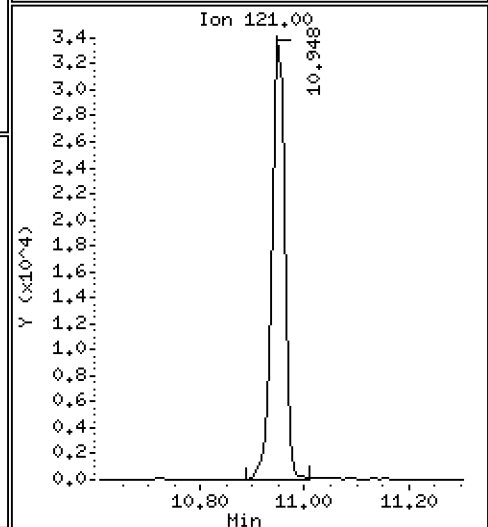
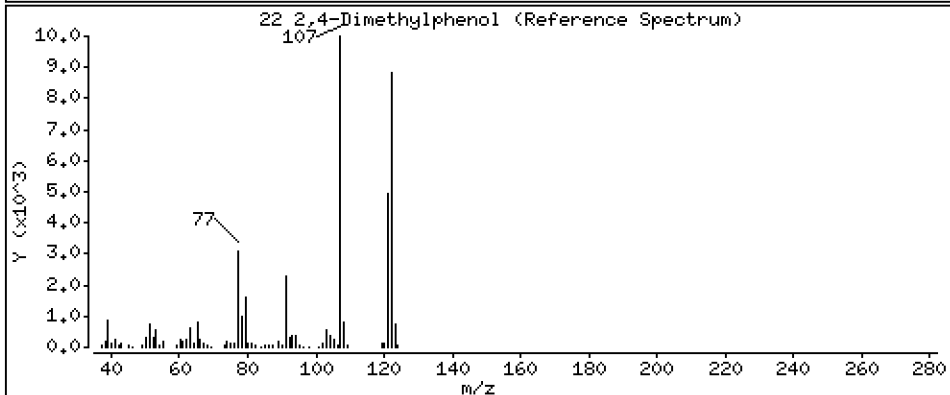
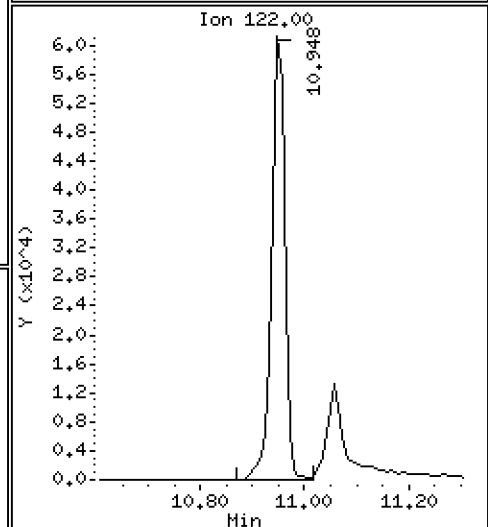
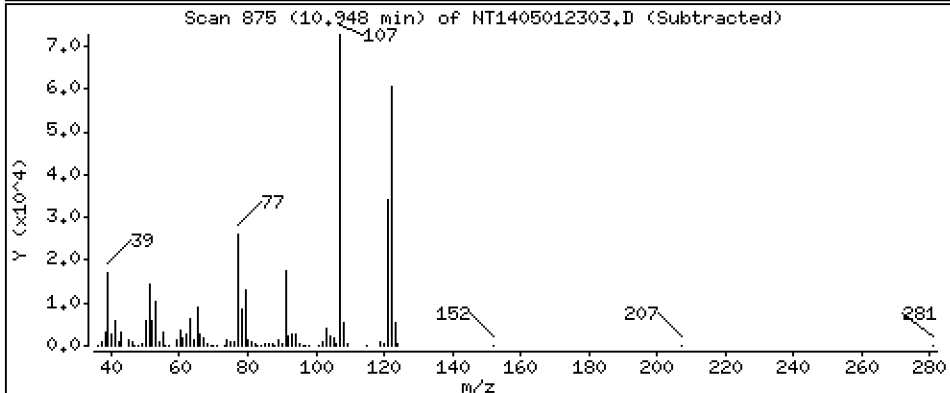
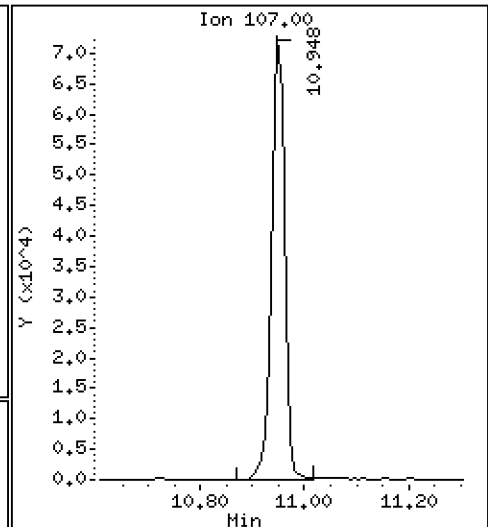
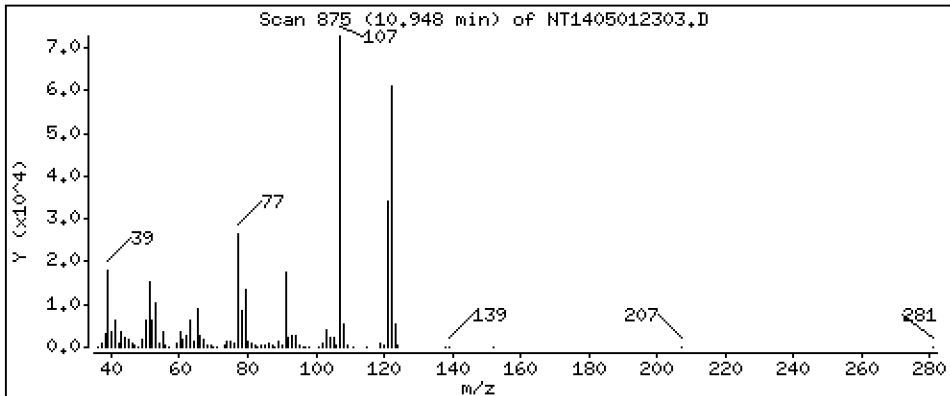
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 1.074 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

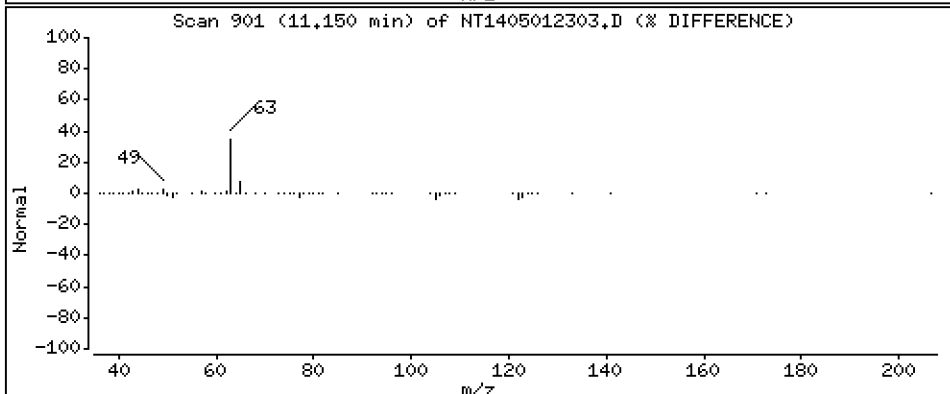
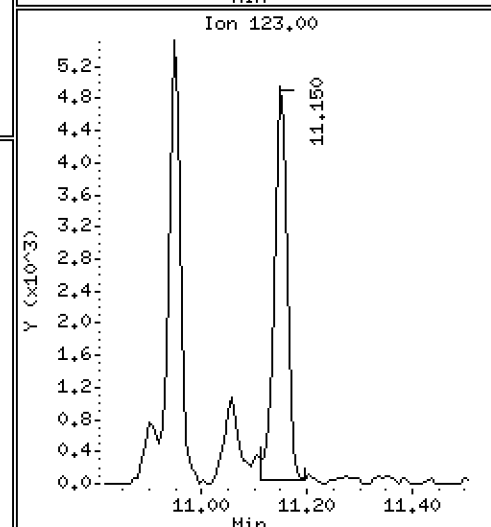
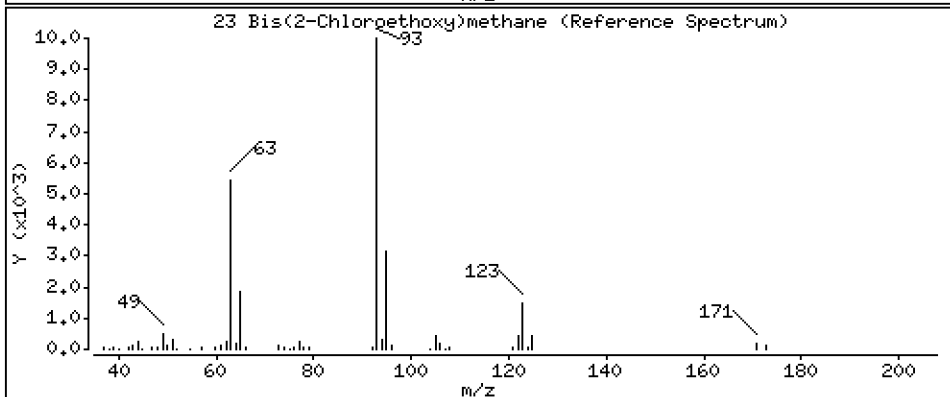
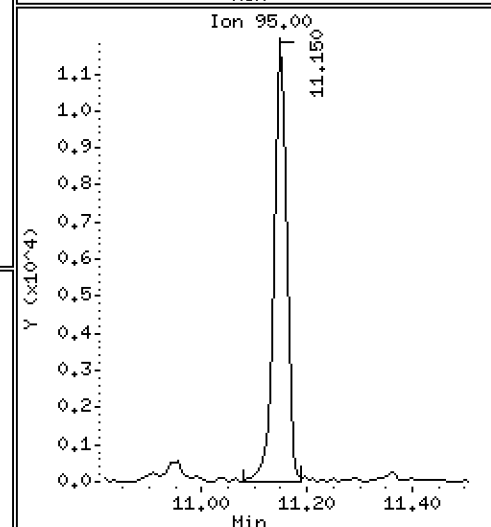
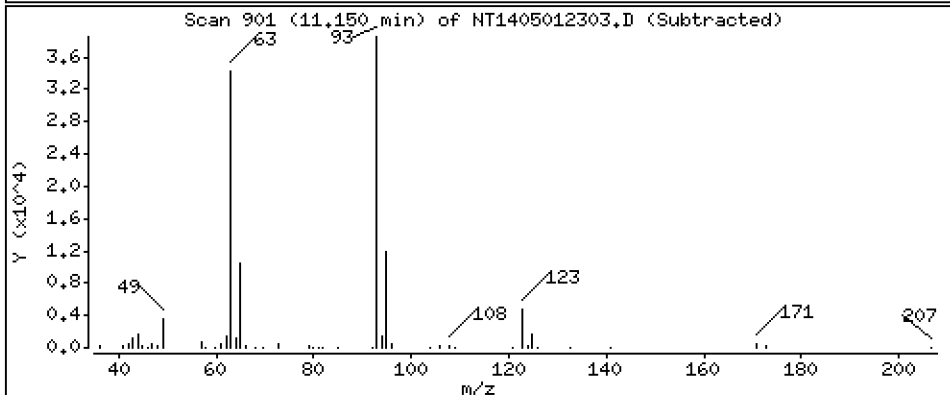
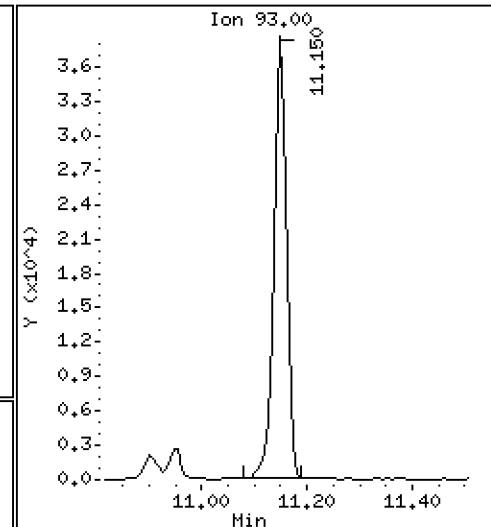
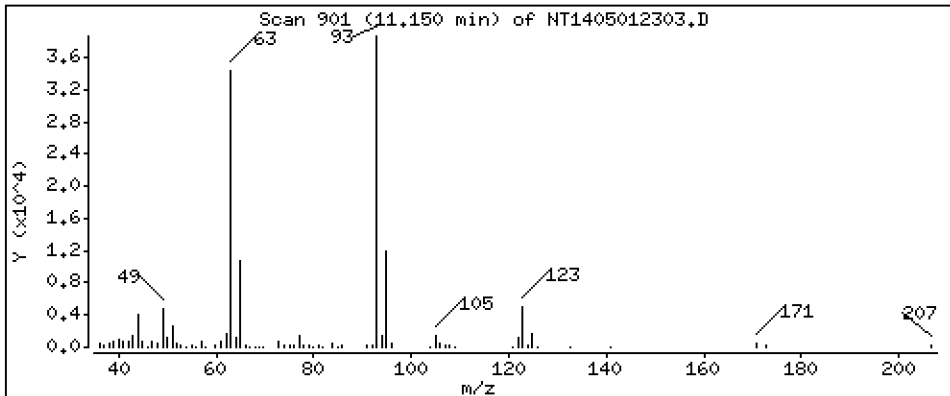
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 0,4819 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

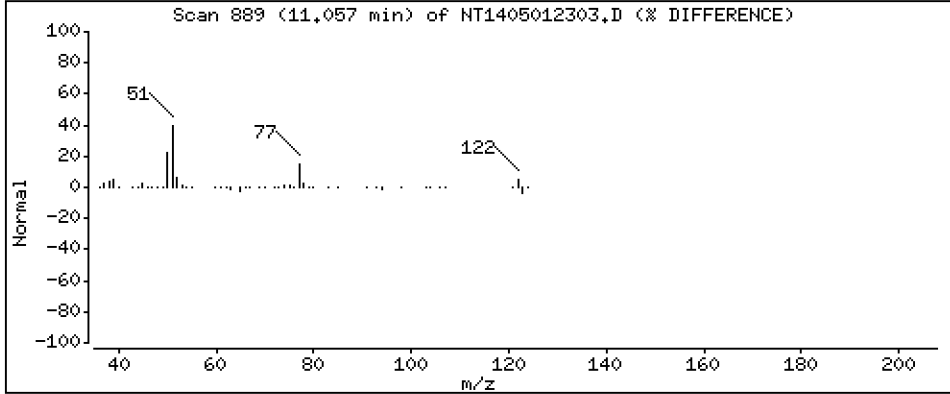
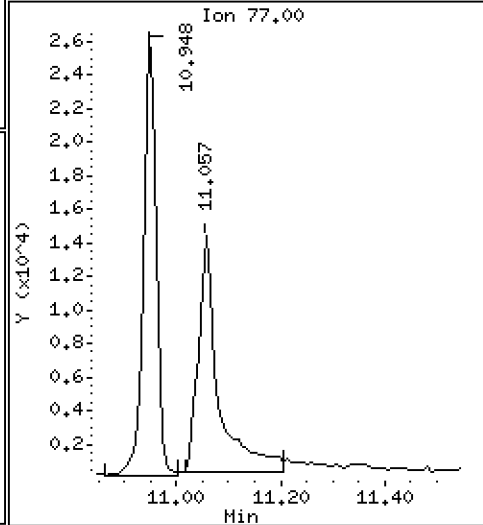
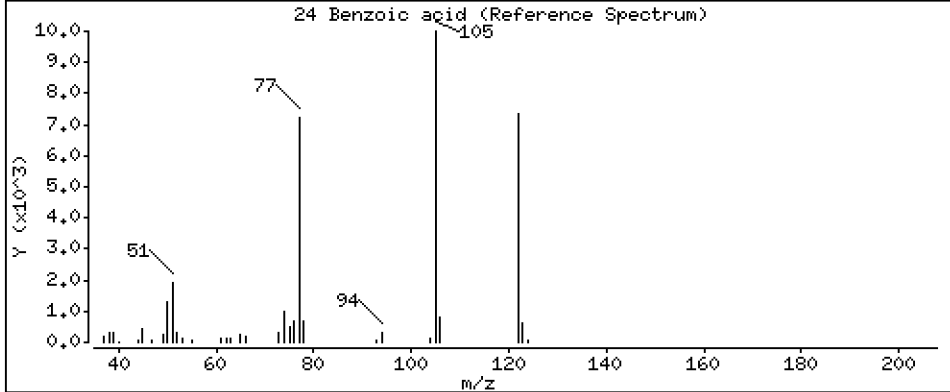
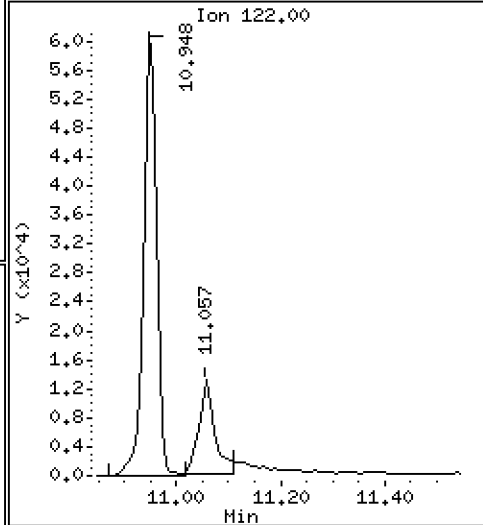
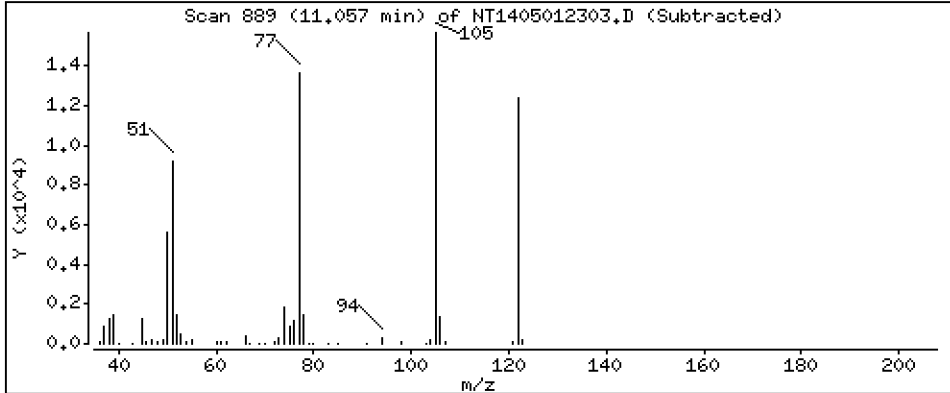
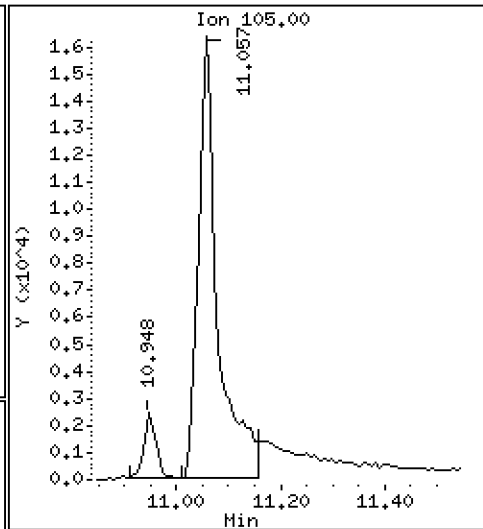
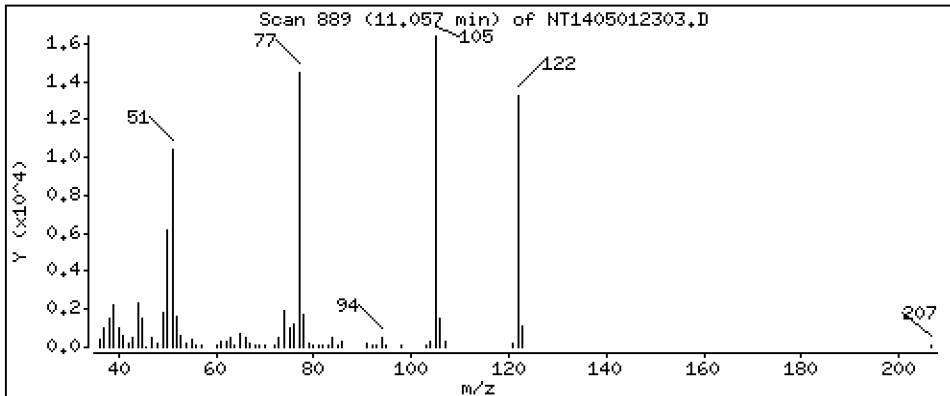
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 0,4649 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

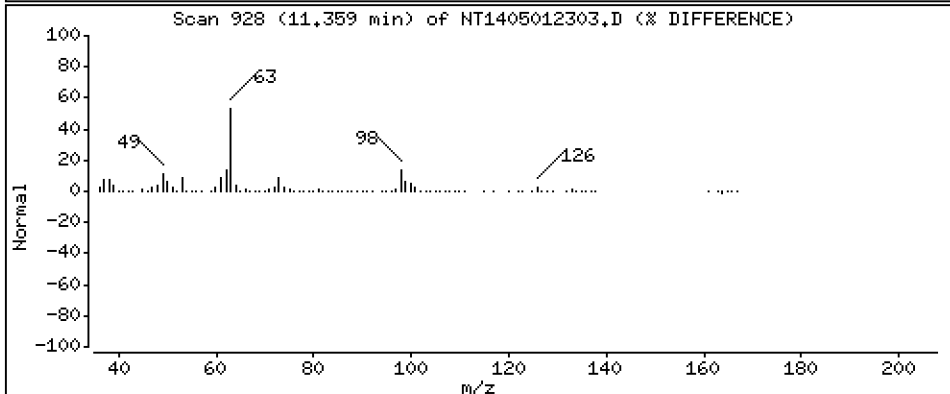
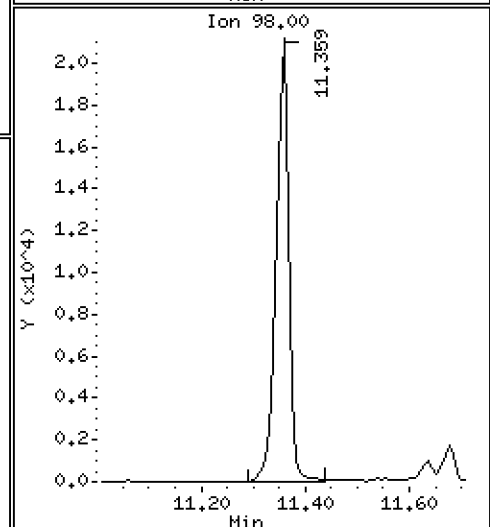
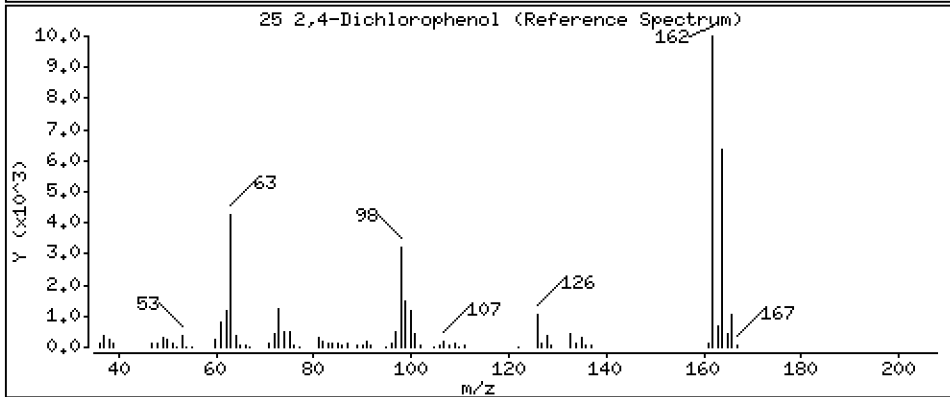
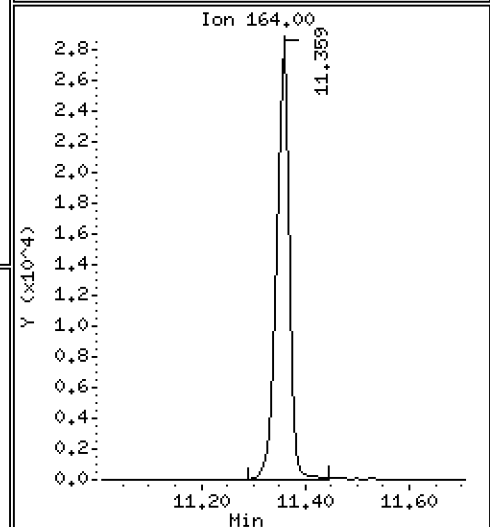
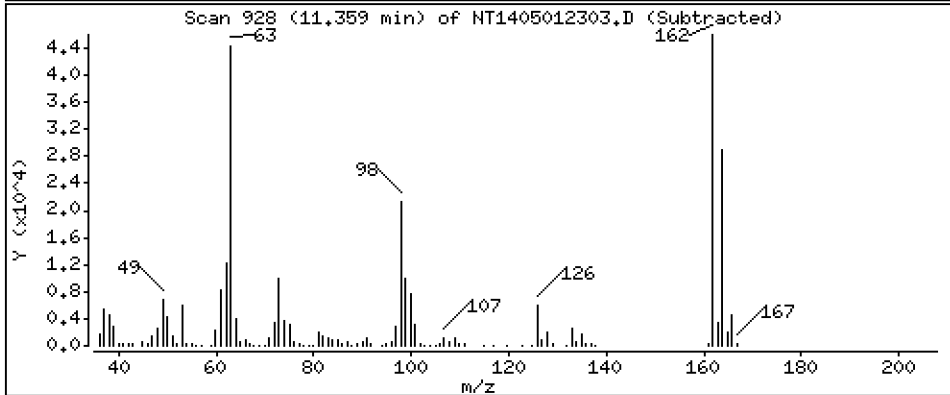
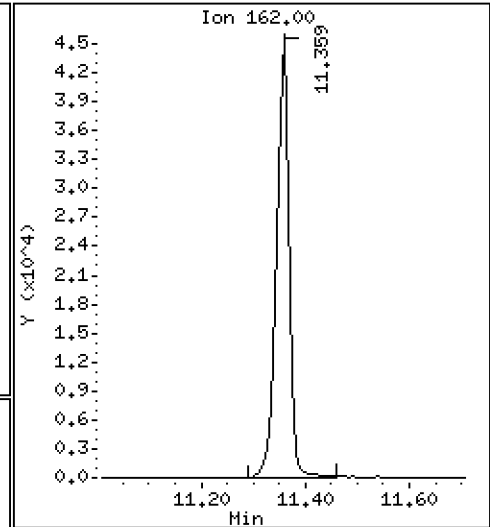
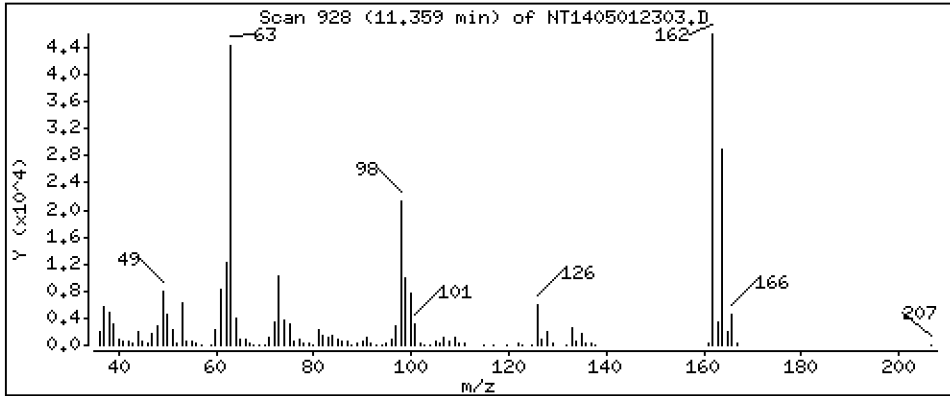
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 0,7497 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

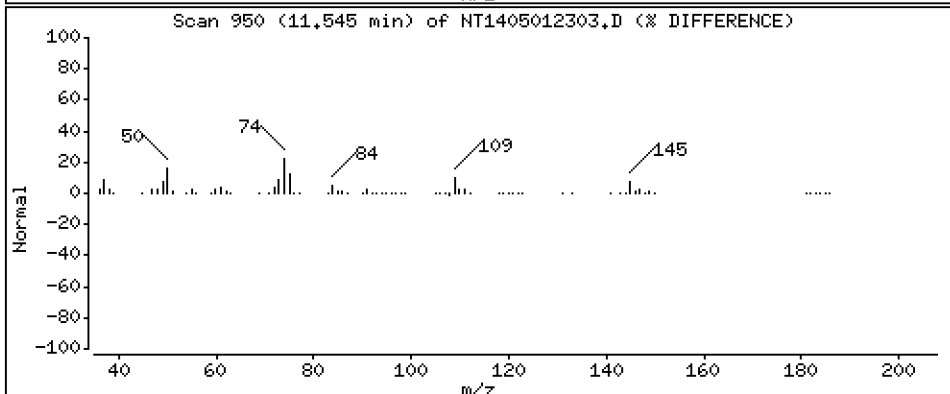
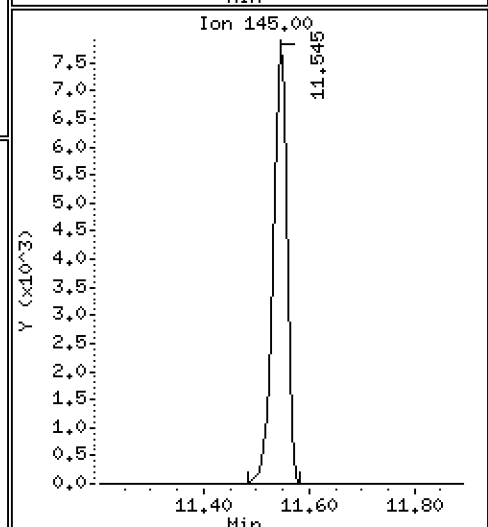
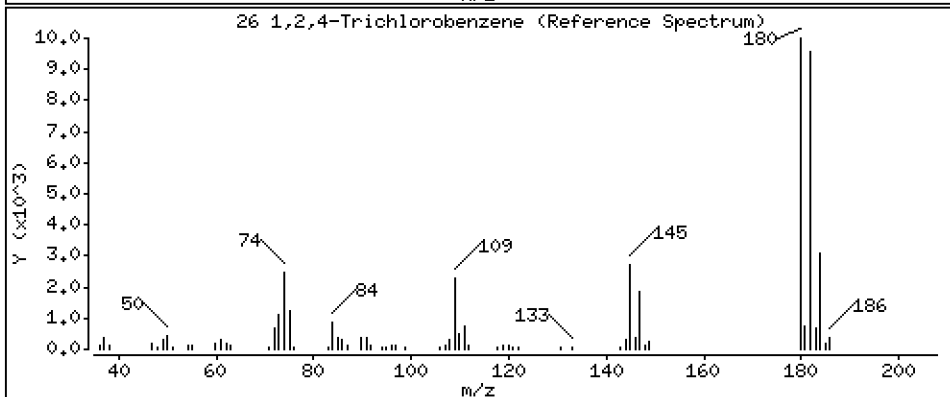
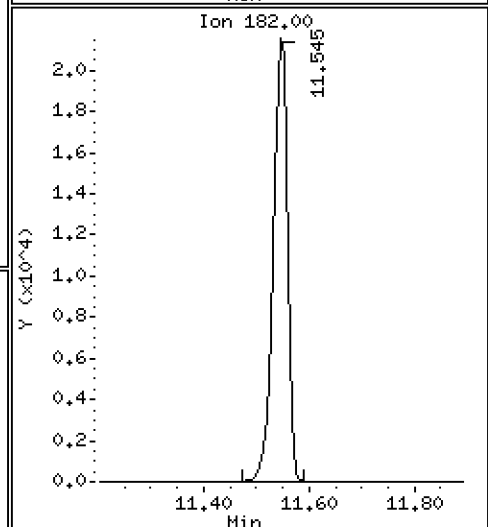
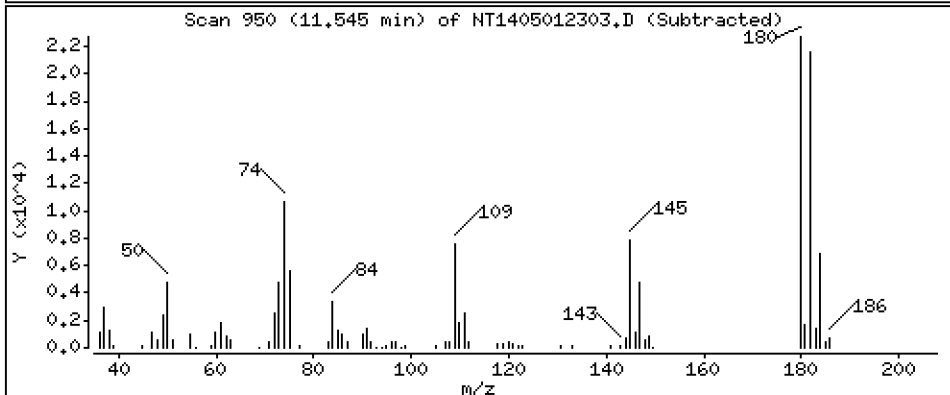
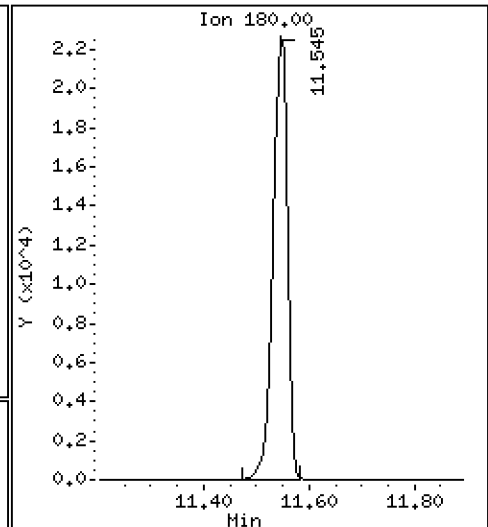
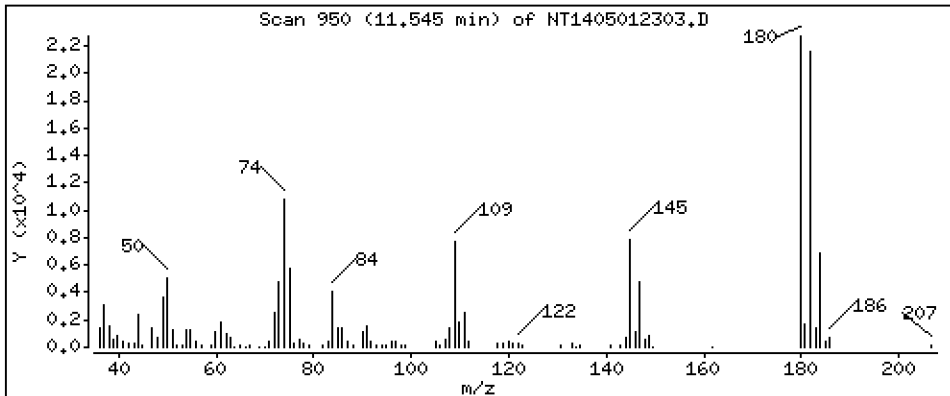
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 0,5049 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

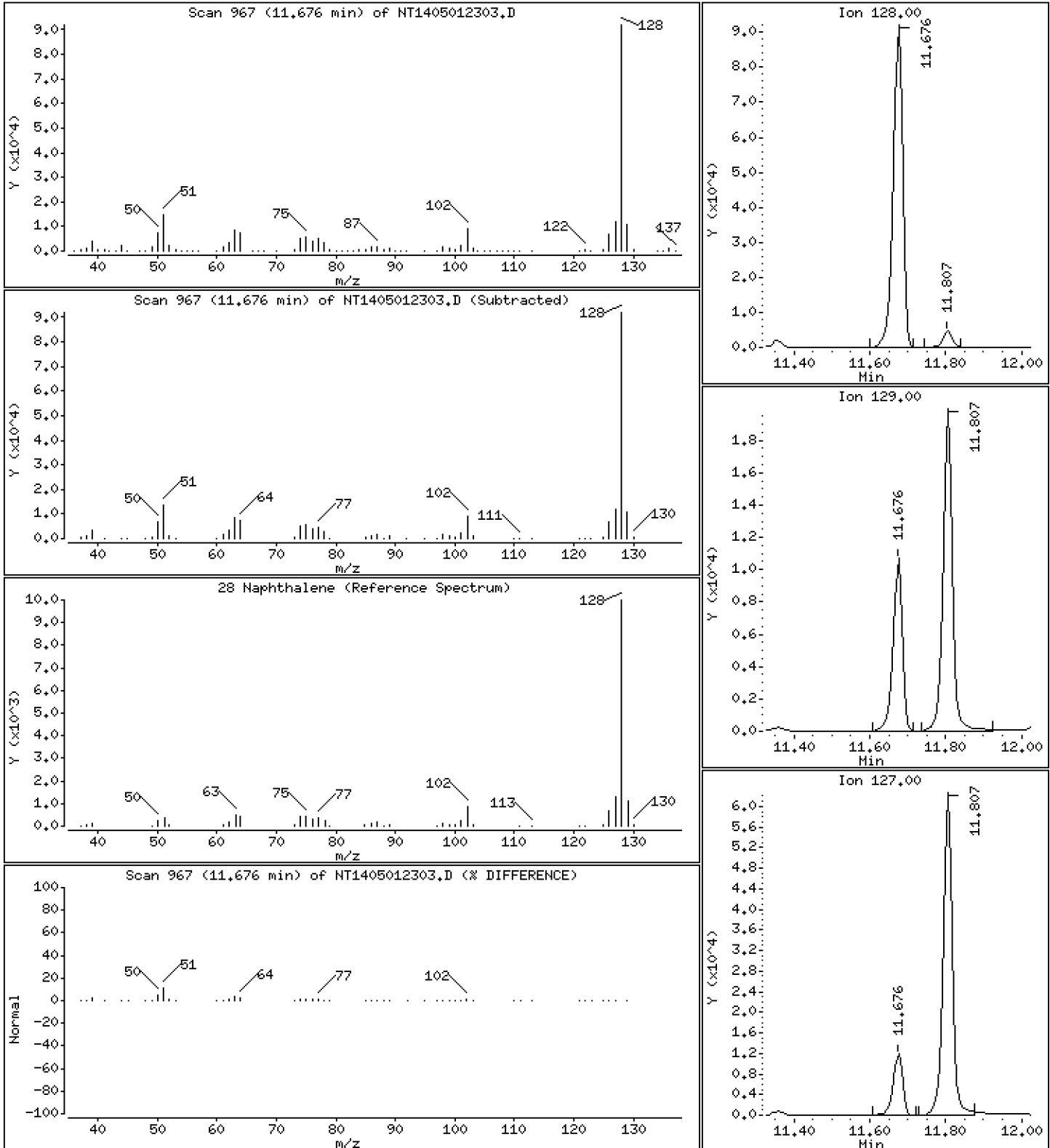
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 0,5025 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

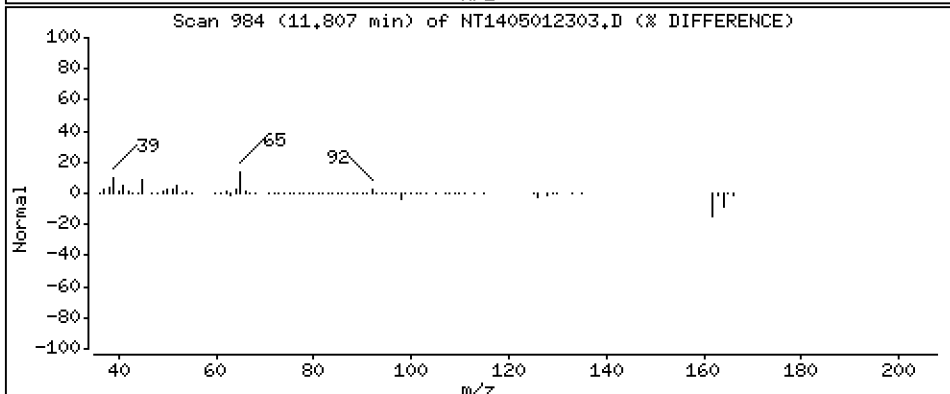
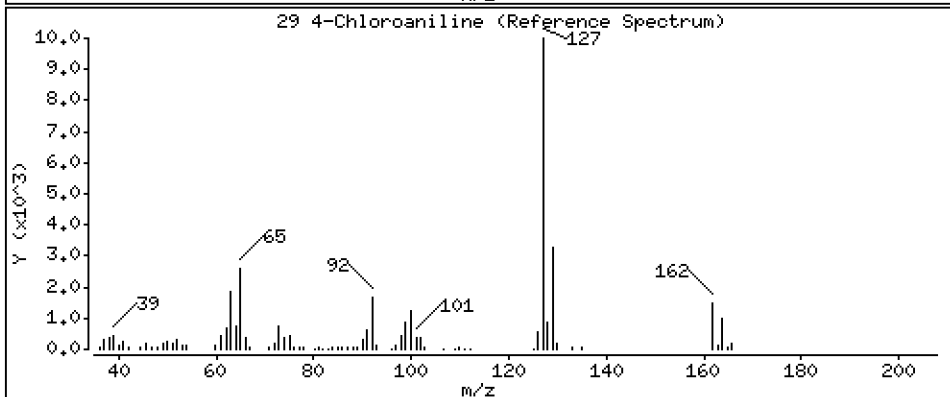
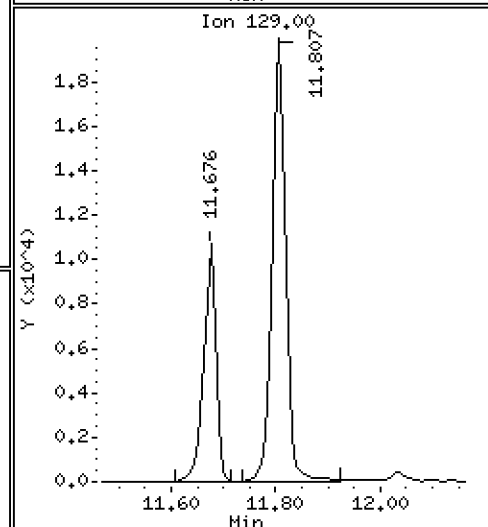
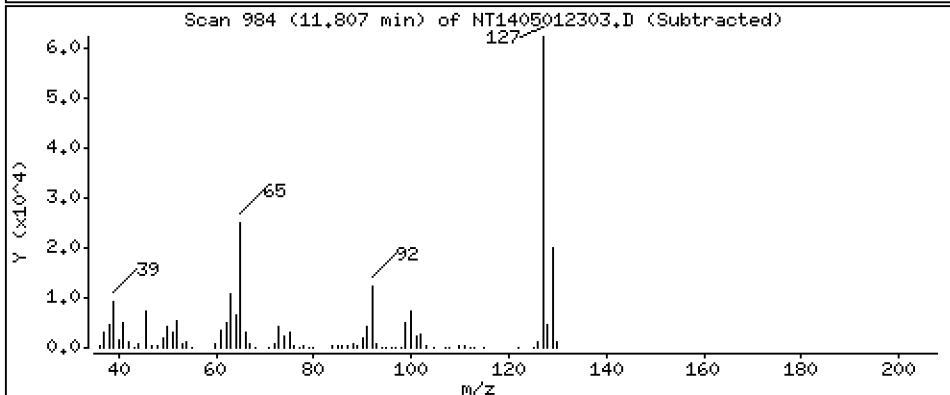
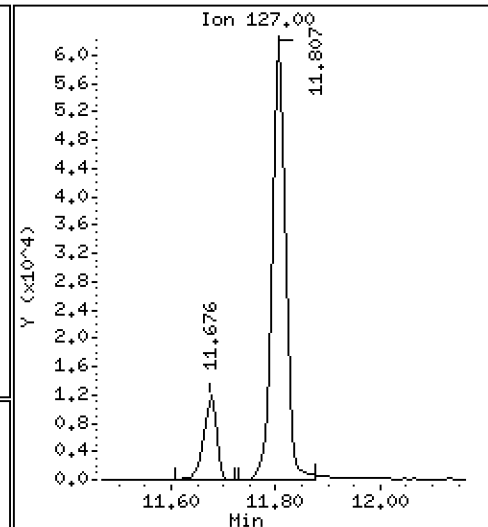
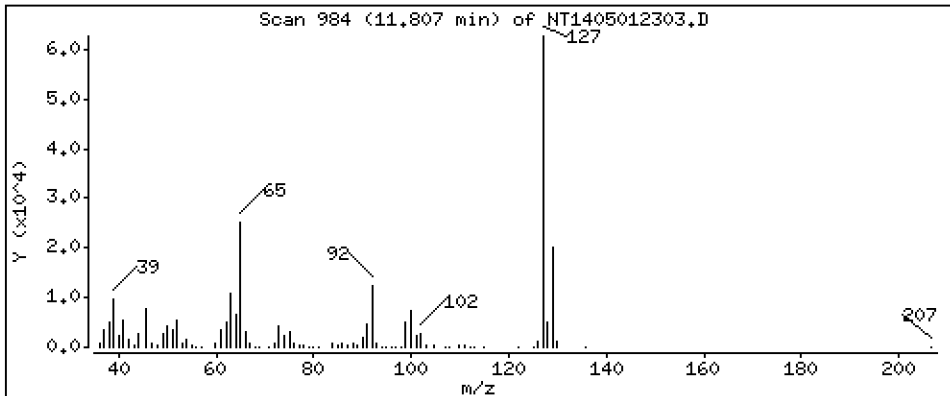
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 0,8371 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

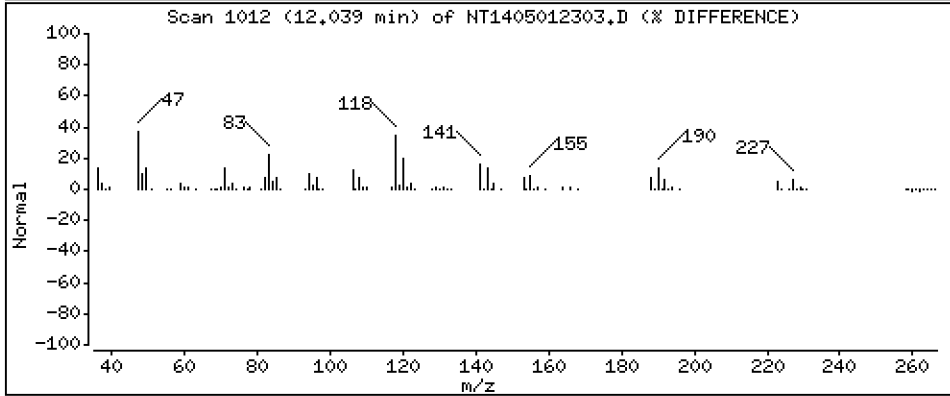
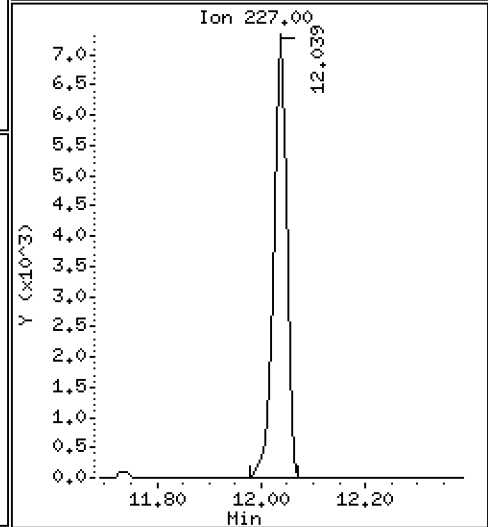
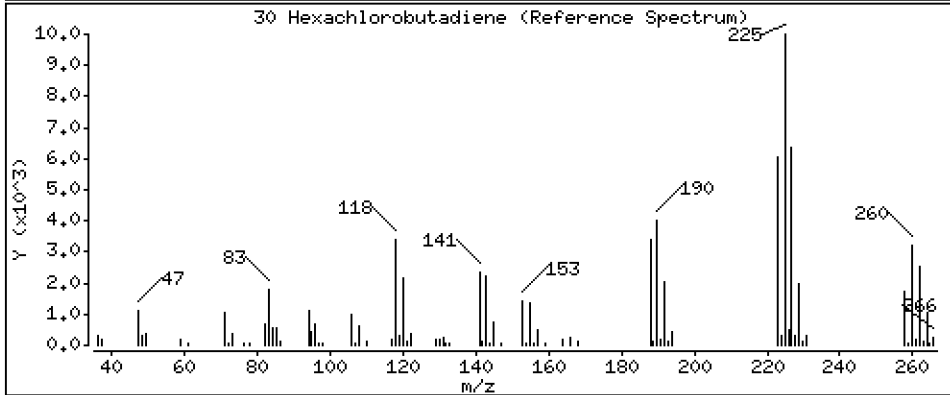
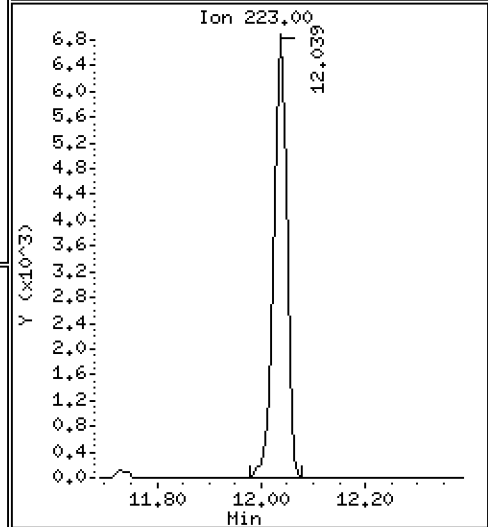
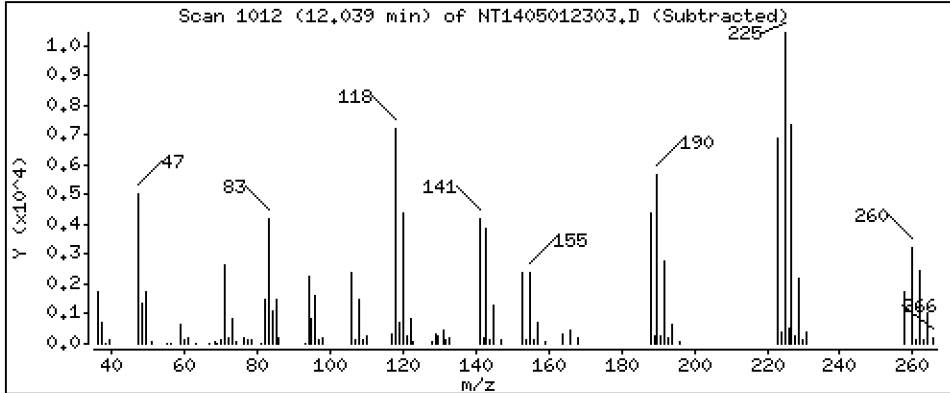
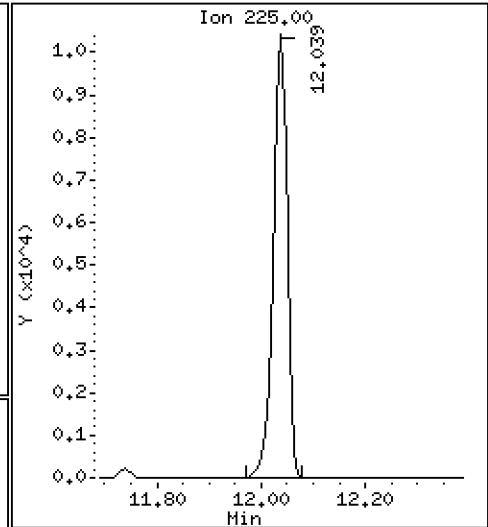
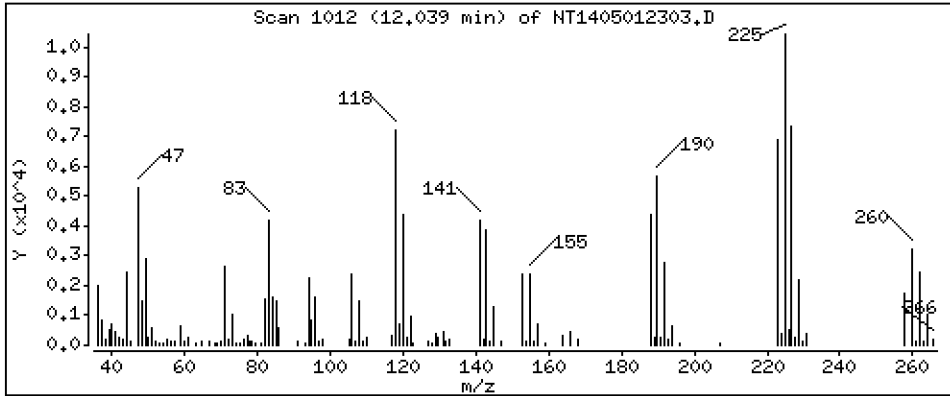
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 0,4867 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

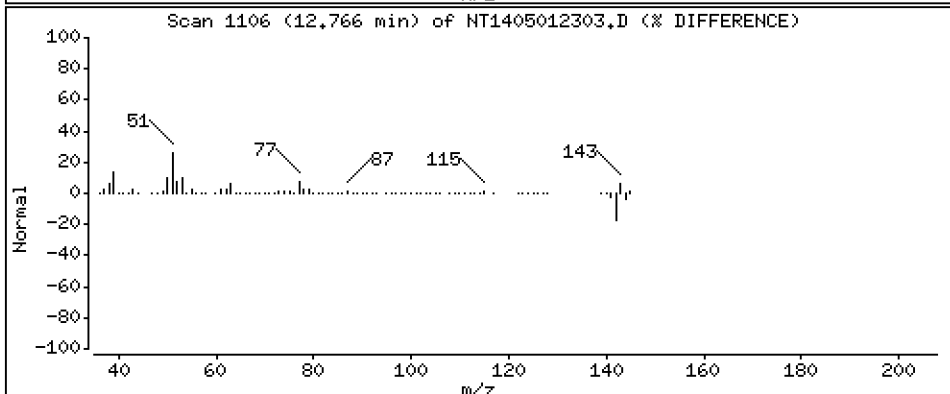
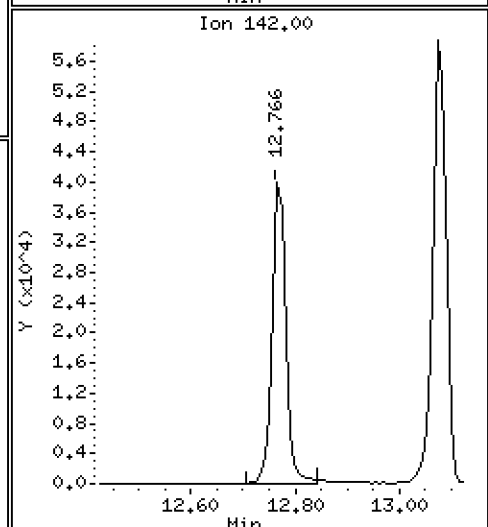
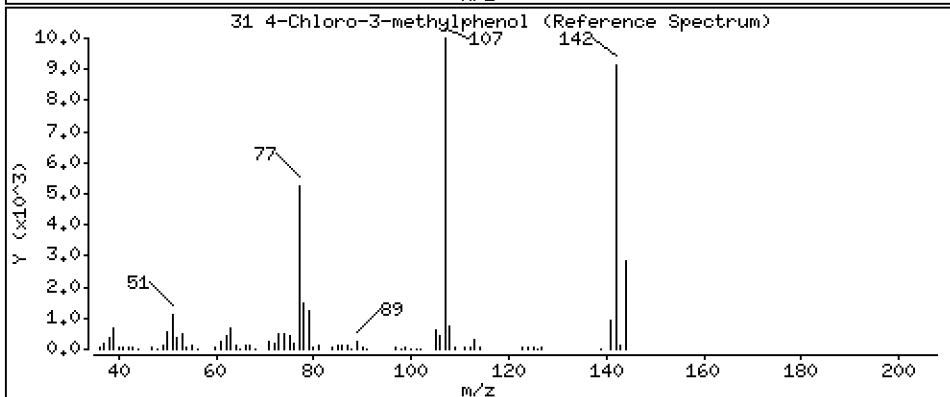
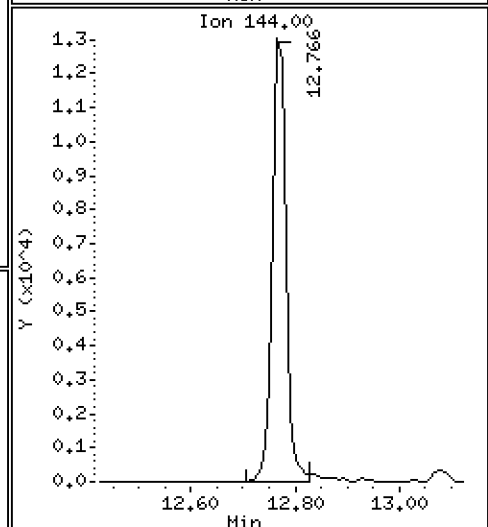
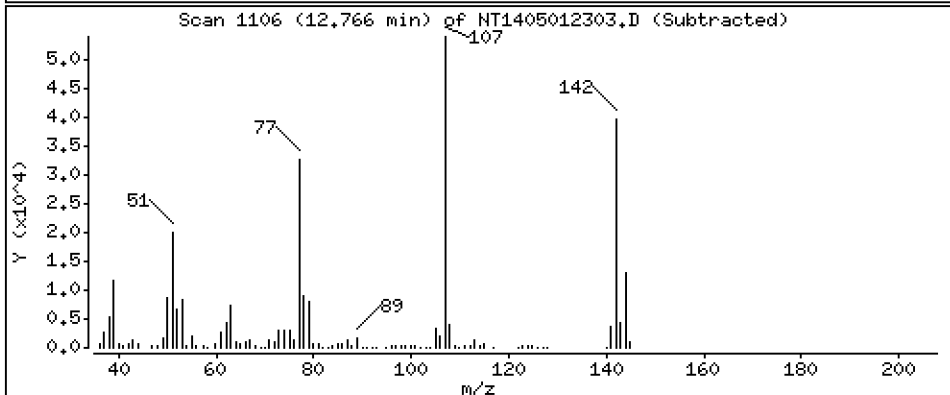
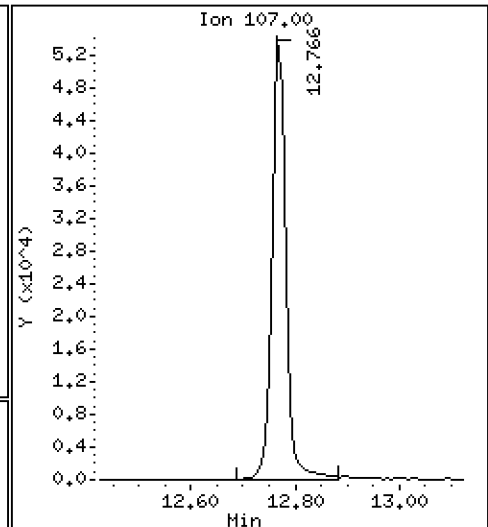
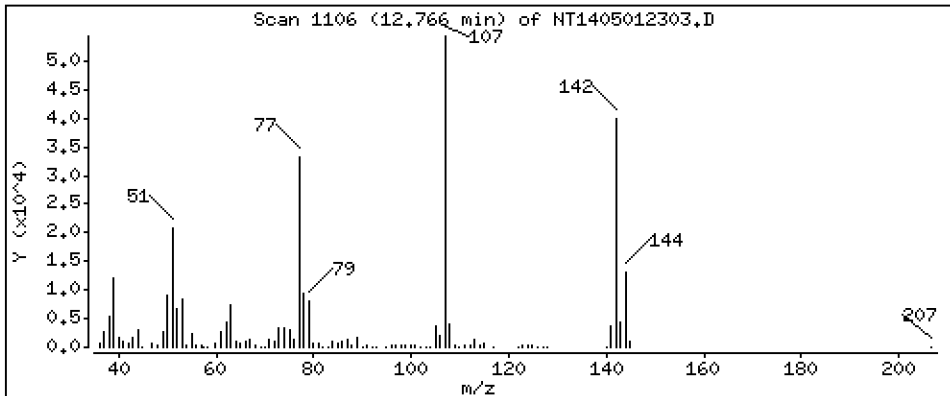
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 0,9513 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

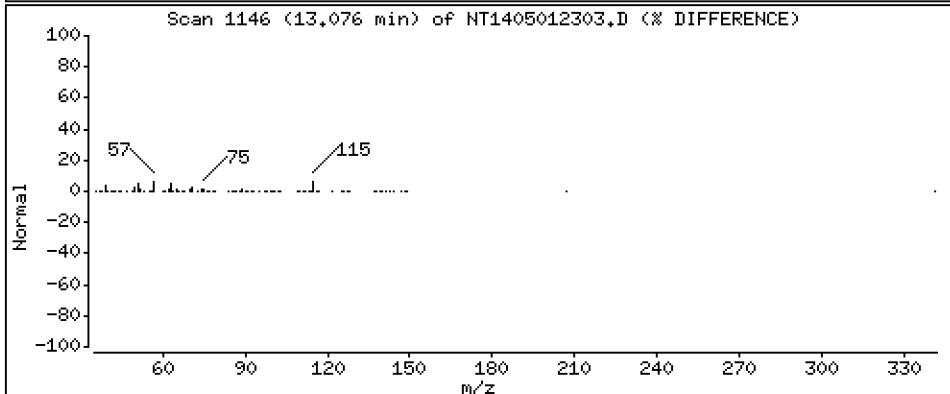
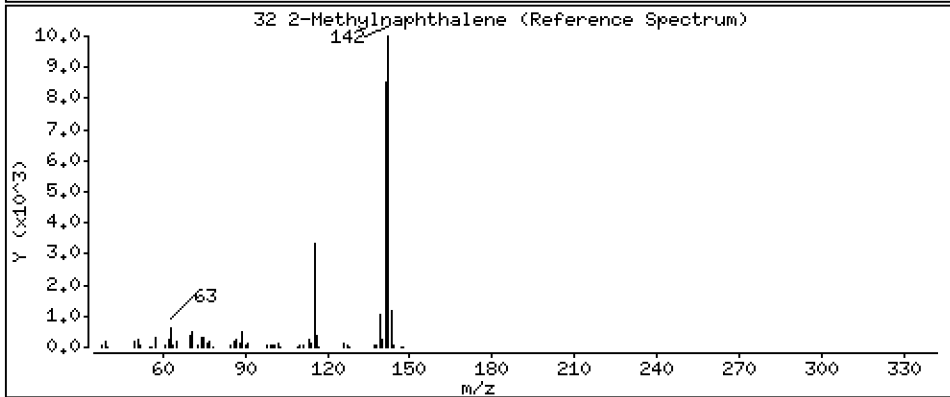
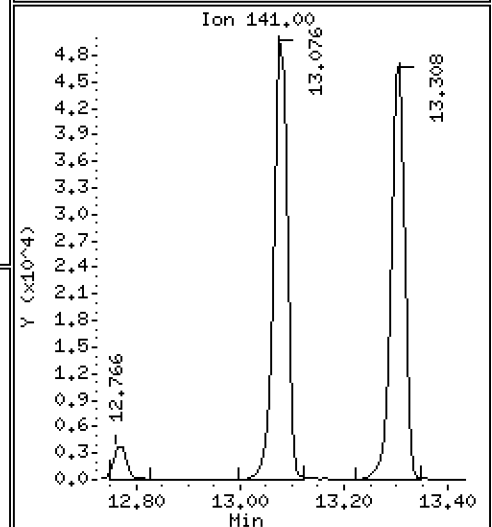
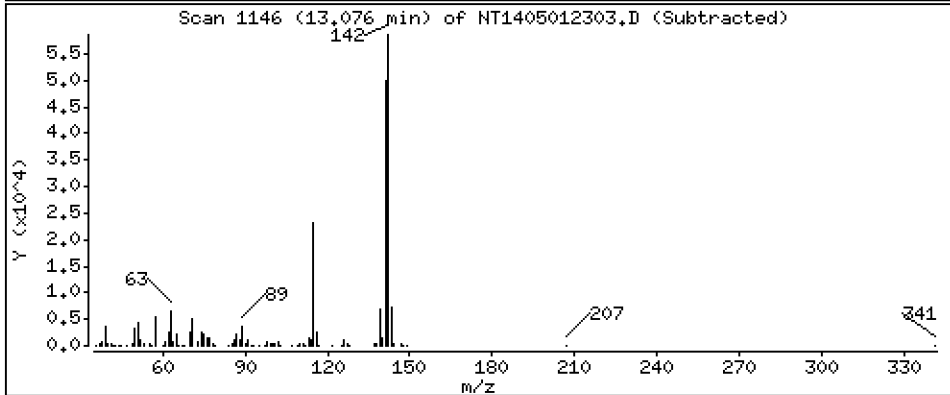
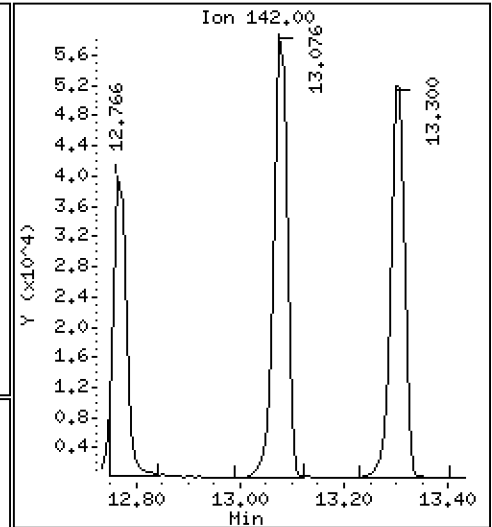
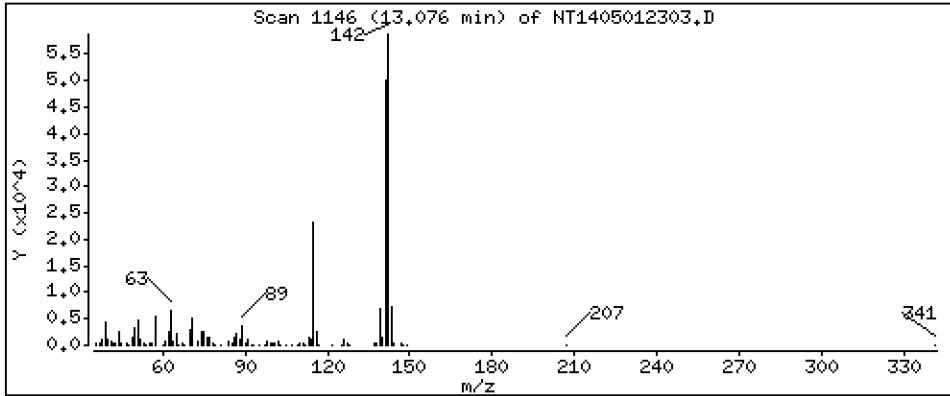
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 0,4618 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

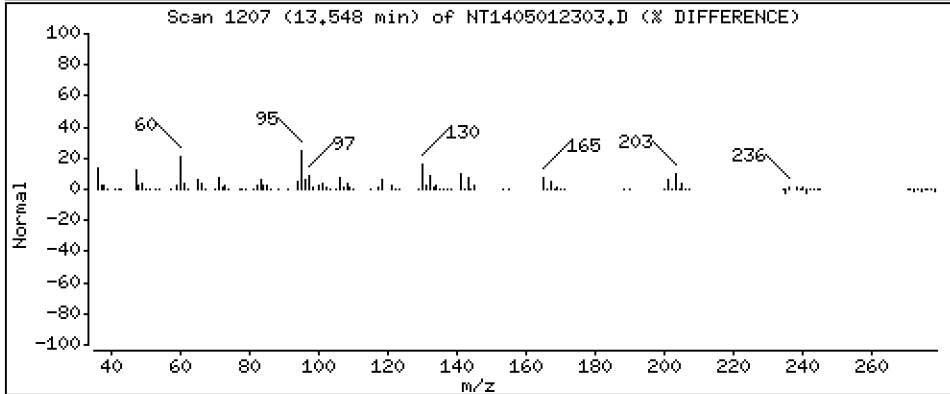
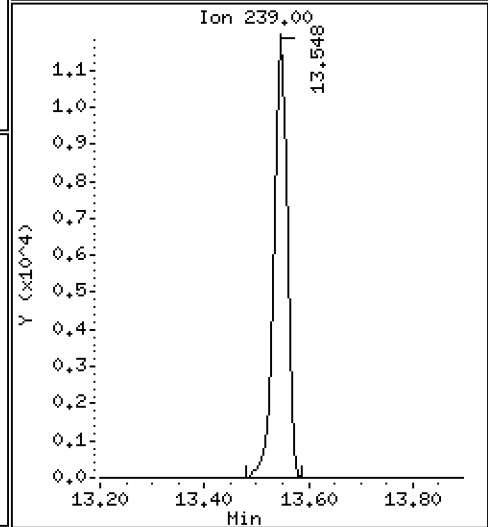
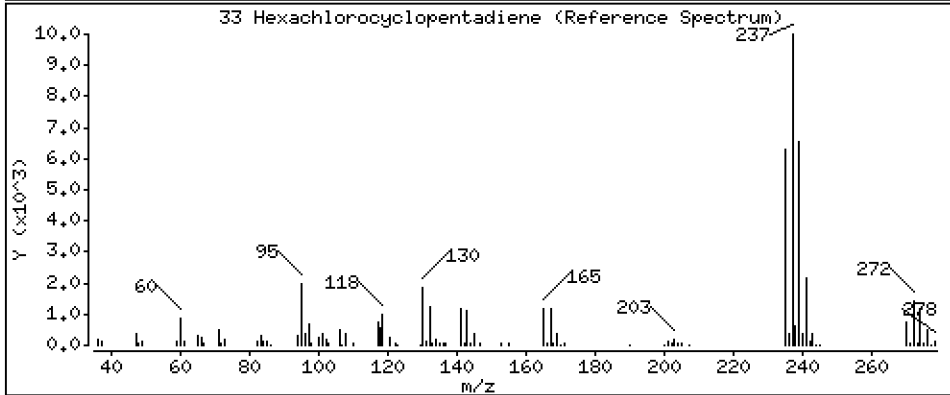
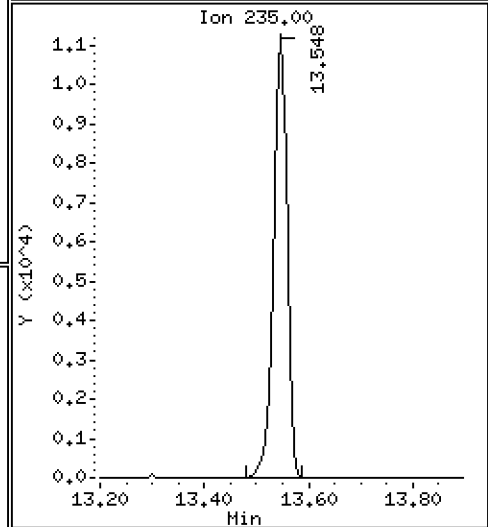
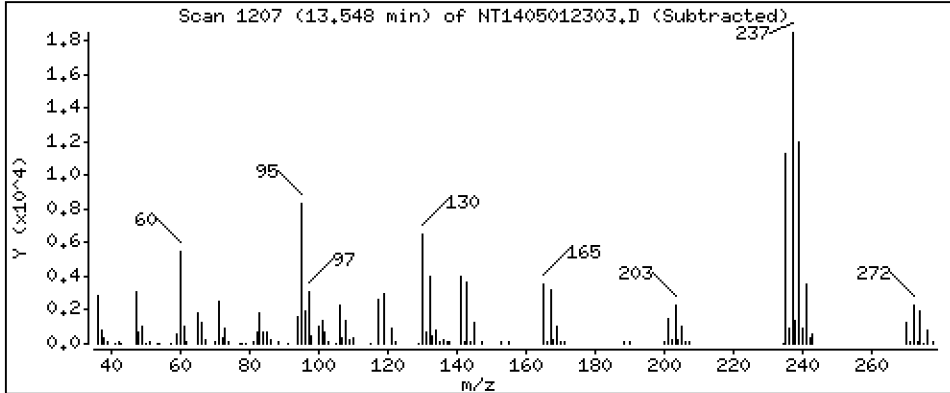
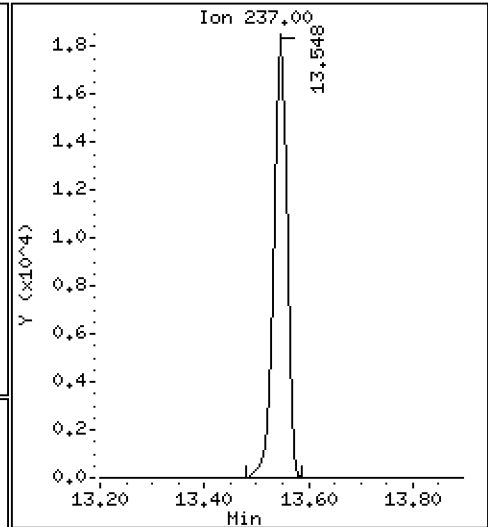
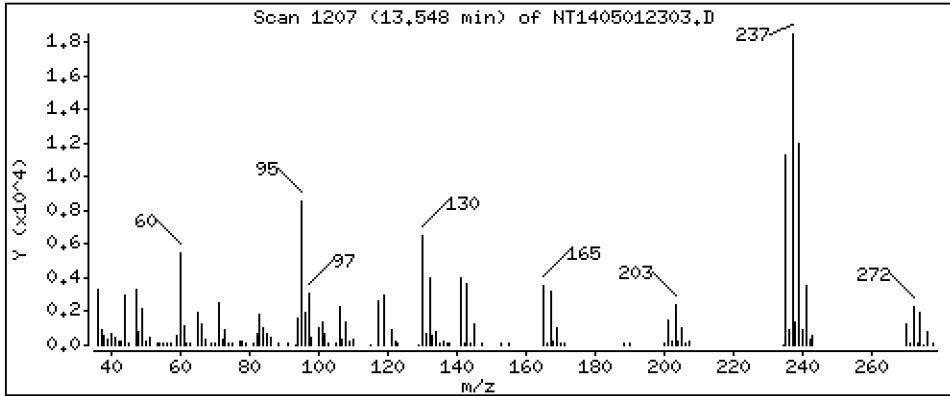
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

33 Hexachlorocyclopentadiene

Concentration: 0.8082 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

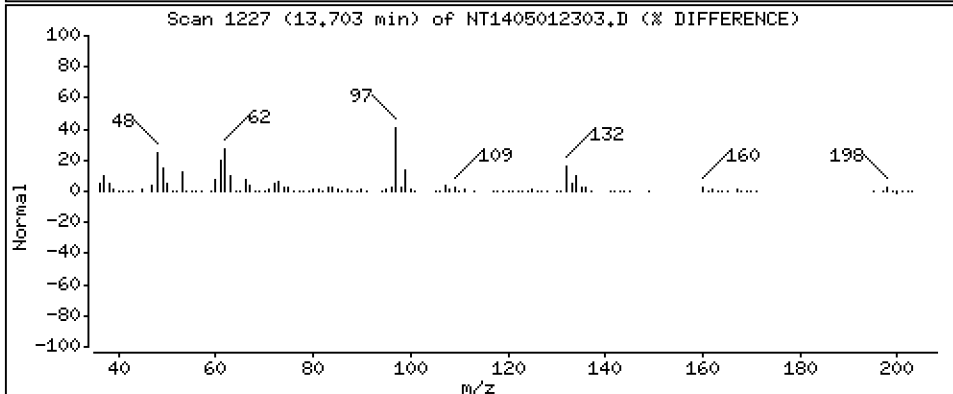
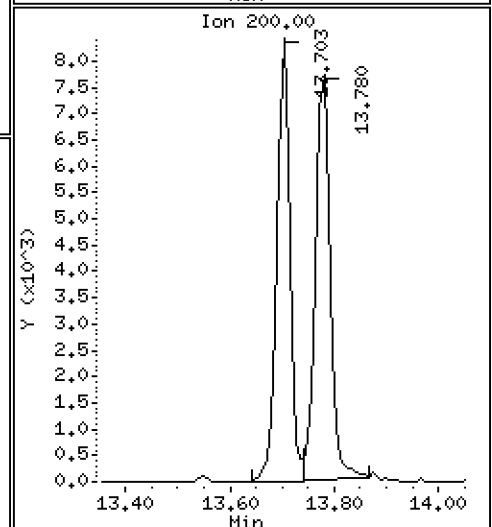
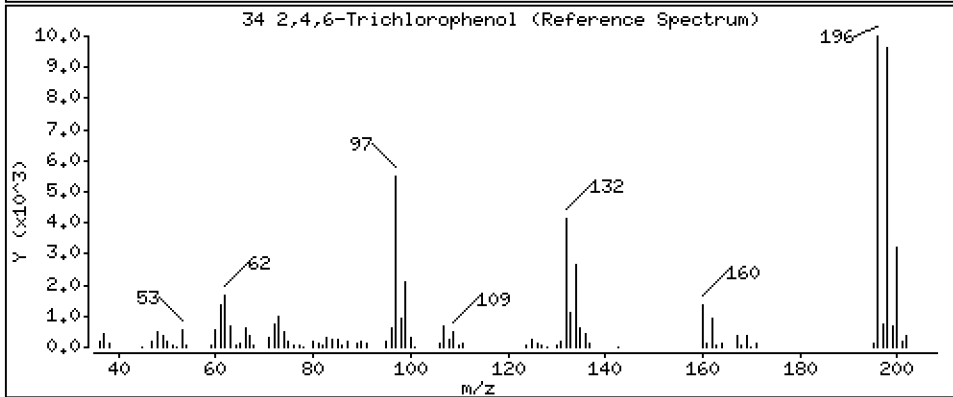
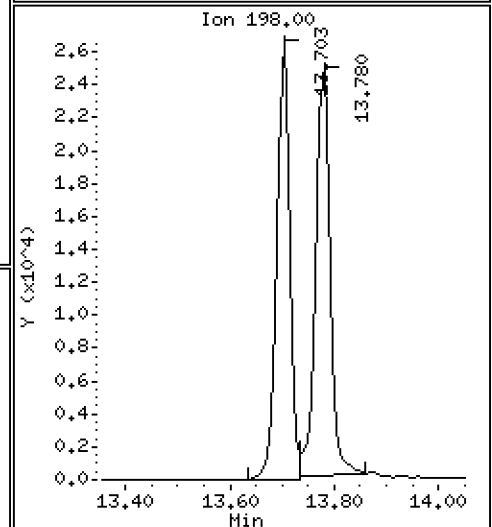
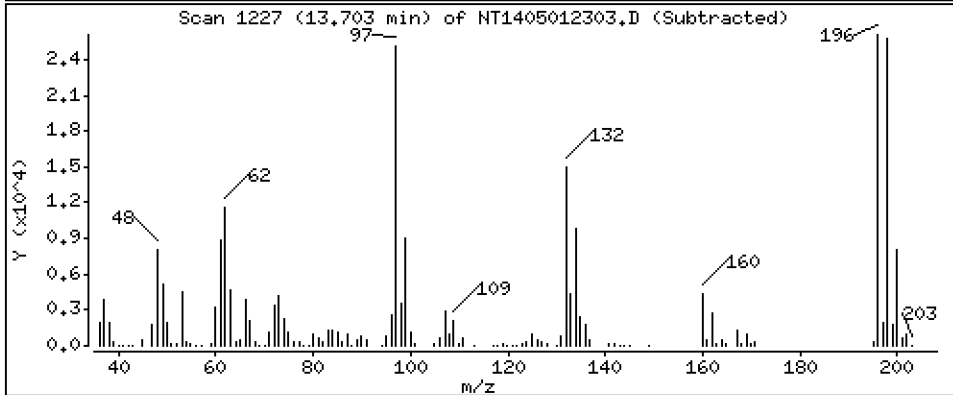
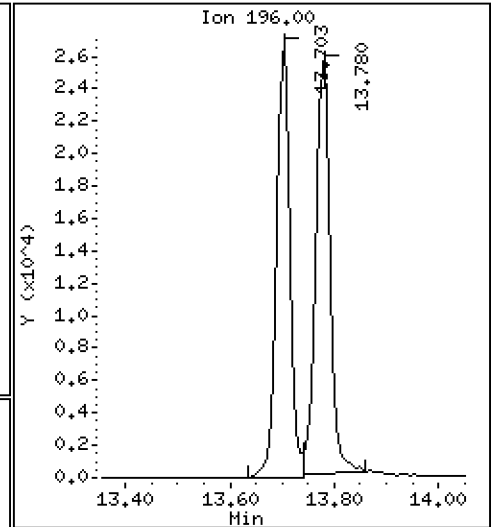
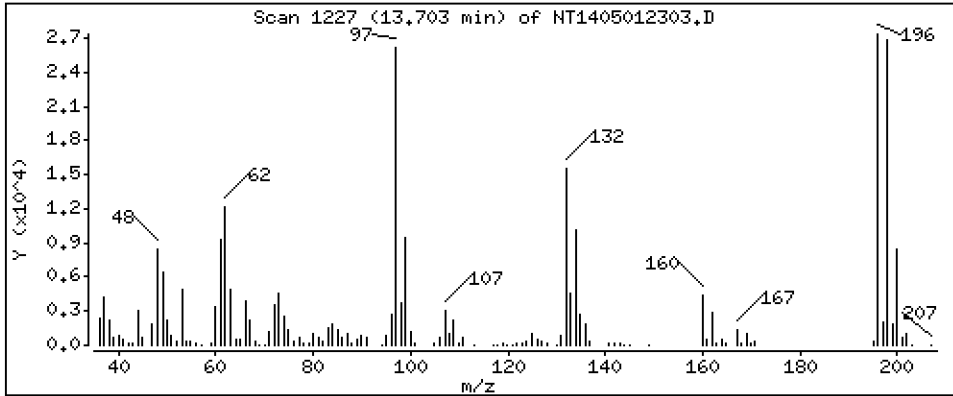
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 0,9607 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

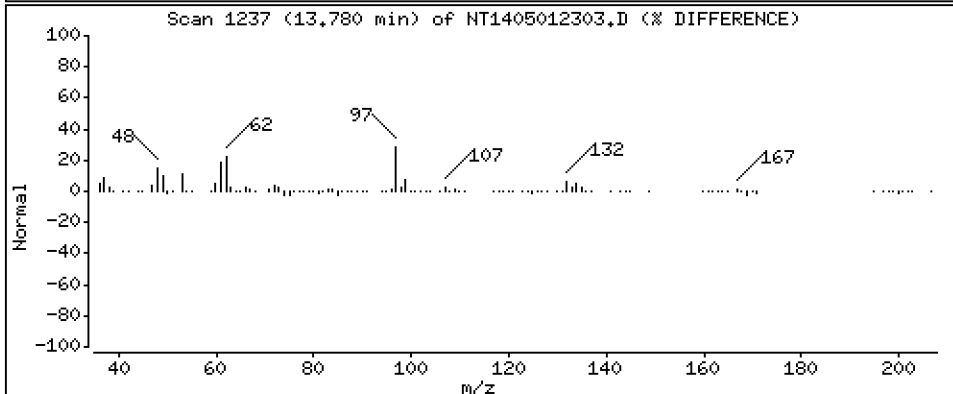
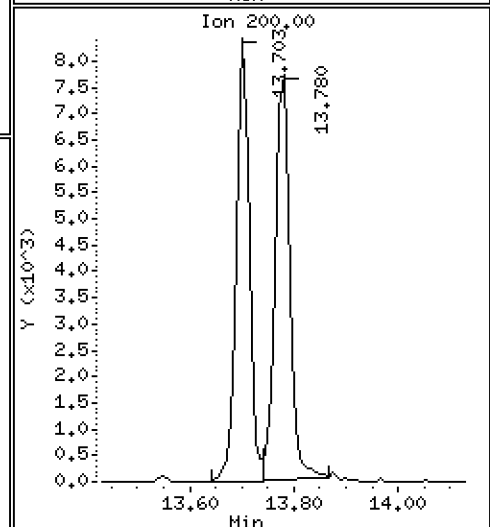
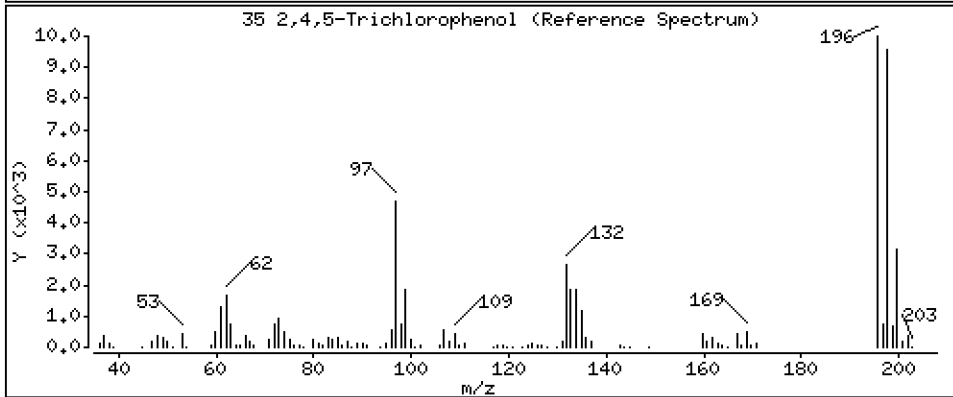
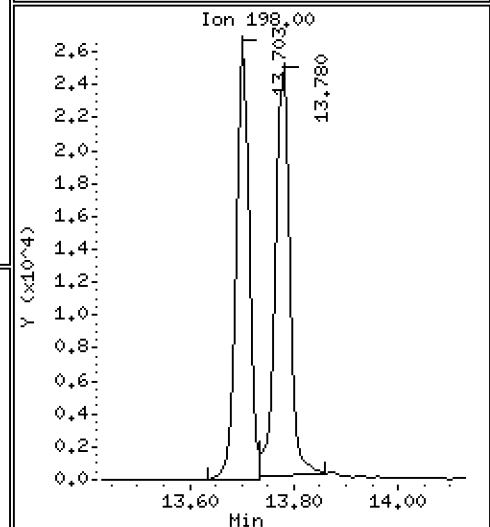
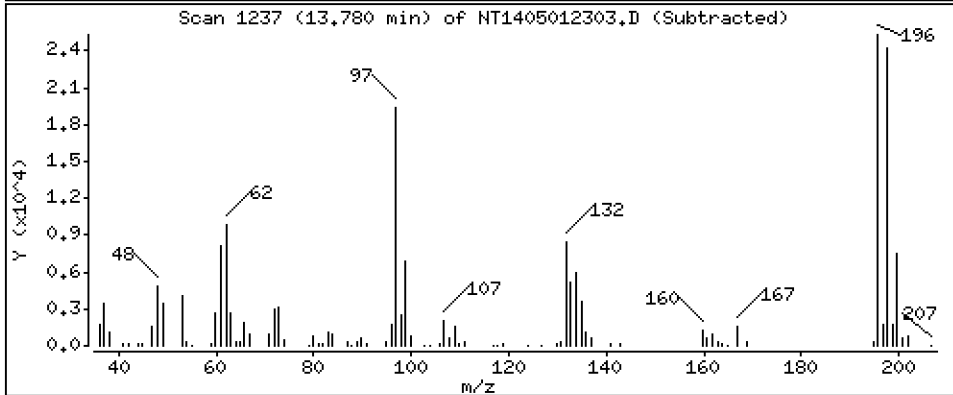
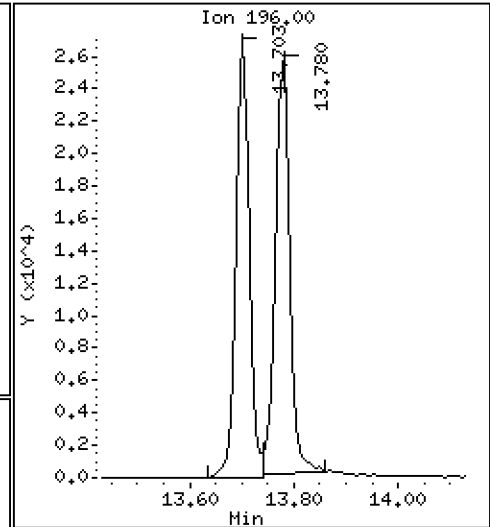
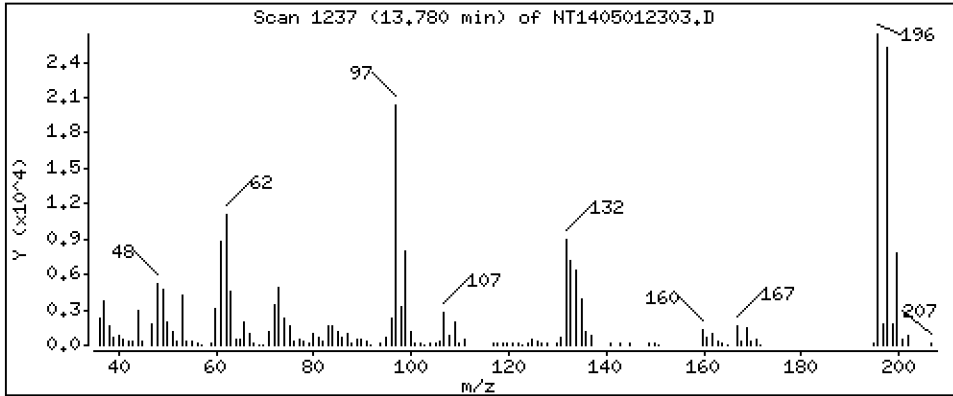
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

35 2,4,5-Trichlorophenol

Concentration: 0.9269 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

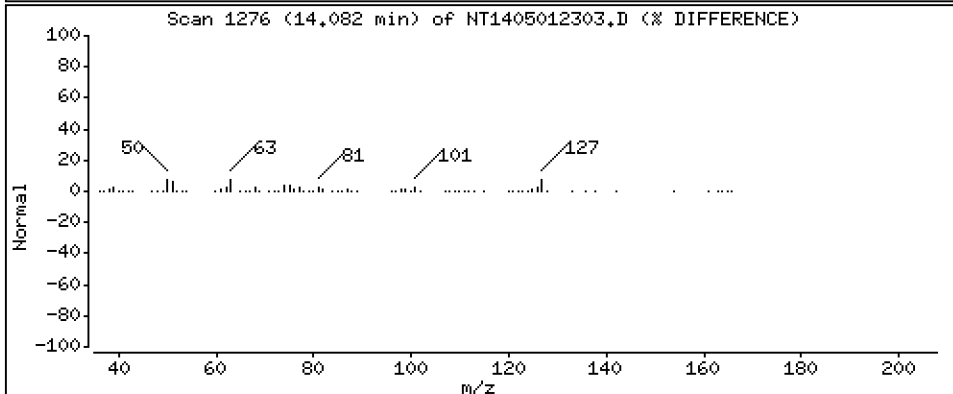
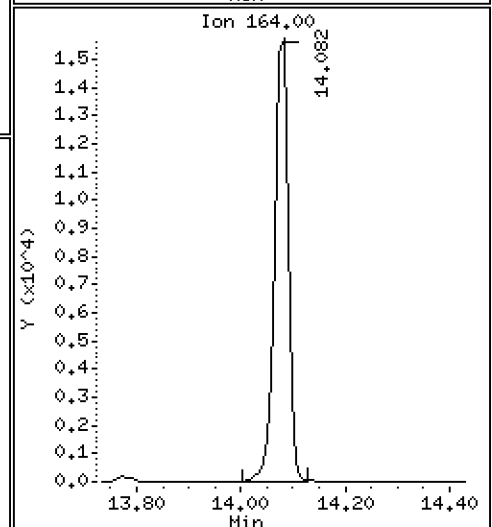
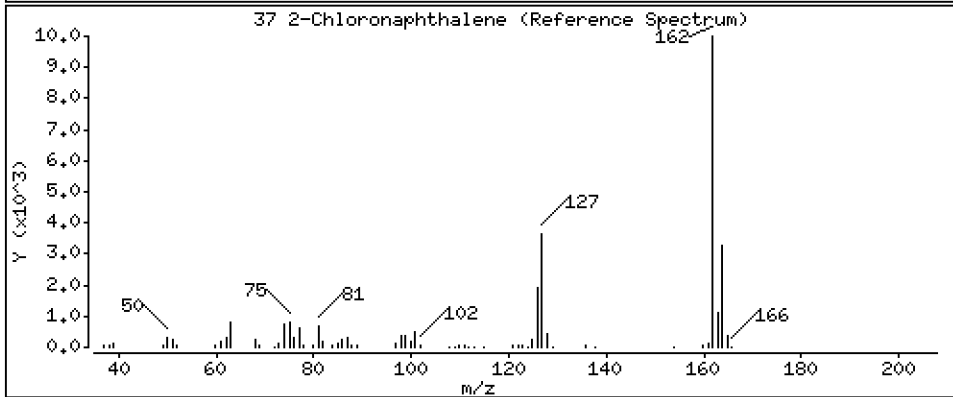
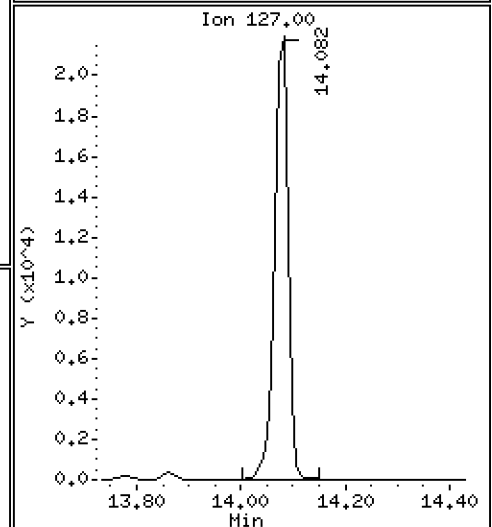
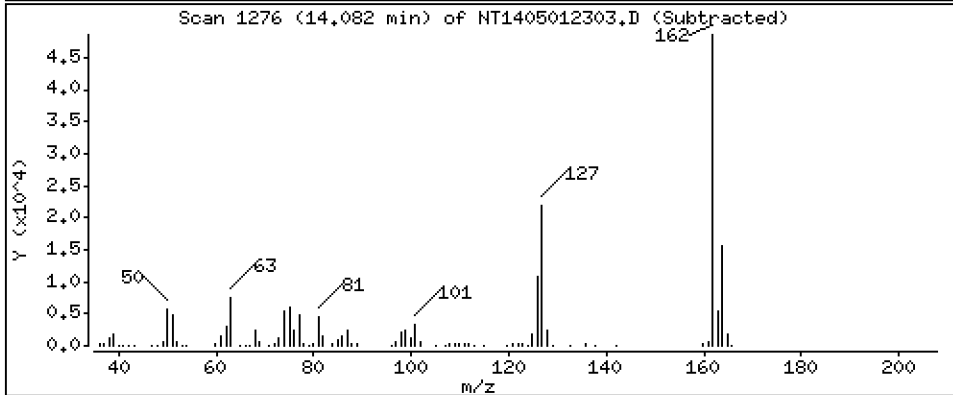
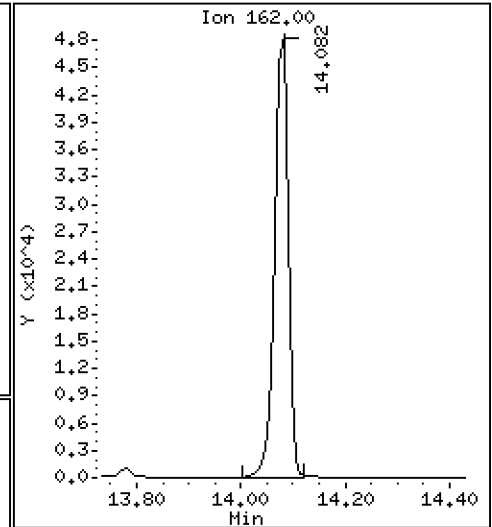
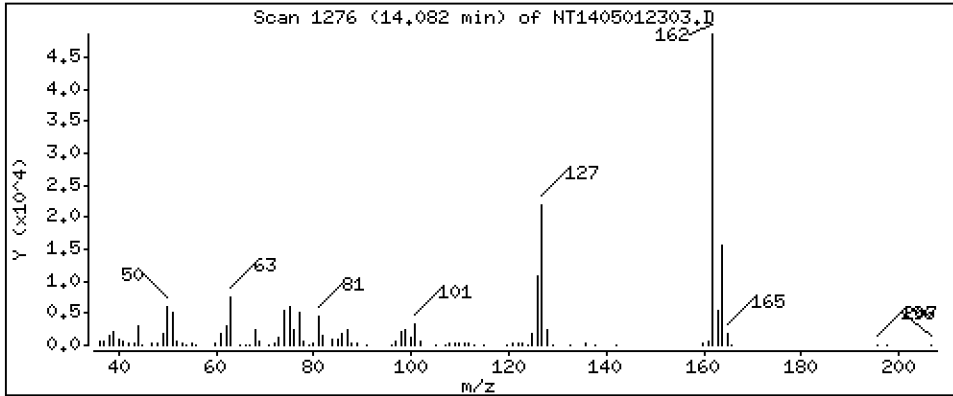
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 0,4844 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

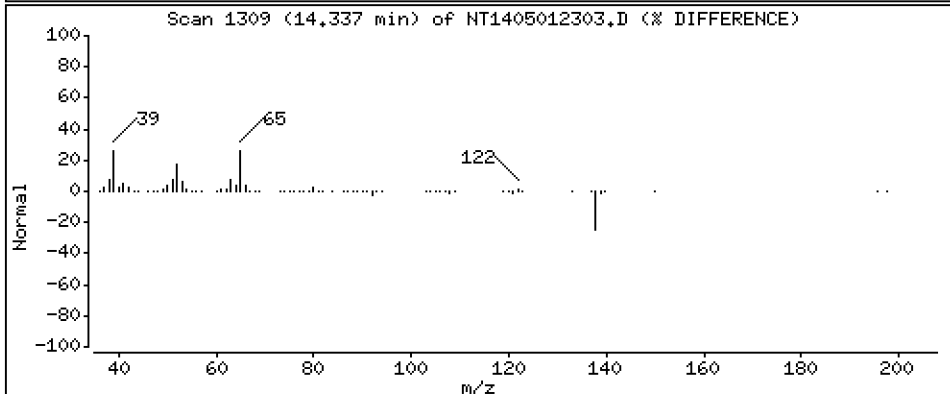
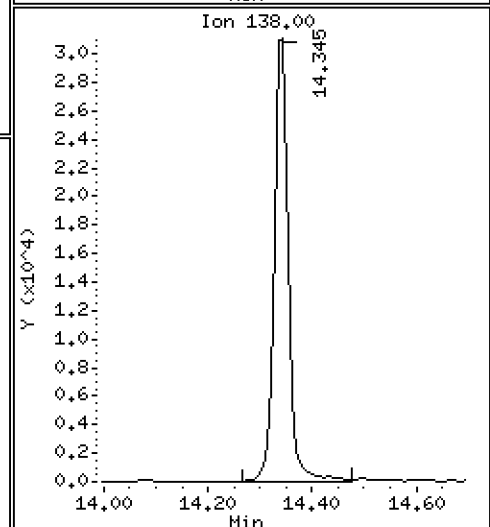
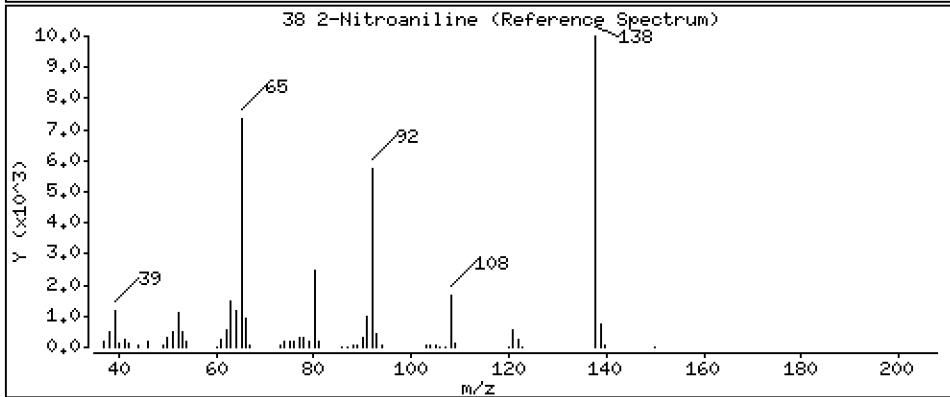
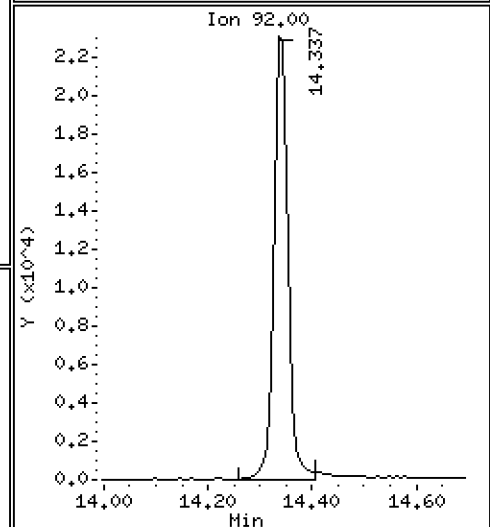
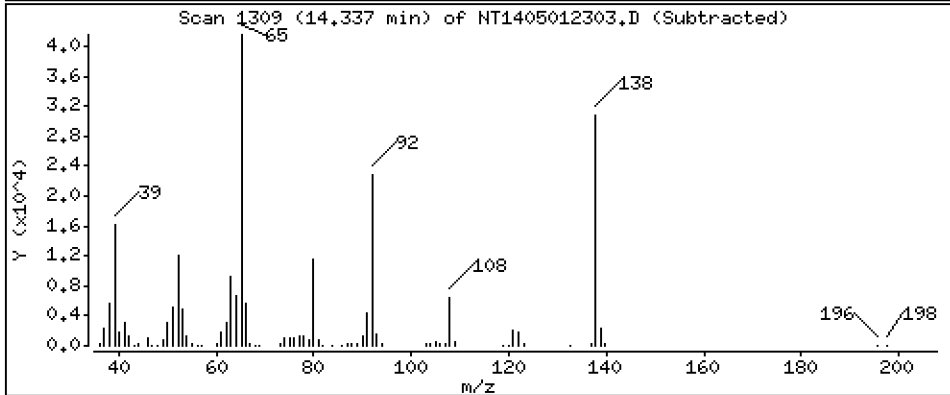
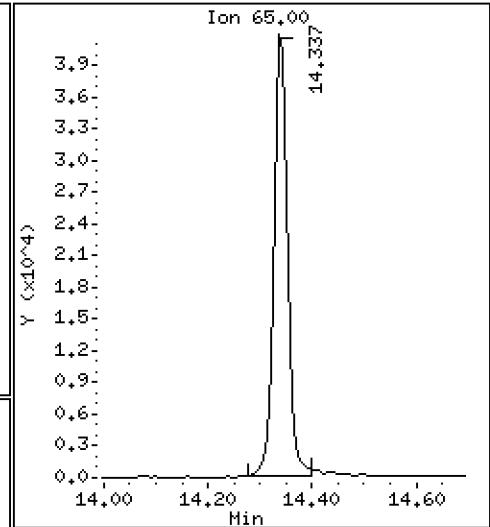
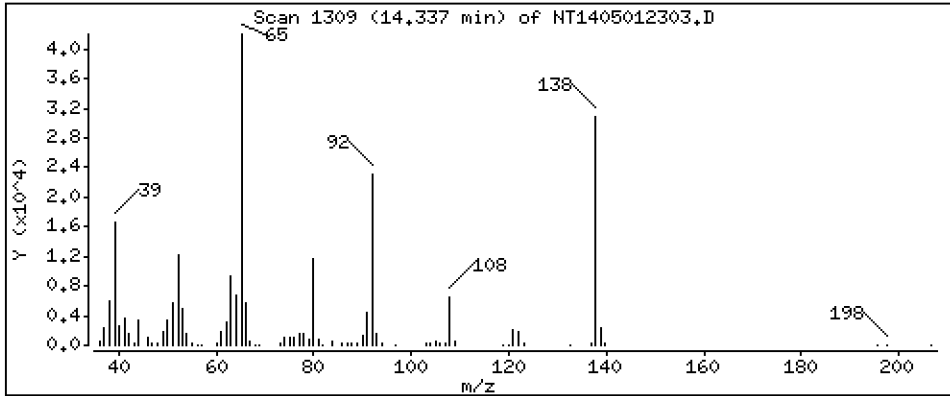
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 0,7968 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

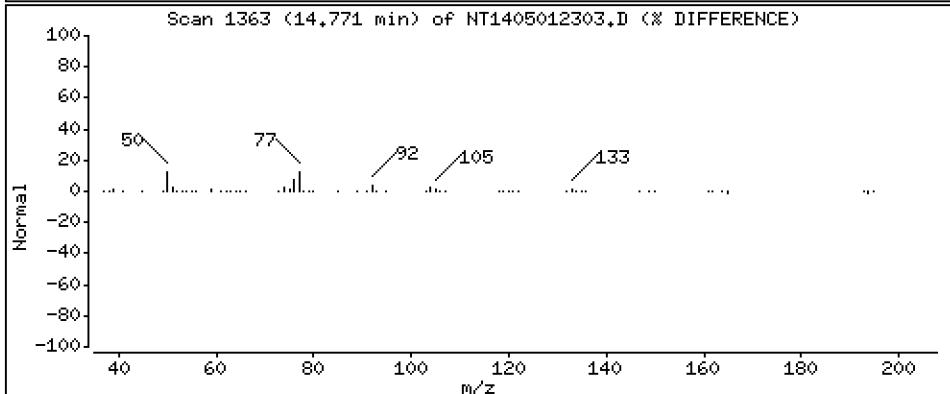
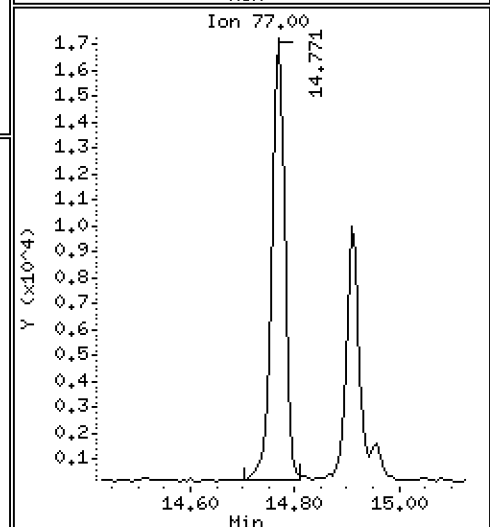
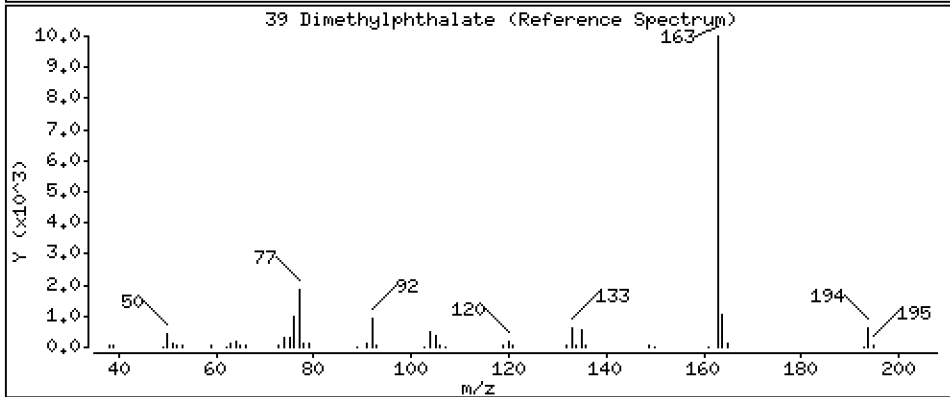
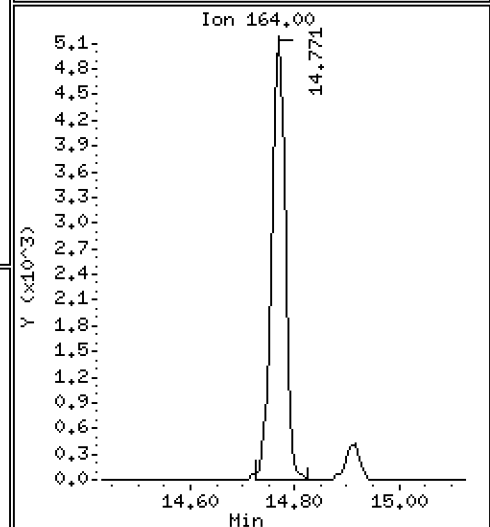
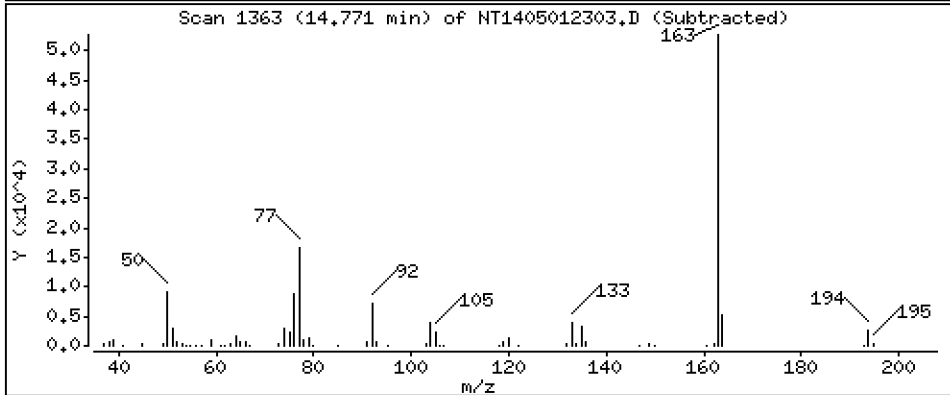
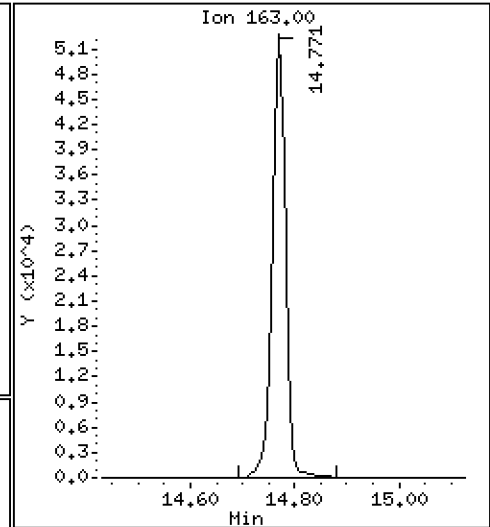
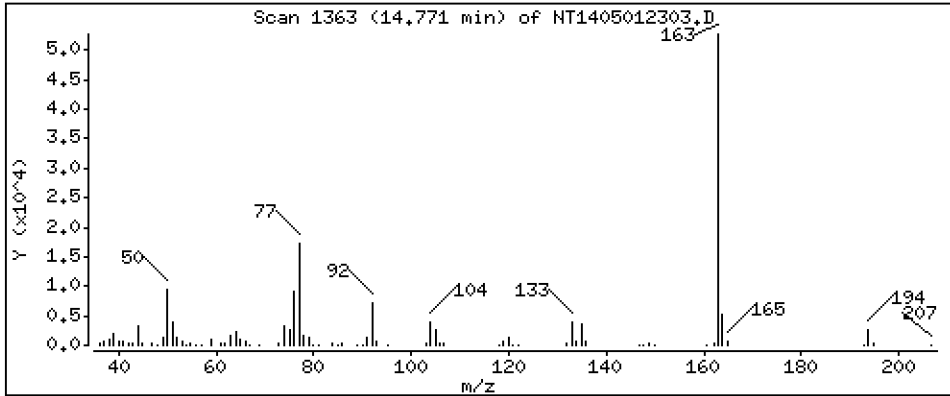
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

39 Dimethylphthalate

Concentration: 0.4945 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

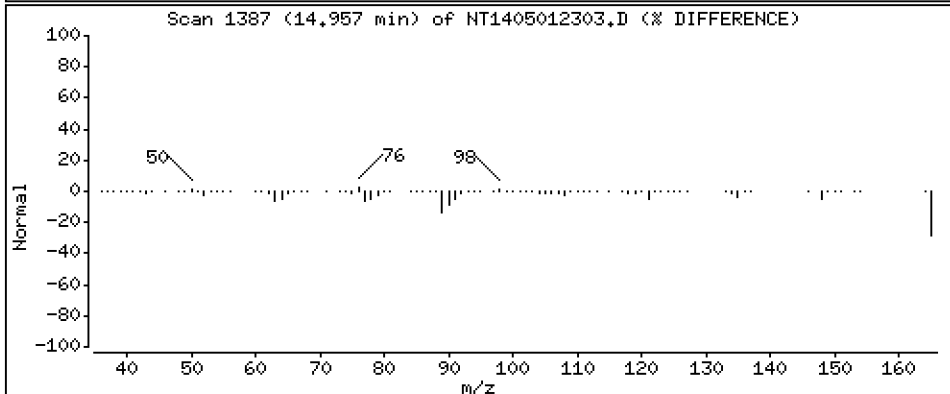
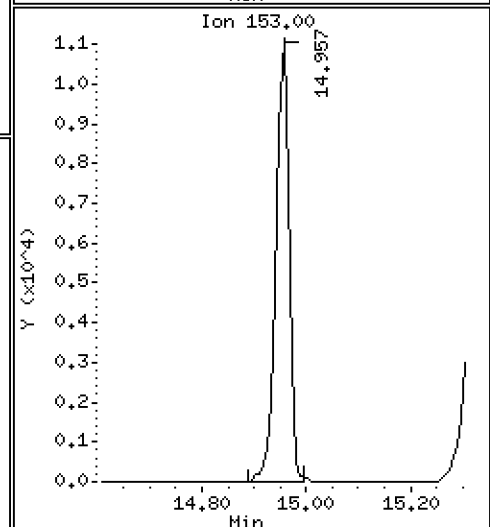
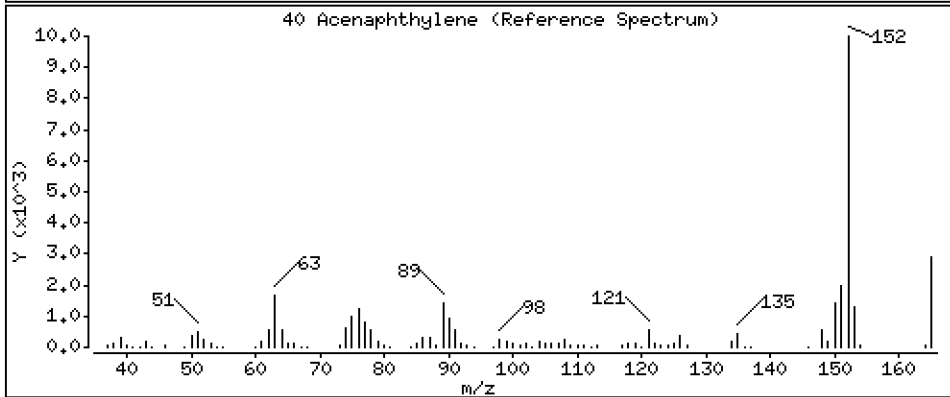
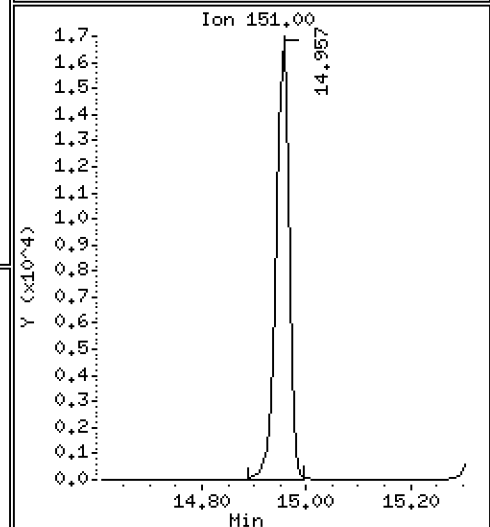
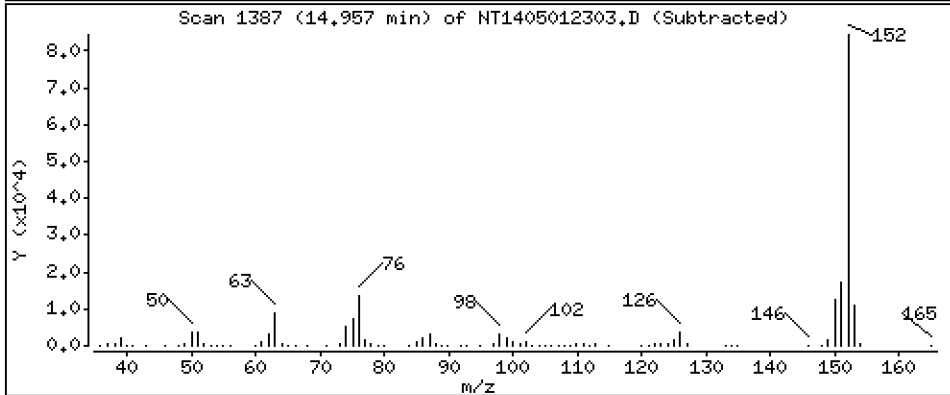
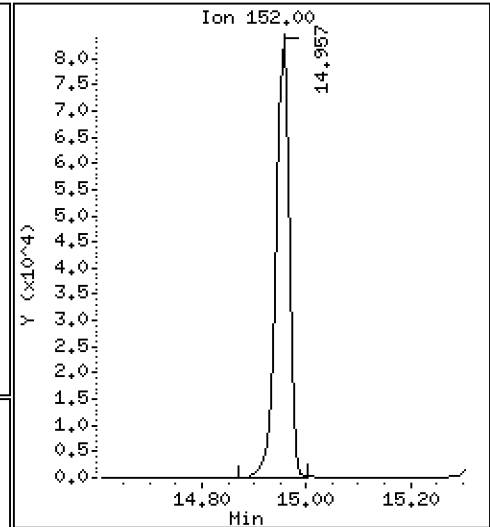
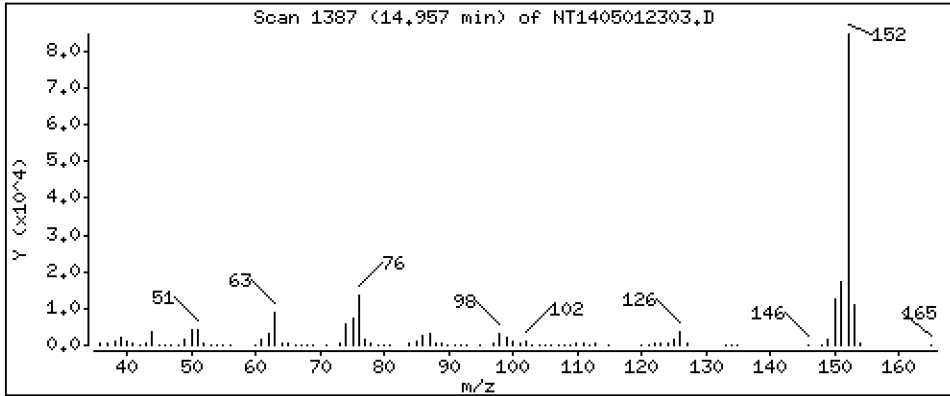
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

40 Acenaphthylene

Concentration: 0.5121 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

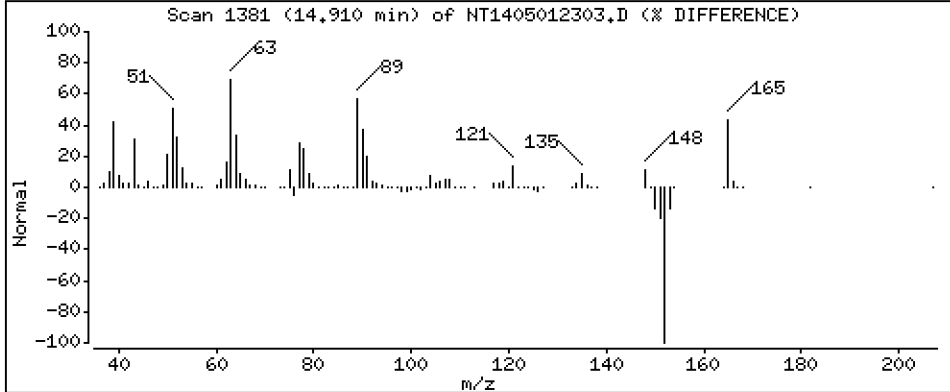
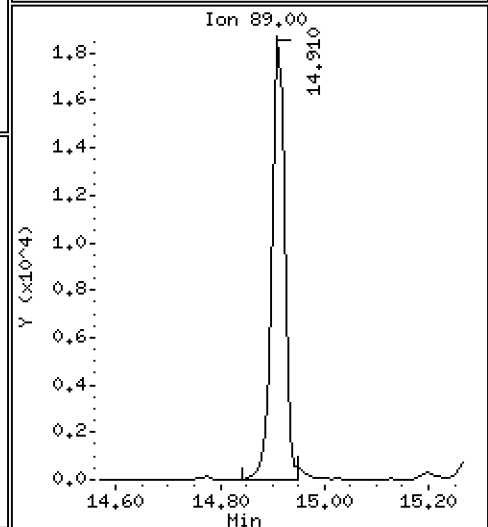
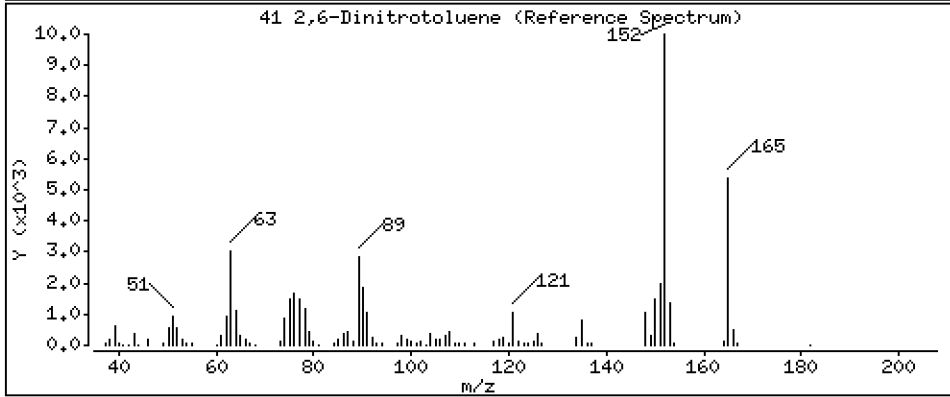
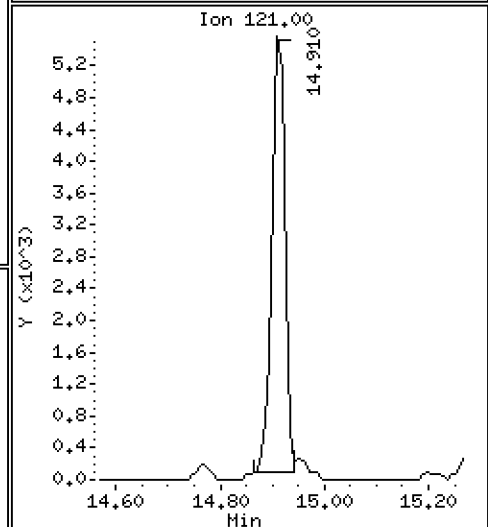
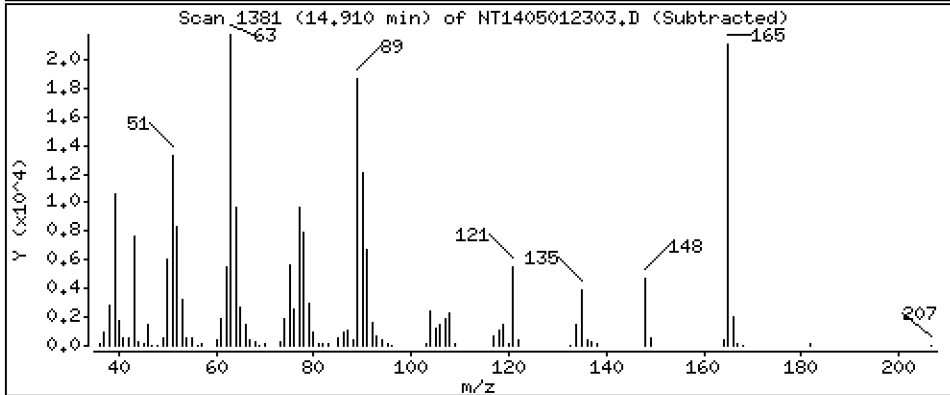
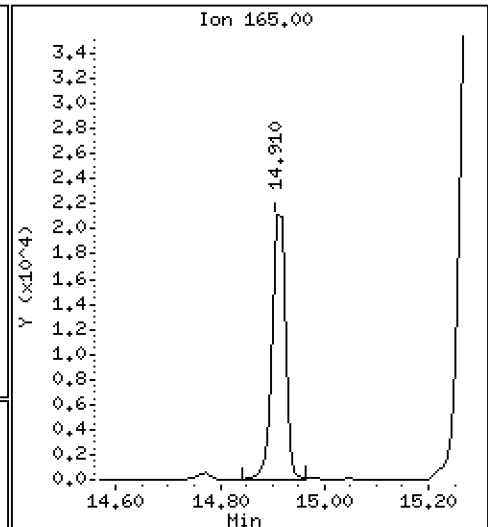
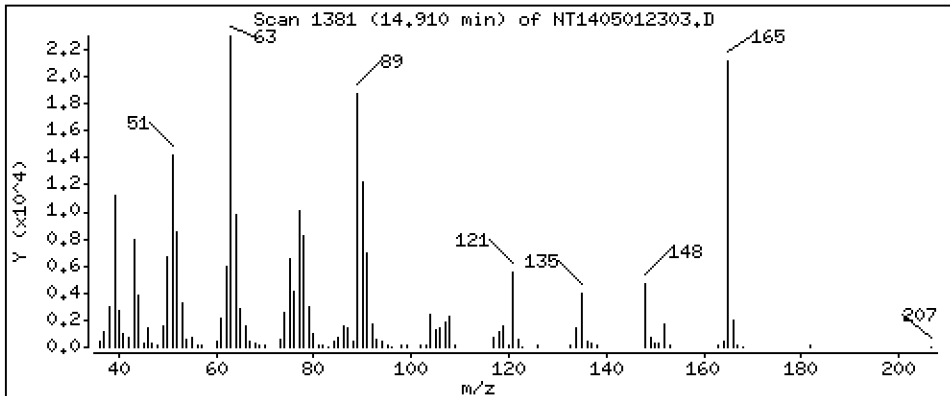
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

41 2,6-Dinitrotoluene

Concentration: 0.8913 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

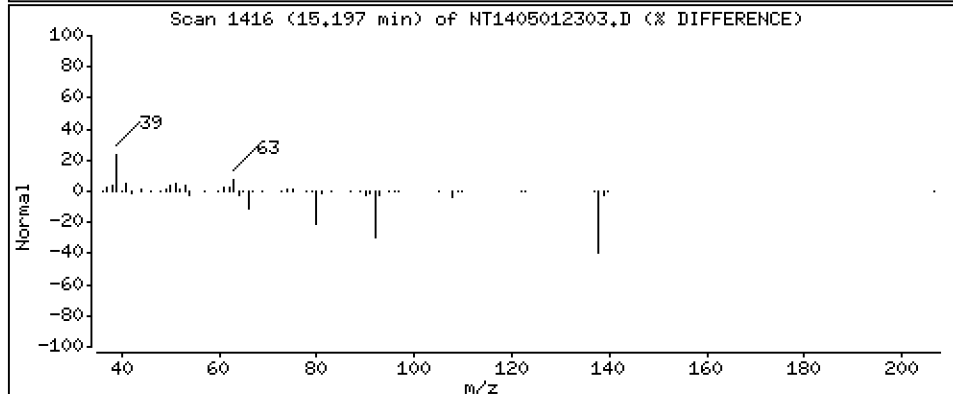
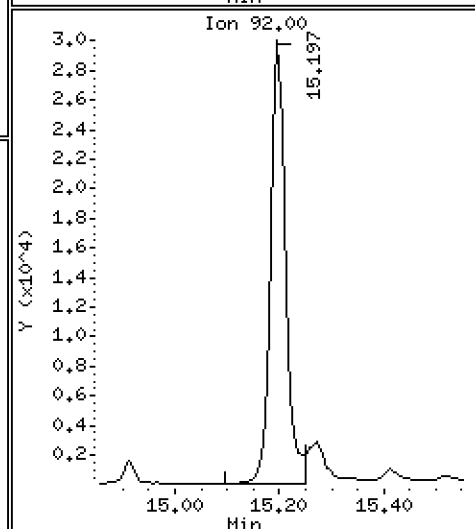
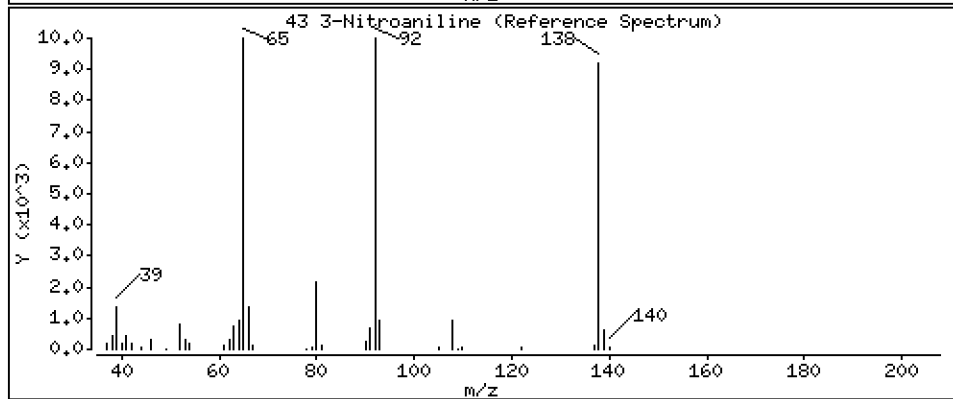
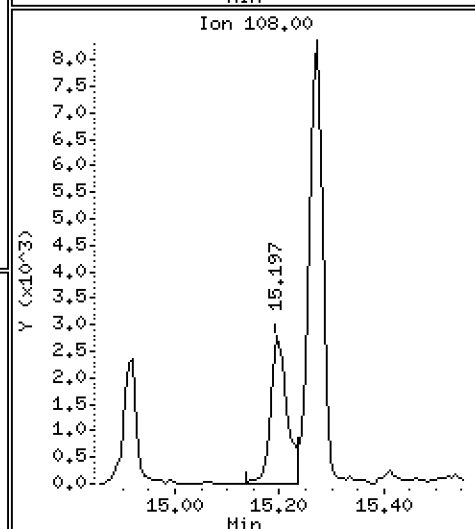
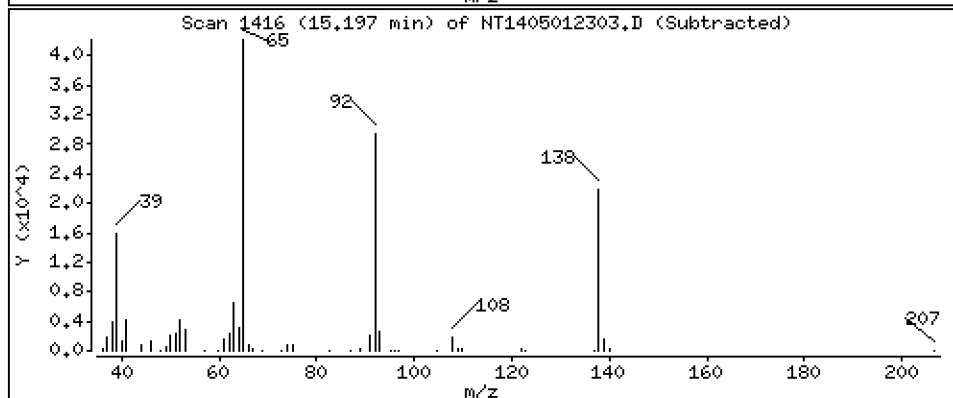
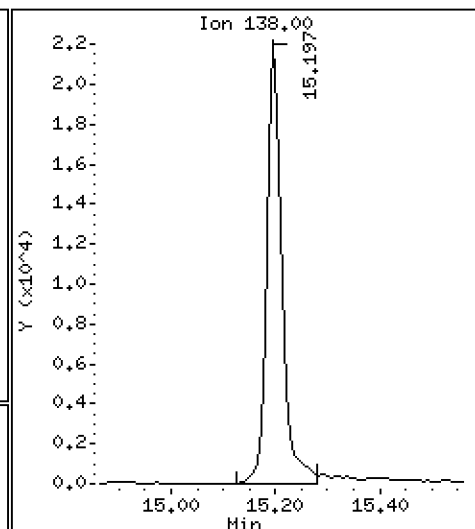
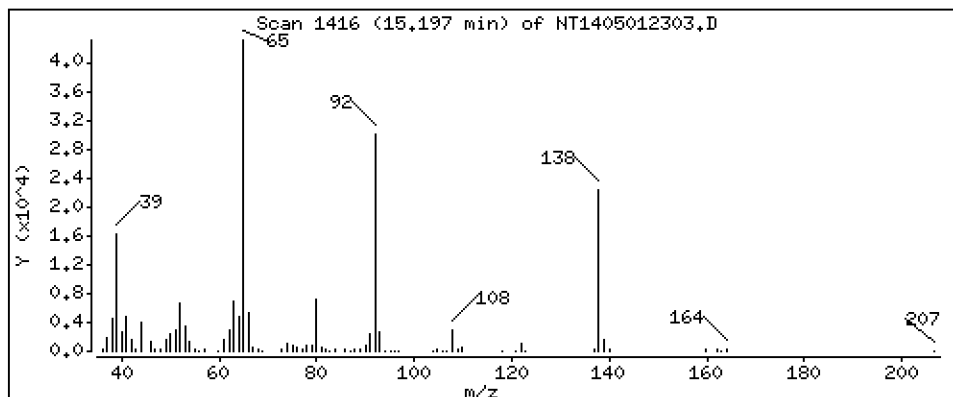
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 0,8540 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

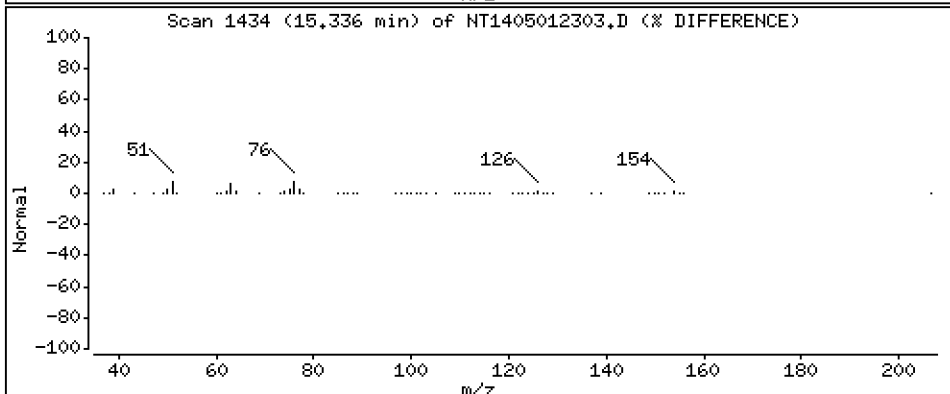
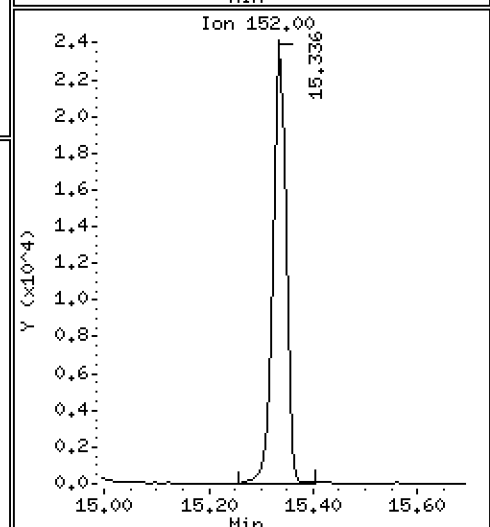
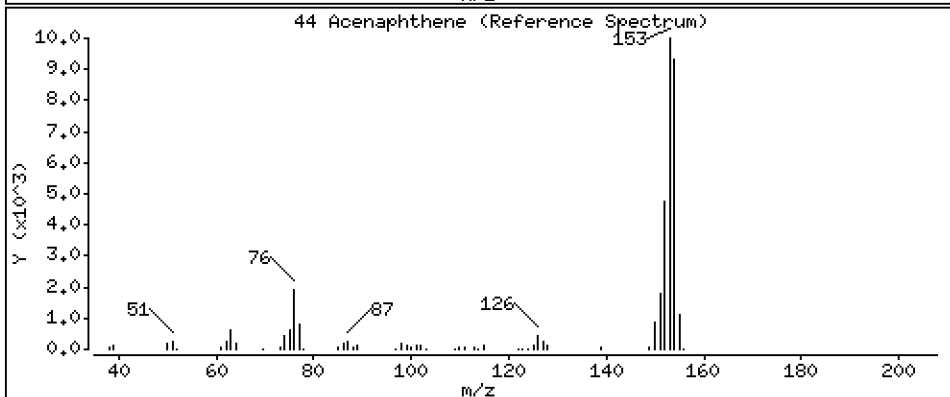
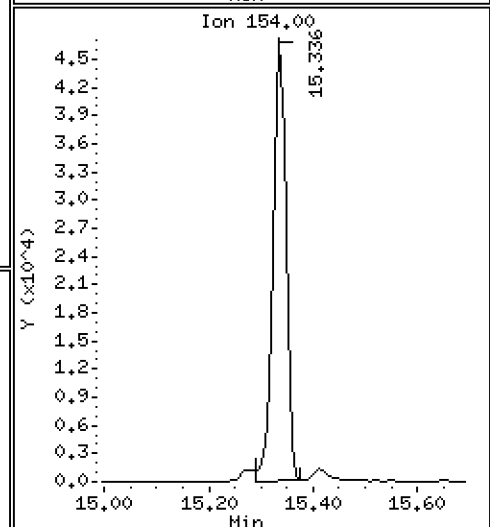
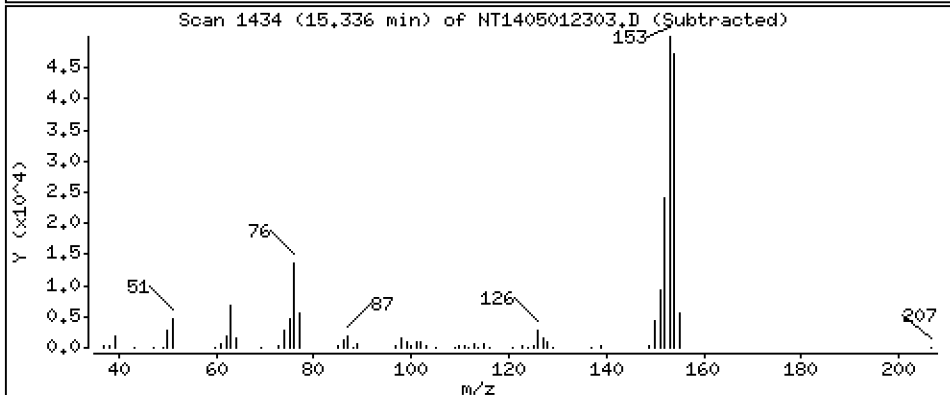
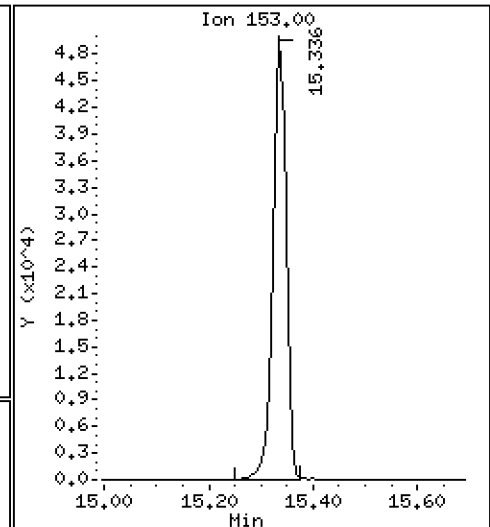
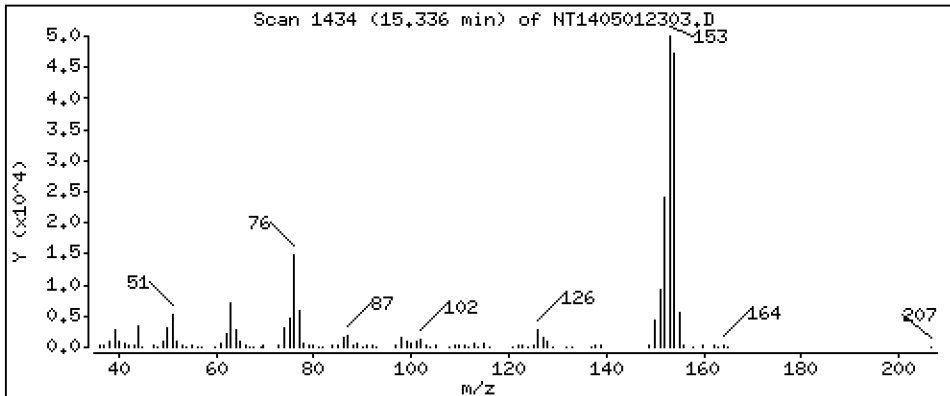
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 0,5017 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

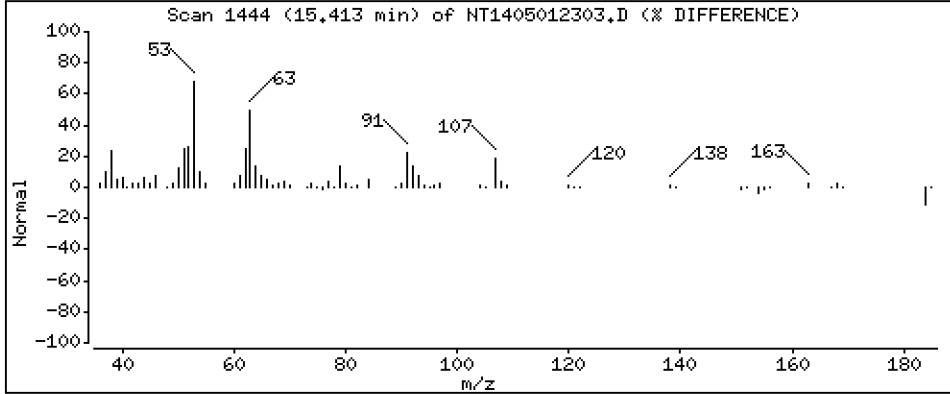
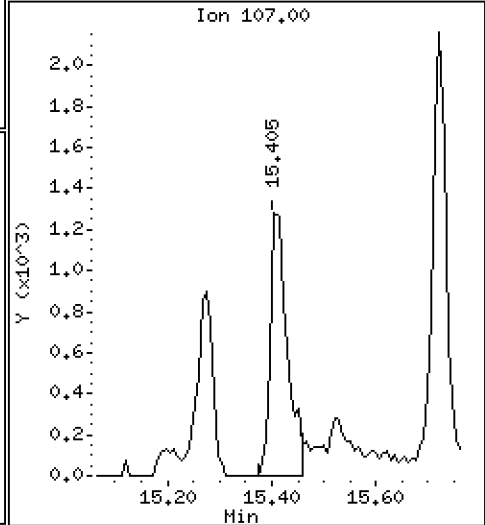
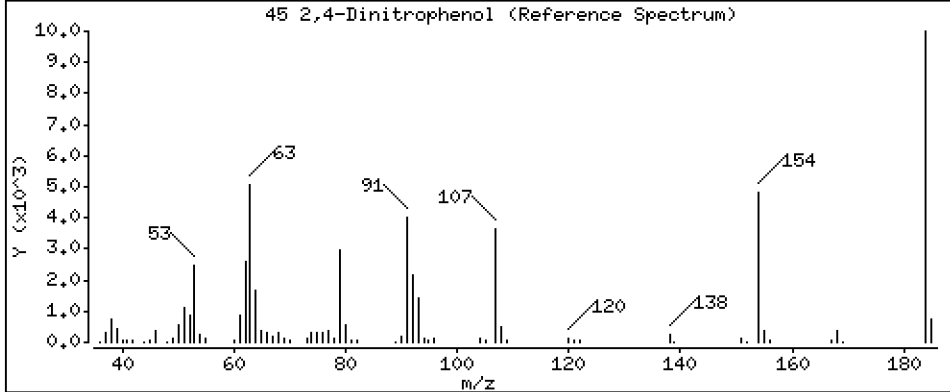
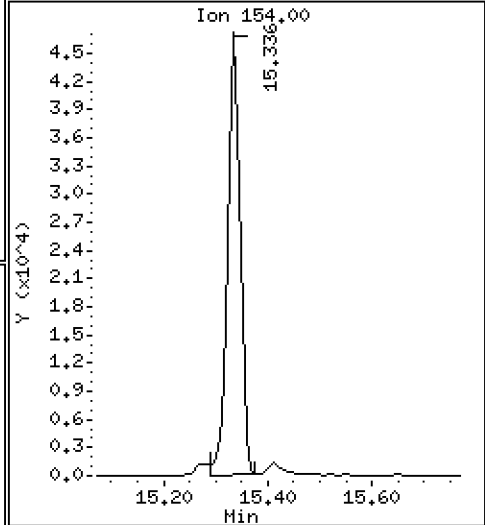
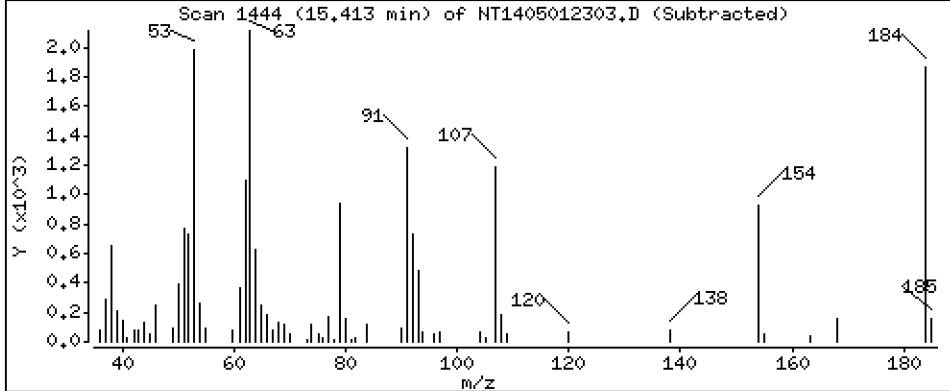
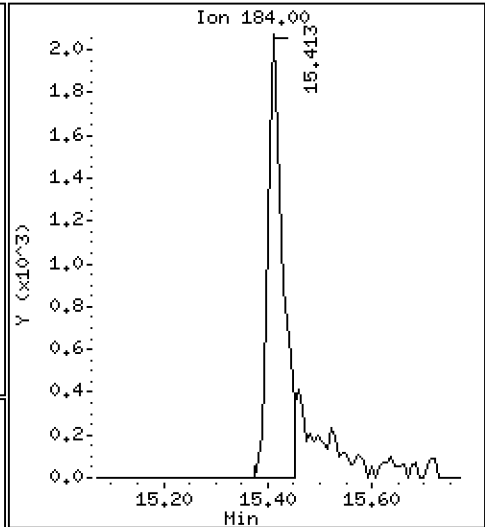
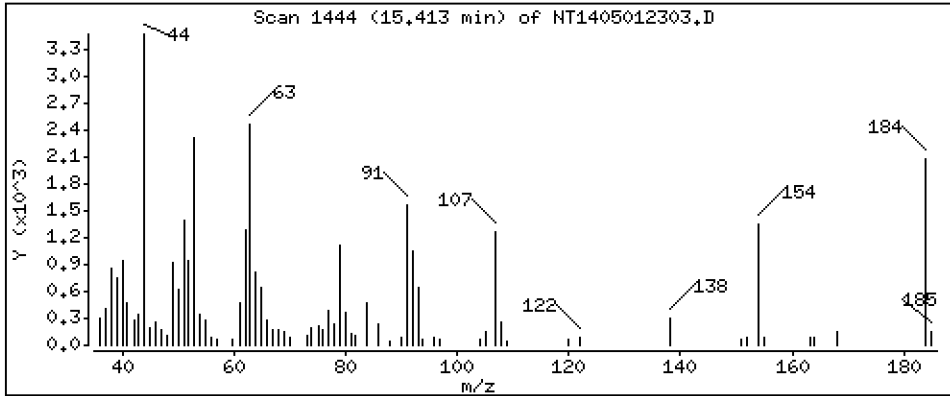
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 0,1663 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

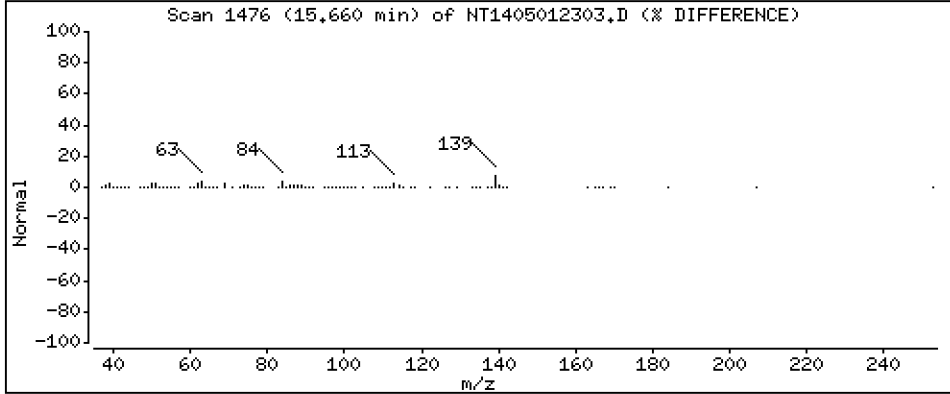
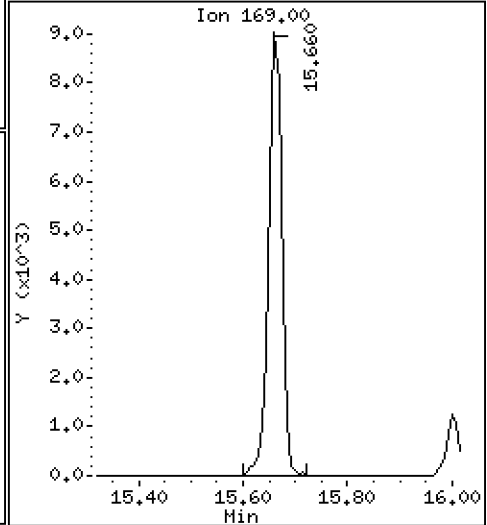
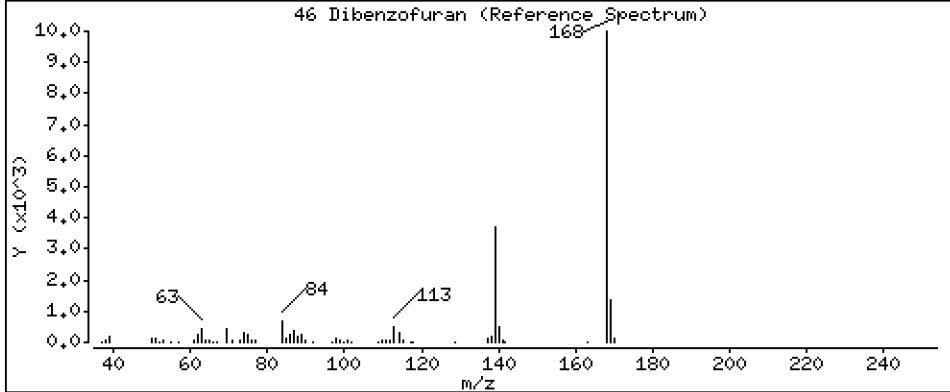
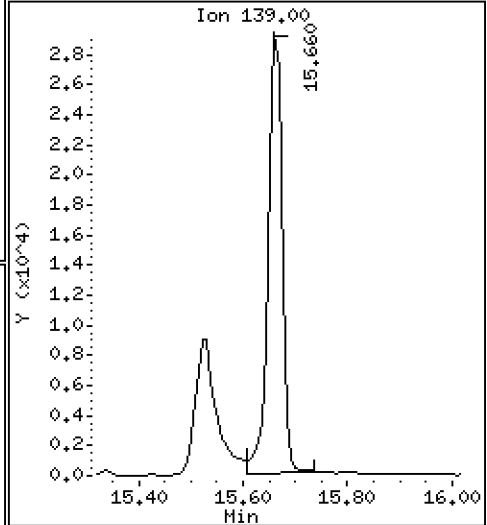
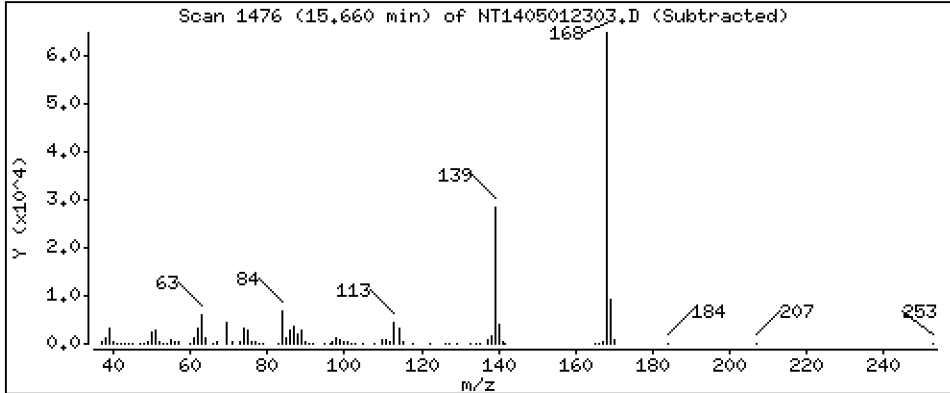
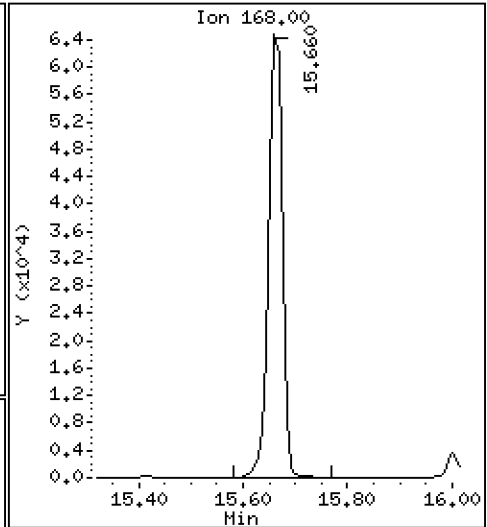
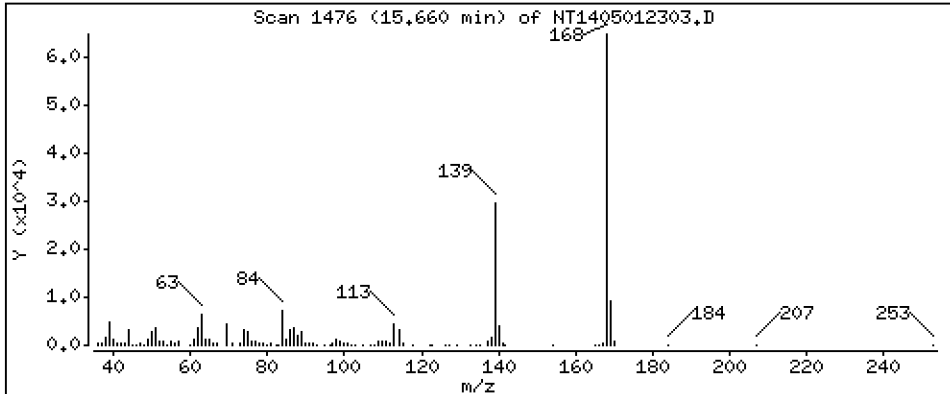
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 0,4850 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

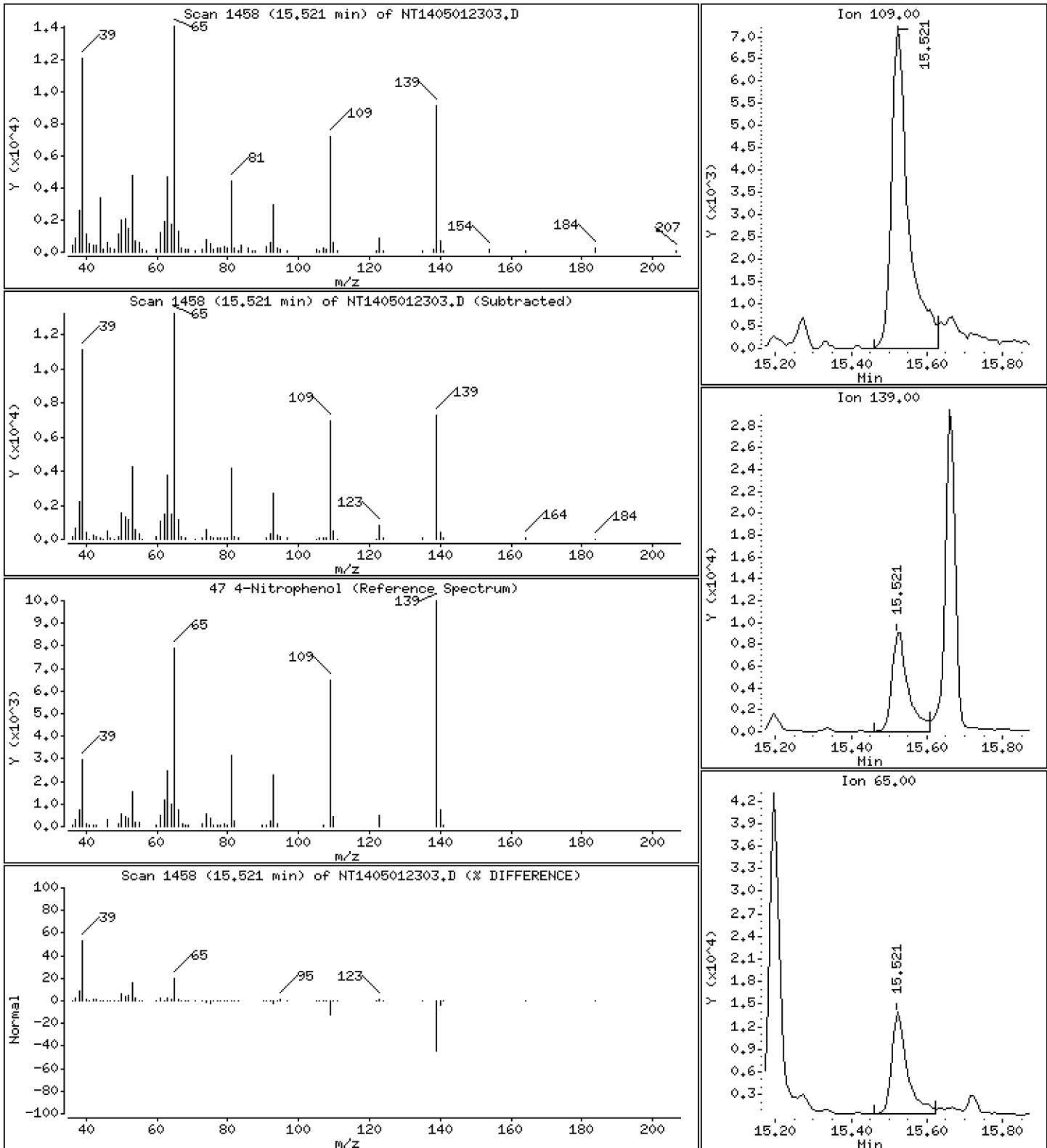
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 0,7460 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

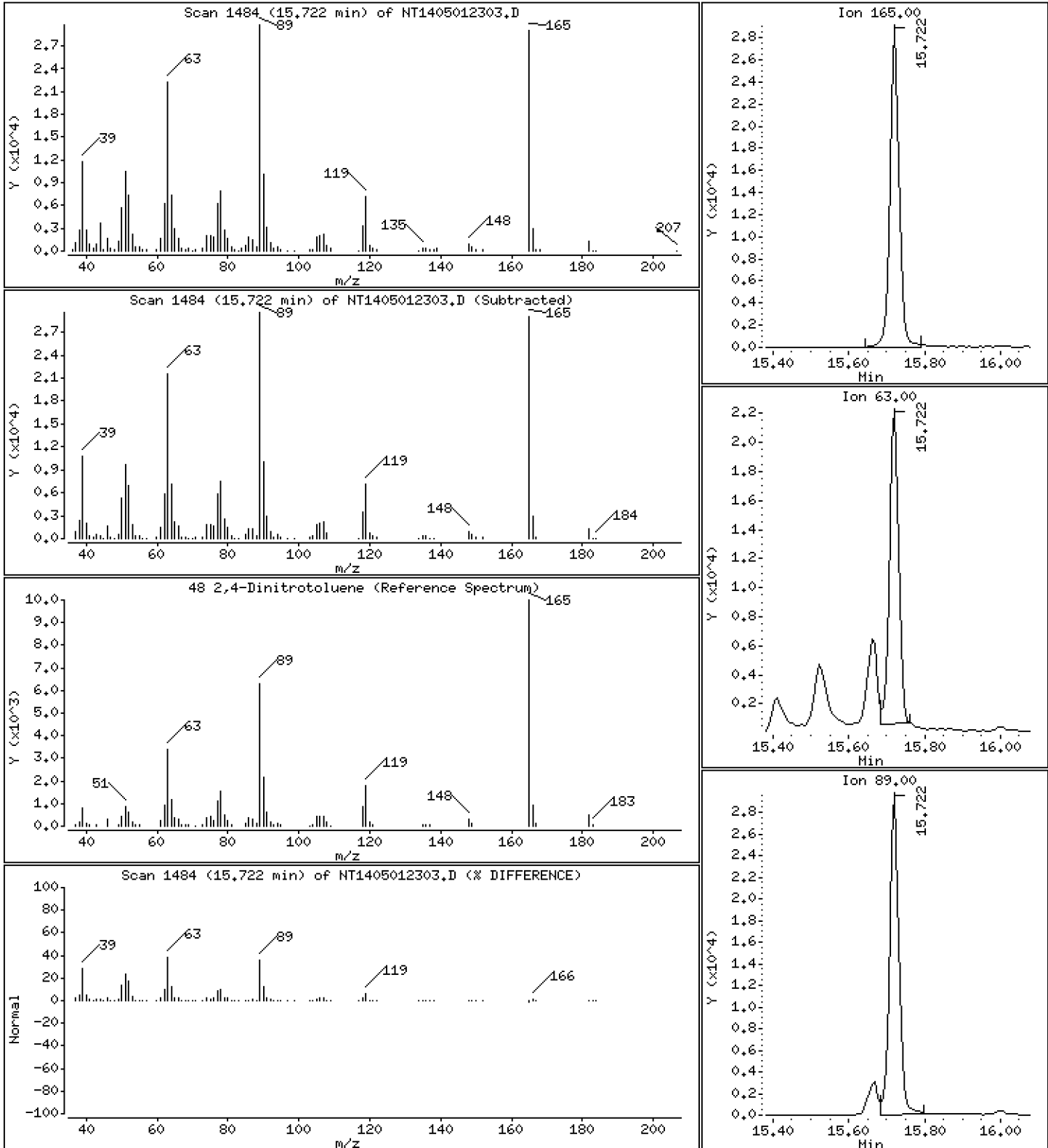
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

48 2,4-Dinitrotoluene

Concentration: 0.8595 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

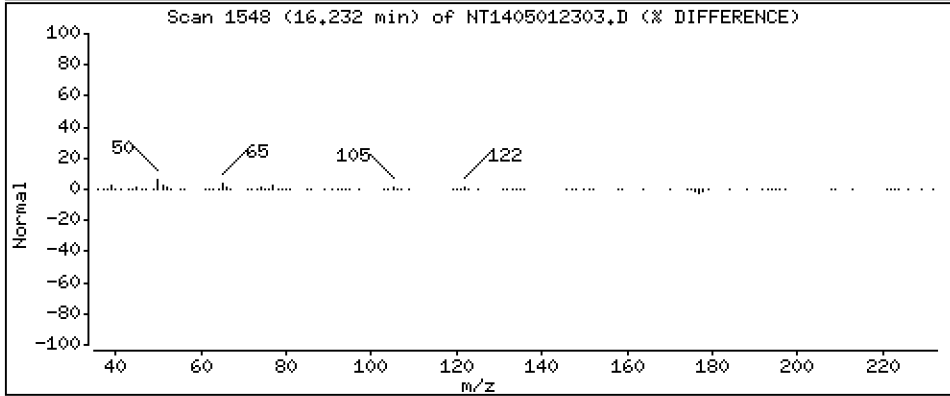
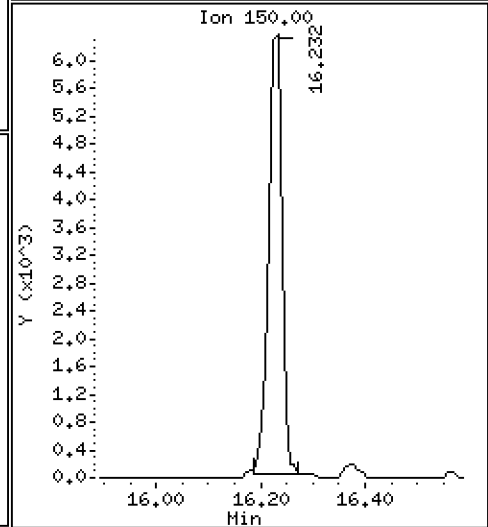
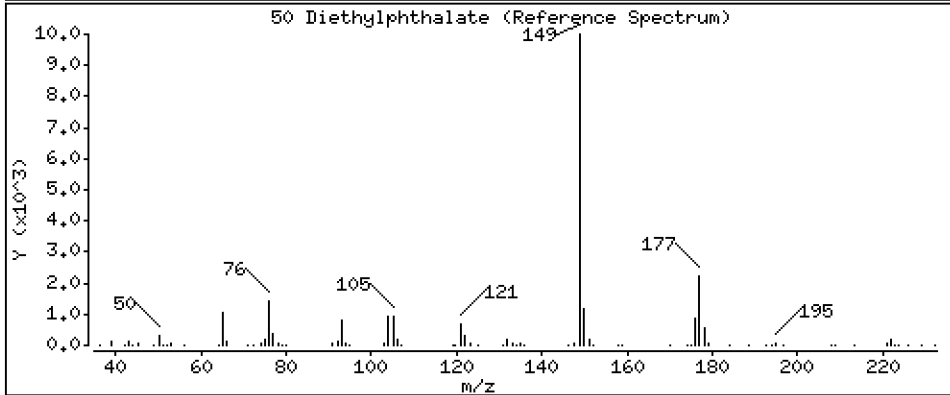
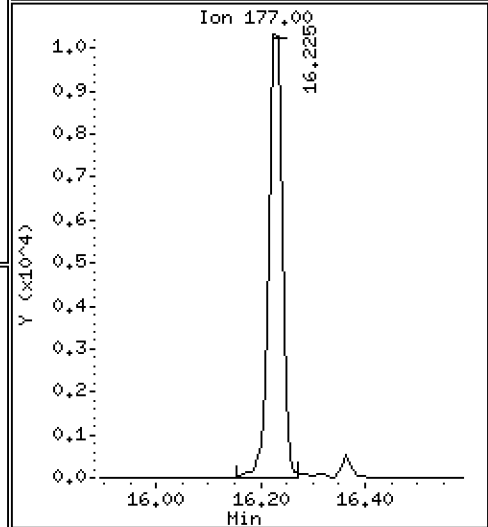
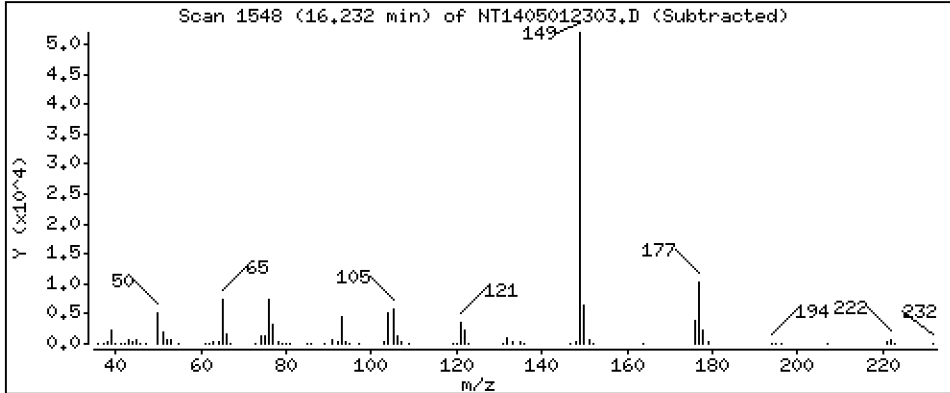
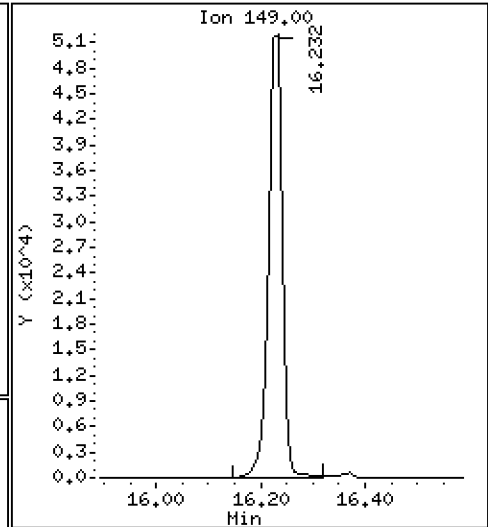
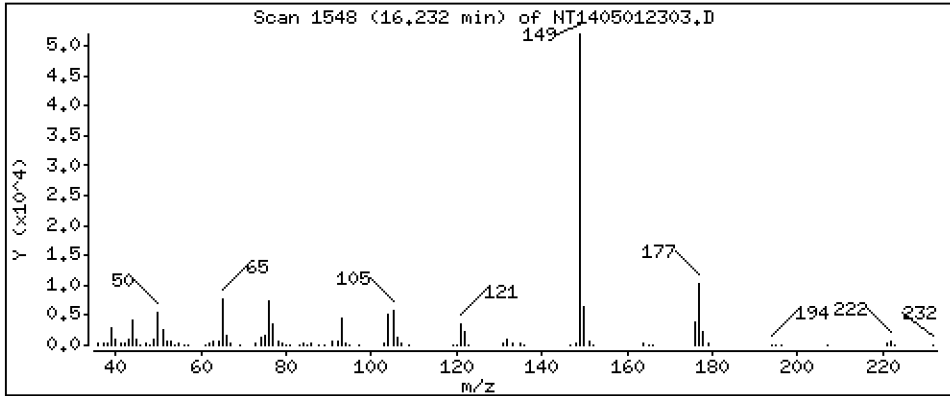
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

50 Diethylphthalate

Concentration: 0.5127 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

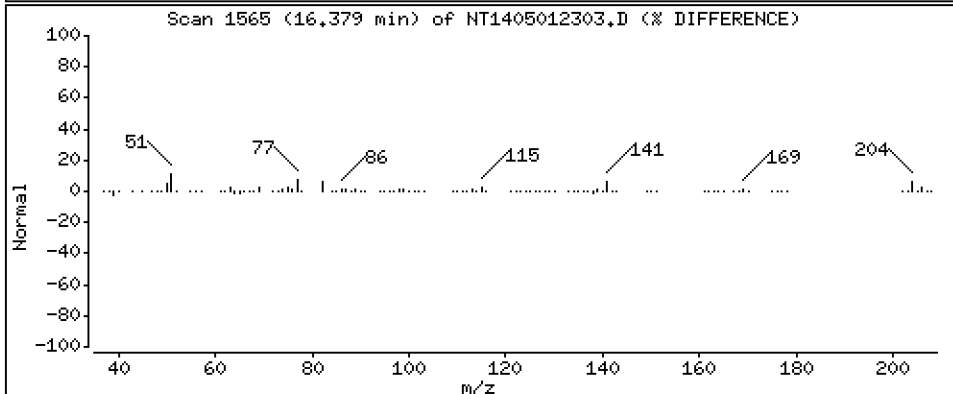
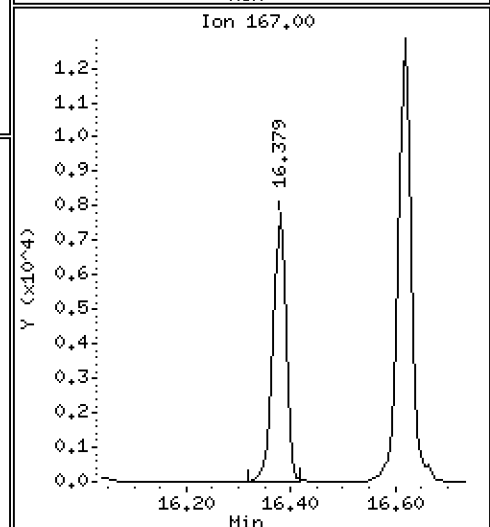
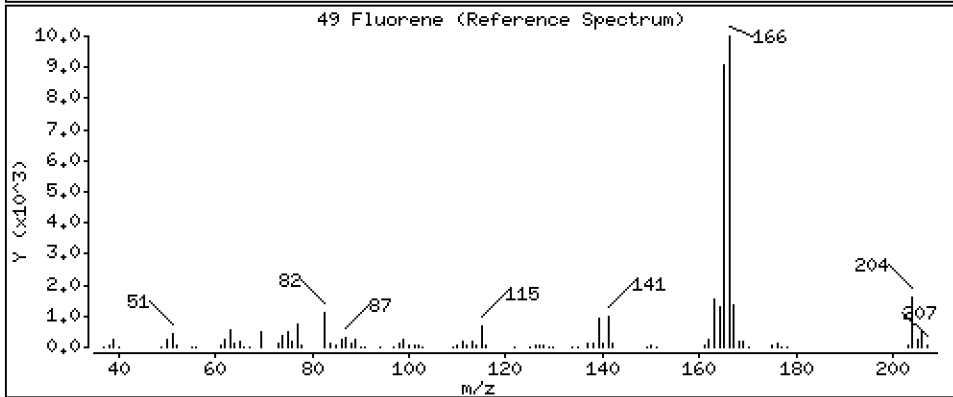
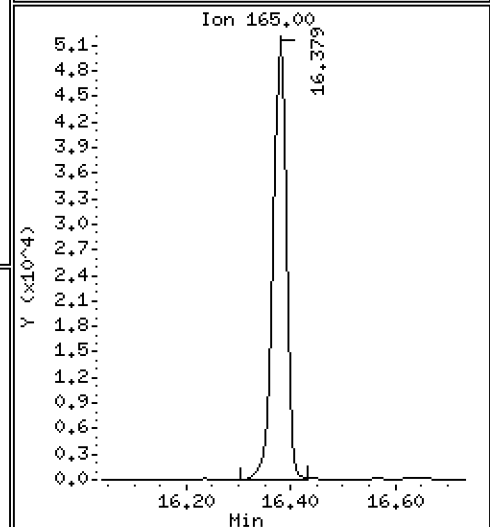
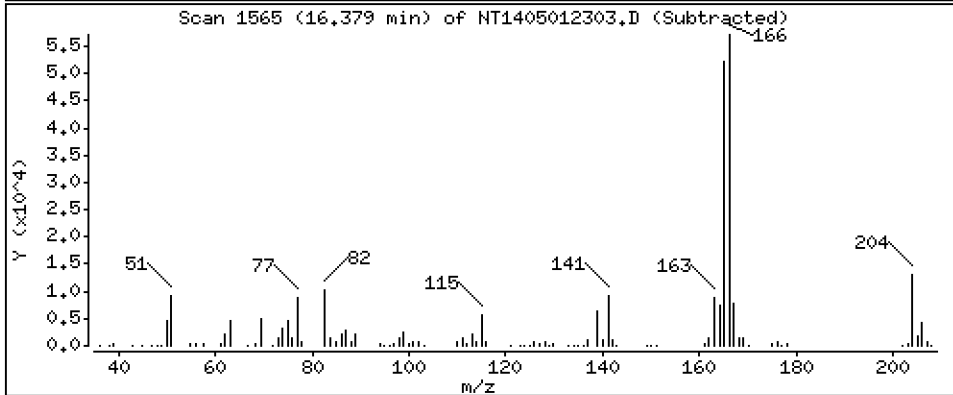
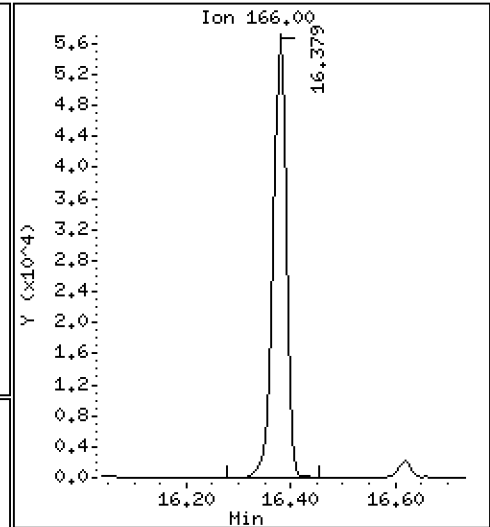
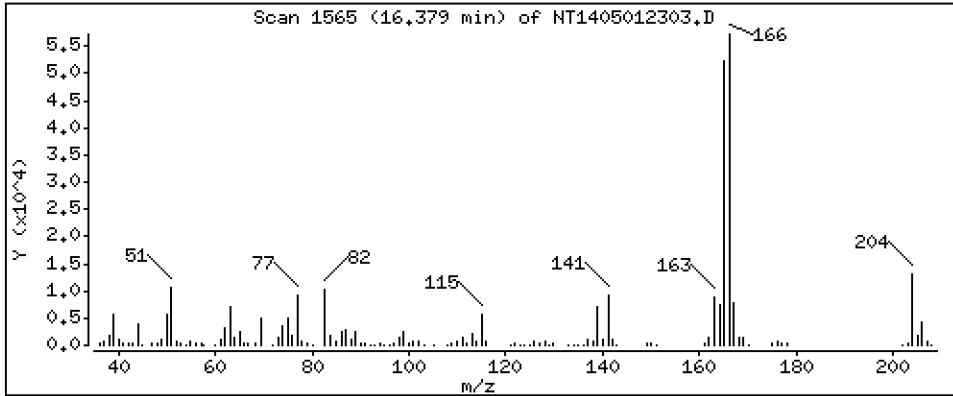
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

49 Fluorene

Concentration: 0.5018 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

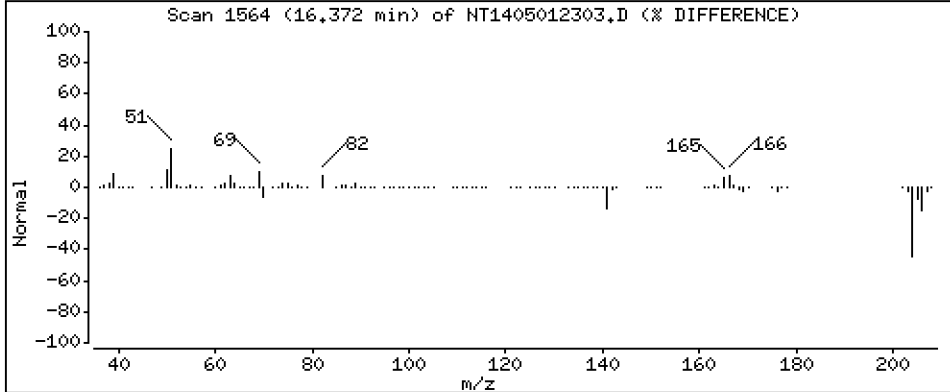
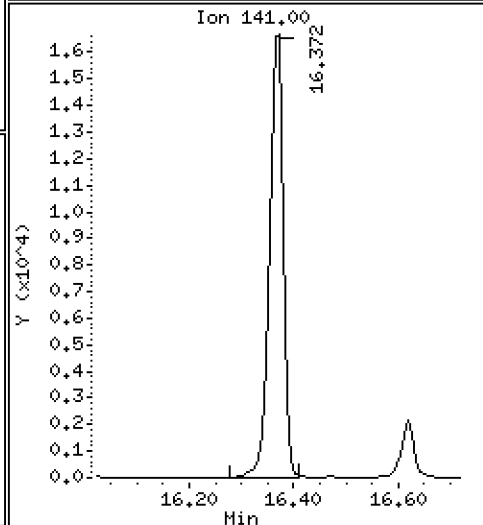
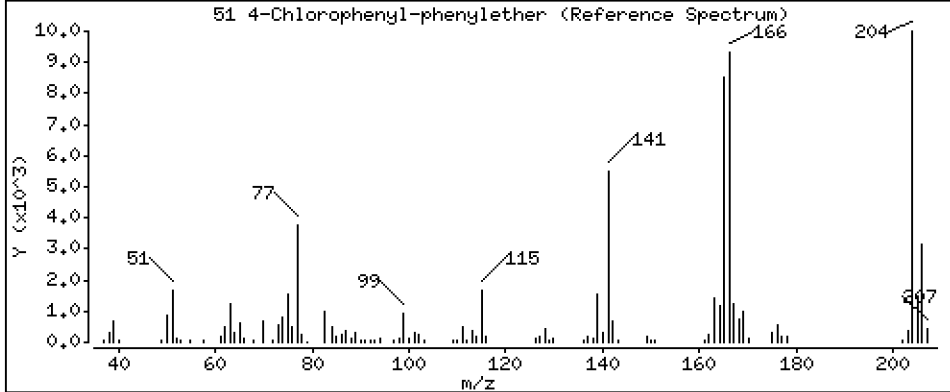
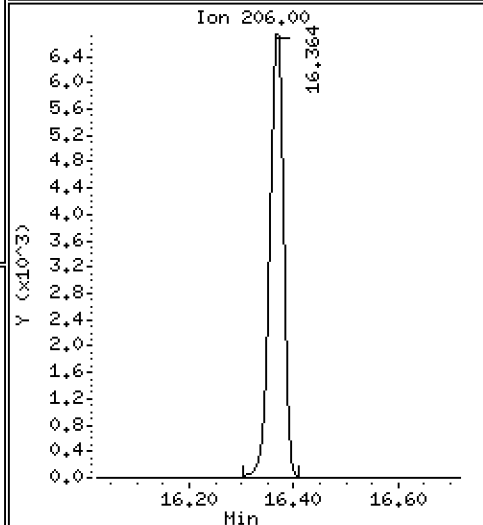
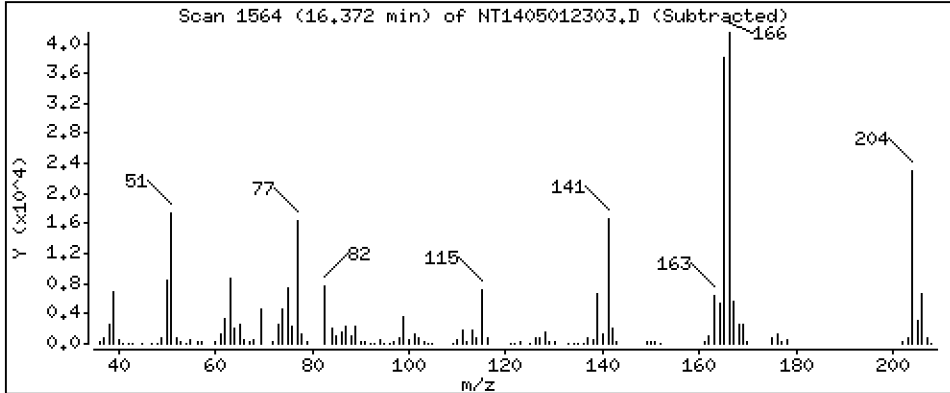
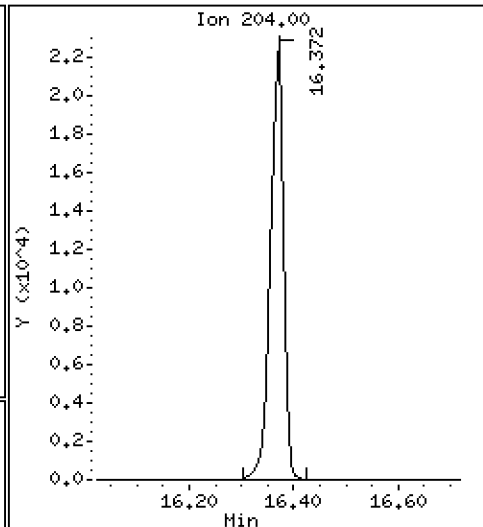
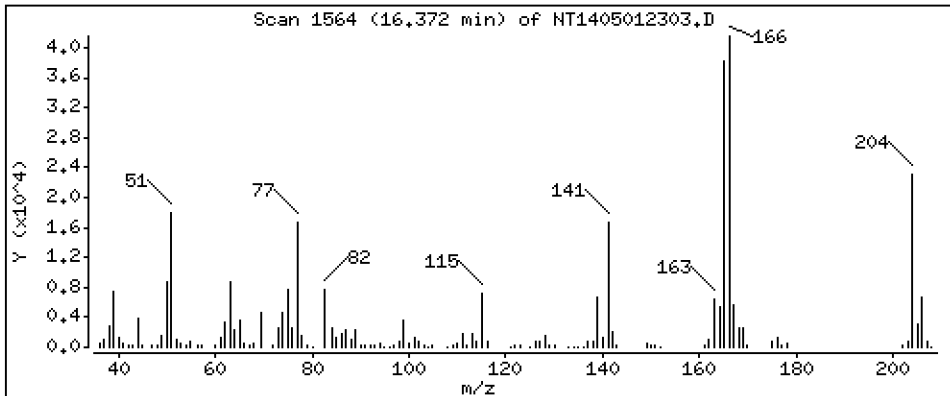
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 0,4383 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

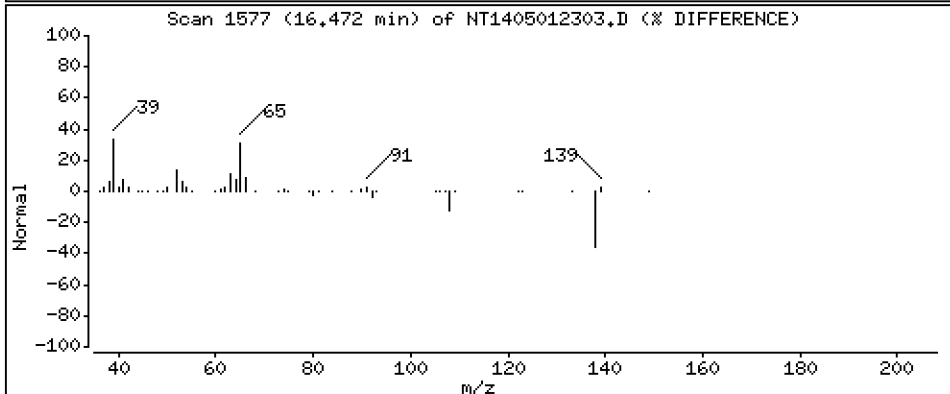
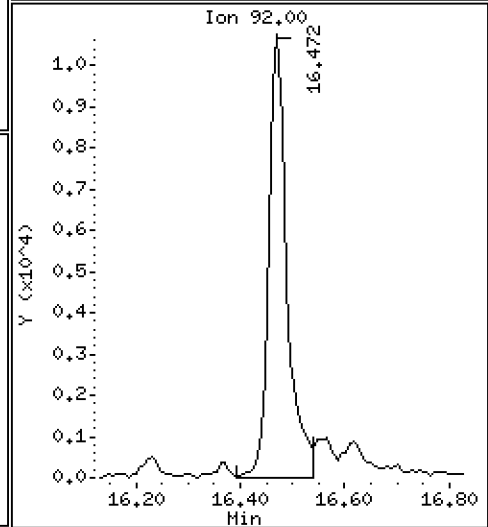
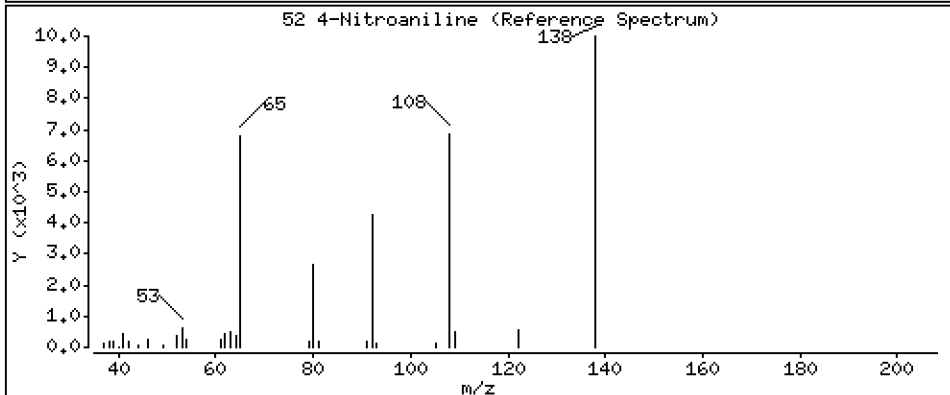
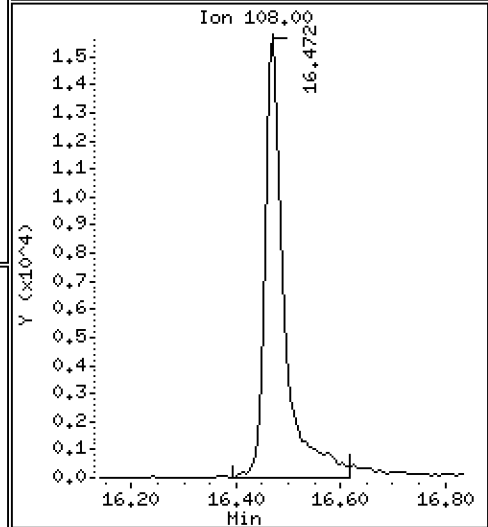
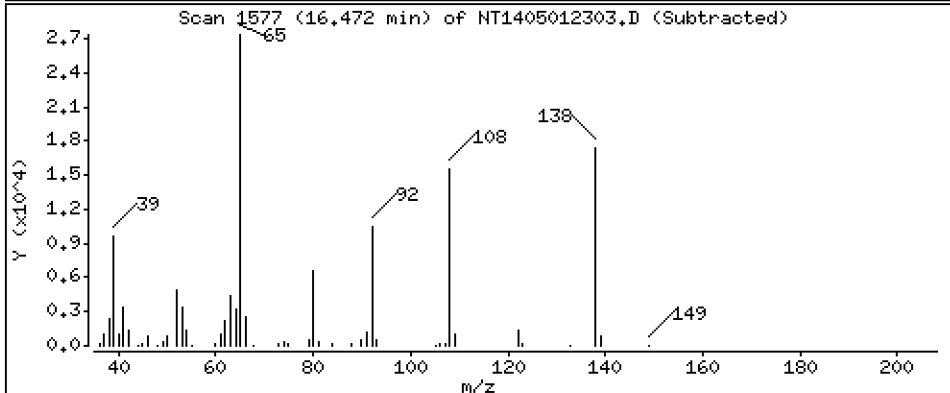
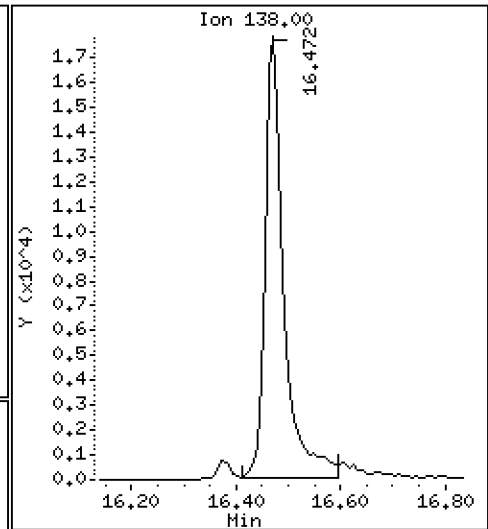
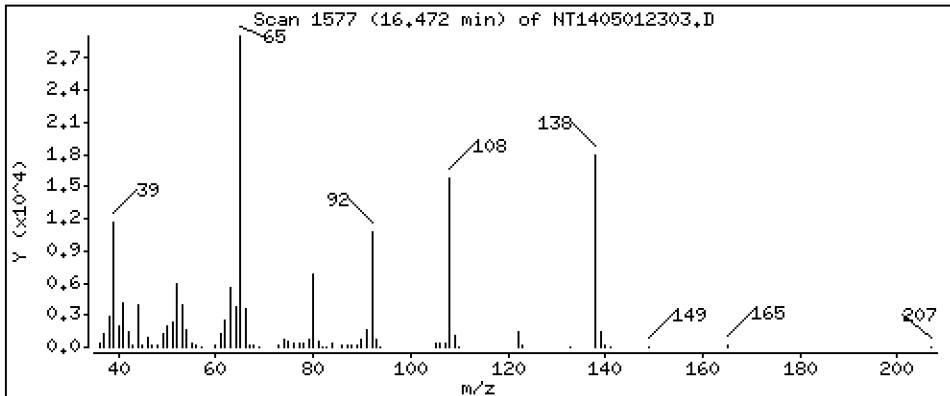
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

52 4-Nitroaniline

Concentration: 0.9597 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

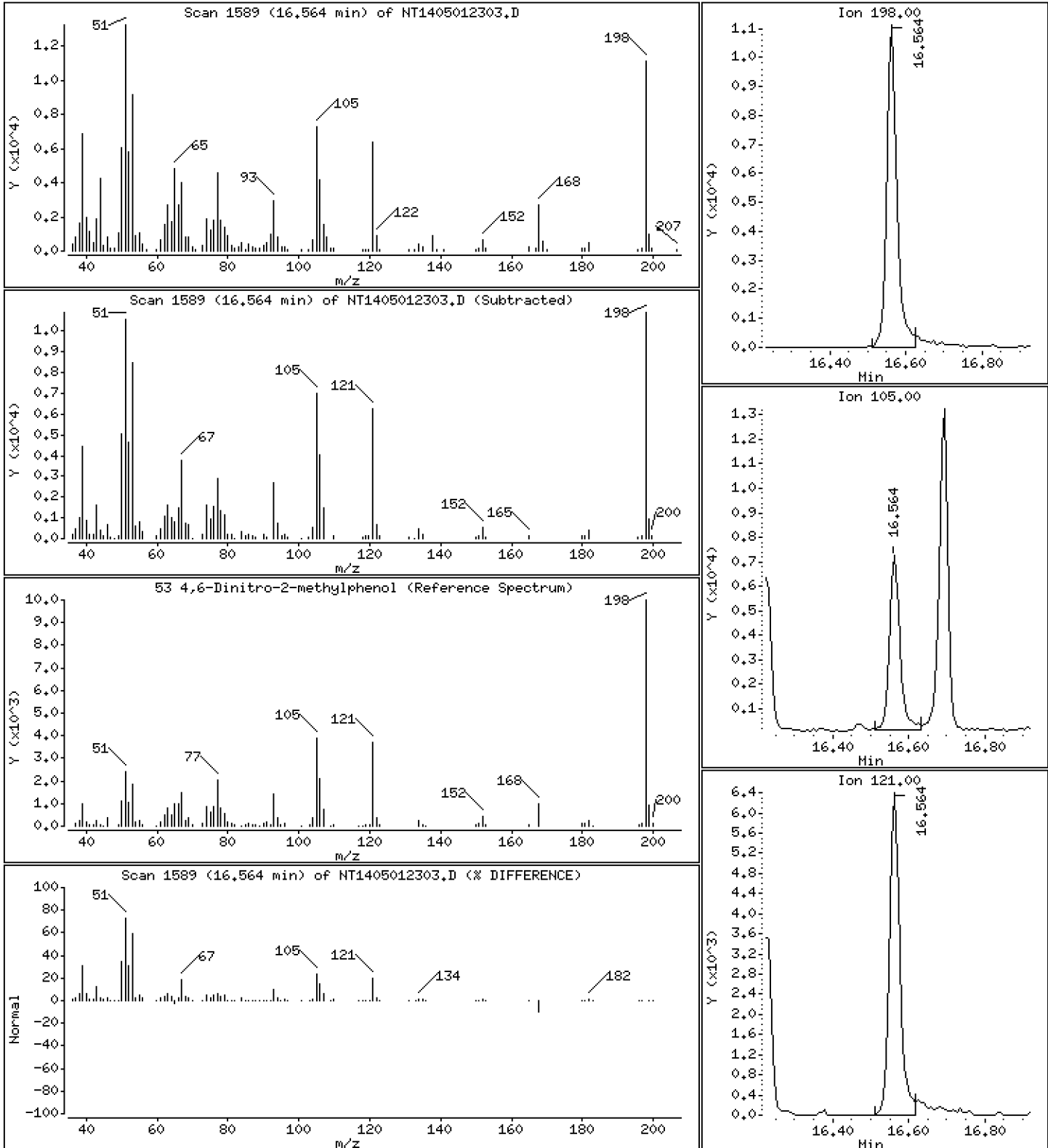
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

53 4,6-Dinitro-2-methylphenol

Concentration: 0.7384 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

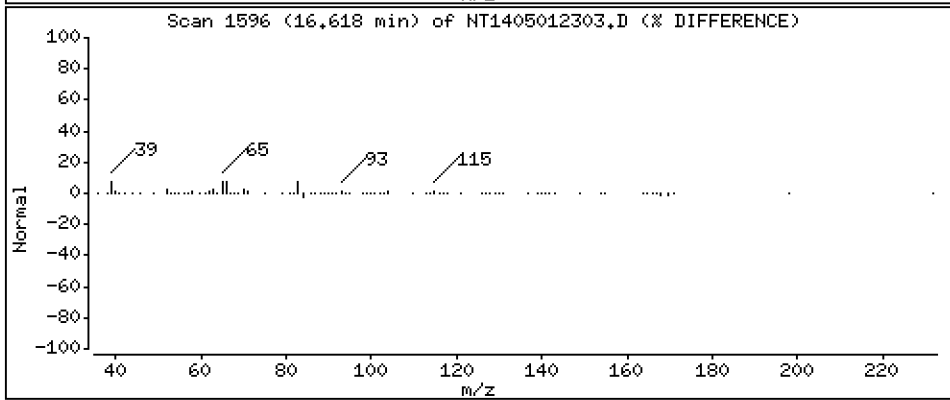
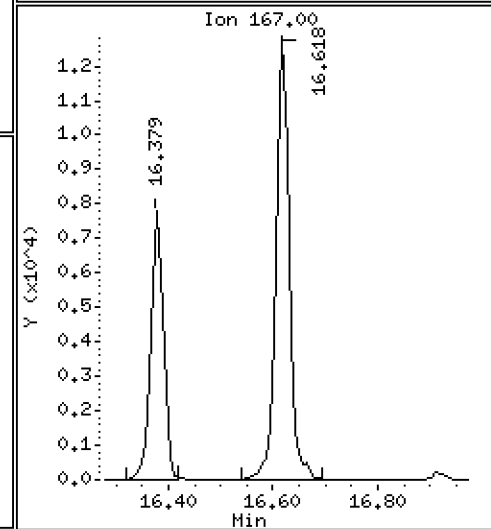
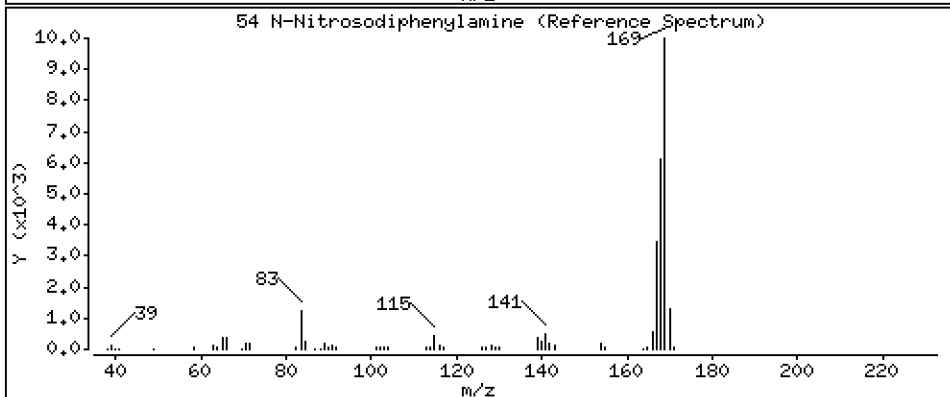
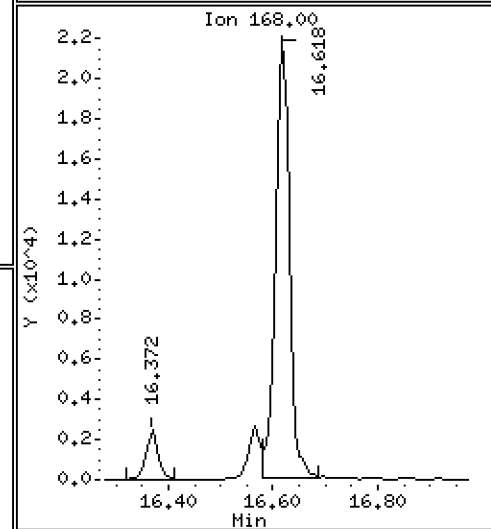
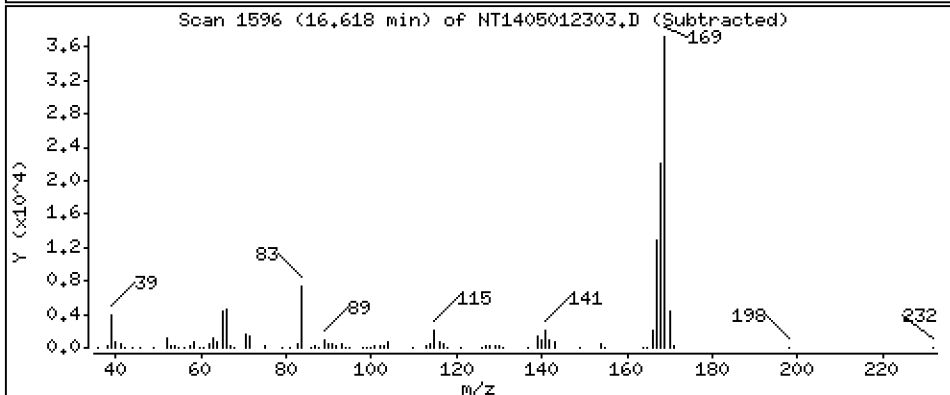
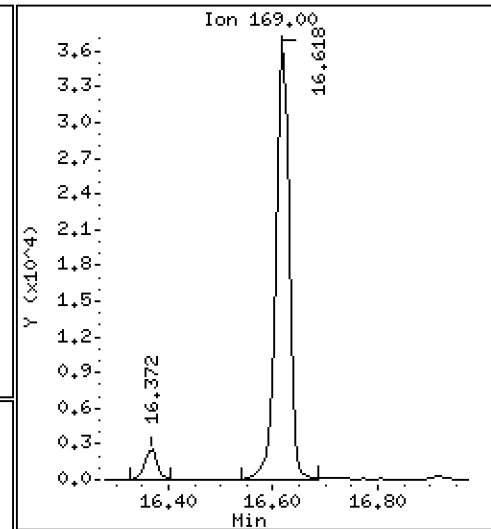
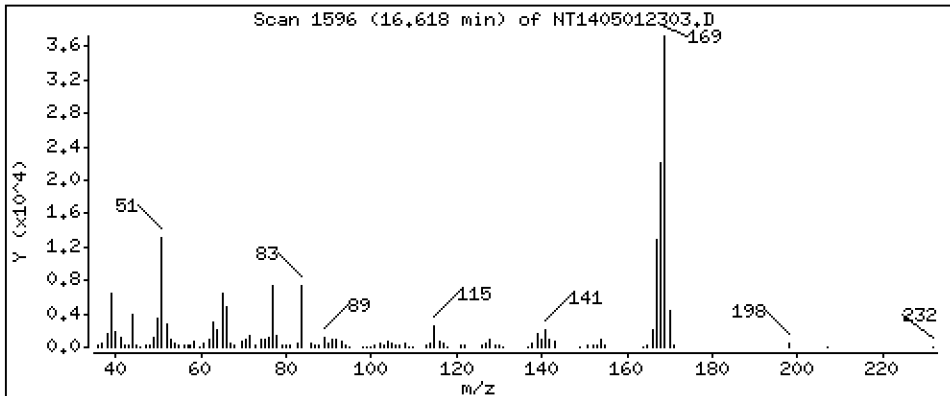
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 0,4929 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

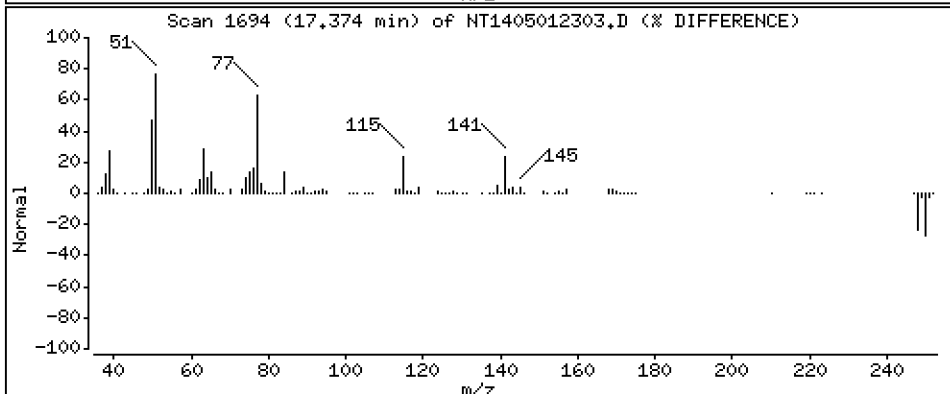
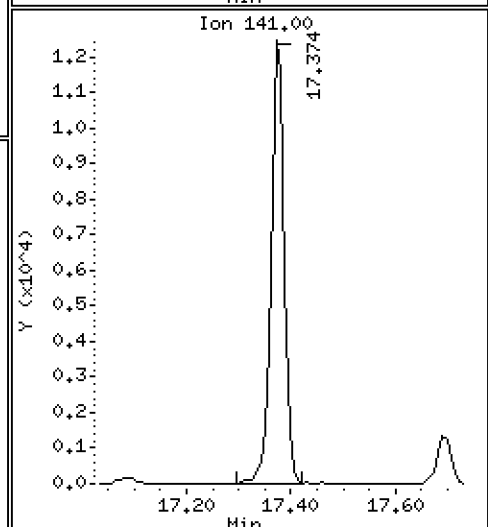
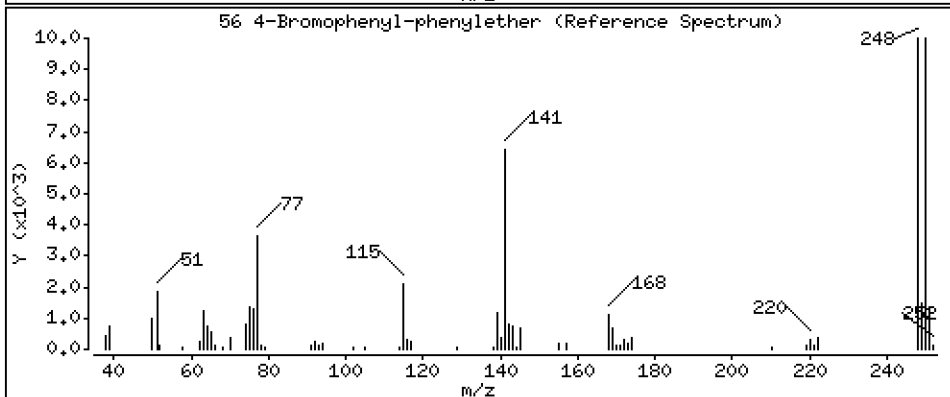
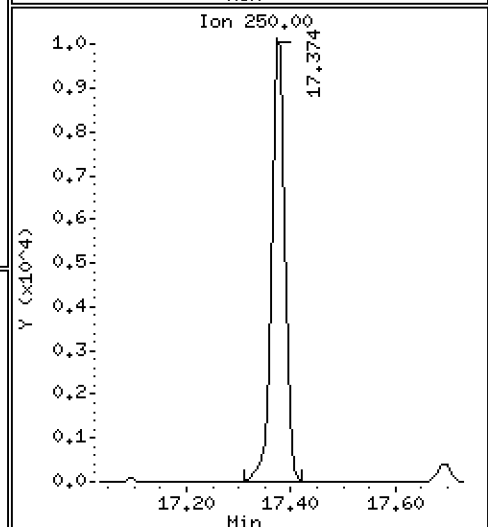
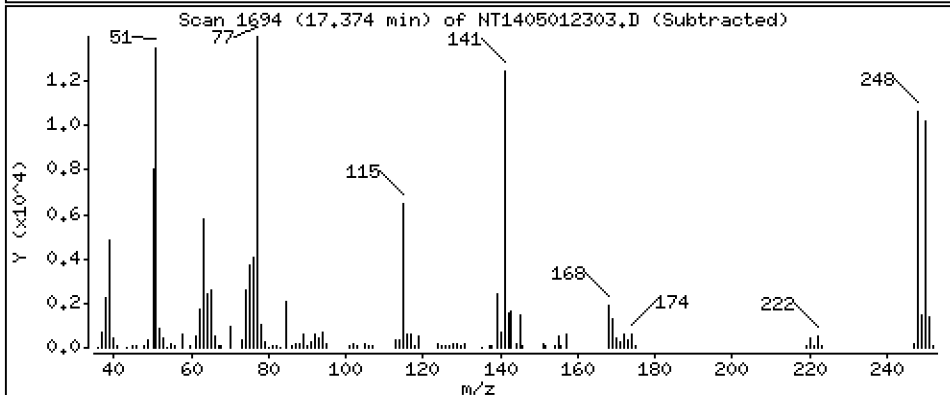
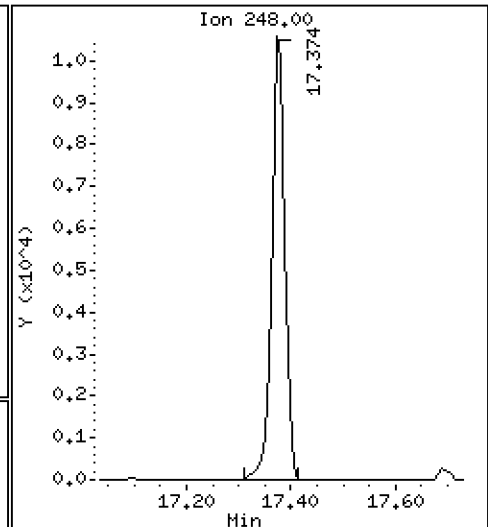
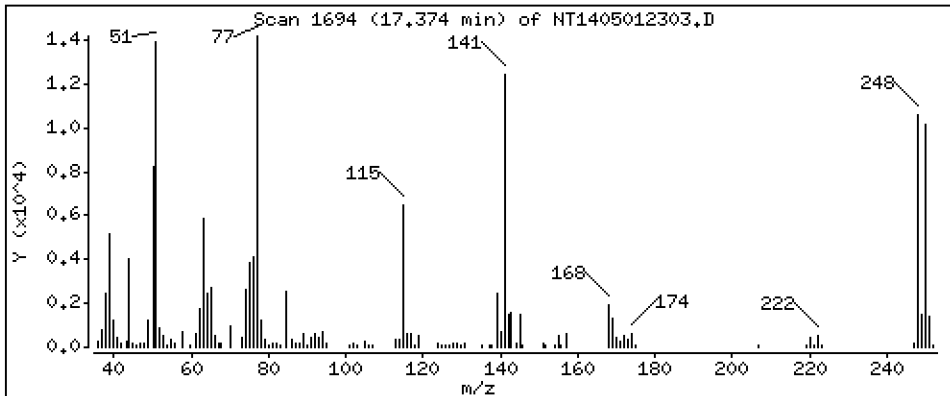
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

Concentration: 0,4422 ug/mL

56 4-Bromophenyl-phenylether



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

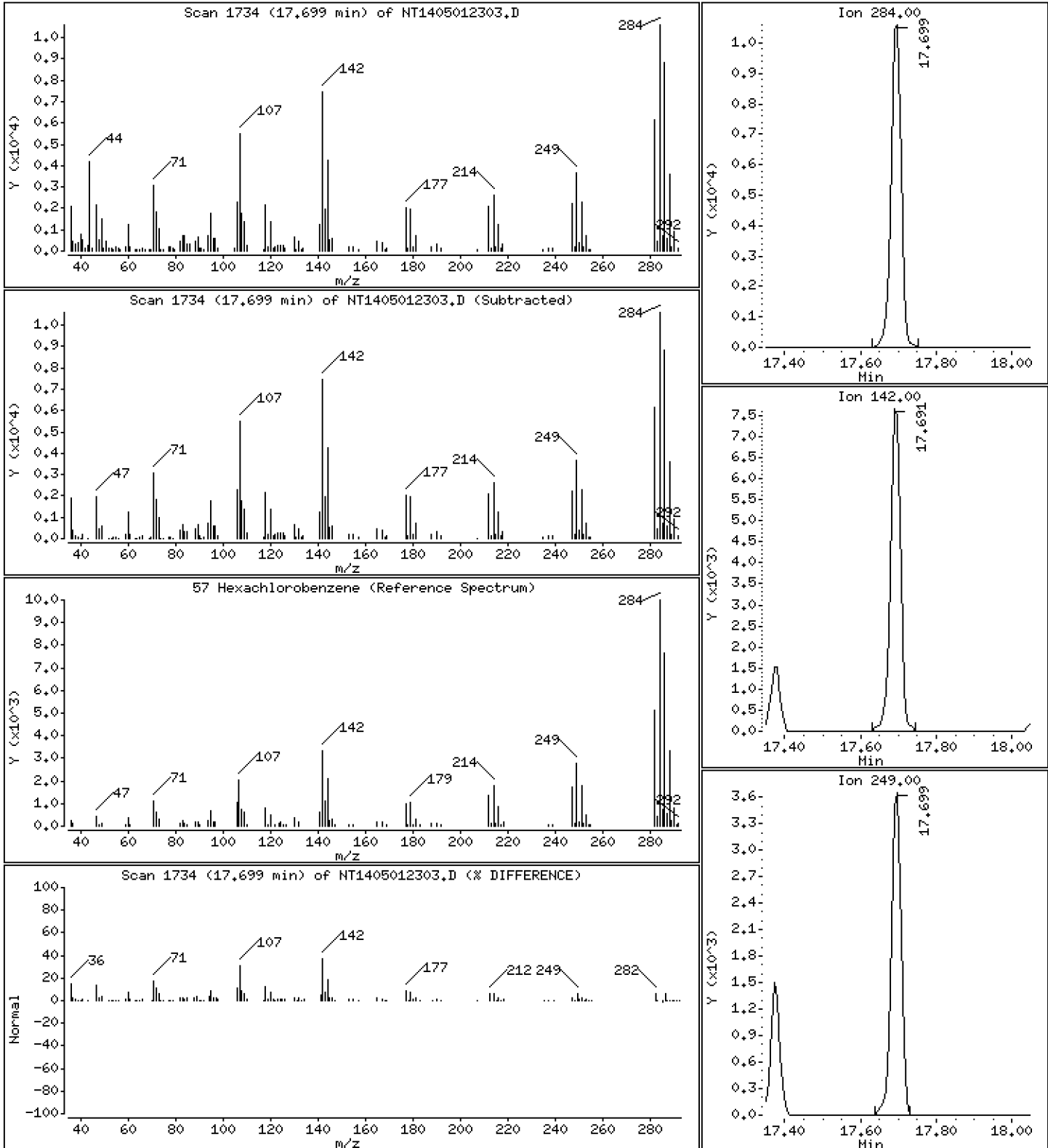
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

57 Hexachlorobenzene

Concentration: 0.4527 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

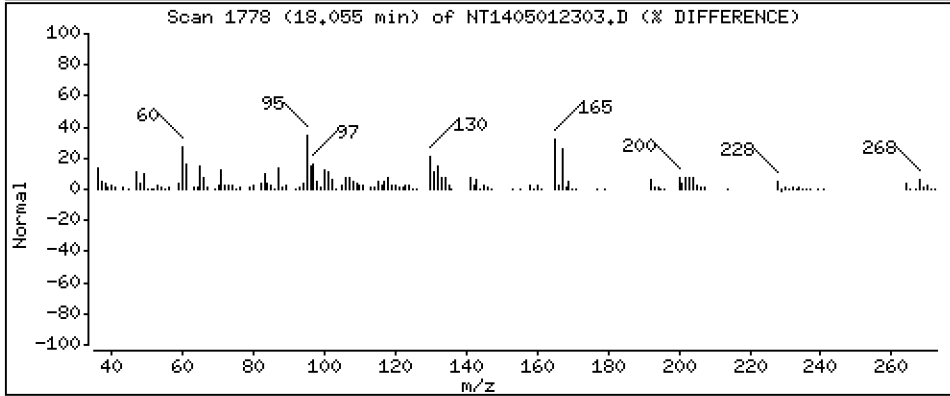
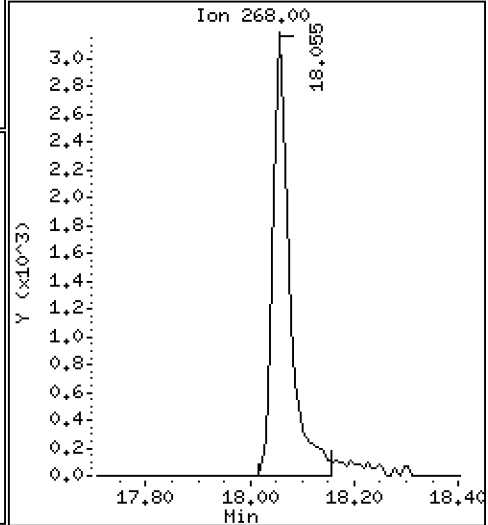
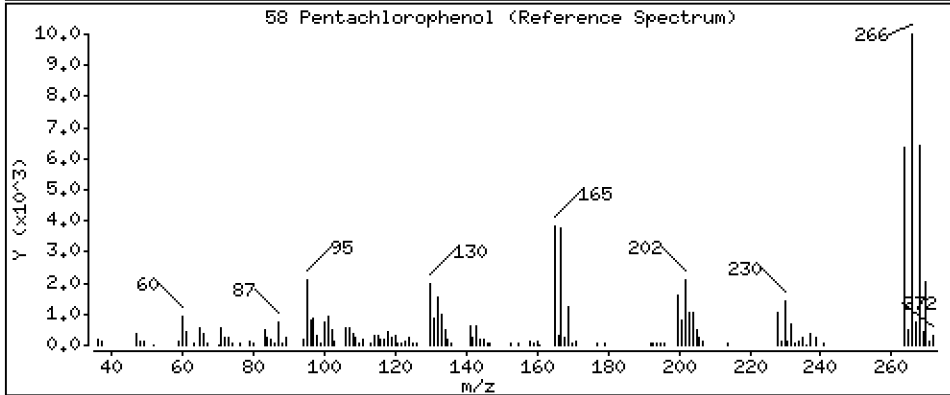
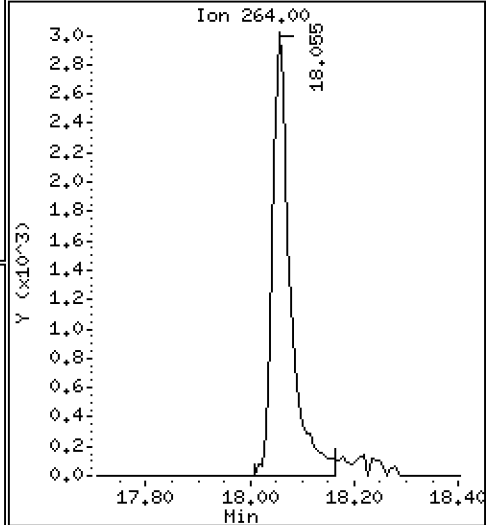
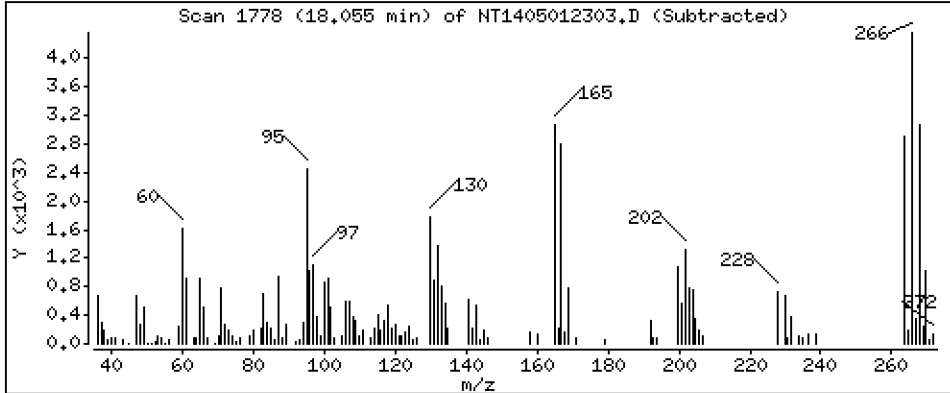
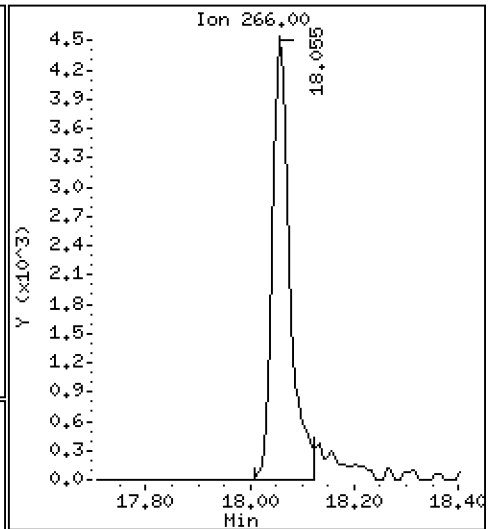
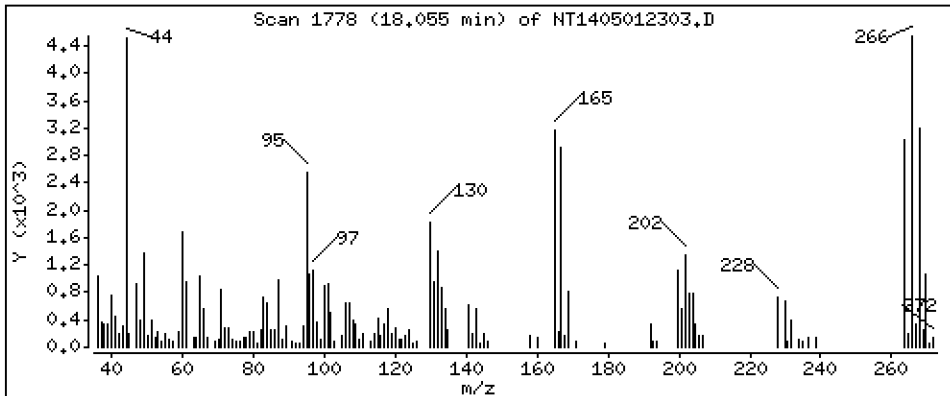
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 0,3906 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

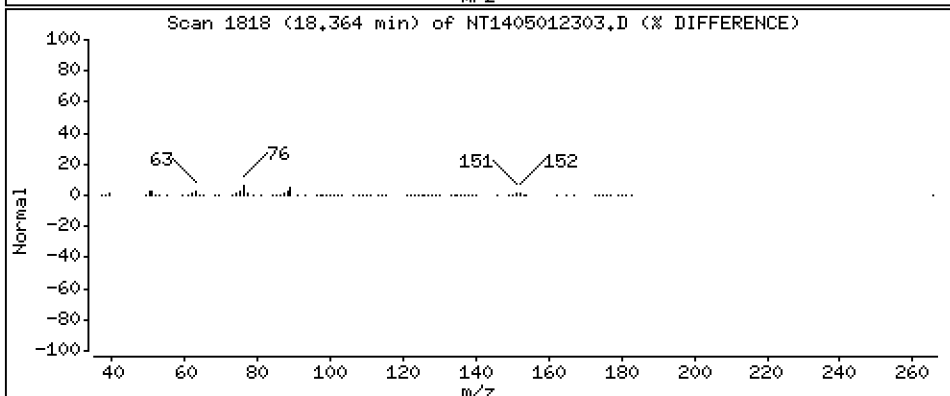
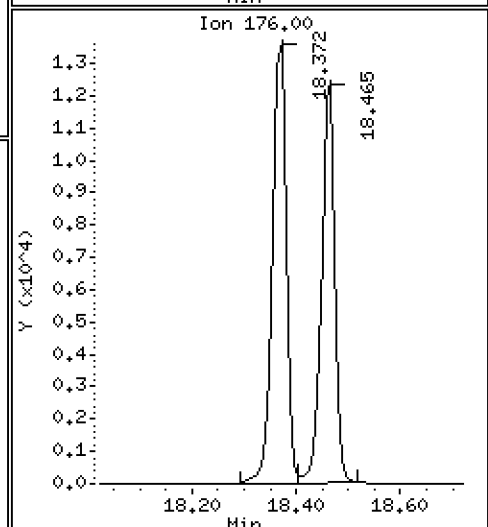
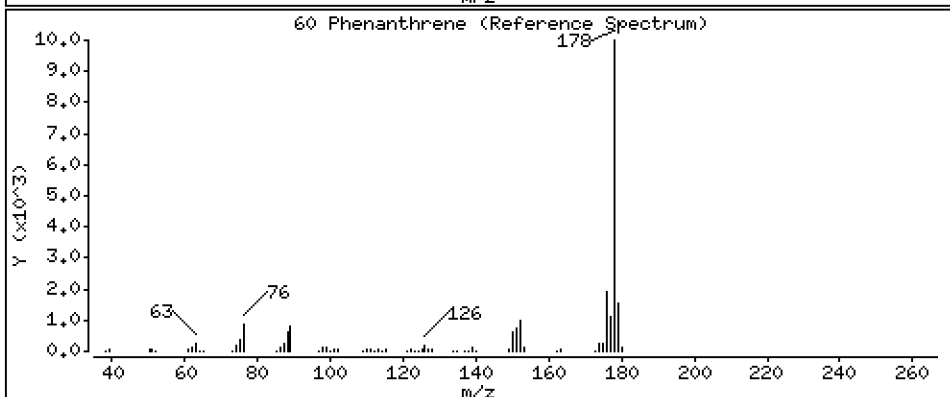
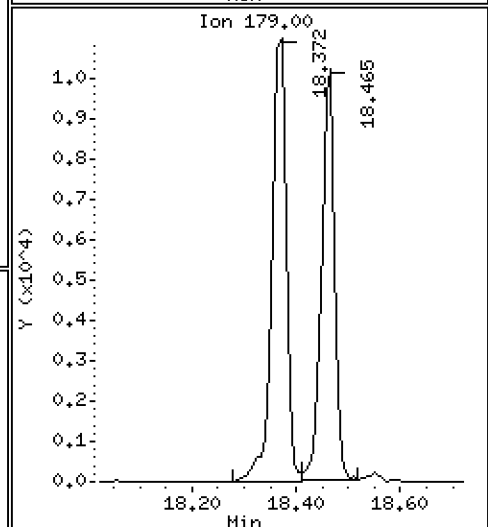
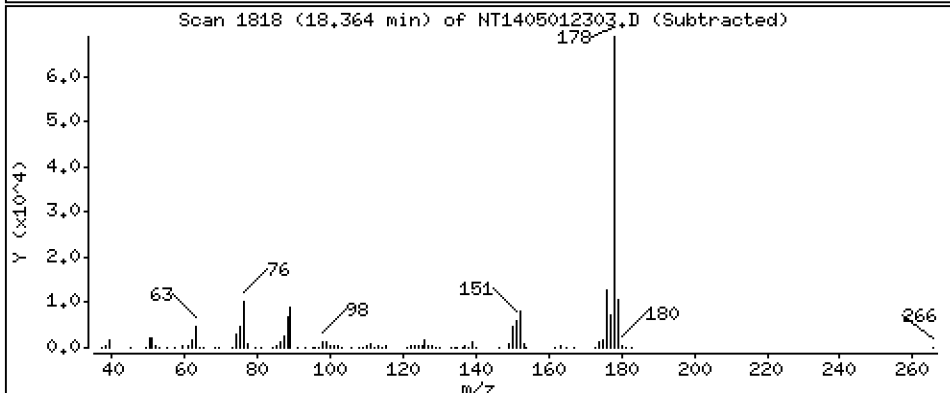
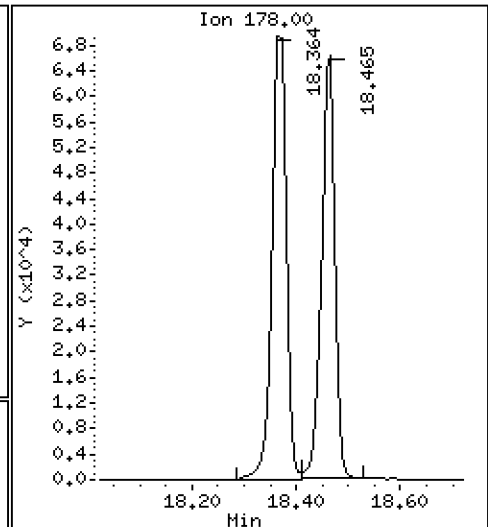
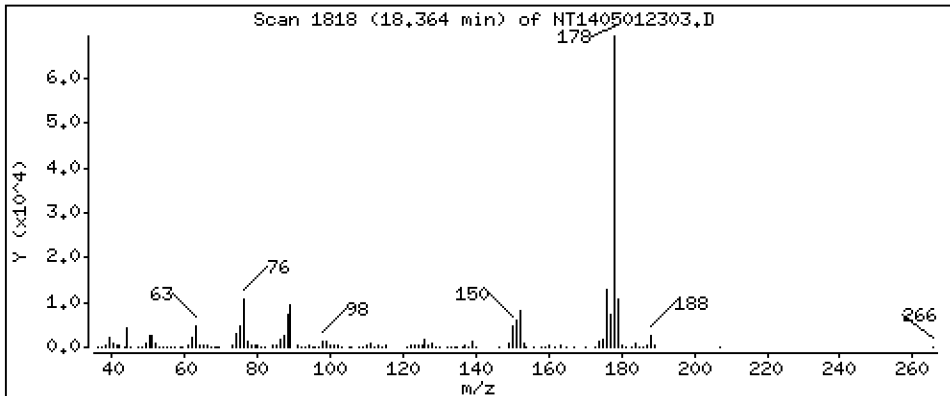
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 0,5023 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

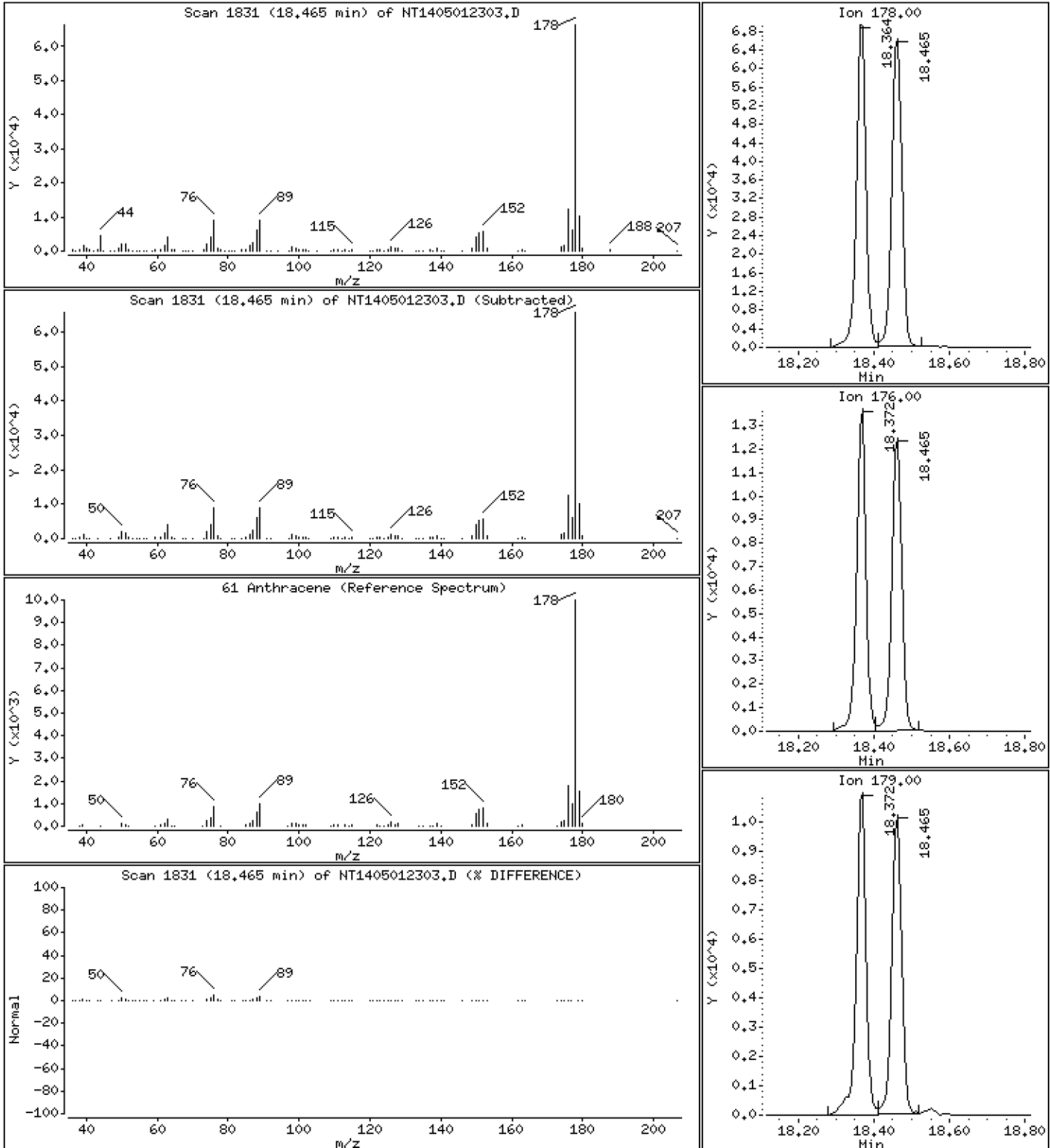
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 0,4862 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

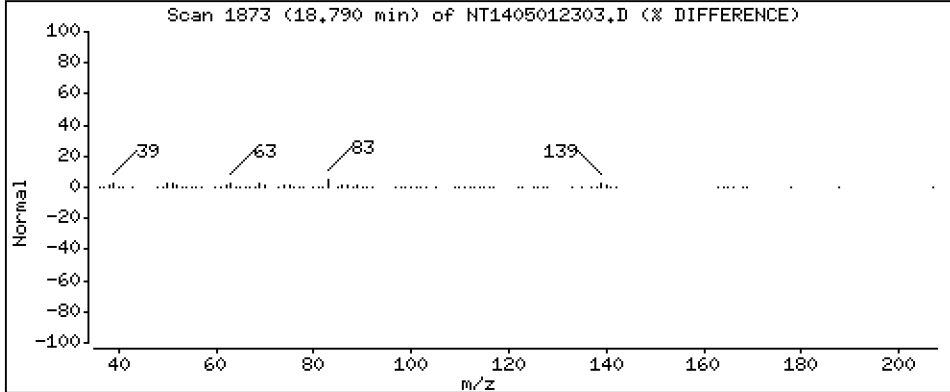
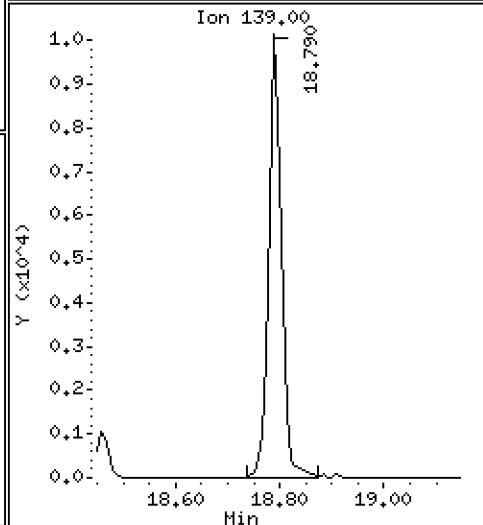
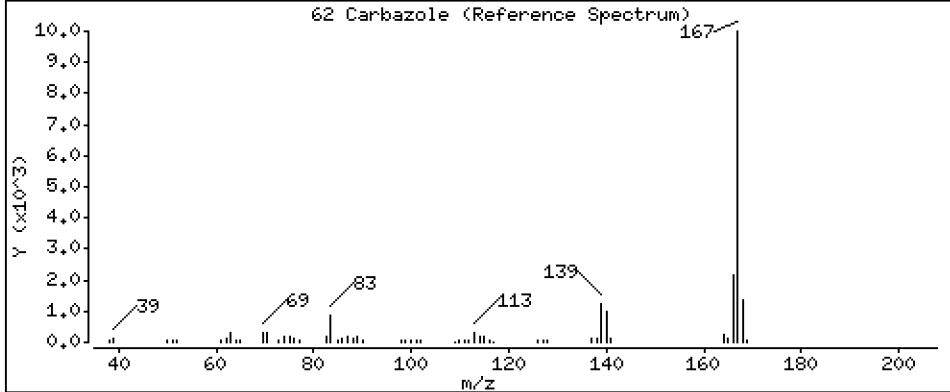
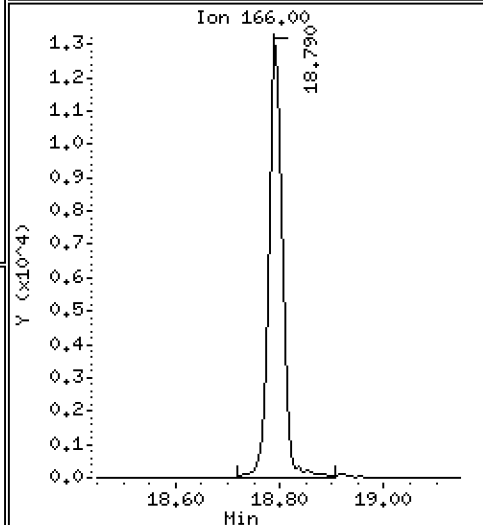
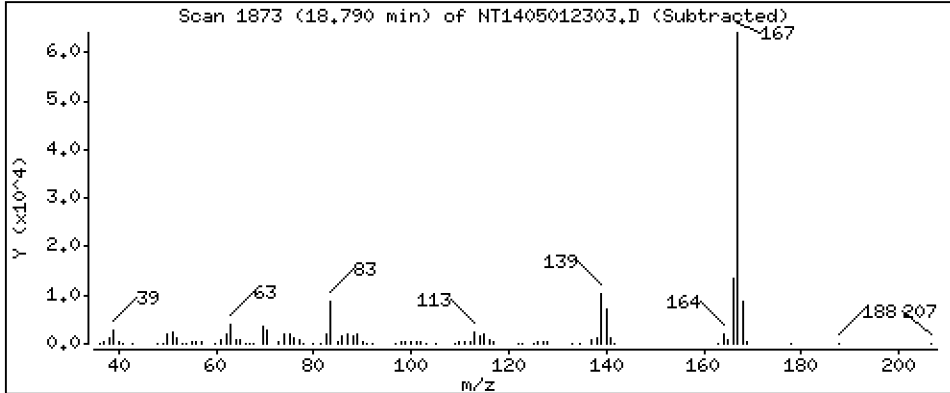
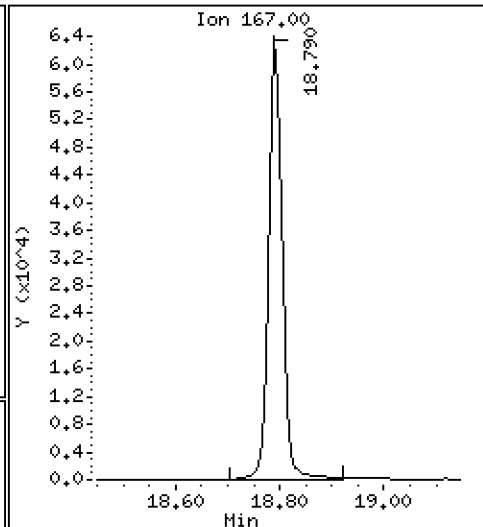
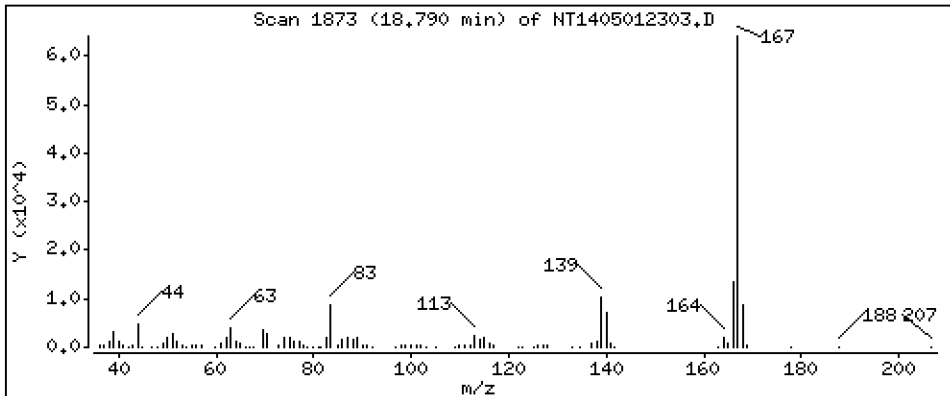
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 0,5024 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

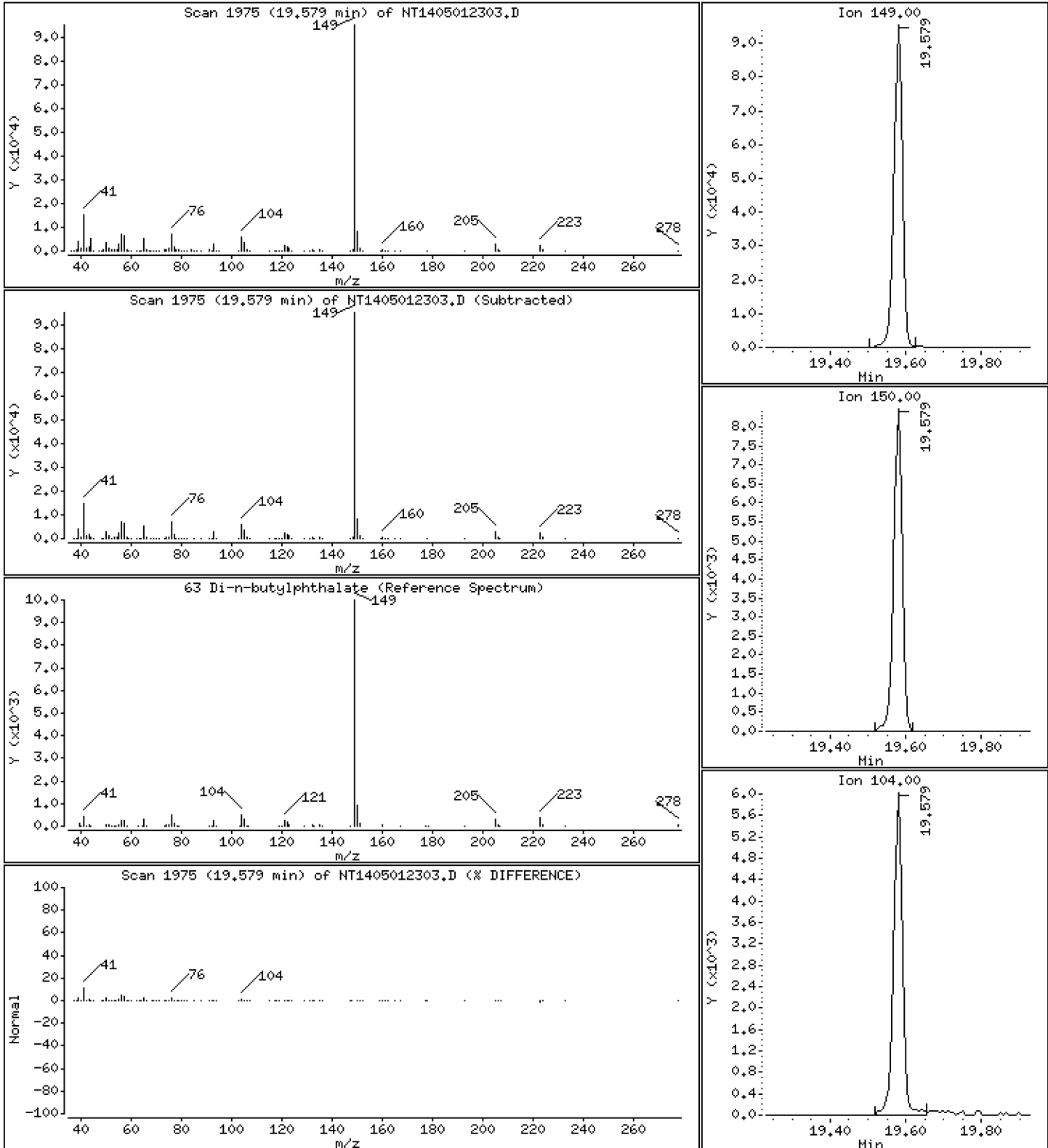
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 0,4099 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

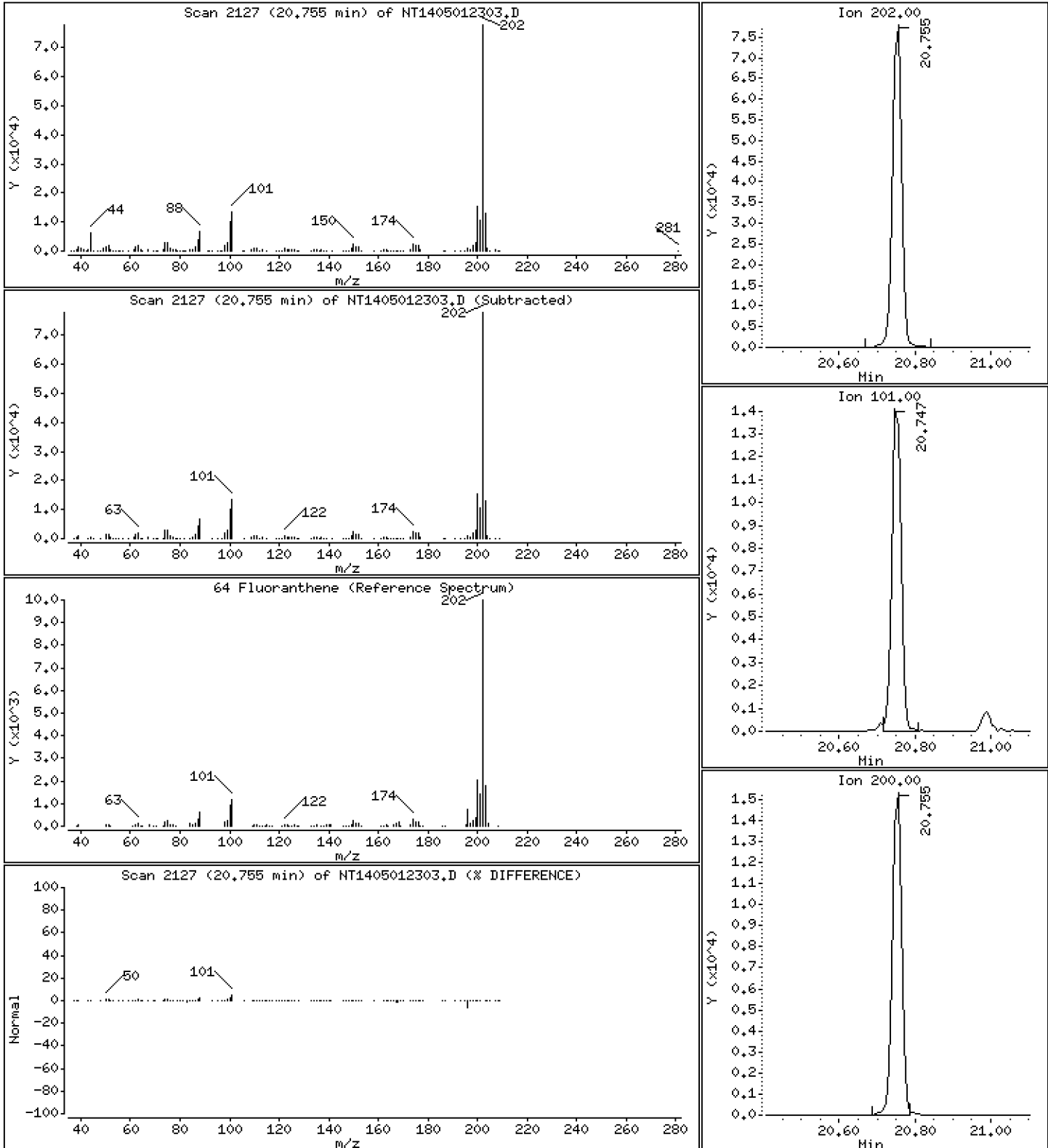
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 0,4524 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

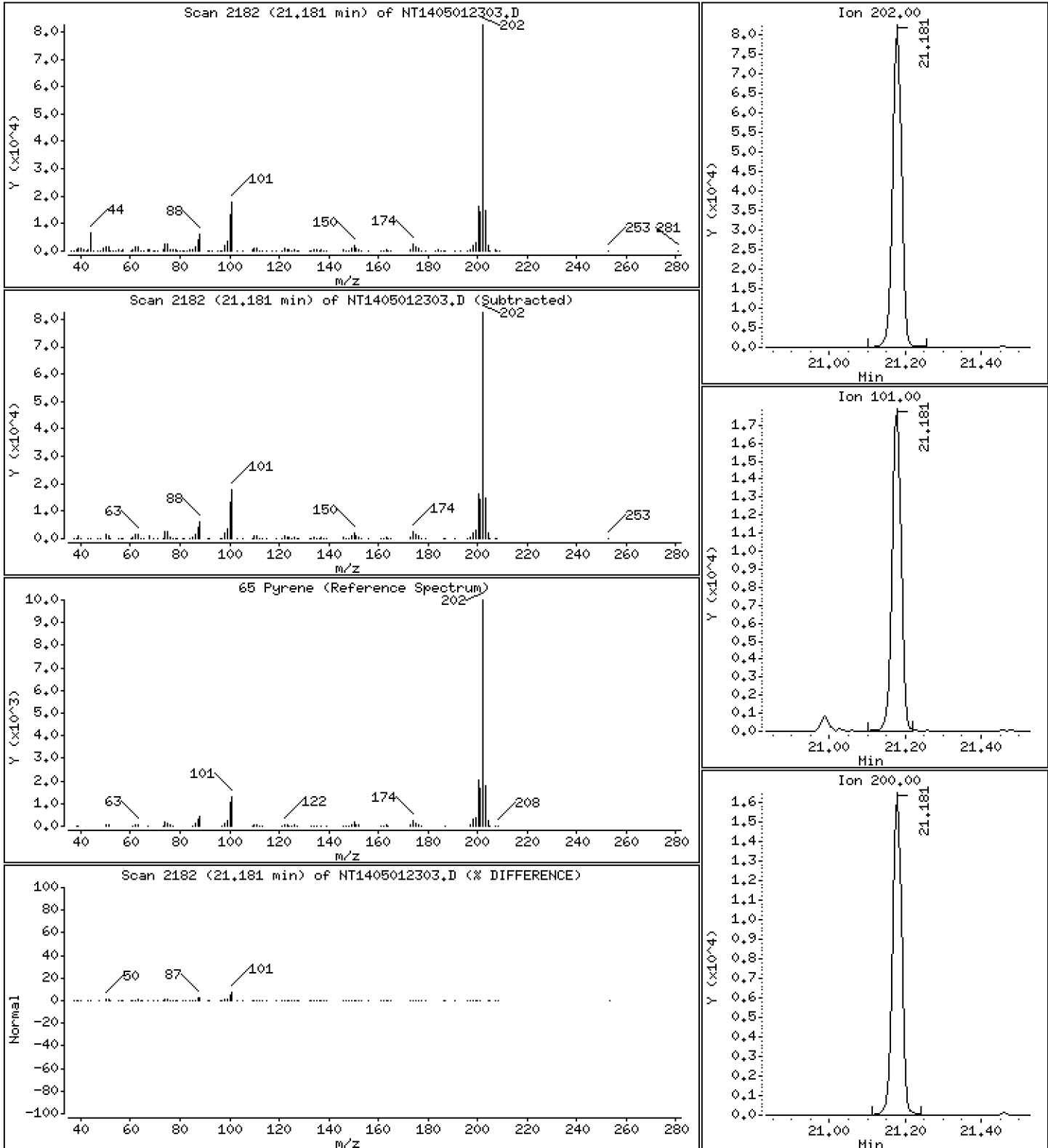
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 0,4533 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

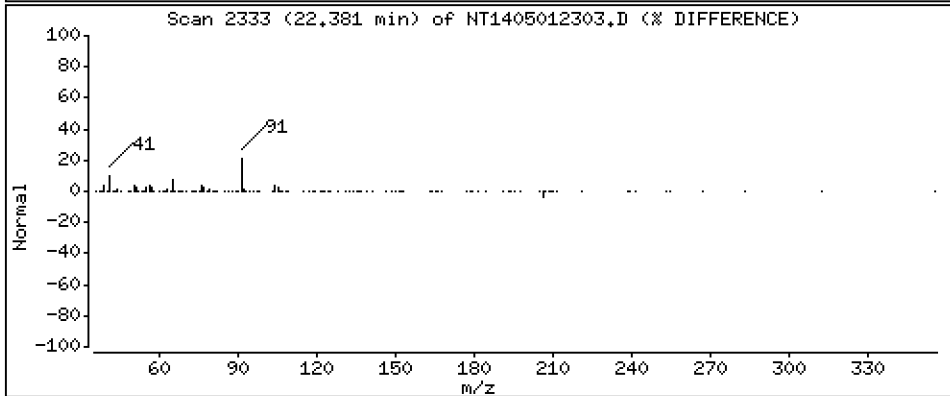
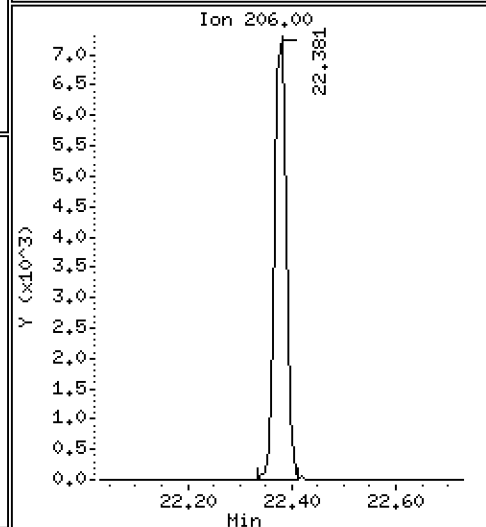
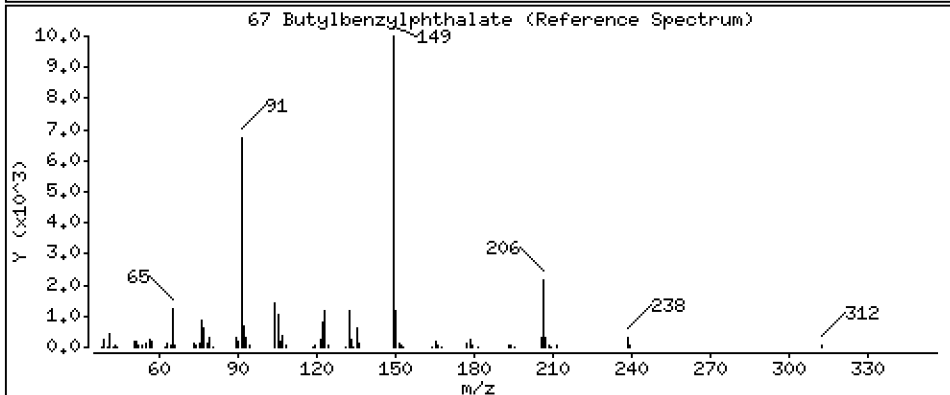
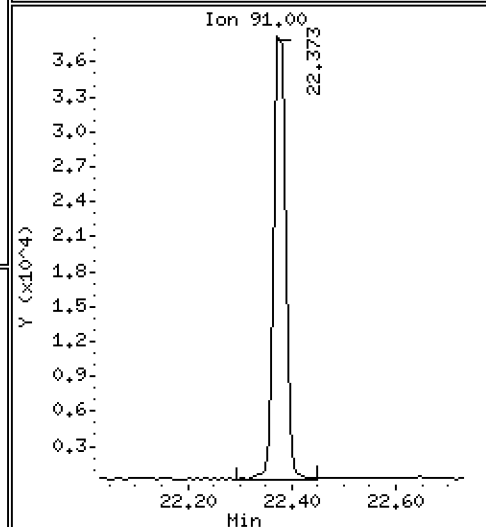
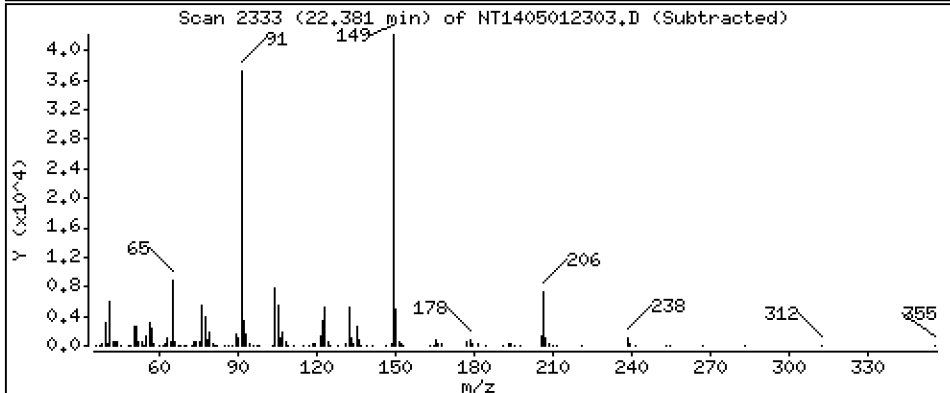
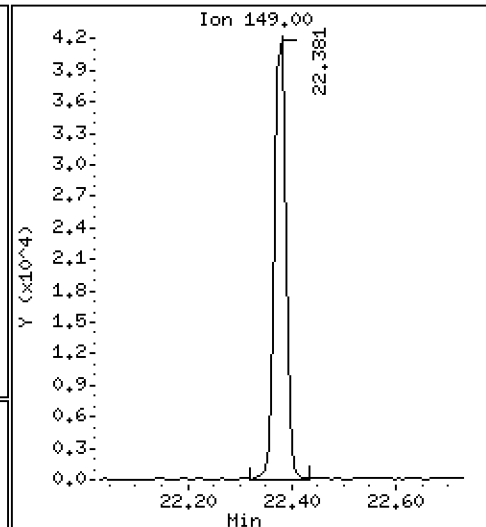
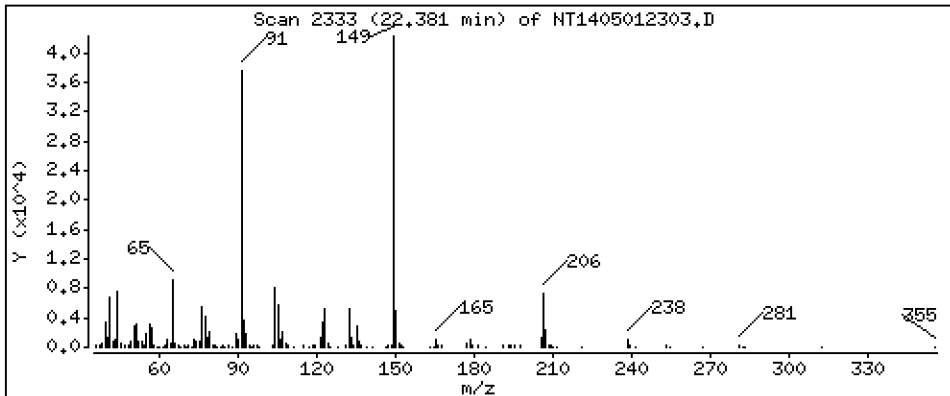
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,3307 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

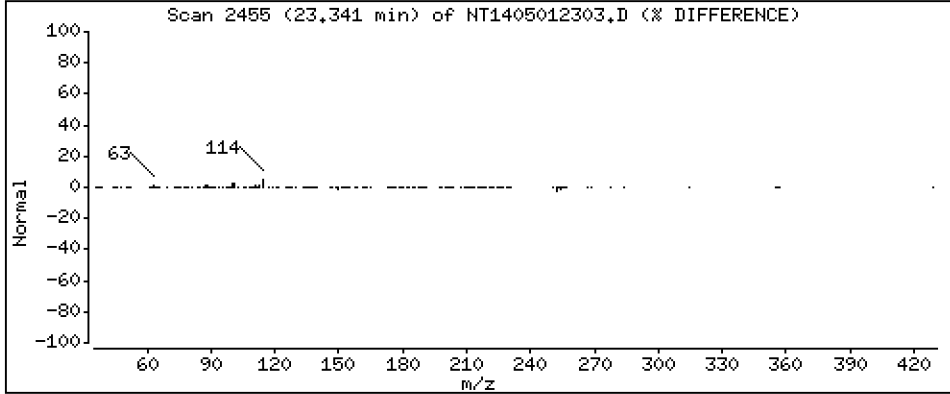
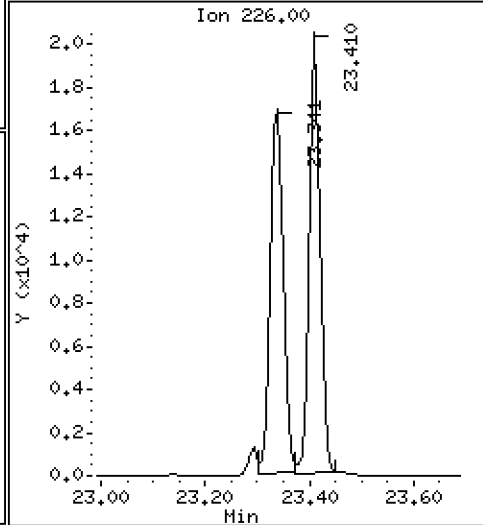
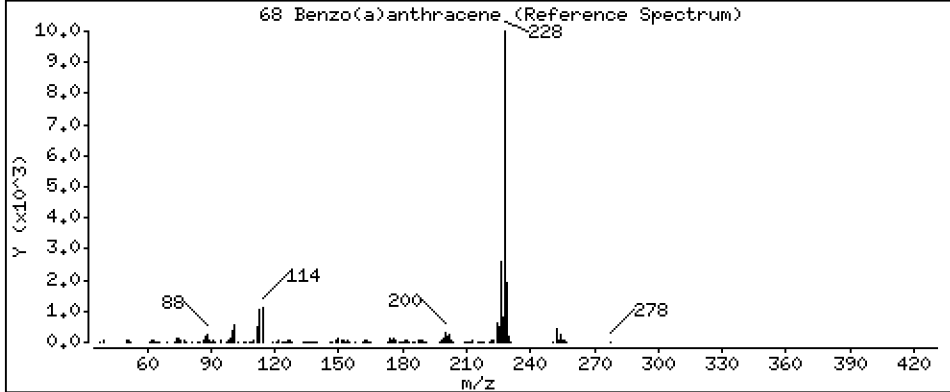
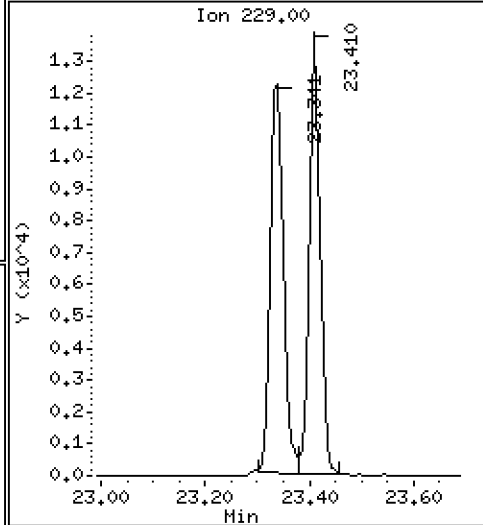
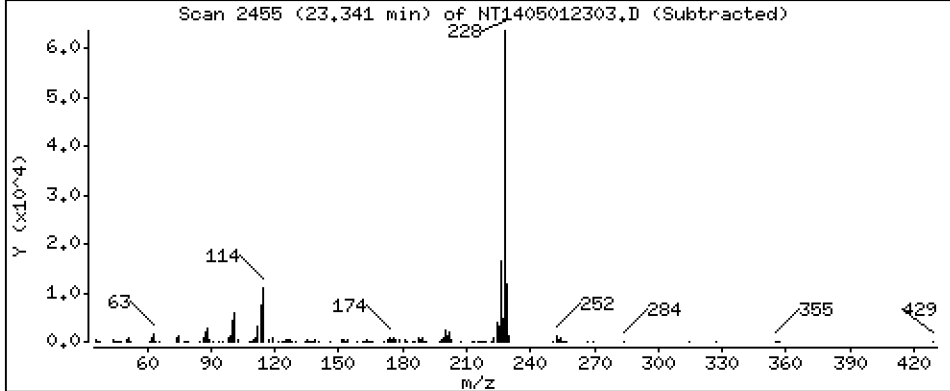
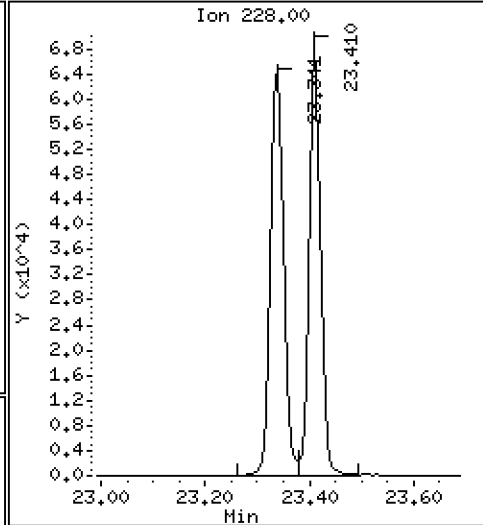
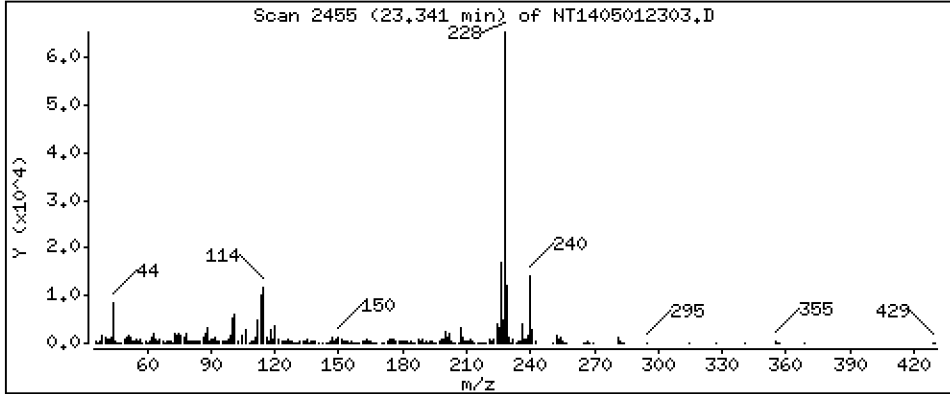
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 0,5188 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

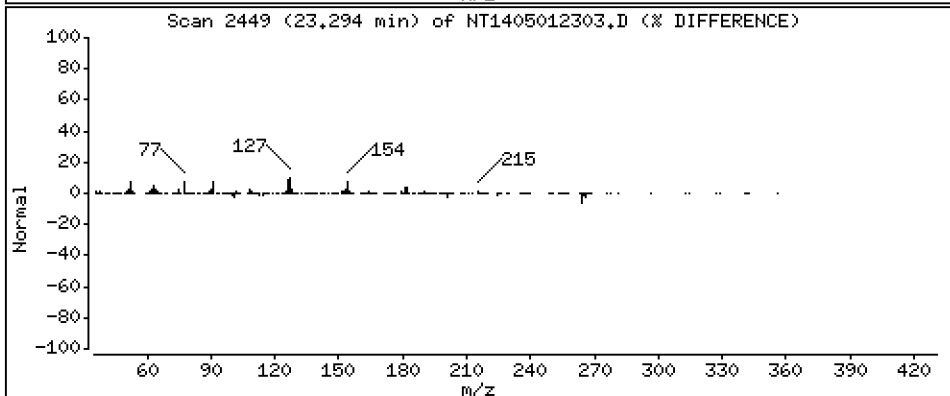
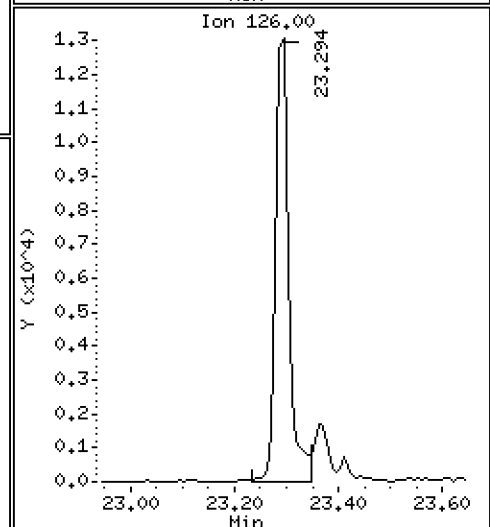
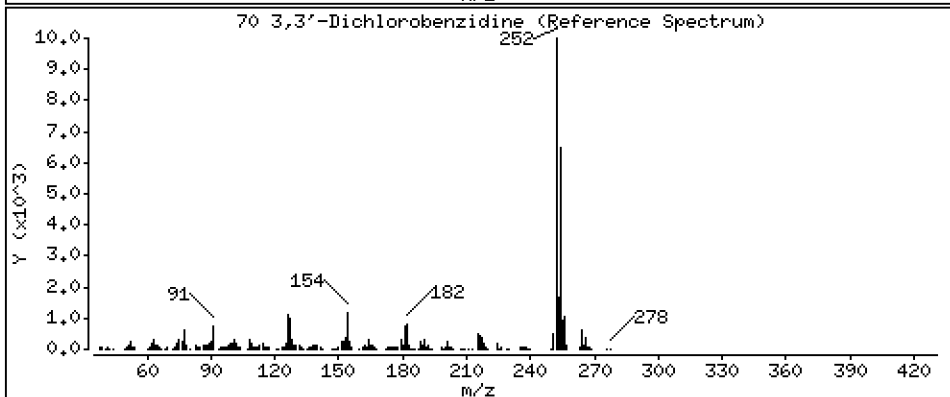
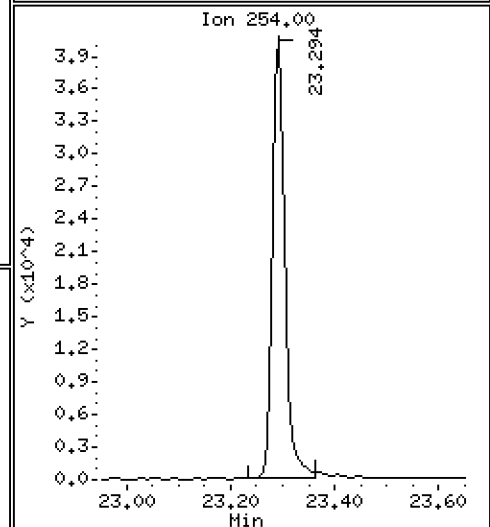
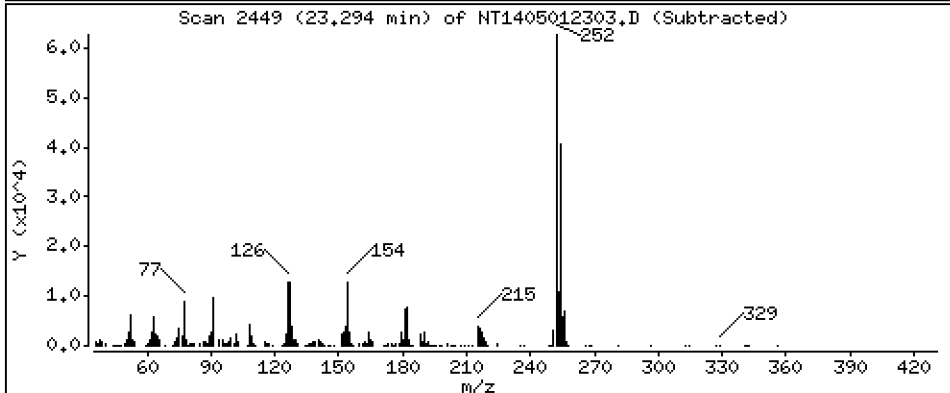
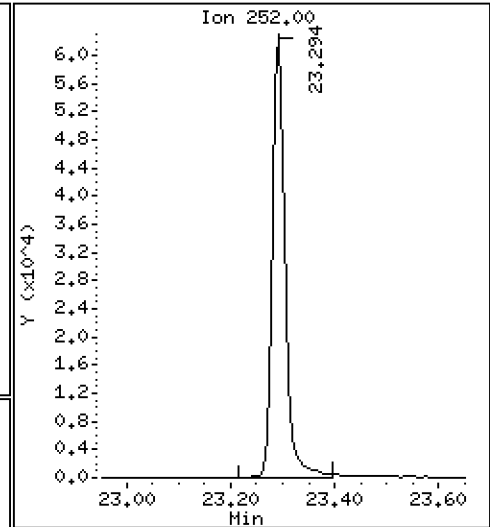
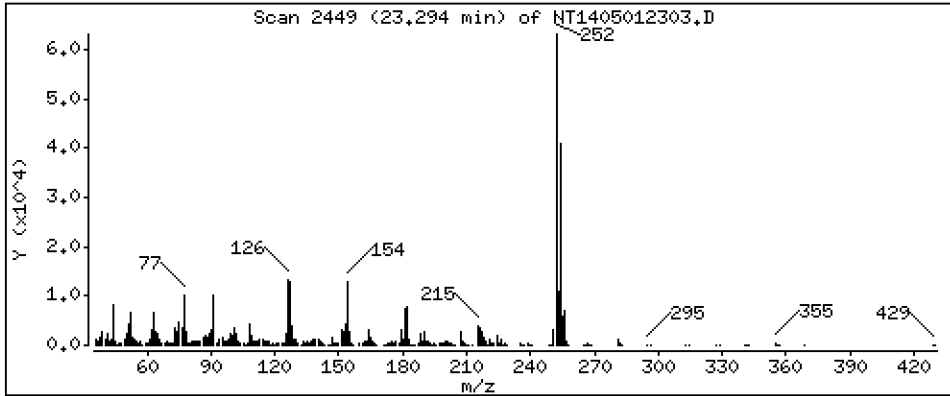
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 1,495 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

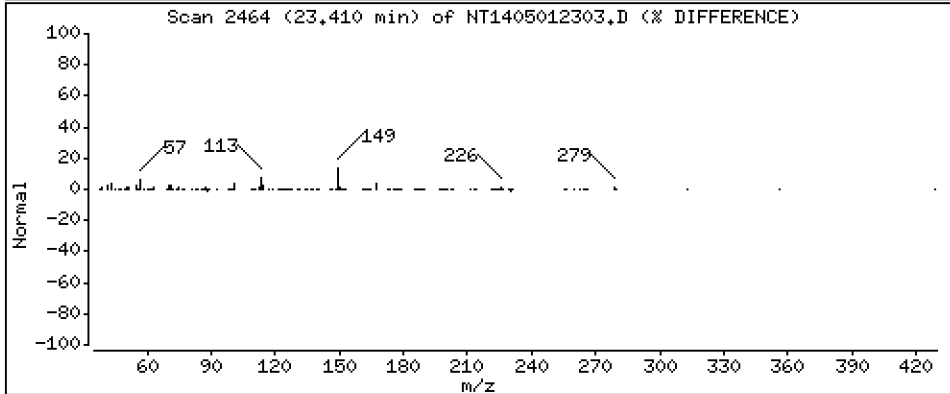
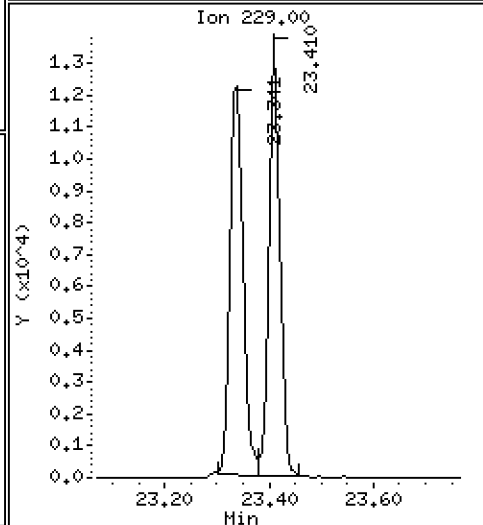
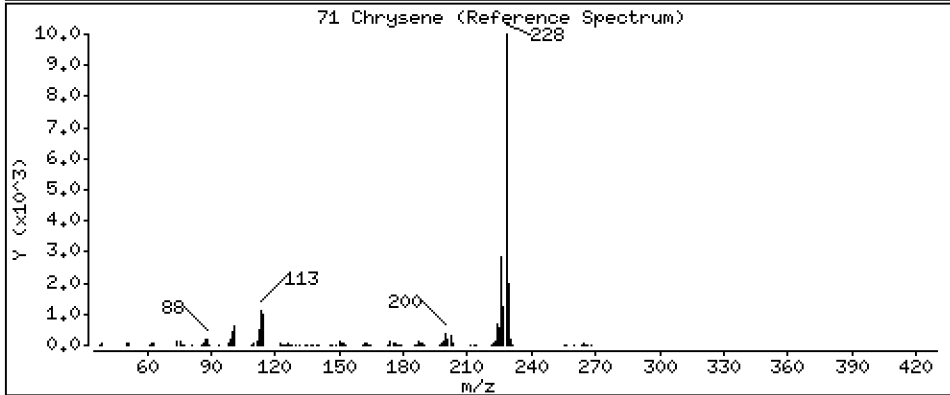
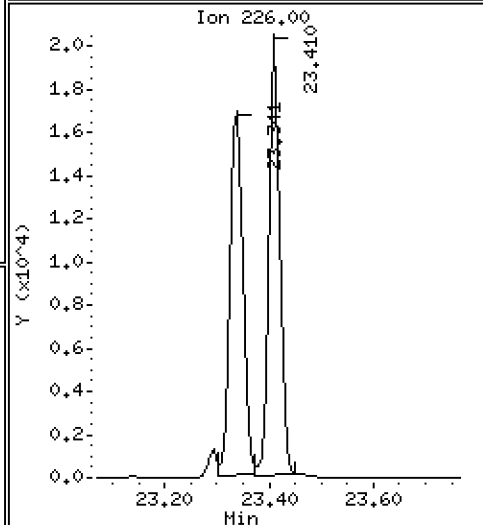
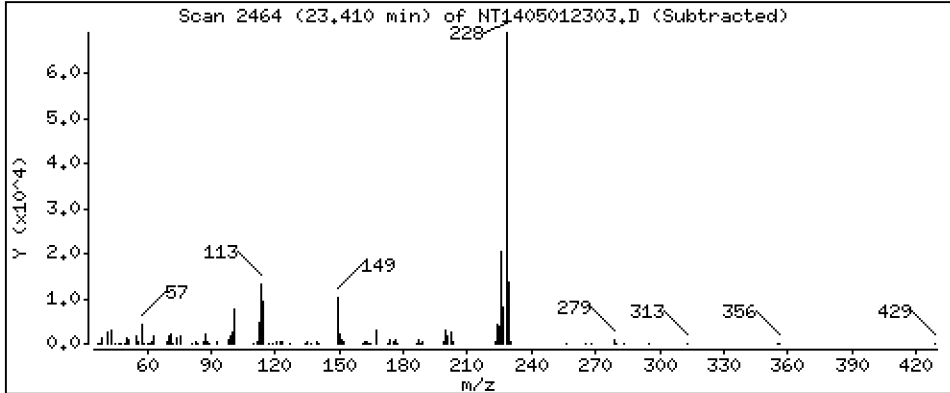
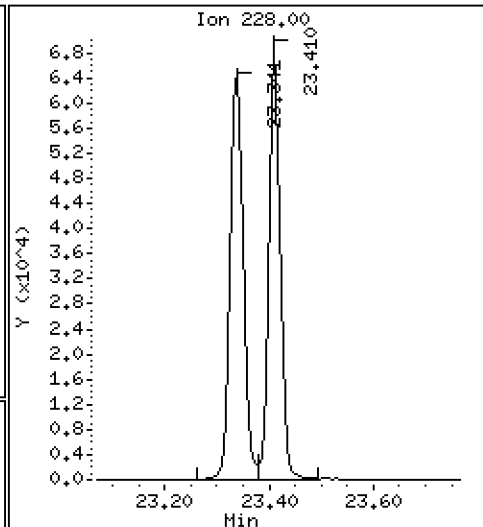
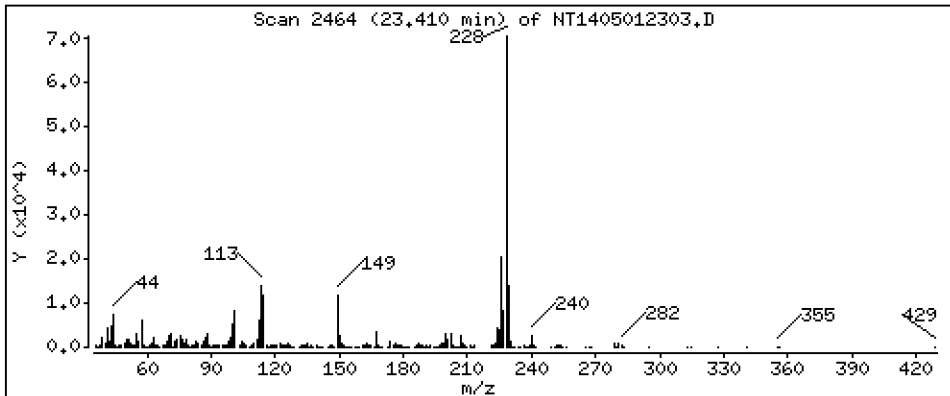
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 0,5079 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

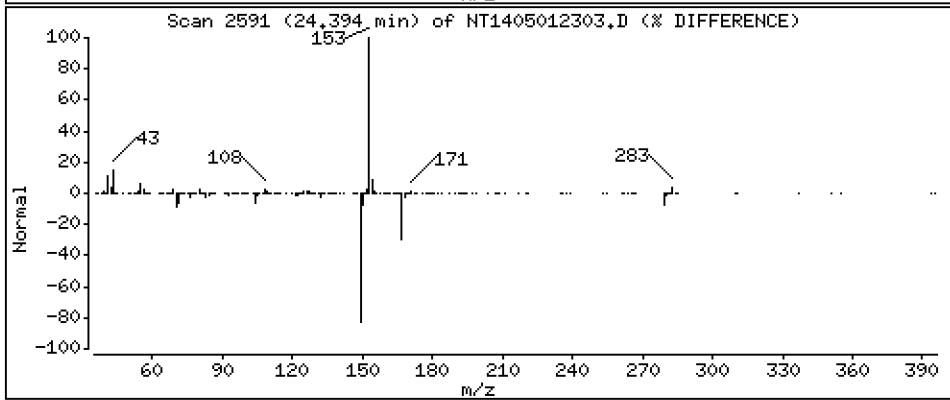
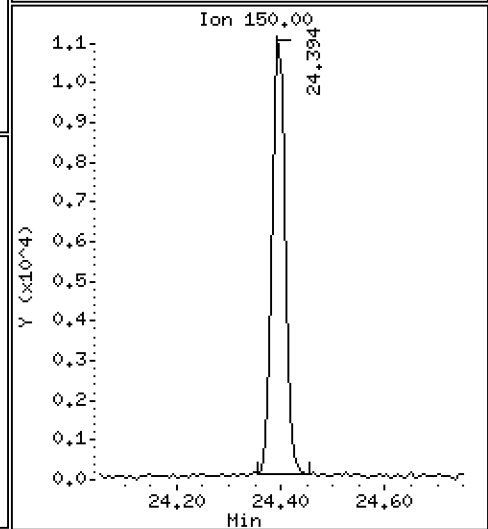
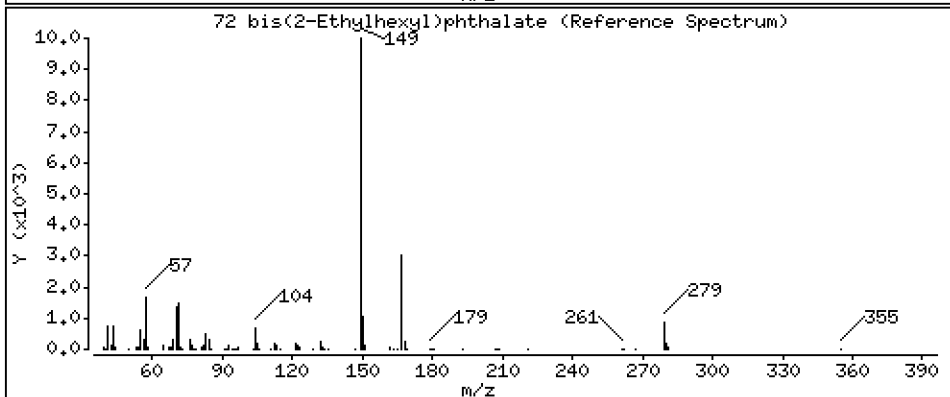
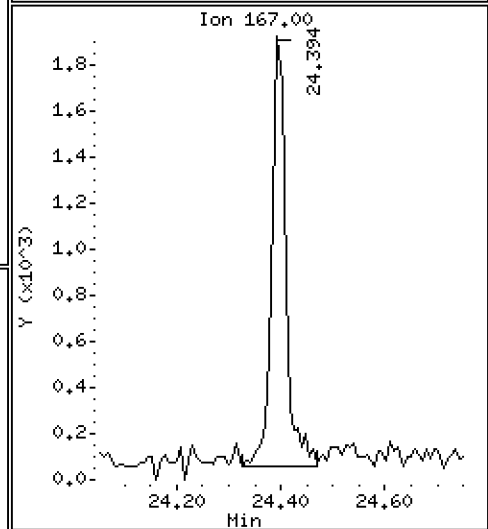
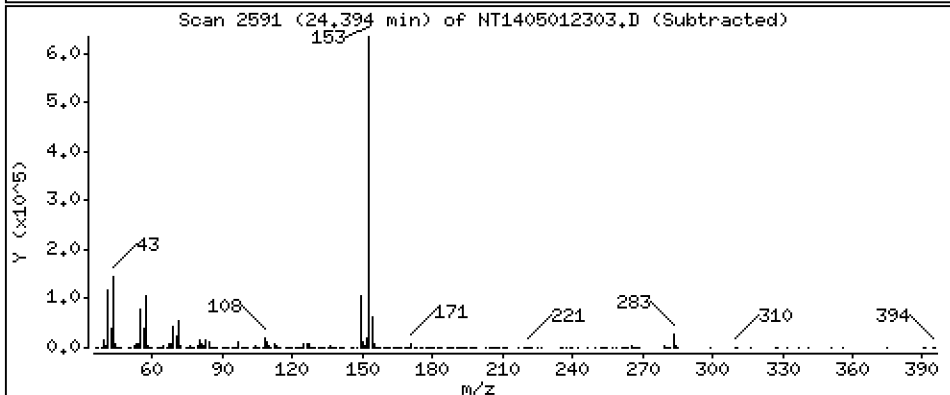
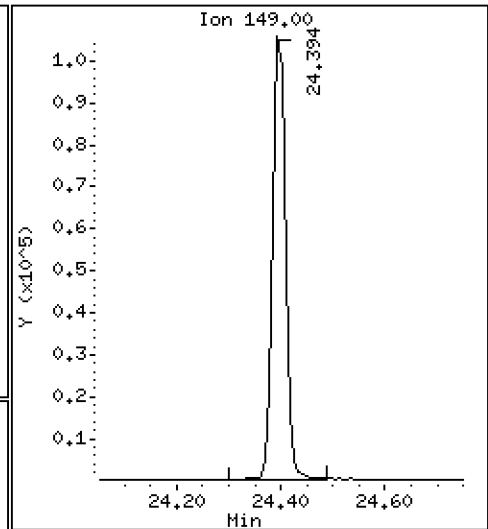
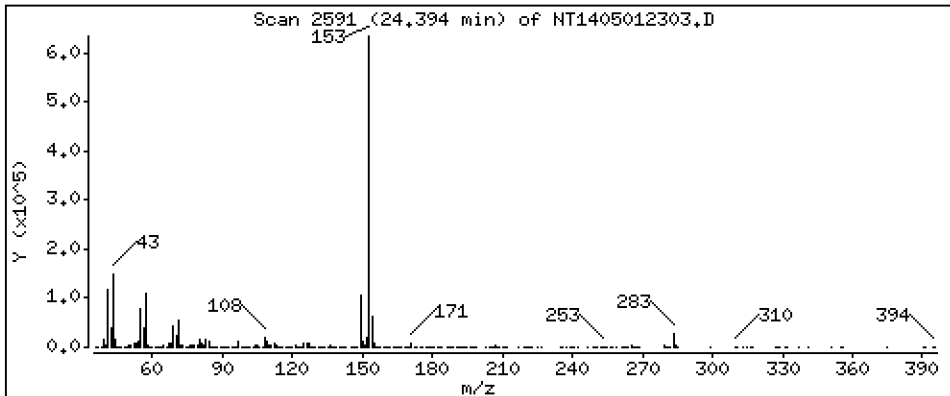
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 0,4778 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

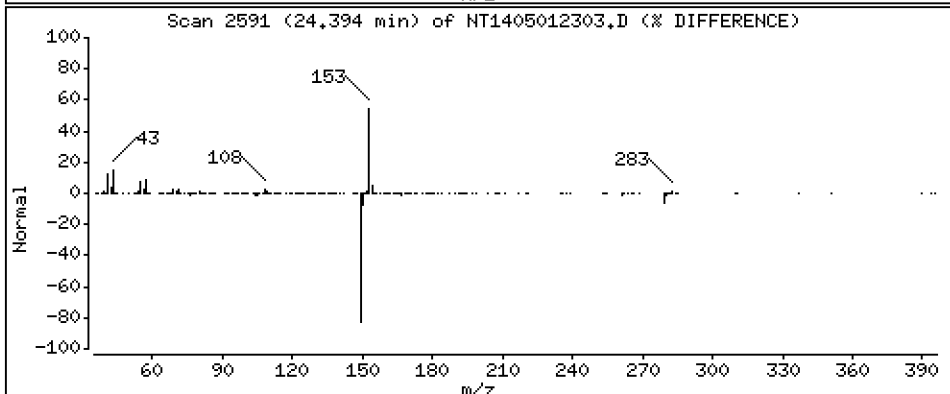
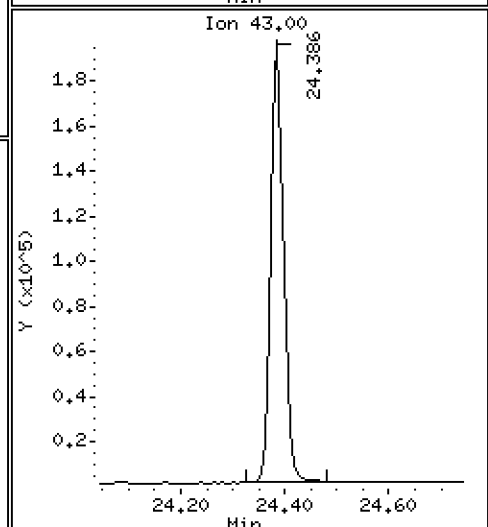
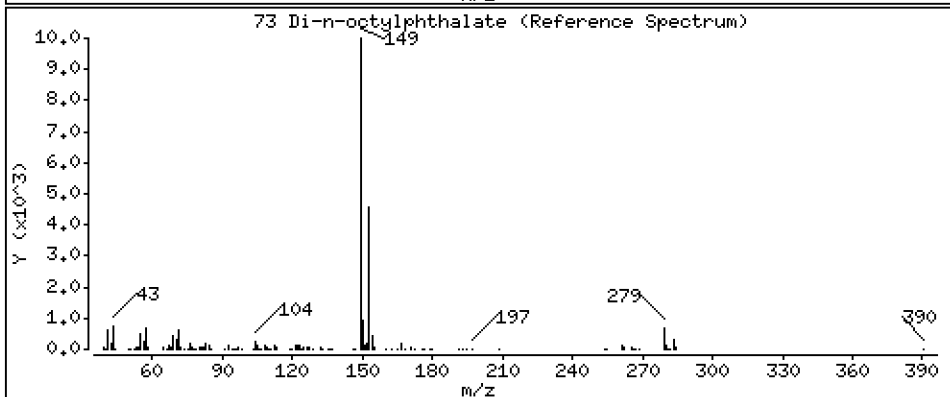
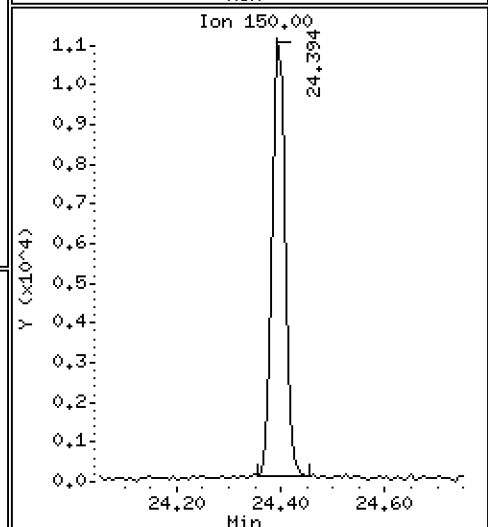
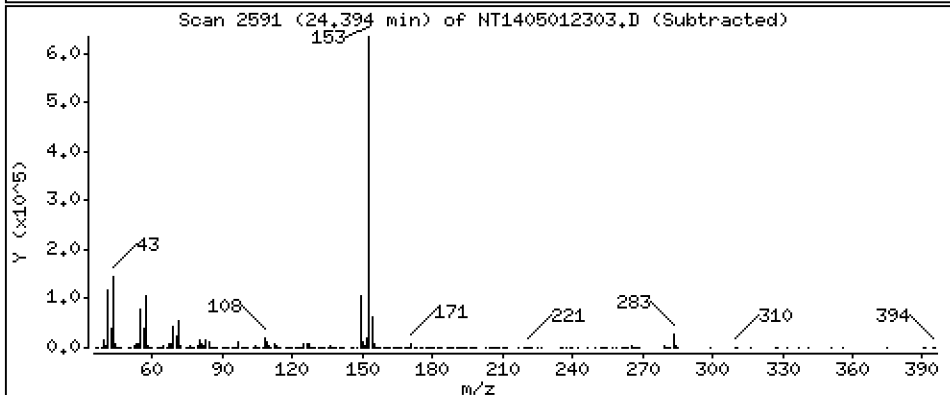
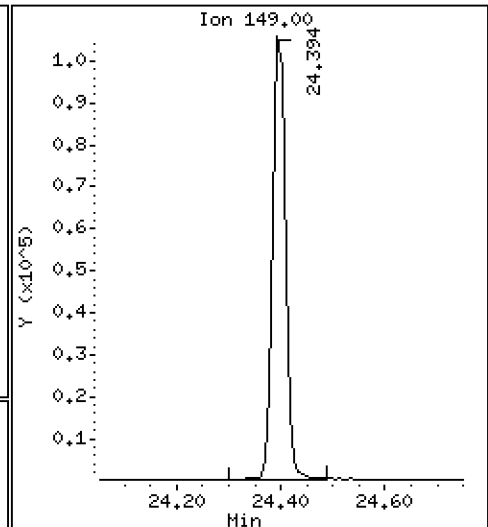
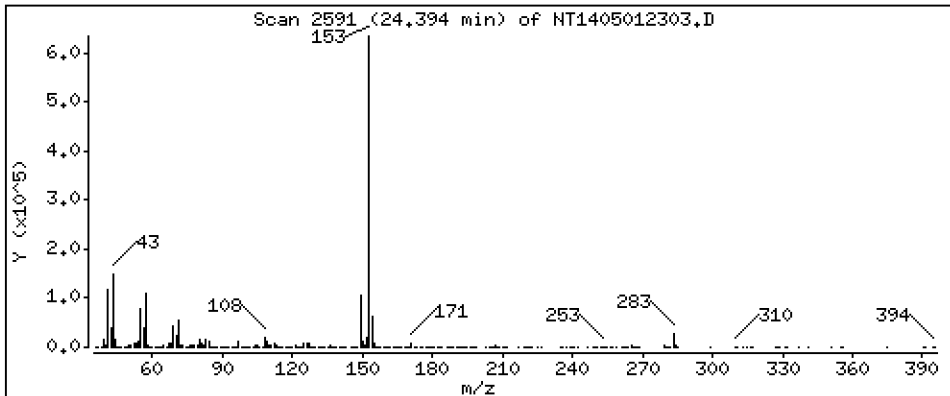
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

73 Di-n-octylphthalate

Concentration: 0.4778 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

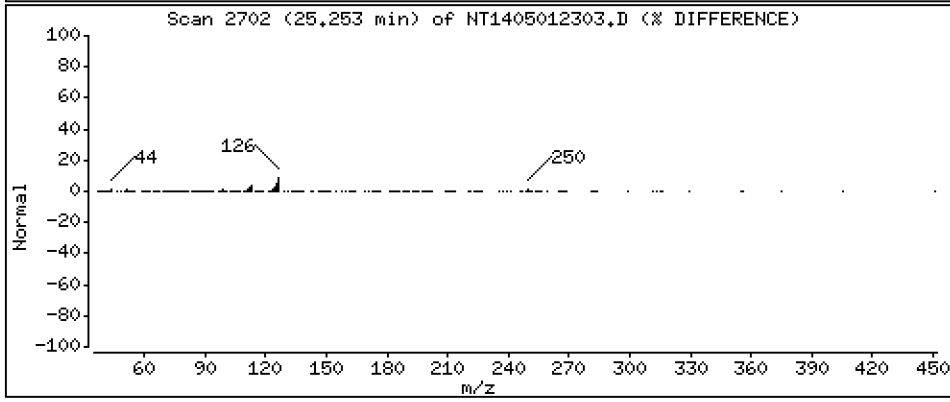
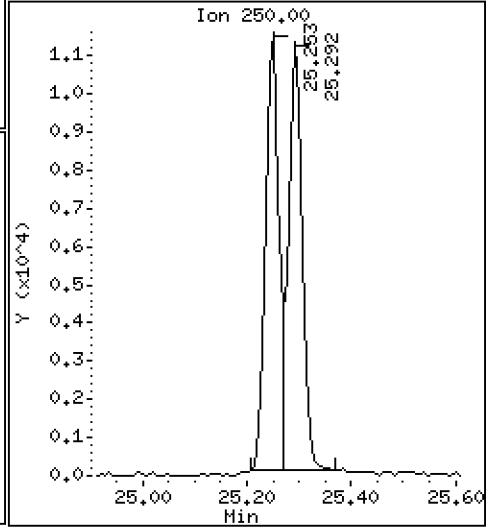
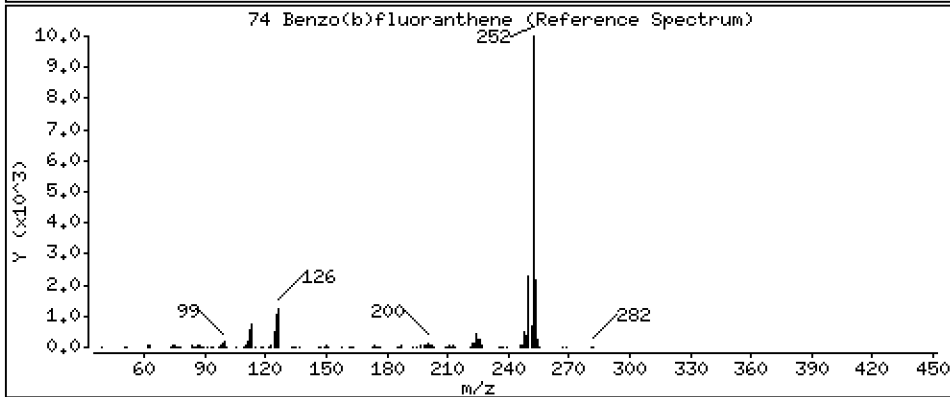
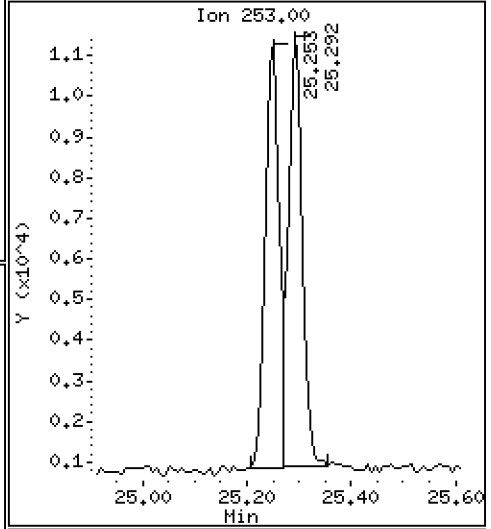
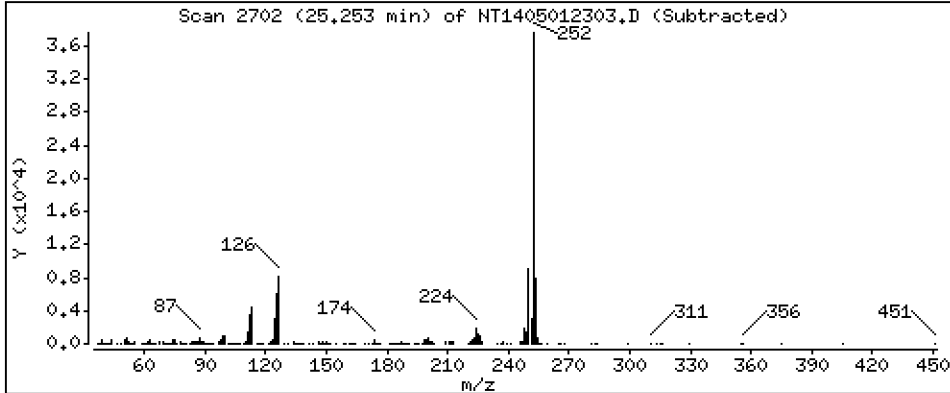
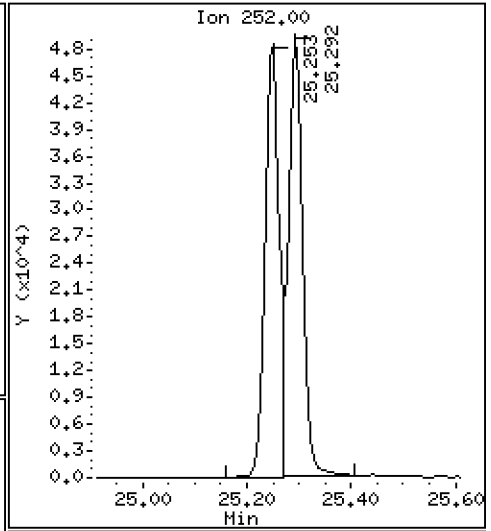
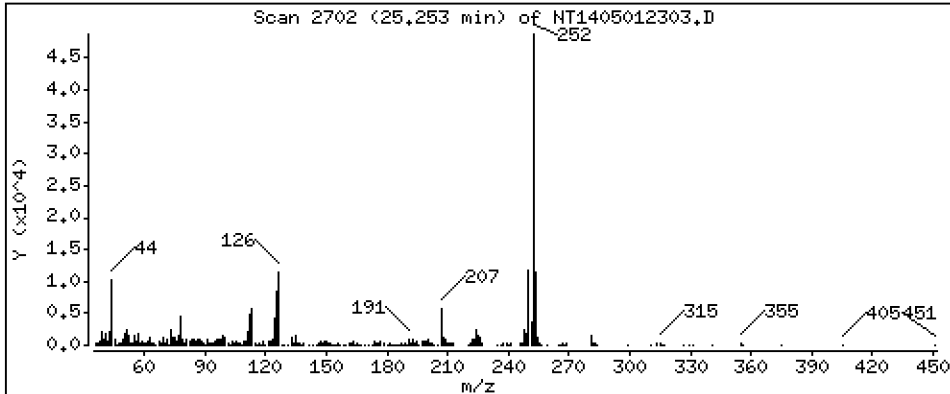
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 0,4769 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

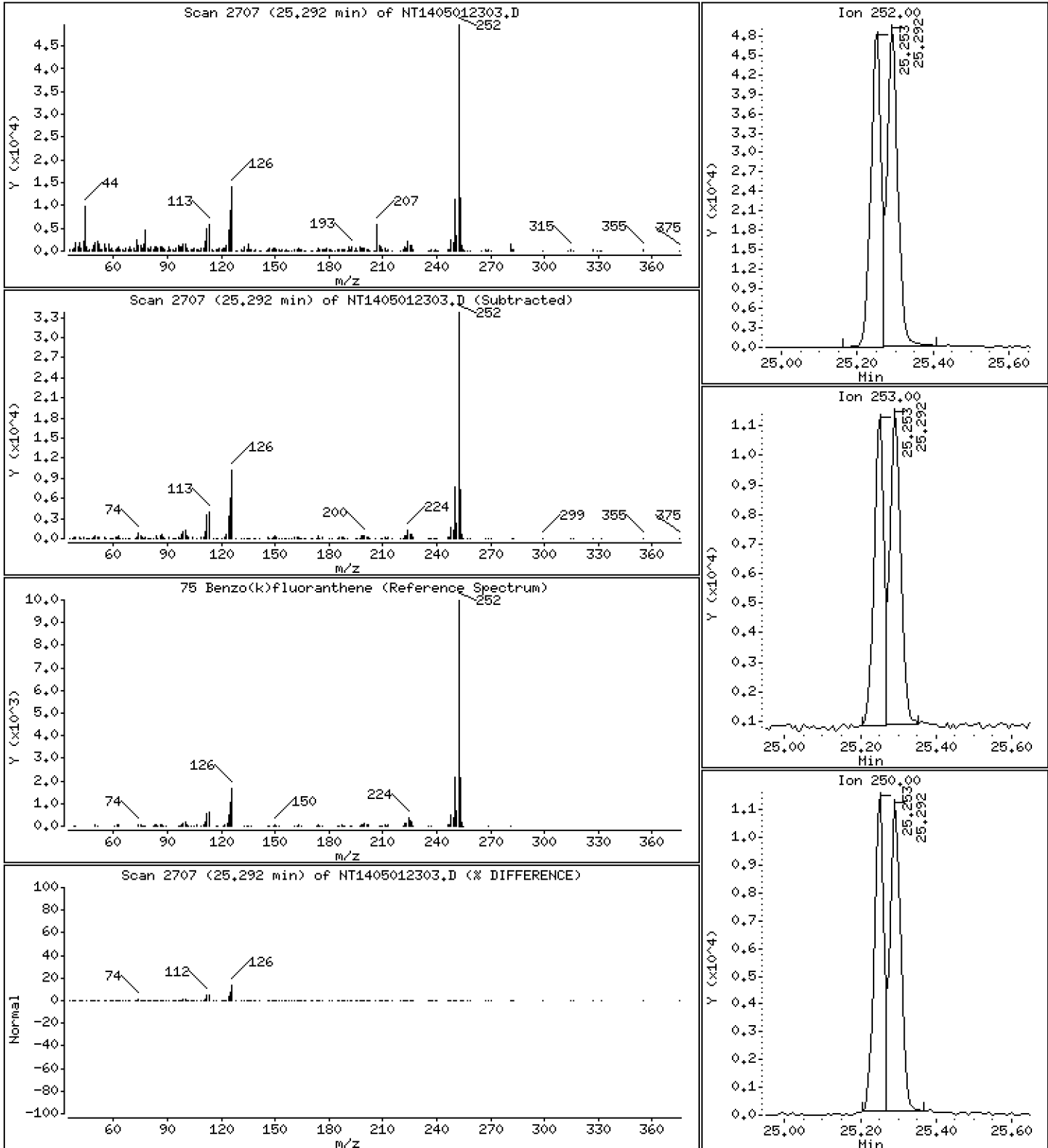
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 0,5417 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

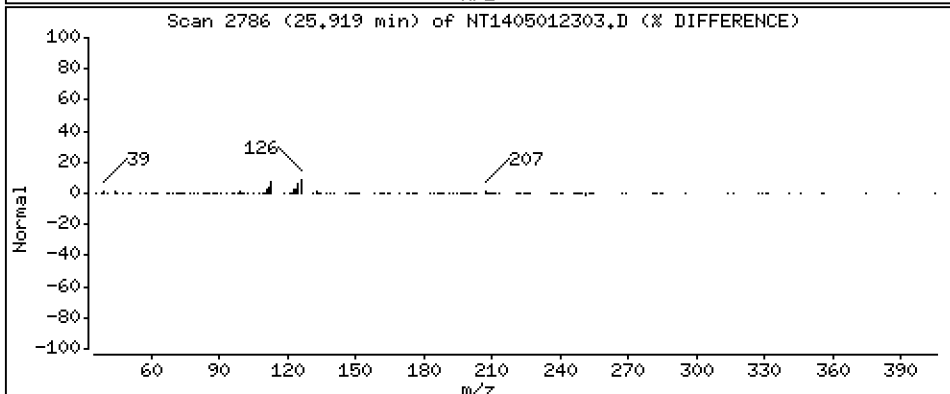
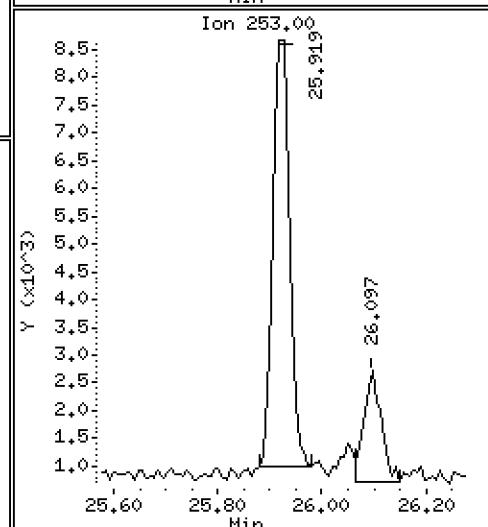
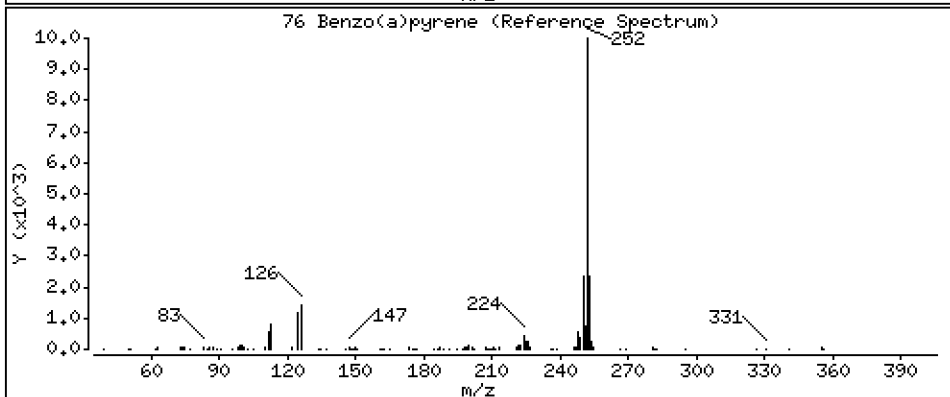
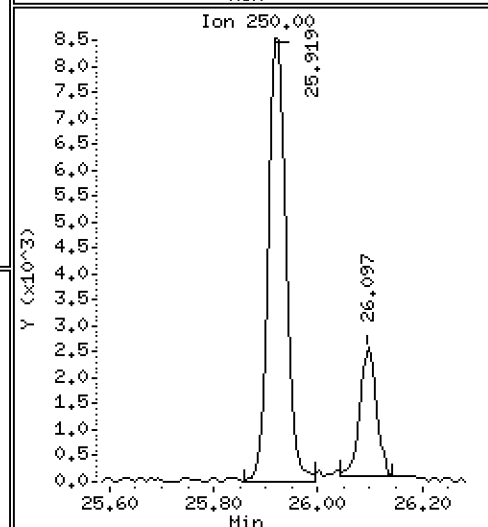
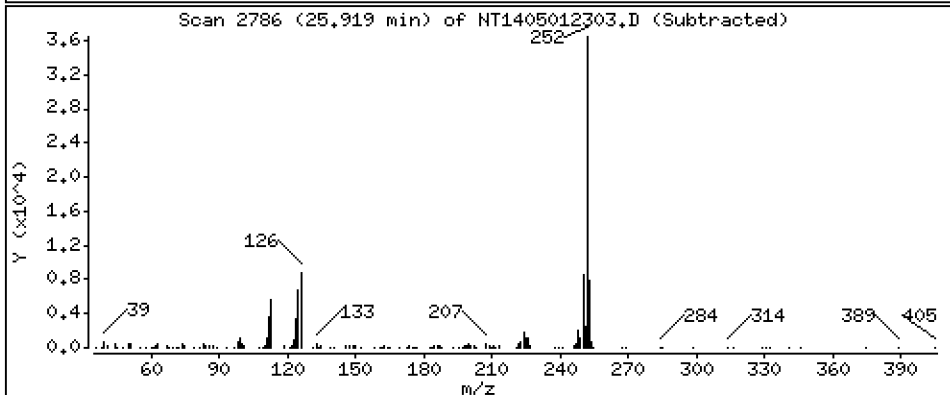
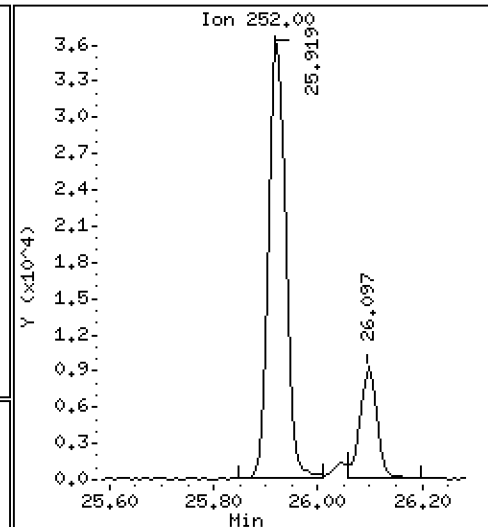
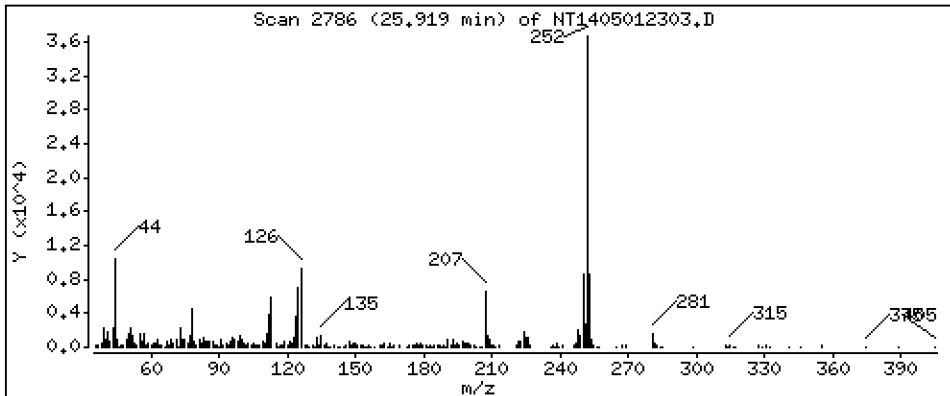
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 0,5001 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

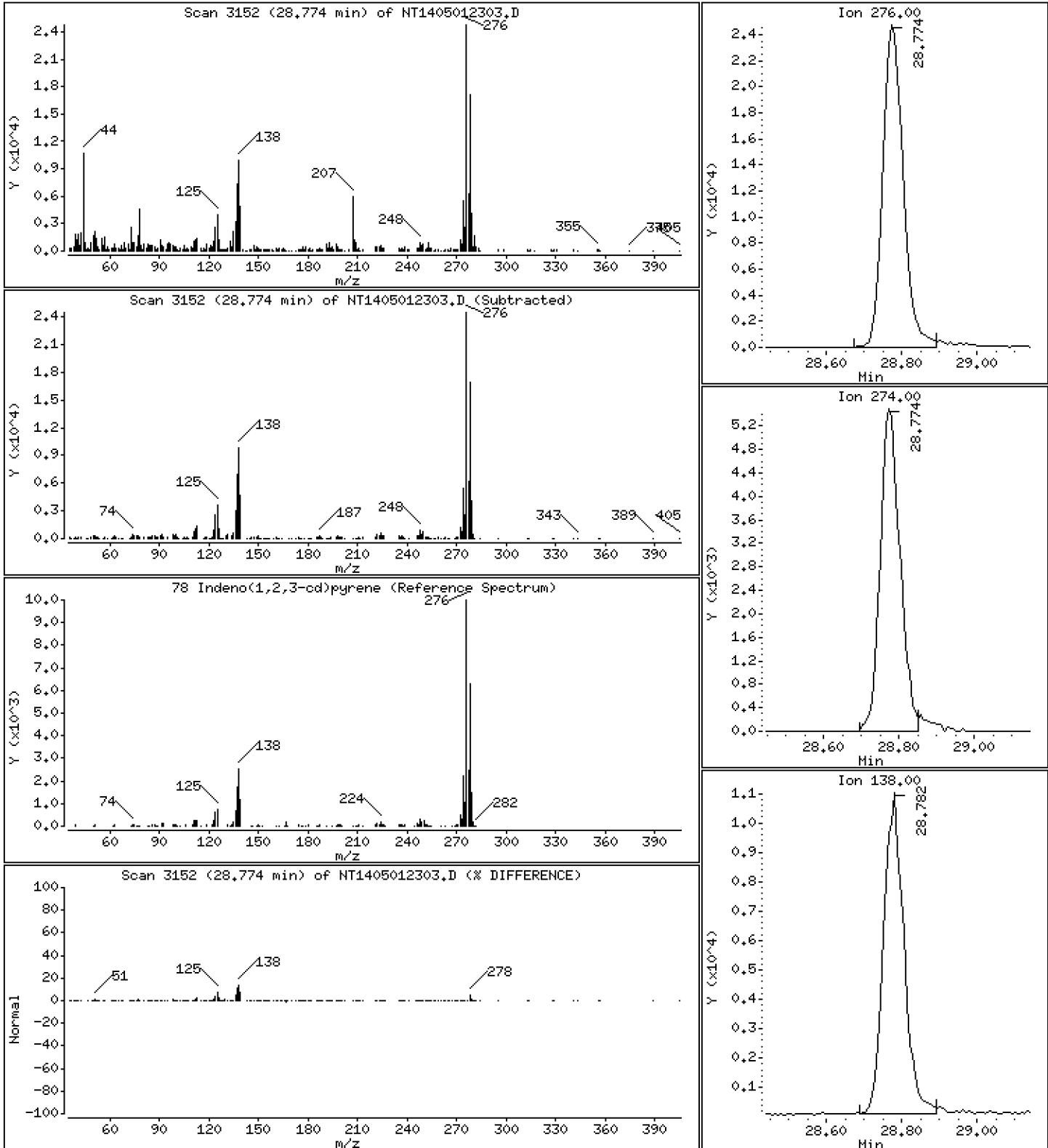
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 0,4142 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

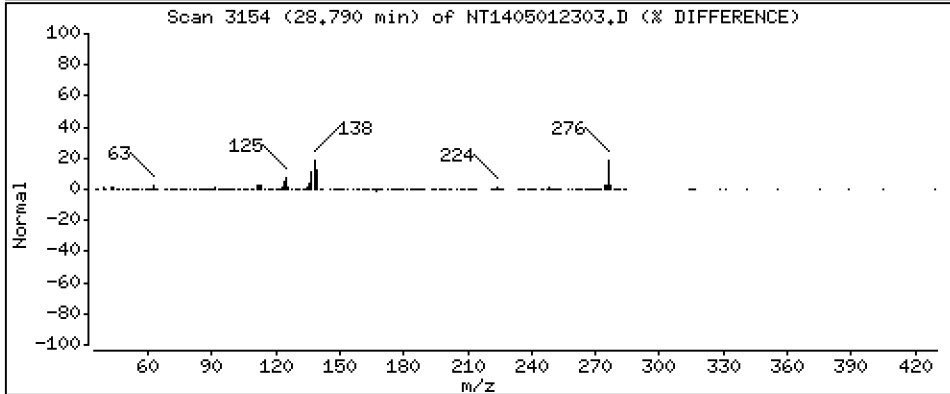
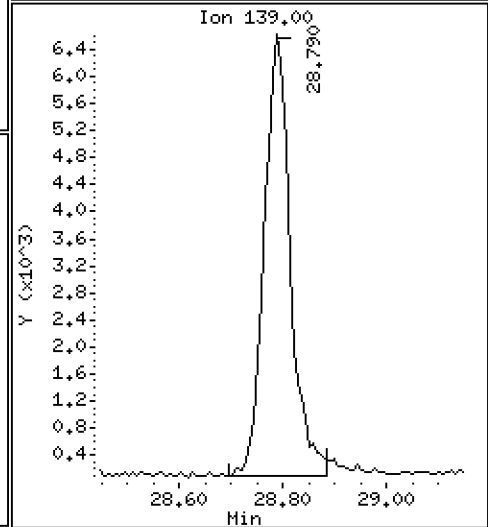
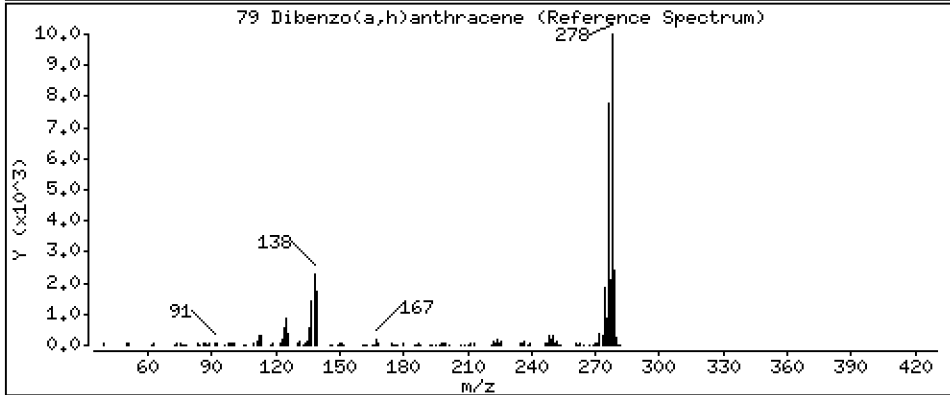
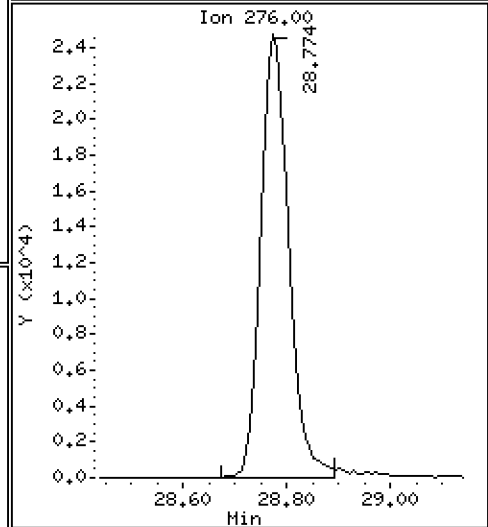
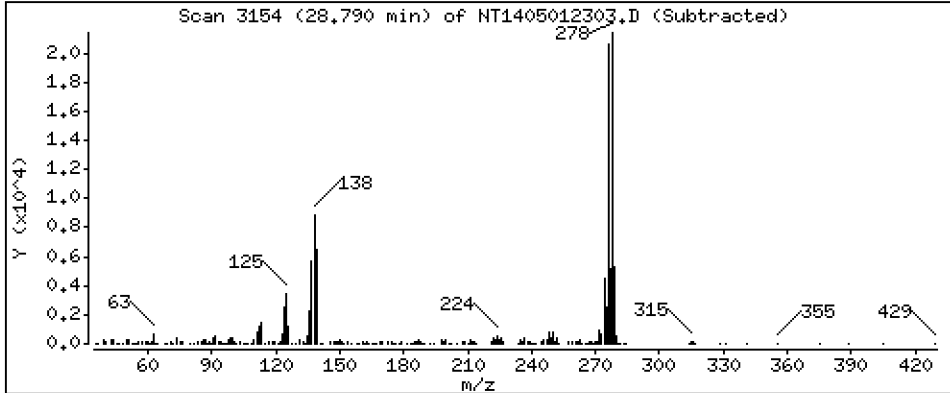
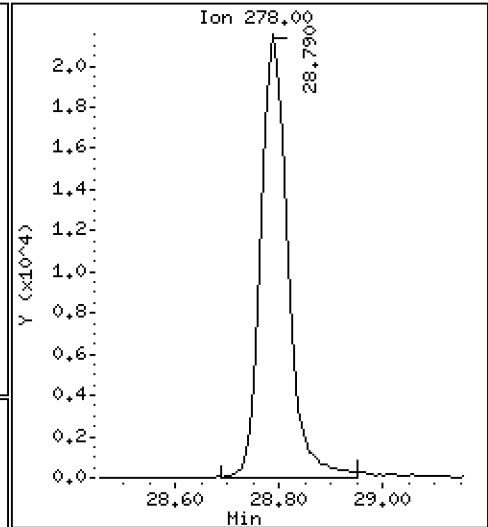
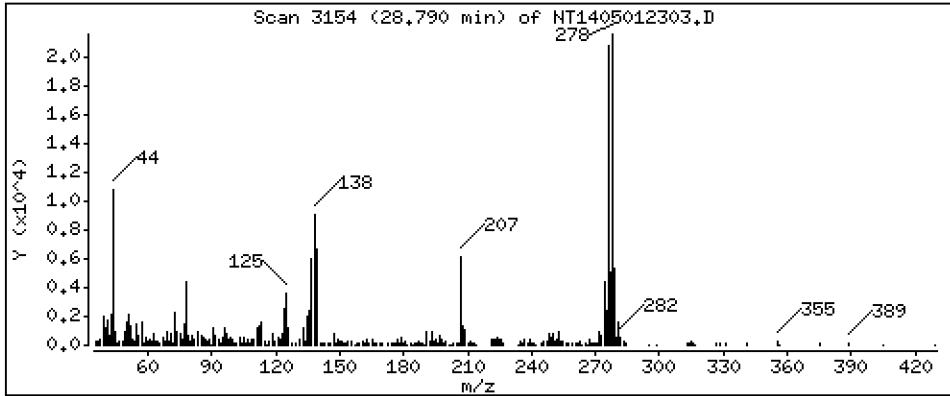
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,4230 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

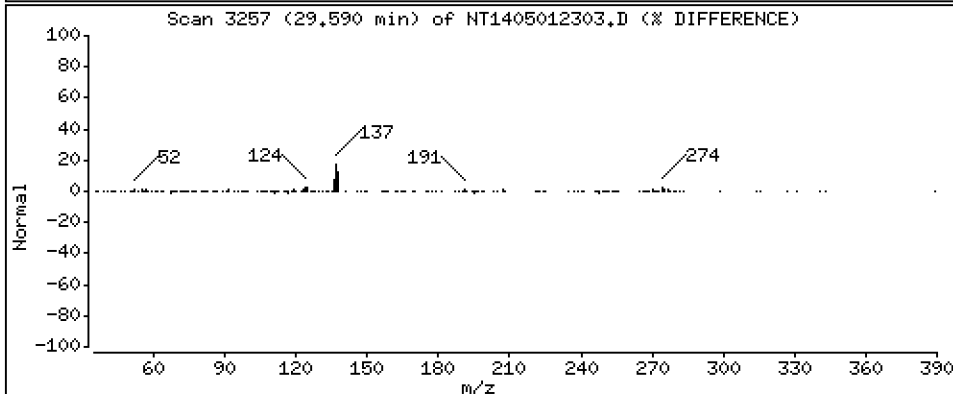
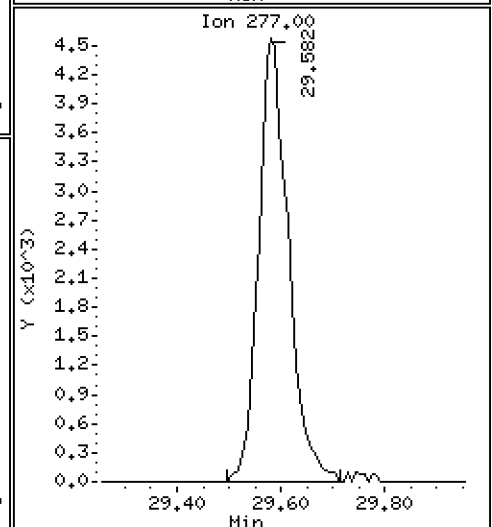
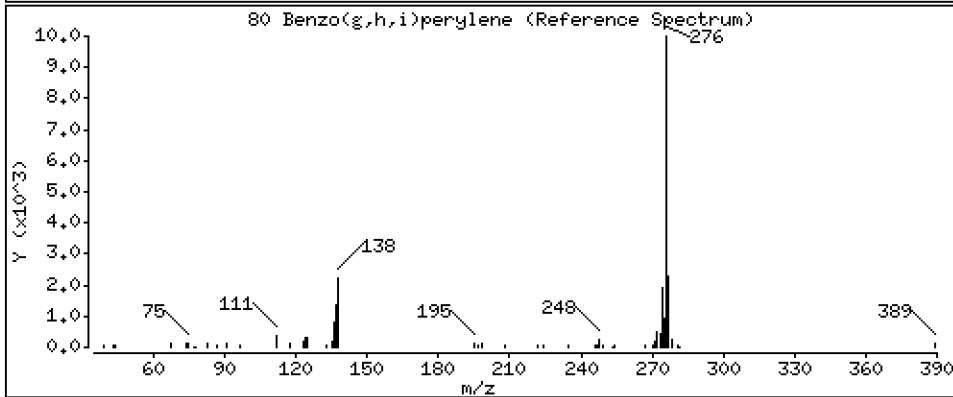
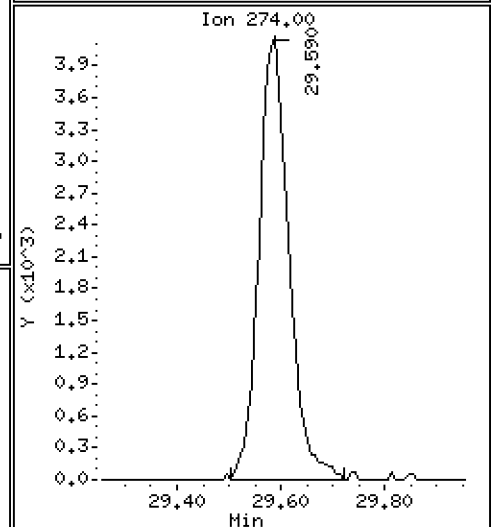
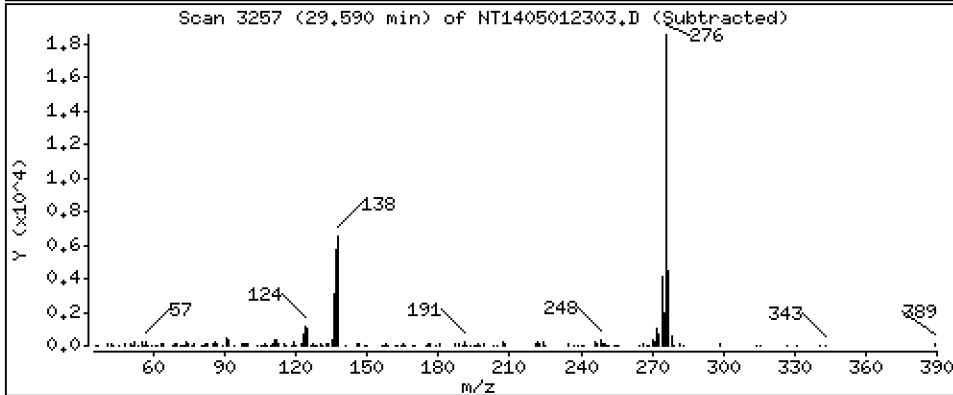
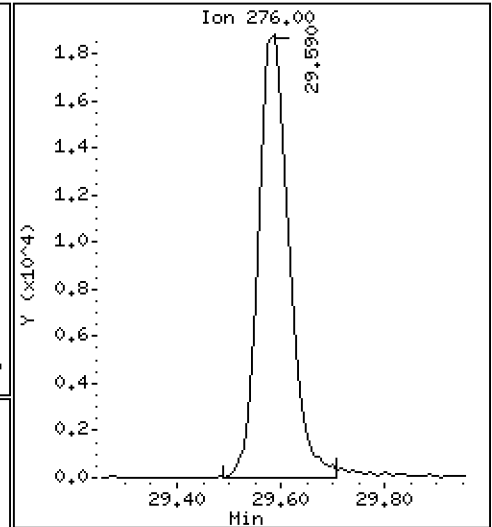
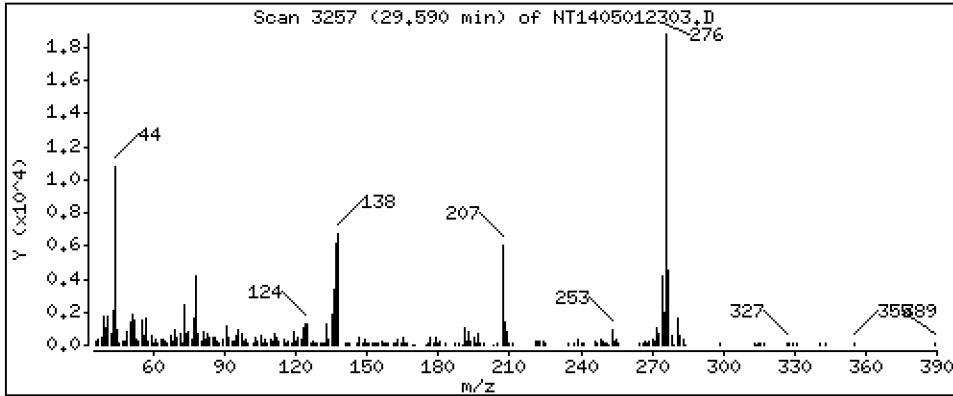
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 0,4080 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

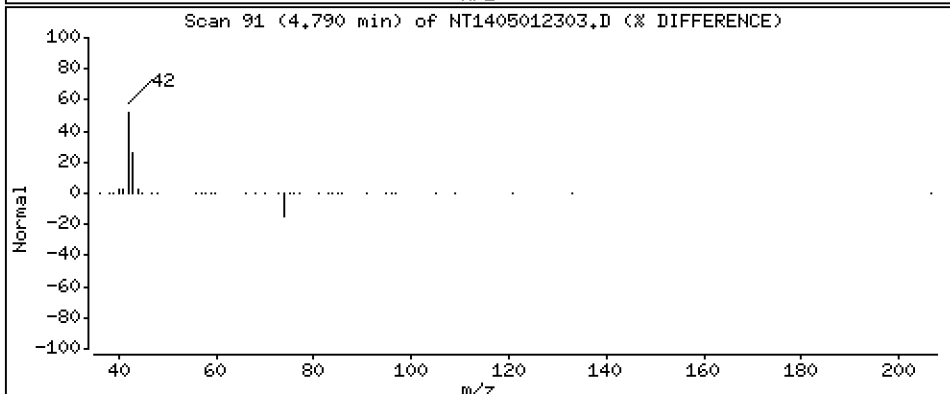
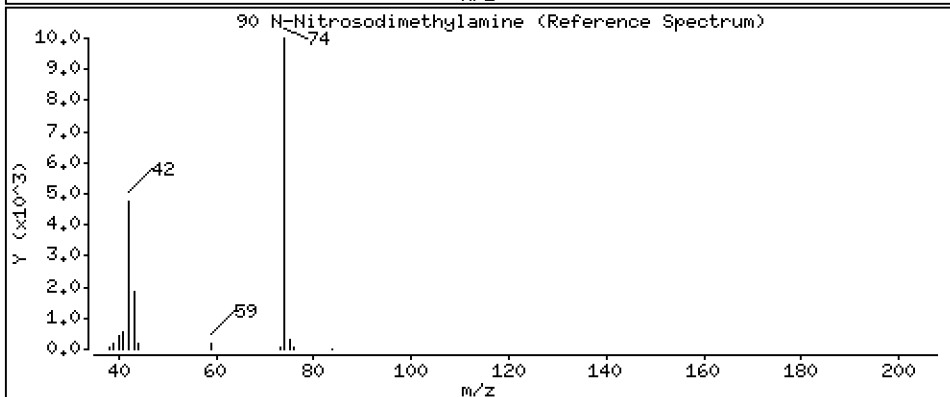
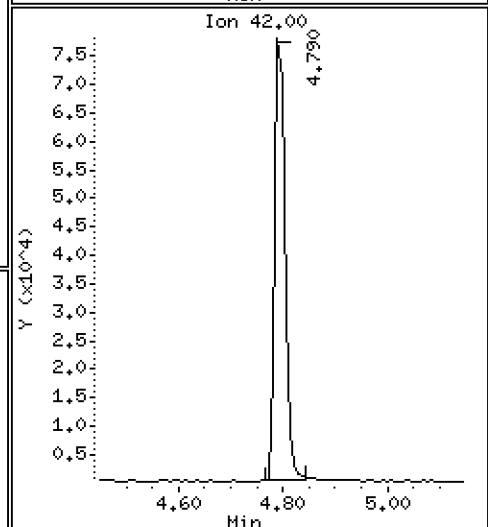
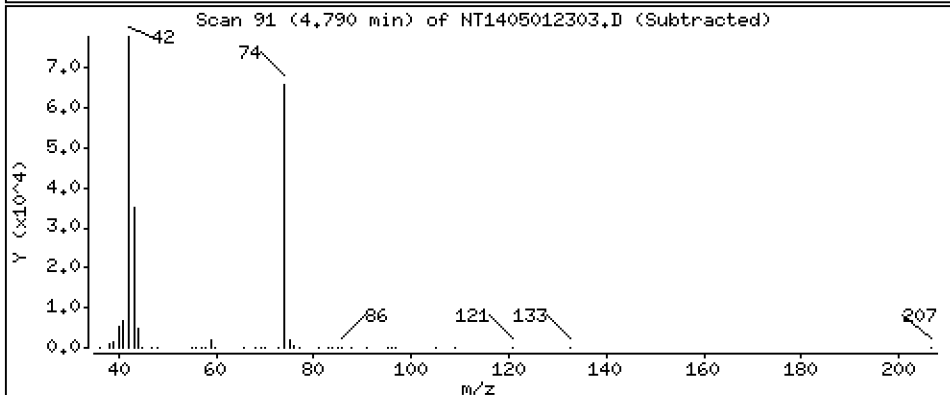
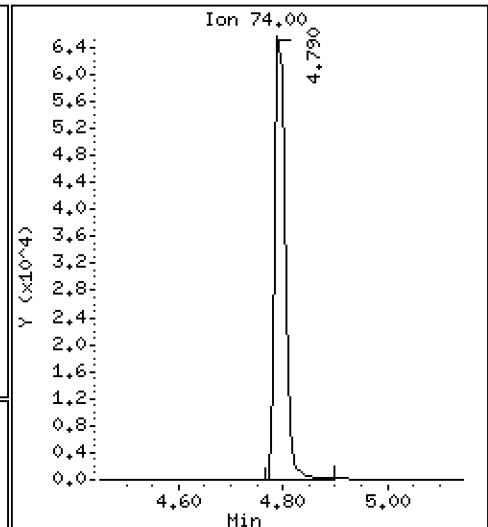
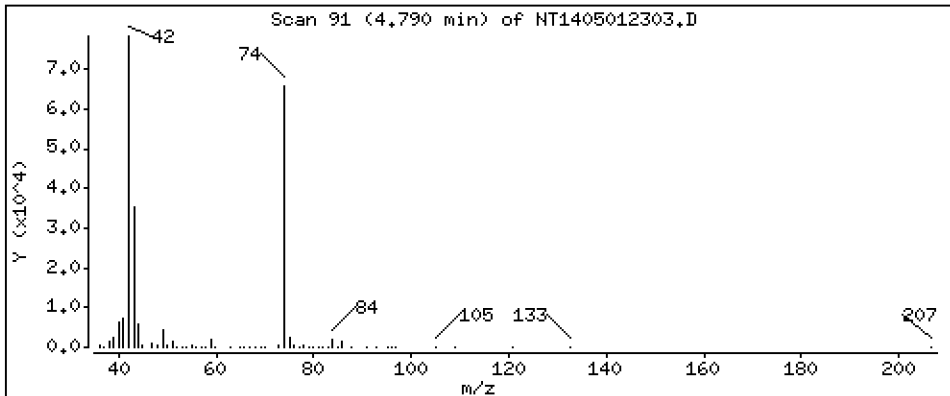
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 0.9801 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

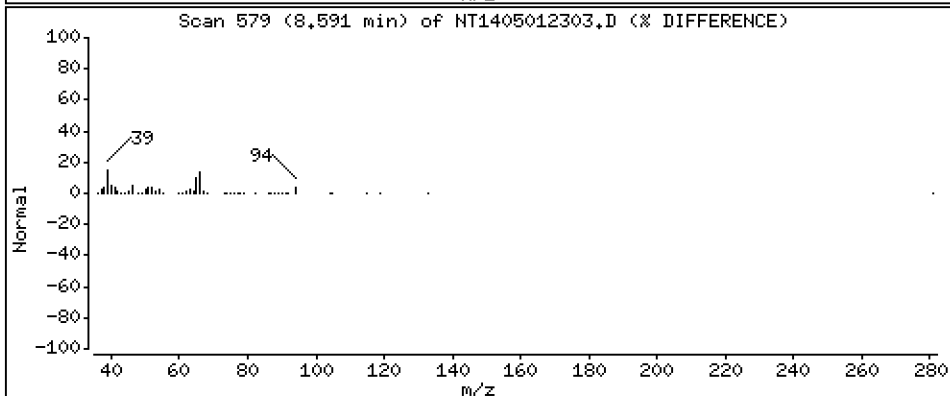
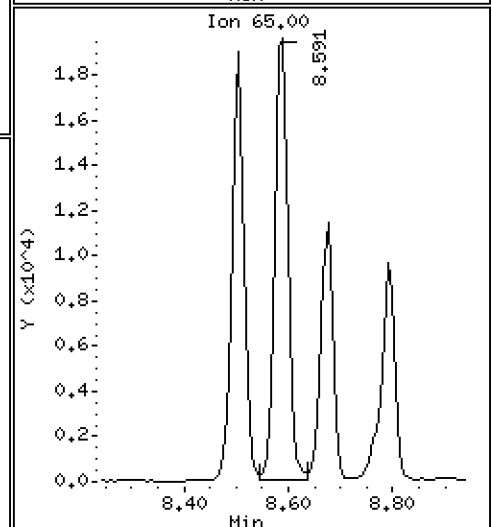
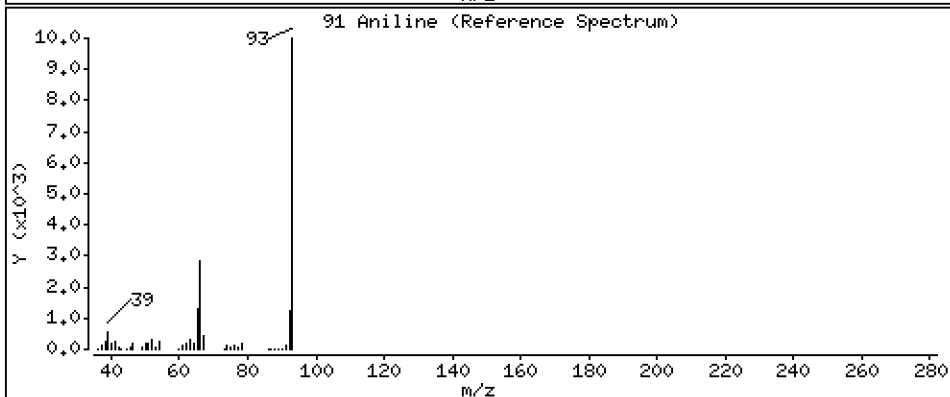
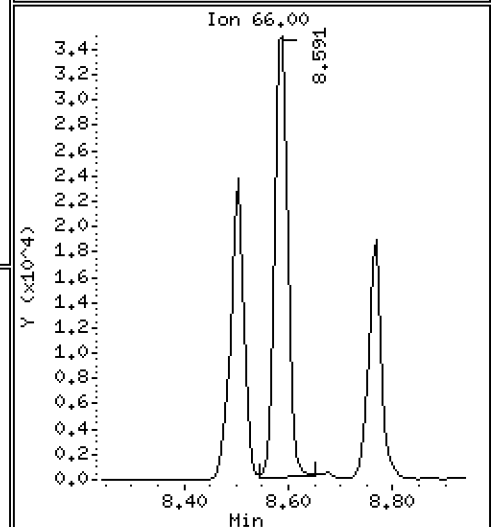
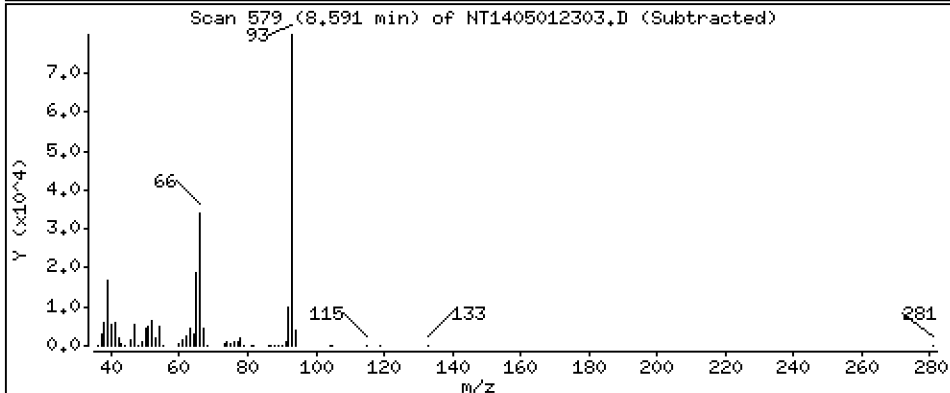
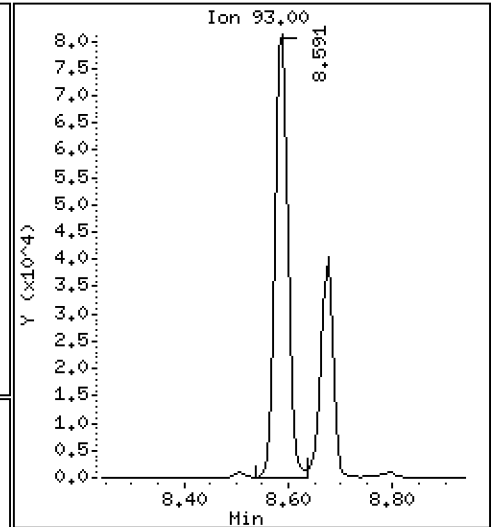
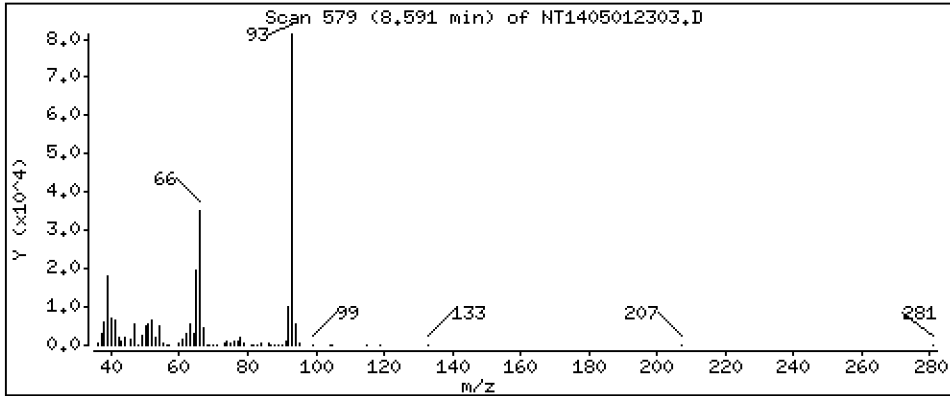
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

91 Aniline

Concentration: 0,9139 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

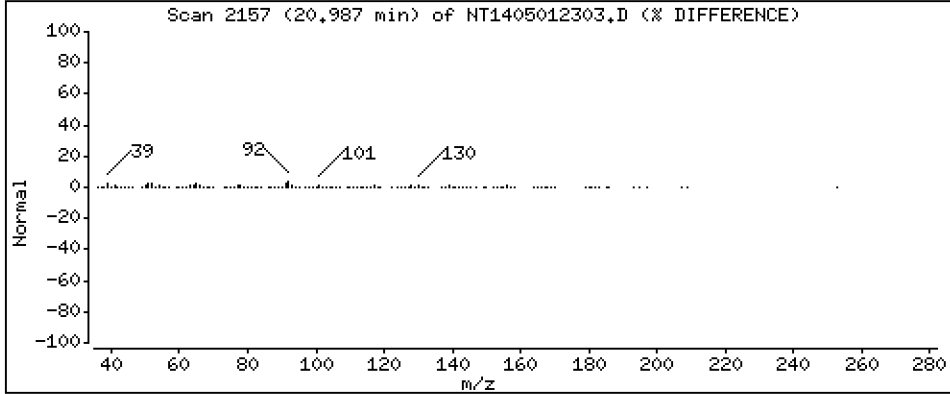
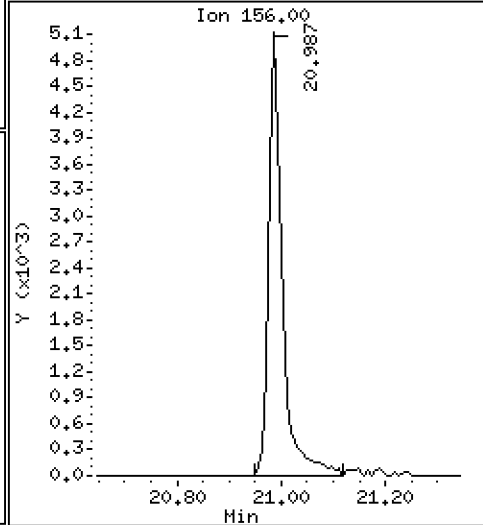
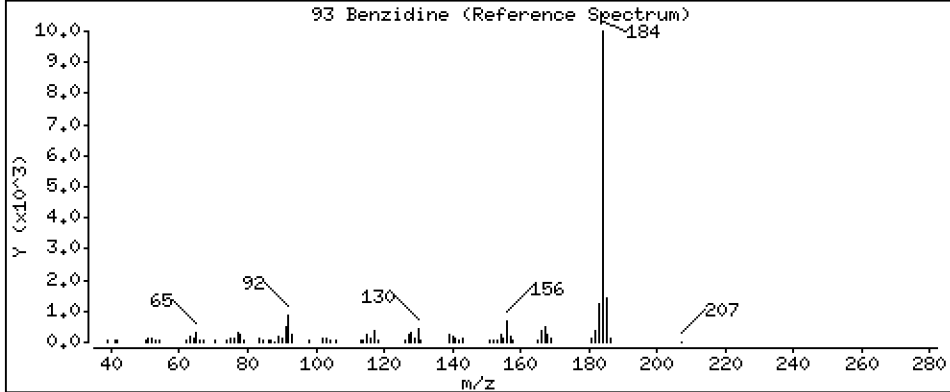
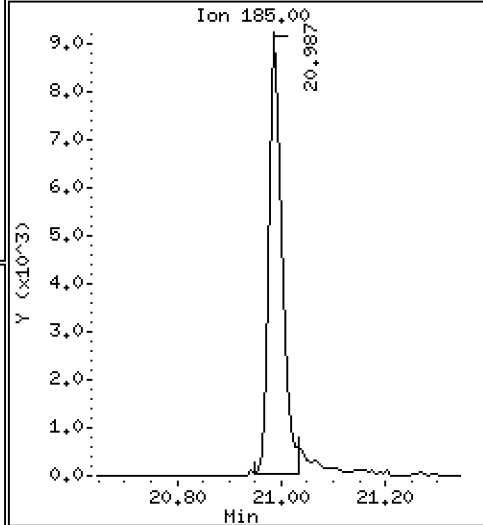
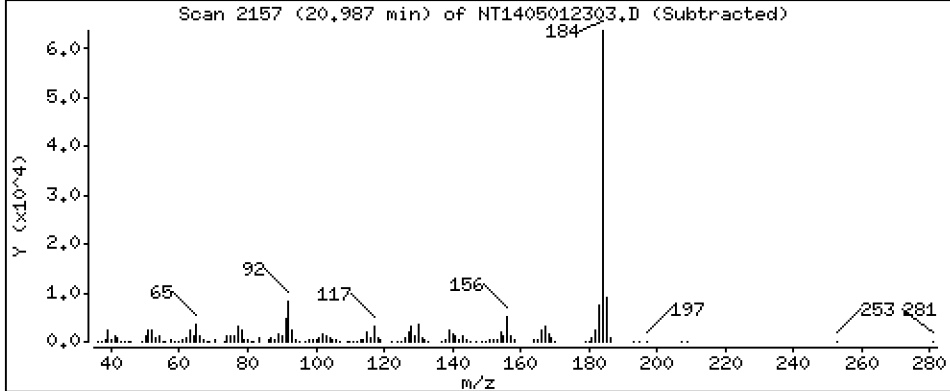
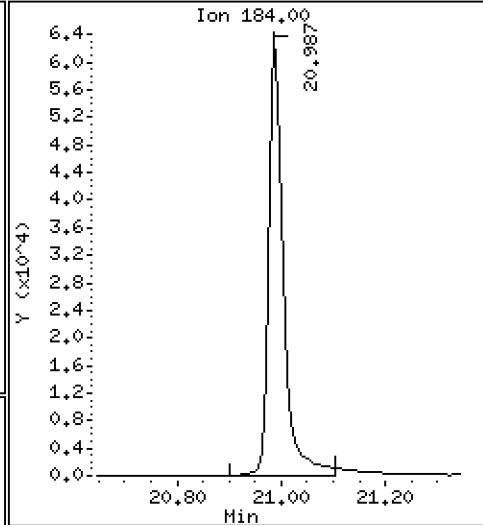
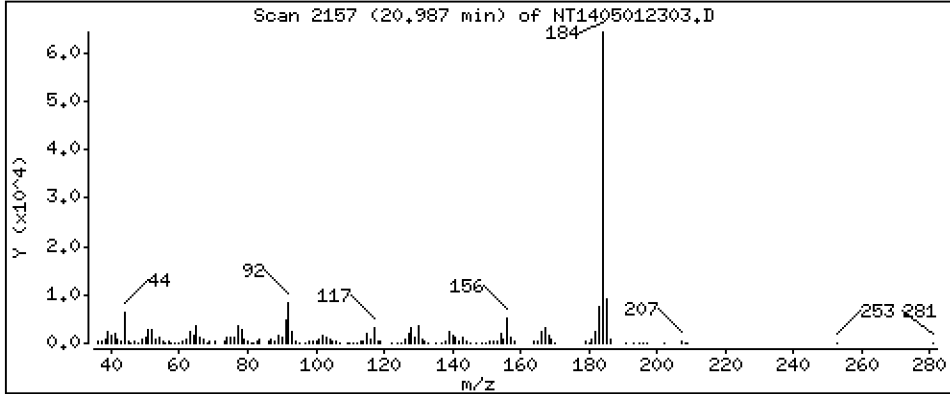
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 1,118 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

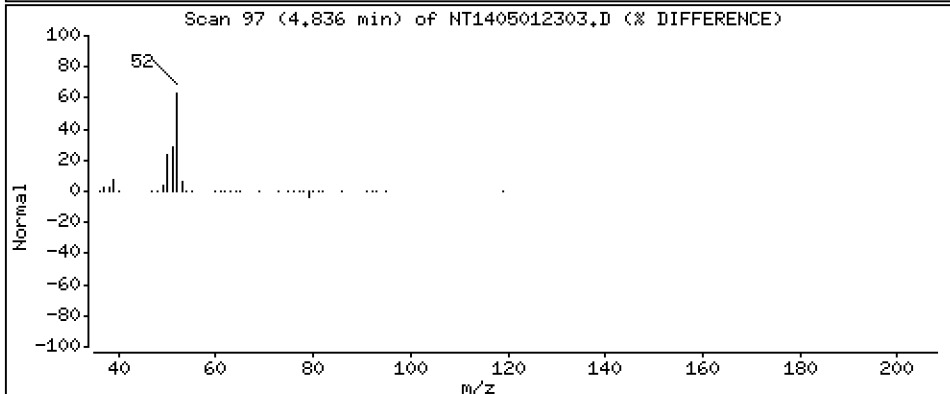
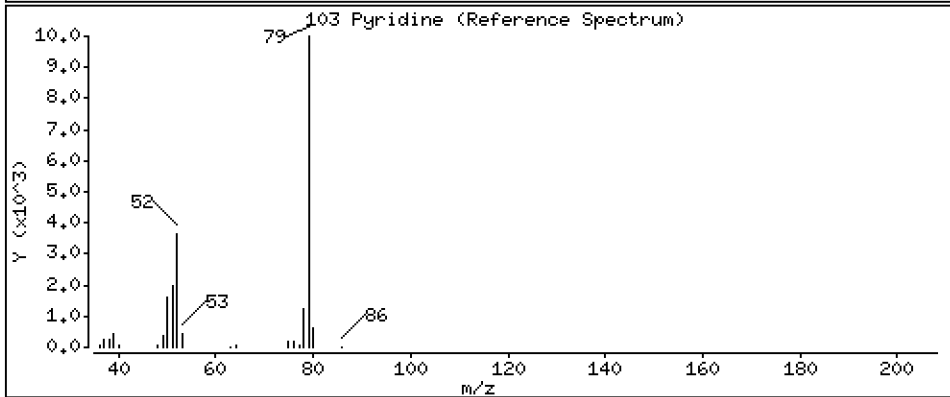
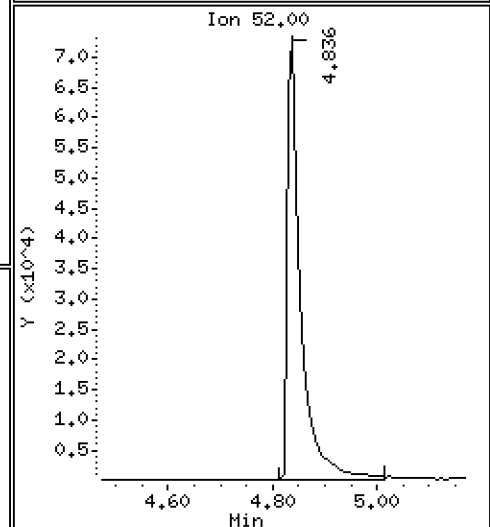
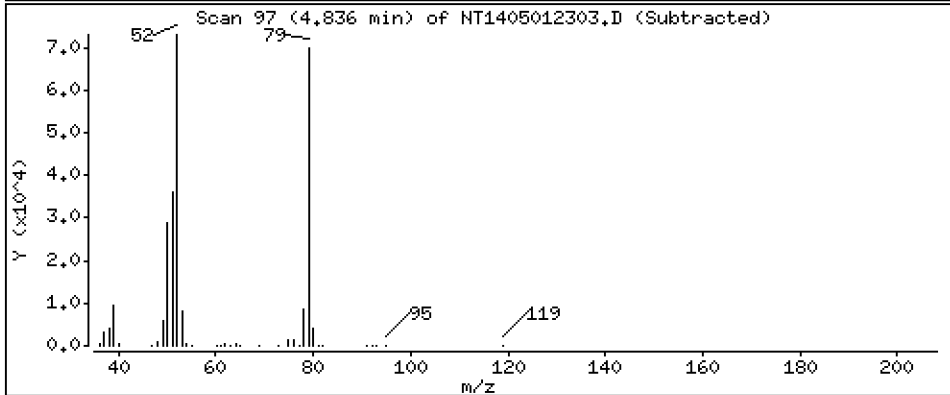
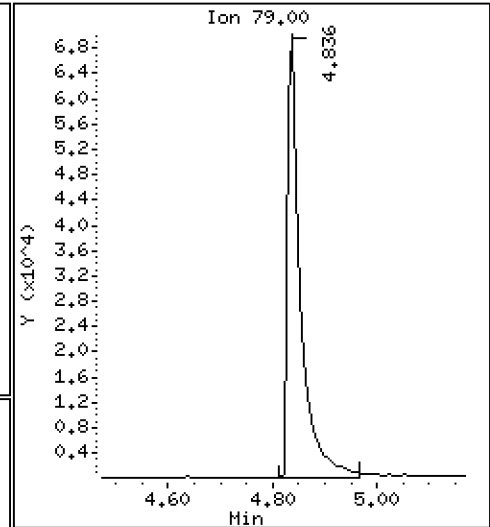
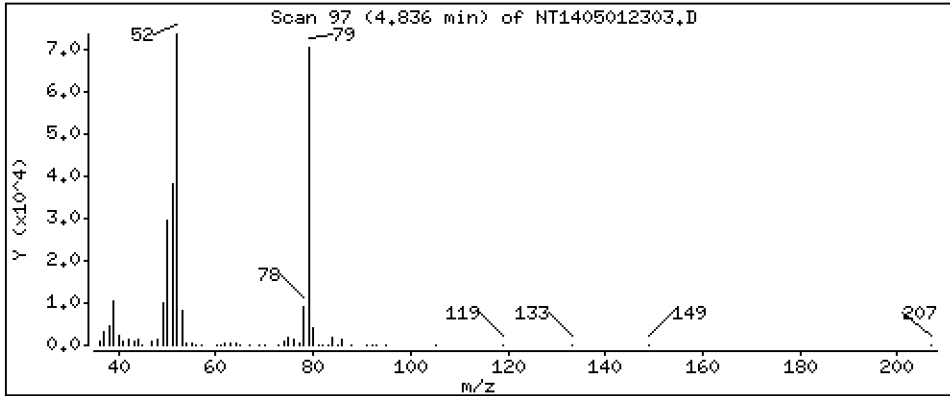
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,5011 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

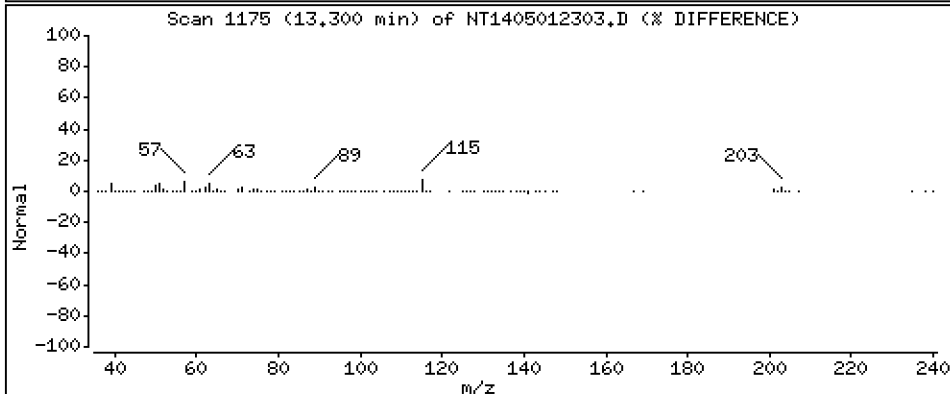
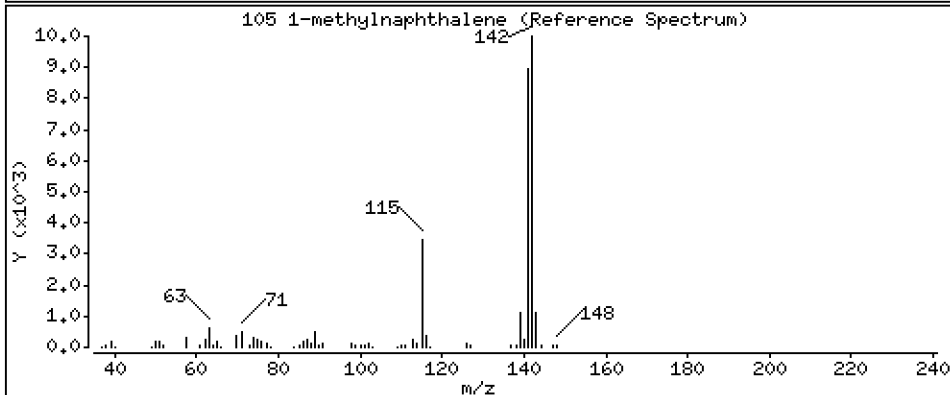
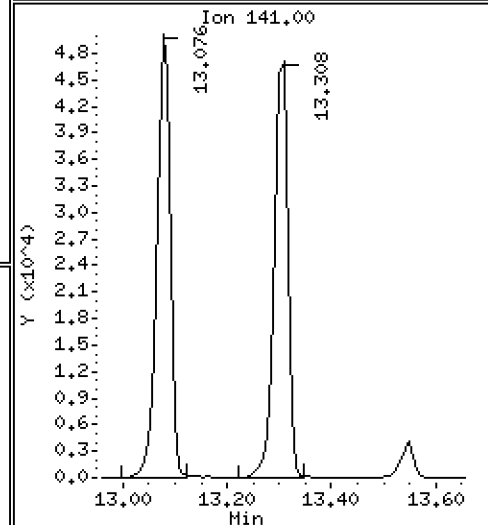
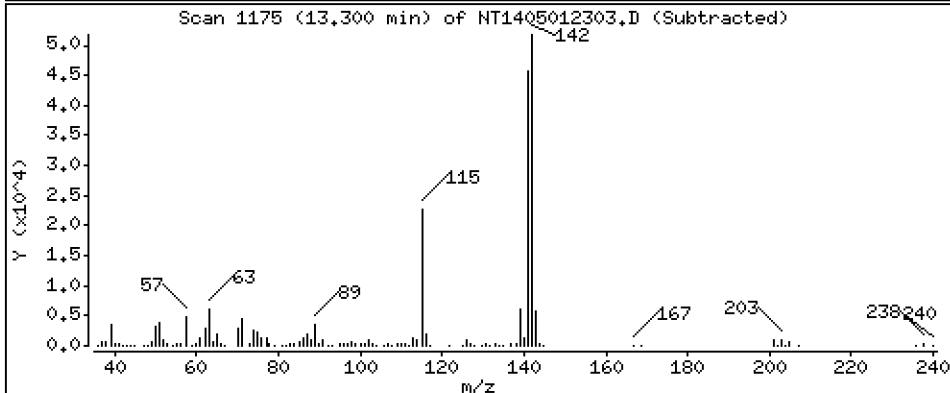
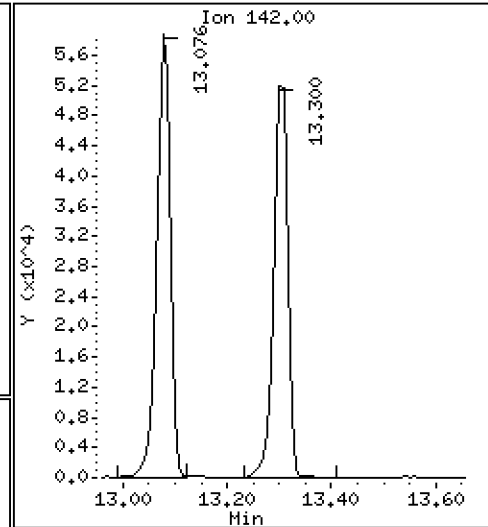
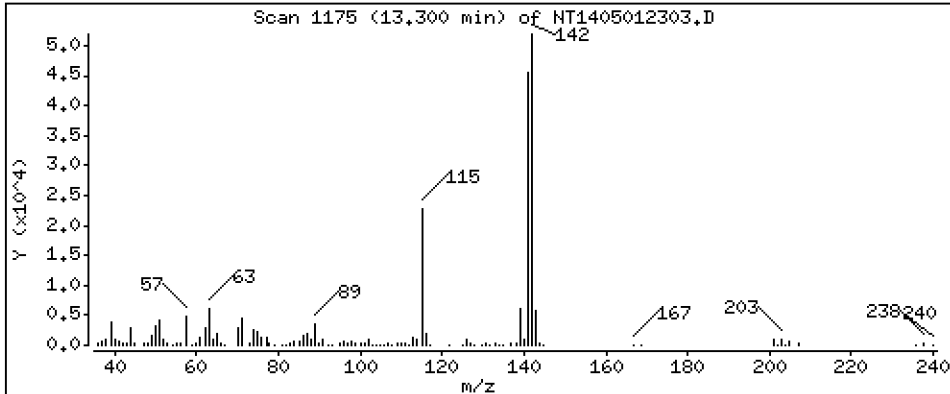
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 0,4398 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

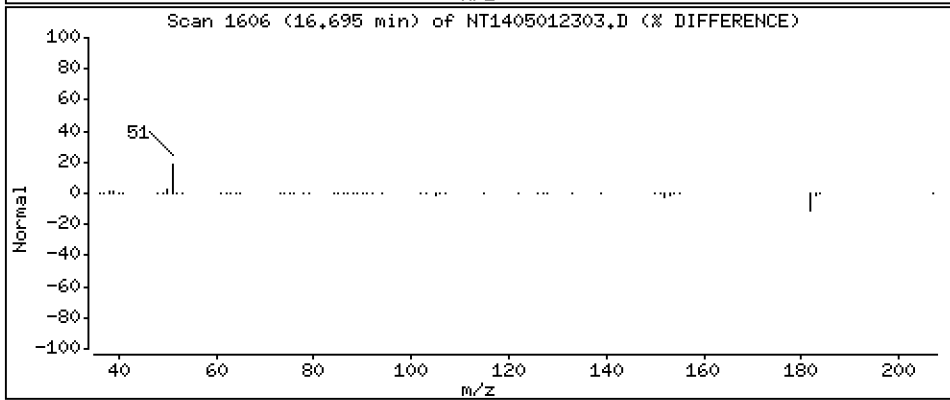
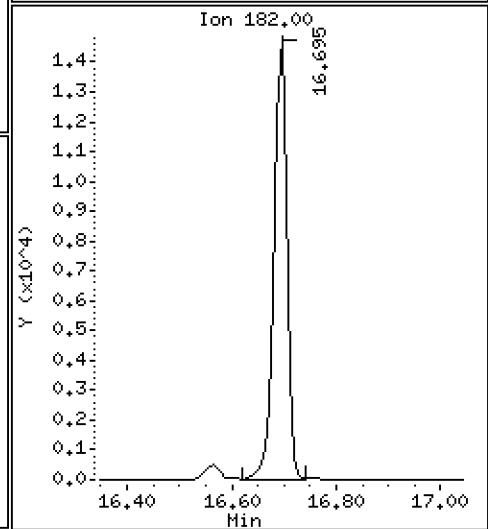
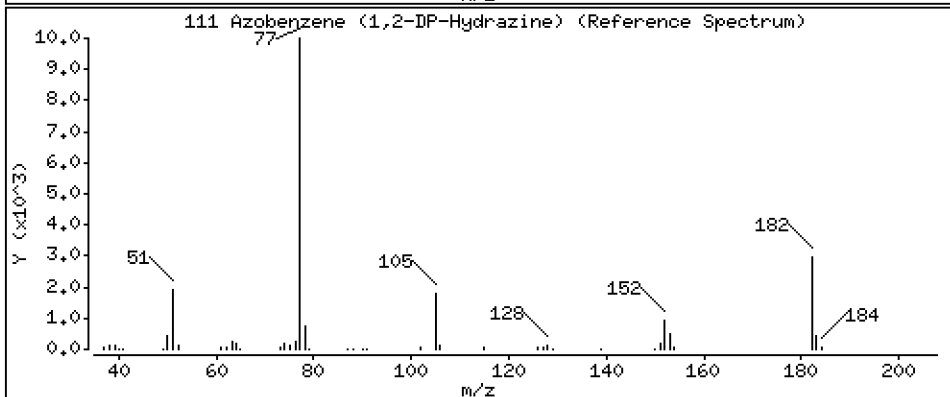
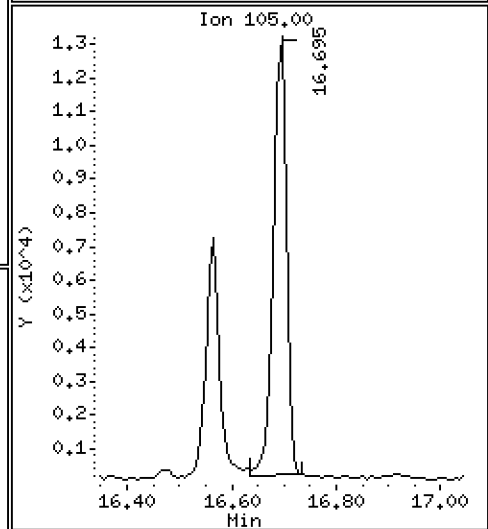
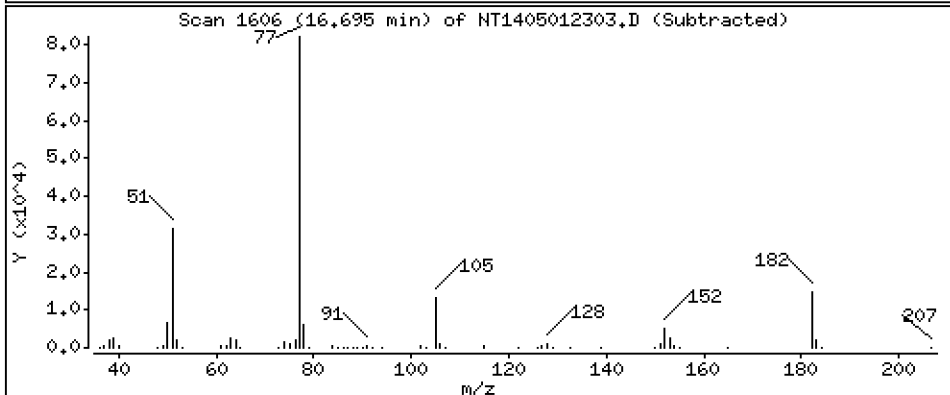
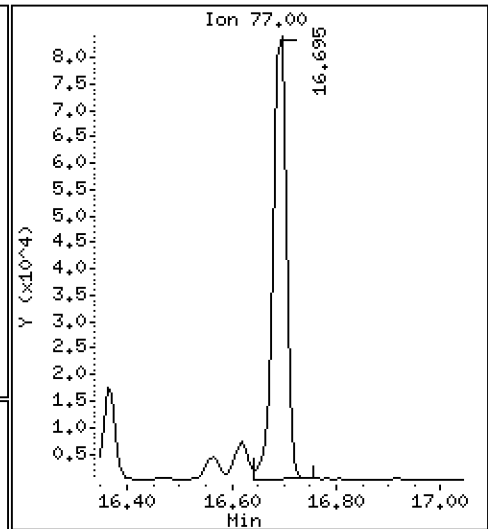
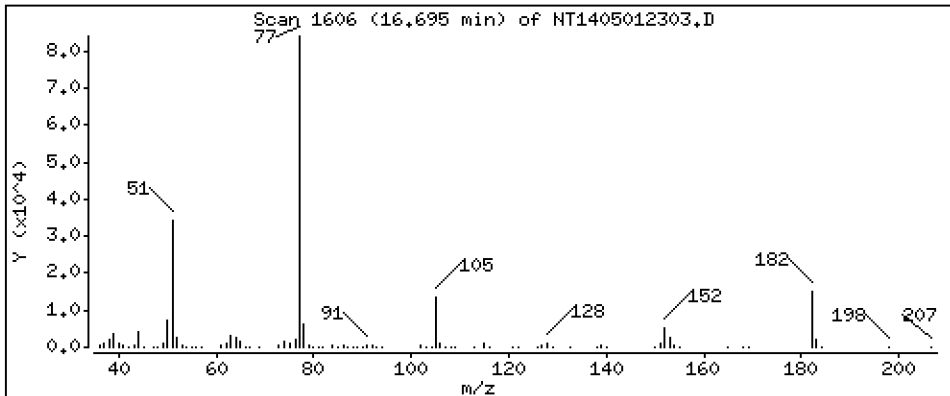
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 0,4761 ug/mL



Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

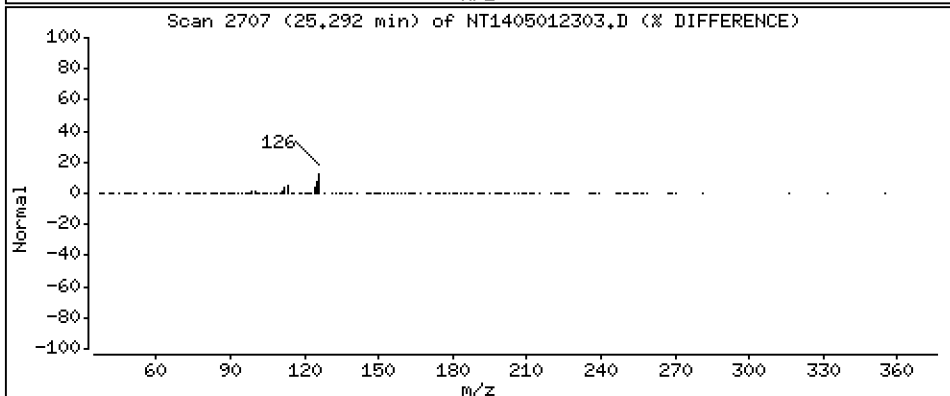
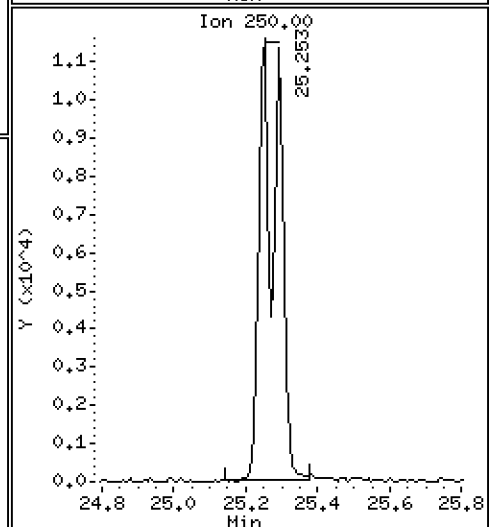
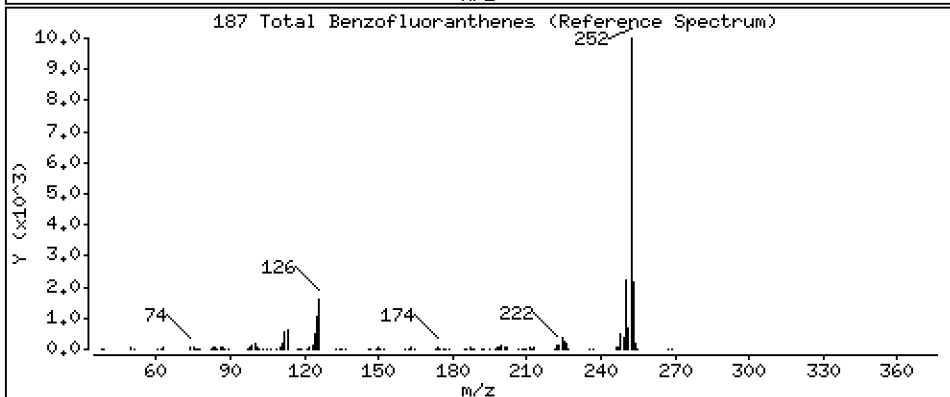
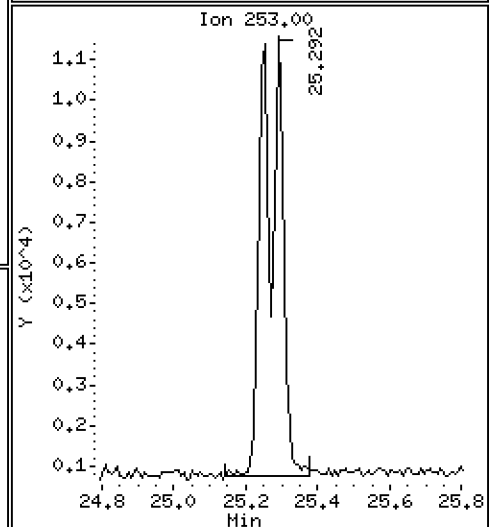
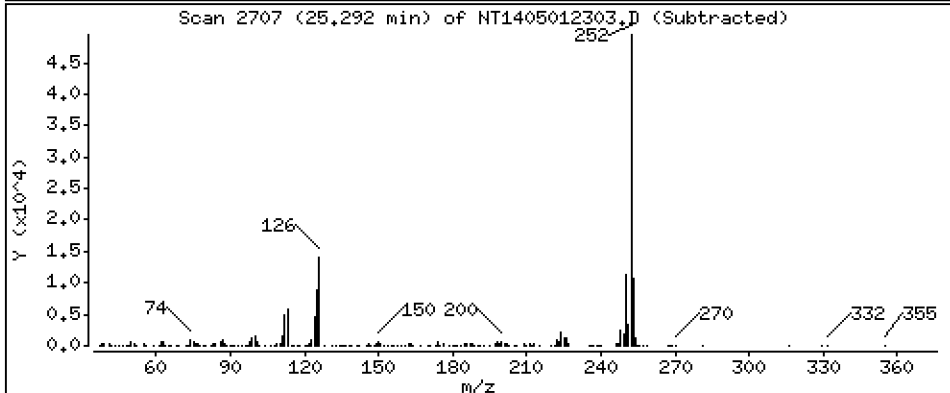
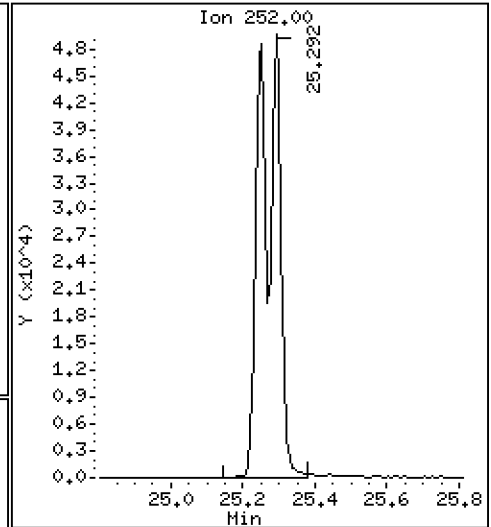
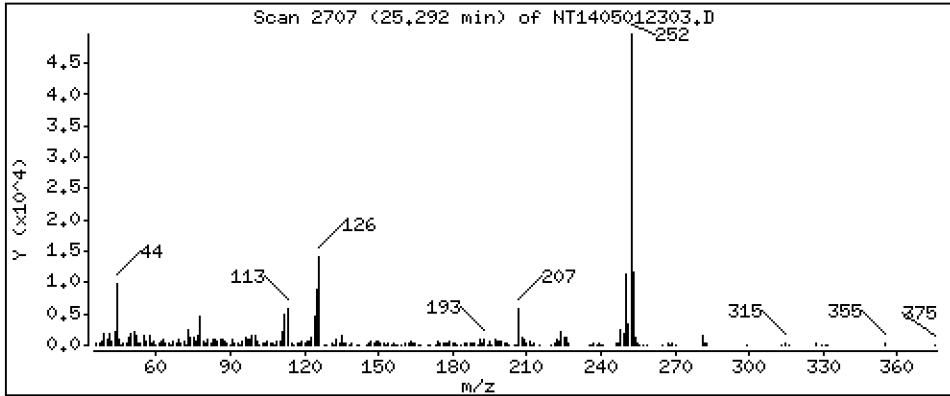
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 1,019 ug/mL





Date : 01-MAY-2023 15:45

Client ID:

Instrument: nt14.i

Sample Info: SLE0024-LCV1

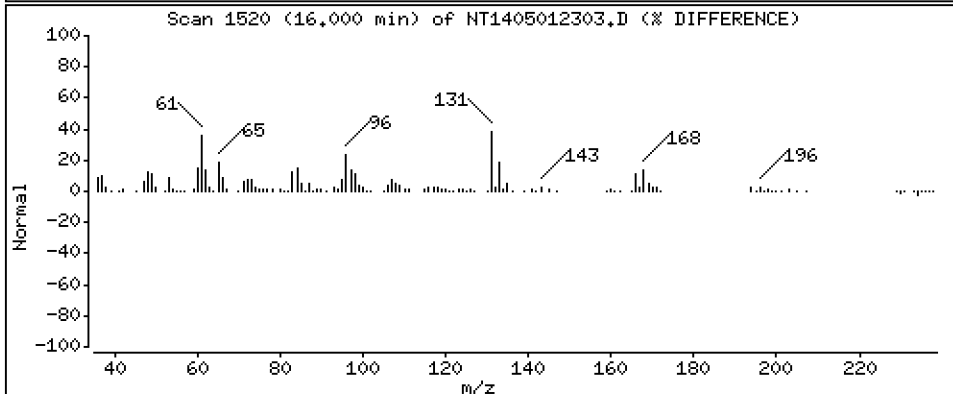
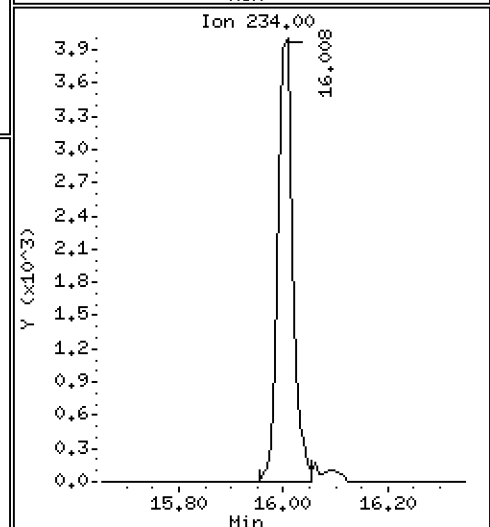
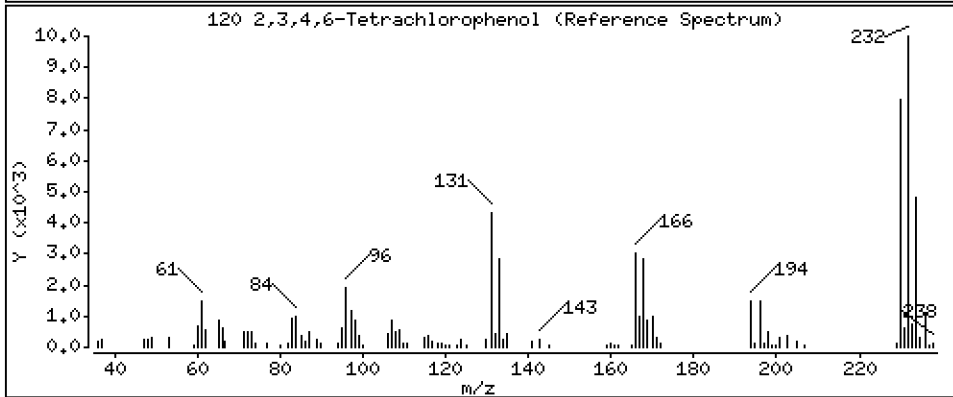
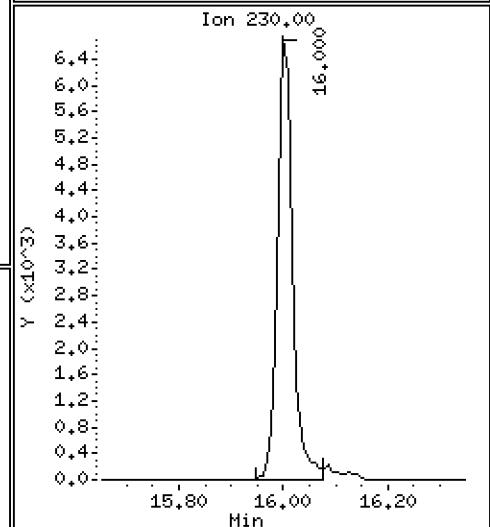
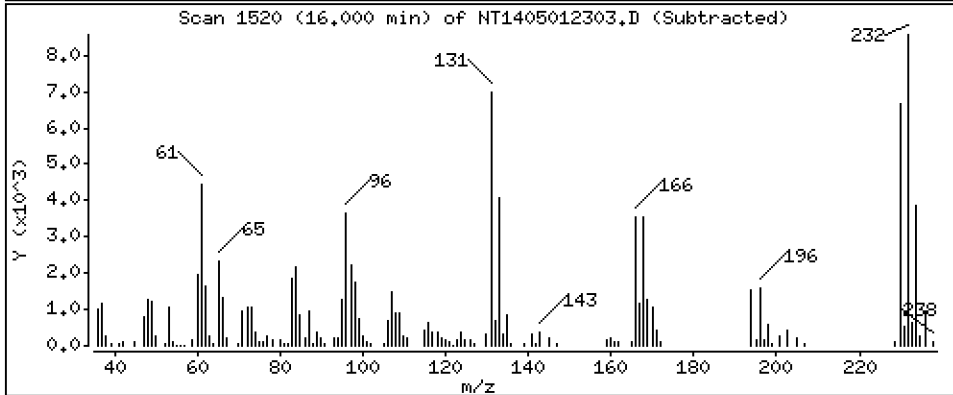
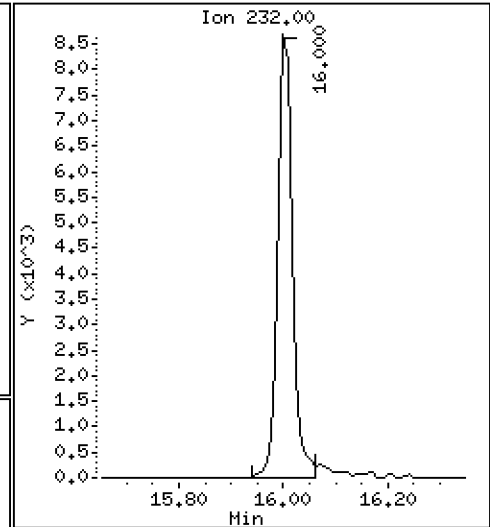
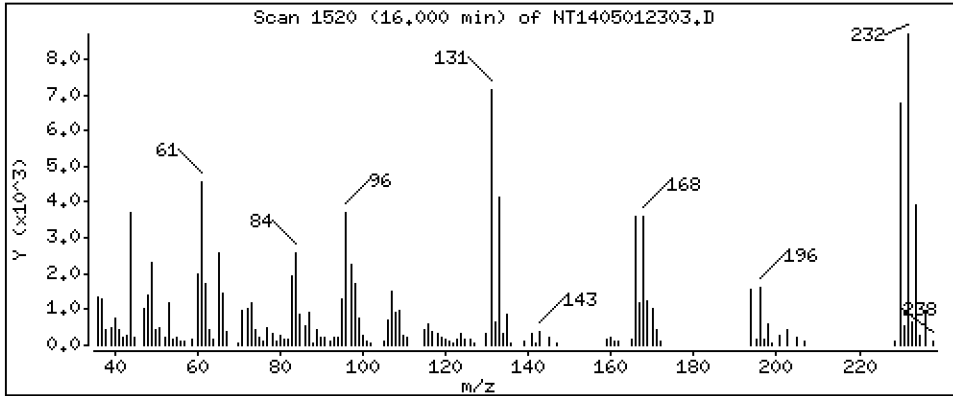
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 0,3538 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230501A.b\NT1405012303.D  
 Lab Smp Id: SLE0024-LCV1  
 Inj Date : 01-MAY-2023 15:45 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0024-LCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Meth Date : 02-May-2023 10:51 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 3  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.898	6.898	(0.755)	83153	0.80716	0.8072
\$ 2 Phenol-d5	99		8.482	8.490	(0.929)	109802	0.75948	0.7595
3 Phenol	94		8.505	8.513	(0.931)	85199	0.52582	0.5258
\$ 5 2-Chlorophenol-d4	132		8.768	8.768	(0.960)	80419	0.78193	0.7819
4 Bis(2-Chloroethyl)ether	93		8.675	8.675	(0.950)	61631	0.49819	0.4982
6 2-Chlorophenol	128		8.791	8.799	(0.963)	58610	0.51932	0.5193
7 1,3-Dichlorobenzene	146		9.070	9.070	(0.993)	57385	0.50781	0.5078
* 8 1,4-Dichlorobenzene-d4	152		9.132	9.132	(1.000)	284867	4.00000	
9 1,4-Dichlorobenzene	146		9.163	9.163	(1.003)	52950	0.49152	0.4915
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.497	(1.040)	34718	0.53288	0.5329
12 1,2-Dichlorobenzene	146		9.520	9.520	(1.042)	52916	0.49368	0.4937
11 Benzyl alcohol	108		9.403	9.403	(1.030)	34364	0.46495	0.4649
14 2,2'-oxybis(1-Chloropropane)	121		9.706	9.706	(1.063)	14202	0.39248	0.3925
13 2-Methylphenol	108		9.628	9.629	(1.054)	56707	0.52460	0.5246
17 Hexachloroethane	117		10.117	10.118	(1.108)	24903	0.48490	0.4849
16 N-Nitroso-di-n-propylamine	70		9.962	9.970	(1.091)	48307	0.44438	0.4444
15 4-Methylphenol	108		9.900	9.900	(1.084)	59704	0.48500	0.4850
\$ 18 Nitrobenzene-d5	82		10.234	10.242	(0.879)	67235	0.48791	0.4879
19 Nitrobenzene	77		10.273	10.273	(0.883)	70266	0.47698	0.4770
20 Isophorone	82		10.715	10.723	(0.921)	84473	0.41775	0.4177
21 2-Nitrophenol	139		10.901	10.909	(0.937)	24902	0.32171	0.3217
22 2,4-Dimethylphenol	107		10.948	10.955	(0.941)	119215	1.07397	1.074
23 Bis(2-Chloroethoxy)methane	93		11.149	11.157	(0.958)	62637	0.48194	0.4819
24 Benzoic acid	105		11.056	11.196	(0.950)	42738	0.46492	0.4649
25 2,4-Dichlorophenol	162		11.359	11.359	(0.976)	81494	0.74968	0.7497
26 1,2,4-Trichlorobenzene	180		11.544	11.552	(0.992)	41838	0.50493	0.5049
* 27 Naphthalene-d8	136		11.637	11.637	(1.000)	1119668	4.00000	
28 Naphthalene	128		11.675	11.675	(1.003)	151231	0.50250	0.5025
29 4-Chloroaniline	127		11.807	11.814	(1.015)	108999	0.83709	0.8371
30 Hexachlorobutadiene	225		12.038	12.039	(1.035)	18438	0.48673	0.4867
31 4-Chloro-3-methylphenol	107		12.766	12.774	(1.097)	94370	0.95133	0.9513
32 2-Methylnaphthalene	142		13.076	13.083	(1.124)	100675	0.46181	0.4618
33 Hexachlorocyclopentadiene	237		13.548	13.548	(0.887)	30928	0.80817	0.8082

Compounds	QUANT	SIG	CONCENTRATIONS					
			ON-COLUMN	FINAL	RT	EXP RT	REL RT	RESPONSE
	MASS		(ug/mL)	(ug/mL)				
34 2,4,6-Trichlorophenol	196		13.702	13.702	(0.897)	45802	0.96071	0.9607
35 2,4,5-Trichlorophenol	196		13.780	13.780	(0.902)	46948	0.92694	0.9269
§ 36 2-Fluorobiphenyl	172		13.865	13.865	(0.908)	95630	0.52807	0.5281
37 2-Chloronaphthalene	162		14.082	14.082	(0.922)	83732	0.48435	0.4844
38 2-Nitroaniline	65		14.337	14.345	(0.939)	73583	0.79682	0.7968
39 Dimethylphthalate	163		14.770	14.778	(0.967)	88179	0.49447	0.4945
40 Acenaphthylene	152		14.956	14.956	(0.979)	141289	0.51210	0.5121
41 2,6-Dinitrotoluene	165		14.910	14.918	(0.976)	36034	0.89127	0.8913
* 42 Acenaphthene-d10	164		15.273	15.273	(1.000)	519932	4.00000	
43 3-Nitroaniline	138		15.196	15.212	(0.995)	43380	0.85397	0.8540
44 Acenaphthene	153		15.335	15.343	(1.004)	82928	0.50175	0.5017
45 2,4-Dinitrophenol	184		15.412	15.420	(1.009)	4065	0.16633	0.1663
46 Dibenzofuran	168		15.660	15.668	(1.025)	114444	0.48504	0.4850
47 4-Nitrophenol	109		15.521	15.521	(1.016)	22051	0.74598	0.7460
48 2,4-Dinitrotoluene	165		15.722	15.729	(1.029)	47049	0.85949	0.8595
50 Diethylphthalate	149		16.232	16.240	(1.063)	98961	0.51268	0.5127
49 Fluorene	166		16.379	16.386	(1.072)	104763	0.50175	0.5018
51 4-Chlorophenyl-phenylether	204		16.371	16.371	(1.072)	37851	0.43827	0.4383
52 4-Nitroaniline	138		16.471	16.487	(1.078)	43112	0.95975	0.9597
53 4,6-Dinitro-2-methylphenol	198		16.564	16.579	(0.904)	20382	0.73838	0.7384
54 N-Nitrosodiphenylamine	169		16.618	16.626	(0.907)	61785	0.49289	0.4929
§ 55 2,4,6-Tribromophenol	330		16.918	16.919	(1.108)	10248	0.59955	0.5995
56 4-Bromophenyl-phenylether	248		17.373	17.381	(0.948)	18233	0.44220	0.4422
57 Hexachlorobenzene	284		17.698	17.698	(0.966)	18877	0.45272	0.4527
58 Pentachlorophenol	266		18.054	18.054	(0.985)	10359	0.39061	0.3906
* 59 Phenanthrene-d10	188		18.325	18.325	(1.000)	887647	4.00000	
60 Phenanthrene	178		18.364	18.372	(1.002)	126073	0.50233	0.5023
61 Anthracene	178		18.464	18.464	(1.008)	117042	0.48623	0.4862
62 Carbazole	167		18.789	18.797	(1.025)	111917	0.50244	0.5024
63 Di-n-butylphthalate	149		19.578	19.579	(1.068)	139181	0.40988	0.4099
64 Fluoranthene	202		20.755	20.755	(0.888)	123657	0.45236	0.4524
65 Pyrene	202		21.180	21.180	(0.906)	127957	0.45327	0.4533
§ 66 Terphenyl-d14	244		21.459	21.459	(0.918)	85065	0.39093	0.3909
67 Butylbenzylphthalate	149		22.380	22.380	(0.958)	60205	0.33065	0.3307
68 Benzo(a)anthracene	228		23.340	23.340	(0.999)	109659	0.51875	0.5188
* 69 Chrysene-d12	240		23.371	23.371	(1.000)	592191	4.00000	
70 3,3'-Dichlorobenzidine	252		23.294	23.302	(0.997)	101272	1.49482	1.495
71 Chrysene	228		23.410	23.418	(1.002)	100145	0.50794	0.5079
72 bis(2-Ethylhexyl)phthalate	149		24.393	24.401	(1.000)	171841	0.47785	0.4778
* 134 Di-n-octylphthalate-d4	153		24.385	24.385	(1.000)	1347119	4.00000	
73 Di-n-octylphthalate	149		24.393	24.401	(1.000)	171841	0.47785	0.4778
74 Benzo(b)fluoranthene	252		25.252	25.260	(0.970)	91940	0.47689	0.4769
75 Benzo(k)fluoranthene	252		25.291	25.307	(0.971)	102478	0.54174	0.5417
76 Benzo(a)pyrene	252		25.918	25.934	(0.995)	81477	0.50009	0.5001
* 77 Perylene-d12	264		26.042	26.050	(1.000)	578202	4.00000	
78 Indeno(1,2,3-cd)pyrene	276		28.774	28.789	(1.105)	93326	0.41424	0.4142
79 Dibenzo(a,h)anthracene	278		28.789	28.805	(1.105)	77963	0.42305	0.4230
80 Benzo(g,h,i)perylene	276		29.589	29.605	(1.136)	77822	0.40803	0.4080
90 N-Nitrosodimethylamine	74		4.790	4.797	(0.525)	83952	0.98015	0.9801
91 Aniline	93		8.590	8.590	(0.941)	134384	0.91392	0.9139
93 Benzidine	184		20.987	20.994	(0.898)	120575	1.11770	1.118
103 Pyridine	79		4.836	4.821	(0.530)	127062	0.50115	0.5011
105 1-methylnaphthalene	142		13.300	13.308	(1.143)	92577	0.43976	0.4398
111 Azobenzene (1,2-DP-Hydrazine)	77		16.695	16.695	(1.093)	141827	0.47613	0.4761

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.291	25.307	(0.971)	186053	1.01938	1.019
120 2,3,4,6-Tetrachlorophenol	232	16.000	16.000	(1.048)	16231	0.35383	0.3538

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 01-MAY-2023  
 Lab File ID: NT1405012303.D Calibration Time: 15:06  
 Lab Smp Id: SLE0024-LCV1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	273989	136995	547978	284867	3.97
27 Naphthalene-d8	1103207	551604	2206414	1119668	1.49
42 Acenaphthene-d10	520358	260179	1040716	519932	-0.08
59 Phenanthrene-d10	882575	441288	1765150	887647	0.57
69 Chrysene-d12	600619	300310	1201238	592191	-1.40
134 Di-n-octylphthala	1445631	722816	2891262	1347119	-6.81
77 Perylene-d12	570040	285020	1140080	578202	1.43

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.13	8.63	9.63	9.13	-0.00
27 Naphthalene-d8	11.64	11.14	12.14	11.64	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.33	17.83	18.83	18.33	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.37	-0.00
134 Di-n-octylphthala	24.39	23.89	24.89	24.39	-0.00
77 Perylene-d12	26.05	25.55	26.55	26.04	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012303.D

Lab ID: SLE0024-LCV1  
nt14.i, ABN.m, 01-MAY-2023 15:45

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.950	0.962	-0.0120	Benzoic acid

RRT check based on Ccal File: NT1405012302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



CONTINUING CALIBRATION CHECK  
EPA 8270E

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: NT14

Calibration: GD00062

Lab File ID: NT1405022317.D

Calibration Date: 04/21/2023

Sequence: SLE0049

Injection Date: 05/02/23

Lab Sample ID: SLE0049-CCV1

Injection Time: 23:39

Sequence Name: Calibration Check

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Phenol	A	5.0000	5.0	2.2751850	2.2954810		0.9	+/-50
4-Methylphenol	A	5.0000	5.0	1.7285470	1.7173020		-0.7	+/-50
Naphthalene	A	5.0000	5.2	1.0751590	1.1278360		4.9	+/-50
2-Methylnaphthalene	A	5.0000	5.1	0.7788139	0.7881069		1.2	+/-50
Acenaphthylene	A	5.0000	5.2	2.1225980	2.2271270		4.9	+/-50
Dimethylphthalate	A	5.0000	4.9	1.3719560	1.3443180		-2.0	+/-50
Acenaphthene	A	5.0000	5.3	1.2715320	1.3443470		5.7	+/-50
Dibenzofuran	A	5.0000	5.0	1.8152320	1.8247500		0.5	+/-50
Fluorene	A	5.0000	4.7	1.6063130	1.5147780		-5.7	+/-50
Phenanthrene	A	5.0000	5.2	1.1309770	1.1836910		4.7	+/-50
Anthracene	A	5.0000	5.5	1.0847210	1.1896830		9.7	+/-50
Fluoranthene	A	5.0000	5.3	1.8464150	1.9603580		6.2	+/-50
Pyrene	A	5.0000	5.2	1.9067960	1.9848130		4.1	+/-50
Butylbenzylphthalate	A	5.0000	4.3	0.9308079	0.9654587		-14.1	+/-50
Benzo(a)anthracene	A	5.0000	5.4	1.4278450	1.5504560		8.6	+/-50
Chrysene	A	5.0000	5.4	1.3317250	1.4459900		8.6	+/-50
bis(2-Ethylhexyl)phthalate	A	5.0000	4.7	1.0678070	1.0136490		-5.1	+/-50
Benzo(a)fluoranthene, Total	A	10.000	11.8	1.2626500	1.4913600		18.1	+/-50
Benzo(a)pyrene	A	5.0000	5.8	1.1271120	1.3038170		15.7	+/-50
Indeno(1,2,3-cd)pyrene	A	5.0000	3.4	1.3992660	1.0470720		-32.8	+/-50
Dibenzo(a,h)anthracene	A	5.0000	3.5	1.1627800	0.8912939		-30.1	+/-50
Benzo(g,h,i)perylene	A	5.0000	2.7	1.1488320	0.6994930		-47.0	+/-50
2-Fluorophenol	A	7.5000	7.74	1.4465510	1.4929450		3.2	+/-50
Phenol-d5	A	7.5000	7.91	2.0300630	2.1415430		5.5	+/-50
2-Chlorophenol-d4	A	7.5000	8.06	1.4441450	1.5521410		7.5	+/-50
1,2-Dichlorobenzene-d4	A	5.0000	5.31	0.9148326	0.9724199		6.3	+/-50
Nitrobenzene-d5	A	5.0000	5.29	0.4922929	0.5207953		5.8	+/-50
2-Fluorobiphenyl	A	5.0000	5.42	1.3932180	1.5094620		8.3	+/-50
2,4,6-Tribromophenol	A	7.5000	7.70	0.1113678	0.1349223		2.6	+/-50
p-Terphenyl-d14	A	5.0000	4.85	1.1921270	1.2526570		-2.9	+/-50

\* Values outside of QC limits

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14,1\20230502,1\NT1405022317.D

Date: 02-May-2023 23:39

Client ID:

Sample Info: SLE0049-CCW1

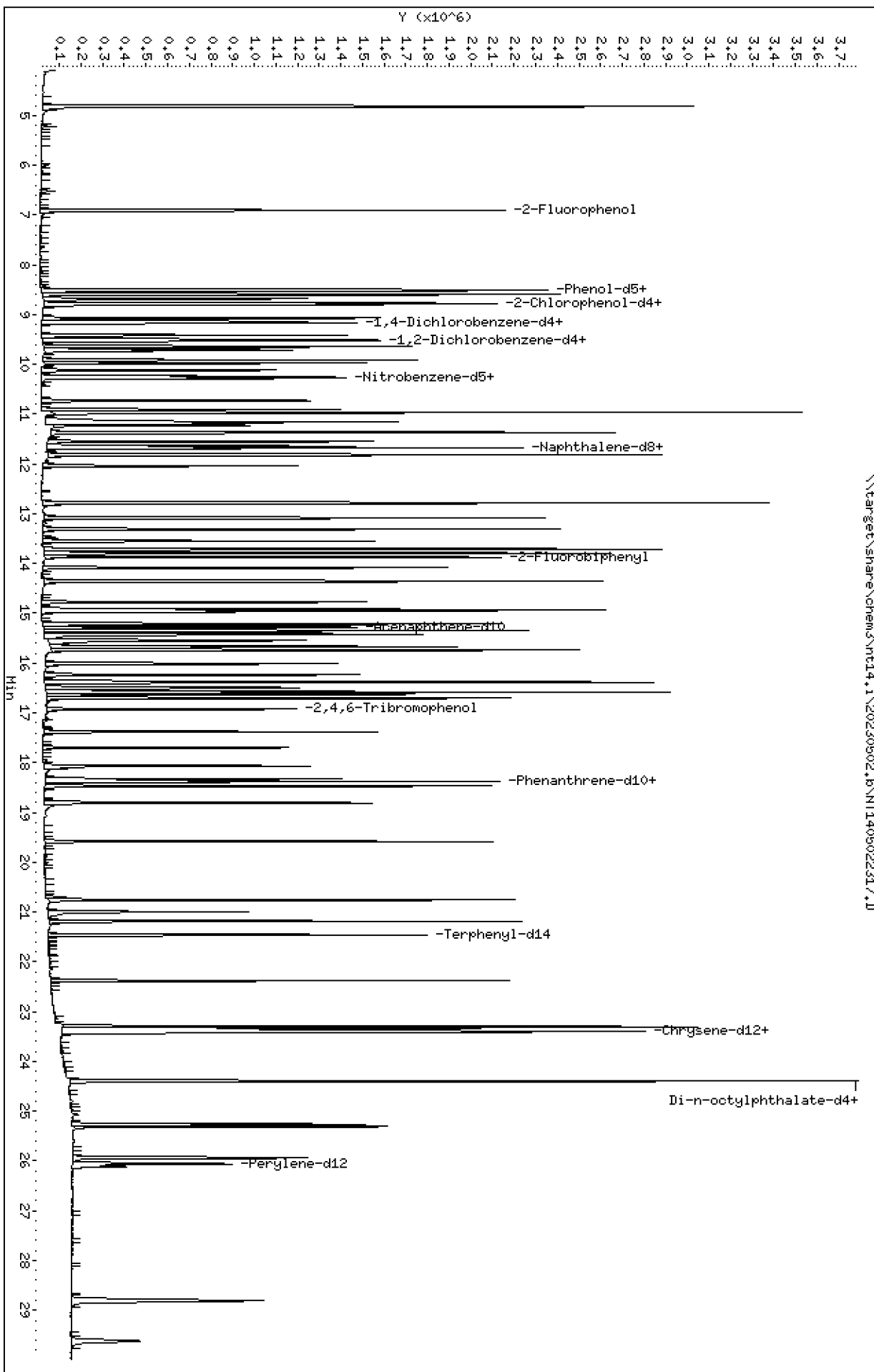
Column phase: ZB-5msi

Instrument: nt14,1

Operator: USD

Column diameter: 0.25

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Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

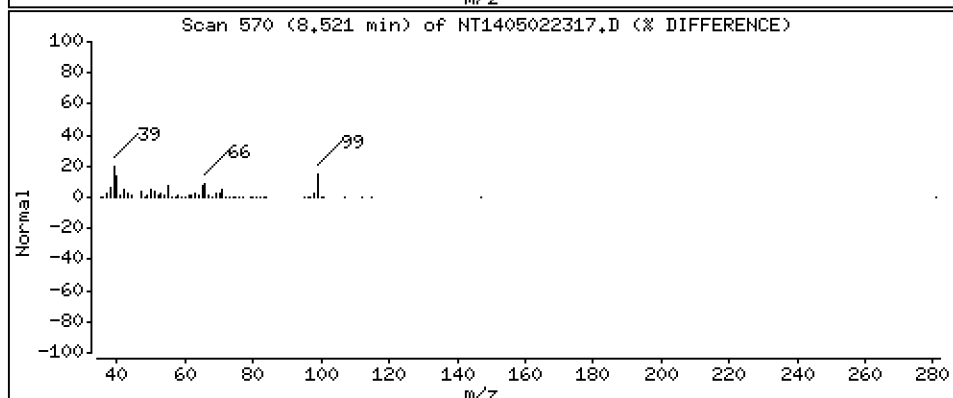
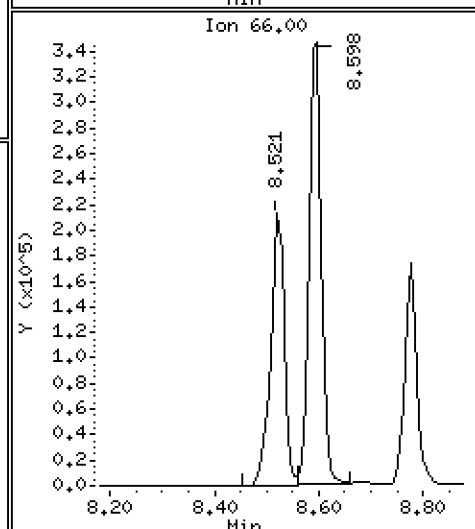
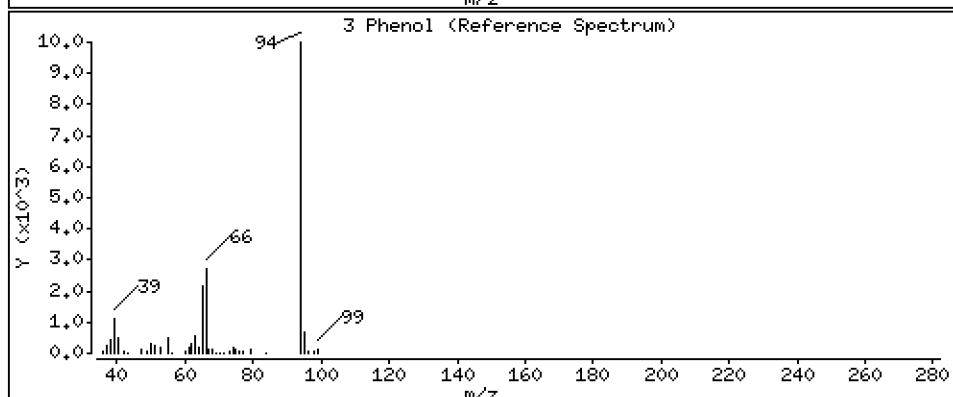
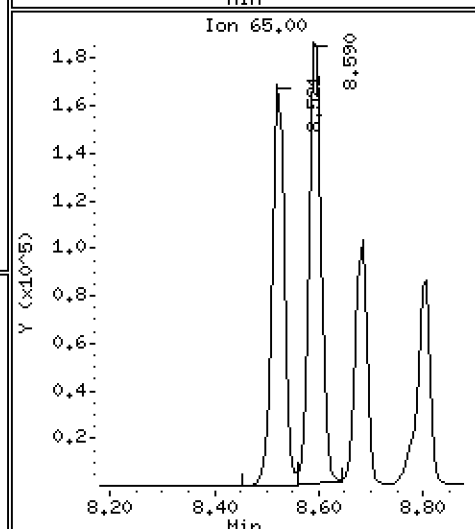
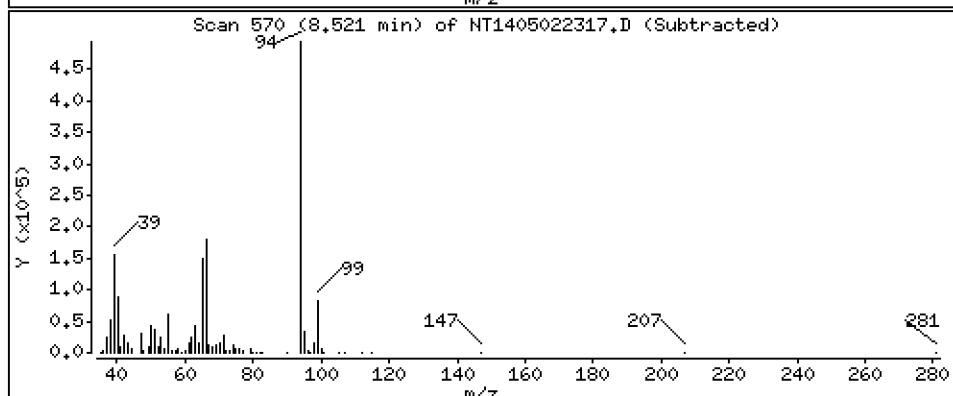
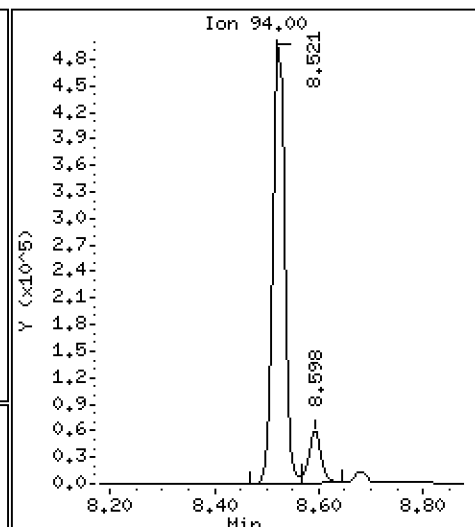
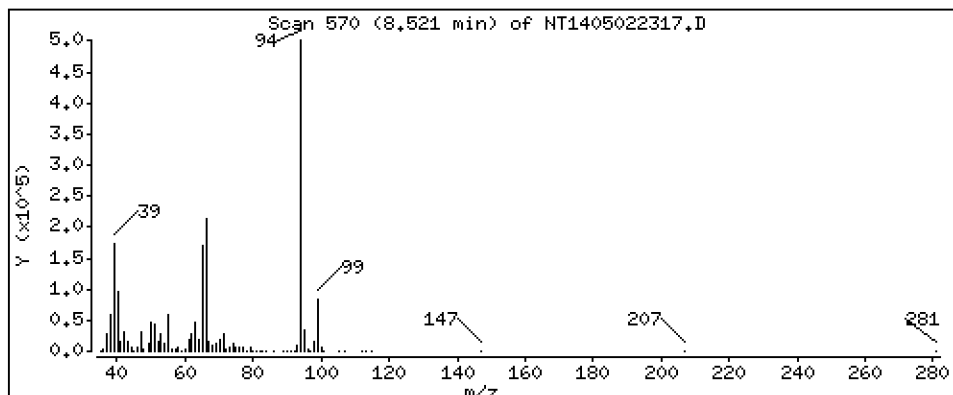
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 5,045 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

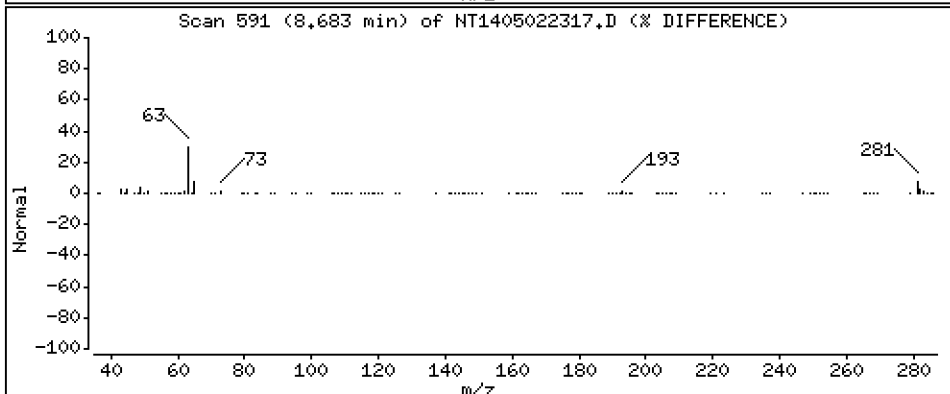
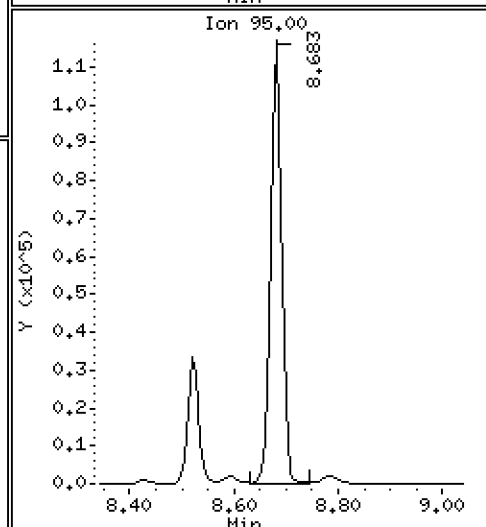
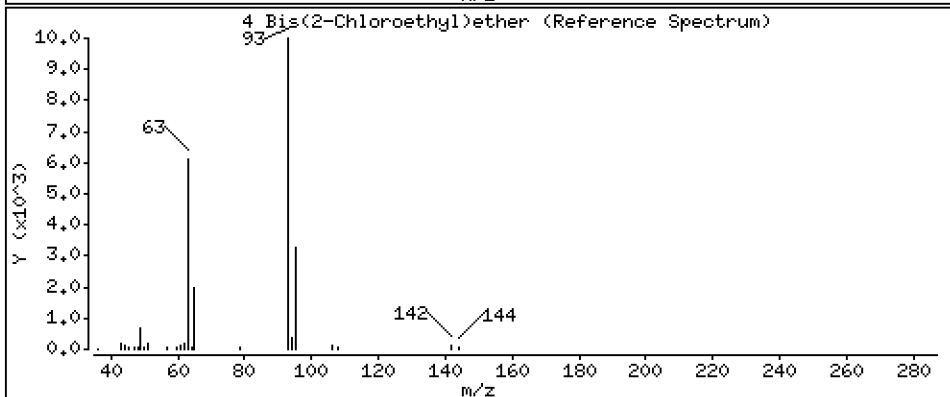
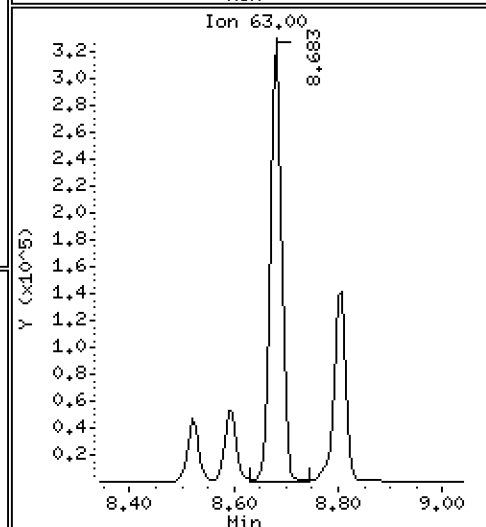
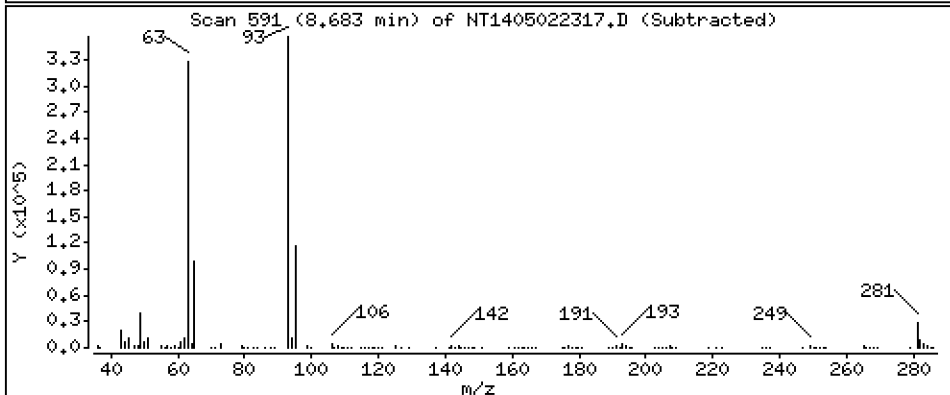
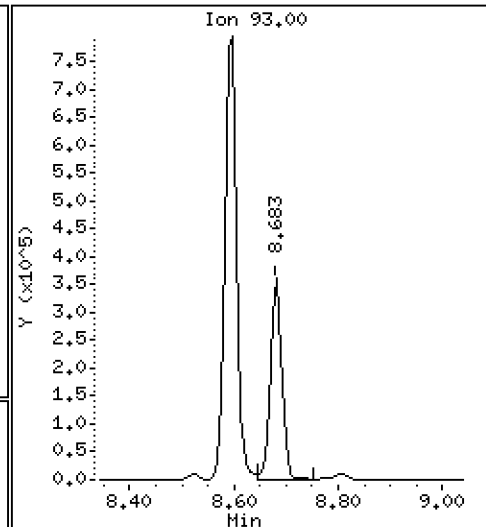
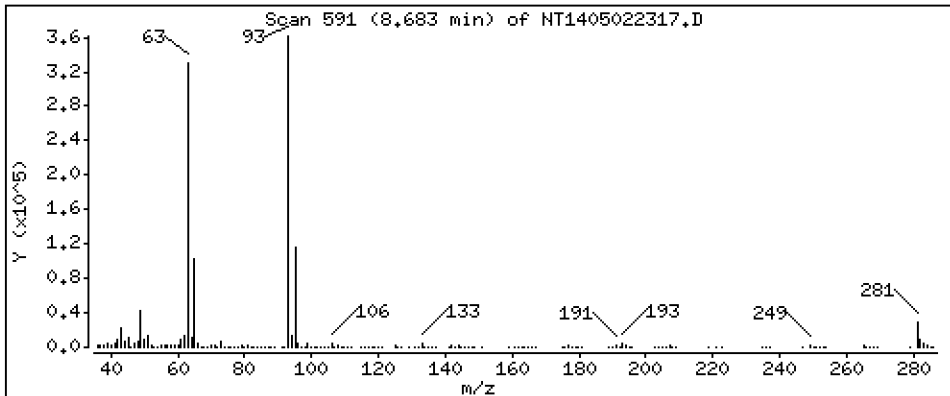
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 4,747 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

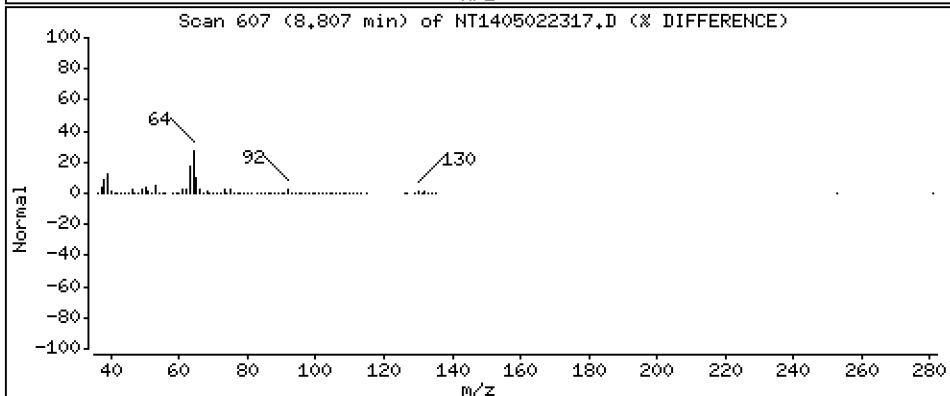
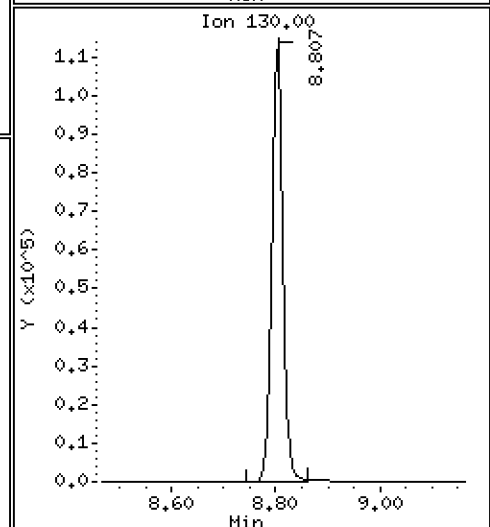
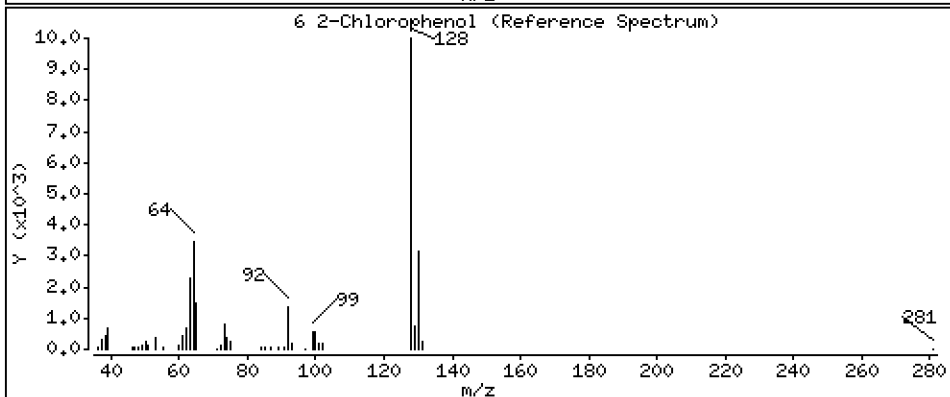
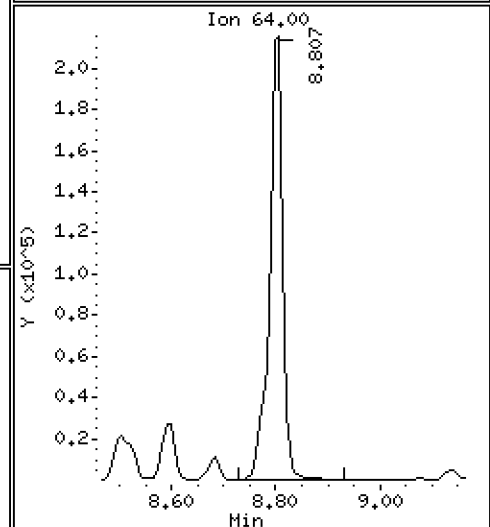
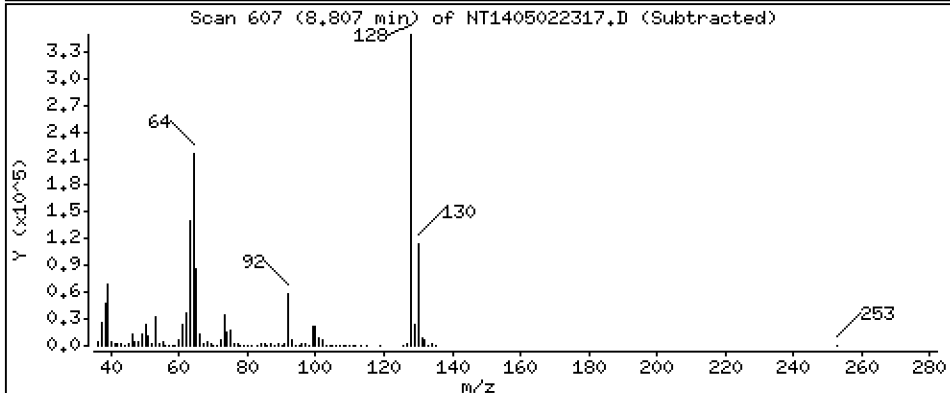
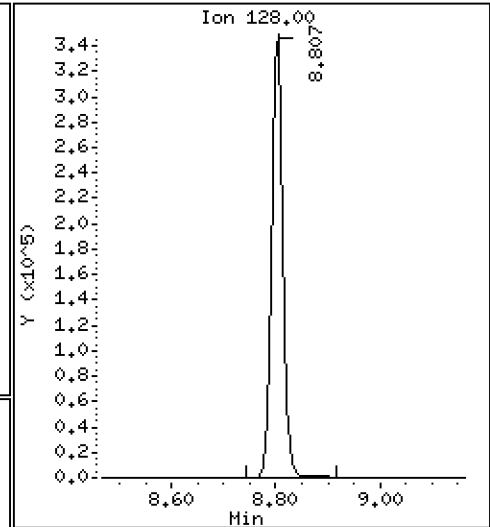
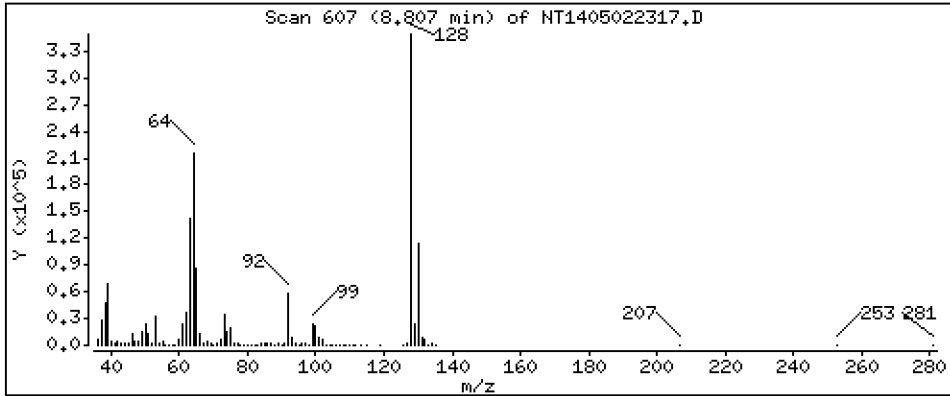
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 5,831 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

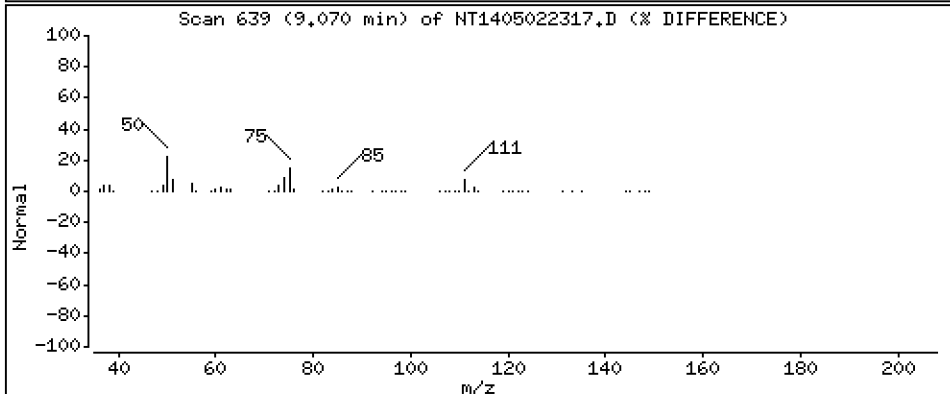
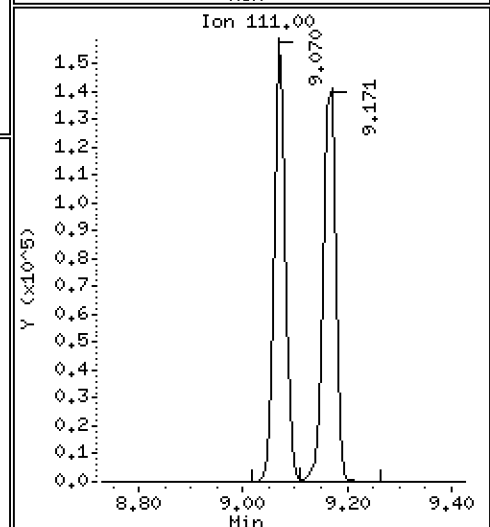
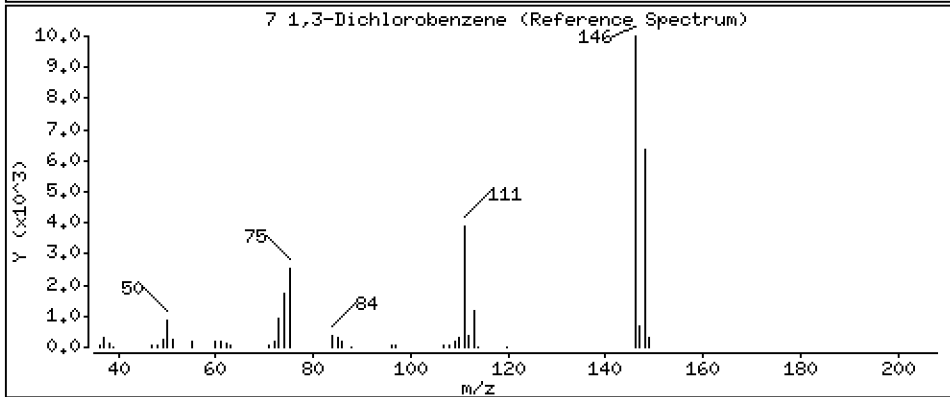
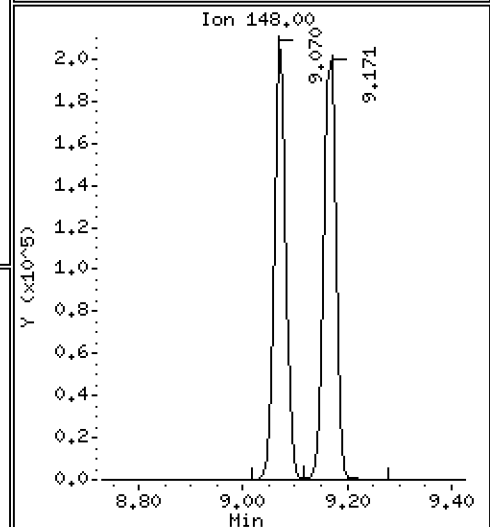
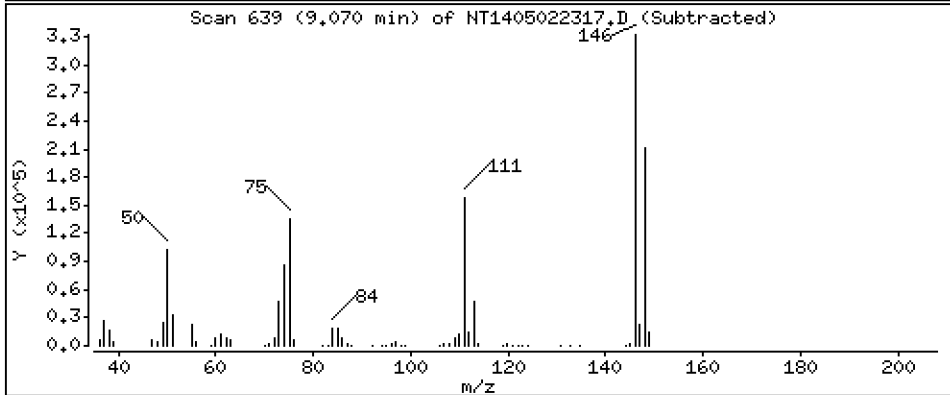
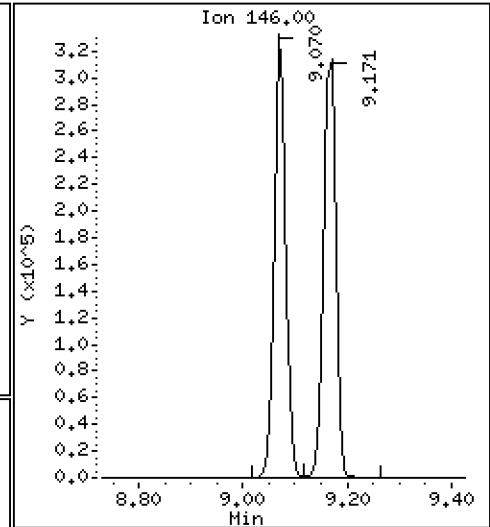
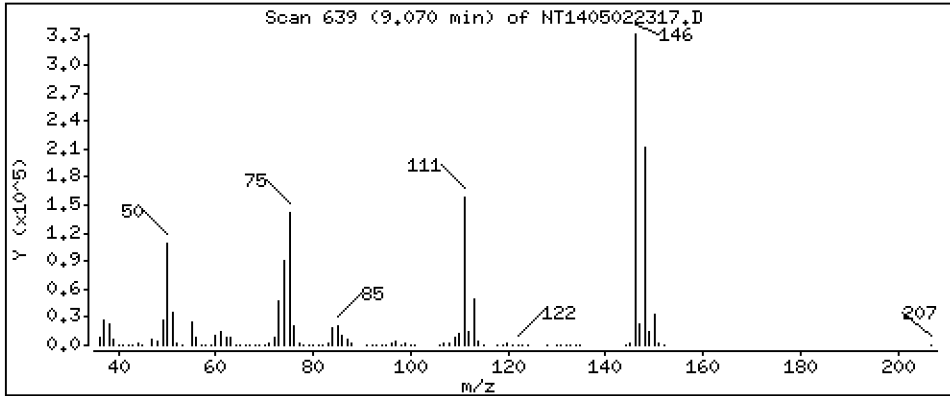
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

7 1,3-Dichlorobenzene

Concentration: 4.967 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

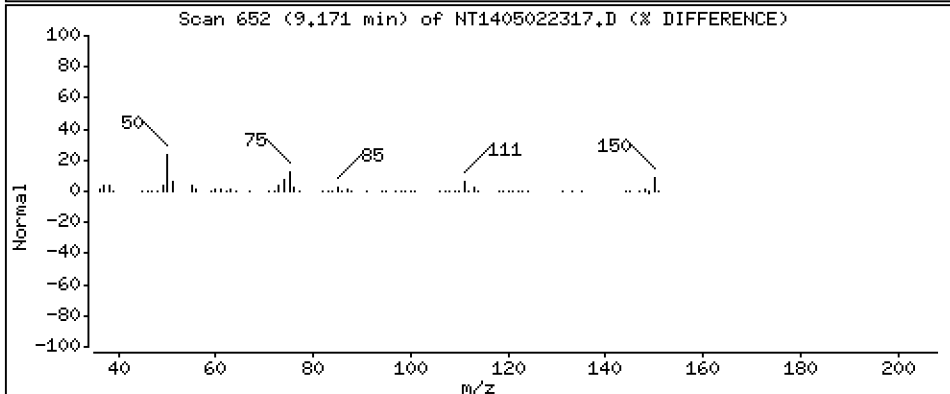
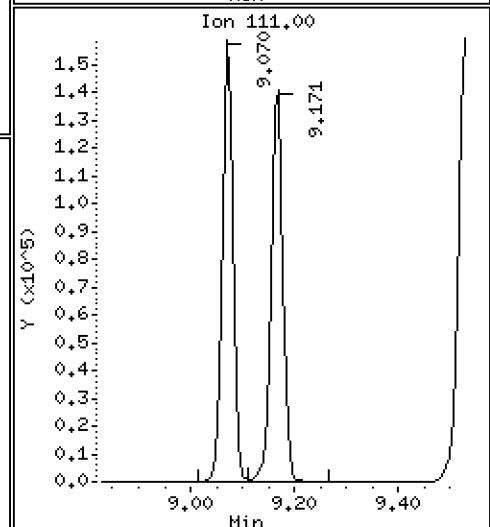
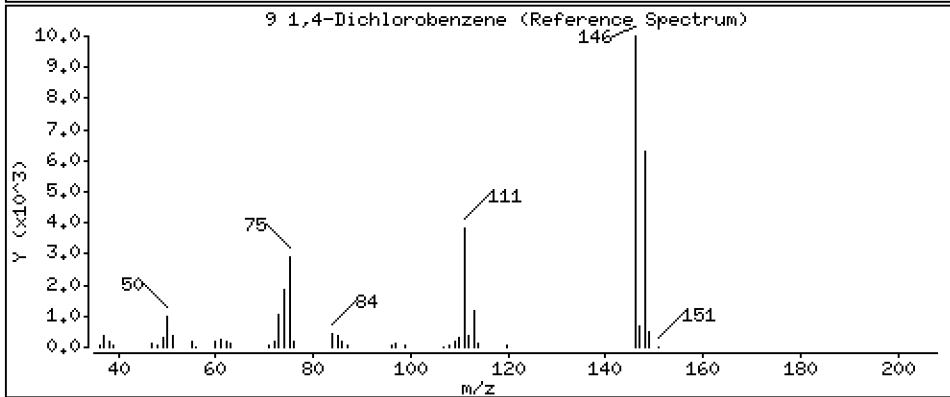
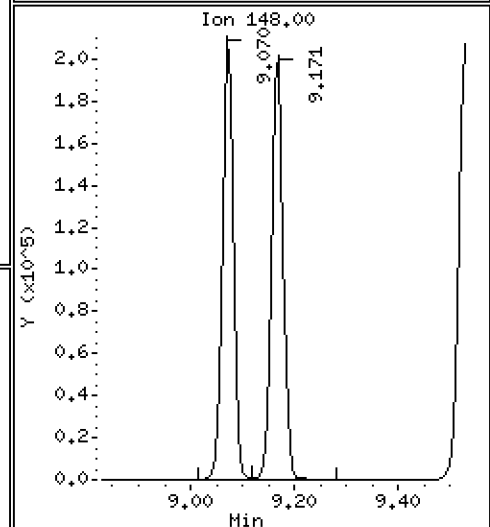
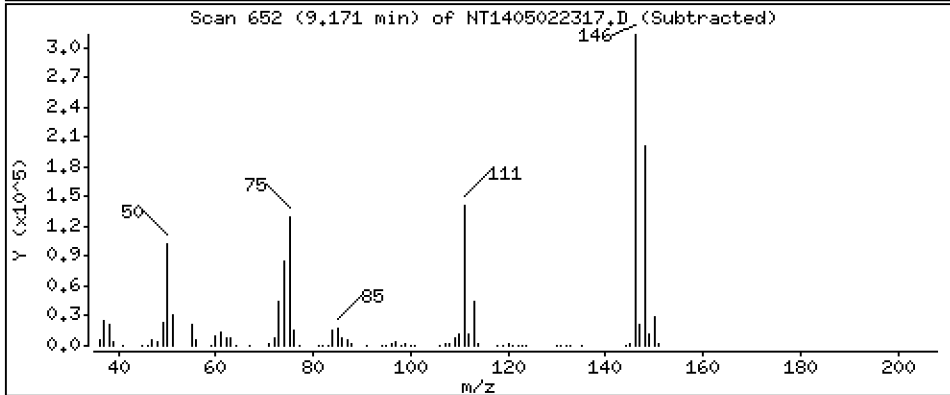
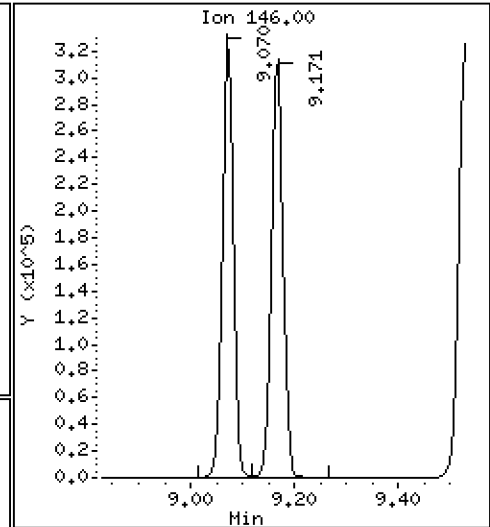
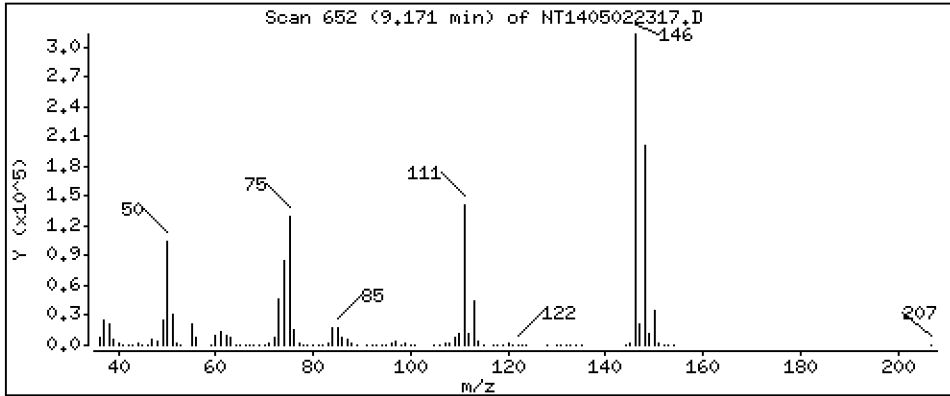
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 5,627 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

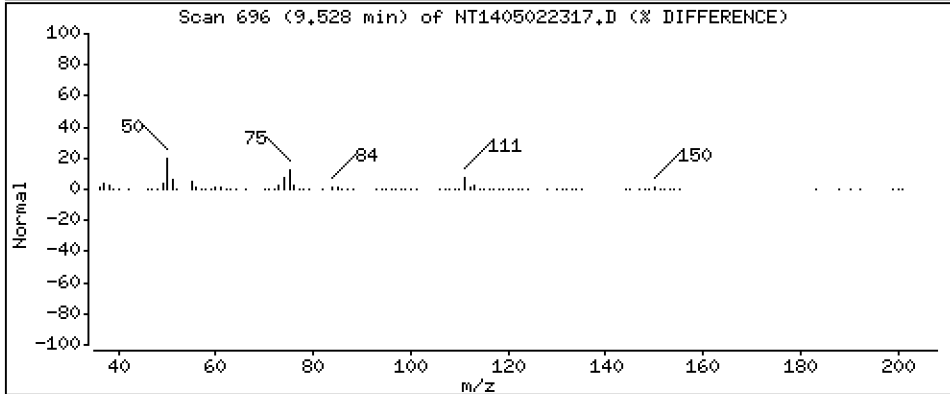
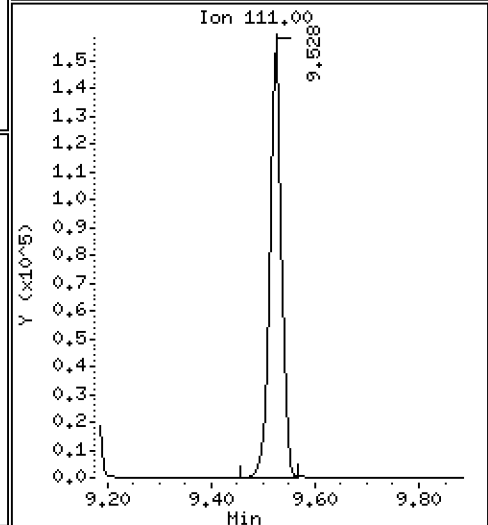
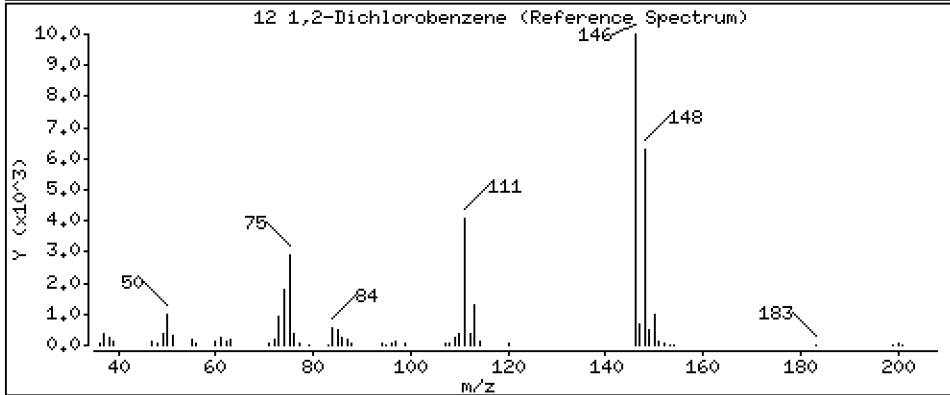
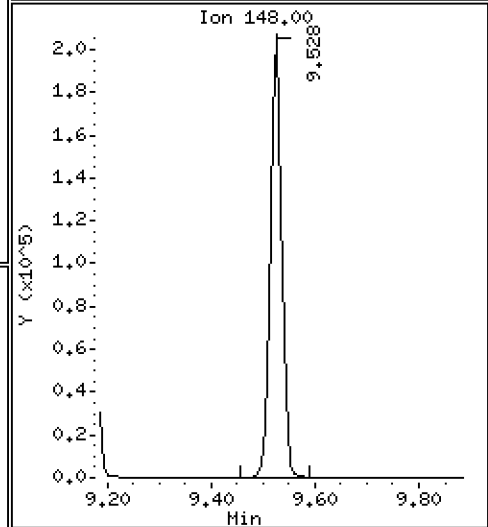
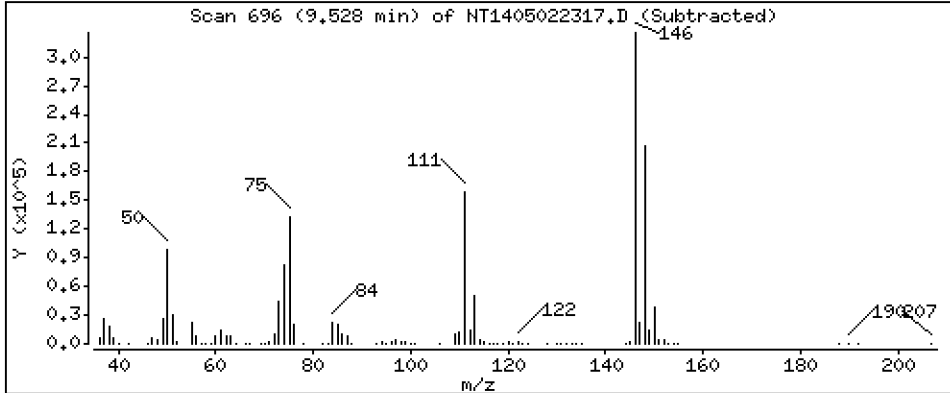
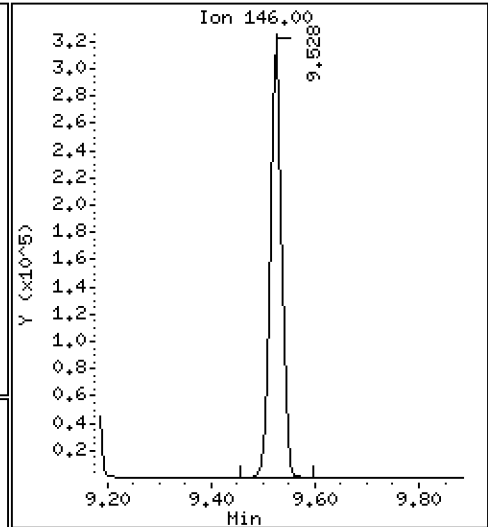
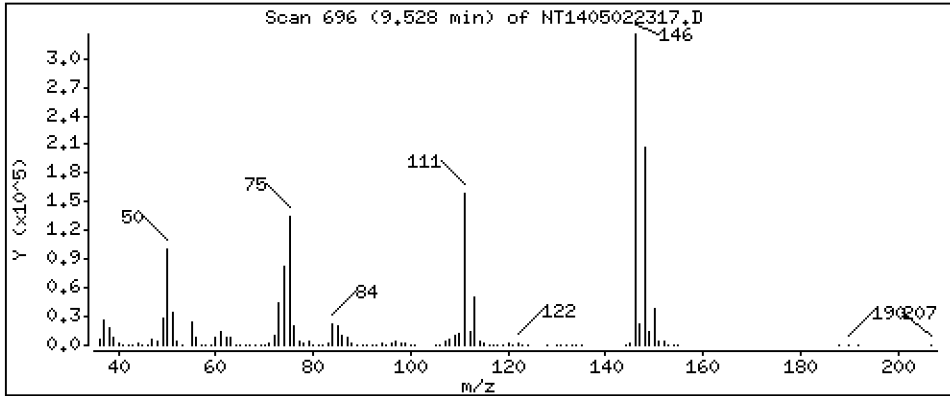
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 5.013 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

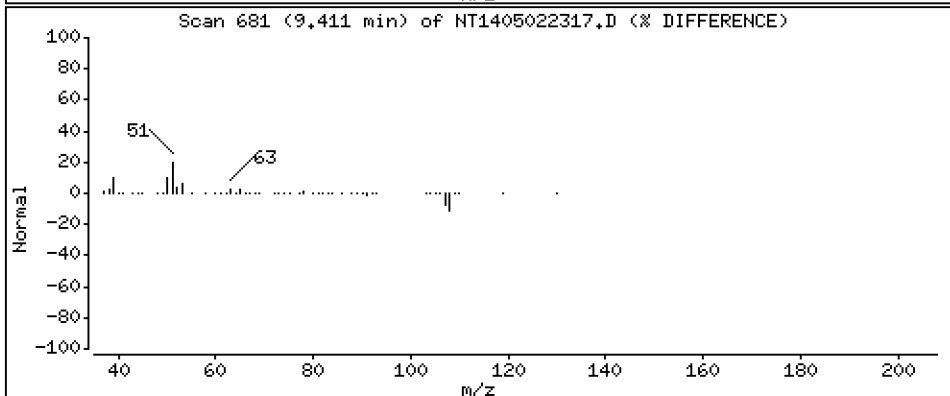
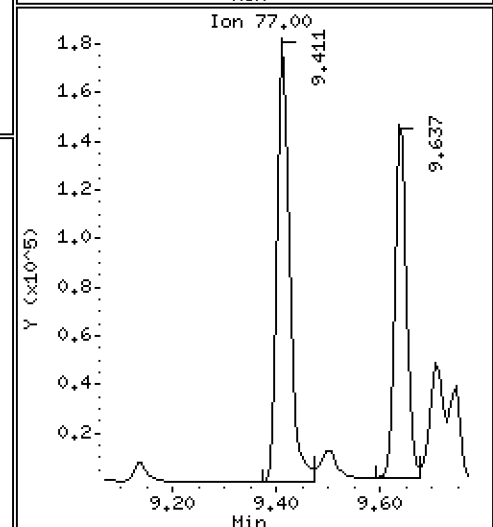
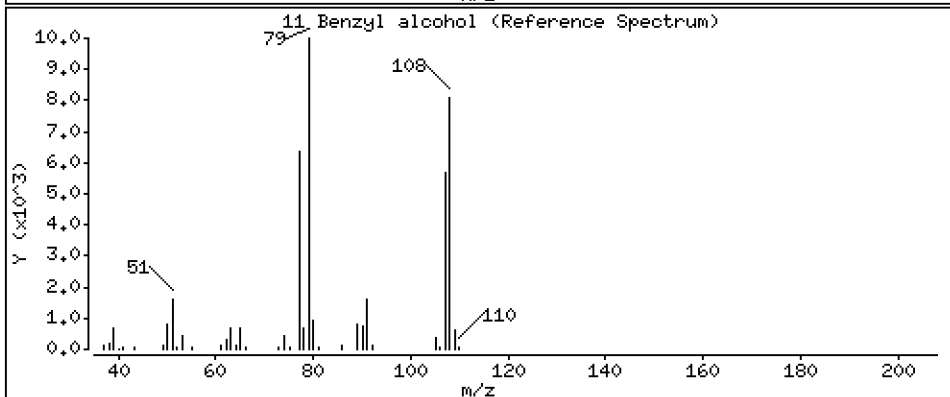
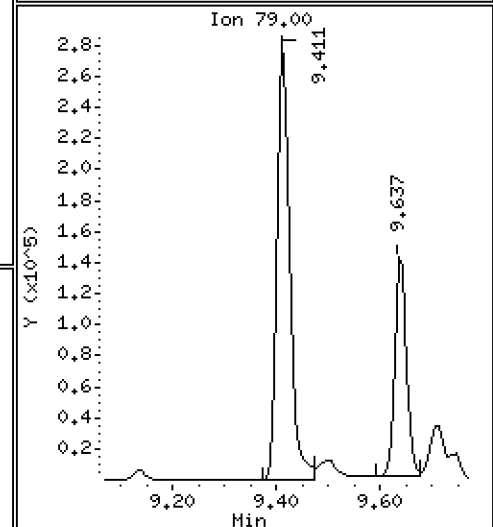
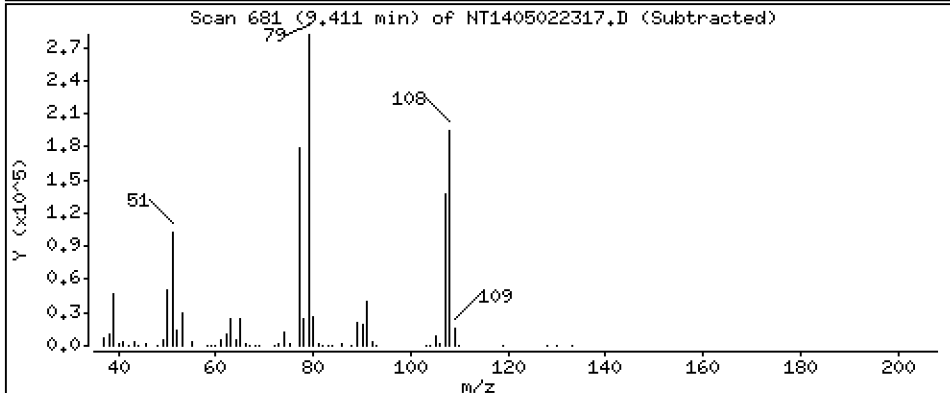
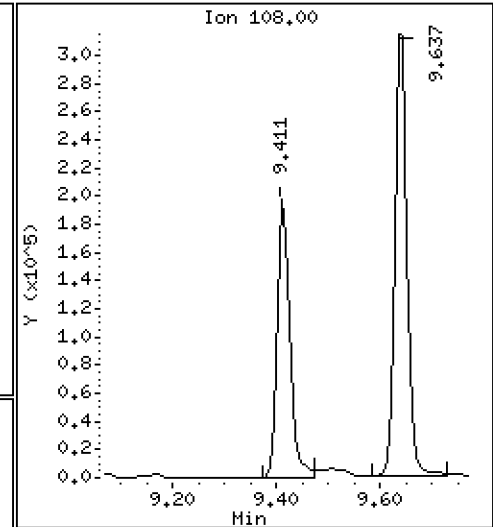
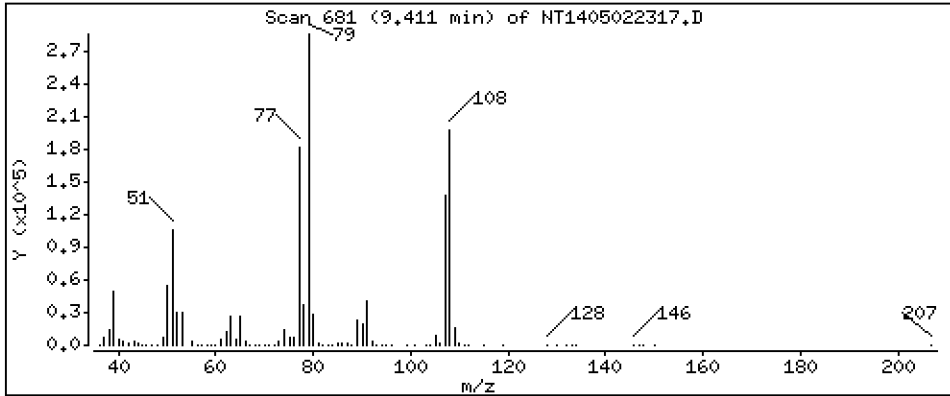
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.839 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

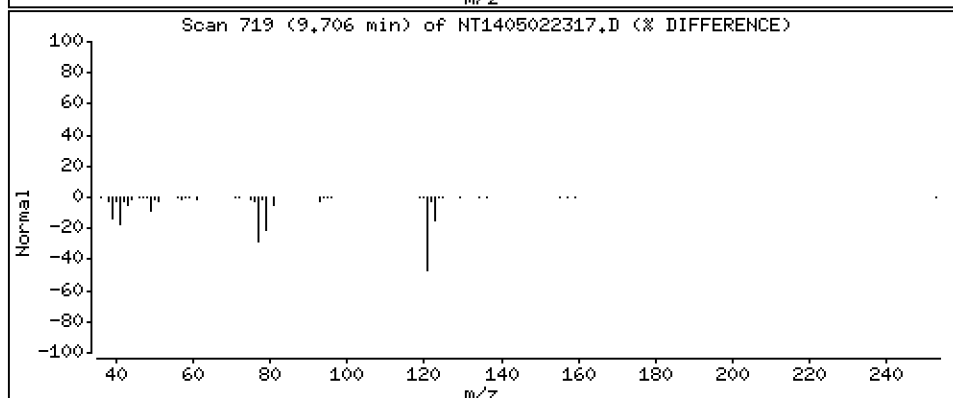
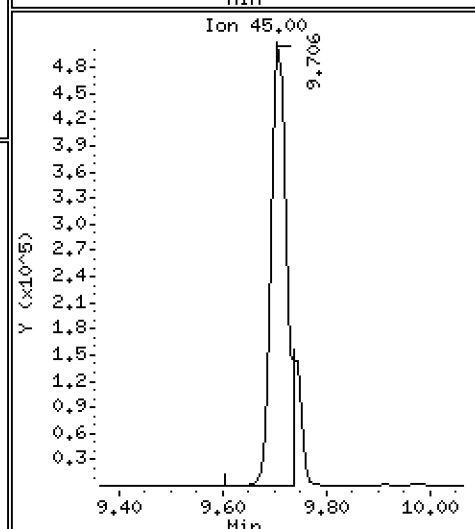
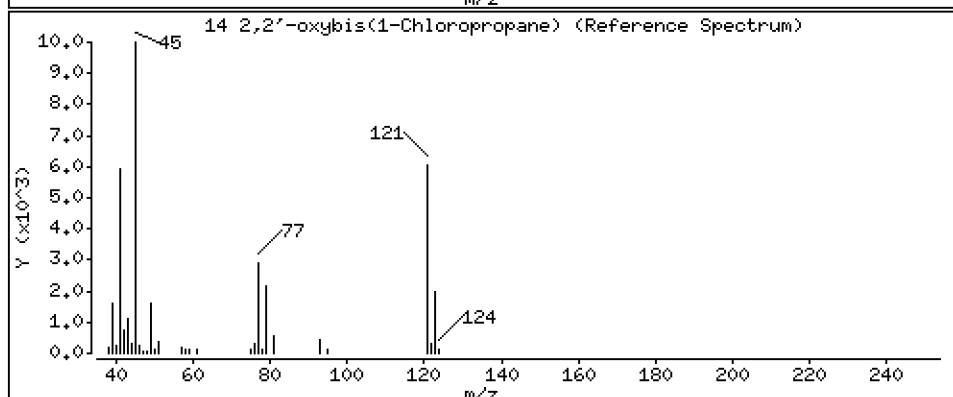
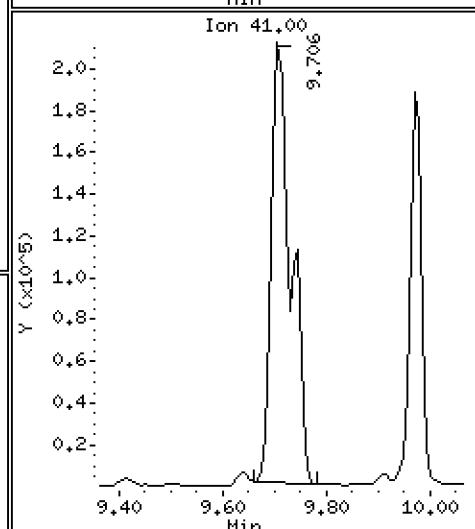
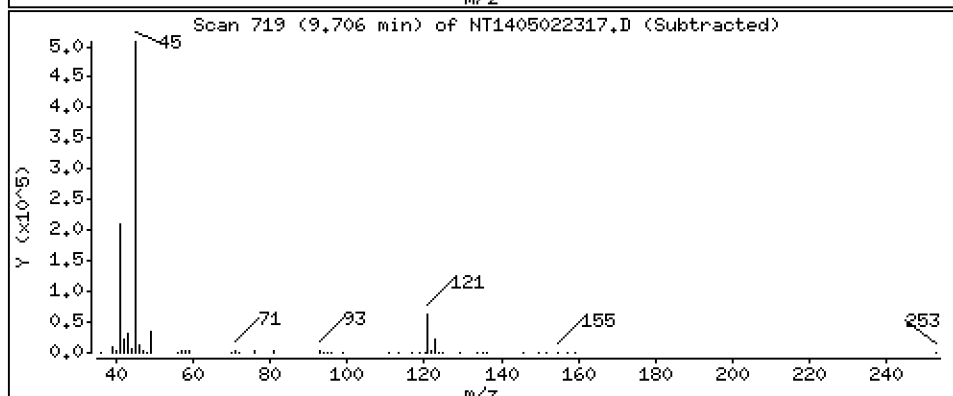
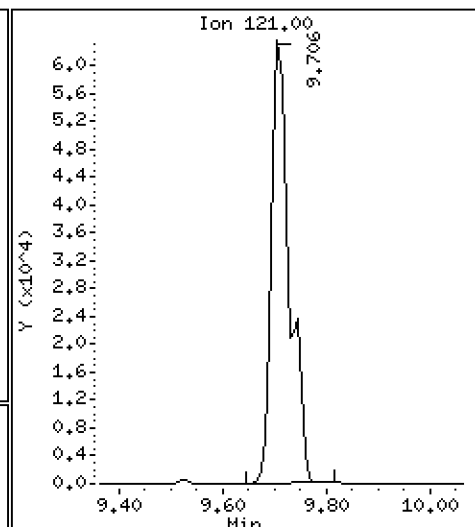
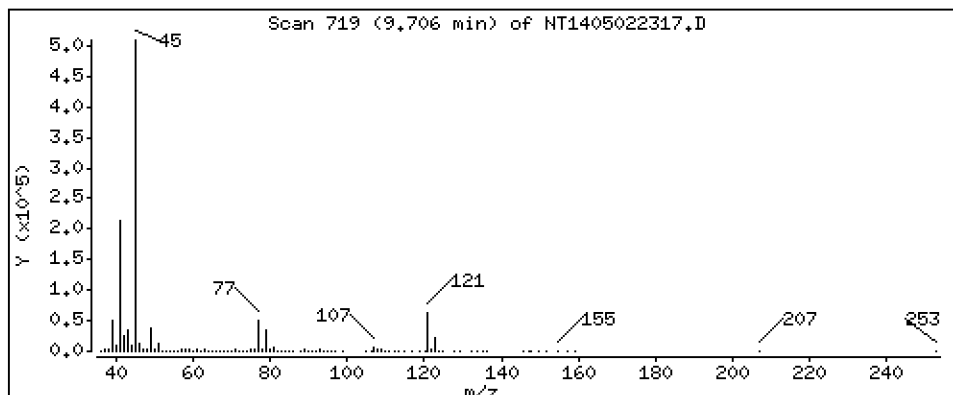
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 5,047 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

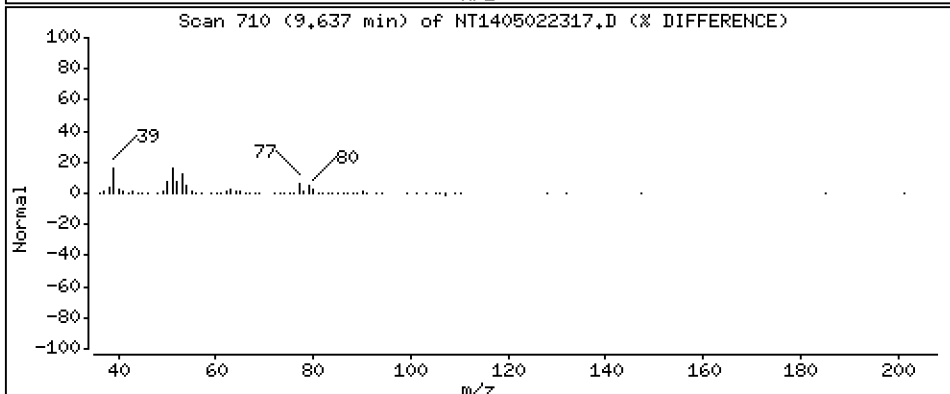
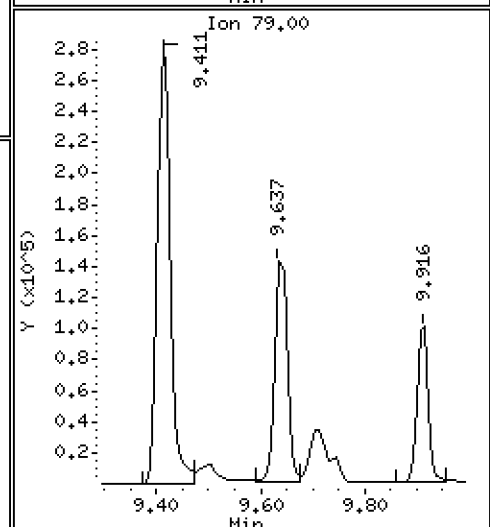
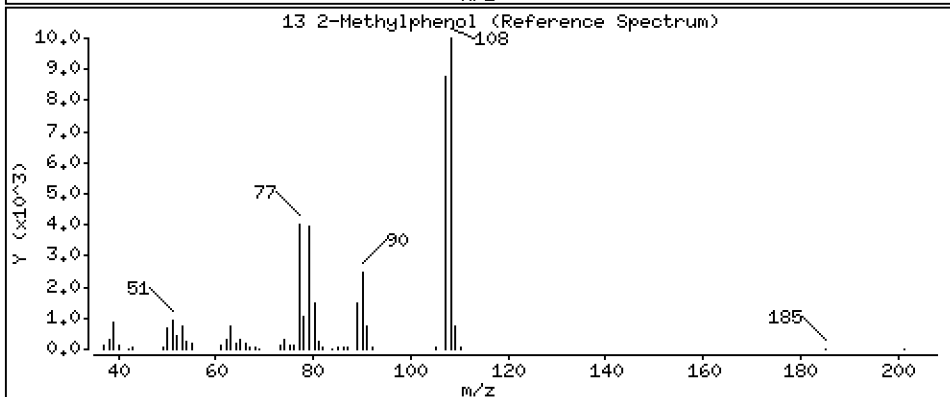
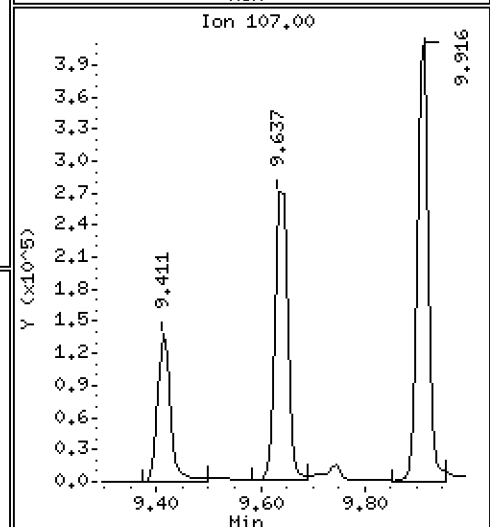
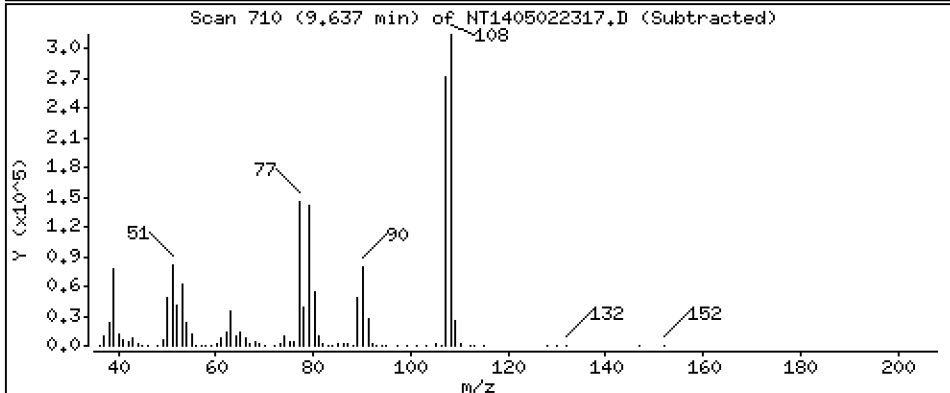
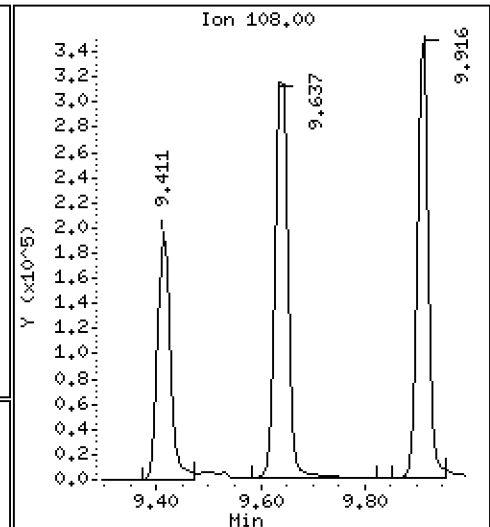
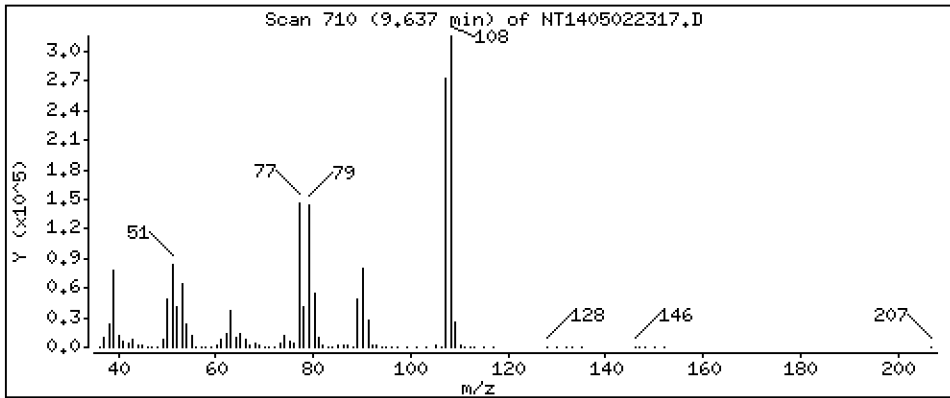
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 5.702 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

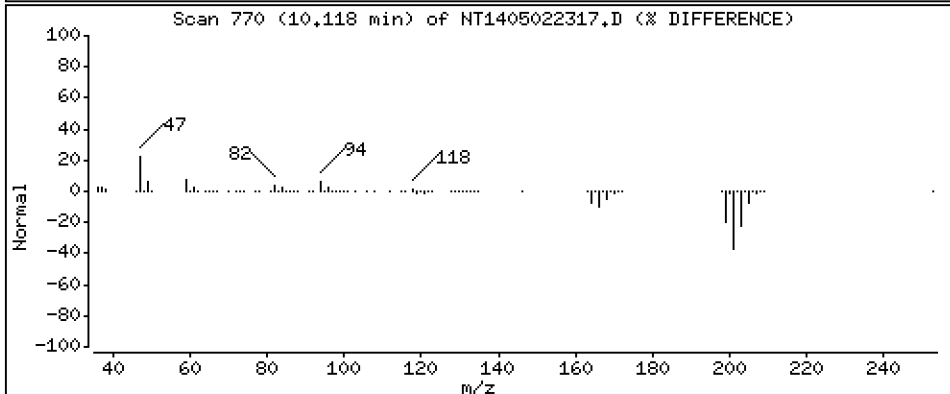
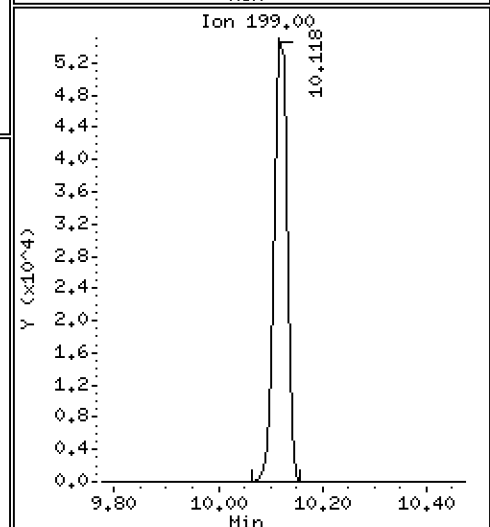
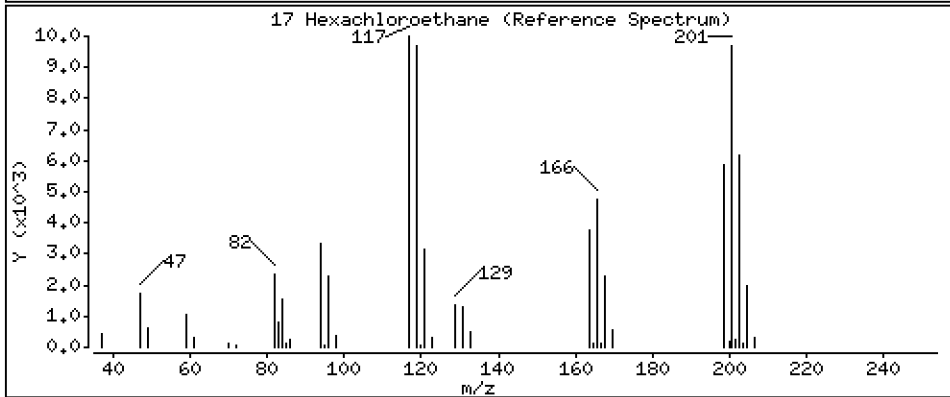
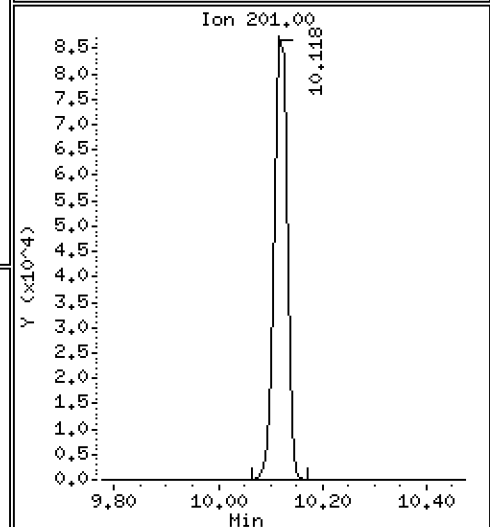
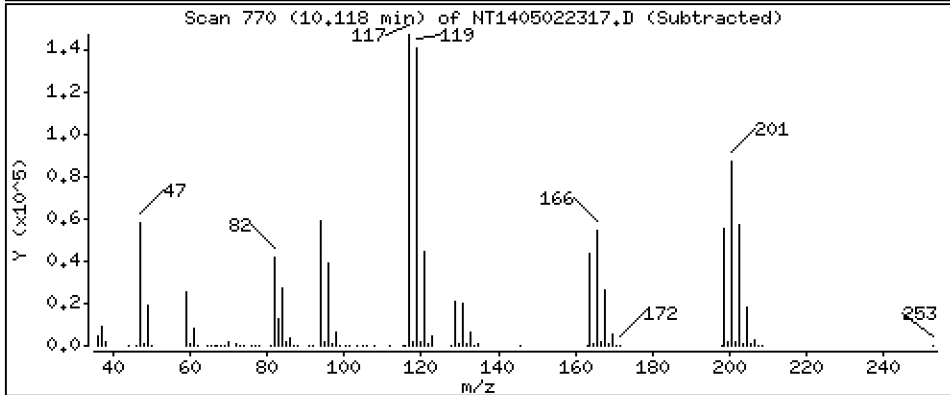
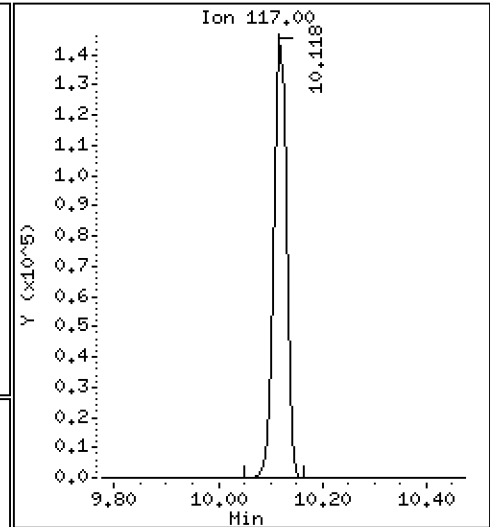
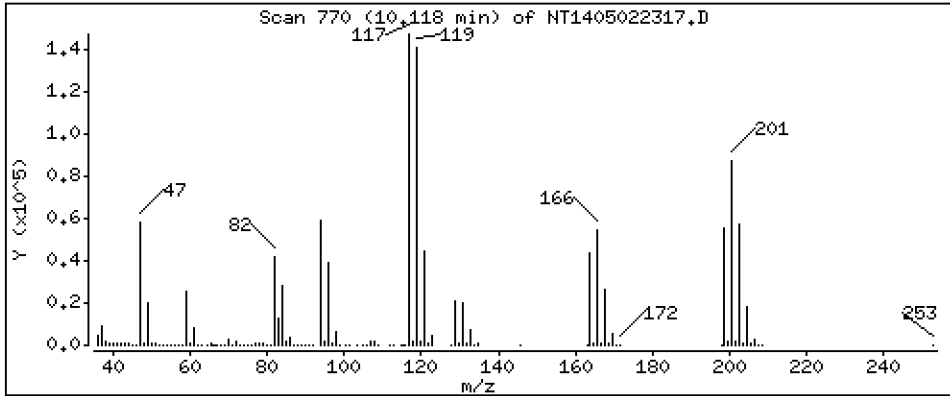
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 5,062 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

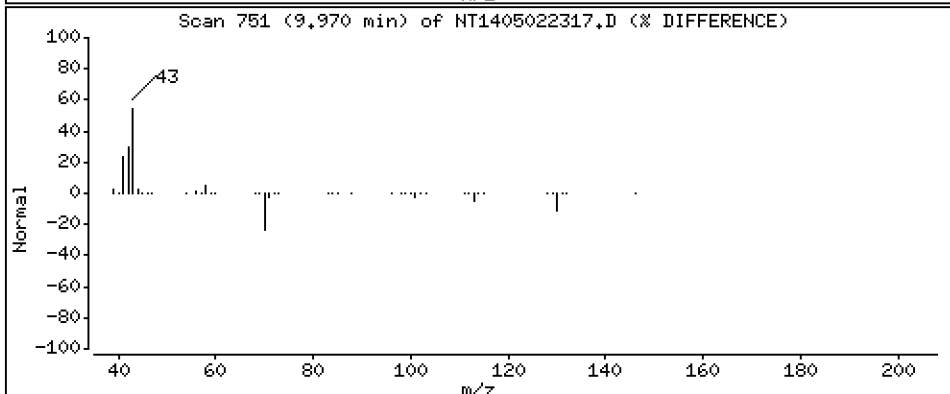
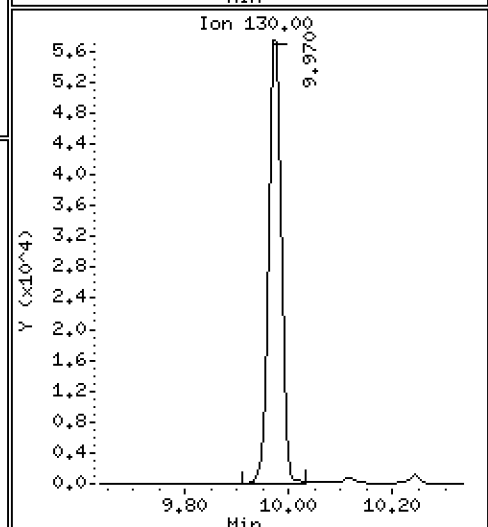
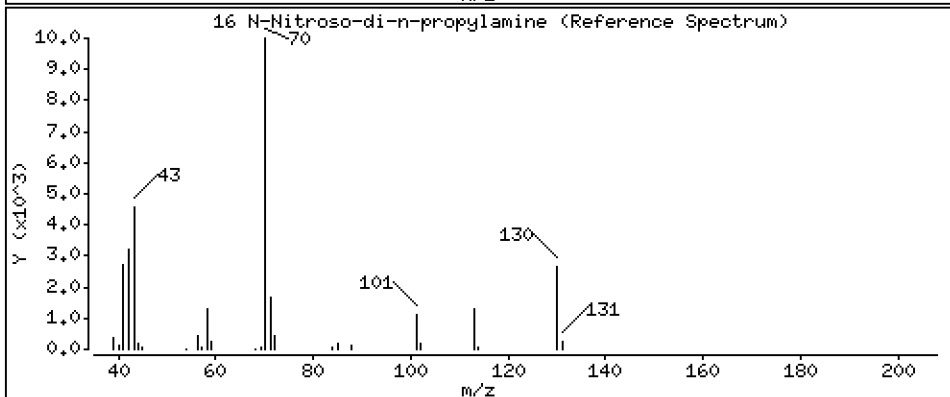
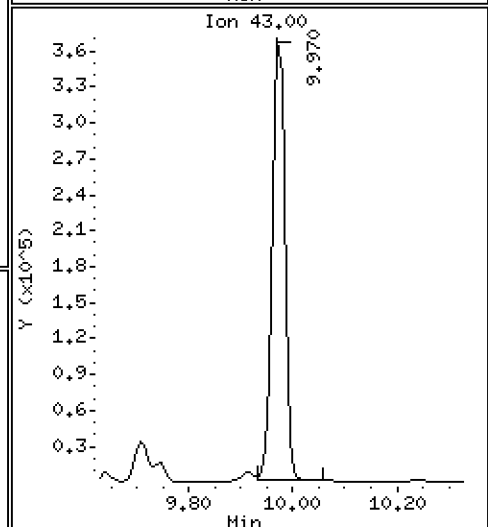
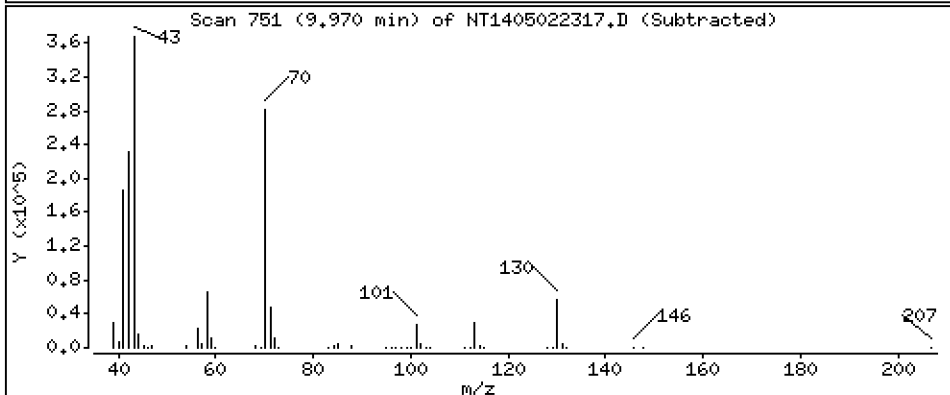
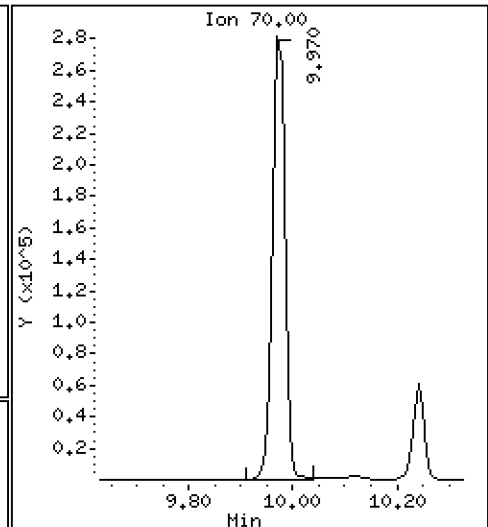
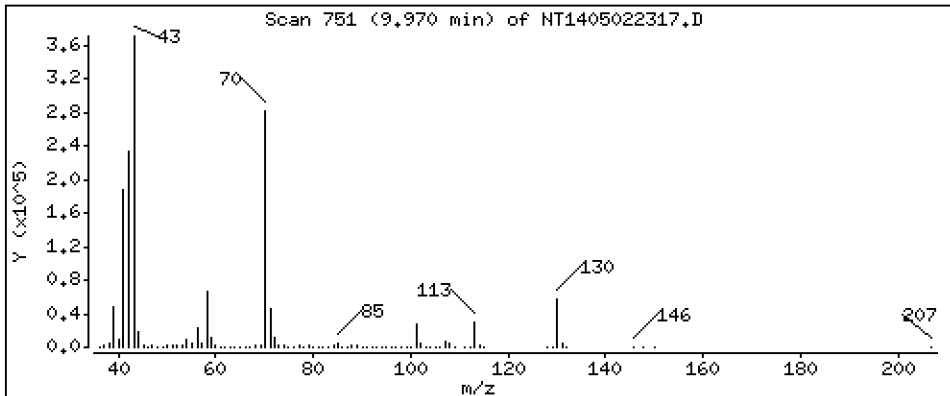
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 4,570 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

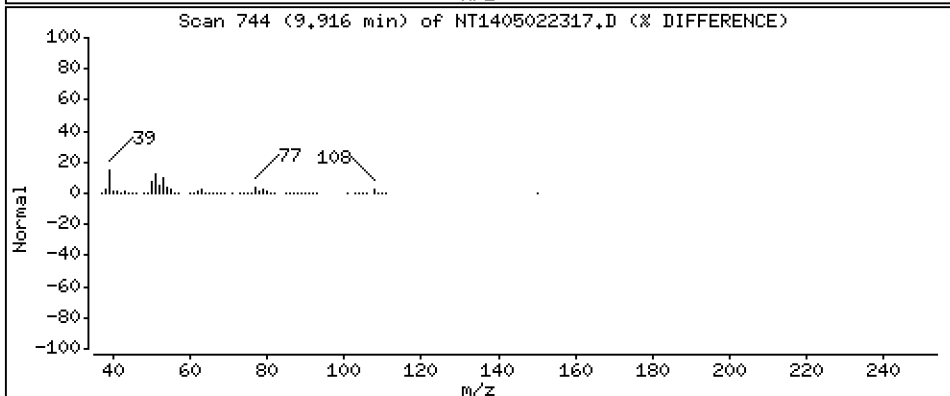
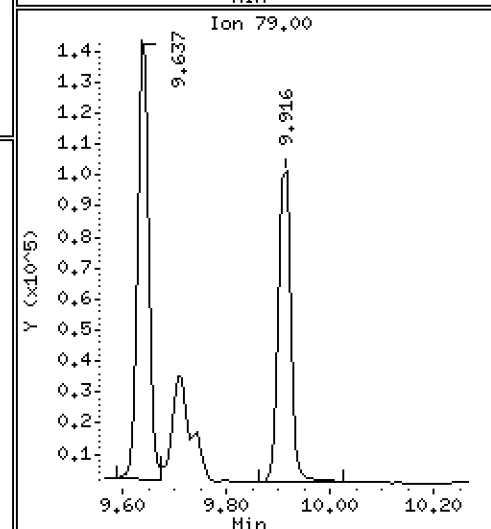
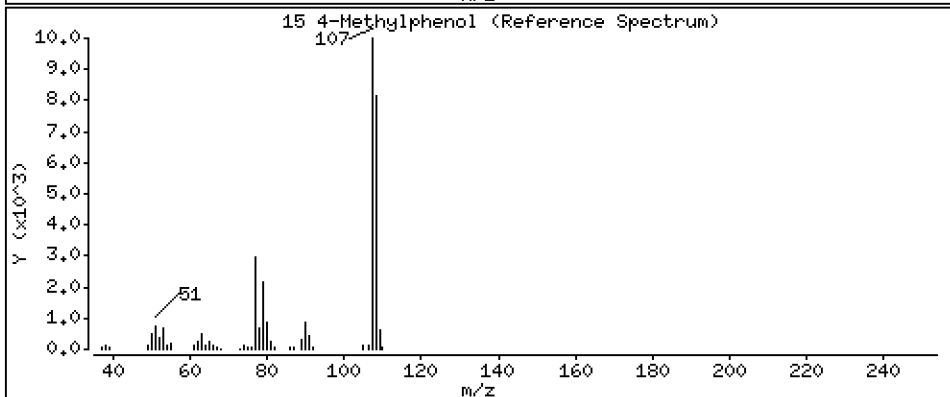
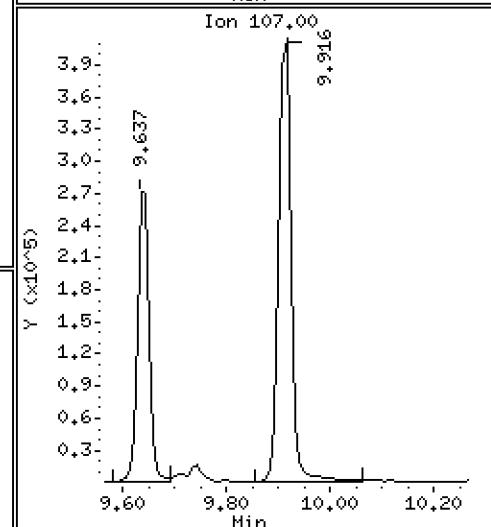
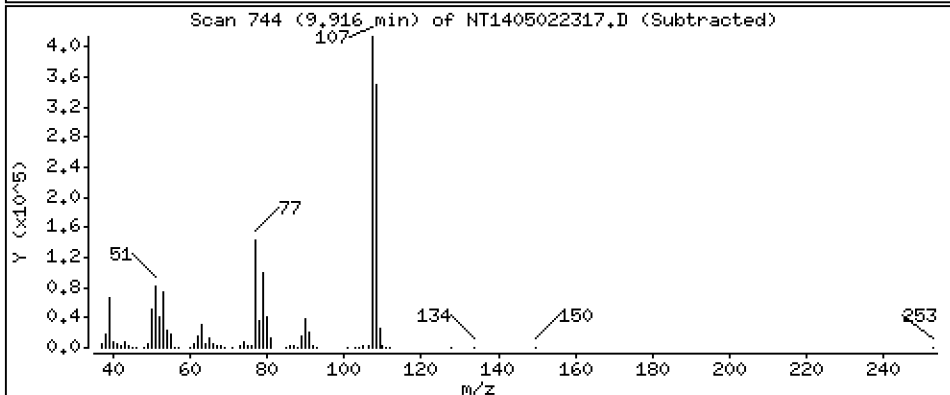
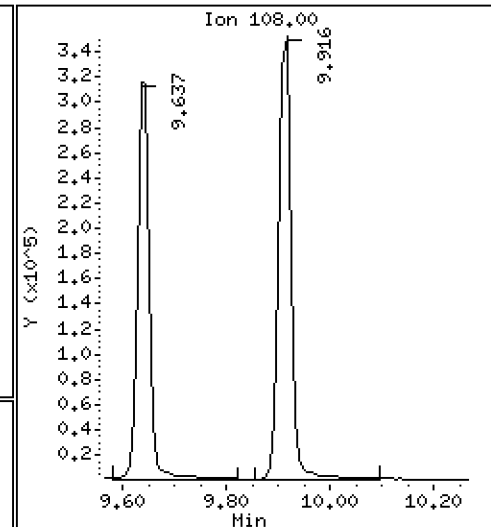
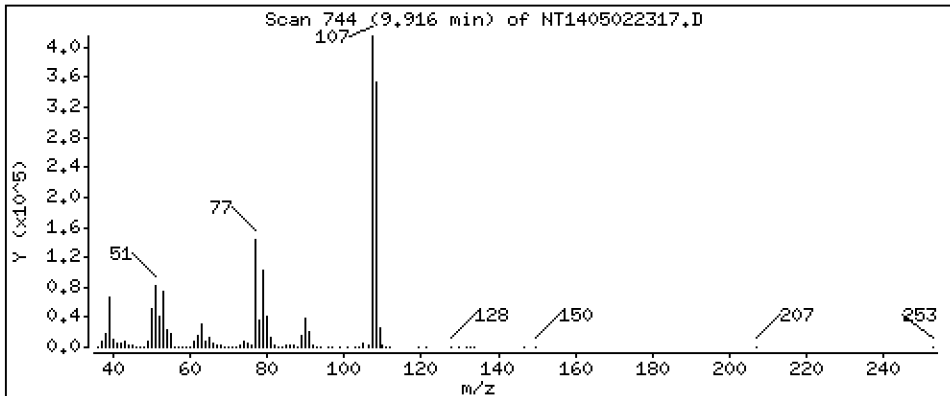
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 4,967 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

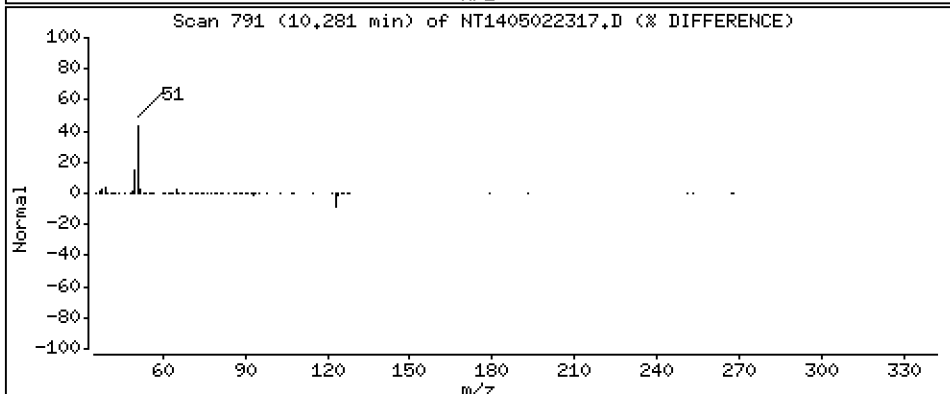
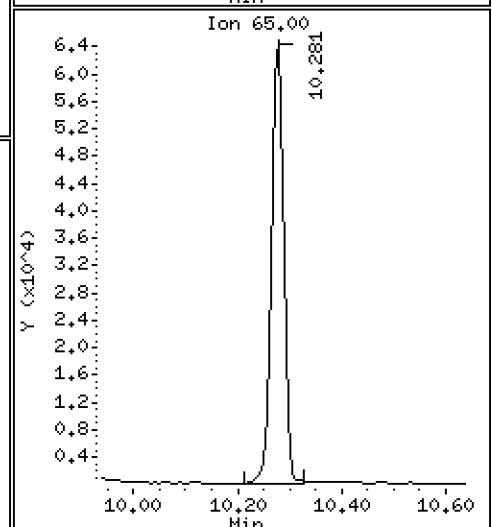
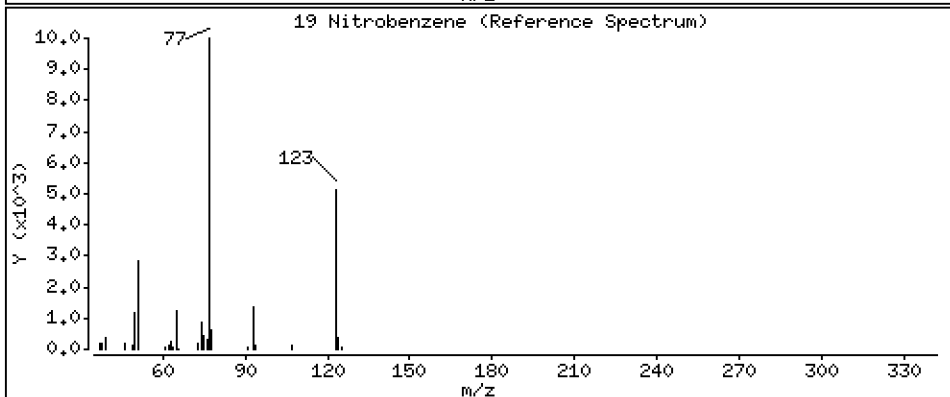
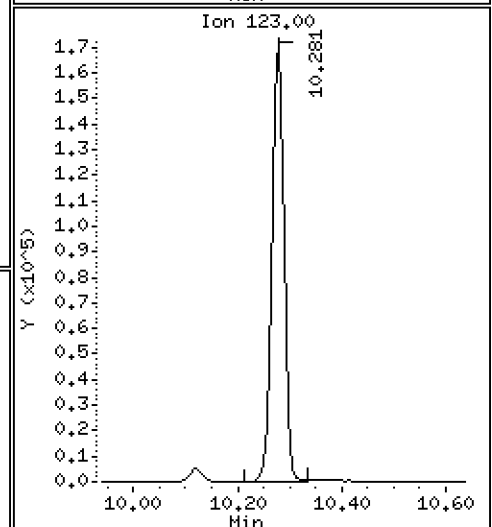
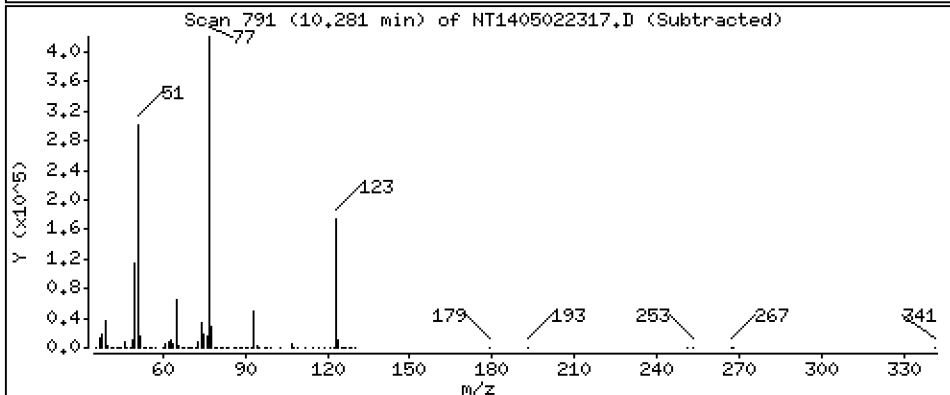
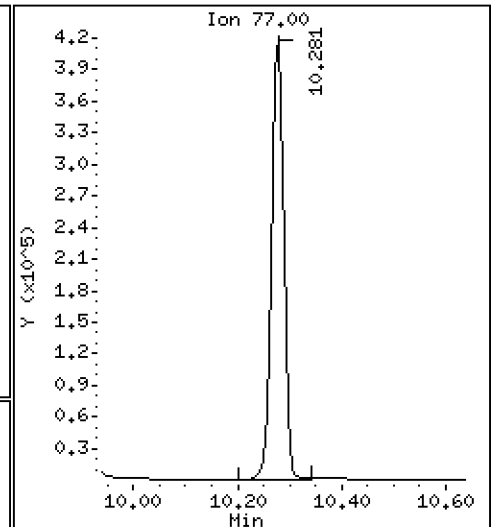
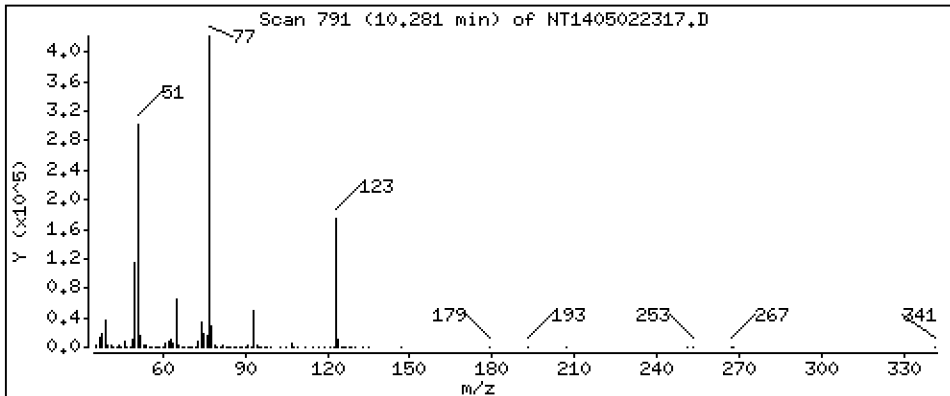
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 4,895 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

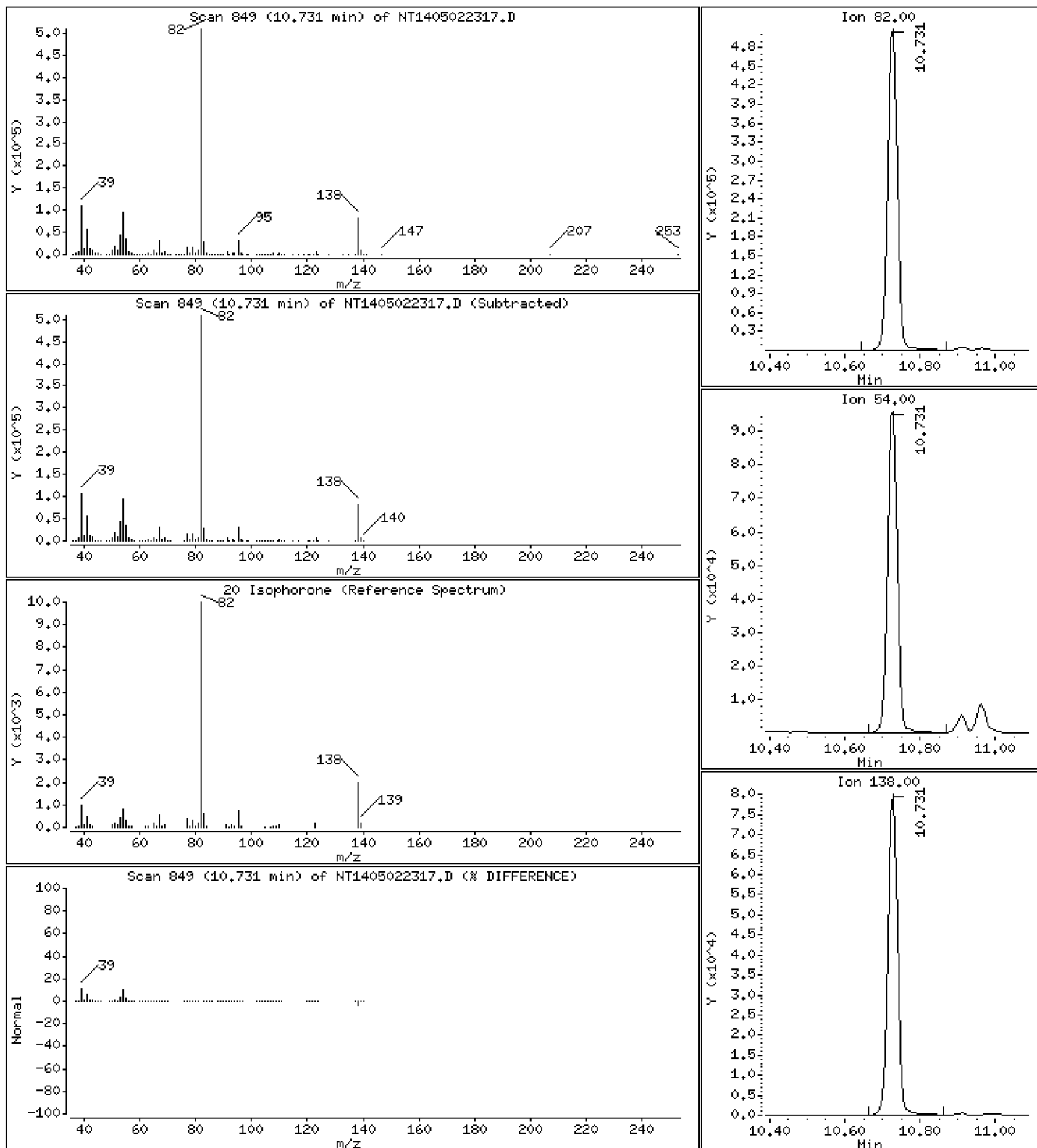
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 5,108 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

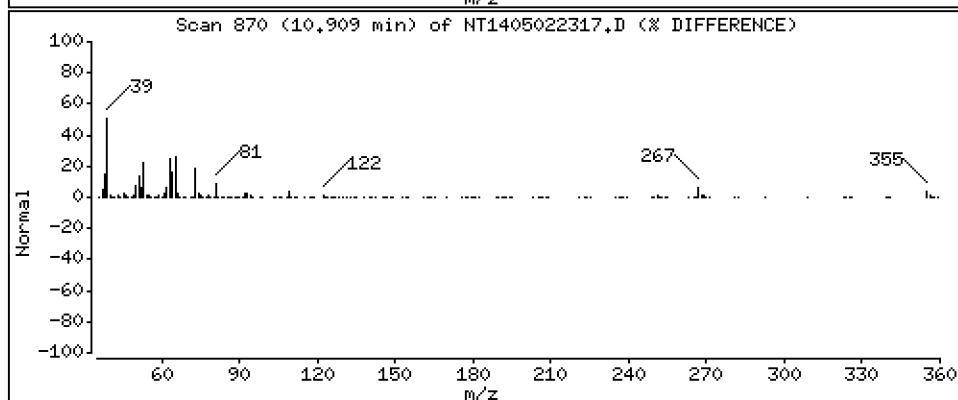
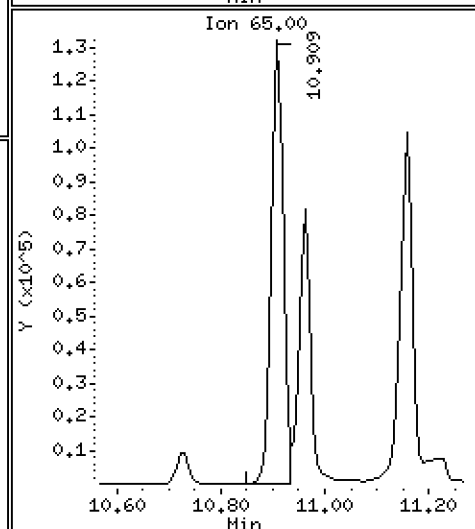
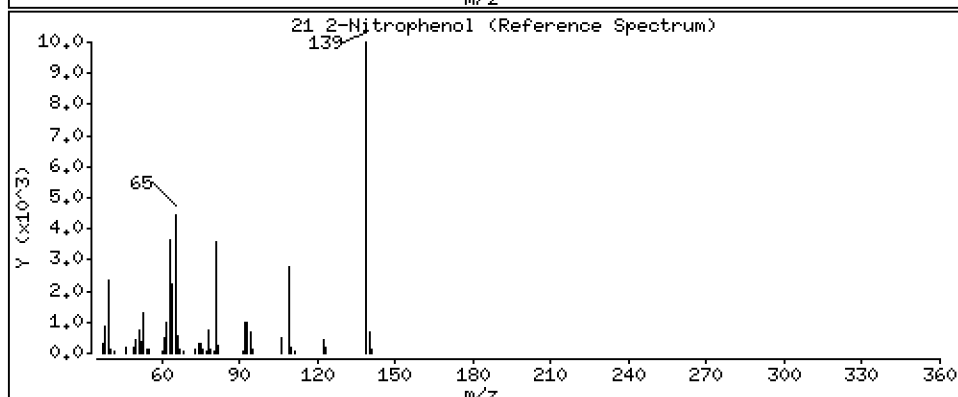
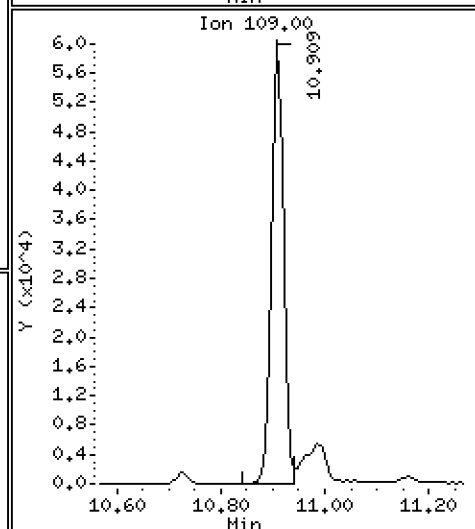
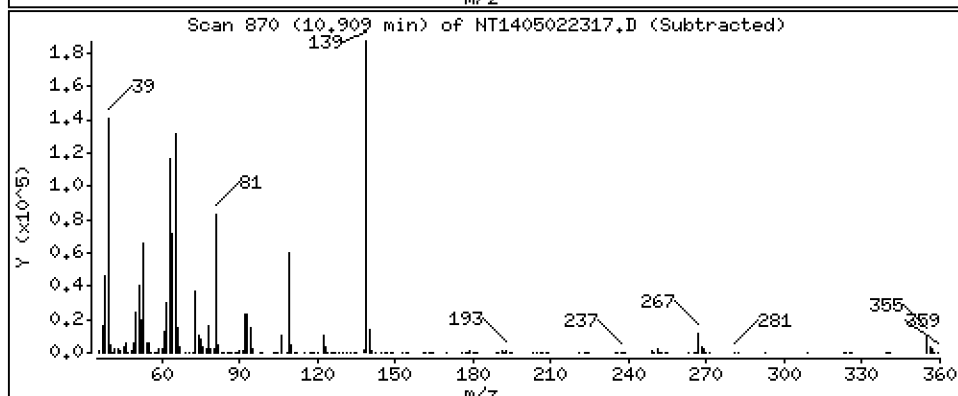
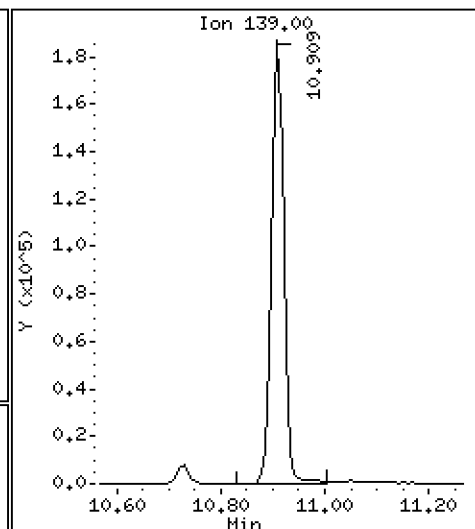
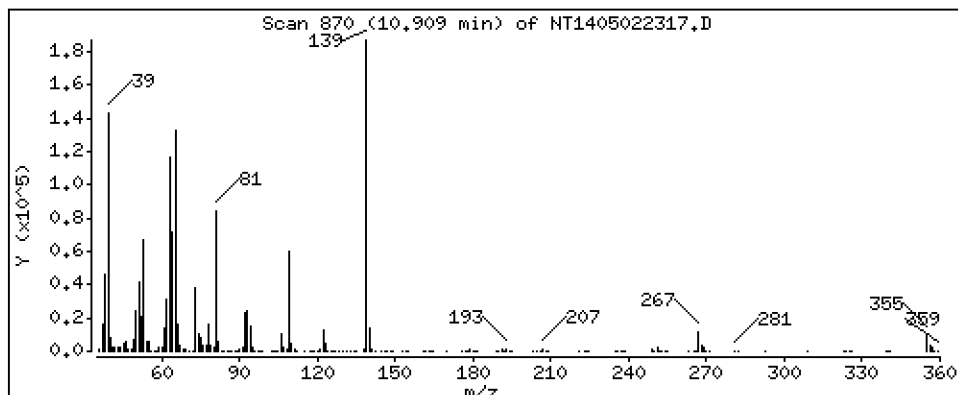
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 4,533 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

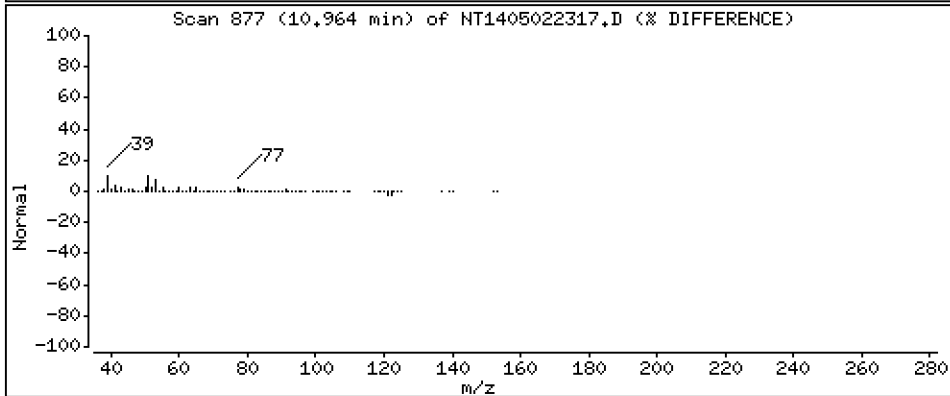
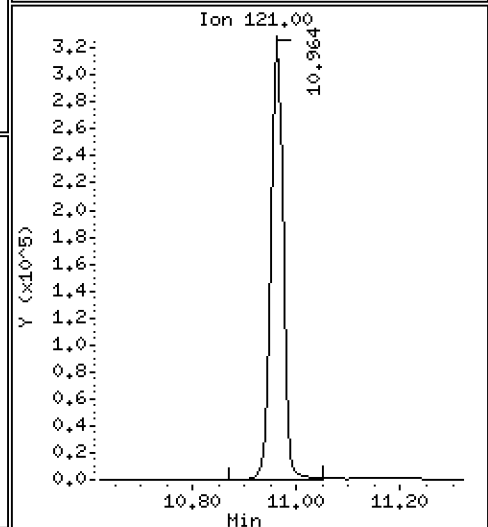
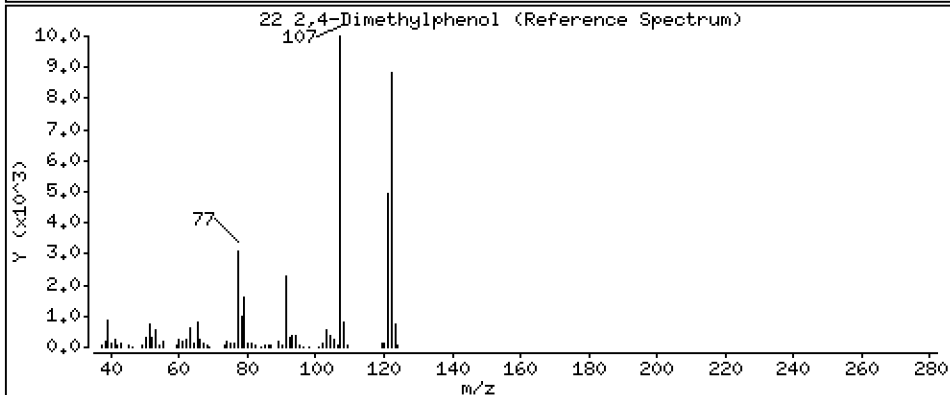
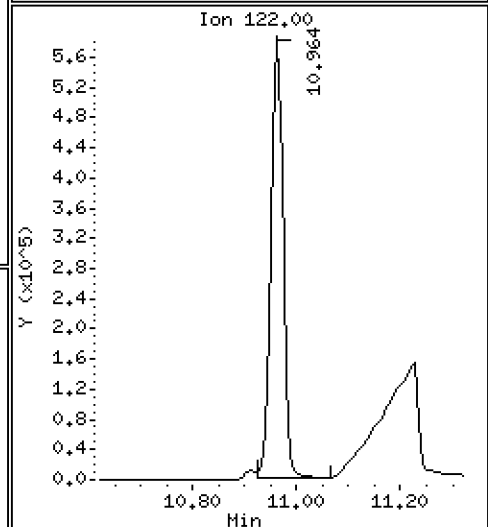
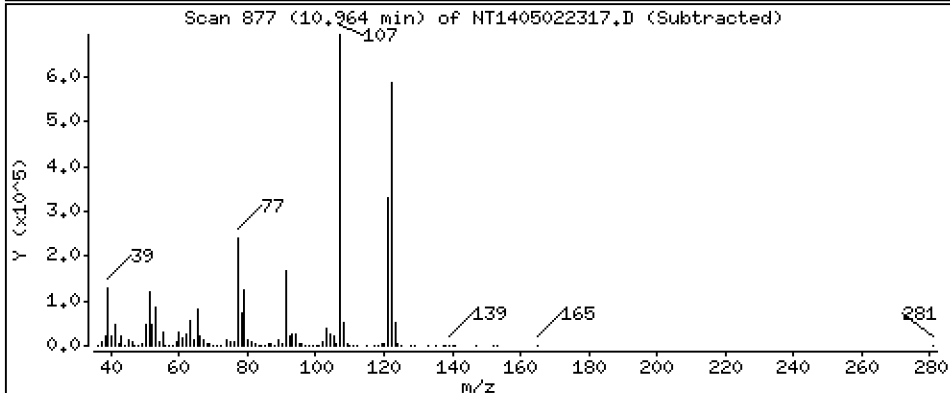
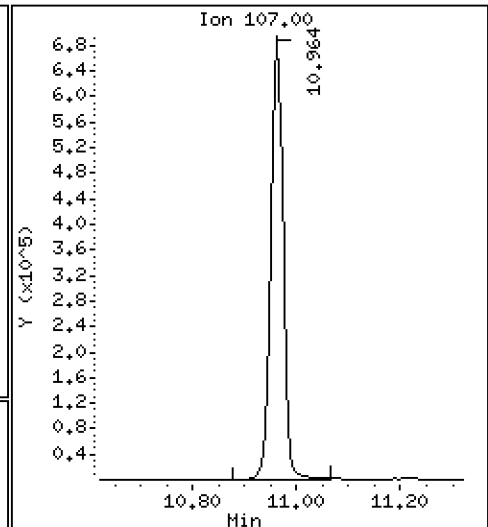
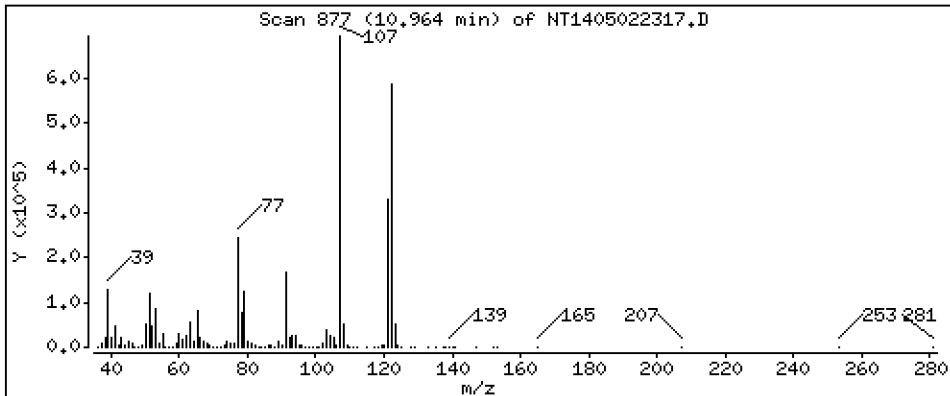
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 10,70 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

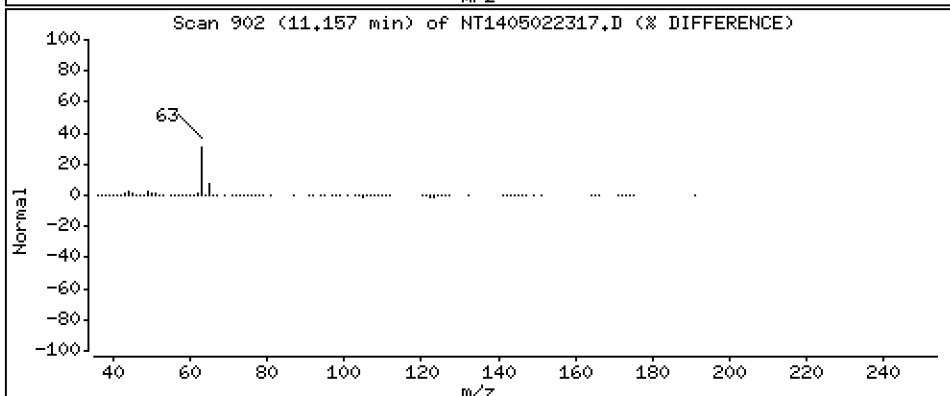
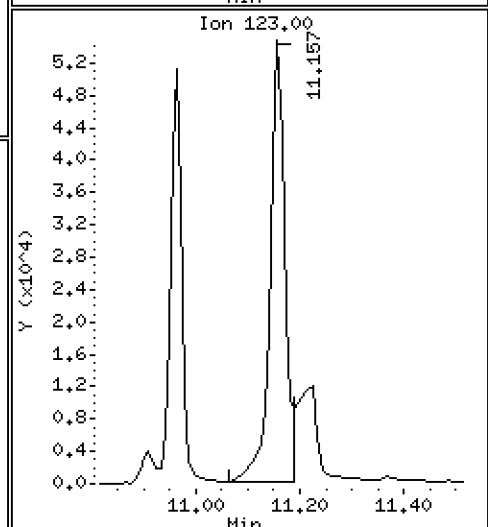
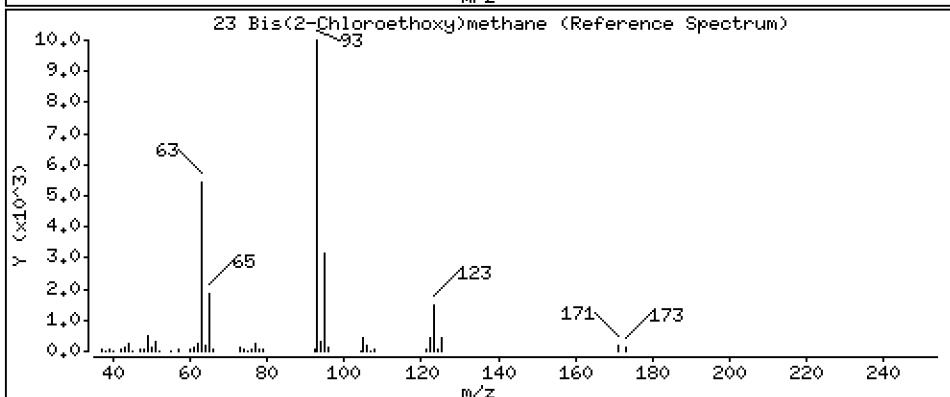
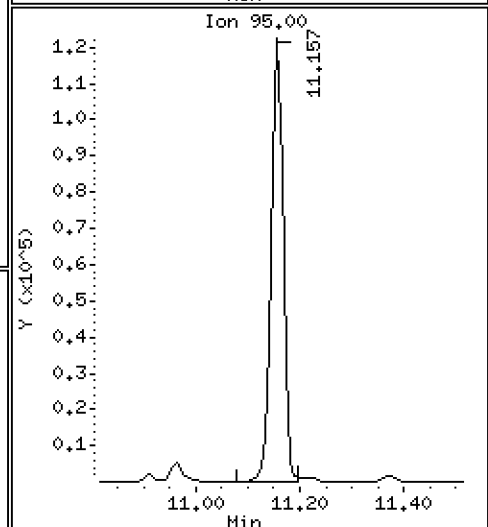
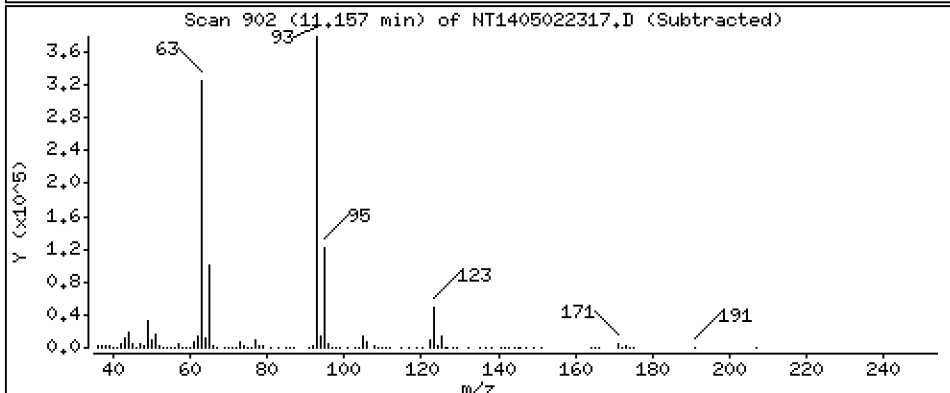
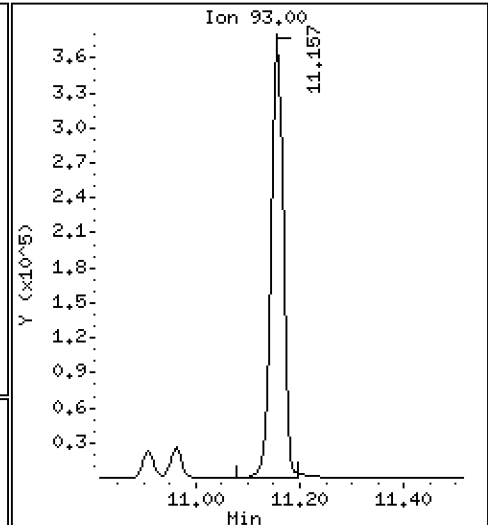
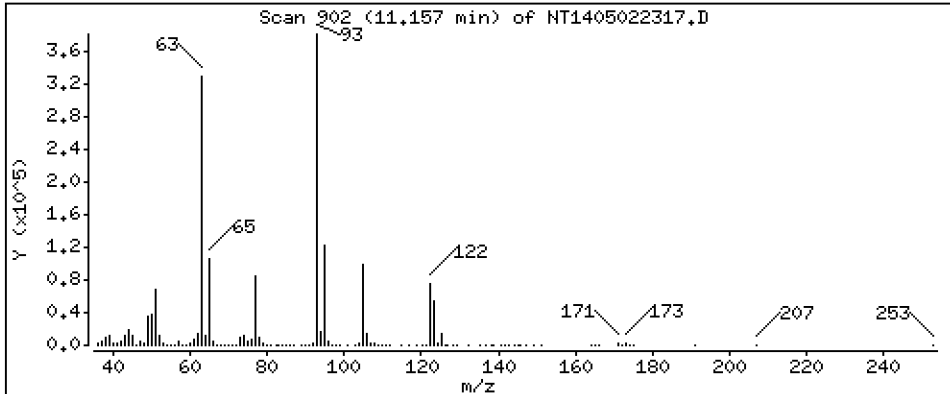
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 4,861 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

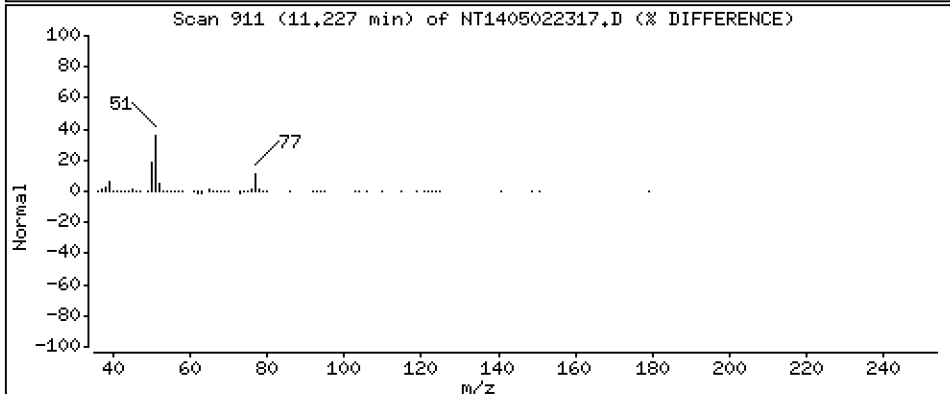
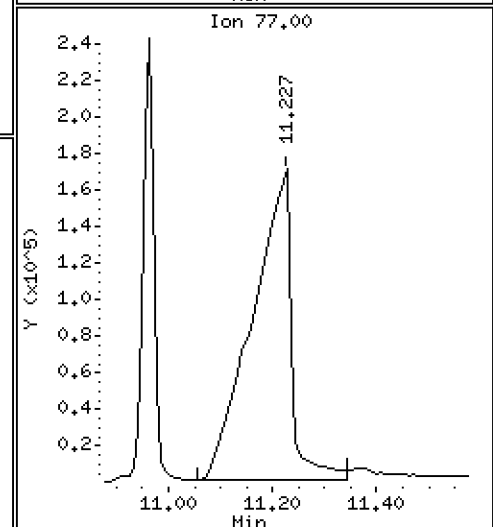
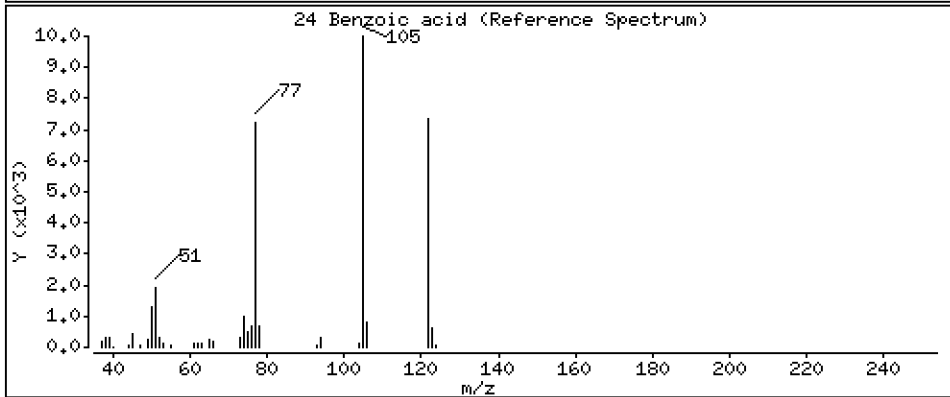
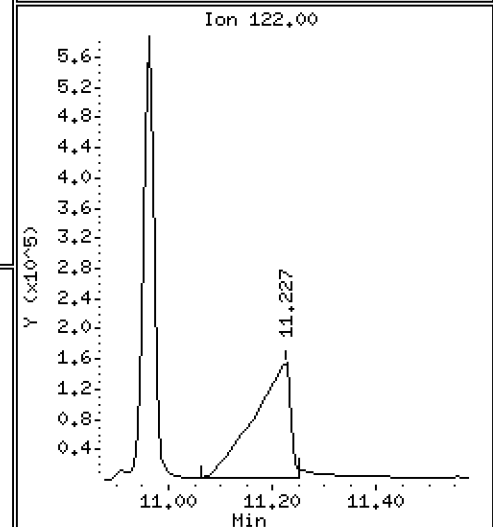
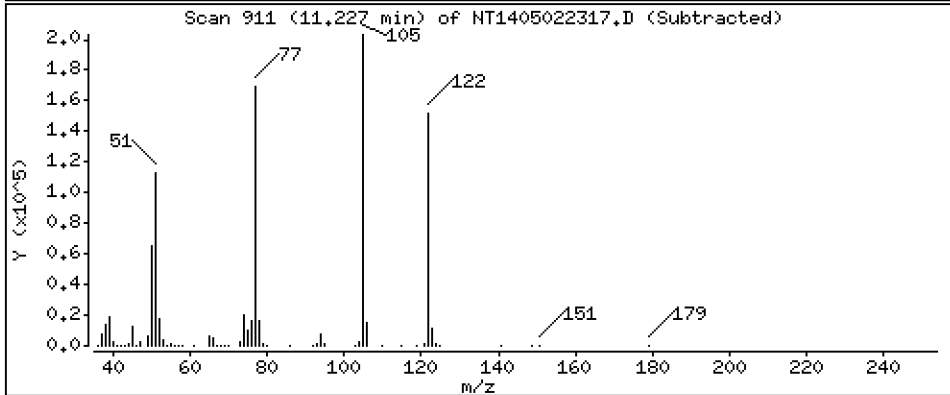
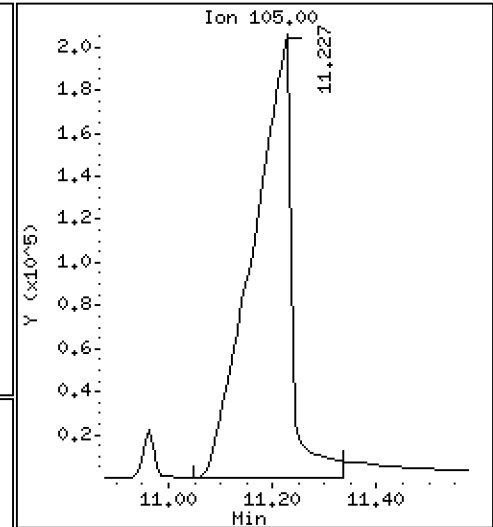
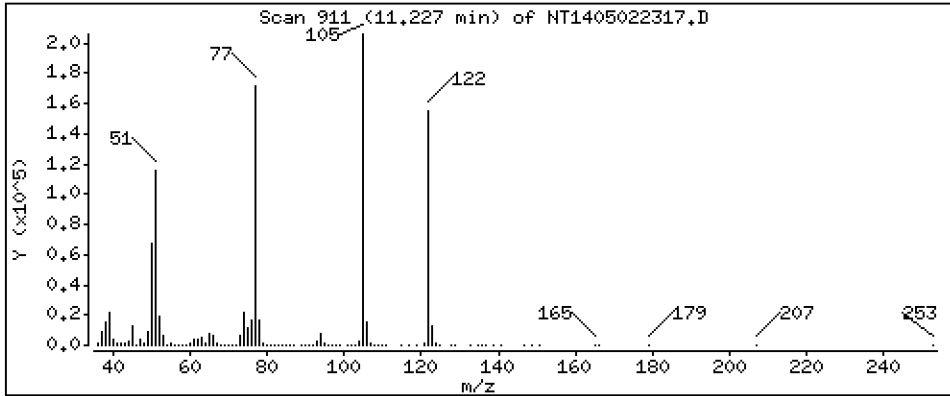
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 12,68 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

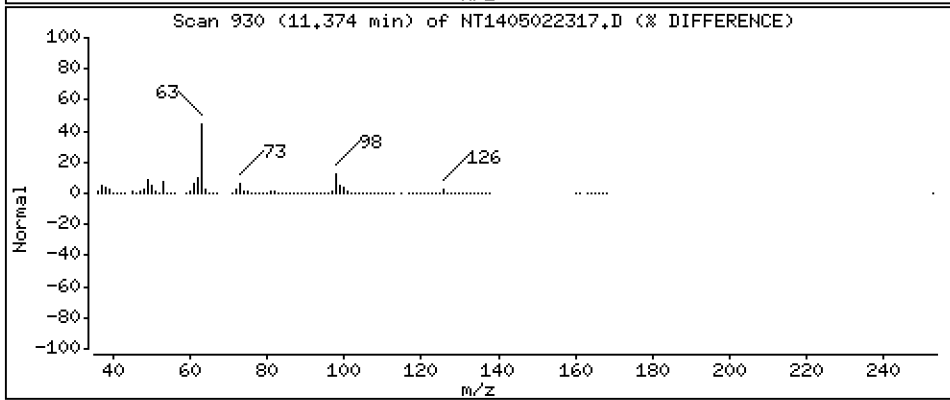
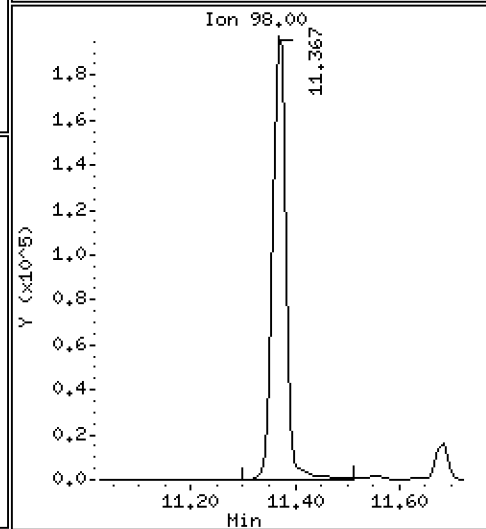
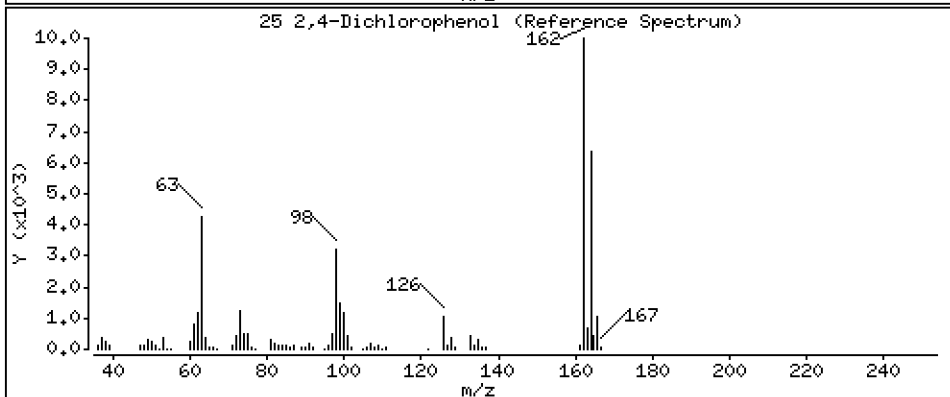
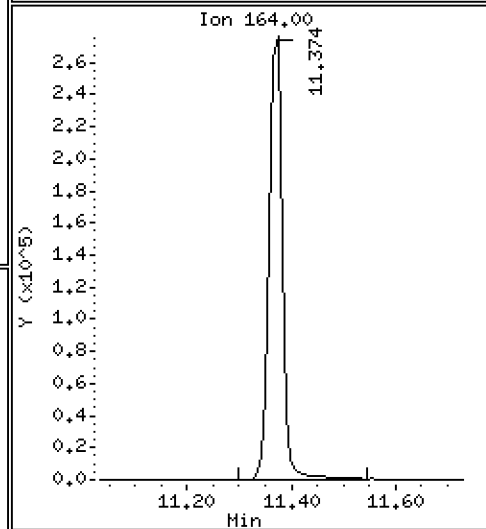
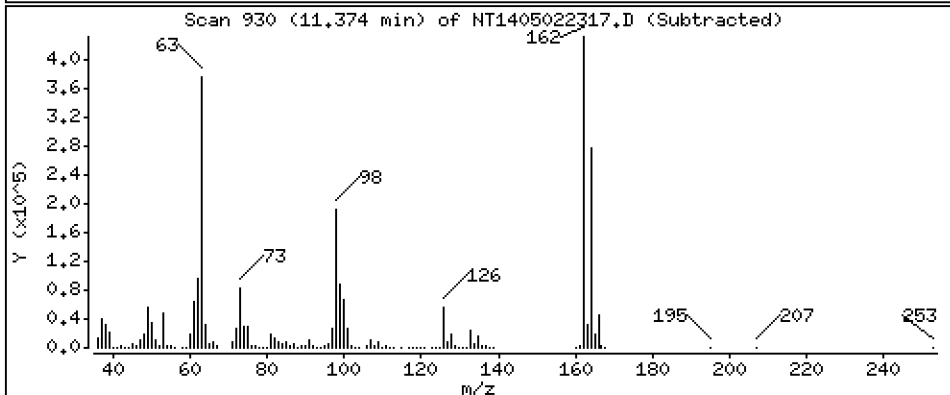
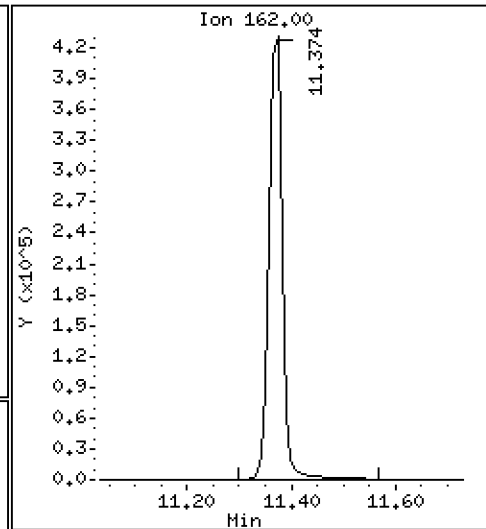
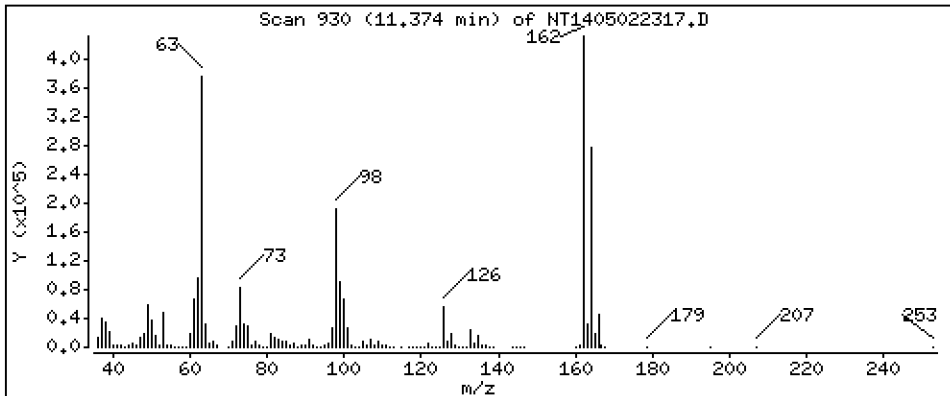
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 9,396 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

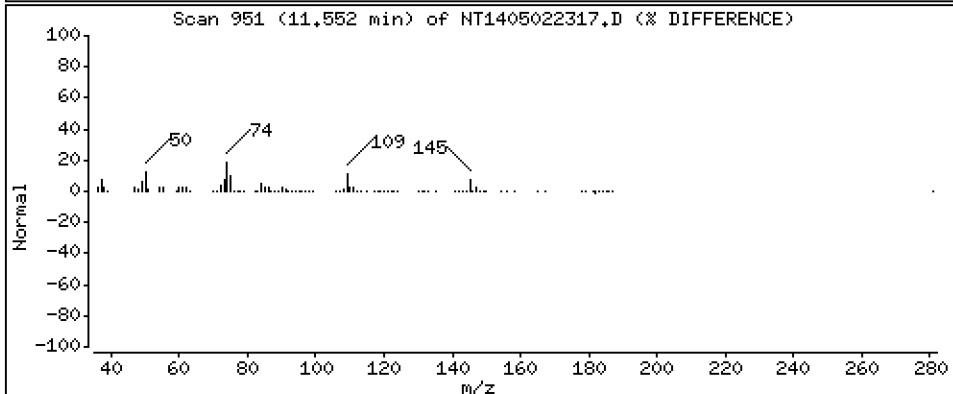
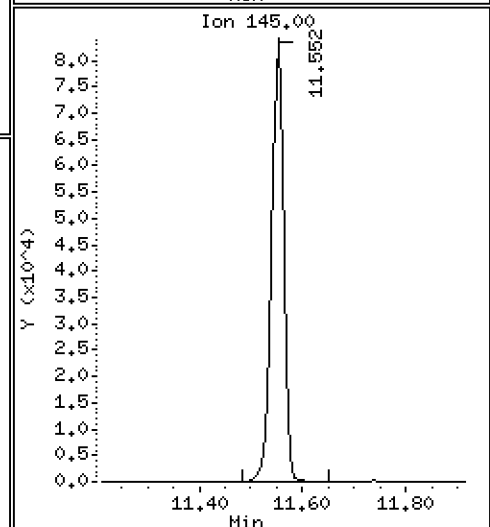
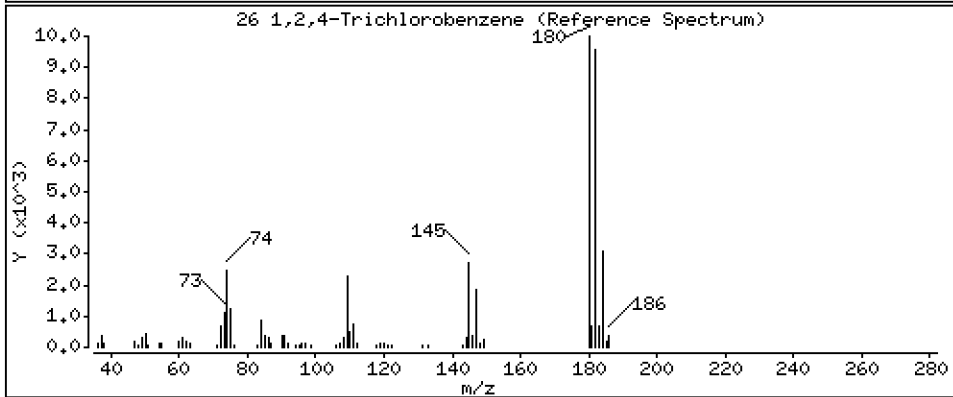
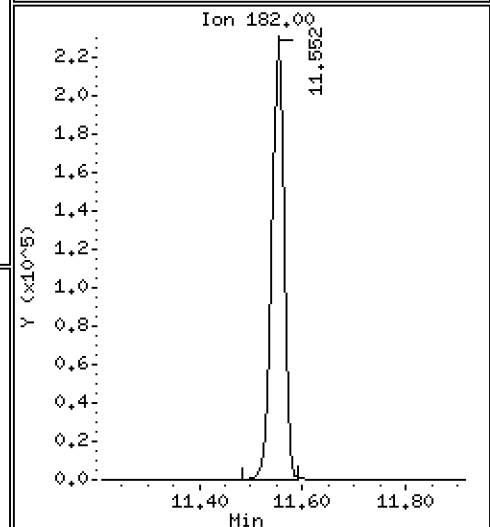
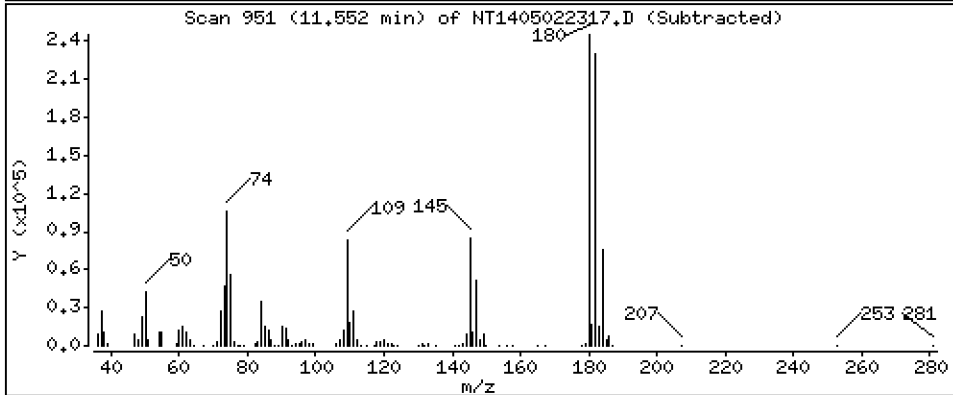
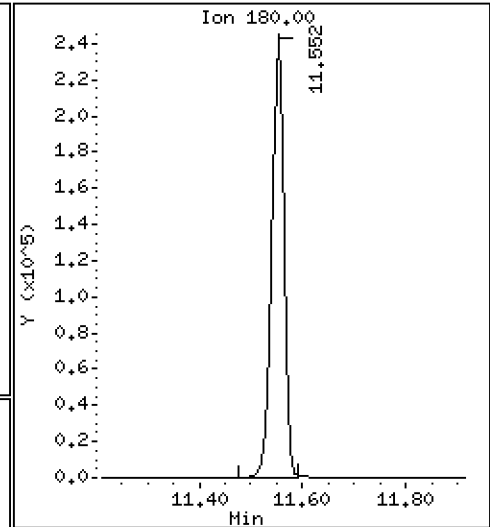
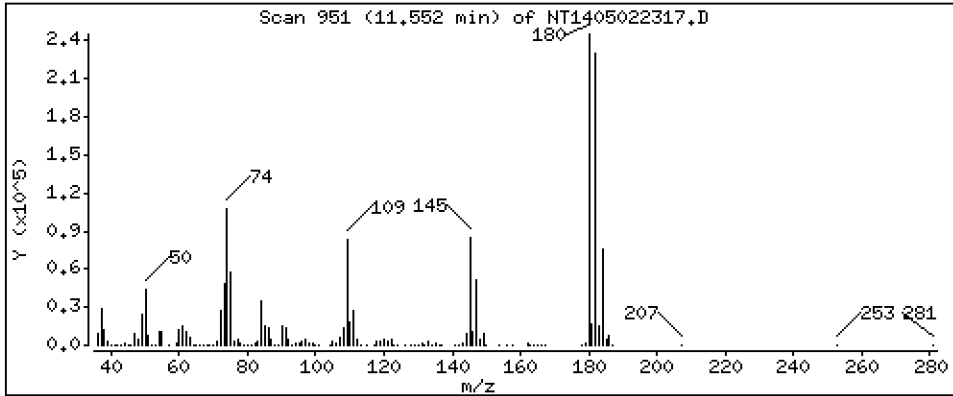
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,953 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

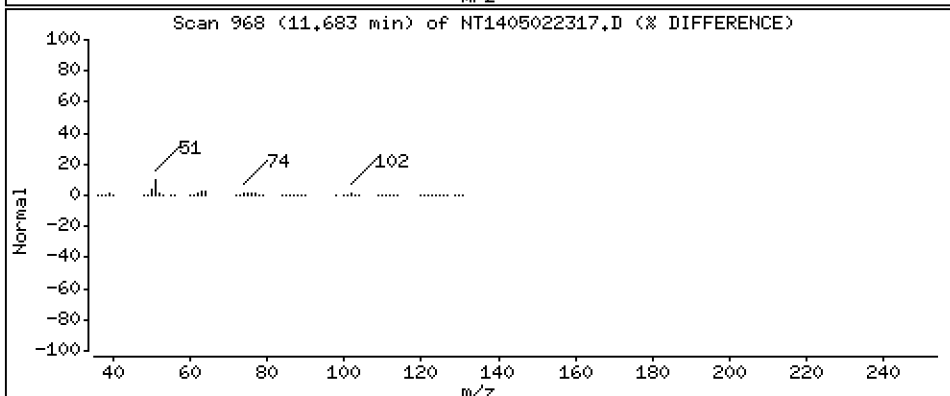
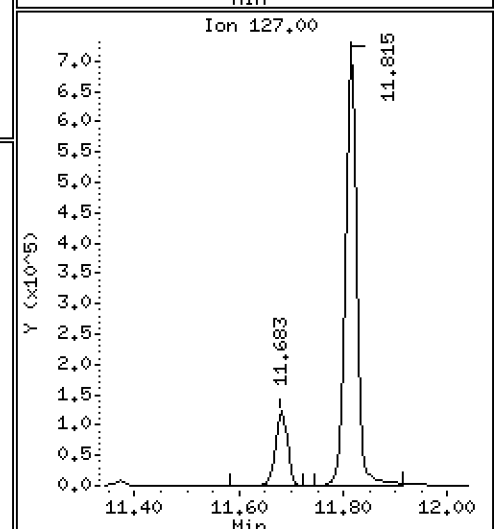
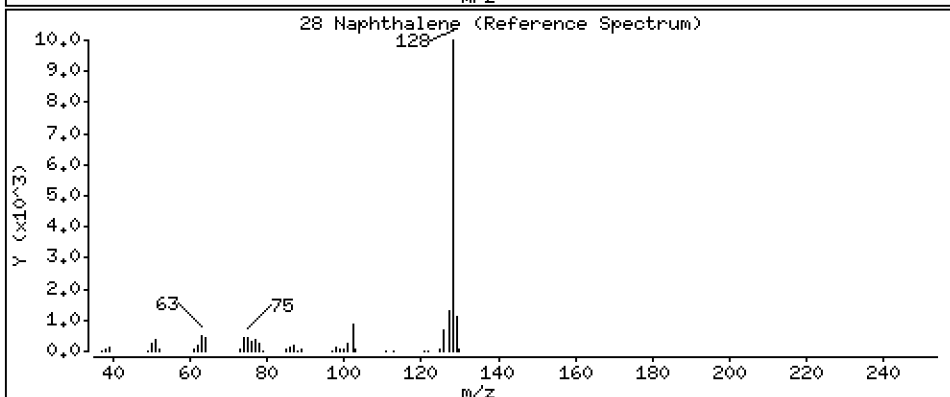
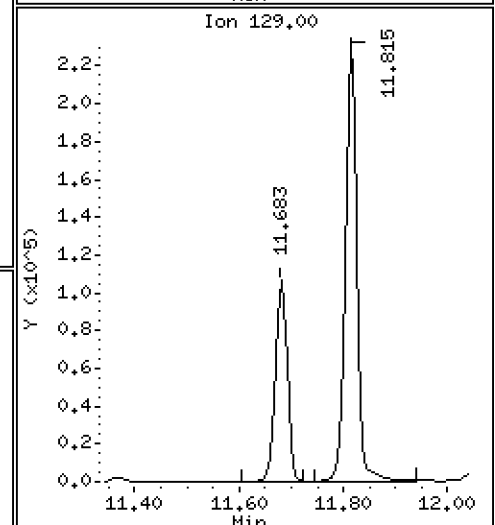
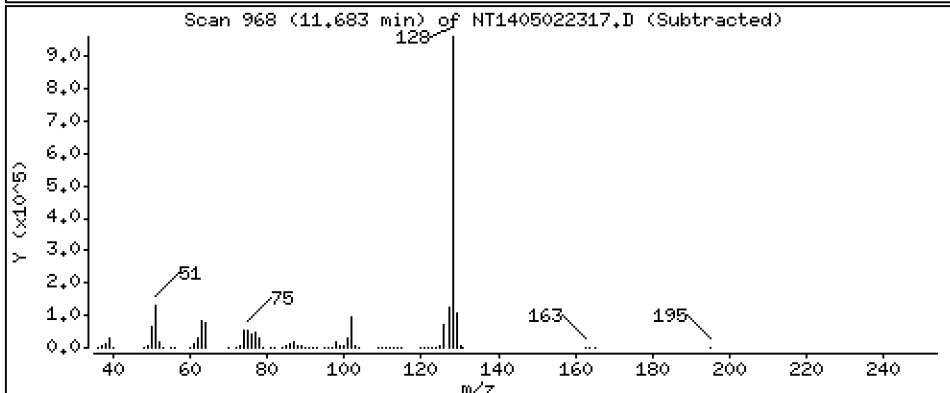
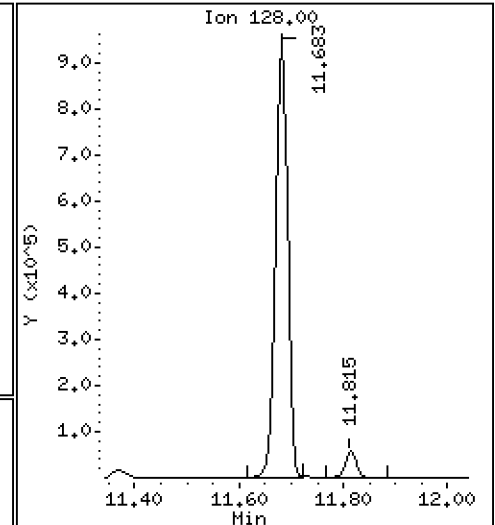
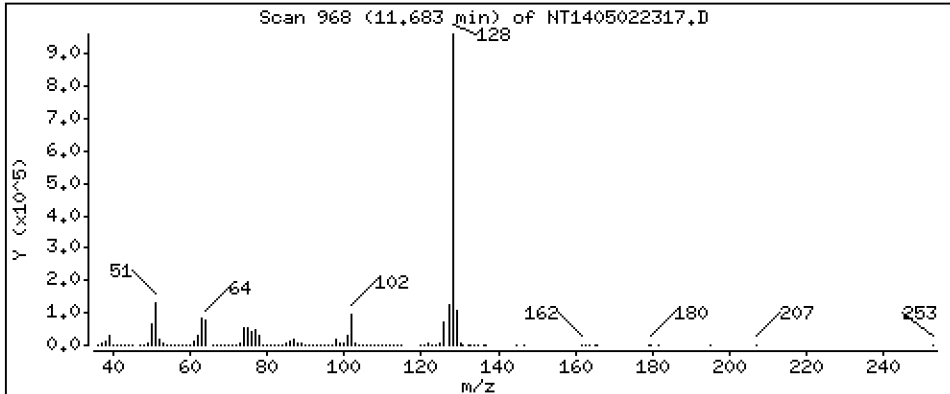
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 5,245 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

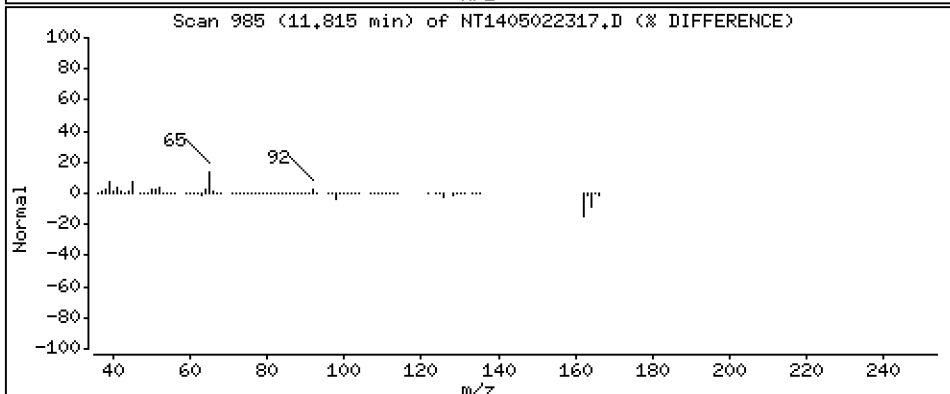
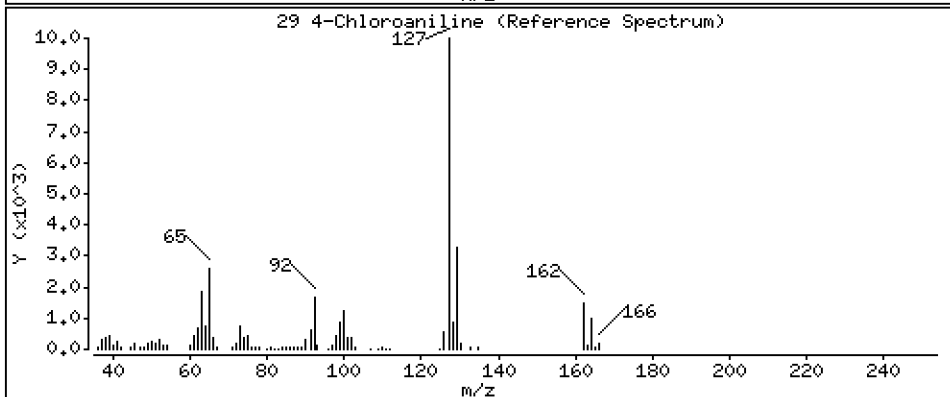
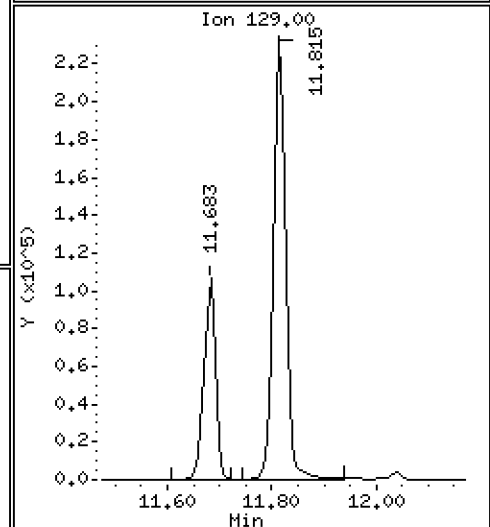
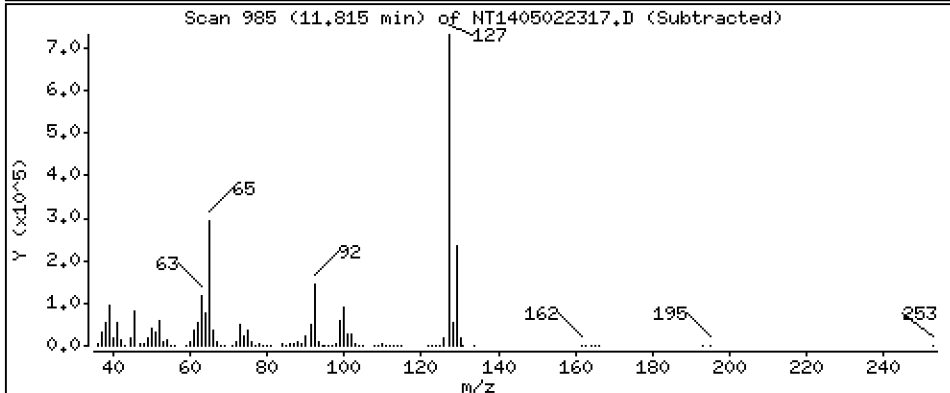
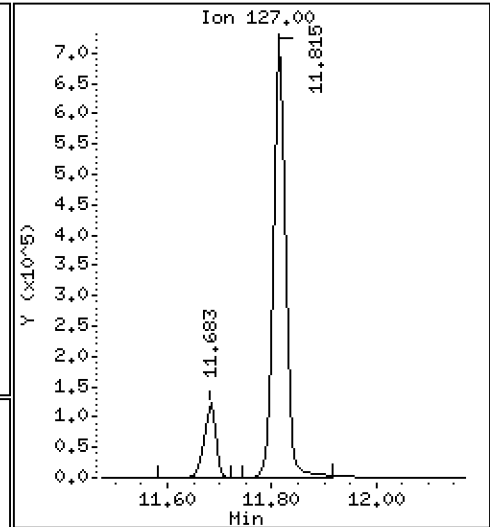
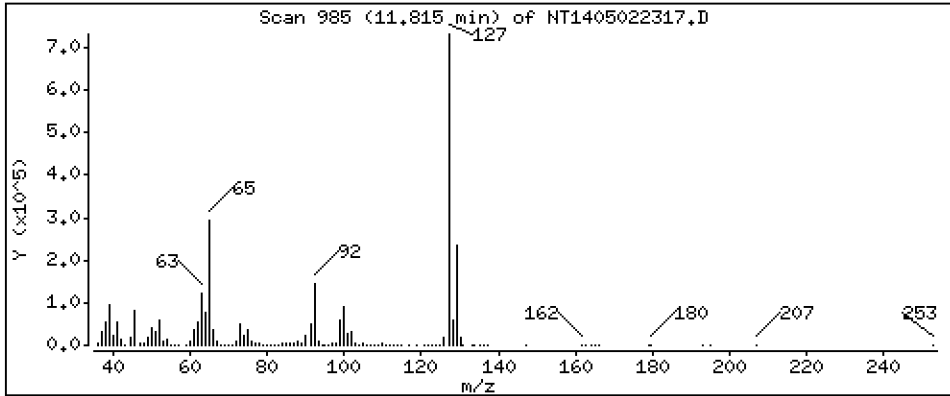
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 10,60 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

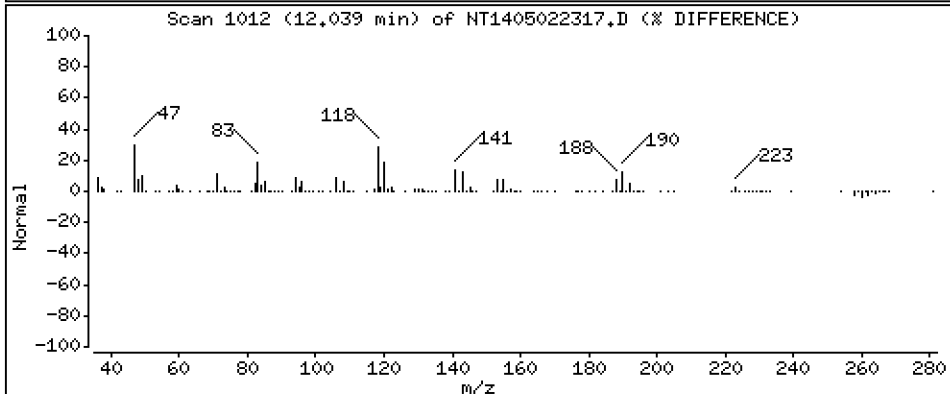
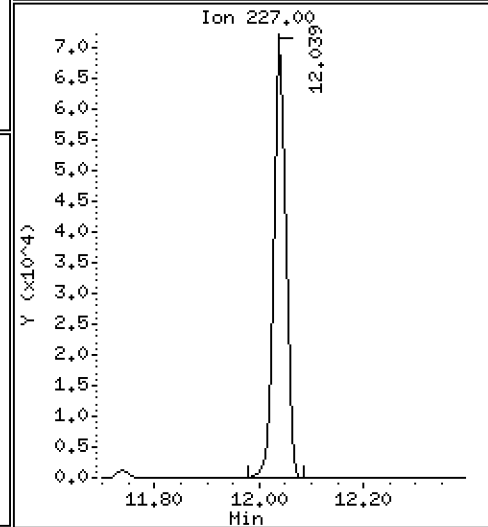
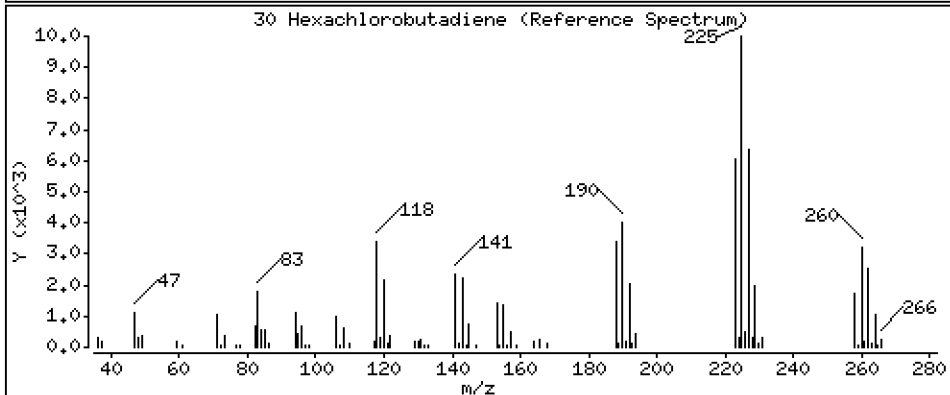
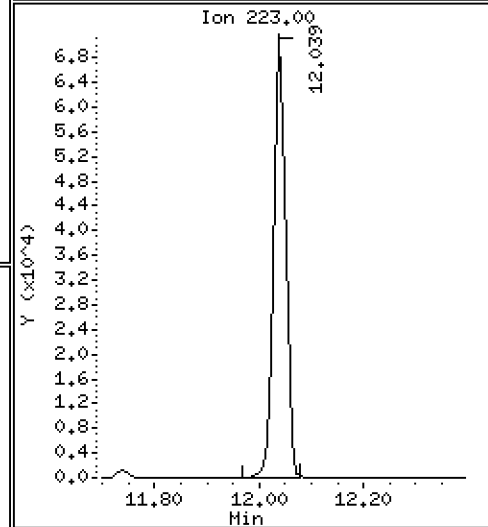
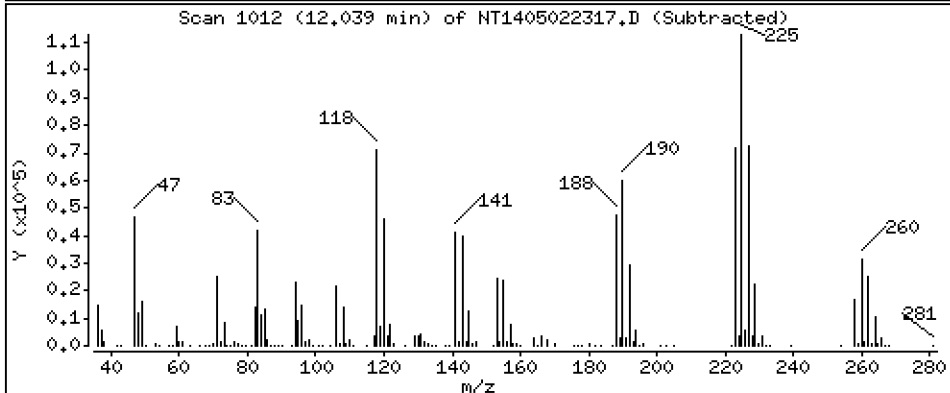
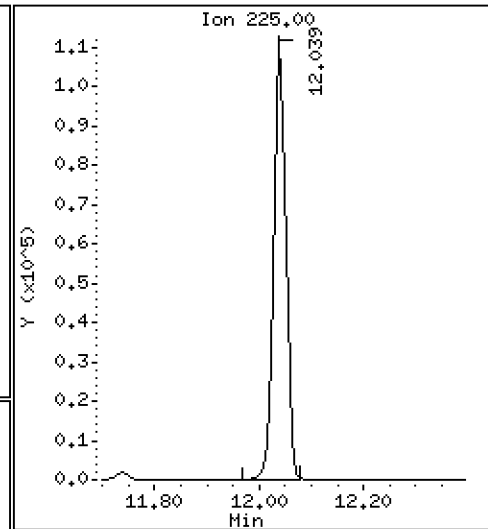
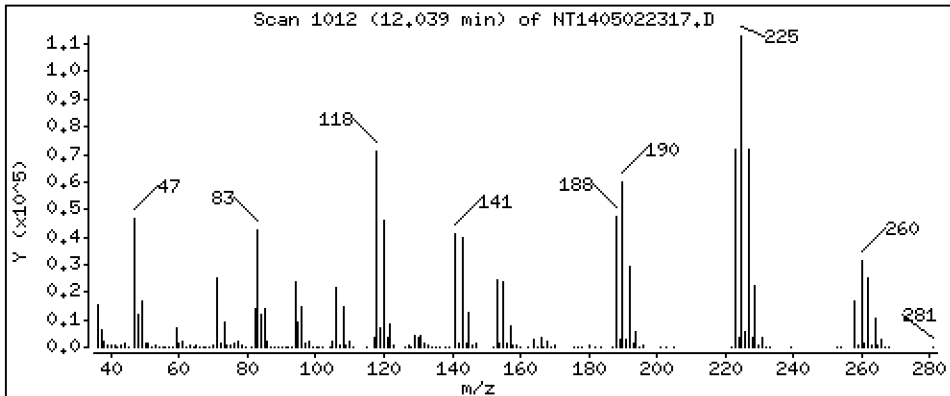
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 5,112 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

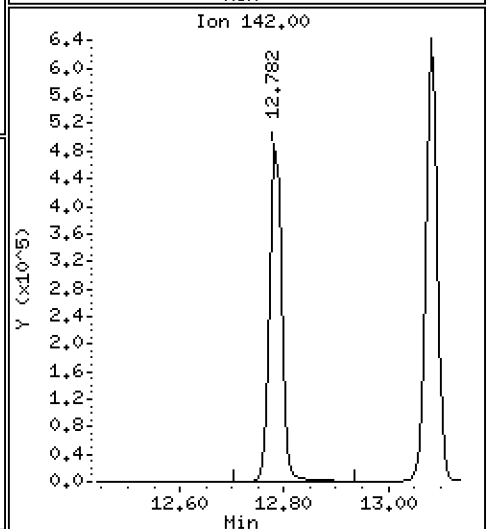
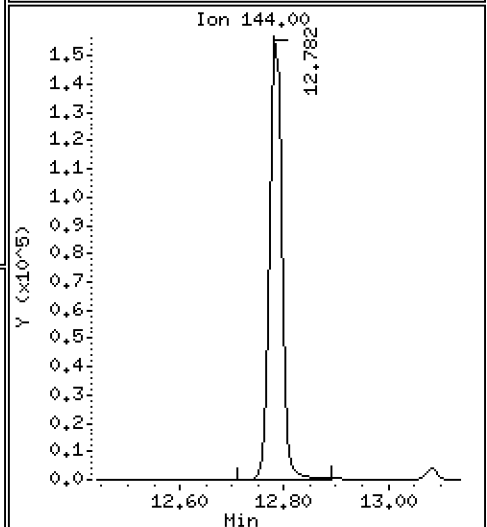
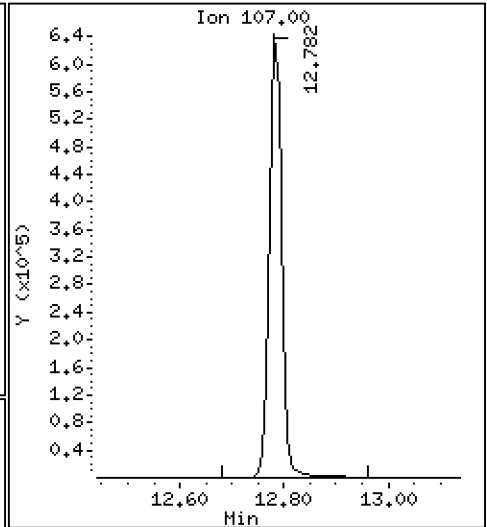
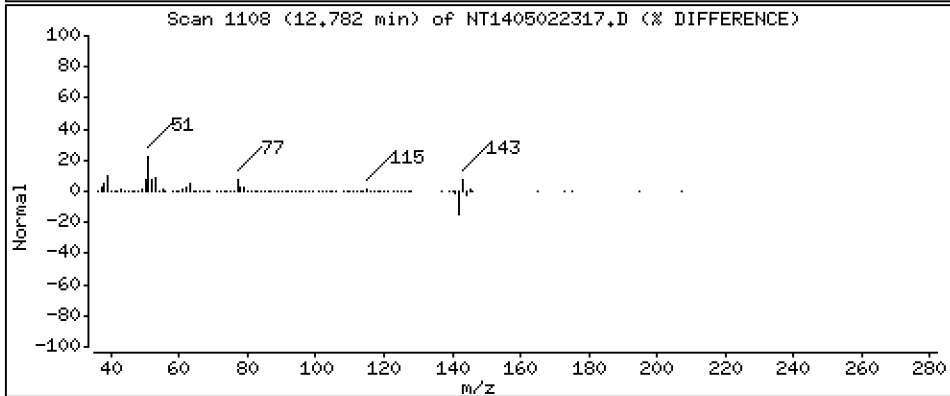
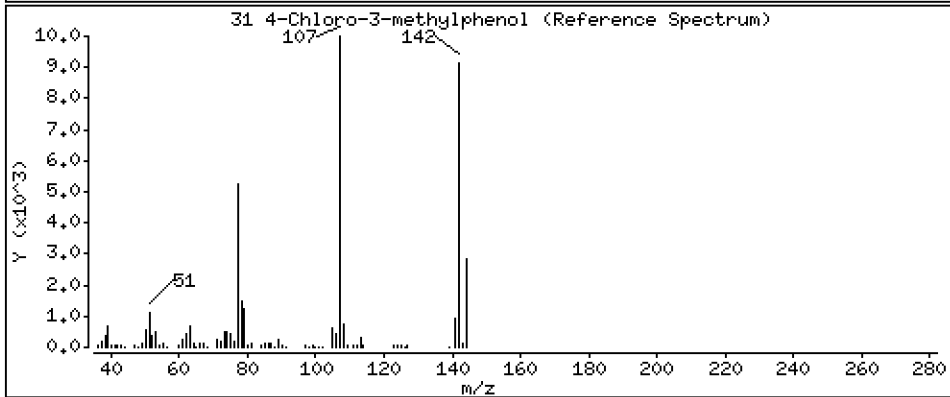
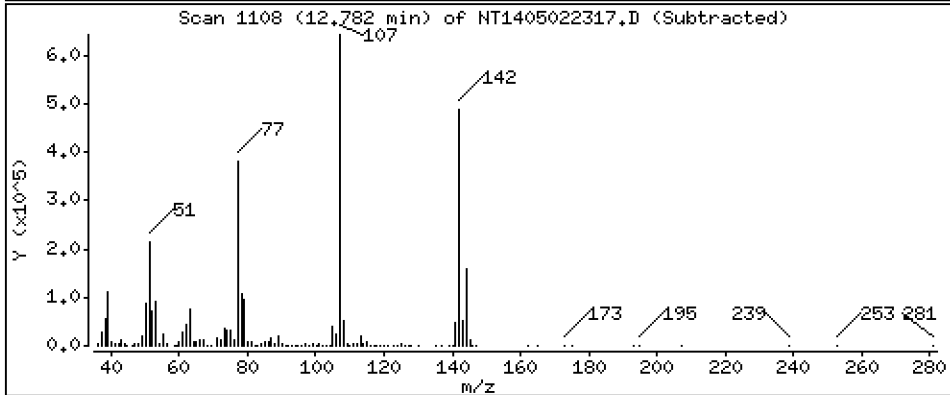
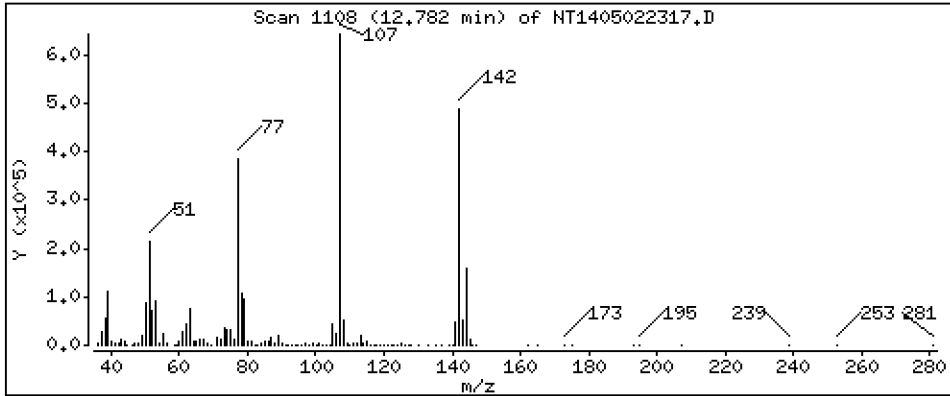
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 11,06 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

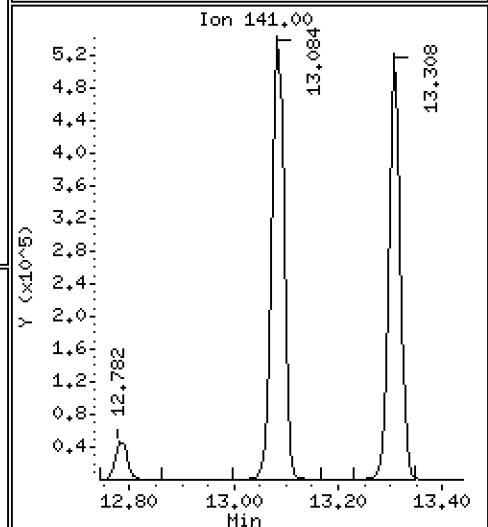
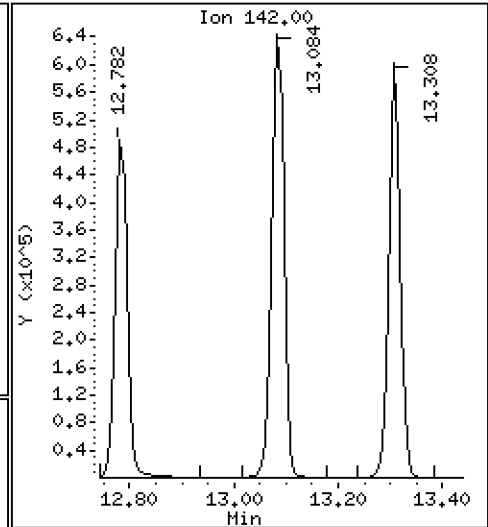
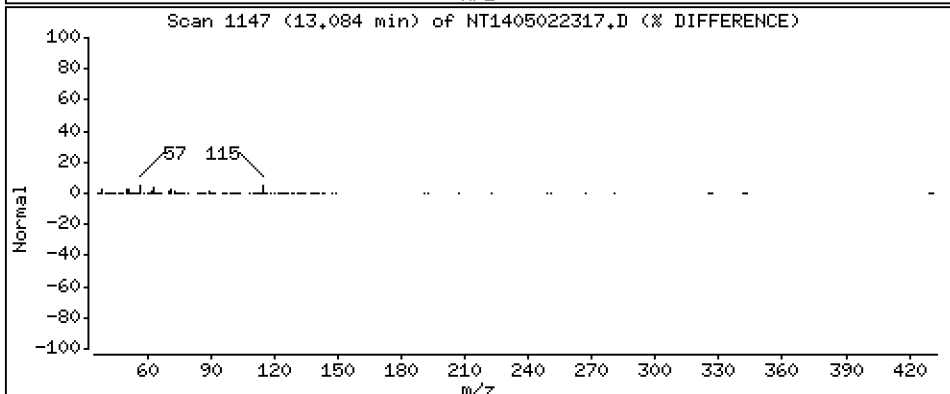
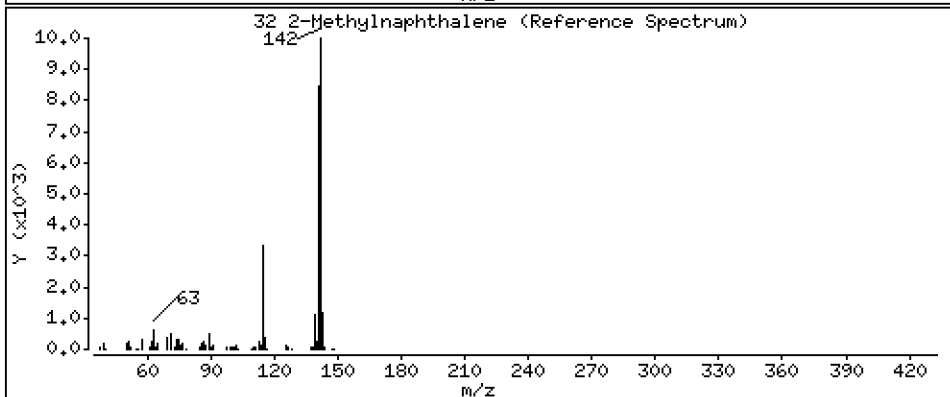
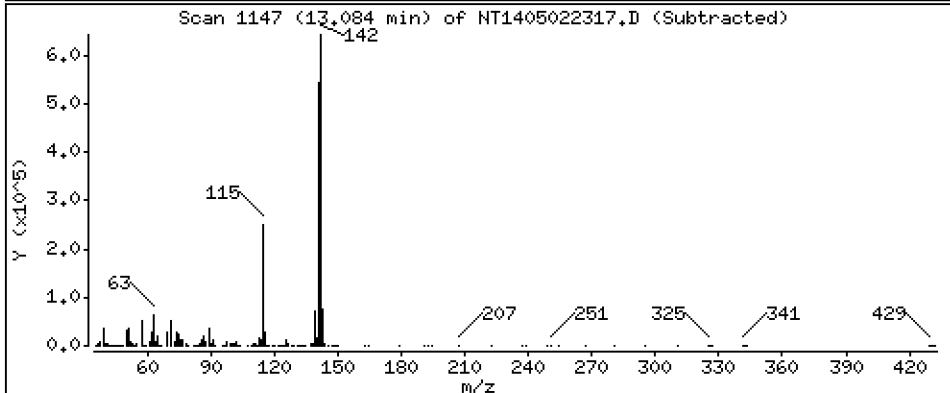
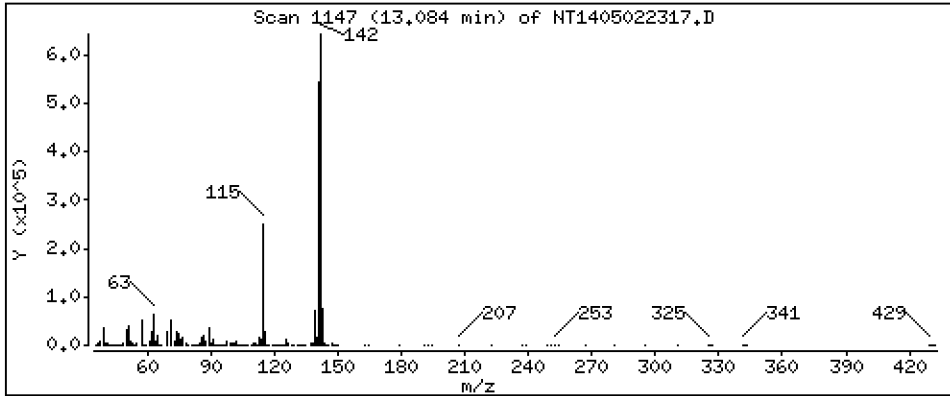
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 5,060 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

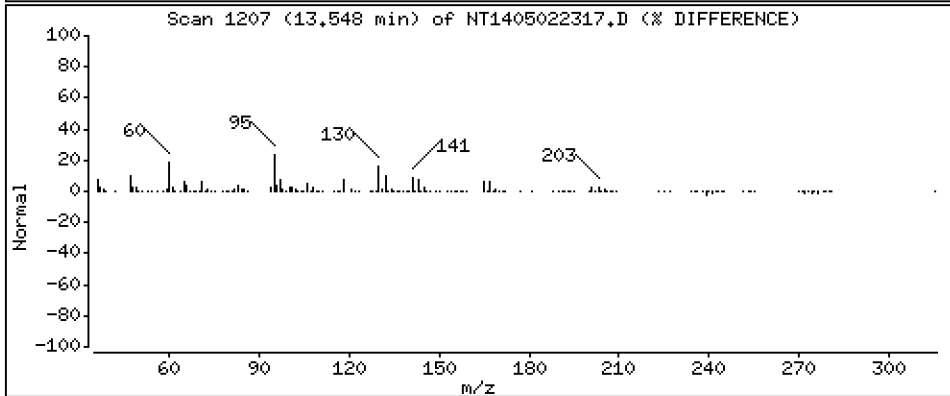
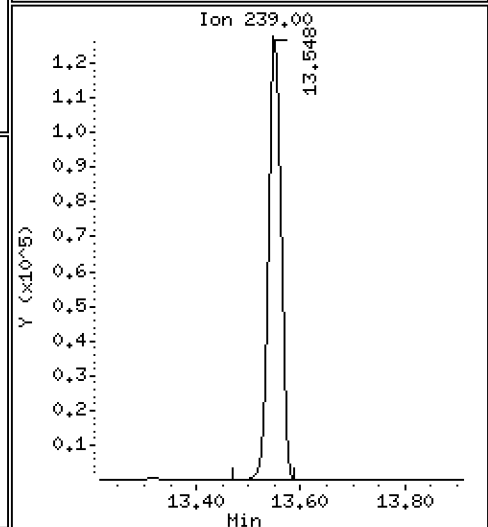
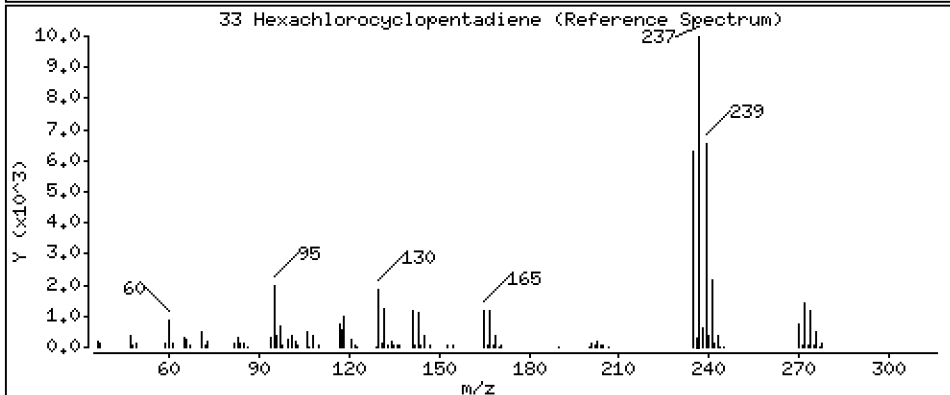
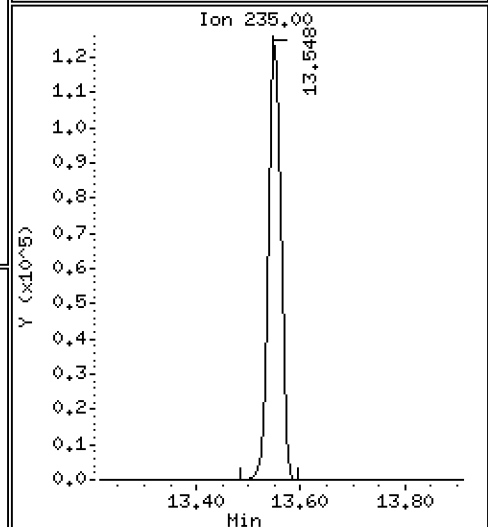
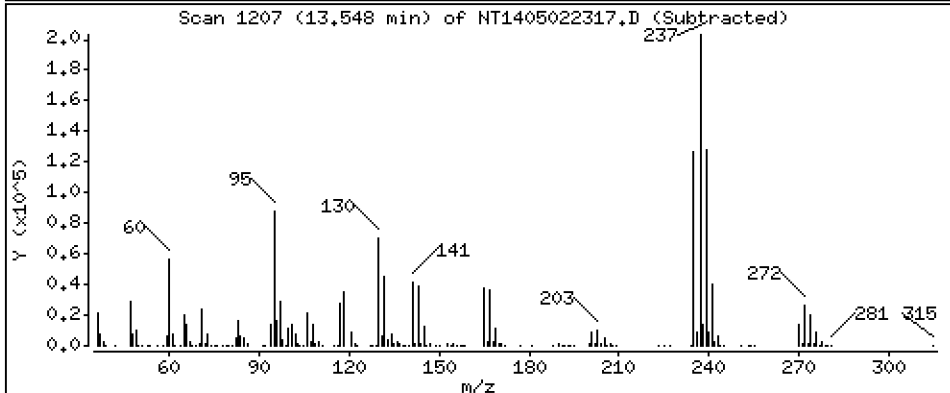
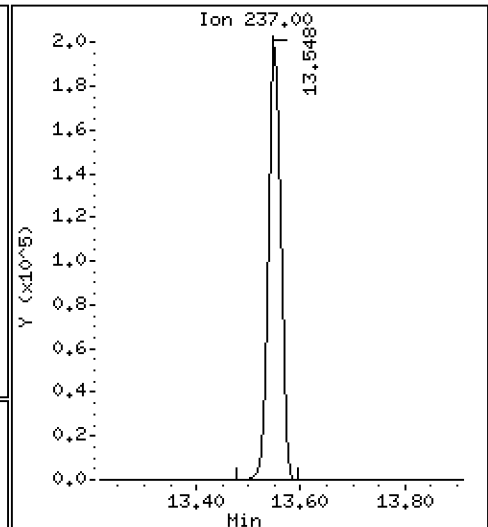
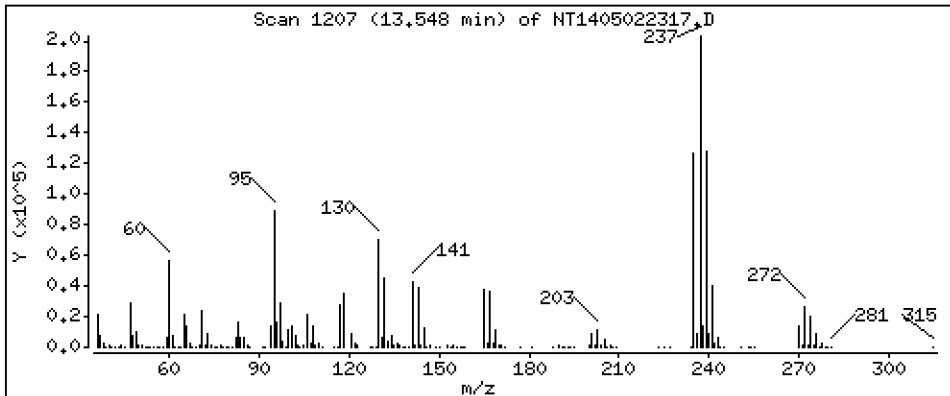
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

33 Hexachlorocyclopentadiene

Concentration: 8,799 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

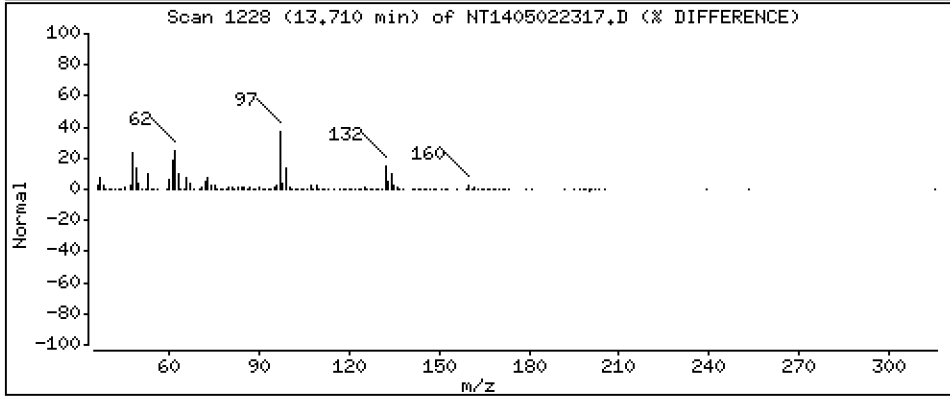
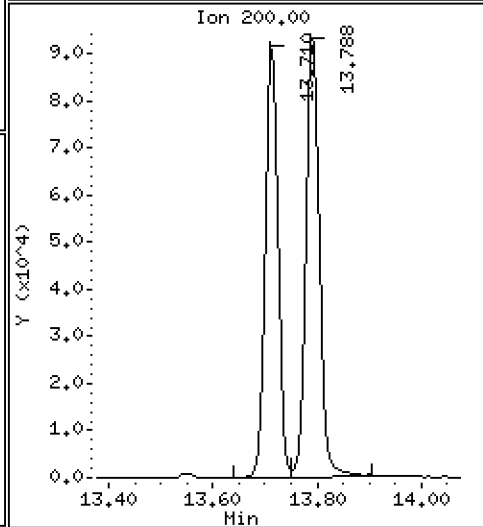
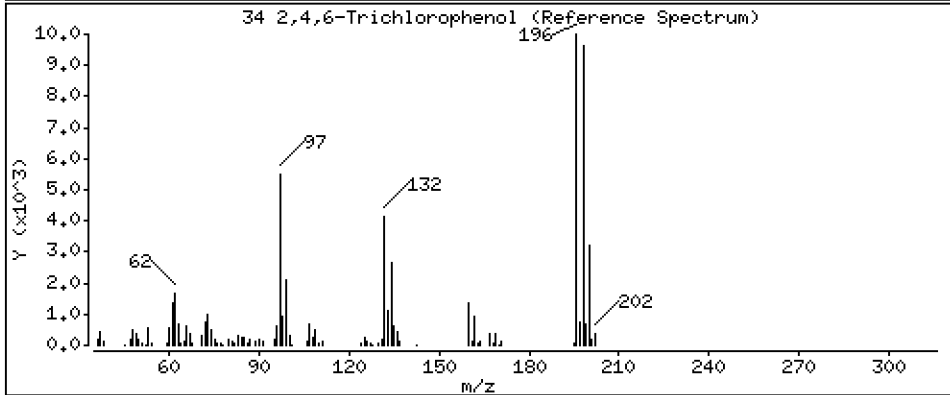
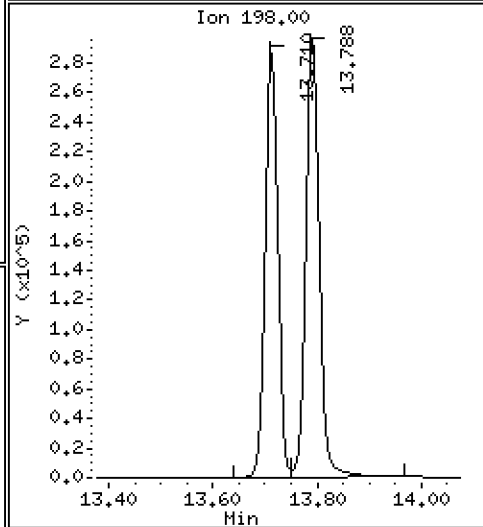
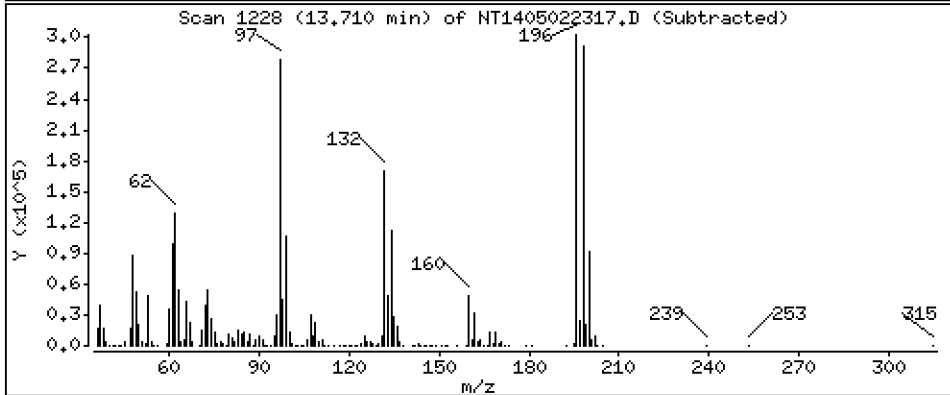
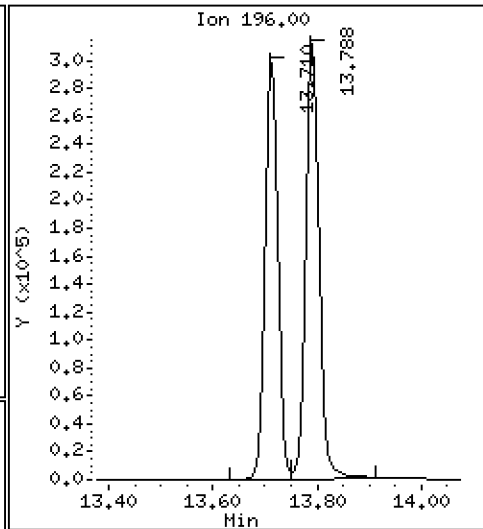
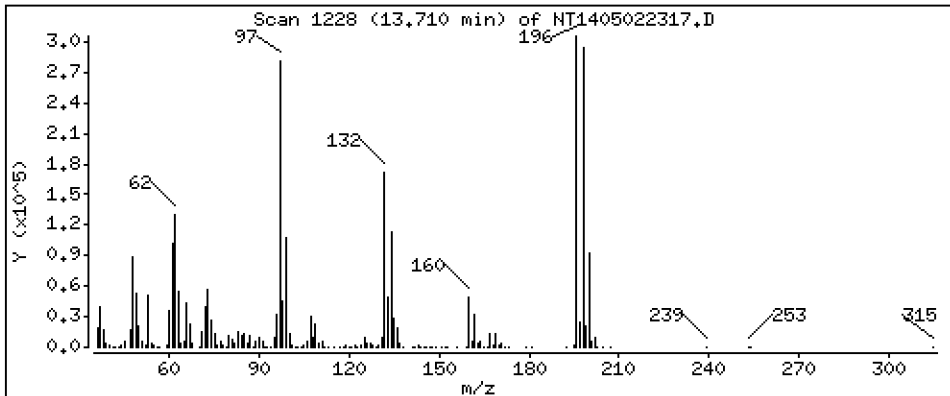
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 11,07 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

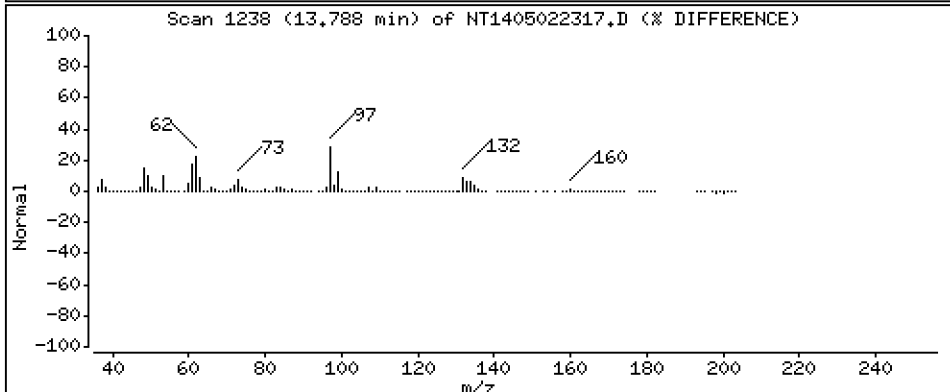
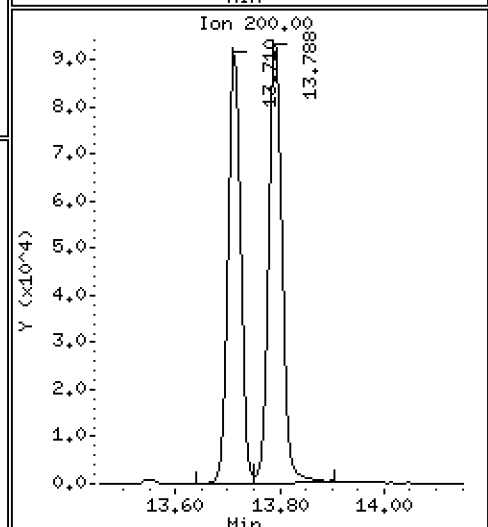
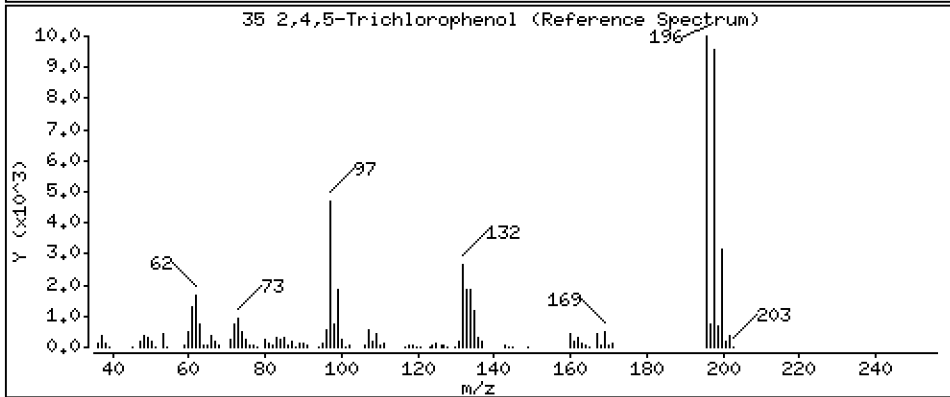
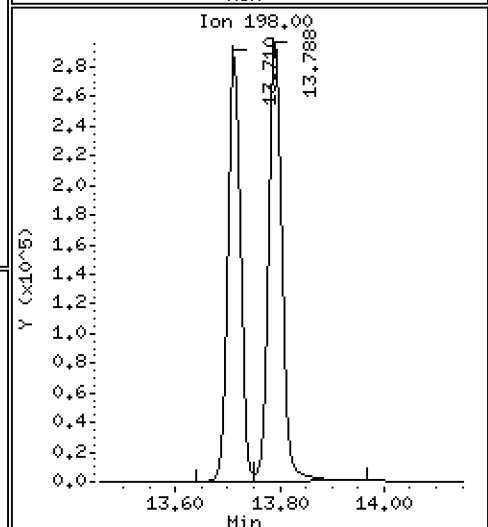
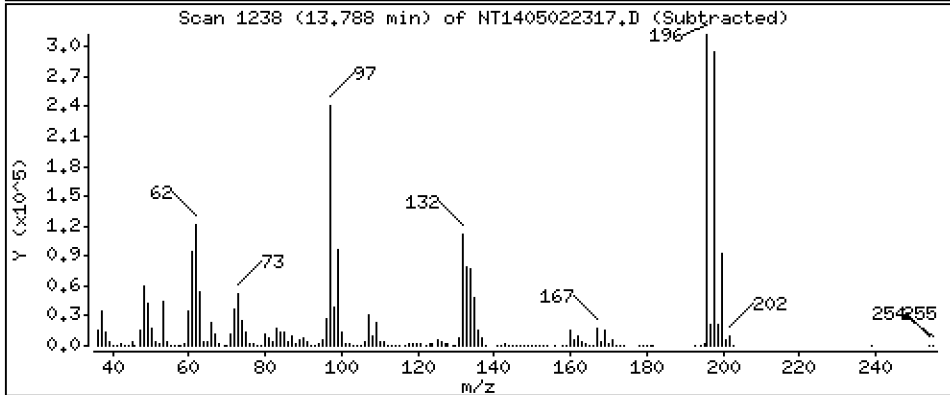
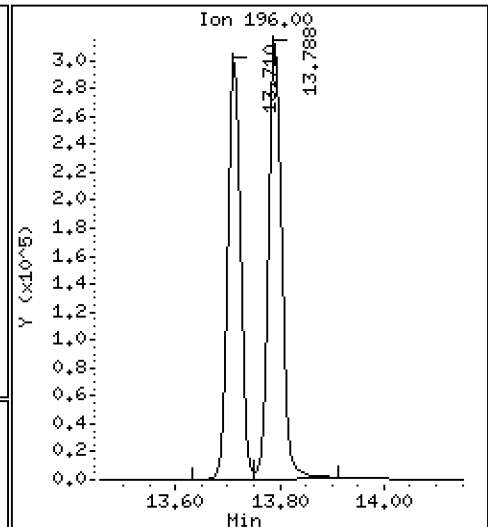
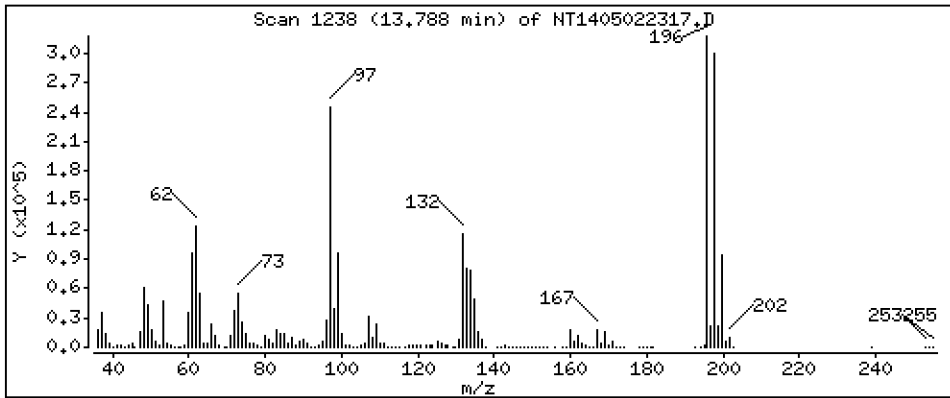
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 11,24 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

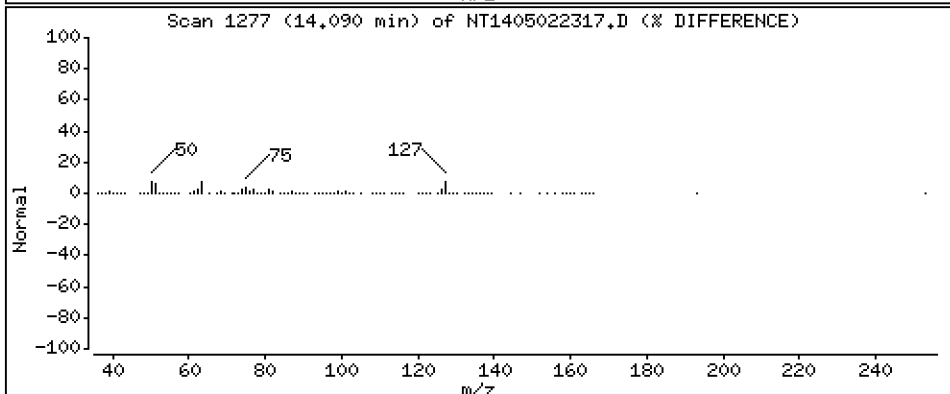
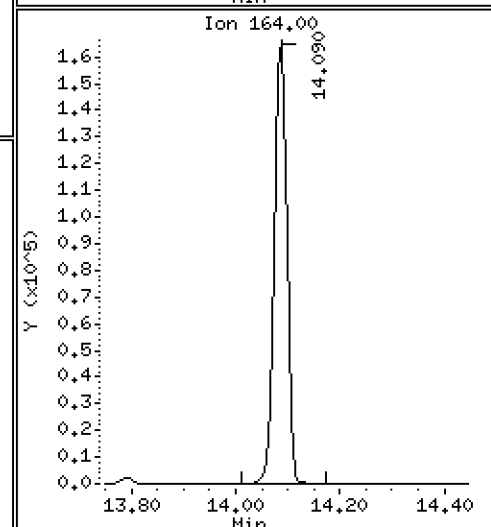
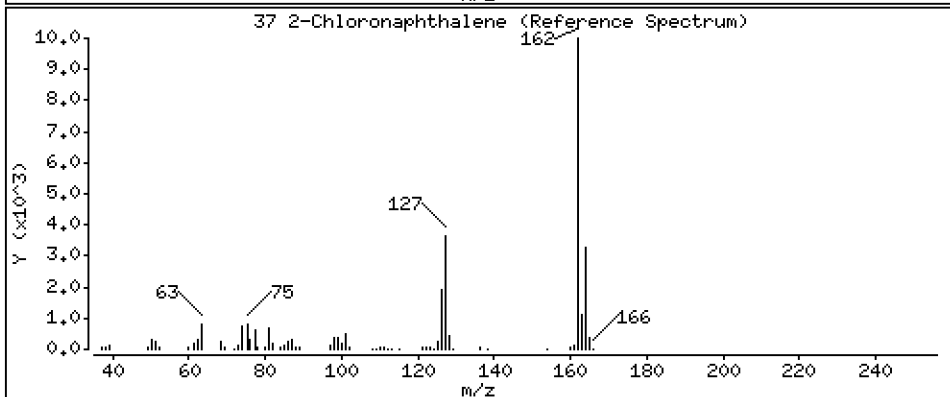
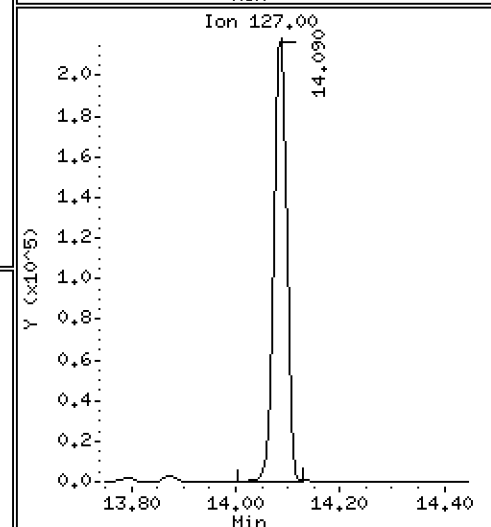
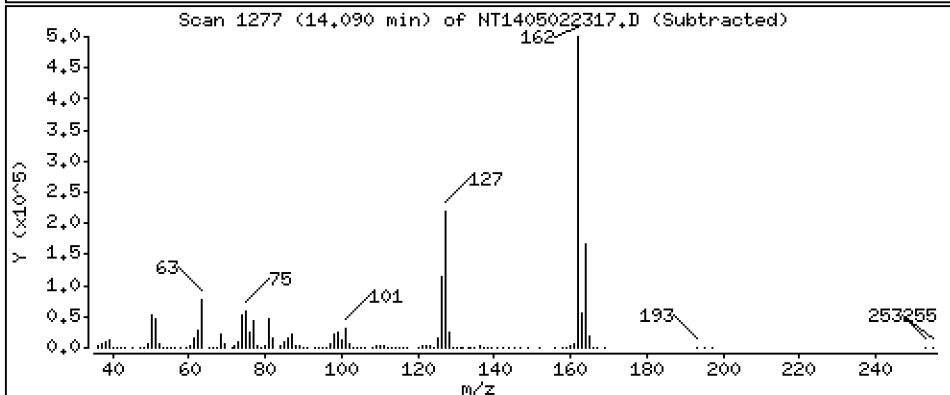
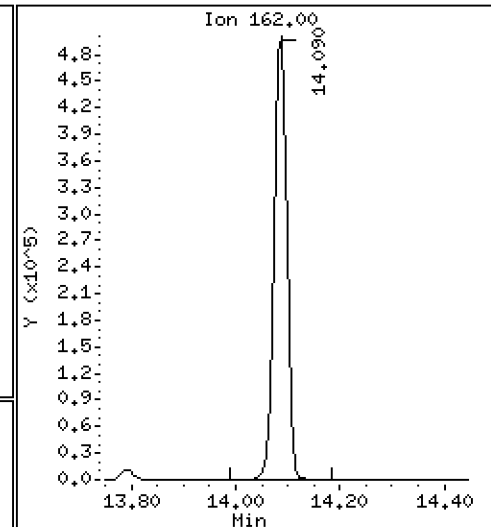
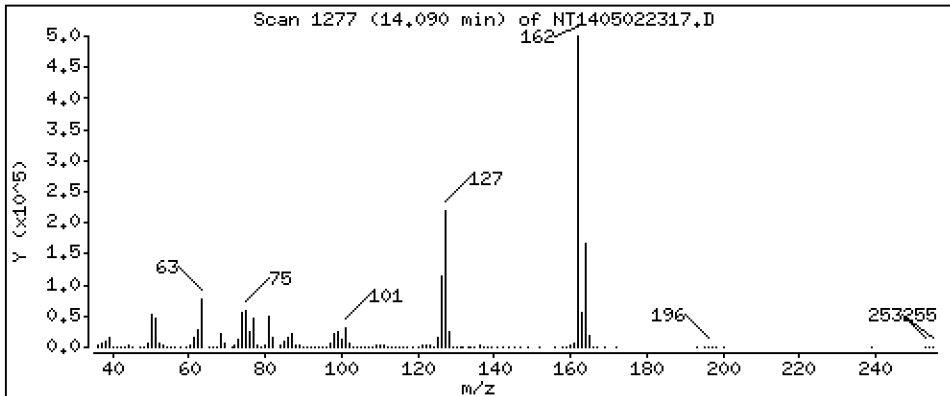
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 5,004 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

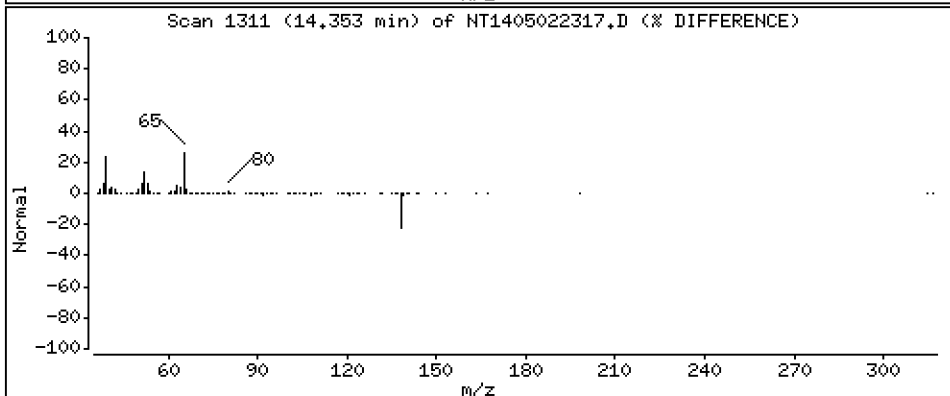
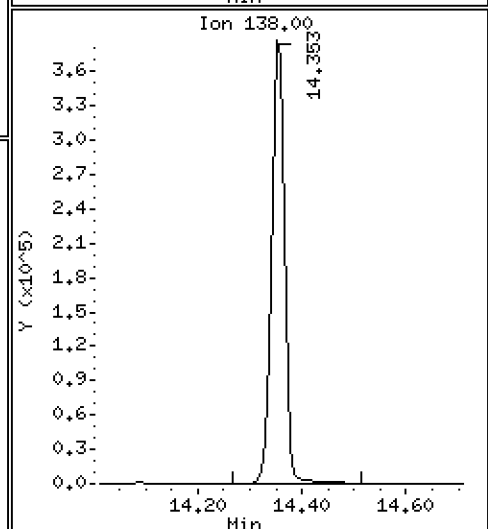
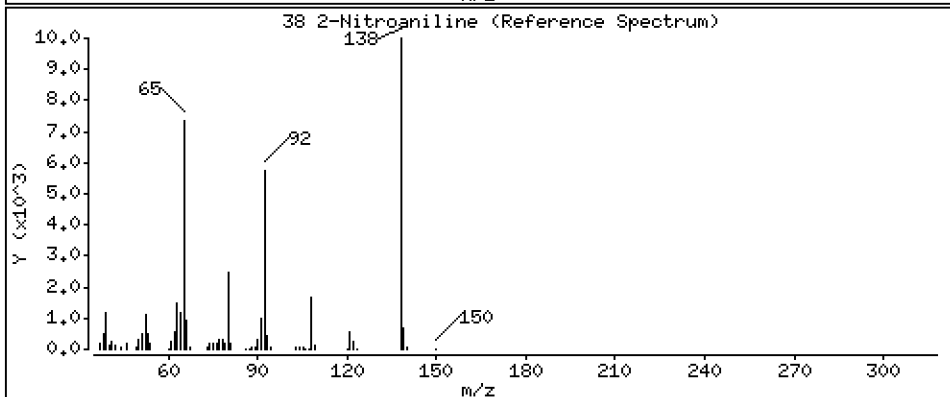
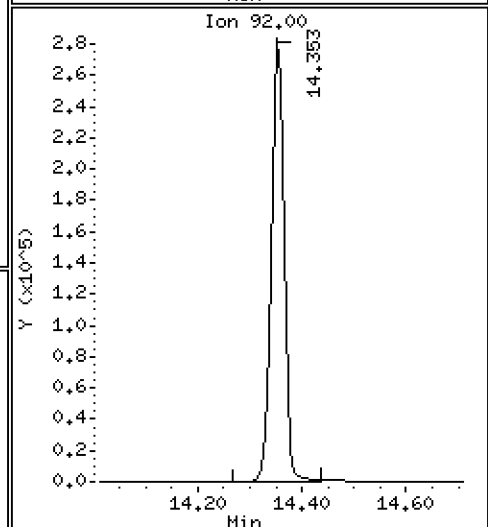
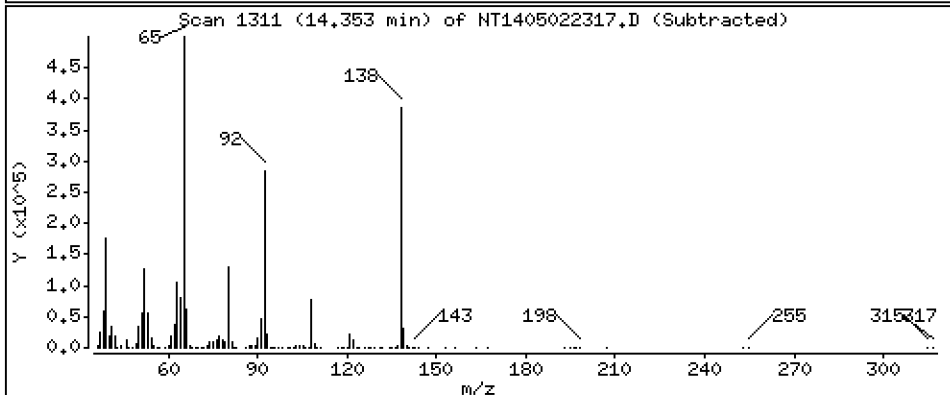
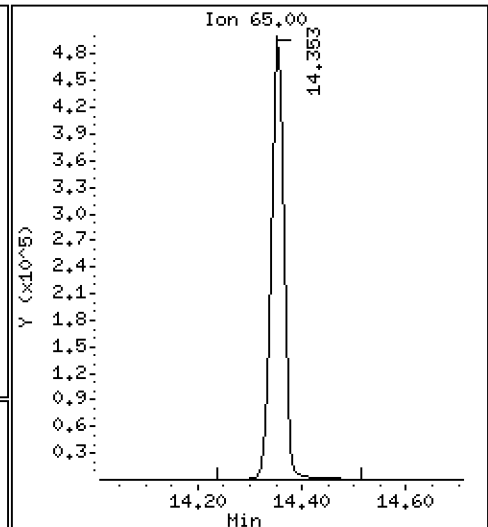
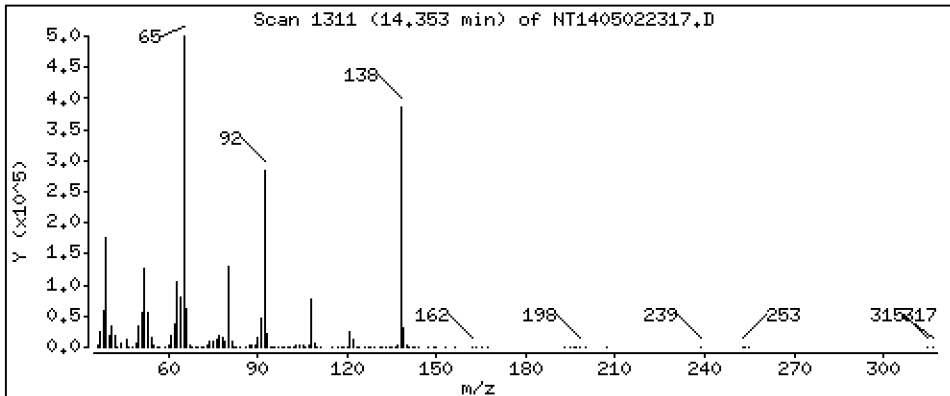
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 10,15 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

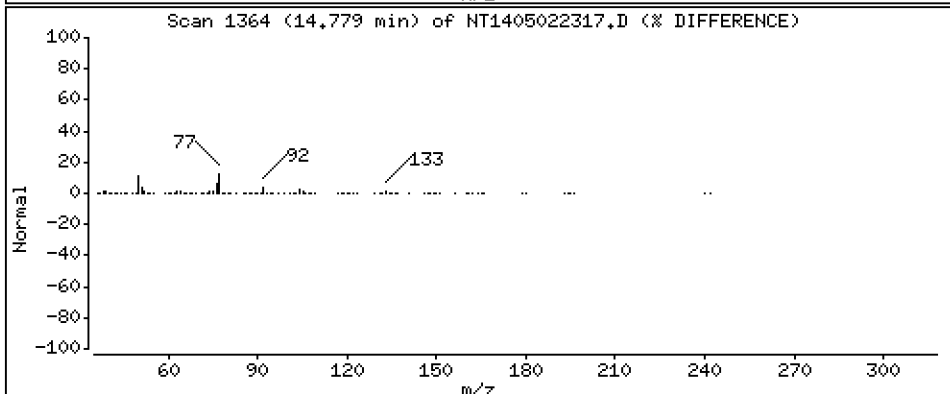
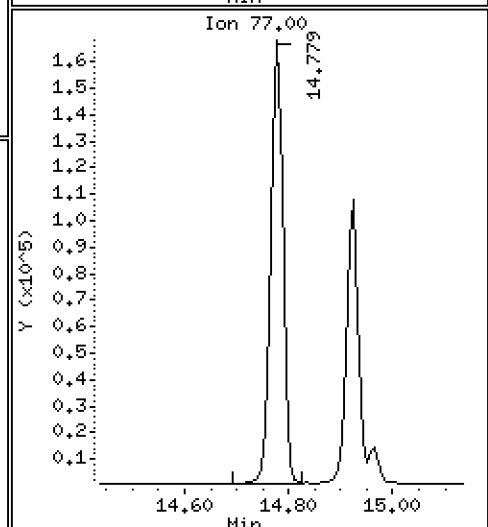
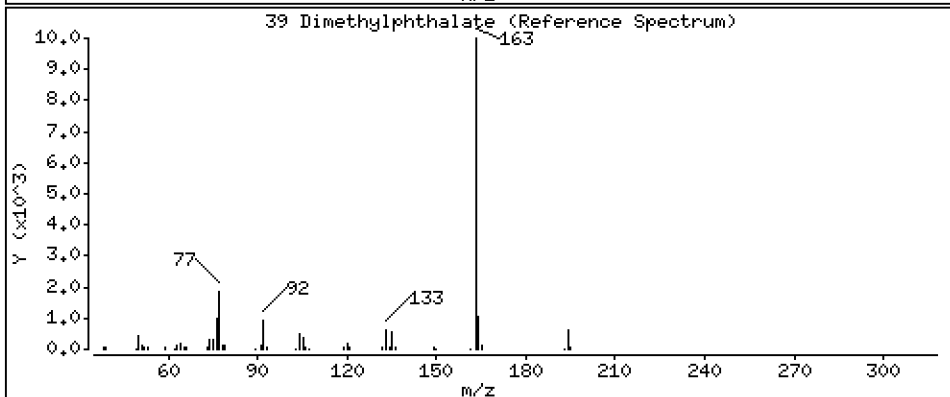
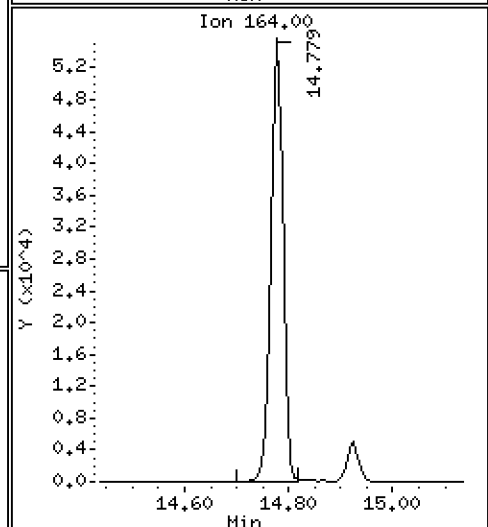
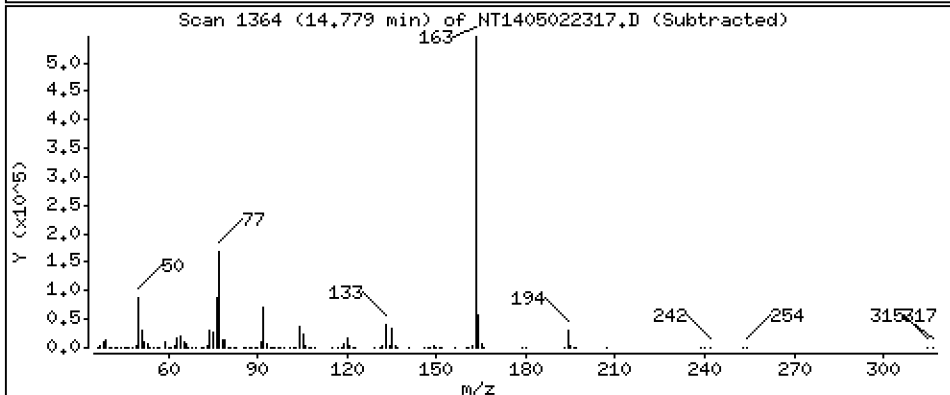
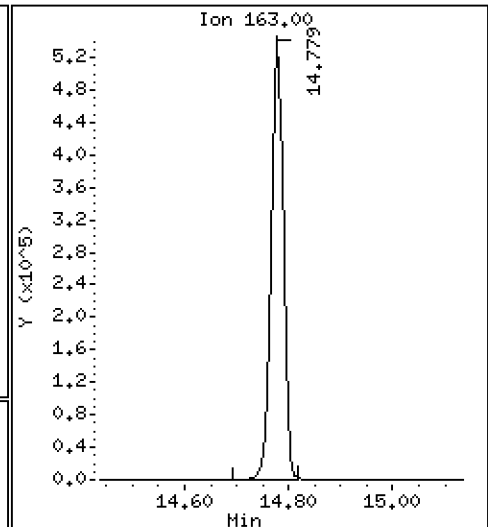
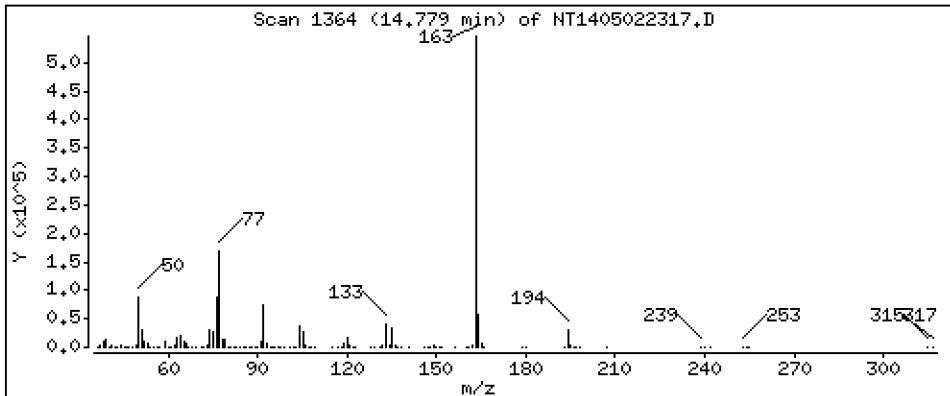
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,899 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

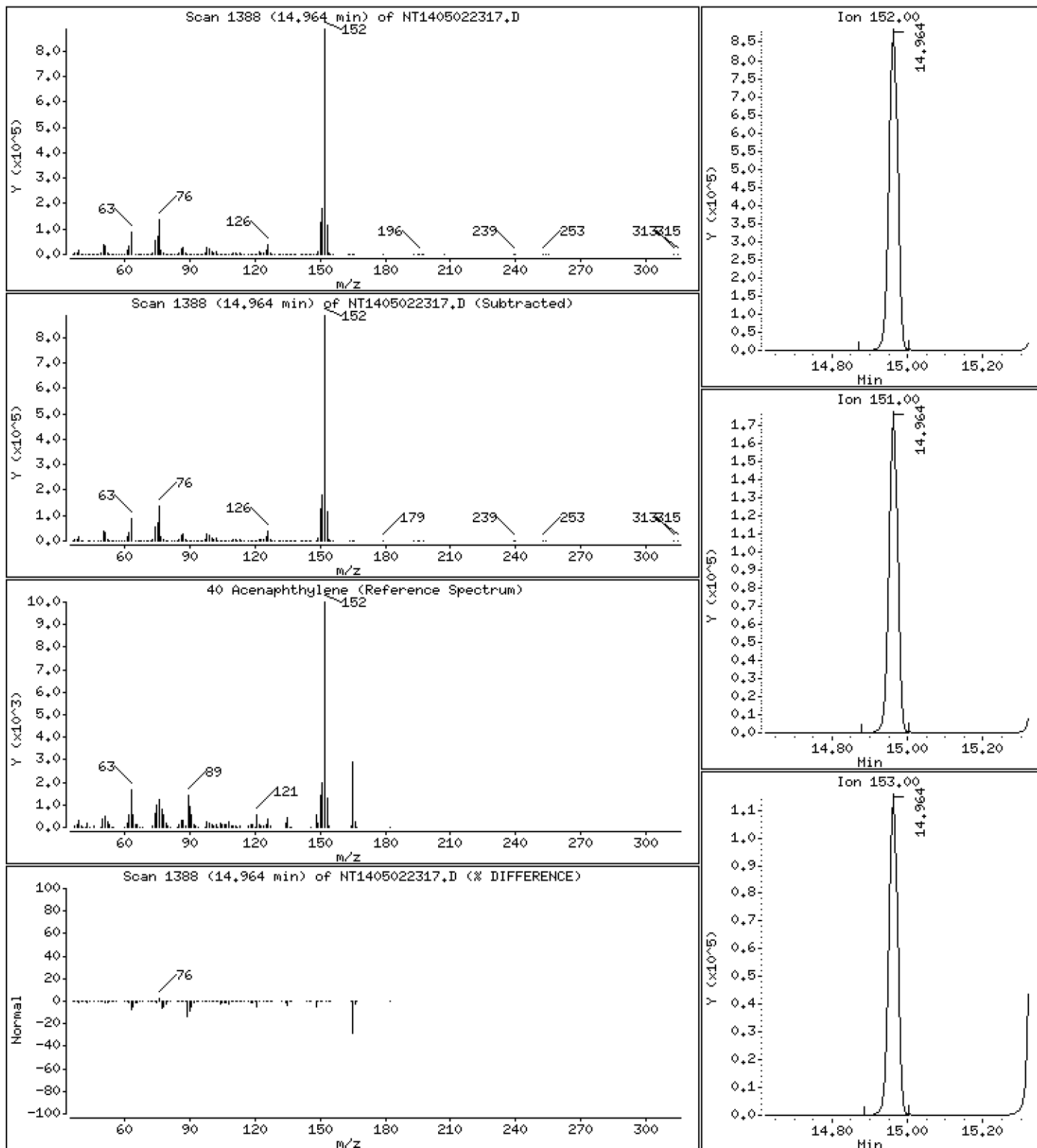
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

40 Acenaphthylene

Concentration: 5.246 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

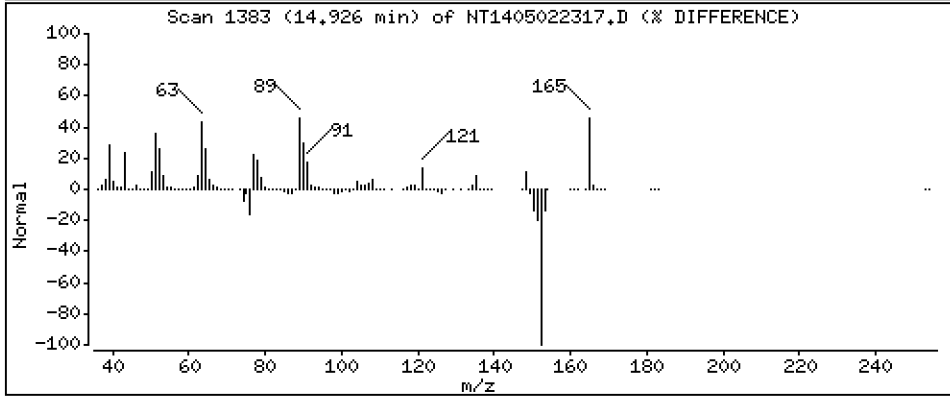
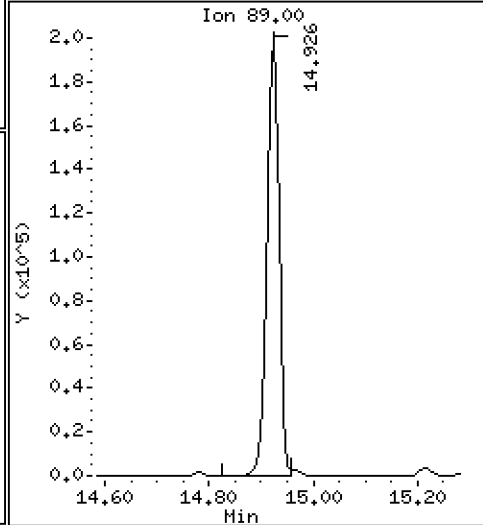
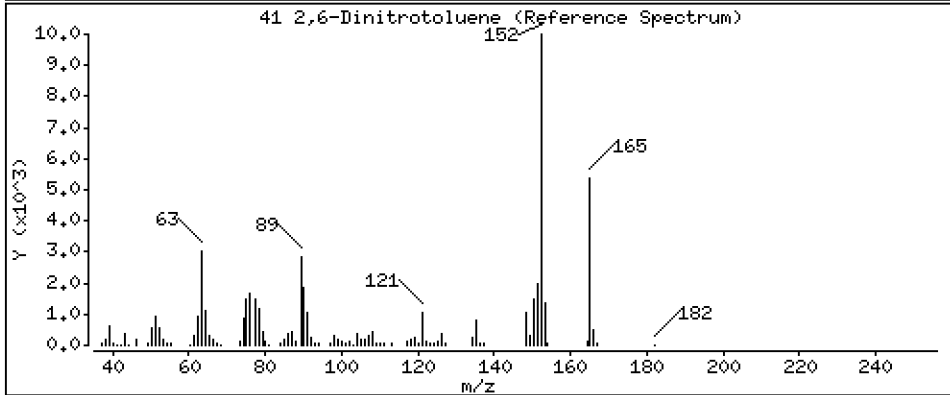
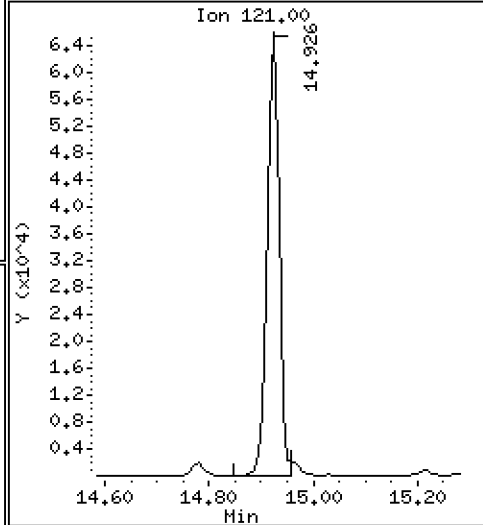
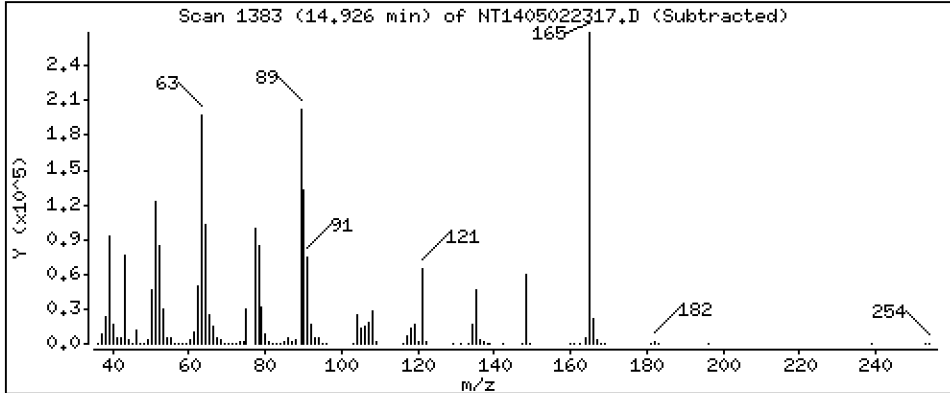
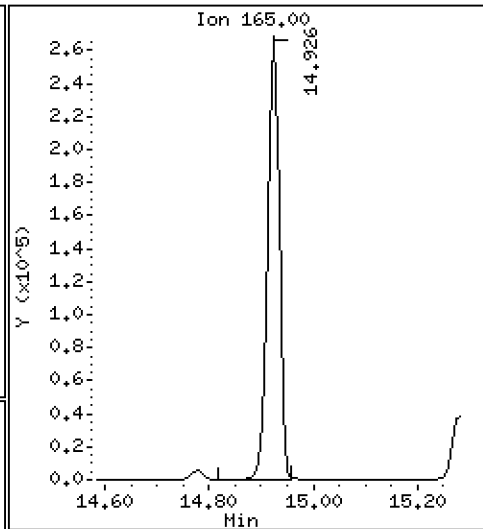
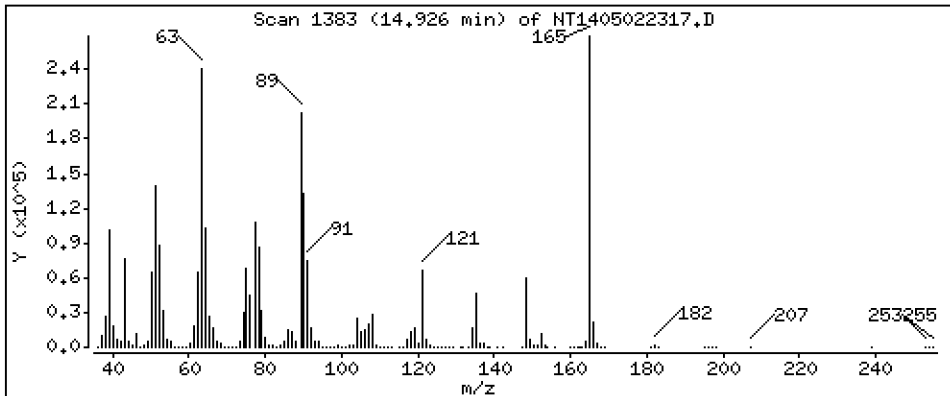
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

41 2,6-Dinitrotoluene

Concentration: 10,32 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

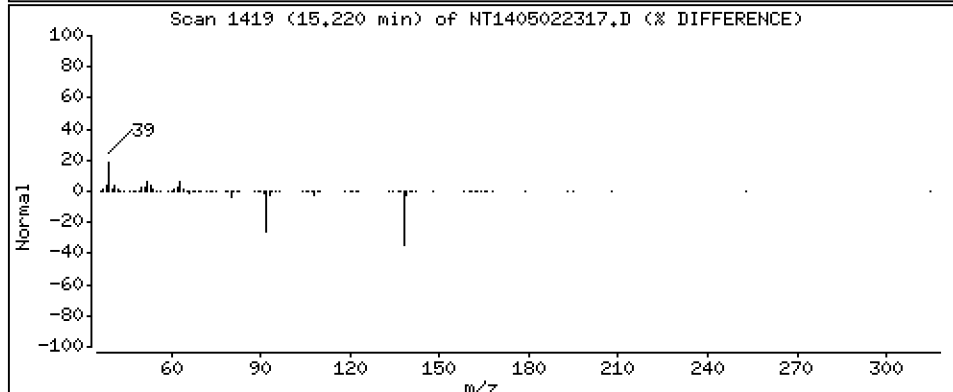
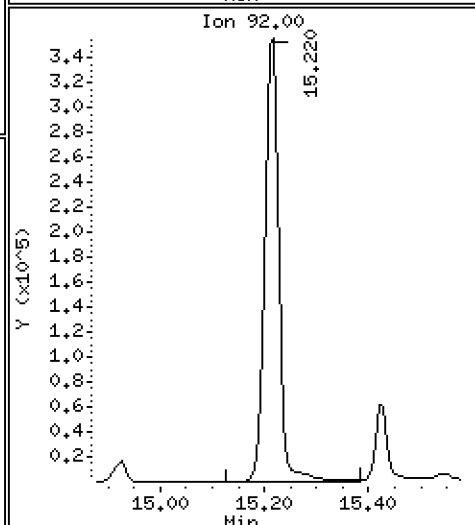
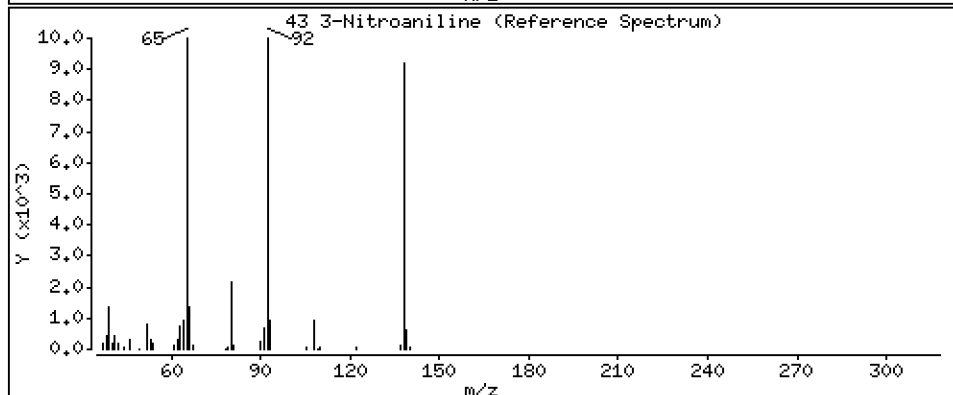
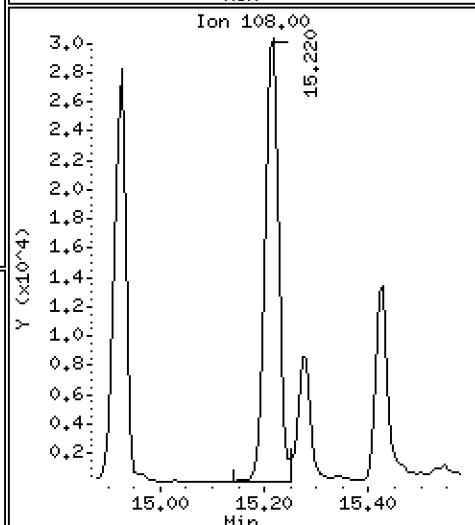
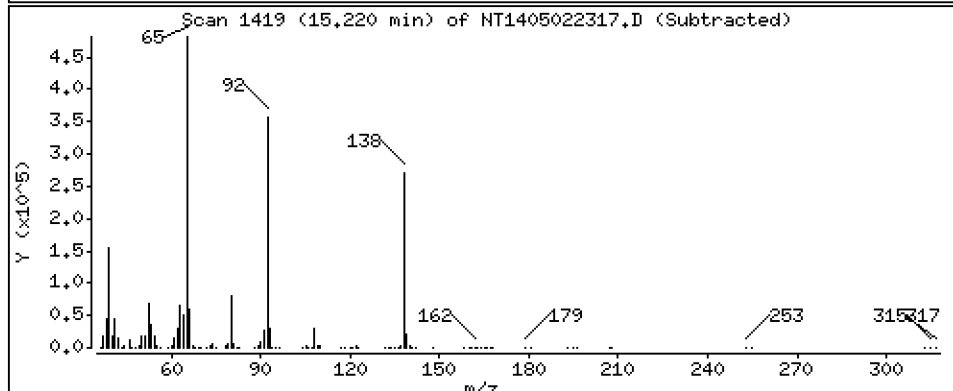
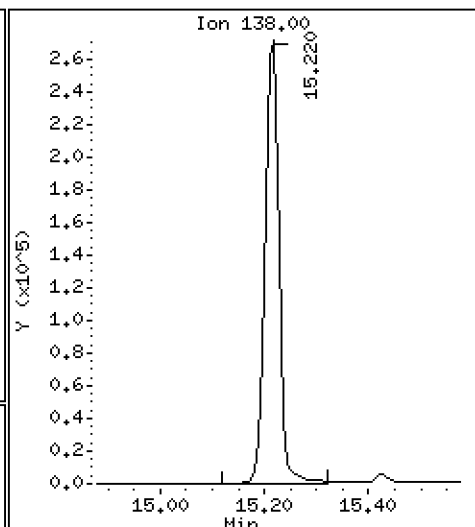
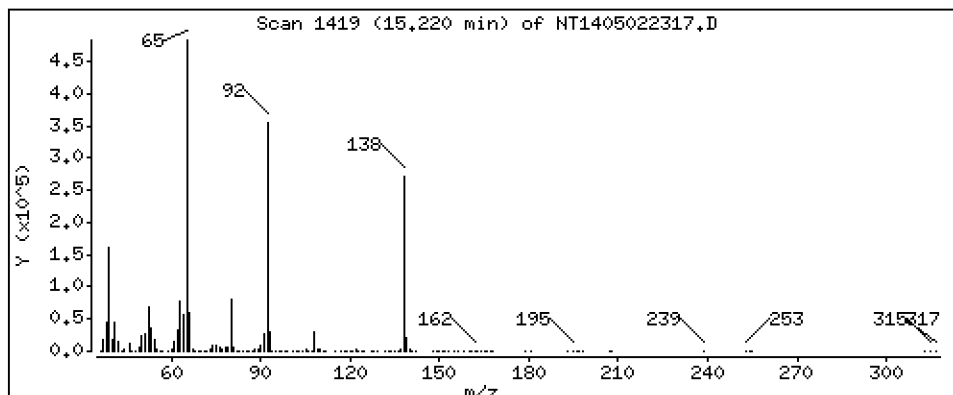
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 10,17 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

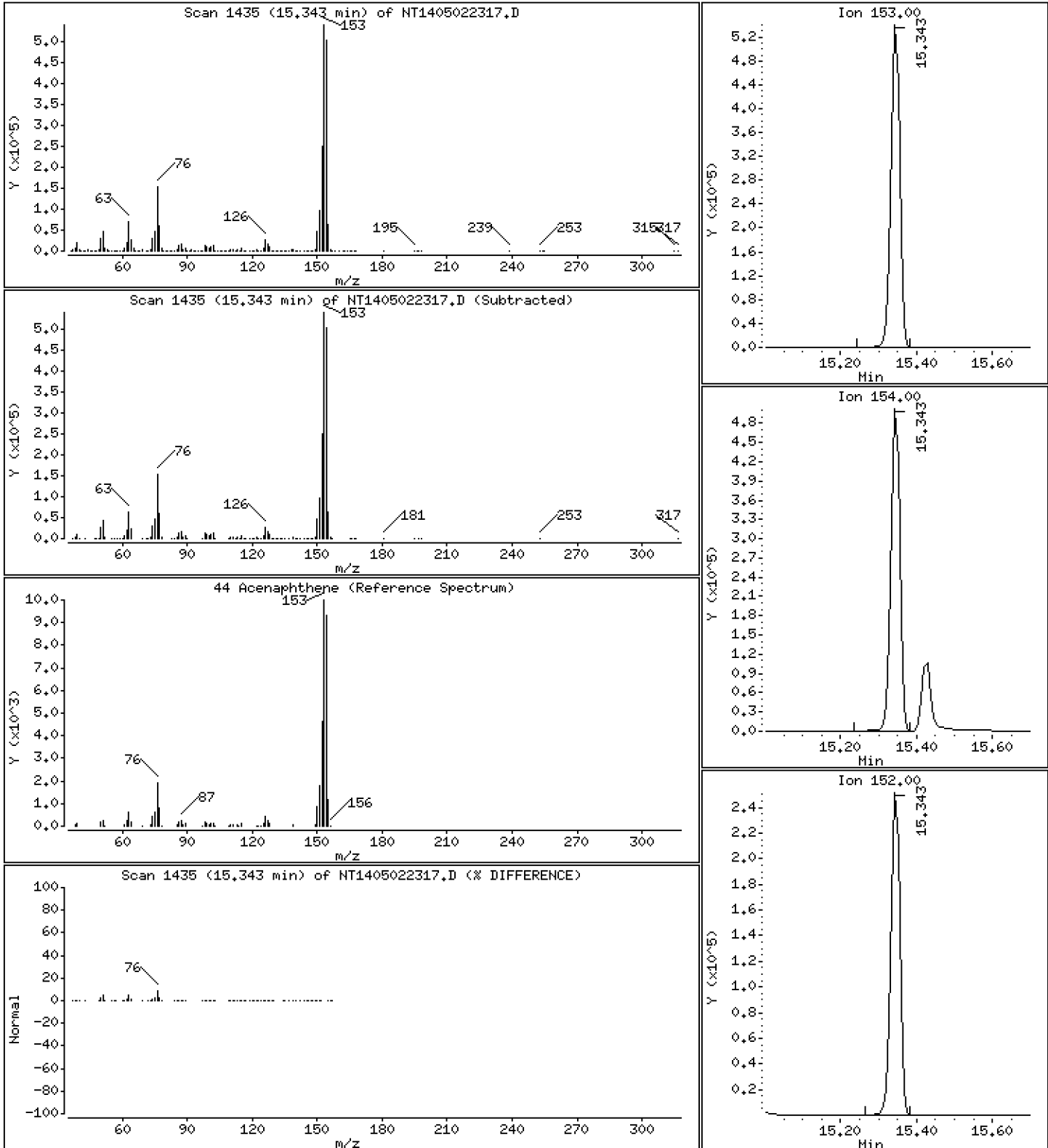
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 5,286 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

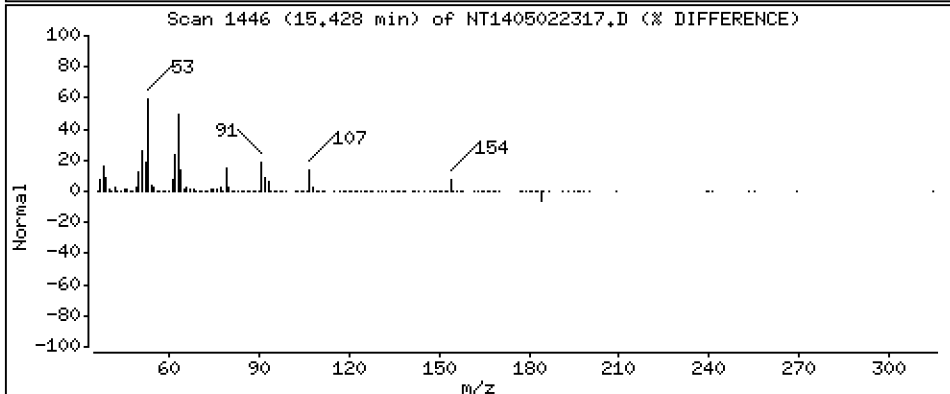
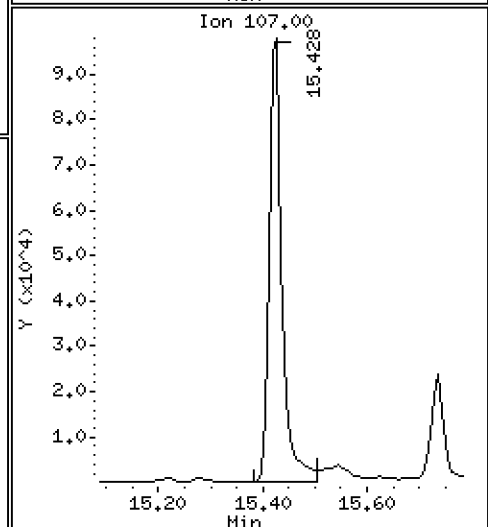
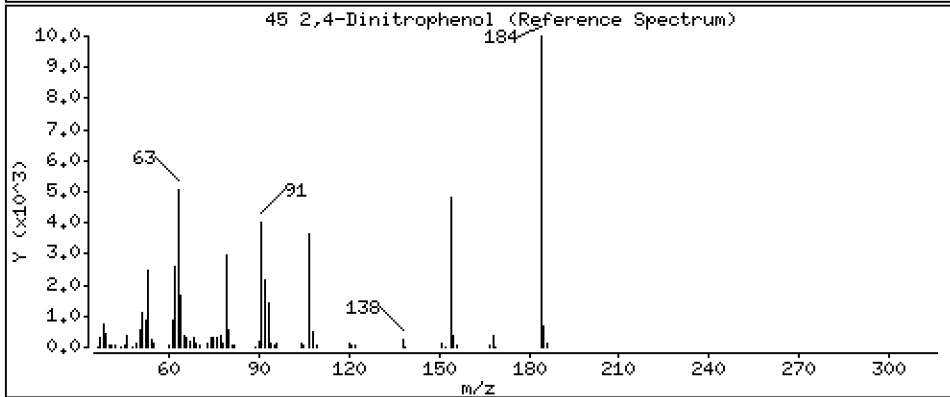
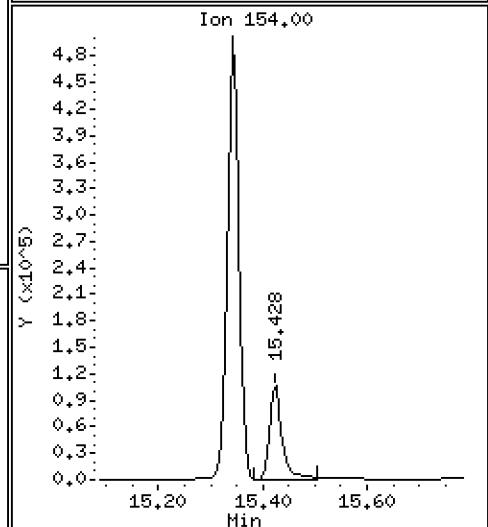
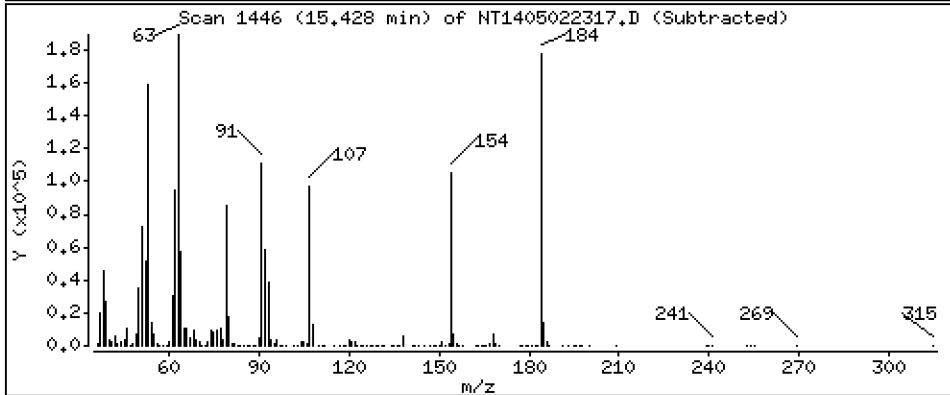
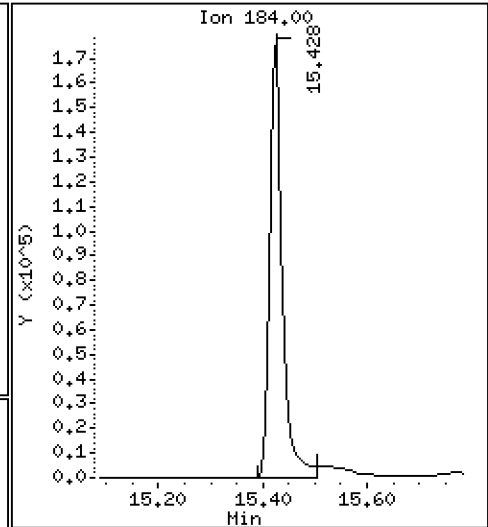
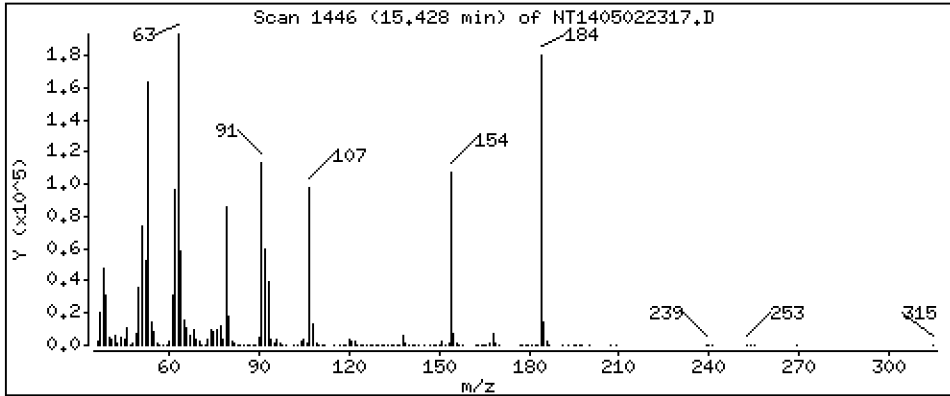
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

45 2,4-Dinitrophenol

Concentration: 12,82 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

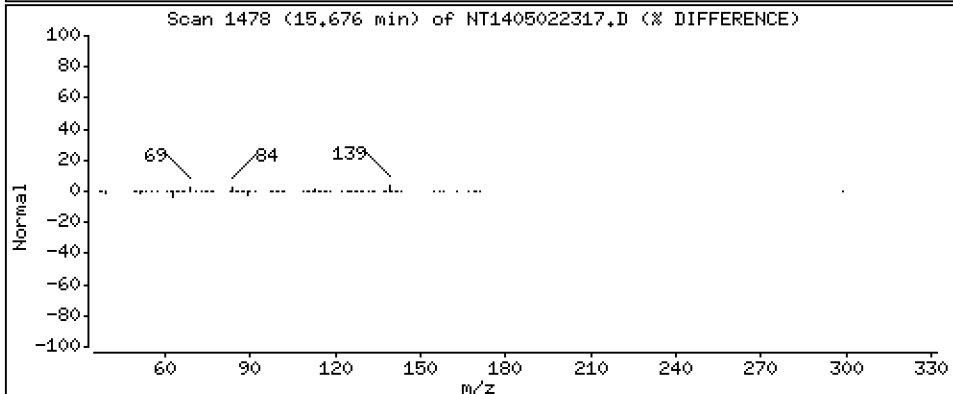
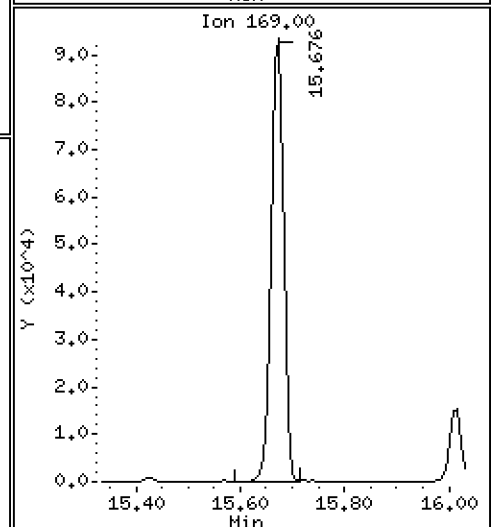
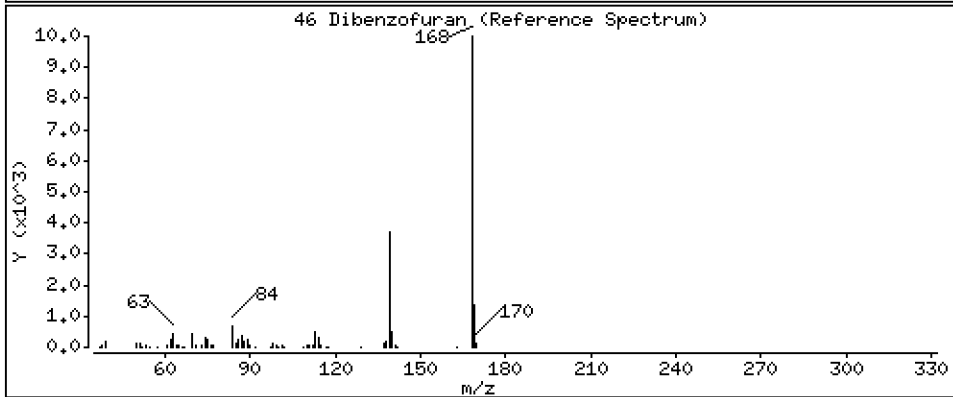
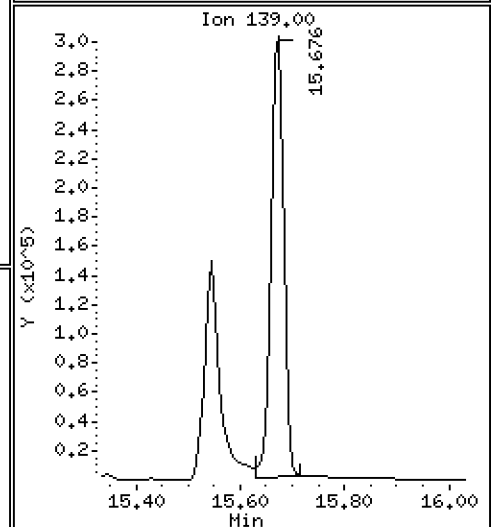
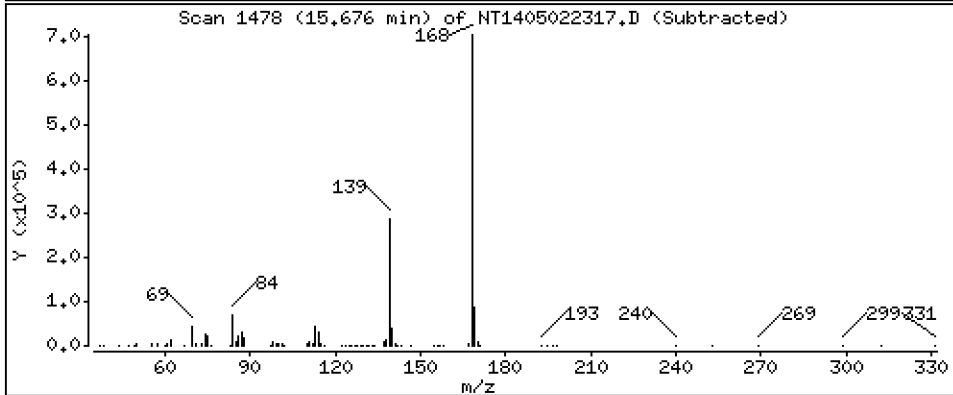
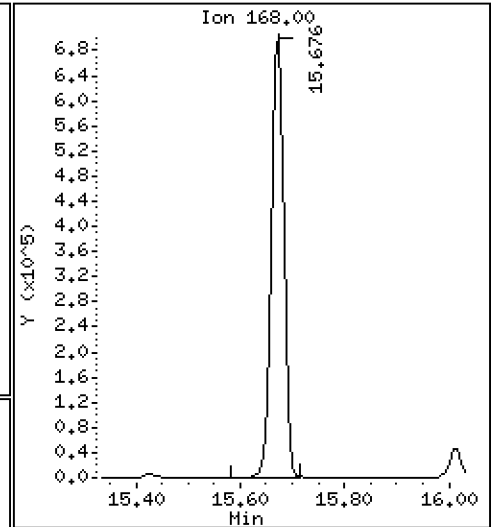
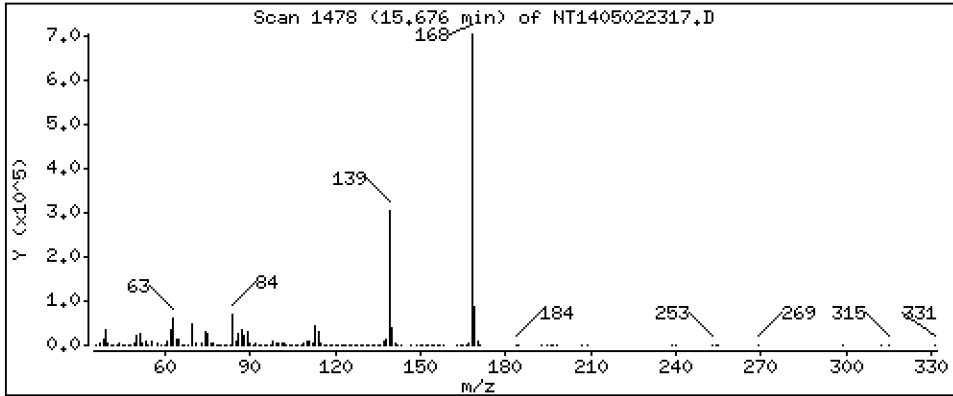
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 5,026 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

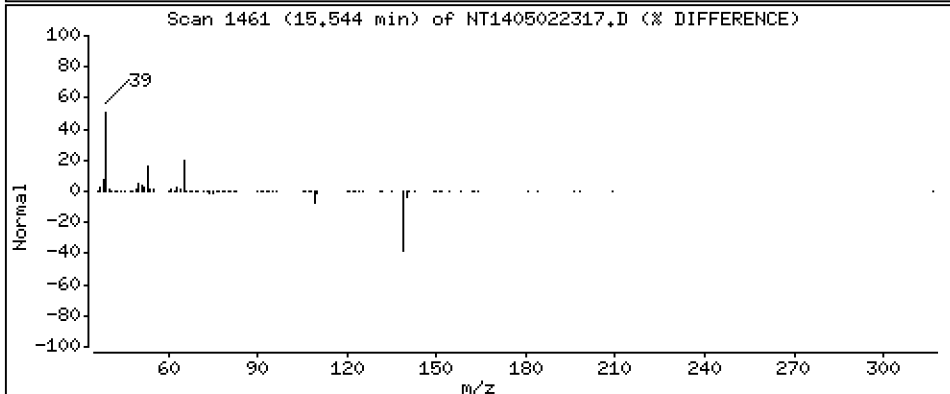
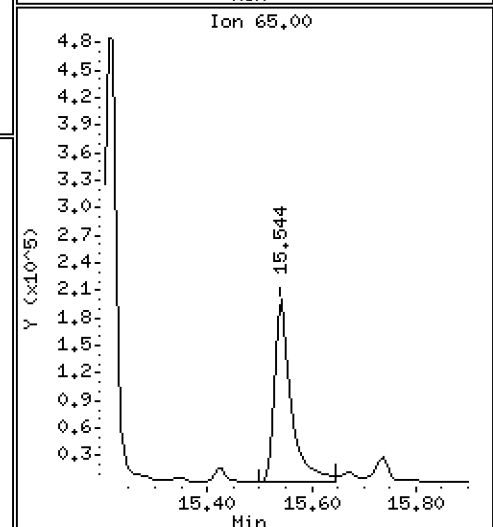
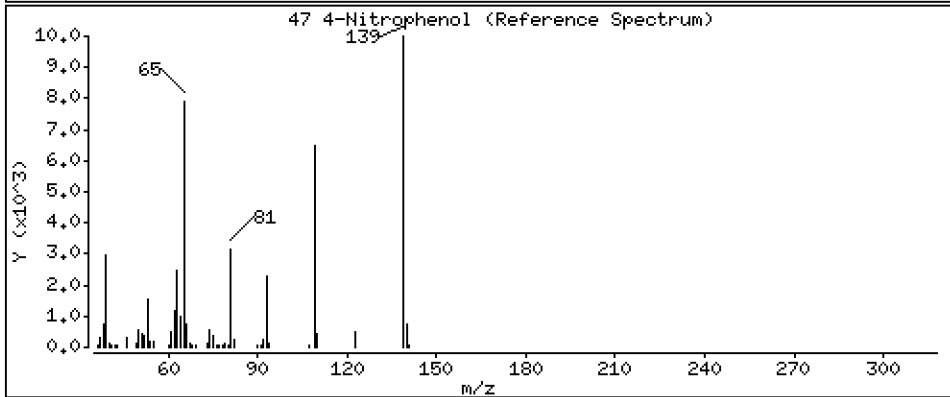
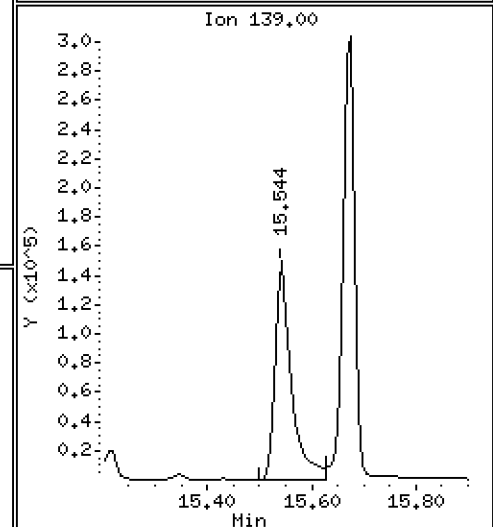
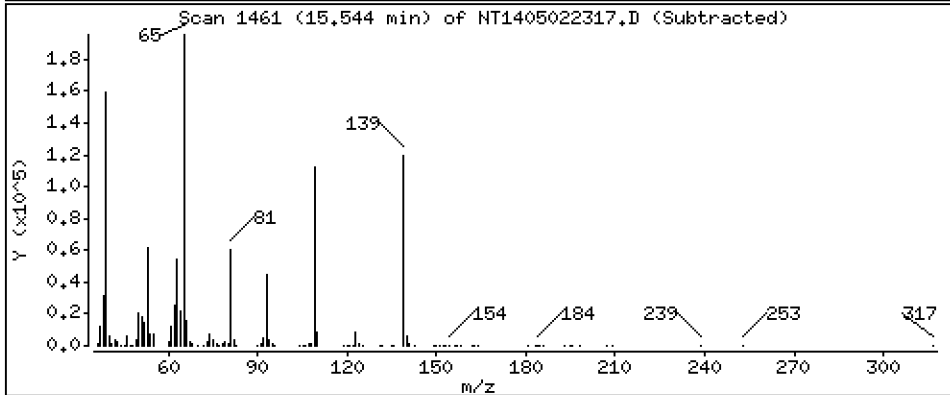
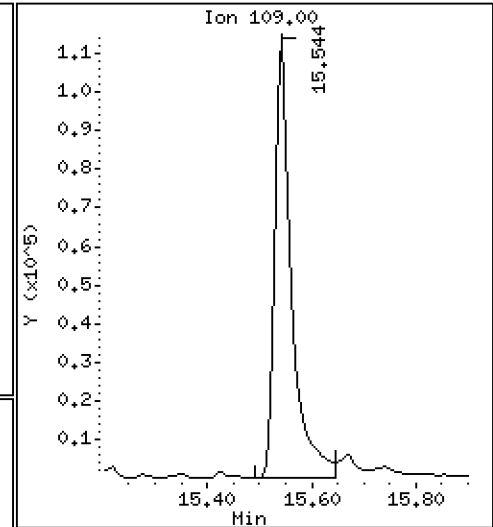
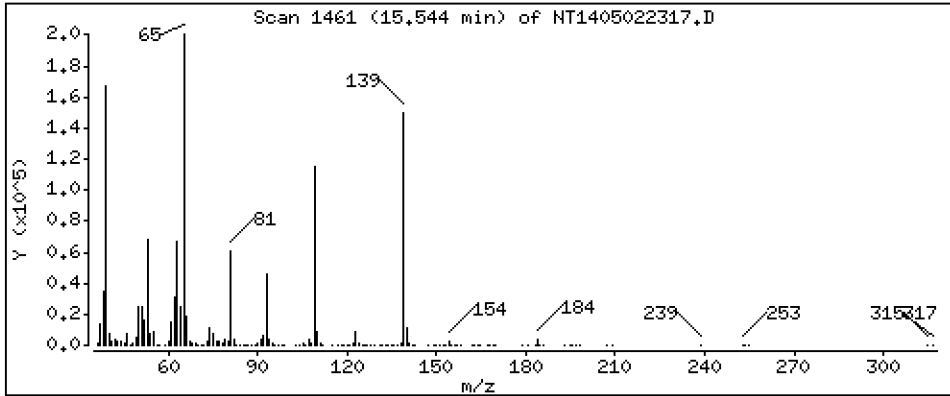
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 8,949 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

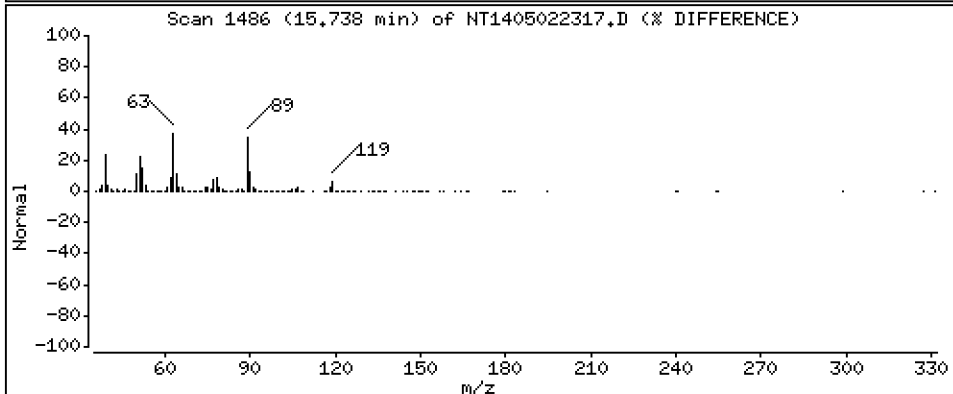
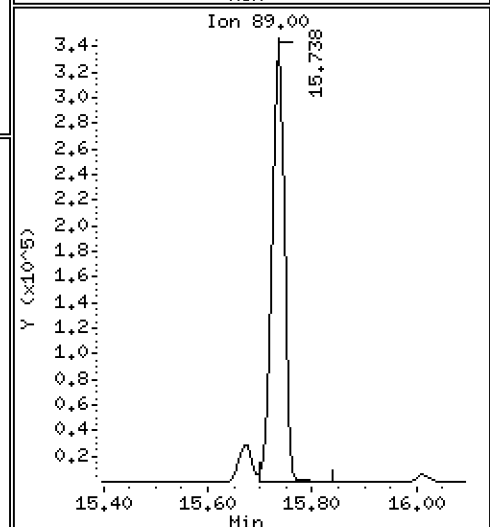
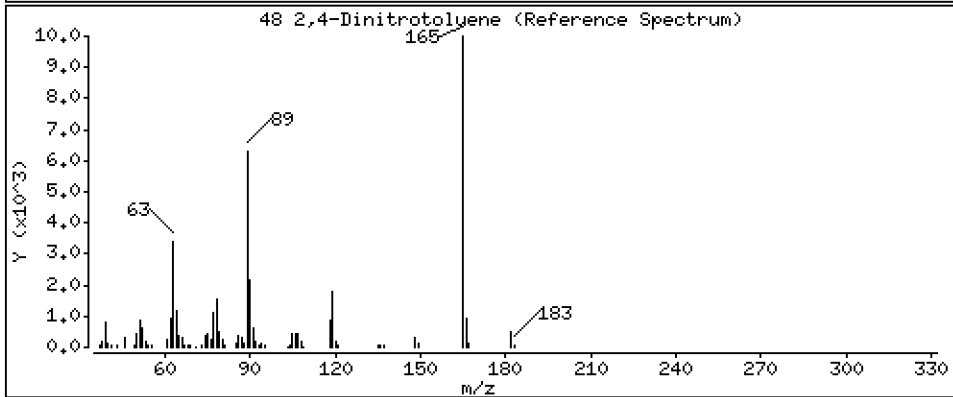
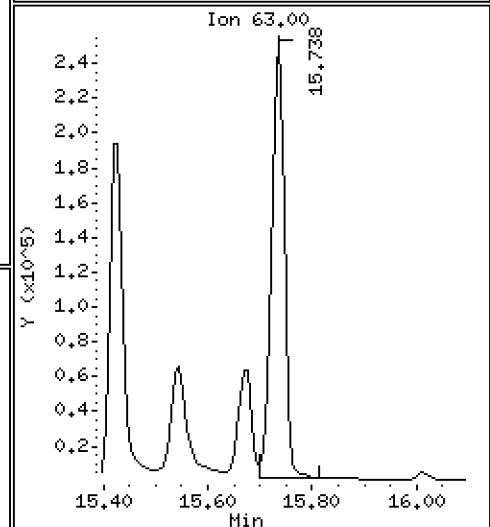
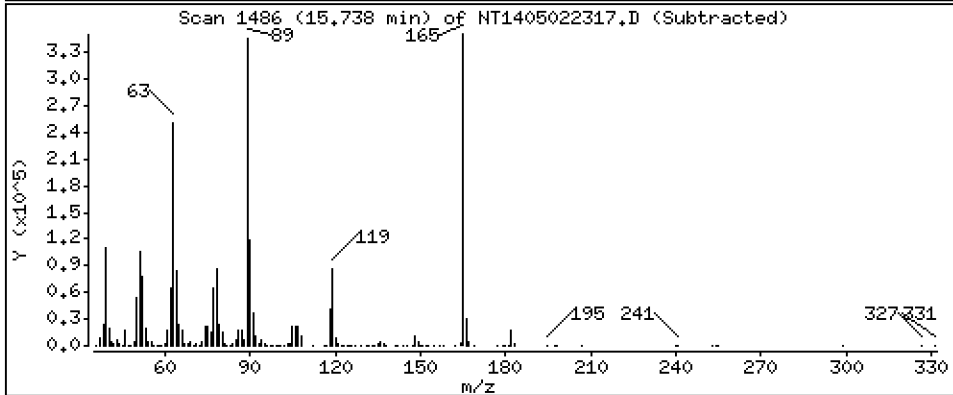
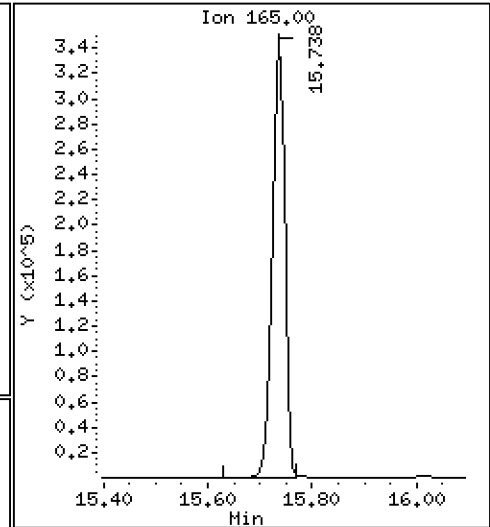
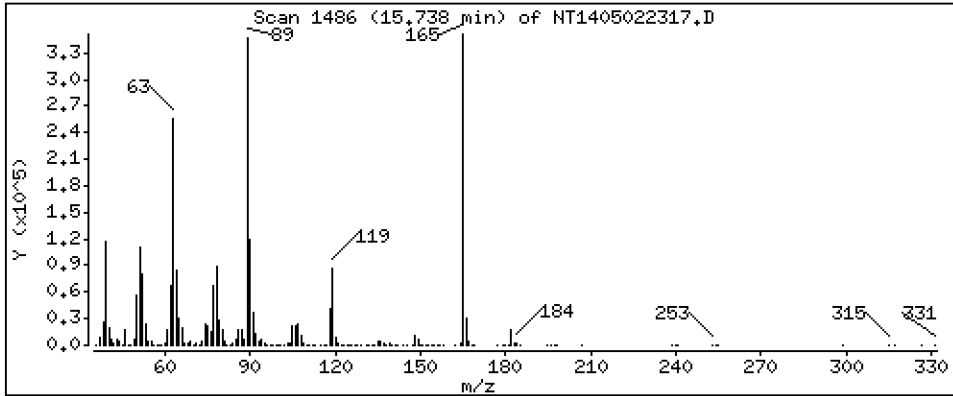
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 10,48 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

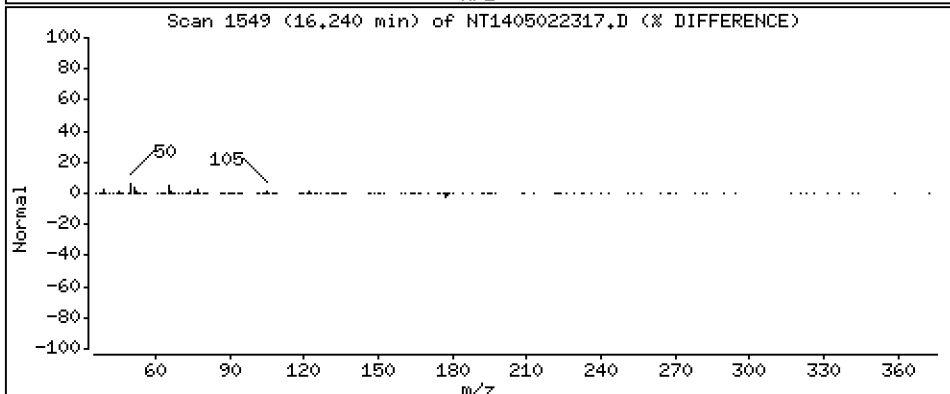
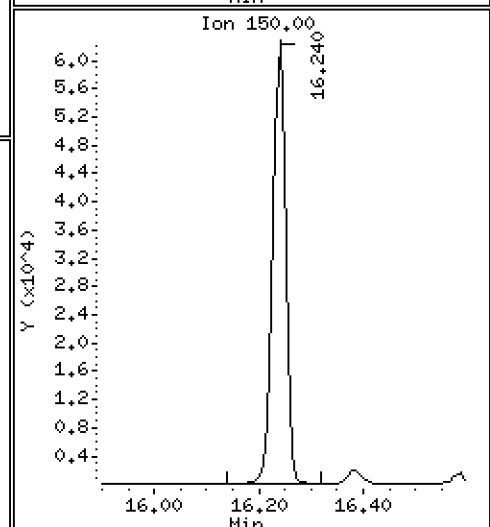
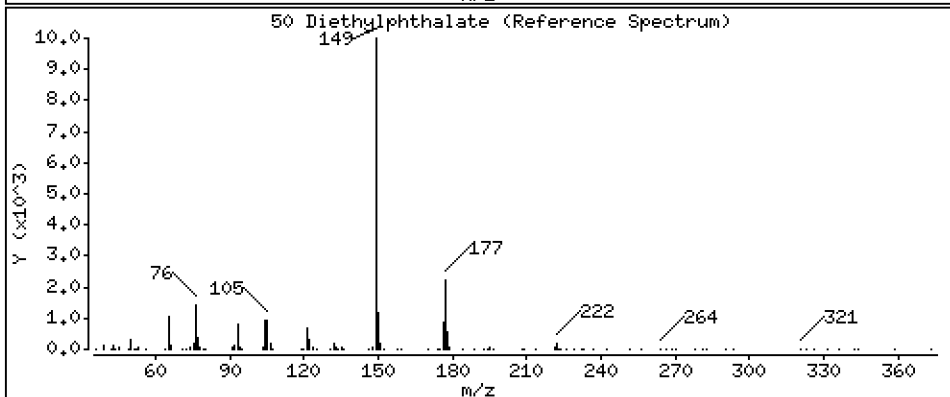
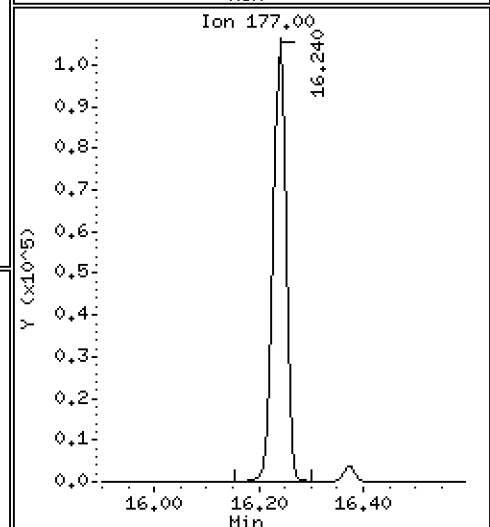
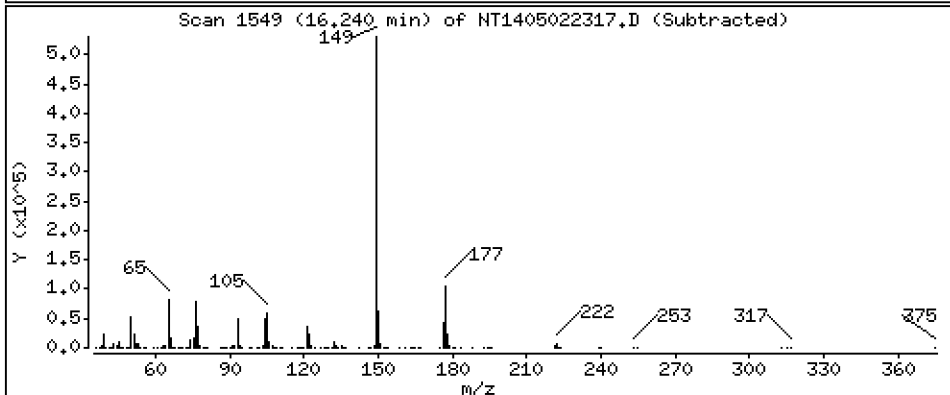
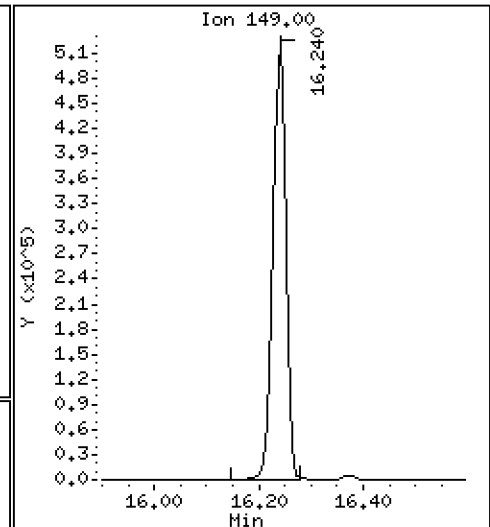
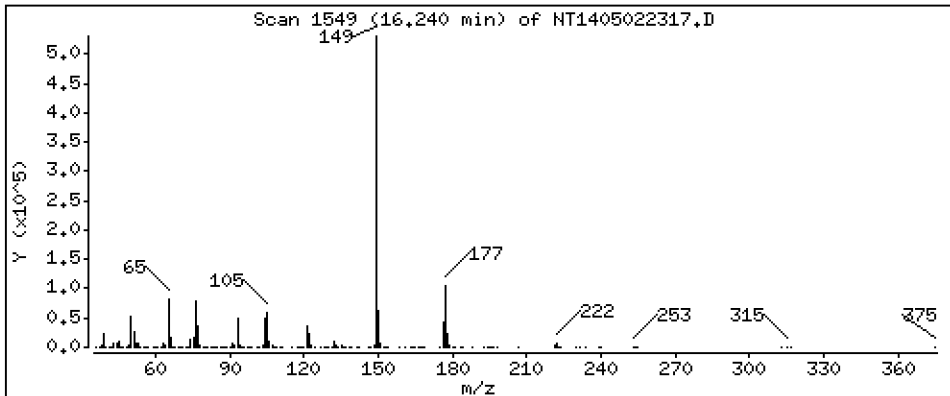
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,695 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

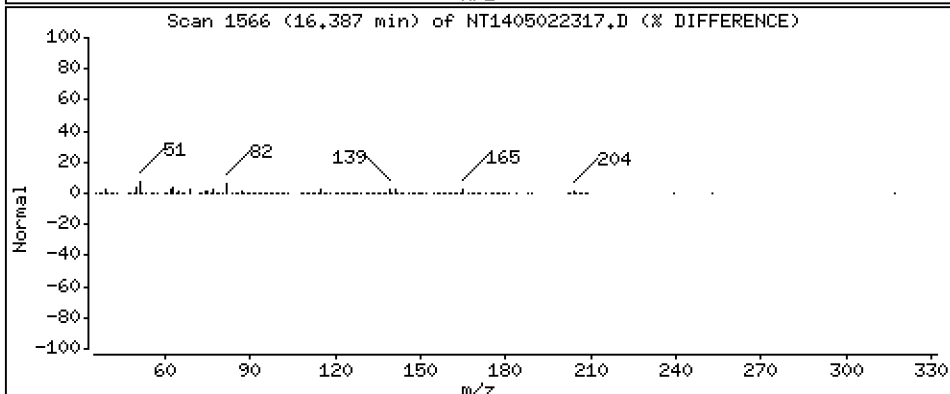
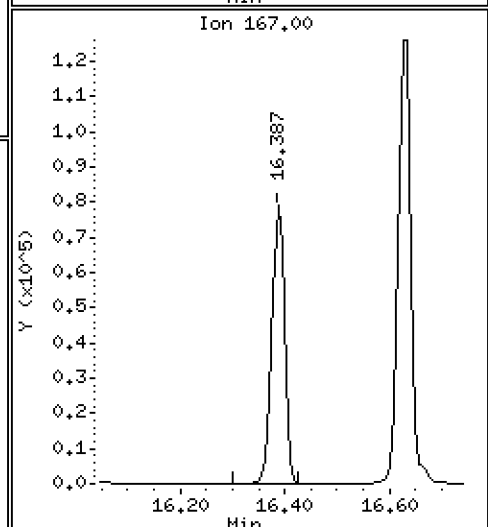
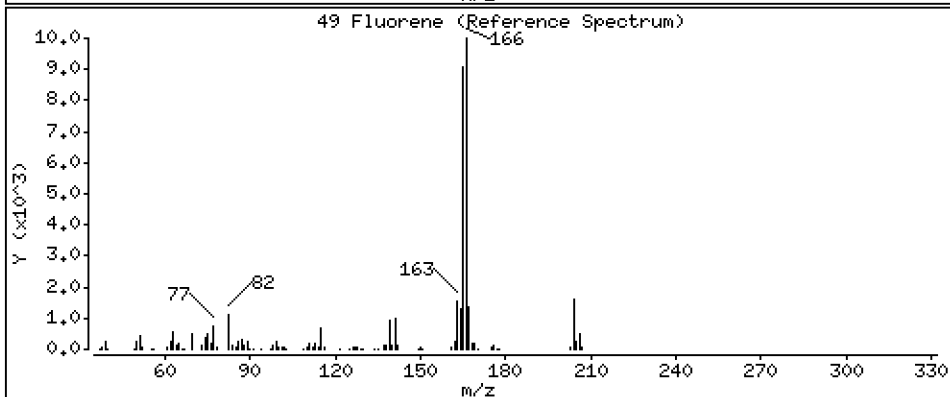
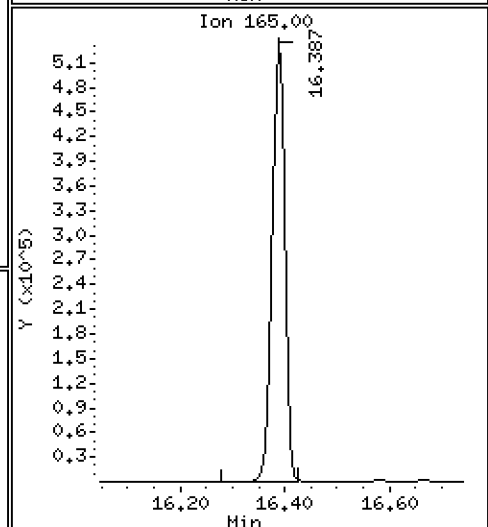
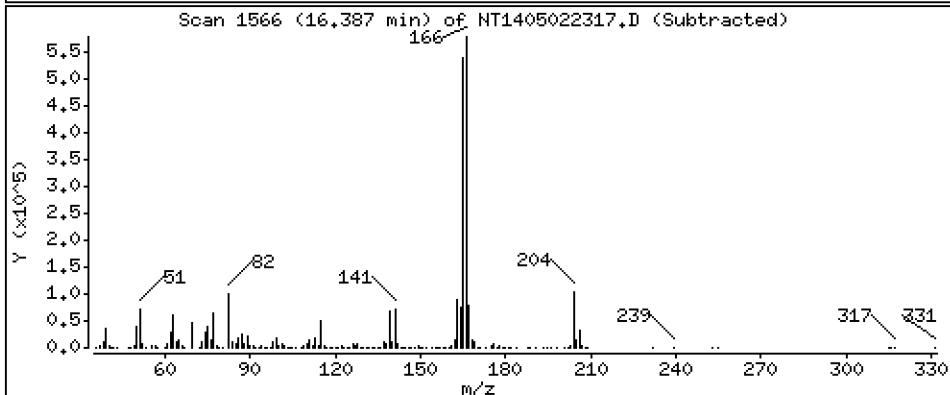
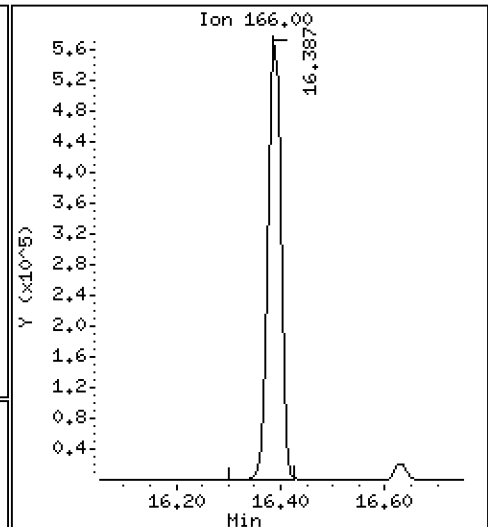
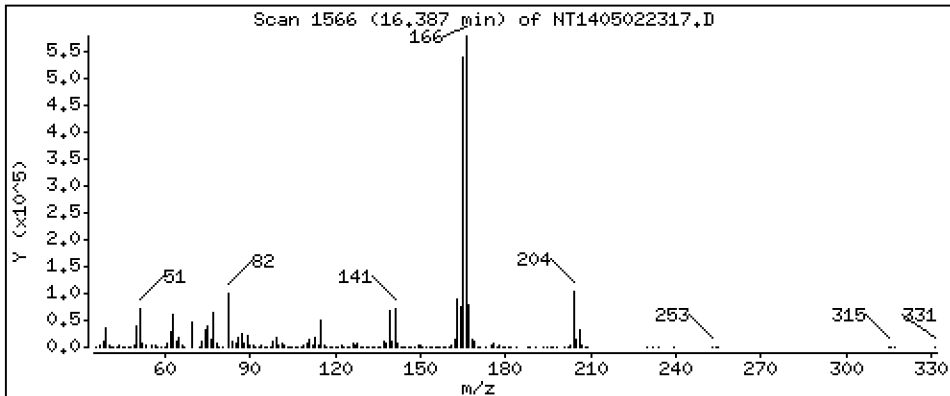
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 4,715 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

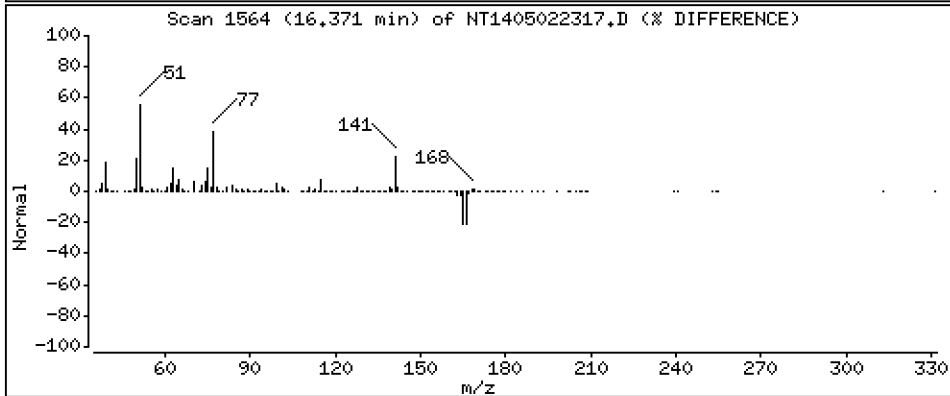
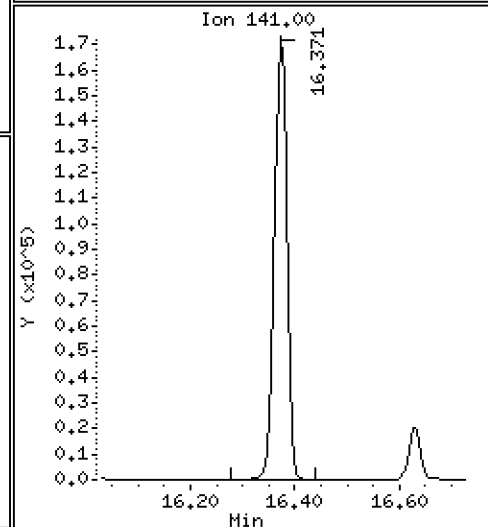
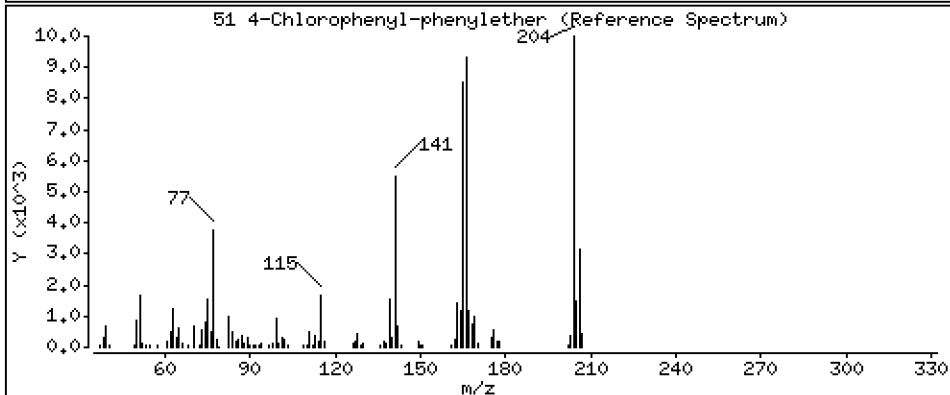
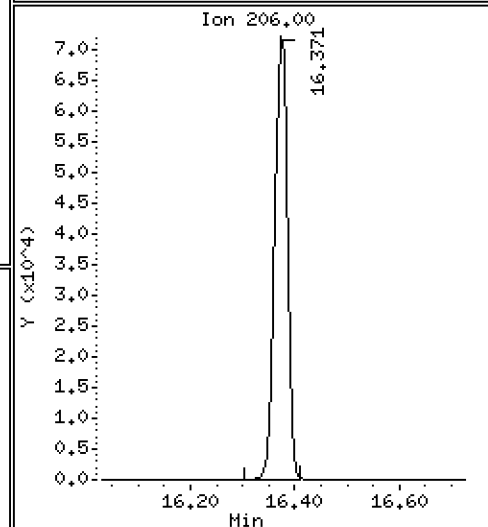
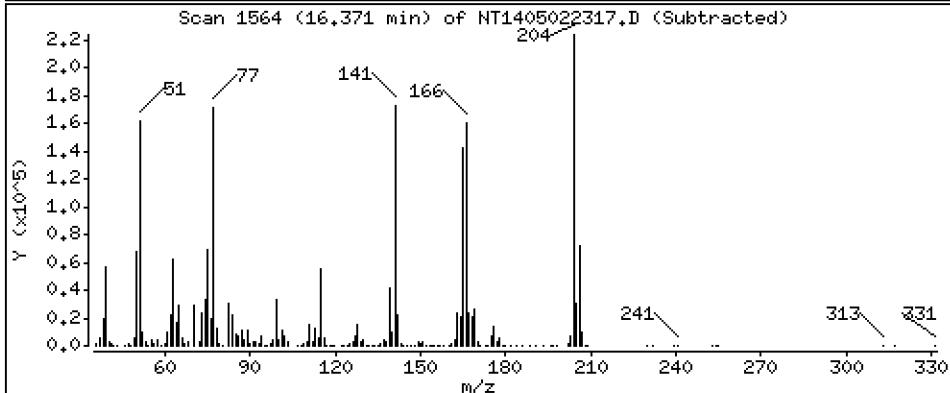
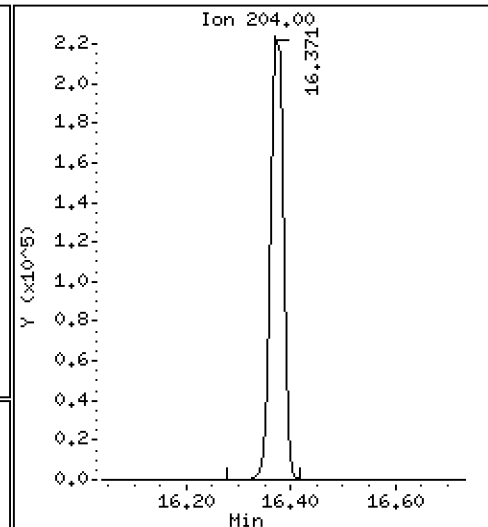
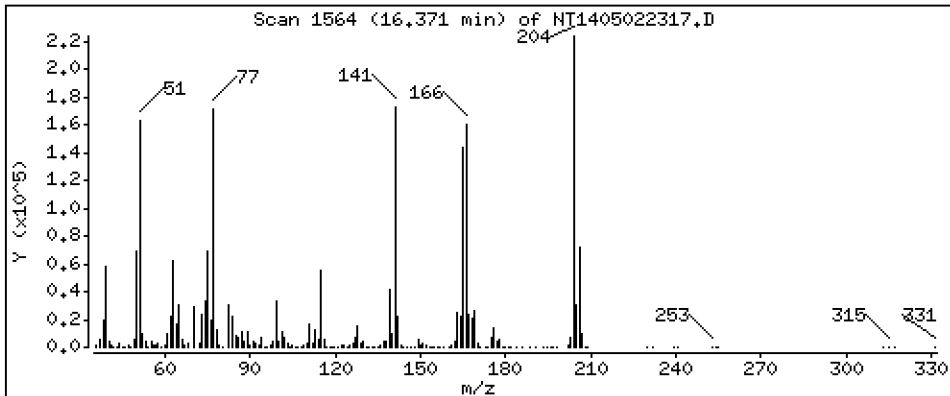
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 5,012 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

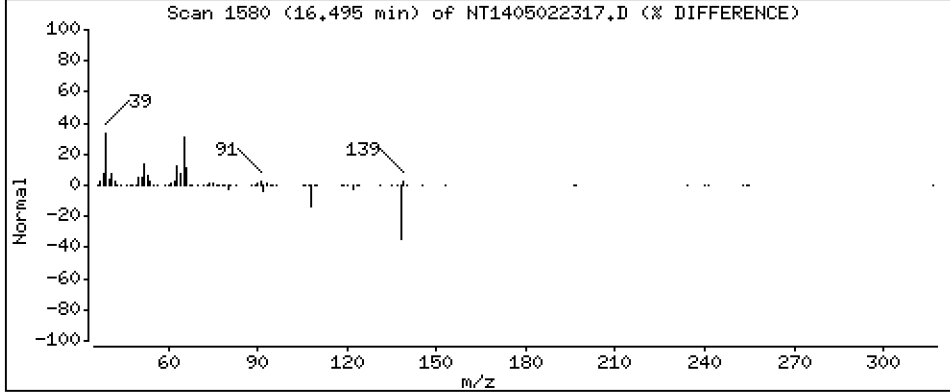
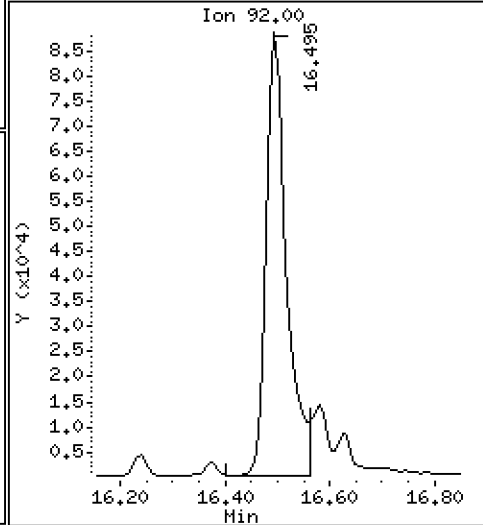
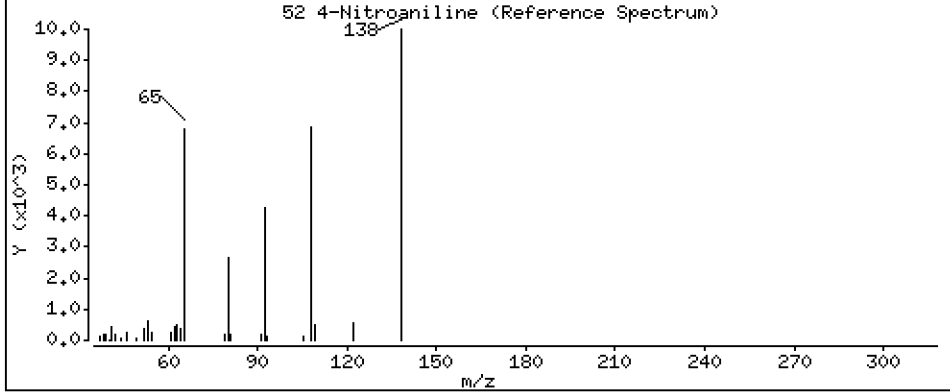
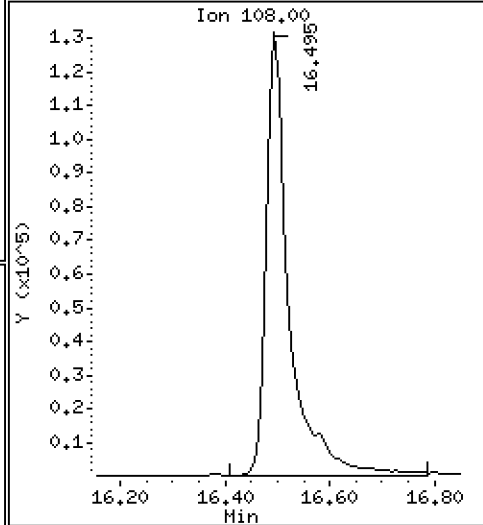
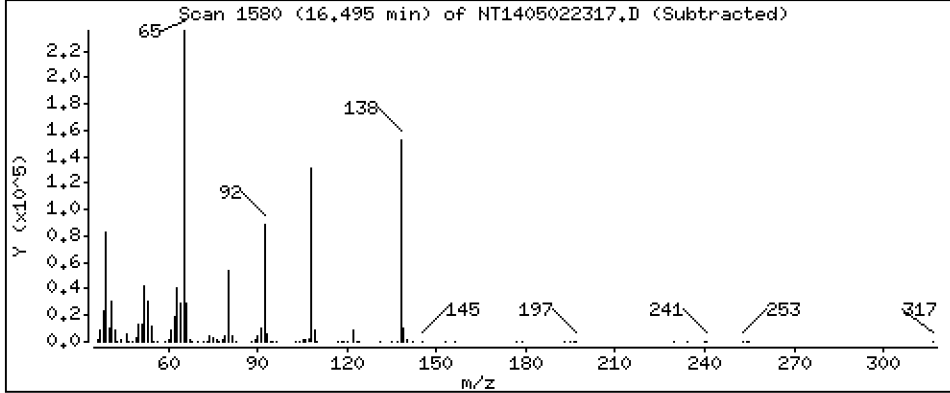
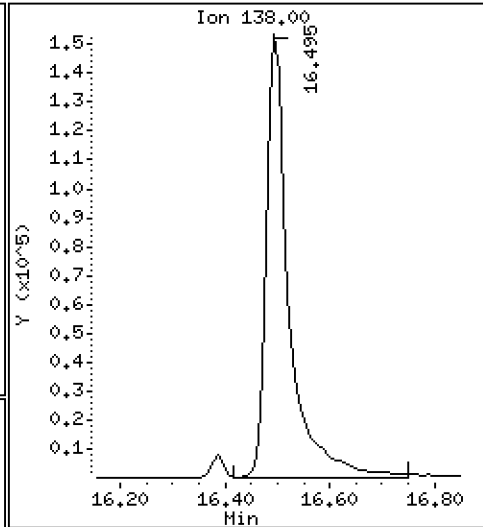
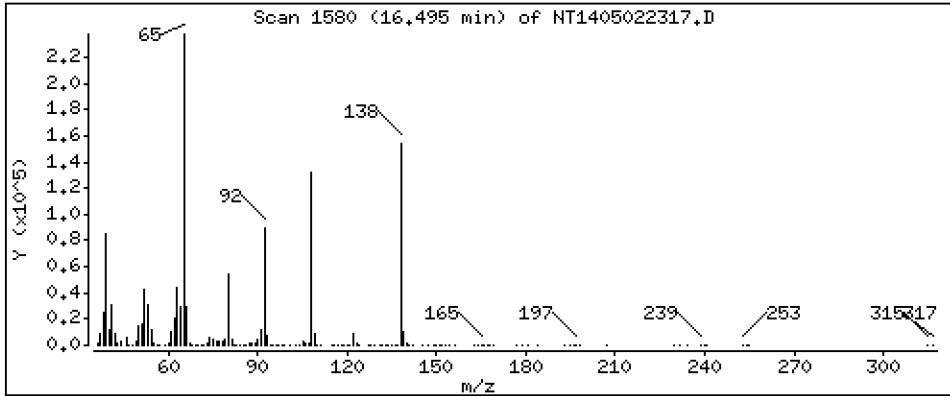
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

52 4-Nitroaniline

Concentration: 10,62 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

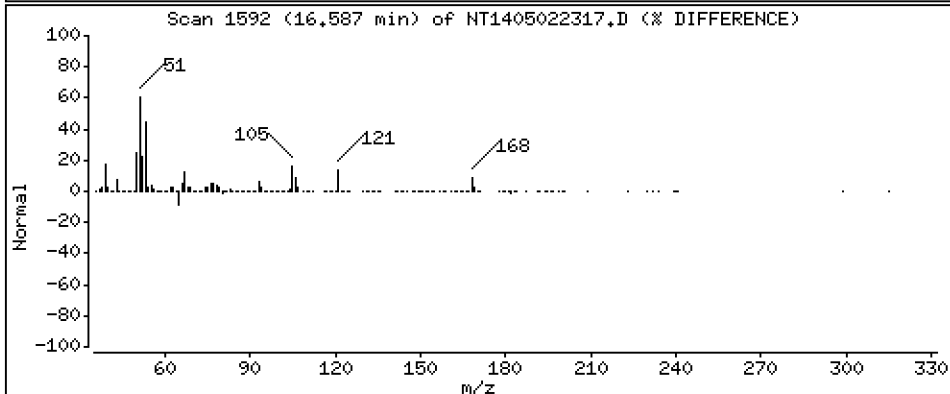
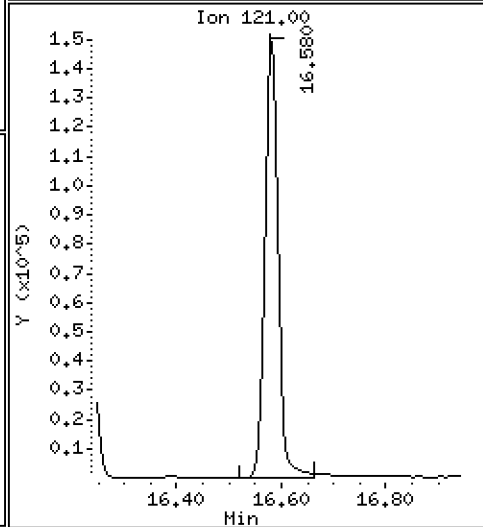
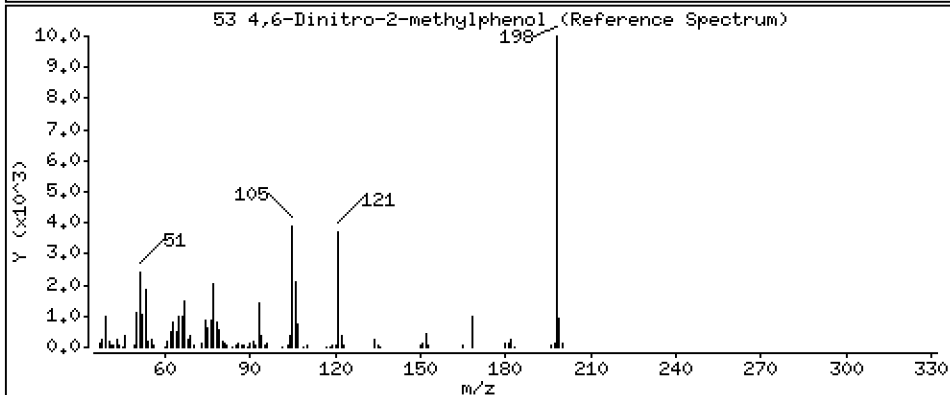
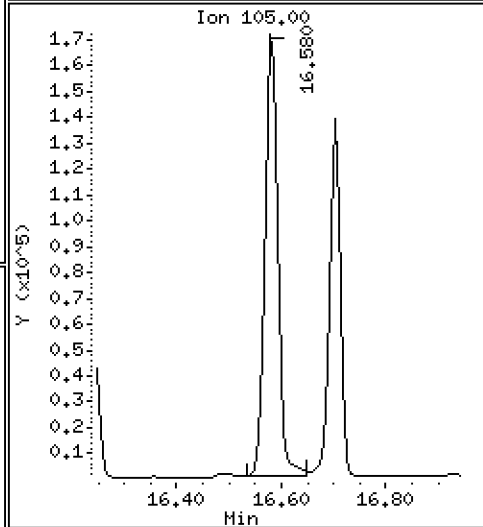
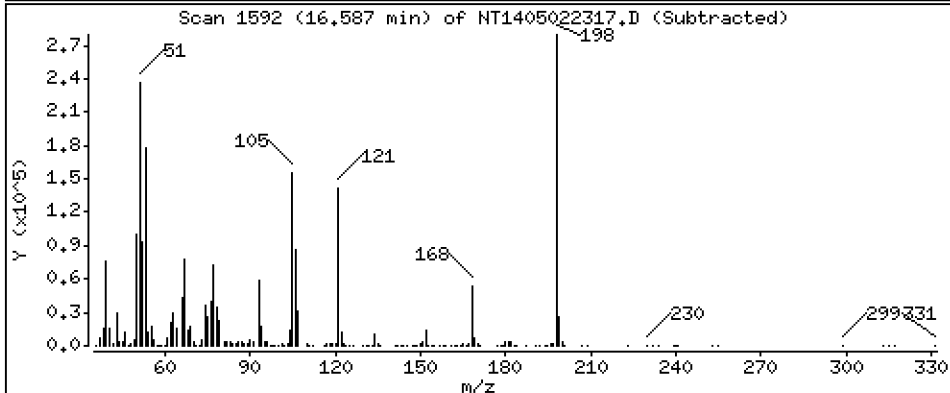
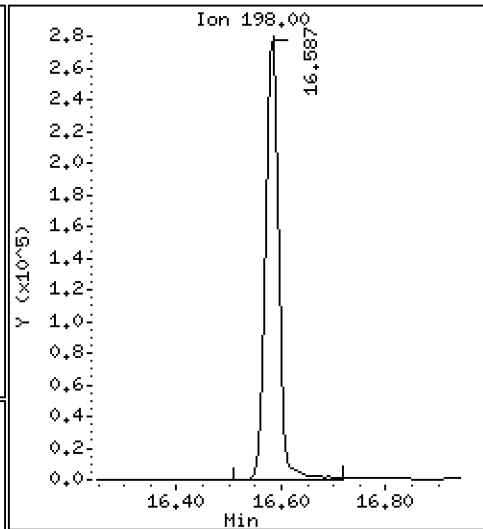
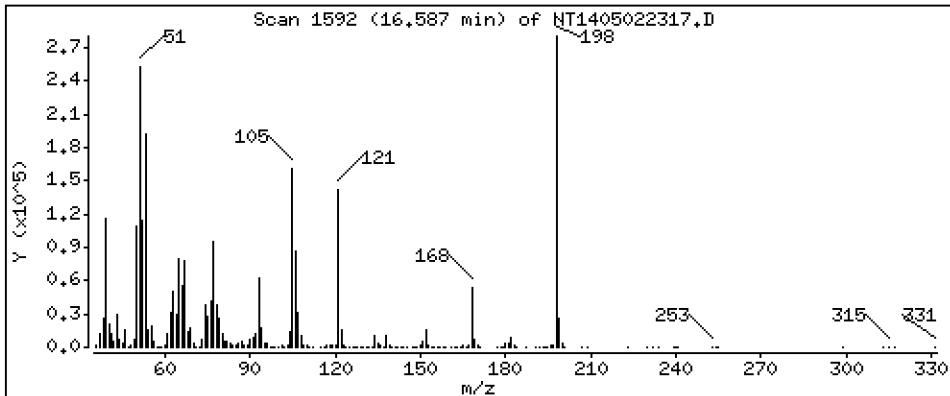
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 18,55 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

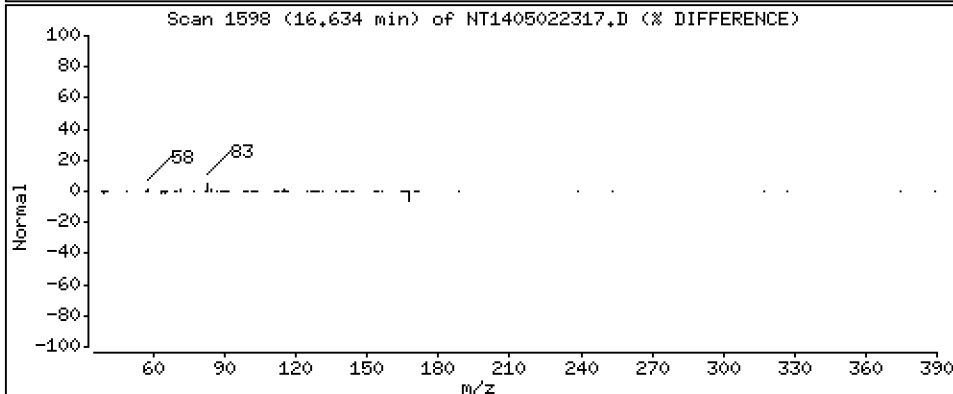
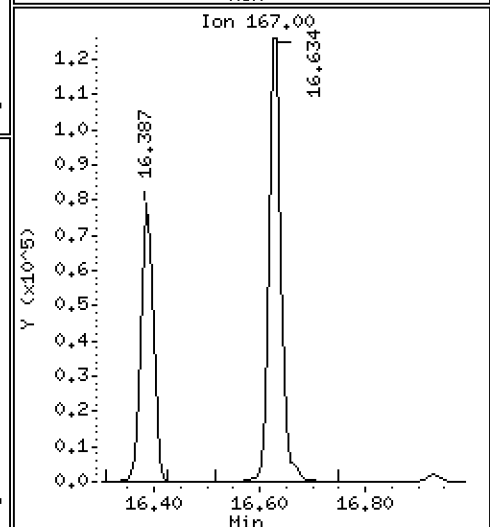
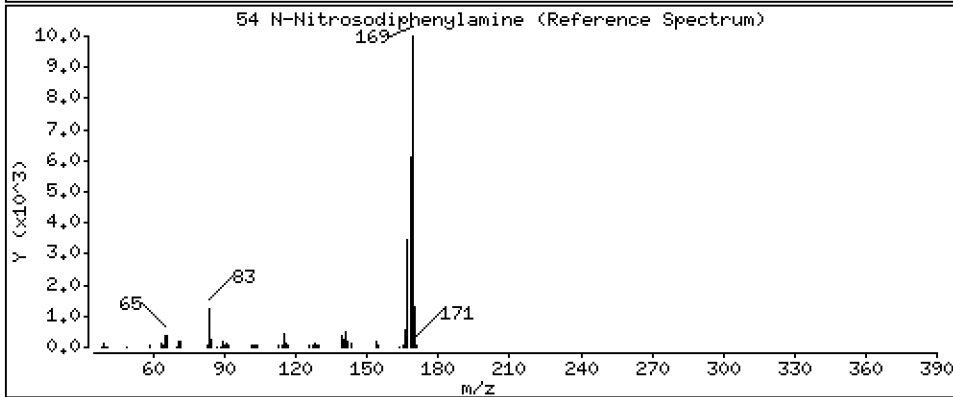
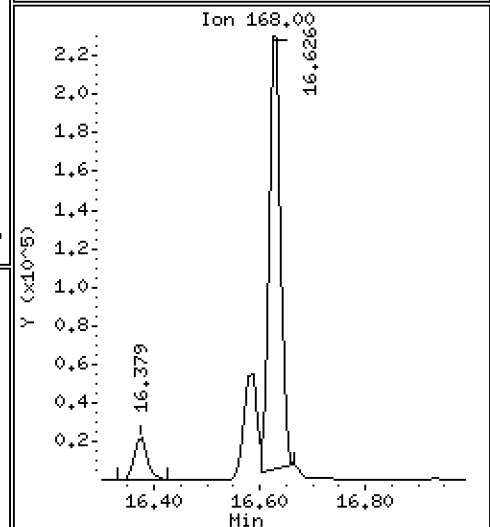
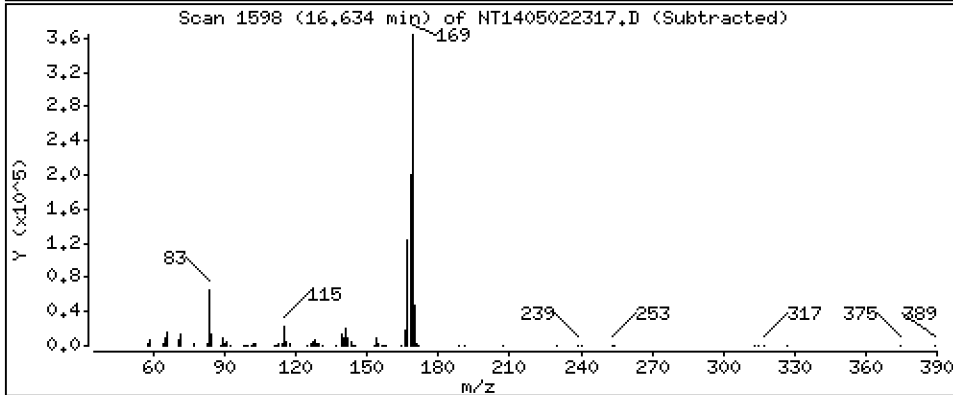
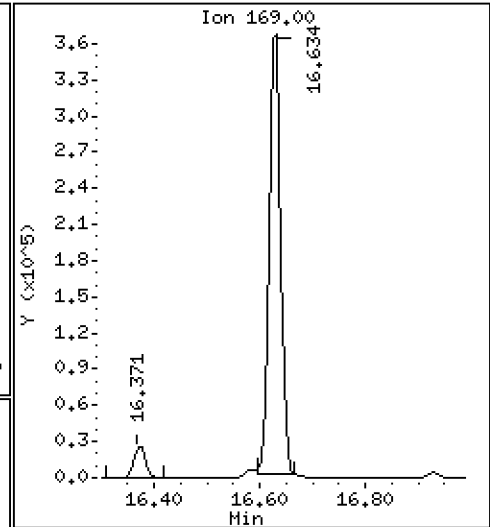
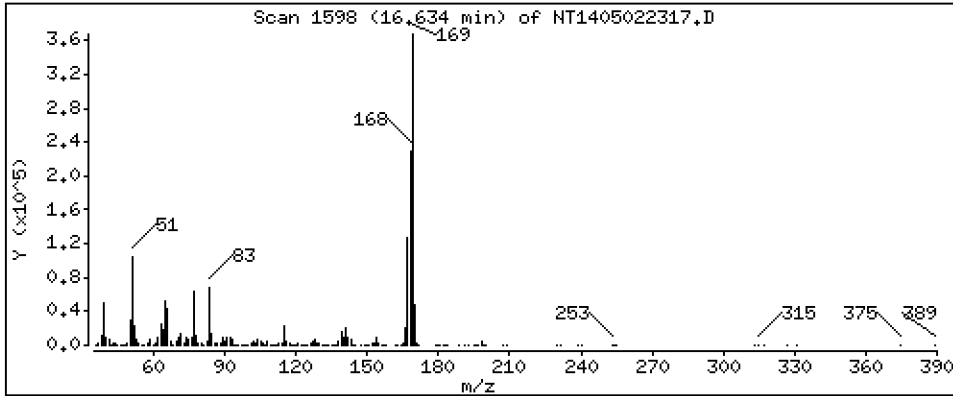
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,844 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

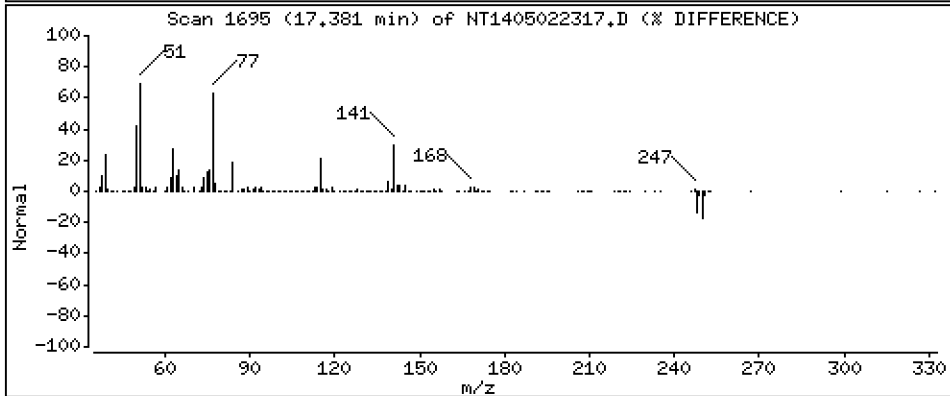
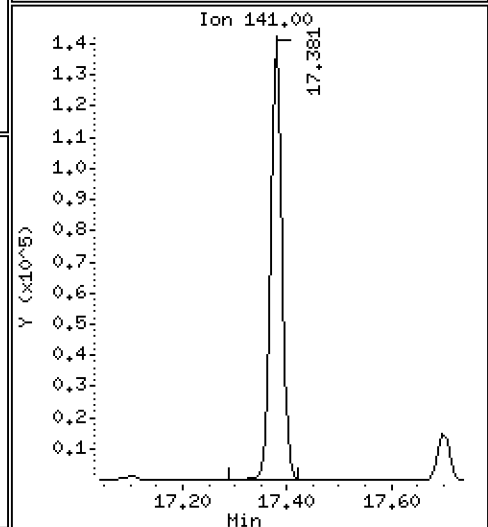
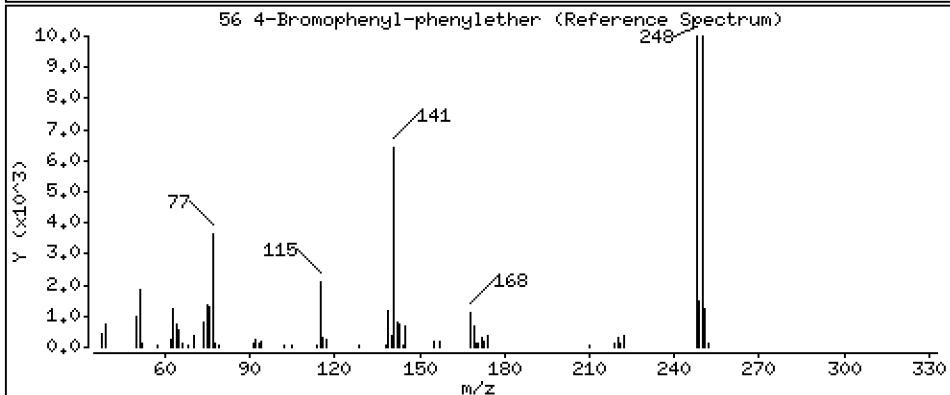
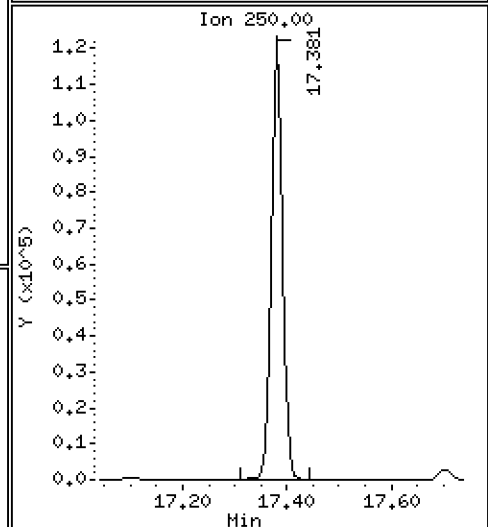
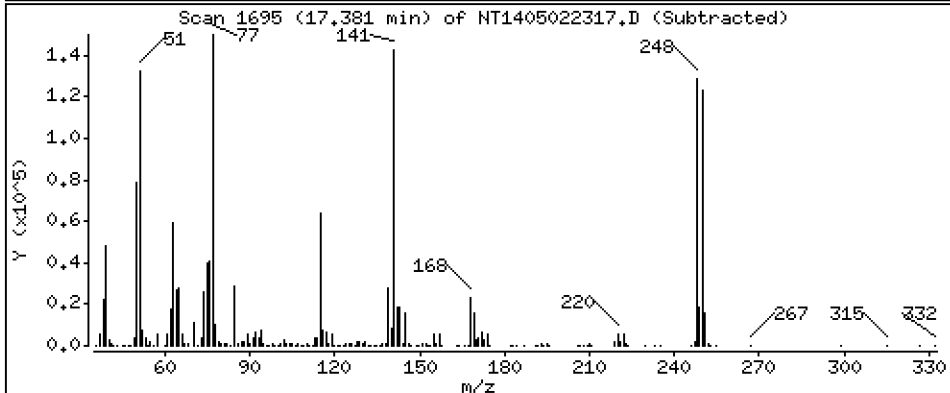
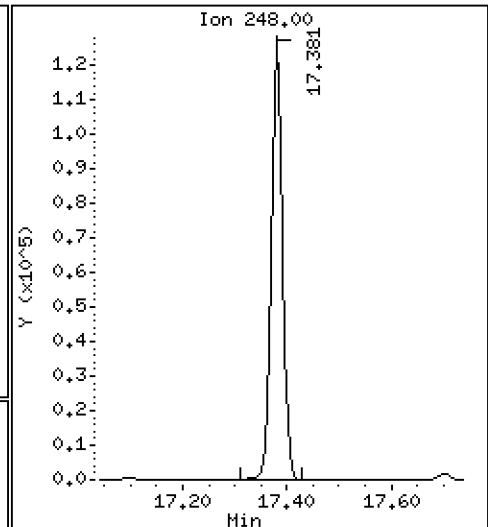
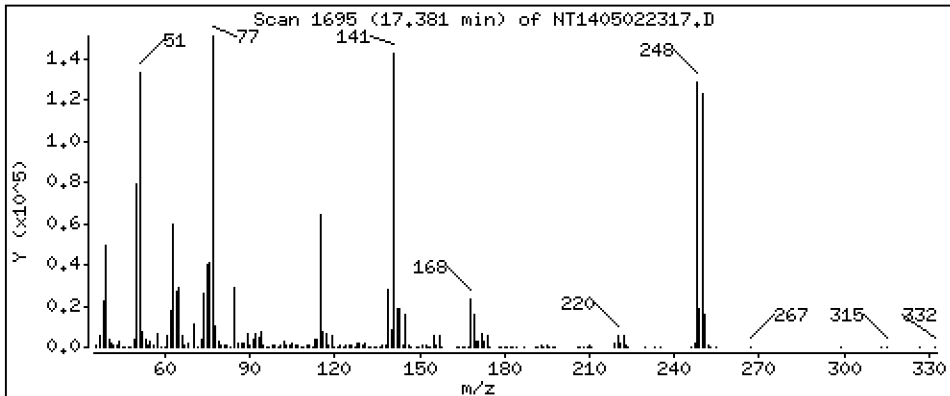
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 5,005 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

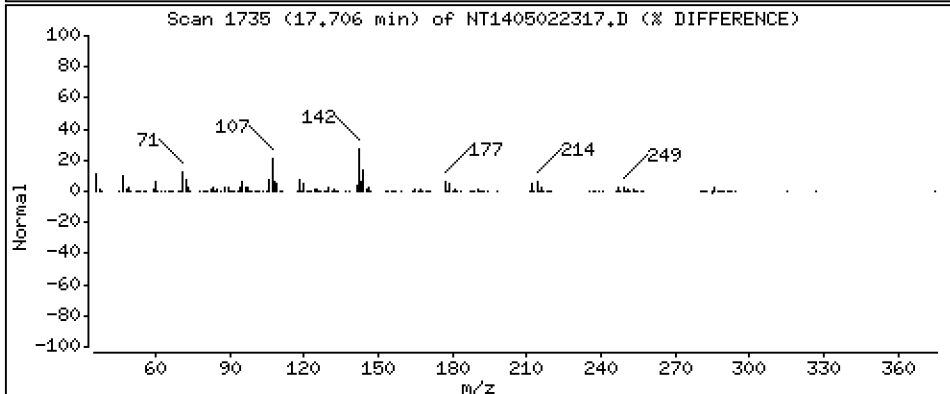
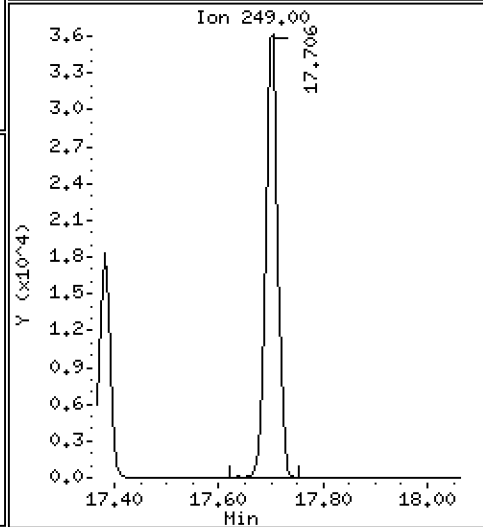
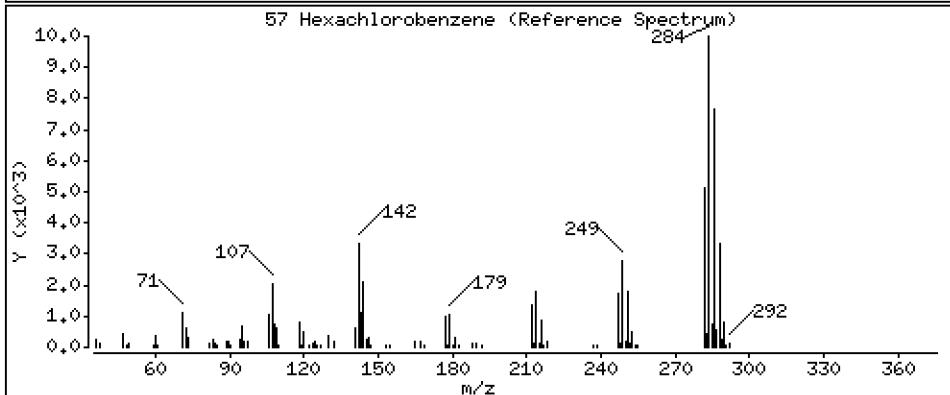
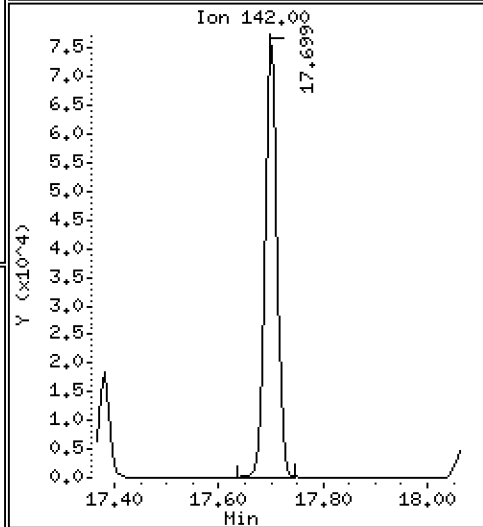
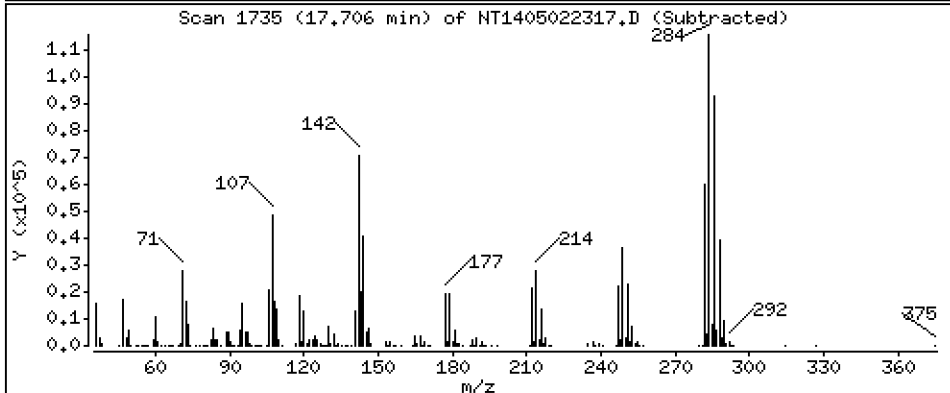
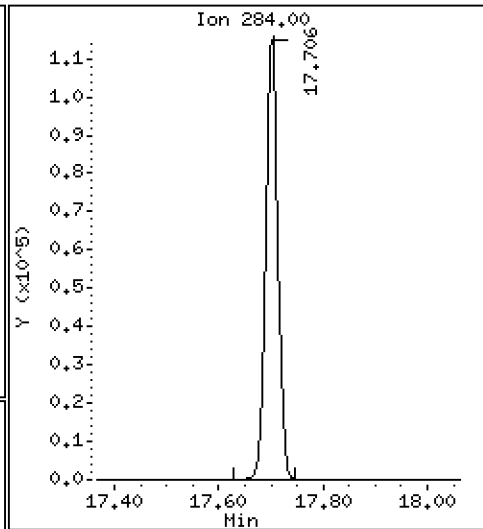
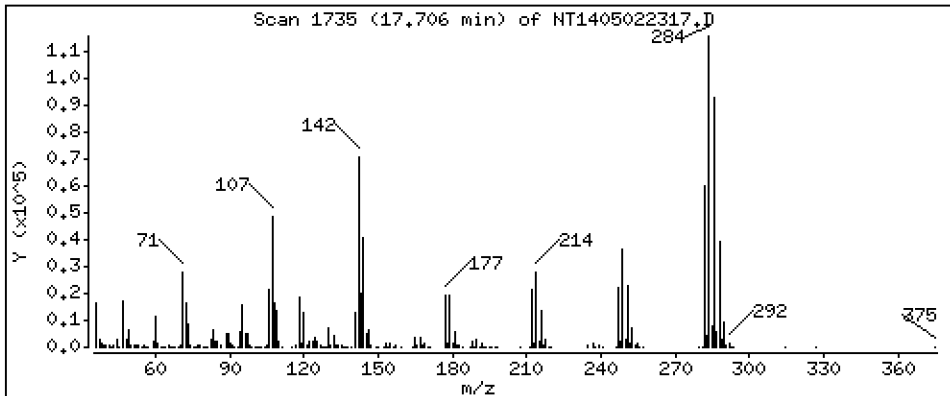
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,880 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

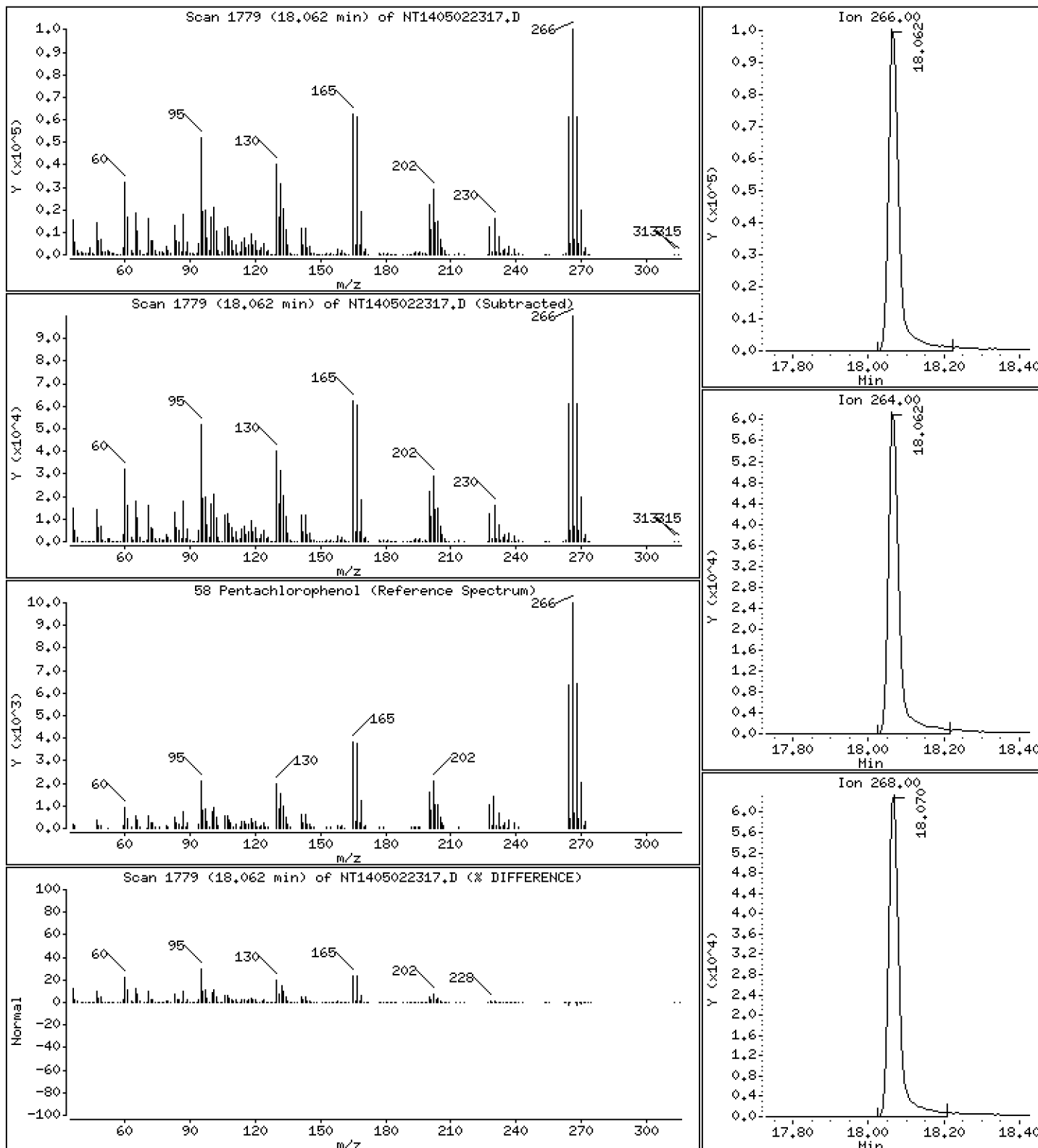
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 7,653 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

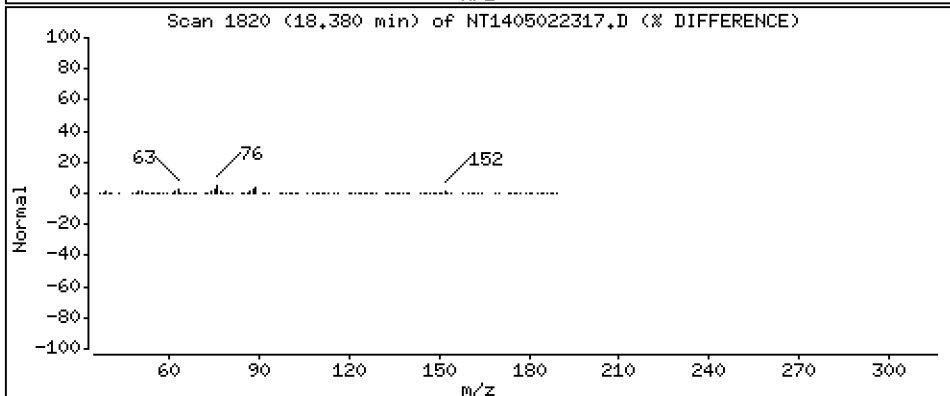
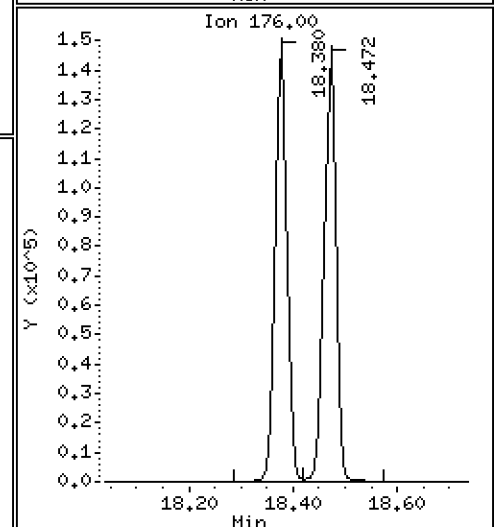
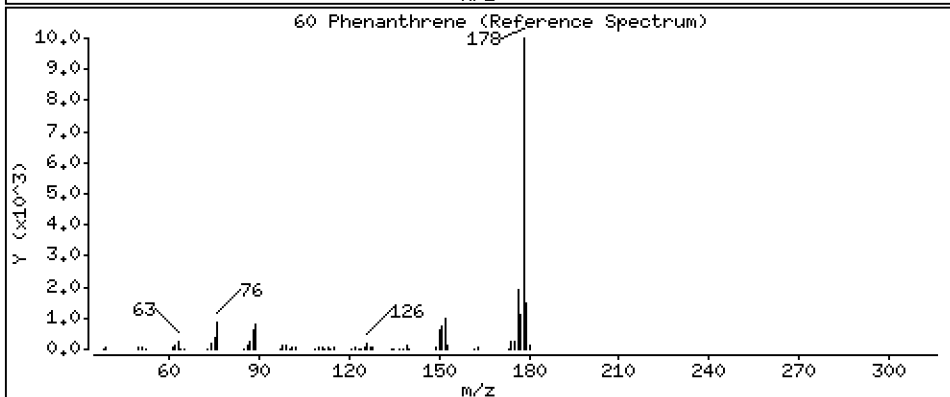
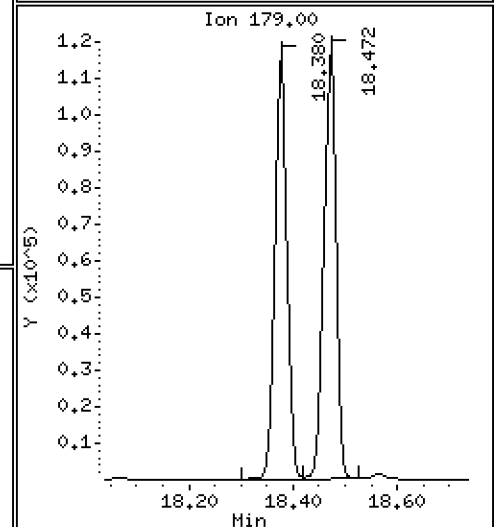
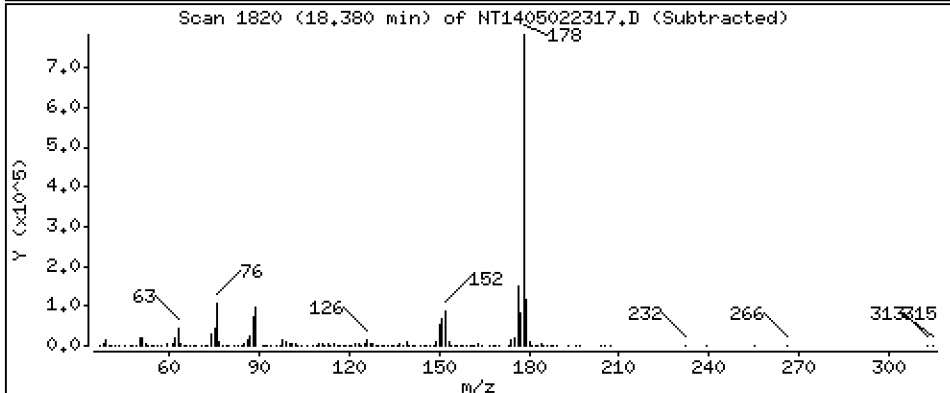
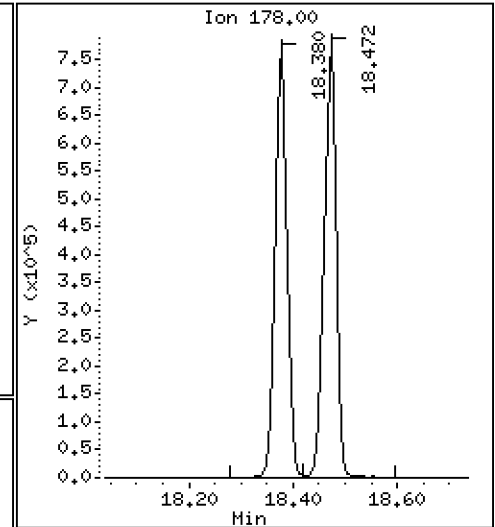
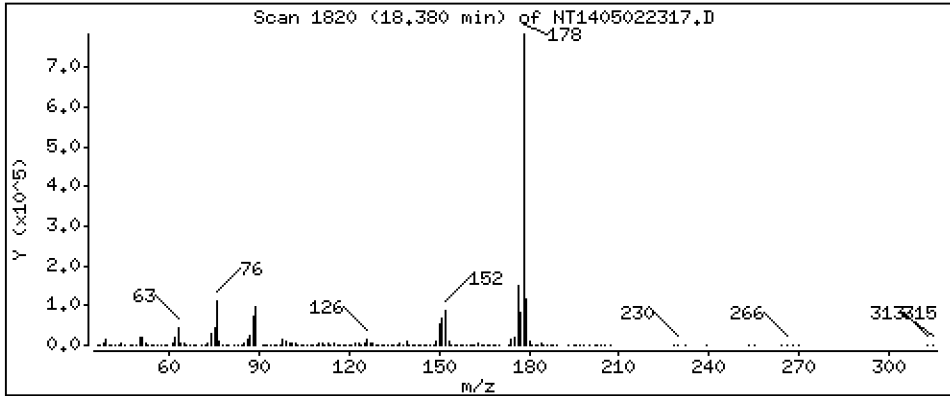
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 5,233 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

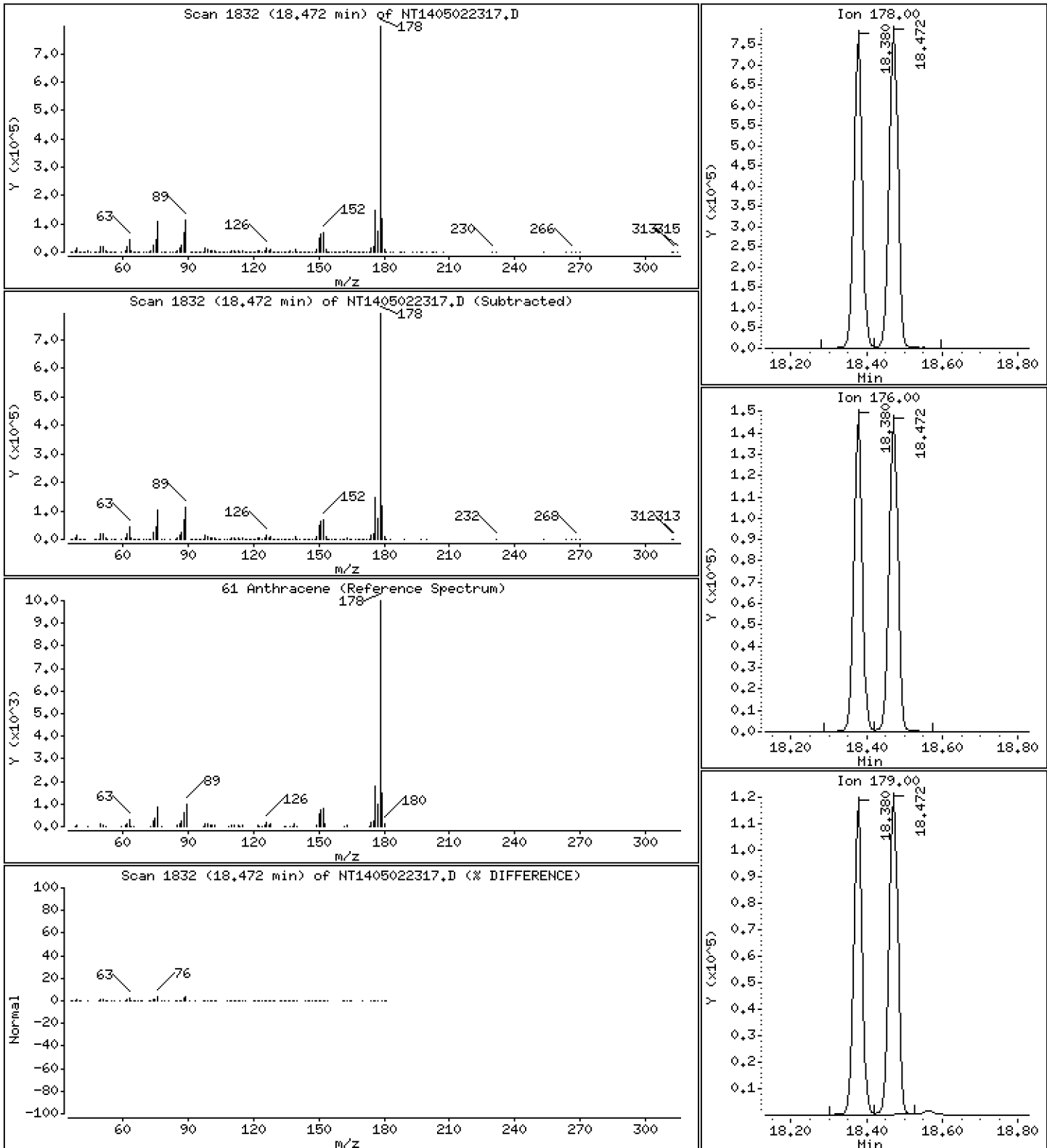
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 5,484 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

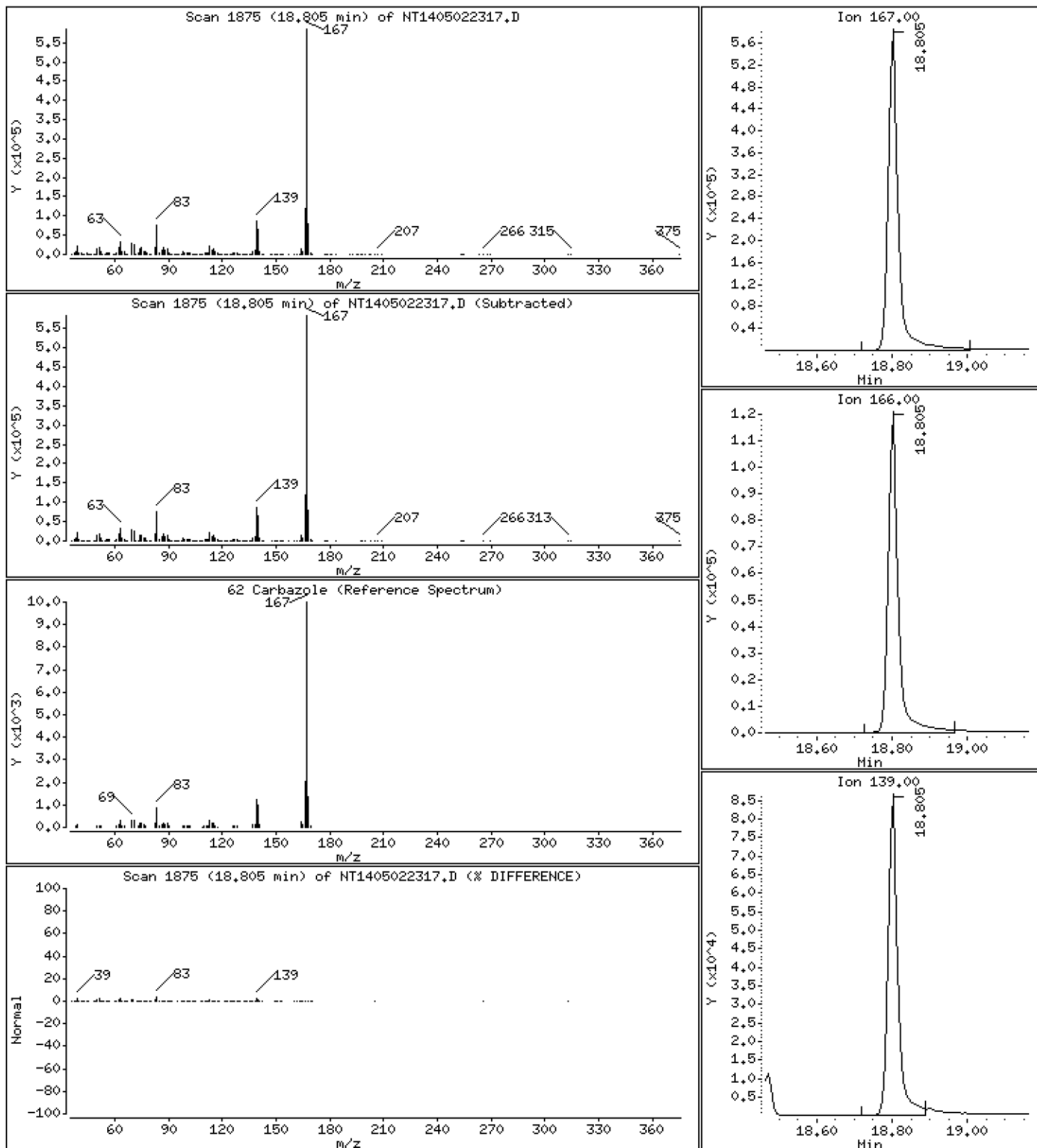
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 5,193 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

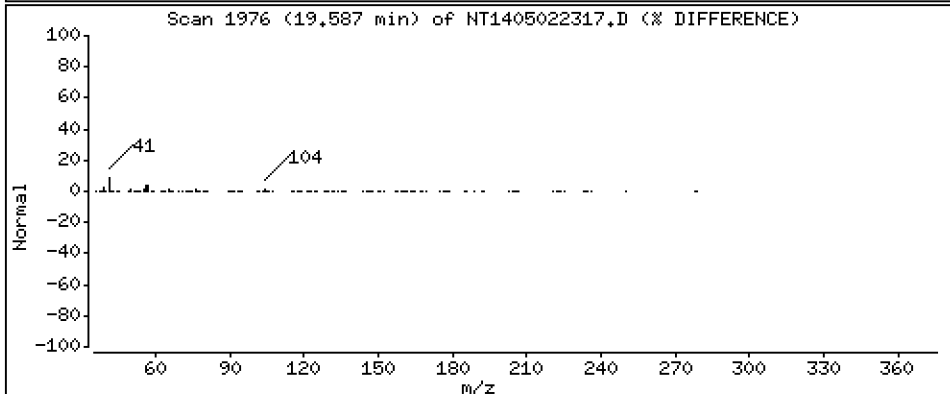
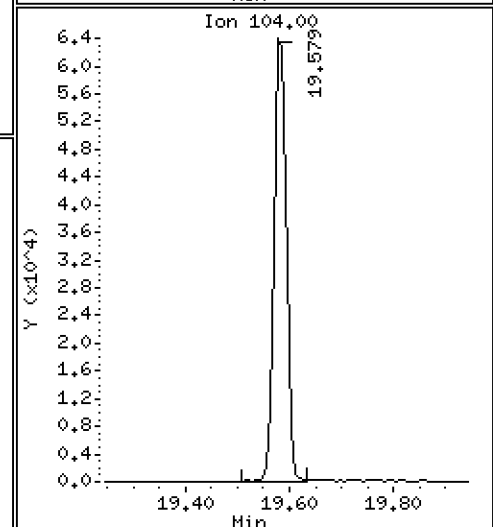
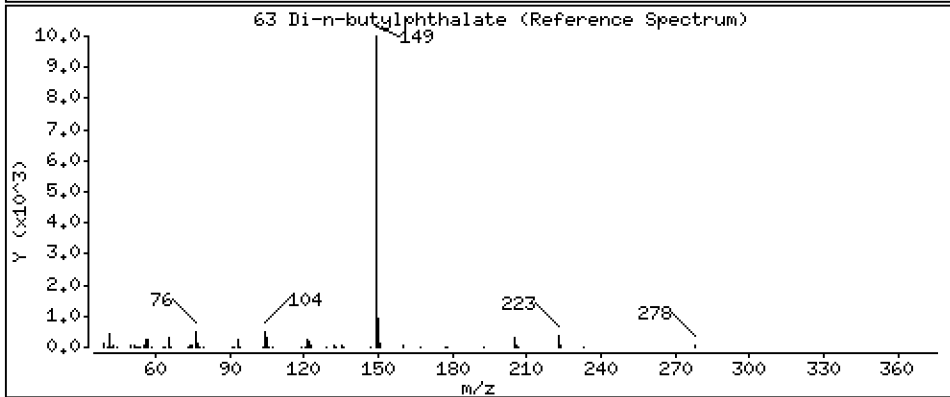
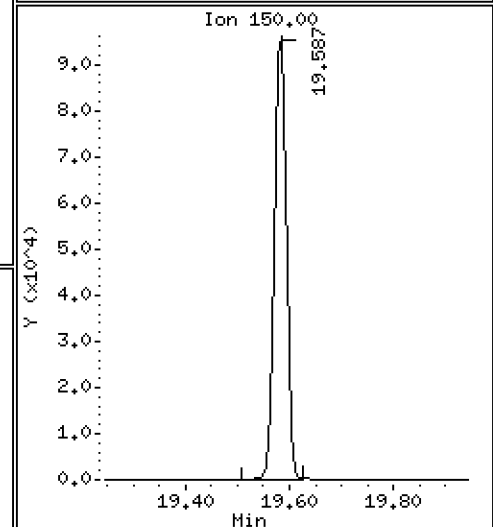
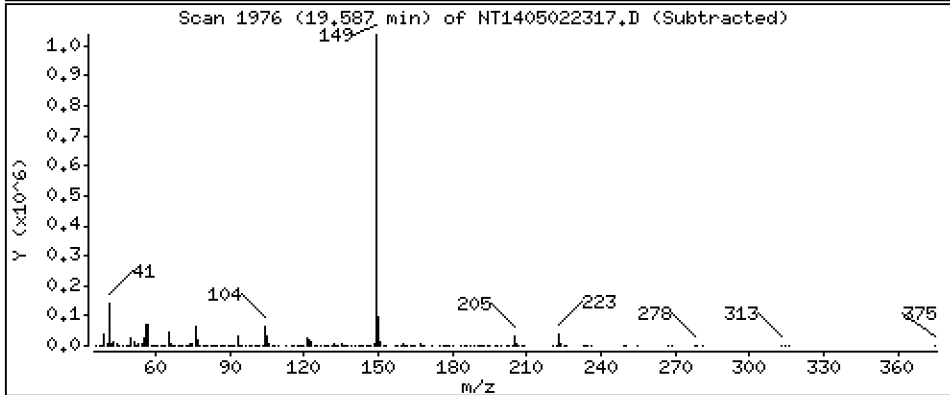
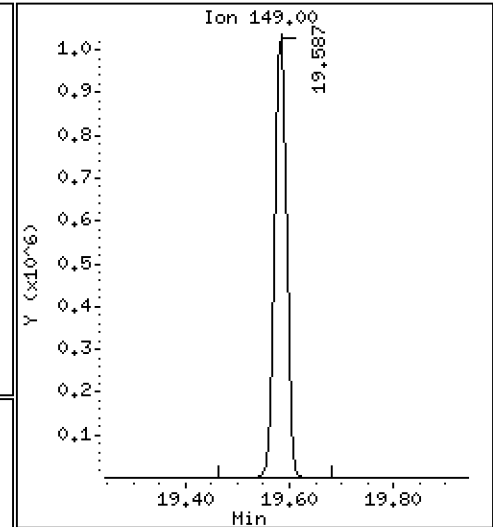
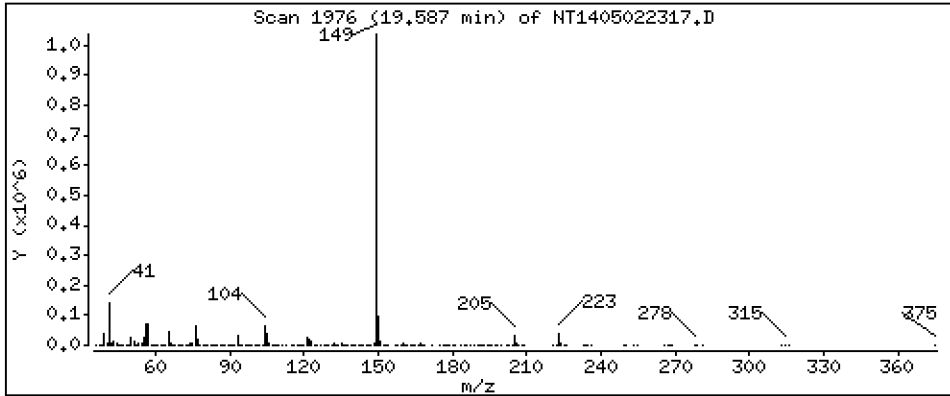
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 5,005 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

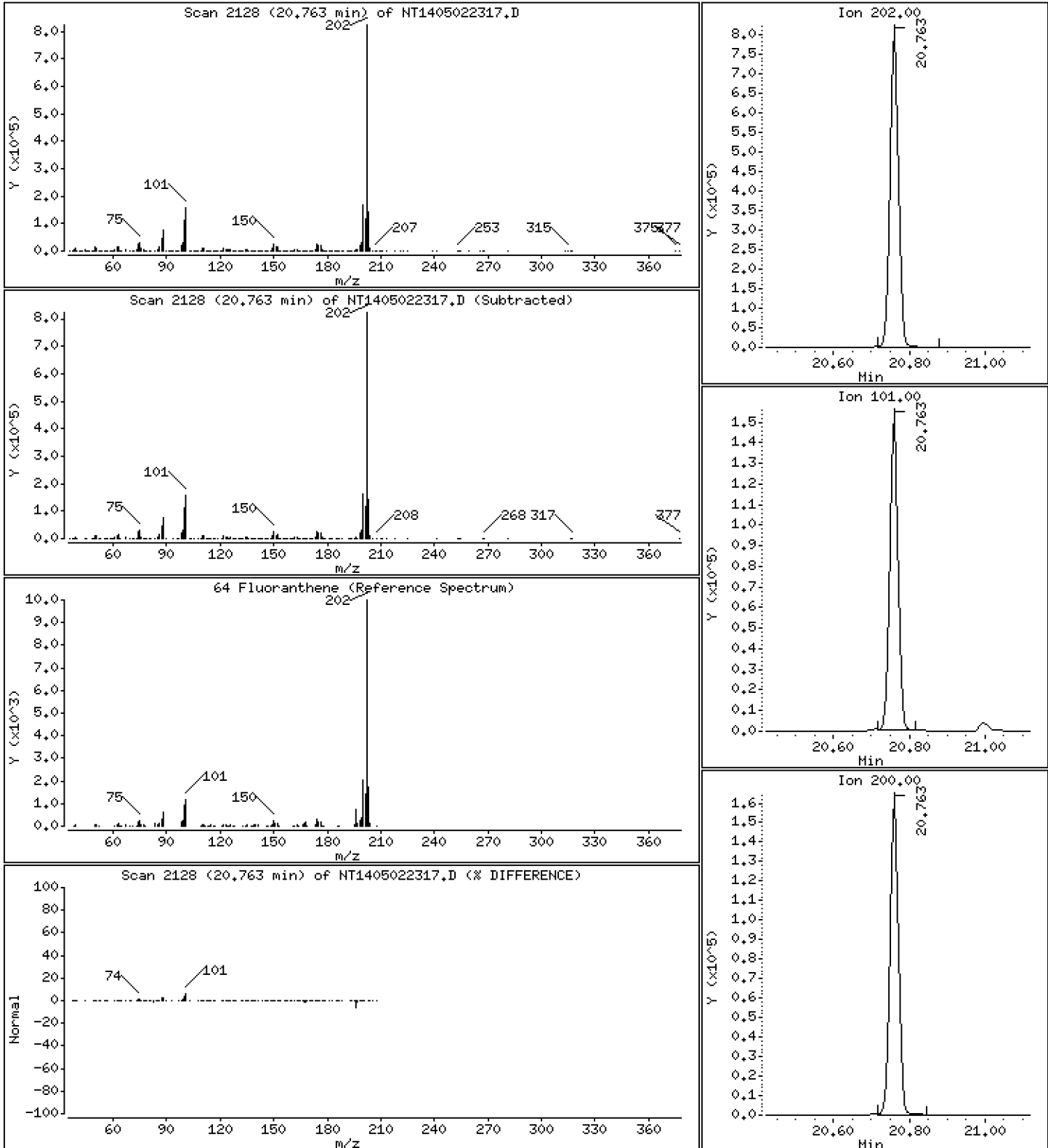
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 5,309 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

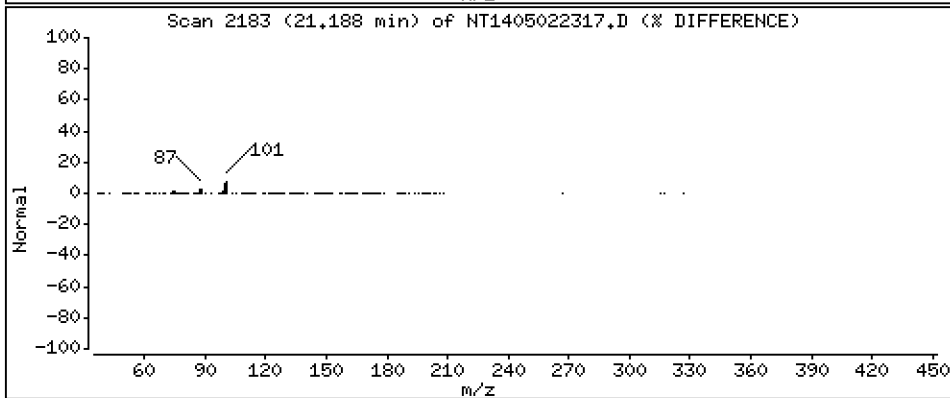
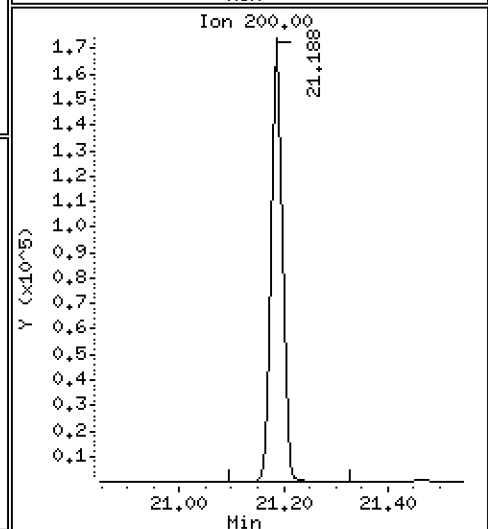
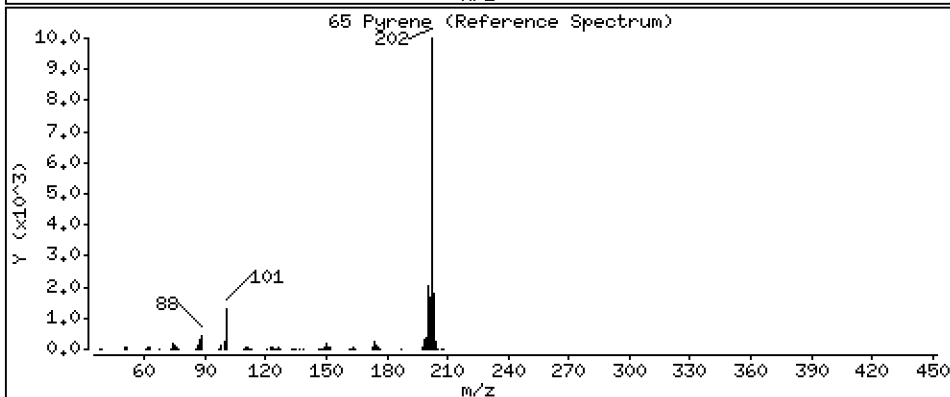
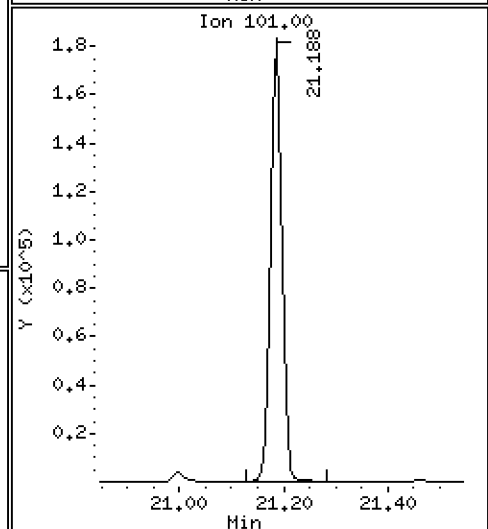
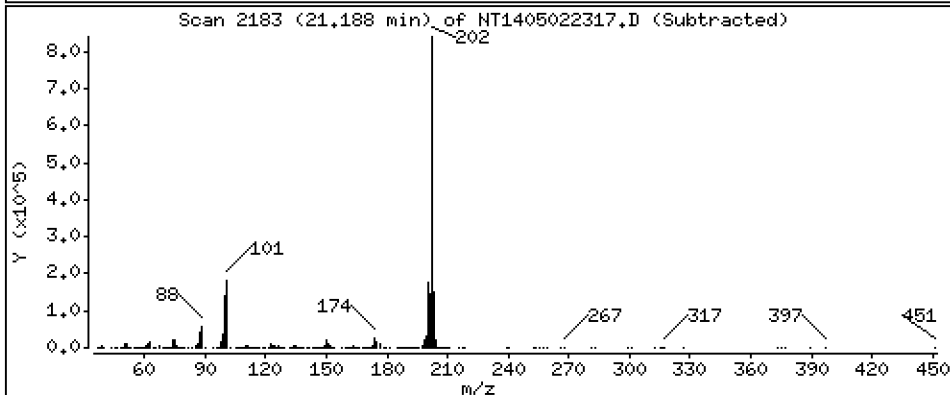
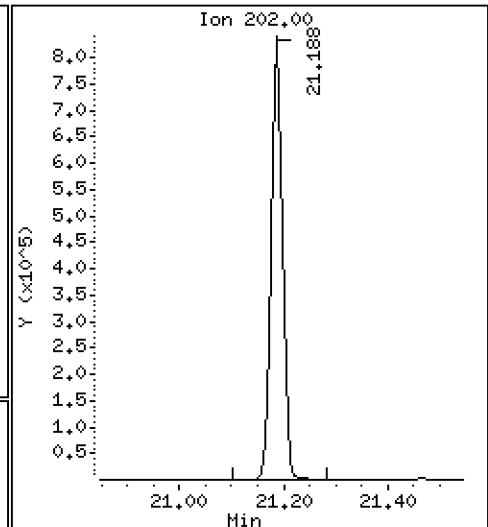
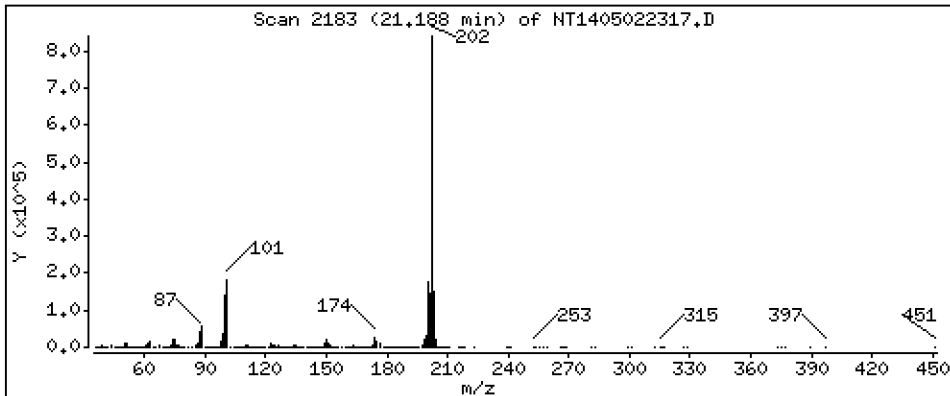
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 5,205 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

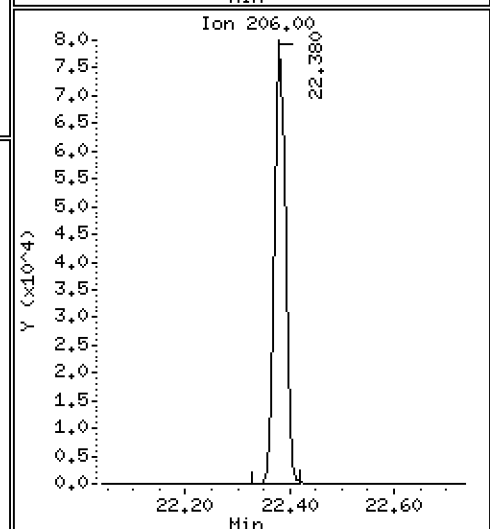
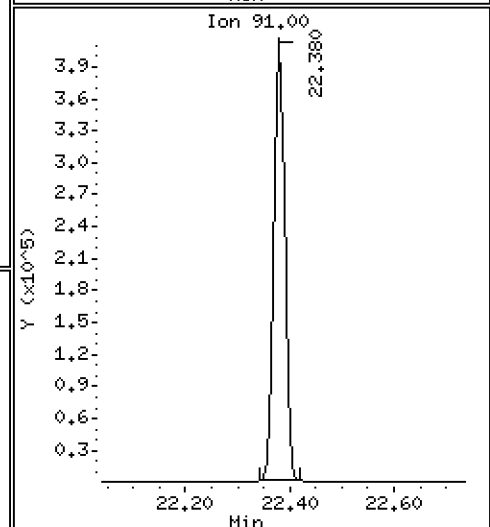
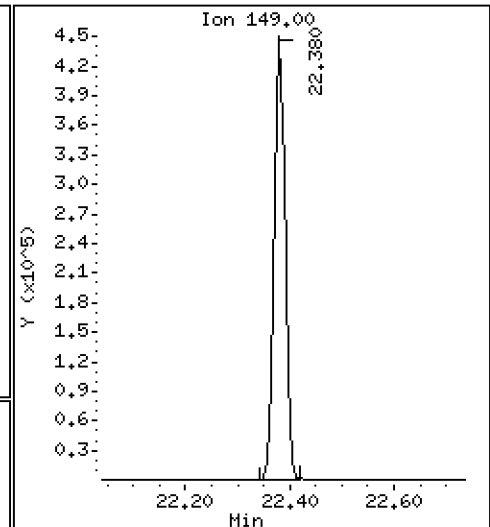
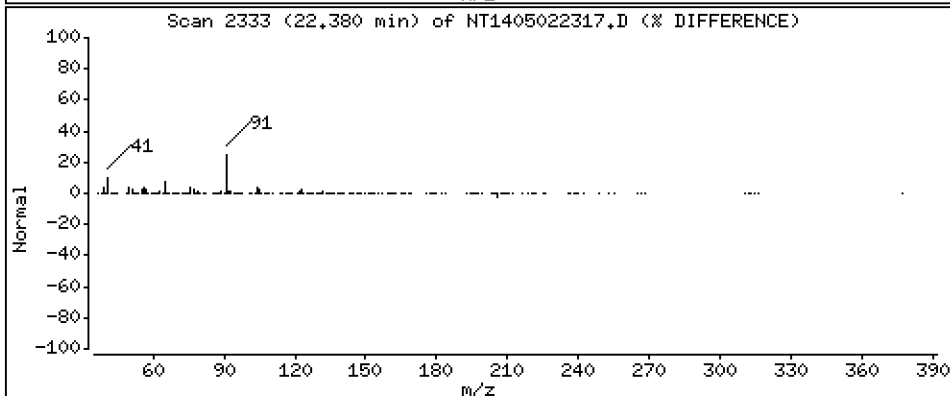
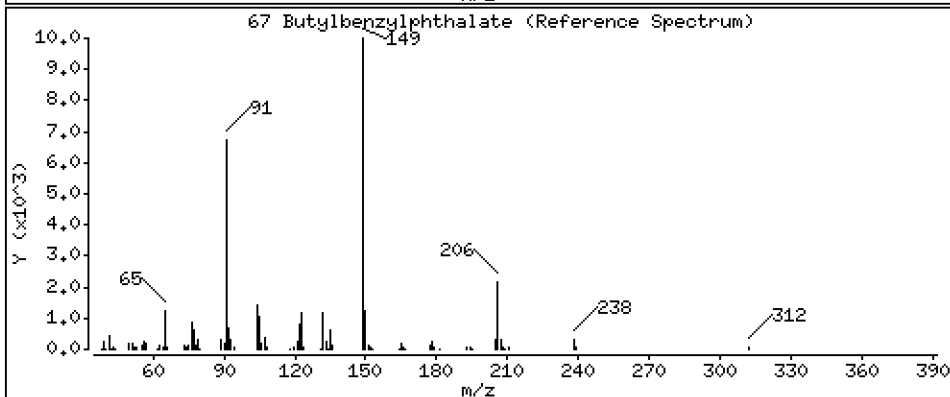
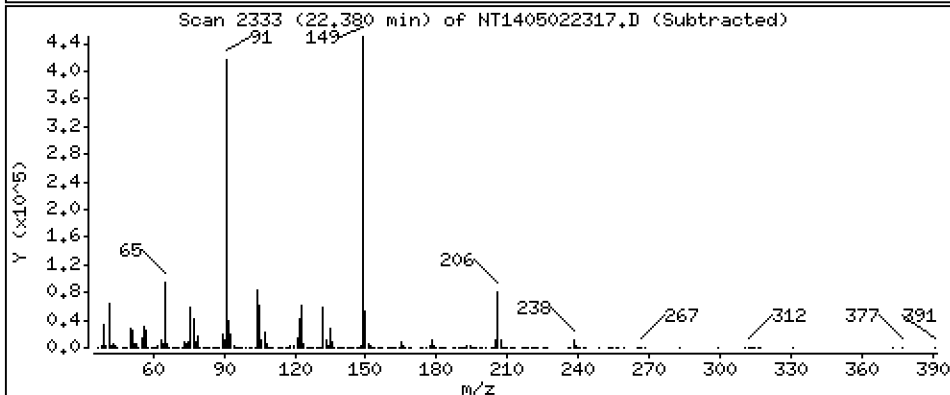
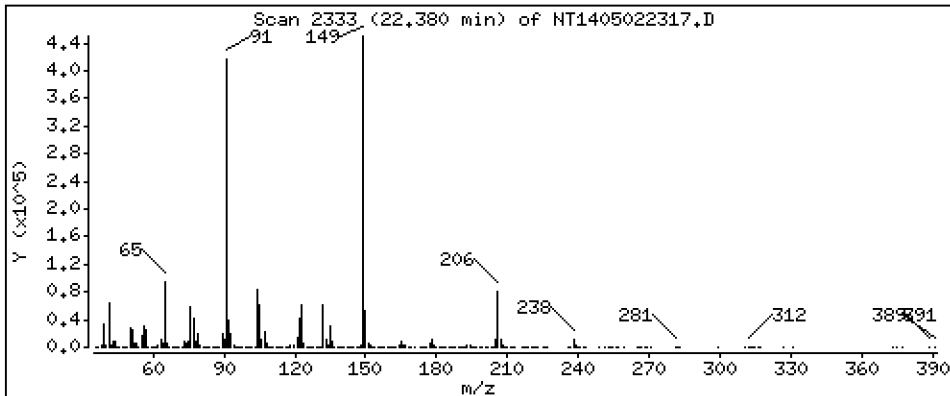
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,296 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

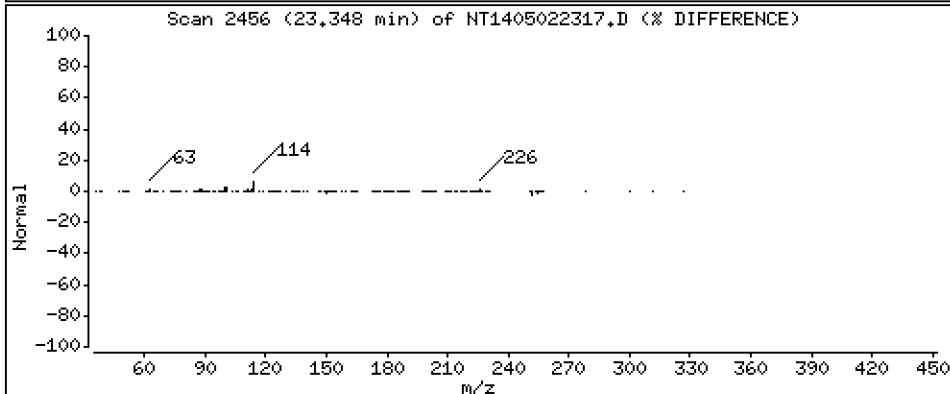
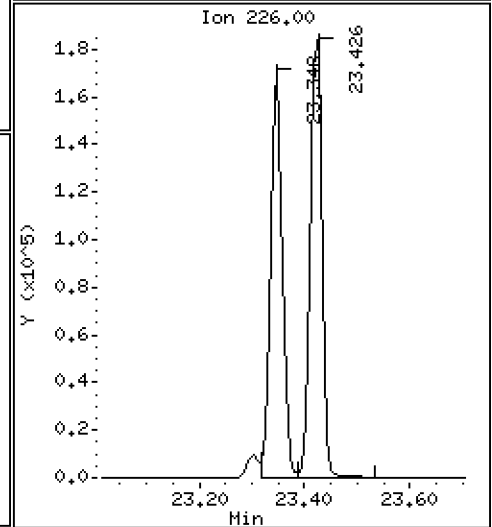
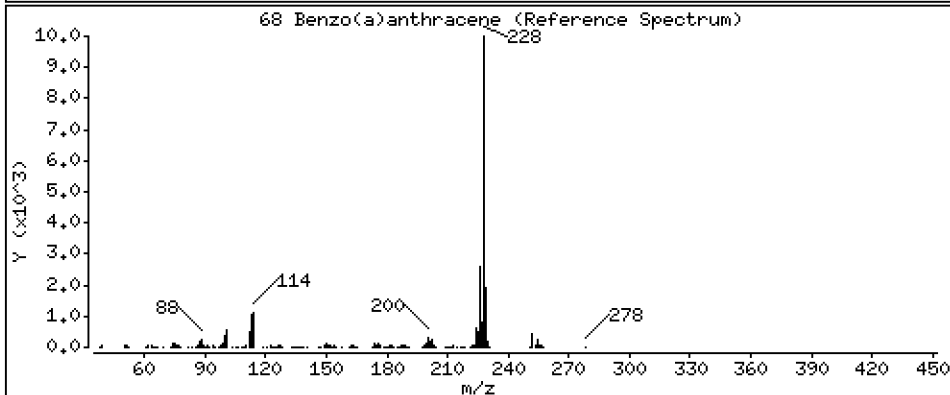
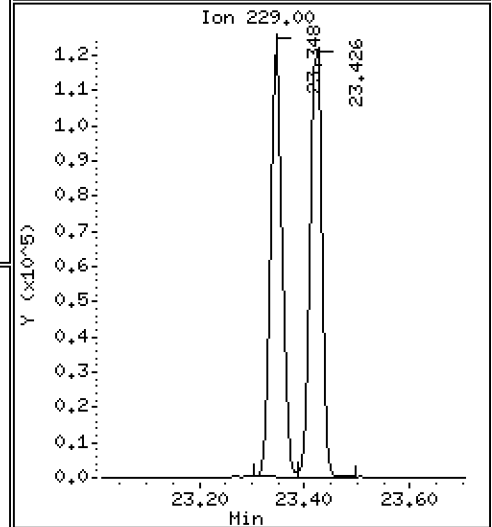
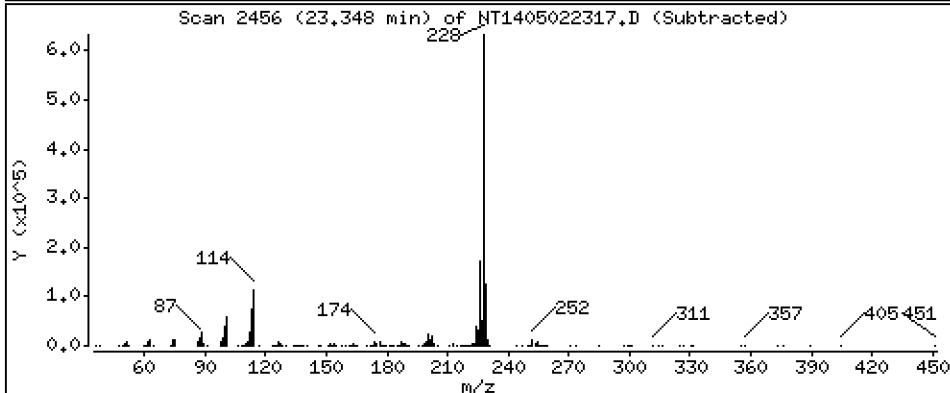
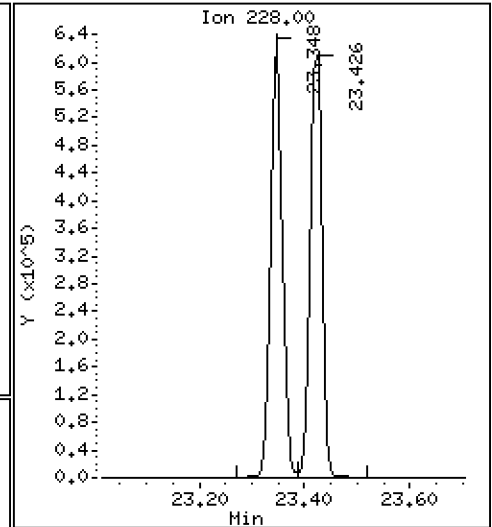
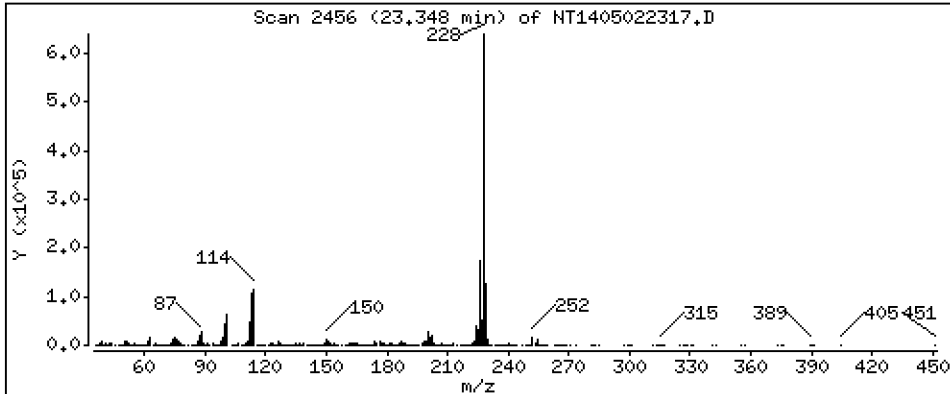
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 5,429 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

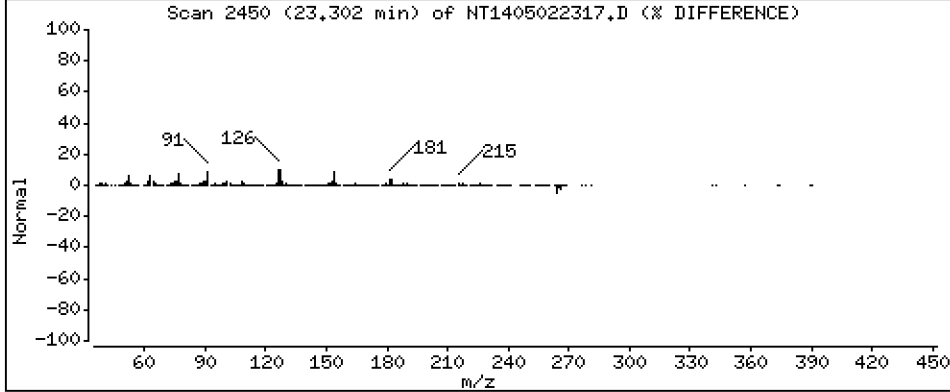
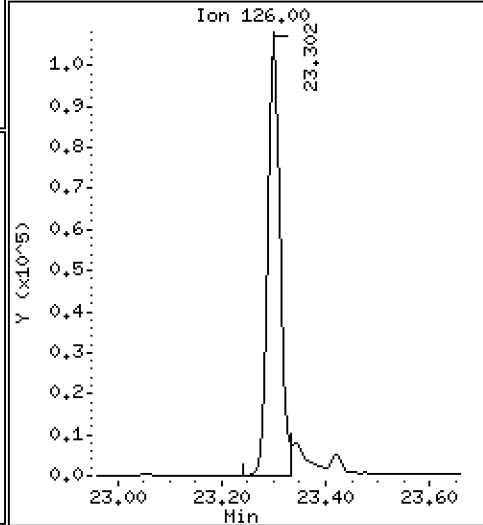
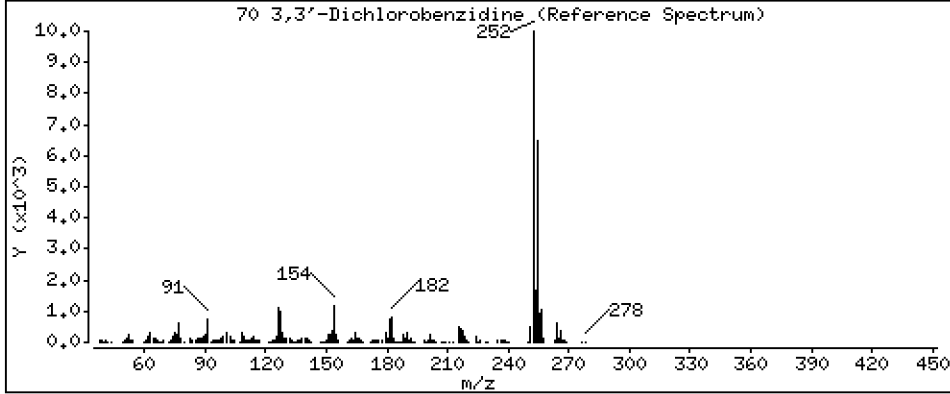
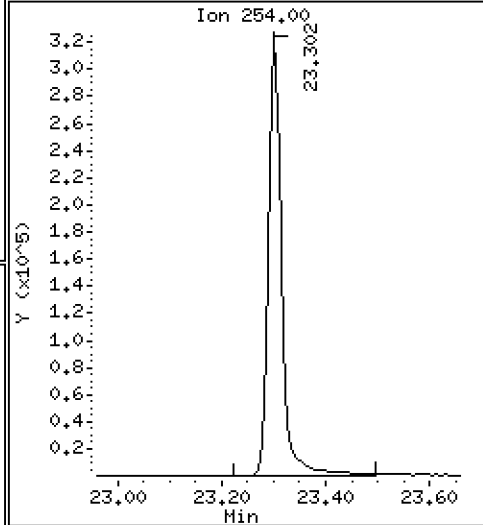
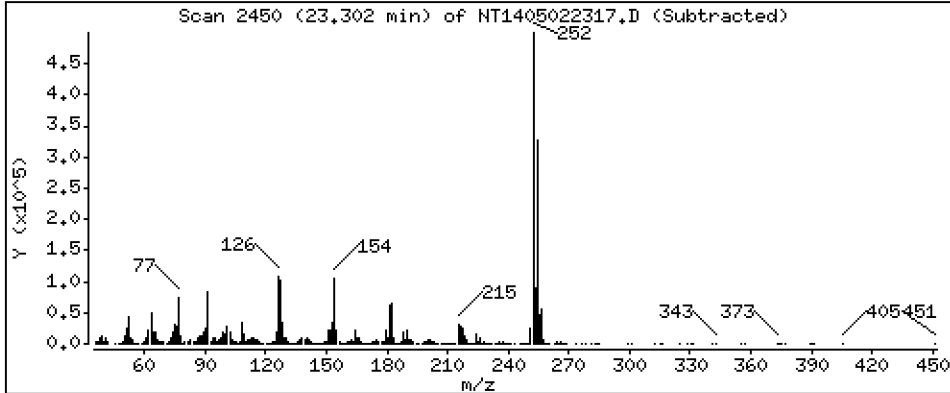
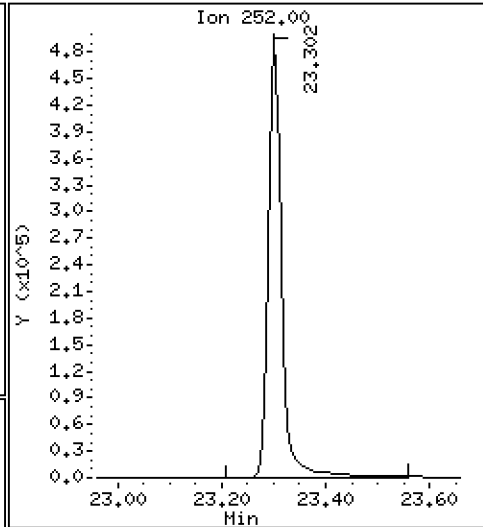
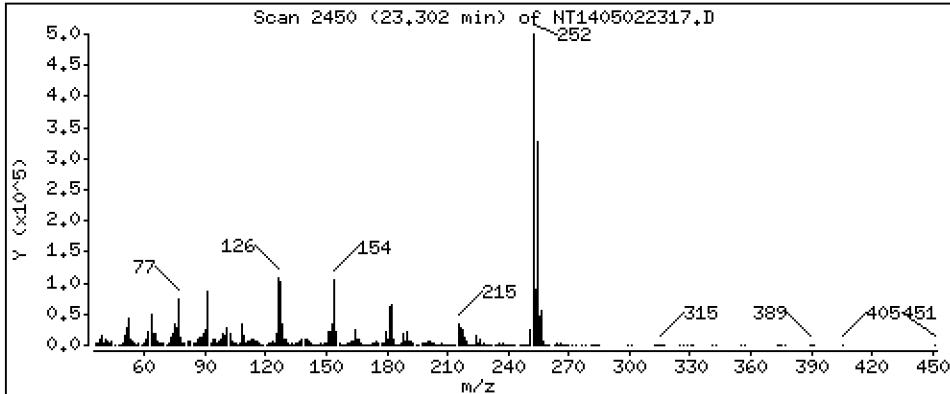
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 14,65 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

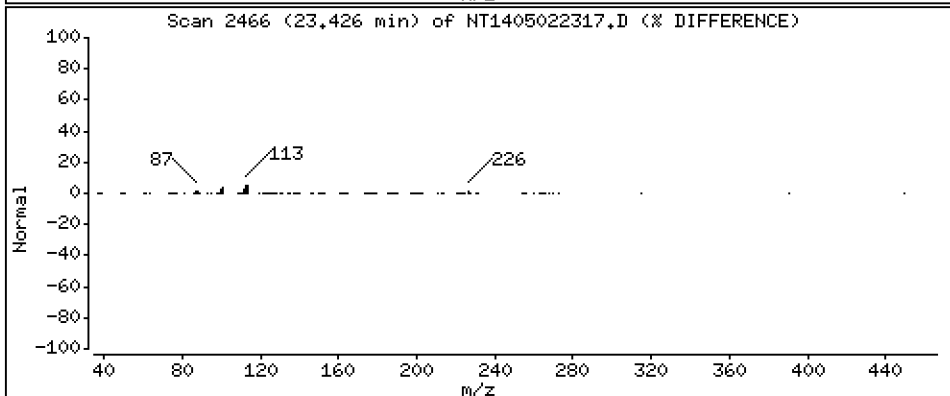
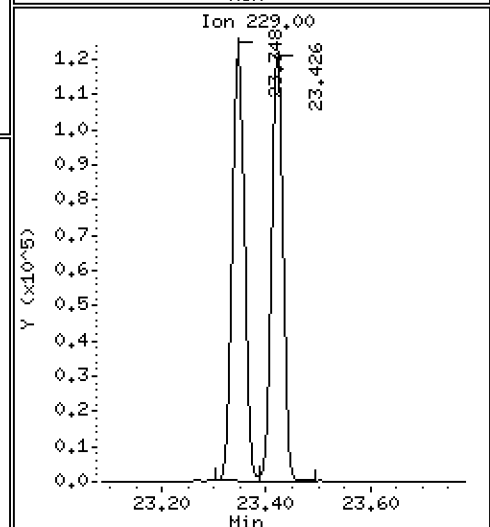
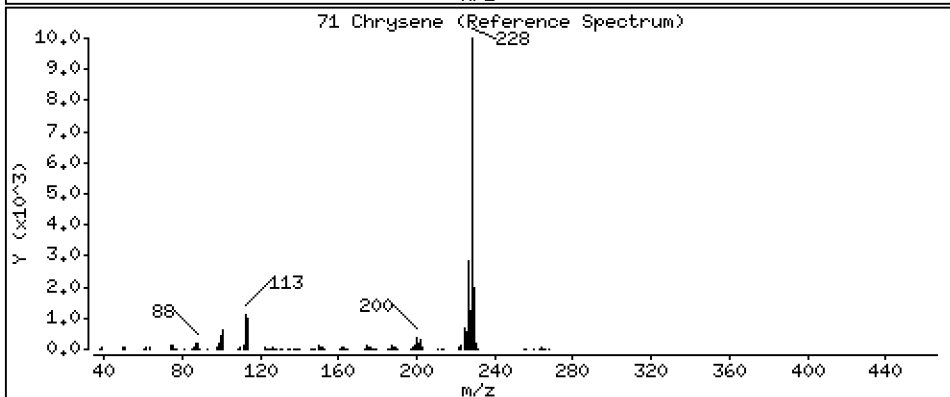
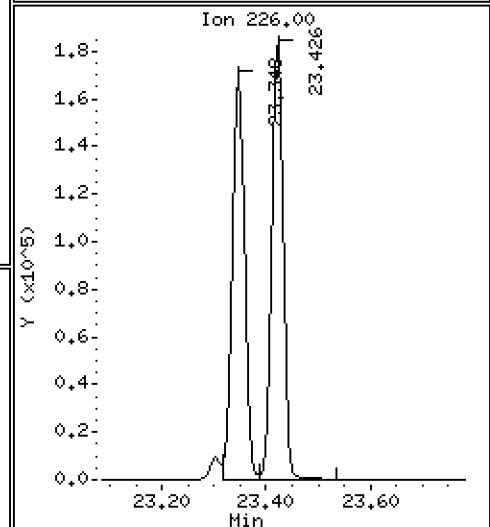
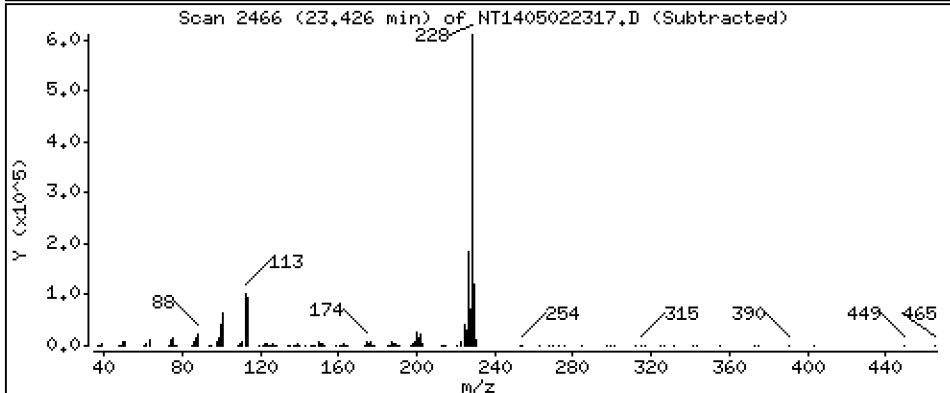
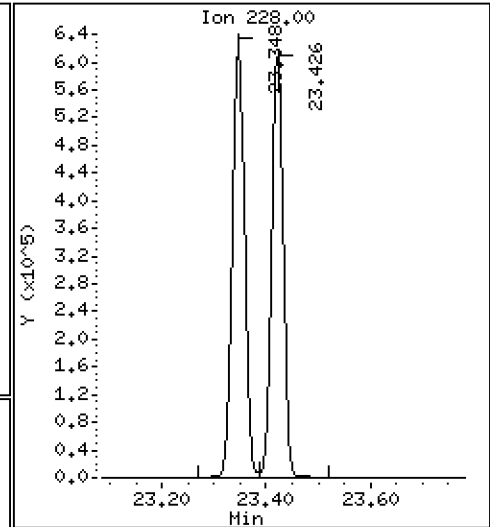
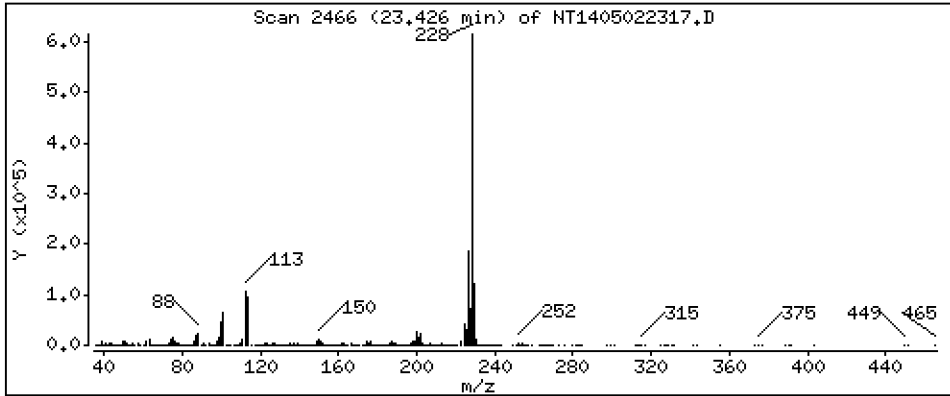
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 5,429 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

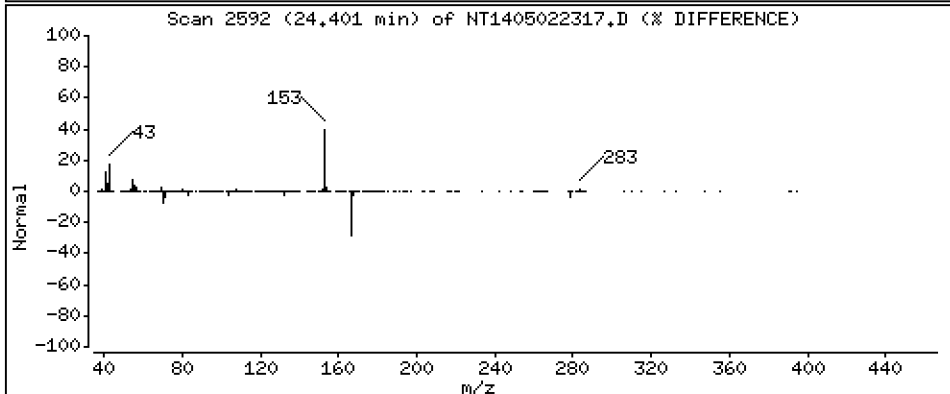
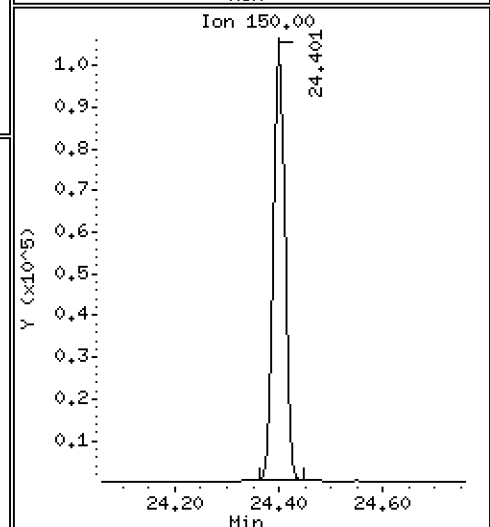
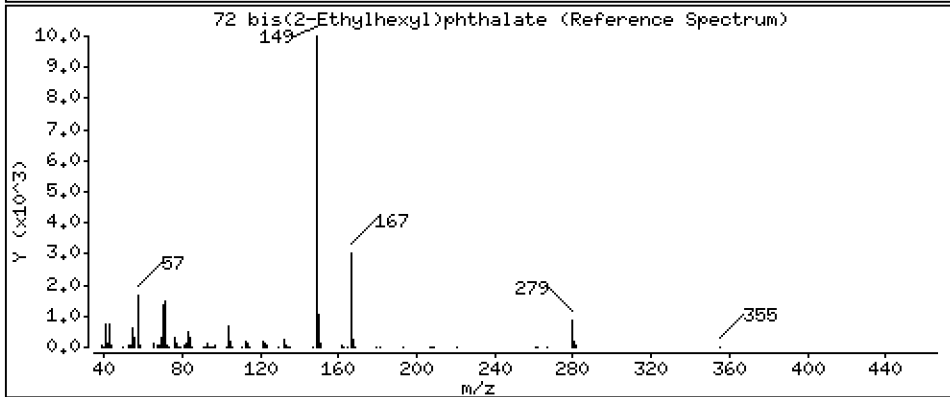
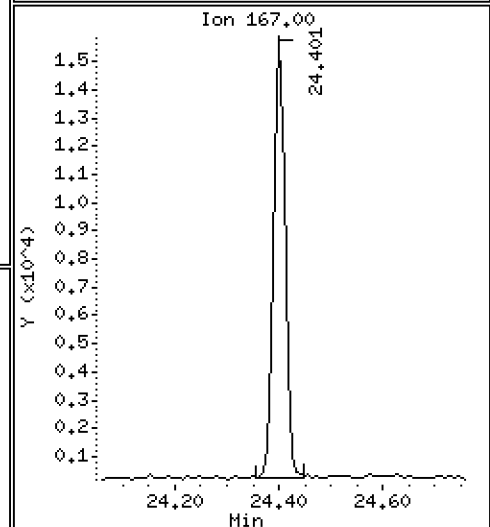
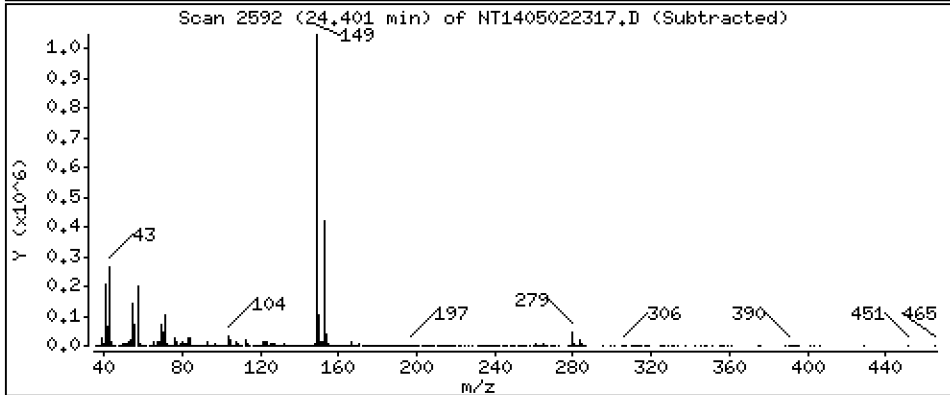
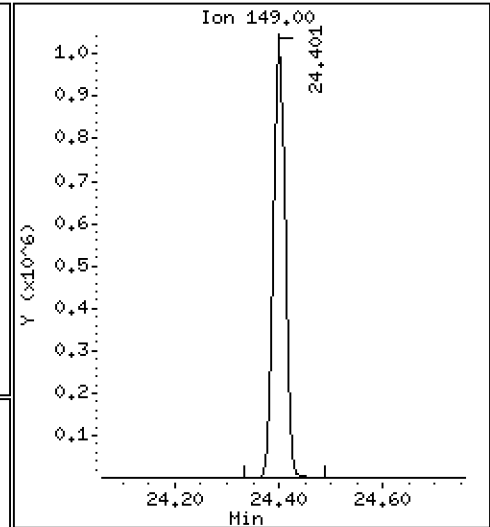
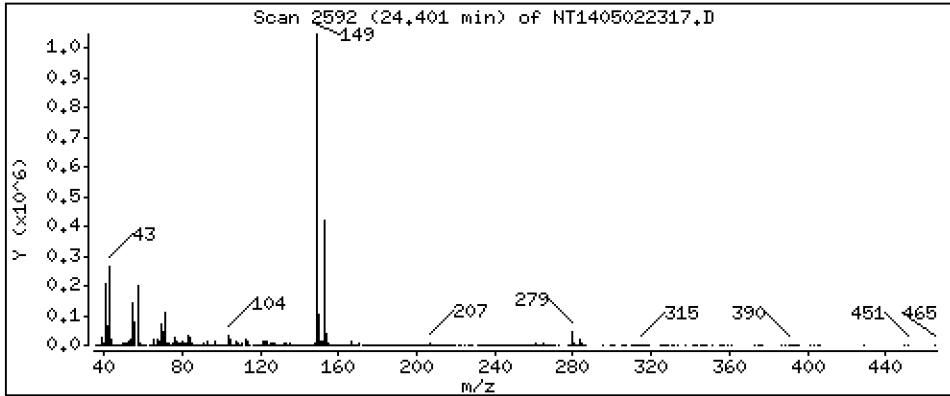
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 4,746 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

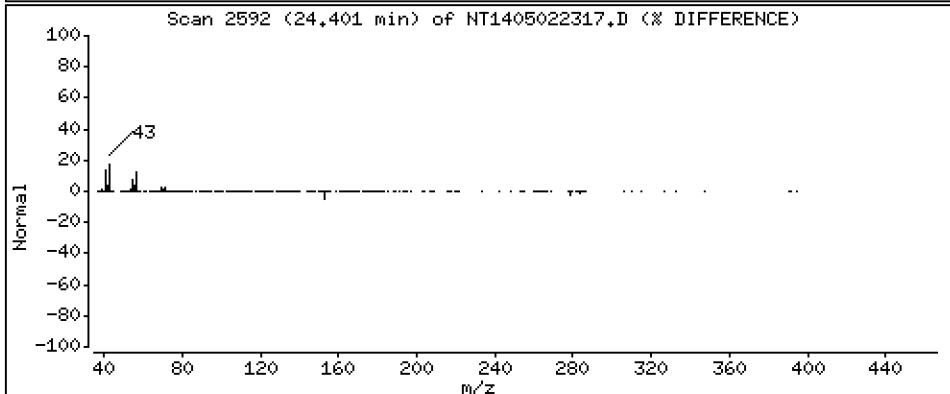
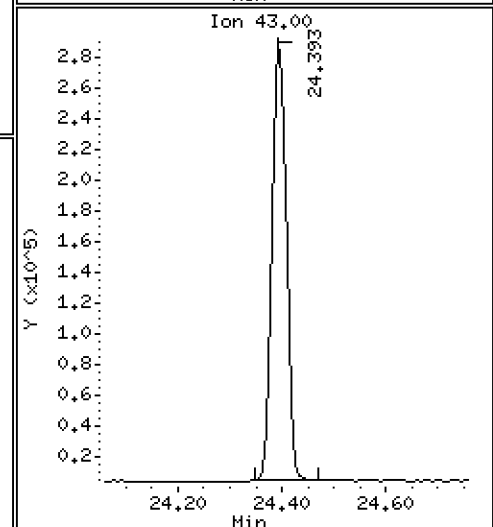
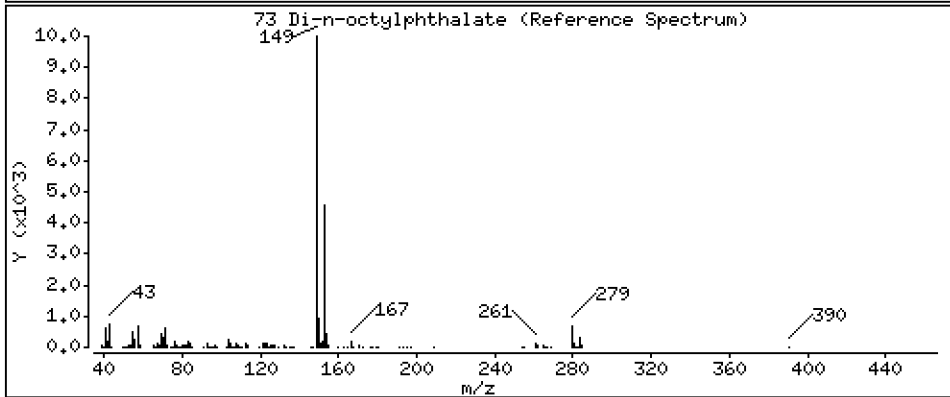
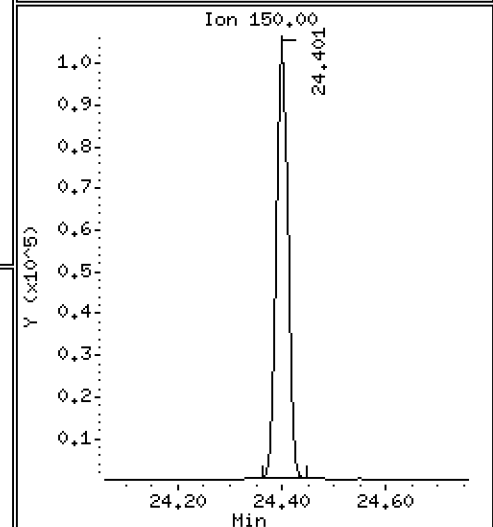
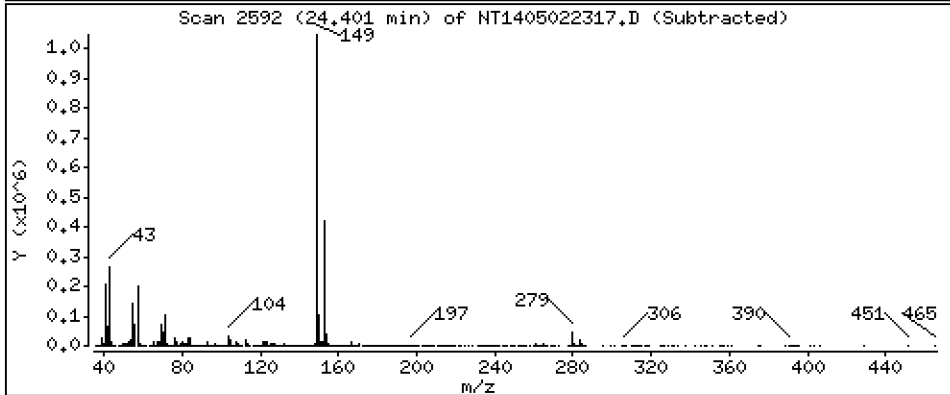
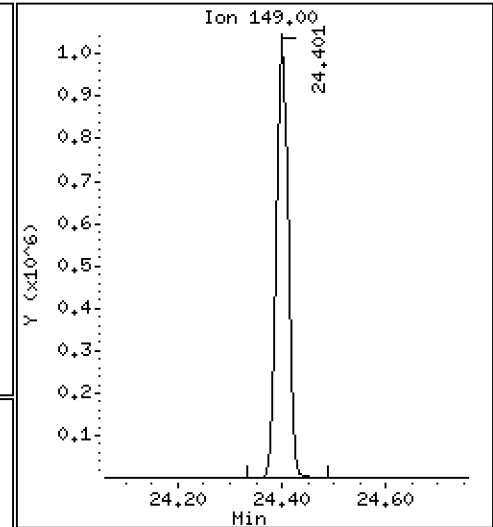
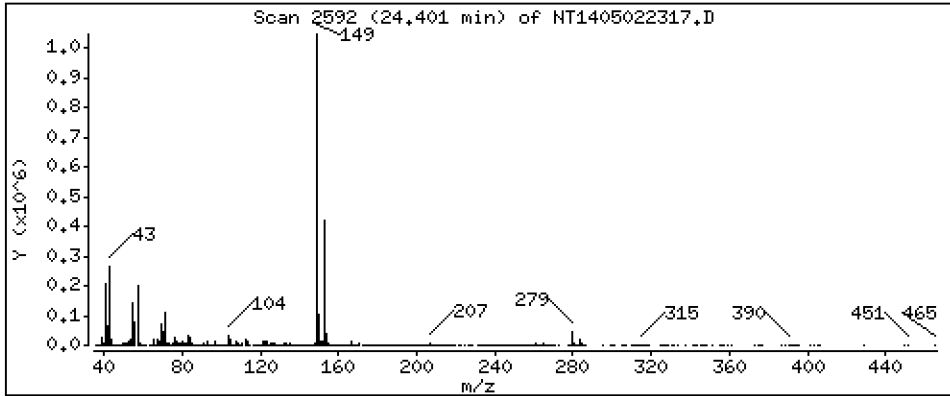
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 4,746 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

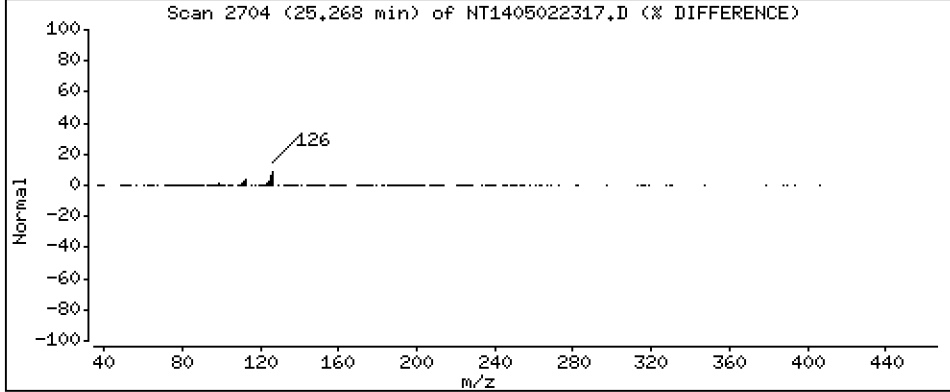
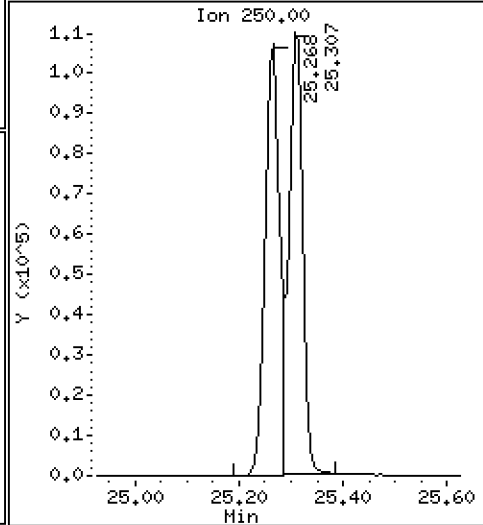
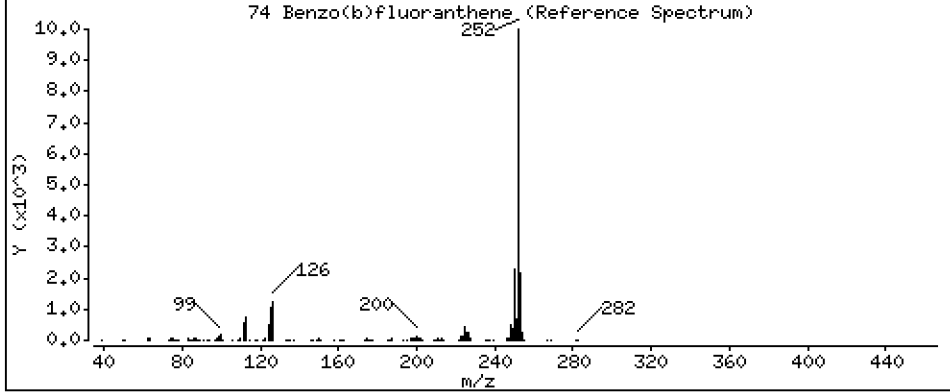
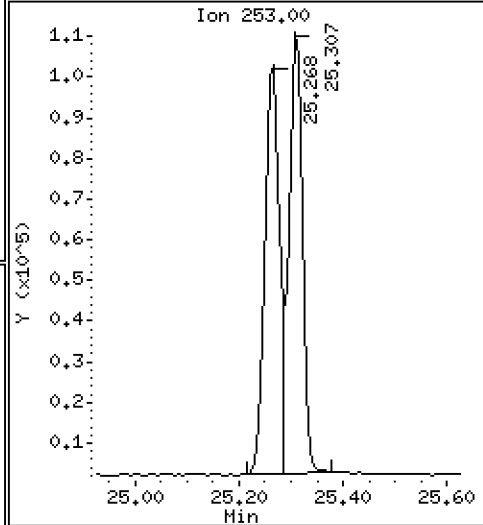
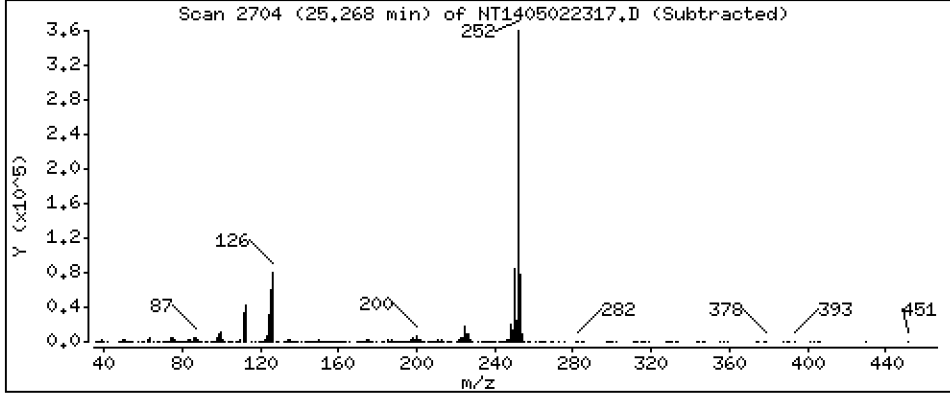
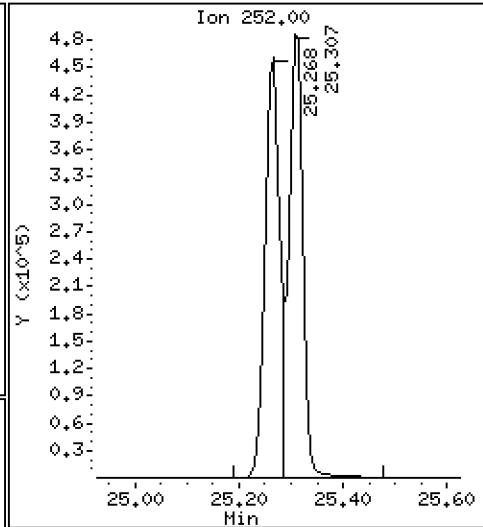
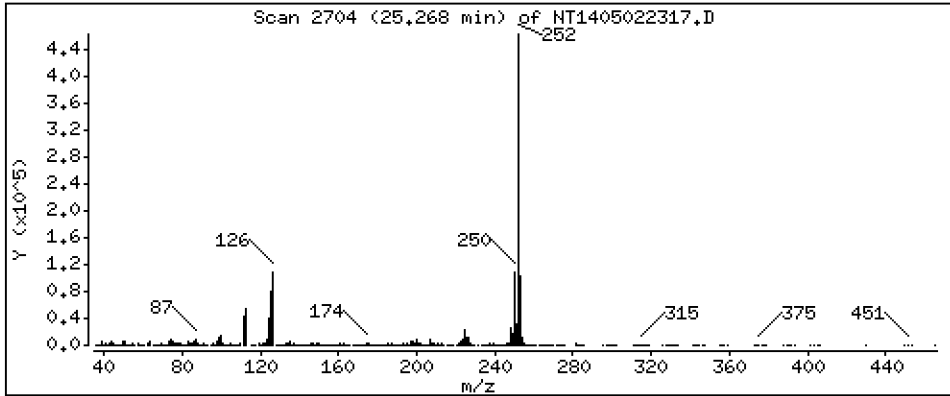
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 5,547 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

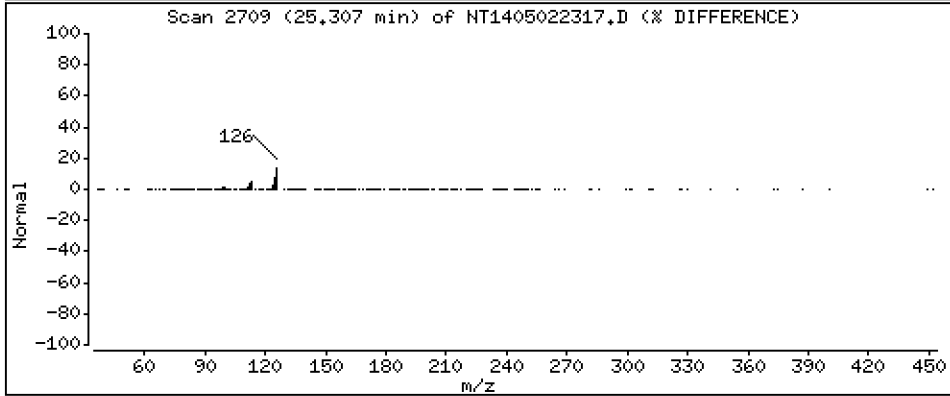
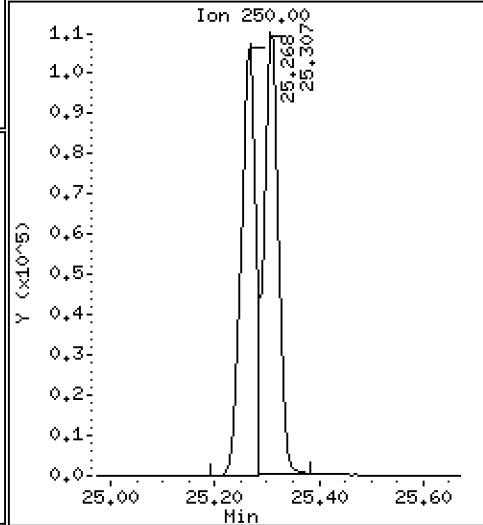
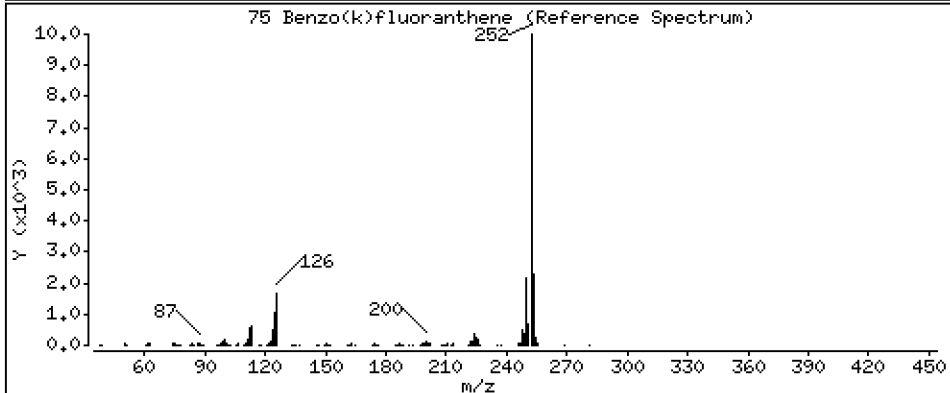
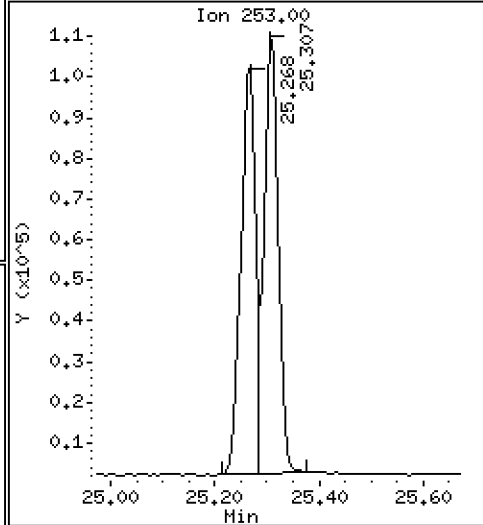
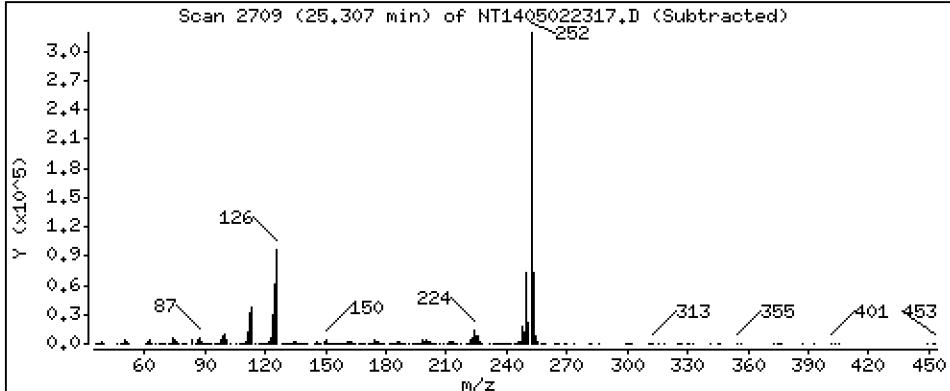
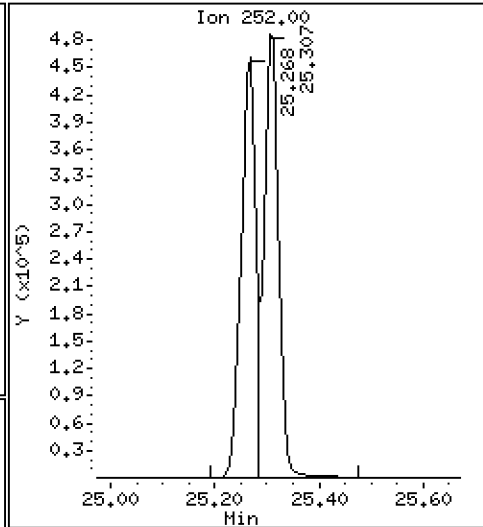
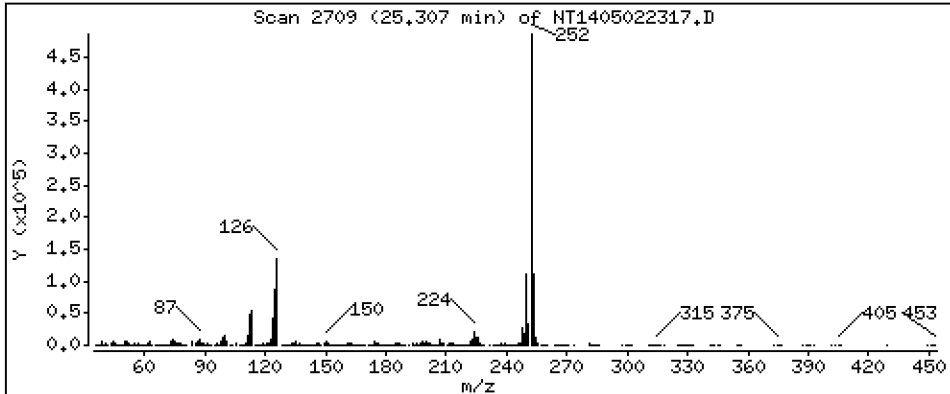
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 6,301 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

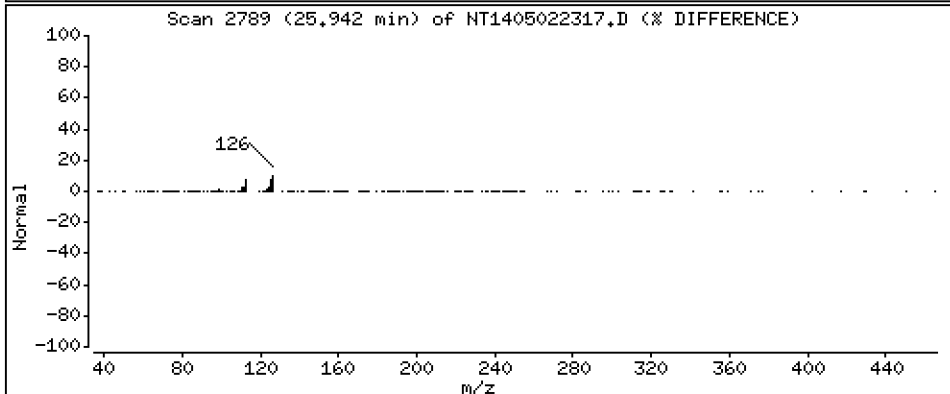
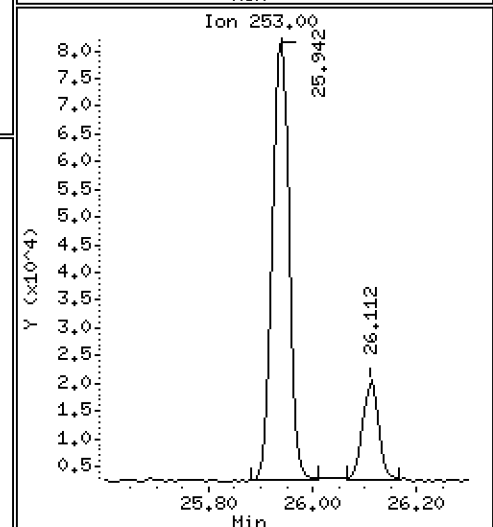
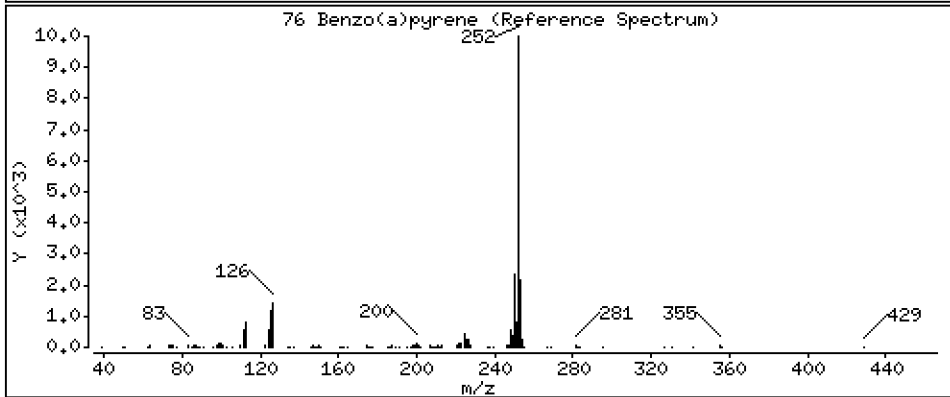
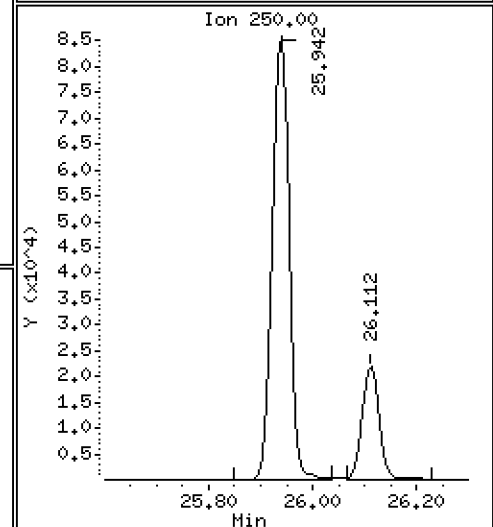
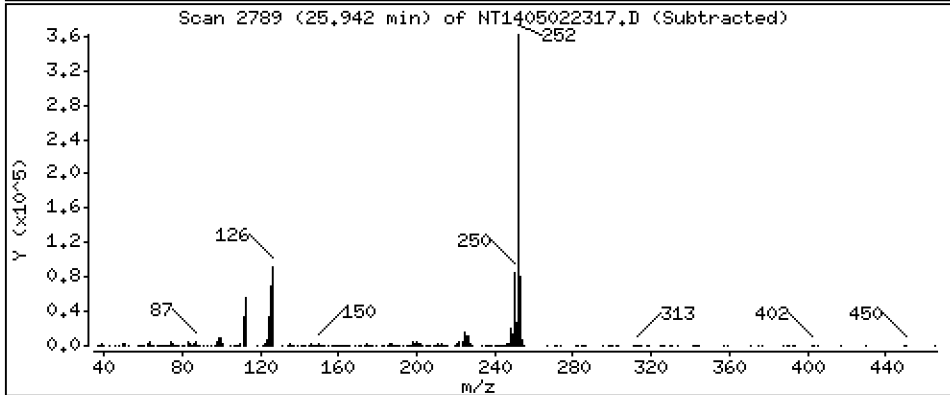
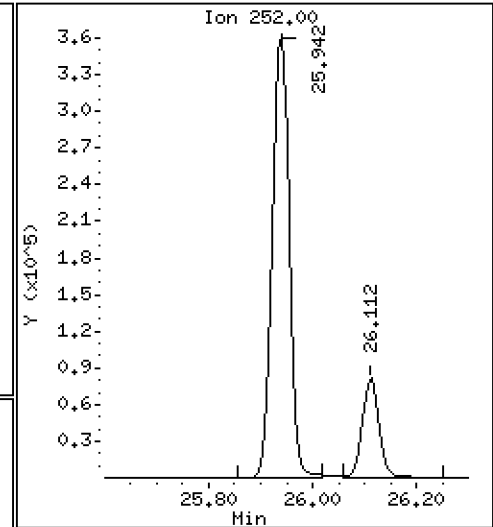
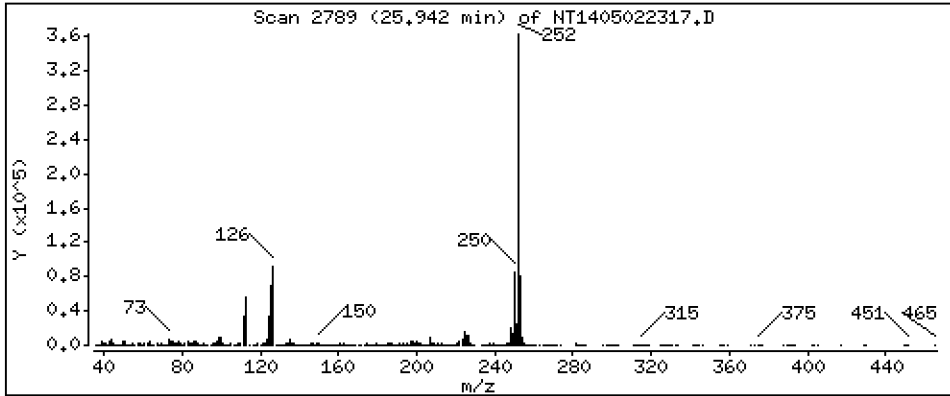
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 5,784 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

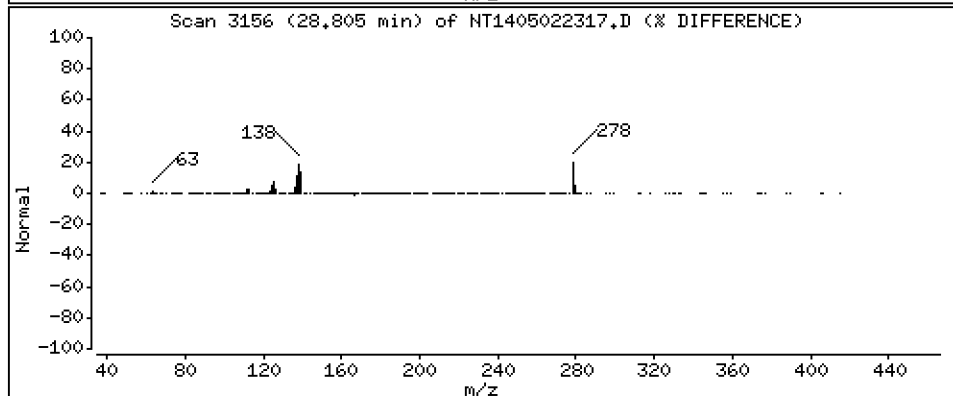
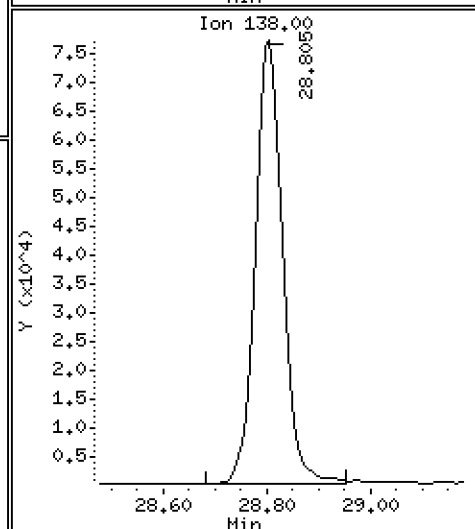
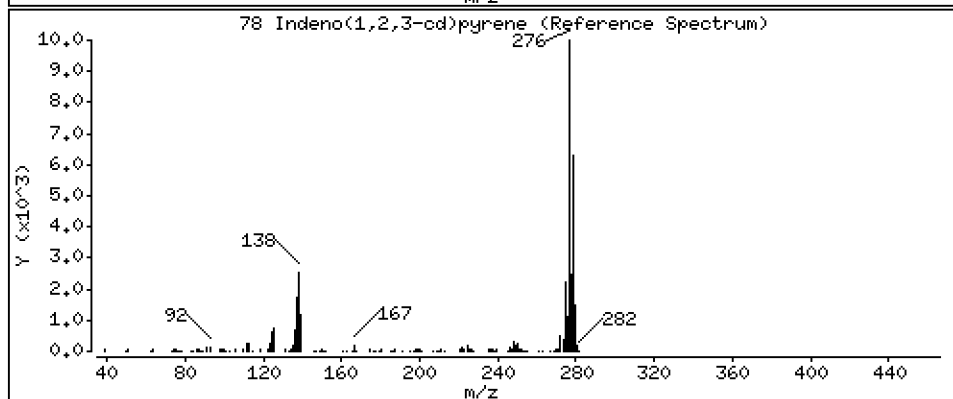
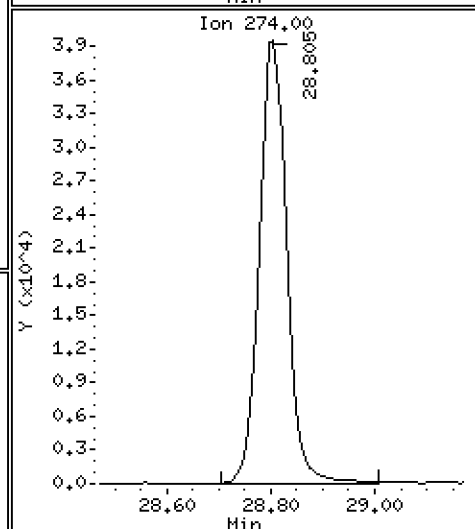
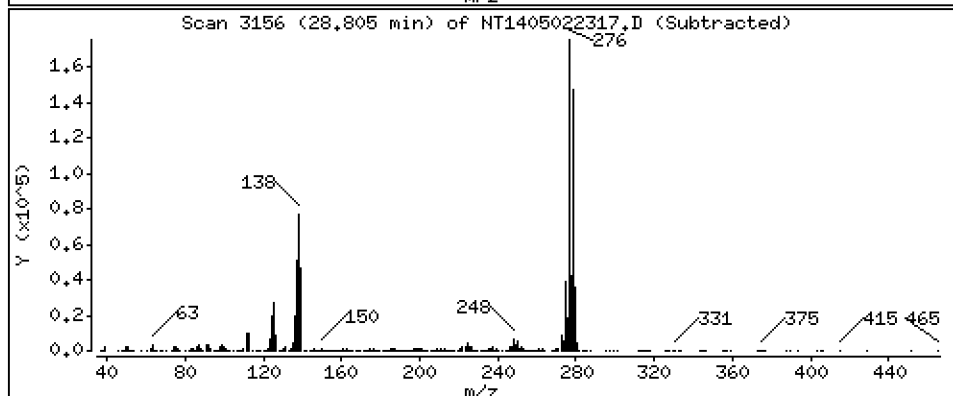
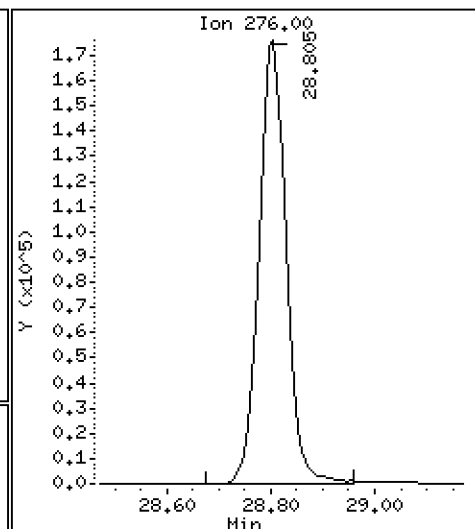
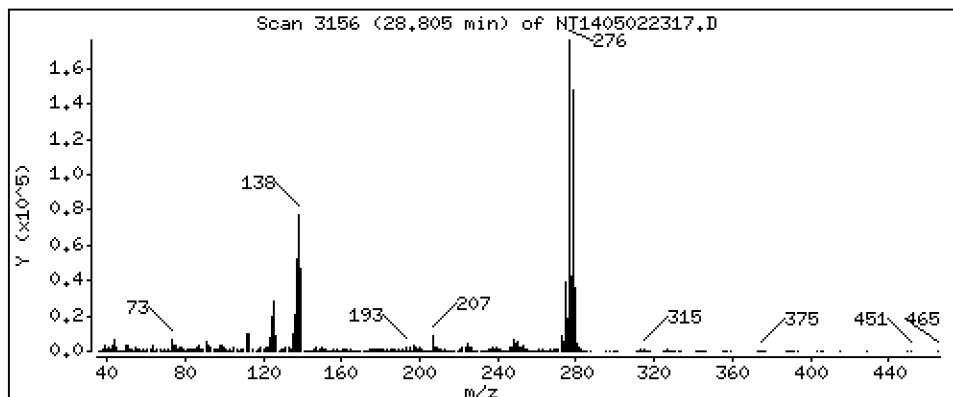
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 3,359 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

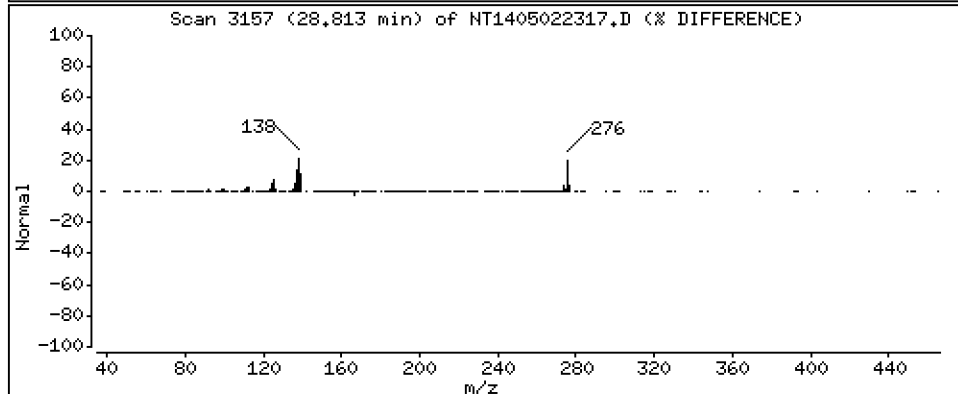
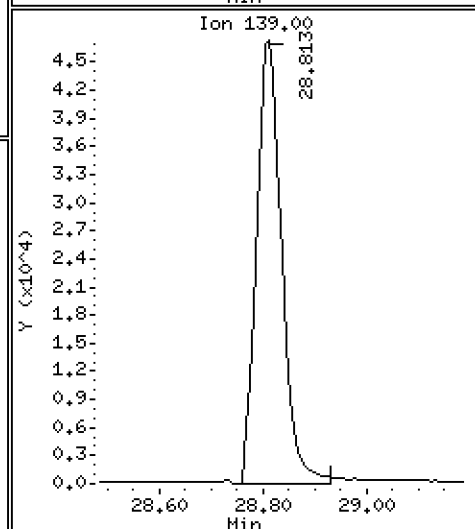
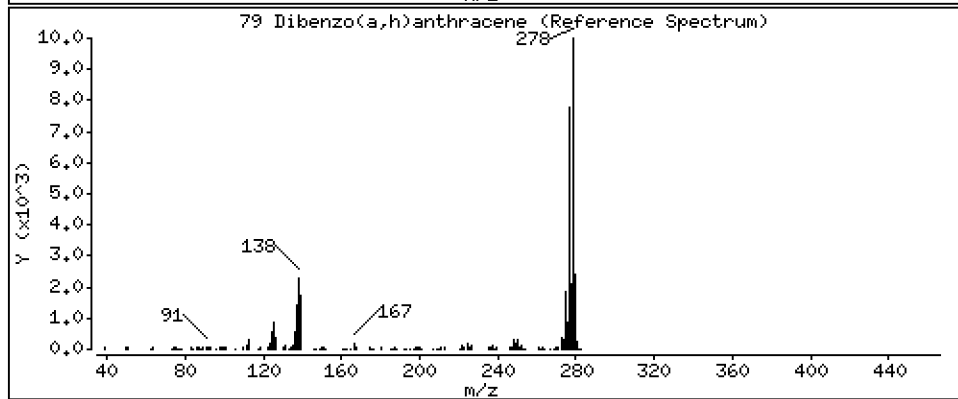
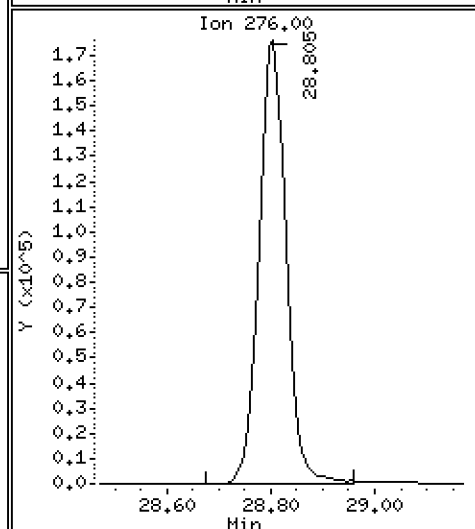
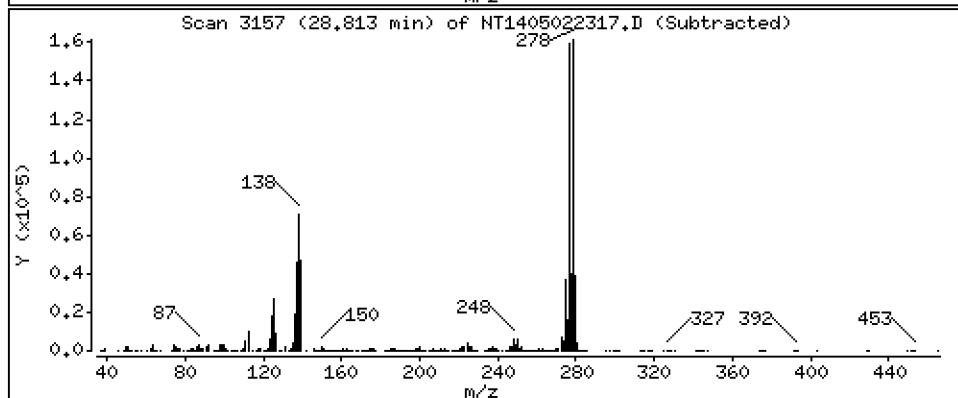
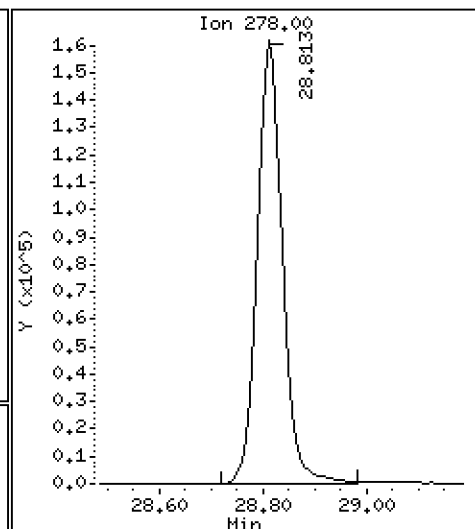
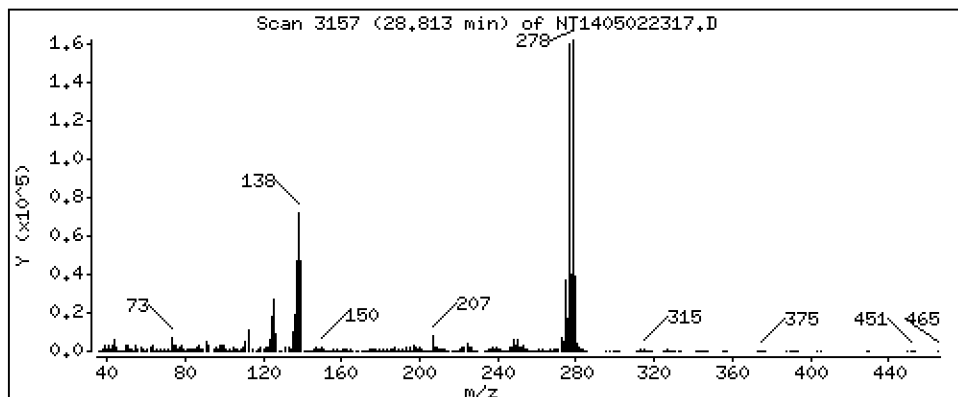
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 3,496 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

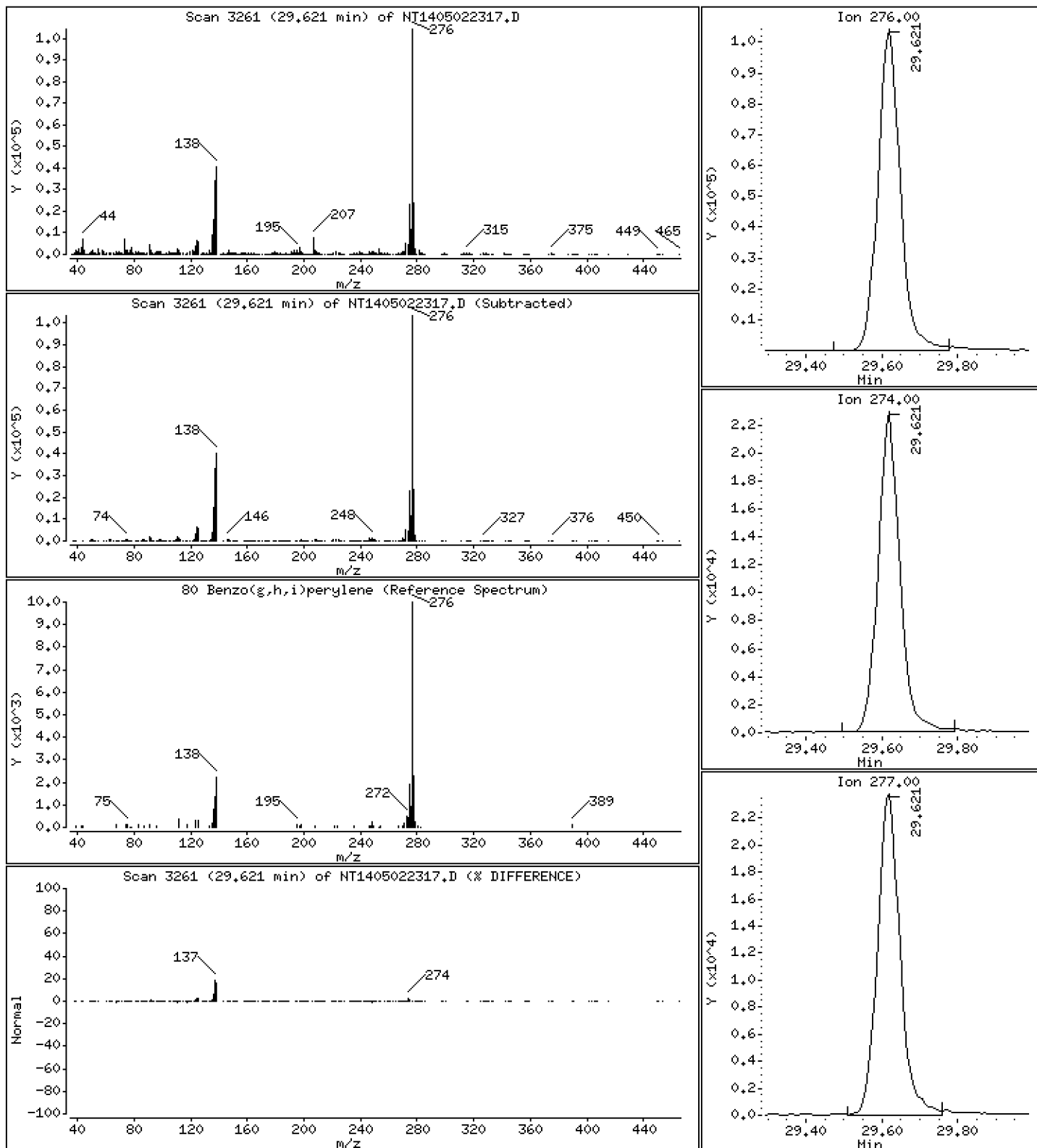
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 2,651 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

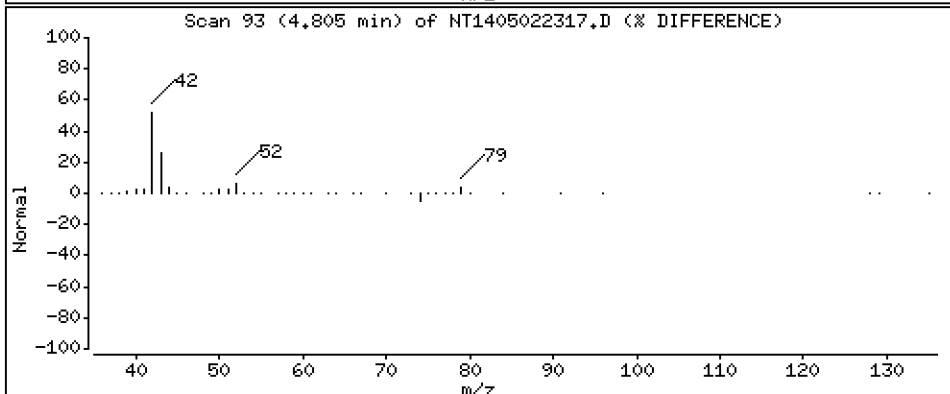
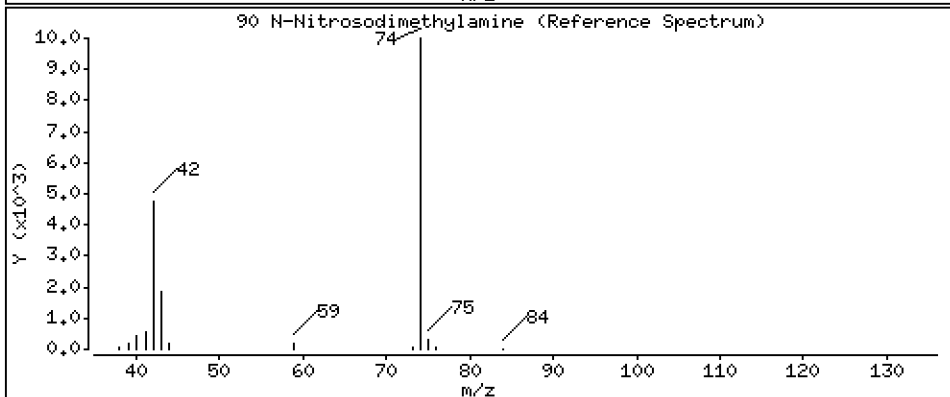
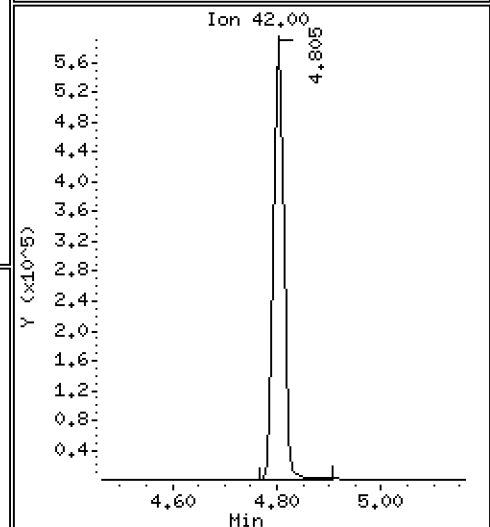
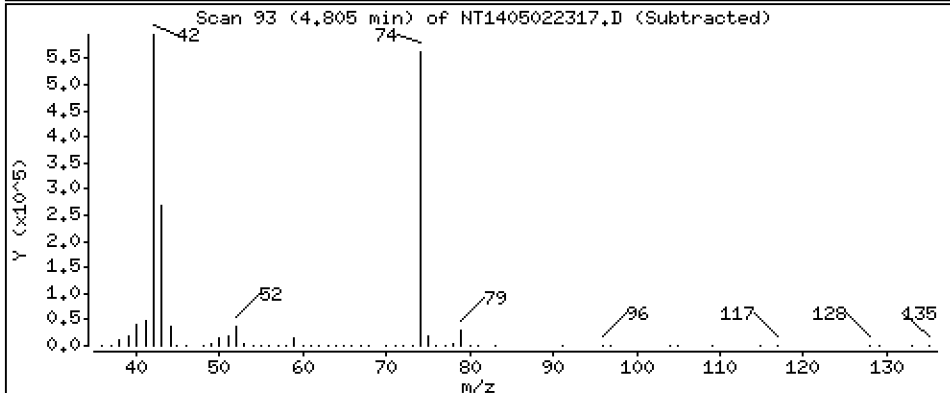
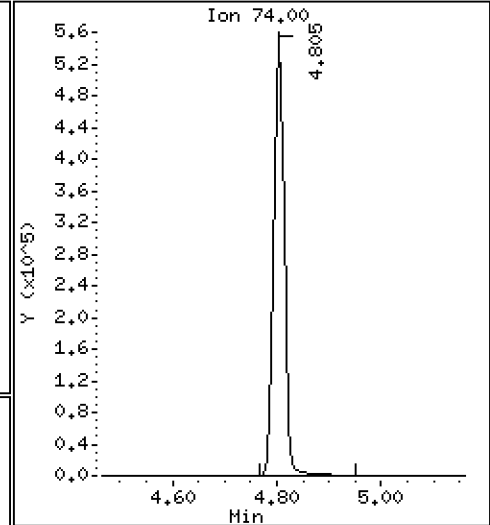
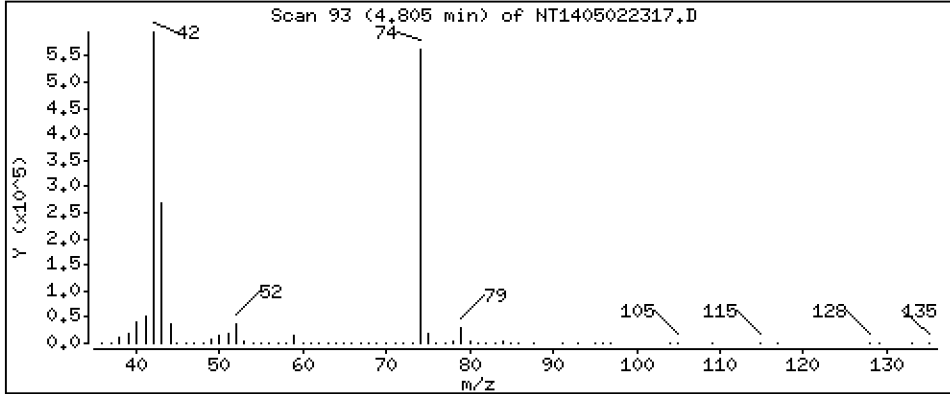
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 9,348 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

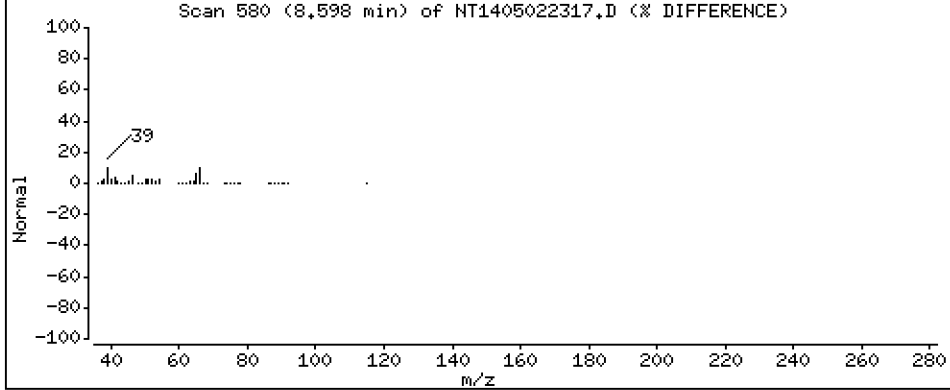
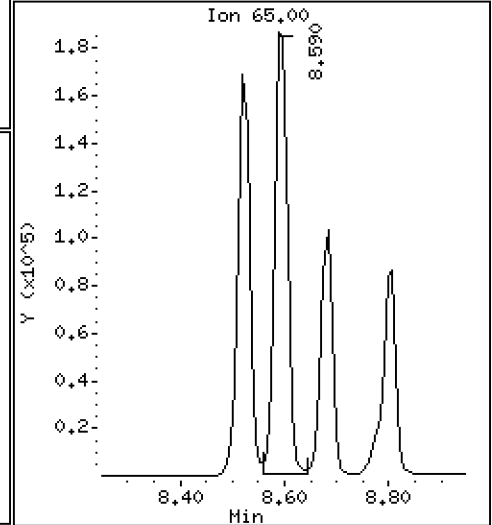
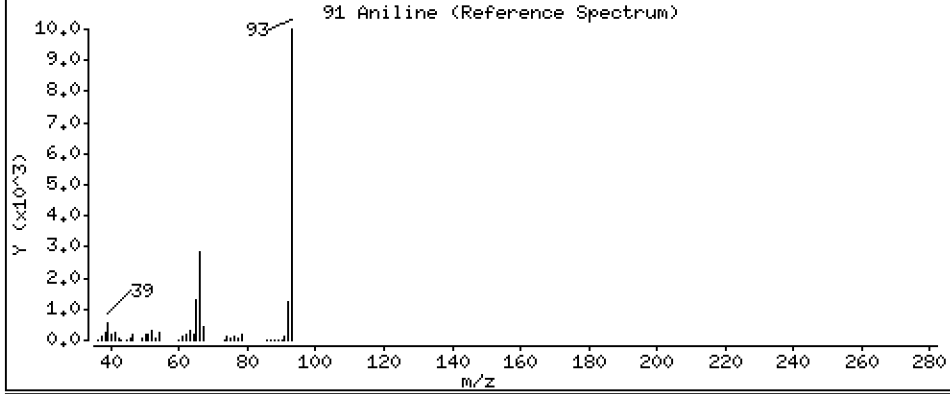
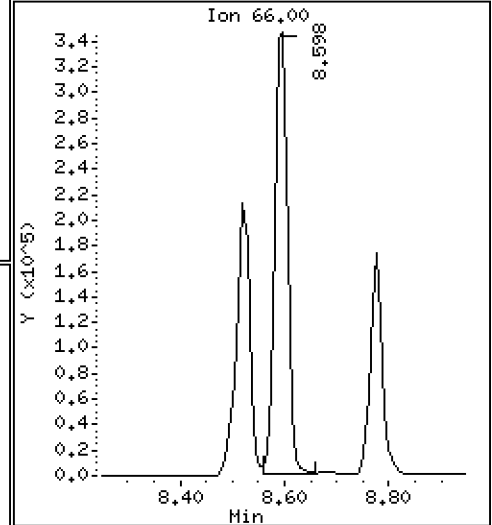
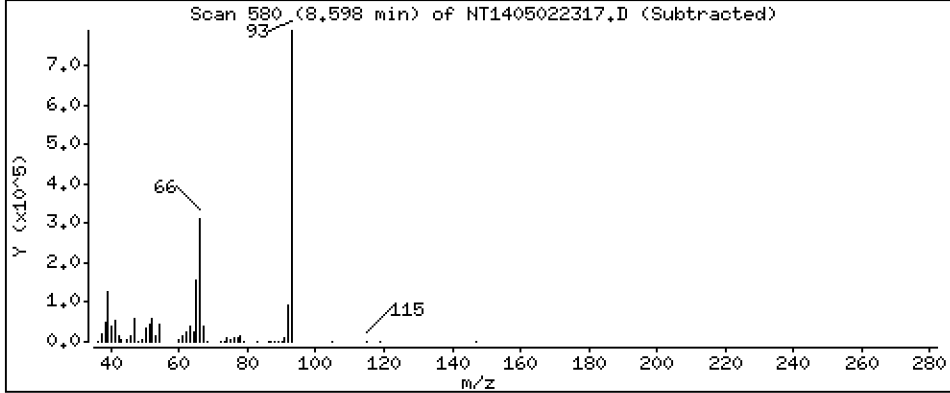
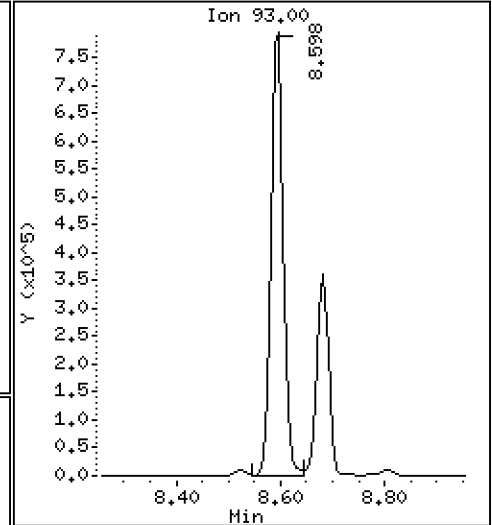
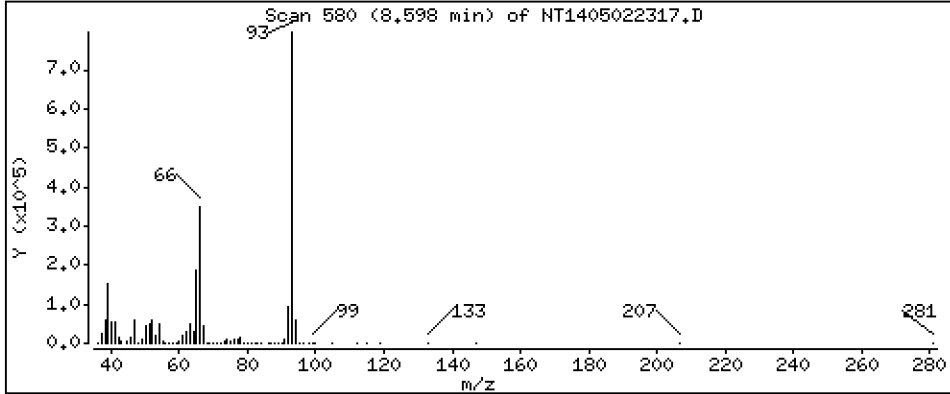
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

91 Aniline

Concentration: 9.703 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

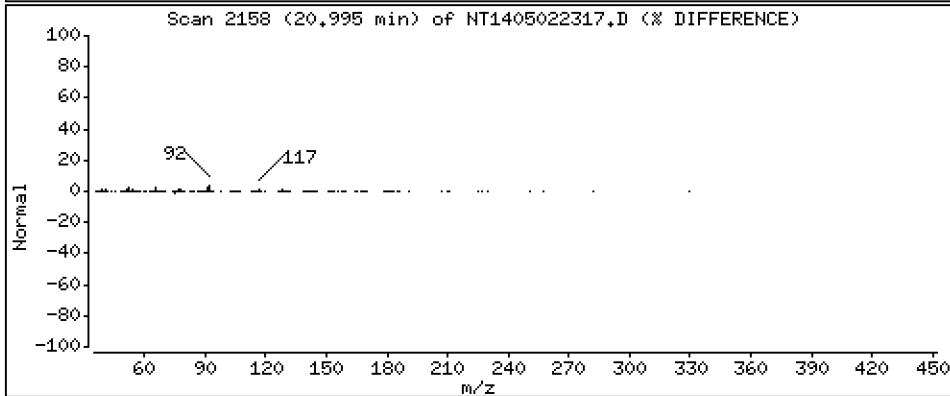
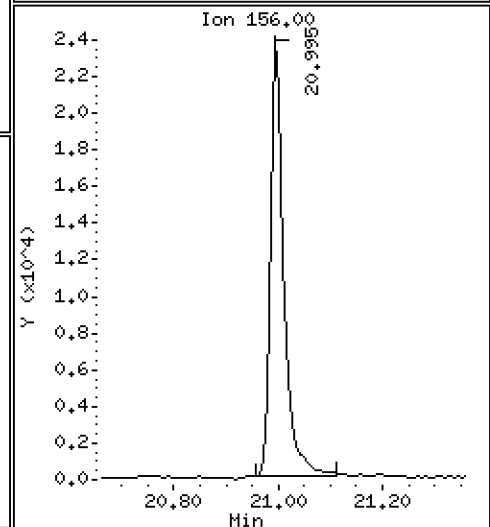
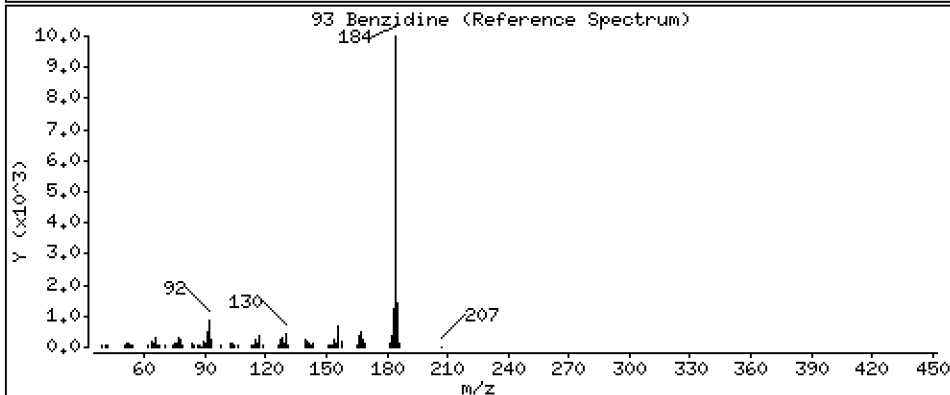
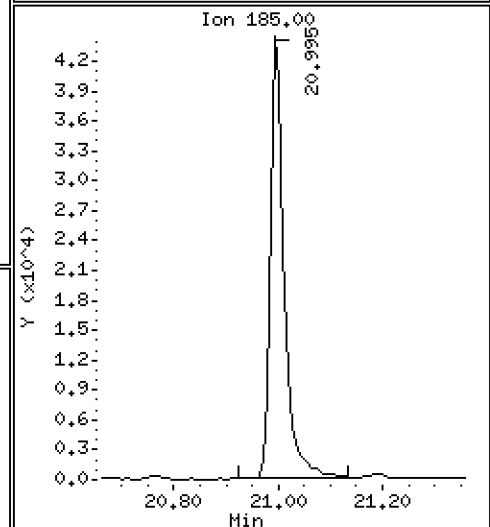
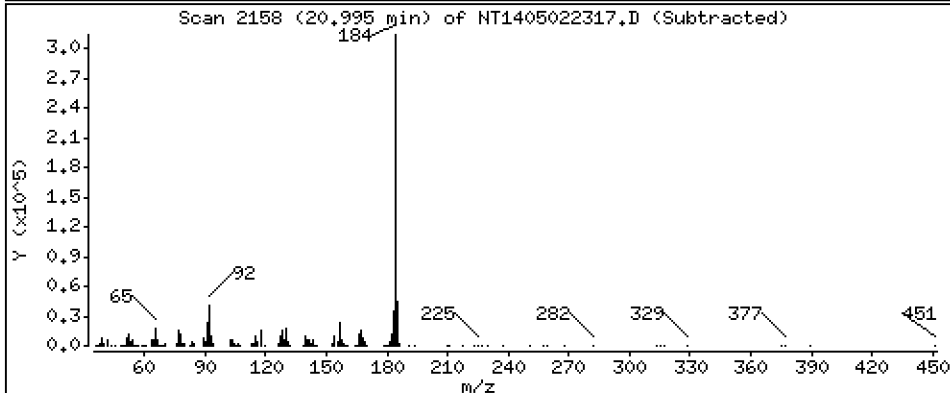
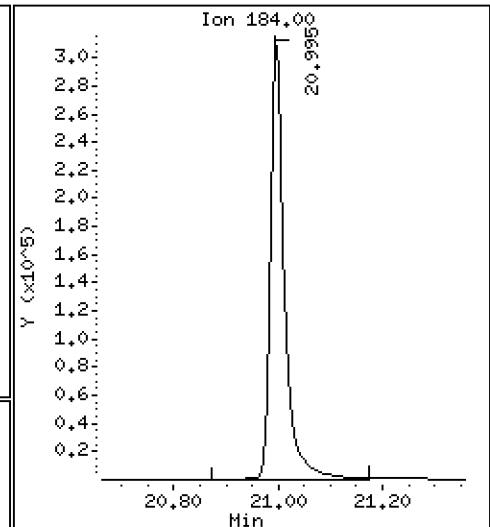
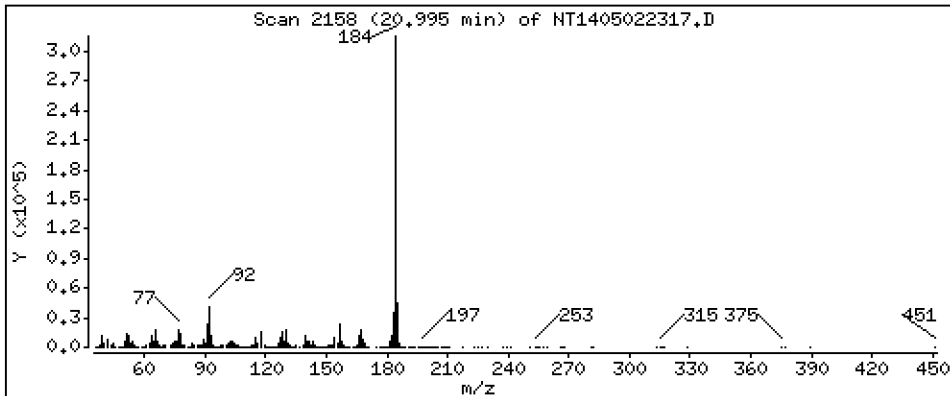
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 6,472 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

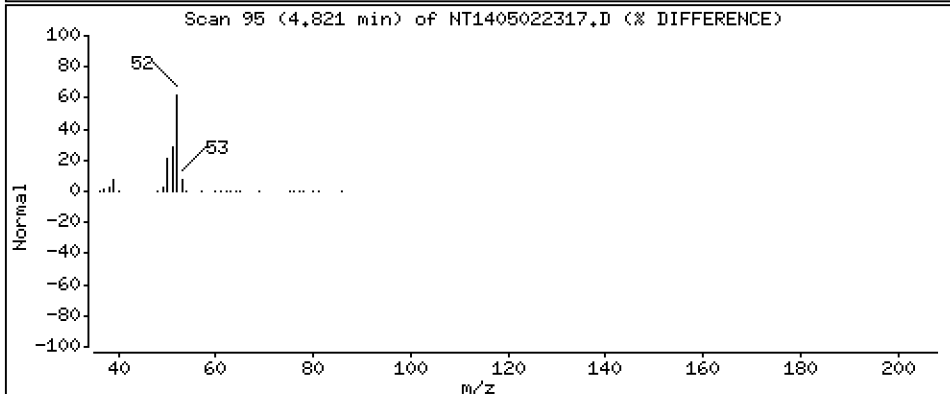
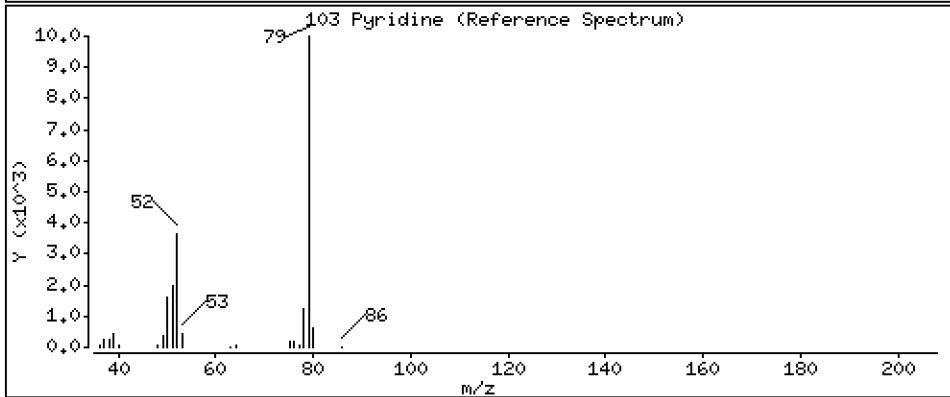
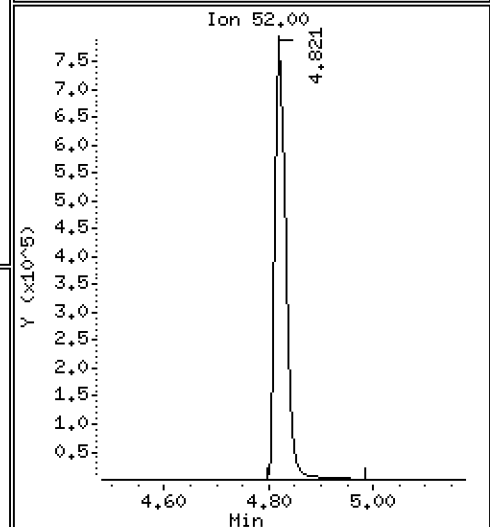
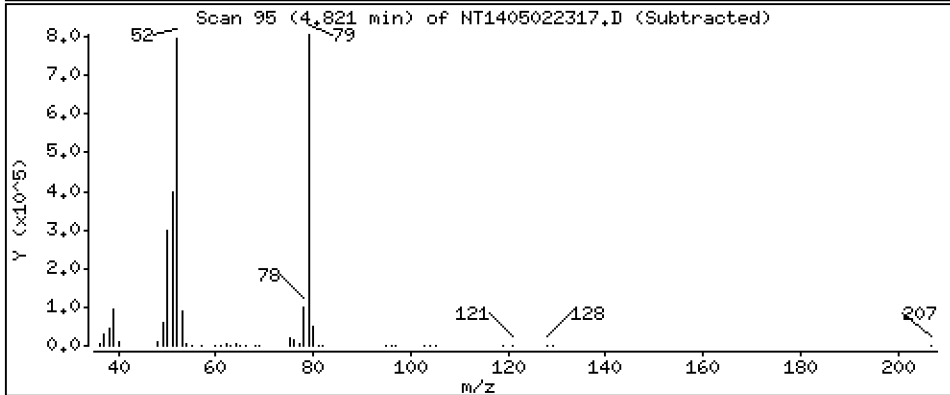
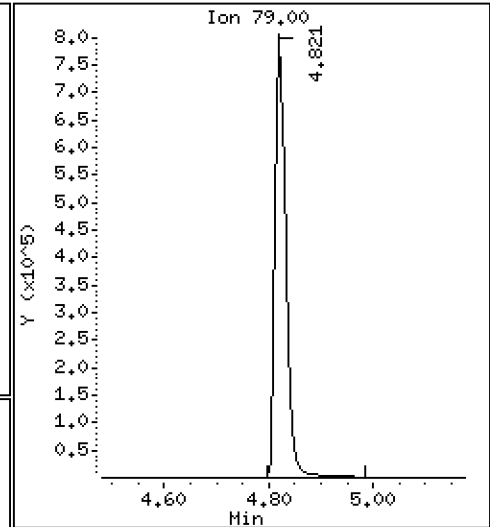
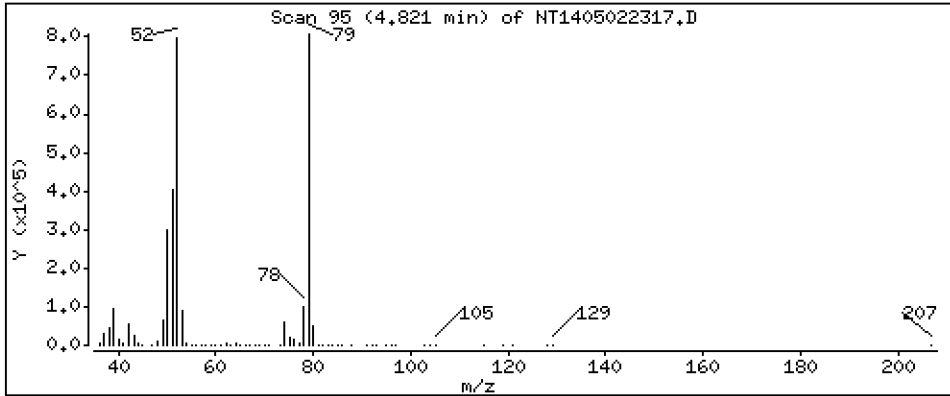
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 4,737 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

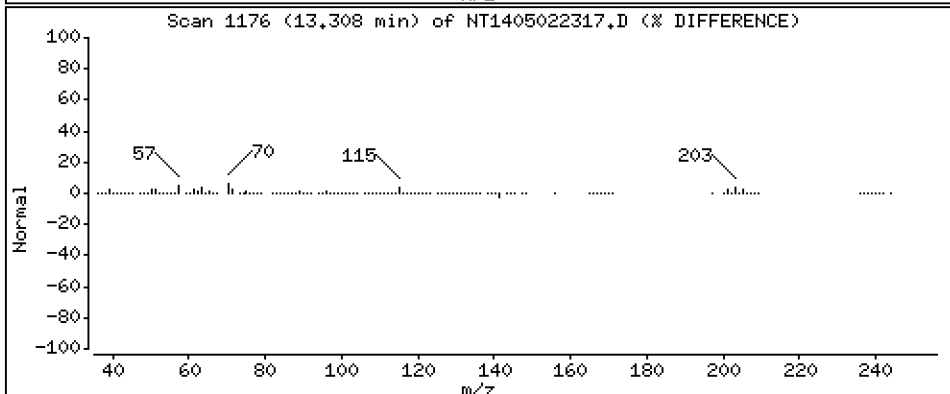
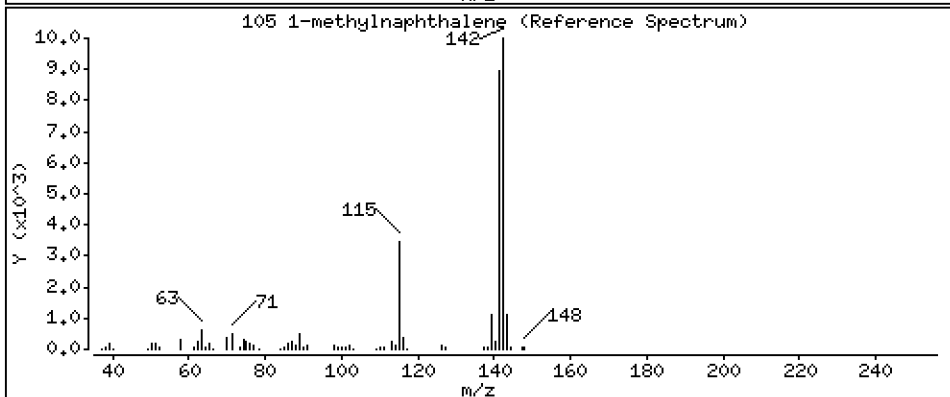
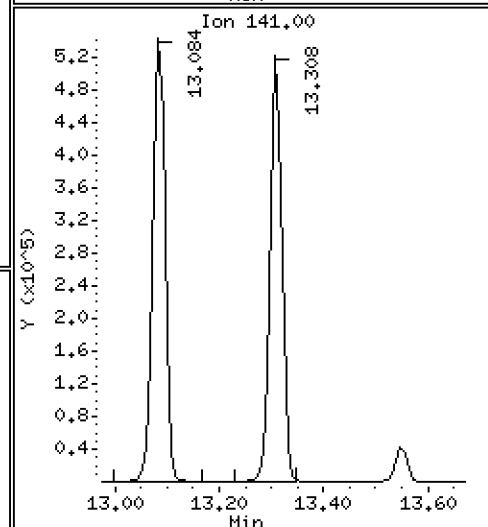
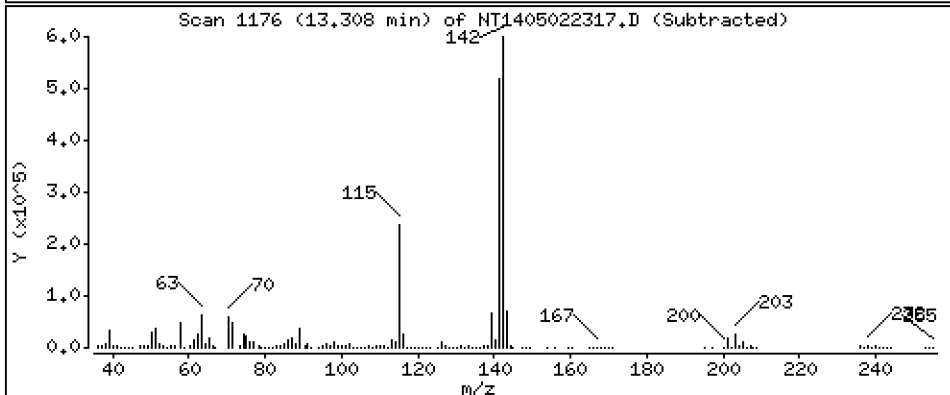
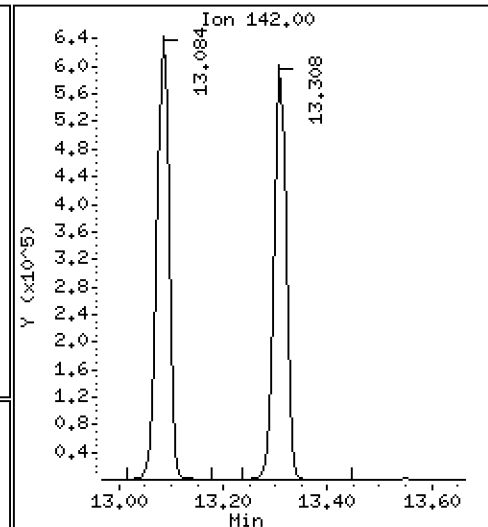
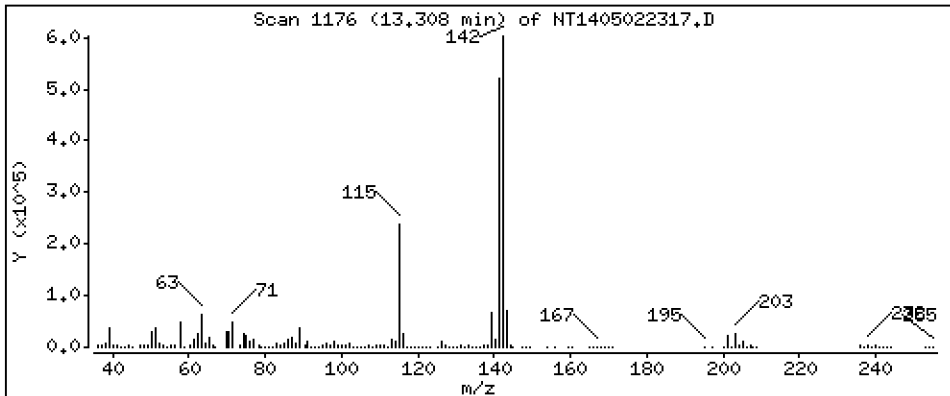
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 4,802 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

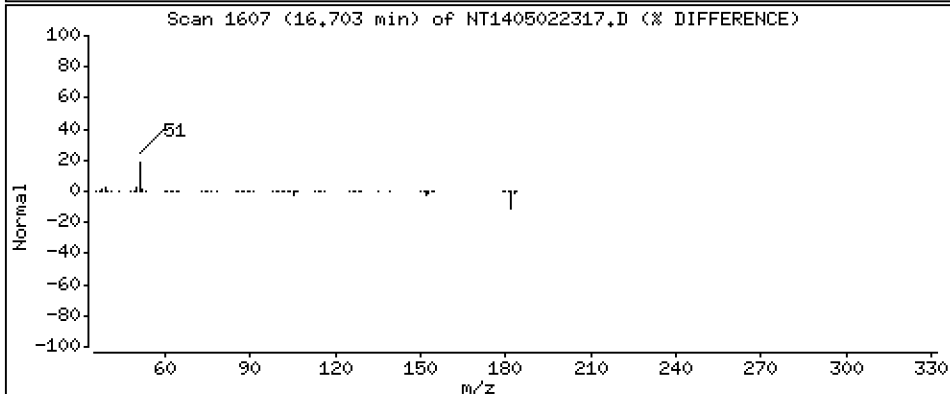
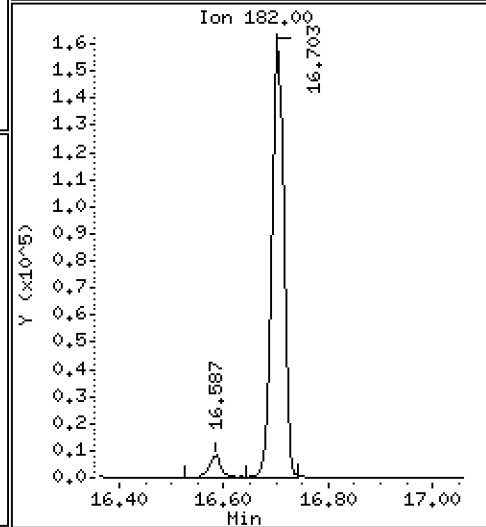
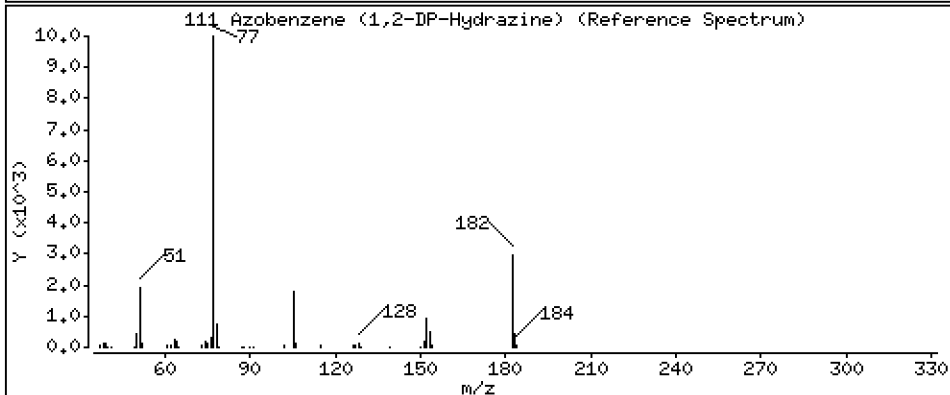
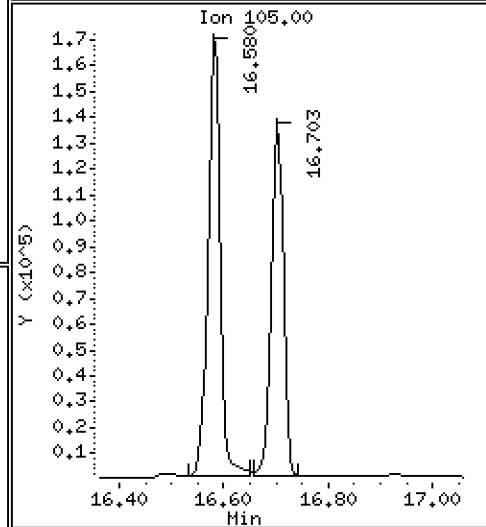
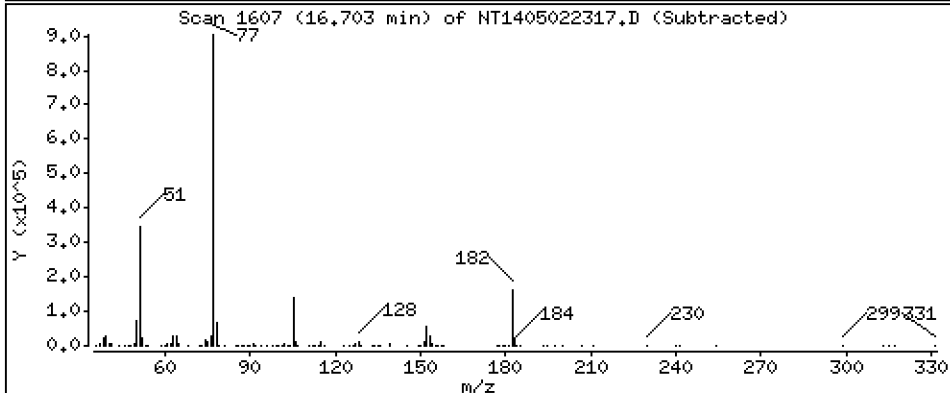
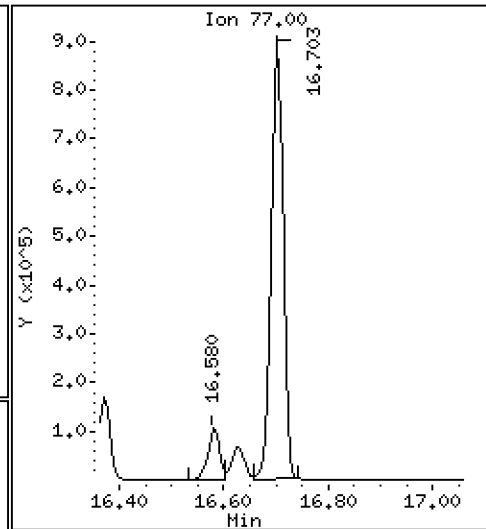
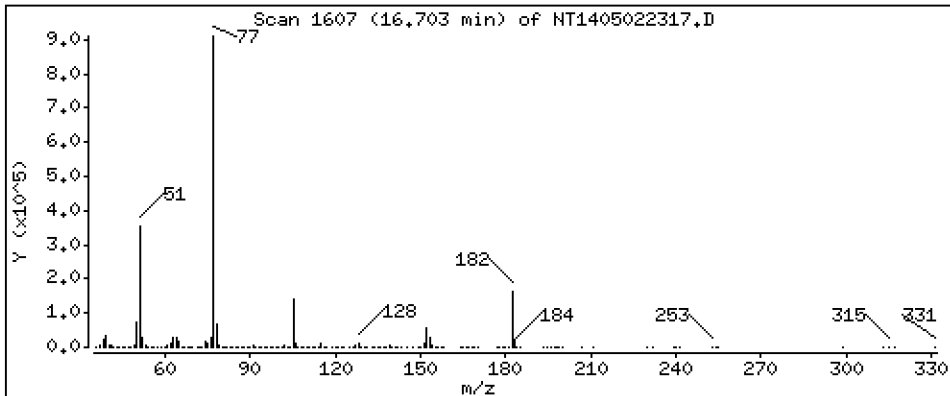
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 4,732 ug/mL





Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

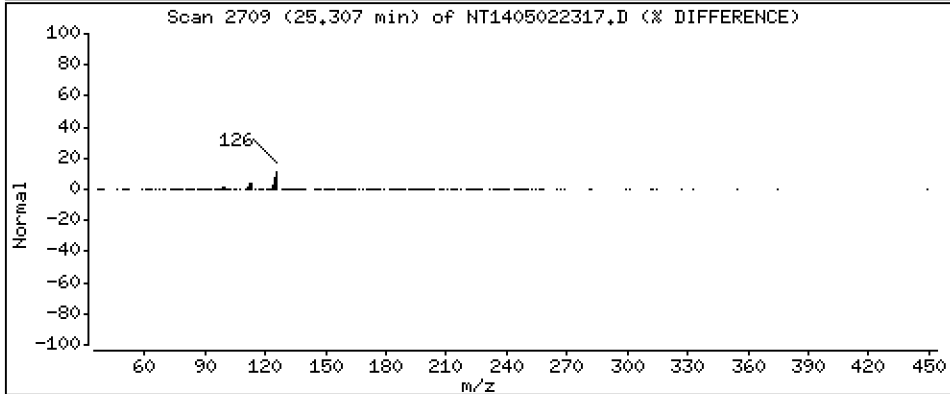
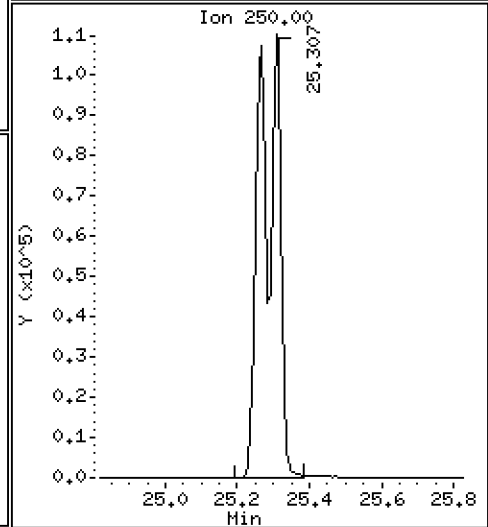
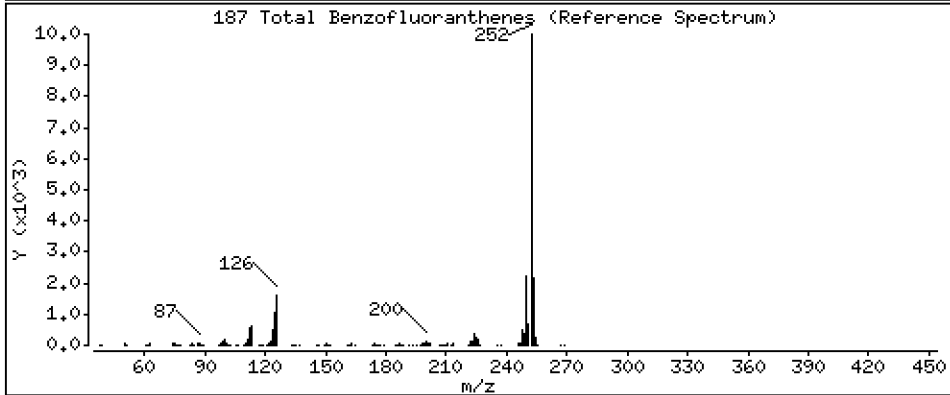
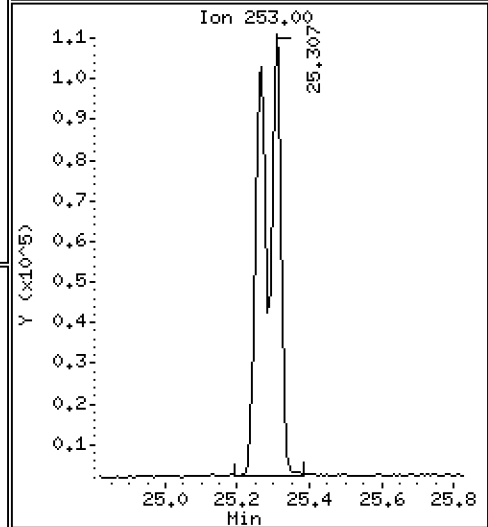
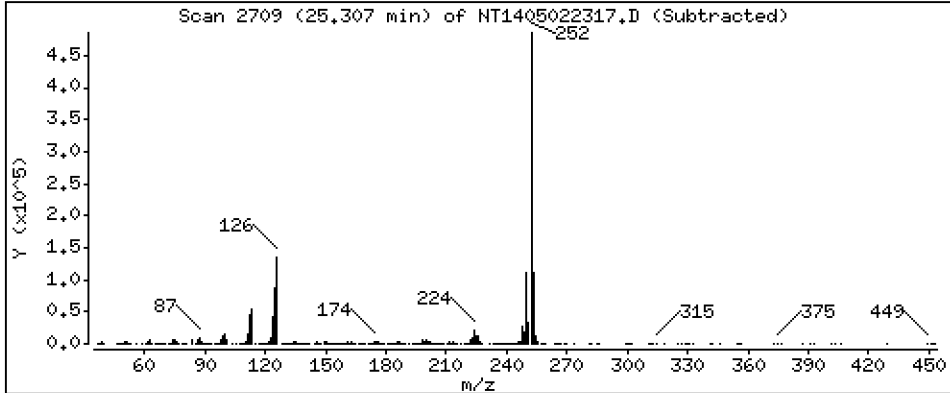
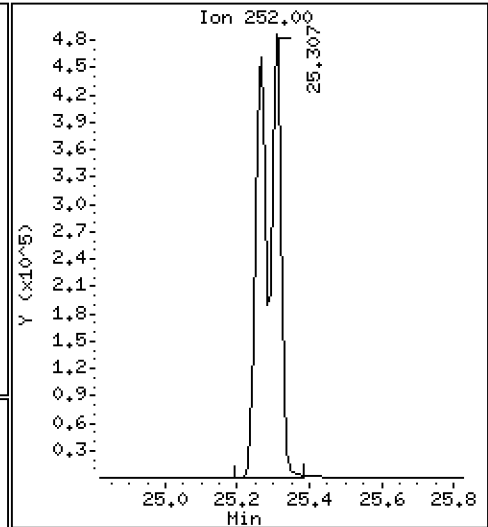
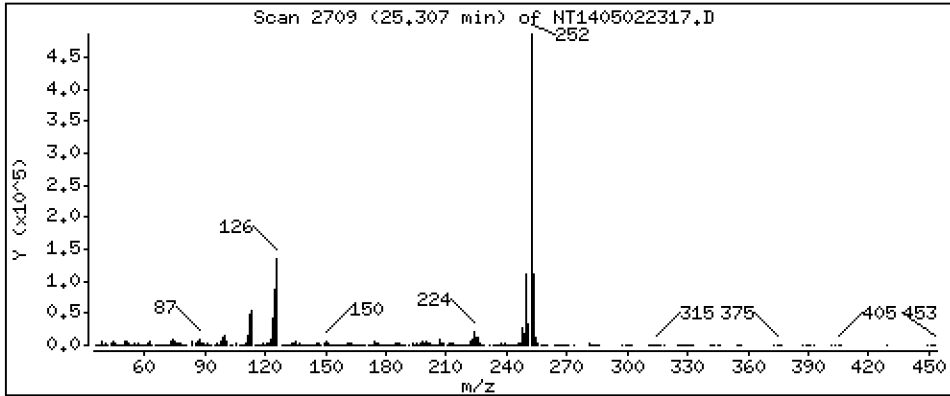
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 11,81 ug/mL



Date : 02-MAY-2023 23:39

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-CCV1

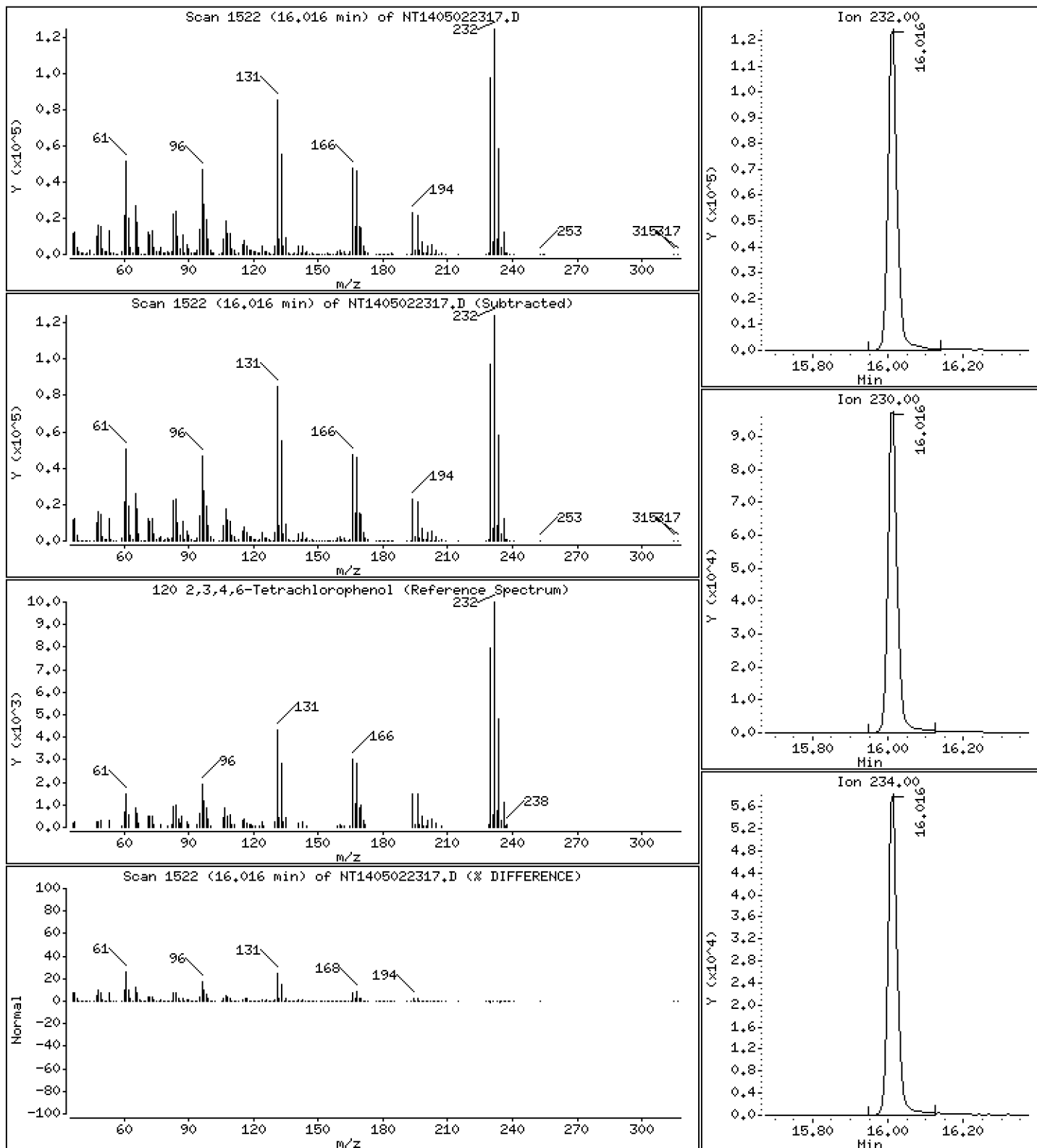
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 5,258 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230502.b\NT1405022317.D  
 Lab Smp Id: SLE0049-CCV1  
 Inj Date : 02-MAY-2023 23:39 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0049-CCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Meth Date : 03-May-2023 12:20 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 2  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.906	6.914	(0.756)	717232	7.74054	7.741
\$ 2 Phenol-d5	99		8.497	8.505	(0.930)	1028828	7.91186	7.912
3 Phenol	94		8.520	8.528	(0.932)	735188	5.04460	5.045
\$ 5 2-Chlorophenol-d4	132		8.775	8.783	(0.960)	745671	8.06087	8.061
4 Bis(2-Chloroethyl)ether	93		8.683	8.690	(0.950)	528243	4.74737	4.747
6 2-Chlorophenol	128		8.806	8.814	(0.964)	591951	5.83149	5.831
7 1,3-Dichlorobenzene	146		9.069	9.077	(0.992)	504871	4.96721	4.967
* 8 1,4-Dichlorobenzene-d4	152		9.139	9.147	(1.000)	256221	4.00000	
9 1,4-Dichlorobenzene	146		9.170	9.178	(1.003)	545187	5.62661	5.627
\$ 10 1,2-Dichlorobenzene-d4	152		9.496	9.504	(1.039)	311443	5.31474	5.315
12 1,2-Dichlorobenzene	146		9.527	9.535	(1.042)	483265	5.01265	5.013
11 Benzyl alcohol	108		9.411	9.419	(1.030)	321652	4.83855	4.839
14 2,2'-oxybis(1-Chloropropane)	121		9.706	9.714	(1.062)	164264	5.04702	5.047 (M)
13 2-Methylphenol	108		9.636	9.644	(1.054)	554359	5.70176	5.702
17 Hexachloroethane	117		10.117	10.125	(1.107)	233829	5.06201	5.062
16 N-Nitroso-di-n-propylamine	70		9.970	9.978	(1.091)	446829	4.56994	4.570
15 4-Methylphenol	108		9.916	9.916	(1.085)	550011	4.96747	4.967
\$ 18 Nitrobenzene-d5	82		10.241	10.249	(0.880)	659254	5.28949	5.289
19 Nitrobenzene	77		10.280	10.288	(0.883)	652209	4.89507	4.895
20 Isophorone	82		10.730	10.738	(0.922)	934225	5.10811	5.108
21 2-Nitrophenol	139		10.909	10.917	(0.937)	288004	4.53312	4.533
22 2,4-Dimethylphenol	107		10.963	10.971	(0.942)	1074576	10.7031	10.70
23 Bis(2-Chloroethoxy)methane	93		11.157	11.165	(0.959)	571451	4.86132	4.861
24 Benzoic acid	105		11.227	11.227	(0.965)	1053893	12.6757	12.68
25 2,4-Dichlorophenol	162		11.374	11.382	(0.977)	769564	9.39619	9.396
26 1,2,4-Trichlorobenzene	180		11.552	11.559	(0.993)	371180	4.95287	4.953
* 27 Naphthalene-d8	136		11.637	11.652	(1.000)	1012688	4.00000	
28 Naphthalene	128		11.683	11.691	(1.004)	1427683	5.24497	5.245
29 4-Chloroaniline	127		11.814	11.822	(1.015)	1248425	10.6005	10.60
30 Hexachlorobutadiene	225		12.038	12.046	(1.035)	175145	5.11190	5.112
31 4-Chloro-3-methylphenol	107		12.781	12.789	(1.098)	992586	11.0631	11.06
32 2-Methylnaphthalene	142		13.083	13.091	(1.124)	997633	5.05966	5.060
33 Hexachlorocyclopentadiene	237		13.547	13.563	(0.887)	317232	8.79947	8.799

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
34 2,4,6-Trichlorophenol	196	13.710	13.726	(0.897)	497262	11.0719	11.07
35 2,4,5-Trichlorophenol	196	13.787	13.803	(0.902)	536297	11.2401	11.24
§ 36 2-Fluorobiphenyl	172	13.872	13.880	(0.908)	924166	5.41718	5.417
37 2-Chloronaphthalene	162	14.089	14.097	(0.922)	814907	5.00386	5.004
38 2-Nitroaniline	65	14.352	14.360	(0.939)	882606	10.1456	10.15
39 Dimethylphthalate	163	14.778	14.786	(0.967)	823057	4.89928	4.899
40 Acenaphthylene	152	14.964	14.972	(0.979)	1363556	5.24623	5.246
41 2,6-Dinitrotoluene	165	14.925	14.933	(0.977)	392890	10.3157	10.32
* 42 Acenaphthene-d10	164	15.281	15.289	(1.000)	489799	4.00000	
43 3-Nitroaniline	138	15.219	15.227	(0.996)	486497	10.1663	10.17
44 Acenaphthene	153	15.343	15.351	(1.004)	823075	5.28633	5.286
45 2,4-Dinitrophenol	184	15.428	15.436	(1.010)	295164	12.8206	12.82
46 Dibenzofuran	168	15.675	15.683	(1.026)	1117201	5.02622	5.026
47 4-Nitrophenol	109	15.544	15.552	(1.017)	249206	8.94927	8.949
48 2,4-Dinitrotoluene	165	15.737	15.745	(1.030)	540366	10.4787	10.48
50 Diethylphthalate	149	16.240	16.247	(1.063)	853745	4.69502	4.695
49 Fluorene	166	16.386	16.402	(1.072)	927421	4.71508	4.715
51 4-Chlorophenyl-phenylether	204	16.371	16.386	(1.071)	407815	5.01249	5.012
52 4-Nitroaniline	138	16.494	16.502	(1.079)	449266	10.6167	10.62
53 4,6-Dinitro-2-methylphenol	198	16.587	16.595	(0.905)	473633	18.5537	18.55
54 N-Nitrosodiphenylamine	169	16.633	16.641	(0.907)	561602	4.84450	4.844
§ 55 2,4,6-Tribromophenol	330	16.926	16.942	(1.108)	123909	7.69515	7.695
56 4-Bromophenyl-phenylether	248	17.381	17.389	(0.948)	190855	5.00524	5.005
57 Hexachlorobenzene	284	17.706	17.714	(0.966)	188163	4.87960	4.880
58 Pentachlorophenol	266	18.062	18.077	(0.985)	187690	7.65282	7.653
* 59 Phenanthrene-d10	188	18.333	18.341	(1.000)	820888	4.00000	
60 Phenanthrene	178	18.379	18.387	(1.003)	1214597	5.23304	5.233
61 Anthracene	178	18.472	18.480	(1.008)	1220746	5.48382	5.484
62 Carbazole	167	18.805	18.812	(1.026)	1069689	5.19282	5.193
63 Di-n-butylphthalate	149	19.586	19.594	(1.068)	1571552	5.00453	5.005
64 Fluoranthene	202	20.762	20.770	(0.888)	1221021	5.30855	5.309
65 Pyrene	202	21.188	21.195	(0.906)	1236253	5.20458	5.205
§ 66 Terphenyl-d14	244	21.466	21.474	(0.918)	780225	4.85478	4.855
67 Butylbenzylphthalate	149	22.380	22.388	(0.957)	601342	4.29630	4.296
68 Benzo(a)anthracene	228	23.348	23.356	(0.999)	965711	5.42936	5.429
* 69 Chrysene-d12	240	23.379	23.387	(1.000)	498285	4.00000	
70 3,3'-Dichlorobenzidine	252	23.301	23.309	(0.997)	834911	14.6461	14.65
71 Chrysene	228	23.425	23.433	(1.002)	900644	5.42901	5.429
72 bis(2-Ethylhexyl)phthalate	149	24.401	24.409	(1.000)	1519747	4.74640	4.746
* 134 Di-n-octylphthalate-d4	153	24.393	24.401	(1.000)	1199427	4.00000	
73 Di-n-octylphthalate	149	24.401	24.409	(1.000)	1519747	4.74640	4.746
74 Benzo(b)fluoranthene	252	25.268	25.276	(0.970)	899200	5.54696	5.547
75 Benzo(k)fluoranthene	252	25.306	25.322	(0.971)	1002163	6.30062	6.301
76 Benzo(a)pyrene	252	25.941	25.949	(0.996)	792354	5.78388	5.784
* 77 Perylene-d12	264	26.058	26.073	(1.000)	486175	4.00000	
78 Indeno(1,2,3-cd)pyrene	276	28.805	28.820	(1.105)	636325	3.35904	3.359
79 Dibenzo(a,h)anthracene	278	28.812	28.836	(1.106)	541656	3.49552	3.496
80 Benzo(g,h,i)perylene	276	29.620	29.644	(1.137)	425095	2.65074	2.651
90 N-Nitrosodimethylamine	74	4.805	4.813	(0.526)	720124	9.34750	9.348
91 Aniline	93	8.598	8.605	(0.941)	1283252	9.70288	9.703
93 Benzidine	184	20.994	21.010	(0.898)	587493	6.47227	6.472
103 Pyridine	79	4.820	4.828	(0.527)	1080183	4.73668	4.737
105 1-methylnaphthalene	142	13.308	13.315	(1.144)	914353	4.80217	4.802
111 Azobenzene (1,2-DP-Hydrazine)	77	16.702	16.710	(1.093)	1327826	4.73190	4.732

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.306	25.322	(0.971)	1812655	11.8113	11.81
120 2,3,4,6-Tetrachlorophenol	232	16.015	16.023	(1.048)	227201	5.25759	5.258

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 02-MAY-2023  
 Lab File ID: NT1405022317.D Calibration Time: 14:28  
 Lab Smp Id: SLE0049-CCV1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	246356	123178	492712	256221	4.00
27 Naphthalene-d8	988717	494359	1977434	1012688	2.42
42 Acenaphthene-d10	475022	237511	950044	489799	3.11
59 Phenanthrene-d10	791082	395541	1582164	820888	3.77
69 Chrysene-d12	470889	235445	941778	498285	5.82
134 Di-n-octylphthala	1158641	579321	2317282	1199427	3.52
77 Perylene-d12	463245	231623	926490	486175	4.95

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.15	8.65	9.65	9.14	-0.09
27 Naphthalene-d8	11.65	11.15	12.15	11.64	-0.13
42 Acenaphthene-d10	15.29	14.79	15.79	15.28	-0.05
59 Phenanthrene-d10	18.34	17.84	18.84	18.33	-0.04
69 Chrysene-d12	23.39	22.89	23.89	23.38	-0.03
134 Di-n-octylphthala	24.40	23.90	24.90	24.39	-0.03
77 Perylene-d12	26.07	25.57	26.57	26.06	-0.06

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405022317.D

Lab ID: SLE0049-CCV1  
nt14.i, ABN.m, 02-MAY-2023 23:39

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

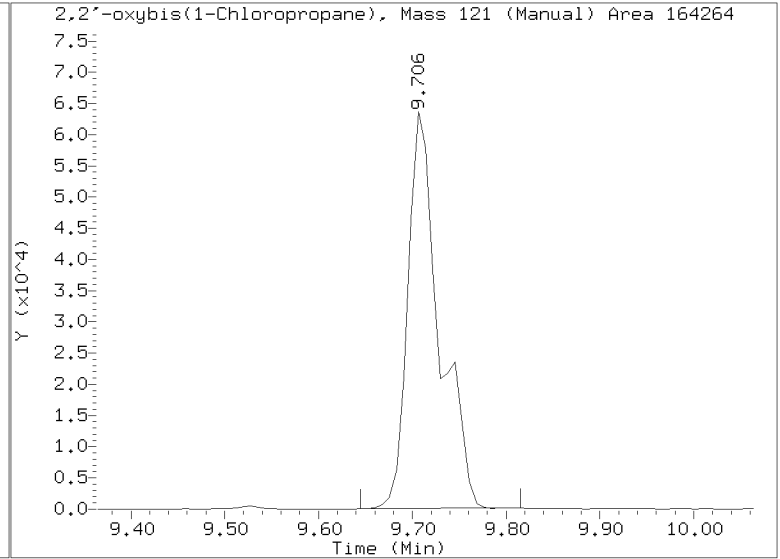
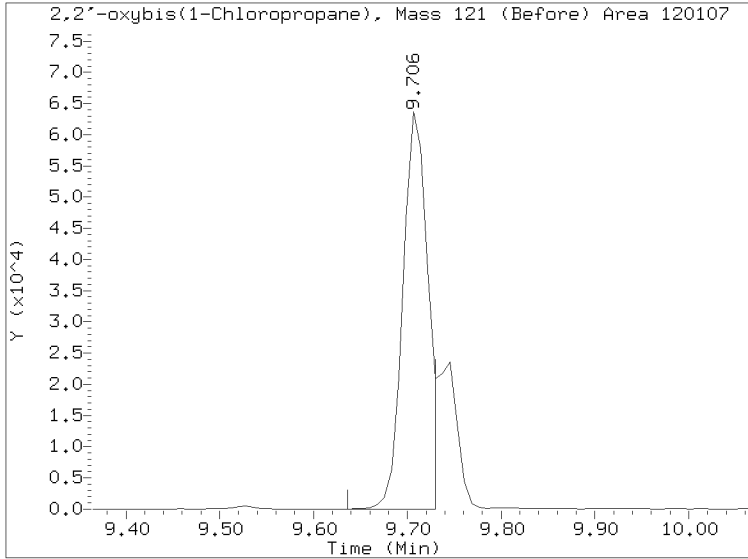
RRT check based on Ccal File: NT1405022302.D

On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230502.b/NT1405022317.D  
Injection Date: 02-MAY-2023 23:39  
Lab ID:SLE0049-CCV1 Client ID:  
Report Date: 05/03/2023 12:22



**APPROVED**

*By Deenay Dunmore at 12:24 pm, May 03, 2023*





**LOW-CONCENTRATION  
CONTINUING CALIBRATION CHECK  
EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: NT14

Calibration: GD00062

Lab File ID: NT1405022303.D

Calibration Date: 04/21/2023

Sequence: SLE0049

Injection Date: 05/02/23

Lab Sample ID: SLE0049-LCV1

Injection Time: 15:05

Sequence Name: ABN 0.5

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Phenol	A	0.50000	0.4	2.2751850	2.0185490		-11.3	+/-50
4-Methylphenol	A	0.50000	0.4	1.7285470	1.4505500		-16.1	+/-50
Naphthalene	A	0.50000	0.5	1.0751590	1.0833150		0.8	+/-50
2-Methylnaphthalene	A	0.50000	0.5	0.7788139	0.7288428		-6.4	+/-50
Acenaphthylene	A	0.50000	0.6	2.1225980	2.4016320		13.1	+/-50
Dimethylphthalate	A	0.50000	0.5	1.3719560	1.3713420		-0.04	+/-50
Acenaphthene	A	0.50000	0.5	1.2715320	1.2800770		0.7	+/-50
Dibenzofuran	A	0.50000	0.5	1.8152320	1.7568980		-3.2	+/-50
Fluorene	A	0.50000	0.5	1.6063130	1.4689370		-8.6	+/-50
Phenanthrene	A	0.50000	0.5	1.1309770	1.1330460		0.2	+/-50
Anthracene	A	0.50000	0.5	1.0847210	1.0734870		-1.0	+/-50
Fluoranthene	A	0.50000	0.5	1.8464150	1.8652320		1.0	+/-50
Pyrene	A	0.50000	0.5	1.9067960	1.9159640		0.5	+/-50
Butylbenzylphthalate	A	0.50000	0.4	0.9308079	0.9700887		-21.0	+/-50
Benzo(a)anthracene	A	0.50000	0.5	1.4278450	1.4724420		3.1	+/-50
Chrysene	A	0.50000	0.5	1.3317250	1.3519500		1.5	+/-50
bis(2-Ethylhexyl)phthalate	A	0.50000	0.5	1.0678070	1.0111930		-5.3	+/-50
Benzo(a)fluoranthene, Total	A	1.00000	1.0	1.2626500	1.3084500		3.6	+/-50
Benzo(a)pyrene	A	0.50000	0.5	1.1271120	1.1917410		5.7	+/-50
Indeno(1,2,3-cd)pyrene	A	0.50000	0.4	1.3992660	1.1561640		-25.8	+/-50
Dibenzo(a,h)anthracene	A	0.50000	0.4	1.1627800	0.9835398		-22.9	+/-50
Benzo(g,h,i)perylene	A	0.50000	0.3	1.1488320	0.8998663		-31.8	+/-50
2-Fluorophenol	A	0.75000	0.709	1.4465510	1.3668950		-5.5	+/-50
Phenol-d5	A	0.75000	0.672	2.0300630	1.8199000		-10.4	+/-50
2-Chlorophenol-d4	A	0.75000	0.716	1.4441450	1.3778960		-4.6	+/-50
1,2-Dichlorobenzene-d4	A	0.50000	0.512	0.9148326	0.9366150		2.4	+/-50
Nitrobenzene-d5	A	0.50000	0.474	0.4922929	0.4667450		-5.2	+/-50
2-Fluorobiphenyl	A	0.50000	0.522	1.3932180	1.4536170		4.3	+/-50
2,4,6-Tribromophenol	A	0.75000	0.492	0.1113678	0.0863263		-34.4	+/-50
p-Terphenyl-d14	A	0.50000	0.436	1.1921270	1.2784780		-12.9	+/-50

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14,1\20230502,1\NT1405022303.D

Date: 02-May-2023 15:05

Client ID:

Sample Info: SLE0049-LCW1

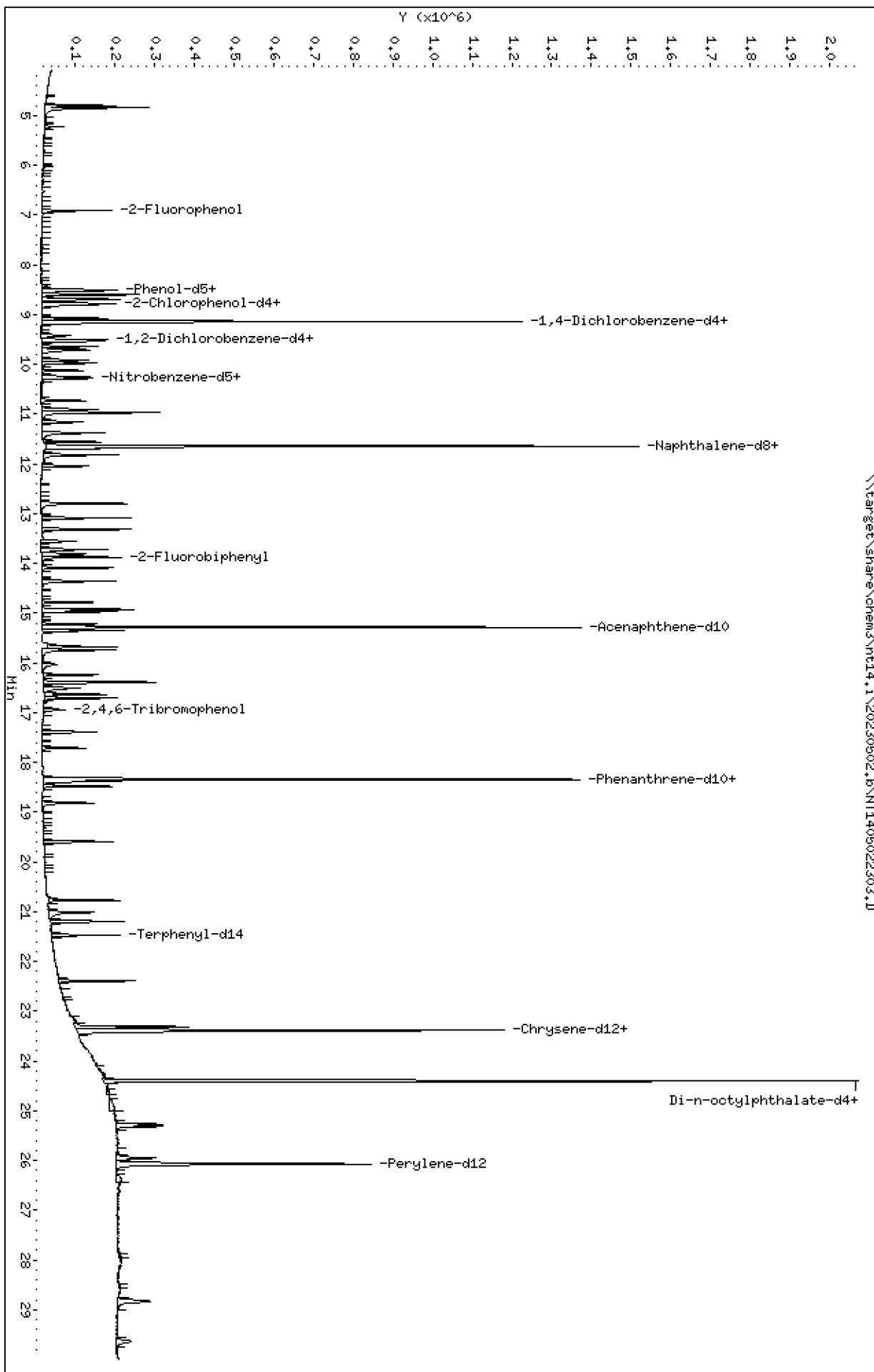
Column phase: ZB-5msi

Instrument: nt14,1

Operator: USD

Column diameter: 0.25

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Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

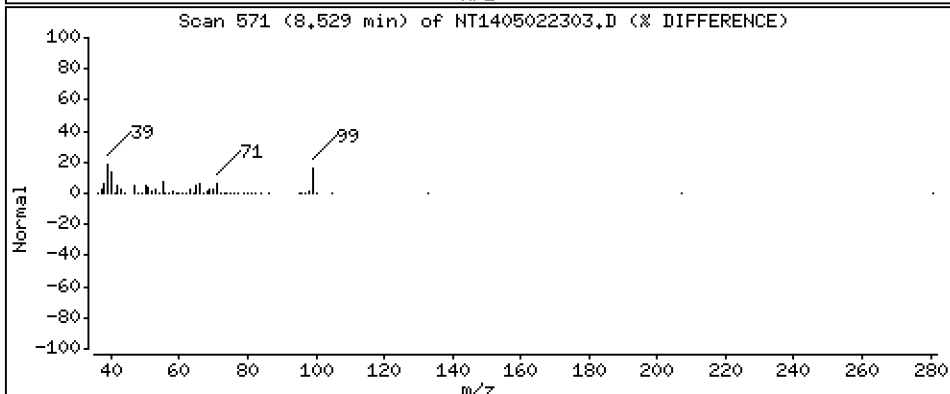
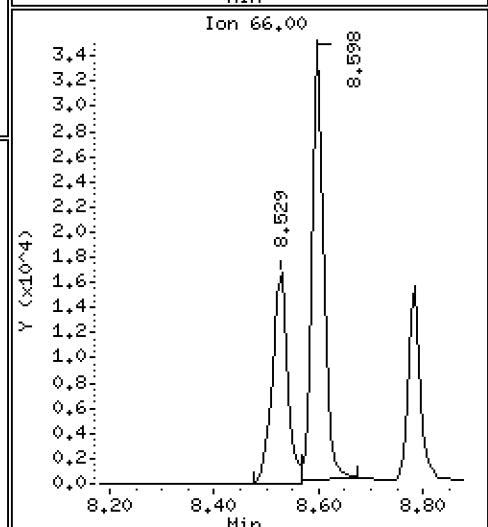
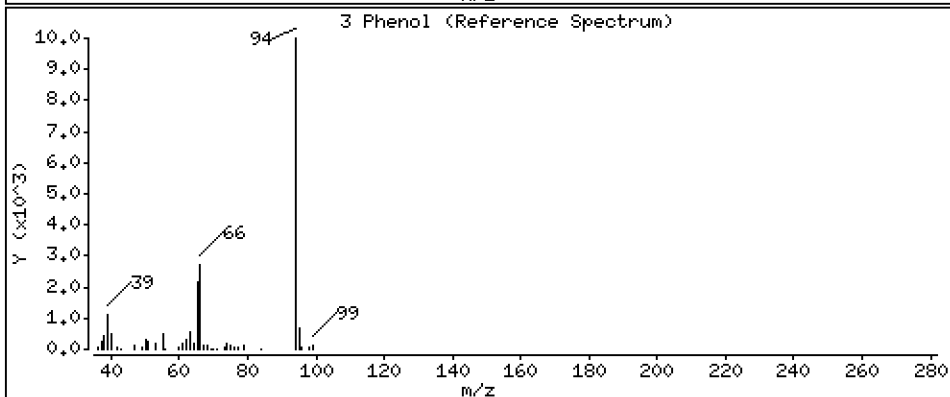
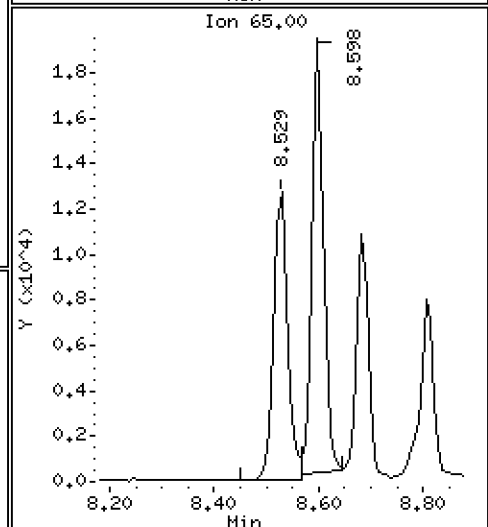
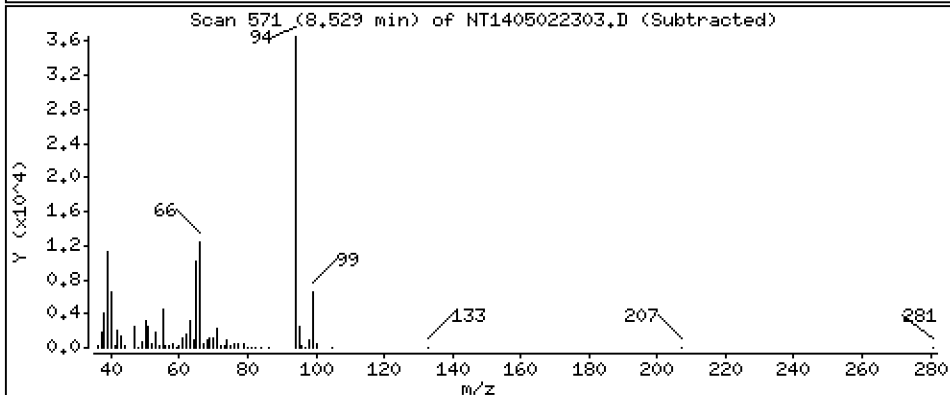
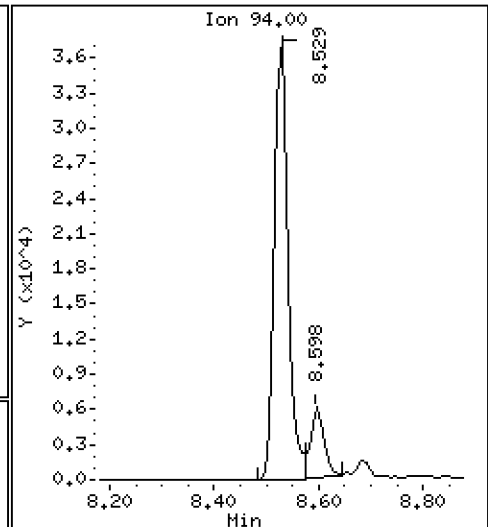
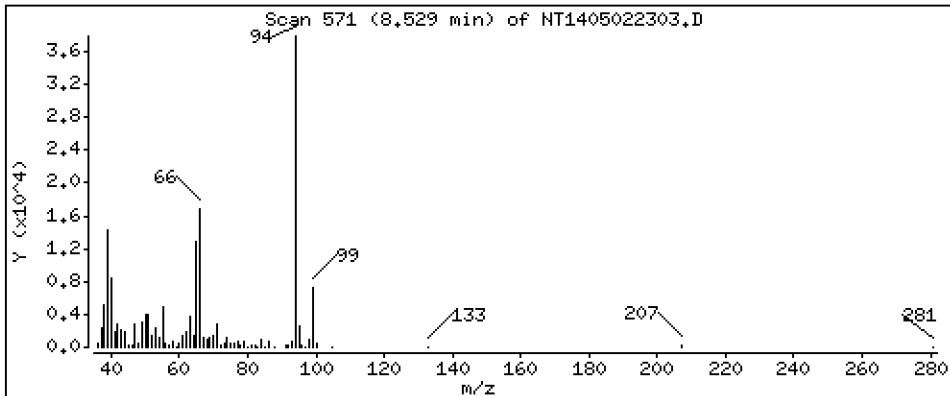
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,4436 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

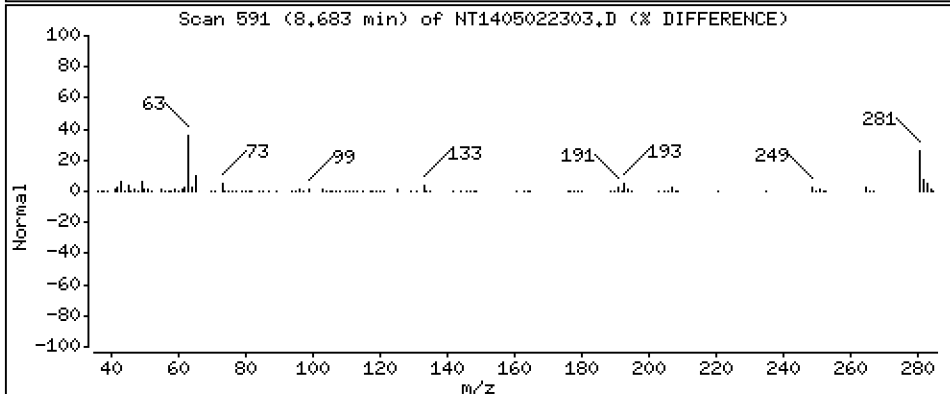
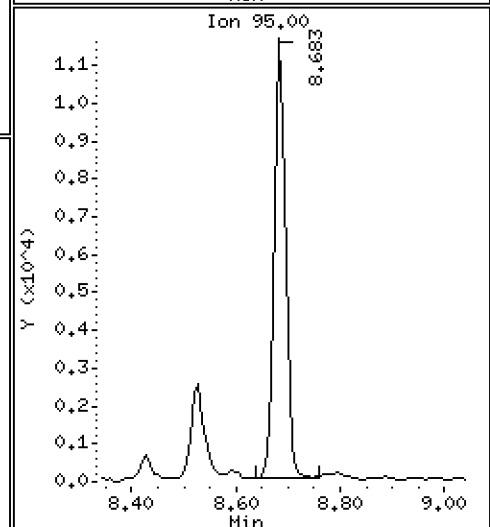
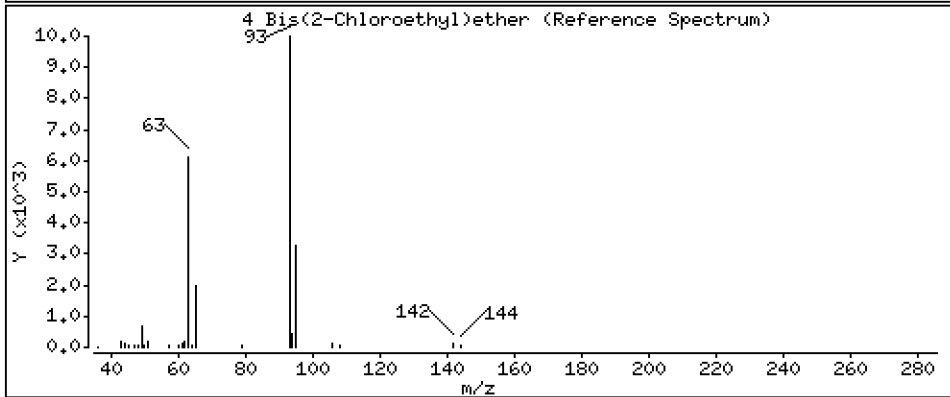
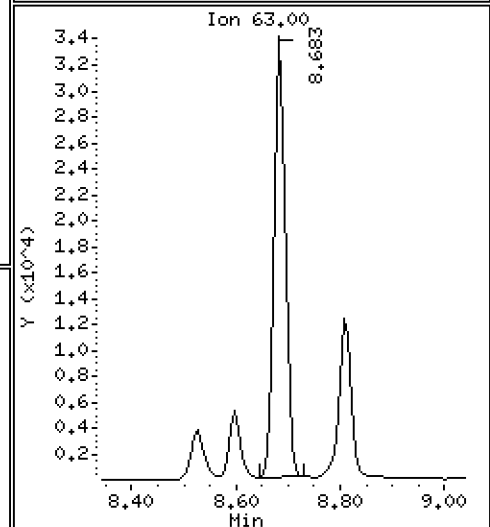
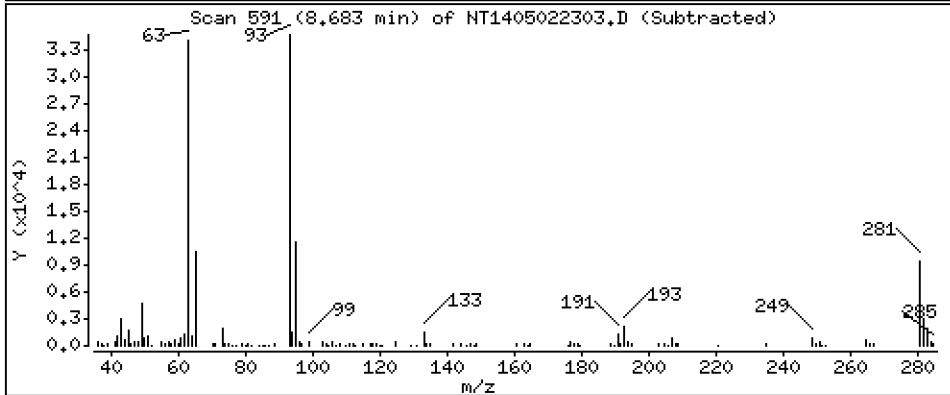
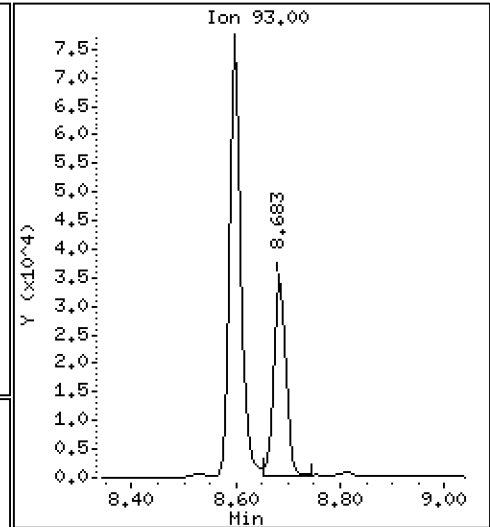
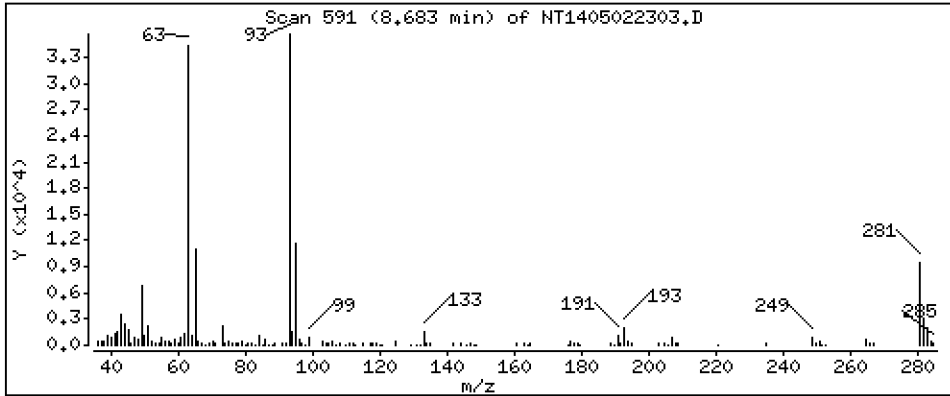
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

4 Bis(2-Chloroethyl)ether

Concentration: 0,4830 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

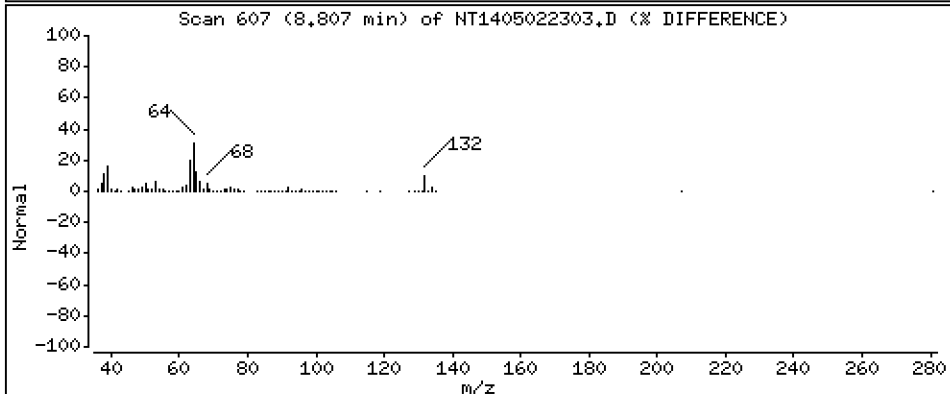
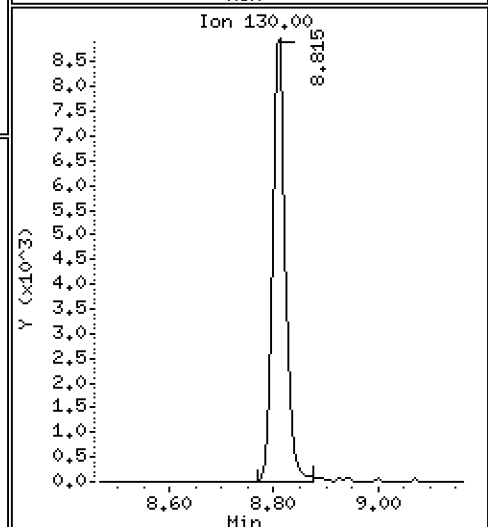
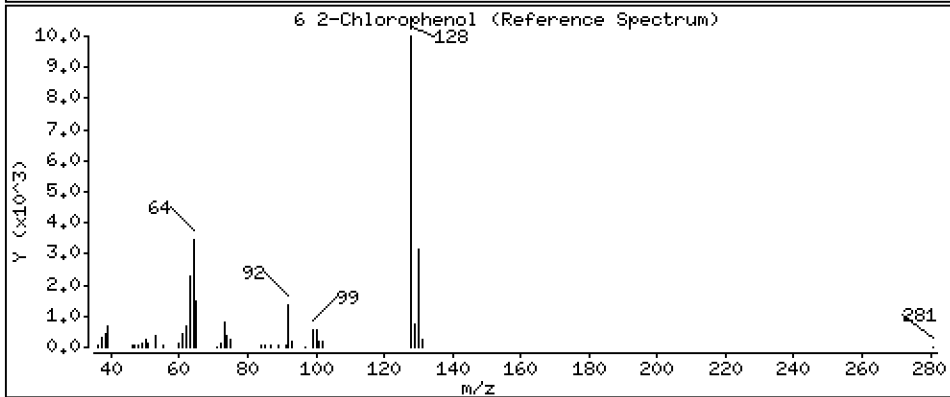
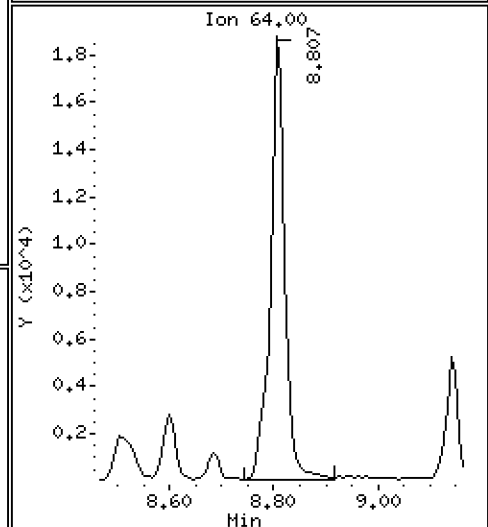
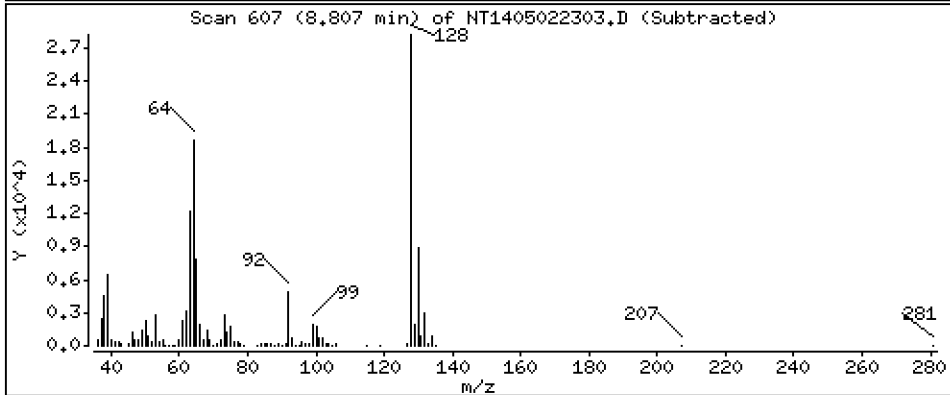
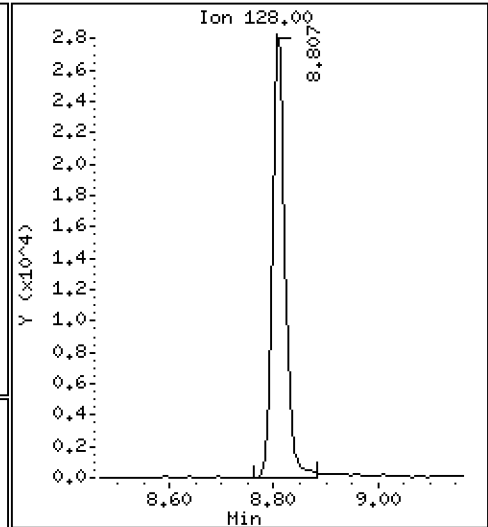
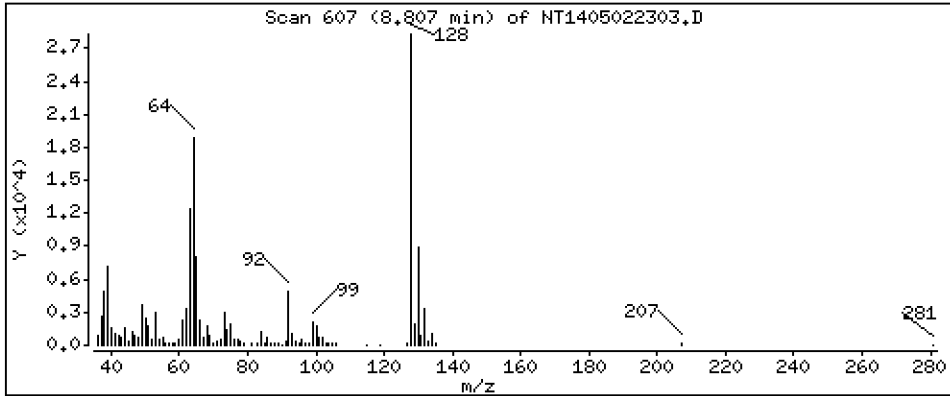
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

6 2-Chlorophenol

Concentration: 0,4681 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

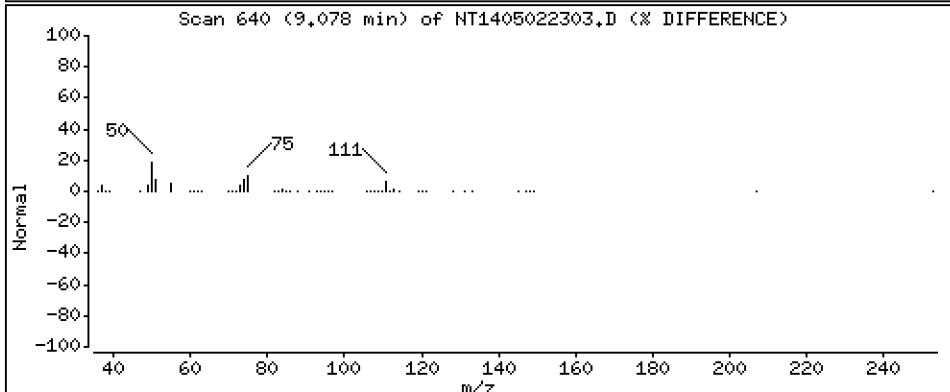
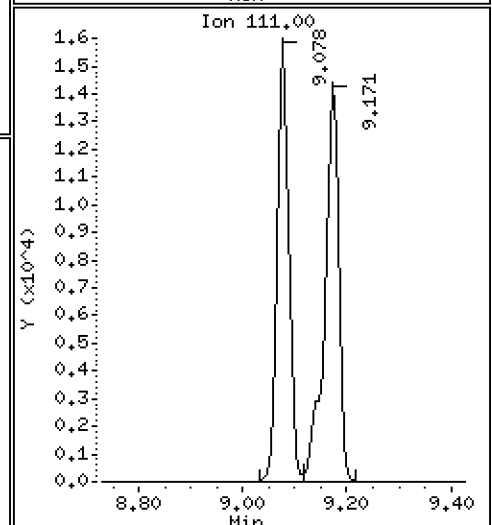
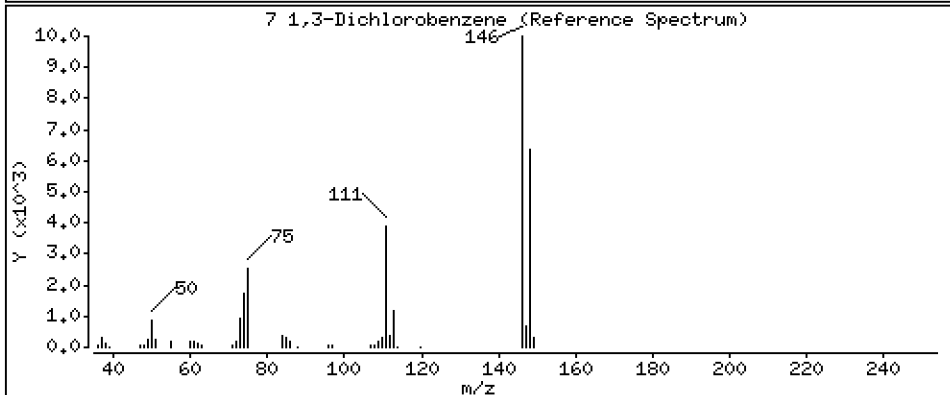
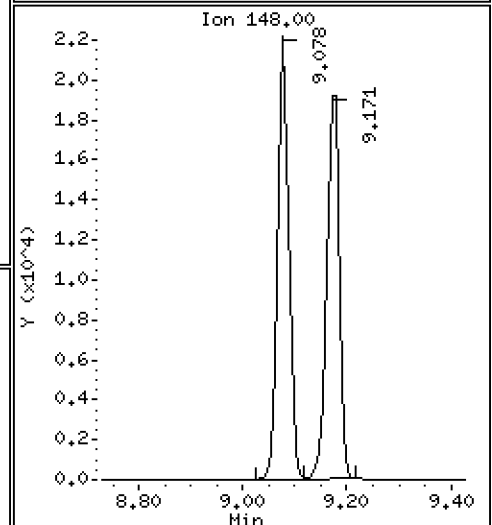
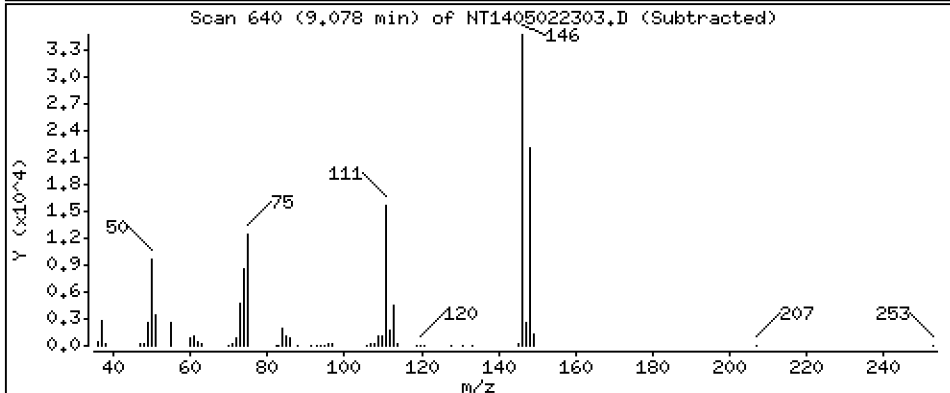
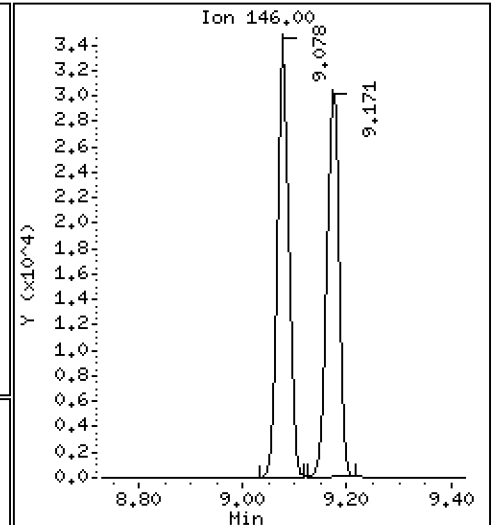
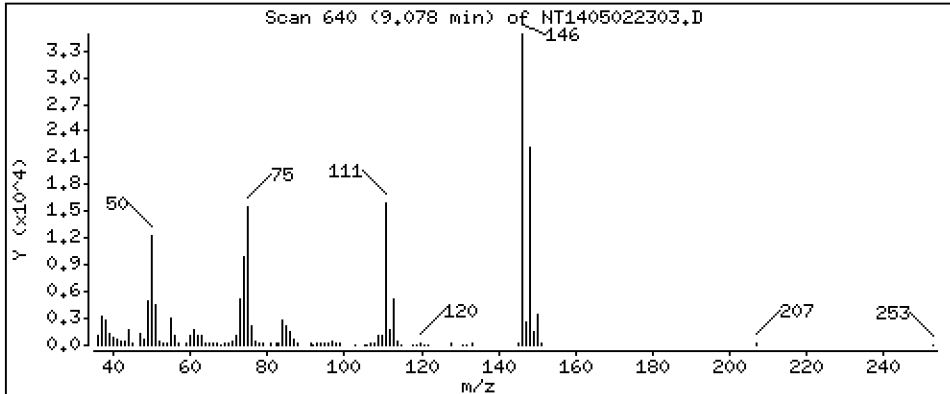
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,4973 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

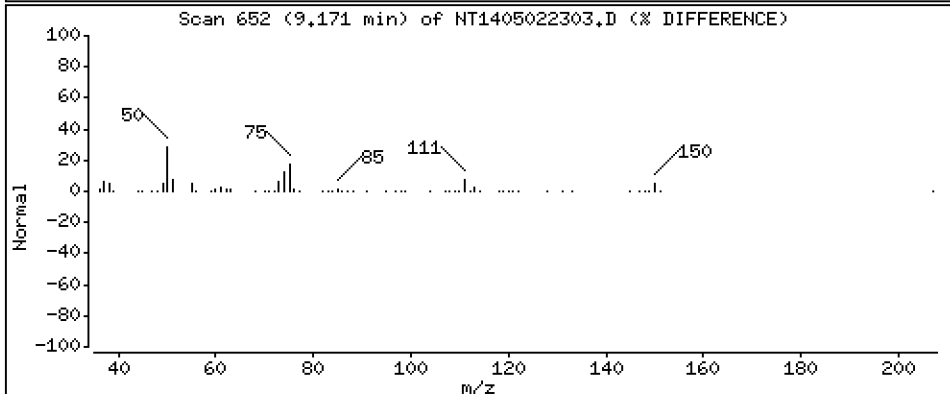
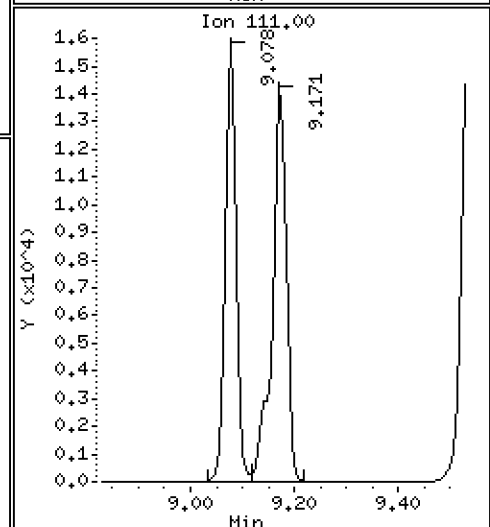
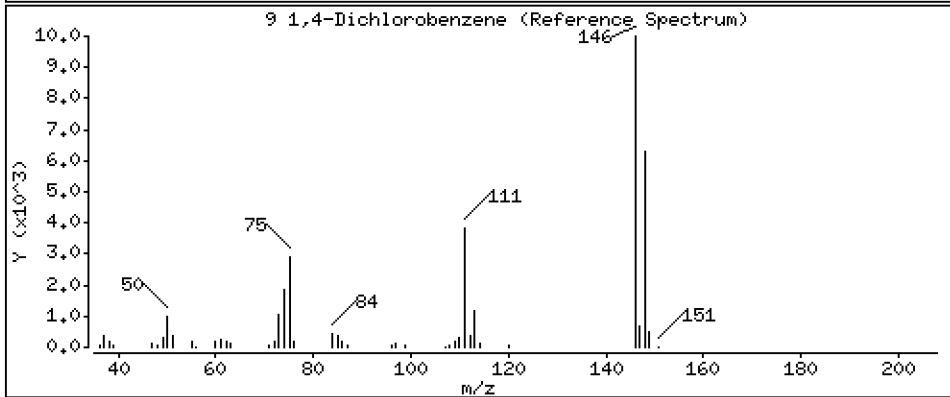
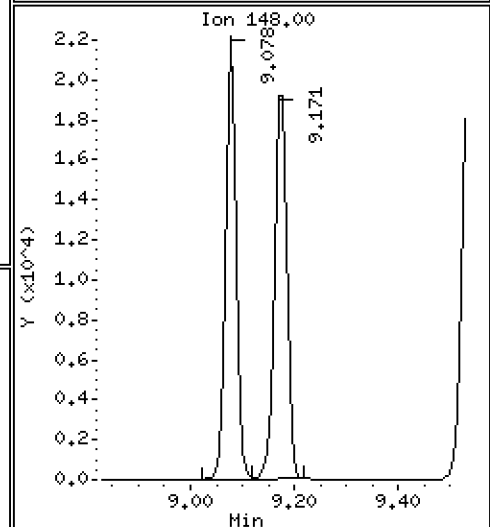
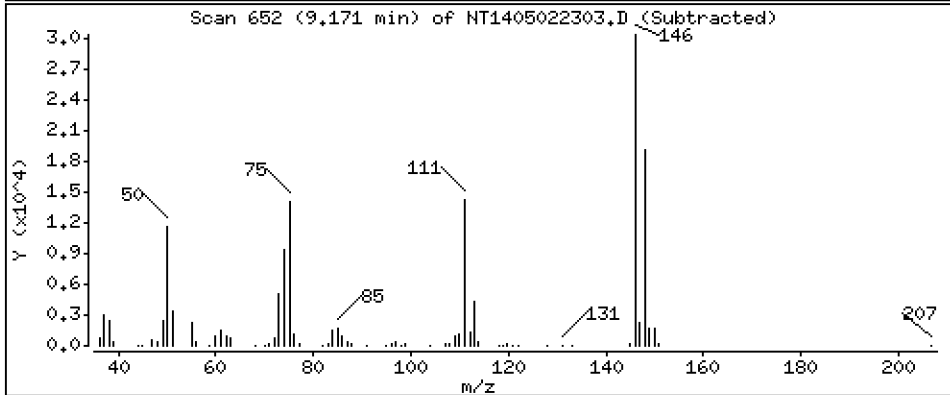
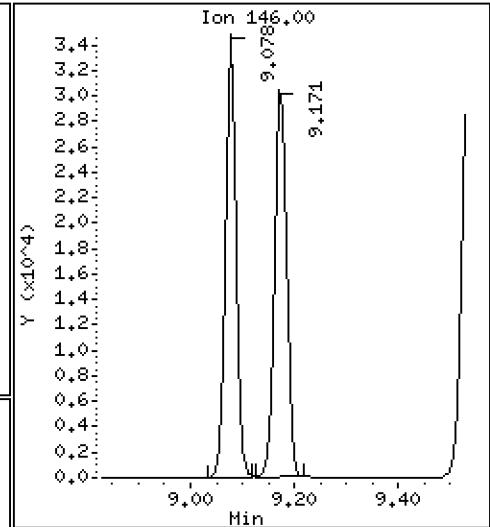
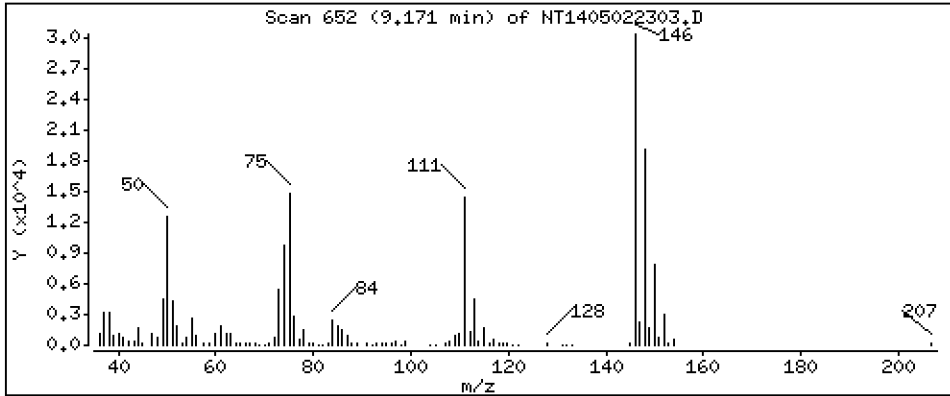
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 0.4830 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

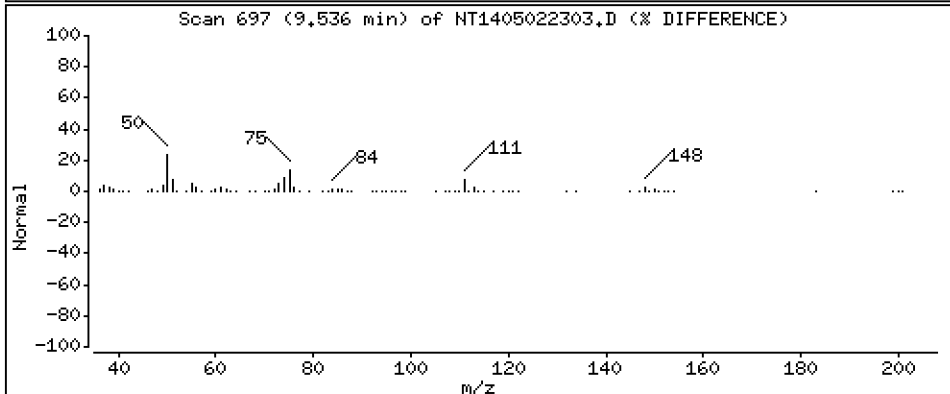
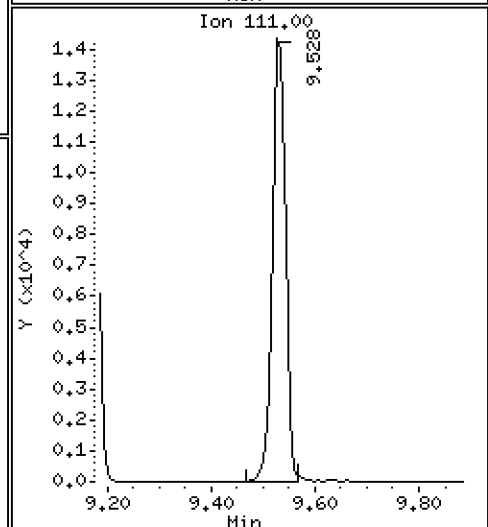
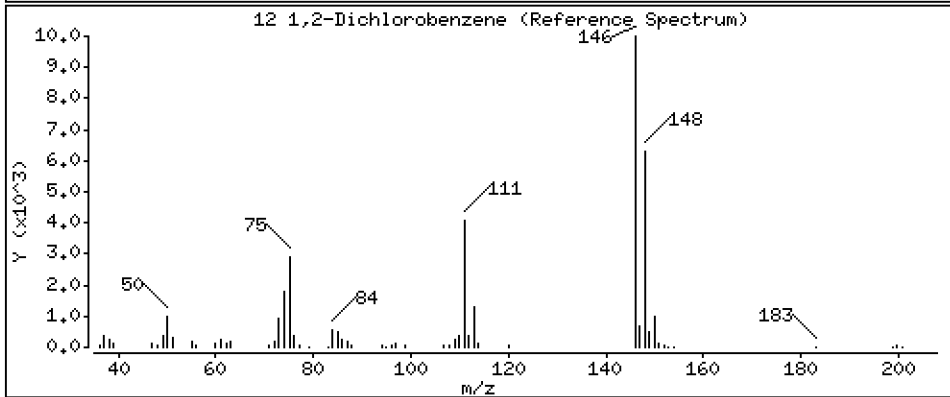
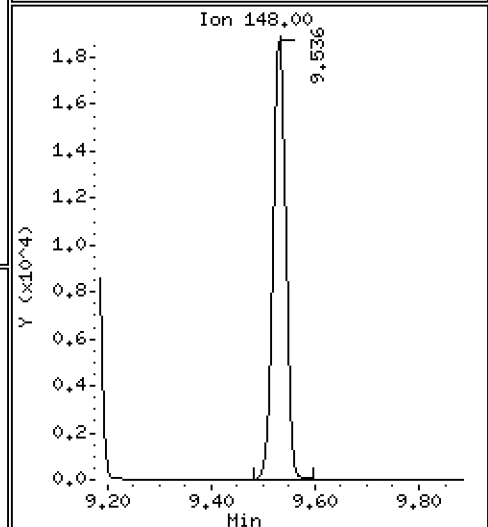
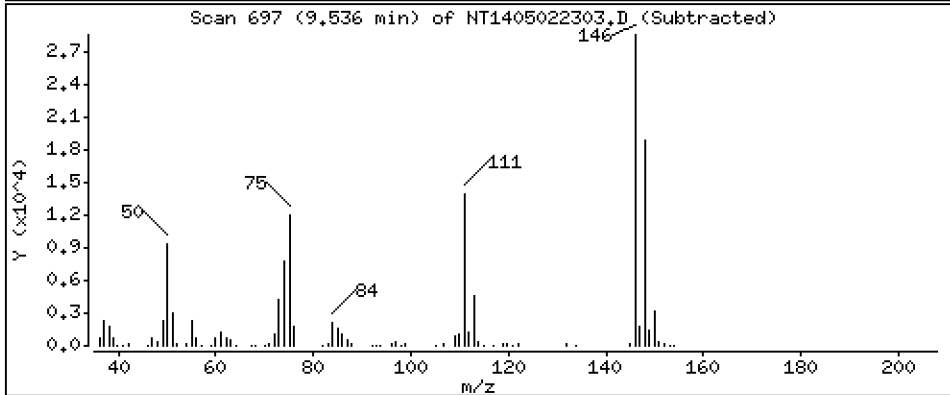
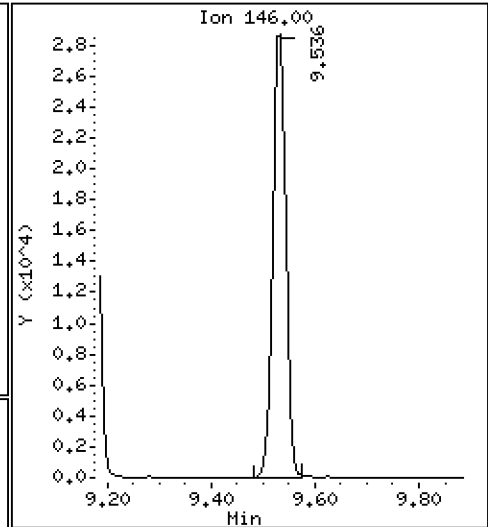
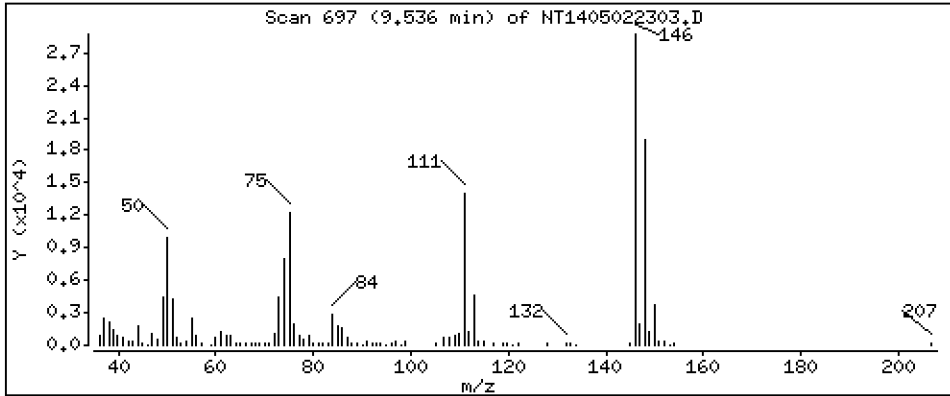
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 0.4932 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

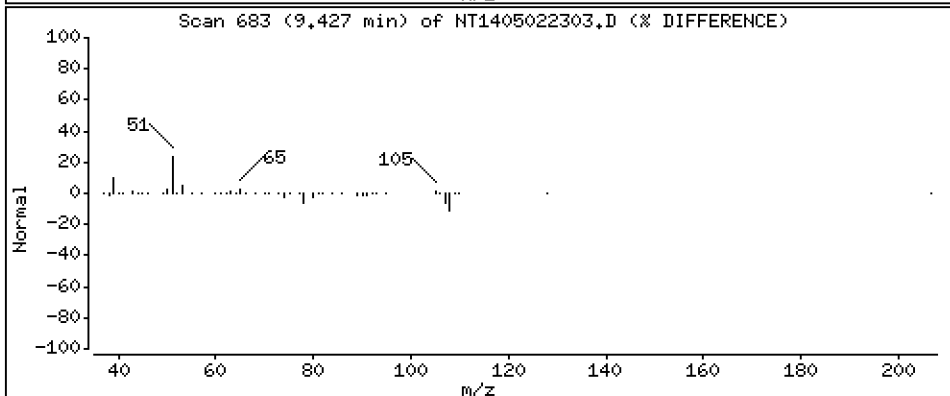
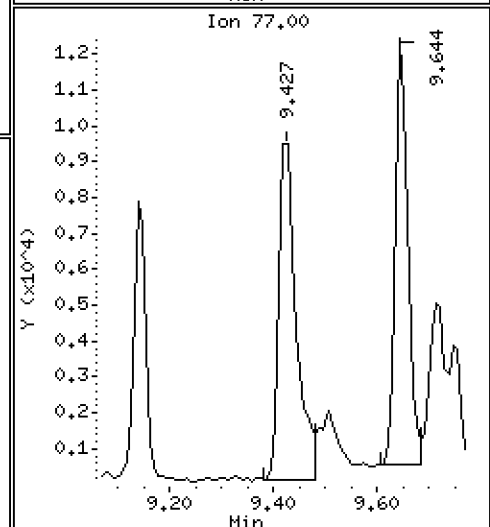
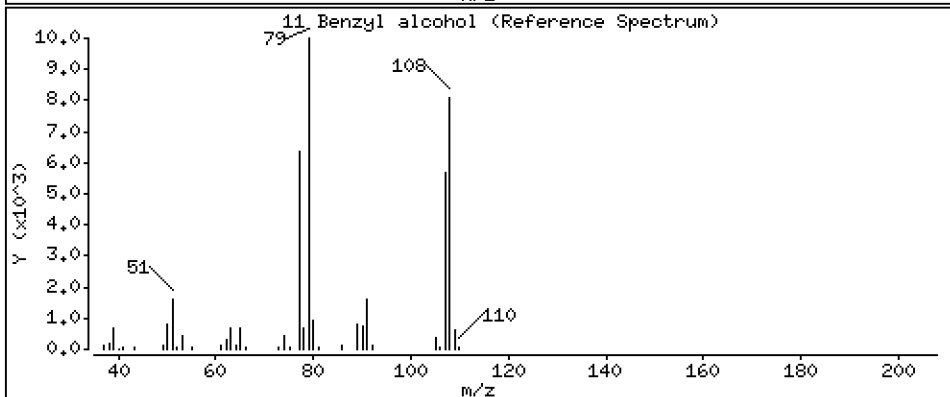
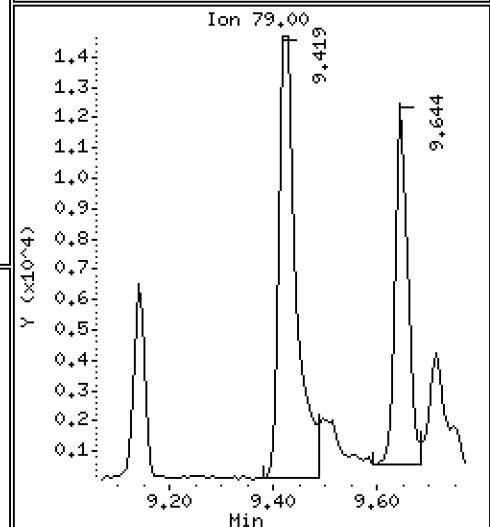
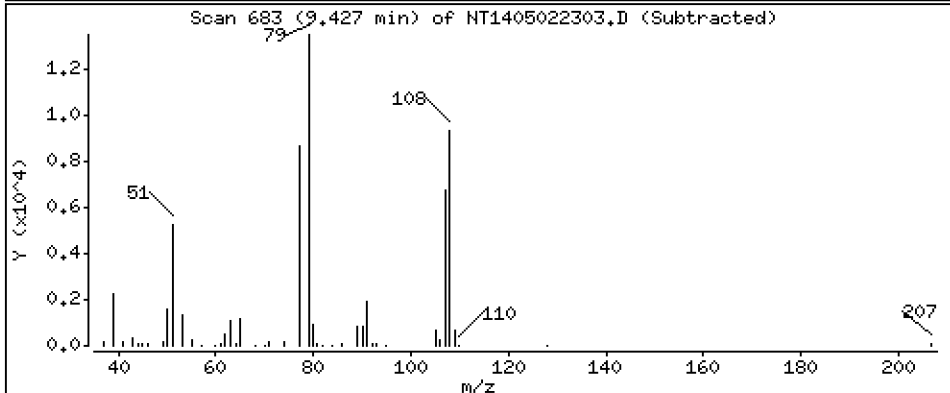
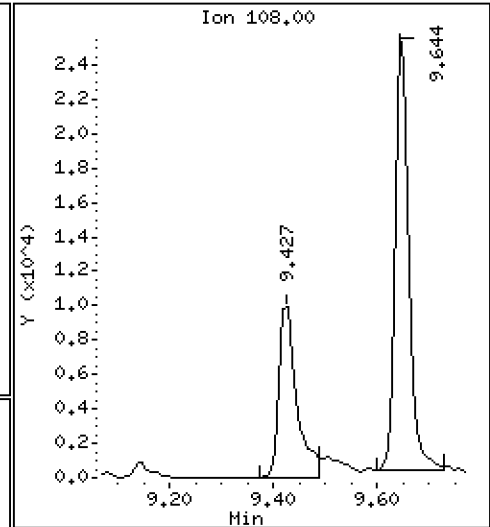
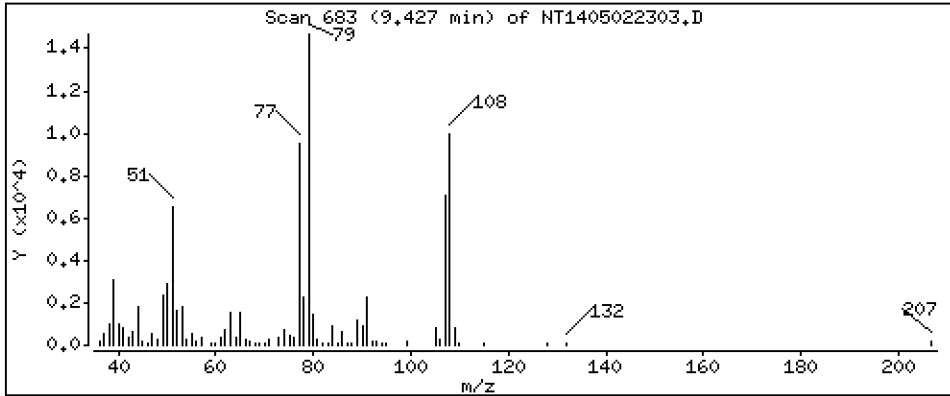
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

11 Benzyl alcohol

Concentration: 0,3457 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

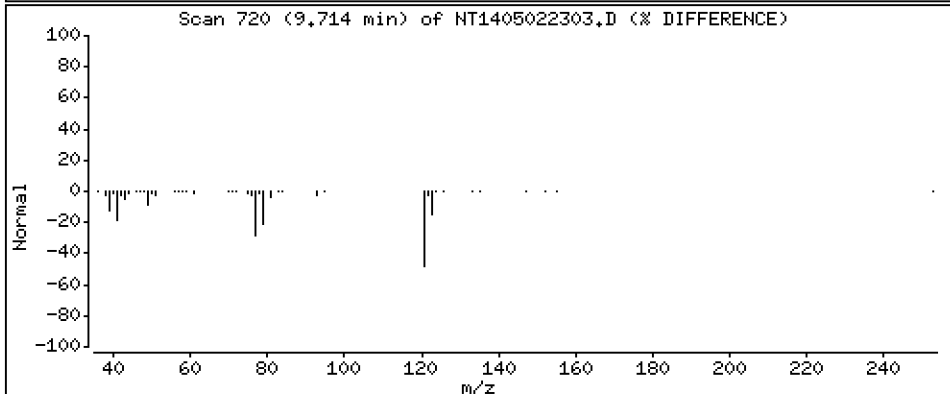
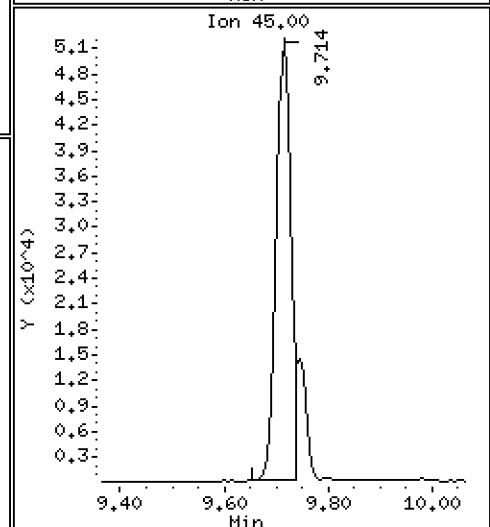
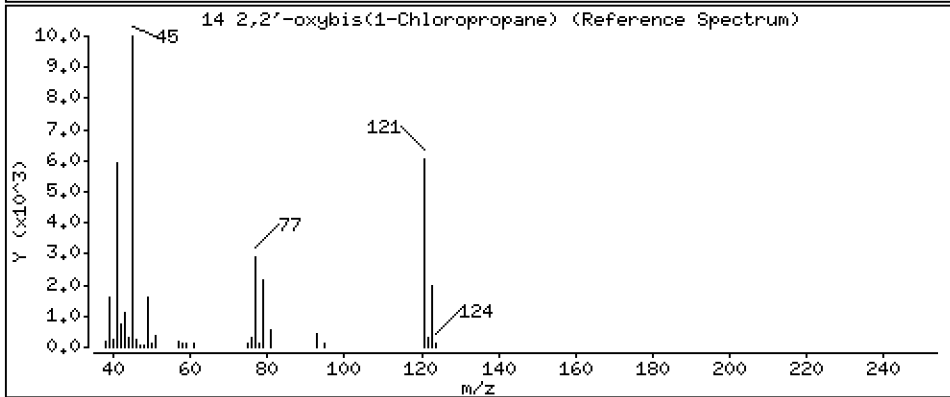
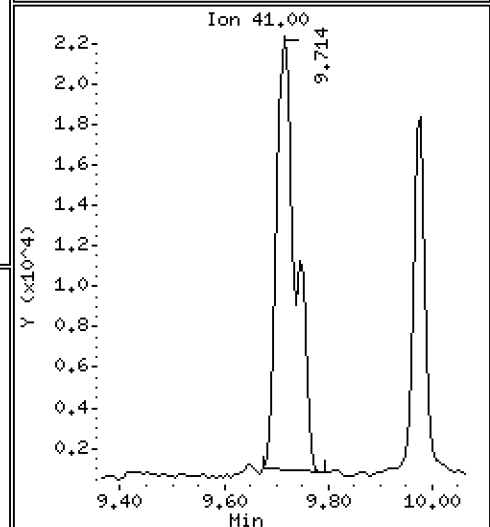
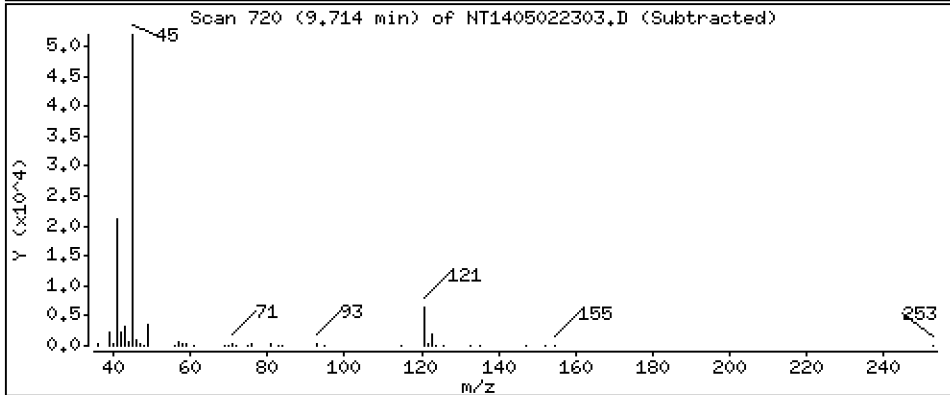
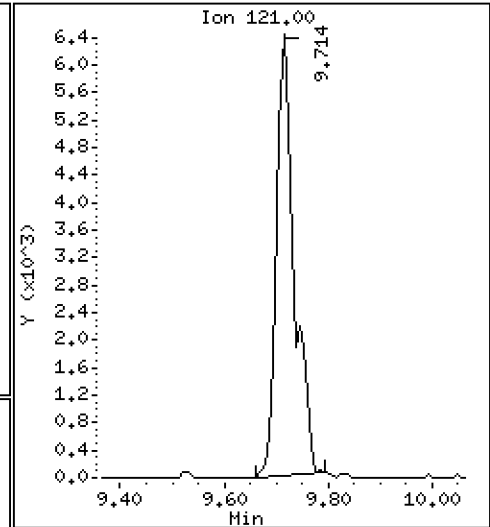
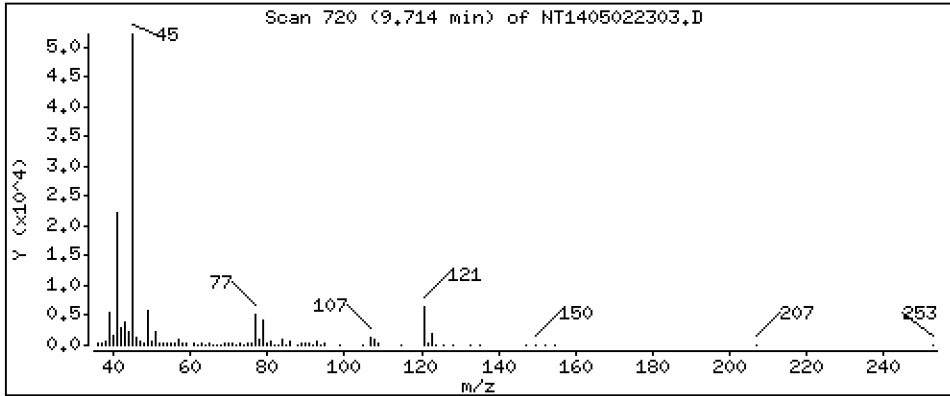
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

14 2,2'-oxybis(1-Chloropropane)

Concentration: 0,4483 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

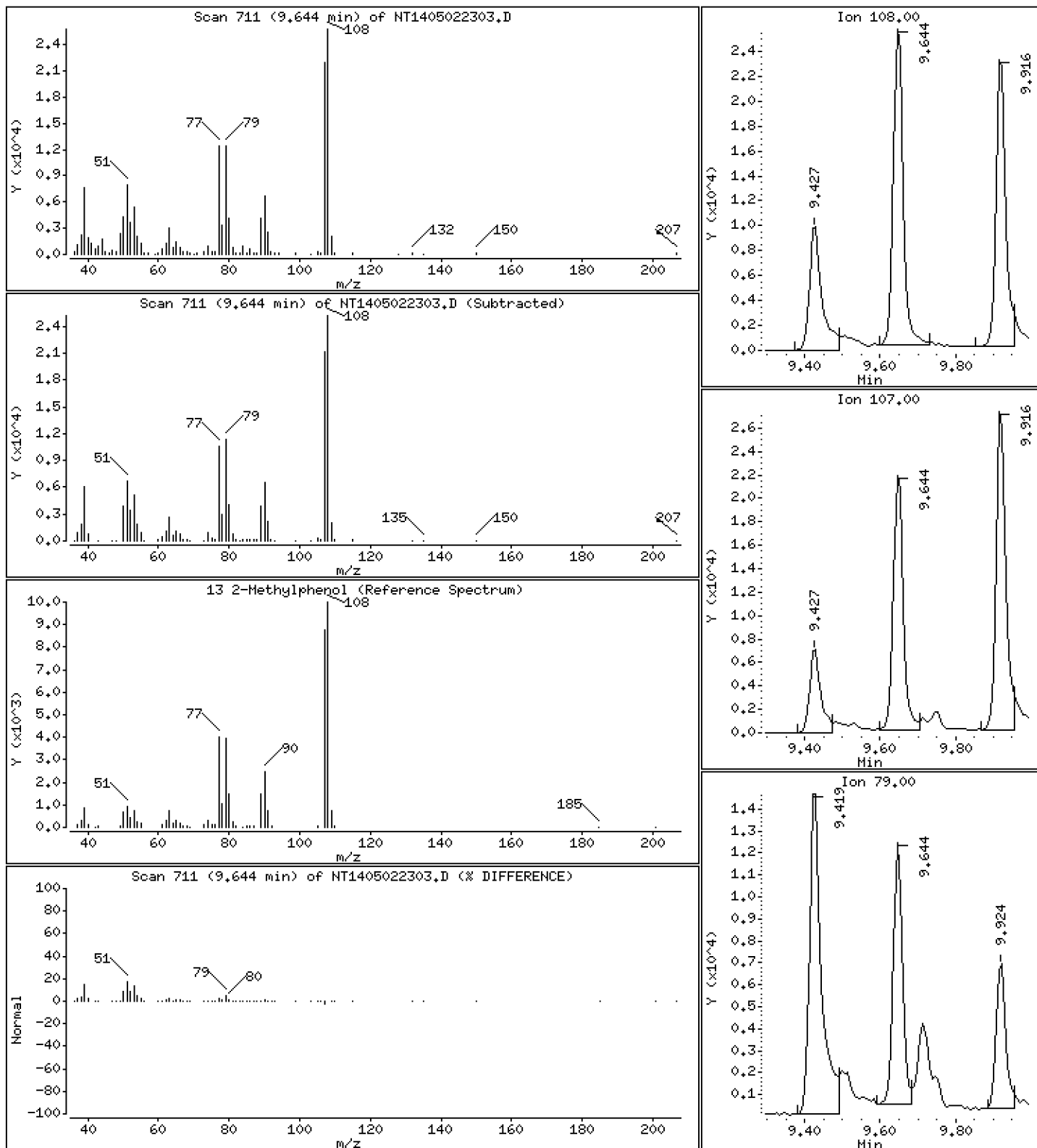
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 0.4501 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

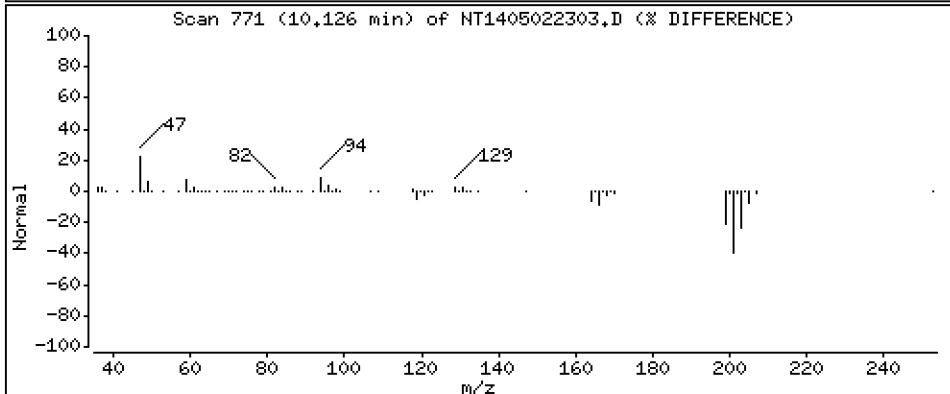
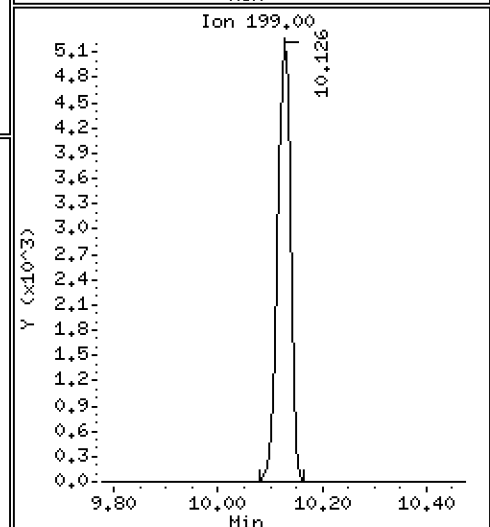
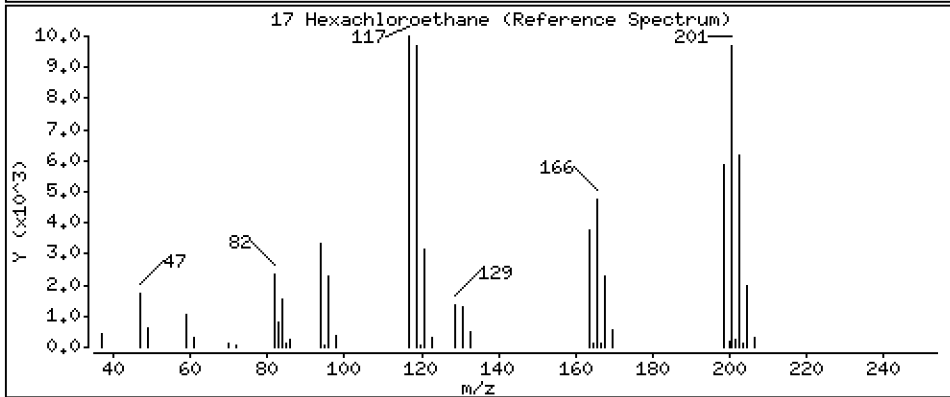
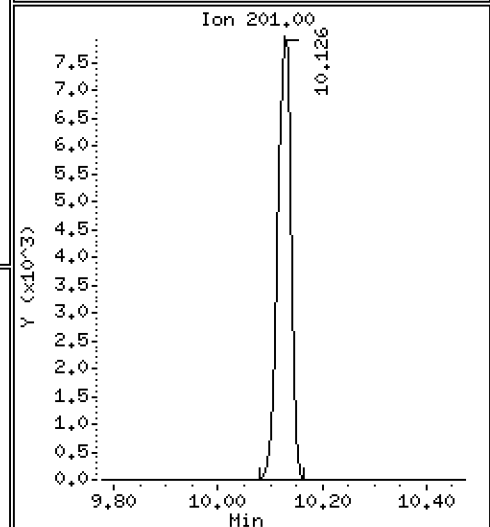
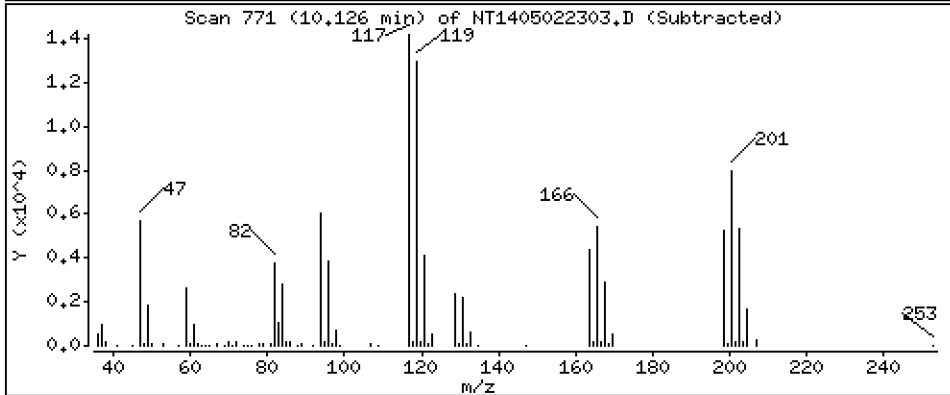
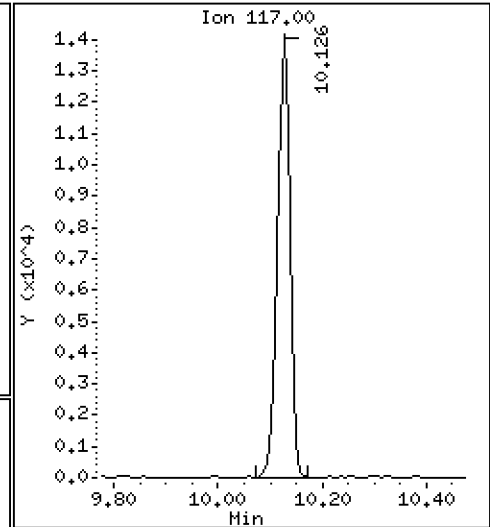
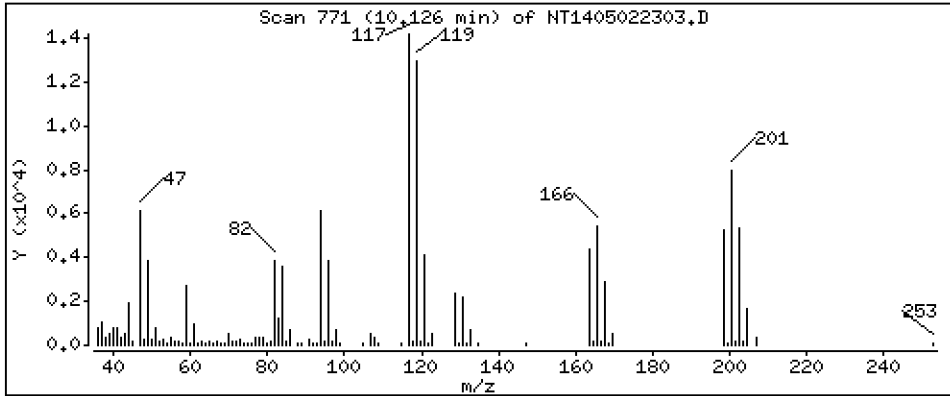
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

17 Hexachloroethane

Concentration: 0,4847 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

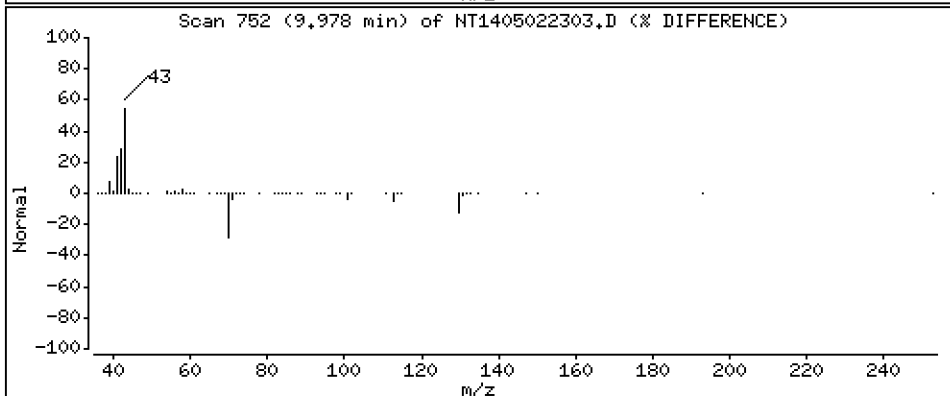
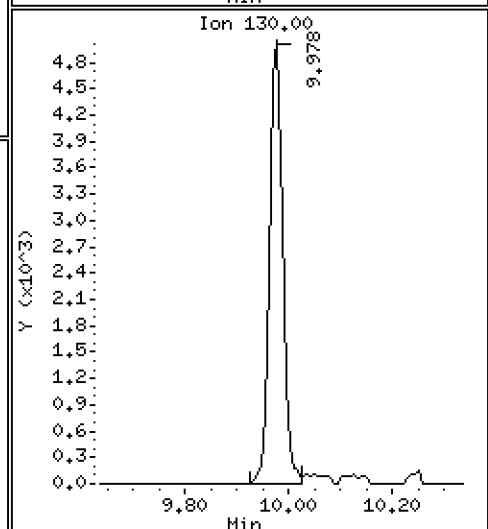
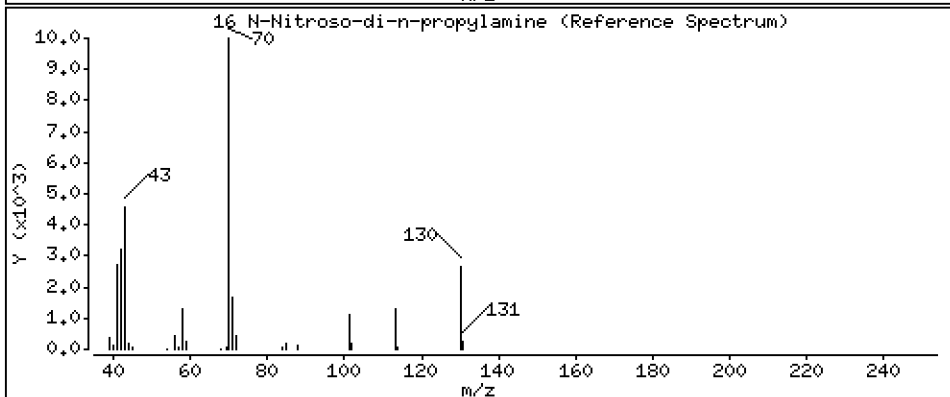
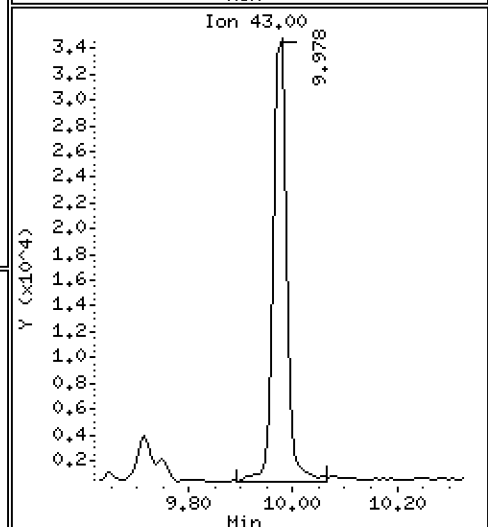
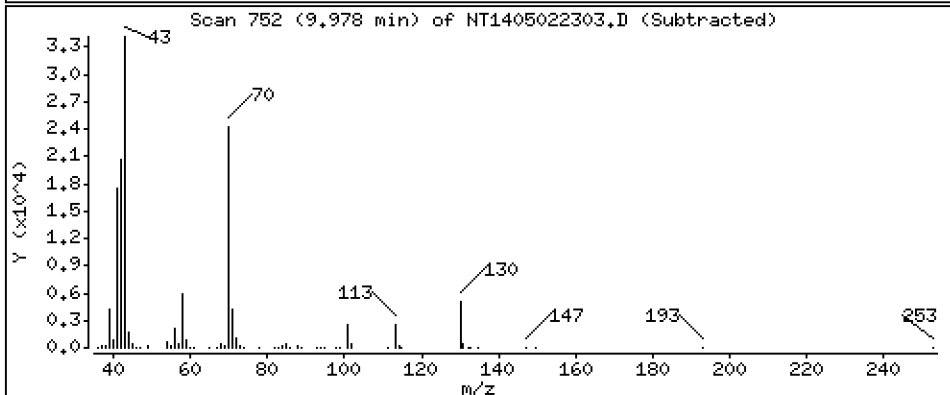
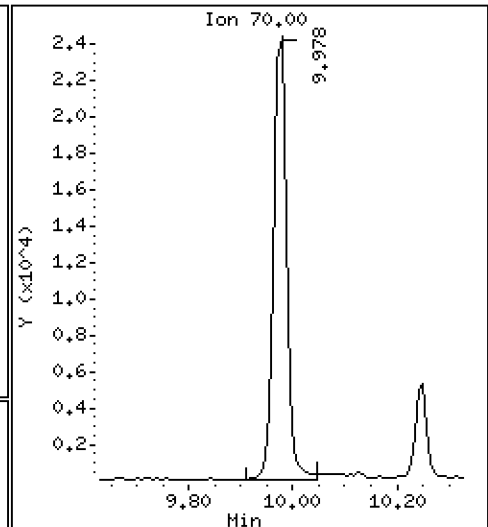
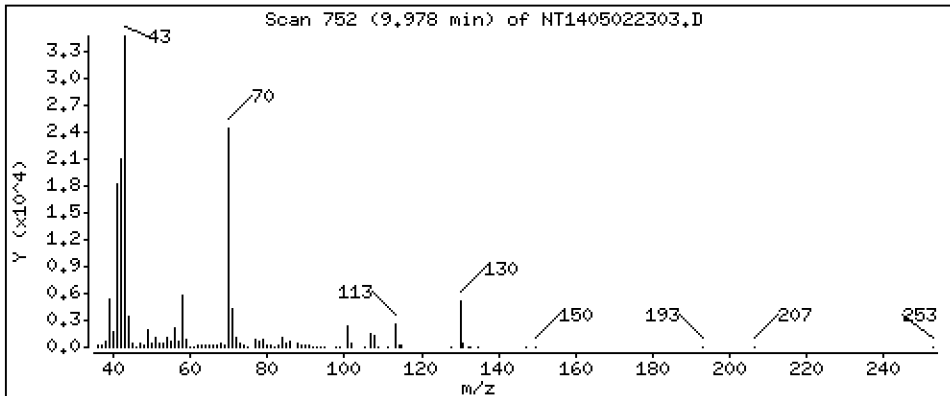
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 0,4112 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

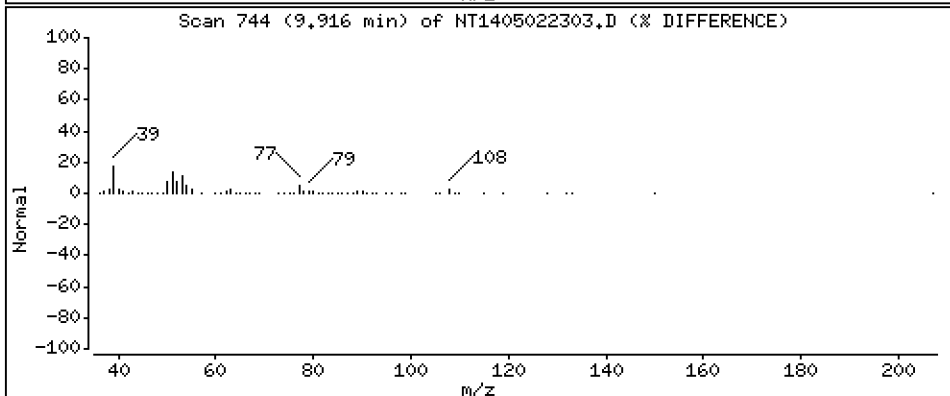
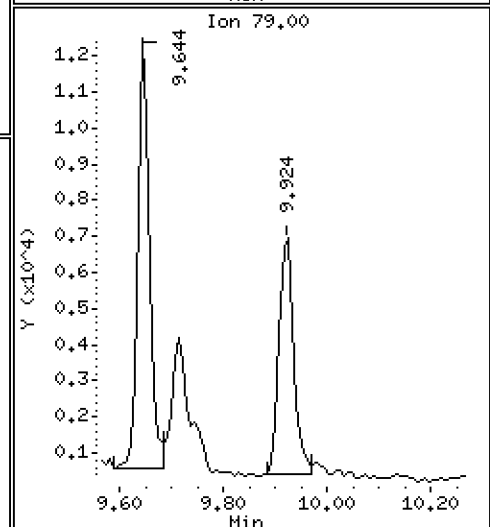
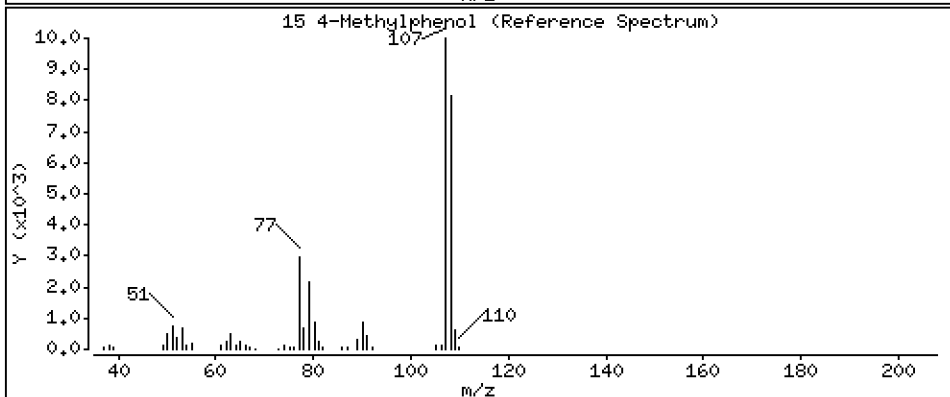
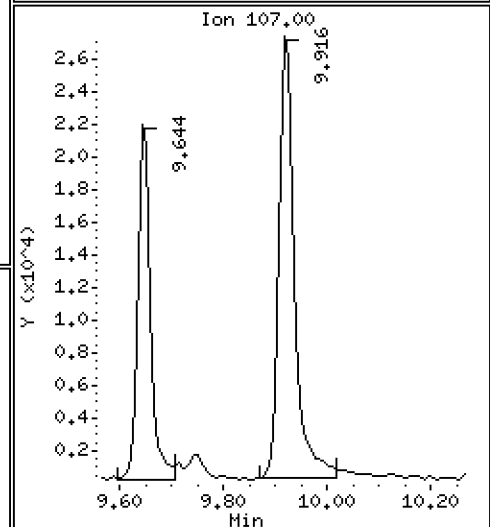
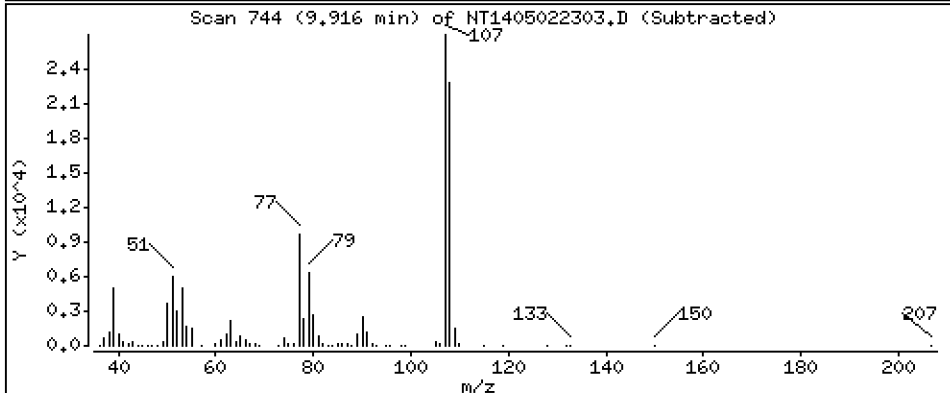
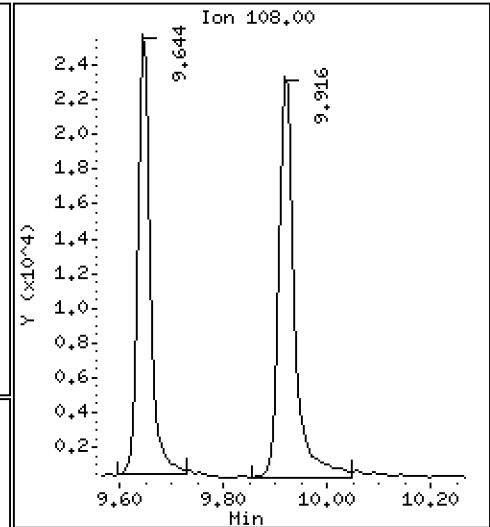
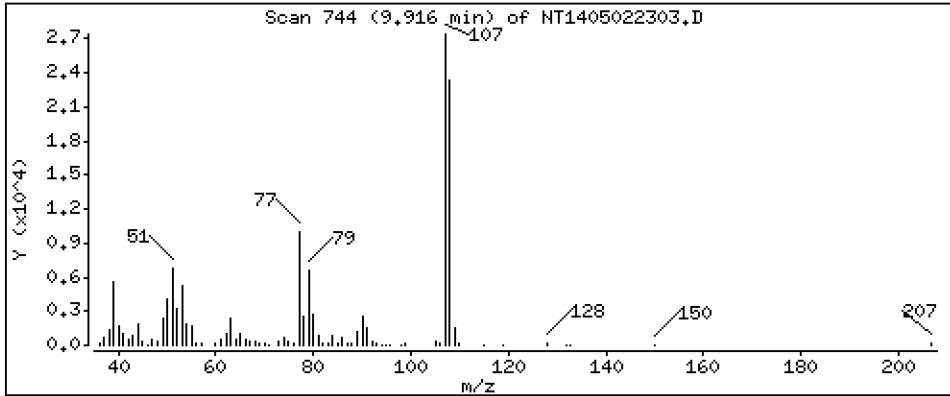
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 0.4196 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

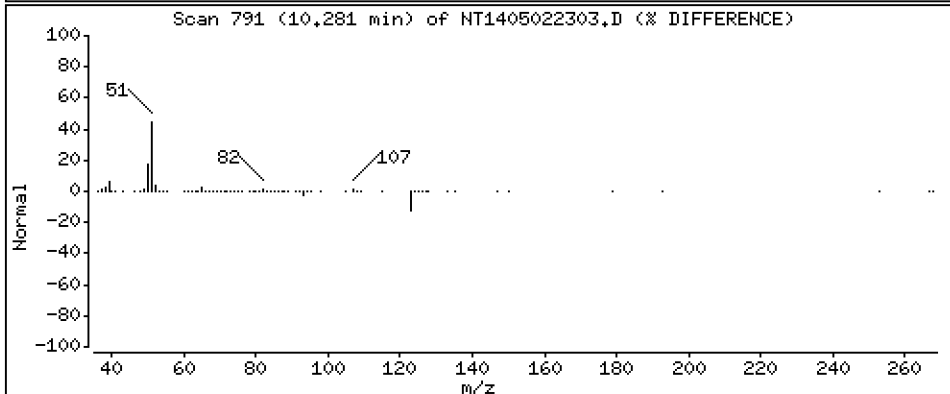
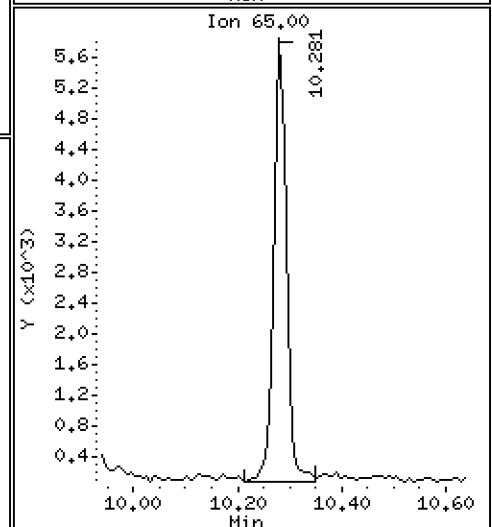
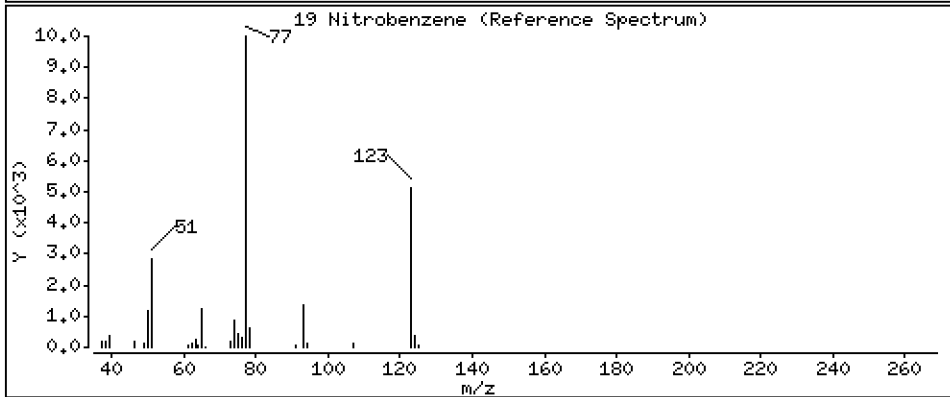
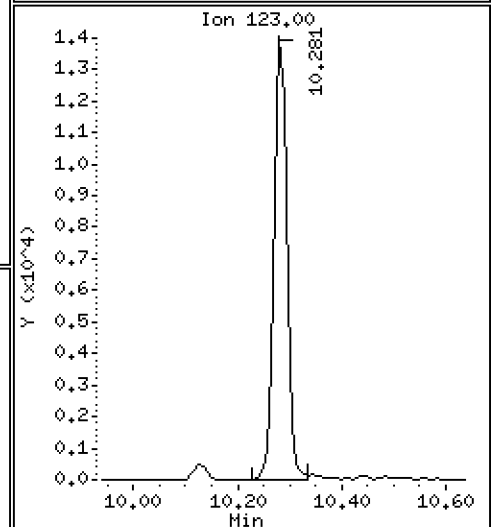
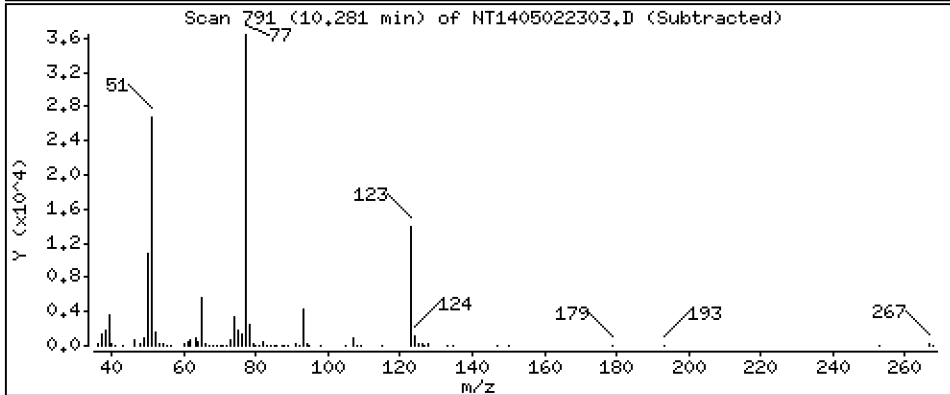
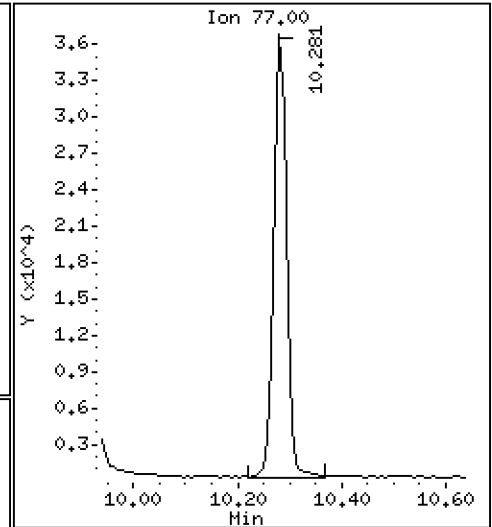
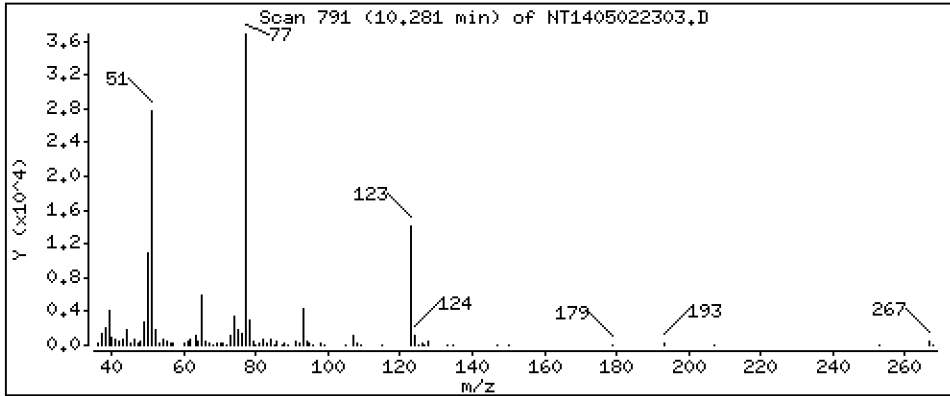
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

19 Nitrobenzene

Concentration: 0,4515 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

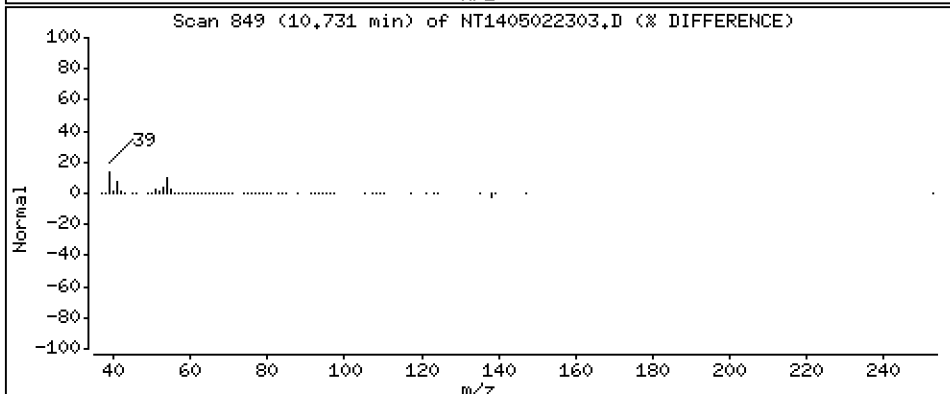
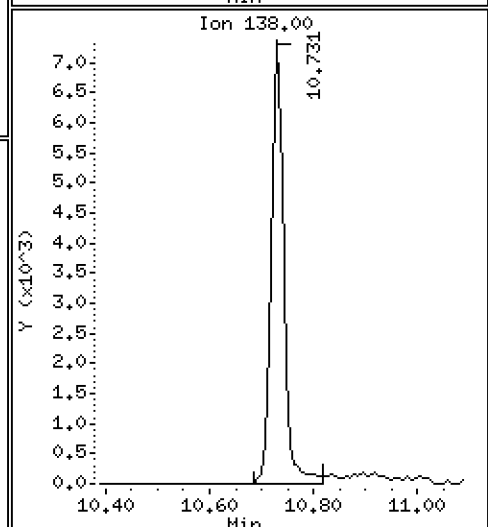
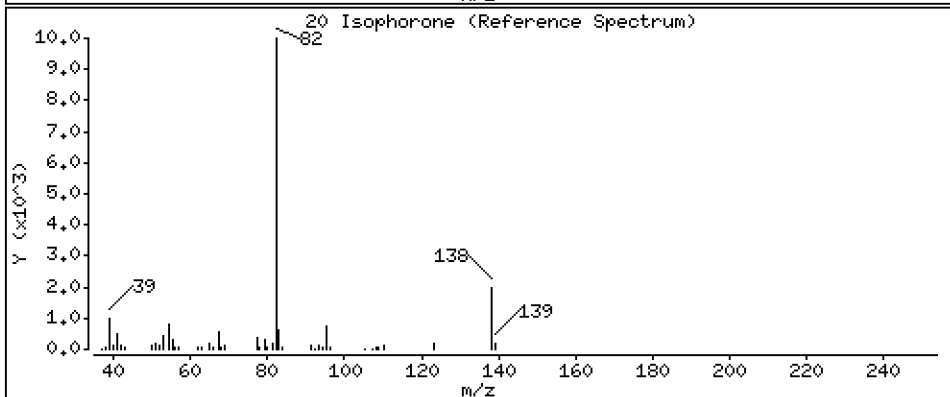
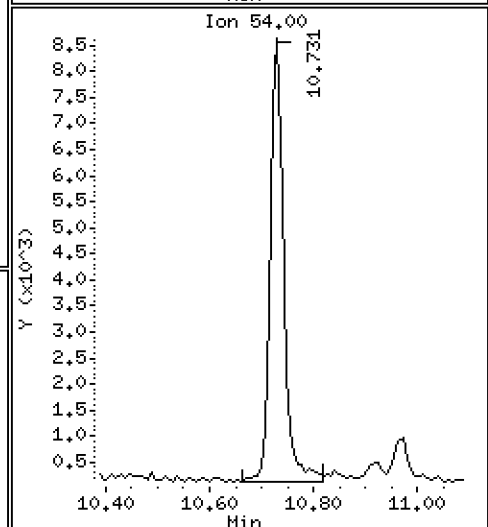
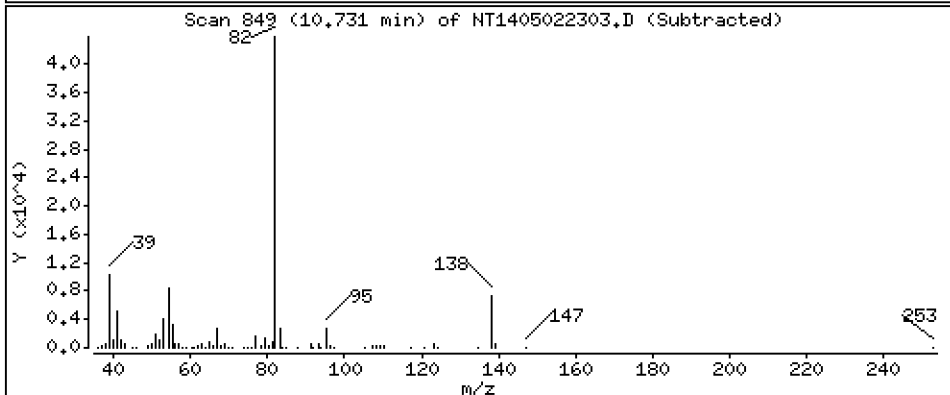
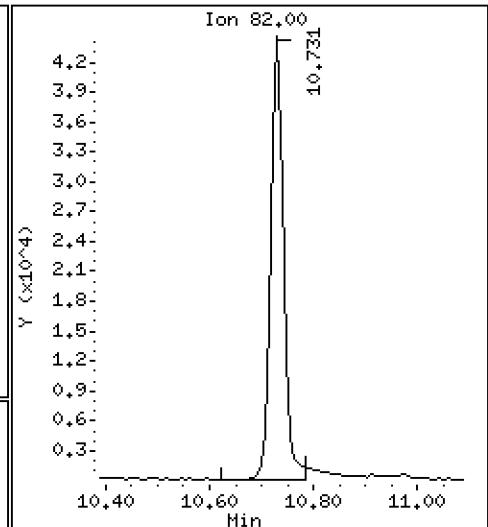
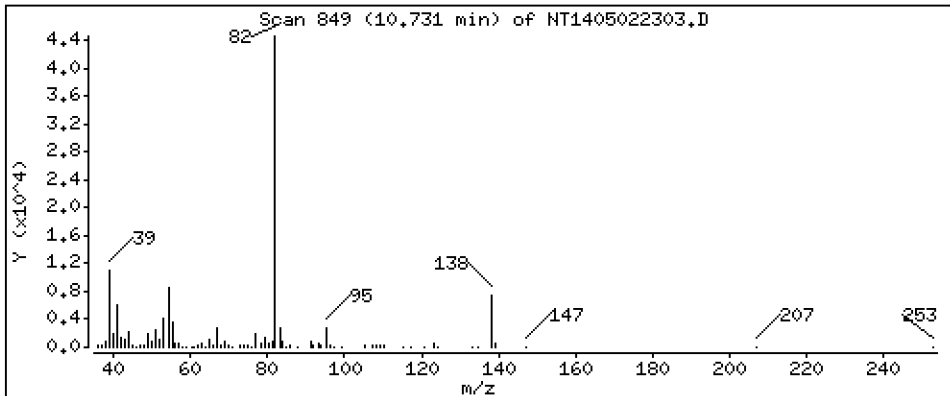
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

20 Isophorone

Concentration: 0,3988 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

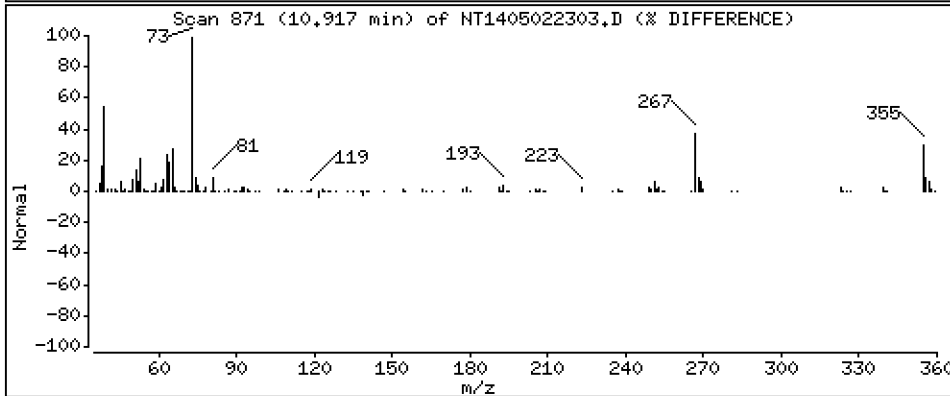
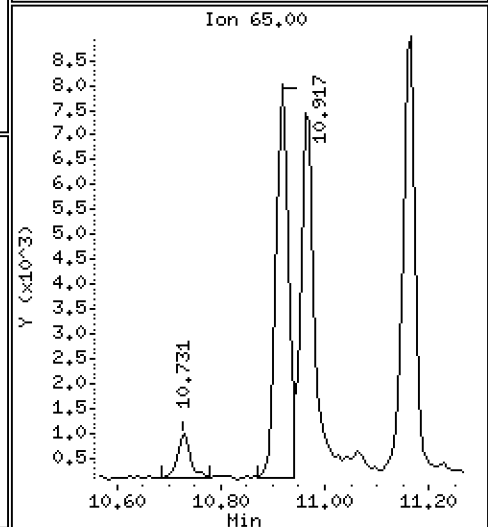
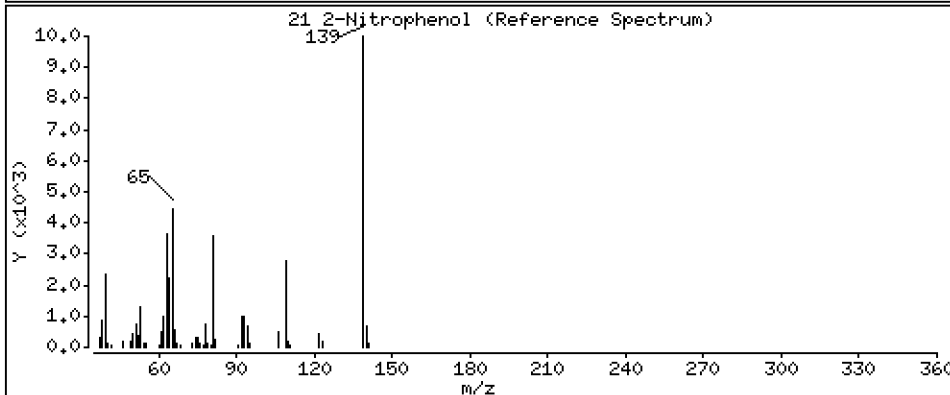
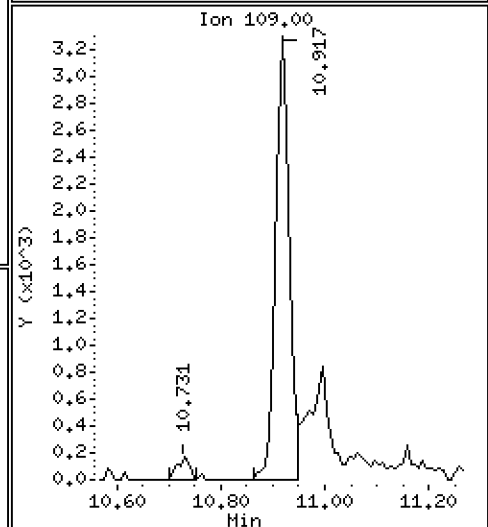
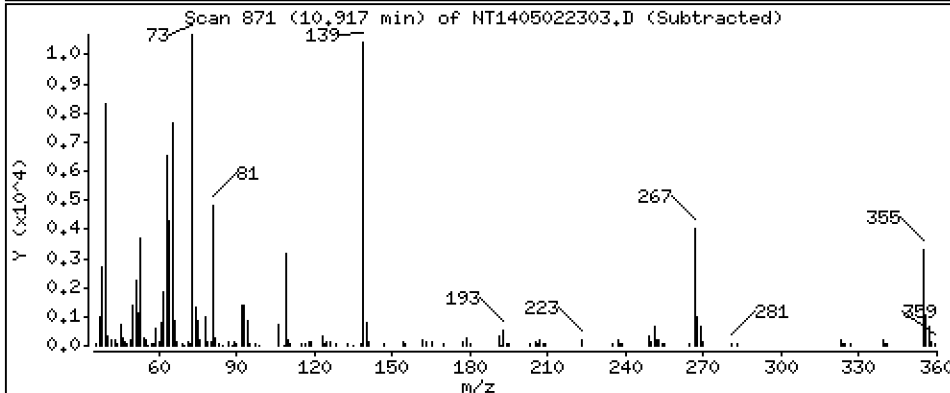
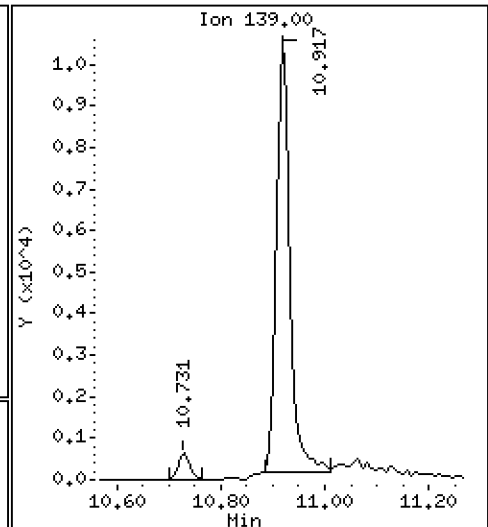
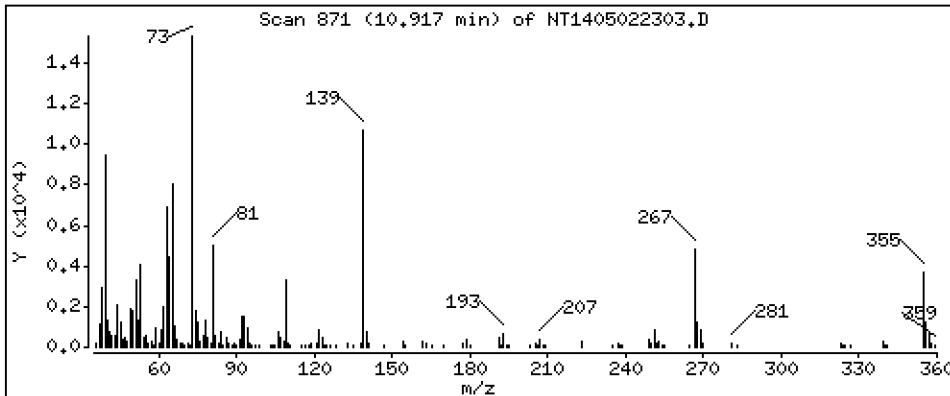
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

21 2-Nitrophenol

Concentration: 0,2560 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

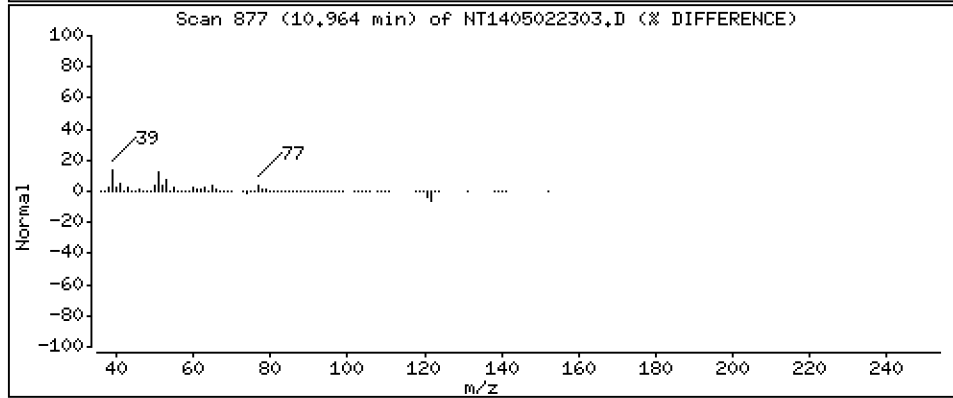
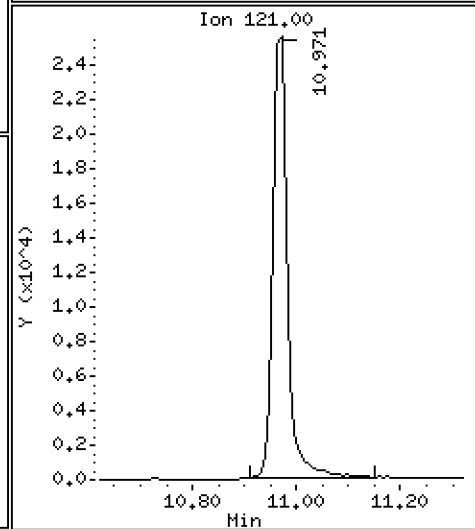
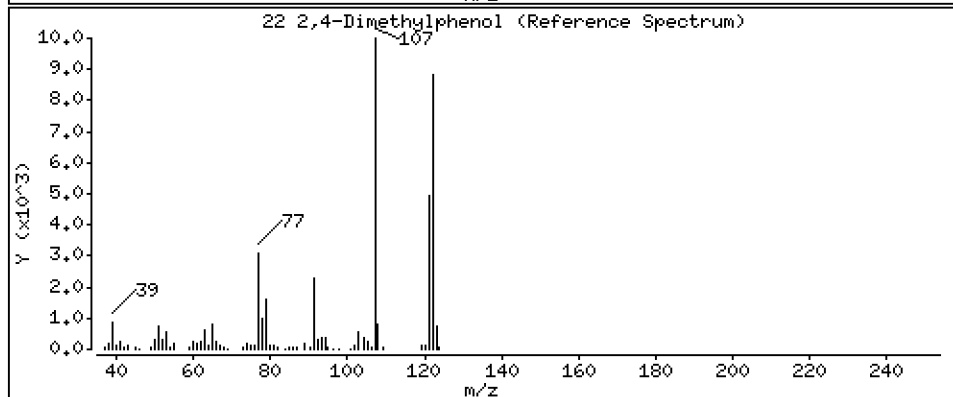
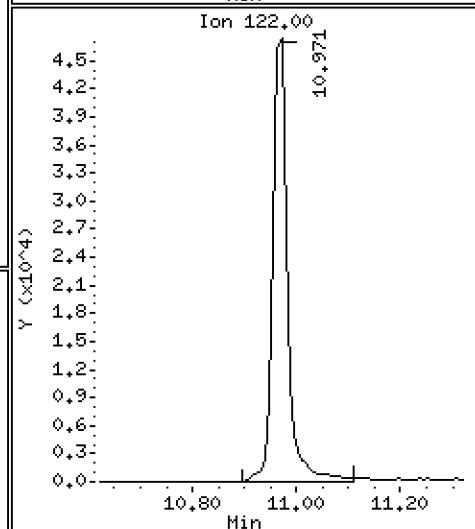
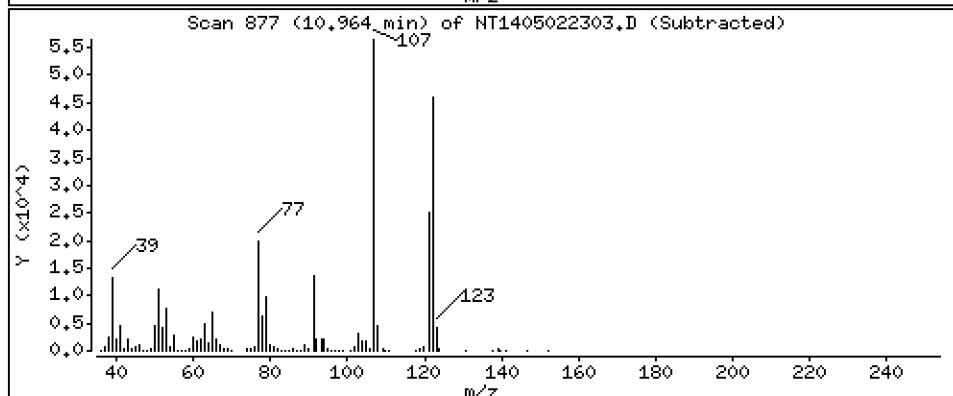
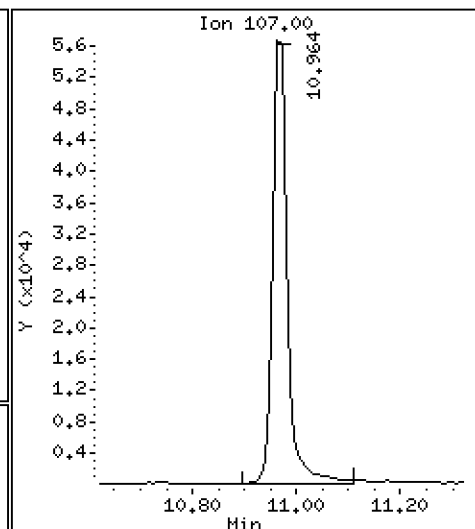
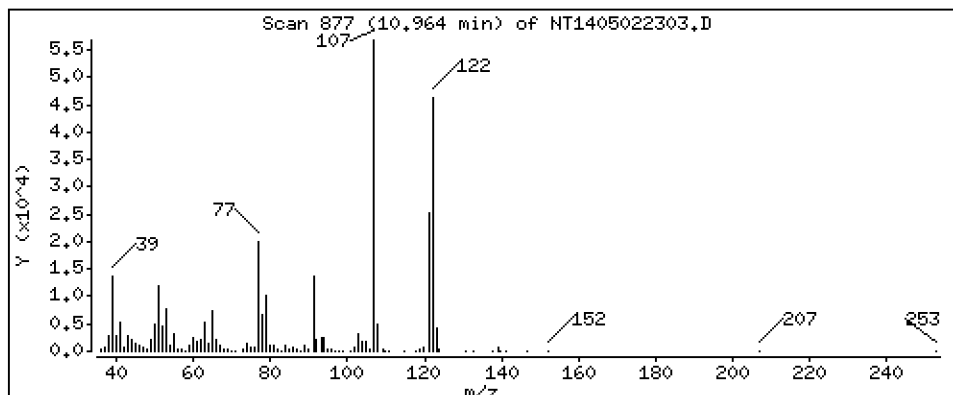
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 1,066 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

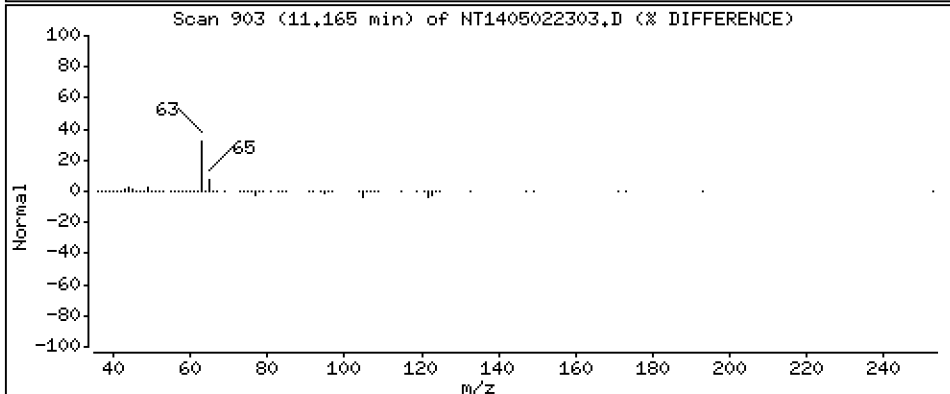
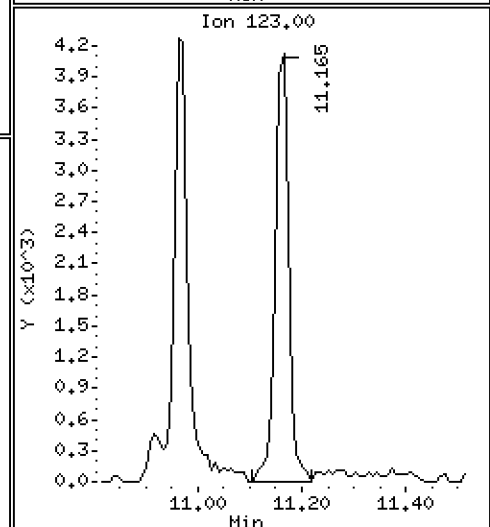
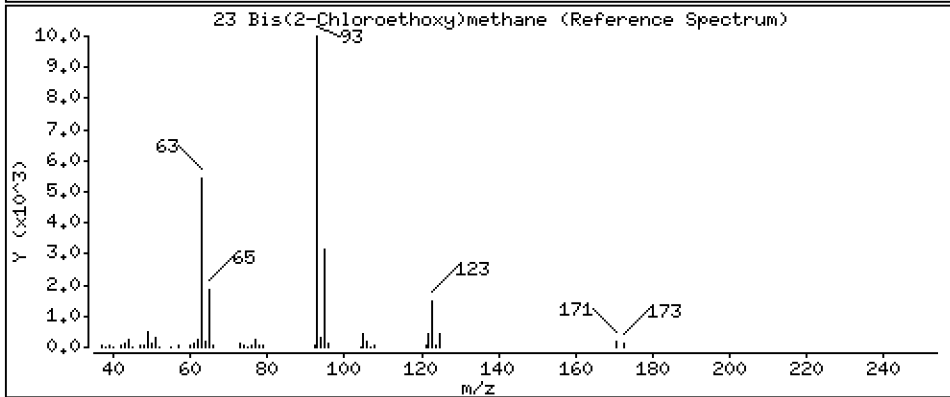
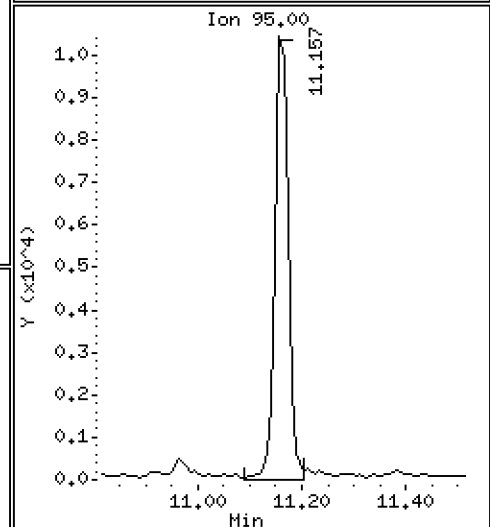
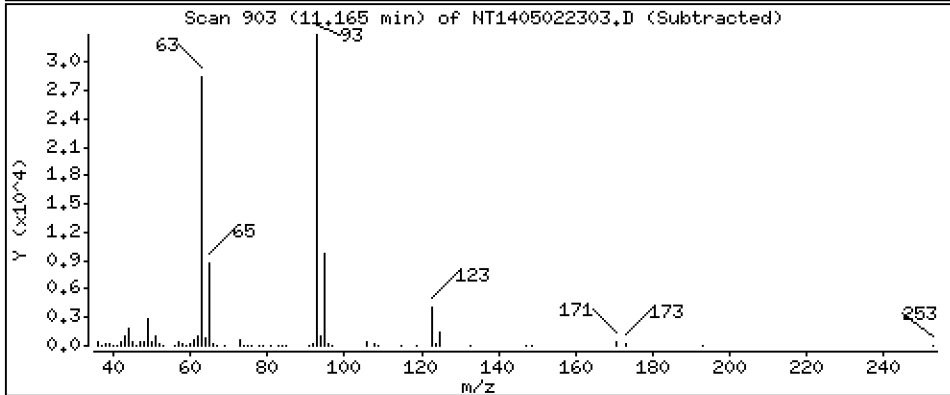
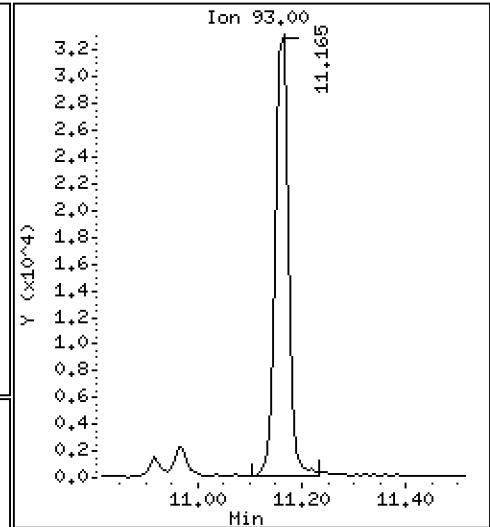
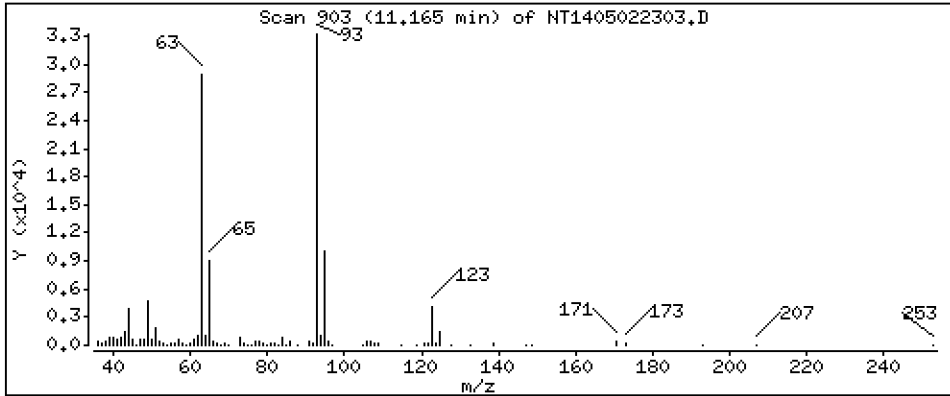
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

23 Bis(2-Chloroethoxy)methane

Concentration: 0,4703 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

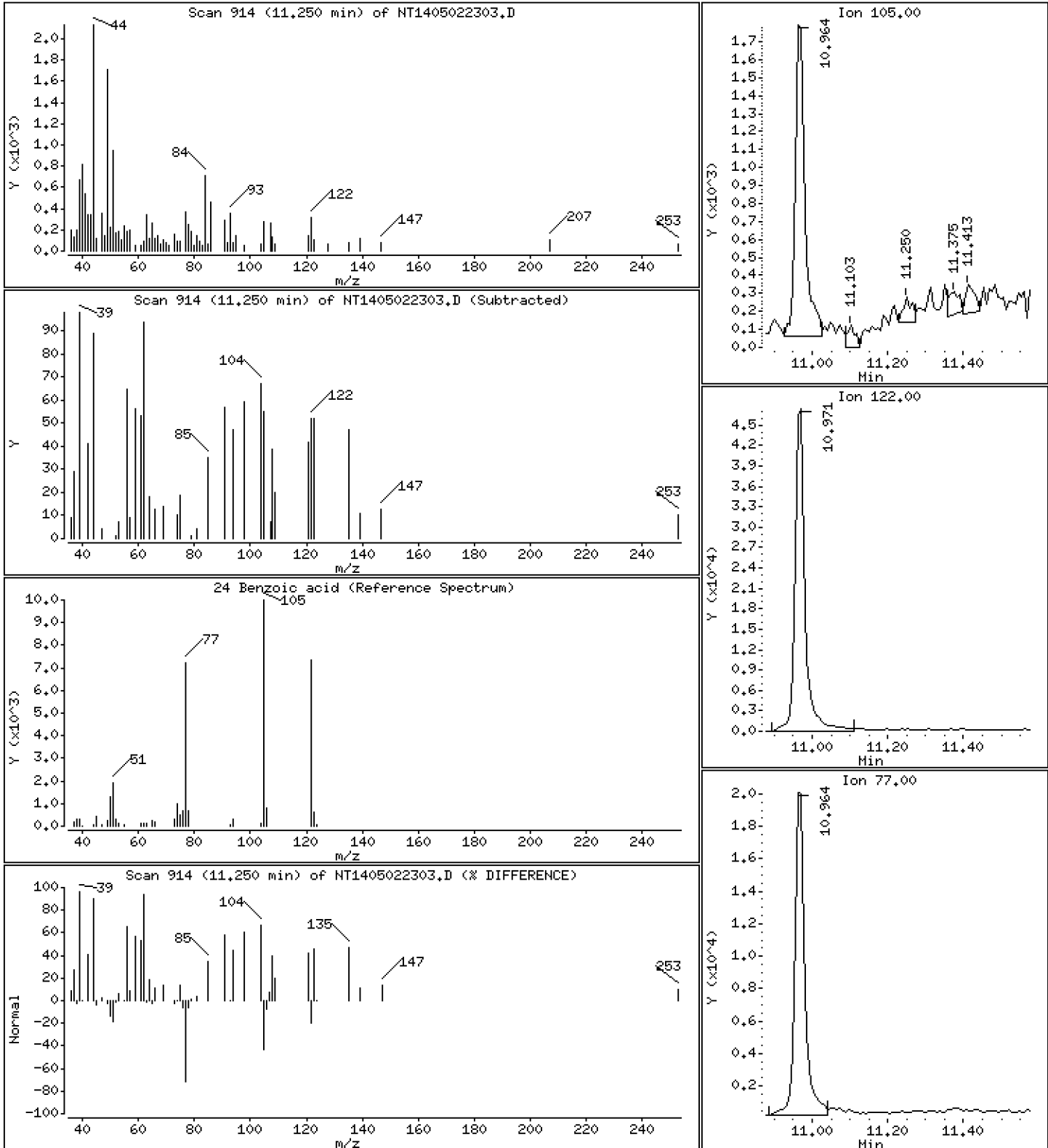
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

24 Benzoic acid

Concentration: 0.003004 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

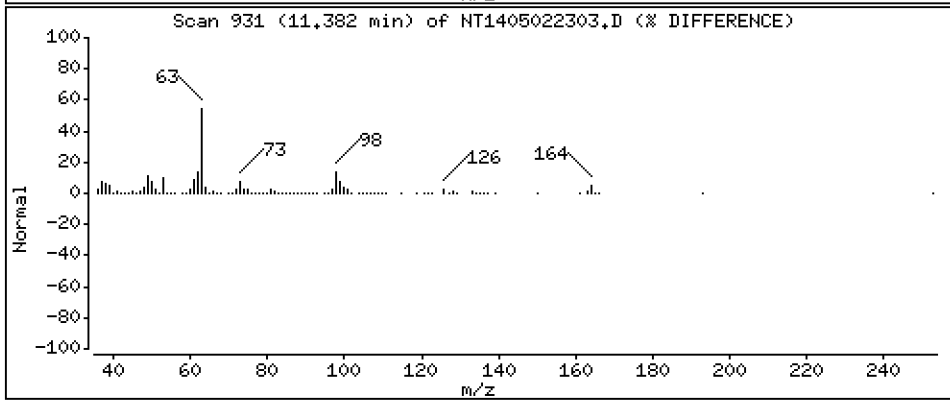
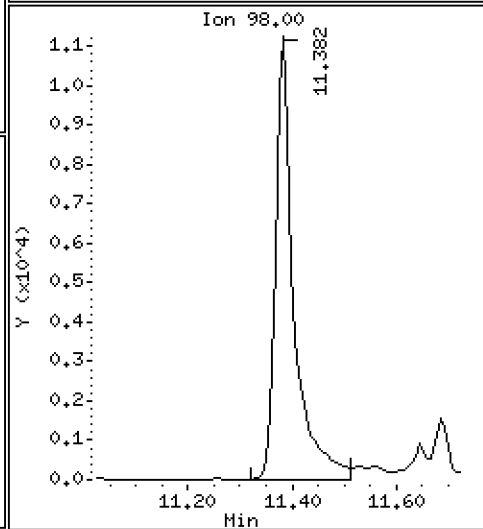
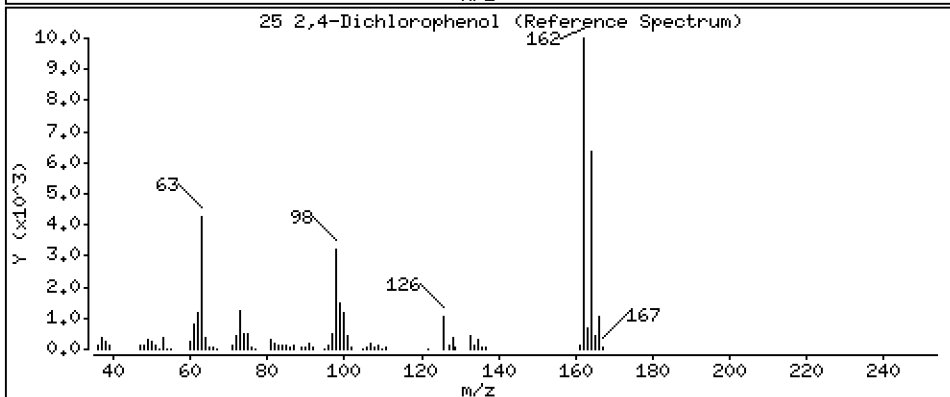
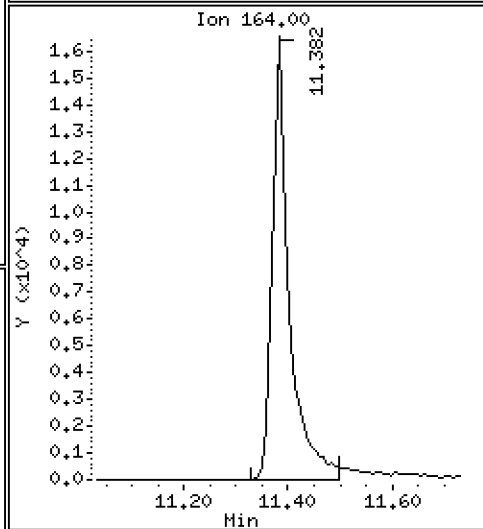
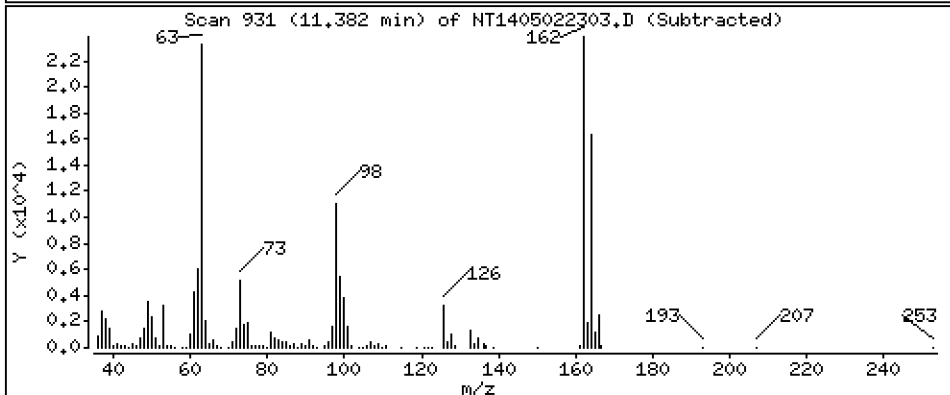
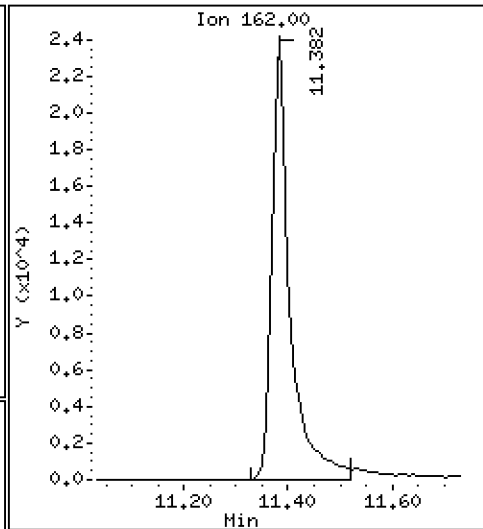
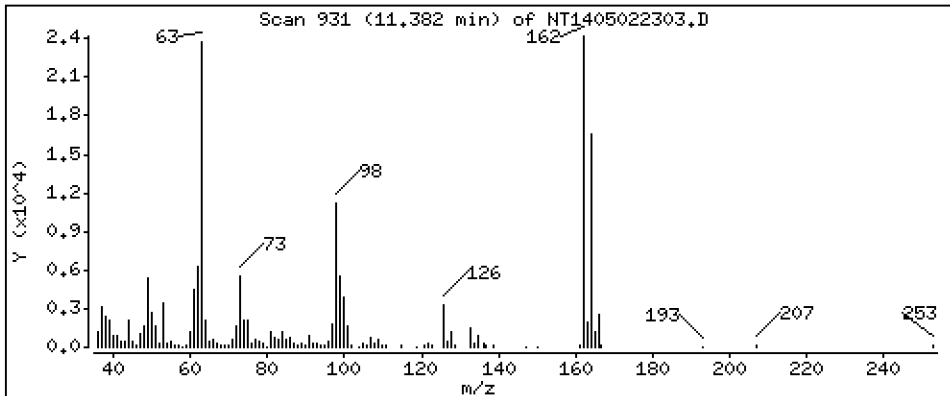
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

25 2,4-Dichlorophenol

Concentration: 0,5970 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

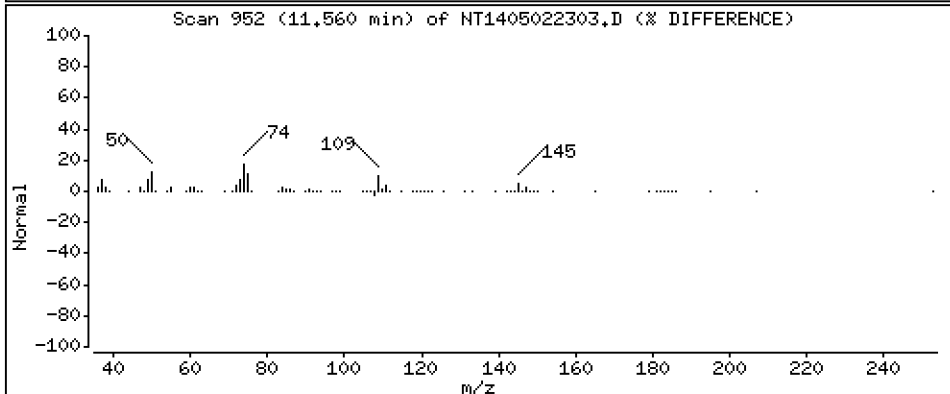
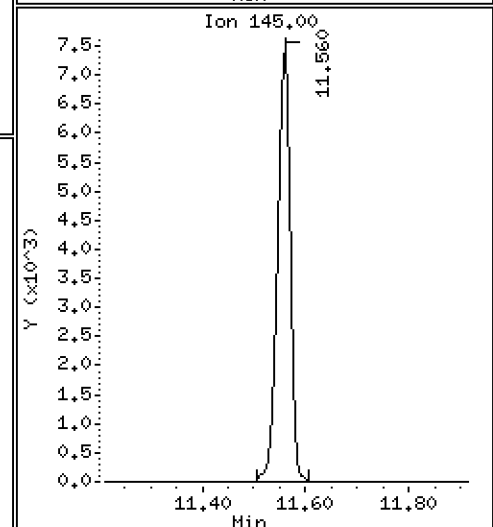
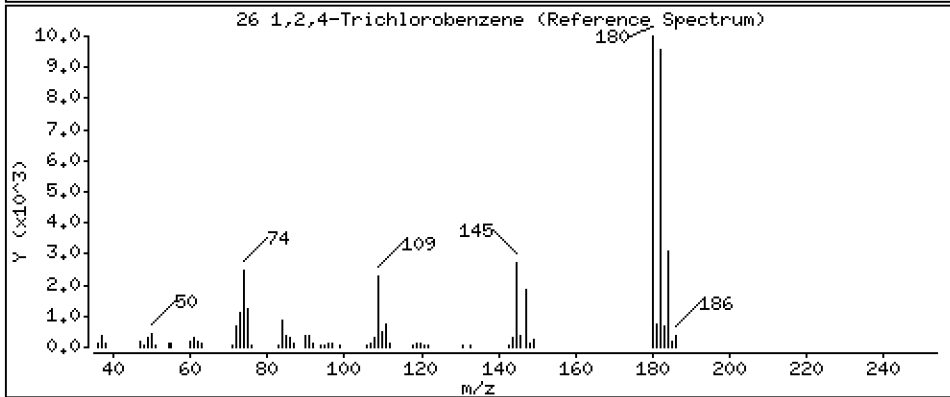
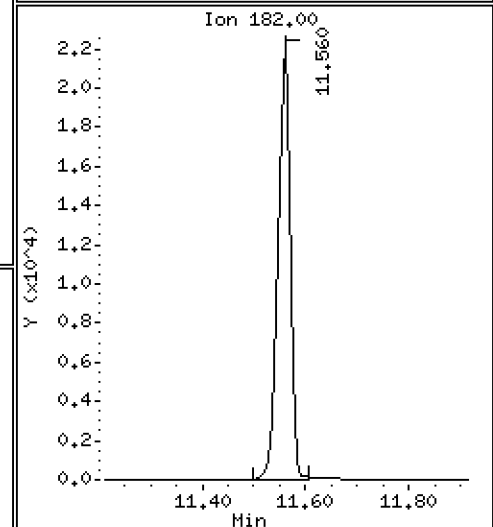
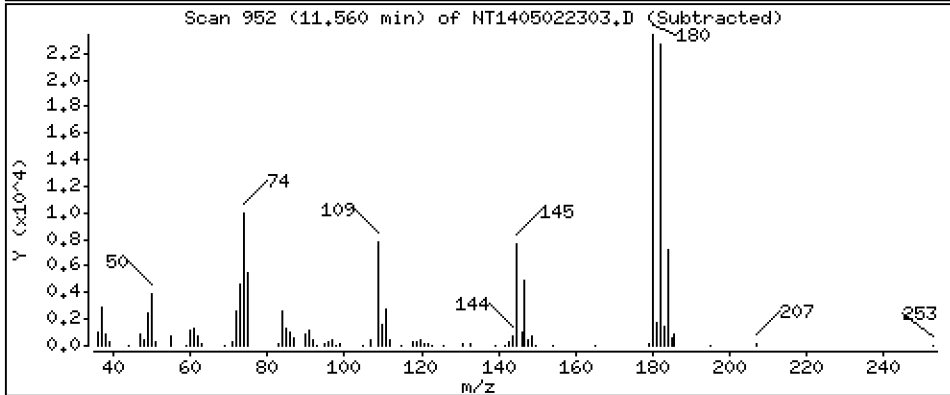
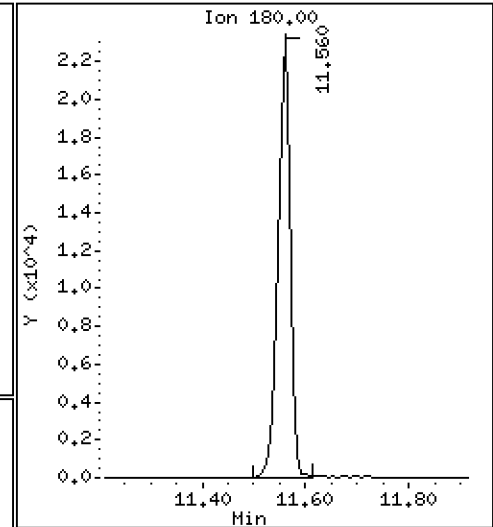
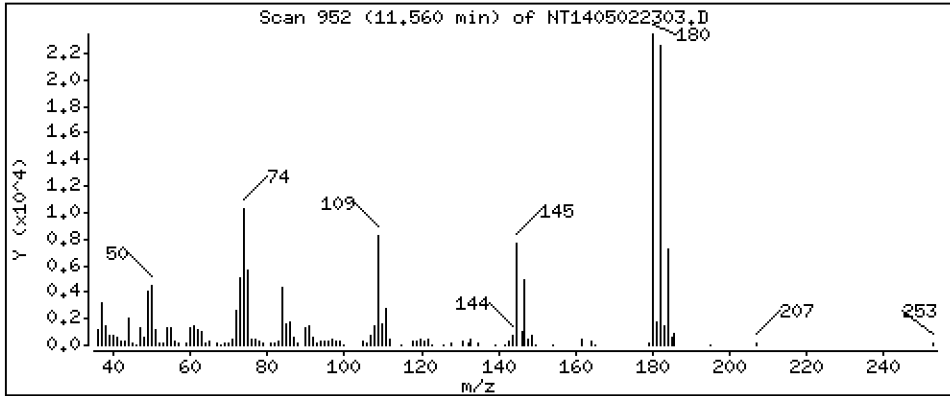
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 0,4918 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

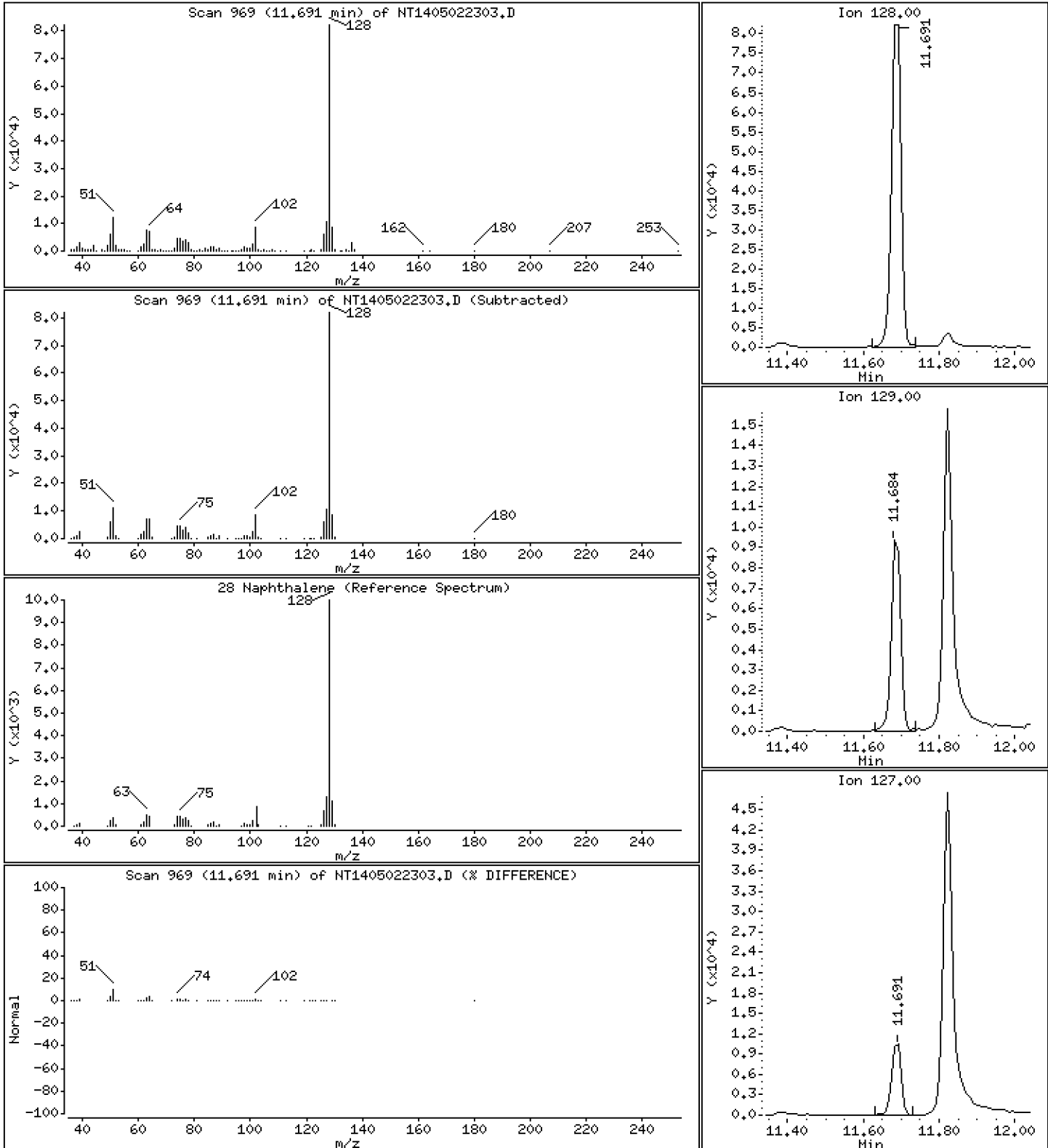
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

28 Naphthalene

Concentration: 0,5038 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

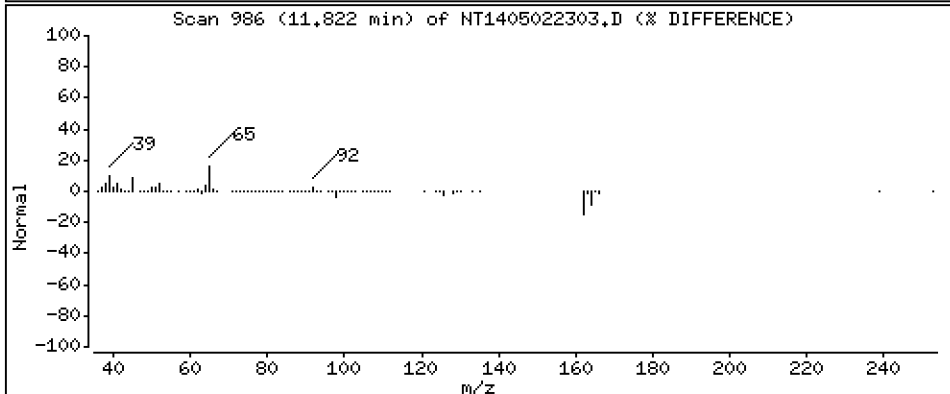
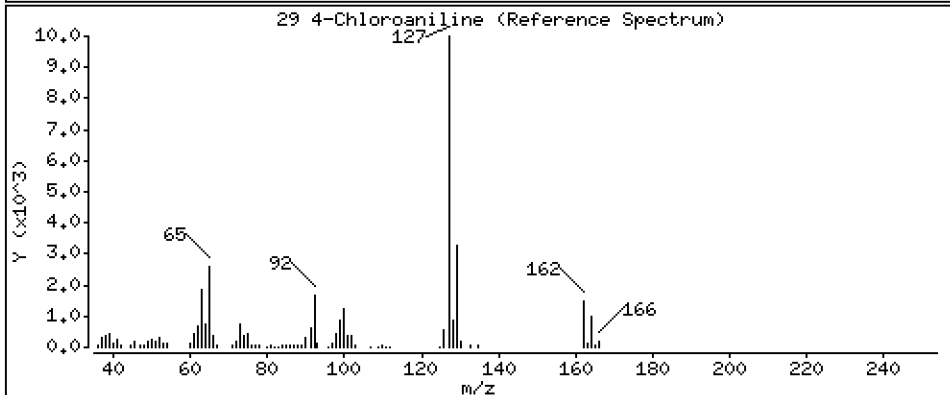
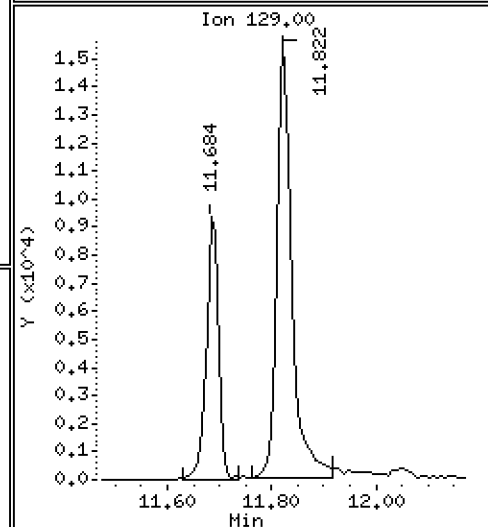
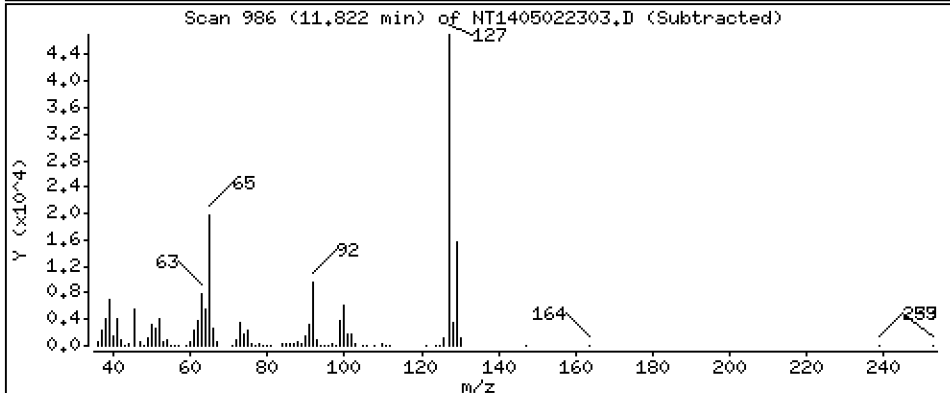
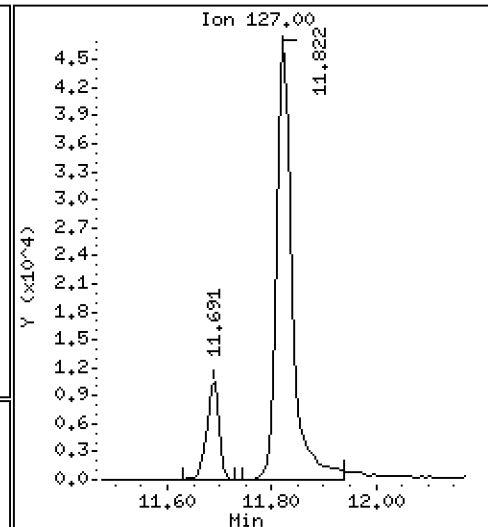
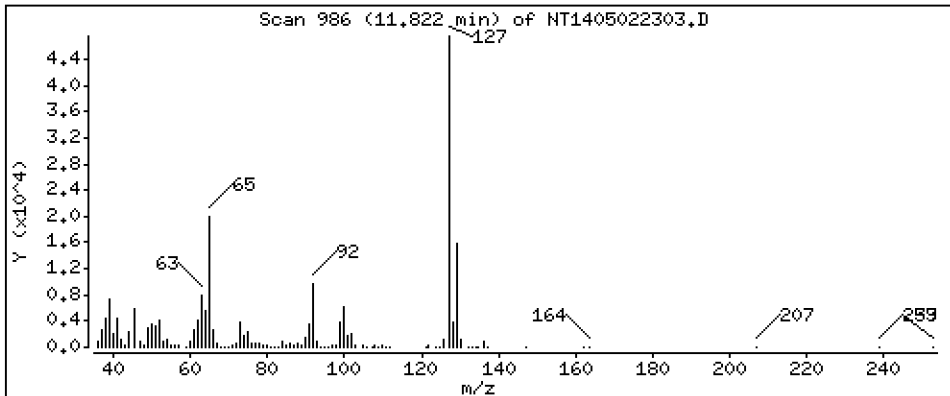
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

29 4-Chloroaniline

Concentration: 0,8632 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

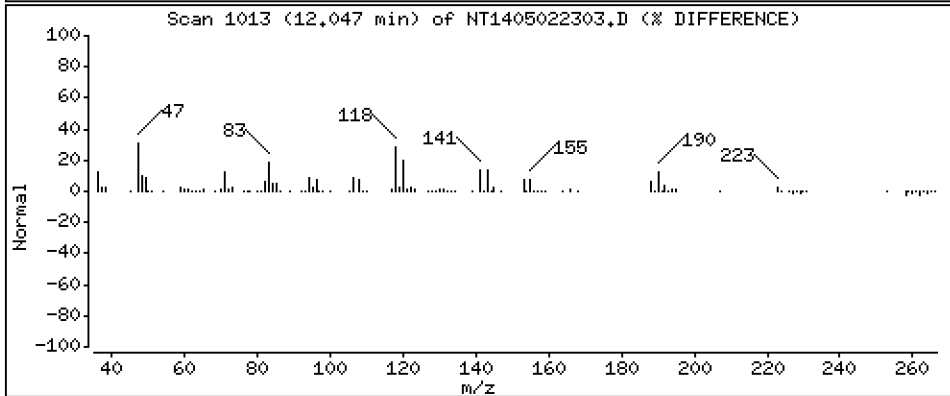
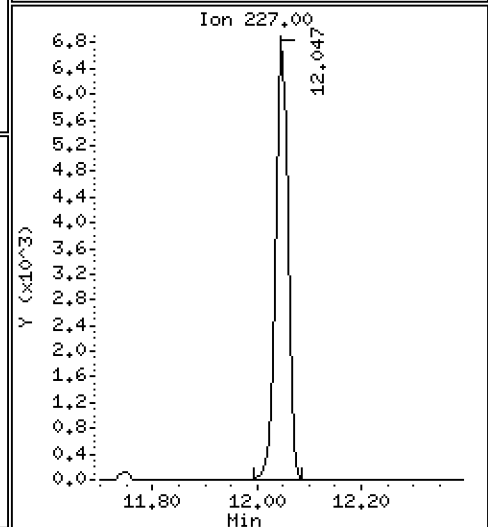
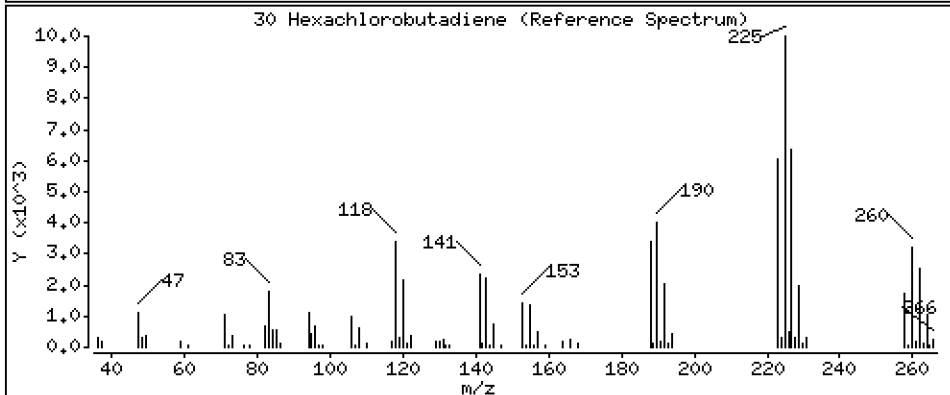
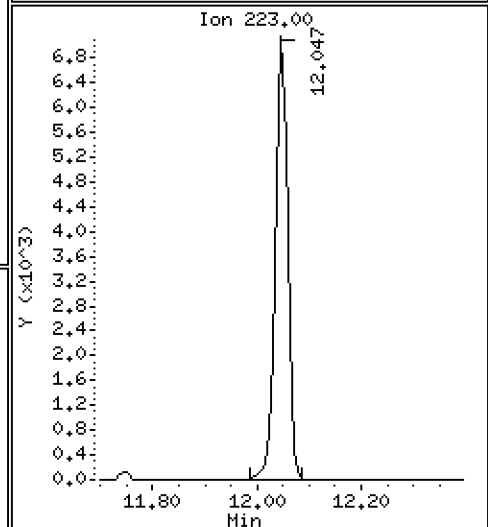
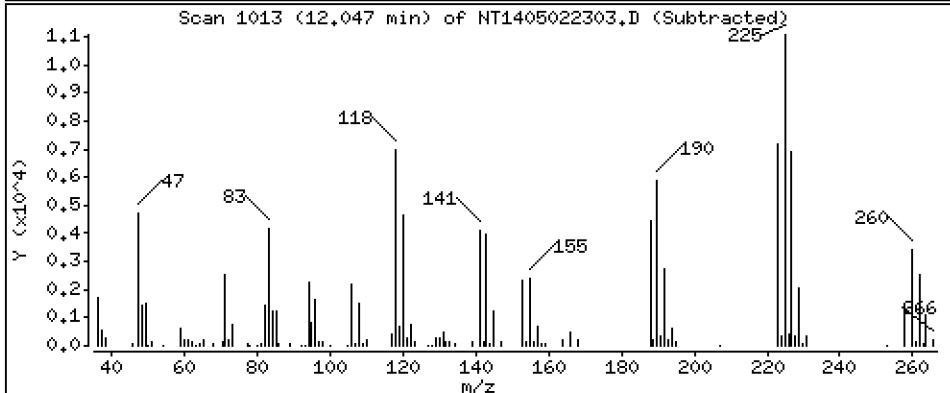
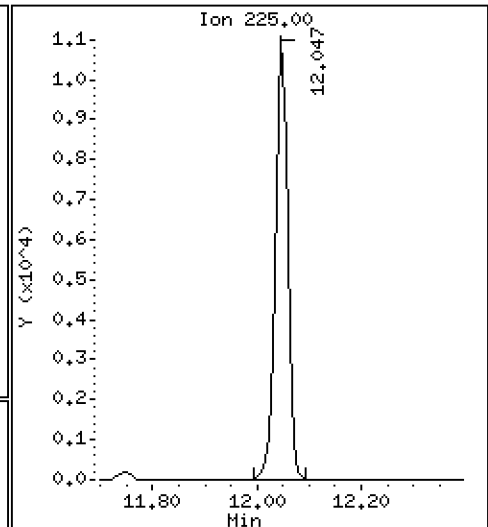
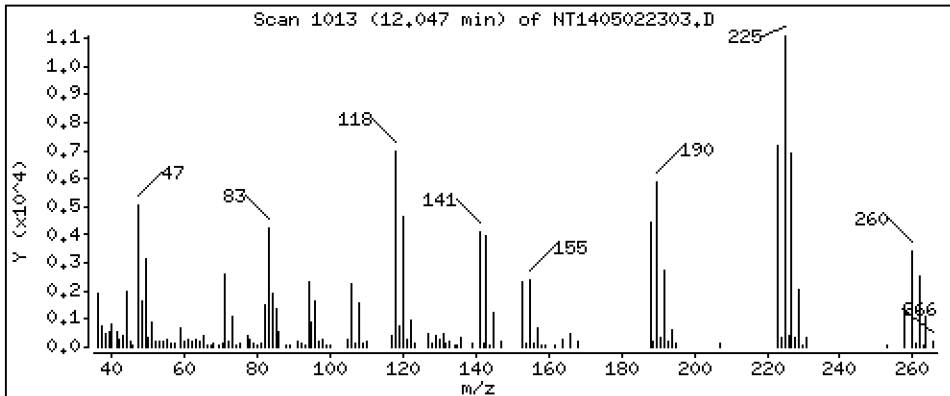
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 0,5007 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

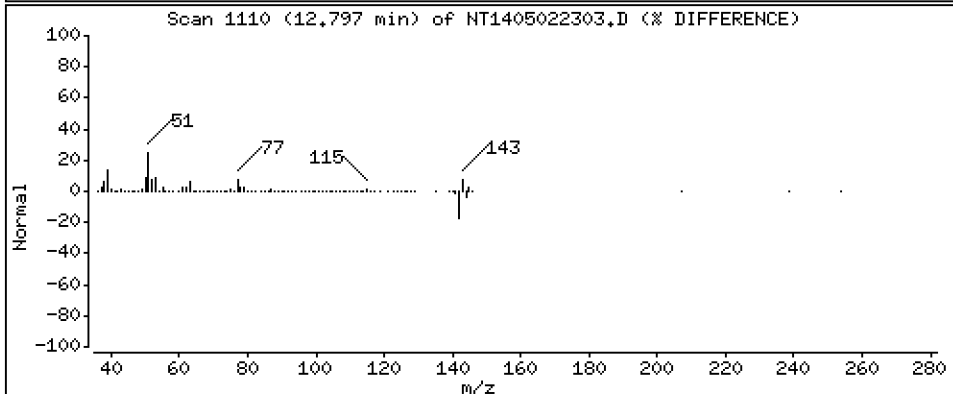
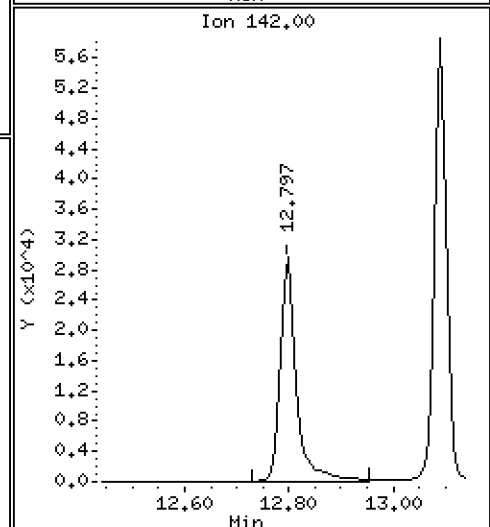
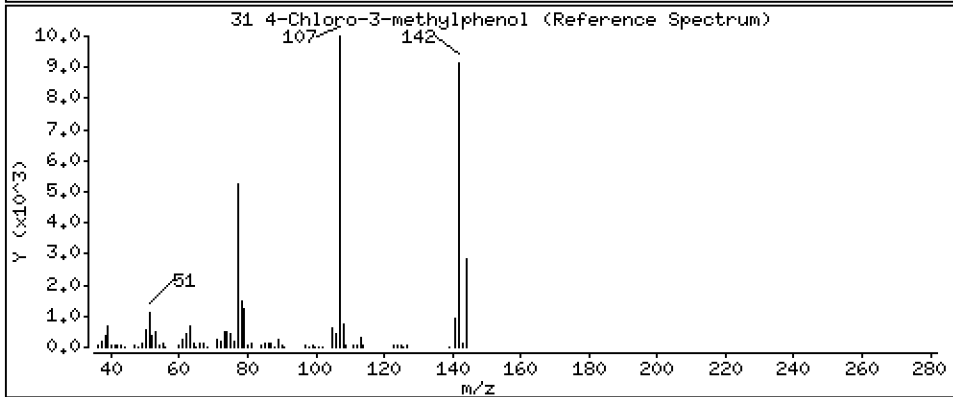
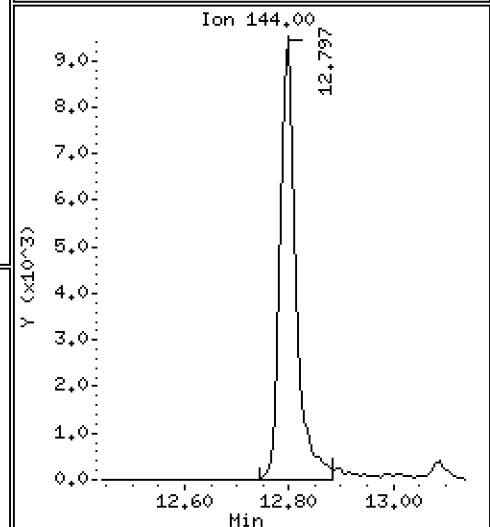
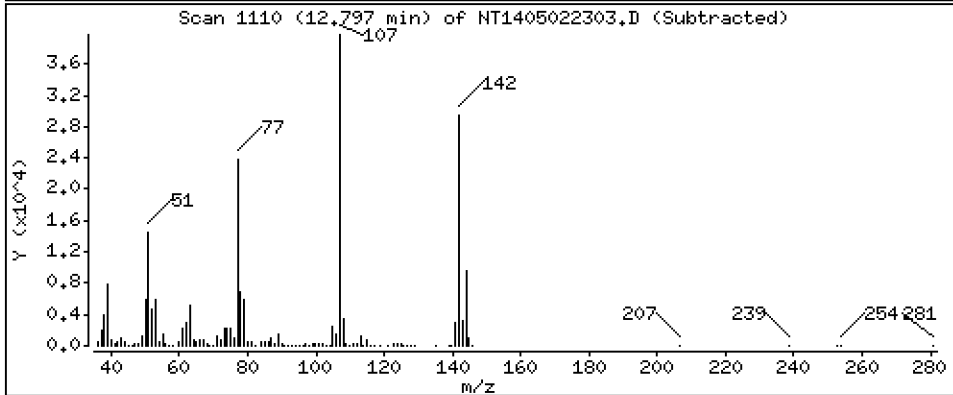
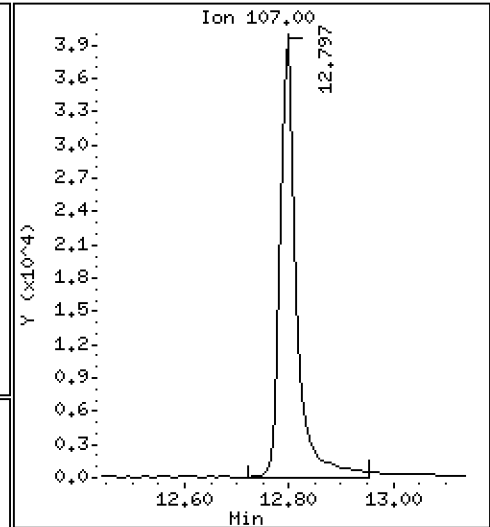
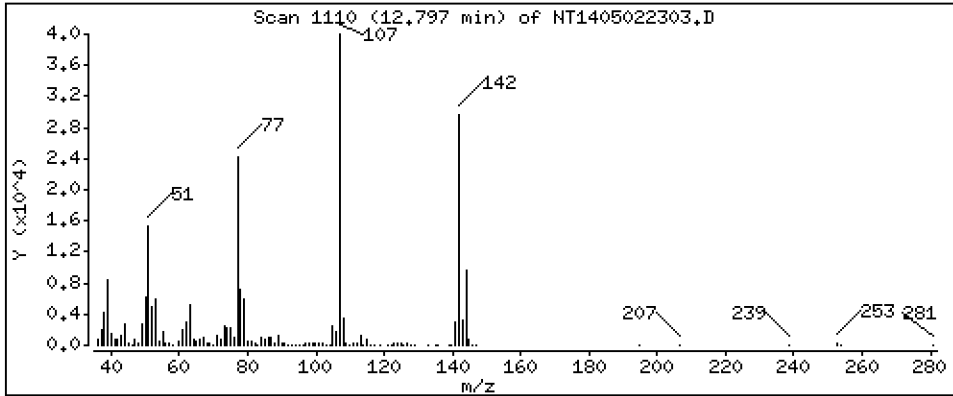
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

31 4-Chloro-3-methylphenol

Concentration: 0,9505 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

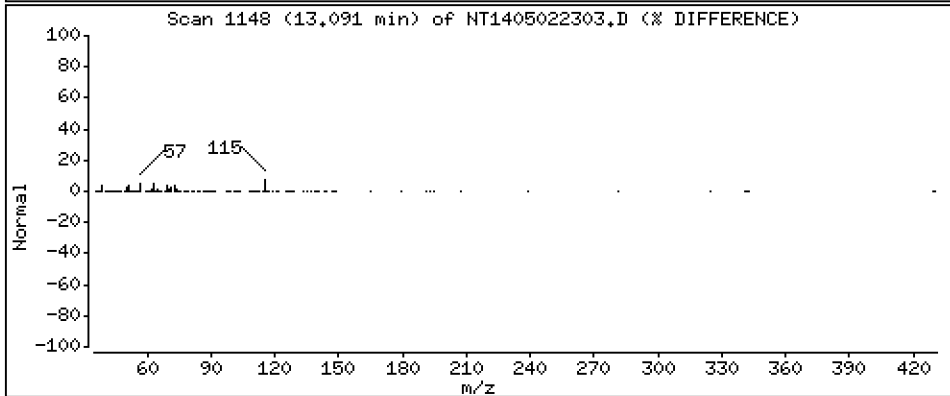
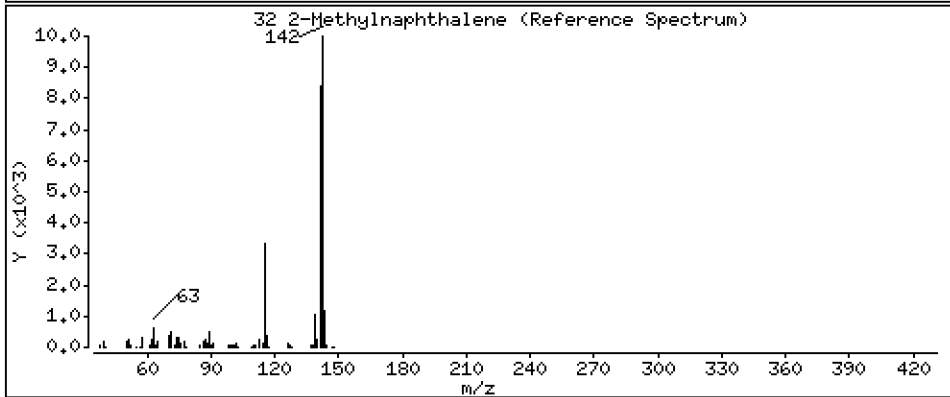
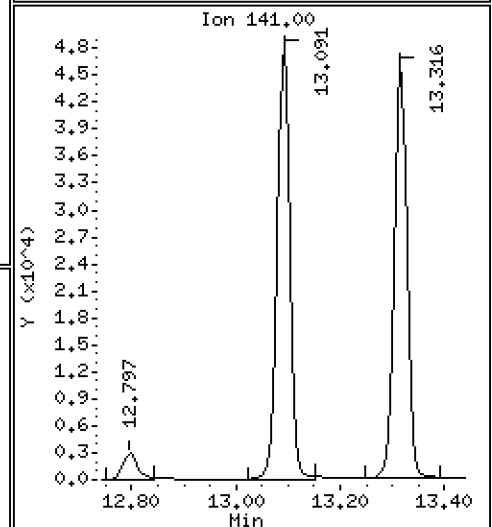
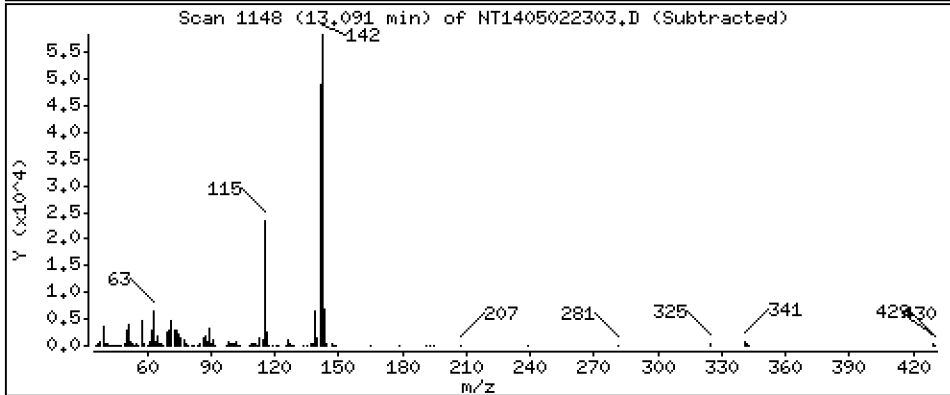
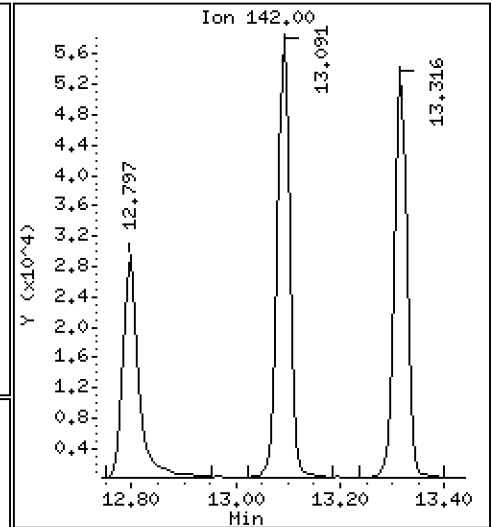
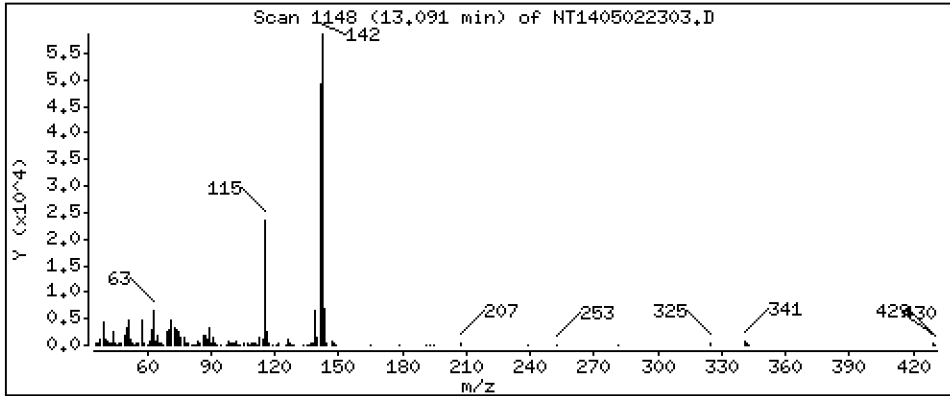
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

32 2-Methylnaphthalene

Concentration: 0,4679 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

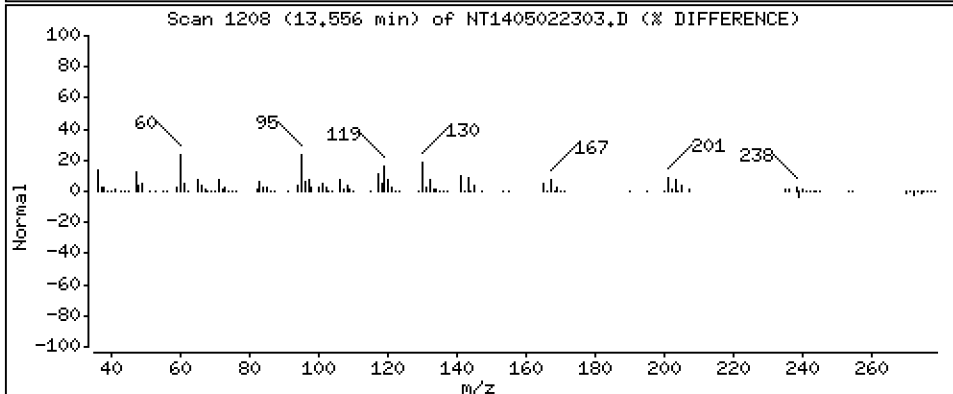
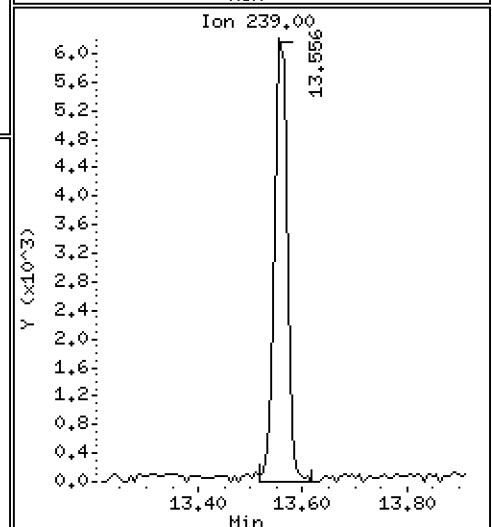
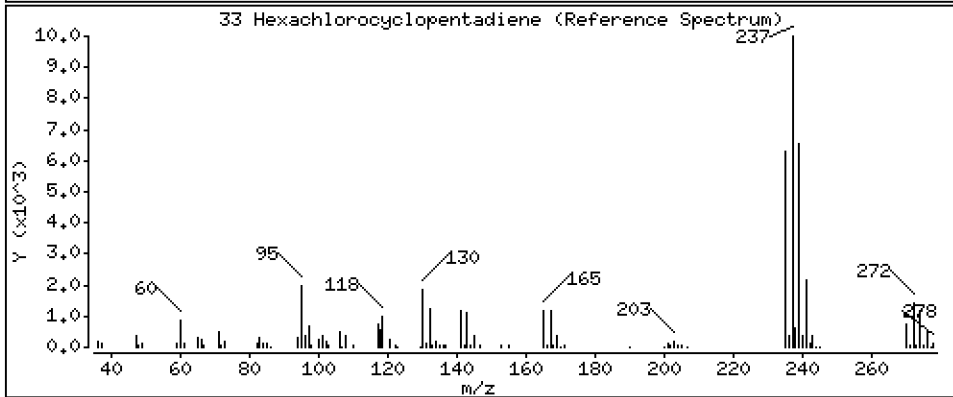
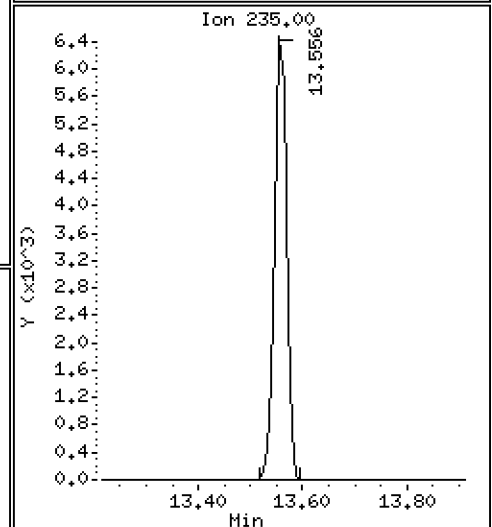
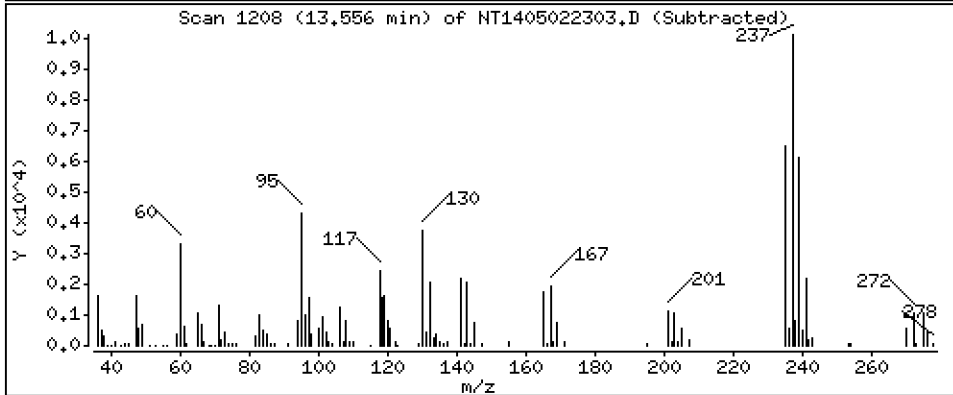
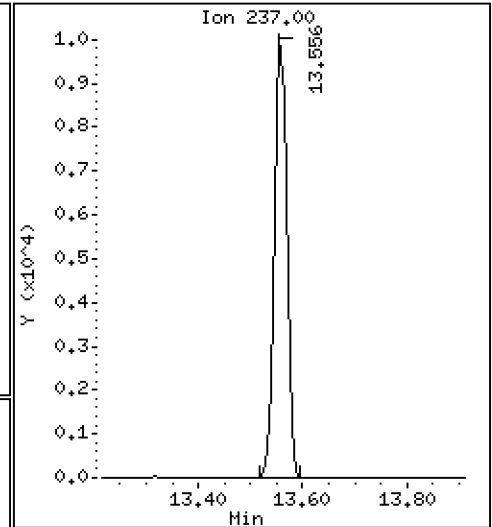
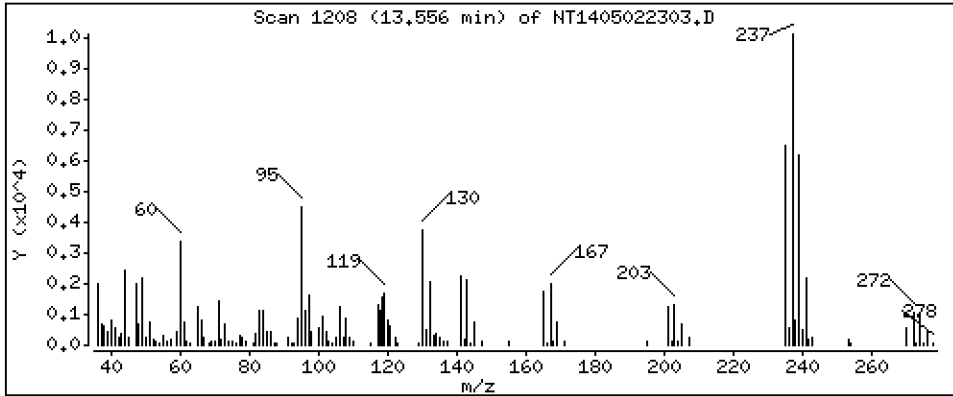
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

33 Hexachlorocyclopentadiene

Concentration: 0.4421 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

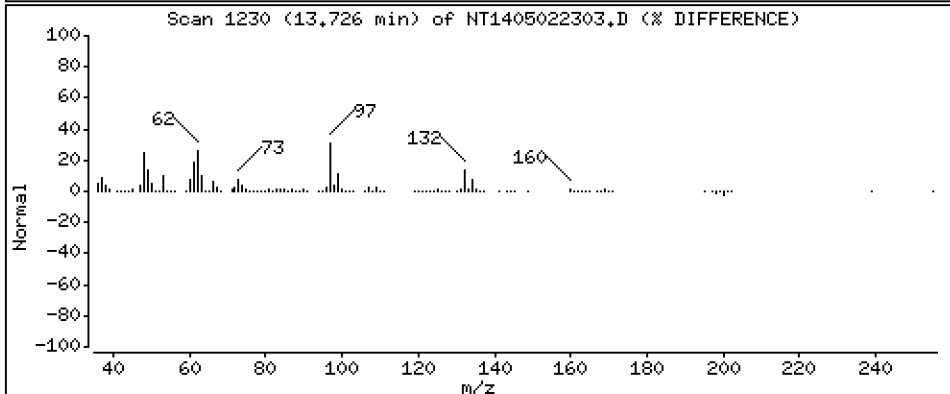
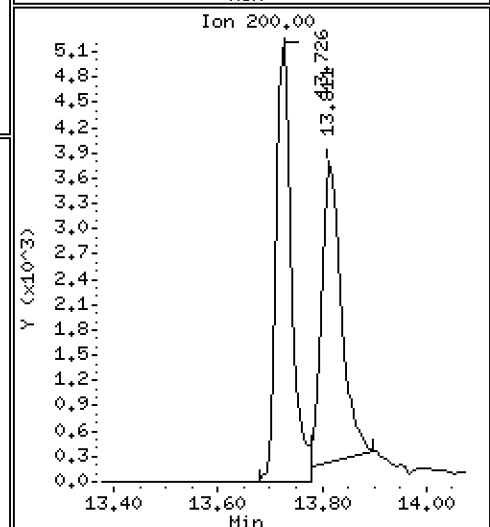
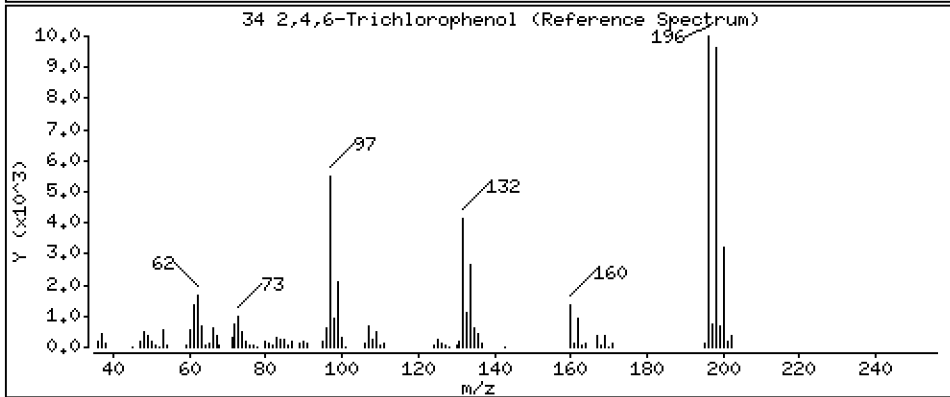
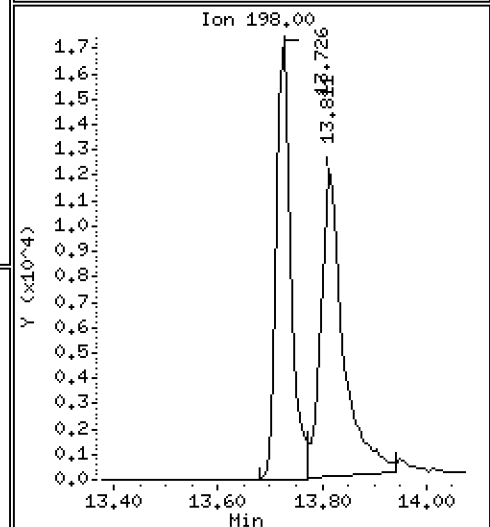
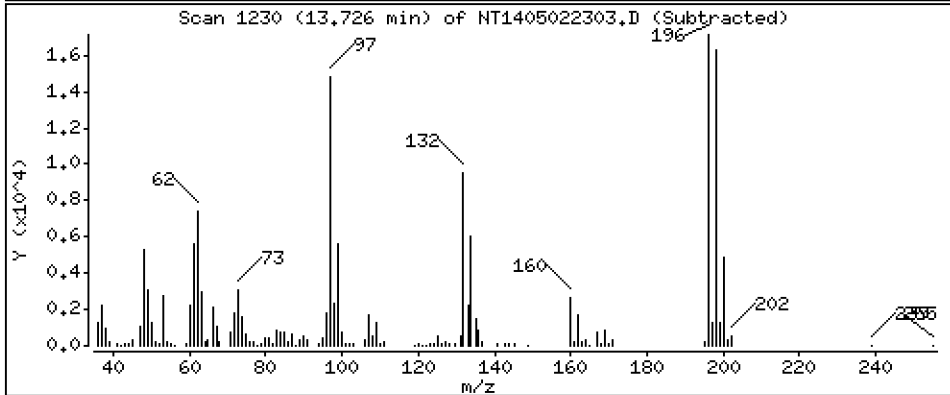
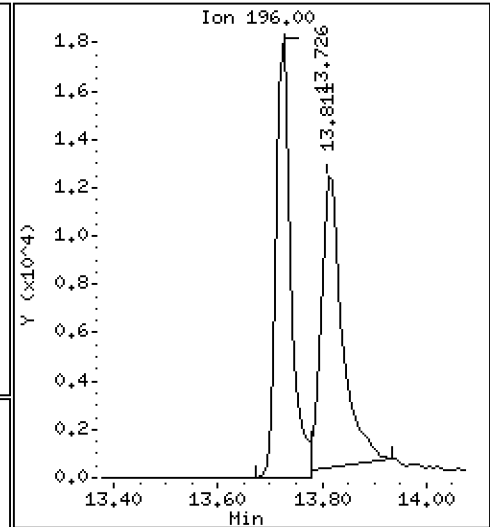
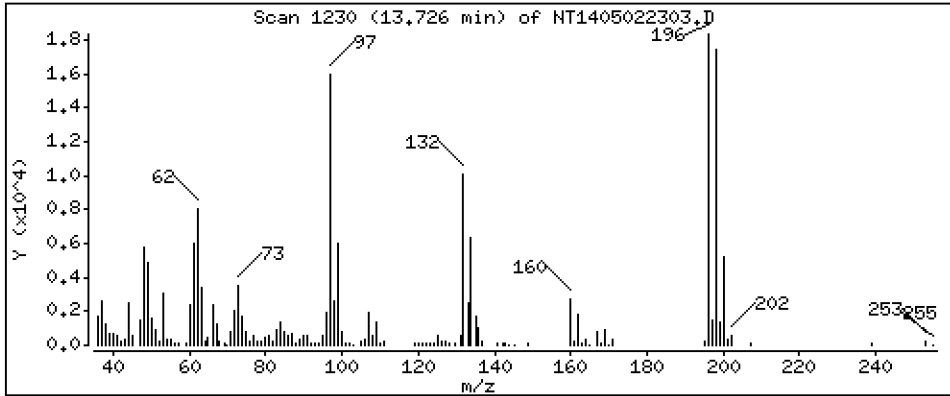
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

34 2,4,6-Trichlorophenol

Concentration: 0,7974 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

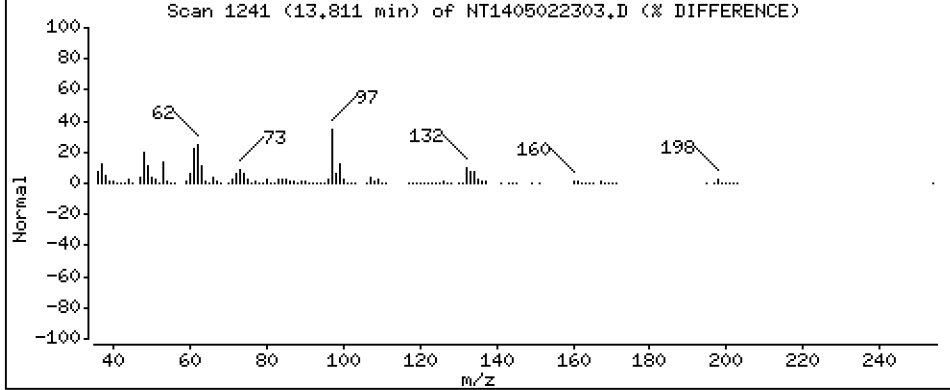
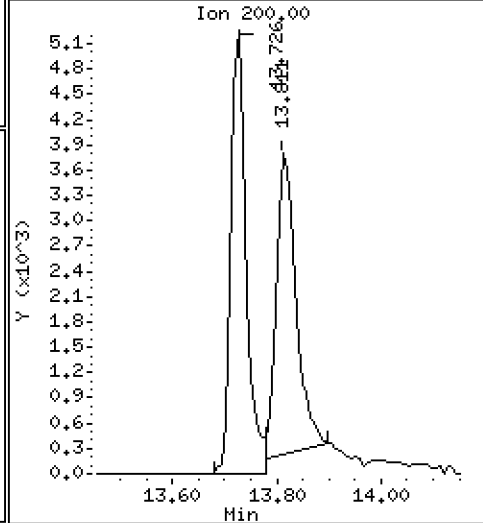
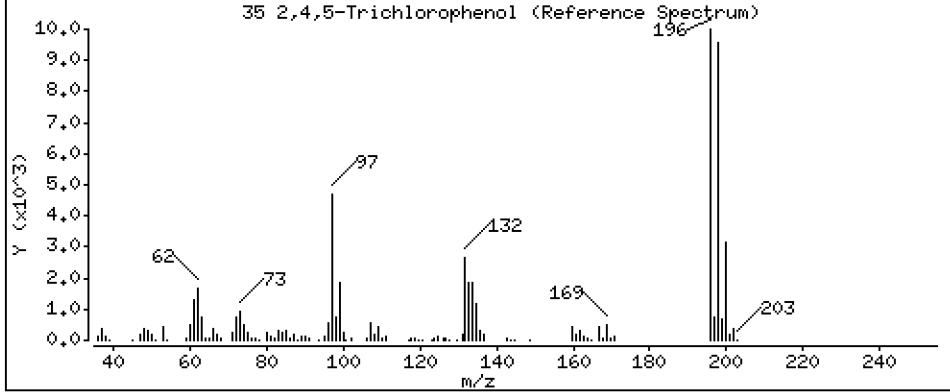
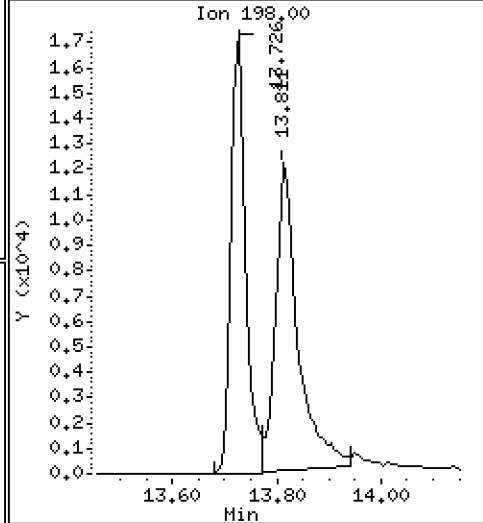
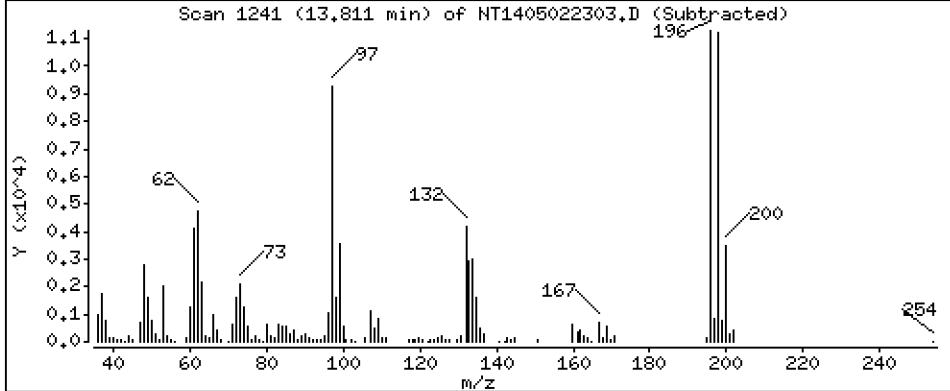
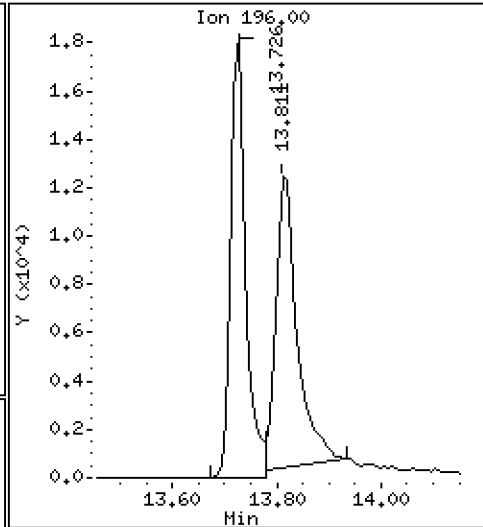
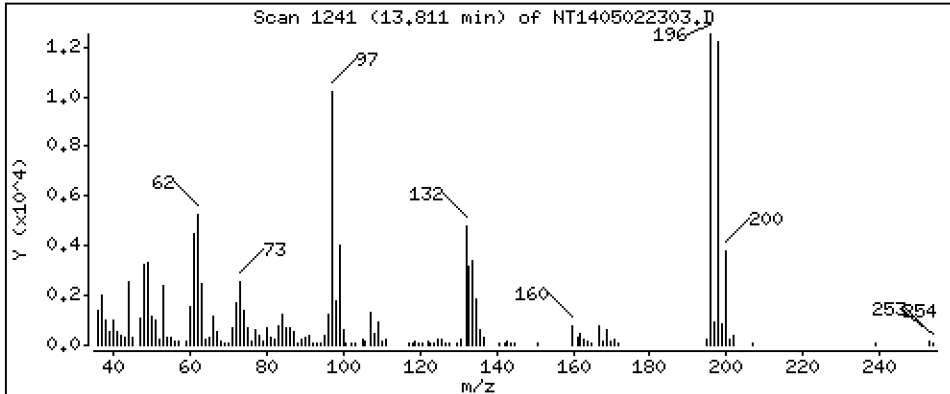
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

35 2,4,5-Trichlorophenol

Concentration: 0,7361 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

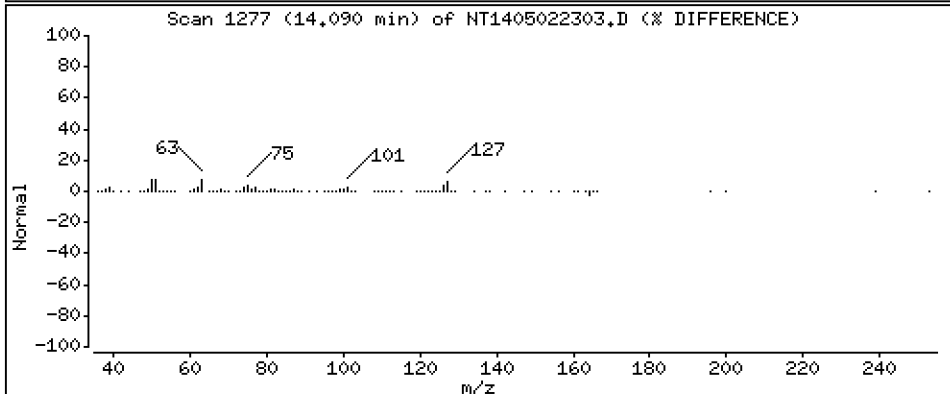
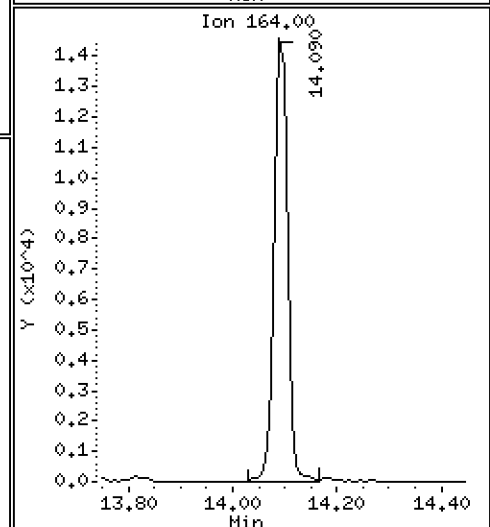
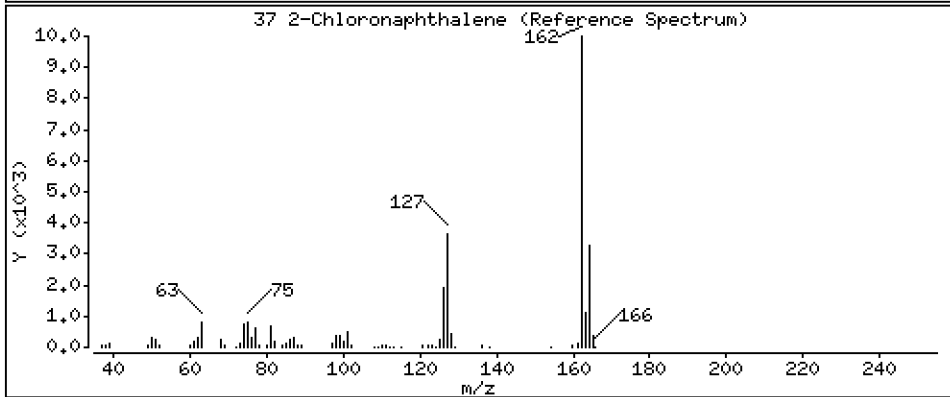
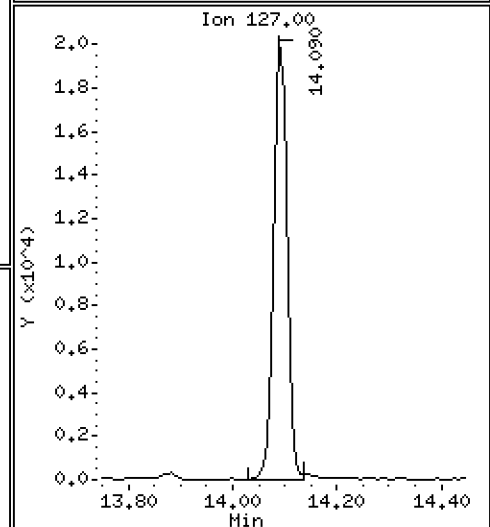
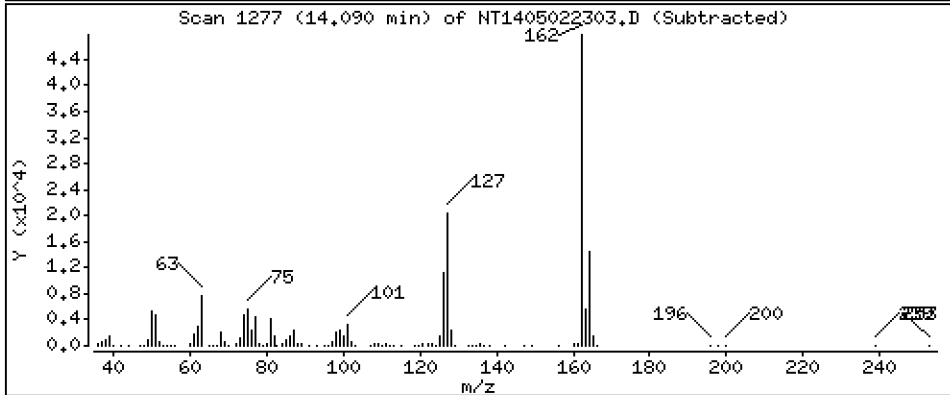
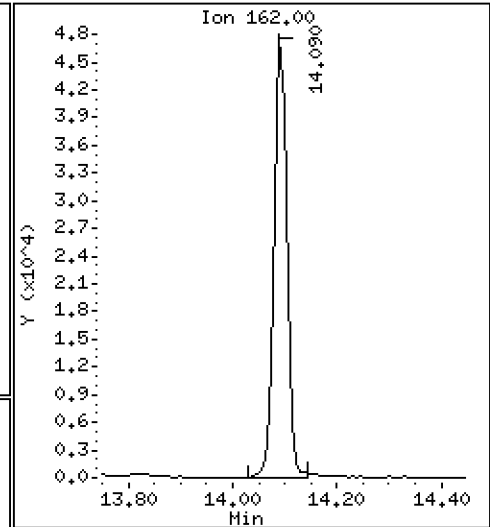
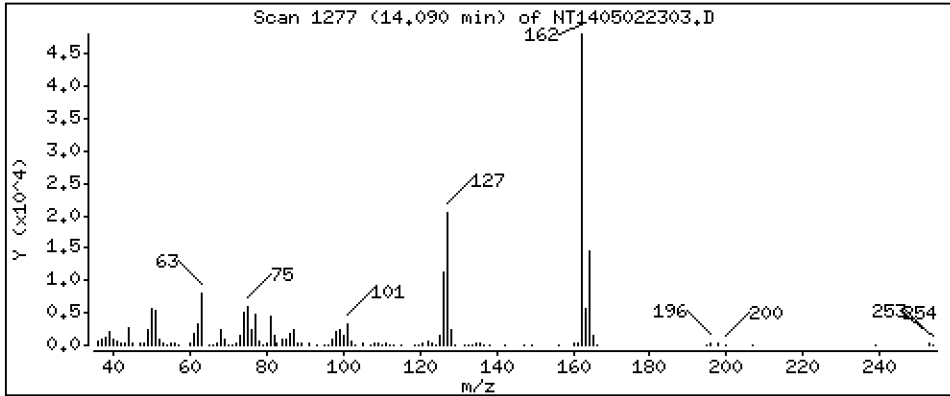
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

37 2-Chloronaphthalene

Concentration: 0,4797 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

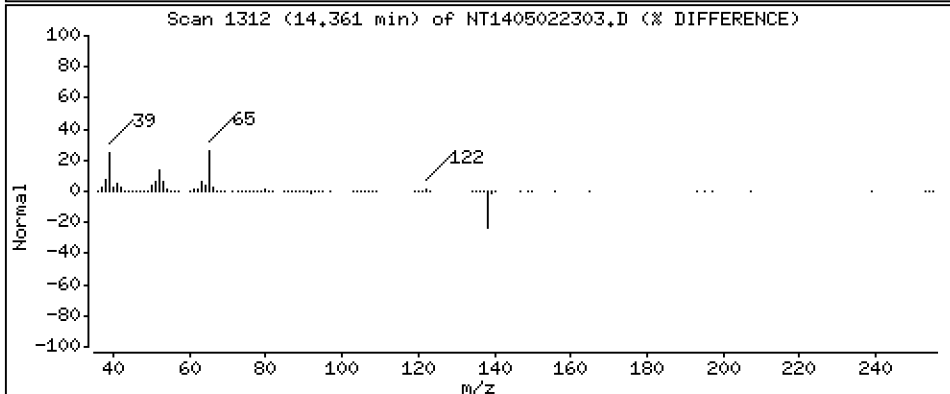
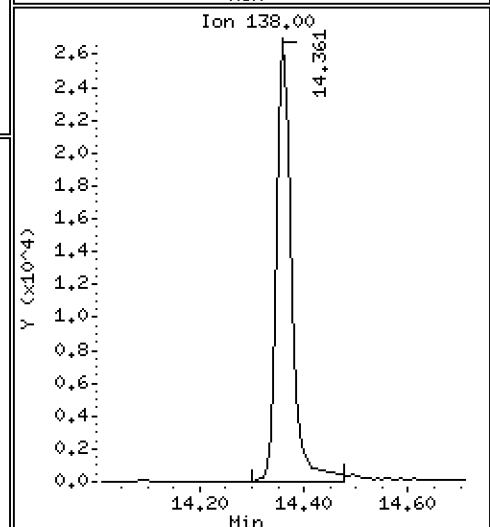
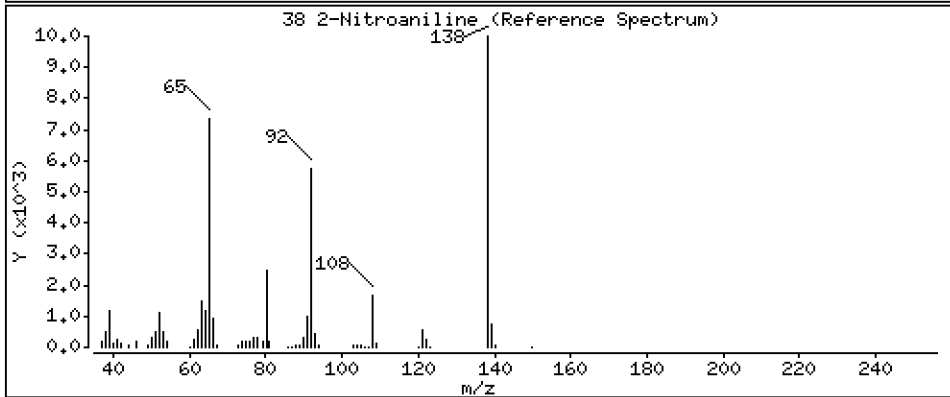
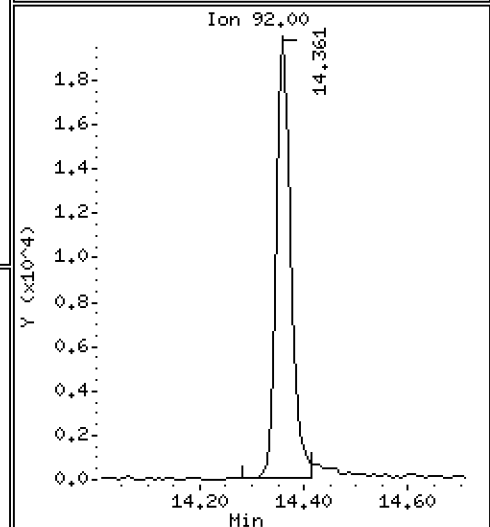
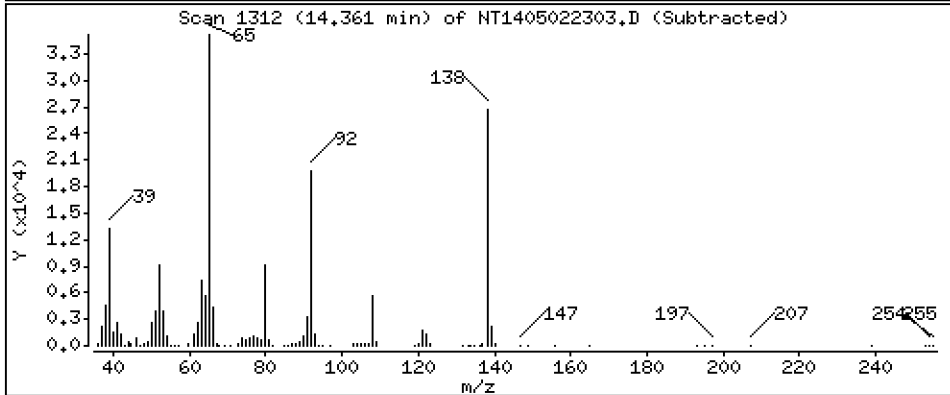
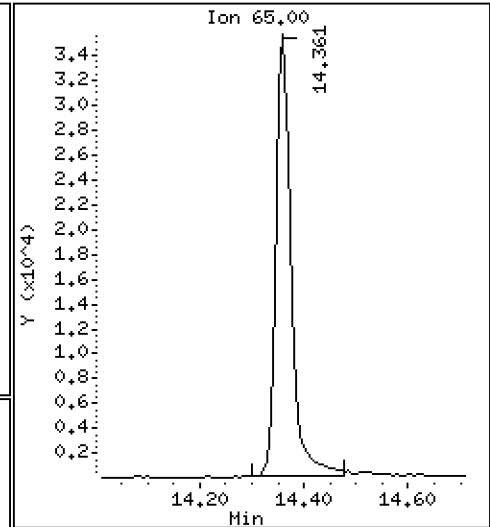
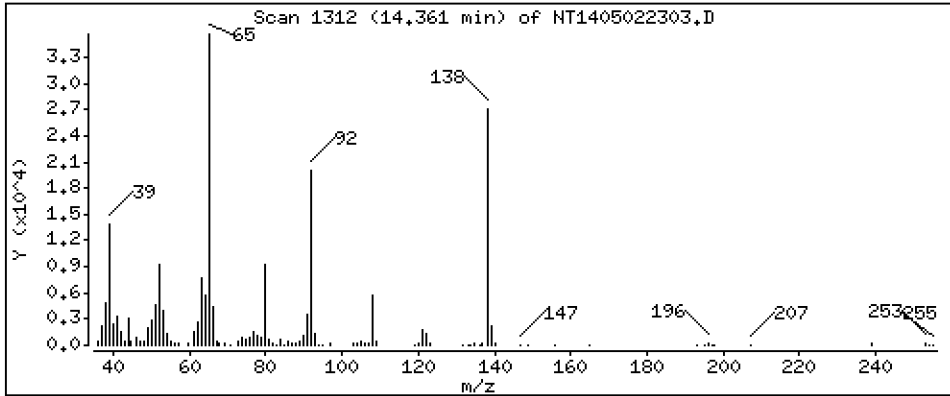
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

38 2-Nitroaniline

Concentration: 0,8188 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

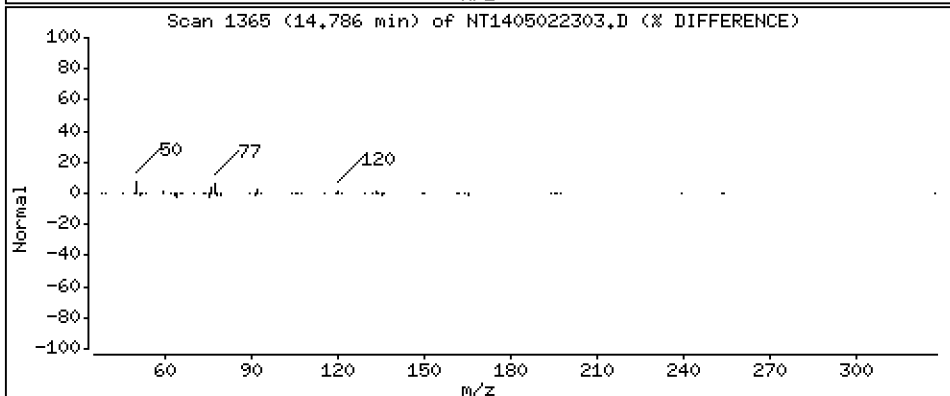
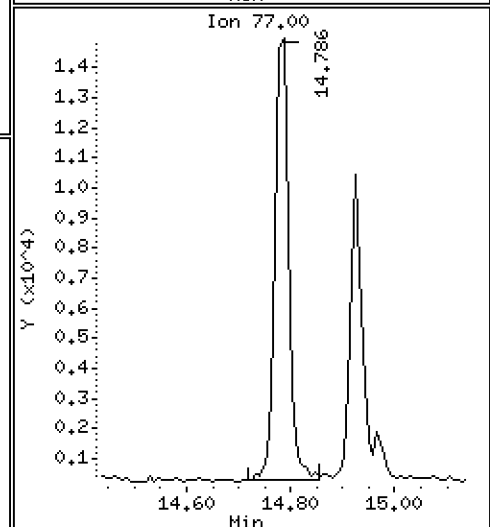
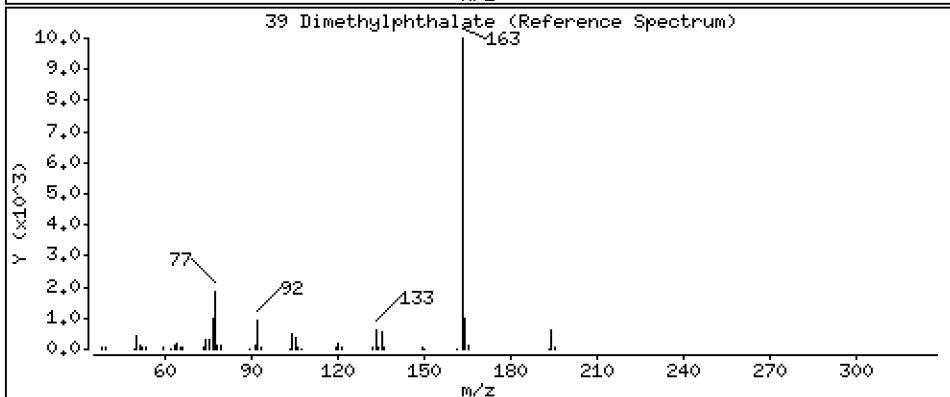
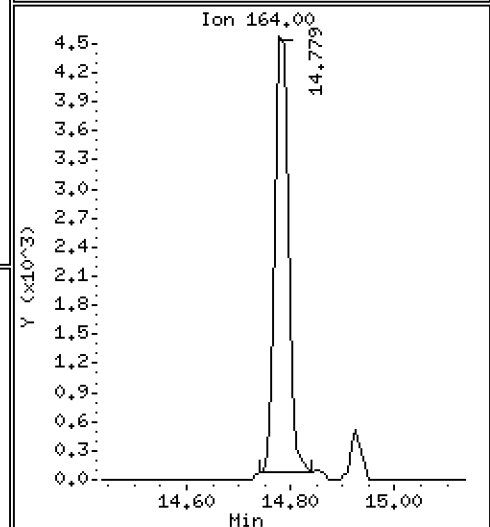
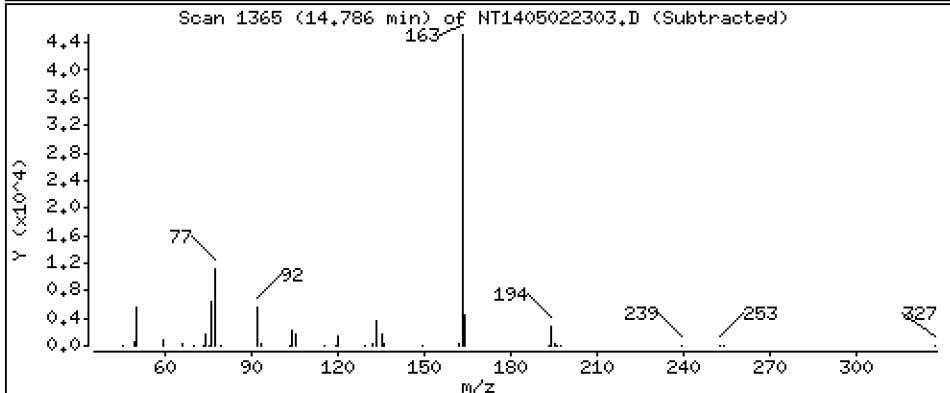
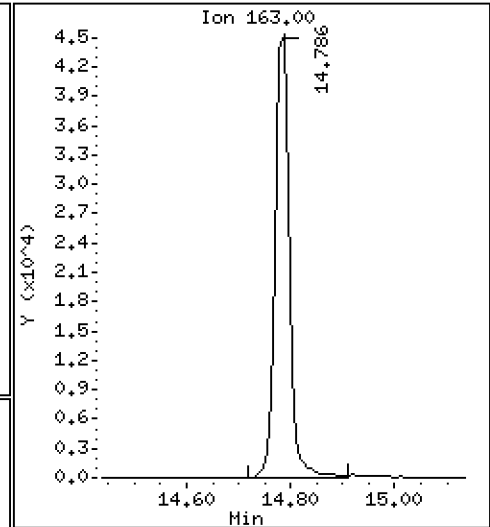
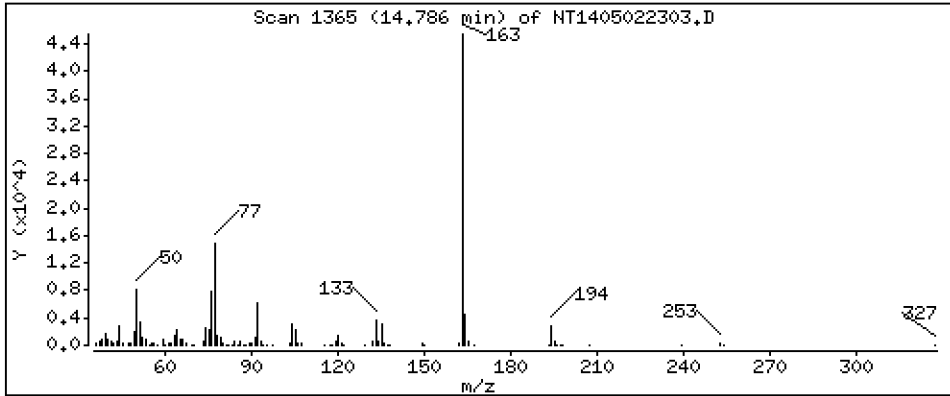
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 0,4998 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

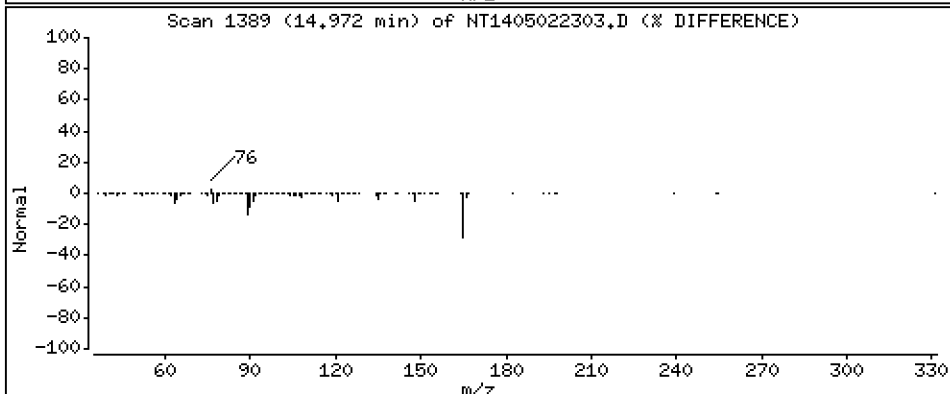
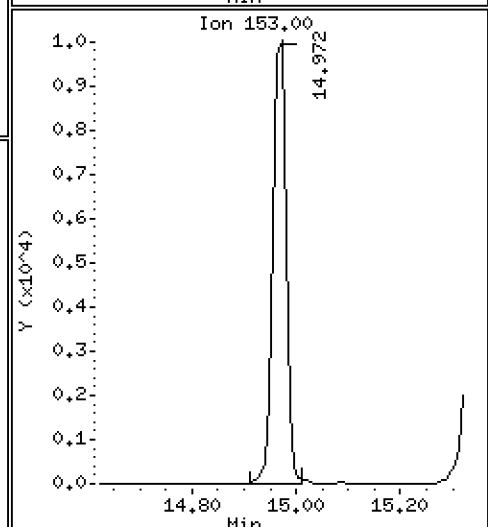
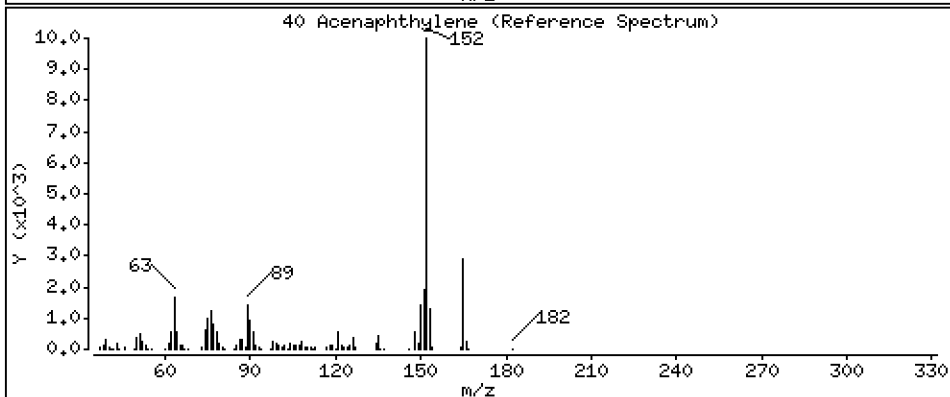
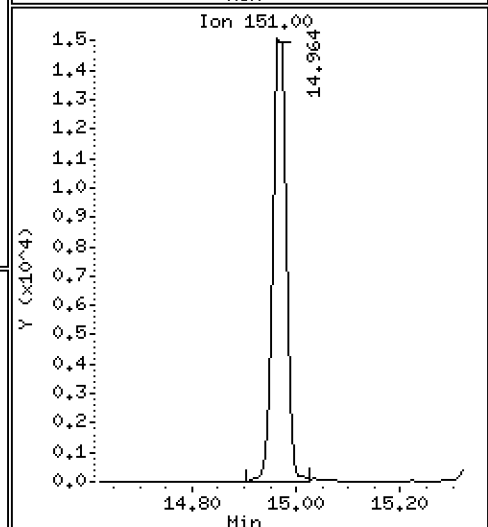
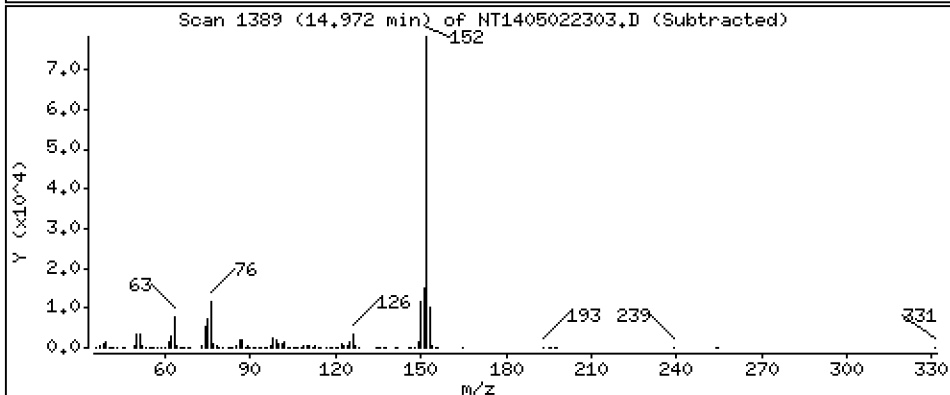
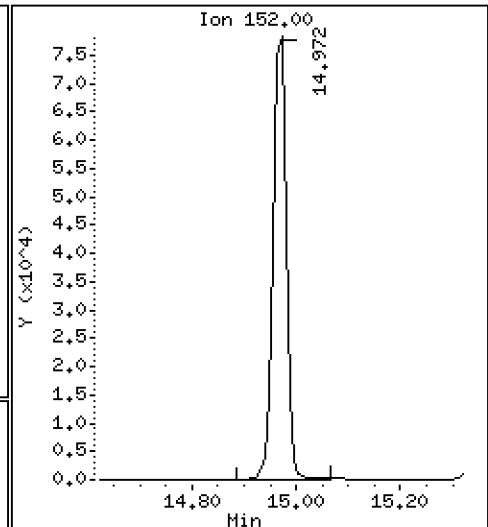
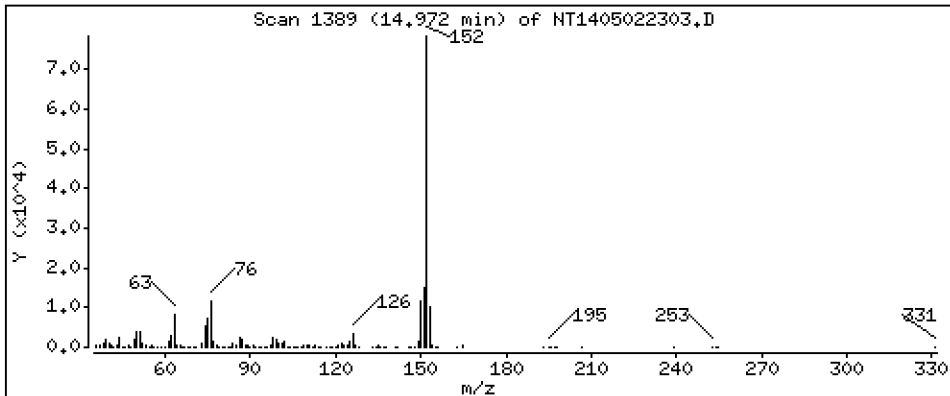
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

40 Acenaphthylene

Concentration: 0,5657 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

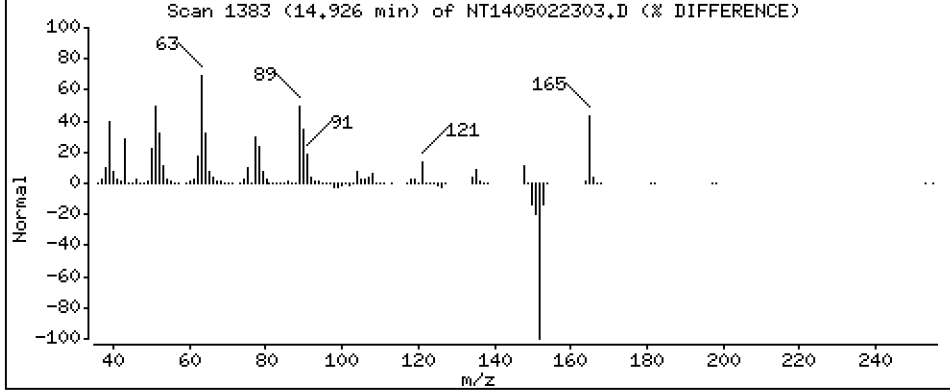
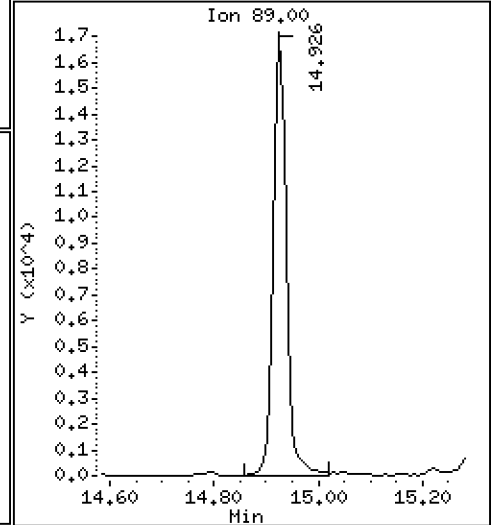
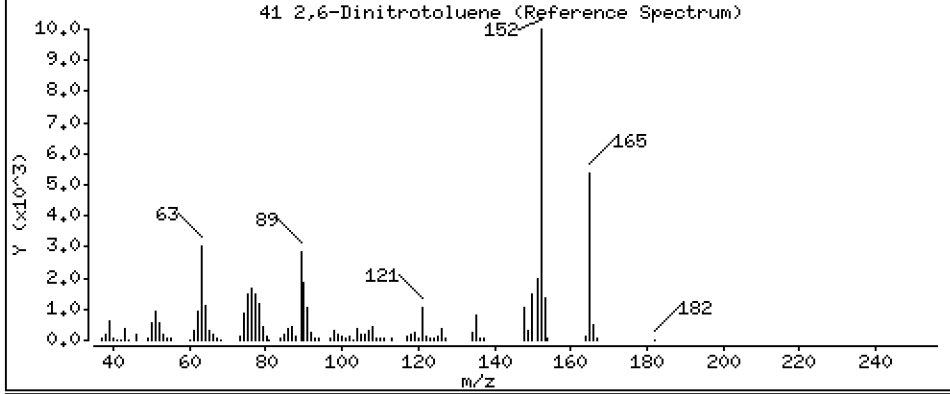
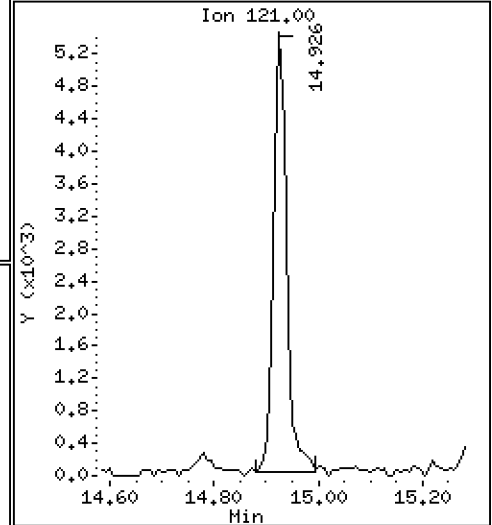
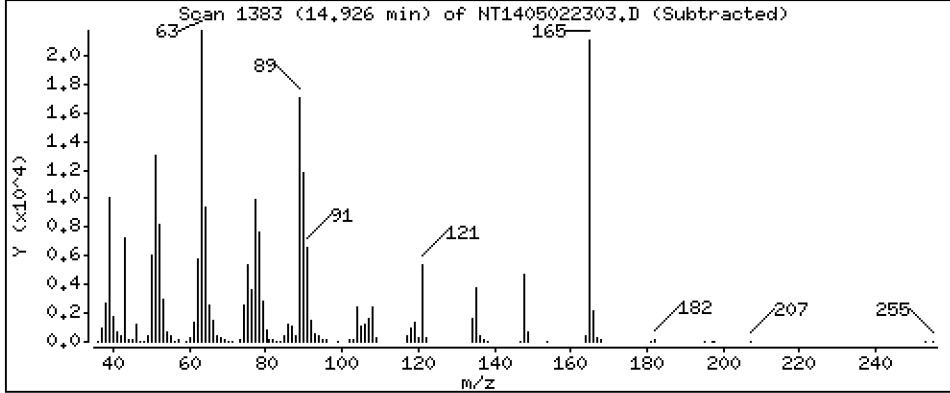
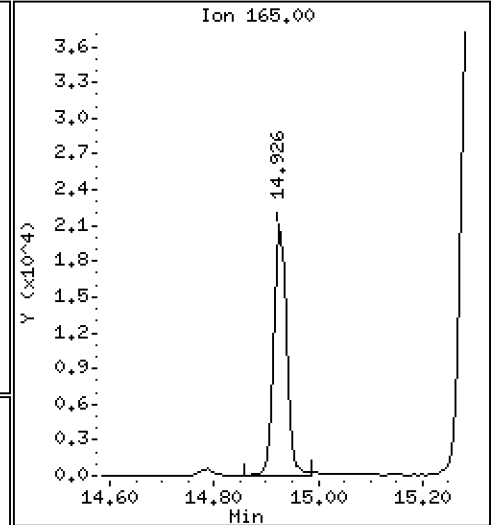
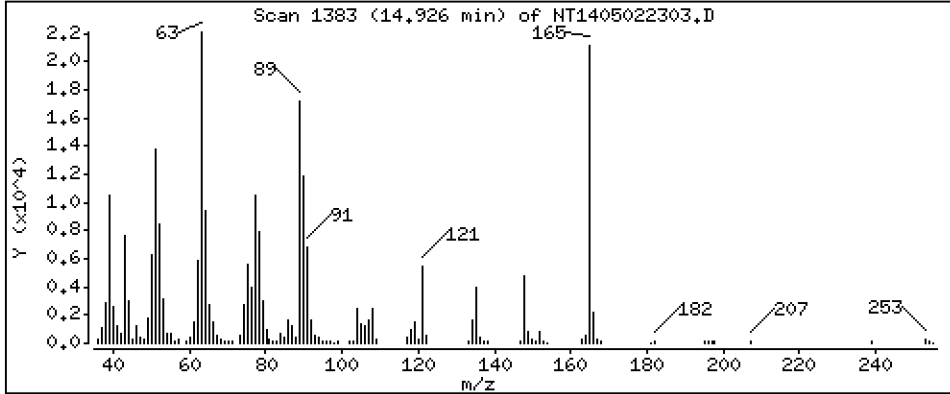
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

41 2,6-Dinitrotoluene

Concentration: 0.9063 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

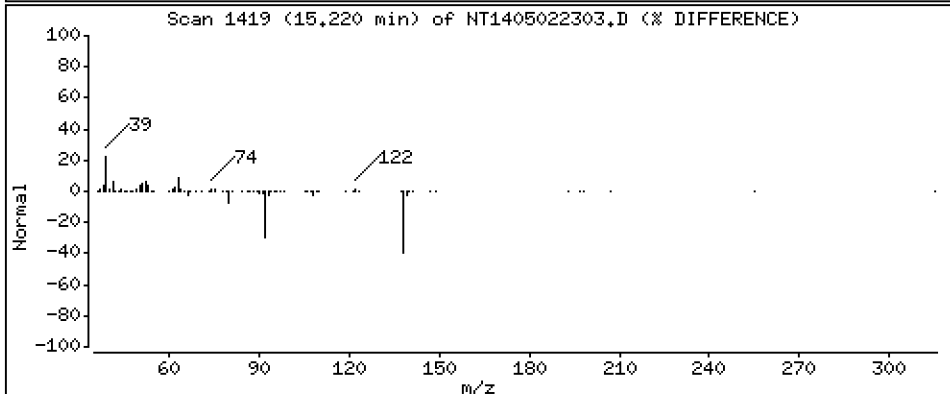
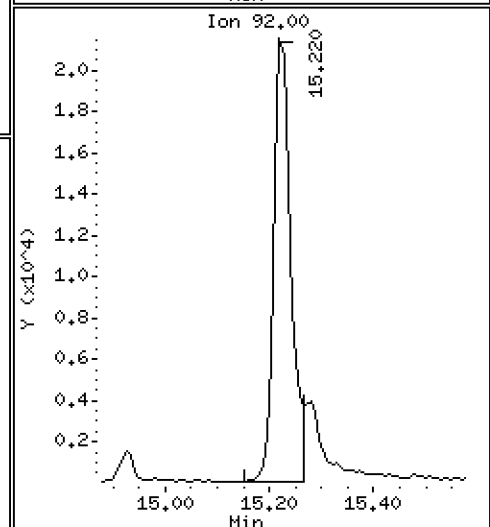
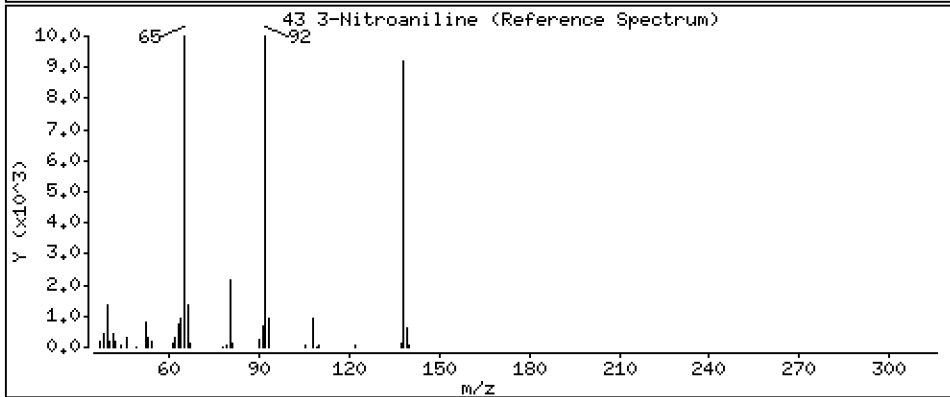
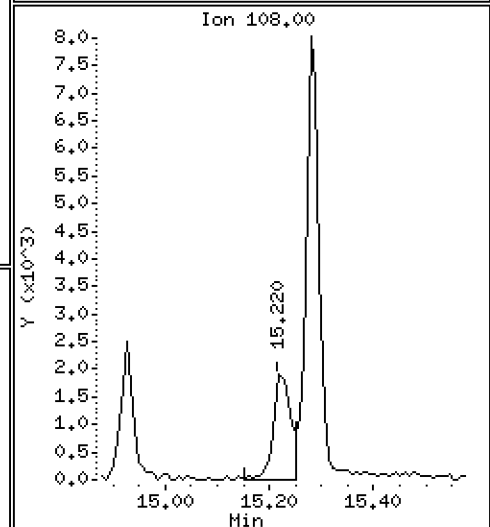
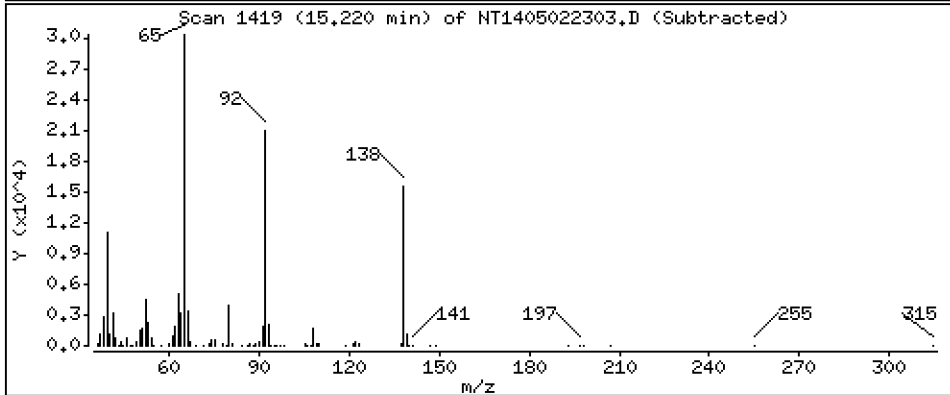
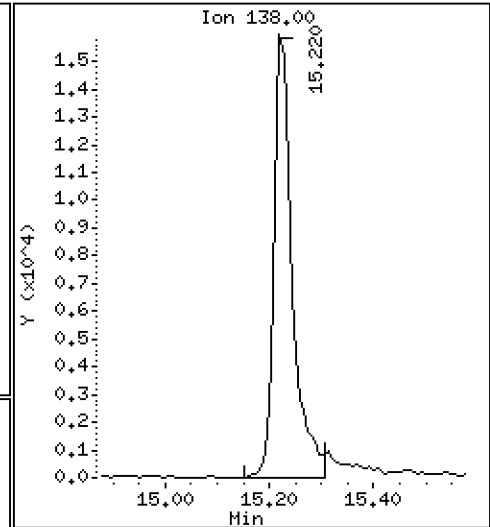
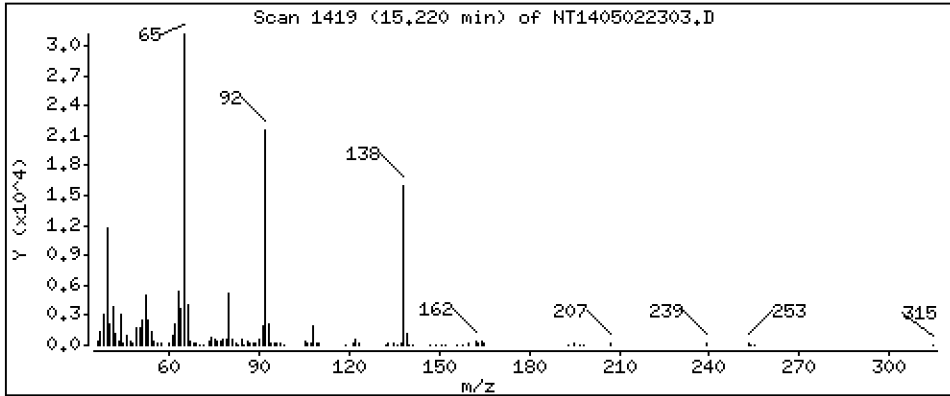
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

43 3-Nitroaniline

Concentration: 0,8091 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

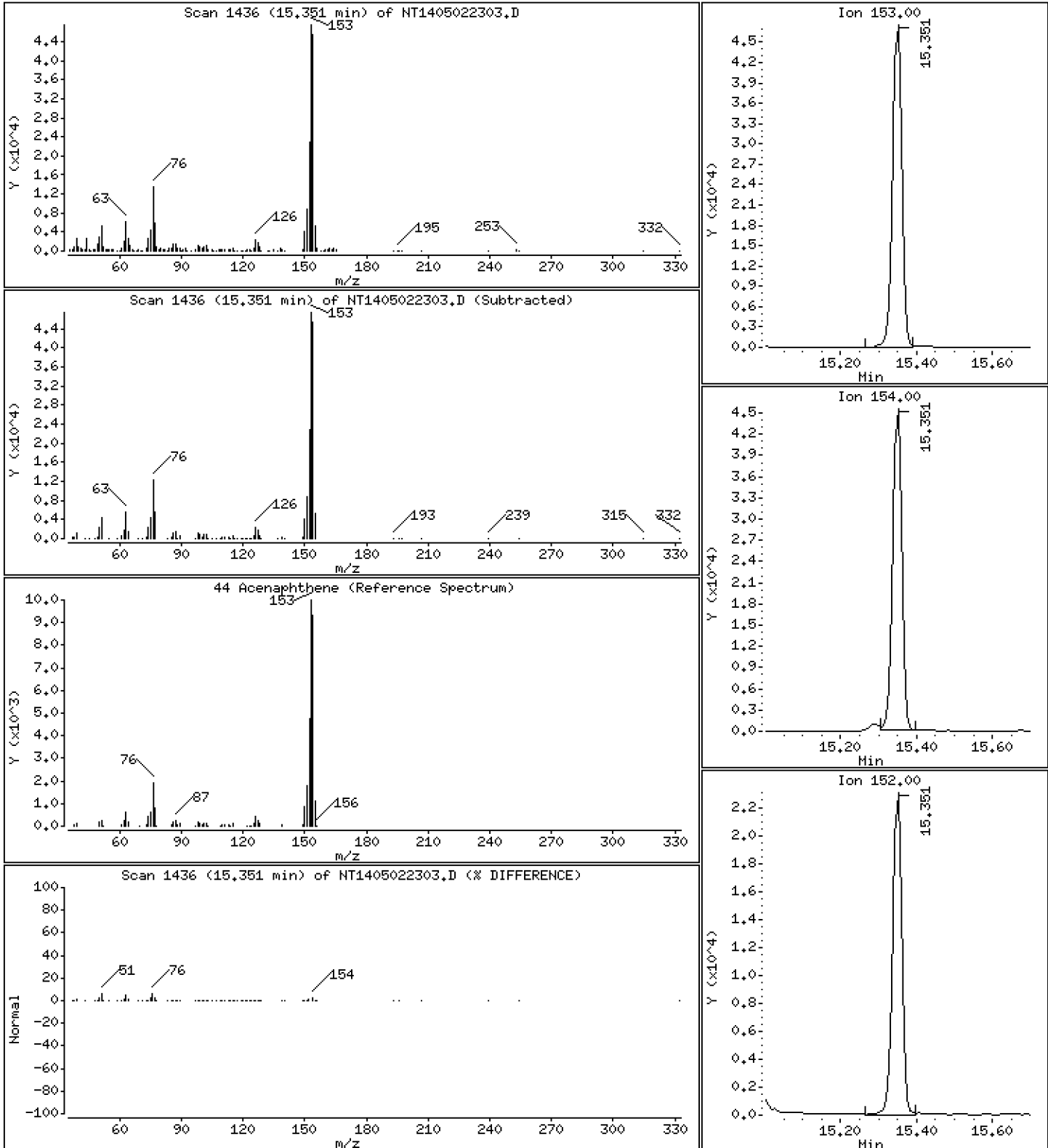
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

44 Acenaphthene

Concentration: 0,5034 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

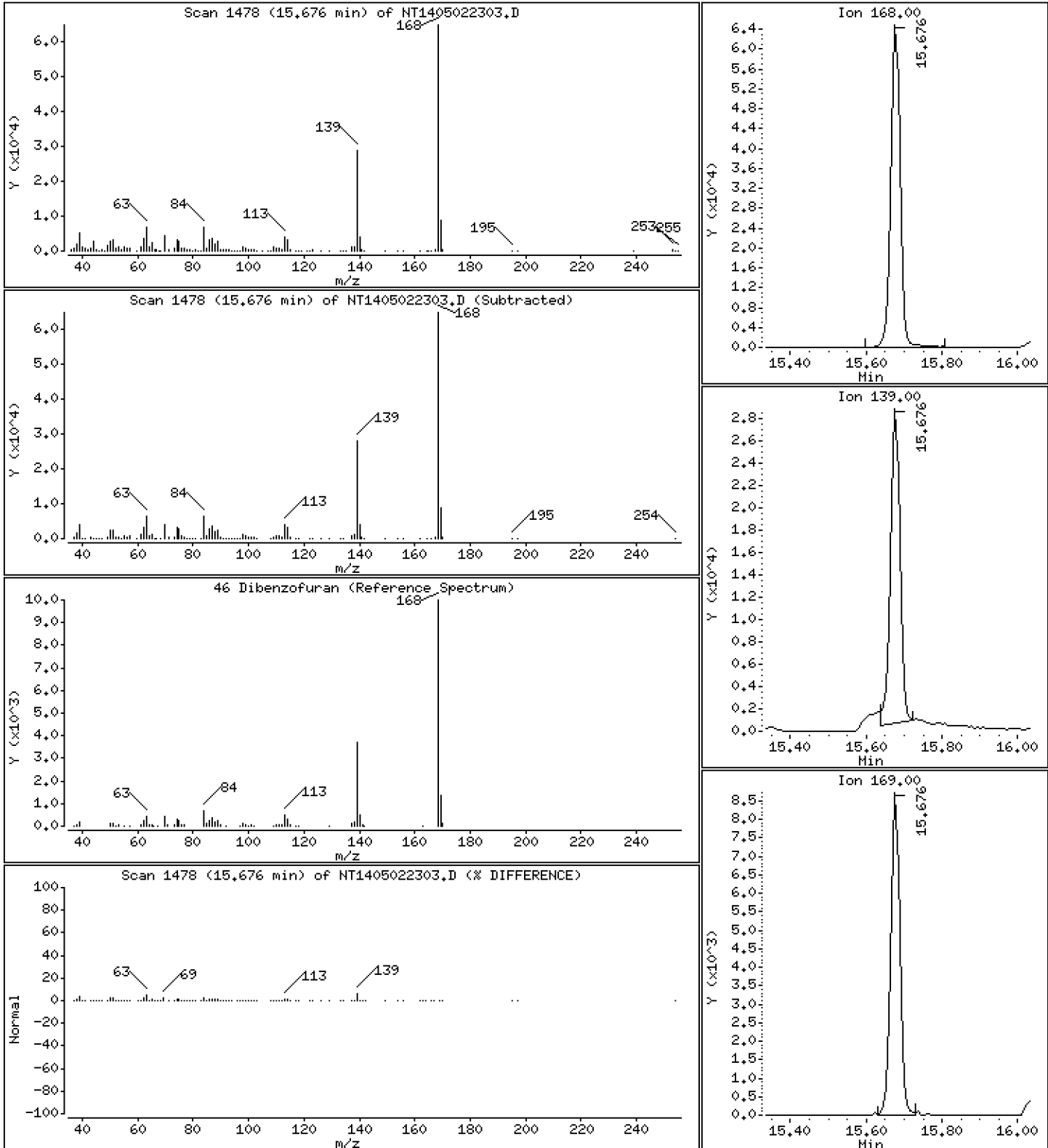
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

46 Dibenzofuran

Concentration: 0,4839 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

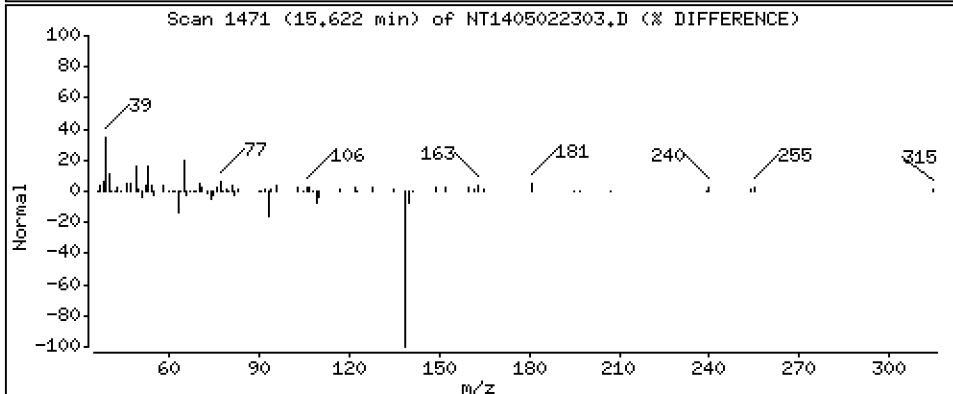
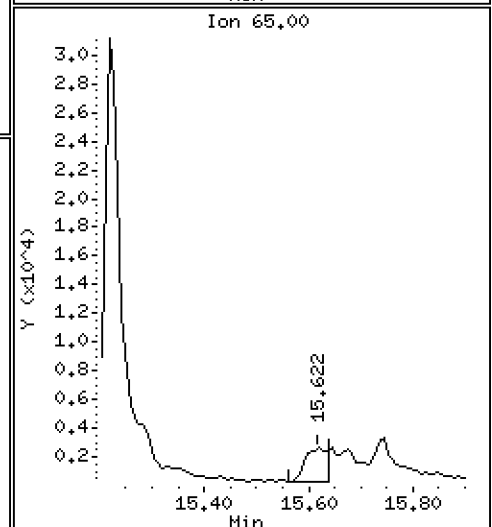
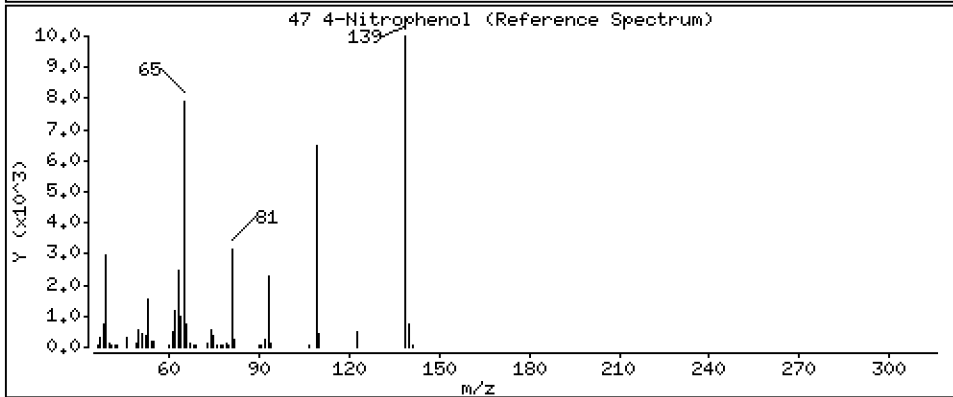
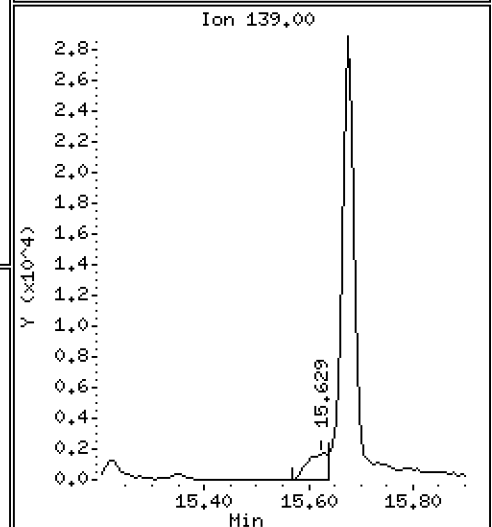
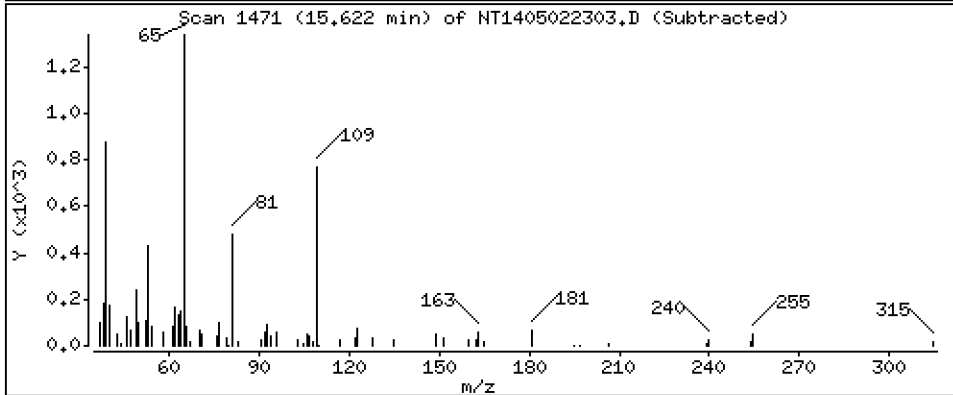
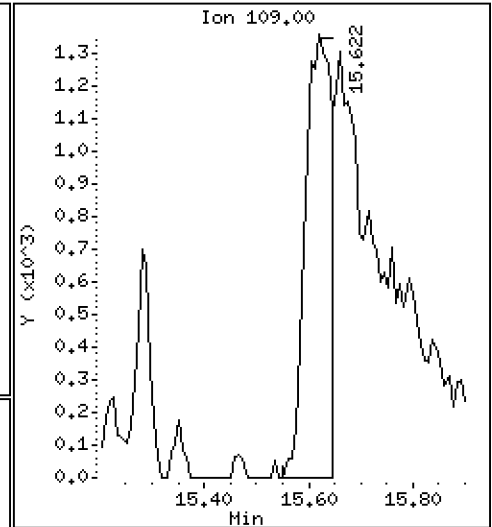
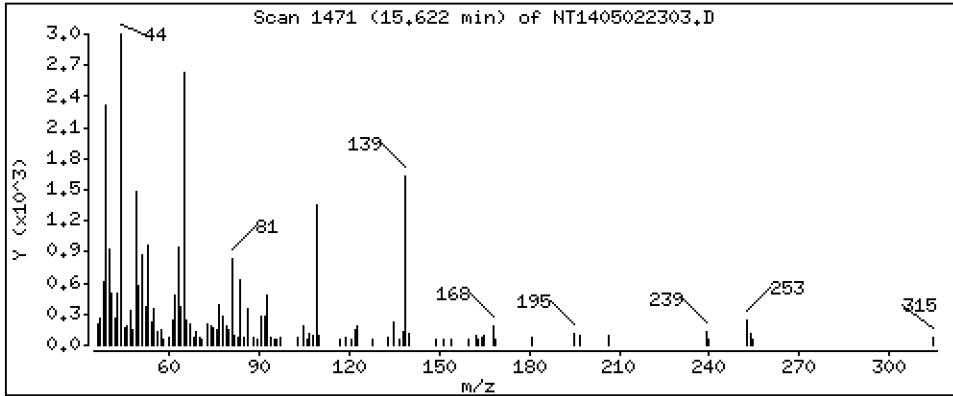
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

47 4-Nitrophenol

Concentration: 0,1700 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

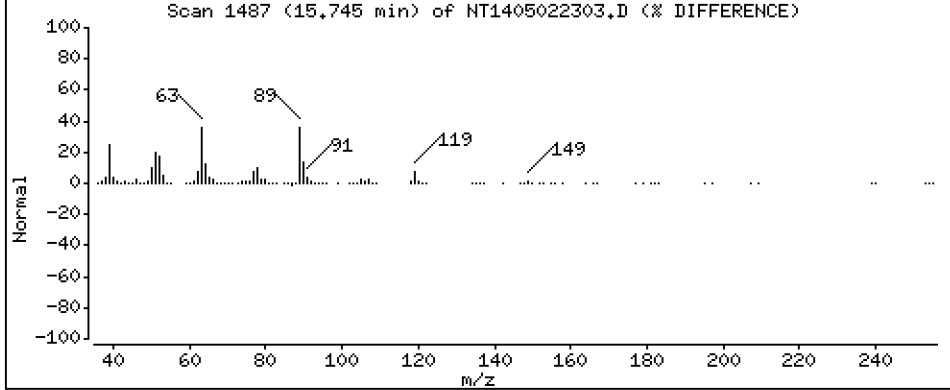
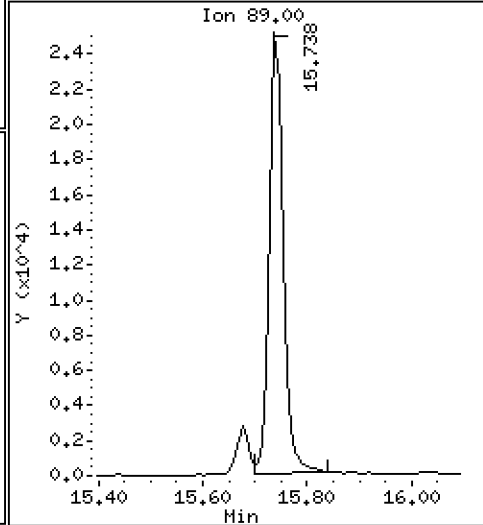
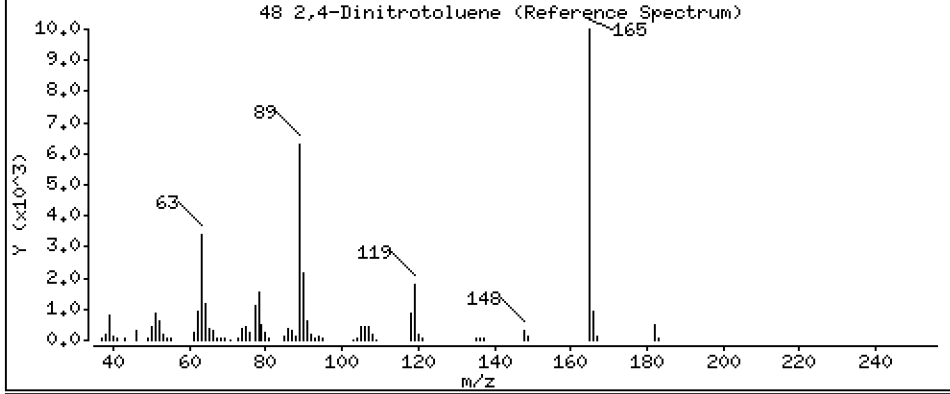
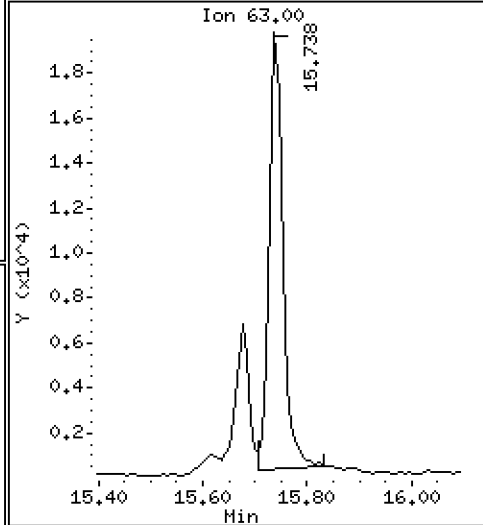
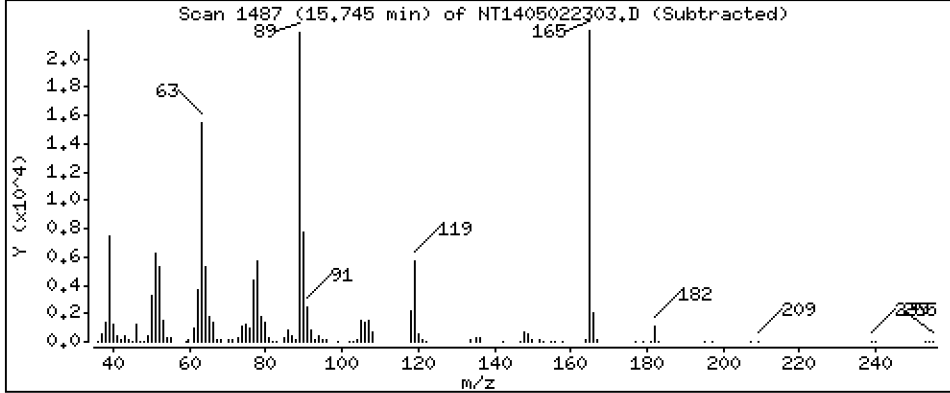
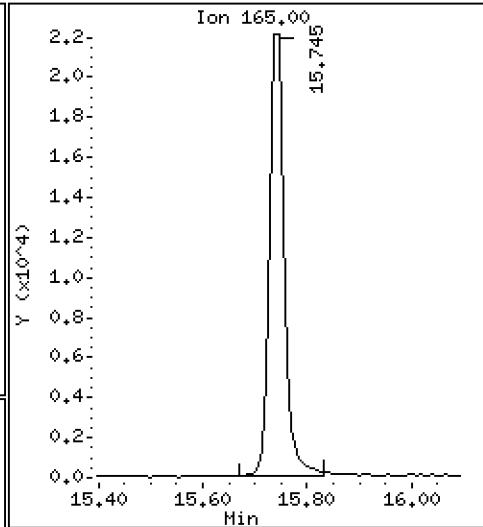
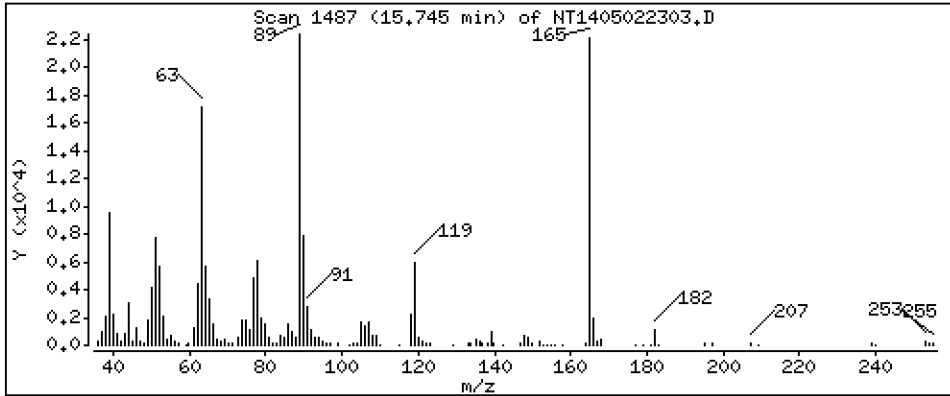
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

48 2,4-Dinitrotoluene

Concentration: 0,8309 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

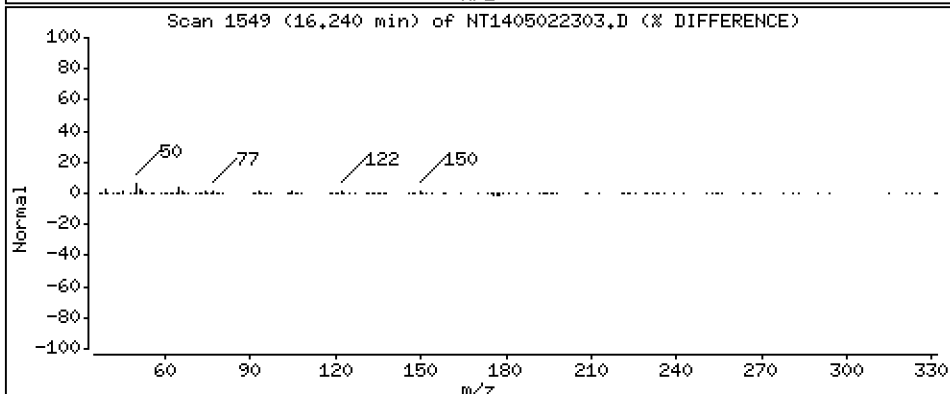
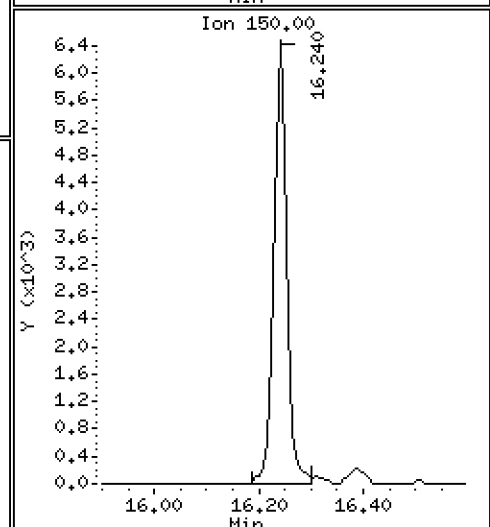
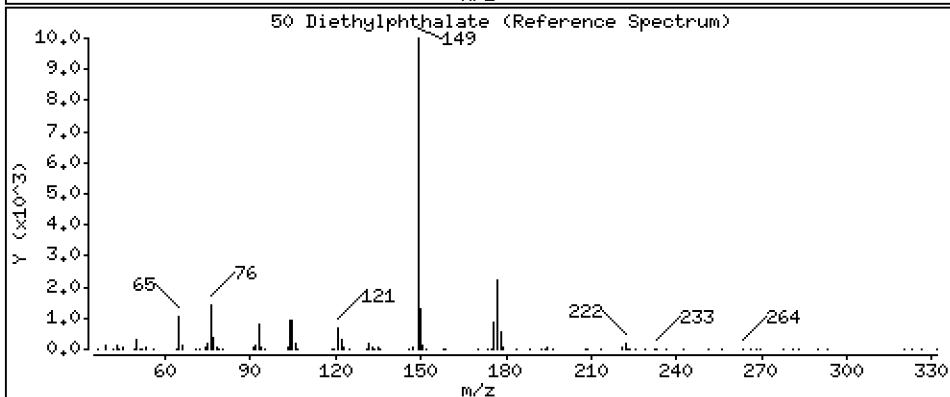
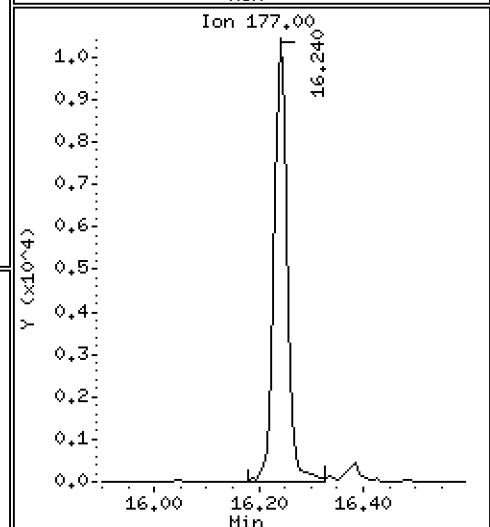
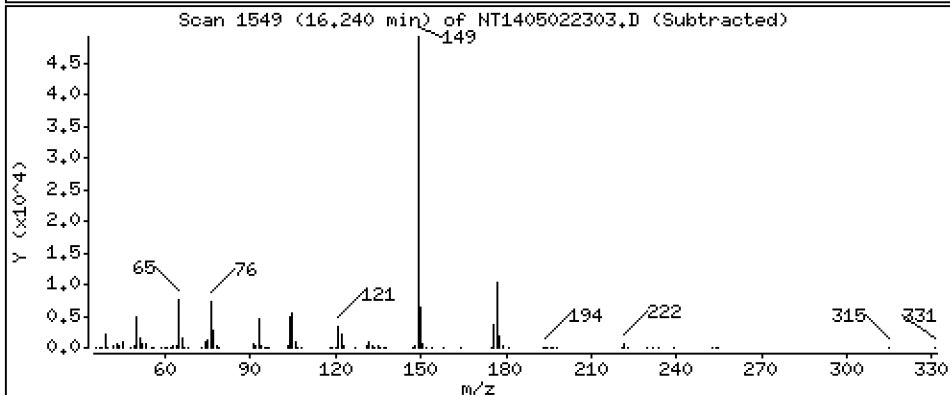
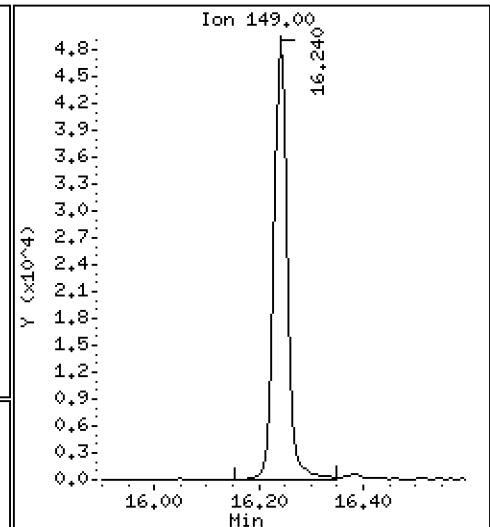
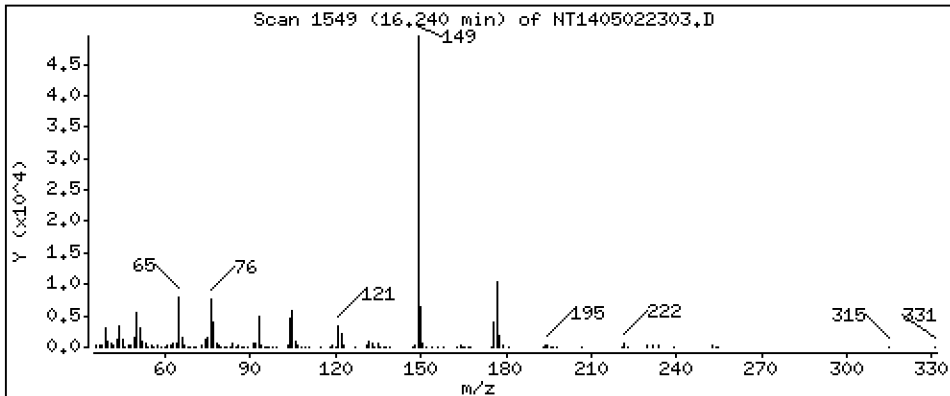
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,5039 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

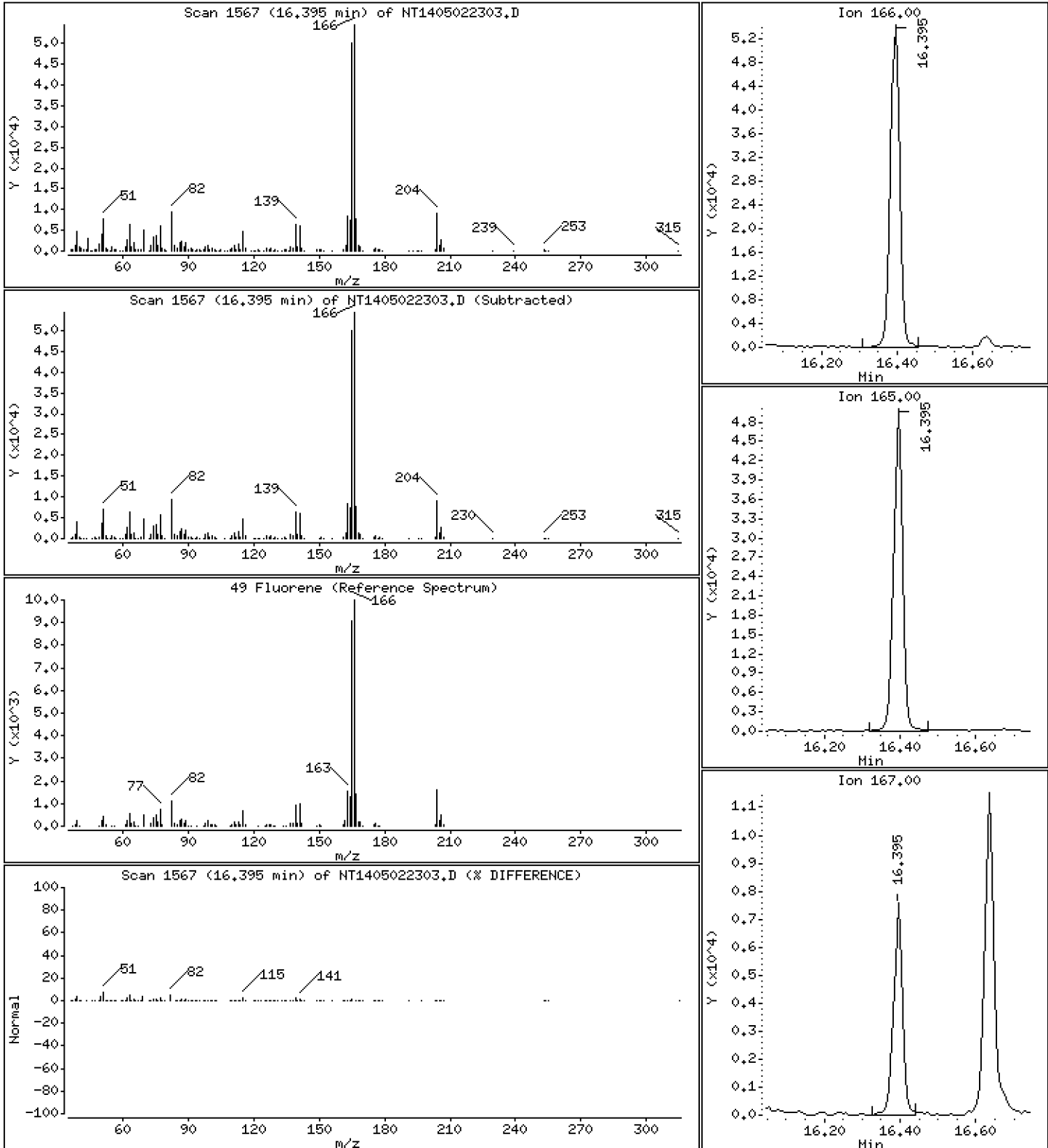
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

49 Fluorene

Concentration: 0,4572 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

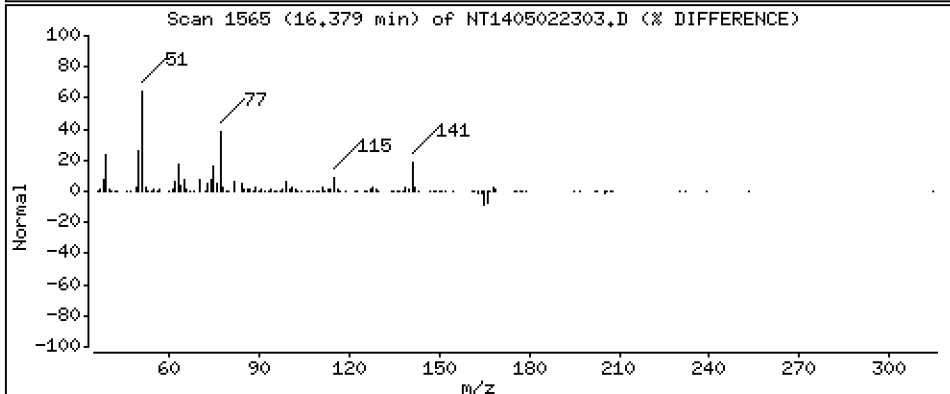
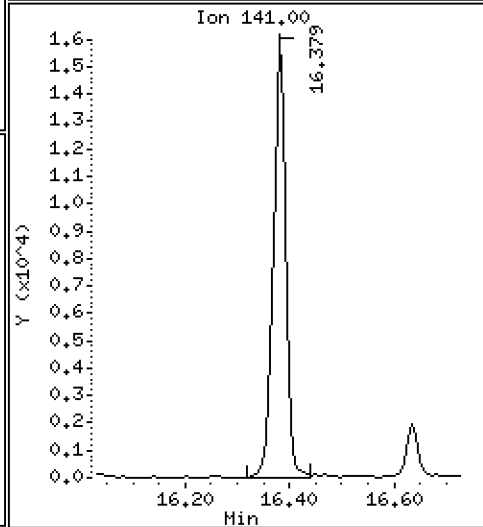
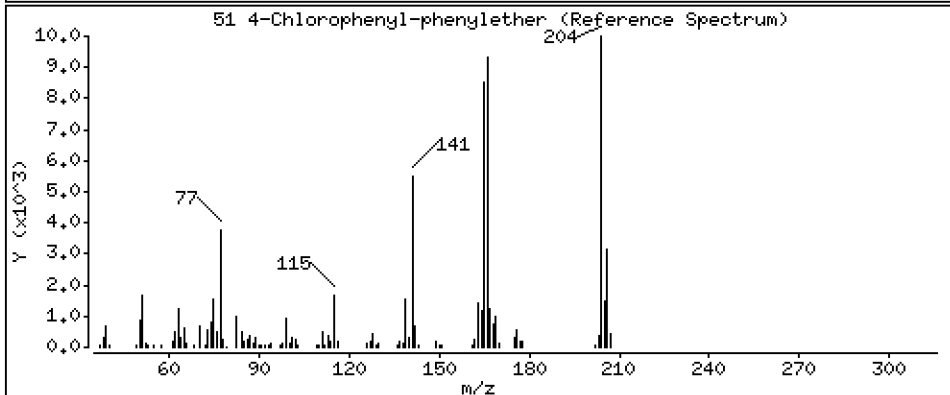
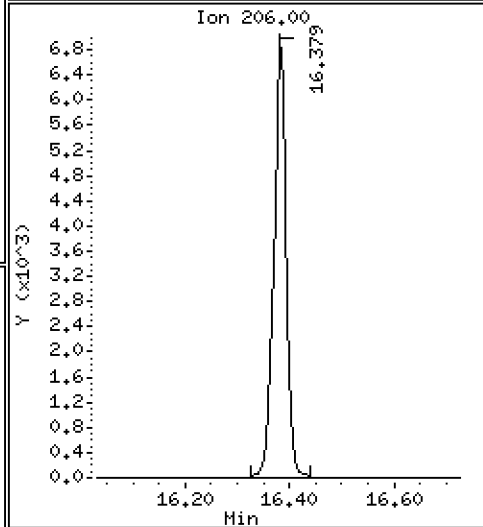
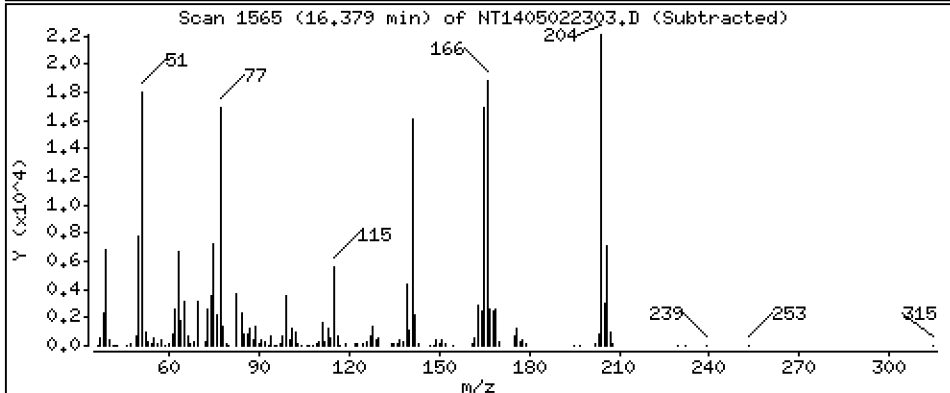
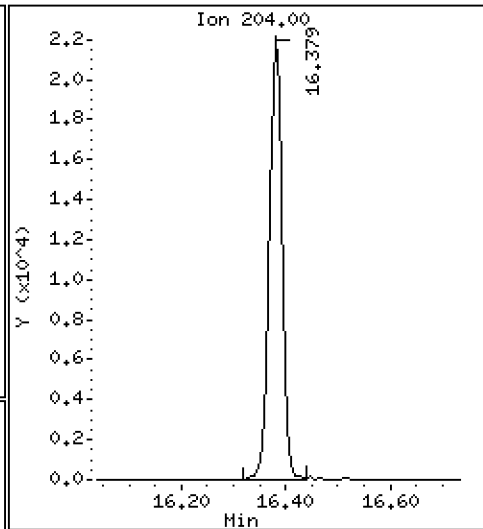
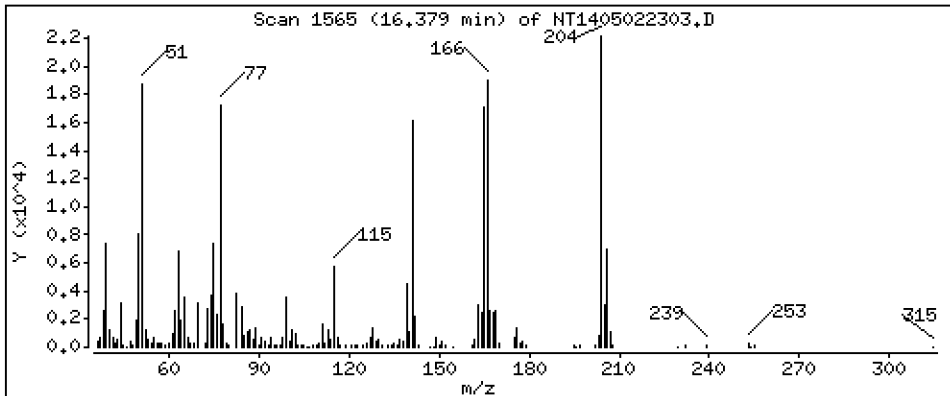
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

51 4-Chlorophenyl-phenylether

Concentration: 0,4476 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

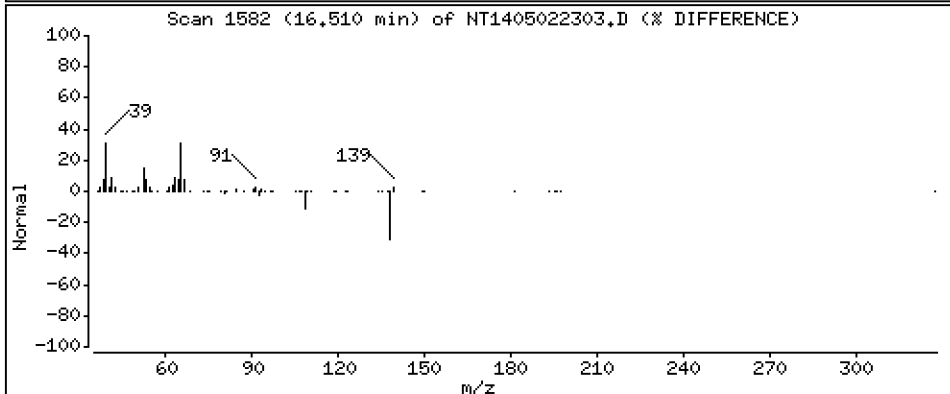
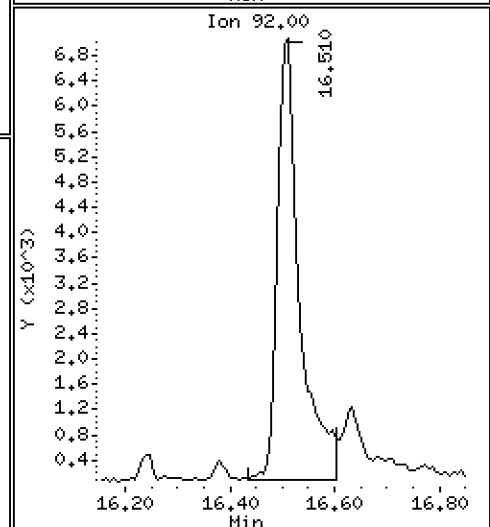
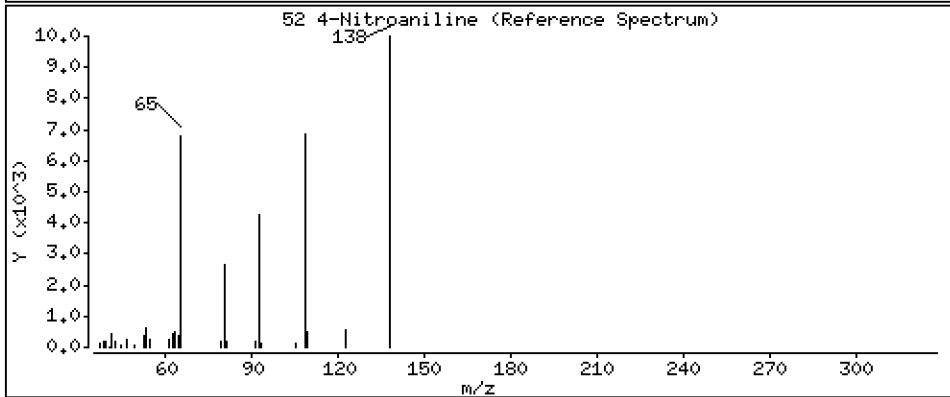
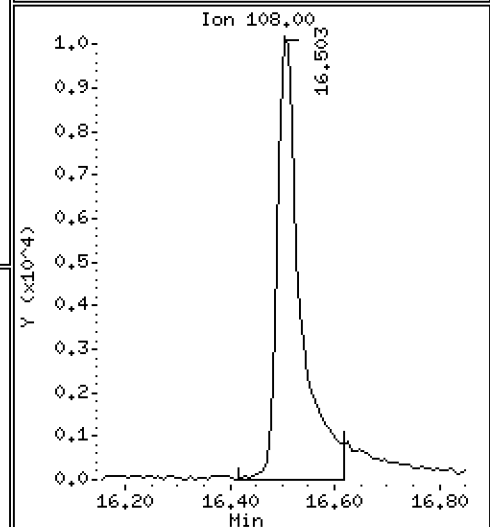
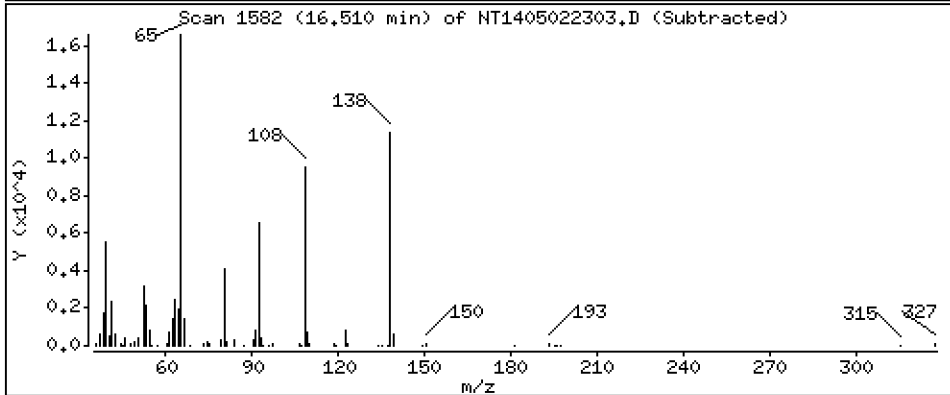
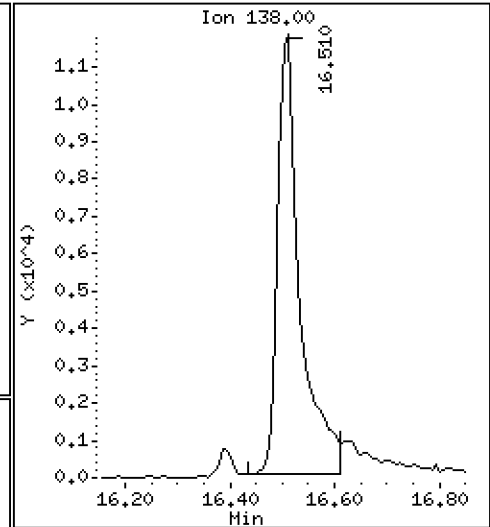
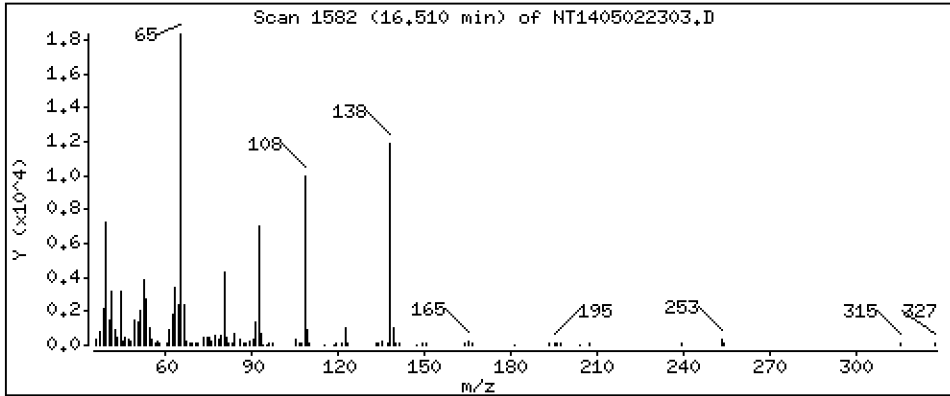
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

52 4-Nitroaniline

Concentration: 0.8370 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

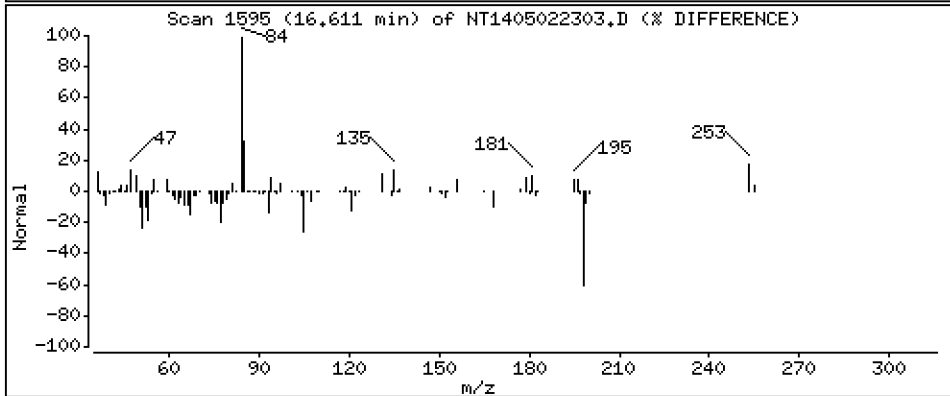
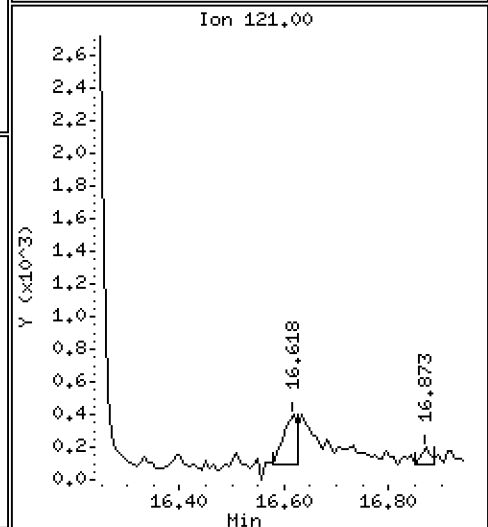
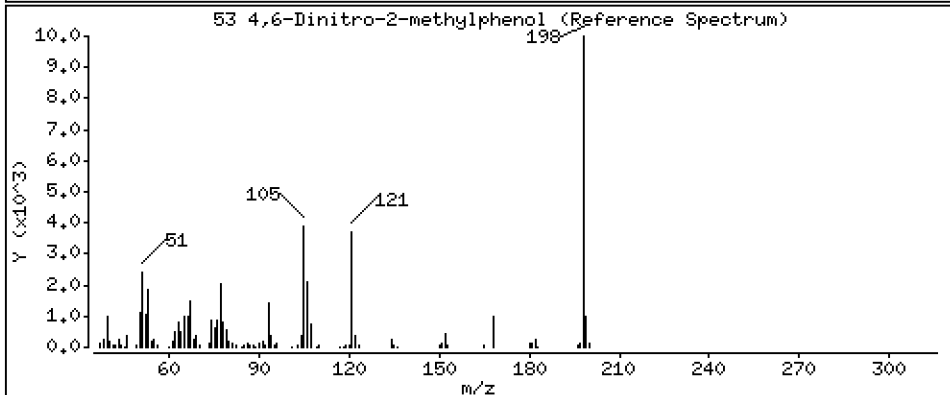
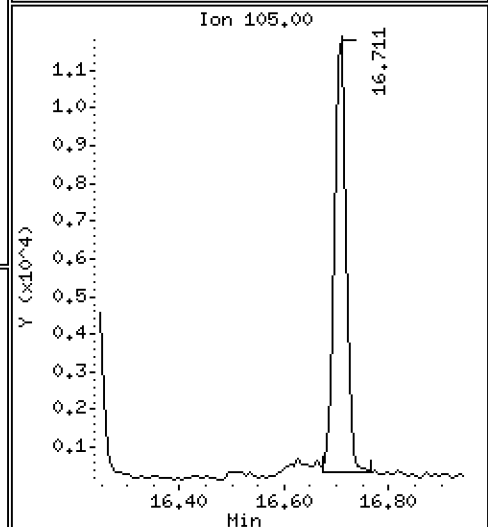
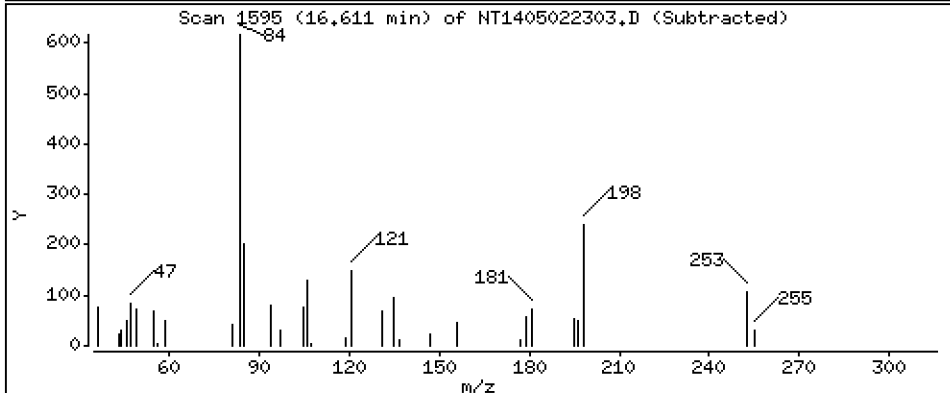
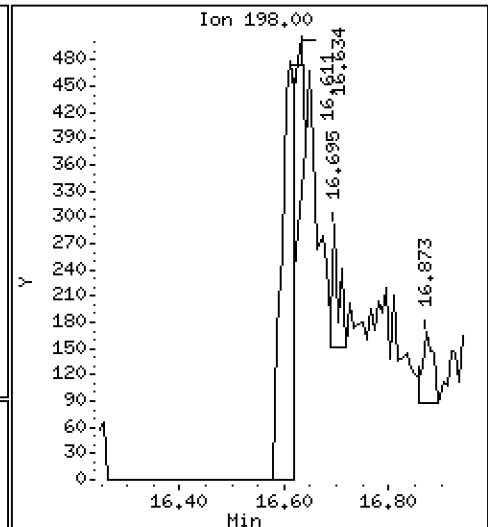
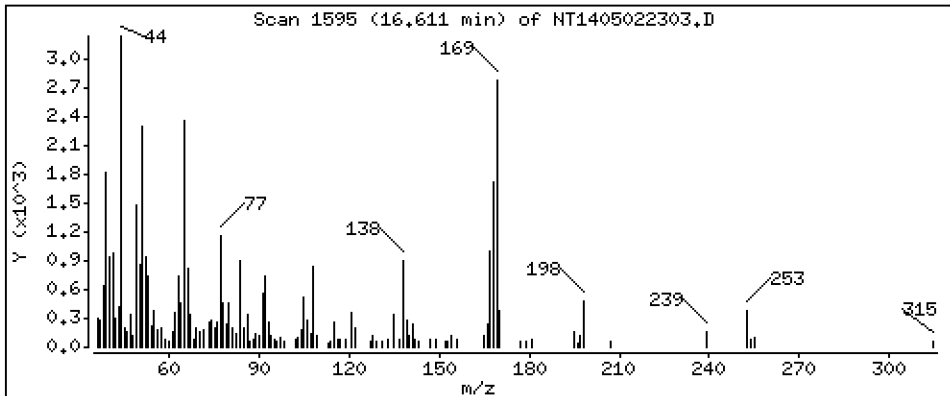
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

53 4,6-Dinitro-2-methylphenol

Concentration: 0,03247 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

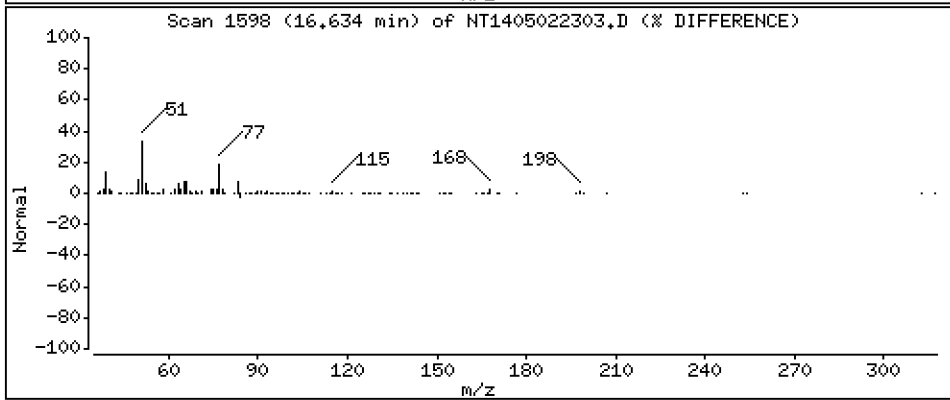
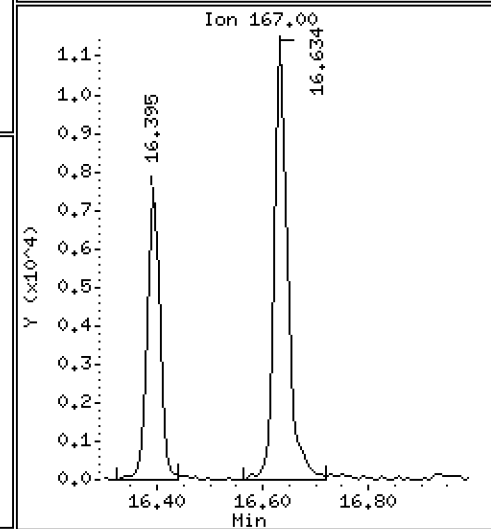
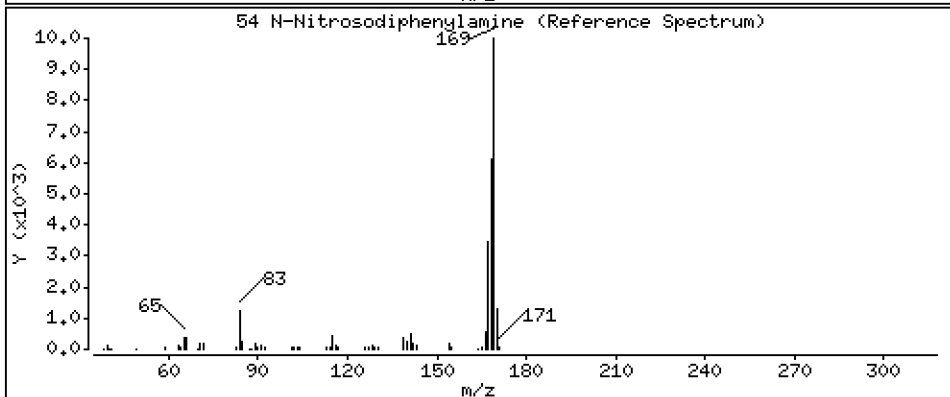
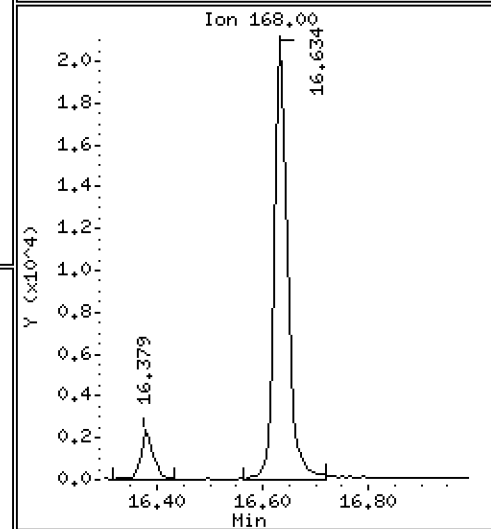
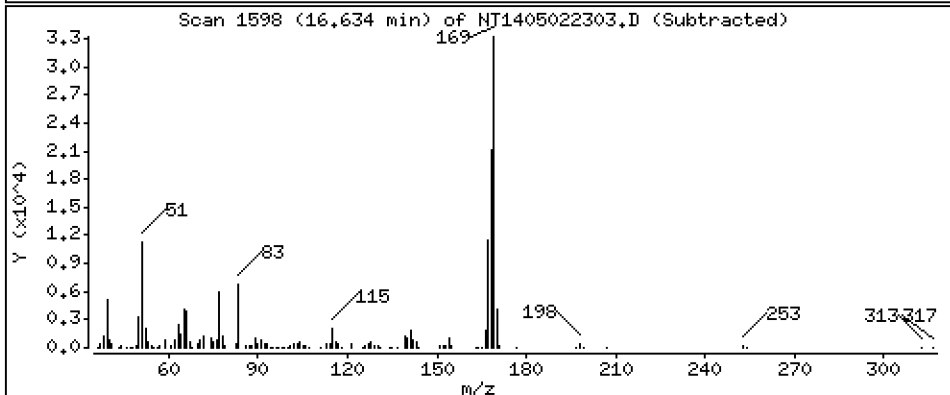
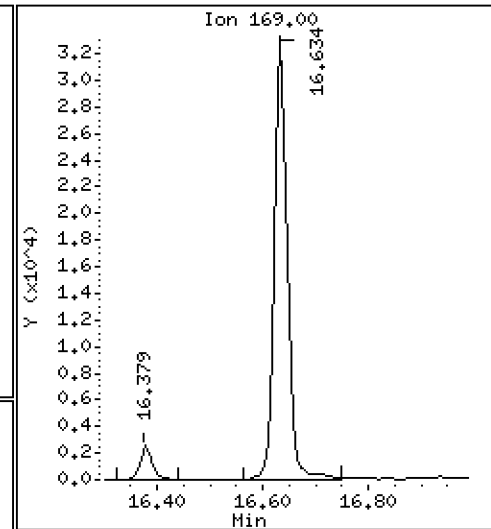
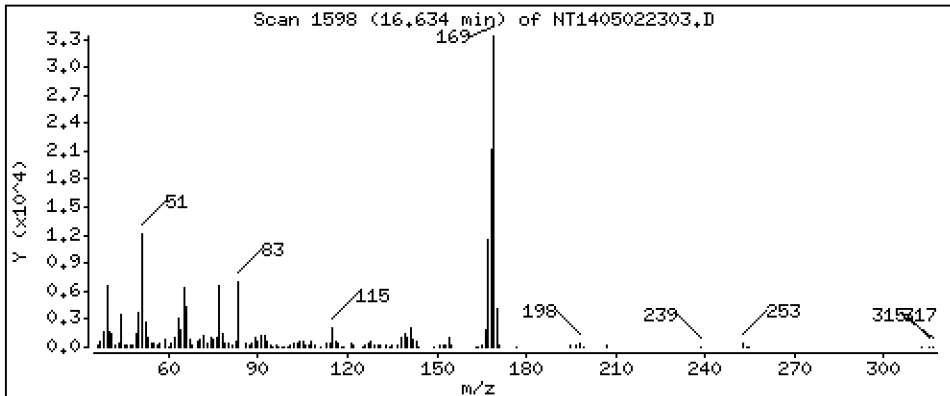
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 0,4812 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

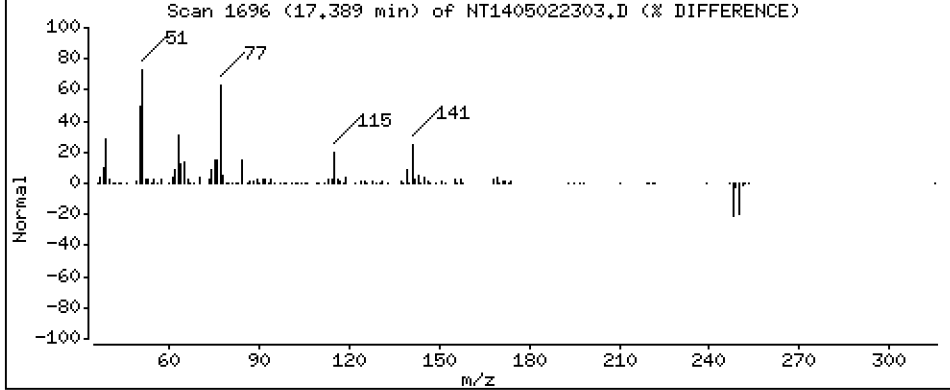
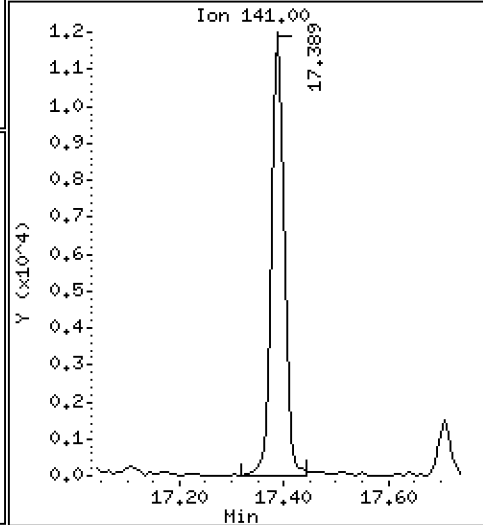
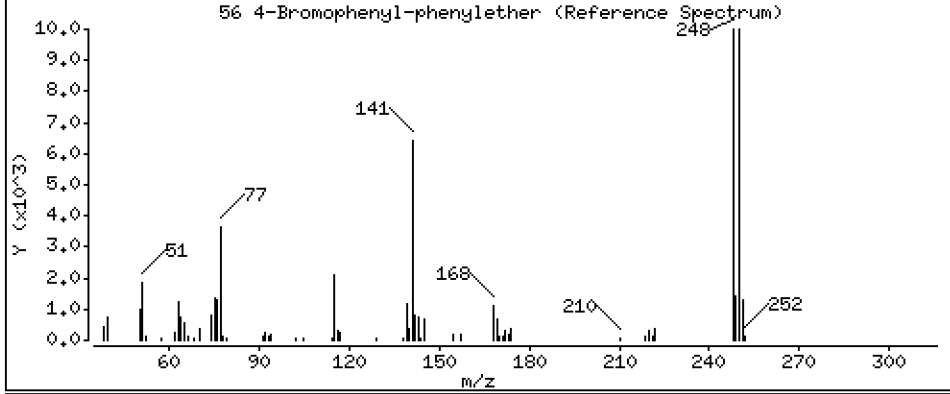
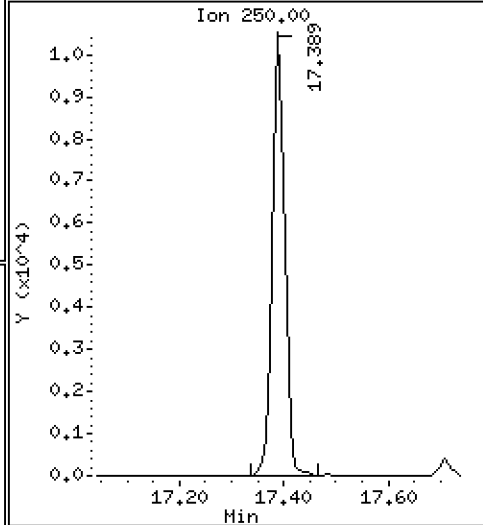
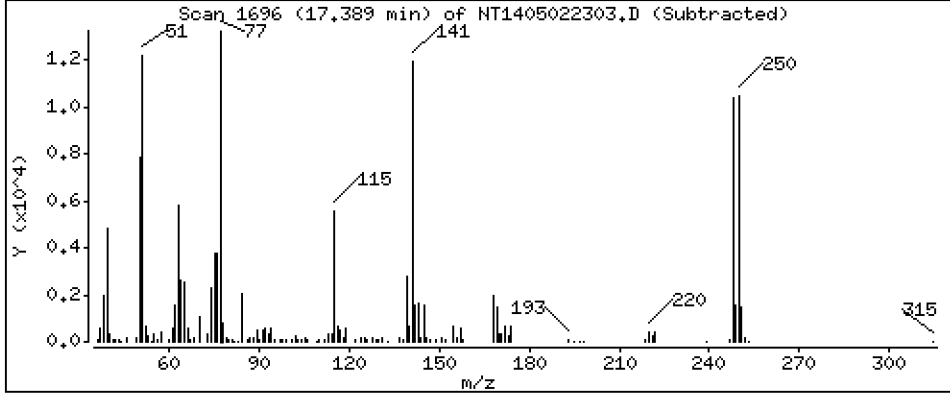
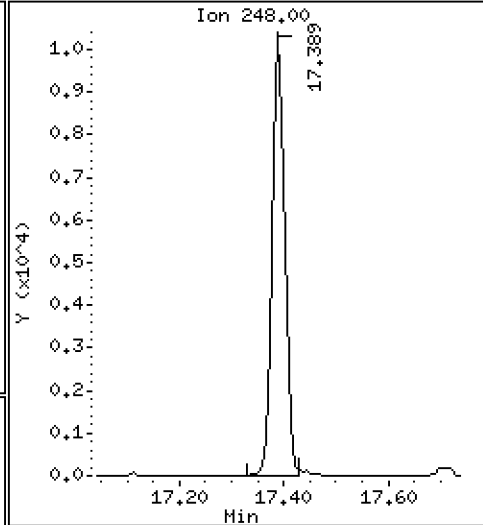
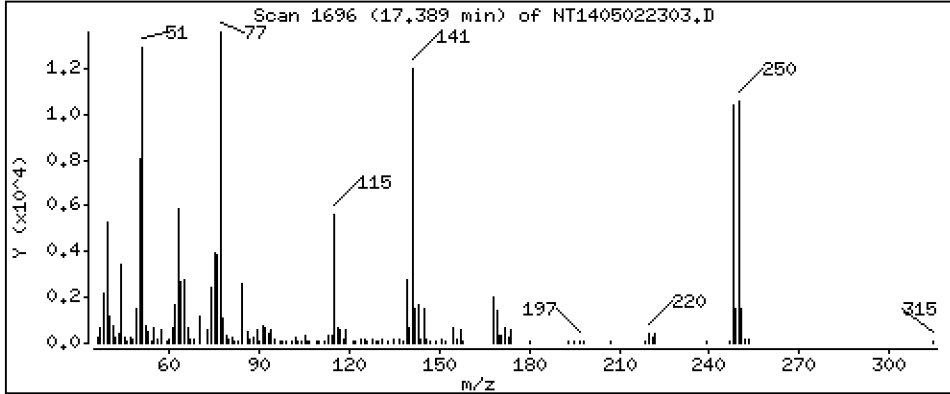
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

56 4-Bromophenyl-phenylether

Concentration: 0,4399 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

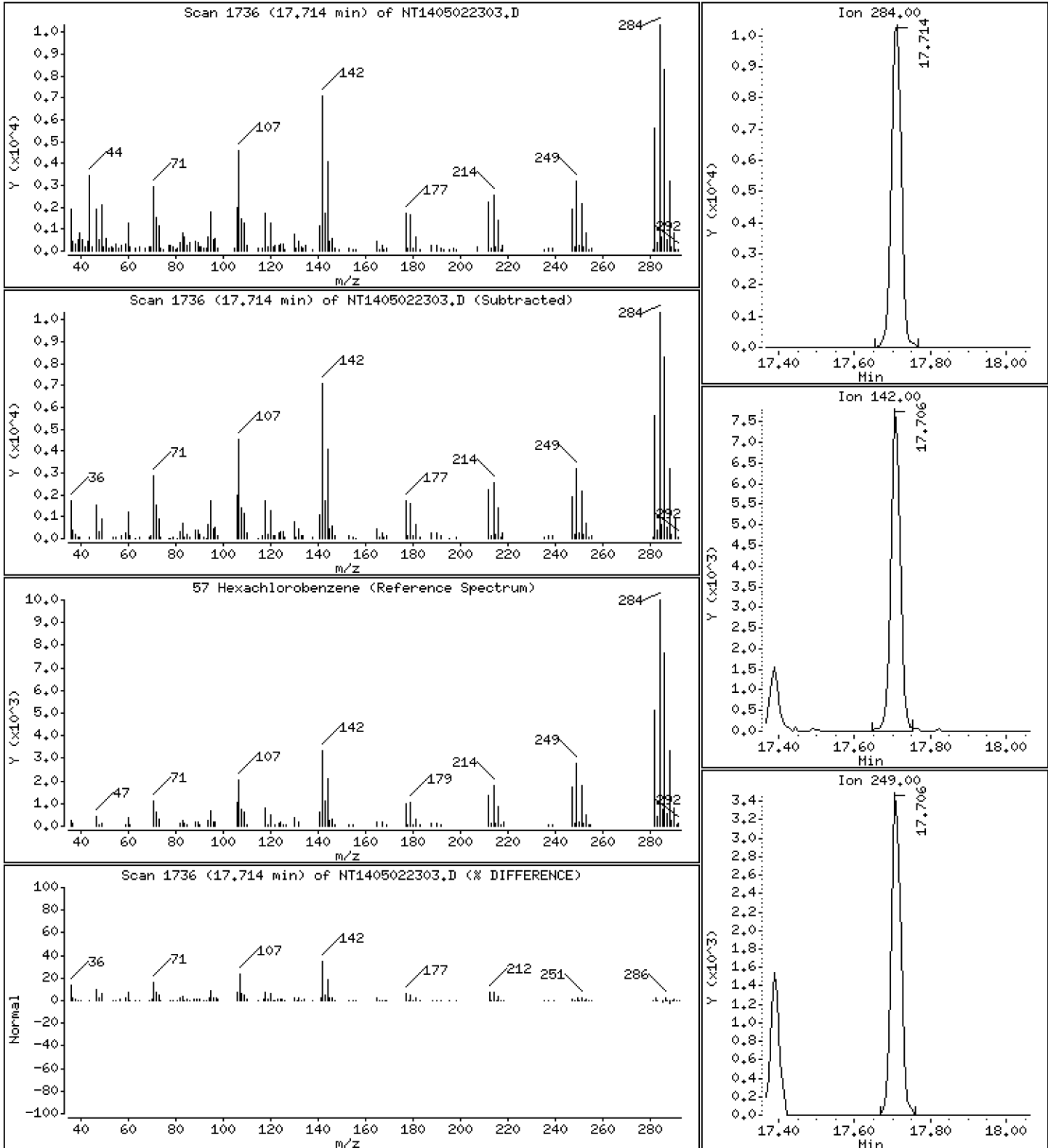
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 0,4671 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

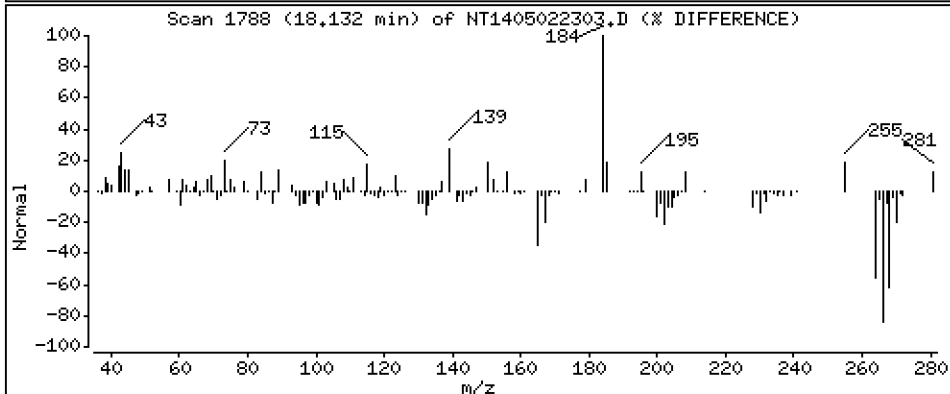
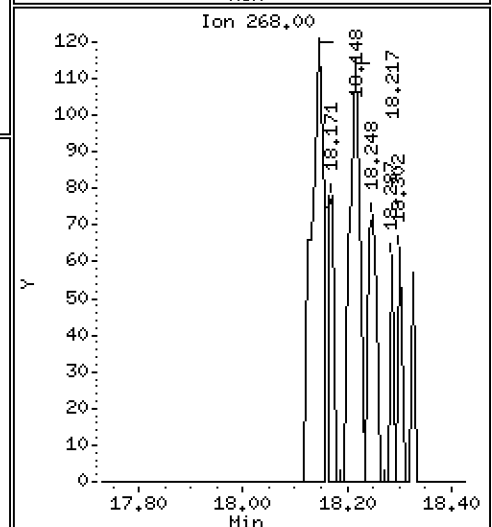
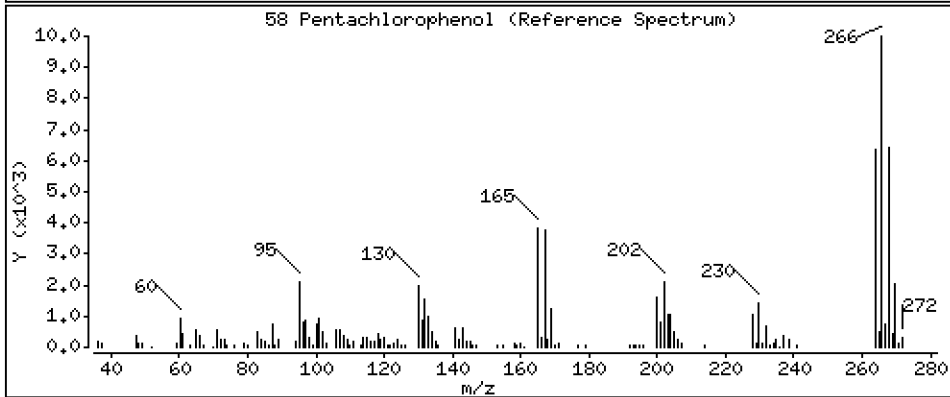
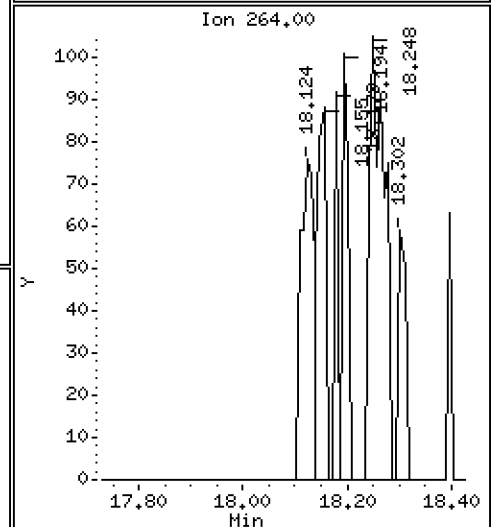
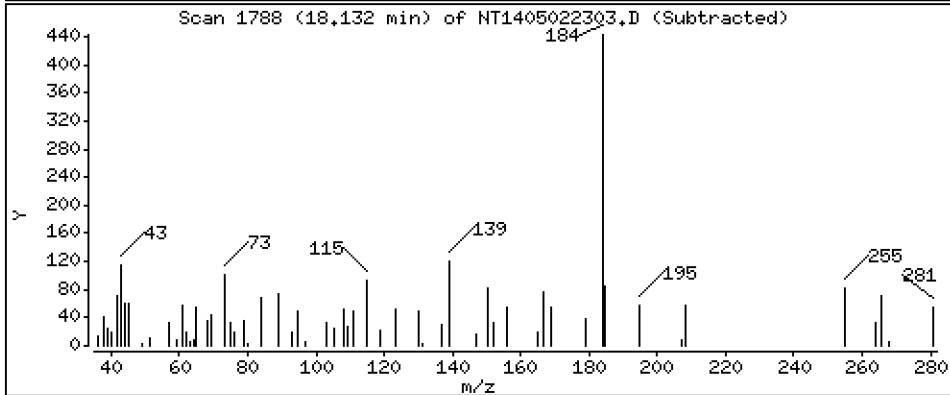
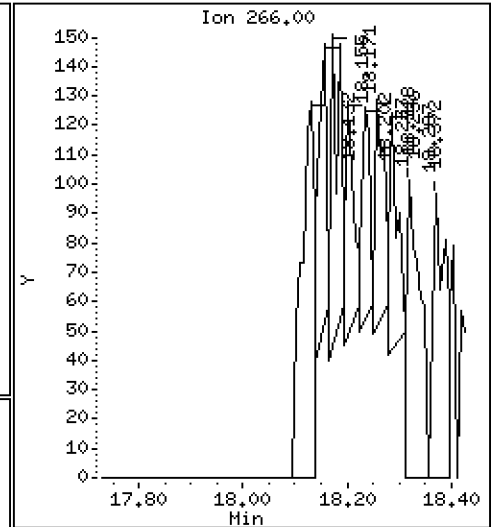
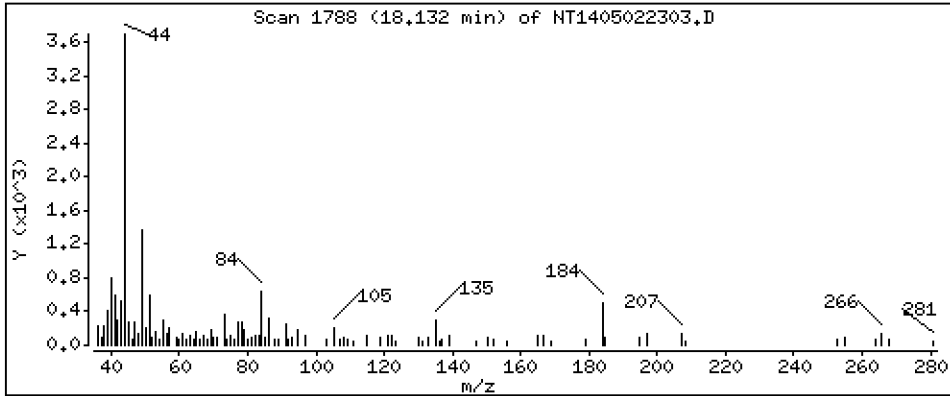
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 0,01006 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

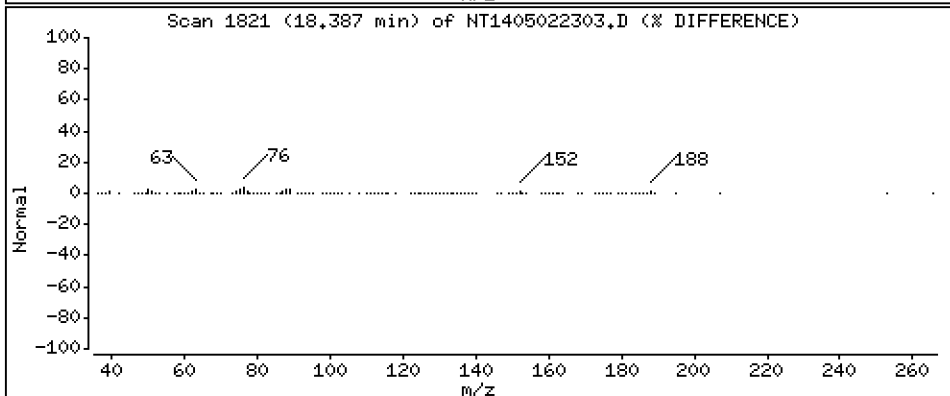
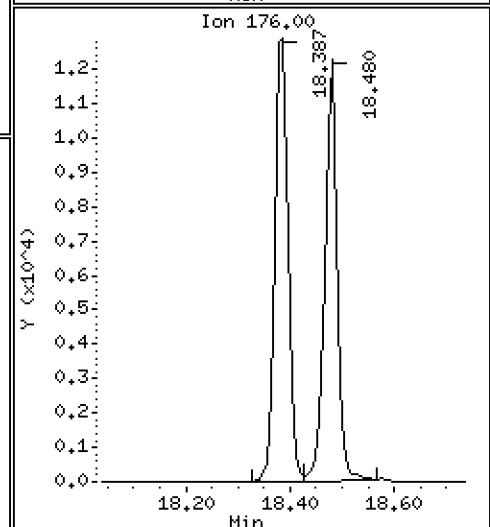
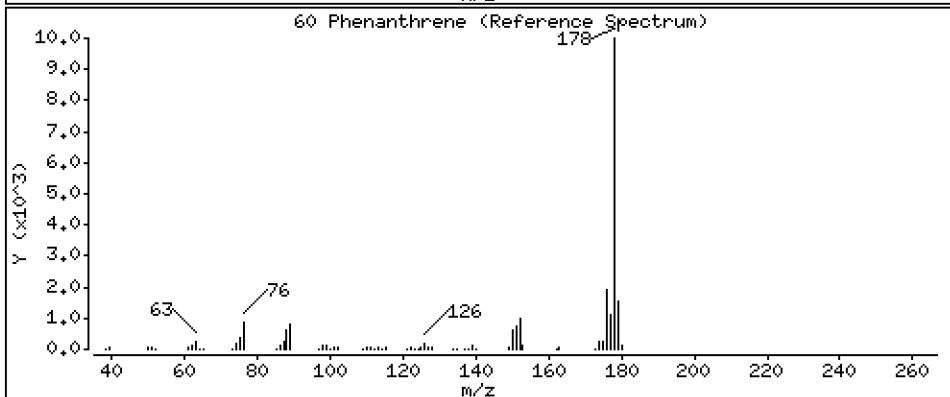
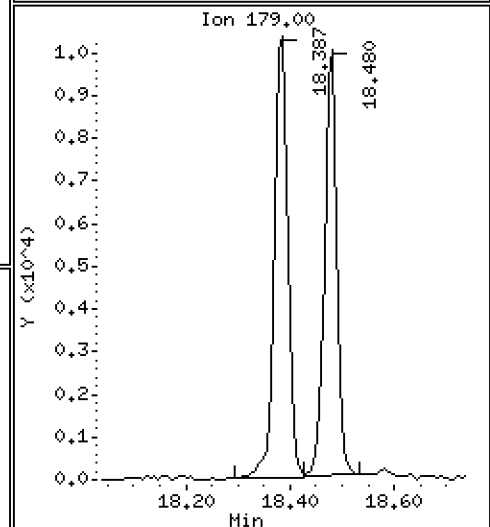
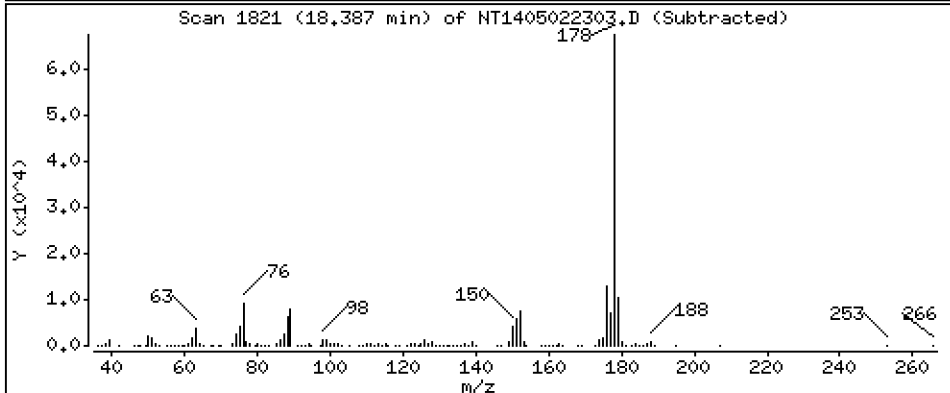
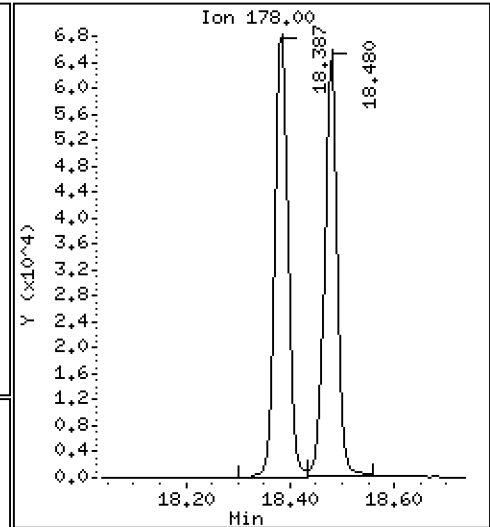
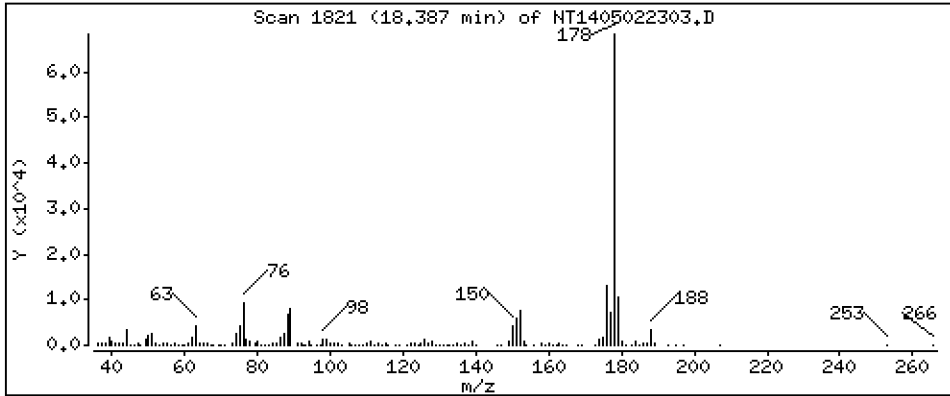
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

60 Phenanthrene

Concentration: 0,5009 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

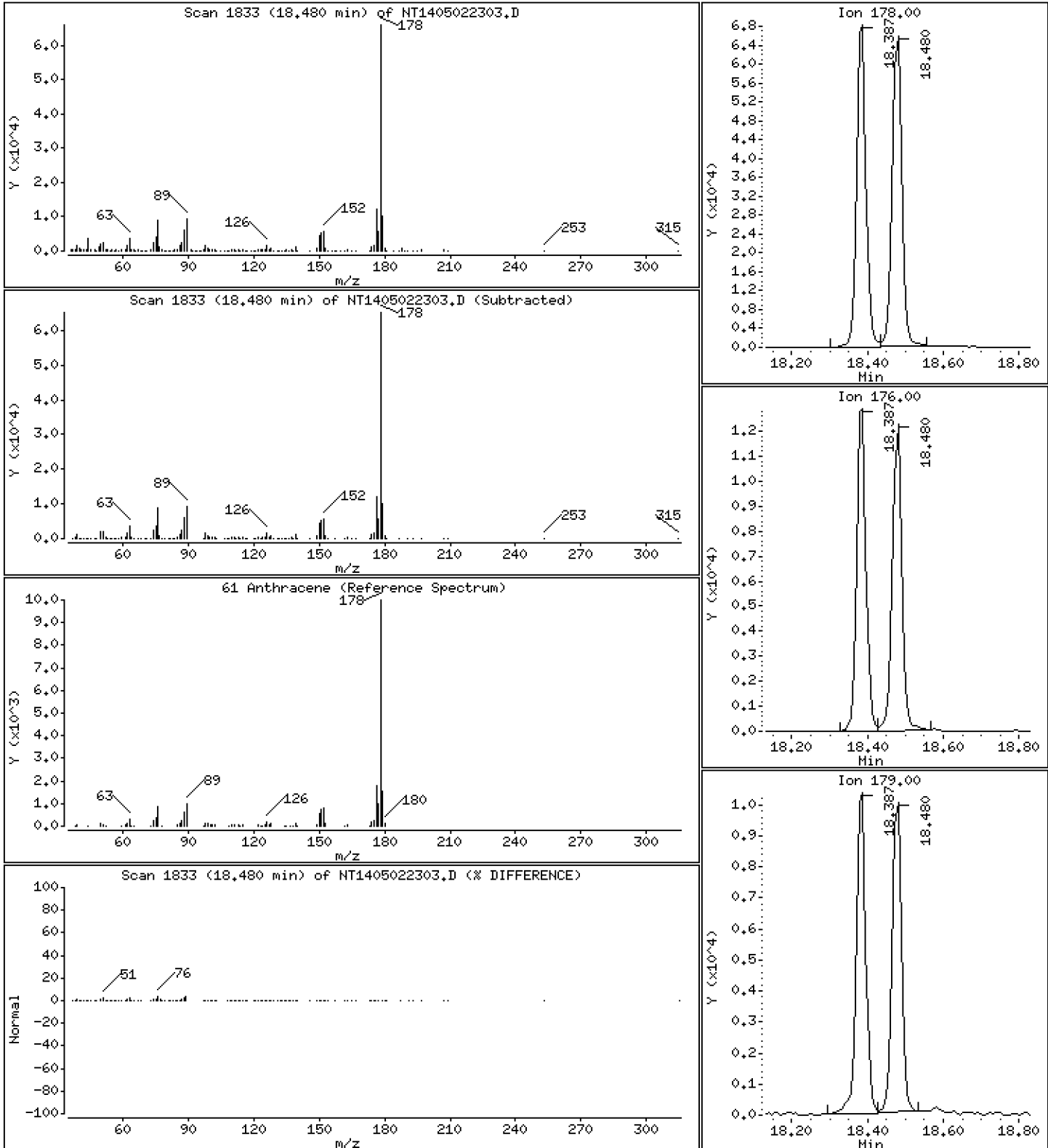
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

61 Anthracene

Concentration: 0,4948 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

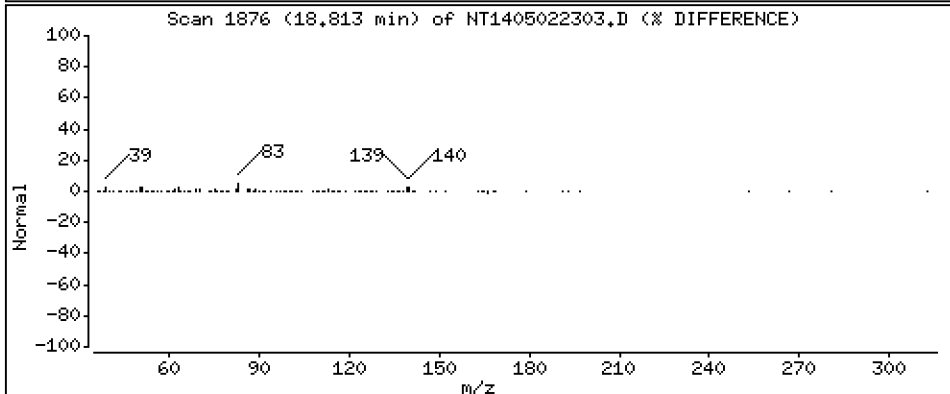
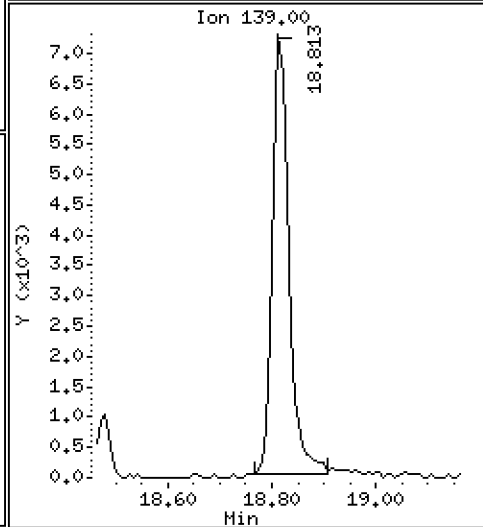
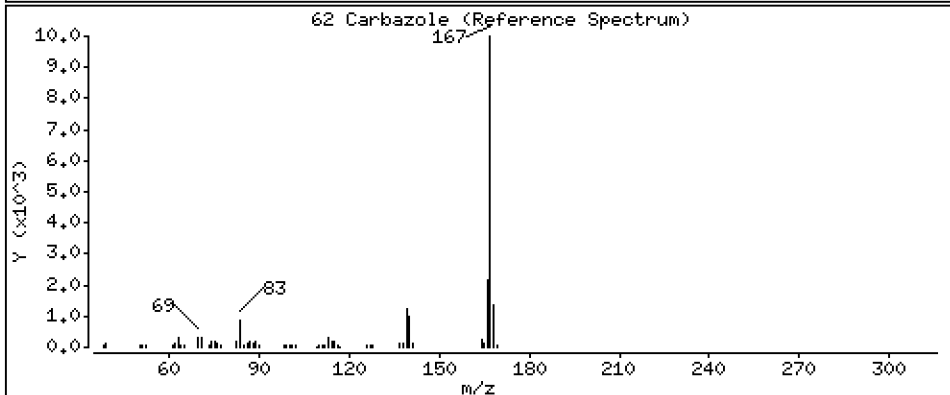
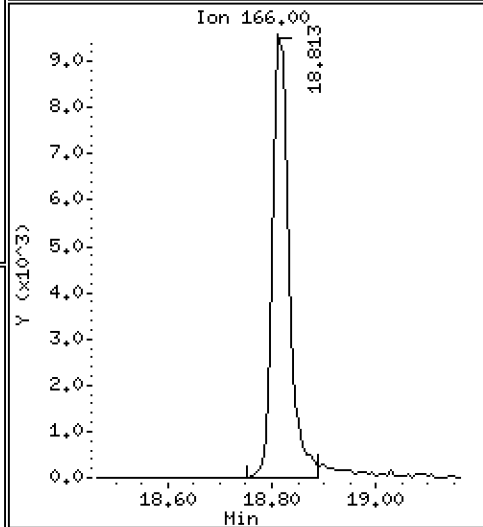
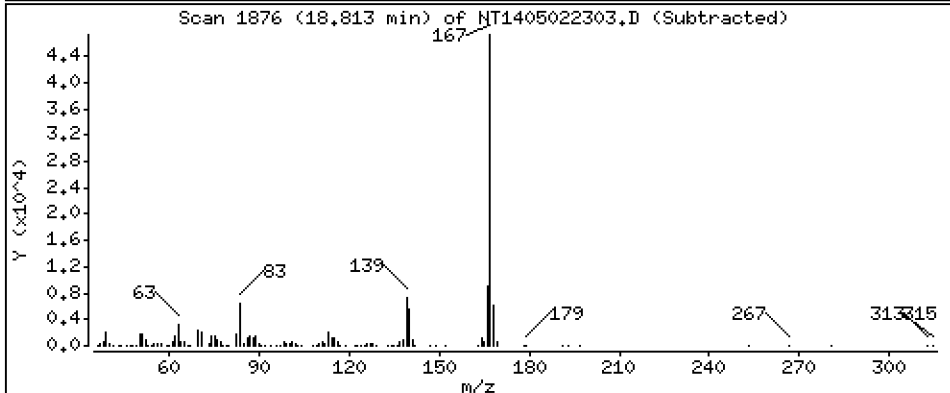
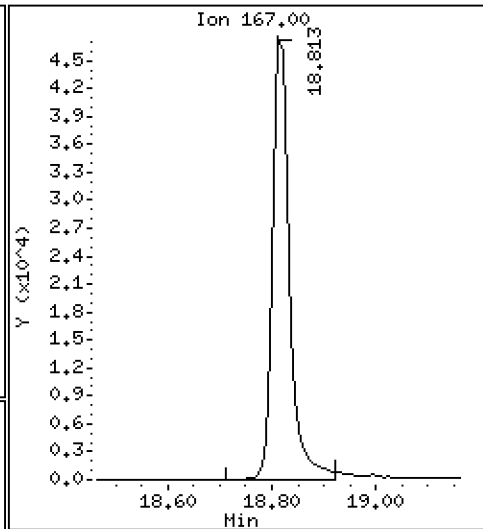
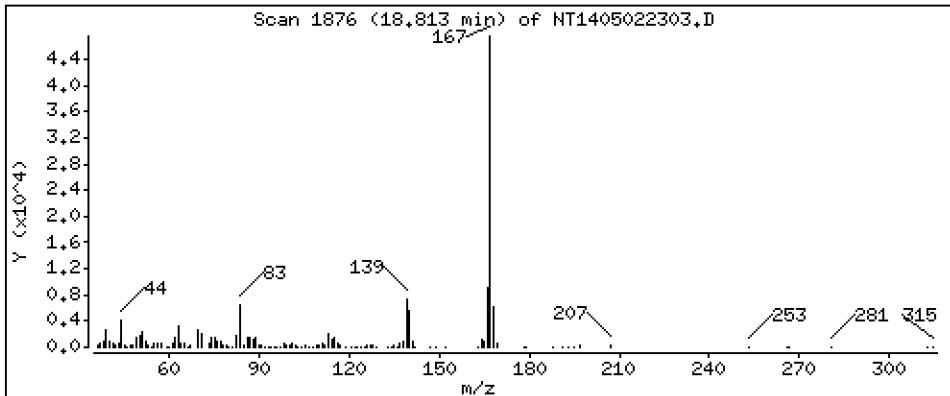
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

62 Carbazole

Concentration: 0,5032 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

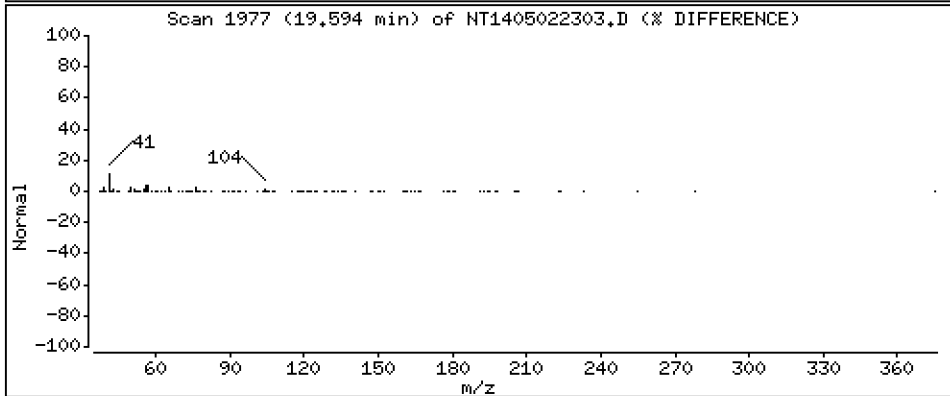
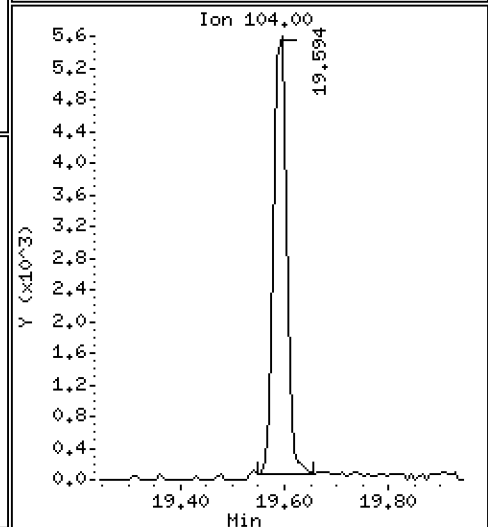
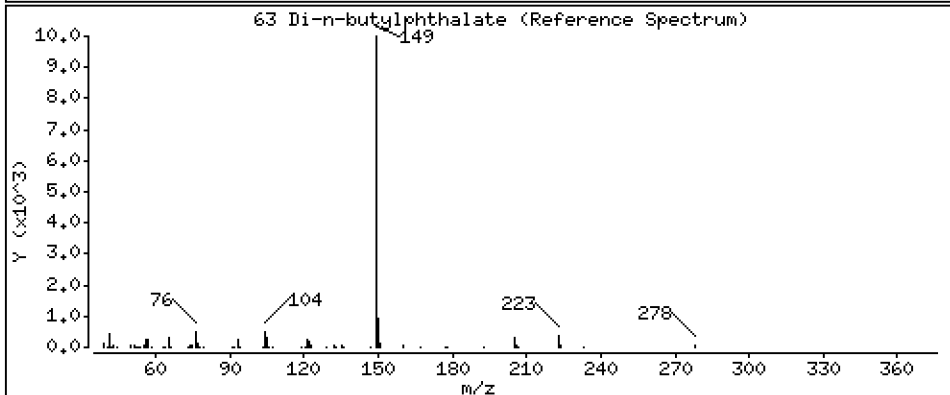
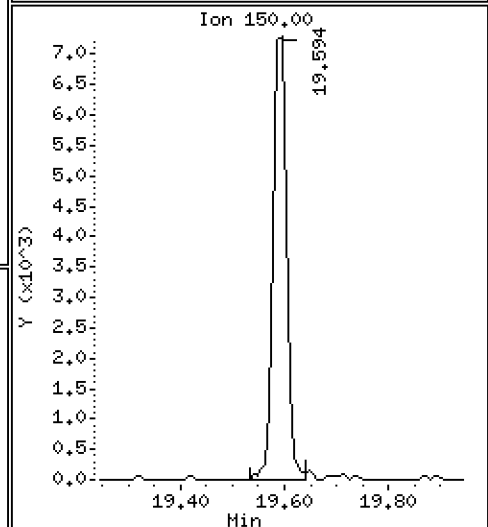
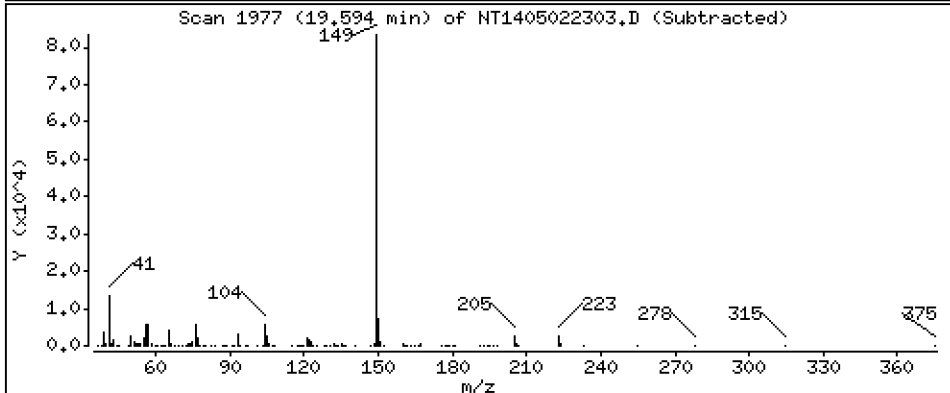
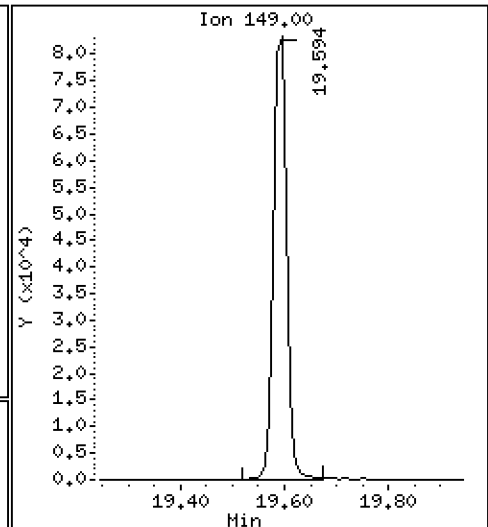
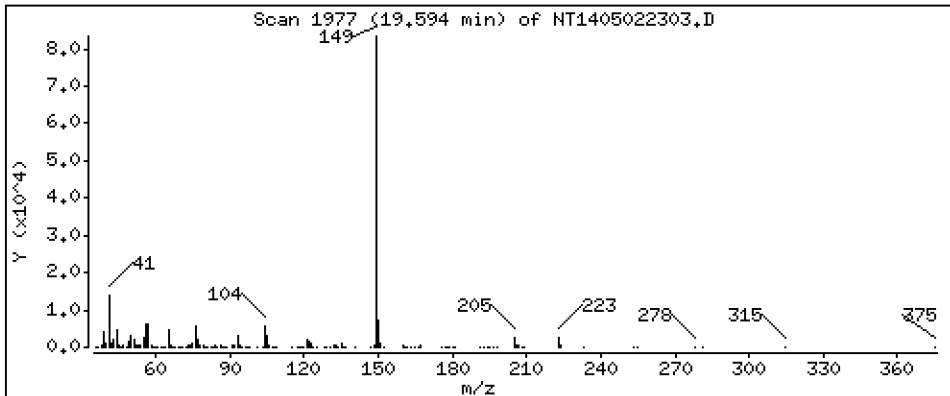
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

63 Di-n-butylphthalate

Concentration: 0,4401 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

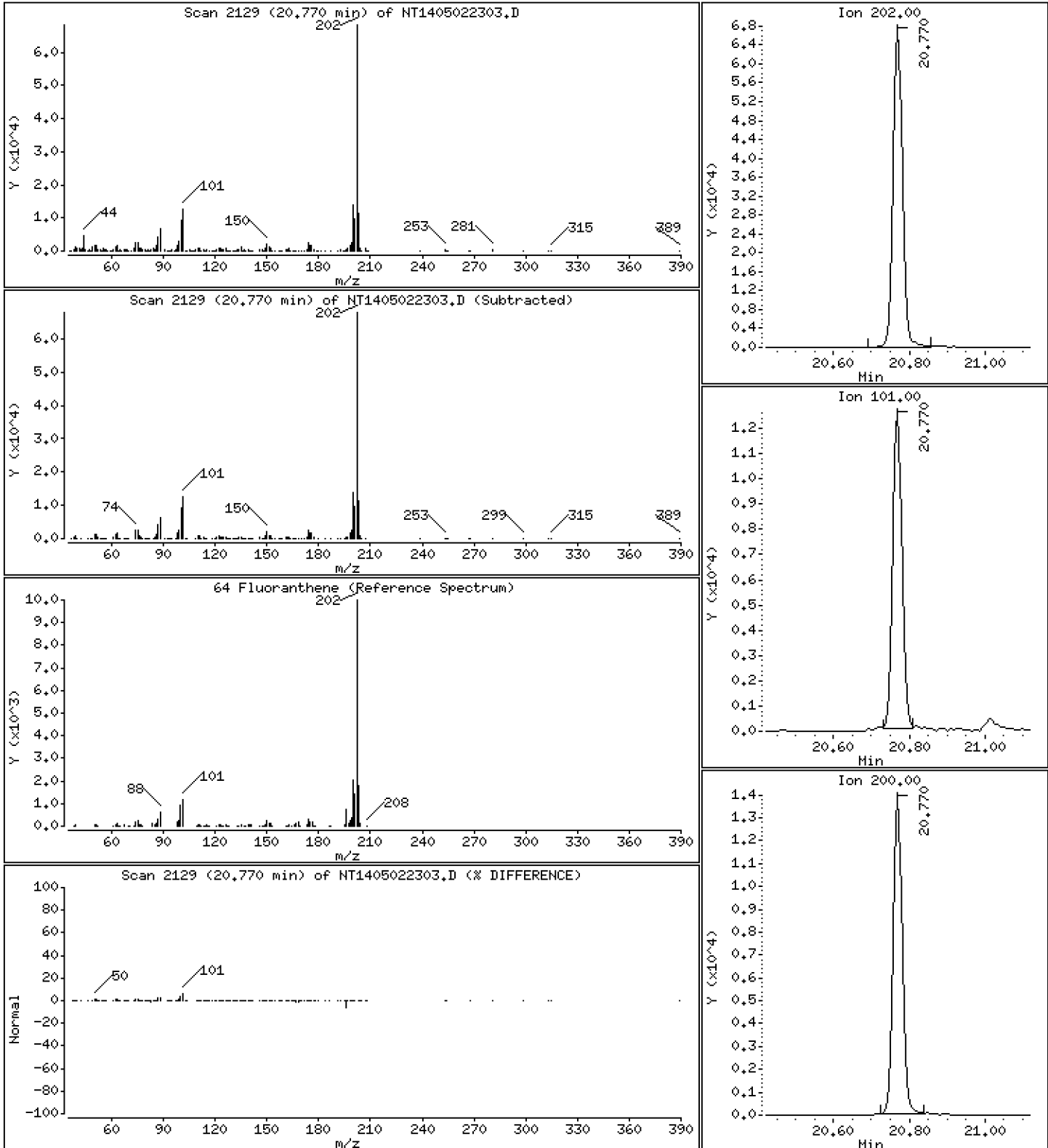
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

64 Fluoranthene

Concentration: 0,5051 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

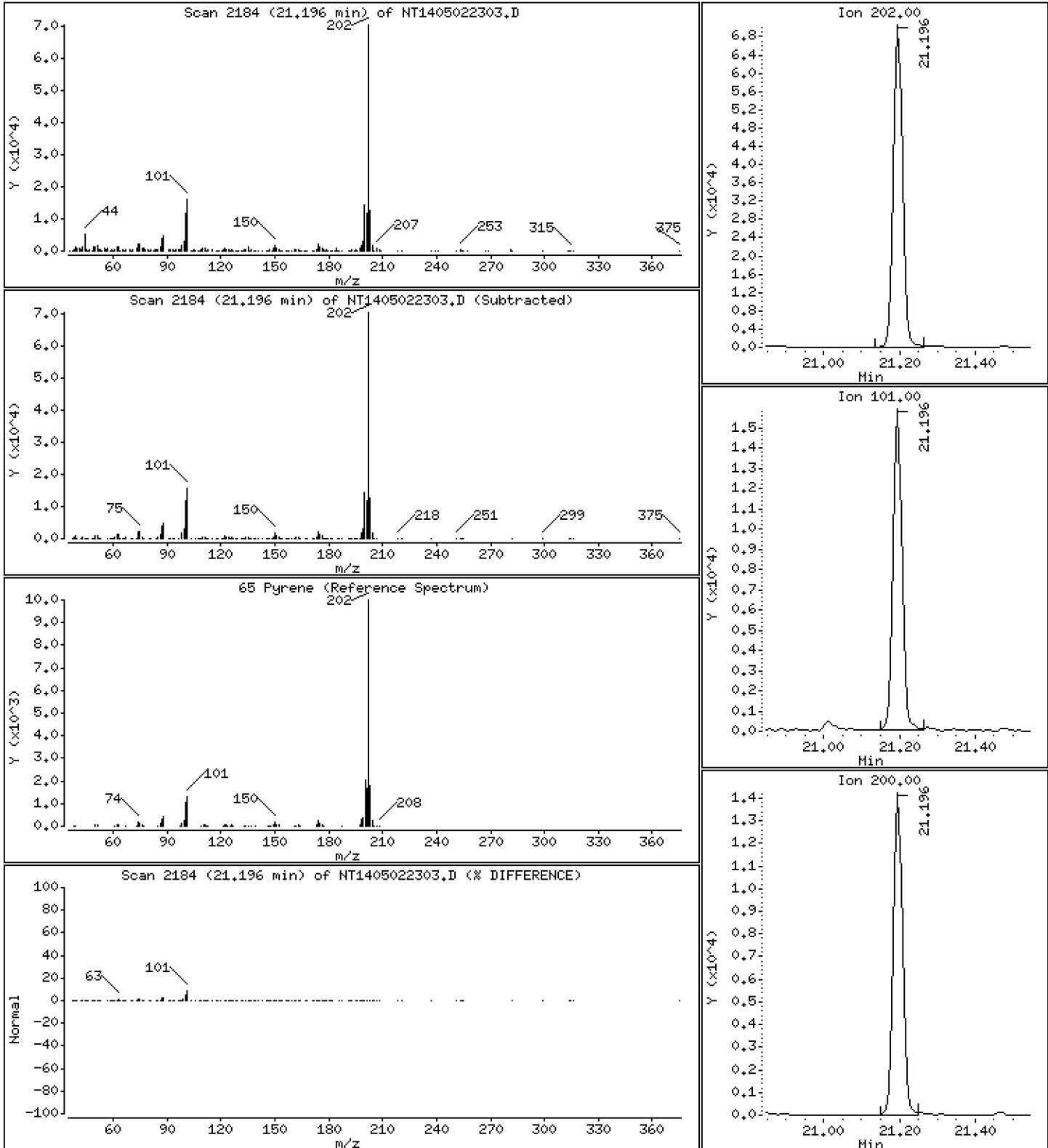
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

65 Pyrene

Concentration: 0,5024 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

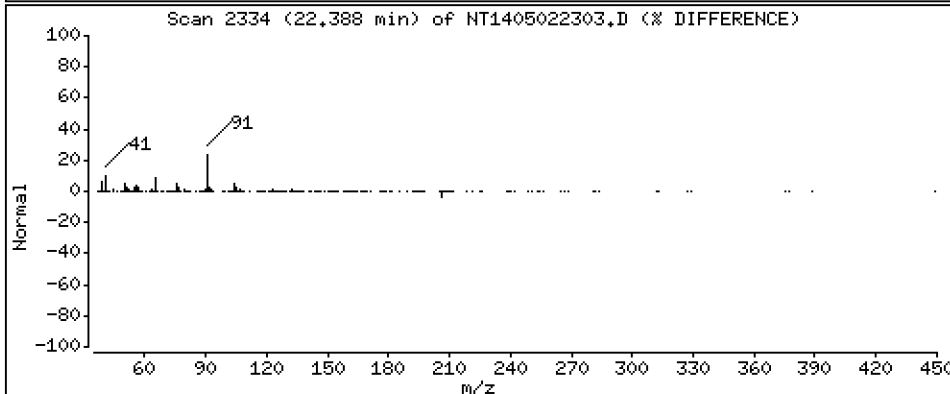
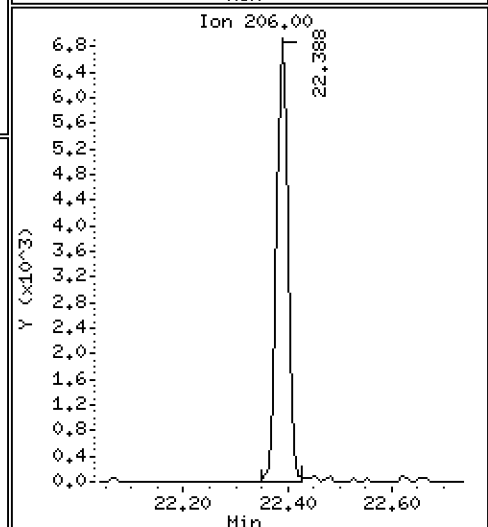
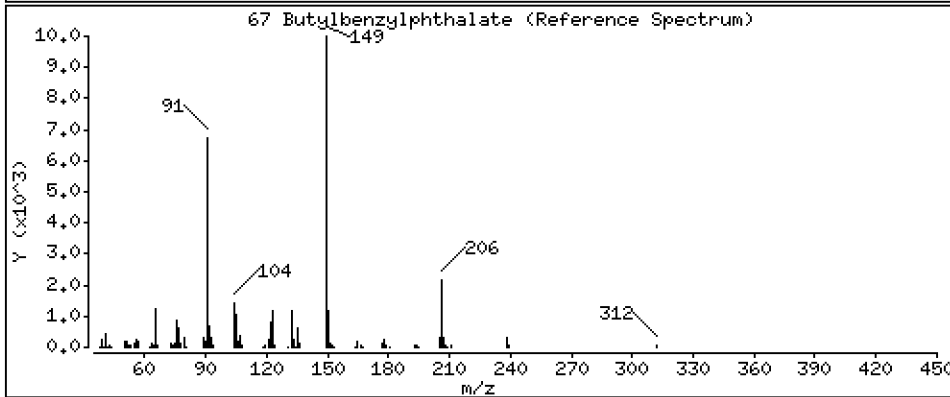
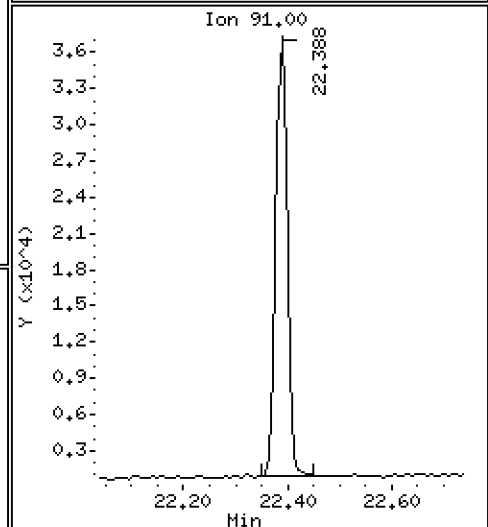
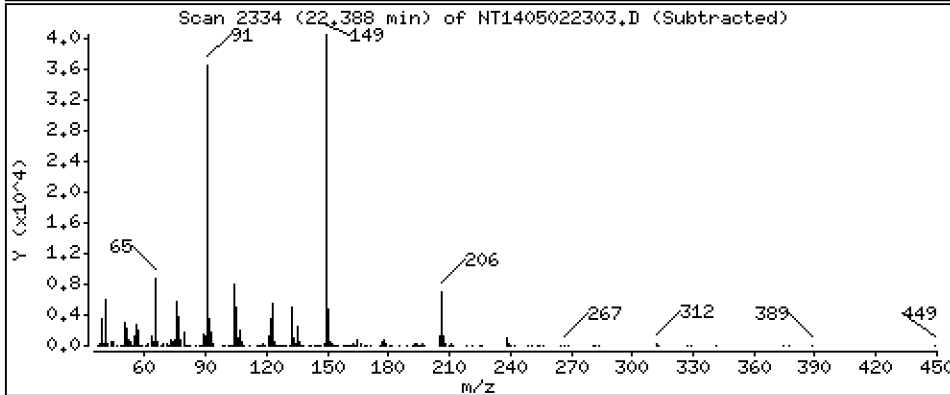
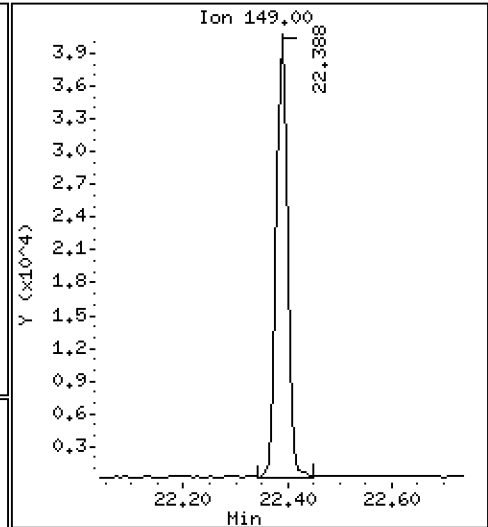
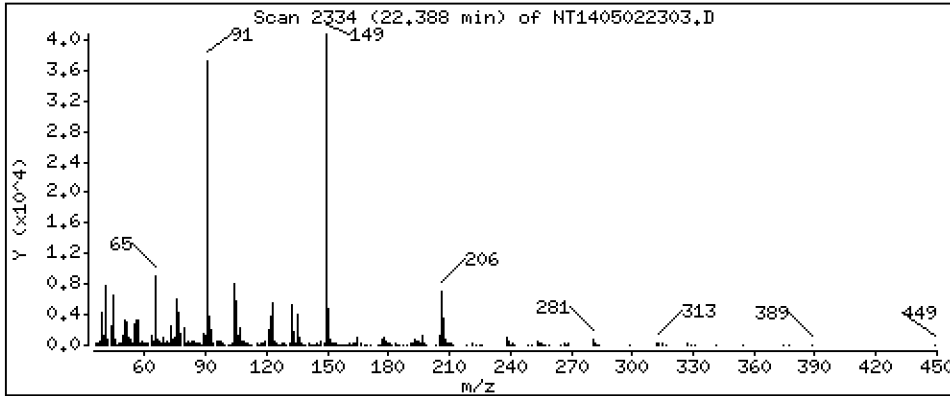
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,3950 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

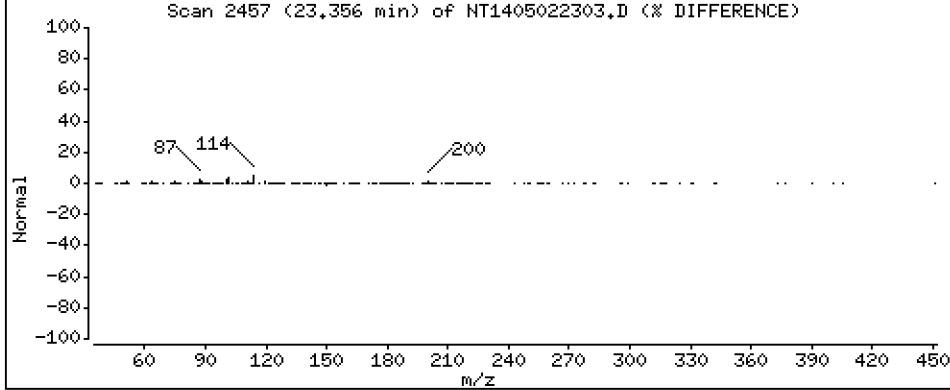
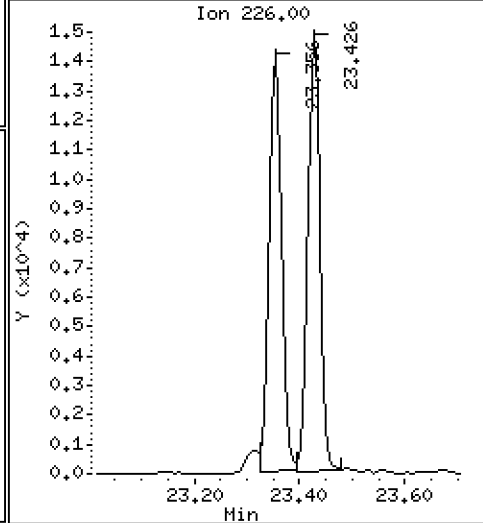
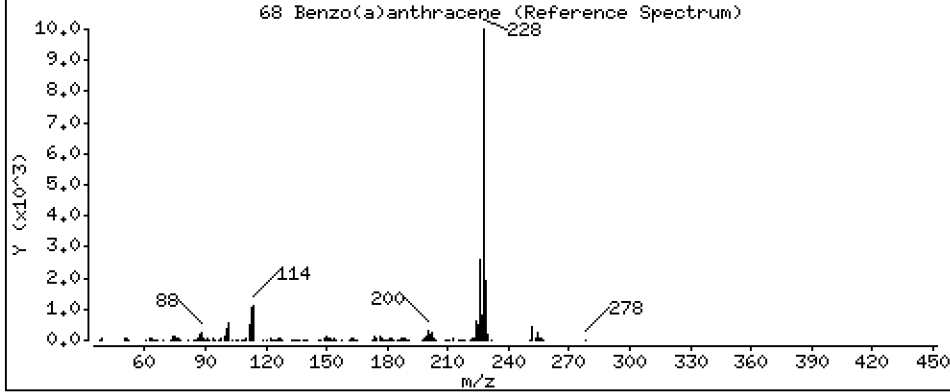
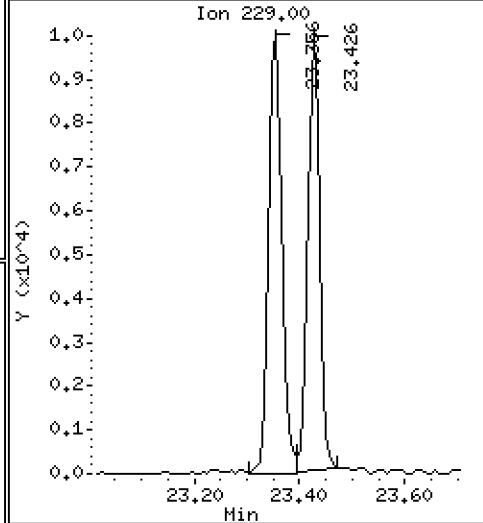
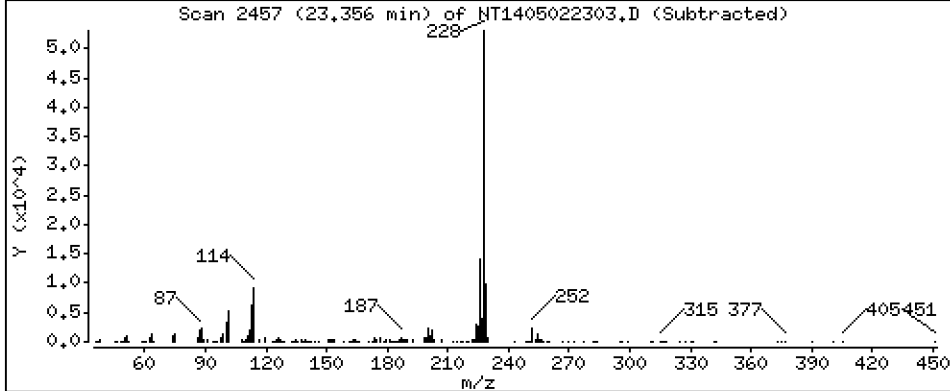
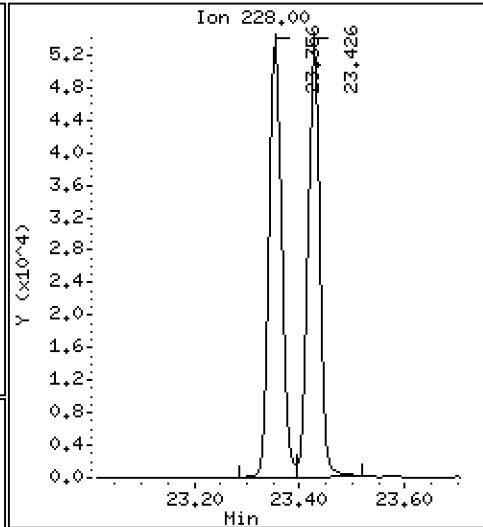
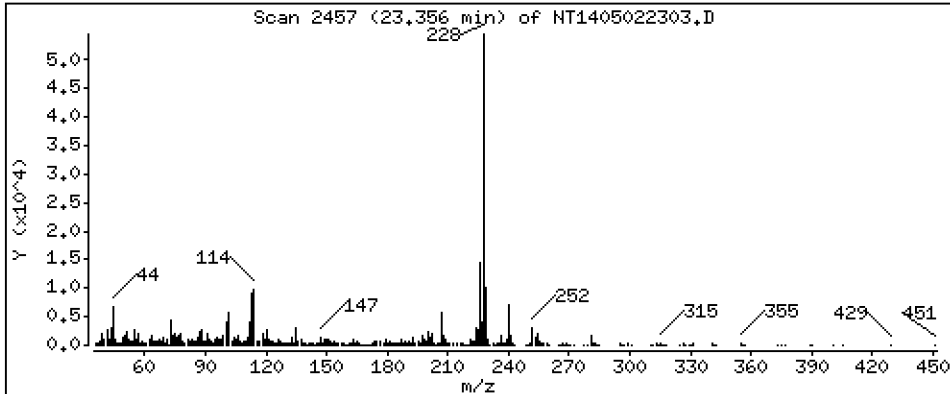
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

68 Benzo(a)anthracene

Concentration: 0,5156 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

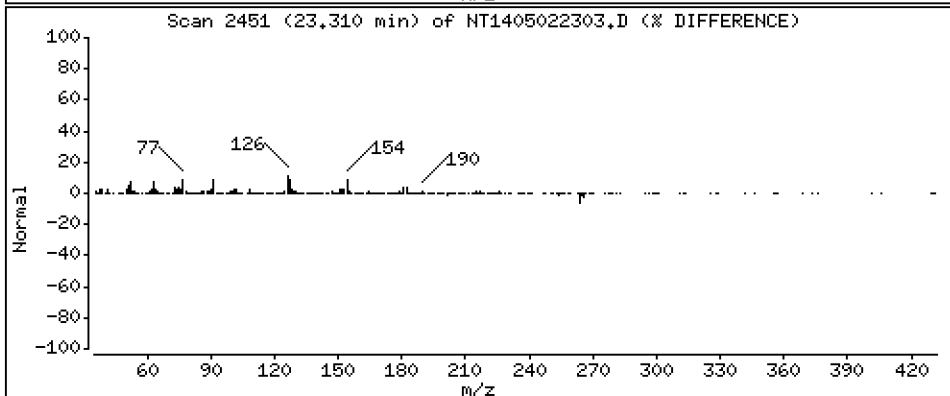
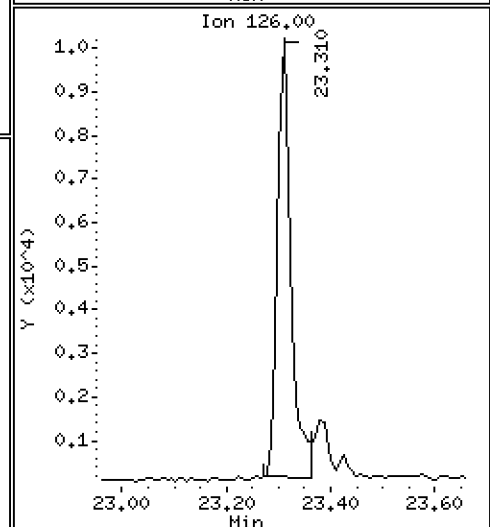
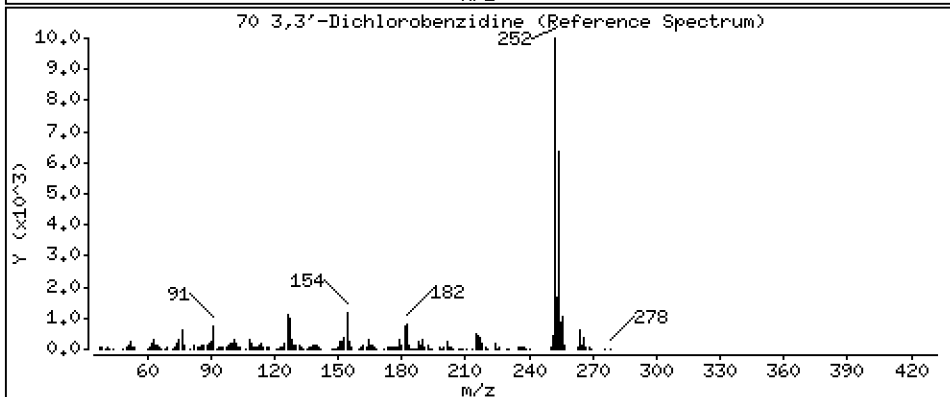
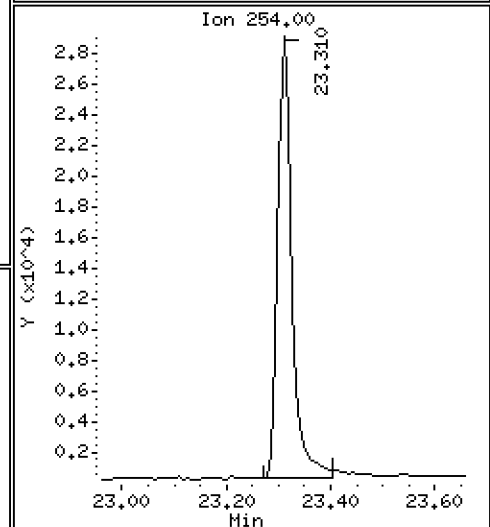
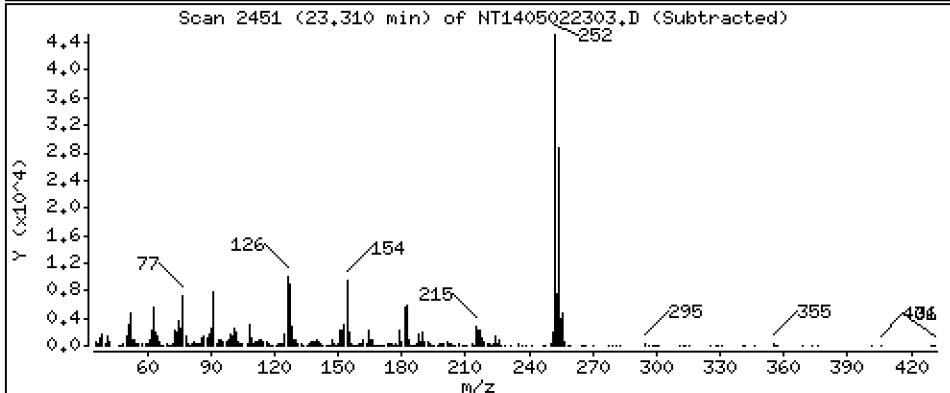
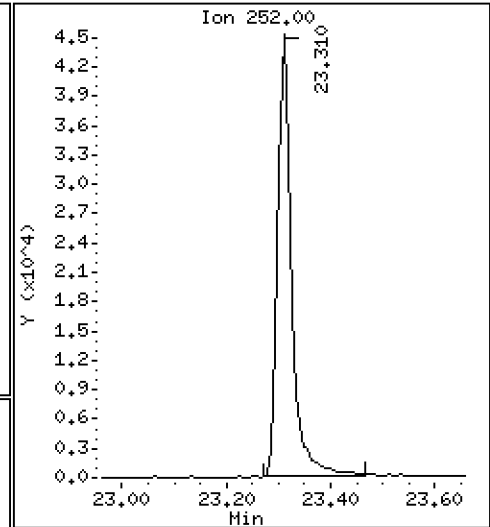
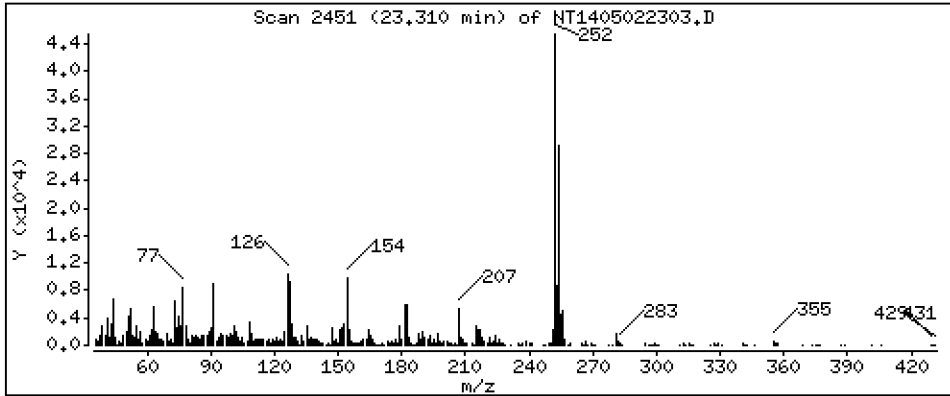
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

70 3,3'-Dichlorobenzidine

Concentration: 1,467 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

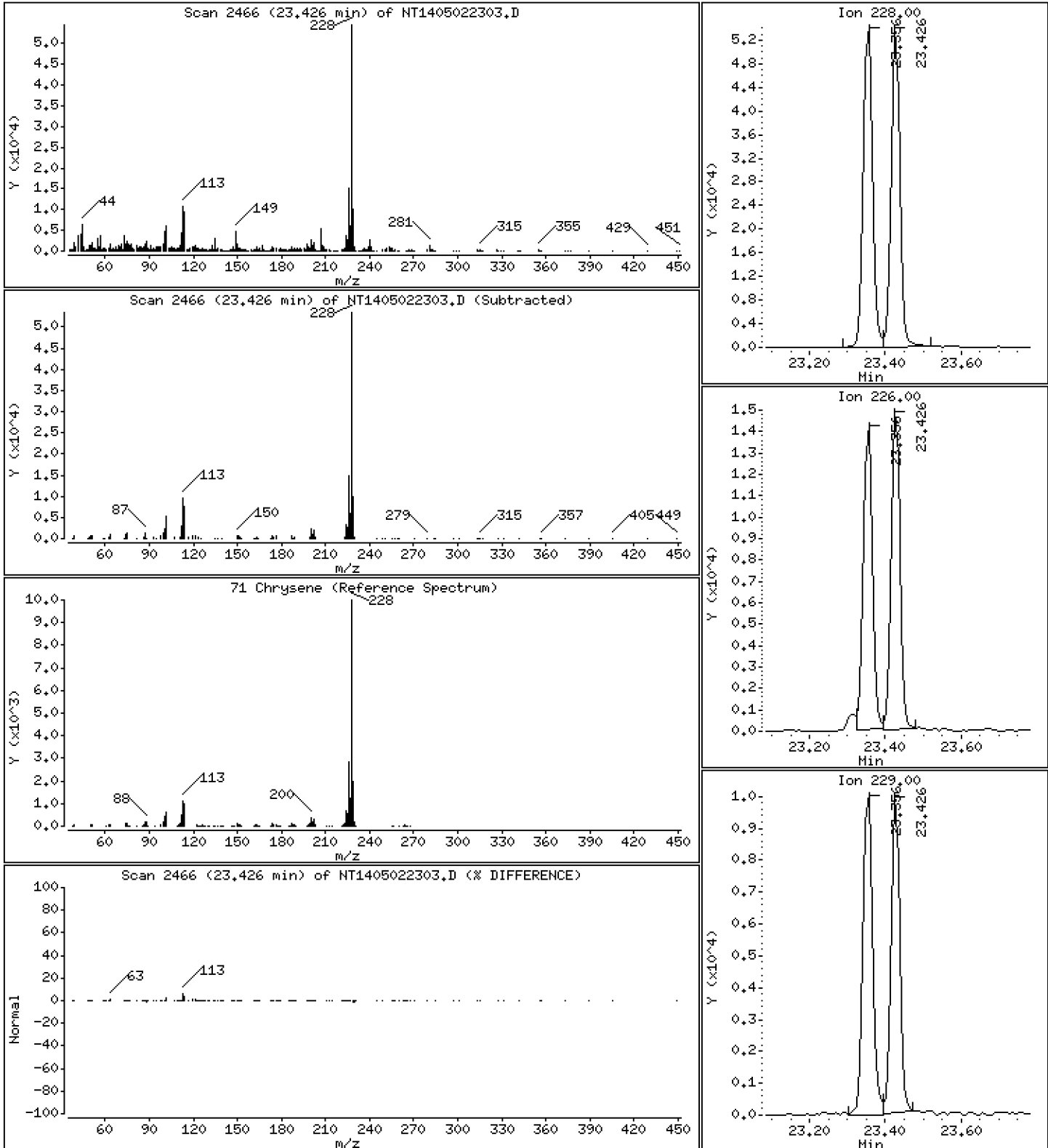
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

71 Chrysene

Concentration: 0,5076 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

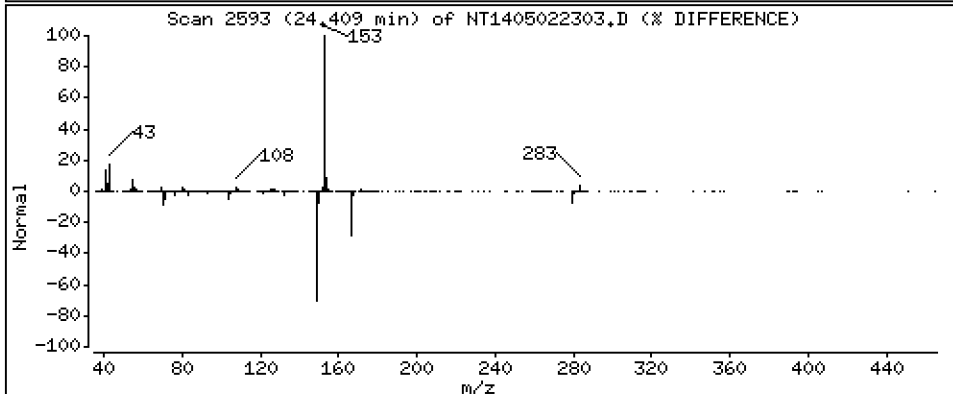
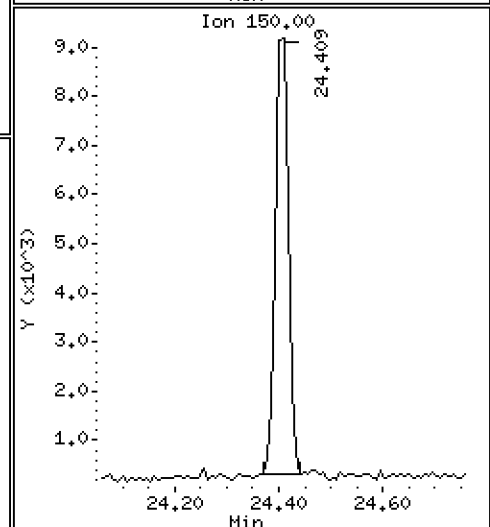
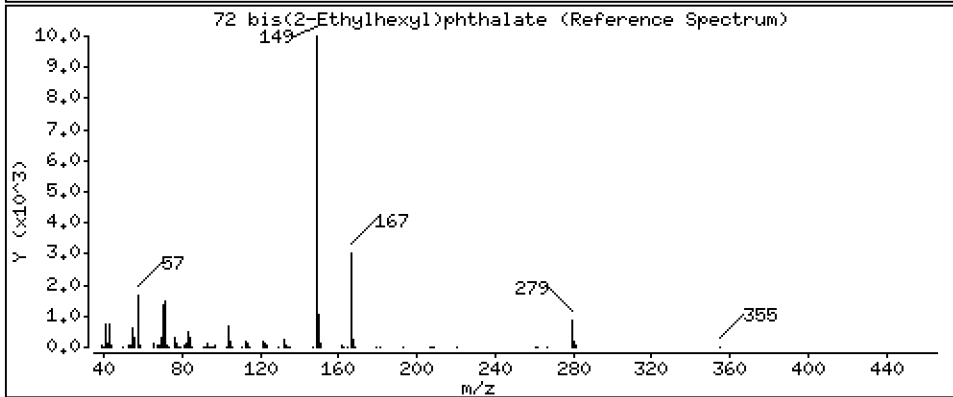
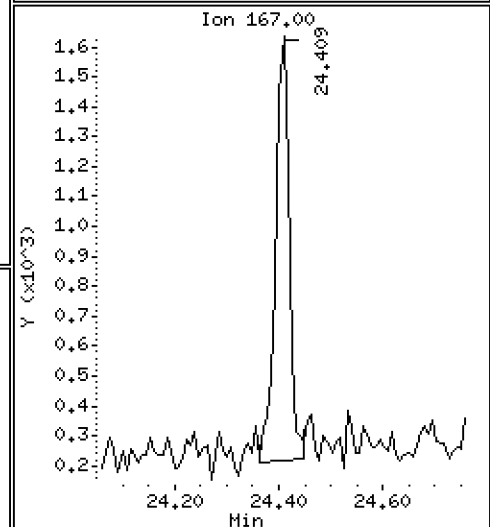
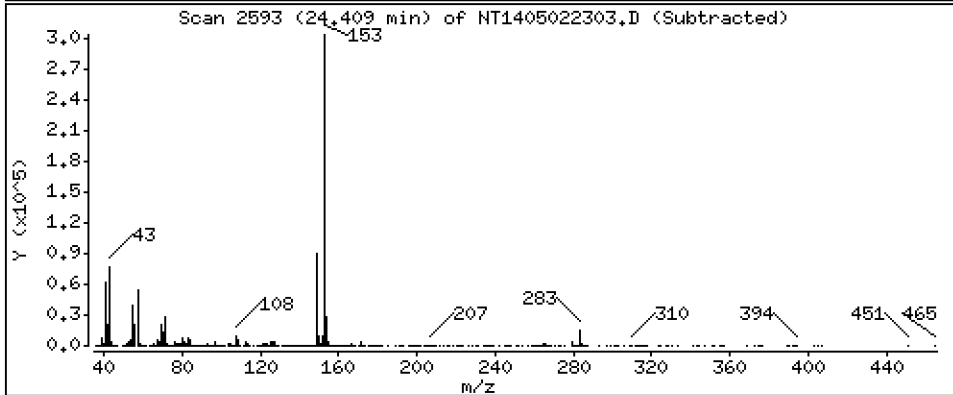
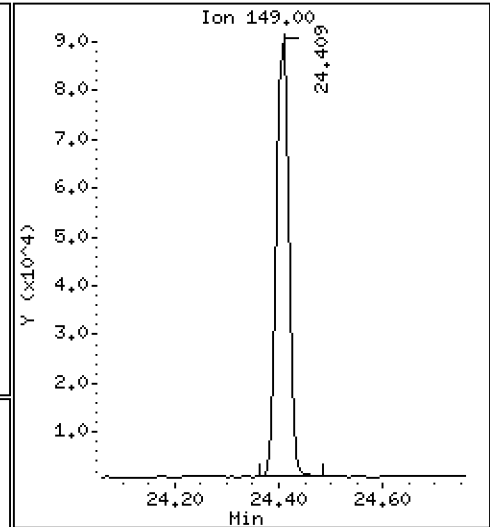
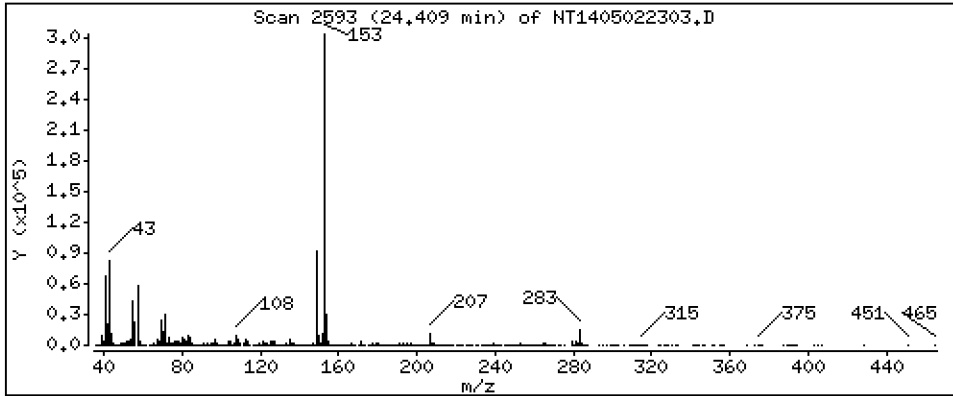
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

72 bis(2-Ethylhexyl)phthalate

Concentration: 0,4735 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

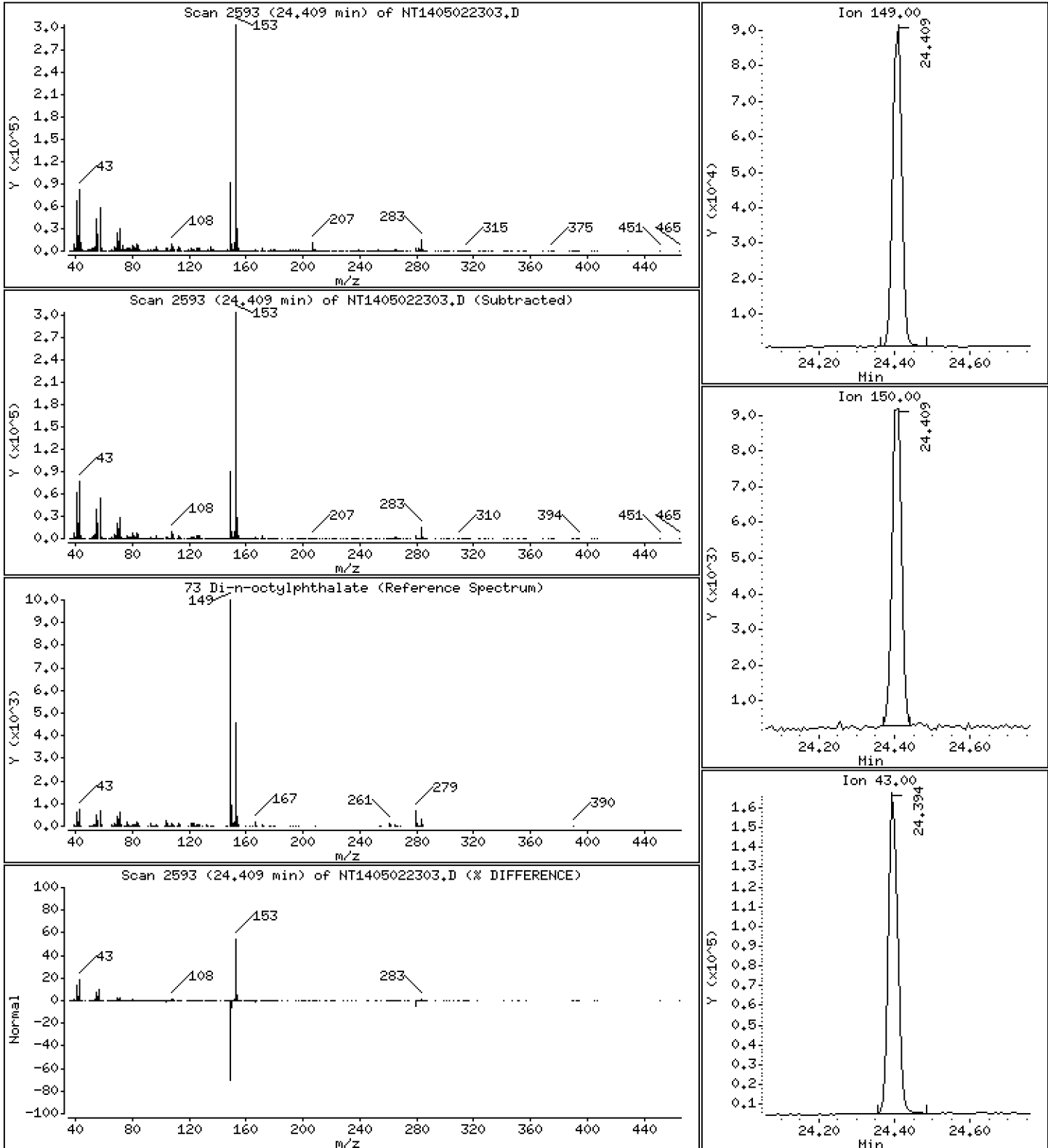
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

73 Di-n-octylphthalate

Concentration: 0,4735 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

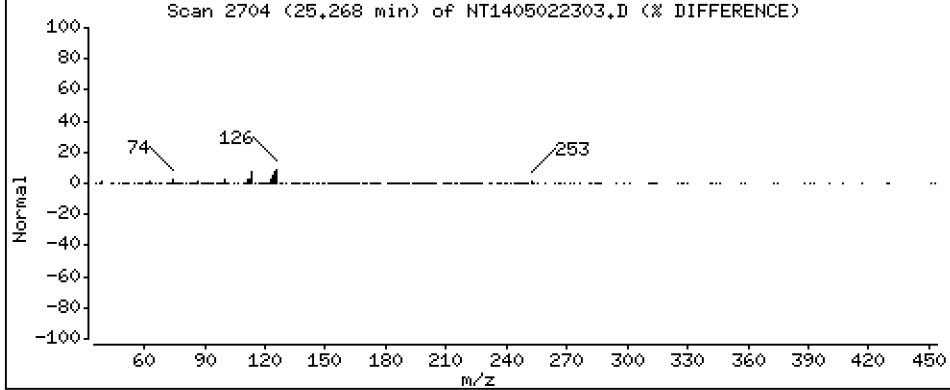
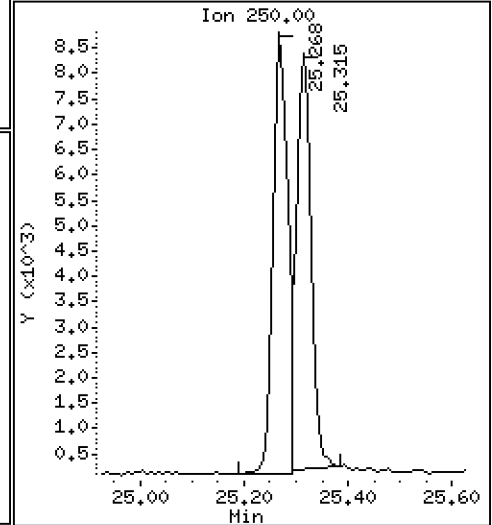
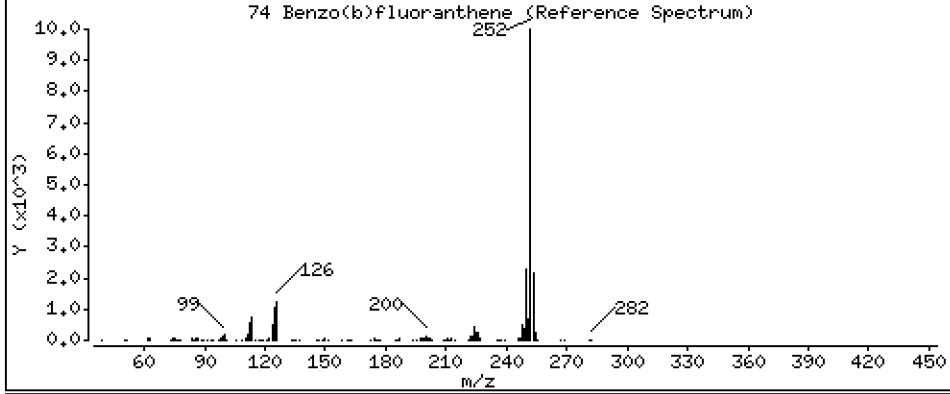
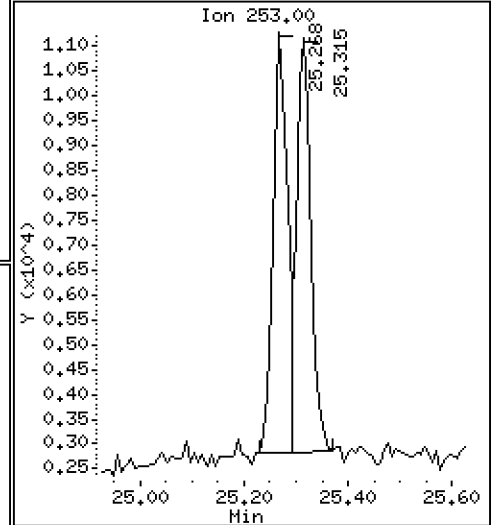
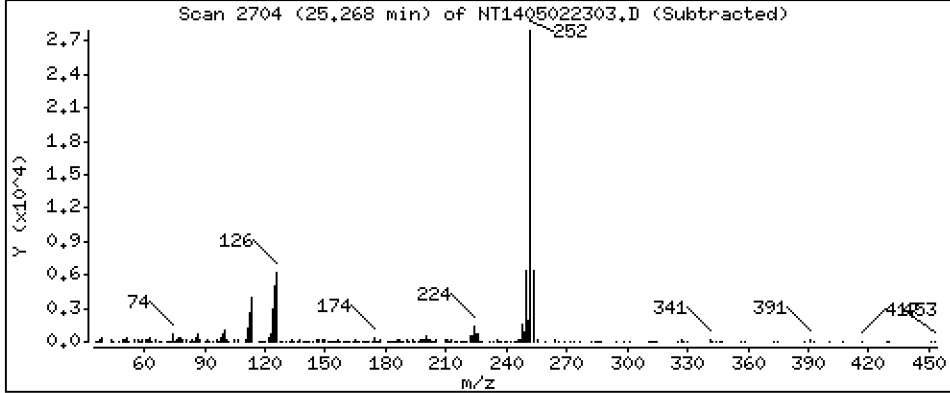
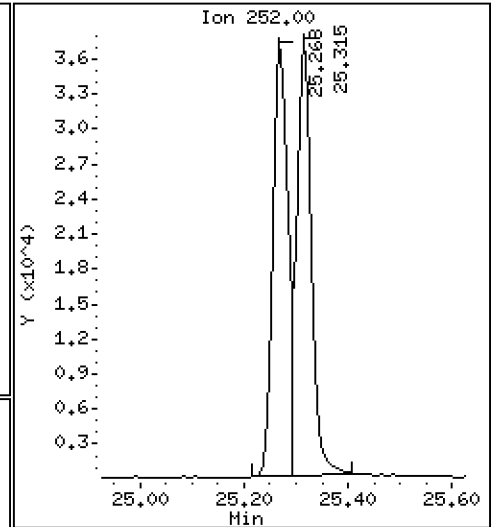
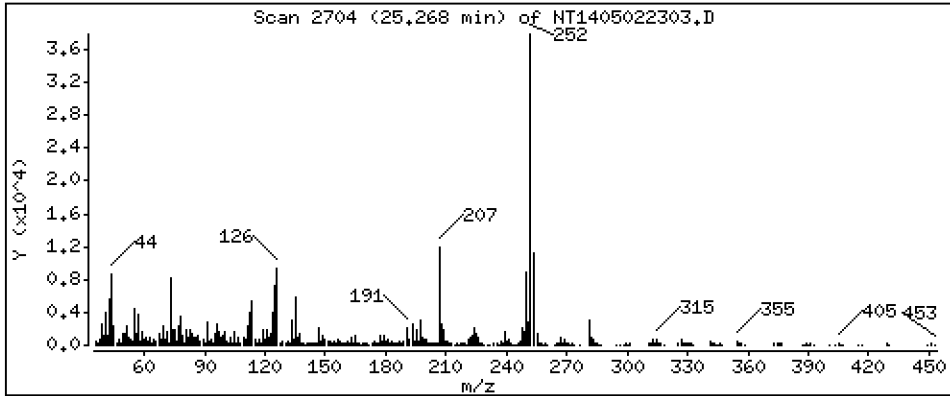
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

74 Benzo(b)fluoranthene

Concentration: 0,4883 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

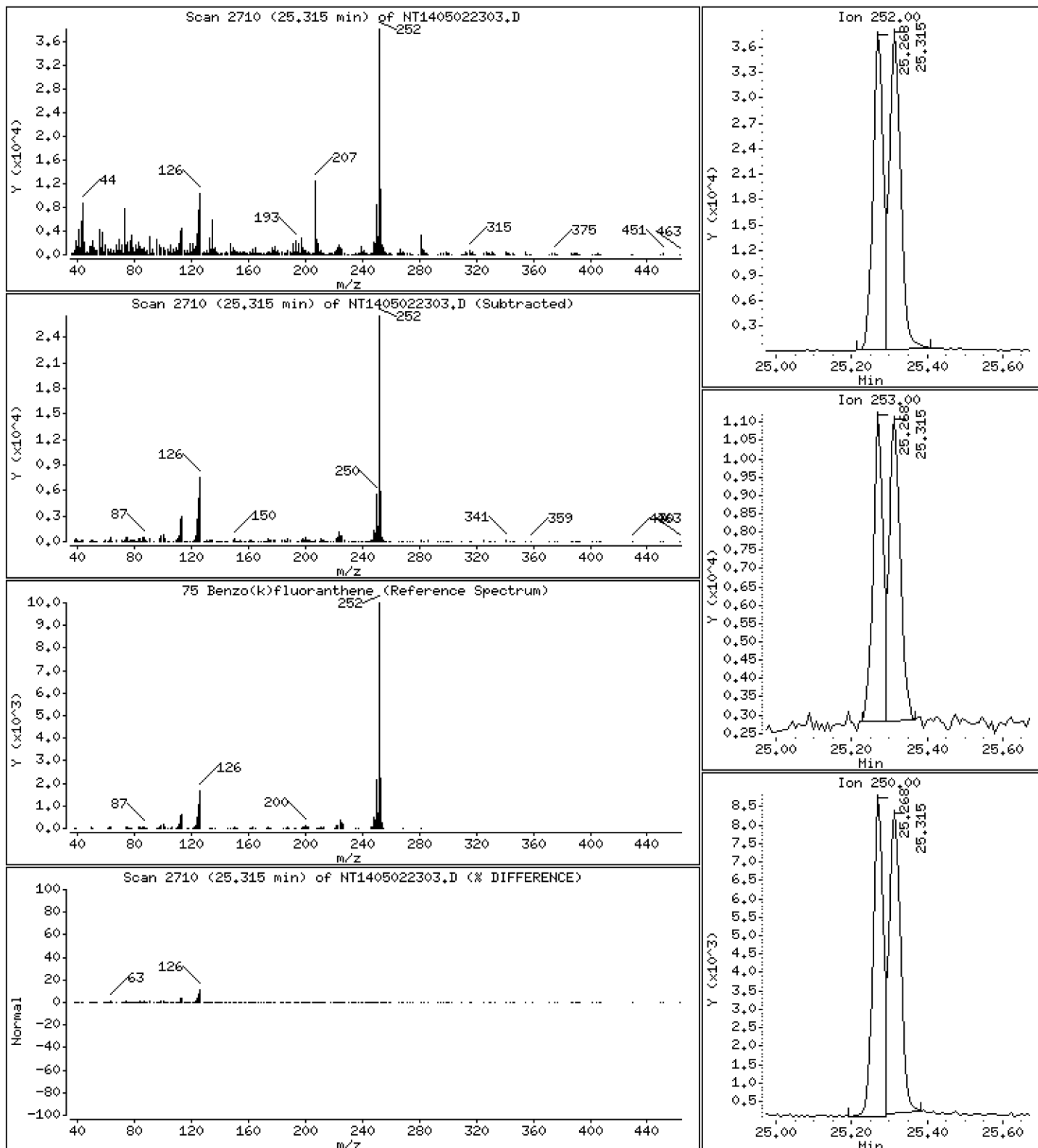
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

75 Benzo(k)fluoranthene

Concentration: 0,5399 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

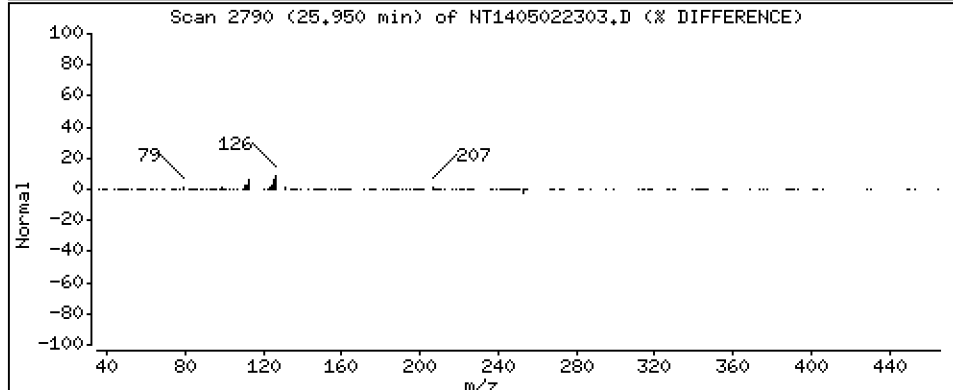
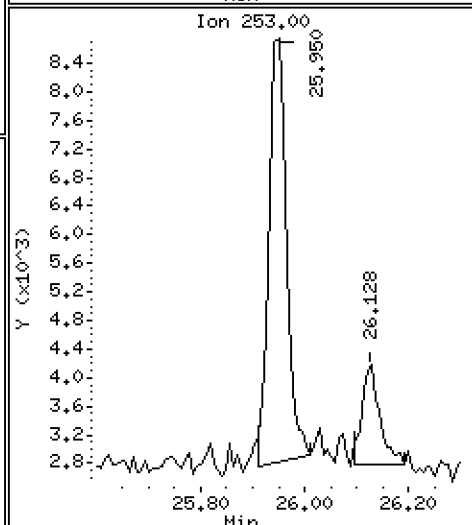
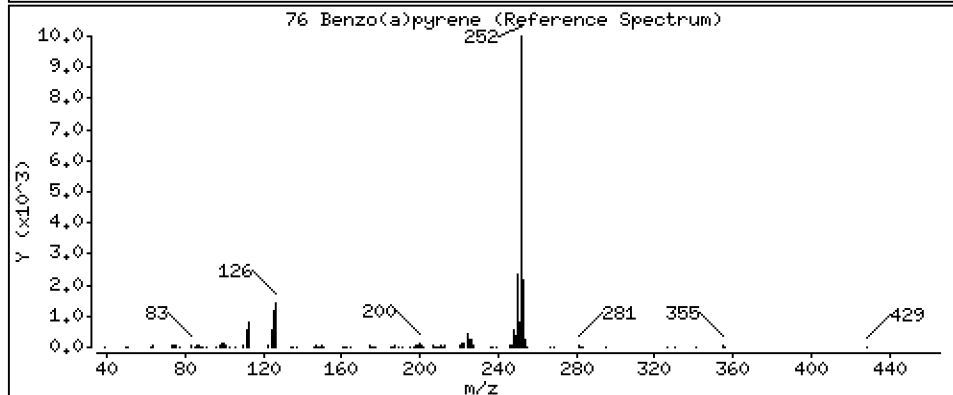
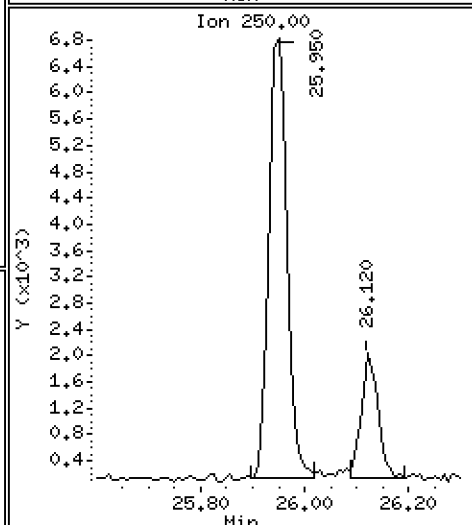
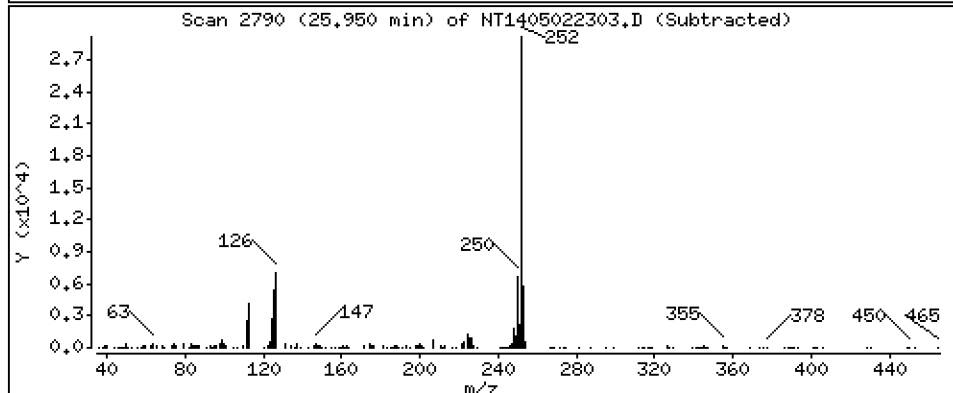
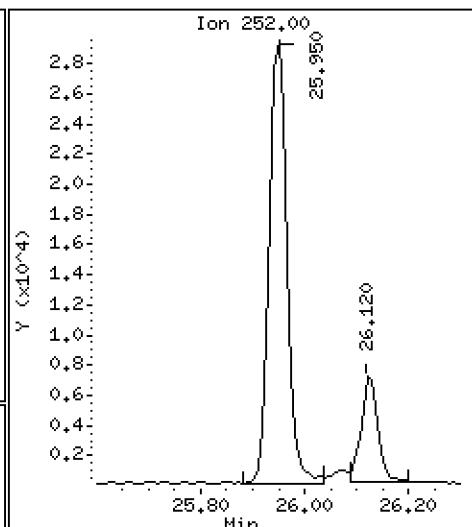
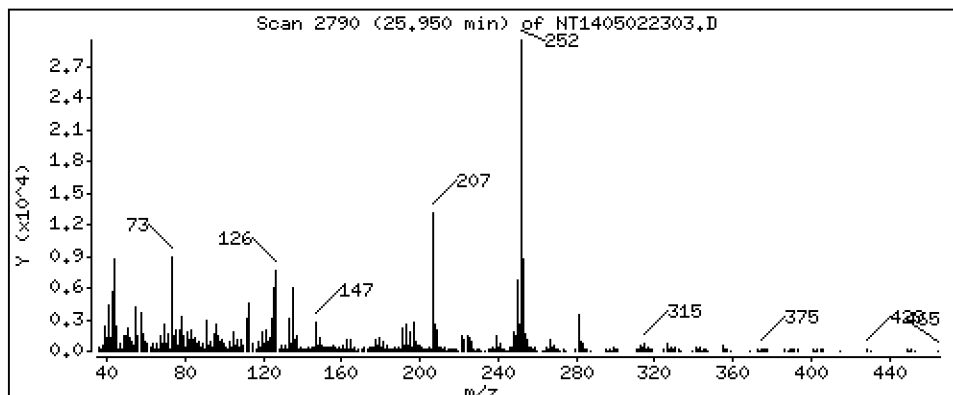
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

76 Benzo(a)pyrene

Concentration: 0,5287 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

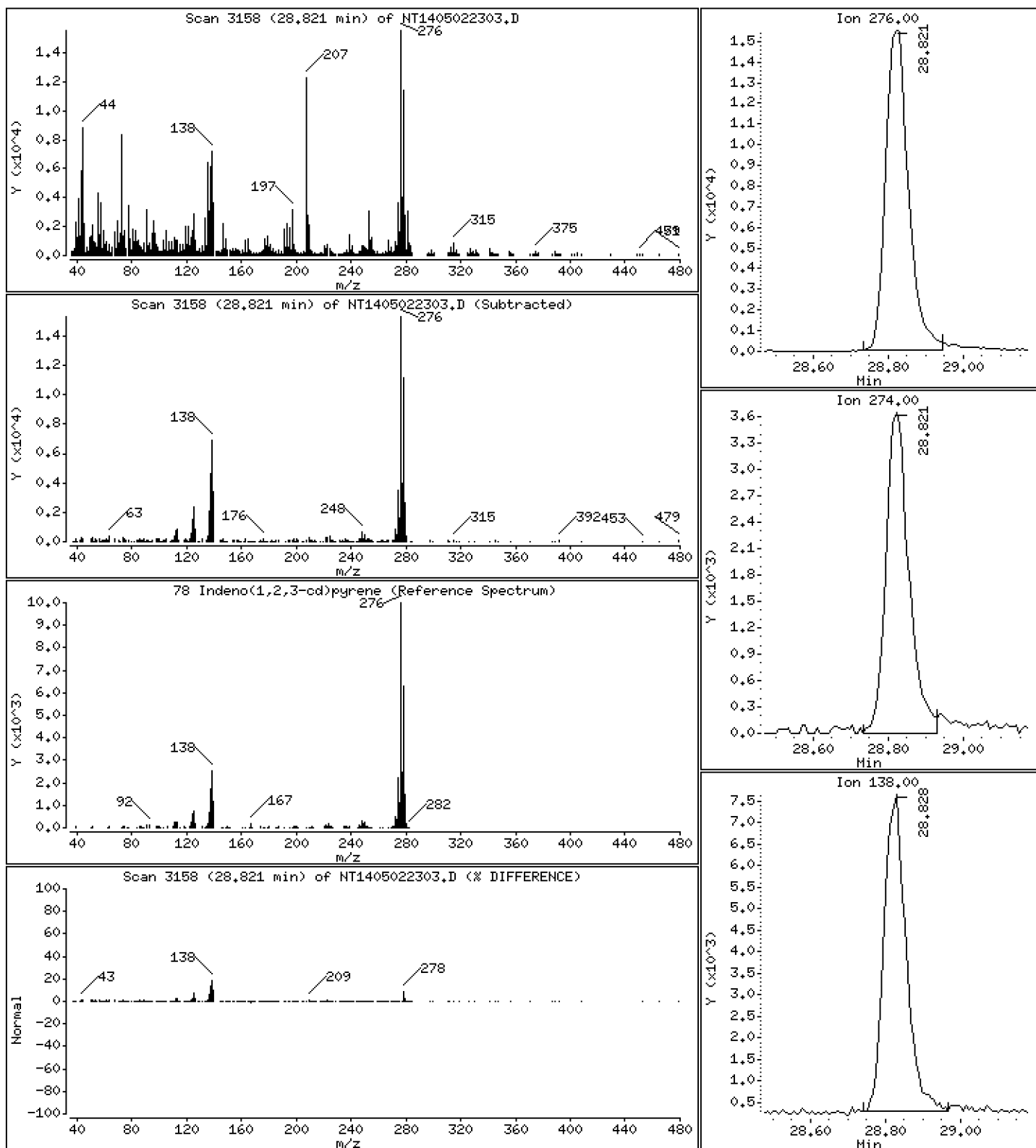
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

78 Indeno(1,2,3-cd)pyrene

Concentration: 0,3709 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

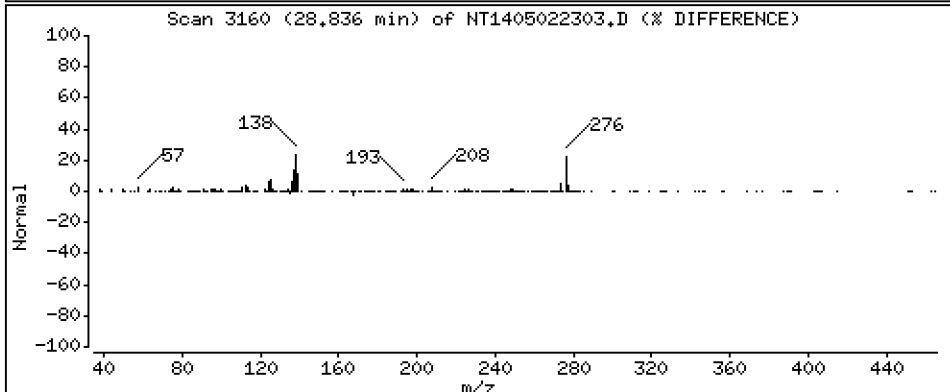
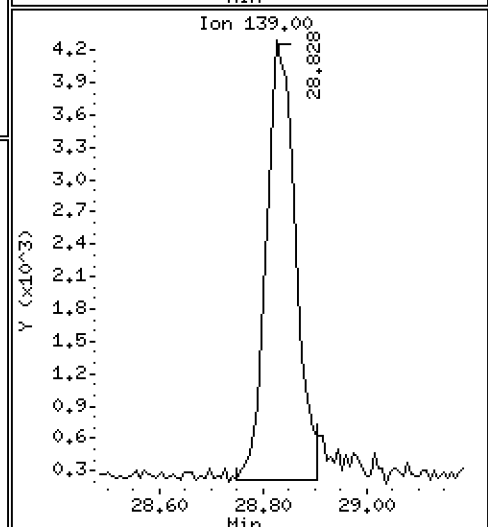
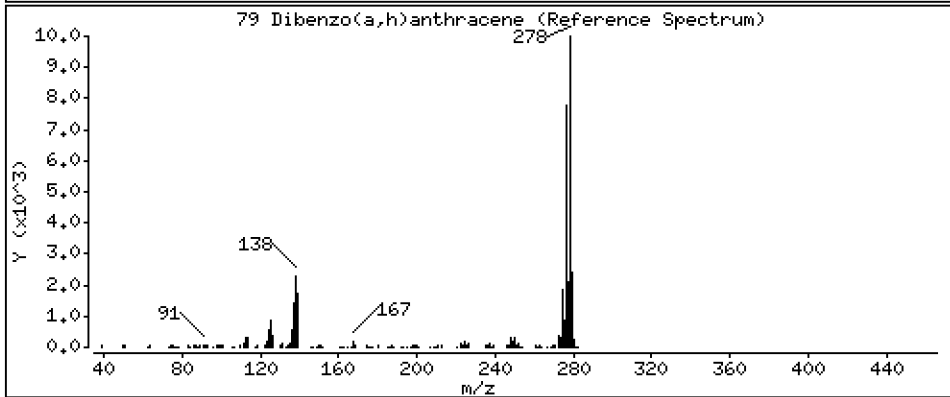
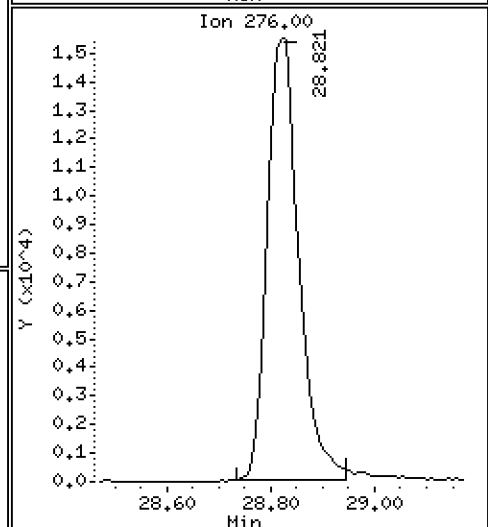
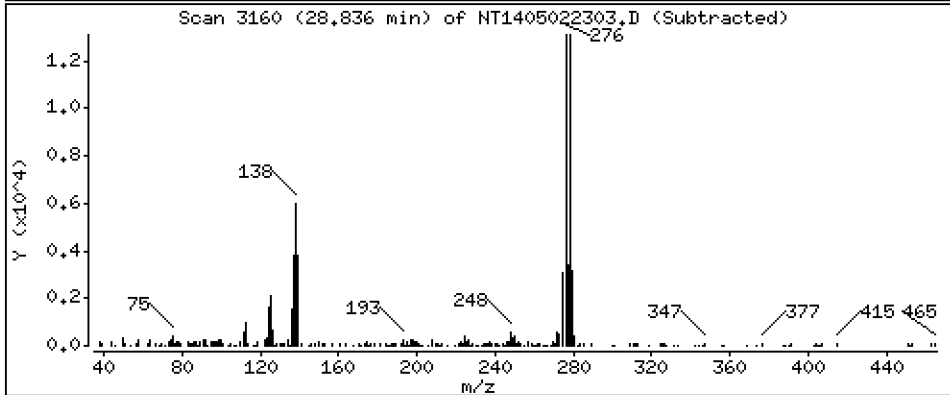
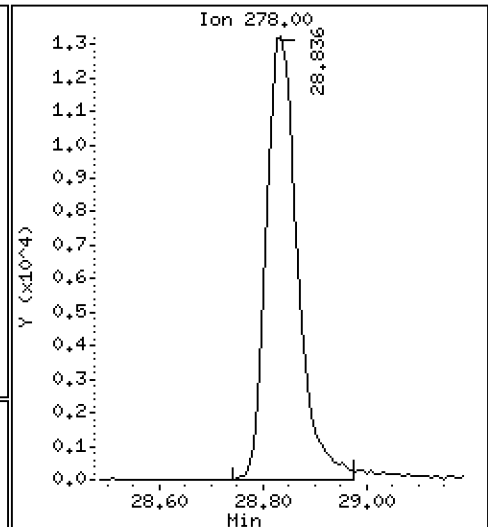
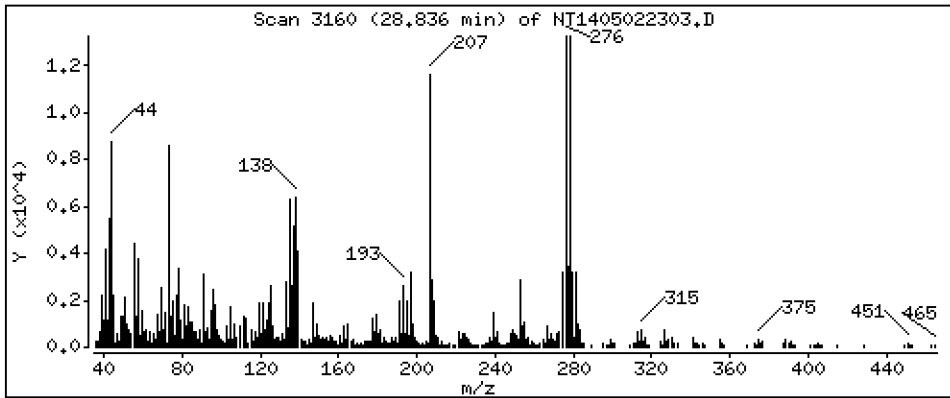
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,3857 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

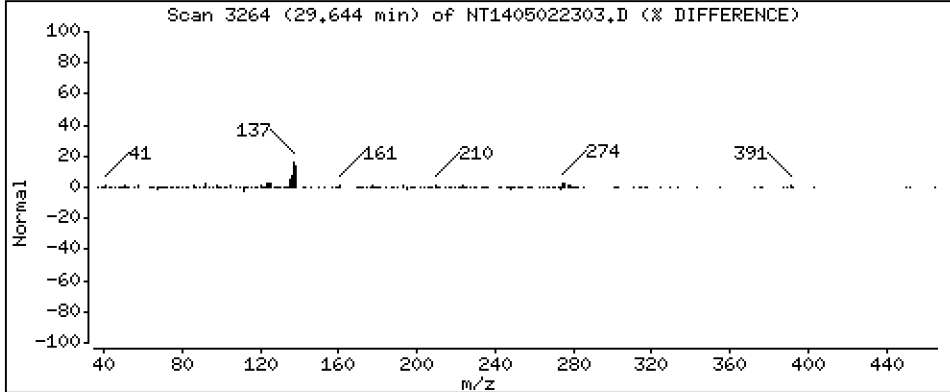
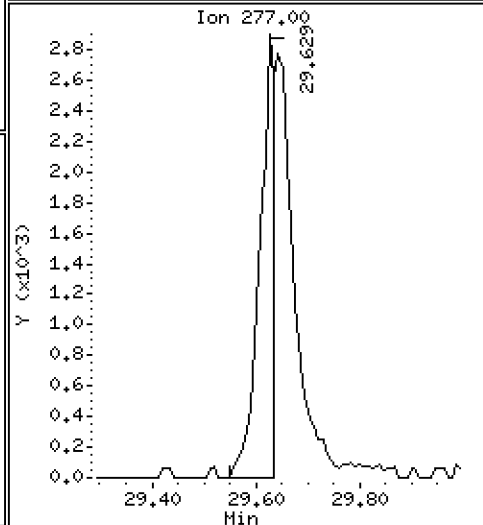
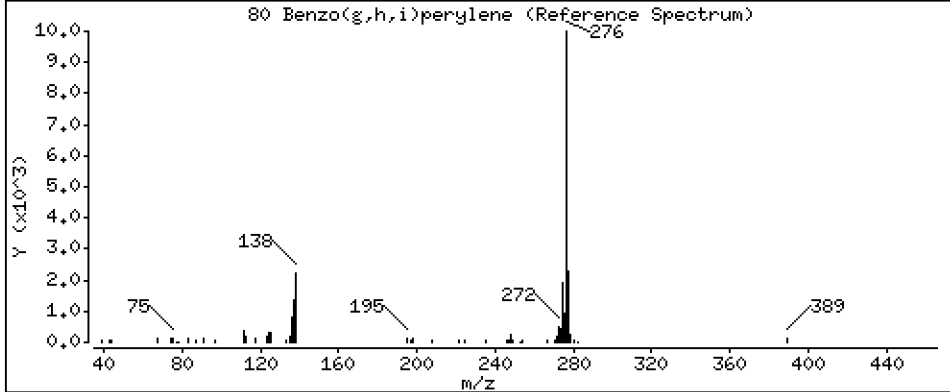
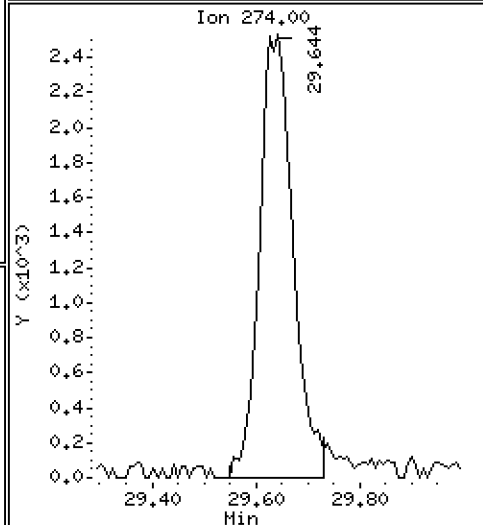
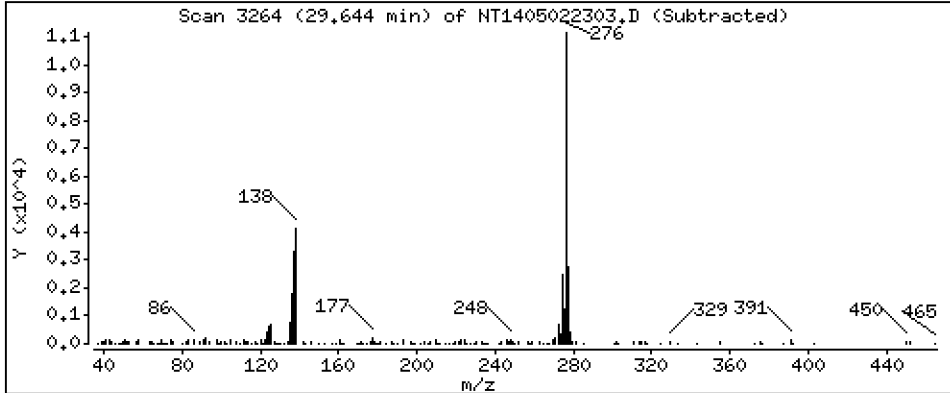
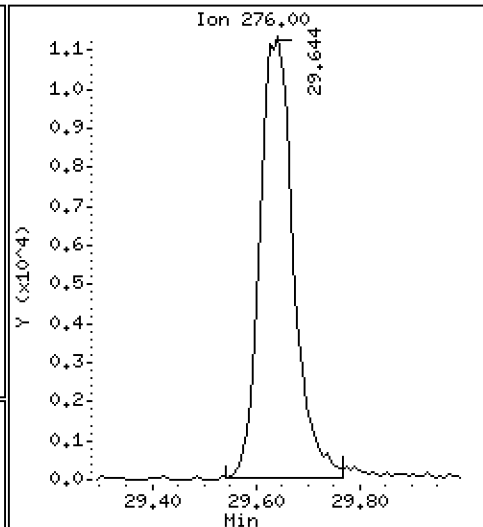
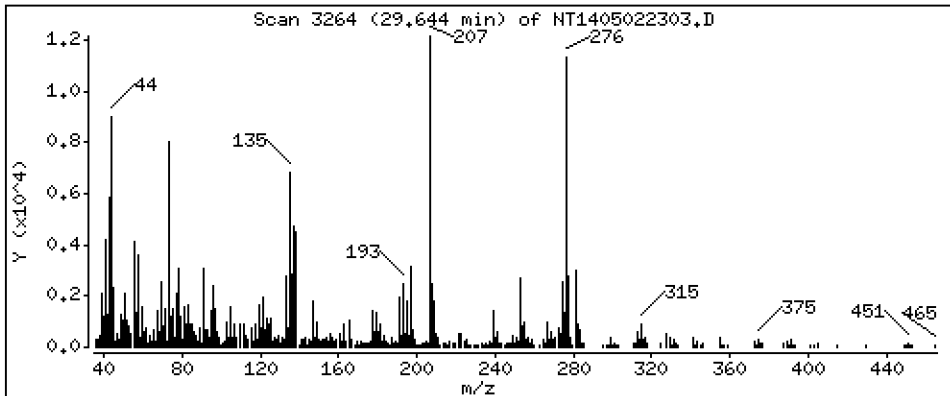
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

80 Benzo(g,h,i)perylene

Concentration: 0,3410 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

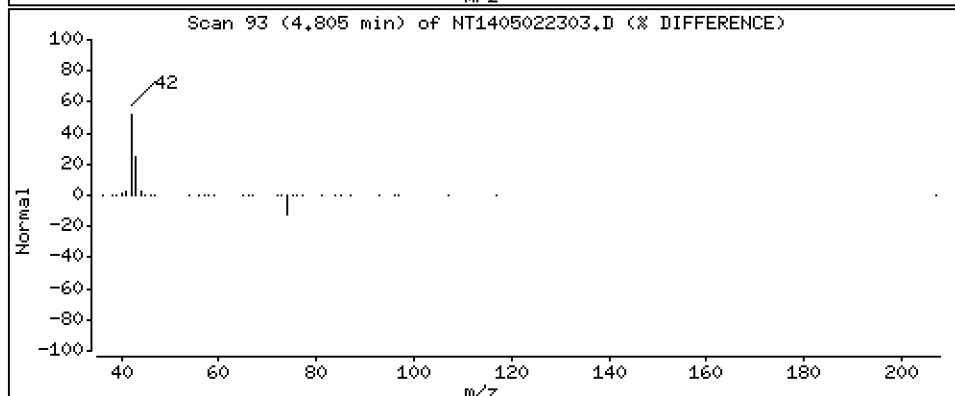
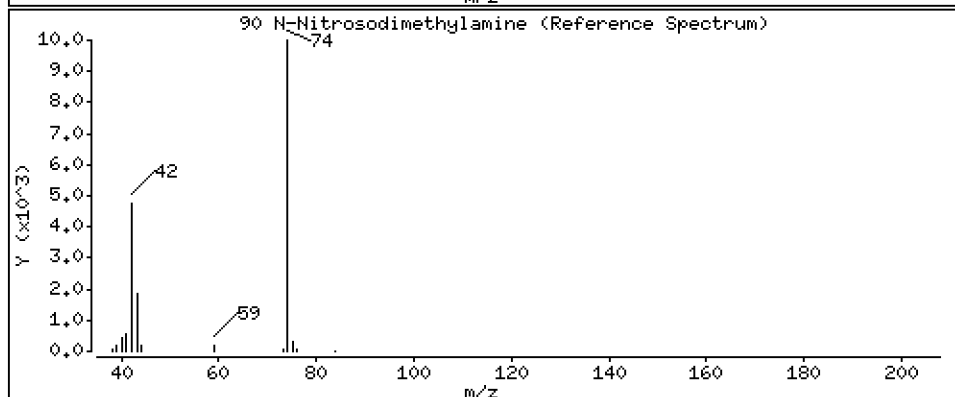
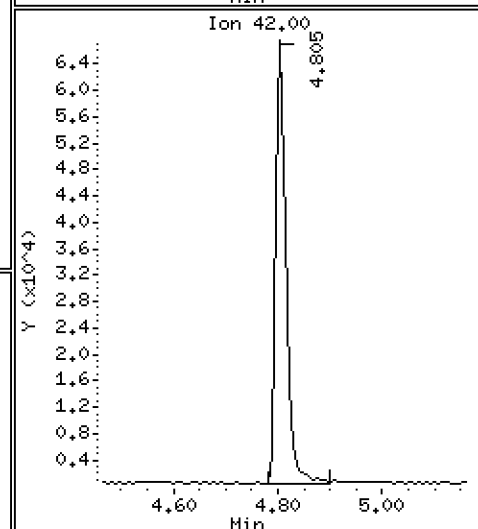
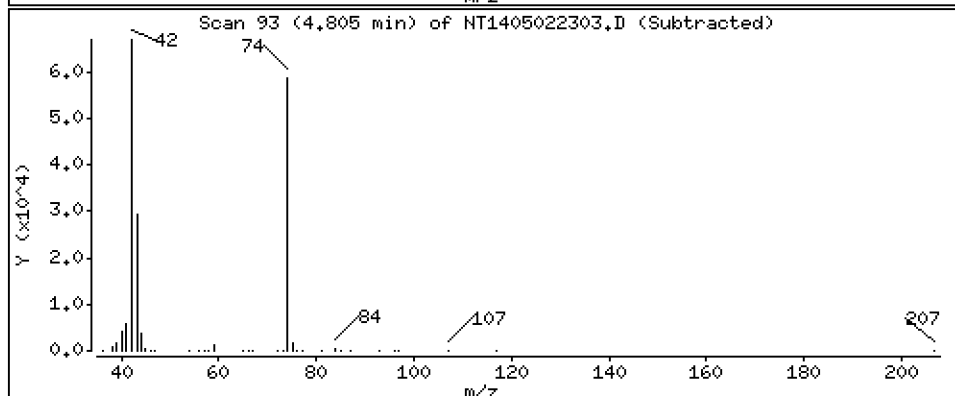
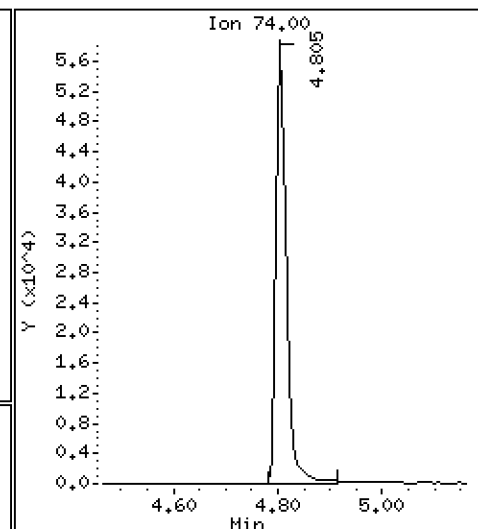
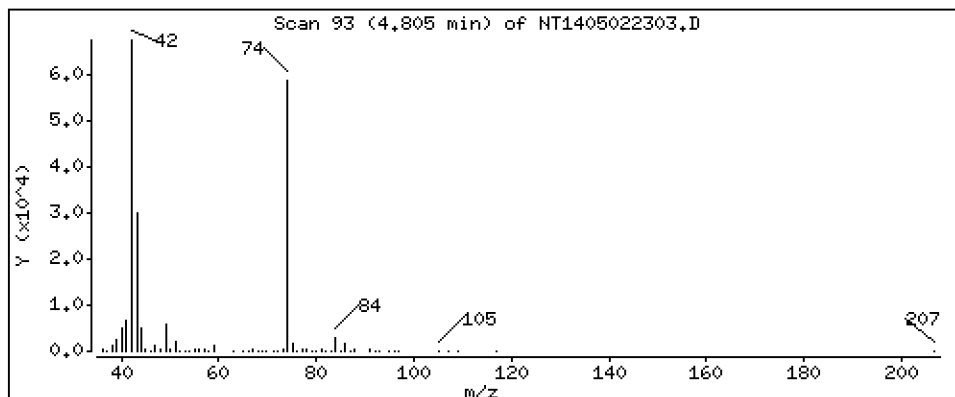
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 0,9603 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

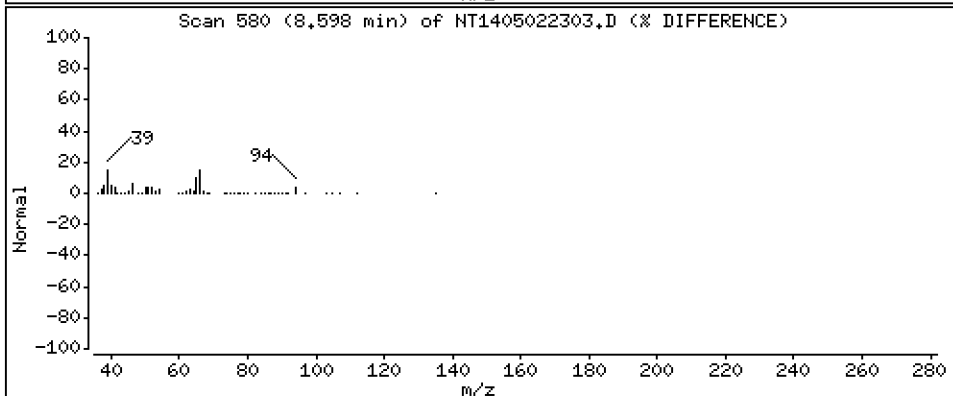
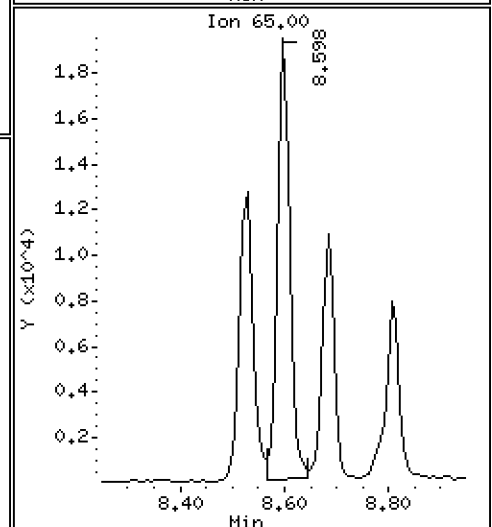
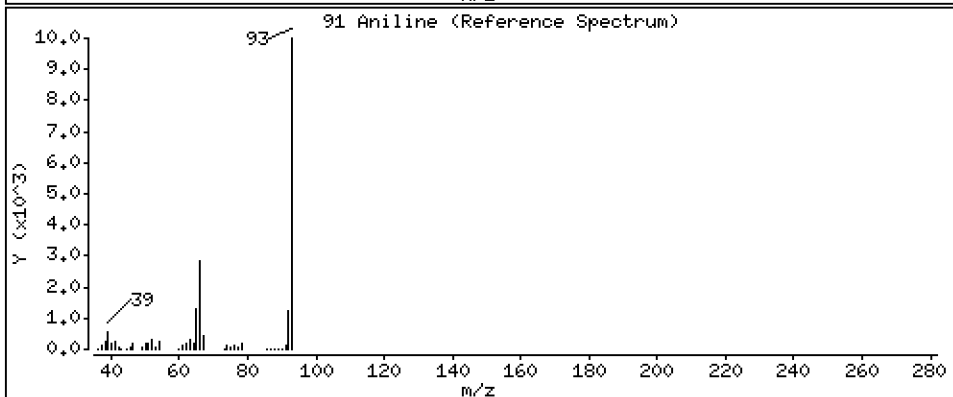
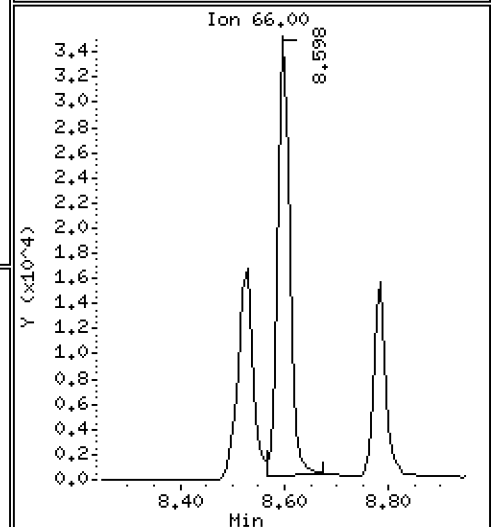
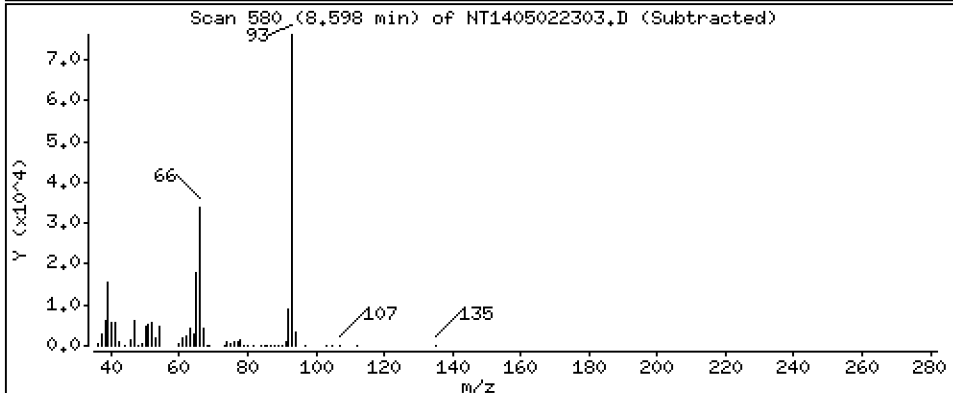
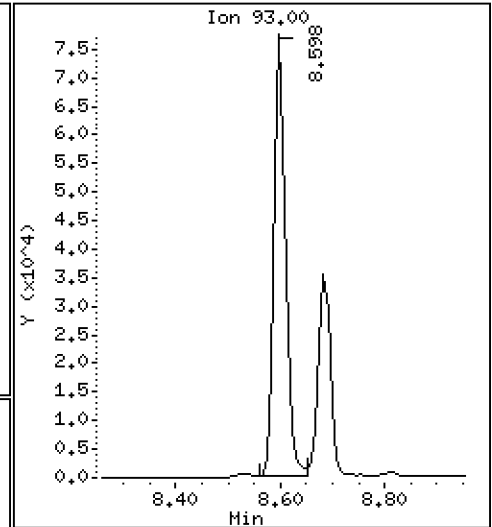
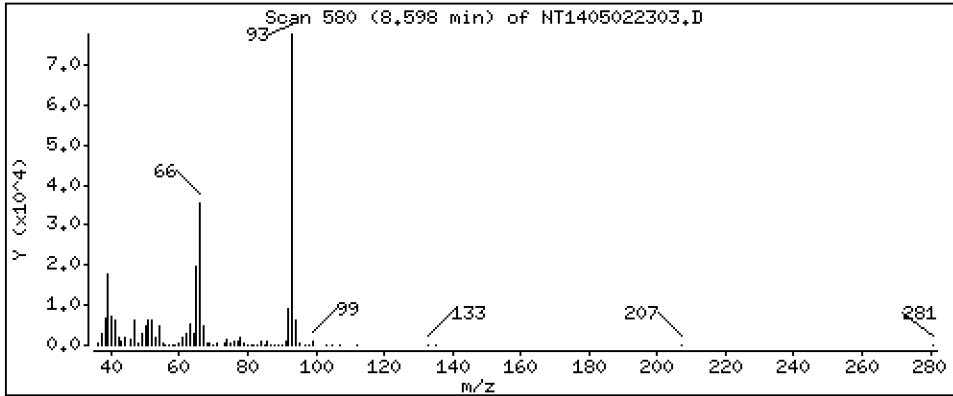
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

91 Aniline

Concentration: 0,8772 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

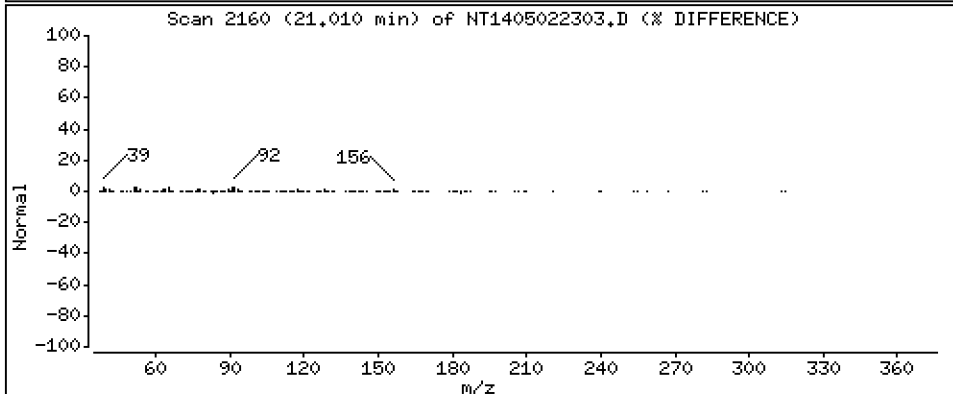
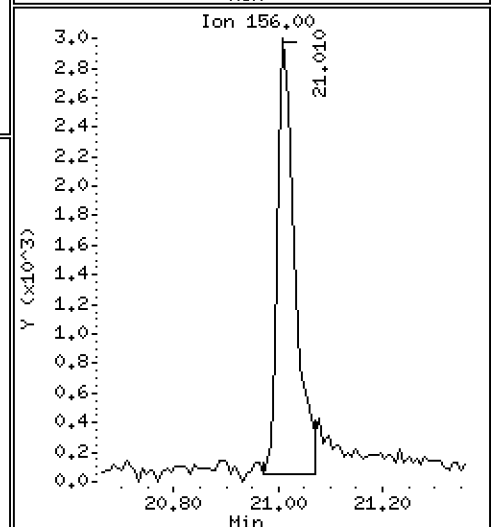
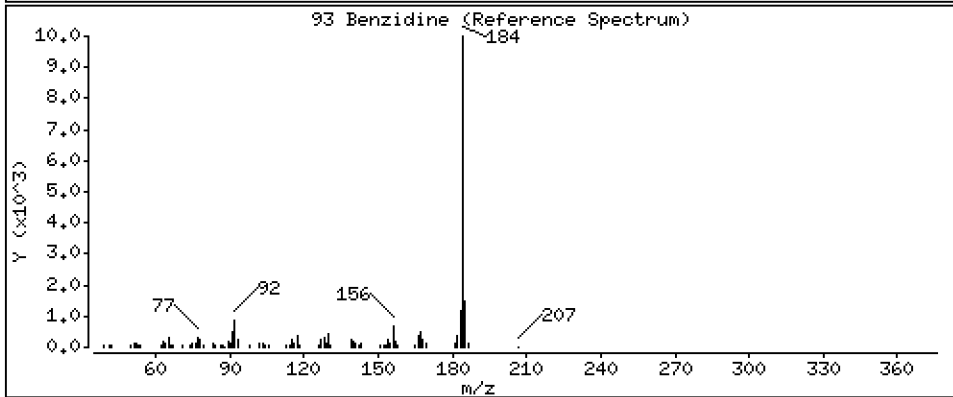
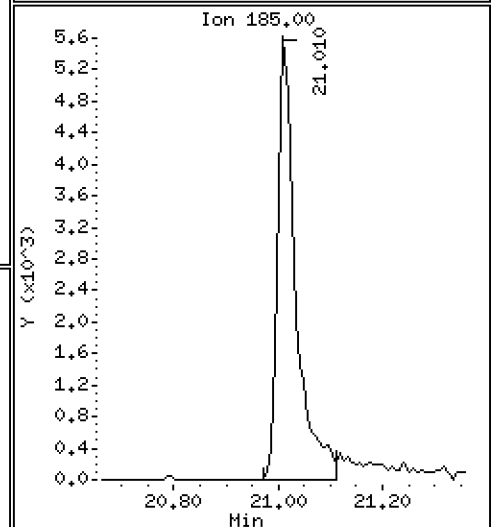
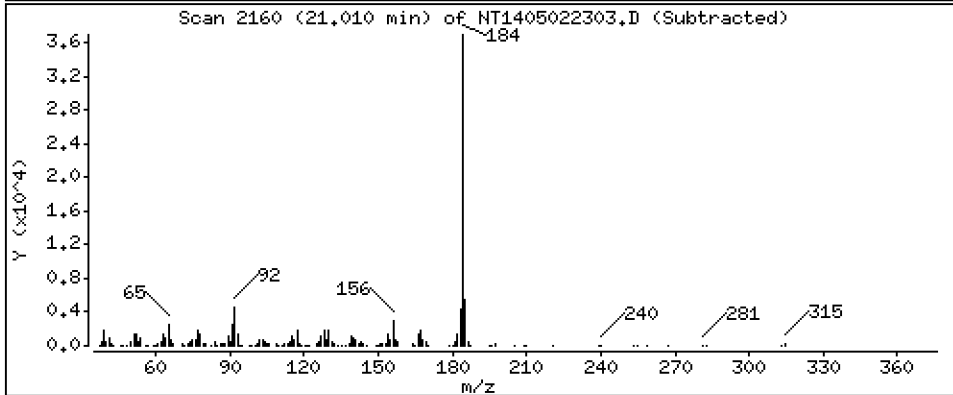
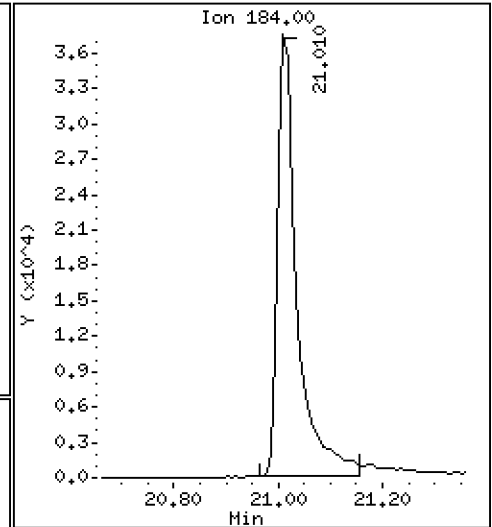
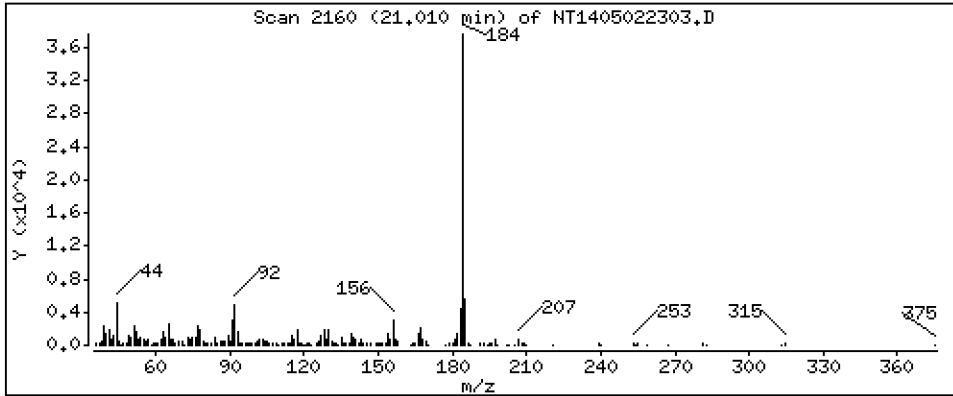
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

93 Benzidine

Concentration: 1,091 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

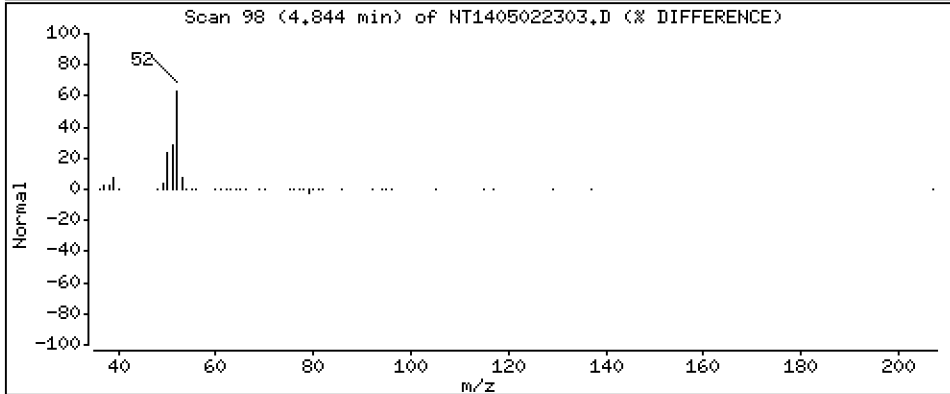
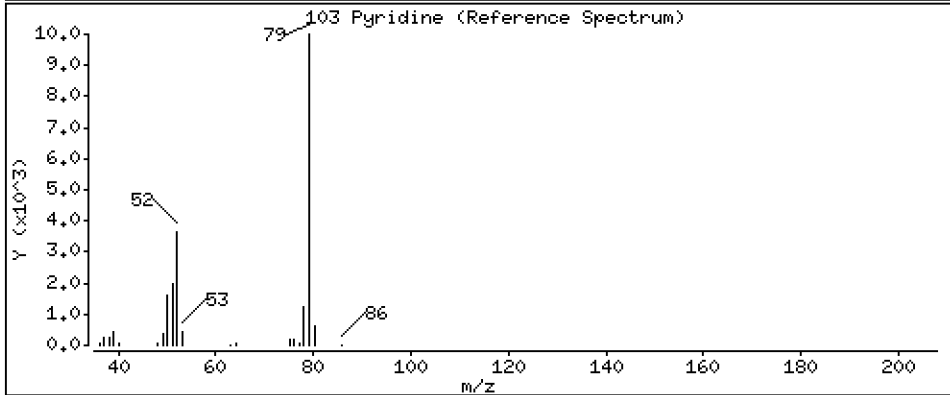
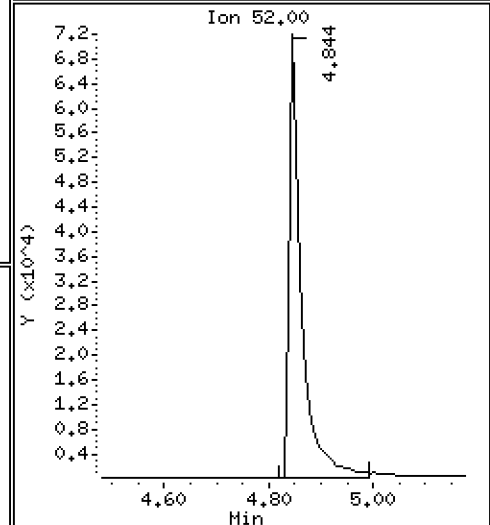
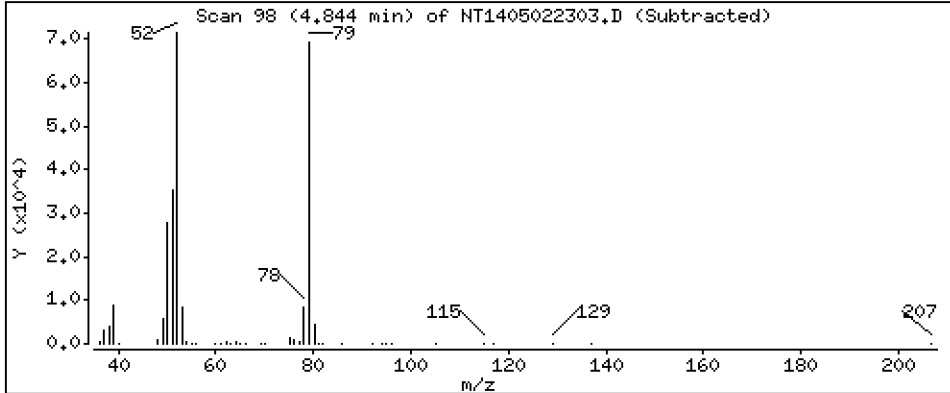
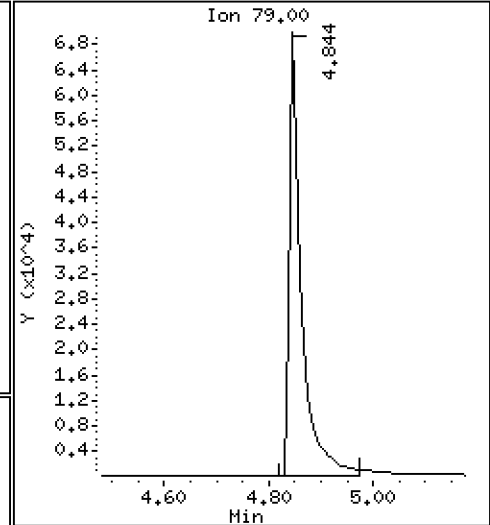
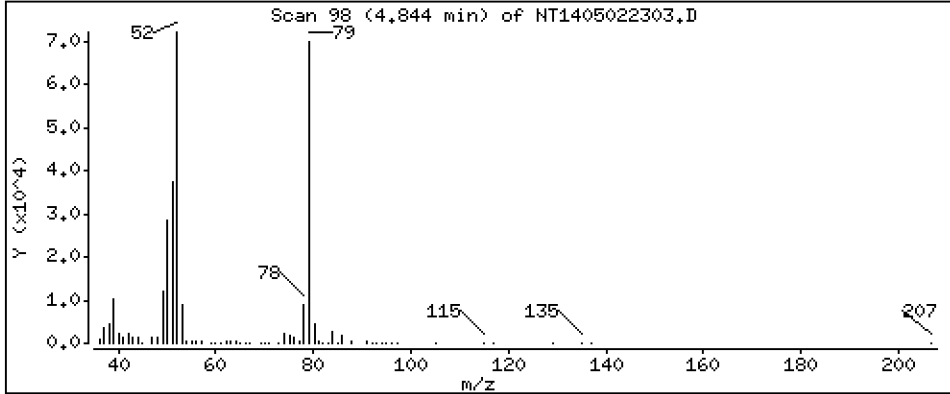
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

103 Pyridine

Concentration: 0,5036 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

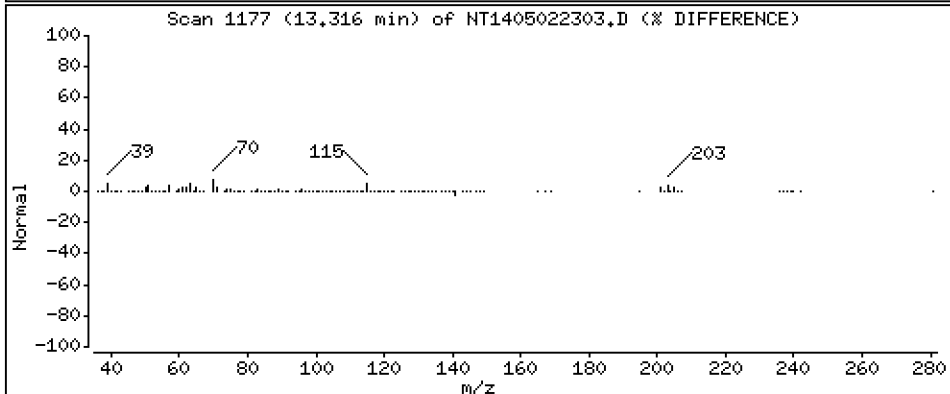
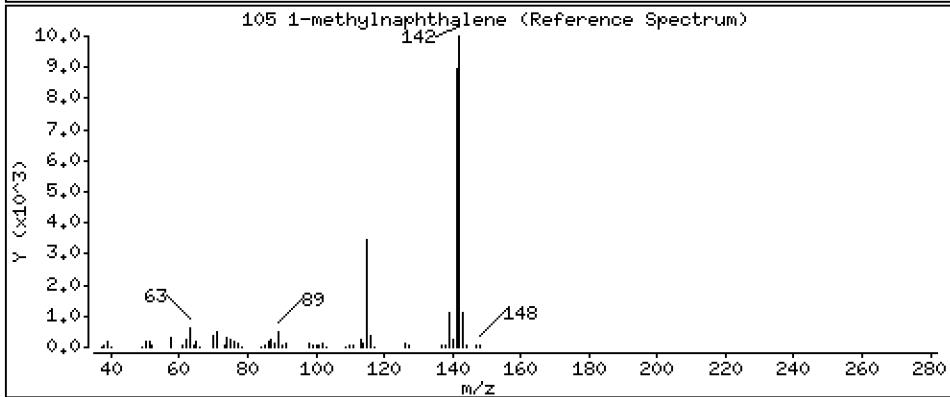
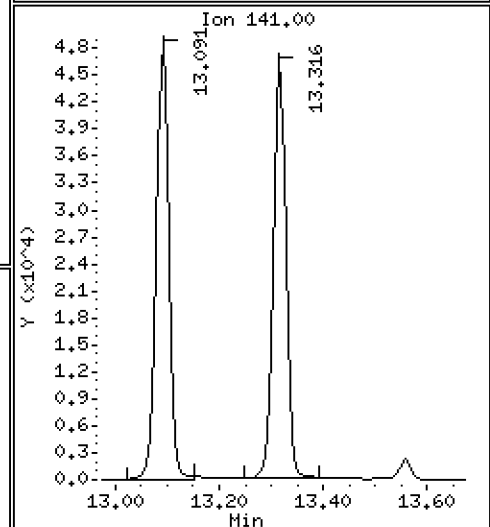
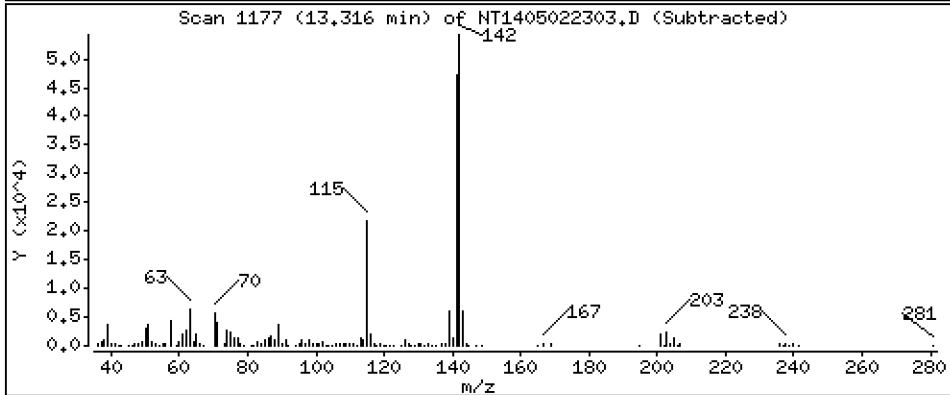
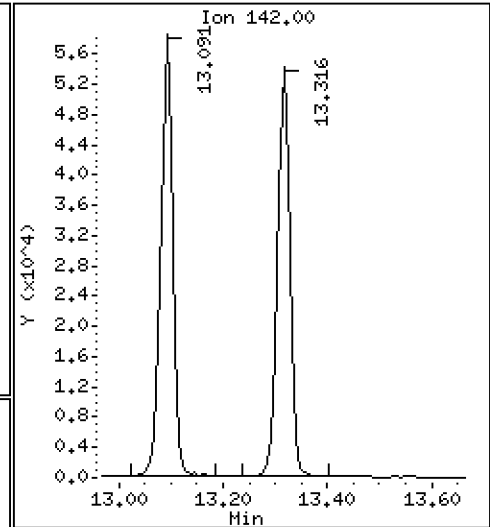
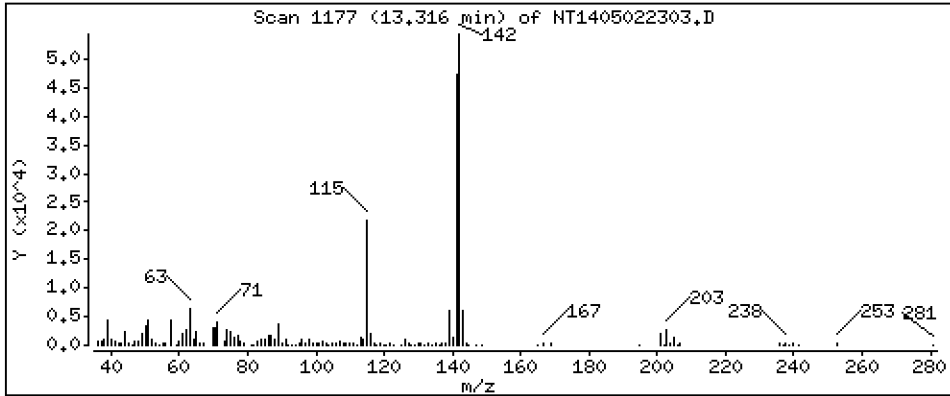
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

105 1-methylnaphthalene

Concentration: 0,4510 ug/mL





Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

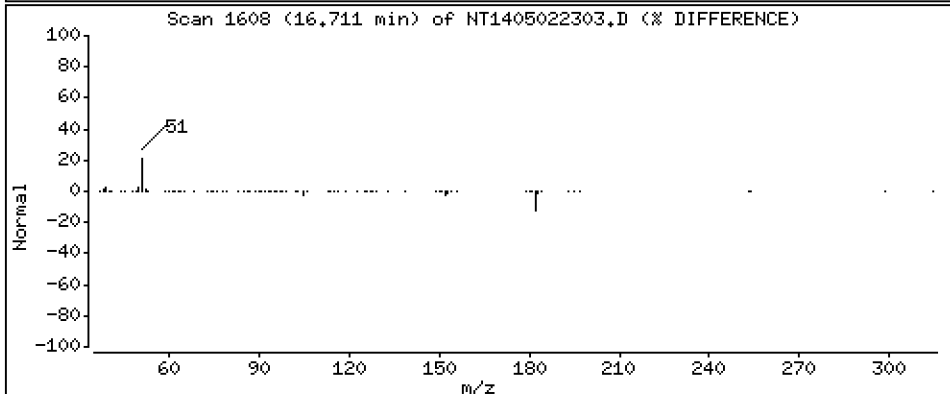
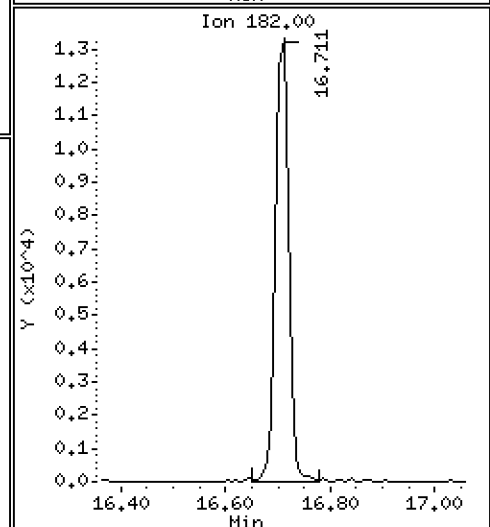
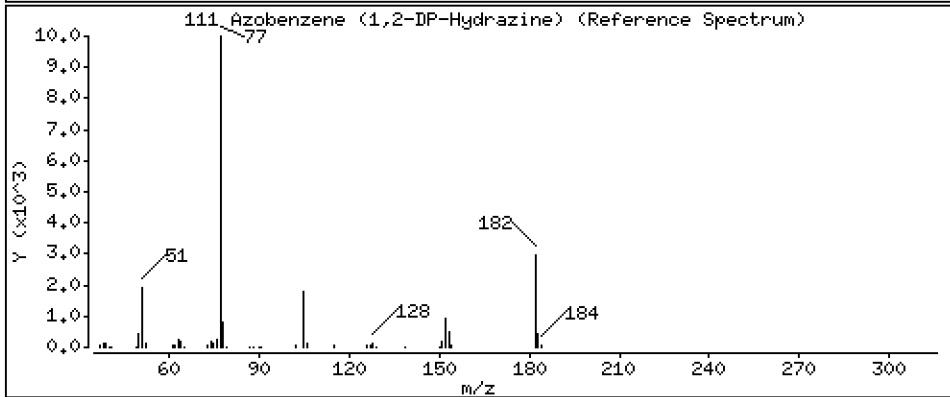
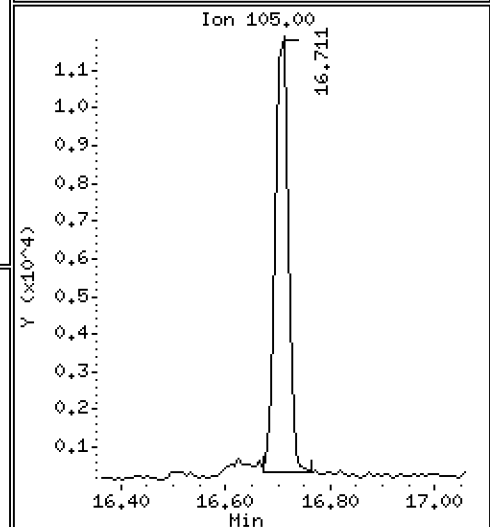
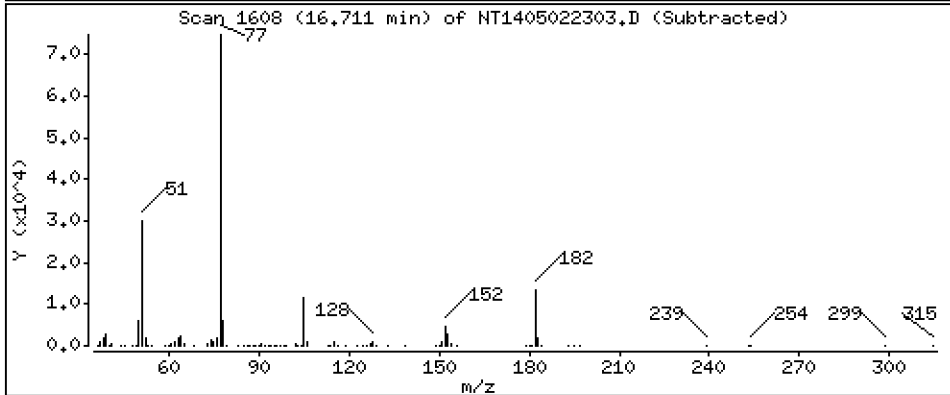
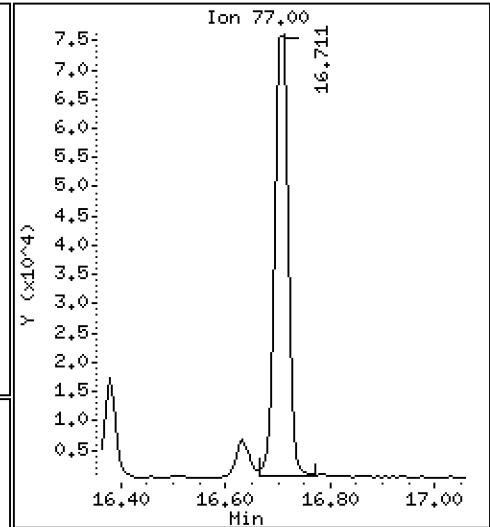
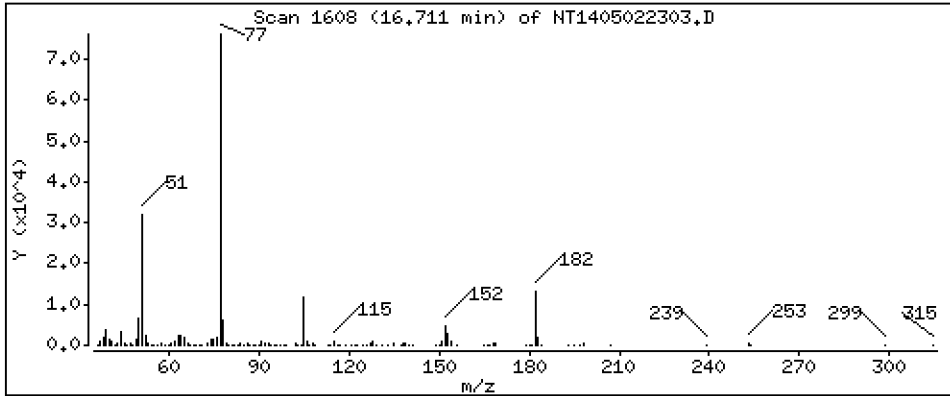
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

111 Azobenzene (1,2-DP-Hydrazine)

Concentration: 0,4638 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

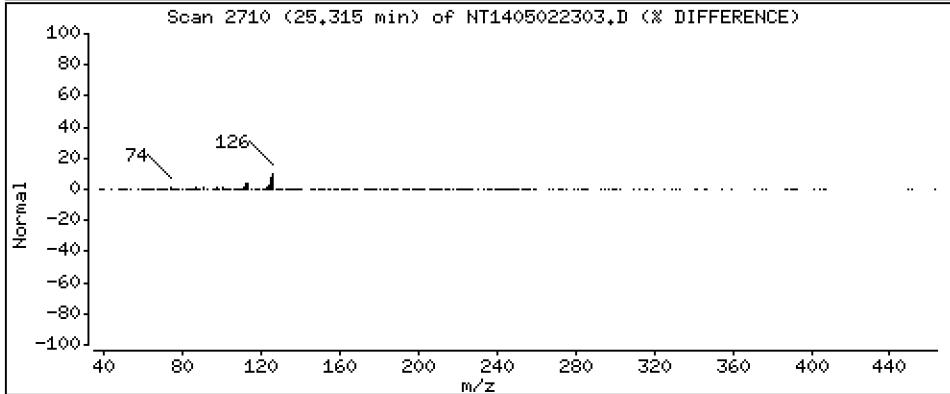
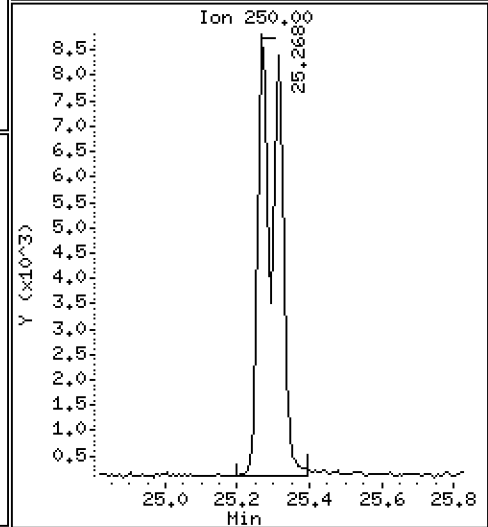
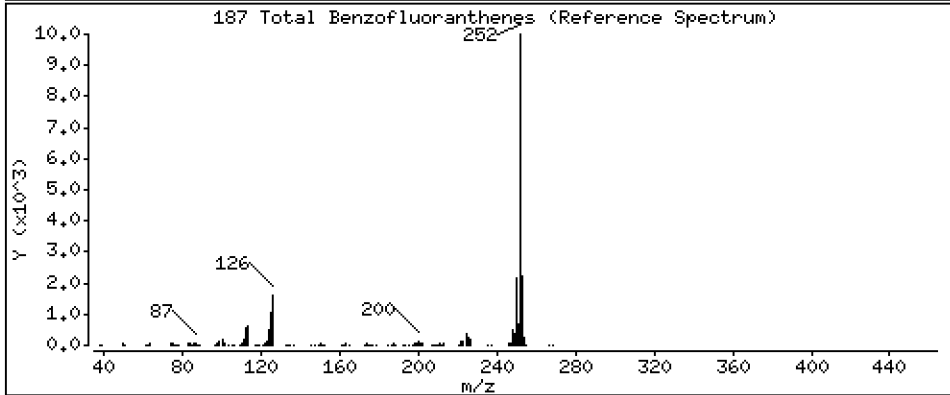
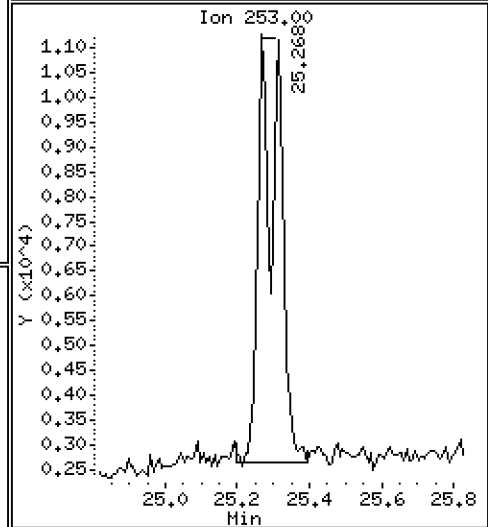
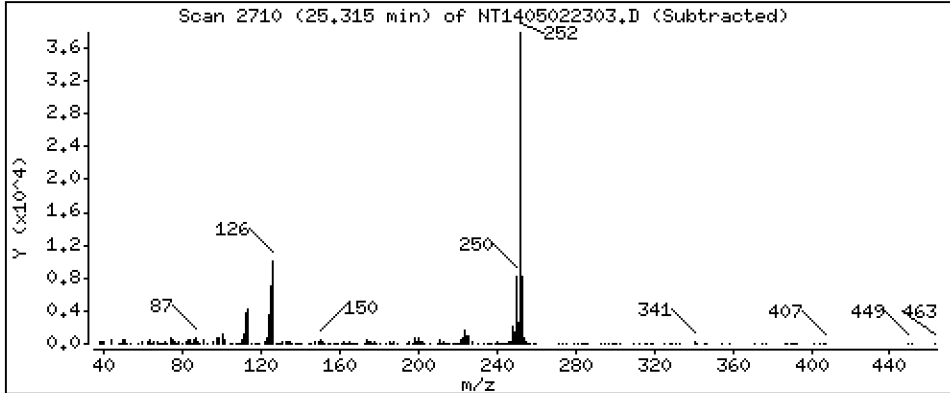
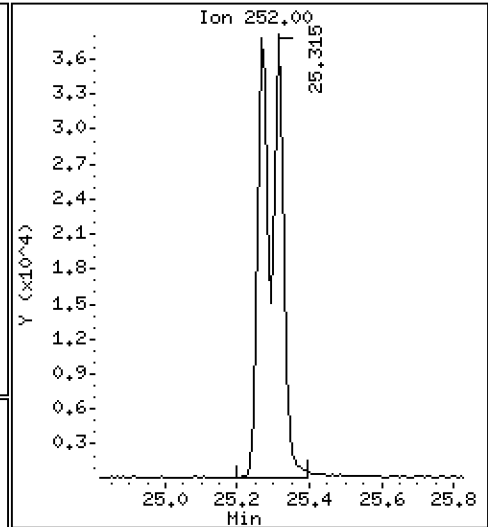
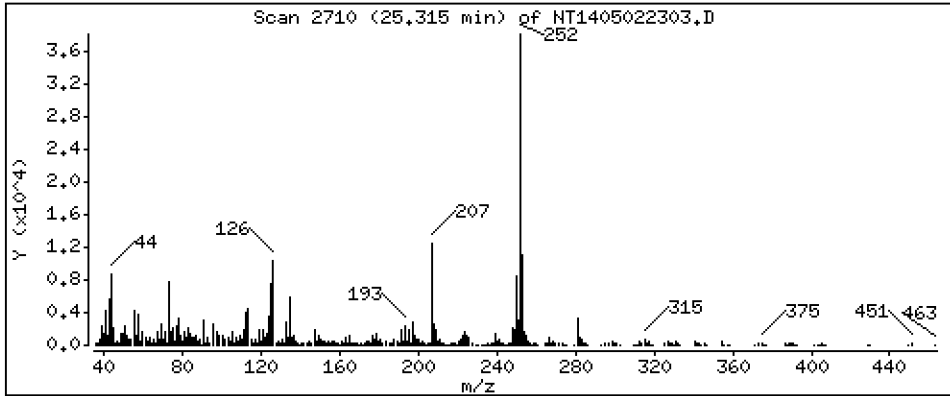
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

187 Total Benzofluoranthenes

Concentration: 1,036 ug/mL



Date : 02-MAY-2023 15:05

Client ID:

Instrument: nt14.i

Sample Info: SLE0049-LCV1

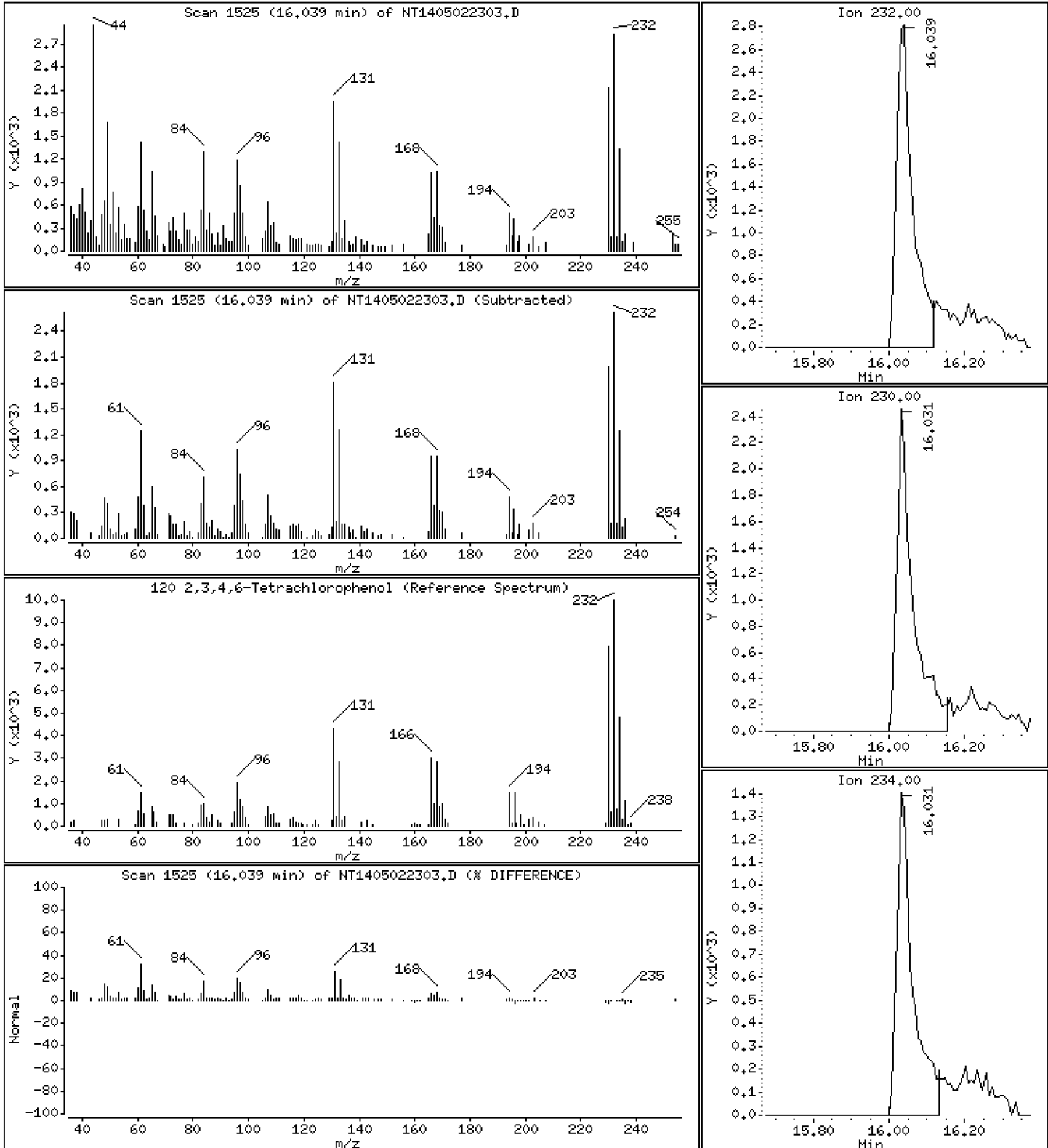
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

120 2,3,4,6-Tetrachlorophenol

Concentration: 0,2198 ug/mL



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230502.b\NT1405022303.D  
 Lab Smp Id: SLE0049-LCV1  
 Inj Date : 02-MAY-2023 15:05 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0049-LCV1  
 Misc Info :  
 Comment : 1ul Injection  
 Method : \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Meth Date : 03-May-2023 12:20 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 17:37 Cal File: NT04212308.D  
 Als bottle: 3  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: ICAL.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.914	6.914	(0.756)	66102	0.70870	0.7087
\$ 2 Phenol-d5	99		8.505	8.505	(0.931)	88009	0.67236	0.6724
3 Phenol	94		8.528	8.528	(0.933)	65077	0.44360	0.4436
\$ 5 2-Chlorophenol-d4	132		8.783	8.783	(0.961)	66634	0.71559	0.7156
4 Bis(2-Chloroethyl)ether	93		8.683	8.690	(0.950)	54096	0.48297	0.4830
6 2-Chlorophenol	128		8.806	8.814	(0.964)	47834	0.46813	0.4681
7 1,3-Dichlorobenzene	146		9.077	9.077	(0.993)	50877	0.49727	0.4973
* 8 1,4-Dichlorobenzene-d4	152		9.139	9.147	(1.000)	257916	4.00000	
9 1,4-Dichlorobenzene	146		9.170	9.178	(1.003)	47107	0.48297	0.4830
\$ 10 1,2-Dichlorobenzene-d4	152		9.504	9.504	(1.040)	30196	0.51191	0.5119
12 1,2-Dichlorobenzene	146		9.535	9.535	(1.043)	47867	0.49324	0.4932
11 Benzyl alcohol	108		9.427	9.419	(1.031)	23133	0.34570	0.3457
14 2,2'-oxybis(1-Chloropropane)	121		9.714	9.714	(1.063)	14686	0.44826	0.4483 (M)
13 2-Methylphenol	108		9.644	9.644	(1.055)	44046	0.45005	0.4501
17 Hexachloroethane	117		10.125	10.125	(1.108)	22539	0.48472	0.4847
16 N-Nitroso-di-n-propylamine	70		9.978	9.978	(1.092)	40473	0.41122	0.4112
15 4-Methylphenol	108		9.916	9.916	(1.085)	46765	0.41959	0.4196
\$ 18 Nitrobenzene-d5	82		10.249	10.249	(0.880)	58430	0.47405	0.4741
19 Nitrobenzene	77		10.280	10.288	(0.883)	59496	0.45153	0.4515
20 Isophorone	82		10.730	10.738	(0.922)	72134	0.39882	0.3988
21 2-Nitrophenol	139		10.917	10.917	(0.938)	17753	0.25596	0.2560
22 2,4-Dimethylphenol	107		10.963	10.971	(0.941)	105870	1.06629	1.066
23 Bis(2-Chloroethoxy)methane	93		11.165	11.165	(0.959)	54678	0.47035	0.4703
24 Benzoic acid	105		11.250	11.227	(0.966)	247	0.00300	0.003004
25 2,4-Dichlorophenol	162		11.382	11.382	(0.977)	58294	0.59699	0.5970
26 1,2,4-Trichlorobenzene	180		11.560	11.559	(0.993)	36451	0.49183	0.4918
* 27 Naphthalene-d8	136		11.644	11.652	(1.000)	1001489	4.00000	
28 Naphthalene	128		11.691	11.691	(1.004)	135616	0.50379	0.5038
29 4-Chloroaniline	127		11.822	11.822	(1.015)	100534	0.86319	0.8632
30 Hexachlorobutadiene	225		12.046	12.046	(1.035)	16966	0.50072	0.5007
31 4-Chloro-3-methylphenol	107		12.797	12.789	(1.099)	84334	0.95048	0.9505
32 2-Methylnaphthalene	142		13.091	13.091	(1.124)	91241	0.46792	0.4679
33 Hexachlorocyclopentadiene	237		13.555	13.563	(0.887)	15549	0.44212	0.4421

Compounds	QUANT SIG					CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)	
34 2,4,6-Trichlorophenol	196	13.726	13.726	(0.898)	34937	0.79741	0.7974	
35 2,4,5-Trichlorophenol	196	13.811	13.803	(0.904)	34263	0.73612	0.7361	
§ 36 2-Fluorobiphenyl	172	13.873	13.880	(0.908)	86820	0.52168	0.5217	
37 2-Chloronaphthalene	162	14.089	14.097	(0.922)	76206	0.47967	0.4797	
38 2-Nitroaniline	65	14.360	14.360	(0.940)	69490	0.81883	0.8188	
39 Dimethylphthalate	163	14.786	14.786	(0.968)	81906	0.49978	0.4998	
40 Acenaphthylene	152	14.972	14.972	(0.980)	143442	0.56573	0.5657	
41 2,6-Dinitrotoluene	165	14.925	14.933	(0.977)	33675	0.90634	0.9063	
* 42 Acenaphthene-d10	164	15.281	15.289	(1.000)	477815	4.00000		
43 3-Nitroaniline	138	15.219	15.227	(0.996)	37773	0.80914	0.8091	
44 Acenaphthene	153	15.351	15.351	(1.005)	76455	0.50336	0.5034	
45 2,4-Dinitrophenol	184	Compound Not Detected.						
46 Dibenzofuran	168	15.675	15.683	(1.026)	104934	0.48393	0.4839	
47 4-Nitrophenol	109	15.621	15.552	(1.022)	4617	0.16996	0.1700	
48 2,4-Dinitrotoluene	165	15.745	15.745	(1.030)	41799	0.83089	0.8309	
50 Diethylphthalate	149	16.240	16.247	(1.063)	89389	0.50391	0.5039	
49 Fluorene	166	16.394	16.402	(1.073)	87735	0.45724	0.4572	
51 4-Chlorophenyl-phenylether	204	16.379	16.386	(1.072)	35527	0.44762	0.4476	
52 4-Nitroaniline	138	16.510	16.502	(1.080)	34551	0.83696	0.8370	
53 4,6-Dinitro-2-methylphenol	198	16.610	16.595	(0.906)	830	0.03247	0.03247	
54 N-Nitrosodiphenylamine	169	16.633	16.641	(0.907)	55852	0.48119	0.4812	
§ 55 2,4,6-Tribromophenol	330	16.942	16.942	(1.109)	7734	0.49235	0.4924	
56 4-Bromophenyl-phenylether	248	17.389	17.389	(0.948)	16794	0.43988	0.4399	
57 Hexachlorobenzene	284	17.714	17.714	(0.966)	18034	0.46709	0.4671	
58 Pentachlorophenol	266	18.132	18.077	(0.989)	247	0.01006	0.01006	
* 59 Phenanthrene-d10	188	18.341	18.341	(1.000)	821905	4.00000		
60 Phenanthrene	178	18.387	18.387	(1.003)	116407	0.50091	0.5009	
61 Anthracene	178	18.480	18.480	(1.008)	110288	0.49482	0.4948	
62 Carbazole	167	18.813	18.812	(1.026)	103780	0.50318	0.5032	
63 Di-n-butylphthalate	149	19.594	19.594	(1.068)	138366	0.44007	0.4401	
64 Fluoranthene	202	20.770	20.770	(0.888)	110079	0.50510	0.5051	
65 Pyrene	202	21.195	21.195	(0.906)	113073	0.50240	0.5024	
§ 66 Terphenyl-d14	244	21.474	21.474	(0.918)	75451	0.43562	0.4356	
67 Butylbenzylphthalate	149	22.388	22.388	(0.957)	57251	0.39505	0.3950	
68 Benzo(a)anthracene	228	23.356	23.356	(0.999)	86898	0.51562	0.5156	
* 69 Chrysene-d12	240	23.387	23.387	(1.000)	472130	4.00000		
70 3,3'-Dichlorobenzidine	252	23.309	23.309	(0.997)	79251	1.46725	1.467	
71 Chrysene	228	23.425	23.433	(1.002)	79787	0.50759	0.5076	
72 bis(2-Ethylhexyl)phthalate	149	24.409	24.409	(1.001)	140567	0.47349	0.4735	
* 134 Di-n-octylphthalate-d4	153	24.393	24.401	(1.000)	1112088	4.00000		
73 Di-n-octylphthalate	149	24.409	24.409	(1.001)	140567	0.47349	0.4735	
74 Benzo(b)fluoranthene	252	25.268	25.276	(0.969)	73552	0.48829	0.4883	
75 Benzo(k)fluoranthene	252	25.314	25.322	(0.971)	79796	0.53990	0.5399	
76 Benzo(a)pyrene	252	25.949	25.949	(0.996)	67297	0.52867	0.5287	
* 77 Perylene-d12	264	26.065	26.073	(1.000)	451756	4.00000		
78 Indeno(1,2,3-cd)pyrene	276	28.820	28.820	(1.106)	65288	0.37090	0.3709	
79 Dibenzo(a,h)anthracene	278	28.836	28.836	(1.106)	55540	0.38573	0.3857	
80 Benzo(g,h,i)perylene	276	29.644	29.644	(1.137)	50815	0.34101	0.3410	
90 N-Nitrosodimethylamine	74	4.805	4.813	(0.526)	74470	0.96030	0.9603	
91 Aniline	93	8.598	8.605	(0.941)	116784	0.87722	0.8772	
93 Benzidine	184	21.010	21.010	(0.898)	93806	1.09069	1.091	
103 Pyridine	79	4.844	4.828	(0.530)	115607	0.50361	0.5036	
105 1-methylnaphthalene	142	13.315	13.315	(1.143)	84923	0.45100	0.4510	
111 Azobenzene (1,2-DP-Hydrazine)	77	16.710	16.710	(1.094)	126956	0.46377	0.4638	

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.314	25.322	(0.971)	147775	1.03627	1.036
120 2,3,4,6-Tetrachlorophenol	232	16.039	16.023	(1.050)	9268	0.21985	0.2198

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i Calibration Date: 02-MAY-2023  
 Lab File ID: NT1405022303.D Calibration Time: 14:28  
 Lab Smp Id: SLE0049-LCV1  
 Analysis Type: SV Level:  
 Quant Type: ISTD Sample Type:  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230502.b\ABN.m  
 Misc Info:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	246356	123178	492712	257916	4.69
27 Naphthalene-d8	988717	494359	1977434	1001489	1.29
42 Acenaphthene-d10	475022	237511	950044	477815	0.59
59 Phenanthrene-d10	791082	395541	1582164	821905	3.90
69 Chrysene-d12	470889	235445	941778	472130	0.26
134 Di-n-octylphthala	1158641	579321	2317282	1112088	-4.02
77 Perylene-d12	463245	231623	926490	451756	-2.48

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.15	8.65	9.65	9.14	-0.08
27 Naphthalene-d8	11.65	11.15	12.15	11.64	-0.07
42 Acenaphthene-d10	15.29	14.79	15.79	15.28	-0.05
59 Phenanthrene-d10	18.34	17.84	18.84	18.34	0.00
69 Chrysene-d12	23.39	22.89	23.89	23.39	0.00
134 Di-n-octylphthala	24.40	23.90	24.90	24.39	-0.03
77 Perylene-d12	26.07	25.57	26.57	26.07	-0.03

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405022303.D

Lab ID: SLE0049-LCV1  
nt14.i, ABN.m, 02-MAY-2023 15:05

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.022	1.017	0.0051	4-Nitrophenol

RRT check based on Ccal File: NT1405022302.D

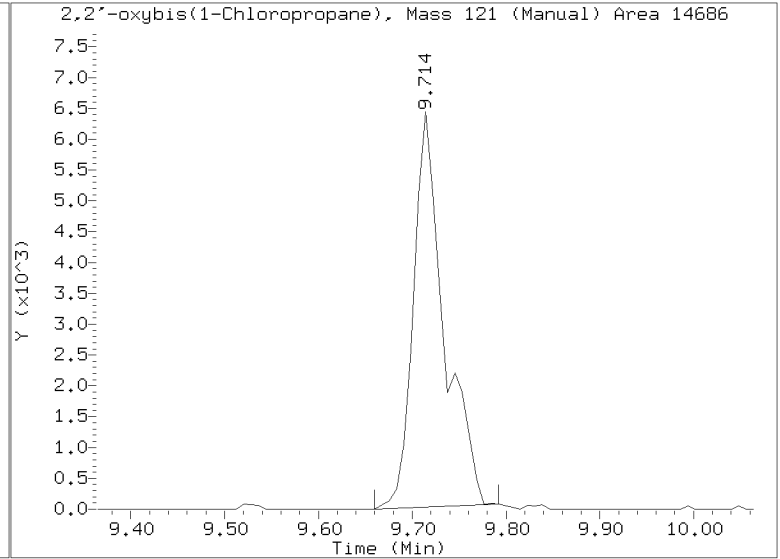
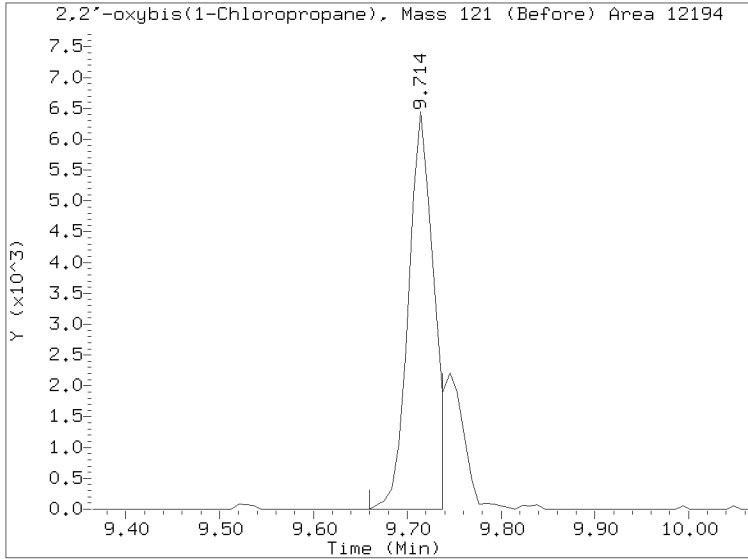
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

\* Only compounds listed in the work order have been verified by the analyst \*



Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230502.b/NT1405022303.D  
Injection Date: 02-MAY-2023 15:05  
Lab ID: SLE0049-LCV1 Client ID:  
Report Date: 05/03/2023 12:20



**APPROVED**  
By Deenay Dunmore at 12:23 pm, May 03, 2023



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 8270E

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLD0357

Instrument: NT14

Calibration: GD00062

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SLD0357-TUN1	NT04212304.D	NA	04/21/23 15:32
20 ppm ABN	SLD0357-CAL7	NT04212305.D	NA	04/21/23 15:47
10 ppm ABN	SLD0357-CAL6	NT04212306.D	NA	04/21/23 16:23
5 ppm ABN	SLD0357-CAL5	NT04212307.D	NA	04/21/23 17:00
2.5 ppm ABN	SLD0357-CAL4	NT04212308.D	NA	04/21/23 17:37
1 ppm ABN	SLD0357-CAL3	NT04212309.D	NA	04/21/23 18:13
0.5 ppm ABN	SLD0357-CAL2	NT04212310.D	NA	04/21/23 18:50
0.2 ppm ABN	SLD0357-CAL1	NT04212311.D	NA	04/21/23 19:27
SCV 5.0	SLD0357-SCV1	NT04212314.D	NA	04/21/23 21:16
Initial Cal Blank	SLD0357-ICB1	NT04212315.D	NA	04/21/23 21:53



**ANALYSIS SEQUENCE**

**SLD0357**

Instrument: NT14  
Calibration ID: GD00062

Printed: 4/27/2023 8:06:23AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0357-TUN1	QC		1		L002618			
SLD0357-CAL1	QC		2		K011105	K010831		
SLD0357-CAL2	QC		3		K011106	K010831		
SLD0357-CAL3	QC		4		K011107	K010831		
SLD0357-CAL4	QC		5		K011108	K010831		
SLD0357-CAL5	QC		6		K011109	K010831		
SLD0357-CAL6	QC		7		K011110	K010831		
SLD0357-CAL7	QC		8		K011111	K010831		
SLD0357-SCV1	QC		9		K010066	K010831		
SLD0357-ICB1	QC		10		K005156	K010831		

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230421.b

Time	Filename	LabID	ClientId	DF																
1	1532	NT04212304.D	SEQ-TUN		1	NO	ISTDS	FOUND												
2	1547	NT04212305.D	SEQ-CAL7		1		9.12	265117	11.63	1081013	15.27	511876	18.32	780182	23.36	492514	26.03	519591	24.38	1141430
3	1623	NT04212306.D	SEQ-CAL6		1		9.12	263269	11.62	1052524	15.26	501412	18.31	792660	23.36	458575	26.03	483255	24.38	1090519
4	1700	NT04212307.D	SEQ-CAL5		1		9.12	239131	11.61	954450	15.26	448699	18.30	711389	23.36	410209	26.03	424249	24.37	929005
5	1737	NT04212308.D	SEQ-CAL4		1		9.11	252290	11.61	995953	15.25	475373	18.30	772801	23.36	439097	26.03	454075	24.37	972124
6	1813	NT04212309.D	SEQ-CAL3		1		9.11	262871	11.61	1042624	15.25	486388	18.30	806729	23.35	459922	26.02	464832	24.37	979871
7	1850	NT04212310.D	SEQ-CAL2		1		9.11	261457	11.61	1011776	15.25	476664	18.30	796851	23.35	452731	26.02	452605	24.37	910929
8	1927	NT04212311.D	SEQ-CAL1		1		9.11	261004	11.61	1007973	15.25	466900	18.30	781987	23.36	453231	26.02	443928	24.37	890581
9	2116	NT04212314.D			1		9.11	238265	11.61	954318	15.26	452418	18.30	736482	23.36	415993	26.02	420543	24.38	909750
10	2153	NT04212315.D			1		9.11	247630	11.61	984847	15.25	450660	18.30	759650	23.36	432017	26.02	424950	24.37	820994

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230421.b

ARI Job No.: SEQ- Method: DFTPP8270E.m Instrument: nt14.i Date: 21-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1532	NT04212304.D	SEQ-TUN		1	NO MANUAL INTEGRATION
1547	NT04212305.D	SEQ-CAL7		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1623	NT04212306.D	SEQ-CAL6		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1700	NT04212307.D	SEQ-CAL5		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1737	NT04212308.D	SEQ-CAL4		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1813	NT04212309.D	SEQ-CAL3		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1850	NT04212310.D	SEQ-CAL2		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
1927	NT04212311.D	SEQ-CAL1		1	2,2'-oxybis(1-Chloropropane), Benzoic acid,
2116	NT04212314.D			1	NO MANUAL INTEGRATION
2153	NT04212315.D			1	NO MANUAL INTEGRATION

Security Status Report

Date: 26-Apr-2023 17:37

NT04212304.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212305.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212306.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212307.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212308.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212309.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212310.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212311.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212314.D	Data Locked	j rains, 26-Apr-2023 17:28
NT04212315.D	Data Locked	j rains, 26-Apr-2023 17:28



## ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270E

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0024

Instrument: NT14

Calibration: GD00062

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SLE0024-TUN1	NT1405012301.D	NA	05/01/23 14:50
Initial Cal Check	SLE0024-ICV1	NT1405012302.D	NA	05/01/23 15:06
ABN 0.5	SLE0024-LCV1	NT1405012303.D	NA	05/01/23 15:45
Blank	BLD0297-BLK1	NT1405012306.D	Solid	05/01/23 17:36
LCS	BLD0297-BS1	NT1405012307.D	Solid	05/01/23 18:13
LCS Dup	BLD0297-BSD1	NT1405012308.D	Solid	05/01/23 18:50
Reference	BLD0297-SRM1	NT1405012309.D	Solid	05/01/23 19:27
ZZZZZ	23C0109-02RE1	NT1405012310.D	Solid	05/01/23 20:03
ZZZZZ	23D0037-01	NT1405012311.D	Solid	05/01/23 20:40
ZZZZZ	23D0037-03	NT1405012312.D	Solid	05/01/23 21:17
LDW23-SS1818	23D0063-01	NT1405012313.D	Solid	05/01/23 21:54
LDW23-SS1818	BLD0297-MS1	NT1405012314.D	Solid	05/01/23 22:31
LDW23-SS1818	BLD0297-MSD1	NT1405012315.D	Solid	05/01/23 23:08
LDW23-SS1819	23D0063-03	NT1405012316.D	Solid	05/01/23 23:45
Calibration Check	SLE0024-CCV1	NT1405012317.D	NA	05/02/23 00:21



ANALYSIS SEQUENCE

SLE0024

Instrument ID: NT14                      GCMS Description: Agilent 7890A/5975C XL  
Calibration ID: GD00062                GCMS Column ID: L004289  
MS EM Level: 1753 EV

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLE0024-TUN1	MS Tune	QC		1	L002618		05/01/2023 14:50	NT1405012301.D	DSD	
SLE0024-ICV1	Initial Cal Check	QC		2	K011109	K010831	05/01/2023 15:06	NT1405012302.D	DSD	
SLE0024-LCV1	ABN 0.5	QC		3	K011106	K010831	05/01/2023 15:45	NT1405012303.D	DSD	
BLD0297-BLK1	Blank	QC		4		K010831	05/01/2023 17:36	NT1405012306.D	DSD	
BLD0297-BS1	LCS	QC		5		K010831	05/01/2023 18:13	NT1405012307.D	DSD	
BLD0297-BSD1	LCS Dup	QC		6		K010831	05/01/2023 18:50	NT1405012308.D	DSD	
BLD0297-SRM1	Reference	QC		7		K010831	05/01/2023 19:27	NT1405012309.D	DSD	
23D0037-01	LDW23-SS1812	20ug/kg solid or 0.2ug/L l	A 01	8		K010831	05/01/2023 20:40	NT1405012311.D	DSD	
23C0109-02RE1	LDW23-SS1104	20ug/kg solid or 0.2ug/L l	A 03	9		K010831	05/01/2023 20:03	NT1405012310.D	DSD	From BLC0185 by CTO on 12-Apr-2023
23D0037-03	LDW23-SS1813	20ug/kg solid or 0.2ug/L l	A 01	10		K010831	05/01/2023 21:17	NT1405012312.D	DSD	
23D0063-01	LDW23-SS1818	20ug/kg solid or 0.2ug/L l	A 01	11		K010831	05/01/2023 21:54	NT1405012313.D	DSD	
BLD0297-MS1	Matrix Spike	QC		12		K010831	05/01/2023 22:31	NT1405012314.D	DSD	
BLD0297-MSD1	Matrix Spike Dup	QC		13		K010831	05/01/2023 23:08	NT1405012315.D	DSD	
23D0063-03	LDW23-SS1819	20ug/kg solid or 0.2ug/L l	A 01	14		K010831	05/01/2023 23:45	NT1405012316.D	DSD	
SLE0024-CCV1	Calibration Check	QC		15	K011109	K010831	05/02/2023 00:21	NT1405012317.D	DSD	



INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230501A.b

Time	Filename	LabID	ClientId	DF																						
1	1450	NT1405012301.D	SEQ-TUN1		1		NO	ISTDS	FOUND																	
2	1506	NT1405012302.D	SLE0024-ICV1		1		9.13	273989		11.64	1103207		15.27	520358		18.33	882575		23.37	600619		26.05	570040		24.39	1445631
3	1545	NT1405012303.D	SLE0024-LCV1		1		9.13	284867		11.64	1119668		15.27	519932		18.33	887647		23.37	592191		26.04	578202		24.39	1347119
4	1736	NT1405012306.D	BLD0297-BLK1		1		9.13	283133		11.64	1121905		15.27	523607		18.32	904280		23.37	583587		26.04	535151		24.39	1320118
5	1813	NT1405012307.D	BLD0297-BS1		1		9.13	269737		11.64	1065007		15.27	505269		18.33	849855		23.37	588373		26.05	529081		24.39	1400043
6	1850	NT1405012308.D	BLD0297-BSD1		1		9.13	266733		11.64	1062513		15.27	505318		18.33	857485		23.37	575190		26.05	516036		24.39	1393213
7	1927	NT1405012309.D	BLD0297-SRM1		1		9.13	271365		11.64	1061685		15.27	499813		18.32	854336		23.37	576956		26.04	515005		24.39	1380708
8	2003	NT1405012310.D	23C0109-02		1		9.14	269257		11.64	1063690		15.27	501101		18.33	864110		23.39	573187		26.08	578223		24.40	1402079
9	2040	NT1405012311.D	23D0037-01		1		9.14	275018		11.64	1101972		15.28	514360		18.33	899125		23.40	628512		26.10	579508		24.41	1444182
10	2117	NT1405012312.D	23D0037-03		4		9.13	275138		11.64	1090707		15.27	512377		18.33	871733		23.39	593540		26.07	572930		24.40	1419189
11	2154	NT1405012313.D	23D0063-01		1		9.14	270952		11.64	1083674		15.28	502004		18.33	874574		23.39	583588		26.08	549663		24.40	1363355
12	2231	NT1405012314.D	BLD0297-MS1		1		9.14	257379		11.64	1036476		15.28	498618		18.34	869300		23.39	592607		26.09	531225		24.41	1384356
13	2308	NT1405012315.D	BLD0297-MSD1		1		9.14	255578		11.64	1020523		15.28	485892		18.34	866191		23.39	590368		26.10	497453		24.41	1339795
14	2345	NT1405012316.D	23D0063-03		1		9.14	263115		11.64	1057704		15.28	496409		18.34	856347		23.39	601327		26.10	453322		24.41	1372526
15	0021	NT1405012317.D	SLE0024-CCV1		1		9.14	235481		11.65	936343		15.28	446166		18.33	757105		23.38	518321		26.07	464216		24.39	1259586

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230501A.b

ARI Job No.: SLE0 Method: DFTPP8270E.m Instrument: nt14.i Date: 01-MAY-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1450	NT1405012301.D	SLE0024-TUN1		1	NO MANUAL INTEGRATION
1506	NT1405012302.D	SLE0024-ICV1		1	NO MANUAL INTEGRATION
1545	NT1405012303.D	SLE0024-LCV1		1	NO MANUAL INTEGRATION
1622	NT1405012304.D	SIM-ICV1		1	NO MANUAL INTEGRATION
1659	NT1405012305.D	SIM-LCV1		1	NO MANUAL INTEGRATION
1736	NT1405012306.D	BLD0297-BLK1		1	NO MANUAL INTEGRATION
1813	NT1405012307.D	BLD0297-BS1		1	NO MANUAL INTEGRATION
1850	NT1405012308.D	BLD0297-BSD1		1	NO MANUAL INTEGRATION
1927	NT1405012309.D	BLD0297-SRM1		1	NO MANUAL INTEGRATION
2003	NT1405012310.D	23C0109-02RE1		1	NO MANUAL INTEGRATION
2040	NT1405012311.D	23D0037-01		1	NO MANUAL INTEGRATION
2117	NT1405012312.D	23D0037-03		4	Dibenzo(a,h)anthracene,
2154	NT1405012313.D	23D0063-01		1	Dibenzo(a,h)anthracene,
2231	NT1405012314.D	BLD0297-MS1		1	NO MANUAL INTEGRATION
2308	NT1405012315.D	BLD0297-MSD1		1	NO MANUAL INTEGRATION
2345	NT1405012316.D	23D0063-03		1	Dibenzo(a,h)anthracene,
0021	NT1405012317.D	SLE0024-CCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230501A.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0058	NT1405012318.D	SIM-CCV1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 02-May-2023 11:35

NT1405012301.D	Data Locked	deenayd, 02-
NT1405012302.D	Data Locked	deenayd, 02-
NT1405012303.D	Data Locked	deenayd, 02-
NT1405012304.D	Data Locked	deenayd, 02-
NT1405012305.D	Data Locked	deenayd, 02-
NT1405012306.D	Data Locked	deenayd, 02-
NT1405012307.D	Data Locked	deenayd, 02-
NT1405012308.D	Data Locked	deenayd, 02-
NT1405012309.D	Data Locked	deenayd, 02-
NT1405012310.D	Data Locked	deenayd, 02-
NT1405012311.D	Data Locked	deenayd, 02-
NT1405012312.D	Data Locked	deenayd, 02-
NT1405012313.D	Data Locked	deenayd, 02-
NT1405012314.D	Data Locked	deenayd, 02-
NT1405012315.D	Data Locked	deenayd, 02-
NT1405012316.D	Data Locked	deenayd, 02-
NT1405012317.D	Data Locked	deenayd, 02-
NT1405012318.D	Data Locked	deenayd, 02-



## ANALYSIS BATCH (SEQUENCE) SUMMARY

**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0049

Instrument: NT14

Calibration: GD00062

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SLE0049-TUN1	NT1405022301.D	NA	05/02/23 14:08
Initial Cal Check	SLE0049-ICV1	NT1405022302.D	NA	05/02/23 14:28
ABN 0.5	SLE0049-LCV1	NT1405022303.D	NA	05/02/23 15:05
Blank	BLD0297-BLK3	NT1405022306.D	Solid	05/02/23 16:56
ZZZZZ	23D0037-01RE1	NT1405022307.D	Solid	05/02/23 17:32
ZZZZZ	BLD0557-BLK1	NT1405022308.D	Water	05/02/23 18:09
ZZZZZ	BLD0557-BS1	NT1405022309.D	Water	05/02/23 18:46
ZZZZZ	BLD0557-BSD1	NT1405022310.D	Water	05/02/23 19:22
ZZZZZ	23D0414-02	NT1405022311.D	Water	05/02/23 19:59
ZZZZZ	23D0442-02	NT1405022312.D	Water	05/02/23 20:36
ZZZZZ	23D0442-03	NT1405022313.D	Water	05/02/23 21:12
ZZZZZ	23D0442-04	NT1405022314.D	Water	05/02/23 21:49
ZZZZZ	23D0442-05	NT1405022315.D	Water	05/02/23 22:26
ZZZZZ	23D0442-06	NT1405022316.D	Water	05/02/23 23:02
Calibration Check	SLE0049-CCV1	NT1405022317.D	NA	05/02/23 23:39



ANALYSIS SEQUENCE

SLE0049

Instrument ID: NT14                      GCMS Description: Agilent 7890A/5975C XL  
Calibration ID: GD00062                GCMS Column ID: L004289  
MS EM Level: 1753 EV

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLE0049-TUN1	MS Tune	QC		1	L002618		05/02/2023 14:08	NT1405022301.D	DSD	
SLE0049-ICV1	Initial Cal Check	QC		2	K011109	K010831	05/02/2023 14:28	NT1405022302.D	DSD	
SLE0049-LCV1	ABN 0.5	QC		3	K011106	K010831	05/02/2023 15:05	NT1405022303.D	DSD	
BLD0297-BLK3	Blank	QC		4		K010831	05/02/2023 16:56	NT1405022306.D	DSD	
23D0037-01RE1	LDW23-SS1812	20ug/kg solid or 0.2ug/L l	A 01	5		K010831	05/02/2023 17:32	NT1405022307.D	DSD	Added 5/2/2023 by DSD
BLD0557-BLK1	Blank	QC		6		K010831	05/02/2023 18:09	NT1405022308.D	DSD	
BLD0557-BS1	LCS	QC		7		K010831	05/02/2023 18:46	NT1405022309.D	DSD	
BLD0557-BSD1	LCS Dup	QC		8		K010831	05/02/2023 19:22	NT1405022310.D	DSD	
23D0414-02	MW-112-S-0423	20ug/kg solid or 0.2ug/L l	A 01	9		K010831	05/02/2023 19:59	NT1405022311.D	DSD	
23D0442-02	MW-129-I-0423	20ug/kg solid or 0.2ug/L l	D 01	10		K010831	05/02/2023 20:36	NT1405022312.D	DSD	
23D0442-03	MW-114-I-1-0423	20ug/kg solid or 0.2ug/L l	D 01	11		K010831	05/02/2023 21:12	NT1405022313.D	DSD	
23D0442-04	MW-126-S-0423	20ug/kg solid or 0.2ug/L l	D 01	12		K010831	05/02/2023 21:49	NT1405022314.D	DSD	
23D0442-05	MW-126-I-0423	20ug/kg solid or 0.2ug/L l	D 01	13		K010831	05/02/2023 22:26	NT1405022315.D	DSD	
23D0442-06	MW-123-I-2-0423	20ug/kg solid or 0.2ug/L l	D 01	14		K010831	05/02/2023 23:02	NT1405022316.D	DSD	
SLE0049-CCV1	Calibration Check	QC		15	K011109	K010831	05/02/2023 23:39	NT1405022317.D	DSD	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230502.b

Time	Filename	LabID	ClientId	DF															
1	1408	NT1405022301.D	SLE0049-TUN1	1		NO ISTDS FOUND													
2	1428	NT1405022302.D	SLE0049-ICV1	1		9.15	246356	11.65	988717	15.29	475022	18.34	791082	23.39	470889	26.07	463245	24.40	1158637
3	1505	NT1405022303.D	SLE0049-LCV1	1		9.14	257916	11.64	1001489	15.28	477815	18.34	821905	23.39	472130	26.07	451756	24.39	1112088
4	1656	NT1405022306.D	BLD0297-BLK3	1		9.14	259081	11.64	1041283	15.28	492494	18.33	848264	23.38	472309	26.07	436656	24.39	1104482
5	1732	NT1405022307.D	23D0037-01RE1	4		9.14	270525	11.64	1064860	15.28	496858	18.34	812204	23.39	521617	26.08	553267	24.40	1302783
6	1809	NT1405022308.D	BLD0557-BLK1	1		9.14	276484	11.64	987841	15.28	470649	18.33	794637	23.38	449092	26.07	456784	24.39	1115675
7	1846	NT1405022309.D	BLD0557-BS1	1		9.14	242333	11.64	971179	15.29	455166	18.33	754192	23.39	458354	26.07	463477	24.39	1128442
8	1922	NT1405022310.D	BLD0557-BSD1	1		9.14	247197	11.64	993357	15.29	469250	18.33	768637	23.38	468979	26.07	472391	24.39	1138185
9	1959	NT1405022311.D	23D0414-02	1		9.14	253027	11.64	983801	15.28	457453	18.33	761925	23.38	439236	26.06	460137	24.39	1112860
10	2036	NT1405022312.D	23D0442-02	1		9.14	257498	11.64	1012035	15.28	474047	18.33	801525	23.38	449705	26.07	460790	24.39	1106859
11	2112	NT1405022313.D	23D0442-03	1		9.14	257053	11.64	1011058	15.28	479082	18.33	783553	23.38	464855	26.07	491568	24.39	1181088
12	2149	NT1405022314.D	23D0442-04	1		9.14	258825	11.65	1000190	15.28	476200	18.33	787853	23.38	453262	26.06	486620	24.39	1156579
13	2226	NT1405022315.D	23D0442-05	1		9.14	251440	11.64	976427	15.28	453727	18.33	758813	23.38	443224	26.06	474482	24.39	1124295
14	2302	NT1405022316.D	23D0442-06	1		9.14	254450	11.64	992020	15.27	465842	18.33	780247	23.38	448111	26.06	475560	24.39	1140844
15	2339	NT1405022317.D	SLE0049-CCV1	1		9.14	256221	11.64	1012688	15.28	489799	18.33	820888	23.38	498285	26.06	486175	24.39	1199427

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230502.b

ARI Job No.: SLE0 Method: ABN.m Instrument: nt14.i Date: 02-MAY-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1428	NT1405022302.D	SLE0049-ICV1		1	2,2'-oxybis(1-Chloropropane),
1505	NT1405022303.D	SLE0049-LCV1		1	2,2'-oxybis(1-Chloropropane),
1542	NT1405022304.D	SIM-ICV1		1	NO MANUAL INTEGRATION
1619	NT1405022305.D	SIM-LCV1		1	NO MANUAL INTEGRATION
1656	NT1405022306.D	BLD0297-BLK3		1	NO MANUAL INTEGRATION
1732	NT1405022307.D	23D0037-01RE1		4	NO MANUAL INTEGRATION
1809	NT1405022308.D	BLD0557-BLK1		1	NO MANUAL INTEGRATION
1846	NT1405022309.D	BLD0557-BS1		1	NO MANUAL INTEGRATION
1922	NT1405022310.D	BLD0557-BSD1		1	NO MANUAL INTEGRATION
1959	NT1405022311.D	23D0414-02		1	NO MANUAL INTEGRATION
2036	NT1405022312.D	23D0442-02		1	NO MANUAL INTEGRATION
2112	NT1405022313.D	23D0442-03		1	NO MANUAL INTEGRATION
2149	NT1405022314.D	23D0442-04		1	NO MANUAL INTEGRATION
2226	NT1405022315.D	23D0442-05		1	NO MANUAL INTEGRATION
2302	NT1405022316.D	23D0442-06		1	NO MANUAL INTEGRATION
2339	NT1405022317.D	SLE0049-CCV1		1	2,2'-oxybis(1-Chloropropane),



Security Status Report

Date: 03-May-2023 12:42

NT1405022301.D	Data Locked	deenayd, 03-
NT1405022302.D	Data Locked	deenayd, 03-
NT1405022303.D	Data Locked	deenayd, 03-
NT1405022304.D	Data Locked	deenayd, 03-
NT1405022305.D	Data Locked	deenayd, 03-
NT1405022306.D	Data Locked	deenayd, 03-
NT1405022307.D	Data Locked	deenayd, 03-
NT1405022308.D	Data Locked	deenayd, 03-
NT1405022309.D	Data Locked	deenayd, 03-
NT1405022310.D	Data Locked	deenayd, 03-
NT1405022311.D	Data Locked	deenayd, 03-
NT1405022312.D	Data Locked	deenayd, 03-
NT1405022313.D	Data Locked	deenayd, 03-
NT1405022314.D	Data Locked	deenayd, 03-
NT1405022315.D	Data Locked	deenayd, 03-
NT1405022316.D	Data Locked	deenayd, 03-
NT1405022317.D	Data Locked	deenayd, 03-



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8270E**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG/WO:	<u>23D0063</u>
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLD0357</u>	Instrument:	<u>NT14</u>
Calibration:	<u>GD00062</u>	Calibration Date:	<u>04/21/2023</u>

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLD0357-ICB1 (Water)</b>		Lab File ID: NT04212315.D			Analyzed: 04/21/23 21:53			
2-Fluorophenol	7.5000	104	30 - 160	6.867	6.869286	-0.0023	N/A	
Phenol-d5	7.5000	106	30 - 160	8.459	8.465571	-0.0066	N/A	
2-Chlorophenol-d4	7.5000	108	30 - 160	8.745	8.748143	-0.0031	N/A	
1,2-Dichlorobenzene-d4	5.0000	107	30 - 160	9.473	9.475285	-0.0023	N/A	
Nitrobenzene-d5	5.0000	107	30 - 160	10.218	10.21843	-0.0004	N/A	
2-Fluorobiphenyl	5.0000	107	30 - 160	13.85	13.84714	0.0029	N/A	
2,4,6-Tribromophenol	7.5000	83.8	30 - 160	16.895	16.90171	-0.0067	N/A	
p-Terphenyl-d14	5.0000	98.6	30 - 160	21.443	21.44414	-0.0011	N/A	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG/WO: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0024

Instrument: NT14

Calibration: GD00062

Calibration Date: 04/21/2023

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLE0024-ICV1 (Solid)</b> Lab File ID: NT1405012302.D Analyzed: 05/01/23 15:06								
2-Fluorophenol	7.5000	109	80 - 120	6.898	6.869286	0.0287	N/A	
Phenol-d5	7.5000	110	80 - 120	8.49	8.465571	0.0244	N/A	
2-Chlorophenol-d4	7.5000	110	80 - 120	8.768	8.748143	0.0199	N/A	
1,2-Dichlorobenzene-d4	5.0000	109	80 - 120	9.497	9.475285	0.0217	N/A	
Nitrobenzene-d5	5.0000	107	80 - 120	10.242	10.21843	0.0236	N/A	
2-Fluorobiphenyl	5.0000	107	80 - 120	13.865	13.84714	0.0179	N/A	
2,4,6-Tribromophenol	7.5000	106	80 - 120	16.919	16.90171	0.0173	N/A	
p-Terphenyl-d14	5.0000	91.4	80 - 120	21.459	21.44414	0.0149	N/A	
<b>SLE0024-LCV1 (Solid)</b> Lab File ID: NT1405012303.D Analyzed: 05/01/23 15:45								
2-Fluorophenol	0.75000	108	50 - 150	6.898	6.869286	0.0287	N/A	
Phenol-d5	0.75000	101	50 - 150	8.482	8.465571	0.0164	N/A	
2-Chlorophenol-d4	0.75000	104	50 - 150	8.768	8.748143	0.0199	N/A	
1,2-Dichlorobenzene-d4	0.50000	107	50 - 150	9.496	9.475285	0.0207	N/A	
Nitrobenzene-d5	0.50000	97.6	50 - 150	10.234	10.21843	0.0156	N/A	
2-Fluorobiphenyl	0.50000	106	50 - 150	13.865	13.84714	0.0179	N/A	
2,4,6-Tribromophenol	0.75000	79.9	50 - 150	16.918	16.90171	0.0163	N/A	
p-Terphenyl-d14	0.50000	78.2	50 - 150	21.459	21.44414	0.0149	N/A	
<b>BLD0297-BLK1 (Solid)</b> Lab File ID: NT1405012306.D Analyzed: 05/01/23 17:36								
2-Fluorophenol	750.00	78.2	27 - 120	6.906	6.869286	0.0367	N/A	
Phenol-d5	750.00	82.6	29 - 120	8.489	8.465571	0.0234	N/A	
2-Chlorophenol-d4	750.00	87.9	31 - 120	8.767	8.748143	0.0189	N/A	
1,2-Dichlorobenzene-d4	500.00	86.2	32 - 120	9.496	9.475285	0.0207	N/A	
Nitrobenzene-d5	500.00	89.9	30 - 120	10.234	10.21843	0.0156	N/A	
2-Fluorobiphenyl	500.00	93.9	35 - 120	13.865	13.84714	0.0179	N/A	
2,4,6-Tribromophenol	750.00	71.5	24 - 134	16.918	16.90171	0.0163	N/A	
p-Terphenyl-d14	500.00	91.0	37 - 120	21.458	21.44414	0.0139	N/A	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG/WO: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0024

Instrument: NT14

Calibration: GD00062

Calibration Date: 04/21/2023

Surrogate Compound	Spike Level ug/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>BLD0297-BS1 (Solid)</b>		Lab File ID: NT1405012307.D			Analyzed: 05/01/23 18:13			
2-Fluorophenol	750.00	86.4	27 - 120	6.906	6.869286	0.0367	N/A	
Phenol-d5	750.00	86.9	29 - 120	8.49	8.465571	0.0244	N/A	
2-Chlorophenol-d4	750.00	90.6	31 - 120	8.768	8.748143	0.0199	N/A	
1,2-Dichlorobenzene-d4	500.00	85.4	32 - 120	9.496	9.475285	0.0207	N/A	
Nitrobenzene-d5	500.00	90.0	30 - 120	10.234	10.21843	0.0156	N/A	
2-Fluorobiphenyl	500.00	92.5	35 - 120	13.865	13.84714	0.0179	N/A	
2,4,6-Tribromophenol	750.00	94.1	24 - 134	16.918	16.90171	0.0163	N/A	
p-Terphenyl-d14	500.00	85.6	37 - 120	21.458	21.44414	0.0139	N/A	
<b>BLD0297-BSD1 (Solid)</b>		Lab File ID: NT1405012308.D			Analyzed: 05/01/23 18:50			
2-Fluorophenol	750.00	85.8	27 - 120	6.906	6.869286	0.0367	N/A	
Phenol-d5	750.00	87.5	29 - 120	8.489	8.465571	0.0234	N/A	
2-Chlorophenol-d4	750.00	91.7	31 - 120	8.768	8.748143	0.0199	N/A	
1,2-Dichlorobenzene-d4	500.00	84.8	32 - 120	9.496	9.475285	0.0207	N/A	
Nitrobenzene-d5	500.00	90.0	30 - 120	10.234	10.21843	0.0156	N/A	
2-Fluorobiphenyl	500.00	92.8	35 - 120	13.865	13.84714	0.0179	N/A	
2,4,6-Tribromophenol	750.00	96.4	24 - 134	16.918	16.90171	0.0163	N/A	
p-Terphenyl-d14	500.00	88.8	37 - 120	21.458	21.44414	0.0139	N/A	
<b>BLD0297-SRM1 (Solid)</b>		Lab File ID: NT1405012309.D			Analyzed: 05/01/23 19:27			
2-Fluorophenol	7500.0	87.0	27 - 120	6.914	6.869286	0.0447	N/A	
Phenol-d5	7500.0	88.7	29 - 120	8.49	8.465571	0.0244	N/A	
2-Chlorophenol-d4	7500.0	94.1	31 - 120	8.768	8.748143	0.0199	N/A	
1,2-Dichlorobenzene-d4	5000.0	88.4	32 - 120	9.496	9.475285	0.0207	N/A	
Nitrobenzene-d5	5000.0	93.3	30 - 120	10.234	10.21843	0.0156	N/A	
2-Fluorobiphenyl	5000.0	98.3	35 - 120	13.865	13.84714	0.0179	N/A	
2,4,6-Tribromophenol	7500.0	98.2	24 - 134	16.918	16.90171	0.0163	N/A	
p-Terphenyl-d14	5000.0	87.8	37 - 120	21.459	21.44414	0.0149	N/A	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG/WO: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0024

Instrument: NT14

Calibration: GD00062

Calibration Date: 04/21/2023

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q	
<b>23D0063-01 (Solid)</b>		Lab File ID: NT1405012313.D				Analyzed: 05/01/23 21:54			
2-Fluorophenol	749.96	70.6	27 - 120	6.921	6.869286	0.0517	N/A		
Phenol-d5	749.96	75.7	29 - 120	8.497	8.465571	0.0314	N/A		
2-Chlorophenol-d4	749.96	80.7	31 - 120	8.775	8.748143	0.0269	N/A		
1,2-Dichlorobenzene-d4	499.98	74.4	32 - 120	9.496	9.475285	0.0207	N/A		
Nitrobenzene-d5	499.98	81.6	30 - 120	10.241	10.21843	0.0226	N/A		
2-Fluorobiphenyl	499.98	89.0	35 - 120	13.872	13.84714	0.0249	N/A		
2,4,6-Tribromophenol	749.96	87.2	24 - 134	16.926	16.90171	0.0243	N/A		
p-Terphenyl-d14	499.98	72.7	37 - 120	21.474	21.44414	0.0299	N/A		
<b>BLD0297-MS1 (Solid)</b>		Lab File ID: NT1405012314.D				Analyzed: 05/01/23 22:31			
2-Fluorophenol	749.96	79.0	27 - 120	6.921	6.869286	0.0517	N/A		
Phenol-d5	749.96	81.5	29 - 120	8.505	8.465571	0.0394	N/A		
2-Chlorophenol-d4	749.96	85.2	31 - 120	8.775	8.748143	0.0269	N/A		
1,2-Dichlorobenzene-d4	499.98	76.9	32 - 120	9.496	9.475285	0.0207	N/A		
Nitrobenzene-d5	499.98	83.5	30 - 120	10.242	10.21843	0.0236	N/A		
2-Fluorobiphenyl	499.98	87.4	35 - 120	13.873	13.84714	0.0259	N/A		
2,4,6-Tribromophenol	749.96	94.7	24 - 134	16.934	16.90171	0.0323	N/A		
p-Terphenyl-d14	499.98	69.2	37 - 120	21.482	21.44414	0.0379	N/A		
<b>BLD0297-MSD1 (Solid)</b>		Lab File ID: NT1405012315.D				Analyzed: 05/01/23 23:08			
2-Fluorophenol	749.96	72.9	27 - 120	6.921	6.869286	0.0517	N/A		
Phenol-d5	749.96	77.9	29 - 120	8.505	8.465571	0.0394	N/A		
2-Chlorophenol-d4	749.96	80.7	31 - 120	8.775	8.748143	0.0269	N/A		
1,2-Dichlorobenzene-d4	499.98	76.4	32 - 120	9.496	9.475285	0.0207	N/A		
Nitrobenzene-d5	499.98	83.3	30 - 120	10.242	10.21843	0.0236	N/A		
2-Fluorobiphenyl	499.98	86.7	35 - 120	13.873	13.84714	0.0259	N/A		
2,4,6-Tribromophenol	749.96	81.1	24 - 134	16.934	16.90171	0.0323	N/A		
p-Terphenyl-d14	499.98	67.5	37 - 120	21.482	21.44414	0.0379	N/A		



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG/WO: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0024

Instrument: NT14

Calibration: GD00062

Calibration Date: 04/21/2023

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>23D0063-03 (Solid)</b>		Lab File ID: NT1405012316.D			Analyzed: 05/01/23 23:45			
2-Fluorophenol	749.26	72.8	27 - 120	6.929	6.869286	0.0597	N/A	
Phenol-d5	749.26	73.7	29 - 120	8.505	8.465571	0.0394	N/A	
2-Chlorophenol-d4	749.26	79.0	31 - 120	8.775	8.748143	0.0269	N/A	
1,2-Dichlorobenzene-d4	499.51	68.7	32 - 120	9.504	9.475285	0.0287	N/A	
Nitrobenzene-d5	499.51	77.4	30 - 120	10.242	10.21843	0.0236	N/A	
2-Fluorobiphenyl	499.51	82.0	35 - 120	13.873	13.84714	0.0259	N/A	
2,4,6-Tribromophenol	749.26	91.7	24 - 134	16.934	16.90171	0.0323	N/A	
p-Terphenyl-d14	499.51	64.0	37 - 120	21.482	21.44414	0.0379	N/A	
<b>SLE0024-CCV1 (Solid)</b>		Lab File ID: NT1405012317.D			Analyzed: 05/02/23 00:21			
2-Fluorophenol	7.5000	108	50 - 150	6.906	6.869286	0.0367	N/A	
Phenol-d5	7.5000	109	50 - 150	8.505	8.465571	0.0394	N/A	
2-Chlorophenol-d4	7.5000	108	50 - 150	8.776	8.748143	0.0279	N/A	
1,2-Dichlorobenzene-d4	5.0000	107	50 - 150	9.504	9.475285	0.0287	N/A	
Nitrobenzene-d5	5.0000	110	50 - 150	10.242	10.21843	0.0236	N/A	
2-Fluorobiphenyl	5.0000	109	50 - 150	13.873	13.84714	0.0259	N/A	
2,4,6-Tribromophenol	7.5000	108	50 - 150	16.934	16.90171	0.0323	N/A	
p-Terphenyl-d14	5.0000	91.4	50 - 150	21.466	21.44414	0.0219	N/A	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8270E**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG/WO:	<u>23D0063</u>
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0049</u>	Instrument:	<u>NT14</u>
Calibration:	<u>GD00062</u>	Calibration Date:	<u>04/21/2023</u>

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLE0049-ICV1 (Solid)</b> <span style="float: right;">Lab File ID: NT1405022302.D Analyzed: 05/02/23 14:28</span>								
2-Fluorophenol	7.5000	106	80 - 120	6.914	6.869286	0.0447	N/A	
Phenol-d5	7.5000	109	80 - 120	8.505	8.465571	0.0394	N/A	
2-Chlorophenol-d4	7.5000	109	80 - 120	8.783	8.748143	0.0349	N/A	
1,2-Dichlorobenzene-d4	5.0000	109	80 - 120	9.504	9.475285	0.0287	N/A	
Nitrobenzene-d5	5.0000	108	80 - 120	10.249	10.21843	0.0306	N/A	
2-Fluorobiphenyl	5.0000	109	80 - 120	13.88	13.84714	0.0329	N/A	
2,4,6-Tribromophenol	7.5000	104	80 - 120	16.942	16.90171	0.0403	N/A	
p-Terphenyl-d14	5.0000	103	80 - 120	21.474	21.44414	0.0299	N/A	
<b>SLE0049-LCV1 (Solid)</b> <span style="float: right;">Lab File ID: NT1405022303.D Analyzed: 05/02/23 15:05</span>								
2-Fluorophenol	0.75000	94.5	50 - 150	6.914	6.869286	0.0447	N/A	
Phenol-d5	0.75000	89.6	50 - 150	8.505	8.465571	0.0394	N/A	
2-Chlorophenol-d4	0.75000	95.4	50 - 150	8.783	8.748143	0.0349	N/A	
1,2-Dichlorobenzene-d4	0.50000	102	50 - 150	9.504	9.475285	0.0287	N/A	
Nitrobenzene-d5	0.50000	94.8	50 - 150	10.249	10.21843	0.0306	N/A	
2-Fluorobiphenyl	0.50000	104	50 - 150	13.873	13.84714	0.0259	N/A	
2,4,6-Tribromophenol	0.75000	65.6	50 - 150	16.942	16.90171	0.0403	N/A	
p-Terphenyl-d14	0.50000	87.1	50 - 150	21.474	21.44414	0.0299	N/A	
<b>BLD0297-BLK3 (Solid)</b> <span style="float: right;">Lab File ID: NT1405022306.D Analyzed: 05/02/23 16:56</span>								
2-Fluorophenol	750.00	74.7	27 - 120	6.921	6.869286	0.0517	N/A	
Phenol-d5	750.00	77.3	29 - 120	8.505	8.465571	0.0394	N/A	
2-Chlorophenol-d4	750.00	93.4	31 - 120	8.783	8.748143	0.0349	N/A	
1,2-Dichlorobenzene-d4	500.00	88.4	32 - 120	9.504	9.475285	0.0287	N/A	
Nitrobenzene-d5	500.00	89.3	30 - 120	10.242	10.21843	0.0236	N/A	
2-Fluorobiphenyl	500.00	93.7	35 - 120	13.873	13.84714	0.0259	N/A	
2,4,6-Tribromophenol	750.00	54.7	24 - 134	16.942	16.90171	0.0403	N/A	
p-Terphenyl-d14	500.00	99.8	37 - 120	21.474	21.44414	0.0299	N/A	



## SURROGATE RECOVERY AND RT SUMMARY EPA 8270E

Laboratory:	<u>Analytical Resources, LLC</u>	SDG/WO:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0049</u>	Instrument:	<u>NT14</u>
Calibration:	<u>GD00062</u>	Calibration Date:	<u>04/21/2023</u>

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLE0049-CCV1 (Solid)</b>		Lab File ID: NT1405022317.D			Analyzed: 05/02/23 23:39			
2-Fluorophenol	7.5000	103	50 - 150	6.906	6.869286	0.0367	N/A	
Phenol-d5	7.5000	105	50 - 150	8.497	8.465571	0.0314	N/A	
2-Chlorophenol-d4	7.5000	107	50 - 150	8.775	8.748143	0.0269	N/A	
1,2-Dichlorobenzene-d4	5.0000	106	50 - 150	9.496	9.475285	0.0207	N/A	
Nitrobenzene-d5	5.0000	106	50 - 150	10.241	10.21843	0.0226	N/A	
2-Fluorobiphenyl	5.0000	108	50 - 150	13.872	13.84714	0.0249	N/A	
2,4,6-Tribromophenol	7.5000	103	50 - 150	16.926	16.90171	0.0243	N/A	
p-Terphenyl-d14	5.0000	97.1	50 - 150	21.466	21.44414	0.0219	N/A	





**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC  
Client: Anchor QEA, LLC  
Sequence: SLD0357

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: NT14  
Calibration: GD00062

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Secondary Cal Check (SLD0357-SCV1)</b>		(Water)	Lab File ID: NT04212314.D			Analyzed: 04/21/23 21:16			
1,4-Dichlorobenzene-d4	238265	9.108	239131	9.116	100	50 - 200	-0.008	+/-0.50	
Naphthalene-d8	954318	11.614	954450	11.614	100	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	452418	15.258	448699	15.258	101	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	736482	18.302	711389	18.302	104	50 - 200	0.000	+/-0.50	
Chrysene-d12	415993	23.356	410209	23.356	101	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	909750	24.378	929005	24.37	98	50 - 200	0.008	+/-0.50	
Perylene-d12	420543	26.019	424249	26.027	99	50 - 200	-0.008	+/-0.50	
<b>Initial Cal Blank (SLD0357-ICB1)</b>		(Water)	Lab File ID: NT04212315.D			Analyzed: 04/21/23 21:53			
1,4-Dichlorobenzene-d4	247630	9.109	239131	9.116	104	50 - 200	-0.007	+/-0.50	
Naphthalene-d8	984847	11.614	954450	11.614	103	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	450660	15.25	448699	15.258	100	50 - 200	-0.008	+/-0.50	
Phenanthrene-d10	759650	18.302	711389	18.302	107	50 - 200	0.000	+/-0.50	
Chrysene-d12	432017	23.356	410209	23.356	105	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	820994	24.37	929005	24.37	88	50 - 200	0.000	+/-0.50	
Perylene-d12	424950	26.019	424249	26.027	100	50 - 200	-0.008	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC  
Client: Anchor QEA, LLC  
Sequence: SLE0024

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: NT14  
Calibration: GD00062

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Initial Cal Check (SLE0024-ICV1)</b>		(Solid)	Lab File ID: NT1405012302.D			Analyzed: 05/01/23 15:06			
1,4-Dichlorobenzene-d4	273989	9.132	273989	9.132	100	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1103207	11.637	1103207	11.637	100	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	520358	15.273	520358	15.273	100	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	882575	18.325	882575	18.325	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	600619	23.371	600619	23.371	100	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1445631	24.385	1445631	24.385	100	50 - 200	0.000	+/-0.50	
Perylene-d12	570040	26.05	570040	26.05	100	50 - 200	0.000	+/-0.50	
<b>Low Cal Check (SLE0024-LCV1)</b>		(Solid)	Lab File ID: NT1405012303.D			Analyzed: 05/01/23 15:45			
1,4-Dichlorobenzene-d4	284867	9.132	273989	9.132	104	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1119668	11.637	1103207	11.637	101	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	519932	15.273	520358	15.273	100	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	887647	18.325	882575	18.325	101	50 - 200	0.000	+/-0.50	
Chrysene-d12	592191	23.371	600619	23.371	99	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1347119	24.385	1445631	24.385	93	50 - 200	0.000	+/-0.50	
Perylene-d12	578202	26.042	570040	26.05	101	50 - 200	-0.008	+/-0.50	
<b>Blank (BLD0297-BLK1)</b>		(Solid)	Lab File ID: NT1405012306.D			Analyzed: 05/01/23 17:36			
1,4-Dichlorobenzene-d4	283133	9.131	273989	9.132	103	50 - 200	-0.001	+/-0.50	
Naphthalene-d8	1121905	11.636	1103207	11.637	102	50 - 200	-0.001	+/-0.50	
Acenaphthene-d10	523607	15.273	520358	15.273	101	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	904280	18.317	882575	18.325	102	50 - 200	-0.008	+/-0.50	
Chrysene-d12	583587	23.371	600619	23.371	97	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1320118	24.385	1445631	24.385	91	50 - 200	0.000	+/-0.50	
Perylene-d12	535151	26.042	570040	26.05	94	50 - 200	-0.008	+/-0.50	
<b>LCS (BLD0297-BS1)</b>		(Solid)	Lab File ID: NT1405012307.D			Analyzed: 05/01/23 18:13			
1,4-Dichlorobenzene-d4	269737	9.131	273989	9.132	98	50 - 200	-0.001	+/-0.50	
Naphthalene-d8	1065007	11.637	1103207	11.637	97	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	505269	15.273	520358	15.273	97	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	849855	18.325	882575	18.325	96	50 - 200	0.000	+/-0.50	
Chrysene-d12	588373	23.371	600619	23.371	98	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1400043	24.385	1445631	24.385	97	50 - 200	0.000	+/-0.50	
Perylene-d12	529081	26.05	570040	26.05	93	50 - 200	0.000	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC  
Client: Anchor OEA, LLC  
Sequence: SLE0024

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: NT14  
Calibration: GD00062

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>LCS Dup (BLD0297-BSD1 )</b>		(Solid)	Lab File ID: NT1405012308.D			Analyzed: 05/01/23 18:50			
1,4-Dichlorobenzene-d4	266733	9.131	273989	9.132	97	50 - 200	-0.001	+/-0.50	
Naphthalene-d8	1062513	11.637	1103207	11.637	96	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	505318	15.273	520358	15.273	97	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	857485	18.325	882575	18.325	97	50 - 200	0.000	+/-0.50	
Chrysene-d12	575190	23.371	600619	23.371	96	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1393213	24.385	1445631	24.385	96	50 - 200	0.000	+/-0.50	
Perylene-d12	516036	26.05	570040	26.05	91	50 - 200	0.000	+/-0.50	
<b>Reference (BLD0297-SRM1 )</b>		(Solid)	Lab File ID: NT1405012309.D			Analyzed: 05/01/23 19:27			
1,4-Dichlorobenzene-d4	271365	9.132	273989	9.132	99	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1061685	11.637	1103207	11.637	96	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	499813	15.273	520358	15.273	96	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	854336	18.317	882575	18.325	97	50 - 200	-0.008	+/-0.50	
Chrysene-d12	576956	23.371	600619	23.371	96	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1380708	24.385	1445631	24.385	96	50 - 200	0.000	+/-0.50	
Perylene-d12	515005	26.042	570040	26.05	90	50 - 200	-0.008	+/-0.50	
<b>LDW23-SS1818 (23D0063-01 )</b>		(Solid)	Lab File ID: NT1405012313.D			Analyzed: 05/01/23 21:54			
1,4-Dichlorobenzene-d4	270952	9.139	273989	9.132	99	50 - 200	0.007	+/-0.50	
Naphthalene-d8	1083674	11.637	1103207	11.637	98	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	502004	15.281	520358	15.273	96	50 - 200	0.008	+/-0.50	
Phenanthrene-d10	874574	18.333	882575	18.325	99	50 - 200	0.008	+/-0.50	
Chrysene-d12	583588	23.386	600619	23.371	97	50 - 200	0.015	+/-0.50	
Di-n-Octylphthalate-d4	1363355	24.401	1445631	24.385	94	50 - 200	0.016	+/-0.50	
Perylene-d12	549663	26.081	570040	26.05	96	50 - 200	0.031	+/-0.50	
<b>Matrix Spike (BLD0297-MS1 )</b>		(Solid)	Lab File ID: NT1405012314.D			Analyzed: 05/01/23 22:31			
1,4-Dichlorobenzene-d4	257379	9.139	273989	9.132	94	50 - 200	0.007	+/-0.50	
Naphthalene-d8	1036476	11.637	1103207	11.637	94	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	498618	15.281	520358	15.273	96	50 - 200	0.008	+/-0.50	
Phenanthrene-d10	869300	18.341	882575	18.325	98	50 - 200	0.016	+/-0.50	
Chrysene-d12	592607	23.394	600619	23.371	99	50 - 200	0.023	+/-0.50	
Di-n-Octylphthalate-d4	1384356	24.409	1445631	24.385	96	50 - 200	0.024	+/-0.50	
Perylene-d12	531225	26.089	570040	26.05	93	50 - 200	0.039	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0024

Instrument: NT14

Calibration: GD00062

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Matrix Spike Dup (BLD0297-MSD1)</b>		(Solid)	Lab File ID: NT1405012315.D			Analyzed: 05/01/23 23:08			
1,4-Dichlorobenzene-d4	255578	9.139	273989	9.132	93	50 - 200	0.007	+/-0.50	
Naphthalene-d8	1020523	11.637	1103207	11.637	93	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	485892	15.281	520358	15.273	93	50 - 200	0.008	+/-0.50	
Phenanthrene-d10	866191	18.341	882575	18.325	98	50 - 200	0.016	+/-0.50	
Chrysene-d12	590368	23.394	600619	23.371	98	50 - 200	0.023	+/-0.50	
Di-n-Octylphthalate-d4	1339795	24.409	1445631	24.385	93	50 - 200	0.024	+/-0.50	
Perylene-d12	497453	26.097	570040	26.05	87	50 - 200	0.047	+/-0.50	
<b>LDW23-SS1819 (23D0063-03)</b>		(Solid)	Lab File ID: NT1405012316.D			Analyzed: 05/01/23 23:45			
1,4-Dichlorobenzene-d4	263115	9.139	273989	9.132	96	50 - 200	0.007	+/-0.50	
Naphthalene-d8	1057704	11.637	1103207	11.637	96	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	496409	15.281	520358	15.273	95	50 - 200	0.008	+/-0.50	
Phenanthrene-d10	856347	18.341	882575	18.325	97	50 - 200	0.016	+/-0.50	
Chrysene-d12	601327	23.394	600619	23.371	100	50 - 200	0.023	+/-0.50	
Di-n-Octylphthalate-d4	1372526	24.409	1445631	24.385	95	50 - 200	0.024	+/-0.50	
Perylene-d12	453322	26.104	570040	26.05	80	50 - 200	0.054	+/-0.50	
<b>Calibration Check (SLE0024-CCV1)</b>		(Water)	Lab File ID: NT1405012317.D			Analyzed: 05/02/23 00:21			
1,4-Dichlorobenzene-d4	235481	9.14	273989	9.132	86	50 - 200	0.008	+/-0.50	
Acenaphthene-d10	446166	15.281	520358	15.273	86	50 - 200	0.008	+/-0.50	
Phenanthrene-d10	757105	18.333	882575	18.325	86	50 - 200	0.008	+/-0.50	
Chrysene-d12	518321	23.379	600619	23.371	86	50 - 200	0.008	+/-0.50	
Di-n-Octylphthalate-d4	1259586	24.393	1445631	24.385	87	50 - 200	0.008	+/-0.50	
Perylene-d12	464216	26.066	570040	26.05	81	50 - 200	0.016	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0049

Instrument: NT14

Calibration: GD00062

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Initial Cal Check (SLE0049-ICV1)</b>		(Solid)	Lab File ID: NT1405022302.D			Analyzed: 05/02/23 14:28			
1,4-Dichlorobenzene-d4	246356	9.147	246356	9.147	100	50 - 200	0.000	+/-0.50	
Naphthalene-d8	988717	11.652	988717	11.652	100	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	475022	15.289	475022	15.289	100	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	791082	18.341	791082	18.341	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	470889	23.387	470889	23.387	100	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1158641	24.401	1158641	24.401	100	50 - 200	0.000	+/-0.50	
Perylene-d12	463245	26.073	463245	26.073	100	50 - 200	0.000	+/-0.50	
<b>Low Cal Check (SLE0049-LCV1)</b>		(Solid)	Lab File ID: NT1405022303.D			Analyzed: 05/02/23 15:05			
1,4-Dichlorobenzene-d4	257916	9.139	246356	9.147	105	50 - 200	-0.008	+/-0.50	
Naphthalene-d8	1001489	11.644	988717	11.652	101	50 - 200	-0.008	+/-0.50	
Acenaphthene-d10	477815	15.281	475022	15.289	101	50 - 200	-0.008	+/-0.50	
Phenanthrene-d10	821905	18.341	791082	18.341	104	50 - 200	0.000	+/-0.50	
Chrysene-d12	472130	23.387	470889	23.387	100	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1112088	24.393	1158641	24.401	96	50 - 200	-0.008	+/-0.50	
Perylene-d12	451756	26.065	463245	26.073	98	50 - 200	-0.008	+/-0.50	
<b>Blank (BLD0297-BLK3)</b>		(Solid)	Lab File ID: NT1405022306.D			Analyzed: 05/02/23 16:56			
1,4-Dichlorobenzene-d4	259081	9.139	246356	9.147	105	50 - 200	-0.008	+/-0.50	
Naphthalene-d8	1041283	11.644	988717	11.652	105	50 - 200	-0.008	+/-0.50	
Acenaphthene-d10	492494	15.281	475022	15.289	104	50 - 200	-0.008	+/-0.50	
Phenanthrene-d10	848264	18.333	791082	18.341	107	50 - 200	-0.008	+/-0.50	
Chrysene-d12	472309	23.379	470889	23.387	100	50 - 200	-0.008	+/-0.50	
Di-n-Octylphthalate-d4	1104482	24.393	1158641	24.401	95	50 - 200	-0.008	+/-0.50	
Perylene-d12	436656	26.066	463245	26.073	94	50 - 200	-0.007	+/-0.50	
<b>Calibration Check (SLE0049-CCV1)</b>		(Water)	Lab File ID: NT1405022317.D			Analyzed: 05/02/23 23:39			
1,4-Dichlorobenzene-d4	256221	9.139	246356	9.147	104	50 - 200	-0.008	+/-0.50	
Acenaphthene-d10	489799	15.281	475022	15.289	103	50 - 200	-0.008	+/-0.50	
Phenanthrene-d10	820888	18.333	791082	18.341	104	50 - 200	-0.008	+/-0.50	
Chrysene-d12	498285	23.379	470889	23.387	106	50 - 200	-0.008	+/-0.50	
Di-n-Octylphthalate-d4	1199427	24.393	1158641	24.401	104	50 - 200	-0.008	+/-0.50	
Perylene-d12	486175	26.058	463245	26.073	105	50 - 200	-0.015	+/-0.50	



## HOLDING TIME SUMMARY

**Analysis: EPA 8270E**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/17/23 12:00	13	14	05/01/23 21:54	14	40	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/17/23 12:00	12	14	05/01/23 23:45	14	40	
Matrix Spike BLD0297-MS1	04/04/23 10:02	04/04/23 15:10	04/17/23 12:00	13	14	05/01/23 22:31	14	40	
Matrix Spike Dup BLD0297-MSD1	04/04/23 10:02	04/04/23 15:10	04/17/23 12:00	13	14	05/01/23 23:08	14	40	

\* Indicates hold time exceedance.



## METHOD DETECTION AND REPORTING LIMITS

### EPA 8270E

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: NT14

Analyte	MDL	RL	Units
Phenol	4.4	20.0	ug/kg
4-Methylphenol	7.4	20.0	ug/kg
Naphthalene	4.2	20.0	ug/kg
2-Methylnaphthalene	4.5	20.0	ug/kg
Acenaphthylene	6.2	20.0	ug/kg
Dimethylphthalate	4.4	20.0	ug/kg
Acenaphthene	5.2	20.0	ug/kg
Dibenzofuran	14.1	20.0	ug/kg
Fluorene	14.6	20.0	ug/kg
Phenanthrene	8.7	20.0	ug/kg
Anthracene	7.2	20.0	ug/kg
Fluoranthene	6.1	20.0	ug/kg
Pyrene	5.7	20.0	ug/kg
Butylbenzylphthalate	9.4	20.0	ug/kg
Benzo(a)anthracene	6.0	20.0	ug/kg
Chrysene	6.1	20.0	ug/kg
bis(2-Ethylhexyl)phthalate	5.5	50.0	ug/kg
Benzo(a)fluoranthene, Total	10.0	40.0	ug/kg
Benzo(a)pyrene	4.2	20.0	ug/kg
Indeno(1,2,3-cd)pyrene	14.7	20.0	ug/kg
Dibenzo(a,h)anthracene	17.2	20.0	ug/kg
Benzo(g,h,i)perylene	13.6	20.0	ug/kg



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: NA

Chemical: Tributyl Phosphate

Manufacturer: Chemservice

Product #: 0-916

Lot #: 59-57A

Purity: 99%

Analyst: VFB

Element: B000954





Description: SVOC 4,4 DDT Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 23-Sep-13  
Solvent: N/A Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 11:46 by JZ  
Vendor: Chem Service Lot #: 198-128A  
Vendor Catalog #:

**Comments**

Neat, Purity @ 99.2%. (ARI#: 790A)

Analyte	CAS Number	Concentration	Units
4,4'-DDT	50-29-3	1000000	ug/mL



### Appendix 20.1

### ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: 4,4' DDT

Manufacturer: Chem Service

Product #: \_\_\_\_\_

Lot #: 198-128A

Purity: 99.2%

Analyst: AS



Description: SVOC alpha-Terpineol Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: N/A Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 12:13 by JZ  
Vendor: ACROS Organics Lot #: AD16481201  
Vendor Catalog #:

**Comments**

Neat, Purity @ 98%. (ARI#: I1582A)

Analyte	CAS Number	Concentration	Units
alpha-Terpineol	98-55-5	1000000	ug/mL



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: alpha-Terpineol

Manufacturer: Acros Organics

Product #: \_\_\_\_\_

Lot #: AD6481201

Purity: 98%

Analyst: 12



Description: SVOA Dibutyl Phenyl phosphate Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: NA Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 15:45 by JZ  
Vendor: Monsanto Lot #: N/A  
Vendor Catalog #:

**Comments**

Neat, Purity @ 98.9%.

Analyte	CAS Number	Concentration	Units
Dibutyl Phenyl Phosphate	2528-36-1	1000000	ug/mL

Reviewed By

Date



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Dibutyl Phenyl Phosphate

Manufacturer: Monsanto

Product #: N/A

Lot #: N/A

Purity: 98.9%

Analyst: AD



Description: SVOC Triphenyl Phosphate Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: NA Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 15:59 by JZ  
Vendor: Aldrich Lot #: 04902CM  
Vendor Catalog #:

**Comments**

Neat, Purity @ 99%.

Analyte	CAS Number	Concentration	Units
Triphenyl Phosphate	115-86-6	1000000	ug/mL



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Triphenyl phosphate

Manufacturer: Aldrich

Product #: \_\_\_\_\_

Lot #: 04902CM

Purity: 99%

Analyst: [Signature]





Description:	SVOC Butylated Hydroxytoluene	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	31-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	23-Sep-13 16:18 by JZ
Vendor:	SIGMA	Lot #:	39F-0197
Vendor Catalog #:			

**Comments**

neat,Purity @ 99.9%.

Analyte	CAS Number	Concentration	Units
Butylated Hydroxytoluene	128-37-0	1000000	ug/mL

Reviewed By

Date



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Bulkyated Hydroxytoluene

Manufacturer: Sigma

Product #: \_\_\_\_\_

Lot #: 39F-0197

Purity: 99.8%

Analyst: AB



Description: SVOC Butyl Diphenyl Phosphate Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: NA Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 17:02 by JZ  
Vendor: Monsanto Lot #: N/A  
Vendor Catalog #:

**Comments**

Neat, Purity @ 98%.

Analyte	CAS Number	Concentration	Units
Butyl Diphenyl Phosphate	2752-95-6	1000000	ug/mL



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Butyl Diphenyl Phosphate

Manufacturer: Monsanto

Product #: NA

Lot #: NA

Purity: 99%

Analyst: [Signature]



Description:	SVOC 2,4-Dinitrophenol	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	25-Sep-13
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	25-Sep-13 13:45 by JZ
Vendor:	SIGMA	Lot #:	65H5021
Vendor Catalog #:			

**Comments**

Neat, Purity @ 90-95%. (ARI#: 0466)

Analyte	CAS Number	Concentration	Units
2,4-Dinitrophenol	51-28-5	1000000	ug/mL

**B001941**

SVOA 2,4-Dinitrophenol  
Expires 12/31/2029  
*Prepared By Jianqing Zhou 9/25/2013*



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: 2,4-Dinitrophenol

Manufacturer: Sigma

Product #: \_\_\_\_\_

Lot #: 644 5021

Purity: 90.29%

Analyst: AB



Description:	SVOC Benzoic Acid	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	31-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	25-Sep-13 15:23 by JZ
Vendor:	ACROS Organics	Lot #:	A0224339
Vendor Catalog #:			

**Comments**

Neat, Purity @ 98%.

Analyte	CAS Number	Concentration	Units
Benzoic acid	65-85-0	1000000	ug/mL

**B001945**

SVOC Benzoic Acid  
Expires 12/31/2029

*Prepared By Jianqing Zhou 12/31/2012*

Reviewed By

Date



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Benzoic Acid

Manufacturer: ACROS Organics

Product #: \_\_\_\_\_

Lot #: A0224339

Purity: 98%

Analyst: AB





Description:	SVOC 4,6-Dinitro-2-Methylphenol	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	25-Sep-13
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	25-Sep-13 15:37 by JZ
Vendor:	Chem Service	Lot #:	179-31A
Vendor Catalog #:			

**Comments**

Neat, Purity @ 99%. (ARI#: 009A)

Analyte	CAS Number	Concentration	Units
4,6-Dinitro-2-methylphenol	534-52-1	1000000	ug/mL

**B001948**

SVOA 4,6-Dinitro-2-Methylphenol  
Expires 12/31/2029  
*Prepared By Jianqing Zhou 9/25/2013*



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: 4,6-Dinitro-2-Methylphenol

Manufacturer: Chem Service

Product #: \_\_\_\_\_

Lot #: 179-31A

Purity: 99%

Analyst: RB



Description:	SVOA 1-Methylnaphthalene	Expires:	02-Apr-14
Standard Type:	Analyte Spike	Prepared:	13-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	04-Oct-13 18:32 by JZ
Vendor:	Chem Service	Lot #:	62-5B
Vendor Catalog #:			

**Comments**

Neat, Purity @ 99%

Analyte	CAS Number	Concentration	Units
1-Methylnaphthalene	90-12-0	1000000	ug/mL



**B002054**  
SVOA 1-Methylnaphthalene  
Solvent / Lot: NA  
Prep: 12/13/2012 by JZ  
Exp: 12/31/2029  
Location:



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: 1-Methyl naphthalene

Manufacturer: Chem Service

Product #: 0787

Lot #: 62-53

Purity: 99%

Analyst: AB



Description: SVOA Benzidine Expires: 31-Dec-29  
Standard Type: Analyte Spike Prepared: 15-Oct-13  
Solvent: N/A Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 15-Oct-13 12:07 by JZ  
Vendor: SIGMA Lot #: 18C0024  
Vendor Catalog #:

**Comments**

Purity @ 95%. ARI#: 0467.

Analyte	CAS Number	Concentration	Units
Benzidine	92-87-5	1000000	ug/mL



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Benzidine

Manufacturer: Sigma

Product #: B-3503

Lot #: 18C0024

Purity: 95%

Analyst: B.

# Certificate of Analysis

Product Name: 1,2,4,5-Tetrachlorobenzene  
Product Description: 98%  
Product Brand: Sigma-Aldrich  
Product Number: 131857  
Molecular Weight: 215.89  
CAS Number: 95-94-3

## TEST

APPEARANCE  
INFRARED SPECTRUM

&nbsp;

&nbsp;

&nbsp;

GAS LIQUID

QUALITY CONTROL

## SPECIFICATION

WHITE POWDER, CHIPS OR CRYSTALS  
CONFORMS TO STRUCTURE.

97.5% (MINIMUM)

## LOT 19309JR RESULTS

WHITE CHIPS  
CONFORMS TO STRUCTURE AND  
STANDARD AS  
ILLUSTRATED ON PAGE 1011C OF EDITION  
I,  
VOLUME 1 OF "THE ALDRICH LIBRARY OF  
FT-IR  
SPECTRA".  
99.9%  
JULY 1997



Barbara Rajzer, Supervisor  
Quality Control  
Milwaukee, Wisconsin USA

**F009172**

SVOC 1,2,4,5-Tetrachlorobenzene  
Expires 12/31/2079  
*Prepared By Joshua Rains 10/6/2017*

Data File: \\target\share\chem2\fid4a,1\20230317,1\42301703.D  
Date: 17-MAR-2023 10:46  
Client ID:  
Sample Info: K007226

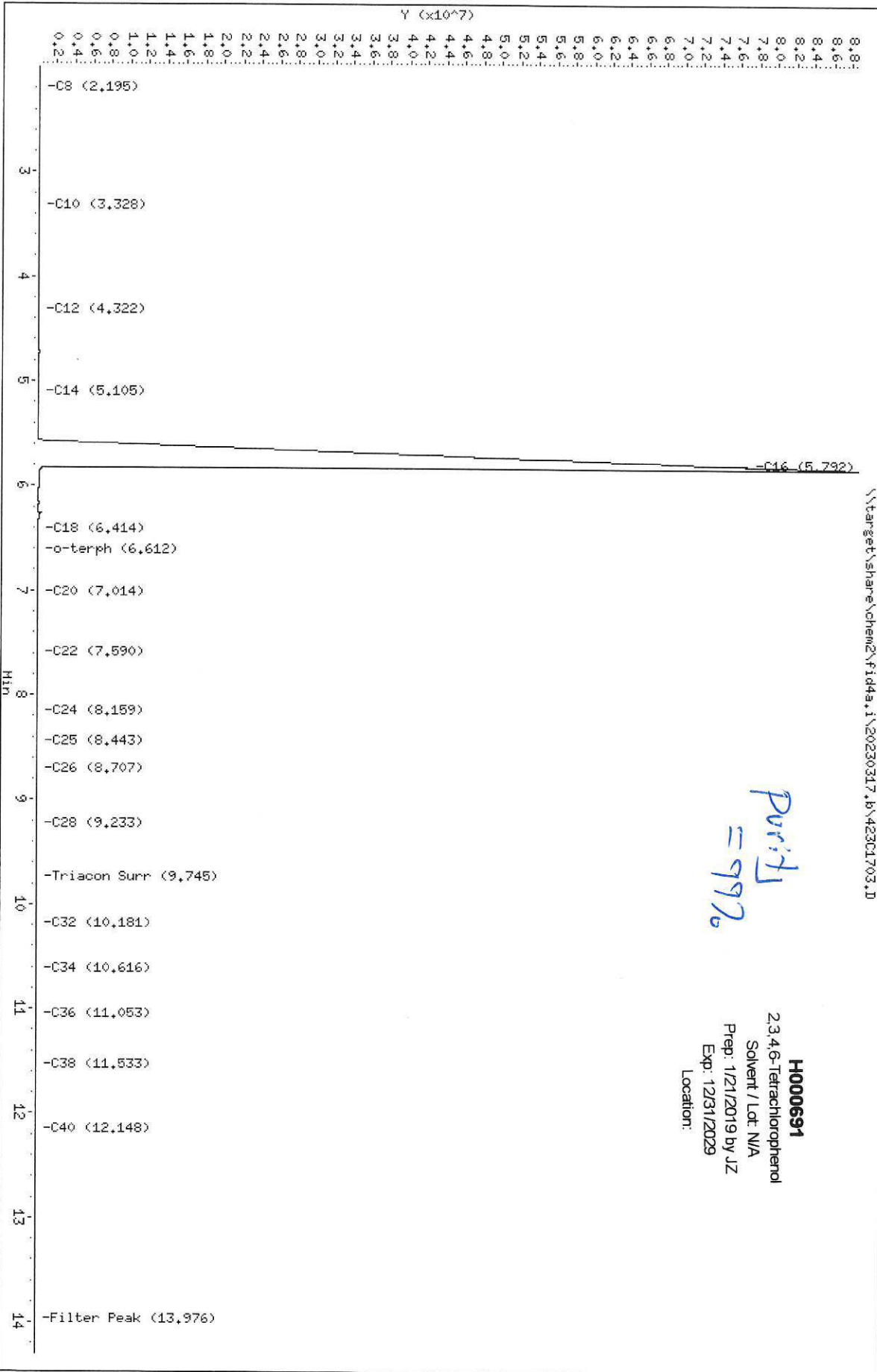
Column phase: RTX-1

Instrument: fid4a,1

Operator: AA

Column diameter: 0.25

Page 1



Purity = 99%

**H000691**  
2,3,4,6-Tetrachlorophenol  
Solvent / Lot: N/A  
Prep: 1/21/2019 by JZ  
Exp: 12/31/2029  
Location:

H000691



ARI Labs, Inc.

Data file : \\target\share\chem2\fid4a.i\20230317.b\423C1703.D  
 Lab Smp Id: K007226  
 Inj Date : 17-MAR-2023 10:46  
 Operator : AA Inst ID: fid4a.i  
 Smp Info : K007226  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem2\fid4a.i\20230317.b\FID4TPH.m  
 Meth Date : 17-Mar-2023 16:58 alfonso Quant Type: AREA%  
 Cal Date : 18-AUG-2022 11:51 Cal File: 422H1803.D  
 Als bottle: 10  
 Dil Factor: 1.00000  
 Integrator: Falcon+ Compound Sublist: tph.sub  
 Target Version: 4.14  
 Processing Host: ALFONSO-201901

Concentration Formula: Amt \* DF \* CpndVariable  
 Cpnd Variable Local Compound Variable

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
2.043	81395	55677	0.684	0.012	1 Toluene
2.074	68503	39991	0.584	0.010	
2.104	85451	37158	0.435	0.012	
2.146	59381	25207	0.424	0.008	
2.181	11414	22862	2.003	0.001	
2.195	34939	23199	0.664	0.005	2 C8
2.218	8679	21808	2.513	0.001	
2.224	21070	21832	1.036	0.003	
2.243	45086	20191	0.448	0.006	
2.286	3130	15677	5.009	0.000	
2.291	12615	15880	1.259	0.001	
2.313	20979	15888	0.757	0.003	
2.333	7621	15373	2.017	0.001	
2.348	31874	17112	0.537	0.004	
2.373	4619	13267	2.872	0.000	
2.380	12003	13446	1.120	0.001	
2.393	10327	13347	1.292	0.001	
2.408	9963	12697	1.274	0.001	
2.446	24366	11882	0.488	0.003	
2.498	24898	10214	0.410	0.003	
2.557	1592	6395	4.017	0.000	
2.570	4427	6384	1.442	0.000	
2.583	4275	6215	1.454	0.000	
2.595	1208	6068	5.024	0.000	
2.602	3076	6230	2.025	0.000	
2.607	1560	6270	4.019	0.000	
2.631	17195	8933	0.520	0.002	
2.654	17386	7637	0.439	0.002	
2.703	4531	5468	1.207	0.000	
2.717	9156	5741	0.627	0.001	
2.740	3955	5045	1.275	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
2.768	1029	4134	4.017	0.000	
2.771	830	4189	5.050	0.000	
2.778	1924	4438	2.307	0.000	
2.784	5498	4564	0.830	0.000	
2.846	25970	8400	0.323	0.003	
2.880	939	3165	3.370	0.000	
2.884	1885	3183	1.688	0.000	
2.901	4805	3504	0.729	0.000	
2.938	581	1990	3.423	0.000	
2.944	1450	2016	1.390	0.000	
2.955	449	1816	4.043	0.000	
2.967	1234	2009	1.629	0.000	
2.982	712	2087	2.931	0.000	
2.988	1000	2338	2.337	0.000	
3.001	3475	3541	1.019	0.000	
3.018	3528	3705	1.050	0.000	
3.033	983	2521	2.564	0.000	
3.038	1297	2686	2.070	0.000	
3.044	2547	2541	0.997	0.000	
3.069	389	1330	3.418	0.000	
3.078	728	1545	2.123	0.000	
3.085	1244	1637	1.316	0.000	
3.098	1115	1624	1.457	0.000	
3.108	926	1475	1.593	0.000	
3.119	239	1202	5.036	0.000	
3.125	540	1251	2.315	0.000	
3.133	409	1219	2.978	0.000	
3.144	2600	1886	0.725	0.000	
3.165	620	1604	2.588	0.000	
3.173	554	1647	2.972	0.000	
3.192	2423	2273	0.938	0.000	
3.197	582	2418	4.158	0.000	
3.204	1161	2723	2.346	0.000	
3.208	825	2777	3.364	0.000	
3.228	4472	3391	0.758	0.000	
3.246	1586	2676	1.688	0.000	
3.279	1194	2070	1.734	0.000	
3.293	854	1951	2.285	0.000	
3.298	595	2029	3.408	0.000	
3.315	2640	2597	0.984	0.000	
3.320	1015	2542	2.504	0.000	
3.328	1549	2593	1.674	0.000	3 C10
3.338	1314	2533	1.928	0.000	
3.350	523	2159	4.130	0.000	
3.358	1776	2105	1.185	0.000	
3.371	356	1797	5.043	0.000	
3.378	914	1880	2.057	0.000	
3.383	380	1927	5.068	0.000	
3.387	595	2023	3.399	0.000	
3.395	1390	2270	1.633	0.000	
3.405	1490	1994	1.338	0.000	
3.423	690	1601	2.321	0.000	
3.435	821	1554	1.894	0.000	
3.441	387	1583	4.087	0.000	
3.444	401	1625	4.051	0.000	
3.448	403	1636	4.060	0.000	
3.455	1216	1700	1.398	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
3.478	235	1185	5.047	0.000	
3.482	412	1229	2.986	0.000	
3.488	695	1177	1.694	0.000	
3.501	239	969	4.063	0.000	
3.509	914	1149	1.258	0.000	
3.520	1078	1069	0.992	0.000	
3.540	301	927	3.079	0.000	
3.556	406	849	2.089	0.000	
3.567	370	873	2.359	0.000	
3.572	178	939	5.270	0.000	
3.578	591	1171	1.981	0.000	
3.591	869	1353	1.556	0.000	
3.596	741	1352	1.826	0.000	
3.606	471	1401	2.976	0.000	
3.613	548	1411	2.577	0.000	
3.618	433	1521	3.511	0.000	
3.625	710	1635	2.303	0.000	
3.630	910	1667	1.832	0.000	
3.652	661	1562	2.362	0.000	
3.670	462	1214	2.627	0.000	
3.686	1036	1453	1.403	0.000	
3.690	829	1374	1.658	0.000	
3.702	531	1191	2.241	0.000	
3.712	452	1355	3.001	0.000	
3.716	820	1423	1.736	0.000	
3.736	2685	2093	0.780	0.000	
3.752	689	2030	2.946	0.000	
3.760	4109	2349	0.572	0.000	
3.805	3183	2036	0.640	0.000	
3.823	496	1686	3.401	0.000	
3.835	1641	2314	1.410	0.000	
3.859	9243	4616	0.499	0.001	
3.897	851	1745	2.051	0.000	
3.904	503	1721	3.419	0.000	
3.927	3866	3293	0.852	0.000	
3.941	5520	3558	0.645	0.000	
3.980	573	1715	2.991	0.000	
3.992	1027	1794	1.748	0.000	
3.995	1494	1860	1.245	0.000	
4.010	887	1639	1.847	0.000	
4.021	663	1724	2.602	0.000	
4.026	1380	1776	1.287	0.000	
4.045	306	1546	5.059	0.000	
4.053	1001	1758	1.757	0.000	
4.061	1137	1804	1.586	0.000	
4.072	779	1773	2.275	0.000	
4.080	989	1896	1.917	0.000	
4.087	561	1905	3.396	0.000	
4.098	1956	2156	1.103	0.000	
4.106	1168	2044	1.750	0.000	
4.127	1049	1627	1.551	0.000	
4.142	587	1545	2.633	0.000	
4.148	1155	1572	1.361	0.000	
4.173	3682	2398	0.651	0.000	
4.189	1023	1738	1.700	0.000	
4.204	549	1627	2.961	0.000	
4.213	628	1658	2.641	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
4.221	1039	1830	1.761	0.000	
4.227	447	1814	4.058	0.000	
4.248	2703	2638	0.976	0.000	
4.256	1387	2945	2.123	0.000	
4.260	743	2988	4.022	0.000	
4.265	912	3081	3.378	0.000	
4.268	779	3140	4.031	0.000	
4.275	1736	3217	1.853	0.000	
4.289	2688	3495	1.300	0.000	
4.295	3466	3448	0.995	0.000	
4.322	1054	2680	2.543	0.000	4 C12
4.330	1686	2627	1.558	0.000	
4.358	1066	1974	1.852	0.000	
4.378	434	1758	4.054	0.000	
4.384	1324	1879	1.419	0.000	
4.403	860	1608	1.869	0.000	
4.414	457	1567	3.431	0.000	
4.421	1117	1675	1.499	0.000	
4.433	910	1538	1.690	0.000	
4.439	865	1534	1.774	0.000	
4.449	764	1302	1.705	0.000	
4.471	433	1123	2.593	0.000	
4.476	734	1135	1.546	0.000	
4.490	385	1005	2.610	0.000	
4.498	555	1186	2.137	0.000	
4.502	695	1166	1.677	0.000	
4.518	587	949	1.618	0.000	
4.526	316	925	2.924	0.000	
4.533	560	989	1.765	0.000	
4.543	469	1001	2.135	0.000	
4.548	222	916	4.130	0.000	
4.553	188	980	5.207	0.000	
4.558	255	1038	4.076	0.000	
4.568	652	1157	1.775	0.000	
4.573	338	1151	3.409	0.000	
4.580	487	1283	2.636	0.000	
4.596	3801	1950	0.513	0.000	
4.631	531	1429	2.692	0.000	
4.663	4548	3737	0.822	0.000	
4.667	2815	3822	1.358	0.000	
4.679	2199	3760	1.710	0.000	
4.688	1068	3585	3.356	0.000	
4.694	2166	3742	1.727	0.000	
4.723	372603	172476	0.463	0.055	
4.894	47034	21828	0.464	0.006	
4.956	80510	28154	0.350	0.011	
4.999	54273	16950	0.312	0.008	
5.068	1137	5713	5.027	0.000	
5.072	8415	5792	0.688	0.001	
5.105	4203	4316	1.027	0.000	5 C14
5.146	660	2685	4.070	0.000	
5.153	2524	2649	1.050	0.000	
5.170	1076	2437	2.265	0.000	
5.174	2371	2438	1.028	0.000	
5.201	1013	2011	1.986	0.000	
5.210	2064	2332	1.130	0.000	
5.224	1083	2304	2.127	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
5.228	2027	2354	1.162	0.000	
5.276	4673	2682	0.574	0.000	
5.322	195	844	4.328	0.000	
5.331	977	1203	1.231	0.000	
5.356	490	993	2.027	0.000	
5.361	814	1044	1.283	0.000	
5.382	115	387	3.351	0.000	
5.399	619	960	1.551	0.000	
5.406	402	1035	2.576	0.000	
5.410	378	1122	2.968	0.000	
5.423	1663	1555	0.935	0.000	
5.452	5951	5020	0.844	0.000	
5.501	290	797	2.753	0.000	
5.523	2317	2472	1.067	0.000	
5.538	5946	6823	1.147	0.000	
5.792	501855376	76456669	0.152	74.449	6 C16
5.807	79757019	82319946	1.032	11.775	
5.823	77929961	88539160	1.136	11.505	
5.962	75333	84828	1.126	0.011	
5.986	474748	124326	0.262	0.070	
6.070	17103	57180	3.343	0.002	
6.074	120761	57565	0.477	0.017	
6.113	90233	47140	0.522	0.013	
6.165	407438	218439	0.536	0.060	
6.263	944101	374166	0.396	0.139	
6.414	114839	39498	0.344	0.016	7 C18
6.464	53190	31177	0.586	0.007	
6.523	31509	25870	0.821	0.004	
6.551	4785	23963	5.008	0.000	
6.559	51194	25409	0.496	0.007	
6.590	21354	21666	1.015	0.003	
6.612	35061	21127	0.603	0.005	\$ 8 o-terph
6.638	17712	19934	1.125	0.002	
6.672	22159	19651	0.887	0.003	
6.683	26846	19268	0.718	0.003	
6.708	5413	18142	3.351	0.000	
6.713	24941	18247	0.732	0.003	
6.747	50657	18478	0.365	0.007	
6.795	23973	17444	0.728	0.003	
6.814	28457	17895	0.629	0.004	
6.837	10746	15445	1.437	0.001	
6.871	29974	21406	0.714	0.004	
6.874	4287	21471	5.009	0.000	
6.882	20520	21675	1.056	0.003	
6.944	32864	17445	0.531	0.004	
6.978	9138	15347	1.679	0.001	
7.014	4130	13830	3.348	0.000	9 C20
7.025	12567	14083	1.121	0.001	
7.038	4952	14274	2.882	0.000	
7.044	6508	14578	2.240	0.000	
7.050	25344	14736	0.581	0.003	
7.099	5531	12365	2.236	0.000	
7.108	16440	12371	0.752	0.002	
7.129	9415	11275	1.198	0.001	
7.175	3589	10327	2.878	0.000	
7.182	7285	10474	1.438	0.001	
7.212	11252	10002	0.889	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
7.227	5193	9506	1.830	0.000	
7.237	5172	9476	1.832	0.000	
7.247	4652	9357	2.011	0.000	
7.254	3258	9369	2.875	0.000	
7.259	7003	9455	1.350	0.001	
7.272	5540	9252	1.670	0.000	
7.283	4511	9087	2.014	0.000	
7.296	5828	9031	1.550	0.000	
7.308	4850	8866	1.828	0.000	
7.318	3111	9014	2.897	0.000	
7.324	3191	9168	2.873	0.000	
7.328	2775	9325	3.360	0.000	
7.339	6190	9713	1.569	0.000	
7.344	2920	9761	3.343	0.000	
7.350	17091	9874	0.578	0.002	
7.379	7217	8616	1.194	0.001	
7.395	5430	8408	1.548	0.000	
7.404	2492	8342	3.348	0.000	
7.409	1666	8354	5.014	0.000	
7.415	2955	8500	2.877	0.000	
7.423	3887	8782	2.259	0.000	
7.465	28160	14253	0.506	0.004	
7.471	6466	14499	2.242	0.000	
7.480	6649	15111	2.273	0.000	
7.484	26595	15197	0.571	0.003	
7.514	13964	13621	0.975	0.002	
7.539	8118	12614	1.554	0.001	
7.553	10540	12495	1.185	0.001	
7.584	2820	11307	4.010	0.000	
7.590	4522	11429	2.527	0.000	10 C22
7.620	16634	10435	0.627	0.002	
7.653	6793	9783	1.440	0.001	
7.663	8606	9666	1.123	0.001	
7.675	2827	9464	3.347	0.000	
7.683	9373	9620	1.026	0.001	
7.699	3657	9205	2.517	0.000	
7.708	5071	9290	1.832	0.000	
7.713	10483	9274	0.885	0.001	
7.735	10686	9257	0.866	0.001	
7.752	4732	8664	1.831	0.000	
7.765	5624	8765	1.558	0.000	
7.773	5614	8686	1.547	0.000	
7.784	3375	8506	2.520	0.000	
7.793	2118	8517	4.021	0.000	
7.799	10086	8544	0.847	0.001	
7.817	7761	8325	1.073	0.001	
7.833	2415	8088	3.350	0.000	
7.838	2838	8160	2.875	0.000	
7.844	3649	8173	2.240	0.000	
7.858	2009	8069	4.017	0.000	
7.864	4482	8197	1.829	0.000	
7.871	3688	8223	2.230	0.000	
7.879	4875	8269	1.696	0.000	
7.889	2009	8061	4.013	0.000	
7.897	4080	8308	2.036	0.000	
7.916	17828	10103	0.567	0.002	
7.935	4052	9086	2.242	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
7.940	2229	8948	4.015	0.000	
7.945	5765	8973	1.556	0.000	
7.954	6458	8765	1.357	0.000	
7.976	2099	8428	4.016	0.000	
7.984	10213	8807	0.862	0.001	
7.999	4897	8282	1.691	0.000	
8.013	8782	8112	0.924	0.001	
8.028	5860	7858	1.341	0.000	
8.040	3929	7871	2.003	0.000	
8.054	9161	8146	0.889	0.001	
8.067	2701	7766	2.876	0.000	
8.074	3069	7702	2.510	0.000	
8.081	2694	7742	2.874	0.000	
8.088	2705	7793	2.881	0.000	
8.095	5842	7832	1.341	0.000	
8.104	5419	7841	1.447	0.000	
8.119	5740	7735	1.348	0.000	
8.134	4986	7768	1.558	0.000	
8.141	5893	8009	1.359	0.000	
8.159	9098	8027	0.882	0.001	11 C24
8.174	3156	7971	2.526	0.000	
8.185	2376	7967	3.353	0.000	
8.190	4739	7937	1.675	0.000	
8.202	5181	8028	1.549	0.000	
8.212	1994	8027	4.025	0.000	
8.223	6137	8270	1.348	0.000	
8.236	6864	8171	1.190	0.001	
8.248	2383	7986	3.351	0.000	
8.253	2405	8059	3.351	0.000	
8.259	5294	8207	1.550	0.000	
8.268	2866	8235	2.874	0.000	
8.280	6583	8312	1.263	0.000	
8.289	4538	8296	1.828	0.000	
8.295	2060	8300	4.029	0.000	
8.300	2063	8291	4.020	0.000	
8.313	7062	8400	1.189	0.001	
8.318	1667	8375	5.023	0.000	
8.332	11362	9100	0.801	0.001	
8.343	4357	8741	2.006	0.000	
8.358	1267	8458	6.676	0.000	
8.363	2991	8621	2.882	0.000	
8.371	3980	8983	2.257	0.000	
8.379	6330	9083	1.435	0.000	
8.385	3111	8963	2.881	0.000	
8.393	6706	9050	1.349	0.000	
8.404	4903	8943	1.824	0.000	
8.417	8437	8972	1.063	0.001	
8.438	7166	9103	1.270	0.001	
8.443	3211	9227	2.873	0.000	12 C25
8.450	3688	9295	2.521	0.000	
8.455	2313	9276	4.010	0.000	
8.475	30054	13714	0.456	0.004	
8.504	5760	9733	1.690	0.000	
8.519	2799	9376	3.350	0.000	
8.529	4766	9710	2.037	0.000	
8.537	4875	9815	2.013	0.000	
8.543	8411	9973	1.186	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
8.555	2969	9916	3.340	0.000	
8.560	3974	9987	2.513	0.000	
8.568	2483	9997	4.026	0.000	
8.572	5007	10043	2.006	0.000	
8.591	14074	10725	0.762	0.002	
8.602	2648	10665	4.028	0.000	
8.606	2159	10862	5.032	0.000	
8.609	2183	10952	5.017	0.000	
8.633	7361	10561	1.435	0.001	
8.647	6774	10495	1.549	0.001	
8.658	2596	10420	4.014	0.000	
8.663	4723	10573	2.239	0.000	
8.669	3156	10589	3.355	0.000	
8.687	15405	11334	0.736	0.002	
8.699	6103	11158	1.828	0.000	
8.707	2223	11136	5.009	0.000	13 C26
8.730	28697	12536	0.437	0.004	
8.754	8658	11553	1.334	0.001	
8.763	2896	11612	4.010	0.000	
8.780	15029	12352	0.822	0.002	
8.788	1833	12243	6.680	0.000	
8.798	11854	12679	1.070	0.001	
8.806	1873	12509	6.677	0.000	
8.809	3133	12565	4.011	0.000	
8.813	2506	12550	5.008	0.000	
8.819	7588	12757	1.681	0.001	
8.829	4418	12679	2.870	0.000	
8.835	6988	12762	1.826	0.001	
8.848	13711	13258	0.967	0.002	
8.872	26625	13656	0.513	0.003	
8.894	4575	13127	2.869	0.000	
8.898	2631	13188	5.013	0.000	
8.902	5918	13262	2.241	0.000	
8.914	8577	13313	1.552	0.001	
8.922	4011	13433	3.349	0.000	
8.926	4724	13546	2.867	0.000	
8.933	6787	13651	2.011	0.001	
8.946	9614	13923	1.448	0.001	
8.951	6274	14004	2.232	0.000	
8.960	5592	14036	2.510	0.000	
8.966	3513	14090	4.011	0.000	
8.969	2829	14171	5.009	0.000	
8.973	4976	14233	2.860	0.000	
8.980	4289	14365	3.350	0.000	
8.996	27708	16441	0.593	0.004	
9.013	8129	14847	1.827	0.001	
9.025	8129	14840	1.826	0.001	
9.036	7503	15229	2.030	0.001	
9.040	4559	15225	3.340	0.000	
9.057	14920	16251	1.089	0.002	
9.067	9915	16831	1.698	0.001	
9.076	8535	17331	2.031	0.001	
9.081	5250	17596	3.352	0.000	
9.084	10558	17675	1.674	0.001	
9.095	4386	17601	4.013	0.000	
9.111	30564	19262	0.630	0.004	
9.128	8346	18722	2.243	0.001	



RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
9.139	15095	18986	1.258	0.002	
9.149	6655	19050	2.862	0.000	
9.158	23240	19719	0.848	0.003	
9.171	1903	19042	10.005	0.000	
9.175	4773	19156	4.013	0.000	
9.187	23630	19927	0.843	0.003	
9.199	4925	19763	4.013	0.000	
9.208	14115	20394	1.445	0.002	
9.219	12303	20691	1.682	0.001	
9.226	7266	20831	2.867	0.001	
9.233	15622	21000	1.344	0.002	14 C28
9.247	9280	20714	2.232	0.001	
9.262	45057	27849	0.618	0.006	
9.281	22651	23200	1.024	0.003	
9.304	13489	22820	1.692	0.001	
9.307	18038	22862	1.267	0.002	
9.328	8656	21778	2.516	0.001	
9.334	8635	21650	2.507	0.001	
9.343	16240	21738	1.339	0.002	
9.354	5409	21709	4.013	0.000	
9.367	16481	22234	1.349	0.002	
9.370	6683	22346	3.344	0.000	
9.382	14775	23166	1.568	0.002	
9.390	11679	23531	2.015	0.001	
9.394	12888	23584	1.830	0.001	
9.408	18752	23645	1.261	0.002	
9.416	4675	23396	5.004	0.000	
9.428	25138	24392	0.970	0.003	
9.438	20233	24095	1.191	0.002	
9.468	67429	26696	0.396	0.009	
9.496	8413	24122	2.867	0.001	
9.507	12049	24259	2.013	0.001	
9.527	36362	25771	0.709	0.005	
9.538	12891	25911	2.010	0.001	
9.543	6452	25853	4.007	0.000	
9.551	10420	26202	2.515	0.001	
9.557	29750	26593	0.894	0.004	
9.574	6252	25071	4.010	0.000	
9.593	29143	27655	0.949	0.004	
9.599	40783	27905	0.684	0.006	
9.620	13159	26364	2.004	0.001	
9.632	17259	26799	1.553	0.002	
9.640	13210	26592	2.013	0.001	
9.664	35362	28170	0.797	0.005	
9.672	27890	28134	1.009	0.004	
9.696	26737	28634	1.071	0.003	
9.711	53475	30848	0.577	0.007	
9.745	33266	29504	0.887	0.004	\$ 15 Triacon Surr
9.752	7348	29501	4.015	0.001	
9.756	20542	29565	1.439	0.003	
9.768	7255	29059	4.005	0.001	
9.773	7275	29173	4.010	0.001	
9.785	31543	30611	0.970	0.004	
9.803	46804	32832	0.701	0.006	
9.821	10456	30060	2.875	0.001	
9.833	30772	31156	1.012	0.004	
9.860	77784	33514	0.431	0.011	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
9.881	12779	32069	2.510	0.001	
9.892	14531	32668	2.248	0.002	
9.896	8201	32902	4.012	0.001	
9.908	23357	33882	1.451	0.003	
9.912	27050	34095	1.260	0.003	
9.939	14585	32570	2.233	0.002	
9.951	23032	33095	1.437	0.003	
9.956	11596	33292	2.871	0.001	
9.966	16544	33271	2.011	0.002	
9.971	11660	33391	2.864	0.001	
9.975	10051	33617	3.345	0.001	
9.983	15209	33983	2.234	0.002	
9.988	15177	33830	2.229	0.002	
9.996	10128	33907	3.348	0.001	
10.018	43348	35629	0.822	0.006	
10.021	7133	35693	5.004	0.001	
10.025	8960	35988	4.016	0.001	
10.034	42064	36944	0.878	0.006	
10.063	65447	38699	0.591	0.009	
10.077	7375	36906	5.004	0.001	
10.083	16743	37428	2.235	0.002	
10.095	34467	38665	1.122	0.005	
10.118	90921	40621	0.447	0.013	
10.151	37738	38047	1.008	0.005	
10.158	11383	38037	3.342	0.001	
10.168	36074	38274	1.061	0.005	
10.181	15072	37809	2.509	0.002	16 C32
10.185	5655	37746	6.675	0.000	
10.198	43905	38471	0.876	0.006	
10.208	24771	38177	1.541	0.003	
10.218	19031	38113	2.003	0.002	
10.228	13353	38279	2.867	0.001	
10.237	21225	38826	1.829	0.003	
10.243	30946	38929	1.258	0.004	
10.266	43064	39733	0.923	0.006	
10.275	11912	39784	3.340	0.001	
10.278	19932	39886	2.001	0.002	
10.293	46366	40725	0.878	0.006	
10.318	46465	41024	0.883	0.006	
10.328	24720	41353	1.673	0.003	
10.334	10308	41278	4.005	0.001	
10.343	29100	41866	1.439	0.004	
10.354	22822	41695	1.827	0.003	
10.360	16568	41490	2.504	0.002	
10.376	31388	42321	1.348	0.004	
10.384	36478	43119	1.182	0.005	
10.393	21427	43144	2.014	0.003	
10.416	82339	44731	0.543	0.012	
10.434	23173	42257	1.824	0.003	
10.455	42801	43684	1.021	0.006	
10.459	19648	44004	2.240	0.002	
10.469	19632	43883	2.235	0.002	
10.492	56113	45807	0.816	0.008	
10.497	20626	45915	2.226	0.003	
10.503	27439	45837	1.671	0.004	
10.513	31833	45842	1.440	0.004	
10.523	6773	45190	6.672	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
10.529	22697	45513	2.005	0.003	
10.543	39087	46432	1.188	0.005	
10.552	16284	46719	2.869	0.002	
10.558	18796	47158	2.509	0.002	
10.576	69878	48769	0.698	0.010	
10.586	12085	48384	4.004	0.001	
10.592	21757	48469	2.228	0.003	
10.609	46960	50482	1.075	0.006	
10.616	40486	50812	1.255	0.005	17 C34
10.628	52392	50284	0.960	0.007	
10.665	99744	52644	0.528	0.014	
10.680	20832	52264	2.509	0.003	
10.699	126137	55939	0.443	0.018	
10.723	18258	52316	2.865	0.002	
10.733	65550	52928	0.807	0.009	
10.751	49102	51903	1.057	0.007	
10.765	10288	51490	5.005	0.001	
10.777	73220	52877	0.722	0.010	
10.791	15621	52150	3.338	0.002	
10.799	46819	52190	1.115	0.006	
10.817	52000	52328	1.006	0.007	
10.828	13014	52167	4.008	0.001	
10.833	18275	52280	2.861	0.002	
10.838	67284	52271	0.777	0.009	
10.860	15395	51401	3.339	0.002	
10.867	15366	51252	3.335	0.002	
10.874	25712	51608	2.007	0.003	
10.885	59363	52064	0.877	0.008	
10.901	33199	51247	1.544	0.004	
10.911	35859	51446	1.435	0.005	
10.925	15150	50526	3.335	0.002	
10.936	27761	50508	1.819	0.004	
10.954	40634	51235	1.261	0.005	
10.958	17973	51428	2.861	0.002	
10.982	101216	54997	0.543	0.014	
10.999	80380	54264	0.675	0.011	
11.022	15822	52869	3.342	0.002	
11.029	23878	53171	2.227	0.003	
11.032	23908	53219	2.226	0.003	
11.044	39793	53228	1.338	0.005	
11.053	13218	52959	4.007	0.001	19 C36
11.057	26491	53088	2.004	0.003	
11.069	47933	53454	1.115	0.007	
11.079	78088	52997	0.679	0.011	
11.132	4853	48537	10.002	0.000	
11.138	21933	48845	2.227	0.003	
11.148	46678	49317	1.057	0.006	
11.158	12248	49060	4.006	0.001	
11.164	14711	49102	3.338	0.002	
11.179	64473	49939	0.775	0.009	
11.192	19751	49439	2.503	0.002	
11.197	14848	49541	3.337	0.002	
11.202	17336	49566	2.859	0.002	
11.206	12400	49639	4.003	0.001	
11.212	56808	49881	0.878	0.008	
11.230	26830	48794	1.819	0.003	
11.263	19014	47590	2.503	0.002	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
11.267	11927	47790	4.007	0.001	
11.285	66432	50042	0.753	0.009	
11.308	17214	49235	2.860	0.002	
11.312	19684	49285	2.504	0.002	
11.322	19740	49570	2.511	0.002	
11.331	27467	50208	1.828	0.004	
11.334	12565	50301	4.003	0.001	
11.338	17617	50367	2.859	0.002	
11.356	50450	50688	1.005	0.007	
11.383	31641	48774	1.541	0.004	
11.392	14562	48589	3.337	0.002	
11.398	14566	48593	3.336	0.002	
11.405	21947	48858	2.226	0.003	
11.418	36961	49602	1.342	0.005	
11.428	52174	49838	0.955	0.007	
11.438	46900	49605	1.058	0.006	
11.456	66003	49218	0.746	0.009	
11.481	84312	48818	0.579	0.012	
11.518	39837	46996	1.180	0.005	
11.533	55836	46822	0.839	0.008	20 C38
11.560	30101	46465	1.544	0.004	
11.568	20916	46512	2.224	0.003	
11.573	11637	46596	4.004	0.001	
11.579	23274	46598	2.002	0.003	
11.586	13953	46531	3.335	0.002	
11.591	9318	46631	5.004	0.001	
11.623	97892	48831	0.499	0.014	
11.631	17107	48984	2.863	0.002	
11.638	22090	49260	2.230	0.003	
11.642	32050	49351	1.540	0.004	
11.669	95446	50981	0.534	0.014	
11.685	95822	49865	0.520	0.014	
11.788	8918	44609	5.002	0.001	
11.791	35704	44768	1.254	0.005	
11.804	11082	44350	4.002	0.001	
11.813	22172	44403	2.003	0.003	
11.823	19993	44543	2.228	0.002	
11.829	13395	44754	3.341	0.001	
11.837	20184	44981	2.228	0.002	
11.852	26933	44942	1.669	0.003	
11.866	36041	45224	1.255	0.005	
11.877	15835	45355	2.864	0.002	
11.883	18222	45726	2.509	0.002	
11.889	15985	45741	2.861	0.002	
11.896	20679	46117	2.230	0.003	
11.905	23259	46896	2.016	0.003	
11.929	70146	49826	0.710	0.010	
11.936	52288	50085	0.958	0.007	
11.951	14787	49369	3.339	0.002	
11.957	17313	49595	2.865	0.002	
11.961	32199	49647	1.542	0.004	
11.971	19578	49063	2.506	0.002	
11.980	34244	49065	1.433	0.005	
12.019	96987	51133	0.527	0.014	
12.025	48685	51499	1.058	0.007	
12.053	38386	51386	1.339	0.005	
12.062	38575	51549	1.336	0.005	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
12.070	17923	51300	2.862	0.002	
12.078	45780	51141	1.117	0.006	
12.105	31495	48817	1.550	0.004	
12.118	85510	48295	0.565	0.012	
12.148	55474	46657	0.841	0.008	21 C40
12.172	34299	45899	1.338	0.005	
12.181	18286	45754	2.502	0.002	
12.188	20565	45727	2.223	0.003	
12.198	29701	45787	1.542	0.004	
12.212	11377	45530	4.002	0.001	
12.218	29576	45566	1.541	0.004	
12.237	41054	45750	1.114	0.006	
12.243	13695	45701	3.337	0.002	
12.253	27528	46122	1.675	0.004	
12.260	16149	46201	2.861	0.002	
12.272	32473	46571	1.434	0.004	
12.347	231342	54259	0.235	0.034	
12.355	96470	54322	0.563	0.014	
12.383	13155	52687	4.005	0.001	
12.389	52817	52930	1.002	0.007	
12.434	117936	55204	0.468	0.017	
12.440	19323	55283	2.861	0.002	
12.448	22049	55156	2.502	0.003	
12.460	127044	56114	0.442	0.018	
12.500	63536	55700	0.877	0.009	
12.519	44746	56237	1.257	0.006	
12.523	16928	56556	3.341	0.002	
12.528	14154	56666	4.003	0.002	
12.532	14154	56644	4.002	0.002	
12.538	25607	57089	2.229	0.003	
12.543	31284	57010	1.822	0.004	
12.560	76588	57084	0.745	0.011	
12.574	22463	56167	2.500	0.003	
12.583	192414	56305	0.293	0.028	
12.668	201456	54098	0.269	0.029	
12.722	63529	49368	0.777	0.009	
12.744	14574	48683	3.340	0.002	
12.757	68233	49046	0.719	0.010	
12.777	29106	48653	1.672	0.004	
12.802	69072	49884	0.722	0.010	
12.805	19947	49915	2.502	0.002	
12.813	12457	49907	4.006	0.001	
12.826	42860	50672	1.182	0.006	
12.830	15192	50711	3.338	0.002	
12.835	63121	50727	0.804	0.009	
12.856	30109	50299	1.671	0.004	
12.871	12459	49875	4.003	0.001	
12.876	24950	49913	2.001	0.003	
12.883	12458	49860	4.002	0.001	
12.892	24999	50091	2.004	0.003	
12.904	37682	50442	1.339	0.005	
12.918	60965	51059	0.838	0.009	
12.929	15268	50972	3.338	0.002	
12.950	101236	52476	0.518	0.014	
12.991	32619	50285	1.542	0.004	
13.030	23826	47690	2.002	0.003	
13.047	49429	47410	0.959	0.007	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
13.072	11668	46709	4.003	0.001	
13.077	14056	46964	3.341	0.002	
13.083	21201	47214	2.227	0.003	
13.092	45034	47490	1.055	0.006	
13.103	33139	47401	1.430	0.004	
13.119	58622	47300	0.807	0.008	
13.136	61979	46406	0.749	0.009	
13.163	36232	45399	1.253	0.005	
13.172	13552	45219	3.337	0.002	
13.178	13550	45211	3.337	0.002	
13.183	13581	45318	3.337	0.002	
13.188	15867	45365	2.859	0.002	
13.193	11350	45433	4.003	0.001	
13.206	54879	45909	0.837	0.008	
13.233	74220	46899	0.632	0.010	
13.246	18724	46923	2.506	0.002	
13.250	14089	47028	3.338	0.002	
13.254	9392	46999	5.004	0.001	
13.261	35241	47103	1.337	0.005	
13.270	21093	46884	2.223	0.003	
13.278	16404	46889	2.858	0.002	
13.284	28108	46937	1.670	0.004	
13.309	27777	46575	1.677	0.004	
13.313	11643	46617	4.004	0.001	
13.323	30391	46938	1.544	0.004	
13.337	49696	47554	0.957	0.007	
13.345	11906	47686	4.005	0.001	
13.352	21499	47921	2.229	0.003	
13.358	14416	48133	3.339	0.002	
13.366	24163	48487	2.007	0.003	
13.391	108474	49842	0.459	0.016	
13.411	39818	49922	1.254	0.005	
13.421	140245	49882	0.356	0.020	
13.468	75433	46221	0.613	0.011	
13.519	59701	44435	0.744	0.008	
13.538	26345	44021	1.671	0.003	
13.553	17475	43727	2.502	0.002	
13.559	19699	43828	2.225	0.002	
13.566	15324	43832	2.860	0.002	
13.574	28519	43956	1.541	0.004	
13.585	21950	43943	2.002	0.003	
13.595	26497	44341	1.673	0.003	
13.603	22230	44574	2.005	0.003	
13.608	11135	44585	4.004	0.001	
13.633	100703	46371	0.460	0.014	
13.650	25255	45974	1.820	0.003	
13.663	20511	45675	2.227	0.003	
13.670	15945	45584	2.859	0.002	
13.677	40973	45642	1.114	0.006	
13.688	4544	45448	10.002	0.000	
13.693	29520	45508	1.542	0.004	
13.718	24720	44995	1.820	0.003	
13.727	11216	44890	4.002	0.001	
13.735	29185	45025	1.543	0.004	
13.752	17874	44782	2.505	0.002	
13.767	35874	45020	1.255	0.005	
13.775	36036	45104	1.252	0.005	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
13.785	11226	44939	4.003	0.001	
13.790	47016	44953	0.956	0.006	
13.813	11118	44516	4.004	0.001	
13.818	37641	44507	1.182	0.005	
13.832	15424	44192	2.865	0.002	
13.838	17564	43967	2.503	0.002	
13.844	26339	43892	1.666	0.003	
13.855	30567	43821	1.434	0.004	
13.865	23854	43526	1.825	0.003	
13.882	28266	43639	1.544	0.004	
13.886	30418	43629	1.434	0.004	
13.901	34702	43472	1.253	0.005	
13.920	48162	44005	0.914	0.007	
13.928	17577	43956	2.501	0.002	
13.941	15410	44084	2.861	0.002	
13.946	11045	44251	4.006	0.001	
13.949	24369	44341	1.820	0.003	
13.959	22103	44264	2.003	0.003	
13.967	22088	44195	2.001	0.003	
13.976	33207	44336	1.335	0.004	18 Filter Peak
13.998	24195	44018	1.819	0.003	
14.007	15335	43888	2.862	0.002	
14.014	17519	43863	2.504	0.002	
14.019	54335	43870	0.807	0.008	
14.046	10722	42915	4.003	0.001	
14.052	19305	42955	2.225	0.002	
14.058	8568	42864	5.003	0.001	
14.067	38739	43159	1.114	0.005	
14.077	15012	42931	2.860	0.002	
14.083	25753	42977	1.669	0.003	
14.102	25682	42913	1.671	0.003	
14.108	19267	42865	2.225	0.002	
14.116	12834	42815	3.336	0.001	
14.126	25874	43369	1.676	0.003	
14.133	56339	43595	0.774	0.008	
14.161	32503	43582	1.341	0.004	
14.165	10909	43696	4.006	0.001	
14.170	15313	43822	2.862	0.002	
14.175	10960	43911	4.007	0.001	
14.178	13176	43945	3.335	0.001	
14.183	19785	43976	2.223	0.002	
14.191	8796	44018	5.005	0.001	
14.197	17636	44177	2.505	0.002	
14.208	28815	44459	1.543	0.004	
14.219	8873	44379	5.002	0.001	
14.223	13318	44445	3.337	0.001	
14.229	28860	44456	1.540	0.004	
14.247	15436	44194	2.863	0.002	
14.260	37147	43758	1.178	0.005	
14.274	45685	43705	0.957	0.006	
===== 677340272	===== 268782821	===== 100.000			

Total unknown % area = 25.478

## Certificate of Composition - Analytical Standard

## ACID STOCK

**Product no.:** 22523046  
**Lot no.:** LRAC9812  
**Expiry Date:** May 2023  
**Manufacturing Date:** May 2021  
**Storage:** Refrigerate  
**Solvent/Matrix:** Dichloromethane  
**Certificate version:** LRAC9812.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)

**J005200**  
 SVOA-ABN ACID STOCK-200-800ug/ml  
 Solvent / Lot: DCM  
 Prep: 5/18/2021 by JZ  
 Exp: 5/31/2023  
 Location:

 5/18/21

Analyte	Assigned Value	Units	Raw Material Purity, %	Raw Material Lot
2,4-DIMETHYLPHENOL CAS# 105-67-9	802	µg/mL	99.9	LB88935
2,4-DICHLOROPHENOL CAS# 120-83-2	802	µg/mL	100.0	BCBZ6787
2,4,5-TRICHLOROPHENOL CAS# 95-95-4	802	µg/mL	99.9	JS00008
2,4-DINITROPHENOL CAS# 51-28-5	1806	µg/mL	75.9	MKBP5833V
2,4,6-TRICHLOROPHENOL CAS# 88-06-2	803	µg/mL	98.7	LB82983
4-CHLORO-3-METHYLPHENOL CAS# 59-50-7	801	µg/mL	99.9	JS00013
4-NITROPHENOL CAS# 100-02-7	801	µg/mL	99.9	LC10889
2-METHYL-4,6-DINITROPHENOL CAS# 534-52-1	1804	µg/mL	99.7	LC18338
PENTACHLOROPHENOL CAS# 87-86-5	803	µg/mL	98.7	MKCK8156
BENZOIC ACID CAS# 65-85-0	1805	µg/mL	99.9	LC16514

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user's location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.





# Certificate of Analysis

**J008074**

SVOA PAH STD 2000ug/ml  
 Expires 6/30/2023  
 Prepared By Joshua Rains 8/5/2021

**Product Name:** PAH Standard

**Product Number:** US-106N-1

**Lot Issue Date:** 11-Jun-2020

**Lot Number:** 0006540449

**Expiration Date:** 30-Jun-2023

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system, and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
acenaphthene	000083-32-9	RM10879	2008 ± 10 µg/mL
acenaphthylene	000208-96-8	RM10891	2003 ± 10 µg/mL
anthracene	000120-12-7	RM14212	2006 ± 10 µg/mL
benz[a]anthracene	000056-55-3	RM16072	2006 ± 10 µg/mL
benzo[b]fluoranthene	000205-99-2	RM14571	2005 ± 10 µg/mL
benzo[k]fluoranthene	000207-08-9	RM14321	2009 ± 10 µg/mL
benzo[ghi]perylene	000191-24-2	RM15761	2008 ± 10 µg/mL
benzo[a]pyrene	000050-32-8	RM12669	2009 ± 10 µg/mL
chrysene	000218-01-9	RM12260	2009 ± 10 µg/mL
dibenz[a,h]anthracene	000053-70-3	RM06786	2009 ± 10 µg/mL
fluoranthene	000206-44-0	RM12277	2004 ± 10 µg/mL
fluorene	000086-73-7	RM09441	2009 ± 10 µg/mL
indeno[1,2,3-cd]pyrene	000193-39-5	RM14192	2009 ± 10 µg/mL
naphthalene	000091-20-3	NT00970	2008 ± 10 µg/mL
phenanthrene	000085-01-8	RM10495	2009 ± 10 µg/mL
pyrene	000129-00-0	RM03479	2008 ± 10 µg/mL

**Matrix:** methylene chloride/benzene (1:1)

 ISO 17034 Cert No.  
 AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 1 of 2

[www.agilent.com/quality/](http://www.agilent.com/quality/)

 ISO 17025 Cert  
 No. AT-1937

# Certificate of Analysis

**Product Number:** US-106N-1

**Lot Number:** 0006540449

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

**Expiration of Certification:**

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

**Maintenance of Certification:**

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

**Sample lot approver:**



Monica Bourgeois  
QMS Representative



ISO 17034 Cert No.  
AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 2 of 2

[www.agilent.com/quality/](http://www.agilent.com/quality/)



ISO 17025 Cert  
No. AT-1937

# Certificate of Analysis

**Produced by Phenova**

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com  
Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101244

**Lot Number:** CL16062

**Description:** Benzidines Standard

**Certification Date:** November 19, 2020

**Storage:** 4 °C

**Expiration Date:** November 30, 2030

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride



Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 2.740%
3,3'-Dichlorobenzidine	91-94-1	2000	± 3.229%

**J008310**

Benzidines std @2000ug/ml  
Expires 11/30/2030  
*Prepared By Van Spohn 8/12/2021*

# Certificate of Analysis

## Produced by Phenova

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com

Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. Quality Standards: Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

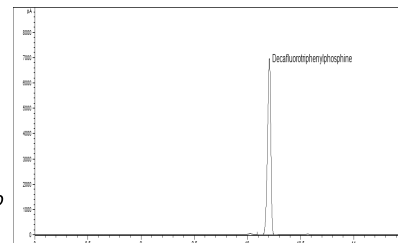


Chemical Testing Laboratory  
Certificate No. 2427.03

# Certificate of Analysis - Certified Reference Material

## Decafluorotriphenylphosphine solution

**Product no.:** 48724-U  
**Lot no.:** LRAD0628  
**Expiry Date:** October 2024  
**Manufacturing Date:** September 2021  
**Storage:** ROOM TEMPERATURE  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAD0628.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)



### Certified Values:

Analyte	Certified Value	Units	Raw Material Purity, %	Raw Material Lot
DFTPP CAS# 5074-71-5	25.2 ± 2.6	mg/mL	97.0	10220909

### ASSAY Method

#### METHOD: GC (BELLEFONTE )

Column: SPB-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness

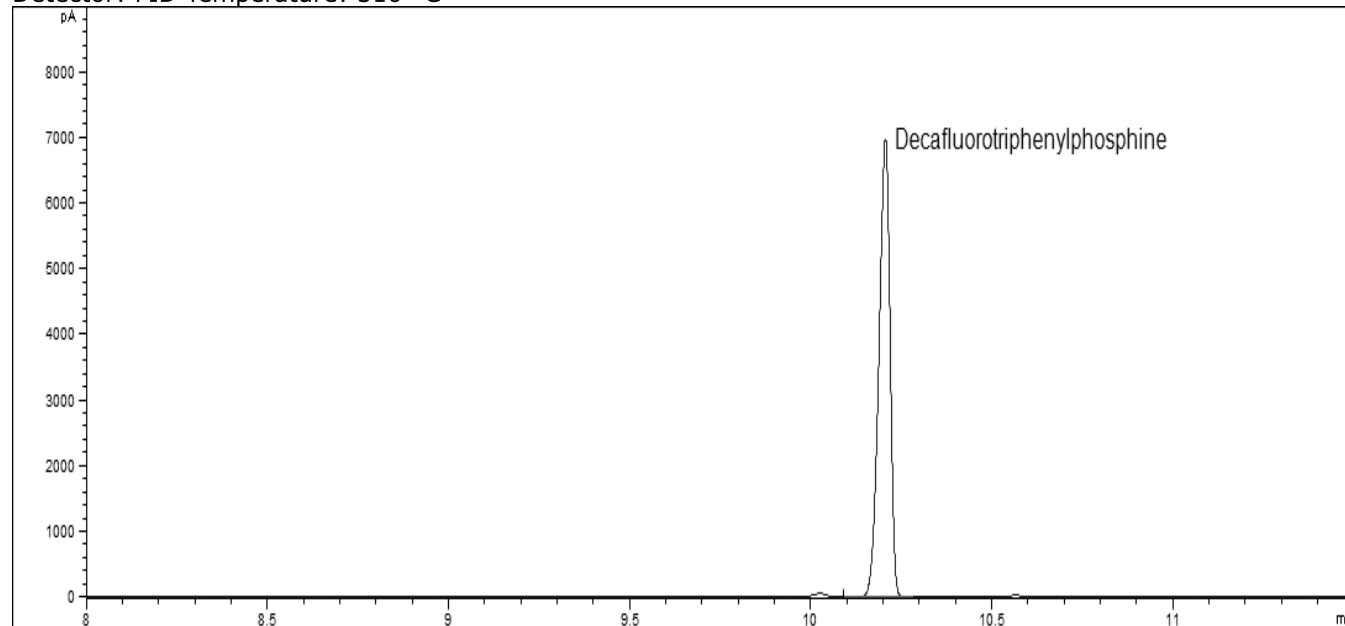
Carrier Gas: H<sub>2</sub> Flow Rate: 4.3 mL/min

Inlet Temperature: 250 °C Injection Volume: 1 µL

Injection Mode: 25:1

Temperature Program: 120 °C (Hold 0 min) @ 12 °C/min to 260 °C (Hold 0 min)

Detector: FID Temperature: 310 °C



**Elution details:**

EO	RT(MIN)	ANALYTE
1	10.206	Decafluorotriphenylphosphine

**Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Minimum sample size:** 1 µL

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

**Accreditation:** Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

**Certificate issue date:** 30-Sep-2021



Andy Ommen - QC Manager

Scott Stetler - QA Manager

**Details on metrological traceability:** This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

**Associated uncertainty:** Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**Homogeneity assessment:** Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

**Stability assessment:**

Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

**Certificate of analysis revision history:**

Certificate version	Date	Reason for version
LRAD0628.01	30-Sep-2021	Original Release Date

**Disclaimer:** The purchaser is required to determine the suitability of this product for any particular application. Sigma-Aldrich RTC makes no warranty of any kind, express or implied, other than its products meet all quality control standards set by Sigma-Aldrich RTC. We do not guarantee that the product can be used for any particular application.

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The life science business of Merck KGaA, Darmstadt, Germany  
operates as MilliporeSigma in the US and Canada.



# Certificate of Analysis

## BNAs - Sandy Loam 1

*Certified  
Reference  
Material*

### Description

Product ID CRM143-50G  
Lot LRAC8918  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

### Certified Values

Analyte	Units	Certified <sup>1,4</sup> Value
1,2,4-Trichlorobenzene	µg/Kg	1477 ± 181
1,3-Dichlorobenzene (m-Dichlorobenzene)	µg/Kg	1625 ± 292
1-Chloronaphthalene	µg/Kg	2809 ± 84
2,3-Dimethylphenol	µg/Kg	4552 ± 137
2,4,5-Trichlorophenol	µg/Kg	3438 ± 245
2,4,6-Trichlorophenol	µg/Kg	2194 ± 251
2,4-Dichlorophenol	µg/Kg	6991 ± 394
2,4-Dimethylphenol	µg/Kg	6357 ± 879
2,4-Dinitrophenol	µg/Kg	2922 ± 523
2,4-Dinitrotoluene (2,4-DNT)	µg/Kg	3318 ± 442
2,6-Dichlorophenol	µg/Kg	4578 ± 874
2,6-Dimethylphenol	µg/Kg	7582 ± 228
2-Chloronaphthalene	µg/Kg	2223 ± 168
2-Chlorophenol	µg/Kg	1678 ± 202
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	µg/Kg	5148 ± 685
2-Methylphenol (o-Cresol)	µg/Kg	6004 ± 573
2-Nitrophenol	µg/Kg	6456 ± 383
3,4-Dimethylphenol	µg/Kg	7185 ± 216
3+4-Methylphenol (m+p-Cresol)	µg/Kg	8033 ± 1613
4-Bromophenyl phenyl ether (BDE-3)	µg/Kg	7169 ± 310
4-Chloro-3-methylphenol	µg/Kg	2071 ± 110
4-Chlorophenyl phenylether	µg/Kg	2052 ± 113
4-Methylphenol (p-Cresol)	µg/Kg	6617 ± 1371
4-Nitrophenol	µg/Kg	6812 ± 595
Acenaphthene	µg/Kg	5489 ± 380



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## Description

Lot **LRAC8918**  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

Acenaphthylene	µg/Kg	1948 ± 240
Anthracene	µg/Kg	2866 ± 237
Benzo(a)anthracene	µg/Kg	5751 ± 552
Benzo(a)pyrene	µg/Kg	5902 ± 612
Benzo(b)fluoranthene	µg/Kg	3010 ± 409
Benzo(b+k)fluoranthene	µg/Kg	6534 ± 196
Benzo(g,h,i)perylene	µg/Kg	1380 ± 136
Benzo(k)fluoranthene	µg/Kg	2215 ± 237
Butyl benzyl phthalate	µg/Kg	3511 ± 384
Carbazole	µg/Kg	5412 ± 407
Chrysene	µg/Kg	1477 ± 72
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	µg/Kg	2905 ± 321
Dibenzo(a,h)anthracene	µg/Kg	3420 ± 302
Dibenzofuran	µg/Kg	6130 ± 253
Dimethyl phthalate	µg/Kg	4537 ± 250
Di-n-butyl phthalate	µg/Kg	1721 ± 154
Di-n-octyl phthalate	µg/Kg	2744 ± 288
Fluoranthene	µg/Kg	2497 ± 222
Fluorene	µg/Kg	3724 ± 222
Hexachlorobutadiene	µg/Kg	1877 ± 245
Indeno(1,2,3-cd) pyrene	µg/Kg	3914 ± 409
Isophorone	µg/Kg	1615 ± 170
Naphthalene	µg/Kg	4458 ± 480
Nitrobenzene	µg/Kg	3539 ± 266
n-Nitrosodimethylamine	µg/Kg	1580 ± 402
n-Nitrosodiphenylamine	µg/Kg	2854 ± 379
Pentachlorophenol	µg/Kg	3411 ± 358
Phenanthrene	µg/Kg	5052 ± 385
Phenol	µg/Kg	2660 ± 184
Pyrene	µg/Kg	2964 ± 256
Pyridine	µg/Kg	1008 ± 30

## Informational Values



# Certificate of Analysis

## BNAs - Sandy Loam 1

*Certified  
Reference  
Material*

### Description

Product ID CRM143-50G  
Lot LRAC8918  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

Analyte	Units	Suggested Acceptance Windows	Standard Deviation
1,2,4-Trichlorobenzene	µg/Kg	148 to 2853	459
1,3-Dichlorobenzene (m-Dichlorobenzene)	µg/Kg	163 to 3440	605
1-Chloronaphthalene	µg/Kg	1123 to 4494	562
2,3-Dimethylphenol	µg/Kg	1821 to 7284	910
2,4,5-Trichlorophenol	µg/Kg	1003 to 5872	811
2,4,6-Trichlorophenol	µg/Kg	640 to 3748	518
2,4-Dichlorophenol	µg/Kg	2391 to 11591	1533
2,4-Dimethylphenol	µg/Kg	0.00 to 13959	2534
2,4-Dinitrophenol	µg/Kg	1169 to 4675	584
2,4-Dinitrotoluene (2,4-DNT)	µg/Kg	1248 to 5388	690
2,6-Dichlorophenol	µg/Kg	1831 to 7324	916
2,6-Dimethylphenol	µg/Kg	3033 to 12132	1516
2-Chloronaphthalene	µg/Kg	748 to 3699	492
2-Chlorophenol	µg/Kg	415 to 2942	421
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	µg/Kg	0.00 to 10347	1733
2-Methylphenol (o-Cresol)	µg/Kg	1306 to 10702	1566
2-Nitrophenol	µg/Kg	1534 to 11379	1641
3,4-Dimethylphenol	µg/Kg	2874 to 11495	1437
3+4-Methylphenol (m+p-Cresol)	µg/Kg	4054 to 16218	2027
4-Bromophenyl phenyl ether (BDE-3)	µg/Kg	2901 to 11437	1423
4-Chloro-3-methylphenol	µg/Kg	677 to 3464	464
4-Chlorophenyl phenylether	µg/Kg	756 to 3348	432
4-Methylphenol (p-Cresol)	µg/Kg	2647 to 10587	1323
4-Nitrophenol	µg/Kg	681 to 14762	2650
Acenaphthene	µg/Kg	2243 to 8736	1082
Acenaphthylene	µg/Kg	712 to 3183	412
Anthracene	µg/Kg	1218 to 4515	550
Benzo(a)anthracene	µg/Kg	2806 to 8696	982
Benzo(a)pyrene	µg/Kg	2512 to 9292	1130
Benzo(b)fluoranthene	µg/Kg	1197 to 4822	604
Benzo(b+k)fluoranthene	µg/Kg	2614 to 10454	1307



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## Description

Lot **LRAC8918**  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

Benzo(g,h,i)perylene	µg/Kg	489 to 2271	297
Benzo(k)fluoranthene	µg/Kg	892 to 3537	441
Butyl benzyl phthalate	µg/Kg	1255 to 5766	752
Carbazole	µg/Kg	2032 to 8792	1127
Chrysene	µg/Kg	669 to 2284	269
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	µg/Kg	765 to 5045	713
Dibenzo(a,h)anthracene	µg/Kg	1257 to 5583	721
Dibenzofuran	µg/Kg	2766 to 9493	1121
Dimethyl phthalate	µg/Kg	1842 to 7231	898
Di-n-butyl phthalate	µg/Kg	495 to 2947	409
Di-n-octyl phthalate	µg/Kg	690 to 4798	685
Fluoranthene	µg/Kg	984 to 4009	504
Fluorene	µg/Kg	1638 to 5810	695
Hexachlorobutadiene	µg/Kg	425 to 3329	484
Indeno(1,2,3-cd) pyrene	µg/Kg	870 to 6957	1015
Isophorone	µg/Kg	437 to 2792	392
Naphthalene	µg/Kg	1131 to 7784	1109
Nitrobenzene	µg/Kg	1024 to 6054	838
n-Nitrosodimethylamine	µg/Kg	632 to 2528	316
n-Nitrosodiphenylamine	µg/Kg	1142 to 4567	571
Pentachlorophenol	µg/Kg	341 to 7037	1209
Phenanthrene	µg/Kg	2307 to 7798	915
Phenol	µg/Kg	681 to 4639	660
Pyrene	µg/Kg	1118 to 4810	615
Pyridine	µg/Kg	403 to 1613	202

### Additional Information:

#### DESCRIPTION

The organic sample is a soil containing extractable BNAs for analysis by 8100, 8270, 8310 or equivalent methods.

This product consist of a 5 vials each containing 10g of soil for analysis of PAHs. Each vial is identical and has been tested how homogeneity. Only one vial is need for test the remaining vials are to be used for multiple methods or routine testing.

The soil has been sterilized to minimize degradation of the sample.

The sample has been sized to 100 mesh.

Required storage condition is 4°C.

The sample has been intentionally prepared with an apparent headspace.

#### STORAGE

The sample should be stored at 4°C. It has been determined to be stable for the duration of the expiration date.

After sub-sampling replace cap securely and store remaining sample at 4°C.

The shelf life of the product was determined by historic stability of similar CRM's. The expiration date may be extended based on stock and popularity upon successful stability testing by a 17025 accredited laboratory.

# Certificate of Analysis

## BNAs - Sandy Loam 1

*Certified  
Reference  
Material*

### Description

**Product ID** CRM143-50G  
**Lot** LRAC8918  
**Expiration Date** January 2024  
**Manufacturing Date** January 2021  
**Storage Conditions** Refrigerate  
**Solvent/Matrix** SOIL

Stability and shelf life after opening must be determined by the user, taking into account sampling frequency/volume and all local conditions.

### SAMPLE PREPARATION

Extract the complete contents of a single vial. Transfer entire contents of one vial to extraction vessel. Rinse vial and cap with extraction solvent.

Assume a 10g sample size for all calculations.

Note: Sample extracts and calibration solutions should be in the same solvent.

Report all results on a wet weight basis, do not correct for moisture.

NOTE: For method 8100 and using a packed column gas chromatographic method or cannot adequately resolve the following may coelute in four pairs of compounds: anthracene and phenanthrene; chrysene and benzo(a)anthracene; benzo(b)fluoranthene and benzo(k)fluoranthene; and dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene.

### SCOPE AND APPLICATION

The BNAs in Soil Certified Reference Material (CRM) consists of 5 10mL VOA vials, with a Teflon lined closures containing approximately 10 grams of soil, fortified with BNAs. Being a natural matrix waste sample the analyst is challenged by the same preparation problems, analytical interferences, etc. as is typical for similar matrices received by the laboratory for analysis.



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## Description

Lot **LRAC8918**  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

**1 Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.  
**4 Ucrm - Uncertainty** values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. K=2 unless specified. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**k:** Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Assume 2.0 for a **Confidence interval = 95%**

**6 Analytical Value-** For QC verification of the certified value only- not to be used in calculations. Represents the analytical data obtained by comparison to a standard as analyzed by the method described in the CoA or another acceptable method. The result may differ from the certified value and UCRM based on method uncertainty as well as the uncertainty associated with the standard used for comparison.

**Traceability:** The standard was manufactured under an ISO/IEC 17025:2017 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Homogeneity:** Homogeneity was assessed in accordance with ISO 17034:2016. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

Expiration is at end of month given on certificate and label.

MSDS reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH ISO/IEC 17025:2017 (ANAB Cert AT-1467) and ISO 17034:2016 (ANAB Cert AR-1470).



Andy Ommen - QC Manager



Mark Pooler - QA Supervisor

**Certification Date** January 05, 2021  
**Version** 0-152021





# Certificate of Analysis

**Product Name:** Toxic Substances Standard

**Product Number:** US-103N-1

**Lot Issue Date:** 25-May-2021

**Lot Number:** 0006609664

**Expiration Date:** 30-Jun-2024

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
benzoic acid	000065-85-0	RM01884	2005 ± 10 µg/mL
o-cresol	000095-48-7	RM12877	2005 ± 10 µg/mL
p-cresol	000106-44-5	RM01988	2005 ± 10 µg/mL
2,4,5-trichlorophenol	000095-95-4	NT00344	2004 ± 10 µg/mL

**Matrix:** methylene chloride (dichloromethane)

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

*[Handwritten signature]*  
*5/11/22*

**K004539**

toxic sub mix#1

Solvent / Lot: methylene chloride

Prep: 5/11/2022 by JZ

Exp: 6/30/2024

Location:



ISO 17034 Cert  
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 1 of 2

[www.agilent.com/quality/](http://www.agilent.com/quality/)  
CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937





## Reference Material Certificate

**Product Name:** Phenols Standard **Lot Number:** 0006648297  
**Product Number:** US-107N-1 **Lot Issue Date:** 17-Nov-2021  
**Storage Conditions:** Store at Room Temperature (15° to 30°C). **Expiration Date:** 31-Dec-2024

Component Name	CERTIFIED VALUES			CAS#	Analyte Lot
	Concentration	Expanded Uncertainty			
4-chloro-3-methylphenol	2006	± 10 µg/mL		000059-50-7	RM01885
2-chlorophenol	2007	± 10 µg/mL		000095-57-8	RM01871
2,4-dichlorophenol	2005	± 10 µg/mL		000120-83-2	RM13878
2,4-dimethylphenol	2006	± 10 µg/mL		000105-67-9	RM13009
2,4-dinitrophenol	2006	± 10 µg/mL		000051-28-5	RM02112
2-methyl-4,6-dinitrophenol	2005	± 10 µg/mL		000534-52-1	RM02292
2-nitrophenol	2007	± 10 µg/mL		000088-75-5	RM13445
4-nitrophenol	2006	± 10 µg/mL		000100-02-7	RM03752
pentachlorophenol	2006	± 10 µg/mL		000087-86-5	RM02474
phenol	2006	± 10 µg/mL		000108-95-2	RM11471
2,4,6-trichlorophenol	2006	± 10 µg/mL		000088-06-2	RM18096

**Matrix:** methylene chloride (dichloromethane)

**Description:**

This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Safety:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this analytical reference material.

*JZ* 5/11/22



ISO 17034



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## Reference Material Certificate

Product Name: PAH Standard

Lot Number: 0006627349

Product Number: US-106N-1

Lot Issue Date: 17-Sep-2021

Storage Conditions: Store at Room Temperature (15° to 30°C).

Expiration Date: 31-Oct-2024

Component Name	CERTIFIED VALUES			CAS#	Analyte Lot
	Concentration	Expanded Uncertainty			
acenaphthene	2007	± 10 µg/mL		000083-32-9	RM10879
acenaphthylene	2004	± 10 µg/mL		000208-96-8	RM10891
anthracene	2006	± 10 µg/mL		000120-12-7	RM14212
benz[a]anthracene	2006	± 10 µg/mL		000056-55-3	RM16072
benzo[b]fluoranthene	2006	± 10 µg/mL		000205-99-2	RM14571
benzo[k]fluoranthene	2006	± 10 µg/mL		000207-08-9	RM18376
benzo[ghi]perylene	2006	± 10 µg/mL		000191-24-2	RM15761
benzo[a]pyrene	2006	± 10 µg/mL		000050-32-8	RM17573
chrysene	2007	± 10 µg/mL		000218-01-9	RM13771
dibenz[a,h]anthracene	2006	± 10 µg/mL		000053-70-3	RM06786
fluoranthene	2006	± 10 µg/mL		000206-44-0	RM12277
fluorene	2006	± 10 µg/mL		000086-73-7	RM09441
indeno[1,2,3-cd]pyrene	2006	± 10 µg/mL		000193-39-5	RM14192
naphthalene	2007	± 10 µg/mL		000091-20-3	RM10445
phenanthrene	2005	± 10 µg/mL		000085-01-8	RM10495
pyrene	2005	± 10 µg/mL		000129-00-0	RM16126

Matrix: methylene chloride/benzene (1:1)

**Description:**

This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**K004541**

SVOA PAH STD 2000ug/ml

Solvent / Lot: DCM/BENZENE

Prep: 5/11/2022 by JZ

Exp: 10/31/2024

Location: Fridge 19

Page: 1 of 2

CSD-QA-015.1





Reference Materials Producer  
Cert #2495.01



## Certificate of Analysis



Chemical Testing  
Cert #2495.02

**Catalog Number:** ECS-A-030 **Lot No.** AA210126005  
**Description:** Base/Neutrals Mix 1  
**Matrix:** Methylene Chloride **Manufactured Date:** 1-26-2021  
**Expiration Date:** 1-26-2024

This SPEXOrganics® Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for organic chromatography instrumentation such as GC, GC-MS, LC, and LC-MS. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

### Certified Compounds:

<u>Compound</u>	<u>CAS #</u>	<u>Labeled</u>	<u>Purity</u>	<u>Certified†</u>	<u>Uncertainty</u>
1,2,4-Trichlorobenzene	120-82-1	2000 µg/mL	99%	2010 µg/mL	± 50 µg/mL
1,2-Dichlorobenzene	95-50-1	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
1,3-Dichlorobenzene	541-73-1	2000 µg/mL	98%	2021 µg/mL	± 51 µg/mL
1,4-Dichlorobenzene	106-46-7	2000 µg/mL	99%	2012 µg/mL	± 50 µg/mL
2,4-Dinitrotoluene	121-14-2	2000 µg/mL	97%	2006 µg/mL	± 50 µg/mL
2,6-Dinitrotoluene	606-20-2	2000 µg/mL	99.6%	2012 µg/mL	± 50 µg/mL
2-Chloronaphthalene	91-58-7	2000 µg/mL	98%	2004 µg/mL	± 50 µg/mL
4-Bromodiphenyl ether	101-55-3	2000 µg/mL	99%	2022 µg/mL	± 51 µg/mL
4-Chlorophenyl-phenyl ether	7005-72-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Azobenzene	103-33-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Bis(2-chloro-1-methylethyl) ether	108-60-1	2000 µg/mL	98.9%	2010 µg/mL	± 50 µg/mL
bis(2-Chloroethoxy)methane	111-91-1	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
bis(2-Chloroethyl)ether	111-44-4	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
Bis(2-Ethylhexyl)phthalate	117-81-7	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Butylbenzyl phthalate	85-68-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Carbazole	86-74-8	2000 µg/mL	95%	2009 µg/mL	± 50 µg/mL
Di-n-butyl phthalate	84-74-2	2000 µg/mL	99%	2020 µg/mL	± 50 µg/mL
Di-n-octyl phthalate	117-84-0	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Diethyl phthalate	84-66-2	2000 µg/mL	99.5%	2002 µg/mL	± 50 µg/mL
Dimethyl phthalate	131-11-3	2000 µg/mL	99%	2006 µg/mL	± 50 µg/mL
Hexachlorobenzene	118-74-1	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachlorobutadiene	87-68-3	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
Hexachlorocyclopentadiene	77-47-4	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachloroethane	67-72-1	2000 µg/mL	98%	2003 µg/mL	± 50 µg/mL
Isophorone	78-59-1	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
N-Nitrosodi-n-propylamine	621-64-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
N-Nitrosodiphenylamine	86-30-6	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
Nitrobenzene	98-95-3	2000 µg/mL	99%	2001 µg/mL	± 50 µg/mL
Pyridine	110-86-1	2000 µg/mL	99%	2004 µg/mL	± 50 µg/mL
N-Nitrosodimethylamine	62-75-9	2000 µg/mL	97%	2000 µg/mL	± 50 µg/mL

*Certificate of Reference Material*

<b>Catalog Number:</b>	ECS-A-030	<b>Lot No.</b>	AA210126005
<b>Description:</b>	Base/Neutrals Mix 1	<b>Manufactured Date:</b>	1-26-2021
<b>Matrix:</b>	Methylene Chloride	<b>Expiration Date:</b>	1-26-2024

**Final Solution Verification:**

Final solution integrity verified by Gas Chromatography/Mass Spectrometry. The mass spectrum of each compound was confirmed against the NIST mass spectral database.

† Certified concentration based on gravimetric weights and corrected for the purity of the compound(s) used to prepare the standard. Analytical balance calibration is verified daily with C1 weight set #23-190006 which is registered with Atlantic Scale, and traceable to NIST and NJ Division of Weights and Measures.

This CRM is guaranteed stable and accurate to within the uncertainty listed for the certified value. This includes uncertainty components due to preparation, homogeneity, short term and long term stability. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further information, contact the Sales Support Department at crmsales@spexcsp.com.

Date of Certification: 1-26-2021

Certifying Officer: Shannon Mave

# Report of Certification

**Catalog Number:** ECS-A-030 **Lot No.** AA210126005  
**Description:** Base/Neutrals Mix 1  
**Matrix:** Methylene Chloride **Manufactured Date:** 1-26-2021  
**Expiration Date:** 1-26-2024

**This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 Quality System consistent with the following standards:**

- ISO 9001:2008: Quality management systems - Requirements - Certified by UL-DQS
- ISO 17025:2005: General Requirements for the Competence of Testing and Calibration Laboratories - Accredited by A2LA
- ISO Guide 34:2009: General Requirements for the Competence of Reference Material Producers - Accredited by A2LA
- ISO Guide 31:2000: Reference Materials - Contents of Certificates and Labels
- ISO Guide 35:2006: Reference Materials - General and statistical principals for certification
- Guide to the Expression of Uncertainty in Measurement 1997
- EURACHEM/CITAC Guide: Qualifying Uncertainty in Analytical Measurements - Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12-2000: Guidelines for the requirements for the competence of reference material producers
- ISO/REMCO N280

## **Storage Requirements:**

To ensure the stability of the product once it arrives in your laboratory, please store this product in a refrigerator (2°C to 8°C). Note: Shipping conditions may differ from storage conditions. The EXPIRATION DATE is calculated from the MANUFACTURED DATE using our stability data and is applicable only if the product is unopened and stored under the prescribed conditions.

## **Instructions for Use:**

Let material come to room temperature before use. Check for precipitate and if necessary sonicate for one minute. If compounds do not dissolve after one minute then sonicate further until the product is dissolved. A clear appearance is acceptable. The minimum recommended amount that should be removed from this vial is 5 µL with a 25 µL gas tight syringe. All solutions should be thoroughly mixed, by shaking, prior to use. All surfaces that come in contact with the solution must be thoroughly cleaned prior to use. Dilutions should be performed only with Class A volumetric glassware.

## **Material Source:**

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For assistance, please contact sales support at crmsales@spexcsp.com.

## **Method of Preparation:**

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, and analytical instrumentation have been qualified prior to use. The highest purity solvents and Class A / calibrated volumetrics have been used in all preparations.

## **Homogeneity:**

The homogeneity of this CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4300-HOMOGEN-1A. This is consistent with the intended use of this CRM. The Degree of Homogeneity, as expressed as maximum between-bottle variation, is 1.2%

## **Statistical Estimator and Confidence Limits:**

The Certified value 'X' as listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$  where X=certified value, U=expanded uncertainty, x=property value
- $U = k u_c$  where k=2 is the coverage factor at the 95% confidence level
- $u_c =$  combined standard uncertainty obtained by combining the individual compound standard uncertainty components  $u_i$ , where  $u_c = \sqrt{\sum u_i^2}$

## **Legal Notice:**

SPEX CertiPrep Certified Reference Materials are not for any cosmetic, drug, or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep be liable for any loss of profits or any incidental, special, or consequential damages.

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Phone: 1-732-549-7144 • Fax 1-732-603-9647





## Certificate of Analysis

**Catalog Number:** ECS-A-030

**Lot No.** AA210126005

**Description:** Base/Neutrals Mix 1

**Matrix:** Methylene Chloride

**Manufactured Date:** 1-26-2021

**Expiration Date:** 1-26-2024

This SPEXOrganics® Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for organic chromatography instrumentation such as GC, GC-MS, LC, and LC-MS. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

### Certified Compounds:

<u>Compound</u>	<u>CAS #</u>	<u>Labeled</u>	<u>Purity</u>	<u>Certified†</u>	<u>Uncertainty</u>
1,2,4-Trichlorobenzene	120-82-1	2000 µg/mL	99%	2010 µg/mL	± 50 µg/mL
1,2-Dichlorobenzene	95-50-1	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
1,3-Dichlorobenzene	541-73-1	2000 µg/mL	98%	2021 µg/mL	± 51 µg/mL
1,4-Dichlorobenzene	106-46-7	2000 µg/mL	99%	2012 µg/mL	± 50 µg/mL
2,4-Dinitrotoluene	121-14-2	2000 µg/mL	97%	2006 µg/mL	± 50 µg/mL
2,6-Dinitrotoluene	606-20-2	2000 µg/mL	99.6%	2012 µg/mL	± 50 µg/mL
2-Chloronaphthalene	91-58-7	2000 µg/mL	98%	2004 µg/mL	± 50 µg/mL
4-Bromodiphenyl ether	101-55-3	2000 µg/mL	99%	2022 µg/mL	± 51 µg/mL
4-Chlorophenyl-phenyl ether	7005-72-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Azobenzene	103-33-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Bis(2-chloro-1-methylethyl) ether	108-60-1	2000 µg/mL	98.9%	2010 µg/mL	± 50 µg/mL
bis(2-Chloroethoxy)methane	111-91-1	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
bis(2-Chloroethyl)ether	111-44-4	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
Bis(2-Ethylhexyl)phthalate	117-81-7	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Butylbenzyl phthalate	85-68-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Carbazole	86-74-8	2000 µg/mL	95%	2009 µg/mL	± 50 µg/mL
Di-n-butyl phthalate	84-74-2	2000 µg/mL	99%	2020 µg/mL	± 50 µg/mL
Di-n-octyl phthalate	117-84-0	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Diethyl phthalate	84-66-2	2000 µg/mL	99.5%	2002 µg/mL	± 50 µg/mL
Dimethyl phthalate	131-11-3	2000 µg/mL	99%	2006 µg/mL	± 50 µg/mL
Hexachlorobenzene	118-74-1	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachlorobutadiene	87-68-3	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
Hexachlorocyclopentadiene	77-47-4	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachloroethane	67-72-1	2000 µg/mL	98%	2003 µg/mL	± 50 µg/mL
Isophorone	78-59-1	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
N-Nitrosodi-n-propylamine	621-64-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
N-Nitrosodiphenylamine	86-30-6	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
Nitrobenzene	98-95-3	2000 µg/mL	99%	2001 µg/mL	± 50 µg/mL
Pyridine	110-86-1	2000 µg/mL	99%	2004 µg/mL	± 50 µg/mL
N-Nitrosodimethylamine	62-75-9	2000 µg/mL	97%	2000 µg/mL	± 50 µg/mL

K004542

## Certificate of Reference Material

**Catalog Number:** ECS-A-030

**Lot No.** AA210126005

**Description:** Base/Neutrals Mix 1

**Matrix:** Methylene Chloride

**Manufactured Date:** 1-26-2021

**Expiration Date:** 1-26-2024

### **Final Solution Verification:**

Final solution integrity verified by Gas Chromatography/Mass Spectrometry. The mass spectrum of each compound was confirmed against the NIST mass spectral database.

† Certified concentration based on gravimetric weights and corrected for the purity of the compound(s) used to prepare the standard. Analytical balance calibration is verified daily with C1 weight set #23-190006 which is registered with Atlantic Scale, and traceable to NIST and NJ Division of Weights and Measures.

This CRM is guaranteed stable and accurate to within the uncertainty listed for the certified value. This includes uncertainty components due to preparation, homogeneity, short term and long term stability. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further information, contact the Sales Support Department at crmsales@spexcsp.com.

Date of Certification: 1-26-2021

Certifying Officer: Shannon Nove

# Report of Certification

**Catalog Number:** ECS-A-030 **Lot No.** AA210126005  
**Description:** Base/Neutrals Mix 1  
**Matrix:** Methylene Chloride **Manufactured Date:** 1-26-2021  
**Expiration Date:** 1-26-2024

**This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 Quality System consistent with the following standards:**

- ISO 9001:2008: Quality management systems - Requirements - Certified by UL-DQS
- ISO 17025:2005: General Requirements for the Competence of Testing and Calibration Laboratories - Accredited by A2LA
- ISO Guide 34:2009: General Requirements for the Competence of Reference Material Producers - Accredited by A2LA
- ISO Guide 31:2000: Reference Materials - Contents of Certificates and Labels
- ISO Guide 35:2006: Reference Materials - General and statistical principals for certification
- Guide to the Expression of Uncertainty in Measurement 1997
- EURACHEM/CITAC Guide: Qualifying Uncertainty in Analytical Measurements - Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12-2000: Guidelines for the requirements for the competence of reference material producers
- ISO/REMCO N280

## **Storage Requirements:**

To ensure the stability of the product once it arrives in your laboratory, please store this product in a refrigerator (2°C to 8°C). Note: Shipping conditions may differ from storage conditions. The EXPIRATION DATE is calculated from the MANUFACTURED DATE using our stability data and is applicable only if the product is unopened and stored under the prescribed conditions.

## **Instructions for Use:**

Let material come to room temperature before use. Check for precipitate and if necessary sonicate for one minute. If compounds do not dissolve after one minute then sonicate further until the product is dissolved. A clear appearance is acceptable. The minimum recommended amount that should be removed from this vial is 5 µL with a 25 µL gas tight syringe. All solutions should be thoroughly mixed, by shaking, prior to use. All surfaces that come in contact with the solution must be thoroughly cleaned prior to use. Dilutions should be performed only with Class A volumetric glassware.

## **Material Source:**

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For assistance, please contact sales support at crmsales@spexcsp.com.

## **Method of Preparation:**

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, and analytical instrumentation have been qualified prior to use. The highest purity solvents and Class A / calibrated volumetrics have been used in all preparations.

## **Homogeneity:**

The homogeneity of this CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4300-HOMOGEN-1A. This is consistent with the intended use of this CRM. The Degree of Homogeneity, as expressed as maximum between-bottle variation, is 1.2%

## **Statistical Estimator and Confidence Limits:**

The Certified value 'X' as listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$  where X=certified value, U=expanded uncertainty, x=property value
- $U = k u_c$  where k=2 is the coverage factor at the 95% confidence level
- $u_c$  = combined standard uncertainty obtained by combining the individual compound standard uncertainty components  $u_i$ , where  $u_c = \sqrt{\sum u_i^2}$

## **Legal Notice:**

SPEX CertiPrep Certified Reference Materials are not for any cosmetic, drug, or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep be liable for any loss of profits or any incidental, special, or consequential damages.

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# Certificate of Analysis

**Product Name:** 1-Methylnaphthalene Standard

**Product Number:** EPA-1225-1

**Lot Issue Date:** 19-Jul-2021

**Lot Number:** 0006624769

**Expiration Date:** 31-Jul-2023

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
1-methylnaphthalene	000090-12-0	RM07712	999.3 ± 5.0 µg/mL

**Matrix:** methanol (methyl alcohol)

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

**Expiration of Certification:**

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

**Maintenance of Certification:**

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

**K004543**

1-Methylnaphthalene  
Solvent / Lot: MEOH  
Prep: 5/11/2022 by JZ  
Exp: 7/31/2023  
Location:

*JZ*  
*5/11/22*

**Sample lot approver:**

*Monica Bourgeois*  
Monica Bourgeois  
QMS Representative



ISO 17034 Cert  
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 1 of 1

[www.agilent.com/quality/](http://www.agilent.com/quality/)  
CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937



# Certificate of Analysis

**Product Name:** Toxic Substances Standard

**Product Number:** US-104N-1

**Lot Issue Date:** 02-Jul-2021

**Lot Number:** 0006620643

**Expiration Date:** 31-Jul-2023

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
aniline	000062-53-3	RM12853	2005 ± 10 µg/mL
benzyl alcohol	000100-51-6	RM10547	2004 ± 10 µg/mL
4-chloroaniline	000106-47-8	RM01886	2002 ± 10 µg/mL
dibenzofuran	000132-64-9	RM02077	2002 ± 10 µg/mL
2-methylnaphthalene	000091-57-6	RM01258	2006 ± 10 µg/mL
2-nitroaniline	000088-74-4	RM02402	2003 ± 10 µg/mL
3-nitroaniline	000099-09-2	RM02424	2003 ± 10 µg/mL
4-nitroaniline	000100-01-6	RM02425	2003 ± 10 µg/mL

**Matrix:** methylene chloride (dichloromethane)

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**K004544**

toxic sub mix#2

Solvent / Lot: methylene chloride

Prep: 5/11/2022 by JZ

Exp: 7/31/2023

Location:

*JZ* 05/11/22



ISO 17034 Cert  
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 1 of 2

[www.agilent.com/quality/](http://www.agilent.com/quality/)  
CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937





CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31493 Lot No.: A0181243
Description: CLP 04.1 BNA Surrogate Mix
CLP 04.1 BNA Surrogate Mix 1000-1500 µg/mL, Methylene Chloride, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: October 31, 2025 Storage: 10°C or colder
Handling: Sonicate prior to use. Ship: Ambient

Handwritten signature and date: 05/11/22

K004545
CLP 04.1 BNA SURR MIX
Solvent / Lot: AO175316
Prep: 5/11/2022 by JZ
Exp: 10/20/2025
Location:

Table with 7 columns: Elution Order, Compound, CAS #, Purity, Weight, Concentration, and Method. Contains 7 rows of data for various compounds like 2-Fluorophenol, Phenol-d6, 2-Chlorophenol-d4, 1,2-Dichlorobenzene-d4, Nitrobenzene-d5, 2-Fluorobiphenyl, and 2,4,6-Tribromophenol.

# Certificate of Analysis

**Produced by Phenova**

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Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101246

**Lot Number:** CL17953

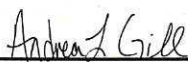
**Description:** Benzoic Acid

**Certification Date:** January 31, 2022

**Storage:** 4 °C

**Expiration Date:** January 31, 2032

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride



Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzoic acid	65-85-0	2000	± 2.714%

**K004603**

Benzoic Acid @2000ug/ml

Solvent / Lot: N/A

Prep: 5/13/2022 by JZ

Exp: 1/31/2032

Location: GC

 5/13/22



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03

# Certificate of Analysis

**Produced by Phenova**

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Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101244

**Lot Number:** CL17662

**Description:** Benzidines Standard

**Certification Date:** December 2, 2021

**Storage:** 4 °C

**Expiration Date:** November 30, 2031

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride

*Andrea Gill*

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 0.211%
3,3'-Dichlorobenzidine	91-94-1	2000	± 1.305%

**K004604**

Benzidines std @2000ug/ml  
Solvent / Lot: Mecl2  
Prep: 5/13/2022 by JZ  
Exp: 11/30/2031  
Location: GC

*JZ 5/13/22*



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



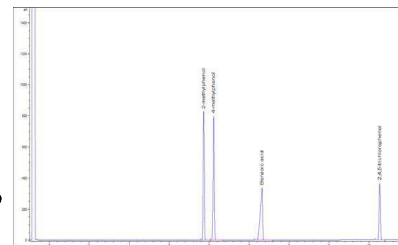
Chemical Testing Laboratory  
Certificate No. 2427.03



# Certificate of Analysis - Certified Reference Material

## EPA TCL Hazardous Substances Mix 1

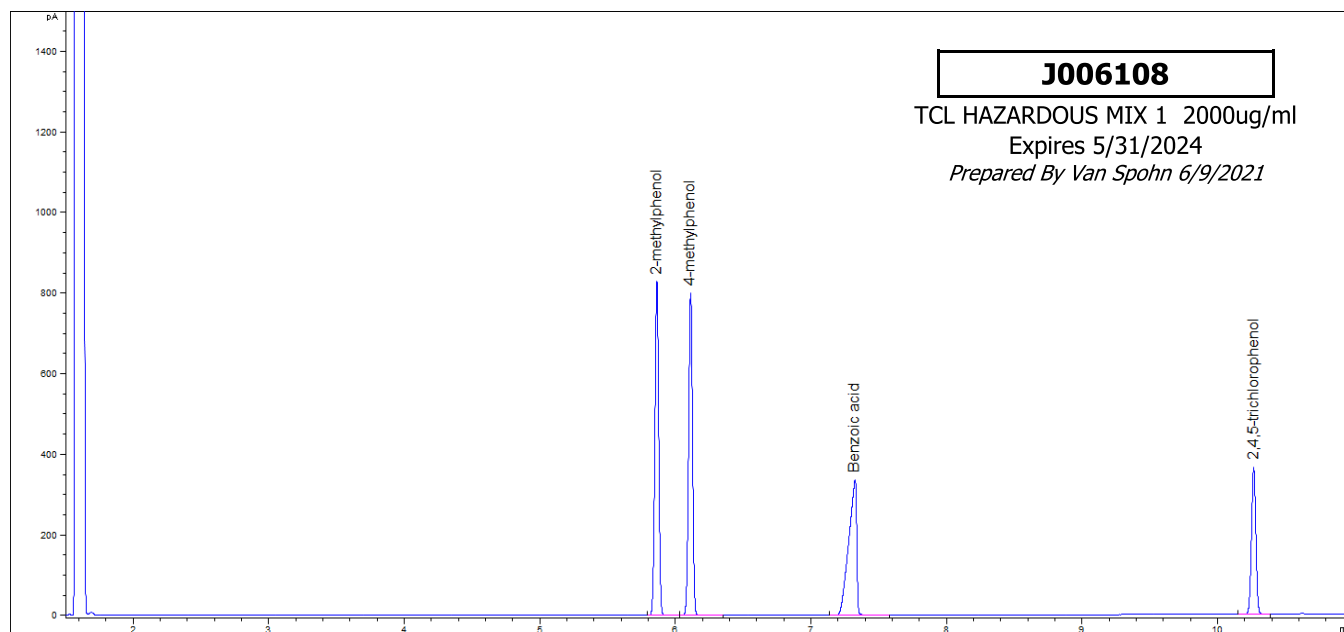
**Product no.:** 48907  
**Lot no.:** LRAC9610  
**Expiry Date:** May 2024  
**Manufacturing Date:** May 2021  
**Storage:** Refrigerate  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAC9610.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)



### Certified Values:

Analyte	Certified Value	Units	Raw Material Purity, %	Elution order	Raw Material Lot
2-METHYLPHENOL CAS# 95-48-7	2004 ± 9	µg/mL	99.0	1	G1735A
4-METHYLPHENOL CAS# 106-44-5	2004 ± 13	µg/mL	98.9	2	06921MG
BENZOIC ACID CAS# 65-85-0	2012 ± 6	µg/mL	99.9	3	LC16514
2,4,5-TRICHLOROPHENOL CAS# 95-95-4	2003 ± 6	µg/mL	99.9	4	JS00008

### Informational Values:



### Additional Information:

**Analytical Method Parameters:**  
 Column: Equity-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness (Column #98)  
 Carrier Gas: H<sub>2</sub>, Flow: 4.5 mL/min  
 Inlet Temperature: 170 °C, Injection Volume: 1 µL  
 Injection Mode: Split, Split Ratio: 20:1



Temperature Program: 80 °C @ 10 °C/min to 190 °C (Hold 5 min)  
Detector: FID  
Detector Temperature: 310 °C

**Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

**Accreditation:** Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

**Certificate issue date:** 20-May-2021



Handwritten signature of Andy Ommen in black ink.

Andy Ommen - QC Manager

Handwritten signature of Mark Pooler in black ink.

Mark Pooler - QA Supervisor

**Details on metrological traceability:** This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

**Associated uncertainty:** Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**Homogeneity assessment:** Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

**Stability assessment:**

Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

**Certificate of analysis revision history:**

Certificate version	Date	Reason for version
LRAC9610.01	20-May-2021	Original Release Date

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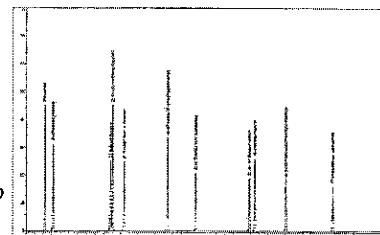
The life science business of Merck KGaA, Darmstadt, Germany  
operates as MilliporeSigma in the US and Canada.



# Certificate of Analysis - Certified Reference Material

## EPA TCL Phenols Mix

**Product no.:** 48904  
**Lot no.:** LRAD0139  
**Expiry Date:** July 2024  
**Manufacturing Date:** July 2021  
**Storage:** REFRIGERATE  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAD0139.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)



### Certified Values:

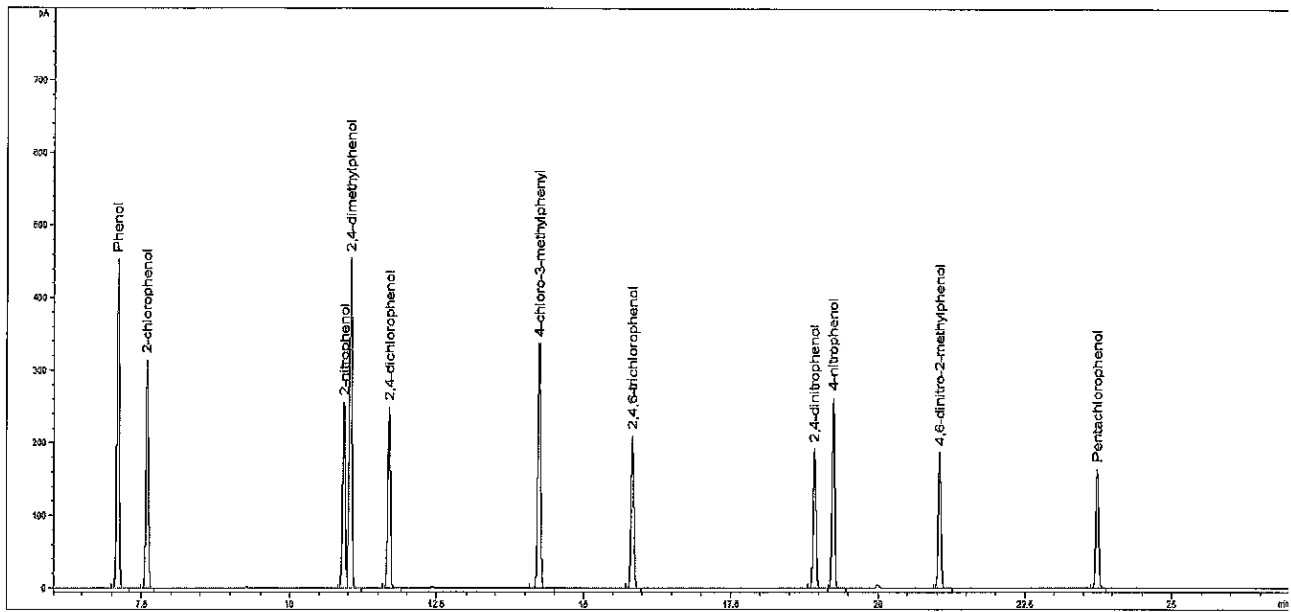
Analyte	Certified Value	Units	Raw Material Purity, %	Raw Material Lot
2-CHLOROPHENOL CAS# 95-57-8	2001 ± 25	µg/mL	99.9	STBG3033V
2-NITROPHENOL CAS# 88-75-5	1999 ± 18	µg/mL	99.3	15905BB
2,4-DIMETHYLPHENOL CAS# 105-67-9	2000 ± 14	µg/mL	99.2	05421CO
2,4-DICHLOROPHENOL CAS# 120-83-2	2000 ± 17	µg/mL	99.5	03221TN
4-CHLORO-3-METHYLPHENOL CAS# 59-50-7	2000 ± 5	µg/mL	99.9	JS00013
2,4,6-TRICHLOROPHENOL CAS# 88-06-2	2002 ± 5	µg/mL	99.5	04212PS
2,4-DINITROPHENOL CAS# 51-28-5	2000 ± 28	µg/mL	66.9	STBJ5751
4-NITROPHENOL CAS# 100-02-7	2000 ± 33	µg/mL	99.0	04628LT
2-METHYL-4,6-DINITROPHENOL CAS# 534-52-1	2000 ± 27	µg/mL	99.7	LC18338
PENTACHLOROPHENOL CAS# 87-86-5	1999 ± 25	µg/mL	97.9	MKCD2150

### ASSAY Method

#### J013597

TCL Phenols Mix 2000ug/ml  
 Solvent / Lot: LRAD0139  
 Prep: 12/30/2021 by VS  
 Exp: 7/31/2024  
 Location:





**METHOD: GC (Bellefonte Method )**

Column: SPB-5, 30 m x 0.53 mm I.D., 1.5 µm film thickness

Carrier Gas: H<sub>2</sub> Flow Rate: 4.5 mL/min

Inlet Temperature: 200 °C Injection Volume: 1.0 µL

Injection Mode: 25:1

Temperature Program: 80 °C (Hold 2 min) @ 6 °C/min to 260 °C (Hold 5 min)

Detector: FID Temperature: 310 °C

**Elution details:**

EO	RT(MIN)	ANALYTE
1	7.095	Phenol
2	7.585	2-chlorophenol
3	10.925	2-nitrophenol
4	11.037	2,4-dimethylphenol
5	11.696	2,4-dichlorophenol
6	14.242	4-chloro-3-methylphenol
7	15.842	2,4,6-trichlorophenol
8	18.93	2,4-dinitrophenol
9	19.25	4-nitrophenol
10	21.05	4,6-dinitro-2-methylphenol
11	23.752	Pentachlorophenol



**Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

**Accreditation:** Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

**Certificate issue date:** 12-Jul-2021



*Andy Ommen*

*Mark Pooler*

Andy Ommen - QC Manager

Mark Pooler - QA Supervisor

**Details on metrological traceability:**

This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

**Associated uncertainty:**

Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**Homogeneity assessment:**

Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

**Stability assessment:**

Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

**Certificate of analysis revision history:**

<b>Certificate version</b>	<b>Date</b>	<b>Reason for version</b>
LRAD0139.01	12-Jul-2021	Original Release Date

**Disclaimer:** The purchaser is required to determine the suitability of this product for any particular application. Sigma-Aldrich RTC makes no warranty of any kind, express or implied, other than its products meet all quality control standards set by Sigma-Aldrich RTC. We do not guarantee that the product can be used for any particular application.

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.





110 Benner Circle  
 Bellefonte, PA 16823-8812  
 Tel: (800)356-1688  
 Fax: (814)353-1309

www.restek.com

**K007194**  
 CLP 04.1 BNA SURR MIX  
 Solvent / Lot: A0187400  
 Prep: 8/5/2022 by VS  
 Exp: 4/30/2026  
 Location:

IAL



# Certificate of Analysis



**FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.**

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

**Catalog No. :** 31493 **Lot No.:** A0187400  
**Description :** CLP 04.1 BNA Surrogate Mix  
CLP 04.1 BNA Surrogate Mix 1000-1500 µg/mL, Methylene Chloride, 1mL/ampul  
**Container Size :** 2 mL **Pkg Amt:** > 1 mL  
**Expiration Date :** April 30, 2026 **Storage:** 10°C or colder  
**Handling:** Sonicate prior to use. **Ship:** Ambient

## CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)			
1	2-Fluorophenol	1,508.0 µg/mL	+/-	8.9571	µg/mL	Gravimetric
	CAS # 367-12-4 (Lot STBJ3299)		+/-	44.0466	µg/mL	Unstressed
	Purity 99%		+/-	53.4340	µg/mL	Stressed
2	Phenol-d6	1,510.0 µg/mL	+/-	8.9689	µg/mL	Gravimetric
	CAS # 13127-88-3 (Lot SL210831)		+/-	44.1050	µg/mL	Unstressed
	Purity 99%		+/-	53.5049	µg/mL	Stressed
3	2-Chlorophenol-d4	1,512.0 µg/mL	+/-	8.9808	µg/mL	Gravimetric
	CAS # 93951-73-6 (Lot PR-30568)		+/-	44.1635	µg/mL	Unstressed
	Purity 99%		+/-	53.5758	µg/mL	Stressed
4	1,2-Dichlorobenzene-d4	1,004.0 µg/mL	+/-	5.9635	µg/mL	Gravimetric
	CAS # 2199-69-1 (Lot PR-32597)		+/-	29.3255	µg/mL	Unstressed
	Purity 99%		+/-	35.5754	µg/mL	Stressed
5	Nitrobenzene-d5	1,004.0 µg/mL	+/-	5.9635	µg/mL	Gravimetric
	CAS # 4165-60-0 (Lot PR-29940A)		+/-	29.3255	µg/mL	Unstressed
	Purity 99%		+/-	35.5754	µg/mL	Stressed
6	2-Fluorobiphenyl	1,004.0 µg/mL	+/-	5.9635	µg/mL	Gravimetric
	CAS # 321-60-8 (Lot 00021384)		+/-	29.3255	µg/mL	Unstressed
	Purity 99%		+/-	35.5754	µg/mL	Stressed
7	2,4,6-Tribromophenol	1,502.0 µg/mL	+/-	8.9214	µg/mL	Gravimetric
	CAS # 118-79-6 (Lot MKCJ7664)		+/-	43.8714	µg/mL	Unstressed
	Purity 99%		+/-	53.2214	µg/mL	Stressed

8	p-Terphenyl-d14		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 1718-51-0	(Lot PR-30504)		+/- 29.2671	µg/mL	Unstressed
	Purity 99%			+/- 35.5046	µg/mL	Stressed

**Solvent:** Methylene chloride  
**CAS #** 75-09-2  
**Purity** 99%

**Tech Tips:**

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

**Column:**  
30m x 0.25mm x 0.25µm  
Rtx-5 (cat.#10223)

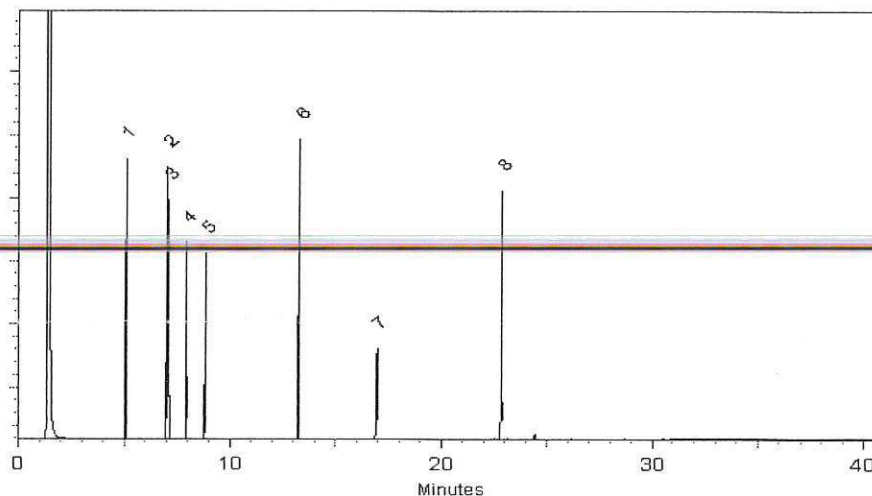
**Carrier Gas:**  
hydrogen-constant pressure 10 psi.

**Temp. Program:**  
40°C (hold 2 min.) to 330°C  
@ 10°C/min. (hold 10 min.)

**Inj. Temp:**  
250°C

**Det. Temp:**  
330°C

**Det. Type:**  
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

*Bryan Snyder*  
Bryan Snyder - Operations Tech I

**Date Mixed:** 17-Jul-2022      **Balance:** 1128353505

*Christie Mills*  
Christie Mills - Operations Tech II - ARM QC

**Date Passed:** 21-Jul-2022

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397

## General Certified Reference Material Notes

### Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

### Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

### Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value ( includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

*k* is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-Us](http://www.restek.com/Contact-Us) for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at [www.restek.com/Contact-Us](http://www.restek.com/Contact-Us).
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

### Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

### Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



# Certificate of Analysis

**Produced by Phenova**

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com  
Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101444

**Lot Number:** CL18355

**Description:** 8270 Calibration Standard

**Certification Date:** July 25, 2022

**Storage:** -18 °C

**Expiration Date:** August 31, 2023

**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

**K007995**

SVOA-8270 LCS MIX 1000ug/ml

Solvent / Lot: N/A

Prep: 8/29/2022 by JZ

Exp: 8/31/2023

Location: FREEZER 44



Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Acenaphthene	83-32-9	1000	± 0.300%
Acenaphthylene	208-96-8	1000	± 0.225%
Anthracene	120-12-7	1000	± 6.858%
Azobenzene	103-33-3	1000	± 0.224%
Benzo(a)anthracene	56-55-3	1000	± 0.247%
Benzo(a)pyrene	50-32-8	1000	± 0.270%
Benzo(b)fluoranthene	205-99-2	1000	± 0.635%
Benzo(k)fluoranthene	207-08-9	1000	± 0.682%
Benzo(g,h,i)perylene	191-24-2	1000	± 0.272%
Benzyl alcohol	100-51-6	1000	± 0.231%
Benzyl butyl phthalate	85-68-7	1000	± 0.480%
bis(2-Chloroethoxy)methane	111-91-1	1000	± 0.479%
bis(2-Chloroethyl) ether	111-44-4	1000	± 0.479%
bis(2-Chloroisopropyl) ether	108-60-1	1000	± 0.550%
bis(2-Ethylhexyl) adipate	103-23-1	1000	± 0.479%
bis(2-Ethylhexyl) phthalate	117-81-7	1000	± 0.479%
4-Bromophenyl phenyl ether	101-55-3	1000	± 0.479%
Carbazole	86-74-8	1000	± 0.146%

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Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
4-Chloroaniline	106-47-8	1000	± 0.300%
4-Chloro-3-methylphenol	59-50-7	1000	± 0.545%
2-Chloronaphthalene	91-58-7	1000	± 0.224%
2-Chlorophenol	95-57-8	1000	± 0.507%
4-Chlorophenyl phenyl ether	7005-72-3	1000	± 0.479%
Chrysene	218-01-9	1000	± 0.145%
Dibenz(a,h)anthracene	53-70-3	1000	± 1.058%
Dibenzofuran	132-64-9	1000	± 0.302%
Di-n-butyl phthalate	84-74-2	1000	± 0.518%
1,2-Dichlorobenzene	95-50-1	1000	± 0.247%
1,3-Dichlorobenzene	541-73-1	1000	± 0.225%
1,4-Dichlorobenzene	106-46-7	1000	± 0.224%
2,4-Dichlorophenol	120-83-2	1000	± 0.545%
Diethyl phthalate	84-66-2	1000	± 0.518%
2,4-Dimethylphenol	105-67-9	1000	± 0.507%
Dimethyl phthalate	131-11-3	1000	± 0.518%
1,2-Dinitrobenzene	528-29-0	1000	± 0.361%
1,3-Dinitrobenzene	99-65-0	1000	± 0.300%
1,4-Dinitrobenzene	100-25-4	1000	± 0.242%
2,4-Dinitrophenol	51-28-5	1000	± 0.545%
2,4-Dinitrotoluene	121-14-2	1000	± 1.128%



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**Catalog No.:** AL0-101444

**Lot Number:** CL18355

**Description:** 8270 Calibration Standard

**Certification Date:** July 25, 2022

**Storage:** -18 °C

**Expiration Date:** August 31, 2023

**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2,6-Dinitrotoluene	606-20-2	1000	± 0.224%
Di-n-octyl phthalate	117-84-0	1000	± 0.486%
Fluoranthene	206-44-0	1000	± 0.224%
Fluorene	86-73-7	1000	± 0.224%
Hexachlorobenzene	118-74-1	1000	± 0.152%
Hexachlorobutadiene	87-68-3	1000	± 0.746%
Hexachlorocyclopentadiene	77-47-4	1000	± 0.153%
Hexachloroethane	67-72-1	1000	± 0.300%
Indeno(1,2,3-cd)pyrene	193-39-5	1000	± 0.883%
Isophorone	78-59-1	1000	± 0.145%
2-Methyl-4,6-dinitrophenol	534-52-1	1000	± 0.508%
1-Methylnaphthalene	90-12-0	1000	± 0.479%
2-Methylnaphthalene	91-57-6	1000	± 0.487%
2-Methylphenol	95-48-7	1000	± 0.545%
3-Methylphenol	108-39-4	500	± 0.279%
4-Methylphenol	106-44-5	500	± 0.399%
Naphthalene	91-20-3	1000	± 0.226%
2-Nitroaniline	88-74-4	1000	± 0.224%
3-Nitroaniline	99-09-2	1000	± 0.235%
4-Nitroaniline	100-01-6	1000	± 0.300%
Nitrobenzene	98-95-3	1000	± 0.300%

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**Catalog No.:** AL0-101444      **Lot Number:** CL18355  
**Description:** 8270 Calibration Standard      **Certification Date:** July 25, 2022  
**Storage:** -18 °C      **Expiration Date:** August 31, 2023  
**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2-Nitrophenol	88-75-5	1000	± 0.514%
4-Nitrophenol	100-02-7	1000	± 0.519%
N-Nitrosodimethylamine	62-75-9	1000	± 0.503%
N-Nitrosodiphenylamine	86-30-6	1000	± 0.476%
N-Nitrosodi-n-propylamine	621-64-7	1000	± 0.461%
Pentachlorophenol	87-86-5	1000	± 0.202%
Phenanthrene	85-01-8	1000	± 0.145%
Phenol	108-95-2	1000	± 0.545%
Pyrene	129-00-0	1000	± 0.147%
Pyridine	110-86-1	1000	± 0.503%
2,3,4,6-Tetrachlorophenol	58-90-2	1000	± 0.247%
2,3,5,6-Tetrachlorophenol	935-95-5	1000	± 0.247%
1,2,4-Trichlorobenzene	120-82-1	1000	± 0.224%
2,4,5-Trichlorophenol	95-95-4	1000	± 0.507%
2,4,6-Trichlorophenol	88-06-2	1000	± 0.509%

**Notes:** The proper chemical name for Bis(2-Chloroisopropyl) ether is 2,2'-oxybis(1-chloropropane). The analytical uncertainty contribution to the expanded uncertainty for 3 and 4-Methylphenol is measured as the total of the two analytes. N-Nitrosodiphenylamine presents as Diphenylamine at 854 µg/mL.

# Certificate of Analysis

## Produced by Phenova

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Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. Quality Standards: Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$u_{CRM} = \sqrt{u_M^2 + u_H^2 + u_{LTS}^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03

# Certificate of Composition - Analytical Standard

## BASE STOCK

**Product no.:** 22523051  
**Lot no.:** LRAD2751  
**Expiry Date:** June 2024  
**Manufacturing Date:** June 2022  
**Storage:** REFRIGERATE  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAD2751.01 *(Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)*

Analyte	Assigned Value	Units	Raw Material Purity, %	Raw Material Lot
3,3'-DICHLOROBENZIDINE, 100MG, NEAT CAS# 91-94-1	799	µg/mL	99.8	LRAD2376
2,4-DINITROTOLUENE CAS# 121-14-2	801	µg/mL	97.8	LB46632
2,6-DINITROTOLUENE CAS# 606-20-2	800	µg/mL	99.2	11231AN
HEXACHLOROCYCLOPENTADIENE CAS# 77-47-4	800	µg/mL	96.0	LB95525
N-NITROSODIMETHYLAMINE CAS# 62-75-9	800	µg/mL	95.0	2019-030598 5
PERYLENE CAS# 198-55-0	200	µg/mL	99.6	04101PG
ANILINE CAS# 62-53-3	800	µg/mL	99.9	LA41596
4-CHLOROANILINE CAS# 106-47-8	800	µg/mL	100.0	MKBZ6909V
2-NITROANILINE CAS# 88-74-4	799	µg/mL	99.9	07411KN
3-NITROANILINE CAS# 99-09-2	800	µg/mL	99.9	LC09264
4-NITROANILINE CAS# 100-01-6	800	µg/mL	99.9	15609AA
PYRIDINE (LOW WATER) CAS# 110-86-1	800	µg/mL	100.0	SHBJ9218

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user's location. Open slowly and carefully to avoid dispersion of the material.



**Health and safety information:**

All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

**Certificate issue date:**

03 JUN 2022



Andy Ommen - QC Manager



Scott Stetler - QA Manager

**Certificate of analysis revision history:**

Certificate version	Date	Reason for version
LRAD2751.01	03 JUN 2022	Original Release Date

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.



# Certificate of Composition - Analytical Standard

## ACID STOCK

**Product no.:** 22523046  
**Lot no.:** LRAD2750  
**Expiry Date:** June 2024  
**Manufacturing Date:** June 2022  
**Storage:** REFRIGERATE  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAD2750.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)

Analyte	Assigned Value	Units	Raw Material Purity, %	Raw Material Lot
2,4-DIMETHYLPHENOL CAS# 105-67-9	800	µg/mL	99.9	LB88935
2,4-DICHLOROPHENOL CAS# 120-83-2	800	µg/mL	100.0	BCBZ6787
2,4,5-TRICHLOROPHENOL CAS# 95-95-4	801	µg/mL	99.9	JS00008
2,4-DINITROPHENOL CAS# 51-28-5	1799	µg/mL	66.9	STBJ5751
2,4,6-TRICHLOROPHENOL CAS# 88-06-2	800	µg/mL	98.7	LB82983
4-CHLORO-3-METHYLPHENOL CAS# 59-50-7	800	µg/mL	100.0	BCCD4461
4-NITROPHENOL CAS# 100-02-7	800	µg/mL	100.0	MKCN1089
2-METHYL-4,6-DINITROPHENOL CAS# 534-52-1	1800	µg/mL	100.0	BCBX5762
PENTACHLOROPHENOL CAS# 87-86-5	800	µg/mL	99.0	23614-01
BENZOIC ACID CAS# 65-85-0	1800	µg/mL	99.9	LC16514

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user's location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.



Certificate issue date: 03 JUN 2022



Andy Ommen - QC Manager



Scott Stetler - QA Manager

**Certificate of analysis revision history:**

Certificate version	Date	Reason for version
LRAD2750.01	03 JUN 2022	Original Release Date

**Disclaimer:** The purchaser is required to determine the suitability of this product for any particular application. Sigma-Aldrich RTC makes no warranty of any kind, express or implied, other than its products meet all quality control standards set by Sigma-Aldrich RTC. We do not guarantee that the product can be used for any particular application.

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.





# Certificate of Analysis

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## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101244

**Lot Number:** CL18939

**Description:** Benzidines Standard

**Certification Date:** September 7, 2022

**Storage:** 4 °C

**Expiration Date:** August 31, 2032

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride



Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 3.812%
3,3'-Dichlorobenzidine	91-94-1	2000	± 1.419%

### L001288

Benzidines std @2000ug/ml  
Solvent / Lot: CL18939  
Prep: 2/7/2023 by VS  
Exp: 8/31/2032  
Location: GC



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Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
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## Certified Reference Material

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**Catalog No.:** AL0-101443

**Lot Number:** CL18741

**Description:** Aniline

**Certification Date:** July 21, 2022

**Storage:** 4 °C

**Expiration Date:** July 31, 2030

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride



Aaron Duker, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aniline	62-53-3	1000	± 1.719%

### L001290

Aniline-1000ug/mL  
Solvent / Lot: CL18741  
Prep: 2/7/2023 by VS  
Exp: 7/31/2030  
Location: GC



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## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101444

**Lot Number:** CL18811

**Description:** 8270 Calibration Standard

**Certification Date:** August 9, 2022

**Storage:** -18 °C

**Expiration Date:** November 30, 2023

**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

### L001291

SVOA-8270 LCS MIX 1000ug/ml

Solvent / Lot: CL18811

Prep: 2/7/2023 by VS

Exp: 11/30/2023

Location: FREEZER 44



Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	µg/mL	Expanded Uncertainty
Acenaphthene	83-32-9	1000	± 1.643%
Acenaphthylene	208-96-8	1000	± 1.317%
Anthracene	120-12-7	1000	± 2.136%
Azobenzene	103-33-3	1000	± 1.630%
Benzo(a)anthracene	56-55-3	1000	± 2.372%
Benzo(a)pyrene	50-32-8	1000	± 3.028%
Benzo(b)fluoranthene	205-99-2	1000	± 2.377%
Benzo(k)fluoranthene	207-08-9	1000	± 2.286%
Benzo(g,h,i)perylene	191-24-2	1000	± 2.561%
Benzyl alcohol	100-51-6	1000	± 1.803%
Benzyl butyl phthalate	85-68-7	1000	± 1.855%
bis(2-Chloroethoxy)methane	111-91-1	1000	± 1.626%
bis(2-Chloroethyl) ether	111-44-4	1000	± 1.776%
bis(2-Chloroisopropyl) ether	108-60-1	1000	± 2.406%
bis(2-Ethylhexyl) adipate	103-23-1	1000	± 2.415%
bis(2-Ethylhexyl) phthalate	117-81-7	1000	± 2.350%
4-Bromophenyl phenyl ether	101-55-3	1000	± 1.708%
Carbazole	86-74-8	1000	± 1.844%



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## Certified Reference Material

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<b>Catalog No.:</b> AL0-101444	<b>Lot Number:</b> CL18811
<b>Description:</b> 8270 Calibration Standard	<b>Certification Date:</b> August 9, 2022
<b>Storage:</b> -18 °C	<b>Expiration Date:</b> November 30, 2023
<b>Provided As:</b> 1 mL in 2 mL Ampoule in MeCl <sub>2</sub> /Methanol (97:3)	

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
4-Chloroaniline	106-47-8	1000	± 2.831%
4-Chloro-3-methylphenol	59-50-7	1000	± 1.571%
2-Chloronaphthalene	91-58-7	1000	± 2.022%
2-Chlorophenol	95-57-8	1000	± 2.001%
4-Chlorophenyl phenyl ether	7005-72-3	1000	± 1.634%
Chrysene	218-01-9	1000	± 2.358%
Dibenz(a,h)anthracene	53-70-3	1000	± 2.452%
Dibenzofuran	132-64-9	1000	± 0.310%
Di-n-butyl phthalate	84-74-2	1000	± 2.347%
1,2-Dichlorobenzene	95-50-1	1000	± 1.803%
1,3-Dichlorobenzene	541-73-1	1000	± 1.808%
1,4-Dichlorobenzene	106-46-7	1000	± 1.503%
2,4-Dichlorophenol	120-83-2	1000	± 1.393%
Diethyl phthalate	84-66-2	1000	± 1.870%
2,4-Dimethylphenol	105-67-9	1000	± 2.495%
Dimethyl phthalate	131-11-3	1000	± 2.113%
1,2-Dinitrobenzene	528-29-0	1000	± 0.240%
1,3-Dinitrobenzene	99-65-0	1000	± 1.221%
1,4-Dinitrobenzene	100-25-4	1000	± 0.246%
2,4-Dinitrophenol	51-28-5	1000	± 0.519%
2,4-Dinitrotoluene	121-14-2	1000	± 2.242%



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**Catalog No.:** AL0-101444      **Lot Number:** CL18811  
**Description:** 8270 Calibration Standard      **Certification Date:** August 9, 2022  
**Storage:** -18 °C      **Expiration Date:** November 30, 2023  
**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2,6-Dinitrotoluene	606-20-2	1000	± 2.154%
Di-n-octyl phthalate	117-84-0	1000	± 2.670%
Fluoranthene	206-44-0	1000	± 2.103%
Fluorene	86-73-7	1000	± 0.890%
Hexachlorobenzene	118-74-1	1000	± 1.210%
Hexachlorobutadiene	87-68-3	1000	± 1.304%
Hexachlorocyclopentadiene	77-47-4	1000	± 1.510%
Hexachloroethane	67-72-1	1000	± 3.281%
Indeno(1,2,3-cd)pyrene	193-39-5	1000	± 1.921%
Isophorone	78-59-1	1000	± 2.022%
2-Methyl-4,6-dinitrophenol	534-52-1	1000	± 1.661%
1-Methylnaphthalene	90-12-0	1000	± 1.929%
2-Methylnaphthalene	91-57-6	1000	± 2.220%
2-Methylphenol	95-48-7	1000	± 2.168%
3-Methylphenol	108-39-4	500	± 1.025%
4-Methylphenol	106-44-5	500	± 1.064%
Naphthalene	91-20-3	1000	± 1.199%
2-Nitroaniline	88-74-4	1000	± 1.874%
3-Nitroaniline	99-09-2	1000	± 2.146%
4-Nitroaniline	100-01-6	1000	± 0.300%
Nitrobenzene	98-95-3	1000	± 1.704%



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**Catalog No.:** AL0-101444      **Lot Number:** CL18811  
**Description:** 8270 Calibration Standard      **Certification Date:** August 9, 2022  
**Storage:** -18 °C      **Expiration Date:** November 30, 2023  
**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2-Nitrophenol	88-75-5	1000	± 2.051%
4-Nitrophenol	100-02-7	1000	± 1.413%
N-Nitrosodimethylamine	62-75-9	1000	± 0.545%
N-Nitrosodiphenylamine	86-30-6	1000	± 1.669%
N-Nitrosodi-n-propylamine	621-64-7	1000	± 0.712%
Pentachlorophenol	87-86-5	1000	± 2.454%
Phenanthrene	85-01-8	1000	± 2.072%
Phenol	108-95-2	1000	± 2.140%
Pyrene	129-00-0	1000	± 1.869%
Pyridine	110-86-1	1000	± 0.545%
2,3,4,6-Tetrachlorophenol	58-90-2	1000	± 2.552%
2,3,5,6-Tetrachlorophenol	935-95-5	1000	± 2.220%
1,2,4-Trichlorobenzene	120-82-1	1000	± 1.632%
2,4,5-Trichlorophenol	95-95-4	1000	± 1.596%
2,4,6-Trichlorophenol	88-06-2	1000	± 0.481%

**Notes:** The proper chemical name for Bis(2-Chloroisopropyl) ether is 2,2'-oxybis(1-chloropropane). The analytical uncertainty contribution to the expanded uncertainty for 3 and 4-Methylphenol is measured as the total of the two analytes. N-Nitrosodiphenylamine presents as Diphenylamine at 854 µg/mL.



Reference Material Producer  
Certificate No. 2427.02



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Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03

# Certificate of Analysis

## Produced by Phenova

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Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

1. **Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. **Quality Standards:** Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. **Intended Use:** The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. **Handling and Usage Notes:** Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. **Period of Validity:** The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
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Chemical Testing Laboratory  
Certificate No. 2427.03







**Form I**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8270E-SIM**  
**SIM SVOC Organics (Dual scan list)**

Laboratory: Analytical Resources, LLC

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment

Laboratory ID: 23D0063-01 A

SDG: 23D0063

Sampled: 04/04/23 10:02

Prepared: 04/17/23 12:00

File ID: NT1405012313S.D

% Solids: 43.18

Preparation: EPA 3546 (Microwave)

Analyzed: 05/01/23 21:54

Batch: BLD0297

Sequence: SLE0027

Initial/Final: 23.16 g Wet / 1 mL

Instrument: NT14

Column: ZB-5MS

Calibration: GD00063

Cleanups: GPC

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg dry)	Q	DL	RL
106-46-7	1,4-Dichlorobenzene	1	1.4	J	0.6	5.0
95-50-1	1,2-Dichlorobenzene	1	5.0	U	0.7	5.0
100-51-6	Benzyl Alcohol	1	24.6		2.5	20.0
65-85-0	Benzoic acid	1	39.8	J	13.4	100
105-67-9	2,4-Dimethylphenol	1	20.0	U	2.2	20.0
120-82-1	1,2,4-Trichlorobenzene	1	5.0	U	2.7	5.0
86-30-6	N-Nitrosodiphenylamine	1	5.0	U	1.3	5.0
87-86-5	Pentachlorophenol	1	4.0	J	2.1	20.0

SURROGATES	ADDED: (ug/kg dry)	FOUND: (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	749.96	526	70.1	27 - 120	
p-Terphenyl-d14	499.98	493	98.6	37 - 120	



Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012313S.D

Date : 01-May-2023 21:54

Client ID:

Sample Info: 23D0063-01

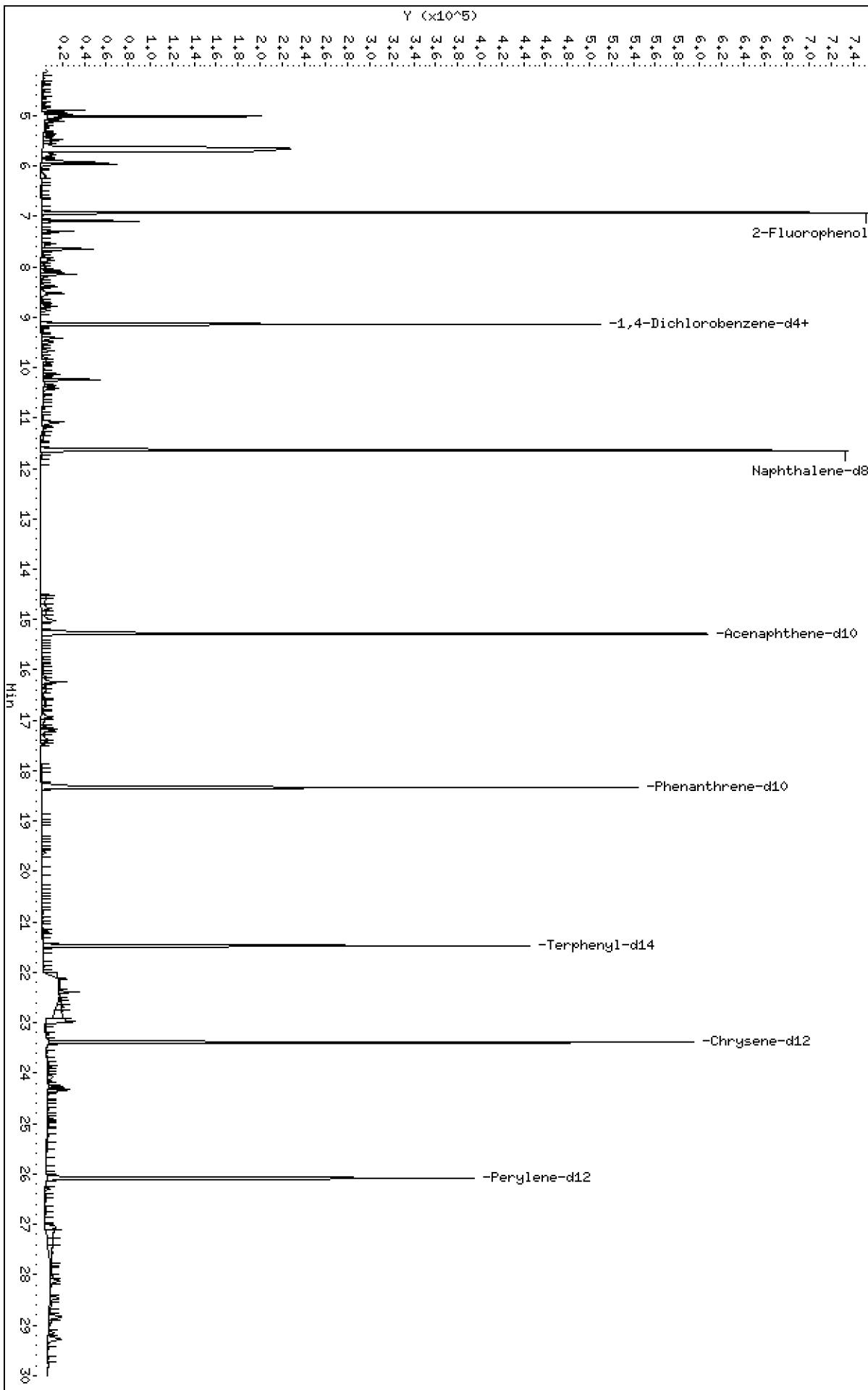
Instrument: nt14.1

Operator: USD

Column diameter: 0.25

Column phase: ZB-5msi

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Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

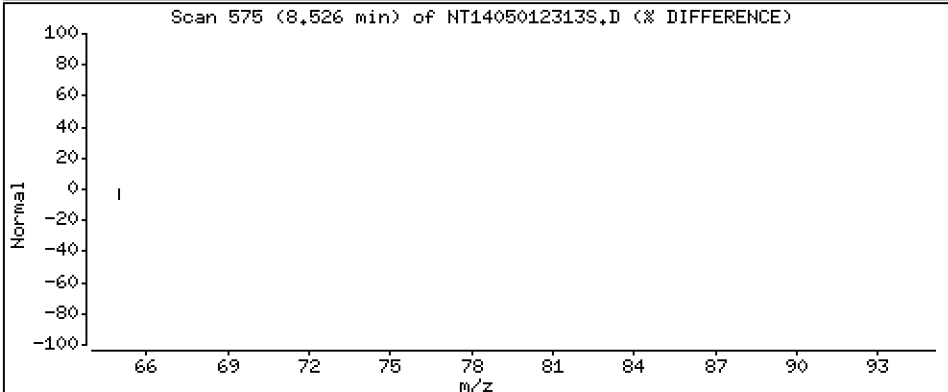
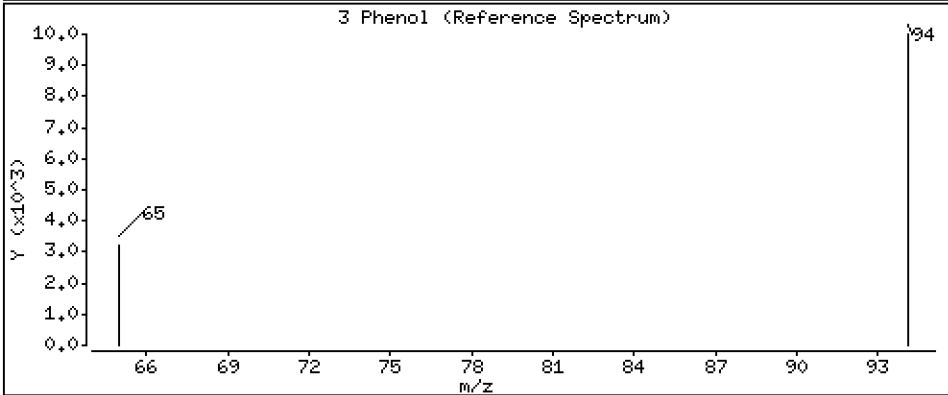
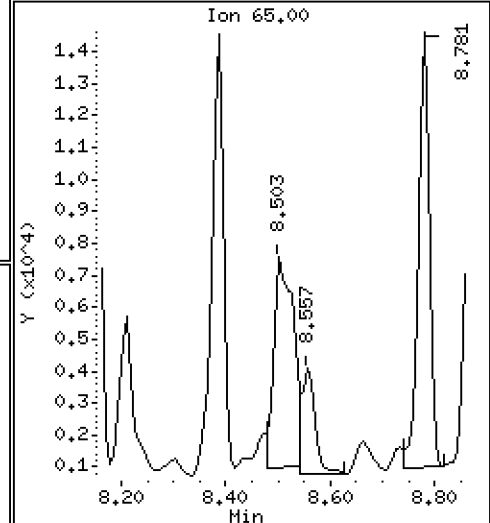
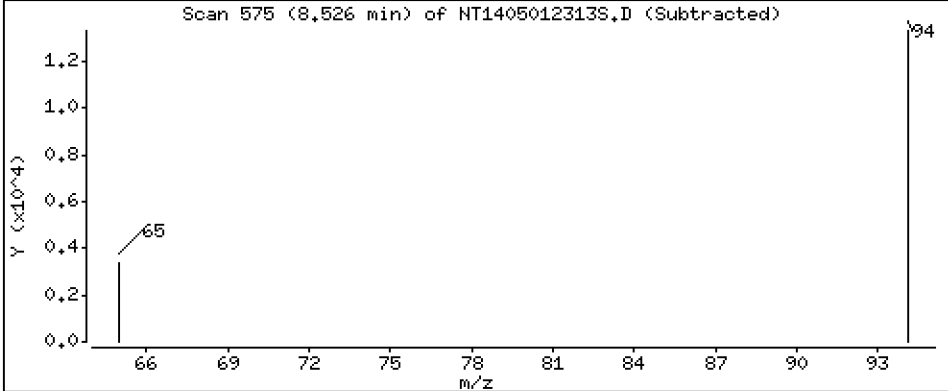
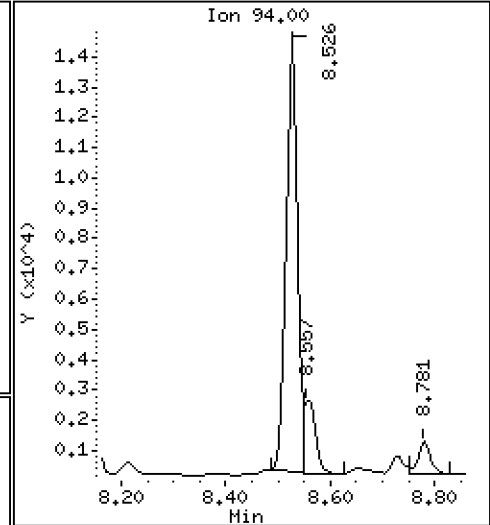
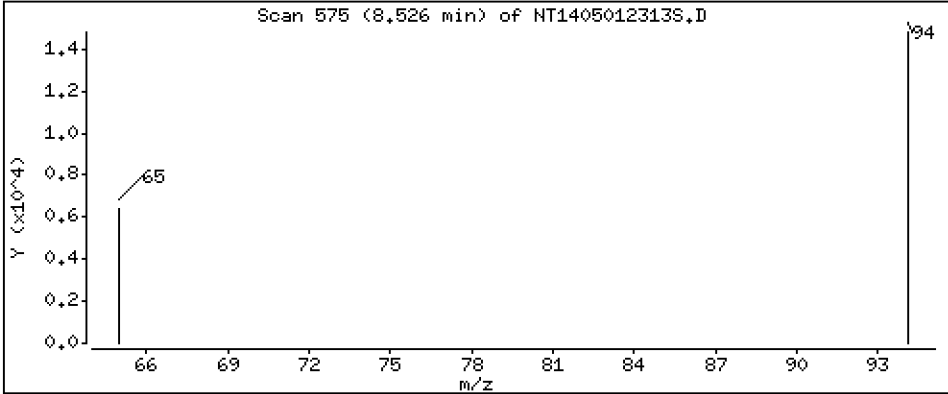
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,1198 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

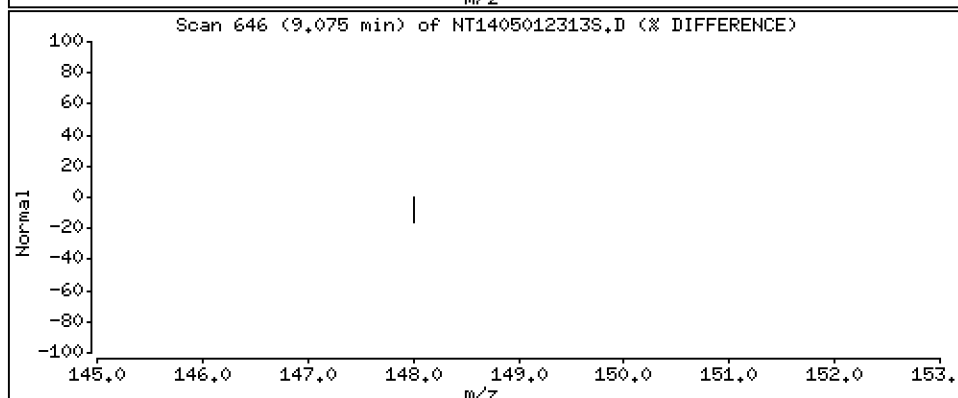
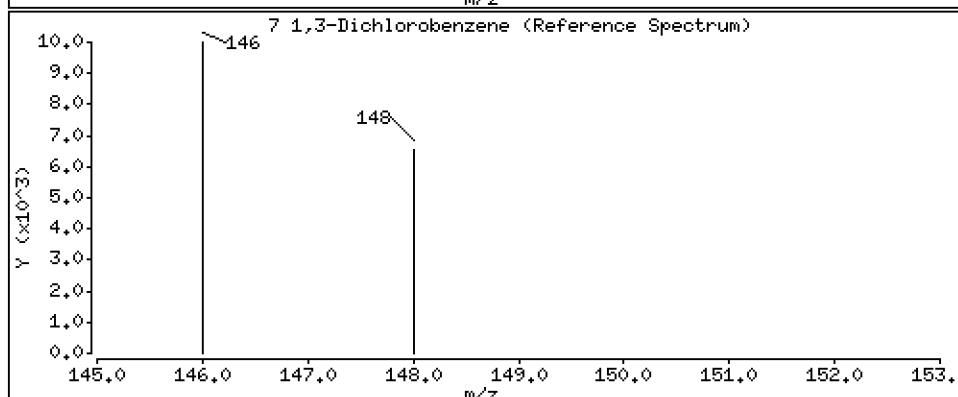
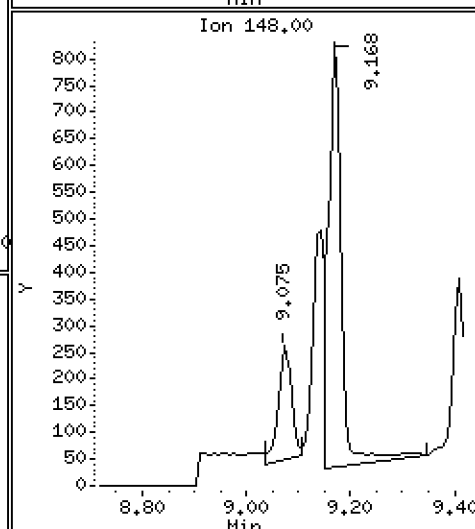
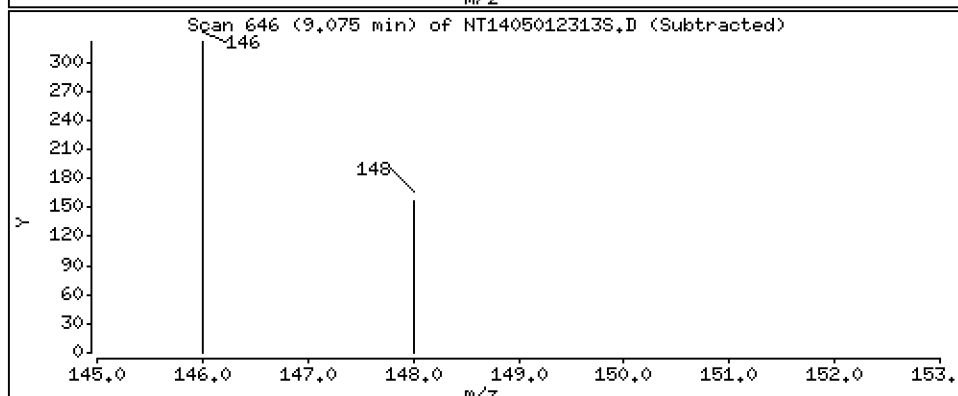
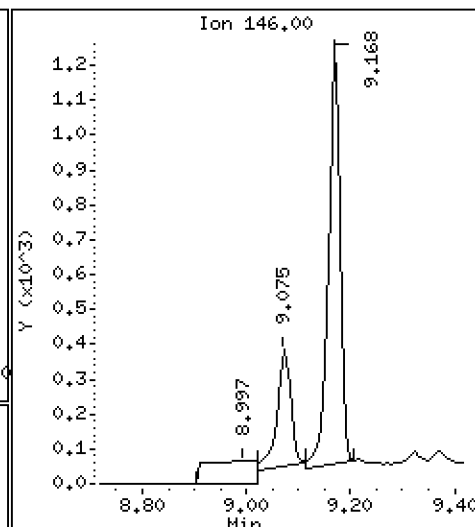
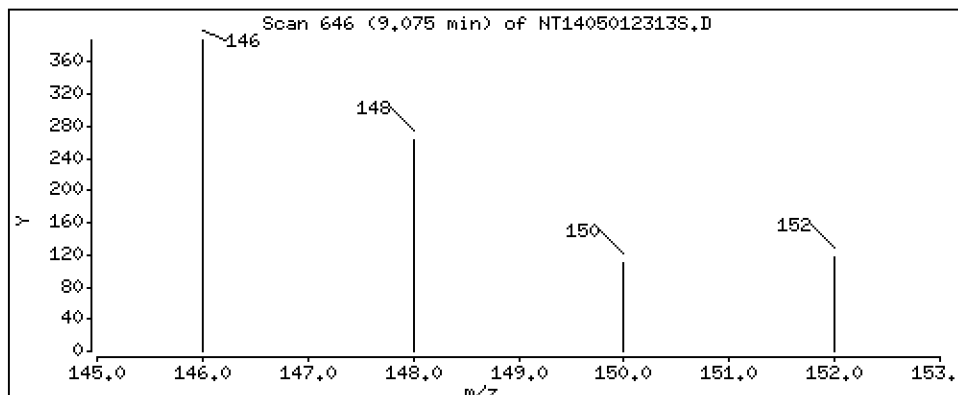
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,004358 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

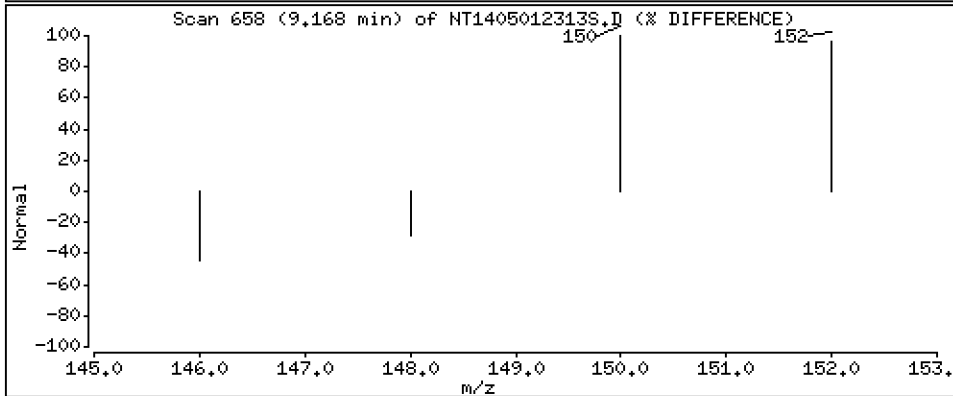
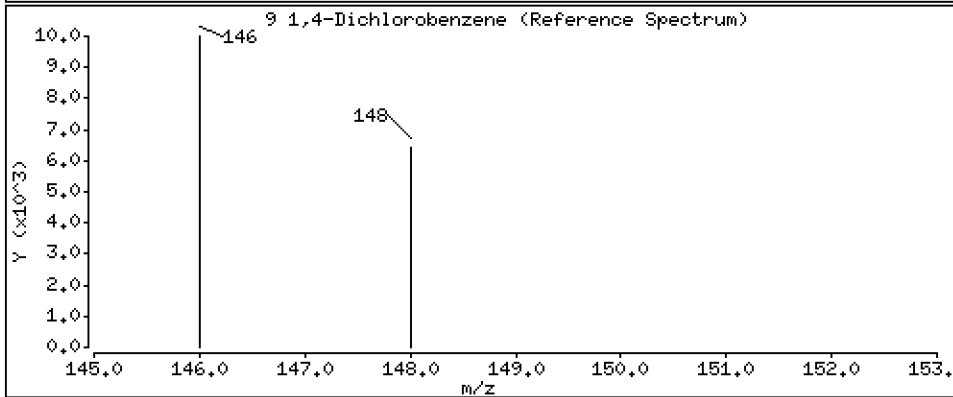
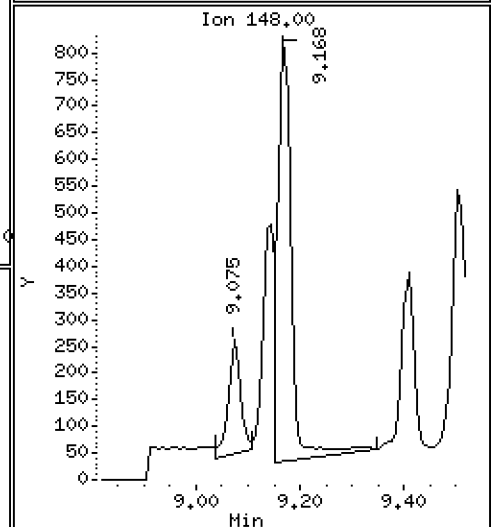
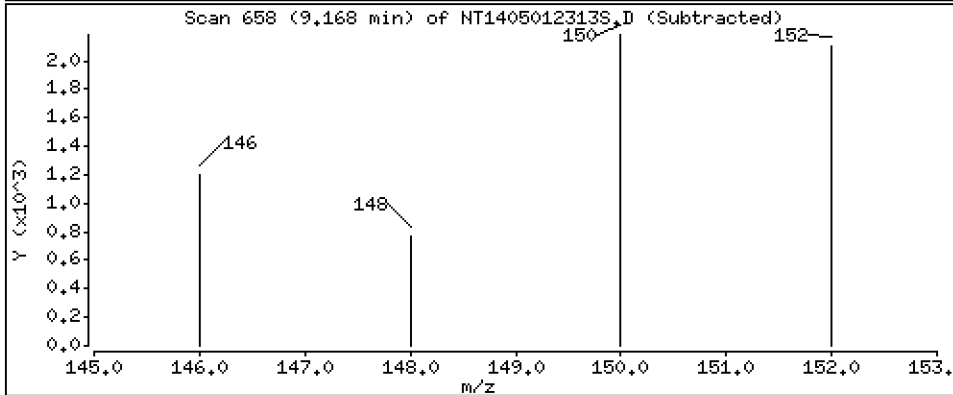
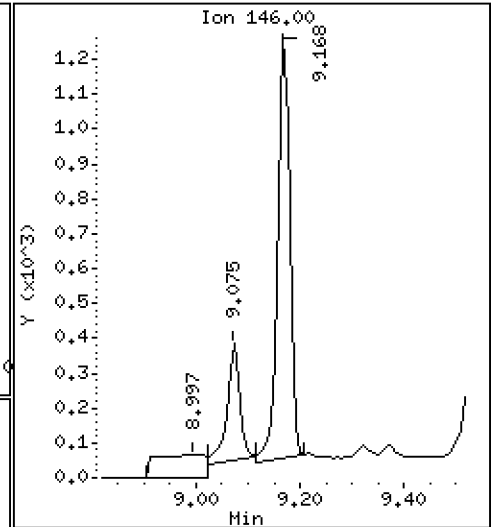
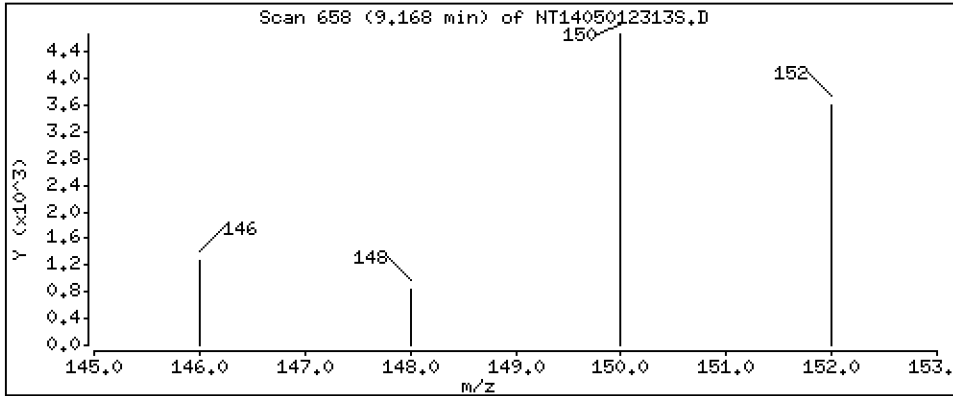
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9,1,4-Dichlorobenzene

Concentration: 0.01433 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

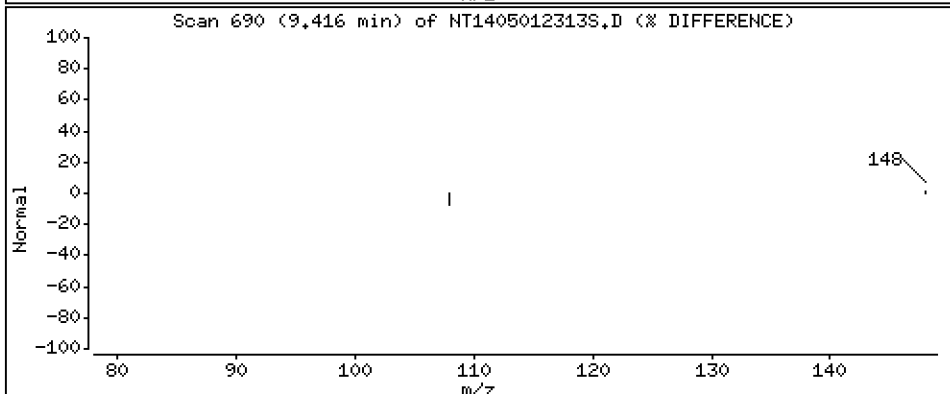
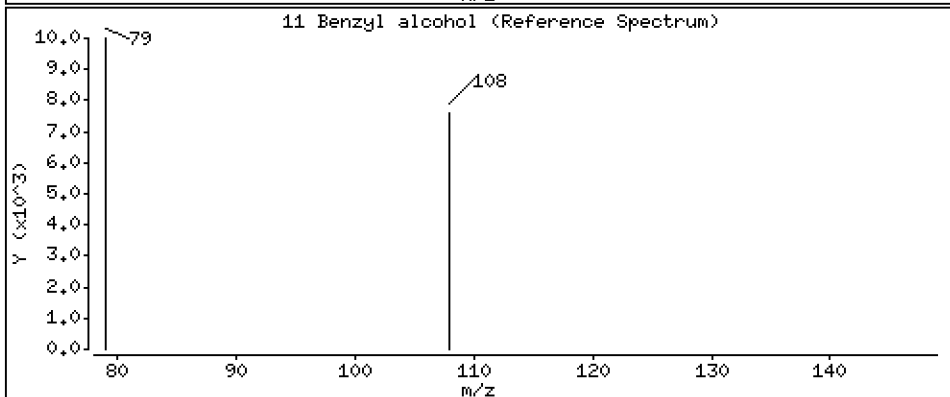
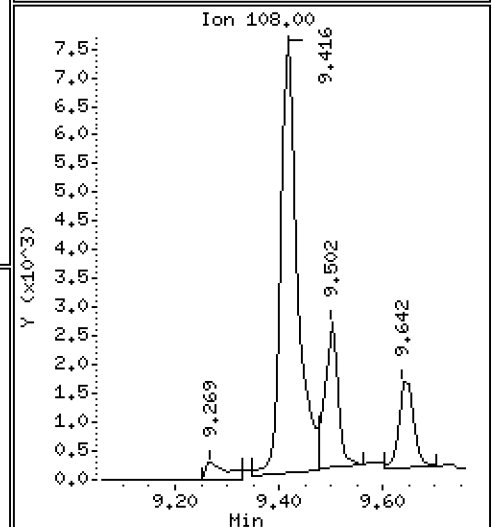
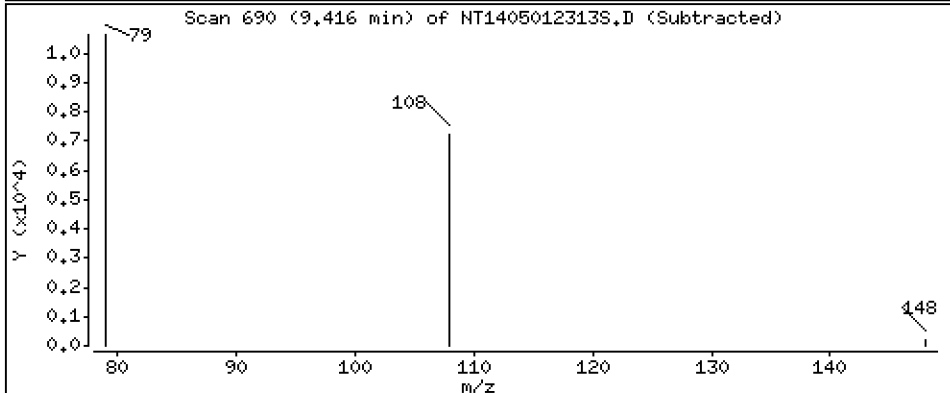
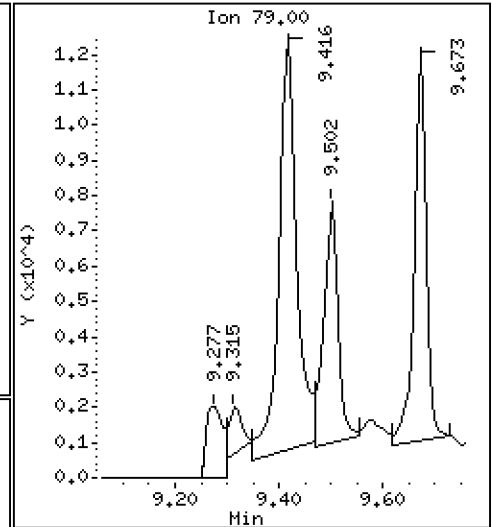
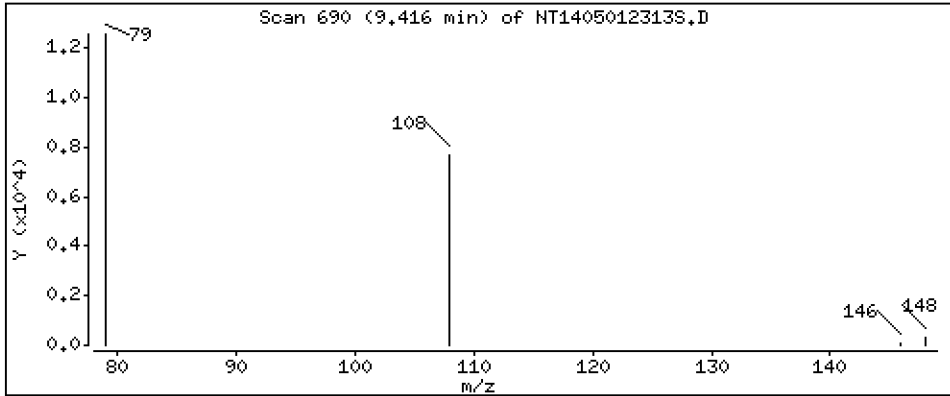
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

11 Benzyl alcohol

Concentration: 0,2458 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

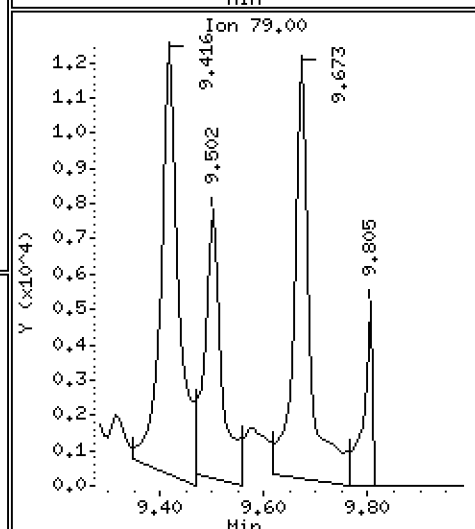
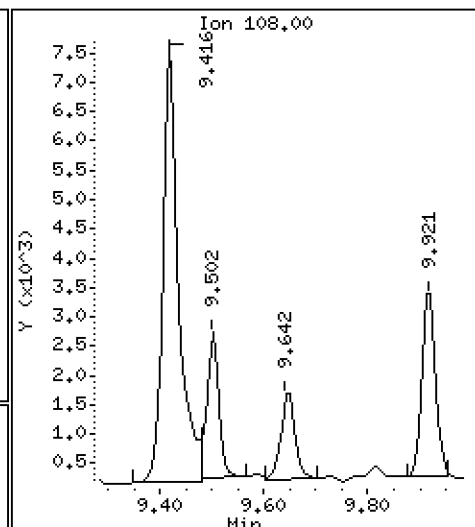
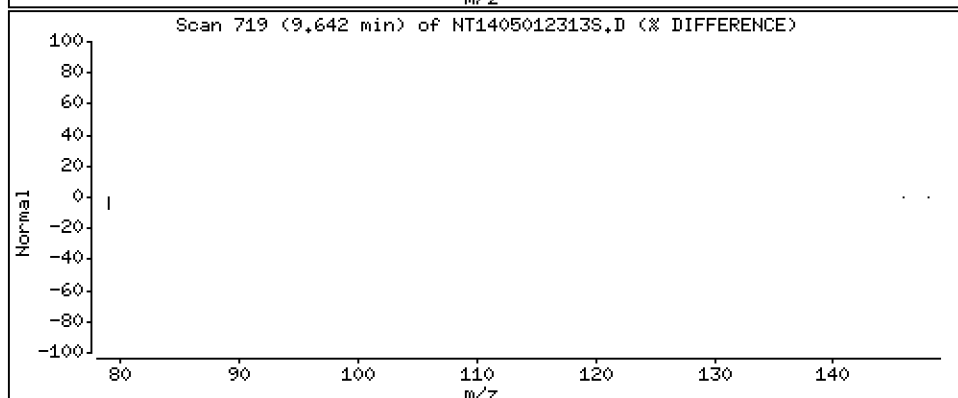
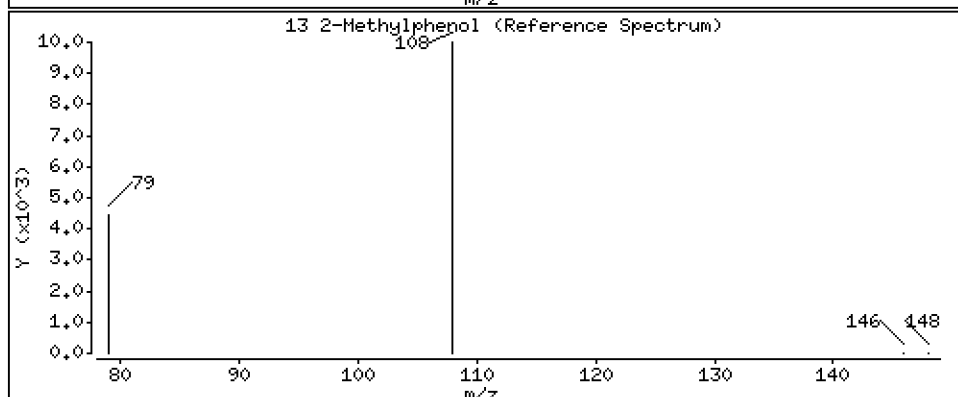
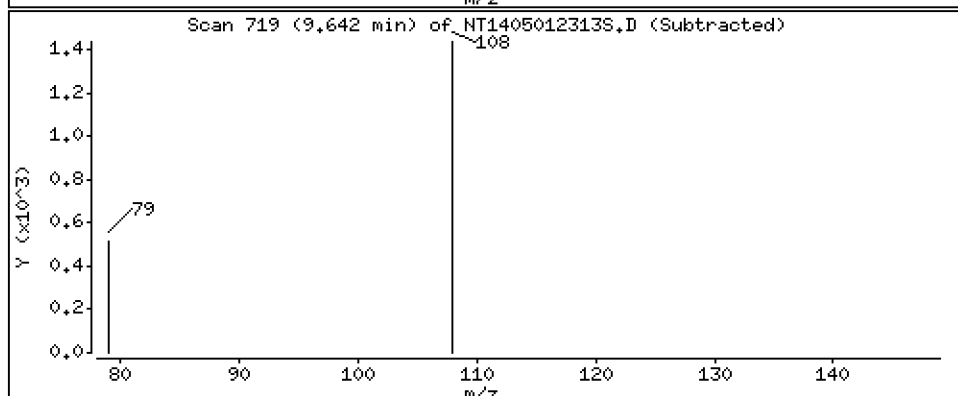
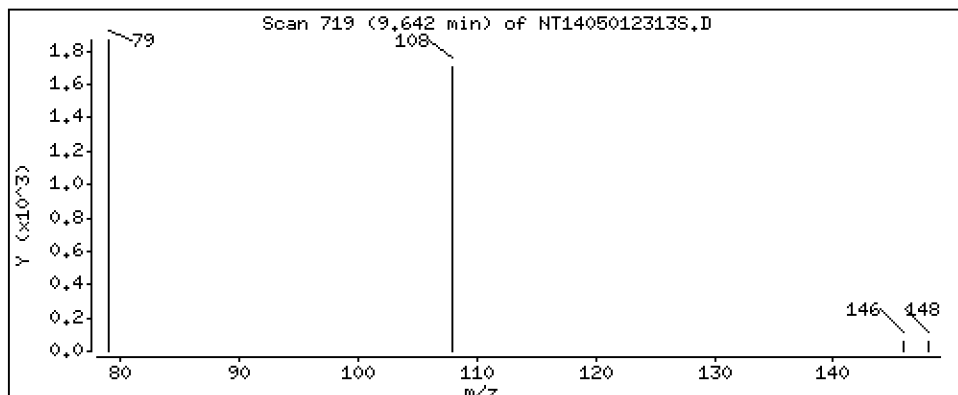
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

13 2-Methylphenol

Concentration: 0,02490 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

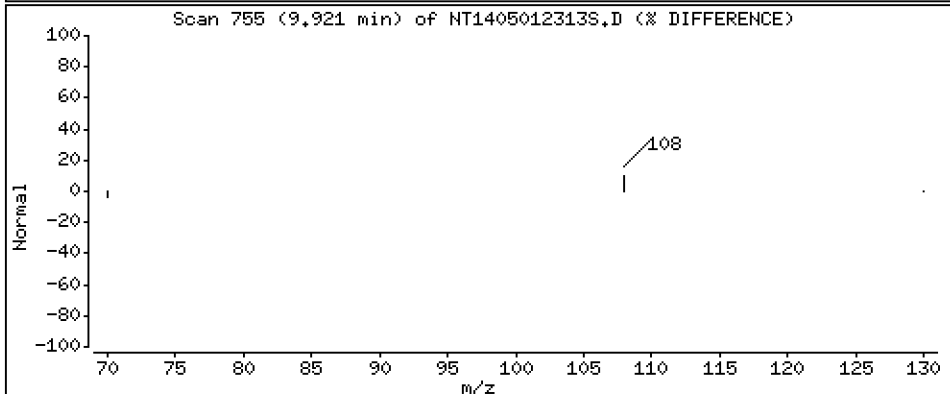
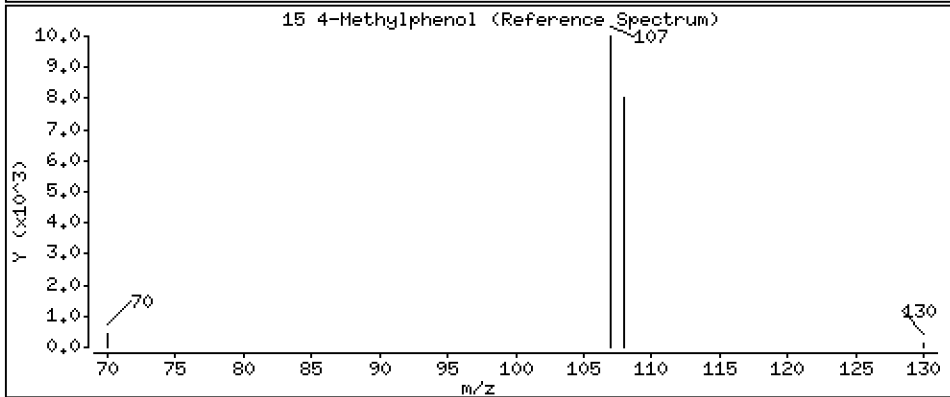
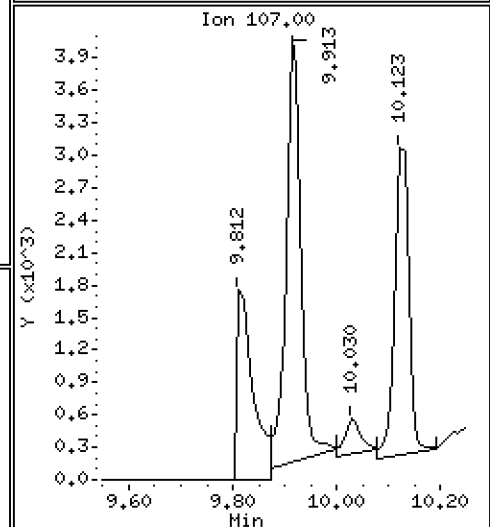
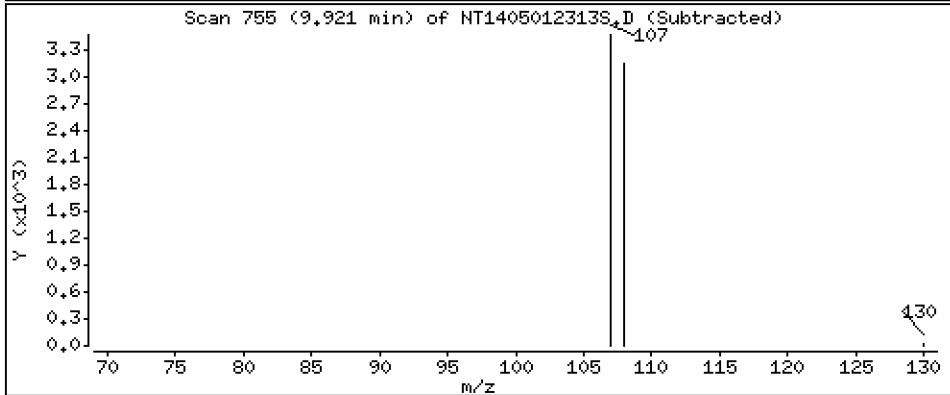
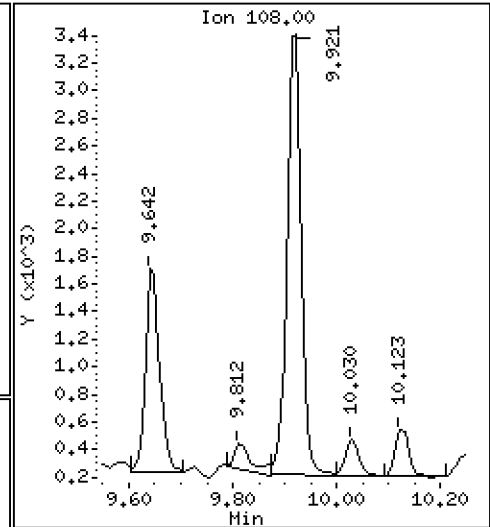
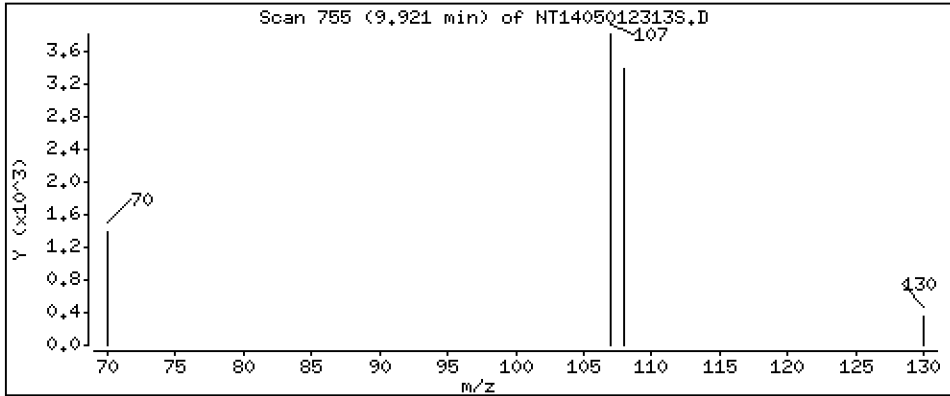
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 0,05379 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

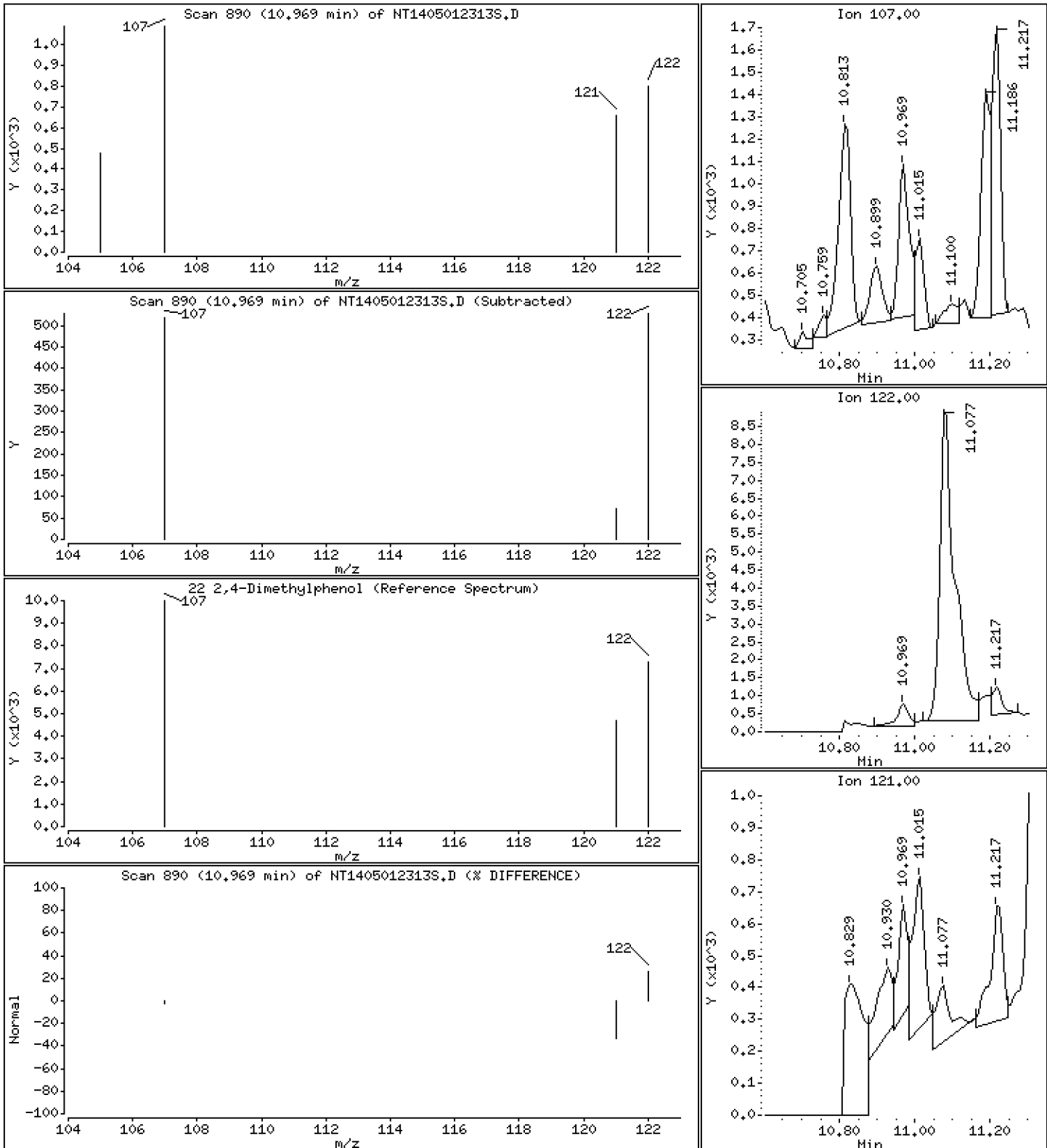
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 0.01219 ug/mL





Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

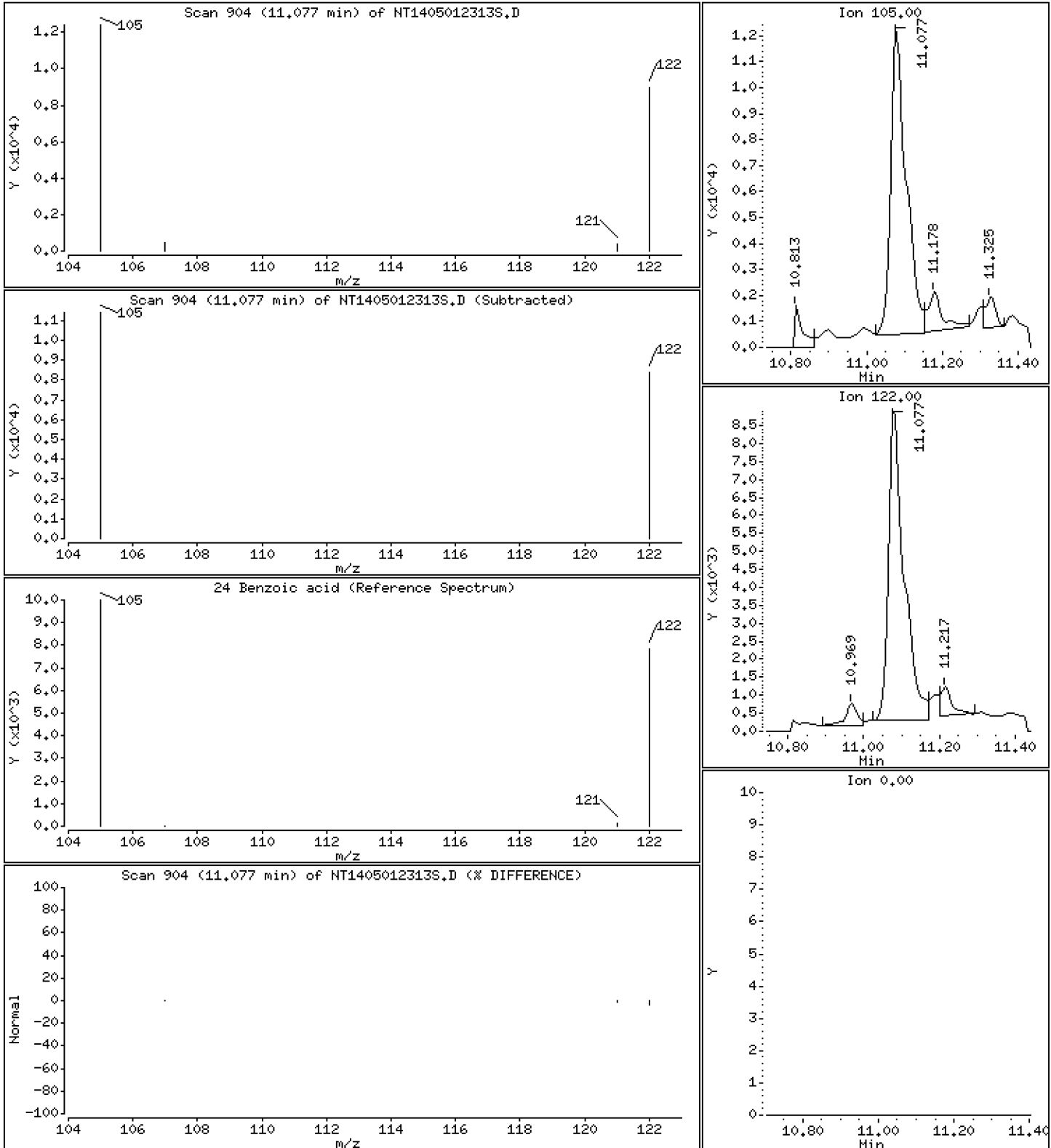
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 0,3980 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

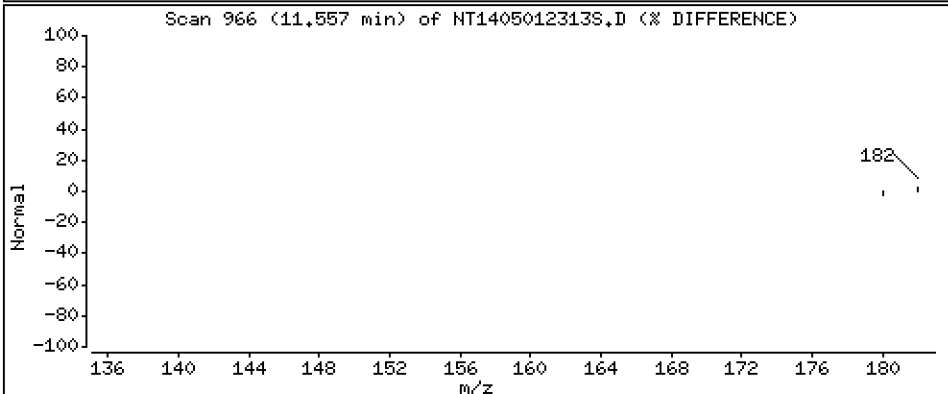
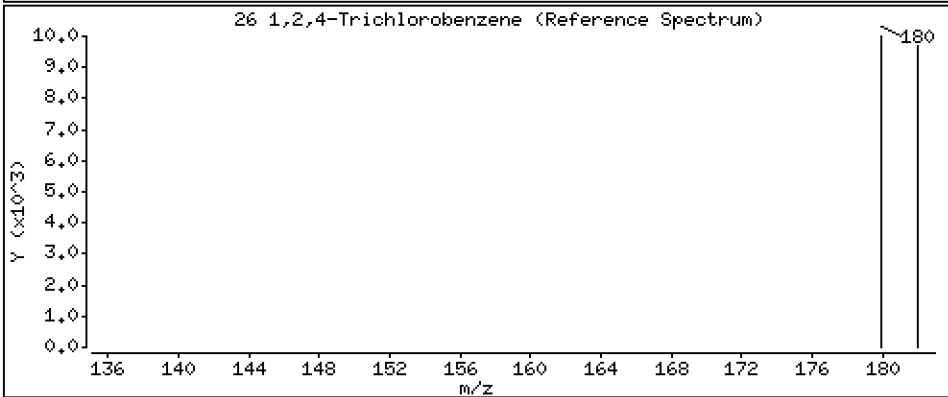
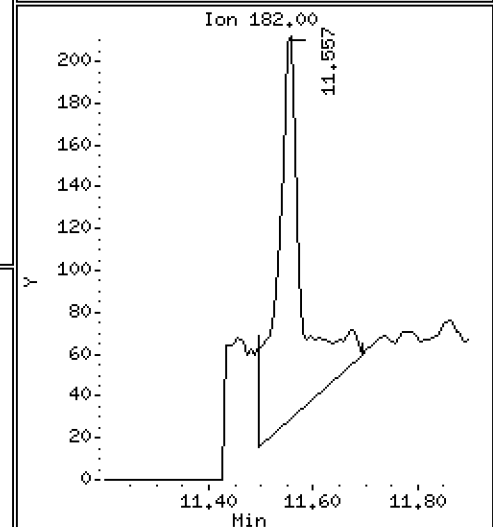
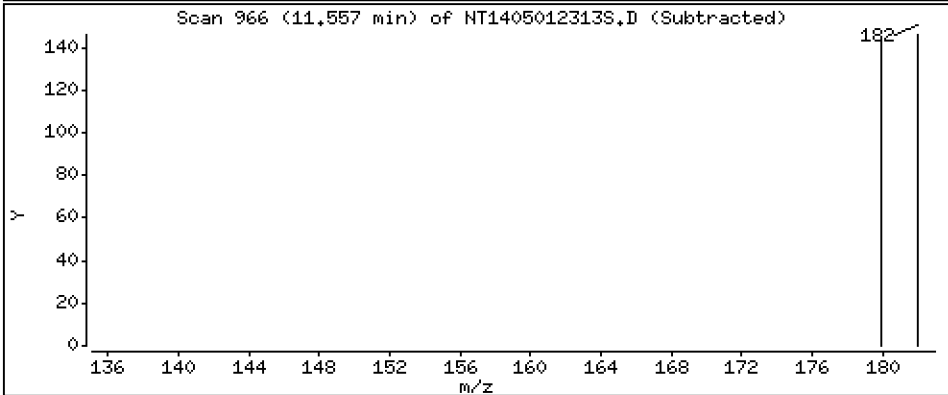
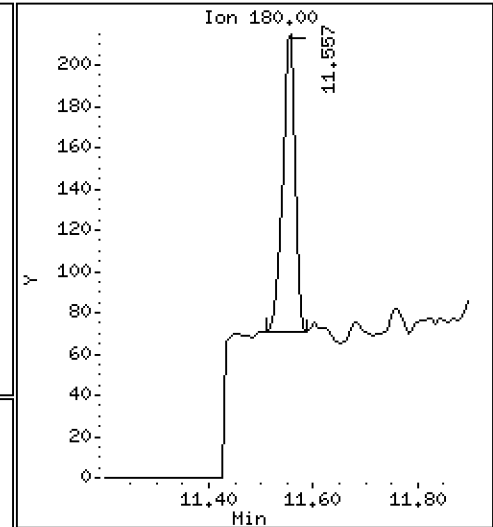
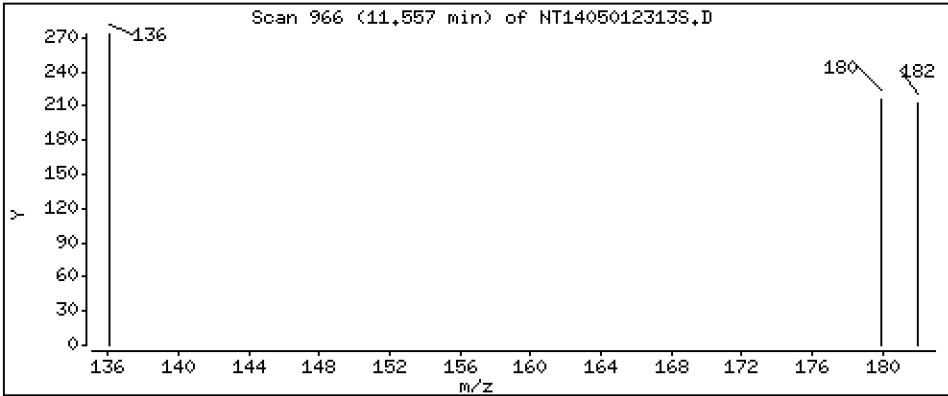
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 0,002607 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

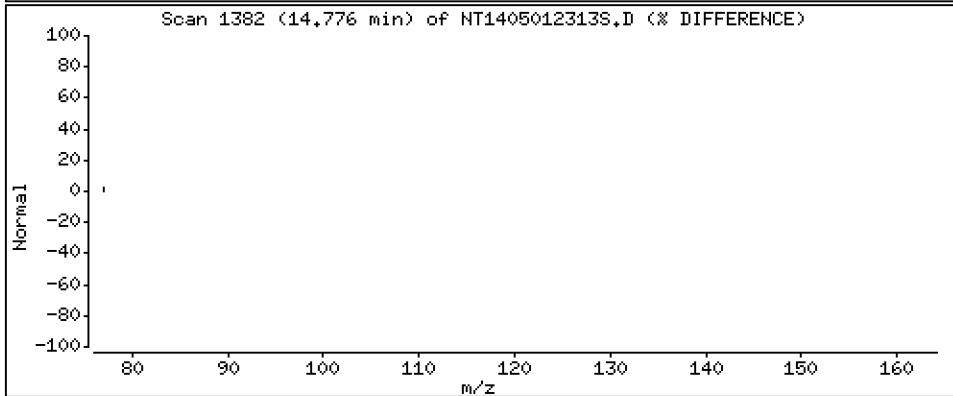
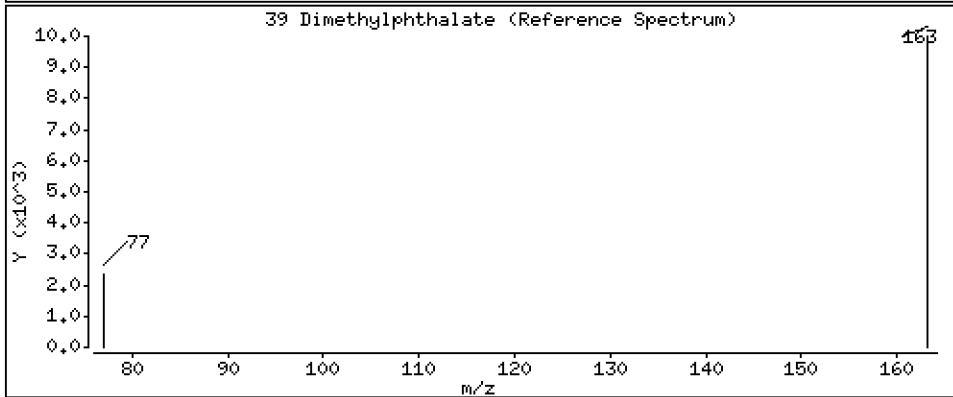
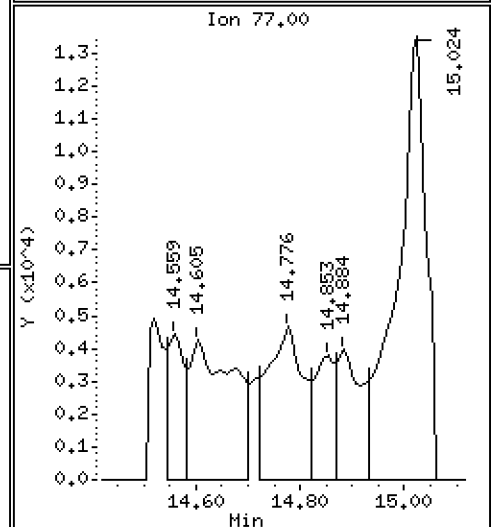
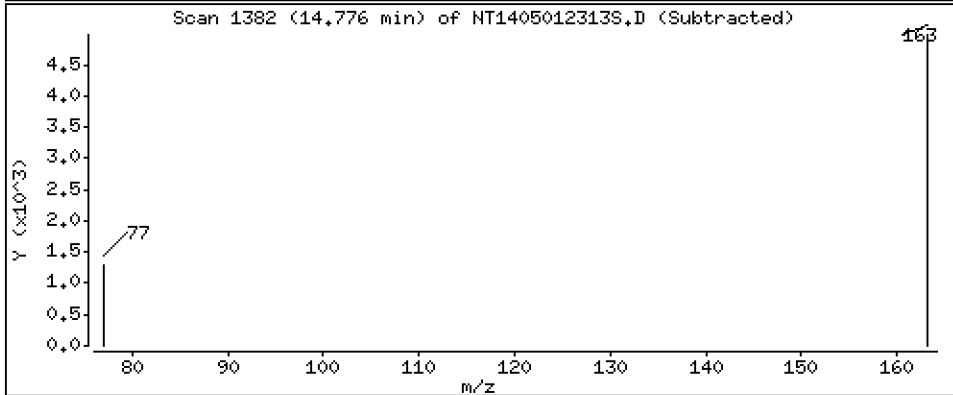
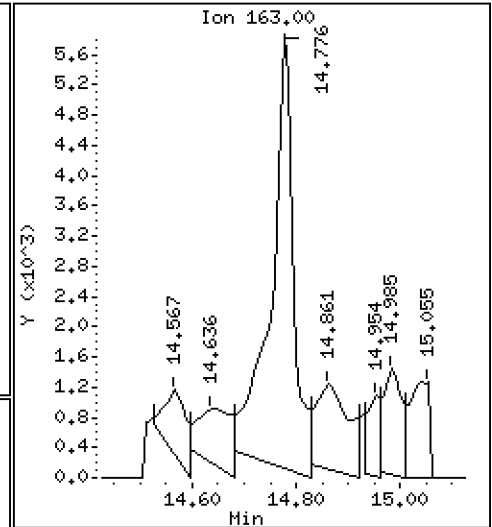
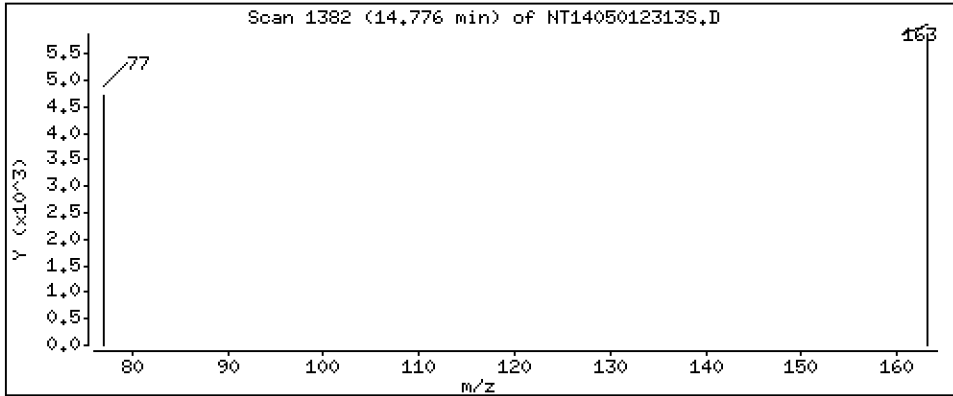
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 0,08252 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

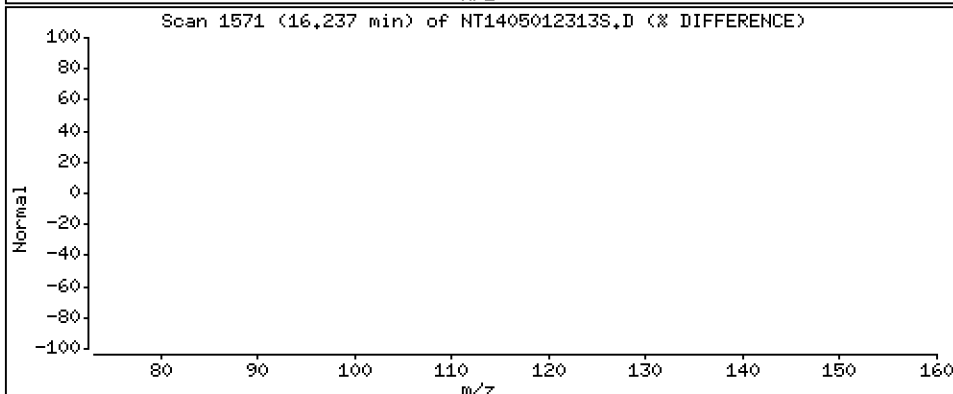
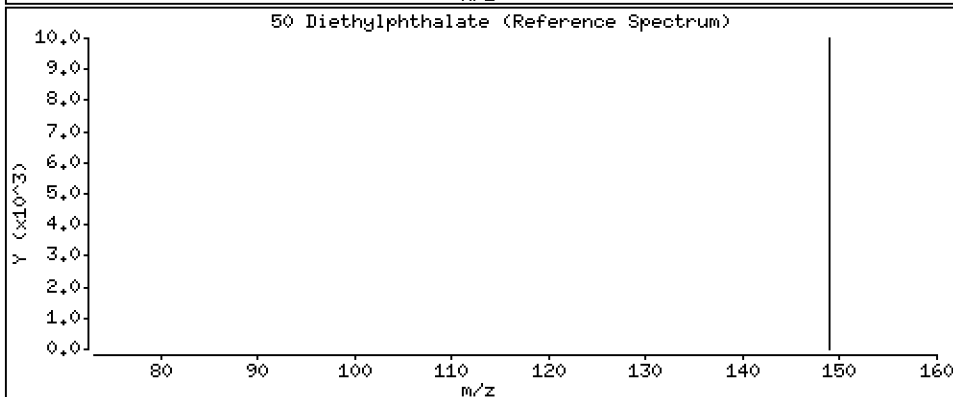
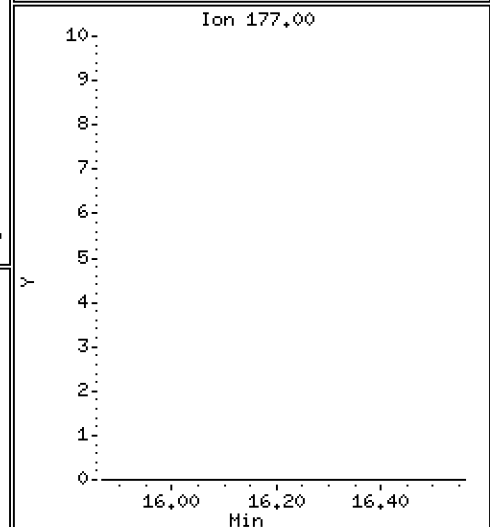
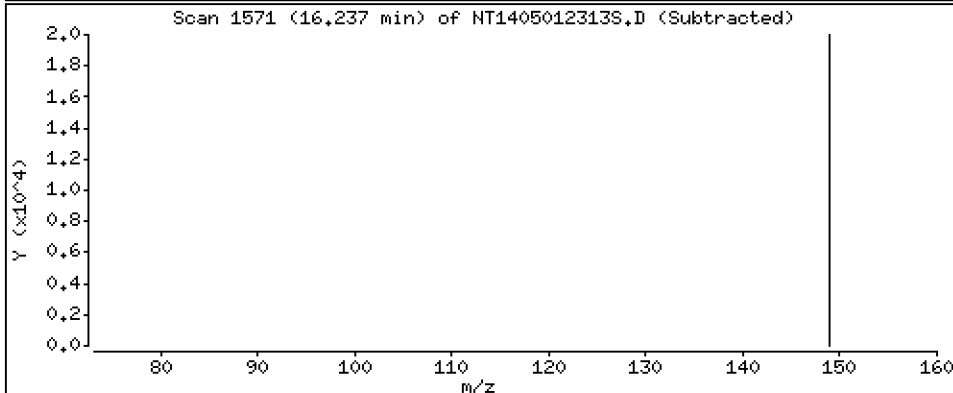
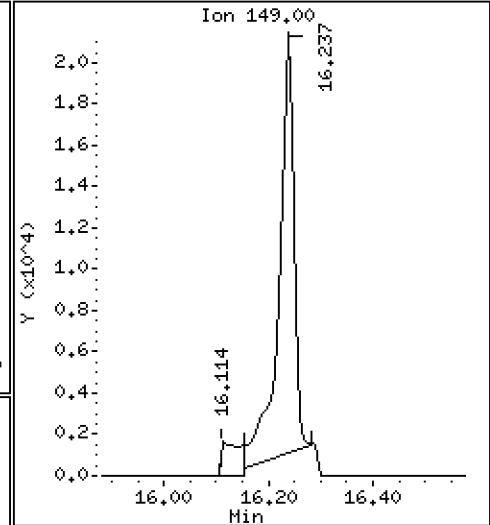
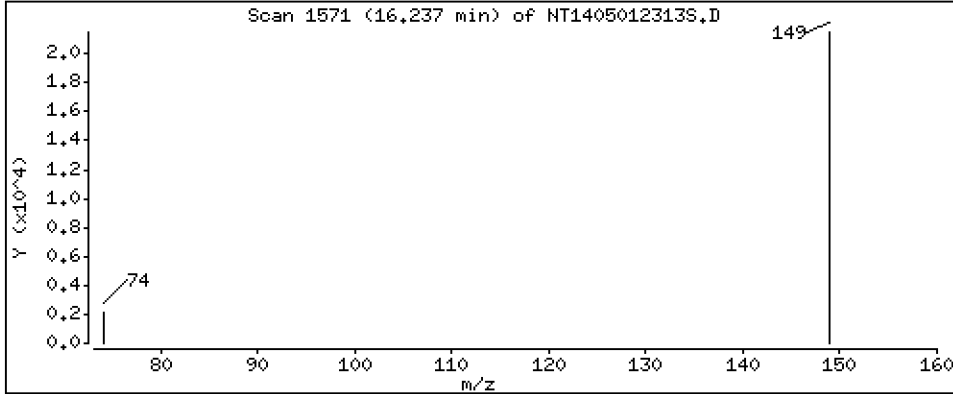
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,1895 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

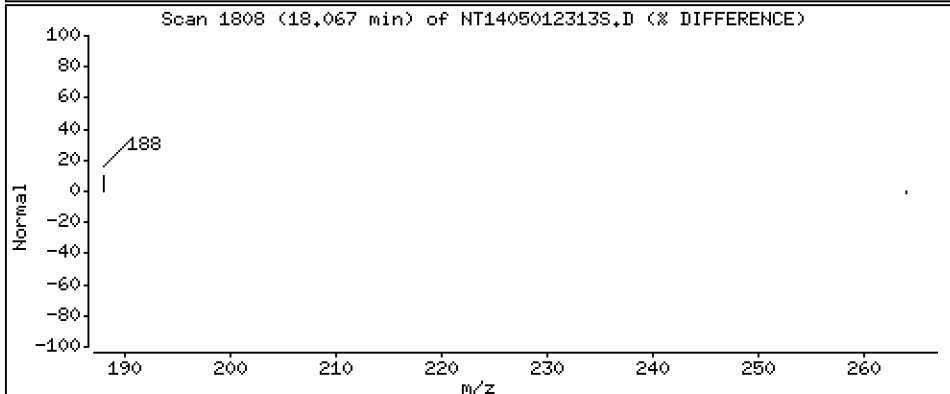
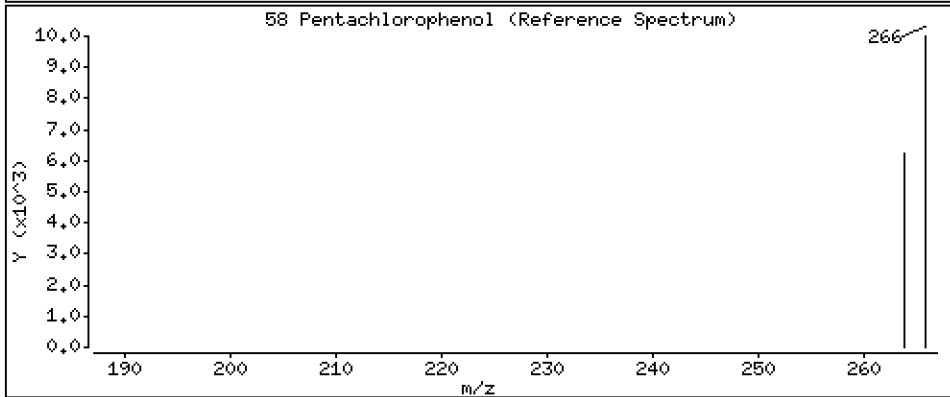
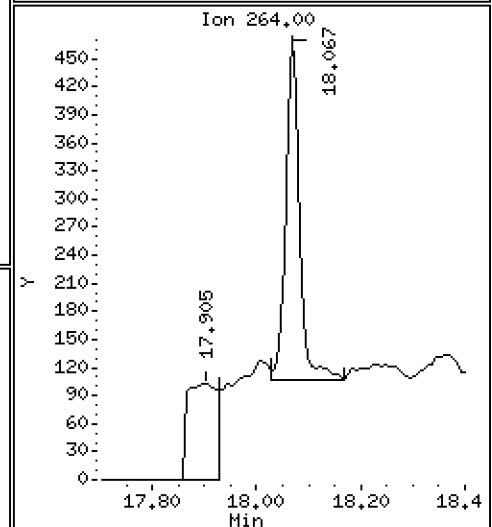
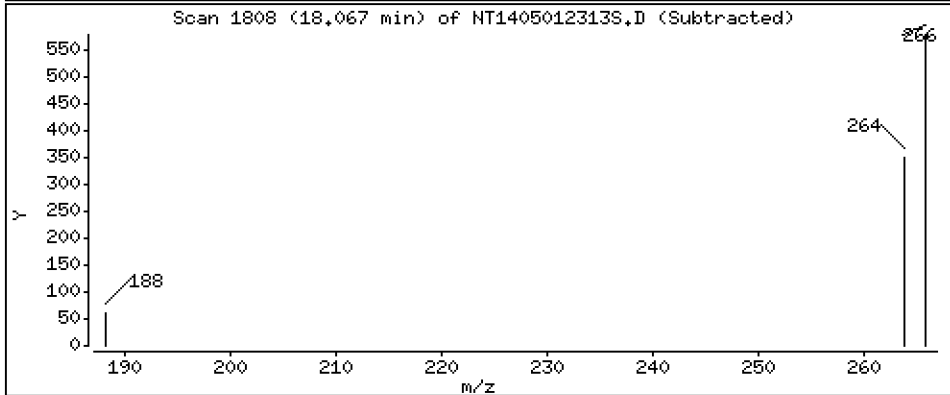
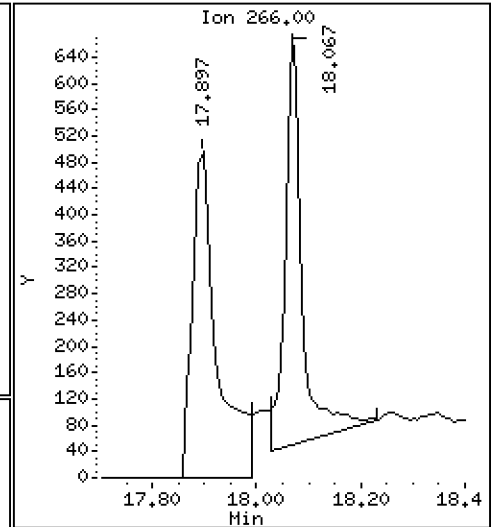
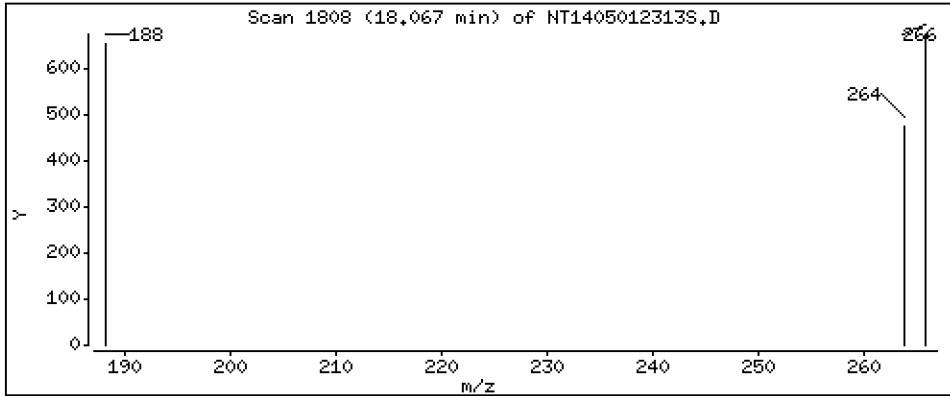
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 0,03999 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

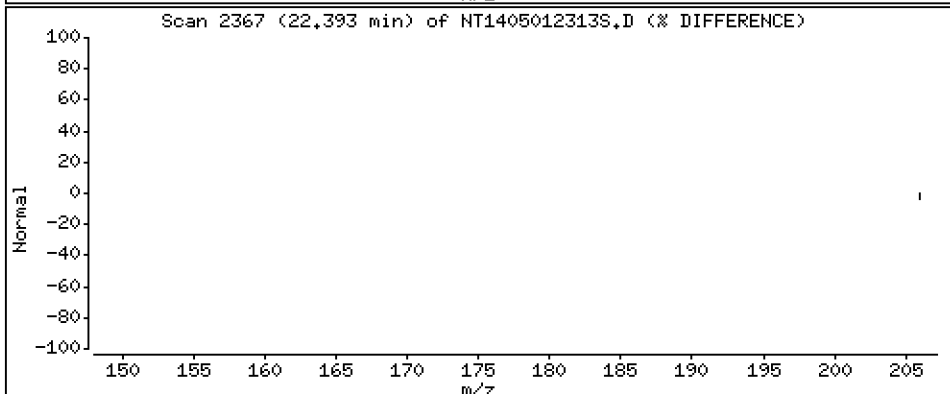
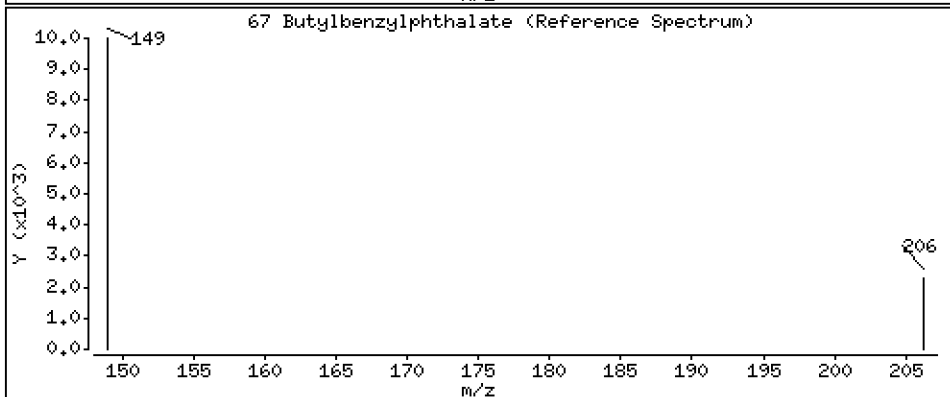
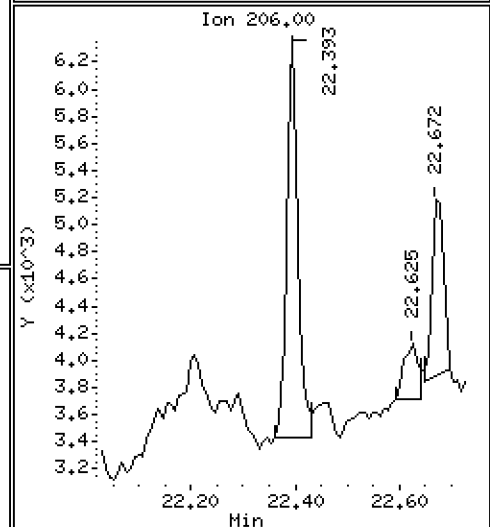
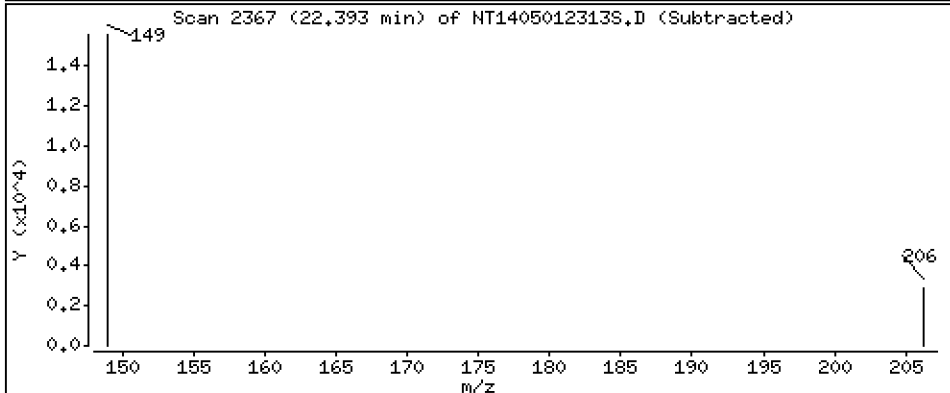
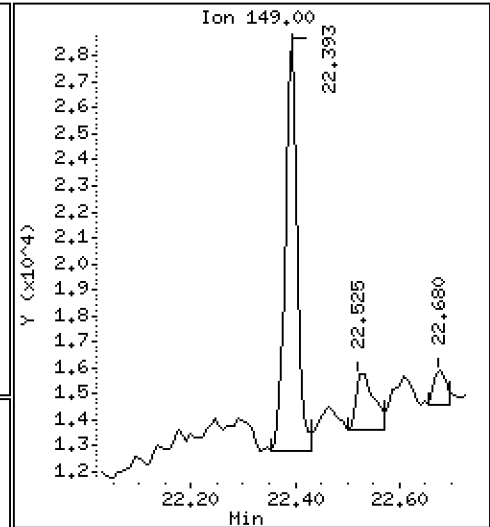
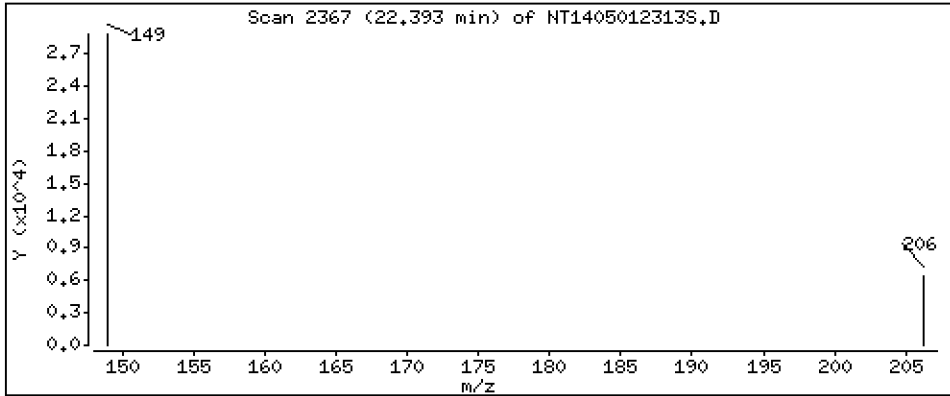
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

67 Butylbenzylphthalate

Concentration: 0.1584 ug/mL



Date : 01-MAY-2023 21:54

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-01

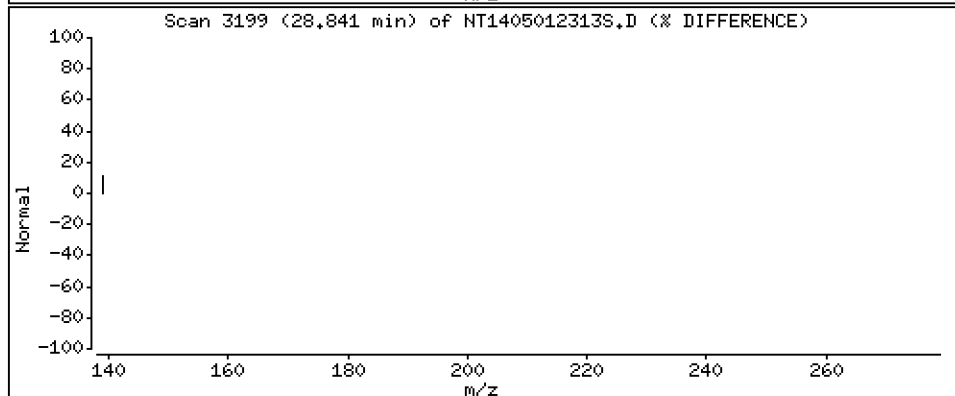
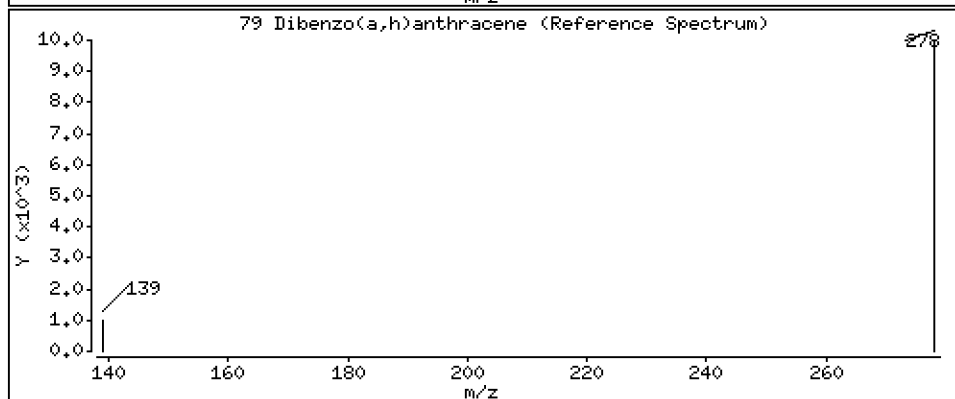
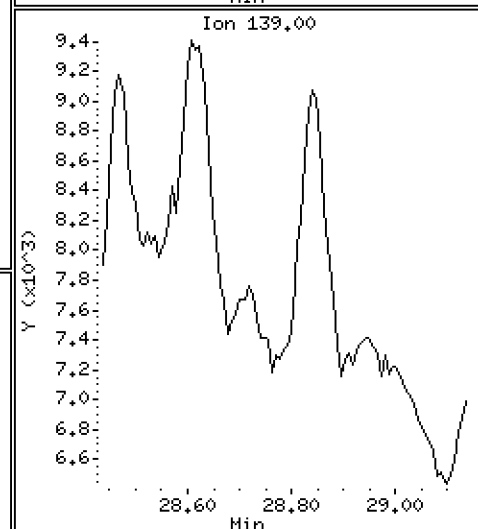
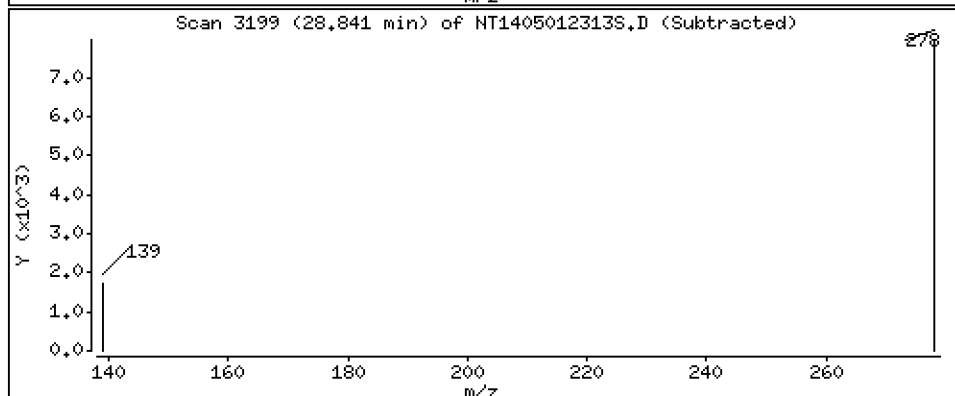
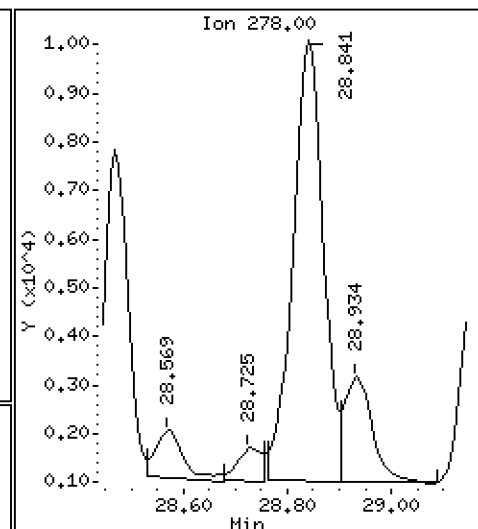
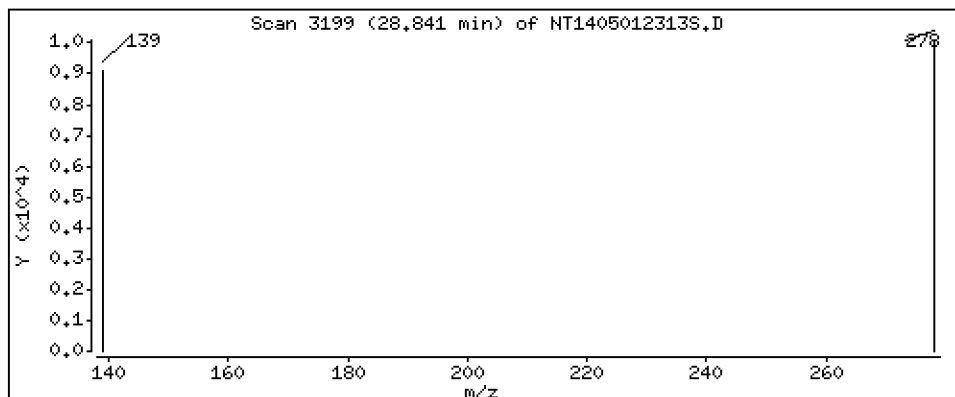
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,1788 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012313S.D  
 Lab Smp Id: 23D0063-01  
 Inj Date : 01-MAY-2023 21:54 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : 23D0063-01  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 13  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSSDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.926	6.903	(0.757)	586226	5.25587	5.256 (R)
3 Phenol	94		8.525	8.510	(0.932)	21414	0.11975	0.1198
7 1,3-Dichlorobenzene	146		9.074	9.067	(0.992)	591	0.00436	0.004358
* 8 1,4-Dichlorobenzene-d4	152		9.144	9.137	(1.000)	320030	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	1839	0.01433	0.01433
11 Benzyl alcohol	79		9.416	9.408	(1.030)	27094	0.24577	0.2458
12 1,2-Dichlorobenzene	146		Compound Not Detected.					
13 2-Methylphenol	108		9.641	9.634	(1.054)	2776	0.02490	0.02490
15 4-Methylphenol	108		9.921	9.898	(1.085)	6190	0.05379	0.05379
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
22 2,4-Dimethylphenol	107		10.968	10.953	(0.942)	1437	0.01219	0.01219
24 Benzoic acid	105		11.077	11.085	(0.951)	32557	0.39799	0.3980
26 1,2,4-Trichlorobenzene	180		11.557	11.549	(0.993)	236	0.00261	0.002607
* 27 Naphthalene-d8	136		11.642	11.634	(1.000)	1233063	4.00000	
30 Hexachlorobutadiene	225		Compound Not Detected.					
39 Dimethylphthalate	163		14.775	14.776	(0.967)	17082	0.08252	0.08252
* 42 Acenaphthene-d10	162		15.278	15.271	(1.000)	566996	4.00000	
50 Diethylphthalate	149		16.237	16.229	(1.063)	40122	0.18955	0.1895
54 N-Nitrosodiphenylamine	169		Compound Not Detected.					
57 Hexachlorobenzene	284		Compound Not Detected.					
58 Pentachlorophenol	266		18.067	18.052	(0.985)	1420	0.03999	0.03999
* 59 Phenanthrene-d10	188		18.338	18.323	(1.000)	1000622	4.00000	
\$ 66 Terphenyl-d14	244		21.479	21.456	(0.918)	560719	4.93199	4.932 (R)
67 Butylbenzylphthalate	149		22.393	22.377	(0.957)	25700	0.15838	0.1584
* 69 Chrysene-d12	240		23.392	23.369	(1.000)	714789	4.00000	
* 77 Perylene-d12	264		26.086	26.047	(1.000)	699575	4.00000	
79 Dibenzo(a,h)anthracene	278		28.841	28.794	(1.106)	37860	0.17876	0.1788
90 N-Nitrosodimethylamine	74		Compound Not Detected.					

QC Flag Legend

R - Spike/Surrogate failed recovery limits.



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012313S.D  
 Lab Smp Id: 23D0063-01  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	320030	-3.48
27 Naphthalene-d8	1259018	629509	2518036	1233063	-2.06
42 Acenaphthene-d10	580636	290318	1161272	566996	-2.35
59 Phenanthrene-d10	1027945	513973	2055890	1000622	-2.66
69 Chrysene-d12	775653	387827	1551306	714789	-7.85
77 Perylene-d12	750797	375399	1501594	699575	-6.82

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	0.08
27 Naphthalene-d8	11.63	11.13	12.13	11.64	0.06
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.32	17.82	18.82	18.34	0.08
69 Chrysene-d12	23.37	22.87	23.87	23.39	0.10
77 Perylene-d12	26.05	25.55	26.55	26.09	0.15

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012313S.D

Lab ID: 23D0063-01

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 21:54

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
-----	-----	-----	-------	----------

---

NONE

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



Form I  
ORGANIC ANALYSIS DATA SHEET  
EPA 8270E-SIM  
SIM SVOC Organics (Dual scan list)

Laboratory: Analytical Resources, LLC

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment

Laboratory ID: 23D0063-03 A

SDG: 23D0063

Sampled: 04/04/23 12:52

Prepared: 04/17/23 12:00

File ID: NT1405012316S.D

% Solids: 35.11

Preparation: EPA 3546 (Microwave)

Analyzed: 05/01/23 23:45

Batch: BLD0297

Sequence: SLE0027

Initial/Final: 28.51 g Wet / 1 mL

Instrument: NT14

Column: ZB-5MS

Calibration: GD00063

Cleanups: GPC

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg dry)	Q	DL	RL
106-46-7	1,4-Dichlorobenzene	1	1.8	J	0.6	5.0
95-50-1	1,2-Dichlorobenzene	1	0.8	J	0.7	5.0
100-51-6	Benzyl Alcohol	1	40.8		2.5	20.0
65-85-0	Benzoic acid	1	81.5	J	13.4	99.9
105-67-9	2,4-Dimethylphenol	1	4.9	J	2.2	20.0
120-82-1	1,2,4-Trichlorobenzene	1	5.0	U	2.7	5.0
86-30-6	N-Nitrosodiphenylamine	1	3.9	J	1.3	5.0
87-86-5	Pentachlorophenol	1	3.4	J	2.1	20.0

SURROGATES	ADDED: (ug/kg dry)	FOUND: (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	749.26	537	71.7	27 - 120	
p-Terphenyl-d14	499.51	450	90.1	37 - 120	

Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012316S.D

Date : 01-May-2023 23:45

Client ID:

Sample Info: 23D0063-03

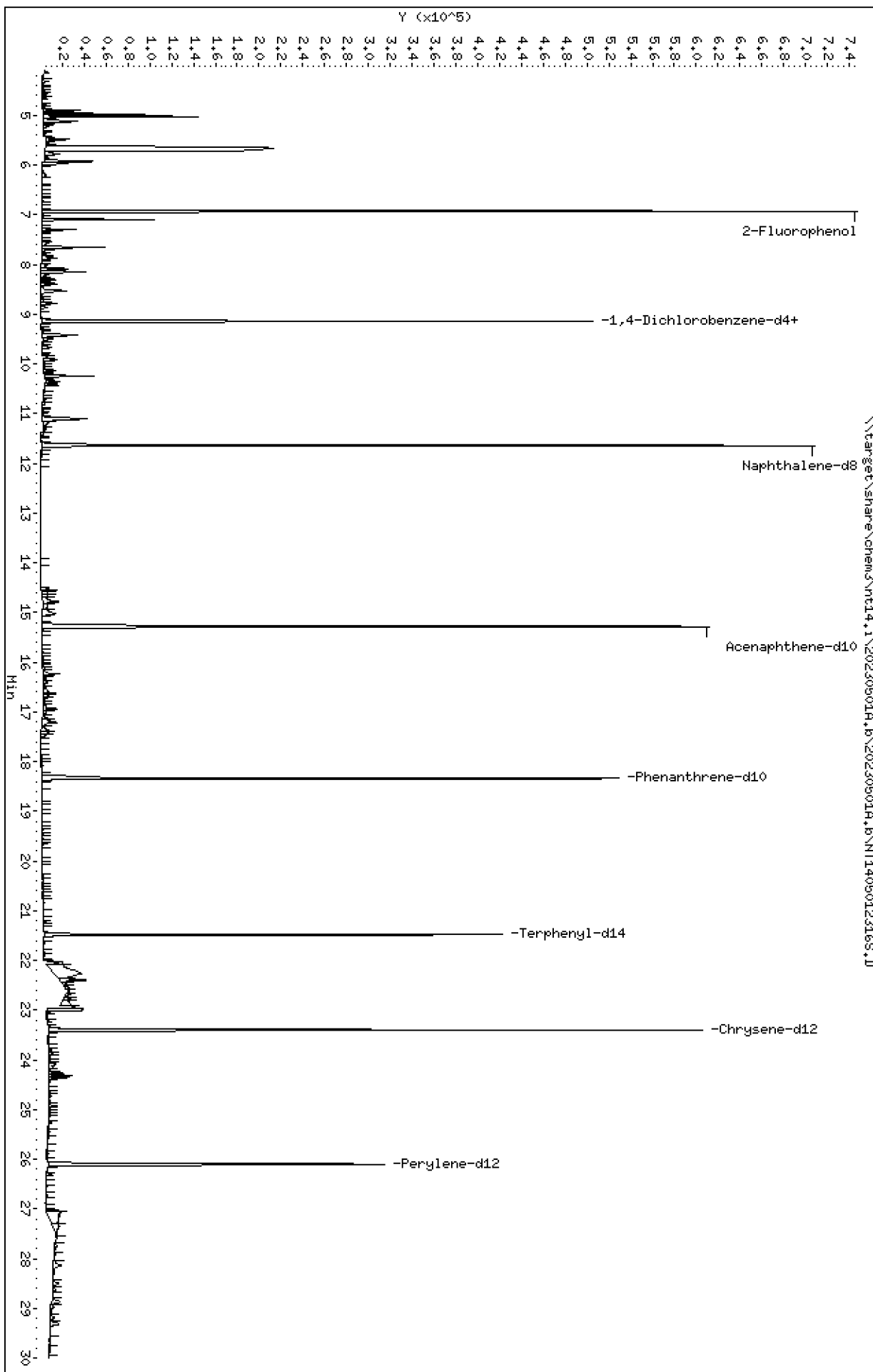
Instrument: nt14.1

Operator: USD

Column diameter: 0.25

Column phase: ZB-5msi

Page 1



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

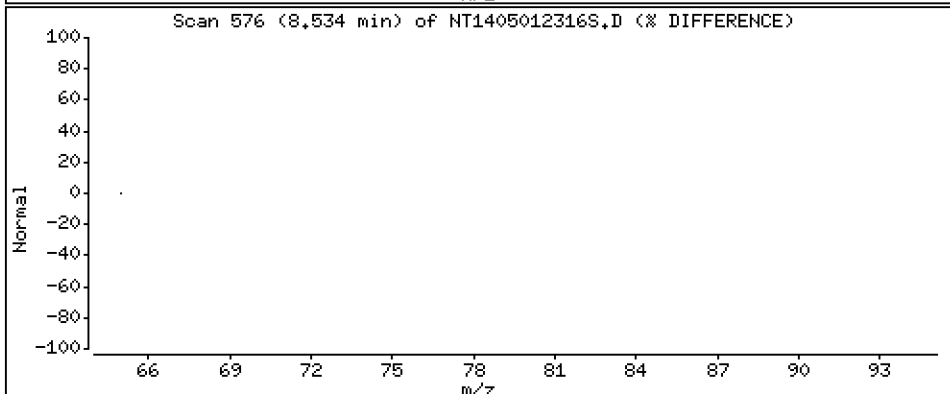
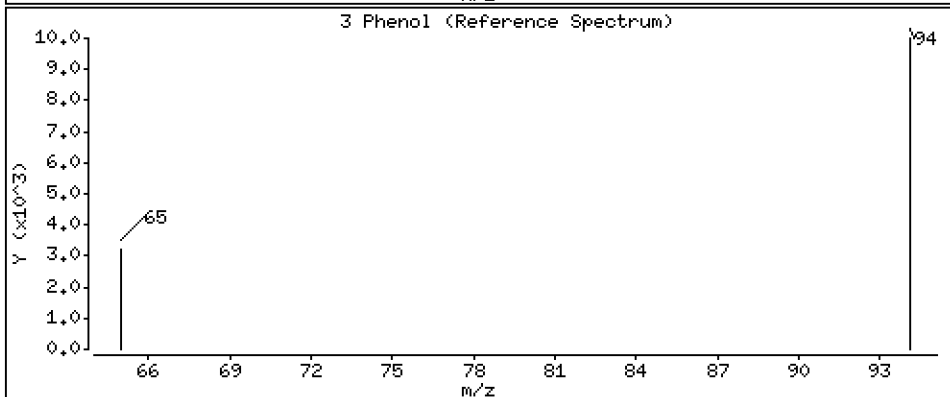
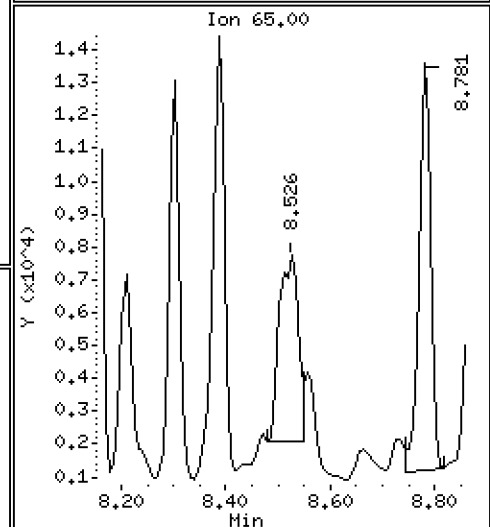
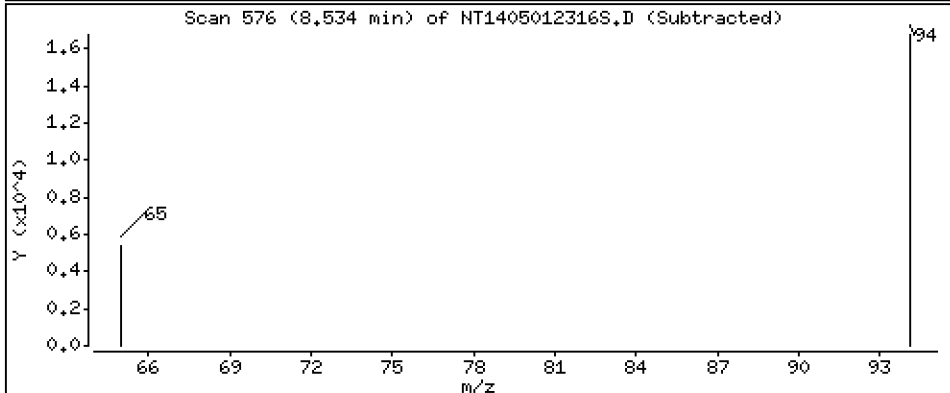
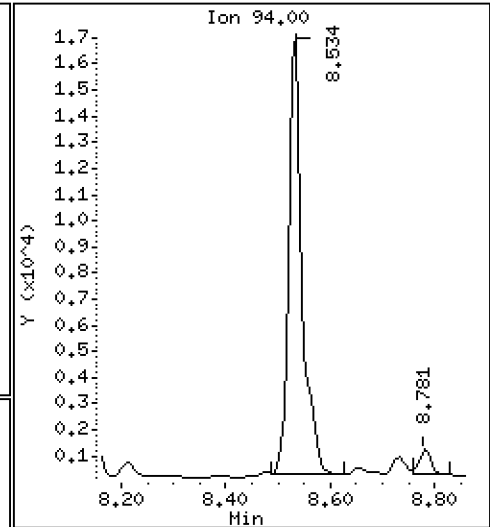
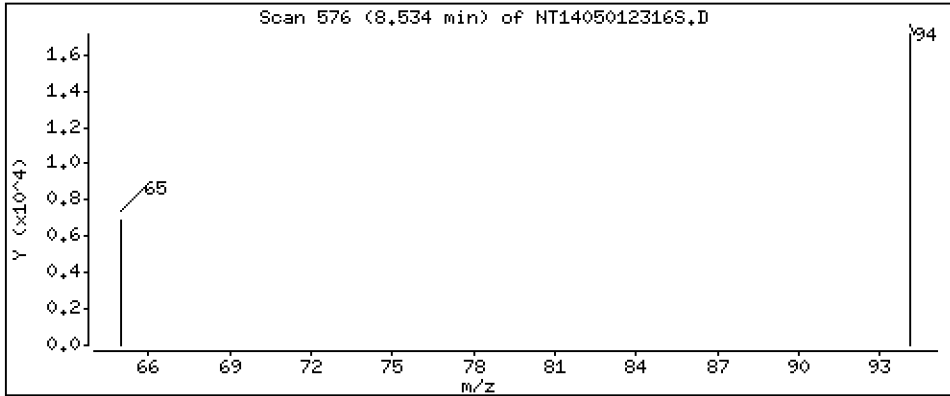
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,1778 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

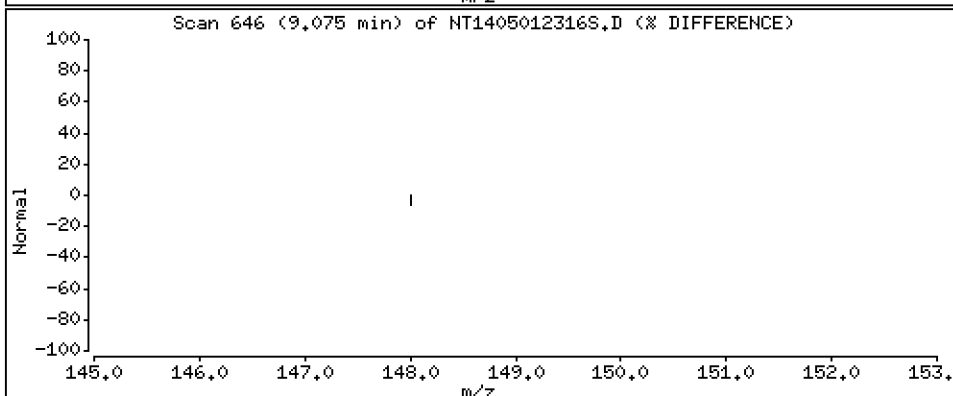
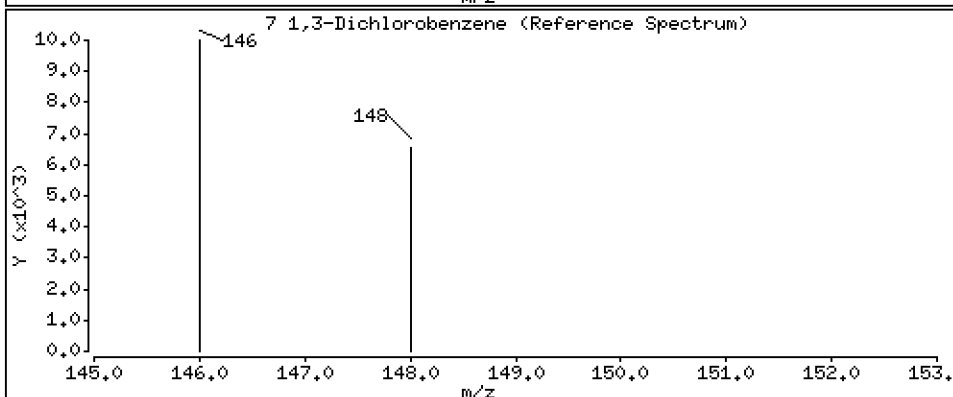
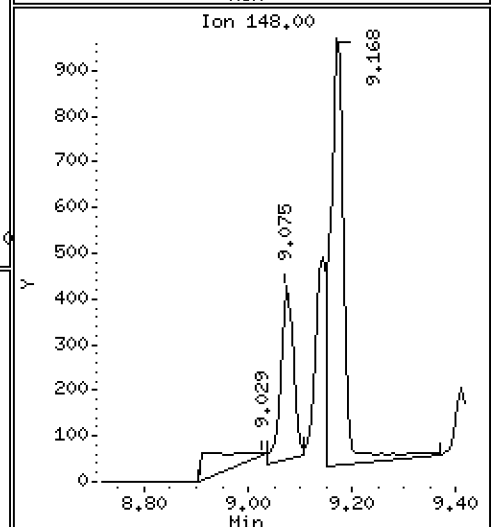
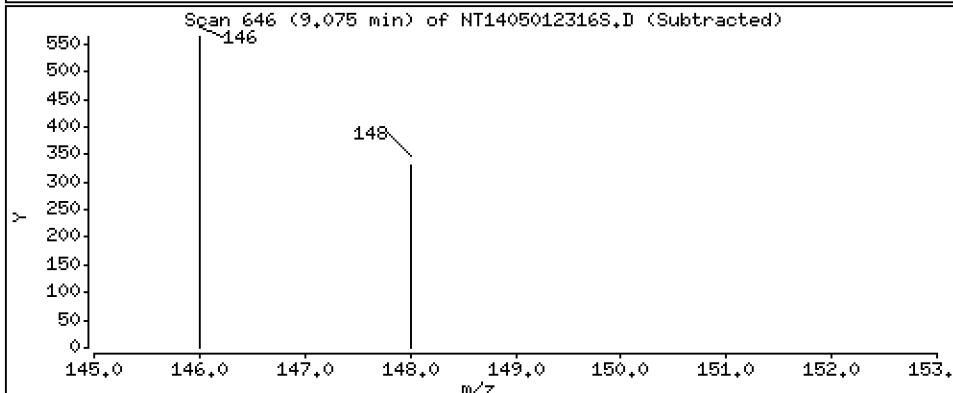
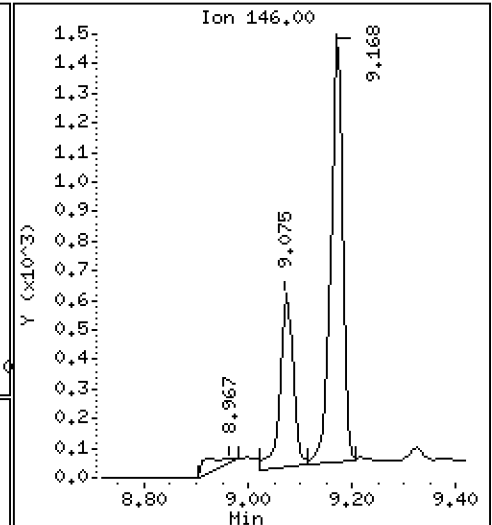
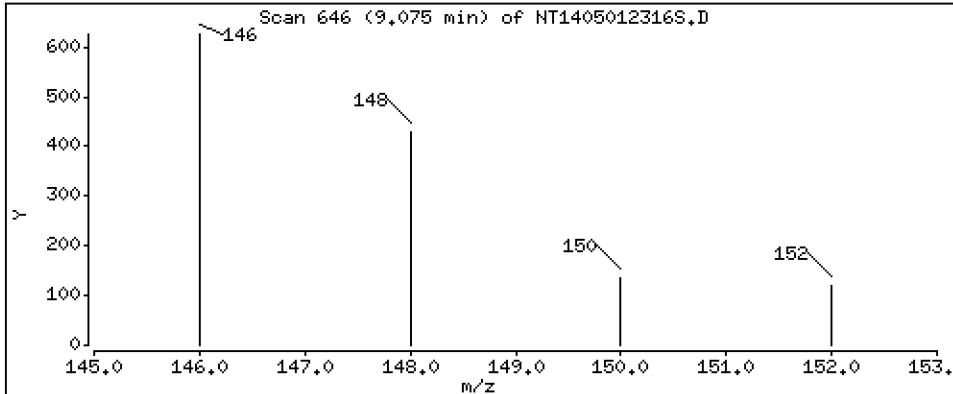
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,007467 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

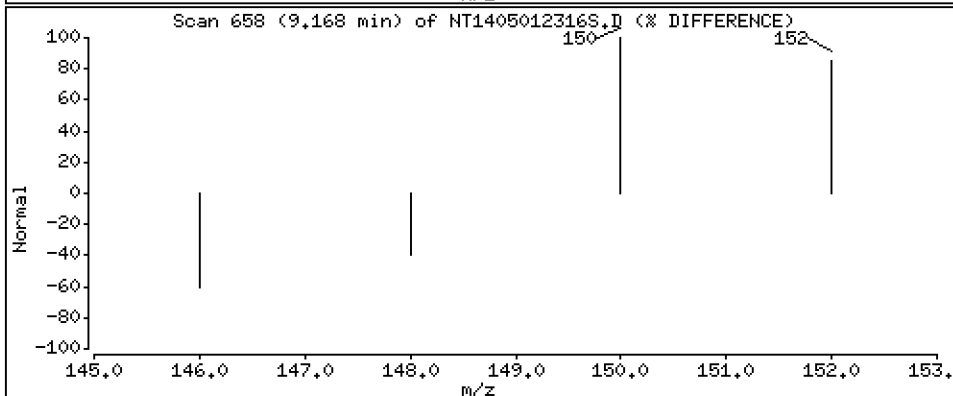
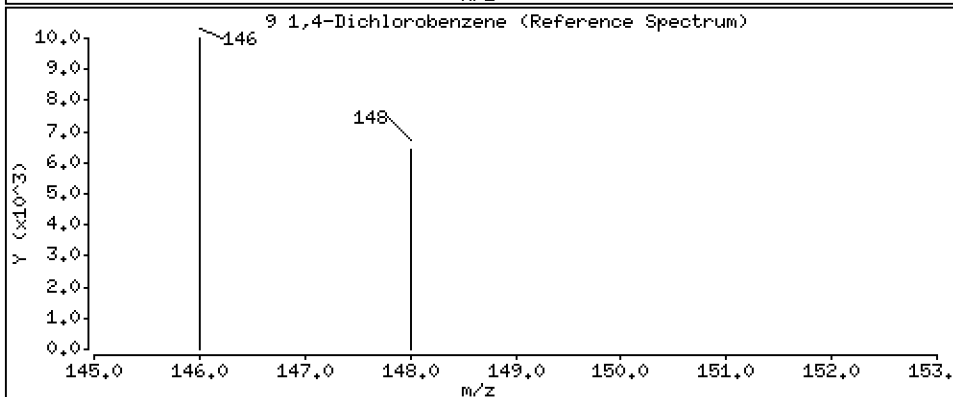
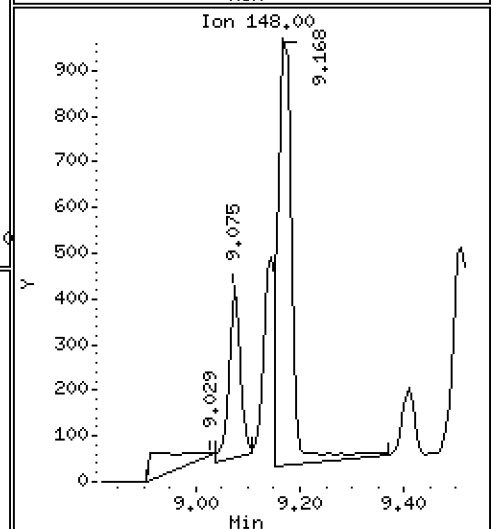
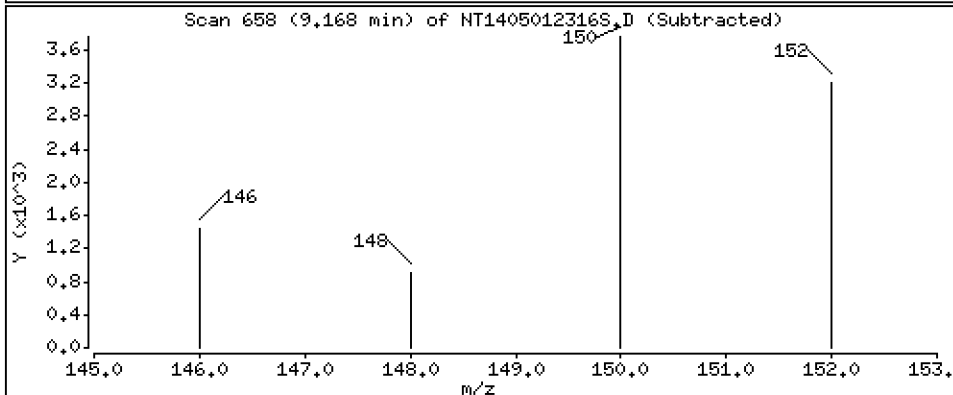
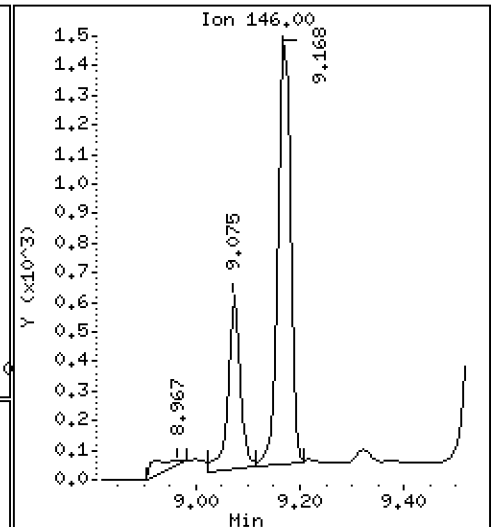
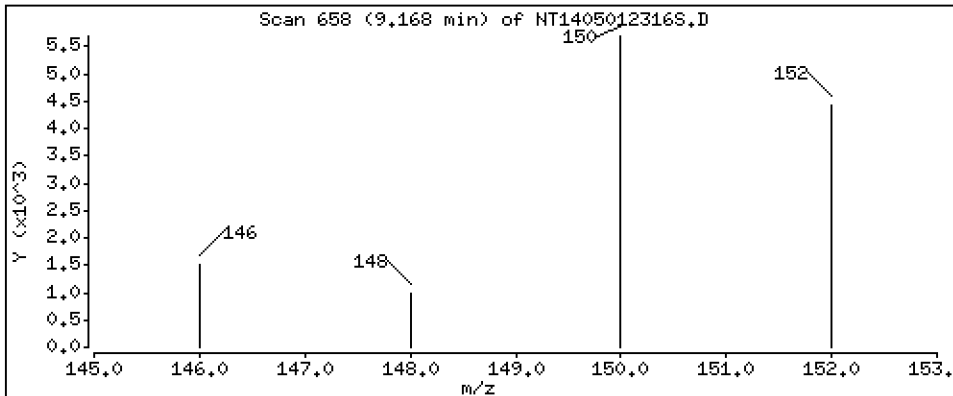
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 0,01822 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

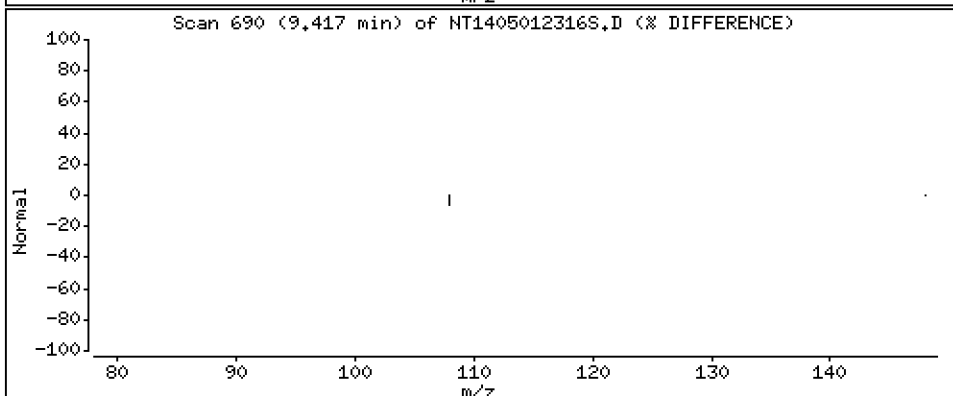
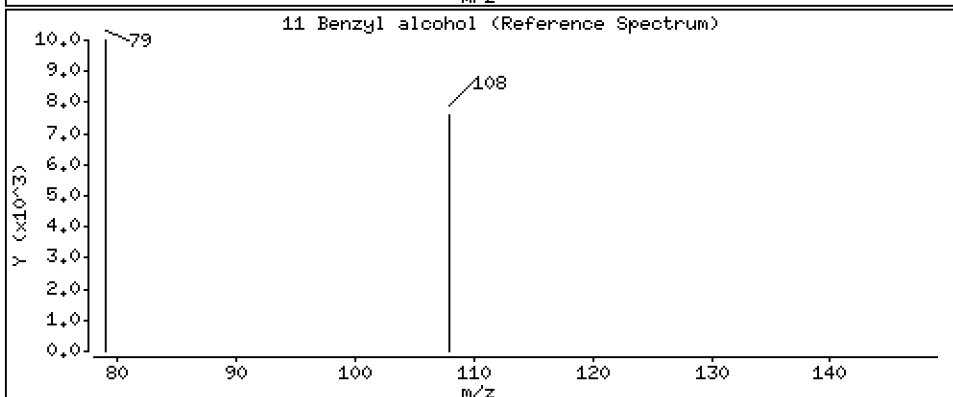
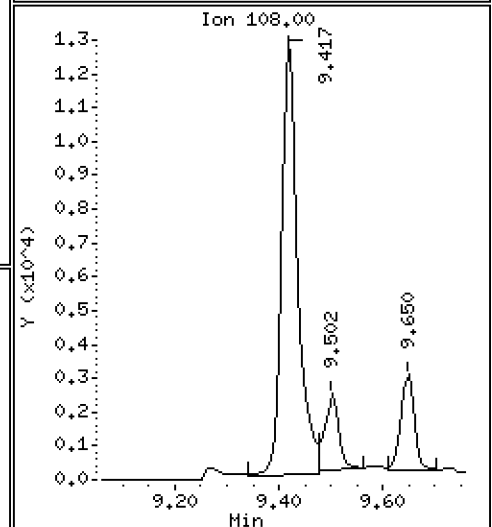
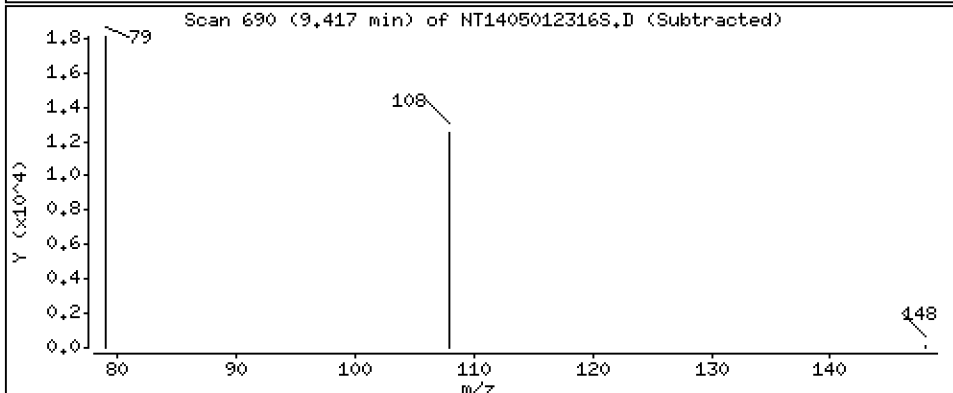
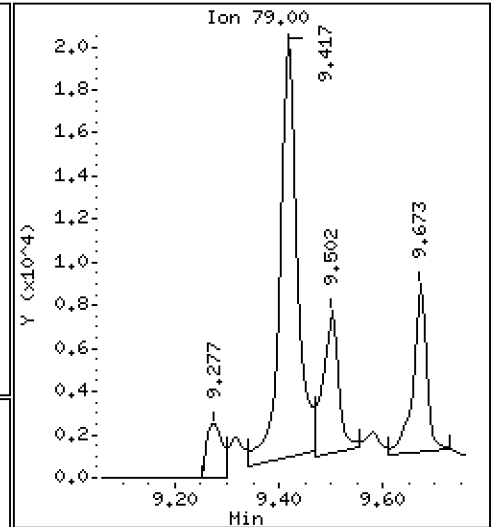
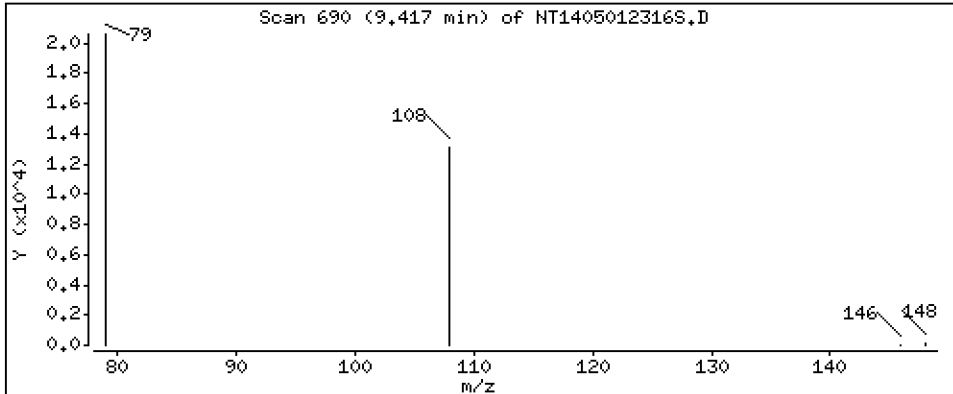
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 0.4084 ug/mL





Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

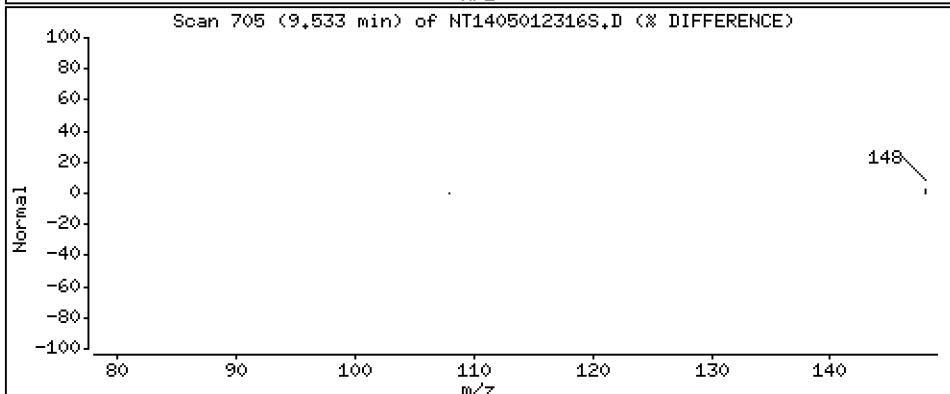
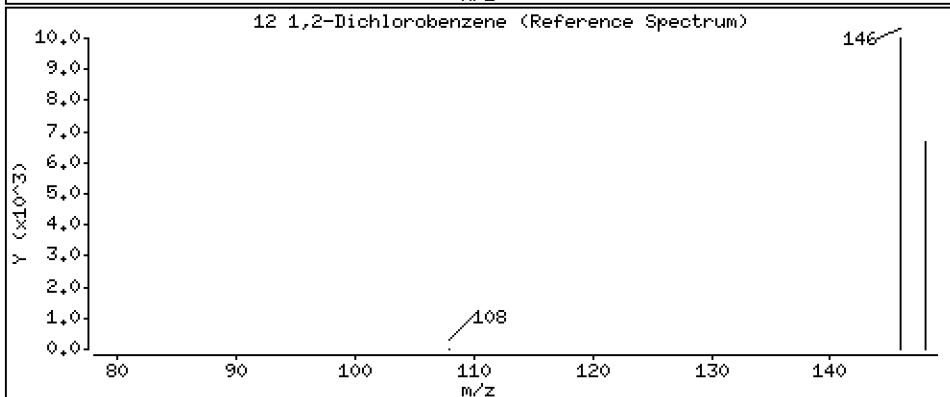
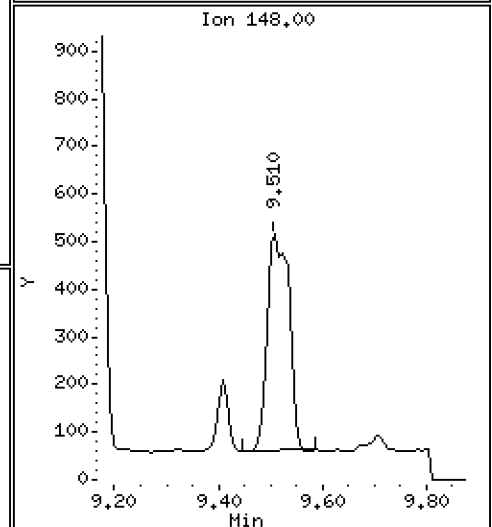
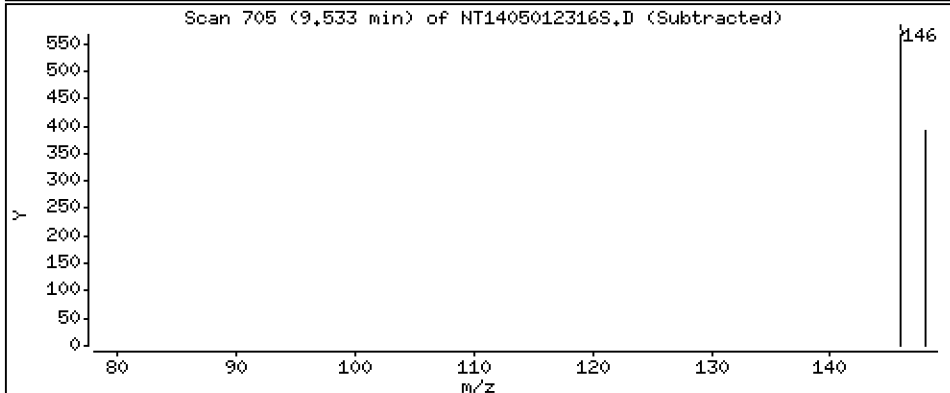
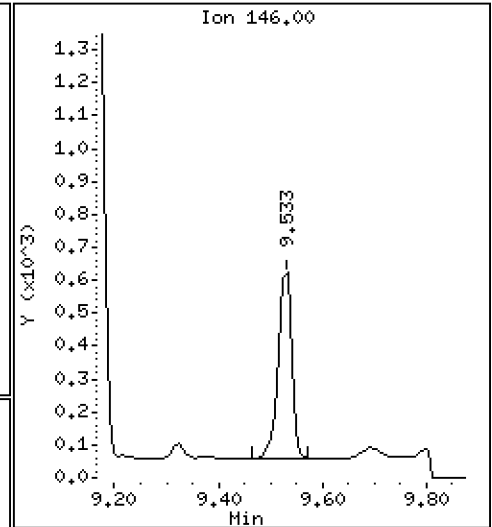
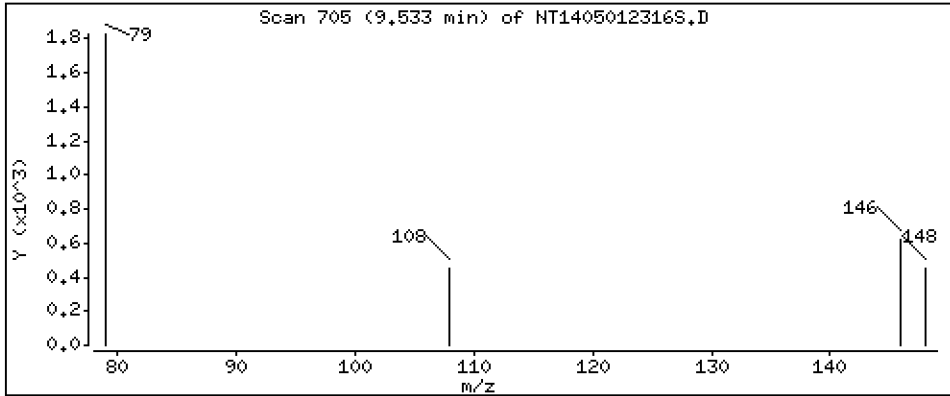
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 0,007781 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

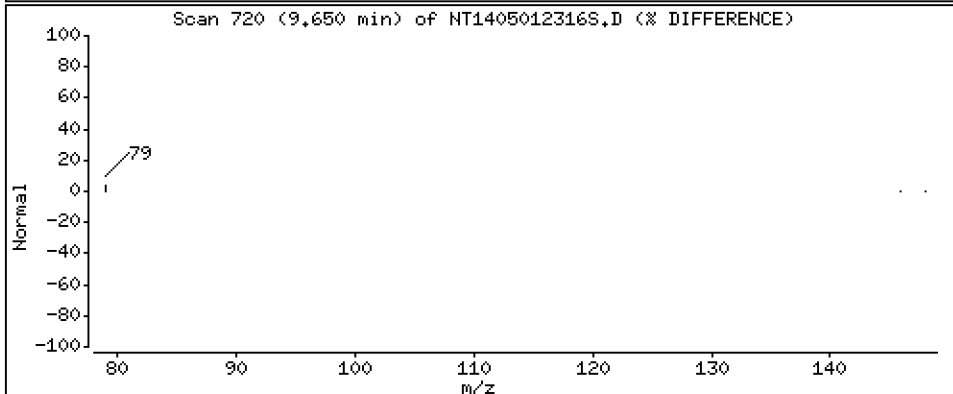
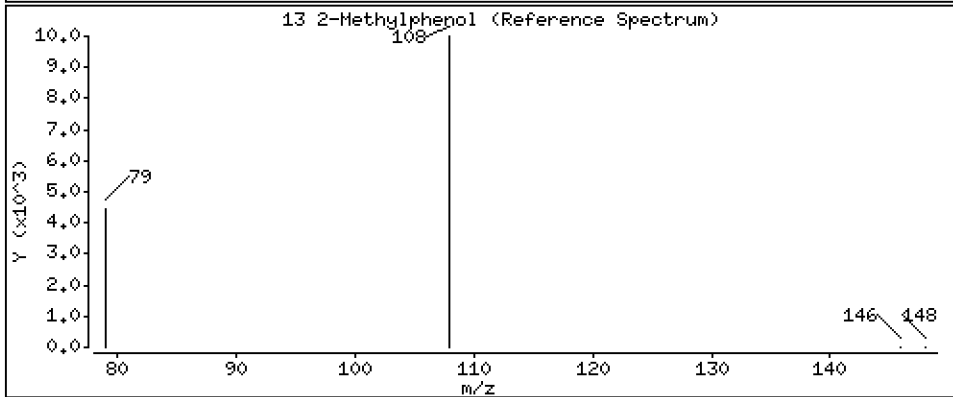
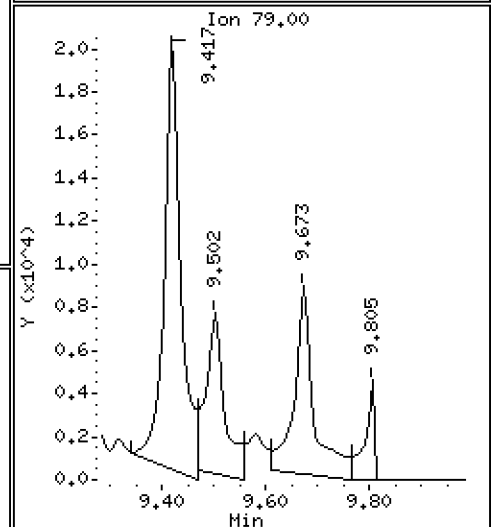
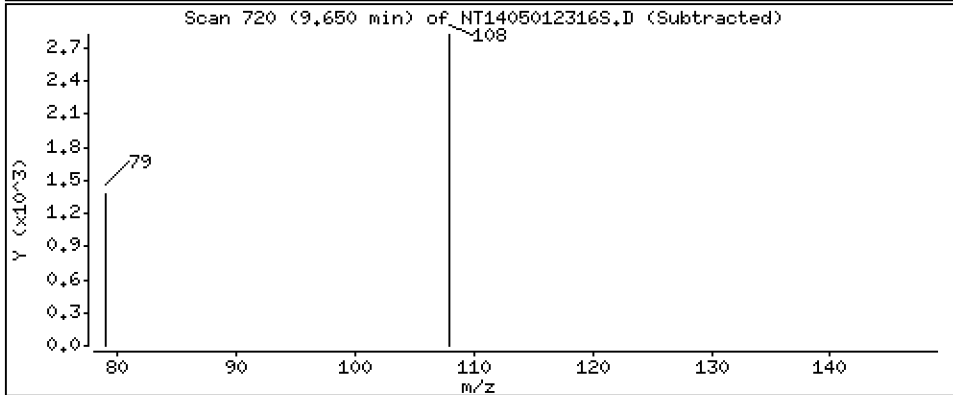
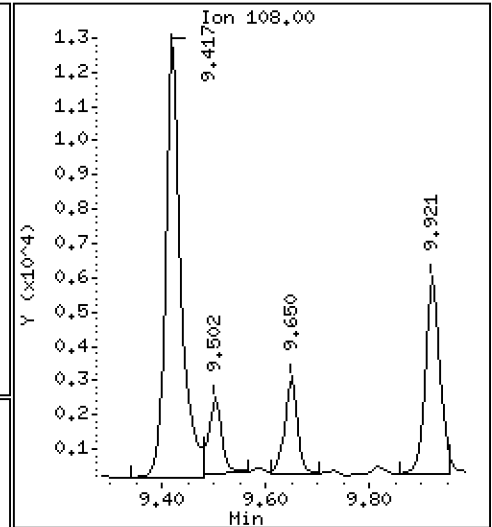
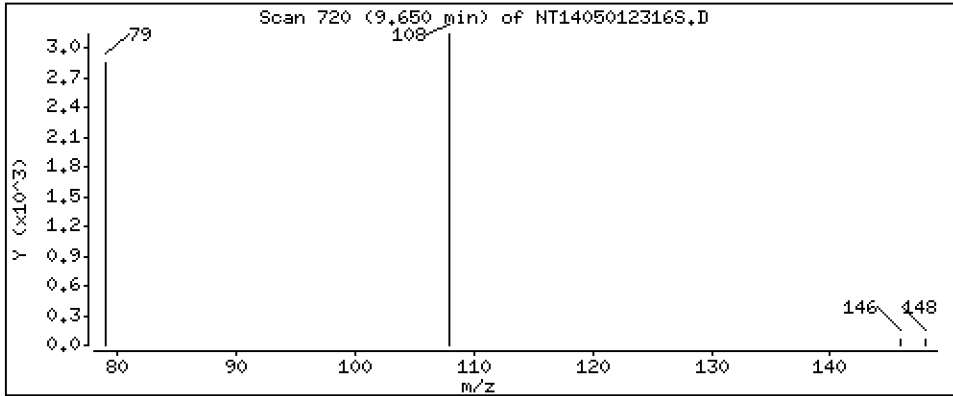
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

13 2-Methylphenol

Concentration: 0,04364 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

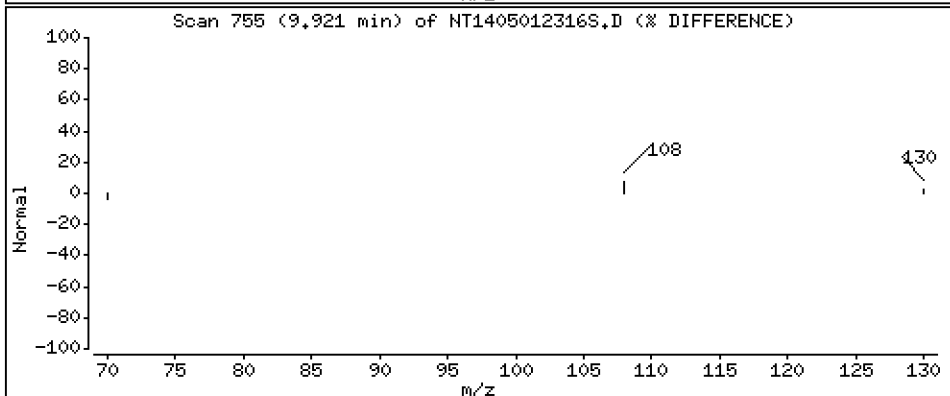
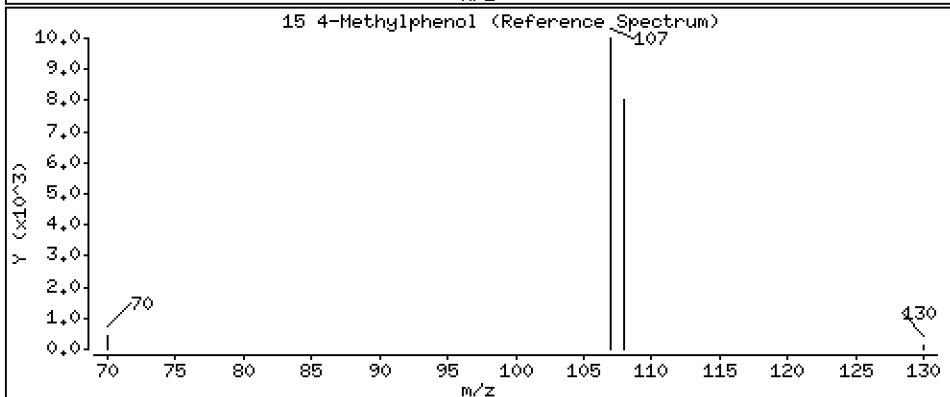
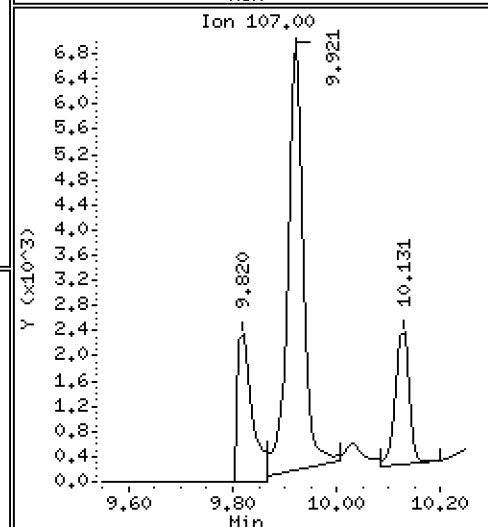
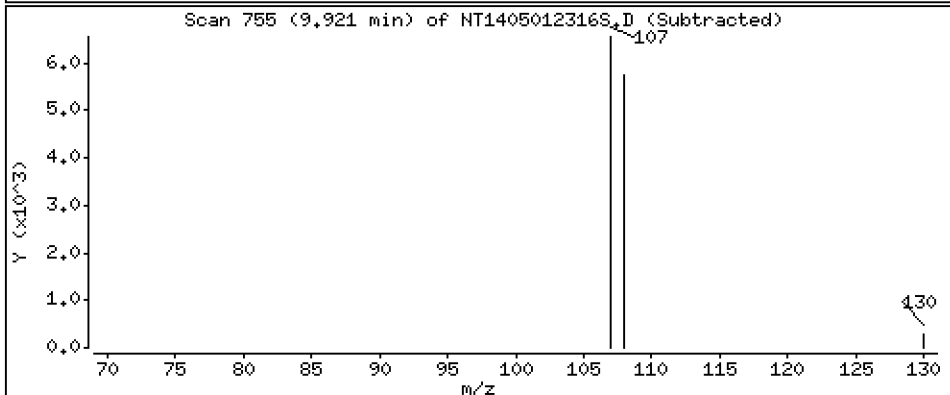
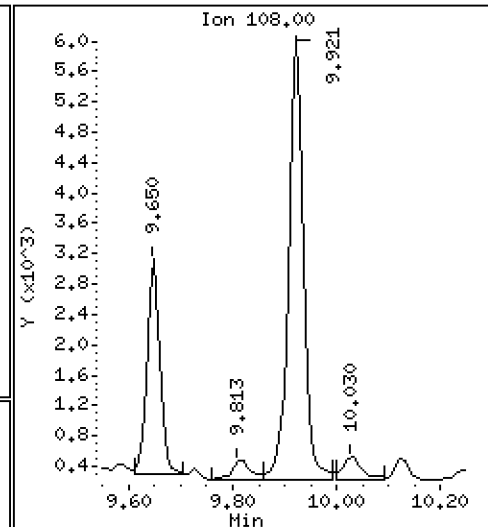
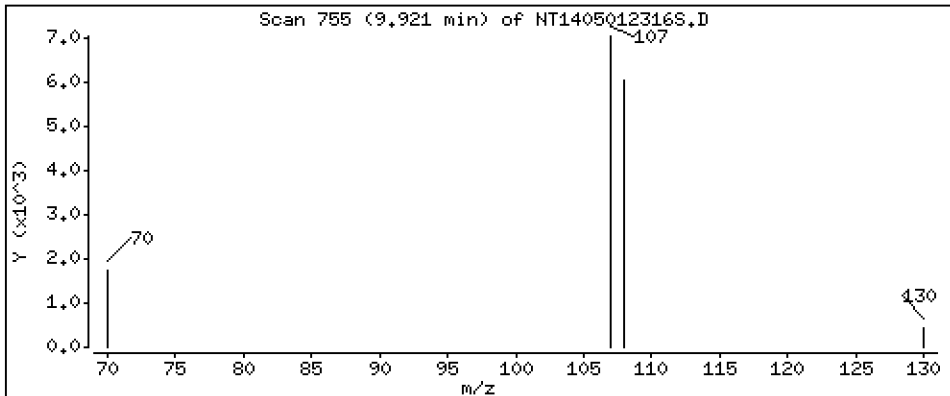
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 0,1065 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

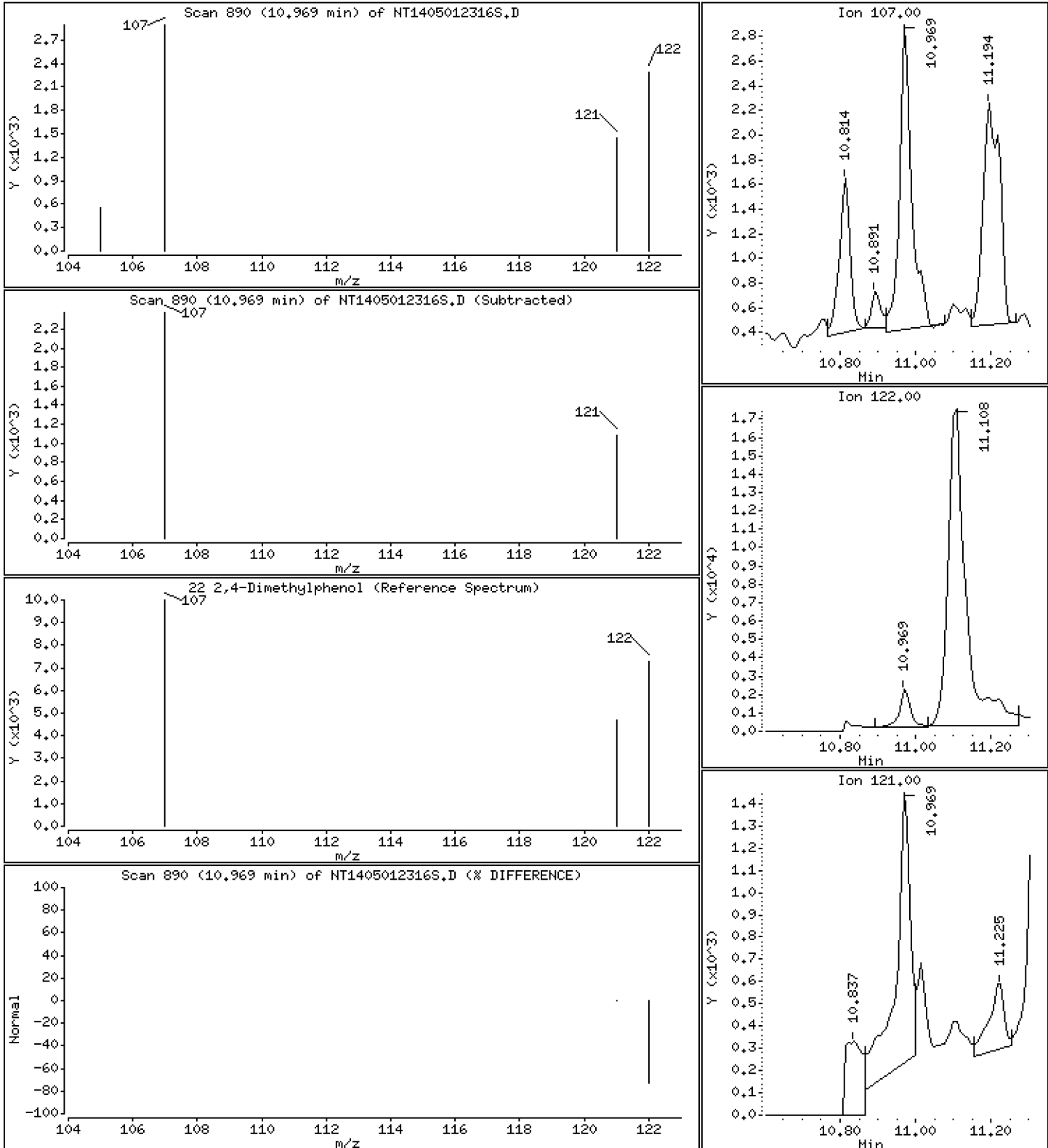
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 0.04868 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

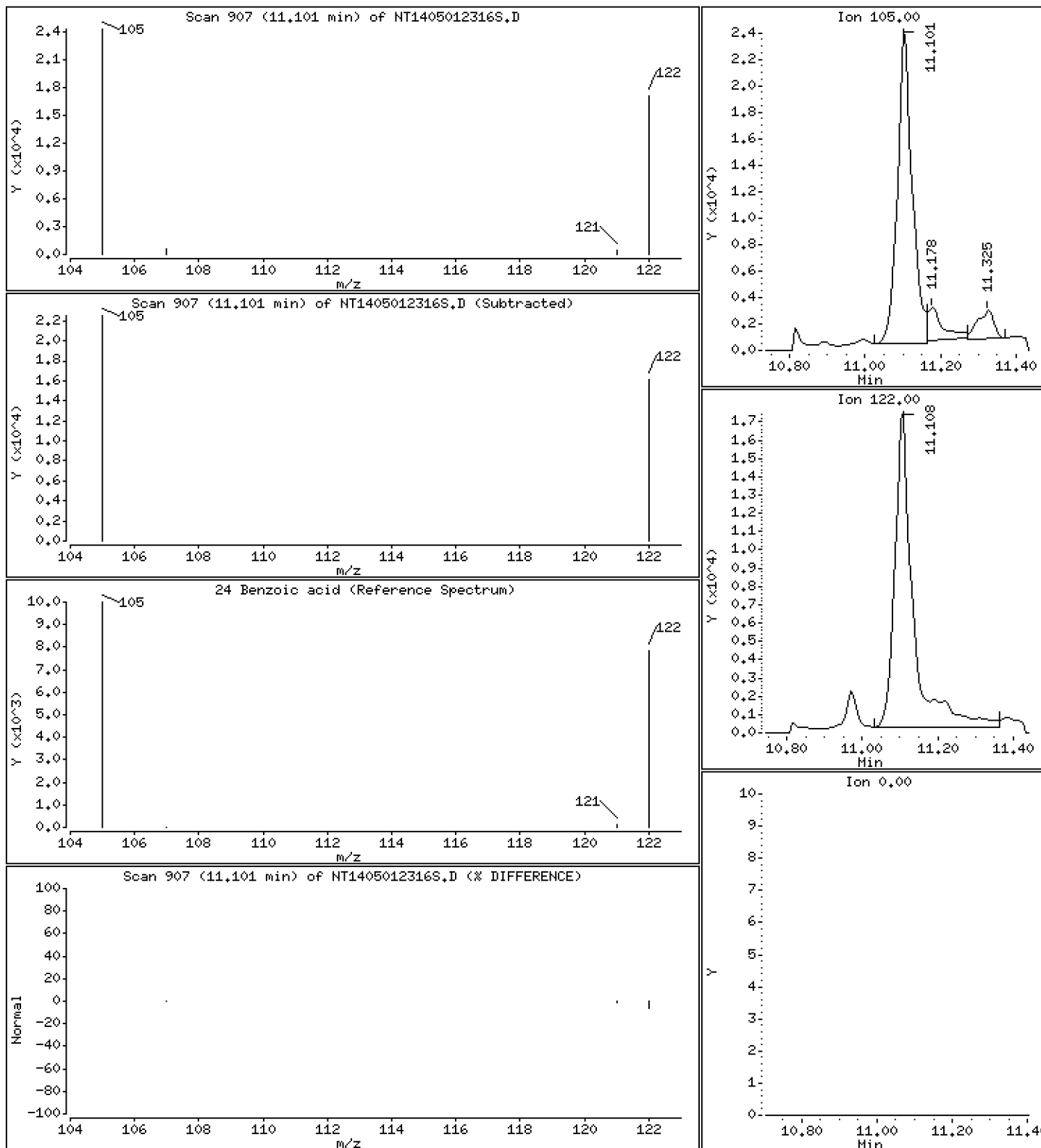
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 0,8154 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

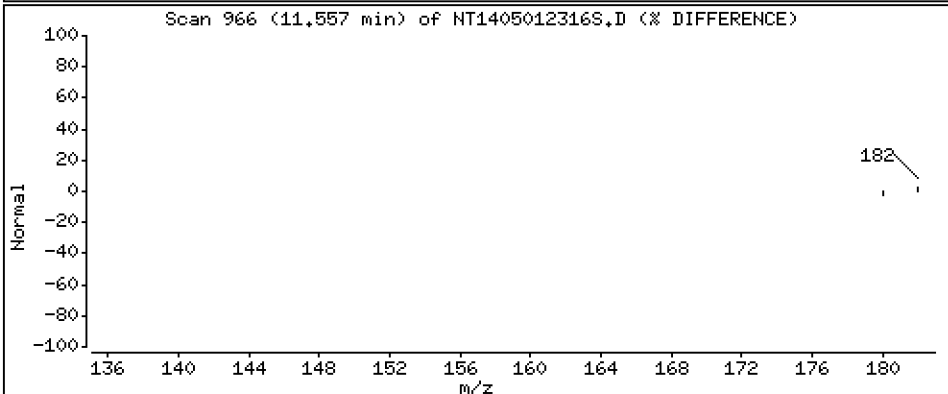
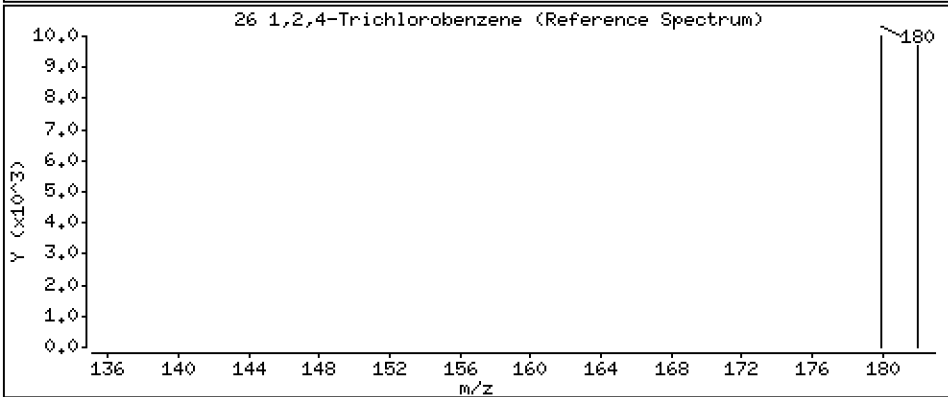
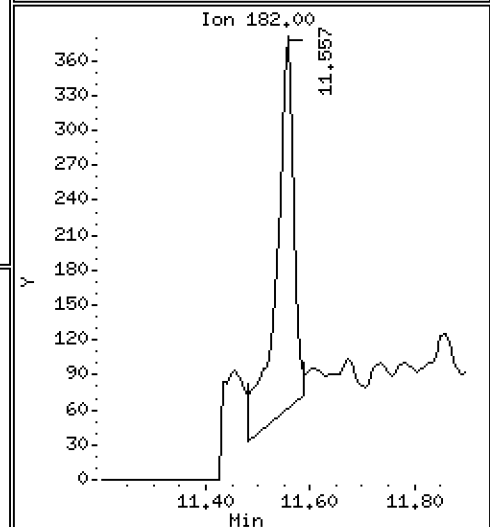
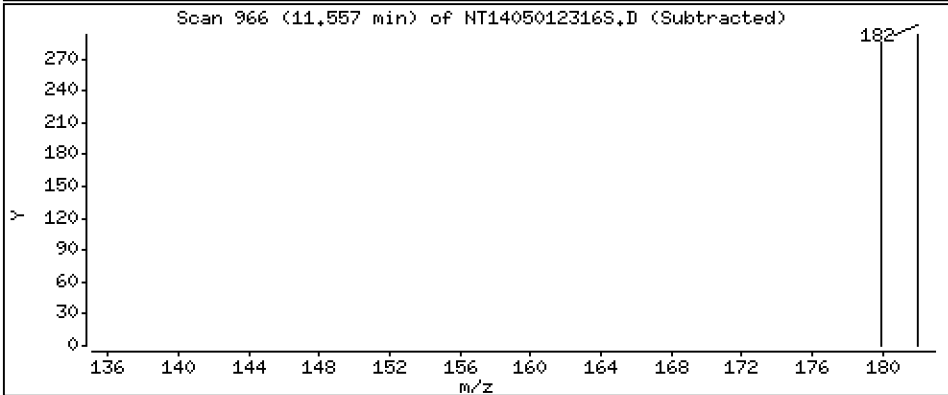
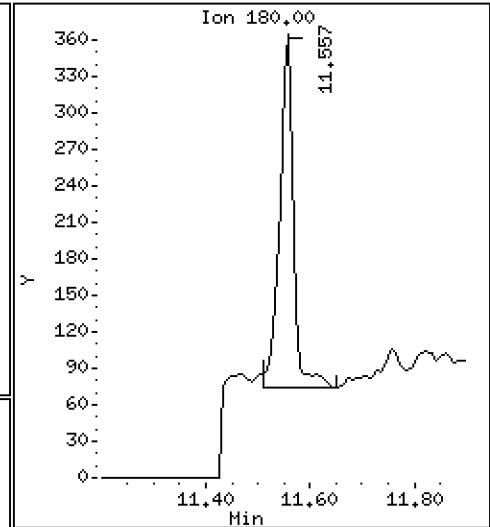
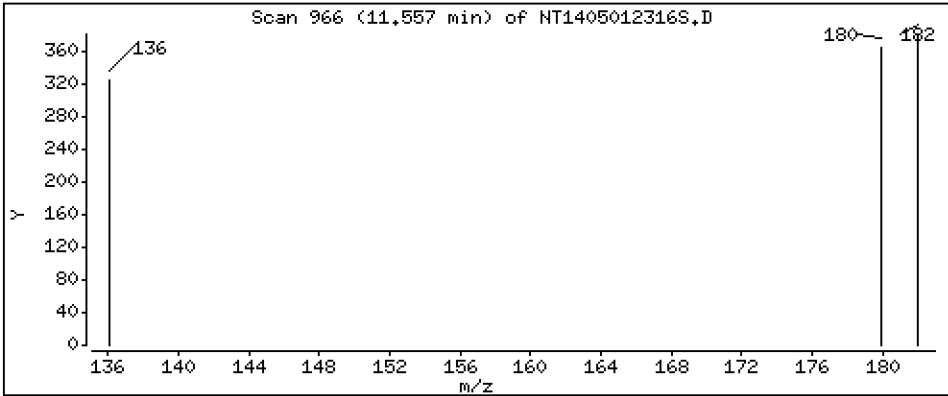
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 0,006003 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

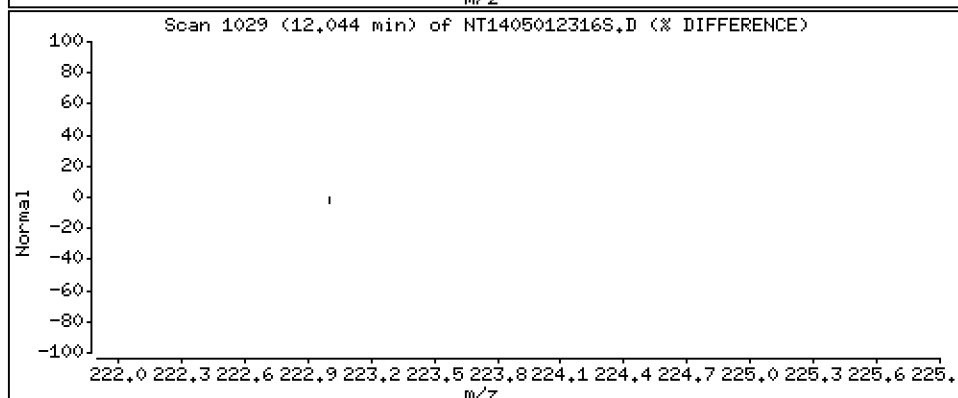
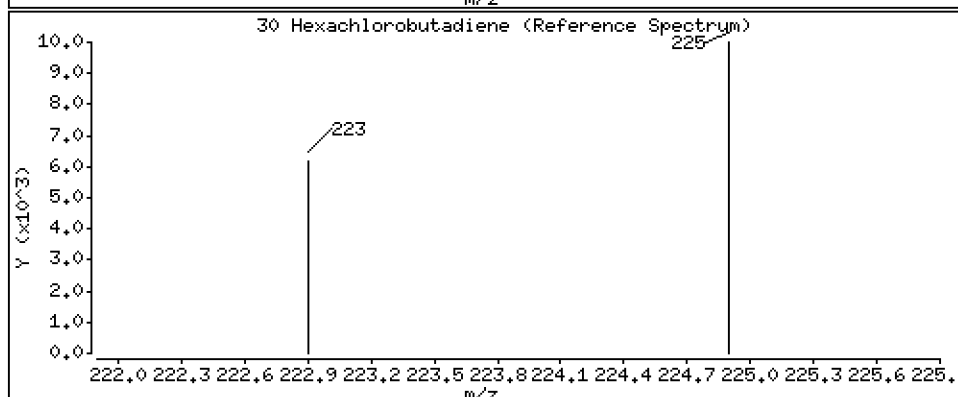
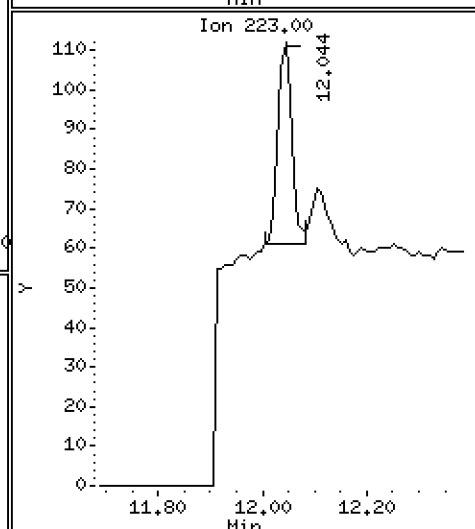
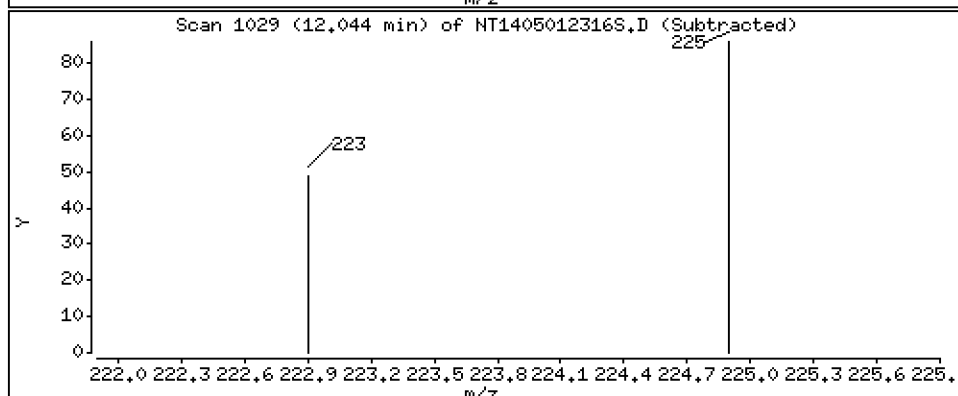
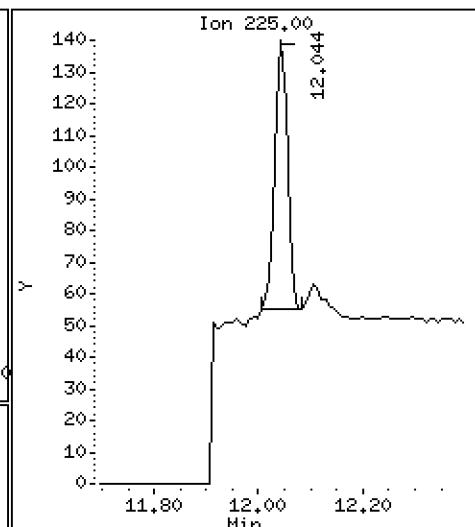
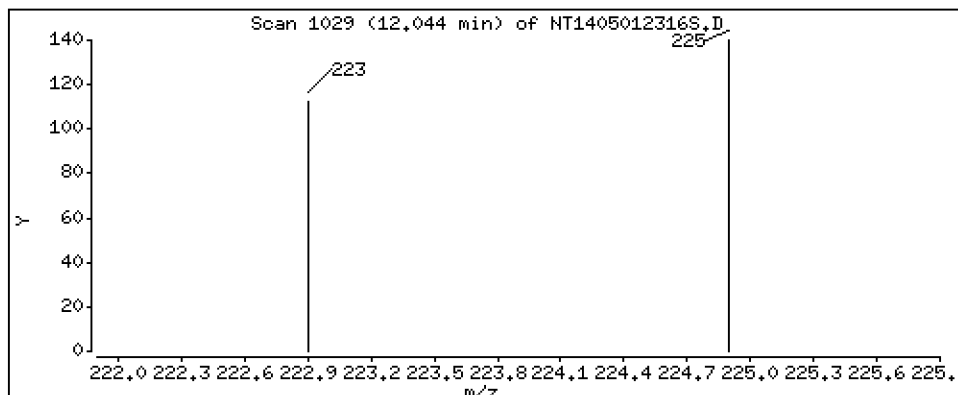
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 0,002742 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

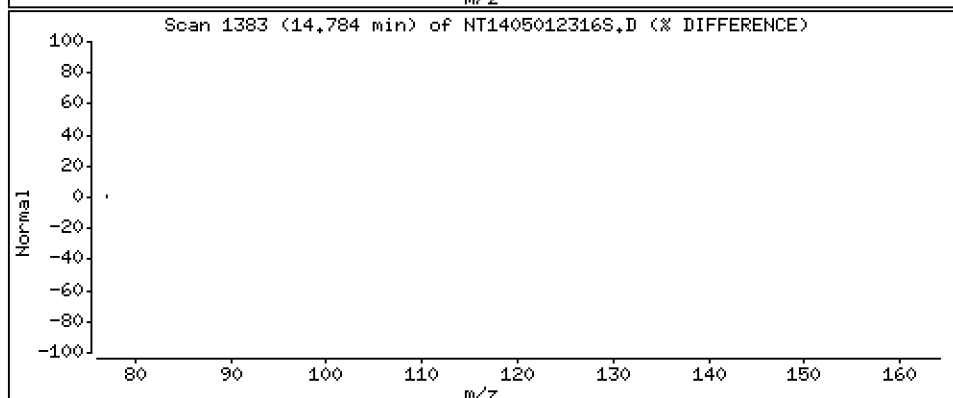
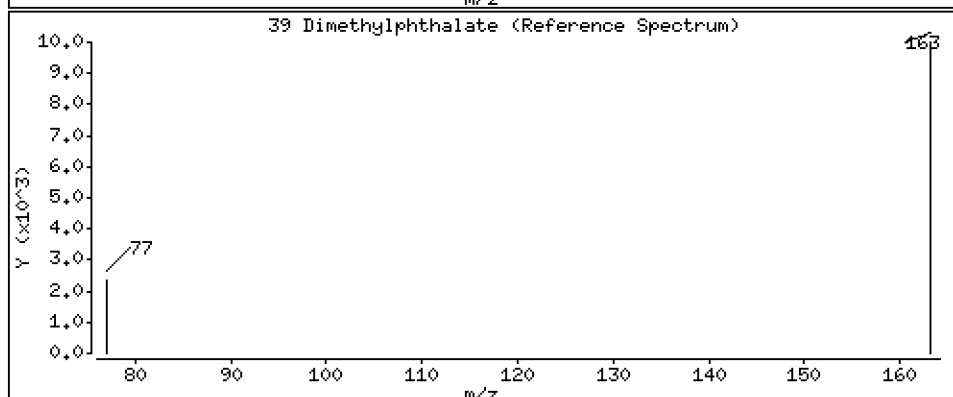
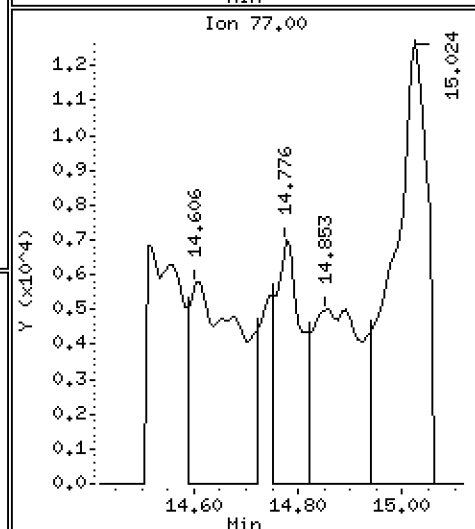
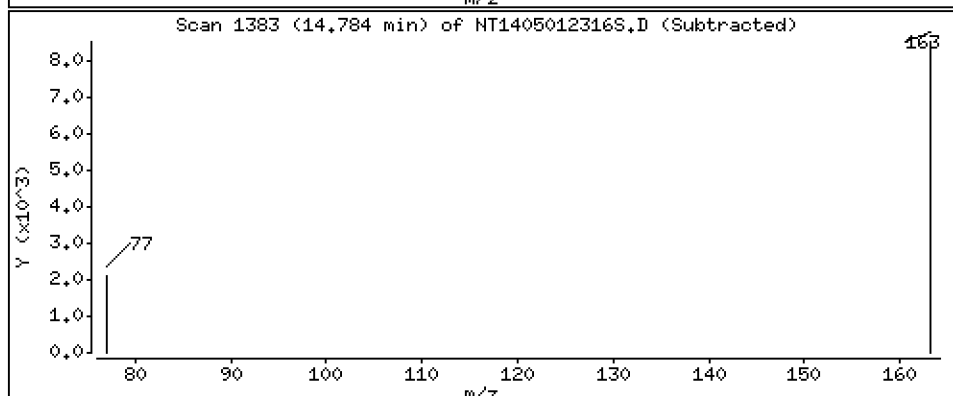
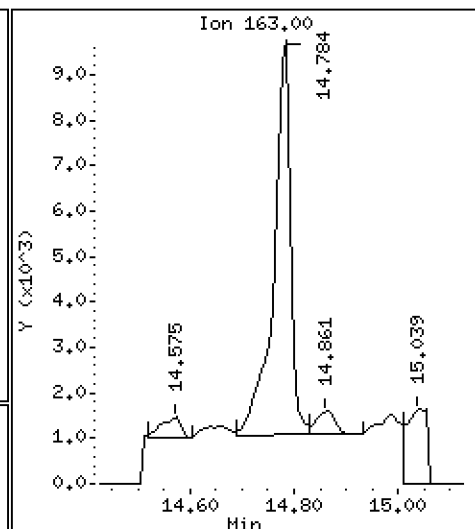
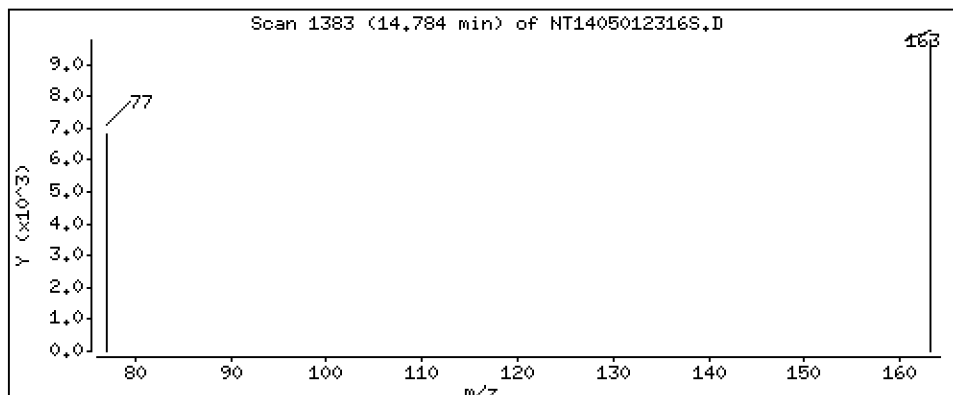
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 0,09335 ug/mL





Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

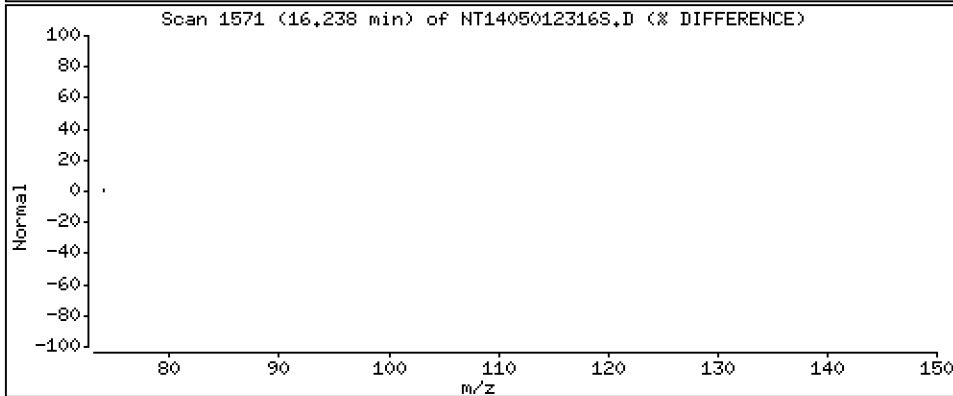
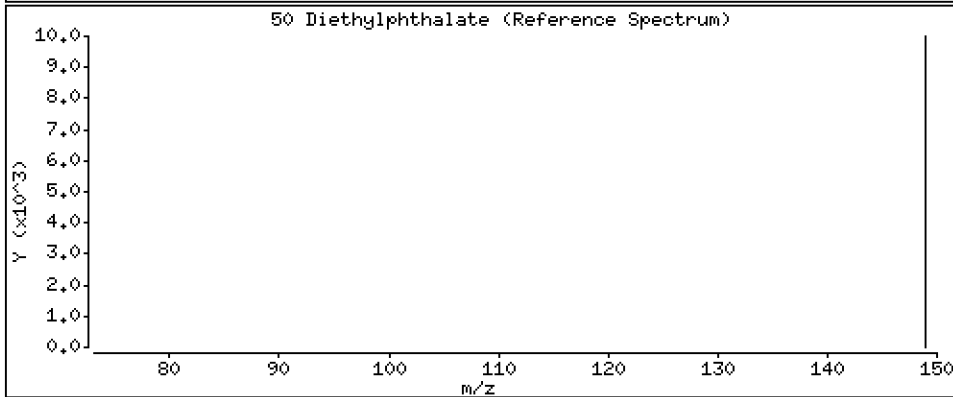
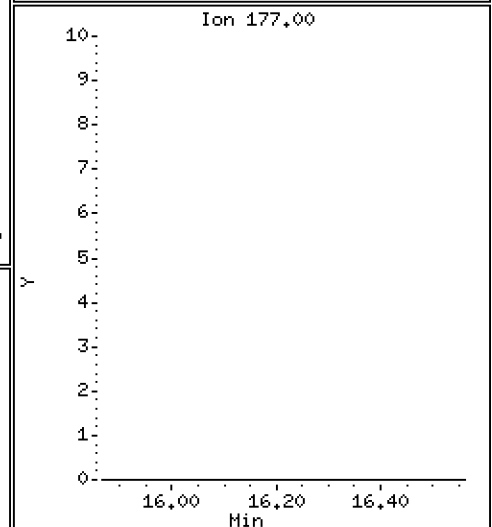
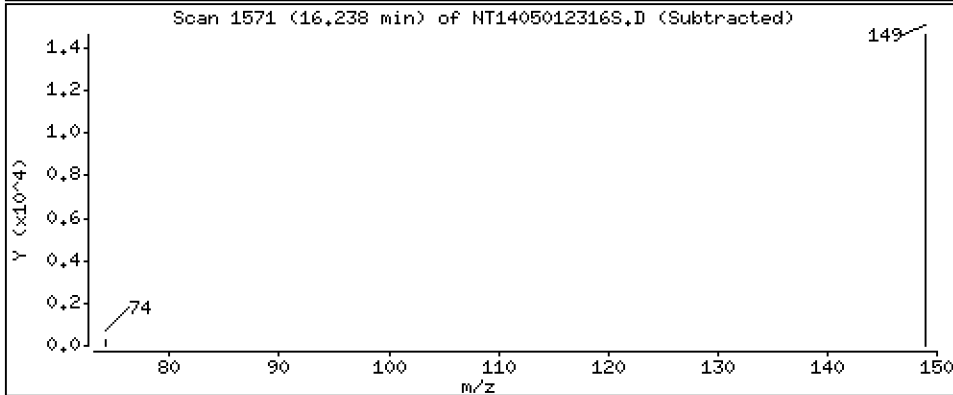
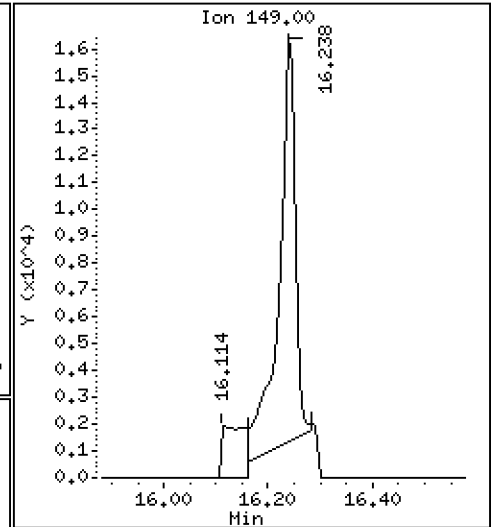
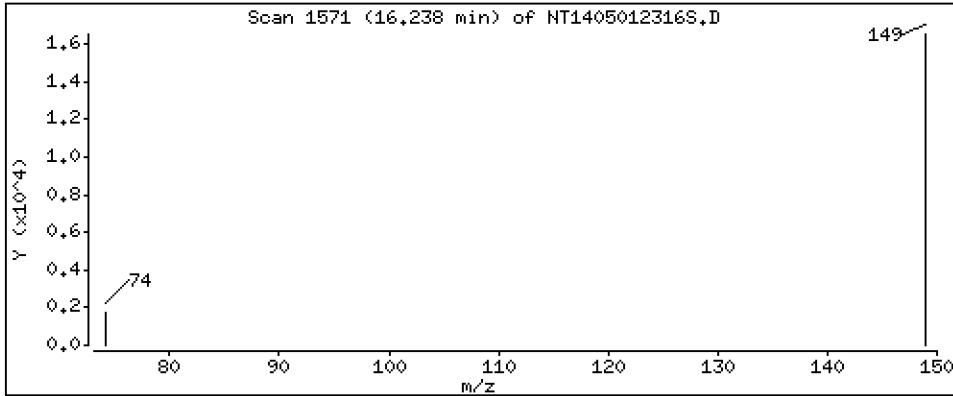
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,1585 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

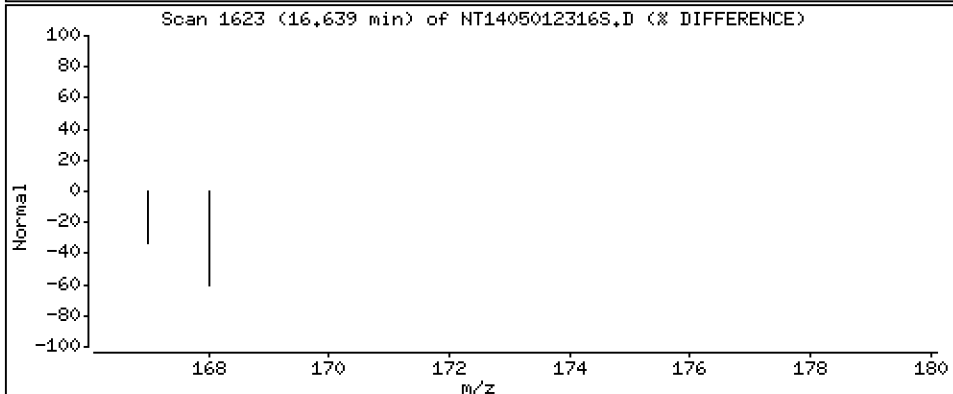
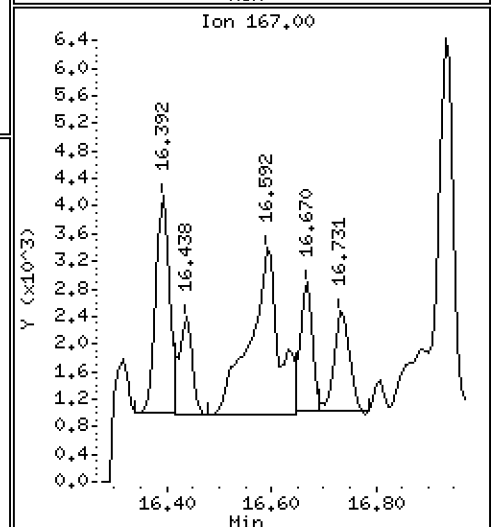
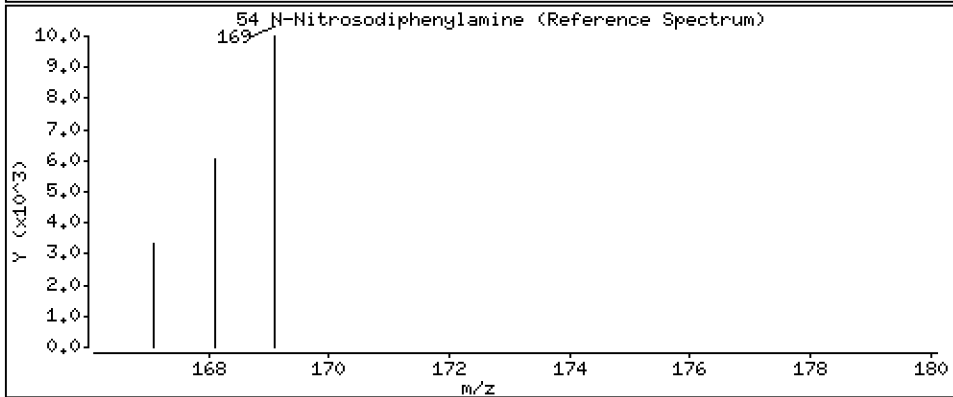
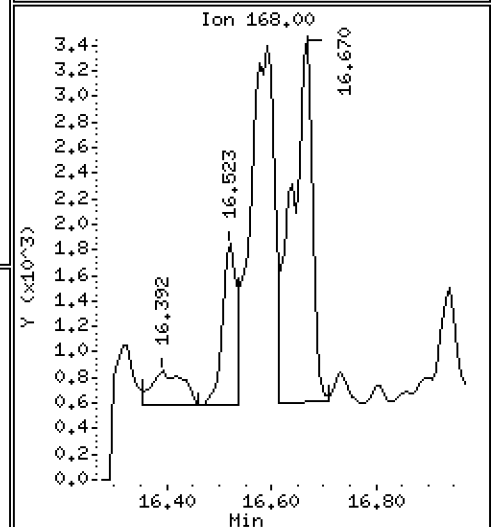
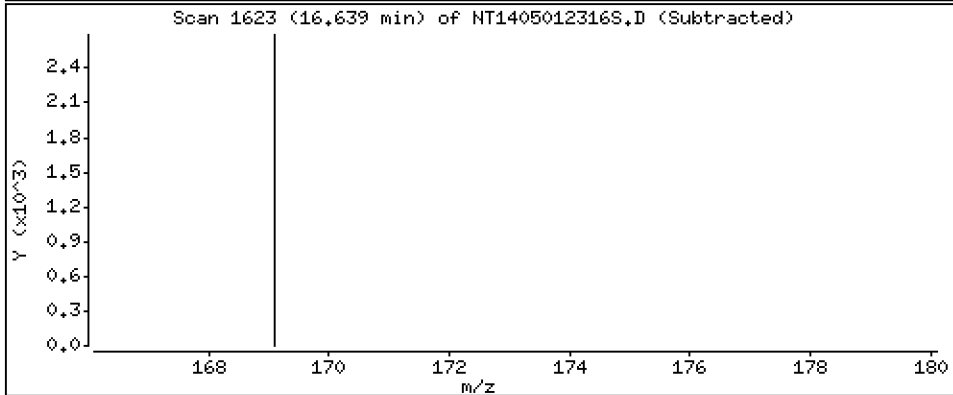
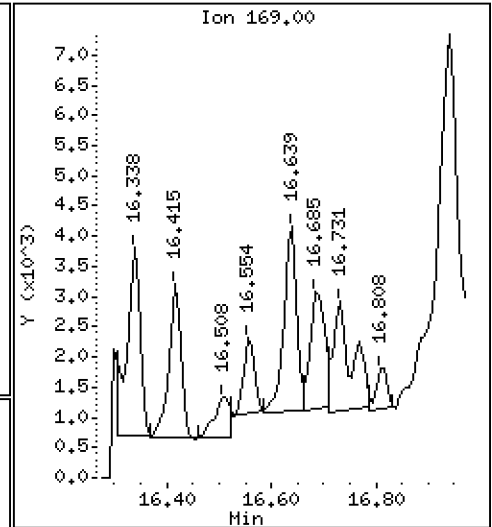
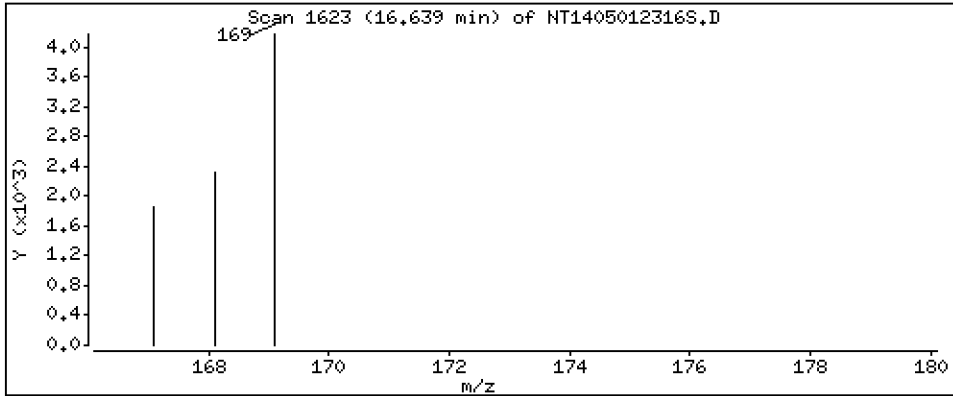
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 0,03874 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

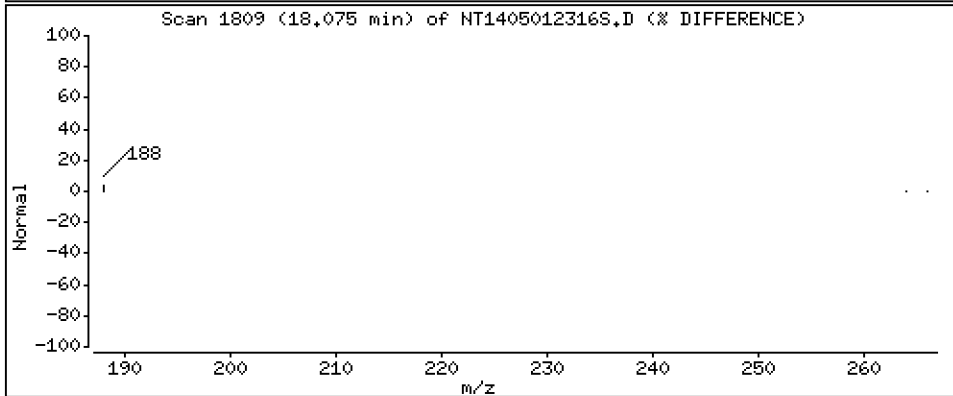
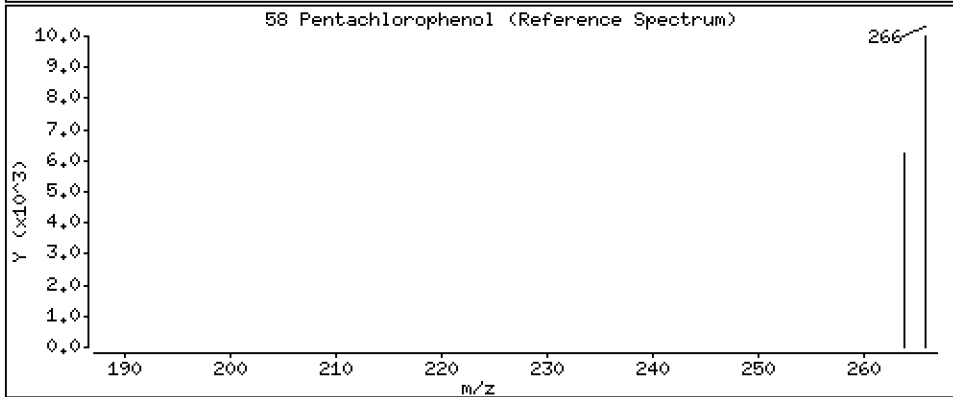
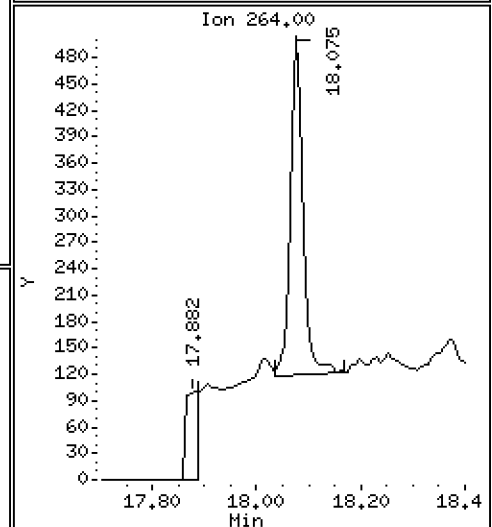
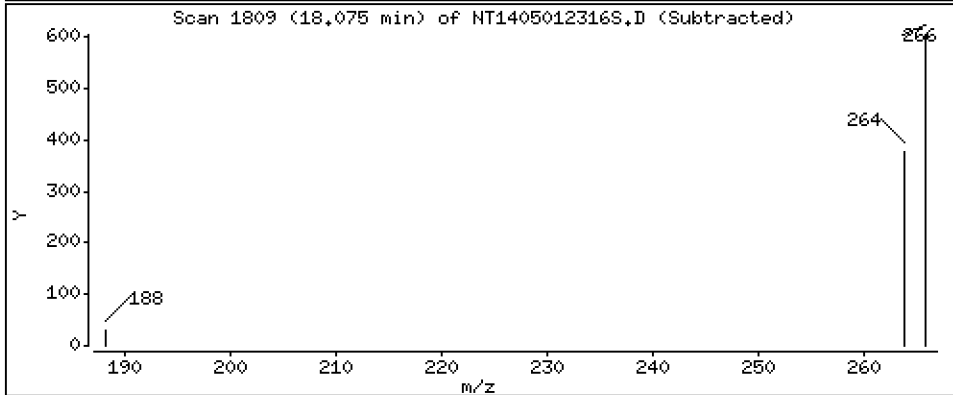
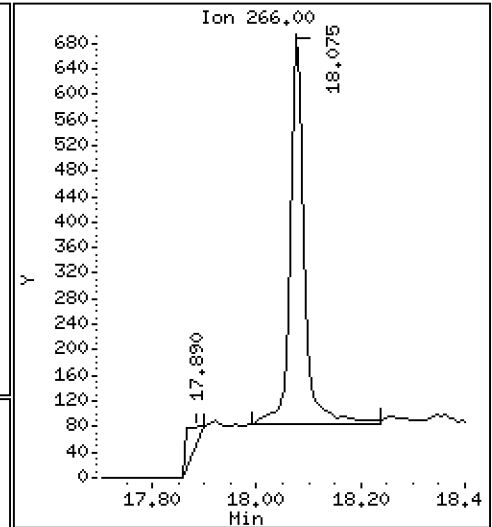
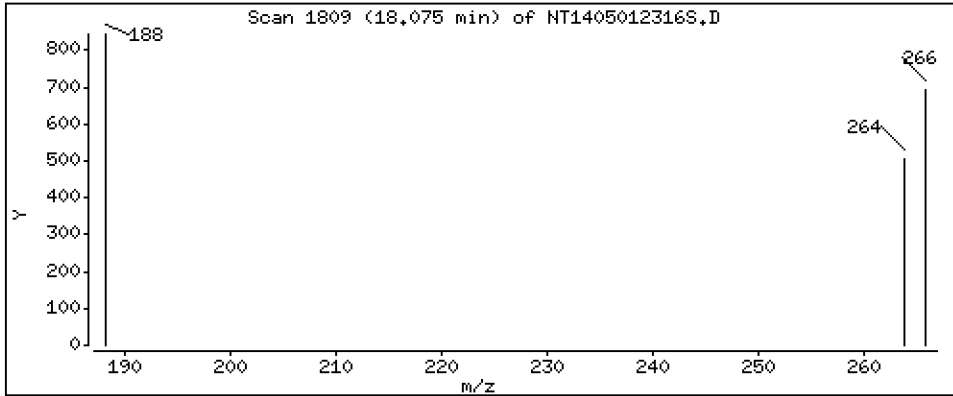
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 0,03378 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

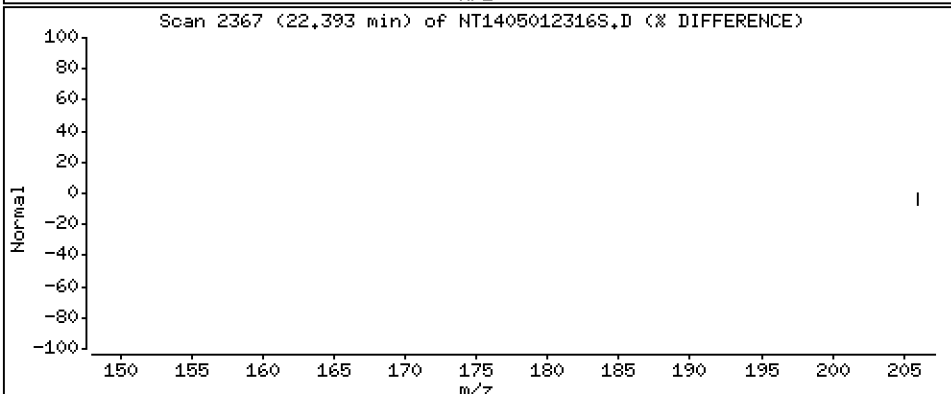
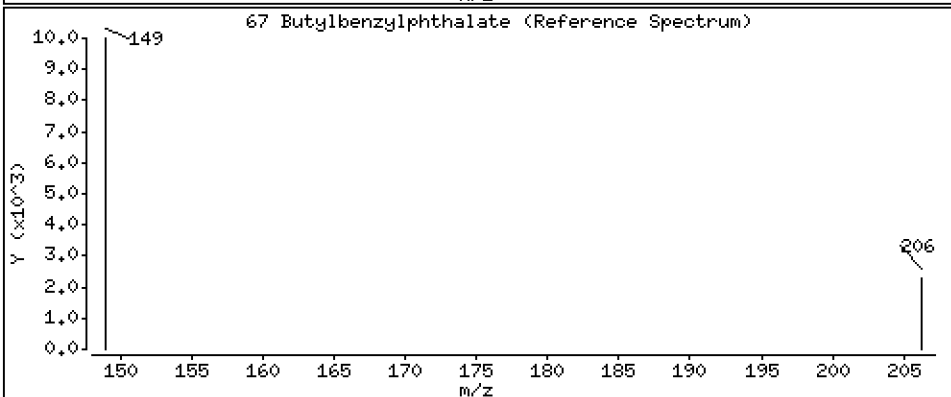
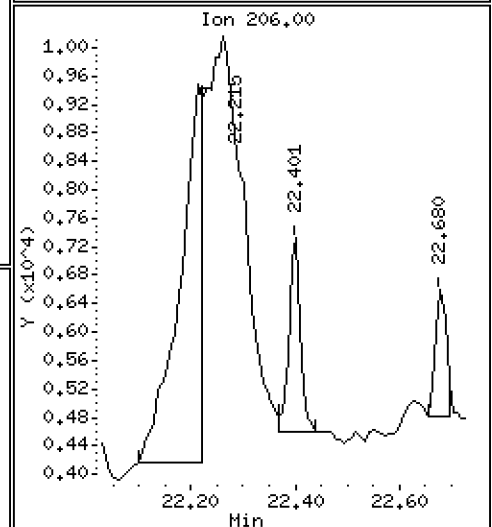
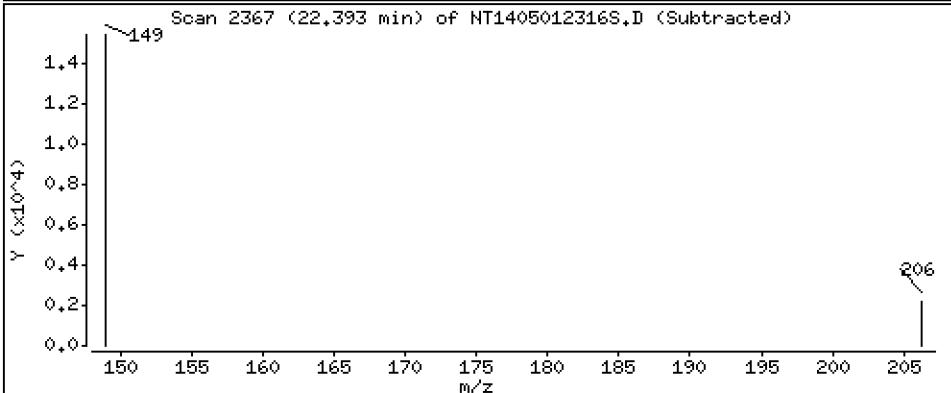
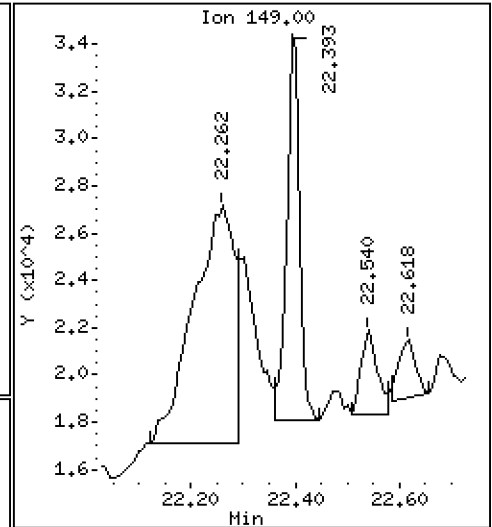
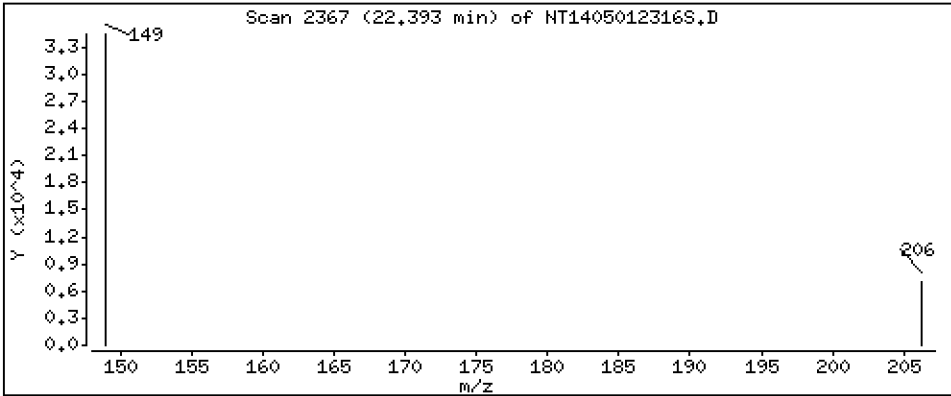
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,1668 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

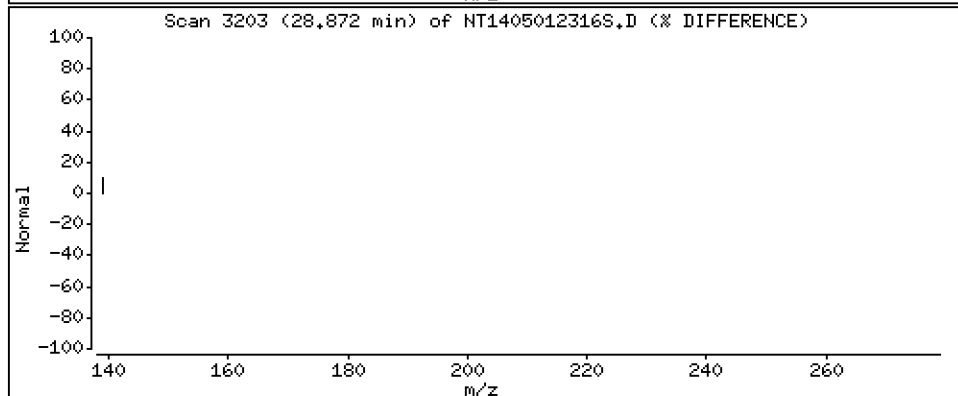
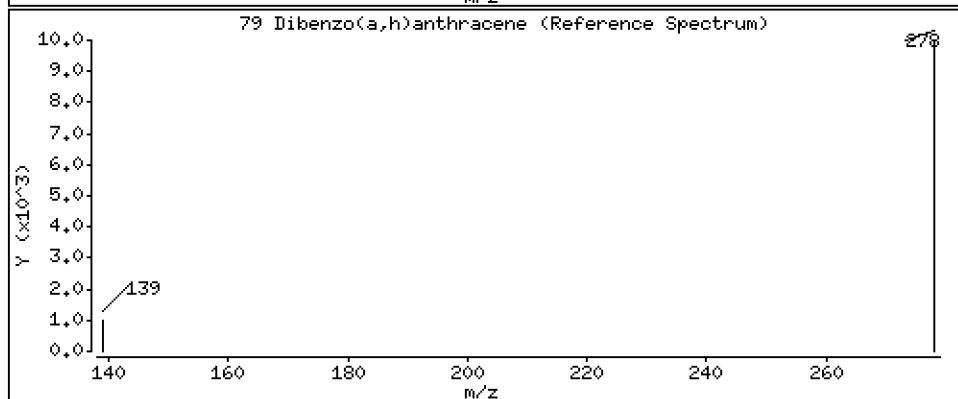
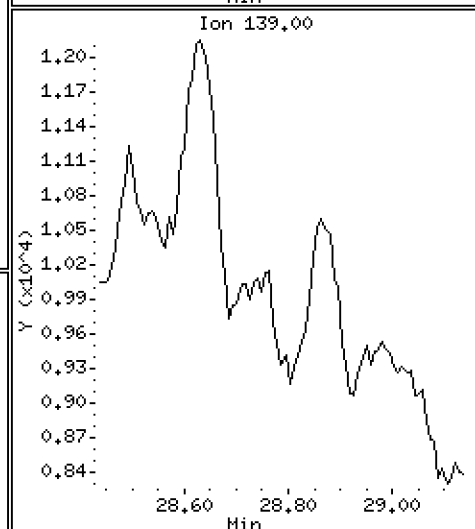
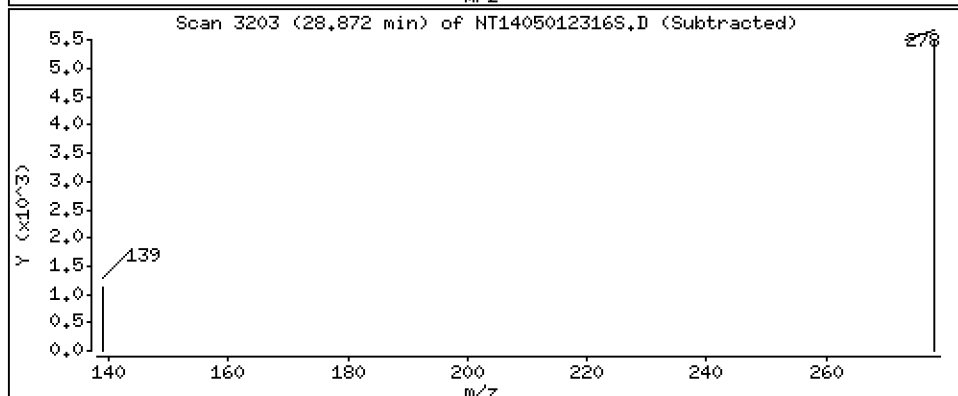
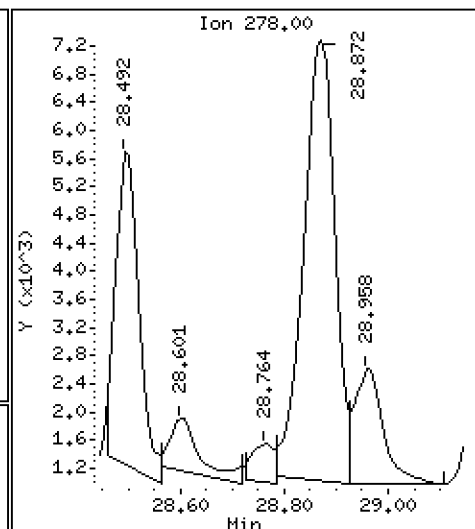
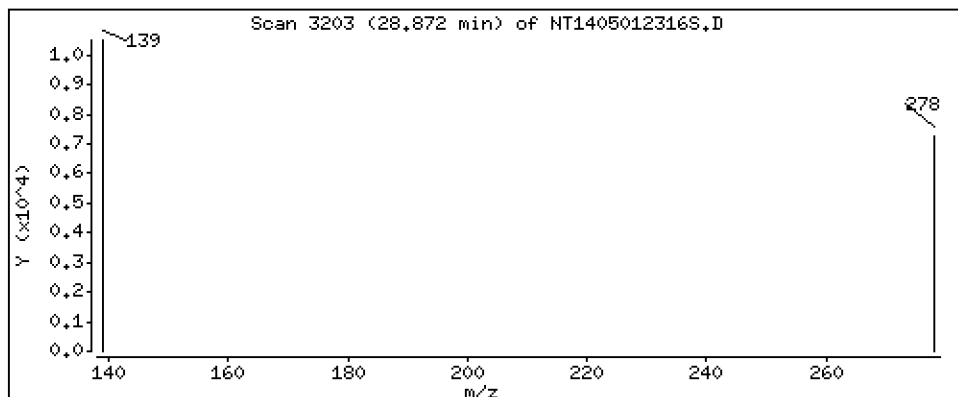
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

79 Dibenzo(a,h)anthracene

Concentration: 0.1531 ug/mL



Date : 01-MAY-2023 23:45

Client ID:

Instrument: nt14.i

Sample Info: 23D0063-03

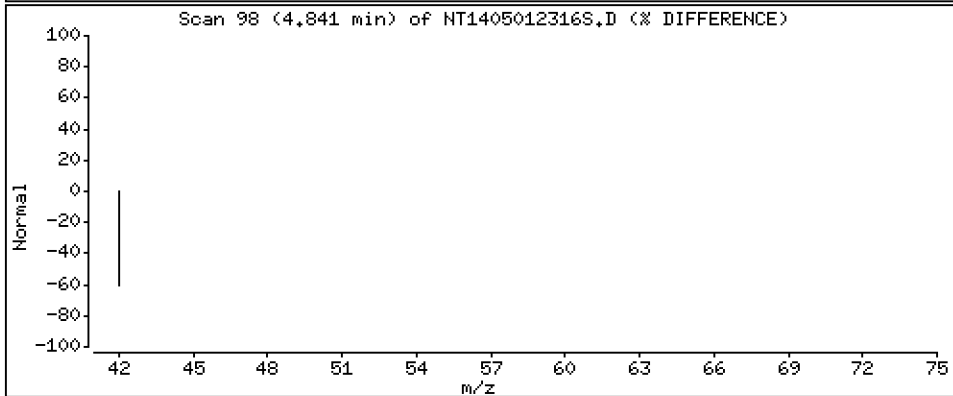
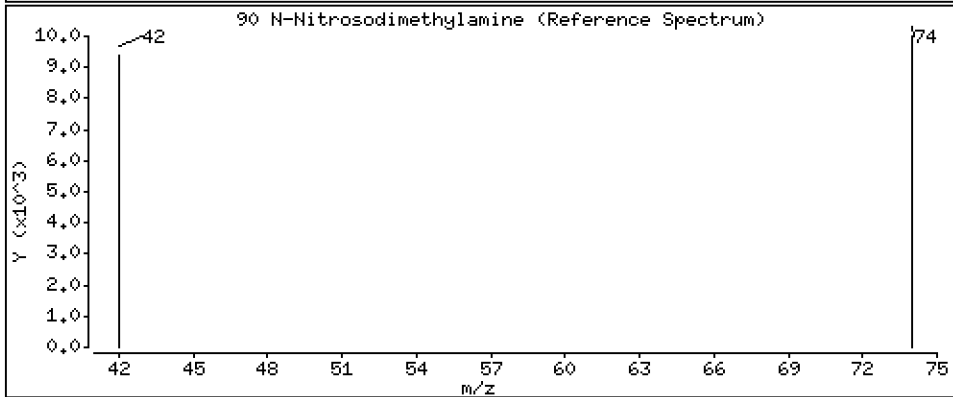
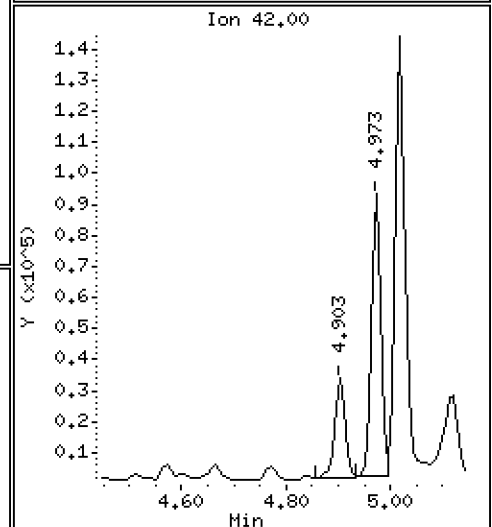
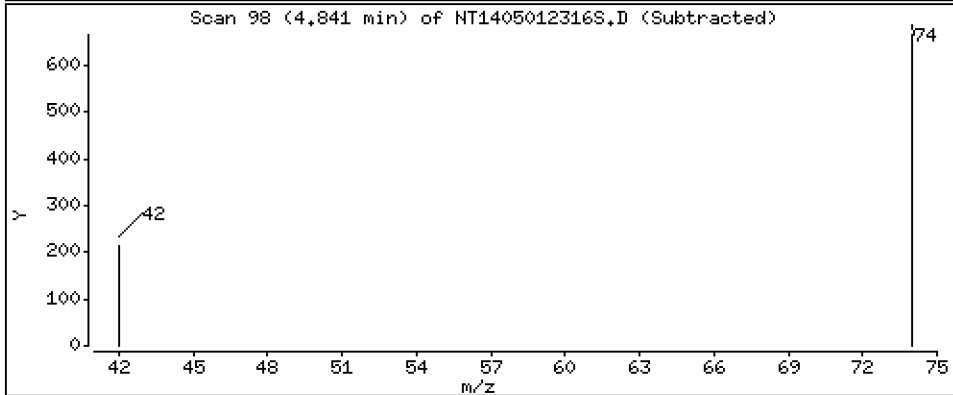
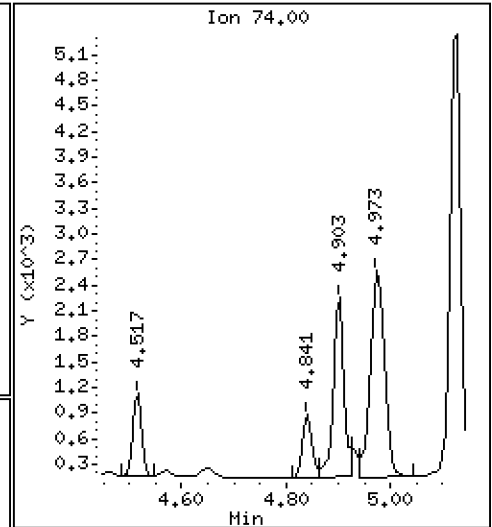
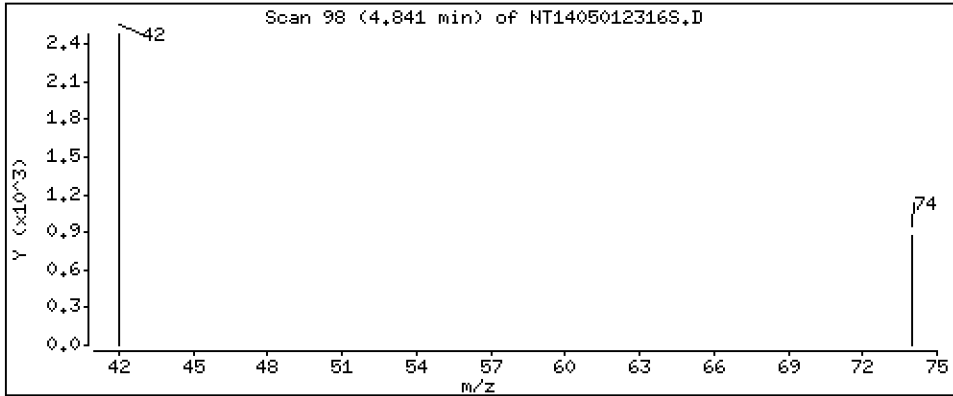
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 0,01134 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012316S.D  
 Lab Smp Id: 23D0063-03  
 Inj Date : 01-MAY-2023 23:45 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : 23D0063-03  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 16  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.927	6.903	(0.757)	581964	5.37518	5.375 (R)
3 Phenol	94		8.533	8.510	(0.933)	30861	0.17780	0.1778
7 1,3-Dichlorobenzene	146		9.075	9.067	(0.992)	983	0.00747	0.007467
* 8 1,4-Dichlorobenzene-d4	152		9.144	9.137	(1.000)	310651	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	2270	0.01822	0.01822
11 Benzyl alcohol	79		9.416	9.408	(1.030)	43705	0.40841	0.4084
12 1,2-Dichlorobenzene	146		9.533	9.525	(1.042)	967	0.00778	0.007781 (M)
13 2-Methylphenol	108		9.649	9.634	(1.055)	4723	0.04364	0.04364
15 4-Methylphenol	108		9.921	9.898	(1.085)	11897	0.10650	0.1065
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
22 2,4-Dimethylphenol	107		10.968	10.953	(0.942)	5640	0.04868	0.04868
24 Benzoic acid	105		11.100	11.085	(0.953)	65642	0.81540	0.8154
26 1,2,4-Trichlorobenzene	180		11.557	11.549	(0.993)	534	0.00600	0.006003
* 27 Naphthalene-d8	136		11.642	11.634	(1.000)	1211476	4.00000	
30 Hexachlorobutadiene	225		12.044	12.044	(1.035)	135	0.00274	0.002742
39 Dimethylphthalate	163		14.783	14.776	(0.967)	18908	0.09335	0.09335
* 42 Acenaphthene-d10	162		15.286	15.271	(1.000)	554837	4.00000	
50 Diethylphthalate	149		16.237	16.229	(1.062)	32834	0.15852	0.1585
54 N-Nitrosodiphenylamine	169		16.638	16.623	(0.907)	5332	0.03874	0.03874
57 Hexachlorobenzene	284		Compound Not Detected.					
58 Pentachlorophenol	266		18.075	18.052	(0.986)	1180	0.03378	0.03378
* 59 Phenanthrene-d10	188		18.338	18.323	(1.000)	984485	4.00000	
\$ 66 Terphenyl-d14	244		21.487	21.456	(0.918)	529287	4.50469	4.505 (R)
67 Butylbenzylphthalate	149		22.393	22.377	(0.957)	27967	0.16677	0.1668
* 69 Chrysene-d12	240		23.399	23.369	(1.000)	738721	4.00000	
* 77 Perylene-d12	264		26.102	26.047	(1.000)	569311	4.00000	
79 Dibenzo(a,h)anthracene	278		28.872	28.794	(1.106)	26395	0.15315	0.1531 (H)
90 N-Nitrosodimethylamine	74		4.841	4.795	(0.529)	1002	0.01134	0.01134

QC Flag Legend

R - Spike/Surrogate failed recovery limits.  
 M - Compound response manually integrated.

QC Flag Legend

H - Operator selected an alternate compound hit.



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012316S.D  
 Lab Smp Id: 23D0063-03  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	310651	-6.31
27 Naphthalene-d8	1259018	629509	2518036	1211476	-3.78
42 Acenaphthene-d10	580636	290318	1161272	554837	-4.44
59 Phenanthrene-d10	1027945	513973	2055890	984485	-4.23
69 Chrysene-d12	775653	387827	1551306	738721	-4.76
77 Perylene-d12	750797	375399	1501594	569311	-24.17

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	0.08
27 Naphthalene-d8	11.63	11.13	12.13	11.64	0.07
42 Acenaphthene-d10	15.27	14.77	15.77	15.29	0.10
59 Phenanthrene-d10	18.32	17.82	18.82	18.34	0.08
69 Chrysene-d12	23.37	22.87	23.87	23.40	0.13
77 Perylene-d12	26.05	25.55	26.55	26.10	0.21

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012316S.D

Lab ID: 23D0063-03

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 23:45

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT CCV RRT DELTA COMPOUND

---

NONE

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

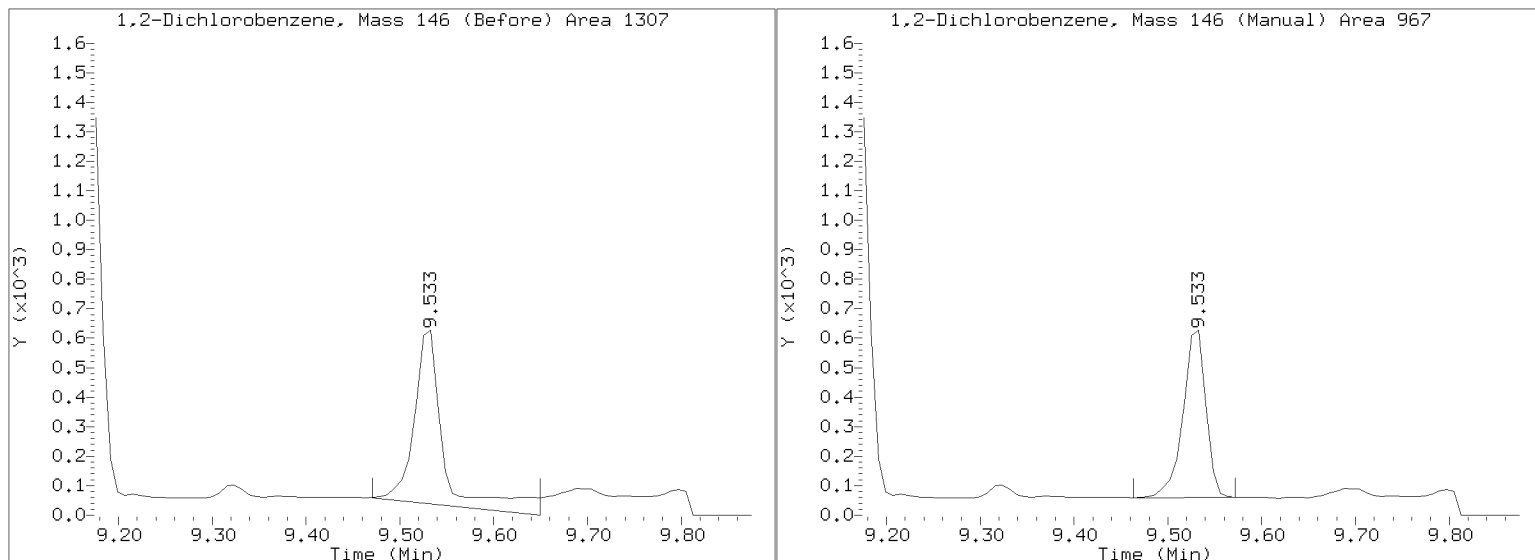
On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230501A.b/20230501A.b/NT1405012316S.D  
Injection Date: 01-MAY-2023 23:45  
Lab ID:23D0063-03 Client ID:  
Report Date: 05/02/2023 12:25



**APPROVED**  
By Deenay Dunmore at 1:16 pm, May 02, 2023





Batch: BLD0297

Prepared using: EPA 3546 (Microwave)

8270E SVOC (20ug/kg solid or 0.2ug/L low H2O Sepf) in Solid (Version:AOC4 List)

Matrix: Solid

Date Prepared: 04/17/23

Balance ID: B146462614

Set Up By: CTO 4/12/23

From BLC0185 on 4/12/2023 by CTO

WO Comments

23C0109: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

The following standards may be missing from this batch!

Designator	Description
39	Benzidine Spike
QLS 14	QLS Spike (Freezer)

Analysis: 8270E SVOC (20ug/kg solid or 0.2ug/L low H2O Sepf)

Lab Number & Container	% Solids	Initial (g)		(REQ) GPC C/U (1:1) 1 2 3	Water Wash 1mL	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
		Target Dry: 10 (Wet)	Actual					
23C0109-02RE1 A	35.9	(27.86)	27.89	(1:1)	1mL	1	0.5	From BLC0185 by CTO on 12-Apr-2023
23D0037-01 A	56.6	(17.66)	17.67	(1:1)	1mL	1	0.5	
23D0037-03 A	71.7	(13.94)	13.99	(1:1)	1mL	1	0.5	
23D0063-01 A	43.2	(23.16)	23.16	(1:1)	1mL	1	0.5	
23D0063-03 A	35.1	(28.48)	28.51	(1:1)	1mL	1	0.5	

Batch QC

Lab Number	% Solids	Initial (g)		(REQ) GPC C/U (1:1) 1 2 3	Water Wash 1mL	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
		Target Dry: 10 (Wet)	Actual					
BLD0297-BLK1	100.0	(10.00)	10.00	(1:1)	1mL	1	0.5	Use 5g Neutral Sodium Sulfate for Blanks
BLD0297-BS1	100.0	(10.00)	10.00	(1:1)	1mL	1	0.5	Use 5g Neutral Sodium Sulfate for Blanks
BLD0297-BSD1	100.0	(10.00)	10.00	(1:1)	1mL	1	0.5	Use 5g Neutral Sodium Sulfate for Blanks
BLD0297-MS1	43.2	(23.16)	23.16	(1:1)	1mL	1	0.5	Use 23D0063-01
BLD0297-MSD1	43.2	(23.16)	23.16	(1:1)	1mL	1	0.5	Use 23D0063-01
BLD0297-SRM1	100.0	(10.00) <sup>(1.00)</sup>	1.00	(1:1)	1mL	1	0.5	Use K003477

\*1g DI WATER

Checked By: [Signature] 04/17/23

Date

Preparation Reviewed By: [Signature] 4/25/23

Date

Extraction Date and Time: 04/17/23 12:00



Batch: BLD0297

Prepared using: EPA 3546 (Microwave)

8270E SVOC (20ug/kg solid or 0.2ug/L low H2O Sept) in Solid (Version:AOC4 List)

**WO Comments**  
 23C0109: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
 23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
 23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Prep Steps

Reagents Used

Surrogates & Spike Standards Used

Station/Reagent	Standard ID
Microwave	
Analyst: <i>CT</i> Date: <i>4/17/23</i>	
Anhydrous Sodium Sulfate	<i>L003261</i>
1:1 Methylene Chloride/Acetone	<i>L002244</i>
Methylene Chloride	<i>L002621</i>
Pre-Deactivated Glass Wool	<i>L001924</i>
Pre GPC KD	
Analyst: <i>AA</i> Date: <i>4-21-23</i>	
Pre-Deactivated Glass Wool	<i>NA</i>
Anhydrous Sodium Sulfate	<i>NA</i>
Methylene Chloride	<i>L002621</i>
Hexane	<i>L001957</i>
GPC Filter Prep	
Analyst: <i>nes</i> Date: <i>4/22/23</i>	
Methylene Chloride	<i>L002621</i>
GPC Filter	<i>L001769</i>
GPC	
Analyst: <i>TWC</i> Date: <i>4/22/23</i>	
Methylene Chloride	<i>L002621</i>
GPC Calibration File	<i>U00132</i>
Post GPC KD	
Analyst: <i>AA</i> Date: <i>4-24-23</i>	
Methylene Chloride	<i>K005941</i>
Vialing	
Analyst: <i>lj</i> Date: <i>4/25/23</i>	
Methylene Chloride	<i>K005941</i>

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate	A L001153	50uL		
100/150ug/mL	Exp Date: <i>8/1/2423</i>		<i>CT</i>	<i>Y</i>
Full List Spike (Freezer)	7 L001812 (V)	50uL		
100ug/mL	Exp Date: <i>8/4/2423</i>		<i>CT</i>	<i>Y</i>
Base Spike	56 L001812 (V)	50uL		
200ug/mL	Exp Date: <i>8/24/2423</i>		<i>CT</i>	<i>Y</i>
Acid Spike	38 L001812 (V)	50uL		
100/200ug/mL	Exp Date: <i>8/24/2423</i>		<i>CT</i>	<i>Y</i>

MANUALLY ENTER EXPIRATION DATES!

(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards.

If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator in the Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).





Batch: BLD0297

Prepared using: EPA 3546 (Microwave)

8270E SVOC (20ug/kg solid or 0.2ug/L low H2O Sepf) in Solid (Version:AOC4 List)

**WO Comments**

23C0109: <C>BPR SRM, MS, DUP <C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0037: <C>BPR SRM, MS, DUP <C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0063: <C>BPR SRM, MS, DUP <C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Prep Instructions	
<p><b>SPECIAL INSTRUCTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Weigh into beakers-lightly dry with Sodium Sulfate.</li> <li>2. Transfer to microwave vessel.</li> <li>3. Add DCM ONLY to the vessels (until solvent is 3 inches above soil layer after homogenization).</li> <li>4. Add surr/spike.</li> <li>5. Microwave on appropriate power setting determined by # of samples.</li> <li>6. After microwave-re-homogenize while hot then let cool 10-15 min in Refridgerator 05. Re-homogenize while cool.</li> <li>7. Decant DCM into Erlenmeyer flask with a funnel containing pre-deactivated glasswool.</li> <li>8. Rinse with DCM</li> <li>9. Microwave a 2nd time using 1:1 DCM/ACE.</li> <li>10. Let cool and decant the solvent then empty the soil into the funnel and rinse with DCM.</li> <li>11. KD: Add 10 mL Hexane directly to extract in the KD.</li> <li>12. GPC REQUIRED 100°C water bath (CLP) KD to 5mL.</li> <li>13. Vialers to take 1:5 Split Pre- GPC.</li> <li>14. (After GPC): KD at 80°C.</li> <li>15. TurboVap to 1mL in DCM.</li> <li>16. WATER WASH REQUIRED:             <ol style="list-style-type: none"> <li>16a. Vial 1mL of all extracts in 2mL amber vials in DCM.</li> <li>16b. Add ~0.5mL DI water and vortex for ~5 seconds each.</li> <li>16c. Centrifuge extracts for 5 minutes at 1500-2000rpm.</li> <li>16d. Transfer and vial 0.5mL. to new 2mL. amber vials (Avoiding collecting water in syringe and cleaning syringe with Acetone and DCM between each vial).</li> </ol> </li> <li>17. Archive water wahed vials and deliever new vials to GC Department for analysis.</li> </ol> <p>A. Need Total Solids Y <input type="checkbox"/> N <input checked="" type="checkbox"/></p> <p>B. Archive/Freeze <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/></p>	



Extraction Parameter: SVA Extraction Batch BLP0290

Total Solids Batch: BLD0066 Work Order(s): 23D0037

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)=	
<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= <u>φ1 - φ4.</u>	<u>M φ4/φ4/23</u>
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input checked="" type="checkbox"/> Oily, obvious fuel/sulfur odors= <u>φ1 - φ4.</u>	<u>M φ4/φ4/23</u>
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input type="checkbox"/> Previously Frozen =	
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<u>SRM smells like not SRM. BSD smells like SRM at KD after GPC.</u>	<u>AA 4-24-23</u>
<input checked="" type="checkbox"/> Share Samples Y/N	<u>φ4/φ4/23</u>
<input checked="" type="checkbox"/> Multiple Jars Y/N	<u>φ4/φ4/23</u>
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	





Extraction Parameter: SWA Extraction Batch BCP0292

Total Solids Batch: BLD0093 Work Order(s): 23D0063

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input checked="" type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)= <u>01-04</u>	<u>CR 4/5/23</u>
<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= <u>01-04</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input checked="" type="checkbox"/> Previously Frozen = <u>01-04</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input checked="" type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<input checked="" type="checkbox"/> Share Samples Y / <u>N</u>	<u>CR 4/5/23</u>
<input checked="" type="checkbox"/> Multiple Jars Y / <u>N</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	



### CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0170

Cleanup Type: GPC

Cleanup Method: EPA 3640A GPC Cleanup 1:1

Analysis: EPA 8270E-SIM

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Reference	BLD0297-SRM2	NT1405012309S.D	04/25/2023	
Matrix Spike Dup	BLD0297-MSD2	NT1405012315S.D	04/25/2023	
Matrix Spike	BLD0297-MS2	NT1405012314S.D	04/25/2023	
LCS Dup	BLD0297-BSD2	NT1405012308S.D	04/25/2023	
Blank	BLD0297-BLK2	NT1405012306S.D	04/25/2023	
LDW23-SS1818	23D0063-01	NT1405012313S.D	04/25/2023	
LDW23-SS1819	23D0063-03	NT1405012316S.D	04/25/2023	
LCS	BLD0297-BS2	NT1405012307S.D	04/25/2023	



**CLEANUP BENCH SHEET**

CLD0170

Matrix: Solid      Cleanup using: Organics - EPA 3640A GPC Cleanup 1:1      Check Standard: CLB0132-GPC1      Printed: 4/25/2023 10:41:00AM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0109-02RE1	A	LDW23-SS1104	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
23C0109-02RE1	A	LDW23-SS1104	A 04	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0037-01	A	LDW23-SS1812	A 01	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0037-01	A	LDW23-SS1812	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
23D0037-03	A	LDW23-SS1813	A 01	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0037-03	A	LDW23-SS1813	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
23D0063-01	A	LDW23-SS1818	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
23D0063-01	A	LDW23-SS1818	A 01	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0063-03	A	LDW23-SS1819	A 01	1	1	VOC (20ug/kg solid or 0.2ug/L low H <sub>2</sub>	4/25/2023	LMJ	
23D0063-03	A	LDW23-SS1819	A 03	1	1	8270E-SIM Dual Scan SVOC	4/25/2023	LMJ	
BLD0297-BLK1	-	Blank	-	1	1	-	4/25/2023	LMJ	
BLD0297-BLK2	-	Blank	-	1	1	-	4/25/2023	LMJ	
BLD0297-BS1	-	LCS	-	1	1	-	4/25/2023	LMJ	
BLD0297-BS2	-	LCS	-	1	1	-	4/25/2023	LMJ	
BLD0297-BSD1	-	LCS Dup	-	1	1	-	4/25/2023	LMJ	
BLD0297-BSD2	-	LCS Dup	-	1	1	-	4/25/2023	LMJ	
BLD0297-MS1	-	Matrix Spike	-	1	1	-	4/25/2023	LMJ	
BLD0297-MS2	-	Matrix Spike	-	1	1	-	4/25/2023	LMJ	
BLD0297-MSD1	-	Matrix Spike Dup	-	1	1	-	4/25/2023	LMJ	
BLD0297-MSD2	-	Matrix Spike Dup	-	1	1	-	4/25/2023	LMJ	
BLD0297-SRM1	-	Reference	-	1	1	-	4/25/2023	LMJ	
BLD0297-SRM2	-	Reference	-	1	1	-	4/25/2023	LMJ	



### CLEANUP BENCH SHEET

CLD0170

**Matrix: Solid**      **Cleanup using: Organics - EPA 3640A GPC Cleanup 1:1**      **Check Standard: CLB0132-GPC1**      **Printed: 4/25/2023 10:41:00AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
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**Form I**  
**METHOD BLANK DATA SHEET**  
**EPA 8270E-SIM**

Blank
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Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BLD0297-BLK2</u>
Sampled:	<u>N/A</u>	Prepared:	<u>04/17/23 12:00</u>
Solids:		Preparation:	<u>EPA 3546 (Microwave)</u>
Batch:	<u>BLD0297</u>	Sequence:	<u>SLE0027</u>
Instrument:	<u>NT14</u>	Column:	<u>ZB-5MS</u>
		File ID:	<u>NT1405012306S.D</u>
		Analyzed:	<u>05/01/23 17:36</u>
		Initial/Final:	<u>10 g / 1 mL</u>
		Calibration:	<u>GD00063</u>
		Cleanups:	<u>GPC</u>

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg wet)	Q	DL	RL
106-46-7	1,4-Dichlorobenzene	1	0.7	J	0.6	5.0
95-50-1	1,2-Dichlorobenzene	1	0.9	J	0.7	5.0
100-51-6	Benzyl Alcohol	1	20.0	U	2.5	20.0
65-85-0	Benzoic acid	1	100	U	13.4	100
105-67-9	2,4-Dimethylphenol	1	20.0	U	2.2	20.0
120-82-1	1,2,4-Trichlorobenzene	1	5.0	U	2.7	5.0
86-30-6	N-Nitrosodiphenylamine	1	5.0	U	1.3	5.0
87-86-5	Pentachlorophenol	1	20.0	U	2.1	20.0

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
2-Fluorophenol	750.00	577	76.9	27 - 120	
p-Terphenyl-d14	500.00	482	96.3	37 - 120	

Data File: \\target\share\chem3\nt14.1\20230501A.b\NT1405012306S.D

Page 1

Date: 01-May-2023 17:36

Client ID:

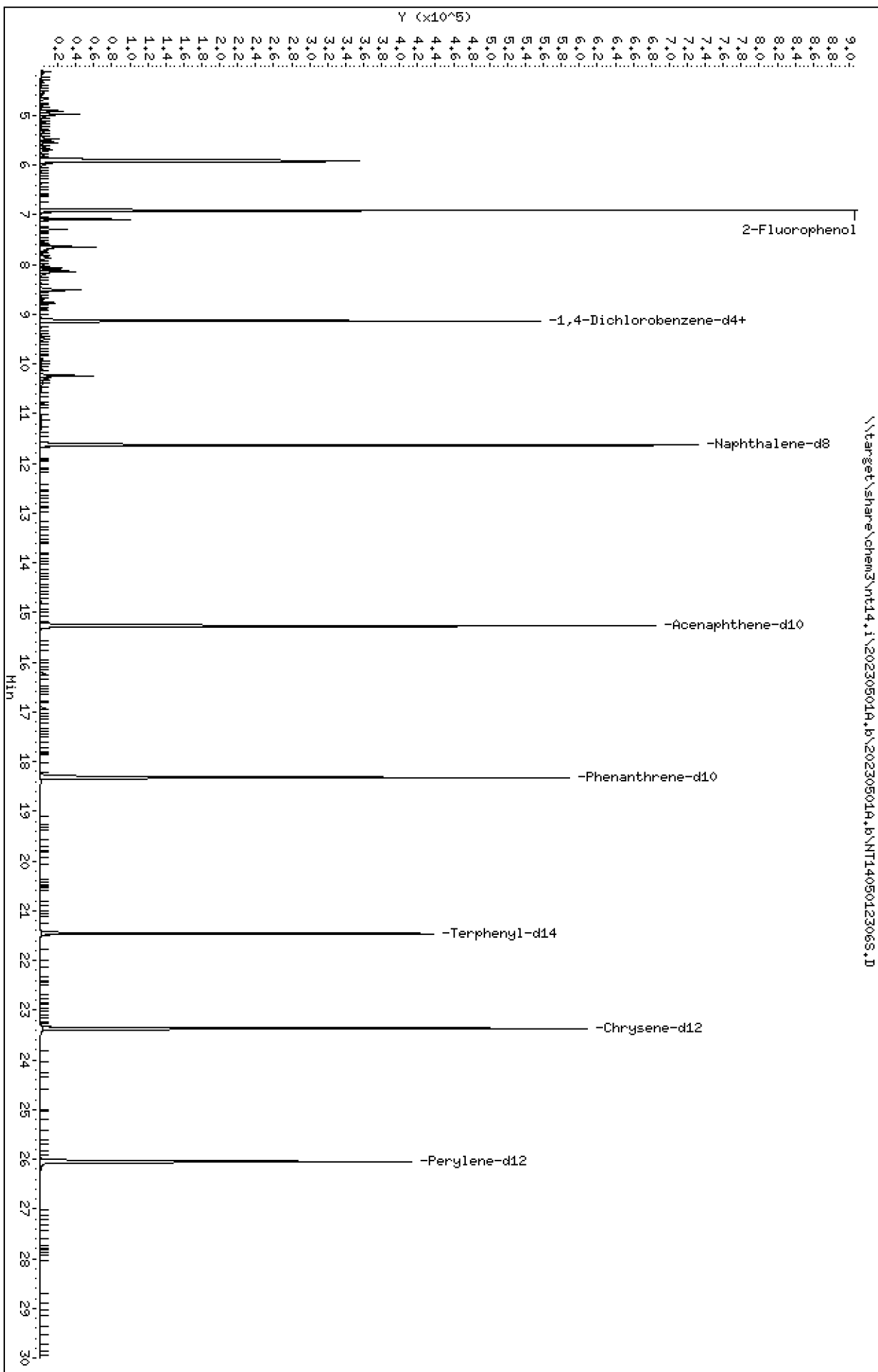
Instrument: nt14.1

Sample Info: BLD0297-BLK2

Operator: USD

Column phase: ZB-5msi

Column diameter: 0.25



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

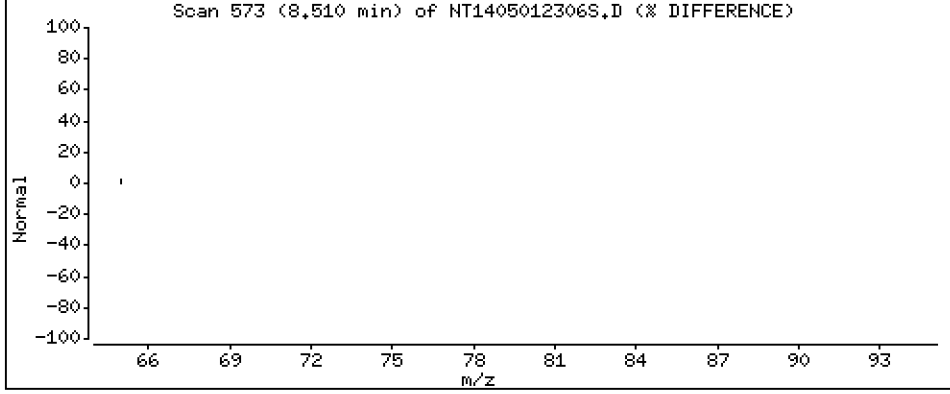
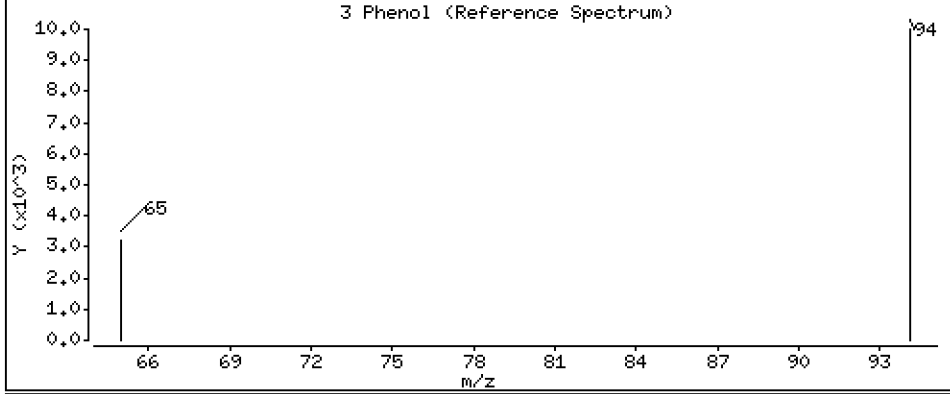
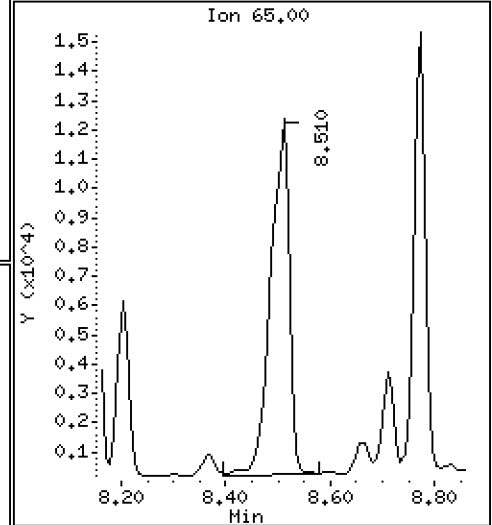
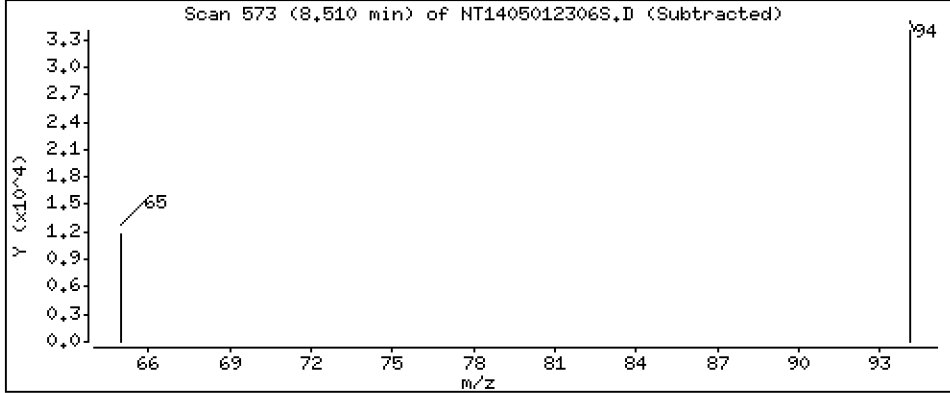
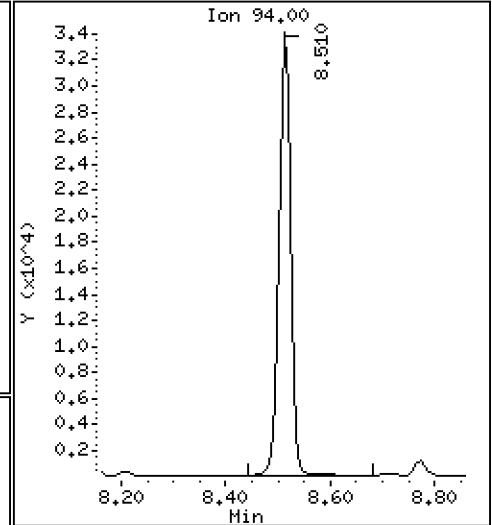
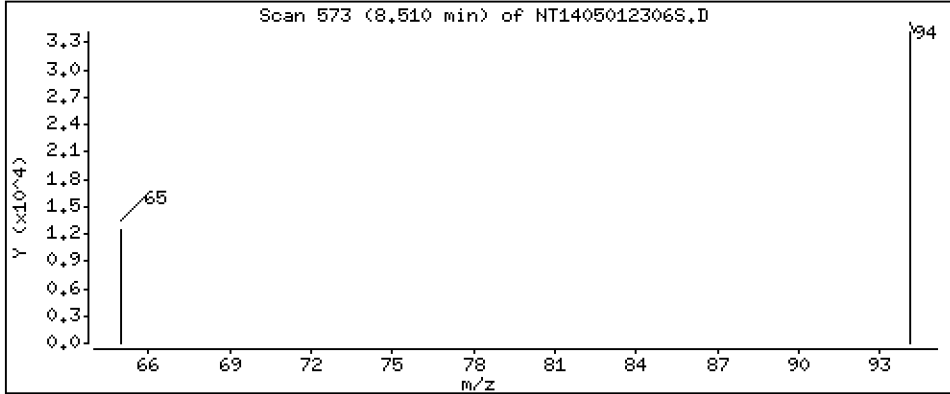
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,2635 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

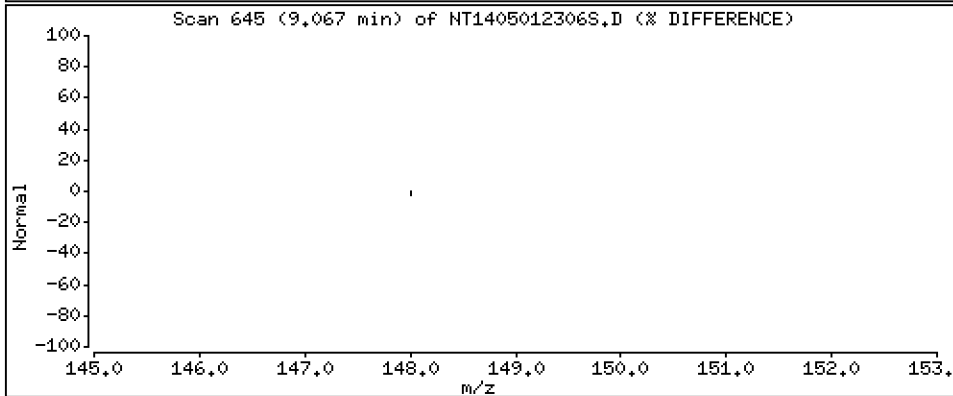
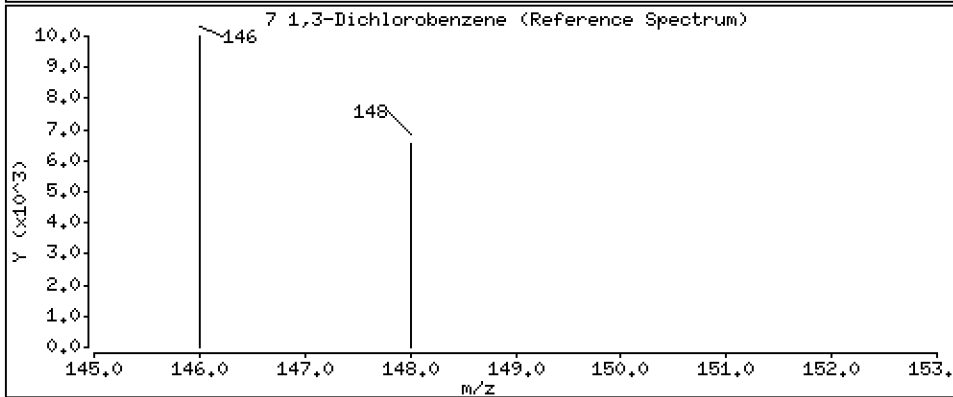
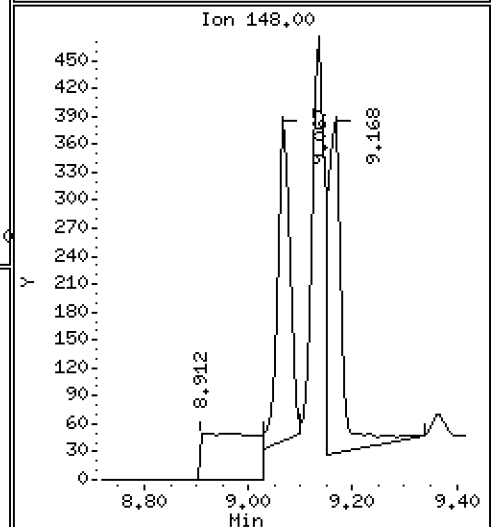
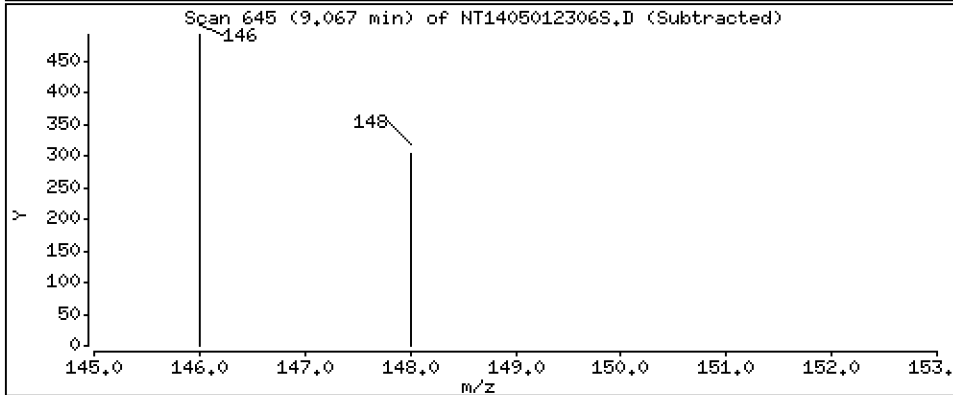
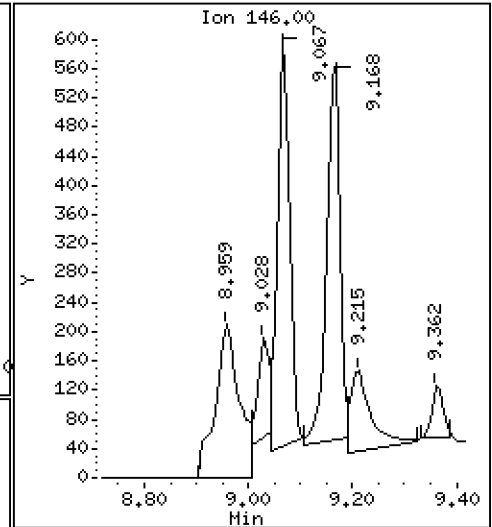
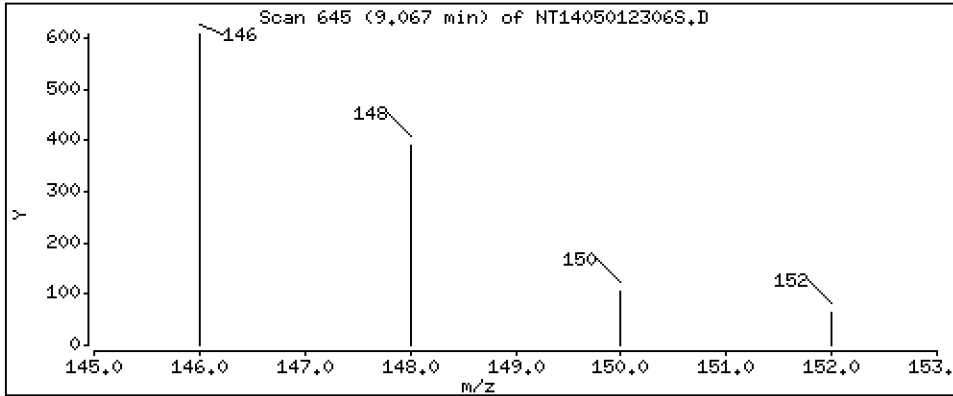
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,006293 ug/mL





Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

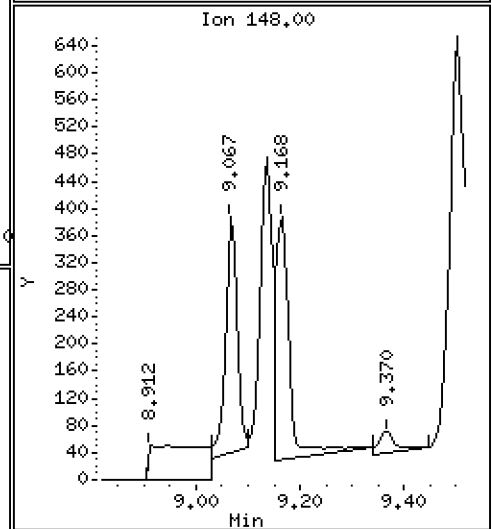
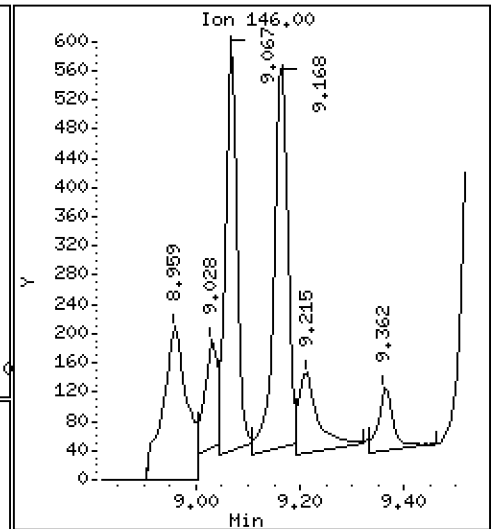
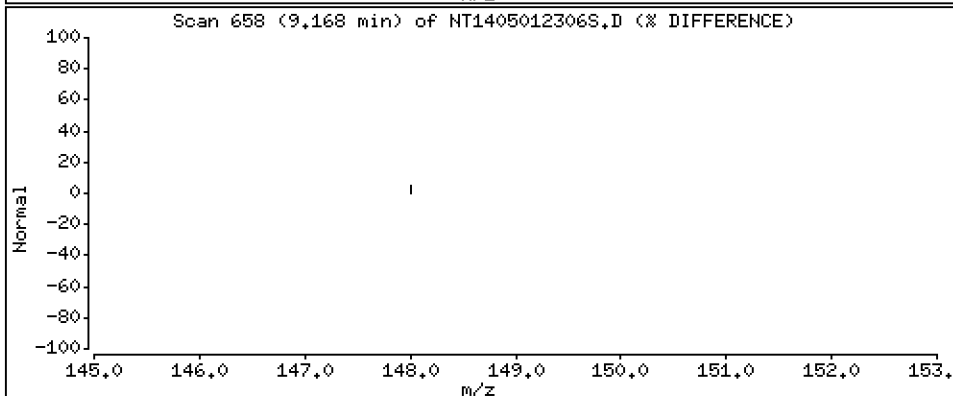
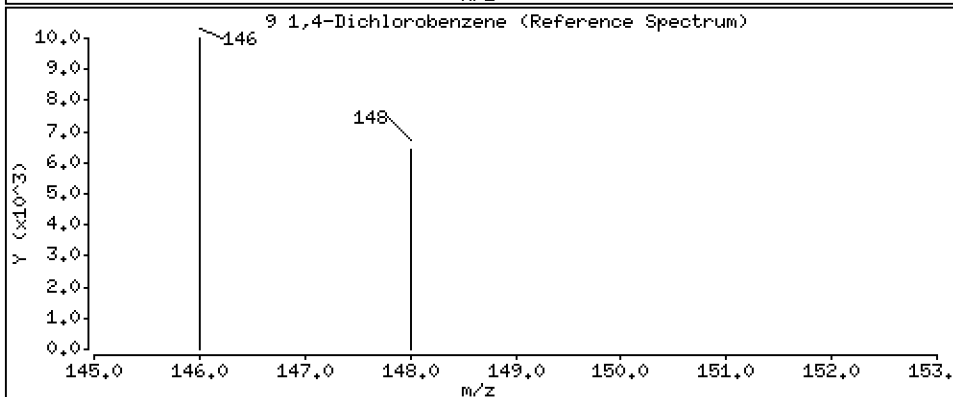
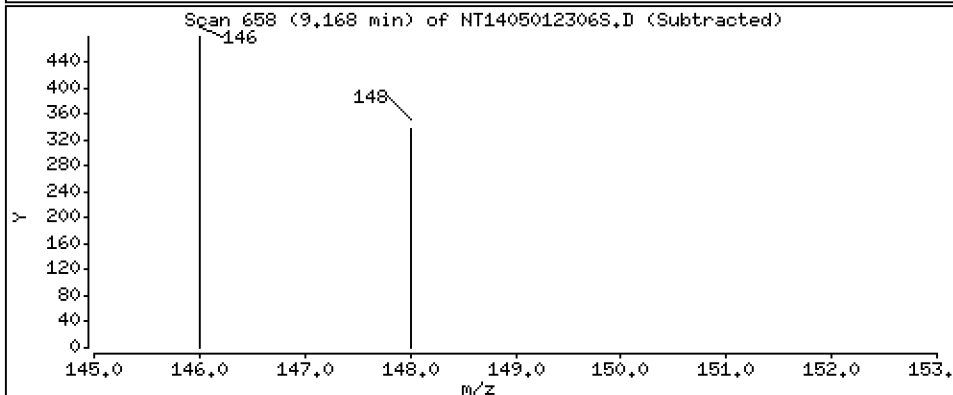
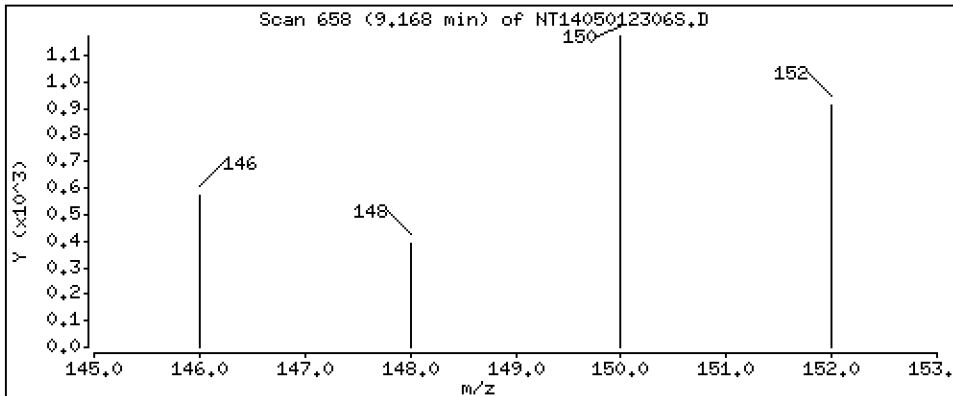
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 0,006972 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

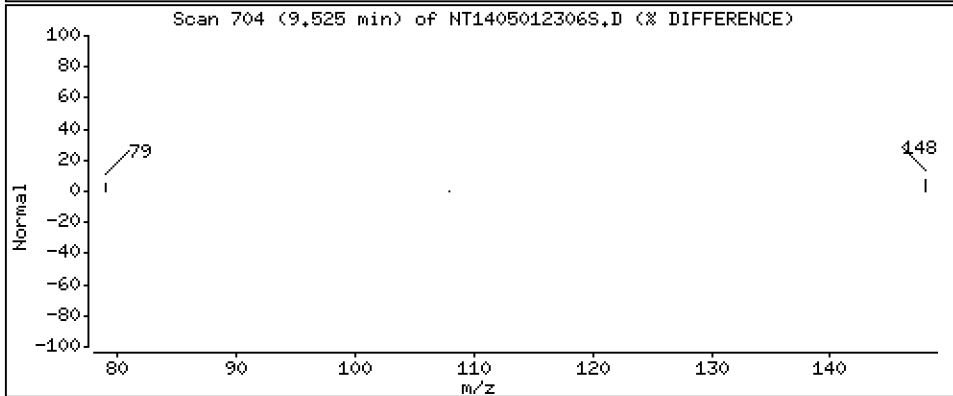
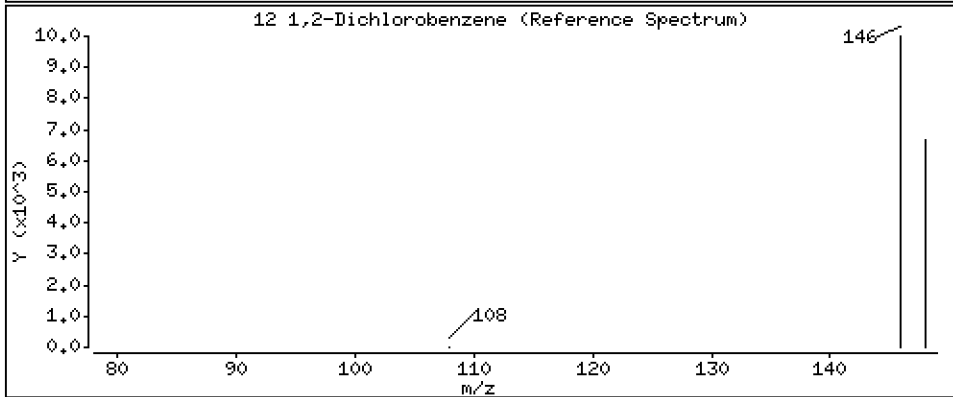
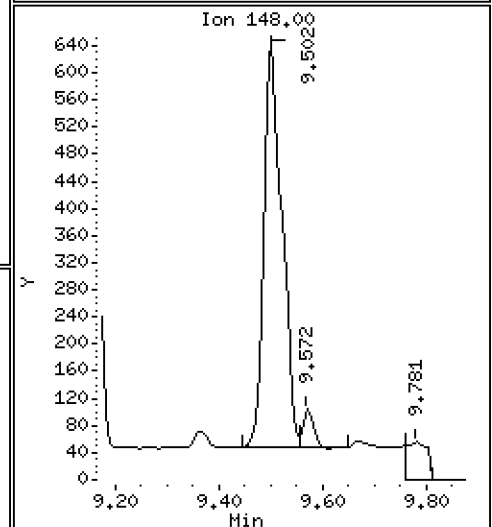
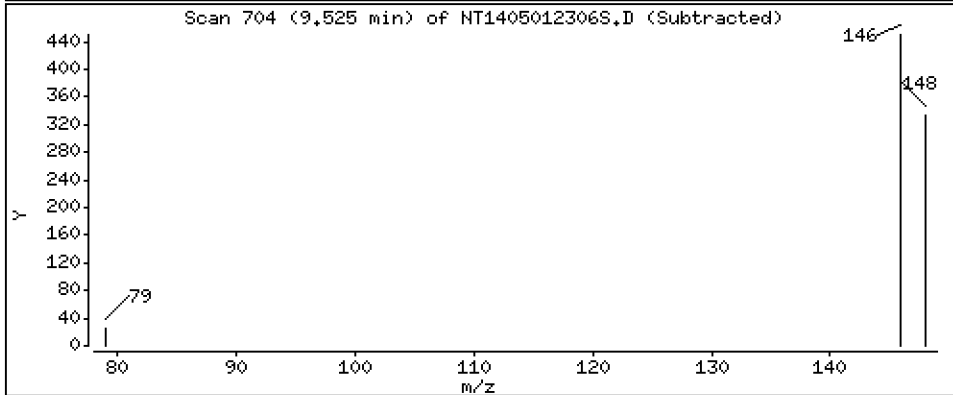
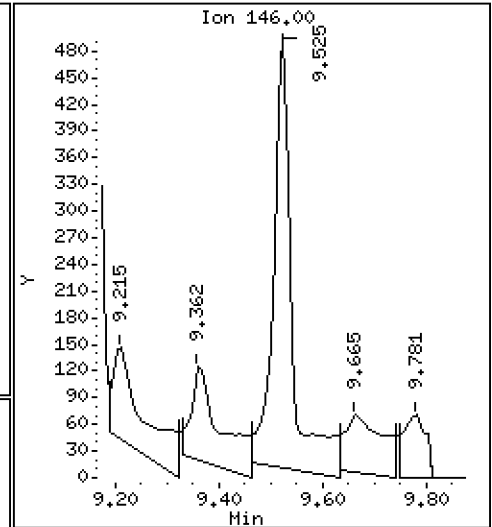
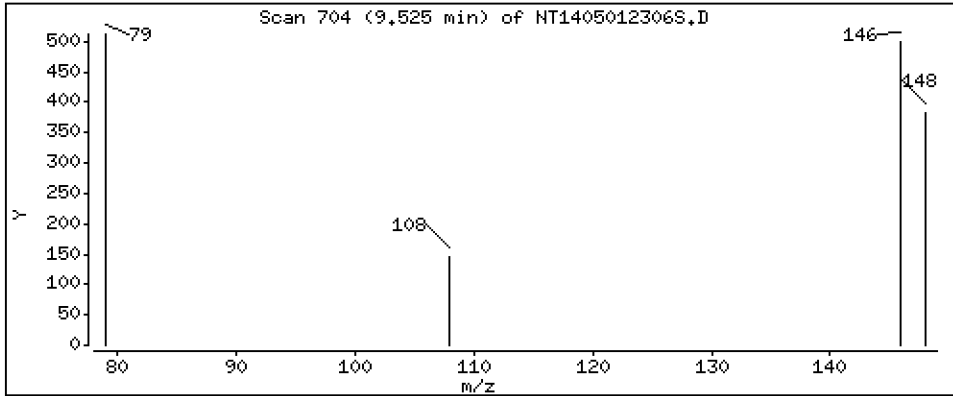
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 0,008785 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

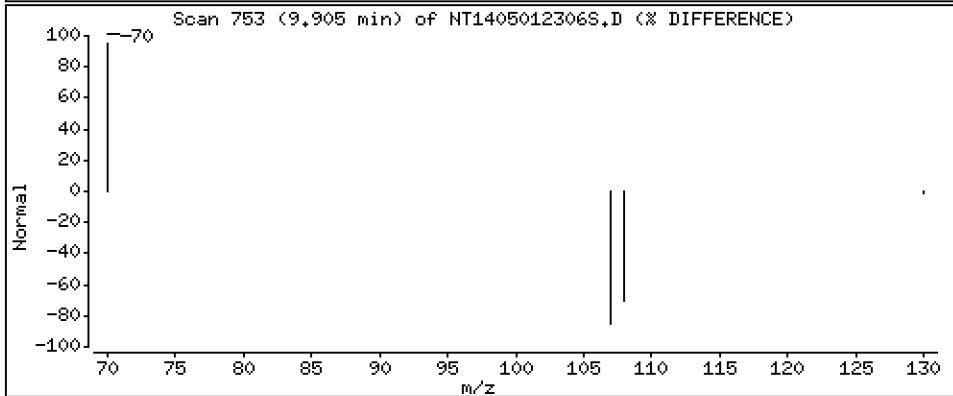
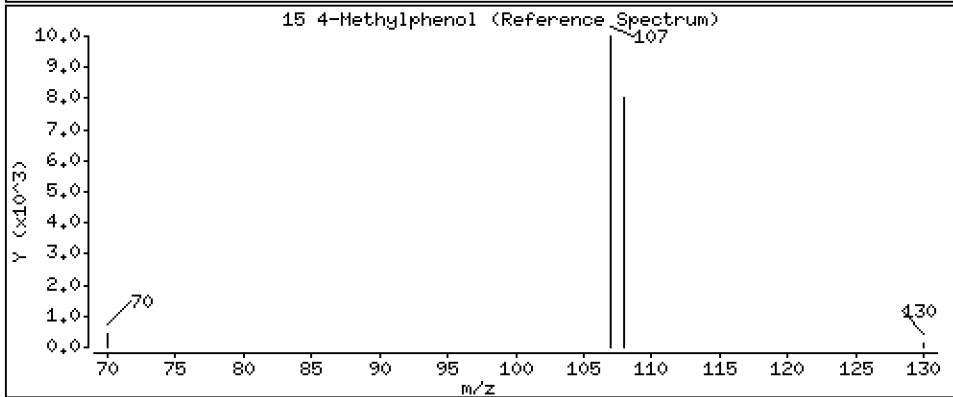
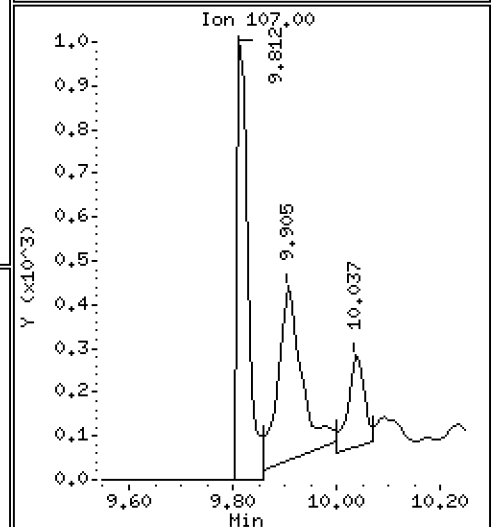
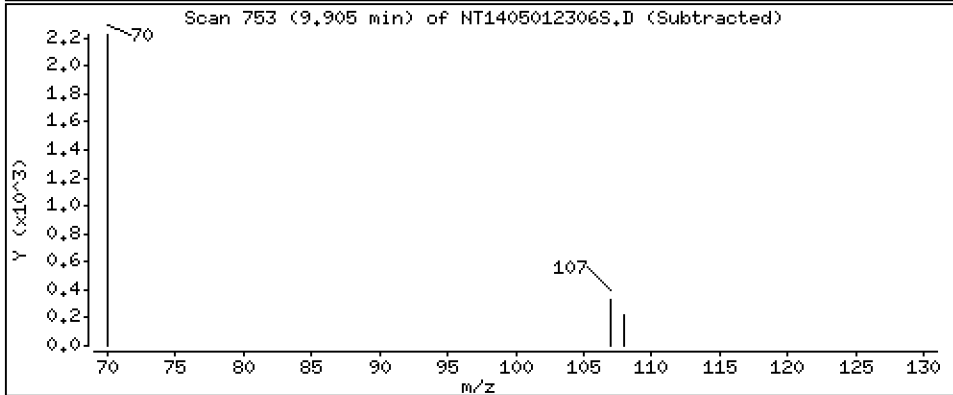
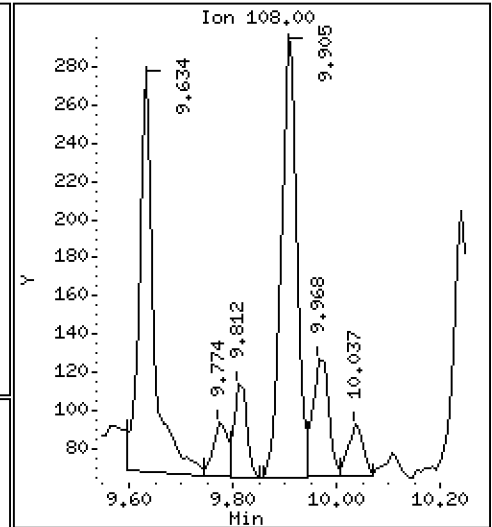
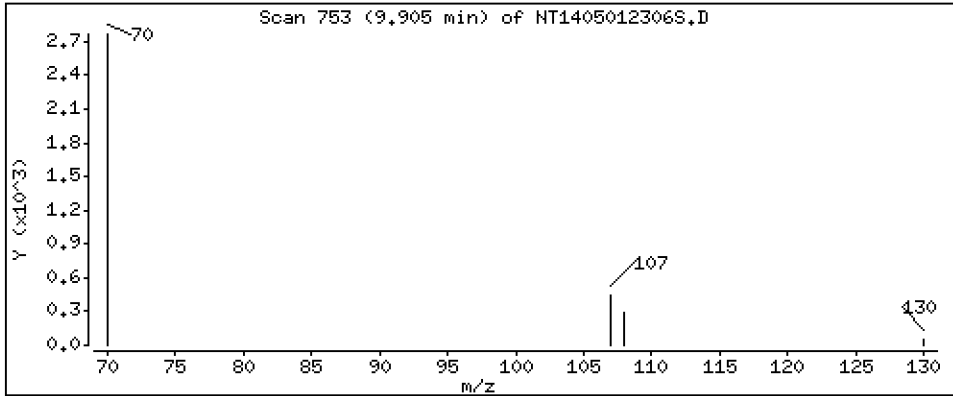
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 0.003982 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

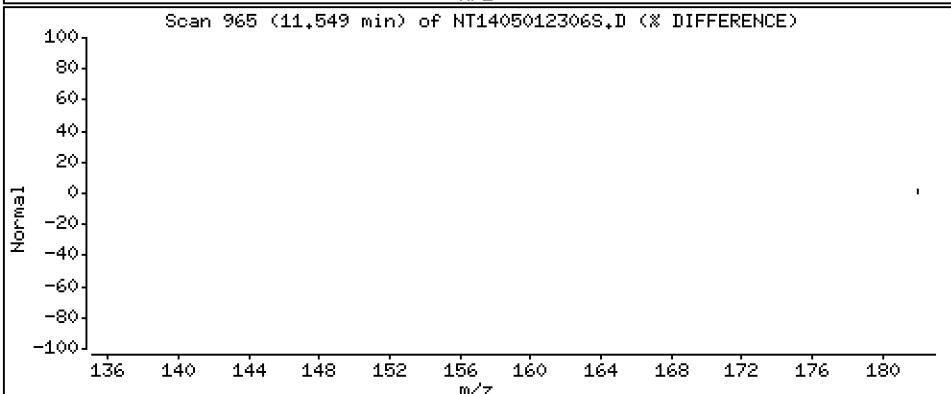
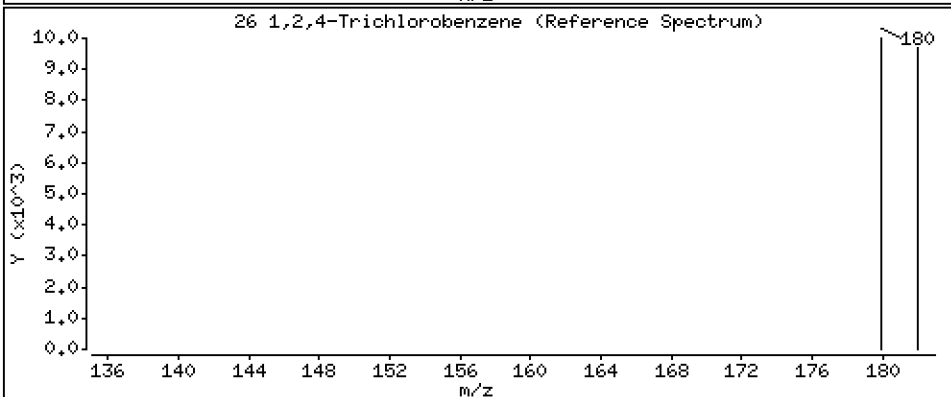
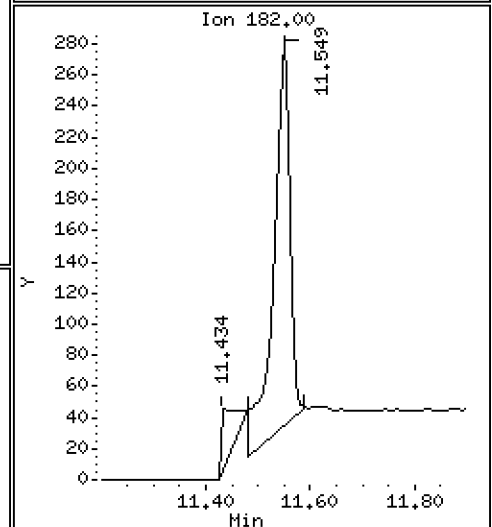
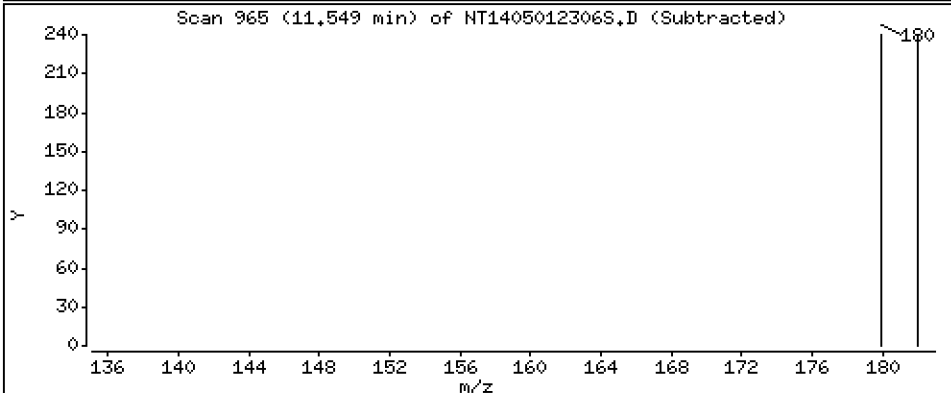
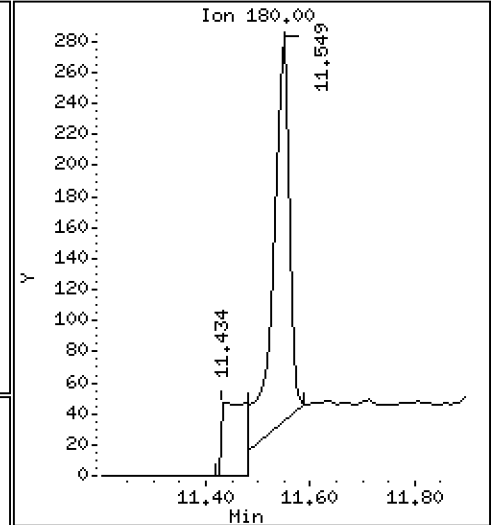
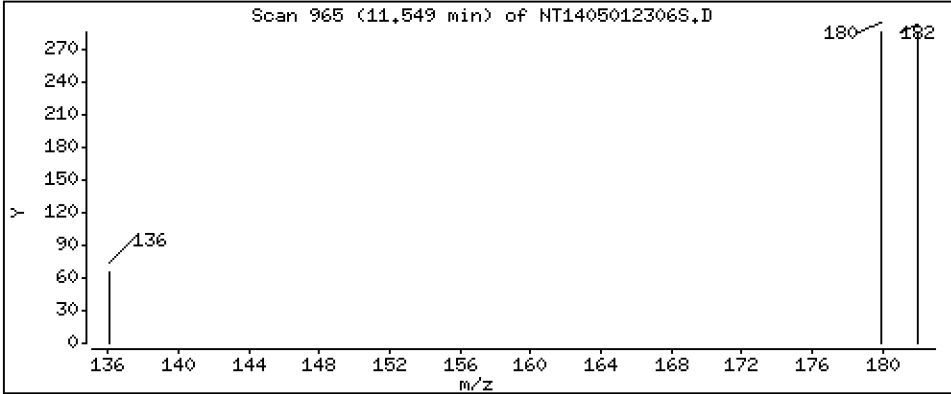
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 0,005538 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

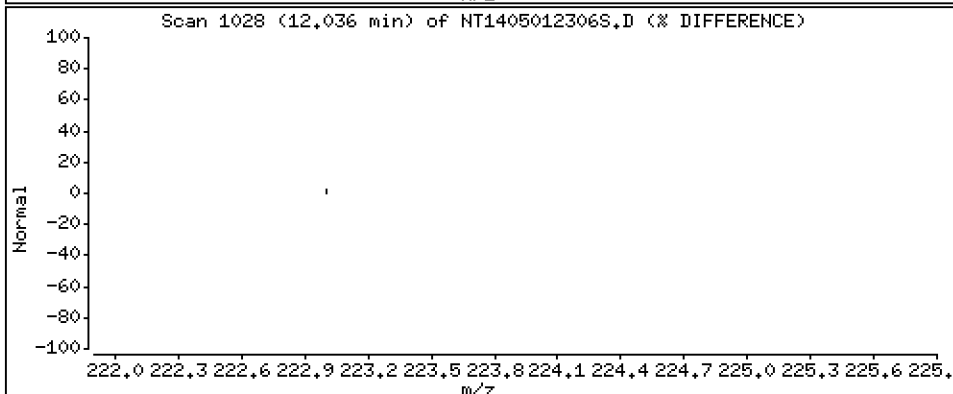
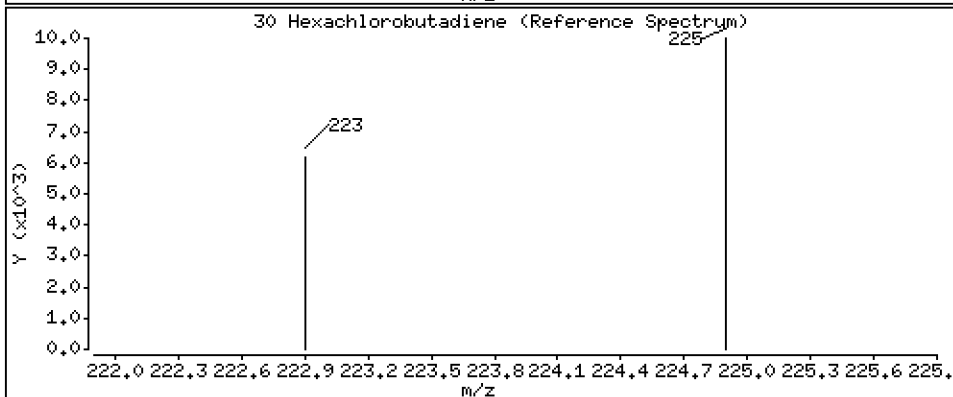
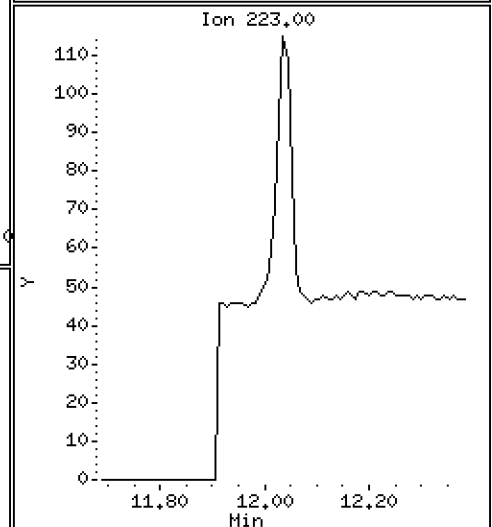
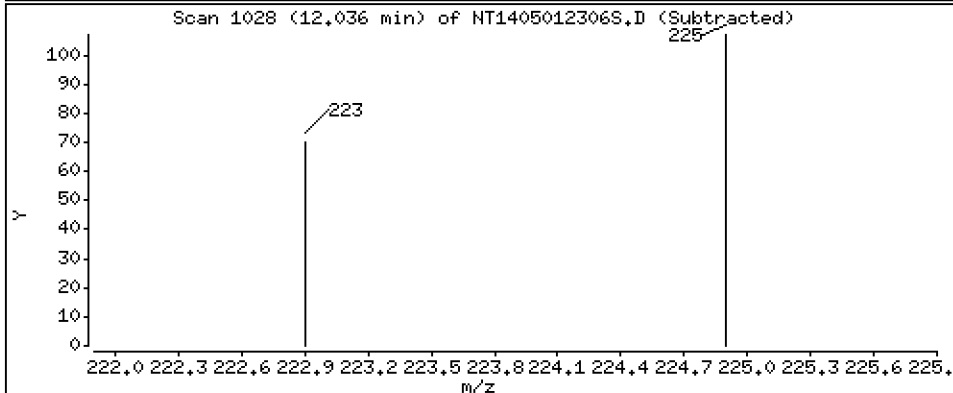
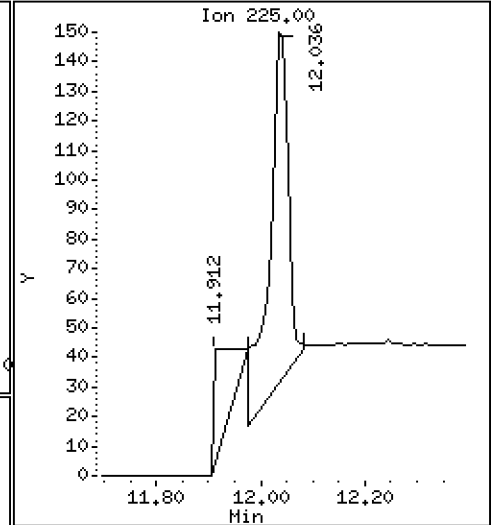
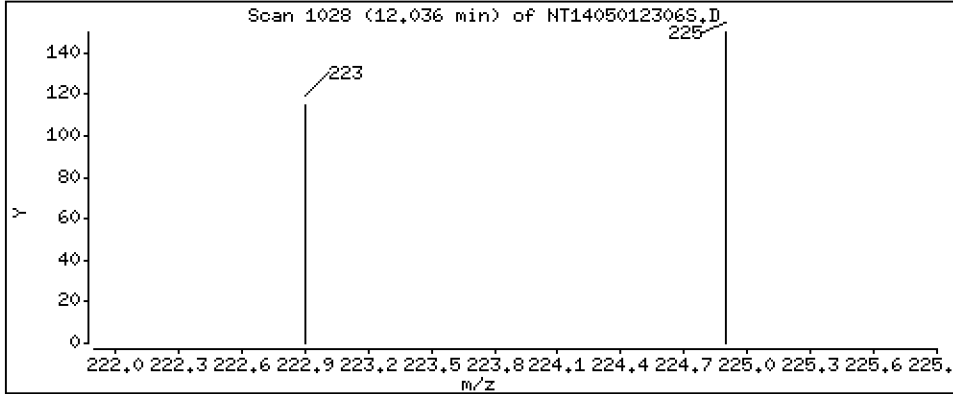
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 0,005606 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

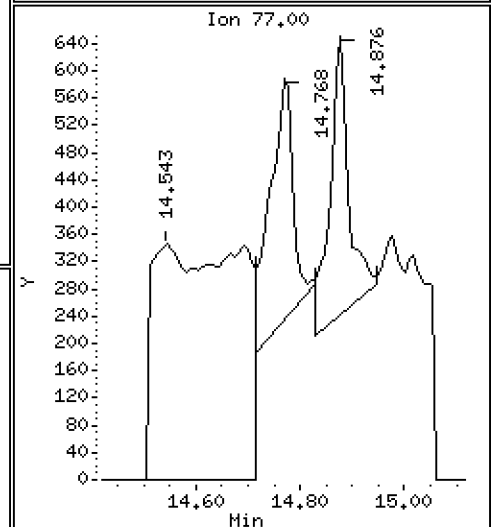
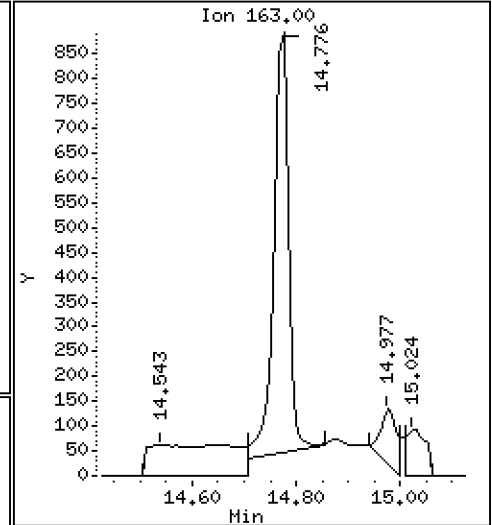
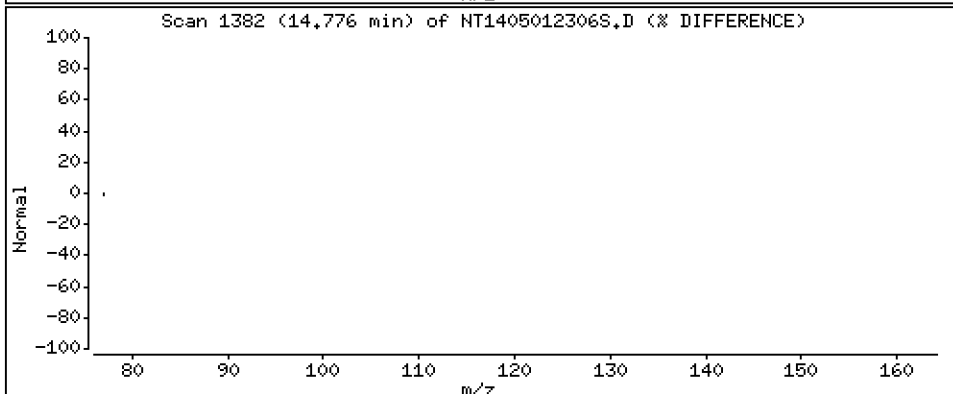
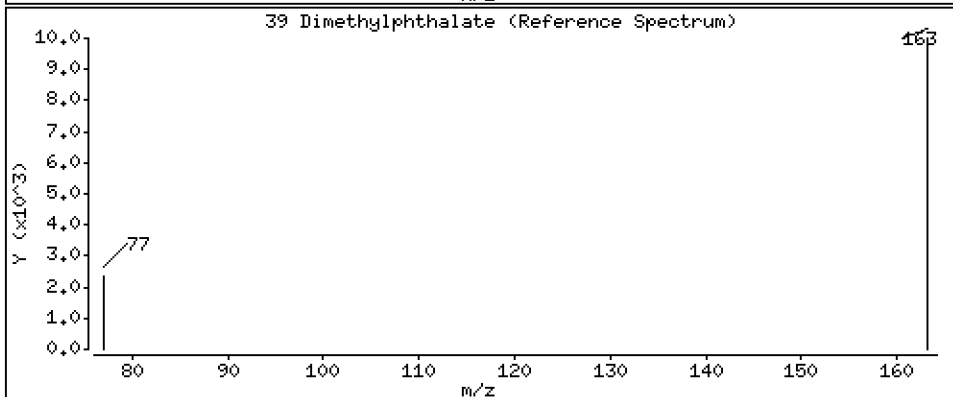
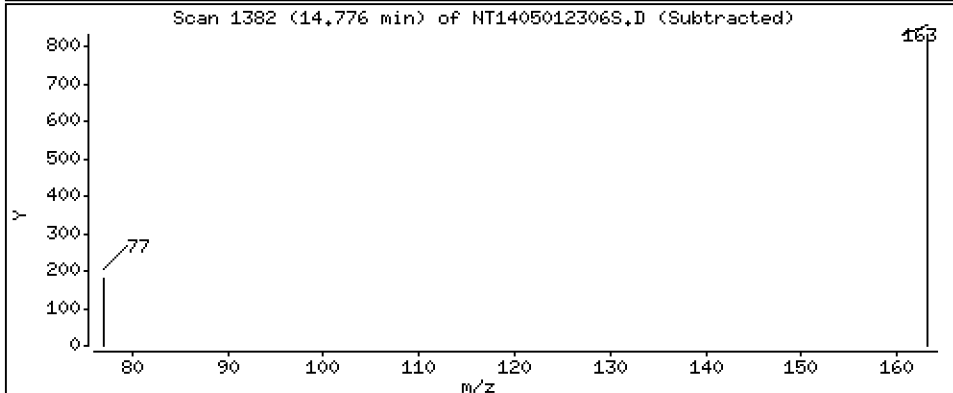
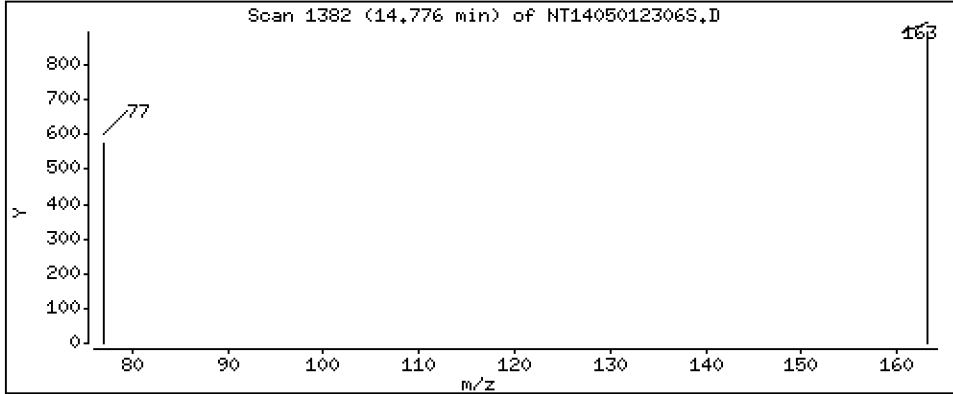
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 0,007337 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

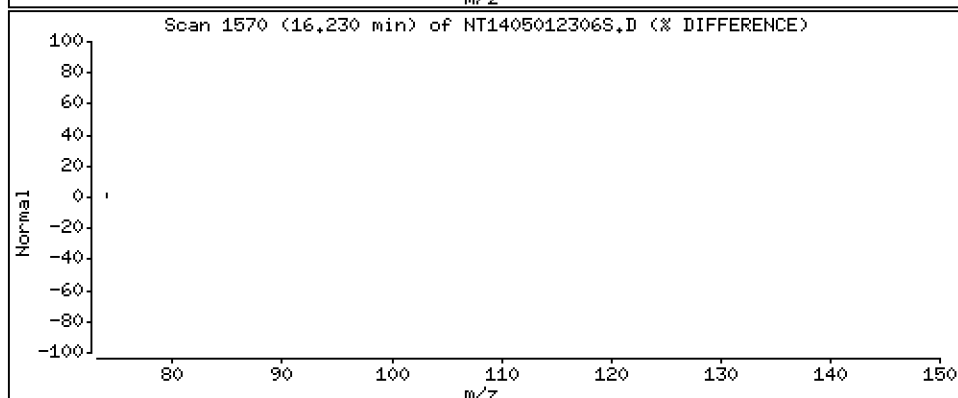
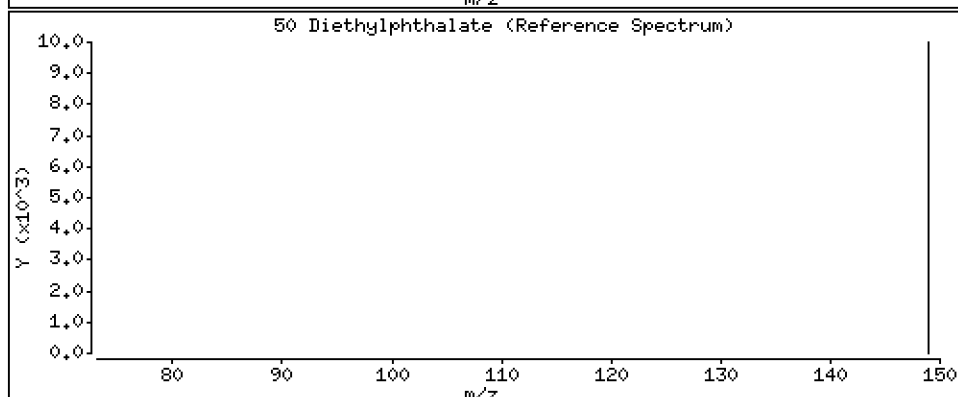
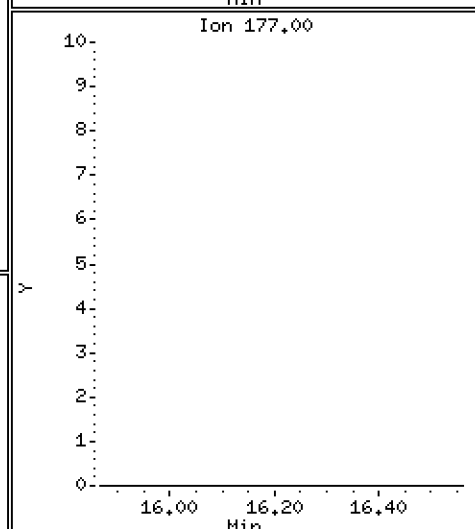
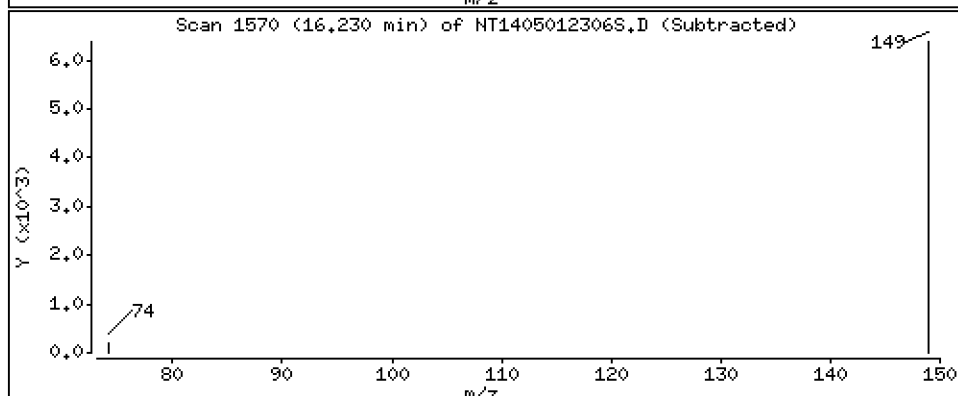
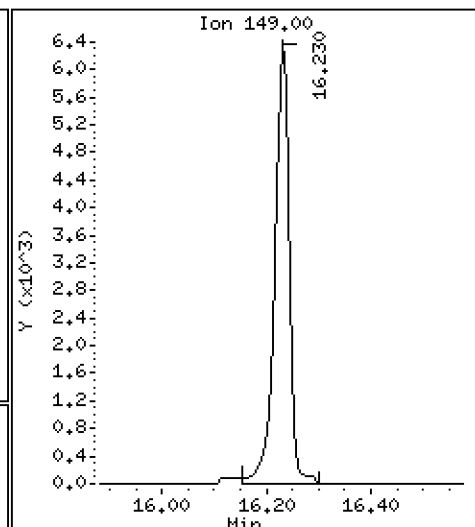
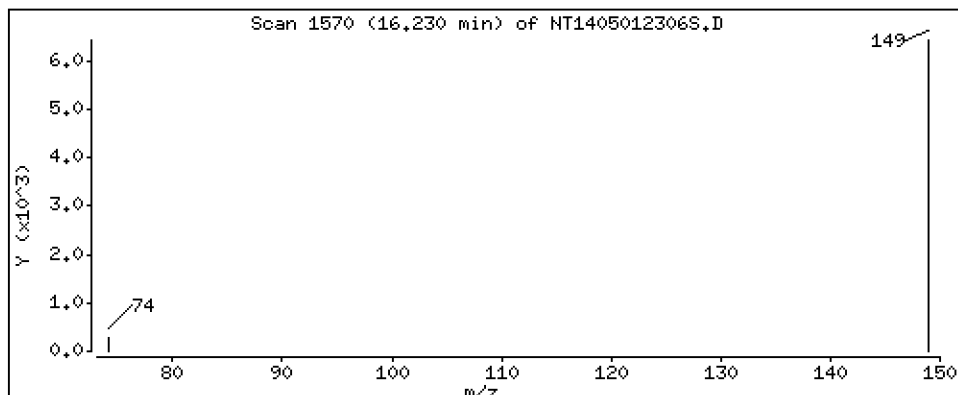
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,05343 ug/mL



Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

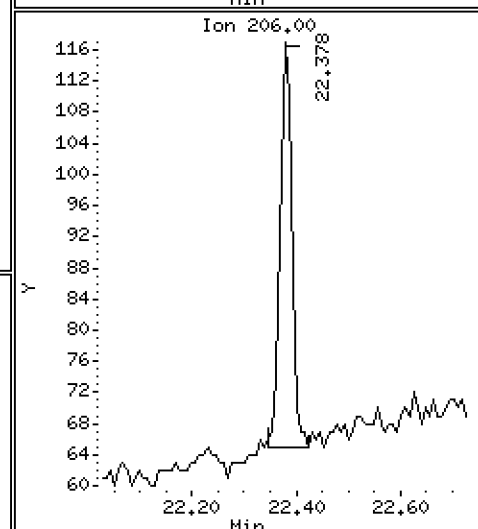
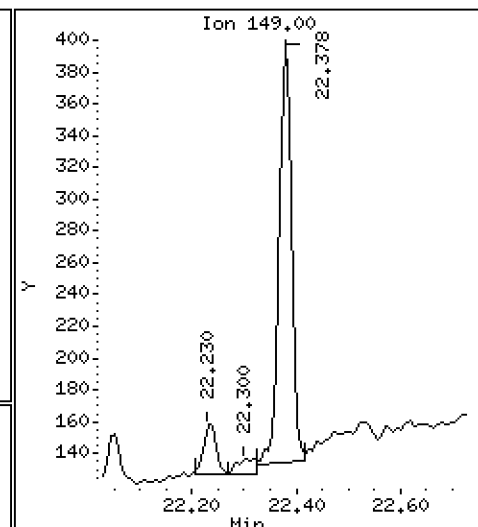
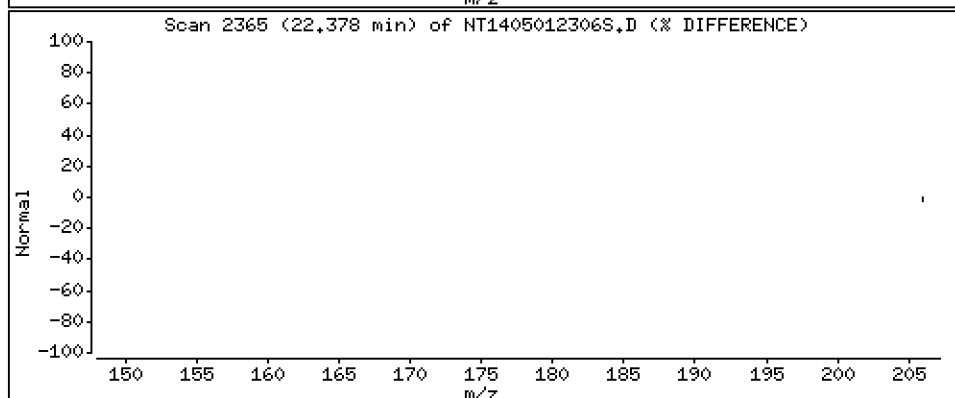
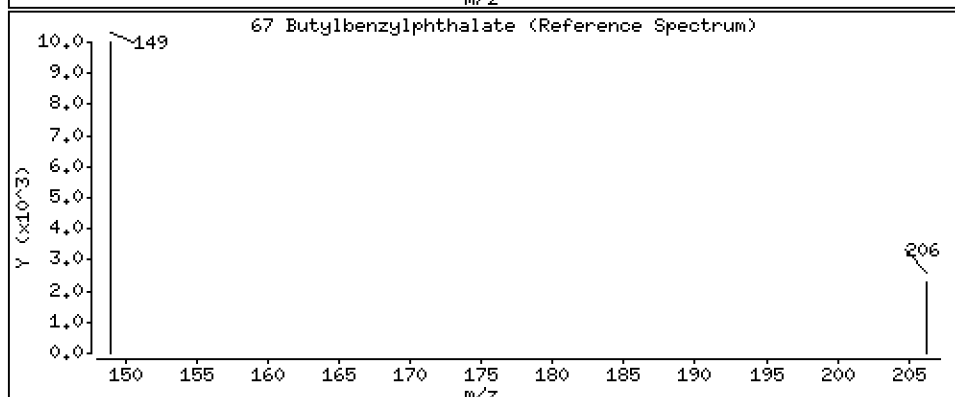
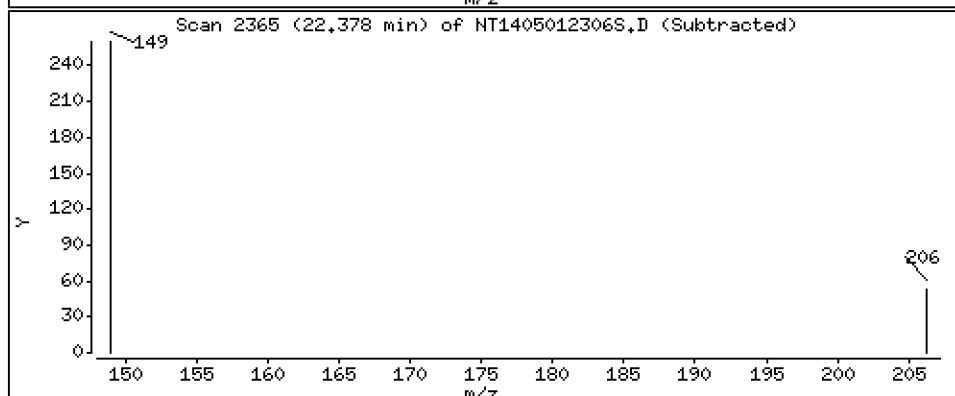
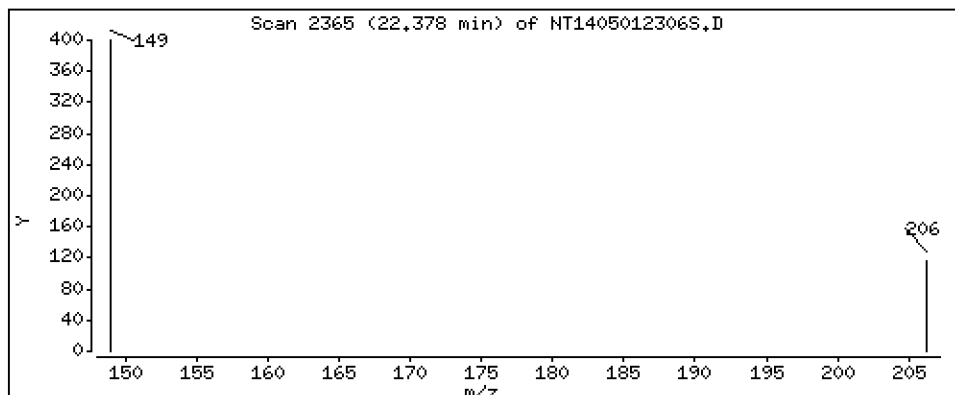
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,002350 ug/mL





Date : 01-MAY-2023 17:36

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BLK2

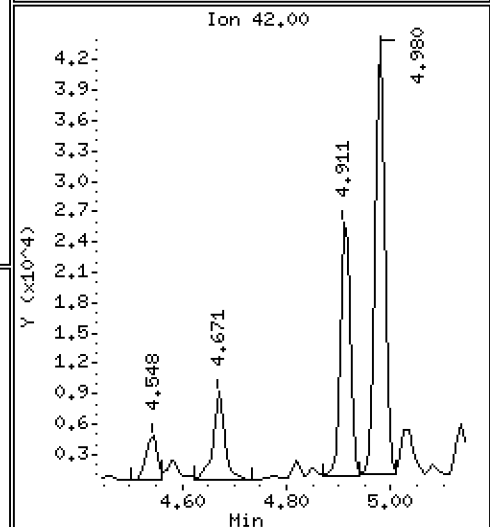
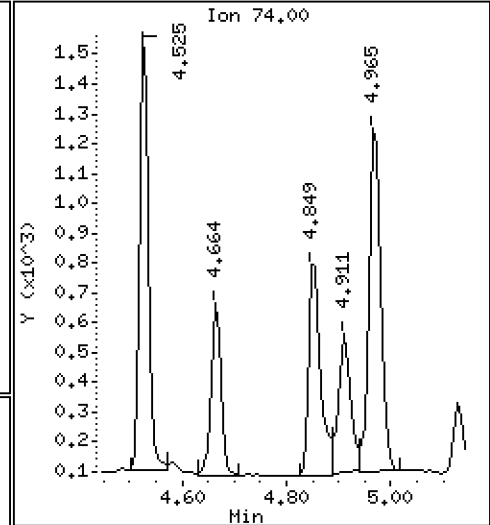
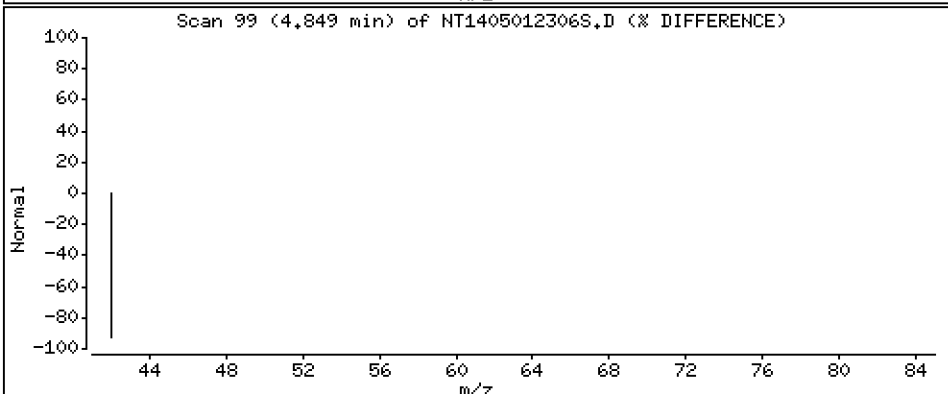
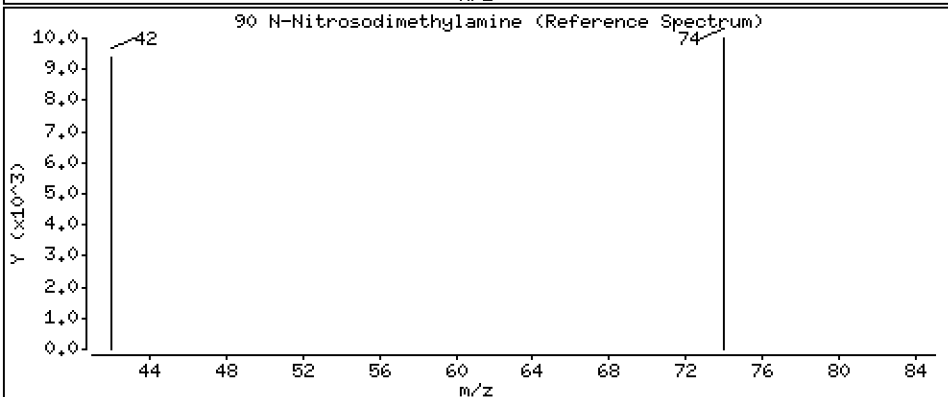
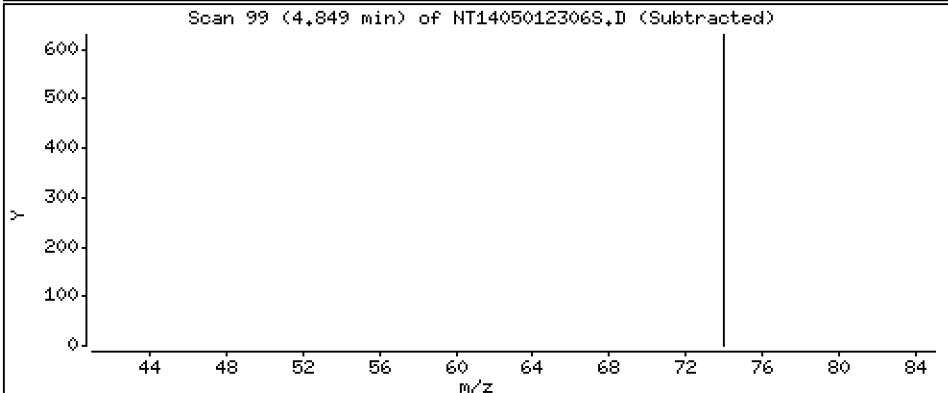
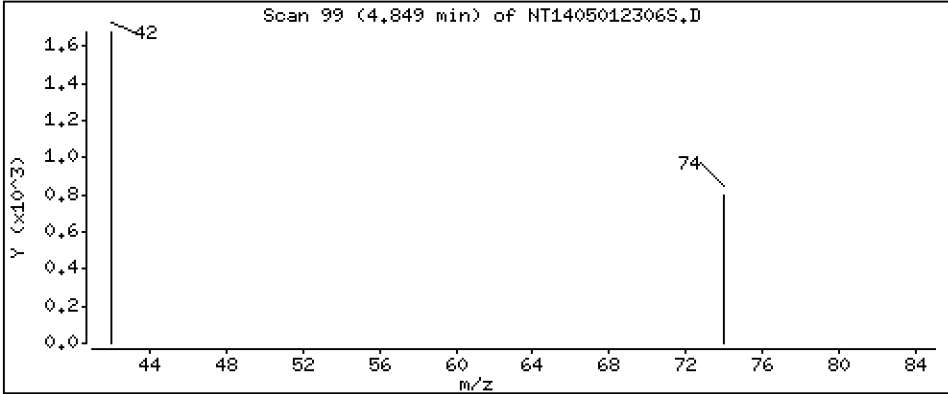
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 0,01240 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012306S.D  
 Lab Smp Id: BLD0297-BLK2  
 Inj Date : 01-MAY-2023 17:36 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-BLK2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 6  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.911	6.903	(0.756)	673843	5.76804	5.768 (R)
3 Phenol	94		8.510	8.510	(0.931)	49353	0.26351	0.2635
7 1,3-Dichlorobenzene	146		9.067	9.067	(0.992)	894	0.00629	0.006293
* 8 1,4-Dichlorobenzene-d4	152		9.136	9.137	(1.000)	335197	4.00000	
9 1,4-Dichlorobenzene	146		9.167	9.168	(1.003)	937	0.00697	0.006972
11 Benzyl alcohol	79		Compound Not Detected.					
12 1,2-Dichlorobenzene	146		9.525	9.525	(1.042)	1178	0.00879	0.008785
13 2-Methylphenol	108		Compound Not Detected.					
15 4-Methylphenol	108		9.905	9.898	(1.084)	480	0.00398	0.003982
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
22 2,4-Dimethylphenol	107		Compound Not Detected.					
24 Benzoic acid	105		Compound Not Detected.					
26 1,2,4-Trichlorobenzene	180		11.549	11.549	(0.993)	523	0.00554	0.005538
* 27 Naphthalene-d8	136		11.634	11.634	(1.000)	1286282	4.00000	
30 Hexachlorobutadiene	225		12.036	12.044	(1.035)	293	0.00561	0.005606
39 Dimethylphthalate	163		14.775	14.776	(0.968)	1589	0.00734	0.007337
* 42 Acenaphthene-d10	162		15.270	15.271	(1.000)	593213	4.00000	
50 Diethylphthalate	149		16.229	16.229	(1.063)	11832	0.05343	0.05343
54 N-Nitrosodiphenylamine	169		Compound Not Detected.					
57 Hexachlorobenzene	284		Compound Not Detected.					
58 Pentachlorophenol	266		Compound Not Detected.					
* 59 Phenanthrene-d10	188		18.322	18.323	(1.000)	1050113	4.00000	
\$ 66 Terphenyl-d14	244		21.463	21.456	(0.918)	597508	4.81718	4.817 (R)
67 Butylbenzylphthalate	149		22.377	22.377	(0.958)	416	0.00235	0.002350
* 69 Chrysene-d12	240		23.368	23.369	(1.000)	779840	4.00000	
* 77 Perylene-d12	264		26.047	26.047	(1.000)	735840	4.00000	
79 Dibenzo(a,h)anthracene	278		Compound Not Detected.					
90 N-Nitrosodimethylamine	74		4.848	4.795	(0.531)	1182	0.01240	0.01240

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012306S.D  
 Lab Smp Id: BLD0297-BLK2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	335197	1.09
27 Naphthalene-d8	1259018	629509	2518036	1286282	2.17
42 Acenaphthene-d10	580636	290318	1161272	593213	2.17
59 Phenanthrene-d10	1027945	513973	2055890	1050113	2.16
69 Chrysene-d12	775653	387827	1551306	779840	0.54
77 Perylene-d12	750797	375399	1501594	735840	-1.99

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	-0.00
27 Naphthalene-d8	11.63	11.13	12.13	11.63	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.32	17.82	18.82	18.32	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.37	-0.00
77 Perylene-d12	26.05	25.55	26.55	26.05	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012306S.D

Lab ID: BLD0297-BLK2

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 17:36

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.531	0.525	0.0059	N-Nitrosodimethylamine

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



**LCS / LCS DUPLICATE RECOVERY**  
**EPA 8270E-SIM**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Analyzed: 05/01/23 18:13

Batch: BLD0297

Laboratory ID: BLD0297-BS2

Preparation: EPA 3546 (Microwave)

Sequence Name: LCS

Initial/Final: 10 g / 1 mL

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
1,4-Dichlorobenzene	500	378		75.6	36 - 120
1,2-Dichlorobenzene	500	378		75.6	36 - 120
Benzyl Alcohol	500	408		81.7	25 - 123
Benzoic acid	2300	2370		103	10 - 160
2,4-Dimethylphenol	1300	504		38.7	10 - 120
1,2,4-Trichlorobenzene	500	403		80.6	35 - 120
N-Nitrosodiphenylamine	500	375		74.9	27 - 120
Pentachlorophenol	1300	1220	Q	93.9	26 - 120

\* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
1,4-Dichlorobenzene	500	375		74.9	0.872	30	36 - 120
1,2-Dichlorobenzene	500	376		75.2	0.526	30	36 - 120
Benzyl Alcohol	500	408		81.7	0.0135	30	25 - 123
Benzoic acid	2300	2400		104	1.09	30	10 - 160
2,4-Dimethylphenol	1300	632		48.6	22.6	30	10 - 120
1,2,4-Trichlorobenzene	500	399		79.8	0.992	30	35 - 120
N-Nitrosodiphenylamine	500	399		79.9	6.39	30	27 - 120
Pentachlorophenol	1300	1290	Q	99.4	5.63	30	26 - 120

\* Indicates values outside of QC limits

Data File: \\target\share\chem3\nt14,1\20230501A,B\NT1405012307S.D

Date : 01-May-2023 18:13

Client ID:

Sample Info: BLD0297-B52

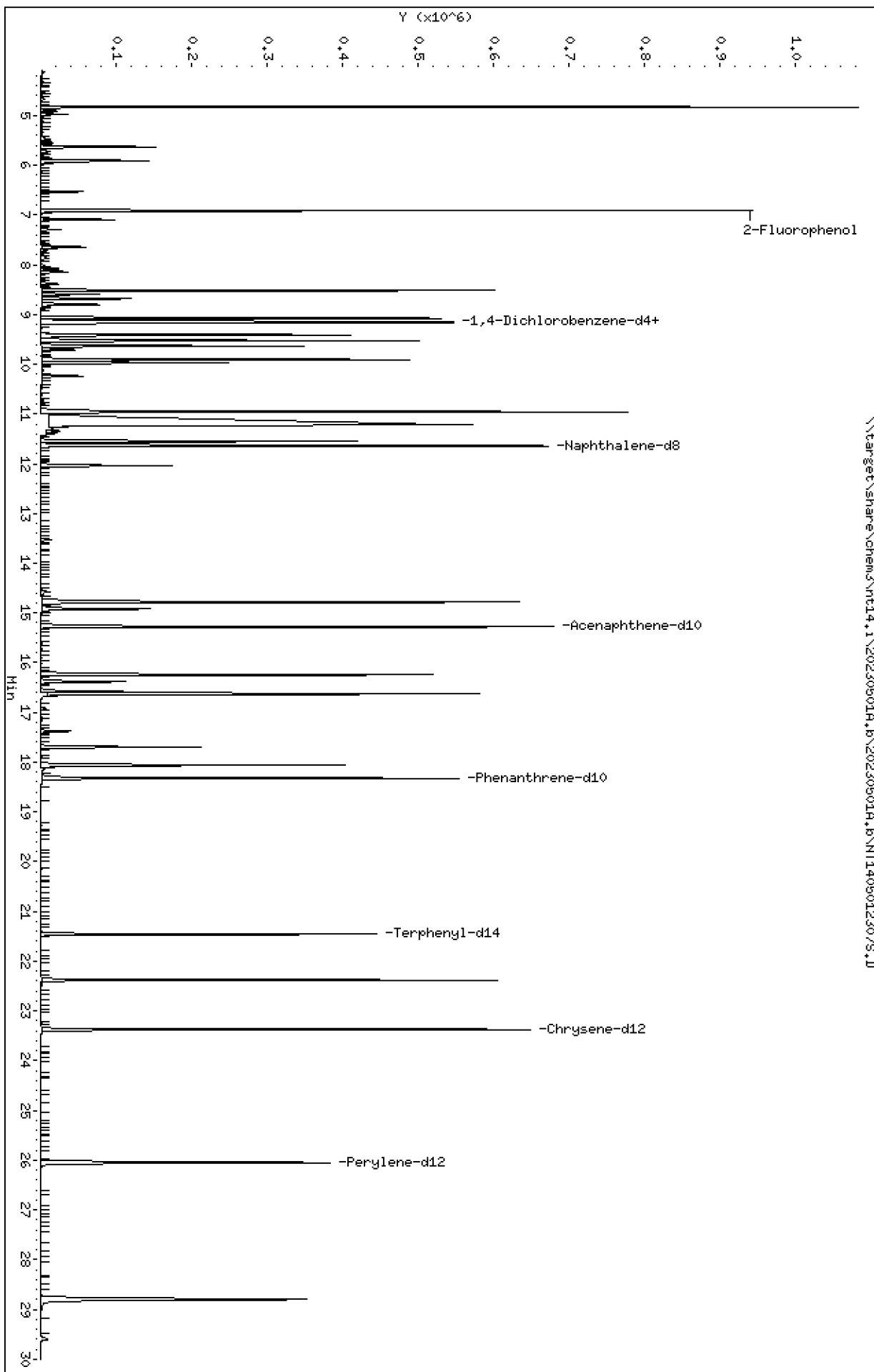
Column phase: ZB-5msi

Instrument: nt14,1

Operator: USD

Column diameter: 0.25

\\target\share\chem3\nt14,1\20230501A,B\NT1405012307S.D



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

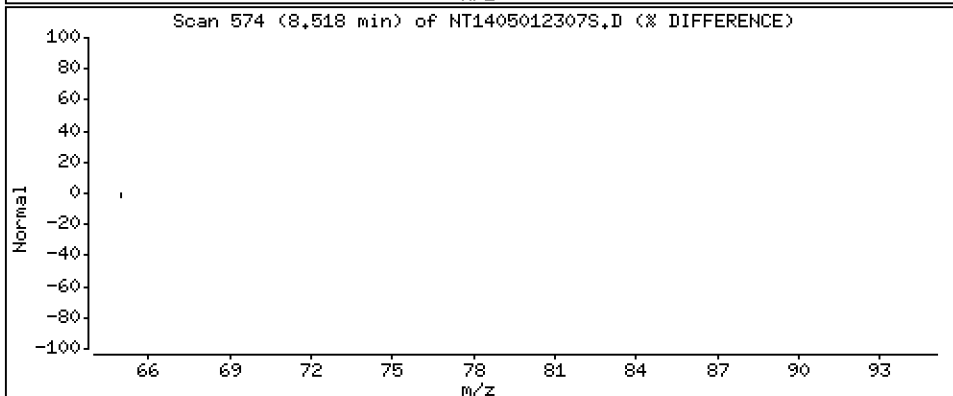
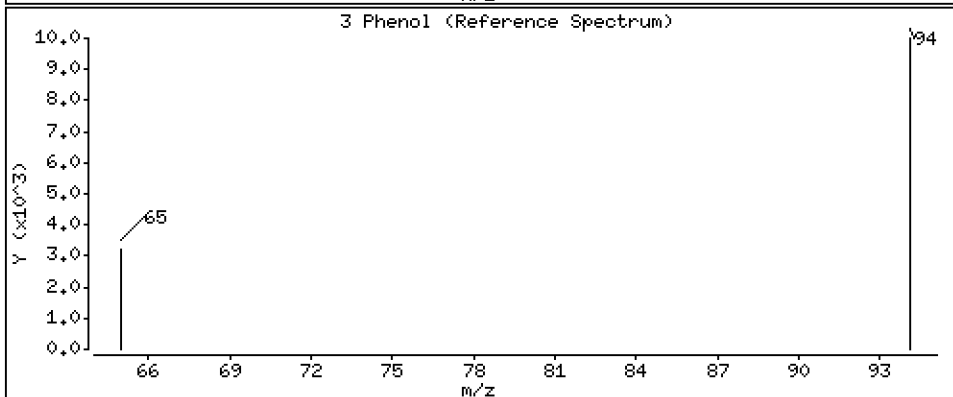
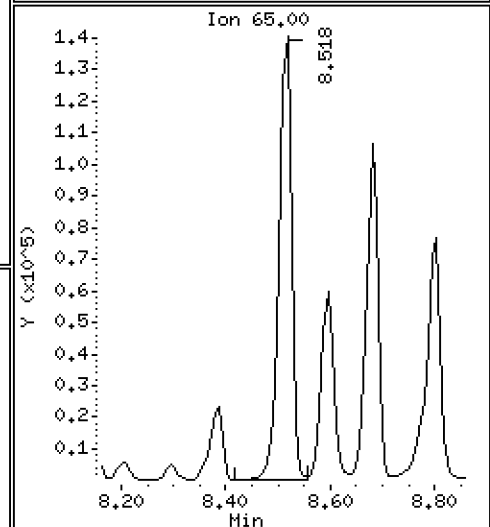
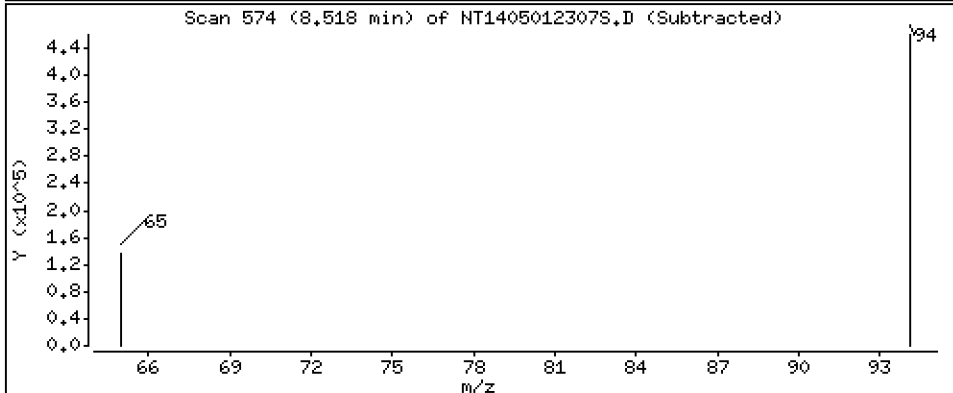
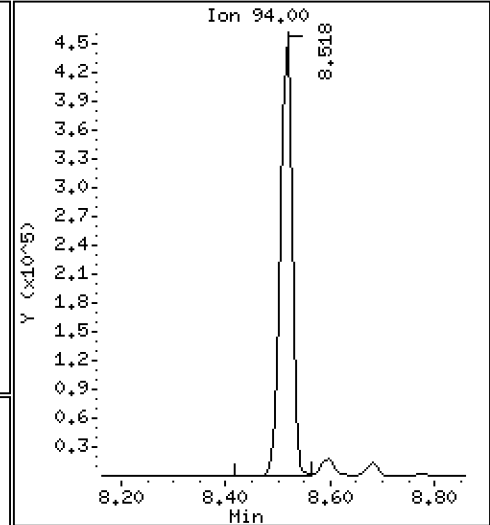
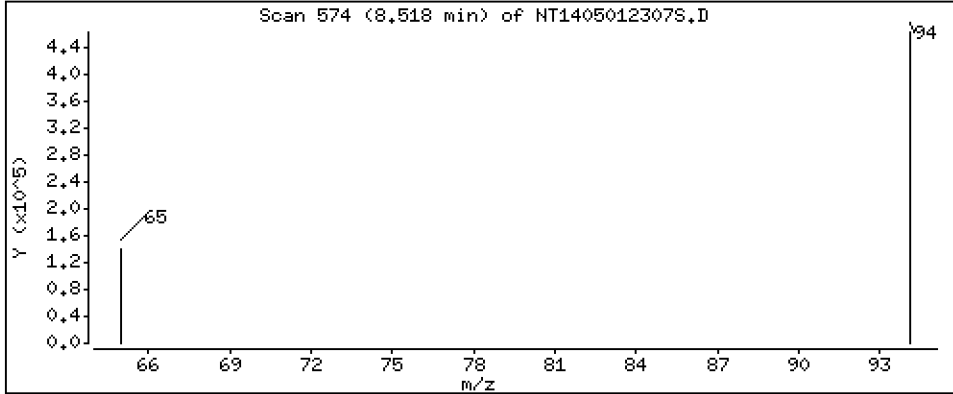
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 3,781 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

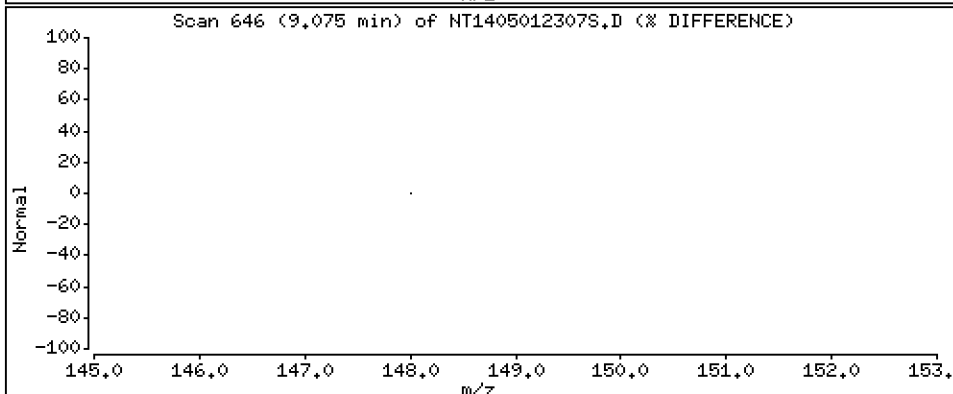
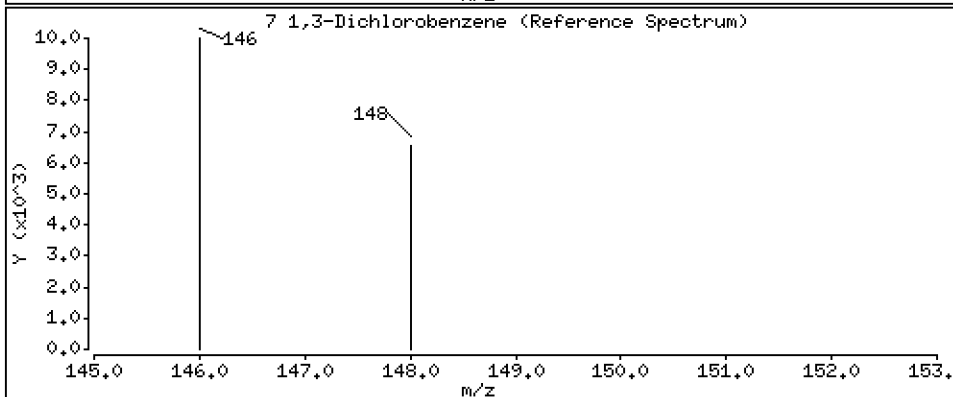
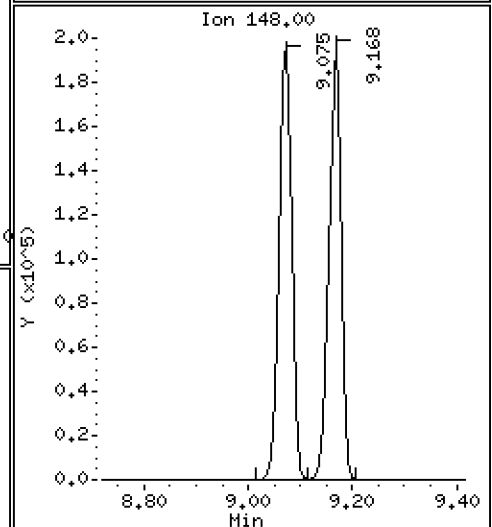
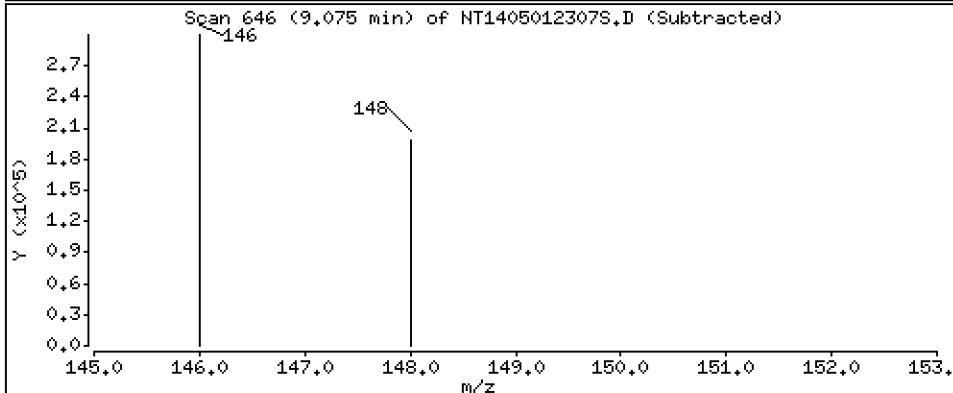
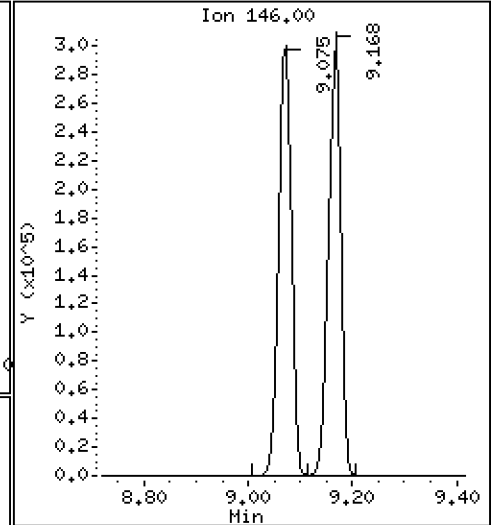
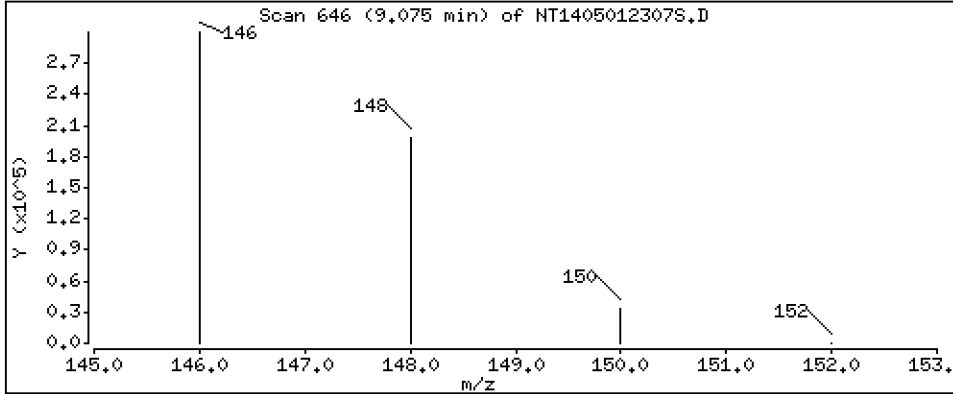
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 3,665 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

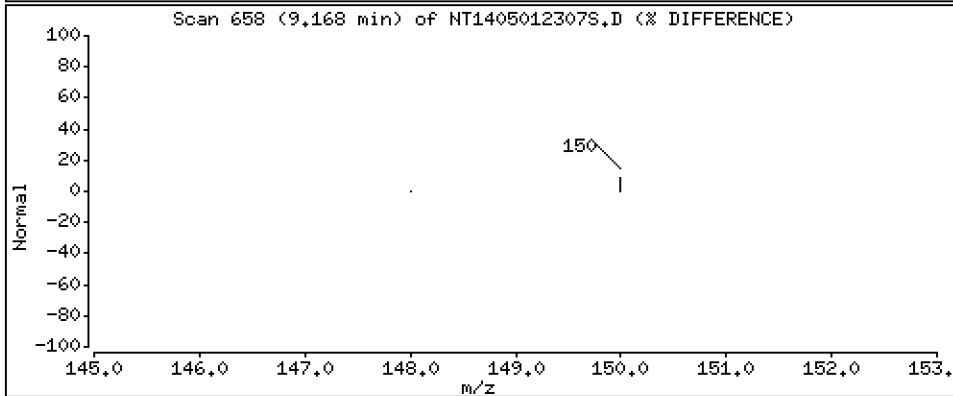
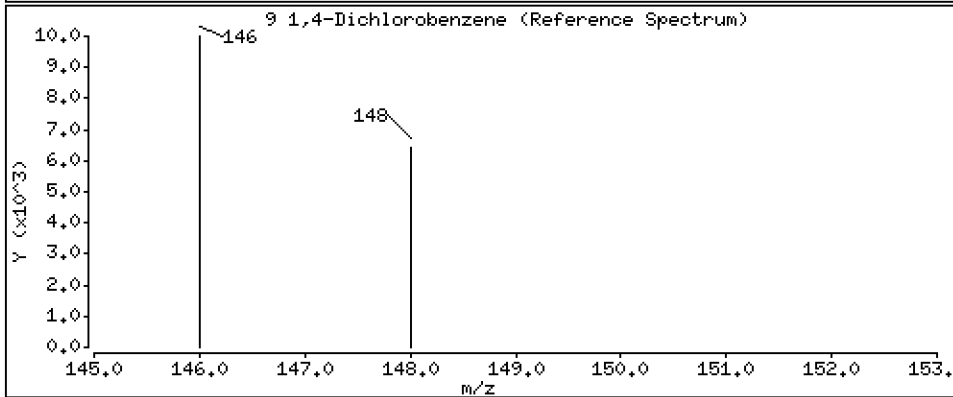
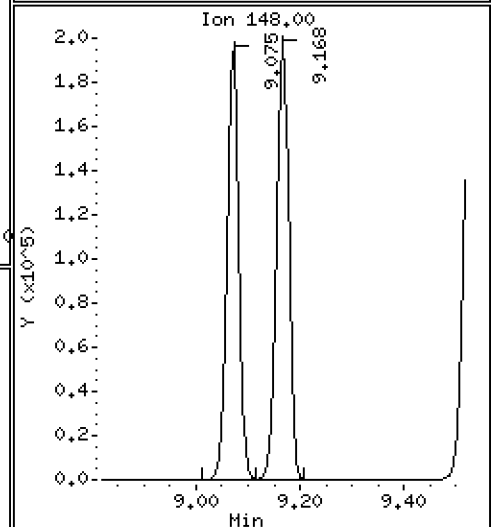
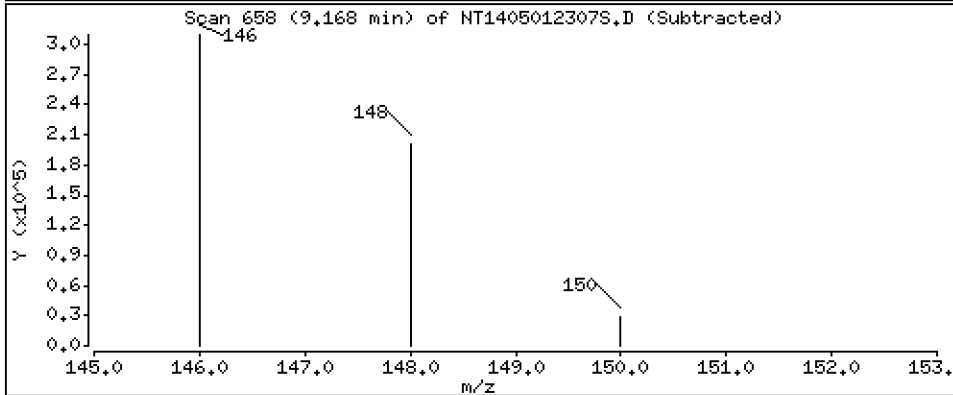
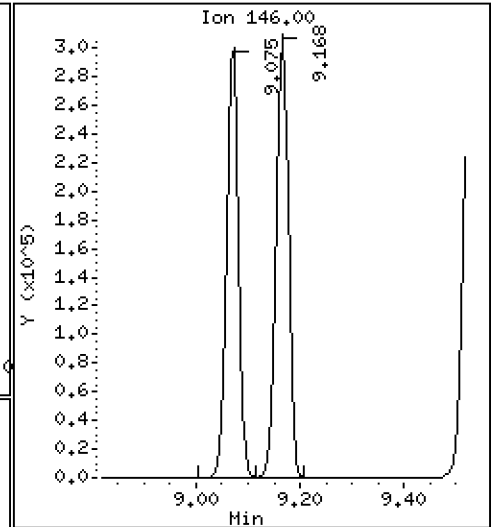
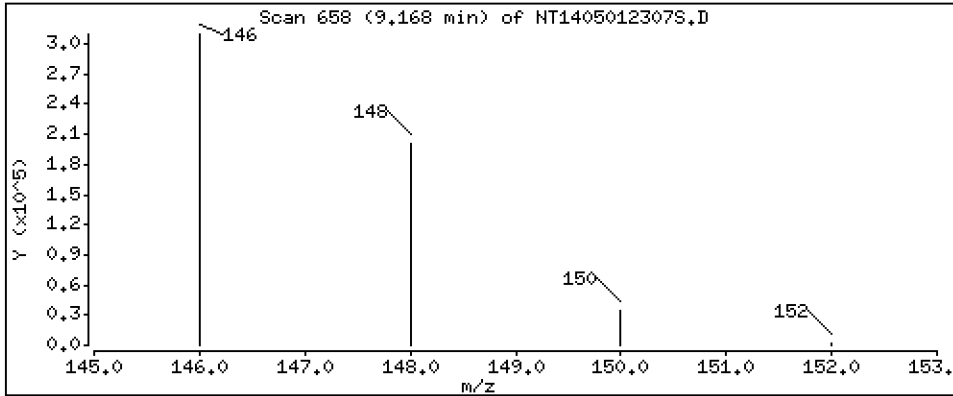
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 3,780 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

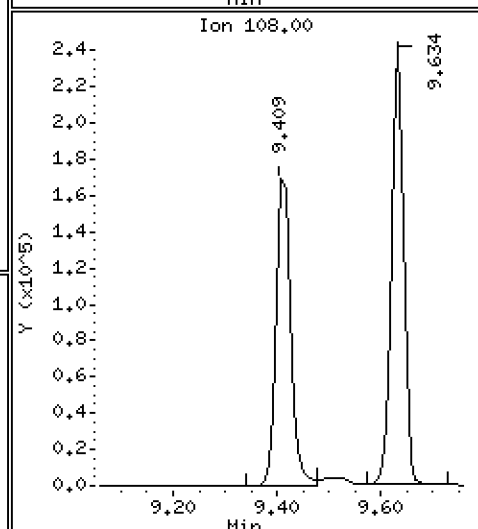
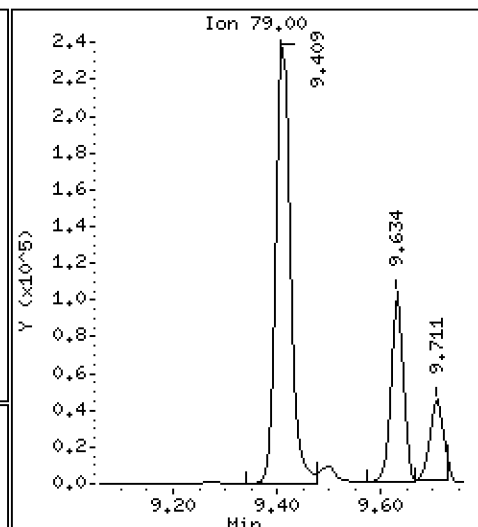
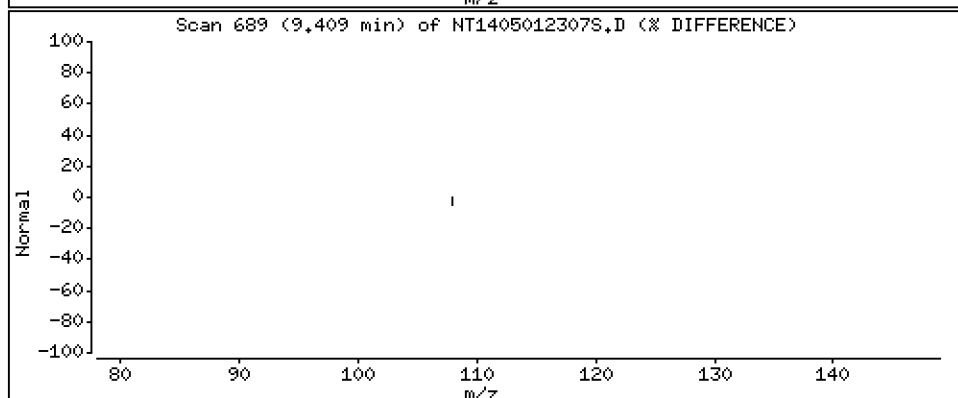
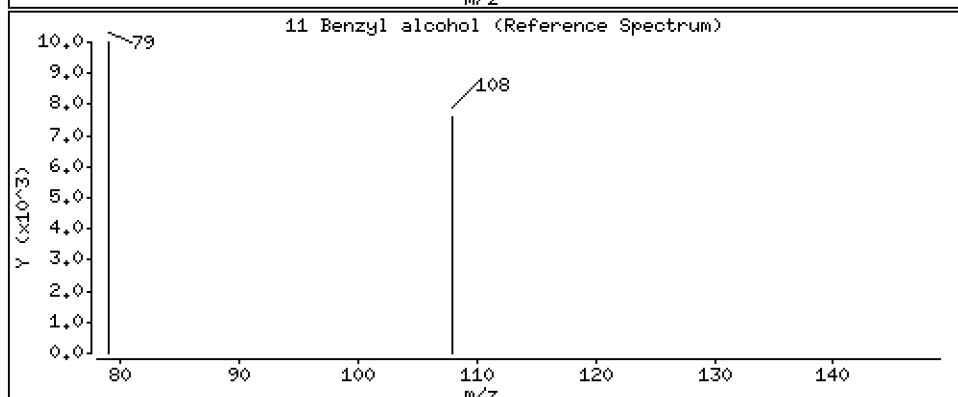
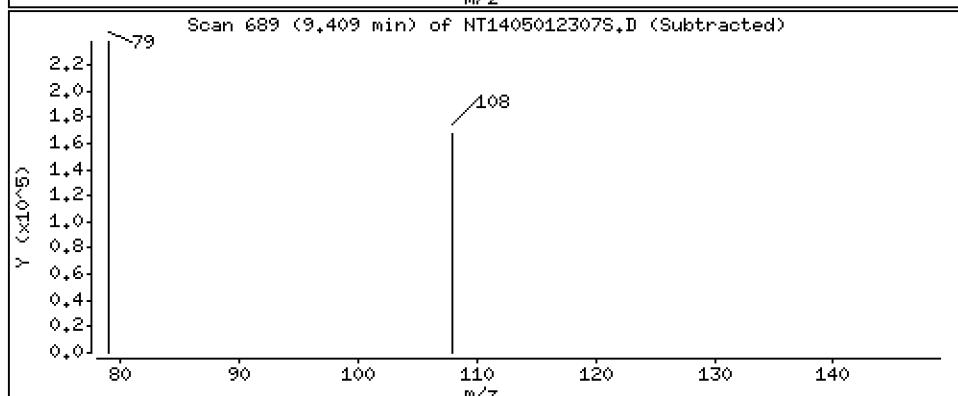
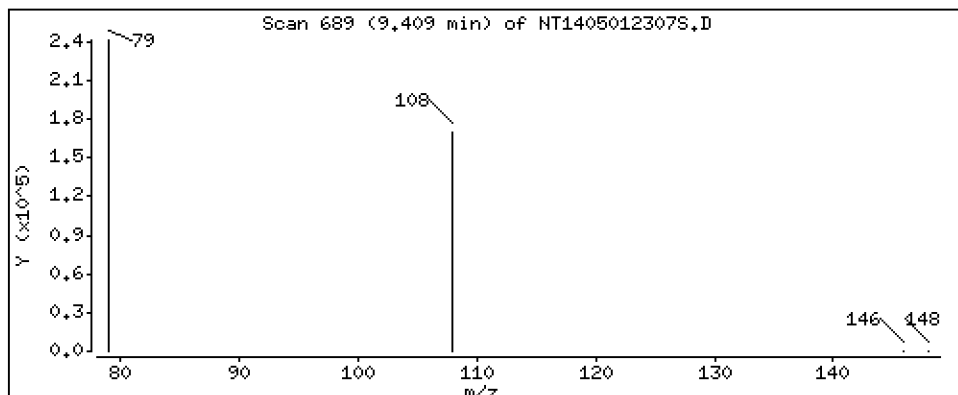
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.084 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

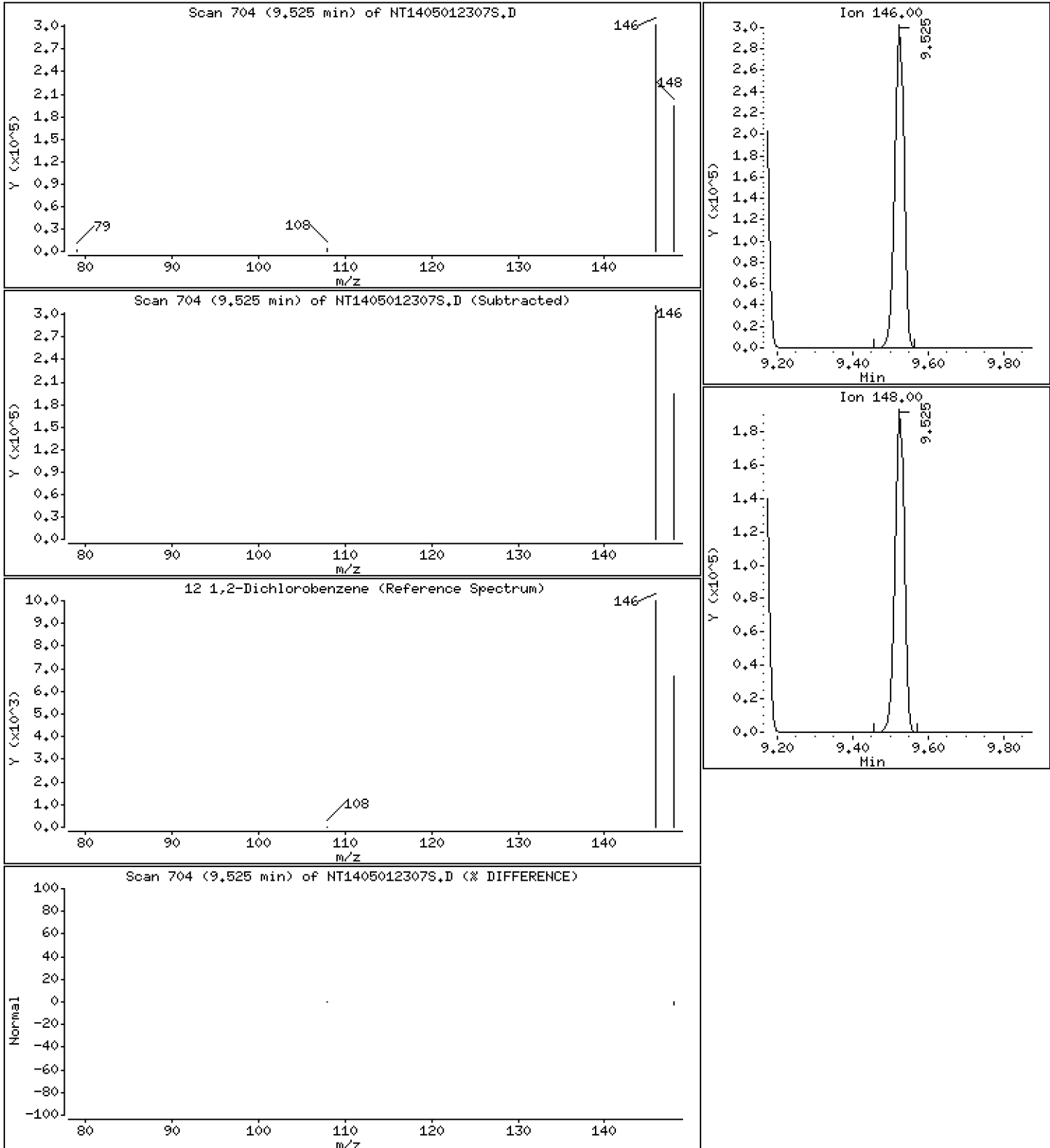
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 3,782 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

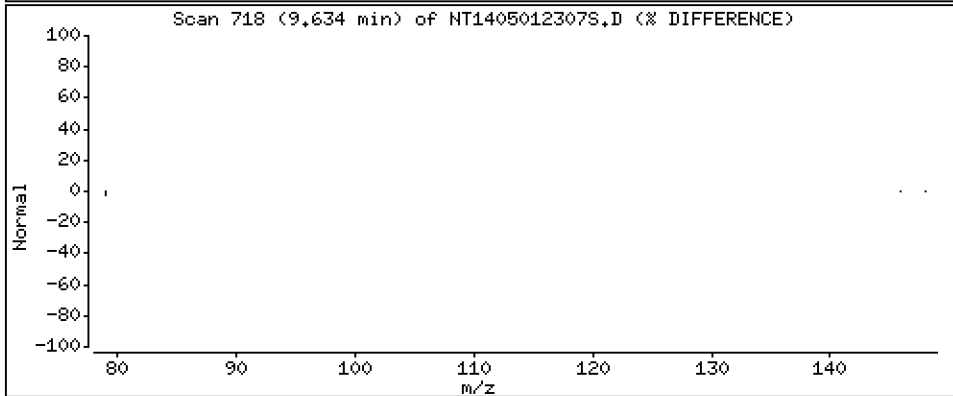
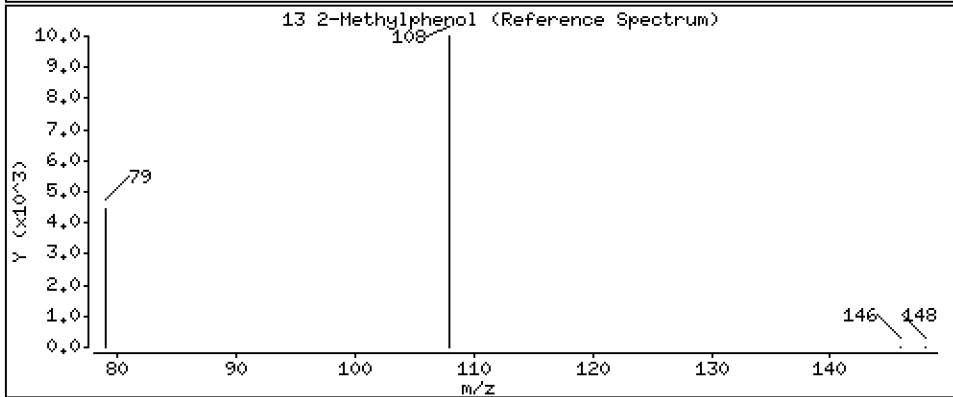
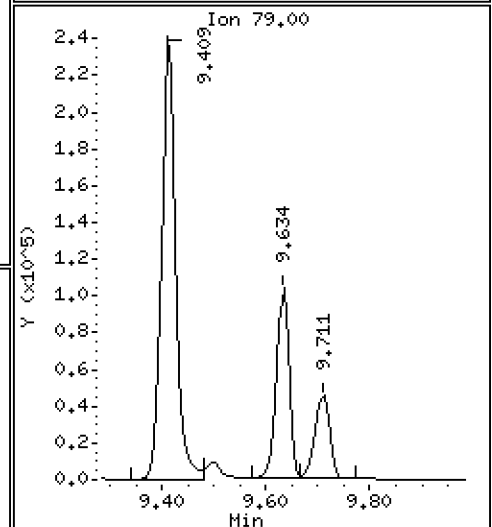
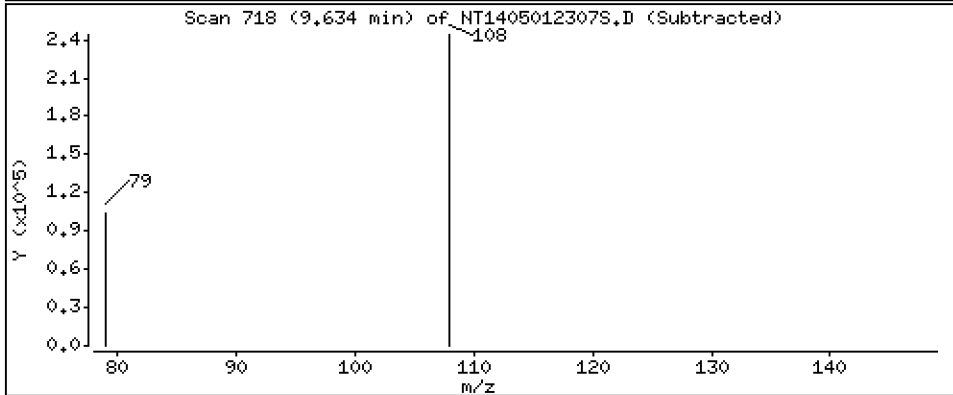
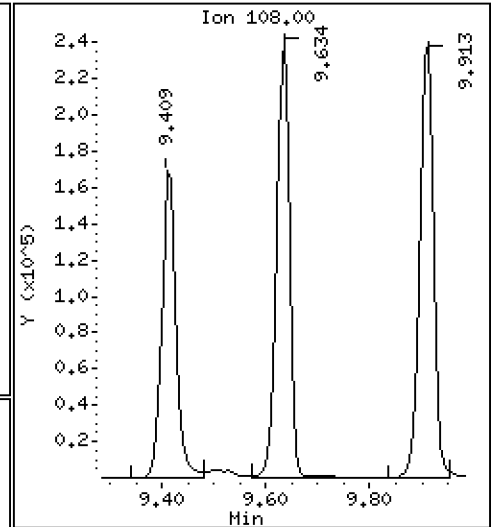
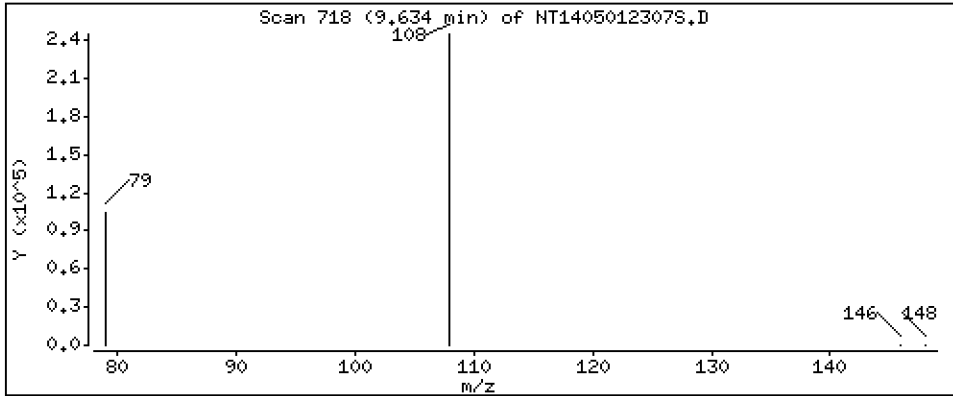
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

13 2-Methylphenol

Concentration: 3,533 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

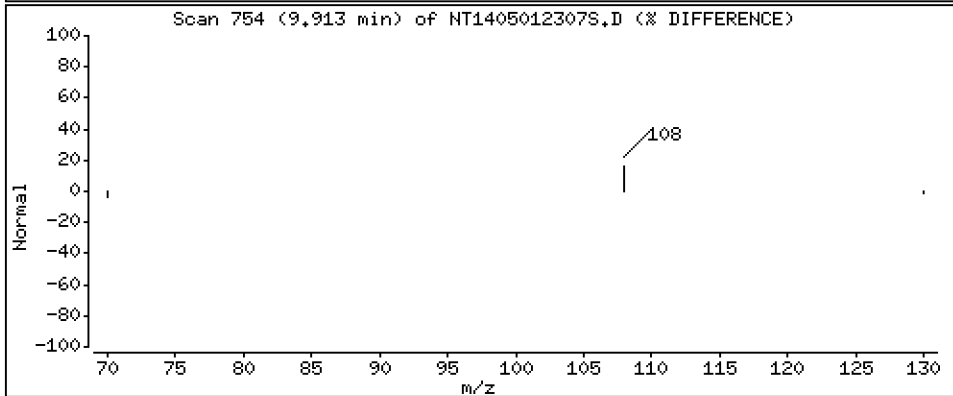
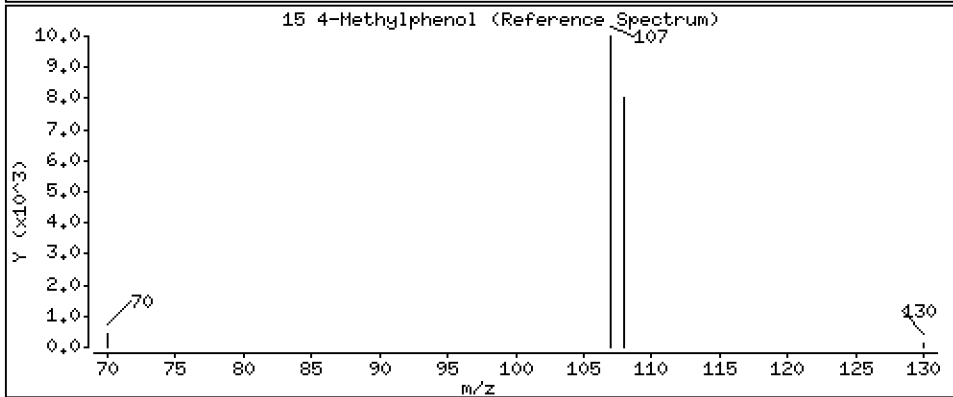
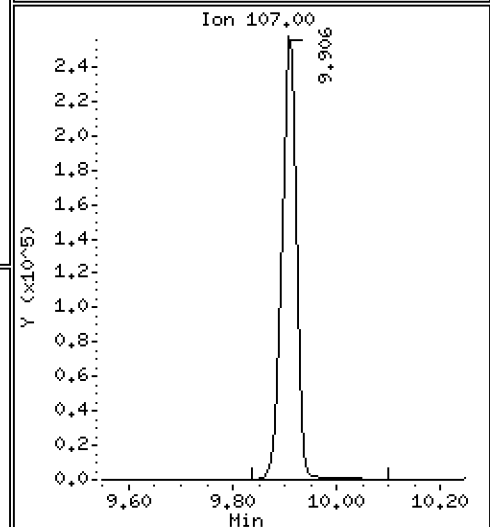
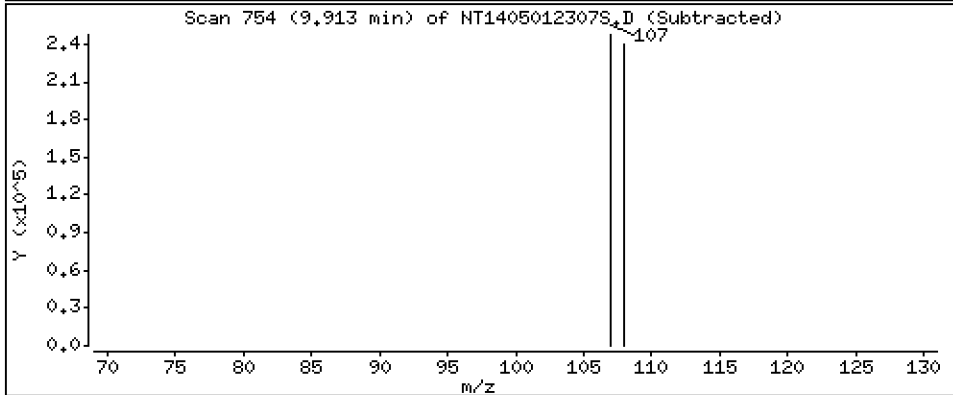
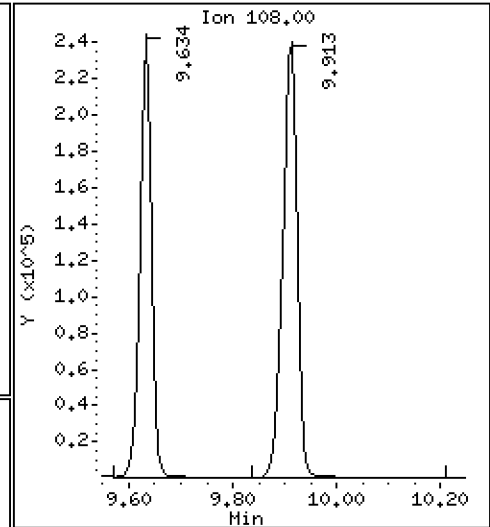
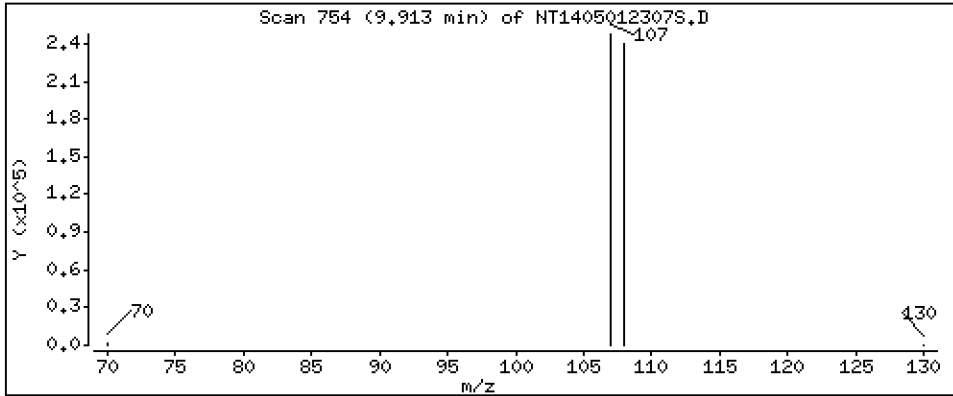
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.097 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

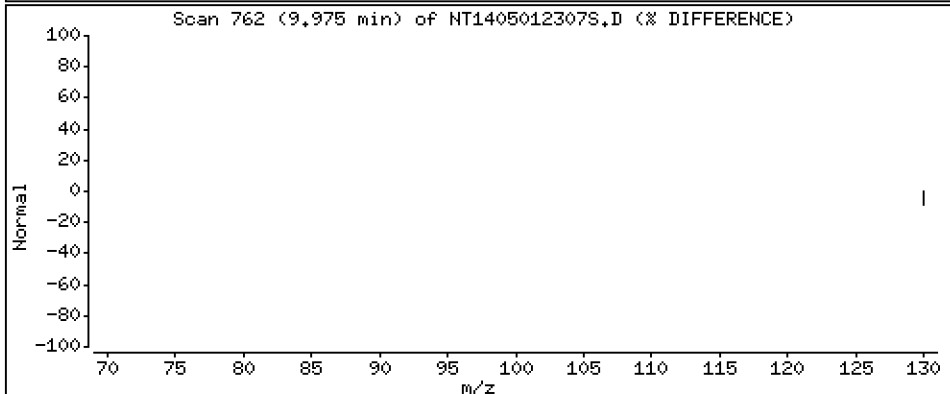
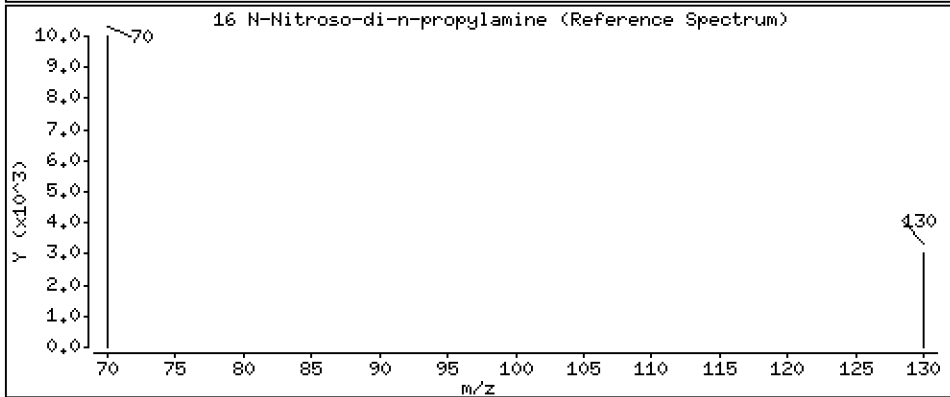
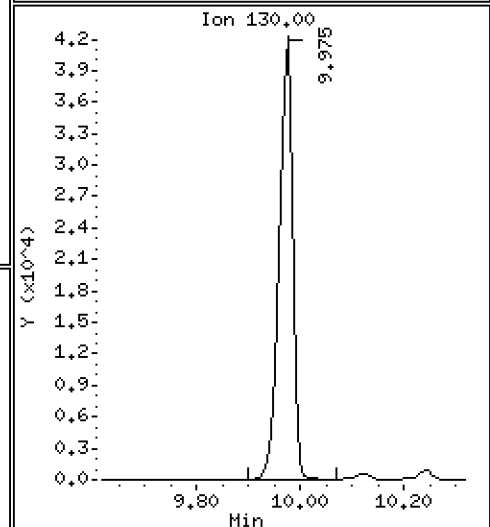
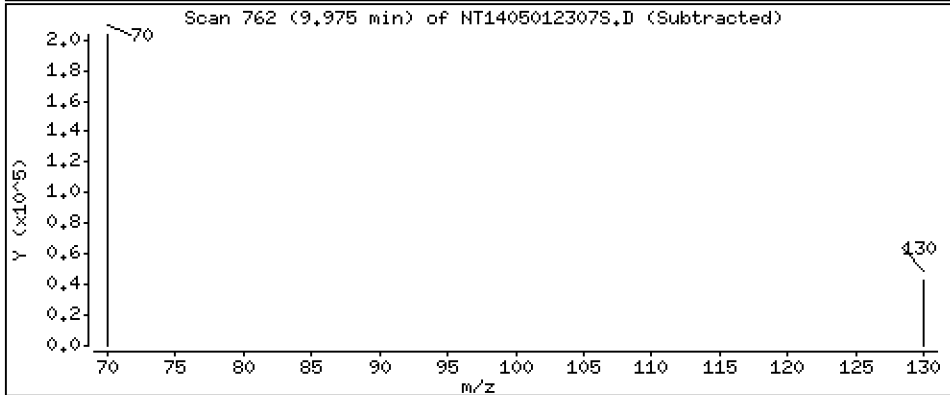
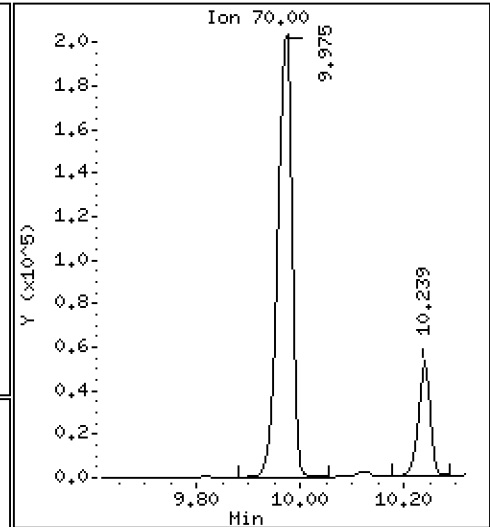
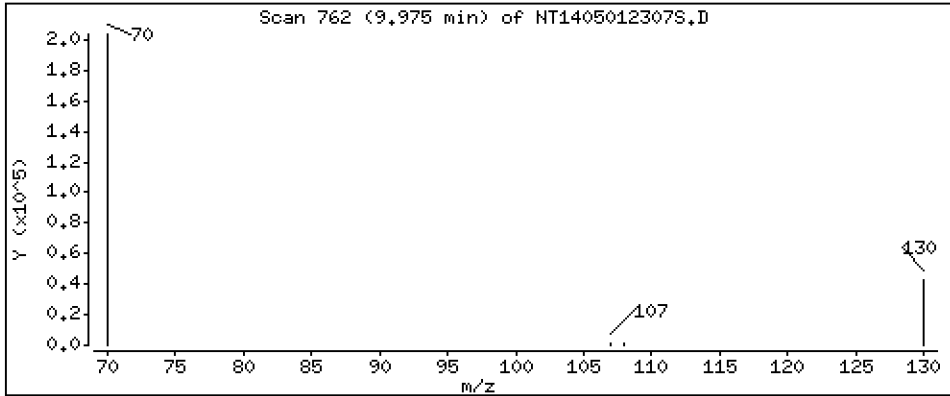
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 3,556 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

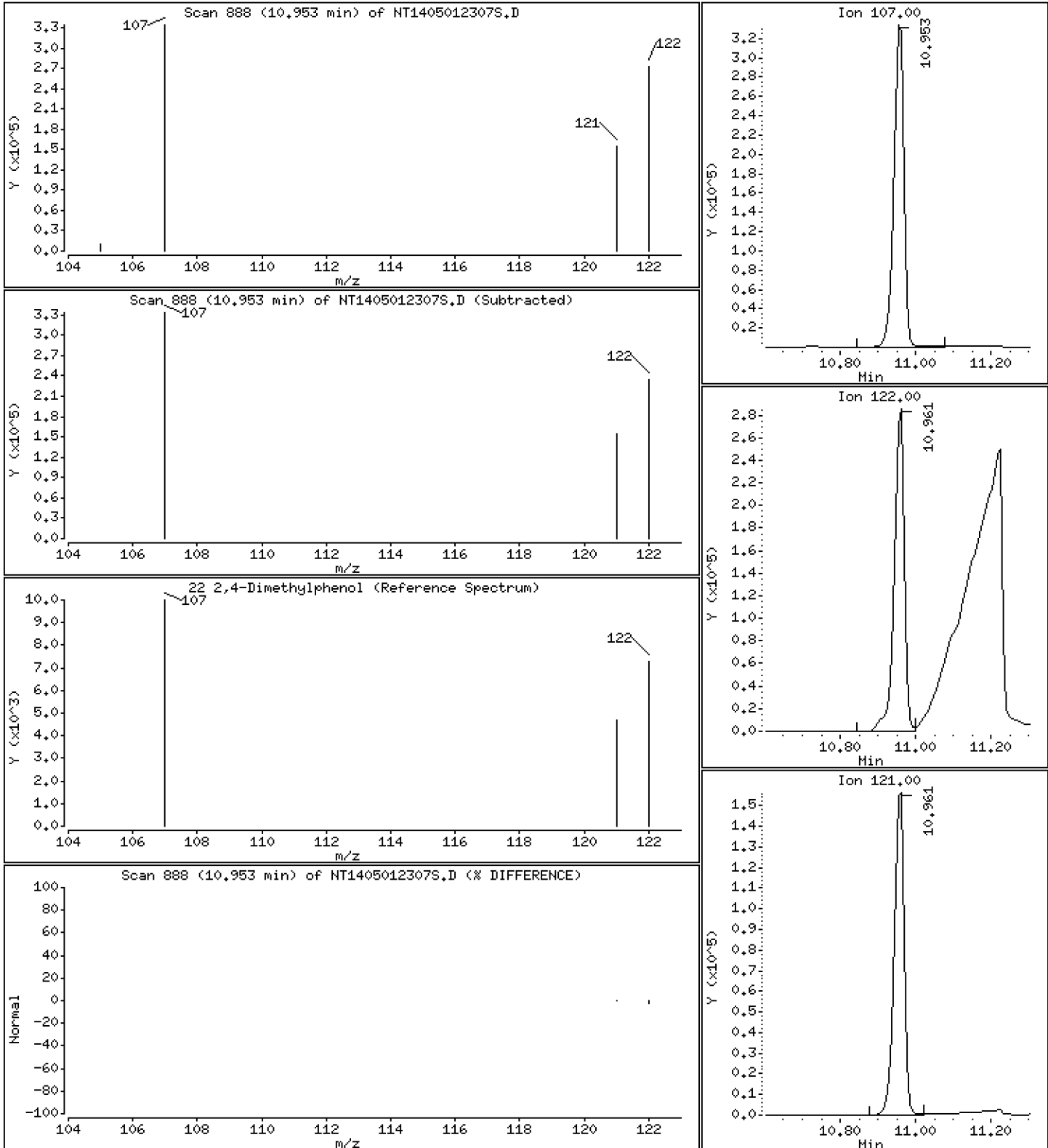
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 5,037 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

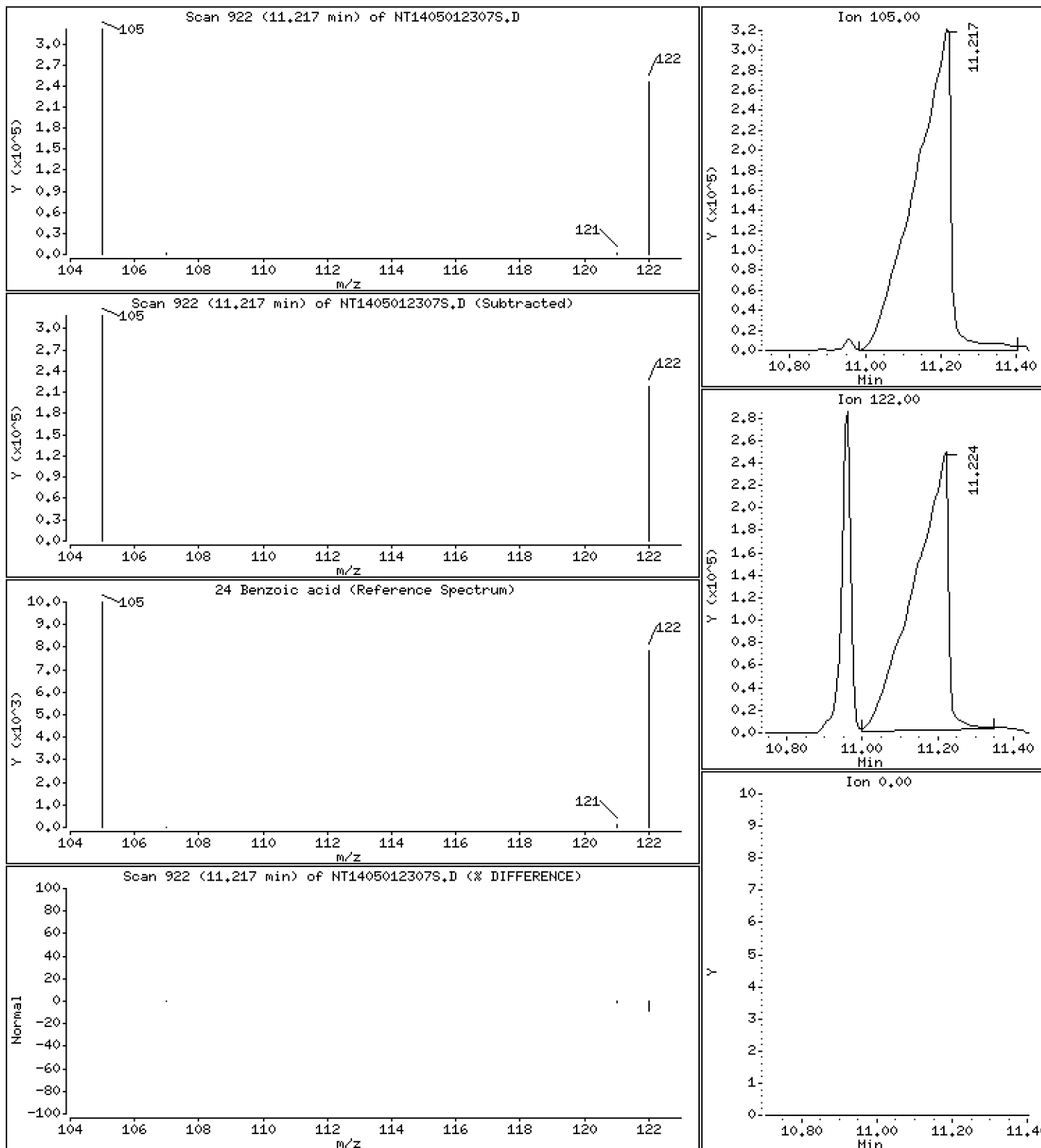
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 23,70 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

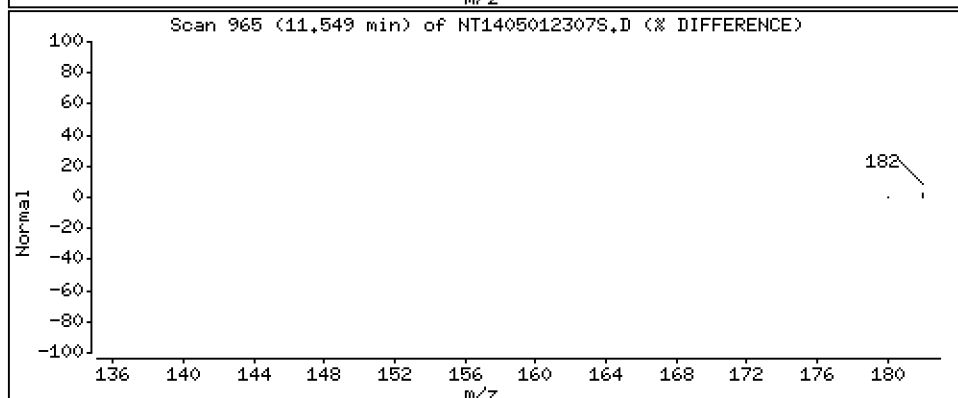
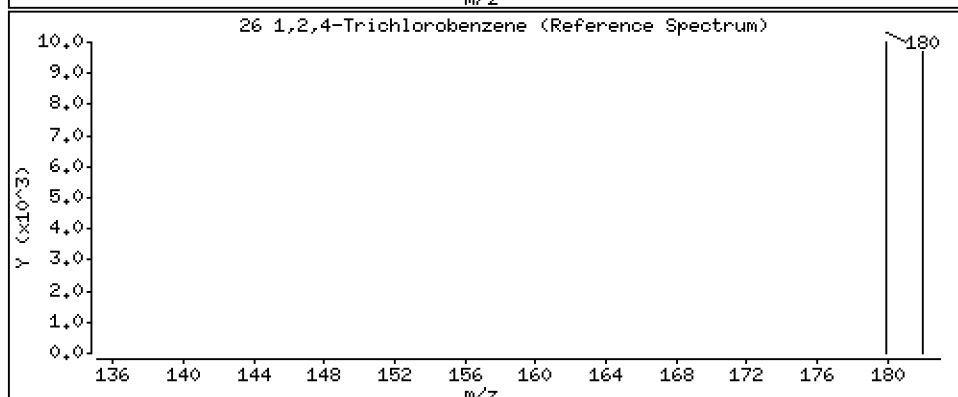
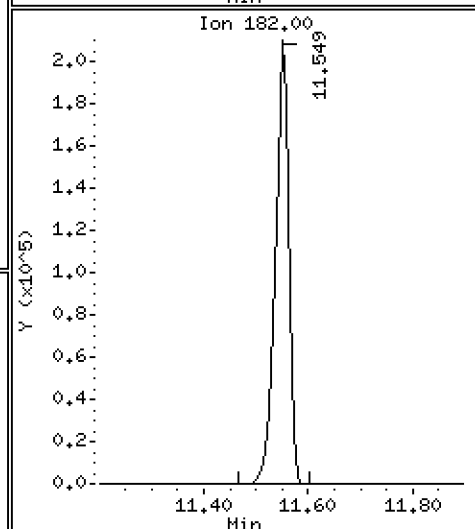
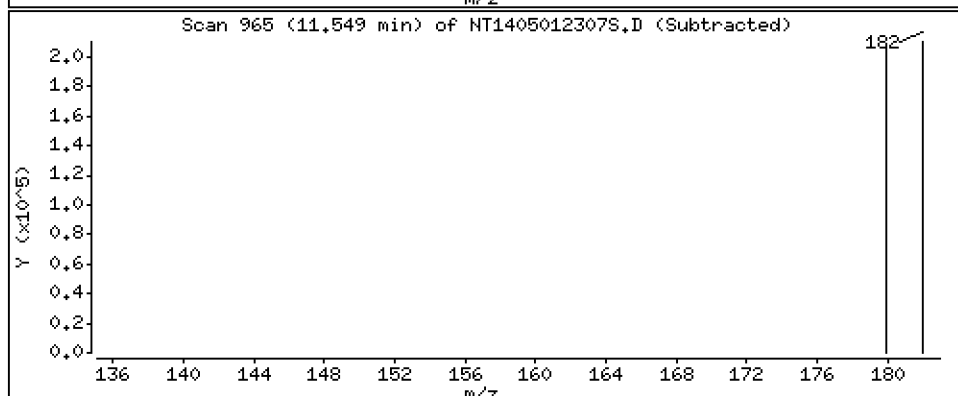
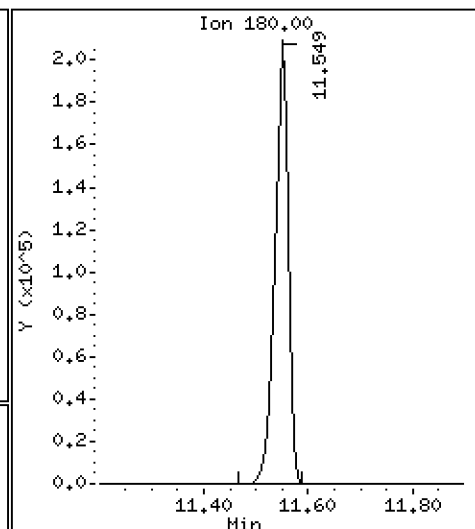
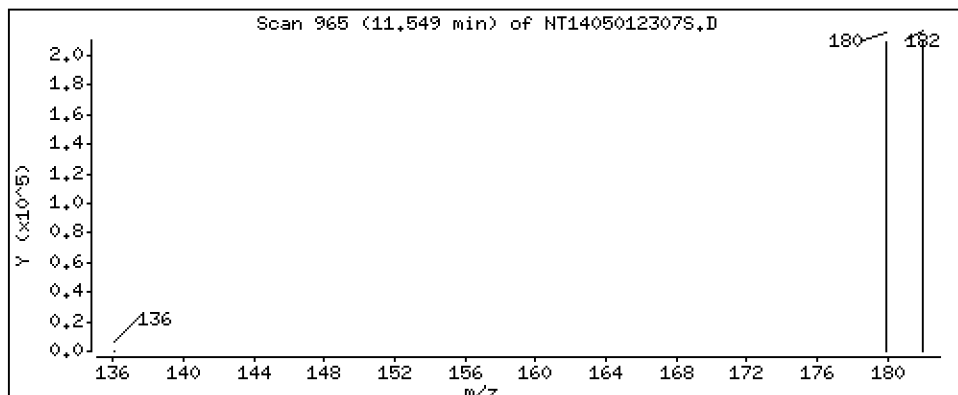
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,028 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

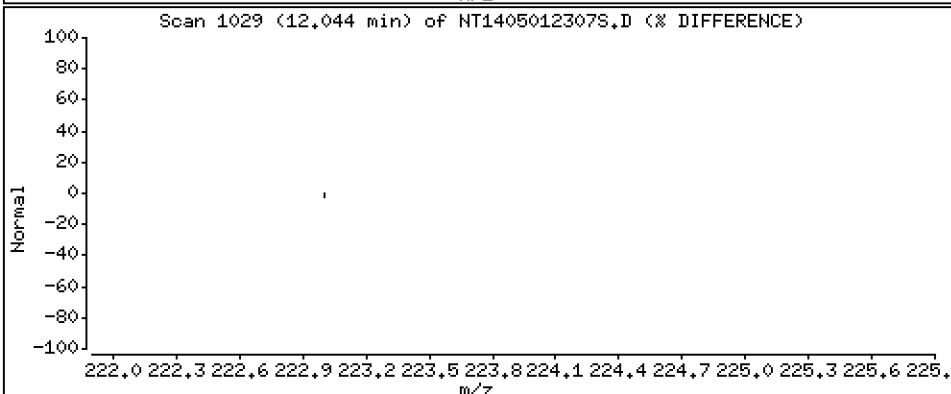
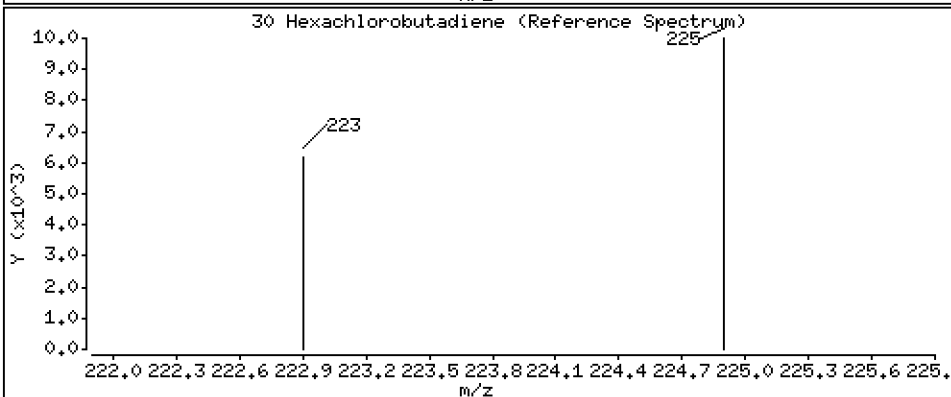
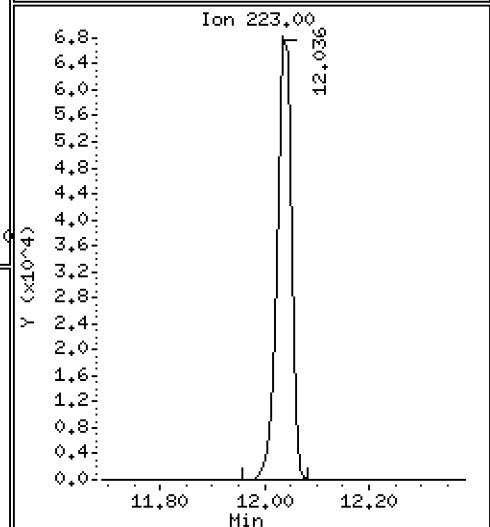
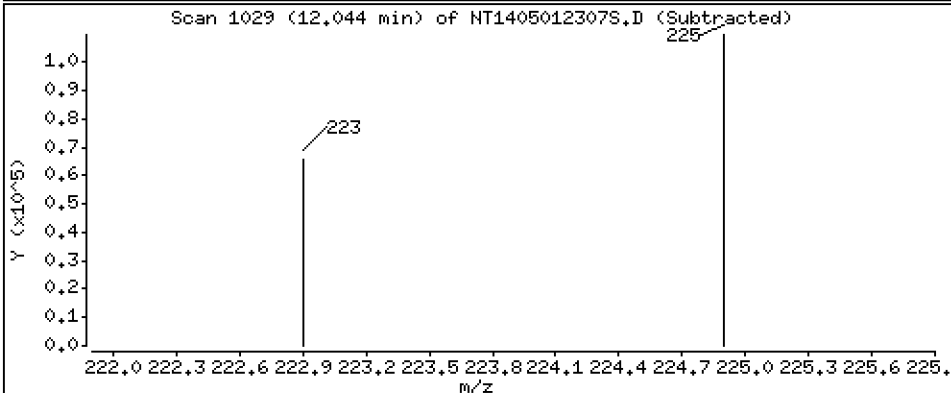
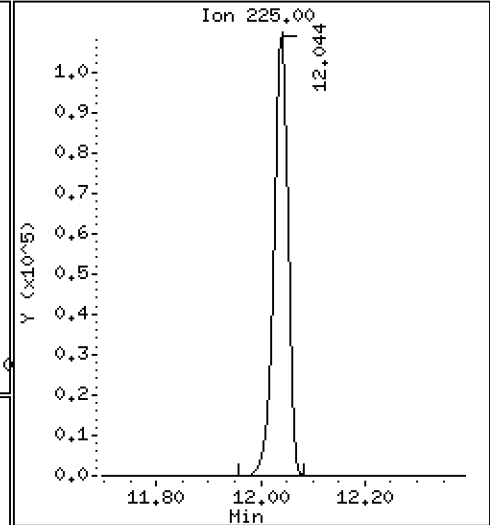
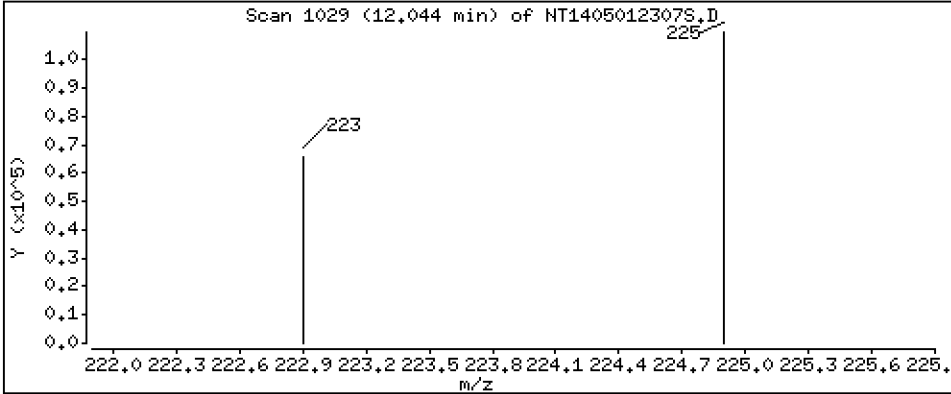
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 3,960 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

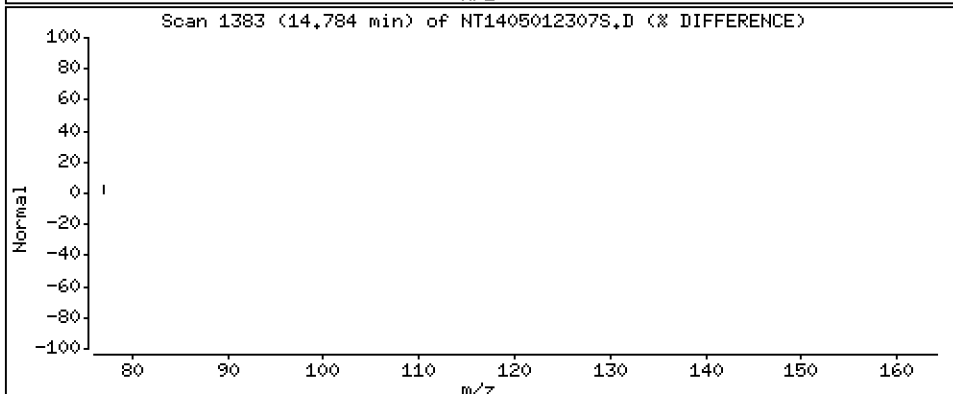
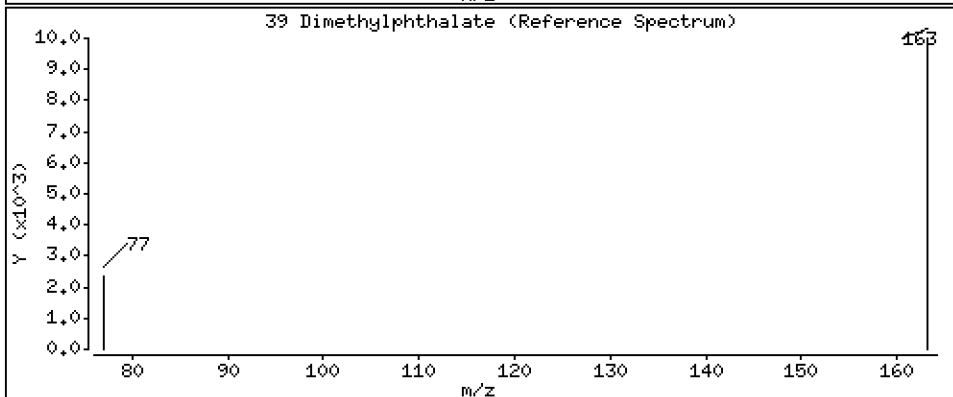
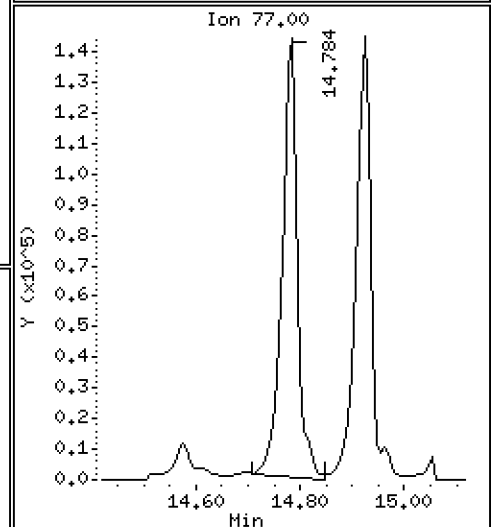
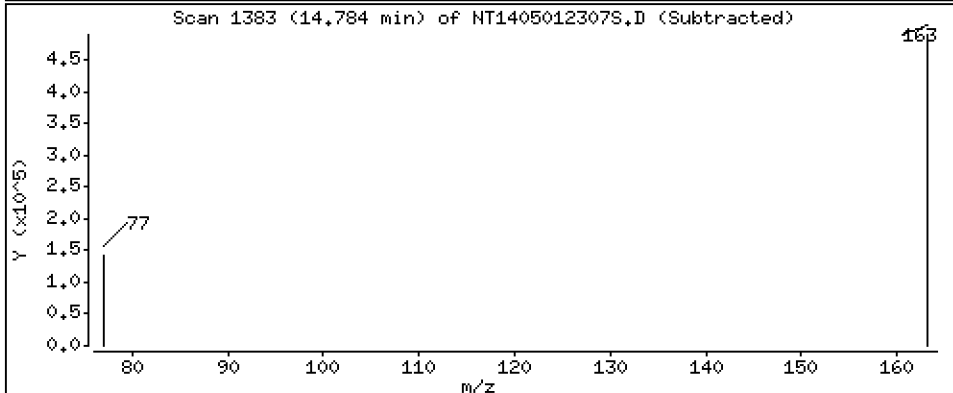
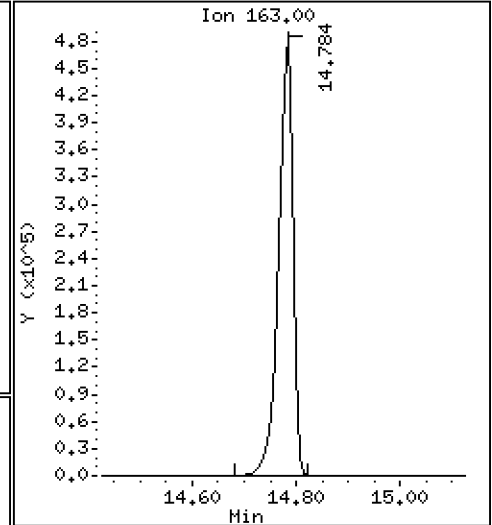
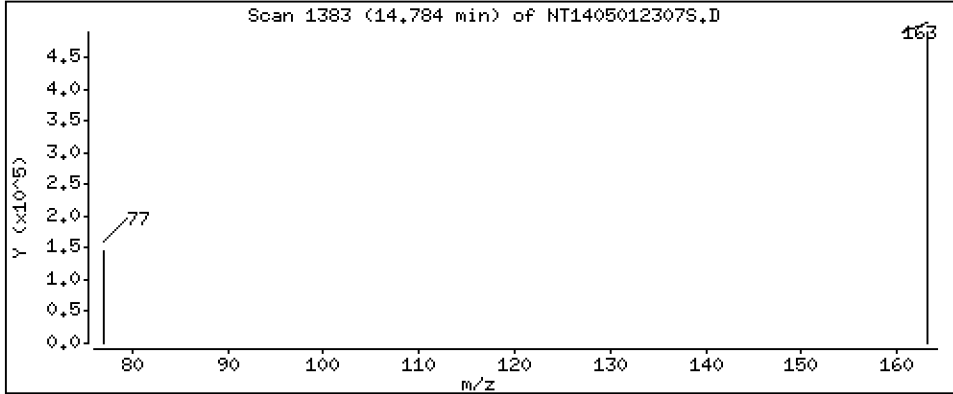
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,285 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

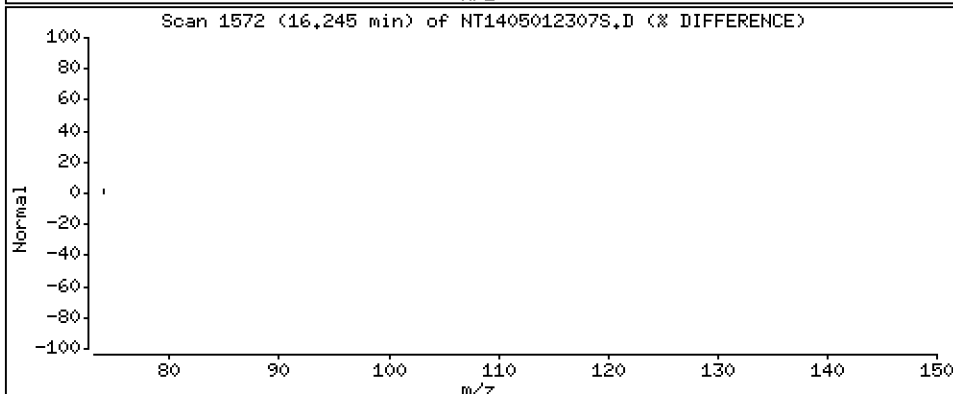
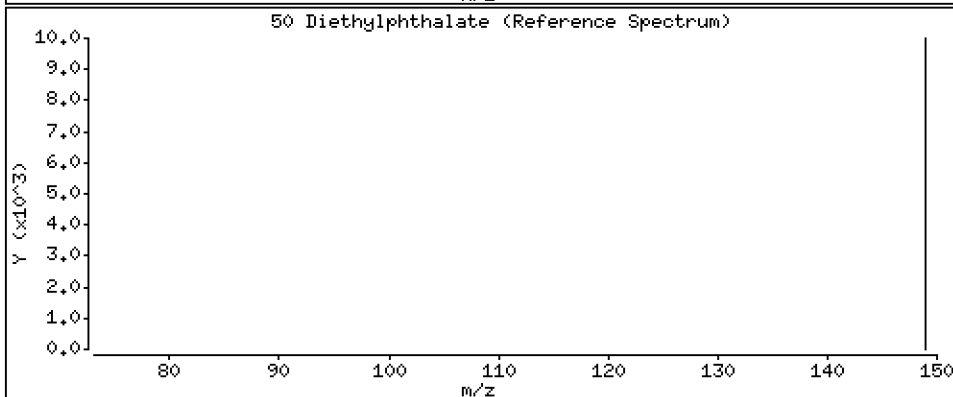
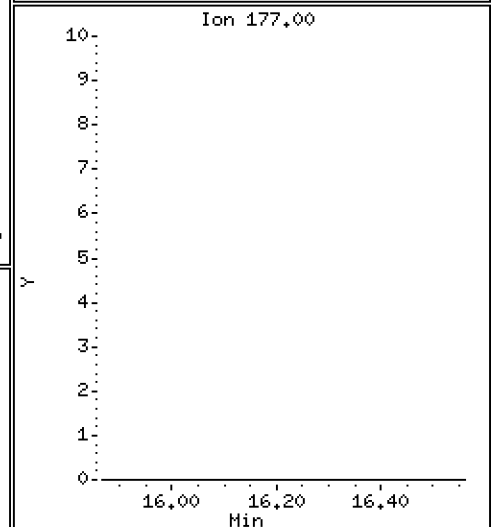
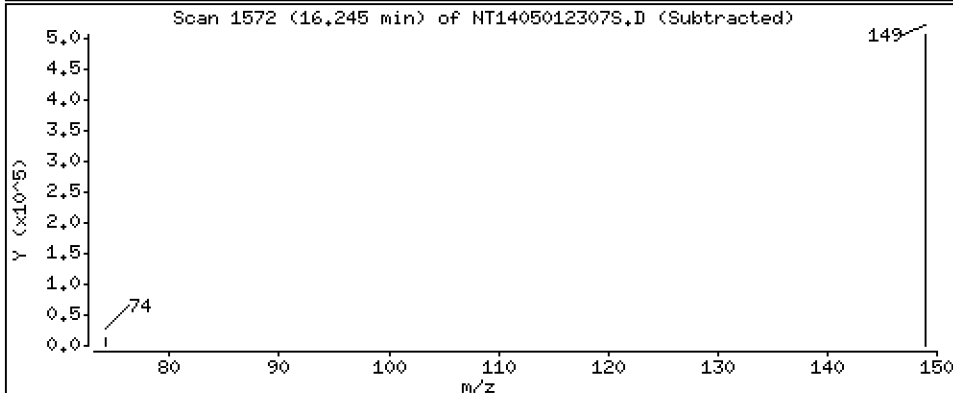
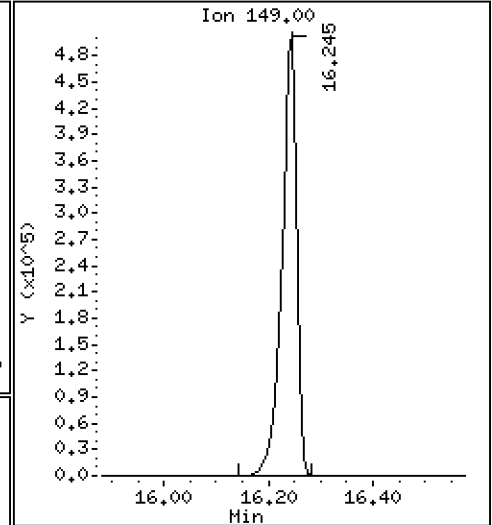
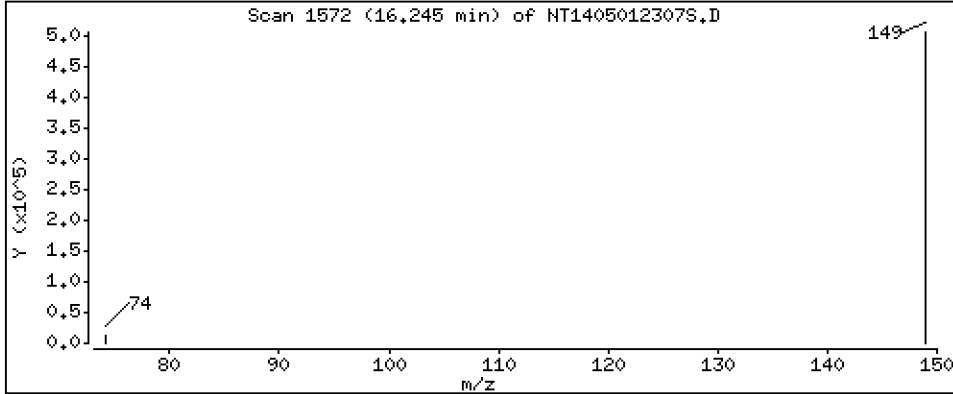
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,604 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

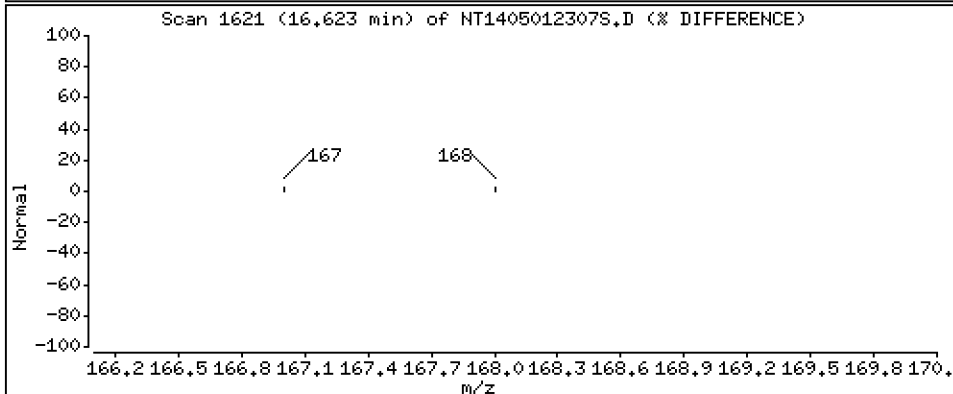
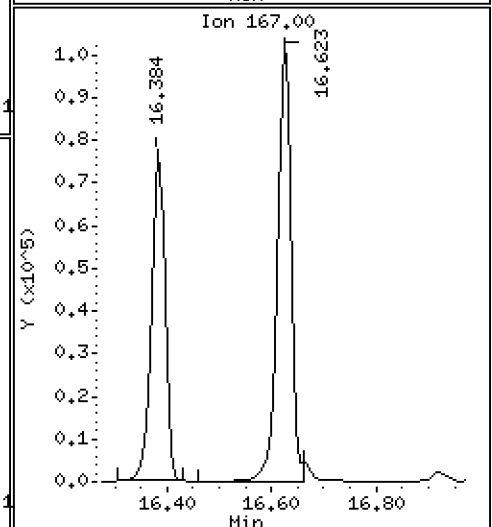
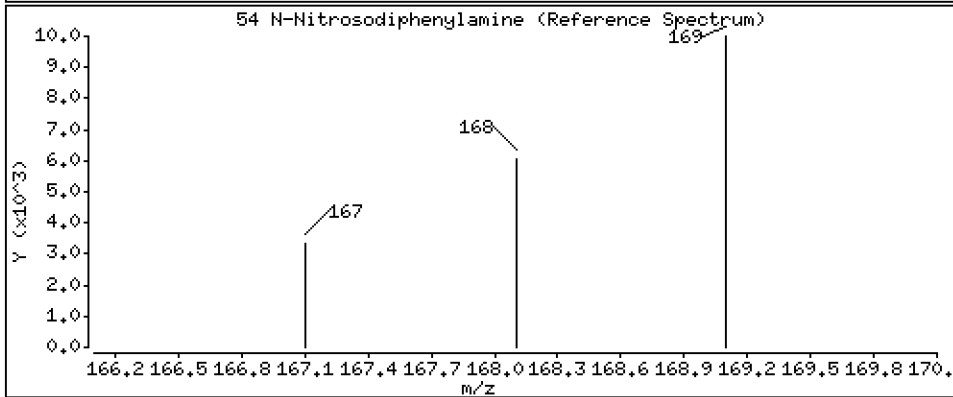
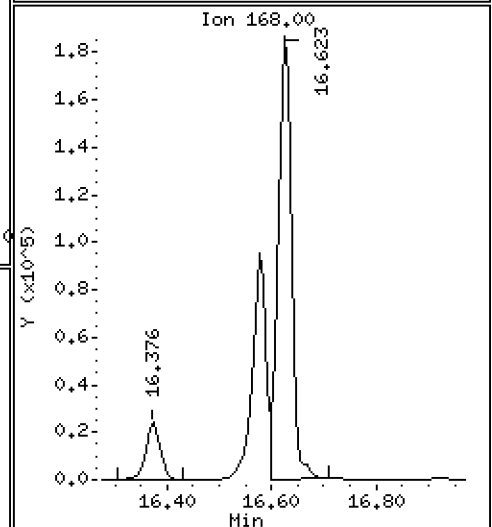
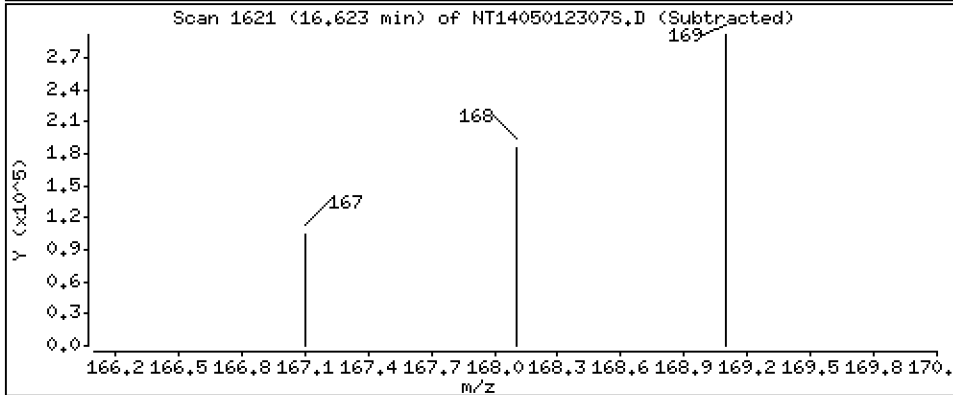
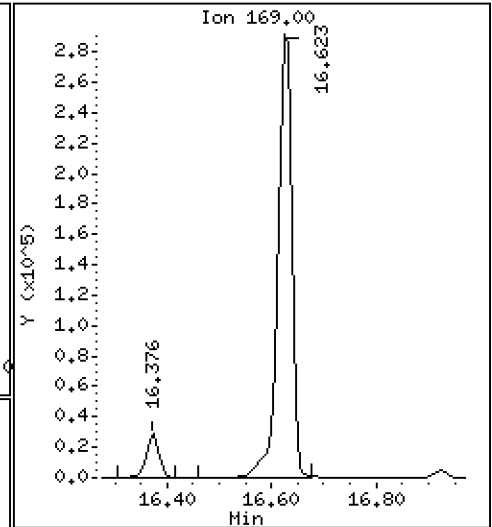
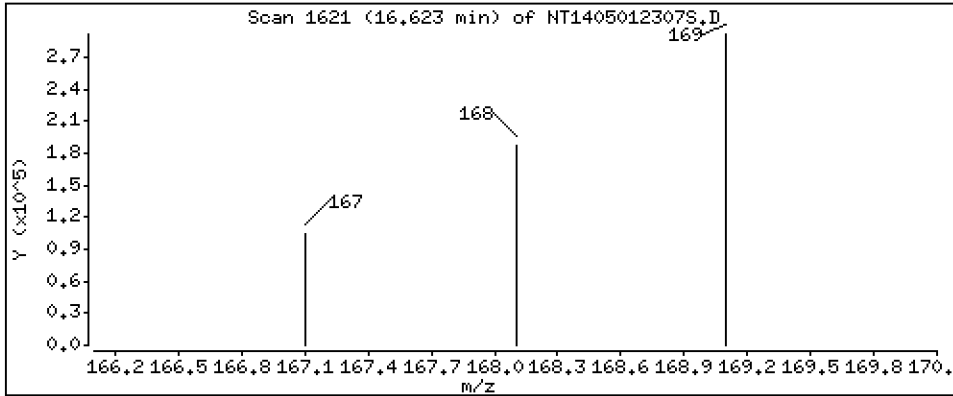
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

54 N-Nitrosodiphenylamine

Concentration: 3.747 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

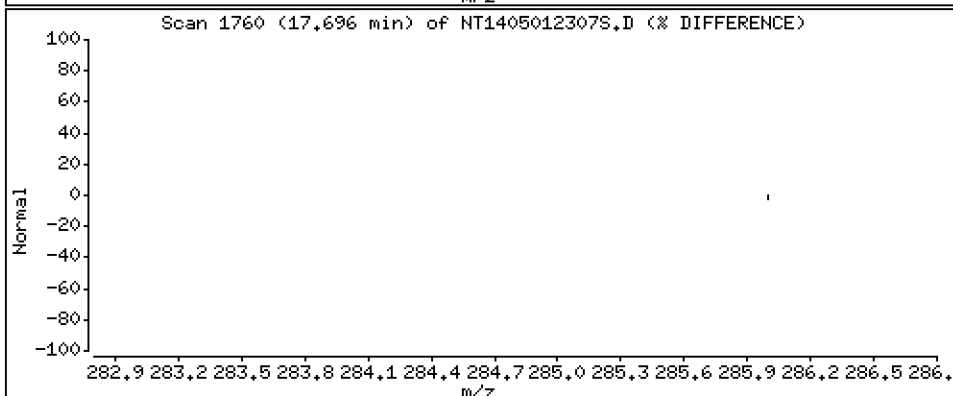
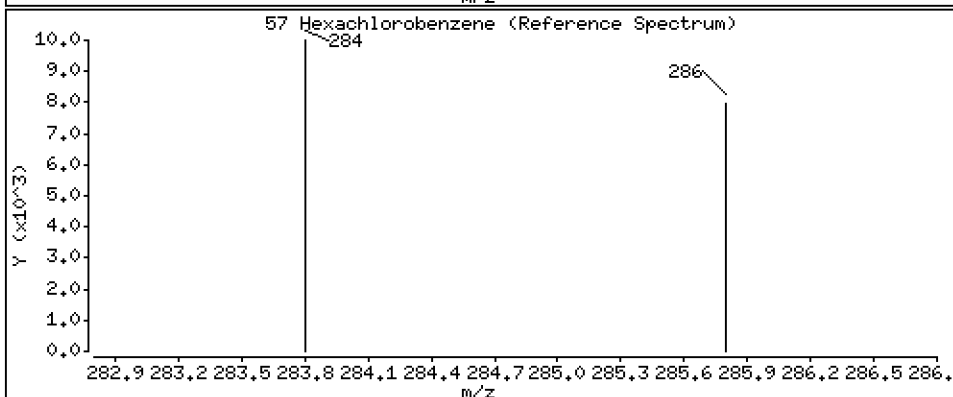
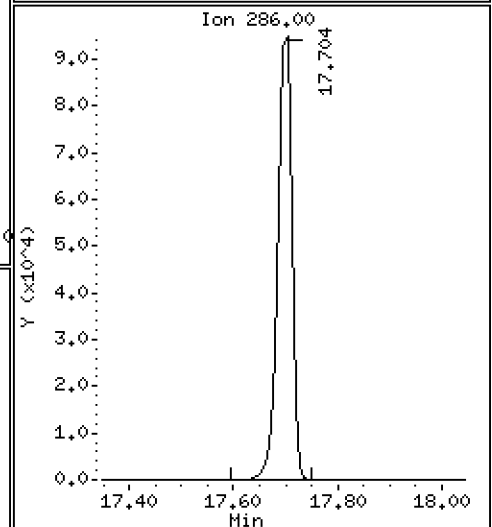
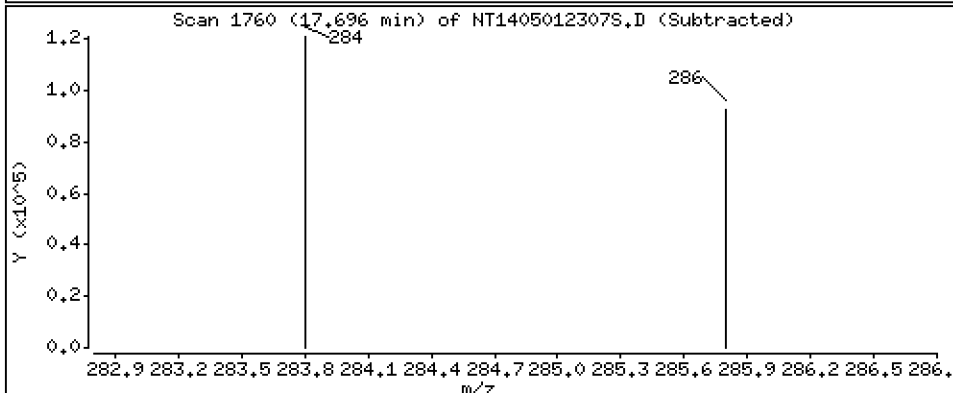
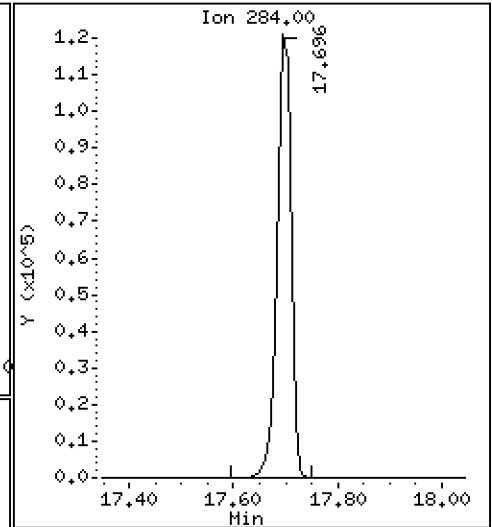
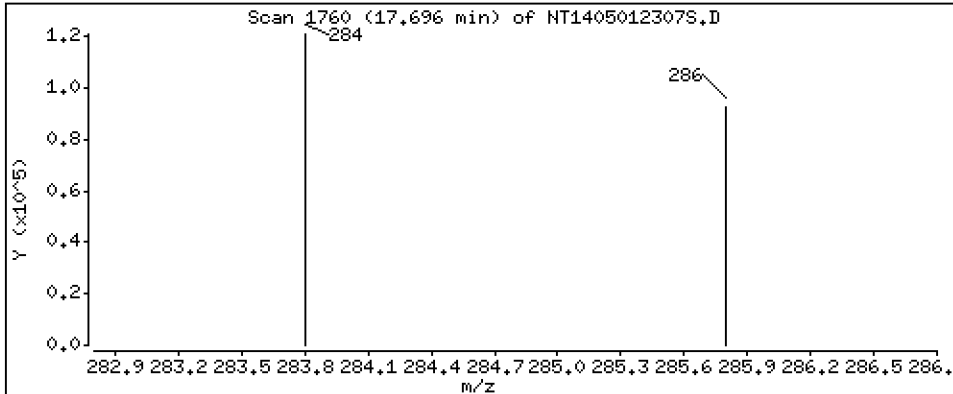
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,023 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

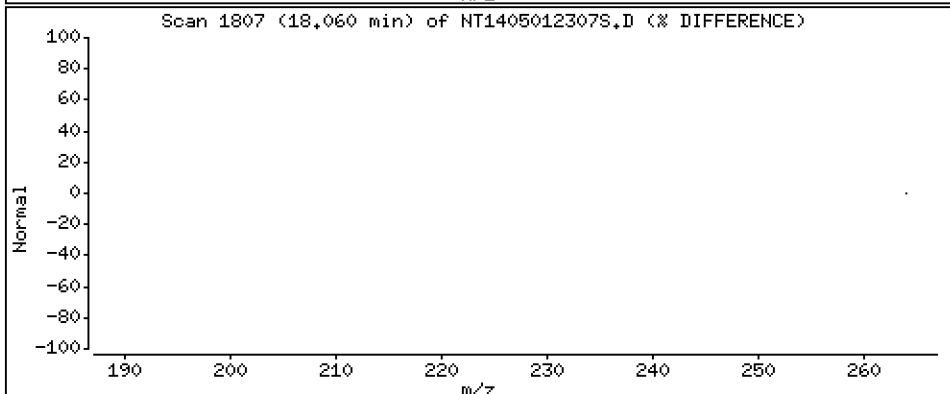
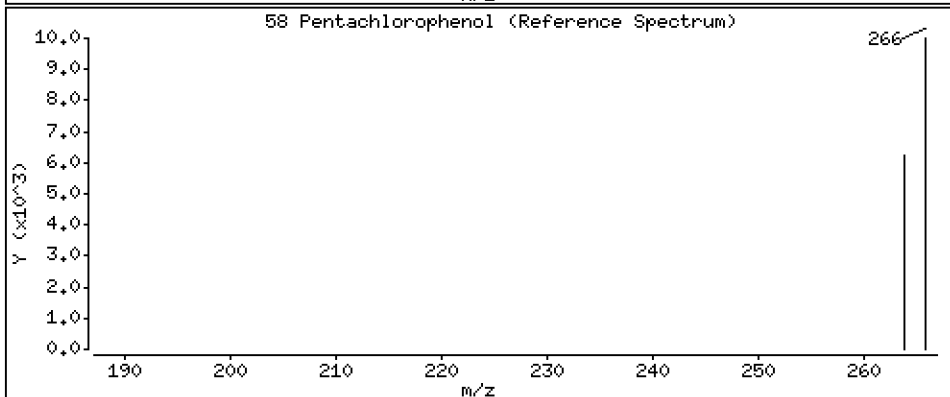
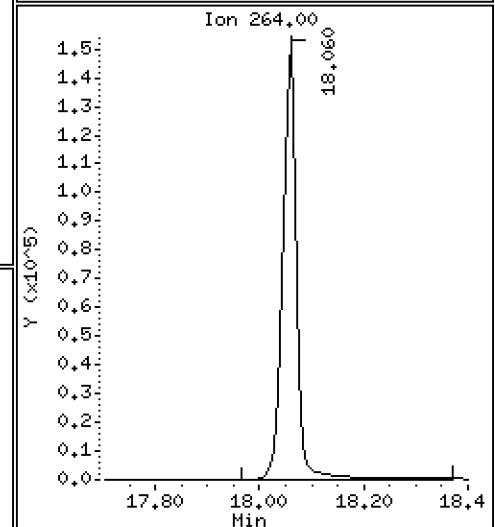
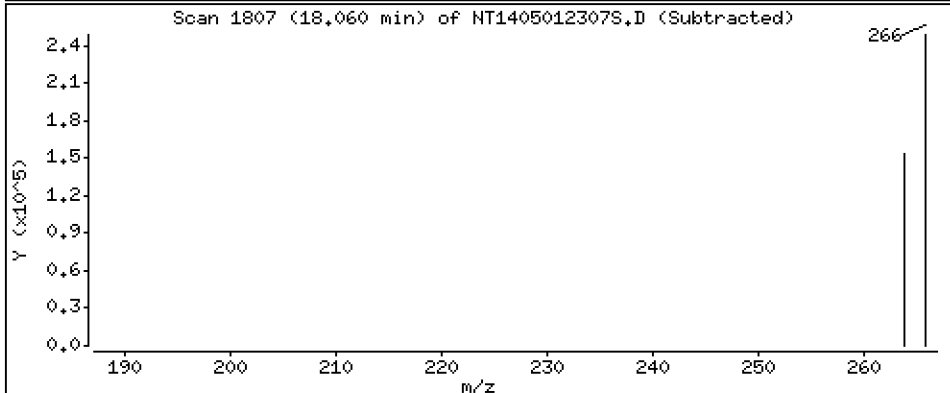
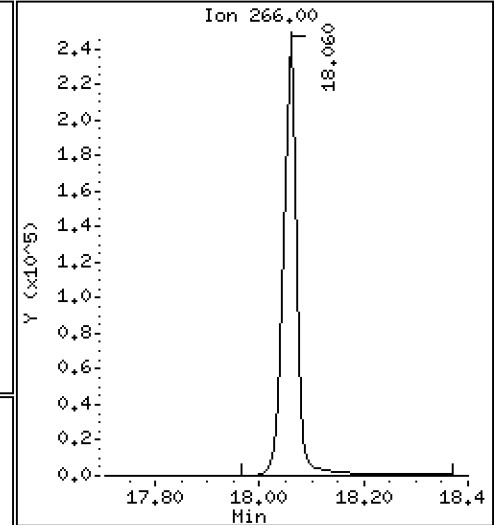
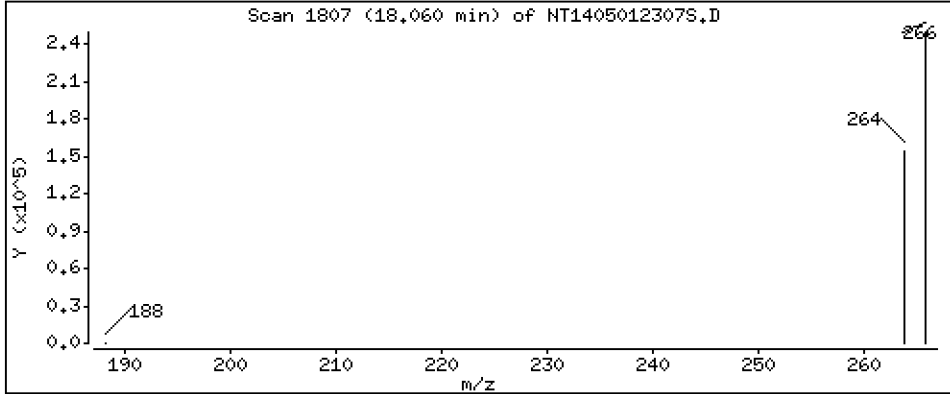
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 12,21 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

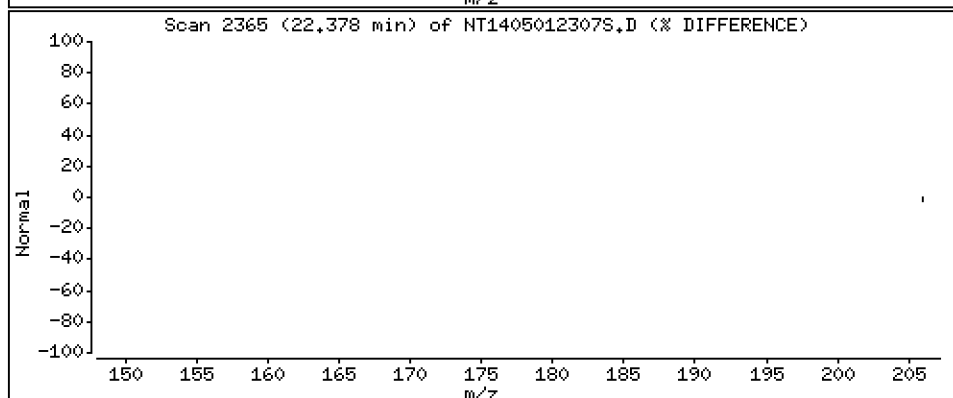
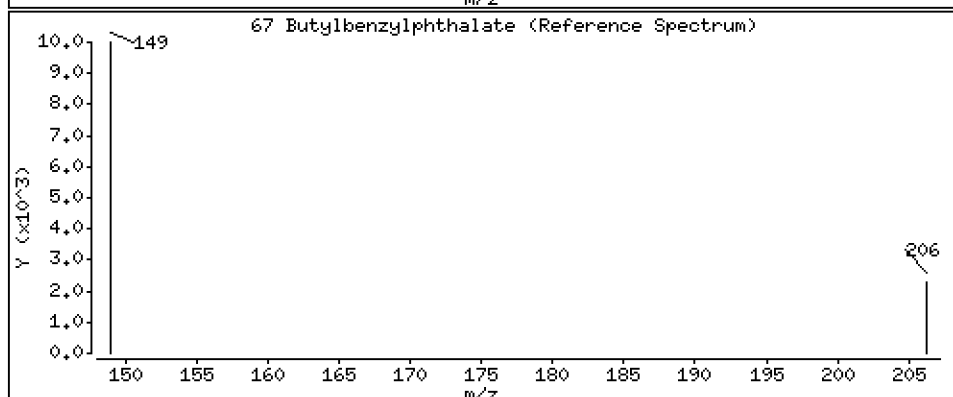
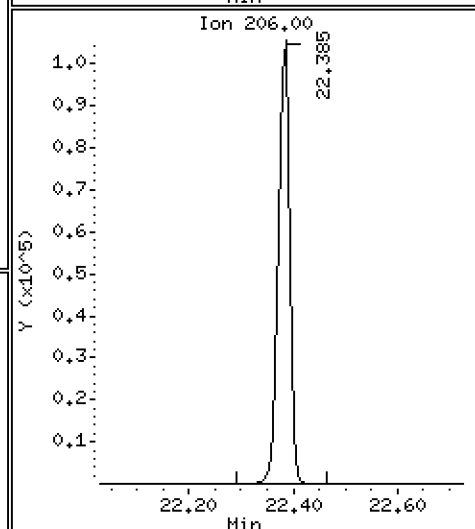
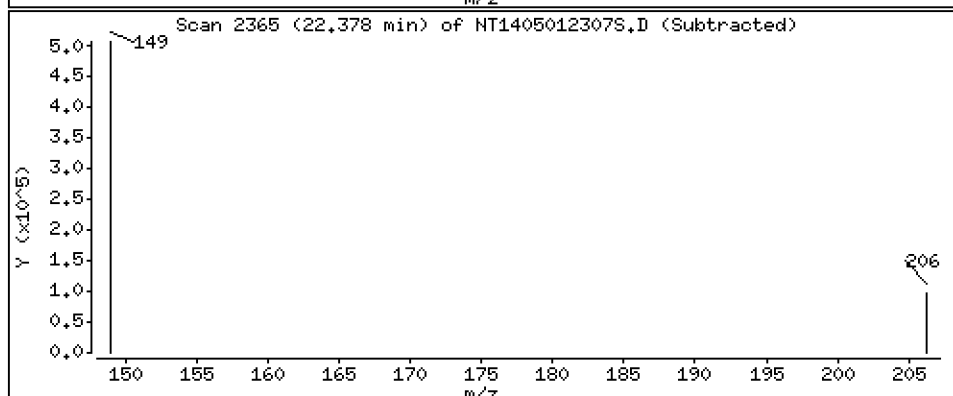
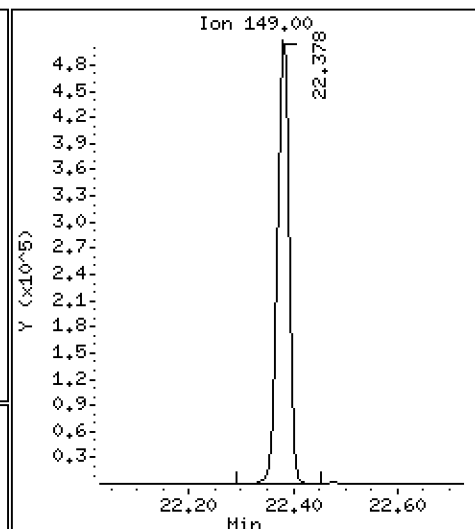
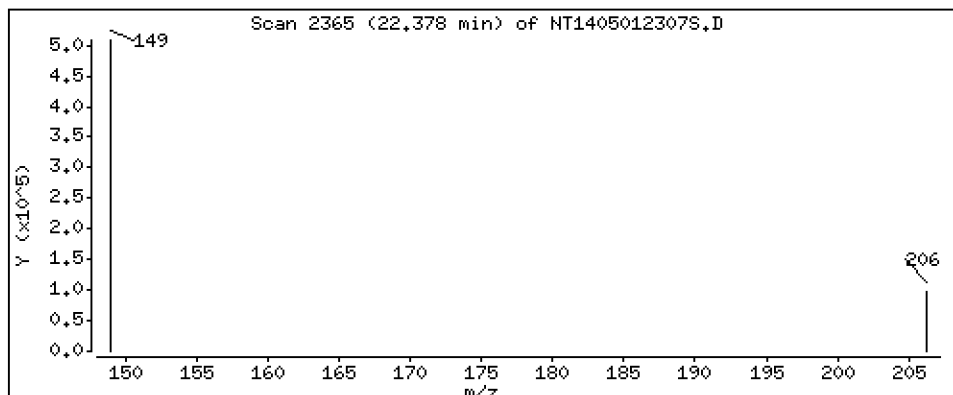
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,348 ug/mL





Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

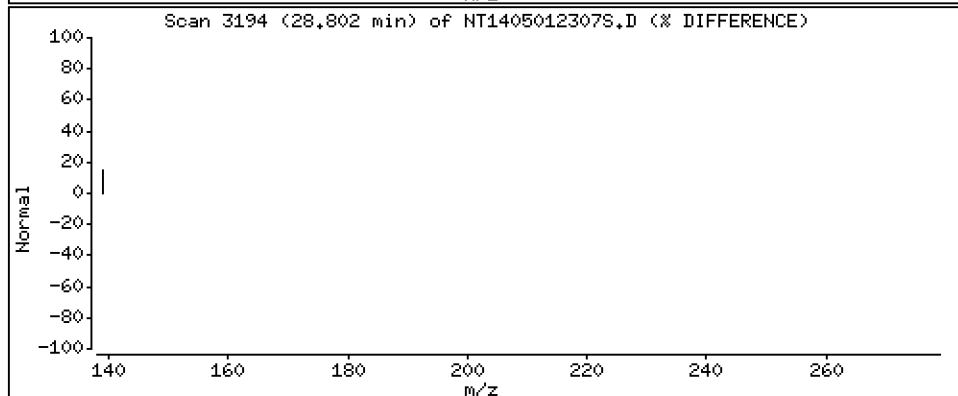
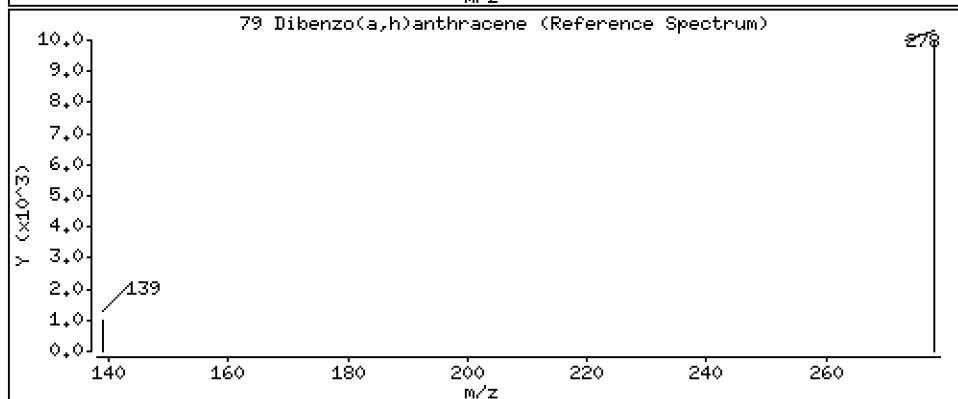
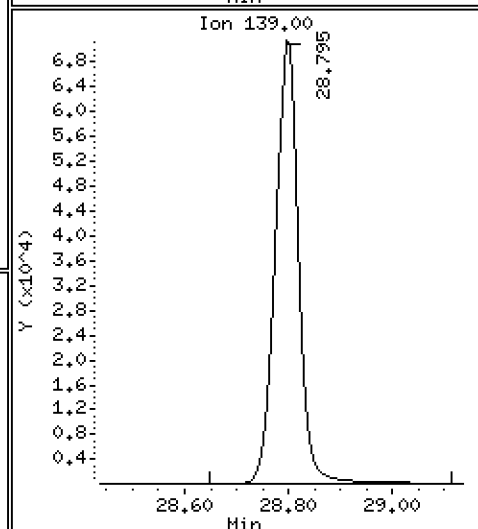
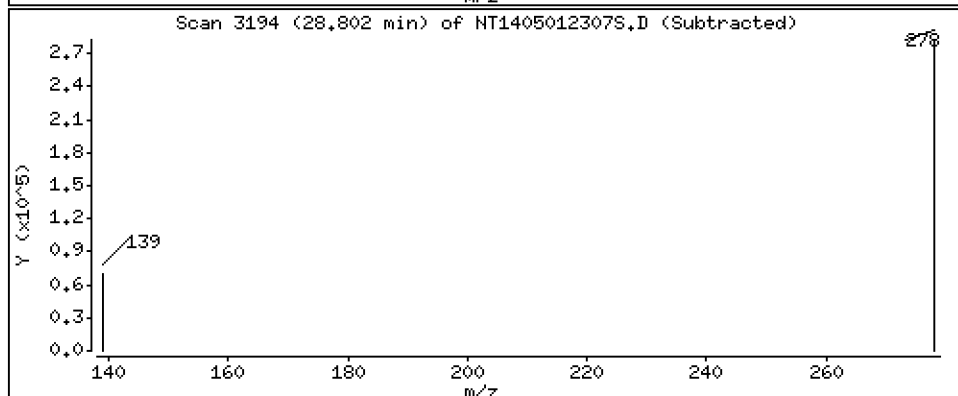
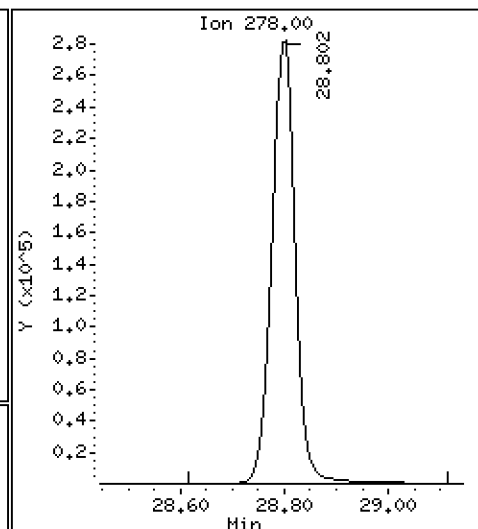
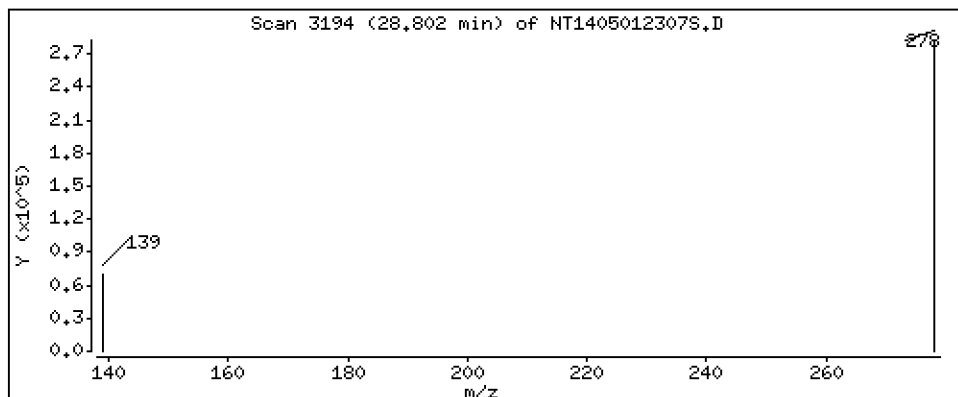
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,069 ug/mL



Date : 01-MAY-2023 18:13

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BS2

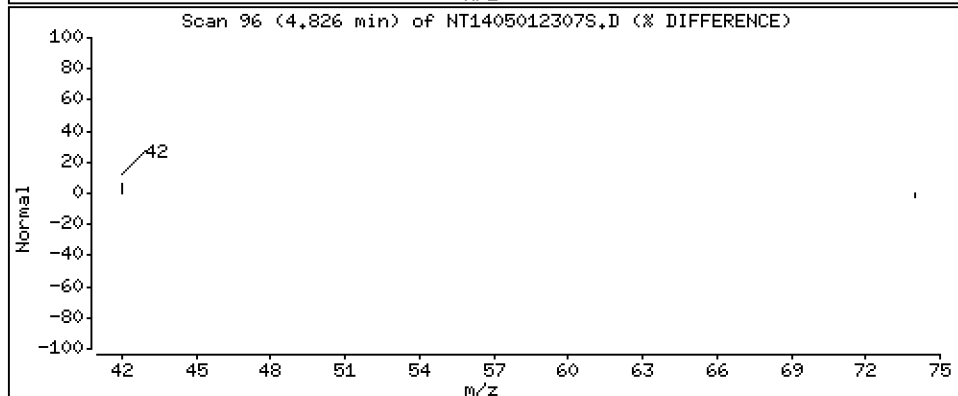
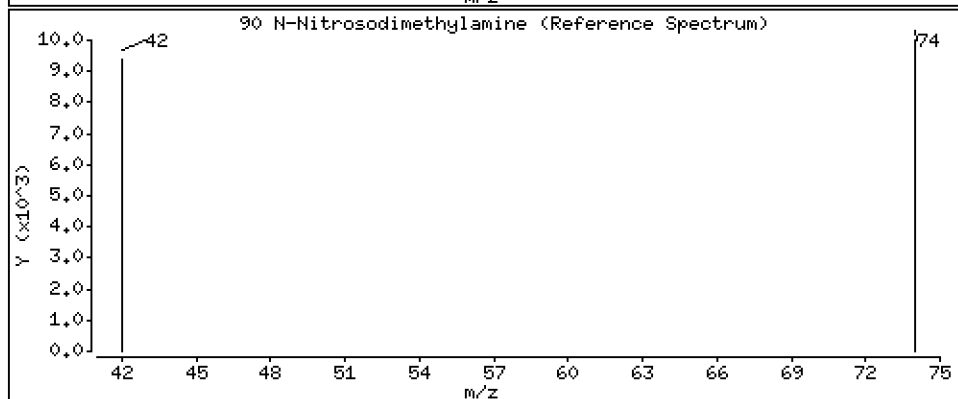
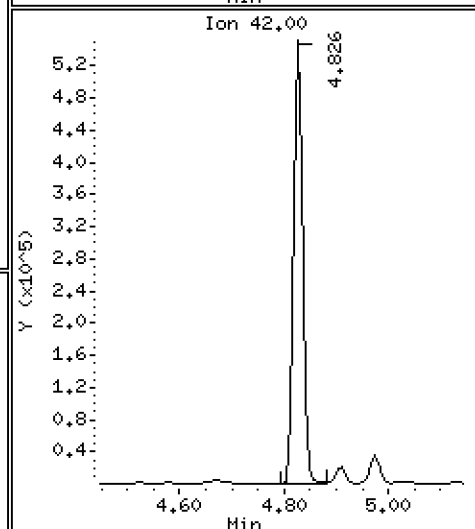
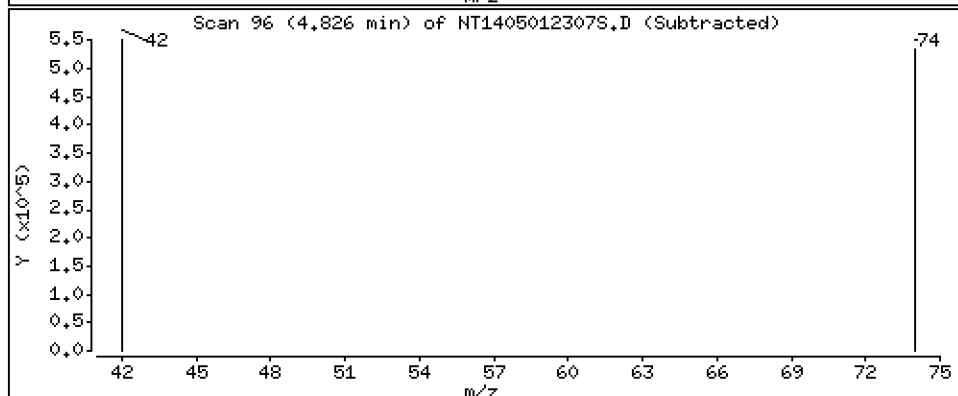
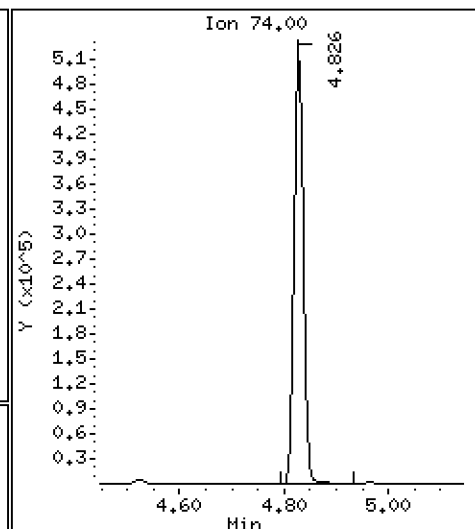
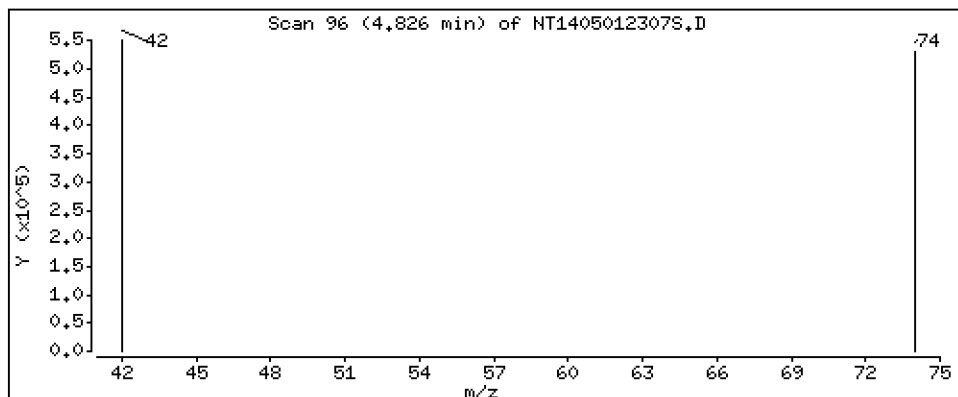
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 7,499 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012307S.D  
 Lab Smp Id: BLD0297-BS2  
 Inj Date : 01-MAY-2023 18:13 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-BS2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 7  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.911	6.903	(0.756)	703931	6.35189	6.352 (R)
3 Phenol	94		8.518	8.510	(0.932)	671760	3.78095	3.781
7 1,3-Dichlorobenzene	146		9.074	9.067	(0.993)	493936	3.66539	3.665
* 8 1,4-Dichlorobenzene-d4	152		9.137	9.137	(1.000)	317978	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	481957	3.78007	3.780
11 Benzyl alcohol	79		9.408	9.408	(1.030)	447353	4.08410	4.084
12 1,2-Dichlorobenzene	146		9.525	9.525	(1.042)	481113	3.78224	3.782
13 2-Methylphenol	108		9.633	9.634	(1.054)	391344	3.53251	3.533
15 4-Methylphenol	108		9.913	9.898	(1.085)	468440	4.09671	4.097
16 N-Nitroso-di-n-propylamine	70		9.975	9.967	(1.092)	372891	3.55635	3.556
22 2,4-Dimethylphenol	107		10.953	10.953	(0.941)	589028	5.03657	5.037
24 Benzoic acid	105		11.216	11.085	(0.963)	2137799	23.6959	23.70
26 1,2,4-Trichlorobenzene	180		11.549	11.549	(0.992)	361668	4.02825	4.028
* 27 Naphthalene-d8	136		11.642	11.634	(1.000)	1222840	4.00000	
30 Hexachlorobutadiene	225		12.043	12.044	(1.035)	196762	3.95998	3.960
39 Dimethylphthalate	163		14.783	14.776	(0.968)	897739	4.28509	4.285
* 42 Acenaphthene-d10	162		15.278	15.271	(1.000)	573863	4.00000	
50 Diethylphthalate	149		16.245	16.229	(1.063)	986439	4.60447	4.604
54 N-Nitrosodiphenylamine	169		16.623	16.623	(0.907)	522947	3.74656	3.747
57 Hexachlorobenzene	284		17.695	17.696	(0.966)	214349	4.02322	4.023 (H)
58 Pentachlorophenol	266		18.059	18.052	(0.986)	432547	12.2088	12.21
* 59 Phenanthrene-d10	188		18.322	18.323	(1.000)	998395	4.00000	
\$ 66 Terphenyl-d14	244		21.464	21.456	(0.918)	577435	4.75351	4.754 (R)
67 Butylbenzylphthalate	149		22.377	22.377	(0.957)	753838	4.34803	4.348
* 69 Chrysene-d12	240		23.376	23.369	(1.000)	763735	4.00000	
* 77 Perylene-d12	264		26.047	26.047	(1.000)	716157	4.00000	
79 Dibenzo(a,h)anthracene	278		28.802	28.794	(1.106)	882144	4.06877	4.069
90 N-Nitrosodimethylamine	74		4.825	4.795	(0.528)	678221	7.49939	7.499

QC Flag Legend

R - Spike/Surrogate failed recovery limits.  
 H - Operator selected an alternate compound hit.



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012307S.D  
 Lab Smp Id: BLD0297-BS2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	317978	-4.10
27 Naphthalene-d8	1259018	629509	2518036	1222840	-2.87
42 Acenaphthene-d10	580636	290318	1161272	573863	-1.17
59 Phenanthrene-d10	1027945	513973	2055890	998395	-2.87
69 Chrysene-d12	775653	387827	1551306	763735	-1.54
77 Perylene-d12	750797	375399	1501594	716157	-4.61

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	-0.00
27 Naphthalene-d8	11.63	11.13	12.13	11.64	0.06
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.32	17.82	18.82	18.32	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.38	0.03
77 Perylene-d12	26.05	25.55	26.55	26.05	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012307S.D

Lab ID: BLD0297-BS2

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 18:13

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.963	0.953	0.0107	Benzoic acid

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

Data File: \\target\share\chem3\nt14,1\20230501A,B\NT1405012308S.D

Date: 01-May-2023 18:50

Client ID:

Sample Info: BLD0297-BSM2

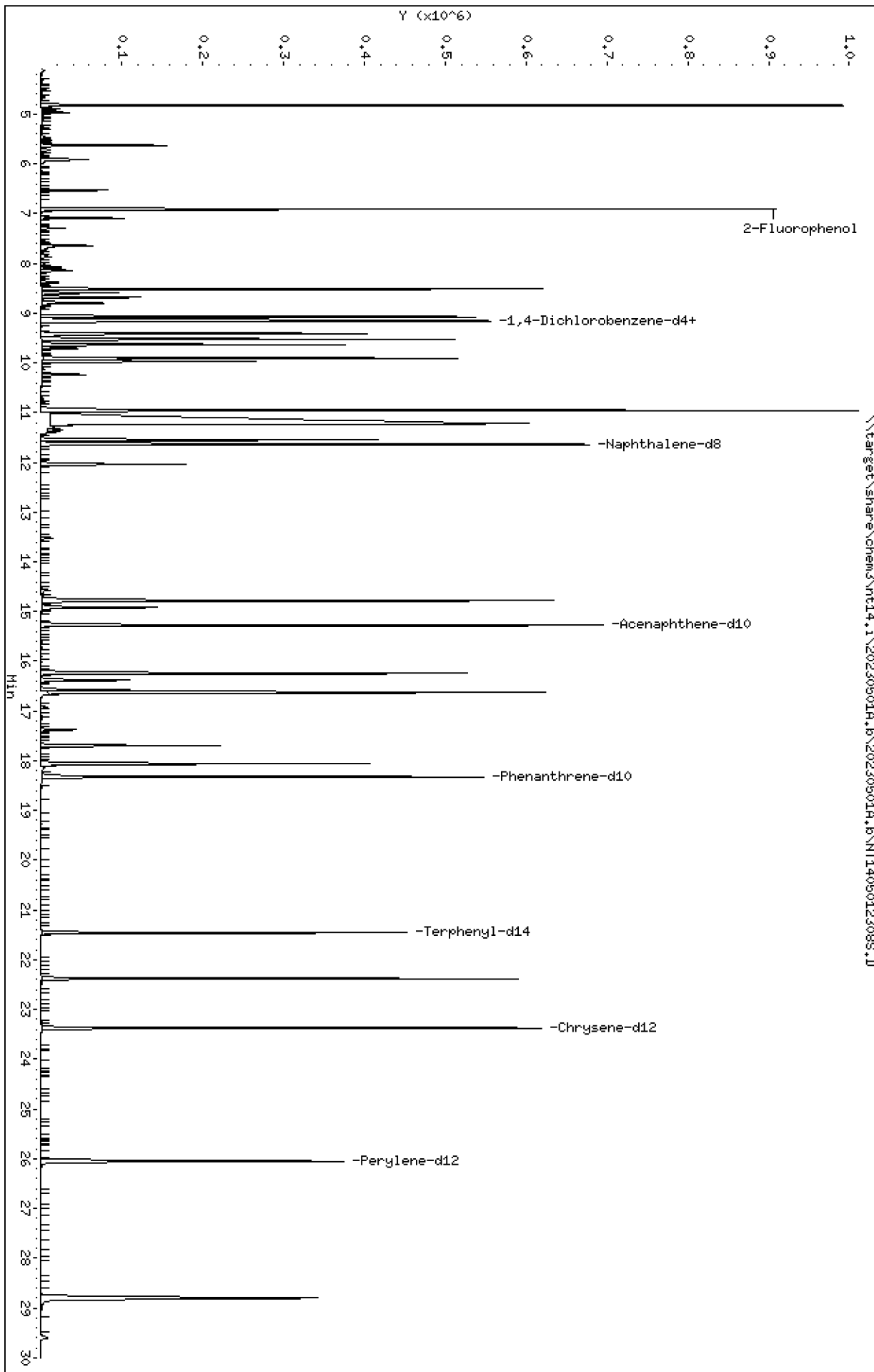
Column phase: ZB-5msi

Instrument: nt14,1

Operator: USD

Column diameter: 0.25

Page 1



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

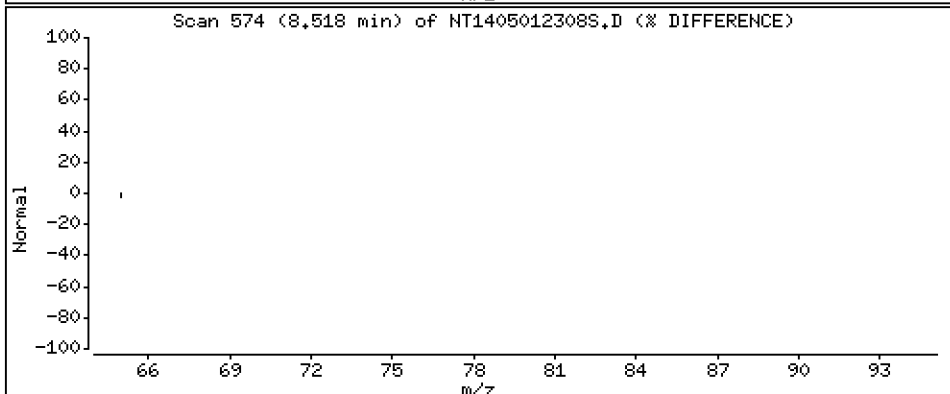
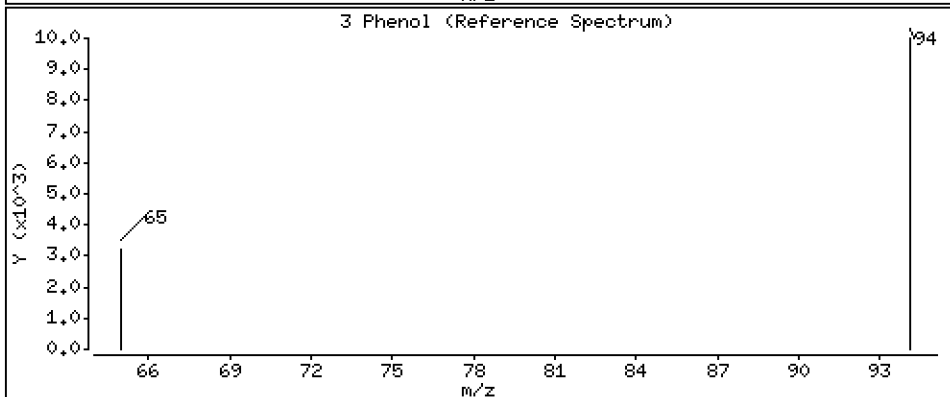
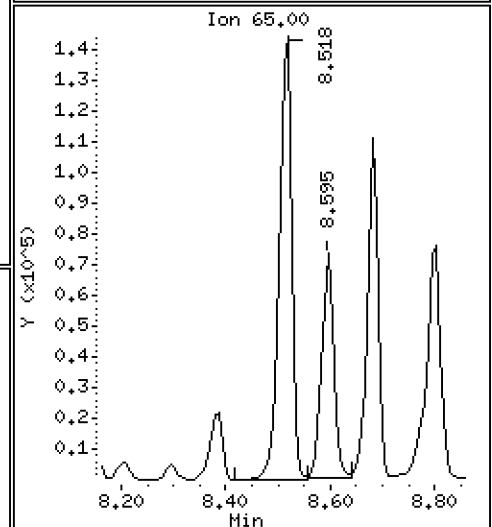
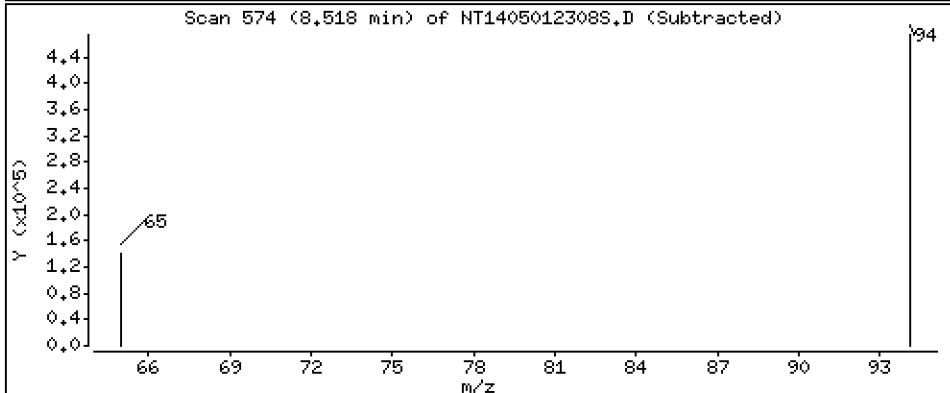
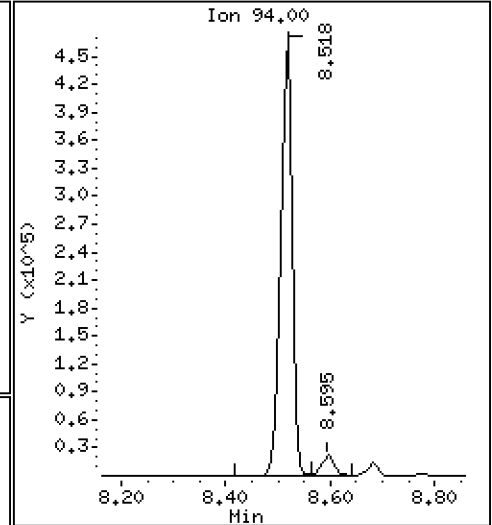
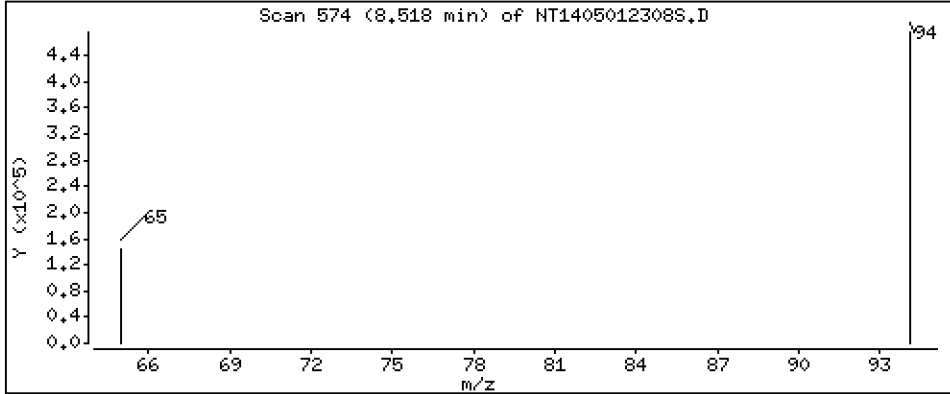
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 3,885 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

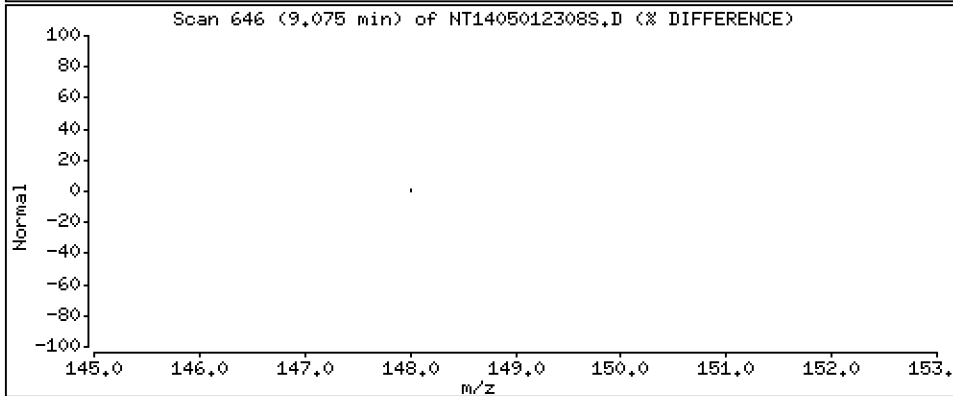
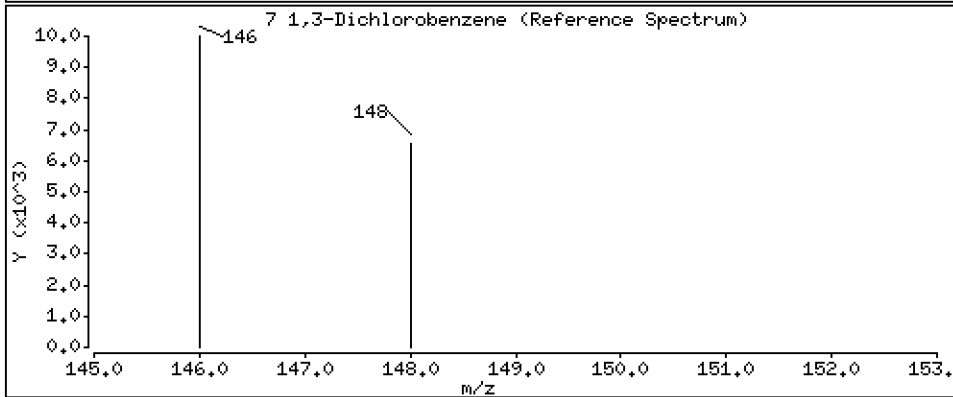
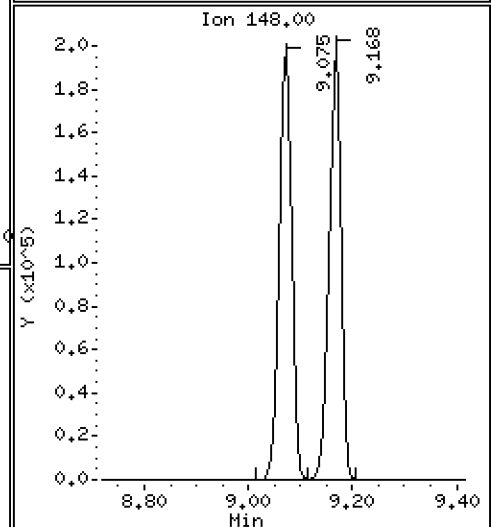
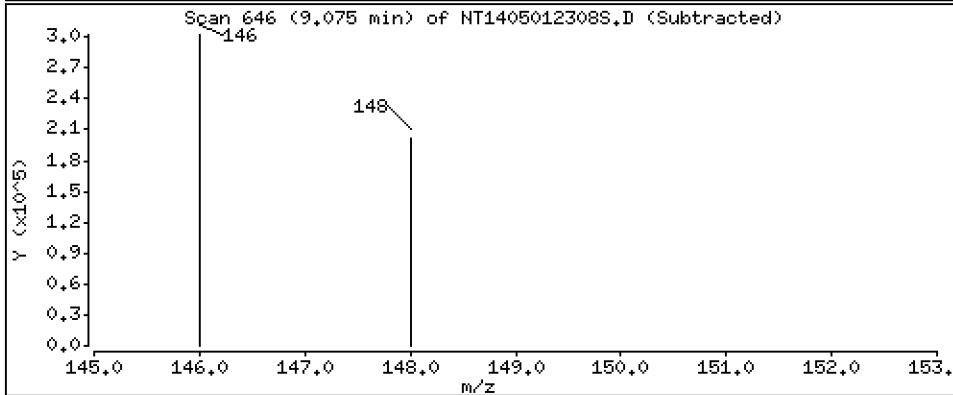
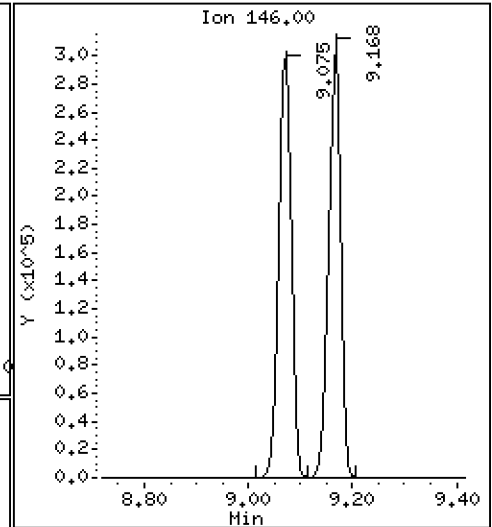
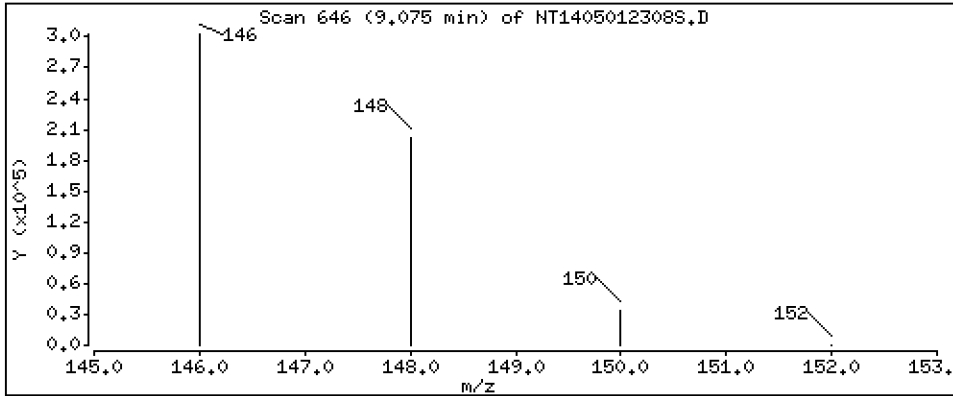
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 3,626 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

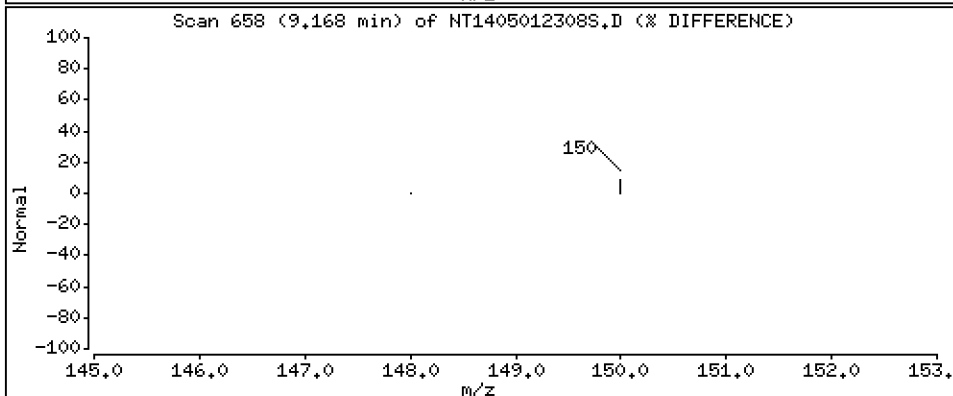
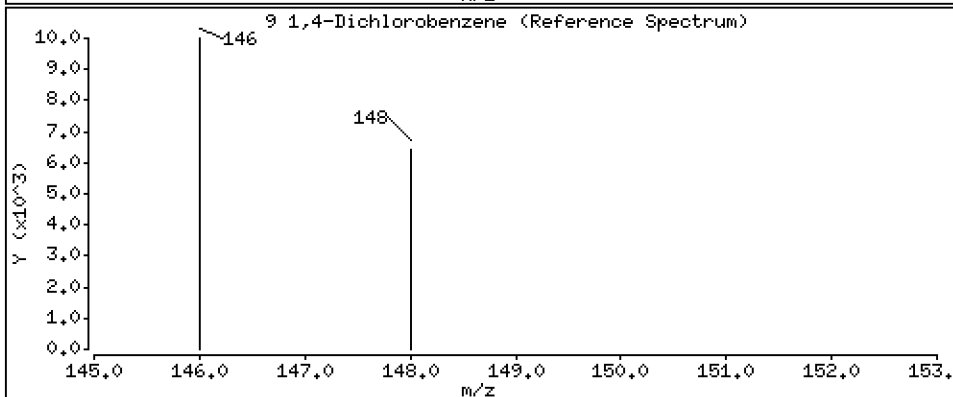
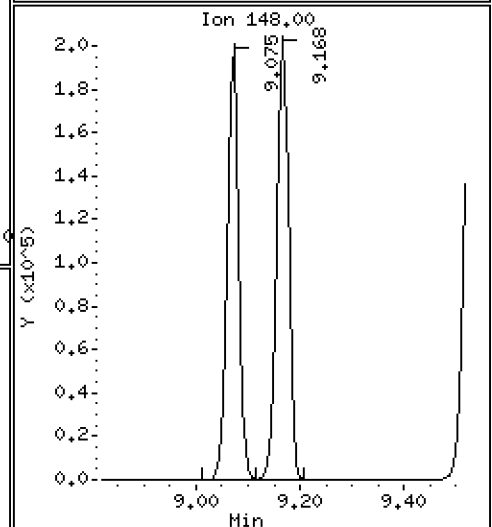
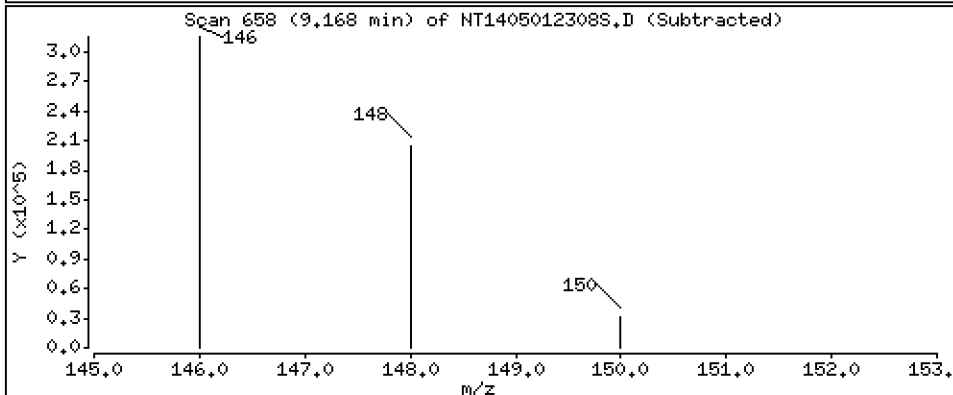
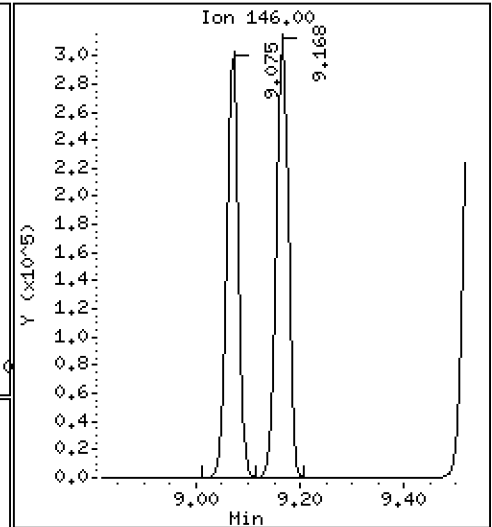
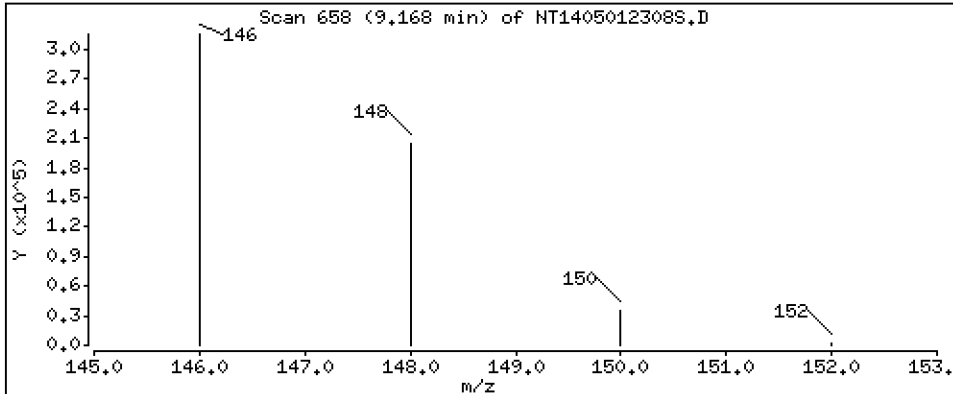
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 3,747 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

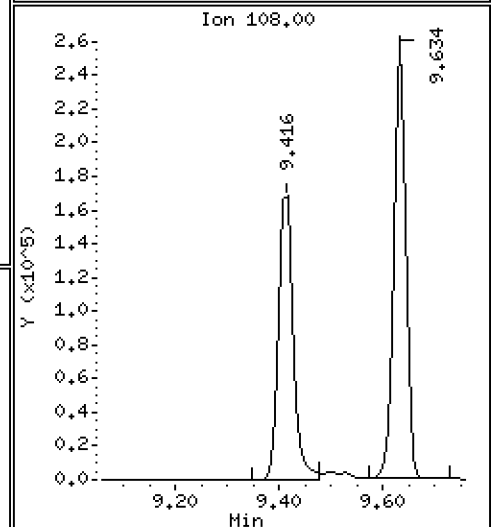
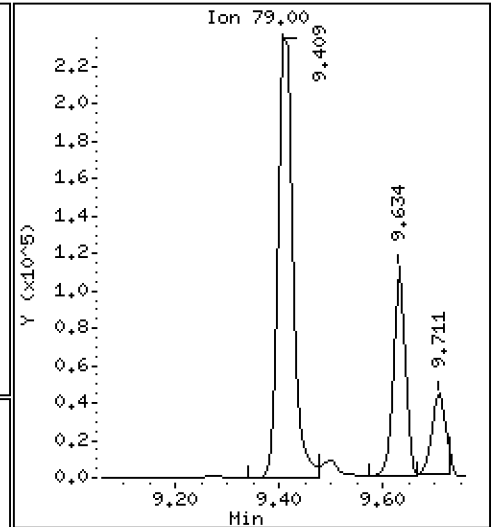
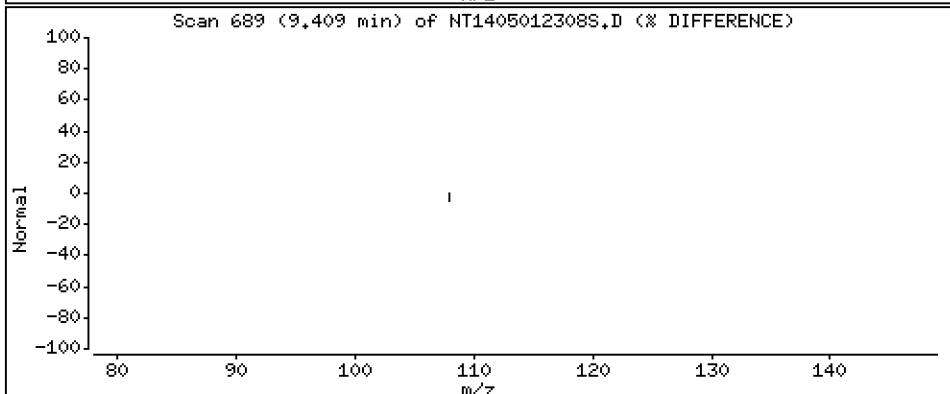
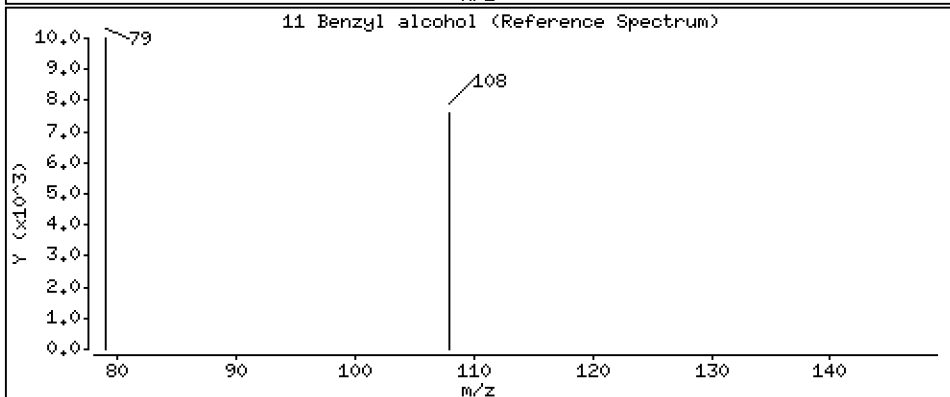
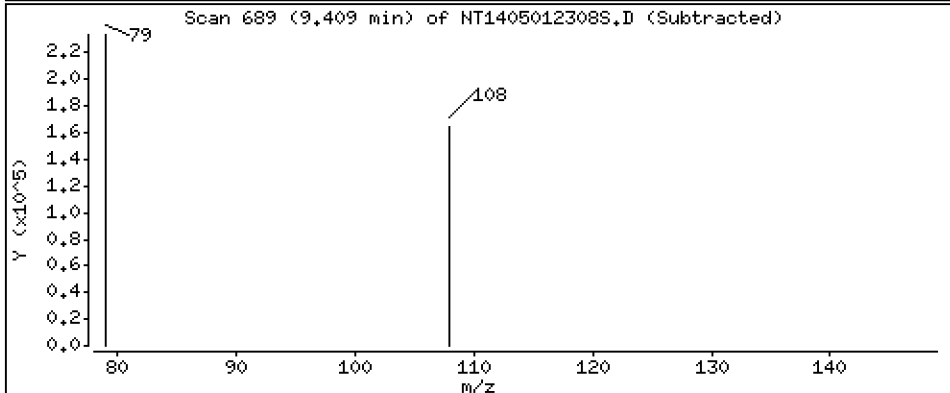
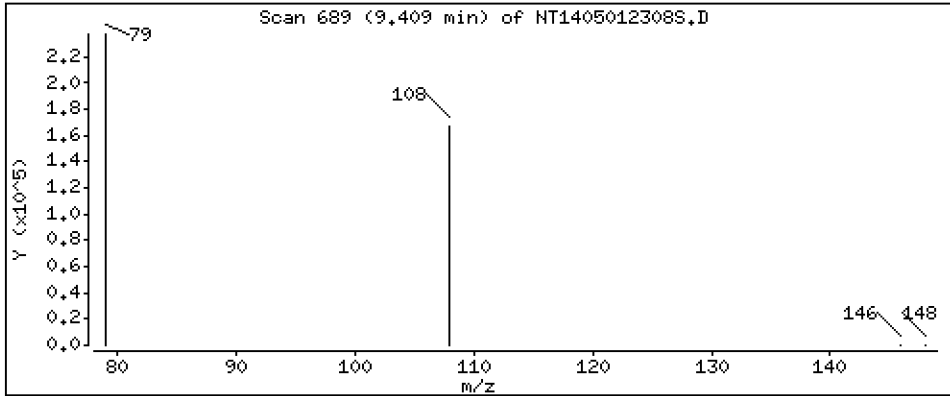
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

11 Benzyl alcohol

Concentration: 4,084 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

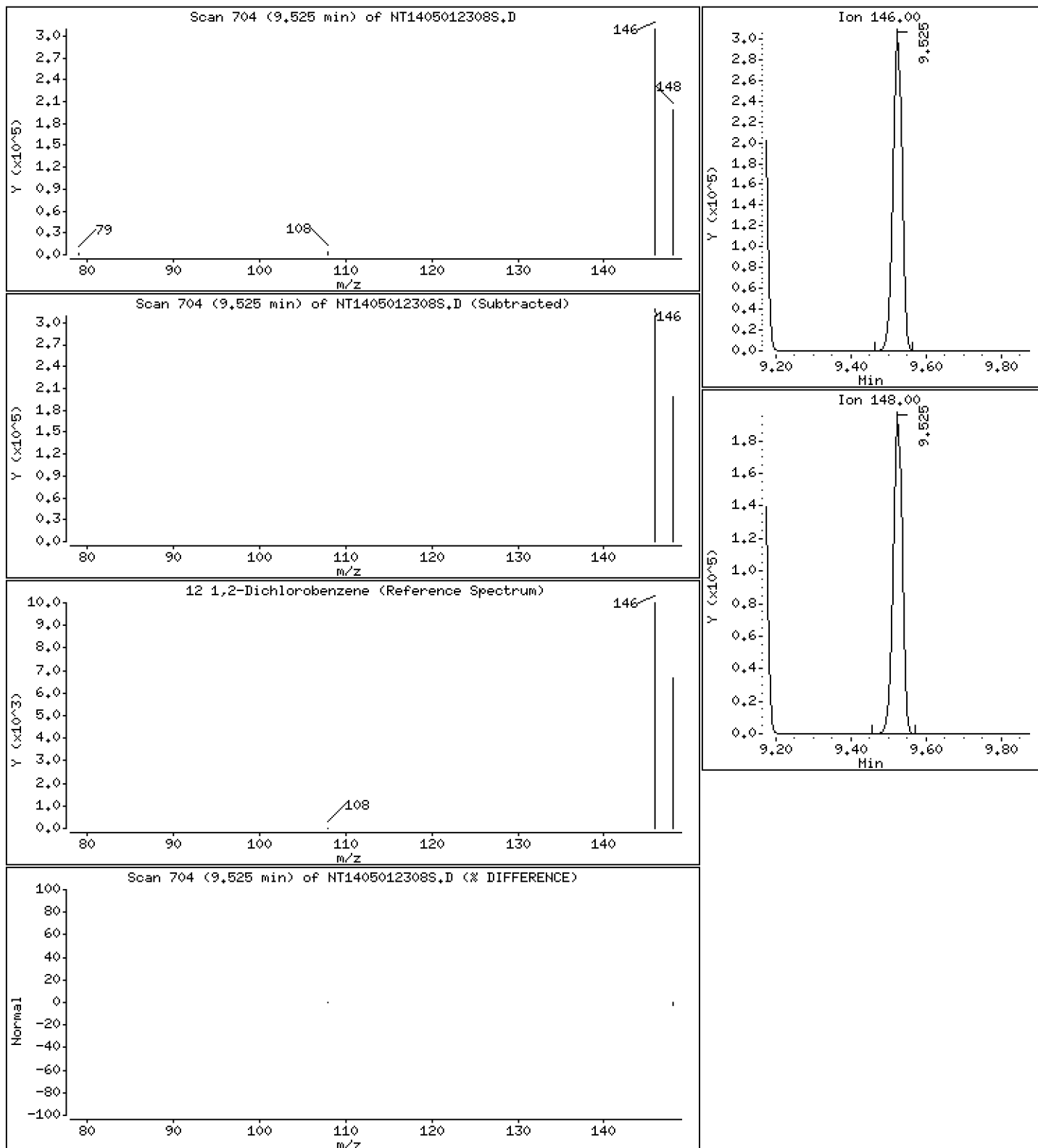
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 3,762 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

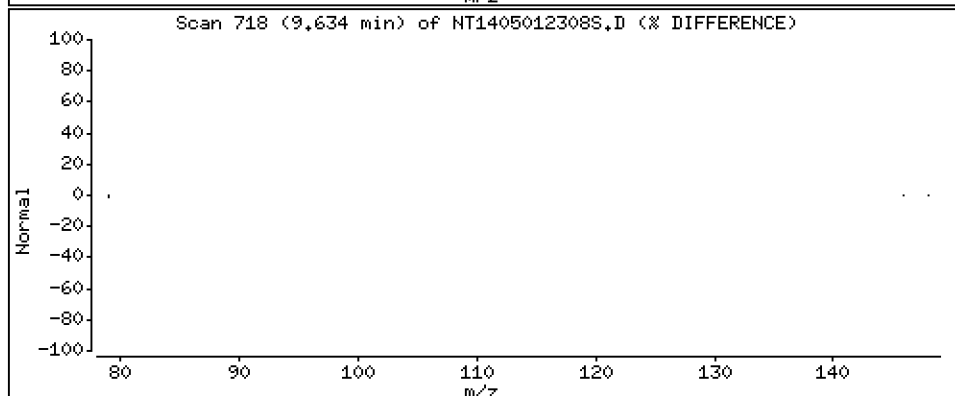
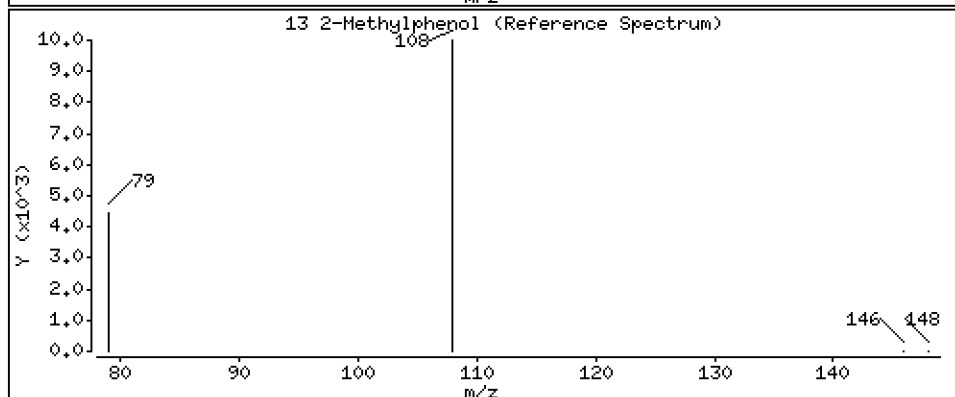
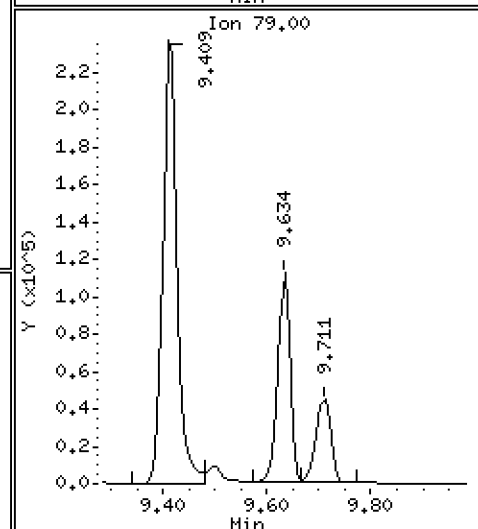
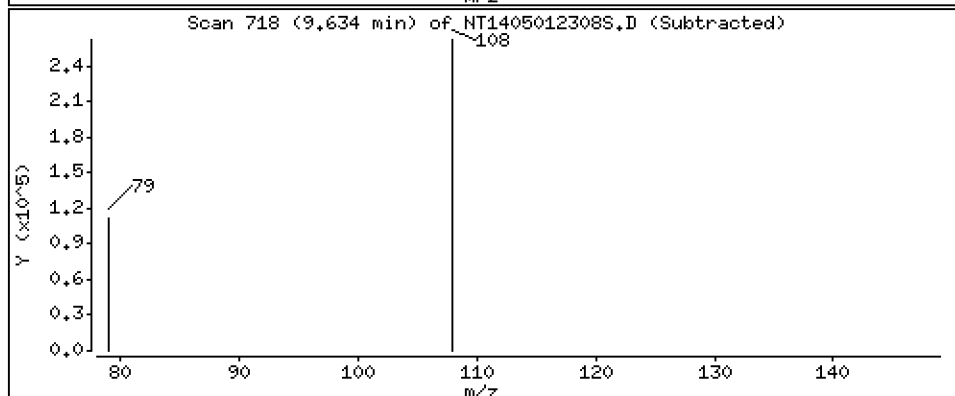
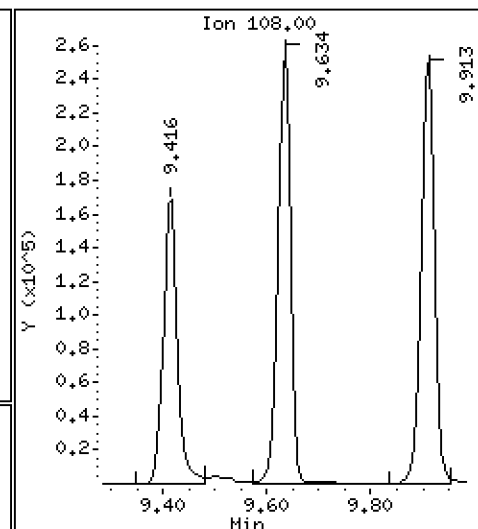
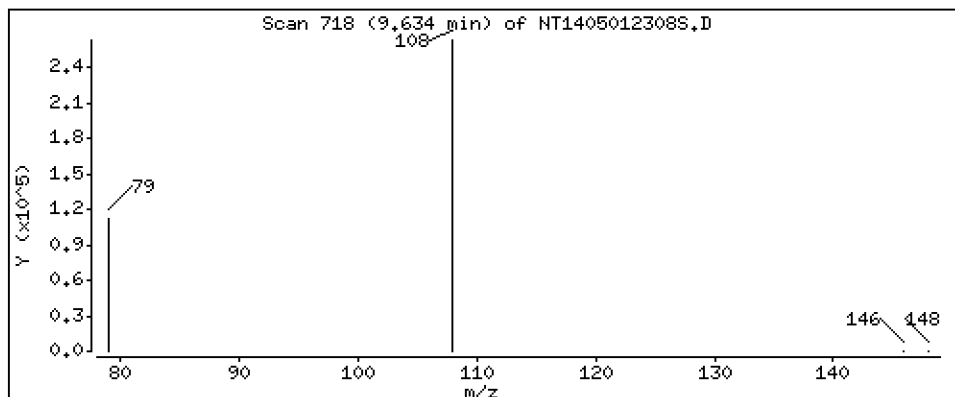
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

13 2-Methylphenol

Concentration: 3,679 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

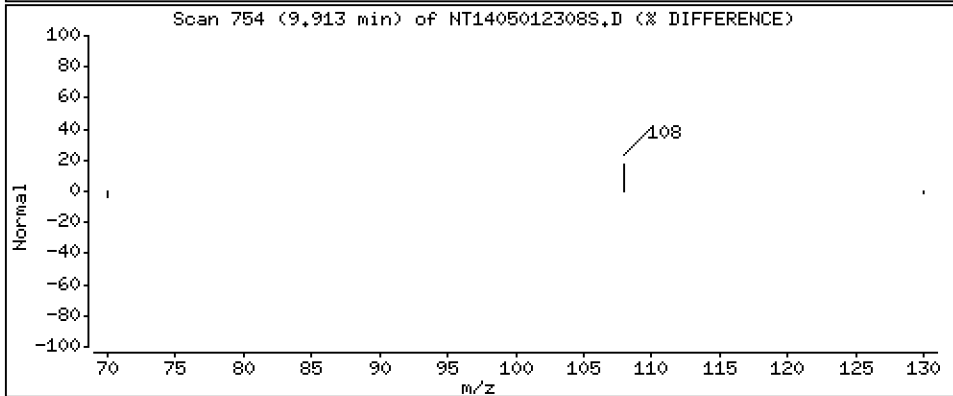
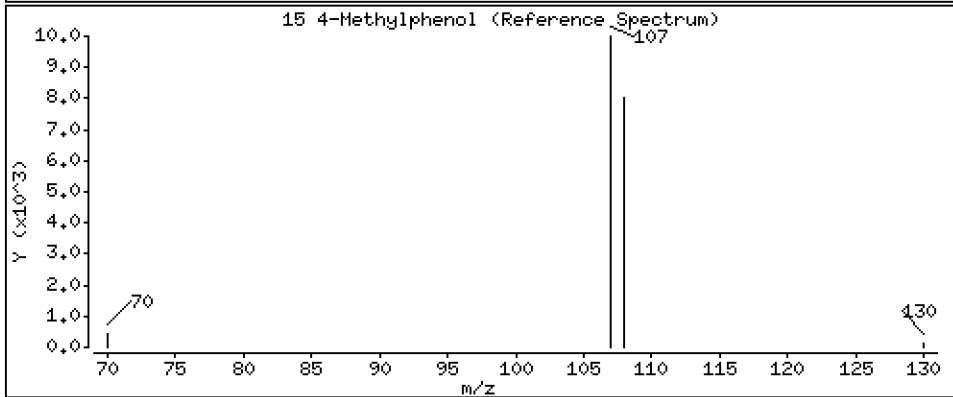
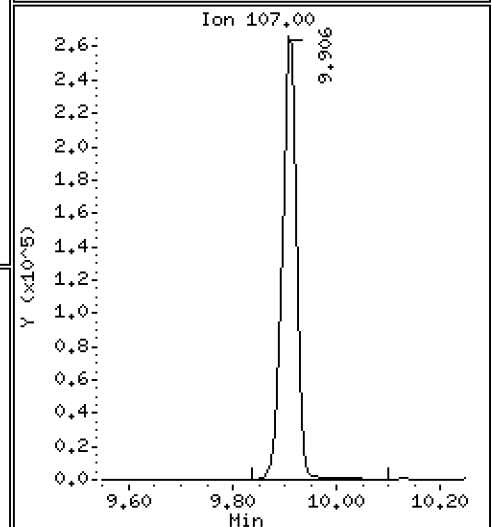
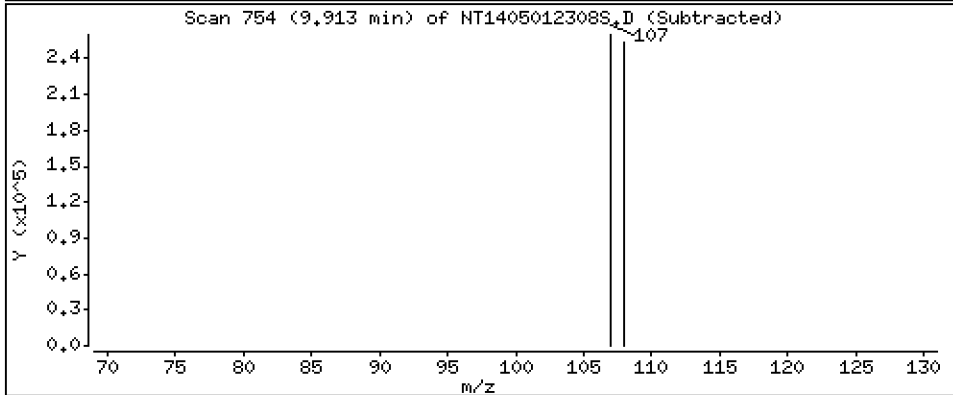
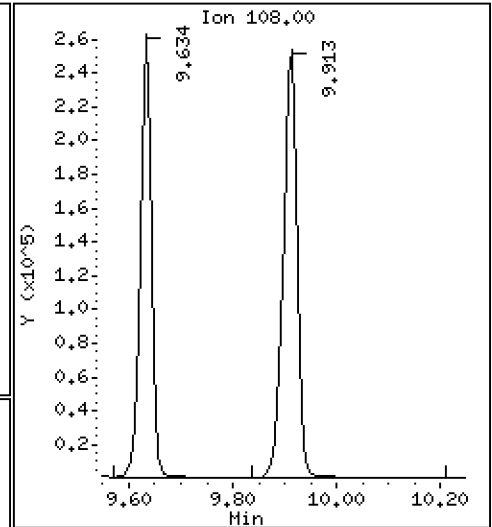
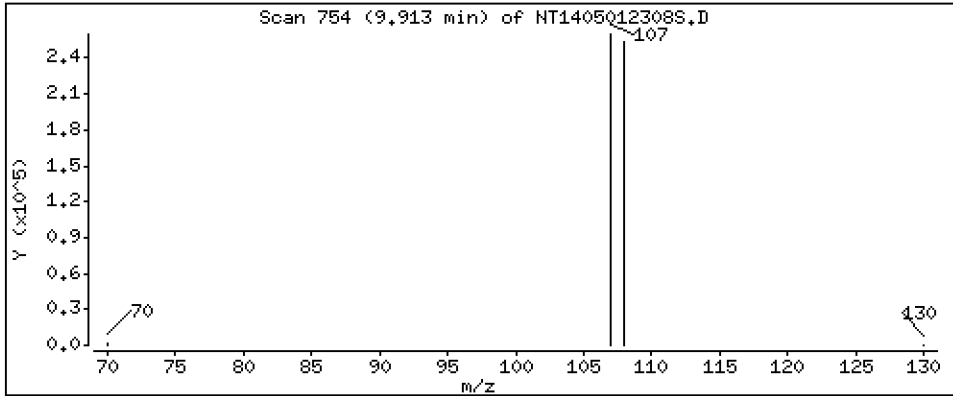
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.166 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

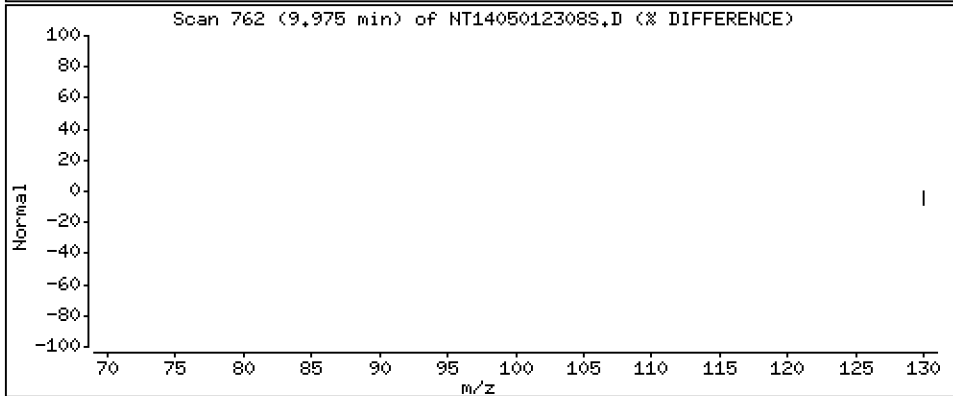
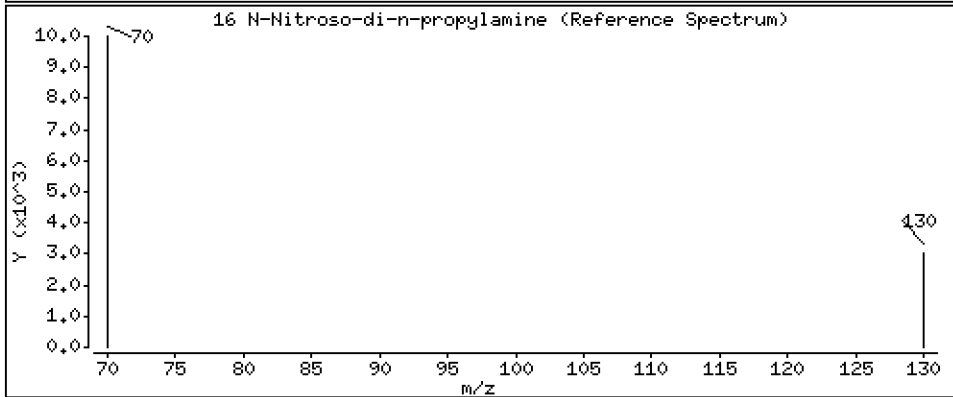
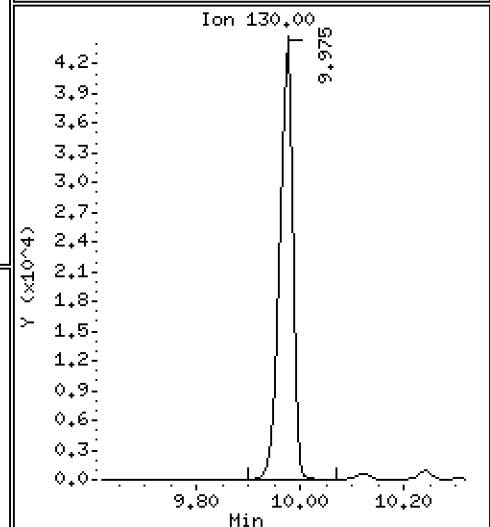
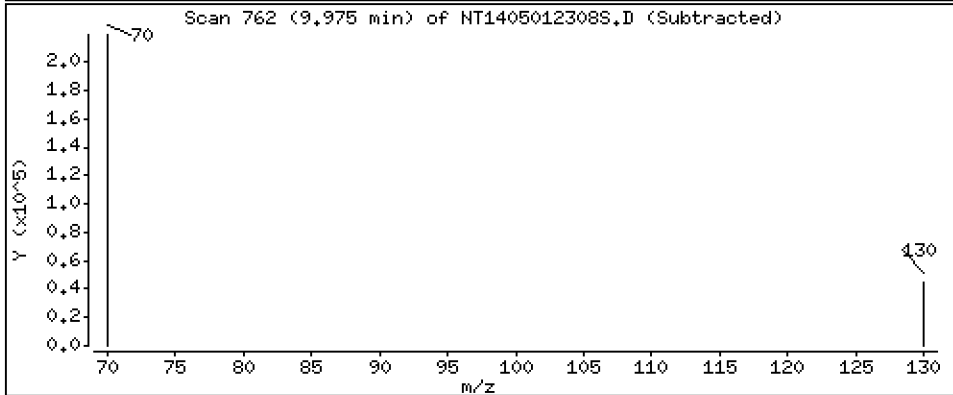
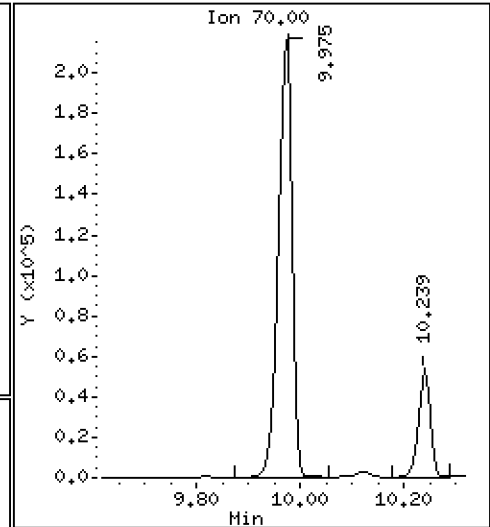
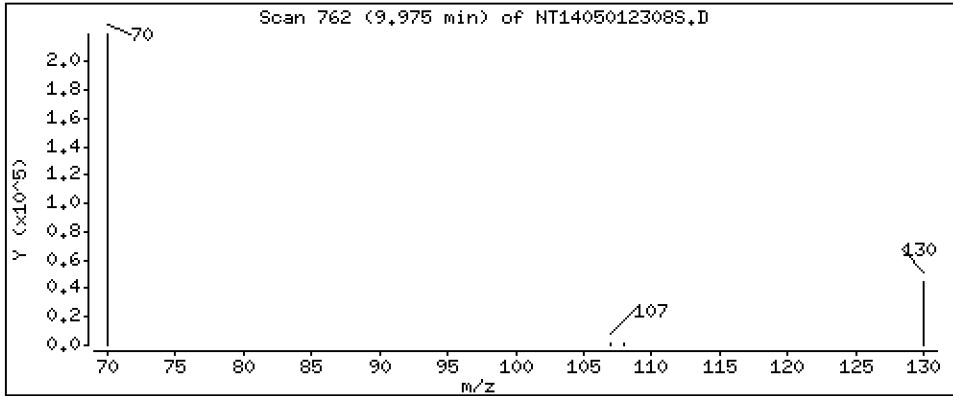
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 3,654 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

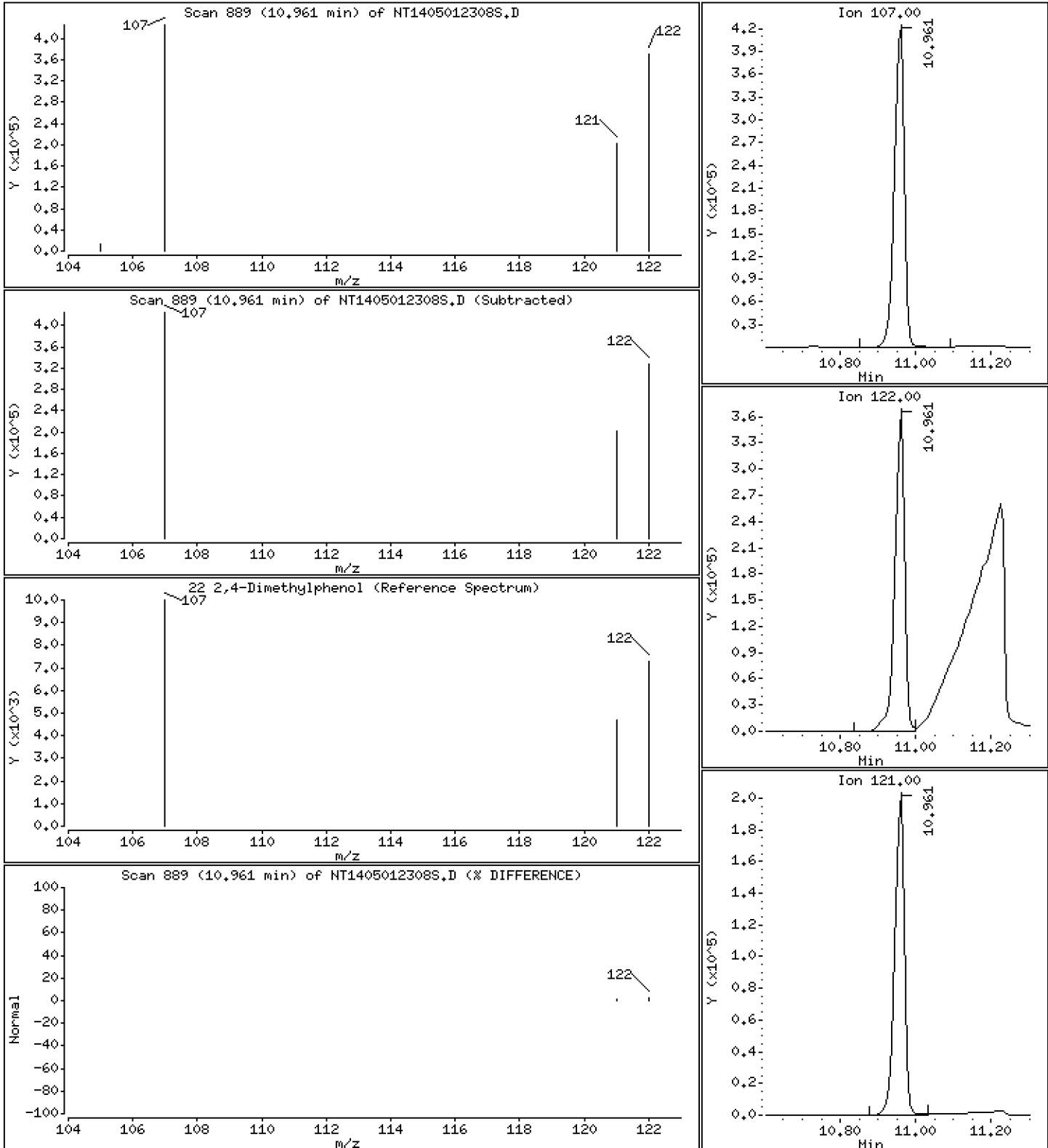
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 6,317 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

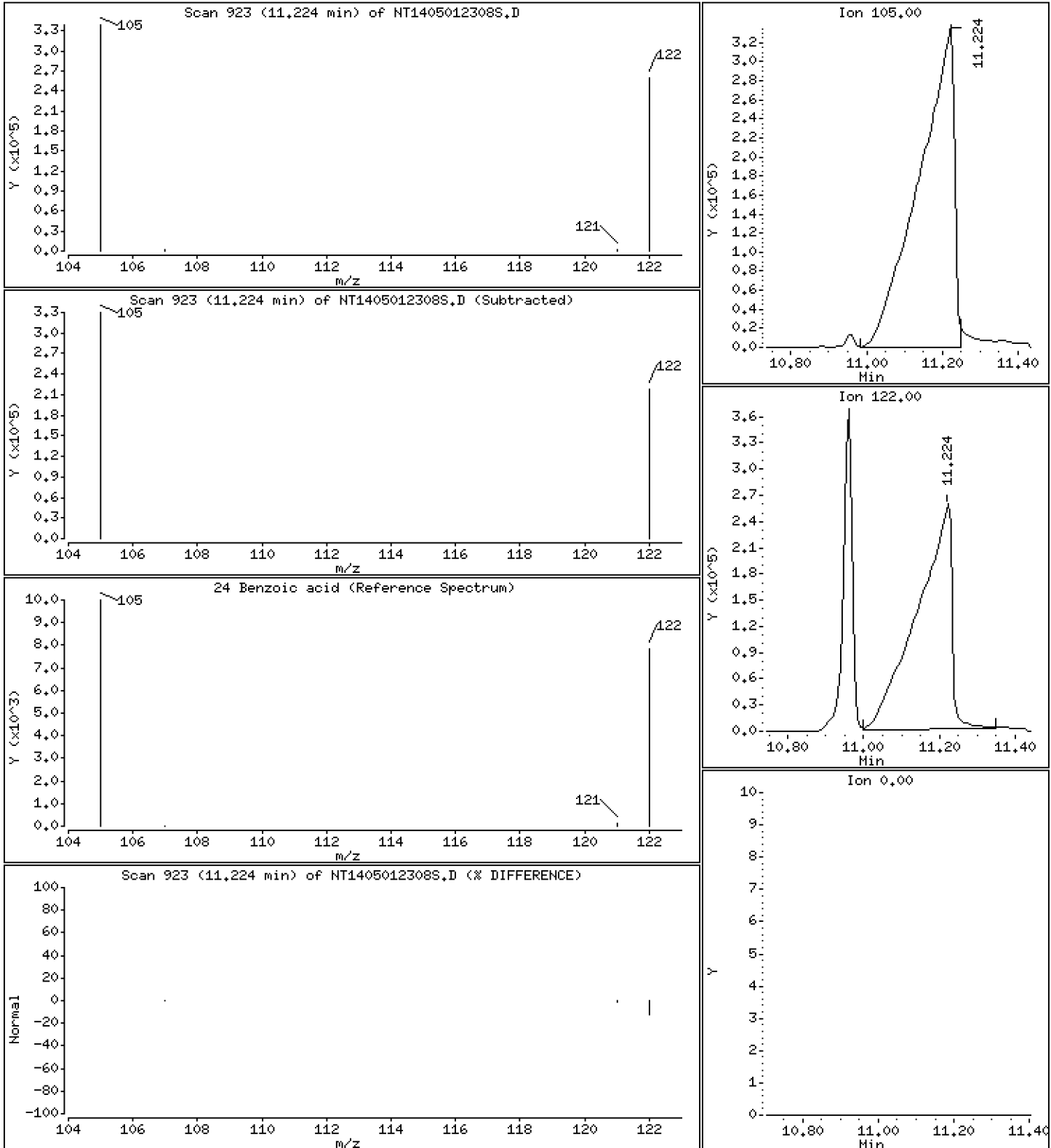
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 23,96 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

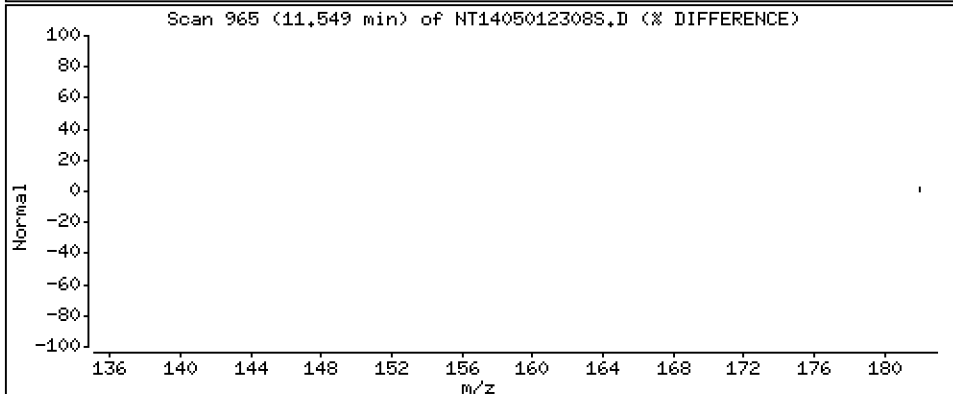
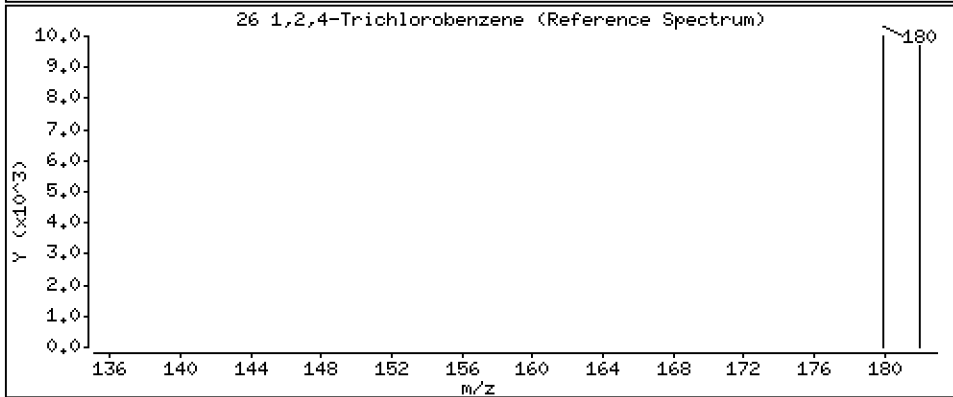
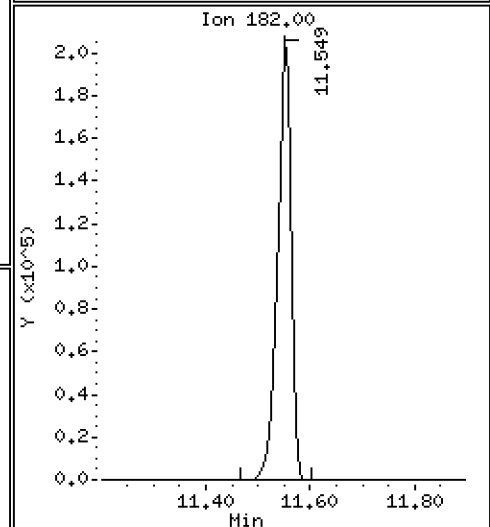
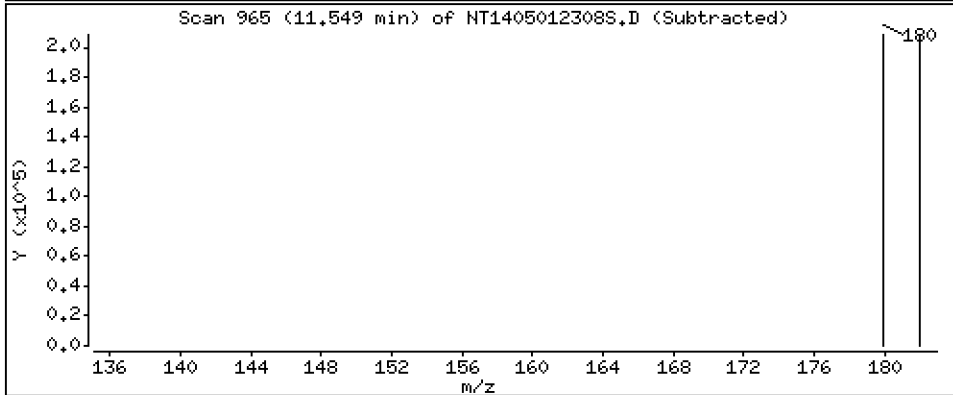
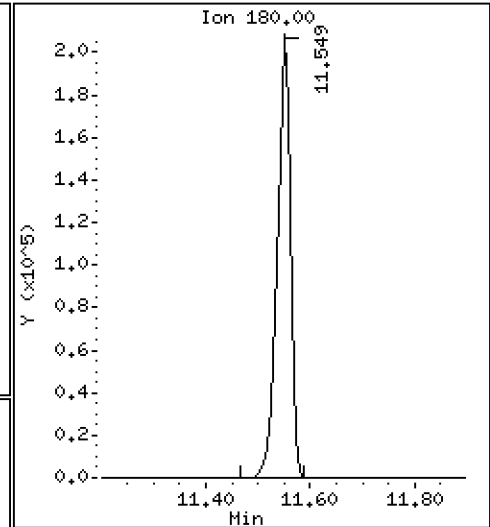
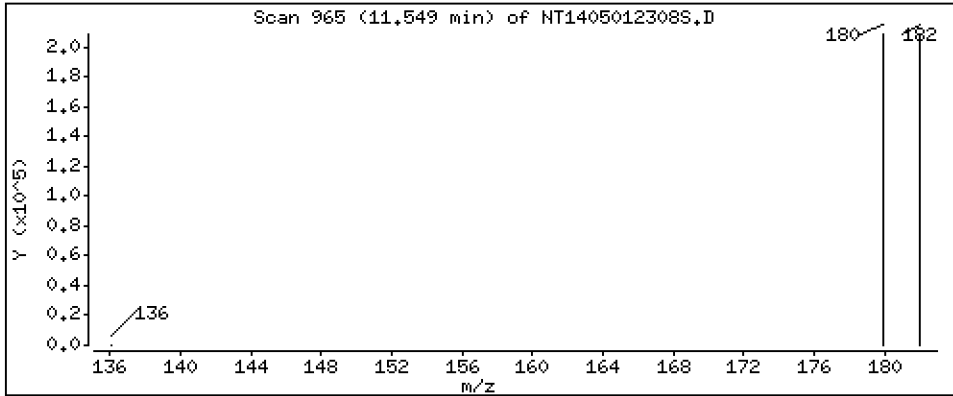
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 3,988 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

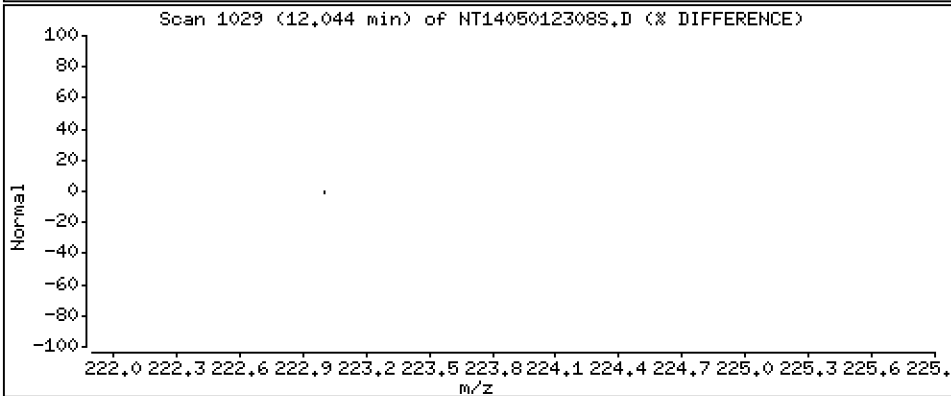
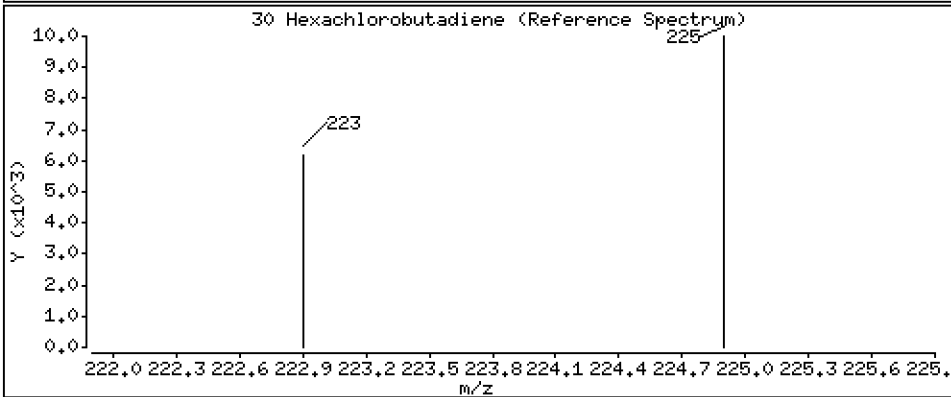
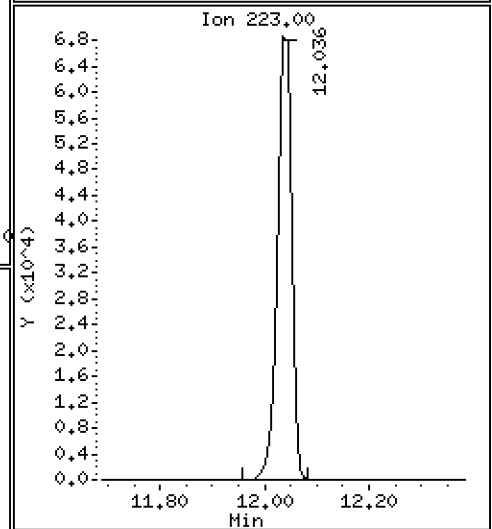
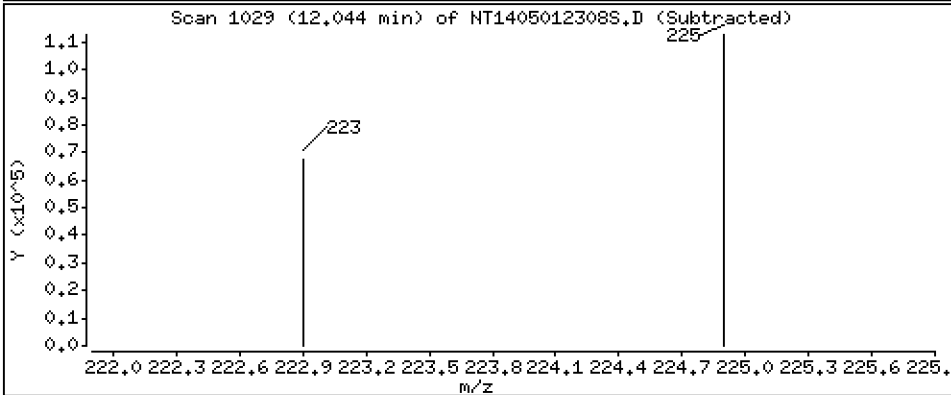
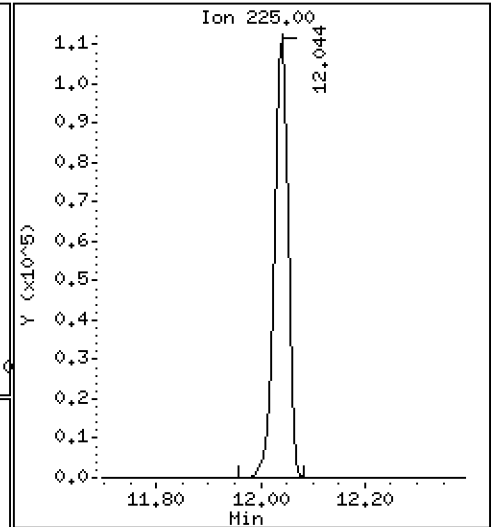
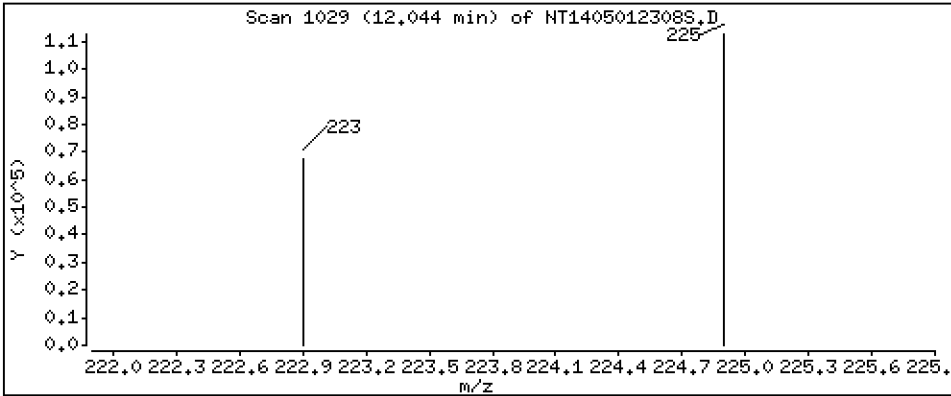
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 3,966 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

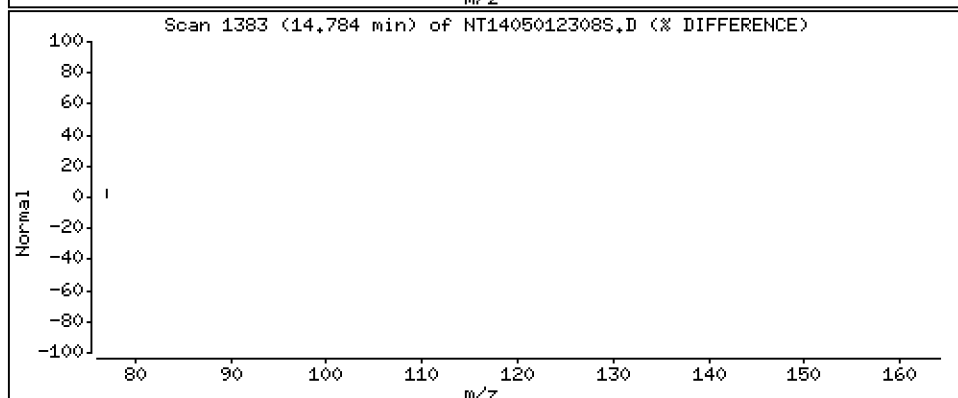
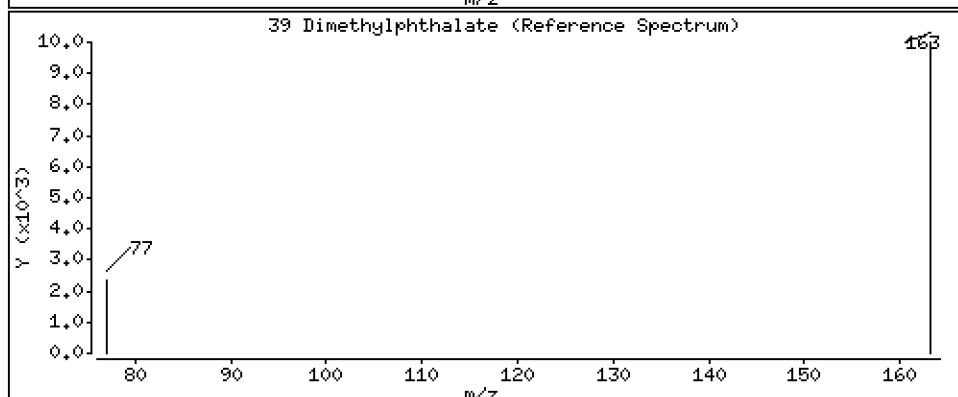
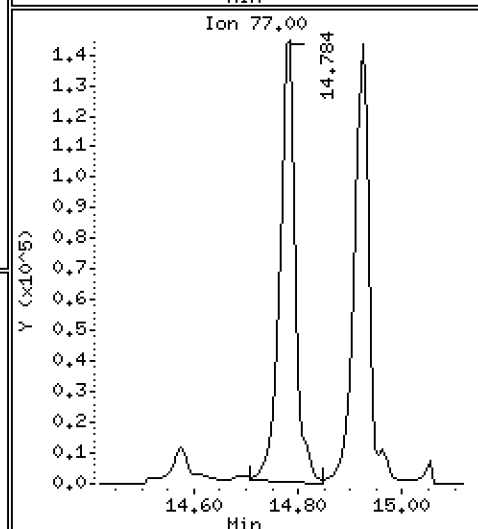
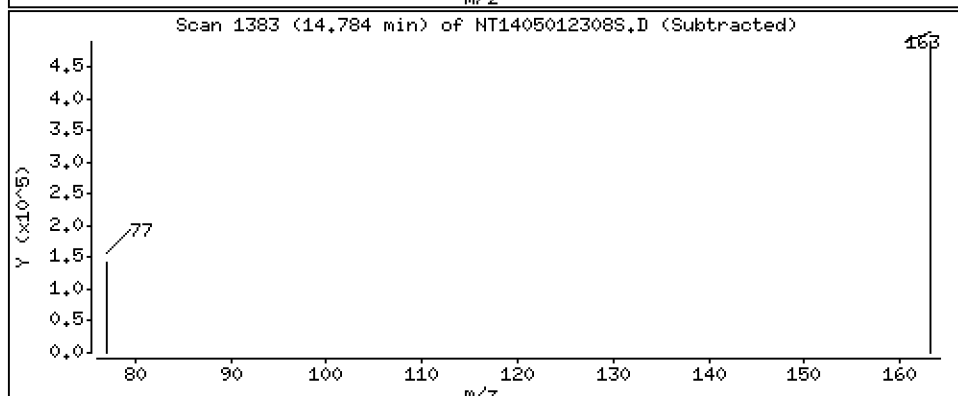
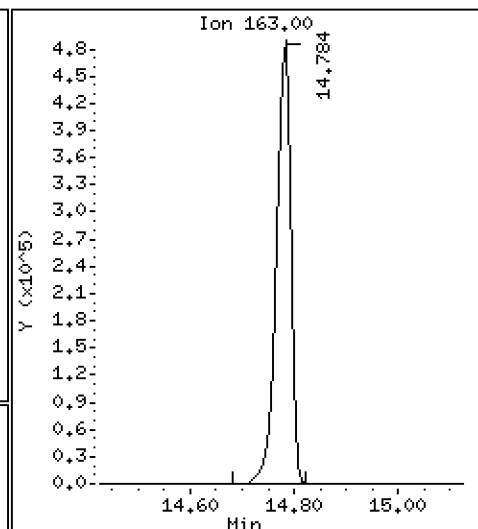
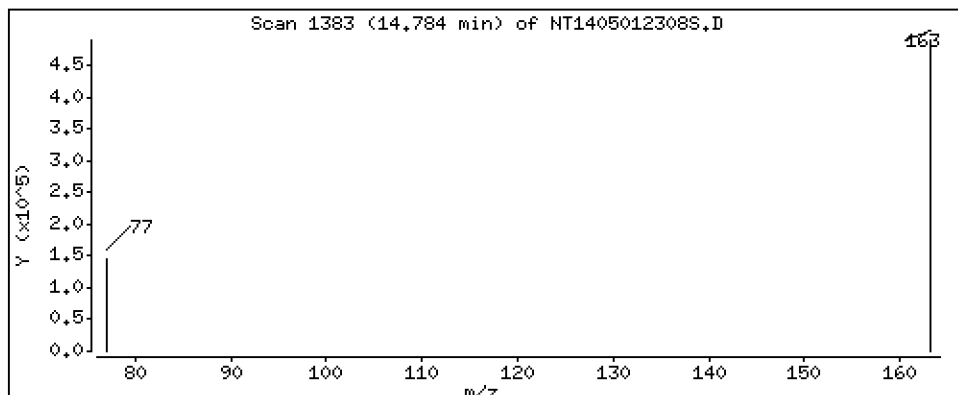
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,364 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

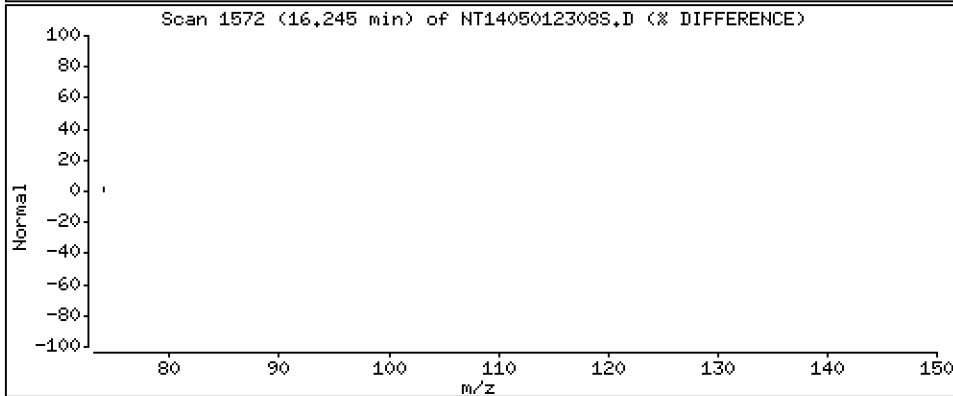
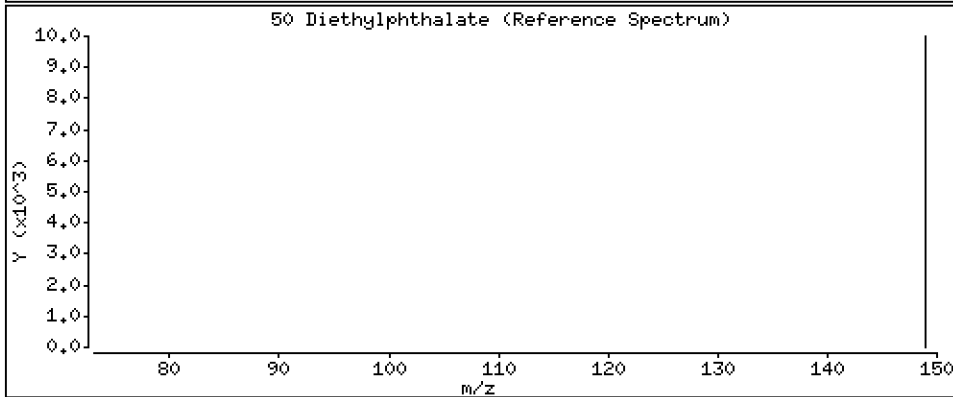
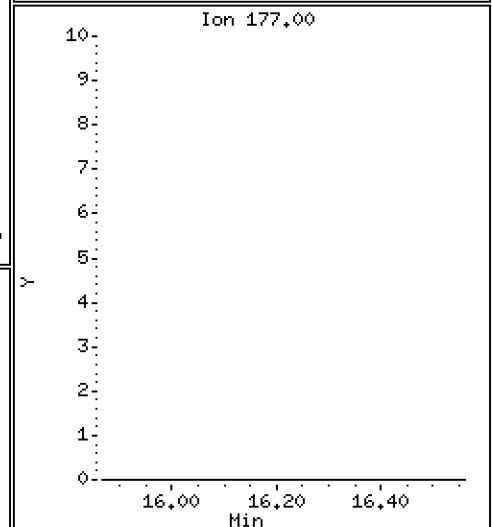
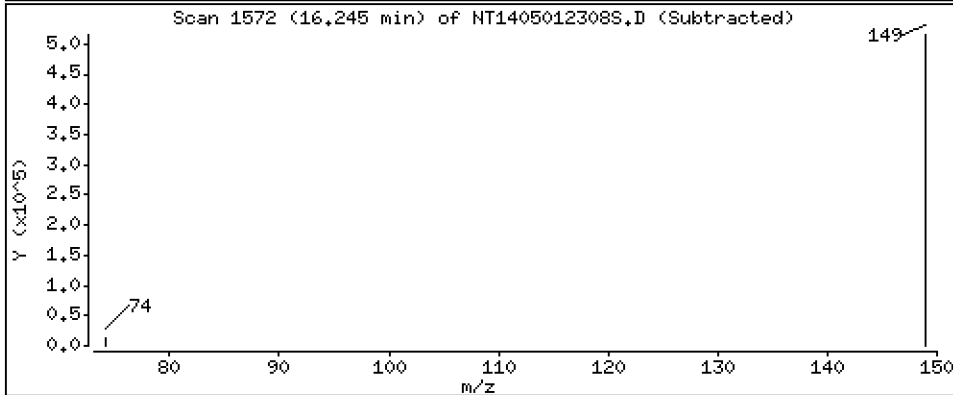
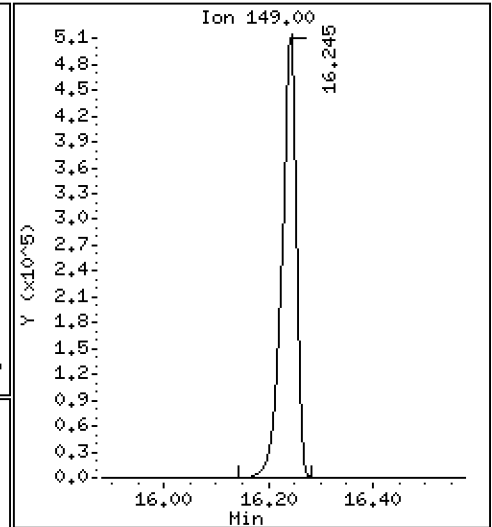
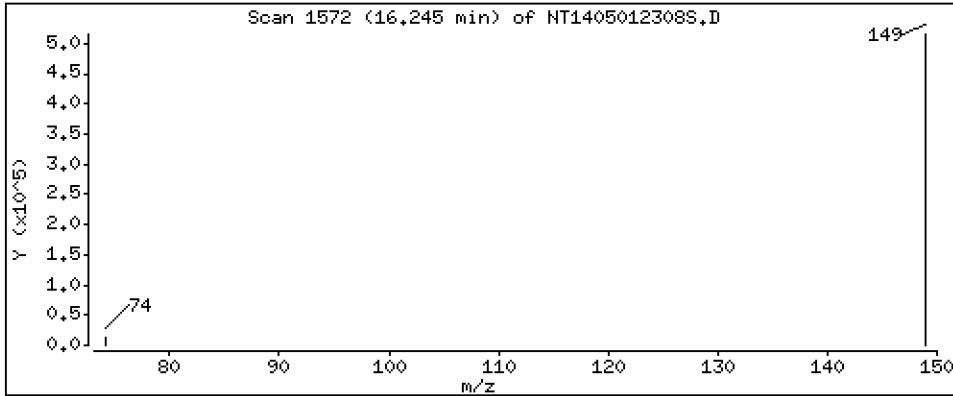
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,658 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

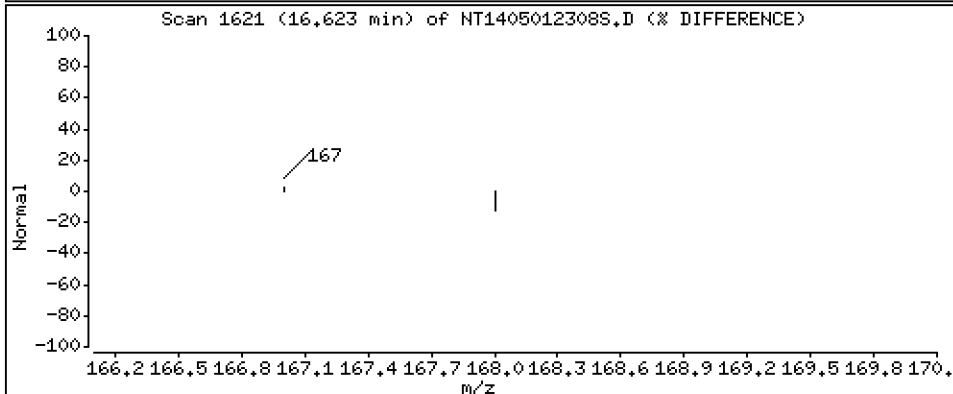
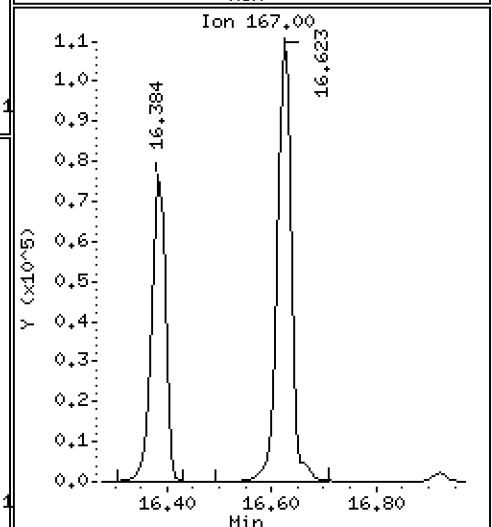
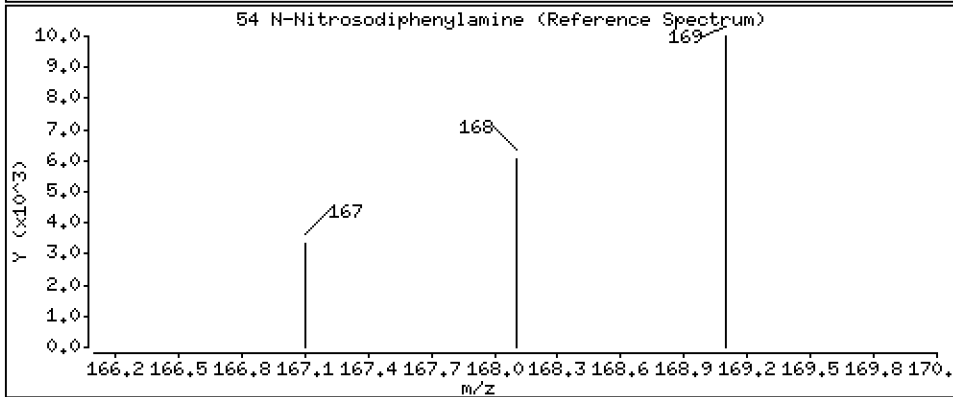
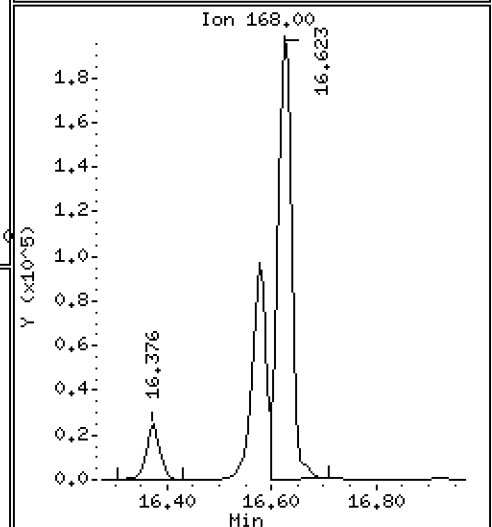
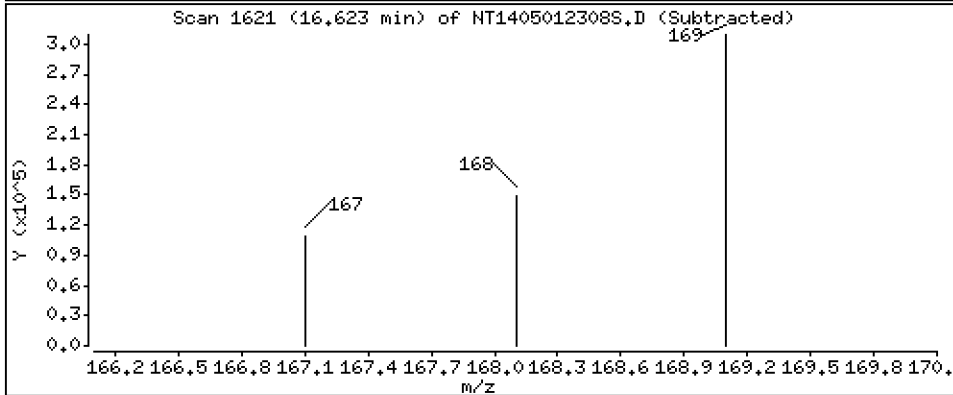
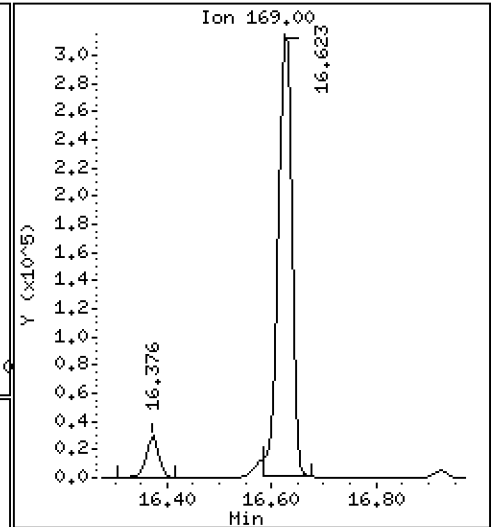
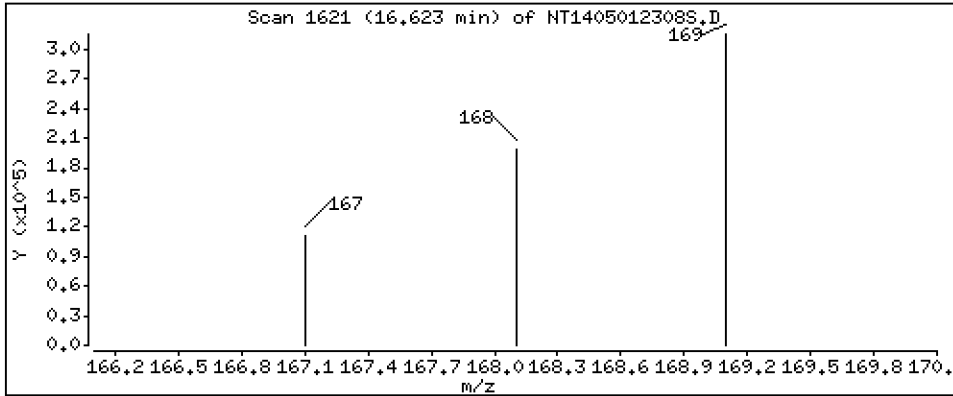
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 3,994 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

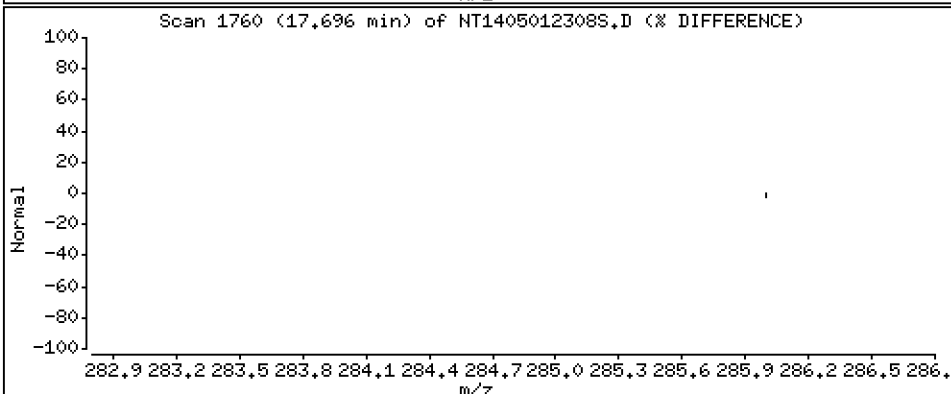
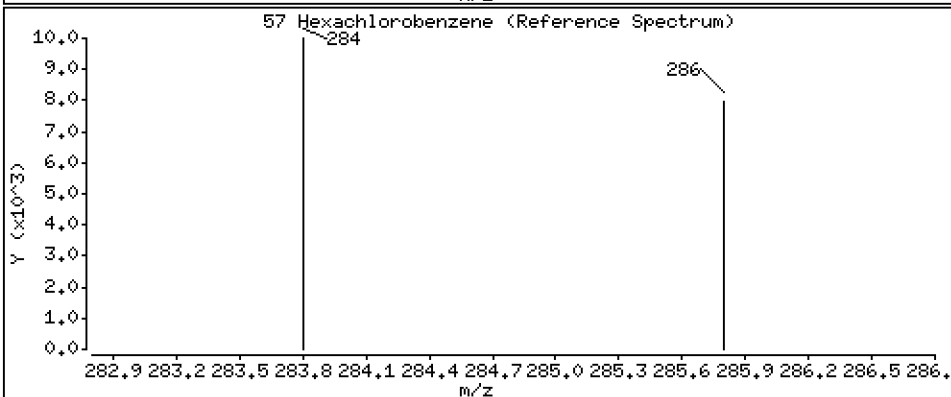
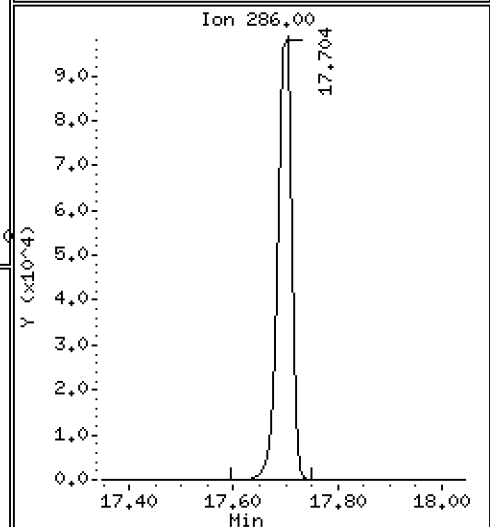
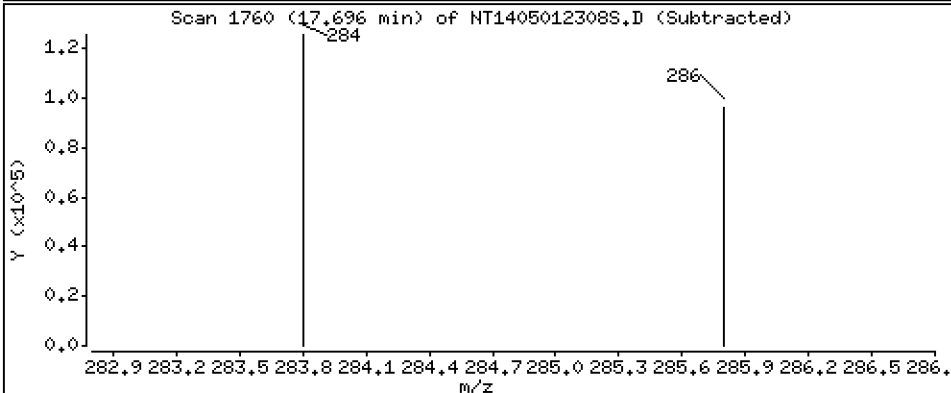
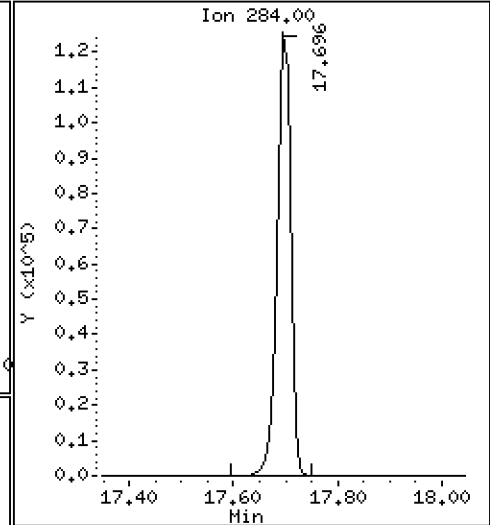
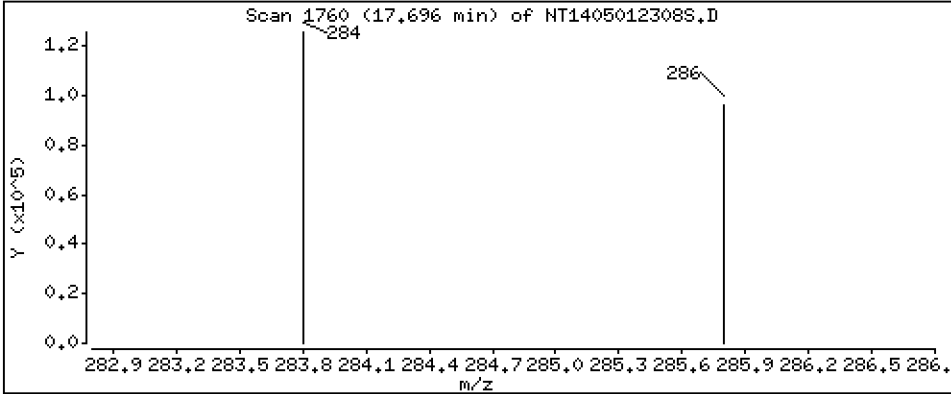
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,069 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

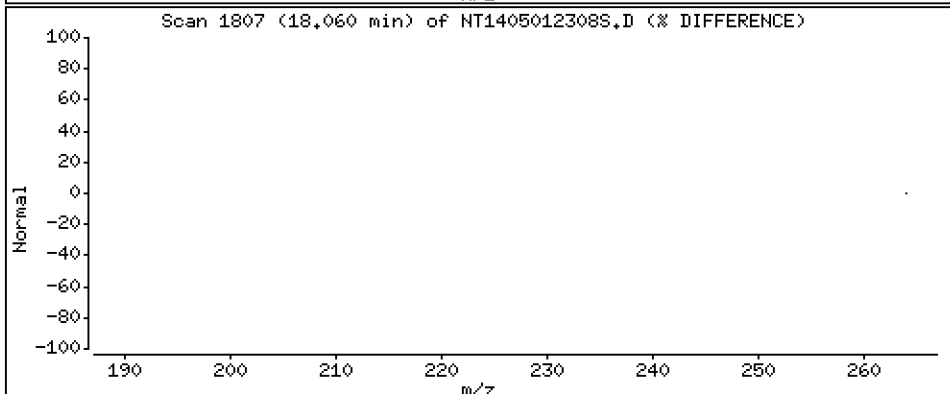
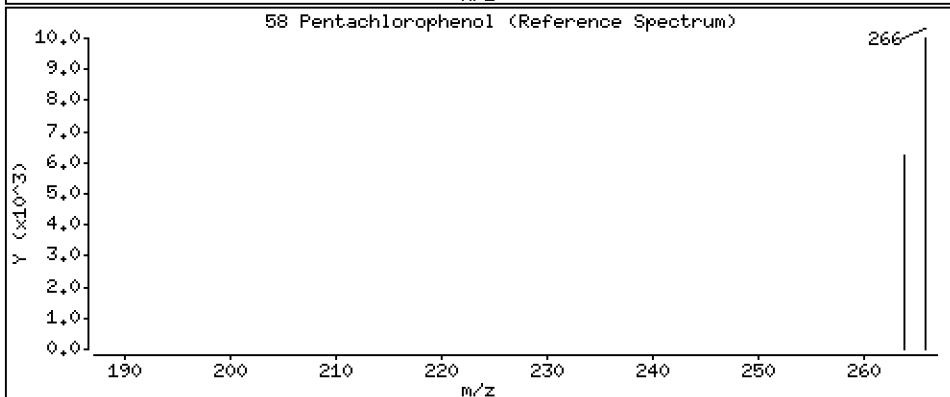
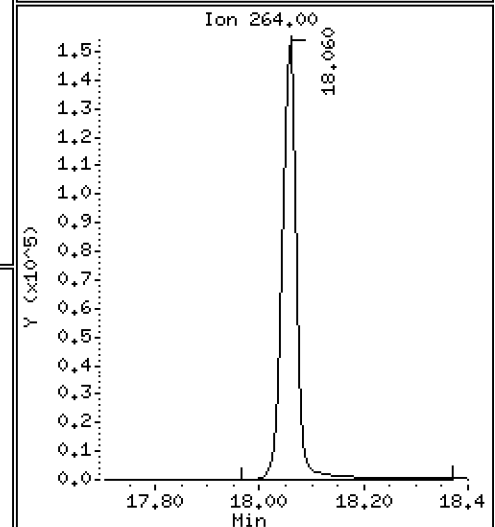
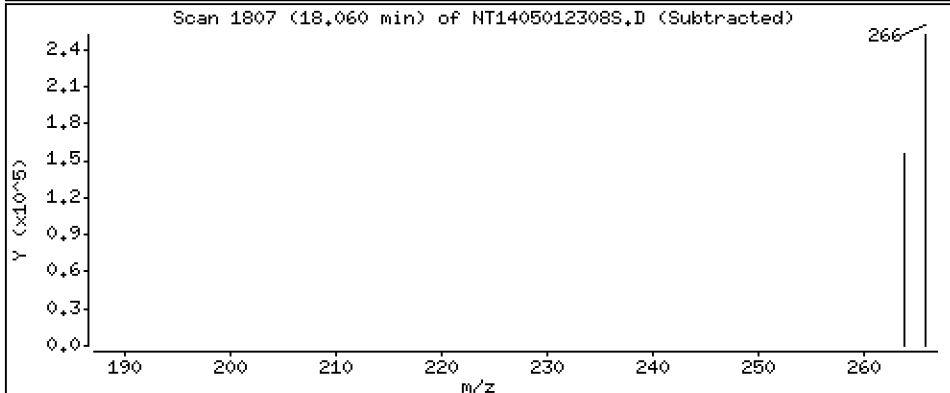
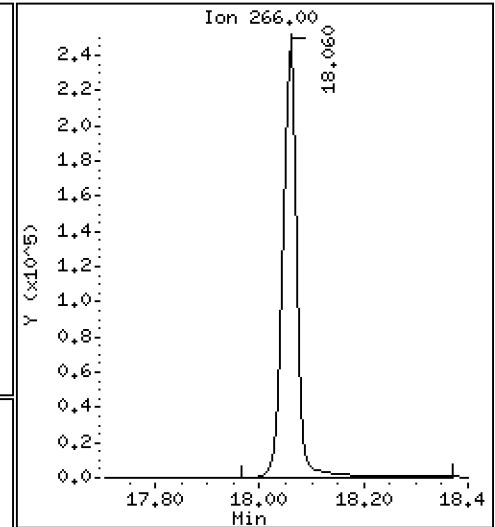
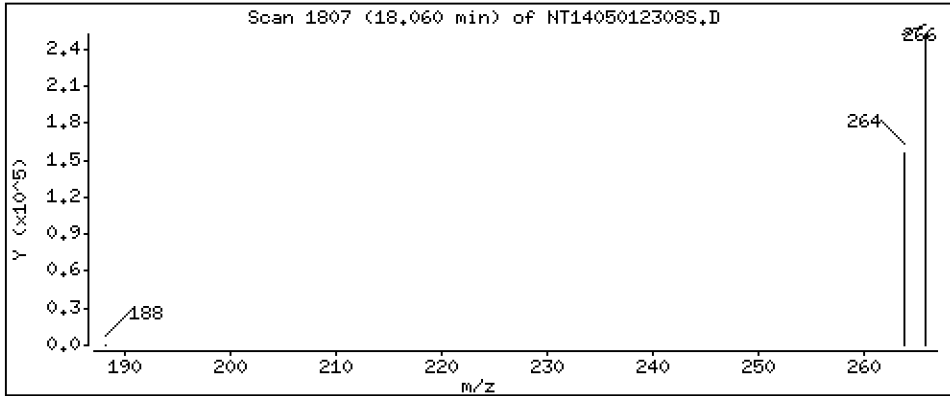
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 12,92 ug/mL





Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

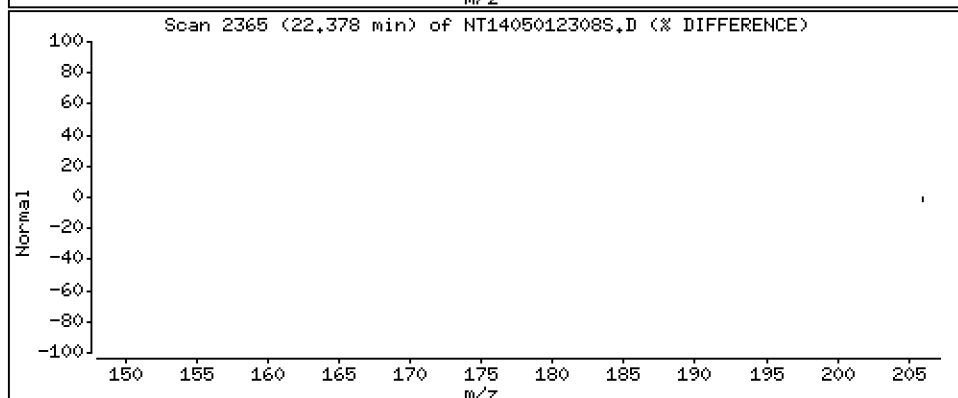
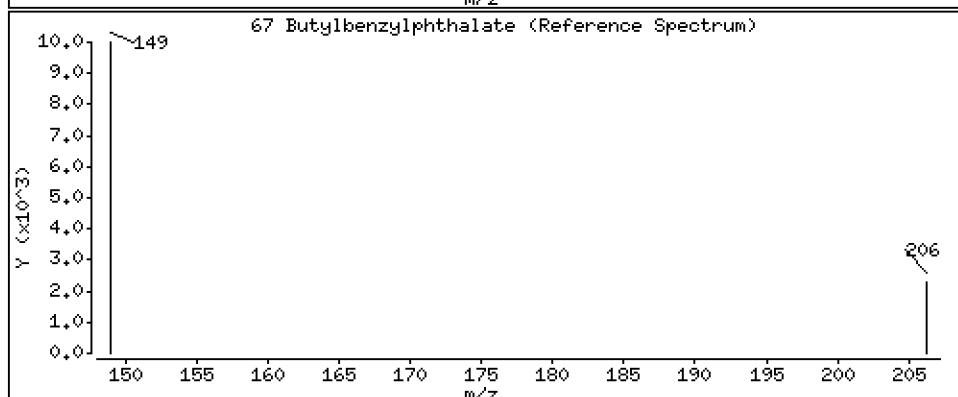
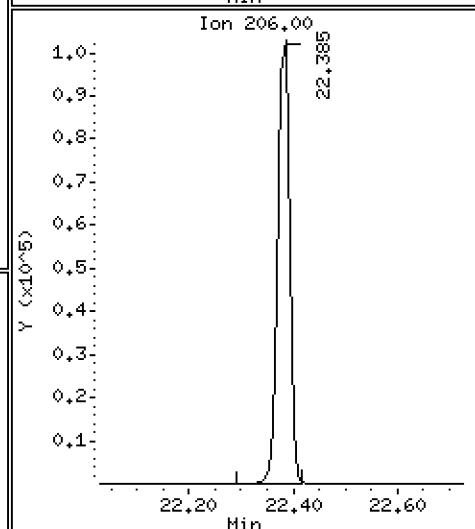
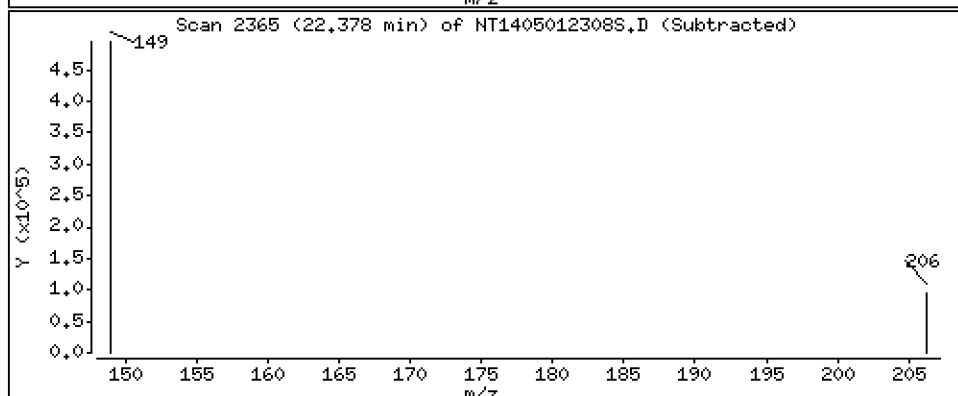
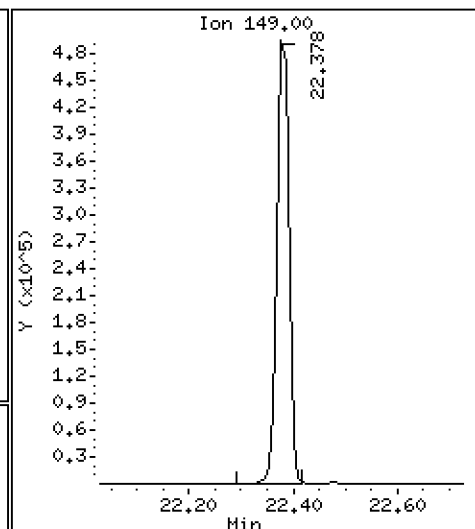
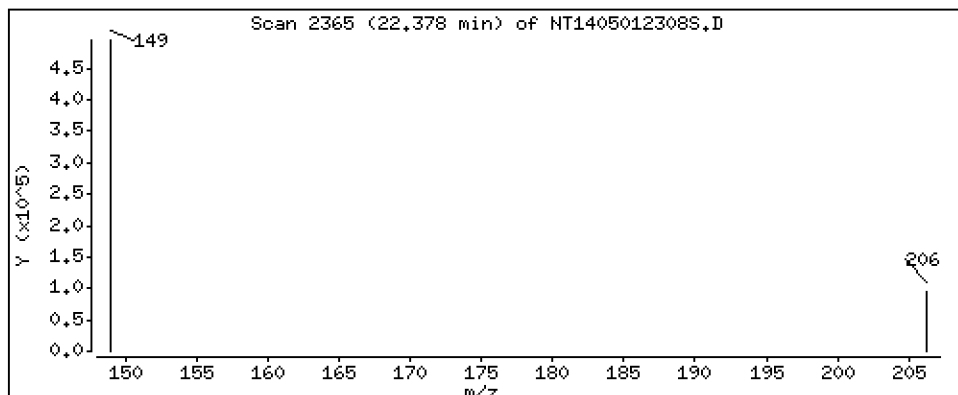
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,329 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

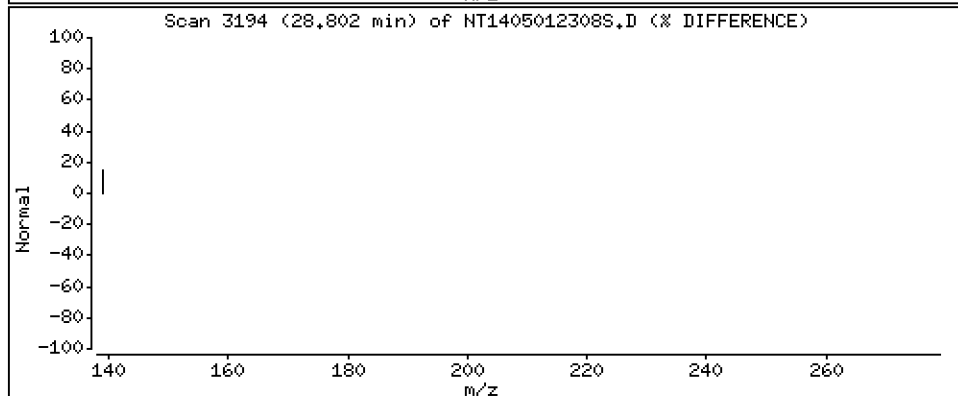
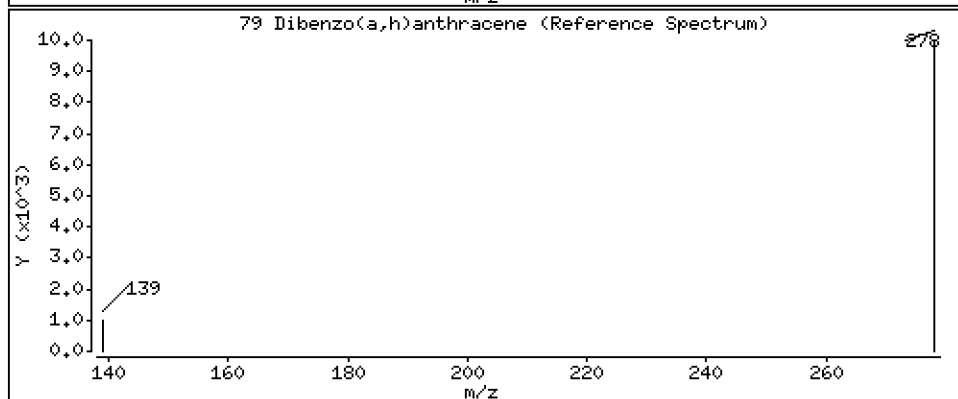
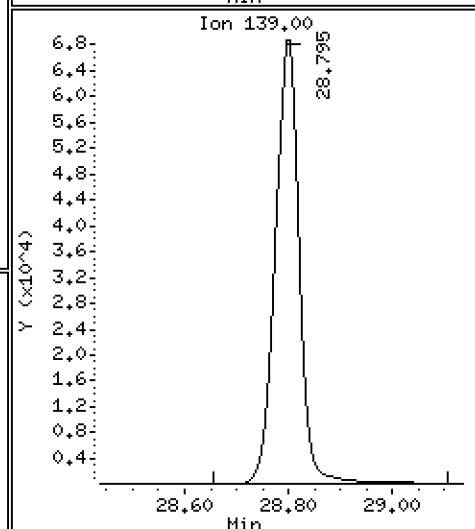
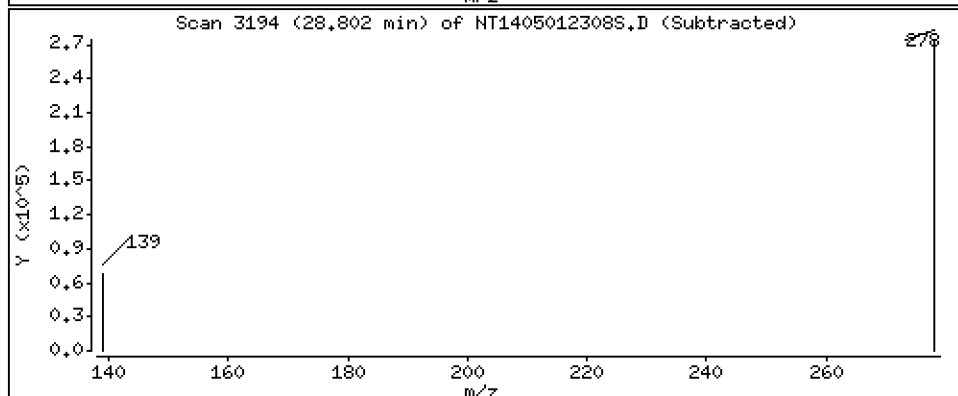
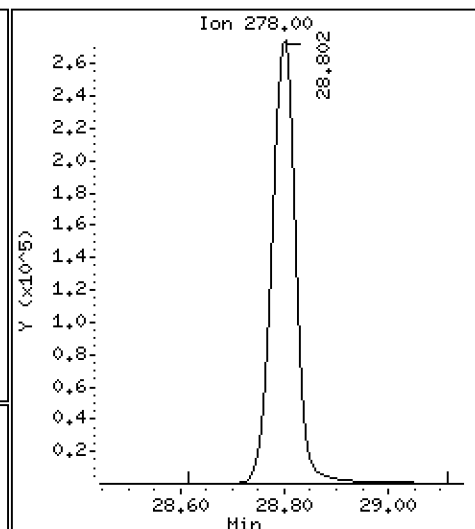
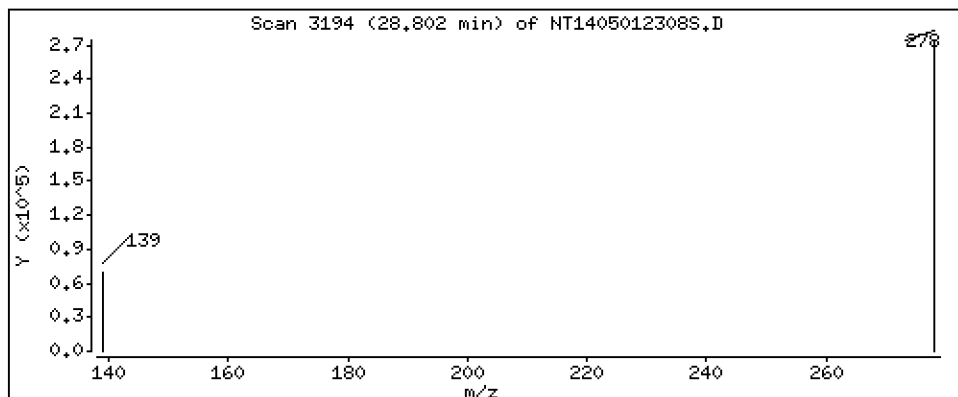
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,110 ug/mL



Date : 01-MAY-2023 18:50

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-BSD2

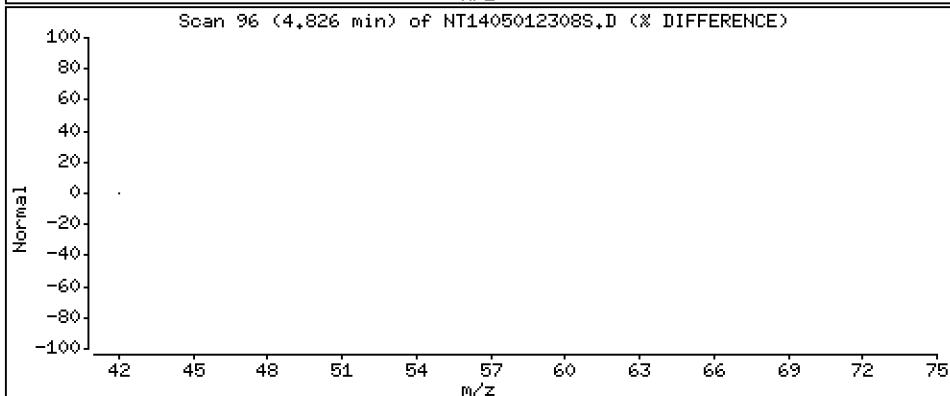
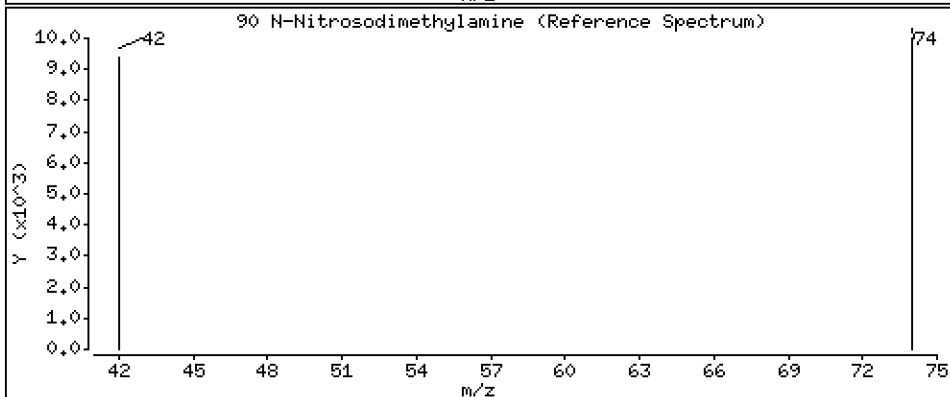
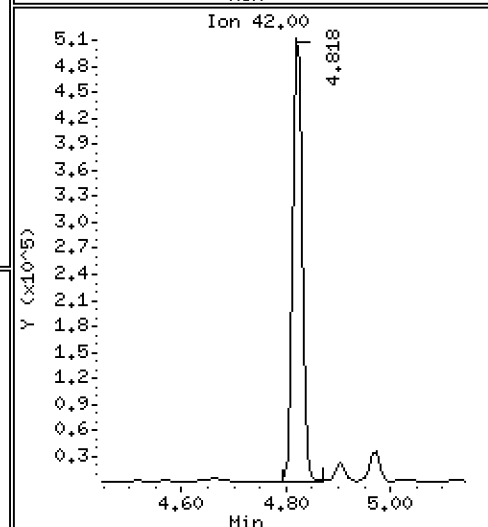
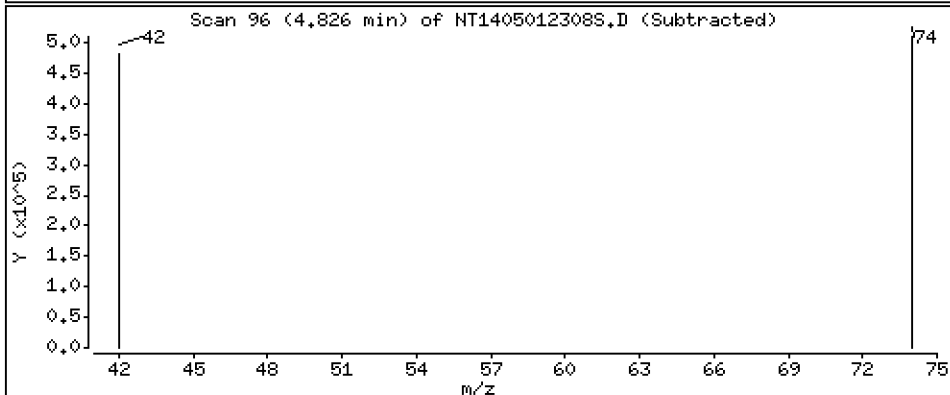
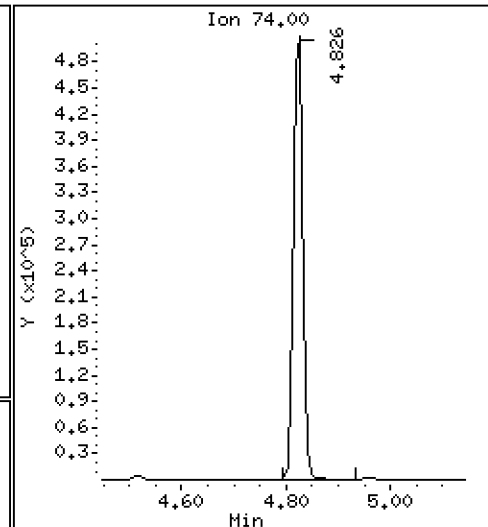
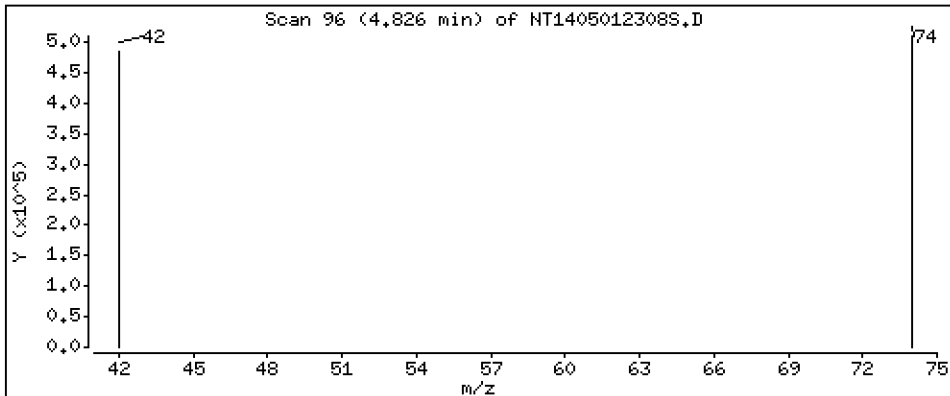
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 7,418 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012308S.D  
 Lab Smp Id: BLD0297-BSD2  
 Inj Date : 01-MAY-2023 18:50 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-BSD2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 8  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.911	6.903	(0.756)	697082	6.29680	6.297 (R)
3 Phenol	94		8.518	8.510	(0.932)	689423	3.88451	3.885
7 1,3-Dichlorobenzene	146		9.074	9.067	(0.993)	488129	3.62617	3.626
* 8 1,4-Dichlorobenzene-d4	152		9.136	9.137	(1.000)	317639	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	477263	3.74725	3.747
11 Benzyl alcohol	79		9.408	9.408	(1.030)	446816	4.08355	4.084
12 1,2-Dichlorobenzene	146		9.525	9.525	(1.042)	478080	3.76241	3.762
13 2-Methylphenol	108		9.633	9.634	(1.054)	407088	3.67855	3.679
15 4-Methylphenol	108		9.913	9.898	(1.085)	475819	4.16569	4.166
16 N-Nitroso-di-n-propylamine	70		9.975	9.967	(1.092)	382768	3.65444	3.654
22 2,4-Dimethylphenol	107		10.960	10.953	(0.941)	738199	6.31710	6.317
24 Benzoic acid	105		11.224	11.085	(0.964)	2162552	23.9555	23.96
26 1,2,4-Trichlorobenzene	180		11.549	11.549	(0.992)	357813	3.98849	3.988
* 27 Naphthalene-d8	136		11.642	11.634	(1.000)	1221867	4.00000	
30 Hexachlorobutadiene	225		12.043	12.044	(1.035)	196895	3.96581	3.966
39 Dimethylphthalate	163		14.783	14.776	(0.968)	908774	4.36383	4.364
* 42 Acenaphthene-d10	162		15.278	15.271	(1.000)	570435	4.00000	
50 Diethylphthalate	149		16.245	16.229	(1.063)	991914	4.65785	4.658
54 N-Nitrosodiphenylamine	169		16.623	16.623	(0.907)	554785	3.99394	3.994
57 Hexachlorobenzene	284		17.695	17.696	(0.966)	215728	4.06875	4.069
58 Pentachlorophenol	266		18.059	18.052	(0.986)	455416	12.9167	12.92
* 59 Phenanthrene-d10	188		18.322	18.323	(1.000)	993574	4.00000	
\$ 66 Terphenyl-d14	244		21.463	21.456	(0.918)	581237	4.78924	4.789 (R)
67 Butylbenzylphthalate	149		22.377	22.377	(0.957)	749836	4.32895	4.329
* 69 Chrysene-d12	240		23.376	23.369	(1.000)	763029	4.00000	
* 77 Perylene-d12	264		26.047	26.047	(1.000)	703072	4.00000	
79 Dibenzo(a,h)anthracene	278		28.802	28.794	(1.106)	874714	4.10959	4.110
90 N-Nitrosodimethylamine	74		4.825	4.795	(0.528)	670179	7.41838	7.418

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012308S.D  
 Lab Smp Id: BLD0297-BSD2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	317639	-4.20
27 Naphthalene-d8	1259018	629509	2518036	1221867	-2.95
42 Acenaphthene-d10	580636	290318	1161272	570435	-1.76
59 Phenanthrene-d10	1027945	513973	2055890	993574	-3.34
69 Chrysene-d12	775653	387827	1551306	763029	-1.63
77 Perylene-d12	750797	375399	1501594	703072	-6.36

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	-0.00
27 Naphthalene-d8	11.63	11.13	12.13	11.64	0.06
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.32	17.82	18.82	18.32	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.38	0.03
77 Perylene-d12	26.05	25.55	26.55	26.05	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012308S.D

Lab ID: BLD0297-BSD2

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 18:50

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.964	0.953	0.0113	Benzoic acid

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



**MS / MS DUPLICATE RECOVERY**  
**EPA 8270E-SIM**

Laboratory: <u>Analytical Resources, LLC</u>	SDG: <u>23D0063</u>
Client: <u>Anchor OEA, LLC</u>	Project: <u>AOC5 MR Phase 1</u>
Matrix: <u>Solid</u>	Analyzed: <u>05/01/23 22:31</u>
Batch: <u>BLD0297</u>	Laboratory ID: <u>BLD0297-MS2</u>
Preparation: <u>EPA 3546 (Microwave)</u>	Sequence Name: <u>Matrix Spike</u>
Initial/Final: <u>23.16 g / 1 mL</u>	Source Sample: <u>LDW23-SS1818</u>

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	Q	MS CONCENTRATION (ug/kg dry)	Q	MS % REC. #	QC LIMITS REC.
1,4-Dichlorobenzene	500	1.4	J	341		67.8	36 - 120
1,2-Dichlorobenzene	500	ND	U	341		68.3	36 - 120
Benzyl Alcohol	500	24.6		389		73.0	25 - 123
Benzoic acid	2300	39.8	J	951		39.6	10 - 160
2,4-Dimethylphenol	1300	ND	U	369		28.4	10 - 120
1,2,4-Trichlorobenzene	500	ND	U	367		73.5	35 - 120
N-Nitrosodiphenylamine	500	ND	U	379		75.8	27 - 120
Pentachlorophenol	1300	4.0	J	1140	Q	87.3	26 - 120

\* Values outside of QC limits



**MS / MS DUPLICATE RECOVERY**  
**EPA 8270E-SIM**

Laboratory: <u>Analytical Resources, LLC</u>	SDG: <u>23D0063</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>AOC5 MR Phase 1</u>
Matrix: <u>Solid</u>	Analyzed: <u>05/01/23 23:08</u>
Batch: <u>BLD0297</u>	Laboratory ID: <u>BLD0297-MSD2</u>
Preparation: <u>EPA 3546 (Microwave)</u>	Sequence Name: <u>Matrix Spike Dup</u>
Initial/Final: <u>23.16 g / 1 mL</u>	Source Sample: <u>LDW23-SS1818</u>

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
1,4-Dichlorobenzene	500	340		67.8	0.0946	30	36 - 120
1,2-Dichlorobenzene	500	341		68.2	0.120	30	36 - 120
Benzyl Alcohol	500	396		74.3	1.71	30	25 - 123
Benzoic acid	2300	958		39.9	0.752	30	10 - 160
2,4-Dimethylphenol	1300	283		21.8	26.4	30	10 - 120
1,2,4-Trichlorobenzene	500	368		73.6	0.130	30	35 - 120
N-Nitrosodiphenylamine	500	306		61.2	21.3	30	27 - 120
Pentachlorophenol	1300	1070	Q	81.7	6.57	30	26 - 120

\* Values outside of QC limits



Data File: \\target\share\chem3\nt14,1\20230501A,B\NT1405012314S.D

Date: 01-May-2023 22:31

Client ID:

Sample Info: BLD0297-HS2

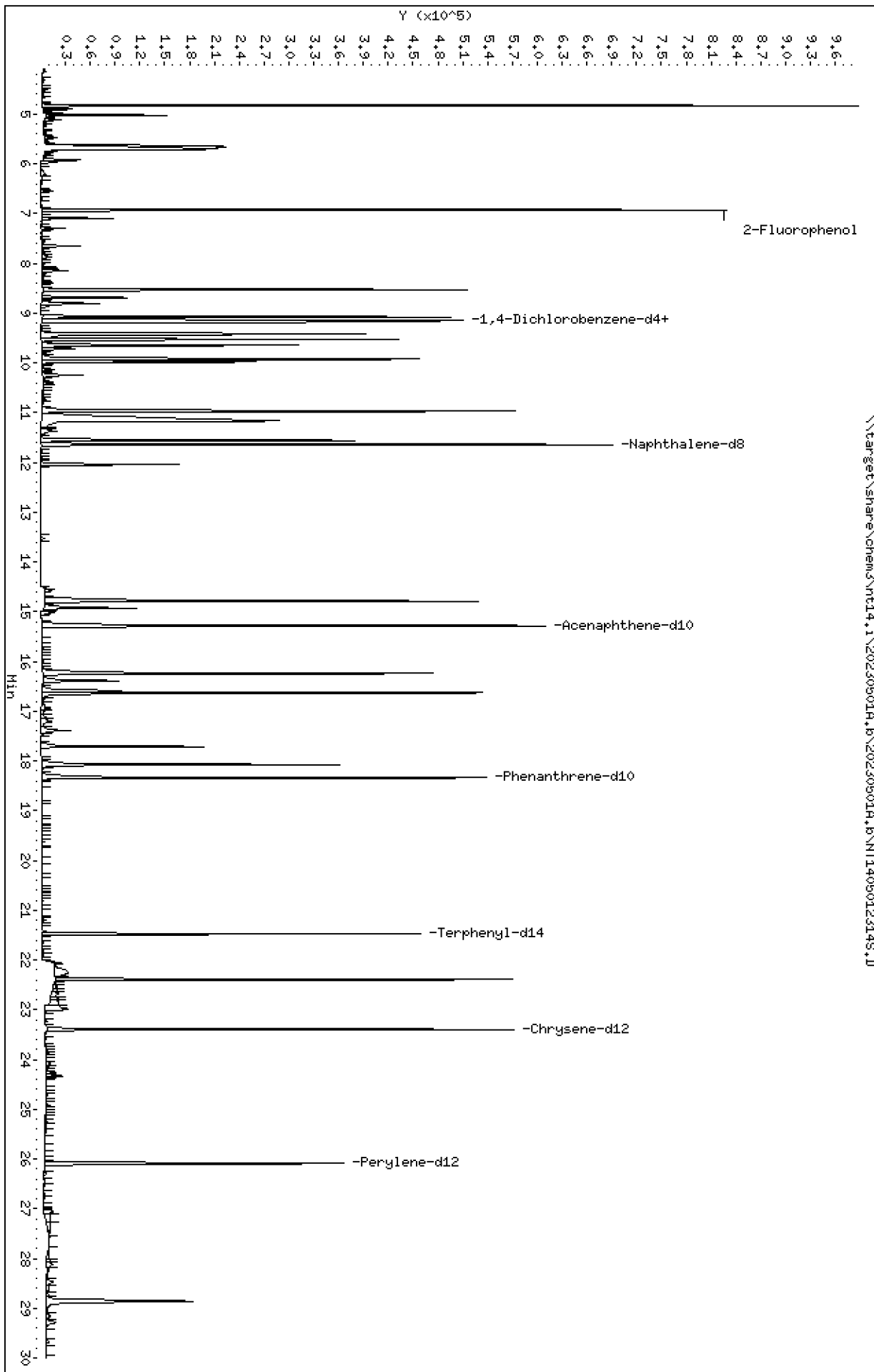
Column phase: ZB-5msi

Instrument: nt14,1

Operator: JSD

Column diameter: 0.25

\\target\share\chem3\nt14,1\20230501A,B\NT1405012314S.D



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

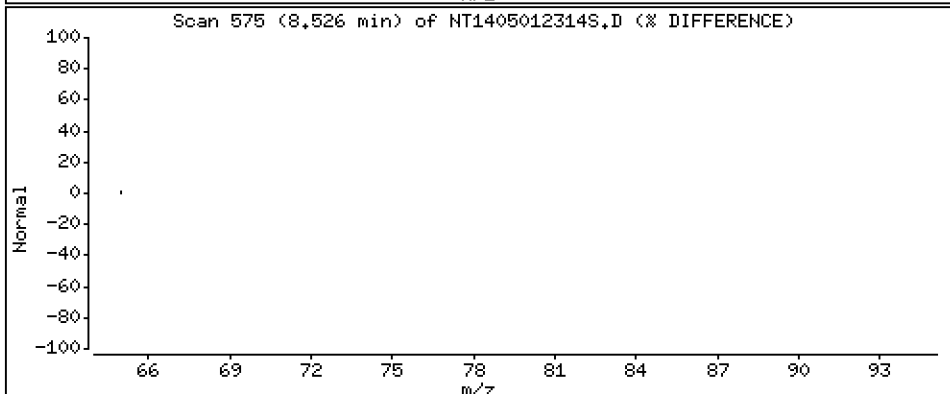
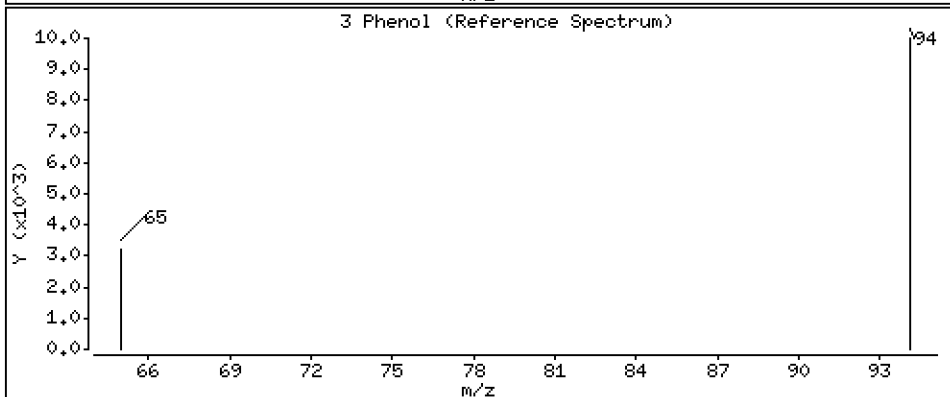
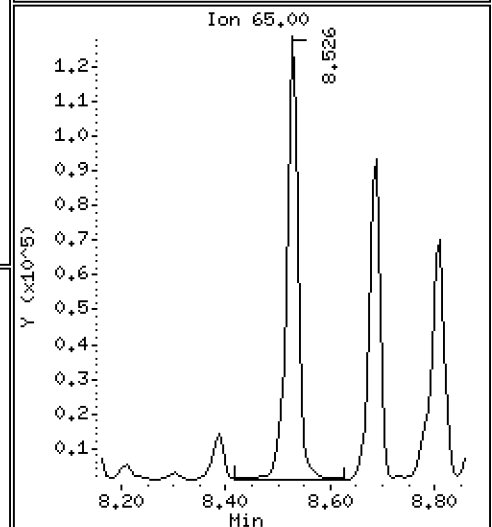
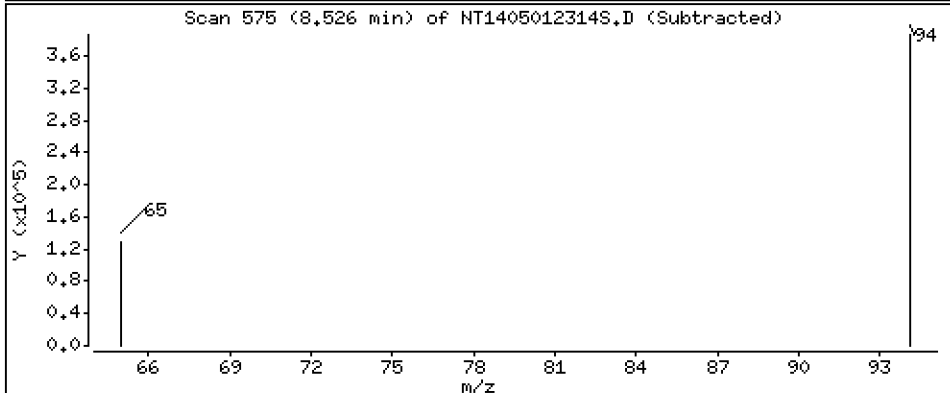
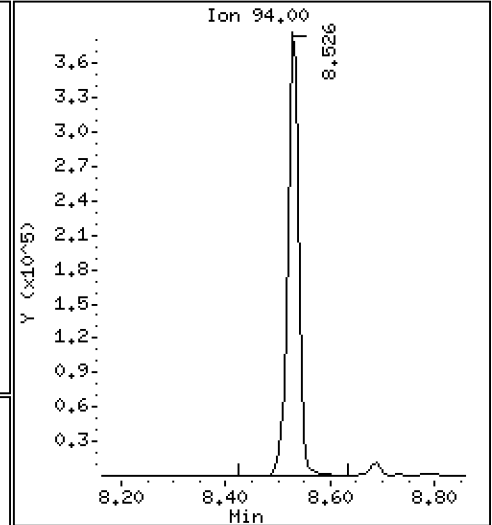
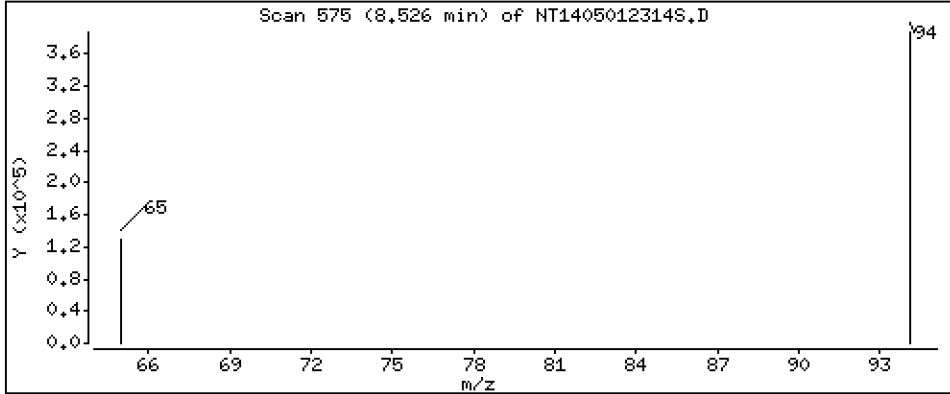
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 3,435 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

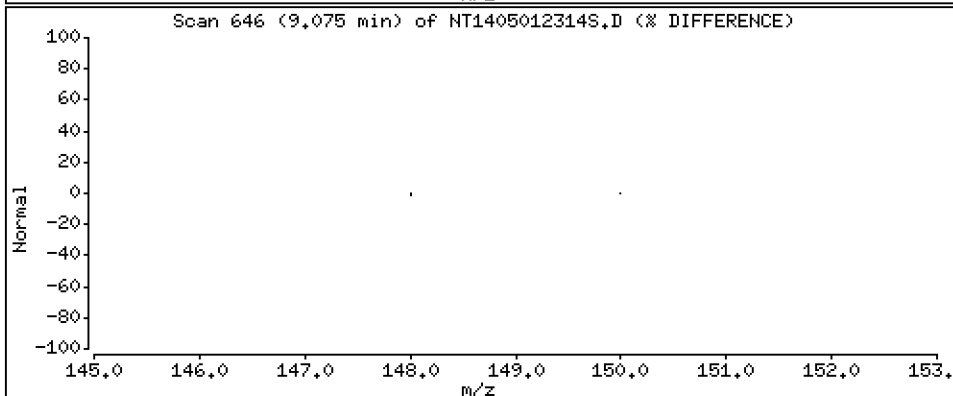
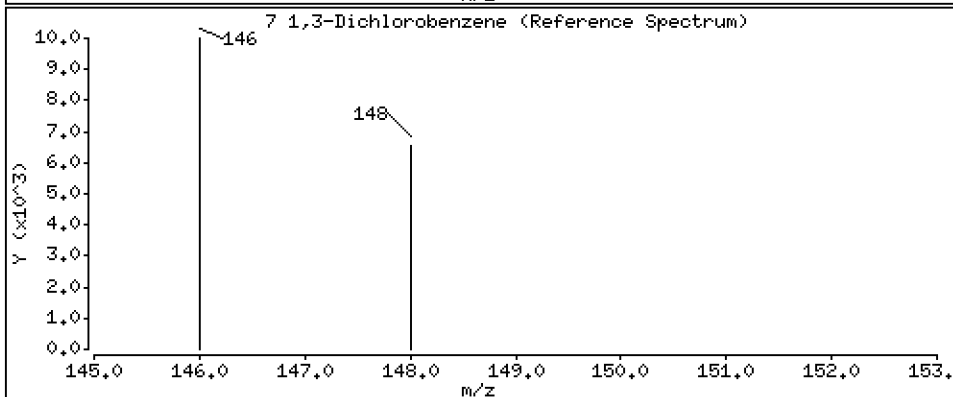
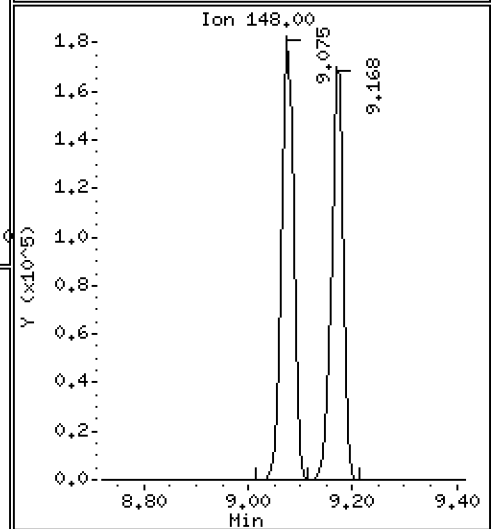
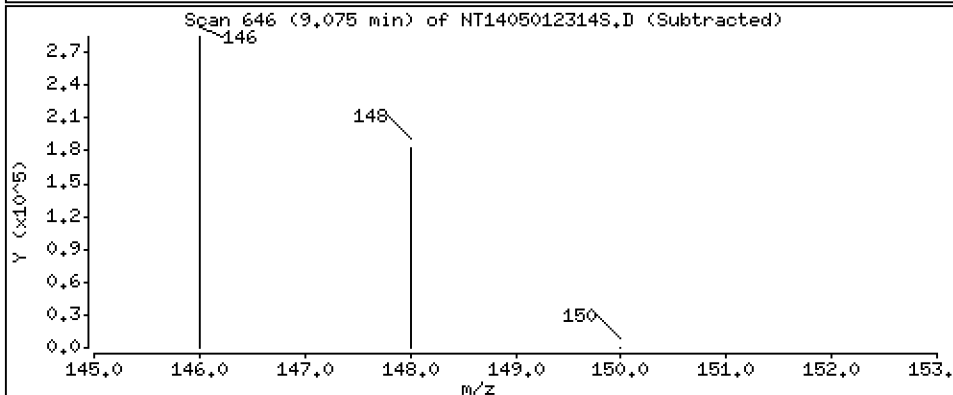
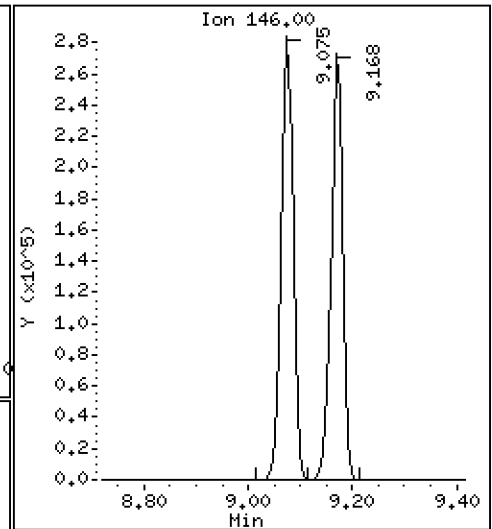
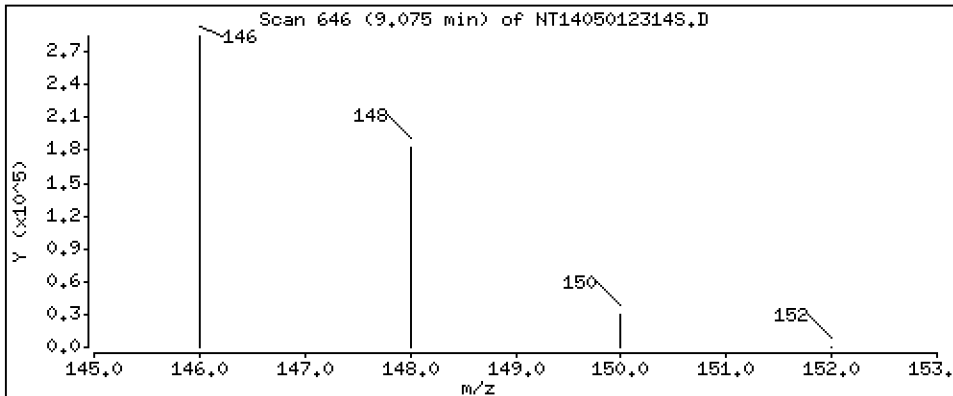
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 3,309 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

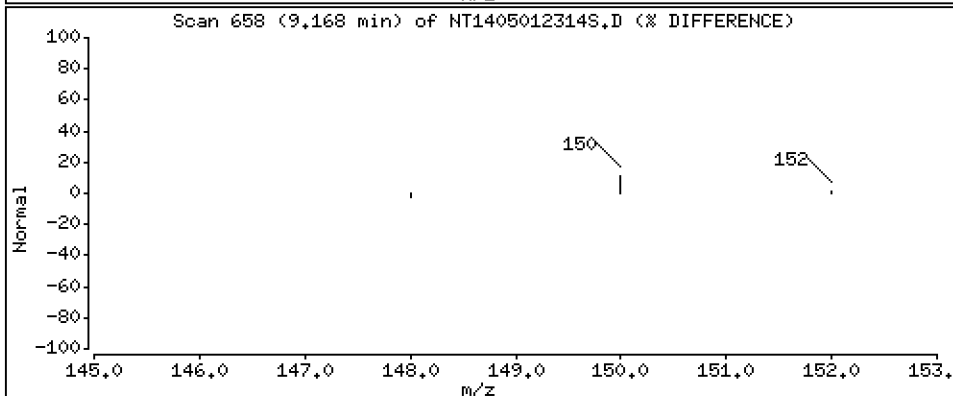
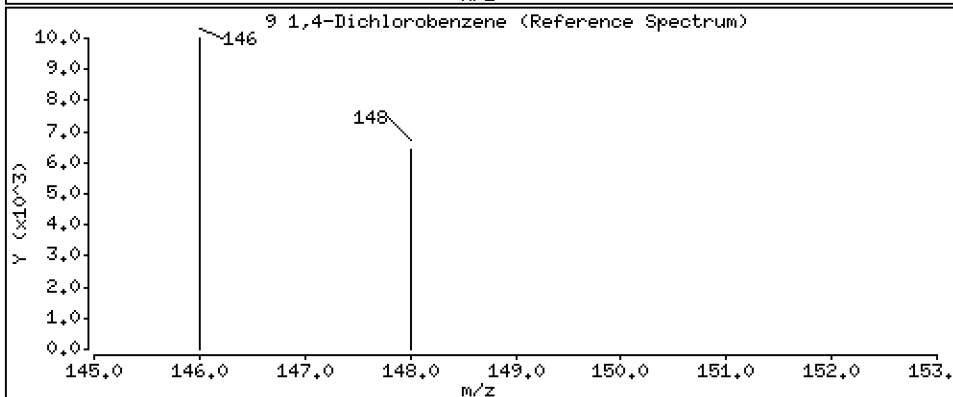
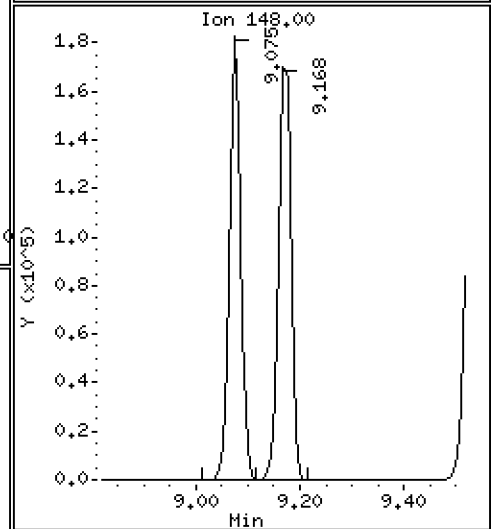
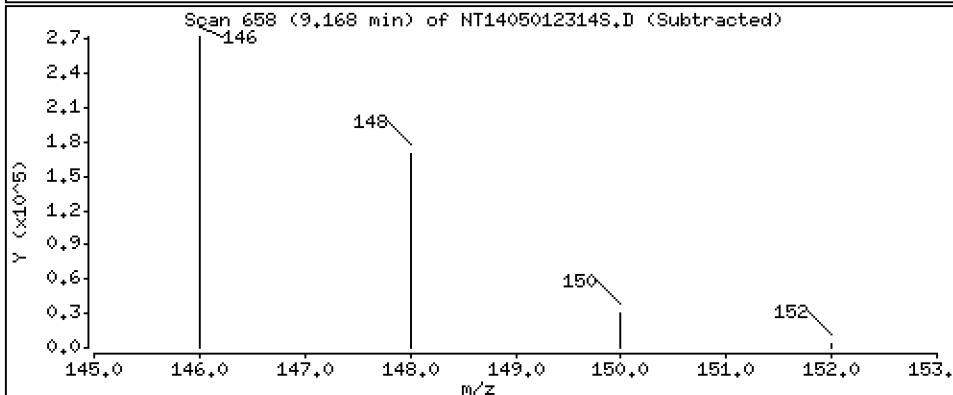
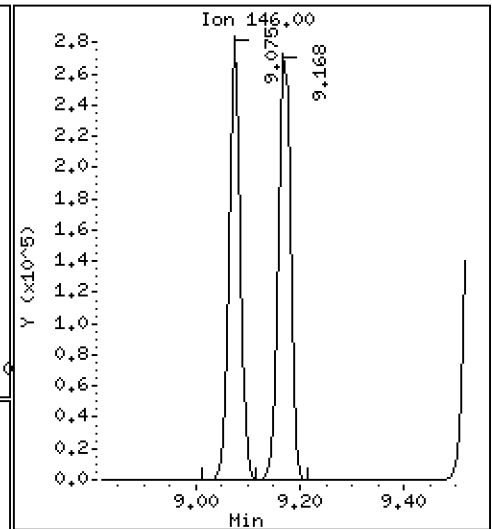
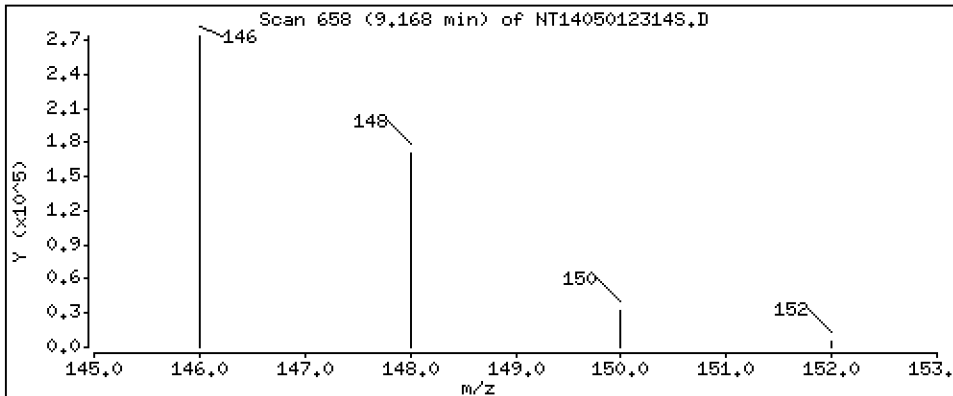
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 3,405 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

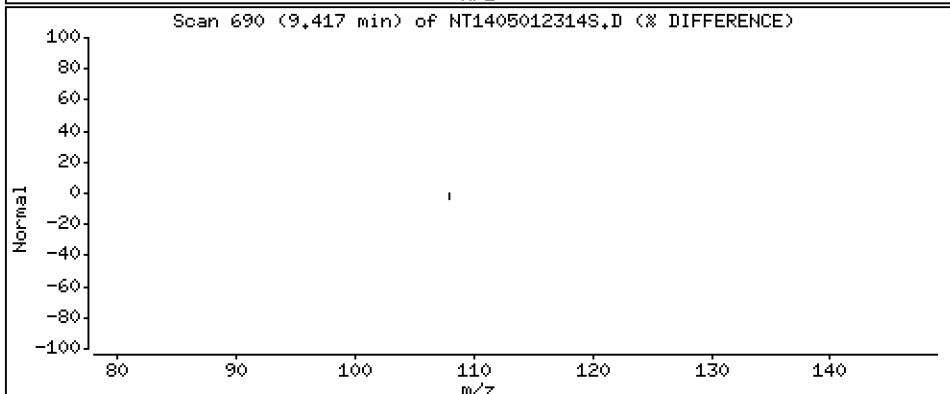
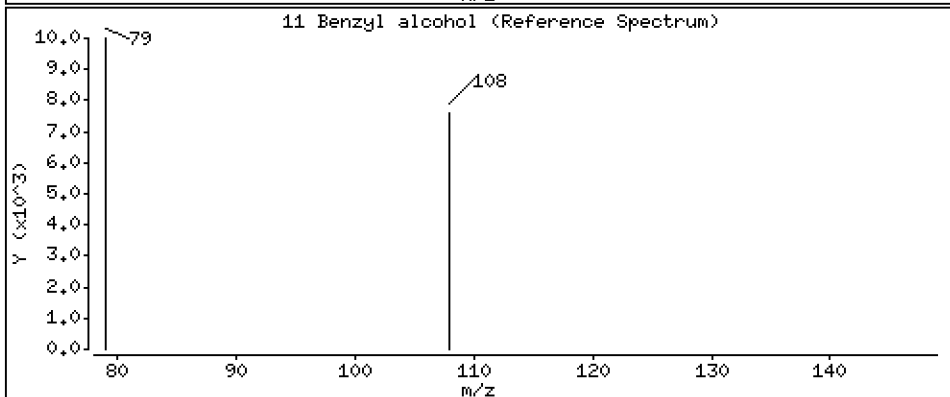
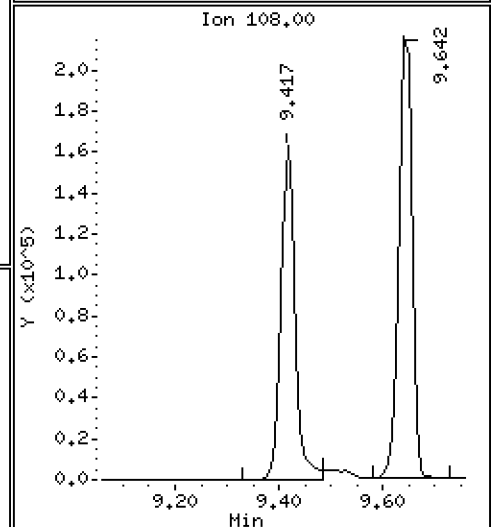
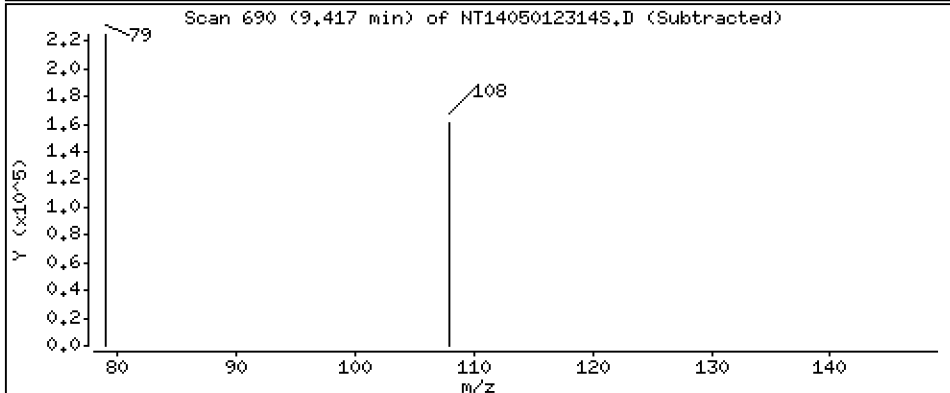
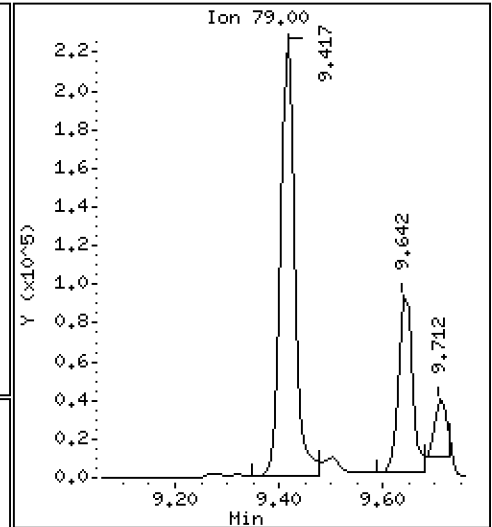
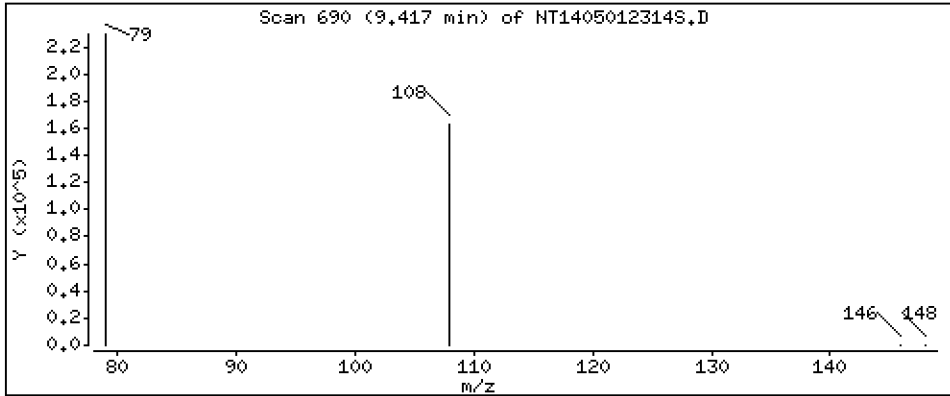
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

11 Benzyl alcohol

Concentration: 3,894 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

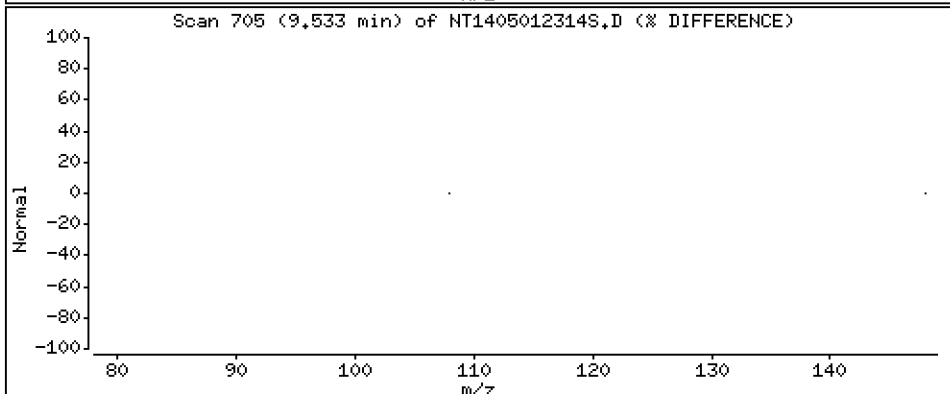
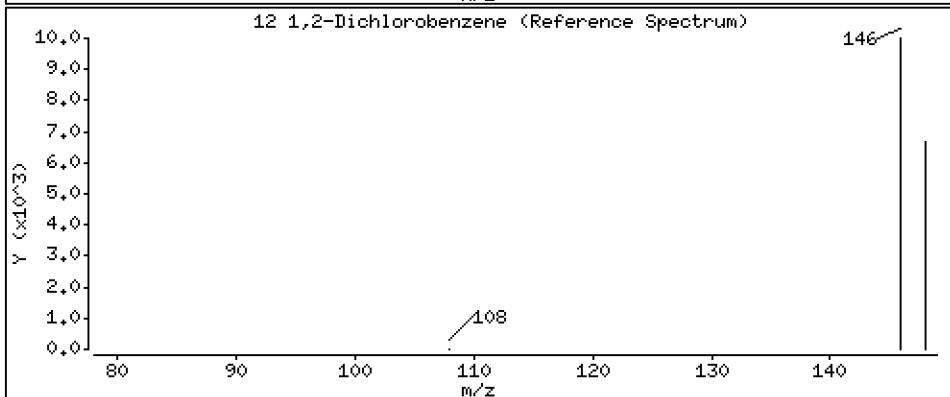
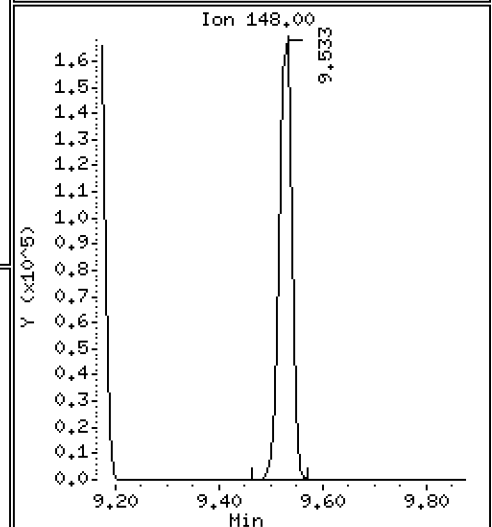
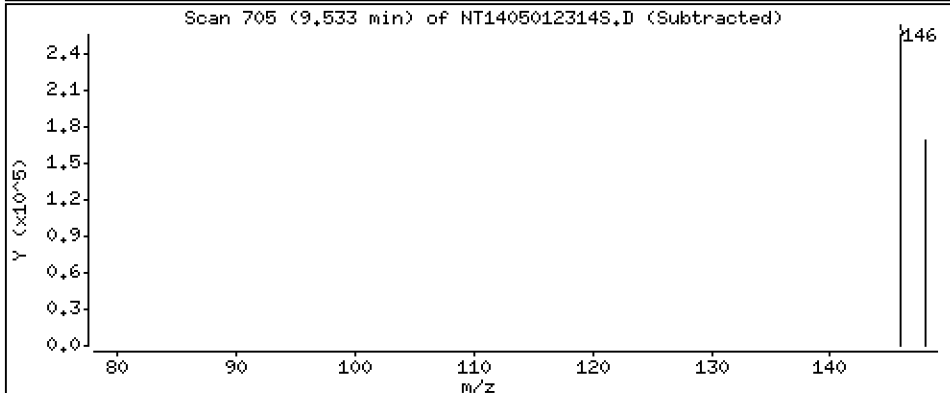
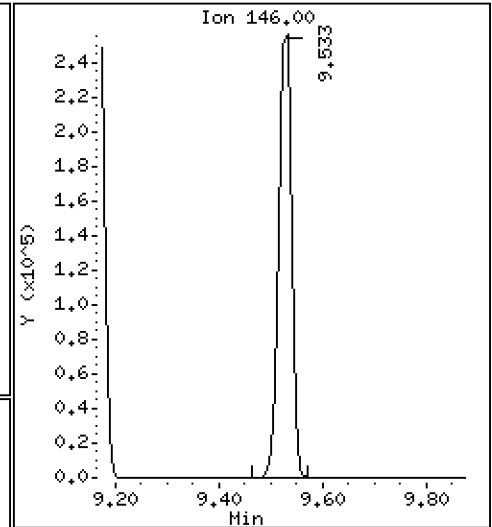
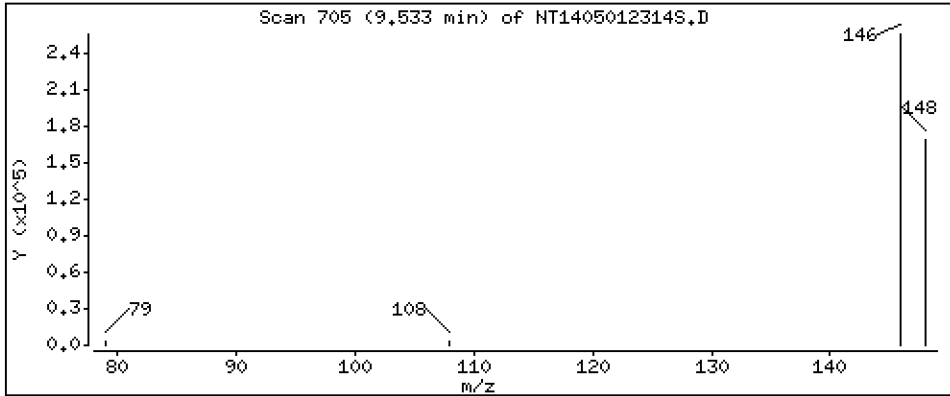
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 3,415 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

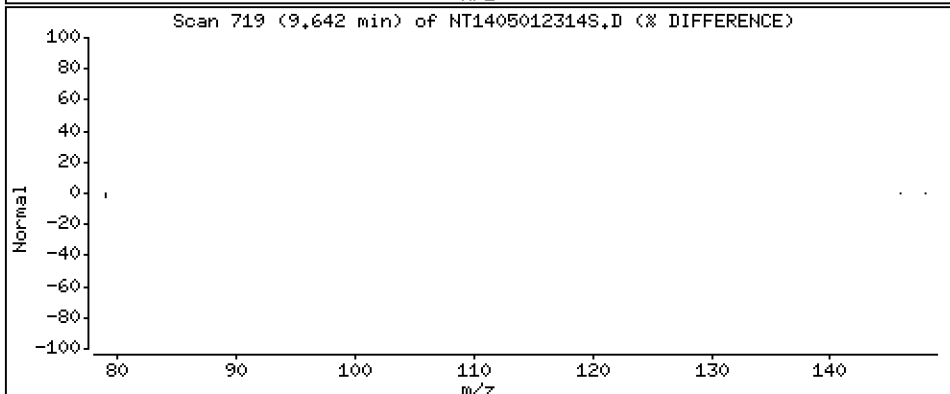
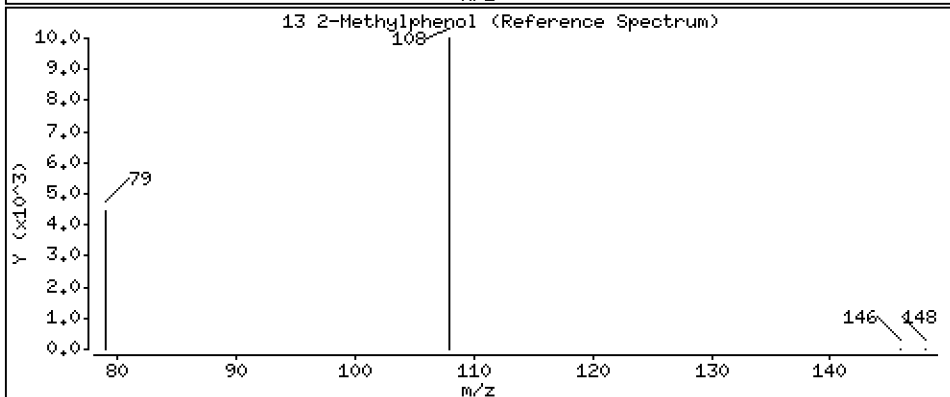
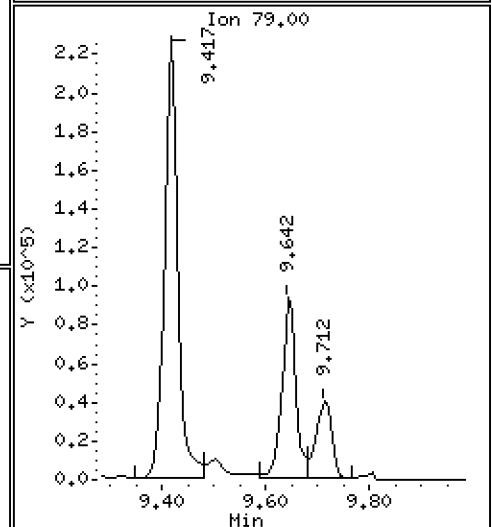
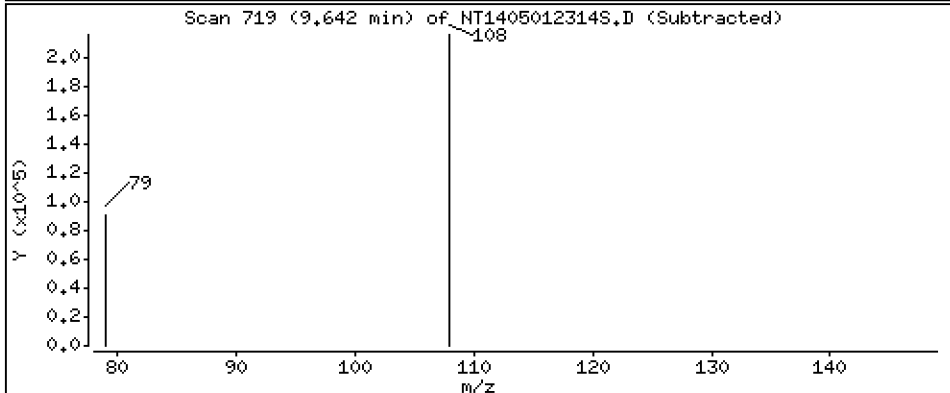
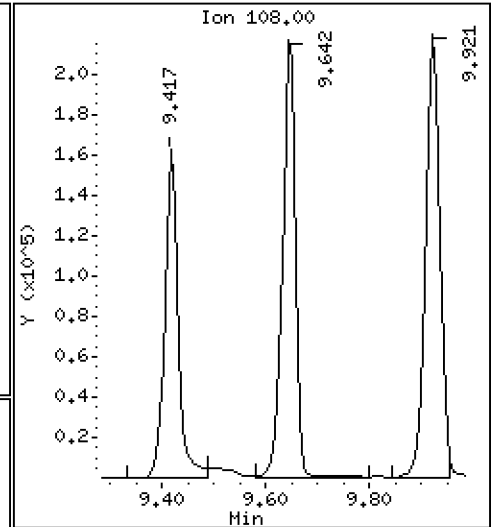
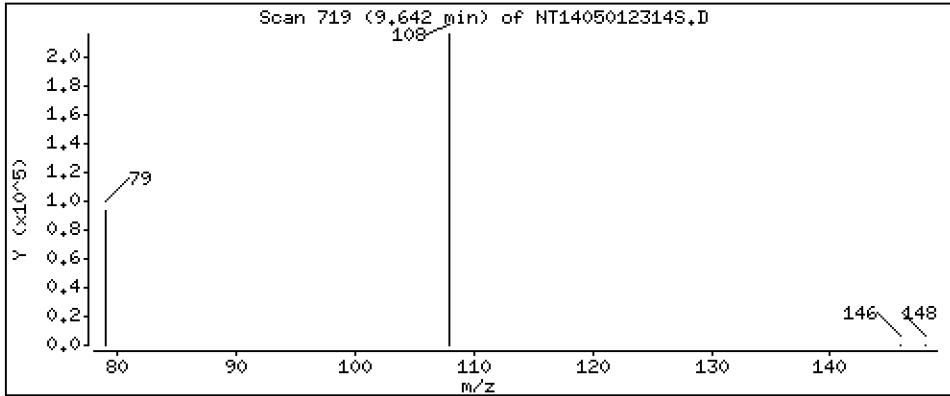
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 3.459 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

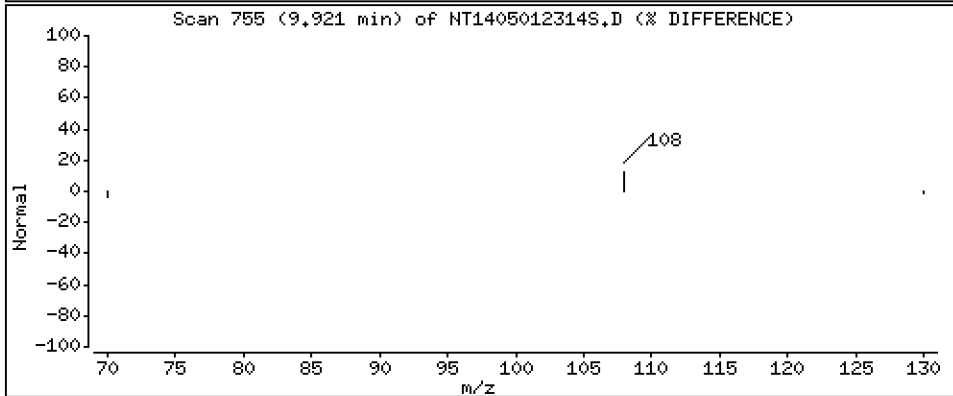
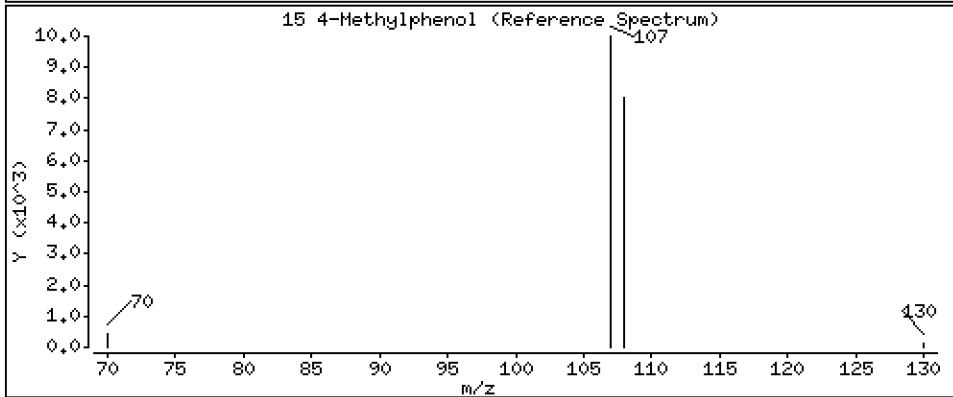
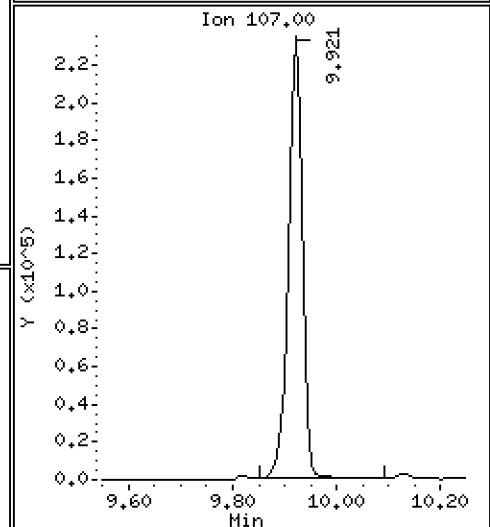
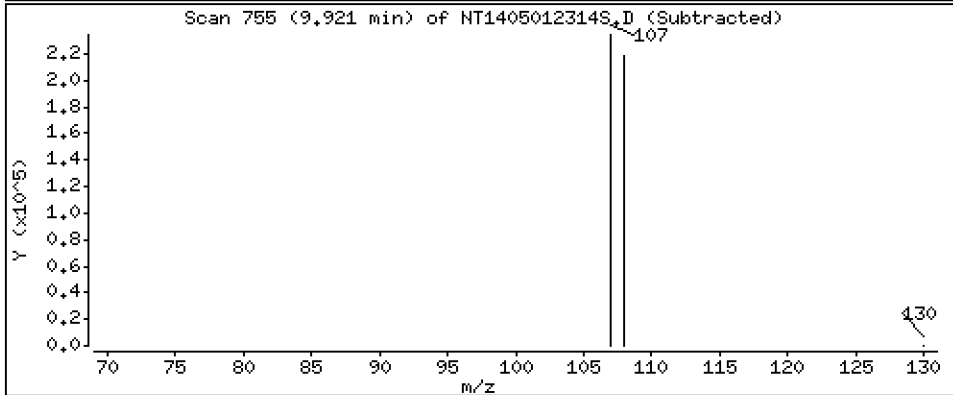
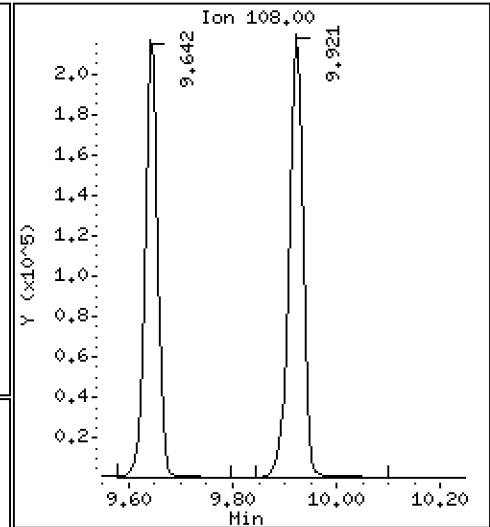
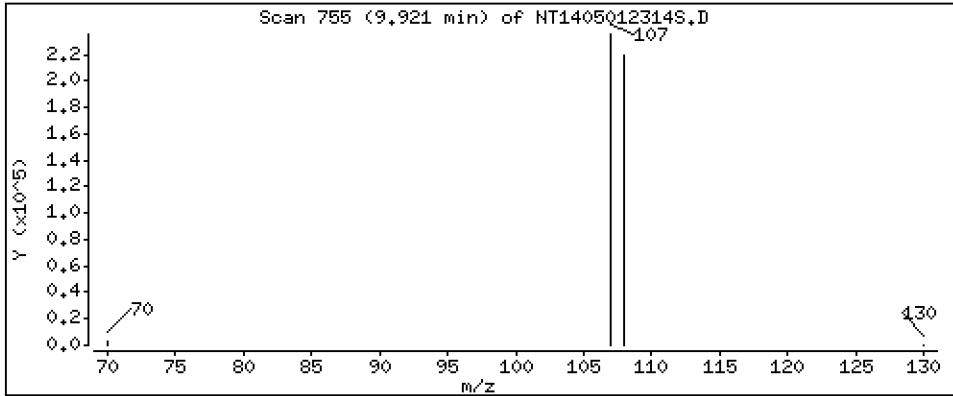
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 3.885 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

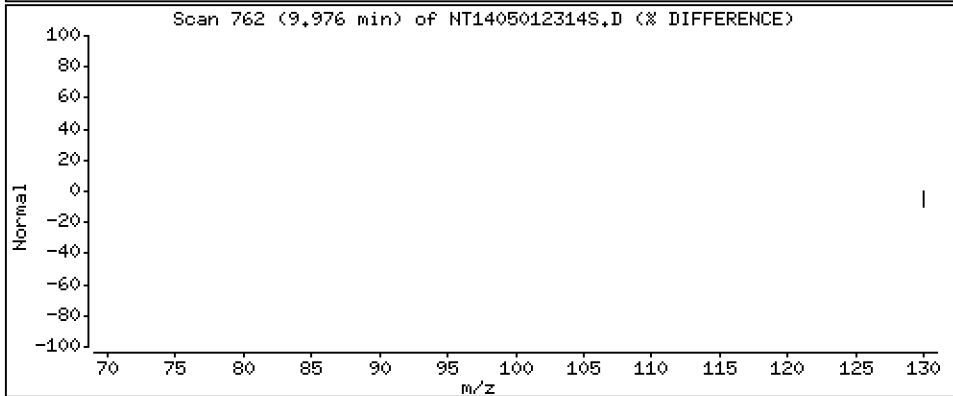
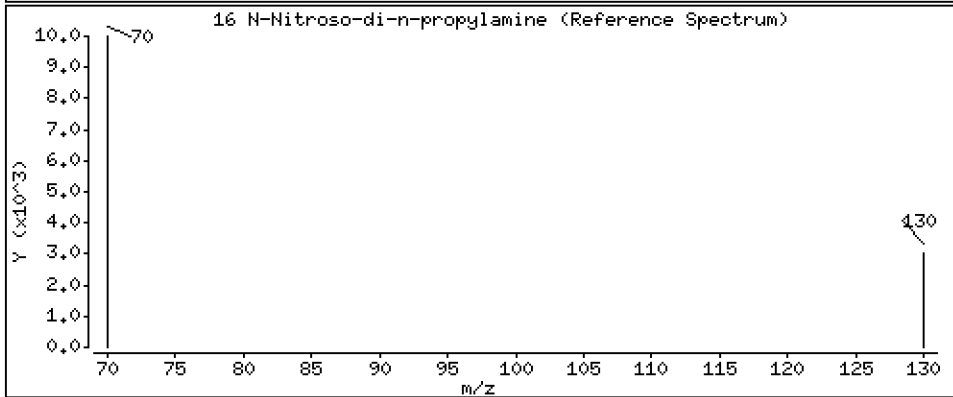
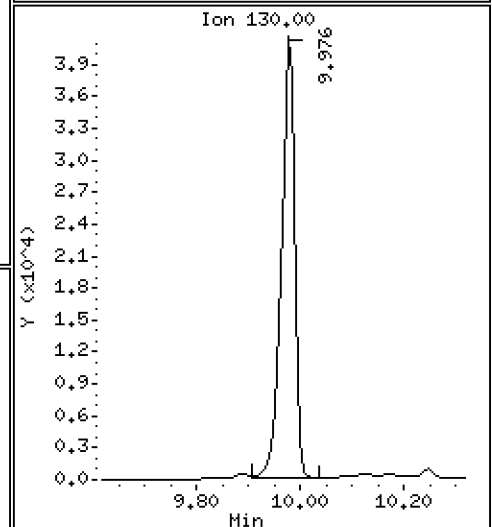
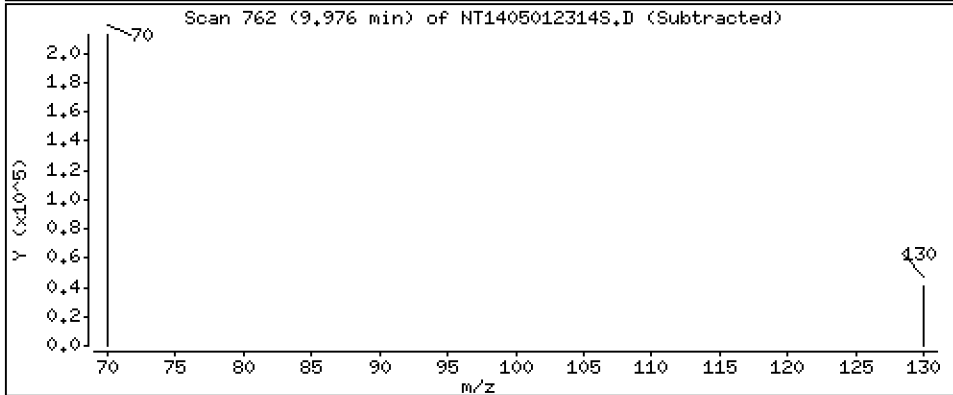
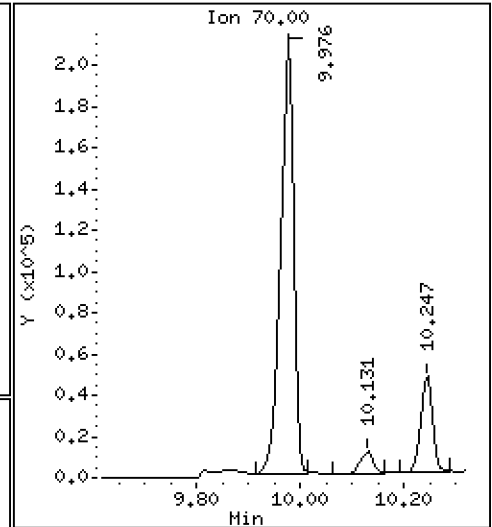
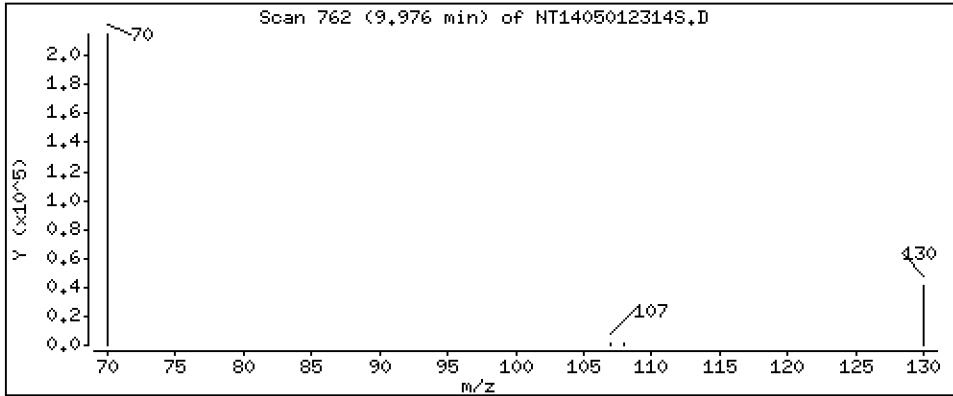
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 3,569 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

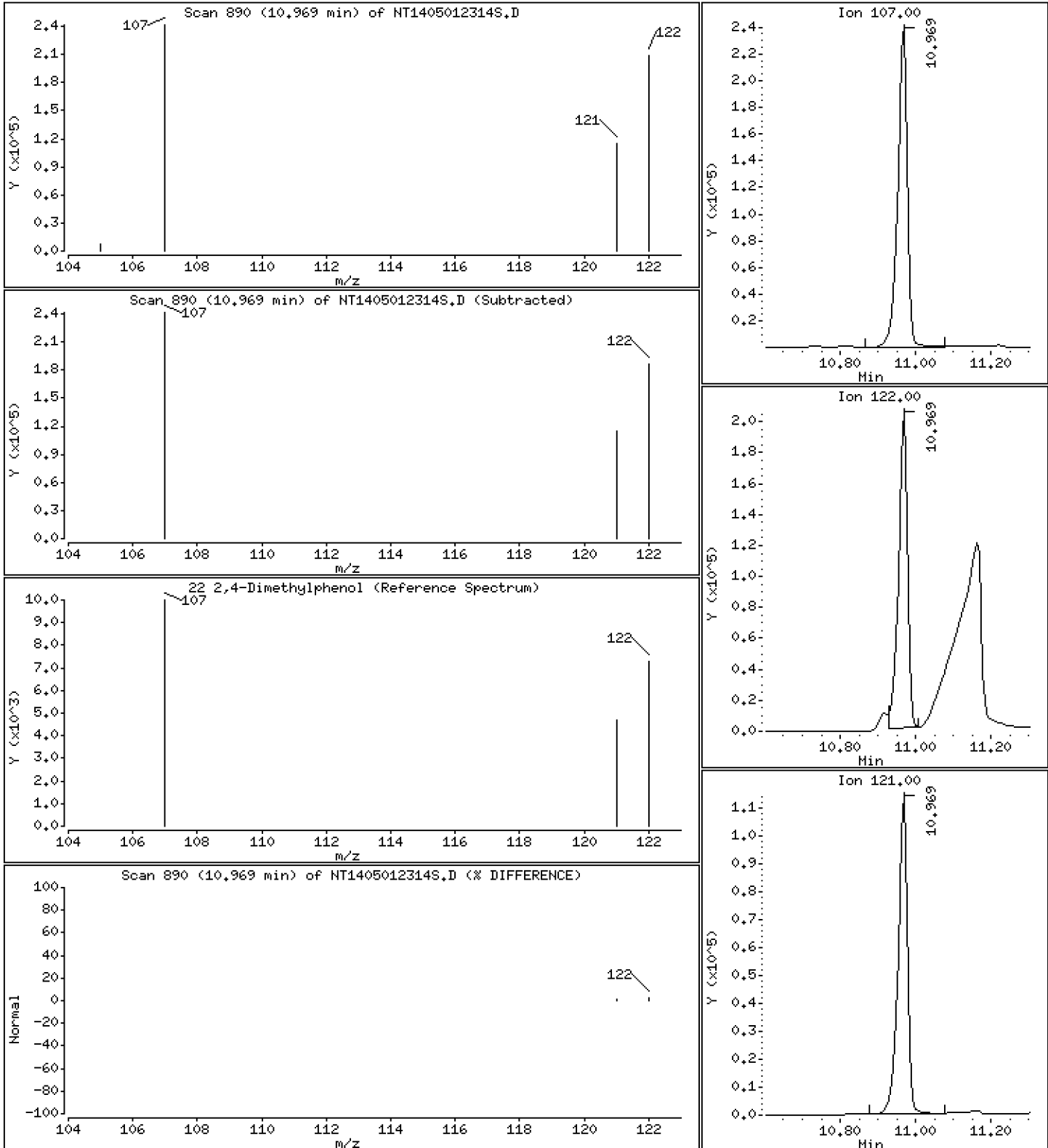
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 3.695 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

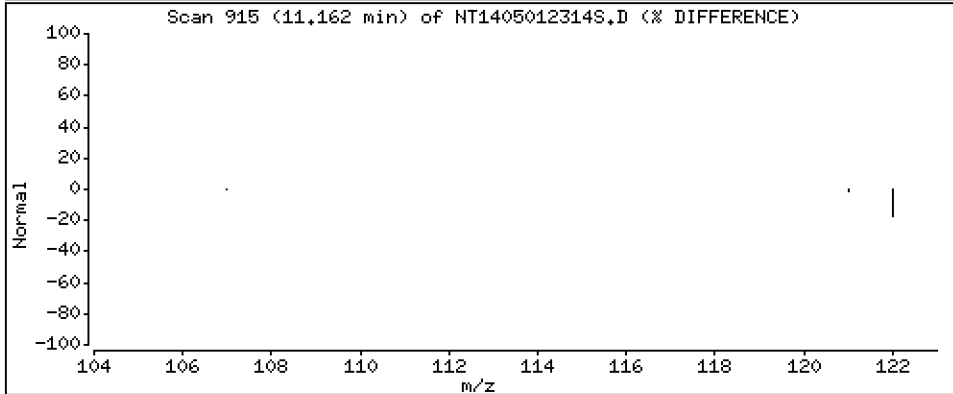
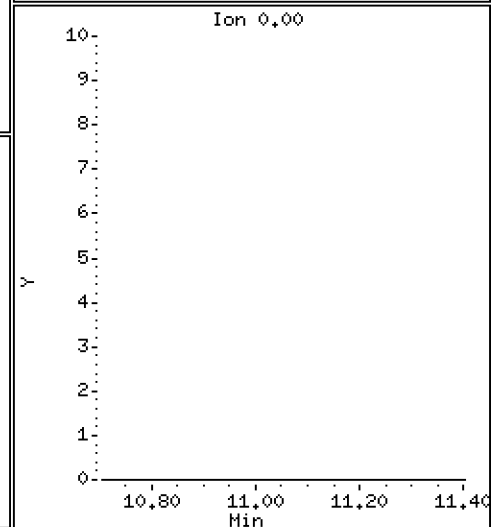
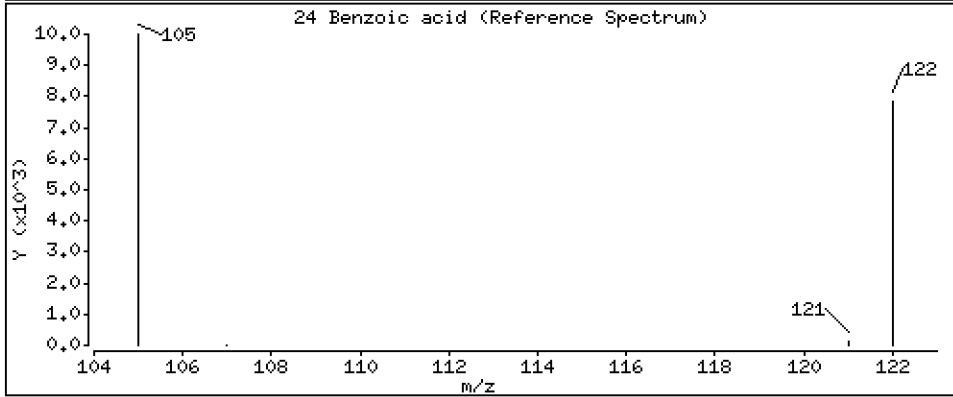
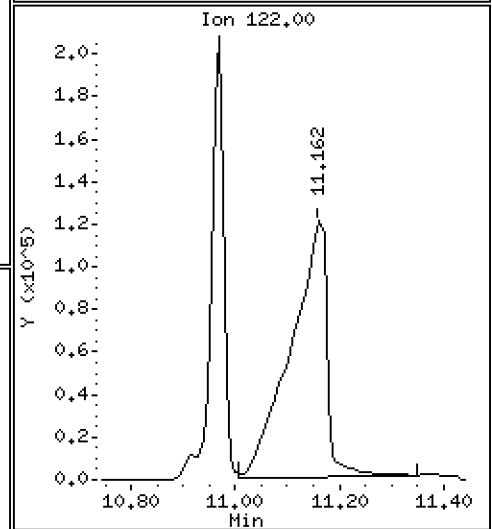
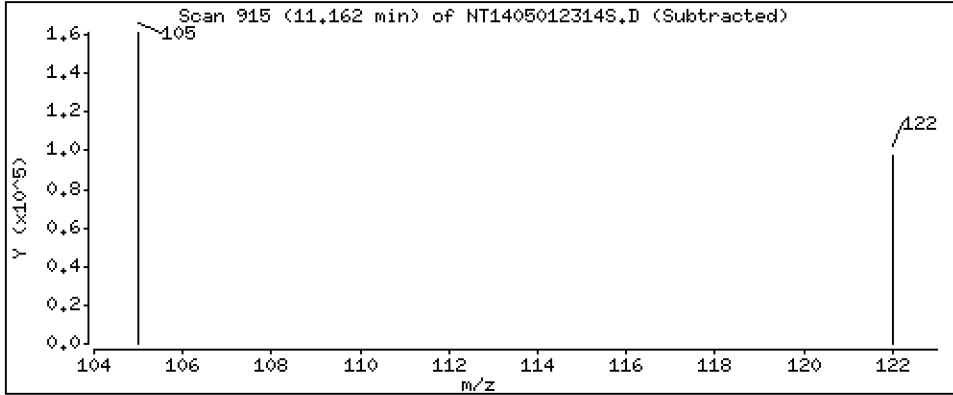
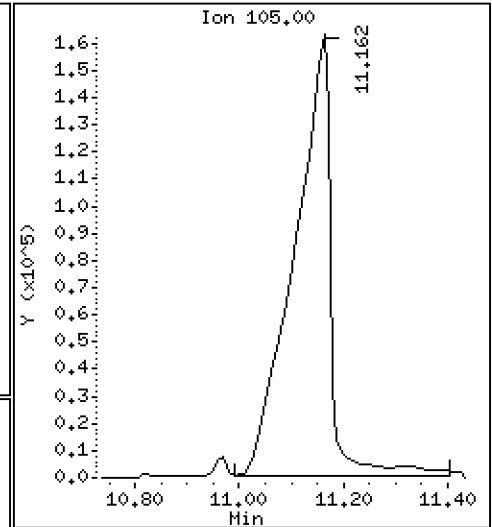
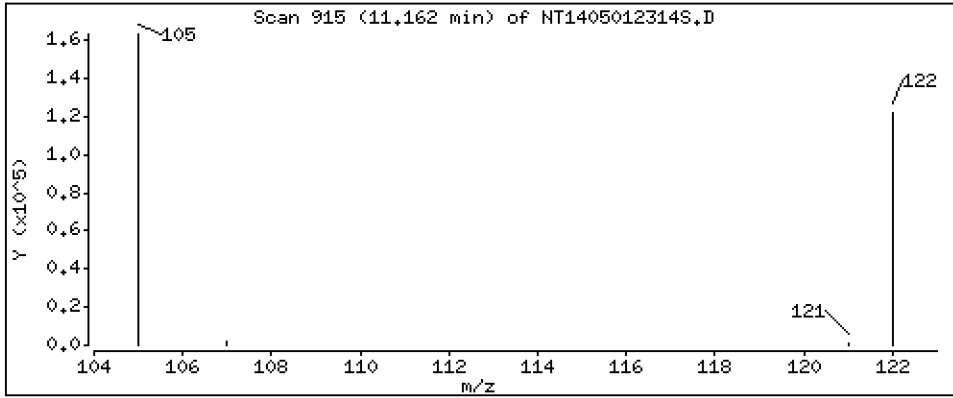
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 9,509 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

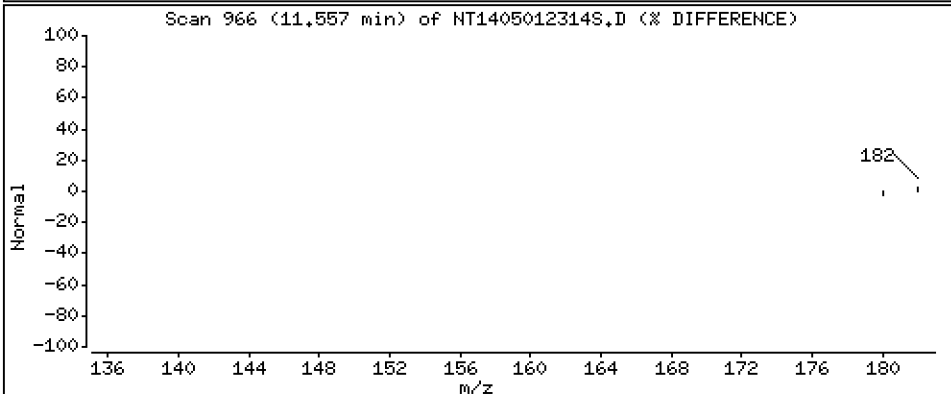
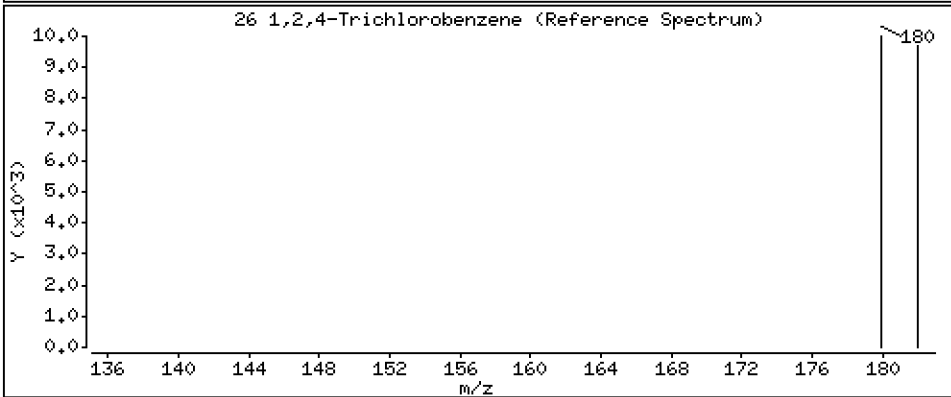
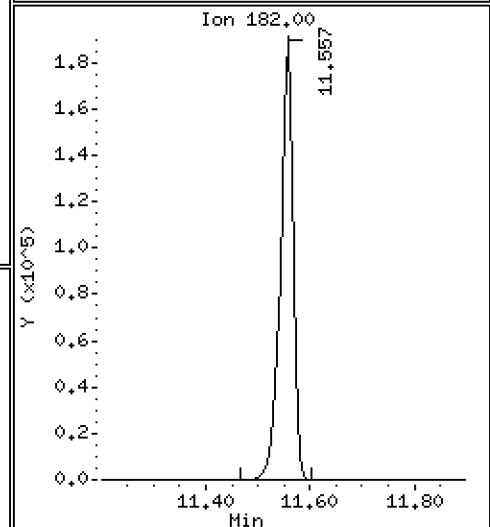
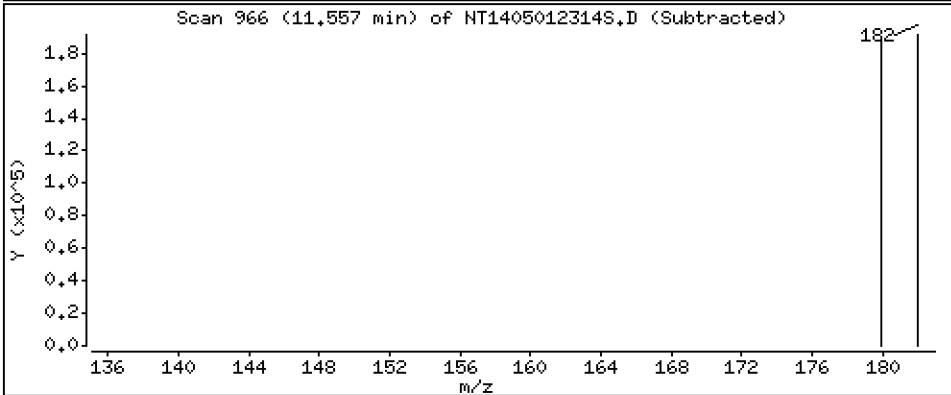
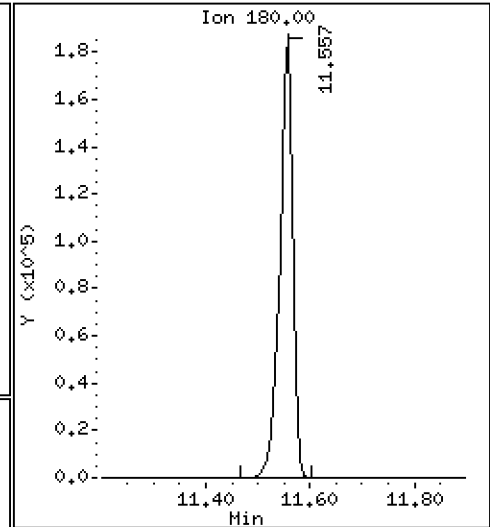
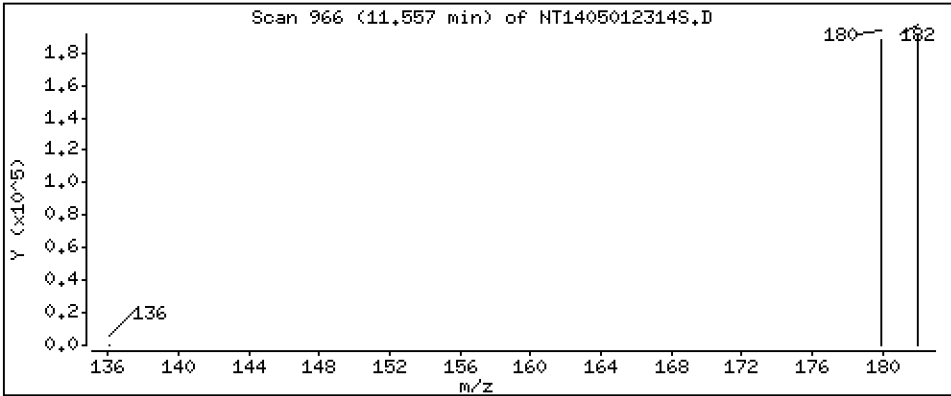
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 3,675 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

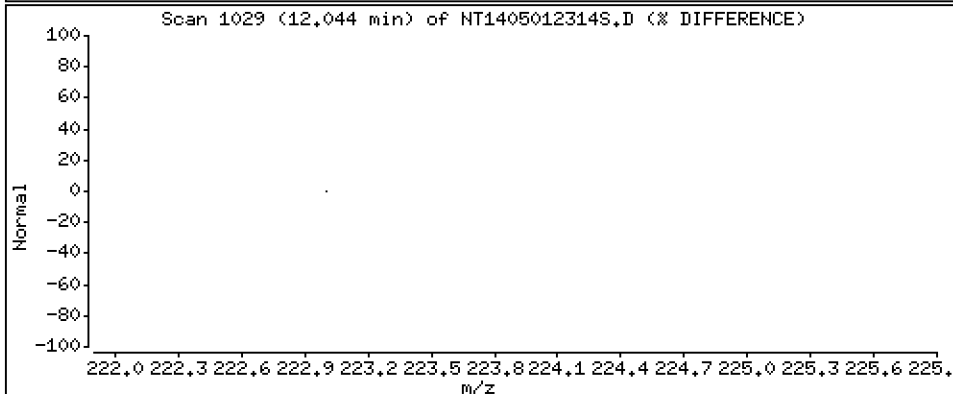
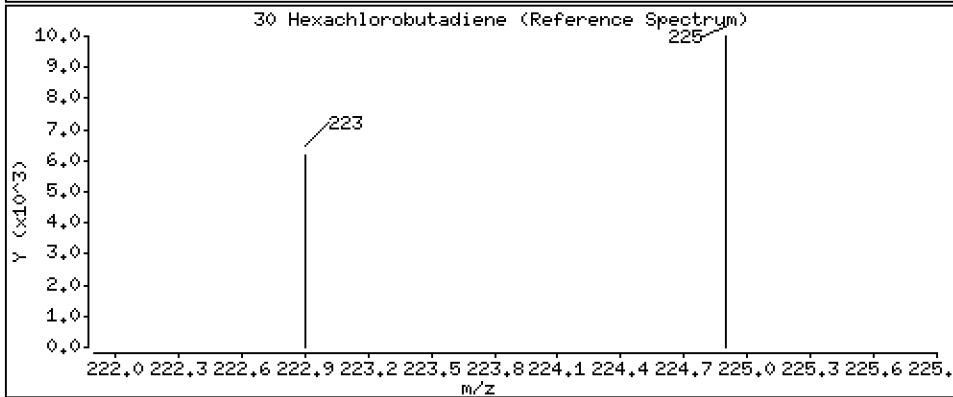
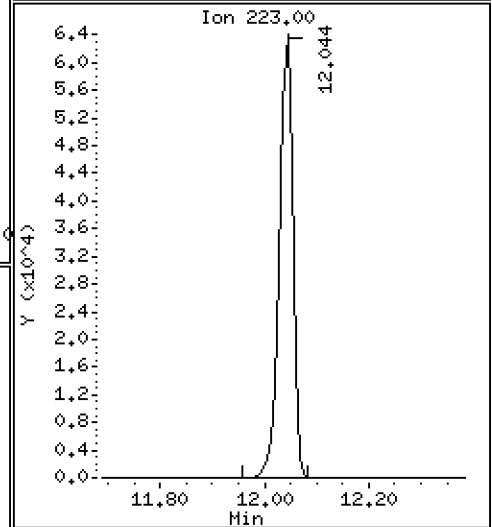
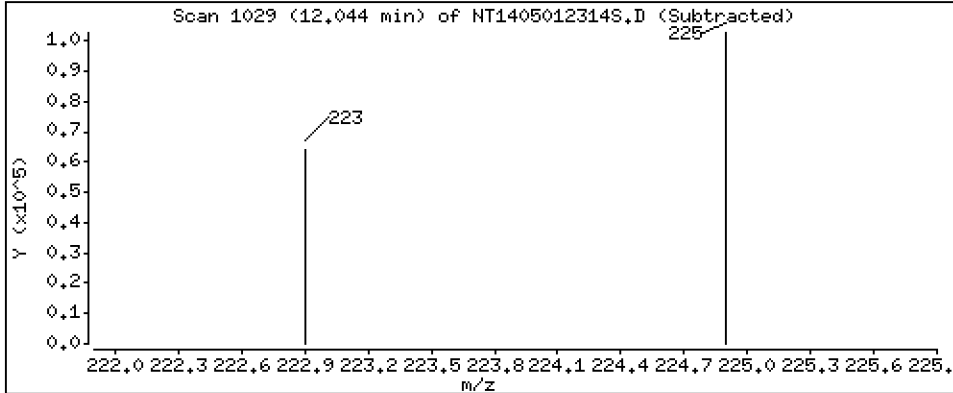
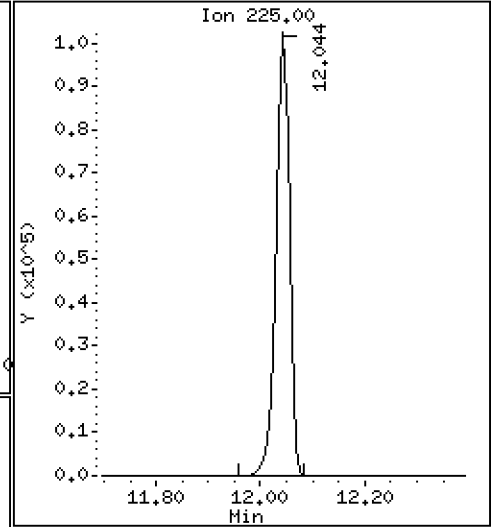
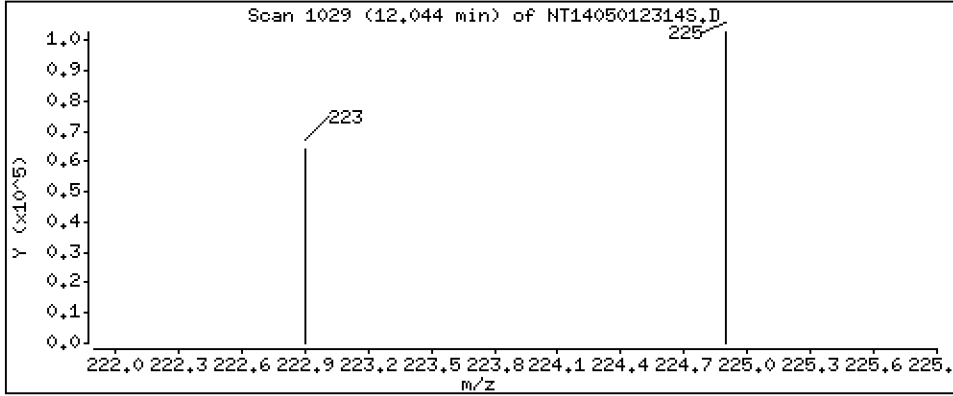
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 3,601 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

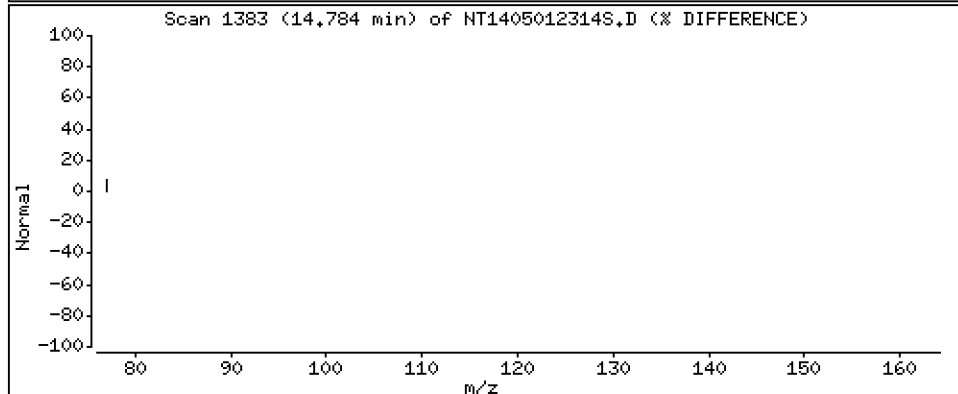
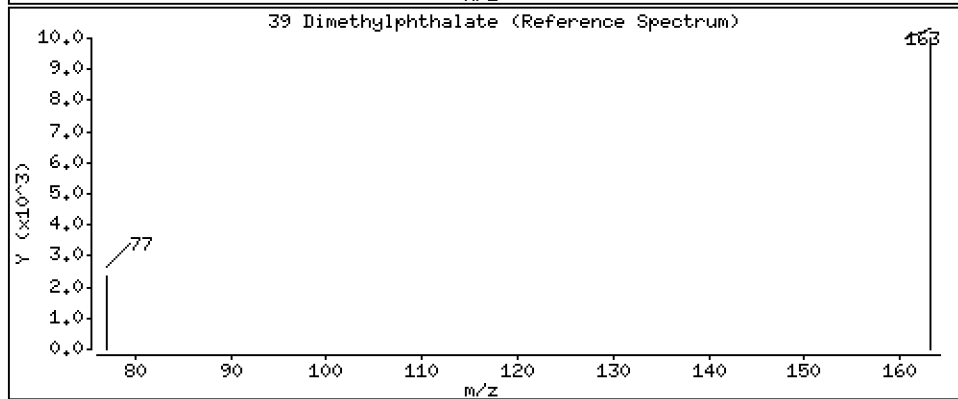
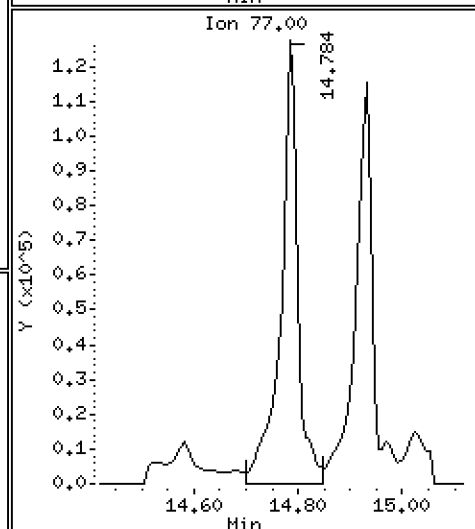
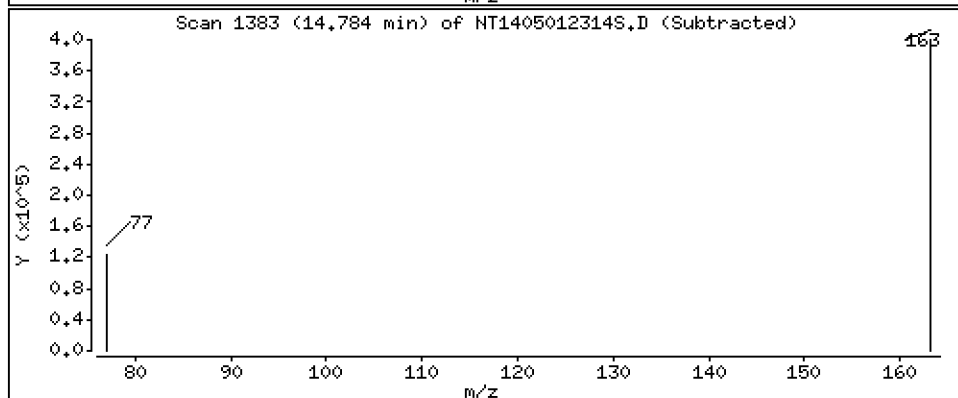
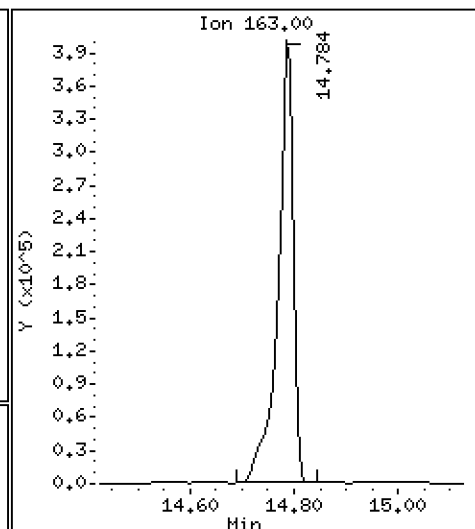
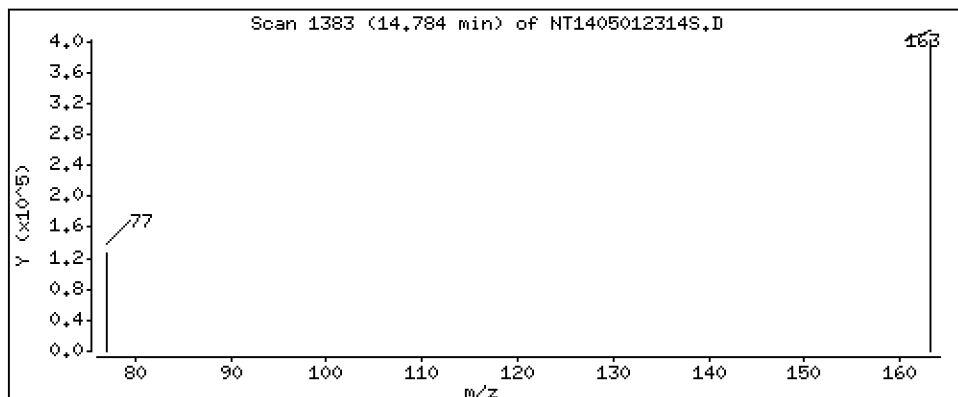
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 3,968 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

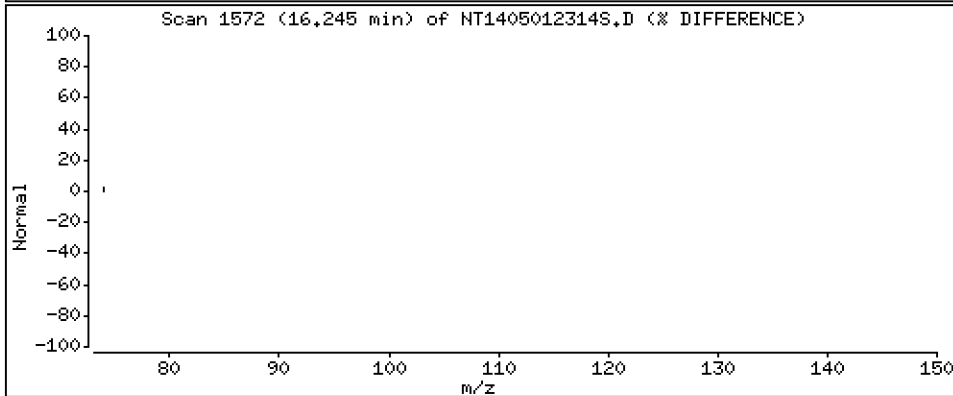
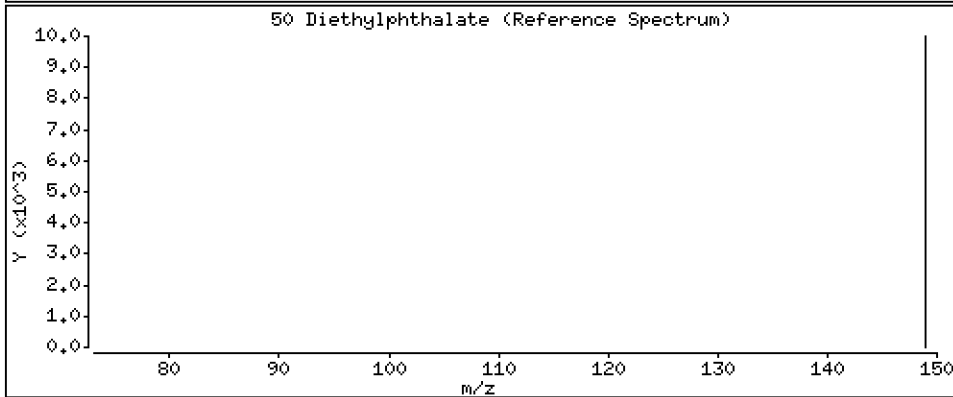
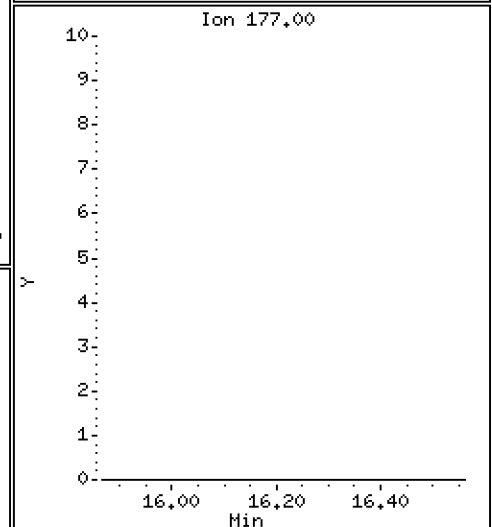
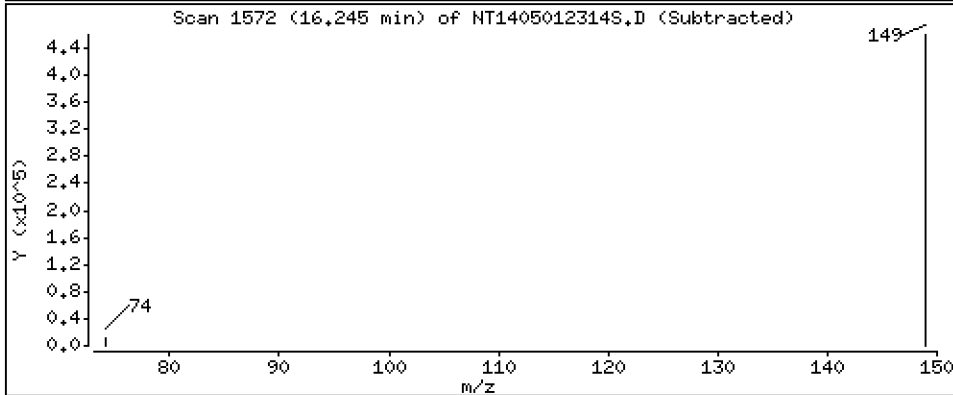
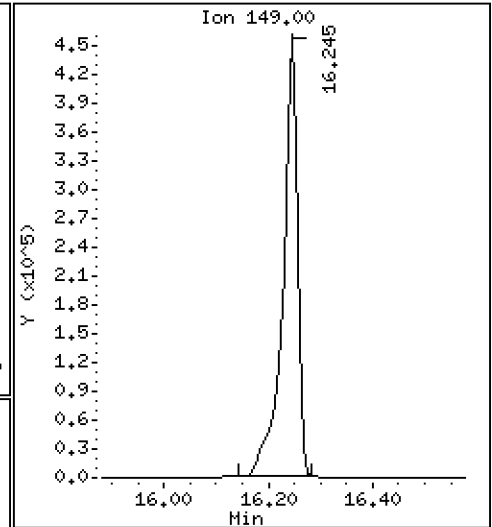
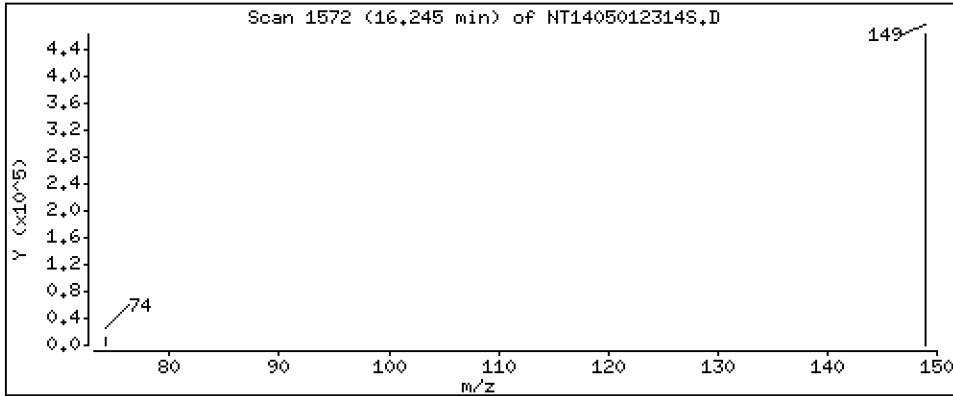
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,295 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

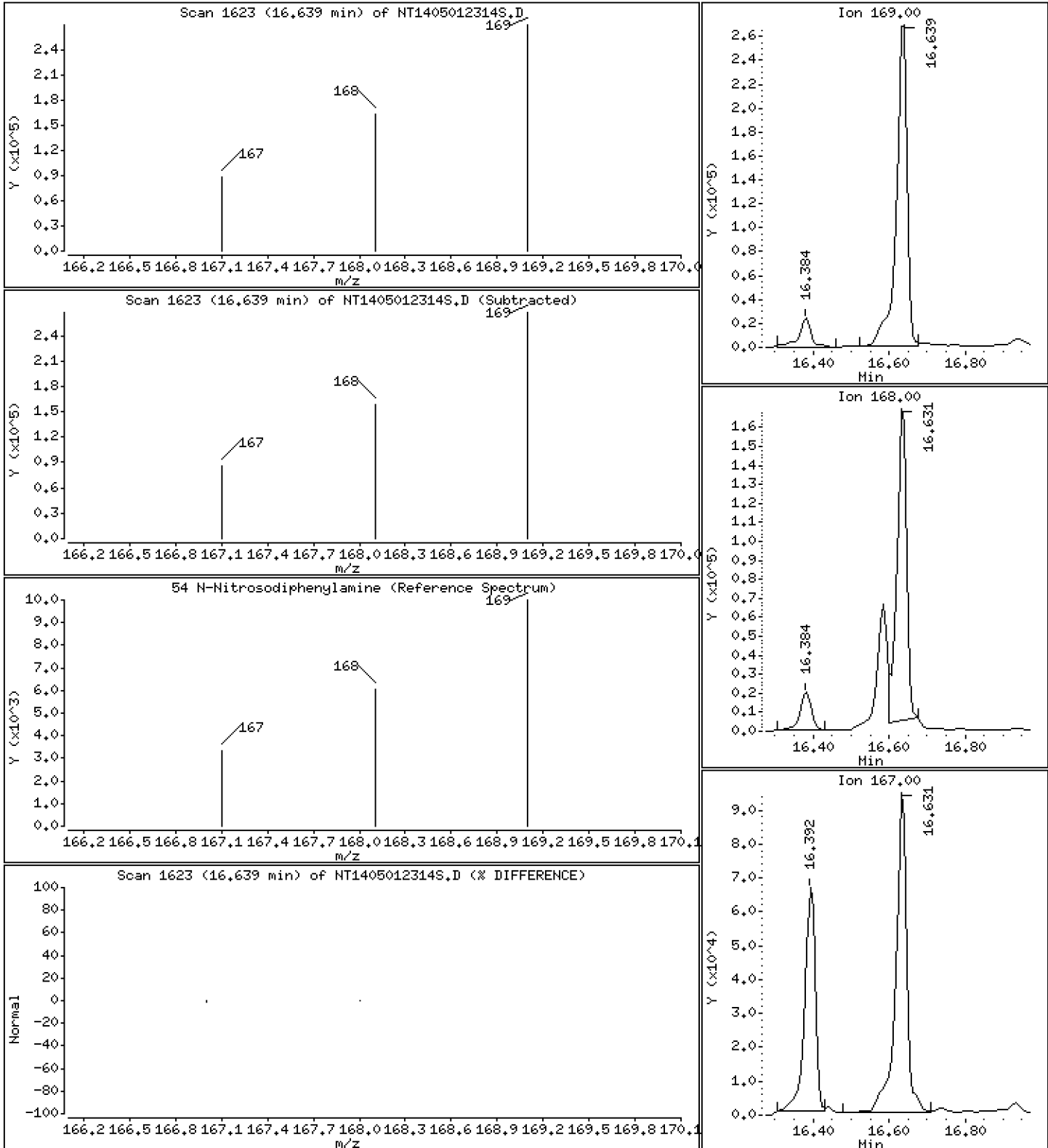
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

54 N-Nitrosodiphenylamine

Concentration: 3.791 ug/mL





Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

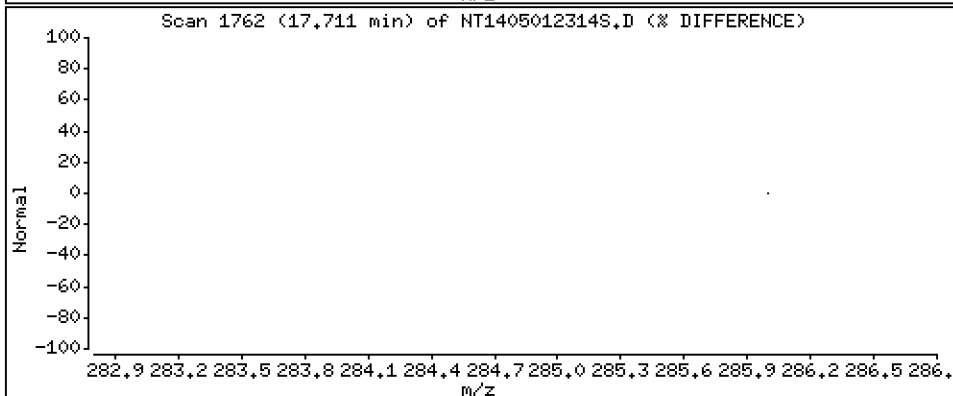
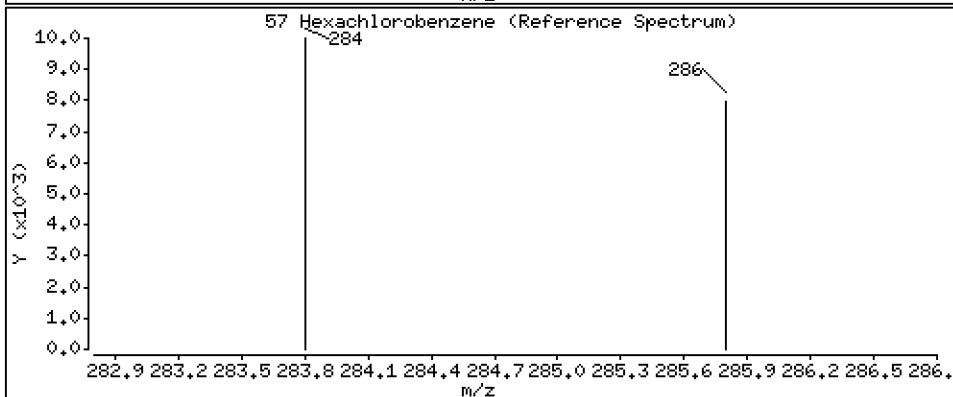
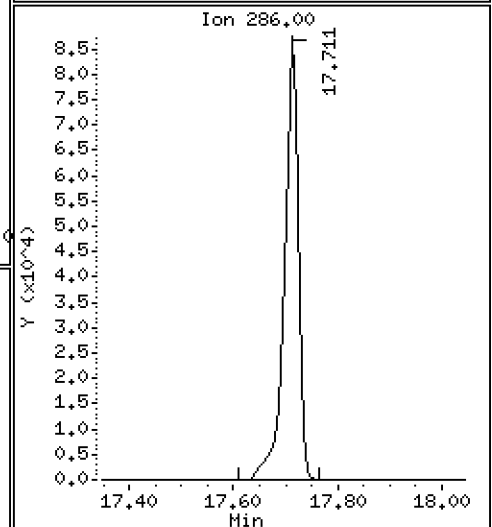
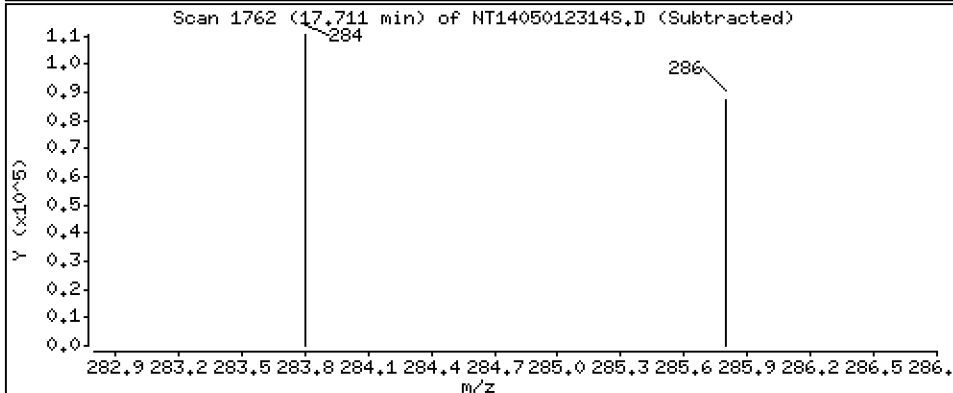
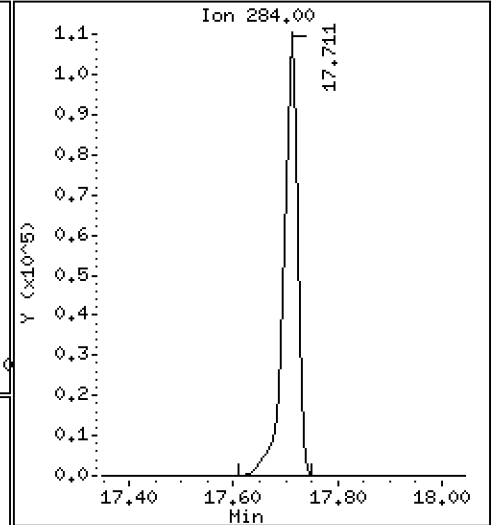
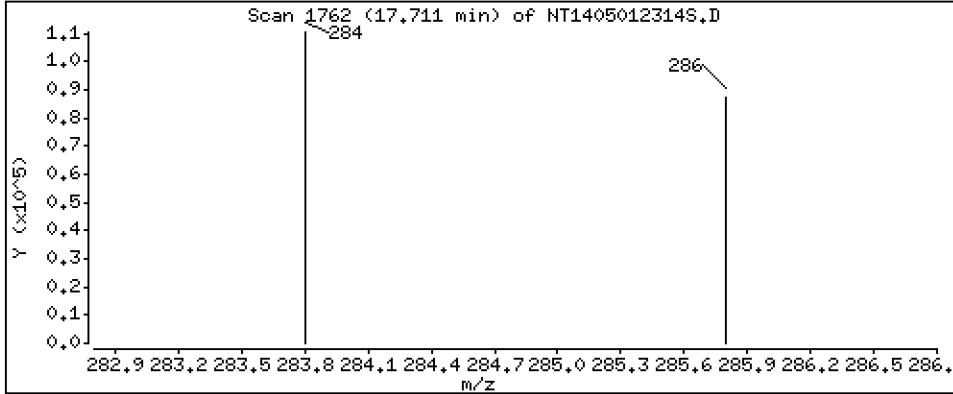
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 3,733 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

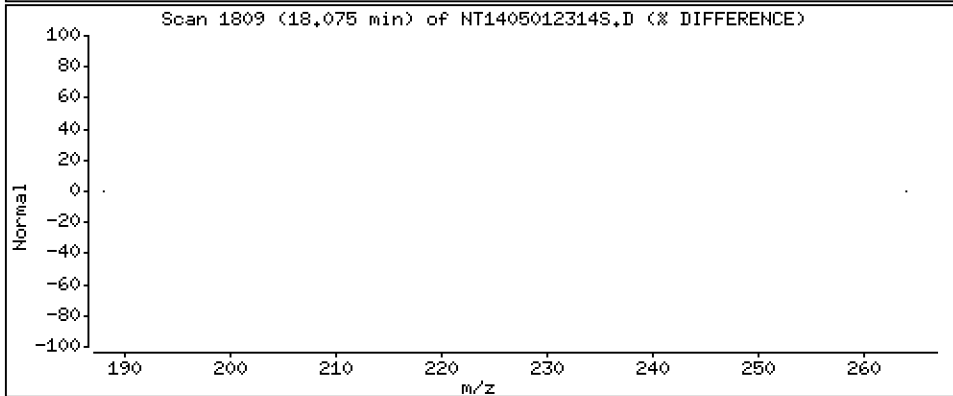
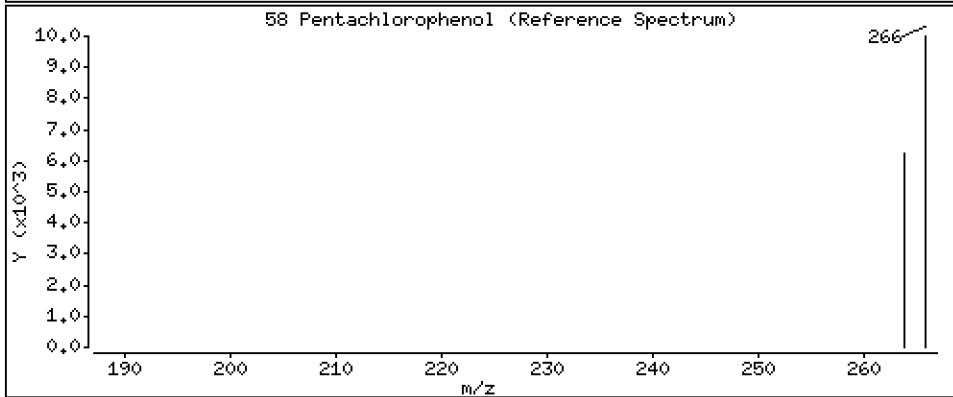
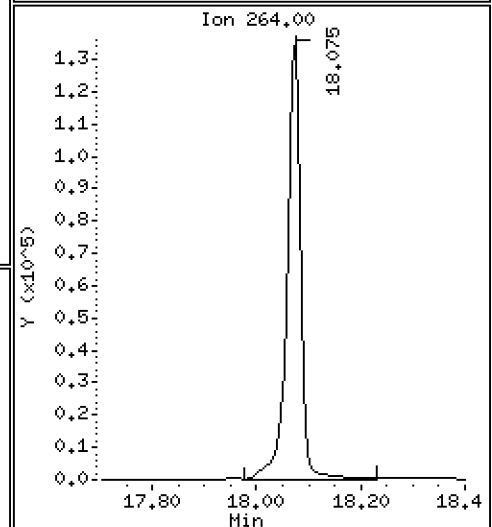
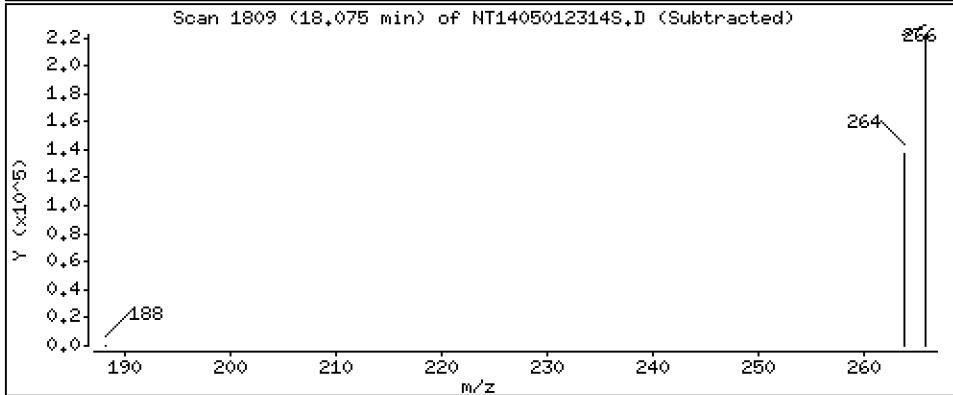
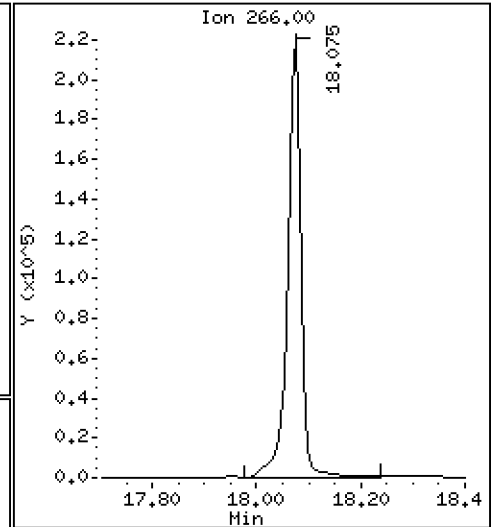
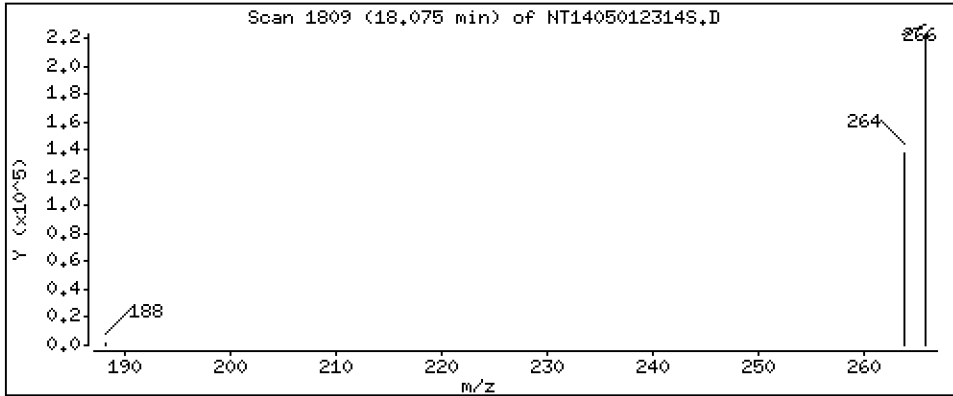
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 11,39 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

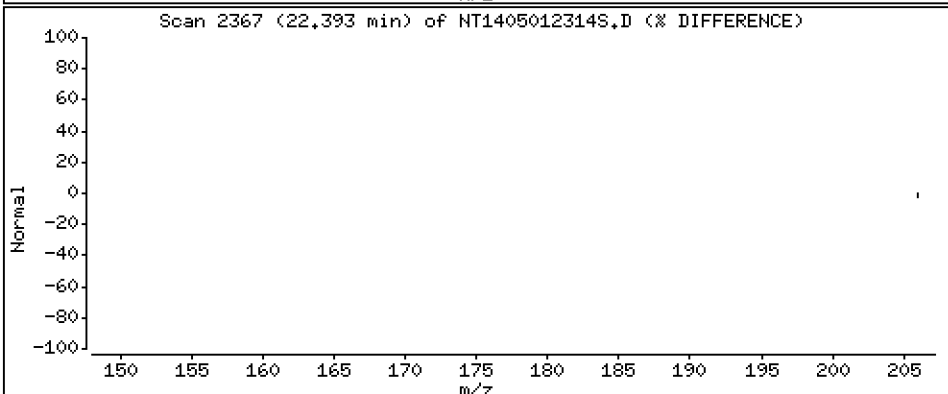
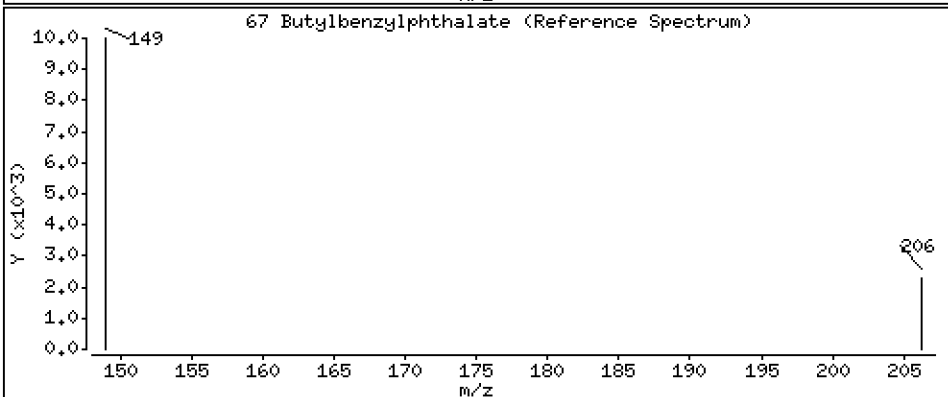
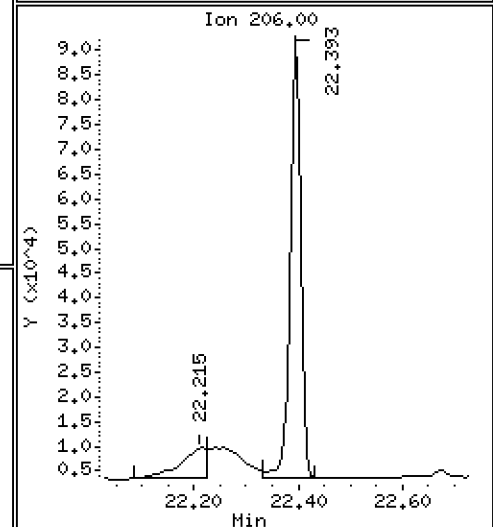
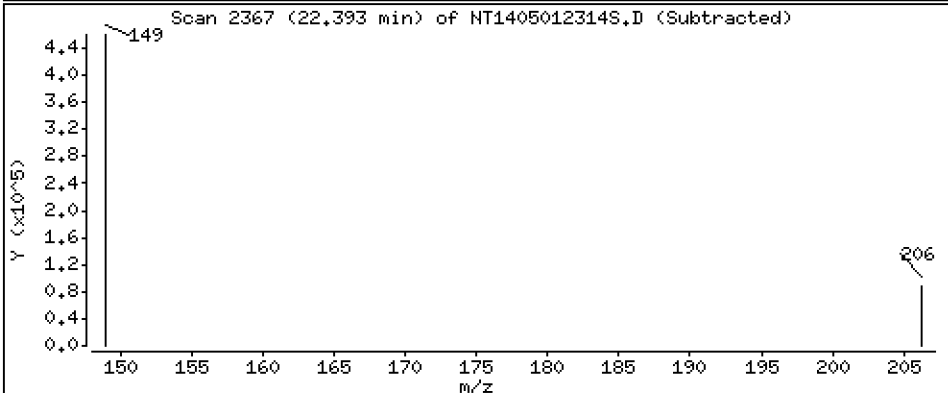
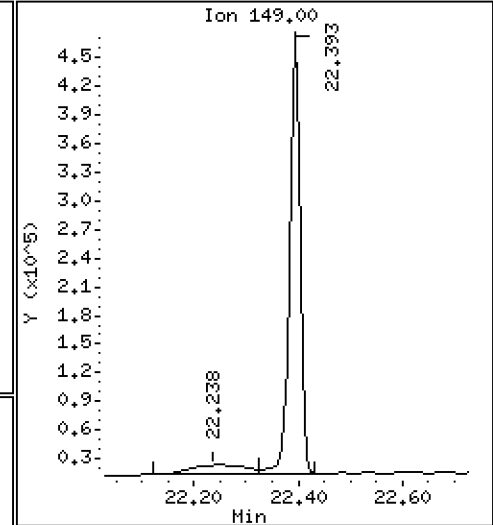
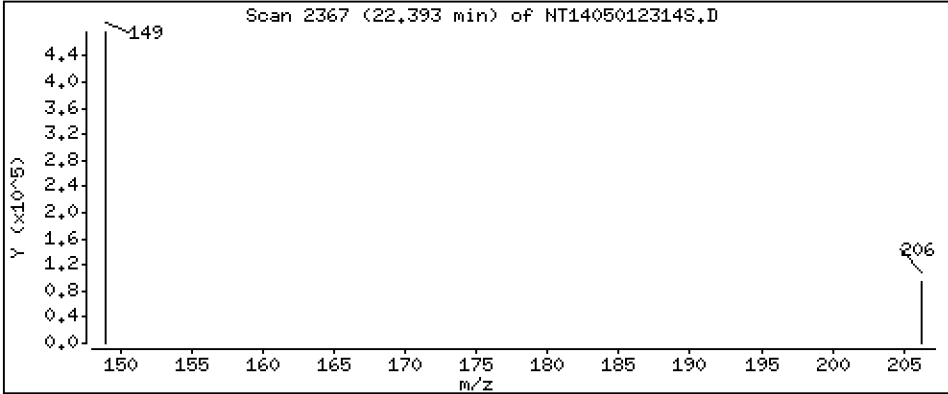
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 3,978 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

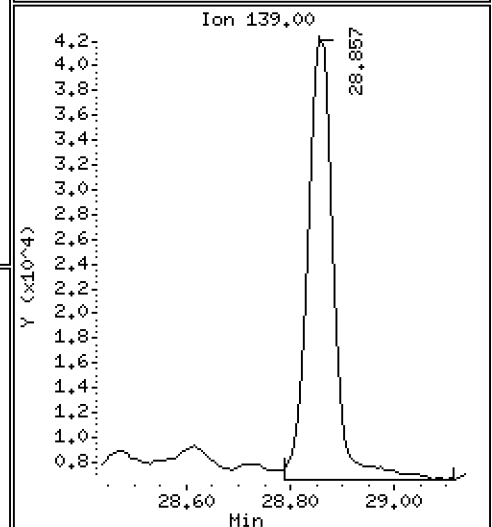
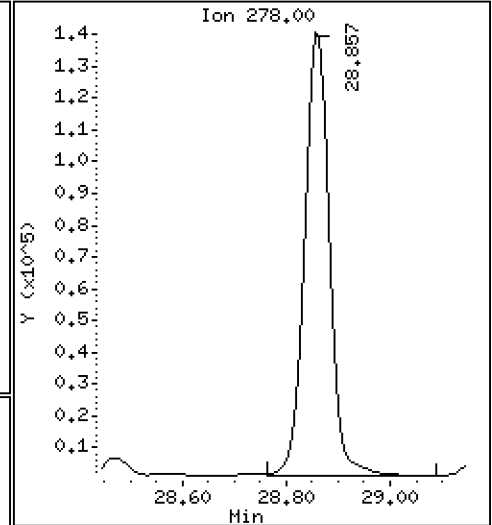
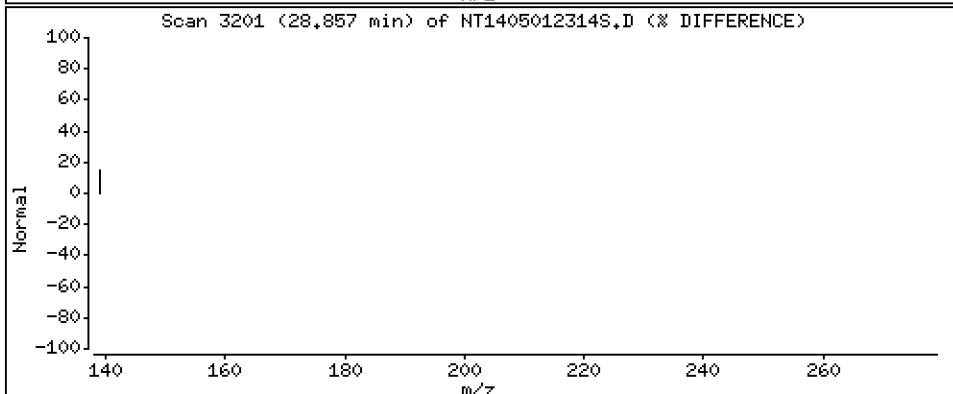
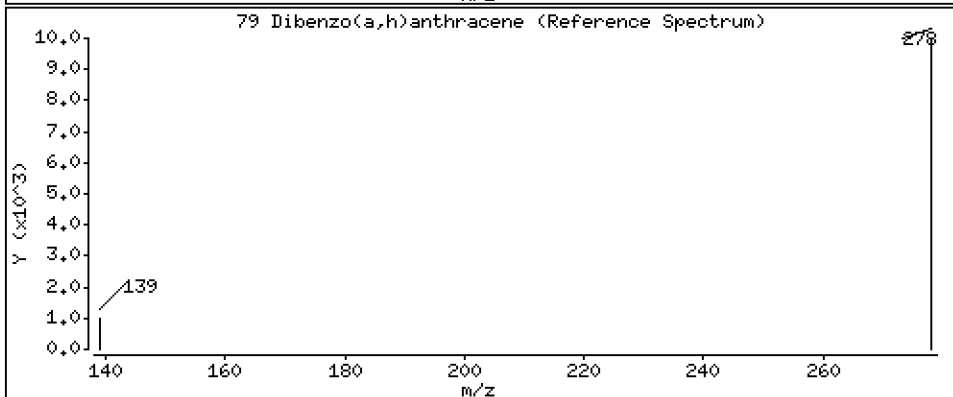
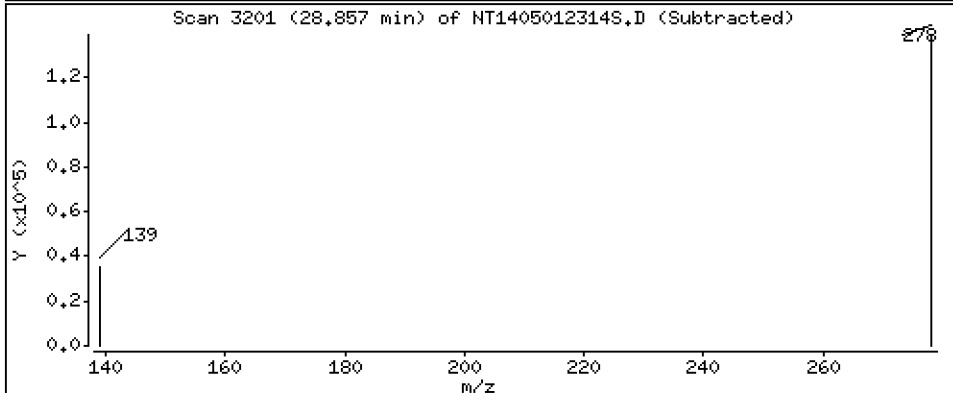
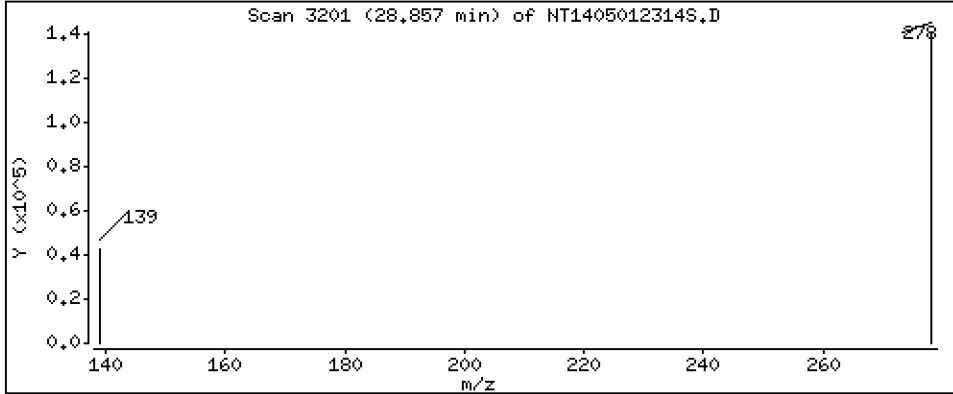
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 2,243 ug/mL



Date : 01-MAY-2023 22:31

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MS2

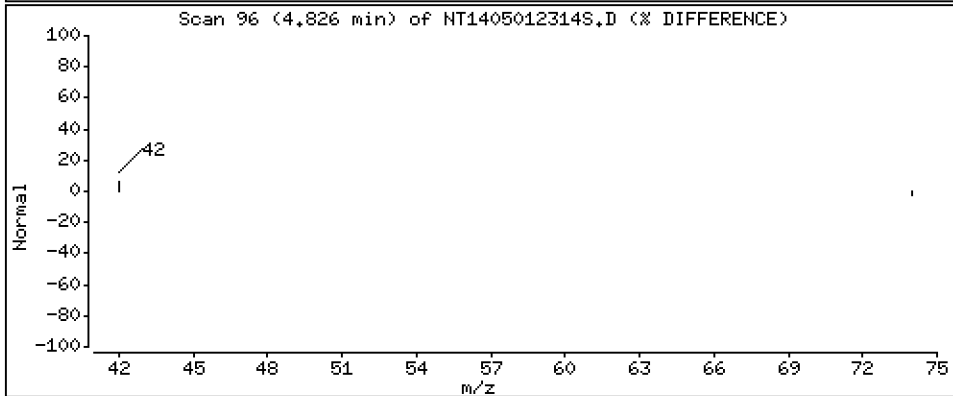
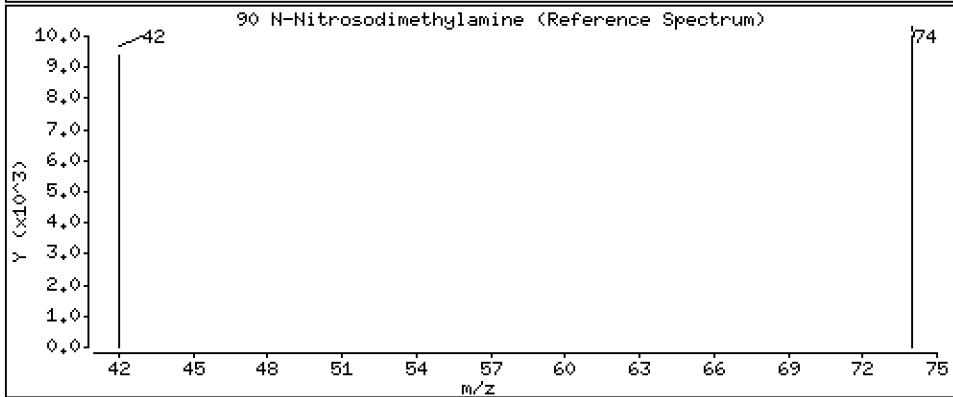
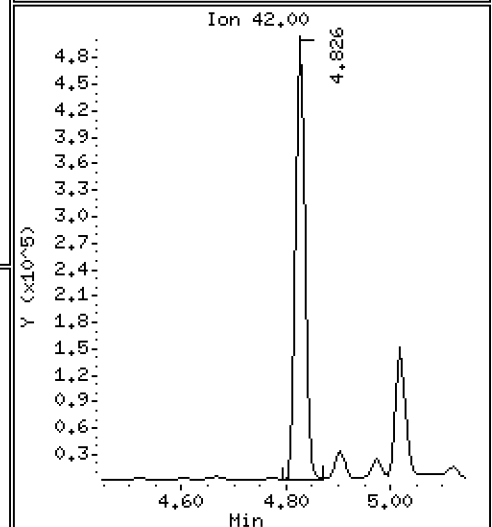
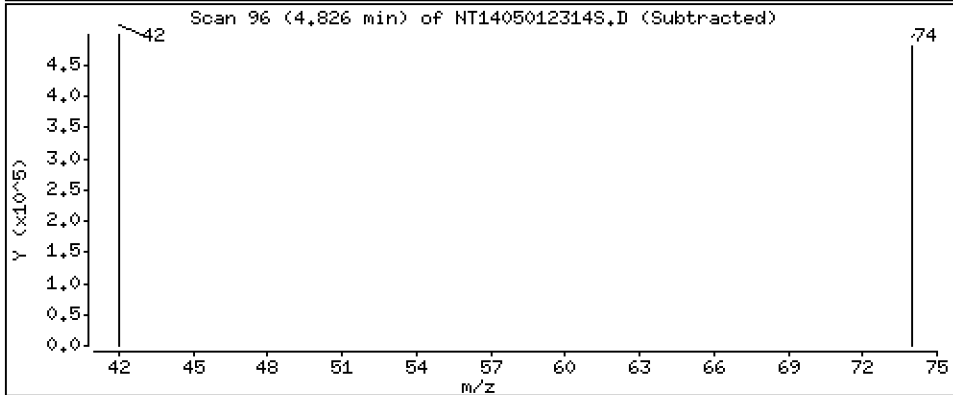
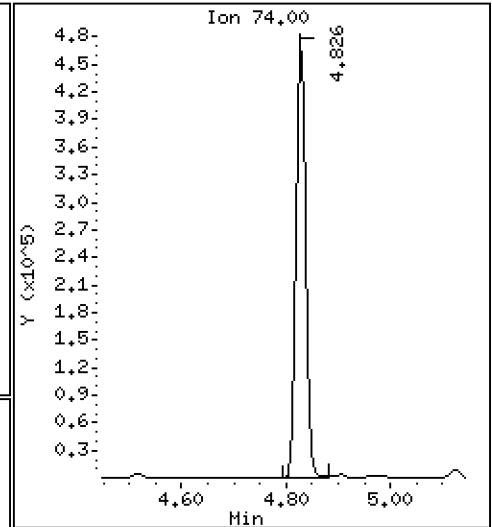
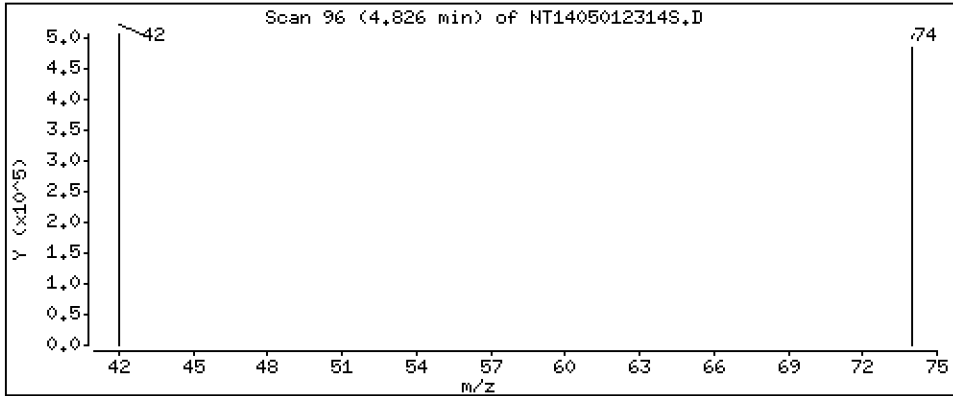
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 7,412 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012314S.D  
 Lab Smp Id: BLD0297-MS2  
 Inj Date : 01-MAY-2023 22:31 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-MS2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 14  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.926	6.903	(0.757)	616962	5.78720	5.787 (R)
3 Phenol	94		8.526	8.510	(0.932)	587091	3.43503	3.435
7 1,3-Dichlorobenzene	146		9.075	9.067	(0.992)	428987	3.30927	3.309
* 8 1,4-Dichlorobenzene-d4	152		9.144	9.137	(1.000)	305886	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	417674	3.40539	3.405
11 Benzyl alcohol	79		9.416	9.408	(1.030)	410304	3.89394	3.894
12 1,2-Dichlorobenzene	146		9.533	9.525	(1.042)	417894	3.41512	3.415
13 2-Methylphenol	108		9.641	9.634	(1.054)	368673	3.45943	3.459
15 4-Methylphenol	108		9.921	9.898	(1.085)	427314	3.88478	3.885
16 N-Nitroso-di-n-propylamine	70		9.975	9.967	(1.091)	359974	3.56887	3.569
22 2,4-Dimethylphenol	107		10.968	10.953	(0.942)	421831	3.69475	3.695
24 Benzoic acid	105		11.162	11.085	(0.959)	781848	9.50890	9.509
26 1,2,4-Trichlorobenzene	180		11.557	11.549	(0.993)	322099	3.67488	3.675
* 27 Naphthalene-d8	136		11.642	11.634	(1.000)	1193774	4.00000	
30 Hexachlorobutadiene	225		12.044	12.044	(1.035)	174688	3.60133	3.601
39 Dimethylphthalate	163		14.783	14.776	(0.967)	808058	3.96837	3.968
* 42 Acenaphthene-d10	162		15.286	15.271	(1.000)	557761	4.00000	
50 Diethylphthalate	149		16.245	16.229	(1.063)	894298	4.29489	4.295
54 N-Nitrosodiphenylamine	169		16.638	16.623	(0.907)	529215	3.79120	3.791
57 Hexachlorobenzene	284		17.711	17.696	(0.966)	198922	3.73341	3.733
58 Pentachlorophenol	266		18.075	18.052	(0.986)	403576	11.3903	11.39
* 59 Phenanthrene-d10	188		18.338	18.323	(1.000)	998464	4.00000	
\$ 66 Terphenyl-d14	244		21.479	21.456	(0.918)	554626	4.75496	4.755 (R)
67 Butylbenzylphthalate	149		22.393	22.377	(0.957)	662163	3.97754	3.978
* 69 Chrysene-d12	240		23.392	23.369	(1.000)	733344	4.00000	
* 77 Perylene-d12	264		26.094	26.047	(1.000)	675579	4.00000	
79 Dibenzo(a,h)anthracene	278		28.856	28.794	(1.106)	458766	2.24309	2.243
90 N-Nitrosodimethylamine	74		4.825	4.795	(0.528)	644851	7.41228	7.412

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012314S.D  
 Lab Smp Id: BLD0297-MS2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	305886	-7.75
27 Naphthalene-d8	1259018	629509	2518036	1193774	-5.18
42 Acenaphthene-d10	580636	290318	1161272	557761	-3.94
59 Phenanthrene-d10	1027945	513973	2055890	998464	-2.87
69 Chrysene-d12	775653	387827	1551306	733344	-5.45
77 Perylene-d12	750797	375399	1501594	675579	-10.02

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	0.08
27 Naphthalene-d8	11.63	11.13	12.13	11.64	0.07
42 Acenaphthene-d10	15.27	14.77	15.77	15.29	0.10
59 Phenanthrene-d10	18.32	17.82	18.82	18.34	0.08
69 Chrysene-d12	23.37	22.87	23.87	23.39	0.10
77 Perylene-d12	26.05	25.55	26.55	26.09	0.18

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012314S.D

Lab ID: BLD0297-MS2

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 22:31

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.959	0.953	0.0060	Benzoic acid

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012315S.D

Date : 01-May-2023 23:08

Client ID:

Sample Info: BLD0297-HSD2

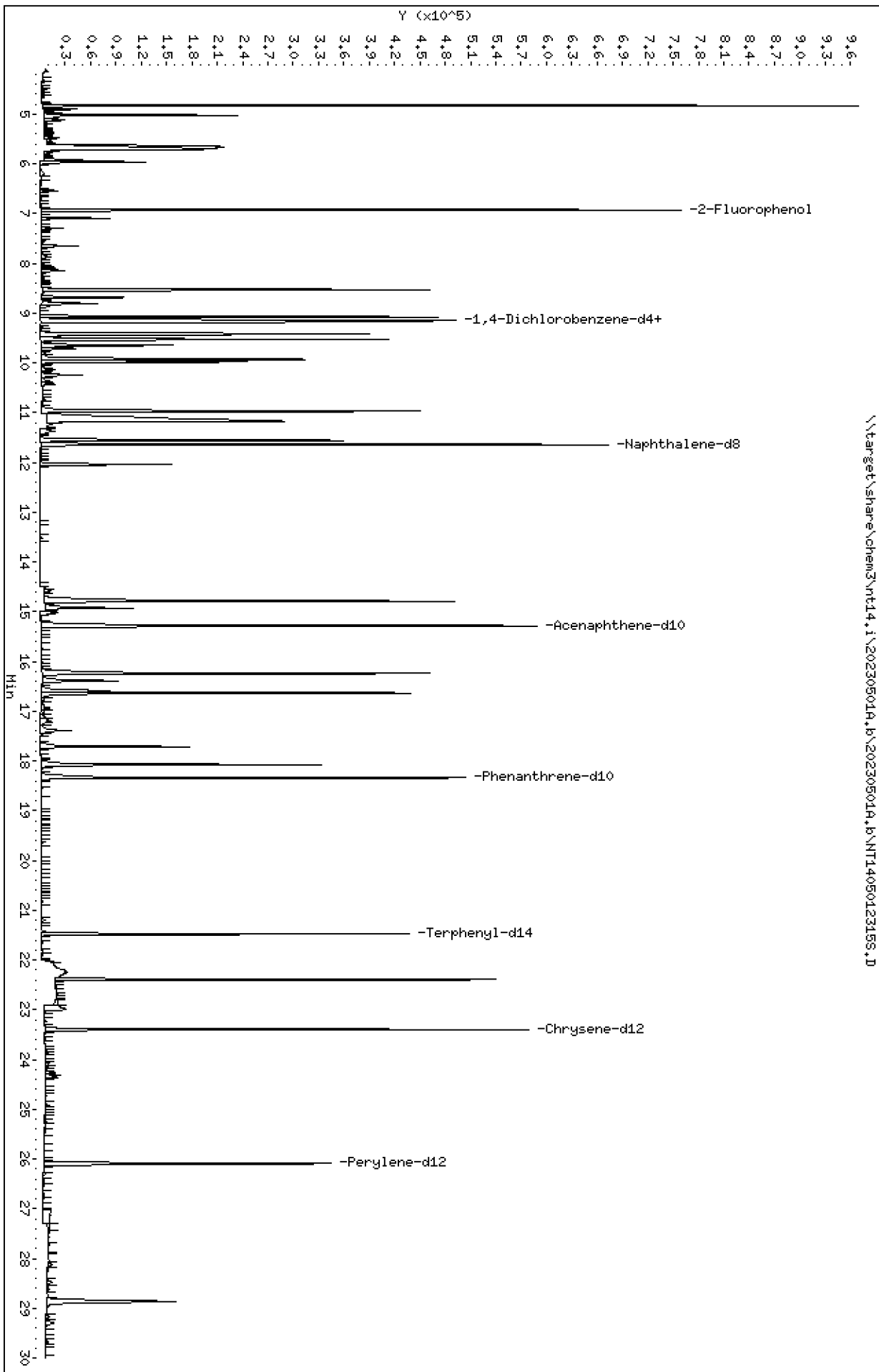
Instrument: nt14.1

Operator: USD

Column diameter: 0.25

Column phase: ZB-Smsi

\\target\share\chem3\nt14.1\20230501A.B\NT1405012315S.D



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

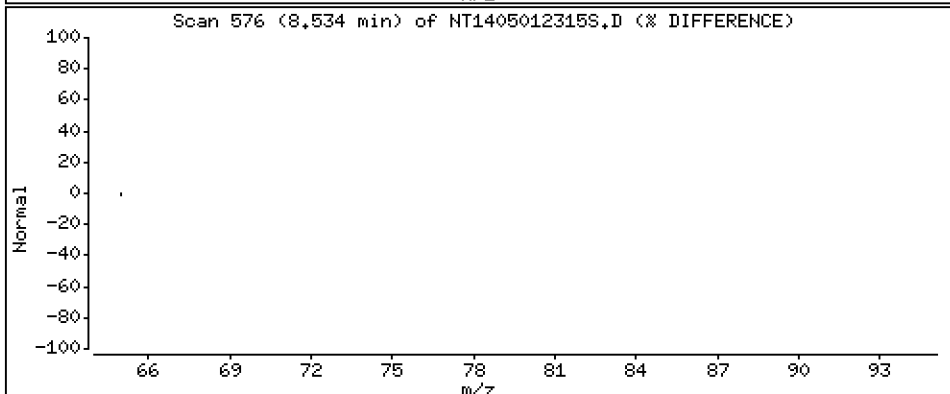
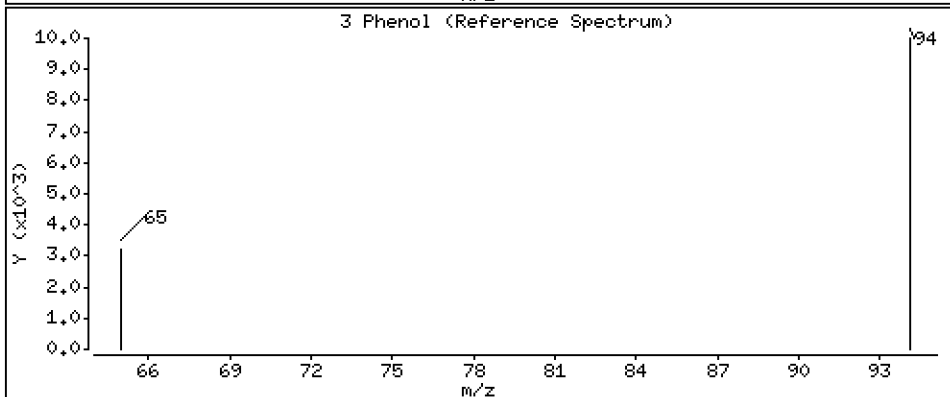
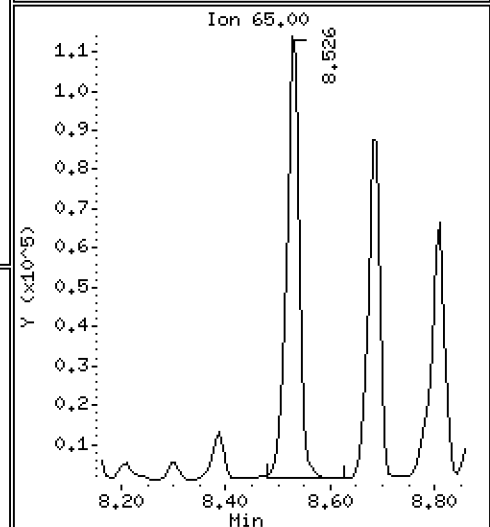
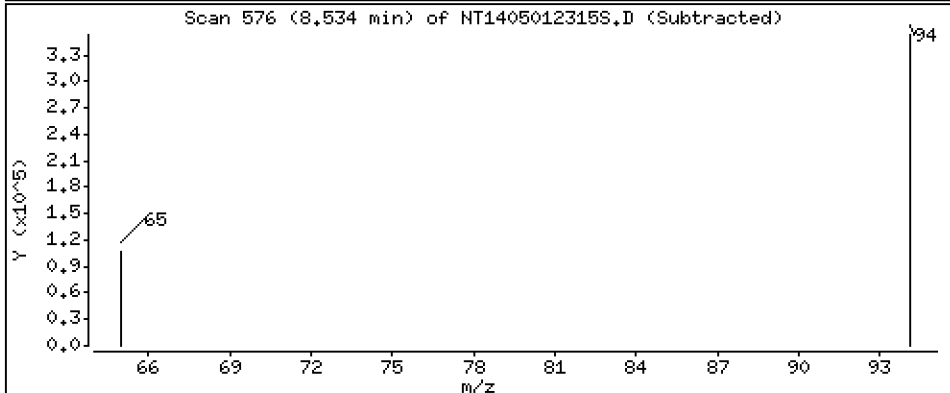
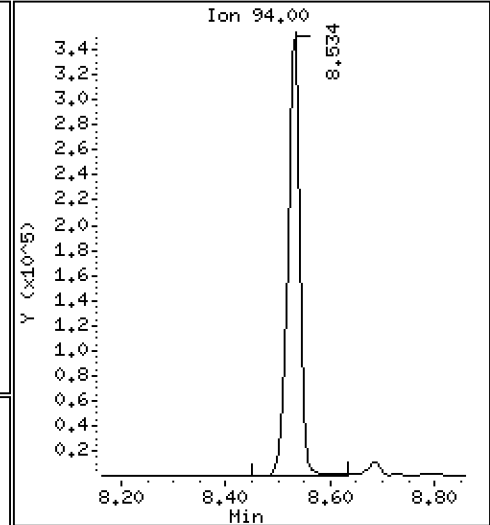
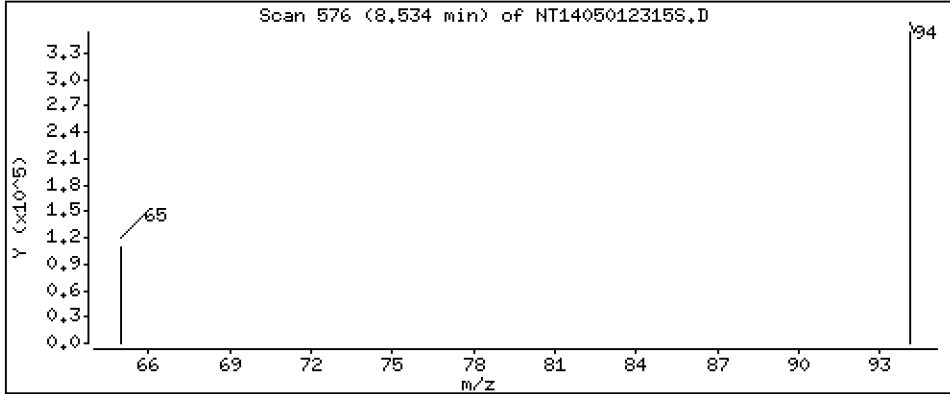
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 3,363 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

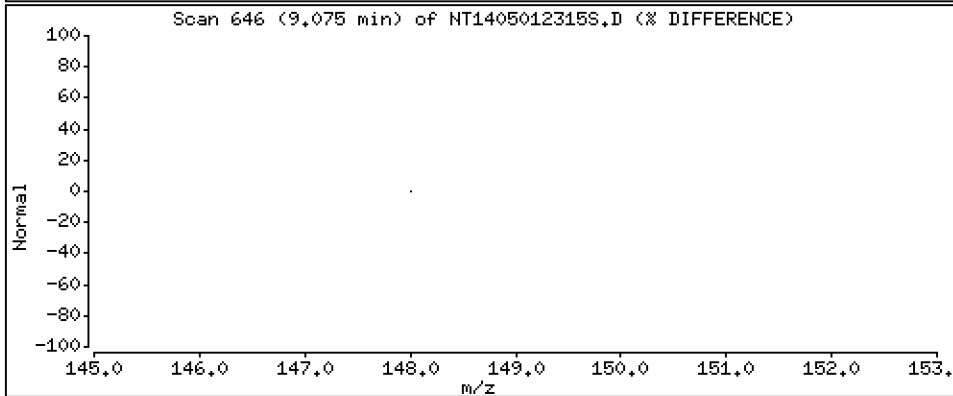
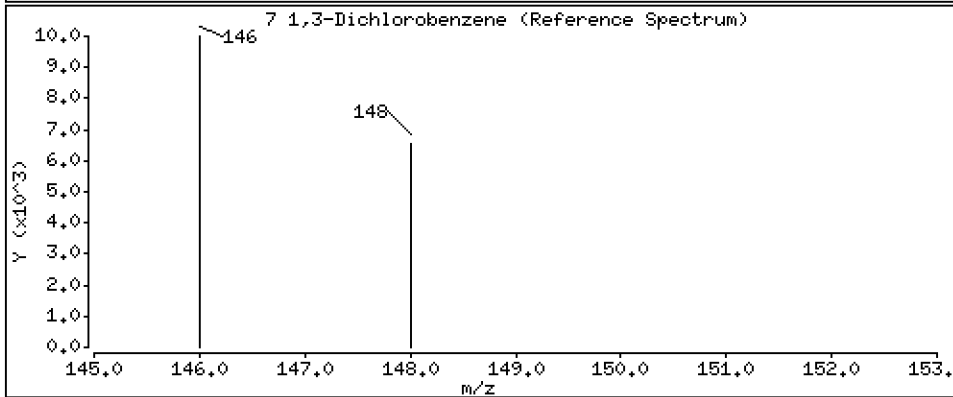
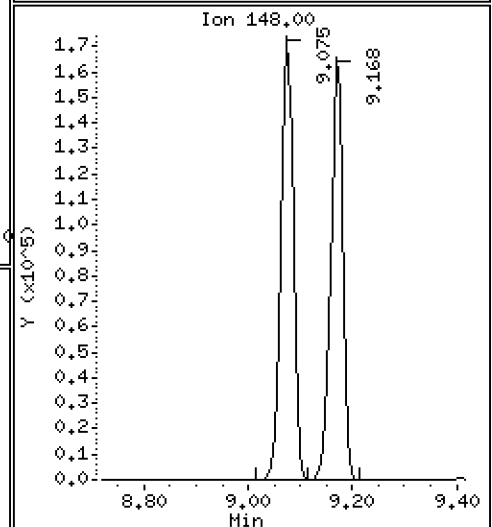
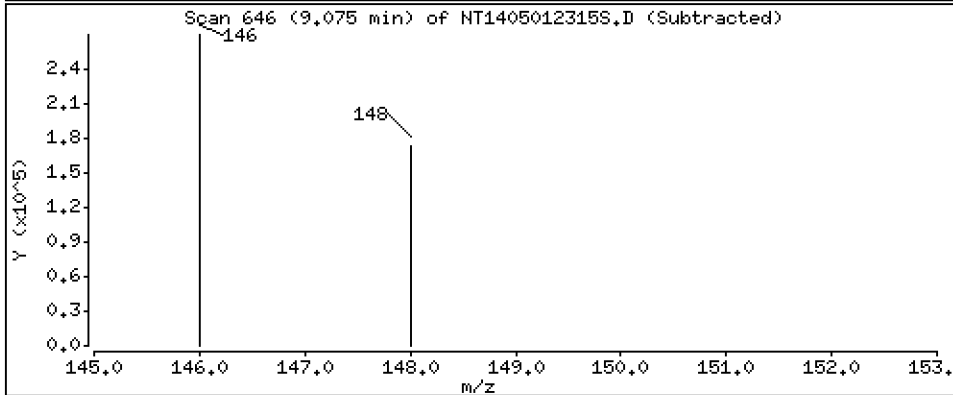
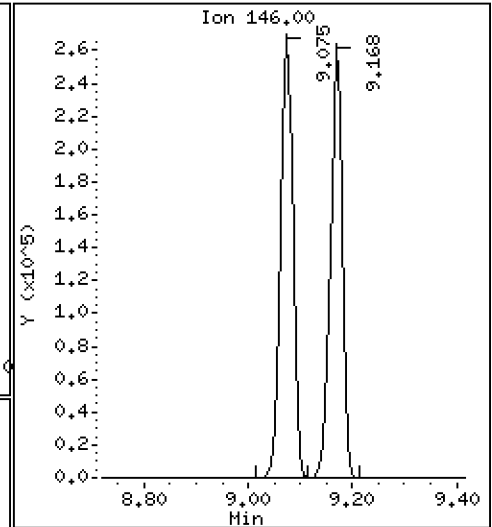
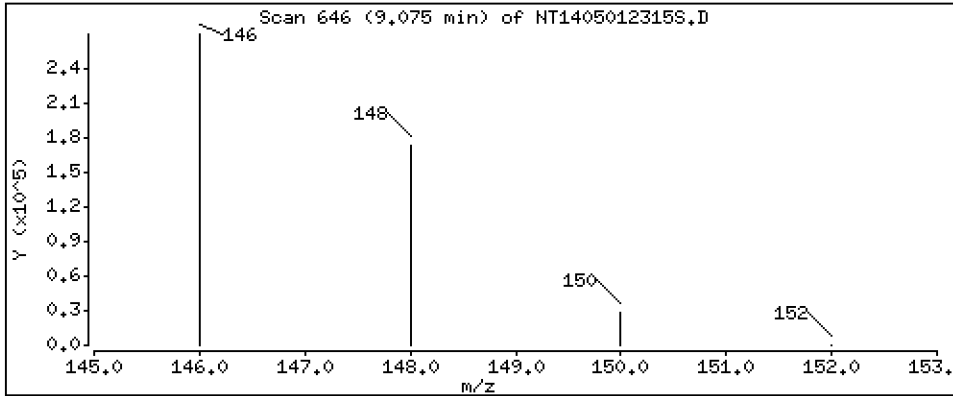
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 3,307 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

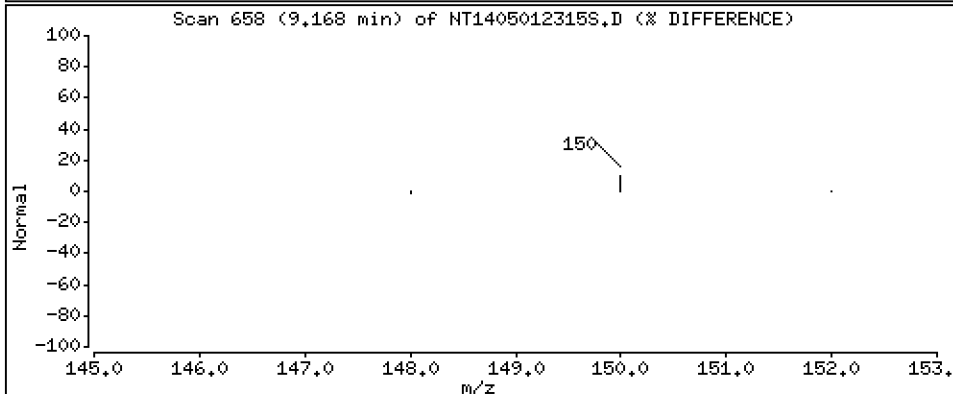
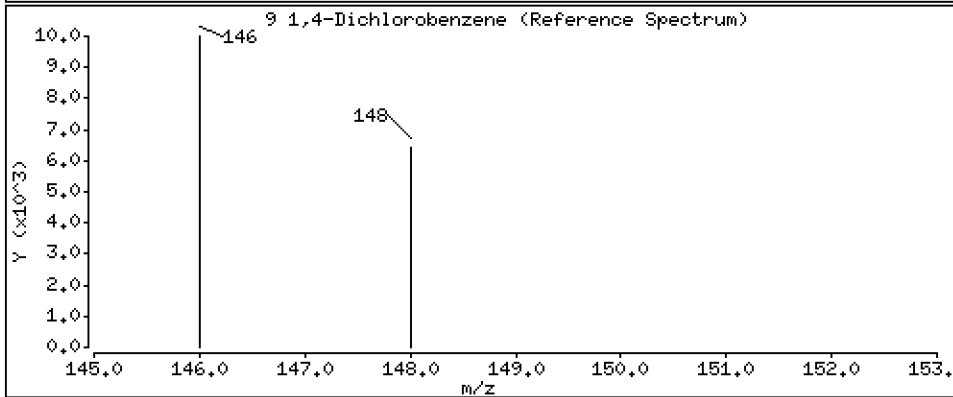
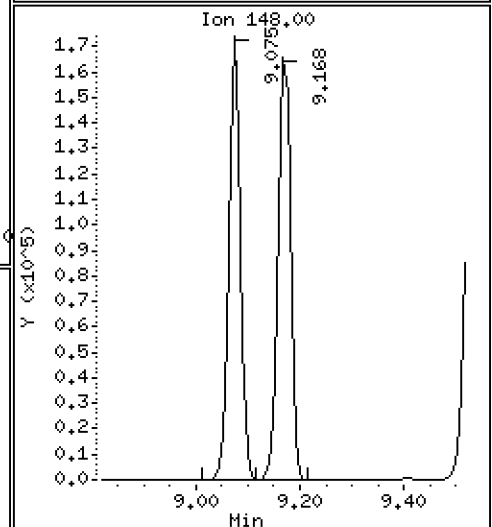
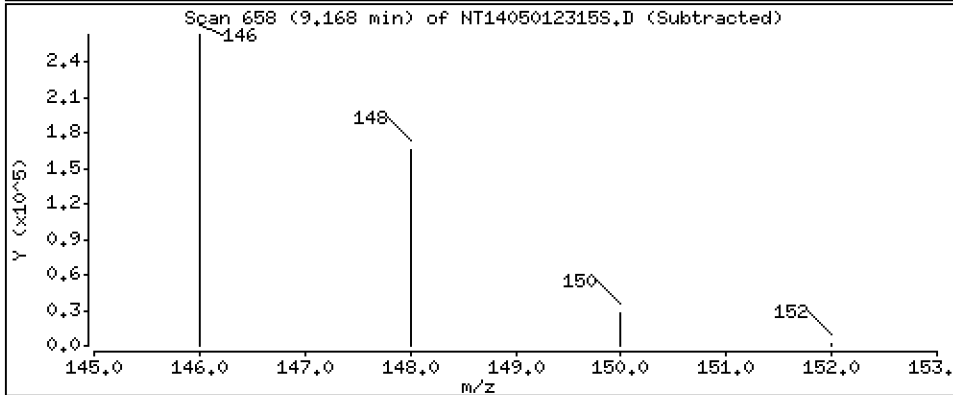
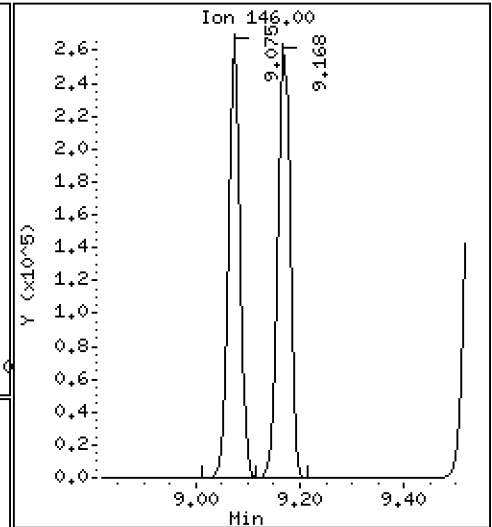
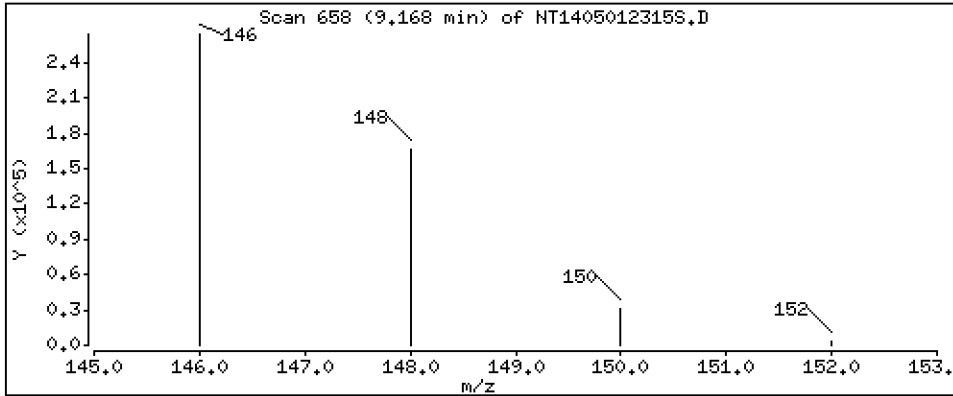
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 3.402 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

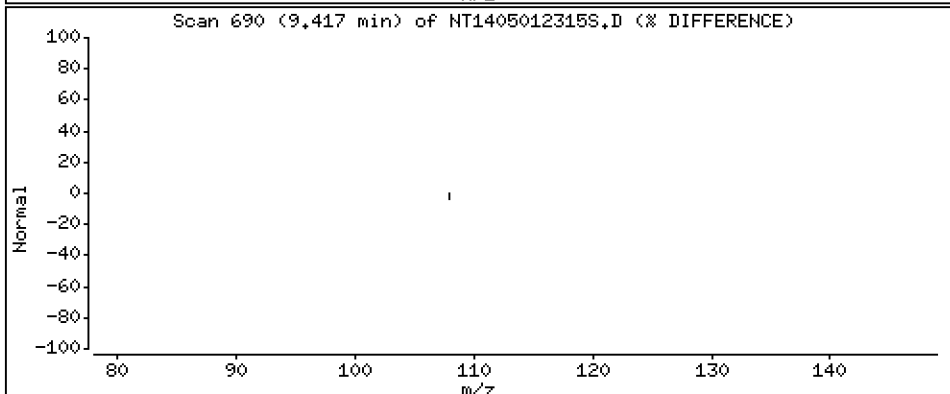
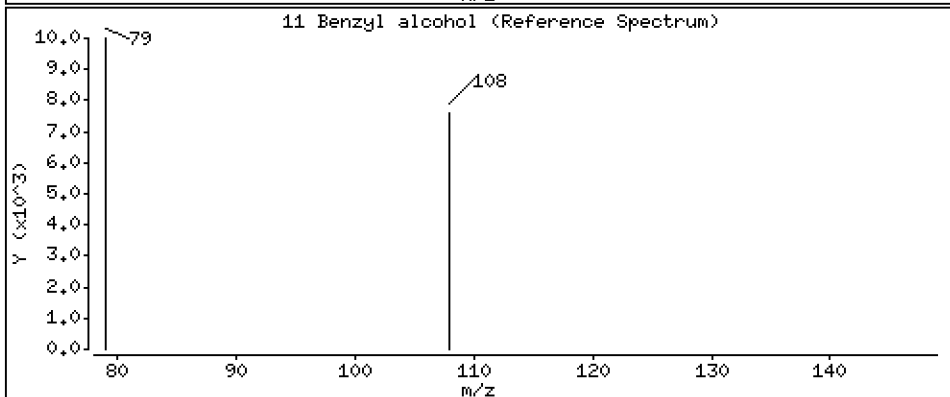
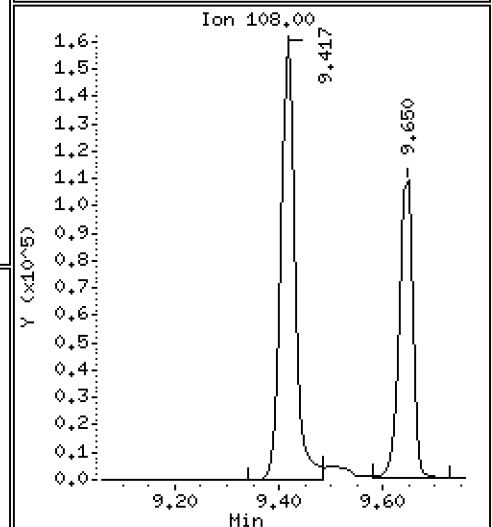
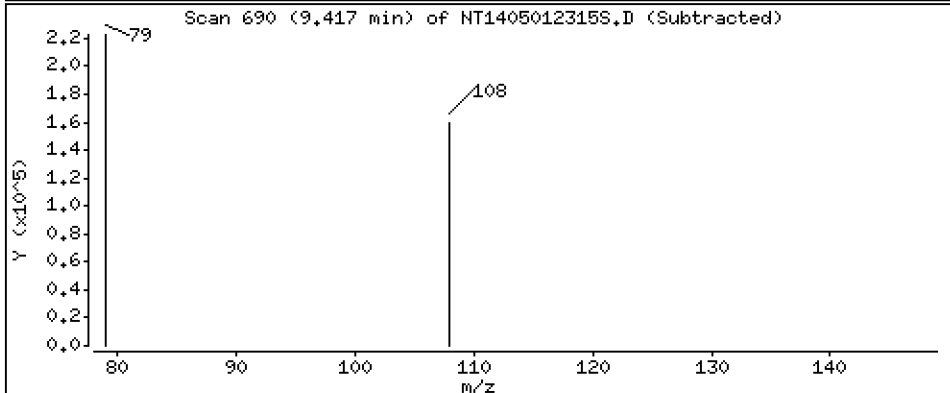
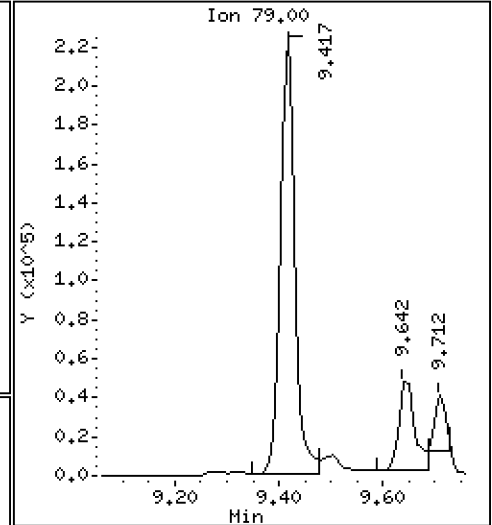
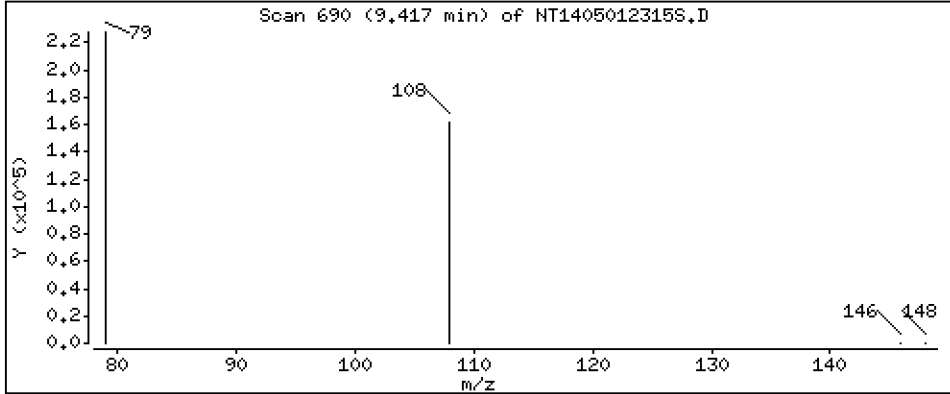
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 3.961 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

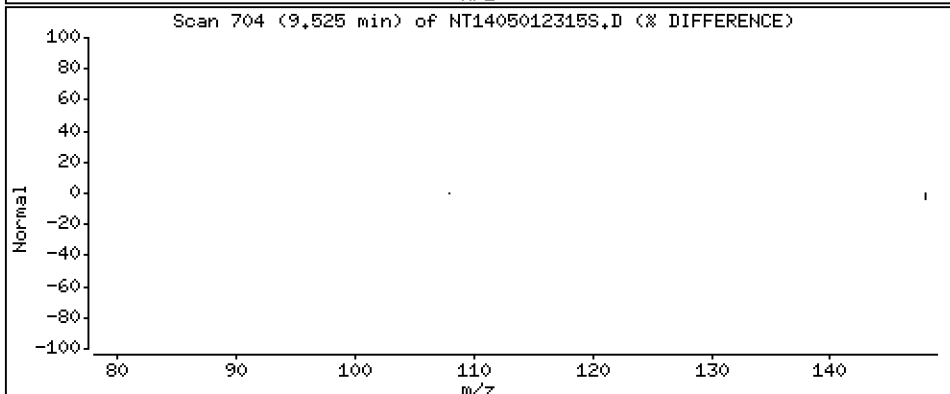
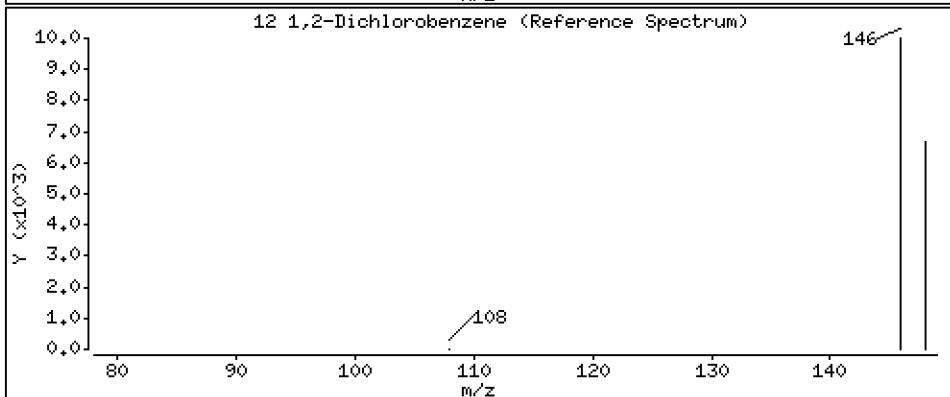
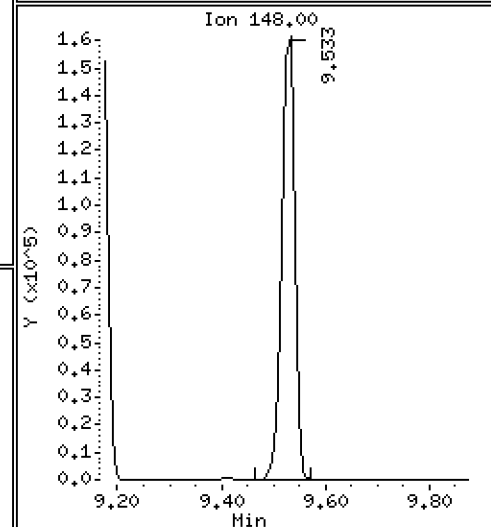
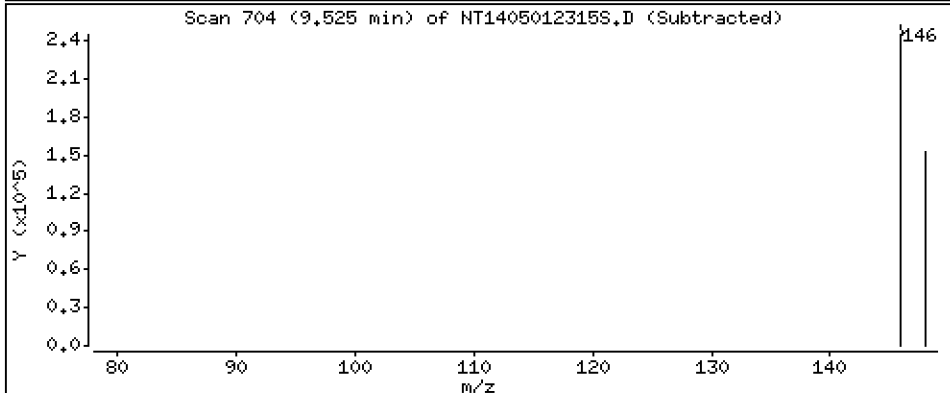
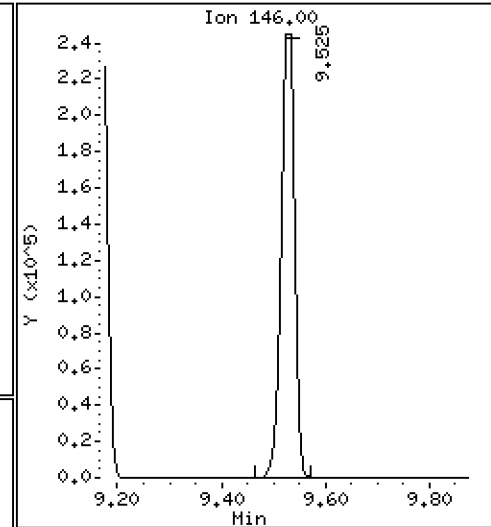
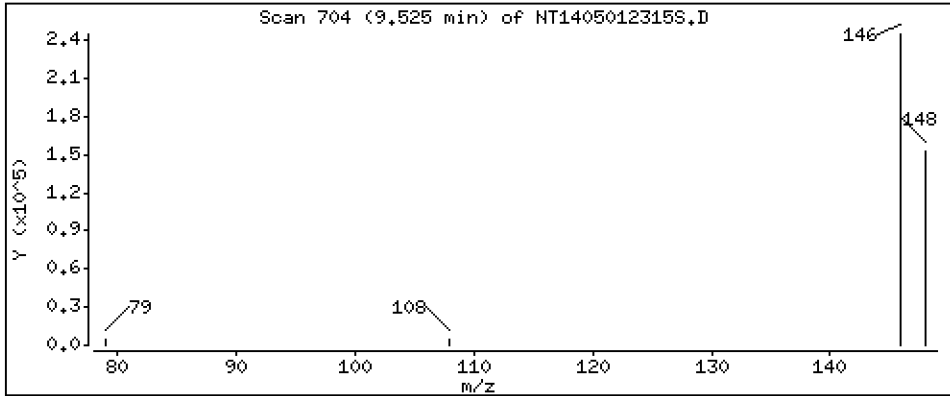
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 3,411 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

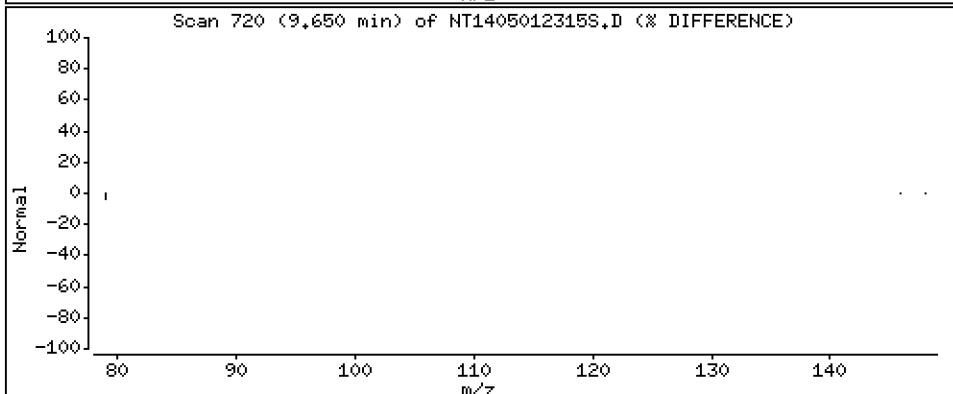
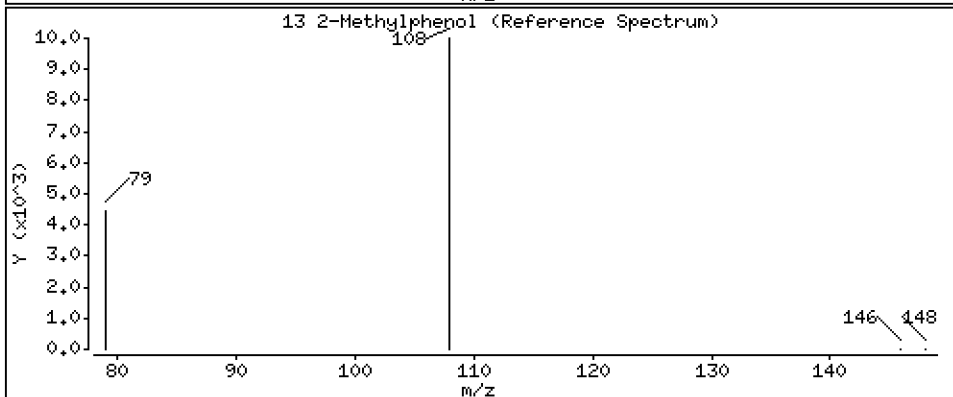
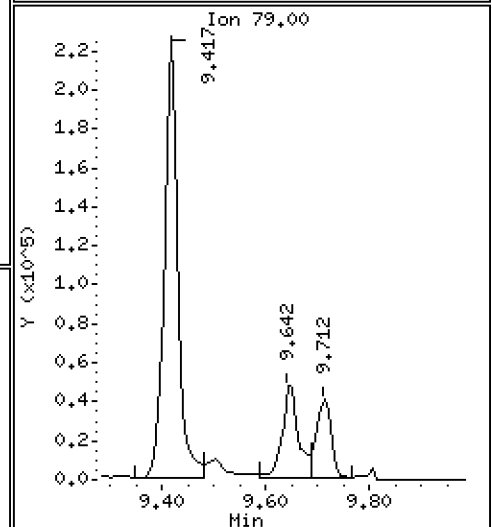
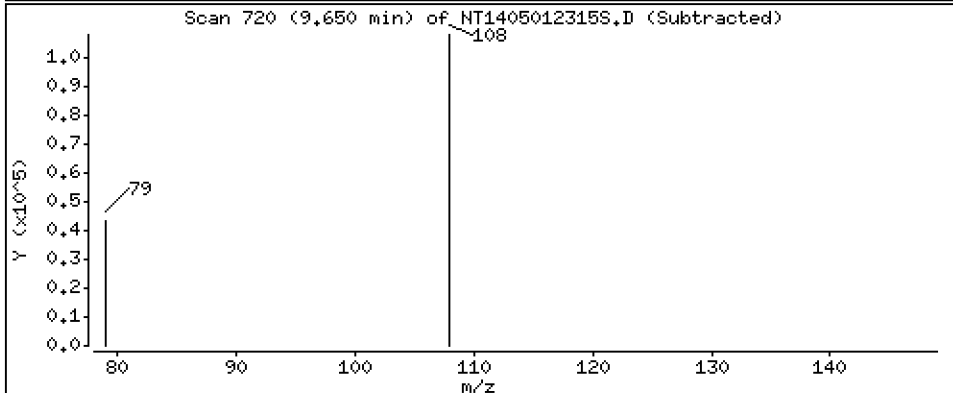
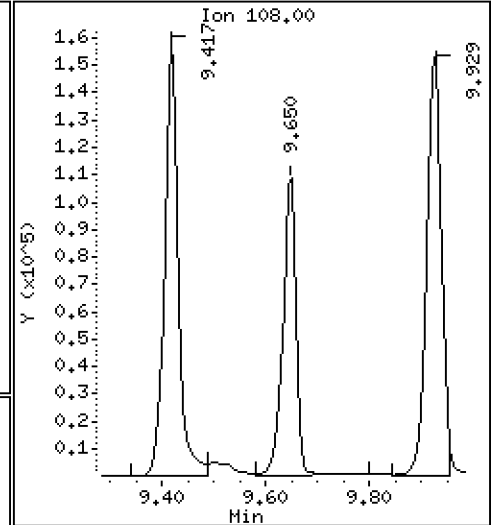
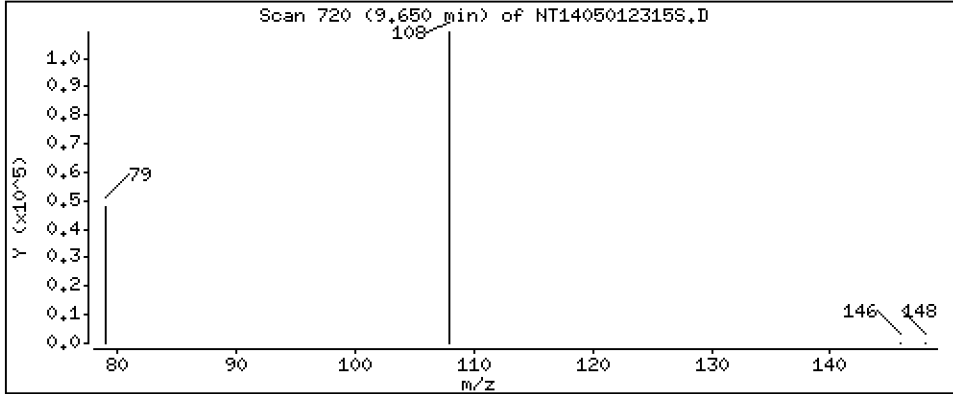
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 1.823 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

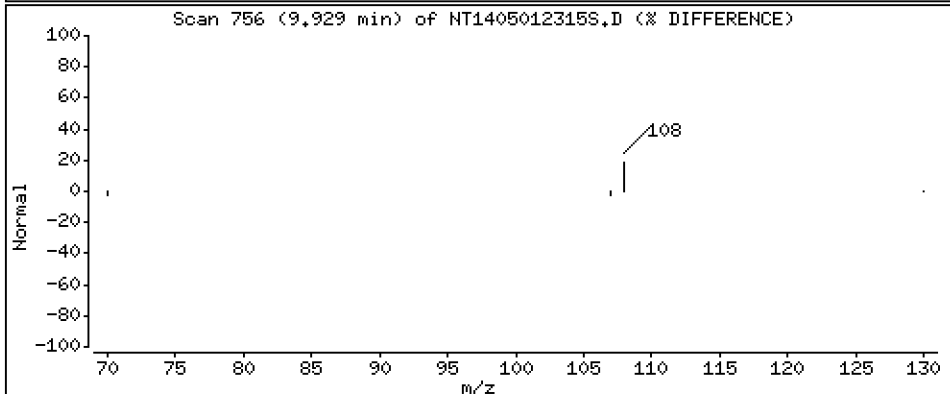
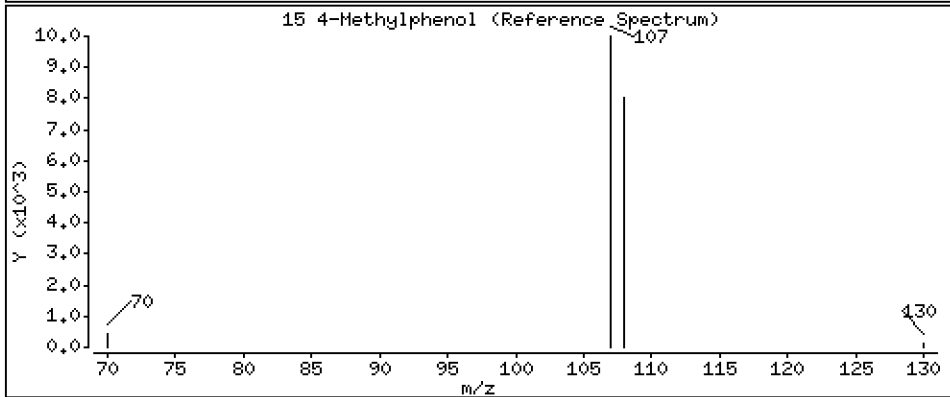
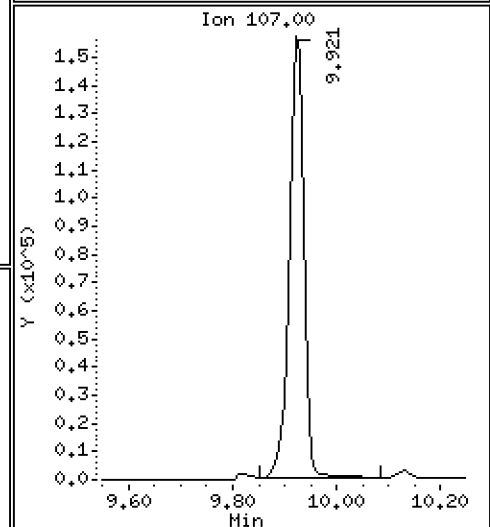
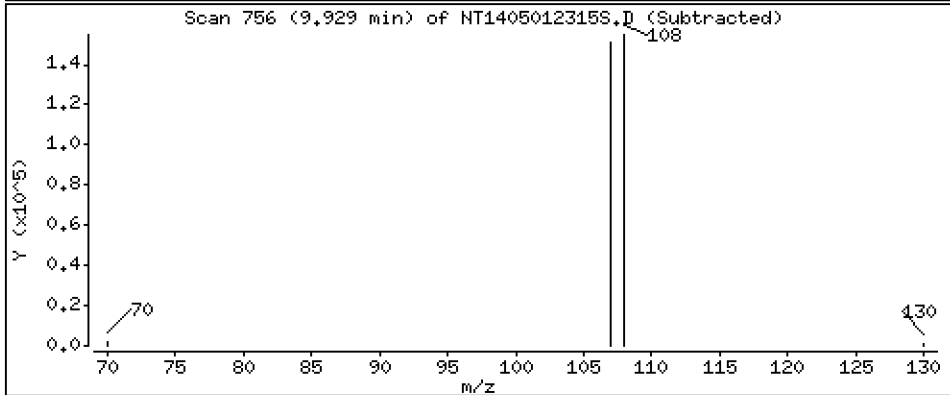
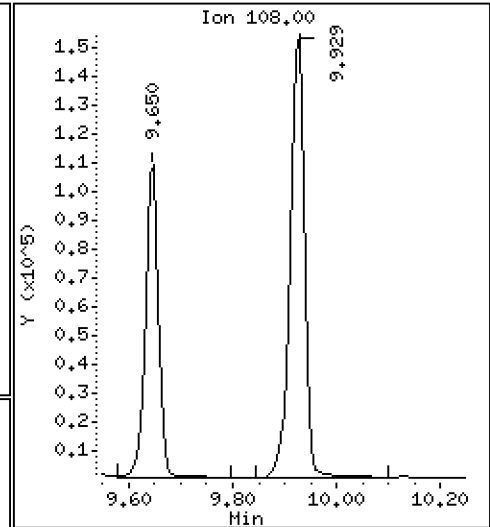
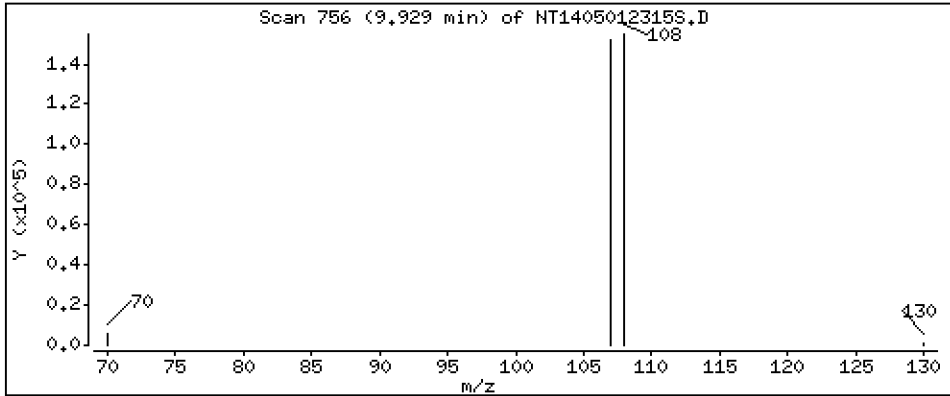
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 2,860 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

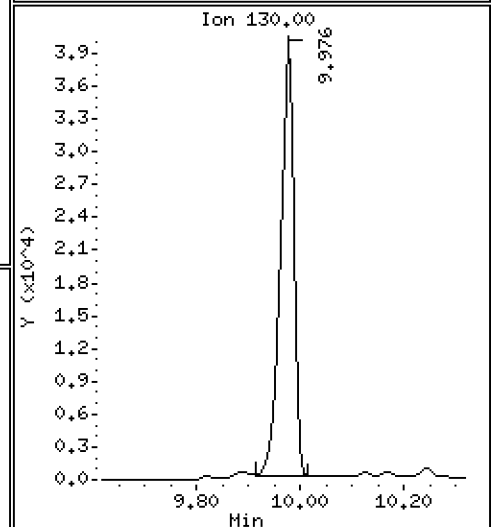
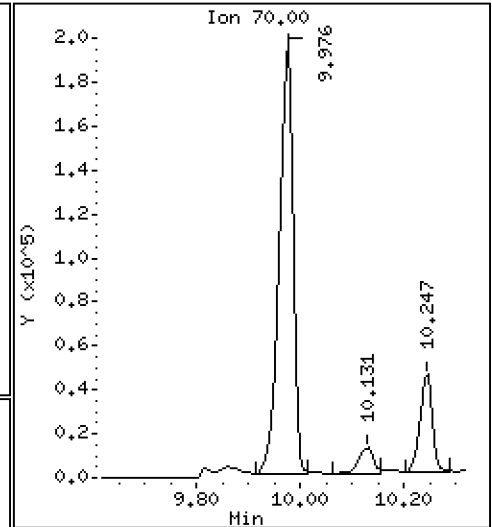
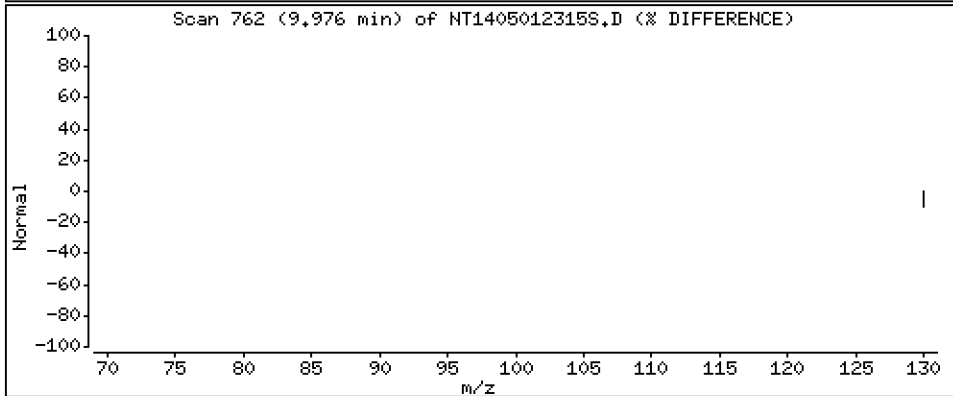
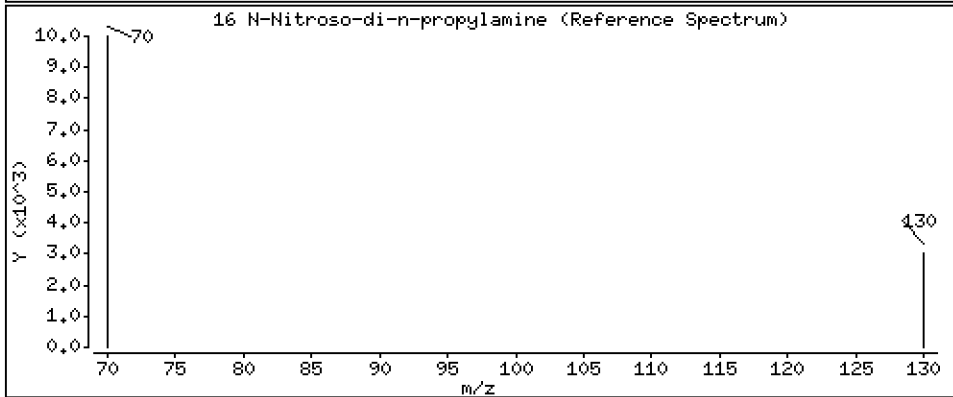
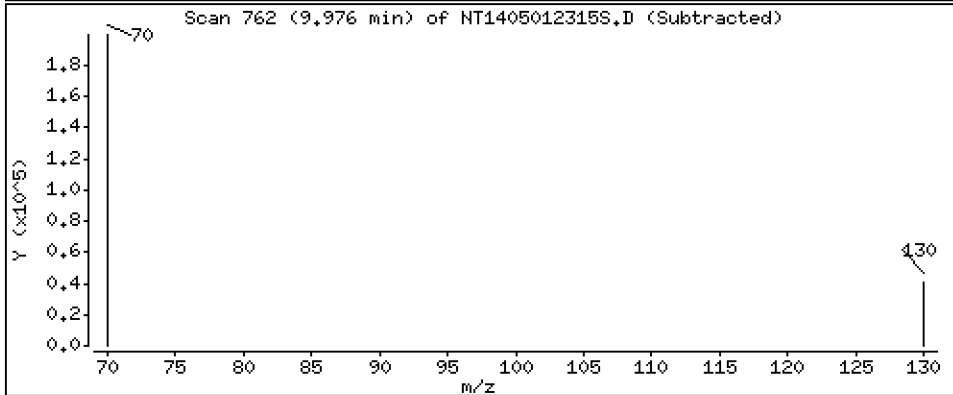
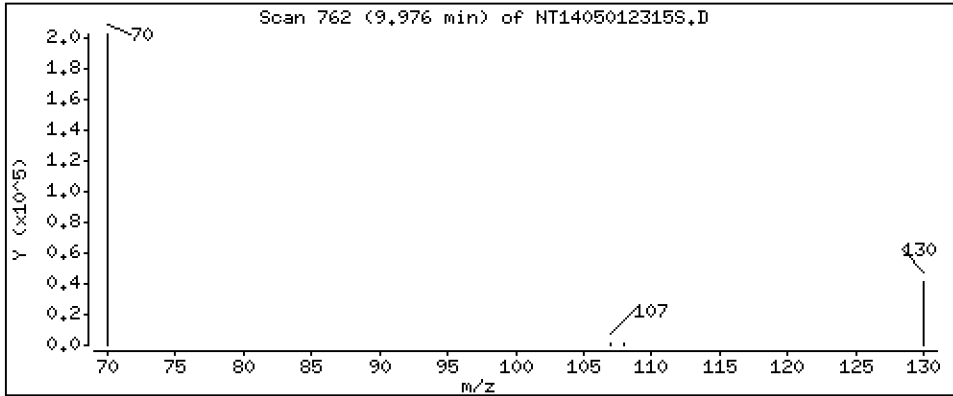
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 3,567 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

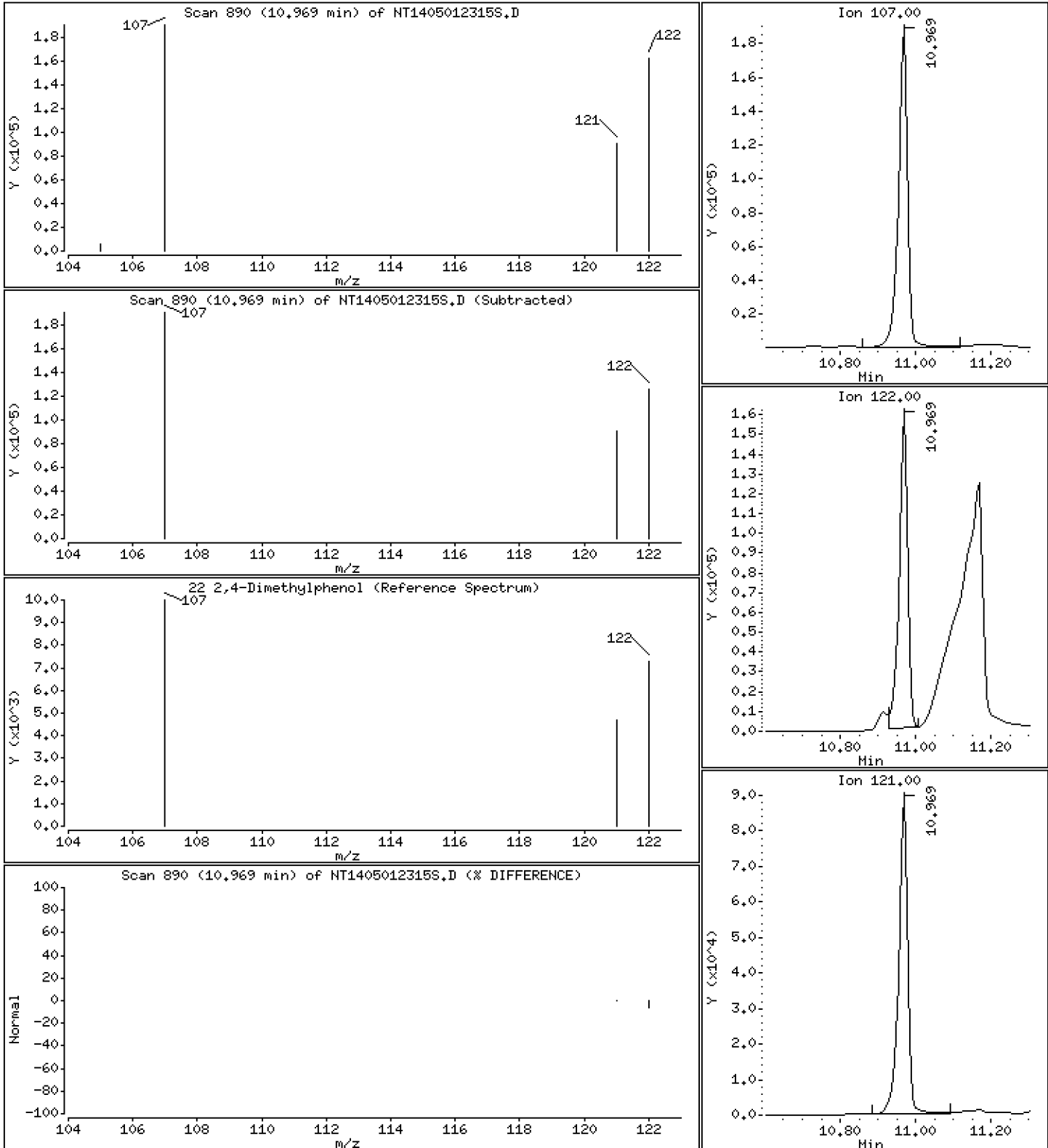
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 2,834 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

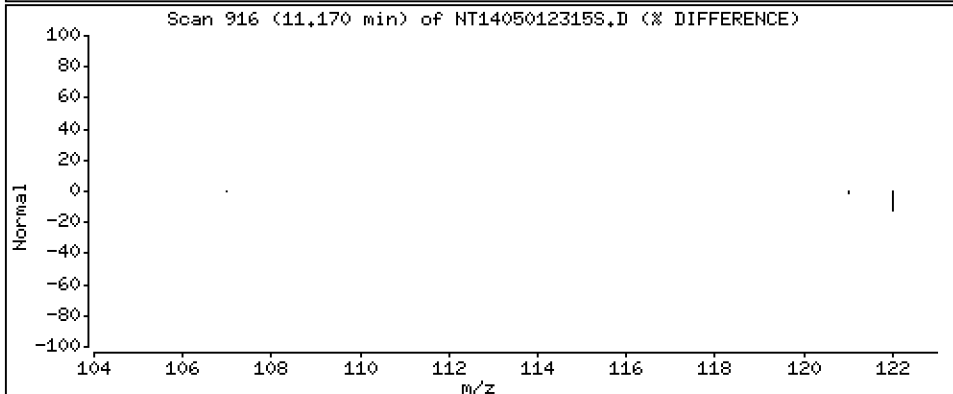
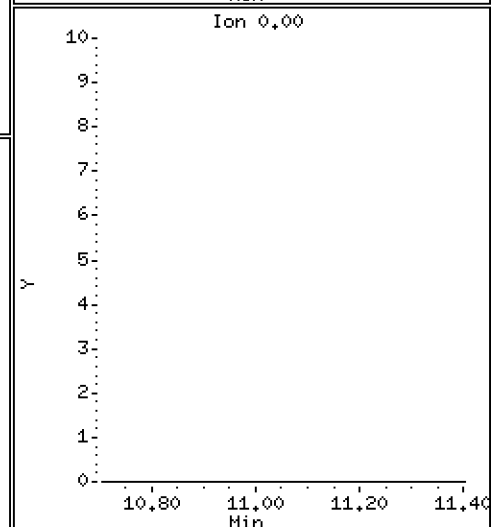
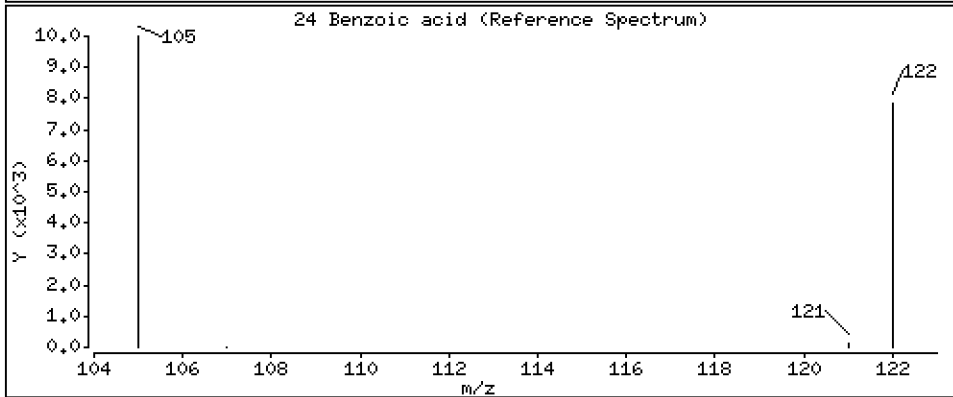
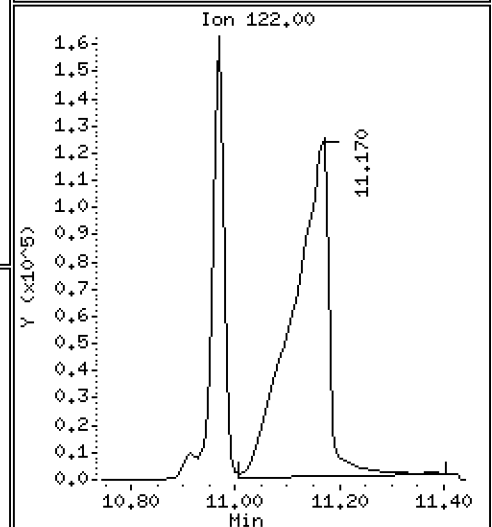
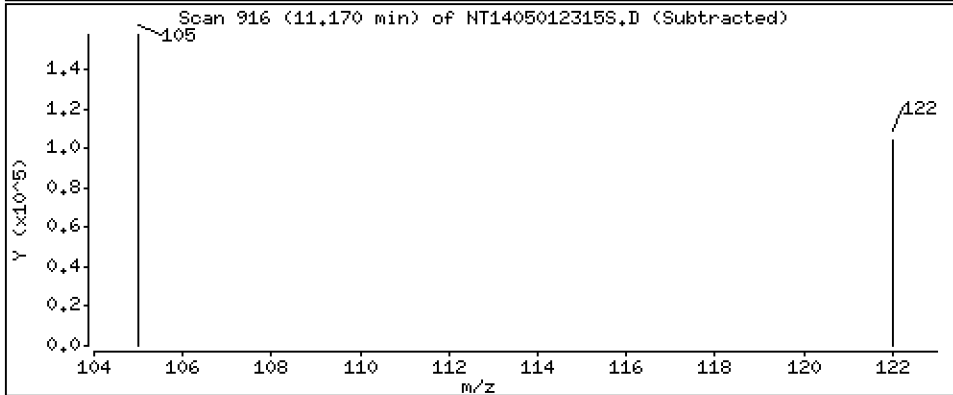
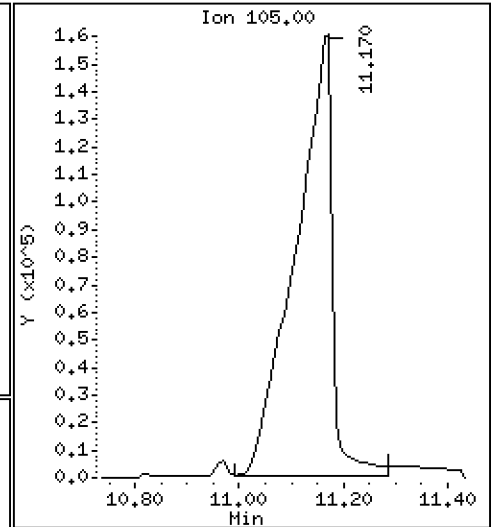
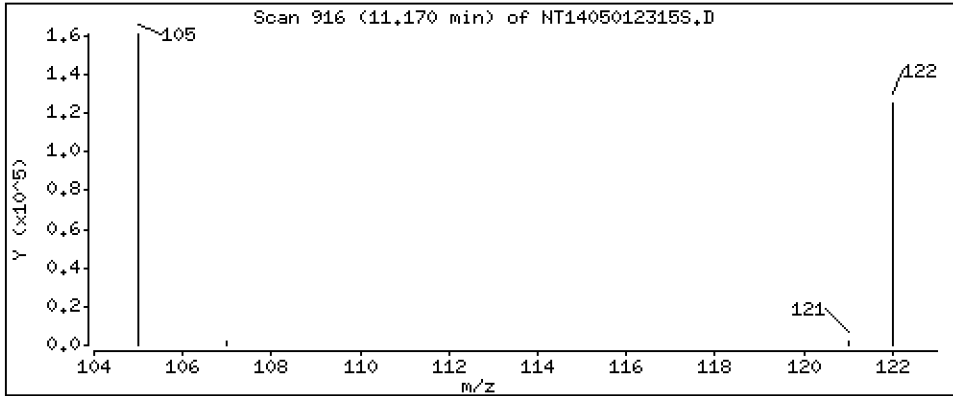
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 9,581 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

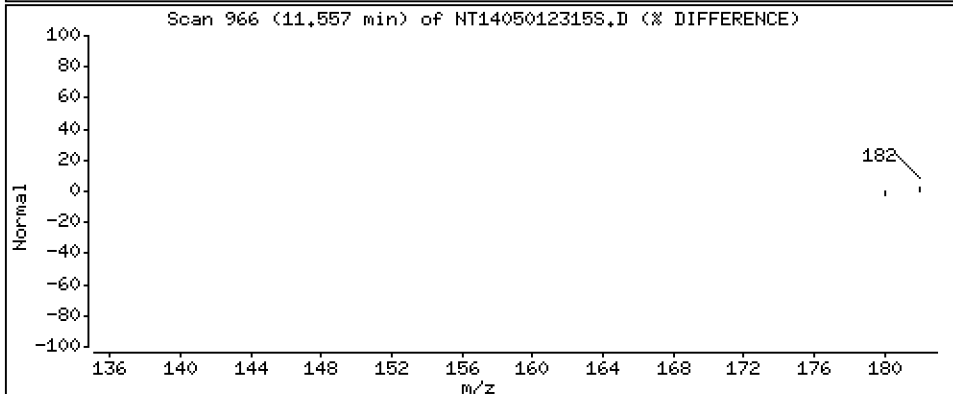
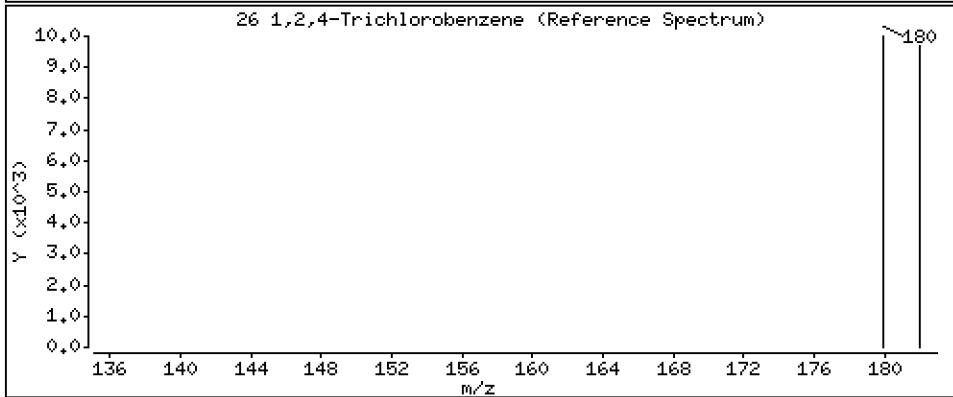
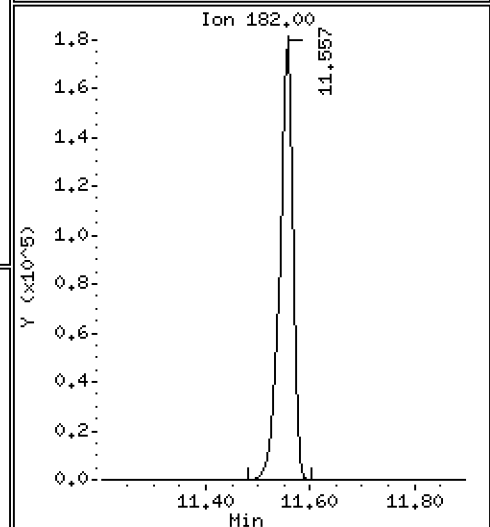
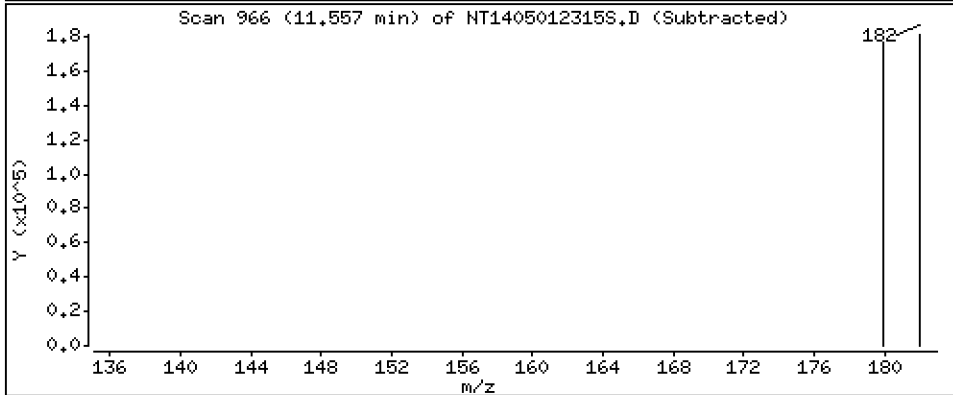
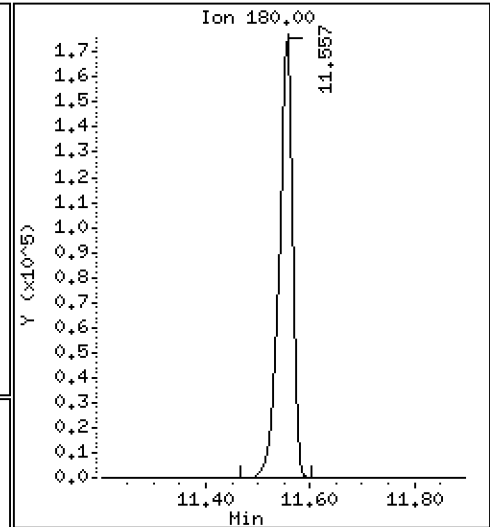
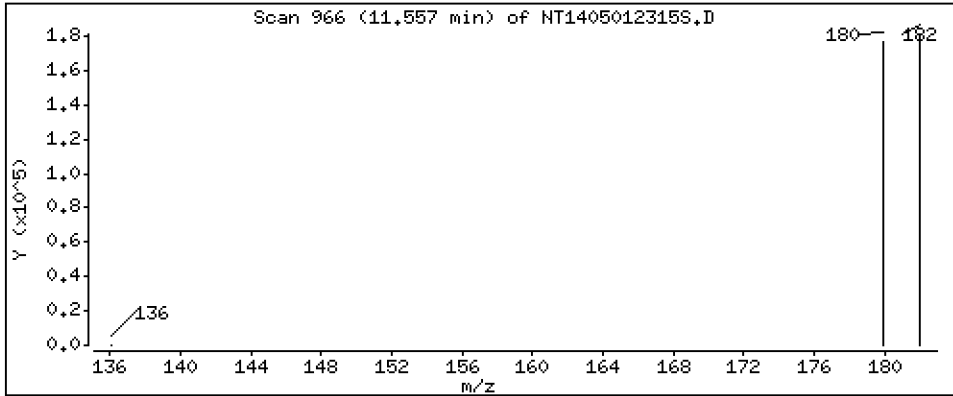
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 3,680 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

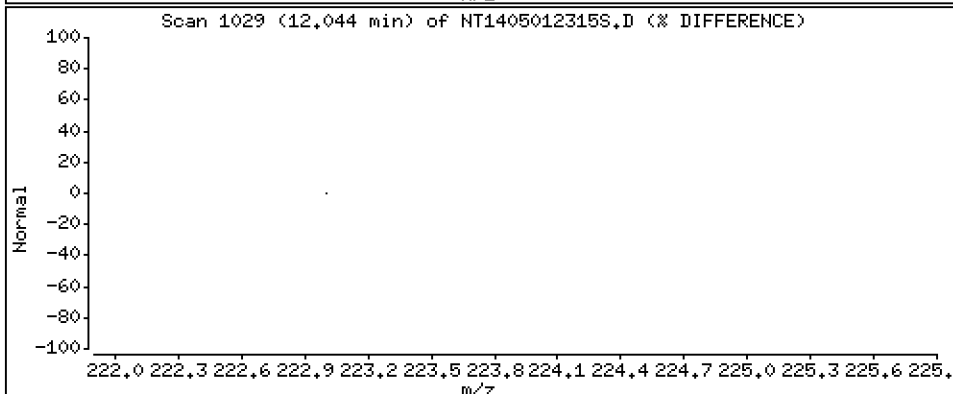
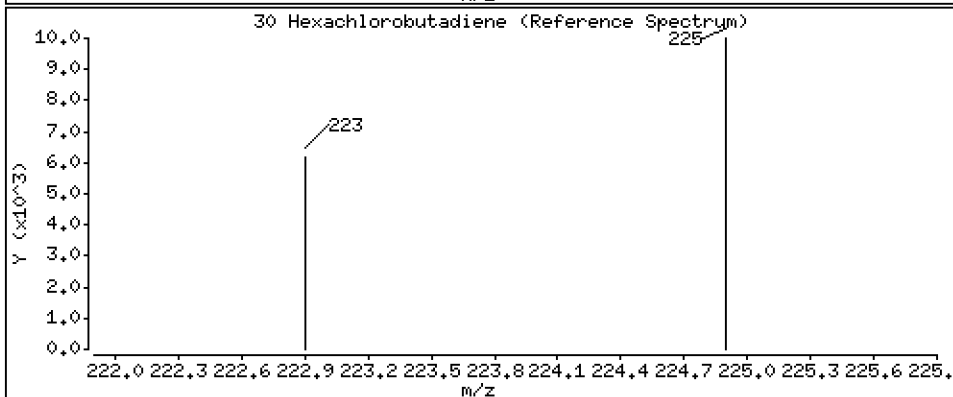
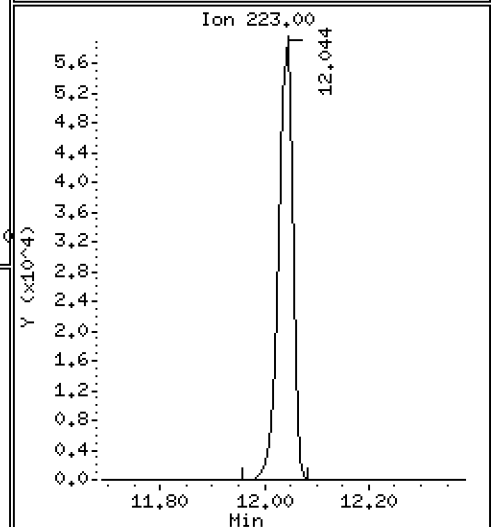
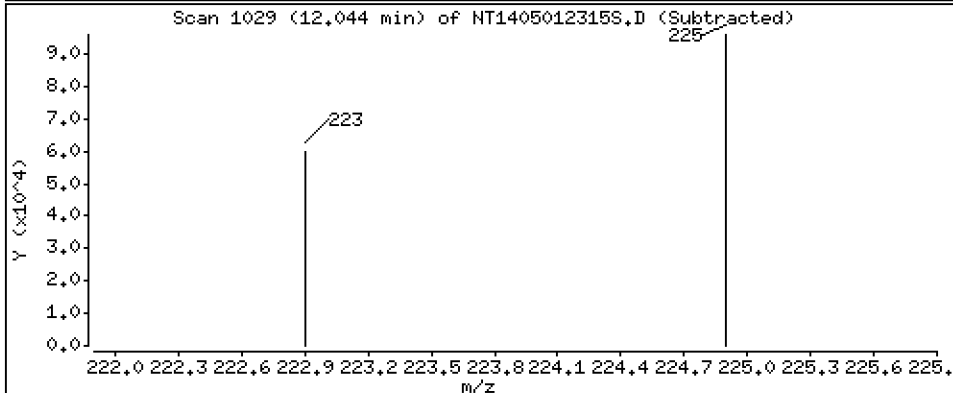
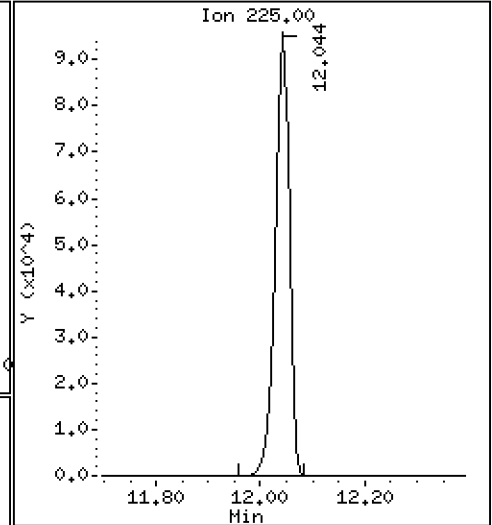
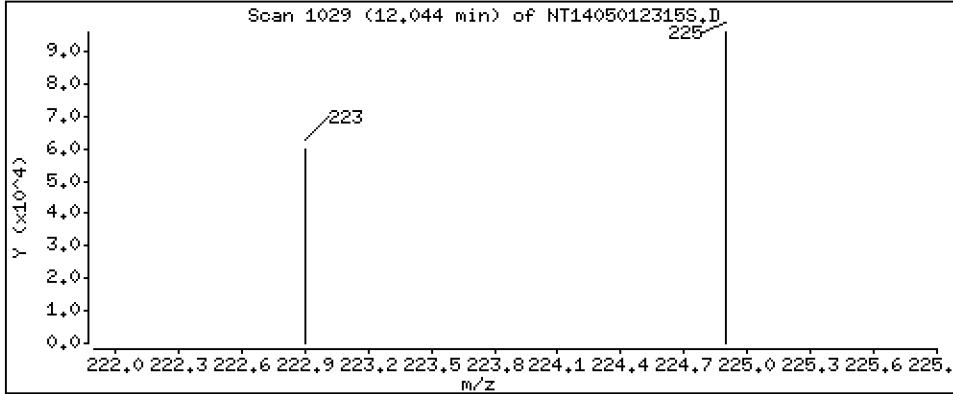
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 3,595 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

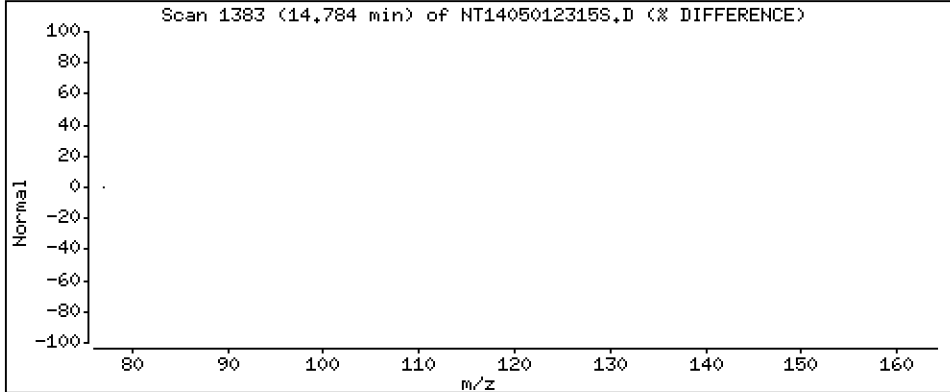
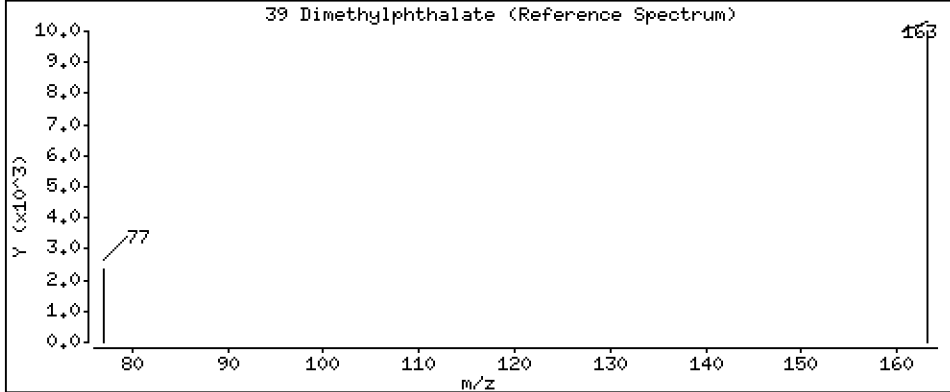
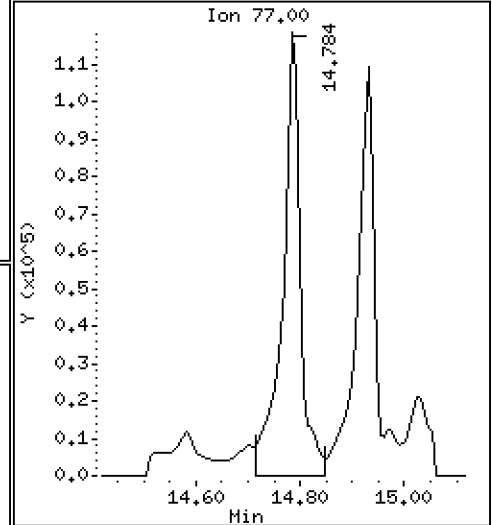
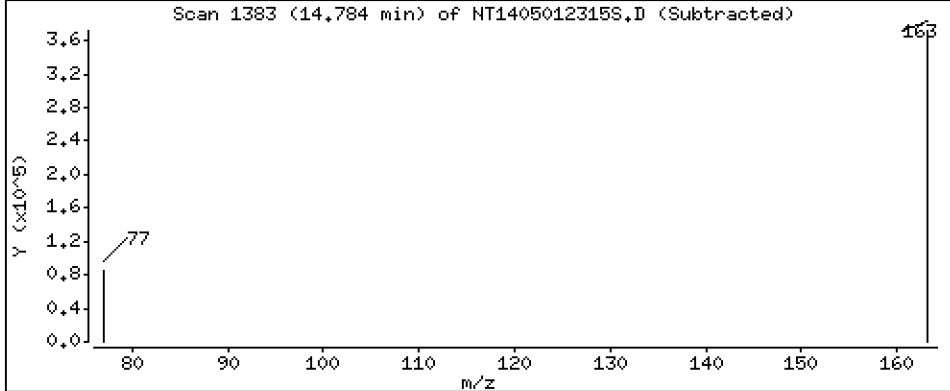
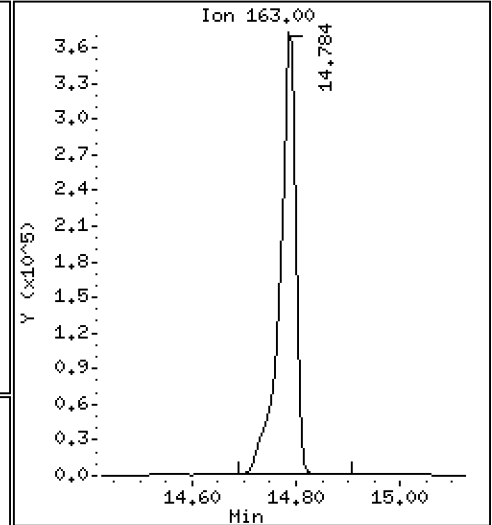
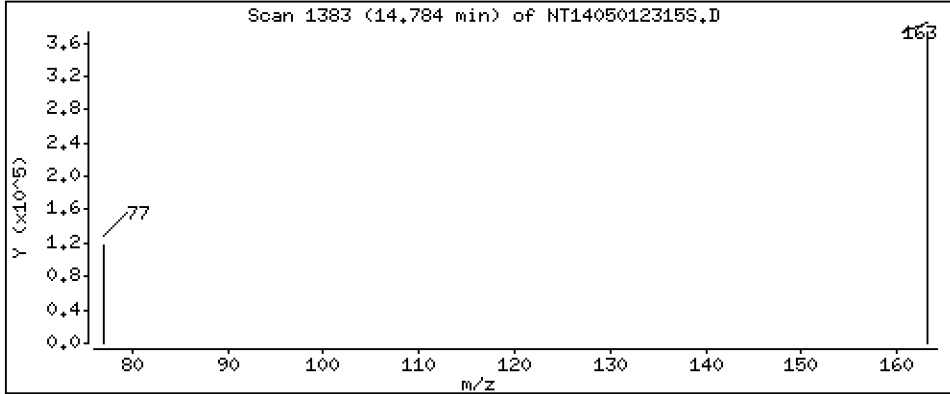
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 3,928 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

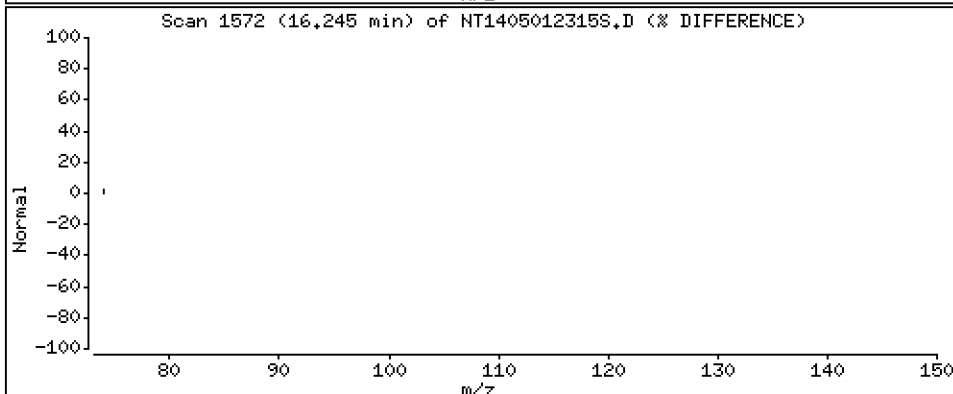
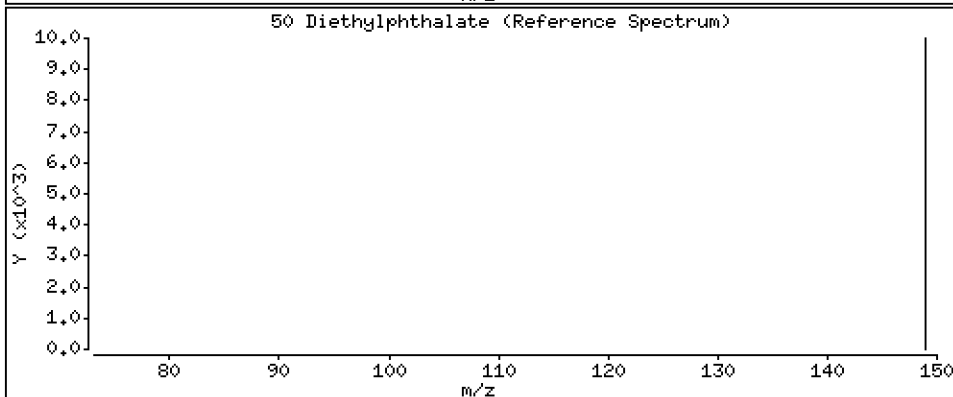
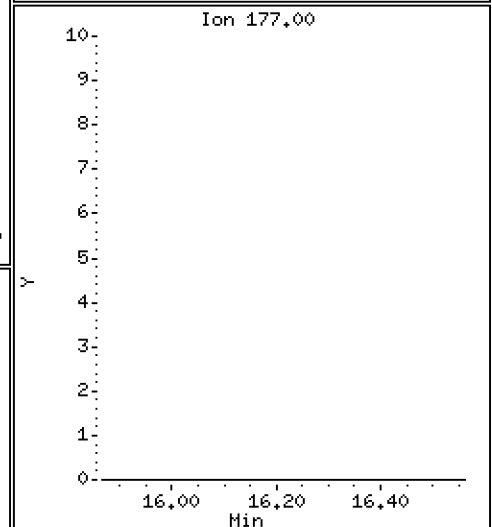
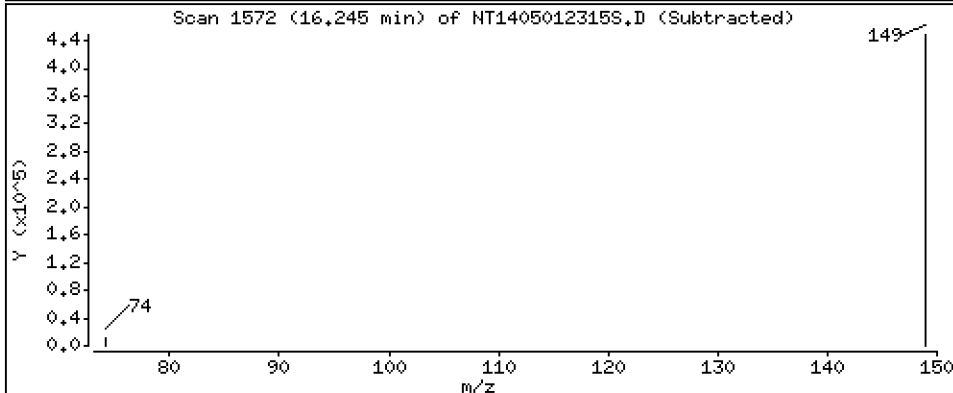
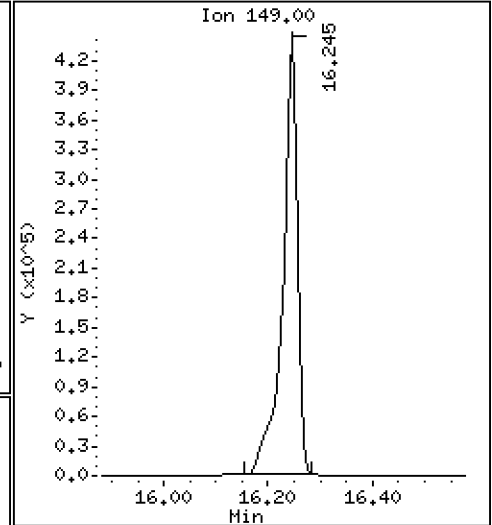
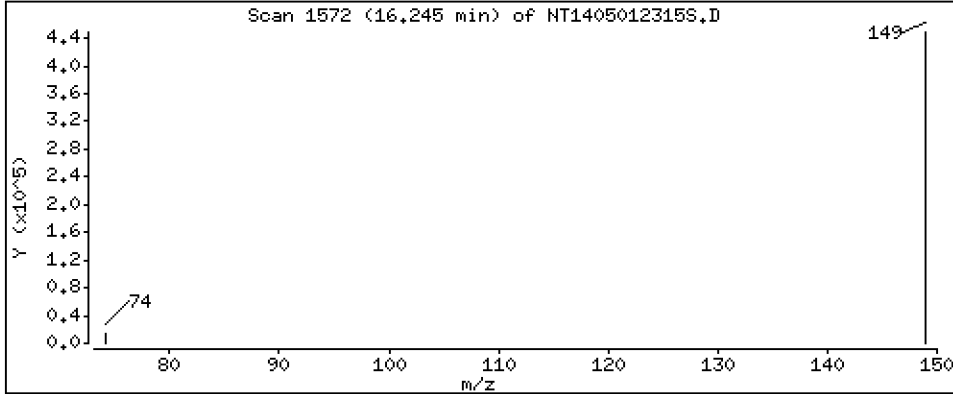
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,227 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

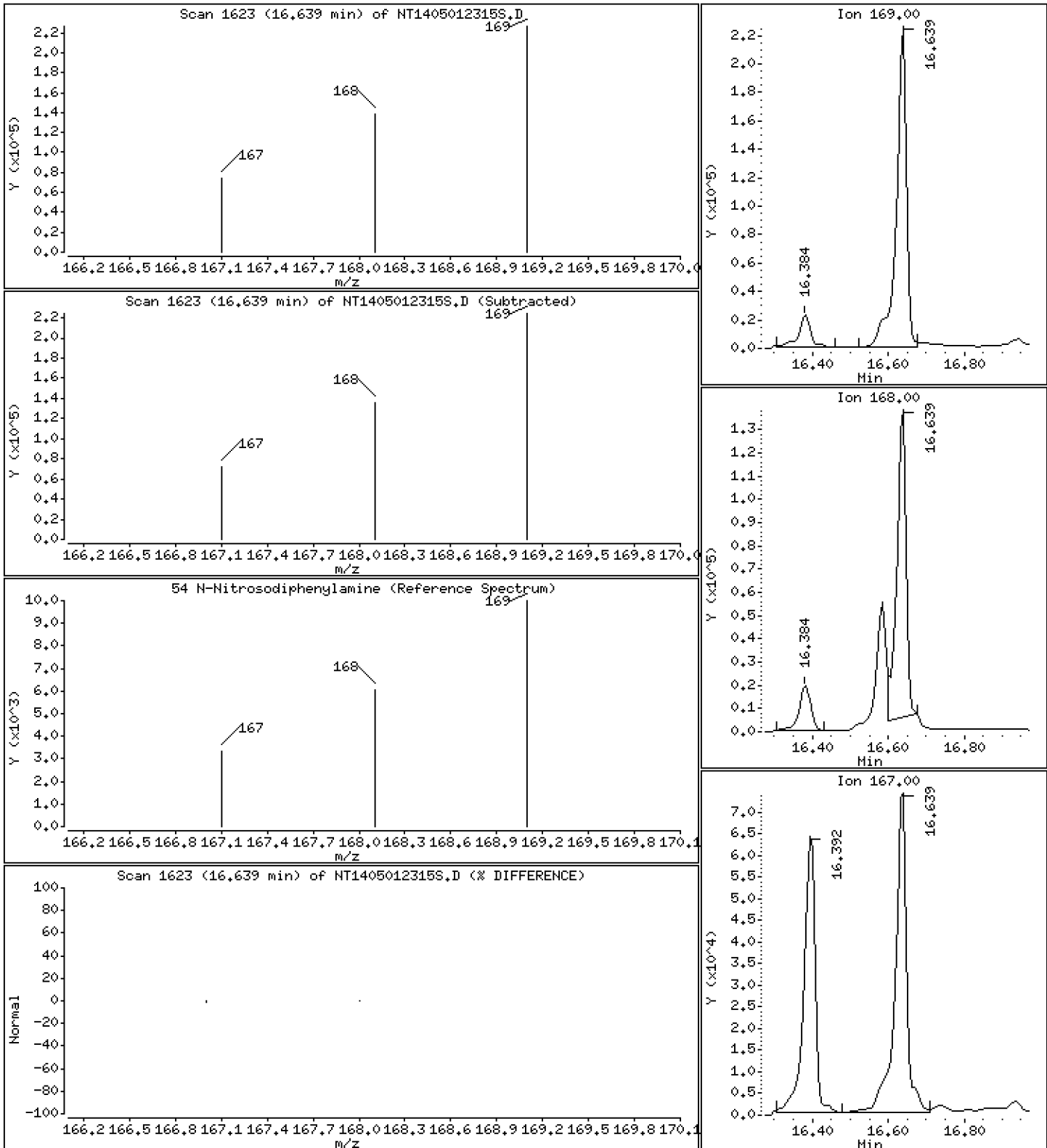
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 3,062 ug/mL





Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

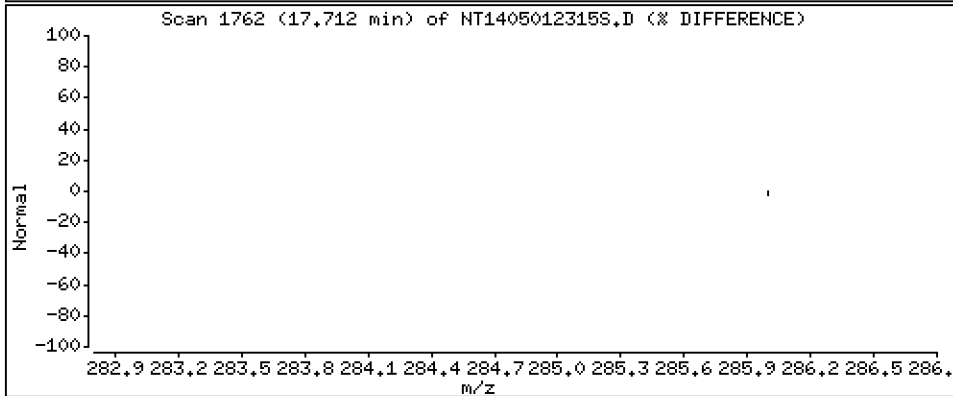
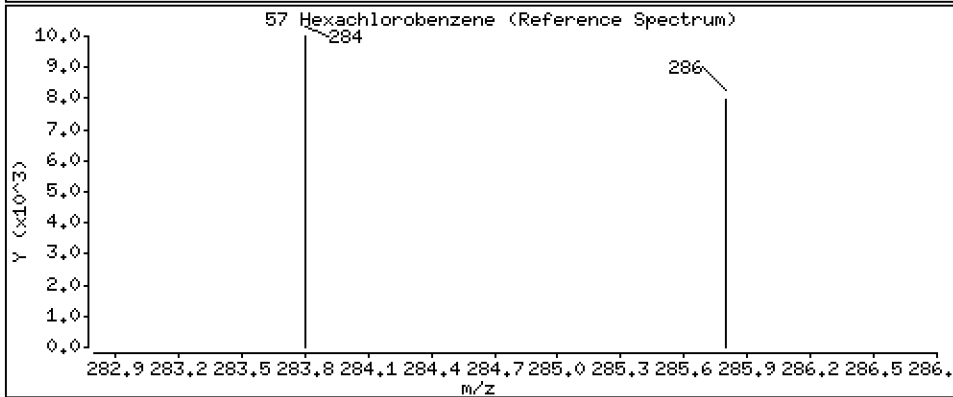
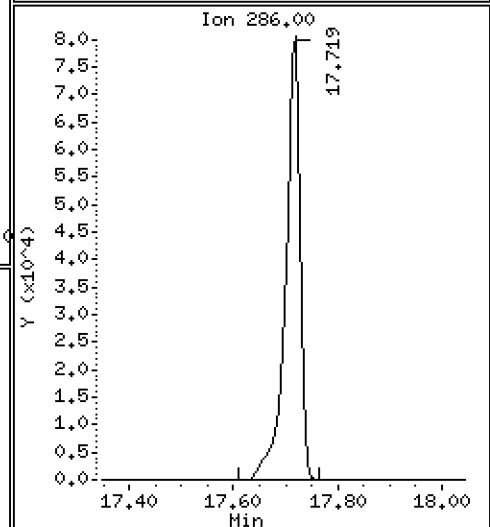
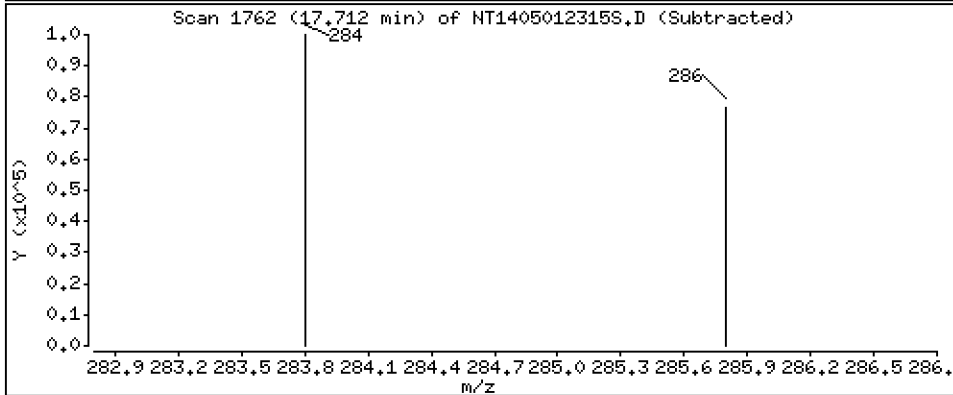
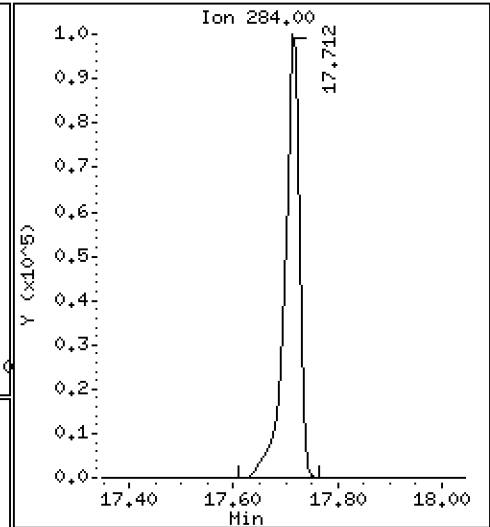
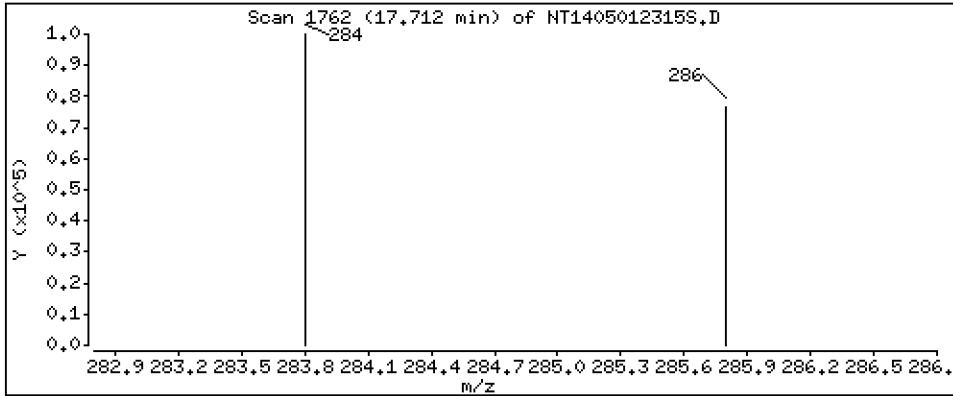
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 3,710 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

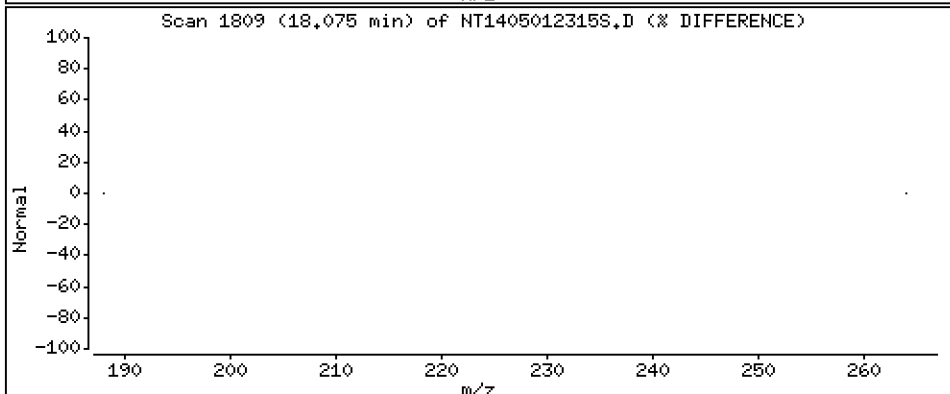
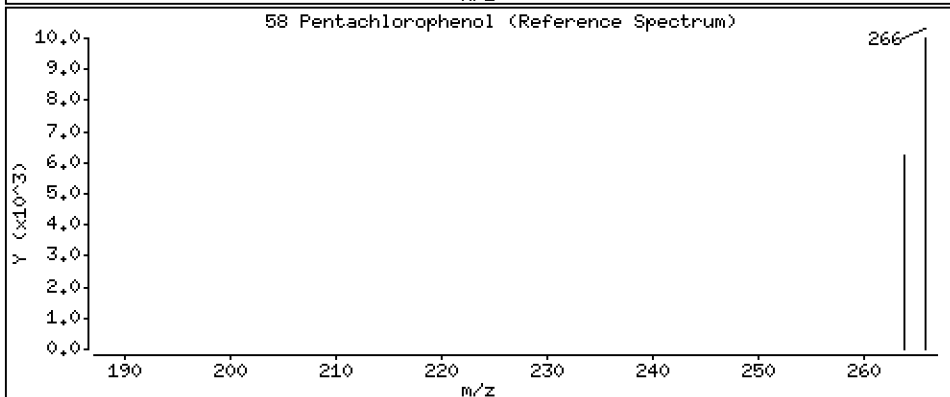
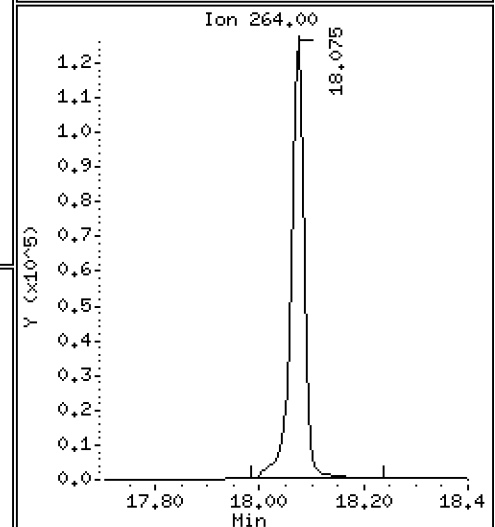
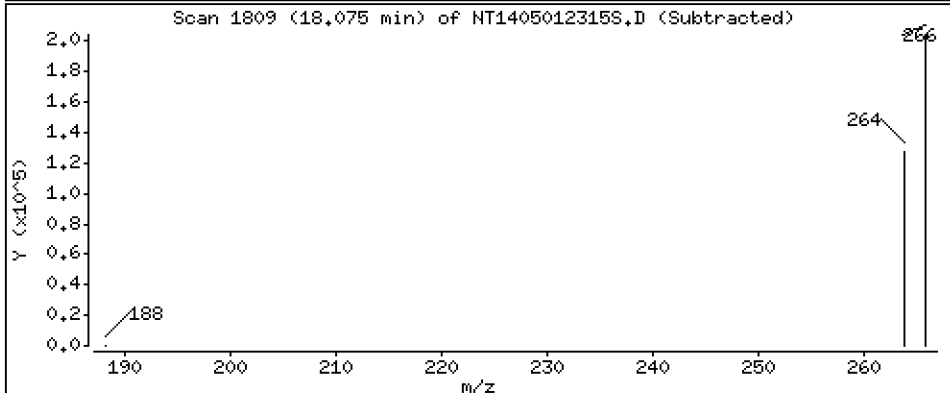
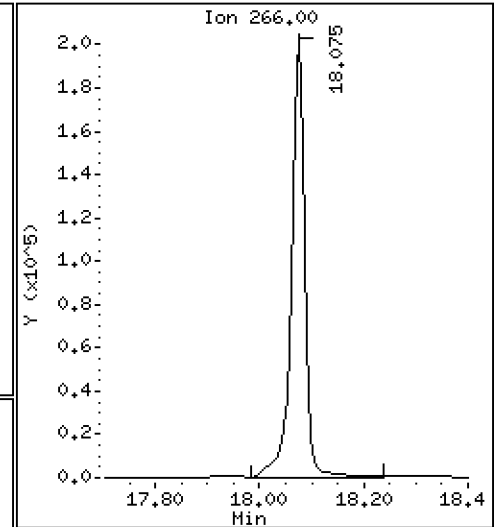
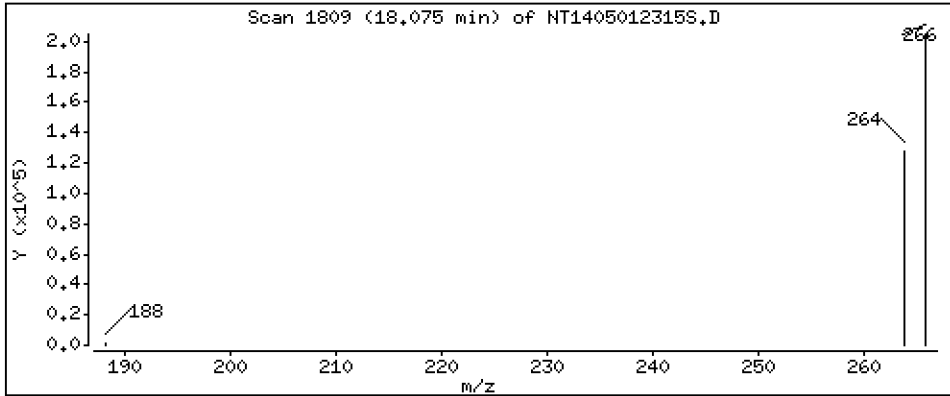
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 10,67 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

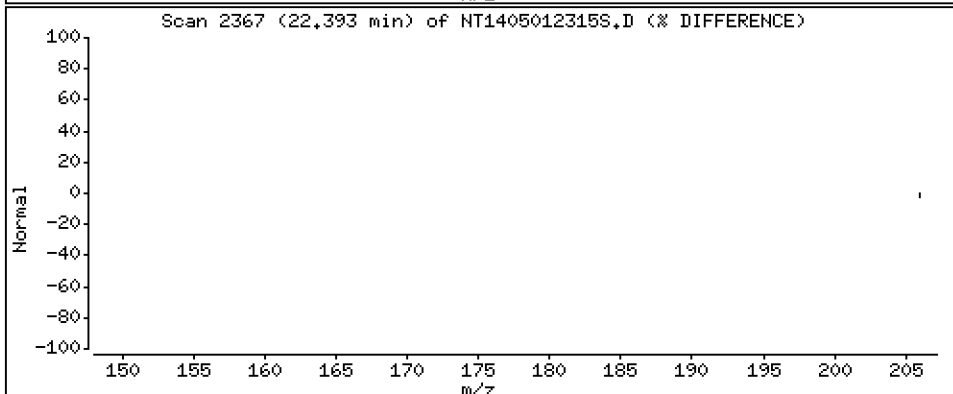
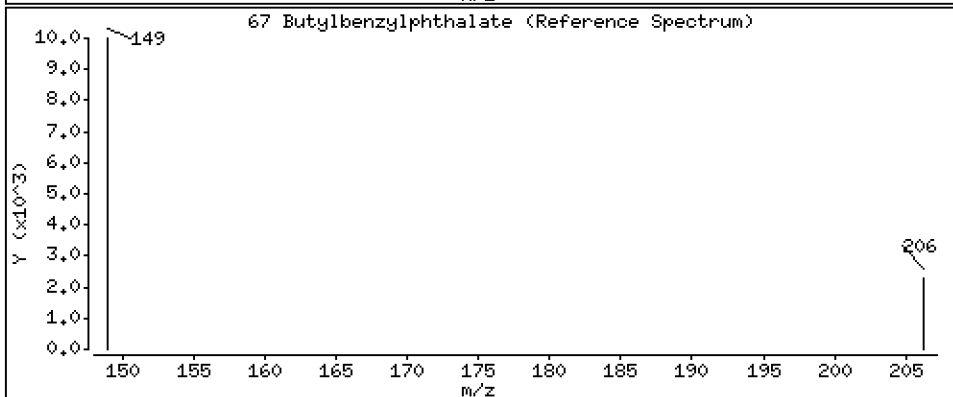
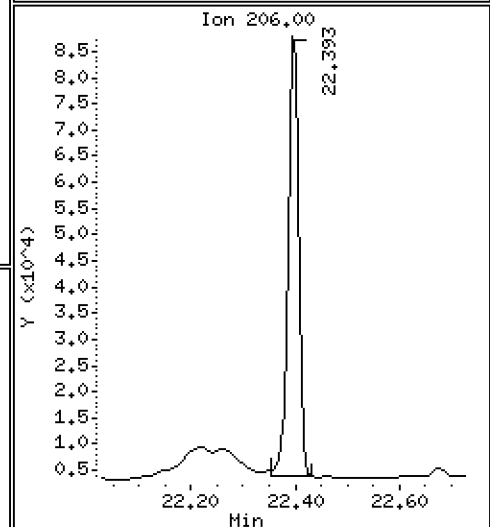
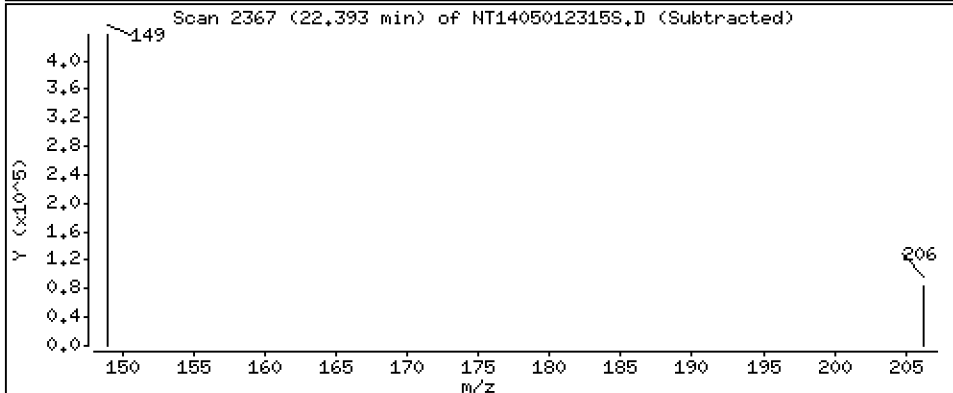
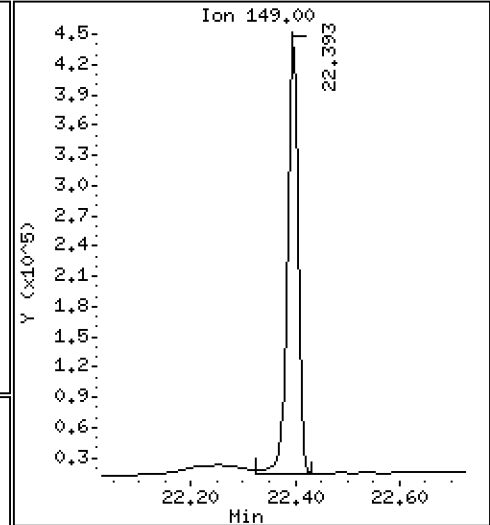
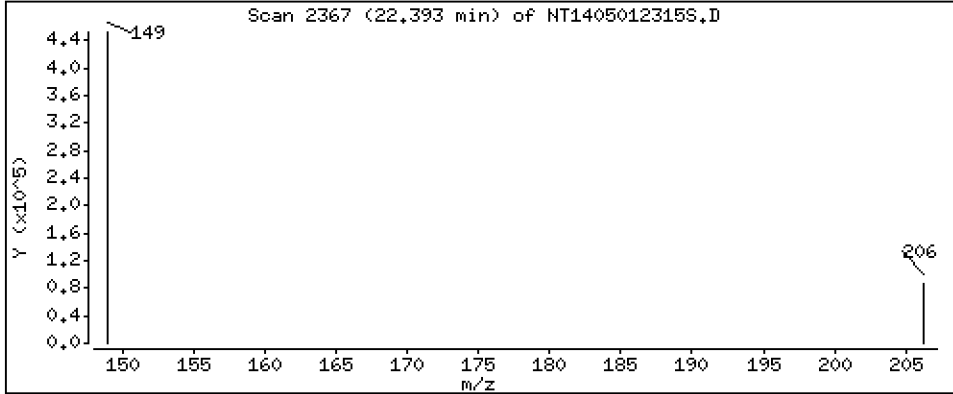
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 3,900 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

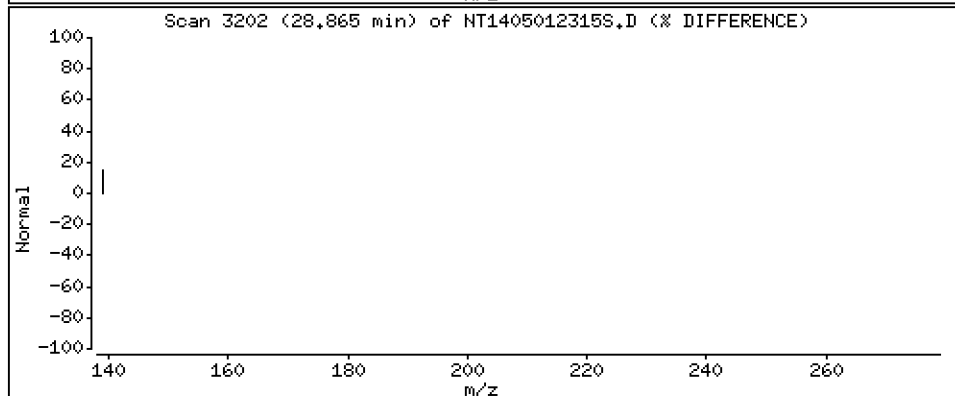
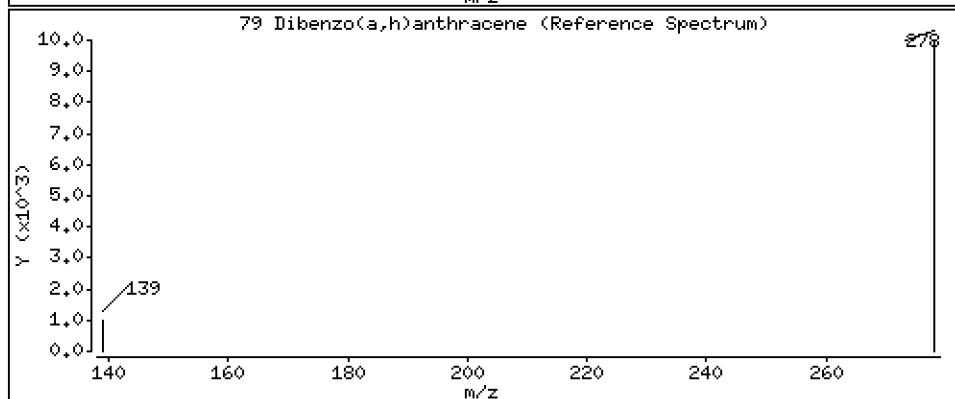
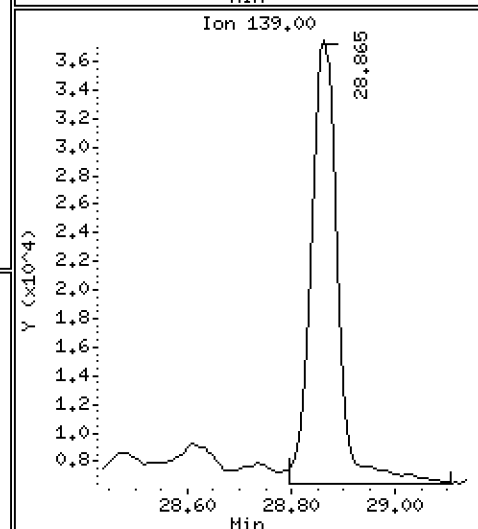
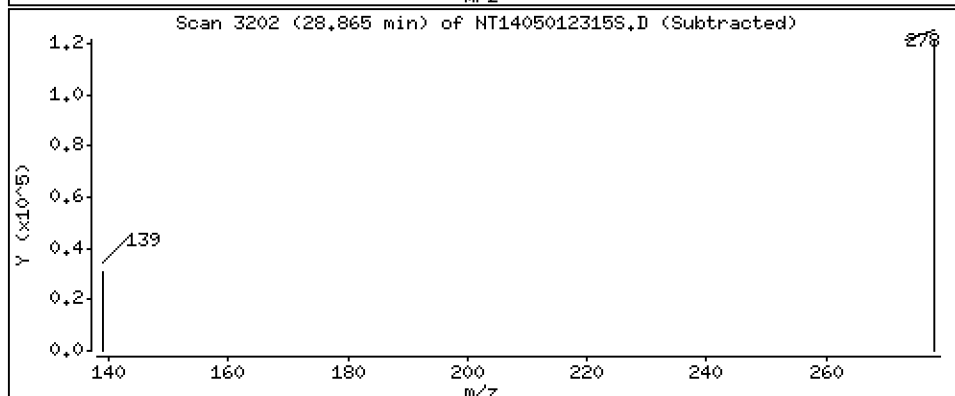
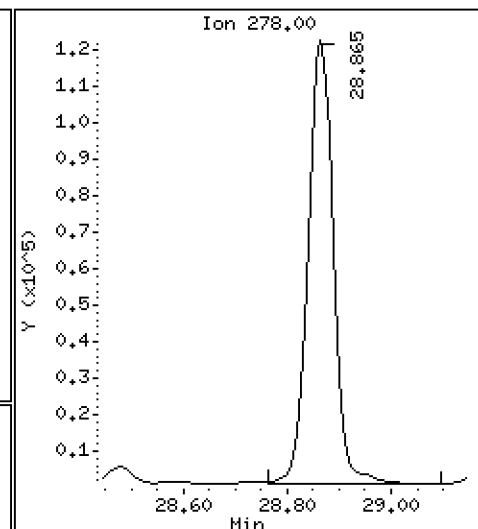
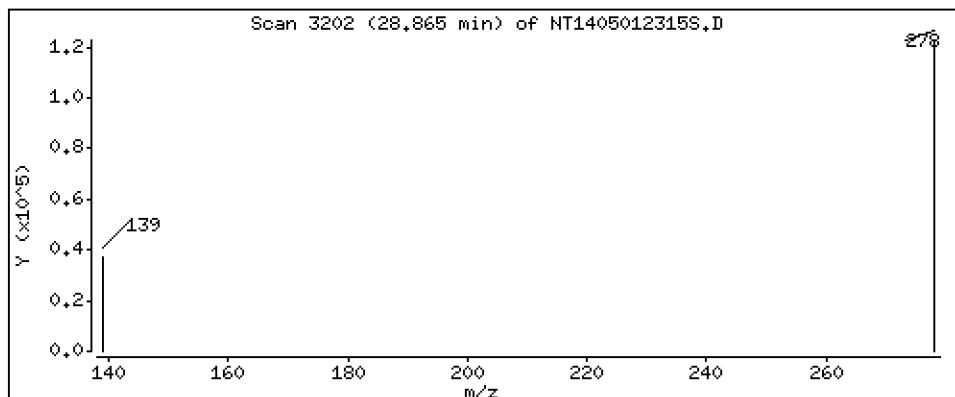
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 2,130 ug/mL



Date : 01-MAY-2023 23:08

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-MSD2

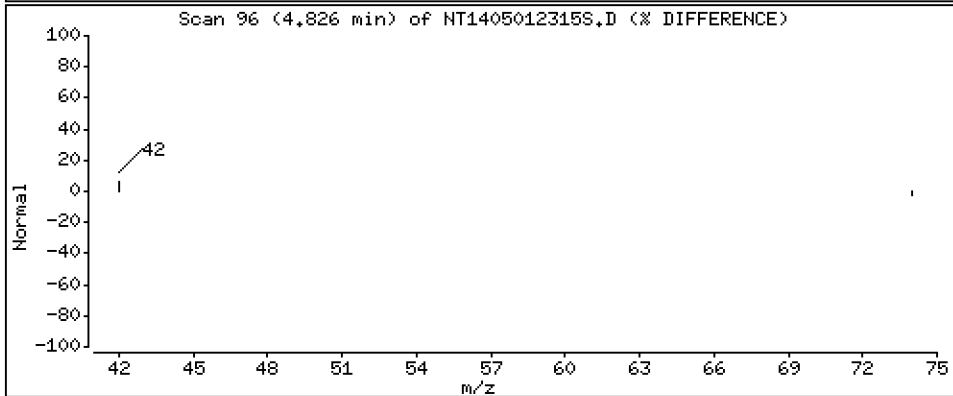
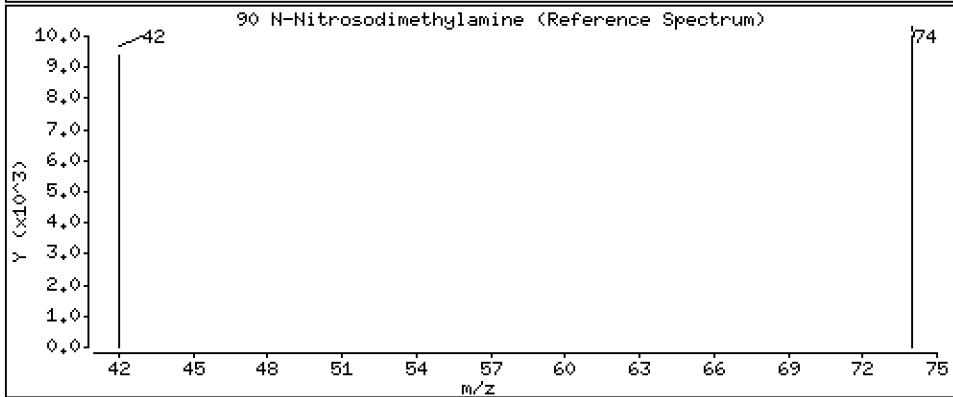
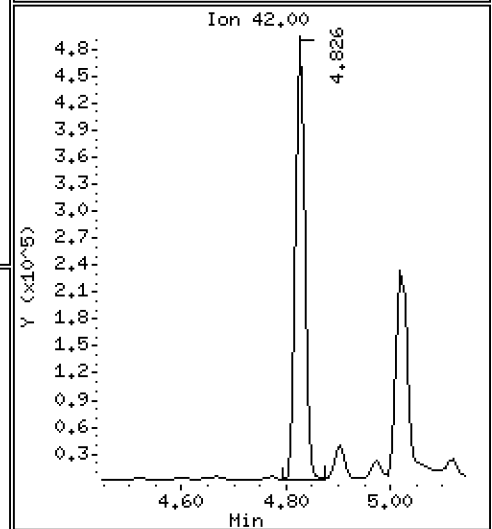
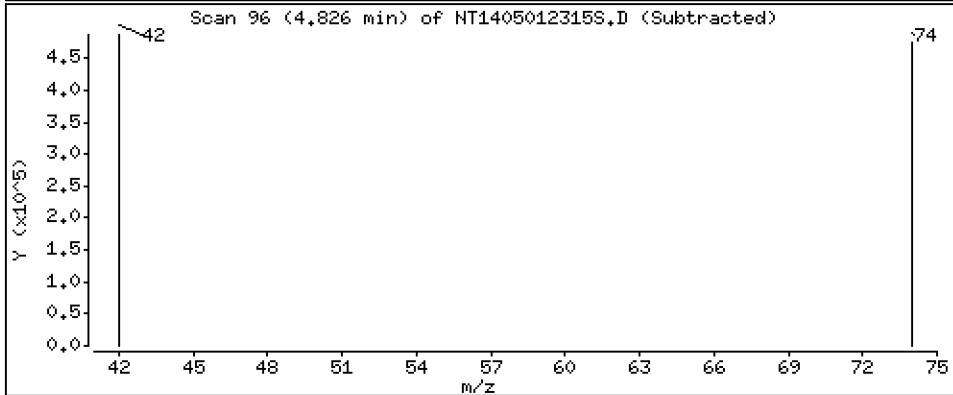
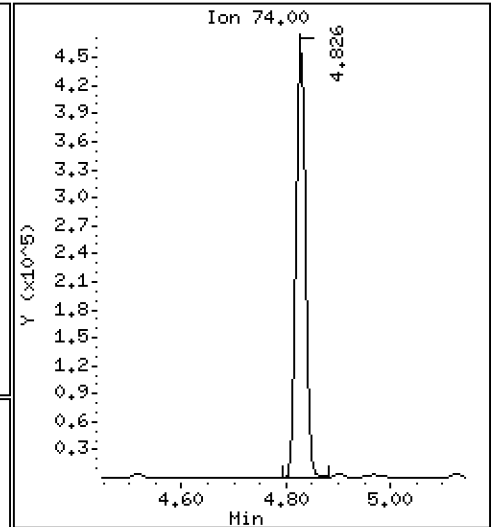
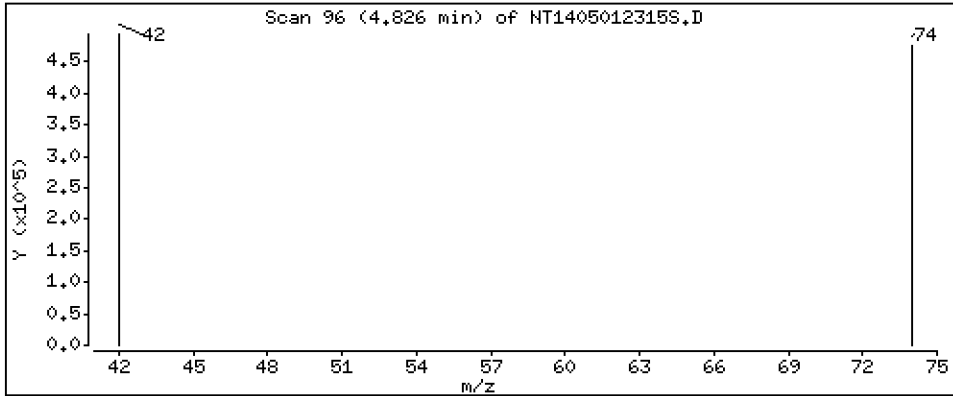
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 7,328 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012315S.D  
 Lab Smp Id: BLD0297-MSD2  
 Inj Date : 01-MAY-2023 23:08 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-MSD2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 15  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.926	6.903	(0.757)	564143	5.39630	5.396 (R)
3 Phenol	94		8.533	8.510	(0.933)	563599	3.36272	3.363
7 1,3-Dichlorobenzene	146		9.075	9.067	(0.992)	420373	3.30688	3.307
* 8 1,4-Dichlorobenzene-d4	152		9.144	9.137	(1.000)	299960	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	409195	3.40217	3.402
11 Benzyl alcohol	79		9.416	9.408	(1.030)	409275	3.96091	3.961
12 1,2-Dichlorobenzene	146		9.525	9.525	(1.042)	409309	3.41104	3.411
13 2-Methylphenol	108		9.649	9.634	(1.055)	190517	1.82303	1.823
15 4-Methylphenol	108		9.929	9.898	(1.086)	308467	2.85972	2.860
16 N-Nitroso-di-n-propylamine	70		9.975	9.967	(1.091)	352841	3.56726	3.567
22 2,4-Dimethylphenol	107		10.968	10.953	(0.942)	317830	2.83358	2.834
24 Benzoic acid	105		11.170	11.085	(0.959)	774157	9.58065	9.581
26 1,2,4-Trichlorobenzene	180		11.557	11.549	(0.993)	316854	3.67966	3.680
* 27 Naphthalene-d8	136		11.642	11.634	(1.000)	1172812	4.00000	
30 Hexachlorobutadiene	225		12.044	12.044	(1.035)	171341	3.59546	3.595
39 Dimethylphthalate	163		14.783	14.776	(0.967)	789605	3.92758	3.928
* 42 Acenaphthene-d10	162		15.286	15.271	(1.000)	550684	4.00000	
50 Diethylphthalate	149		16.245	16.229	(1.063)	868958	4.22682	4.227
54 N-Nitrosodiphenylamine	169		16.638	16.623	(0.907)	420355	3.06166	3.062
57 Hexachlorobenzene	284		17.711	17.696	(0.966)	194420	3.70988	3.710
58 Pentachlorophenol	266		18.075	18.052	(0.986)	371699	10.6659	10.67
* 59 Phenanthrene-d10	188		18.338	18.323	(1.000)	982057	4.00000	
\$ 66 Terphenyl-d14	244		21.479	21.456	(0.918)	537809	4.68212	4.682 (R)
67 Butylbenzylphthalate	149		22.393	22.377	(0.957)	639291	3.89956	3.900
* 69 Chrysene-d12	240		23.399	23.369	(1.000)	722171	4.00000	
* 77 Perylene-d12	264		26.094	26.047	(1.000)	632423	4.00000	
79 Dibenzo(a,h)anthracene	278		28.864	28.794	(1.106)	407870	2.13033	2.130
90 N-Nitrosodimethylamine	74		4.825	4.795	(0.528)	625168	7.32800	7.328

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012315S.D  
 Lab Smp Id: BLD0297-MSD2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	299960	-9.53
27 Naphthalene-d8	1259018	629509	2518036	1172812	-6.85
42 Acenaphthene-d10	580636	290318	1161272	550684	-5.16
59 Phenanthrene-d10	1027945	513973	2055890	982057	-4.46
69 Chrysene-d12	775653	387827	1551306	722171	-6.90
77 Perylene-d12	750797	375399	1501594	632423	-15.77

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	0.08
27 Naphthalene-d8	11.63	11.13	12.13	11.64	0.07
42 Acenaphthene-d10	15.27	14.77	15.77	15.29	0.10
59 Phenanthrene-d10	18.32	17.82	18.82	18.34	0.08
69 Chrysene-d12	23.37	22.87	23.87	23.40	0.13
77 Perylene-d12	26.05	25.55	26.55	26.09	0.18

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012315S.D

Lab ID: BLD0297-MSD2

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 23:08

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.959	0.953	0.0067	Benzoic acid

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*





## STANDARD REFERENCE MATERIAL RECOVERY

### EPA 8270E-SIM

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Matrix:** Solid

**Laboratory ID:** BLD0297-SRM2

**Batch:** BLD0297

**Initial/Final:** 1 g / 1 mL

**Preparation:** EPA 3546 (Microwave)

**Analyzed:** 05/01/2023 19:27

**Standard ID:** K003477

**Expires:** 01/31/2024

**Standard Lot#:** CRM 143 (LRAC8918)

**Description:** CRM 143 BNAs - Sandy Loam

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
2,4-Dimethylphenol	6357.0	2650	21.7	200		41.7	0 - 220
1,2,4-Trichlorobenzene	1477.0	1300	26.8	50.0		88.3	10 - 193
N-Nitrosodiphenylamine	2854.0	2830	13.1	50.0		99.3	40 - 160
Pentachlorophenol	3411.0	3230	21.3	200	Q	94.6	10 - 206

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230501A.b\NT1405012309S.D

Date: 01-May-2023 19:27

Client ID:

Sample Info: BLD0297-SRM2

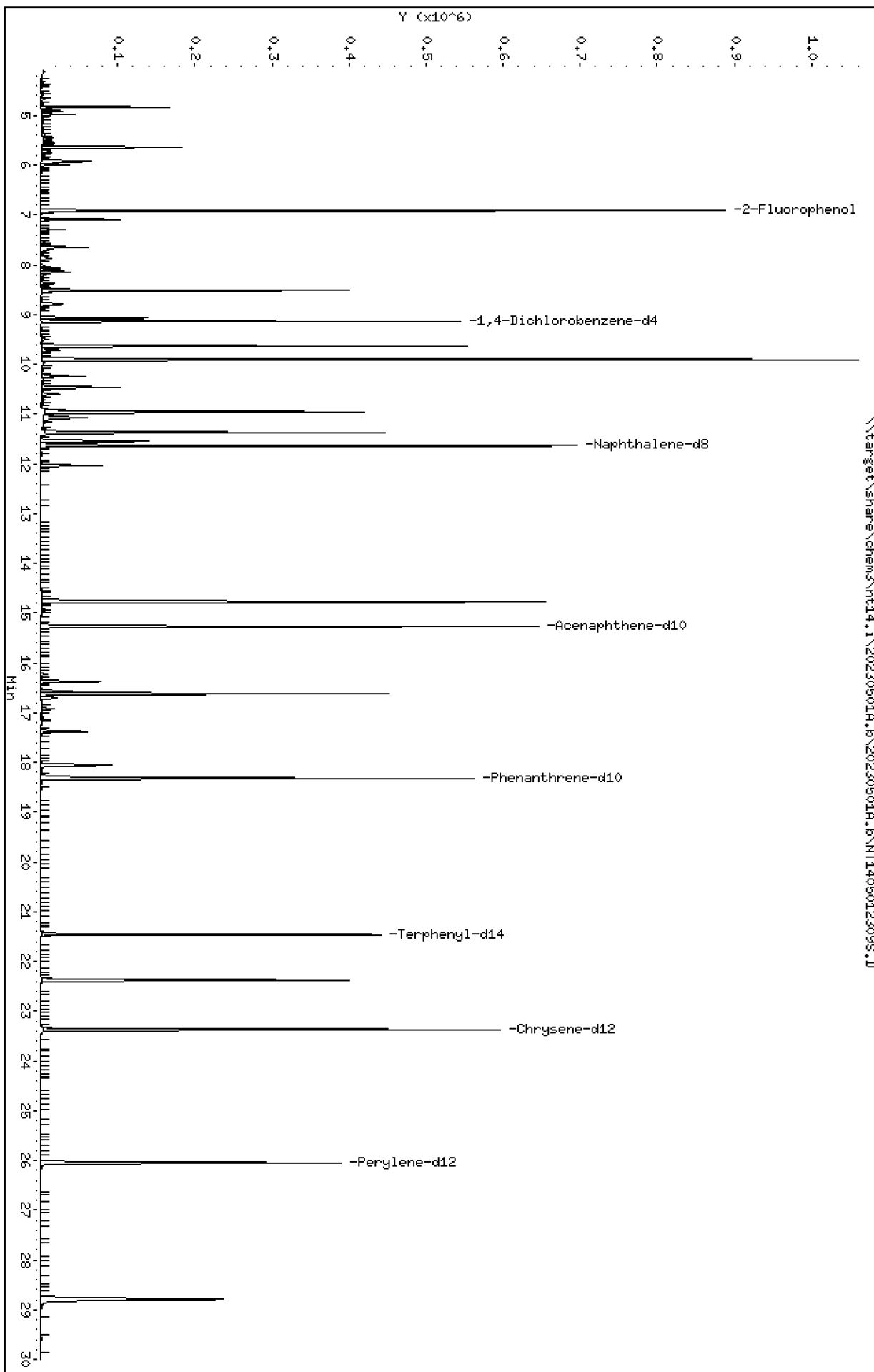
Instrument: nt14.1

Operator: USD

Column diameter: 0.25

Column phase: ZB-5msi

\\target\share\chem3\nt14.1\20230501A.b\NT1405012309S.D



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

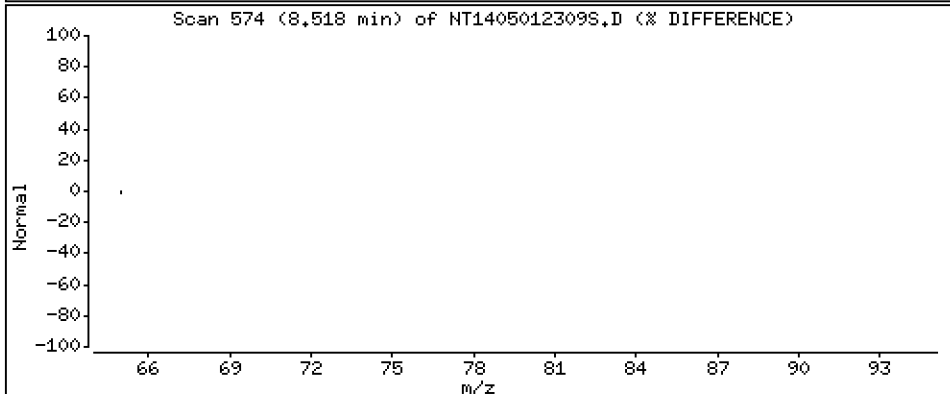
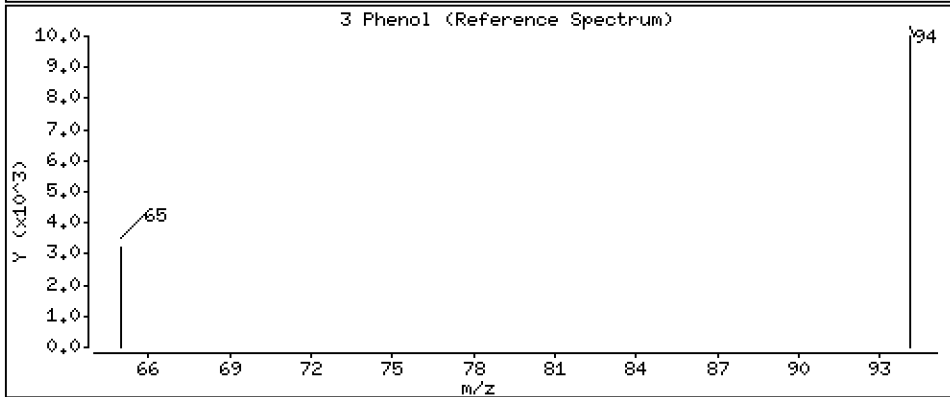
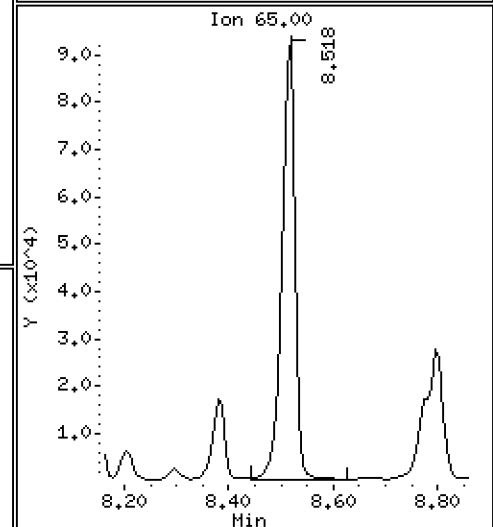
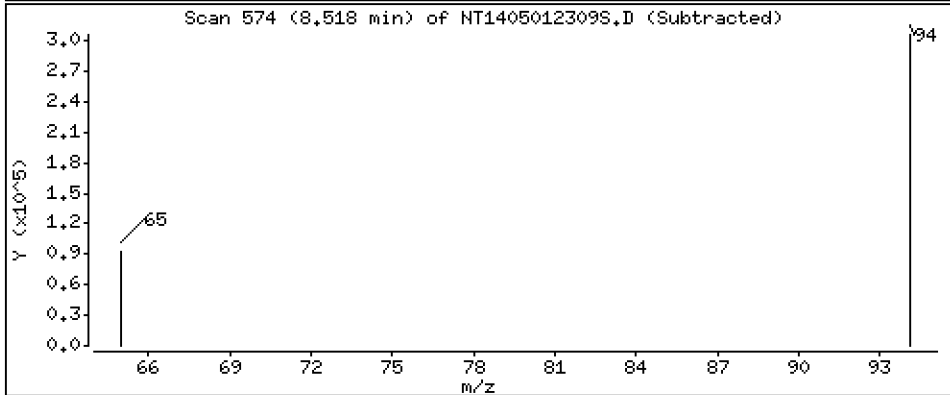
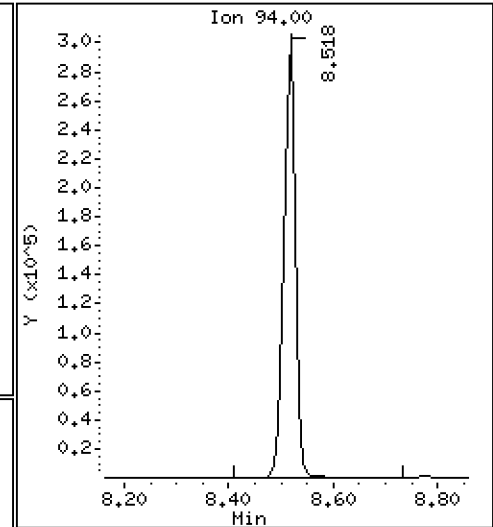
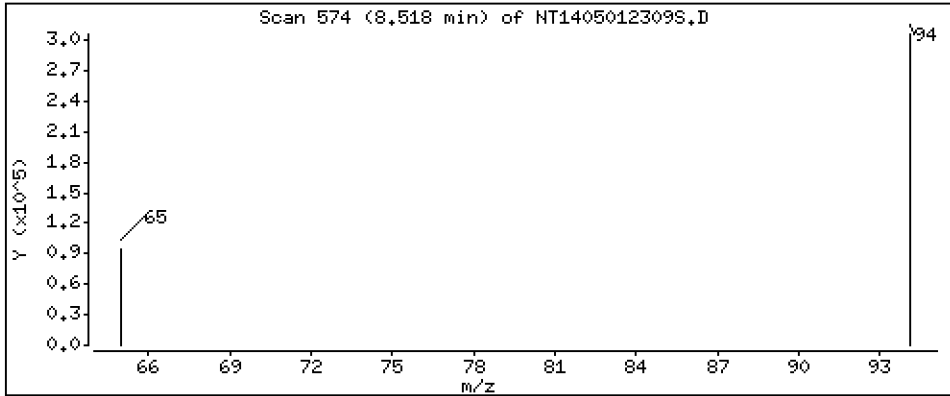
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 2,483 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

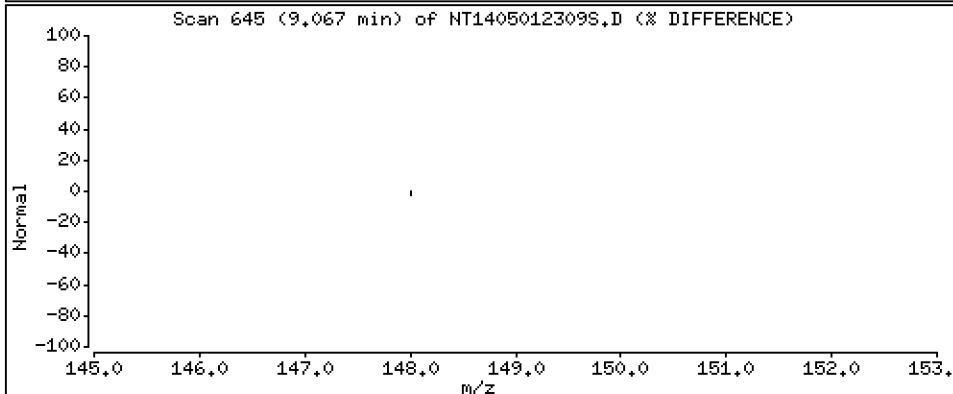
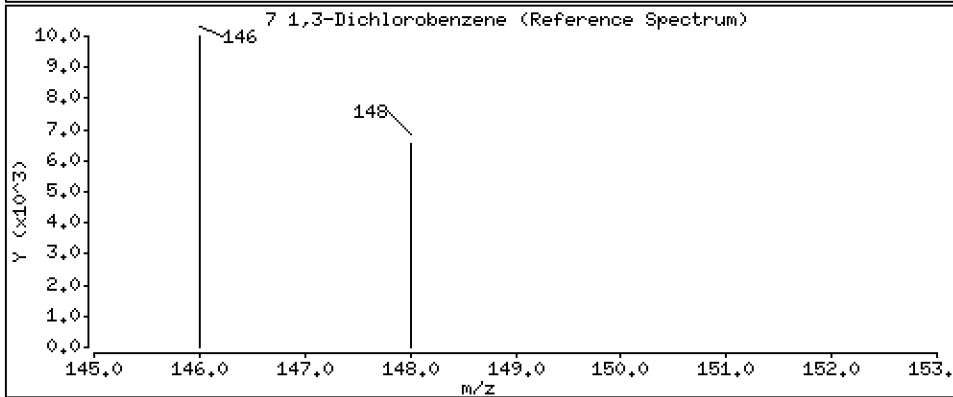
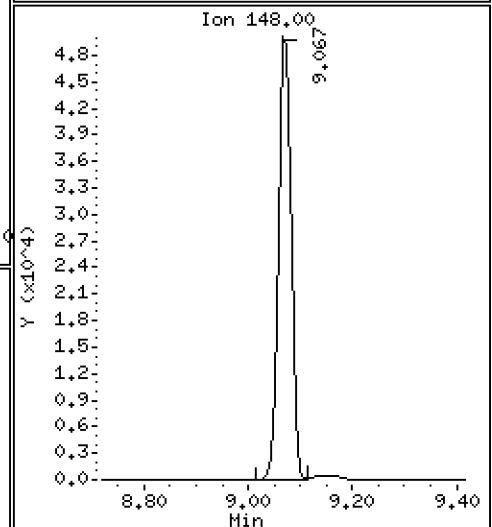
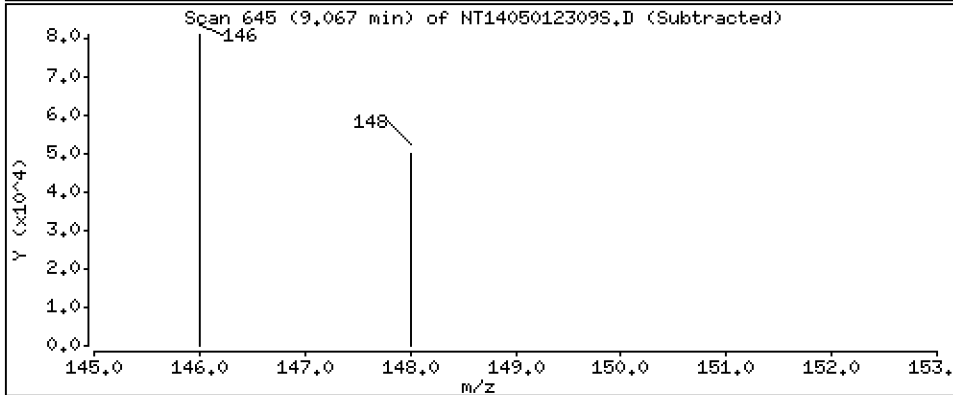
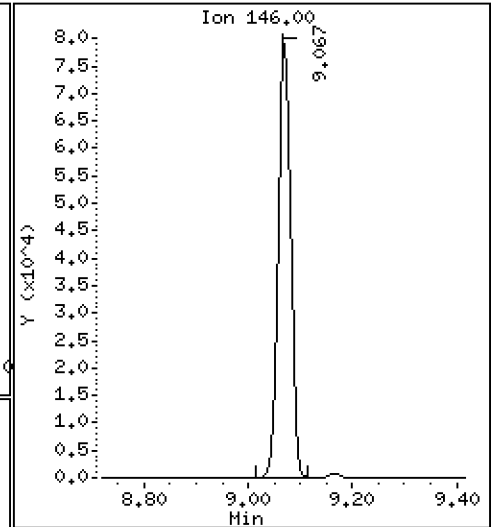
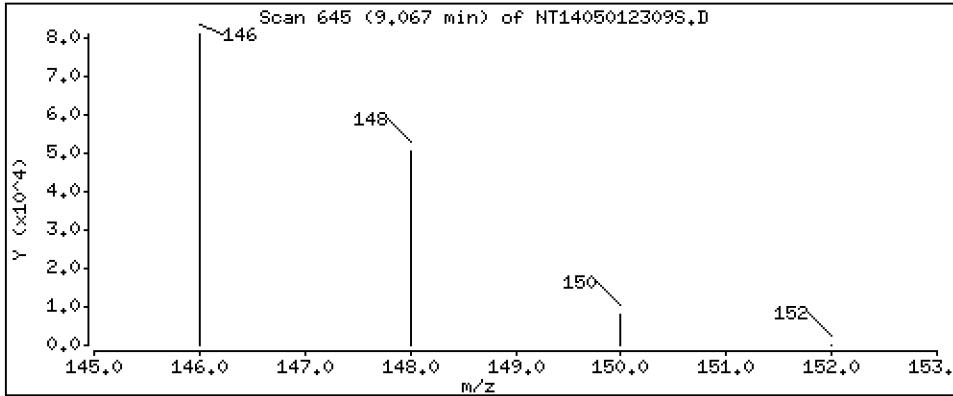
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,9326 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

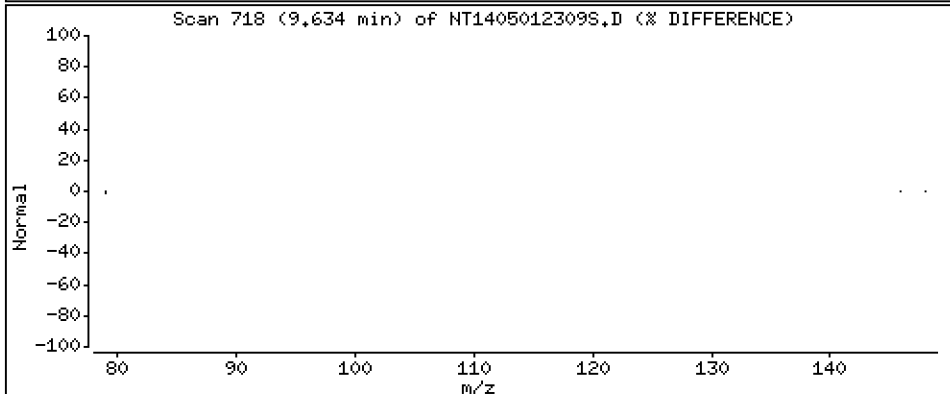
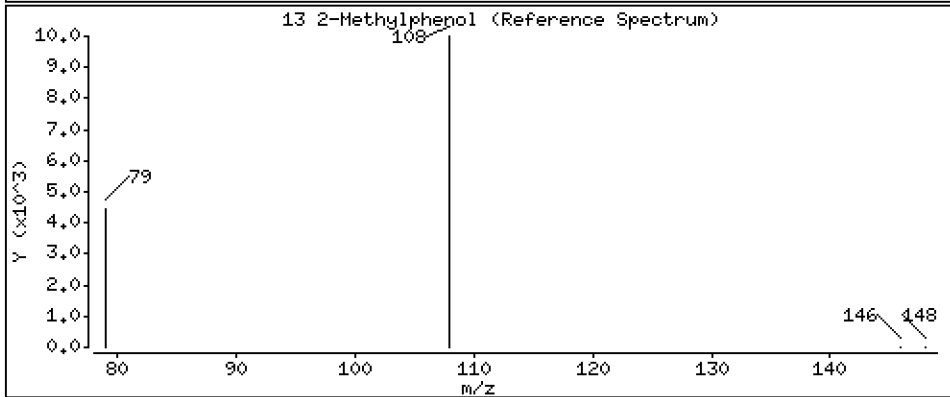
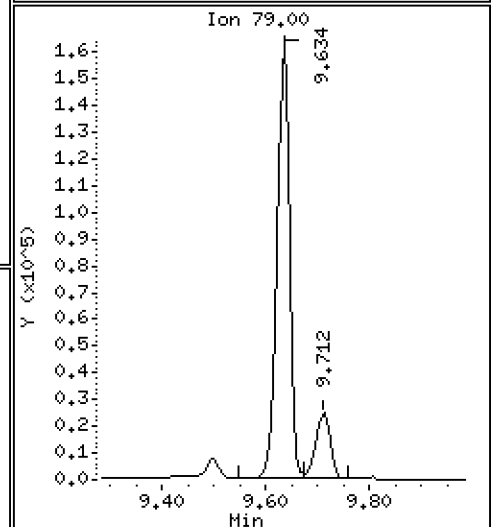
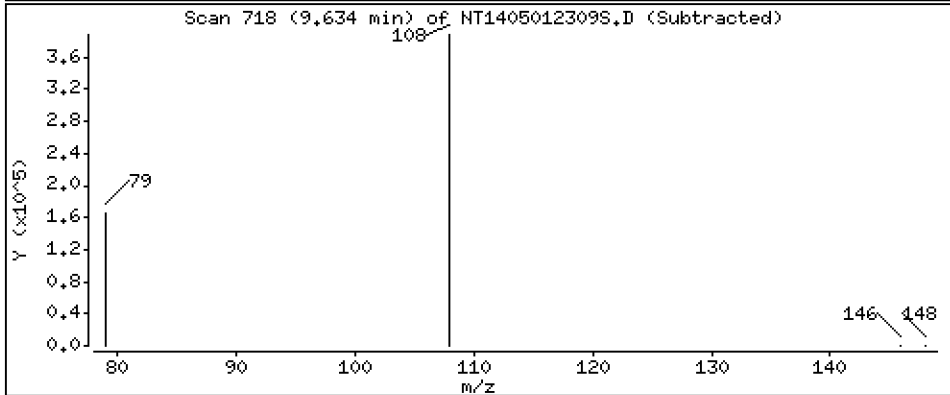
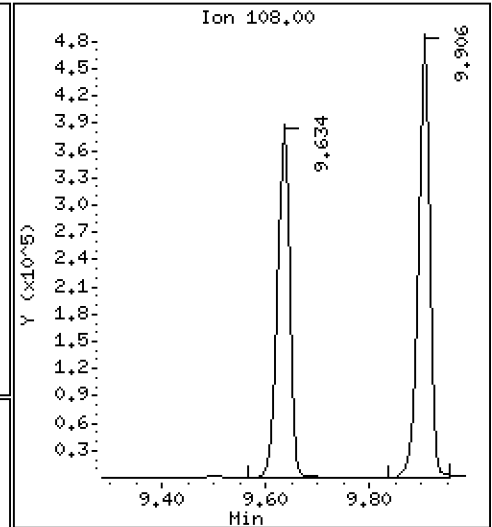
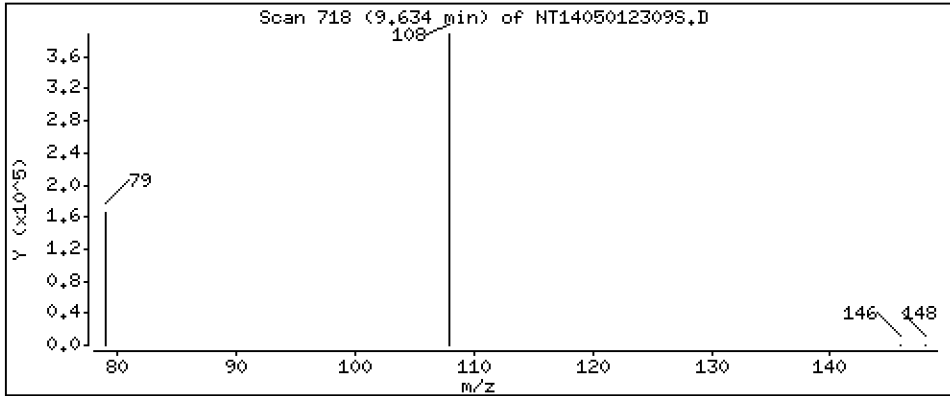
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 5.376 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

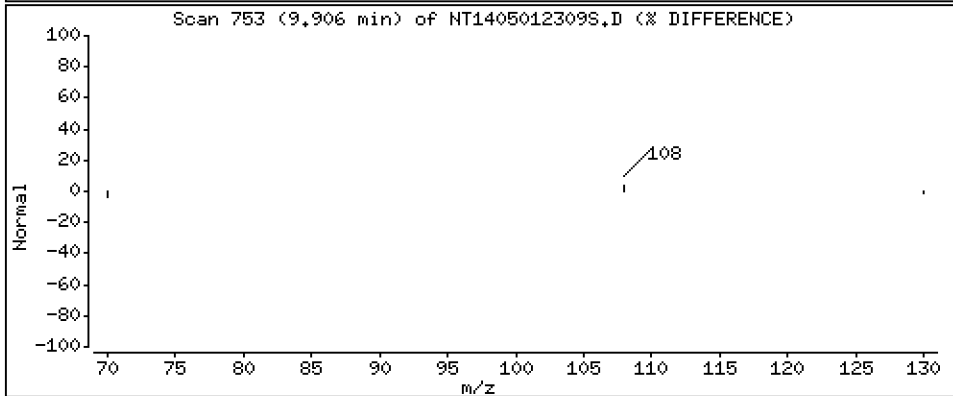
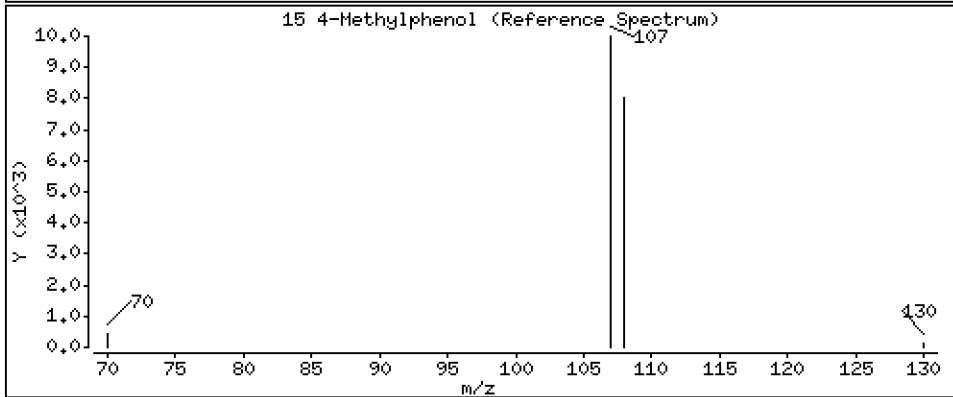
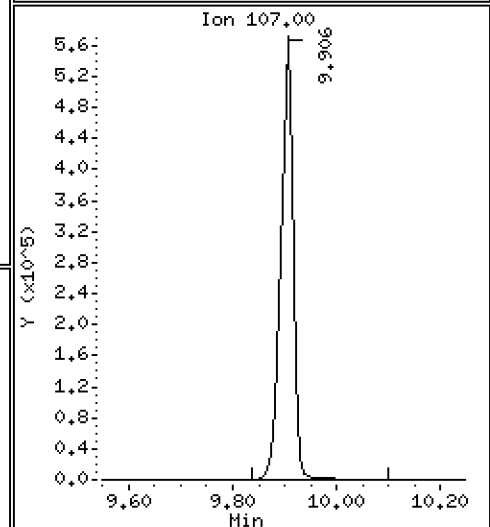
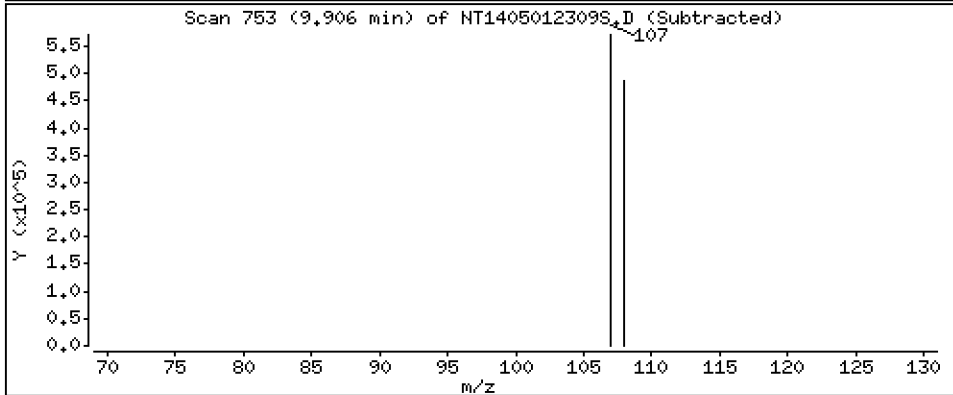
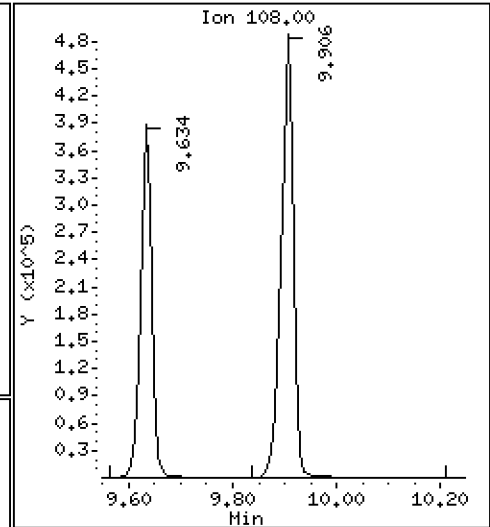
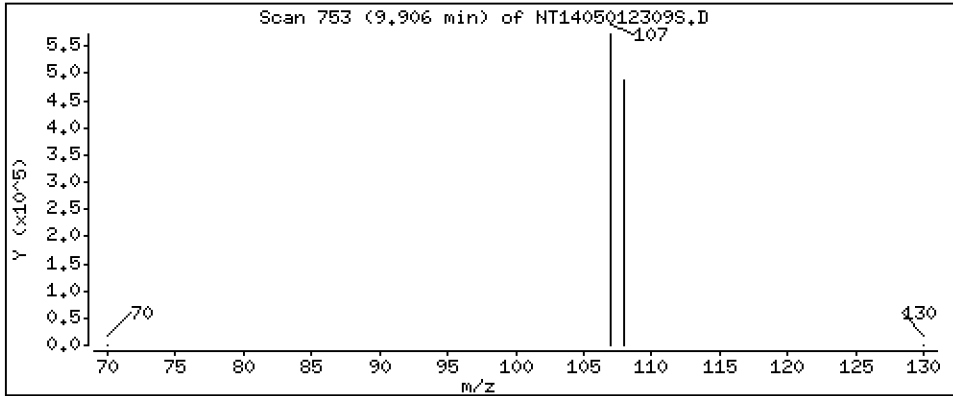
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 6.731 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

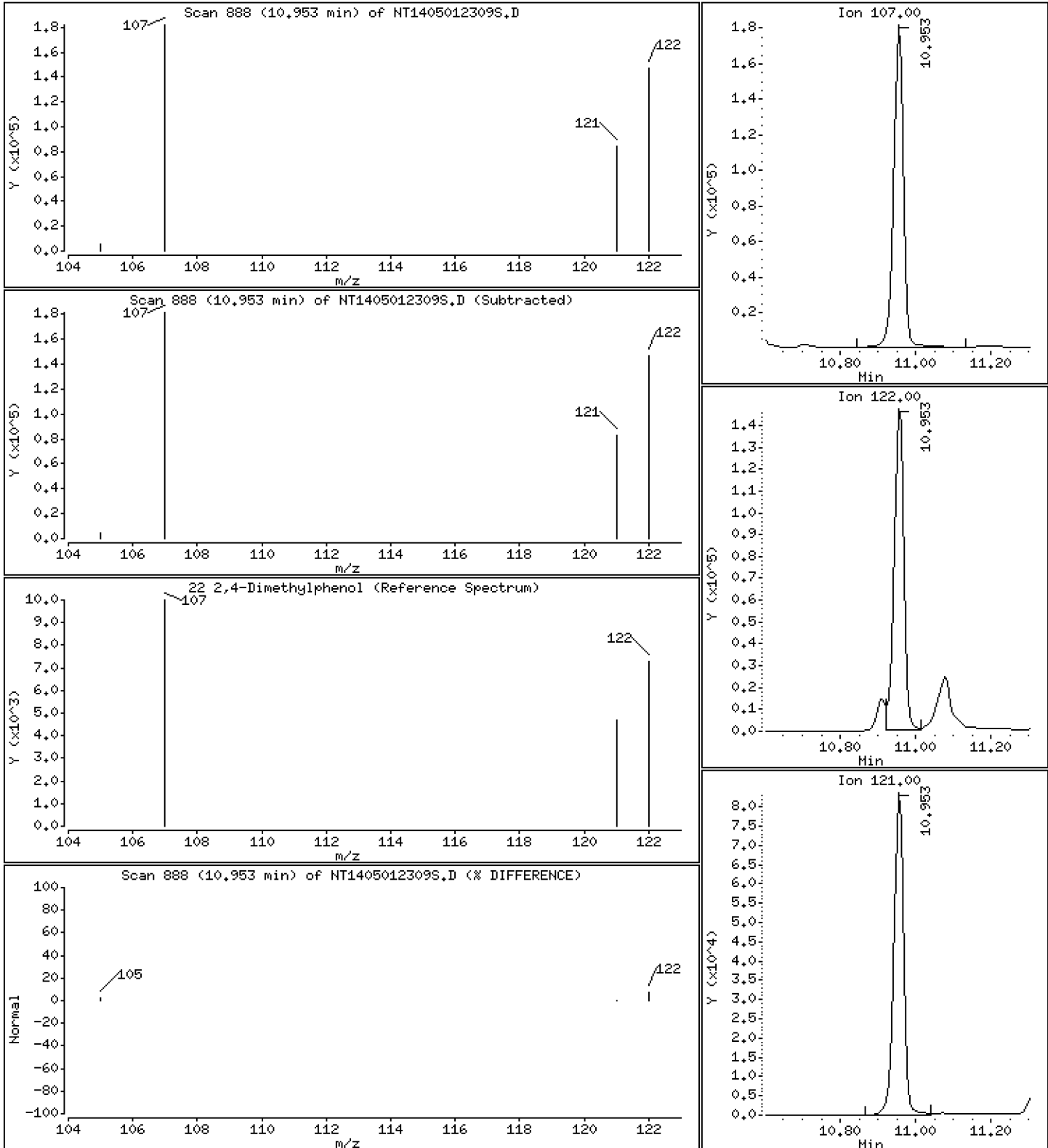
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 2,650 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

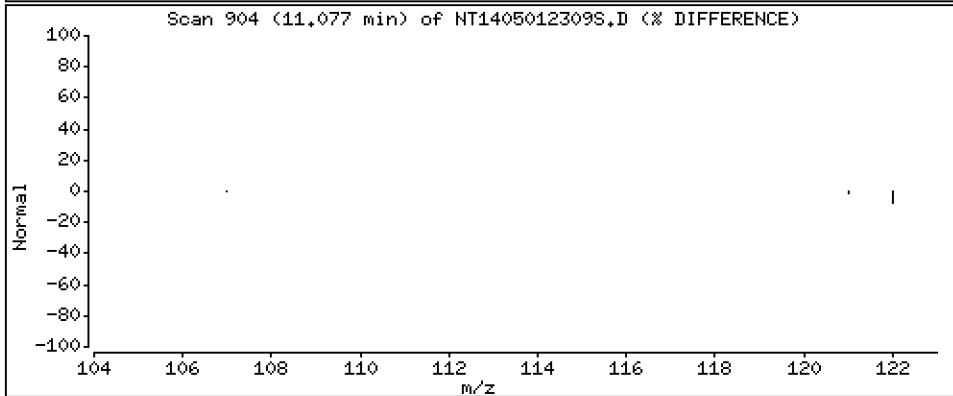
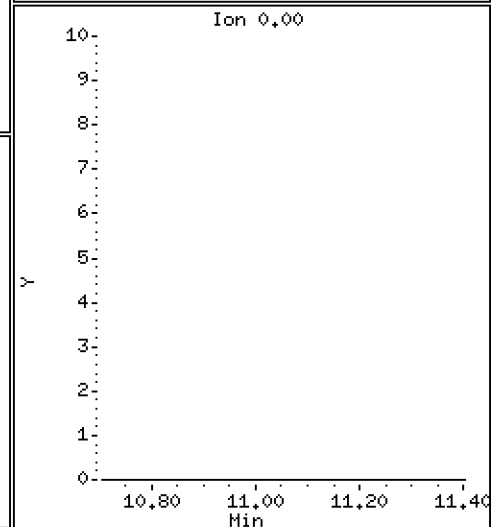
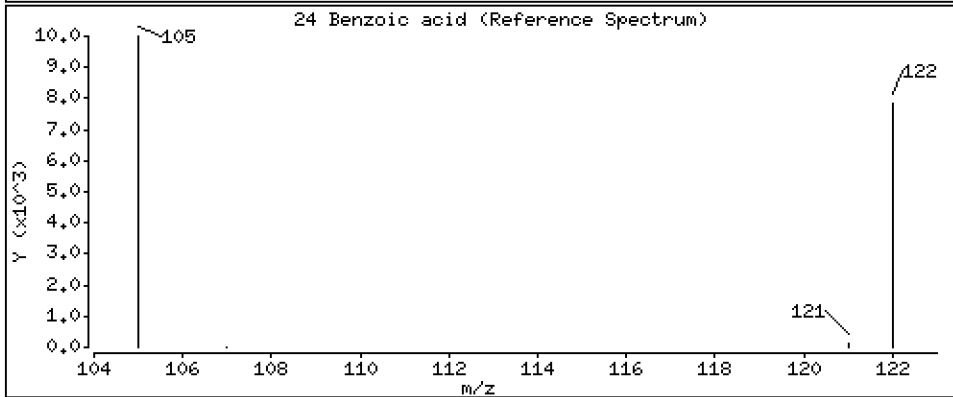
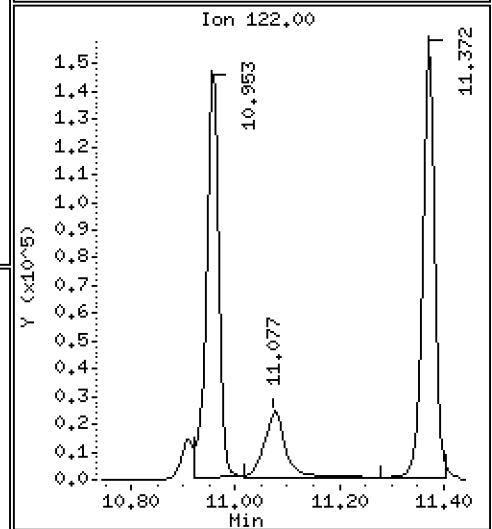
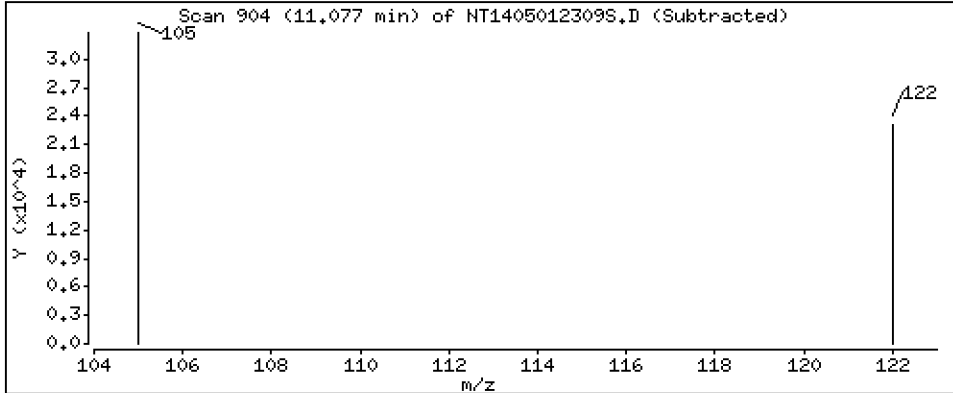
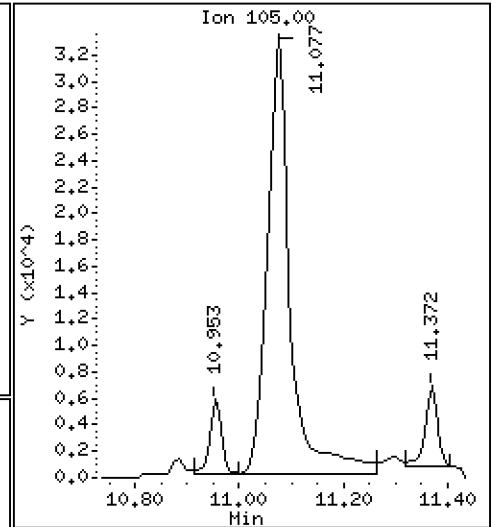
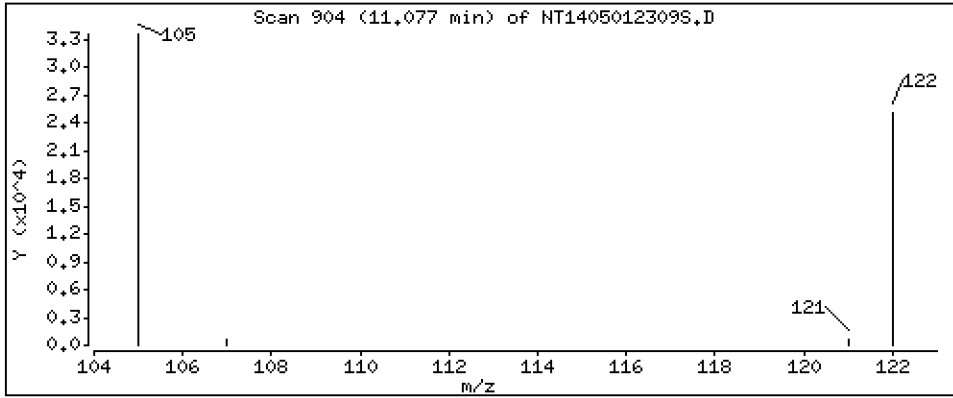
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 1,203 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

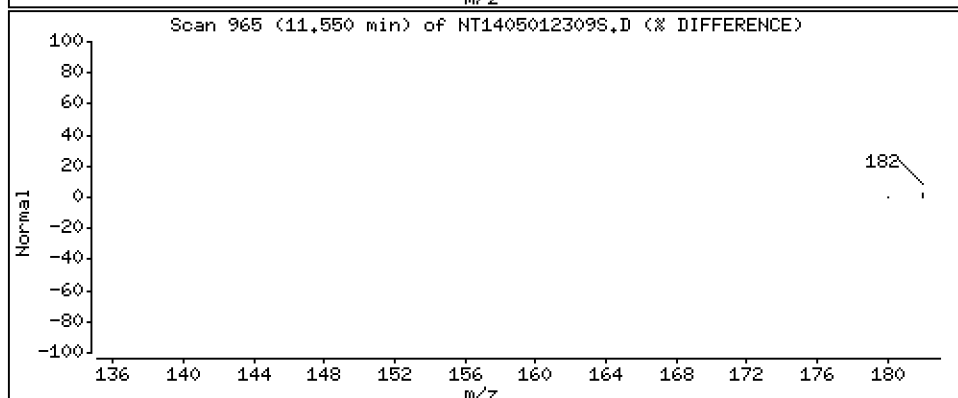
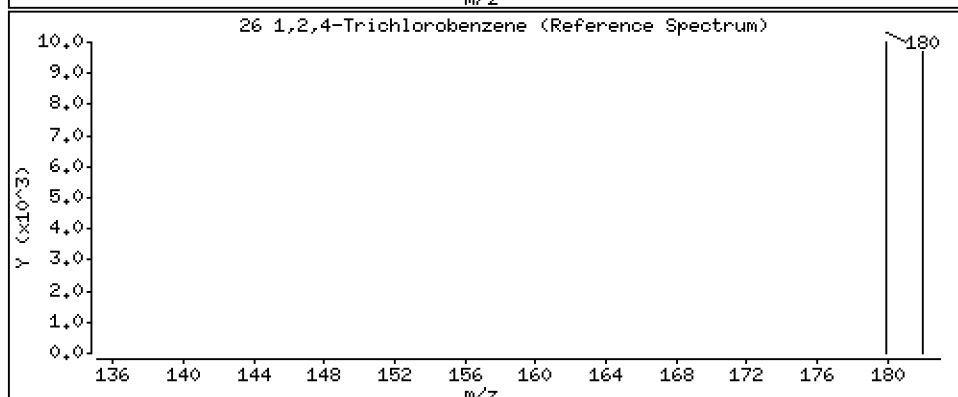
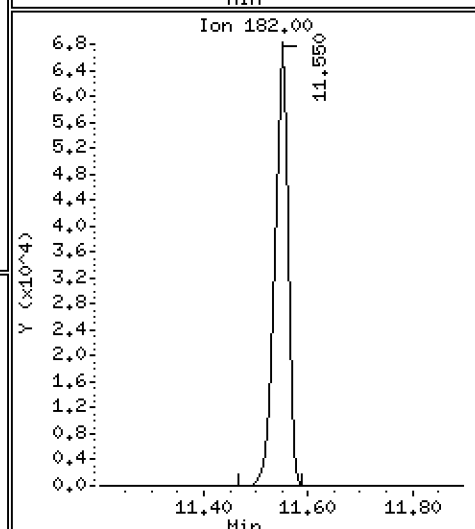
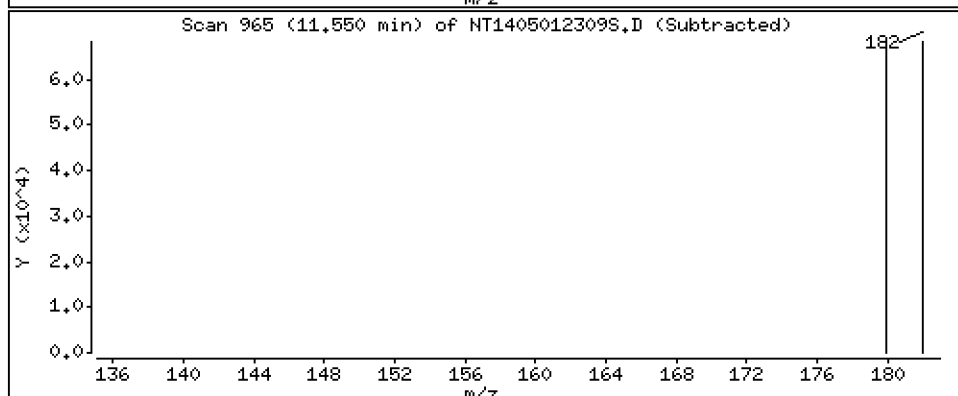
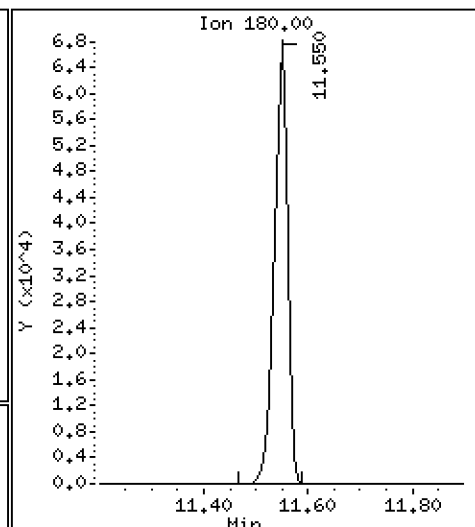
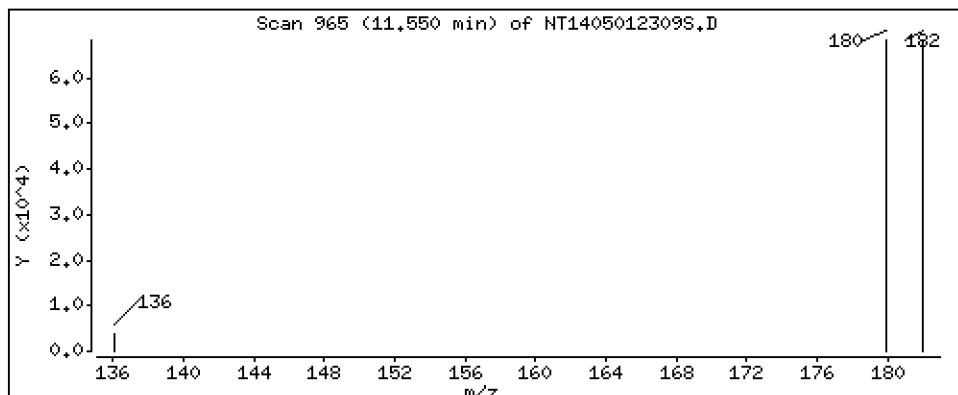
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 1,304 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

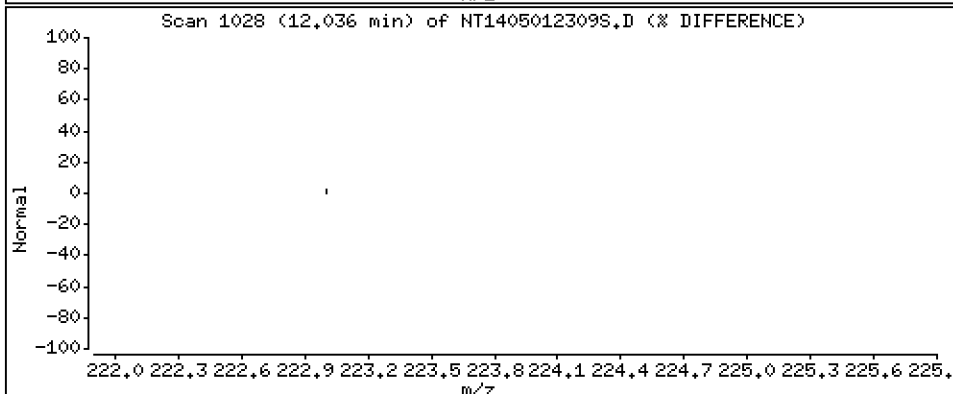
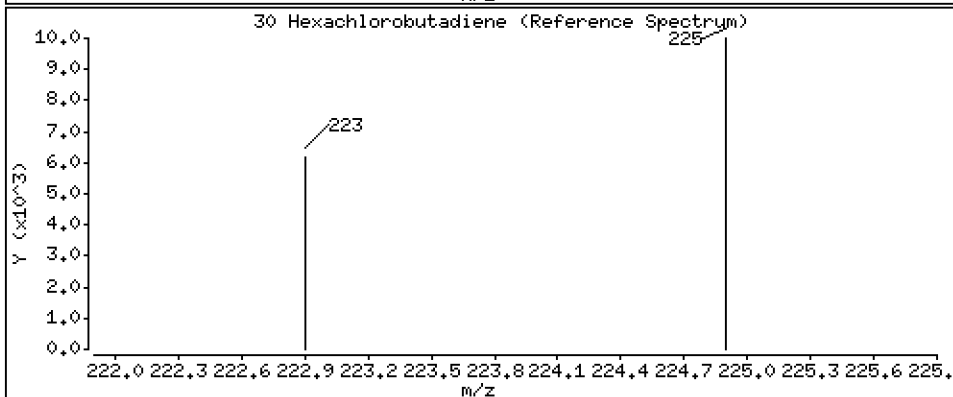
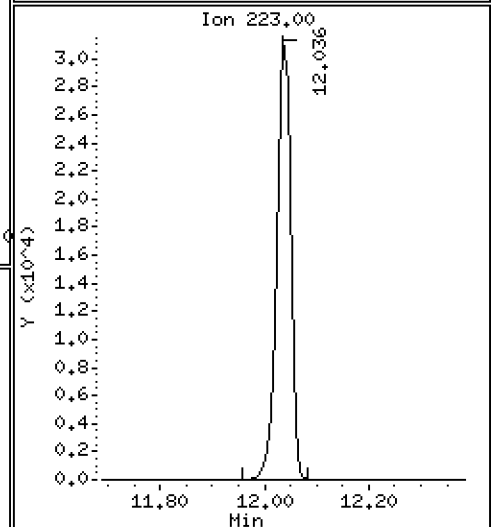
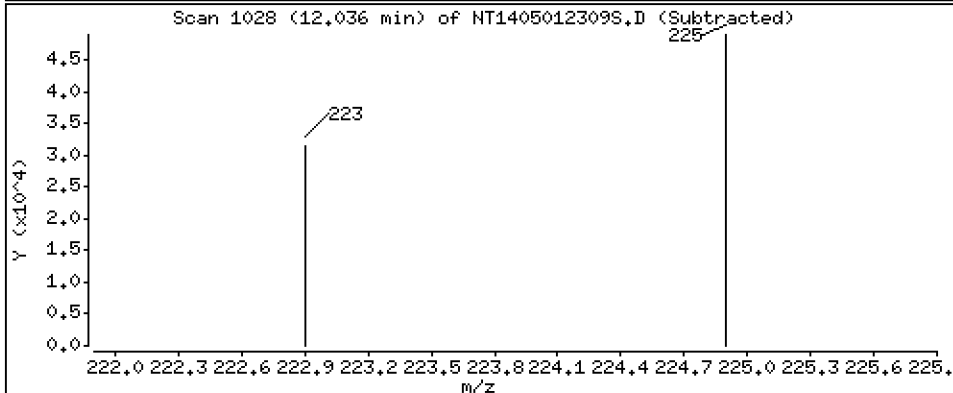
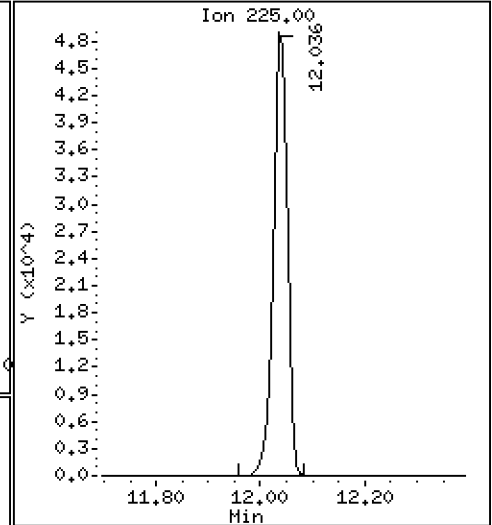
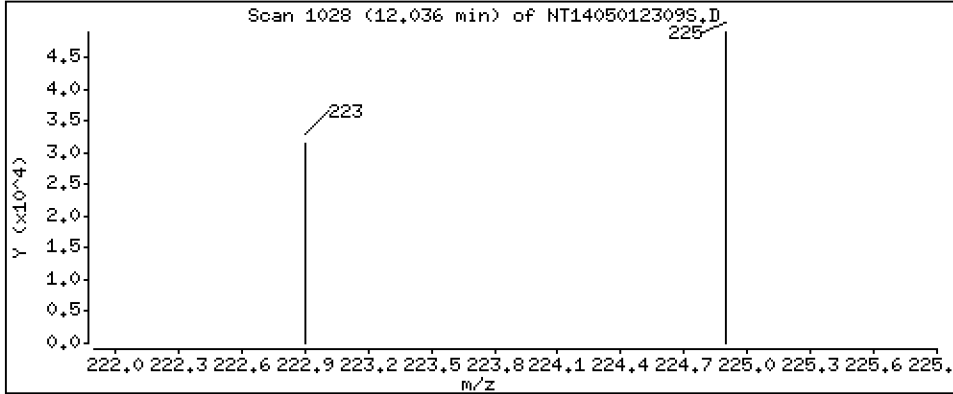
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 1,775 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

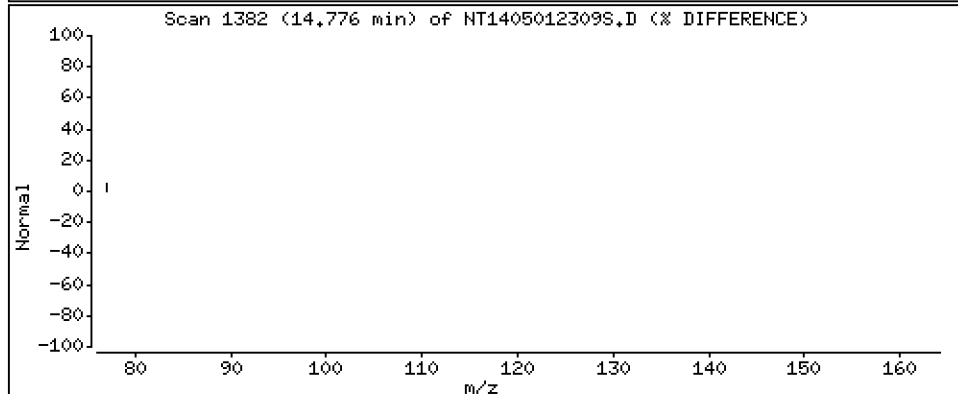
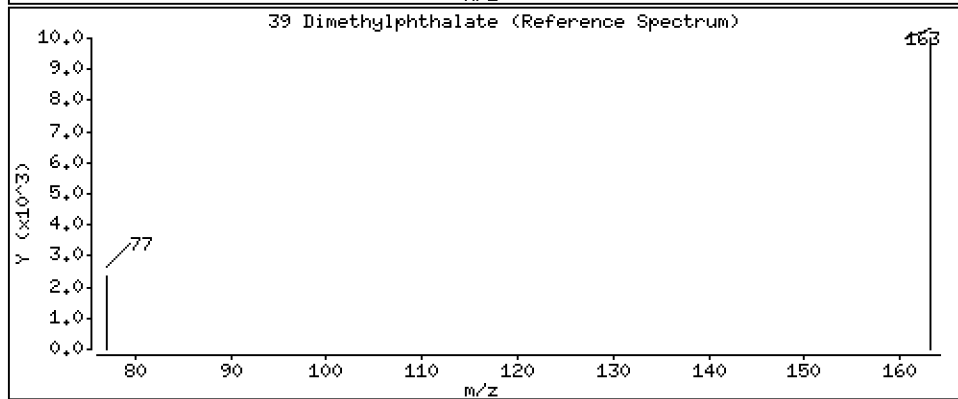
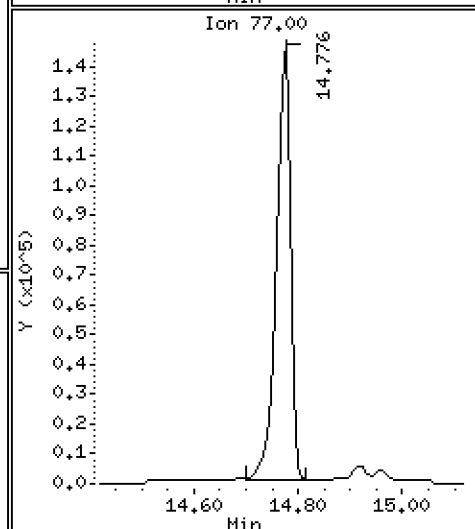
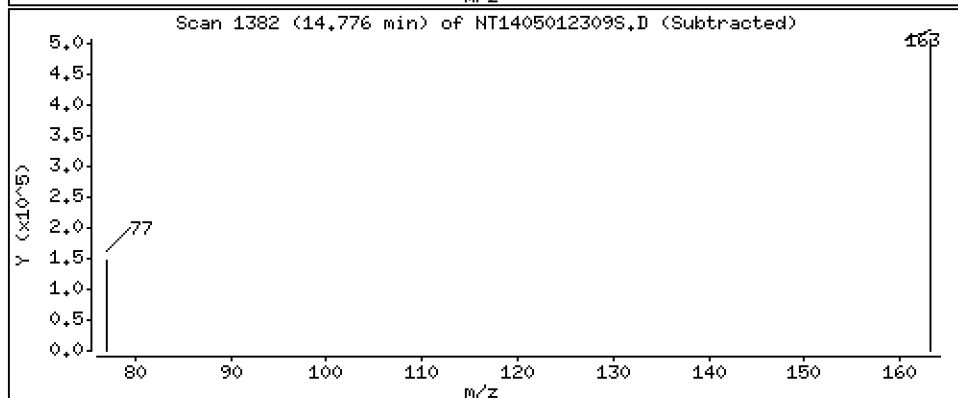
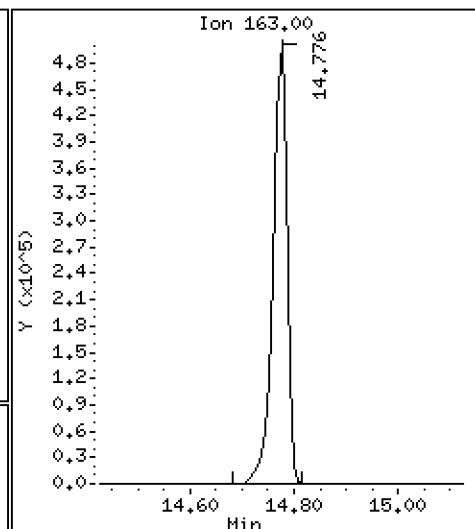
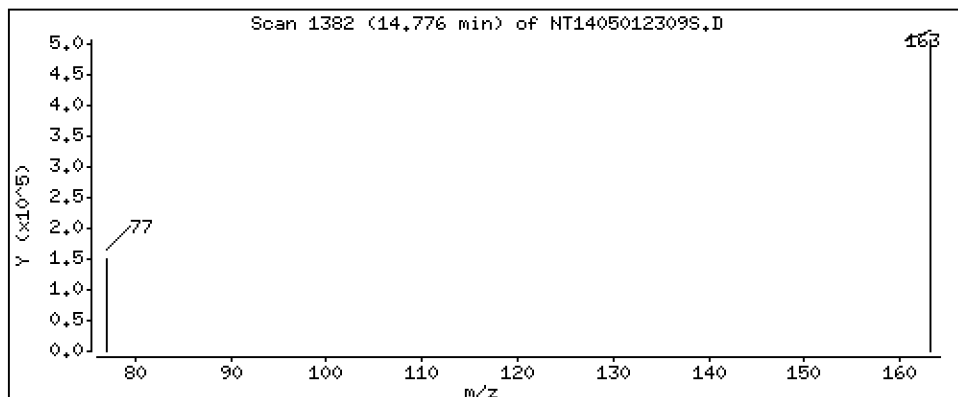
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,297 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

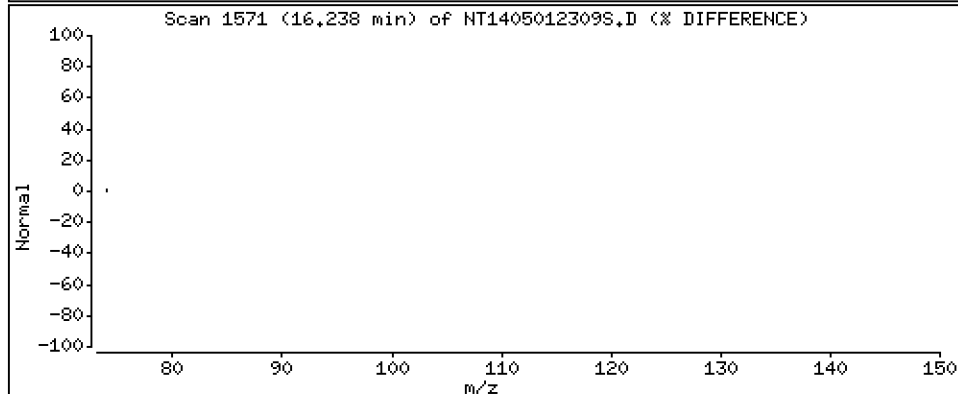
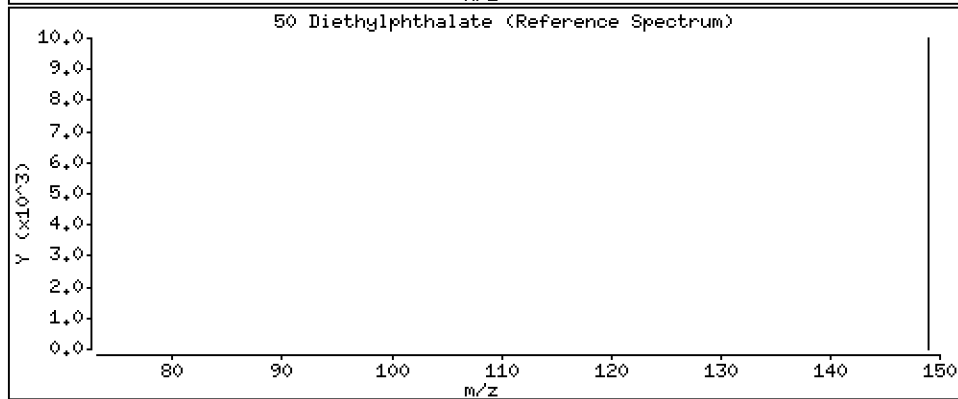
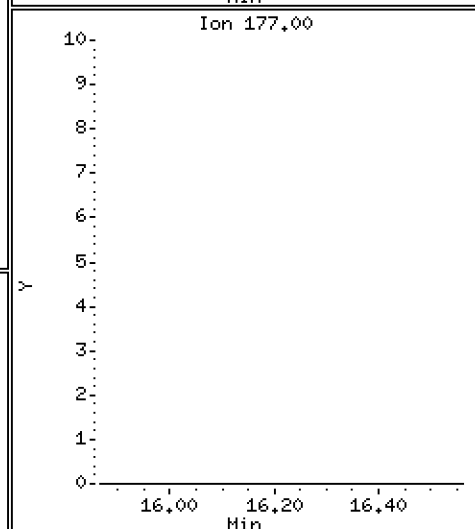
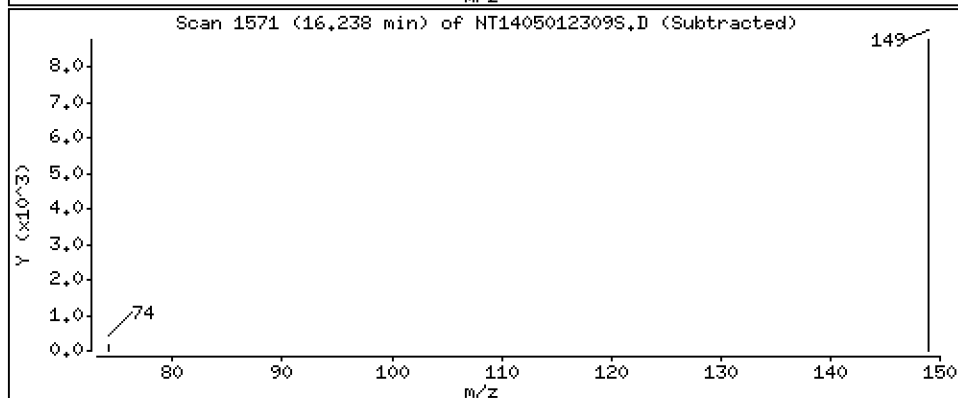
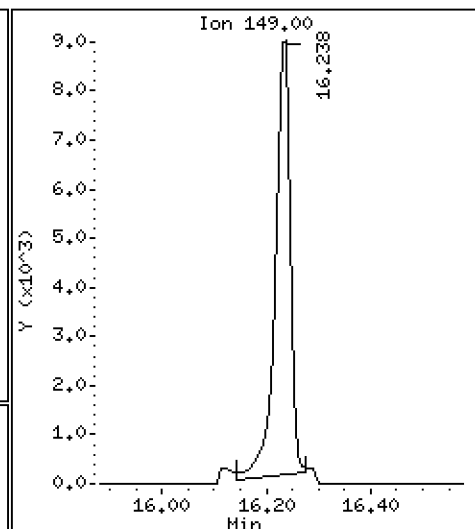
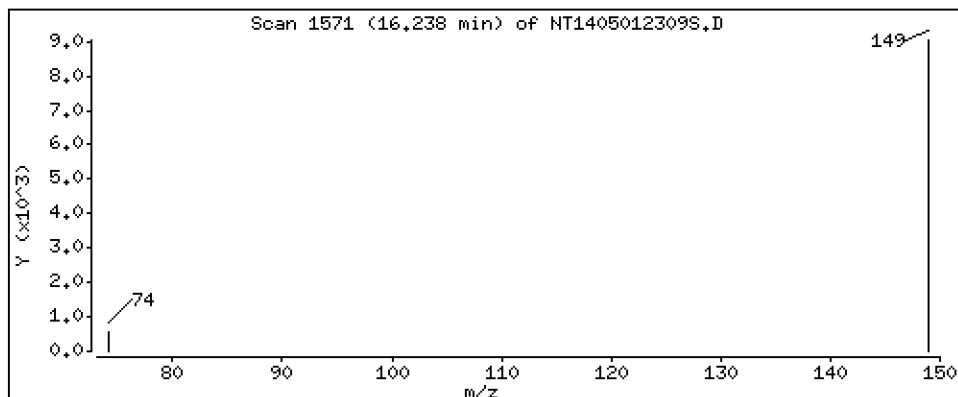
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,08088 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

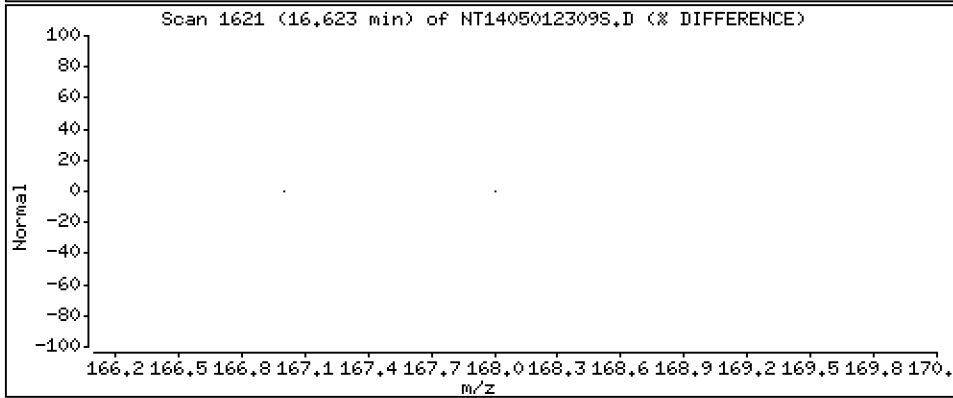
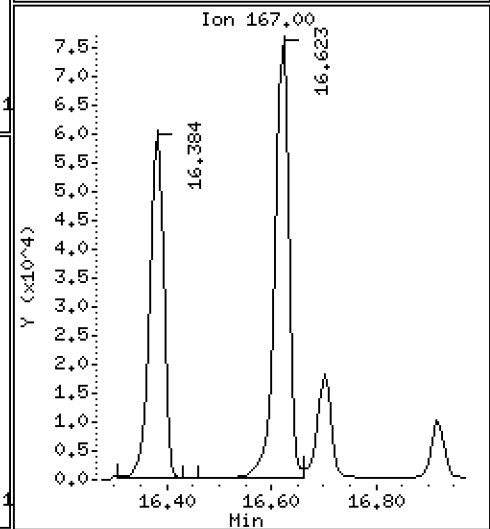
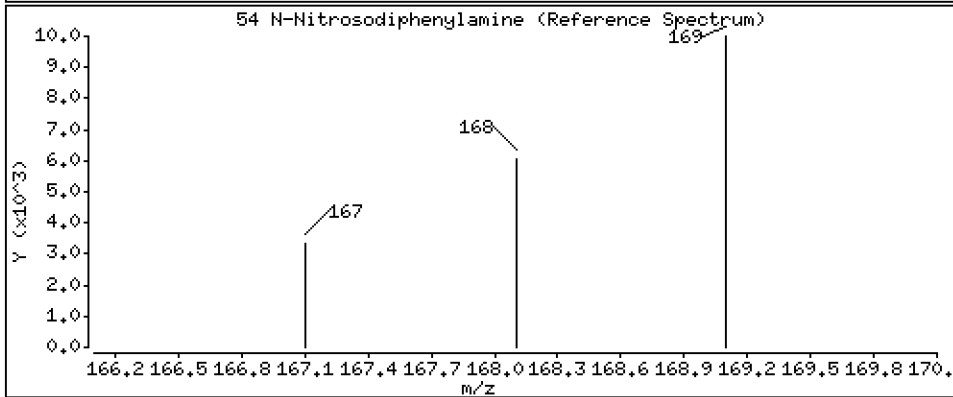
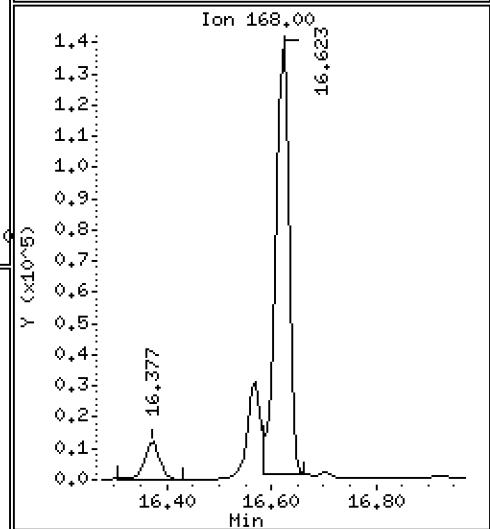
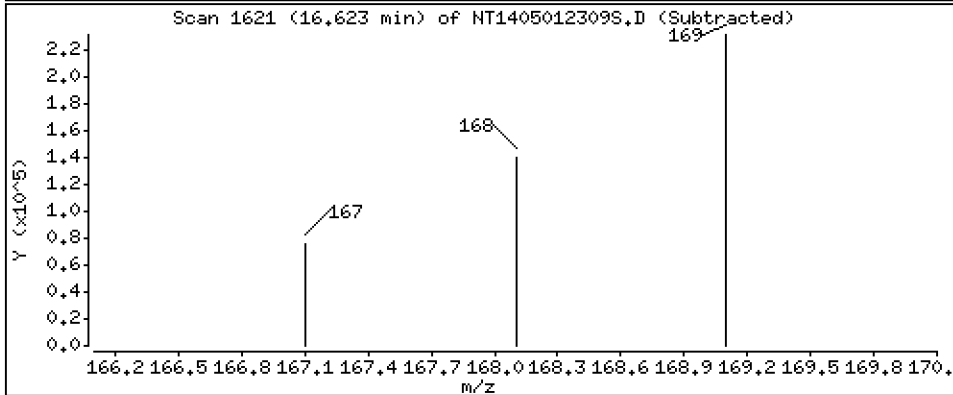
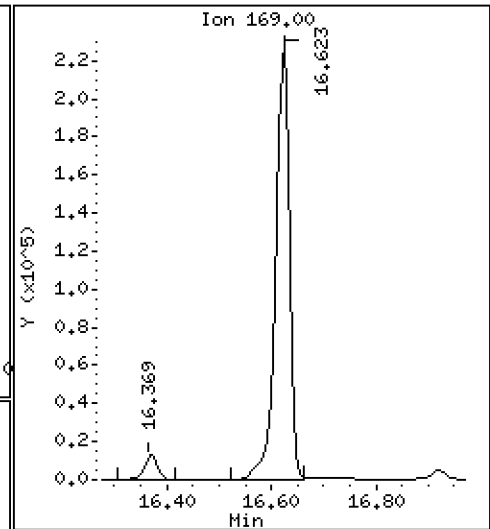
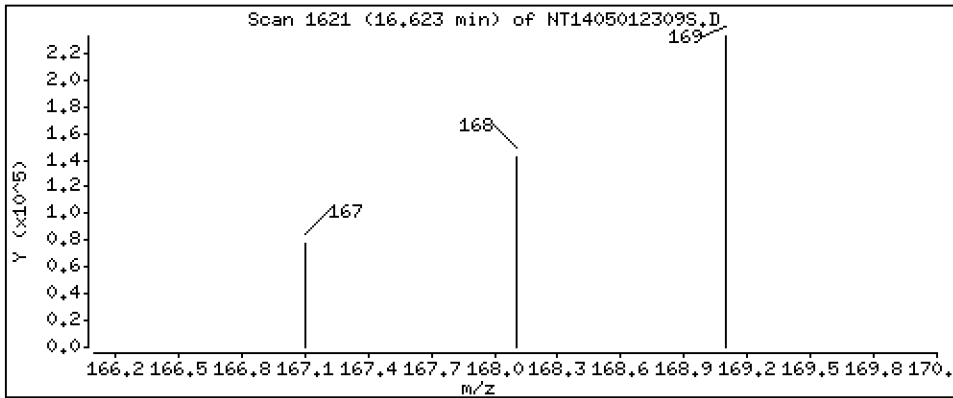
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 2,834 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

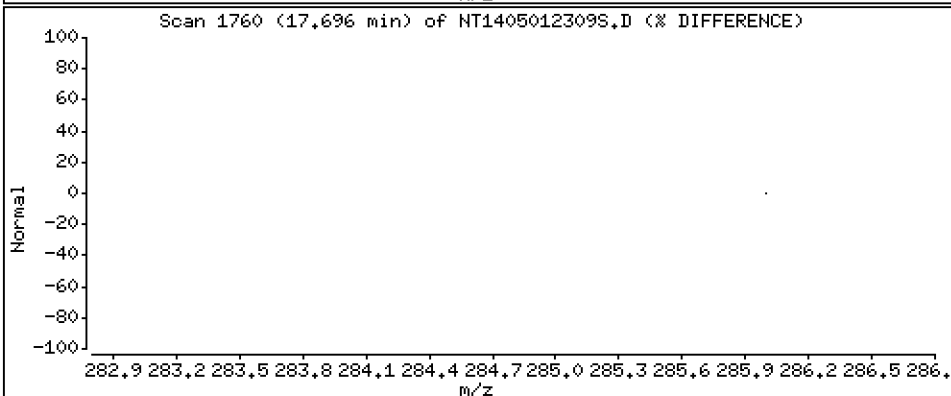
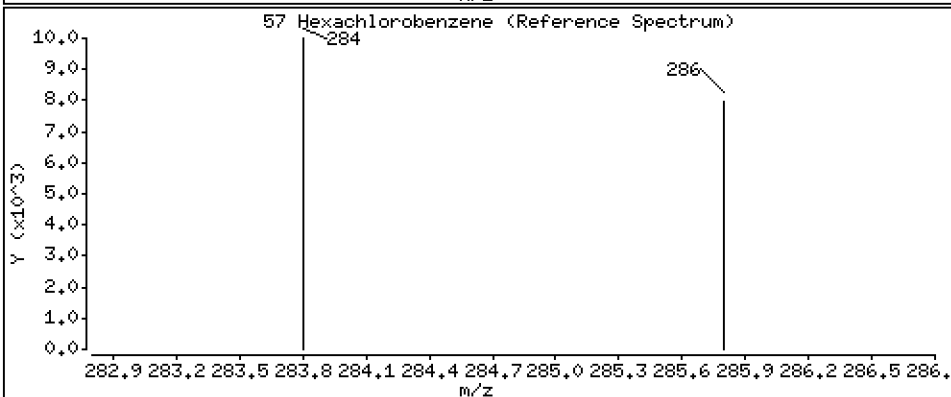
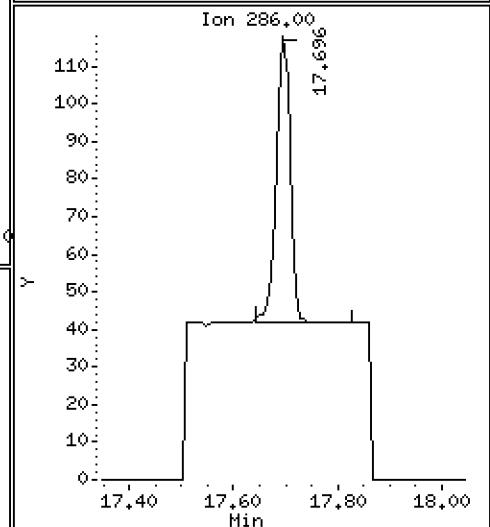
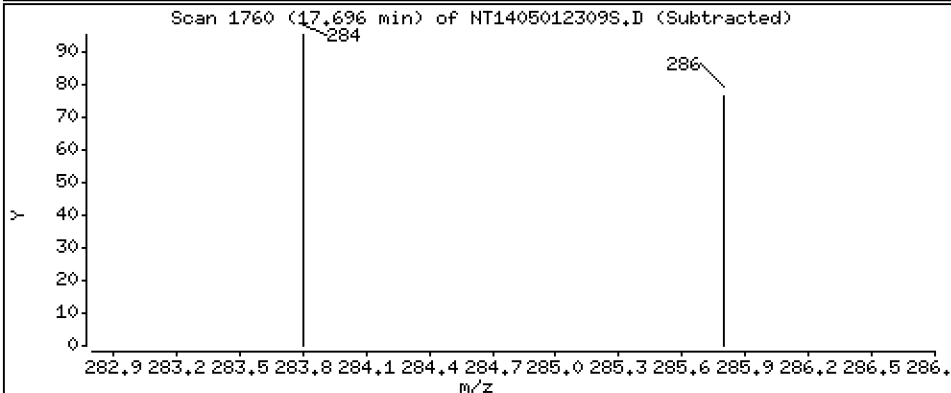
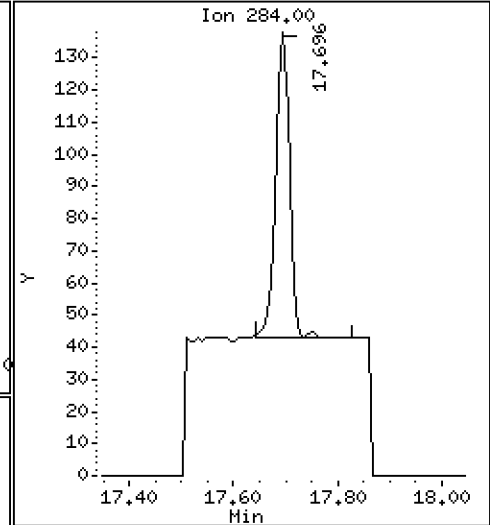
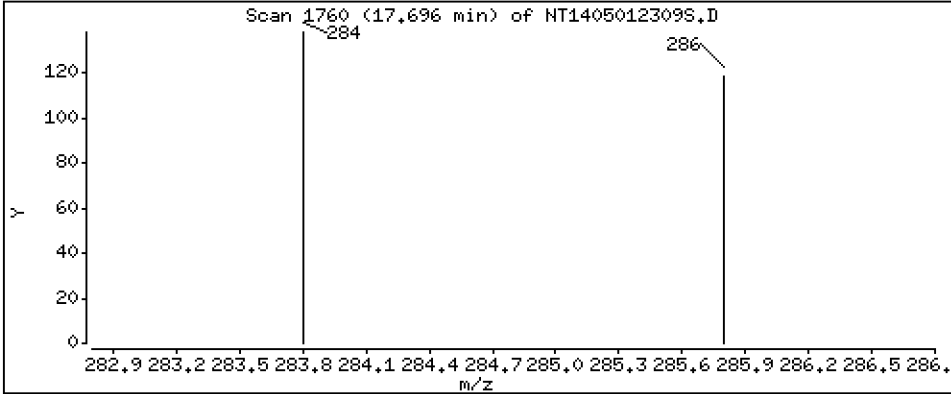
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 0,003117 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

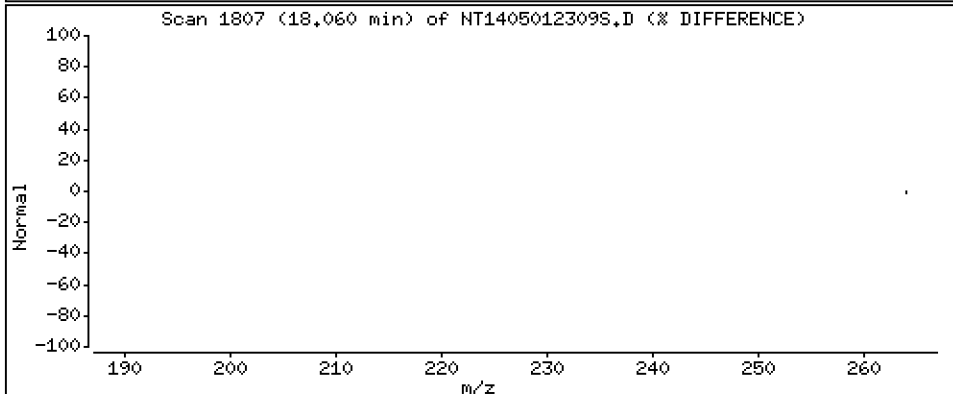
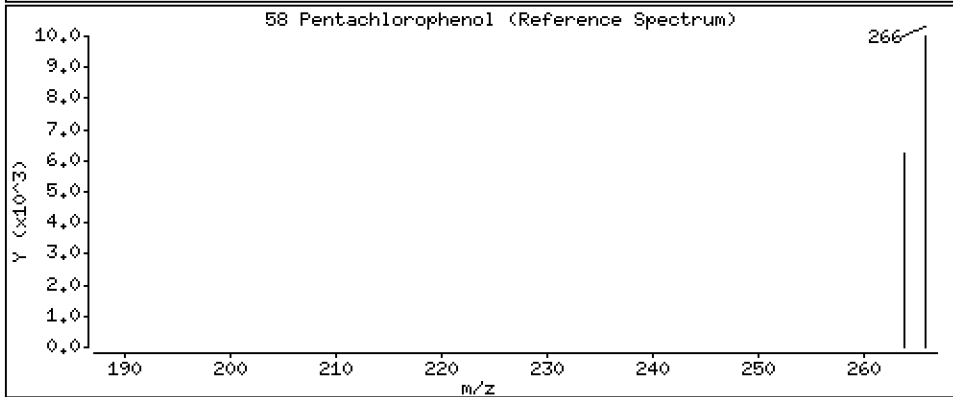
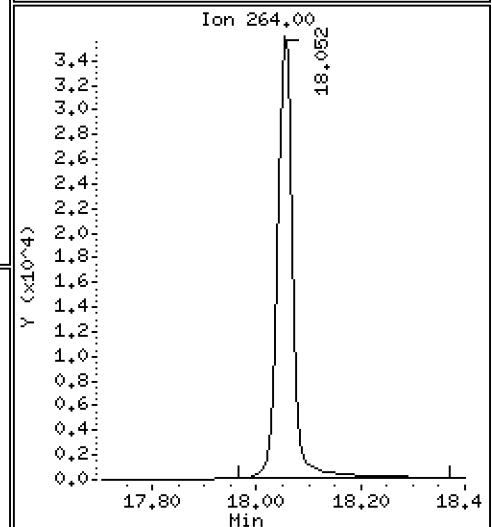
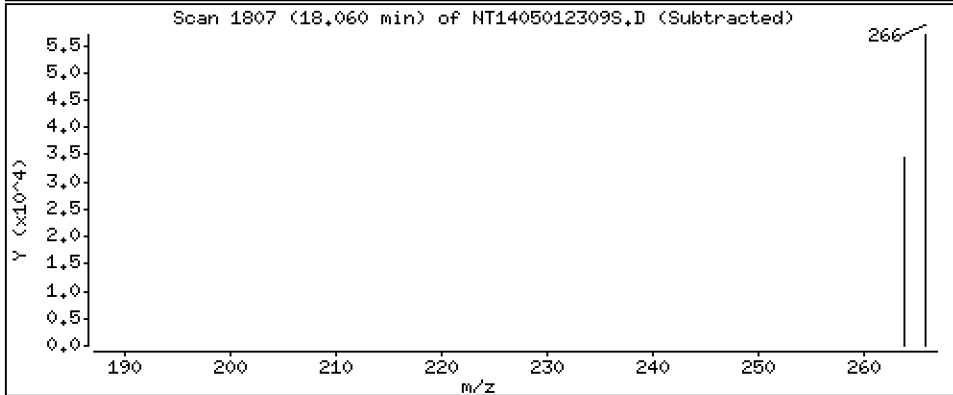
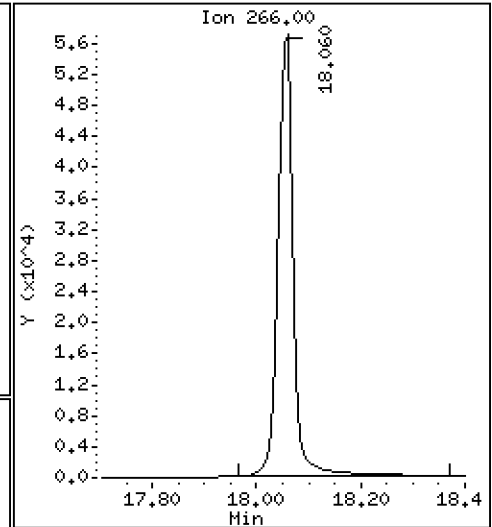
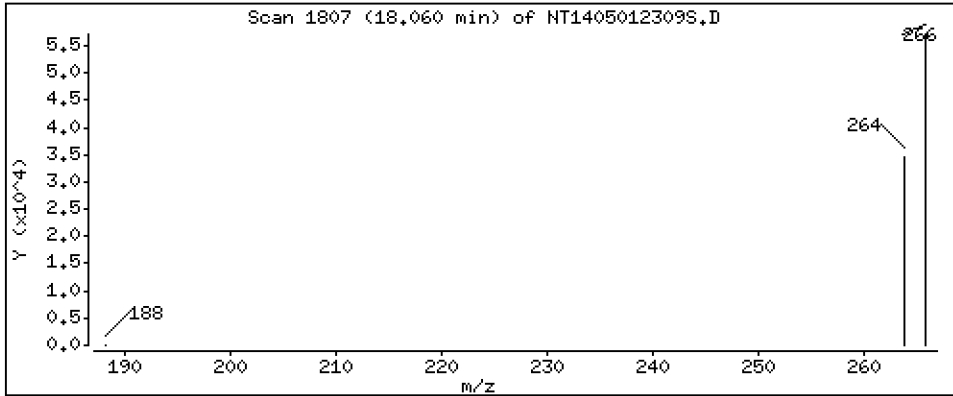
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,226 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

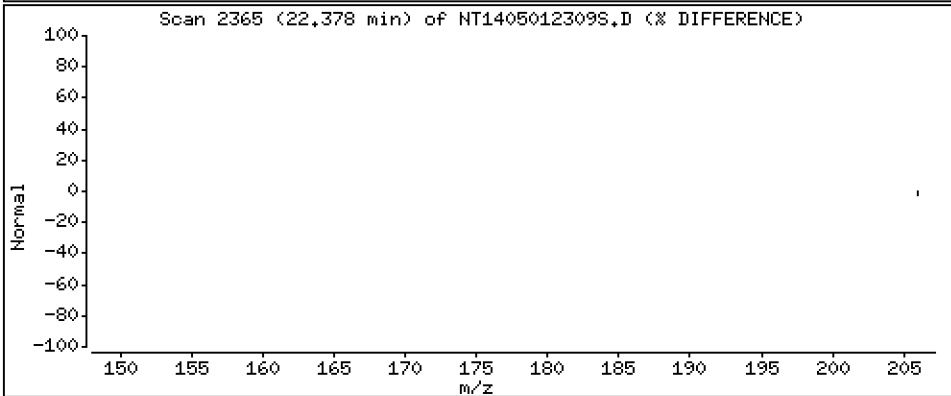
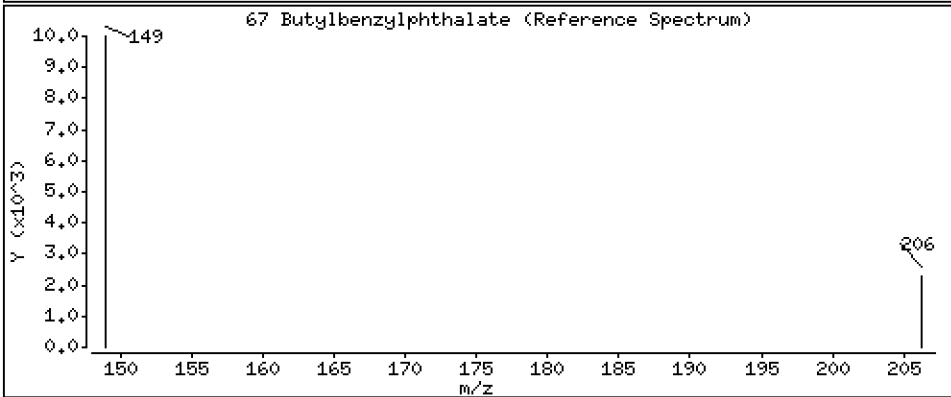
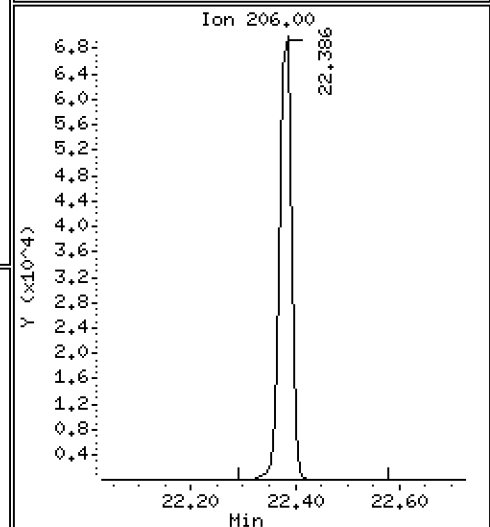
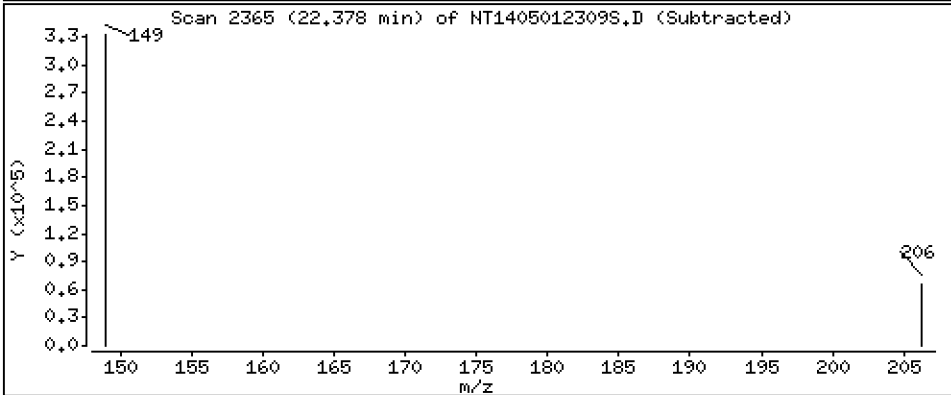
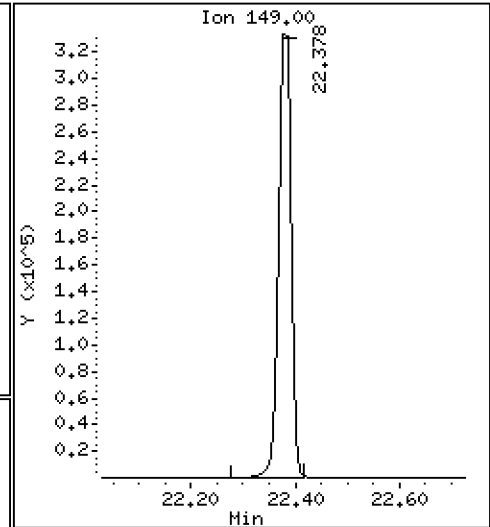
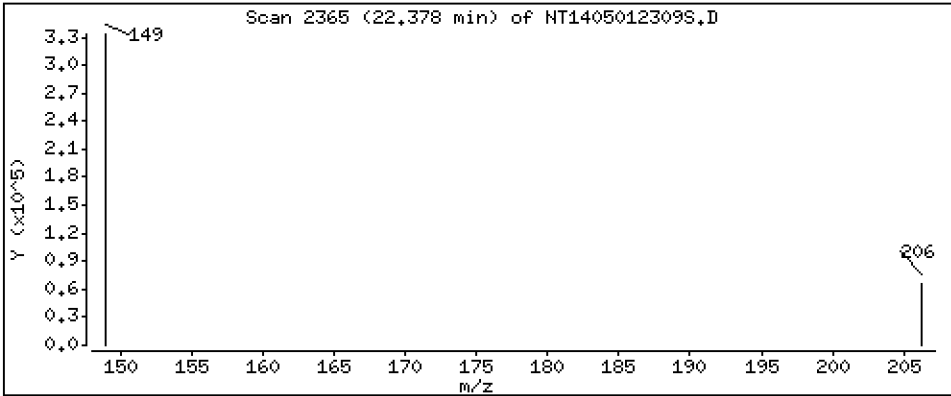
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 3,056 ug/mL





Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

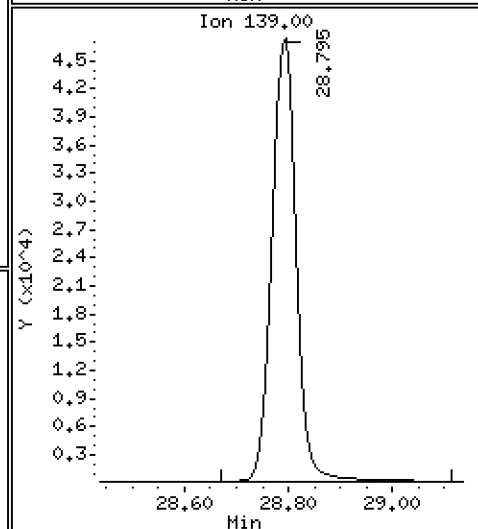
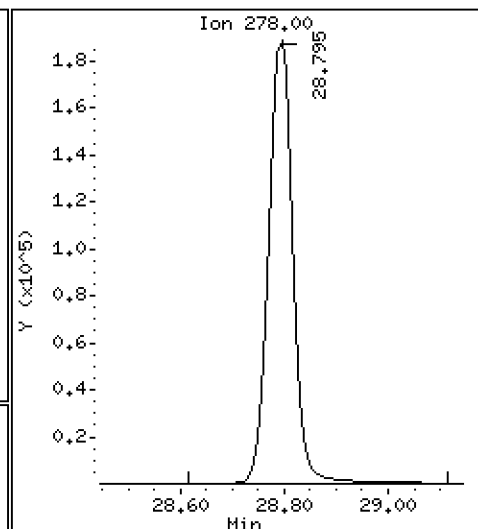
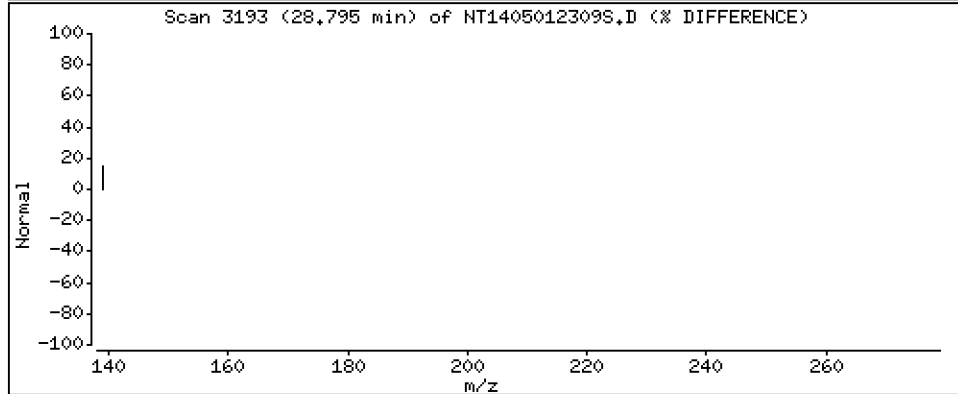
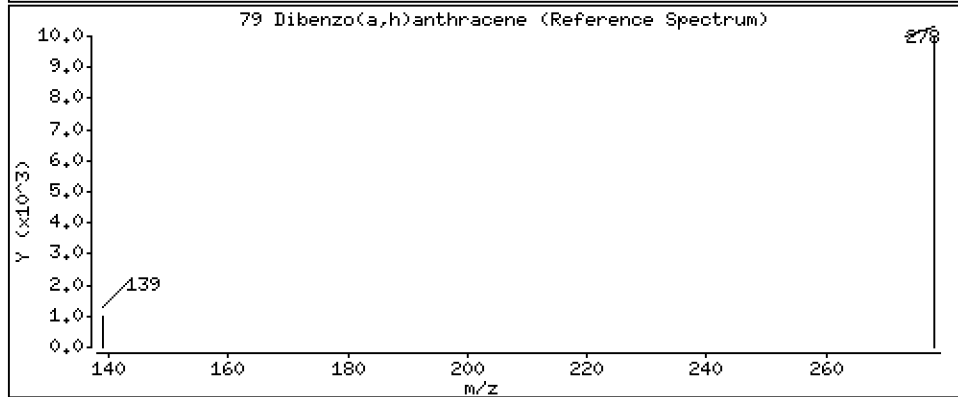
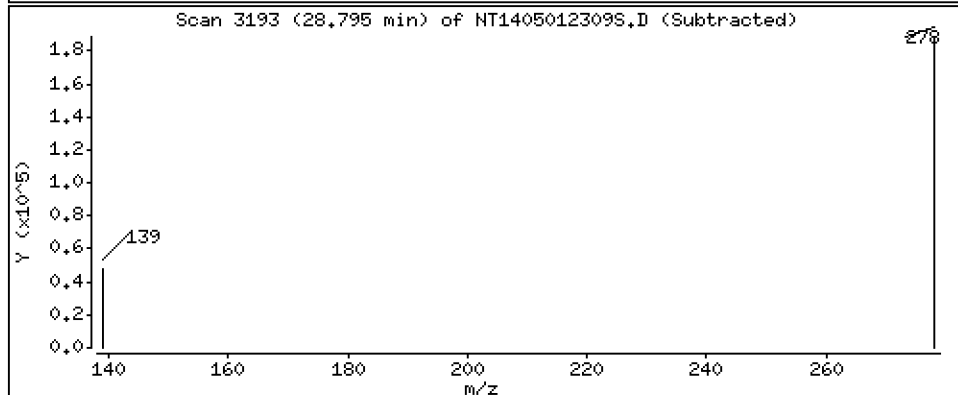
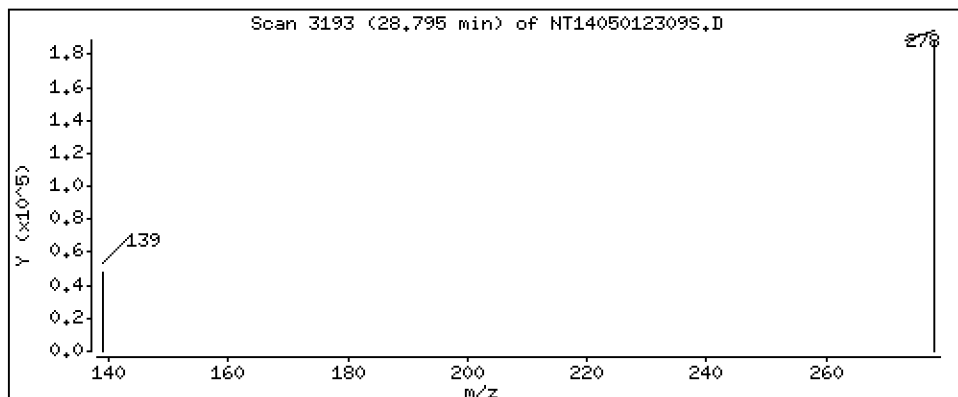
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 2,872 ug/mL



Date : 01-MAY-2023 19:27

Client ID:

Instrument: nt14.i

Sample Info: BLD0297-SRM2

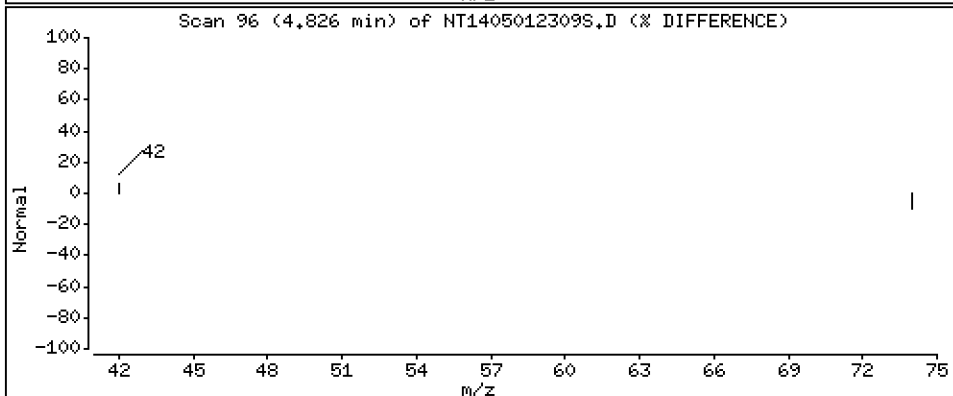
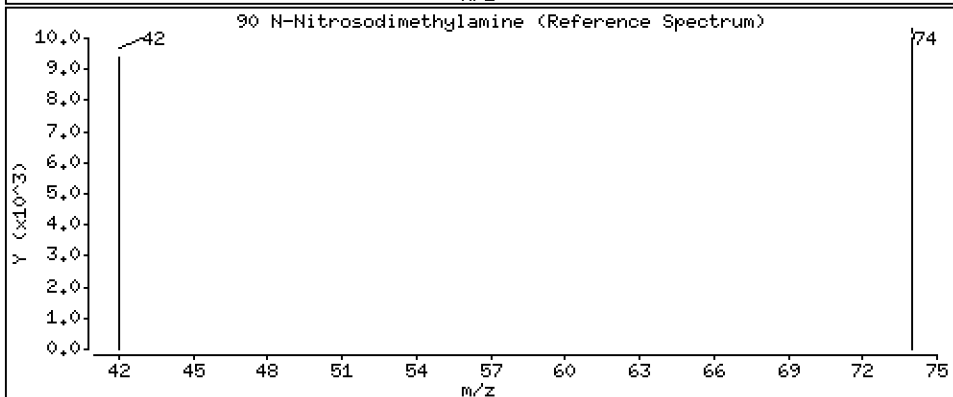
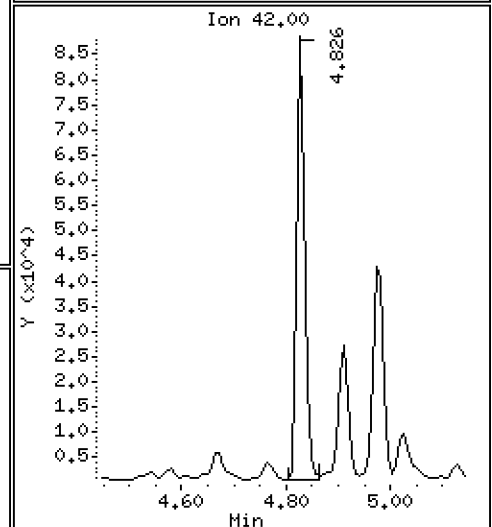
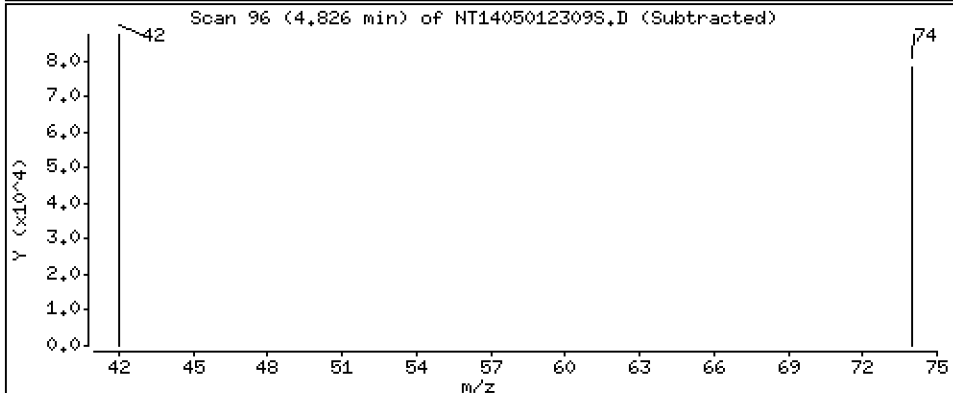
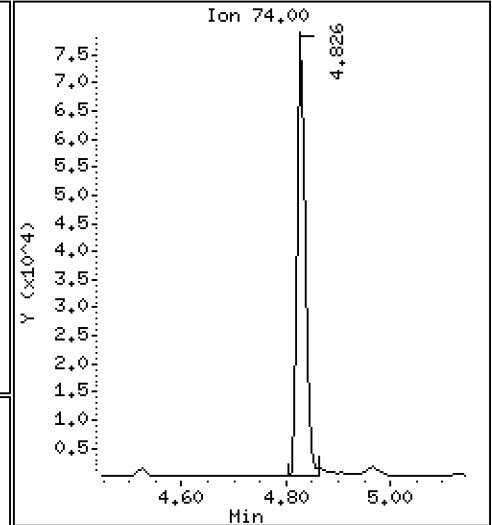
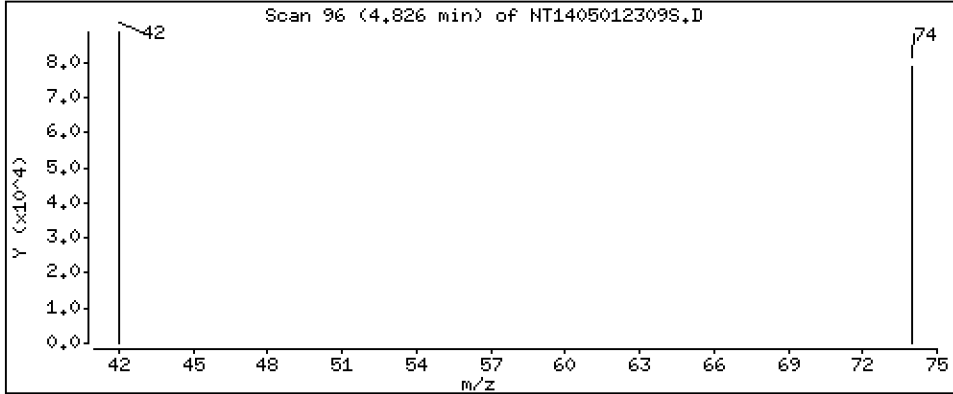
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

90 N-Nitrosodimethylamine

Concentration: 0,9737 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012309S.D  
 Lab Smp Id: BLD0297-SRM2  
 Inj Date : 01-MAY-2023 19:27 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : BLD0297-SRM2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 9  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/mL)
\$ 1 2-Fluorophenol	112		6.911	6.903	(0.756)	719630	6.40339	6.403 (R)
3 Phenol	94		8.518	8.510	(0.932)	447378	2.48307	2.483
7 1,3-Dichlorobenzene	146		9.067	9.067	(0.992)	127445	0.93261	0.9326
* 8 1,4-Dichlorobenzene-d4	152		9.137	9.137	(1.000)	322455	4.00000	
9 1,4-Dichlorobenzene	146		Compound Not Detected.					
11 Benzyl alcohol	79		Compound Not Detected.					
12 1,2-Dichlorobenzene	146		Compound Not Detected.					
13 2-Methylphenol	108		9.633	9.634	(1.054)	603948	5.37592	5.376
15 4-Methylphenol	108		9.905	9.898	(1.084)	780479	6.73086	6.731
16 N-Nitroso-di-n-propylamine	70		Compound Not Detected.					
22 2,4-Dimethylphenol	107		10.953	10.953	(0.941)	308373	2.64999	2.650
24 Benzoic acid	105		11.077	11.085	(0.952)	97382	1.20260	1.203
26 1,2,4-Trichlorobenzene	180		11.549	11.549	(0.993)	116482	1.30387	1.304
* 27 Naphthalene-d8	136		11.634	11.634	(1.000)	1216748	4.00000	
30 Hexachlorobutadiene	225		12.036	12.044	(1.035)	87738	1.77463	1.775
39 Dimethylphthalate	163		14.775	14.776	(0.968)	893381	4.29714	4.297
* 42 Acenaphthene-d10	162		15.271	15.271	(1.000)	569475	4.00000	
50 Diethylphthalate	149		16.237	16.229	(1.063)	17194	0.08088	0.08088
54 N-Nitrosodiphenylamine	169		16.623	16.623	(0.907)	395449	2.83432	2.834
57 Hexachlorobenzene	284		17.695	17.696	(0.966)	166	0.00312	0.003117
58 Pentachlorophenol	266		18.059	18.052	(0.986)	114238	3.22577	3.226
* 59 Phenanthrene-d10	188		18.322	18.323	(1.000)	997975	4.00000	
\$ 66 Terphenyl-d14	244		21.464	21.456	(0.918)	592008	4.98179	4.982 (R)
67 Butylbenzylphthalate	149		22.377	22.377	(0.957)	518270	3.05574	3.056
* 69 Chrysene-d12	240		23.376	23.369	(1.000)	747131	4.00000	
* 77 Perylene-d12	264		26.047	26.047	(1.000)	699186	4.00000	
79 Dibenzo(a,h)anthracene	278		28.794	28.794	(1.105)	607822	2.87154	2.872
90 N-Nitrosodimethylamine	74		4.825	4.795	(0.528)	89301	0.97373	0.9737

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012309S.D  
 Lab Smp Id: BLD0297-SRM2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	322455	-2.75
27 Naphthalene-d8	1259018	629509	2518036	1216748	-3.36
42 Acenaphthene-d10	580636	290318	1161272	569475	-1.92
59 Phenanthrene-d10	1027945	513973	2055890	997975	-2.92
69 Chrysene-d12	775653	387827	1551306	747131	-3.68
77 Perylene-d12	750797	375399	1501594	699186	-6.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	-0.00
27 Naphthalene-d8	11.63	11.13	12.13	11.63	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.32	17.82	18.82	18.32	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.38	0.03
77 Perylene-d12	26.05	25.55	26.55	26.05	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012309S.D

Lab ID: BLD0297-SRM2

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 19:27

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
-----	-----	-----	-------	----------

---

NONE

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



**INITIAL CALIBRATION DATA**  
**EPA 8270E-SIM**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00063	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
1,4-Dichlorobenzene	0.05	2.017958	0.1	1.496592	0.2	1.485519	0.5	1.804867	1	1.368488	2.5	1.705008
1,2-Dichlorobenzene	0.05	1.976964	0.1	1.479144	0.2	1.478082	0.5	1.814208	1	1.368361	2.5	1.718433
Benzyl Alcohol					0.2	1.122539	0.5	1.528201	1	1.185036	2.5	1.595267
Benzoic acid			0.4	2.481131E-02	0.8	6.492454E-02	2	0.1964987	4	0.183125	10	0.3020084
2,4-Dimethylphenol	0.1	0.4166773	0.2	0.3326379	0.4	0.3546074	1	0.451496	2	0.3525907	5	0.4330047
1,2,4-Trichlorobenzene	0.05	0.4245711	0.1	0.308833	0.2	0.3012188	0.5	0.3644981	1	0.2715944	2.5	0.3369106
N-Nitrosodiphenylamine	0.05	0.5703052	0.1	0.4679727	0.2	0.5108283	0.5	0.6655657	1	0.5084093	2.5	0.63233
Pentachlorophenol			0.2	0.0360514	0.4	0.0537356	1	0.1011625	2	8.917665E-02	5	0.1406398
2-Fluorophenol	0.075	1.537315	0.15	1.195472	0.3	1.262081	0.75	1.621277	1.5	1.259586	3.75	1.581976
p-Terphenyl-d14	0.05	0.9446537	0.1	0.4985158	0.2	0.5253626	0.5	0.8547157	1	0.5422376	2.5	0.7202468



**INITIAL CALIBRATION DATA**  
**EPA 8270E-SIM**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00063	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
1,4-Dichlorobenzene	5	1.453222	10	1.499363								
1,2-Dichlorobenzene	5	1.454736	10	1.511277								
Benzyl Alcohol	5	1.343758	10	1.492585								
Benzoic acid	20	0.2846401	40	0.3278752								
2,4-Dimethylphenol	10	0.3626931	20	0.3567166								
1,2,4-Trichlorobenzene	5	0.2866608	10	0.2922697								
N-Nitrosodiphenylamine	5	0.5305563	10	0.5877917								
Pentachlorophenol	10	0.1279825	20	0.1455028								
2-Fluorophenol	7.5	1.338869	15	1.356124								
p-Terphenyl-d14	5	0.6247902	10	0.6331659								



**INITIAL CALIBRATION DATA**  
**EPA 8270E-SIM**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00063	Instrument:	NT14
Calibration Date:	04/21/2023	Column (1):	ZB-5MS

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
1,4-Dichlorobenzene	1.603877	13.7			RSD (15)	
1,2-Dichlorobenzene	1.600151	13.2			RSD (15)	
Benzyl Alcohol	1.377898	14.0			RSD (15)	
Benzoic acid	0.1976976	59.5		0.9974	QCOD (0.99)	
2,4-Dimethylphenol	0.382553	11.6			RSD (15)	
1,2,4-Trichlorobenzene	0.3233196	15.6	0.9980		LCOD (0.99)	
N-Nitrosodiphenylamine	0.5592199	12.0			RSD (15)	
Pentachlorophenol	9.917875E-02	42.9	0.9939		LCOD (0.99)	
2-Fluorophenol	1.394088	11.7			RSD (15)	
p-Terphenyl-d14	0.667961	24.1	0.9980		LCOD (0.99)	





**ANALYSIS SEQUENCE**

**SLD0358**

Instrument: NT14  
Calibration ID: GD00063

Printed: 4/27/2023 2:02:30PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0358-TUN1	QC		1		L002618			
SLD0358-CAL1	QC		2		L002878	K010831		
SLD0358-CAL2	QC		3		L002877	K010831		
SLD0358-CAL3	QC		4		K011105	K010831		
SLD0358-CAL4	QC		5		K011106	K010831		
SLD0358-CAL5	QC		6		K011107	K010831		
SLD0358-CAL6	QC		7		K011108	K010831		
SLD0358-CAL7	QC		8		K011109	K010831		
SLD0358-CAL8	QC		9		K011110	K010831		
SLD0358-SCV1	QC		10		K010066	K010831		
SLD0358-ICB1	QC		11		K005156	K010831		

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230421.b\20230421.b

Time	Filename	LabID	ClientId	DF									
1	1623	NT04212306S.D	SEQ-CAL6		1		9.12	310165  11.62	1216000  15.26	569501  18.31	921651  23.36	598590  26.02	658064
2	1700	NT04212307S.D	SEQ-CAL5		1		9.11	284316  11.62	1099228  15.26	513204  18.31	849641  23.35	542691  26.02	581096
3	1737	NT04212308S.D	SEQ-CAL4		1		9.11	299483  11.62	1156442  15.26	540162  18.31	903346  23.35	582718  26.02	619880
4	1813	NT04212309S.D	SEQ-CAL3		1		9.11	313847  11.62	1195091  15.26	556977  18.31	941816  23.35	617803  26.02	639373
5	1850	NT04212310S.D	SEQ-CAL2		1		9.11	309195  11.62	1168028  15.26	541996  18.30	916189  23.35	597401  26.02	623920
6	1927	NT04212311S.D	SEQ-CAL1		1		9.11	306573  11.62	1159423  15.26	533497  18.31	911500  23.35	600195  26.02	606720
7	2003	NT04212312S.D	SEQ-SIM2		1		9.11	304906  11.62	1142624  15.26	521404  18.31	891505  23.35	584134  26.02	587277
8	2040	NT04212313S.D	SEQ-SIM1		1		9.11	302484  11.62	1135075  15.26	519077  18.30	881493  23.35	571384  26.02	579560
9	2116	NT04212314S.D	SEQ-SCV1		1		9.11	281794  11.62	1095304  15.26	511599  18.31	855994  23.36	548116  26.02	575271
10	2153	NT04212315S.D	SEQ-ICB1		1		9.11	299097  11.62	1133019  15.26	520604  18.30	879557  23.35	568627  26.02	582564

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230421.b\20230421.b

ARI Job No.:           Method: ABN.m   Instrument: nt14.i   Date: 21-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1411	NT04212302S.D			1	NO MANUAL INTEGRATION
1447	NT04212303S.D			1	NO MANUAL INTEGRATION
1547	NT04212305S.D			1	NO MANUAL INTEGRATION
1623	NT04212306S.D SEQ-CAL6			1	Benzoic acid,
1700	NT04212307S.D SEQ-CAL5			1	Benzoic acid,
1737	NT04212308S.D SEQ-CAL4			1	NO MANUAL INTEGRATION
1813	NT04212309S.D SEQ-CAL3			1	NO MANUAL INTEGRATION
1850	NT04212310S.D SEQ-CAL2			1	NO MANUAL INTEGRATION
1927	NT04212311S.D SEQ-CAL1			1	NO MANUAL INTEGRATION
2003	NT04212312S.D SEQ-SIM2			1	Pentachlorophenol,
2040	NT04212313S.D SEQ-SIM1			1	Benzoic acid, Pentachlorophenol,
2116	NT04212314S.D SEQ-SCV1			1	NO MANUAL INTEGRATION
2153	NT04212315S.D SEQ-ICB1			1	NO MANUAL INTEGRATION

Security Status Report

Date: 27-Apr-2023 14:02

NT04212302S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212303S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212305S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212306S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212307S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212308S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212309S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212310S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212311S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212312S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212313S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212314S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212315S.D	Data Locked	j rains, 27-Apr-2023 13:43

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 16:23  
 End Cal Date : 21-APR-2023 20:40  
 Quant Method : ISTD  
 Origin : Force  
 Target Version : 4.14  
 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Last Edit : 27-Apr-2023 12:33 jrains

Calibration File Names:

Level 1: \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212313S.D  
 Level 2: \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212312S.D  
 Level 3: \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212311S.D  
 Level 4: \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212310S.D  
 Level 5: \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212309S.D  
 Level 6: \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212308S.D  
 Level 7: \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212307S.D  
 Level 8: \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212306S.D

Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
138 Chlorobenzilate	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
139 Isodrin	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
140 Diallyte A	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
141 Diallate B	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
142 1,2-Dibromo-3-Chloropropane	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
135 2,3,5,6-Tetrachlorophenol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
136 2,3,4,5-tetrachlorophenol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
137 NewCpnd_131	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
133 Butylatedhydroxytoluene	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
132 3,6-Dimethylphenanthrene	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

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 Last Edit : 27-Apr-2023 12:33 jrains

Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
131 1-Methylphenanthrene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
146 Benzo(j)fluoranthene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
130 Dibenzothiophene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
129 1-Methylfluorene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
128 N-Hexadecane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
127 2-Isopropyl-naphthalene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
126 N-Tetradecane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

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 Last Edit : 27-Apr-2023 12:33 jrains

Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
144 alpha-Terpineol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
125 Safrole	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
124 3,4-Dimethylphenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
123 Acetophenone	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
122 Furfuraldehyde	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
143 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
121 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000



ARI Labs, Inc.

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
120 2,3,4,6-Tetrachlorophenol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
119 7,12-Dimethylbenz(a)anthracen	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
118 Triphenyl Phosphate	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
117 Butyl Diphenyl Phosphate	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
116 Dibutyl Phenyl Phosphate	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
115 Tributyl Phosphate	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
114 Beta-Pinene	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 16:23  
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 Origin : Force  
 Target Version : 4.14  
 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Last Edit : 27-Apr-2023 12:33 jrains

Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
113 Diphenyl Oxide	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
112 Biphenyl	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
111 Azobenzene (1,2-DP-Hydrazine)	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
110 Tetrachloroguaiacol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
109 3,4,5-Trichloroguaiacol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
108 4,5,6-Trichloroguaiacol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
107 4,5-Dichloro-2-Methoxyphenol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 16:23  
 End Cal Date : 21-APR-2023 20:40  
 Quant Method : ISTD  
 Origin : Force  
 Target Version : 4.14  
 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Last Edit : 27-Apr-2023 12:33 jrains

Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
106 Guaiacol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
105 1-methylnaphthalene	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
3 Phenol	2.53739	1.94578	2.02601	2.58972	1.97794	2.50844					
	2.11107	2.18358					AVRG		2.23499		11.99910
4 Bis(2-Chloroethyl)ether	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
6 2-Chlorophenol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
7 1,3-Dichlorobenzene	2.12824	1.58947	1.57744	1.91840	1.44611	1.80652					
	1.52603	1.56914					AVRG		1.69517		13.76881
9 1,4-Dichlorobenzene	2.01796	1.49659	1.48552	1.80487	1.36849	1.70501					
	1.45322	1.49936					AVRG		1.60388		13.67284

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 Integrator : HP RTE  
 Method file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Last Edit : 27-Apr-2023 12:33 jrains

Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
11 Benzyl alcohol	++++	++++	1.12254	1.52820	1.18504	1.59527					
	1.34376	1.49258					AVRG		1.37790		14.01879
12 1,2-Dichlorobenzene	1.97696	1.47914	1.47808	1.81421	1.36836	1.71843					
	1.45474	1.51128					AVRG		1.60015		13.23833
13 2-Methylphenol	1.48054	1.15891	1.22627	1.59423	1.24496	1.61011					
	1.37729	1.45647					AVRG		1.39360		12.25215
14 2,2'-oxybis(1-Chloropropane)	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
15 4-Methylphenol	1.44880	1.13333	1.23351	1.66955	1.29751	1.70897					
	1.46359	1.55199					AVRG		1.43841		14.27616
16 N-Nitroso-di-n-propylamine	1.46441	1.13399	1.18862	1.53138	1.16443	1.47805					
	1.24957	1.34144					AVRG		1.31899		11.88401
17 Hexachloroethane	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
19 Nitrobenzene	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
20 Isophorone	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
21 2-Nitrophenol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
22 2,4-Dimethylphenol	0.41668	0.33264	0.35461	0.45150	0.35259	0.43300					
	0.36269	0.35672					AVRG		0.38255		11.56225
23 Bis(2-Chloroethoxy)methane	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
24 Benzoic acid	++++	2835	15055	114758	218851	873138					
	1564422	3986962					QUAD	0.000e+000	3.77415	-0.22056	0.99827
25 2,4-Dichlorophenol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
26 1,2,4-Trichlorobenzene	6024 393882	8822 888500	17462	53218	81145	243511		LINR	0.000e+000	0.29369	0.99799
28 Naphthalene	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
29 4-Chloroaniline	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
30 Hexachlorobutadiene	0.19756 0.15014	0.14685 0.15702	0.14711	0.18578	0.14022	0.17558		AVRG		0.16253	12.95346
31 4-Chloro-3-methylphenol	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
32 2-Methylnaphthalene	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
33 Hexachlorocyclopentadiene	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
34 2,4,6-Trichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
35 2,4,5-Trichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
37 2-Chloronaphthalene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
38 2-Nitroaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
39 Dimethylphthalate	1.82262	1.35787	1.35588	1.68577	1.27396	1.55685					
	1.30382	1.32563					AVRG		1.46030		13.94234
40 Acenaphthylene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
41 2,6-Dinitrotoluene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
43 3-Nitroaniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
44 Acenaphthene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
45 2,4-Dinitrophenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
46 Dibenzofuran	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
47 4-Nitrophenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
48 2,4-Dinitrotoluene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
49 Fluorene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000



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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
50 Diethylphthalate	++++	++++	1.46884	1.75498	1.32467	1.63964					
	1.37094	1.40064					AVRG		1.49328		11.30473
51 4-Chlorophenyl-phenylether	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
52 4-Nitroaniline	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
53 4,6-Dinitro-2-methylphenol	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
54 N-Nitrosodiphenylamine	0.57031	0.46797	0.51083	0.66557	0.50841	0.63233					
	0.53056	0.58779					AVRG		0.55922		12.02700
56 4-Bromophenyl-phenylether	++++	++++	++++	++++	++++	++++					
	++++	++++					AVRG		0.000e+000		0.000e+000
57 Hexachlorobenzene	0.25774	0.19316	0.19127	0.23723	0.18135	0.23087					
	0.20023	0.21579					AVRG		0.21345		12.45202

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
58 Pentachlorophenol	++++ 271848	1607 670514	4898	23171	41994	158808		LINR	0.000e+000	0.14194	0.99389
60 Phenanthrene	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
61 Anthracene	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
62 Carbazole	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
63 Di-n-butylphthalate	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
64 Fluoranthene	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000
65 Pyrene	++++ ++++	++++ ++++	++++	++++	++++	++++		AVRG	0.000e+000		0.000e+000

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R <sup>2</sup>
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
67 Butylbenzylphthalate	3691 590547	6887 1364849	17005	65171	110301	365901					
							LINR	0.000e+000	0.90803		0.99802
68 Benzo(a)anthracene	++++ ++++	++++ ++++	++++	++++	++++	++++					
							AVRG	0.000e+000			0.000e+000
70 3,3'-Dichlorobenzidine	++++ ++++	++++ ++++	++++	++++	++++	++++					
							AVRG	0.000e+000			0.000e+000
71 Chrysene	++++ ++++	++++ ++++	++++	++++	++++	++++					
							AVRG	0.000e+000			0.000e+000
72 bis(2-Ethylhexyl)phthalate	++++ ++++	++++ ++++	++++	++++	++++	++++					
							AVRG	0.000e+000			0.000e+000
73 Di-n-octylphthalate	++++ ++++	++++ ++++	++++	++++	++++	++++					
							AVRG	0.000e+000			0.000e+000
74 Benzo(b)fluoranthene	++++ ++++	++++ ++++	++++	++++	++++	++++					
							AVRG	0.000e+000			0.000e+000

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
75 Benzo(k)fluoranthene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
76 Benzo(a)pyrene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
78 Indeno(1,2,3-cd)pyrene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
79 Dibenzo(a,h)anthracene	6485	10634	24462	90068	146922	492388					
	822191	2019845					LINR	0.000e+000	1.21096		0.99760
80 Benzo(g,h,i)perylene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
90 N-Nitrosodimethylamine	1.36377	1.04045	1.06911	1.33540	1.01395	1.24763					
	1.04571	0.98516					AVRG		1.13765		13.43333
91 Aniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
92 1,2-Diphenylhydrazine	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
93 Benzidine	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
96 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
97 Caffeine	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
98 Retene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
99 Perylene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
100 3-beta-Coprostanol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000

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	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
101 Cholesterol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
102 beta-Sitosterol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
103 Pyridine	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 1 2-Fluorophenol	1.53732	1.19547	1.26208	1.62128	1.25959	1.58198					
	1.33887	1.35612					AVRG		1.39409		11.72058
\$ 145 d8-1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 2 Phenol-d5	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 5 2-Chlorophenol-d4	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000

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	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
\$ 10 1,2-Dichlorobenzene-d4	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 18 Nitrobenzene-d5	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 36 2-Fluorobiphenyl	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 55 2,4,6-Tribromophenol	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 66 Terphenyl-d14	6747	7280	15766	63826	83749	262313					
	423835	947517					LINR	0.000e+000	0.63622		0.99798
\$ 85 p-Cresol-d4	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 86 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000

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Compound	0.0500000	0.1000000	0.2000000	0.5000000	1.0000	2.5000	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
	5.0000	10.0000									
	Level 7	Level 8									
\$ 87 Fluoranthene-d10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 88 Dibenz(a,h)anthracene-d14	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 89 Diphenyl-d10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000
\$ 95 D10-1-methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++	+++++					AVRG		0.000e+000		0.000e+000



ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 16:23  
End Cal Date : 21-APR-2023 20:40  
Quant Method : ISTD  
Origin : Force  
Target Version : 4.14  
Integrator : HP RTE  
Method file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
Last Edit : 27-Apr-2023 12:33 jrains

Curve	Formula	Units
Averaged	Amt = Rsp/ml	Response
Linear	Amt = b + Rsp/ml	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m
Batch File: \\target\share\chem3\nt14.i\20230421.b\20230421.b
Inst ID: nt14.i

ID: RT01 RT02 RT03 RT04 RT05 RT06 RT07 RT08
FILENAME: NT04212306S NT04212307S NT04212308S NT04212309S NT04212310S NT04212311S NT04212312S NT04212313S
INJ. DATE: 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023 21-APR-2023
INJ. TIME: 16:23 17:00 17:37 18:13 18:50 19:27 20:03 20:40

Table with columns: Compound, RT01, RT02, RT03, RT04, RT05, RT06, RT07, RT08, EXPEC RT, RT WINDOW, AVG RT, STD DEV. Rows include various chemical compounds like 2-Fluorophenol, Chlorobenzilate, Isodrin, etc.

Reviewer 1 \_\_\_\_\_ Date: \_\_\_\_\_
Reviewer 2 \_\_\_\_\_ Date: \_\_\_\_\_

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
Batch File: \\target\share\chem3\nt14.i\20230421.b\20230421.b  
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
127 2-Isopropyl-naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	23.349	22.849-23.849	+++++	+++++
126 N-Tetradecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	22.474	21.974-22.974	+++++	+++++
144 alpha-Terpineol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.191	10.691-11.691	+++++	+++++
125 Safrole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.779	17.279-18.279	+++++	+++++
124 3,4-Dimethylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.310	15.810-16.810	+++++	+++++
123 Acetophenone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.707	17.207-18.207	+++++	+++++
122 Furfuraldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.921	8.421-9.421	+++++	+++++
143 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.736	3.236-4.236	+++++	+++++
145 d8-1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	2.914	2.414-3.414	+++++	+++++
121 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.148	19.648-20.648	+++++	+++++
120 2,3,4,6-Tetrachlorophe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.588	15.088-16.088	+++++	+++++
119 7,12-Dimethylbenz(a)an	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	38.587	38.087-39.087	+++++	+++++
118 Triphenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.382	19.882-20.882	+++++	+++++
117 Butyl Diphenyl Phospha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.734	18.234-19.234	+++++	+++++
116 Dibutyl Phenyl Phospha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.987	16.487-17.487	+++++	+++++
115 Tributyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.204	14.704-15.704	+++++	+++++
114 Beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.540	14.040-15.040	+++++	+++++
113 Diphenyl Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.586	21.086-22.086	+++++	+++++
112 Biphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.692	17.192-18.192	+++++	+++++
111 Azobenzene (1,2-DP-Hyd	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.268	15.768-16.768	+++++	+++++
110 Tetrachloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.055	17.555-18.555	+++++	+++++
109 3,4,5-Trichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.228	16.728-17.728	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
Batch File: \\target\share\chem3\nt14.i\20230421.b\20230421.b  
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
108 4,5,6-Trichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.517	16.017-17.017	+++++	+++++
107 4,5-Dichloro-2-Methoxy	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.803	14.303-15.303	+++++	+++++
106 Guaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.843	11.343-12.343	+++++	+++++
105 1-methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	12.927	12.427-13.427	+++++	+++++
\$ 2 Phenol-d5	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.235	7.735-8.735	+++++	+++++
3 Phenol	8.503	8.488	8.488	8.480	8.480	8.480	8.480	8.480	8.480	7.980-8.980	8.485	0.008
4 Bis(2-Chloroethyl)ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.397	7.897-8.897	+++++	+++++
\$ 5 2-Chlorophenol-d4	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.490	7.990-8.990	+++++	+++++
6 2-Chlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.521	8.021-9.021	+++++	+++++
7 1,3-Dichlorobenzene	9.052	9.052	9.052	9.044	9.052	9.052	9.052	9.044	9.044	8.544-9.544	9.050	0.004
* 8 1,4-Dichlorobenzene-d4	9.122	9.114	9.114	9.114	9.114	9.114	9.114	9.114	9.114	8.614-9.614	9.115	0.003
9 1,4-Dichlorobenzene	9.145	9.145	9.145	9.145	9.145	9.145	9.145	9.145	9.145	8.645-9.645	9.145	0.000
\$ 10 1,2-Dichlorobenzene-d4	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.068	8.568-9.568	+++++	+++++
11 Benzyl alcohol	9.393	9.386	9.386	9.386	9.386	9.386	9.385	9.385	9.385	8.885-9.885	9.386	0.003
12 1,2-Dichlorobenzene	9.510	9.502	9.502	9.502	9.502	9.502	9.502	9.502	9.502	9.002-10.002	9.503	0.003
13 2-Methylphenol	9.393	9.386	9.386	9.386	9.386	9.386	9.385	9.385	9.385	8.885-9.885	9.386	0.003
14 2,2'-oxybis(1-Chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.413	8.913-9.913	+++++	+++++
15 4-Methylphenol	9.618	9.611	9.611	9.603	9.603	9.603	9.603	9.603	9.603	9.103-10.103	9.607	0.006
16 N-Nitroso-di-n-propyla	9.968	9.952	9.952	9.945	9.945	9.945	9.944	9.944	9.944	9.444-10.444	9.949	0.008
17 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.809	9.309-10.309	+++++	+++++
\$ 18 Nitrobenzene-d5	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.917	9.417-10.417	+++++	+++++
19 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.948	9.448-10.448	+++++	+++++
20 Isophorone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.399	9.899-10.899	+++++	+++++
21 2-Nitrophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.575	10.075-11.075	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

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Batch File: \\target\share\chem3\nt14.i\20230421.b\20230421.b

Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
22 2,4-Dimethylphenol	10.945	10.938	10.930	10.930	10.930	10.930	10.930	10.930	10.930	10.430-11.430	10.933	0.006
23 Bis(2-Chloroethoxy)met	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.830	10.330-11.330	+++++	+++++
24 Benzoic acid	11.286	11.178	11.139	11.070	11.046	11.023	11.023	11.054	11.054	10.554-11.554	11.102	0.093
25 2,4-Dichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.033	10.533-11.533	+++++	+++++
26 1,2,4-Trichlorobenzene	11.534	11.534	11.527	11.527	11.527	11.526	11.526	11.526	11.526	11.026-12.026	11.528	0.004
* 27 Naphthalene-d8	11.619	11.619	11.619	11.619	11.619	11.619	11.619	11.619	11.619	11.119-12.119	11.619	0.000
28 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.326	10.826-11.826	+++++	+++++
29 4-Chloroaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.457	10.957-11.957	+++++	+++++
30 Hexachlorobutadiene	12.021	12.021	12.021	12.021	12.021	12.021	12.021	12.021	12.021	11.521-12.521	12.021	0.000
31 4-Chloro-3-methylpheno	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	12.432	11.932-12.932	+++++	+++++
32 2-Methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	12.710	12.210-13.210	+++++	+++++
33 Hexachlorocyclopentadi	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.182	12.682-13.682	+++++	+++++
34 2,4,6-Trichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.330	12.830-13.830	+++++	+++++
35 2,4,5-Trichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.415	12.915-13.915	+++++	+++++
\$ 36 2-Fluorobiphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.484	12.984-13.984	+++++	+++++
37 2-Chloronaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.686	13.186-14.186	+++++	+++++
38 2-Nitroaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.941	13.441-14.441	+++++	+++++
39 Dimethylphthalate	14.776	14.761	14.761	14.753	14.753	14.753	14.753	14.753	14.753	14.253-15.253	14.758	0.008
40 Acenaphthylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.545	14.045-15.045	+++++	+++++
41 2,6-Dinitrotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.506	14.006-15.006	+++++	+++++
* 42 Acenaphthene-d10	15.263	15.256	15.256	15.256	15.256	15.256	15.255	15.256	15.256	14.756-15.756	15.257	0.003
43 3-Nitroaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.785	14.285-15.285	+++++	+++++
44 Acenaphthene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.924	14.424-15.424	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m

Batch File: \\target\share\chem3\nt14.i\20230421.b\20230421.b

Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
45 2,4-Dinitrophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.001	14.501-15.501	+++++	+++++
46 Dibenzofuran	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.621	15.121-16.121	+++++	+++++
47 4-Nitrophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.171	14.671-15.671	+++++	+++++
48 2,4-Dinitrotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.302	14.802-15.802	+++++	+++++
49 Fluorene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.952	15.452-16.452	+++++	+++++
50 Diethylphthalate	16.237	16.222	16.222	16.214	16.214	16.214	16.214	16.214	16.214	15.714-16.714	16.219	0.008
51 4-Chlorophenyl-phenyle	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.952	15.452-16.452	+++++	+++++
52 4-Nitroaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.037	15.537-16.537	+++++	+++++
53 4,6-Dinitro-2-methylph	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.145	15.645-16.645	+++++	+++++
54 N-Nitrosodiphenylamine	16.623	16.608	16.608	16.600	16.600	16.608	16.600	16.600	16.600	16.100-17.100	16.606	0.008
55 2,4,6-Tribromophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.477	15.977-16.977	+++++	+++++
56 4-Bromophenyl-phenylet	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.939	16.439-17.439	+++++	+++++
57 Hexachlorobenzene	17.680	17.681	17.681	17.673	17.673	17.673	17.680	17.673	17.673	17.173-18.173	17.677	0.004
58 Pentachlorophenol	18.044	18.037	18.037	18.037	18.037	18.037	18.036	18.037	18.037	17.537-18.537	18.038	0.003
59 Phenanthrene-d10	18.307	18.308	18.308	18.308	18.300	18.307	18.307	18.300	18.300	17.800-18.800	18.306	0.004
60 Phenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.899	17.399-18.399	+++++	+++++
61 Anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.991	17.491-18.491	+++++	+++++
62 Carbazole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.324	17.824-18.824	+++++	+++++
63 Di-n-butylphthalate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.152	18.652-19.652	+++++	+++++
64 Fluoranthene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.289	19.789-20.789	+++++	+++++
65 Pyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.715	20.215-21.215	+++++	+++++
66 Terphenyl-d14	21.449	21.441	21.441	21.441	21.441	21.441	21.441	21.441	21.441	20.941-21.941	21.442	0.003
67 Butylbenzylphthalate	22.370	22.362	22.362	22.362	22.362	22.362	22.370	22.370	22.370	21.870-22.870	22.365	0.004
68 Benzo(a)anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	22.875	22.375-23.375	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

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Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 69 Chrysene-d12	23.361	23.354	23.354	23.354	23.354	23.354	23.353	23.353	23.353	22.853-23.853	23.354	0.003
70 3,3'-Dichlorobenzidine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	22.844	22.344-23.344	+++++	+++++
71 Chrysene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	22.952	22.452-23.452	+++++	+++++
72 bis(2-Ethylhexyl)phtha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	22.997	22.497-23.497	+++++	+++++
73 Di-n-octylphthalate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	23.990	23.490-24.490	+++++	+++++
74 Benzo(b)fluoranthene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	24.687	24.187-25.187	+++++	+++++
75 Benzo(k)fluoranthene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	24.725	24.225-25.225	+++++	+++++
76 Benzo(a)pyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.283	24.783-25.783	+++++	+++++
* 77 Perylene-d12	26.024	26.025	26.025	26.025	26.025	26.025	26.024	26.025	26.025	25.525-26.525	26.025	0.000
78 Indeno(1,2,3-cd)pyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.794	27.294-28.294	+++++	+++++
79 Dibenzo(a,h)anthracene	28.795	28.764	28.756	28.756	28.748	28.756	28.756	28.756	28.756	28.256-29.256	28.761	0.014
80 Benzo(g,h,i)perylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	28.494	27.994-28.994	+++++	+++++
\$ 85 p-Cresol-d4	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.238	16.738-17.738	+++++	+++++
\$ 86 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	29.316	28.816-29.816	+++++	+++++
\$ 87 Fluoranthene-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.007	25.507-26.507	+++++	+++++
\$ 88 Dibenz(a,h)anthracene-	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	44.609	44.109-45.109	+++++	+++++
\$ 89 Diphenyl-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.085	15.585-16.585	+++++	+++++
90 N-Nitrosodimethylamine	4.795	4.780	4.780	4.772	4.780	4.780	4.787	4.787	4.787	4.287-5.287	4.783	0.007
91 Aniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.305	7.805-8.805	+++++	+++++
92 1,2-Diphenylhydrazine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.615	21.115-22.115	+++++	+++++
93 Benzidine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.529	20.029-21.029	+++++	+++++
\$ 95 D10-1-methylnaphthalen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.686	17.186-18.186	+++++	+++++
96 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.540	14.040-15.040	+++++	+++++
97 Caffeine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.957	26.457-27.457	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

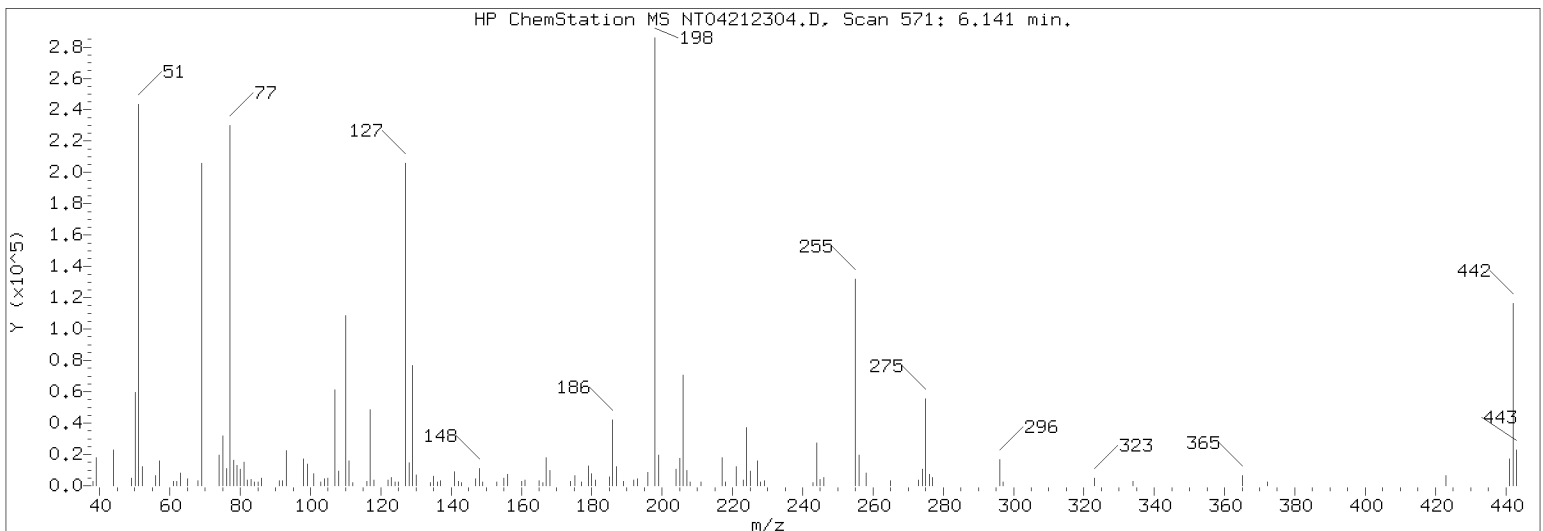
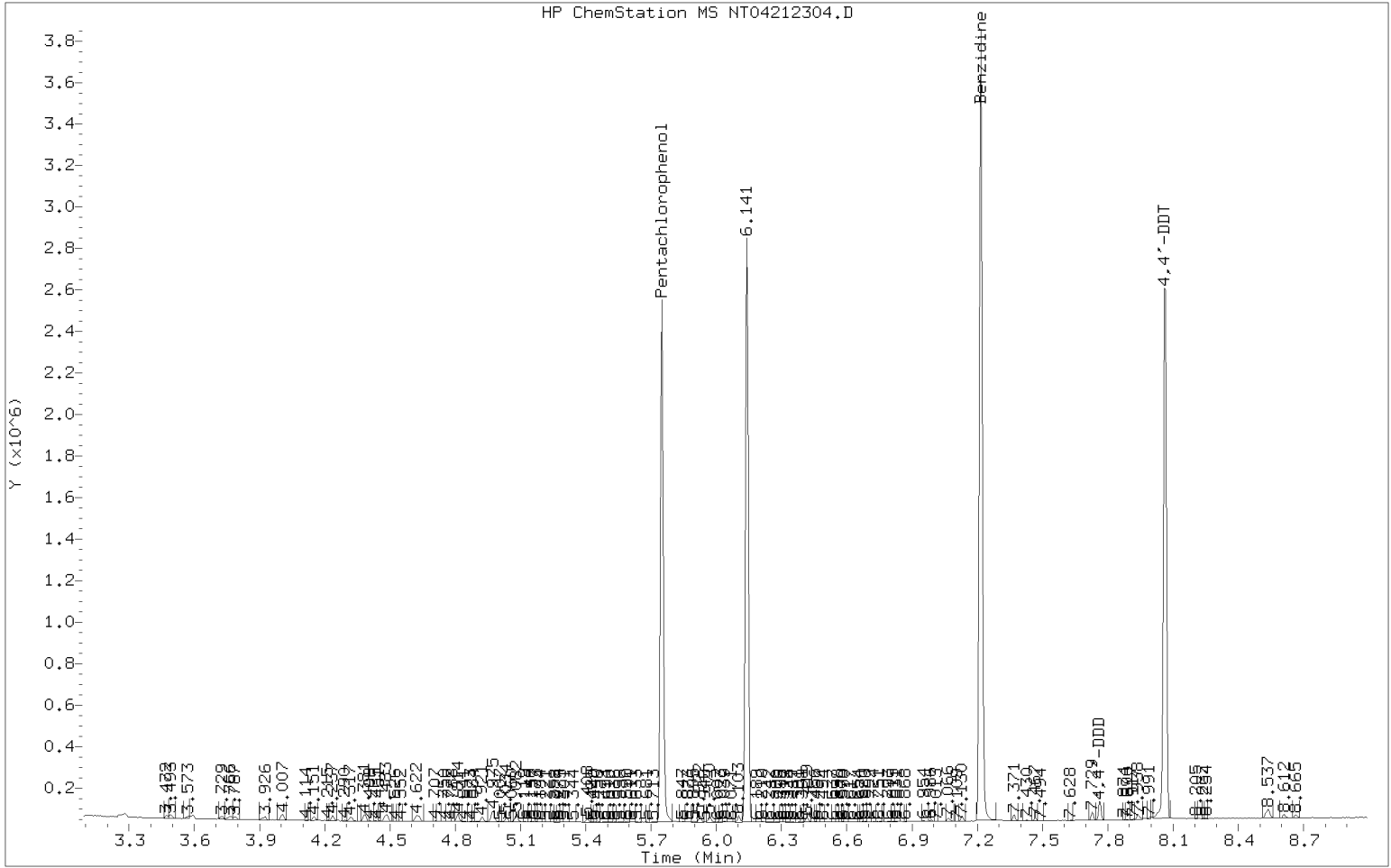
Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Batch File: \\target\share\chem3\nt14.i\20230421.b\20230421.b  
 Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
98 Retene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.609	19.109-20.109	+++++	+++++
99 Perylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.438	24.938-25.938	+++++	+++++
100 3-beta-Coprostanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.384	25.884-26.884	+++++	+++++
101 Cholesterol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	43.881	43.381-44.381	+++++	+++++
102 beta-Sitosterol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	45.573	45.073-46.073	+++++	+++++
103 Pyridine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.535	4.035-5.035	+++++	+++++

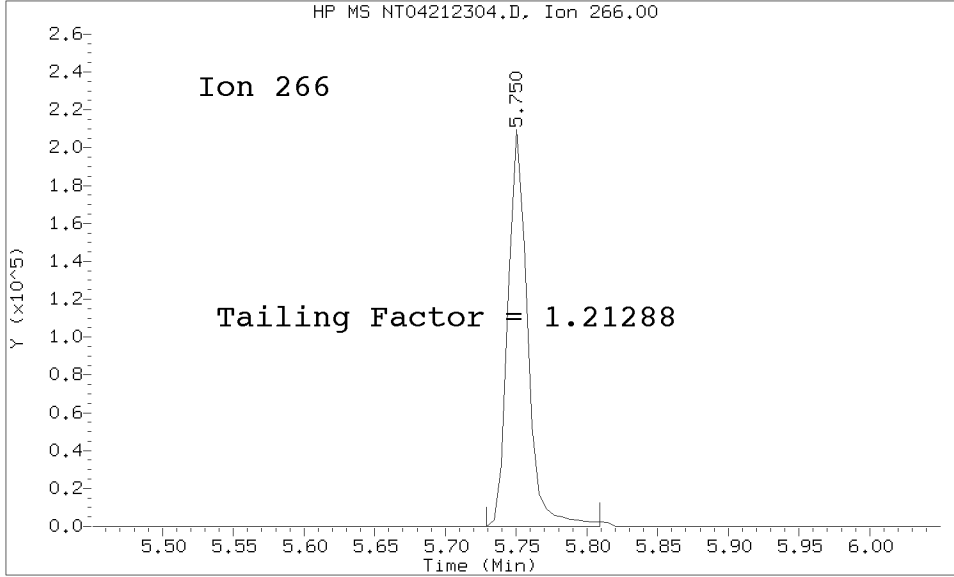


DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20230421.b/NT04212304.D/NT04212304.D  
Method Used: \20230421.b\DFTPP8270E.m Inst: nt14  
Injection Date: 21-APR-2023 15:32 Operator: JGR  
Sample Info: SEQ-TUN SEQ-TUN  
Report Date: 04/27/2023 08:14



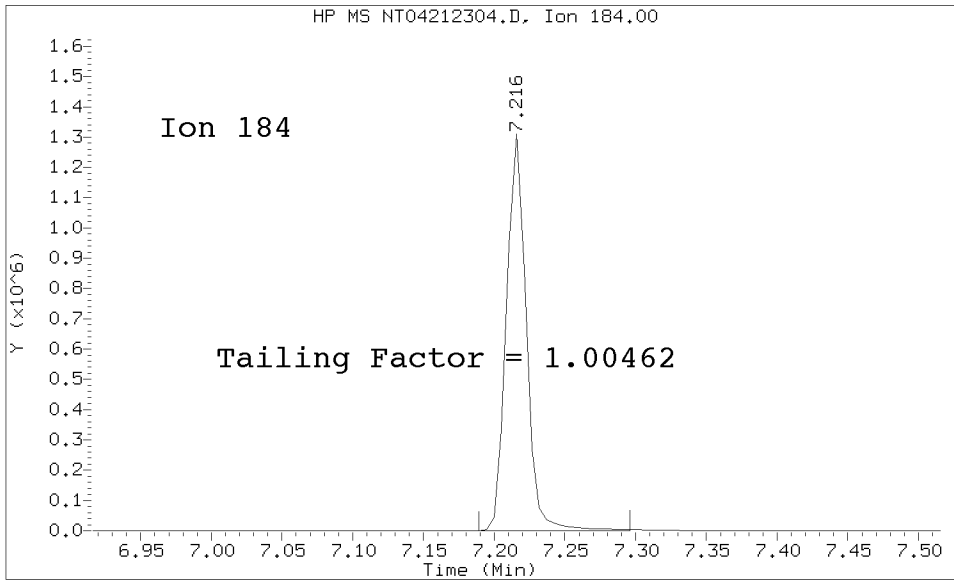
Datafile Analyzed: /20230421.b/NT04212304.D/NT04212304.D  
Method Used: \20230421.b\DFTPP8270E.m\sw846ddt.m Inst: nt14  
Injection Date: 21-APR-2023 15:32 Operator: JGR  
Sample Info: SEQ-TUN  
Report Date: 04/27/2023 08:14



Pentachlorophenol

=====  
Exp. RT = 5.751  
Found RT = 5.750

Tail Factor = 1.213 Maximum Allowed = 2.0



Benzidine

=====  
Exp. RT = 7.216  
Found RT = 7.216

Tail Factor = 1.005 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.2128778	2.000	PASS
Benzidine	1.0046189	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	368019			N/A
4,4-DDE	0	0.0	20.0	PASS
4,4-DDD	19097	4.9	20.0	PASS
4,4-DDD + DDE	19097	4.9	20.0	PASS

Tuning Sample, nt14.i/20230421.b/NT04212304.D, \*\*\* PASSED \*\*\*

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	1.14 ( 1.55)
69	Mass 69 relative abundance	73.13
70	Less than 2.00% of mass 69	0.00 ( 0.00)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.86
365	1.00 - 100.00% of mass 198	2.31
441	Less than 150.00% of mass 443	6.62 ( 76.77)
442	Less than 200.00% of mass 198	44.31
443	15.00 - 24.00% of mass 442	8.62 ( 19.45)

Data File: NT04212304.D

Spectrum: Avg. Scans 570-572 ( 6.14), Background Scan 566

Location of Maximum: 198.00

Number of points: 124

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	2454	103.00	803	160.00	932	225.00	7648
39.00	15373	104.00	3625	161.00	3109	227.00	13109
50.00	49616	105.00	3767	165.00	1870	228.00	807
51.00	203328	107.00	48928	166.00	1426	229.00	2072
52.00	10370	108.00	7621	167.00	9571	243.00	672
56.00	5554	110.00	86880	168.00	7589	244.00	22152
57.00	13104	111.00	12950	174.00	2602	245.00	3069
61.00	890	112.00	696	175.00	5223	246.00	4423
62.00	2450	116.00	2422	177.00	1674	255.00	109240
63.00	6873	117.00	39288	179.00	9808	256.00	15861
65.00	3662	118.00	2912	180.00	6483	258.00	6699
68.00	2587	122.00	2971	181.00	3049	265.00	2074
69.00	166528	123.00	4322	185.00	4646	273.00	2532
74.00	15879	124.00	856	186.00	33960	274.00	8498
75.00	25240	125.00	810	187.00	9711	275.00	44848
76.00	8841	127.00	161600	189.00	1703	276.00	5938
77.00	186048	128.00	11874	192.00	2937	277.00	4100
78.00	13175	129.00	60088	193.00	3398	296.00	13718
79.00	10739	130.00	5211	196.00	6802	297.00	1538
80.00	8544	134.00	703	198.00	227712	323.00	3918
81.00	12412	135.00	4899	199.00	15624	334.00	1975
82.00	3101	136.00	779	204.00	8470	365.00	5265
83.00	3022	137.00	2478	205.00	13852	372.00	1613
84.00	168	141.00	7254	206.00	56008	423.00	5637
85.00	749	142.00	2395	207.00	7500	441.00	15065
86.00	4555	143.00	698	208.00	1486	442.00	100888
91.00	2722	147.00	3733	211.00	1592	443.00	19624
92.00	2706	148.00	8974	217.00	14687	444.00	800
93.00	18152	149.00	773	218.00	797		
98.00	13633	153.00	1554	221.00	10031		
99.00	10999	155.00	3828	223.00	3190		
101.00	6240	156.00	5705	224.00	29976		

Data File: \\target\share\chem3\nt14.1\20230421.1\20230421.1\NT04212306S.D

Date: 21-APR-2023 16:23

Client ID:

Sample Info: SEQ-CAL6

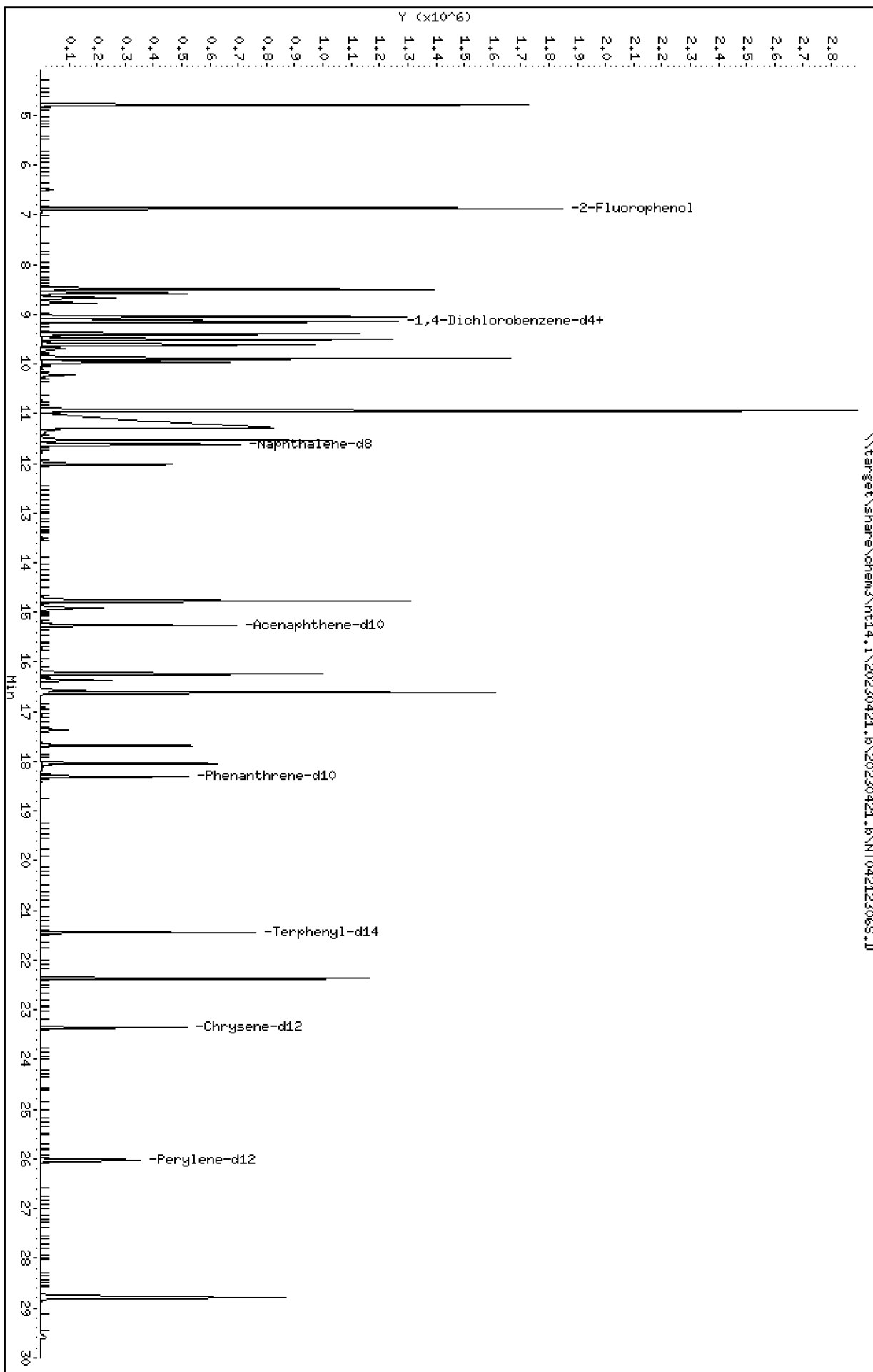
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

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ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212306S.D  
 Lab Smp Id: SEQ-CAL6  
 Inj Date : 21-APR-2023 16:23 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL6  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 3 Calibration Sample, Level: 8  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.753)	1577333	15.0000	14.59
3 Phenol	94		8.502	8.479	(0.932)	1693174	10.0000	9.770
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.992)	1216728	10.0000	9.257
* 8 1,4-Dichlorobenzene-d4	152		9.121	9.113	(1.000)	310165	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	1162625	10.0000	9.348
11 Benzyl alcohol	79		9.393	9.385	(1.030)	1157369	10.0000	10.83
12 1,2-Dichlorobenzene	146		9.509	9.501	(1.043)	1171863	10.0000	9.445
13 2-Methylphenol	108		9.618	9.603	(1.054)	1129365	10.0000	10.45 (H)
15 4-Methylphenol	108		9.890	9.874	(1.084)	1203433	10.0000	10.79 (H)
16 N-Nitroso-di-n-propylamine	70		9.967	9.944	(1.093)	1040173	10.0000	10.17
22 2,4-Dimethylphenol	107		10.945	10.929	(0.942)	2168837	20.0000	18.65
24 Benzoic acid	105		11.286	11.054	(0.971)	3986962	40.0000	40.01 (M)
26 1,2,4-Trichlorobenzene	180		11.534	11.526	(0.993)	888500	10.0000	9.952
* 27 Naphthalene-d8	136		11.618	11.619	(1.000)	1216000	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	477341	10.0000	9.661
39 Dimethylphthalate	163		14.775	14.752	(0.968)	1887369	10.0000	9.078
* 42 Acenaphthene-d10	162		15.263	15.255	(1.000)	569501	4.00000	
50 Diethylphthalate	149		16.237	16.214	(1.064)	1994169	10.0000	9.380
54 N-Nitrosodiphenylamine	169		16.623	16.600	(0.908)	1354347	10.0000	10.51
57 Hexachlorobenzene	284		17.680	17.672	(0.966)	497216	10.0000	10.11
58 Pentachlorophenol	266		18.044	18.037	(0.986)	670514	20.0000	20.50
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	921651	4.00000	
\$ 66 Terphenyl-d14	244		21.448	21.441	(0.918)	947517	10.0000	9.952
67 Butylbenzylphthalate	149		22.369	22.370	(0.958)	1364849	10.0000	10.04
* 69 Chrysene-d12	240		23.361	23.353	(1.000)	598590	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	658064	4.00000	
79 Dibenzo(a,h)anthracene	278		28.794	28.756	(1.106)	2019845	10.0000	10.14
90 N-Nitrosodimethylamine	74		4.794	4.787	(0.526)	1527809	20.0000	17.32

QC Flag Legend

M - Compound response manually integrated.  
 H - Operator selected an alternate compound hit.





ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212306S.D  
 Lab Smp Id: SEQ-CAL6  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	310165	-1.17
27 Naphthalene-d8	1195091	597546	2390182	1216000	1.75
42 Acenaphthene-d10	556977	278489	1113954	569501	2.25
59 Phenanthrene-d10	941816	470908	1883632	921651	-2.14
69 Chrysene-d12	617803	308902	1235606	598590	-3.11
77 Perylene-d12	639373	319687	1278746	658064	2.92

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.12	0.08
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	0.05
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.36	0.03
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212306S.D

Lab ID: SEQ-CAL6

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 16:23

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.971	0.951	0.0200	Benzoic acid

RRT check based on Ccal File: 20230421.b/NT04212313S.D

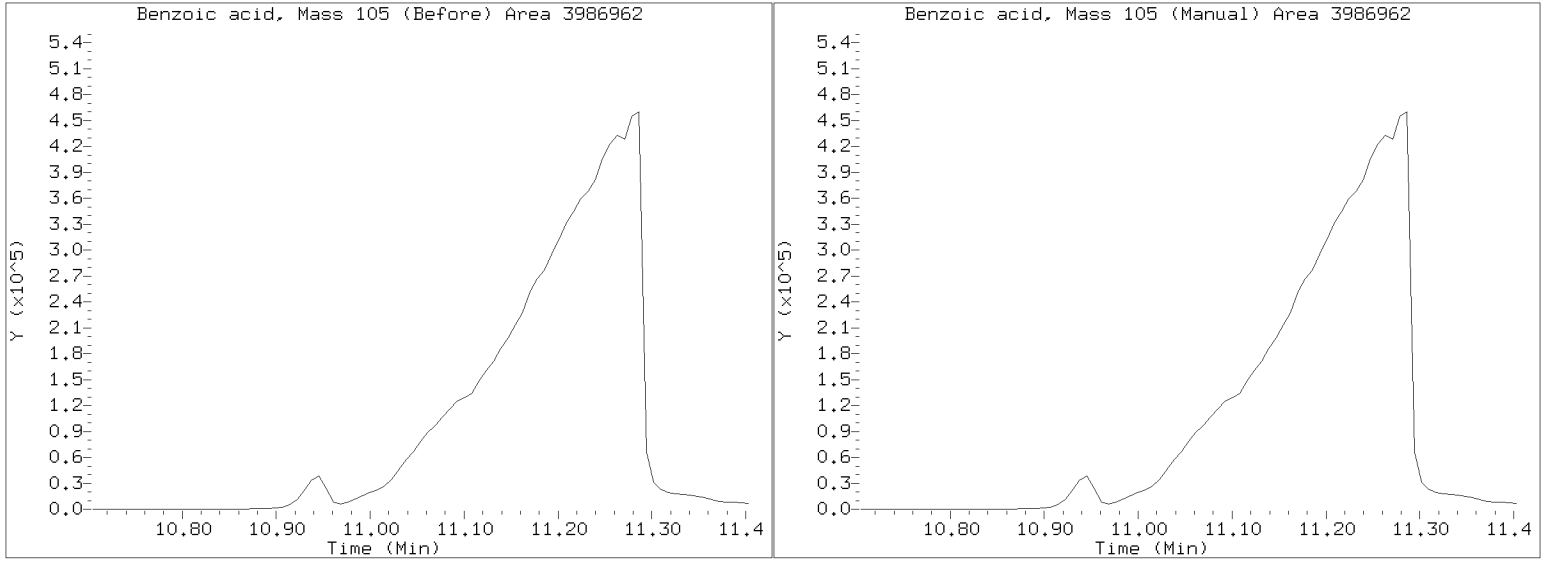
On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/20230421.b/NT04212306S.D  
Injection Date: 21-APR-2023 16:23  
Lab ID:SEQ-CAL6 Client ID:  
Report Date: 04/27/2023 12:55



Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212307S.D

Date : 21-APR-2023 17:00

Client ID:

Sample Info: SEQ-CALS

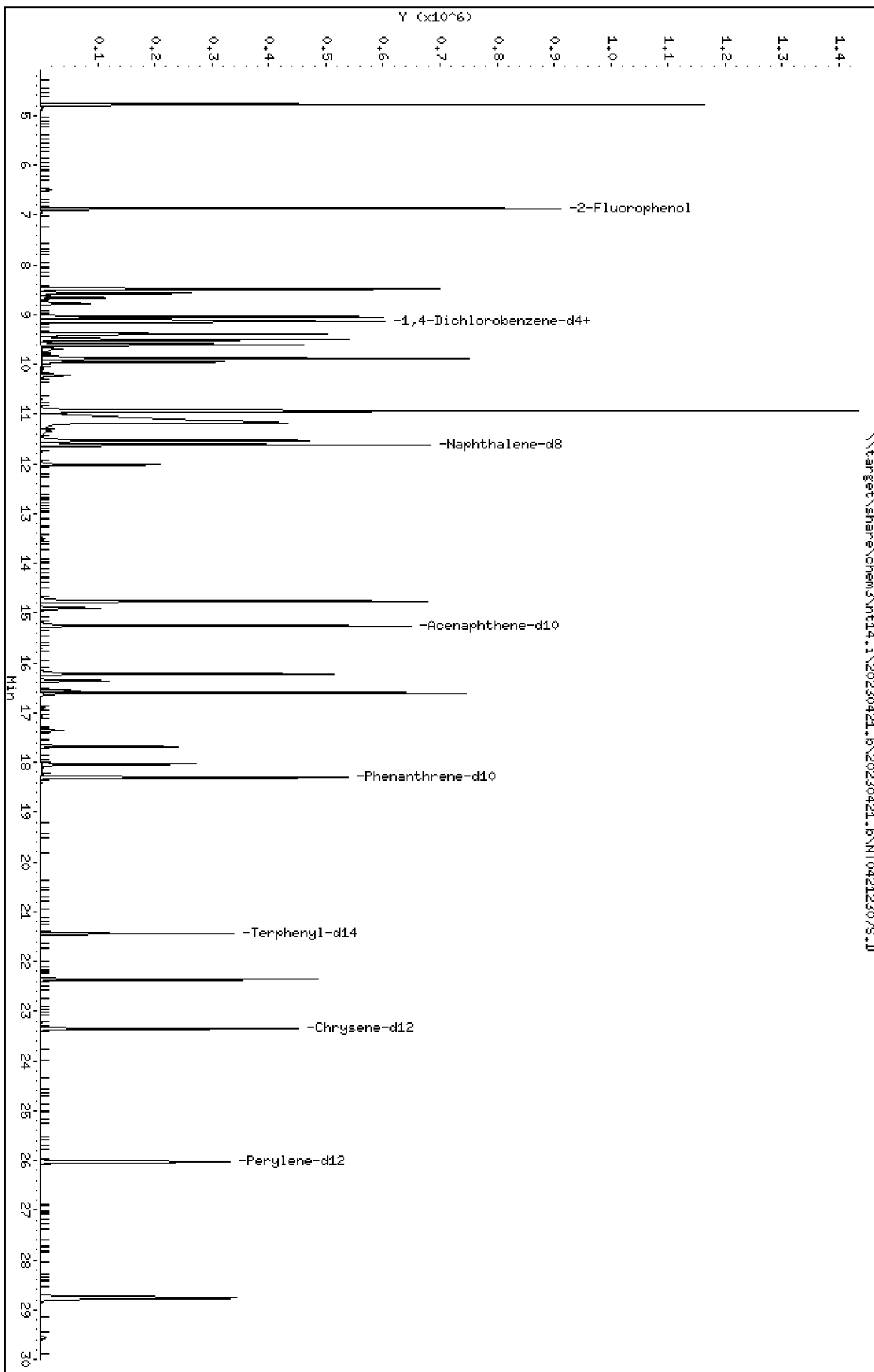
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

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ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212307S.D  
 Lab Smp Id: SEQ-CAL5  
 Inj Date : 21-APR-2023 17:00 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL5  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 4 Calibration Sample, Level: 7  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/mL)	ON-COL (ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	713741	7.50000	7.203
3 Phenol	94		8.487	8.479	(0.931)	750264	5.00000	4.723
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	542343	5.00000	4.501
* 8 1,4-Dichlorobenzene-d4	152		9.114	9.113	(1.000)	284316	4.00000	
9 1,4-Dichlorobenzene	146		9.145	9.144	(1.003)	516468	5.00000	4.530
11 Benzyl alcohol	79		9.385	9.385	(1.030)	477565	5.00000	4.876
12 1,2-Dichlorobenzene	146		9.502	9.501	(1.043)	517006	5.00000	4.546
13 2-Methylphenol	108		9.610	9.603	(1.055)	489482	5.00000	4.941 (H)
15 4-Methylphenol	108		9.882	9.874	(1.084)	520151	5.00000	5.088 (H)
16 N-Nitroso-di-n-propylamine	70		9.952	9.944	(1.092)	444092	5.00000	4.737
22 2,4-Dimethylphenol	107		10.937	10.929	(0.941)	996706	10.0000	9.481
24 Benzoic acid	105		11.178	11.054	(0.962)	1564422	20.0000	19.70 (M)
26 1,2,4-Trichlorobenzene	180		11.534	11.526	(0.993)	393882	5.00000	4.880
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1099228	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	206294	5.00000	4.619
39 Dimethylphthalate	163		14.760	14.752	(0.968)	836407	5.00000	4.464
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	513204	4.00000	
50 Diethylphthalate	149		16.222	16.214	(1.063)	879463	5.00000	4.590
54 N-Nitrosodiphenylamine	169		16.607	16.600	(0.907)	563478	5.00000	4.744
57 Hexachlorobenzene	284		17.680	17.672	(0.966)	212651	5.00000	4.690
58 Pentachlorophenol	266		18.036	18.037	(0.985)	271848	10.0000	9.016
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	849641	4.00000	
\$ 66 Terphenyl-d14	244		21.441	21.441	(0.918)	423835	5.00000	4.910
67 Butylbenzylphthalate	149		22.362	22.370	(0.958)	590547	5.00000	4.794
* 69 Chrysene-d12	240		23.353	23.353	(1.000)	542691	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	581096	4.00000	
79 Dibenzo(a,h)anthracene	278		28.763	28.756	(1.105)	822191	5.00000	4.674
90 N-Nitrosodimethylamine	74		4.779	4.787	(0.524)	743281	10.0000	9.192

QC Flag Legend

M - Compound response manually integrated.  
 H - Operator selected an alternate compound hit.



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212307S.D  
 Lab Smp Id: SEQ-CAL5  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	284316	-9.41
27 Naphthalene-d8	1195091	597546	2390182	1099228	-8.02
42 Acenaphthene-d10	556977	278489	1113954	513204	-7.86
59 Phenanthrene-d10	941816	470908	1883632	849641	-9.79
69 Chrysene-d12	617803	308902	1235606	542691	-12.16
77 Perylene-d12	639373	319687	1278746	581096	-9.11

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.35	-0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212307S.D

Lab ID: SEQ-CAL5

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 17:00

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.962	0.951	0.0107	Benzoic acid

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

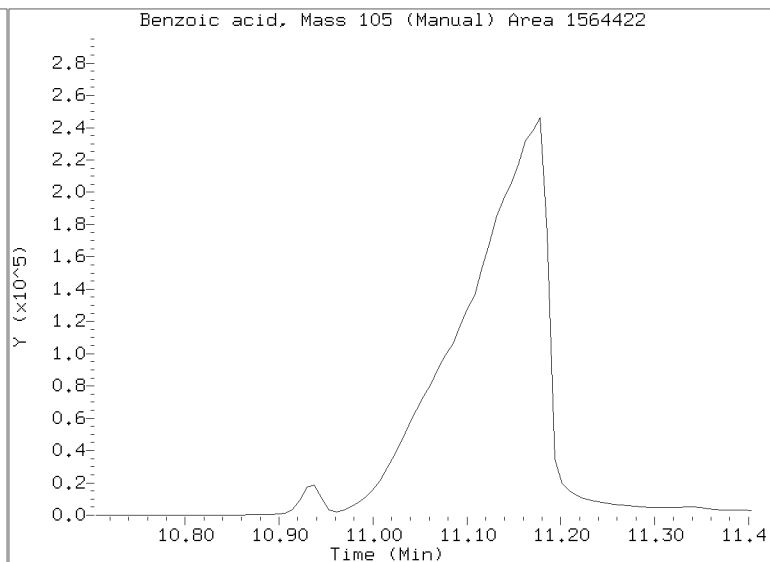
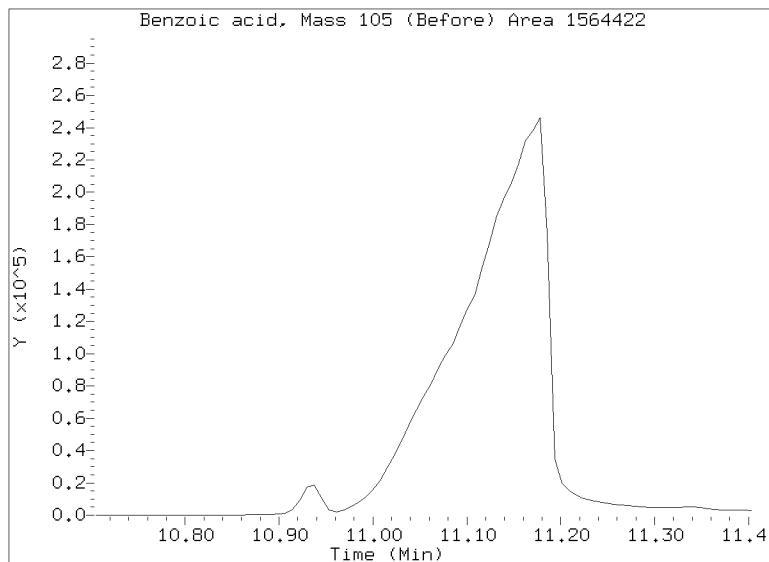
Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/20230421.b/NT04212307S.D  
Injection Date: 21-APR-2023 17:00  
Lab ID: SEQ-CAL5 Client ID:  
Report Date: 04/27/2023 12:55



Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212308S.D

Date: 21-APR-2023 17:37

Client ID:

Sample Info: SEQ-CAL4

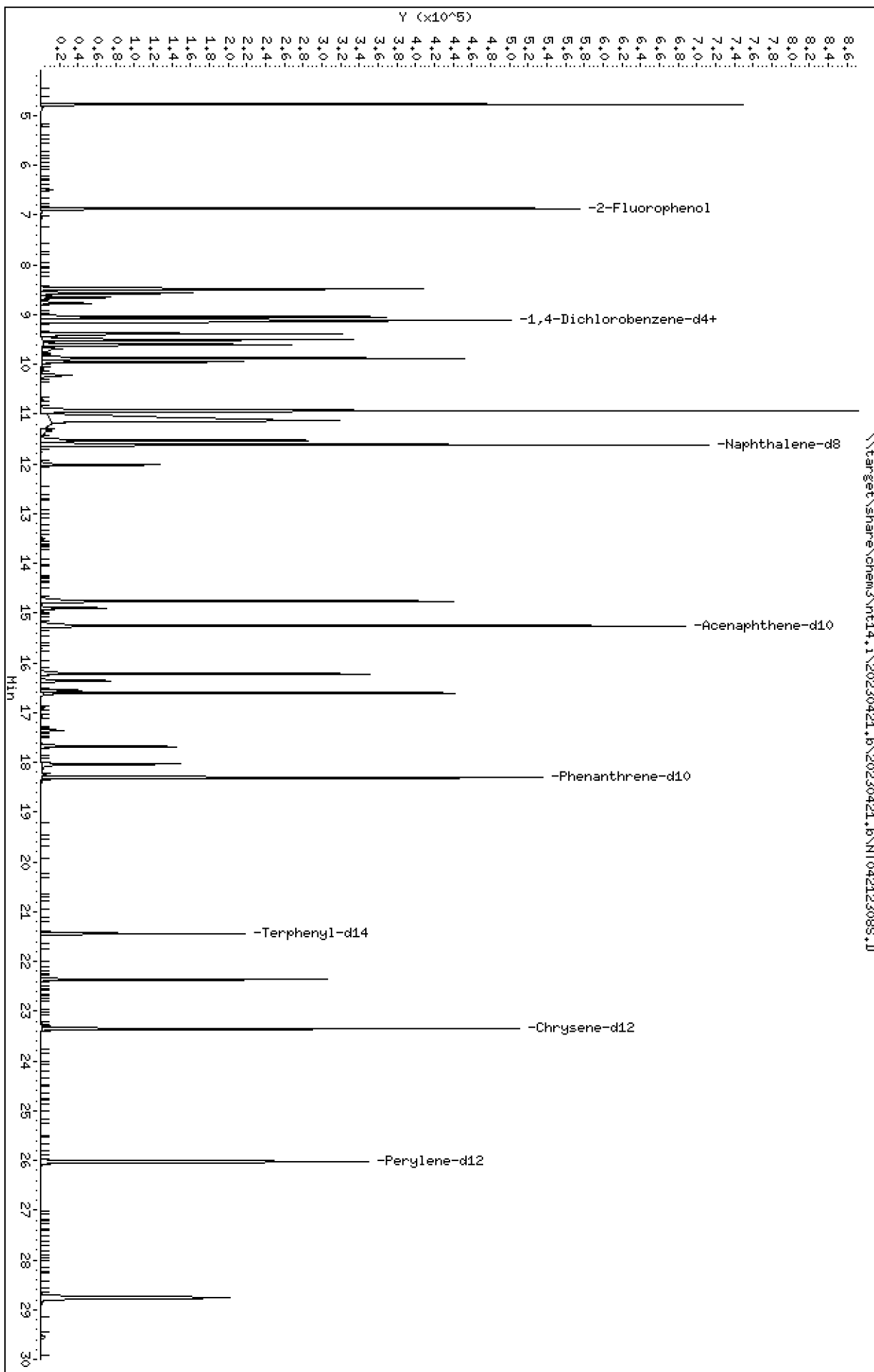
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

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ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212308S.D  
 Lab Smp Id: SEQ-CAL4  
 Inj Date : 21-APR-2023 17:37 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL4  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 5 Calibration Sample, Level: 6  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	444164	3.75000	4.255
3 Phenol	94		8.487	8.479	(0.931)	469522	2.50000	2.806
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	338139	2.50000	2.664
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	299483	4.00000	
9 1,4-Dichlorobenzene	146		9.145	9.144	(1.003)	319138	2.50000	2.658
11 Benzyl alcohol	79		9.385	9.385	(1.030)	298597	2.50000	2.894
12 1,2-Dichlorobenzene	146		9.502	9.501	(1.043)	321651	2.50000	2.685
13 2-Methylphenol	108		9.610	9.603	(1.055)	301376	2.50000	2.888 (H)
15 4-Methylphenol	108		9.874	9.874	(1.083)	319879	2.50000	2.970 (H)
16 N-Nitroso-di-n-propylamine	70		9.952	9.944	(1.092)	276657	2.50000	2.801
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	625931	5.00000	5.659
24 Benzoic acid	105		11.139	11.054	(0.959)	873138	10.0000	10.90
26 1,2,4-Trichlorobenzene	180		11.526	11.526	(0.992)	243511	2.50000	2.868
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1156442	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	126907	2.50000	2.701
39 Dimethylphthalate	163		14.760	14.752	(0.968)	525594	2.50000	2.665
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	540162	4.00000	
50 Diethylphthalate	149		16.222	16.214	(1.063)	553546	2.50000	2.745
54 N-Nitrosodiphenylamine	169		16.607	16.600	(0.907)	357008	2.50000	2.827
57 Hexachlorobenzene	284		17.680	17.672	(0.966)	130346	2.50000	2.704
58 Pentachlorophenol	266		18.036	18.037	(0.985)	158808	5.00000	4.954
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	903346	4.00000	
\$ 66 Terphenyl-d14	244		21.441	21.441	(0.918)	262313	2.50000	2.830
67 Butylbenzylphthalate	149		22.362	22.370	(0.958)	365901	2.50000	2.766
* 69 Chrysene-d12	240		23.353	23.353	(1.000)	582718	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	619880	4.00000	
79 Dibenzo(a,h)anthracene	278		28.755	28.756	(1.105)	492388	2.50000	2.624
90 N-Nitrosodimethylamine	74		4.779	4.787	(0.524)	467054	5.00000	5.483

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212308S.D  
 Lab Smp Id: SEQ-CAL4  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	299483	-4.58
27 Naphthalene-d8	1195091	597546	2390182	1156442	-3.23
42 Acenaphthene-d10	556977	278489	1113954	540162	-3.02
59 Phenanthrene-d10	941816	470908	1883632	903346	-4.08
69 Chrysene-d12	617803	308902	1235606	582718	-5.68
77 Perylene-d12	639373	319687	1278746	619880	-3.05

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.35	-0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212308S.D

Lab ID: SEQ-CAL4

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 17:37

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.959	0.951	0.0073	Benzoic acid

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212309S.D

Date: 21-APR-2023 18:13

Client ID:

Sample Info: SEQ-CAL3

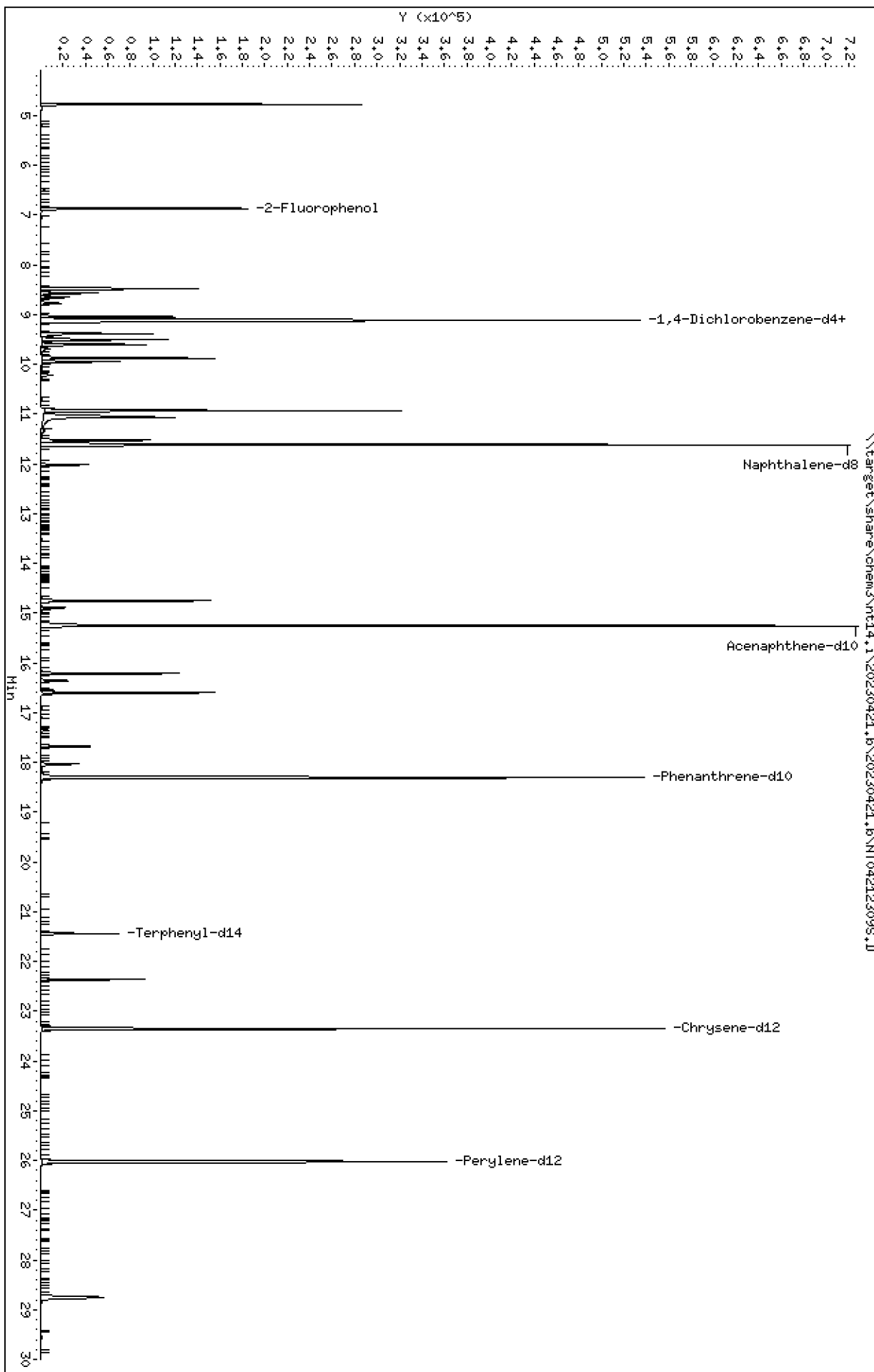
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212309S.D  
 Lab Smp Id: SEQ-CAL3  
 Inj Date : 21-APR-2023 18:13 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL3  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 6 Calibration Sample, Level: 5  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	148244	1.50000	1.355
3 Phenol	94		8.479	8.479	(0.930)	155193	1.00000	0.8850
7 1,3-Dichlorobenzene	146		9.044	9.044	(0.992)	113464	1.00000	0.8531
* 8 1,4-Dichlorobenzene-d4	152		9.114	9.113	(1.000)	313847	4.00000	
9 1,4-Dichlorobenzene	146		9.145	9.144	(1.003)	107374	1.00000	0.8532
11 Benzyl alcohol	79		9.385	9.385	(1.030)	92980	1.00000	0.8600
12 1,2-Dichlorobenzene	146		9.502	9.501	(1.043)	107364	1.00000	0.8551
13 2-Methylphenol	108		9.603	9.603	(1.054)	97682	1.00000	0.8933 (H)
15 4-Methylphenol	108		9.874	9.874	(1.083)	101805	1.00000	0.9020 (H)
16 N-Nitroso-di-n-propylamine	70		9.944	9.944	(1.091)	91363	1.00000	0.8828
22 2,4-Dimethylphenol	107		10.930	10.929	(0.941)	210689	2.00000	1.843
24 Benzoic acid	105		11.069	11.054	(0.953)	218851	4.00000	2.735
26 1,2,4-Trichlorobenzene	180		11.526	11.526	(0.992)	81145	1.00000	0.9248
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1195091	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	41894	1.00000	0.8627
39 Dimethylphthalate	163		14.752	14.752	(0.967)	177392	1.00000	0.8724
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	556977	4.00000	
50 Diethylphthalate	149		16.214	16.214	(1.063)	184452	1.00000	0.8871
54 N-Nitrosodiphenylamine	169		16.600	16.600	(0.907)	119707	1.00000	0.9091
57 Hexachlorobenzene	284		17.672	17.672	(0.965)	42700	1.00000	0.8496
58 Pentachlorophenol	266		18.036	18.037	(0.985)	41994	2.00000	1.257
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	941816	4.00000	
\$ 66 Terphenyl-d14	244		21.441	21.441	(0.918)	83749	1.00000	0.8523
67 Butylbenzylphthalate	149		22.362	22.370	(0.958)	110301	1.00000	0.7865
* 69 Chrysene-d12	240		23.353	23.353	(1.000)	617803	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	639373	4.00000	
79 Dibenzo(a,h)anthracene	278		28.755	28.756	(1.105)	146922	1.00000	0.7590
90 N-Nitrosodimethylamine	74		4.772	4.787	(0.524)	159113	2.00000	1.783

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212309S.D  
 Lab Smp Id: SEQ-CAL3  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	313847	0.00
27 Naphthalene-d8	1195091	597546	2390182	1195091	0.00
42 Acenaphthene-d10	556977	278489	1113954	556977	0.00
59 Phenanthrene-d10	941816	470908	1883632	941816	0.00
69 Chrysene-d12	617803	308902	1235606	617803	0.00
77 Perylene-d12	639373	319687	1278746	639373	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	0.00
69 Chrysene-d12	23.35	22.85	23.85	23.35	0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



REVIEW SUMMARY FOR FILE - NT04212309S.D

Lab ID: SEQ-CAL3

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 18:13

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212310S.D

Date: 21-APR-2023 18:50

Client ID:

Sample Info: SEQ-CAL2

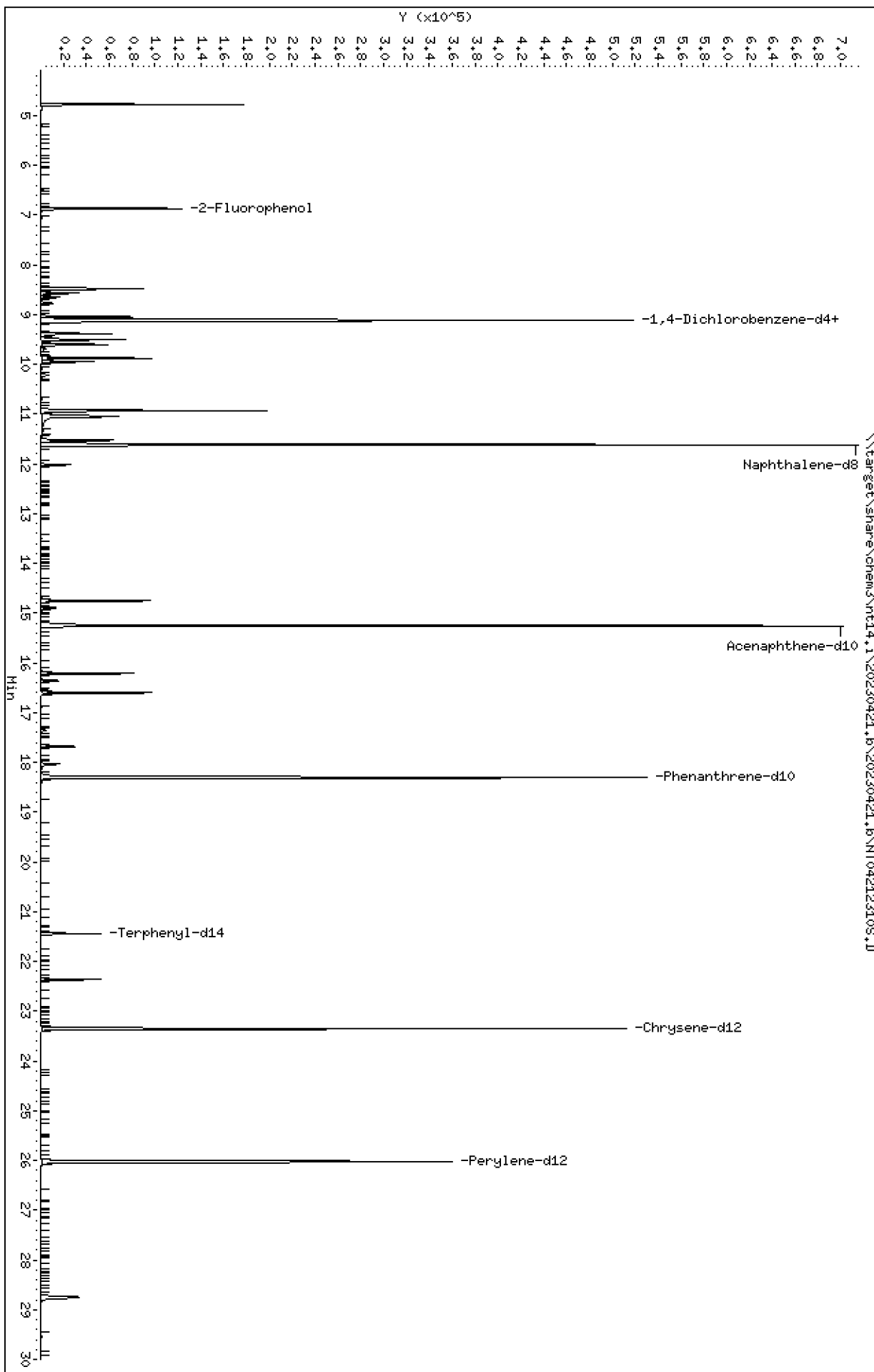
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

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ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212310S.D  
 Lab Smp Id: SEQ-CAL2  
 Inj Date : 21-APR-2023 18:50 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 7 Calibration Sample, Level: 4  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/mL)	ON-COL (ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	93992	0.75000	0.8722
3 Phenol	94		8.479	8.479	(0.930)	100091	0.50000	0.5794
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	74145	0.50000	0.5658
* 8 1,4-Dichlorobenzene-d4	152		9.114	9.113	(1.000)	309195	4.00000	
9 1,4-Dichlorobenzene	146		9.145	9.144	(1.003)	69757	0.50000	0.5627
11 Benzyl alcohol	79		9.385	9.385	(1.030)	59064	0.50000	0.5545
12 1,2-Dichlorobenzene	146		9.502	9.501	(1.043)	70118	0.50000	0.5669
13 2-Methylphenol	108		9.603	9.603	(1.054)	61616	0.50000	0.5720 (H)
15 4-Methylphenol	108		9.874	9.874	(1.083)	64527	0.50000	0.5803 (H)
16 N-Nitroso-di-n-propylamine	70		9.944	9.944	(1.091)	59187	0.50000	0.5805
22 2,4-Dimethylphenol	107		10.930	10.929	(0.941)	131840	1.00000	1.180
24 Benzoic acid	105		11.046	11.054	(0.951)	114758	2.00000	1.475
26 1,2,4-Trichlorobenzene	180		11.526	11.526	(0.992)	53218	0.50000	0.6206
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1168028	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	27124	0.50000	0.5715
39 Dimethylphthalate	163		14.752	14.752	(0.967)	114210	0.50000	0.5772
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	541996	4.00000	
50 Diethylphthalate	149		16.214	16.214	(1.063)	118899	0.50000	0.5876
54 N-Nitrosodiphenylamine	169		16.600	16.600	(0.907)	76223	0.50000	0.5951
57 Hexachlorobenzene	284		17.672	17.672	(0.966)	27168	0.50000	0.5557
58 Pentachlorophenol	266		18.036	18.037	(0.986)	23171	1.00000	0.7127
* 59 Phenanthrene-d10	188		18.299	18.299	(1.000)	916189	4.00000	
\$ 66 Terphenyl-d14	244		21.441	21.441	(0.918)	63826	0.50000	0.6717
67 Butylbenzylphthalate	149		22.362	22.370	(0.958)	65171	0.50000	0.4806
* 69 Chrysene-d12	240		23.353	23.353	(1.000)	597401	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	623920	4.00000	
79 Dibenzo(a,h)anthracene	278		28.748	28.756	(1.105)	90068	0.50000	0.4768
90 N-Nitrosodimethylamine	74		4.779	4.787	(0.524)	103225	1.00000	1.174

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212310S.D  
 Lab Smp Id: SEQ-CAL2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	309195	-1.48
27 Naphthalene-d8	1195091	597546	2390182	1168028	-2.26
42 Acenaphthene-d10	556977	278489	1113954	541996	-2.69
59 Phenanthrene-d10	941816	470908	1883632	916189	-2.72
69 Chrysene-d12	617803	308902	1235606	597401	-3.30
77 Perylene-d12	639373	319687	1278746	623920	-2.42

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.30	-0.04
69 Chrysene-d12	23.35	22.85	23.85	23.35	-0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212310S.D

Lab ID: SEQ-CAL2

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 18:50

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212311S.D

Date: 21-APR-2023 19:27

Client ID:

Sample Info: SEQ-CALL

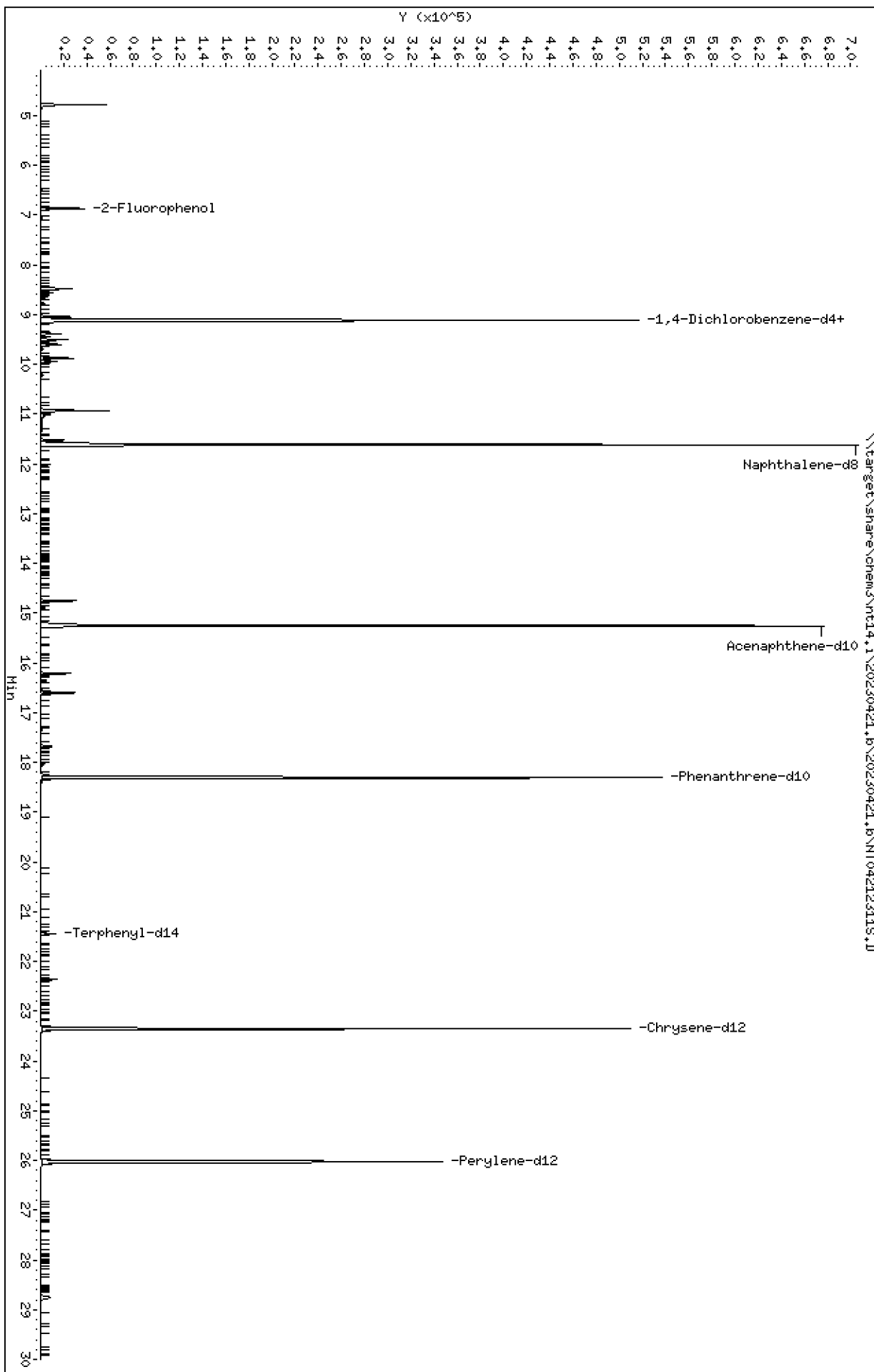
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212311S.D  
 Lab Smp Id: SEQ-CAL1  
 Inj Date : 21-APR-2023 19:27 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-CAL1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 8 Calibration Sample, Level: 3  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	29019	0.30000	0.2716
3 Phenol	94		8.479	8.479	(0.930)	31056	0.20000	0.1813
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	24180	0.20000	0.1861
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	306573	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	22771	0.20000	0.1852
11 Benzyl alcohol	79		9.385	9.385	(1.030)	17207	0.20000	0.1629
12 1,2-Dichlorobenzene	146		9.502	9.501	(1.043)	22657	0.20000	0.1847
13 2-Methylphenol	108		9.602	9.603	(1.054)	18797	0.20000	0.1760(H)
15 4-Methylphenol	108		9.874	9.874	(1.083)	18908	0.20000	0.1715(H)
16 N-Nitroso-di-n-propylamine	70		9.944	9.944	(1.091)	18220	0.20000	0.1802
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	41114	0.40000	0.3708
24 Benzoic acid	105		11.022	11.054	(0.949)	15055	0.80000	0.1959
26 1,2,4-Trichlorobenzene	180		11.526	11.526	(0.992)	17462	0.20000	0.2051
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1159423	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	8528	0.20000	0.1810
39 Dimethylphthalate	163		14.752	14.752	(0.967)	36168	0.20000	0.1857
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	533497	4.00000	
50 Diethylphthalate	149		16.214	16.214	(1.063)	39181	0.20000	0.1967
54 N-Nitrosodiphenylamine	169		16.607	16.600	(0.907)	23281	0.20000	0.1827
57 Hexachlorobenzene	284		17.672	17.672	(0.965)	8717	0.20000	0.1792
58 Pentachlorophenol	266		18.036	18.037	(0.985)	4898	0.40000	0.1514
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	911500	4.00000	
\$ 66 Terphenyl-d14	244		21.440	21.441	(0.918)	15766	0.20000	0.1652
67 Butylbenzylphthalate	149		22.362	22.370	(0.958)	17005	0.20000	0.1248
* 69 Chrysene-d12	240		23.353	23.353	(1.000)	600195	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	606720	4.00000	
79 Dibenzo(a,h)anthracene	278		28.755	28.756	(1.105)	24462	0.20000	0.1332
90 N-Nitrosodimethylamine	74		4.779	4.787	(0.524)	32776	0.40000	0.3759

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212311S.D  
 Lab Smp Id: SEQ-CAL1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	306573	-2.32
27 Naphthalene-d8	1195091	597546	2390182	1159423	-2.98
42 Acenaphthene-d10	556977	278489	1113954	533497	-4.22
59 Phenanthrene-d10	941816	470908	1883632	911500	-3.22
69 Chrysene-d12	617803	308902	1235606	600195	-2.85
77 Perylene-d12	639373	319687	1278746	606720	-5.11

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.35	-0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



REVIEW SUMMARY FOR FILE - NT04212311S.D

Lab ID: SEQ-CAL1

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 19:27

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212312S.D

Date : 21-APR-2023 20:03

Client ID:

Sample Info: SEQ-SIM2

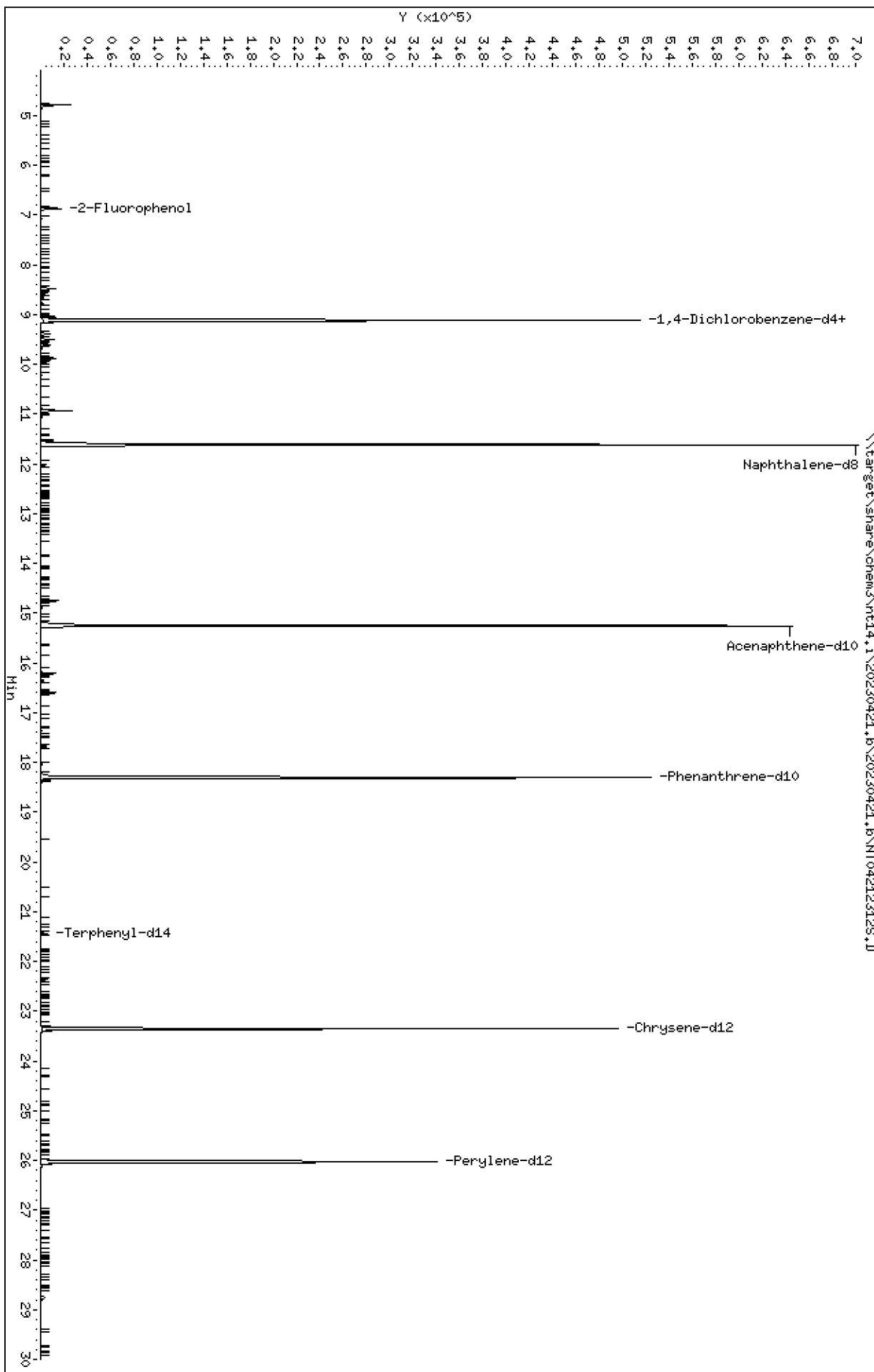
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212312S.D  
 Lab Smp Id: SEQ-SIM2  
 Inj Date : 21-APR-2023 20:03 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SIM2  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 9 Calibration Sample, Level: 2  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	13669	0.15000	0.1286
3 Phenol	94		8.479	8.479	(0.930)	14832	0.10000	0.08706
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	12116	0.10000	0.09376
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	304906	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	11408	0.10000	0.09331
11 Benzyl alcohol	79		9.385	9.385	(1.030)	7796	0.10000	0.07422
12 1,2-Dichlorobenzene	146		9.501	9.501	(1.043)	11275	0.10000	0.09244
13 2-Methylphenol	108		9.602	9.603	(1.054)	8834	0.10000	0.08316 (H)
15 4-Methylphenol	108		9.874	9.874	(1.083)	8639	0.10000	0.07879 (H)
16 N-Nitroso-di-n-propylamine	70		9.944	9.944	(1.091)	8644	0.10000	0.08597
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	19004	0.20000	0.1739
24 Benzoic acid	105		11.022	11.054	(0.949)	2835	0.40000	0.03745
26 1,2,4-Trichlorobenzene	180		11.526	11.526	(0.992)	8822	0.10000	0.1052
* 27 Naphthalene-d8	136		11.618	11.619	(1.000)	1142624	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	4195	0.10000	0.09035
39 Dimethylphthalate	163		14.752	14.752	(0.967)	17700	0.10000	0.09299
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	521404	4.00000	
50 Diethylphthalate	149		16.214	16.214	(1.063)	20602	0.10000	0.1058
54 N-Nitrosodiphenylamine	169		16.599	16.600	(0.907)	10430	0.10000	0.08368
57 Hexachlorobenzene	284		17.680	17.672	(0.966)	4305	0.10000	0.09049
58 Pentachlorophenol	266		18.036	18.037	(0.985)	1607	0.20000	0.05080 (M)
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	891505	4.00000	
\$ 66 Terphenyl-d14	244		21.440	21.441	(0.918)	7280	0.10000	0.07836
67 Butylbenzylphthalate	149		22.369	22.370	(0.958)	6887	0.10000	0.05194
* 69 Chrysene-d12	240		23.353	23.353	(1.000)	584134	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	587277	4.00000	
79 Dibenzo(a,h)anthracene	278		28.755	28.756	(1.105)	10634	0.10000	0.05981
90 N-Nitrosodimethylamine	74		4.787	4.787	(0.525)	15862	0.20000	0.1829

QC Flag Legend

M - Compound response manually integrated.  
 H - Operator selected an alternate compound hit.



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212312S.D  
 Lab Smp Id: SEQ-SIM2  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	304906	-2.85
27 Naphthalene-d8	1195091	597546	2390182	1142624	-4.39
42 Acenaphthene-d10	556977	278489	1113954	521404	-6.39
59 Phenanthrene-d10	941816	470908	1883632	891505	-5.34
69 Chrysene-d12	617803	308902	1235606	584134	-5.45
77 Perylene-d12	639373	319687	1278746	587277	-8.15

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.35	-0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212312S.D

Lab ID: SEQ-SIM2

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 20:03

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: 20230421.b/NT04212313S.D

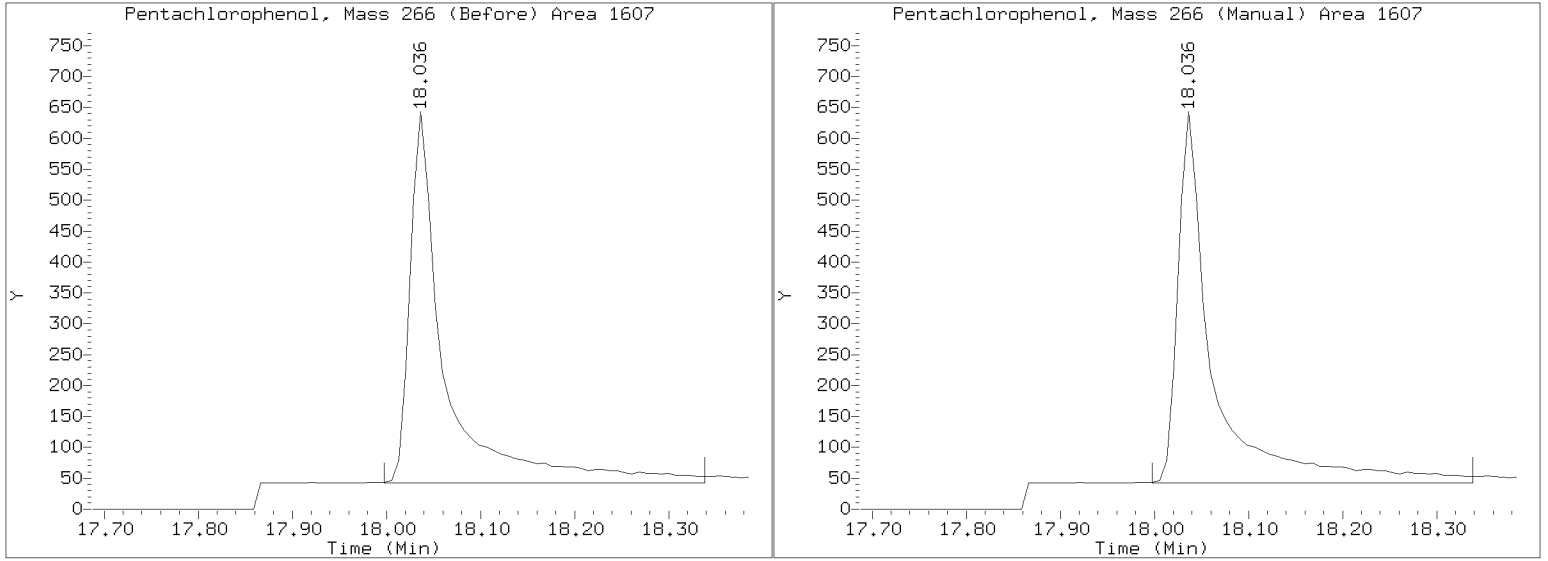
On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/20230421.b/NT04212312S.D  
Injection Date: 21-APR-2023 20:03  
Lab ID:SEQ-SIM2 Client ID:  
Report Date: 04/27/2023 12:55



Data File: \\target\share\chem3\nt14.1\20230421.1\20230421.1\NT04212313S.D

Date: 21-APR-2023 20:40

Client ID:

Sample Info: SEQ-SIM1

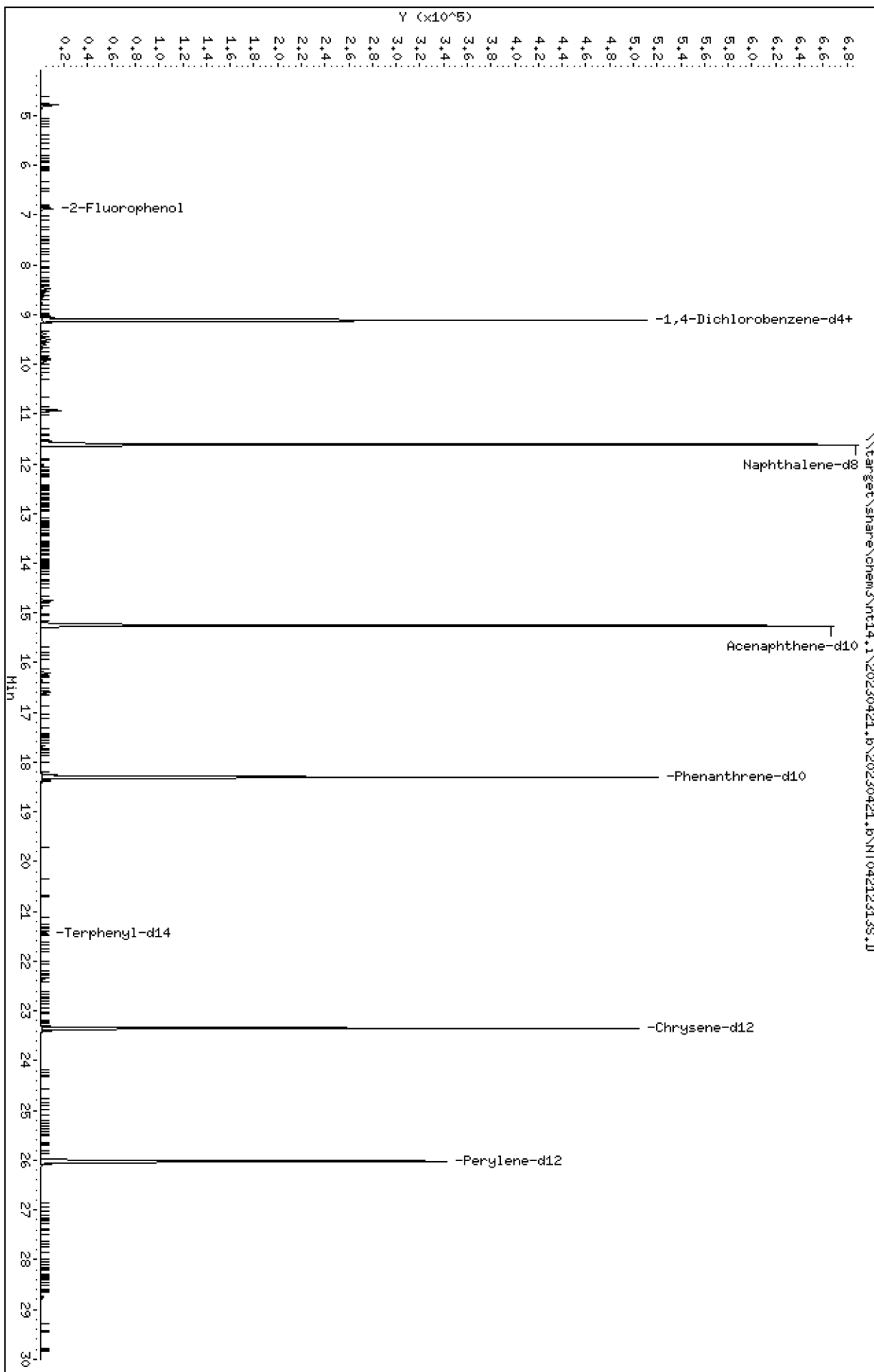
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1





ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212313S.D  
 Lab Smp Id: SEQ-SIM1  
 Inj Date : 21-APR-2023 20:40 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SIM1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 10 Calibration Sample, Level: 1  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.872	6.872	(0.754)	8719	0.07500	0.08271
3 Phenol	94		8.479	8.479	(0.930)	9594	0.05000	0.05677
7 1,3-Dichlorobenzene	146		9.044	9.044	(0.992)	8047	0.05000	0.06277
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	302484	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	7630	0.05000	0.06291
11 Benzyl alcohol	79		9.385	9.385	(1.030)	4896	0.05000	0.04699
12 1,2-Dichlorobenzene	146		9.501	9.501	(1.043)	7475	0.05000	0.06177
13 2-Methylphenol	108		9.602	9.603	(1.054)	5598	0.05000	0.05312 (H)
15 4-Methylphenol	108		9.874	9.874	(1.083)	5478	0.05000	0.05036 (H)
16 N-Nitroso-di-n-propylamine	70		9.944	9.944	(1.091)	5537	0.05000	0.05551
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	11824	0.10000	0.1089
24 Benzoic acid	105		11.053	11.054	(0.951)	892	0.20000	0.01186 (M)
26 1,2,4-Trichlorobenzene	180		11.526	11.526	(0.992)	6024	0.05000	0.07228
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1135075	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	2803	0.05000	0.06077
39 Dimethylphthalate	163		14.752	14.752	(0.967)	11826	0.05000	0.06241
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	519077	4.00000	
50 Diethylphthalate	149		16.214	16.214	(1.063)	14221	0.05000	0.07339
54 N-Nitrosodiphenylamine	169		16.600	16.600	(0.907)	6284	0.05000	0.05099
57 Hexachlorobenzene	284		17.672	17.672	(0.966)	2840	0.05000	0.06037
58 Pentachlorophenol	266		18.036	18.037	(0.986)	852	0.10000	0.02724 (M)
* 59 Phenanthrene-d10	188		18.299	18.299	(1.000)	881493	4.00000	
\$ 66 Terphenyl-d14	244		21.440	21.441	(0.918)	6747	0.05000	0.07424
67 Butylbenzylphthalate	149		22.370	22.370	(0.958)	3691	0.05000	0.02846
* 69 Chrysene-d12	240		23.353	23.353	(1.000)	571384	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	579560	4.00000	
79 Dibenzo(a,h)anthracene	278		28.755	28.756	(1.105)	6485	0.05000	0.03696
90 N-Nitrosodimethylamine	74		4.787	4.787	(0.525)	10313	0.10000	0.1199

QC Flag Legend

M - Compound response manually integrated.  
 H - Operator selected an alternate compound hit.



ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212313S.D  
 Lab Smp Id: SEQ-SIM1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	302484	-3.62
27 Naphthalene-d8	1195091	597546	2390182	1135075	-5.02
42 Acenaphthene-d10	556977	278489	1113954	519077	-6.80
59 Phenanthrene-d10	941816	470908	1883632	881493	-6.40
69 Chrysene-d12	617803	308902	1235606	571384	-7.51
77 Perylene-d12	639373	319687	1278746	579560	-9.35

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.30	-0.04
69 Chrysene-d12	23.35	22.85	23.85	23.35	-0.00
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212313S.D

Lab ID: SEQ-SIM1

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 20:40

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: 20230421.b/NT04212313S.D

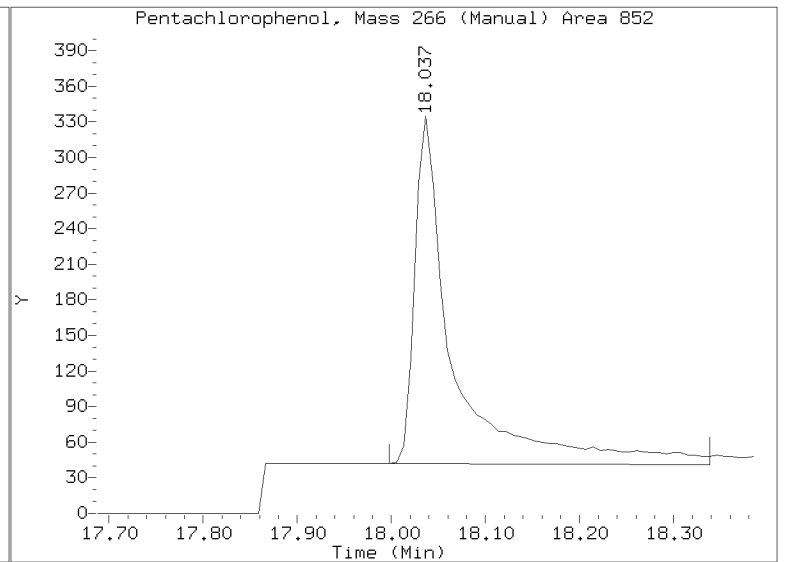
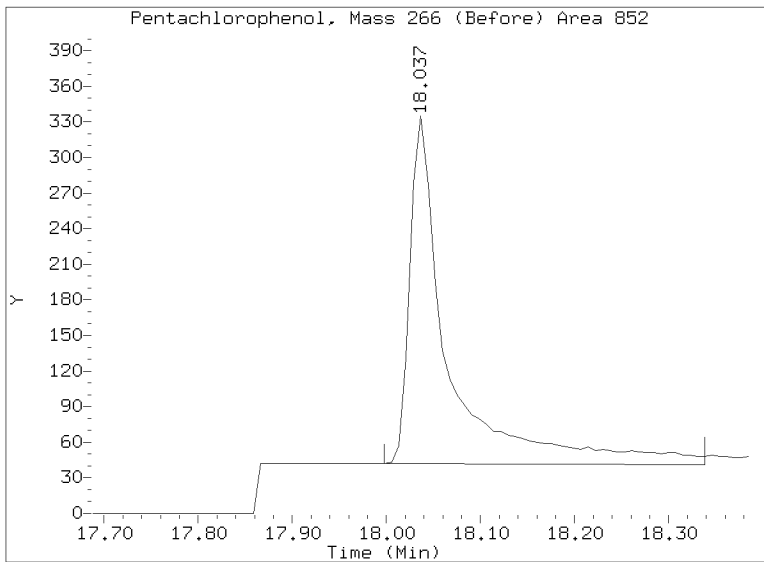
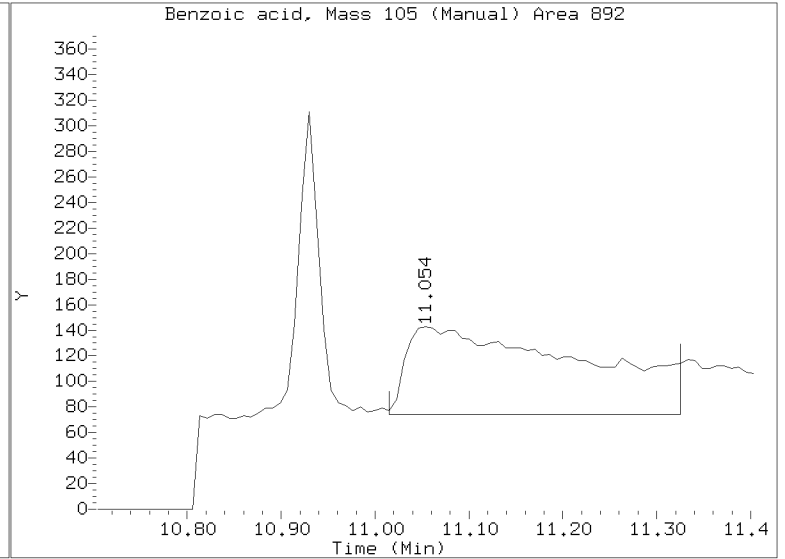
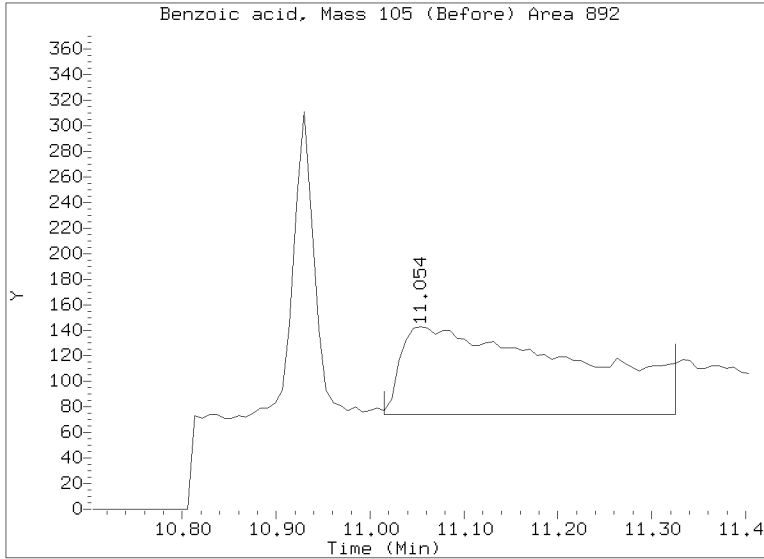
On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

# Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230421.b/20230421.b/NT04212313S.D  
Injection Date: 21-APR-2023 20:40  
Lab ID:SEQ-SIM1 Client ID:  
Report Date: 04/27/2023 12:55



Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212314S.D

Date: 21-APR-2023 21:16

Client ID:

Sample Info: SEQ-SCV1

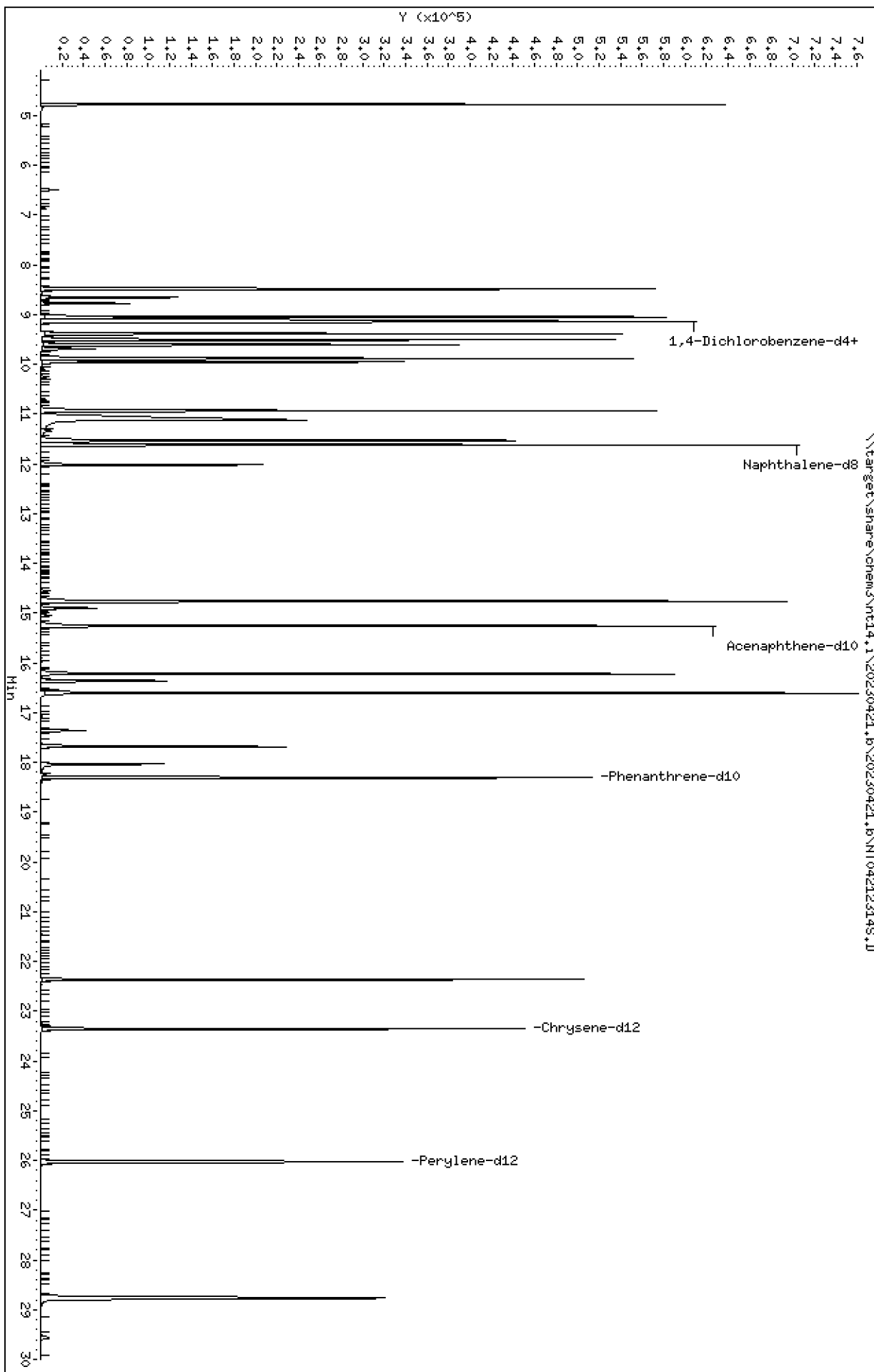
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

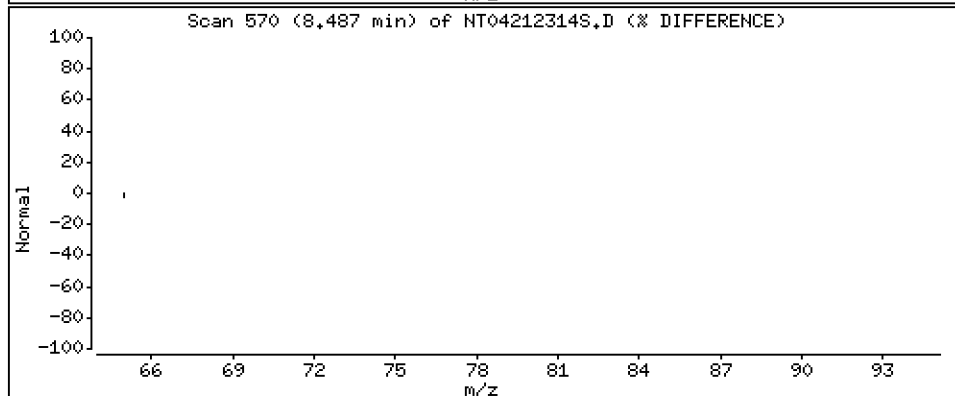
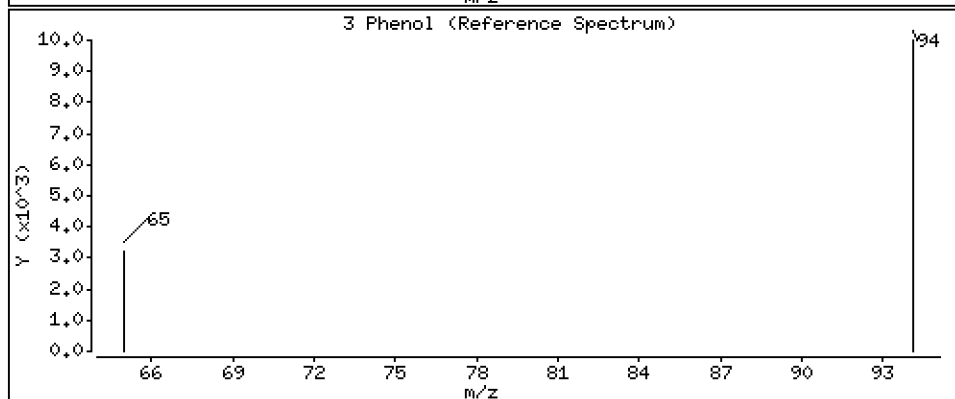
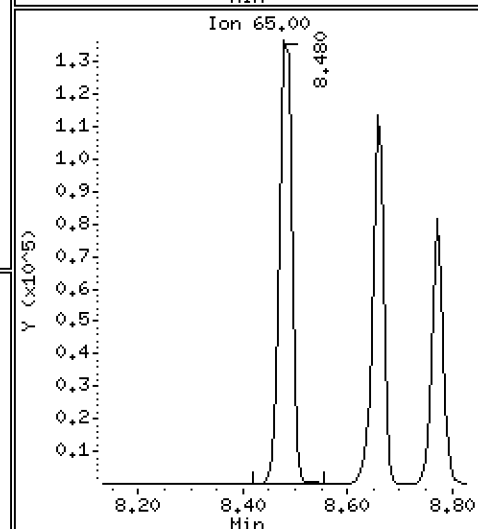
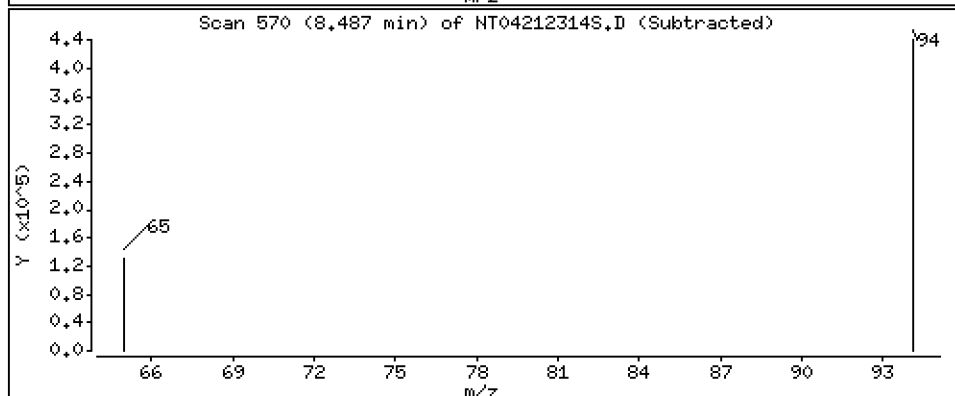
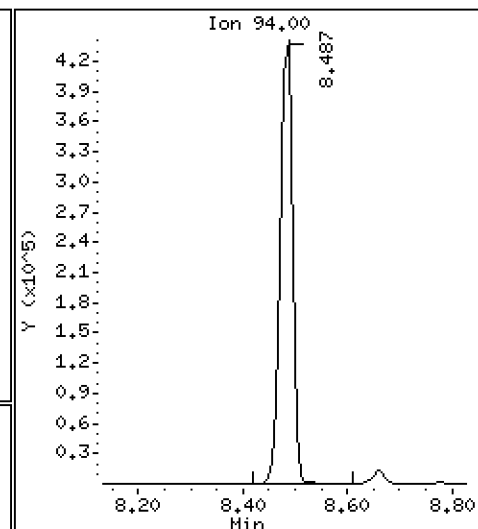
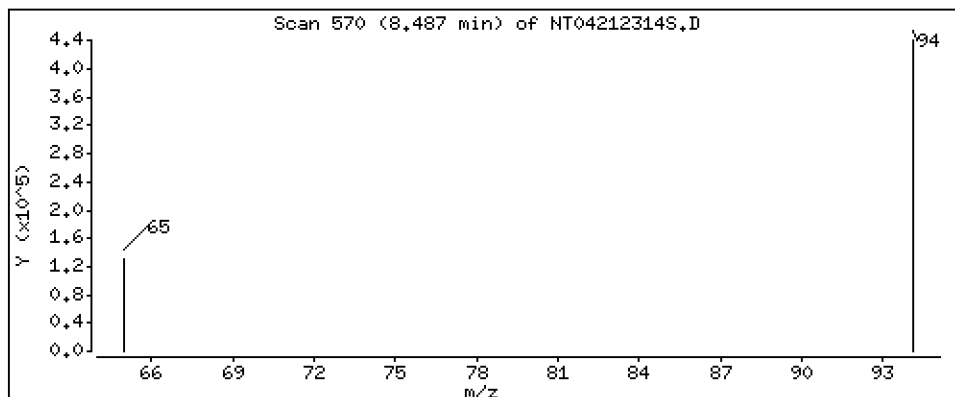
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,304 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

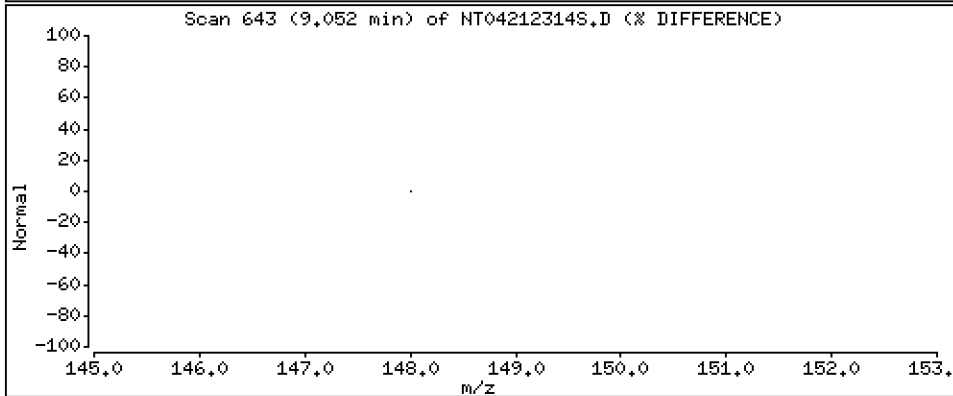
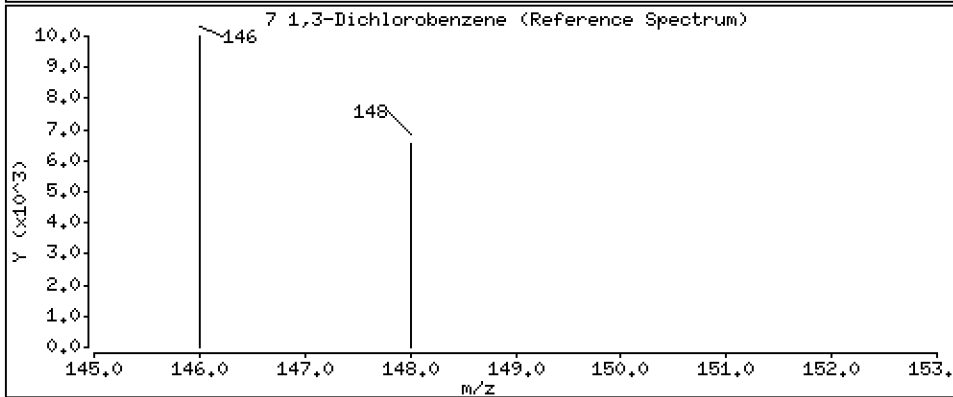
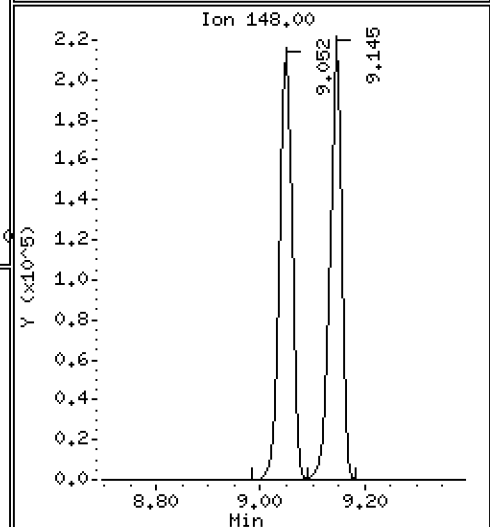
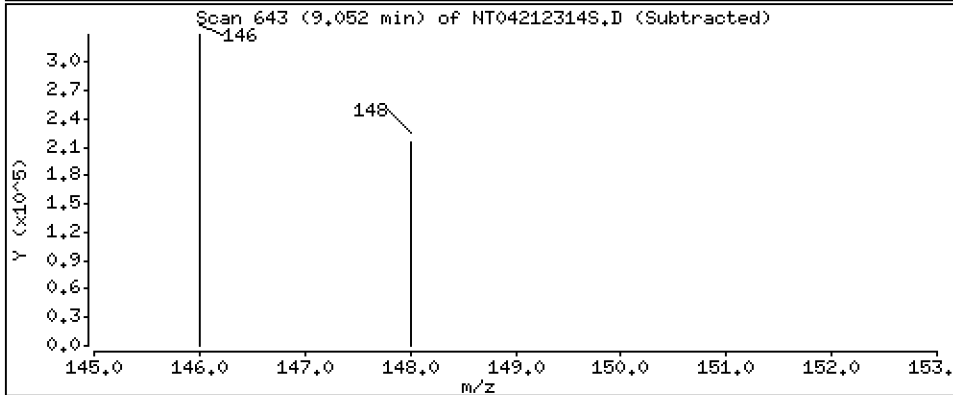
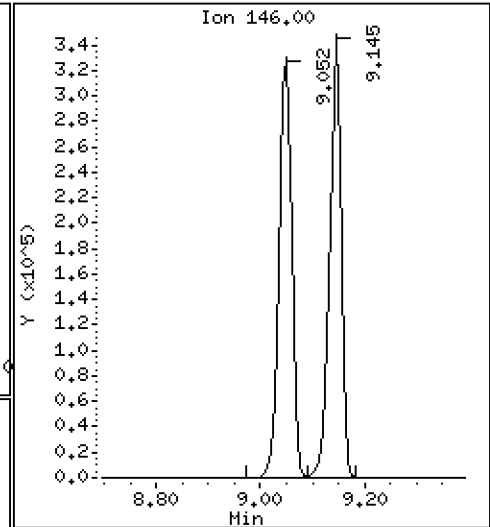
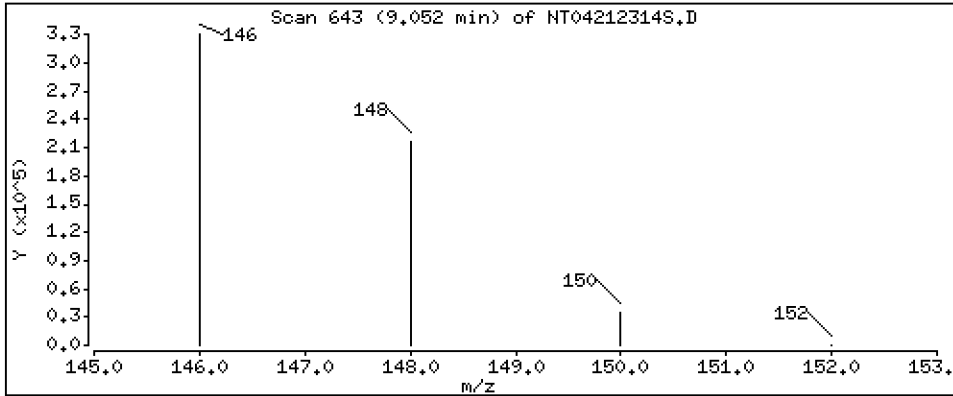
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 4,479 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

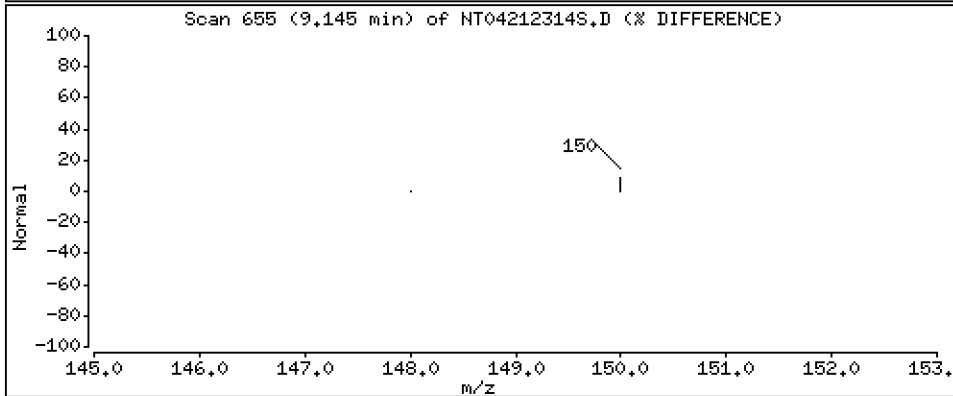
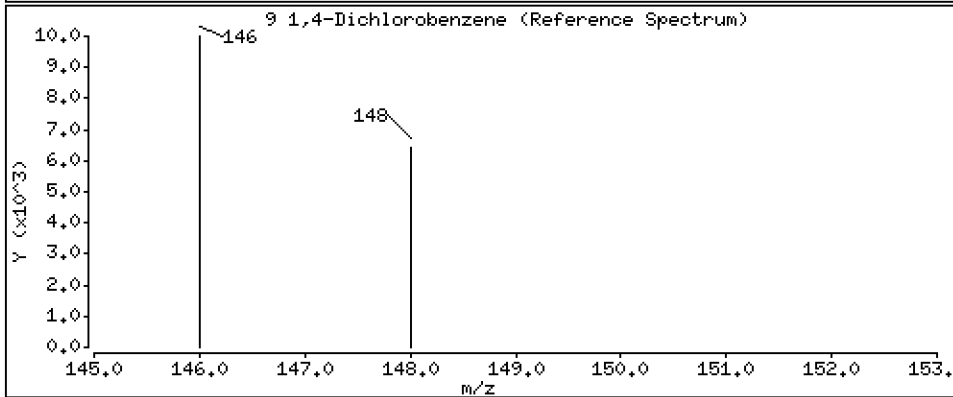
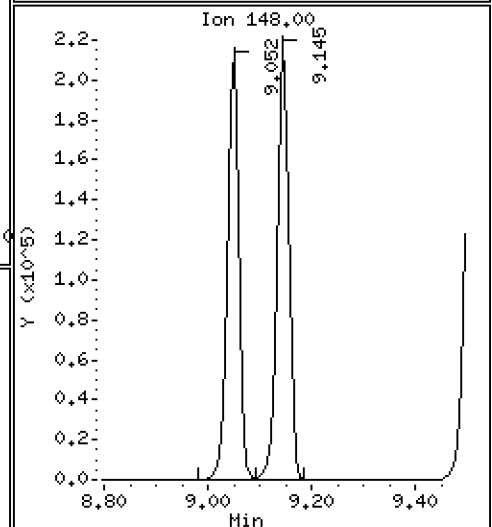
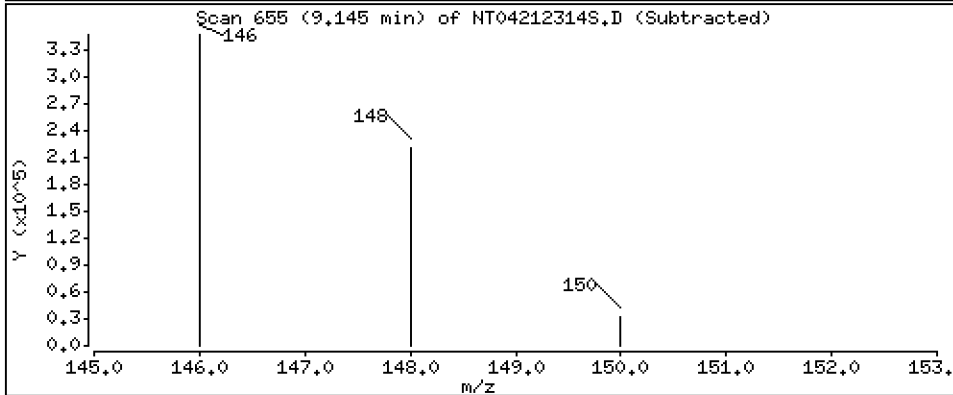
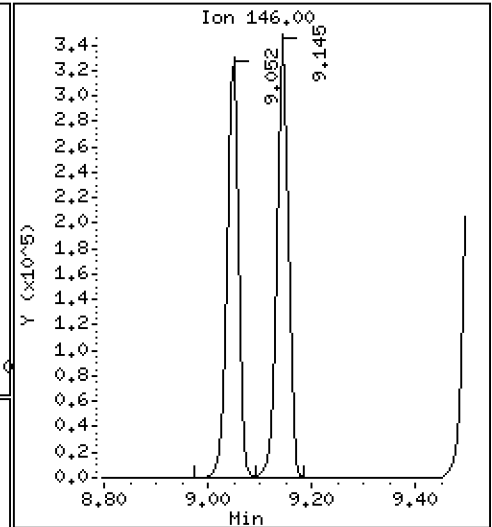
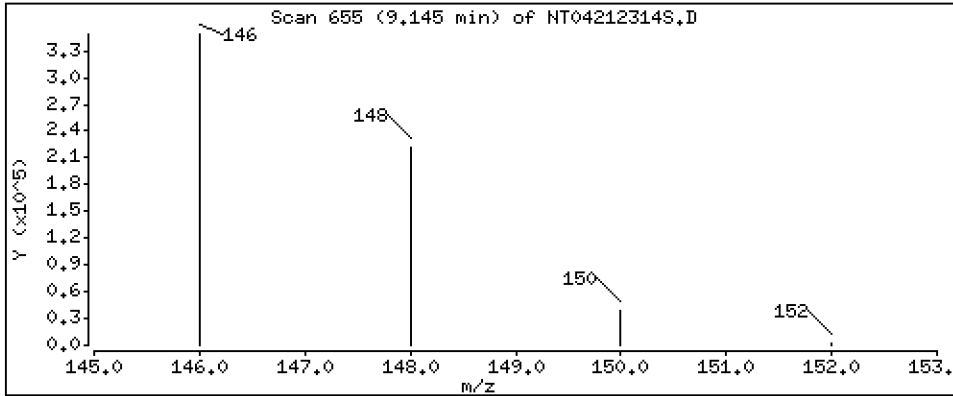
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 4.599 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

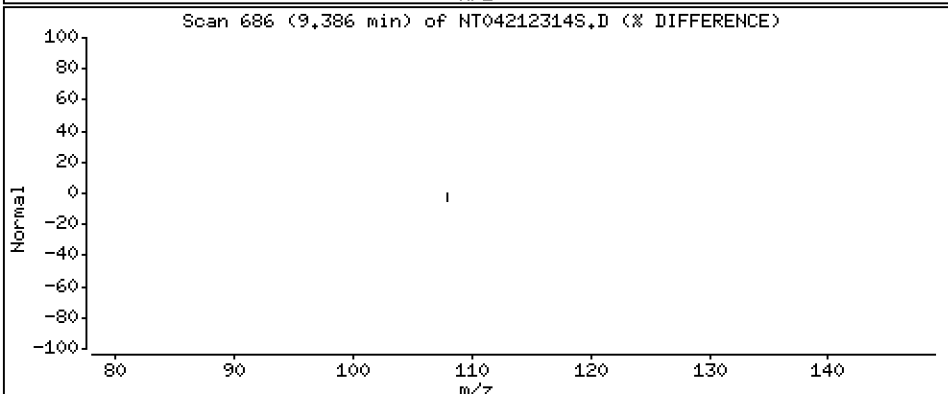
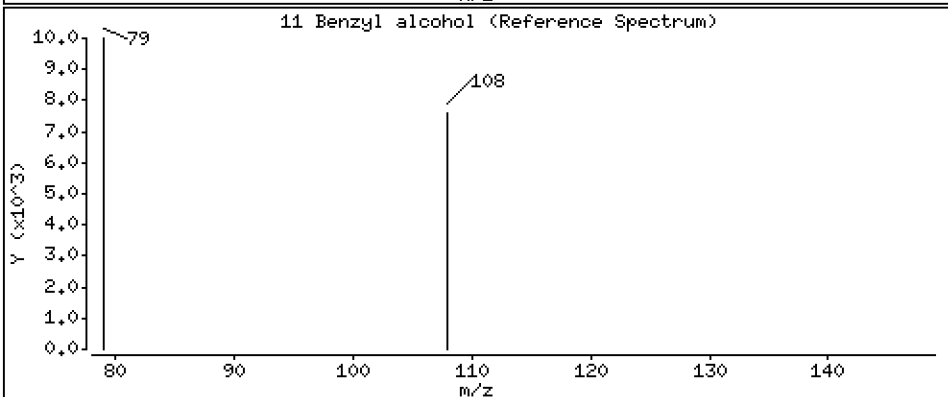
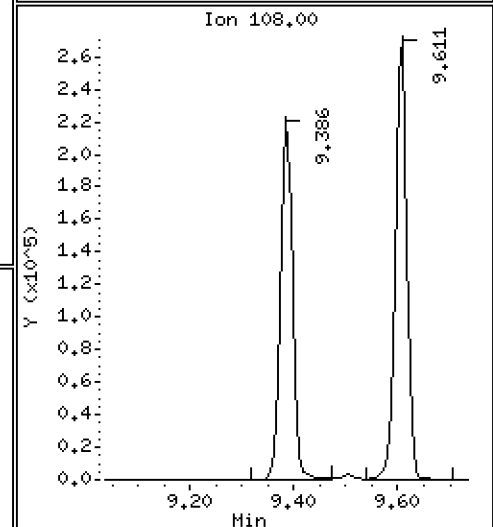
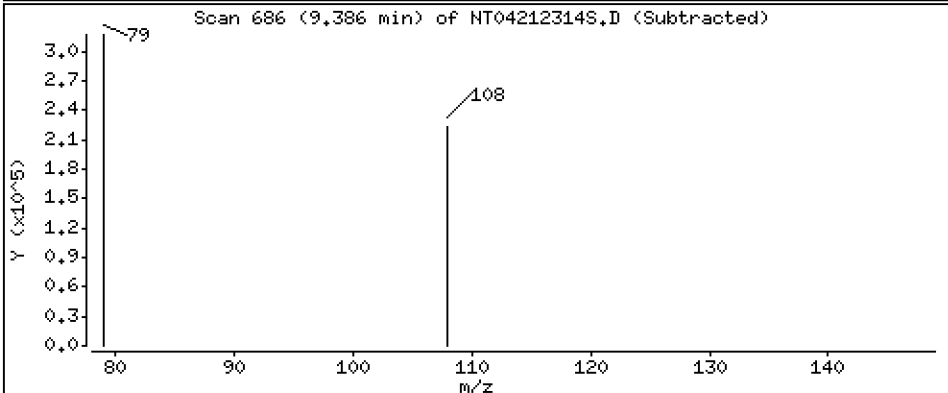
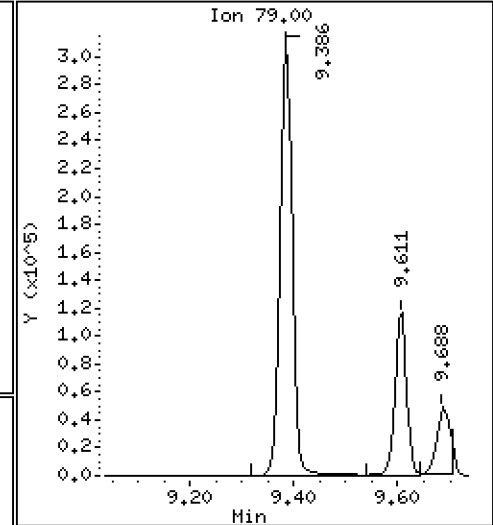
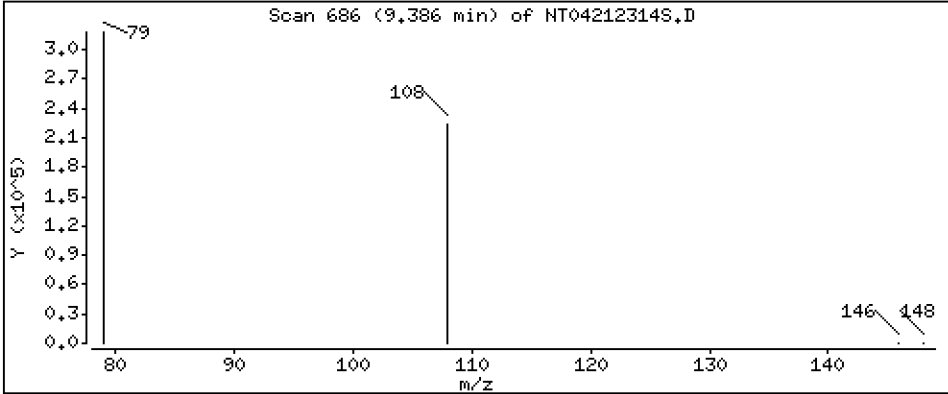
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.915 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

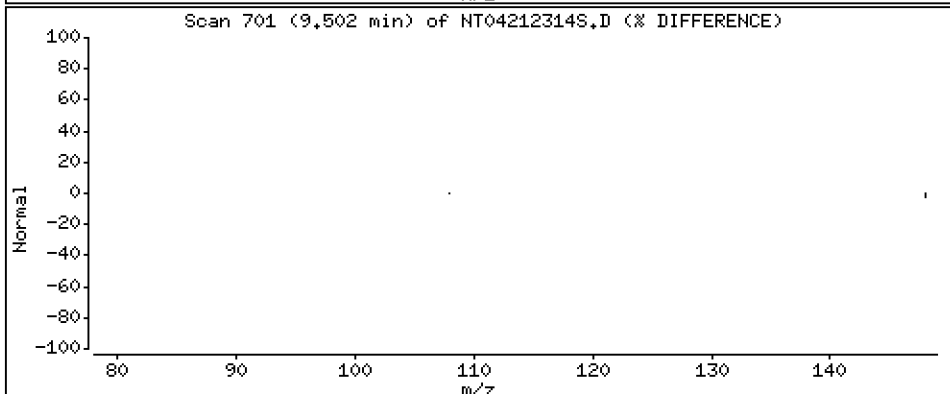
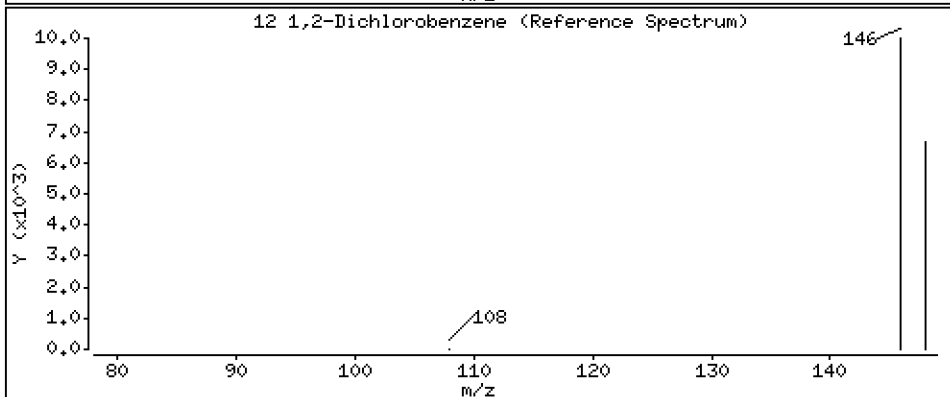
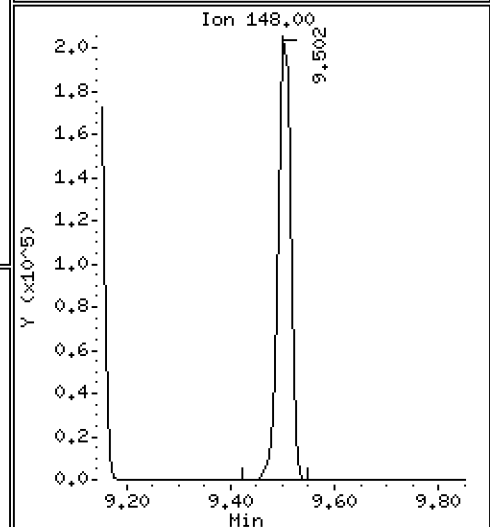
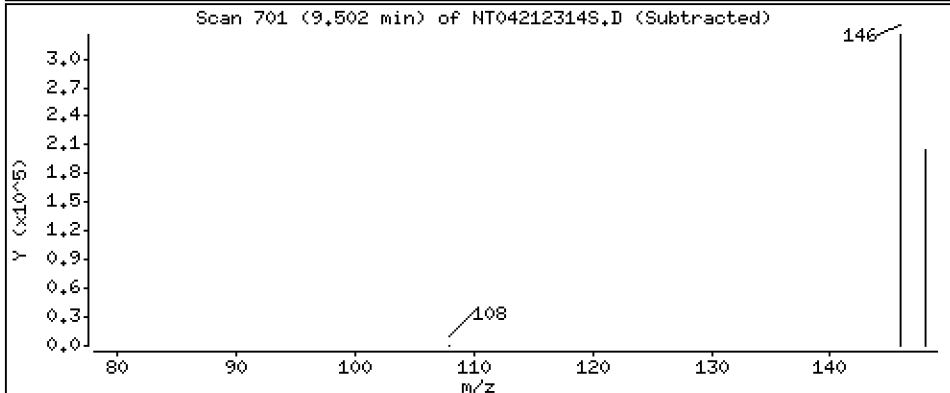
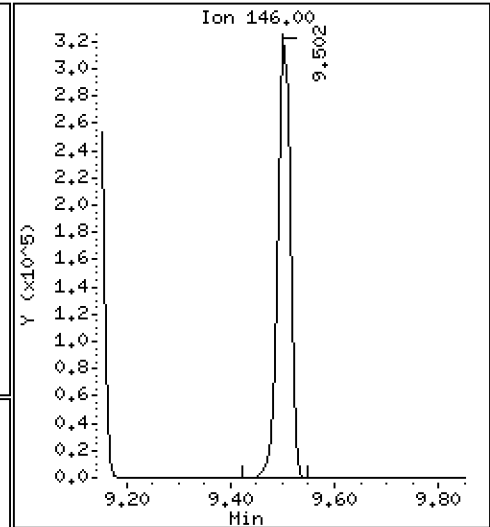
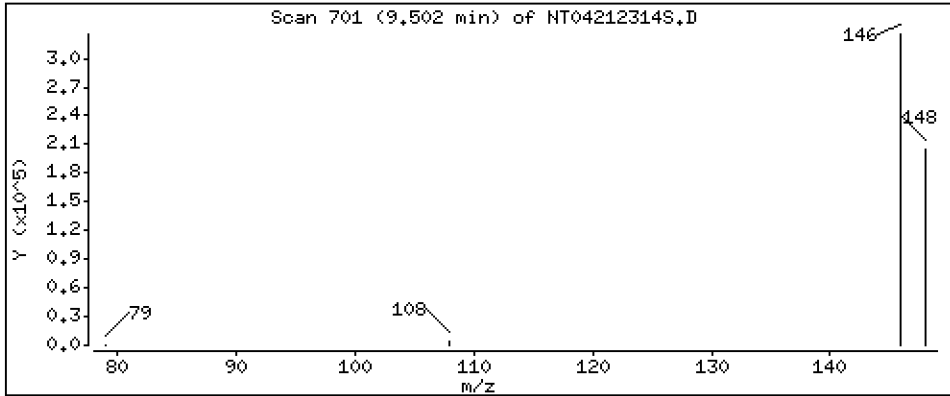
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.535 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

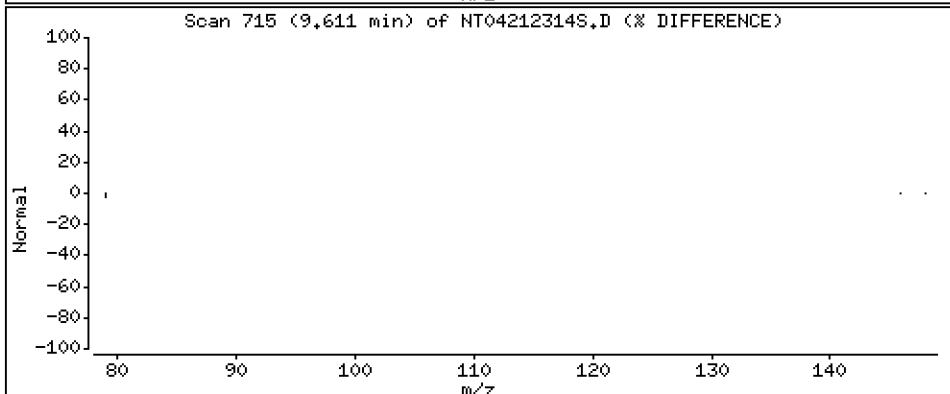
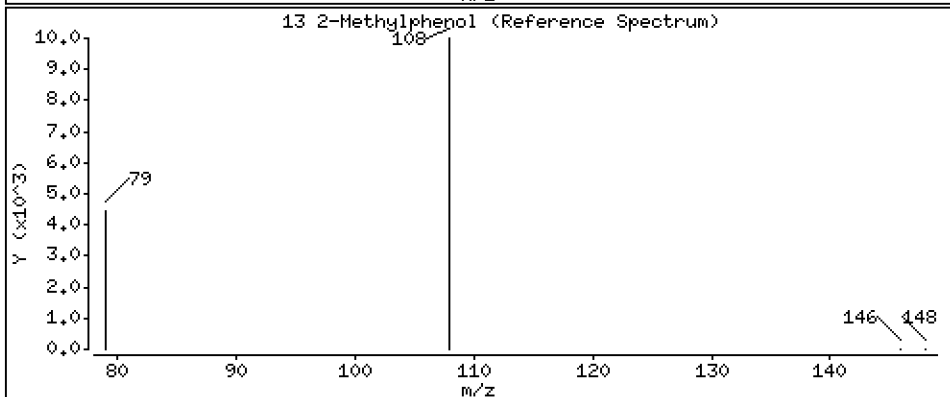
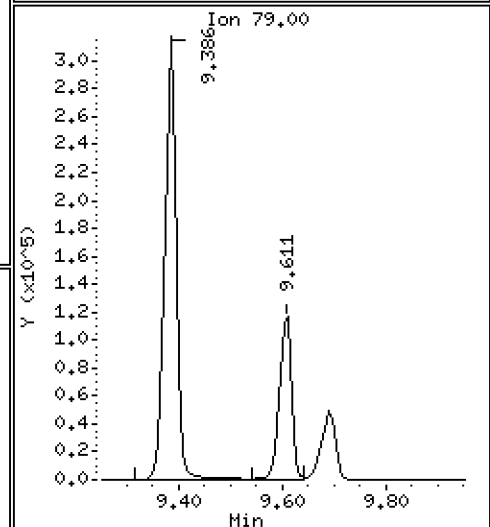
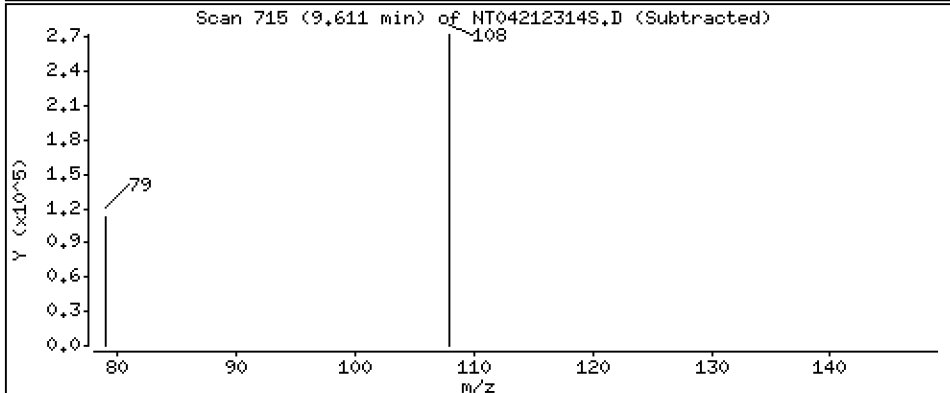
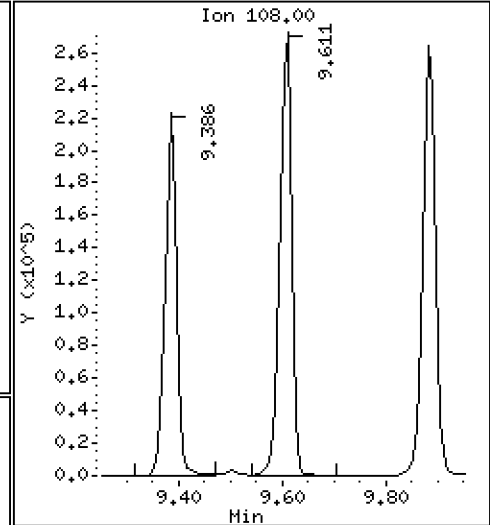
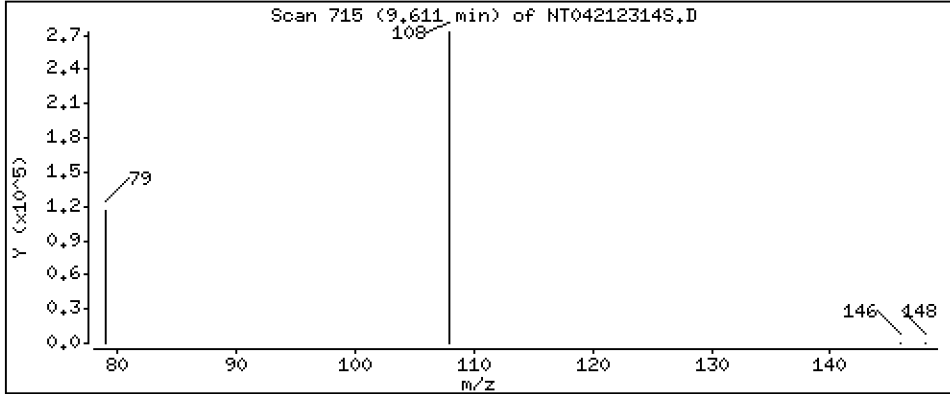
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

13 2-Methylphenol

Concentration: 4,207 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

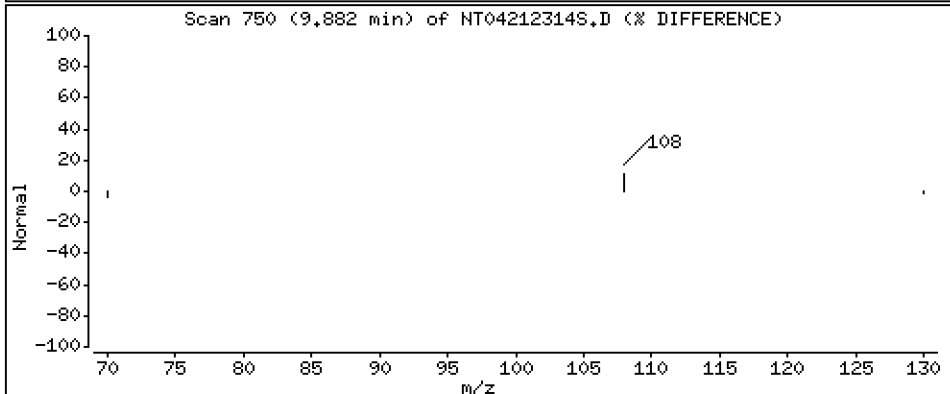
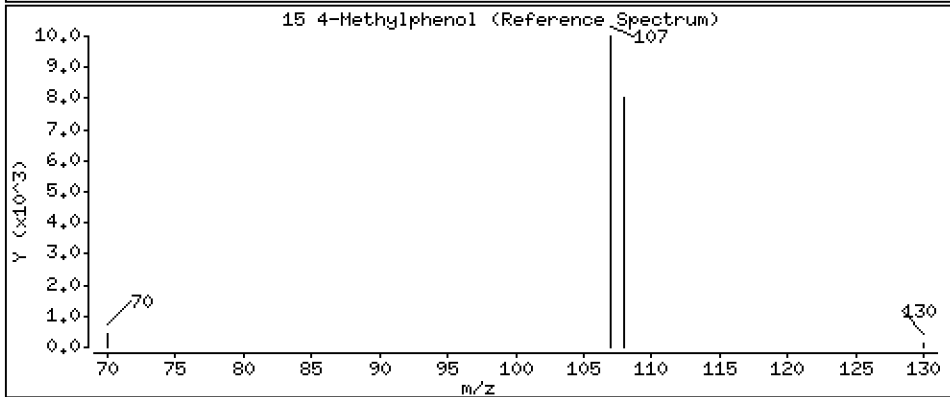
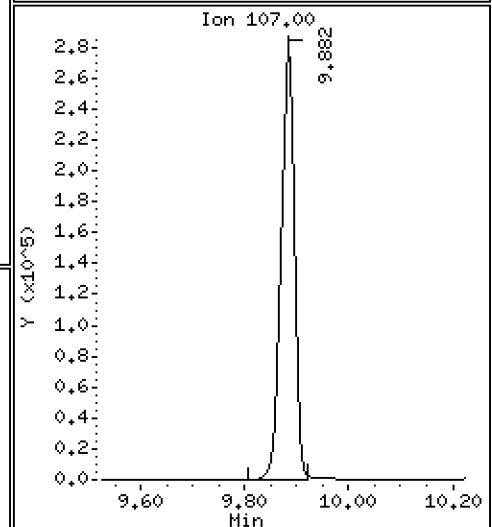
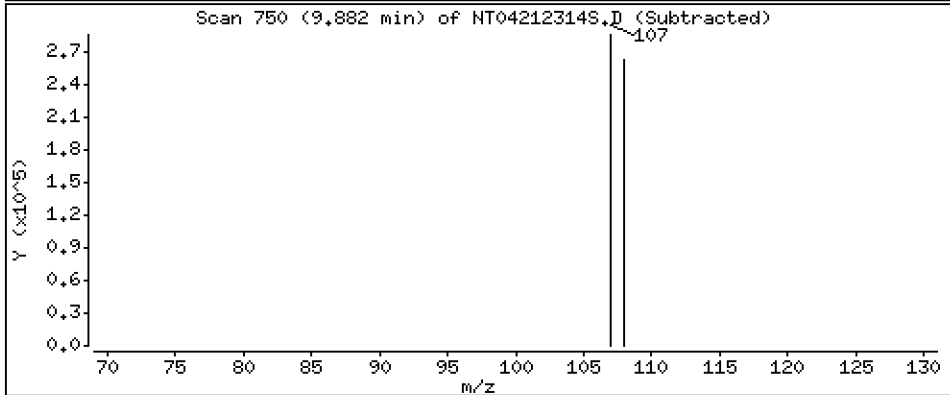
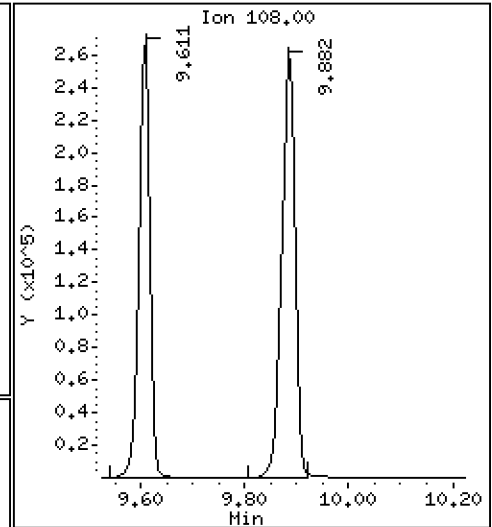
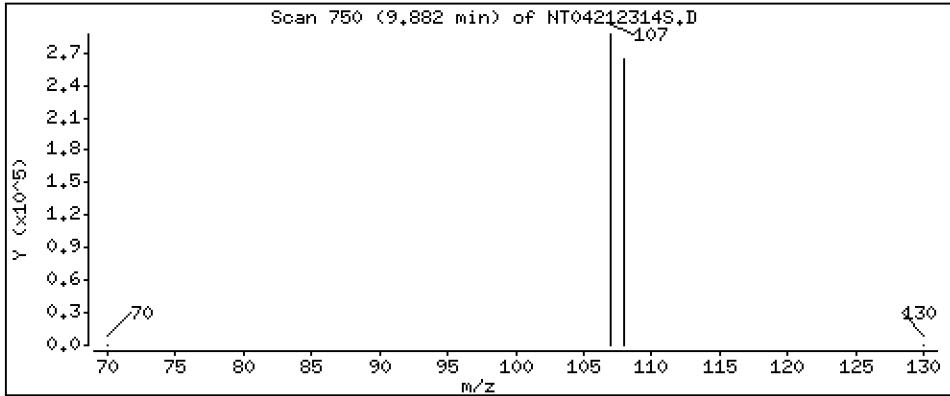
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.538 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

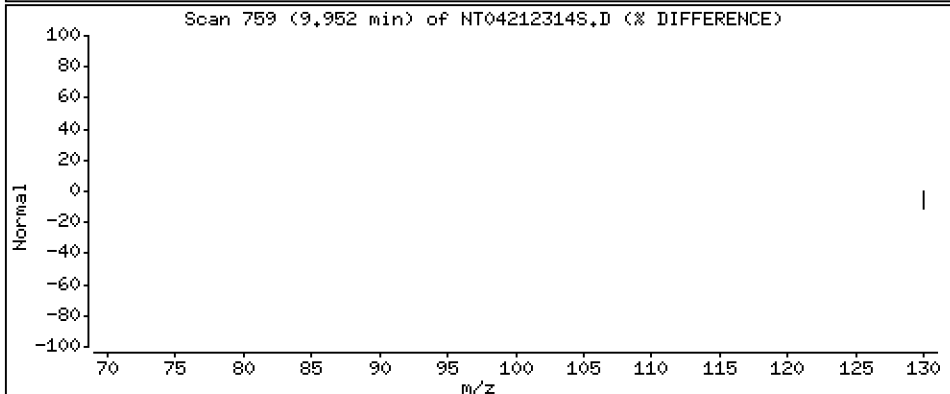
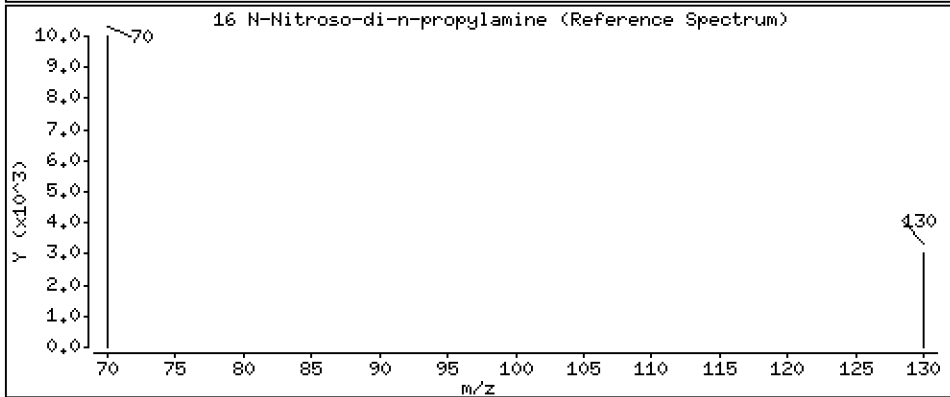
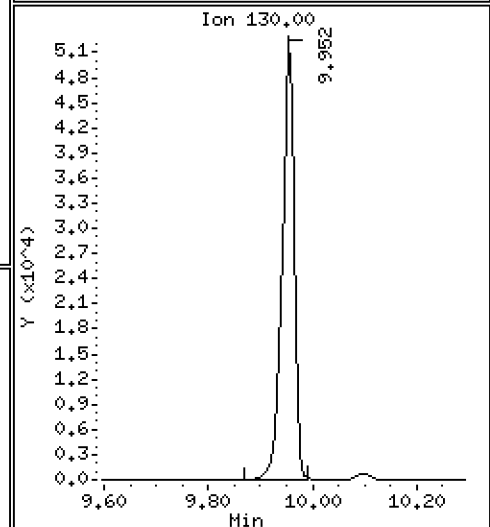
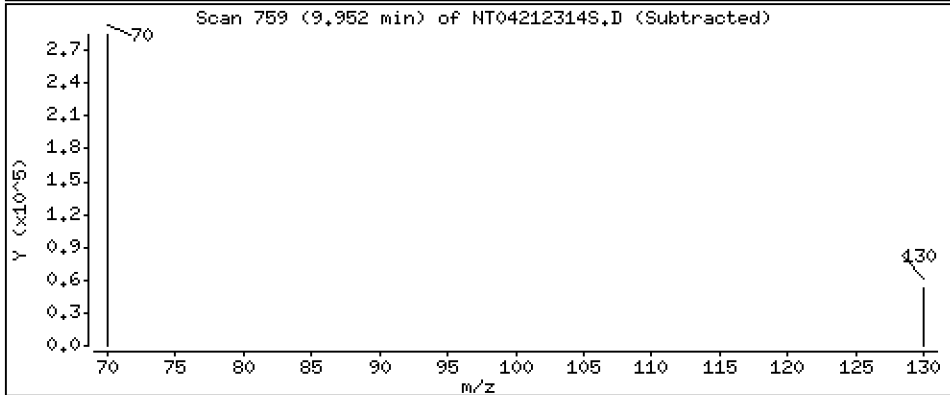
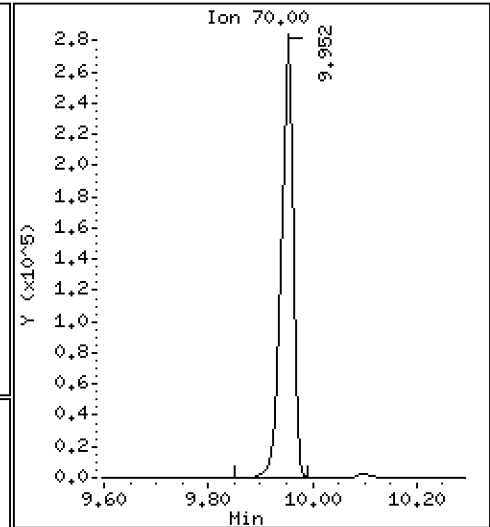
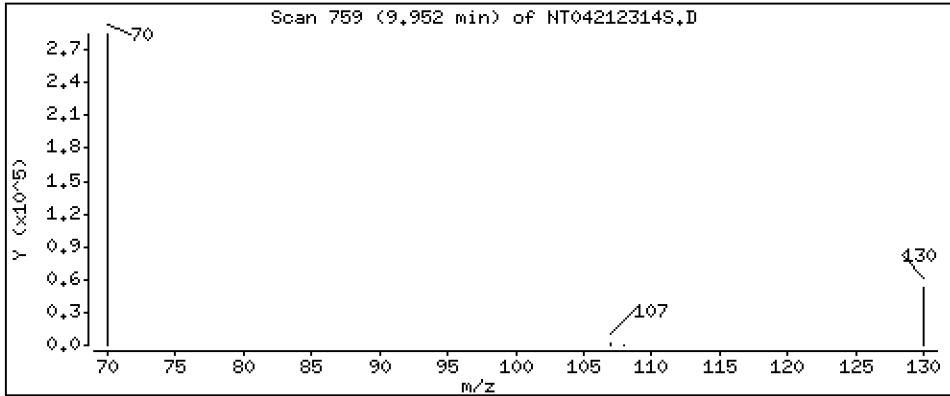
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 4,707 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

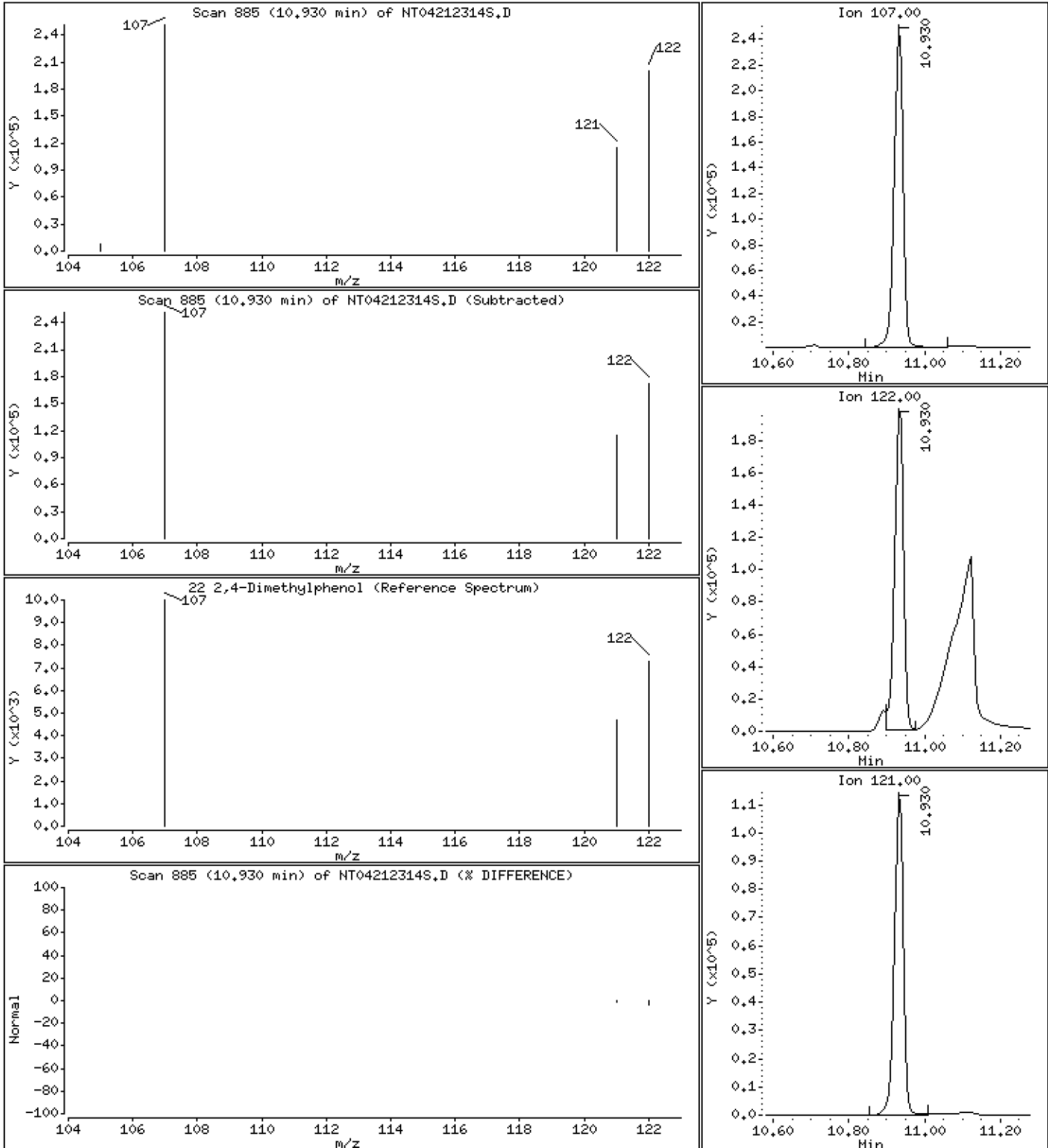
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 3,684 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

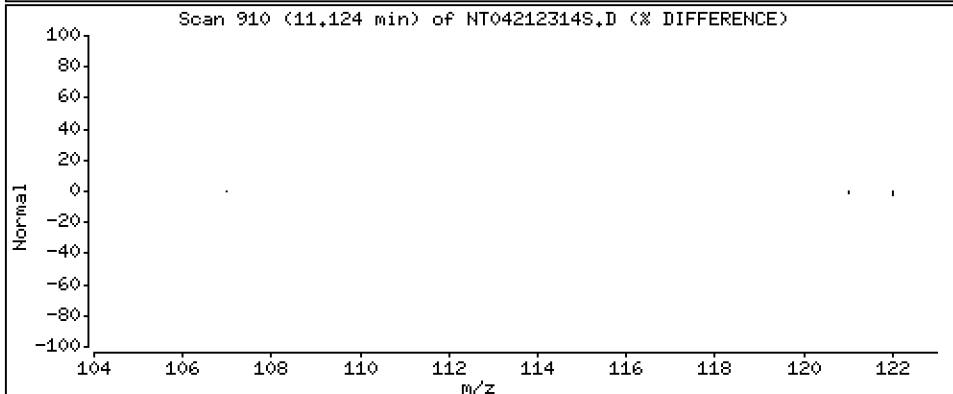
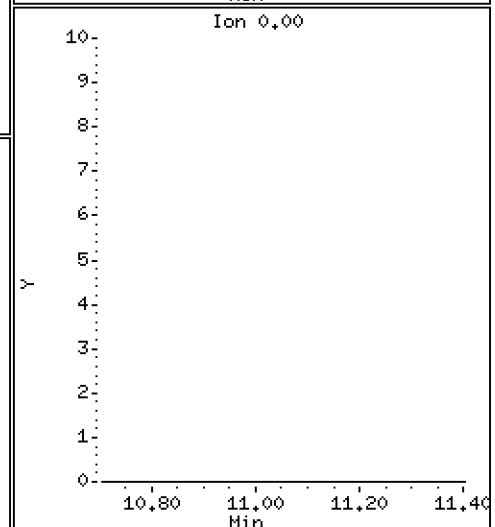
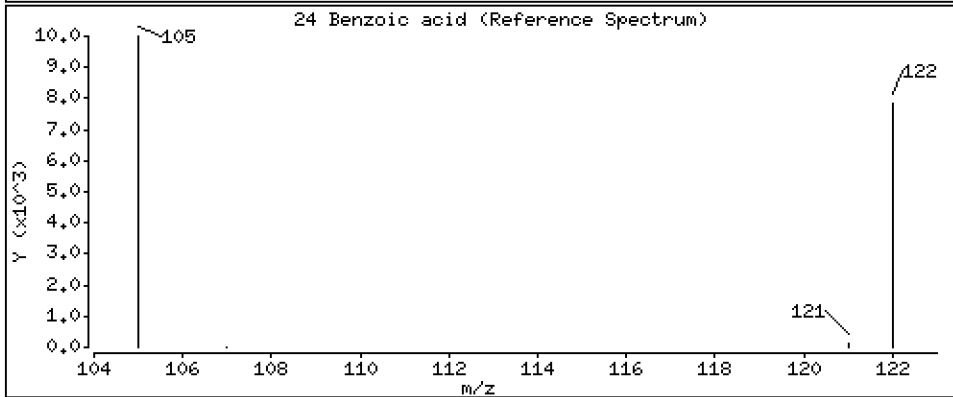
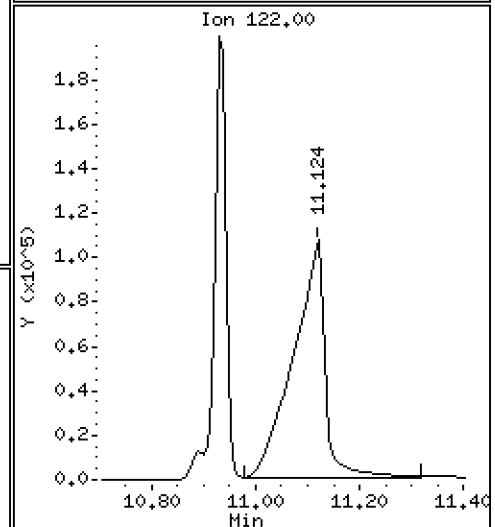
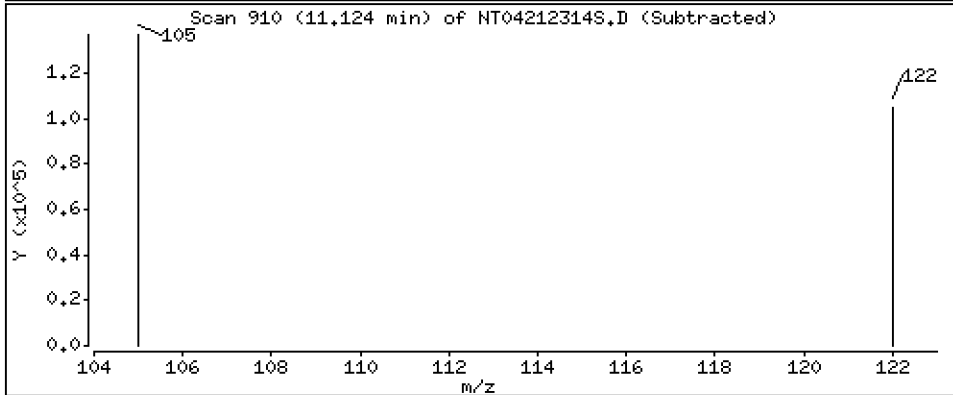
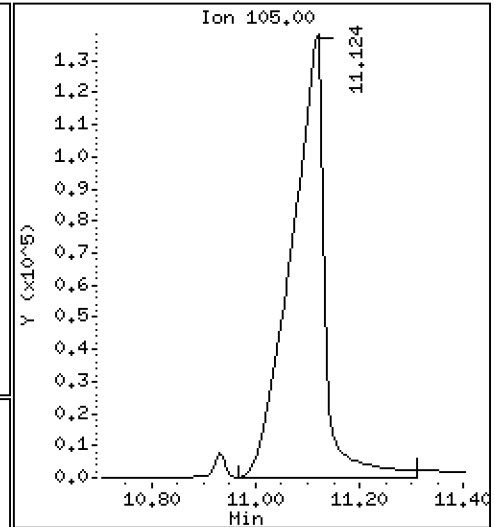
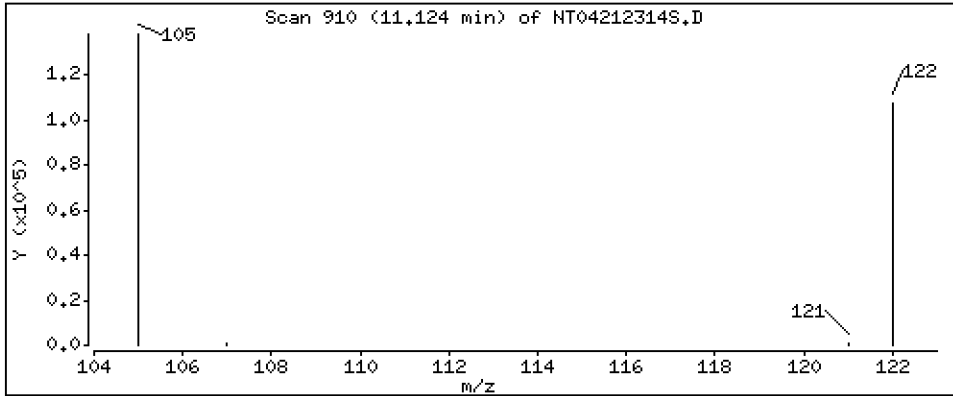
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 8,195 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

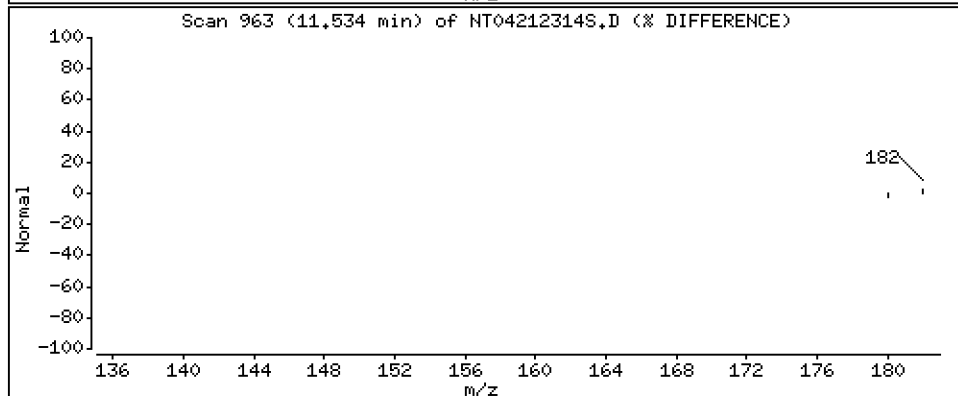
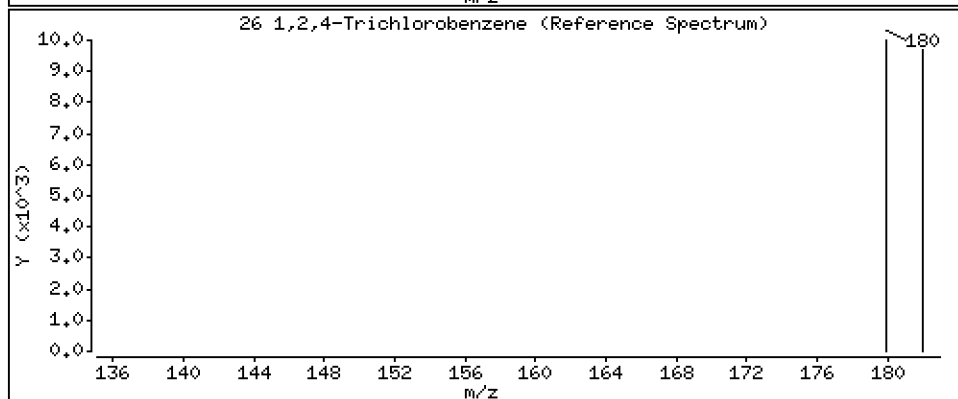
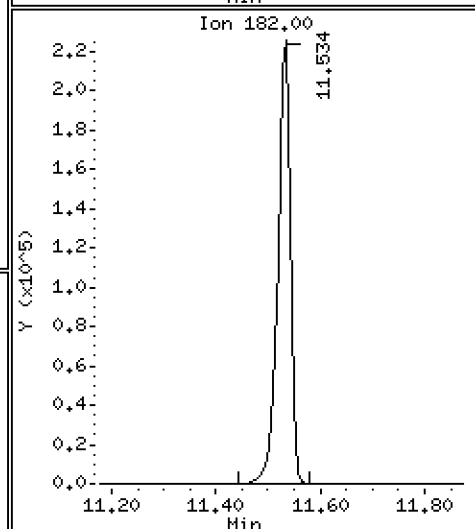
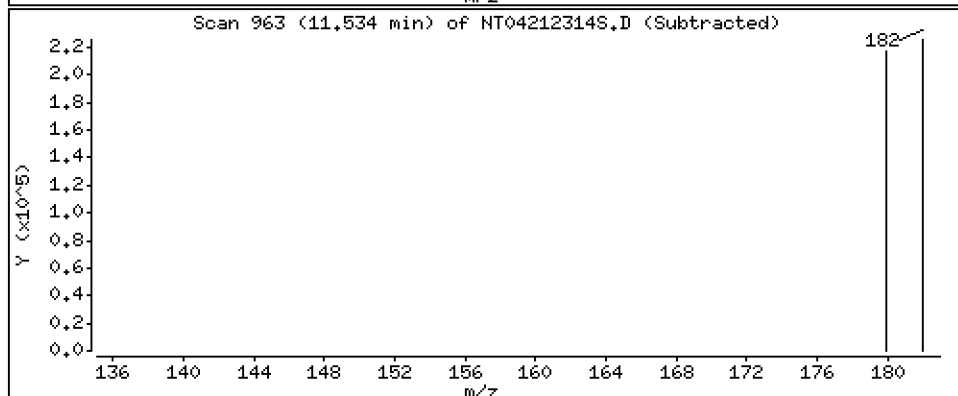
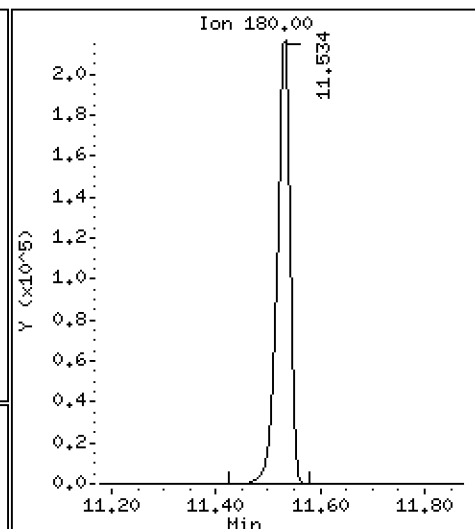
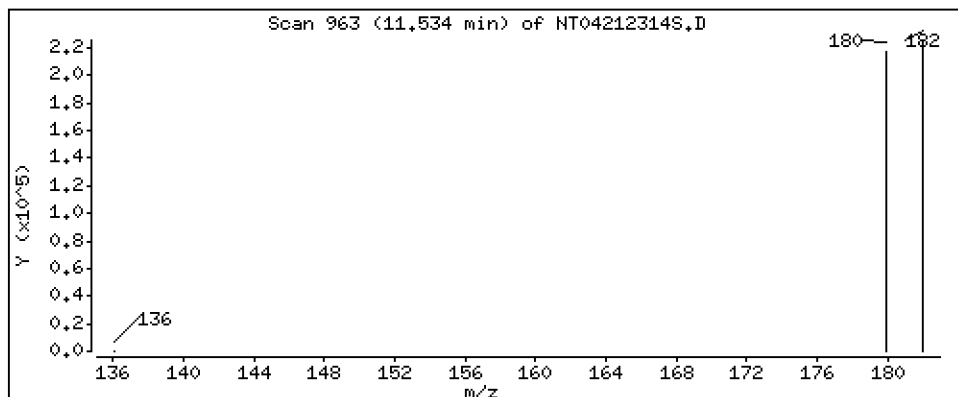
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,671 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

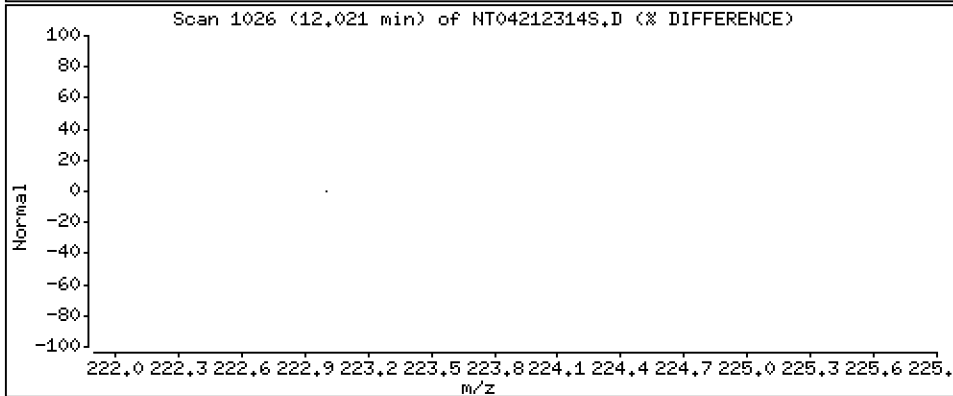
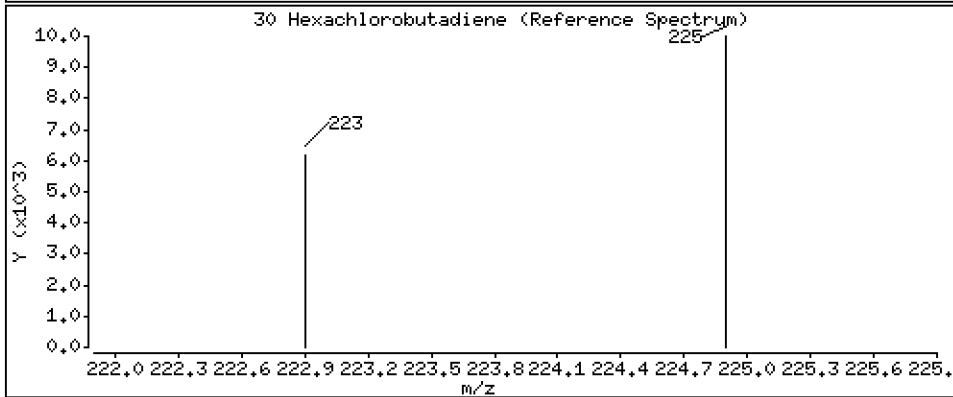
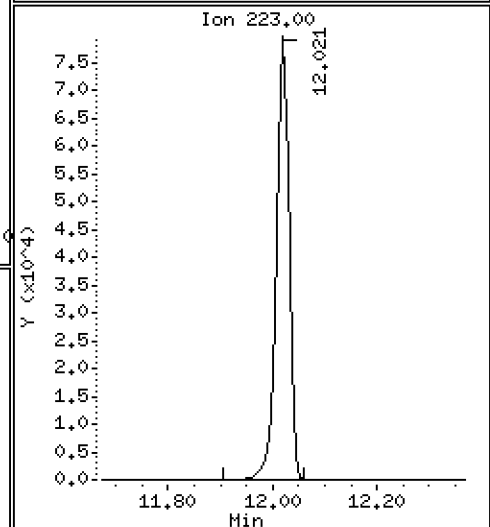
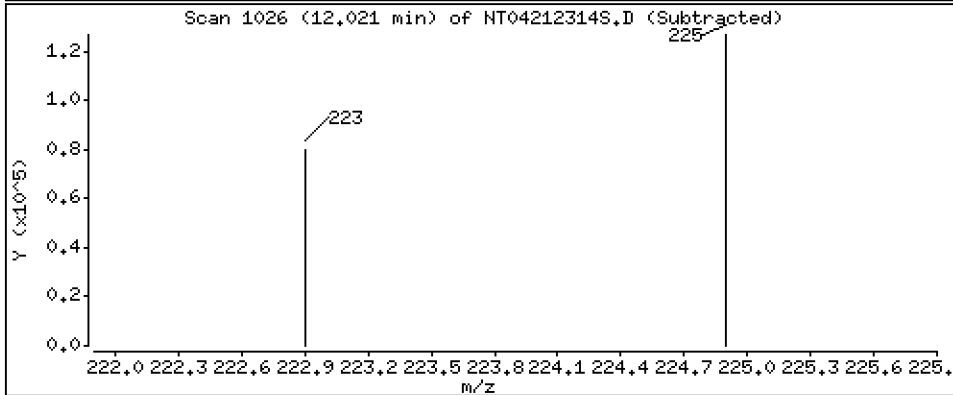
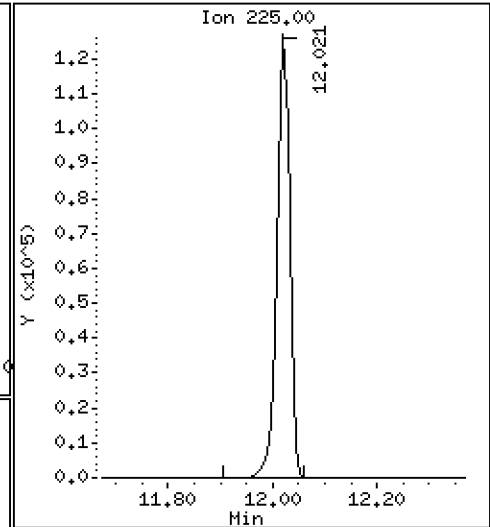
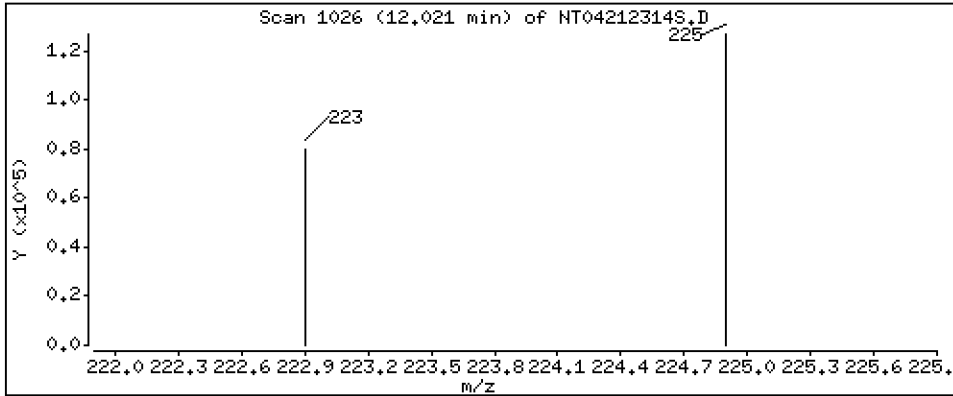
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,574 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

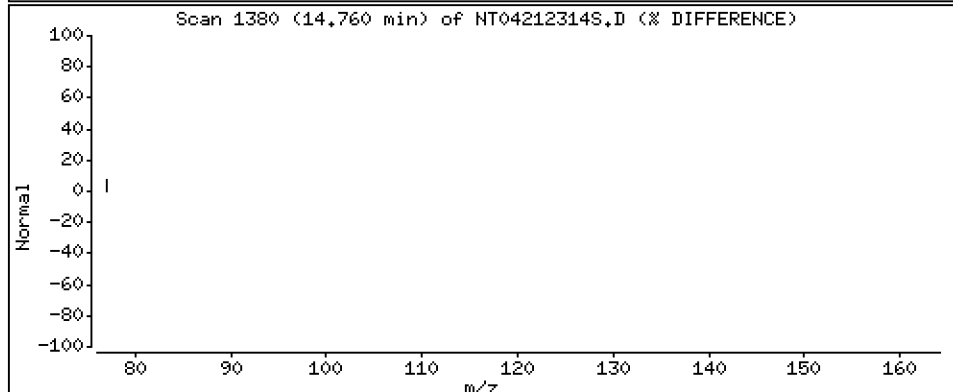
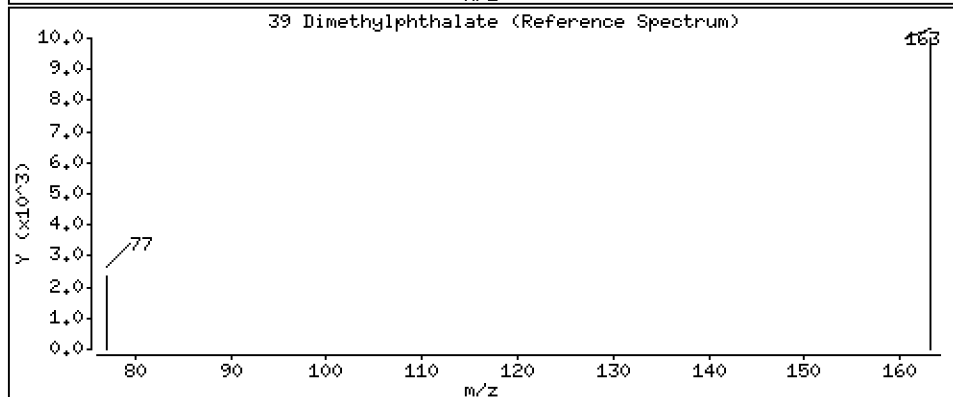
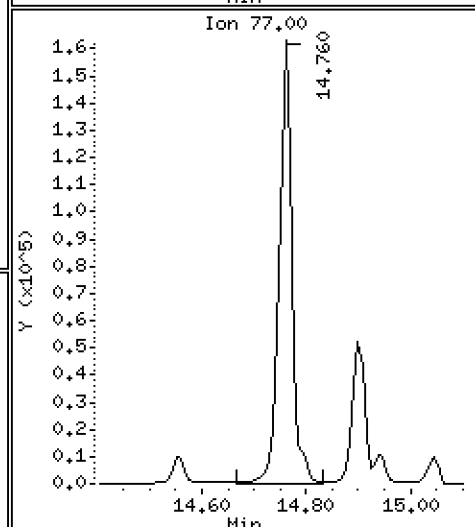
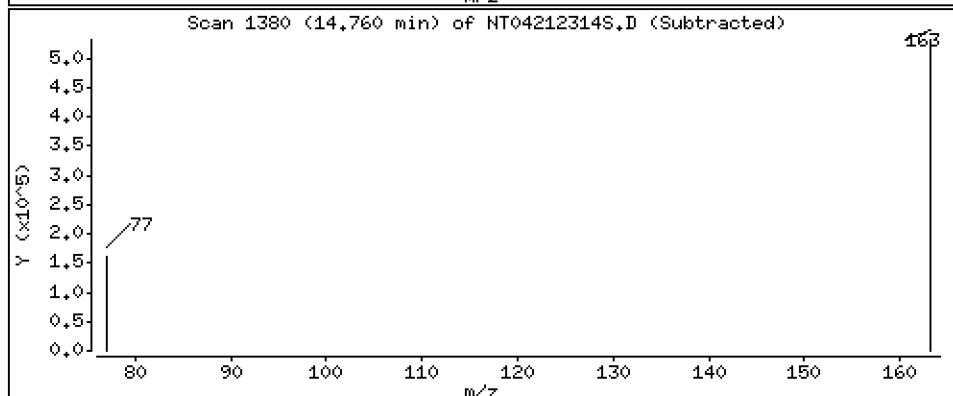
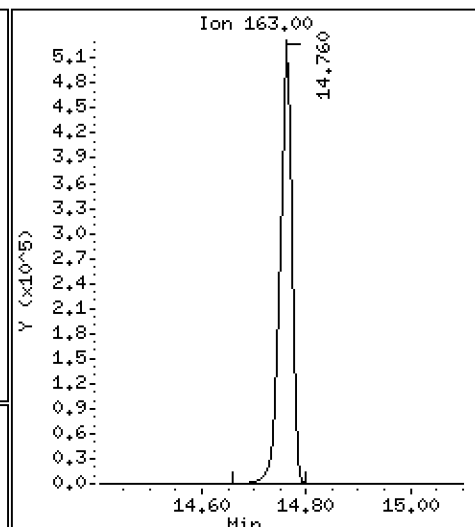
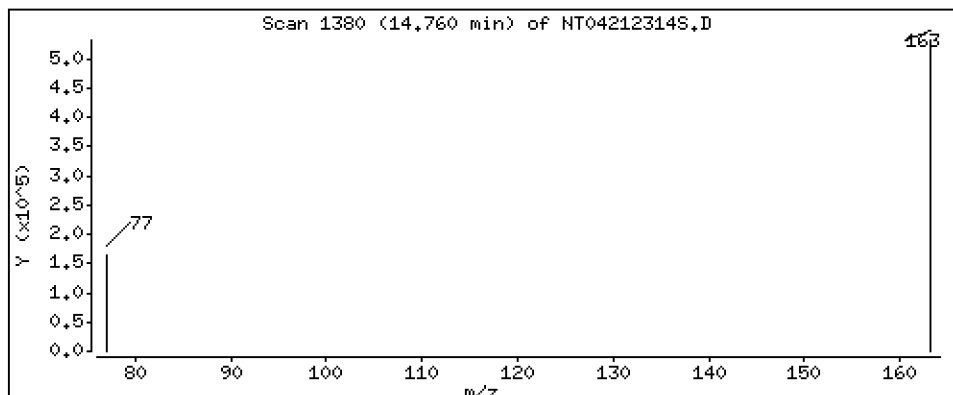
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,407 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

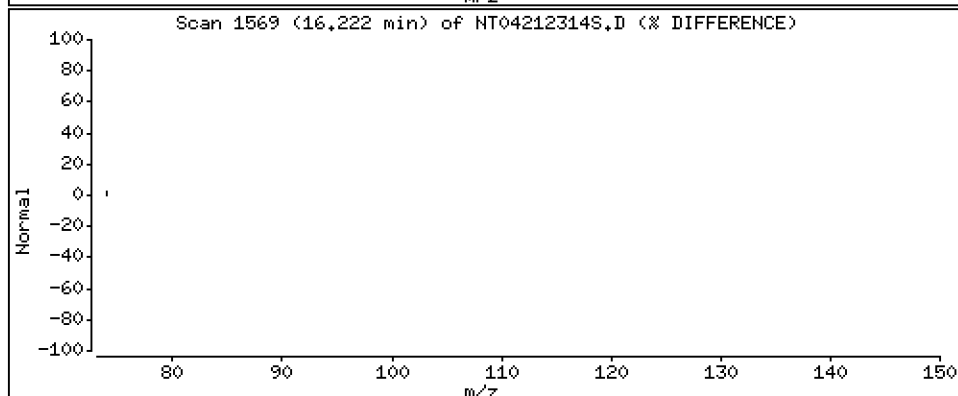
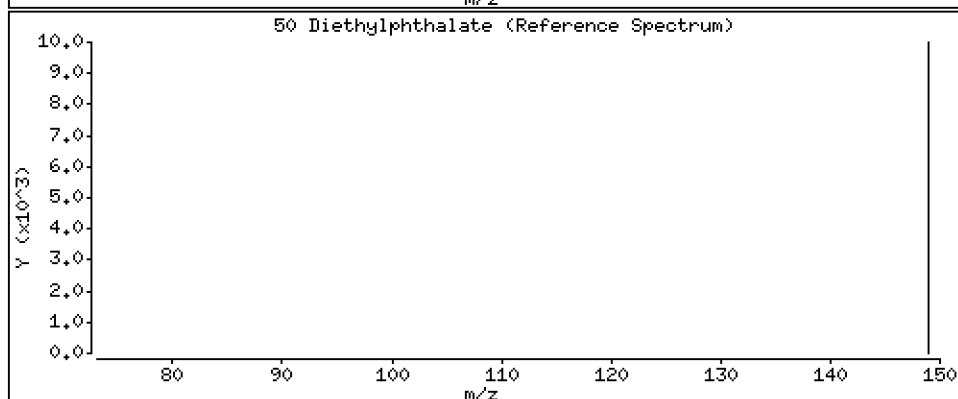
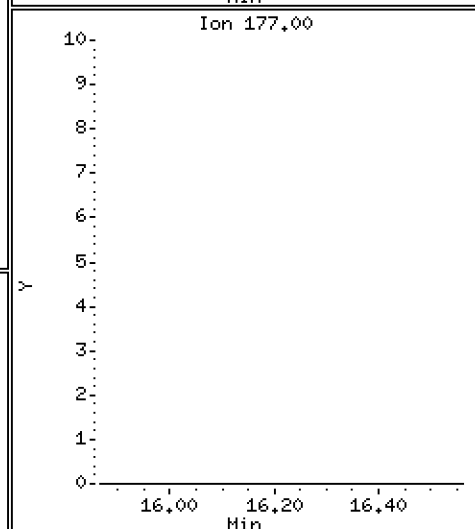
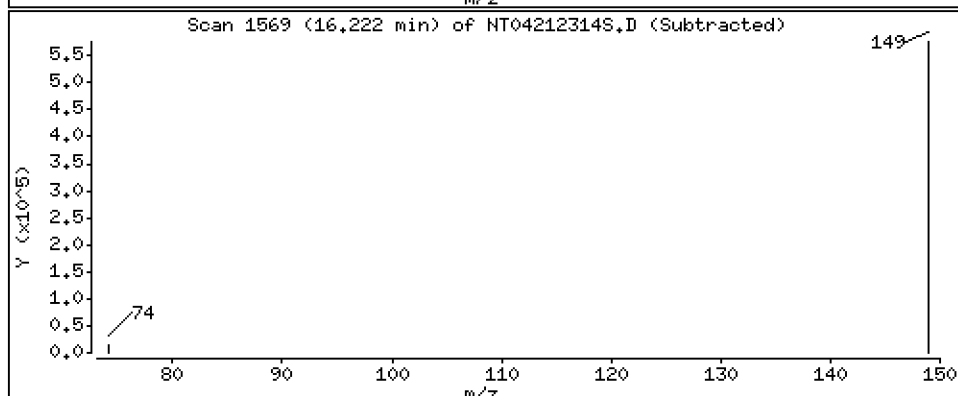
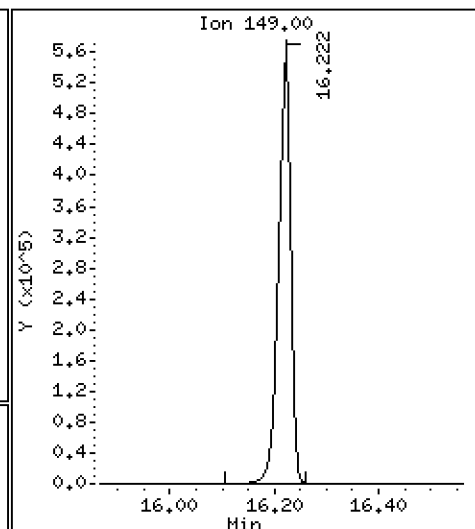
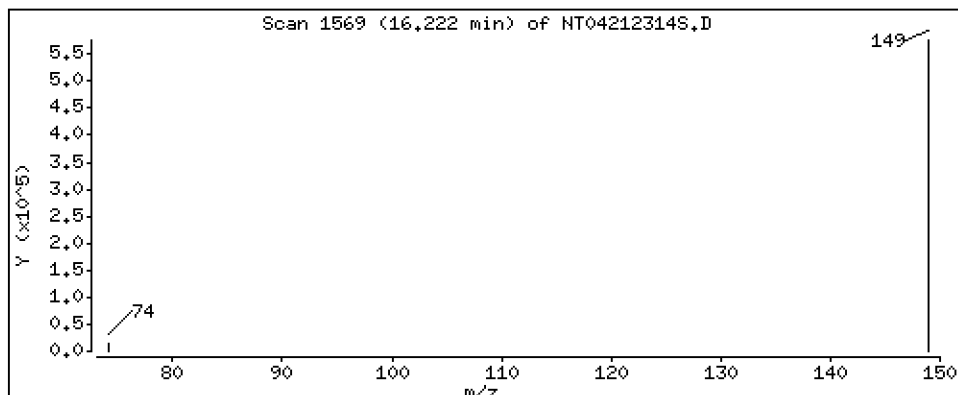
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,605 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

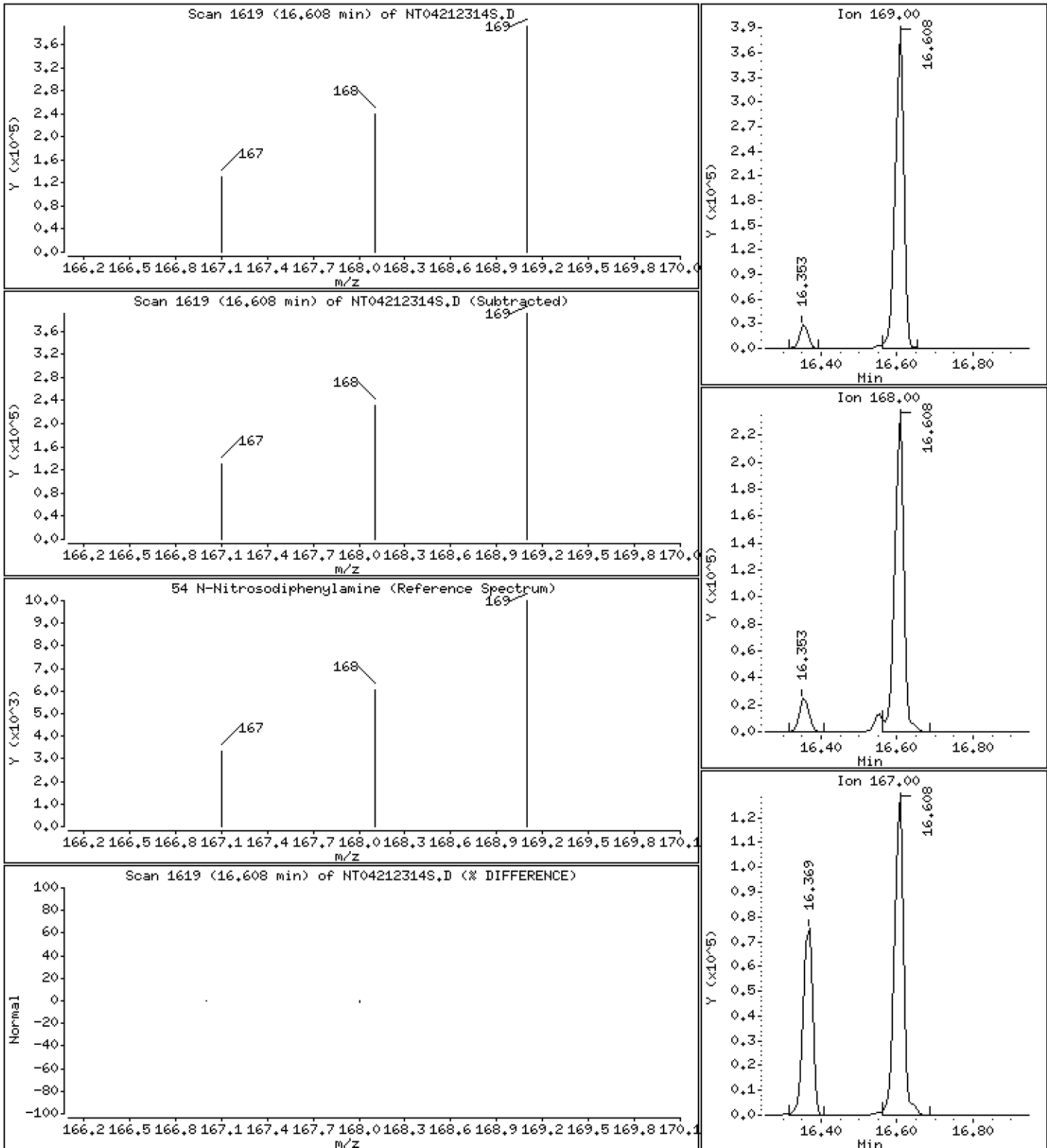
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,906 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

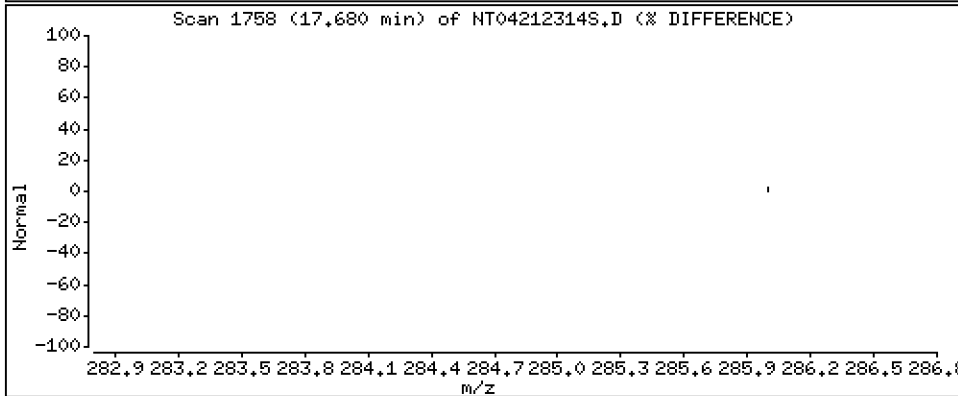
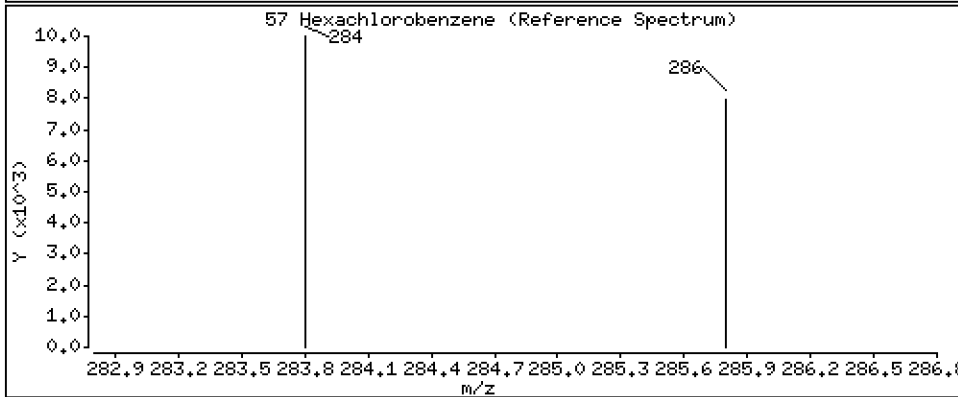
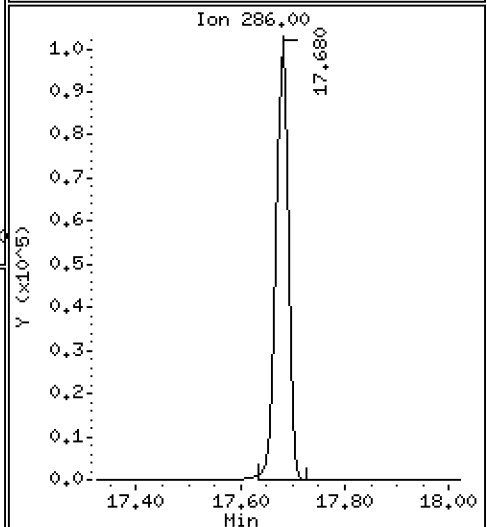
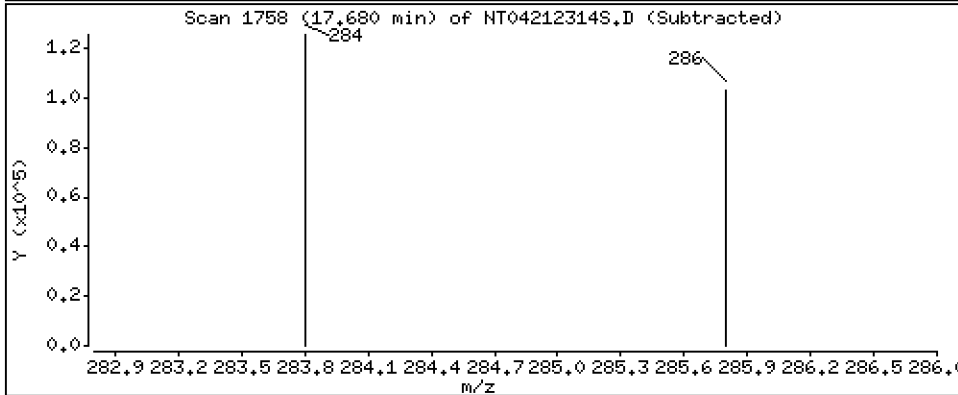
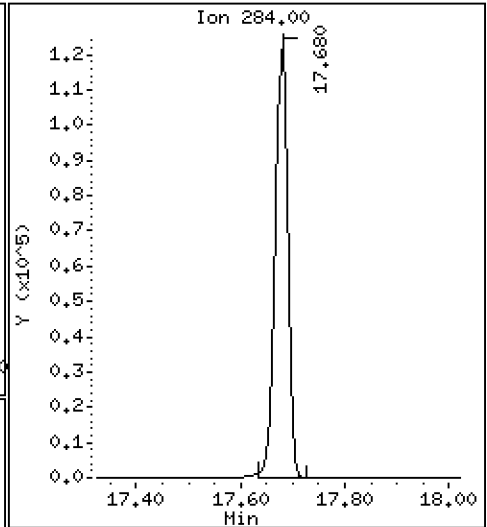
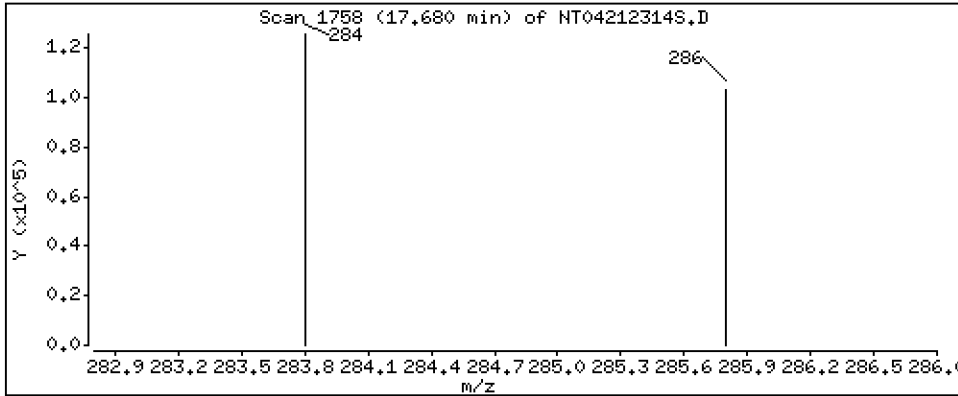
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,294 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

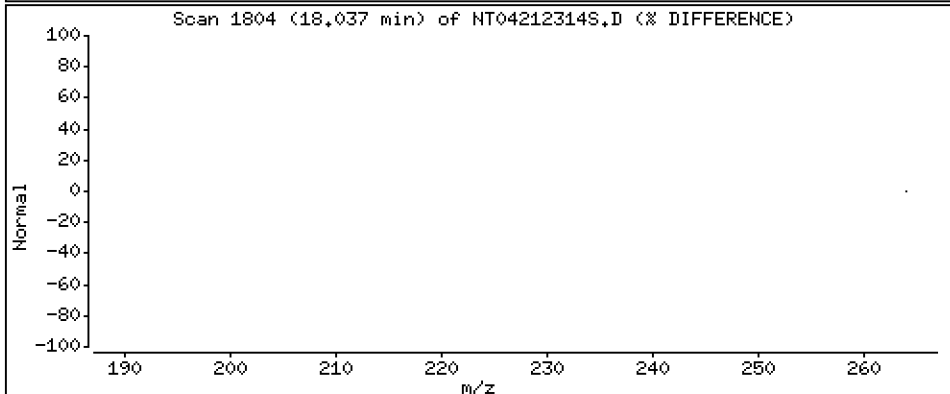
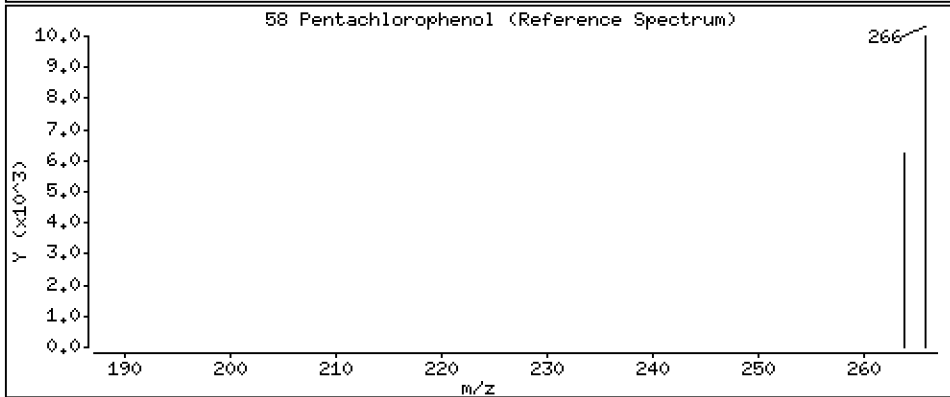
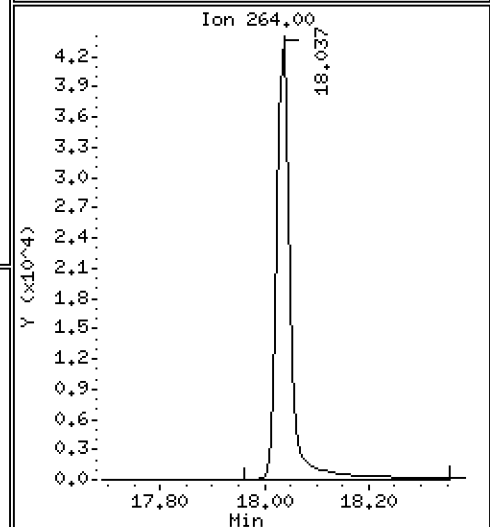
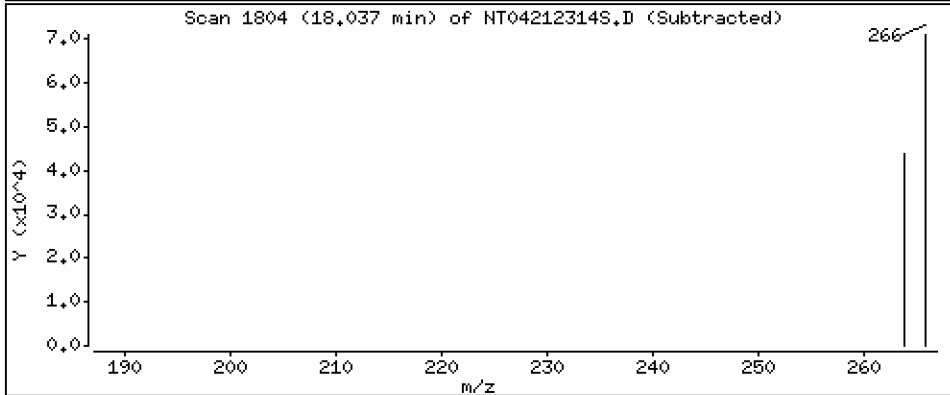
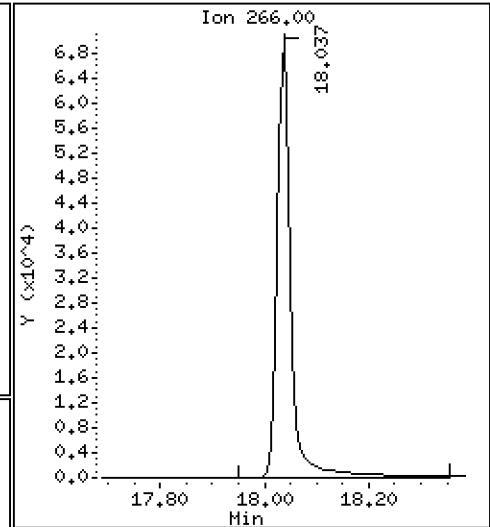
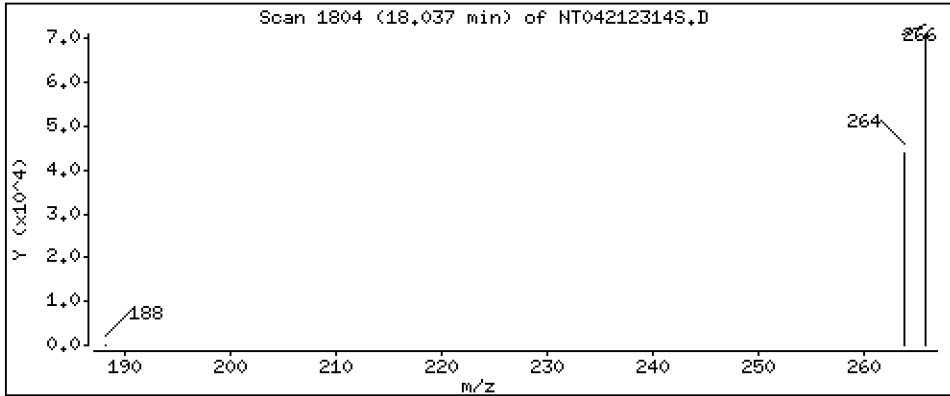
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,972 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

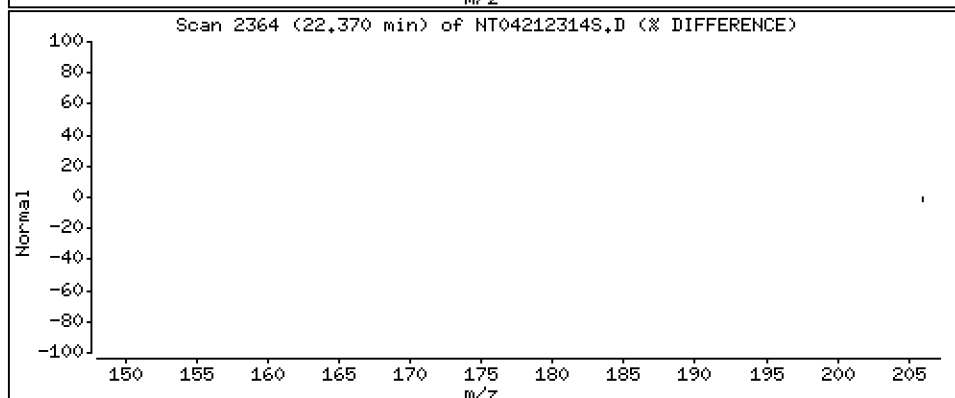
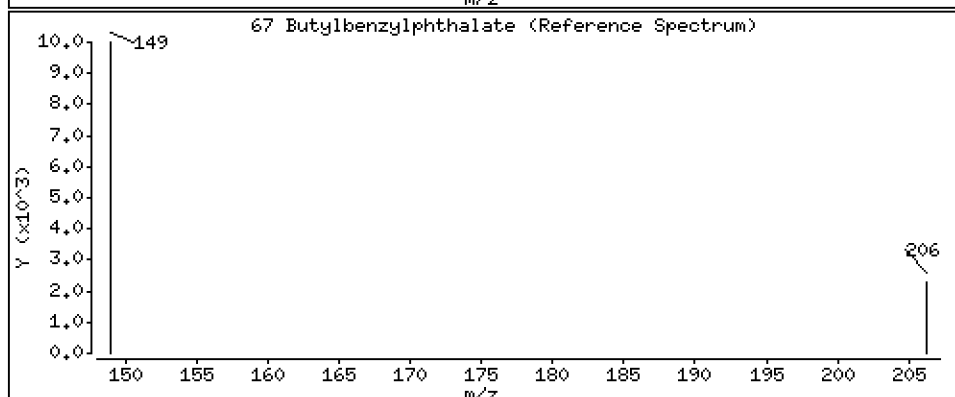
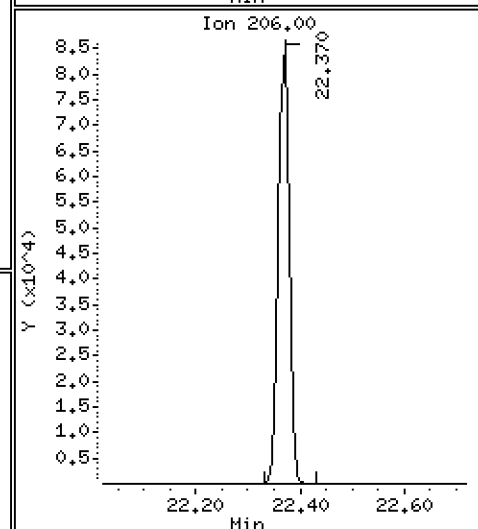
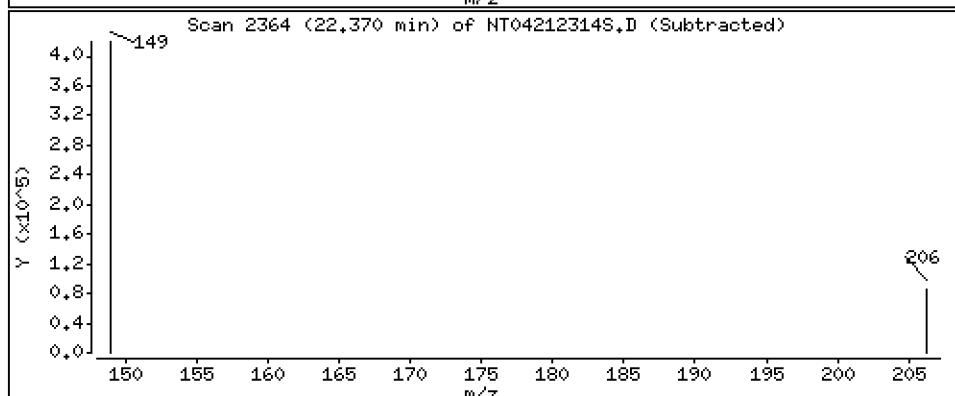
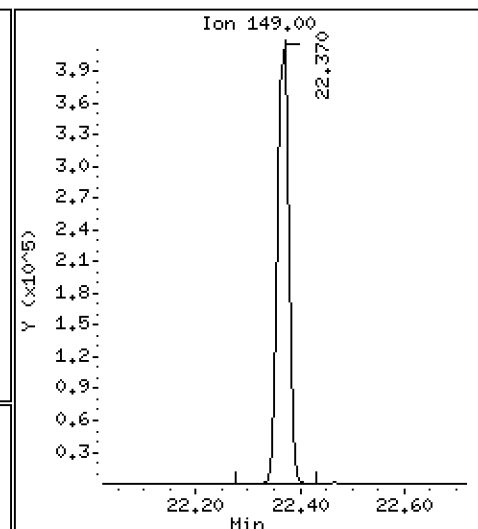
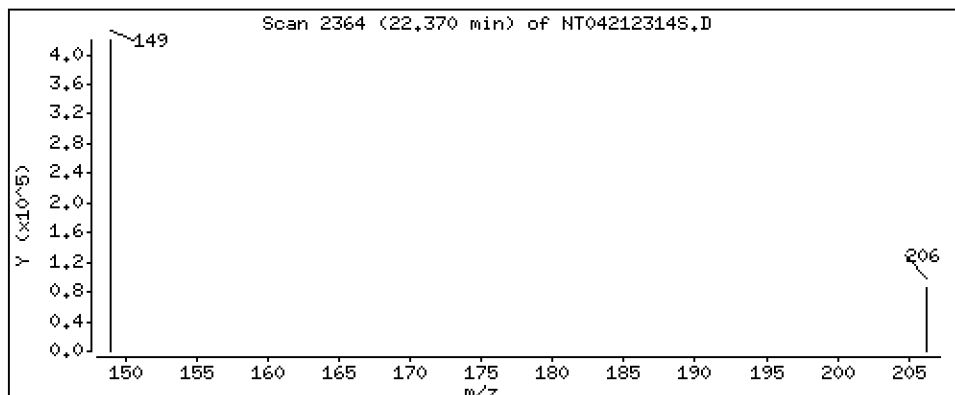
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,695 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

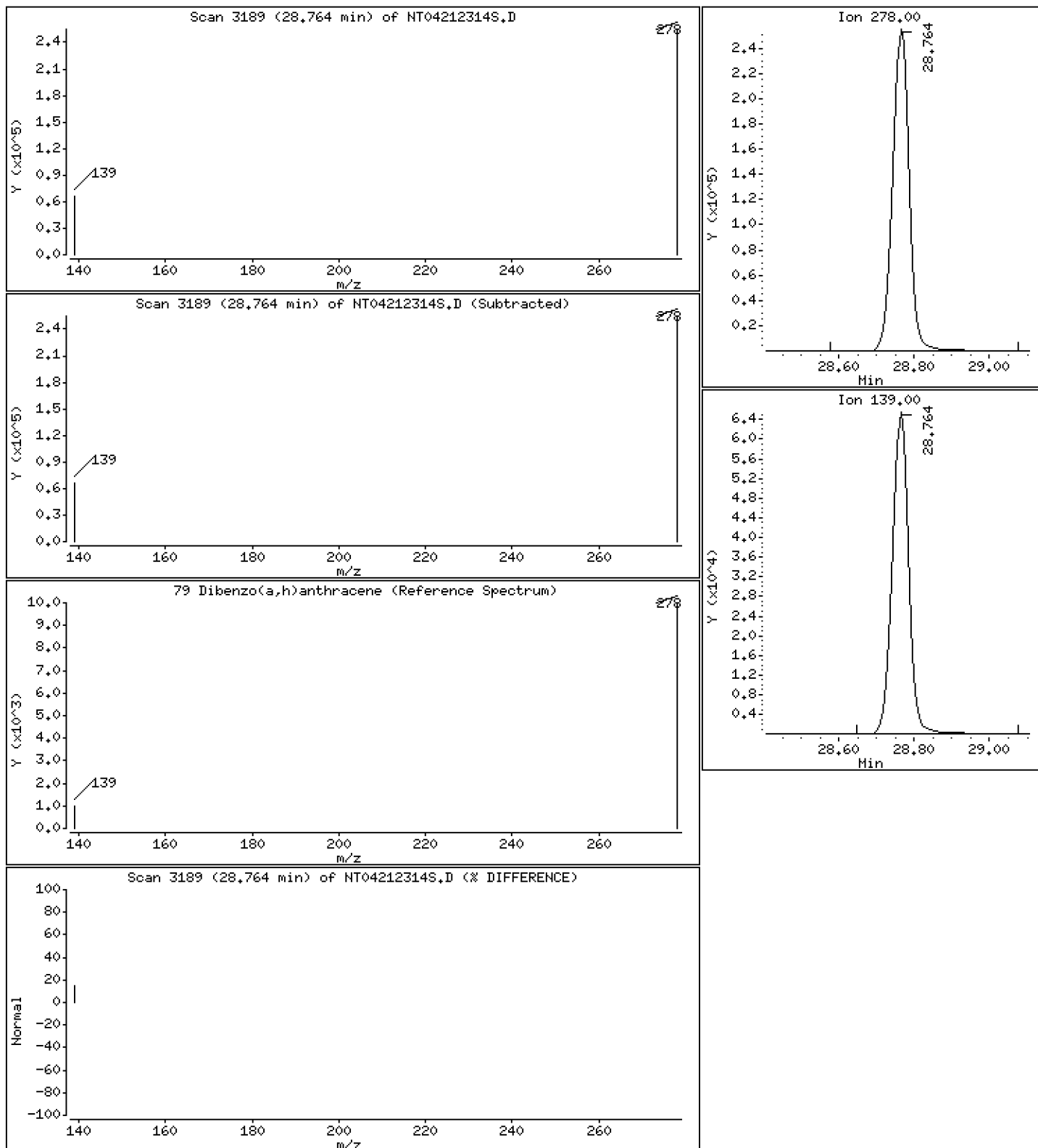
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,390 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

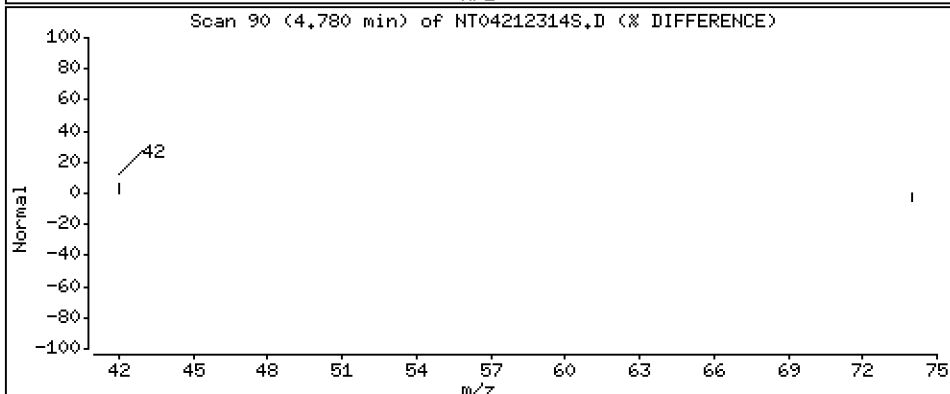
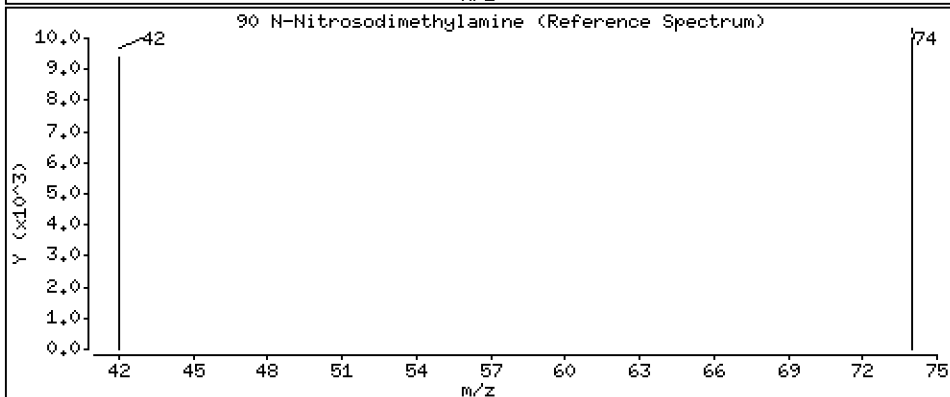
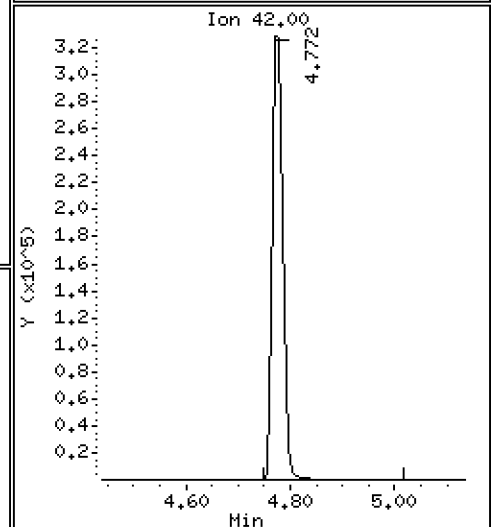
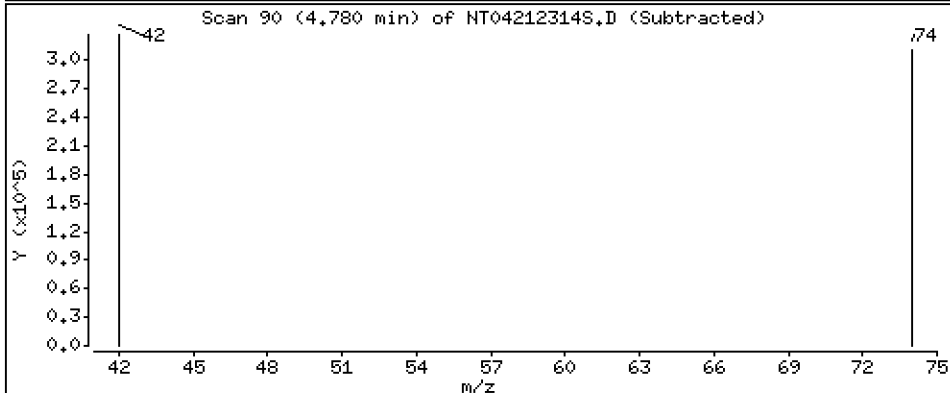
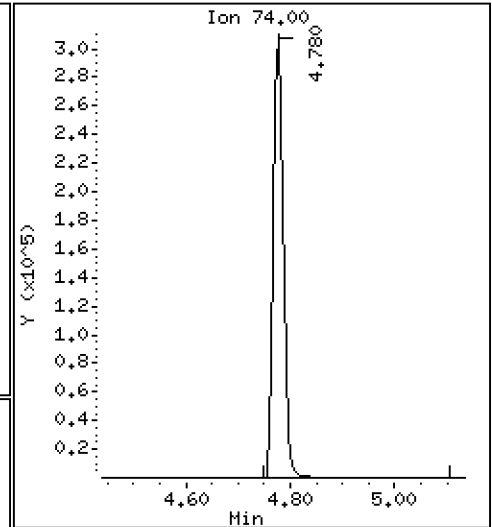
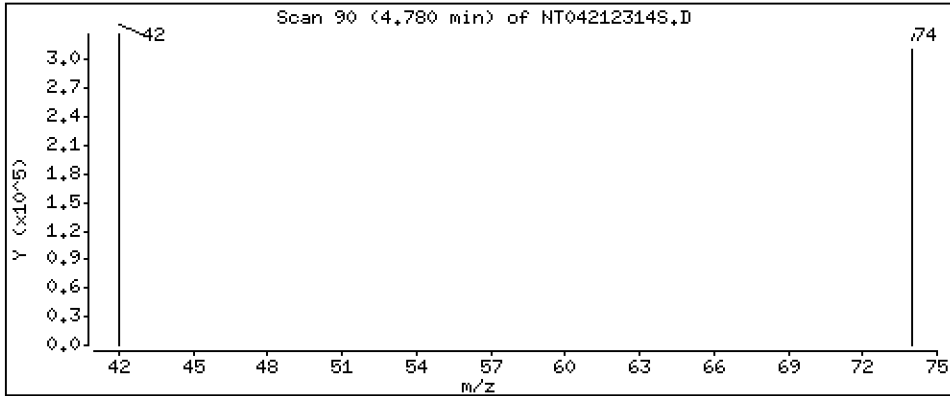
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 4.834 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212314S.D  
 Lab Smp Id: SEQ-SCV1  
 Inj Date : 21-APR-2023 21:16 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SCV1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 11  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		Compound Not Detected.					
3 Phenol	94		8.487	8.479	(0.931)	677736	4.30440	4.304
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	534931	4.47933	4.479
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	281794	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	519596	4.59857	4.599
11 Benzyl alcohol	79		9.385	9.385	(1.030)	477137	4.91535	4.915
12 1,2-Dichlorobenzene	146		9.501	9.501	(1.043)	511191	4.53472	4.535
13 2-Methylphenol	108		9.610	9.603	(1.055)	413068	4.20738	4.207 (H)
15 4-Methylphenol	108		9.882	9.874	(1.084)	459873	4.53821	4.538 (H)
16 N-Nitroso-di-n-propylamine	70		9.952	9.944	(1.092)	437412	4.70737	4.707
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	385878	3.68370	3.684
24 Benzoic acid	105		11.123	11.054	(0.957)	614713	8.19472	8.195
26 1,2,4-Trichlorobenzene	180		11.534	11.526	(0.993)	375647	4.67113	4.671
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1095304	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	203587	4.57443	4.574
39 Dimethylphthalate	163		14.760	14.752	(0.968)	823050	4.40671	4.407
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	511599	4.00000	
50 Diethylphthalate	149		16.222	16.214	(1.063)	879477	4.60482	4.605
54 N-Nitrosodiphenylamine	169		16.607	16.600	(0.907)	587162	4.90642	4.906
57 Hexachlorobenzene	284		17.680	17.672	(0.966)	196168	4.29450	4.294
58 Pentachlorophenol	266		18.036	18.037	(0.985)	120655	3.97208	3.972
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	855994	4.00000	
\$ 66 Terphenyl-d14	244		Compound Not Detected.					
67 Butylbenzylphthalate	149		22.370	22.370	(0.958)	584126	4.69452	4.695
* 69 Chrysene-d12	240		23.361	23.353	(1.000)	548116	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	575271	4.00000	
79 Dibenzo(a,h)anthracene	278		28.763	28.756	(1.105)	764599	4.39029	4.390
90 N-Nitrosodimethylamine	74		4.779	4.787	(0.524)	387451	4.83434	4.834

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212314S.D  
 Lab Smp Id: SEQ-SCV1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	281794	-10.21
27 Naphthalene-d8	1195091	597546	2390182	1095304	-8.35
42 Acenaphthene-d10	556977	278489	1113954	511599	-8.15
59 Phenanthrene-d10	941816	470908	1883632	855994	-9.11
69 Chrysene-d12	617803	308902	1235606	548116	-11.28
77 Perylene-d12	639373	319687	1278746	575271	-10.03

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.36	0.03
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212314S.D

Lab ID: SEQ-SCV1

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 21:16

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

\*\* FIRST SURROGATE NOT FOUND. ICAL Check not performed \*\*

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.957	0.951	0.0060	Benzoic acid

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8270E-SIM**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00063

**Laboratory ID:** SLD0358-SCV1

**Sequence:** SLD0358

**Sequence Name:** SCV 5.0

**Standard ID:** K010066

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
1,4-Dichlorobenzene	5.0000	4.6	-8.0	20.00
1,2-Dichlorobenzene	5.0000	4.5	-9.3	20.00
Benzyl Alcohol	5.0000	4.9	-1.7	20.00
Benzoic acid	10.000	8.2	-18.1	20.00
2,4-Dimethylphenol	5.0000	3.7	-26.3 *	20.00
1,2,4-Trichlorobenzene	5.0000	4.7	-6.6	20.00
N-Nitrosodiphenylamine	5.0000	4.9	-1.9	20.00
Pentachlorophenol	5.0000	4.0	-20.6 *	20.00
2-Fluorophenol	7.5000	0.00		
p-Terphenyl-d14	5.0000	0.00		

\* Indicates values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212314S.D

Date : 21-APR-2023 21:16

Client ID:

Sample Info: SEQ-SCV1

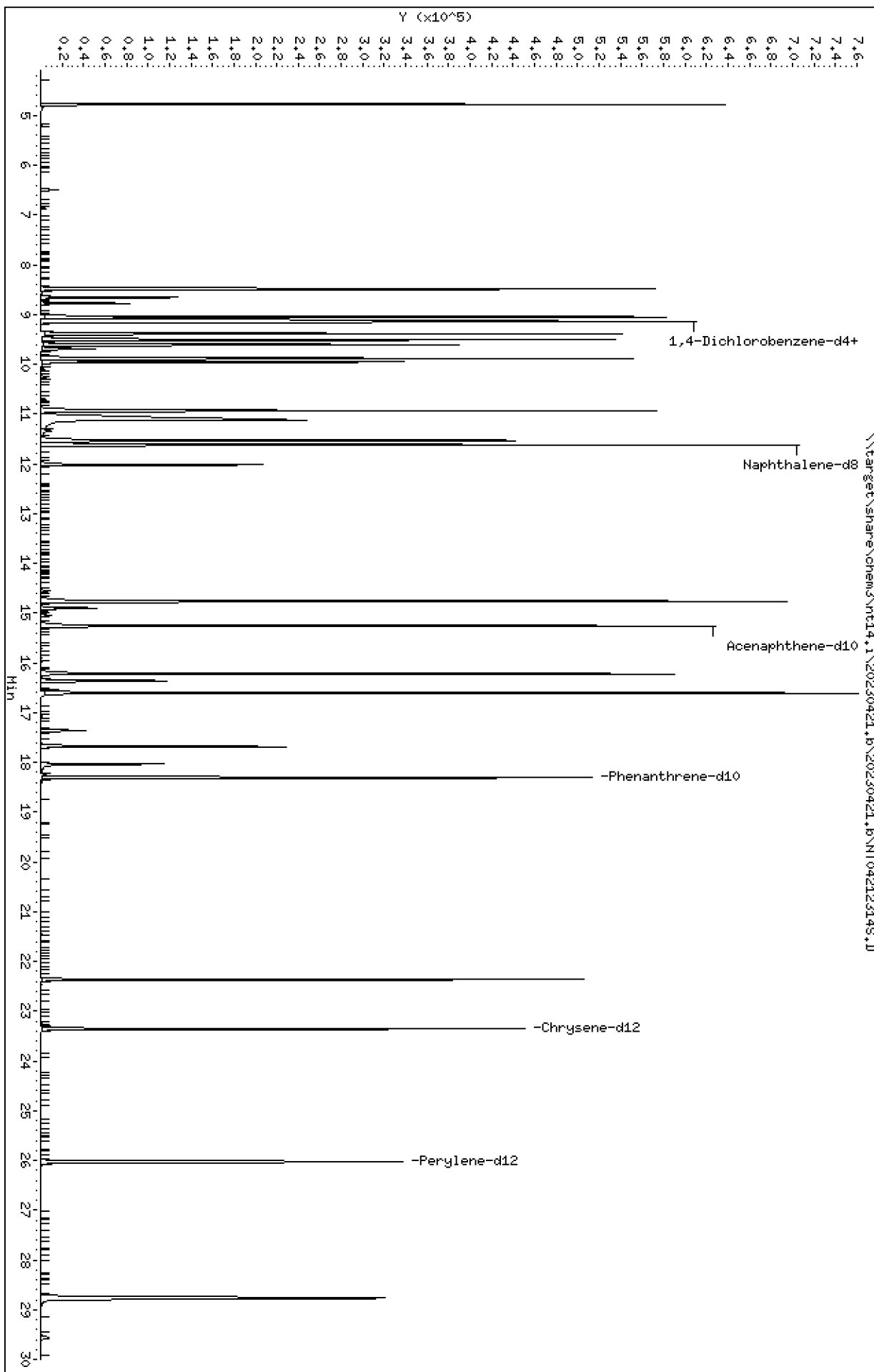
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

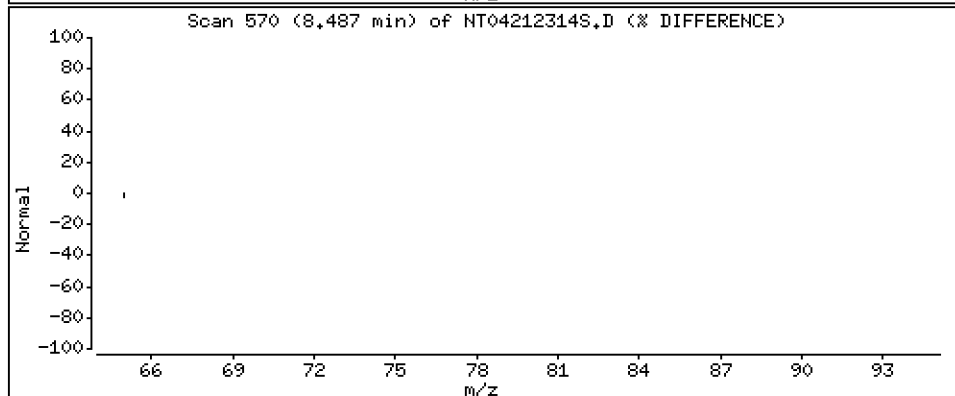
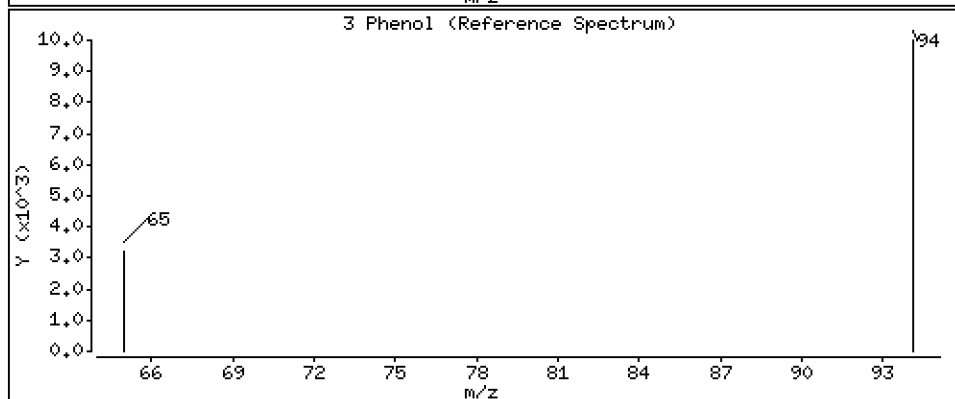
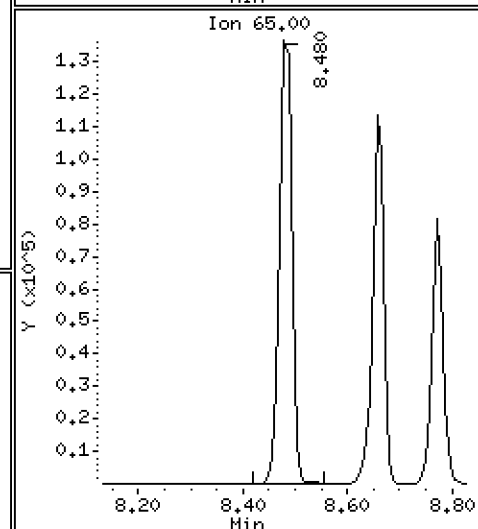
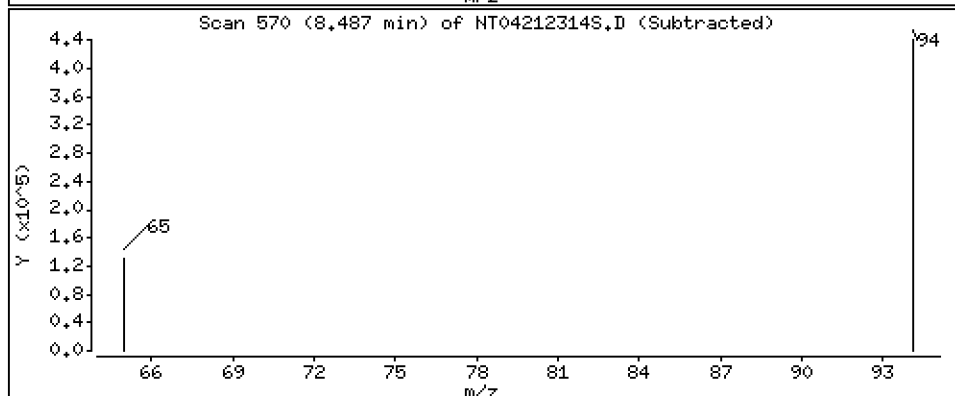
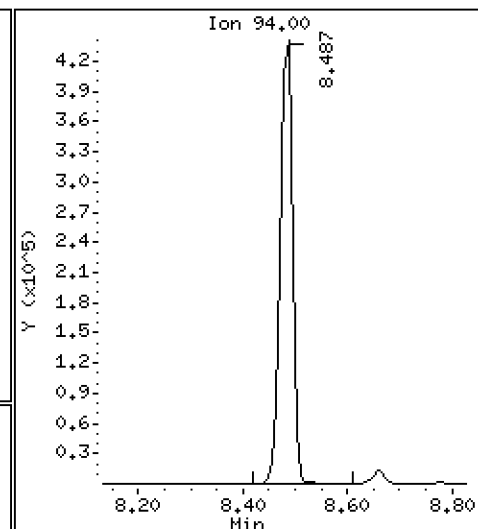
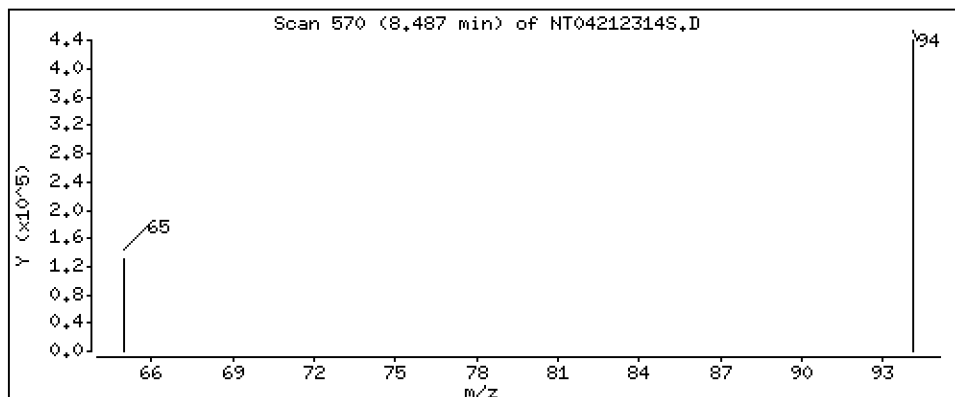
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,304 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

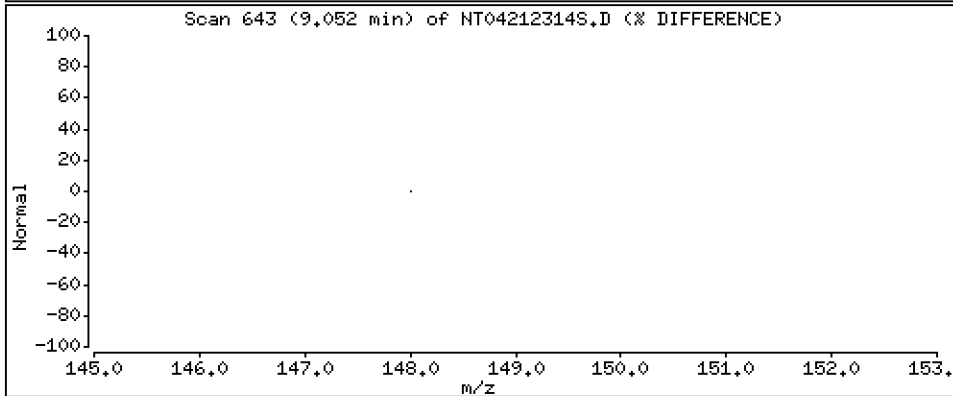
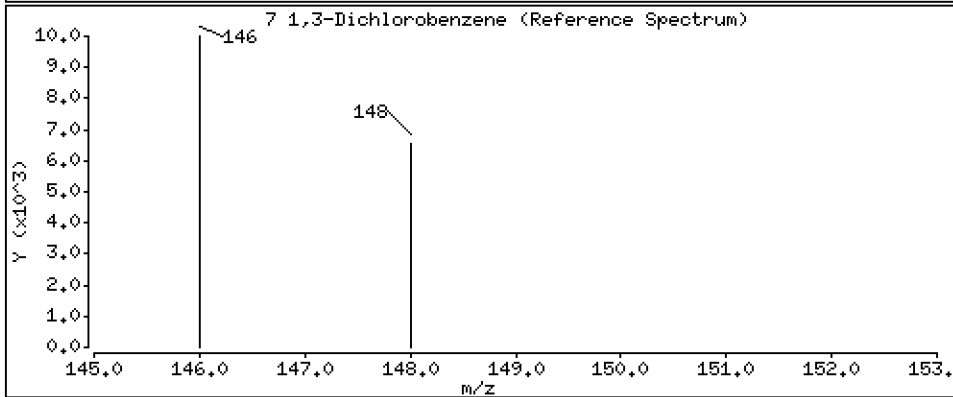
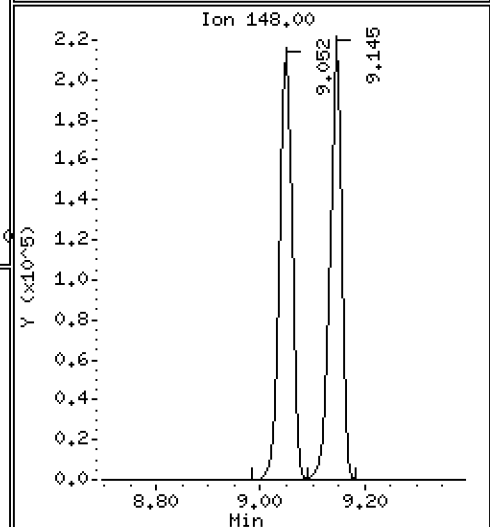
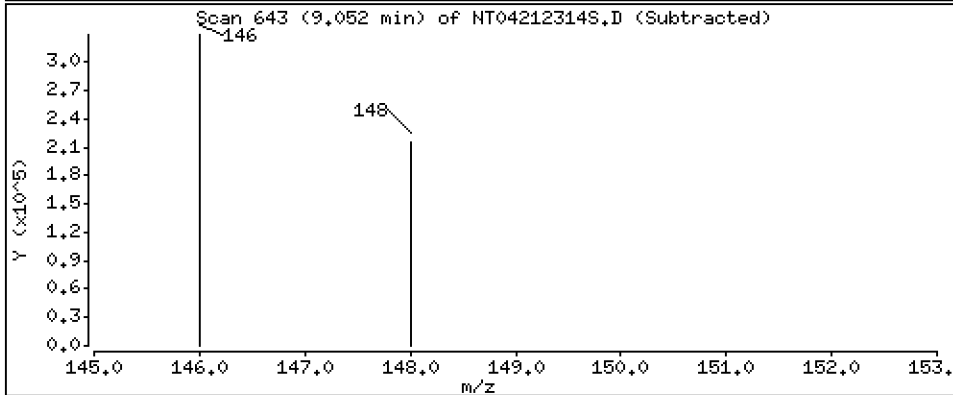
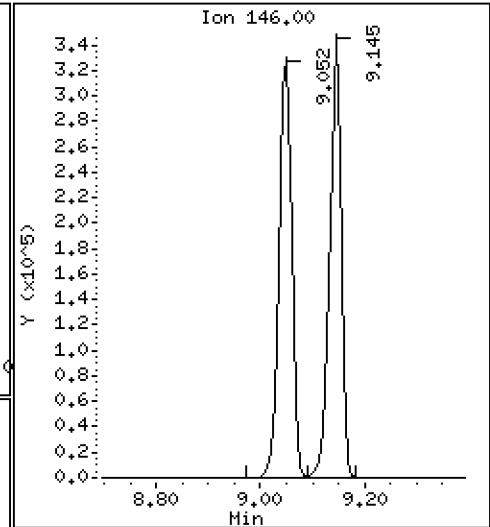
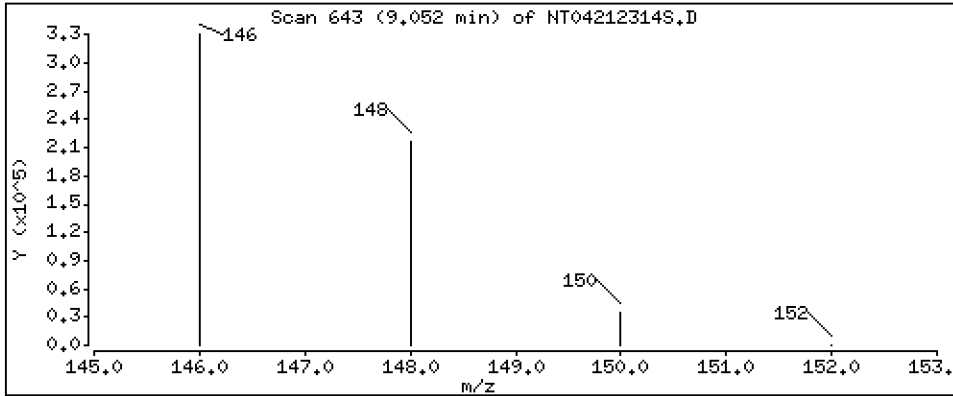
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 4,479 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

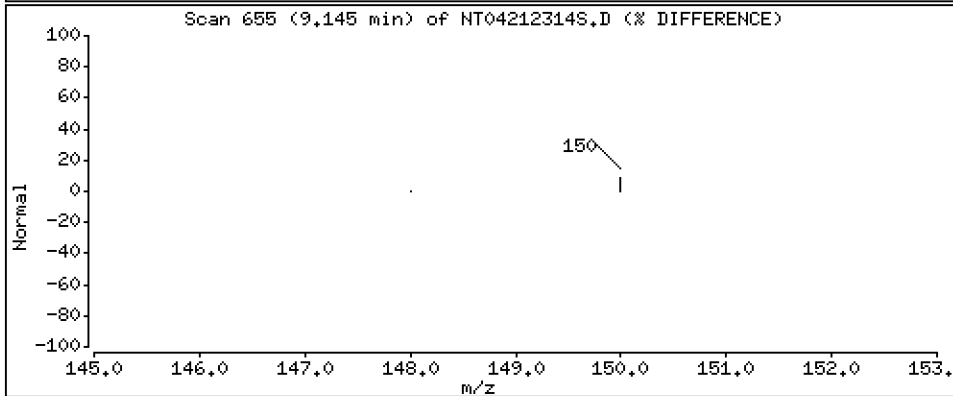
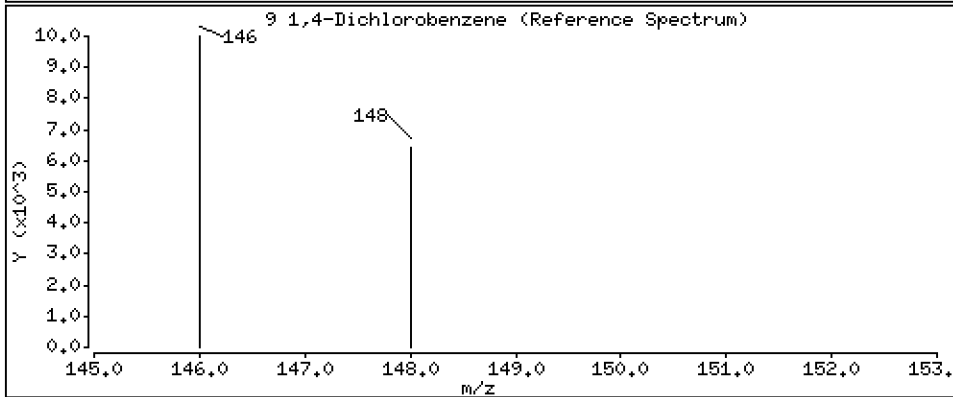
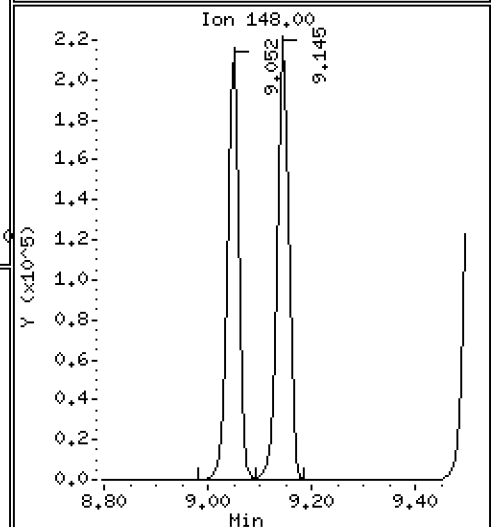
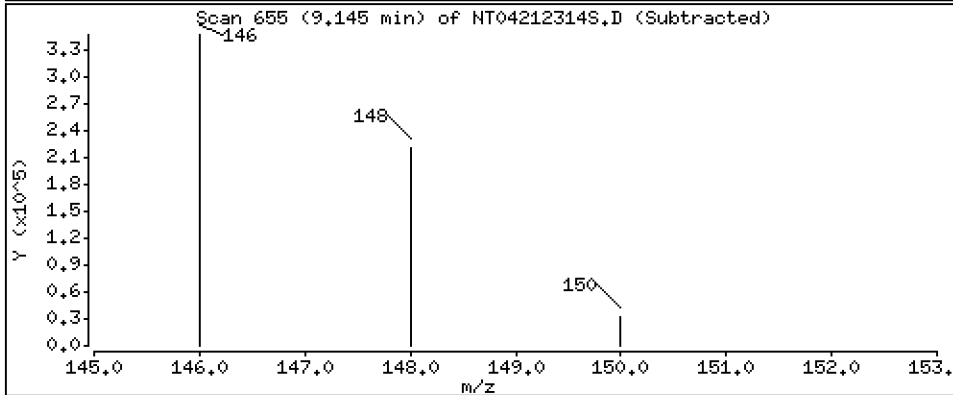
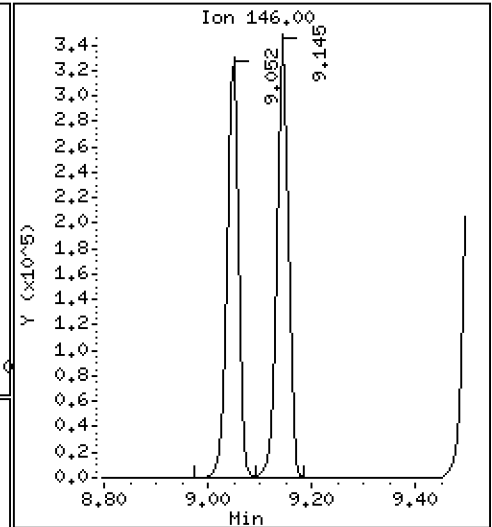
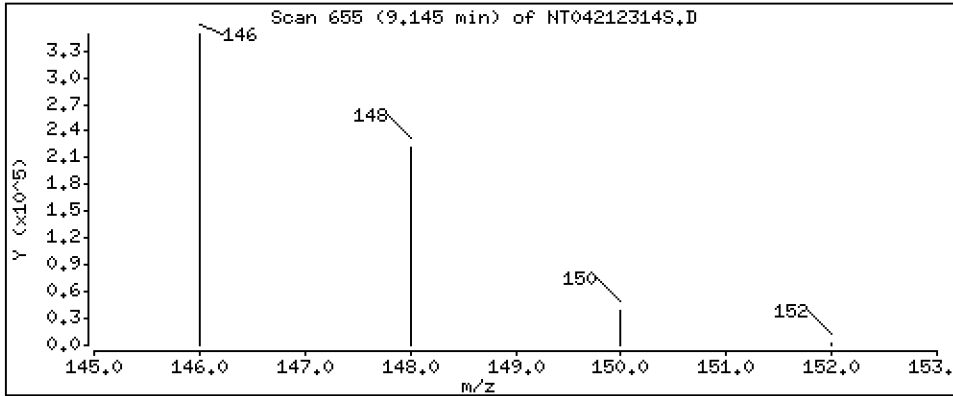
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

9 1,4-Dichlorobenzene

Concentration: 4.599 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

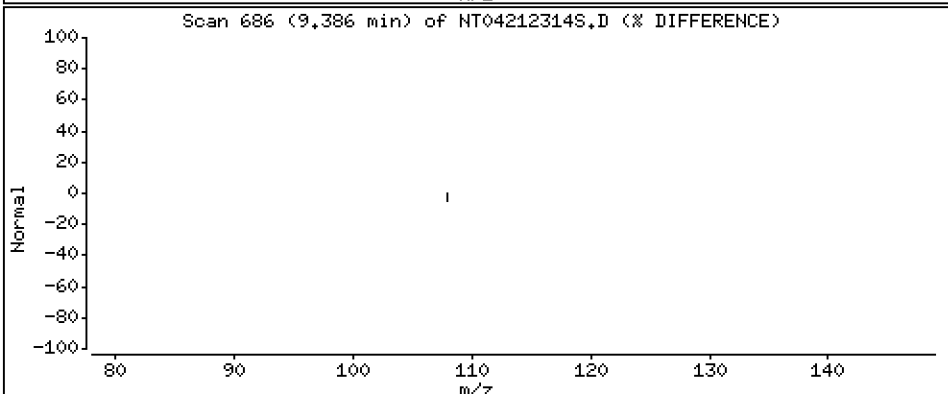
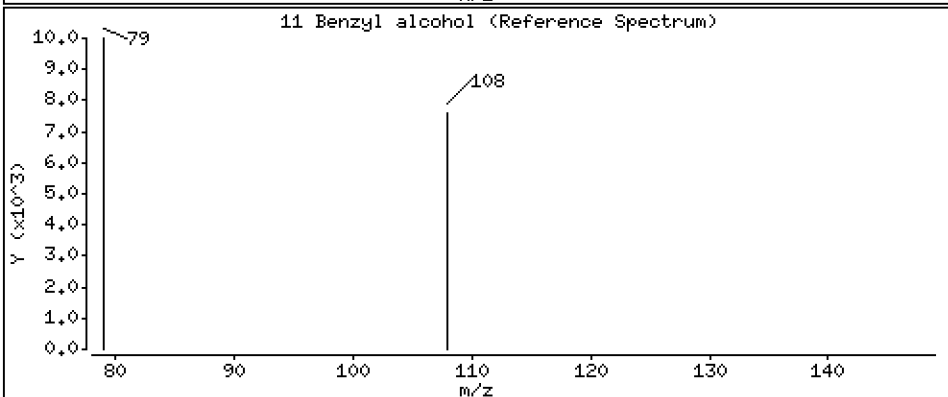
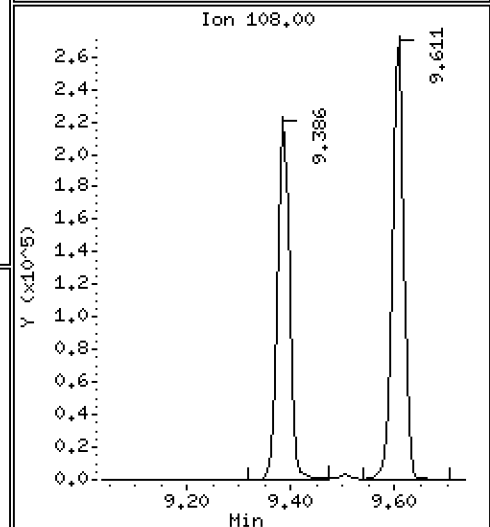
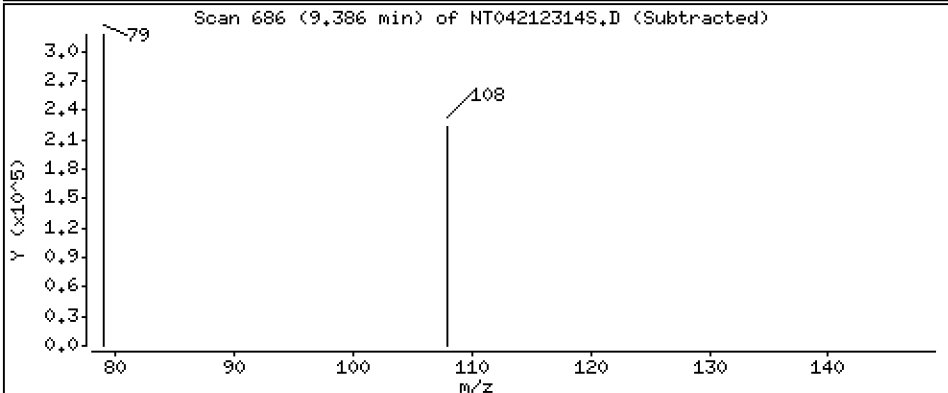
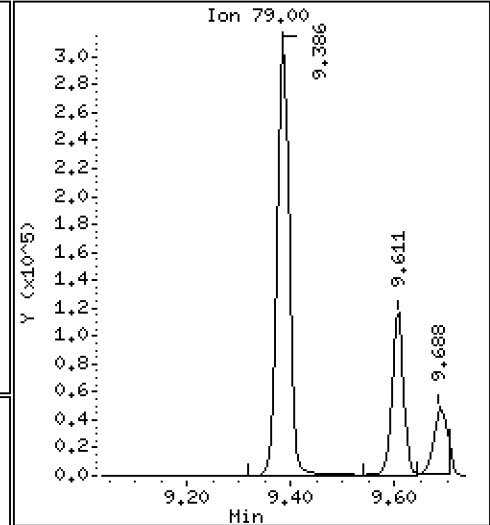
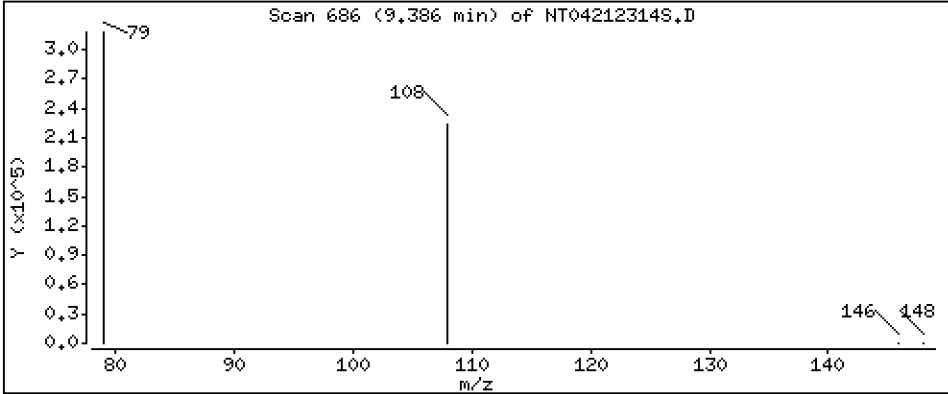
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.915 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

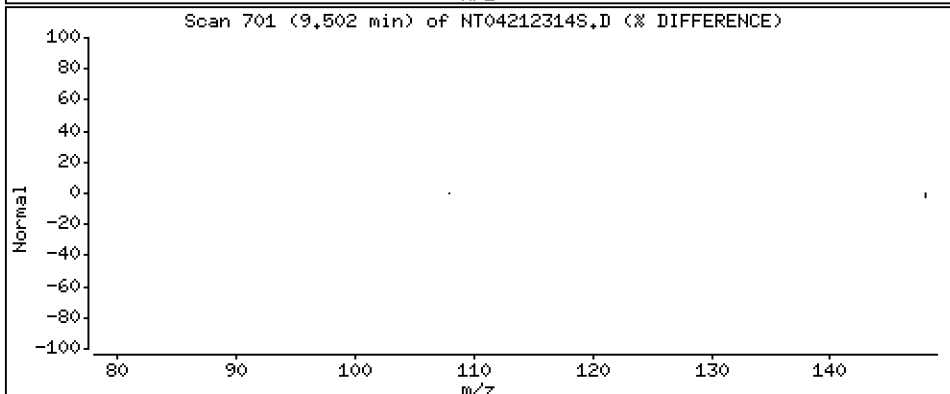
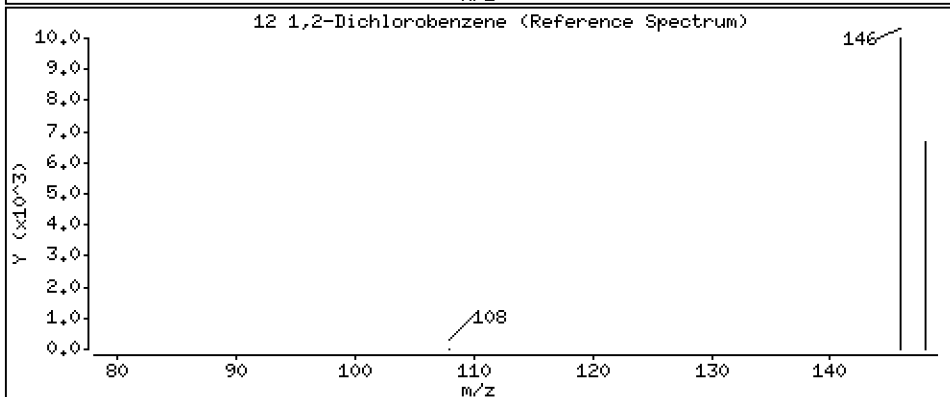
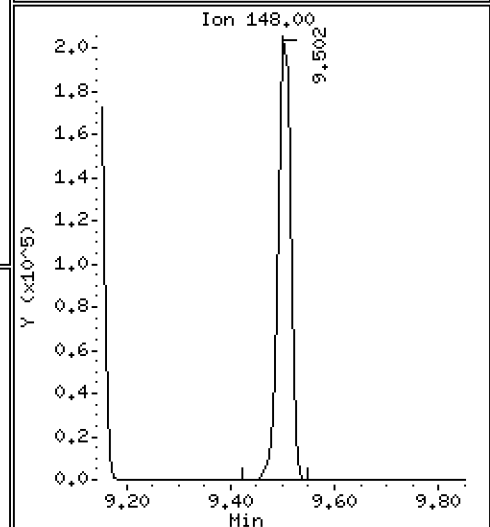
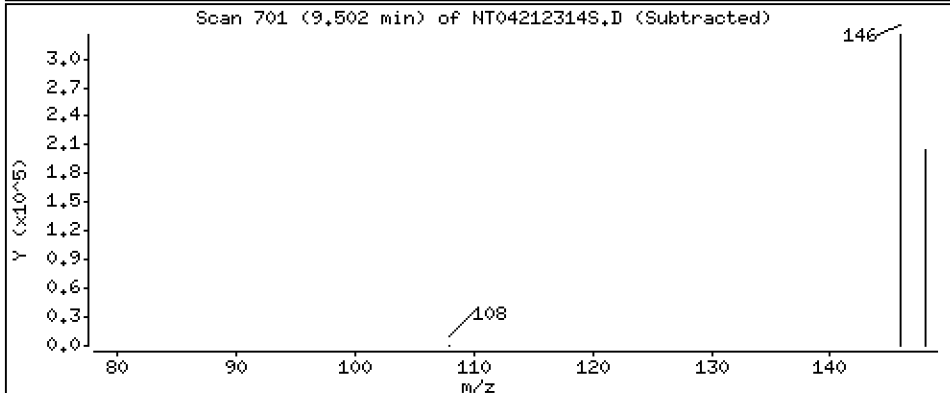
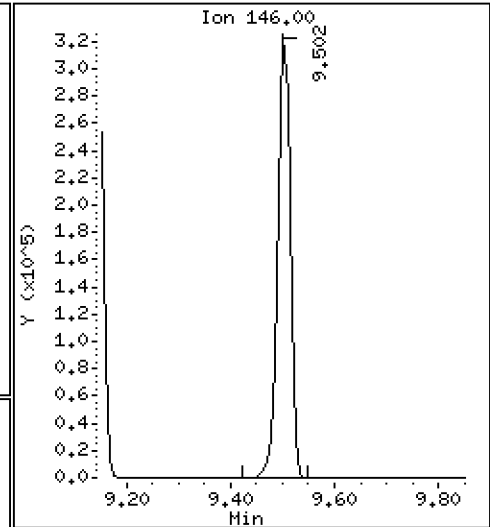
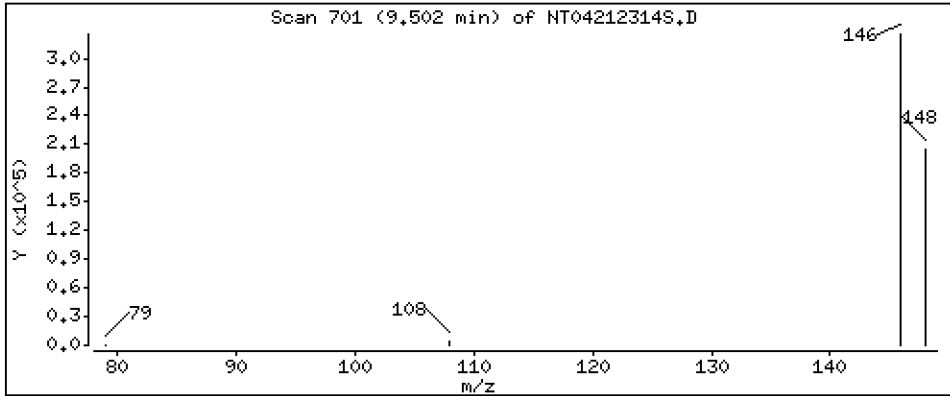
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.535 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

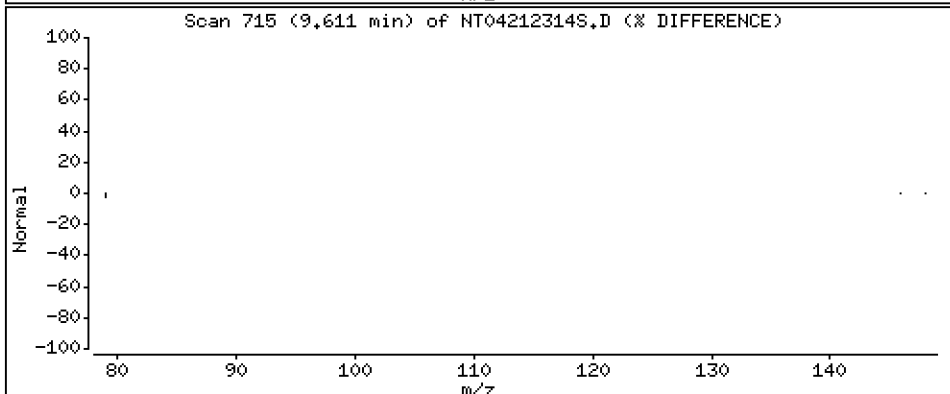
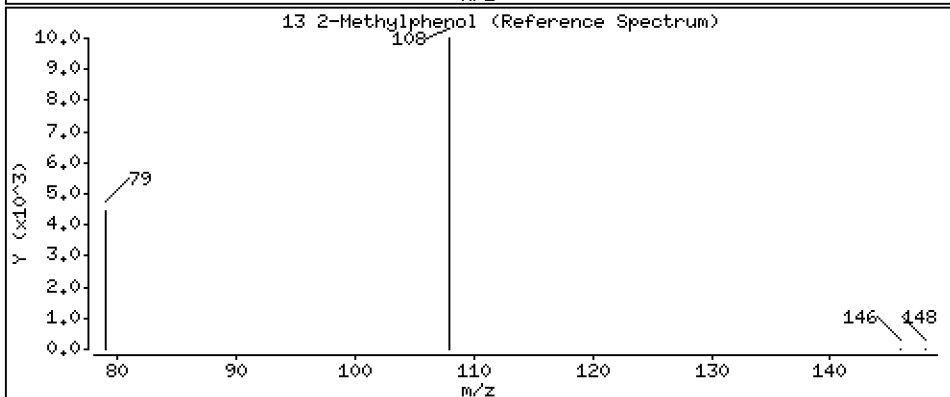
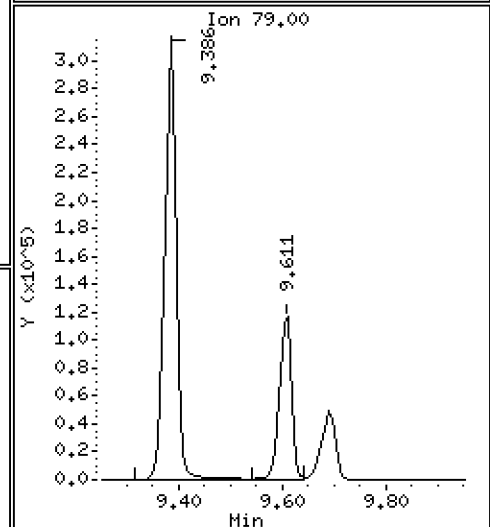
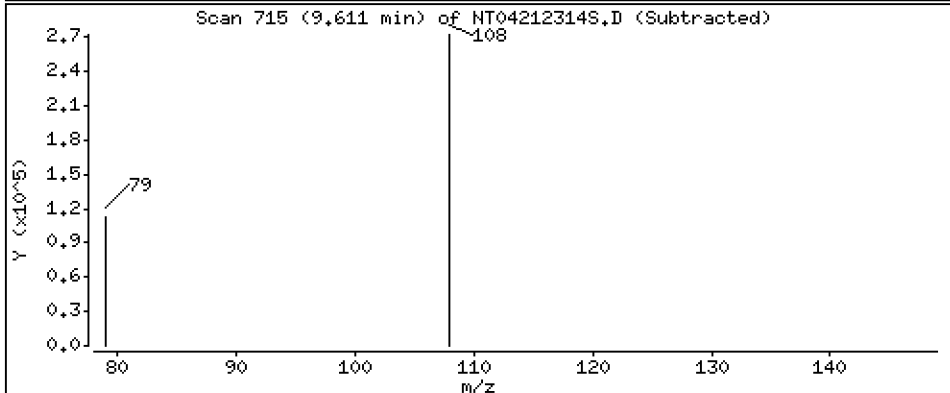
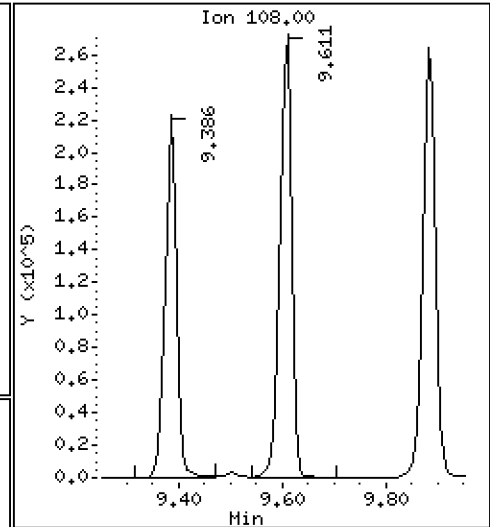
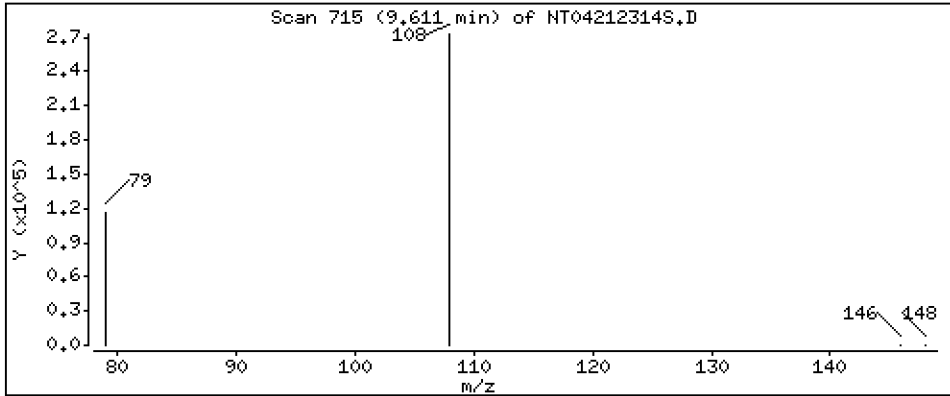
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 4.207 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

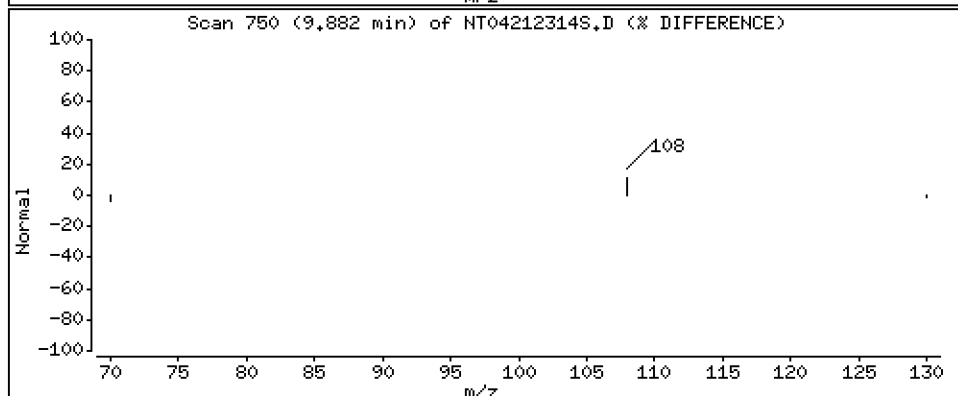
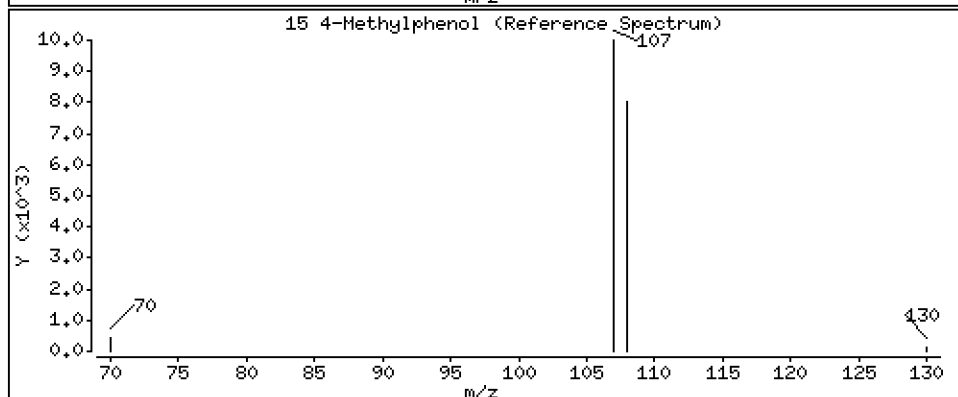
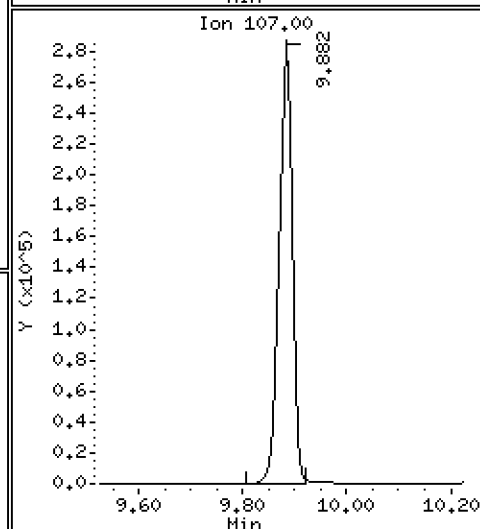
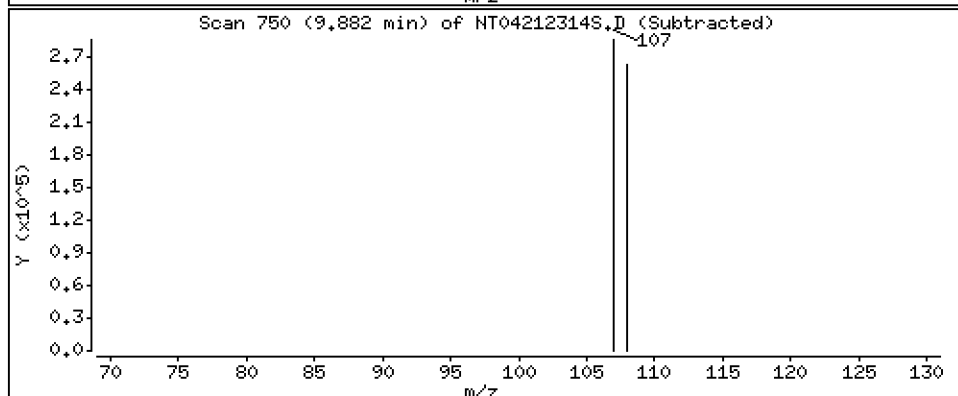
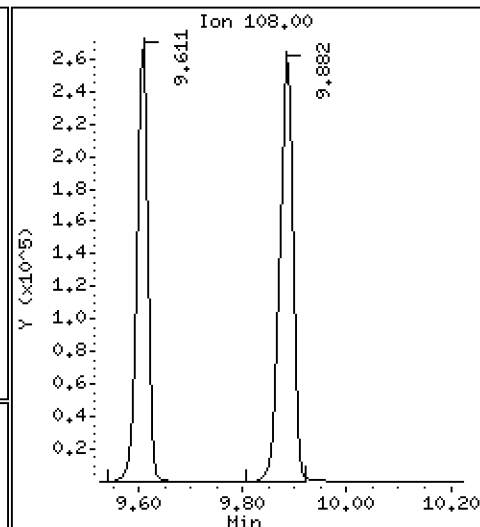
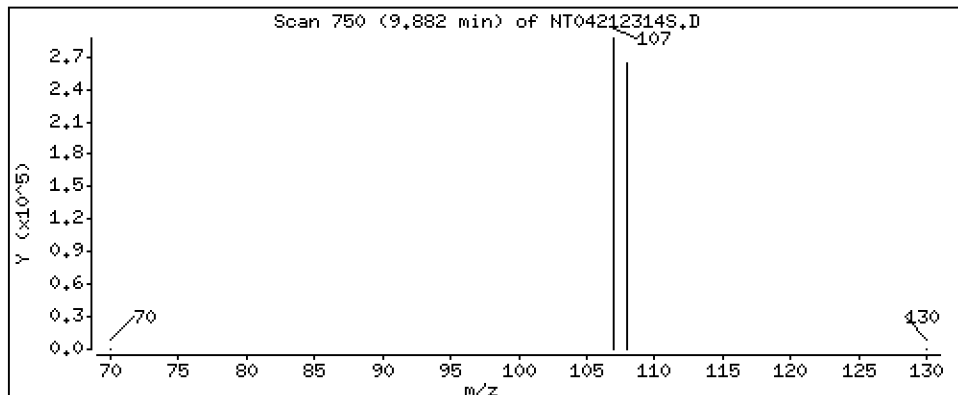
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.538 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

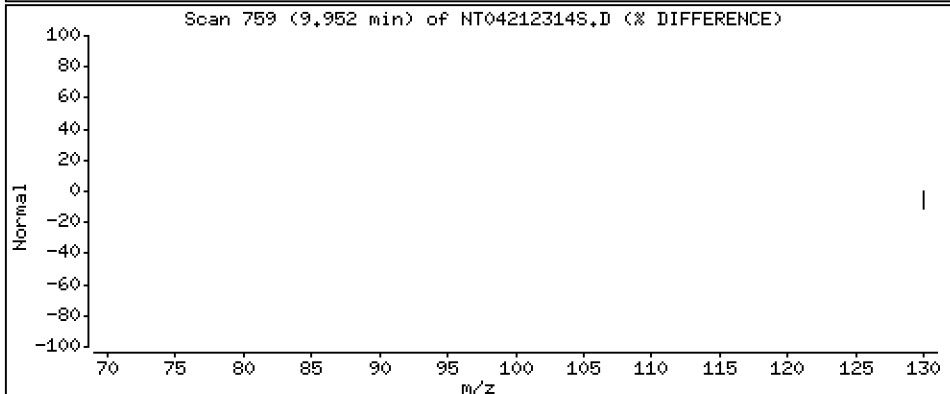
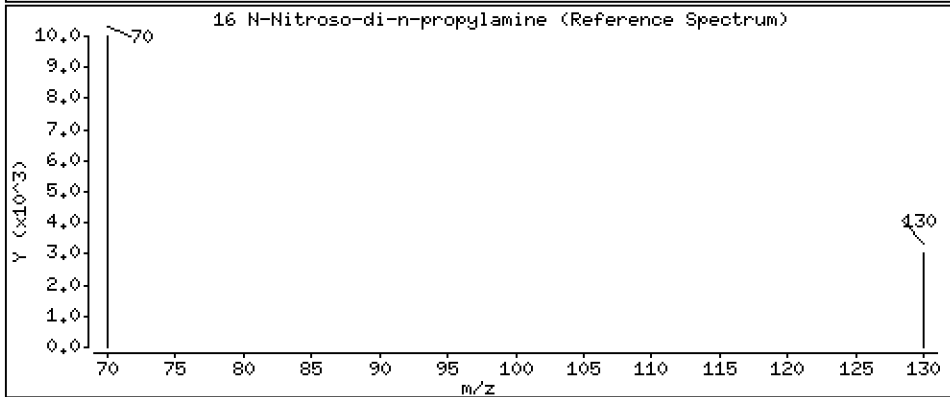
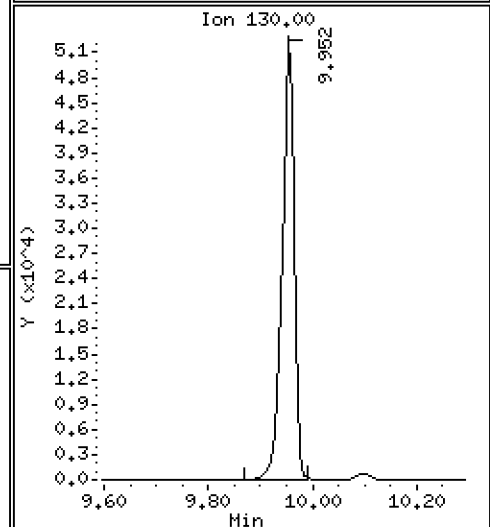
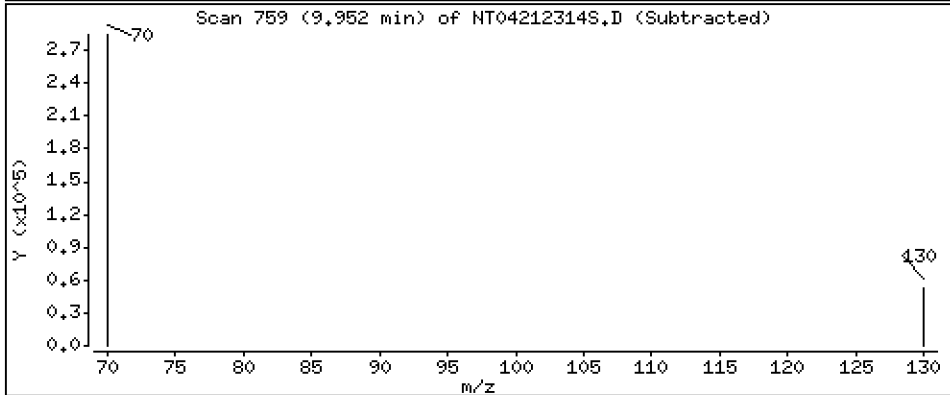
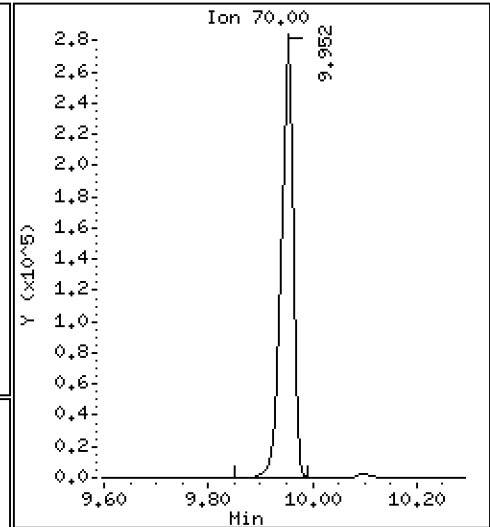
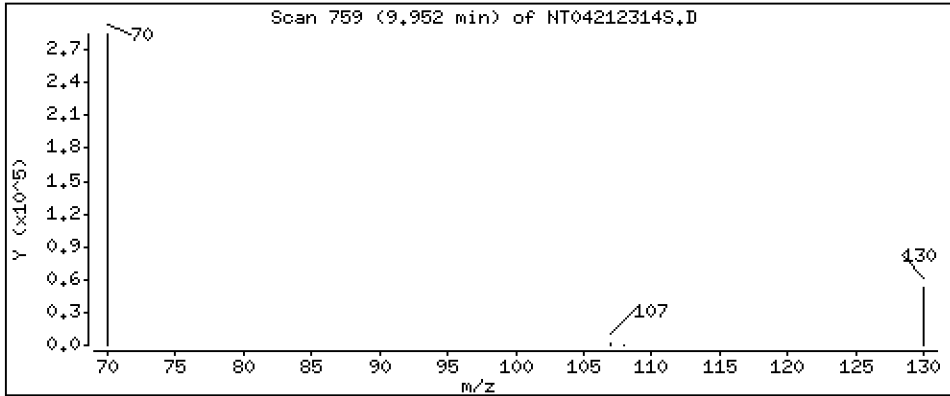
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 4,707 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

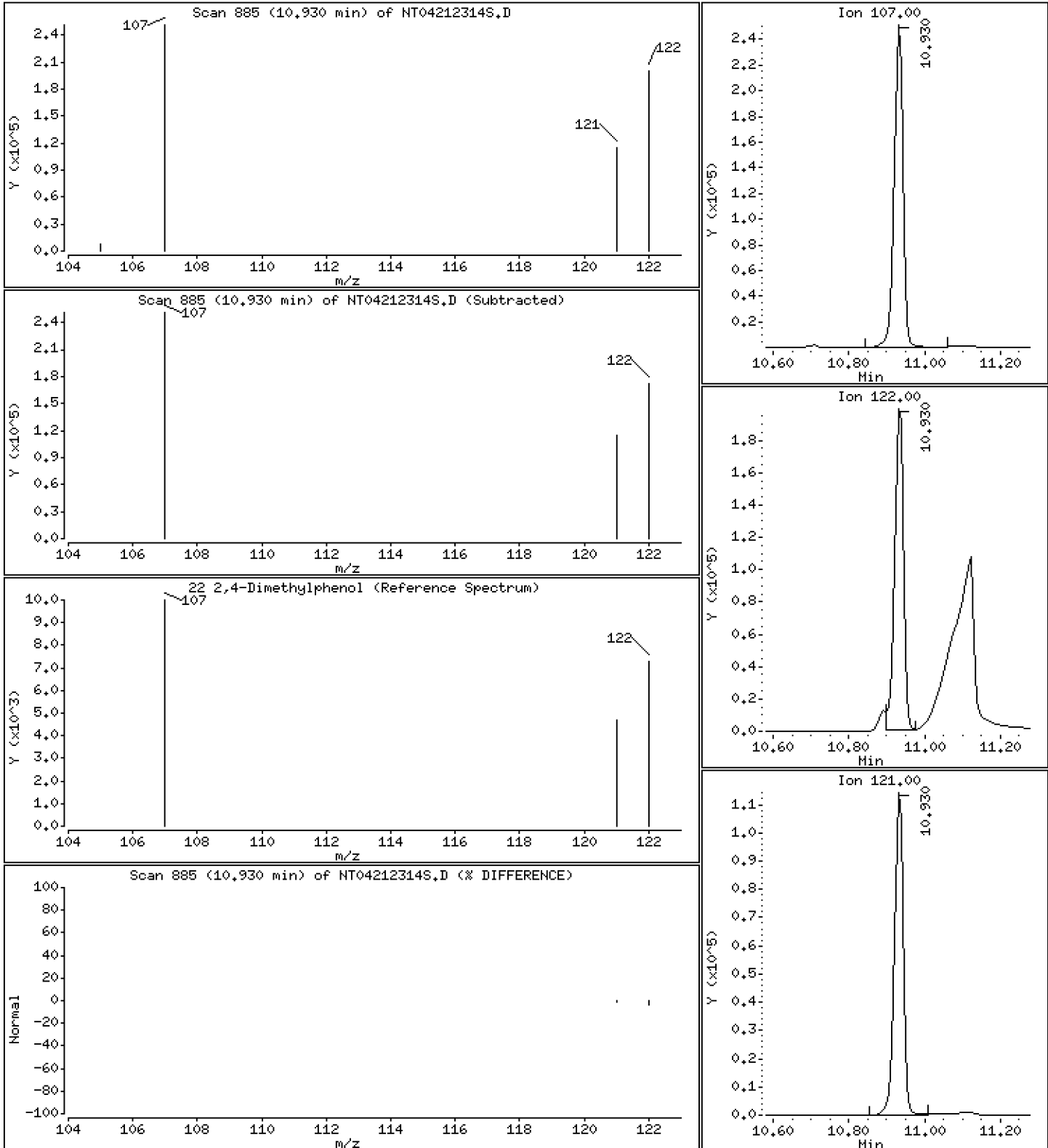
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 3,684 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

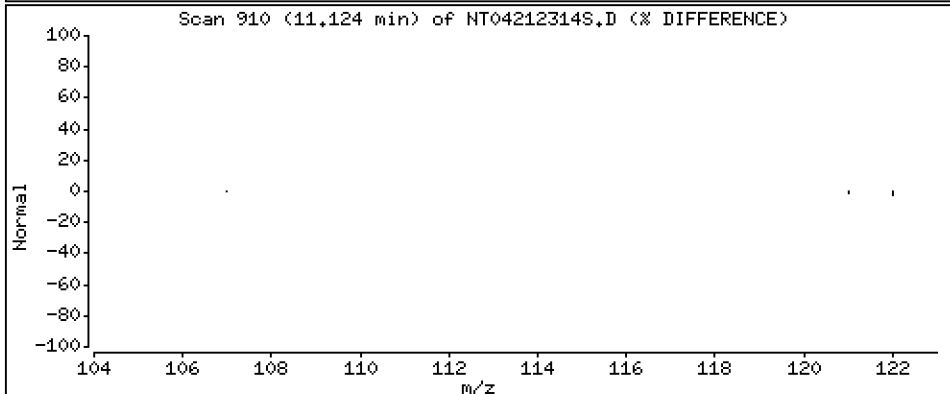
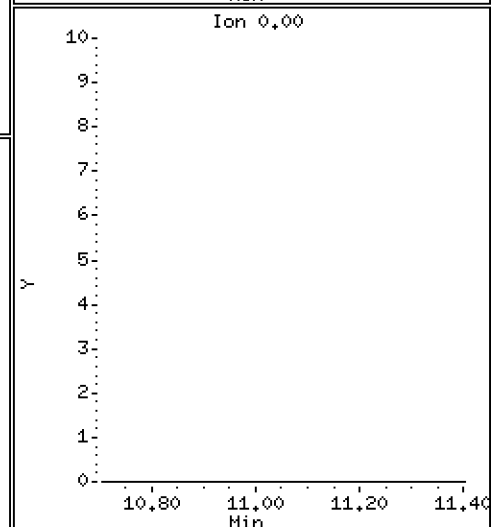
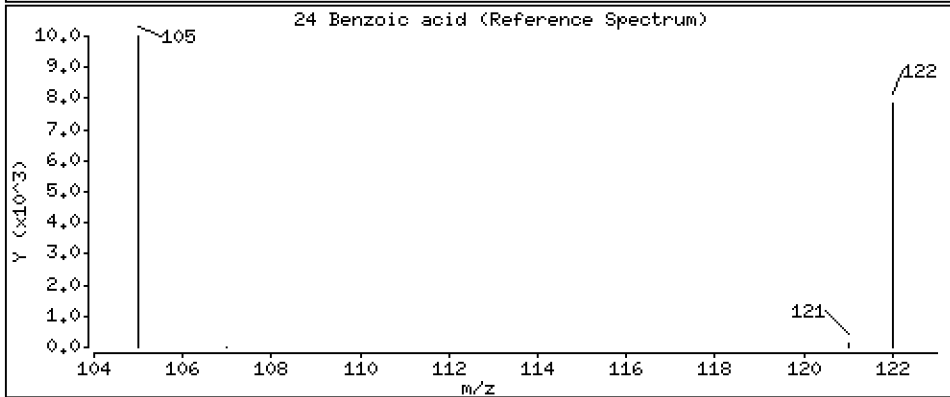
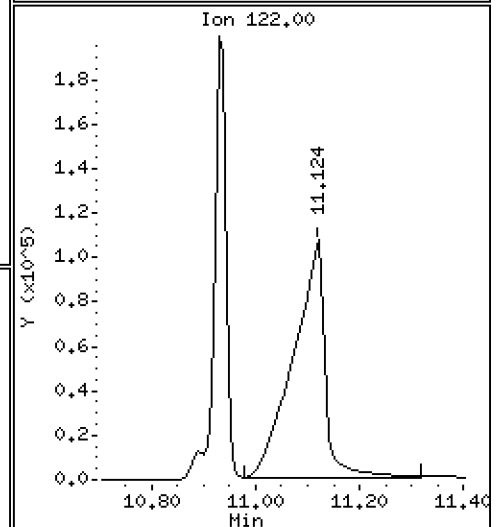
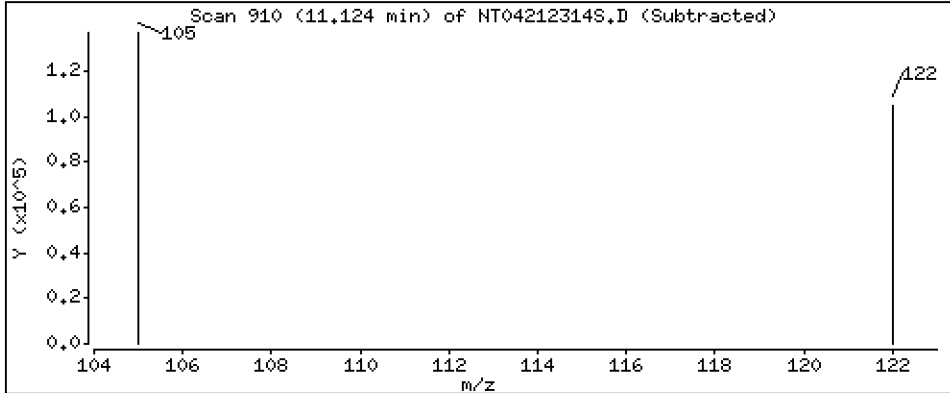
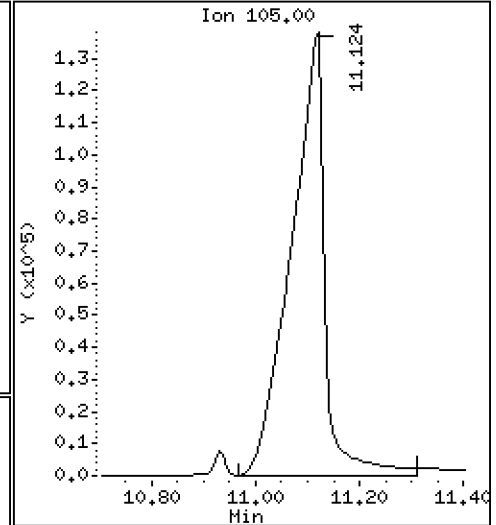
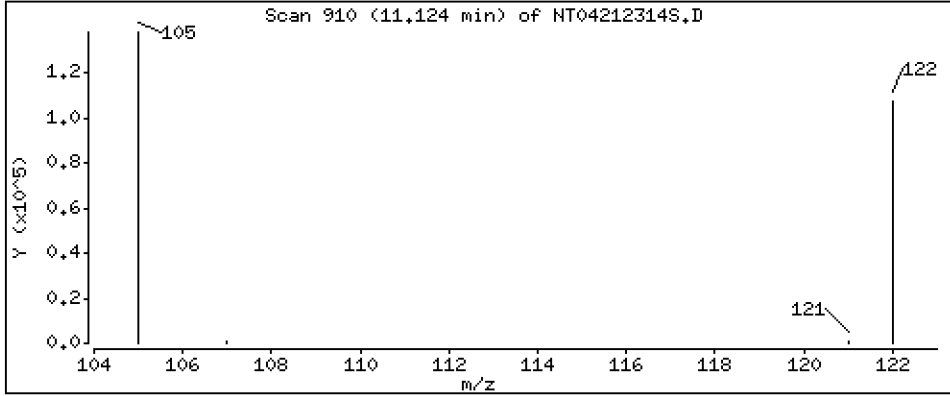
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 8,195 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

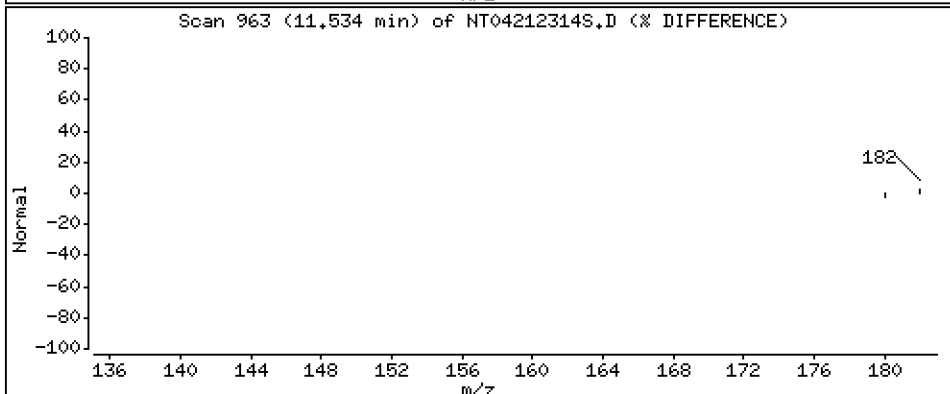
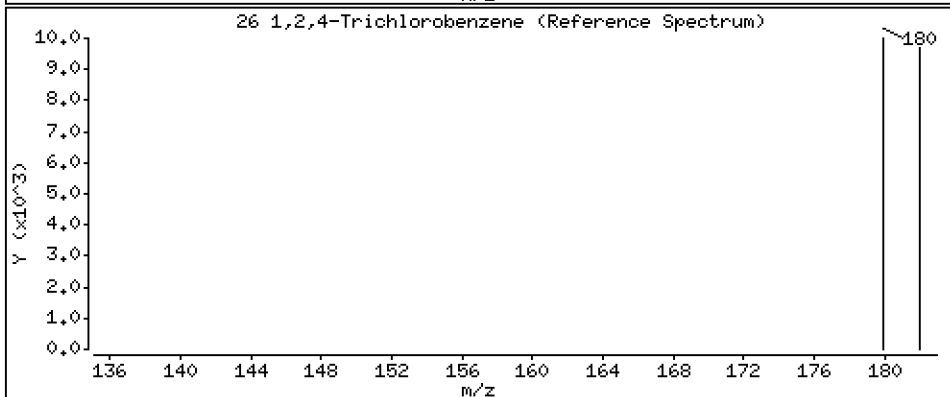
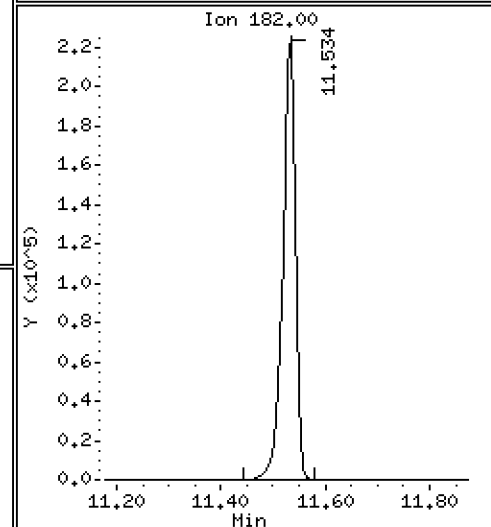
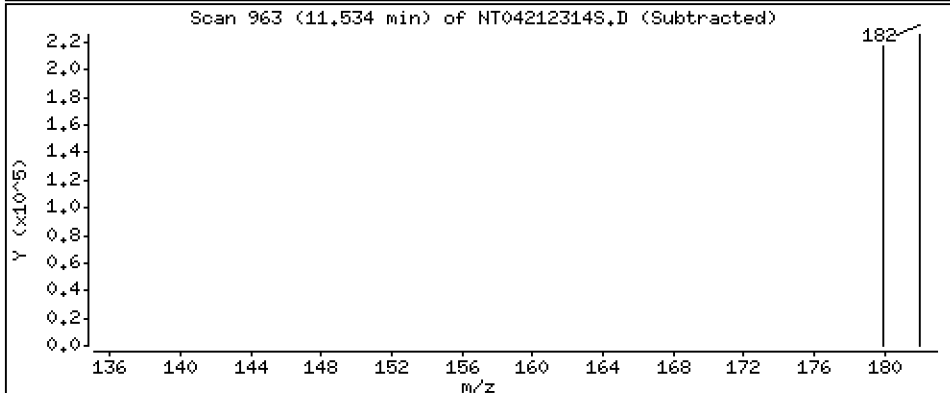
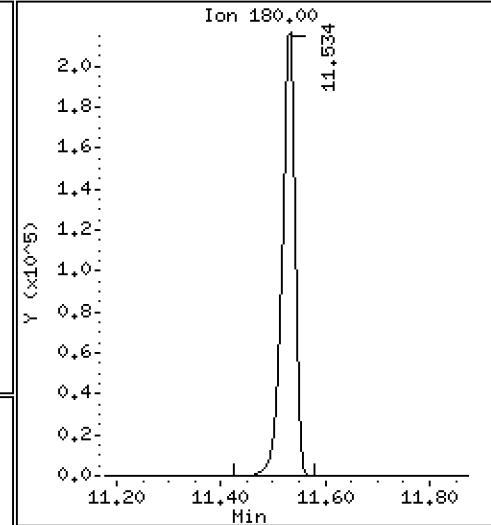
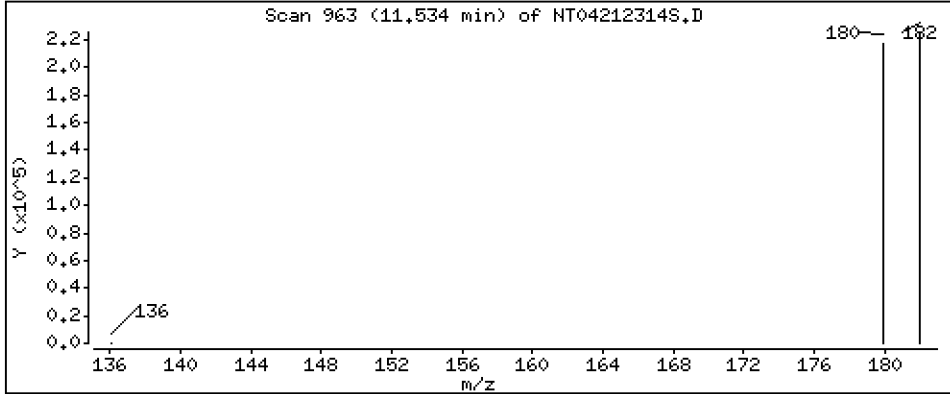
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 4,671 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

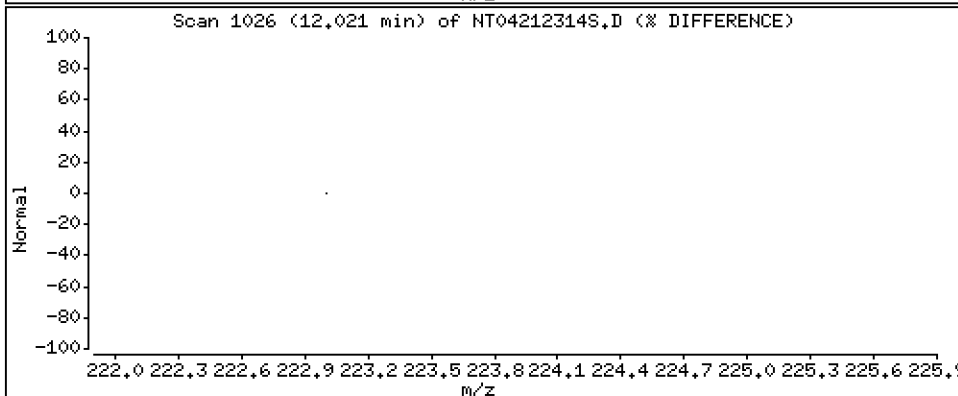
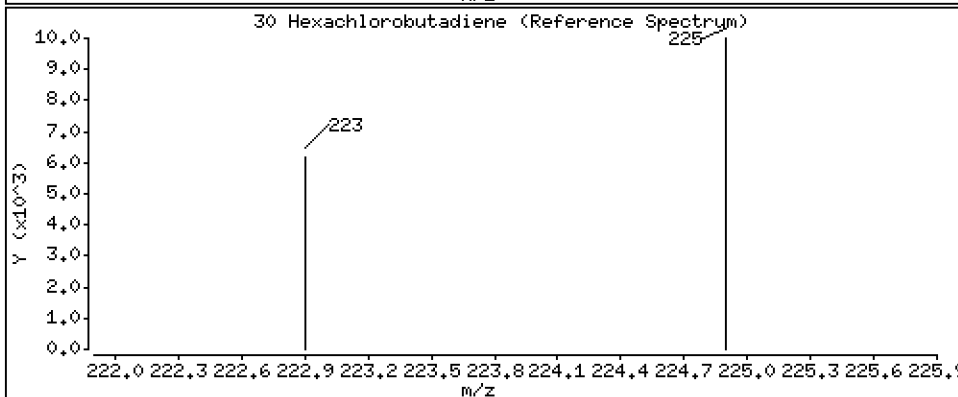
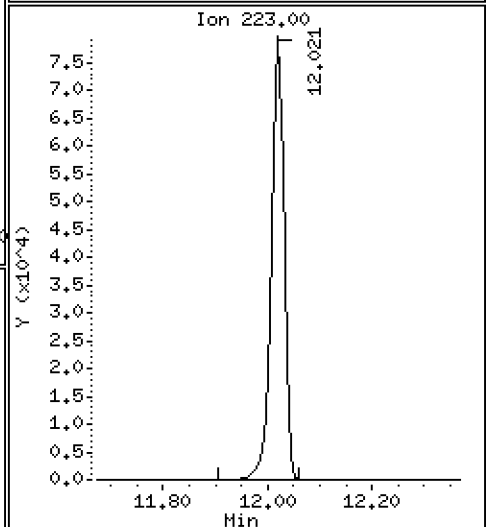
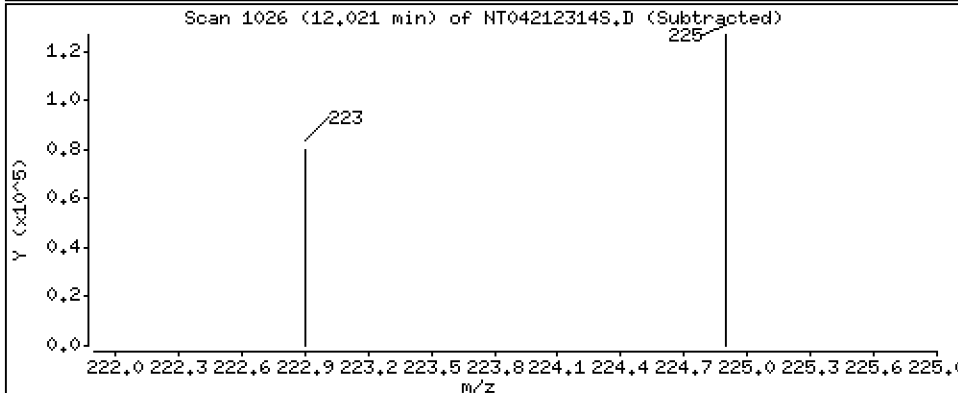
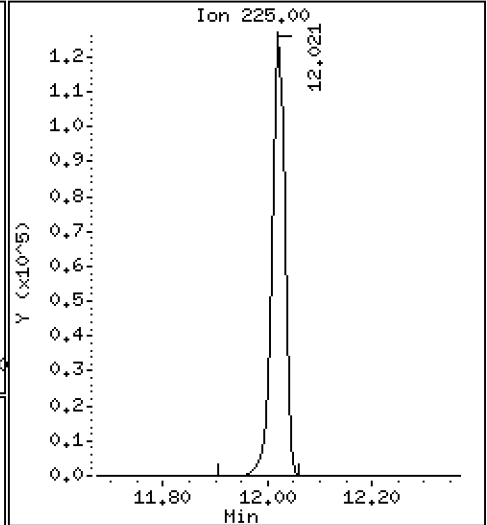
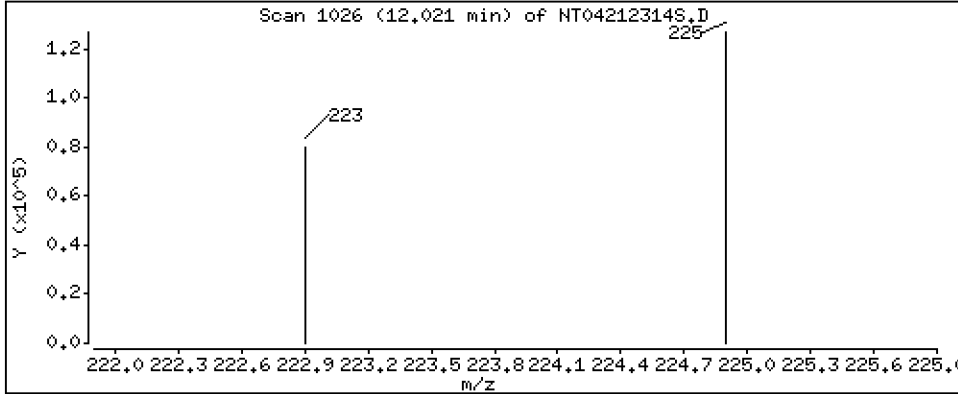
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,574 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

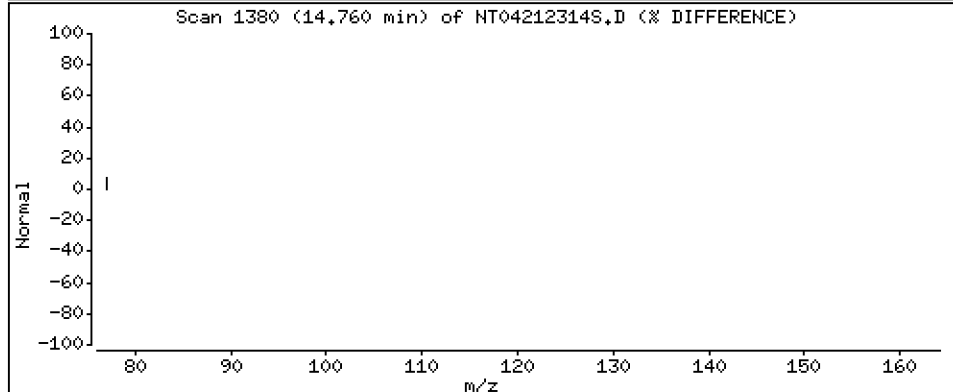
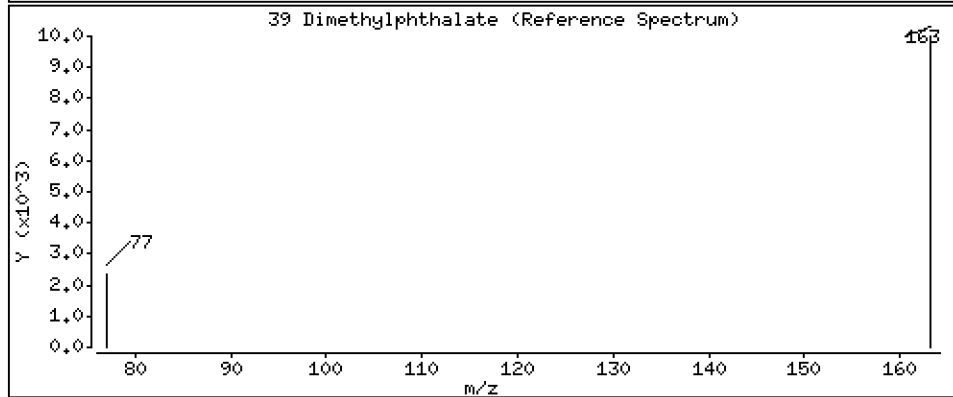
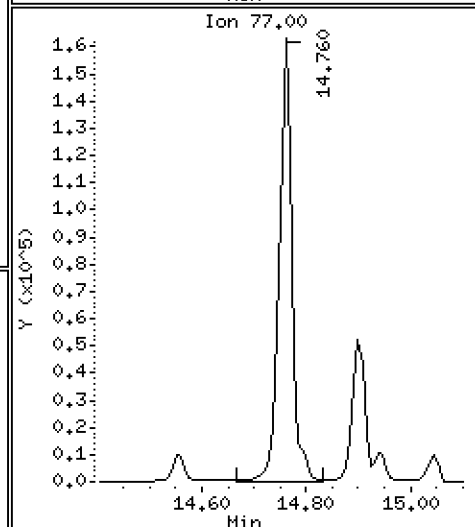
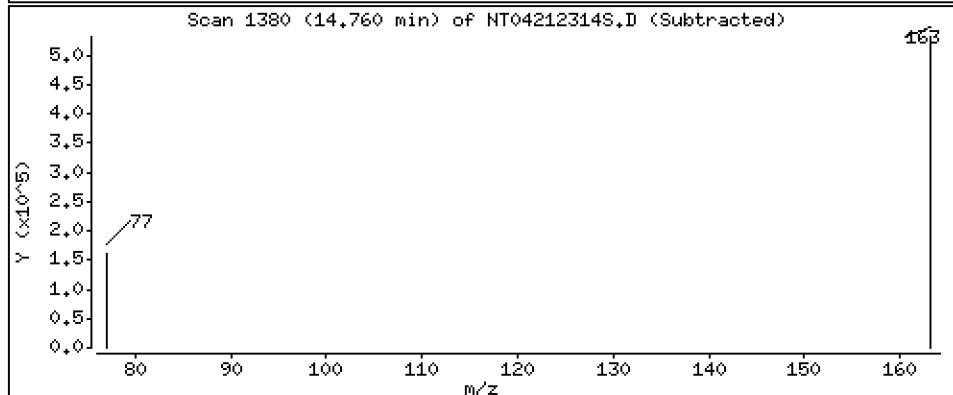
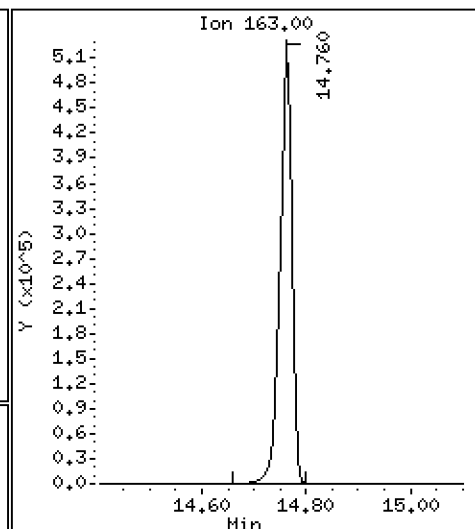
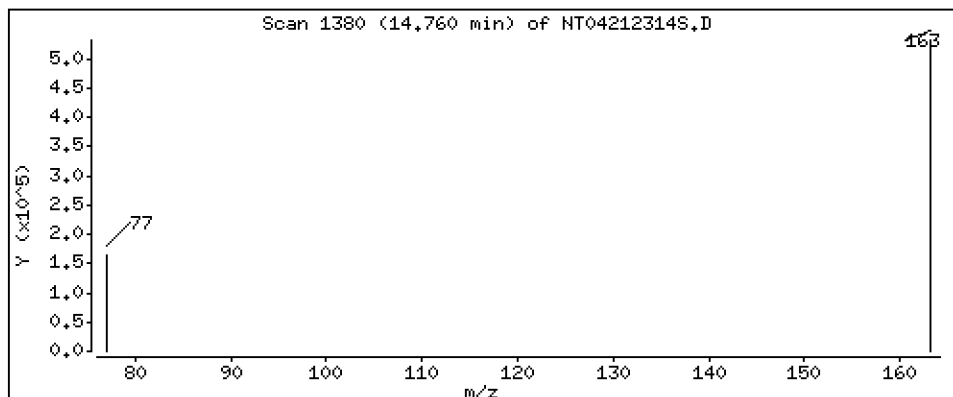
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,407 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

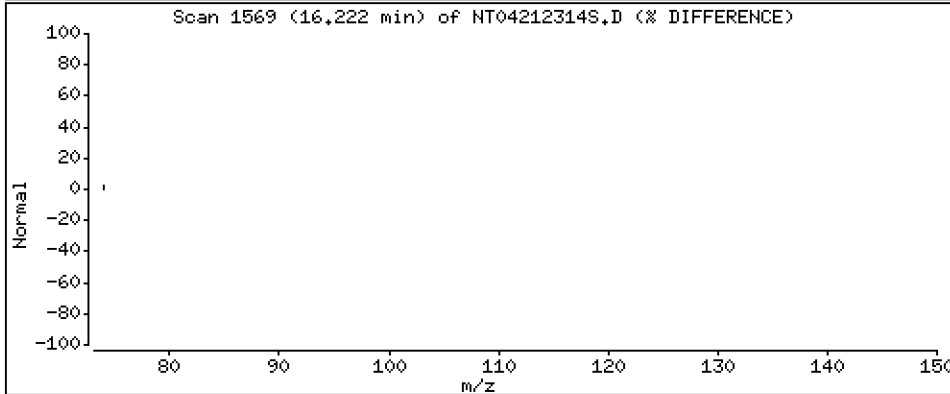
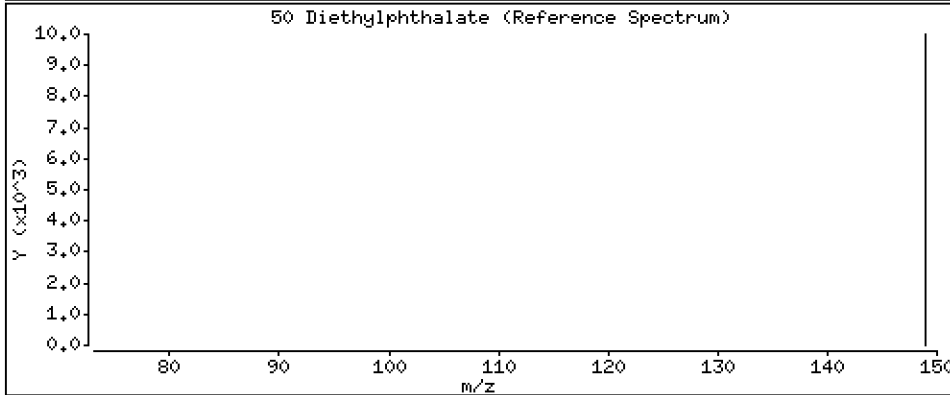
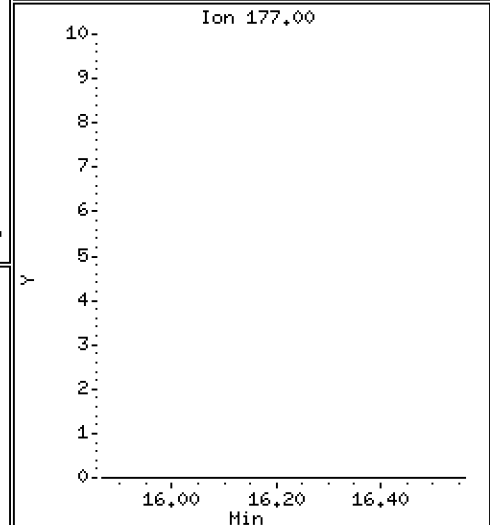
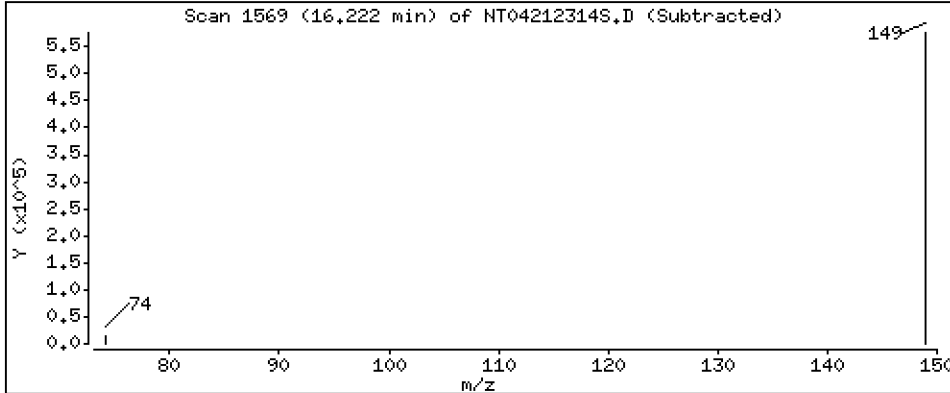
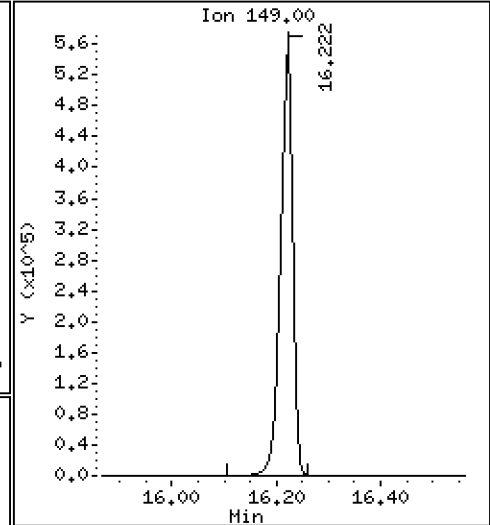
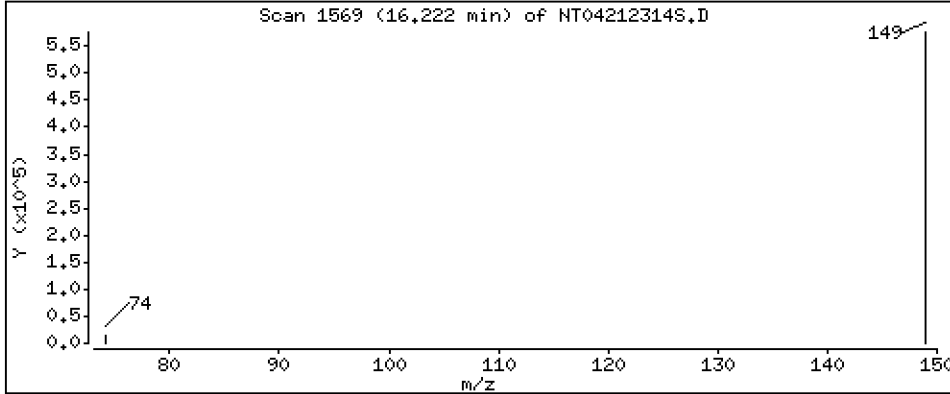
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,605 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

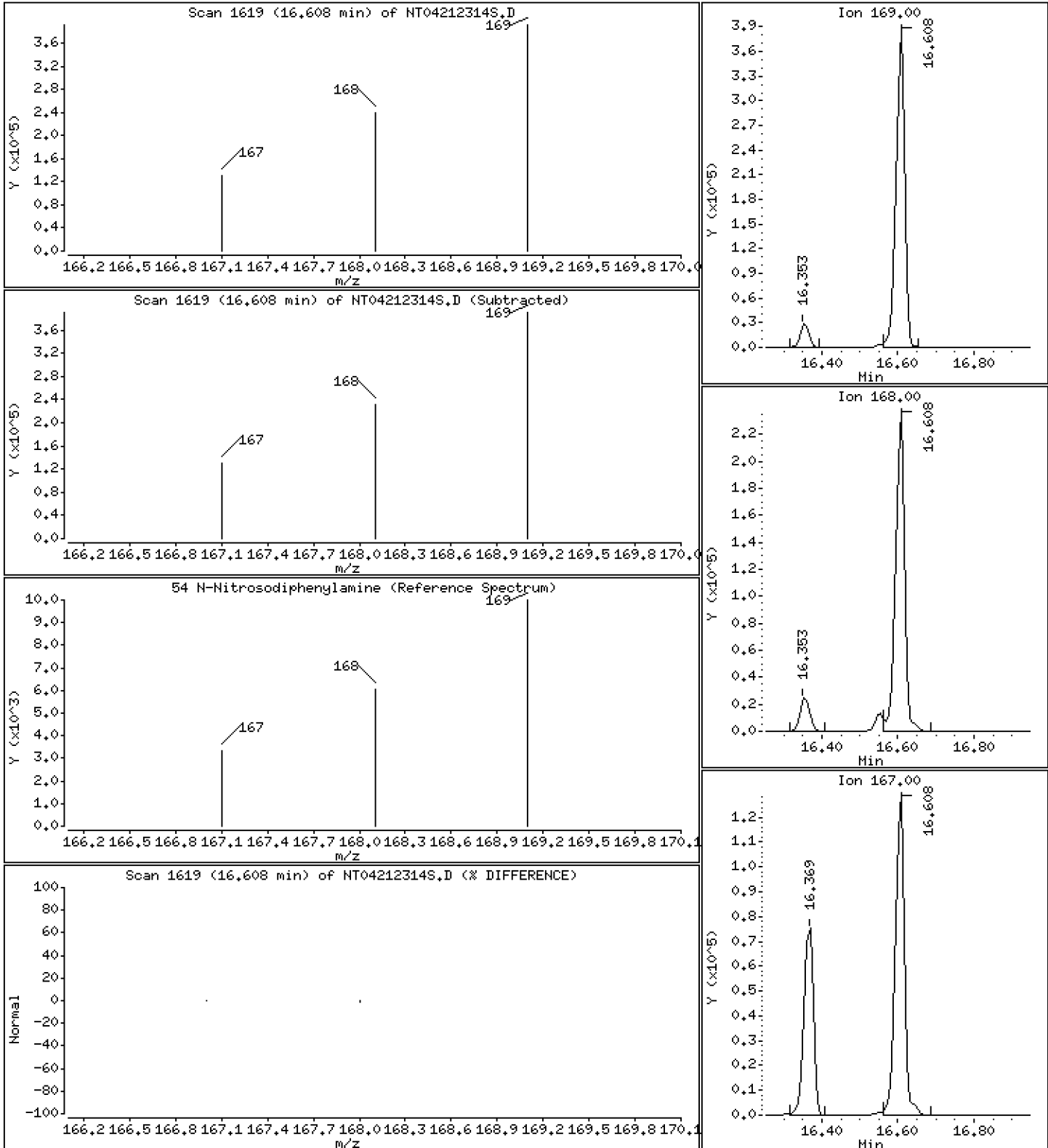
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,906 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

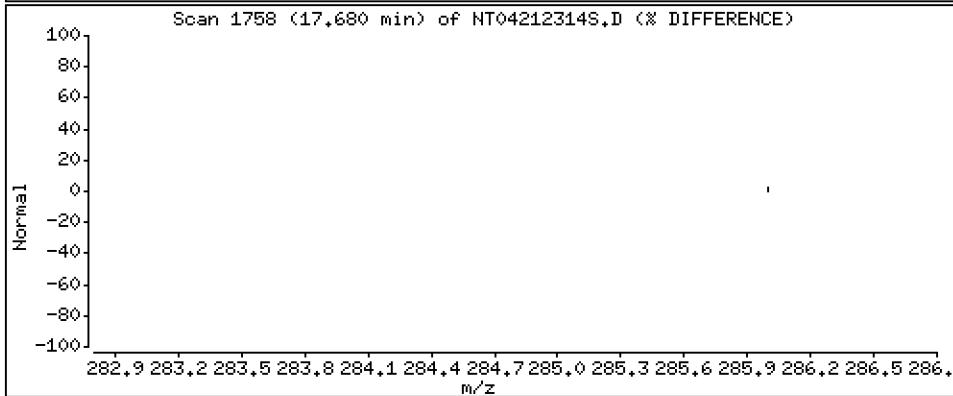
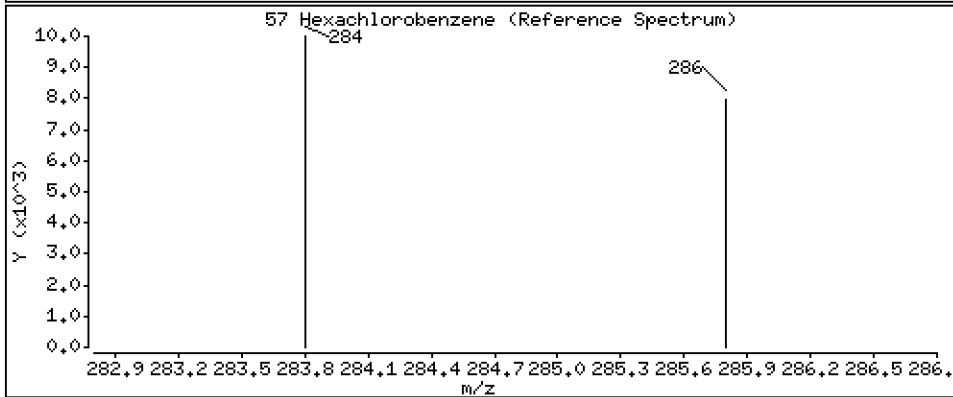
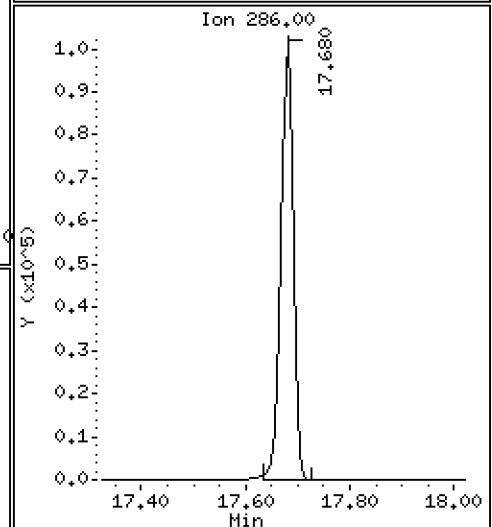
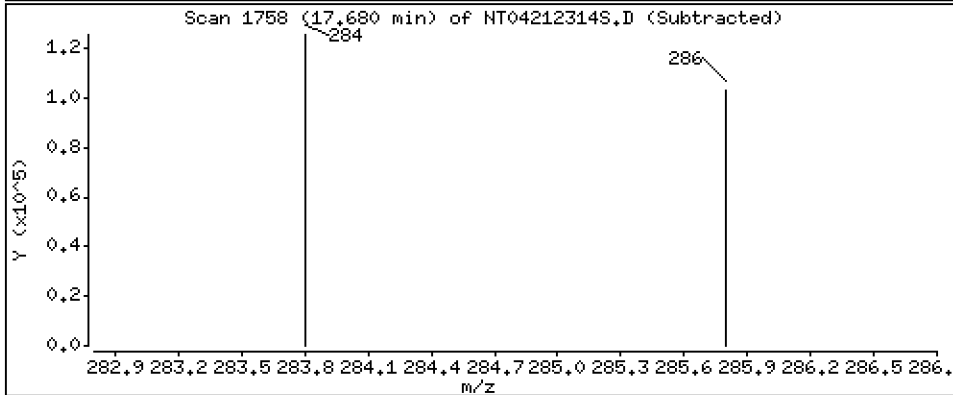
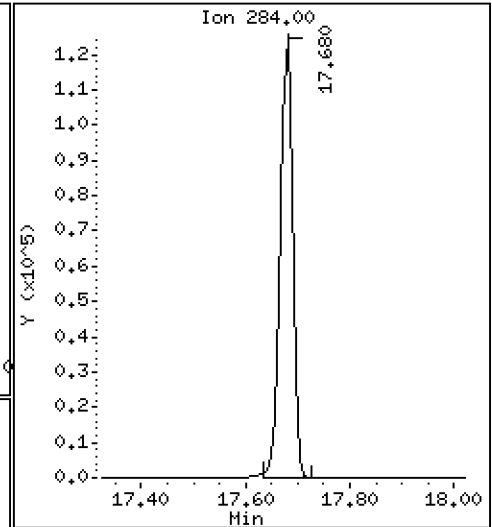
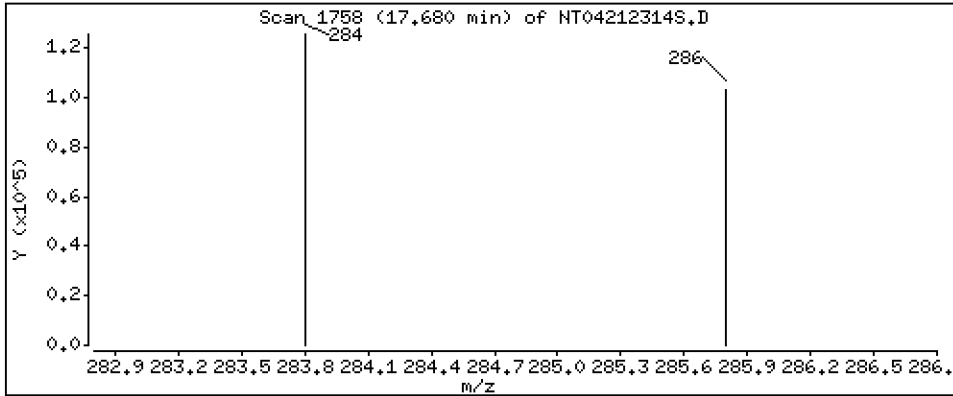
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,294 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

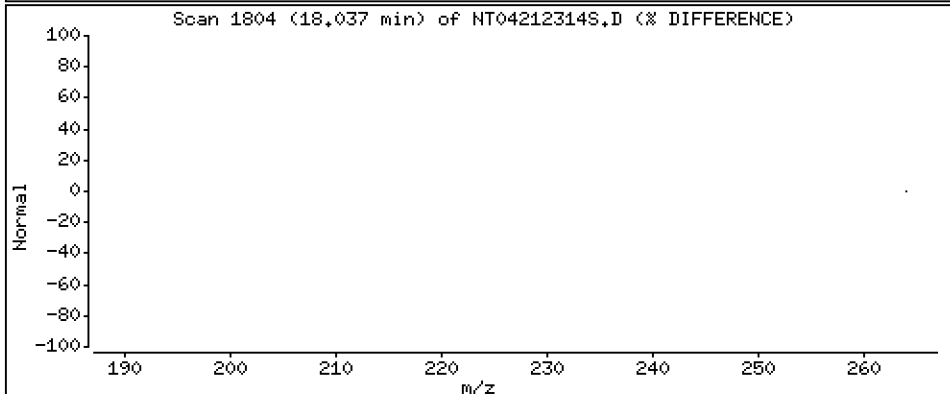
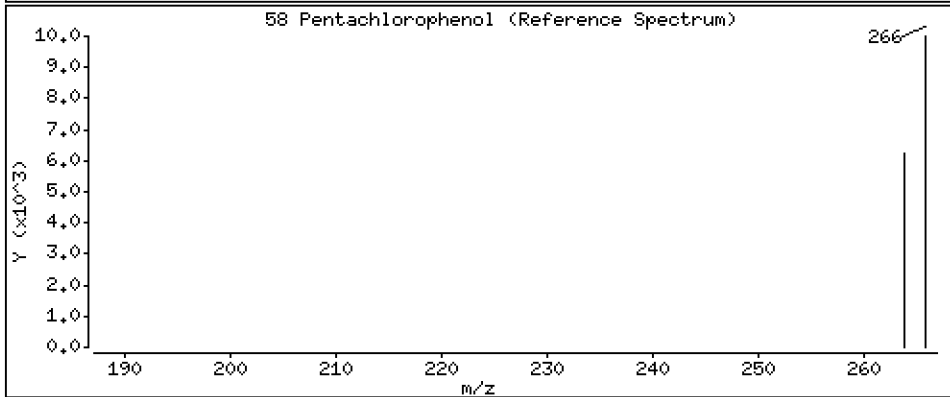
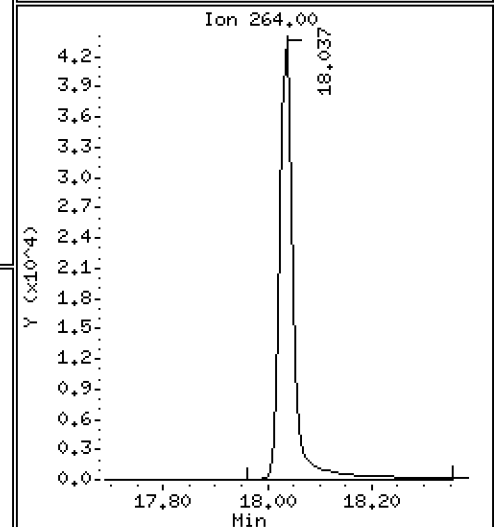
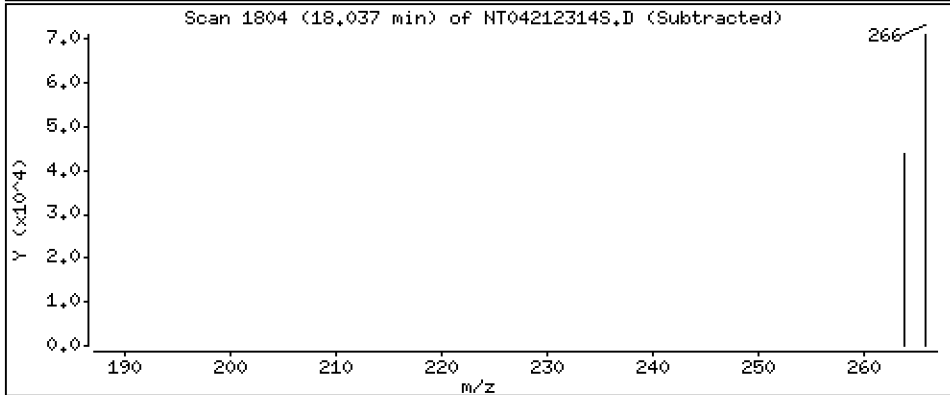
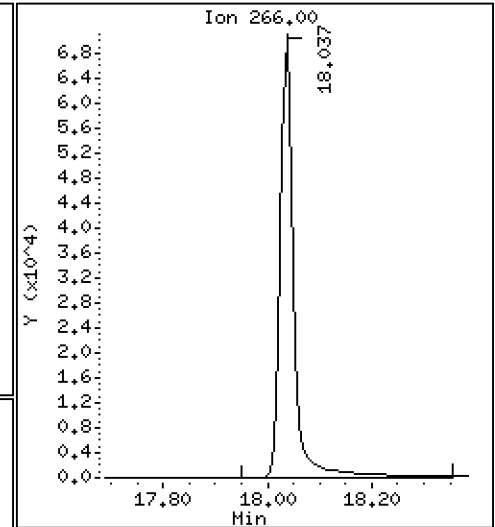
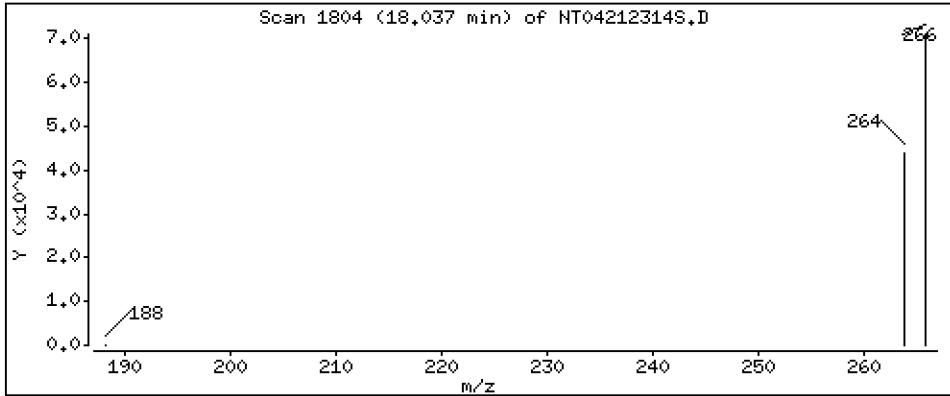
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,972 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

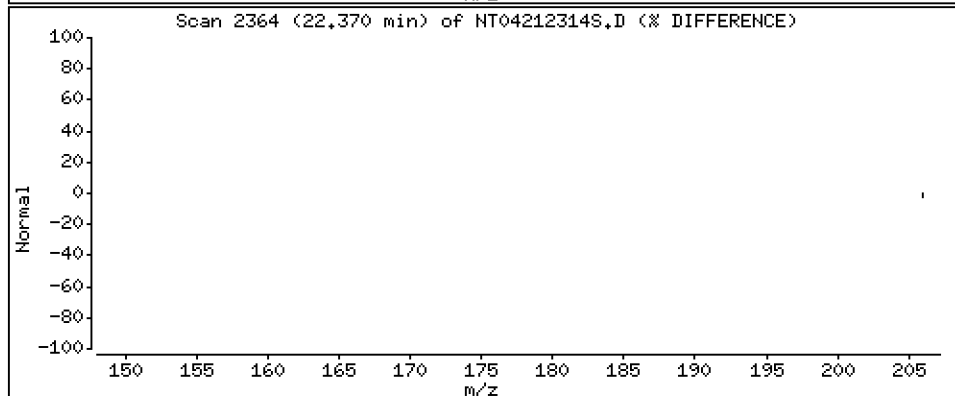
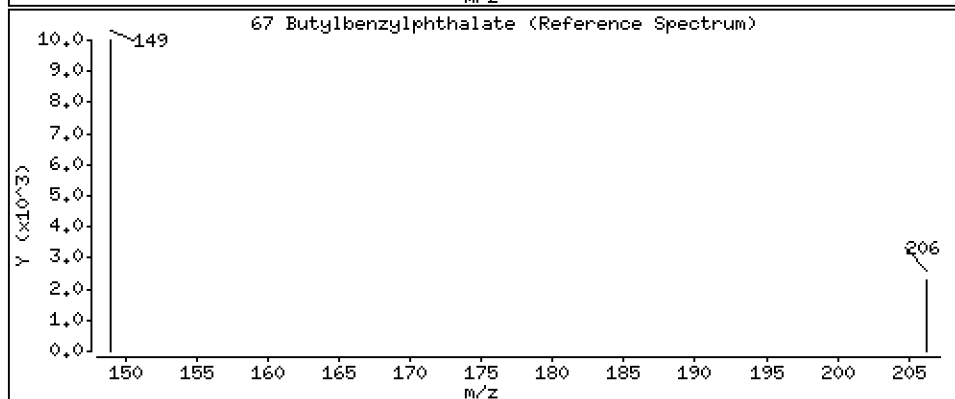
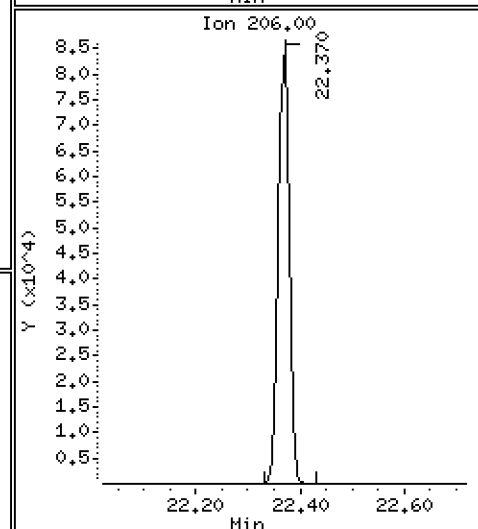
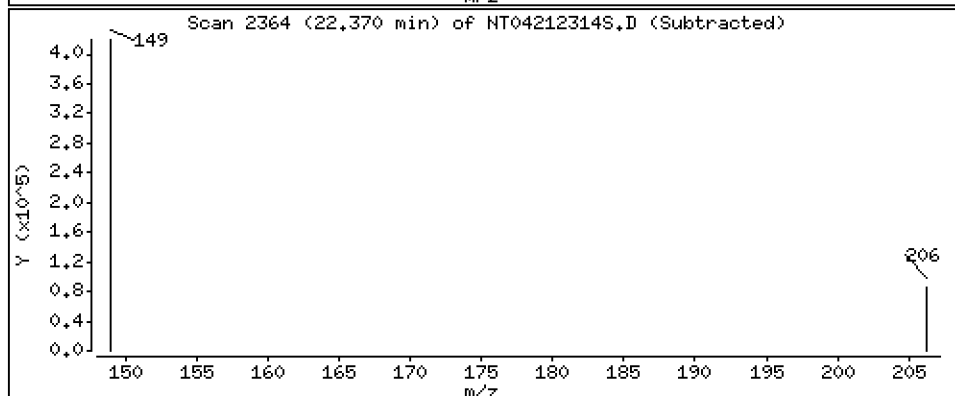
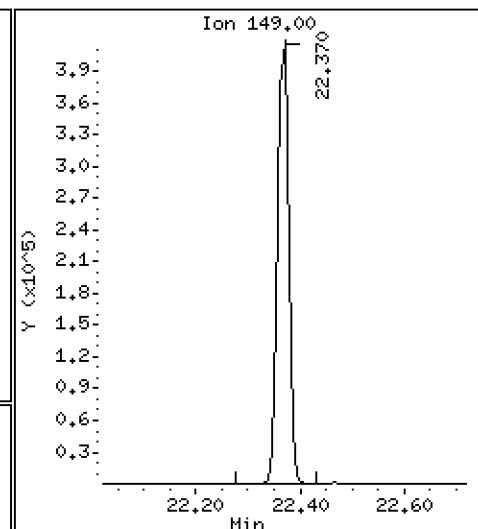
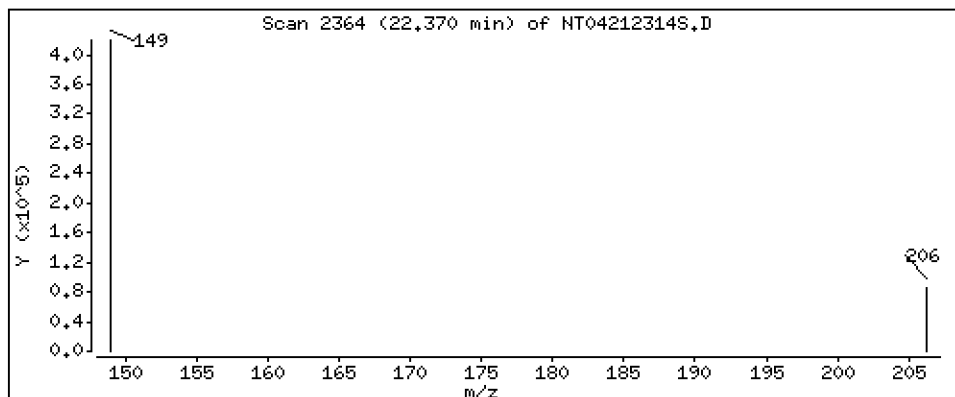
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,695 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

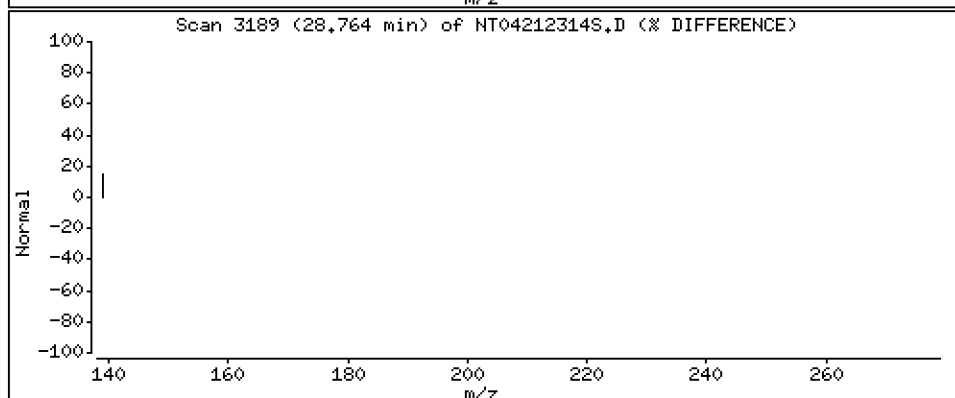
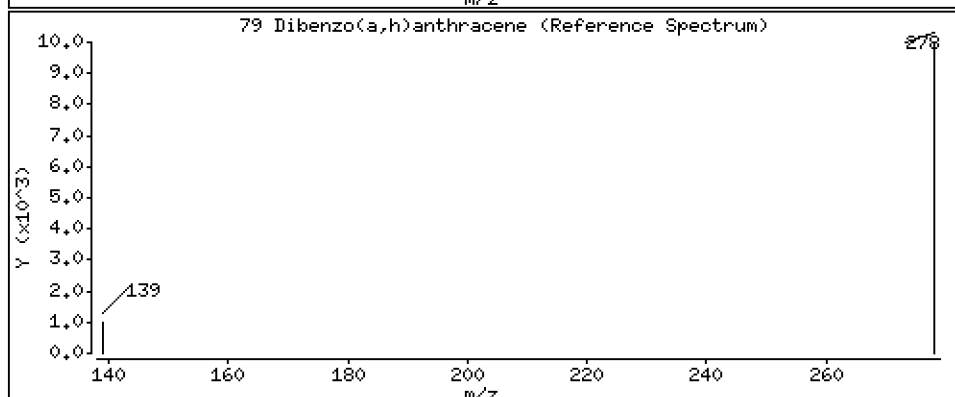
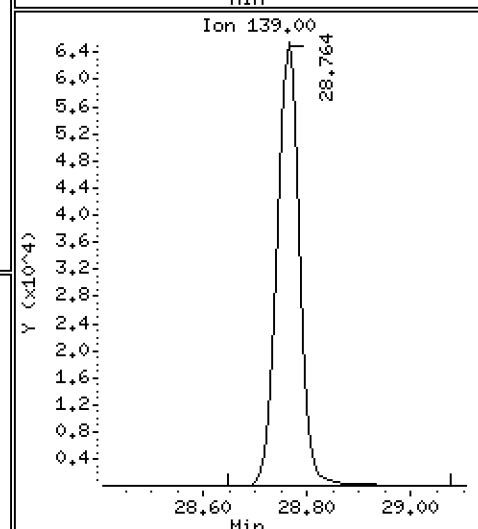
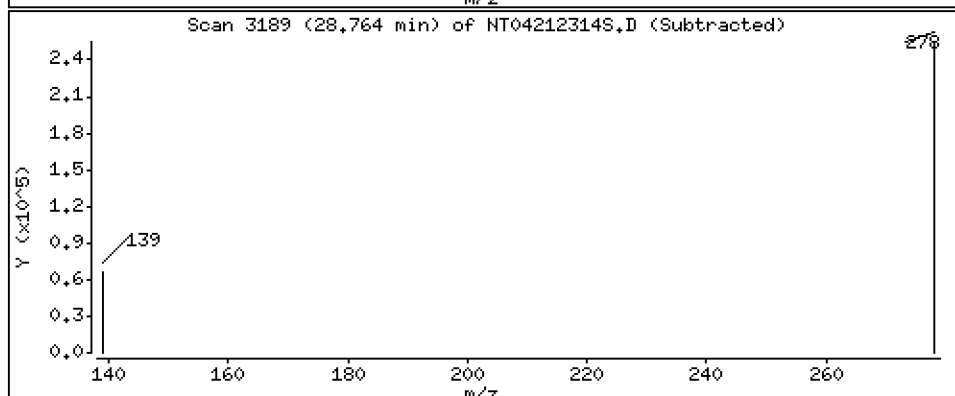
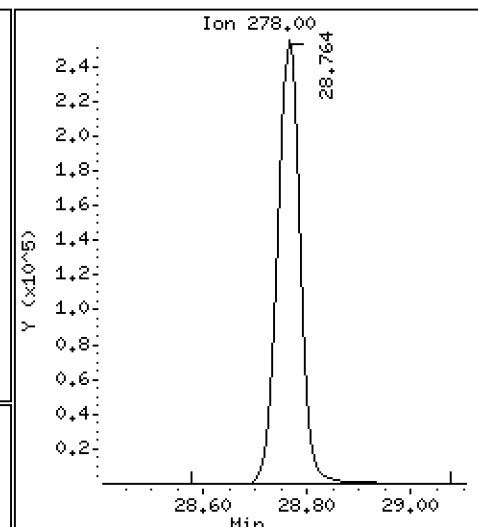
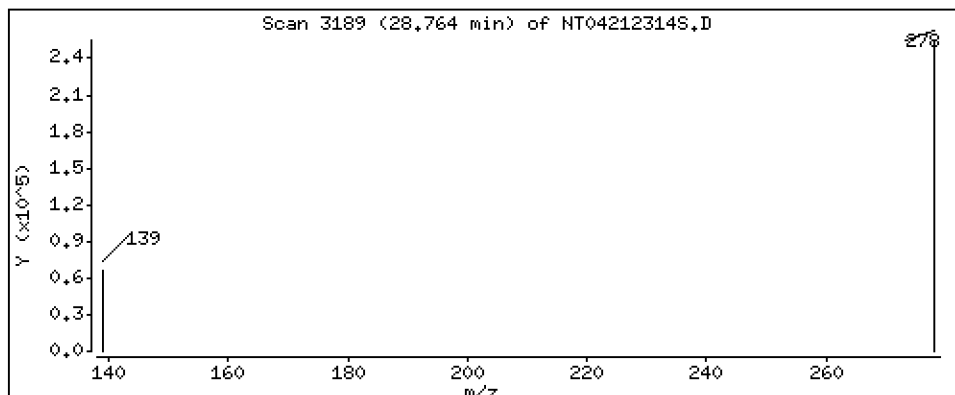
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,390 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

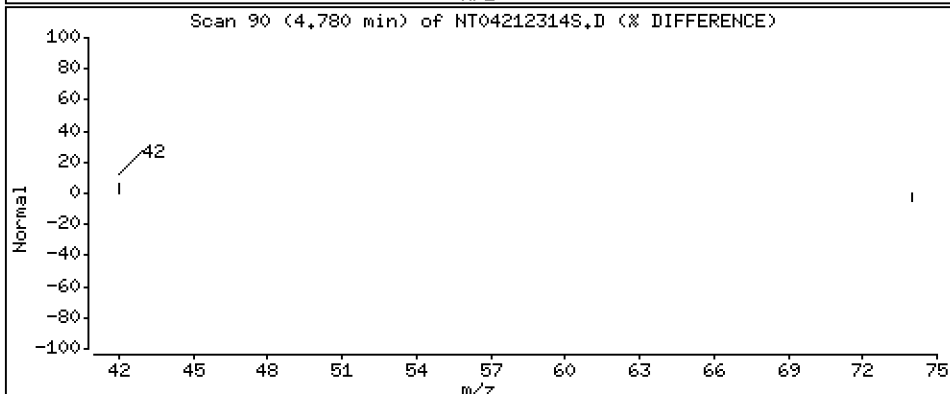
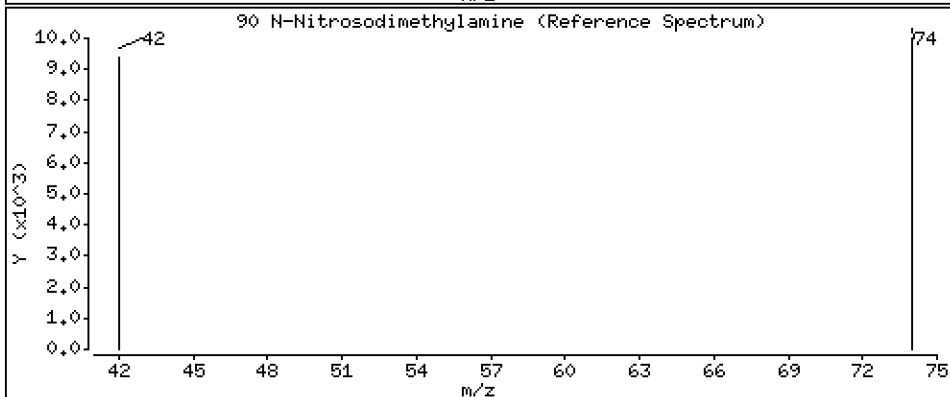
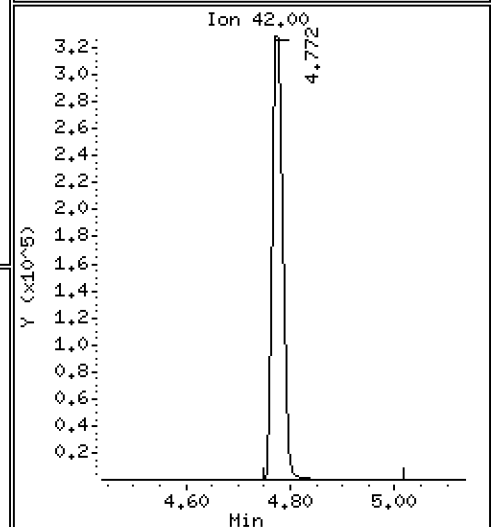
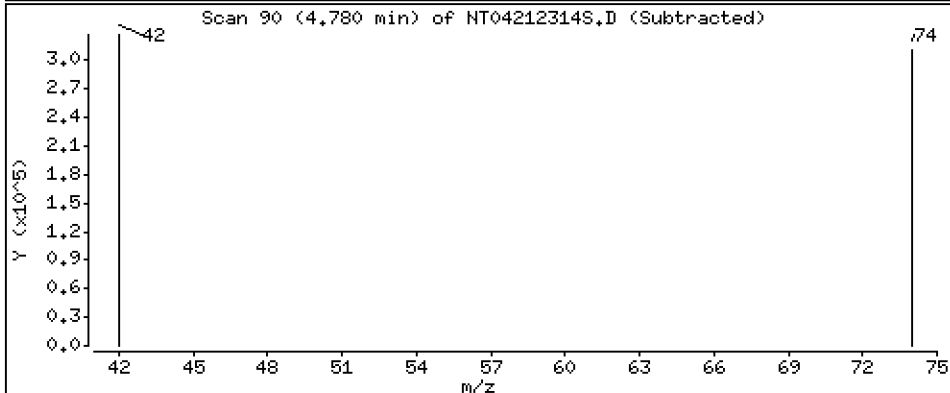
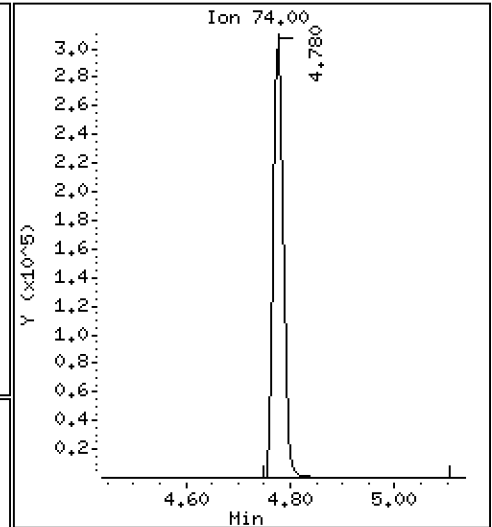
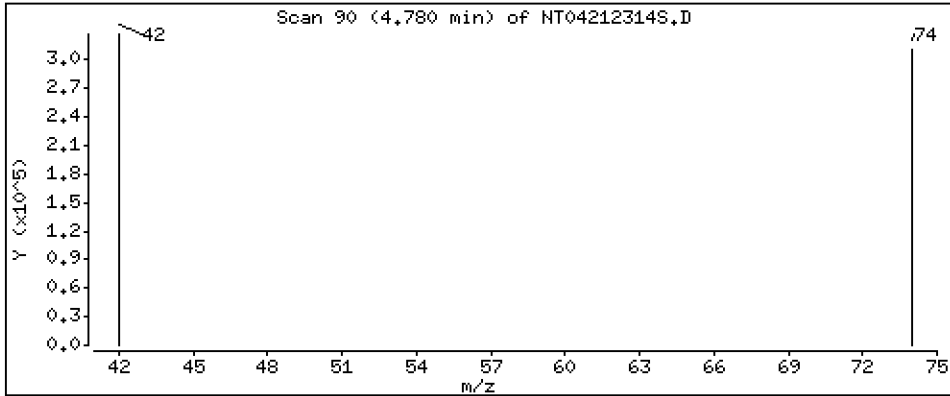
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 4.834 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212314S.D  
 Lab Smp Id: SEQ-SCV1  
 Inj Date : 21-APR-2023 21:16 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SCV1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 11  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		Compound Not Detected.					
3 Phenol	94		8.487	8.479	(0.931)	677736	4.30440	4.304
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	534931	4.47933	4.479
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	281794	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	519596	4.59857	4.599
11 Benzyl alcohol	79		9.385	9.385	(1.030)	477137	4.91535	4.915
12 1,2-Dichlorobenzene	146		9.501	9.501	(1.043)	511191	4.53472	4.535
13 2-Methylphenol	108		9.610	9.603	(1.055)	413068	4.20738	4.207 (H)
15 4-Methylphenol	108		9.882	9.874	(1.084)	459873	4.53821	4.538 (H)
16 N-Nitroso-di-n-propylamine	70		9.952	9.944	(1.092)	437412	4.70737	4.707
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	385878	3.68370	3.684
24 Benzoic acid	105		11.123	11.054	(0.957)	614713	8.19472	8.195
26 1,2,4-Trichlorobenzene	180		11.534	11.526	(0.993)	375647	4.67113	4.671
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1095304	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	203587	4.57443	4.574
39 Dimethylphthalate	163		14.760	14.752	(0.968)	823050	4.40671	4.407
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	511599	4.00000	
50 Diethylphthalate	149		16.222	16.214	(1.063)	879477	4.60482	4.605
54 N-Nitrosodiphenylamine	169		16.607	16.600	(0.907)	587162	4.90642	4.906
57 Hexachlorobenzene	284		17.680	17.672	(0.966)	196168	4.29450	4.294
58 Pentachlorophenol	266		18.036	18.037	(0.985)	120655	3.97208	3.972
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	855994	4.00000	
\$ 66 Terphenyl-d14	244		Compound Not Detected.					
67 Butylbenzylphthalate	149		22.370	22.370	(0.958)	584126	4.69452	4.695
* 69 Chrysene-d12	240		23.361	23.353	(1.000)	548116	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	575271	4.00000	
79 Dibenzo(a,h)anthracene	278		28.763	28.756	(1.105)	764599	4.39029	4.390
90 N-Nitrosodimethylamine	74		4.779	4.787	(0.524)	387451	4.83434	4.834

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212314S.D  
 Lab Smp Id: SEQ-SCV1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	281794	-10.21
27 Naphthalene-d8	1195091	597546	2390182	1095304	-8.35
42 Acenaphthene-d10	556977	278489	1113954	511599	-8.15
59 Phenanthrene-d10	941816	470908	1883632	855994	-9.11
69 Chrysene-d12	617803	308902	1235606	548116	-11.28
77 Perylene-d12	639373	319687	1278746	575271	-10.03

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.36	0.03
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212314S.D

Lab ID: SEQ-SCV1

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 21:16

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

\*\* FIRST SURROGATE NOT FOUND. ICAL Check not performed \*\*

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.957	0.951	0.0060	Benzoic acid

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



**SECOND-SOURCE  
CALIBRATION VERIFICATION**

**EPA 8270E-SIM**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GD00063

**Laboratory ID:** SLD0358-SCV1

**Sequence:** SLD0358

**Standard ID:** K010066

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
1,4-Dichlorobenzene	5.0000	4.6	-8.0	20.00
1,2-Dichlorobenzene	5.0000	4.5	-9.3	20.00
Benzyl Alcohol	5.0000	4.9	-1.7	20.00
Benzoic acid	10.000	8.2	-18.1	20.00
2,4-Dimethylphenol	5.0000	3.7	-26.3 *	20.00
1,2,4-Trichlorobenzene	5.0000	4.7	-6.6	20.00
N-Nitrosodiphenylamine	5.0000	4.9	-1.9	20.00
Pentachlorophenol	5.0000	4.0	-20.6 *	20.00
2-Fluorophenol	7.5000	0.00		
p-Terphenyl-d14	5.0000	0.00		

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212314S.D

Date : 21-APR-2023 21:16

Client ID:

Sample Info: SEQ-SCV1

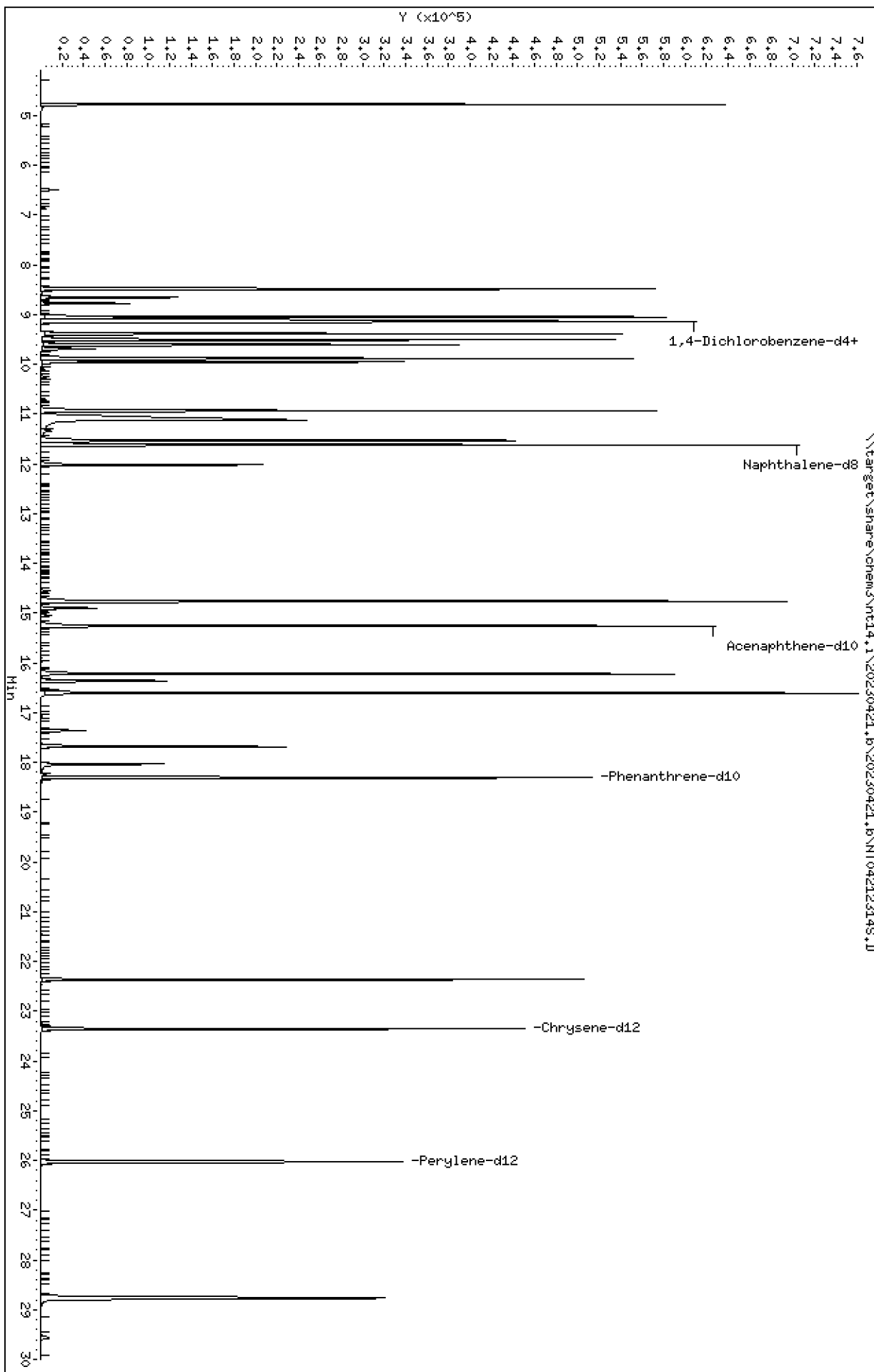
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

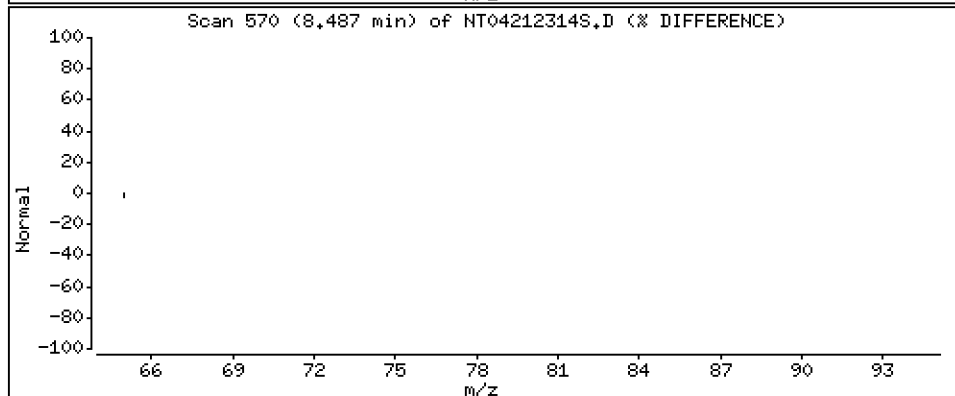
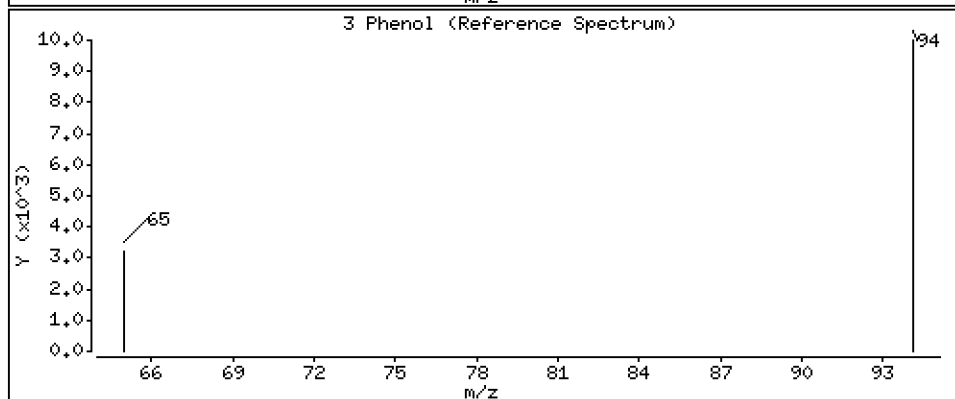
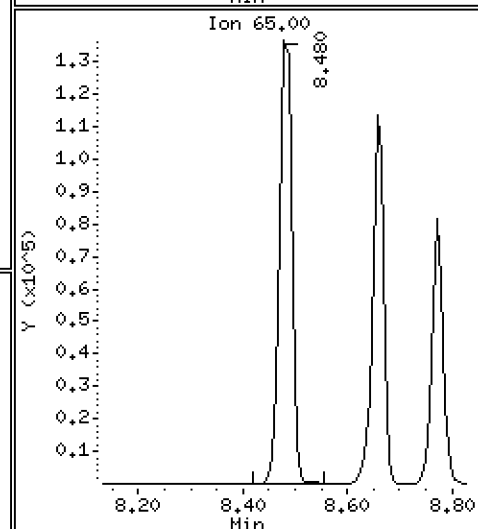
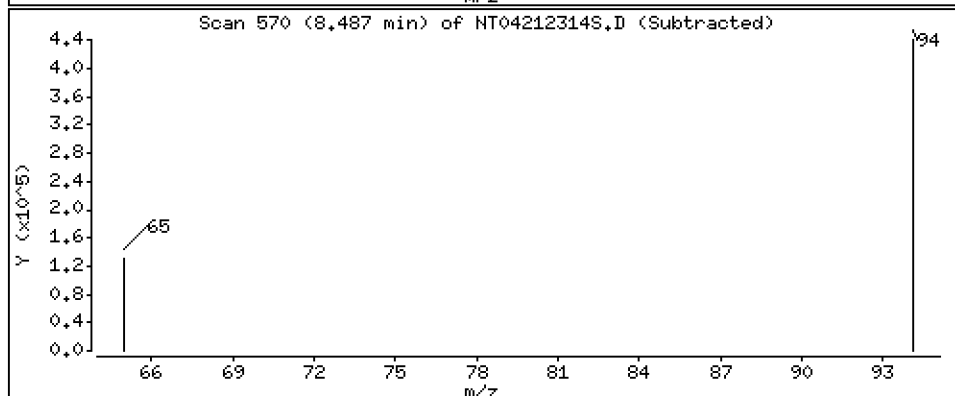
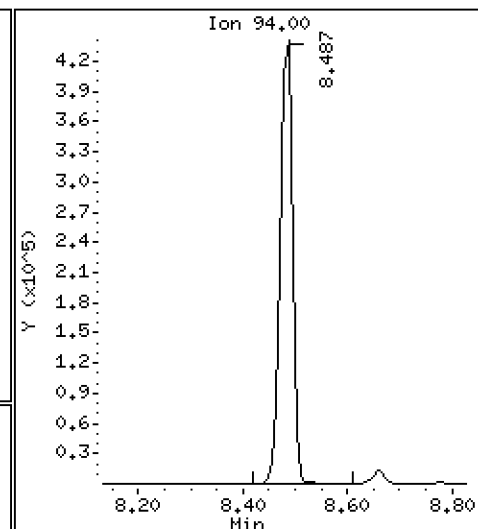
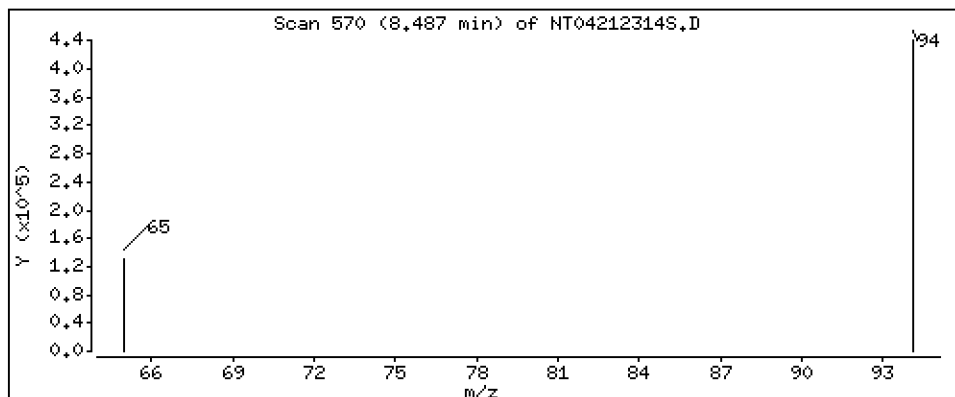
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,304 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

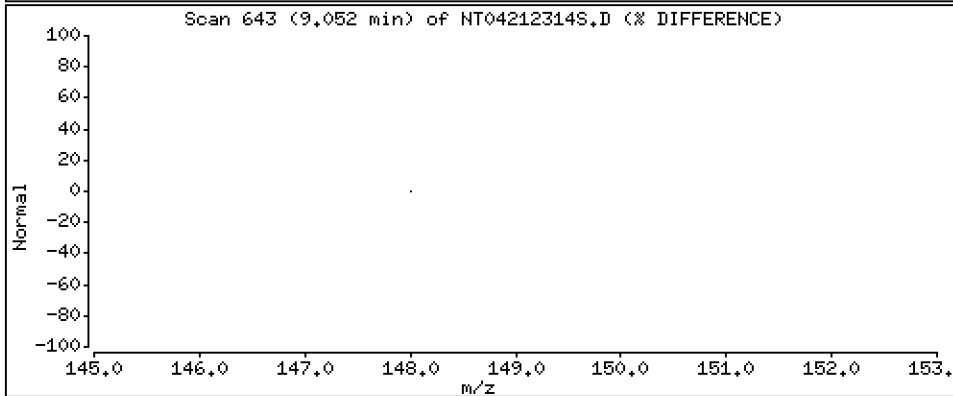
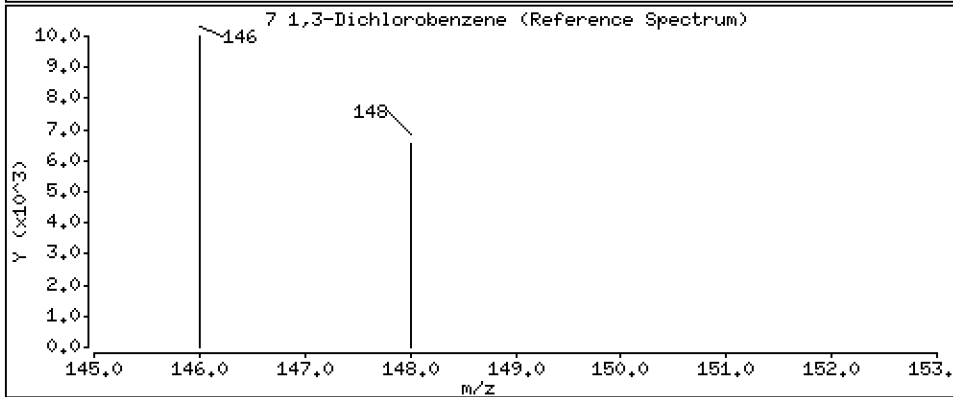
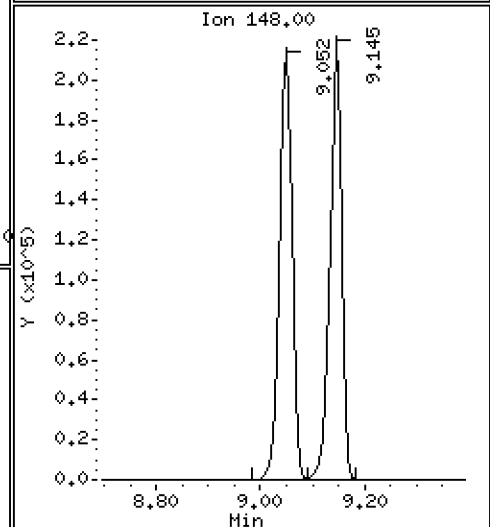
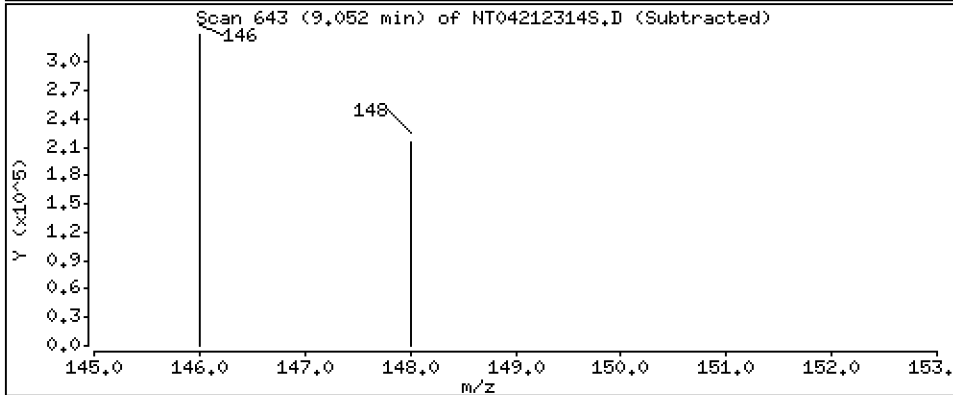
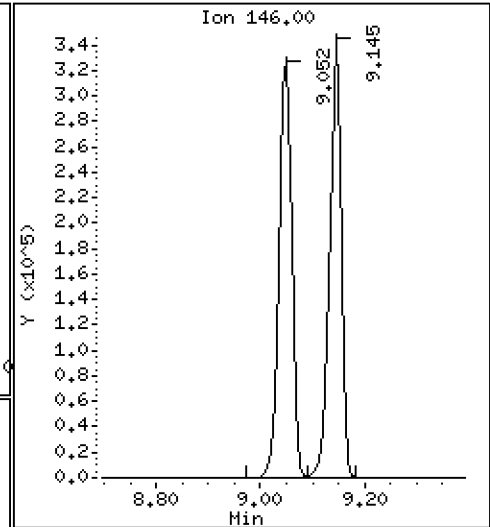
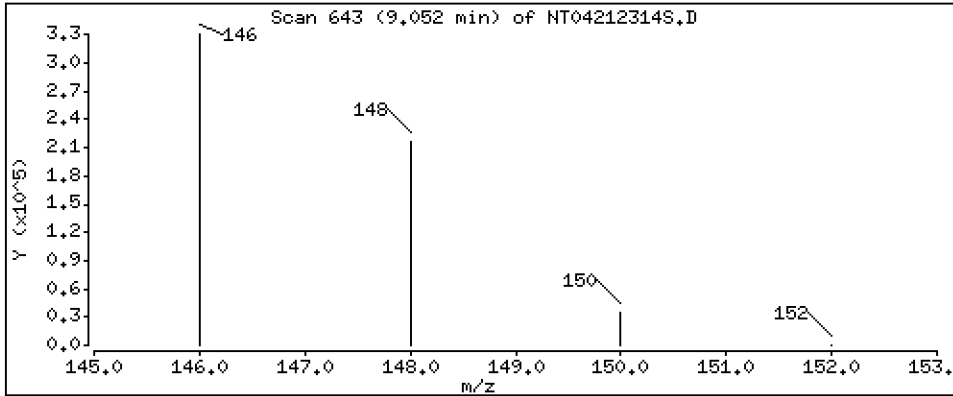
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 4,479 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

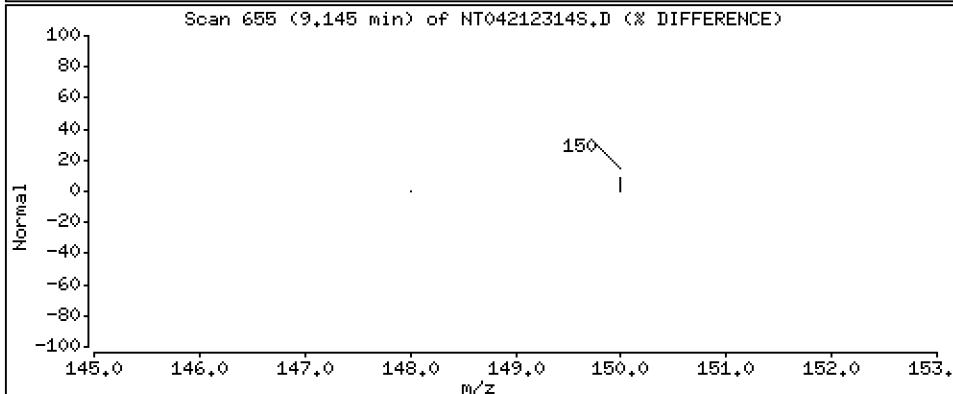
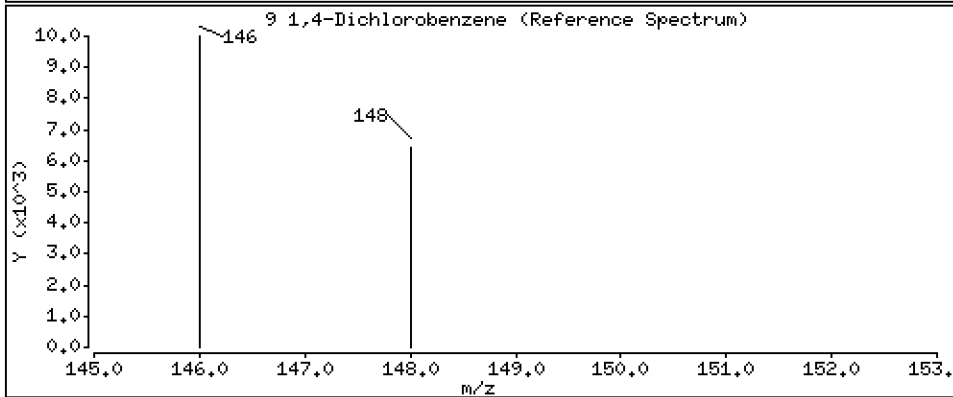
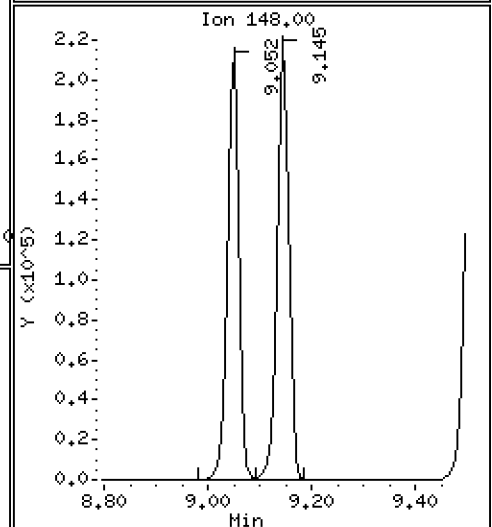
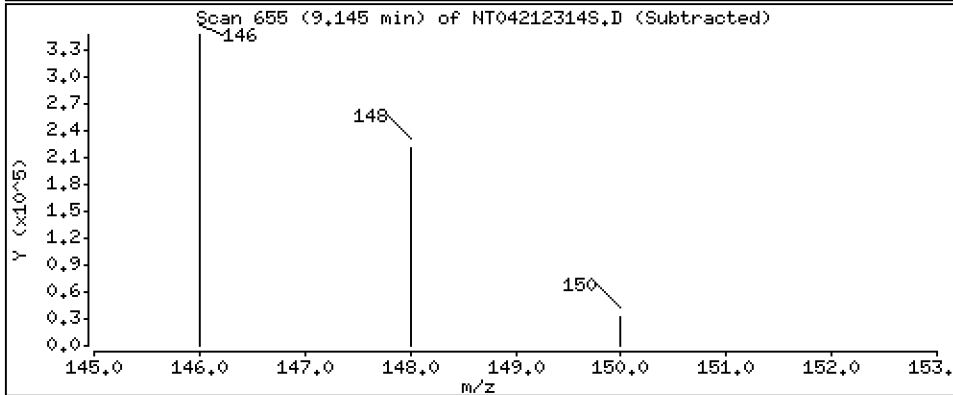
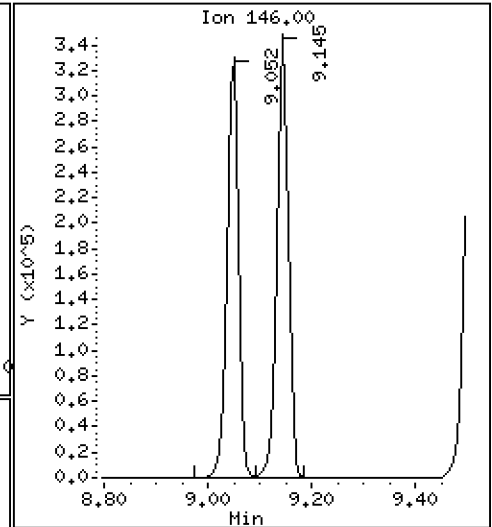
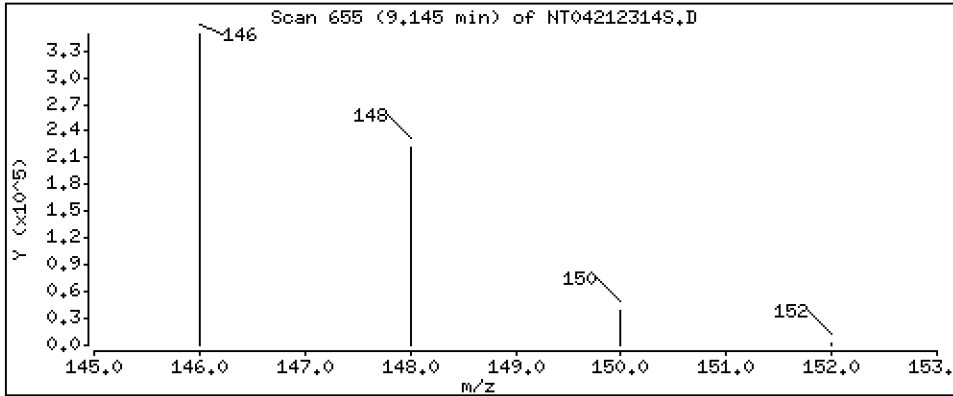
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 4,599 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

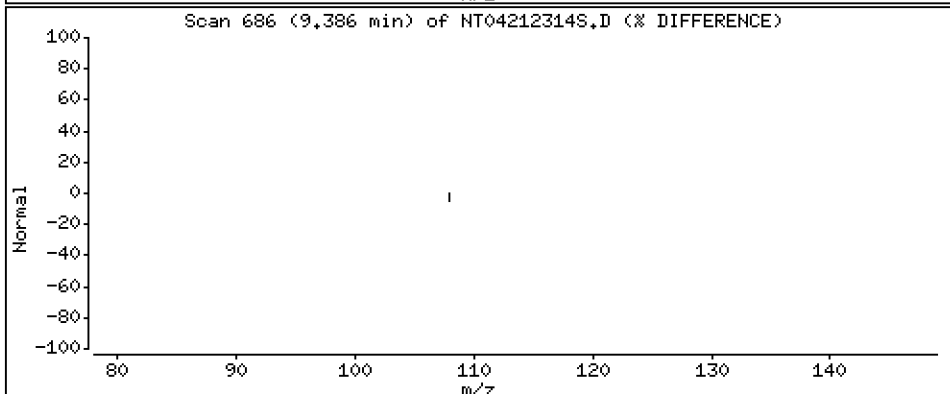
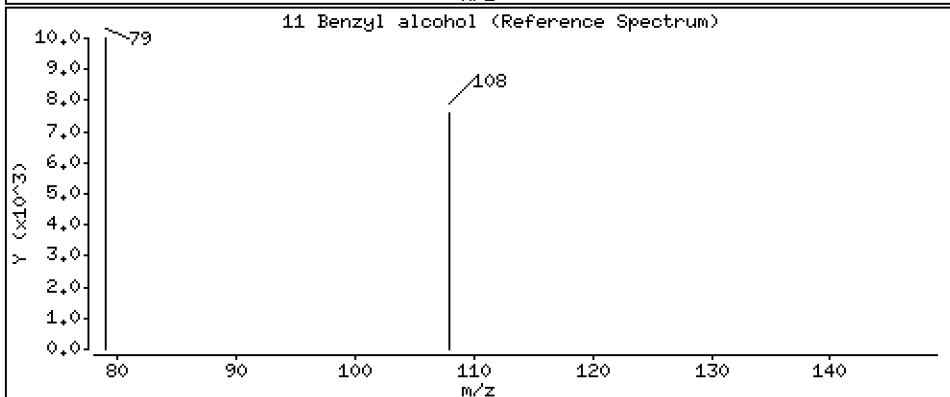
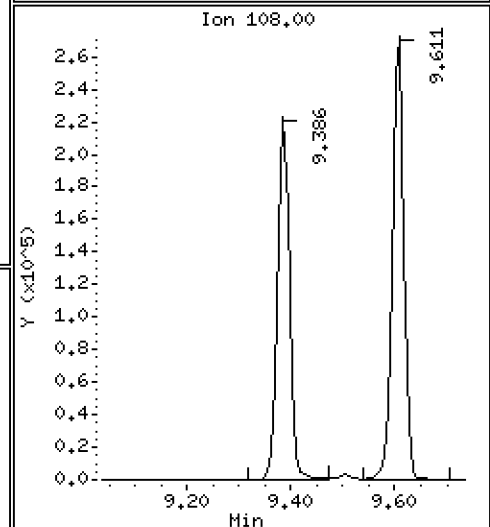
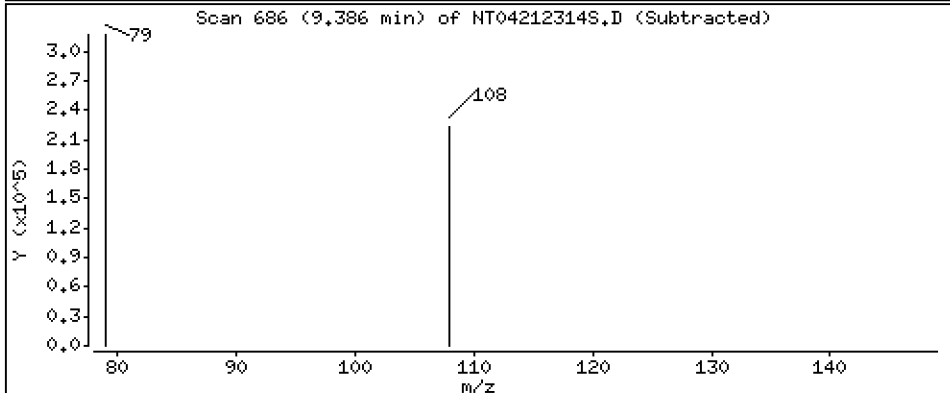
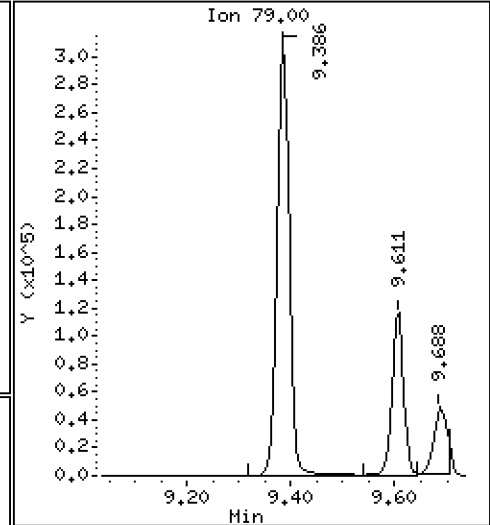
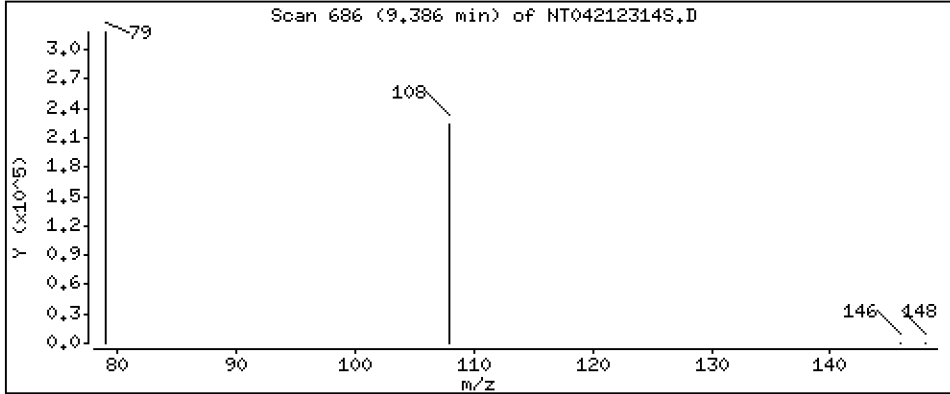
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.915 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

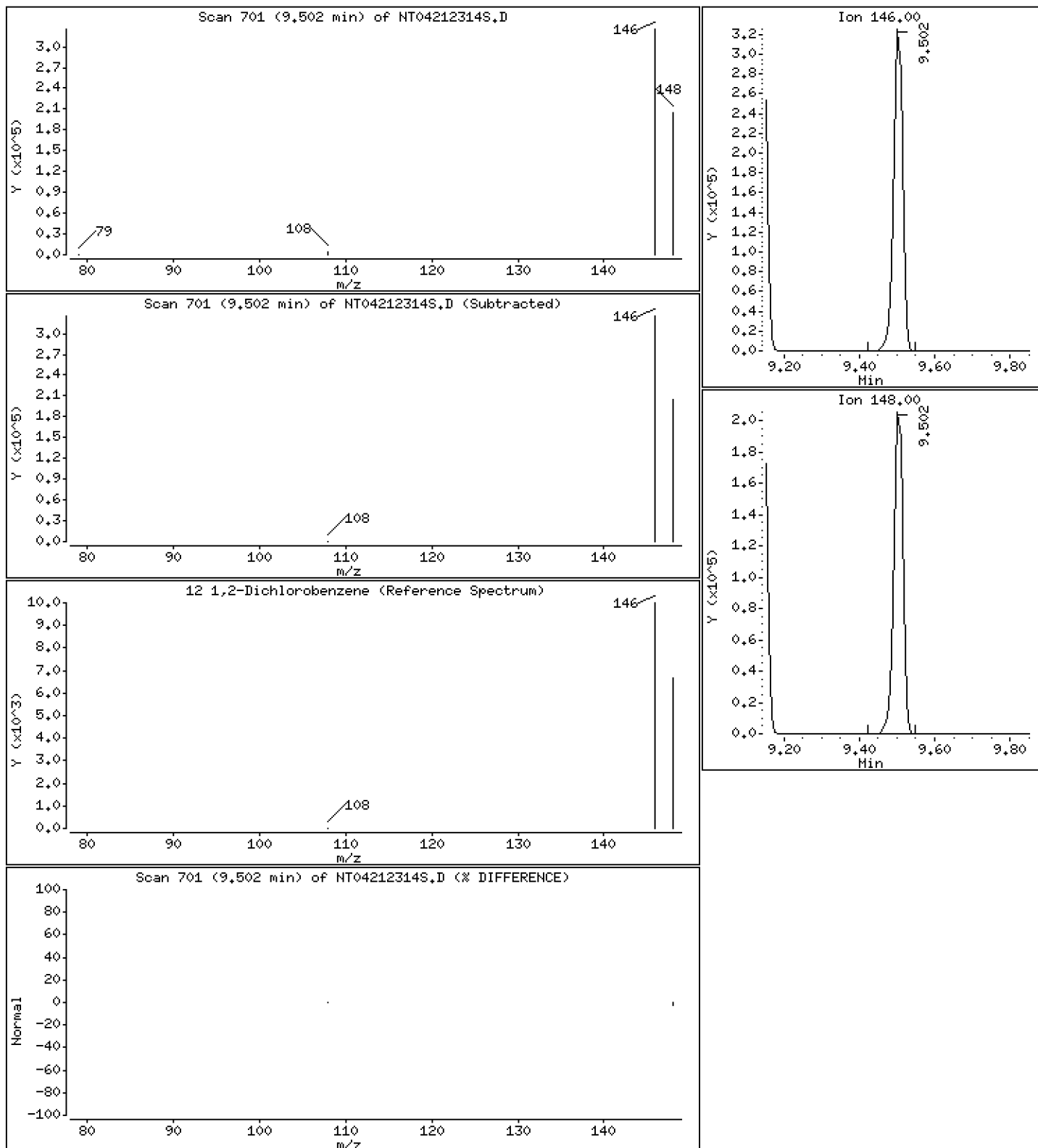
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.535 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

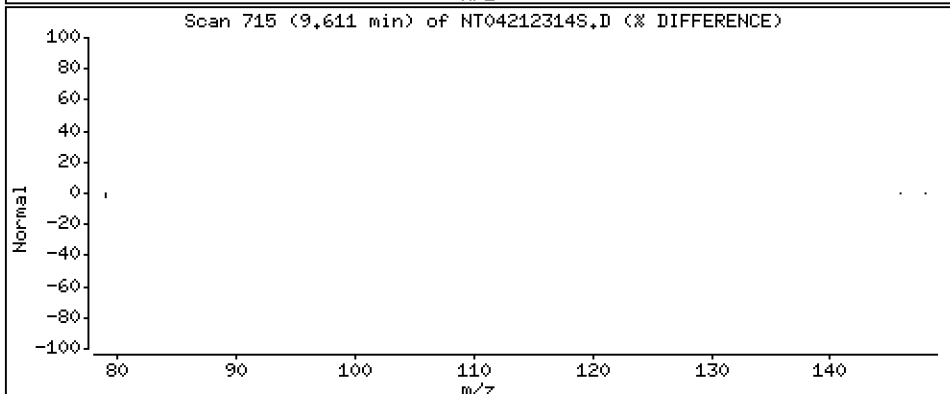
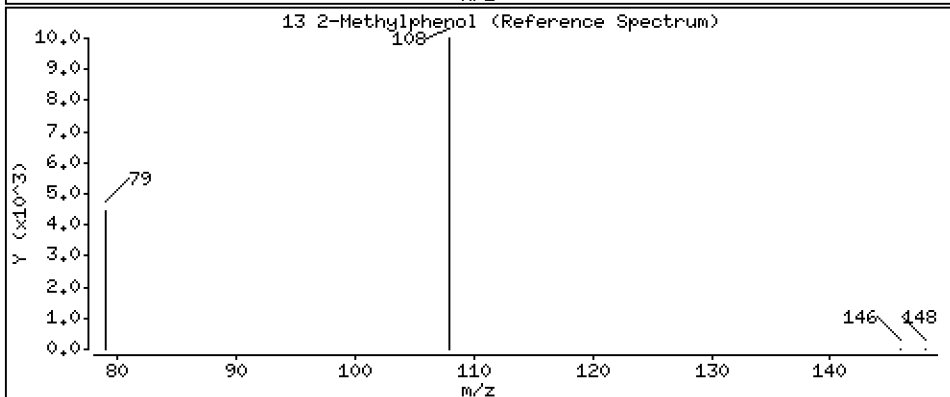
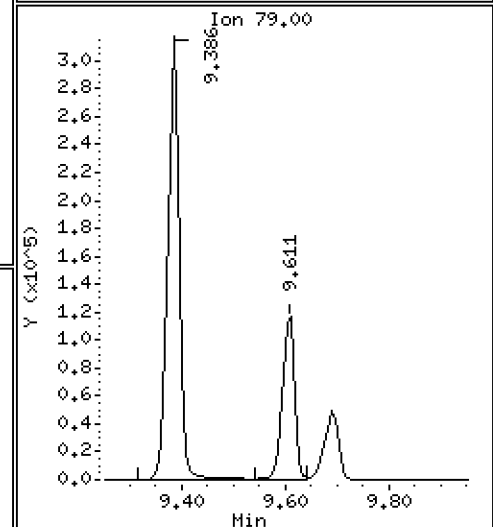
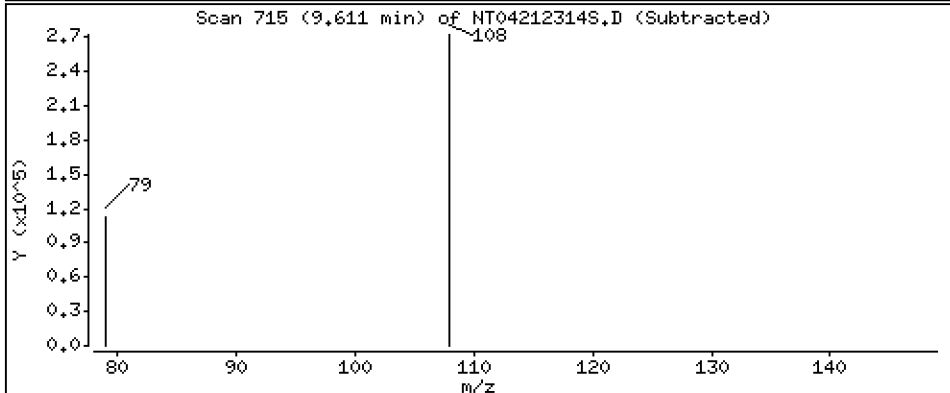
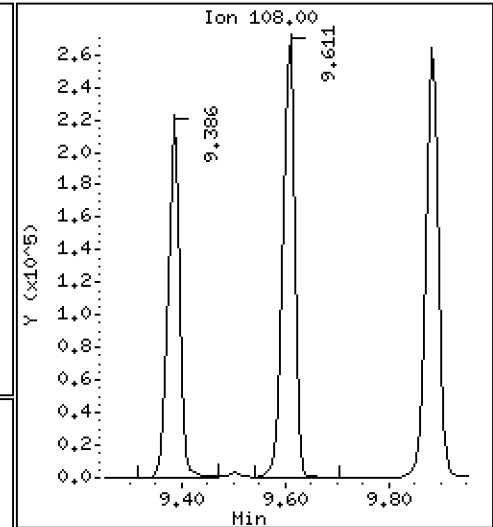
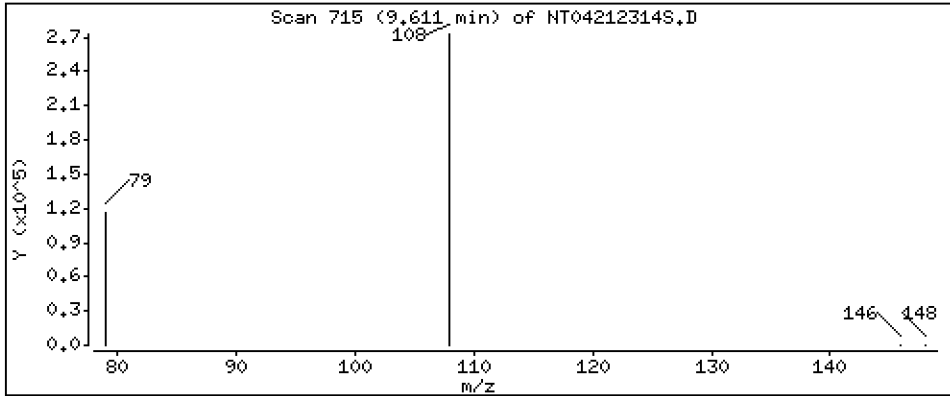
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

13 2-Methylphenol

Concentration: 4.207 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

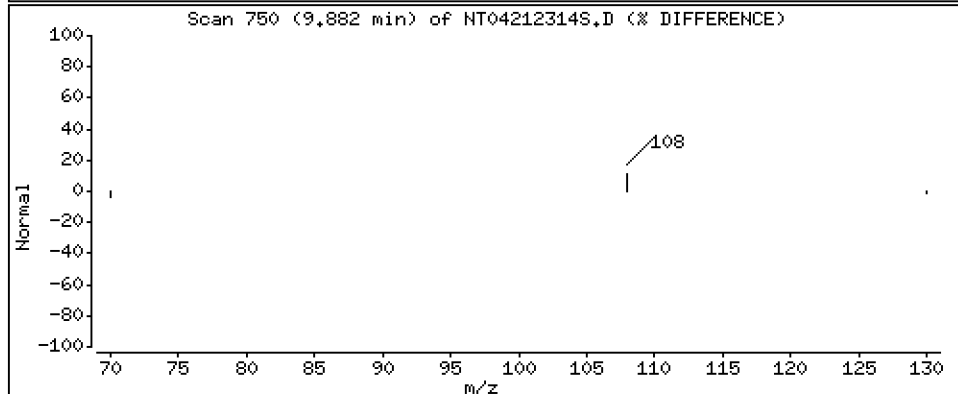
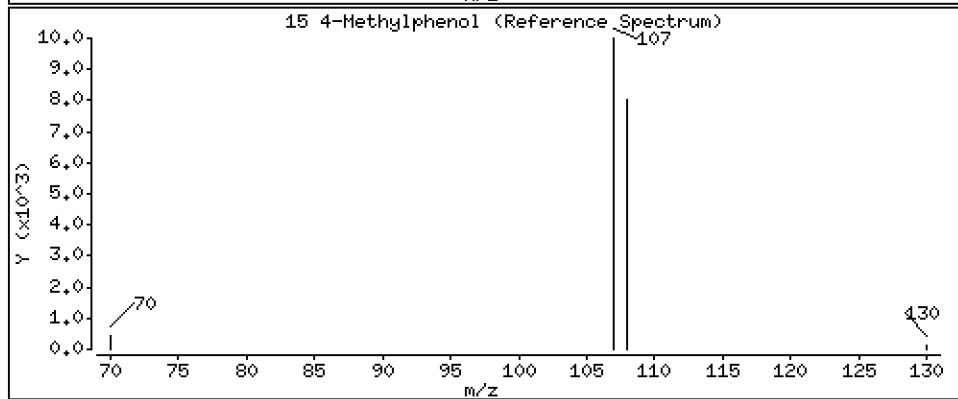
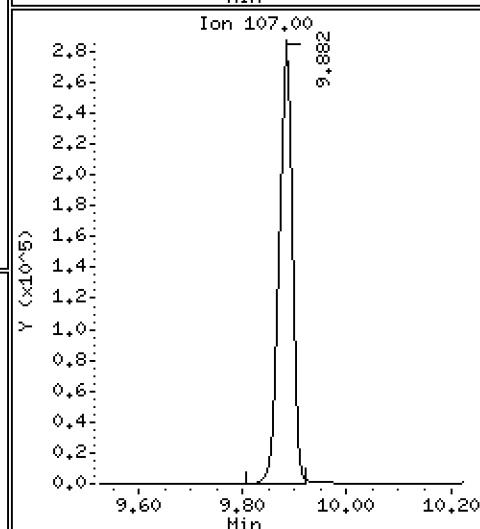
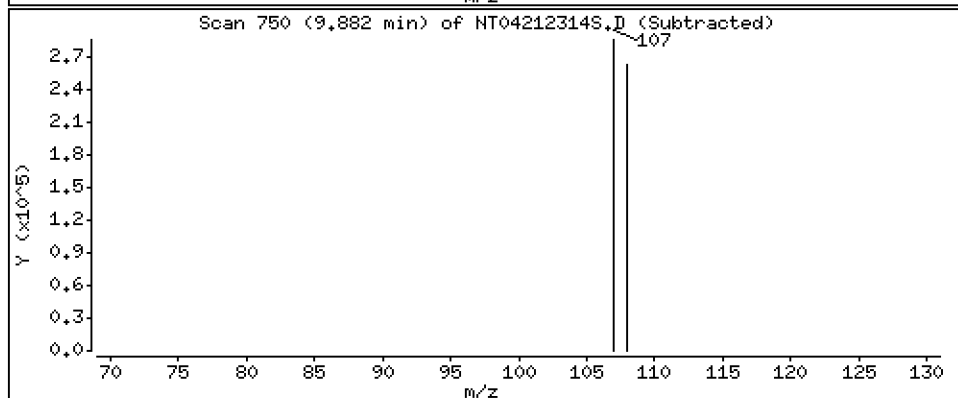
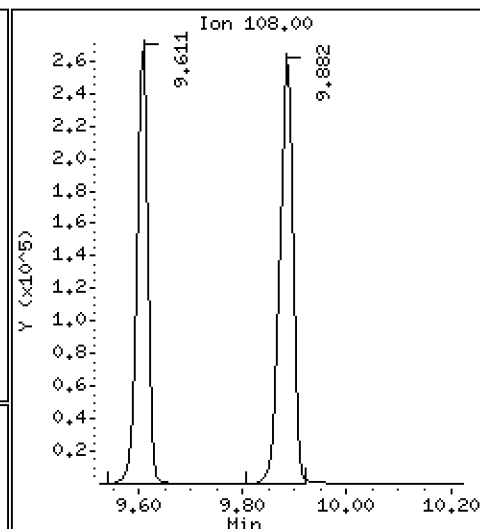
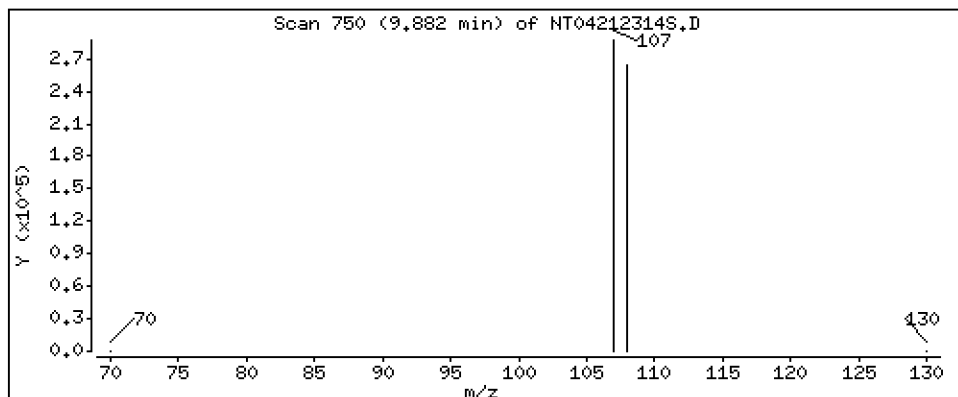
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

15 4-Methylphenol

Concentration: 4.538 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

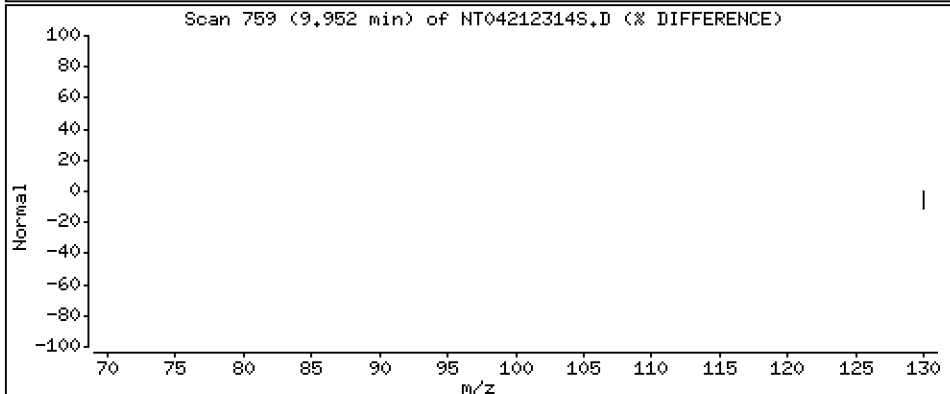
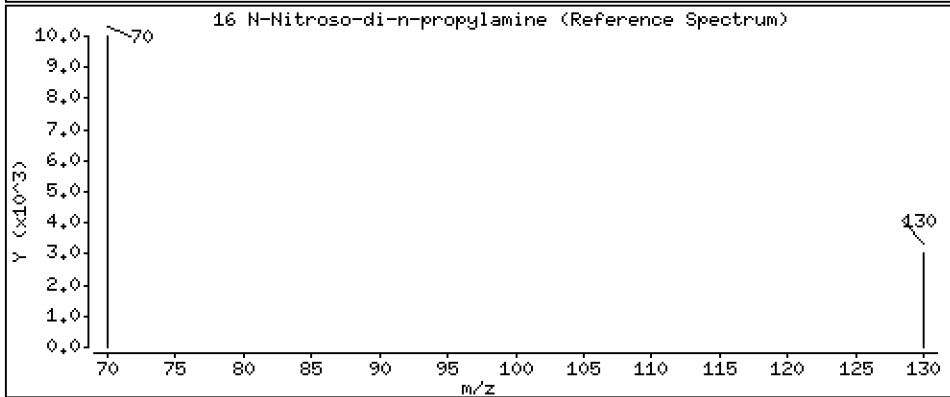
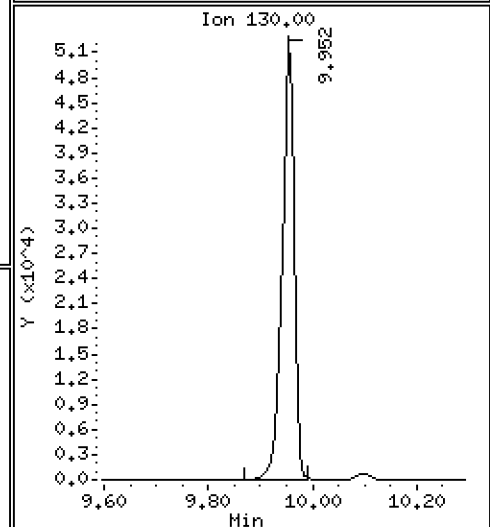
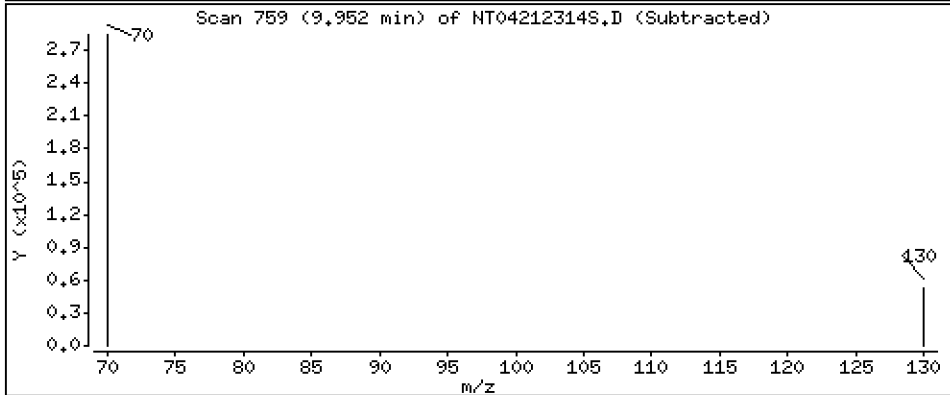
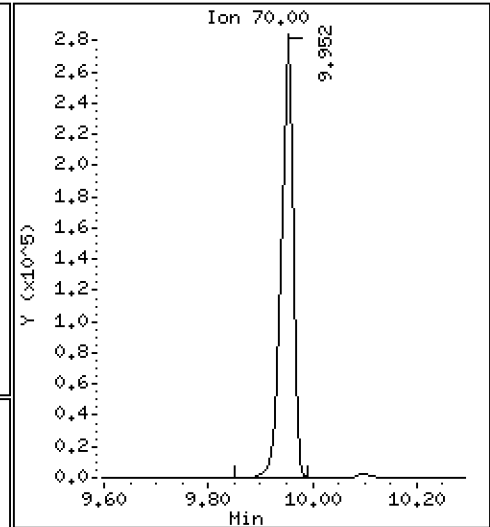
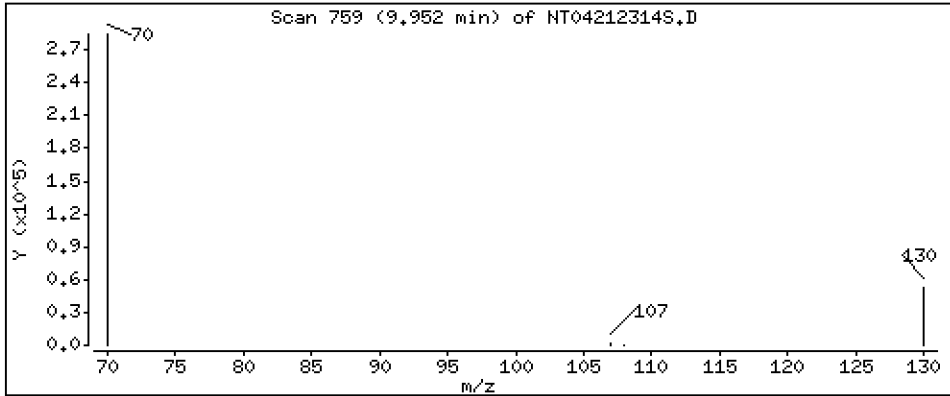
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 4,707 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

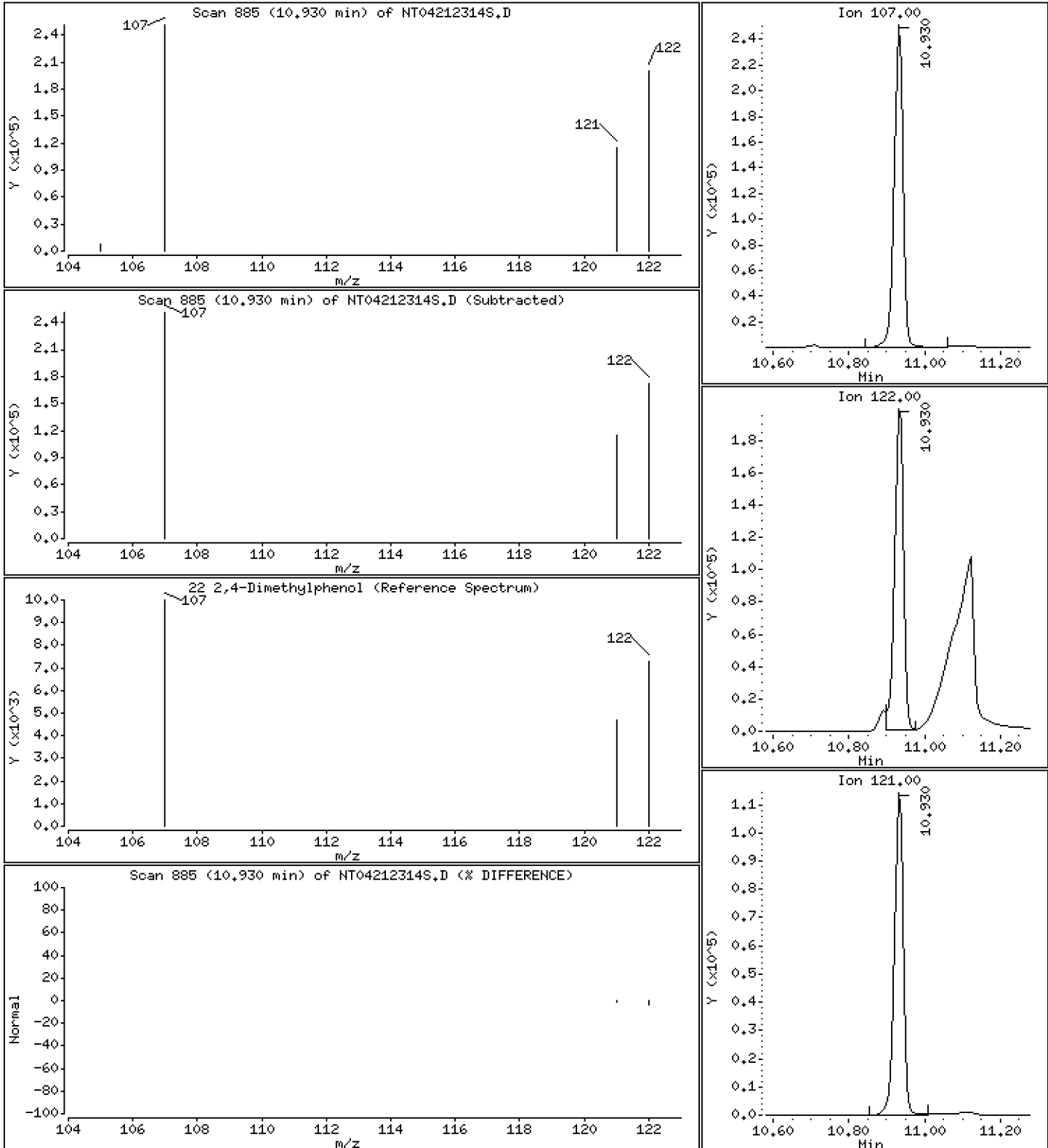
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 3,684 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

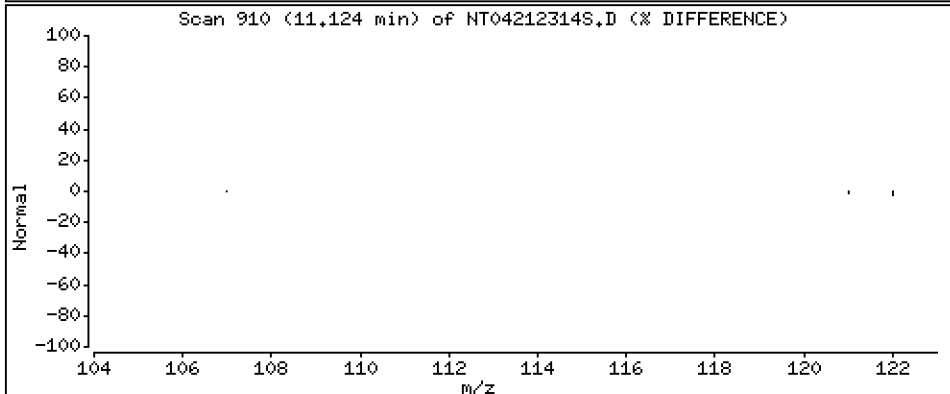
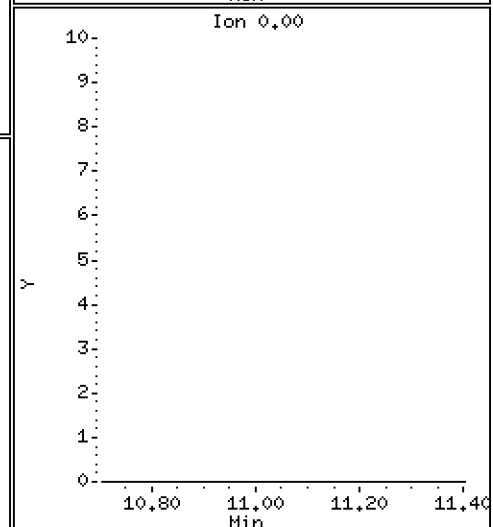
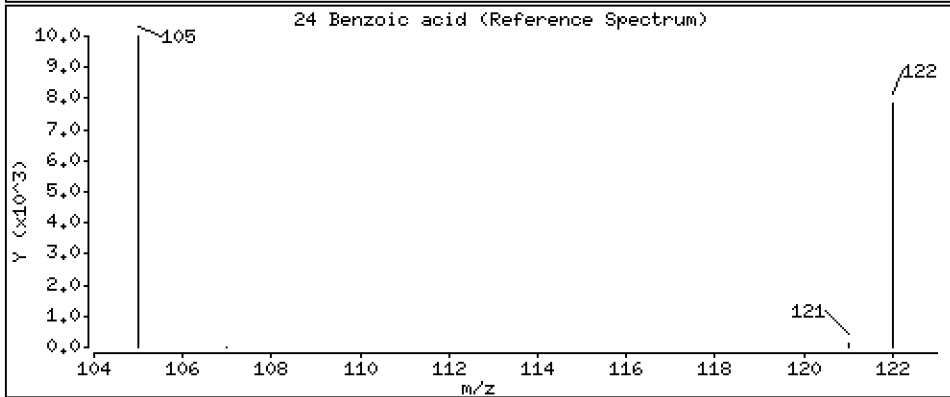
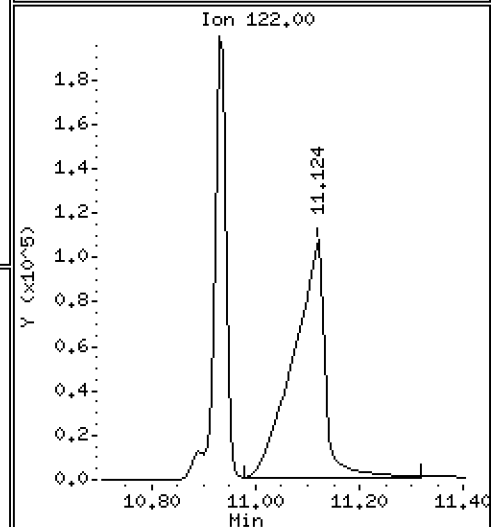
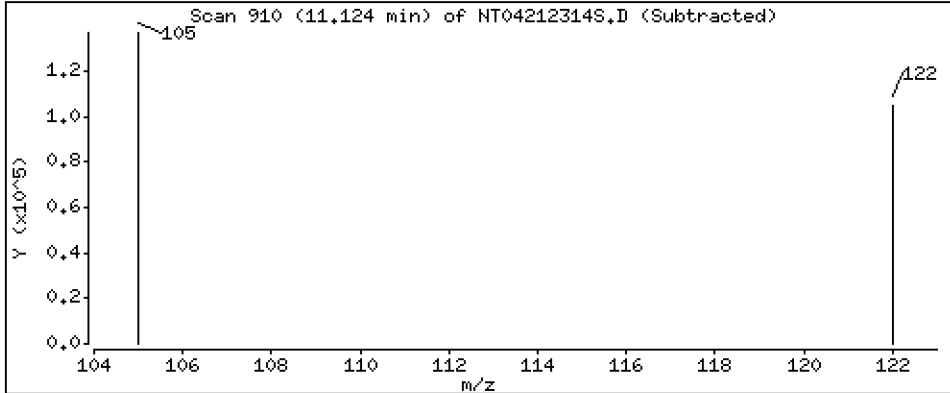
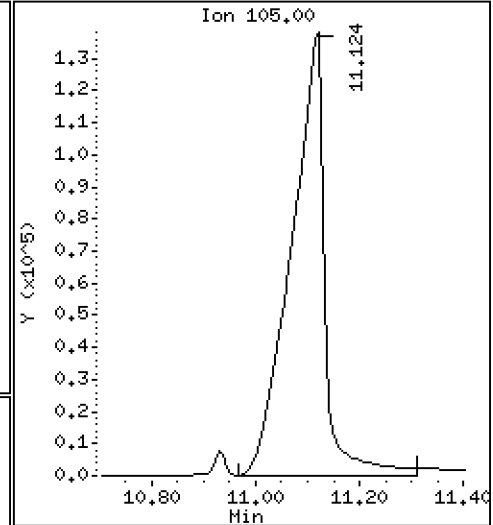
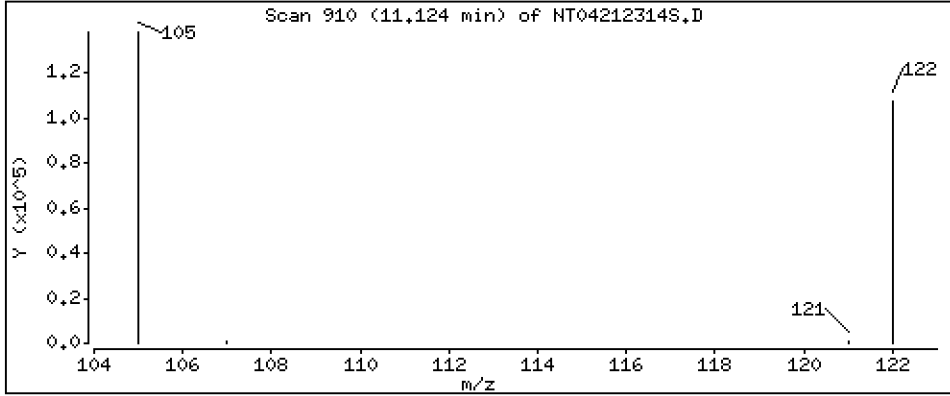
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 8,195 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

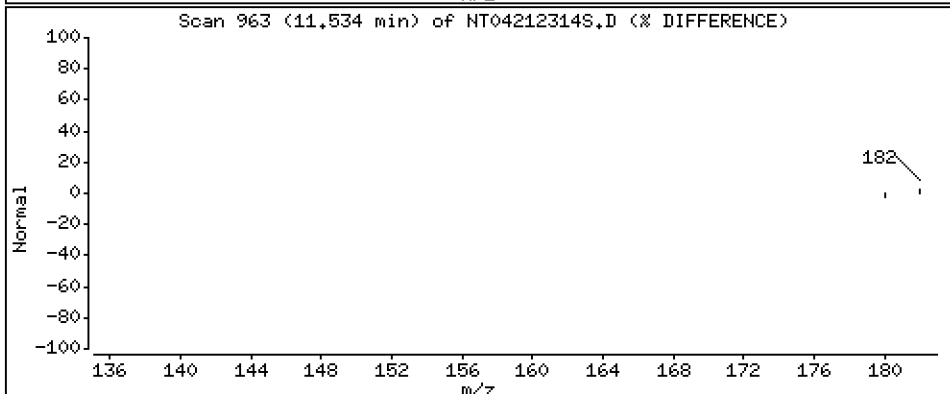
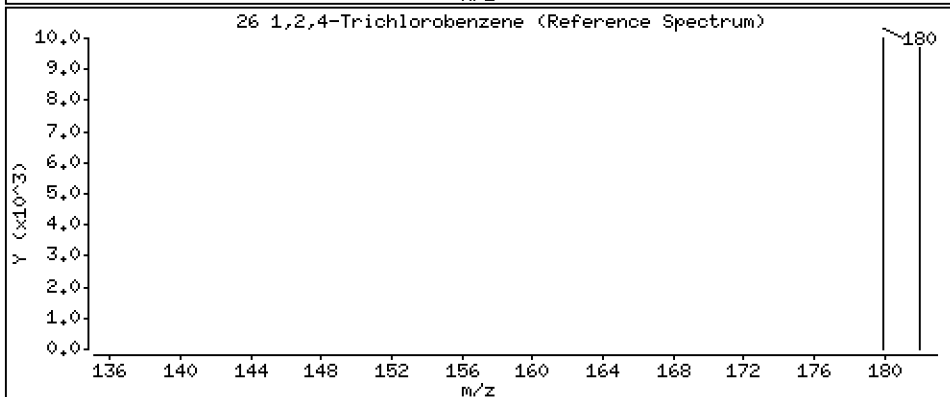
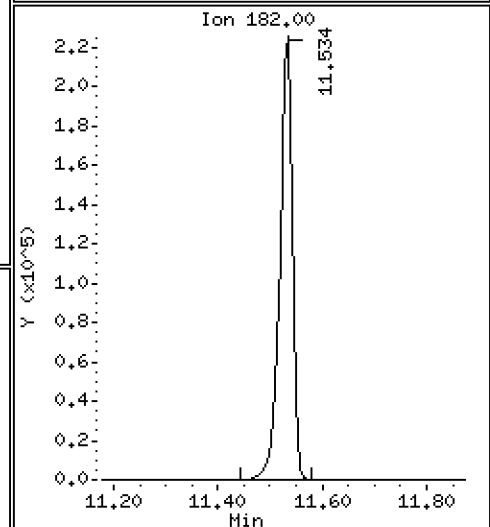
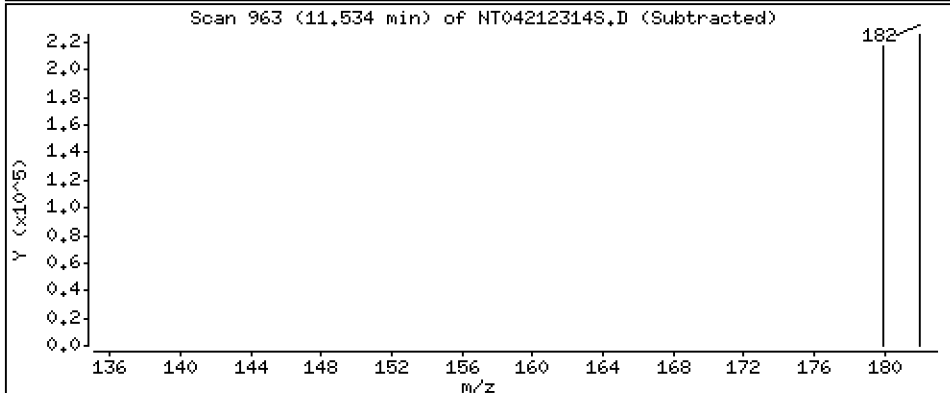
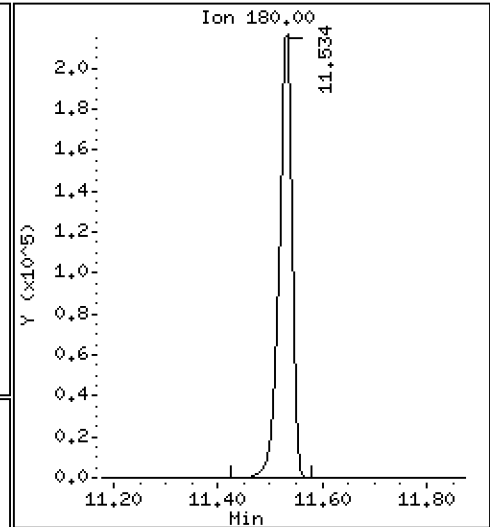
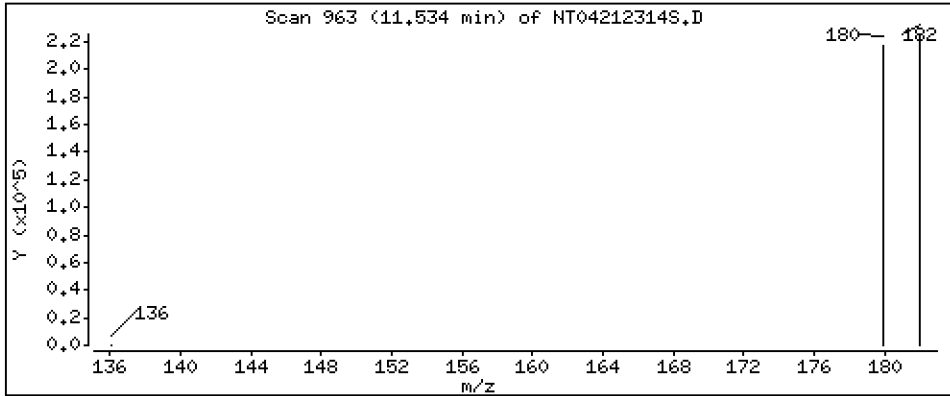
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

26 1,2,4-Trichlorobenzene

Concentration: 4.671 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

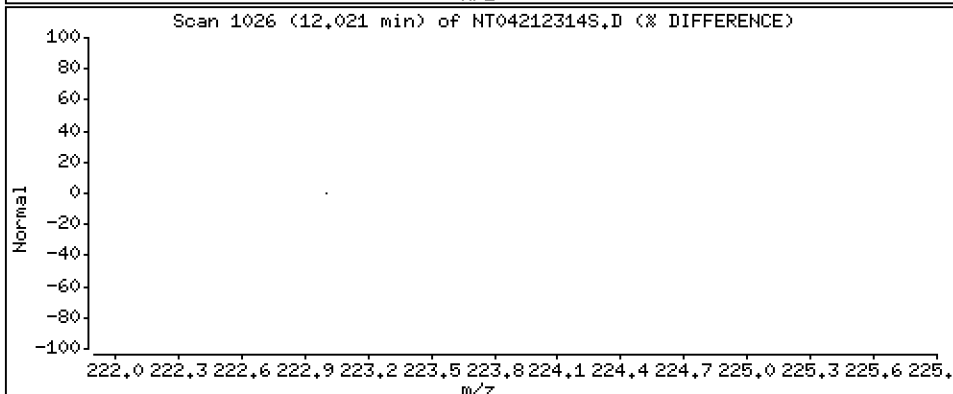
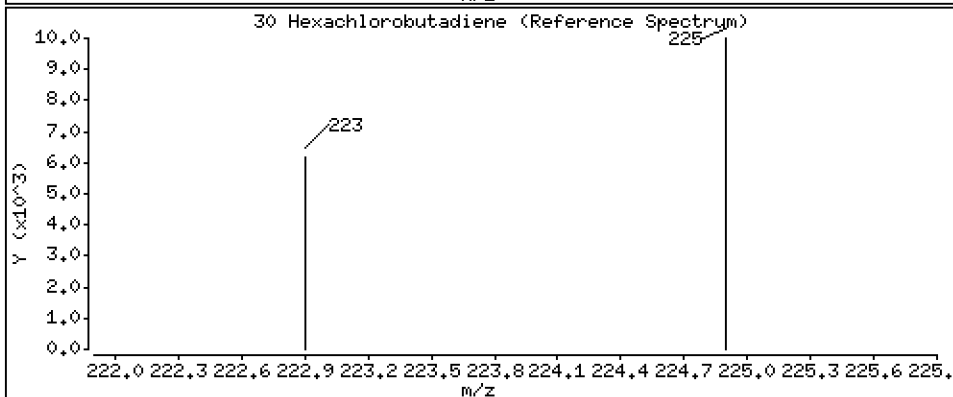
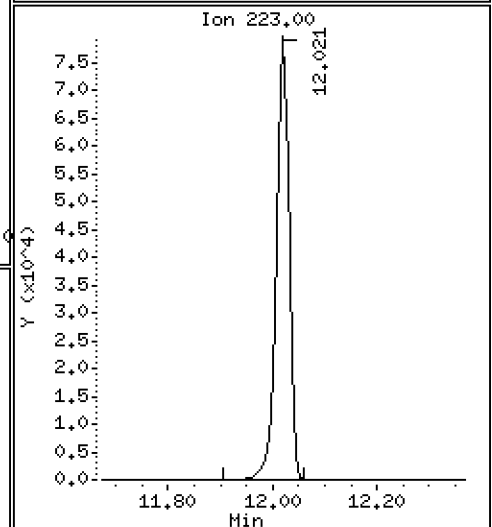
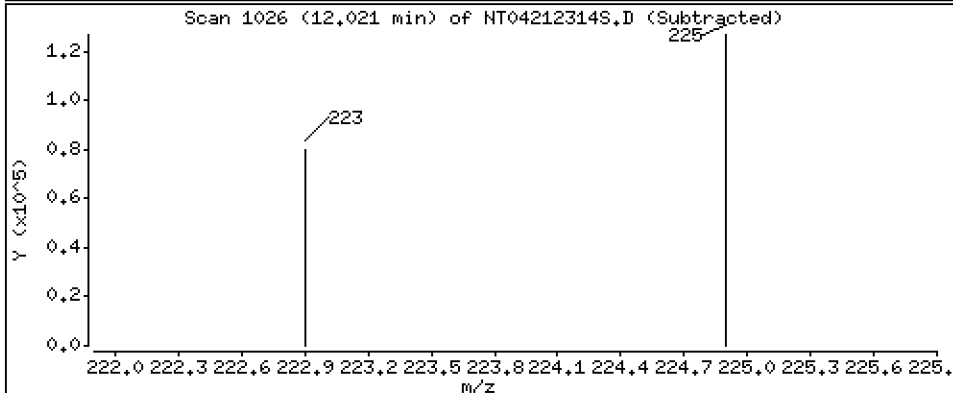
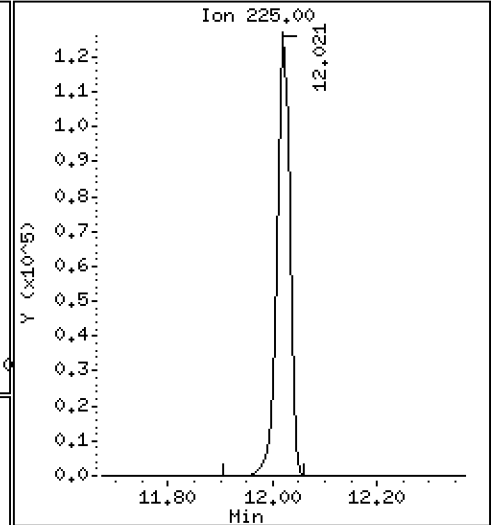
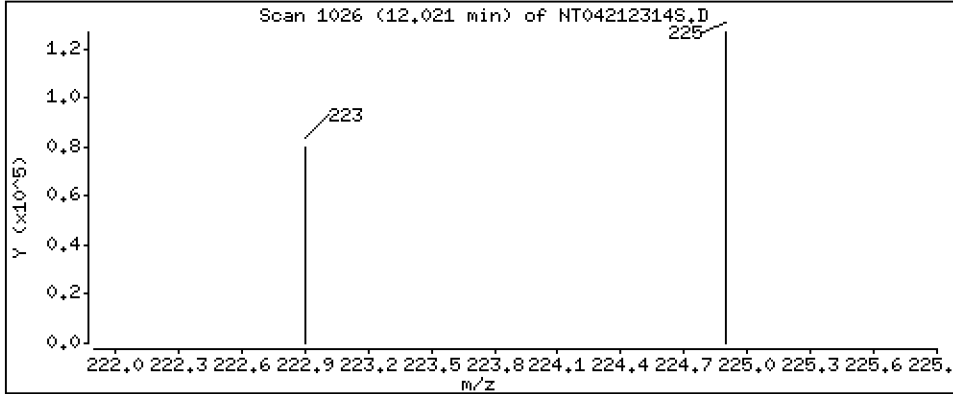
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,574 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

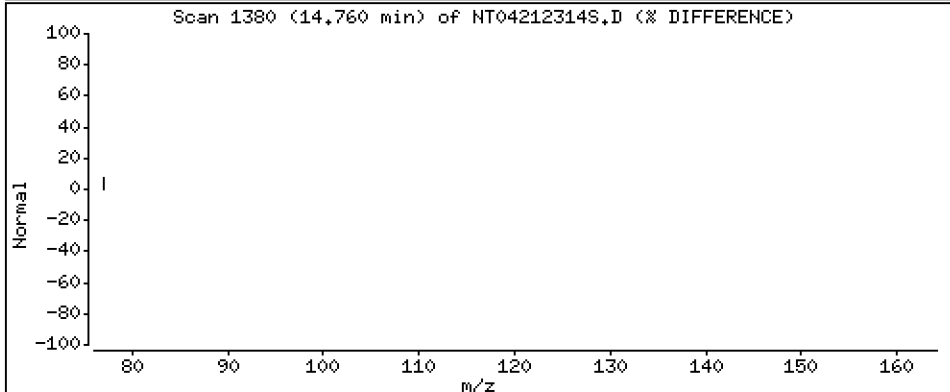
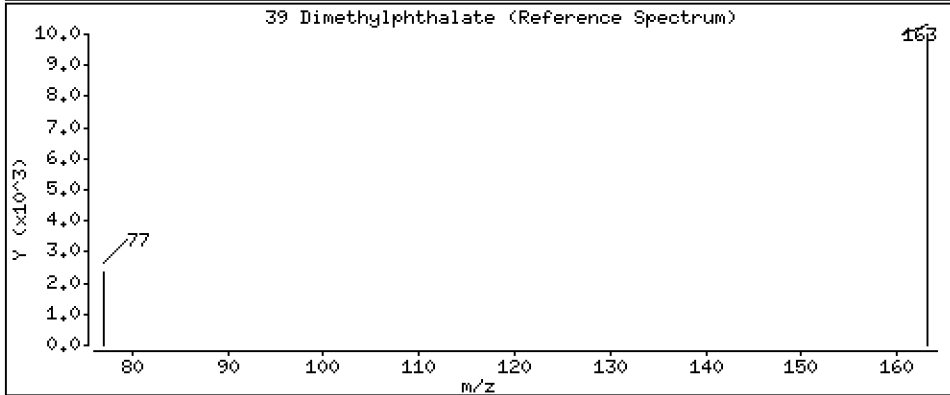
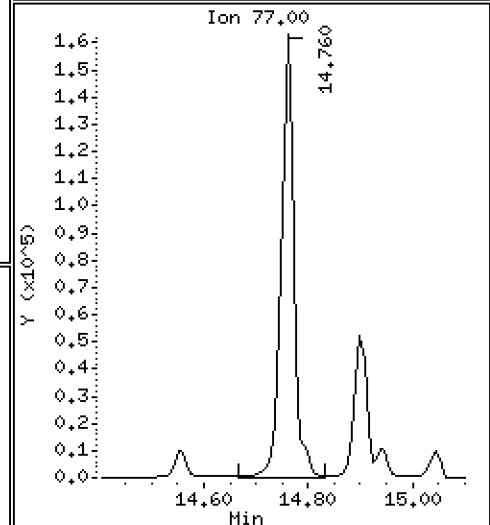
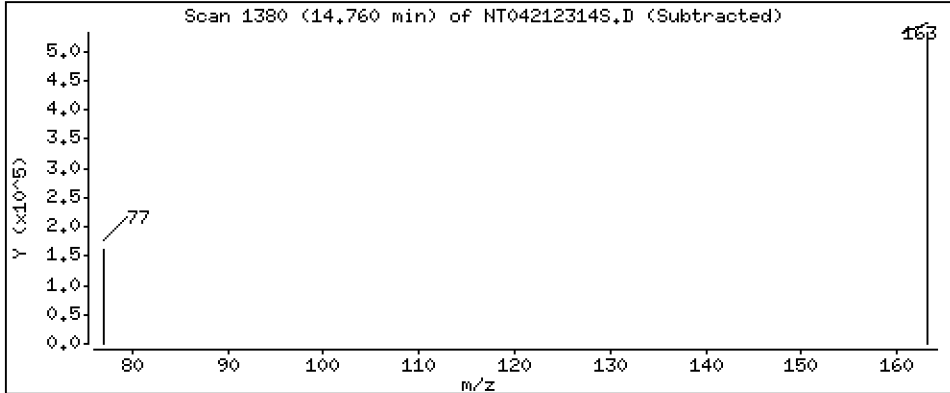
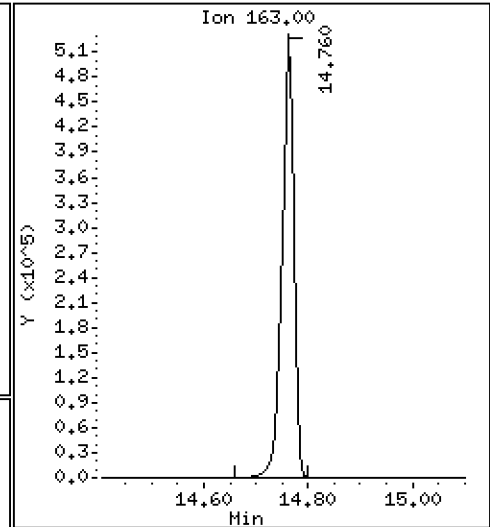
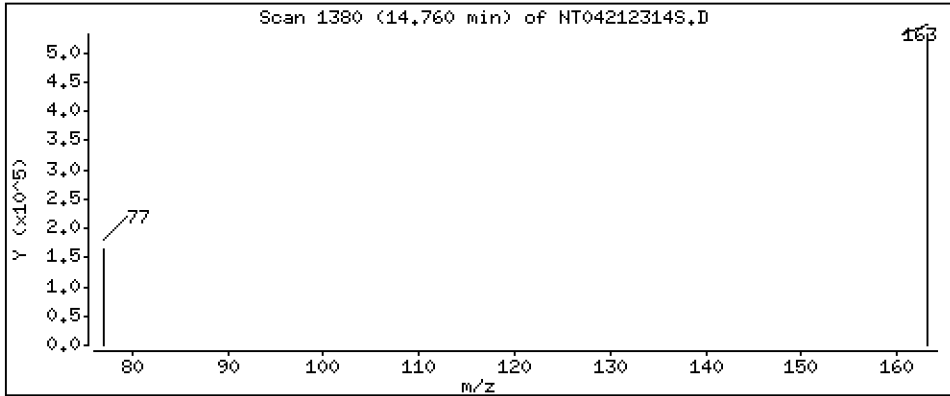
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,407 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

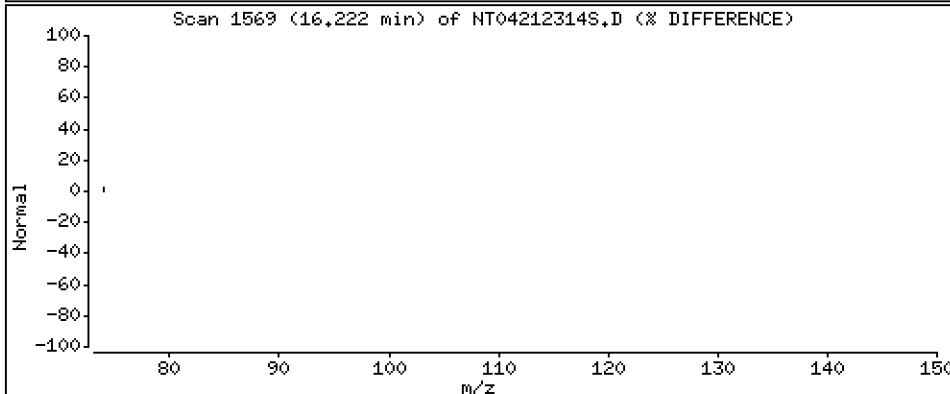
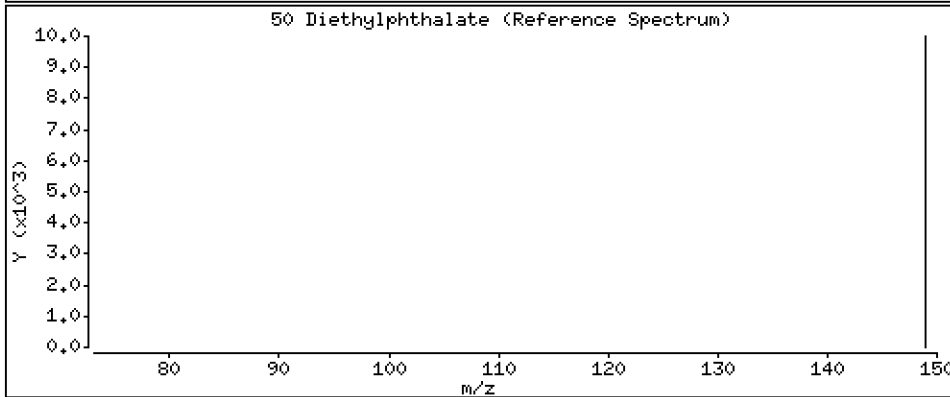
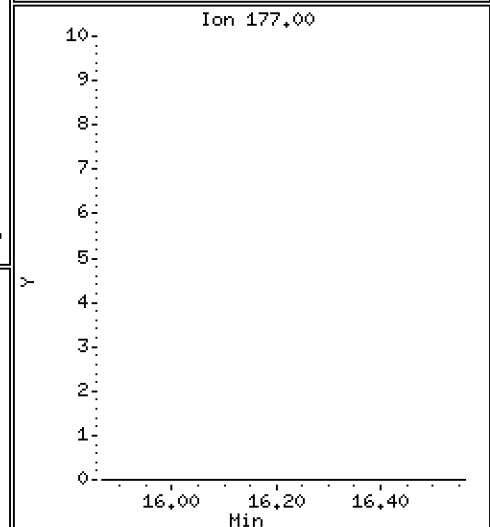
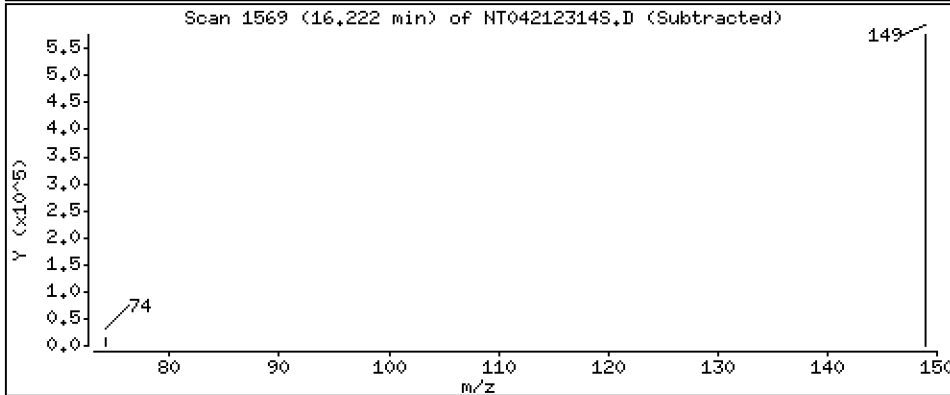
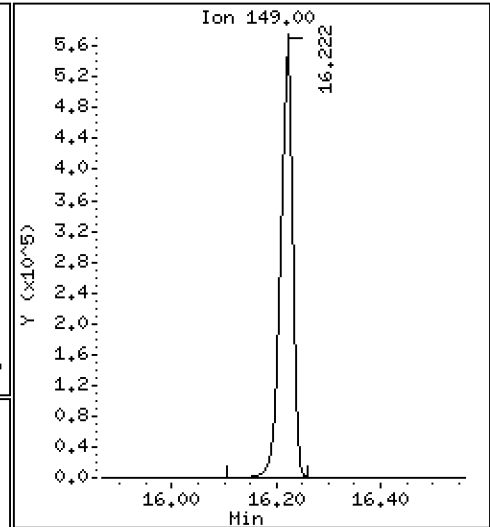
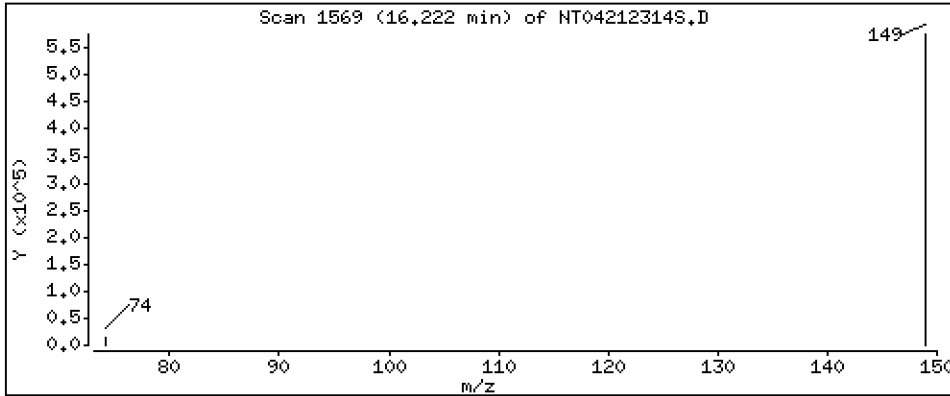
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,605 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

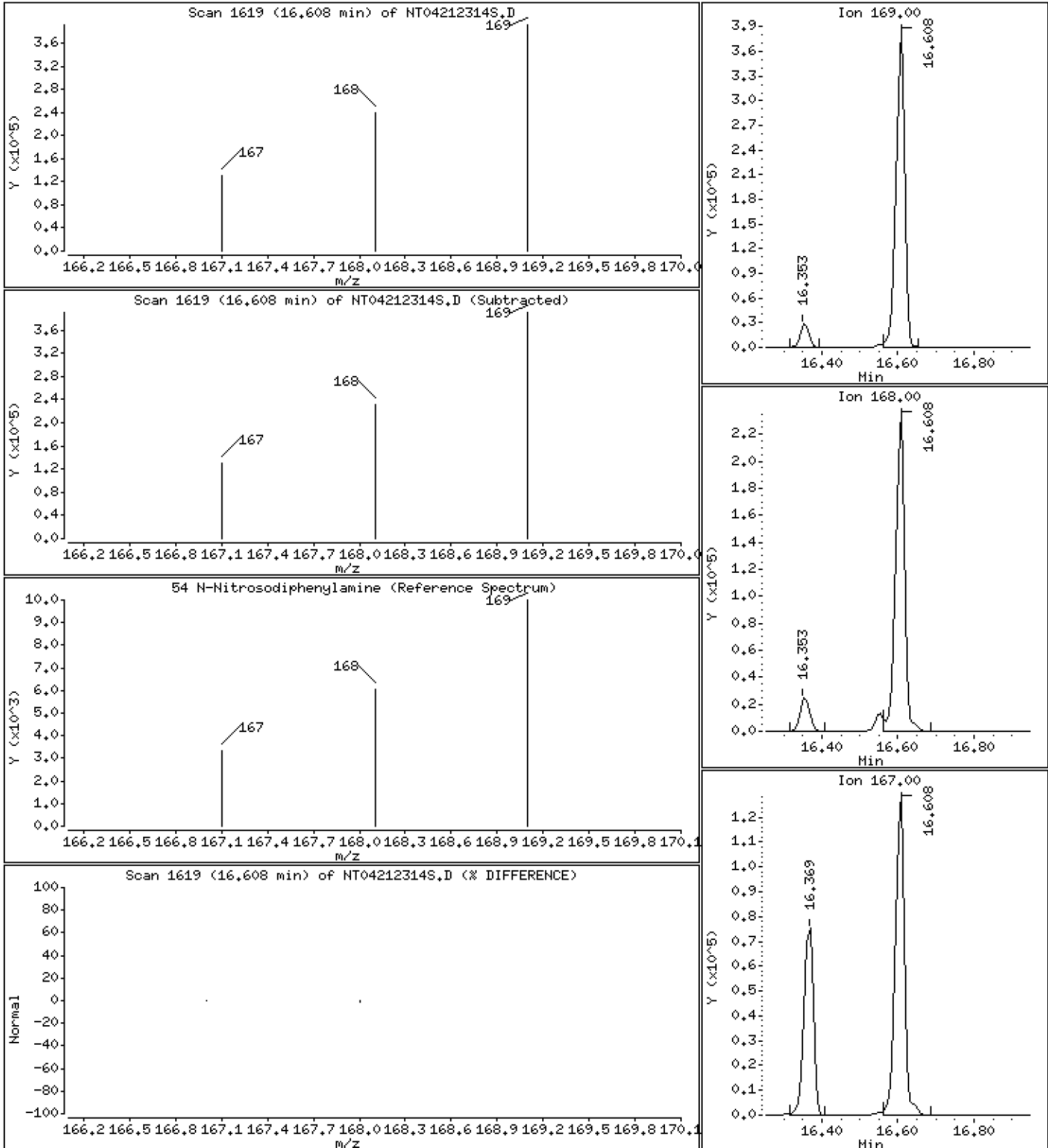
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,906 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

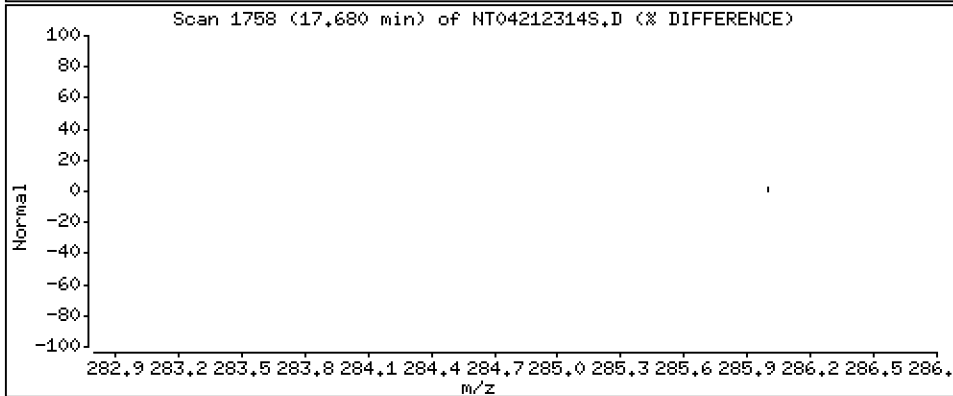
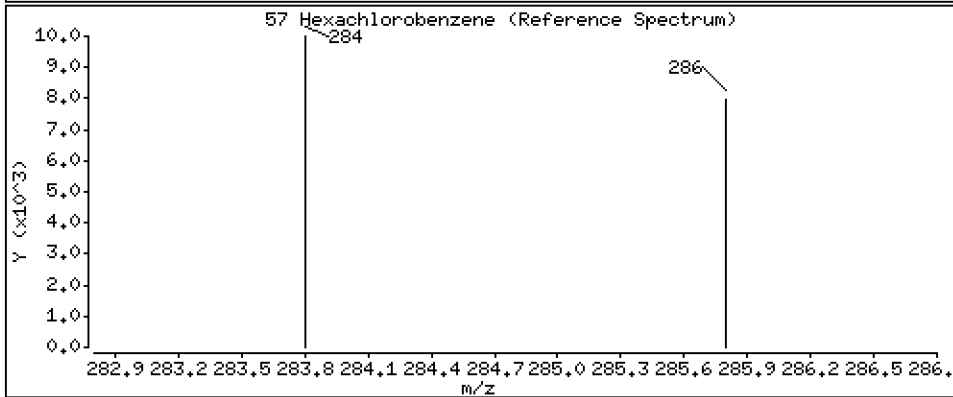
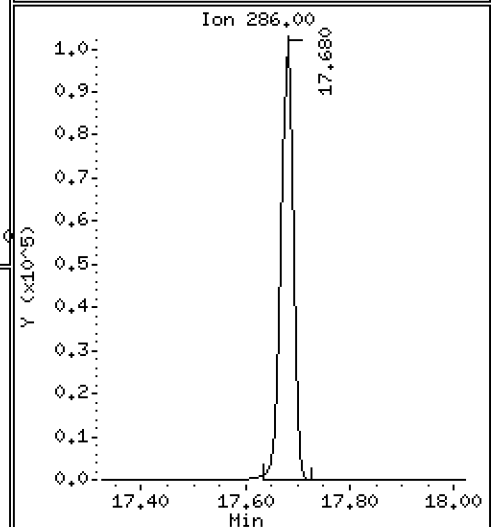
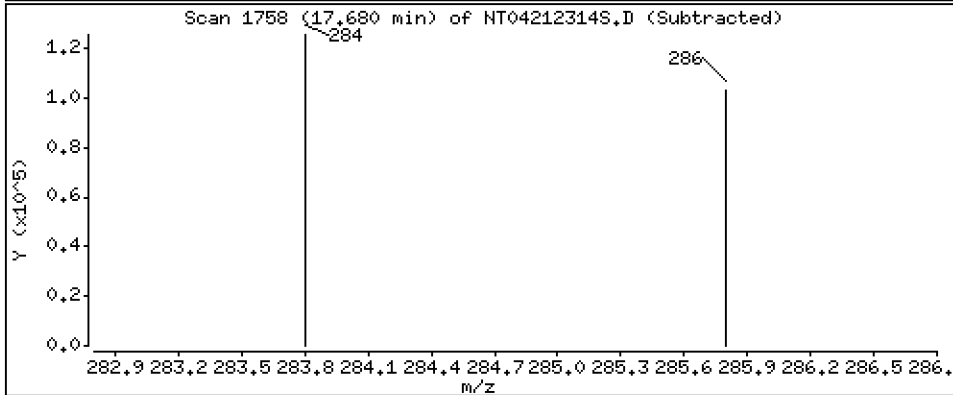
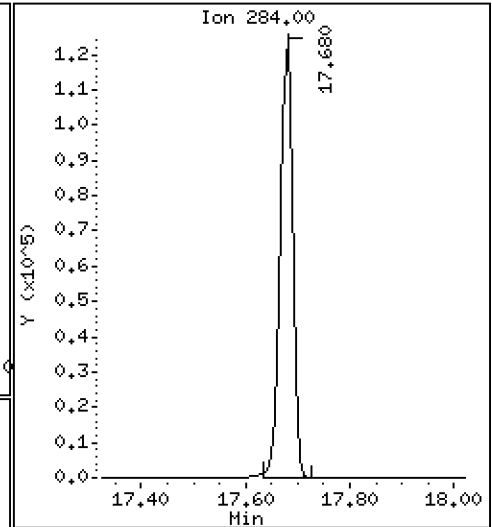
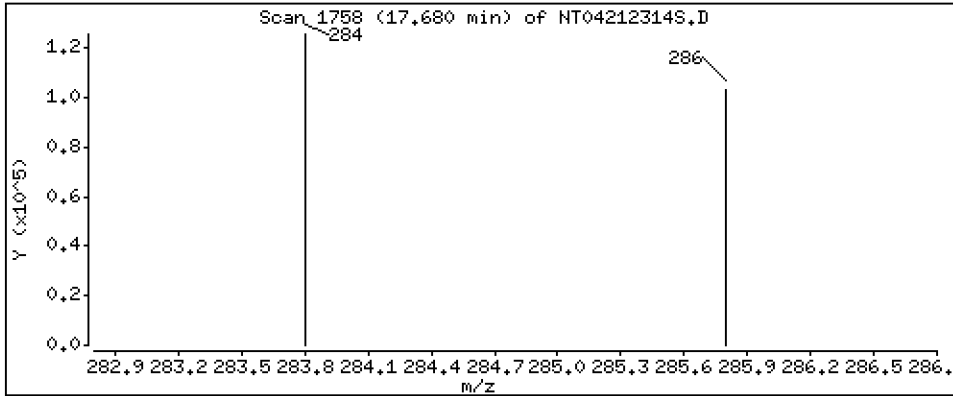
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,294 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

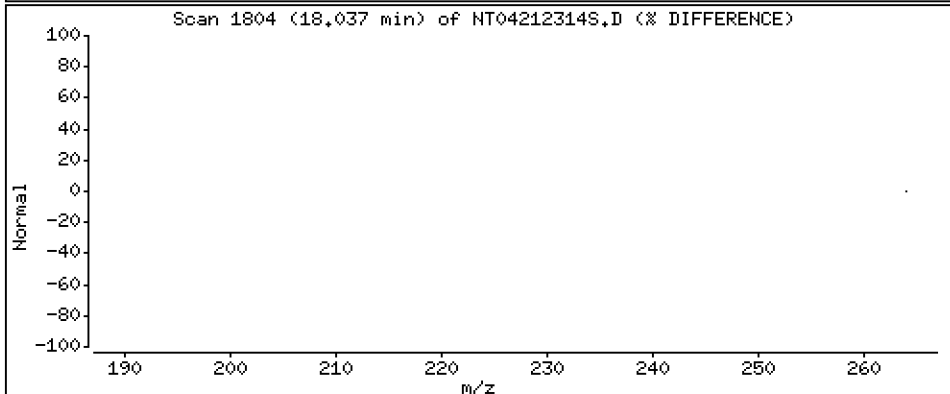
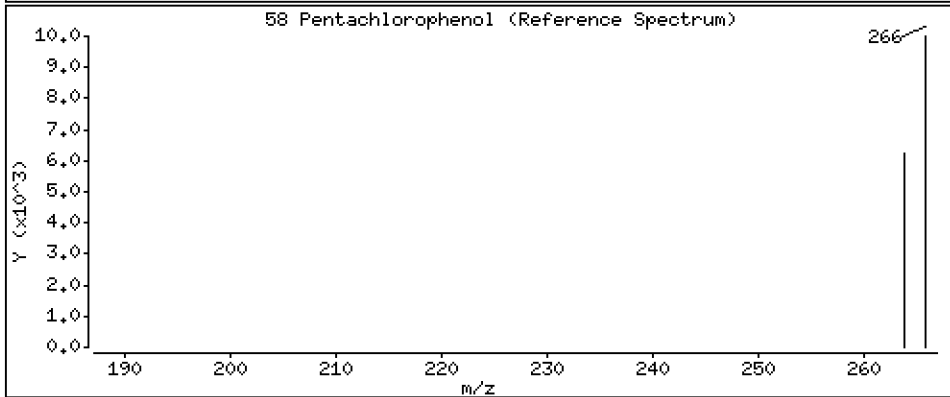
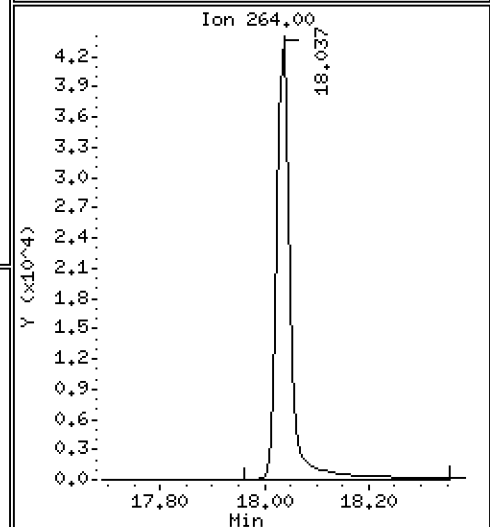
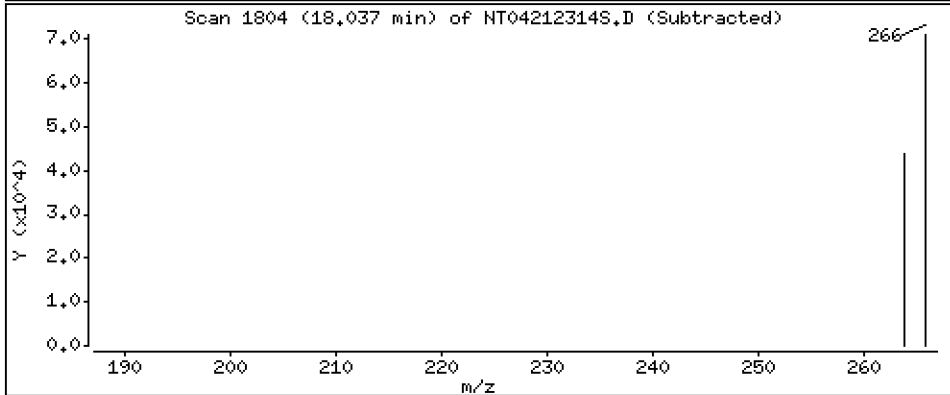
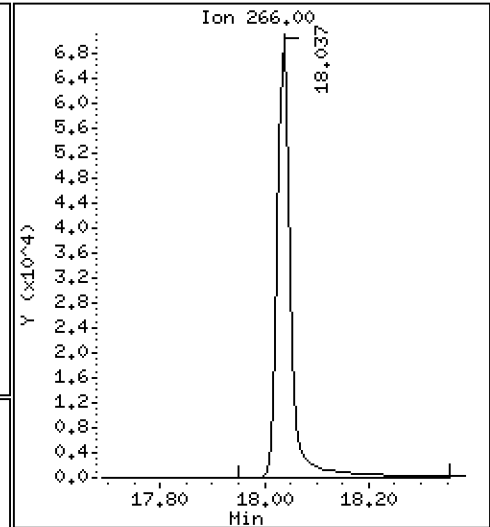
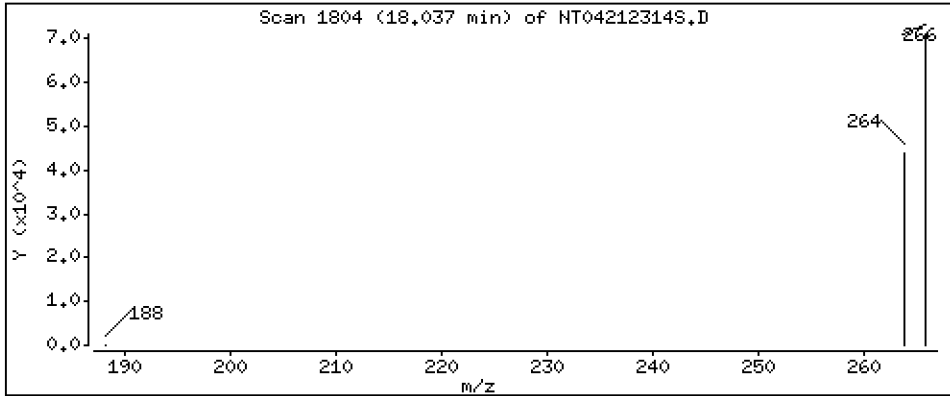
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,972 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

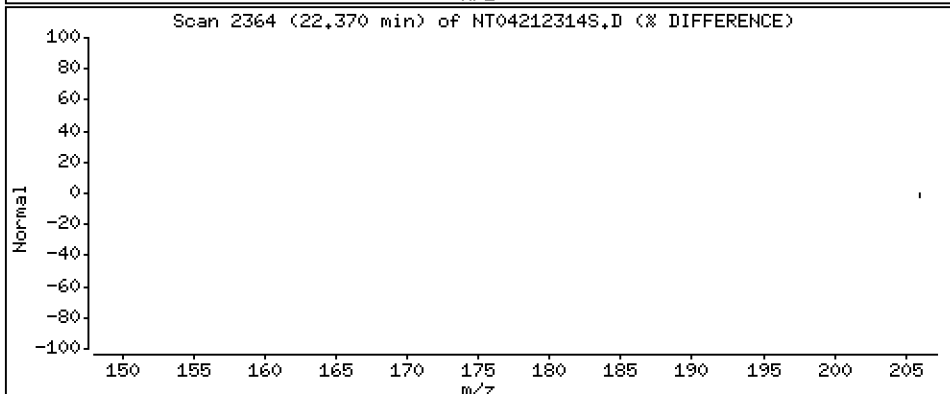
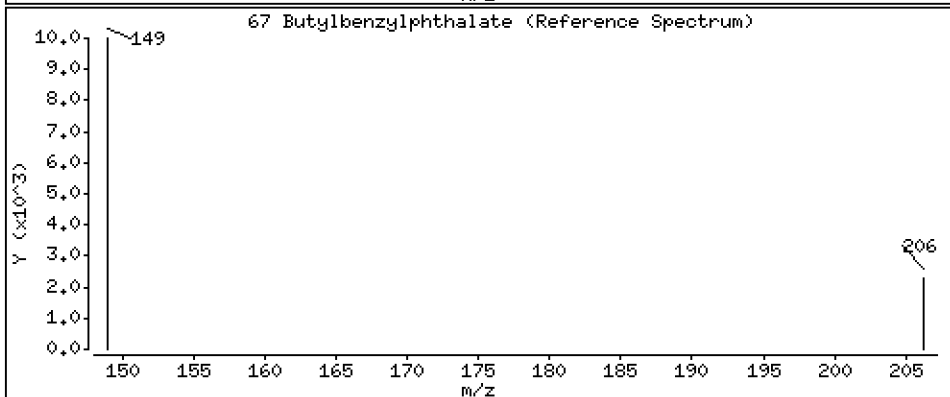
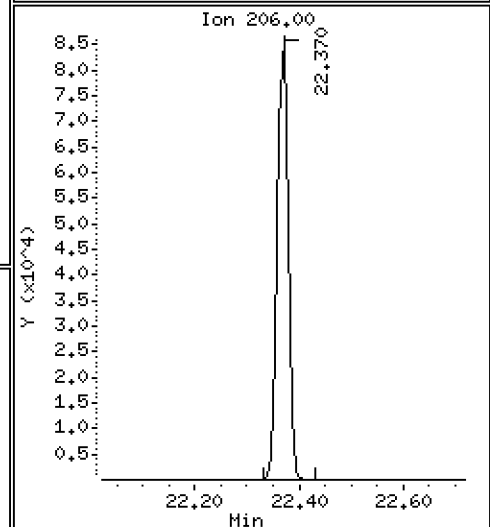
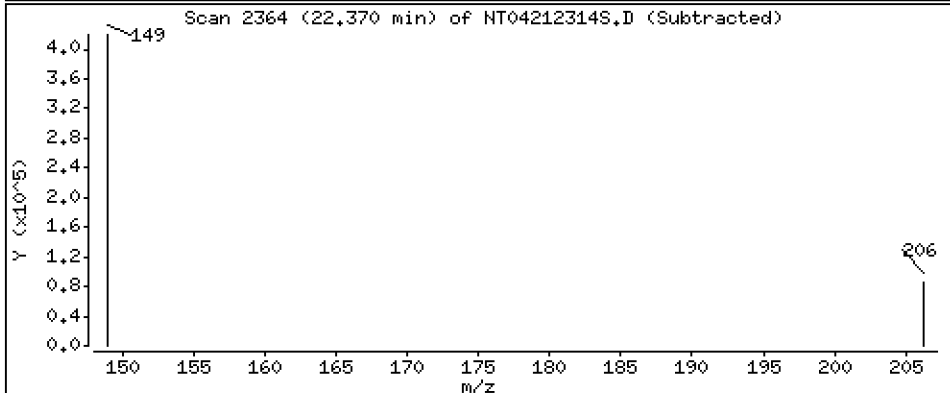
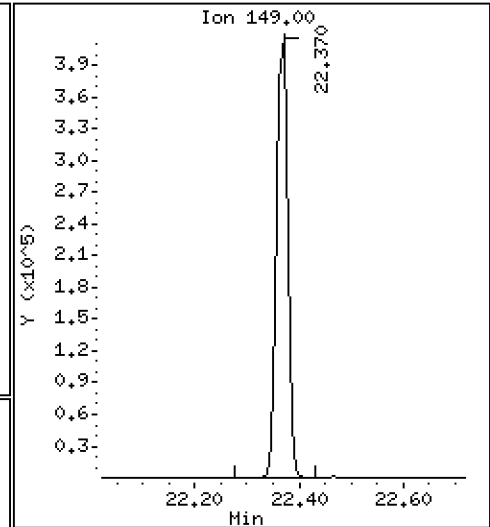
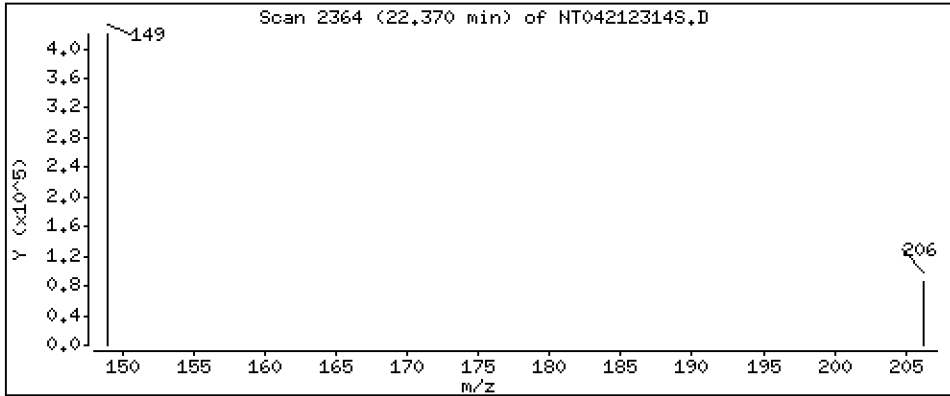
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,695 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

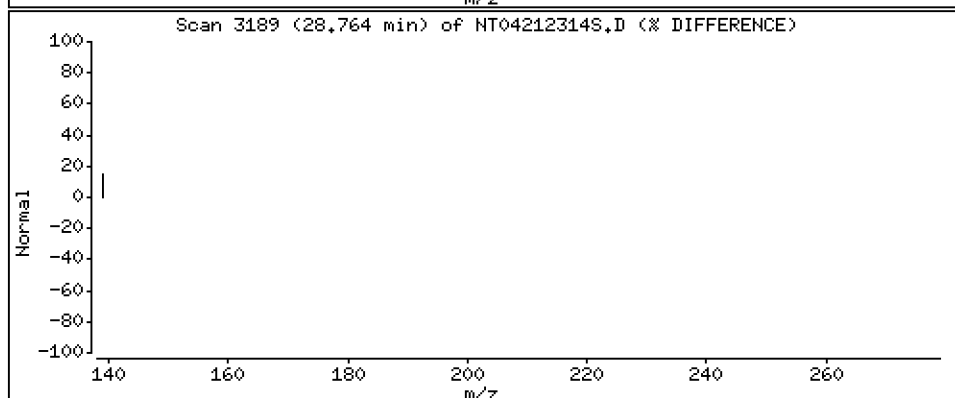
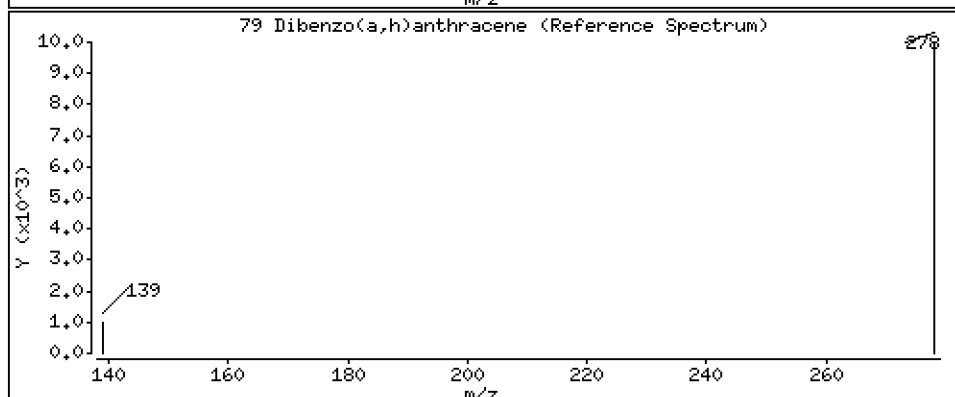
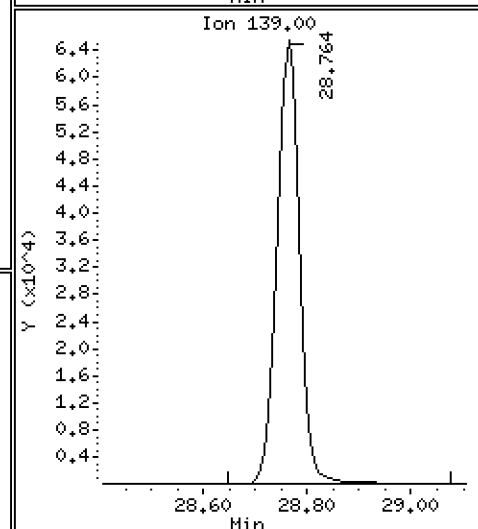
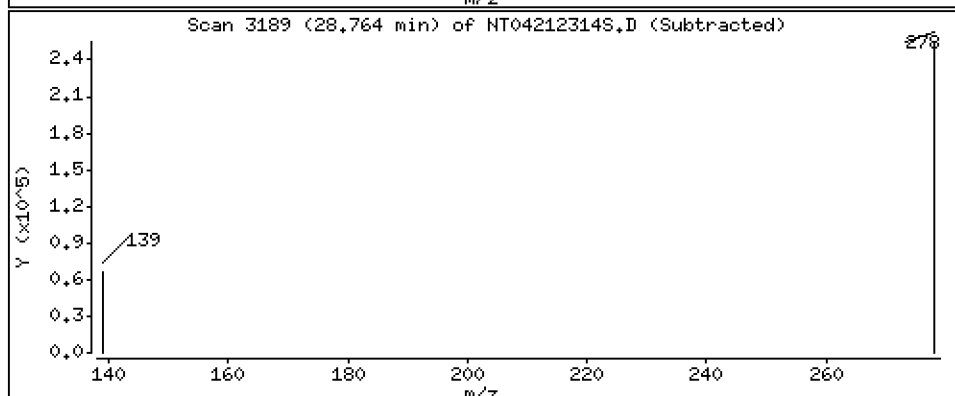
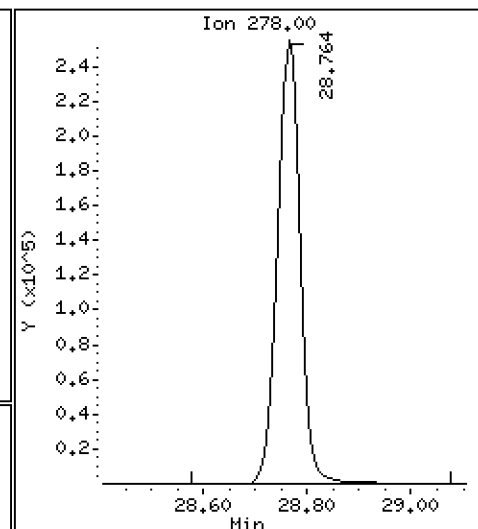
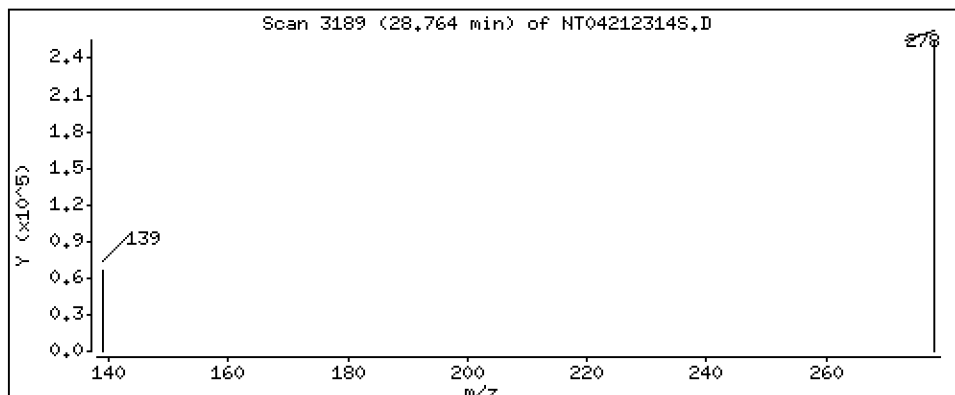
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,390 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

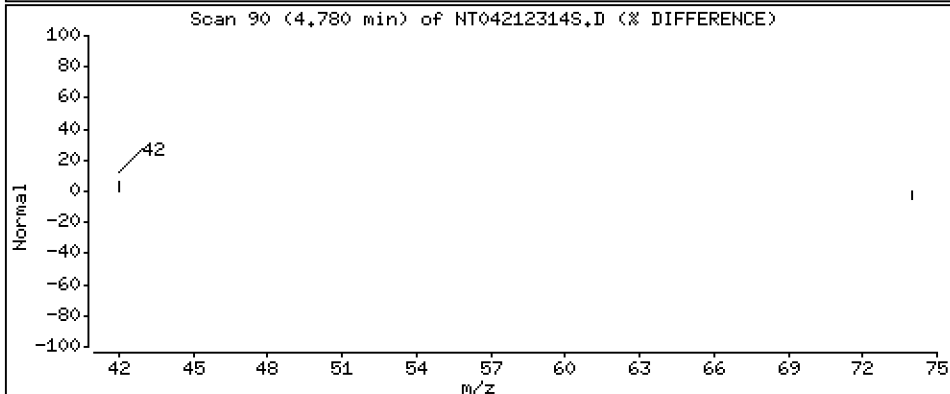
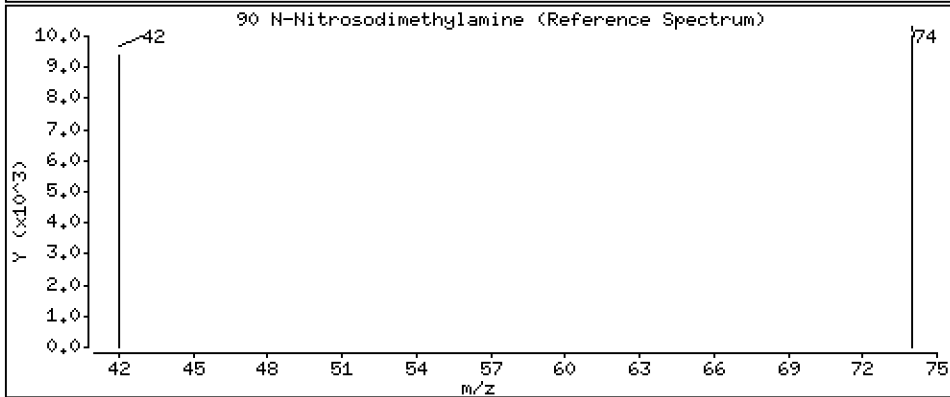
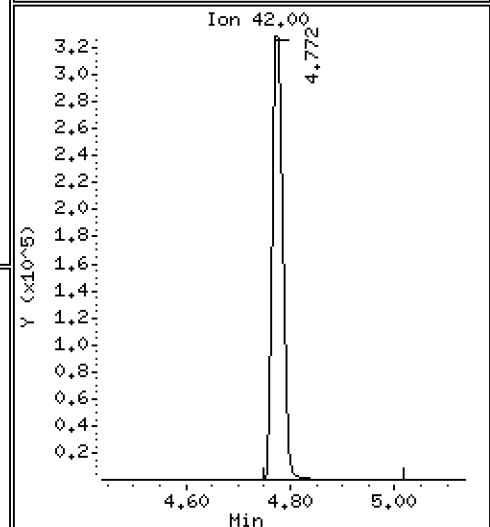
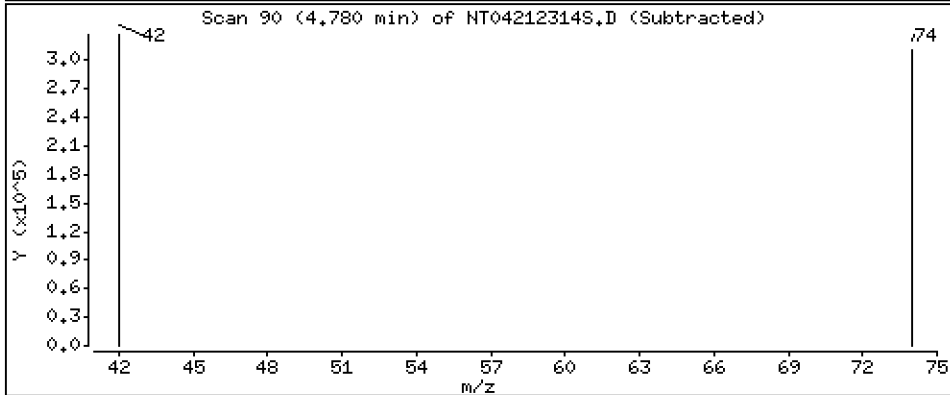
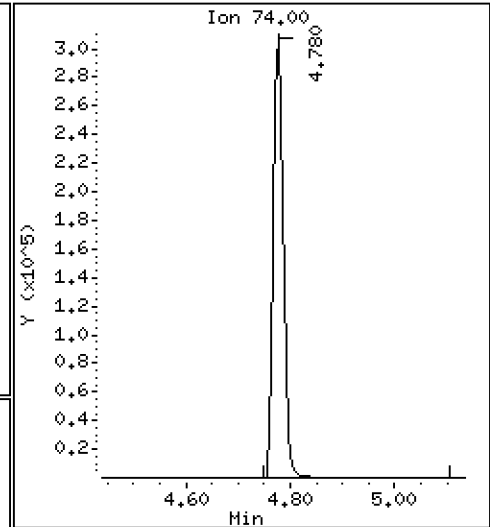
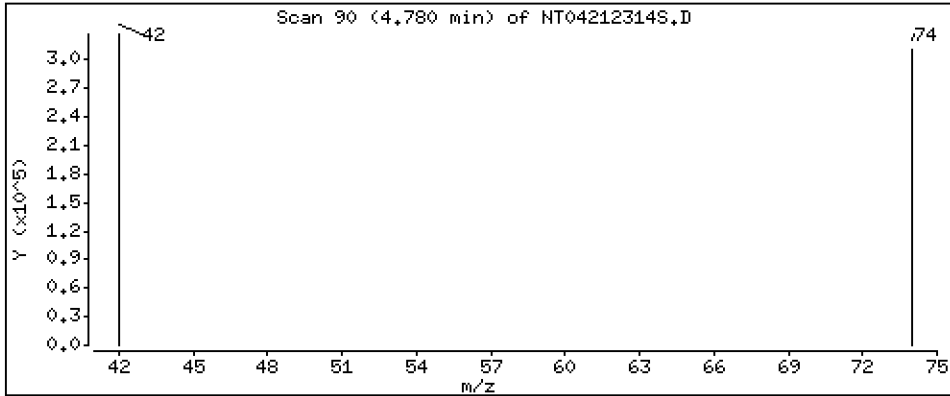
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 4.834 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212314S.D  
 Lab Smp Id: SEQ-SCV1  
 Inj Date : 21-APR-2023 21:16 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SCV1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 11  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		Compound Not Detected.					
3 Phenol	94		8.487	8.479	(0.931)	677736	4.30440	4.304
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	534931	4.47933	4.479
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	281794	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	519596	4.59857	4.599
11 Benzyl alcohol	79		9.385	9.385	(1.030)	477137	4.91535	4.915
12 1,2-Dichlorobenzene	146		9.501	9.501	(1.043)	511191	4.53472	4.535
13 2-Methylphenol	108		9.610	9.603	(1.055)	413068	4.20738	4.207 (H)
15 4-Methylphenol	108		9.882	9.874	(1.084)	459873	4.53821	4.538 (H)
16 N-Nitroso-di-n-propylamine	70		9.952	9.944	(1.092)	437412	4.70737	4.707
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	385878	3.68370	3.684
24 Benzoic acid	105		11.123	11.054	(0.957)	614713	8.19472	8.195
26 1,2,4-Trichlorobenzene	180		11.534	11.526	(0.993)	375647	4.67113	4.671
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1095304	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	203587	4.57443	4.574
39 Dimethylphthalate	163		14.760	14.752	(0.968)	823050	4.40671	4.407
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	511599	4.00000	
50 Diethylphthalate	149		16.222	16.214	(1.063)	879477	4.60482	4.605
54 N-Nitrosodiphenylamine	169		16.607	16.600	(0.907)	587162	4.90642	4.906
57 Hexachlorobenzene	284		17.680	17.672	(0.966)	196168	4.29450	4.294
58 Pentachlorophenol	266		18.036	18.037	(0.985)	120655	3.97208	3.972
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	855994	4.00000	
\$ 66 Terphenyl-d14	244		Compound Not Detected.					
67 Butylbenzylphthalate	149		22.370	22.370	(0.958)	584126	4.69452	4.695
* 69 Chrysene-d12	240		23.361	23.353	(1.000)	548116	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	575271	4.00000	
79 Dibenzo(a,h)anthracene	278		28.763	28.756	(1.105)	764599	4.39029	4.390
90 N-Nitrosodimethylamine	74		4.779	4.787	(0.524)	387451	4.83434	4.834

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212314S.D  
 Lab Smp Id: SEQ-SCV1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	281794	-10.21
27 Naphthalene-d8	1195091	597546	2390182	1095304	-8.35
42 Acenaphthene-d10	556977	278489	1113954	511599	-8.15
59 Phenanthrene-d10	941816	470908	1883632	855994	-9.11
69 Chrysene-d12	617803	308902	1235606	548116	-11.28
77 Perylene-d12	639373	319687	1278746	575271	-10.03

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.36	0.03
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212314S.D

Lab ID: SEQ-SCV1

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 21:16

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

\*\* FIRST SURROGATE NOT FOUND. ICAL Check not performed \*\*

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.957	0.951	0.0060	Benzoic acid

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



**INITIAL CALIBRATION CHECK**  
**EPA 8270E-SIM**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>NT14</u>	Calibration:	<u>GD00063</u>
Lab File ID:	<u>NT1405012304S.D</u>	Calibration Date:	<u>04/21/2023</u>
Sequence:	<u>SLE0027</u>	Injection Date:	<u>05/01/23</u>
Lab Sample ID:	<u>SLE0027-ICV1</u>	Injection Time:	<u>16:22</u>
Sequence Name:	<u>Initial Cal Check</u>		

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
1,4-Dichlorobenzene	A	1.0000	1.0	1.6038770	1.5346730		-4.3	+/-20
1,2-Dichlorobenzene	A	1.0000	1.0	1.6001510	1.5380260		-3.9	+/-20
Benzyl Alcohol	A	1.0000	1.0	1.3778980	1.3266820		-3.7	+/-20
Benzoic acid	A	4.0000	2.4	0.1976976	0.1582106		-40.9	+/-20 *
2,4-Dimethylphenol	A	2.0000	2.2	0.3825530	0.4209551		10.1	+/-20
1,2,4-Trichlorobenzene	A	1.0000	1.0	0.3233196	0.3029790		3.2	+/-20
N-Nitrosodiphenylamine	A	1.0000	1.0	0.5592199	0.5643921		0.9	+/-20
Pentachlorophenol	A	2.0000	1.3	0.0991788	0.0907636		-36.1	+/-20 *
2-Fluorophenol	A	1.5000	1.62	1.3940880	1.5029290		7.8	+/-20
p-Terphenyl-d14	A	1.0000	0.998	0.6679610	0.6347529		-0.2	+/-20
1,4-Dichlorobenzene-d4	A	4.0000	4.0	75967.7800	1.0000		0.0	
Naphthalene-d8	A	4.0000	4.0	289747.2000	1.0000		0.0	
Acenaphthene-d10	A	4.0000	4.0	134244.3000	1.0000		0.0	
Phenanthrene-d10	A	4.0000	4.0	225535.7000	1.0000		0.0	
Chrysene-d12	A	4.0000	4.0	146716.1000	1.0000		0.0	
Perylene-d12	A	4.0000	4.0	152996.6000	1.0000		0.0	

\* Values outside of QC limits



Data File: \\target\share\chem3\nt14.1\20230501A.B\NT1405012304S.D

Date: 01-May-2023 16:22

Client ID:

Sample Info: SLE0027-ICW1

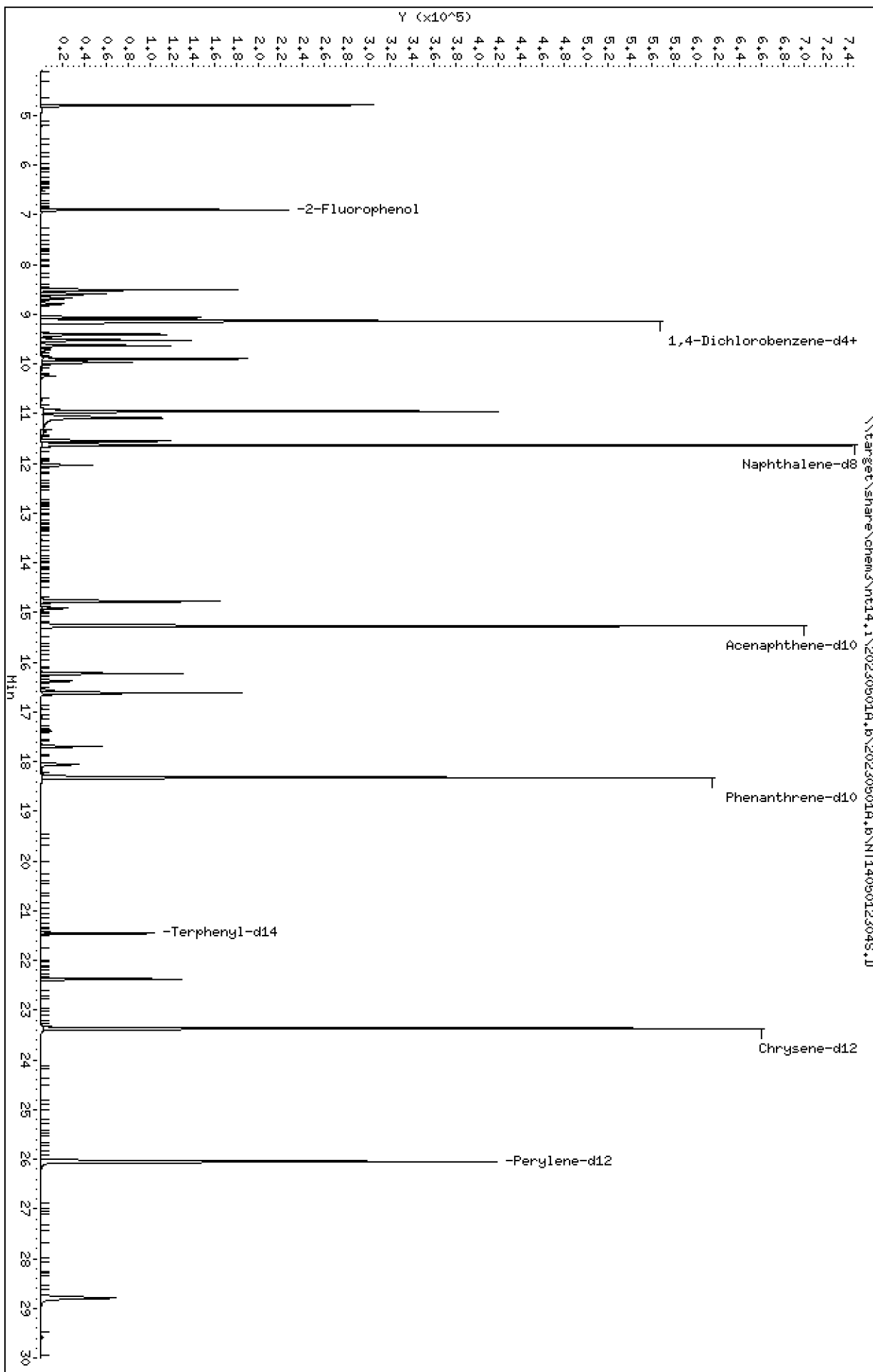
Instrument: nt14.1

Operator: JSD

Column diameter: 0.25

Column phase: ZB-5msi

Page 1



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012304S.D  
 Lab Smp Id: SLE0027-ICV1  
 Inj Date : 01-MAY-2023 16:22 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0027-ICV1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 4 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.903	6.903	(0.756)	186874	1.50000	1.617
3 Phenol	94		8.510	8.510	(0.931)	192905	1.00000	1.041
7 1,3-Dichlorobenzene	146		9.067	9.067	(0.992)	134971	1.00000	0.9605
* 8 1,4-Dichlorobenzene-d4	152		9.137	9.137	(1.000)	331573	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	127214	1.00000	0.9569
11 Benzyl alcohol	79		9.408	9.408	(1.030)	109973	1.00000	0.9628
12 1,2-Dichlorobenzene	146		9.525	9.525	(1.042)	127492	1.00000	0.9612
13 2-Methylphenol	108		9.634	9.634	(1.054)	124105	1.00000	1.074
15 4-Methylphenol	108		9.898	9.898	(1.083)	132522	1.00000	1.111
16 N-Nitroso-di-n-propylamine	70		9.967	9.967	(1.091)	100960	1.00000	0.9234
22 2,4-Dimethylphenol	107		10.953	10.953	(0.941)	264995	2.00000	2.201
24 Benzoic acid	105		11.085	11.085	(0.953)	199190	4.00000	2.366
26 1,2,4-Trichlorobenzene	180		11.549	11.549	(0.993)	95364	1.00000	1.032
* 27 Naphthalene-d8	136		11.634	11.634	(1.000)	1259018	4.00000	
30 Hexachlorobutadiene	225		12.044	12.044	(1.035)	49059	1.00000	0.9590
39 Dimethylphthalate	163		14.776	14.776	(0.968)	205956	1.00000	0.9716
* 42 Acenaphthene-d10	162		15.271	15.271	(1.000)	580636	4.00000	
50 Diethylphthalate	149		16.229	16.229	(1.063)	210618	1.00000	0.9716
54 N-Nitrosodiphenylamine	169		16.623	16.623	(0.907)	145041	1.00000	1.009
57 Hexachlorobenzene	284		17.696	17.696	(0.966)	50337	1.00000	0.9176
58 Pentachlorophenol	266		18.052	18.052	(0.985)	46650	2.00000	1.279
* 59 Phenanthrene-d10	188		18.323	18.323	(1.000)	1027945	4.00000	
\$ 66 Terphenyl-d14	244		21.456	21.456	(0.918)	123087	1.00000	0.9977
67 Butylbenzylphthalate	149		22.377	22.377	(0.958)	145568	1.00000	0.8267
* 69 Chrysene-d12	240		23.369	23.369	(1.000)	775653	4.00000	
* 77 Perylene-d12	264		26.047	26.047	(1.000)	750797	4.00000	
79 Dibenzo(a,h)anthracene	278		28.794	28.794	(1.105)	197431	1.00000	0.8686
90 N-Nitrosodimethylamine	74		4.795	4.795	(0.525)	183583	2.00000	1.947

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012304S.D  
 Lab Smp Id: SLE0027-ICV1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	331573	0.00
27 Naphthalene-d8	1259018	629509	2518036	1259018	0.00
42 Acenaphthene-d10	580636	290318	1161272	580636	0.00
59 Phenanthrene-d10	1027945	513973	2055890	1027945	0.00
69 Chrysene-d12	775653	387827	1551306	775653	0.00
77 Perylene-d12	750797	375399	1501594	750797	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	0.00
27 Naphthalene-d8	11.63	11.13	12.13	11.63	0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	0.00
59 Phenanthrene-d10	18.32	17.82	18.82	18.32	0.00
69 Chrysene-d12	23.37	22.87	23.87	23.37	0.00
77 Perylene-d12	26.05	25.55	26.55	26.05	0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012304S.D

Lab ID: SLE0027-ICV1

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 16:22

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

Quant Method: ICAL

No RRT check. Ccal file.

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230501A.b\20230501A

Instrument: nt14.i Date: 01-MAY-2023 Method: 20230501A.b\SIMABN2.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R <sup>2</sup>
-----	
NO Q-FLAGS	
-----	

ICV CAL: NT1405012304S.D 01-MAY-2023 16:22

Compound	%D
-----	
Benzoic acid	-40.8
Pentachlorophenol	-36.1
-----	



**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8270E-SIM**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>NT14</u>	Calibration:	<u>GD00063</u>
Lab File ID:	<u>NT04212314S.D</u>	Calibration Date:	<u>04/21/2023</u>
Sequence:	<u>SLD0358</u>	Injection Date:	<u>04/21/23</u>
Lab Sample ID:	<u>SLD0358-SCV1</u>	Injection Time:	<u>21:16</u>
Sequence Name:	<u>SCV 5.0</u>		

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
1,4-Dichlorobenzene	A	5.0000	4.6	1.6038770	1.4751090		-8.0	+/-20
1,2-Dichlorobenzene	A	5.0000	4.5	1.6001510	1.4512470		-9.3	+/-20
Benzyl Alcohol	A	5.0000	4.9	1.3778980	1.3545700		-1.7	+/-20
Benzoic acid	A	10.000	8.2	0.1976976	0.2244904		-18.1	+/-20
2,4-Dimethylphenol	A	5.0000	3.7	0.3825530	0.2818418		-26.3	+/-20 *
1,2,4-Trichlorobenzene	A	5.0000	4.7	0.3233196	0.2743691		-6.6	+/-20
N-Nitrosodiphenylamine	A	5.0000	4.9	0.5592199	0.5487534		-1.9	+/-20
Pentachlorophenol	A	5.0000	4.0	0.0991788	0.1127625		-20.6	+/-20 *
2-Fluorophenol	A	7.5000	0.00	1.3940880				
p-Terphenyl-d14	A	5.0000	0.00	0.6679610				

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14.1\20230421.B\20230421.B\NT04212314S.D

Date: 21-APR-2023 21:16

Client ID:

Sample Info: SEQ-SCV1

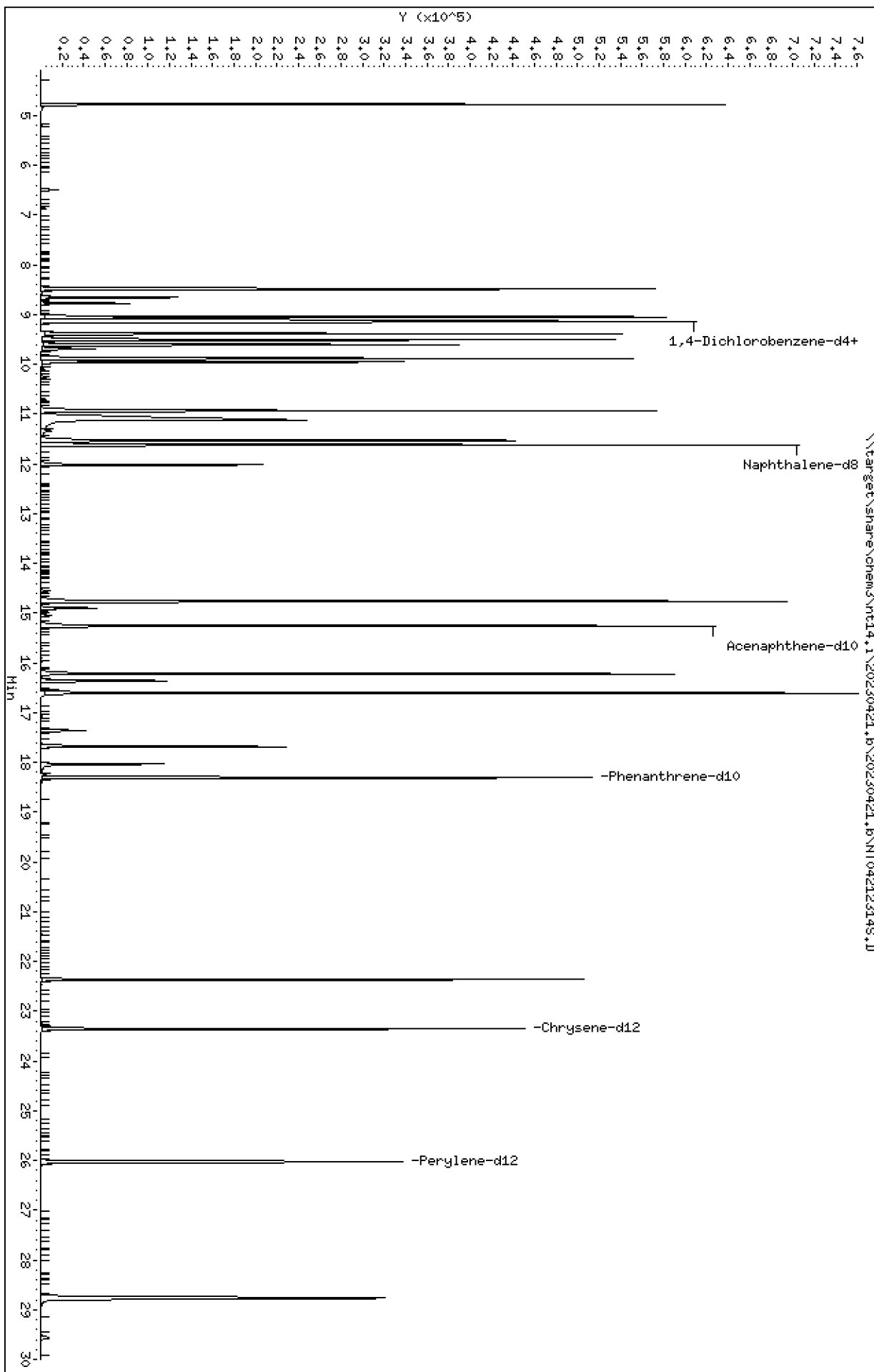
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JGR

Column diameter: 0.25

Page 1



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

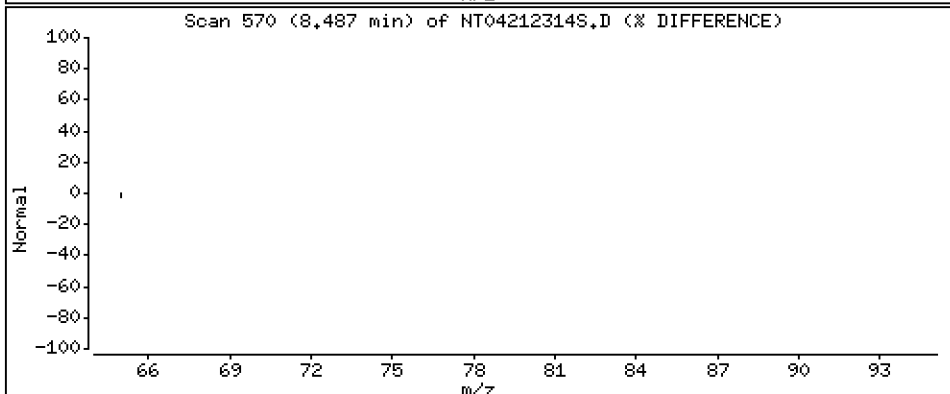
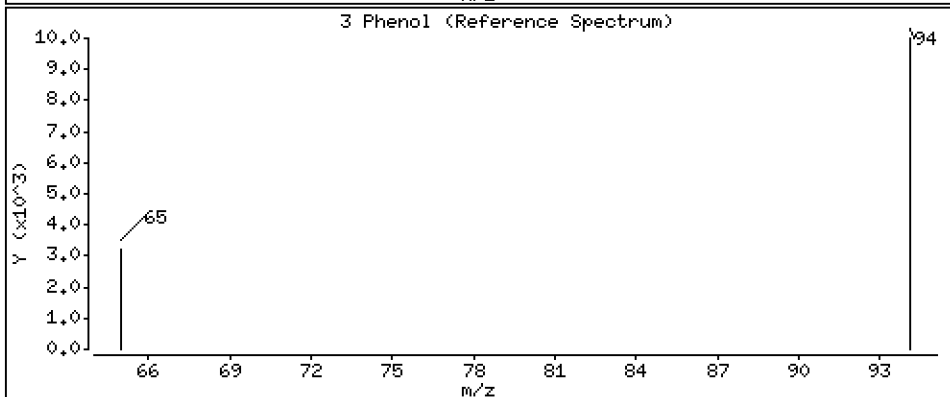
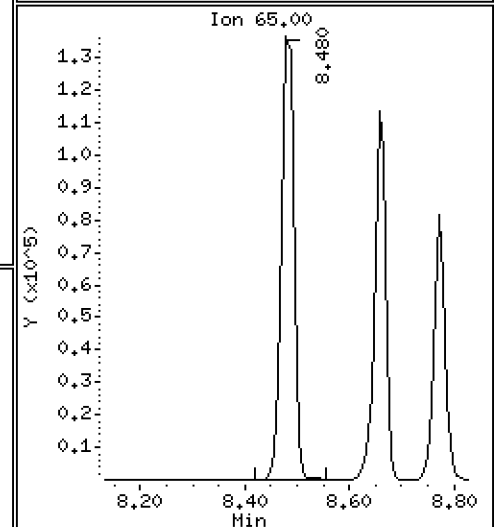
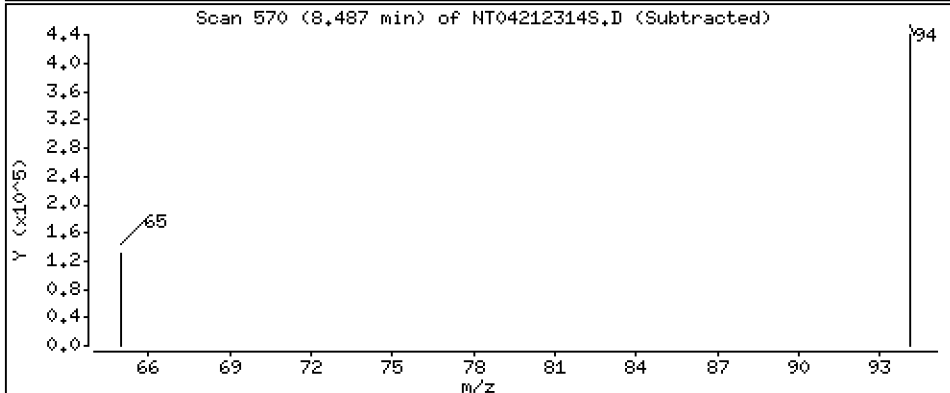
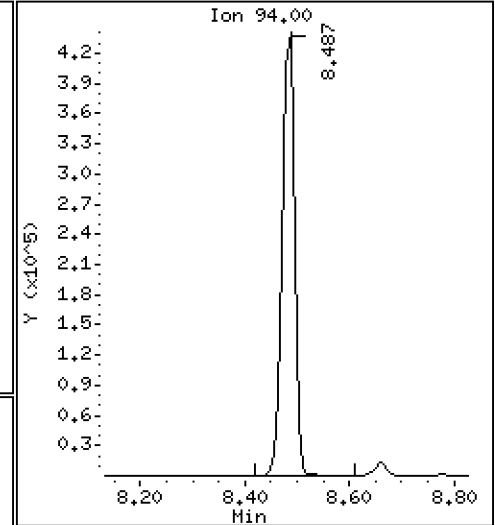
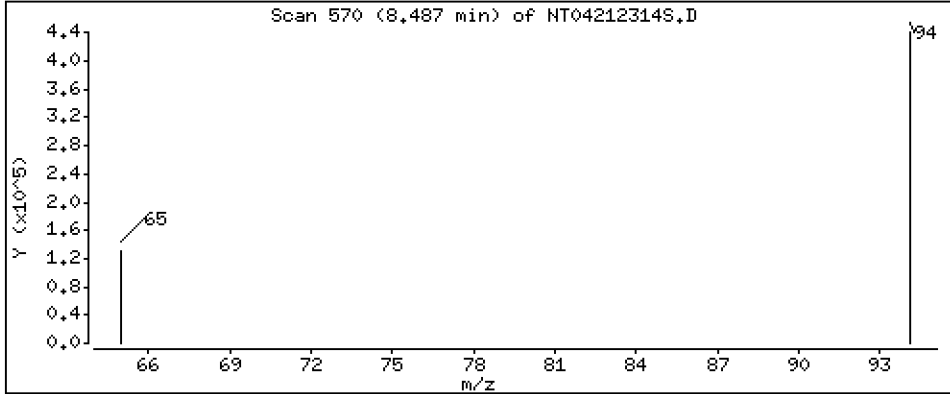
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 4,304 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

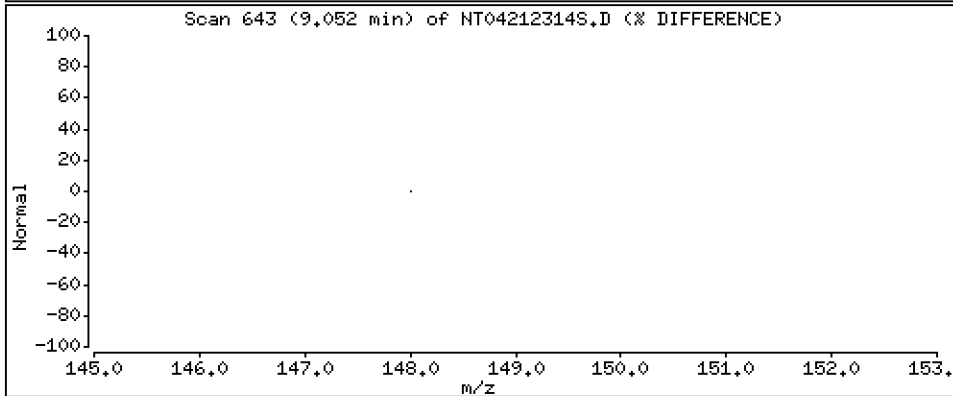
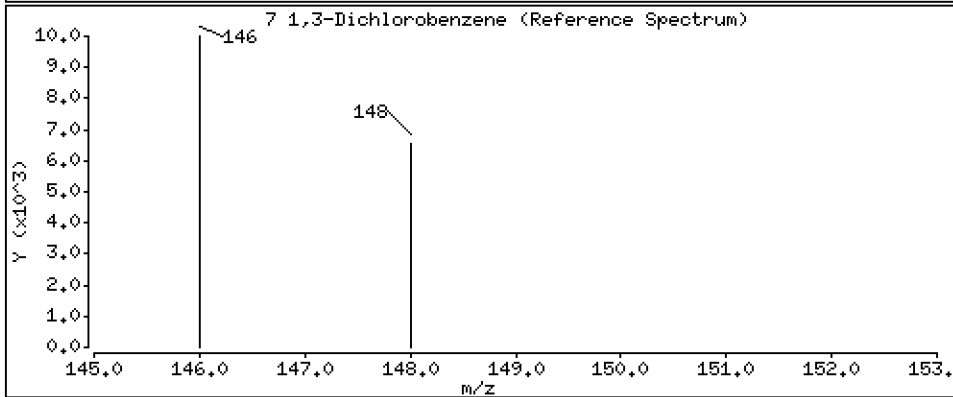
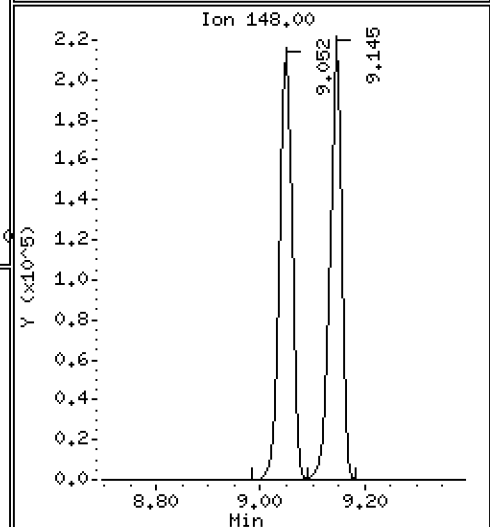
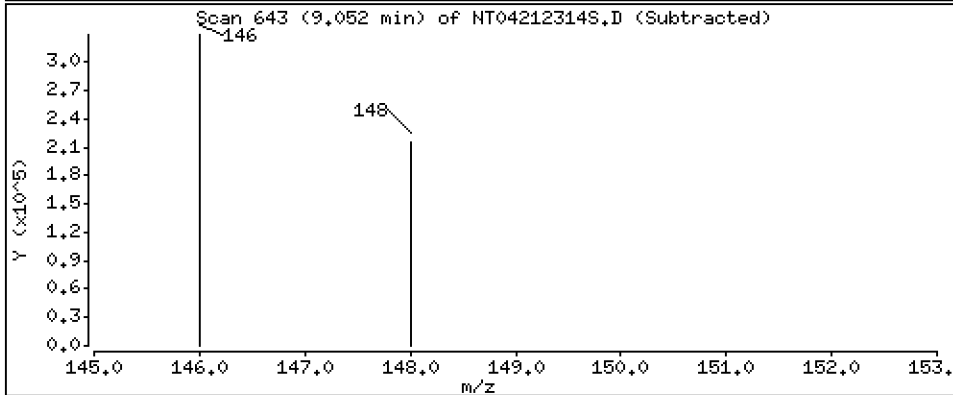
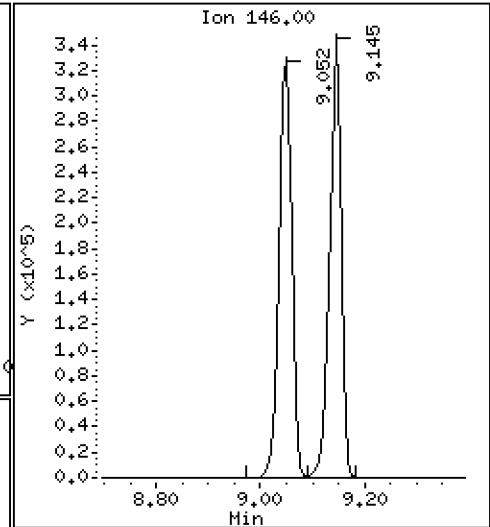
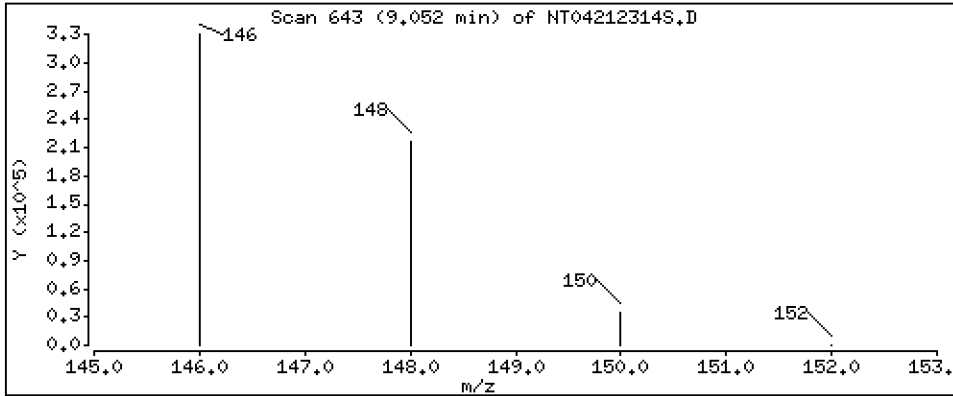
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 4,479 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

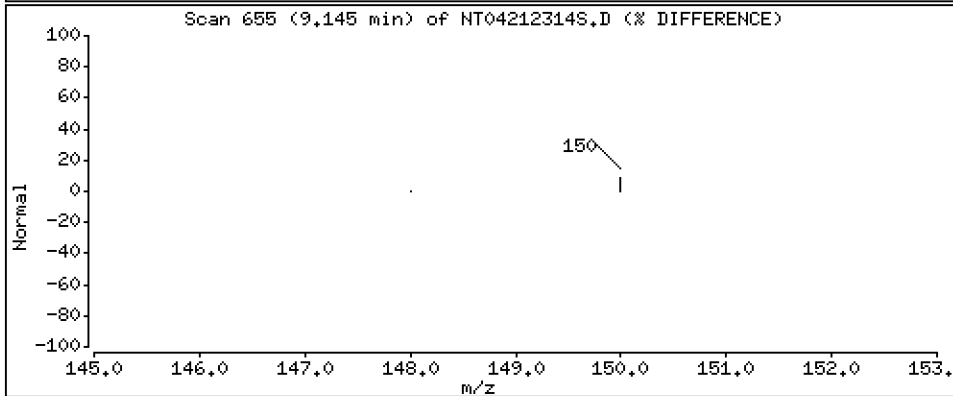
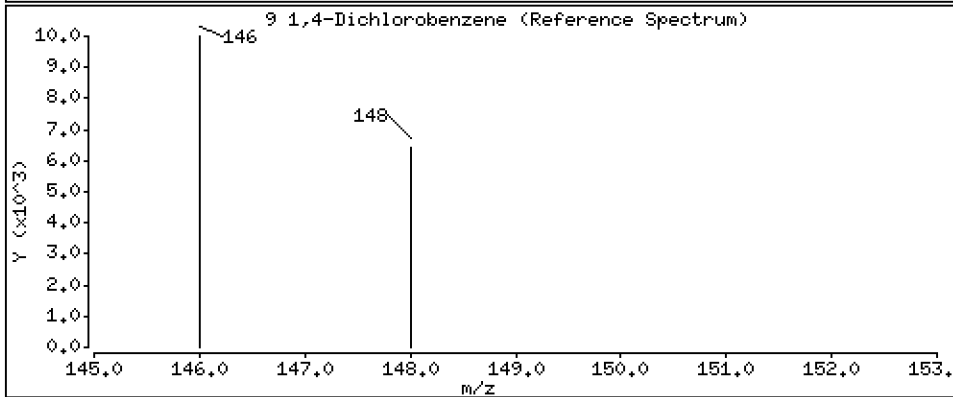
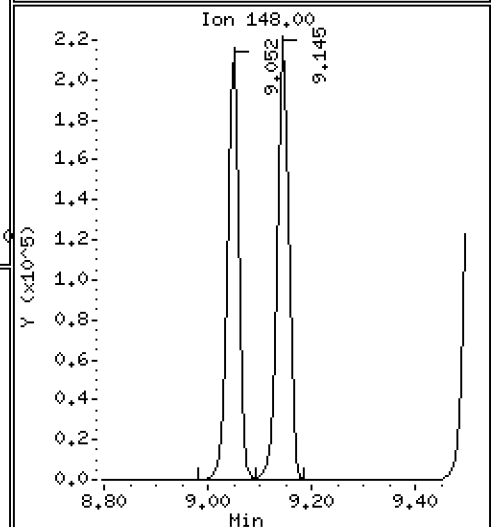
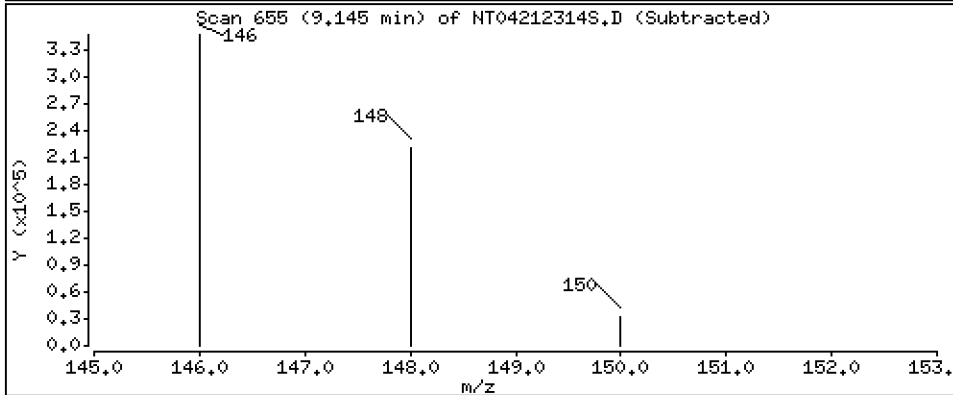
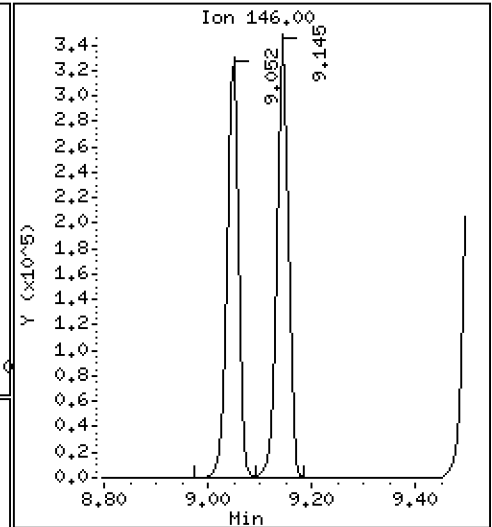
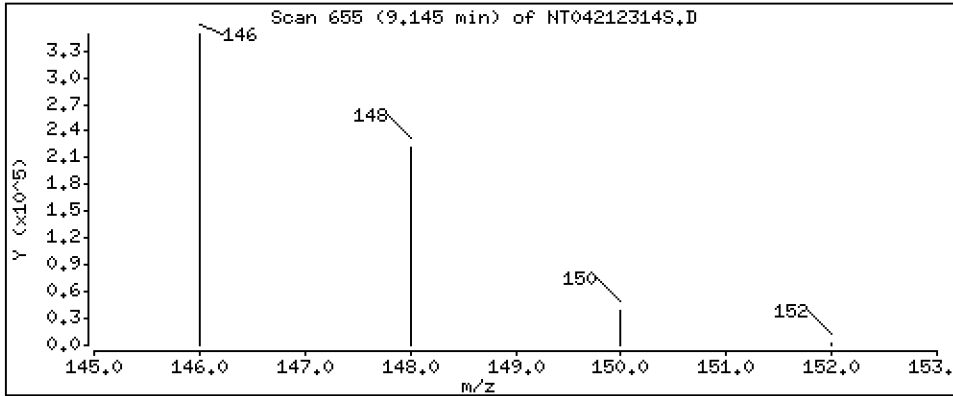
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 4,599 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

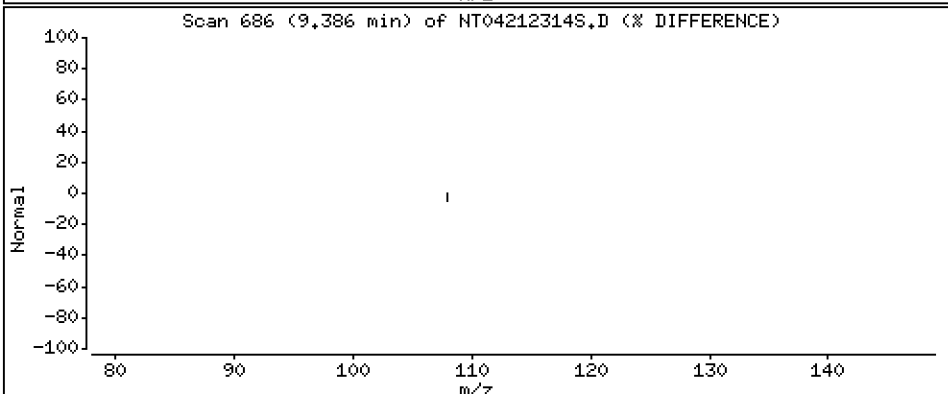
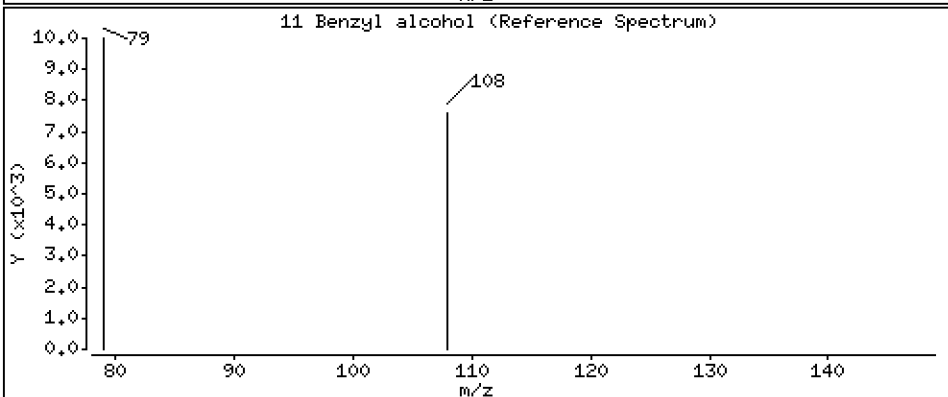
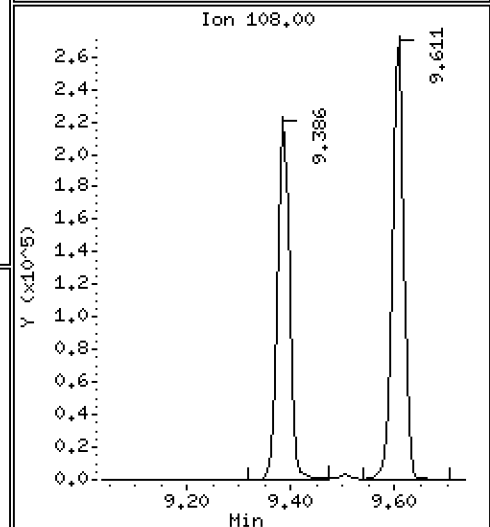
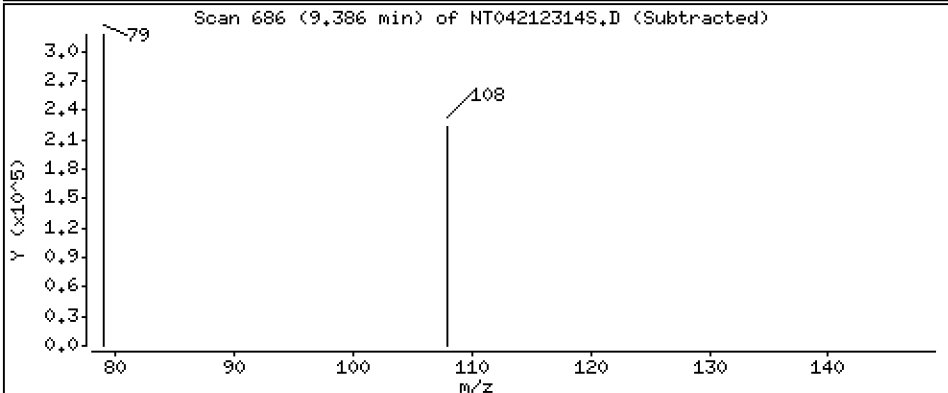
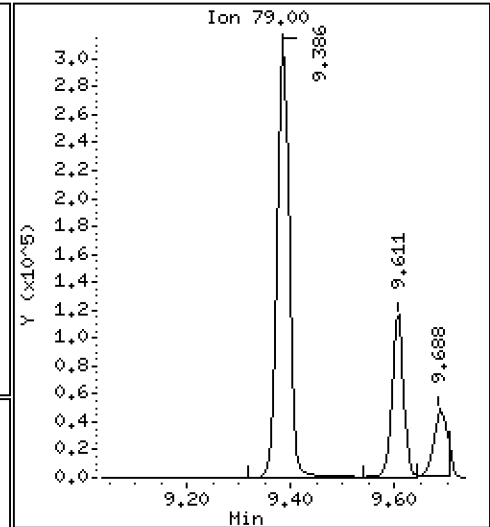
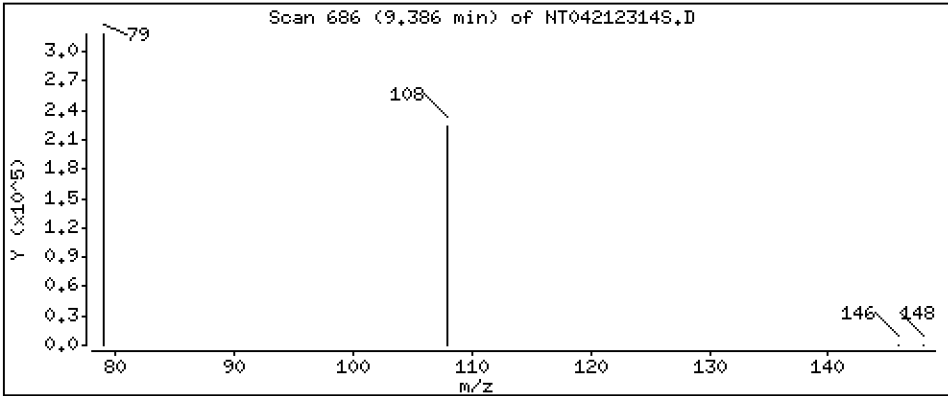
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 4.915 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

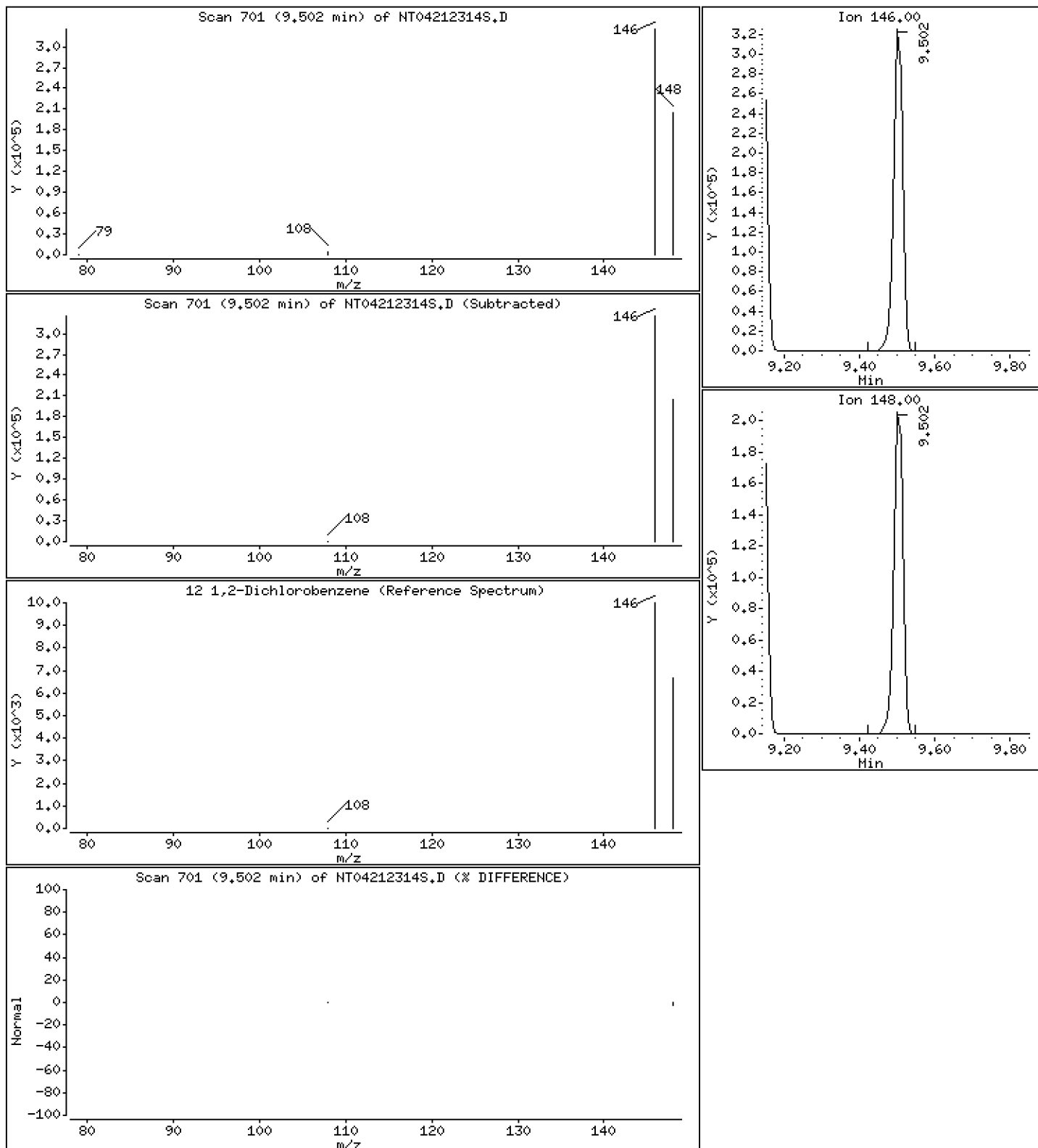
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

12 1,2-Dichlorobenzene

Concentration: 4.535 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

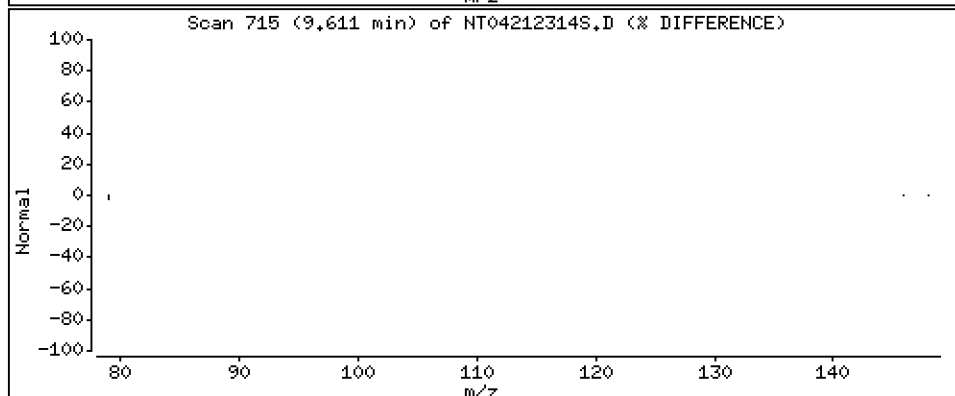
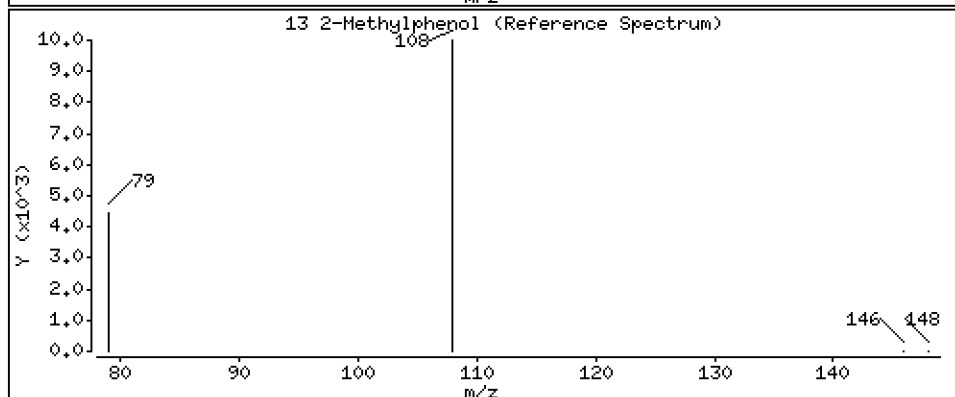
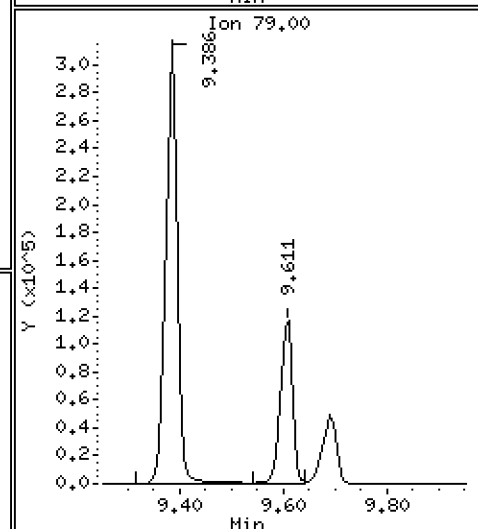
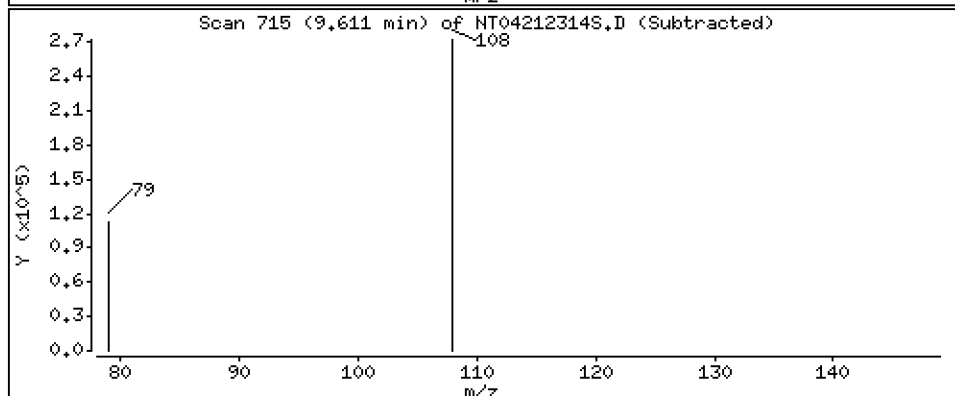
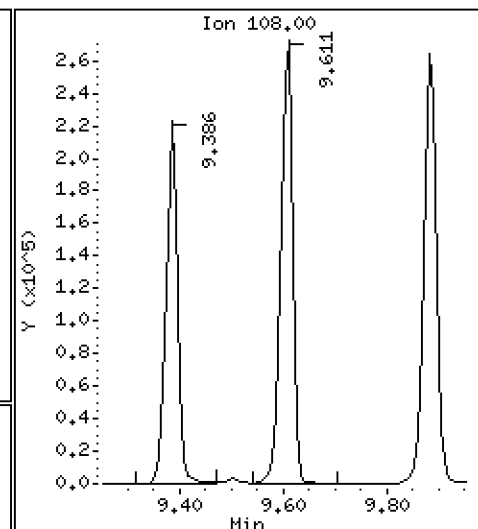
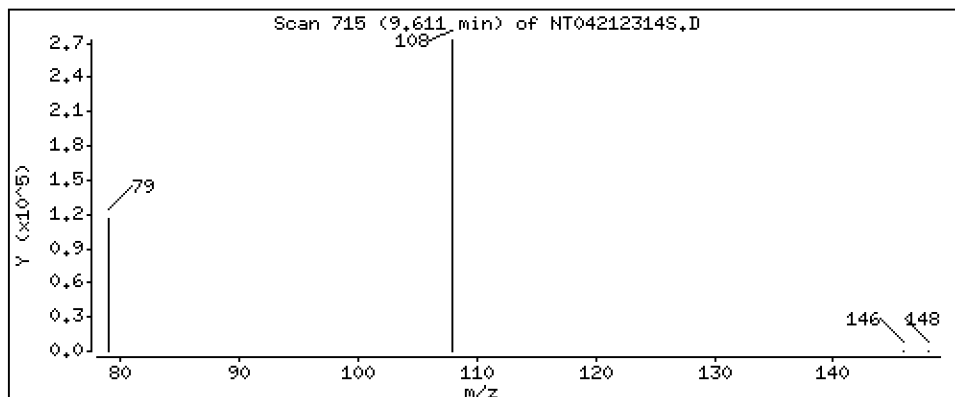
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

13 2-Methylphenol

Concentration: 4,207 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

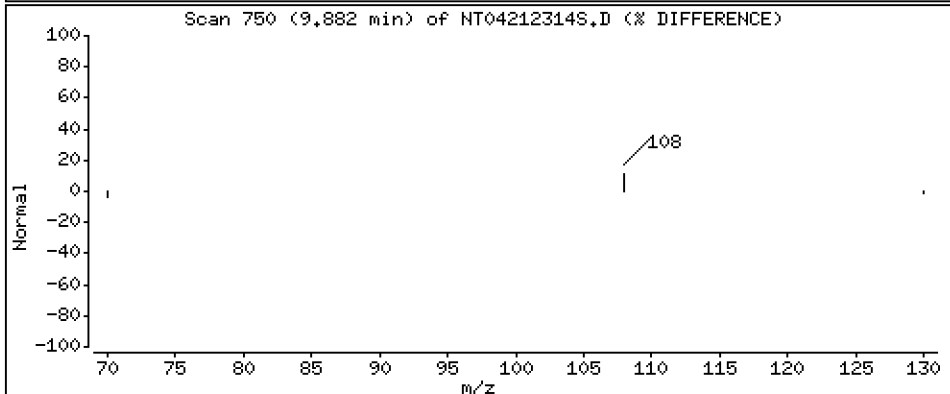
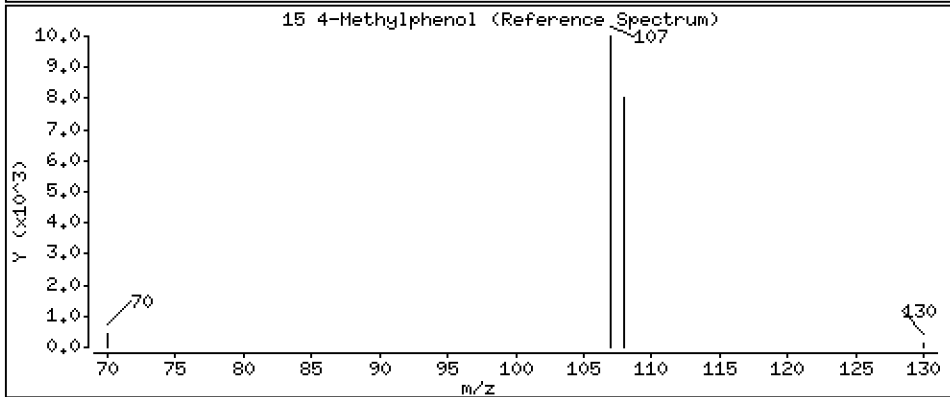
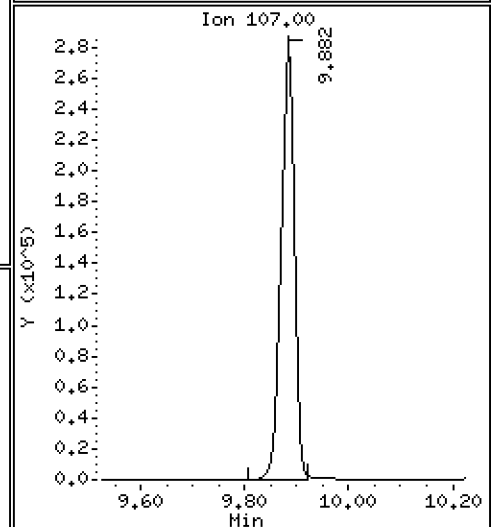
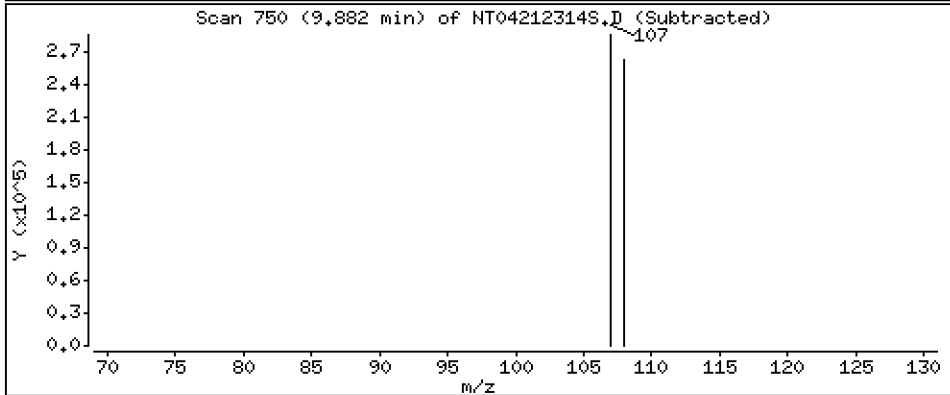
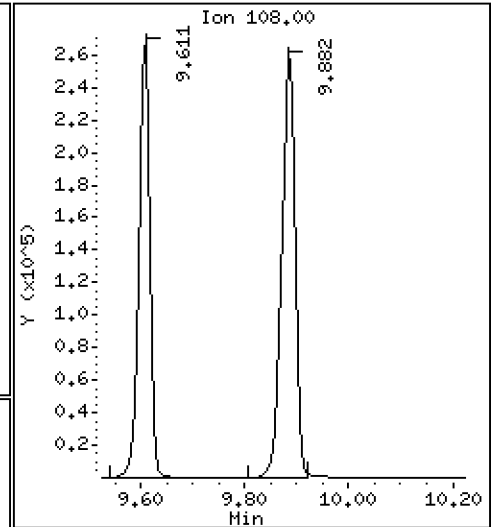
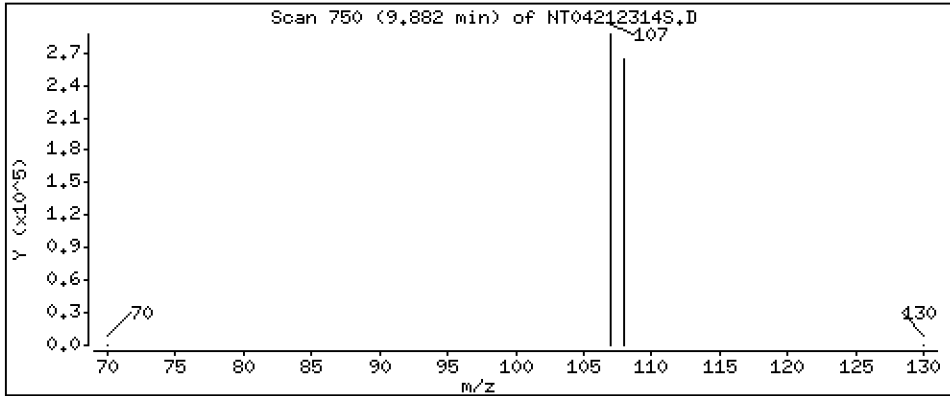
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 4,538 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

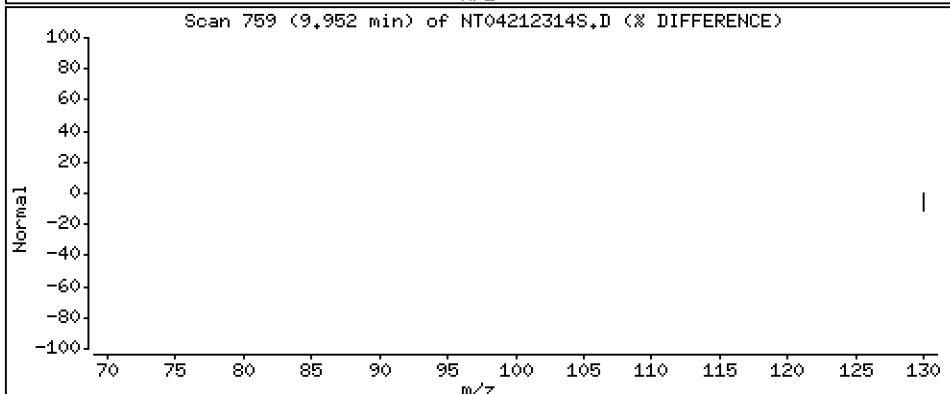
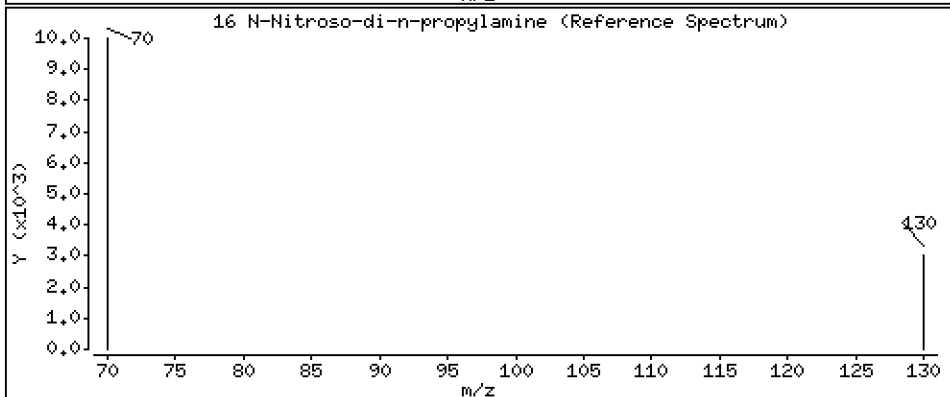
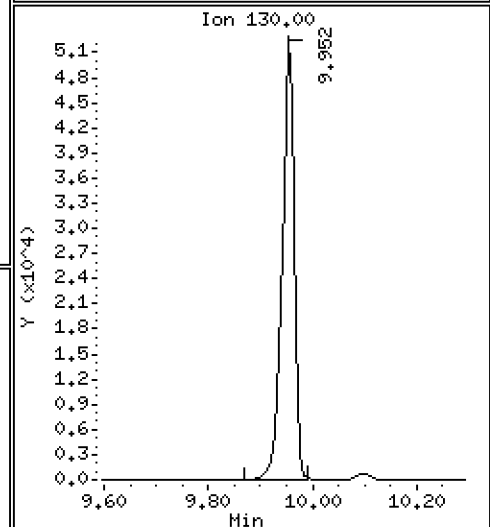
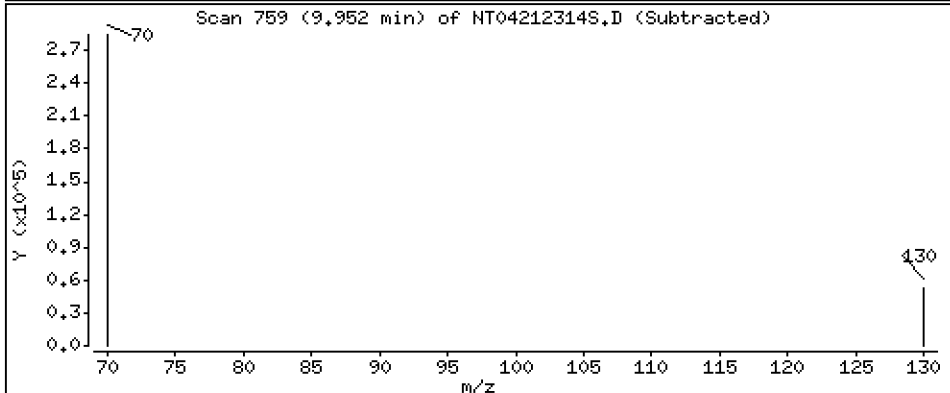
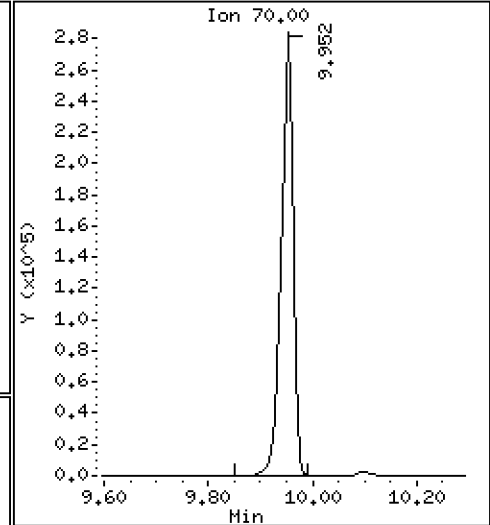
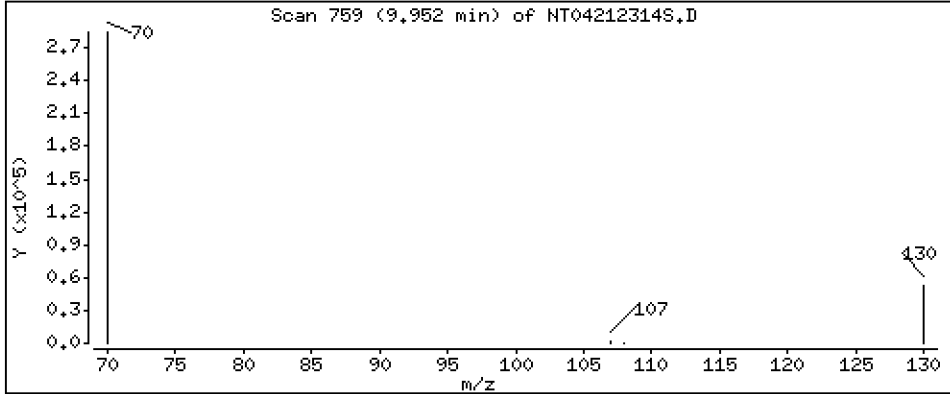
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 4,707 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

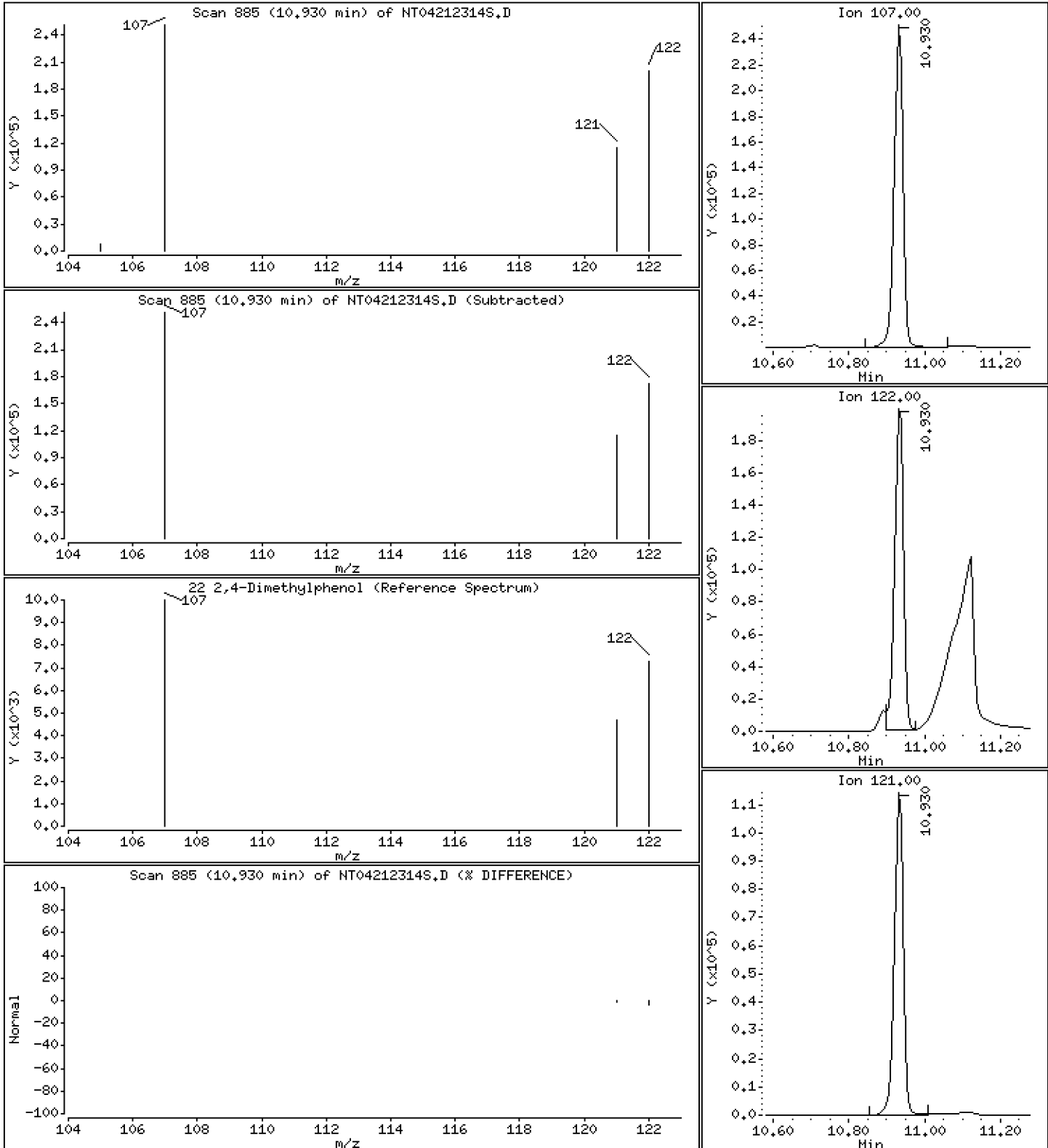
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 3,684 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

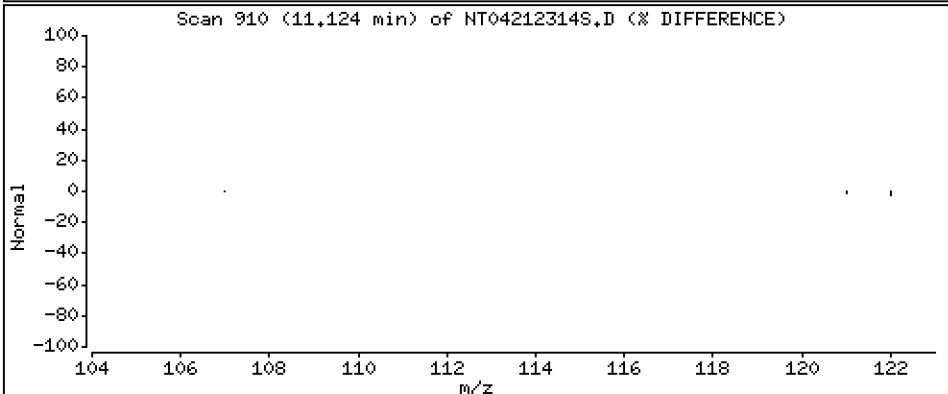
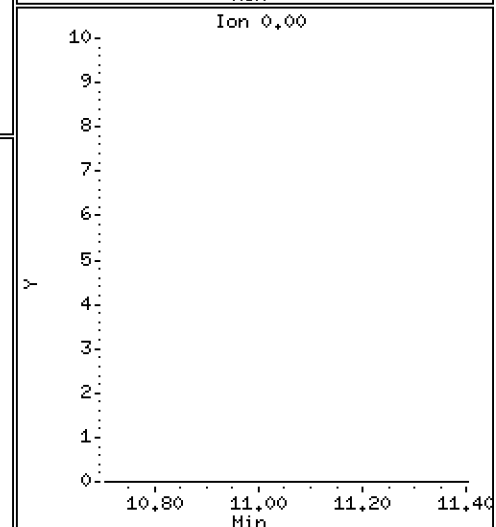
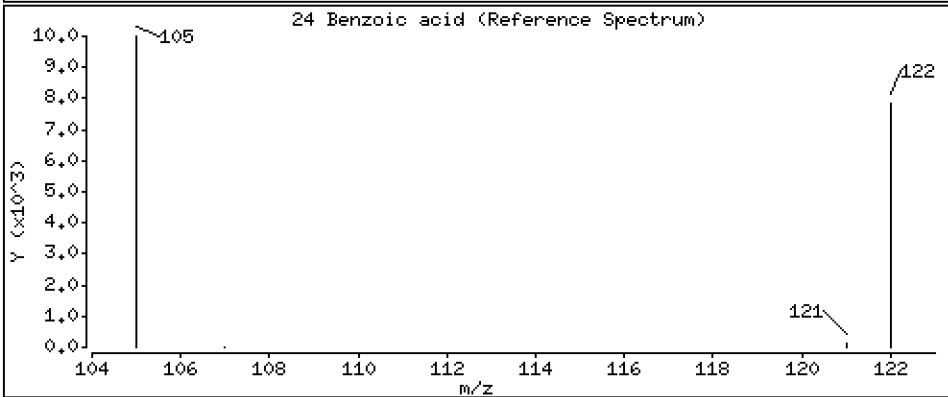
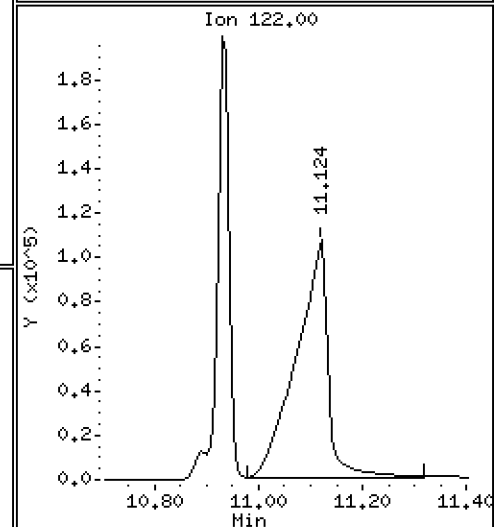
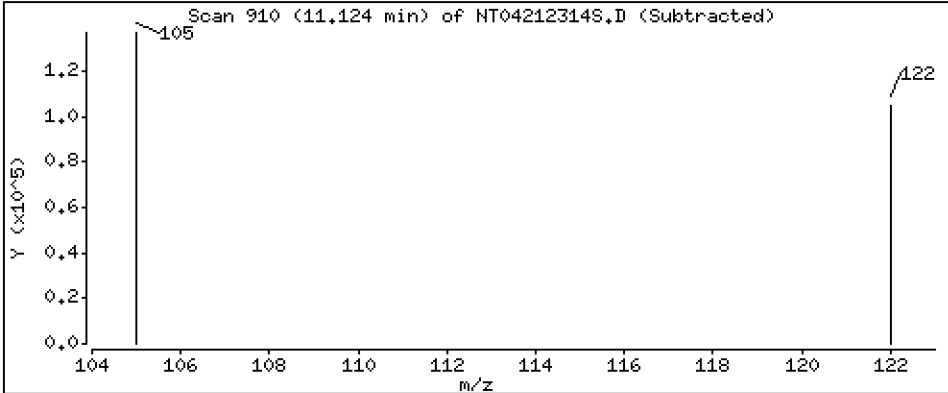
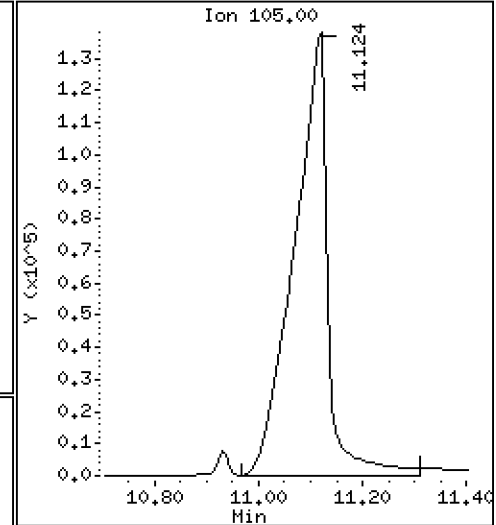
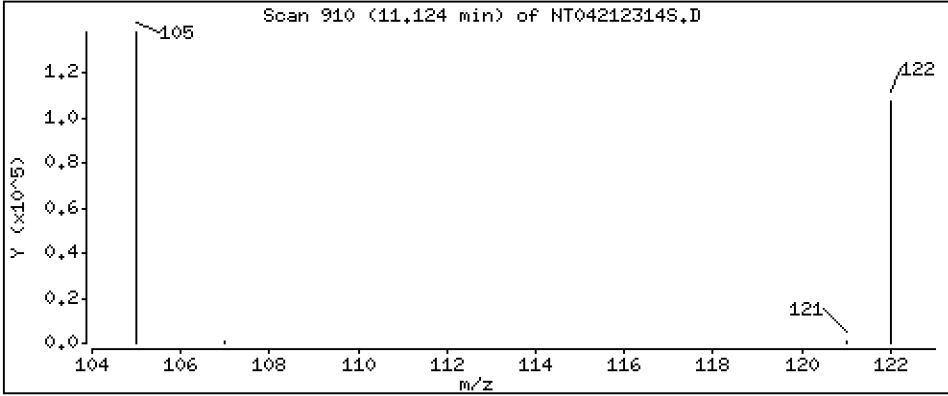
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 8,195 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

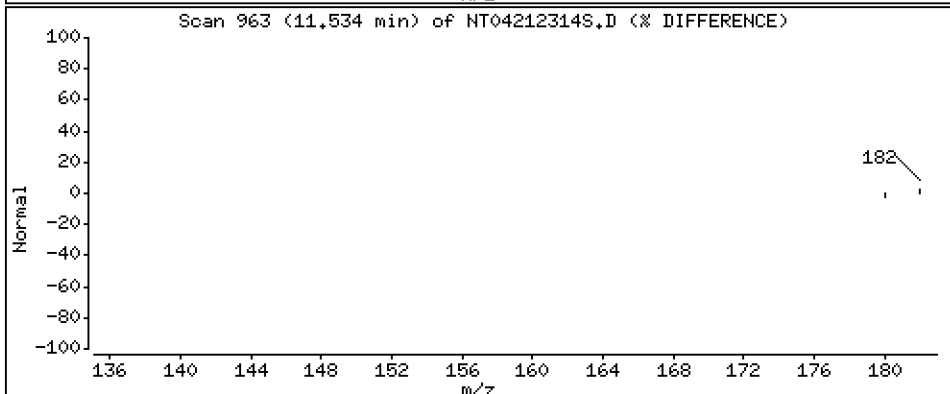
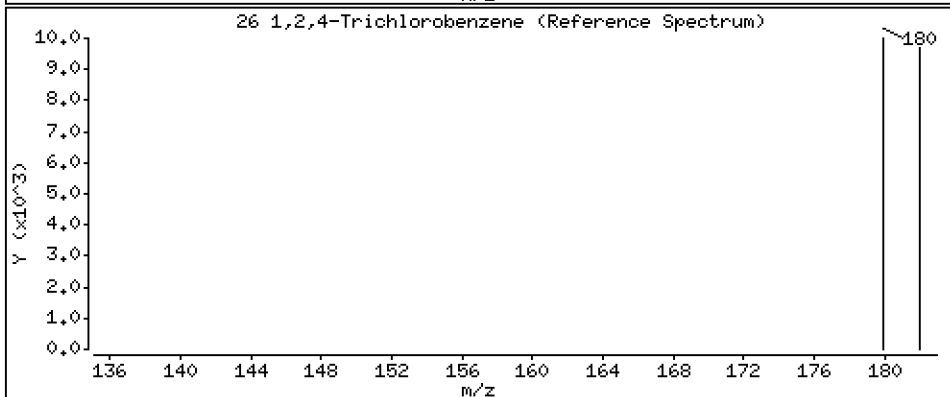
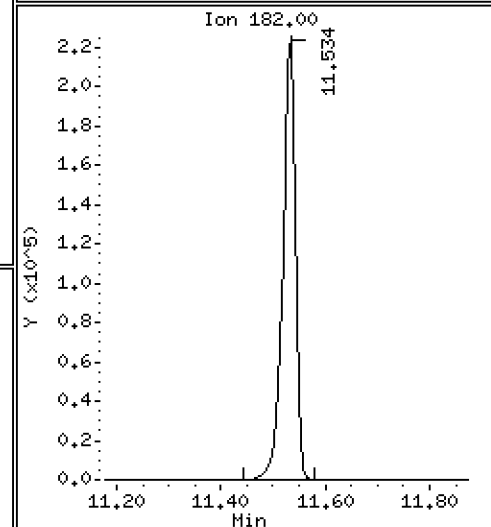
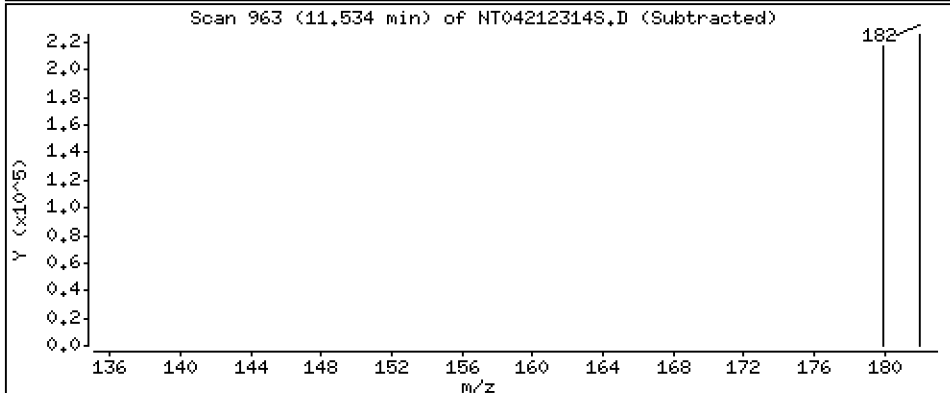
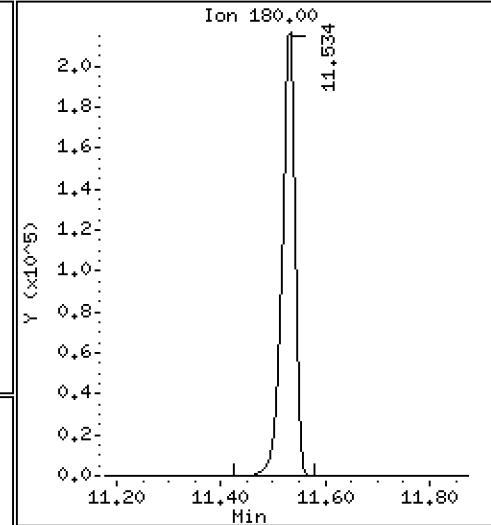
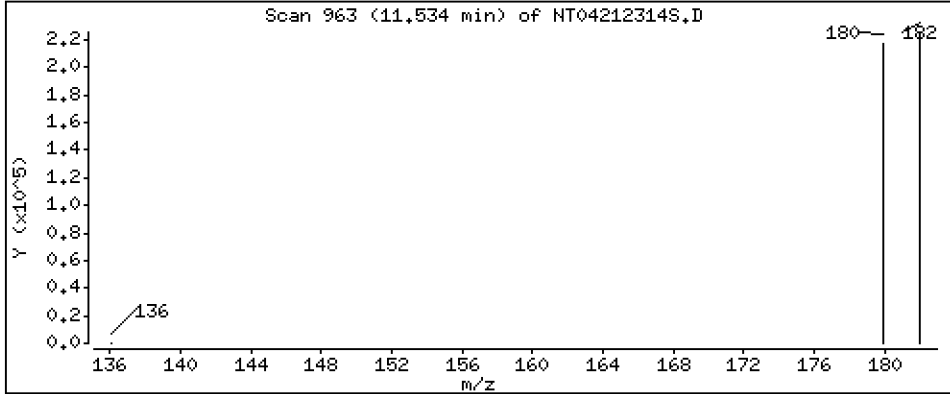
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

26 1,2,4-Trichlorobenzene

Concentration: 4.671 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

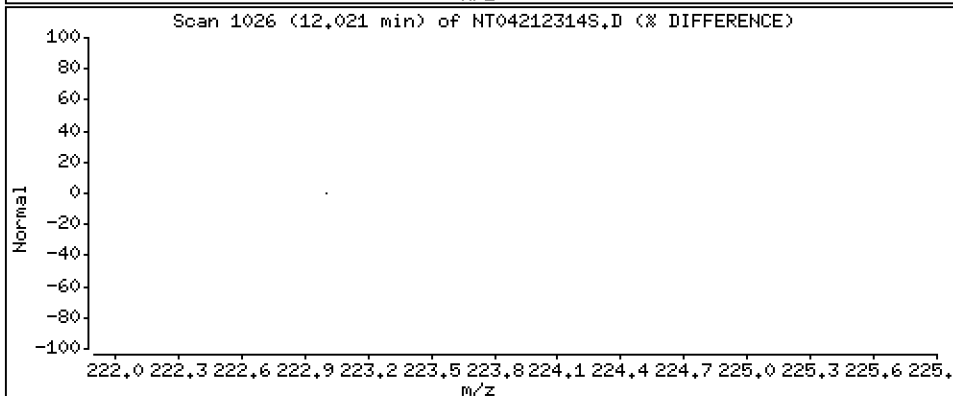
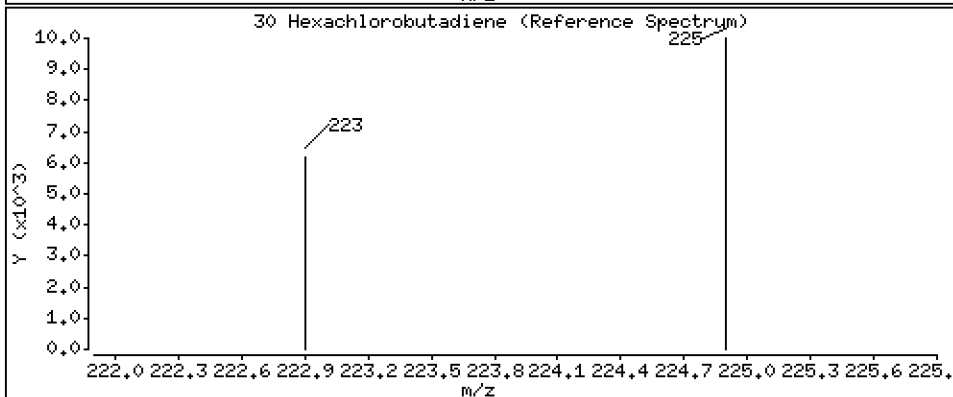
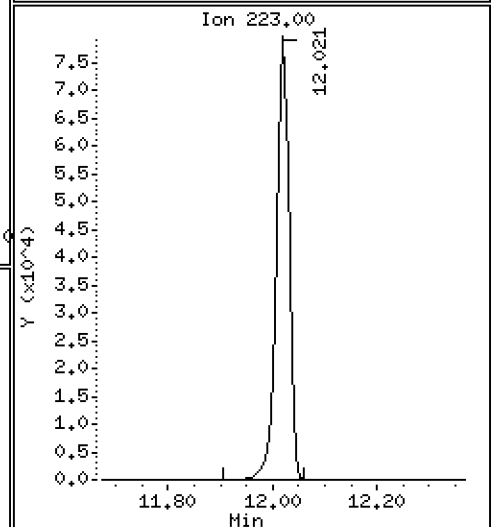
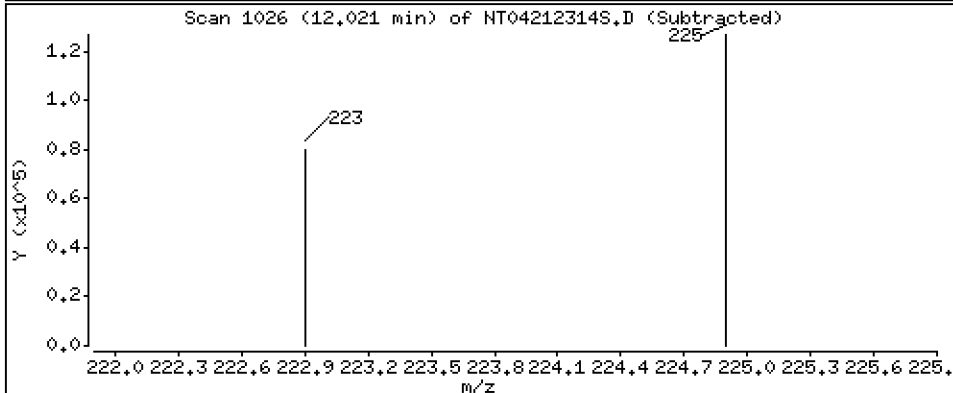
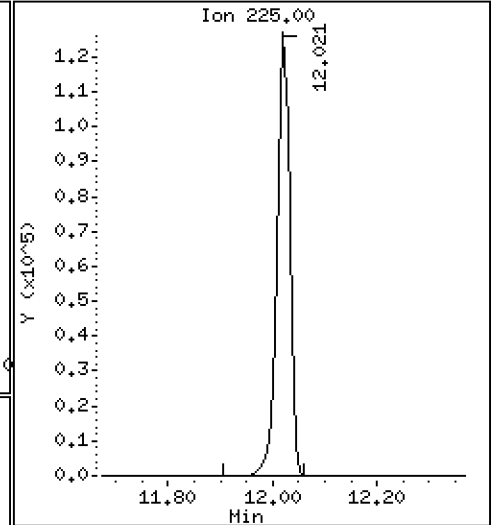
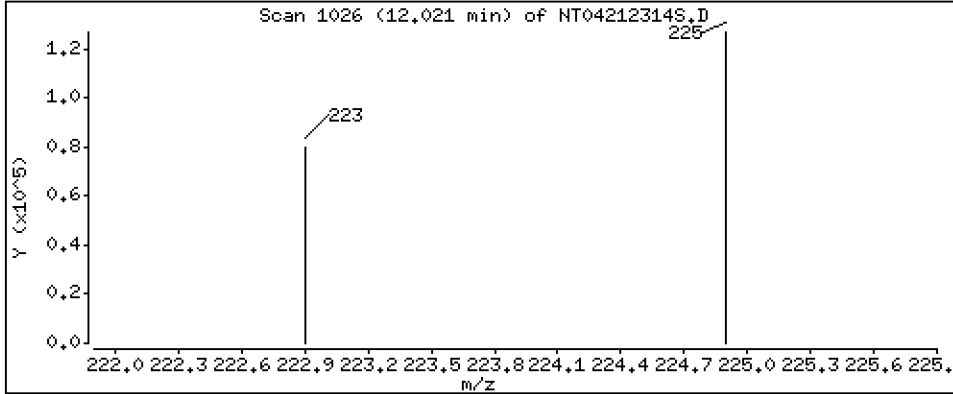
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 4,574 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

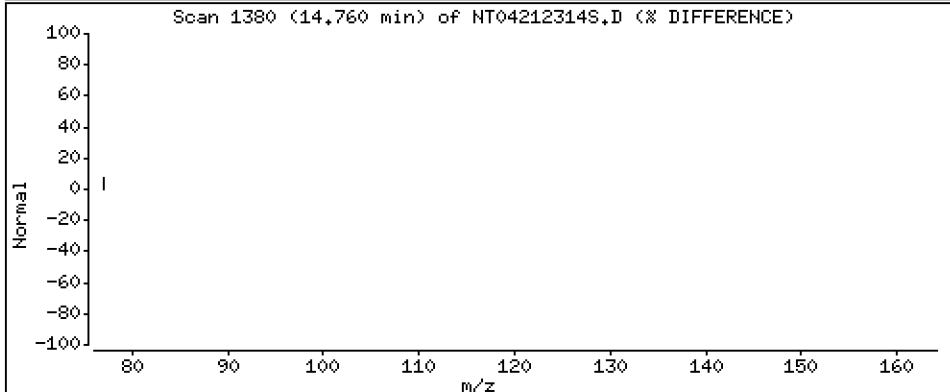
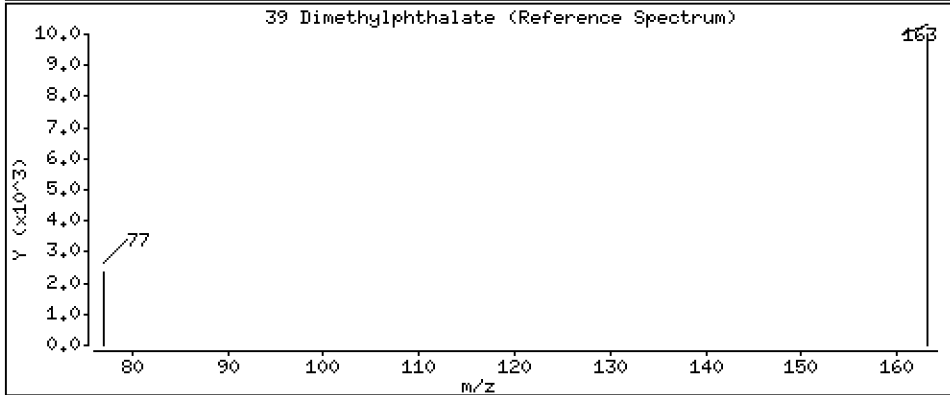
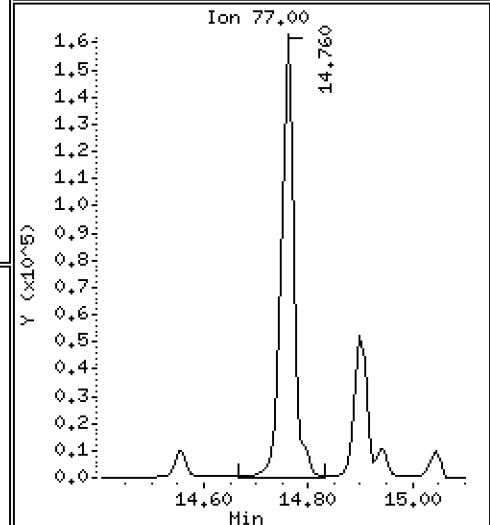
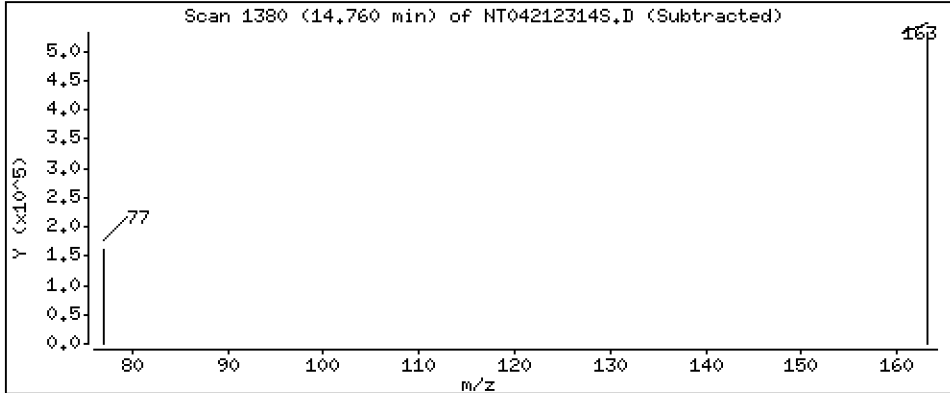
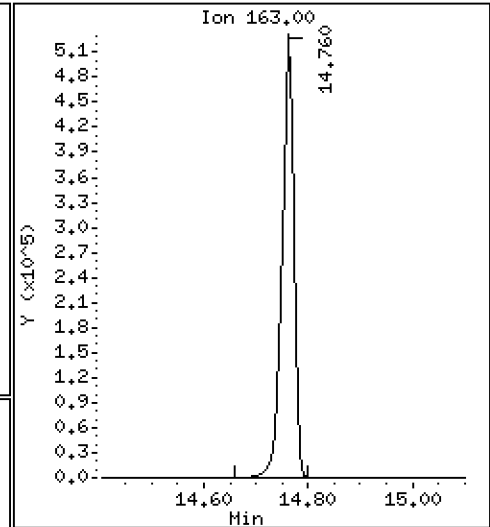
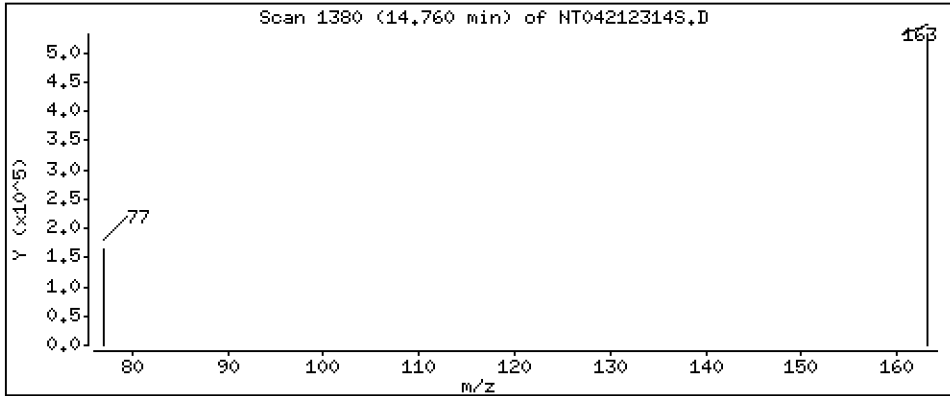
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 4,407 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

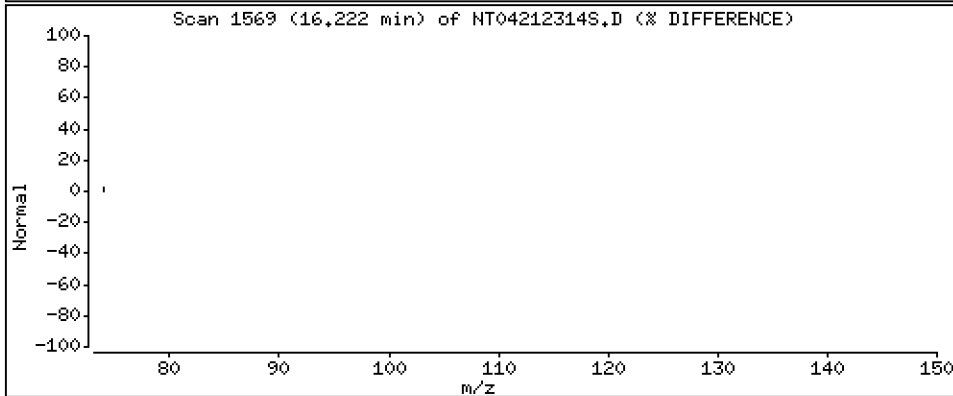
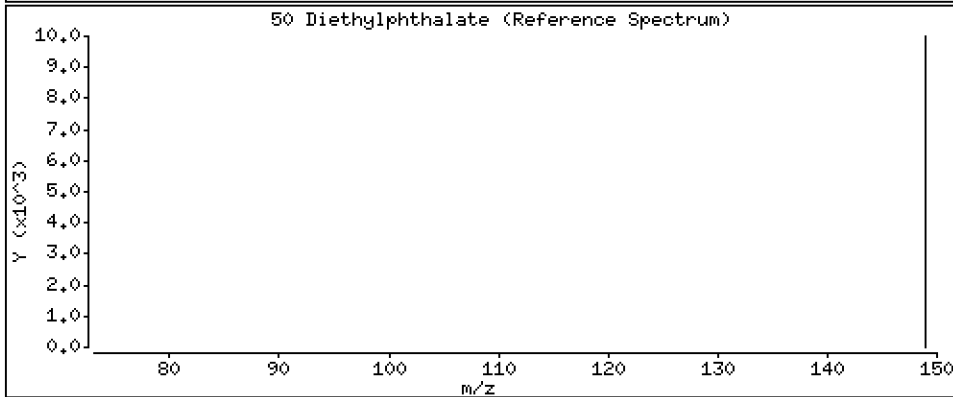
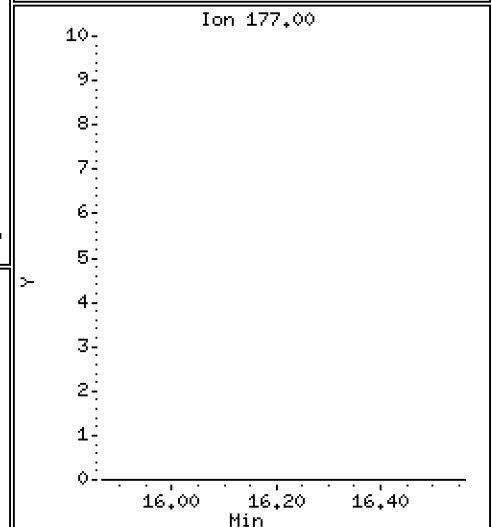
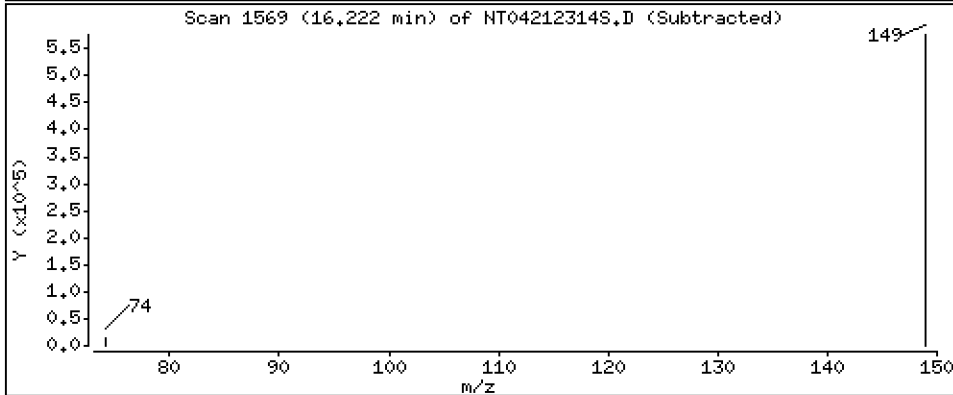
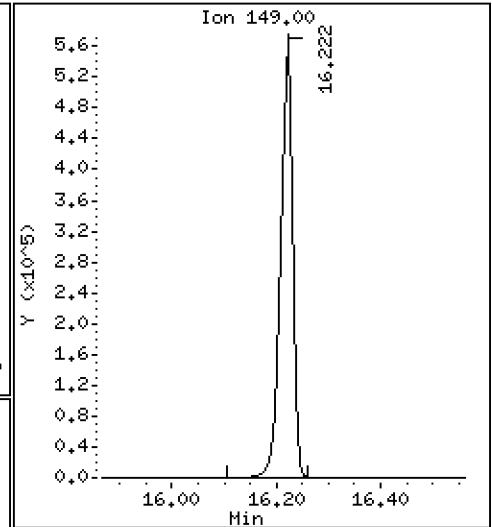
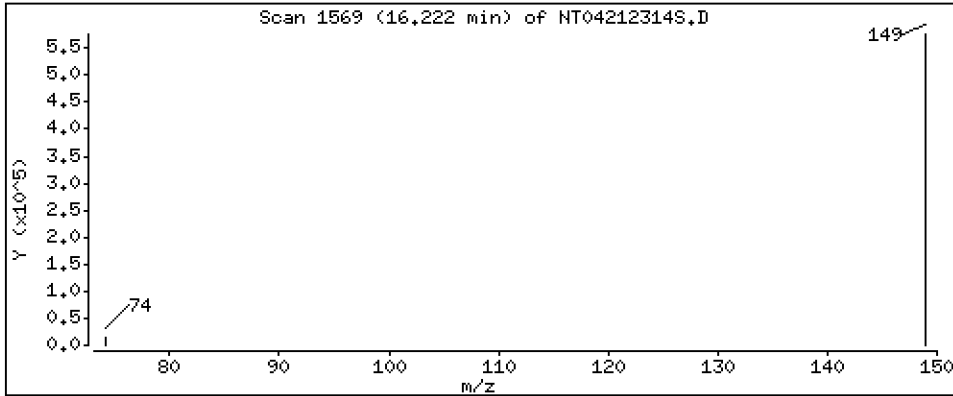
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 4,605 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

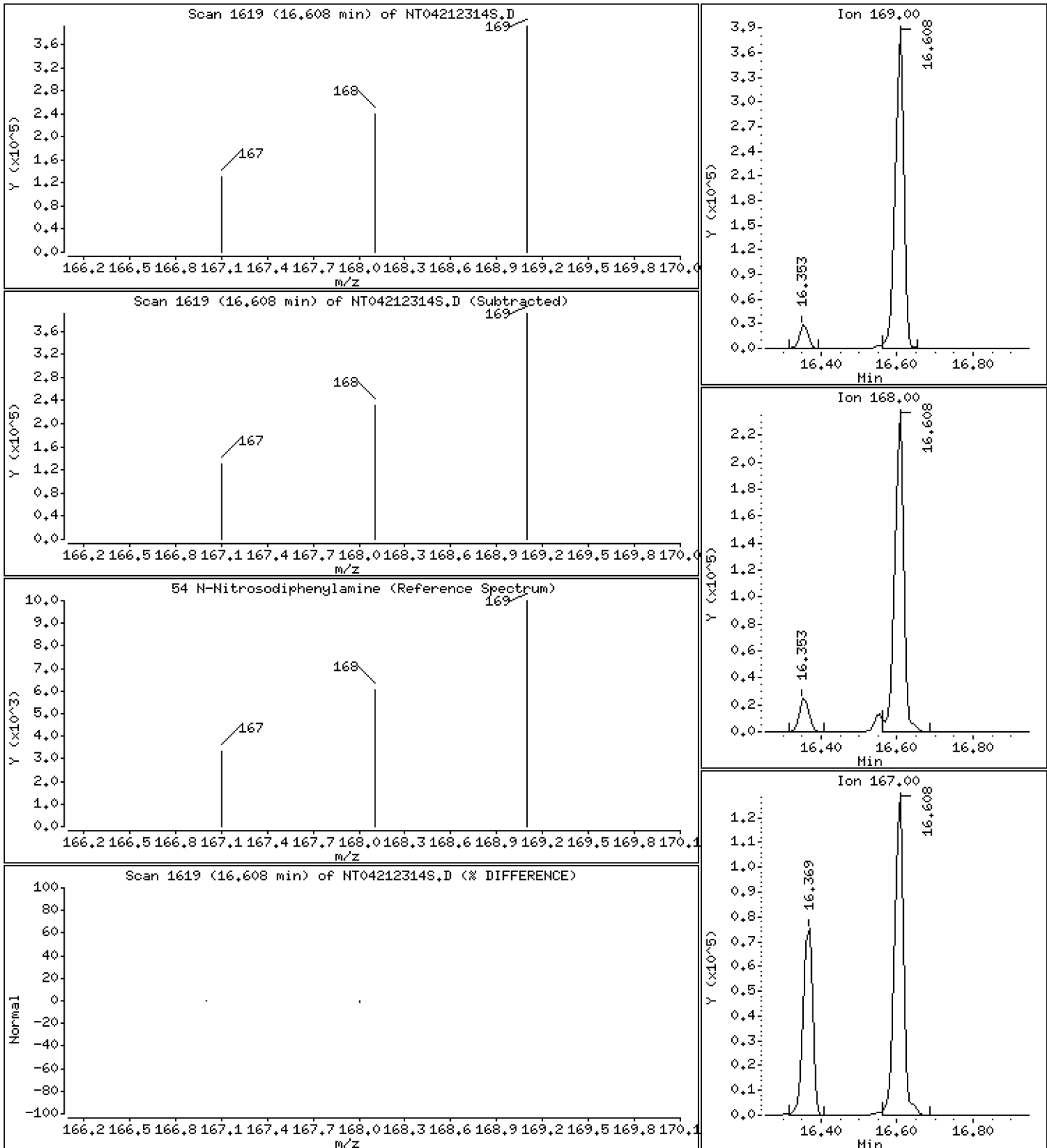
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 4,906 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

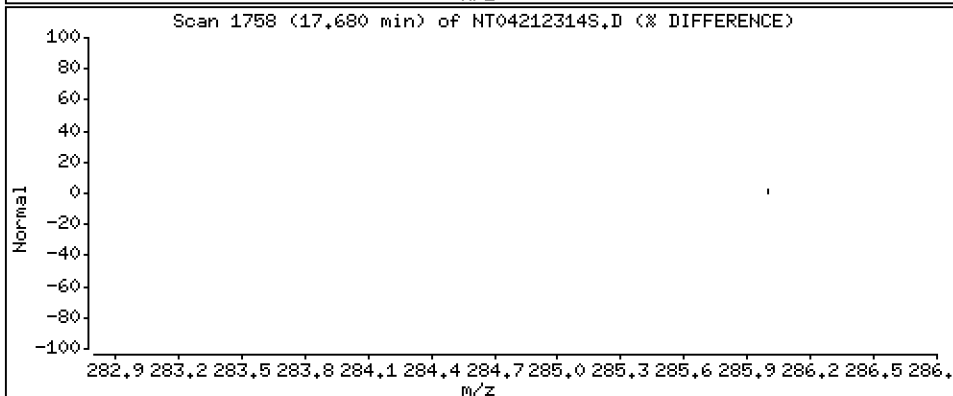
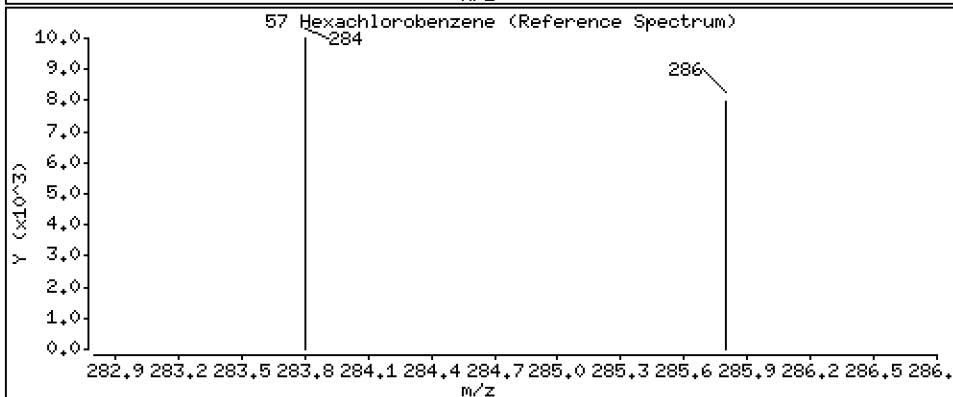
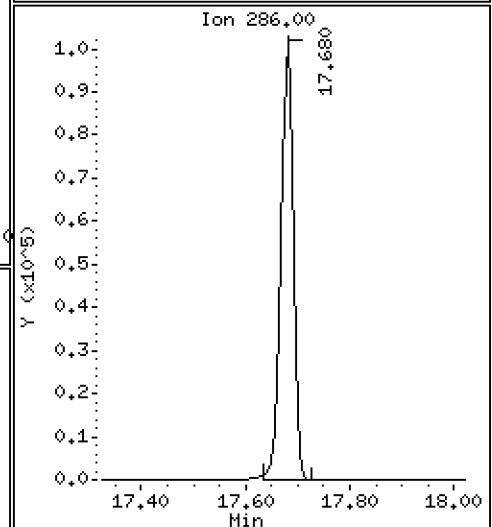
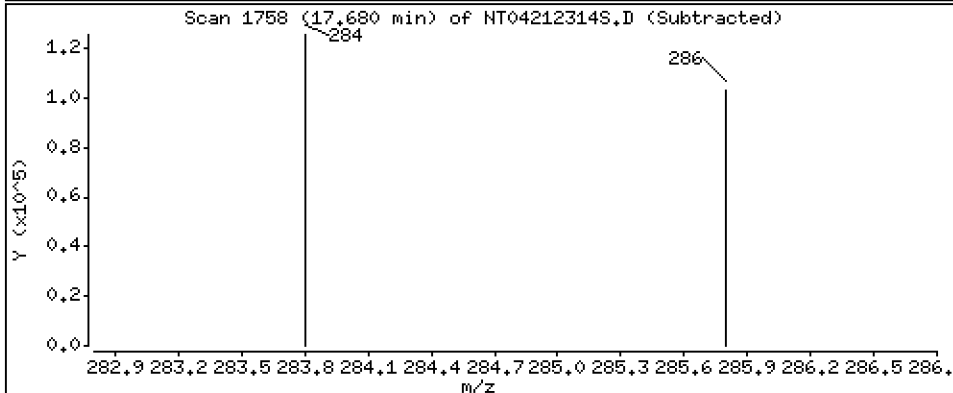
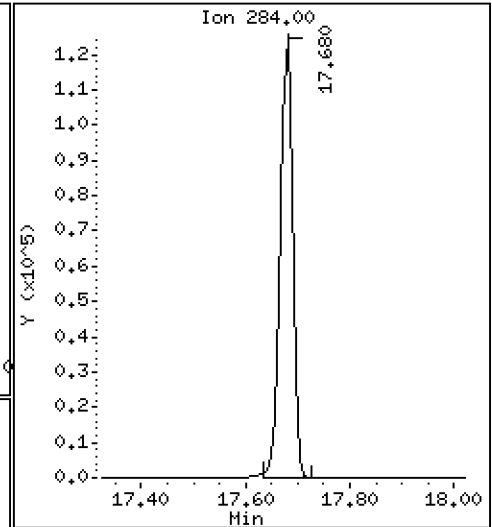
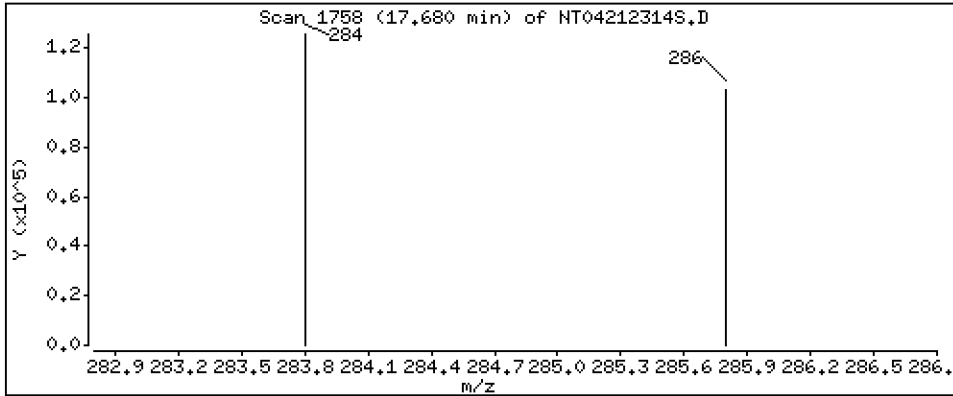
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 4,294 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

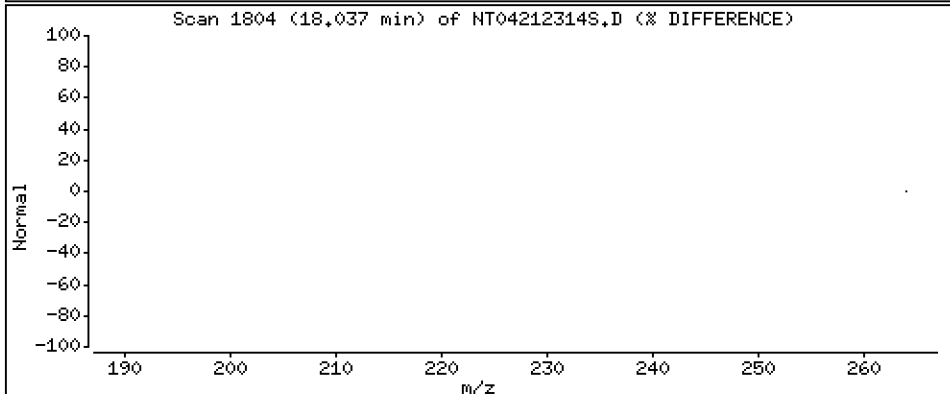
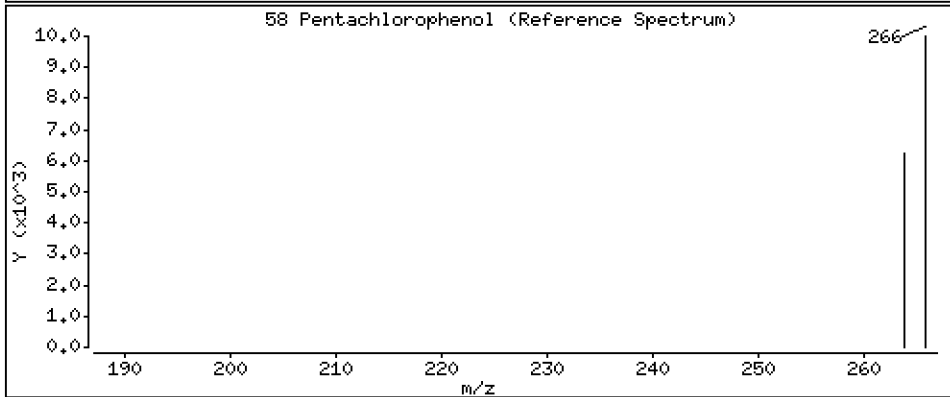
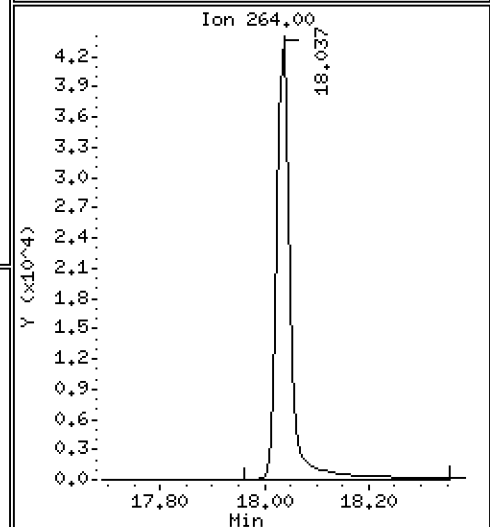
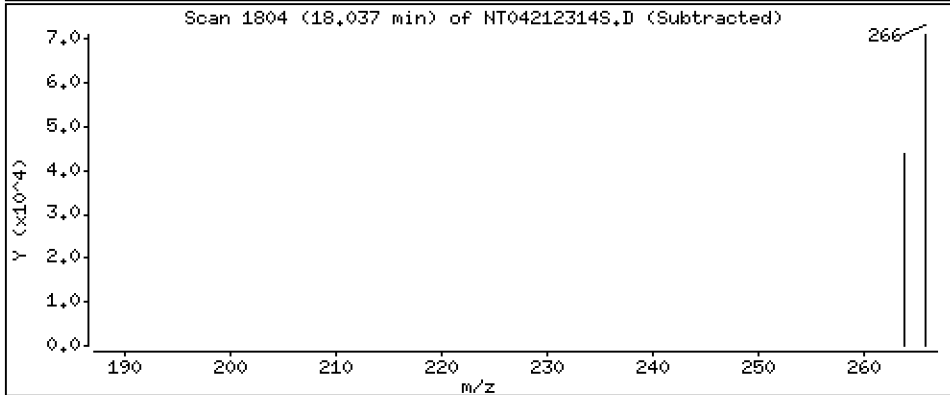
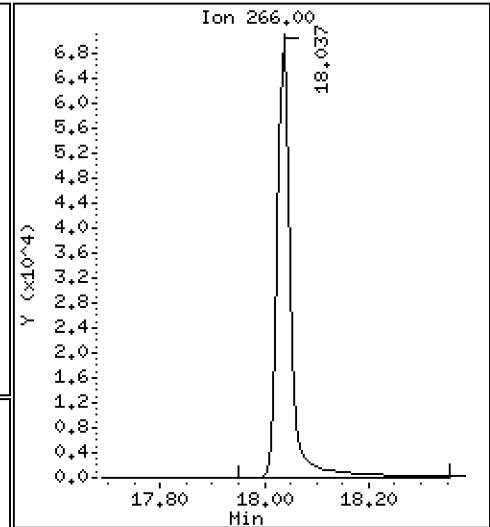
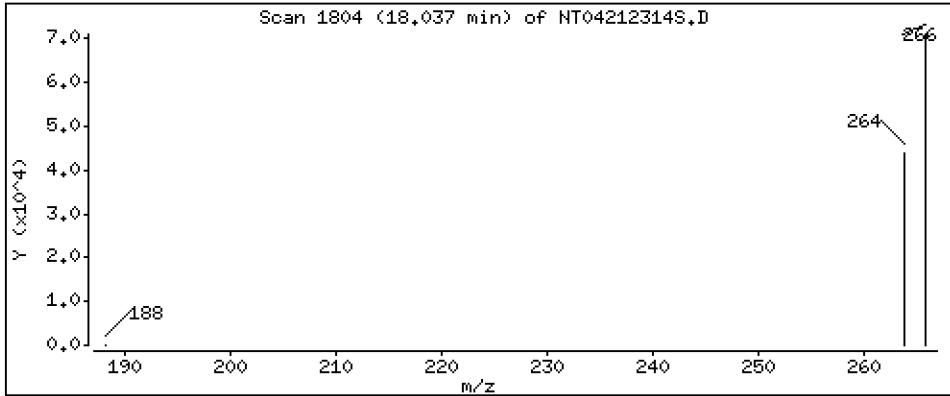
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 3,972 ug/mL





Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

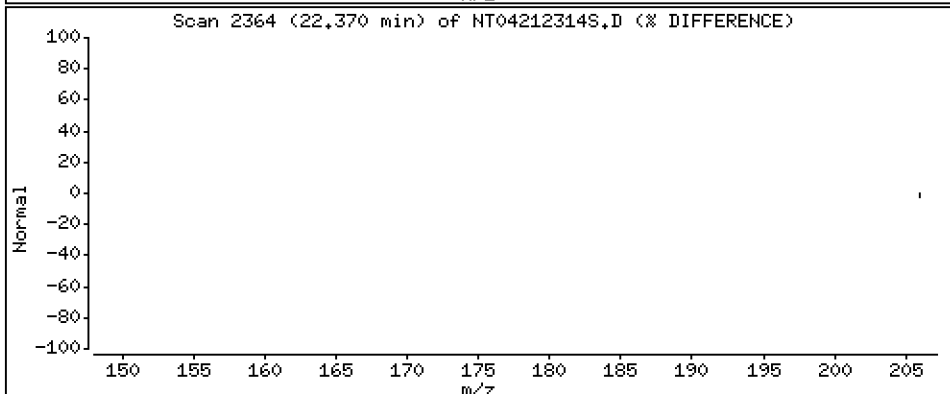
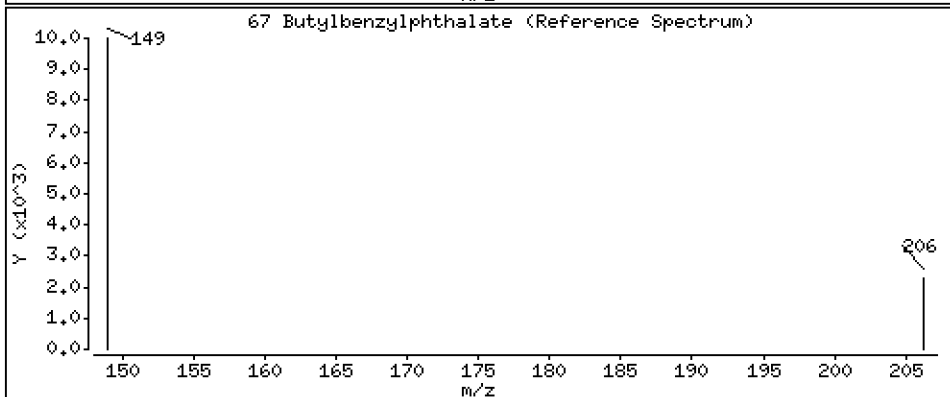
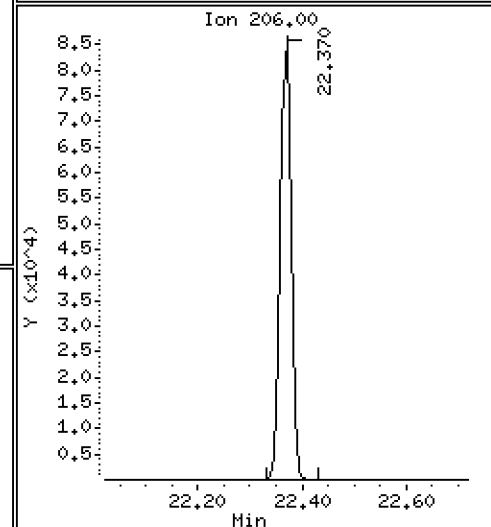
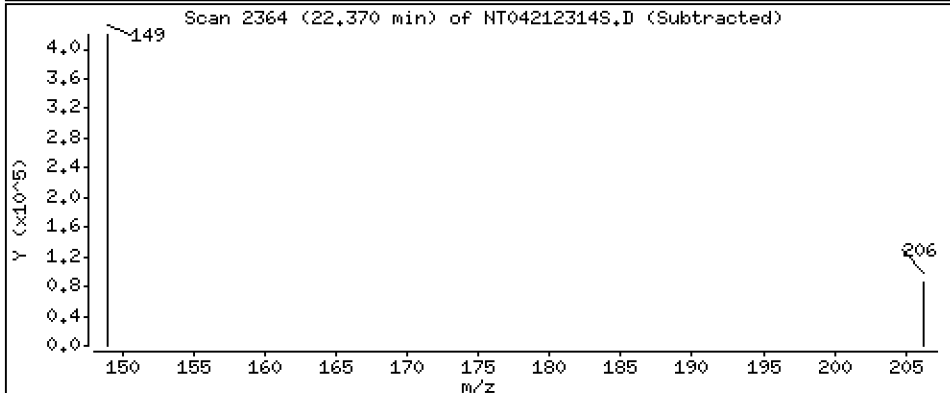
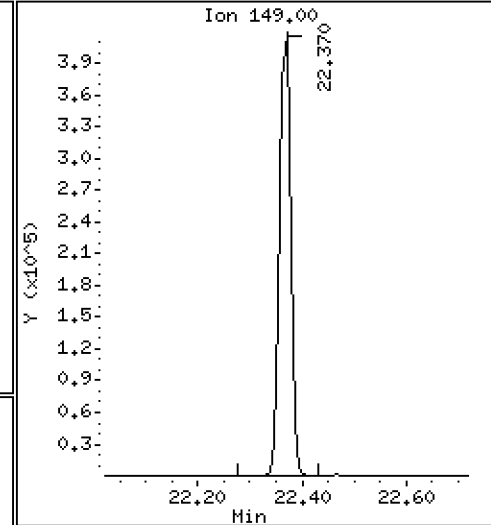
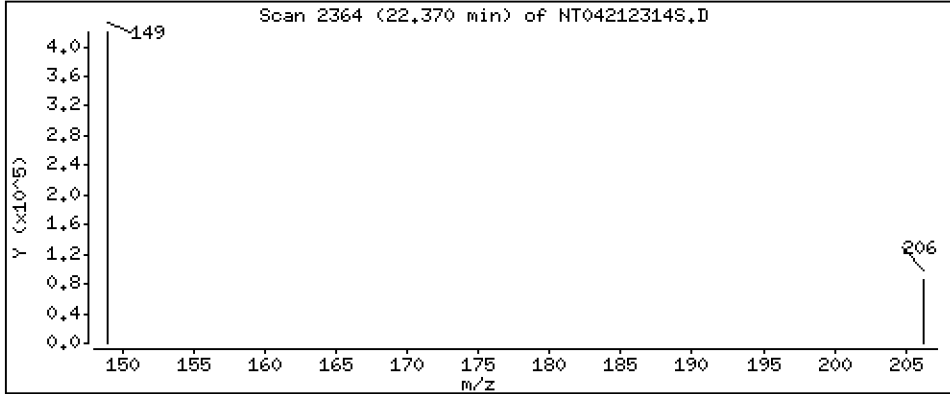
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 4,695 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

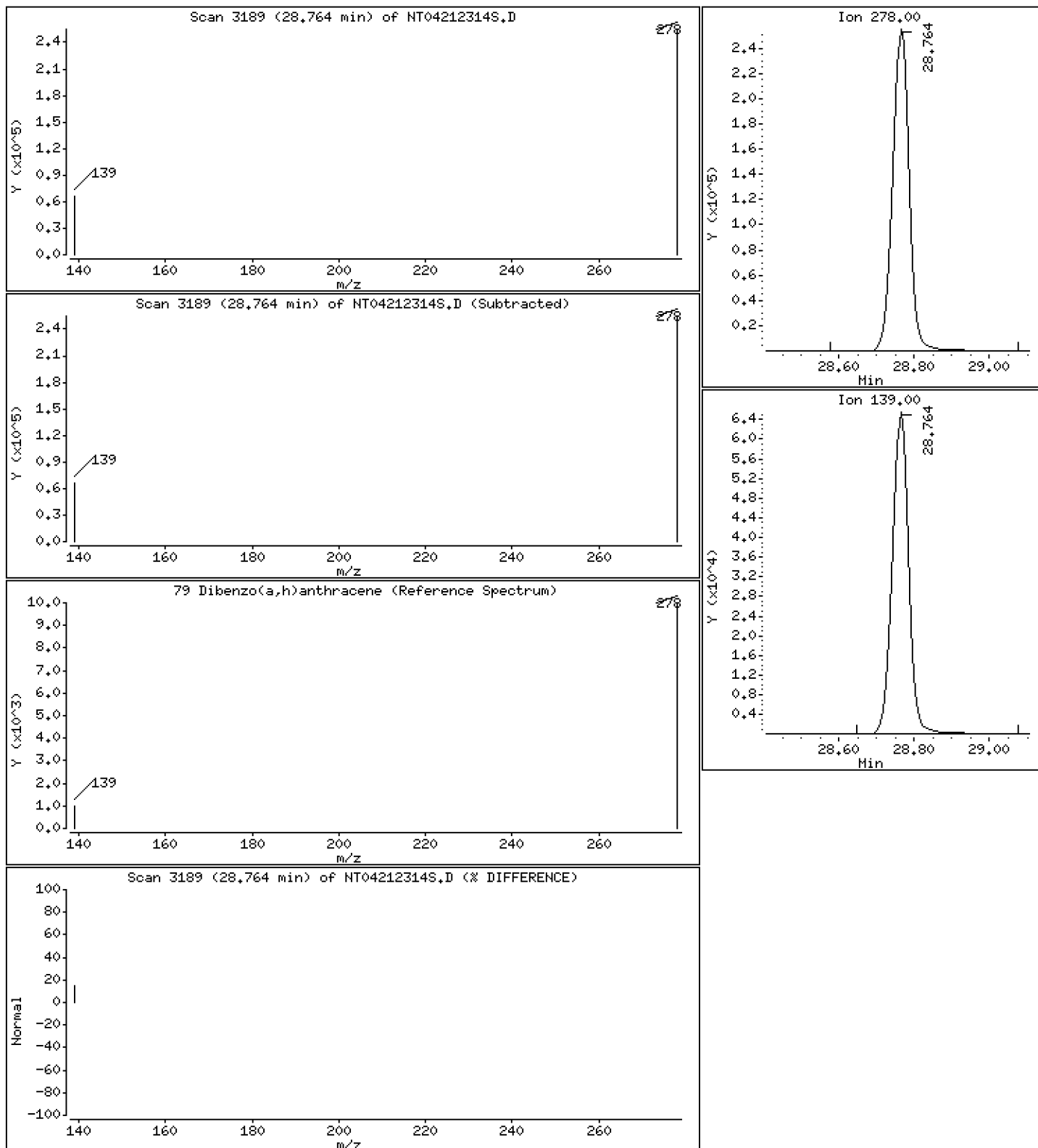
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 4,390 ug/mL



Date : 21-APR-2023 21:16

Client ID:

Instrument: nt14.i

Sample Info: SEQ-SCV1

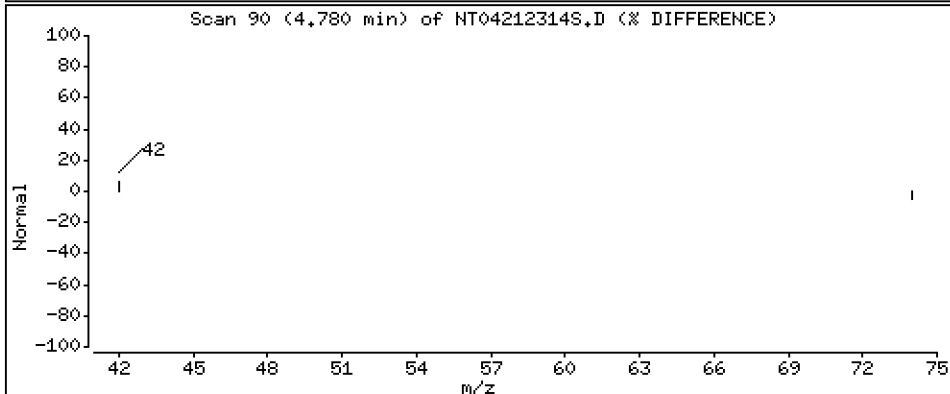
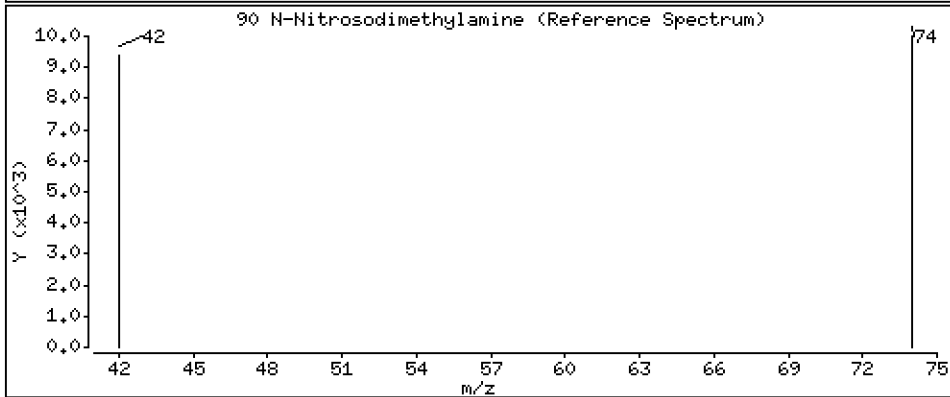
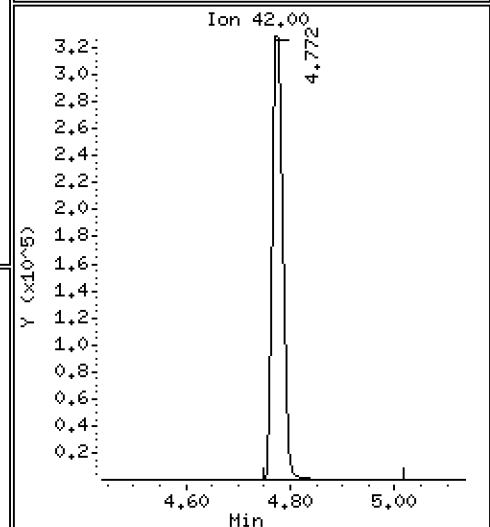
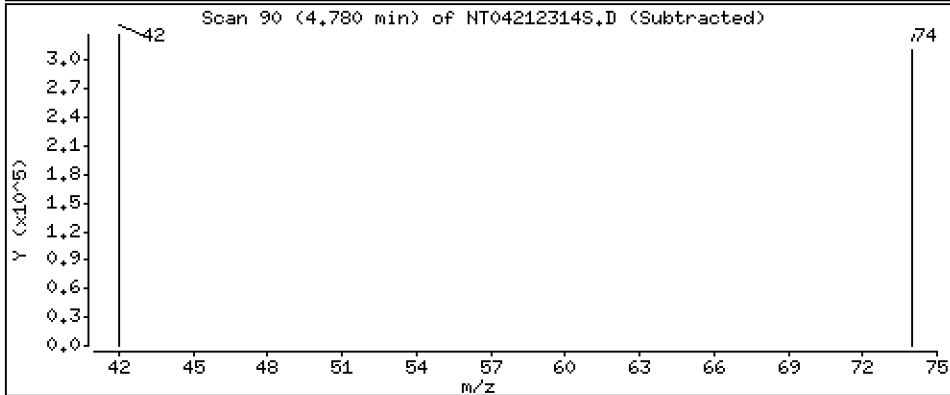
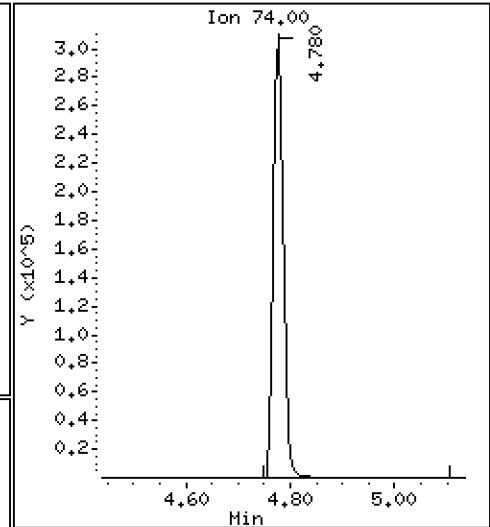
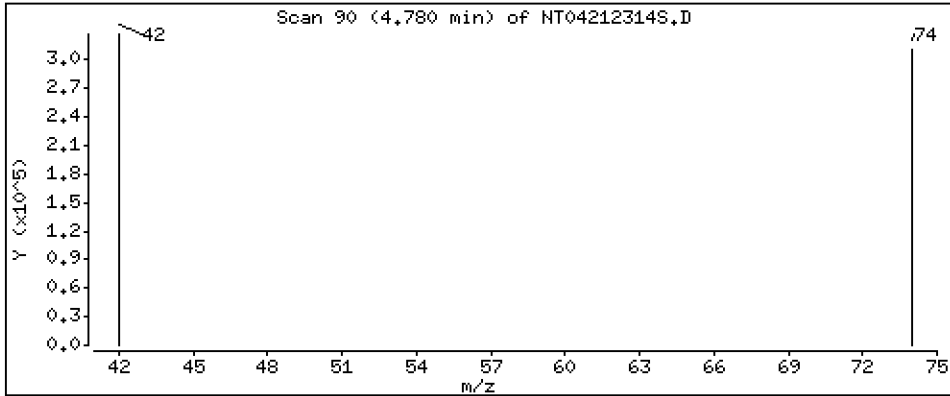
Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 4.834 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230421.b\20230421.b\NT04212314S.D  
 Lab Smp Id: SEQ-SCV1  
 Inj Date : 21-APR-2023 21:16 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : JGR Inst ID: nt14.i  
 Smp Info : SEQ-SCV1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Meth Date : 27-Apr-2023 12:52 j rains Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 11  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: JOSHR-201909

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		Compound Not Detected.					
3 Phenol	94		8.487	8.479	(0.931)	677736	4.30440	4.304
7 1,3-Dichlorobenzene	146		9.051	9.044	(0.993)	534931	4.47933	4.479
* 8 1,4-Dichlorobenzene-d4	152		9.113	9.113	(1.000)	281794	4.00000	
9 1,4-Dichlorobenzene	146		9.144	9.144	(1.003)	519596	4.59857	4.599
11 Benzyl alcohol	79		9.385	9.385	(1.030)	477137	4.91535	4.915
12 1,2-Dichlorobenzene	146		9.501	9.501	(1.043)	511191	4.53472	4.535
13 2-Methylphenol	108		9.610	9.603	(1.055)	413068	4.20738	4.207 (H)
15 4-Methylphenol	108		9.882	9.874	(1.084)	459873	4.53821	4.538 (H)
16 N-Nitroso-di-n-propylamine	70		9.952	9.944	(1.092)	437412	4.70737	4.707
22 2,4-Dimethylphenol	107		10.929	10.929	(0.941)	385878	3.68370	3.684
24 Benzoic acid	105		11.123	11.054	(0.957)	614713	8.19472	8.195
26 1,2,4-Trichlorobenzene	180		11.534	11.526	(0.993)	375647	4.67113	4.671
* 27 Naphthalene-d8	136		11.619	11.619	(1.000)	1095304	4.00000	
30 Hexachlorobutadiene	225		12.020	12.020	(1.035)	203587	4.57443	4.574
39 Dimethylphthalate	163		14.760	14.752	(0.968)	823050	4.40671	4.407
* 42 Acenaphthene-d10	162		15.255	15.255	(1.000)	511599	4.00000	
50 Diethylphthalate	149		16.222	16.214	(1.063)	879477	4.60482	4.605
54 N-Nitrosodiphenylamine	169		16.607	16.600	(0.907)	587162	4.90642	4.906
57 Hexachlorobenzene	284		17.680	17.672	(0.966)	196168	4.29450	4.294
58 Pentachlorophenol	266		18.036	18.037	(0.985)	120655	3.97208	3.972
* 59 Phenanthrene-d10	188		18.307	18.299	(1.000)	855994	4.00000	
\$ 66 Terphenyl-d14	244		Compound Not Detected.					
67 Butylbenzylphthalate	149		22.370	22.370	(0.958)	584126	4.69452	4.695
* 69 Chrysene-d12	240		23.361	23.353	(1.000)	548116	4.00000	
* 77 Perylene-d12	264		26.024	26.024	(1.000)	575271	4.00000	
79 Dibenzo(a,h)anthracene	278		28.763	28.756	(1.105)	764599	4.39029	4.390
90 N-Nitrosodimethylamine	74		4.779	4.787	(0.524)	387451	4.83434	4.834

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT04212314S.D  
 Lab Smp Id: SEQ-SCV1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: JGR  
 Method File: \\target\share\chem3\nt14.i\20230421.b\20230421.b\SIMABN2.m  
 Misc Info:

Calibration Date: 21-APR-2023  
 Calibration Time: 18:13  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	313847	156924	627694	281794	-10.21
27 Naphthalene-d8	1195091	597546	2390182	1095304	-8.35
42 Acenaphthene-d10	556977	278489	1113954	511599	-8.15
59 Phenanthrene-d10	941816	470908	1883632	855994	-9.11
69 Chrysene-d12	617803	308902	1235606	548116	-11.28
77 Perylene-d12	639373	319687	1278746	575271	-10.03

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.11	8.61	9.61	9.11	-0.00
27 Naphthalene-d8	11.62	11.12	12.12	11.62	-0.00
42 Acenaphthene-d10	15.26	14.76	15.76	15.26	-0.00
59 Phenanthrene-d10	18.31	17.81	18.81	18.31	-0.00
69 Chrysene-d12	23.35	22.85	23.85	23.36	0.03
77 Perylene-d12	26.02	25.52	26.52	26.02	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT04212314S.D

Lab ID: SEQ-SCV1

nt14.i, 20230421.b\20230421.b\SIMABN2.m, 21-APR-2023 21:16

RT CO-ELUTION COMPOUNDS

---

NO CO-ELUTIONS

\*\* FIRST SURROGATE NOT FOUND. ICAL Check not performed \*\*

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.957	0.951	0.0060	Benzoic acid

RRT check based on Ccal File: 20230421.b/NT04212313S.D

On Column LOD for nt14.i, 20230421.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



**CONTINUING CALIBRATION CHECK**  
**EPA 8270E-SIM**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>NT14</u>	Calibration:	<u>GD00063</u>
Lab File ID:	<u>NT1405012318S.D</u>	Calibration Date:	<u>04/21/2023</u>
Sequence:	<u>SLE0027</u>	Injection Date:	<u>05/02/23</u>
Lab Sample ID:	<u>SLE0027-CCV1</u>	Injection Time:	<u>00:58</u>
Sequence Name:	<u>Calibration Check</u>		

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
1,4-Dichlorobenzene	A	1.0000	1.0	1.6038770	1.5439820		-3.7	+/-50
1,2-Dichlorobenzene	A	1.0000	1.0	1.6001510	1.5382320		-3.9	+/-50
Benzyl Alcohol	A	1.0000	0.9	1.3778980	1.1878370		-13.8	+/-50
Benzoic acid	A	4.0000	3.3	0.1976976	0.2203871		-17.9	+/-50
2,4-Dimethylphenol	A	2.0000	2.2	0.3825530	0.4300635		12.4	+/-50
1,2,4-Trichlorobenzene	A	1.0000	1.0	0.3233196	0.2970421		1.1	+/-50
N-Nitrosodiphenylamine	A	1.0000	1.0	0.5592199	0.5617366		0.5	+/-50
Pentachlorophenol	A	2.0000	1.3	0.0991788	0.0907939		-36.0	+/-50
2-Fluorophenol	A	1.5000	1.61	1.3940880	1.4933510		7.1	+/-50
p-Terphenyl-d14	A	1.0000	1.09	0.6679610	0.6924008		8.8	+/-50

\* Values outside of QC limits

\* Values outside of QC limits

Data File: \\target\share\chem3\nt14,1\20230501A,B\NT1405012318S.D

Date: 02-MAY-2023 00:58

Client ID:

Sample Info: SLE0027-CCW1

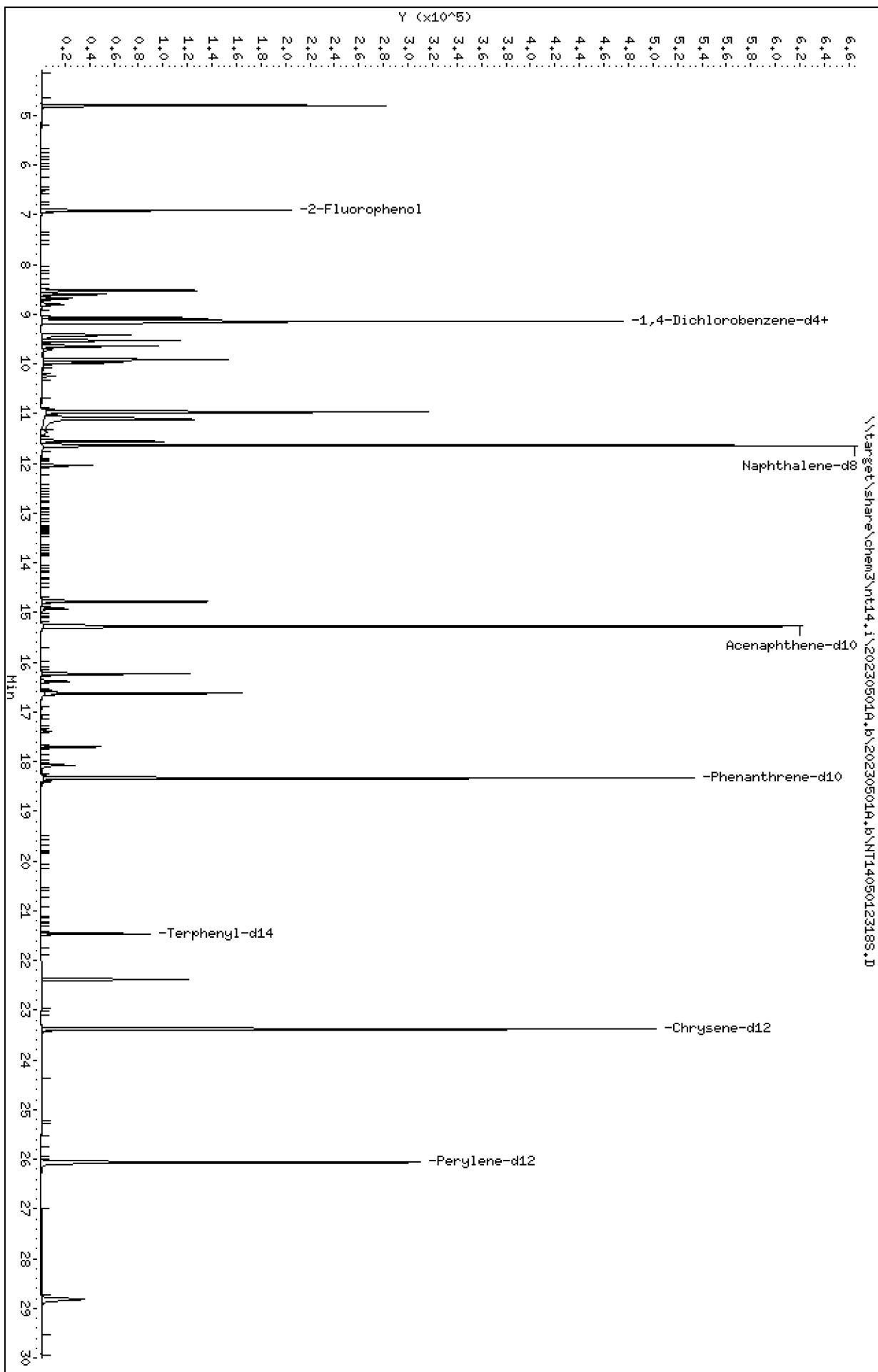
Instrument: nt14,1

Operator: JSD

Column diameter: 0.25

Column phase: ZB-5msi

\\target\share\chem3\nt14,1\20230501A,B\NT1405012318S.D





Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

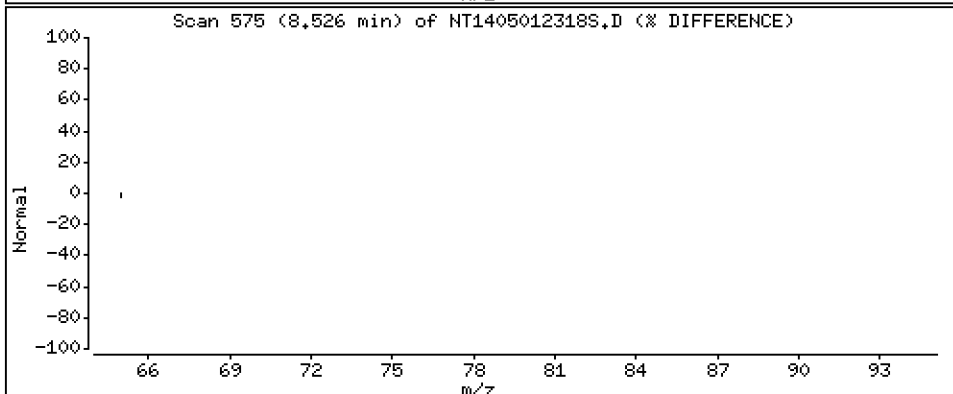
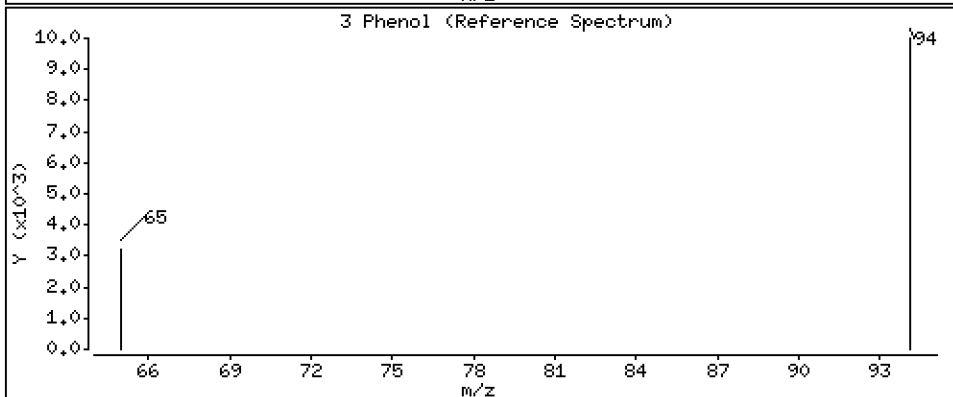
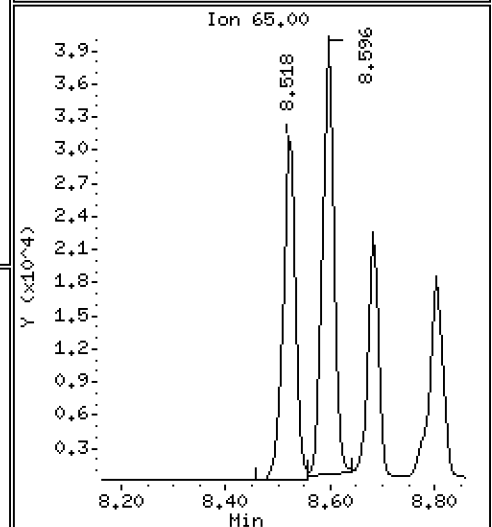
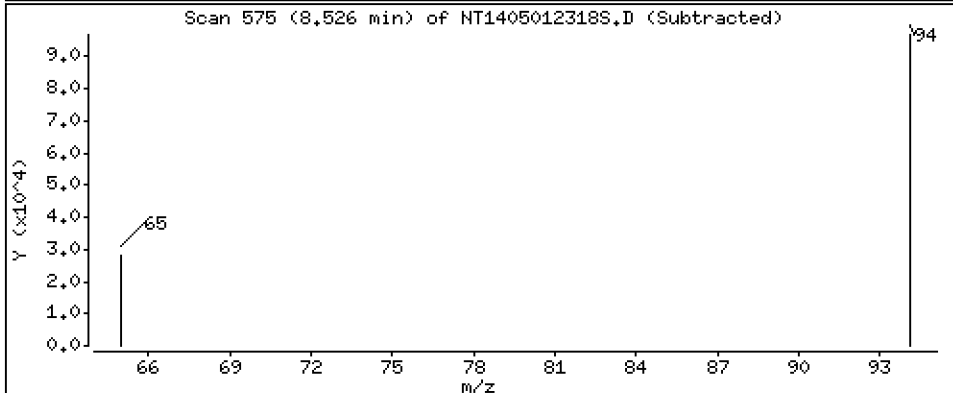
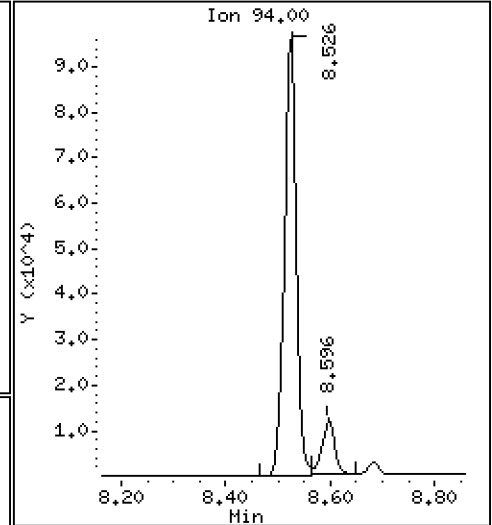
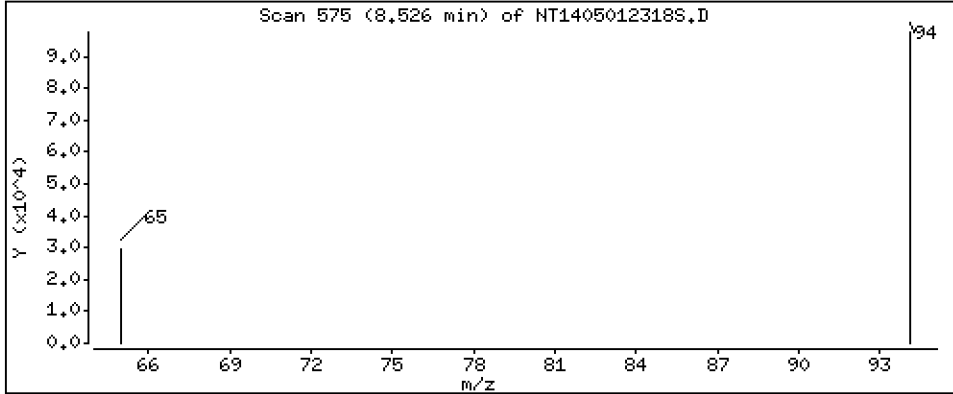
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,9734 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

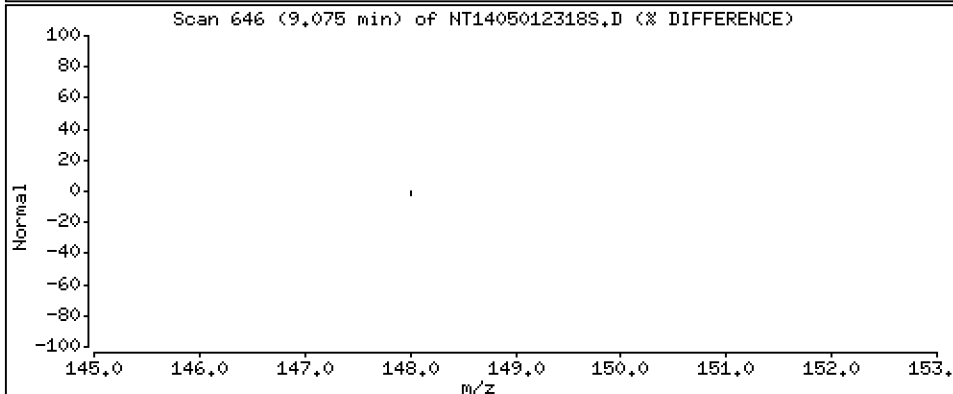
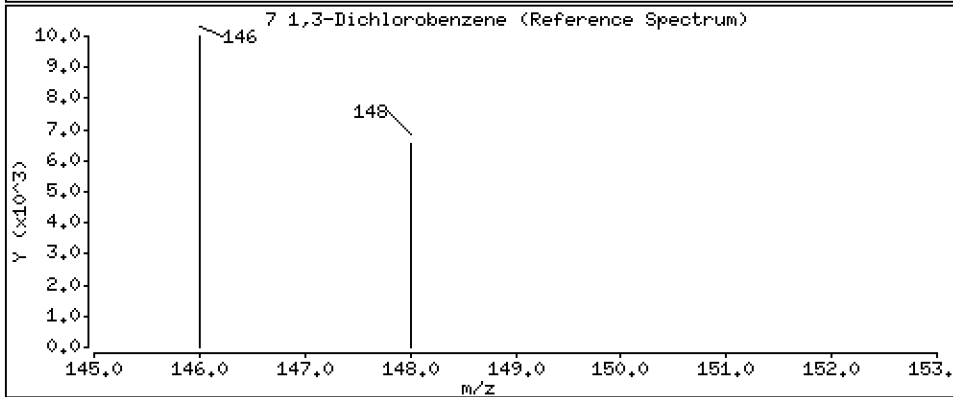
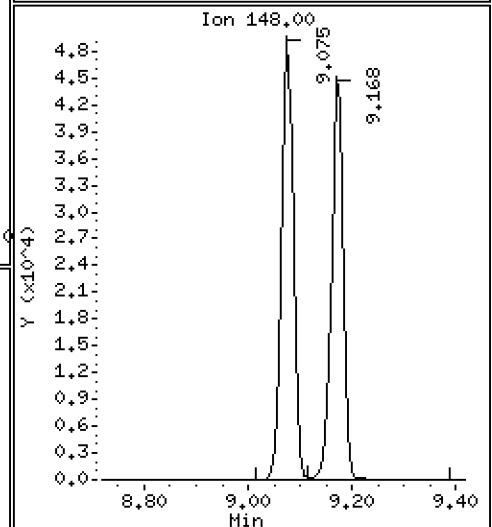
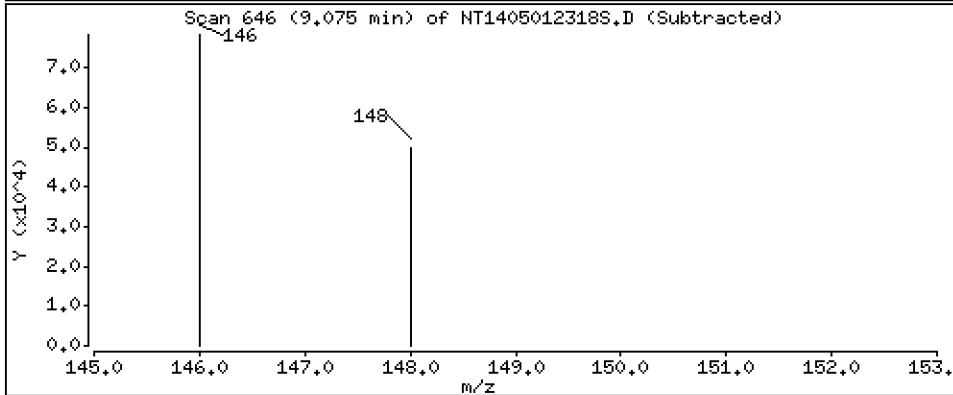
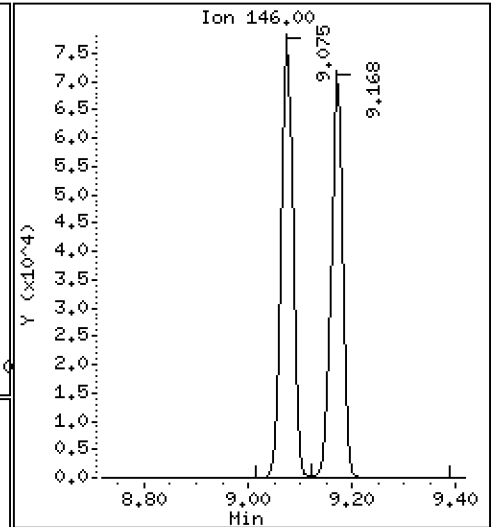
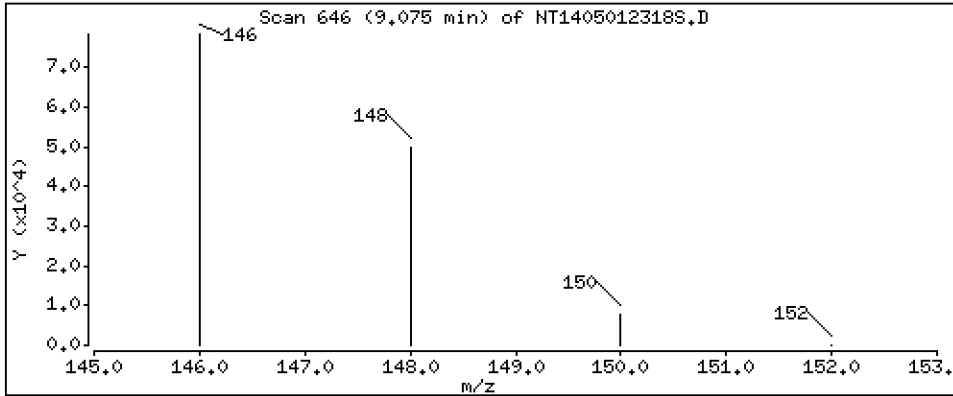
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,9594 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

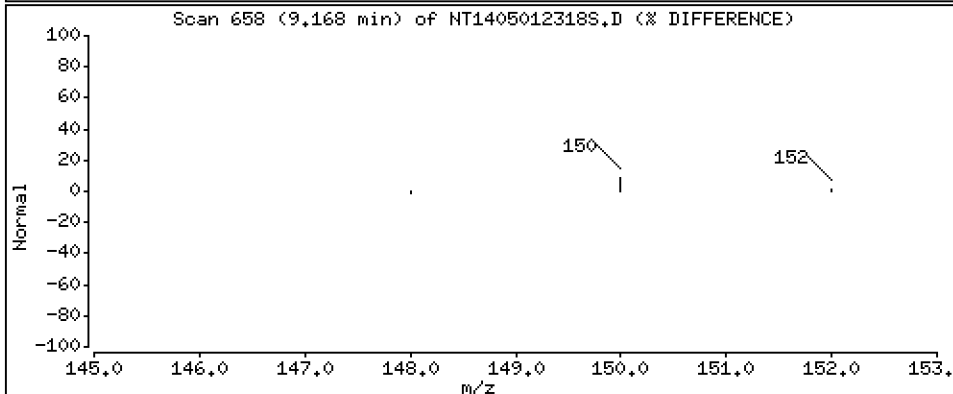
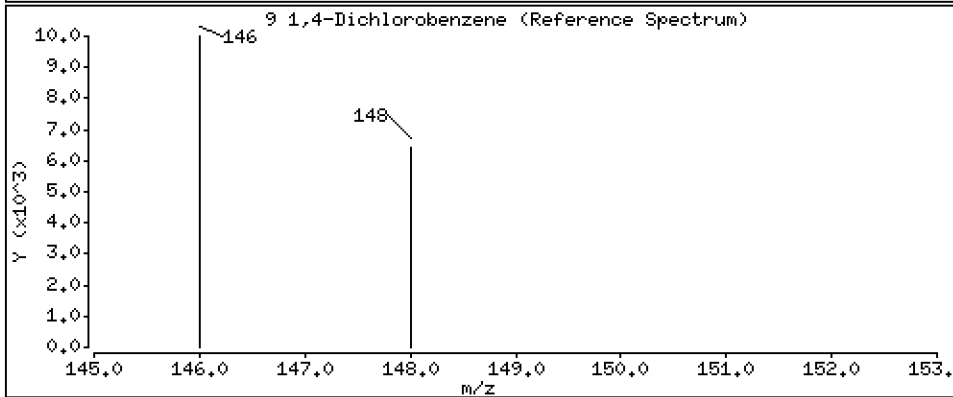
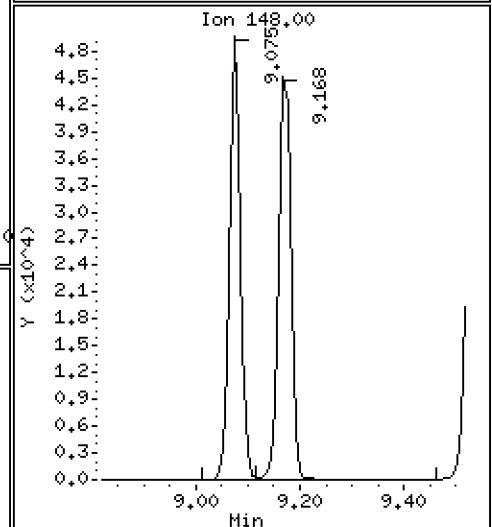
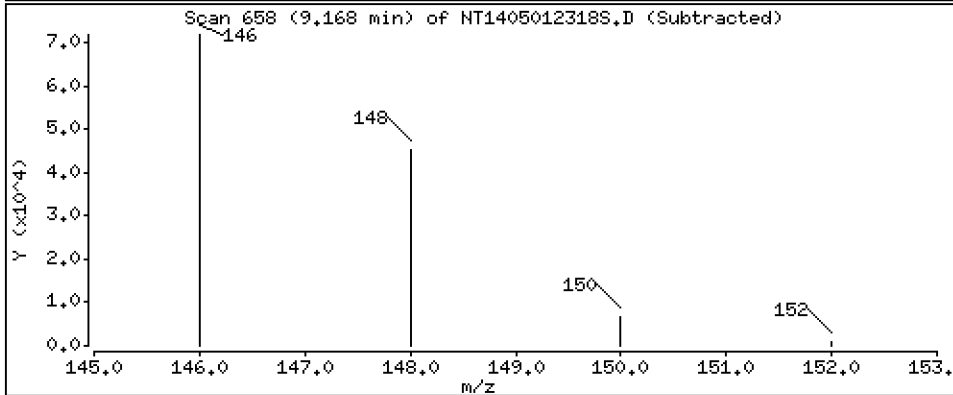
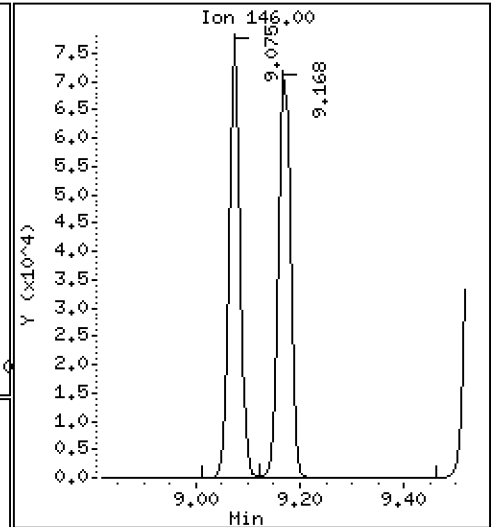
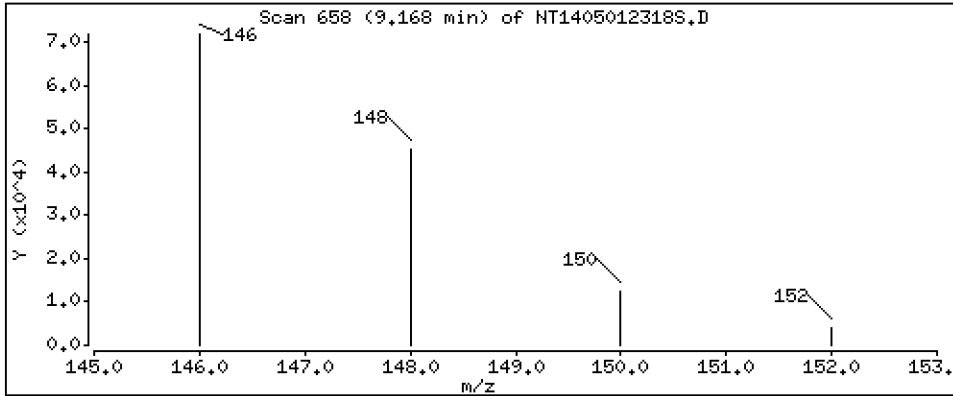
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 0,9627 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

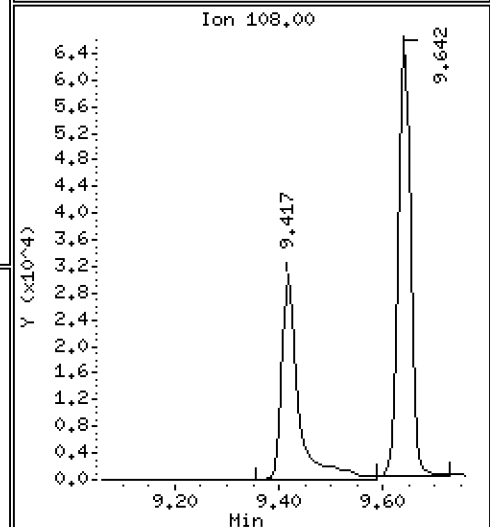
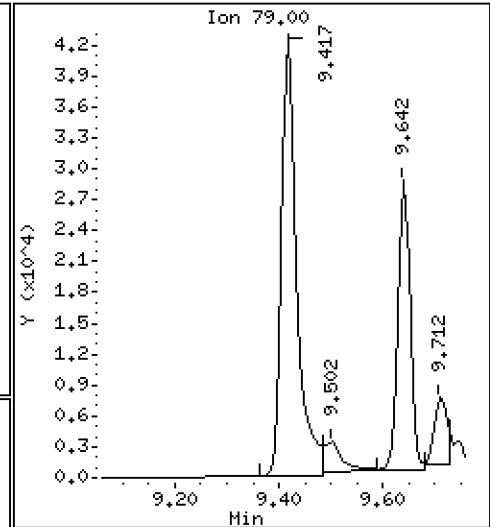
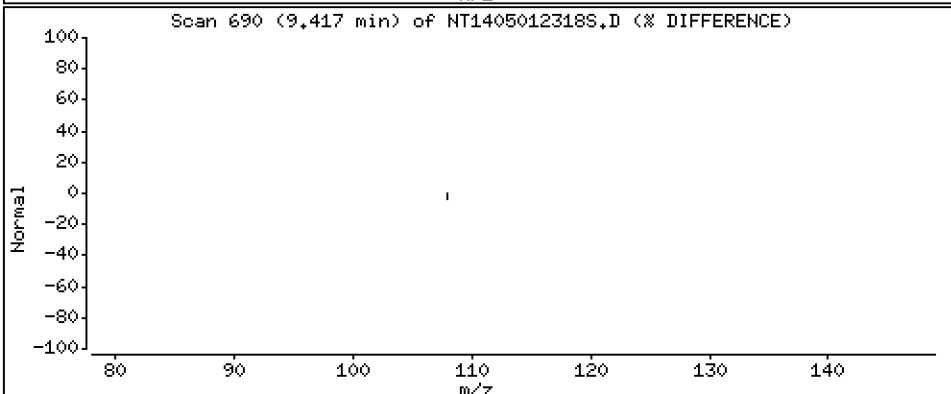
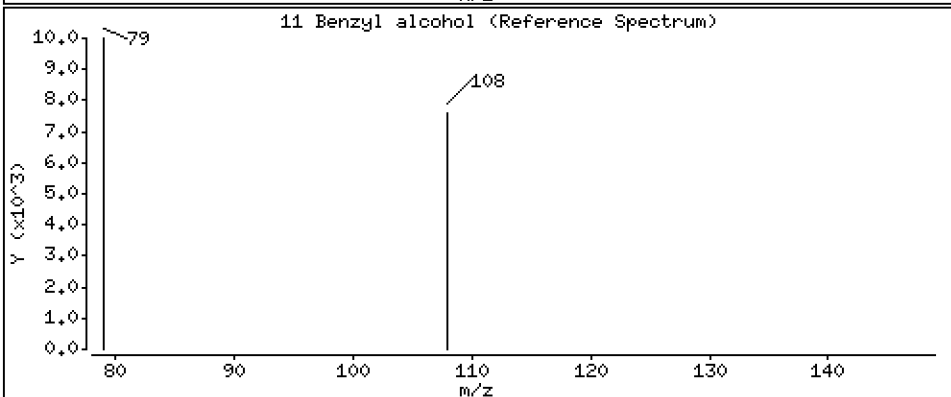
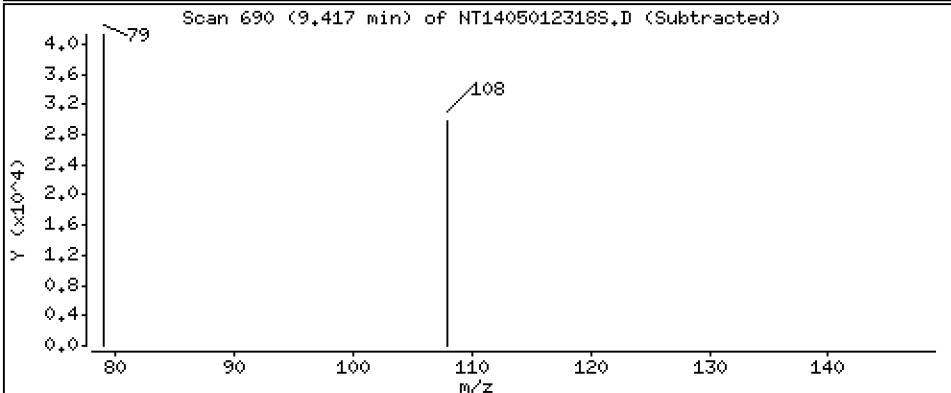
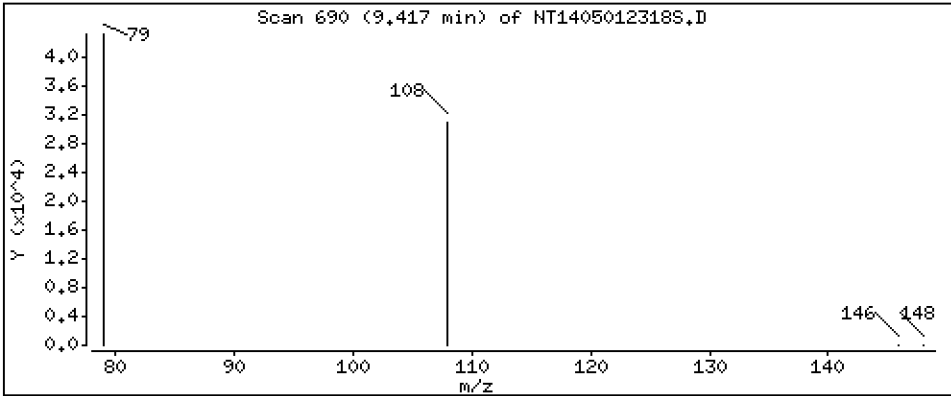
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 0.8621 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

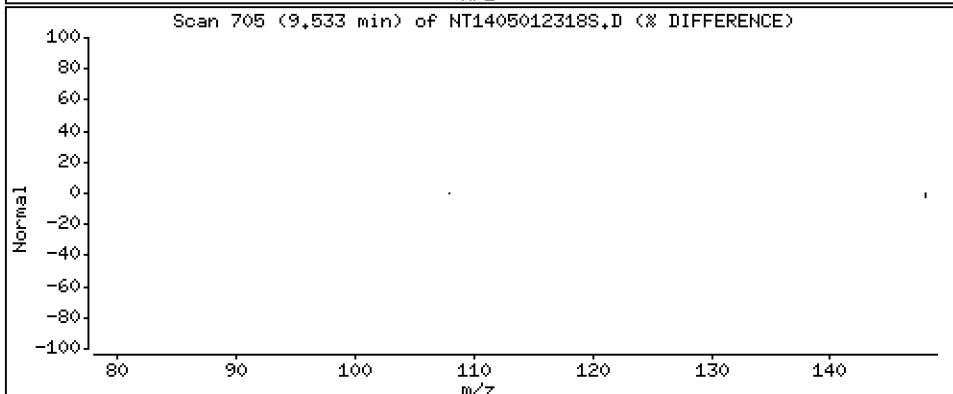
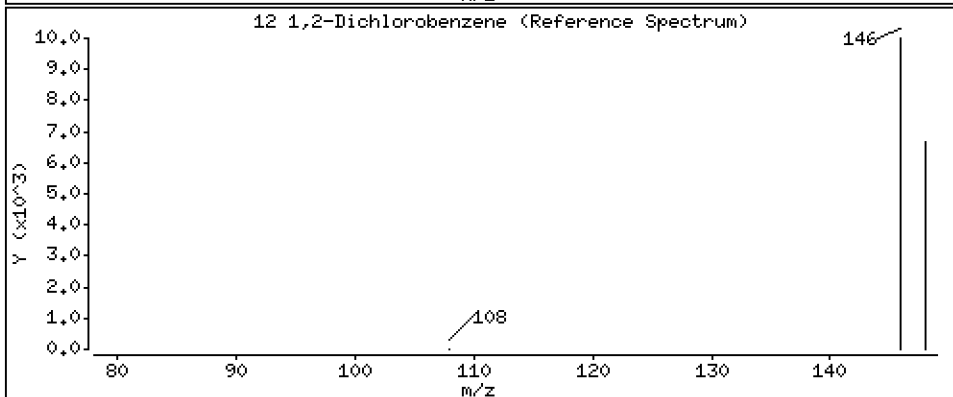
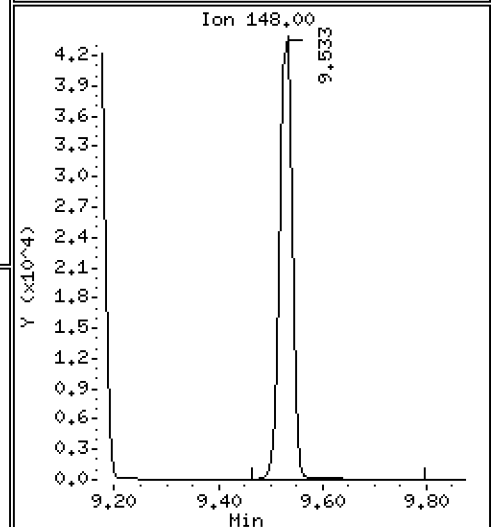
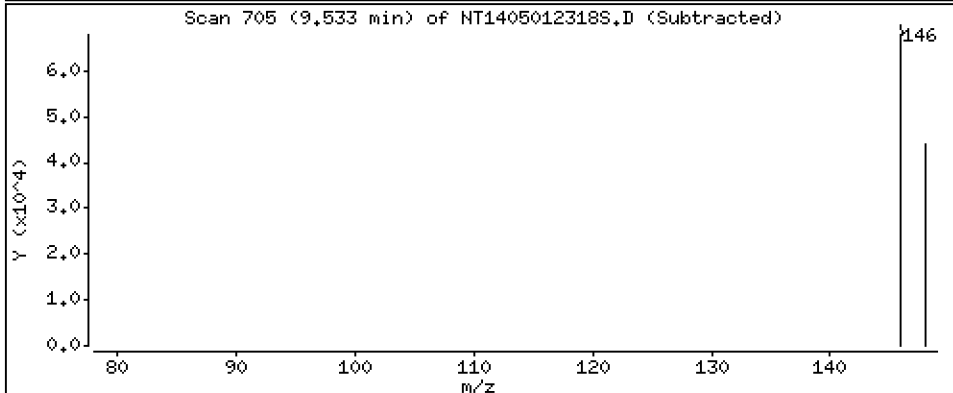
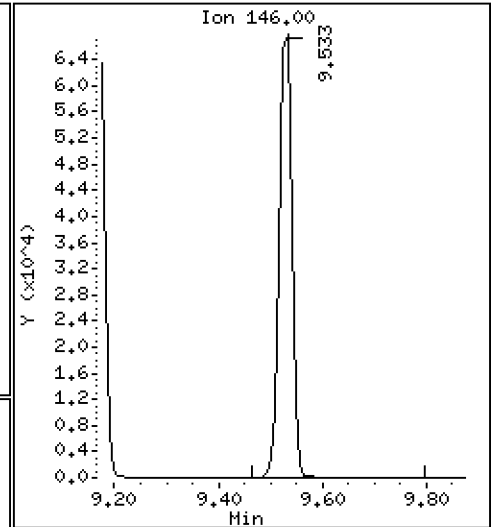
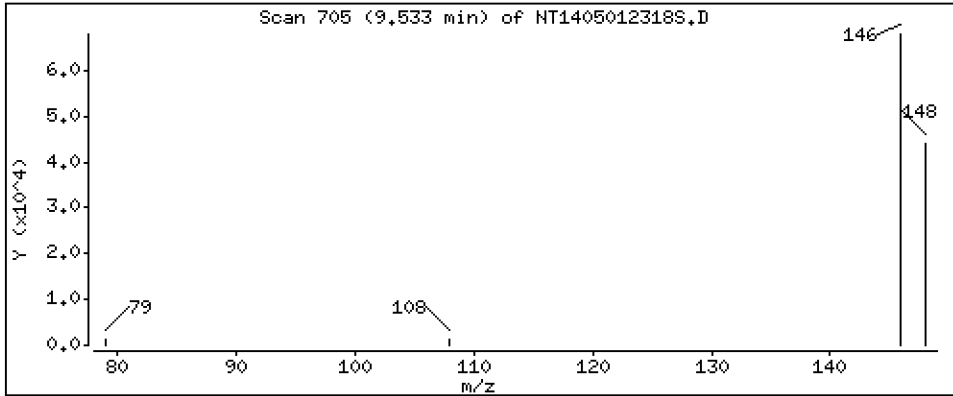
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 0,9613 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

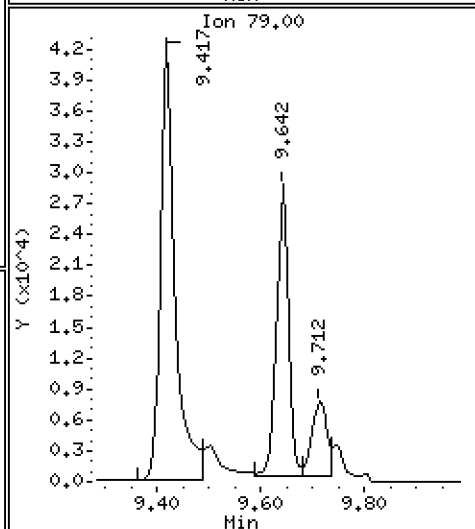
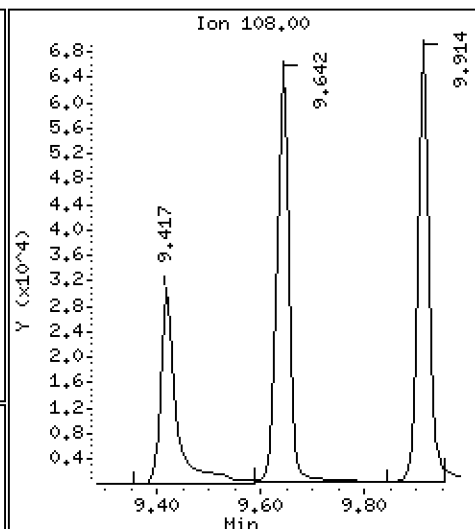
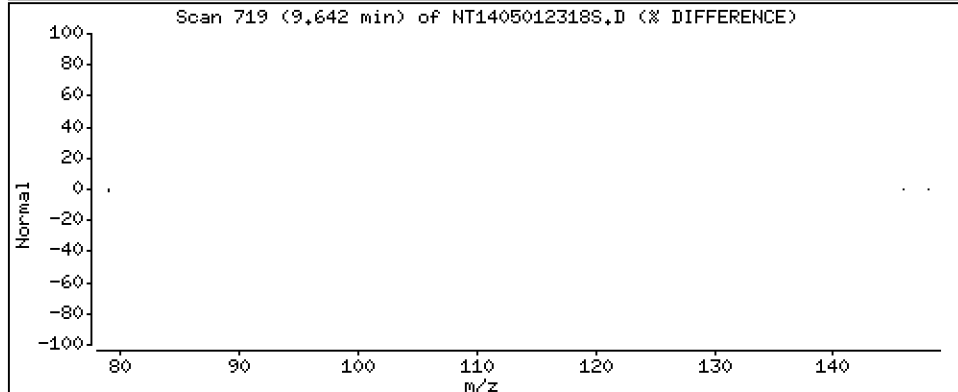
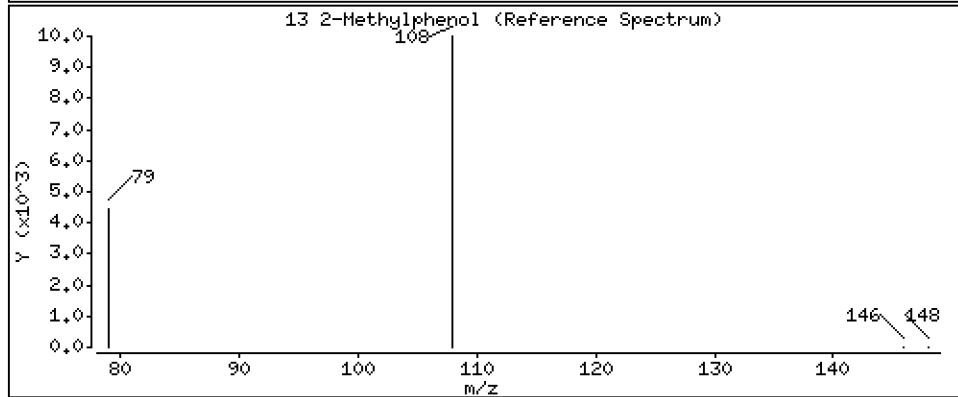
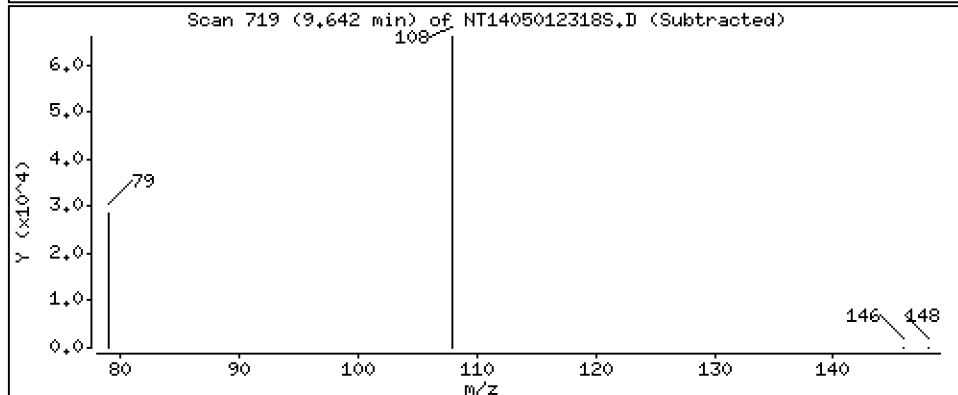
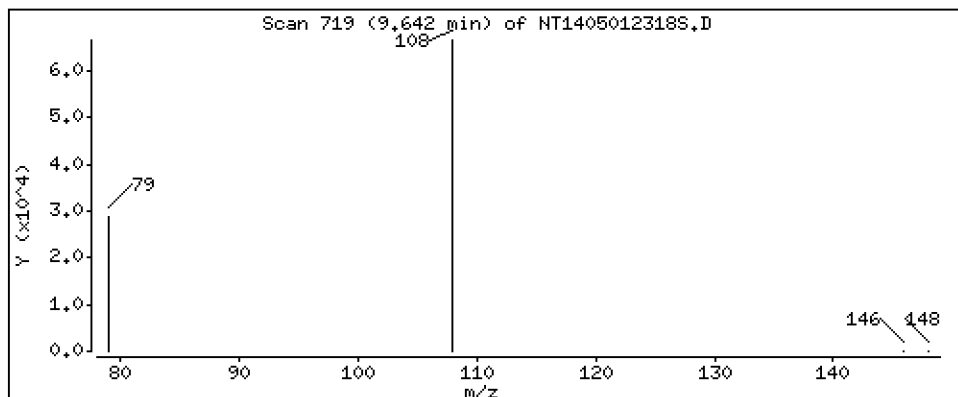
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

13 2-Methylphenol

Concentration: 1,072 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

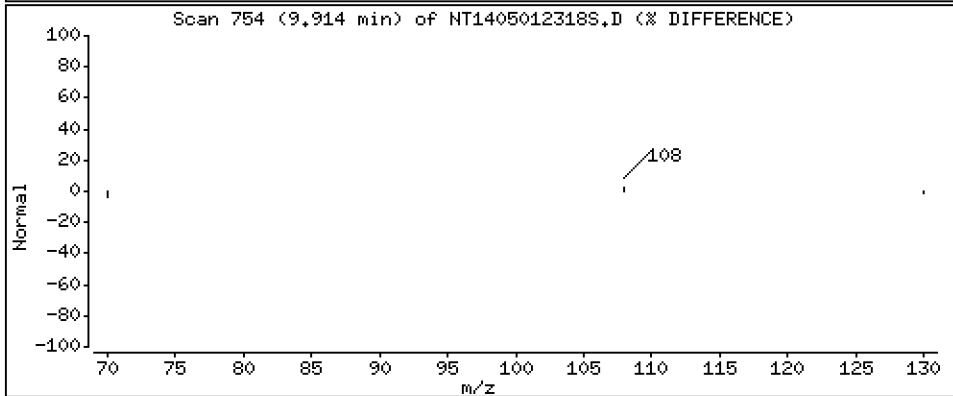
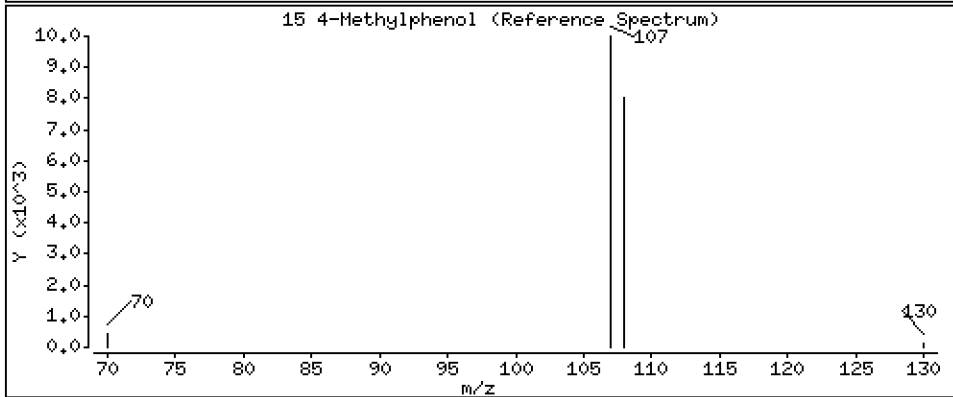
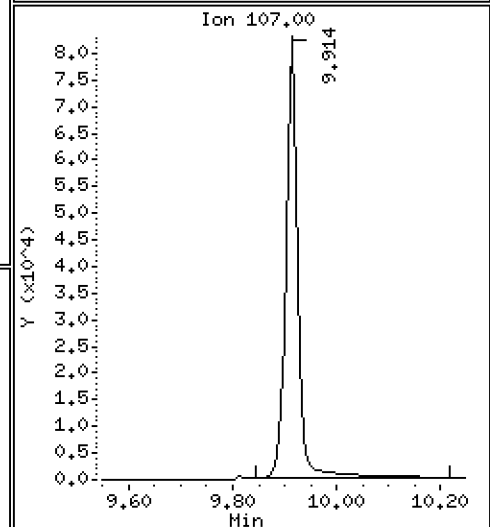
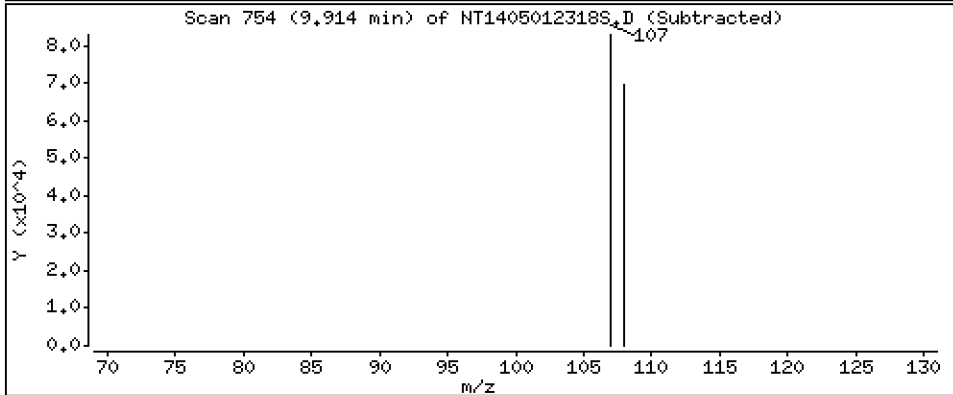
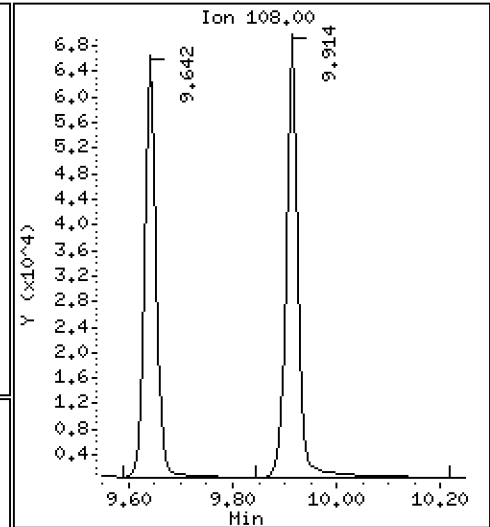
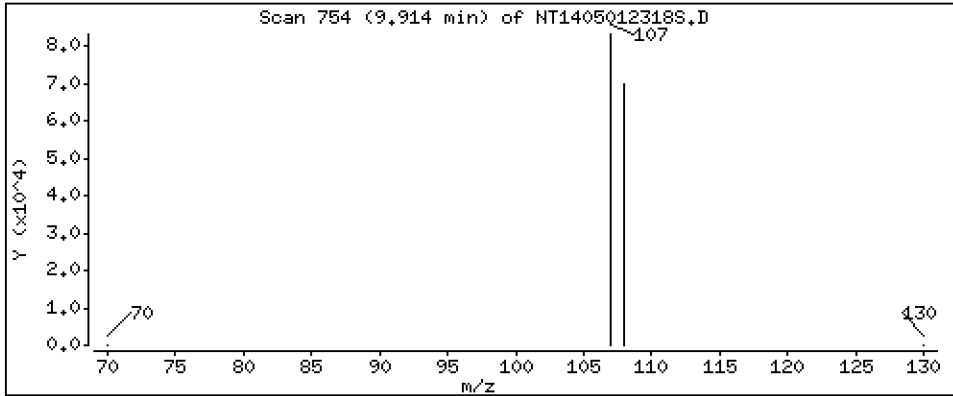
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 1,096 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

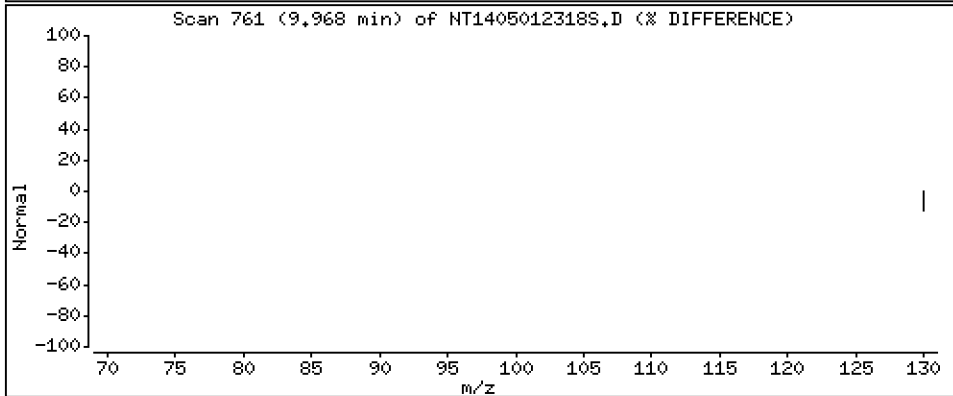
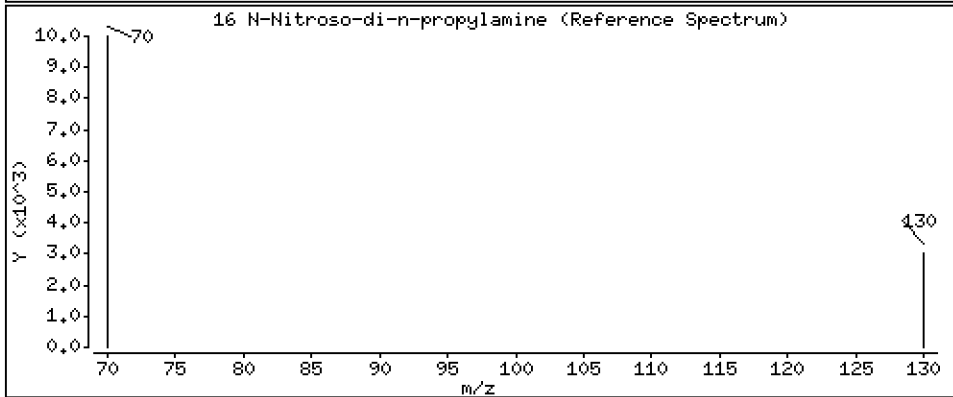
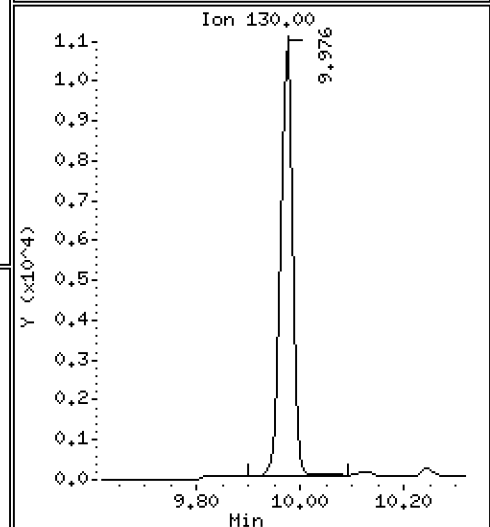
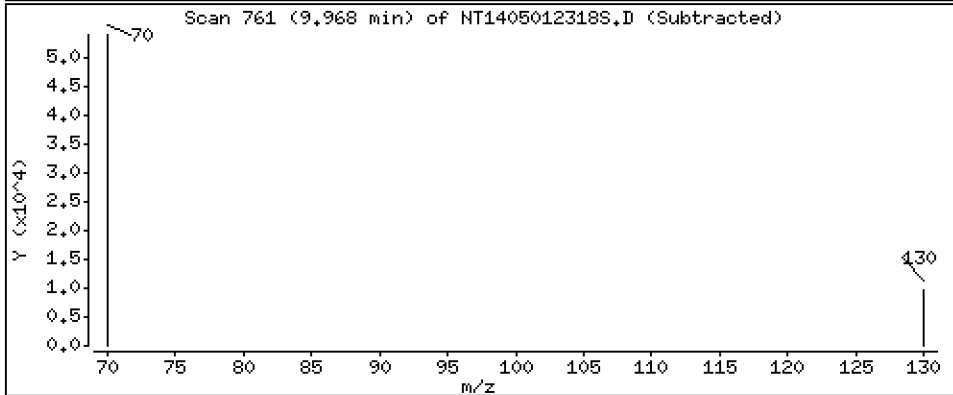
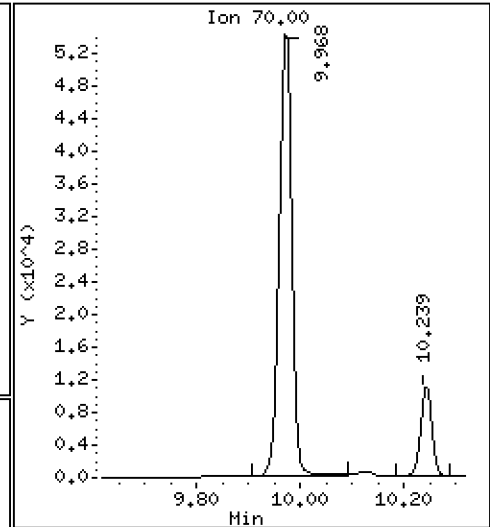
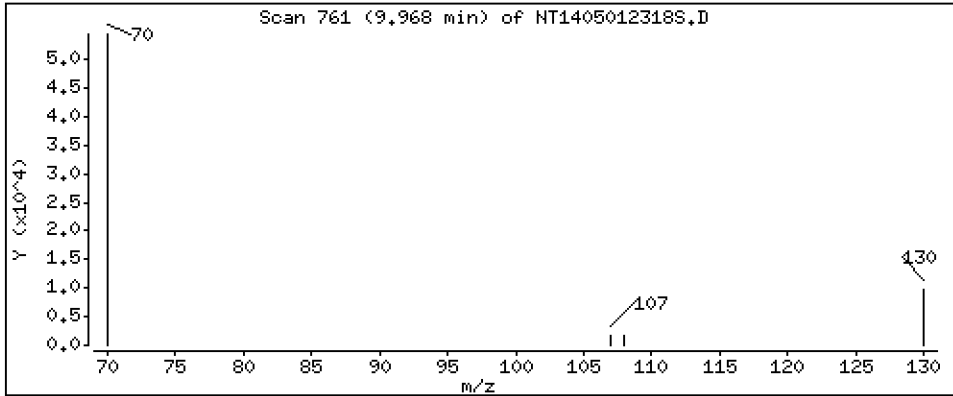
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 0,9452 ug/mL





Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

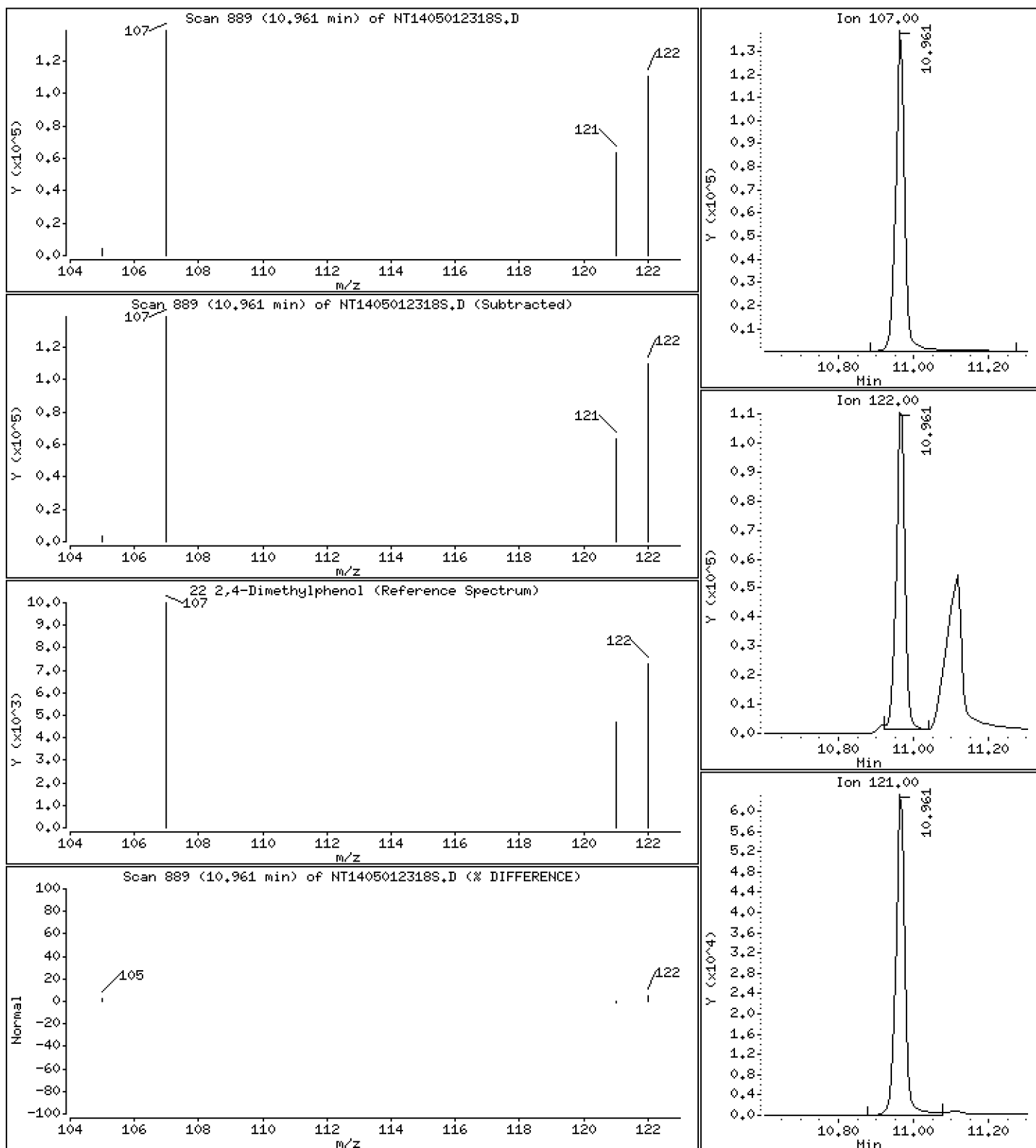
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

22 2,4-Dimethylphenol

Concentration: 2,248 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

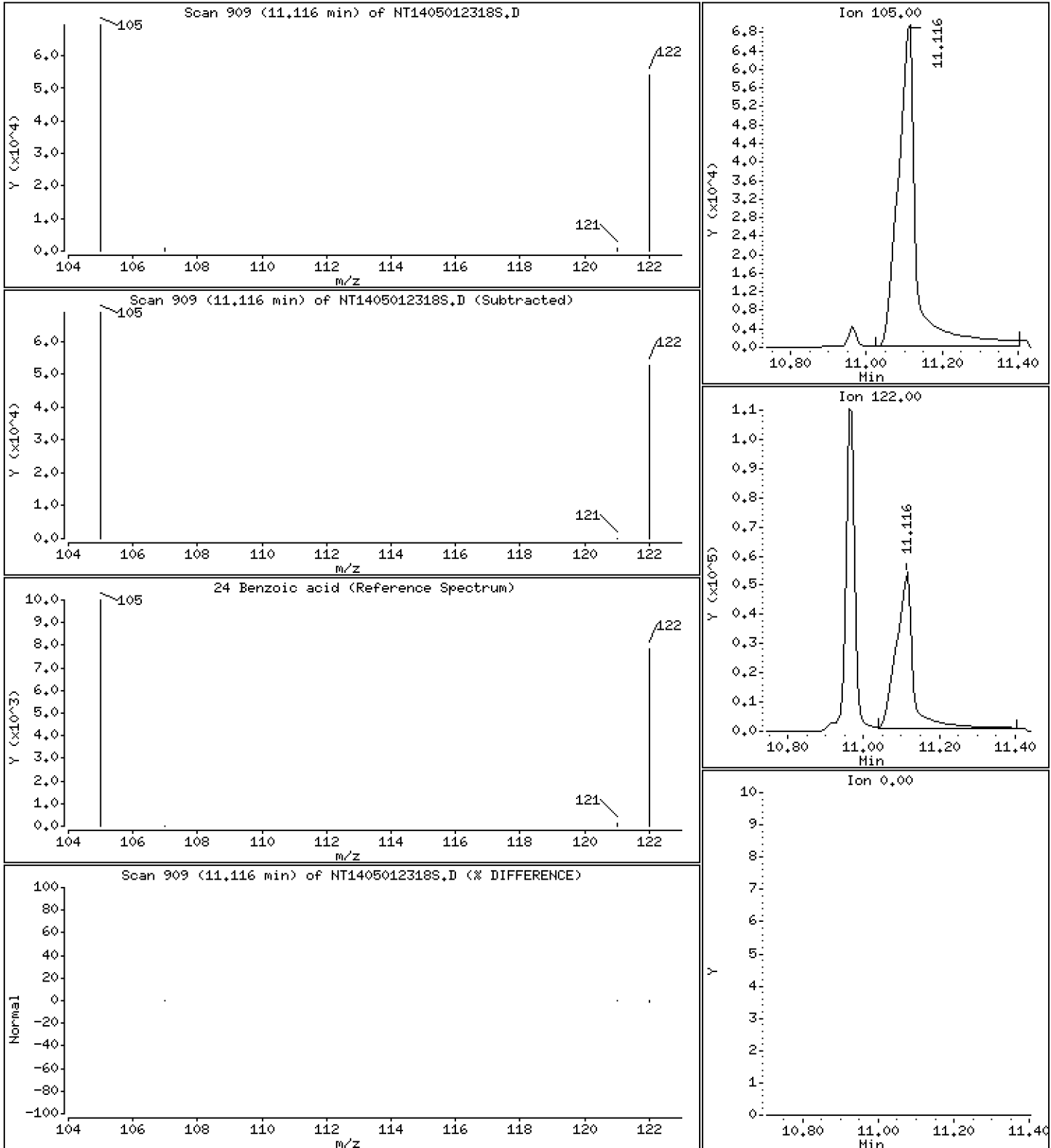
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 3,284 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

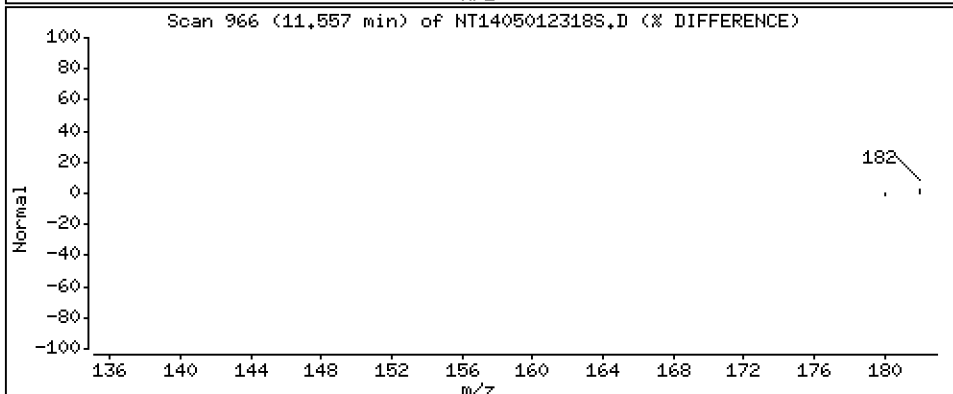
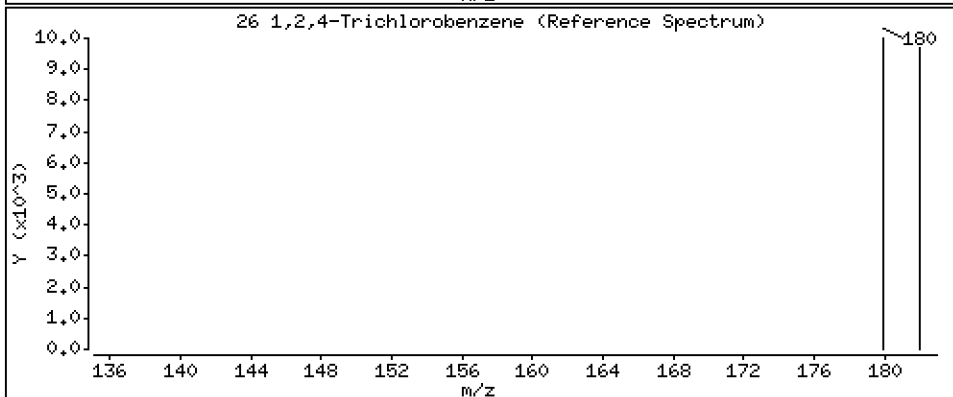
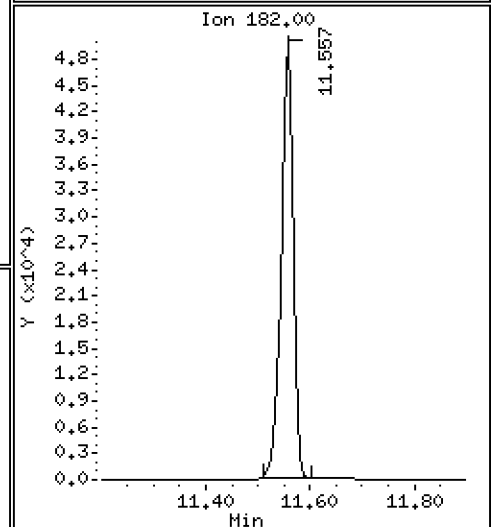
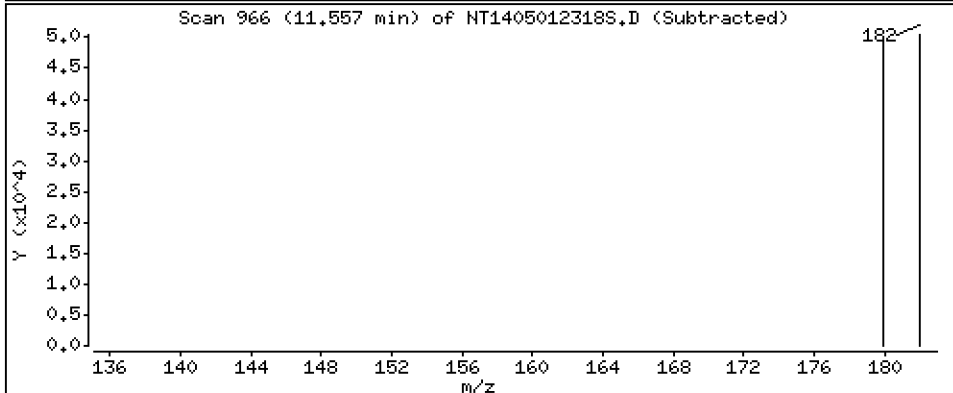
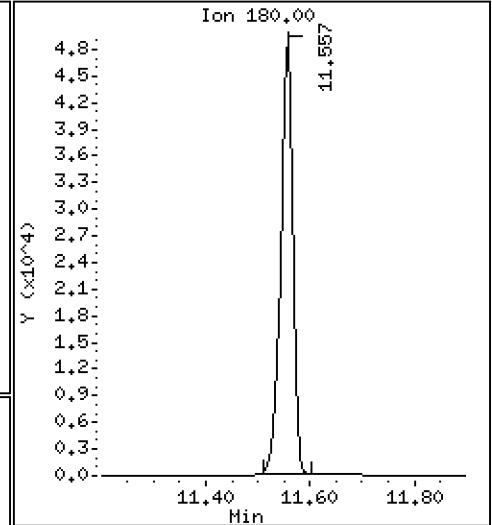
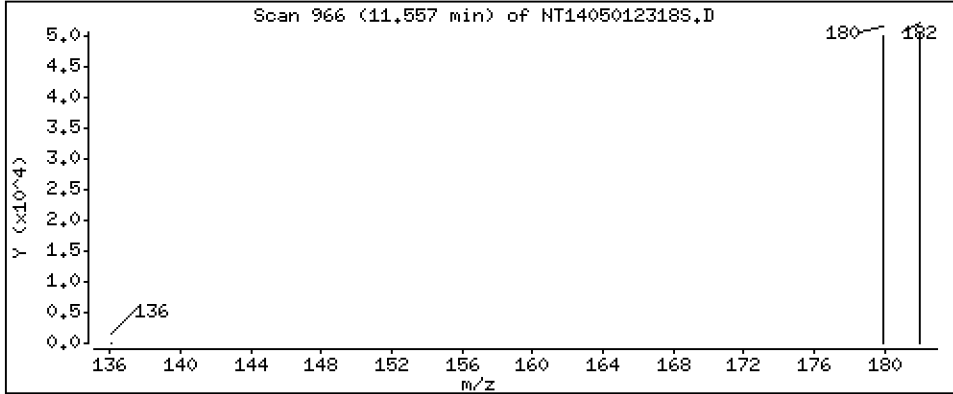
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 1,011 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

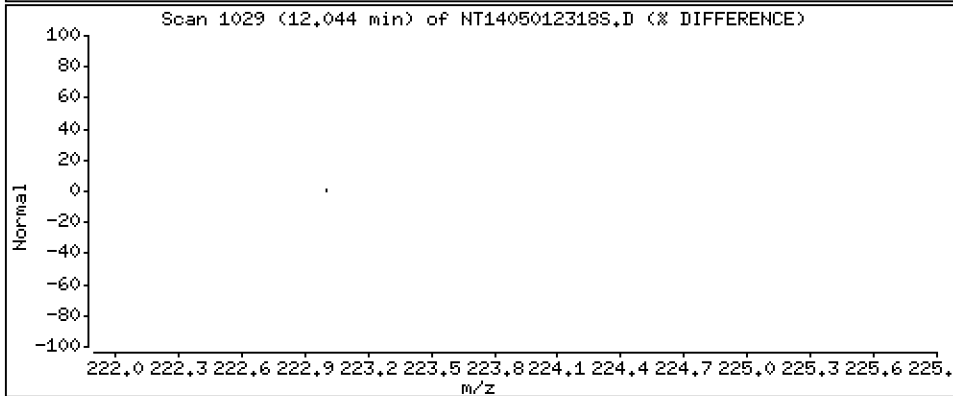
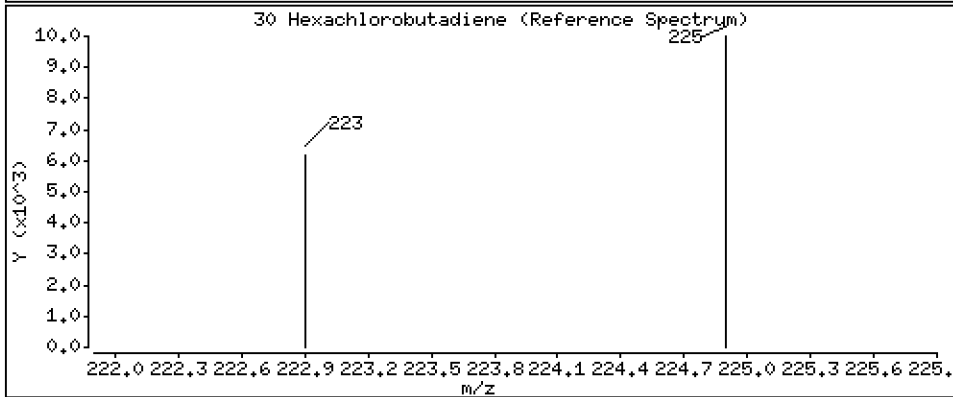
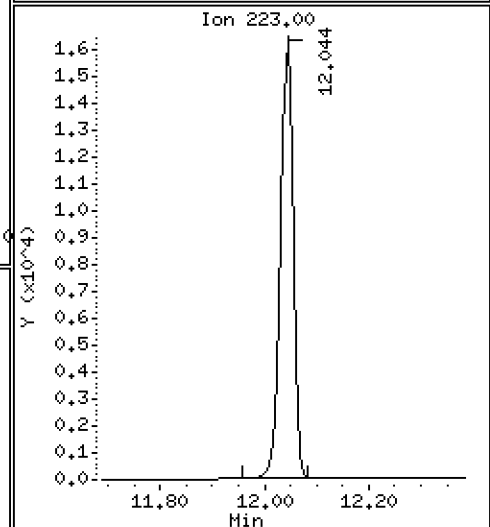
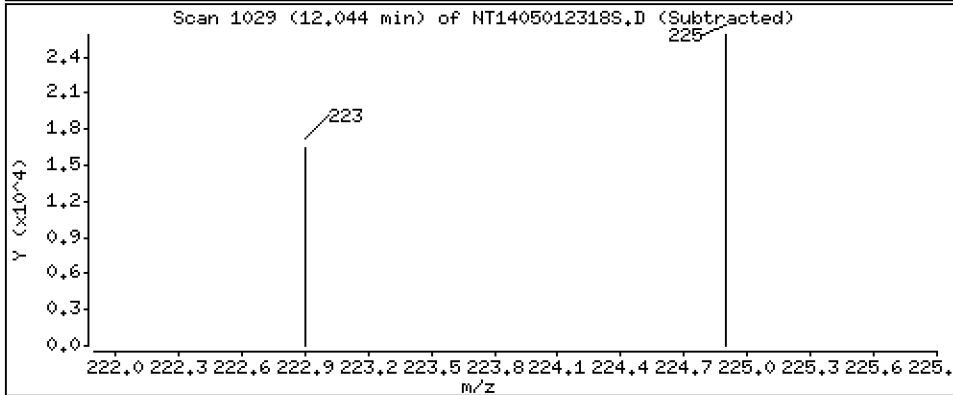
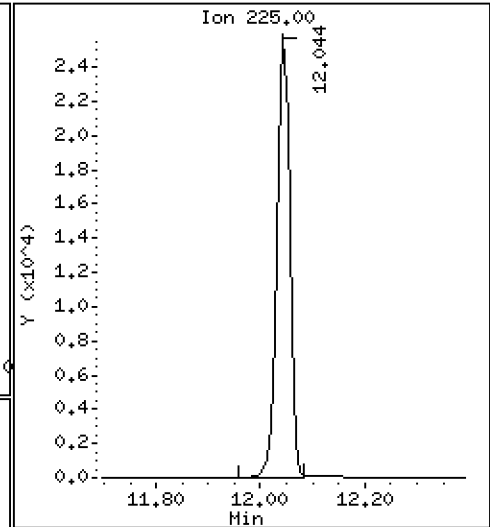
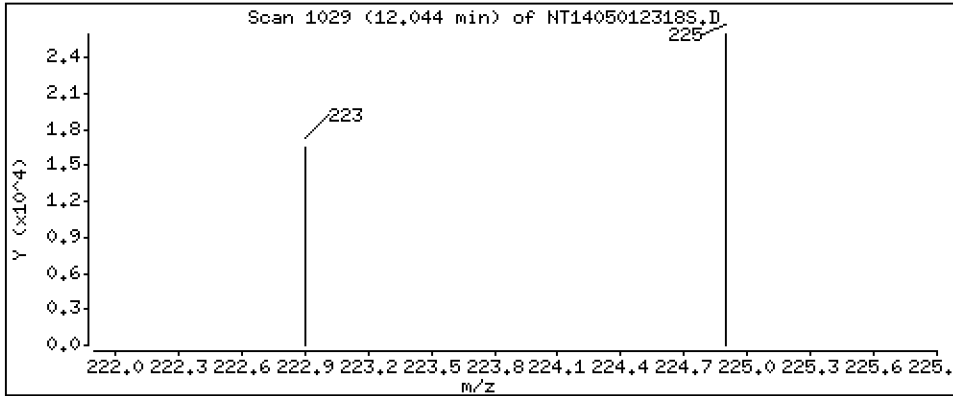
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 0,9559 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

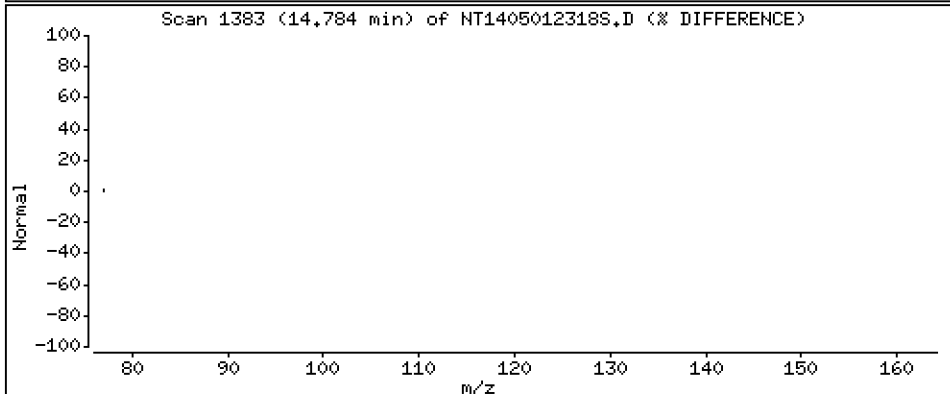
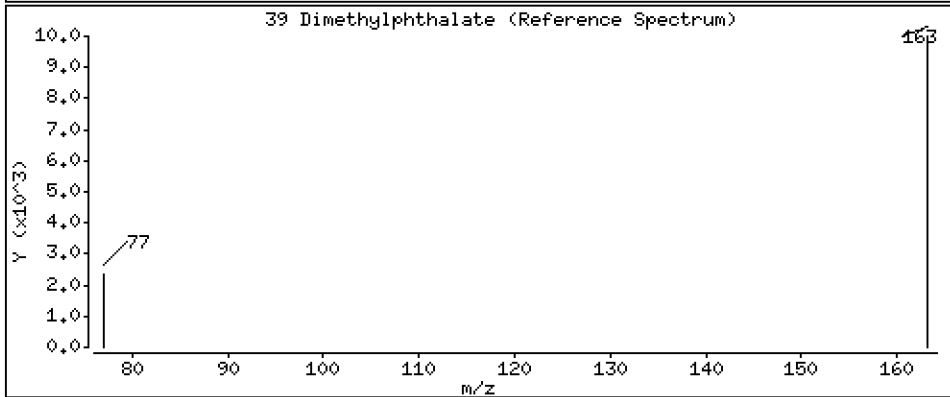
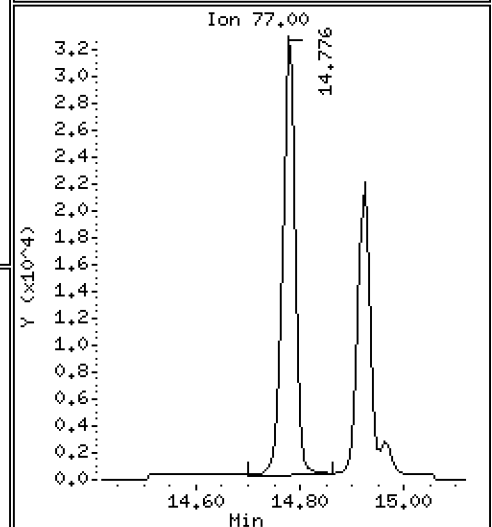
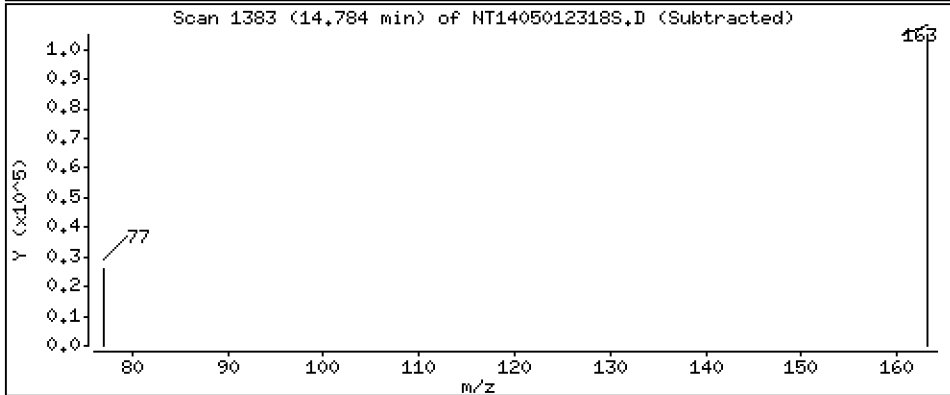
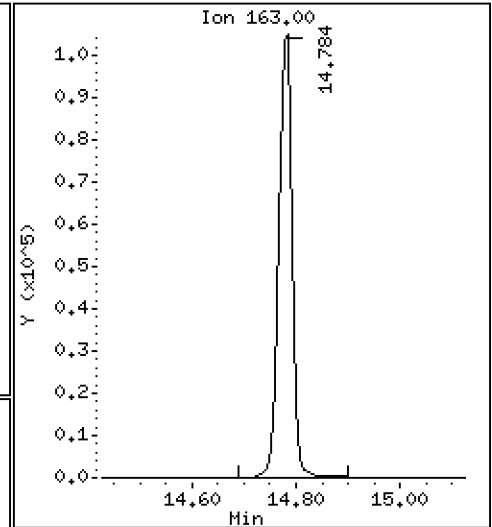
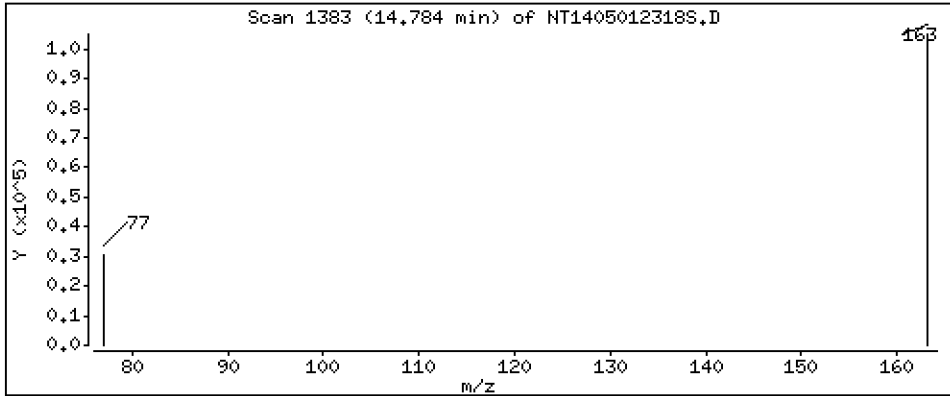
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 0,9746 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

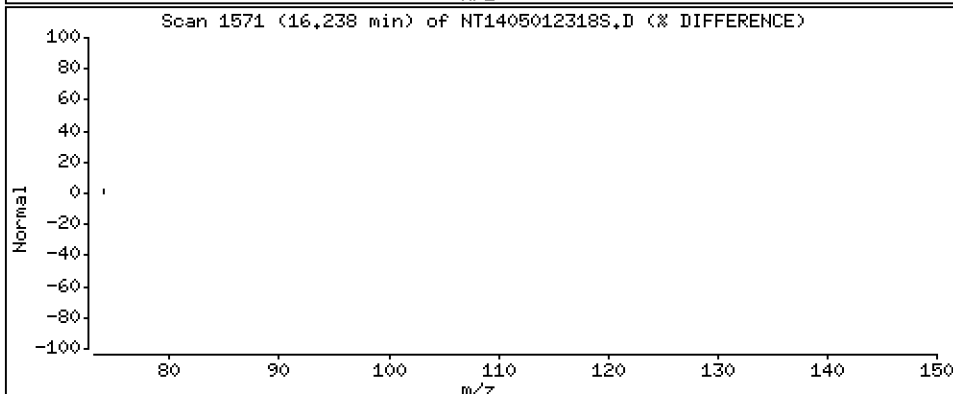
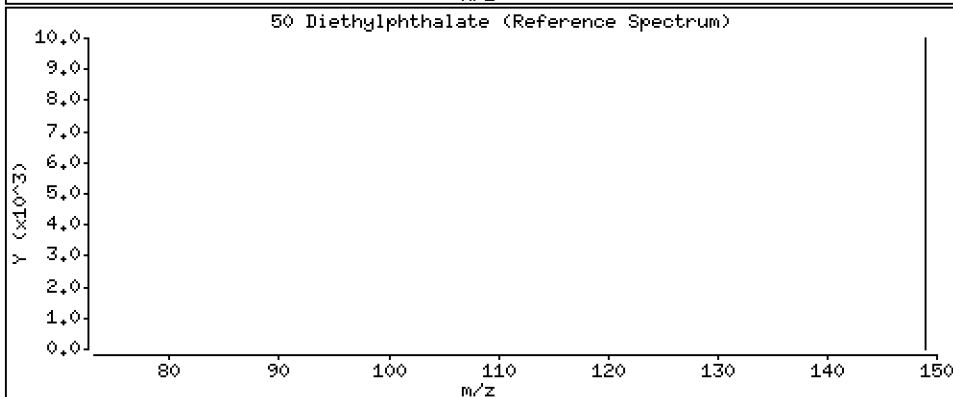
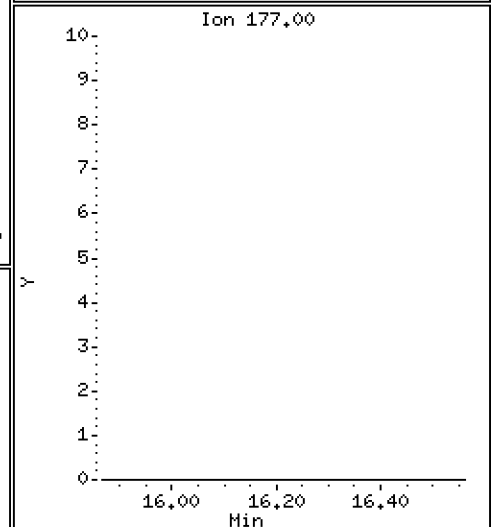
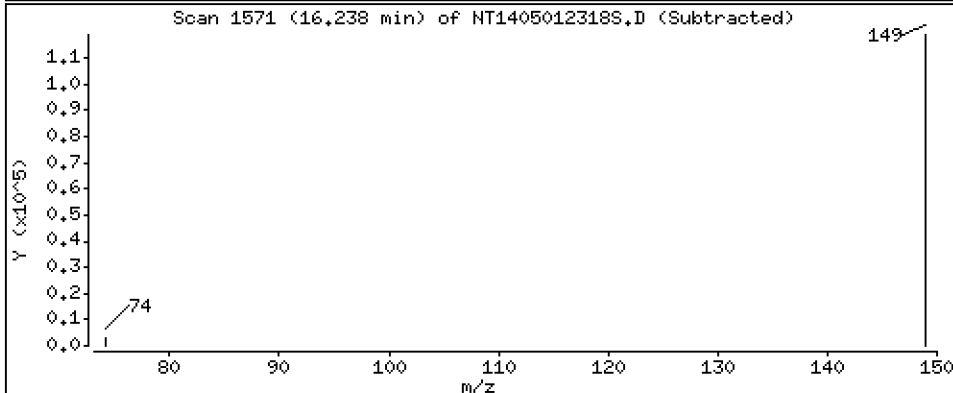
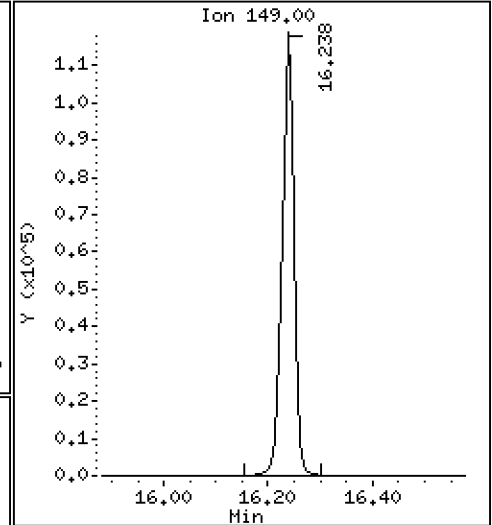
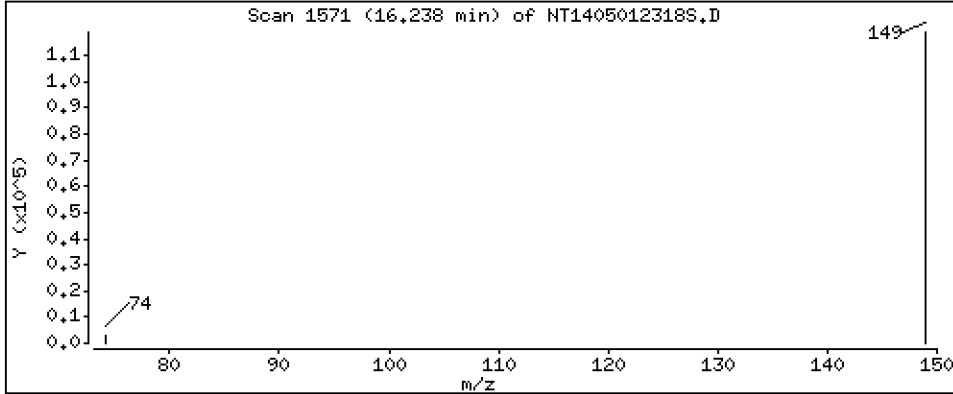
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,9811 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

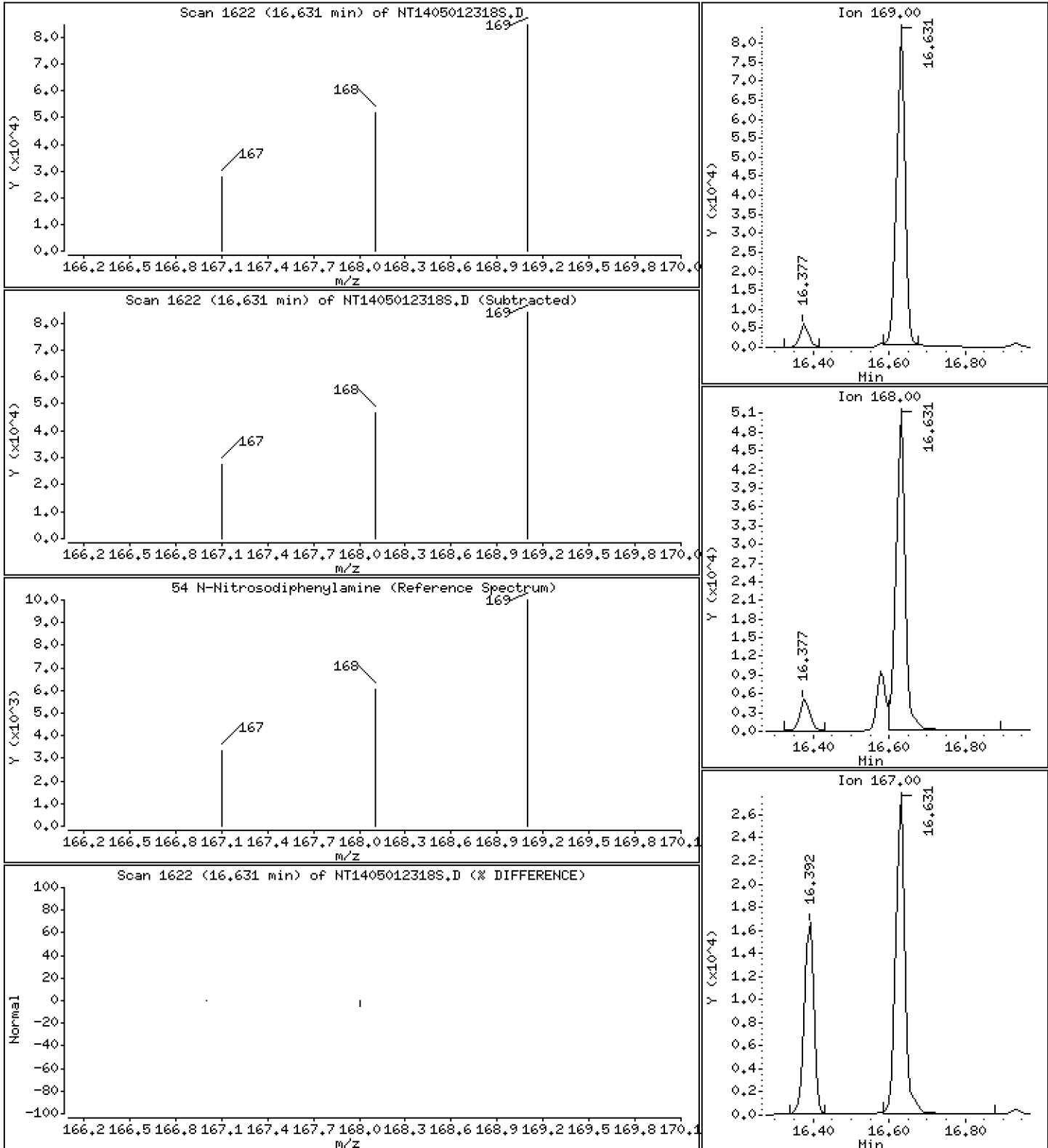
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 1,005 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

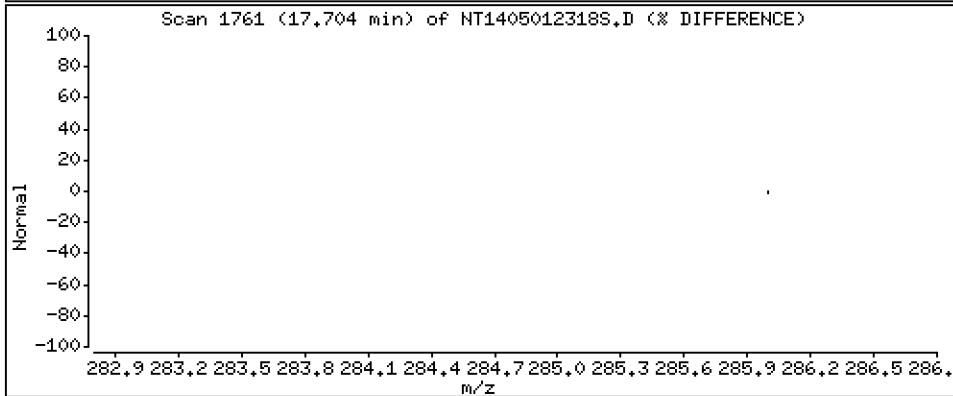
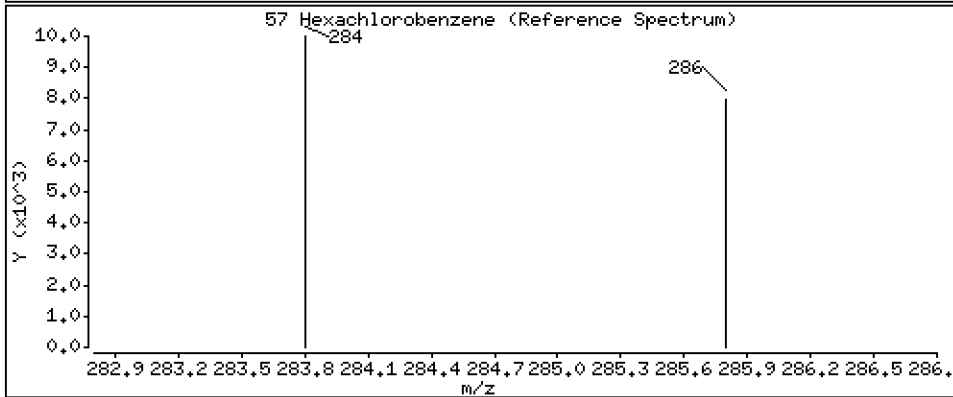
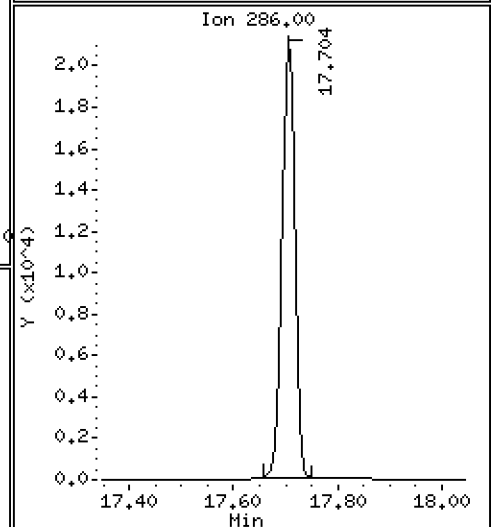
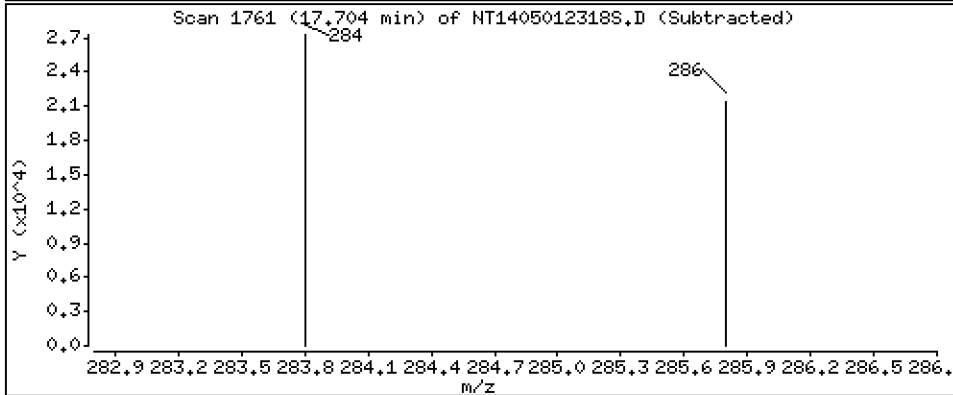
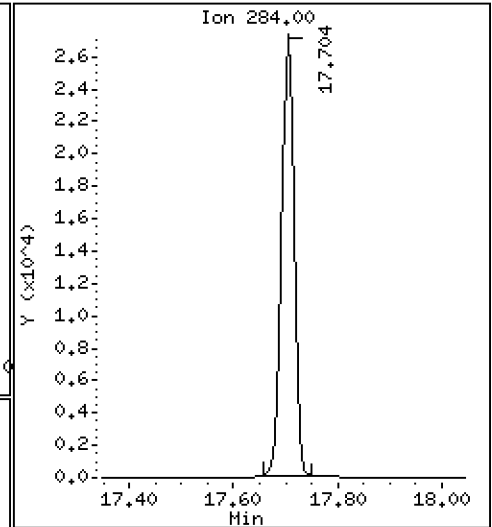
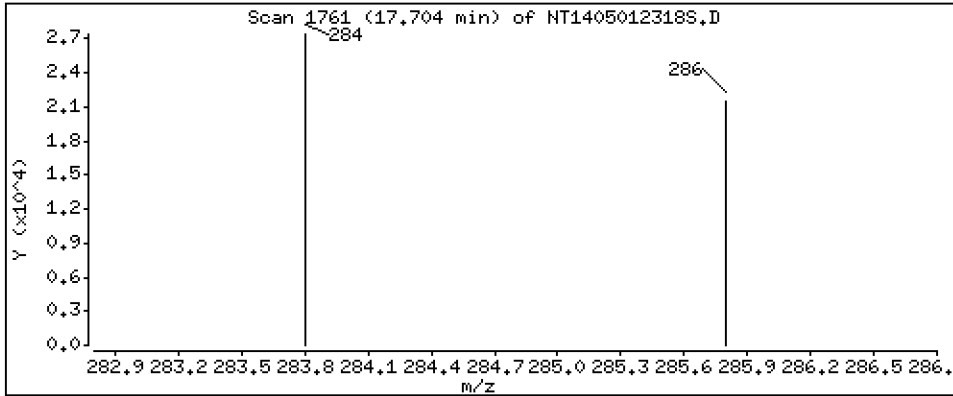
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 0,9186 ug/mL





Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

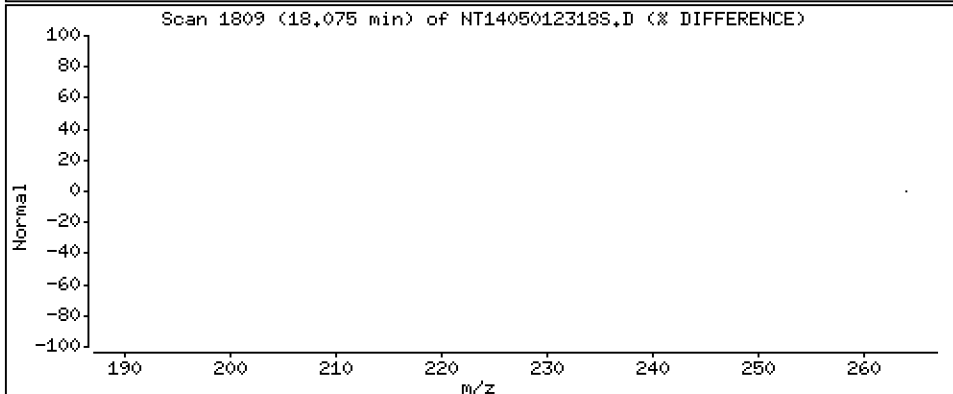
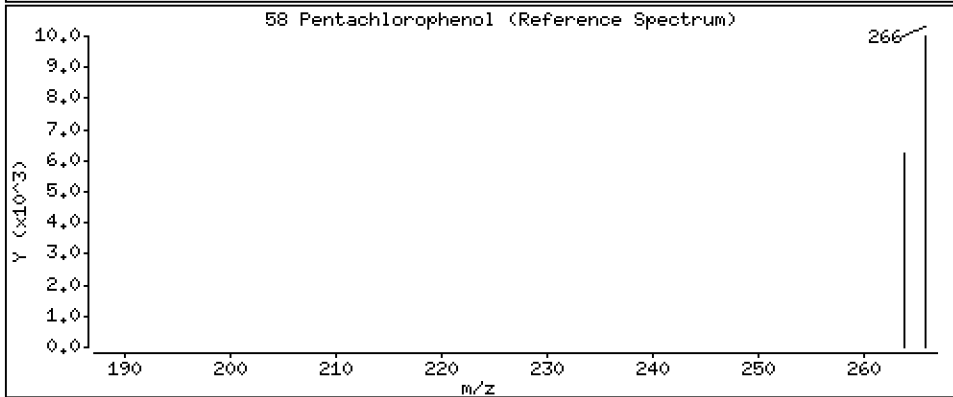
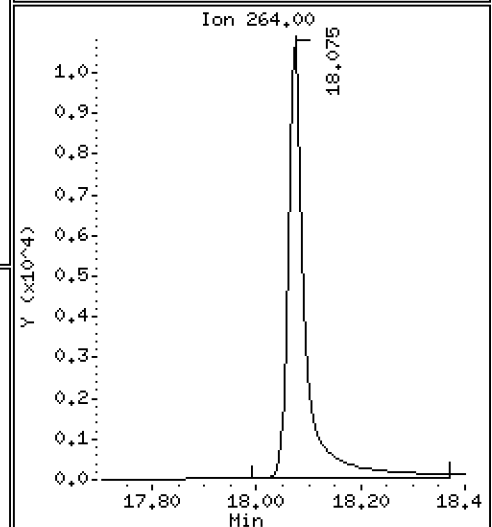
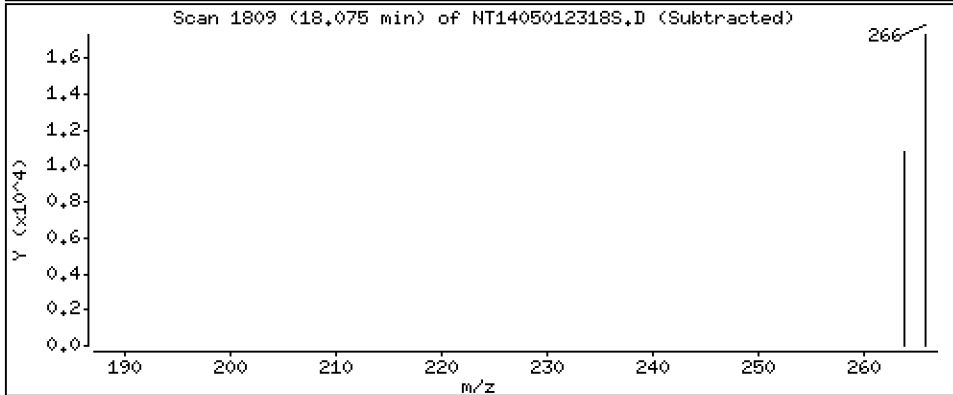
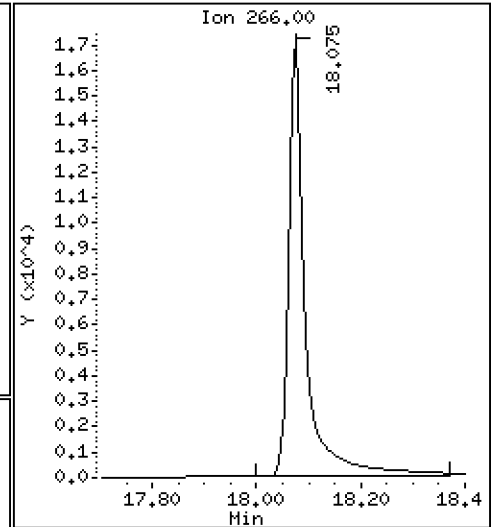
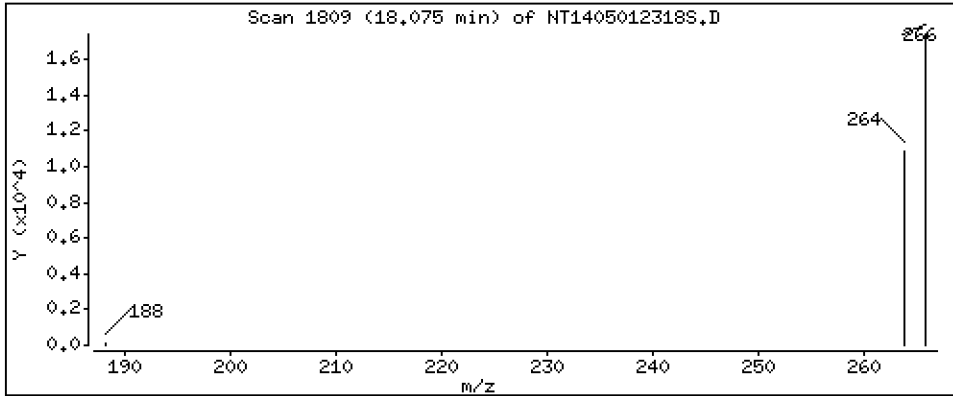
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 1,279 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

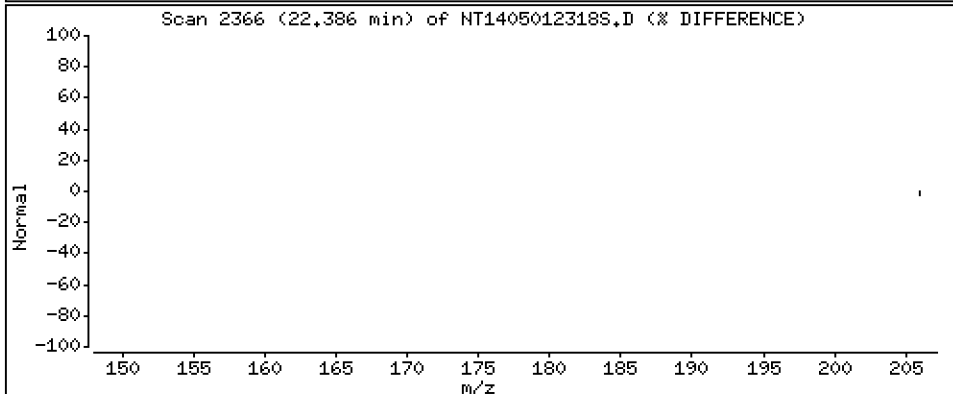
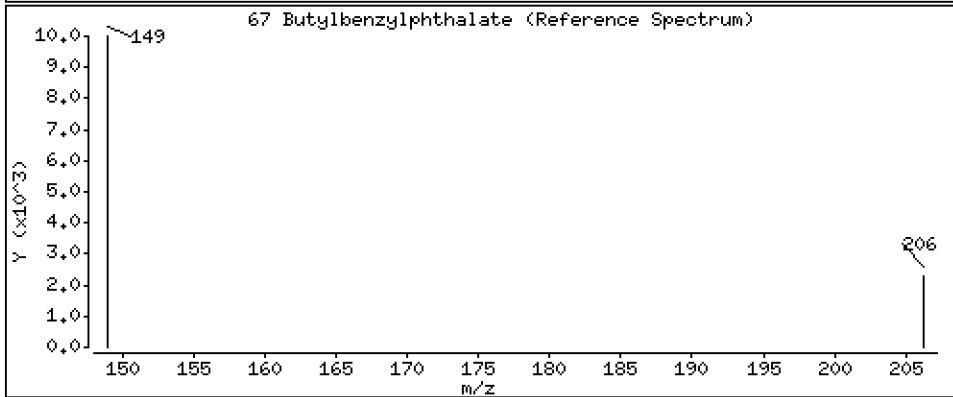
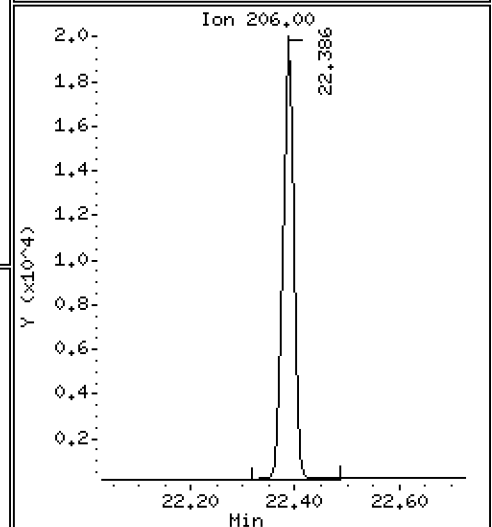
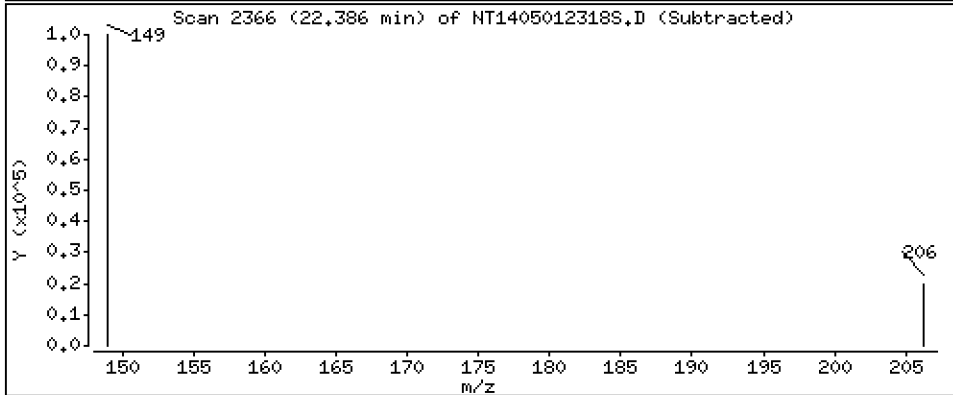
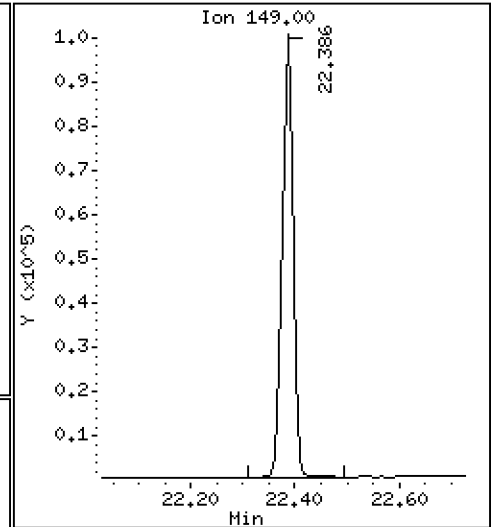
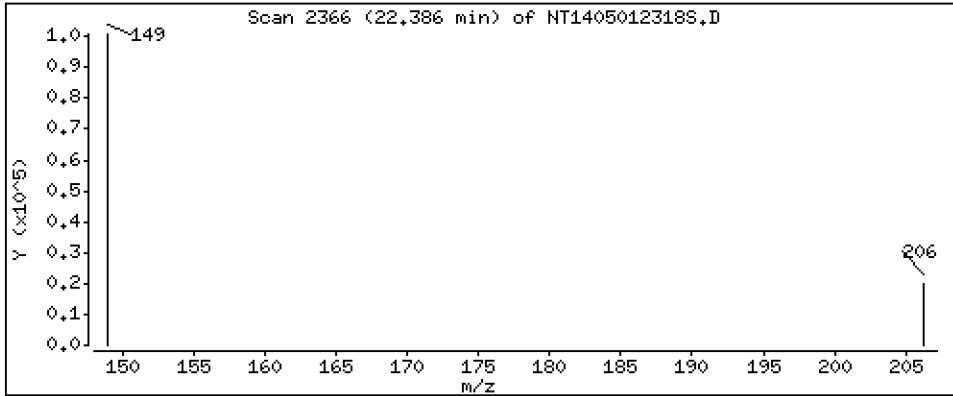
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,9808 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

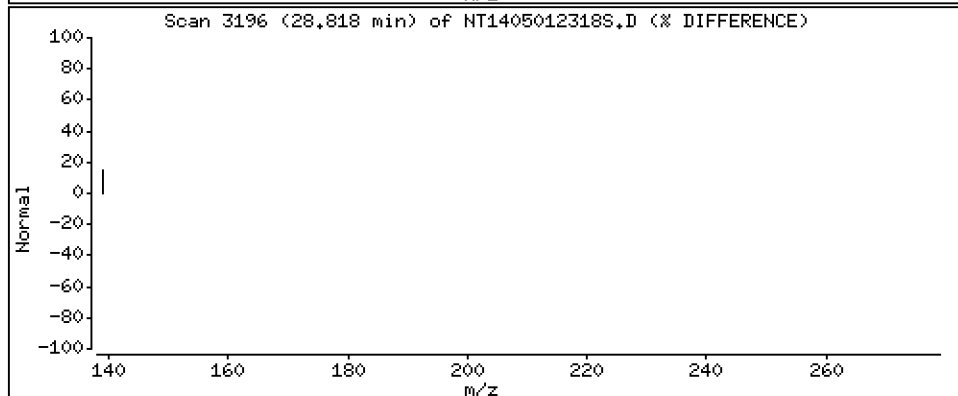
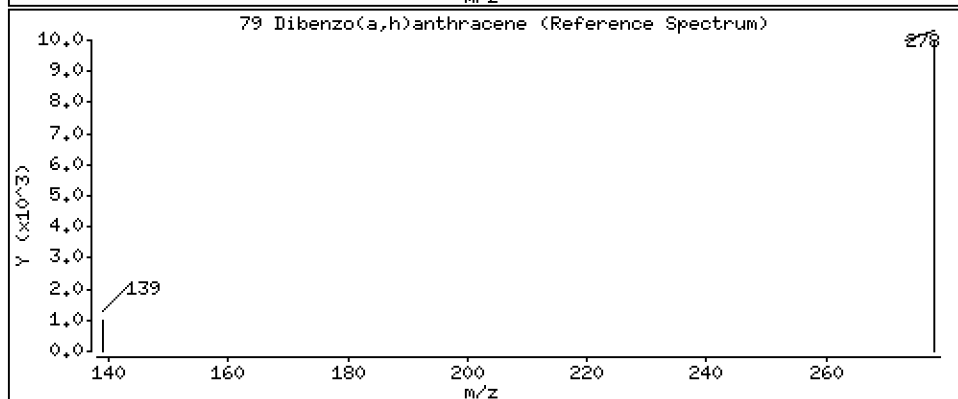
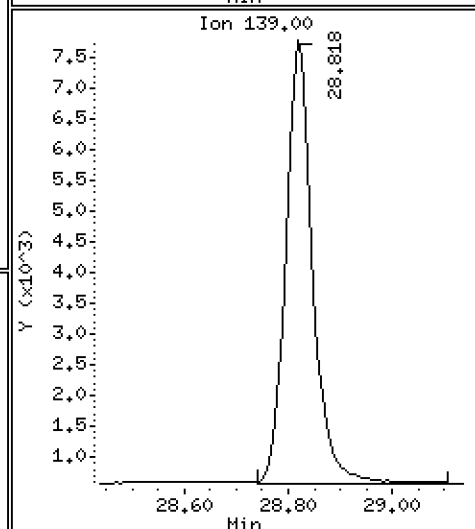
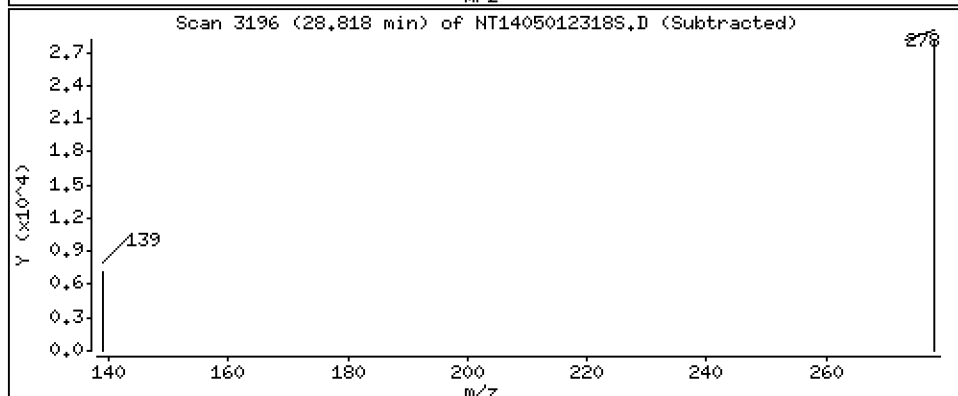
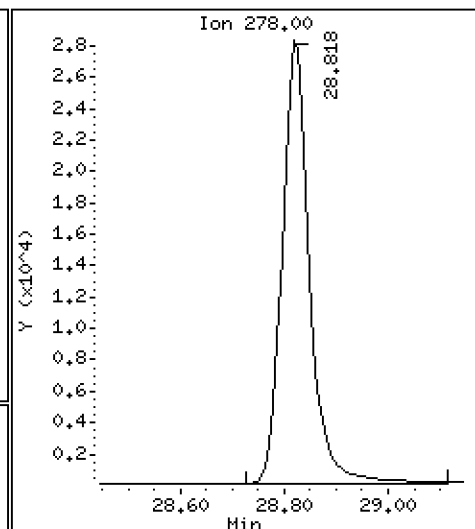
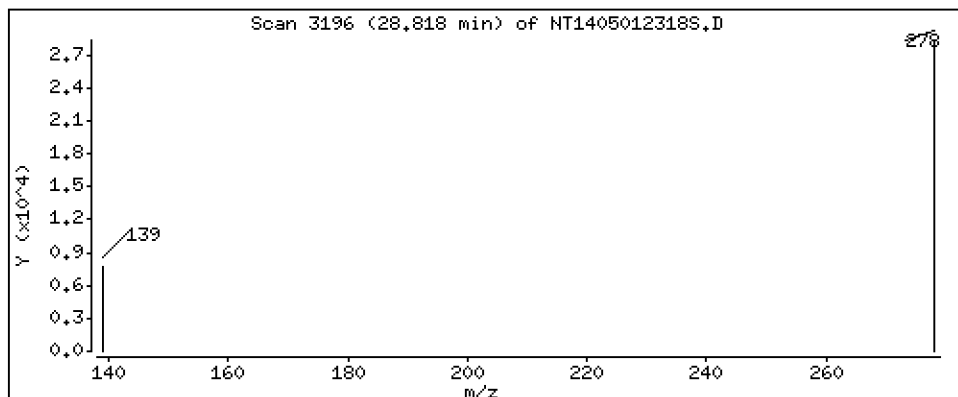
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,5841 ug/mL



Date : 02-MAY-2023 00:58

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-CCV1

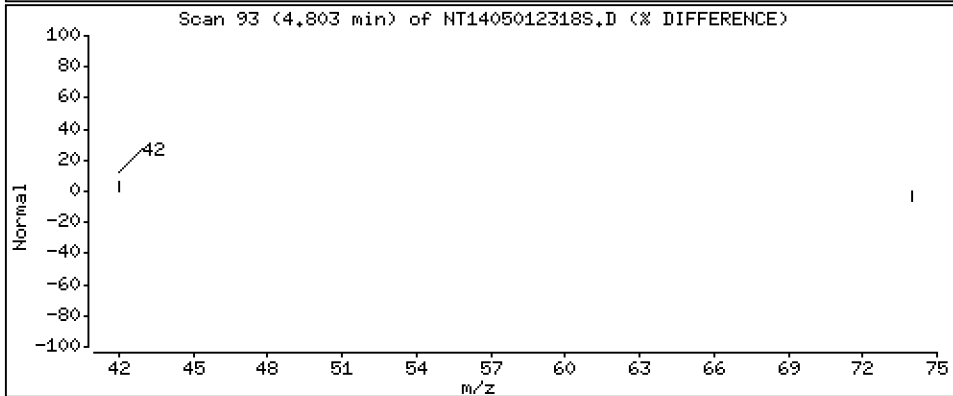
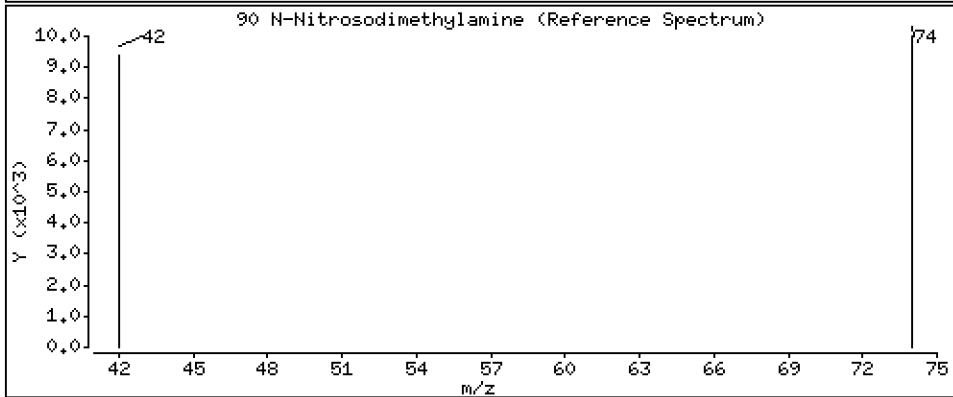
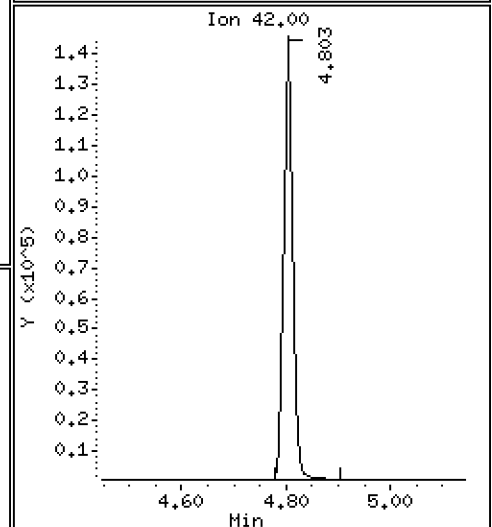
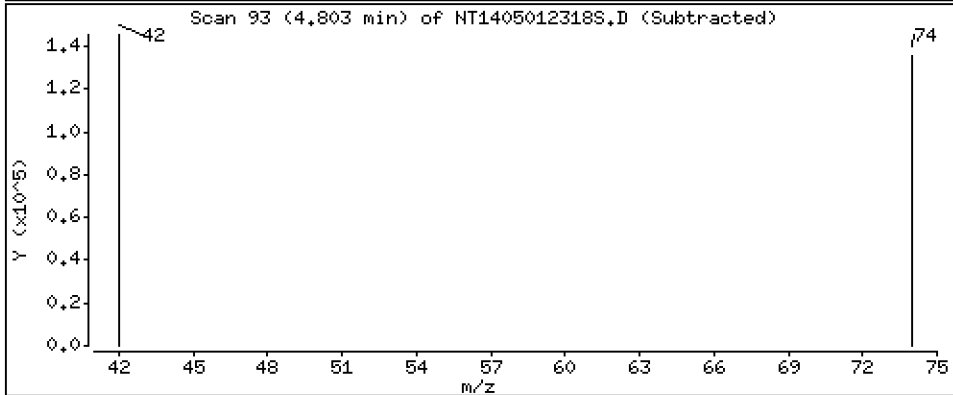
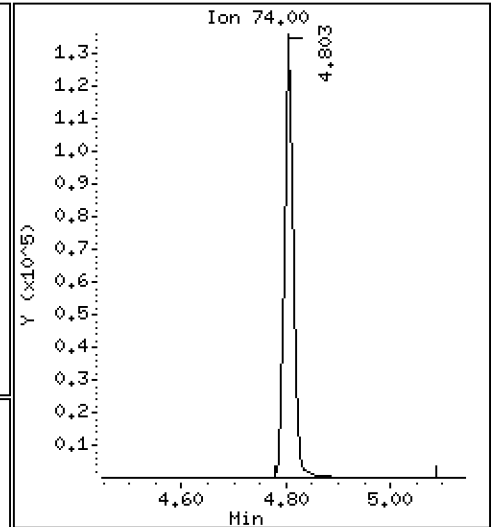
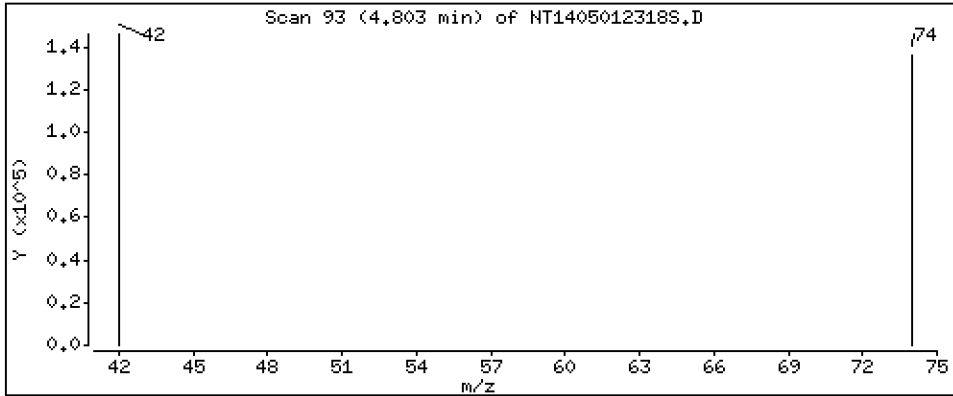
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 1.983 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012318S.D  
 Lab Smp Id: SLE0027-CCV1  
 Inj Date : 02-MAY-2023 00:58 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0027-CCV1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 4  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.911	6.903	(0.756)	158166	1.60680	1.607 (R)
3 Phenol	94		8.526	8.510	(0.932)	153615	0.97341	0.9734
7 1,3-Dichlorobenzene	146		9.075	9.067	(0.992)	114832	0.95938	0.9594
* 8 1,4-Dichlorobenzene-d4	152		9.145	9.137	(1.000)	282436	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	109019	0.96266	0.9627
11 Benzyl alcohol	79		9.416	9.408	(1.030)	83872	0.86207	0.8621
12 1,2-Dichlorobenzene	146		9.533	9.525	(1.042)	108613	0.96130	0.9613
13 2-Methylphenol	108		9.641	9.634	(1.054)	105459	1.07173	1.072
15 4-Methylphenol	108		9.913	9.898	(1.084)	111318	1.09603	1.096
16 N-Nitroso-di-n-propylamine	70		9.967	9.967	(1.090)	88025	0.94516	0.9452
22 2,4-Dimethylphenol	107		10.960	10.953	(0.941)	230519	2.24839	2.248
24 Benzoic acid	105		11.116	11.085	(0.955)	236260	3.28424	3.284
26 1,2,4-Trichlorobenzene	180		11.557	11.549	(0.993)	79609	1.01143	1.011
* 27 Naphthalene-d8	136		11.642	11.634	(1.000)	1072023	4.00000	
30 Hexachlorobutadiene	225		12.044	12.044	(1.035)	41637	0.95587	0.9559
39 Dimethylphthalate	163		14.783	14.776	(0.968)	179230	0.97462	0.9746
* 42 Acenaphthene-d10	162		15.278	15.271	(1.000)	503722	4.00000	
50 Diethylphthalate	149		16.237	16.229	(1.063)	184495	0.98110	0.9811
54 N-Nitrosodiphenylamine	169		16.631	16.623	(0.907)	123213	1.00450	1.005
57 Hexachlorobenzene	284		17.703	17.696	(0.966)	43010	0.91863	0.9186
58 Pentachlorophenol	266		18.075	18.052	(0.986)	39830	1.27929	1.279
* 59 Phenanthrene-d10	188		18.330	18.323	(1.000)	877372	4.00000	
\$ 66 Terphenyl-d14	244		21.464	21.456	(0.918)	110507	1.08831	1.088 (R)
67 Butylbenzylphthalate	149		22.385	22.377	(0.957)	142145	0.98084	0.9808
* 69 Chrysene-d12	240		23.384	23.369	(1.000)	638399	4.00000	
* 77 Perylene-d12	264		26.063	26.047	(1.000)	587588	4.00000	
79 Dibenzo(a,h)anthracene	278		28.818	28.794	(1.106)	103911	0.58414	0.5841
90 N-Nitrosodimethylamine	74		4.802	4.795	(0.525)	159258	1.98259	1.983

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012318S.D  
 Lab Smp Id: SLE0027-CCV1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	282436	-14.82
27 Naphthalene-d8	1259018	629509	2518036	1072023	-14.85
42 Acenaphthene-d10	580636	290318	1161272	503722	-13.25
59 Phenanthrene-d10	1027945	513973	2055890	877372	-14.65
69 Chrysene-d12	775653	387827	1551306	638399	-17.70
77 Perylene-d12	750797	375399	1501594	587588	-21.74

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	0.08
27 Naphthalene-d8	11.63	11.13	12.13	11.64	0.07
42 Acenaphthene-d10	15.27	14.77	15.77	15.28	0.05
59 Phenanthrene-d10	18.32	17.82	18.82	18.33	0.04
69 Chrysene-d12	23.37	22.87	23.87	23.38	0.07
77 Perylene-d12	26.05	25.55	26.55	26.06	0.06

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012318S.D

Lab ID: SLE0027-CCV1

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

02-MAY-2023 00:58

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV	RRT	DELTA	COMPOUND
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NONE

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*



**LOW-CONCENTRATION  
CONTINUING CALIBRATION CHECK  
EPA 8270E-SIM**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>NT14</u>	Calibration:	<u>GD00063</u>
Lab File ID:	<u>NT1405012305S.D</u>	Calibration Date:	<u>04/21/2023</u>
Sequence:	<u>SLE0027</u>	Injection Date:	<u>05/01/23</u>
Lab Sample ID:	<u>SLE0027-LCV1</u>	Injection Time:	<u>16:59</u>
Sequence Name:	<u>ABN 0.1</u>		

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
1,4-Dichlorobenzene	A	0.10000	0.1	1.6038770	1.5365020		-4.2	
1,2-Dichlorobenzene	A	0.10000	0.09	1.6001510	1.5139060		-5.4	
Benzyl Alcohol	A	0.10000	0.08	1.3778980	1.0438040		-24.3	
Benzoic acid	A	0.40000	0.01	0.1976976	0.0079153		-97.0	
2,4-Dimethylphenol	A	0.20000	0.2	0.3825530	0.3810840		-0.4	
1,2,4-Trichlorobenzene	A	0.10000	0.1	0.3233196	0.3046374		3.7	
N-Nitrosodiphenylamine	A	0.10000	0.09	0.5592199	0.4981916		-10.9	
Pentachlorophenol	A	0.20000	0.03	0.0991788	0.0200815		-85.9	
2-Fluorophenol	A	0.15000	0.146	1.3940880	1.3602560		-2.4	
p-Terphenyl-d14	A	0.10000	0.0873	0.6679610	0.5550860		-12.8	

\* Values outside of QC limits



Data File: \\target\share\chem3\nt14.1\20230501A.b\20230501A.b\NT1405012305S.D

Date: 01-May-2023 16:59

Client ID:

Sample Info: SLE0027-LCW1

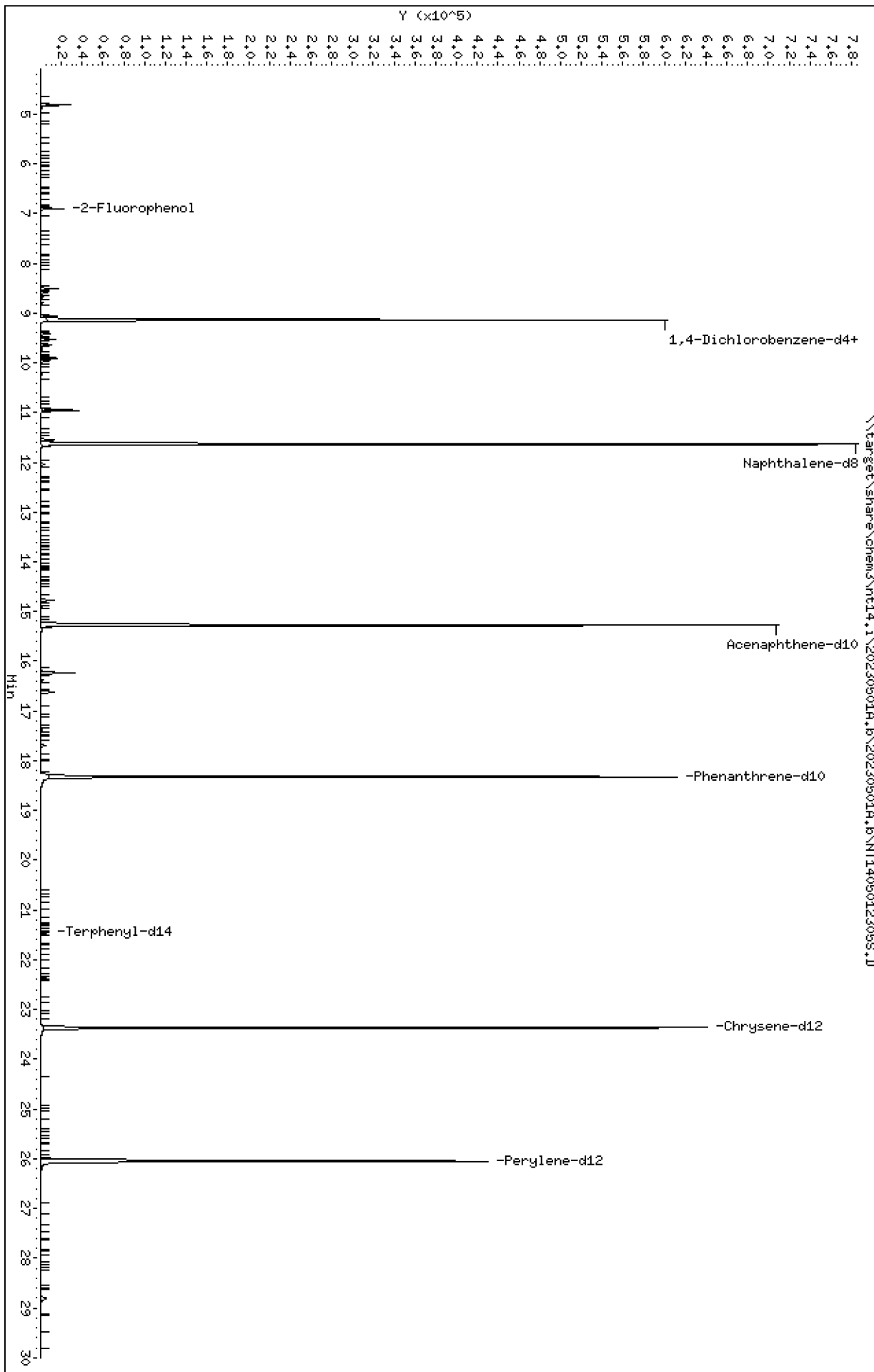
Column phase: ZB-5msi

Instrument: nt14.1

Operator: JSD

Column diameter: 0.25

Page 1



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

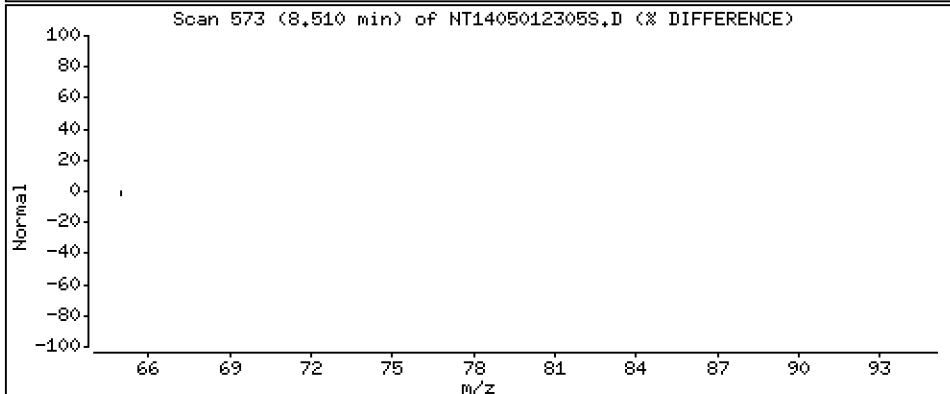
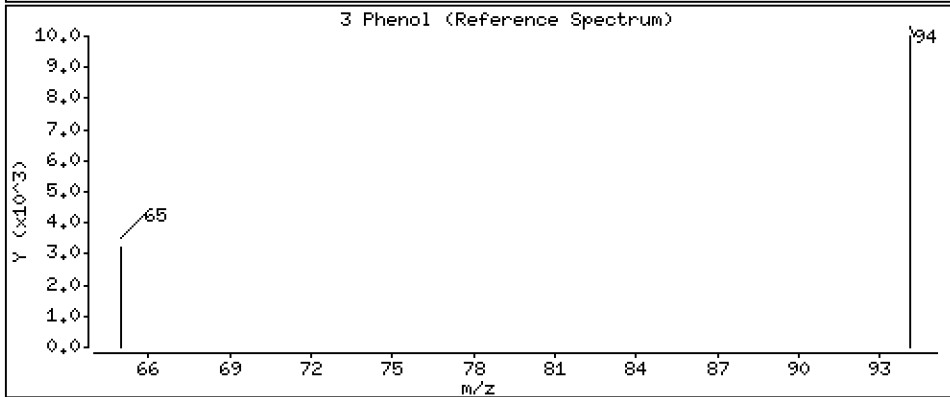
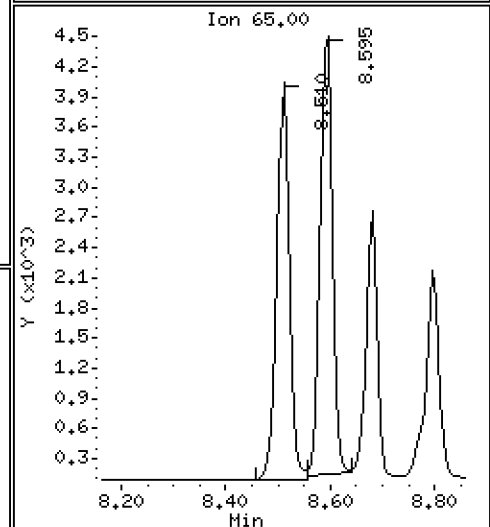
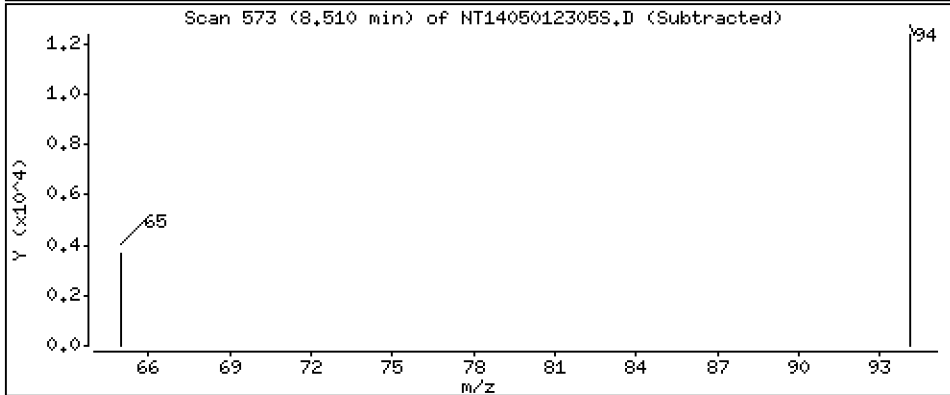
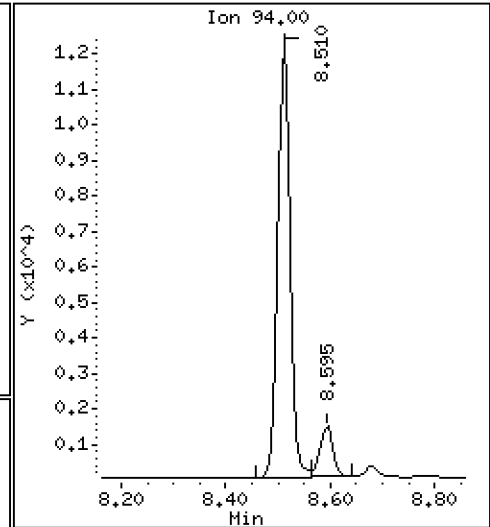
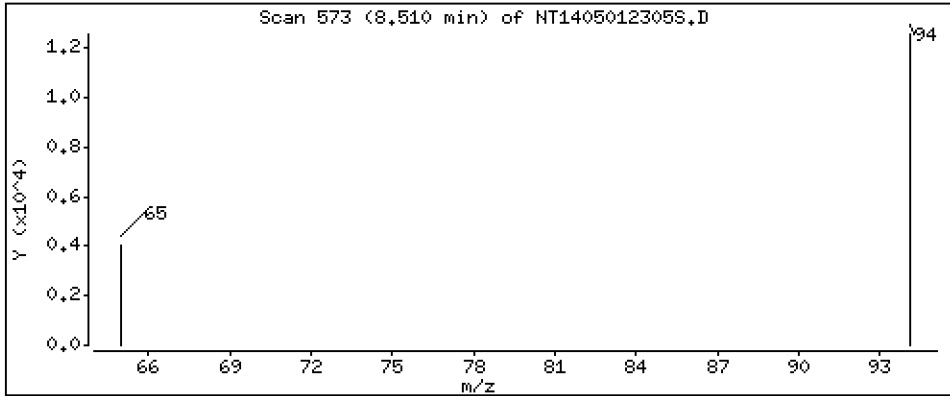
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

3 Phenol

Concentration: 0,09580 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

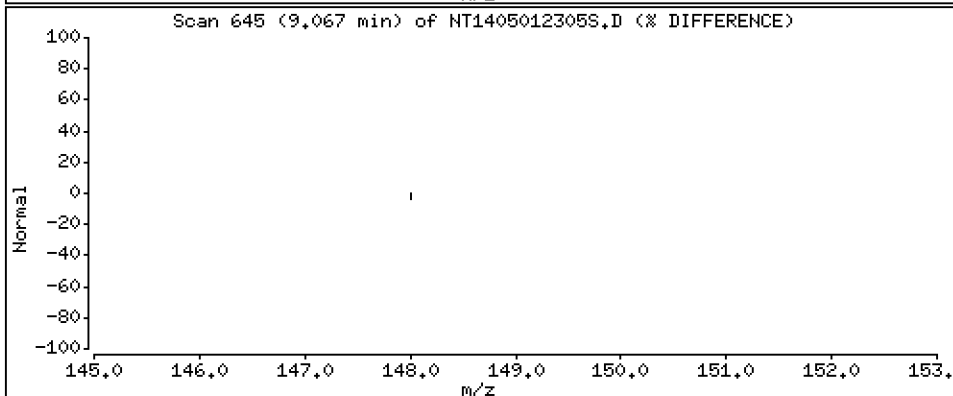
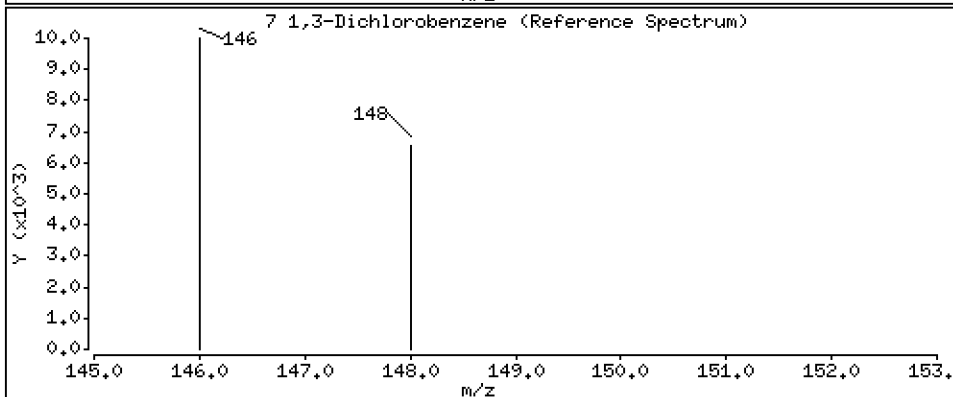
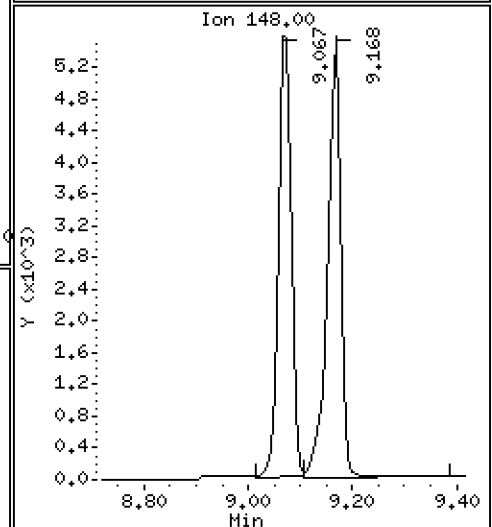
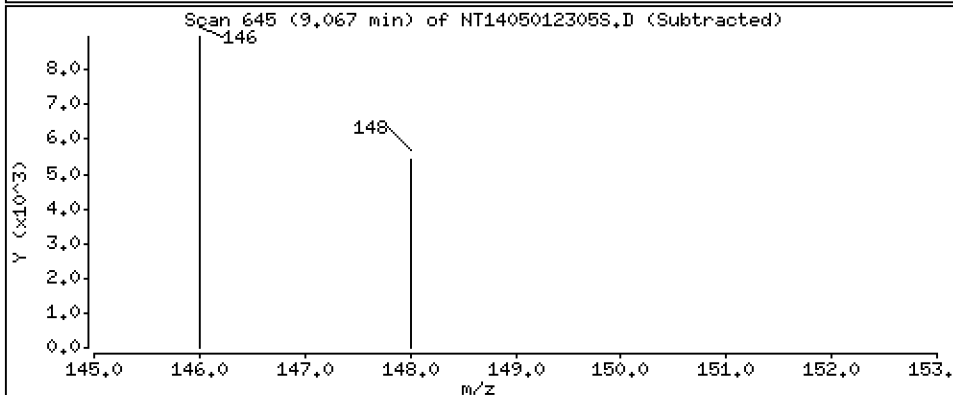
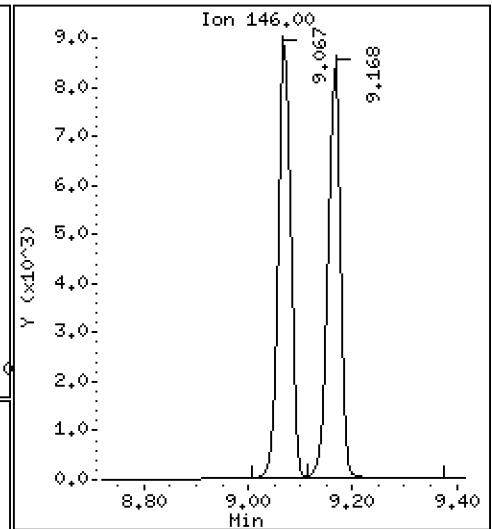
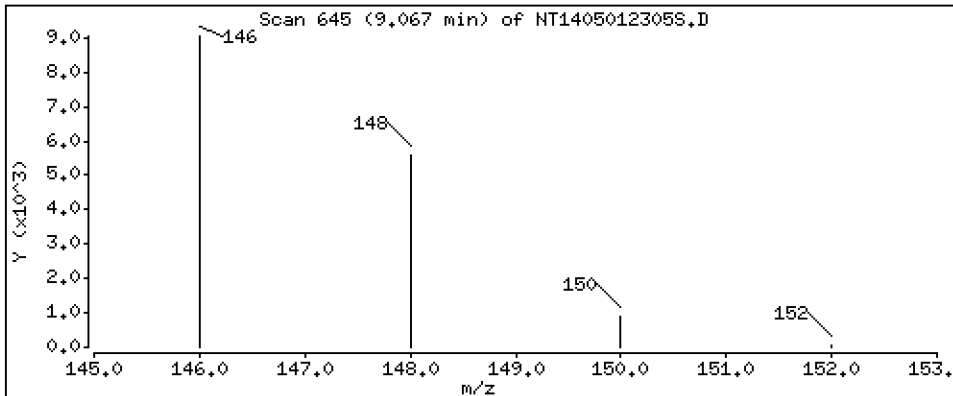
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

7 1,3-Dichlorobenzene

Concentration: 0,09564 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

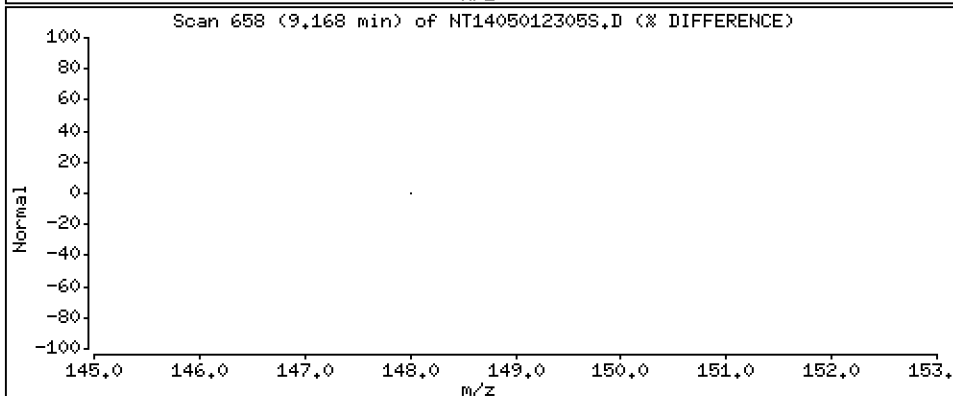
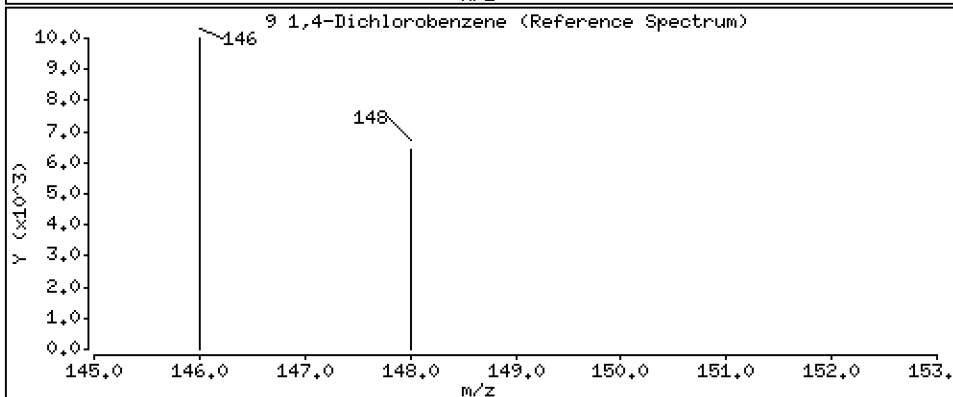
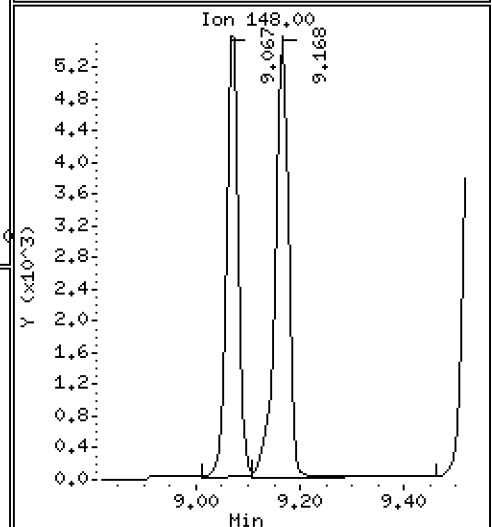
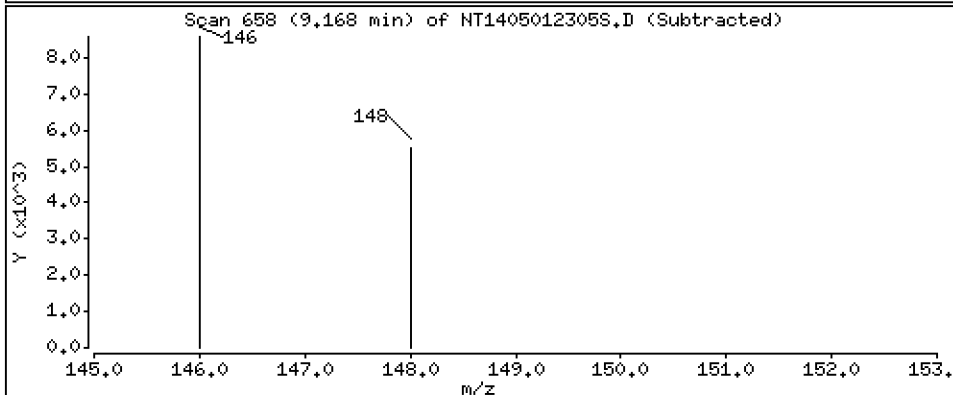
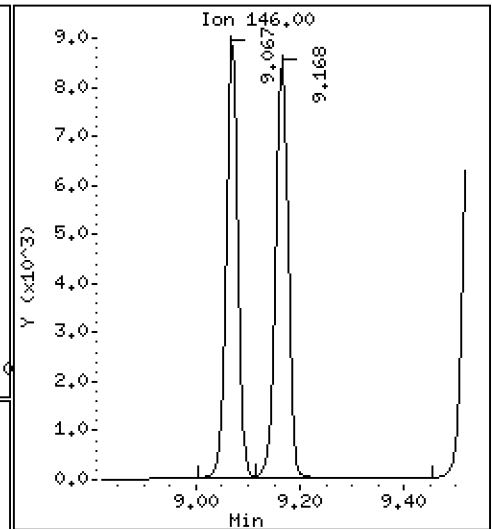
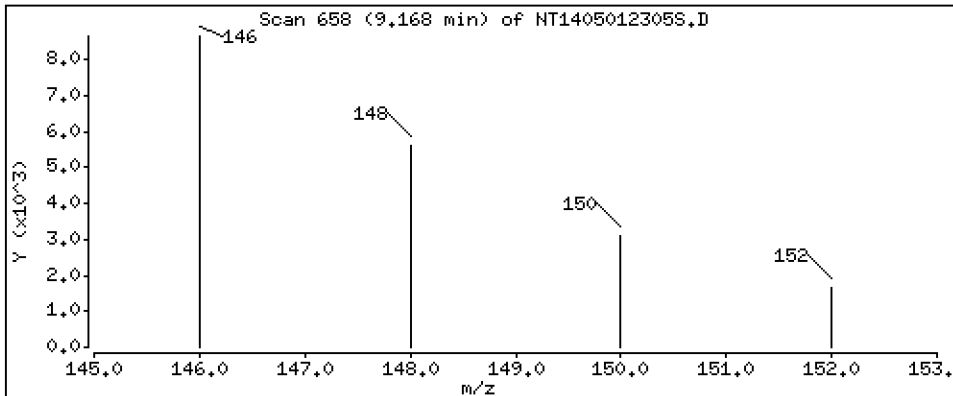
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

9 1,4-Dichlorobenzene

Concentration: 0,09580 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

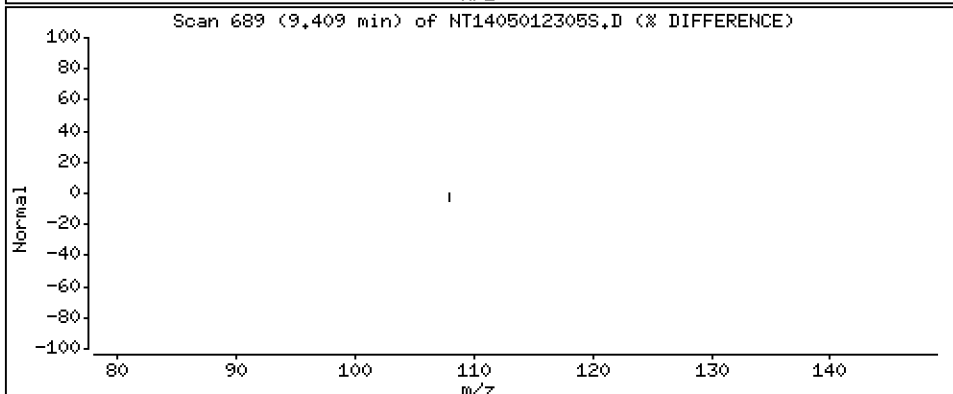
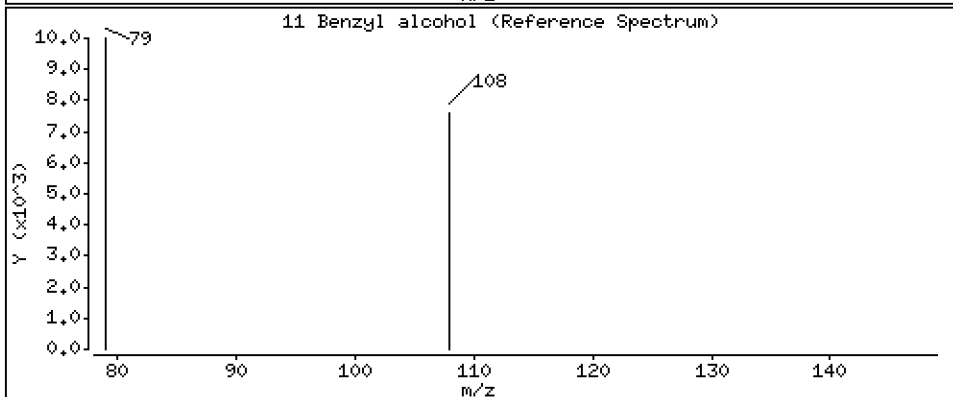
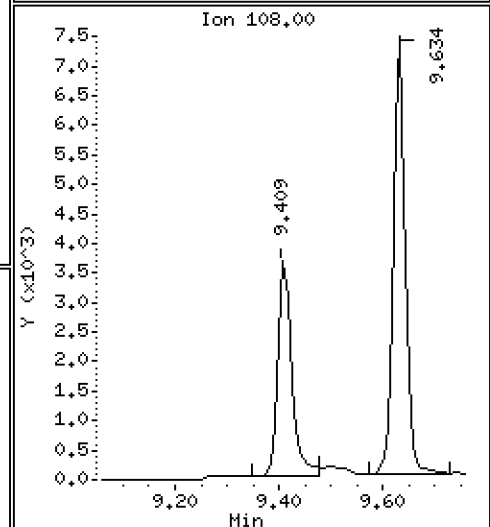
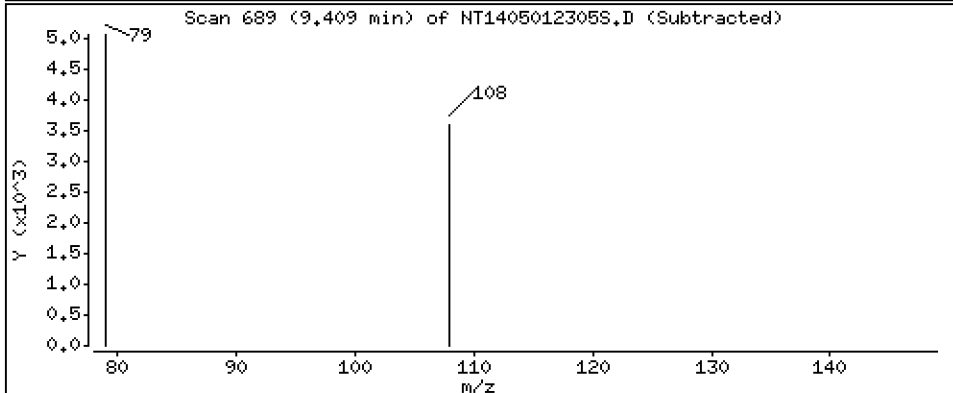
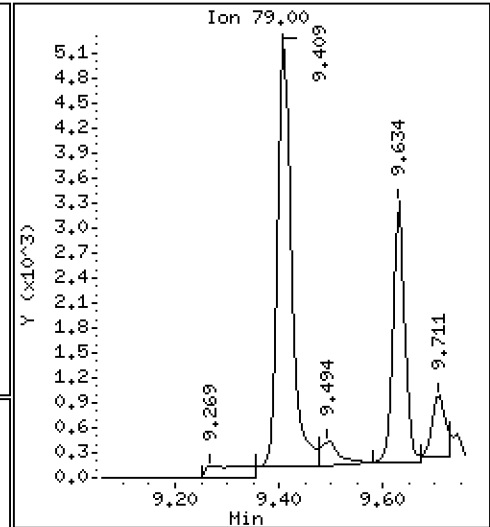
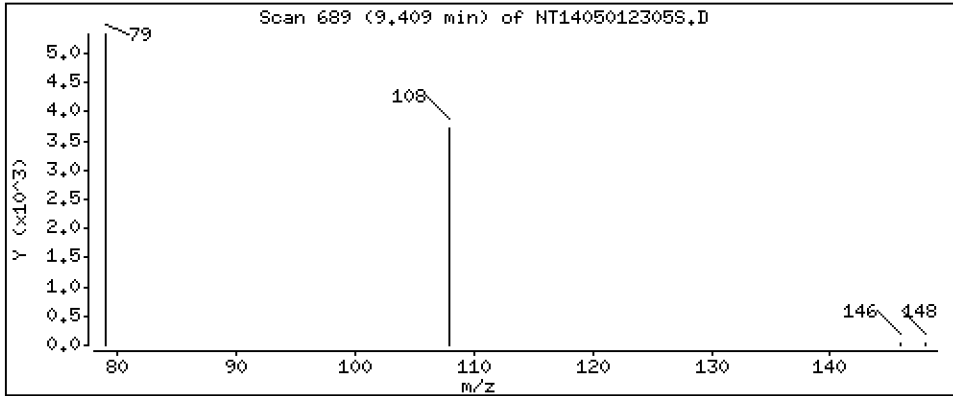
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

11 Benzyl alcohol

Concentration: 0.07575 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

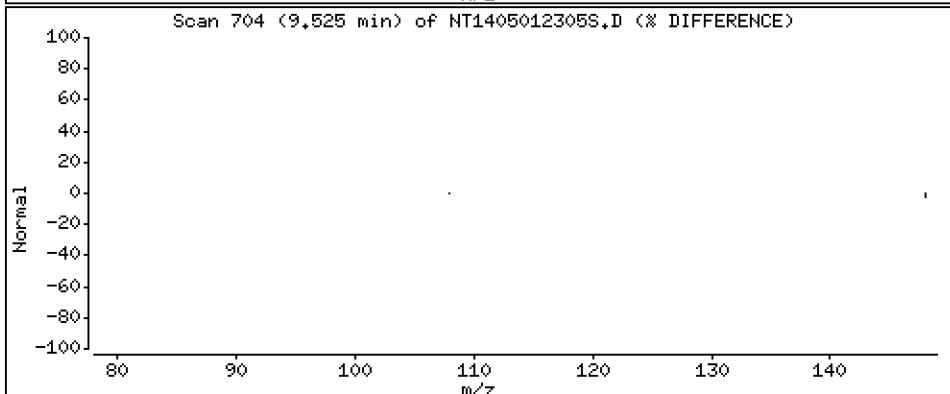
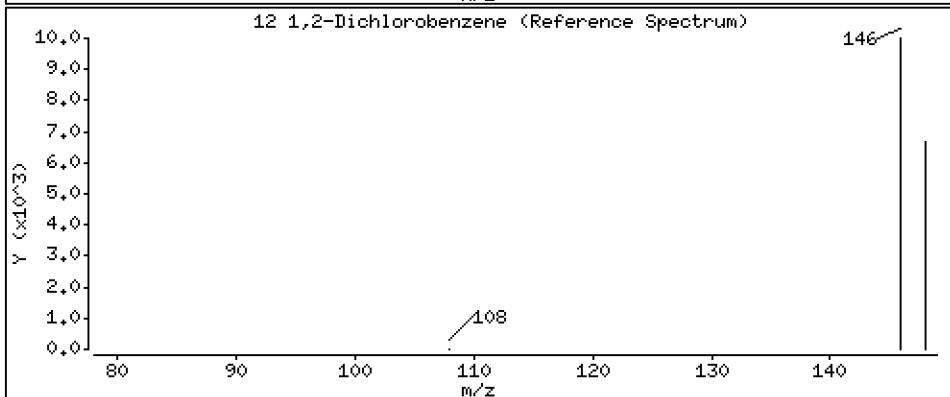
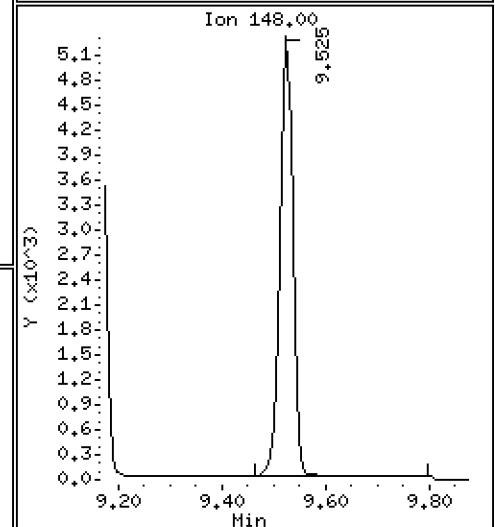
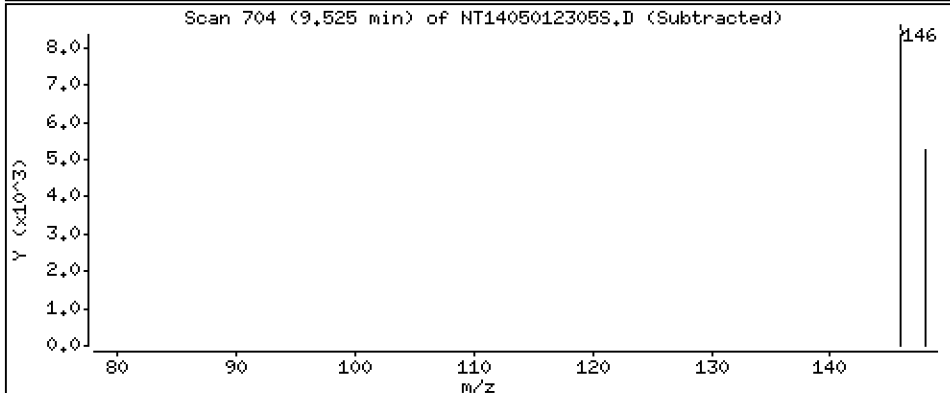
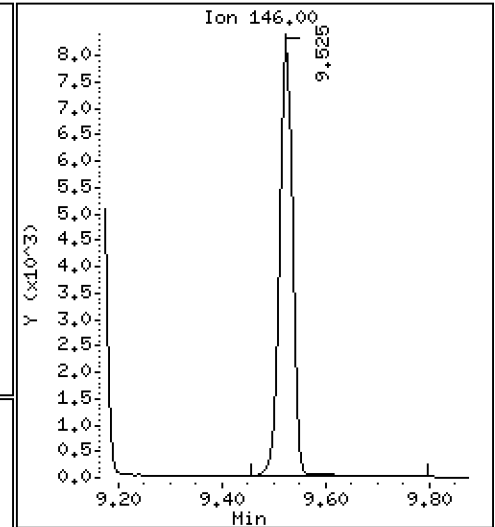
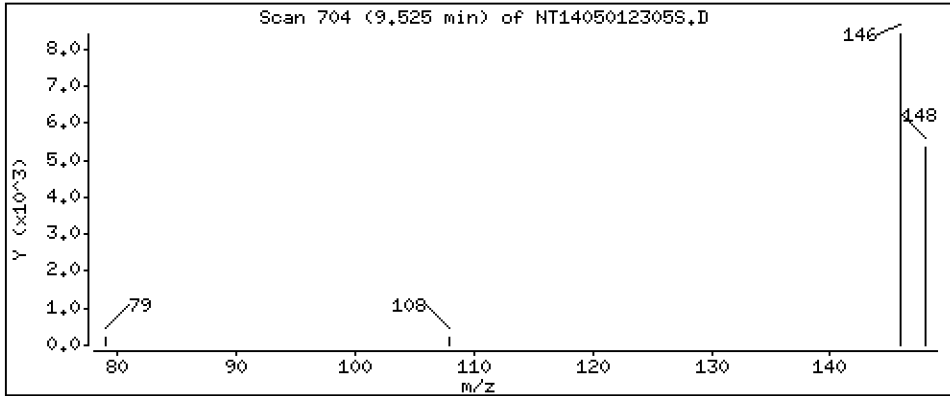
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

12 1,2-Dichlorobenzene

Concentration: 0,09461 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

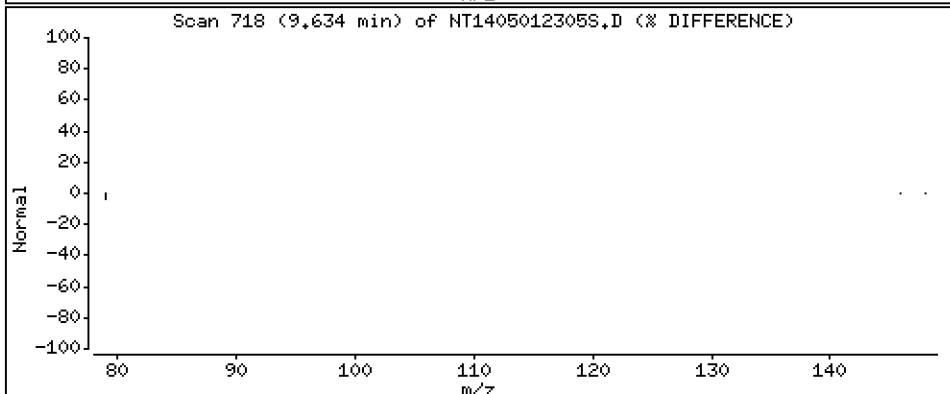
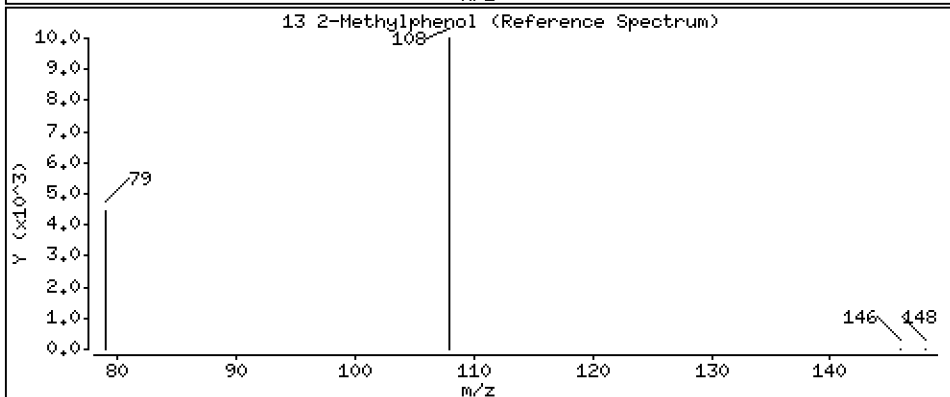
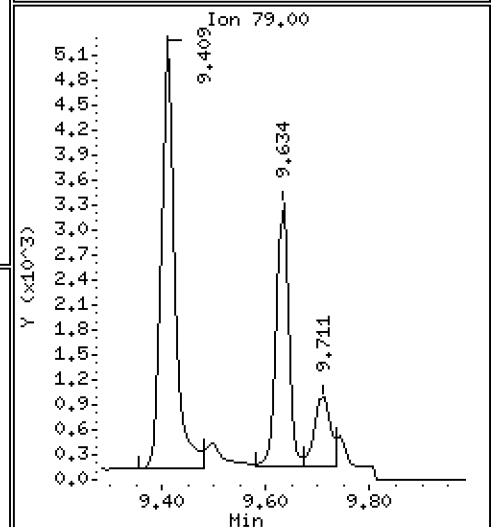
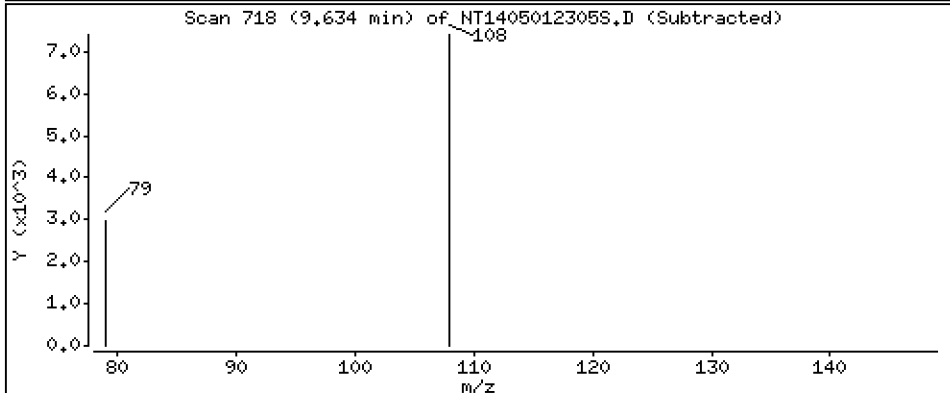
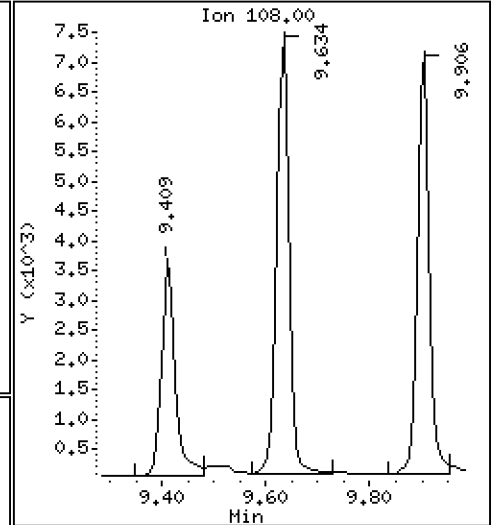
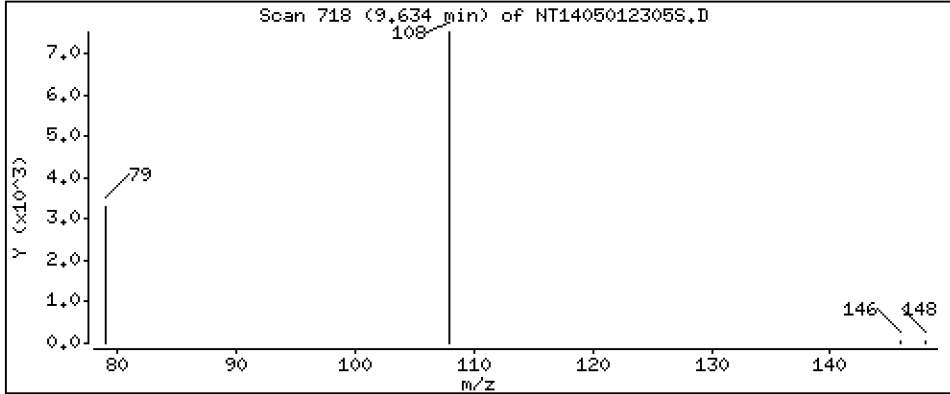
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

13 2-Methylphenol

Concentration: 0,09321 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

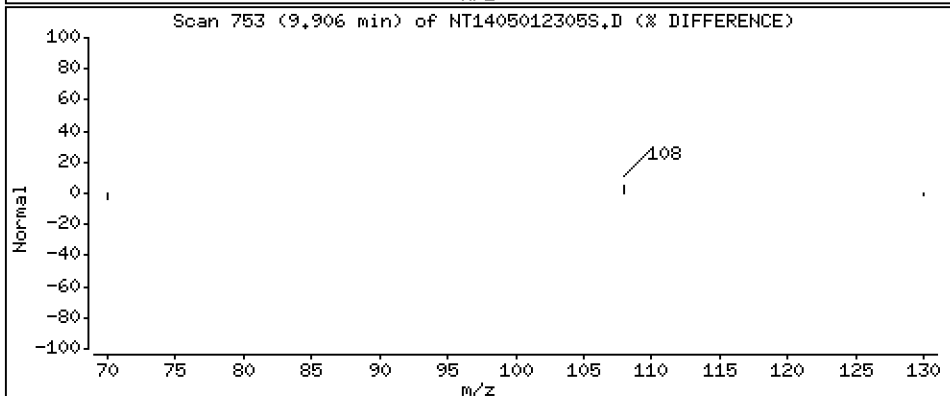
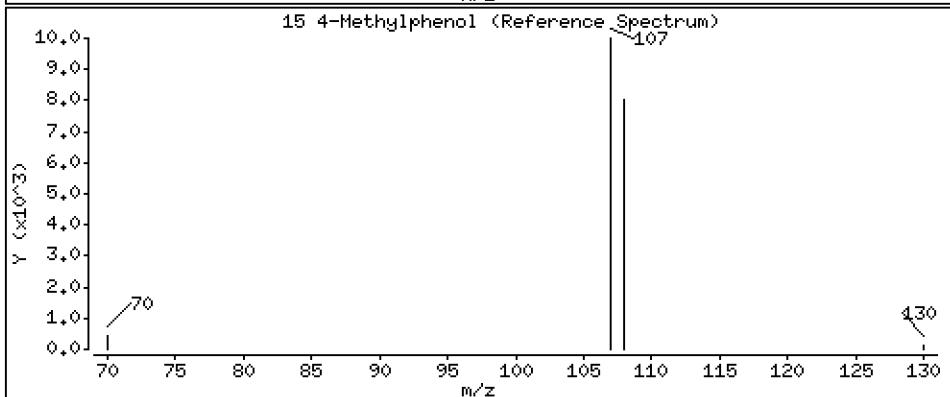
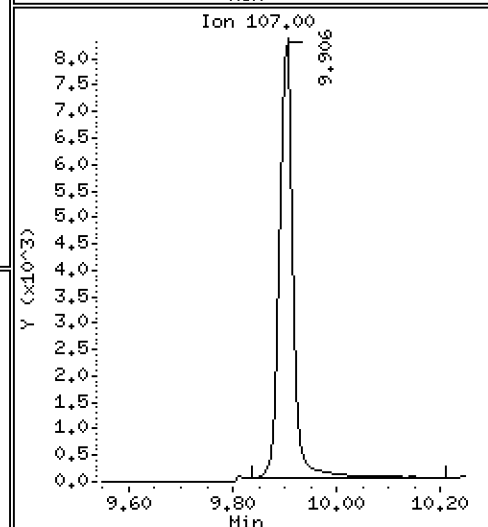
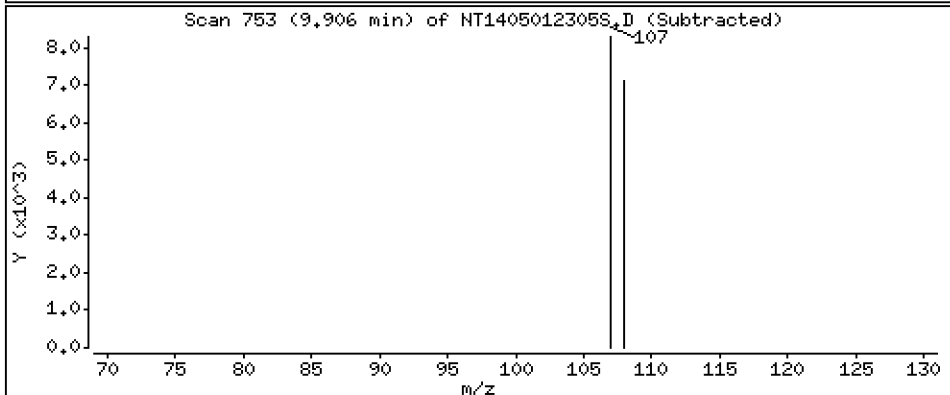
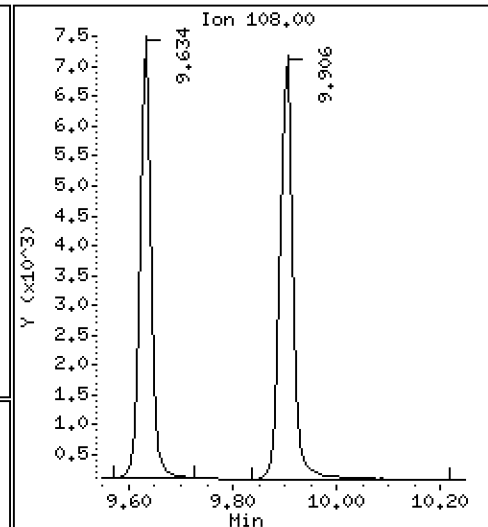
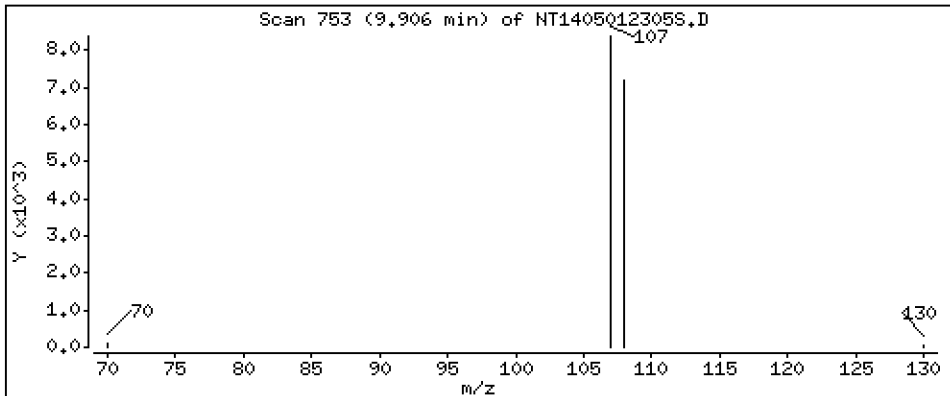
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

15 4-Methylphenol

Concentration: 0,09490 ug/mL





Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

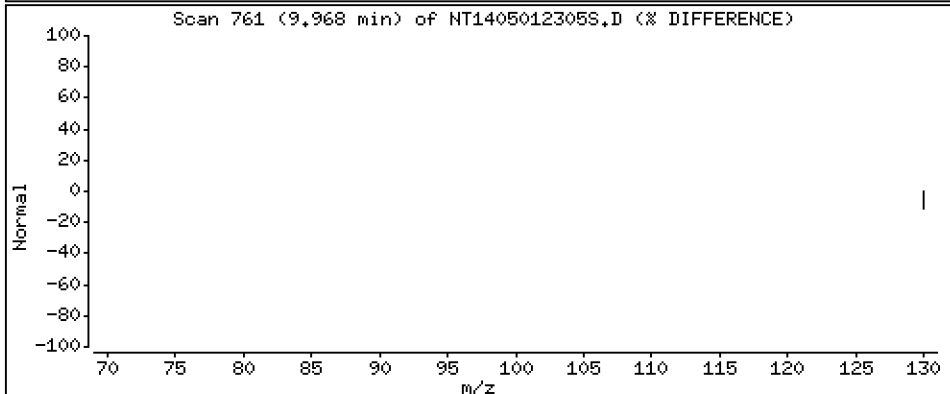
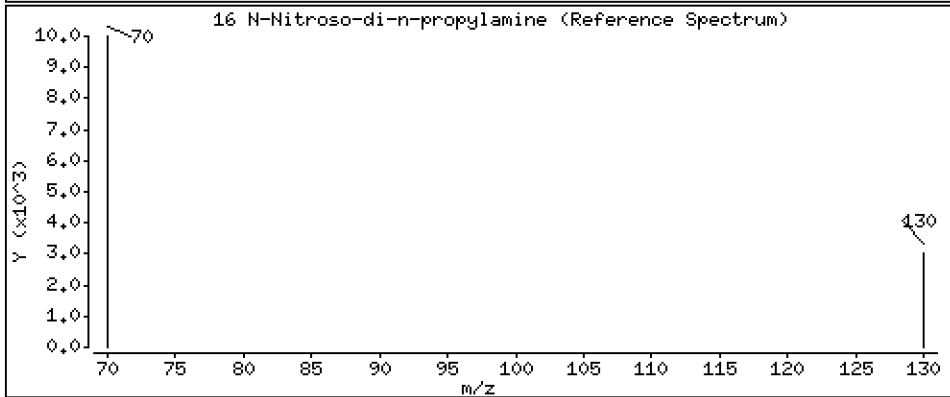
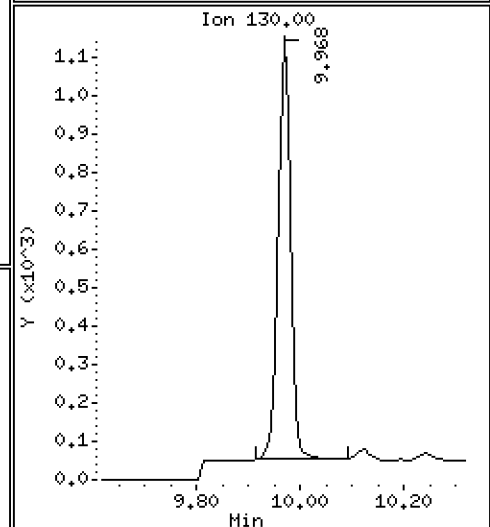
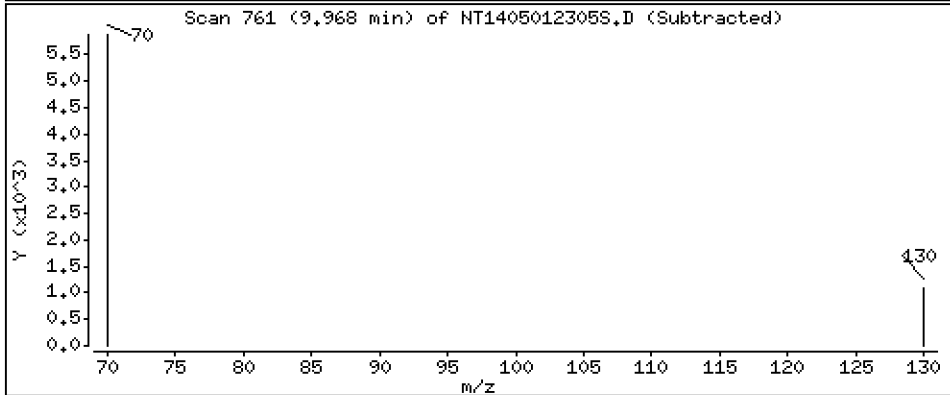
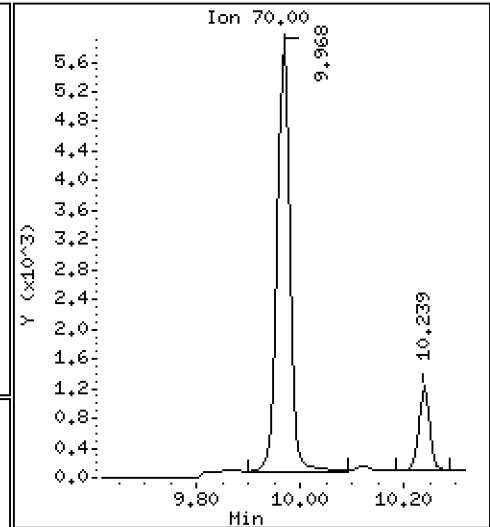
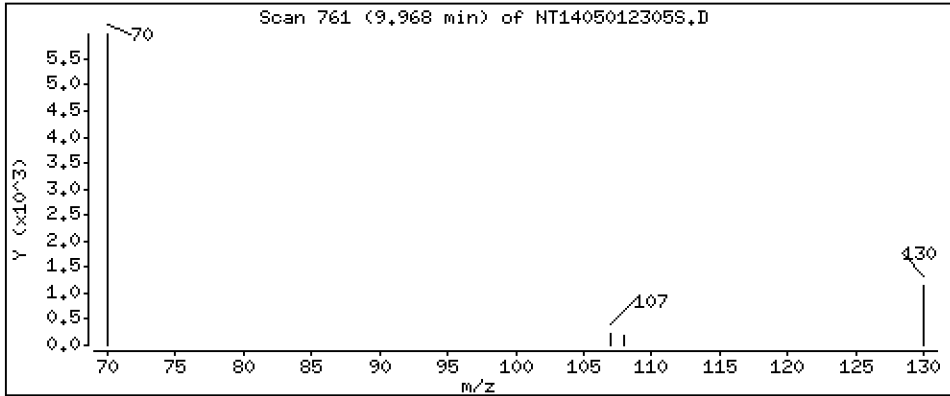
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

16 N-Nitroso-di-n-propylamine

Concentration: 0,08023 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

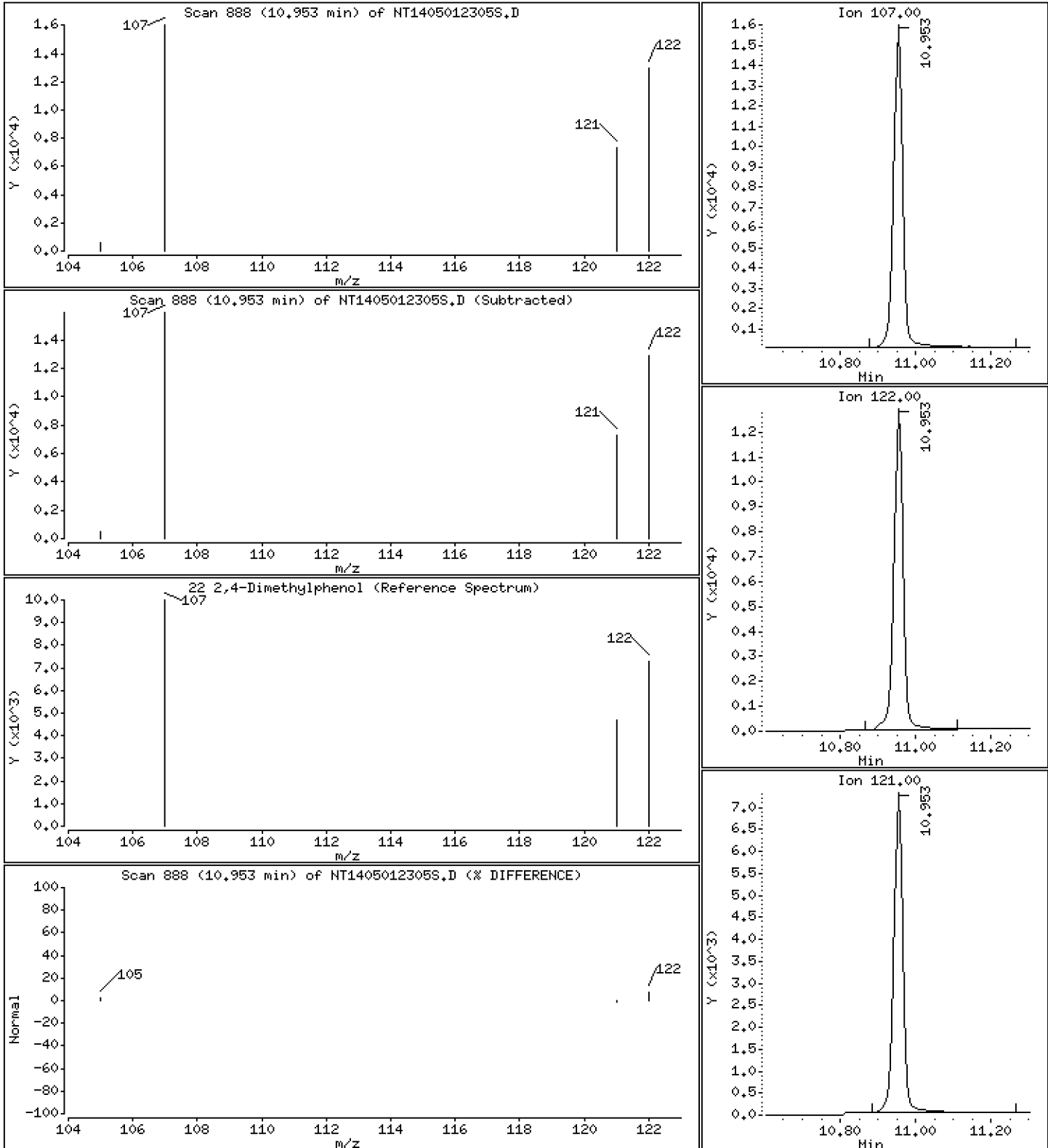
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

22 2,4-Dimethylphenol

Concentration: 0.1992 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

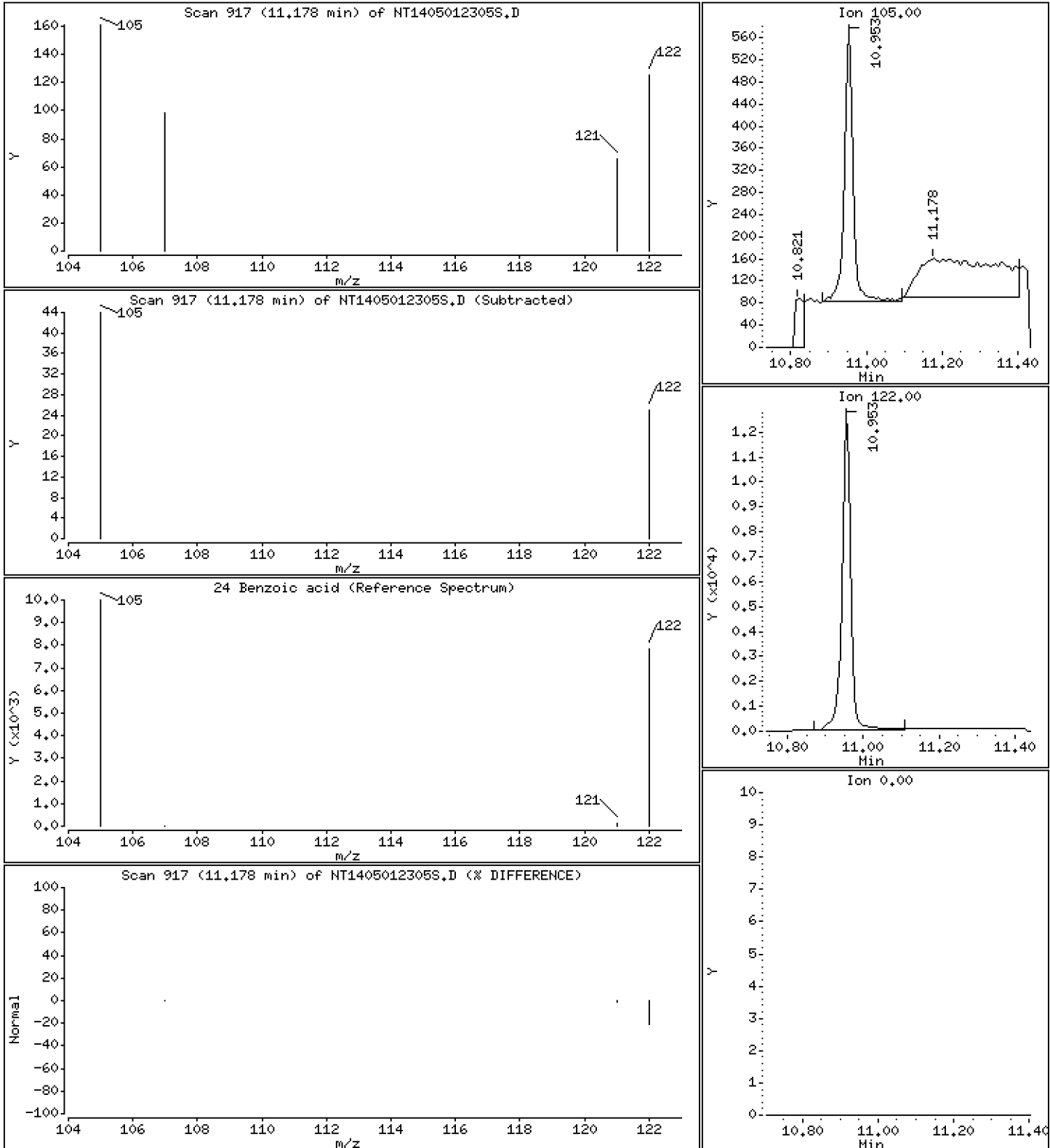
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

24 Benzoic acid

Concentration: 0,01195 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

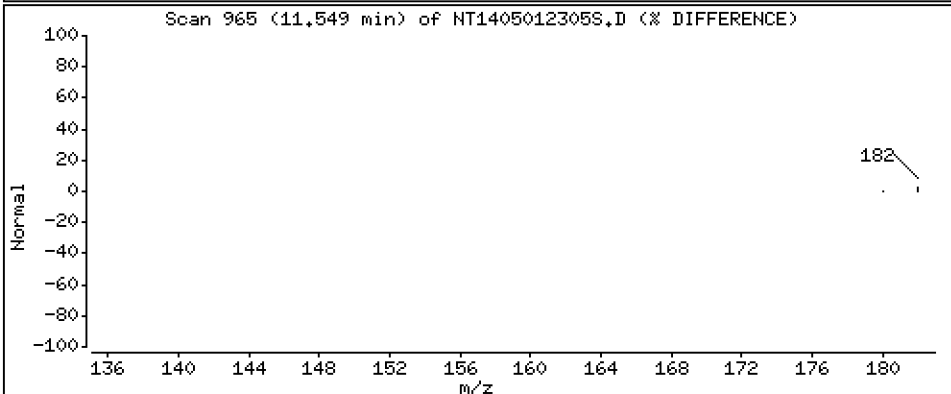
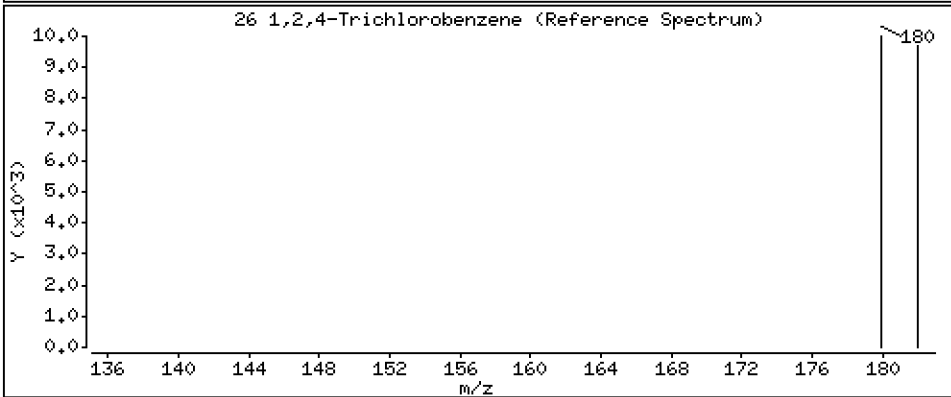
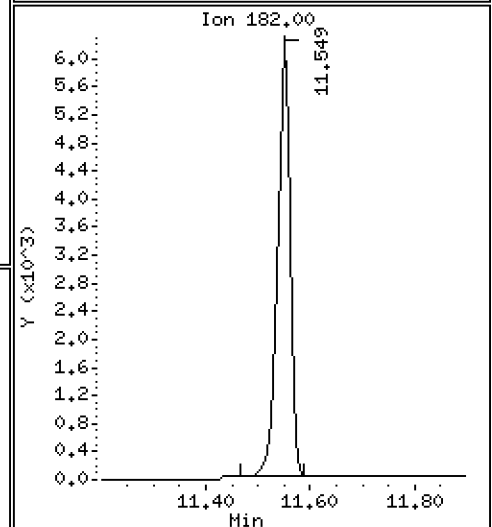
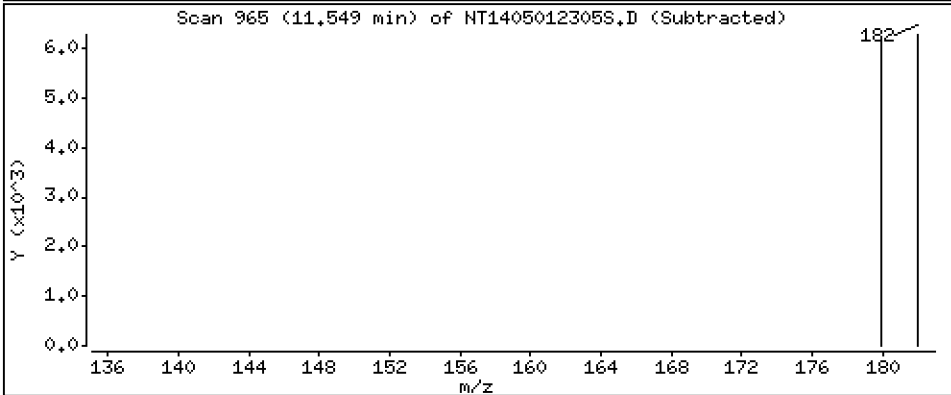
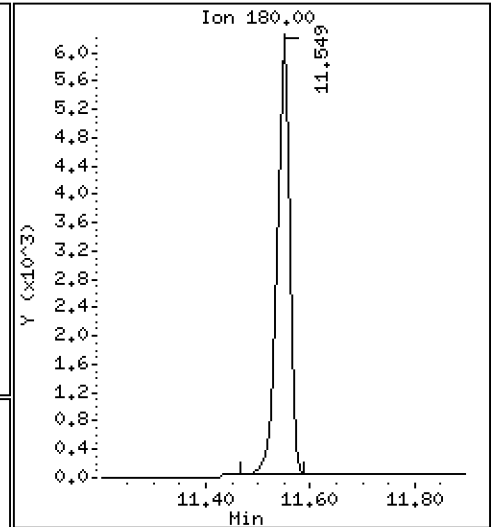
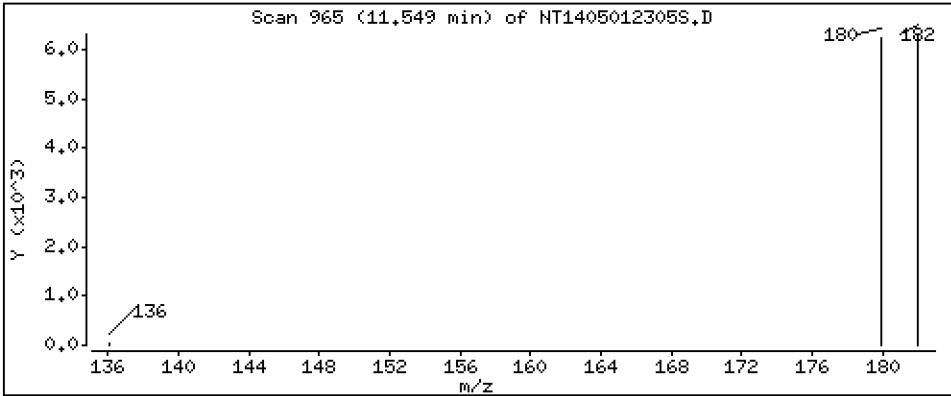
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

26 1,2,4-Trichlorobenzene

Concentration: 0,1037 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

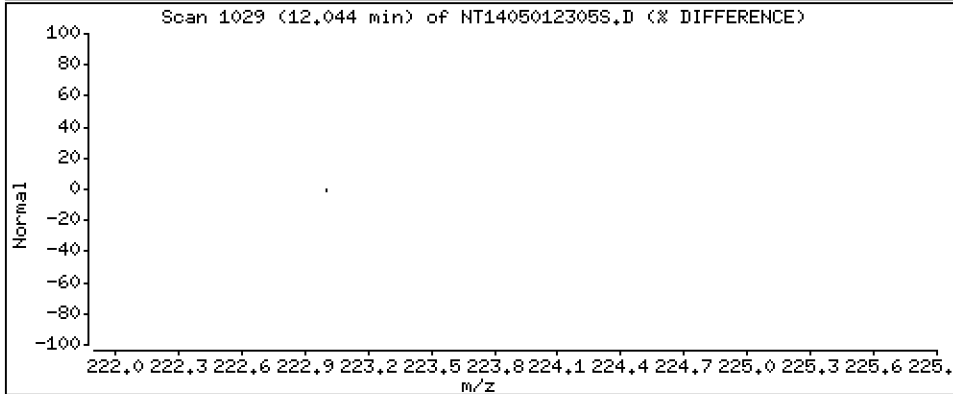
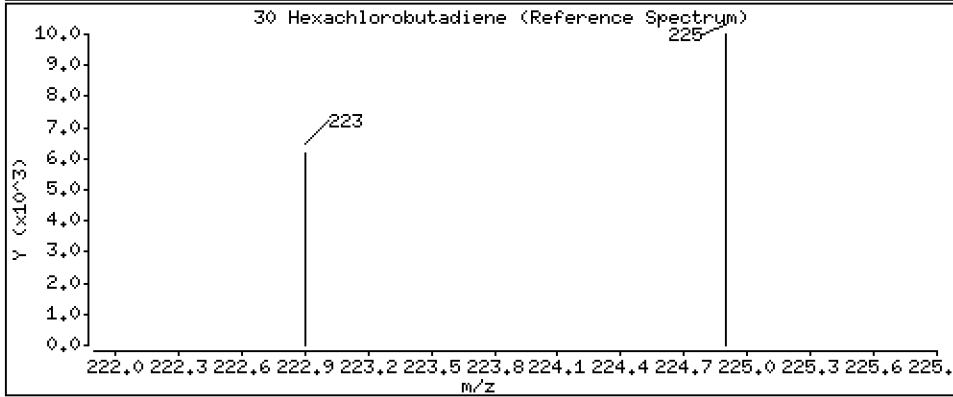
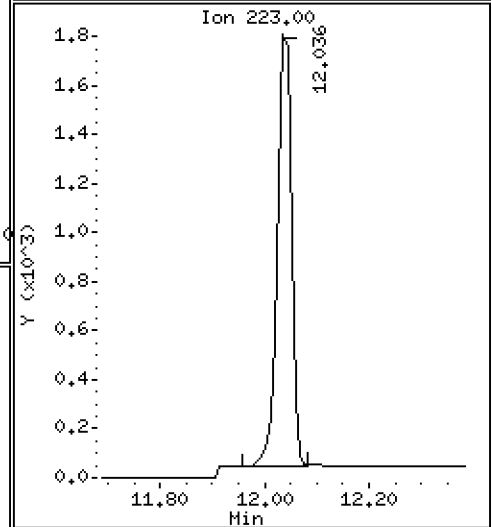
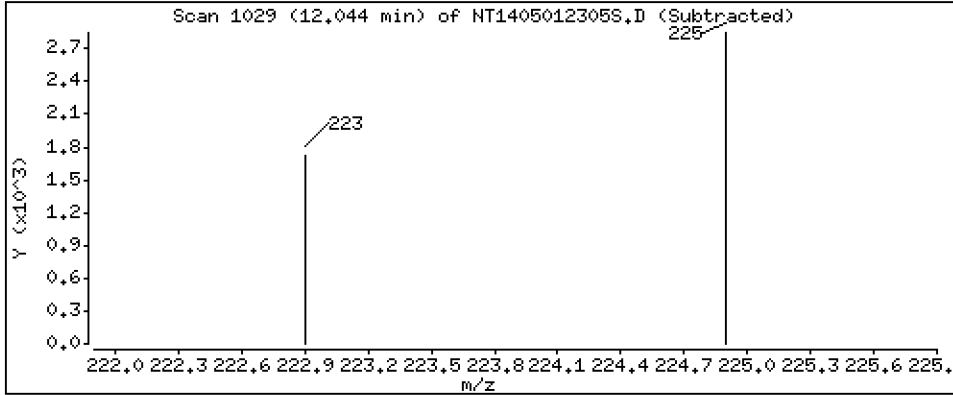
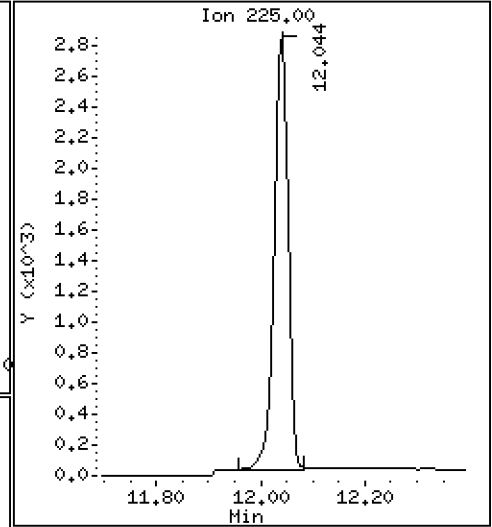
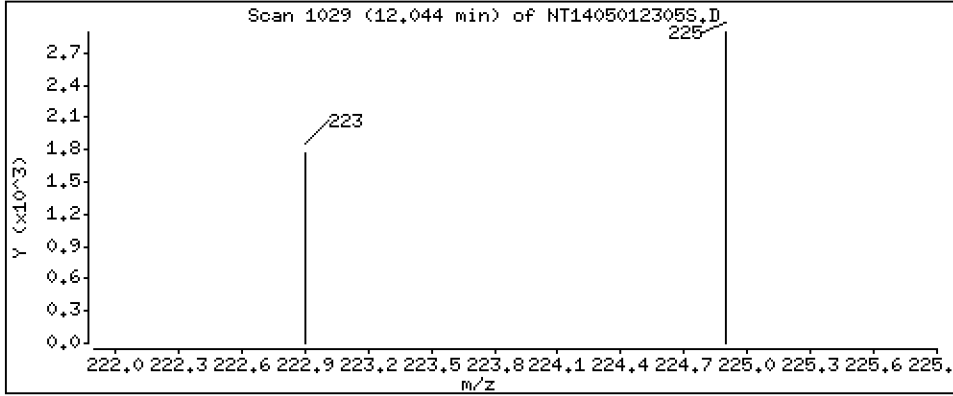
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

30 Hexachlorobutadiene

Concentration: 0,09338 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

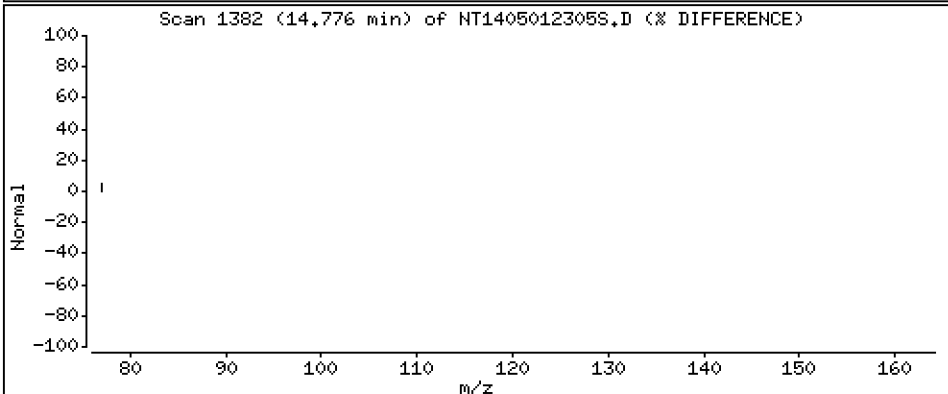
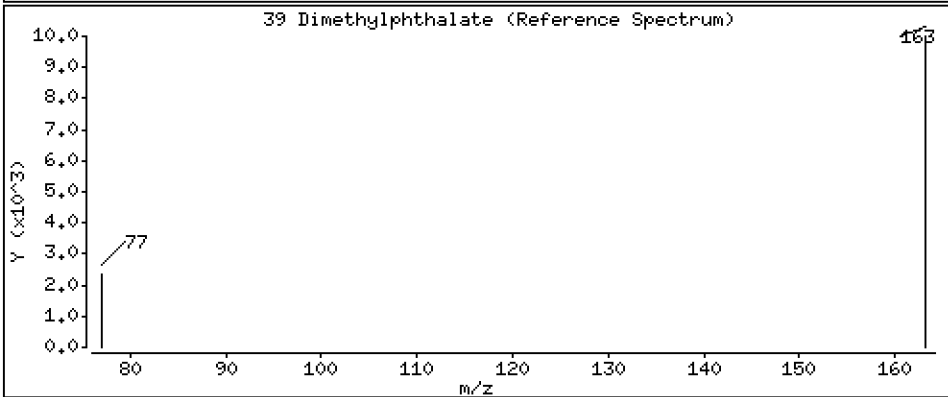
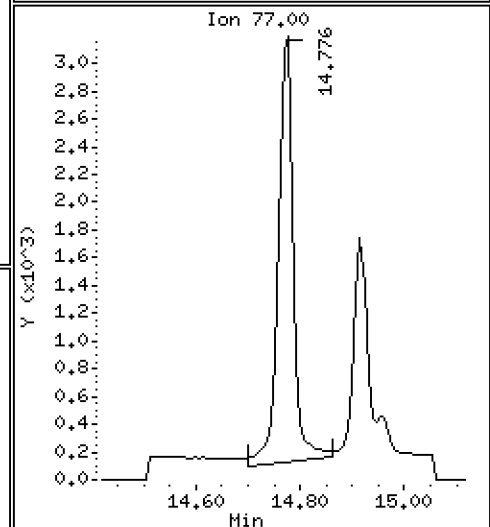
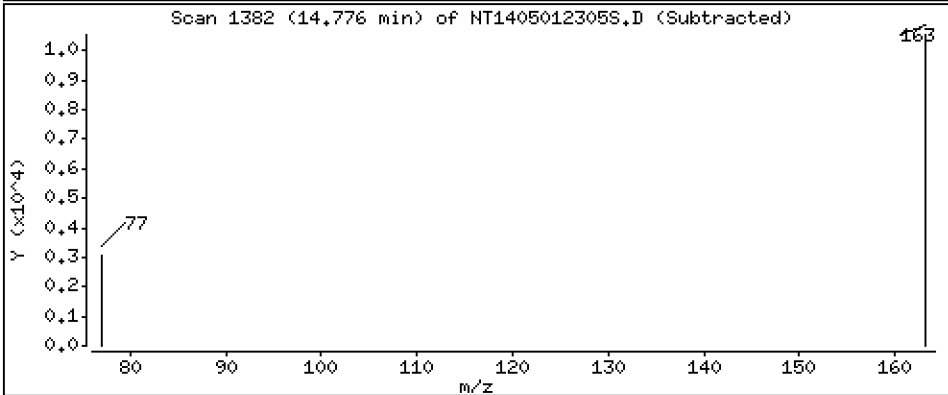
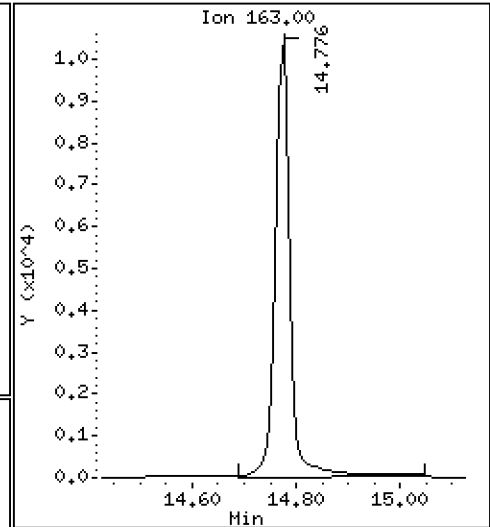
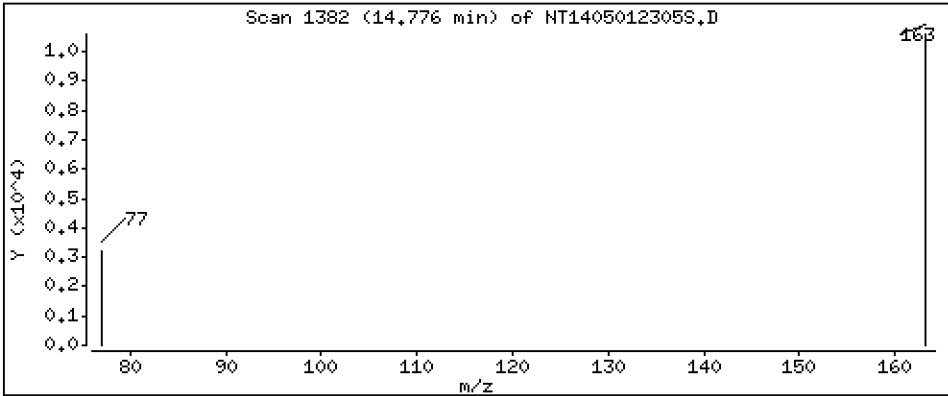
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

39 Dimethylphthalate

Concentration: 0,08869 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

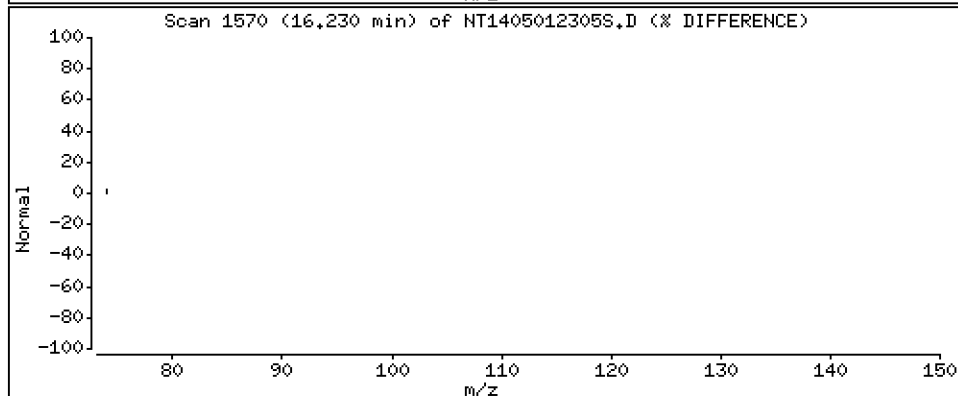
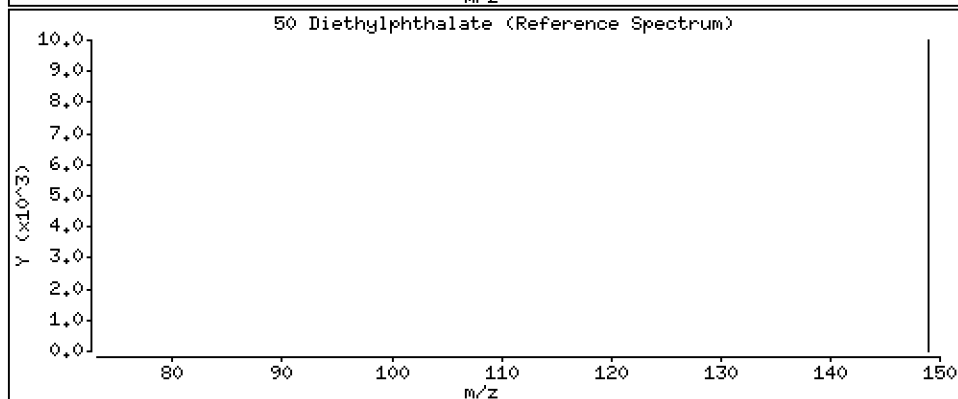
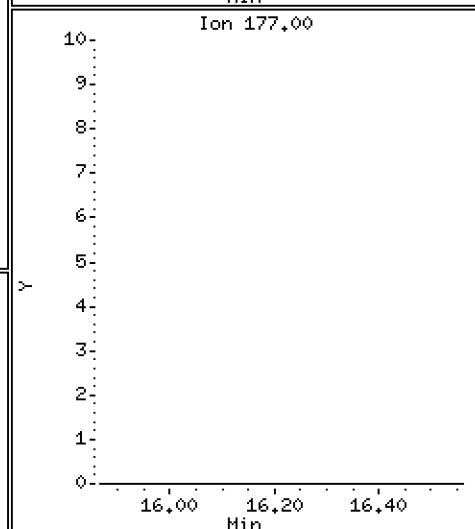
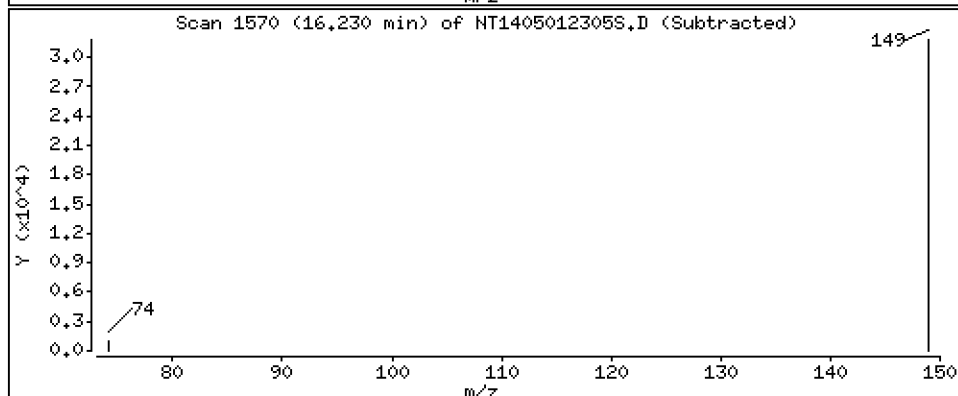
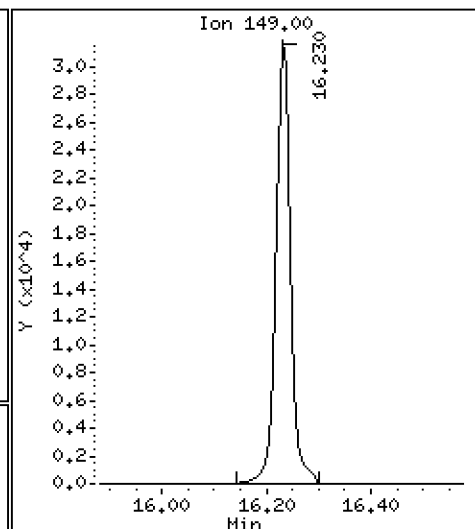
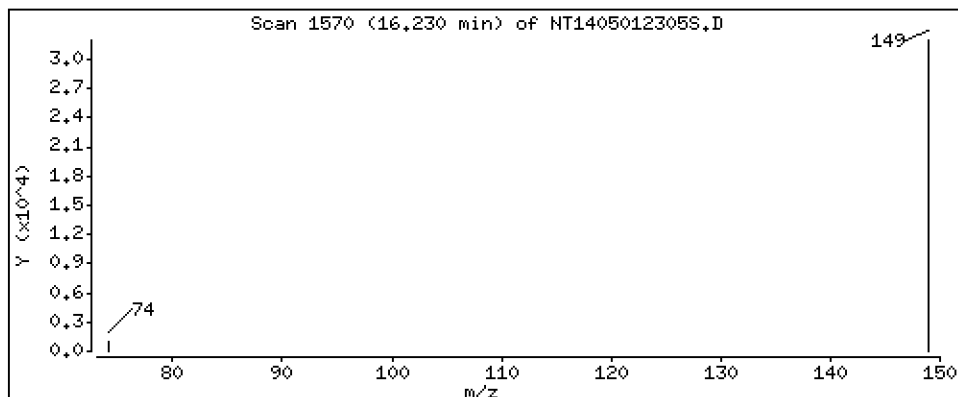
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

50 Diethylphthalate

Concentration: 0,2616 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

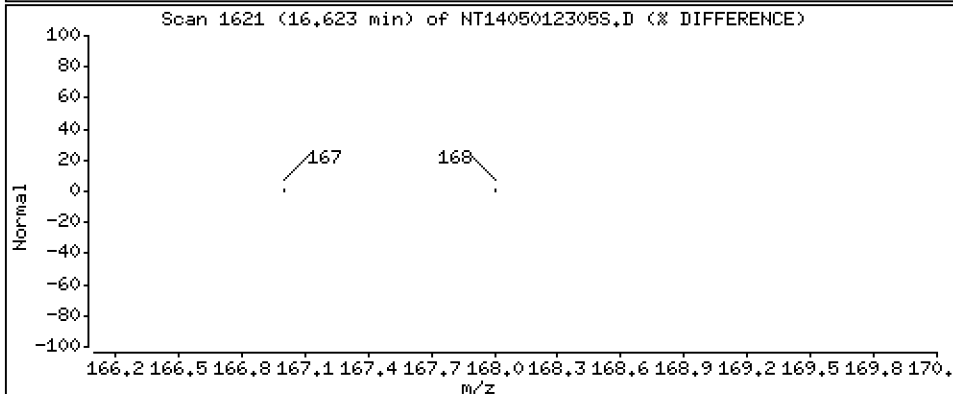
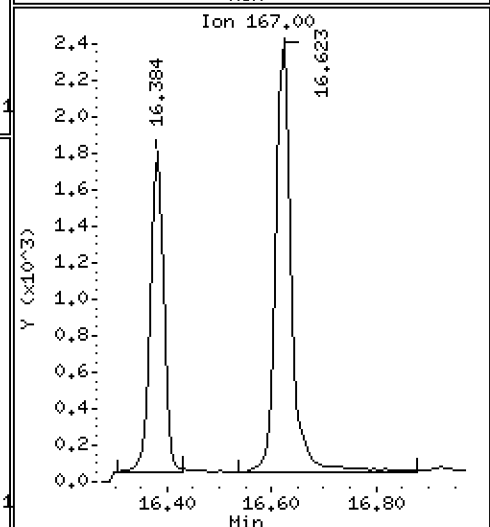
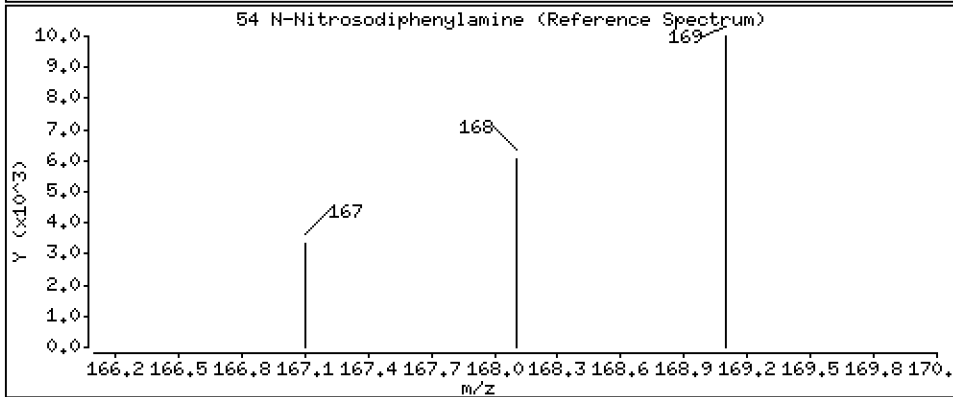
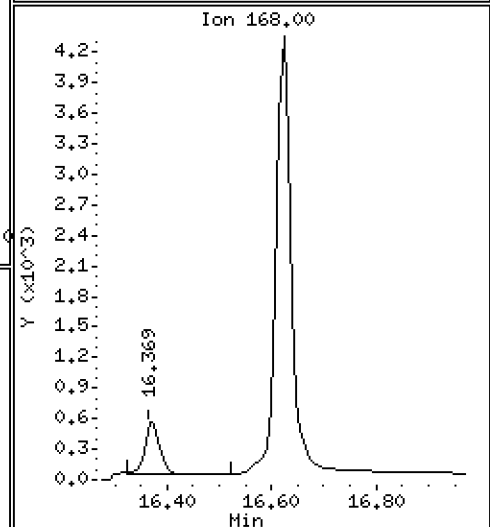
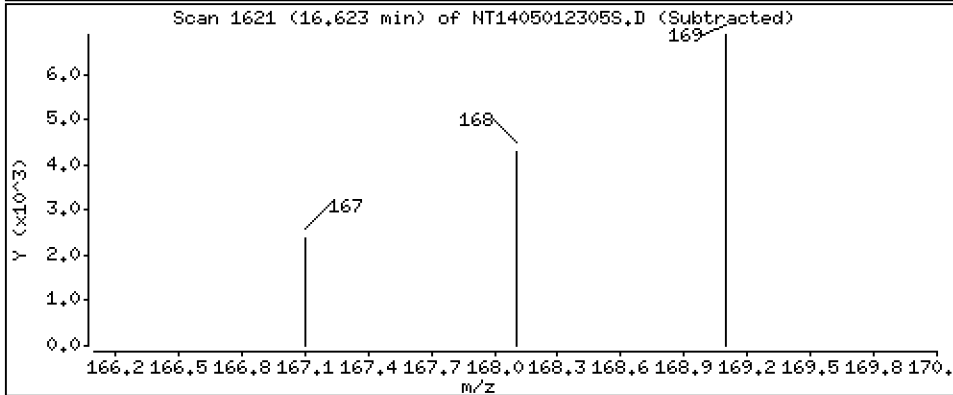
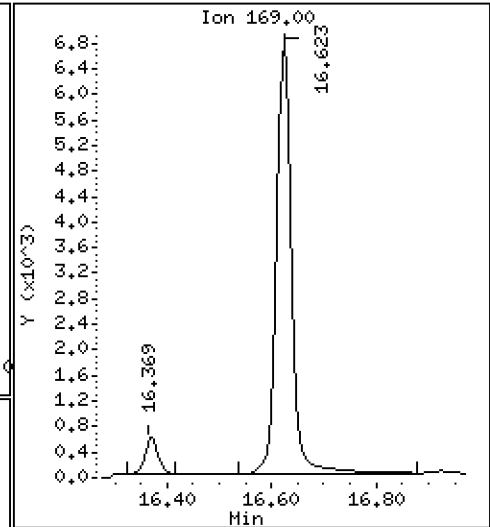
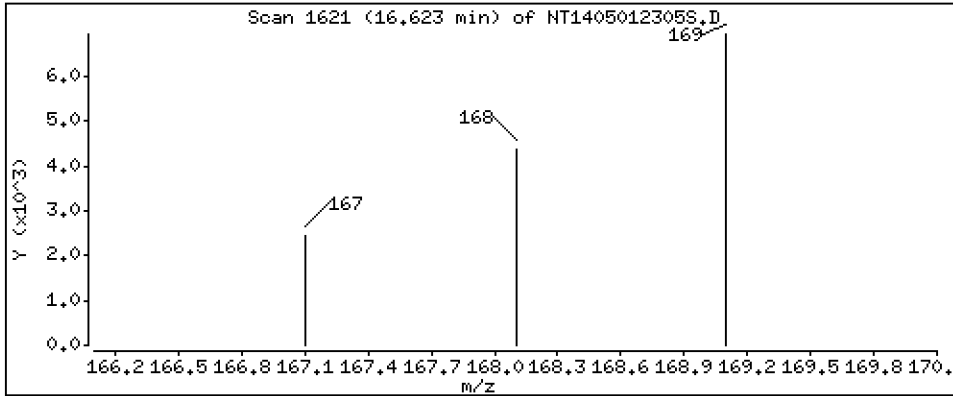
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

54 N-Nitrosodiphenylamine

Concentration: 0,08909 ug/mL





Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

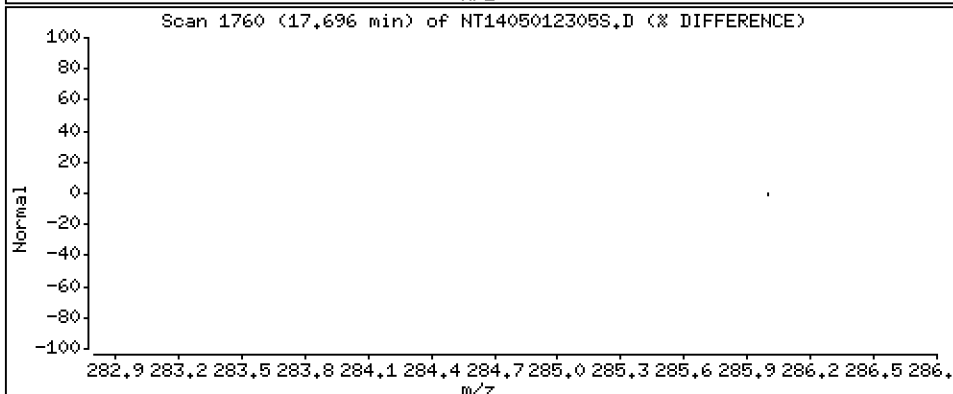
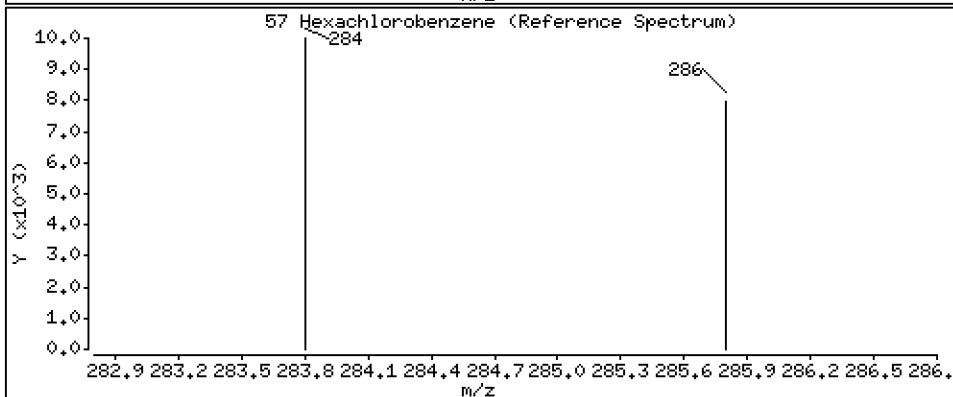
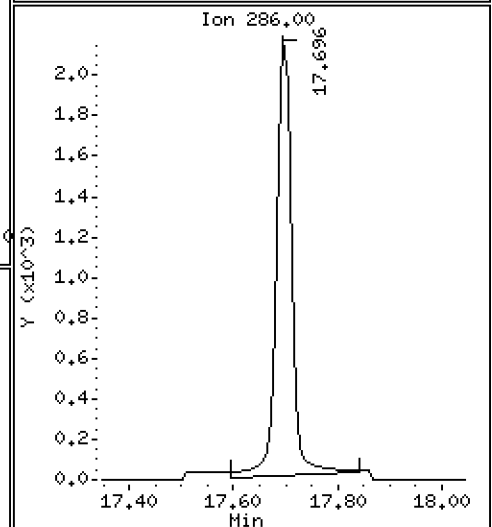
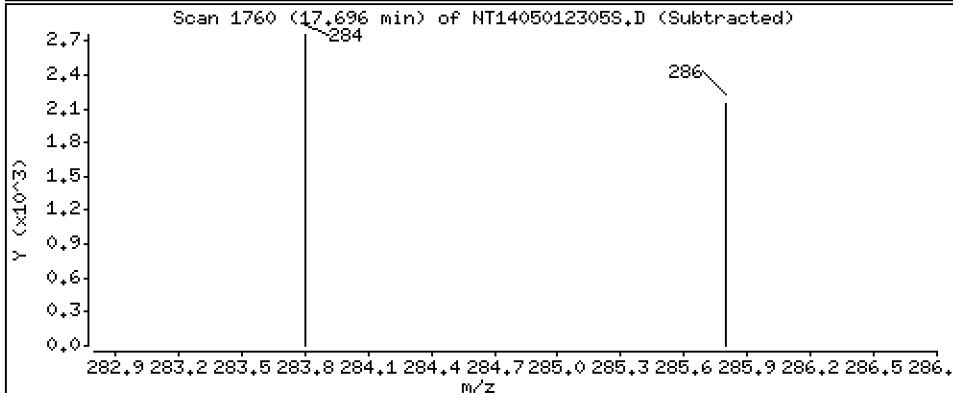
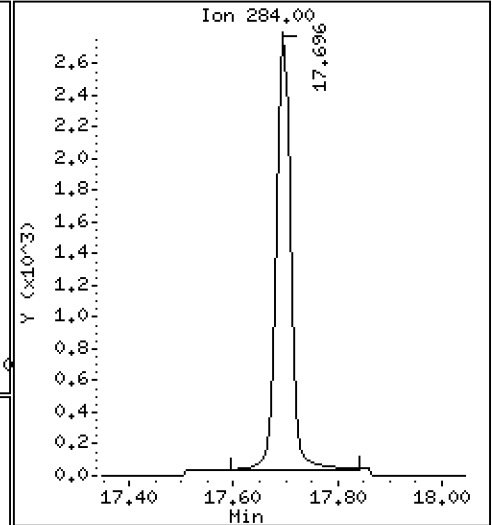
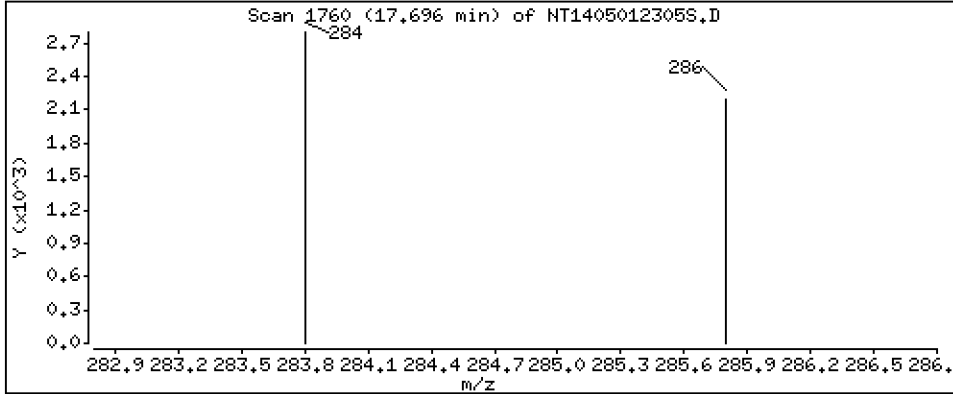
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

57 Hexachlorobenzene

Concentration: 0,08831 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

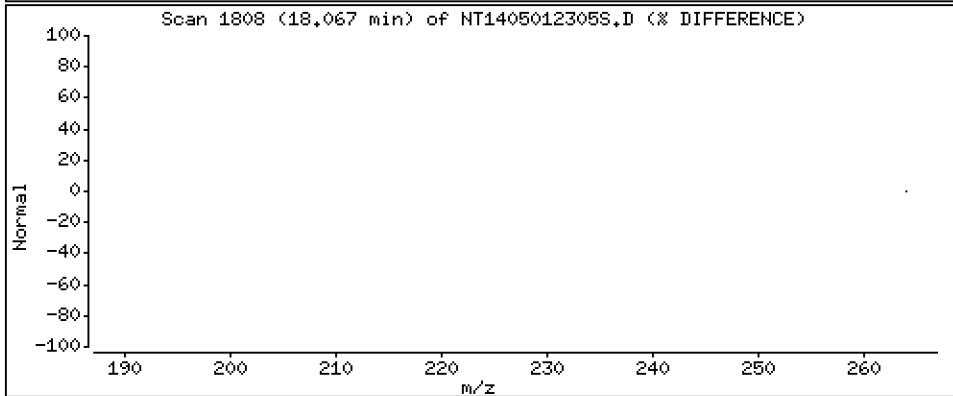
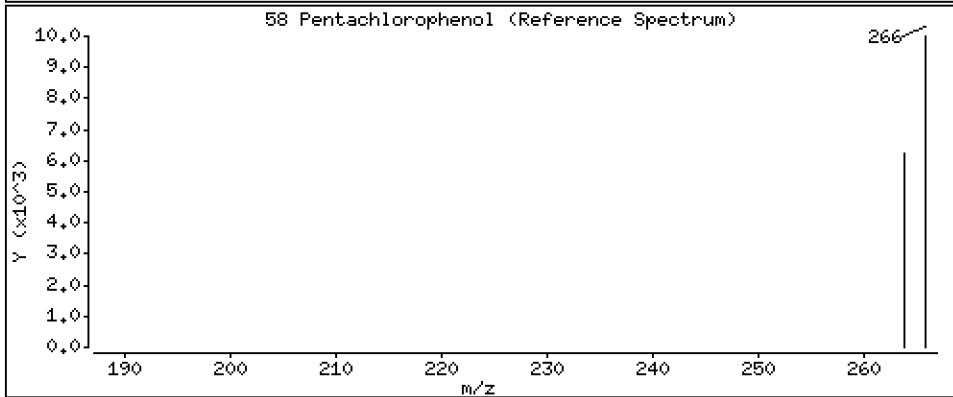
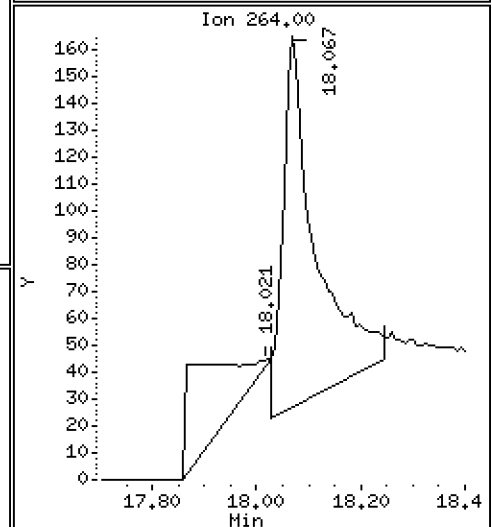
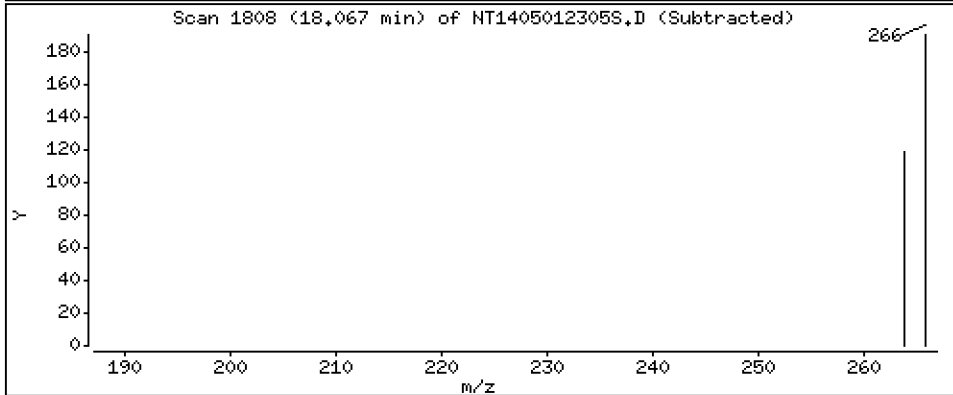
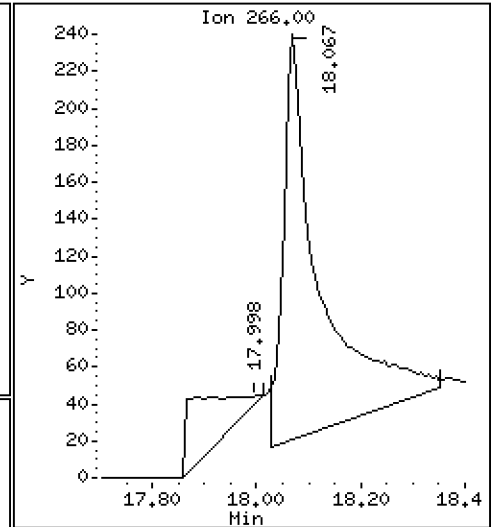
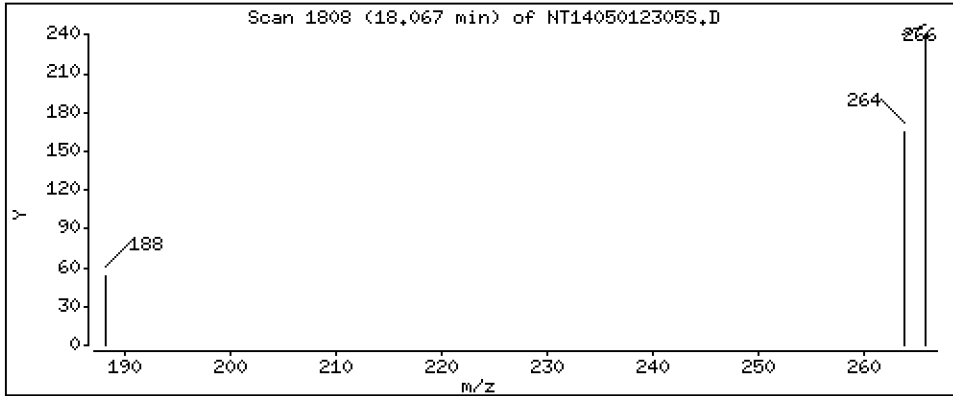
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

58 Pentachlorophenol

Concentration: 0,02829 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

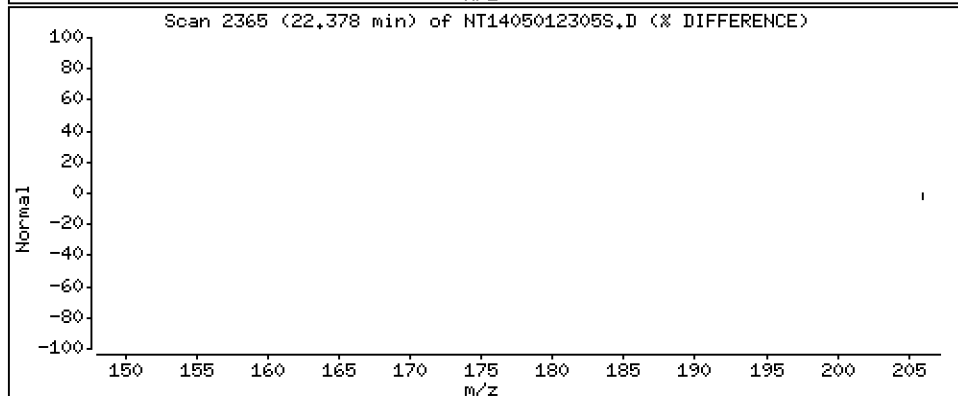
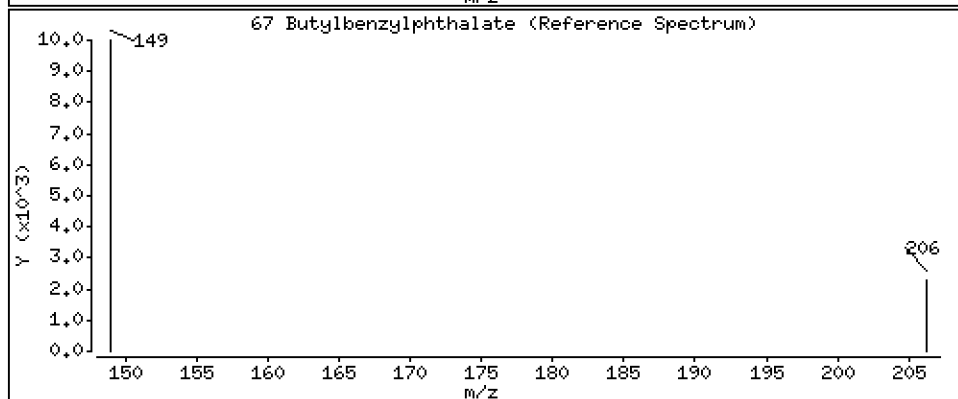
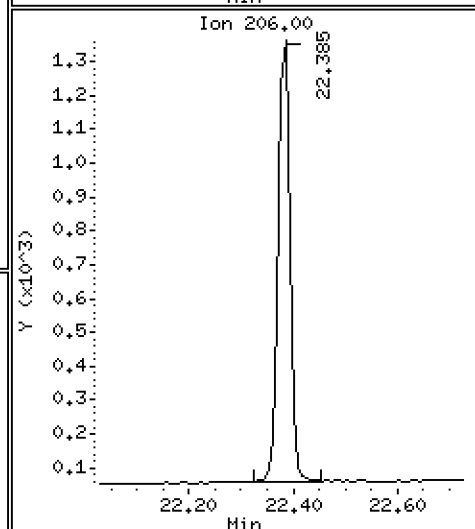
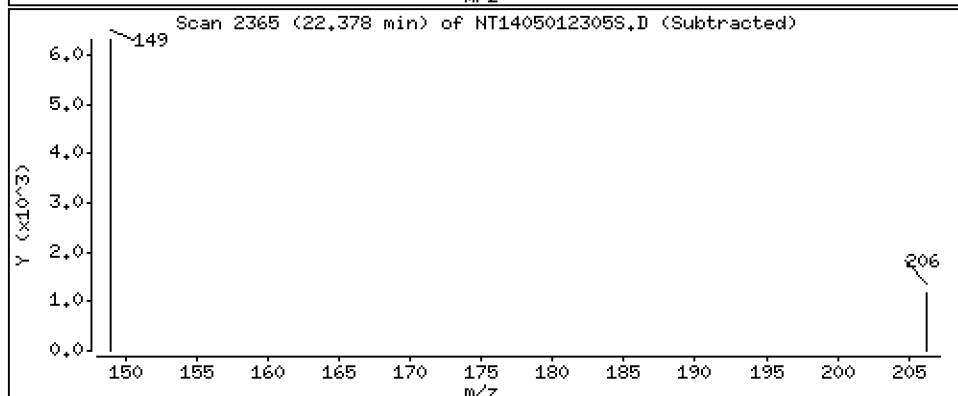
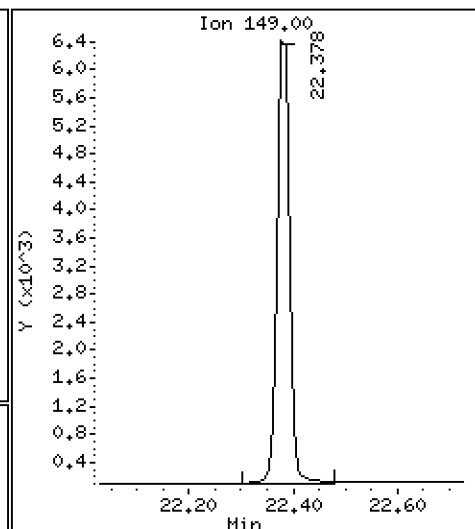
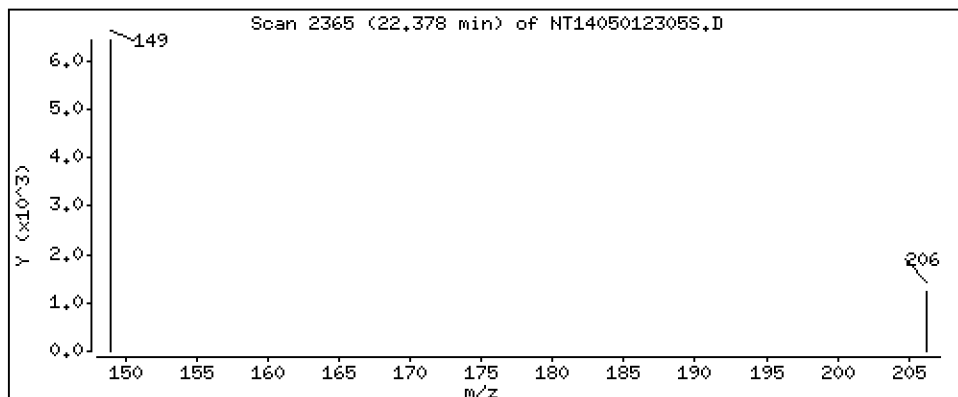
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

67 Butylbenzylphthalate

Concentration: 0,05420 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

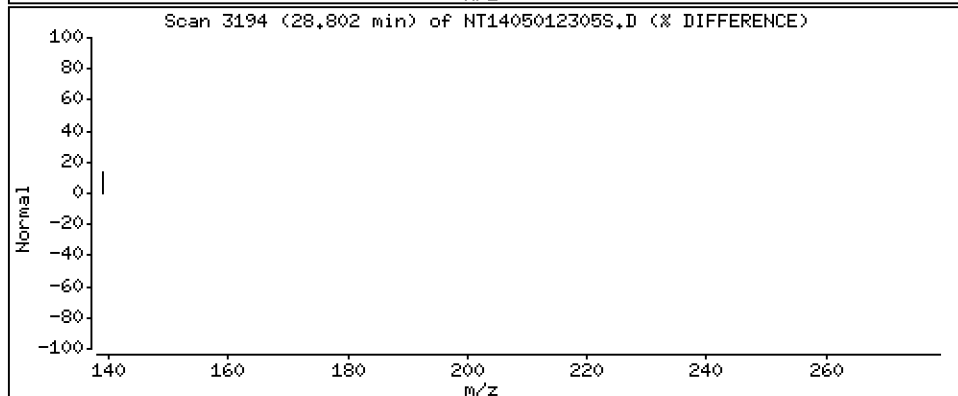
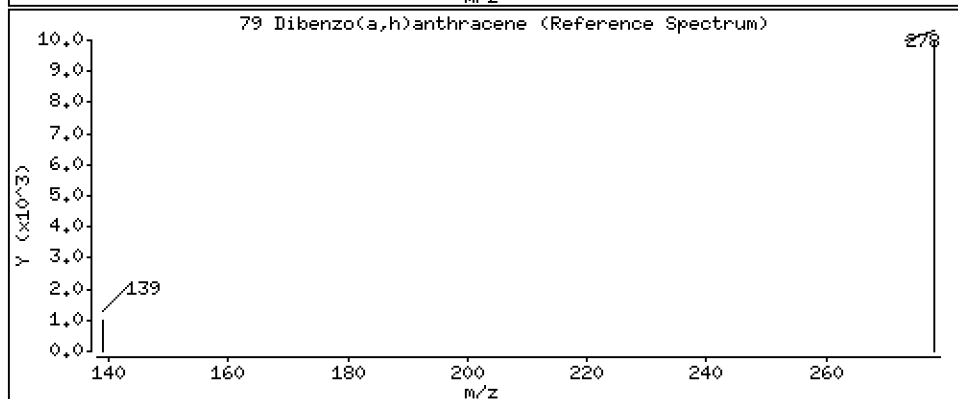
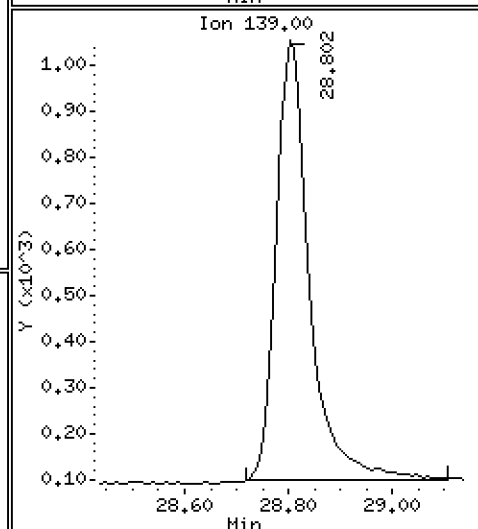
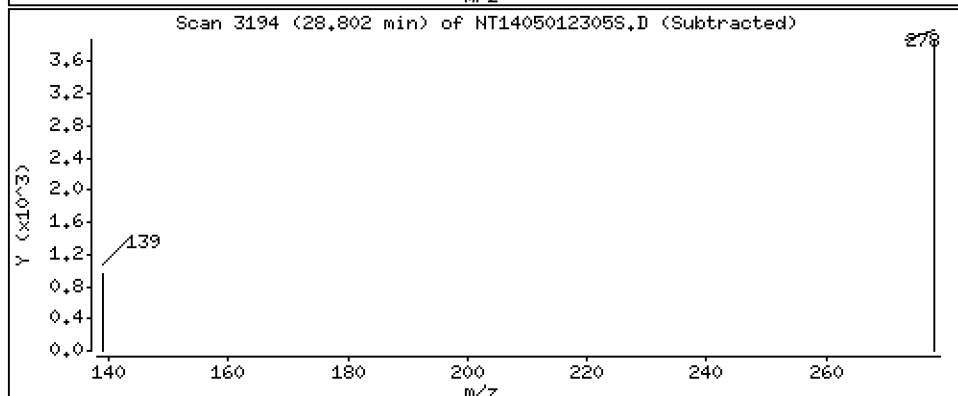
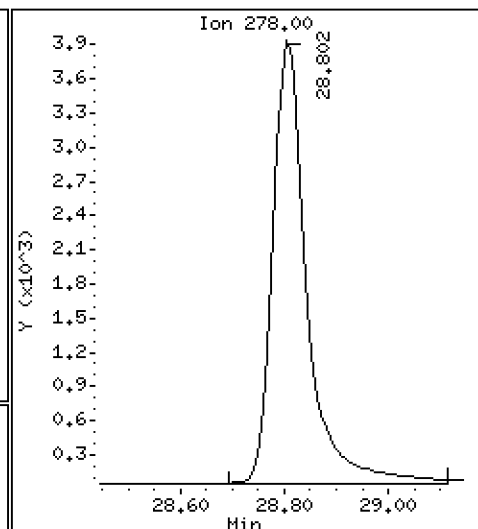
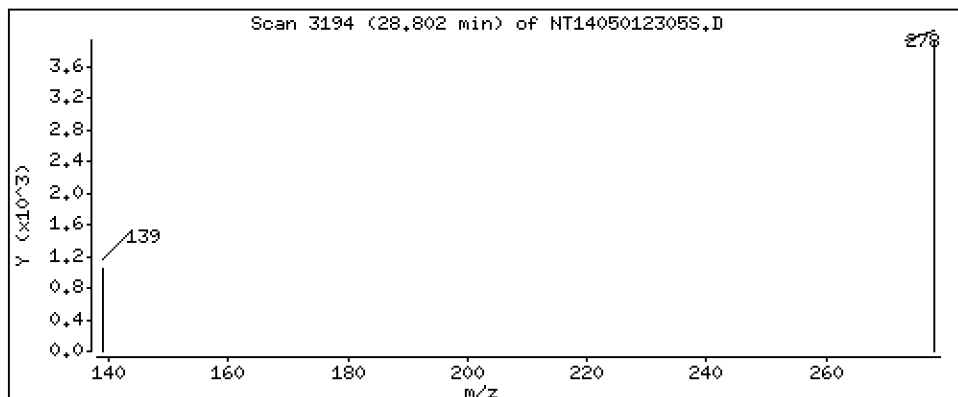
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0,25

79 Dibenzo(a,h)anthracene

Concentration: 0,07376 ug/mL



Date : 01-MAY-2023 16:59

Client ID:

Instrument: nt14.i

Sample Info: SLE0027-LCV1

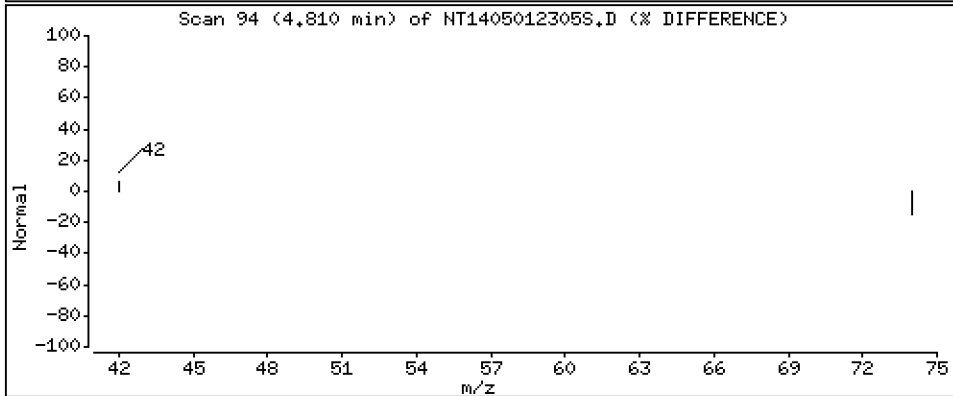
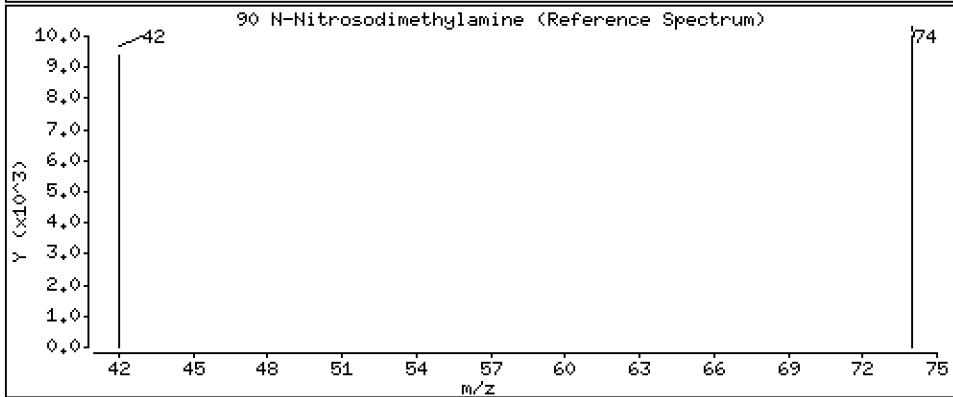
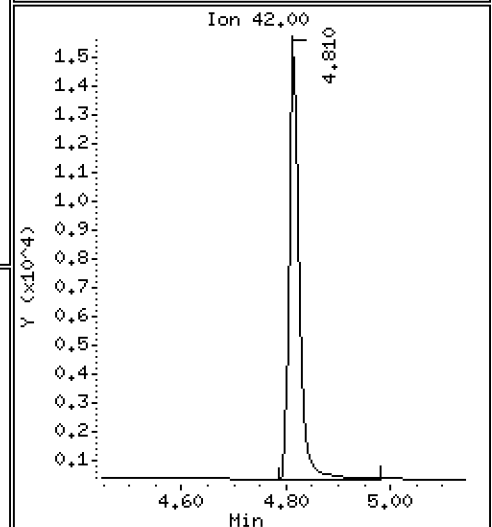
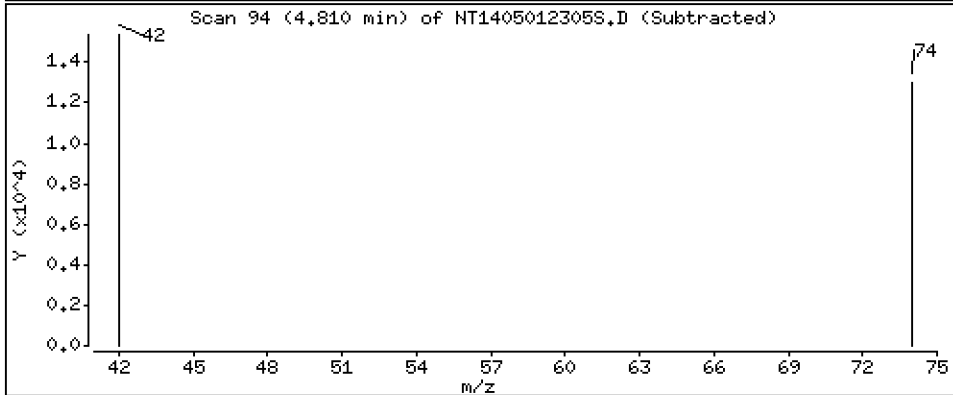
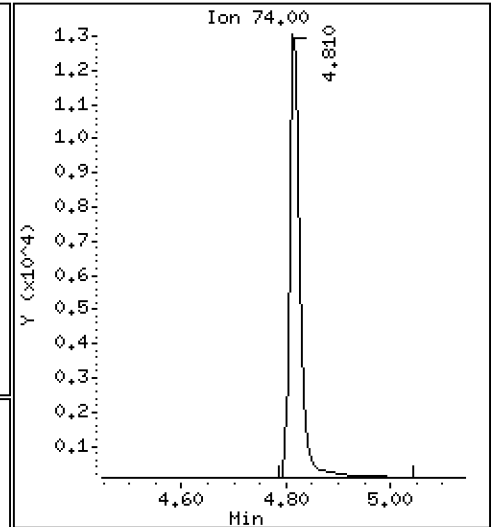
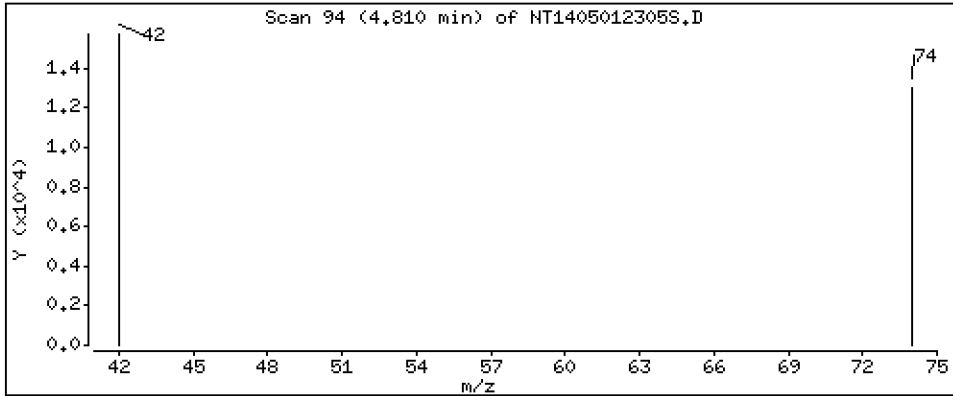
Operator: DSD

Column phase: ZB-5msi

Column diameter: 0.25

90 N-Nitrosodimethylamine

Concentration: 0.1849 ug/mL



ARI Labs, Inc.

METHOD 8270D-SIM

Data file : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\NT1405012305S.D  
 Lab Smp Id: SLE0027-LCV1  
 Inj Date : 01-MAY-2023 16:59 MS Autotune Date: 11-MAR-2023 16:01  
 Operator : DSD Inst ID: nt14.i  
 Smp Info : SLE0027-LCV1  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Meth Date : 02-May-2023 12:15 deenayd Quant Type: ISTD  
 Cal Date : 21-APR-2023 20:40 Cal File: NT04212313S.D  
 Als bottle: 5  
 Dil Factor: 1.00000  
 Integrator: HP RTE Compound Sublist: PSDDA.sub  
 Target Version: 4.14  
 Processing Host: DEENAY-201905

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN	FINAL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.903	6.903	(0.756)	18060	0.14636	0.1464 (R)
3 Phenol	94		8.510	8.510	(0.931)	18952	0.09580	0.09580
7 1,3-Dichlorobenzene	146		9.067	9.067	(0.992)	14350	0.09564	0.09564
* 8 1,4-Dichlorobenzene-d4	152		9.137	9.137	(1.000)	354051	4.00000	
9 1,4-Dichlorobenzene	146		9.168	9.168	(1.003)	13600	0.09580	0.09580
11 Benzyl alcohol	79		9.408	9.408	(1.030)	9239	0.07575	0.07575
12 1,2-Dichlorobenzene	146		9.525	9.525	(1.042)	13400	0.09461	0.09461
13 2-Methylphenol	108		9.633	9.634	(1.054)	11497	0.09321	0.09321
15 4-Methylphenol	108		9.905	9.898	(1.084)	12083	0.09490	0.09490
16 N-Nitroso-di-n-propylamine	70		9.967	9.967	(1.091)	9367	0.08023	0.08023
22 2,4-Dimethylphenol	107		10.953	10.953	(0.941)	25204	0.19923	0.1992
24 Benzoic acid	105		11.177	11.085	(0.961)	1047	0.01195	0.01195
26 1,2,4-Trichlorobenzene	180		11.549	11.549	(0.993)	10074	0.10373	0.1037
* 27 Naphthalene-d8	136		11.634	11.634	(1.000)	1322753	4.00000	
30 Hexachlorobutadiene	225		12.043	12.044	(1.035)	5019	0.09338	0.09338
39 Dimethylphthalate	163		14.775	14.776	(0.968)	19553	0.08869	0.08869
* 42 Acenaphthene-d10	162		15.270	15.271	(1.000)	603872	4.00000	
50 Diethylphthalate	149		16.229	16.229	(1.063)	58975	0.26160	0.2616
54 N-Nitrosodiphenylamine	169		16.623	16.623	(0.907)	13347	0.08909	0.08909
57 Hexachlorobenzene	284		17.695	17.696	(0.966)	5050	0.08831	0.08831
58 Pentachlorophenol	266		18.067	18.052	(0.986)	1076	0.02829	0.02829
* 59 Phenanthrene-d10	188		18.322	18.323	(1.000)	1071636	4.00000	
\$ 66 Terphenyl-d14	244		21.464	21.456	(0.918)	11099	0.08725	0.08725 (R)
67 Butylbenzylphthalate	149		22.377	22.377	(0.958)	9840	0.05420	0.05420
* 69 Chrysene-d12	240		23.368	23.369	(1.000)	799804	4.00000	
* 77 Perylene-d12	264		26.047	26.047	(1.000)	789731	4.00000	
79 Dibenzo(a,h)anthracene	278		28.802	28.794	(1.106)	17635	0.07376	0.07376
90 N-Nitrosodimethylamine	74		4.810	4.795	(0.526)	18616	0.18487	0.1849

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS  
 AREA AND RT SUMMARY

Instrument ID: nt14.i  
 Lab File ID: NT1405012305S.D  
 Lab Smp Id: SLE0027-LCV1  
 Analysis Type: SV  
 Quant Type: ISTD  
 Operator: DSD  
 Method File: \\target\share\chem3\nt14.i\20230501A.b\20230501A.b\SIMABN2.m  
 Misc Info:

Calibration Date: 01-MAY-2023  
 Calibration Time: 16:22  
 Level:  
 Sample Type:

Test Mode:  
 Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	331573	165787	663146	354051	6.78
27 Naphthalene-d8	1259018	629509	2518036	1322753	5.06
42 Acenaphthene-d10	580636	290318	1161272	603872	4.00
59 Phenanthrene-d10	1027945	513973	2055890	1071636	4.25
69 Chrysene-d12	775653	387827	1551306	799804	3.11
77 Perylene-d12	750797	375399	1501594	789731	5.19

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	9.14	8.64	9.64	9.14	-0.00
27 Naphthalene-d8	11.63	11.13	12.13	11.63	-0.00
42 Acenaphthene-d10	15.27	14.77	15.77	15.27	-0.00
59 Phenanthrene-d10	18.32	17.82	18.82	18.32	-0.00
69 Chrysene-d12	23.37	22.87	23.87	23.37	-0.00
77 Perylene-d12	26.05	25.55	26.55	26.05	-0.00

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = - 50% of internal standard area.  
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.  
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1405012305S.D

Lab ID: SLE0027-LCV1

nt14.i, 20230501A.b\20230501A.b\SIMABN2.m,

01-MAY-2023 16:59

RT CO-ELUTION COMPOUNDS

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NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.961	0.953	0.0080	Benzoic acid

RRT check based on Ccal File: 20230501A.b/NT1405012304S.D

On Column LOD for nt14.i, 20230501A.b\SIMABN2.m, PSDDA.sub = 0.0000

Exception: 1,2,4-Trichlorobenzene 0.0010

\* Only compounds listed in the work order have been verified by the analyst \*





## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 8270E-SIM

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLD0358

Instrument: NT14

Calibration: GD00063

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ABN 10.0	SLD0358-CAL8	NT04212306S.D	NA	04/21/23 16:23
ABN 5.0	SLD0358-CAL7	NT04212307S.D	NA	04/21/23 17:00
ABN 2.5	SLD0358-CAL6	NT04212308S.D	NA	04/21/23 17:37
ABN 1.0	SLD0358-CAL5	NT04212309S.D	NA	04/21/23 18:13
ABN 0.5	SLD0358-CAL4	NT04212310S.D	NA	04/21/23 18:50
ABN 0.2	SLD0358-CAL3	NT04212311S.D	NA	04/21/23 19:27
ABN 0.1	SLD0358-CAL2	NT04212312S.D	NA	04/21/23 20:03
ABN 0.05	SLD0358-CAL1	NT04212313S.D	NA	04/21/23 20:40
SCV 5.0	SLD0358-SCV1	NT04212314S.D	NA	04/21/23 21:16
Initial Cal Blank	SLD0358-ICB1	NT04212315S.D	NA	04/21/23 21:53



### ANALYSIS SEQUENCE

**SLD0358**

Instrument: NT14  
Calibration ID: GD00063

Printed: 4/27/2023 2:02:30PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0358-TUN1	QC		1		L002618			
SLD0358-CAL1	QC		2		L002878	K010831		
SLD0358-CAL2	QC		3		L002877	K010831		
SLD0358-CAL3	QC		4		K011105	K010831		
SLD0358-CAL4	QC		5		K011106	K010831		
SLD0358-CAL5	QC		6		K011107	K010831		
SLD0358-CAL6	QC		7		K011108	K010831		
SLD0358-CAL7	QC		8		K011109	K010831		
SLD0358-CAL8	QC		9		K011110	K010831		
SLD0358-SCV1	QC		10		K010066	K010831		
SLD0358-ICB1	QC		11		K005156	K010831		

\_\_\_\_\_  
Samples Loaded By Date

\_\_\_\_\_  
Data Processed By Date

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230421.b\20230421.b

Time	Filename	LabID	ClientId	DF									
1	1623	NT04212306S.D	SEQ-CAL6		1		9.12	310165  11.62	1216000  15.26	569501  18.31	921651  23.36	598590  26.02	658064
2	1700	NT04212307S.D	SEQ-CAL5		1		9.11	284316  11.62	1099228  15.26	513204  18.31	849641  23.35	542691  26.02	581096
3	1737	NT04212308S.D	SEQ-CAL4		1		9.11	299483  11.62	1156442  15.26	540162  18.31	903346  23.35	582718  26.02	619880
4	1813	NT04212309S.D	SEQ-CAL3		1		9.11	313847  11.62	1195091  15.26	556977  18.31	941816  23.35	617803  26.02	639373
5	1850	NT04212310S.D	SEQ-CAL2		1		9.11	309195  11.62	1168028  15.26	541996  18.30	916189  23.35	597401  26.02	623920
6	1927	NT04212311S.D	SEQ-CAL1		1		9.11	306573  11.62	1159423  15.26	533497  18.31	911500  23.35	600195  26.02	606720
7	2003	NT04212312S.D	SEQ-SIM2		1		9.11	304906  11.62	1142624  15.26	521404  18.31	891505  23.35	584134  26.02	587277
8	2040	NT04212313S.D	SEQ-SIM1		1		9.11	302484  11.62	1135075  15.26	519077  18.30	881493  23.35	571384  26.02	579560
9	2116	NT04212314S.D	SEQ-SCV1		1		9.11	281794  11.62	1095304  15.26	511599  18.31	855994  23.36	548116  26.02	575271
10	2153	NT04212315S.D	SEQ-ICB1		1		9.11	299097  11.62	1133019  15.26	520604  18.30	879557  23.35	568627  26.02	582564

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230421.b\20230421.b

ARI Job No.:           Method: ABN.m   Instrument: nt14.i   Date: 21-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1411	NT04212302S.D			1	NO MANUAL INTEGRATION
1447	NT04212303S.D			1	NO MANUAL INTEGRATION
1547	NT04212305S.D			1	NO MANUAL INTEGRATION
1623	NT04212306S.D SEQ-CAL6			1	Benzoic acid,
1700	NT04212307S.D SEQ-CAL5			1	Benzoic acid,
1737	NT04212308S.D SEQ-CAL4			1	NO MANUAL INTEGRATION
1813	NT04212309S.D SEQ-CAL3			1	NO MANUAL INTEGRATION
1850	NT04212310S.D SEQ-CAL2			1	NO MANUAL INTEGRATION
1927	NT04212311S.D SEQ-CAL1			1	NO MANUAL INTEGRATION
2003	NT04212312S.D SEQ-SIM2			1	Pentachlorophenol,
2040	NT04212313S.D SEQ-SIM1			1	Benzoic acid, Pentachlorophenol,
2116	NT04212314S.D SEQ-SCV1			1	NO MANUAL INTEGRATION
2153	NT04212315S.D SEQ-ICB1			1	NO MANUAL INTEGRATION

Security Status Report

Date: 27-Apr-2023 14:02

NT04212302S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212303S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212305S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212306S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212307S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212308S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212309S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212310S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212311S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212312S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212313S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212314S.D	Data Locked	j rains, 27-Apr-2023 13:43
NT04212315S.D	Data Locked	j rains, 27-Apr-2023 13:43



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 8270E-SIM

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0027</u>	Instrument:	<u>NT14</u>
		Calibration:	<u>GD00063</u>

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SLE0027-TUN1	NT1405012301S.D	NA	05/01/23 14:50
Initial Cal Check	SLE0027-ICV1	NT1405012304S.D	NA	05/01/23 16:22
ABN 0.1	SLE0027-LCV1	NT1405012305S.D	NA	05/01/23 16:59
Blank	BLD0297-BLK2	NT1405012306S.D	Solid	05/01/23 17:36
LCS	BLD0297-BS2	NT1405012307S.D	Solid	05/01/23 18:13
LCS Dup	BLD0297-BSD2	NT1405012308S.D	Solid	05/01/23 18:50
Reference	BLD0297-SRM2	NT1405012309S.D	Solid	05/01/23 19:27
ZZZZZ	23C0109-02RE1	NT1405012310S.D	Solid	05/01/23 20:03
ZZZZZ	23D0037-01	NT1405012311S.D	Solid	05/01/23 20:40
ZZZZZ	23D0037-03	NT1405012312S.D	Solid	05/01/23 21:17
LDW23-SS1818	23D0063-01	NT1405012313S.D	Solid	05/01/23 21:54
LDW23-SS1818	BLD0297-MS2	NT1405012314S.D	Solid	05/01/23 22:31
LDW23-SS1818	BLD0297-MSD2	NT1405012315S.D	Solid	05/01/23 23:08
LDW23-SS1819	23D0063-03	NT1405012316S.D	Solid	05/01/23 23:45
Calibration Check	SLE0027-CCV1	NT1405012318S.D	NA	05/02/23 00:58



ANALYSIS SEQUENCE

SLE0027

Instrument ID: NT14      GCMS Description: Agilent 7890A/5975C XL  
 Calibration ID: GD00063      GCMS Column ID: L004289  
 MS EM Level: 1753 EV

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLE0027-TUN1	MS Tune	QC		1	L002618		05/01/2023 14:50	NT1405012301S.D	DSD	
SLE0027-ICV1	Initial Cal Check	QC		2	K011107	K010831	05/01/2023 16:22	NT1405012304S.D	DSD	
SLE0027-LCV1	ABN 0.1	QC		3	K011452	K010831	05/01/2023 16:59	NT1405012305S.D	DSD	
BLD0297-BLK2	Blank	QC		4		K010831	05/01/2023 17:36	NT1405012306S.D	DSD	
BLD0297-BS2	LCS	QC		5		K010831	05/01/2023 18:13	NT1405012307S.D	DSD	
BLD0297-BSD2	LCS Dup	QC		6		K010831	05/01/2023 18:50	NT1405012308S.D	DSD	
BLD0297-SRM2	Reference	QC		7		K010831	05/01/2023 19:27	NT1405012309S.D	DSD	
23C0109-02RE1	LDW23-SS1104	270E-SIM Dual Scan SVO	A 03	8		K010831	05/01/2023 20:03	NT1405012310S.D	DSD	From BLC0185 by CTO on 18-Apr-2023
23D0037-01	LDW23-SS1812	270E-SIM Dual Scan SVO	A 01	9		K010831	05/01/2023 20:40	NT1405012311S.D	DSD	
23D0037-03	LDW23-SS1813	270E-SIM Dual Scan SVO	A 01	10		K010831	05/01/2023 21:17	NT1405012312S.D	DSD	
23D0063-01	LDW23-SS1818	270E-SIM Dual Scan SVO	A 01	11		K010831	05/01/2023 21:54	NT1405012313S.D	DSD	
BLD0297-MS2	Matrix Spike	QC		12		K010831	05/01/2023 22:31	NT1405012314S.D	DSD	
BLD0297-MSD2	Matrix Spike Dup	QC		13		K010831	05/01/2023 23:08	NT1405012315S.D	DSD	
23D0063-03	LDW23-SS1819	270E-SIM Dual Scan SVO	A 01	14		K010831	05/01/2023 23:45	NT1405012316S.D	DSD	
SLE0027-CCV1	Calibration Check	QC		15	K011107	K010831	05/02/2023 00:58	NT1405012318S.D	DSD	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230501A.b\20230501A.b

Time	Filename	LabID	ClientId	DF																		
1	1450	NT1405012301S.D	SLE0027-TUN1	1		NO	ISTDS	FOUND														
2	1622	NT1405012304S.D	SLE0027-ICV1	1		9.14	331573		11.63	1259018		15.27	580636		18.32	1027945		23.37	775653		26.05	750797
3	1659	NT1405012305S.D	SLE0027-LCV1	1		9.14	354051		11.63	1322753		15.27	603872		18.32	1071636		23.37	799804		26.05	789731
4	1736	NT1405012306S.D	BLD0297-BLK2	1		9.14	335197		11.63	1286282		15.27	593213		18.32	1050113		23.37	779840		26.05	735840
5	1813	NT1405012307S.D	BLD0297-BS2	1		9.14	317978		11.64	1222840		15.28	573863		18.32	998395		23.38	763735		26.05	716157
6	1850	NT1405012308S.D	BLD0297-BSD2	1		9.14	317639		11.64	1221867		15.28	570435		18.32	993574		23.38	763029		26.05	703072
7	1927	NT1405012309S.D	BLD0297-SRM2	1		9.14	322455		11.63	1216748		15.27	569475		18.32	997975		23.38	747131		26.05	699186
8	2003	NT1405012310S.D	23C0109-02RE1	1		9.14	317534		11.64	1225566		15.28	562163		18.33	1001030		23.39	725117		26.09	744965
9	2040	NT1405012311S.D	23D0037-01	1		9.14	326570		11.64	1255555		15.28	575538		18.34	1033128		23.41	785977		26.10	731390
10	2117	NT1405012312S.D	23D0037-03	4		9.14	328192		11.64	1245435		15.28	572355		18.33	1017088		23.38	744662		26.08	736276
11	2154	NT1405012313S.D	23D0063-01	1		9.14	320030		11.64	1233063		15.28	566996		18.34	1000622		23.39	714789		26.09	699575
12	2231	NT1405012314S.D	BLD0297-MS2	1		9.14	305886		11.64	1193774		15.29	557761		18.34	998464		23.39	733344		26.09	675579
13	2308	NT1405012315S.D	BLD0297-MSD2	1		9.14	299960		11.64	1172812		15.29	550684		18.34	982057		23.40	722171		26.09	632423
14	2345	NT1405012316S.D	23D0063-03	1		9.14	310651		11.64	1211476		15.29	554837		18.34	984485		23.40	738721		26.10	569311
15	0058	NT1405012318S.D	SLE0027-CCV1	1		9.14	282436		11.64	1072023		15.28	503722		18.33	877372		23.38	638399		26.06	587588



MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230501A.b\20230501A.b

ARI Job No.: SLE0 Method: DFTPP8270E.m Instrument: nt14.i Date: 01-MAY-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1450	NT1405012301S.D	SLE0027-TUN1		1	NO MANUAL INTEGRATION
1506	NT1405012302S.D	SEQ-ICV1		1	NO MANUAL INTEGRATION
1545	NT1405012303S.D	SEQ-LCV1		1	NO MANUAL INTEGRATION
1622	NT1405012304S.D	SLE0027-ICV1		1	NO MANUAL INTEGRATION
1659	NT1405012305S.D	SLE0027-LCV1		1	NO MANUAL INTEGRATION
1736	NT1405012306S.D	BLD0297-BLK2		1	NO MANUAL INTEGRATION
1813	NT1405012307S.D	BLD0297-BS2		1	NO MANUAL INTEGRATION
1850	NT1405012308S.D	BLD0297-BSD2		1	NO MANUAL INTEGRATION
1927	NT1405012309S.D	BLD0297-SRM2		1	NO MANUAL INTEGRATION
2003	NT1405012310S.D	23C0109-02RE1		1	NO MANUAL INTEGRATION
2040	NT1405012311S.D	23D0037-01		1	NO MANUAL INTEGRATION
2117	NT1405012312S.D	23D0037-03		4	NO MANUAL INTEGRATION
2154	NT1405012313S.D	23D0063-01		1	NO MANUAL INTEGRATION
2231	NT1405012314S.D	BLD0297-MS2		1	NO MANUAL INTEGRATION
2308	NT1405012315S.D	BLD0297-MSD2		1	NO MANUAL INTEGRATION
2345	NT1405012316S.D	23D0063-03		1	1,2-Dichlorobenzene,
0021	NT1405012317S.D	SEQ-CCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230501A.b\20230501A.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0058	NT1405012318S.D	SLE0027-CCV1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 02-May-2023 12:34

NT1405012301S.D	Data Locked	deenayd, 02-
NT1405012302S.D	Data Locked	deenayd, 02-
NT1405012303S.D	Data Locked	deenayd, 02-
NT1405012304S.D	Data Locked	deenayd, 02-
NT1405012305S.D	Data Locked	deenayd, 02-
NT1405012306S.D	Data Locked	deenayd, 02-
NT1405012307S.D	Data Locked	deenayd, 02-
NT1405012308S.D	Data Locked	deenayd, 02-
NT1405012309S.D	Data Locked	deenayd, 02-
NT1405012310S.D	Data Locked	deenayd, 02-
NT1405012311S.D	Data Locked	deenayd, 02-
NT1405012312S.D	Data Locked	deenayd, 02-
NT1405012313S.D	Data Locked	deenayd, 02-
NT1405012314S.D	Data Locked	deenayd, 02-
NT1405012315S.D	Data Locked	deenayd, 02-
NT1405012316S.D	Data Locked	deenayd, 02-
NT1405012317S.D	Data Locked	deenayd, 02-
NT1405012318S.D	Data Locked	deenayd, 02-



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8270E-SIM**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG/WO:	<u>23D0063</u>
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLD0358</u>	Instrument:	<u>NT14</u>
Calibration:	<u>GD00063</u>	Calibration Date:	<u>04/21/2023</u>

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLD0358-SCV1 (Solid)</b>			Lab File ID: NT04212314S.D			Analyzed: 04/21/23 21:16		
2-Fluorophenol	7.5000		0 - 200		6.872	-6.8720	N/A	
p-Terphenyl-d14	5.0000		0 - 200		21.4415	-21.4415	N/A	
<b>SLD0358-ICB1 (Solid)</b>			Lab File ID: NT04212315S.D			Analyzed: 04/21/23 21:53		
2-Fluorophenol	7.5000	100	27 - 120	6.873	6.872	0.0010	N/A	
p-Terphenyl-d14	5.0000	98.7	37 - 120	21.441	21.4415	-0.0005	N/A	





**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8270E-SIM**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG/WO:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0027</u>	Instrument:	<u>NT14</u>
Calibration:	<u>GD00063</u>	Calibration Date:	<u>04/21/2023</u>

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>23D0063-03 (Solid)</b>		Lab File ID: NT1405012316S.D			Analyzed: 05/01/23 23:45			
2-Fluorophenol	749.26	71.7	27 - 120	6.927	6.872	0.0550	N/A	
p-Terphenyl-d14	499.51	90.1	37 - 120	21.487	21.4415	0.0455	N/A	
<b>SLE0027-CCV1 (Solid)</b>		Lab File ID: NT1405012318S.D			Analyzed: 05/02/23 00:58			
2-Fluorophenol	1.5000	107	50 - 150	6.911	6.872	0.0390	N/A	
p-Terphenyl-d14	1.0000	109	50 - 150	21.464	21.4415	0.0225	N/A	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E-SIM**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLD0358

Instrument: NT14

Calibration: GD00063

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Secondary Cal Check (SLD0358-SCV1)</b>		(Solid)	Lab File ID: NT04212314S.D			Analyzed: 04/21/23 21:16			
1,4-Dichlorobenzene-d4	281794	9.113	313847	9.114	90	50 - 200	-0.001	+/-0.50	
Naphthalene-d8	1095304	11.619	1195091	11.619	92	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	511599	15.255	556977	15.255	92	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	855994	18.307	941816	18.307	91	50 - 200	0.000	+/-0.50	
Chrysene-d12	548116	23.361	617803	23.353	89	50 - 200	0.008	+/-0.50	
Perylene-d12	575271	26.024	639373	26.024	90	50 - 200	0.000	+/-0.50	
<b>Initial Cal Blank (SLD0358-ICB1)</b>		(Solid)	Lab File ID: NT04212315S.D			Analyzed: 04/21/23 21:53			
1,4-Dichlorobenzene-d4	299097	9.114	313847	9.114	95	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1133019	11.619	1195091	11.619	95	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	520604	15.255	556977	15.255	93	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	879557	18.299	941816	18.307	93	50 - 200	-0.008	+/-0.50	
Chrysene-d12	568627	23.353	617803	23.353	92	50 - 200	0.000	+/-0.50	
Perylene-d12	582564	26.024	639373	26.024	91	50 - 200	0.000	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E-SIM**

Laboratory: Analytical Resources, LLC  
Client: Anchor QEA, LLC  
Sequence: SLE0027

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: NT14  
Calibration: GD00063

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Initial Cal Check (SLE0027-ICV1)</b>		(Solid)	Lab File ID: NT1405012304S.D			Analyzed: 05/01/23 16:22			
1,4-Dichlorobenzene-d4	331573	9.137	331573	9.137	100	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1259018	11.634	1259018	11.634	100	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	580636	15.271	580636	15.271	100	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	1027945	18.323	1027945	18.323	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	775653	23.369	775653	23.369	100	50 - 200	0.000	+/-0.50	
Perylene-d12	750797	26.047	750797	26.047	100	50 - 200	0.000	+/-0.50	
<b>Low Cal Check (SLE0027-LCV1)</b>		(Solid)	Lab File ID: NT1405012305S.D			Analyzed: 05/01/23 16:59			
1,4-Dichlorobenzene-d4	354051	9.137	331573	9.137	107	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1322753	11.634	1259018	11.634	105	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	603872	15.27	580636	15.271	104	50 - 200	-0.001	+/-0.50	
Phenanthrene-d10	1071636	18.322	1027945	18.323	104	50 - 200	-0.001	+/-0.50	
Chrysene-d12	799804	23.368	775653	23.369	103	50 - 200	-0.001	+/-0.50	
Perylene-d12	789731	26.047	750797	26.047	105	50 - 200	0.000	+/-0.50	
<b>Blank (BLD0297-BLK2)</b>		(Solid)	Lab File ID: NT1405012306S.D			Analyzed: 05/01/23 17:36			
1,4-Dichlorobenzene-d4	335197	9.136	331573	9.137	101	50 - 200	-0.001	+/-0.50	
Naphthalene-d8	1286282	11.634	1259018	11.634	102	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	593213	15.27	580636	15.271	102	50 - 200	-0.001	+/-0.50	
Phenanthrene-d10	1050113	18.322	1027945	18.323	102	50 - 200	-0.001	+/-0.50	
Chrysene-d12	779840	23.368	775653	23.369	101	50 - 200	-0.001	+/-0.50	
Perylene-d12	735840	26.047	750797	26.047	98	50 - 200	0.000	+/-0.50	
<b>LCS (BLD0297-BS2)</b>		(Solid)	Lab File ID: NT1405012307S.D			Analyzed: 05/01/23 18:13			
1,4-Dichlorobenzene-d4	317978	9.137	331573	9.137	96	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1222840	11.642	1259018	11.634	97	50 - 200	0.008	+/-0.50	
Acenaphthene-d10	573863	15.278	580636	15.271	99	50 - 200	0.007	+/-0.50	
Phenanthrene-d10	998395	18.322	1027945	18.323	97	50 - 200	-0.001	+/-0.50	
Chrysene-d12	763735	23.376	775653	23.369	98	50 - 200	0.007	+/-0.50	
Perylene-d12	716157	26.047	750797	26.047	95	50 - 200	0.000	+/-0.50	





**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E-SIM**

Laboratory: Analytical Resources, LLC  
Client: Anchor OEA, LLC  
Sequence: SLE0027

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: NT14  
Calibration: GD00063

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>LCS Dup (BLD0297-BSD2 )</b>		(Solid)	Lab File ID: NT1405012308S.D			Analyzed: 05/01/23 18:50			
1,4-Dichlorobenzene-d4	317639	9.136	331573	9.137	96	50 - 200	-0.001	+/-0.50	
Naphthalene-d8	1221867	11.642	1259018	11.634	97	50 - 200	0.008	+/-0.50	
Acenaphthene-d10	570435	15.278	580636	15.271	98	50 - 200	0.007	+/-0.50	
Phenanthrene-d10	993574	18.322	1027945	18.323	97	50 - 200	-0.001	+/-0.50	
Chrysene-d12	763029	23.376	775653	23.369	98	50 - 200	0.007	+/-0.50	
Perylene-d12	703072	26.047	750797	26.047	94	50 - 200	0.000	+/-0.50	
<b>Reference (BLD0297-SRM2 )</b>		(Solid)	Lab File ID: NT1405012309S.D			Analyzed: 05/01/23 19:27			
1,4-Dichlorobenzene-d4	322455	9.137	331573	9.137	97	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1216748	11.634	1259018	11.634	97	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	569475	15.271	580636	15.271	98	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	997975	18.322	1027945	18.323	97	50 - 200	-0.001	+/-0.50	
Chrysene-d12	747131	23.376	775653	23.369	96	50 - 200	0.007	+/-0.50	
Perylene-d12	699186	26.047	750797	26.047	93	50 - 200	0.000	+/-0.50	
<b>LDW23-SS1818 (23D0063-01 )</b>		(Solid)	Lab File ID: NT1405012313S.D			Analyzed: 05/01/23 21:54			
1,4-Dichlorobenzene-d4	320030	9.144	331573	9.137	97	50 - 200	0.007	+/-0.50	
Naphthalene-d8	1233063	11.642	1259018	11.634	98	50 - 200	0.008	+/-0.50	
Acenaphthene-d10	566996	15.278	580636	15.271	98	50 - 200	0.007	+/-0.50	
Phenanthrene-d10	1000622	18.338	1027945	18.323	97	50 - 200	0.015	+/-0.50	
Chrysene-d12	714789	23.392	775653	23.369	92	50 - 200	0.023	+/-0.50	
Perylene-d12	699575	26.086	750797	26.047	93	50 - 200	0.039	+/-0.50	
<b>Matrix Spike (BLD0297-MS2 )</b>		(Solid)	Lab File ID: NT1405012314S.D			Analyzed: 05/01/23 22:31			
1,4-Dichlorobenzene-d4	305886	9.144	331573	9.137	92	50 - 200	0.007	+/-0.50	
Naphthalene-d8	1193774	11.642	1259018	11.634	95	50 - 200	0.008	+/-0.50	
Acenaphthene-d10	557761	15.286	580636	15.271	96	50 - 200	0.015	+/-0.50	
Phenanthrene-d10	998464	18.338	1027945	18.323	97	50 - 200	0.015	+/-0.50	
Chrysene-d12	733344	23.392	775653	23.369	95	50 - 200	0.023	+/-0.50	
Perylene-d12	675579	26.094	750797	26.047	90	50 - 200	0.047	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270E-SIM**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0027

Instrument: NT14

Calibration: GD00063

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Matrix Spike Dup (BLD0297-MSD2)</b>		(Solid)	Lab File ID: NT1405012315S.D			Analyzed: 05/01/23 23:08			
1,4-Dichlorobenzene-d4	299960	9.144	331573	9.137	90	50 - 200	0.007	+/-0.50	
Naphthalene-d8	1172812	11.642	1259018	11.634	93	50 - 200	0.008	+/-0.50	
Acenaphthene-d10	550684	15.286	580636	15.271	95	50 - 200	0.015	+/-0.50	
Phenanthrene-d10	982057	18.338	1027945	18.323	96	50 - 200	0.015	+/-0.50	
Chrysene-d12	722171	23.399	775653	23.369	93	50 - 200	0.030	+/-0.50	
Perylene-d12	632423	26.094	750797	26.047	84	50 - 200	0.047	+/-0.50	
<b>LDW23-SS1819 (23D0063-03)</b>		(Solid)	Lab File ID: NT1405012316S.D			Analyzed: 05/01/23 23:45			
1,4-Dichlorobenzene-d4	310651	9.144	331573	9.137	94	50 - 200	0.007	+/-0.50	
Naphthalene-d8	1211476	11.642	1259018	11.634	96	50 - 200	0.008	+/-0.50	
Acenaphthene-d10	554837	15.286	580636	15.271	96	50 - 200	0.015	+/-0.50	
Phenanthrene-d10	984485	18.338	1027945	18.323	96	50 - 200	0.015	+/-0.50	
Chrysene-d12	738721	23.399	775653	23.369	95	50 - 200	0.030	+/-0.50	
Perylene-d12	569311	26.102	750797	26.047	76	50 - 200	0.055	+/-0.50	
<b>Calibration Check (SLE0027-CCV1)</b>		(Solid)	Lab File ID: NT1405012318S.D			Analyzed: 05/02/23 00:58			
1,4-Dichlorobenzene-d4	282436	9.145	331573	9.137	85	50 - 200	0.008	+/-0.50	
Naphthalene-d8	1072023	11.642	1259018	11.634	85	50 - 200	0.008	+/-0.50	
Acenaphthene-d10	503722	15.278	580636	15.271	87	50 - 200	0.007	+/-0.50	
Phenanthrene-d10	877372	18.33	1027945	18.323	85	50 - 200	0.007	+/-0.50	
Chrysene-d12	638399	23.384	775653	23.369	82	50 - 200	0.015	+/-0.50	
Perylene-d12	587588	26.063	750797	26.047	78	50 - 200	0.016	+/-0.50	



## HOLDING TIME SUMMARY

**Analysis: EPA 8270E-SIM**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/17/23 12:00	13	14	05/01/23 21:54	14	40	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/17/23 12:00	12	14	05/01/23 23:45	14	40	
Matrix Spike BLD0297-MS2	04/04/23 10:02	04/04/23 15:10	04/17/23 12:00	13	14	05/01/23 22:31	14	40	
Matrix Spike Dup BLD0297-MSD2	04/04/23 10:02	04/04/23 15:10	04/17/23 12:00	13	14	05/01/23 23:08	14	40	

\* Indicates hold time exceedance.



**METHOD DETECTION  
AND REPORTING LIMITS**

**EPA 8270E-SIM**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: NT14

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
1,4-Dichlorobenzene	0.6	5.0	ug/kg
1,2-Dichlorobenzene	0.7	5.0	ug/kg
Benzyl Alcohol	2.5	20.0	ug/kg
Benzoic acid	13.4	100	ug/kg
2,4-Dimethylphenol	2.2	20.0	ug/kg
1,2,4-Trichlorobenzene	2.7	5.0	ug/kg
N-Nitrosodiphenylamine	1.3	5.0	ug/kg
Pentachlorophenol	2.1	20.0	ug/kg



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: NA

Chemical: Tributyl Phosphate

Manufacturer: Chemservice

Product #: 0-916

Lot #: 59-57A

Purity: 99%

Analyst: VFB

Element: B000954



Description:	SVOC 4,4 DDT	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	23-Sep-13
Solvent:	N/A	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	23-Sep-13 11:46 by JZ
Vendor:	Chem Service	Lot #:	198-128A
Vendor Catalog #:			

**Comments**

Neat, Purity @ 99.2%. (ARI#: 790A)

Analyte	CAS Number	Concentration	Units
4,4'-DDT	50-29-3	1000000	ug/mL

Reviewed By

Date



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: 4,4' DDT

Manufacturer: Chem Service

Product #: \_\_\_\_\_

Lot #: 198-128A

Purity: 99.2%

Analyst: AS



Description: SVOC alpha-Terpineol Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: N/A Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 12:13 by JZ  
Vendor: ACROS Organics Lot #: AD16481201  
Vendor Catalog #:

**Comments**

Neat, Purity @ 98%. (ARI#: I1582A)

Analyte	CAS Number	Concentration	Units
alpha-Terpineol	98-55-5	1000000	ug/mL





Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: alpha-Terpineol

Manufacturer: Acros Organics

Product #: \_\_\_\_\_

Lot #: AD6481201

Purity: 98%

Analyst: 12



Description: SVOA Dibutyl Phenyl phosphate Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: NA Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 15:45 by JZ  
Vendor: Monsanto Lot #: N/A  
Vendor Catalog #:

**Comments**

Neat, Purity @ 98.9%.

Analyte	CAS Number	Concentration	Units
Dibutyl Phenyl Phosphate	2528-36-1	1000000	ug/mL

Reviewed By

Date



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Dibutyl Phenyl Phosphate

Manufacturer: Monsanto

Product #: N/A

Lot #: N/A

Purity: 98.9%

Analyst: AD



Description: SVOC Triphenyl Phosphate Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: NA Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 15:59 by JZ  
Vendor: Aldrich Lot #: 04902CM  
Vendor Catalog #:

**Comments**

Neat, Purity @ 99%.

Analyte	CAS Number	Concentration	Units
Triphenyl Phosphate	115-86-6	1000000	ug/mL

Reviewed By

Date



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Triphenyl phosphate

Manufacturer: Aldrich

Product #: \_\_\_\_\_

Lot #: 04902CM

Purity: 99%

Analyst: [Signature]



Description: SVOC Butylated Hydroxytoluene Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: NA Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 16:18 by JZ  
Vendor: SIGMA Lot #: 39F-0197  
Vendor Catalog #:

**Comments**

neat,Purity @ 99.9%.

Analyte	CAS Number	Concentration	Units
Butylated Hydroxytoluene	128-37-0	1000000	ug/mL

Reviewed By

Date



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Bulkyated Hydroxytoluene

Manufacturer: Sigma

Product #: \_\_\_\_\_

Lot #: 39F-0197

Purity: 99.8%

Analyst: AB



Description: SVOC Butyl Diphenyl Phosphate Expires: 31-Dec-29  
Standard Type: Calibration Stan Prepared: 31-Dec-12  
Solvent: NA Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 23-Sep-13 17:02 by JZ  
Vendor: Monsanto Lot #: N/A  
Vendor Catalog #:

**Comments**

Neat, Purity @ 98%.

Analyte	CAS Number	Concentration	Units
Butyl Diphenyl Phosphate	2752-95-6	1000000	ug/mL





Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Butyl Diphenyl Phosphate

Manufacturer: Monsanto

Product #: NA

Lot #: NA

Purity: 99%

Analyst: [Signature]



Description: SVOC 2,4-Dinitrophenol  
Standard Type: Calibration Stan  
Solvent: NA  
Final Volume (mls): 1  
Vials: 1  
Vendor: SIGMA  
Vendor Catalog #:

Expires: 31-Dec-29  
Prepared: 25-Sep-13  
Prepared By: Jianqing Zhou  
Department: Organics  
Last Edit: 25-Sep-13 13:45 by JZ  
Lot #: 65H5021

**Comments**

Neat, Purity @ 90-95%. (ARI#: 0466)

Analyte	CAS Number	Concentration	Units
2,4-Dinitrophenol	51-28-5	1000000	ug/mL

**B001941**

SVOA 2,4-Dinitrophenol  
Expires 12/31/2029  
*Prepared By Jianqing Zhou 9/25/2013*



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: 2,4-Dinitrophenol

Manufacturer: Sigma

Product #: \_\_\_\_\_

Lot #: 644 5021

Purity: 90.29%

Analyst: AB



Description:	SVOC Benzoic Acid	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	31-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	25-Sep-13 15:23 by JZ
Vendor:	ACROS Organics	Lot #:	A0224339
Vendor Catalog #:			

**Comments**

Neat, Purity @ 98%.

Analyte	CAS Number	Concentration	Units
Benzoic acid	65-85-0	1000000	ug/mL

**B001945**

SVOC Benzoic Acid  
Expires 12/31/2029

*Prepared By Jianqing Zhou 12/31/2012*

Reviewed By

Date



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Benzoic Acid

Manufacturer: ACROS Organics

Product #: \_\_\_\_\_

Lot #: A0224339

Purity: 98%

Analyst: AB



Description:	SVOC 4,6-Dinitro-2-Methylphenol	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	25-Sep-13
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	25-Sep-13 15:37 by JZ
Vendor:	Chem Service	Lot #:	179-31A
Vendor Catalog #:			

**Comments**

Neat, Purity @ 99%. (ARI#: 009A)

Analyte	CAS Number	Concentration	Units
4,6-Dinitro-2-methylphenol	534-52-1	1000000	ug/mL

<b>B001948</b>
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SVOA 4,6-Dinitro-2-Methylphenol  
Expires 12/31/2029  
*Prepared By Jianqing Zhou 9/25/2013*

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Reviewed By \_\_\_\_\_ Date \_\_\_\_\_



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: 4,6-Dinitro-2-Methylphenol

Manufacturer: Chem Service

Product #: \_\_\_\_\_

Lot #: 179-31A

Purity: 99%

Analyst: RB



Description:	SVOA 1-Methylnaphthalene	Expires:	02-Apr-14
Standard Type:	Analyte Spike	Prepared:	13-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	04-Oct-13 18:32 by JZ
Vendor:	Chem Service	Lot #:	62-5B
Vendor Catalog #:			

**Comments**

Neat, Purity @ 99%

Analyte	CAS Number	Concentration	Units
1-Methylnaphthalene	90-12-0	1000000	ug/mL



**B002054**  
SVOA 1-Methylnaphthalene  
Solvent / Lot: NA  
Prep: 12/13/2012 by JZ  
Exp: 12/31/2029  
Location:





Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: 1-Methyl naphthalene

Manufacturer: Chem Service

Product #: 0787

Lot #: 62-53

Purity: 99%

Analyst: AB



Description: SVOA Benzidine Expires: 31-Dec-29  
Standard Type: Analyte Spike Prepared: 15-Oct-13  
Solvent: N/A Prepared By: Jianqing Zhou  
Final Volume (mls): 1 Department: Organics  
Vials: 1 Last Edit: 15-Oct-13 12:07 by JZ  
Vendor: SIGMA Lot #: 18C0024  
Vendor Catalog #:

**Comments**

Purity @ 95%. ARI#: 0467.

Analyte	CAS Number	Concentration	Units
Benzidine	92-87-5	1000000	ug/mL



Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

The manufacturer of the below chemical was unable to provide a Certificate of Analysis at the time of request by ARI.

Date Requested from Manufacturer: \_\_\_\_\_

Chemical: Benzidine

Manufacturer: Sigma

Product #: B-3503

Lot #: 18C0024

Purity: 95%

Analyst: B.

# Certificate of Analysis

Product Name: 1,2,4,5-Tetrachlorobenzene  
Product Description: 98%  
Product Brand: Sigma-Aldrich  
Product Number: 131857  
Molecular Weight: 215.89  
CAS Number: 95-94-3

## TEST

APPEARANCE  
INFRARED SPECTRUM

&nbsp;

&nbsp;

&nbsp;

GAS LIQUID

QUALITY CONTROL

## SPECIFICATION

WHITE POWDER, CHIPS OR CRYSTALS  
CONFORMS TO STRUCTURE.

97.5% (MINIMUM)

## LOT 19309JR RESULTS

WHITE CHIPS  
CONFORMS TO STRUCTURE AND  
STANDARD AS  
ILLUSTRATED ON PAGE 1011C OF EDITION  
I,  
VOLUME 1 OF "THE ALDRICH LIBRARY OF  
FT-IR  
SPECTRA".  
99.9 %  
JULY 1997



Barbara Rajzer, Supervisor  
Quality Control  
Milwaukee, Wisconsin USA

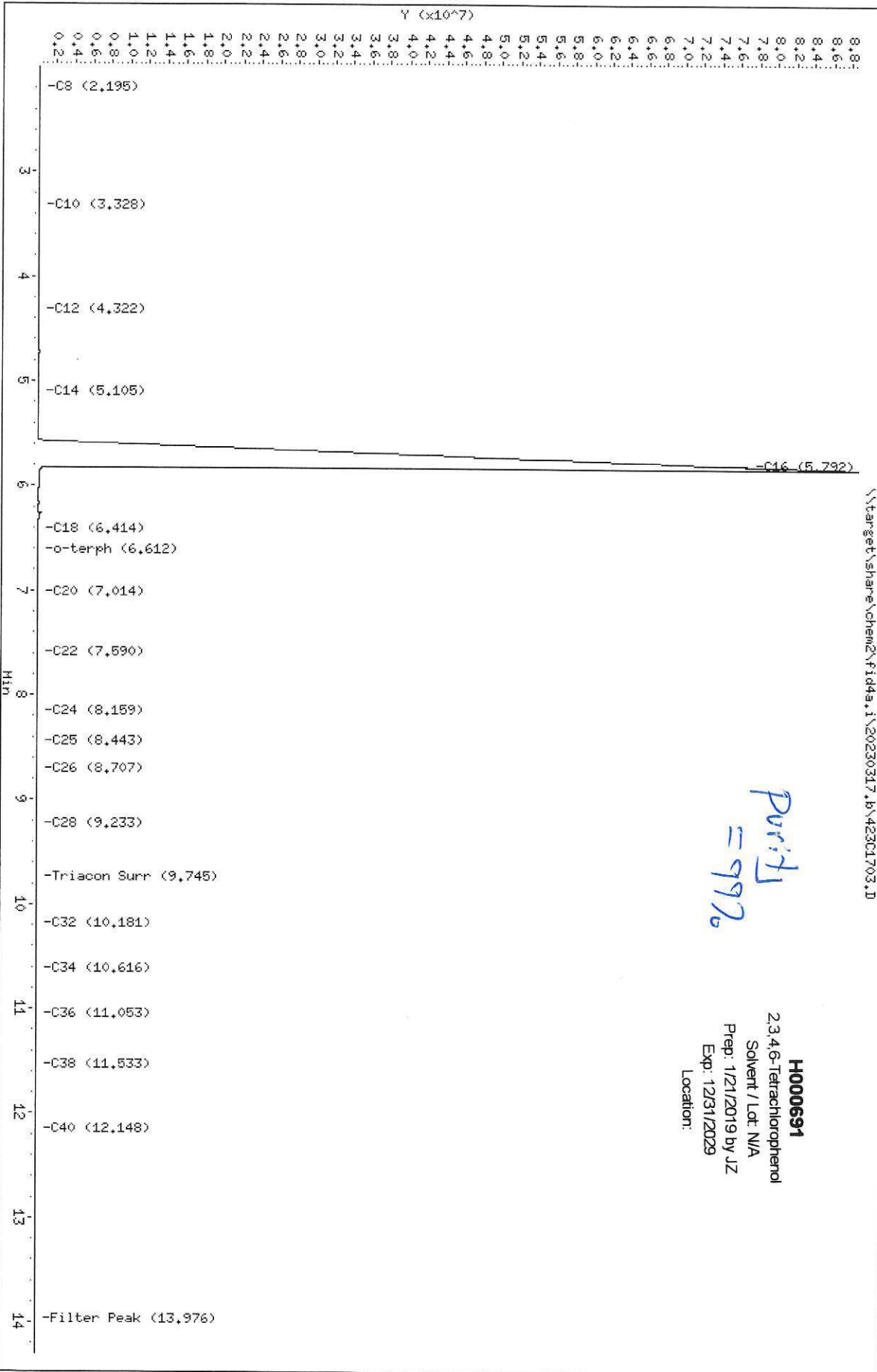
**F009172**

SVOC 1,2,4,5-Tetrachlorobenzene  
Expires 12/31/2079  
*Prepared By Joshua Rains 10/6/2017*

Data File: \\target\share\chem2\fid4a,1\20230317,1\42301703.D  
Date: 17-MAR-2023 10:46  
Client ID:  
Sample Info: K007226

Column phase: RTX-1

Instrument: fid4a.i  
Operator: AA  
Column diameter: 0.25



Purity  
= 99%

**H000691**  
2,3,4,6-Tetrachlorophenol  
Solvent / Lot: N/A  
Prep: 1/21/2019 by JZ  
Exp: 12/31/2029  
Location:

H000691

ARI Labs, Inc.

Data file : \\target\share\chem2\fid4a.i\20230317.b\423C1703.D  
 Lab Smp Id: K007226  
 Inj Date : 17-MAR-2023 10:46  
 Operator : AA Inst ID: fid4a.i  
 Smp Info : K007226  
 Misc Info :  
 Comment :  
 Method : \\target\share\chem2\fid4a.i\20230317.b\FID4TPH.m  
 Meth Date : 17-Mar-2023 16:58 alfonso Quant Type: AREA%  
 Cal Date : 18-AUG-2022 11:51 Cal File: 422H1803.D  
 Als bottle: 10  
 Dil Factor: 1.00000  
 Integrator: Falcon+ Compound Sublist: tph.sub  
 Target Version: 4.14  
 Processing Host: ALFONSO-201901

Concentration Formula: Amt \* DF \* CpndVariable  
 Cpnd Variable Local Compound Variable

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
2.043	81395	55677	0.684	0.012	1 Toluene
2.074	68503	39991	0.584	0.010	
2.104	85451	37158	0.435	0.012	
2.146	59381	25207	0.424	0.008	
2.181	11414	22862	2.003	0.001	
2.195	34939	23199	0.664	0.005	2 C8
2.218	8679	21808	2.513	0.001	
2.224	21070	21832	1.036	0.003	
2.243	45086	20191	0.448	0.006	
2.286	3130	15677	5.009	0.000	
2.291	12615	15880	1.259	0.001	
2.313	20979	15888	0.757	0.003	
2.333	7621	15373	2.017	0.001	
2.348	31874	17112	0.537	0.004	
2.373	4619	13267	2.872	0.000	
2.380	12003	13446	1.120	0.001	
2.393	10327	13347	1.292	0.001	
2.408	9963	12697	1.274	0.001	
2.446	24366	11882	0.488	0.003	
2.498	24898	10214	0.410	0.003	
2.557	1592	6395	4.017	0.000	
2.570	4427	6384	1.442	0.000	
2.583	4275	6215	1.454	0.000	
2.595	1208	6068	5.024	0.000	
2.602	3076	6230	2.025	0.000	
2.607	1560	6270	4.019	0.000	
2.631	17195	8933	0.520	0.002	
2.654	17386	7637	0.439	0.002	
2.703	4531	5468	1.207	0.000	
2.717	9156	5741	0.627	0.001	
2.740	3955	5045	1.275	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
2.768	1029	4134	4.017	0.000	
2.771	830	4189	5.050	0.000	
2.778	1924	4438	2.307	0.000	
2.784	5498	4564	0.830	0.000	
2.846	25970	8400	0.323	0.003	
2.880	939	3165	3.370	0.000	
2.884	1885	3183	1.688	0.000	
2.901	4805	3504	0.729	0.000	
2.938	581	1990	3.423	0.000	
2.944	1450	2016	1.390	0.000	
2.955	449	1816	4.043	0.000	
2.967	1234	2009	1.629	0.000	
2.982	712	2087	2.931	0.000	
2.988	1000	2338	2.337	0.000	
3.001	3475	3541	1.019	0.000	
3.018	3528	3705	1.050	0.000	
3.033	983	2521	2.564	0.000	
3.038	1297	2686	2.070	0.000	
3.044	2547	2541	0.997	0.000	
3.069	389	1330	3.418	0.000	
3.078	728	1545	2.123	0.000	
3.085	1244	1637	1.316	0.000	
3.098	1115	1624	1.457	0.000	
3.108	926	1475	1.593	0.000	
3.119	239	1202	5.036	0.000	
3.125	540	1251	2.315	0.000	
3.133	409	1219	2.978	0.000	
3.144	2600	1886	0.725	0.000	
3.165	620	1604	2.588	0.000	
3.173	554	1647	2.972	0.000	
3.192	2423	2273	0.938	0.000	
3.197	582	2418	4.158	0.000	
3.204	1161	2723	2.346	0.000	
3.208	825	2777	3.364	0.000	
3.228	4472	3391	0.758	0.000	
3.246	1586	2676	1.688	0.000	
3.279	1194	2070	1.734	0.000	
3.293	854	1951	2.285	0.000	
3.298	595	2029	3.408	0.000	
3.315	2640	2597	0.984	0.000	
3.320	1015	2542	2.504	0.000	
3.328	1549	2593	1.674	0.000	3 C10
3.338	1314	2533	1.928	0.000	
3.350	523	2159	4.130	0.000	
3.358	1776	2105	1.185	0.000	
3.371	356	1797	5.043	0.000	
3.378	914	1880	2.057	0.000	
3.383	380	1927	5.068	0.000	
3.387	595	2023	3.399	0.000	
3.395	1390	2270	1.633	0.000	
3.405	1490	1994	1.338	0.000	
3.423	690	1601	2.321	0.000	
3.435	821	1554	1.894	0.000	
3.441	387	1583	4.087	0.000	
3.444	401	1625	4.051	0.000	
3.448	403	1636	4.060	0.000	
3.455	1216	1700	1.398	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
3.478	235	1185	5.047	0.000	
3.482	412	1229	2.986	0.000	
3.488	695	1177	1.694	0.000	
3.501	239	969	4.063	0.000	
3.509	914	1149	1.258	0.000	
3.520	1078	1069	0.992	0.000	
3.540	301	927	3.079	0.000	
3.556	406	849	2.089	0.000	
3.567	370	873	2.359	0.000	
3.572	178	939	5.270	0.000	
3.578	591	1171	1.981	0.000	
3.591	869	1353	1.556	0.000	
3.596	741	1352	1.826	0.000	
3.606	471	1401	2.976	0.000	
3.613	548	1411	2.577	0.000	
3.618	433	1521	3.511	0.000	
3.625	710	1635	2.303	0.000	
3.630	910	1667	1.832	0.000	
3.652	661	1562	2.362	0.000	
3.670	462	1214	2.627	0.000	
3.686	1036	1453	1.403	0.000	
3.690	829	1374	1.658	0.000	
3.702	531	1191	2.241	0.000	
3.712	452	1355	3.001	0.000	
3.716	820	1423	1.736	0.000	
3.736	2685	2093	0.780	0.000	
3.752	689	2030	2.946	0.000	
3.760	4109	2349	0.572	0.000	
3.805	3183	2036	0.640	0.000	
3.823	496	1686	3.401	0.000	
3.835	1641	2314	1.410	0.000	
3.859	9243	4616	0.499	0.001	
3.897	851	1745	2.051	0.000	
3.904	503	1721	3.419	0.000	
3.927	3866	3293	0.852	0.000	
3.941	5520	3558	0.645	0.000	
3.980	573	1715	2.991	0.000	
3.992	1027	1794	1.748	0.000	
3.995	1494	1860	1.245	0.000	
4.010	887	1639	1.847	0.000	
4.021	663	1724	2.602	0.000	
4.026	1380	1776	1.287	0.000	
4.045	306	1546	5.059	0.000	
4.053	1001	1758	1.757	0.000	
4.061	1137	1804	1.586	0.000	
4.072	779	1773	2.275	0.000	
4.080	989	1896	1.917	0.000	
4.087	561	1905	3.396	0.000	
4.098	1956	2156	1.103	0.000	
4.106	1168	2044	1.750	0.000	
4.127	1049	1627	1.551	0.000	
4.142	587	1545	2.633	0.000	
4.148	1155	1572	1.361	0.000	
4.173	3682	2398	0.651	0.000	
4.189	1023	1738	1.700	0.000	
4.204	549	1627	2.961	0.000	
4.213	628	1658	2.641	0.000	



RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
4.221	1039	1830	1.761	0.000	
4.227	447	1814	4.058	0.000	
4.248	2703	2638	0.976	0.000	
4.256	1387	2945	2.123	0.000	
4.260	743	2988	4.022	0.000	
4.265	912	3081	3.378	0.000	
4.268	779	3140	4.031	0.000	
4.275	1736	3217	1.853	0.000	
4.289	2688	3495	1.300	0.000	
4.295	3466	3448	0.995	0.000	
4.322	1054	2680	2.543	0.000	4 C12
4.330	1686	2627	1.558	0.000	
4.358	1066	1974	1.852	0.000	
4.378	434	1758	4.054	0.000	
4.384	1324	1879	1.419	0.000	
4.403	860	1608	1.869	0.000	
4.414	457	1567	3.431	0.000	
4.421	1117	1675	1.499	0.000	
4.433	910	1538	1.690	0.000	
4.439	865	1534	1.774	0.000	
4.449	764	1302	1.705	0.000	
4.471	433	1123	2.593	0.000	
4.476	734	1135	1.546	0.000	
4.490	385	1005	2.610	0.000	
4.498	555	1186	2.137	0.000	
4.502	695	1166	1.677	0.000	
4.518	587	949	1.618	0.000	
4.526	316	925	2.924	0.000	
4.533	560	989	1.765	0.000	
4.543	469	1001	2.135	0.000	
4.548	222	916	4.130	0.000	
4.553	188	980	5.207	0.000	
4.558	255	1038	4.076	0.000	
4.568	652	1157	1.775	0.000	
4.573	338	1151	3.409	0.000	
4.580	487	1283	2.636	0.000	
4.596	3801	1950	0.513	0.000	
4.631	531	1429	2.692	0.000	
4.663	4548	3737	0.822	0.000	
4.667	2815	3822	1.358	0.000	
4.679	2199	3760	1.710	0.000	
4.688	1068	3585	3.356	0.000	
4.694	2166	3742	1.727	0.000	
4.723	372603	172476	0.463	0.055	
4.894	47034	21828	0.464	0.006	
4.956	80510	28154	0.350	0.011	
4.999	54273	16950	0.312	0.008	
5.068	1137	5713	5.027	0.000	
5.072	8415	5792	0.688	0.001	
5.105	4203	4316	1.027	0.000	5 C14
5.146	660	2685	4.070	0.000	
5.153	2524	2649	1.050	0.000	
5.170	1076	2437	2.265	0.000	
5.174	2371	2438	1.028	0.000	
5.201	1013	2011	1.986	0.000	
5.210	2064	2332	1.130	0.000	
5.224	1083	2304	2.127	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
5.228	2027	2354	1.162	0.000	
5.276	4673	2682	0.574	0.000	
5.322	195	844	4.328	0.000	
5.331	977	1203	1.231	0.000	
5.356	490	993	2.027	0.000	
5.361	814	1044	1.283	0.000	
5.382	115	387	3.351	0.000	
5.399	619	960	1.551	0.000	
5.406	402	1035	2.576	0.000	
5.410	378	1122	2.968	0.000	
5.423	1663	1555	0.935	0.000	
5.452	5951	5020	0.844	0.000	
5.501	290	797	2.753	0.000	
5.523	2317	2472	1.067	0.000	
5.538	5946	6823	1.147	0.000	
5.792	501855376	76456669	0.152	74.449	6 C16
5.807	79757019	82319946	1.032	11.775	
5.823	77929961	88539160	1.136	11.505	
5.962	75333	84828	1.126	0.011	
5.986	474748	124326	0.262	0.070	
6.070	17103	57180	3.343	0.002	
6.074	120761	57565	0.477	0.017	
6.113	90233	47140	0.522	0.013	
6.165	407438	218439	0.536	0.060	
6.263	944101	374166	0.396	0.139	
6.414	114839	39498	0.344	0.016	7 C18
6.464	53190	31177	0.586	0.007	
6.523	31509	25870	0.821	0.004	
6.551	4785	23963	5.008	0.000	
6.559	51194	25409	0.496	0.007	
6.590	21354	21666	1.015	0.003	
6.612	35061	21127	0.603	0.005	\$ 8 o-terph
6.638	17712	19934	1.125	0.002	
6.672	22159	19651	0.887	0.003	
6.683	26846	19268	0.718	0.003	
6.708	5413	18142	3.351	0.000	
6.713	24941	18247	0.732	0.003	
6.747	50657	18478	0.365	0.007	
6.795	23973	17444	0.728	0.003	
6.814	28457	17895	0.629	0.004	
6.837	10746	15445	1.437	0.001	
6.871	29974	21406	0.714	0.004	
6.874	4287	21471	5.009	0.000	
6.882	20520	21675	1.056	0.003	
6.944	32864	17445	0.531	0.004	
6.978	9138	15347	1.679	0.001	
7.014	4130	13830	3.348	0.000	9 C20
7.025	12567	14083	1.121	0.001	
7.038	4952	14274	2.882	0.000	
7.044	6508	14578	2.240	0.000	
7.050	25344	14736	0.581	0.003	
7.099	5531	12365	2.236	0.000	
7.108	16440	12371	0.752	0.002	
7.129	9415	11275	1.198	0.001	
7.175	3589	10327	2.878	0.000	
7.182	7285	10474	1.438	0.001	
7.212	11252	10002	0.889	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
7.227	5193	9506	1.830	0.000	
7.237	5172	9476	1.832	0.000	
7.247	4652	9357	2.011	0.000	
7.254	3258	9369	2.875	0.000	
7.259	7003	9455	1.350	0.001	
7.272	5540	9252	1.670	0.000	
7.283	4511	9087	2.014	0.000	
7.296	5828	9031	1.550	0.000	
7.308	4850	8866	1.828	0.000	
7.318	3111	9014	2.897	0.000	
7.324	3191	9168	2.873	0.000	
7.328	2775	9325	3.360	0.000	
7.339	6190	9713	1.569	0.000	
7.344	2920	9761	3.343	0.000	
7.350	17091	9874	0.578	0.002	
7.379	7217	8616	1.194	0.001	
7.395	5430	8408	1.548	0.000	
7.404	2492	8342	3.348	0.000	
7.409	1666	8354	5.014	0.000	
7.415	2955	8500	2.877	0.000	
7.423	3887	8782	2.259	0.000	
7.465	28160	14253	0.506	0.004	
7.471	6466	14499	2.242	0.000	
7.480	6649	15111	2.273	0.000	
7.484	26595	15197	0.571	0.003	
7.514	13964	13621	0.975	0.002	
7.539	8118	12614	1.554	0.001	
7.553	10540	12495	1.185	0.001	
7.584	2820	11307	4.010	0.000	
7.590	4522	11429	2.527	0.000	10 C22
7.620	16634	10435	0.627	0.002	
7.653	6793	9783	1.440	0.001	
7.663	8606	9666	1.123	0.001	
7.675	2827	9464	3.347	0.000	
7.683	9373	9620	1.026	0.001	
7.699	3657	9205	2.517	0.000	
7.708	5071	9290	1.832	0.000	
7.713	10483	9274	0.885	0.001	
7.735	10686	9257	0.866	0.001	
7.752	4732	8664	1.831	0.000	
7.765	5624	8765	1.558	0.000	
7.773	5614	8686	1.547	0.000	
7.784	3375	8506	2.520	0.000	
7.793	2118	8517	4.021	0.000	
7.799	10086	8544	0.847	0.001	
7.817	7761	8325	1.073	0.001	
7.833	2415	8088	3.350	0.000	
7.838	2838	8160	2.875	0.000	
7.844	3649	8173	2.240	0.000	
7.858	2009	8069	4.017	0.000	
7.864	4482	8197	1.829	0.000	
7.871	3688	8223	2.230	0.000	
7.879	4875	8269	1.696	0.000	
7.889	2009	8061	4.013	0.000	
7.897	4080	8308	2.036	0.000	
7.916	17828	10103	0.567	0.002	
7.935	4052	9086	2.242	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
7.940	2229	8948	4.015	0.000	
7.945	5765	8973	1.556	0.000	
7.954	6458	8765	1.357	0.000	
7.976	2099	8428	4.016	0.000	
7.984	10213	8807	0.862	0.001	
7.999	4897	8282	1.691	0.000	
8.013	8782	8112	0.924	0.001	
8.028	5860	7858	1.341	0.000	
8.040	3929	7871	2.003	0.000	
8.054	9161	8146	0.889	0.001	
8.067	2701	7766	2.876	0.000	
8.074	3069	7702	2.510	0.000	
8.081	2694	7742	2.874	0.000	
8.088	2705	7793	2.881	0.000	
8.095	5842	7832	1.341	0.000	
8.104	5419	7841	1.447	0.000	
8.119	5740	7735	1.348	0.000	
8.134	4986	7768	1.558	0.000	
8.141	5893	8009	1.359	0.000	
8.159	9098	8027	0.882	0.001	11 C24
8.174	3156	7971	2.526	0.000	
8.185	2376	7967	3.353	0.000	
8.190	4739	7937	1.675	0.000	
8.202	5181	8028	1.549	0.000	
8.212	1994	8027	4.025	0.000	
8.223	6137	8270	1.348	0.000	
8.236	6864	8171	1.190	0.001	
8.248	2383	7986	3.351	0.000	
8.253	2405	8059	3.351	0.000	
8.259	5294	8207	1.550	0.000	
8.268	2866	8235	2.874	0.000	
8.280	6583	8312	1.263	0.000	
8.289	4538	8296	1.828	0.000	
8.295	2060	8300	4.029	0.000	
8.300	2063	8291	4.020	0.000	
8.313	7062	8400	1.189	0.001	
8.318	1667	8375	5.023	0.000	
8.332	11362	9100	0.801	0.001	
8.343	4357	8741	2.006	0.000	
8.358	1267	8458	6.676	0.000	
8.363	2991	8621	2.882	0.000	
8.371	3980	8983	2.257	0.000	
8.379	6330	9083	1.435	0.000	
8.385	3111	8963	2.881	0.000	
8.393	6706	9050	1.349	0.000	
8.404	4903	8943	1.824	0.000	
8.417	8437	8972	1.063	0.001	
8.438	7166	9103	1.270	0.001	
8.443	3211	9227	2.873	0.000	12 C25
8.450	3688	9295	2.521	0.000	
8.455	2313	9276	4.010	0.000	
8.475	30054	13714	0.456	0.004	
8.504	5760	9733	1.690	0.000	
8.519	2799	9376	3.350	0.000	
8.529	4766	9710	2.037	0.000	
8.537	4875	9815	2.013	0.000	
8.543	8411	9973	1.186	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
8.555	2969	9916	3.340	0.000	
8.560	3974	9987	2.513	0.000	
8.568	2483	9997	4.026	0.000	
8.572	5007	10043	2.006	0.000	
8.591	14074	10725	0.762	0.002	
8.602	2648	10665	4.028	0.000	
8.606	2159	10862	5.032	0.000	
8.609	2183	10952	5.017	0.000	
8.633	7361	10561	1.435	0.001	
8.647	6774	10495	1.549	0.001	
8.658	2596	10420	4.014	0.000	
8.663	4723	10573	2.239	0.000	
8.669	3156	10589	3.355	0.000	
8.687	15405	11334	0.736	0.002	
8.699	6103	11158	1.828	0.000	
8.707	2223	11136	5.009	0.000	13 C26
8.730	28697	12536	0.437	0.004	
8.754	8658	11553	1.334	0.001	
8.763	2896	11612	4.010	0.000	
8.780	15029	12352	0.822	0.002	
8.788	1833	12243	6.680	0.000	
8.798	11854	12679	1.070	0.001	
8.806	1873	12509	6.677	0.000	
8.809	3133	12565	4.011	0.000	
8.813	2506	12550	5.008	0.000	
8.819	7588	12757	1.681	0.001	
8.829	4418	12679	2.870	0.000	
8.835	6988	12762	1.826	0.001	
8.848	13711	13258	0.967	0.002	
8.872	26625	13656	0.513	0.003	
8.894	4575	13127	2.869	0.000	
8.898	2631	13188	5.013	0.000	
8.902	5918	13262	2.241	0.000	
8.914	8577	13313	1.552	0.001	
8.922	4011	13433	3.349	0.000	
8.926	4724	13546	2.867	0.000	
8.933	6787	13651	2.011	0.001	
8.946	9614	13923	1.448	0.001	
8.951	6274	14004	2.232	0.000	
8.960	5592	14036	2.510	0.000	
8.966	3513	14090	4.011	0.000	
8.969	2829	14171	5.009	0.000	
8.973	4976	14233	2.860	0.000	
8.980	4289	14365	3.350	0.000	
8.996	27708	16441	0.593	0.004	
9.013	8129	14847	1.827	0.001	
9.025	8129	14840	1.826	0.001	
9.036	7503	15229	2.030	0.001	
9.040	4559	15225	3.340	0.000	
9.057	14920	16251	1.089	0.002	
9.067	9915	16831	1.698	0.001	
9.076	8535	17331	2.031	0.001	
9.081	5250	17596	3.352	0.000	
9.084	10558	17675	1.674	0.001	
9.095	4386	17601	4.013	0.000	
9.111	30564	19262	0.630	0.004	
9.128	8346	18722	2.243	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
9.139	15095	18986	1.258	0.002	
9.149	6655	19050	2.862	0.000	
9.158	23240	19719	0.848	0.003	
9.171	1903	19042	10.005	0.000	
9.175	4773	19156	4.013	0.000	
9.187	23630	19927	0.843	0.003	
9.199	4925	19763	4.013	0.000	
9.208	14115	20394	1.445	0.002	
9.219	12303	20691	1.682	0.001	
9.226	7266	20831	2.867	0.001	
9.233	15622	21000	1.344	0.002	14 C28
9.247	9280	20714	2.232	0.001	
9.262	45057	27849	0.618	0.006	
9.281	22651	23200	1.024	0.003	
9.304	13489	22820	1.692	0.001	
9.307	18038	22862	1.267	0.002	
9.328	8656	21778	2.516	0.001	
9.334	8635	21650	2.507	0.001	
9.343	16240	21738	1.339	0.002	
9.354	5409	21709	4.013	0.000	
9.367	16481	22234	1.349	0.002	
9.370	6683	22346	3.344	0.000	
9.382	14775	23166	1.568	0.002	
9.390	11679	23531	2.015	0.001	
9.394	12888	23584	1.830	0.001	
9.408	18752	23645	1.261	0.002	
9.416	4675	23396	5.004	0.000	
9.428	25138	24392	0.970	0.003	
9.438	20233	24095	1.191	0.002	
9.468	67429	26696	0.396	0.009	
9.496	8413	24122	2.867	0.001	
9.507	12049	24259	2.013	0.001	
9.527	36362	25771	0.709	0.005	
9.538	12891	25911	2.010	0.001	
9.543	6452	25853	4.007	0.000	
9.551	10420	26202	2.515	0.001	
9.557	29750	26593	0.894	0.004	
9.574	6252	25071	4.010	0.000	
9.593	29143	27655	0.949	0.004	
9.599	40783	27905	0.684	0.006	
9.620	13159	26364	2.004	0.001	
9.632	17259	26799	1.553	0.002	
9.640	13210	26592	2.013	0.001	
9.664	35362	28170	0.797	0.005	
9.672	27890	28134	1.009	0.004	
9.696	26737	28634	1.071	0.003	
9.711	53475	30848	0.577	0.007	
9.745	33266	29504	0.887	0.004	\$ 15 Triacon Surr
9.752	7348	29501	4.015	0.001	
9.756	20542	29565	1.439	0.003	
9.768	7255	29059	4.005	0.001	
9.773	7275	29173	4.010	0.001	
9.785	31543	30611	0.970	0.004	
9.803	46804	32832	0.701	0.006	
9.821	10456	30060	2.875	0.001	
9.833	30772	31156	1.012	0.004	
9.860	77784	33514	0.431	0.011	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
9.881	12779	32069	2.510	0.001	
9.892	14531	32668	2.248	0.002	
9.896	8201	32902	4.012	0.001	
9.908	23357	33882	1.451	0.003	
9.912	27050	34095	1.260	0.003	
9.939	14585	32570	2.233	0.002	
9.951	23032	33095	1.437	0.003	
9.956	11596	33292	2.871	0.001	
9.966	16544	33271	2.011	0.002	
9.971	11660	33391	2.864	0.001	
9.975	10051	33617	3.345	0.001	
9.983	15209	33983	2.234	0.002	
9.988	15177	33830	2.229	0.002	
9.996	10128	33907	3.348	0.001	
10.018	43348	35629	0.822	0.006	
10.021	7133	35693	5.004	0.001	
10.025	8960	35988	4.016	0.001	
10.034	42064	36944	0.878	0.006	
10.063	65447	38699	0.591	0.009	
10.077	7375	36906	5.004	0.001	
10.083	16743	37428	2.235	0.002	
10.095	34467	38665	1.122	0.005	
10.118	90921	40621	0.447	0.013	
10.151	37738	38047	1.008	0.005	
10.158	11383	38037	3.342	0.001	
10.168	36074	38274	1.061	0.005	
10.181	15072	37809	2.509	0.002	16 C32
10.185	5655	37746	6.675	0.000	
10.198	43905	38471	0.876	0.006	
10.208	24771	38177	1.541	0.003	
10.218	19031	38113	2.003	0.002	
10.228	13353	38279	2.867	0.001	
10.237	21225	38826	1.829	0.003	
10.243	30946	38929	1.258	0.004	
10.266	43064	39733	0.923	0.006	
10.275	11912	39784	3.340	0.001	
10.278	19932	39886	2.001	0.002	
10.293	46366	40725	0.878	0.006	
10.318	46465	41024	0.883	0.006	
10.328	24720	41353	1.673	0.003	
10.334	10308	41278	4.005	0.001	
10.343	29100	41866	1.439	0.004	
10.354	22822	41695	1.827	0.003	
10.360	16568	41490	2.504	0.002	
10.376	31388	42321	1.348	0.004	
10.384	36478	43119	1.182	0.005	
10.393	21427	43144	2.014	0.003	
10.416	82339	44731	0.543	0.012	
10.434	23173	42257	1.824	0.003	
10.455	42801	43684	1.021	0.006	
10.459	19648	44004	2.240	0.002	
10.469	19632	43883	2.235	0.002	
10.492	56113	45807	0.816	0.008	
10.497	20626	45915	2.226	0.003	
10.503	27439	45837	1.671	0.004	
10.513	31833	45842	1.440	0.004	
10.523	6773	45190	6.672	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
10.529	22697	45513	2.005	0.003	
10.543	39087	46432	1.188	0.005	
10.552	16284	46719	2.869	0.002	
10.558	18796	47158	2.509	0.002	
10.576	69878	48769	0.698	0.010	
10.586	12085	48384	4.004	0.001	
10.592	21757	48469	2.228	0.003	
10.609	46960	50482	1.075	0.006	
10.616	40486	50812	1.255	0.005	17 C34
10.628	52392	50284	0.960	0.007	
10.665	99744	52644	0.528	0.014	
10.680	20832	52264	2.509	0.003	
10.699	126137	55939	0.443	0.018	
10.723	18258	52316	2.865	0.002	
10.733	65550	52928	0.807	0.009	
10.751	49102	51903	1.057	0.007	
10.765	10288	51490	5.005	0.001	
10.777	73220	52877	0.722	0.010	
10.791	15621	52150	3.338	0.002	
10.799	46819	52190	1.115	0.006	
10.817	52000	52328	1.006	0.007	
10.828	13014	52167	4.008	0.001	
10.833	18275	52280	2.861	0.002	
10.838	67284	52271	0.777	0.009	
10.860	15395	51401	3.339	0.002	
10.867	15366	51252	3.335	0.002	
10.874	25712	51608	2.007	0.003	
10.885	59363	52064	0.877	0.008	
10.901	33199	51247	1.544	0.004	
10.911	35859	51446	1.435	0.005	
10.925	15150	50526	3.335	0.002	
10.936	27761	50508	1.819	0.004	
10.954	40634	51235	1.261	0.005	
10.958	17973	51428	2.861	0.002	
10.982	101216	54997	0.543	0.014	
10.999	80380	54264	0.675	0.011	
11.022	15822	52869	3.342	0.002	
11.029	23878	53171	2.227	0.003	
11.032	23908	53219	2.226	0.003	
11.044	39793	53228	1.338	0.005	
11.053	13218	52959	4.007	0.001	19 C36
11.057	26491	53088	2.004	0.003	
11.069	47933	53454	1.115	0.007	
11.079	78088	52997	0.679	0.011	
11.132	4853	48537	10.002	0.000	
11.138	21933	48845	2.227	0.003	
11.148	46678	49317	1.057	0.006	
11.158	12248	49060	4.006	0.001	
11.164	14711	49102	3.338	0.002	
11.179	64473	49939	0.775	0.009	
11.192	19751	49439	2.503	0.002	
11.197	14848	49541	3.337	0.002	
11.202	17336	49566	2.859	0.002	
11.206	12400	49639	4.003	0.001	
11.212	56808	49881	0.878	0.008	
11.230	26830	48794	1.819	0.003	
11.263	19014	47590	2.503	0.002	



RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
11.267	11927	47790	4.007	0.001	
11.285	66432	50042	0.753	0.009	
11.308	17214	49235	2.860	0.002	
11.312	19684	49285	2.504	0.002	
11.322	19740	49570	2.511	0.002	
11.331	27467	50208	1.828	0.004	
11.334	12565	50301	4.003	0.001	
11.338	17617	50367	2.859	0.002	
11.356	50450	50688	1.005	0.007	
11.383	31641	48774	1.541	0.004	
11.392	14562	48589	3.337	0.002	
11.398	14566	48593	3.336	0.002	
11.405	21947	48858	2.226	0.003	
11.418	36961	49602	1.342	0.005	
11.428	52174	49838	0.955	0.007	
11.438	46900	49605	1.058	0.006	
11.456	66003	49218	0.746	0.009	
11.481	84312	48818	0.579	0.012	
11.518	39837	46996	1.180	0.005	
11.533	55836	46822	0.839	0.008	20 C38
11.560	30101	46465	1.544	0.004	
11.568	20916	46512	2.224	0.003	
11.573	11637	46596	4.004	0.001	
11.579	23274	46598	2.002	0.003	
11.586	13953	46531	3.335	0.002	
11.591	9318	46631	5.004	0.001	
11.623	97892	48831	0.499	0.014	
11.631	17107	48984	2.863	0.002	
11.638	22090	49260	2.230	0.003	
11.642	32050	49351	1.540	0.004	
11.669	95446	50981	0.534	0.014	
11.685	95822	49865	0.520	0.014	
11.788	8918	44609	5.002	0.001	
11.791	35704	44768	1.254	0.005	
11.804	11082	44350	4.002	0.001	
11.813	22172	44403	2.003	0.003	
11.823	19993	44543	2.228	0.002	
11.829	13395	44754	3.341	0.001	
11.837	20184	44981	2.228	0.002	
11.852	26933	44942	1.669	0.003	
11.866	36041	45224	1.255	0.005	
11.877	15835	45355	2.864	0.002	
11.883	18222	45726	2.509	0.002	
11.889	15985	45741	2.861	0.002	
11.896	20679	46117	2.230	0.003	
11.905	23259	46896	2.016	0.003	
11.929	70146	49826	0.710	0.010	
11.936	52288	50085	0.958	0.007	
11.951	14787	49369	3.339	0.002	
11.957	17313	49595	2.865	0.002	
11.961	32199	49647	1.542	0.004	
11.971	19578	49063	2.506	0.002	
11.980	34244	49065	1.433	0.005	
12.019	96987	51133	0.527	0.014	
12.025	48685	51499	1.058	0.007	
12.053	38386	51386	1.339	0.005	
12.062	38575	51549	1.336	0.005	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
12.070	17923	51300	2.862	0.002	
12.078	45780	51141	1.117	0.006	
12.105	31495	48817	1.550	0.004	
12.118	85510	48295	0.565	0.012	
12.148	55474	46657	0.841	0.008	21 C40
12.172	34299	45899	1.338	0.005	
12.181	18286	45754	2.502	0.002	
12.188	20565	45727	2.223	0.003	
12.198	29701	45787	1.542	0.004	
12.212	11377	45530	4.002	0.001	
12.218	29576	45566	1.541	0.004	
12.237	41054	45750	1.114	0.006	
12.243	13695	45701	3.337	0.002	
12.253	27528	46122	1.675	0.004	
12.260	16149	46201	2.861	0.002	
12.272	32473	46571	1.434	0.004	
12.347	231342	54259	0.235	0.034	
12.355	96470	54322	0.563	0.014	
12.383	13155	52687	4.005	0.001	
12.389	52817	52930	1.002	0.007	
12.434	117936	55204	0.468	0.017	
12.440	19323	55283	2.861	0.002	
12.448	22049	55156	2.502	0.003	
12.460	127044	56114	0.442	0.018	
12.500	63536	55700	0.877	0.009	
12.519	44746	56237	1.257	0.006	
12.523	16928	56556	3.341	0.002	
12.528	14154	56666	4.003	0.002	
12.532	14154	56644	4.002	0.002	
12.538	25607	57089	2.229	0.003	
12.543	31284	57010	1.822	0.004	
12.560	76588	57084	0.745	0.011	
12.574	22463	56167	2.500	0.003	
12.583	192414	56305	0.293	0.028	
12.668	201456	54098	0.269	0.029	
12.722	63529	49368	0.777	0.009	
12.744	14574	48683	3.340	0.002	
12.757	68233	49046	0.719	0.010	
12.777	29106	48653	1.672	0.004	
12.802	69072	49884	0.722	0.010	
12.805	19947	49915	2.502	0.002	
12.813	12457	49907	4.006	0.001	
12.826	42860	50672	1.182	0.006	
12.830	15192	50711	3.338	0.002	
12.835	63121	50727	0.804	0.009	
12.856	30109	50299	1.671	0.004	
12.871	12459	49875	4.003	0.001	
12.876	24950	49913	2.001	0.003	
12.883	12458	49860	4.002	0.001	
12.892	24999	50091	2.004	0.003	
12.904	37682	50442	1.339	0.005	
12.918	60965	51059	0.838	0.009	
12.929	15268	50972	3.338	0.002	
12.950	101236	52476	0.518	0.014	
12.991	32619	50285	1.542	0.004	
13.030	23826	47690	2.002	0.003	
13.047	49429	47410	0.959	0.007	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
13.072	11668	46709	4.003	0.001	
13.077	14056	46964	3.341	0.002	
13.083	21201	47214	2.227	0.003	
13.092	45034	47490	1.055	0.006	
13.103	33139	47401	1.430	0.004	
13.119	58622	47300	0.807	0.008	
13.136	61979	46406	0.749	0.009	
13.163	36232	45399	1.253	0.005	
13.172	13552	45219	3.337	0.002	
13.178	13550	45211	3.337	0.002	
13.183	13581	45318	3.337	0.002	
13.188	15867	45365	2.859	0.002	
13.193	11350	45433	4.003	0.001	
13.206	54879	45909	0.837	0.008	
13.233	74220	46899	0.632	0.010	
13.246	18724	46923	2.506	0.002	
13.250	14089	47028	3.338	0.002	
13.254	9392	46999	5.004	0.001	
13.261	35241	47103	1.337	0.005	
13.270	21093	46884	2.223	0.003	
13.278	16404	46889	2.858	0.002	
13.284	28108	46937	1.670	0.004	
13.309	27777	46575	1.677	0.004	
13.313	11643	46617	4.004	0.001	
13.323	30391	46938	1.544	0.004	
13.337	49696	47554	0.957	0.007	
13.345	11906	47686	4.005	0.001	
13.352	21499	47921	2.229	0.003	
13.358	14416	48133	3.339	0.002	
13.366	24163	48487	2.007	0.003	
13.391	108474	49842	0.459	0.016	
13.411	39818	49922	1.254	0.005	
13.421	140245	49882	0.356	0.020	
13.468	75433	46221	0.613	0.011	
13.519	59701	44435	0.744	0.008	
13.538	26345	44021	1.671	0.003	
13.553	17475	43727	2.502	0.002	
13.559	19699	43828	2.225	0.002	
13.566	15324	43832	2.860	0.002	
13.574	28519	43956	1.541	0.004	
13.585	21950	43943	2.002	0.003	
13.595	26497	44341	1.673	0.003	
13.603	22230	44574	2.005	0.003	
13.608	11135	44585	4.004	0.001	
13.633	100703	46371	0.460	0.014	
13.650	25255	45974	1.820	0.003	
13.663	20511	45675	2.227	0.003	
13.670	15945	45584	2.859	0.002	
13.677	40973	45642	1.114	0.006	
13.688	4544	45448	10.002	0.000	
13.693	29520	45508	1.542	0.004	
13.718	24720	44995	1.820	0.003	
13.727	11216	44890	4.002	0.001	
13.735	29185	45025	1.543	0.004	
13.752	17874	44782	2.505	0.002	
13.767	35874	45020	1.255	0.005	
13.775	36036	45104	1.252	0.005	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
13.785	11226	44939	4.003	0.001	
13.790	47016	44953	0.956	0.006	
13.813	11118	44516	4.004	0.001	
13.818	37641	44507	1.182	0.005	
13.832	15424	44192	2.865	0.002	
13.838	17564	43967	2.503	0.002	
13.844	26339	43892	1.666	0.003	
13.855	30567	43821	1.434	0.004	
13.865	23854	43526	1.825	0.003	
13.882	28266	43639	1.544	0.004	
13.886	30418	43629	1.434	0.004	
13.901	34702	43472	1.253	0.005	
13.920	48162	44005	0.914	0.007	
13.928	17577	43956	2.501	0.002	
13.941	15410	44084	2.861	0.002	
13.946	11045	44251	4.006	0.001	
13.949	24369	44341	1.820	0.003	
13.959	22103	44264	2.003	0.003	
13.967	22088	44195	2.001	0.003	
13.976	33207	44336	1.335	0.004	18 Filter Peak
13.998	24195	44018	1.819	0.003	
14.007	15335	43888	2.862	0.002	
14.014	17519	43863	2.504	0.002	
14.019	54335	43870	0.807	0.008	
14.046	10722	42915	4.003	0.001	
14.052	19305	42955	2.225	0.002	
14.058	8568	42864	5.003	0.001	
14.067	38739	43159	1.114	0.005	
14.077	15012	42931	2.860	0.002	
14.083	25753	42977	1.669	0.003	
14.102	25682	42913	1.671	0.003	
14.108	19267	42865	2.225	0.002	
14.116	12834	42815	3.336	0.001	
14.126	25874	43369	1.676	0.003	
14.133	56339	43595	0.774	0.008	
14.161	32503	43582	1.341	0.004	
14.165	10909	43696	4.006	0.001	
14.170	15313	43822	2.862	0.002	
14.175	10960	43911	4.007	0.001	
14.178	13176	43945	3.335	0.001	
14.183	19785	43976	2.223	0.002	
14.191	8796	44018	5.005	0.001	
14.197	17636	44177	2.505	0.002	
14.208	28815	44459	1.543	0.004	
14.219	8873	44379	5.002	0.001	
14.223	13318	44445	3.337	0.001	
14.229	28860	44456	1.540	0.004	
14.247	15436	44194	2.863	0.002	
14.260	37147	43758	1.178	0.005	
14.274	45685	43705	0.957	0.006	
===== 677340272	===== 268782821	===== 100.000			

Total unknown % area = 25.478

## Certificate of Composition - Analytical Standard

## ACID STOCK

**Product no.:** 22523046  
**Lot no.:** LRAC9812  
**Expiry Date:** May 2023  
**Manufacturing Date:** May 2021  
**Storage:** Refrigerate  
**Solvent/Matrix:** Dichloromethane  
**Certificate version:** LRAC9812.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)

**J005200**  
 SVOA-ABN ACID STOCK-200-800ug/ml  
 Solvent / Lot: DCM  
 Prep: 5/18/2021 by JZ  
 Exp: 5/31/2023  
 Location:



Analyte	Assigned Value	Units	Raw Material Purity, %	Raw Material Lot
2,4-DIMETHYLPHENOL CAS# 105-67-9	802	µg/mL	99.9	LB88935
2,4-DICHLOROPHENOL CAS# 120-83-2	802	µg/mL	100.0	BCBZ6787
2,4,5-TRICHLOROPHENOL CAS# 95-95-4	802	µg/mL	99.9	JS00008
2,4-DINITROPHENOL CAS# 51-28-5	1806	µg/mL	75.9	MKBP5833V
2,4,6-TRICHLOROPHENOL CAS# 88-06-2	803	µg/mL	98.7	LB82983
4-CHLORO-3-METHYLPHENOL CAS# 59-50-7	801	µg/mL	99.9	JS00013
4-NITROPHENOL CAS# 100-02-7	801	µg/mL	99.9	LC10889
2-METHYL-4,6-DINITROPHENOL CAS# 534-52-1	1804	µg/mL	99.7	LC18338
PENTACHLOROPHENOL CAS# 87-86-5	803	µg/mL	98.7	MKCK8156
BENZOIC ACID CAS# 65-85-0	1805	µg/mL	99.9	LC16514

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user's location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.



# Certificate of Analysis

**J008074**

 SVOA PAH STD 2000ug/ml  
 Expires 6/30/2023  
 Prepared By Joshua Rains 8/5/2021

**Product Name:** PAH Standard

**Product Number:** US-106N-1

**Lot Issue Date:** 11-Jun-2020

**Lot Number:** 0006540449

**Expiration Date:** 30-Jun-2023

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system, and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
acenaphthene	000083-32-9	RM10879	2008 ± 10 µg/mL
acenaphthylene	000208-96-8	RM10891	2003 ± 10 µg/mL
anthracene	000120-12-7	RM14212	2006 ± 10 µg/mL
benz[a]anthracene	000056-55-3	RM16072	2006 ± 10 µg/mL
benzo[b]fluoranthene	000205-99-2	RM14571	2005 ± 10 µg/mL
benzo[k]fluoranthene	000207-08-9	RM14321	2009 ± 10 µg/mL
benzo[ghi]perylene	000191-24-2	RM15761	2008 ± 10 µg/mL
benzo[a]pyrene	000050-32-8	RM12669	2009 ± 10 µg/mL
chrysene	000218-01-9	RM12260	2009 ± 10 µg/mL
dibenz[a,h]anthracene	000053-70-3	RM06786	2009 ± 10 µg/mL
fluoranthene	000206-44-0	RM12277	2004 ± 10 µg/mL
fluorene	000086-73-7	RM09441	2009 ± 10 µg/mL
indeno[1,2,3-cd]pyrene	000193-39-5	RM14192	2009 ± 10 µg/mL
naphthalene	000091-20-3	NT00970	2008 ± 10 µg/mL
phenanthrene	000085-01-8	RM10495	2009 ± 10 µg/mL
pyrene	000129-00-0	RM03479	2008 ± 10 µg/mL

**Matrix:** methylene chloride/benzene (1:1)

# Certificate of Analysis

**Product Number:** US-106N-1

**Lot Number:** 0006540449

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

**Expiration of Certification:**

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

**Maintenance of Certification:**

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

**Sample lot approver:**



Monica Bourgeois  
QMS Representative



ISO 17034 Cert No.  
AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 2 of 2

[www.agilent.com/quality/](http://www.agilent.com/quality/)



ISO 17025 Cert  
No. AT-1937

# Certificate of Analysis

**Produced by Phenova**

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com  
Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101244

**Lot Number:** CL16062

**Description:** Benzidines Standard

**Certification Date:** November 19, 2020

**Storage:** 4 °C

**Expiration Date:** November 30, 2030

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride



Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 2.740%
3,3'-Dichlorobenzidine	91-94-1	2000	± 3.229%

**J008310**

Benzidines std @2000ug/ml  
Expires 11/30/2030  
*Prepared By Van Spohn 8/12/2021*



# Certificate of Analysis

## Produced by Phenova

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com

Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. Quality Standards: Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

<sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.

<sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.

<sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.

<sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.

<sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

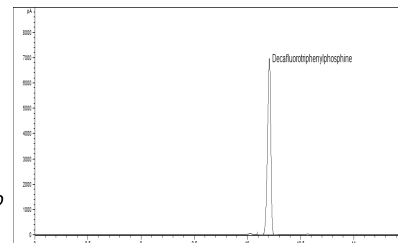


Chemical Testing Laboratory  
Certificate No. 2427.03

# Certificate of Analysis - Certified Reference Material

## Decafluorotriphenylphosphine solution

**Product no.:** 48724-U  
**Lot no.:** LRAD0628  
**Expiry Date:** October 2024  
**Manufacturing Date:** September 2021  
**Storage:** ROOM TEMPERATURE  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAD0628.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)



### Certified Values:

Analyte	Certified Value	Units	Raw Material Purity, %	Raw Material Lot
DFTPP CAS# 5074-71-5	25.2 ± 2.6	mg/mL	97.0	10220909

### ASSAY Method

#### METHOD: GC (BELLEFONTE)

Column: SPB-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness

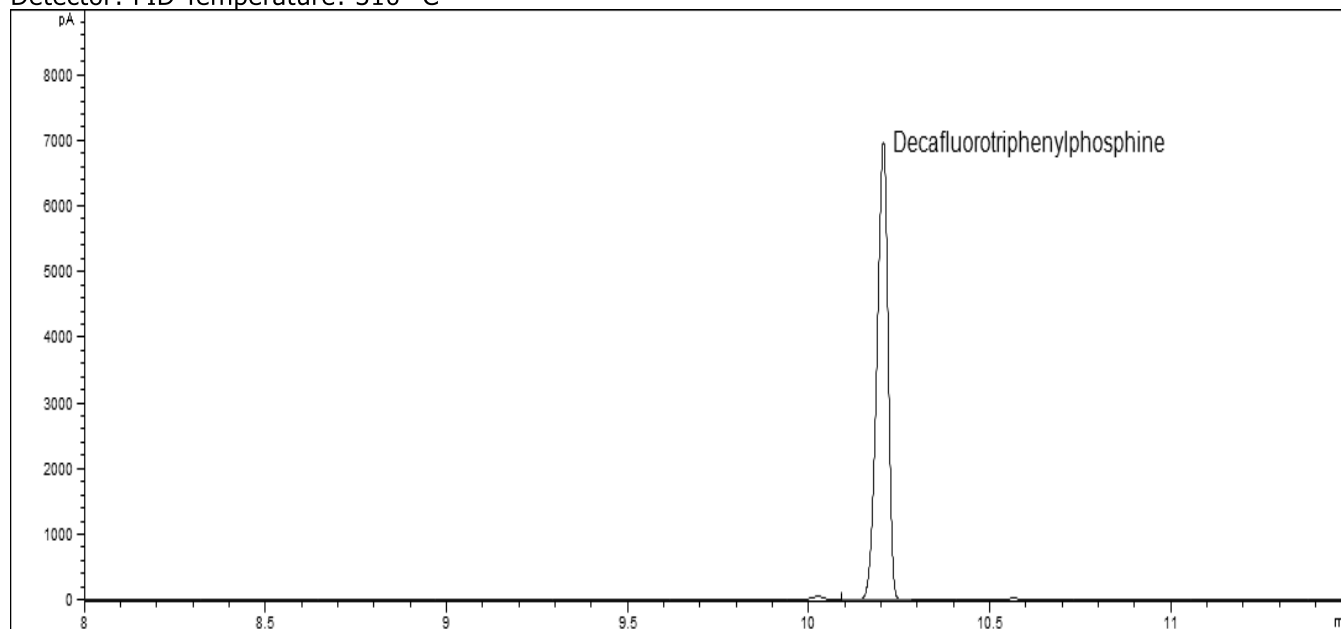
Carrier Gas: H<sub>2</sub> Flow Rate: 4.3 mL/min

Inlet Temperature: 250 °C Injection Volume: 1 µL

Injection Mode: 25:1

Temperature Program: 120 °C (Hold 0 min) @ 12 °C/min to 260 °C (Hold 0 min)

Detector: FID Temperature: 310 °C



**Elution details:**

EO	RT(MIN)	ANALYTE
1	10.206	Decafluorotriphenylphosphine

**Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Minimum sample size:** 1 µL

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

**Accreditation:** Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

**Certificate issue date:** 30-Sep-2021



Andy Ommen - QC Manager

Scott Stetler - QA Manager

**Details on metrological traceability:** This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

**Associated uncertainty:** Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**Homogeneity assessment:** Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

**Stability assessment:**

Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

**Certificate of analysis revision history:**

Certificate version	Date	Reason for version
LRAD0628.01	30-Sep-2021	Original Release Date

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# Certificate of Analysis

## BNAs - Sandy Loam 1

*Certified  
Reference  
Material*

### Description

Product ID CRM143-50G  
Lot LRAC8918  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

### Certified Values

Analyte	Units	Certified <sup>1,4</sup> Value
1,2,4-Trichlorobenzene	µg/Kg	1477 ± 181
1,3-Dichlorobenzene (m-Dichlorobenzene)	µg/Kg	1625 ± 292
1-Chloronaphthalene	µg/Kg	2809 ± 84
2,3-Dimethylphenol	µg/Kg	4552 ± 137
2,4,5-Trichlorophenol	µg/Kg	3438 ± 245
2,4,6-Trichlorophenol	µg/Kg	2194 ± 251
2,4-Dichlorophenol	µg/Kg	6991 ± 394
2,4-Dimethylphenol	µg/Kg	6357 ± 879
2,4-Dinitrophenol	µg/Kg	2922 ± 523
2,4-Dinitrotoluene (2,4-DNT)	µg/Kg	3318 ± 442
2,6-Dichlorophenol	µg/Kg	4578 ± 874
2,6-Dimethylphenol	µg/Kg	7582 ± 228
2-Chloronaphthalene	µg/Kg	2223 ± 168
2-Chlorophenol	µg/Kg	1678 ± 202
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	µg/Kg	5148 ± 685
2-Methylphenol (o-Cresol)	µg/Kg	6004 ± 573
2-Nitrophenol	µg/Kg	6456 ± 383
3,4-Dimethylphenol	µg/Kg	7185 ± 216
3+4-Methylphenol (m+p-Cresol)	µg/Kg	8033 ± 1613
4-Bromophenyl phenyl ether (BDE-3)	µg/Kg	7169 ± 310
4-Chloro-3-methylphenol	µg/Kg	2071 ± 110
4-Chlorophenyl phenylether	µg/Kg	2052 ± 113
4-Methylphenol (p-Cresol)	µg/Kg	6617 ± 1371
4-Nitrophenol	µg/Kg	6812 ± 595
Acenaphthene	µg/Kg	5489 ± 380



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## Description

Lot **LRAC8918**  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

Acenaphthylene	µg/Kg	1948 ± 240
Anthracene	µg/Kg	2866 ± 237
Benzo(a)anthracene	µg/Kg	5751 ± 552
Benzo(a)pyrene	µg/Kg	5902 ± 612
Benzo(b)fluoranthene	µg/Kg	3010 ± 409
Benzo(b+k)fluoranthene	µg/Kg	6534 ± 196
Benzo(g,h,i)perylene	µg/Kg	1380 ± 136
Benzo(k)fluoranthene	µg/Kg	2215 ± 237
Butyl benzyl phthalate	µg/Kg	3511 ± 384
Carbazole	µg/Kg	5412 ± 407
Chrysene	µg/Kg	1477 ± 72
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	µg/Kg	2905 ± 321
Dibenzo(a,h)anthracene	µg/Kg	3420 ± 302
Dibenzofuran	µg/Kg	6130 ± 253
Dimethyl phthalate	µg/Kg	4537 ± 250
Di-n-butyl phthalate	µg/Kg	1721 ± 154
Di-n-octyl phthalate	µg/Kg	2744 ± 288
Fluoranthene	µg/Kg	2497 ± 222
Fluorene	µg/Kg	3724 ± 222
Hexachlorobutadiene	µg/Kg	1877 ± 245
Indeno(1,2,3-cd) pyrene	µg/Kg	3914 ± 409
Isophorone	µg/Kg	1615 ± 170
Naphthalene	µg/Kg	4458 ± 480
Nitrobenzene	µg/Kg	3539 ± 266
n-Nitrosodimethylamine	µg/Kg	1580 ± 402
n-Nitrosodiphenylamine	µg/Kg	2854 ± 379
Pentachlorophenol	µg/Kg	3411 ± 358
Phenanthrene	µg/Kg	5052 ± 385
Phenol	µg/Kg	2660 ± 184
Pyrene	µg/Kg	2964 ± 256
Pyridine	µg/Kg	1008 ± 30

## Informational Values



# Certificate of Analysis

## BNAs - Sandy Loam 1

*Certified  
Reference  
Material*

### Description

**Product ID** CRM143-50G  
**Lot** LRAC8918  
**Expiration Date** January 2024  
**Manufacturing Date** January 2021  
**Storage Conditions** Refrigerate  
**Solvent/Matrix** SOIL

Analyte	Units	Suggested Acceptance Windows	Standard Deviation
1,2,4-Trichlorobenzene	µg/Kg	148 to 2853	459
1,3-Dichlorobenzene (m-Dichlorobenzene)	µg/Kg	163 to 3440	605
1-Chloronaphthalene	µg/Kg	1123 to 4494	562
2,3-Dimethylphenol	µg/Kg	1821 to 7284	910
2,4,5-Trichlorophenol	µg/Kg	1003 to 5872	811
2,4,6-Trichlorophenol	µg/Kg	640 to 3748	518
2,4-Dichlorophenol	µg/Kg	2391 to 11591	1533
2,4-Dimethylphenol	µg/Kg	0.00 to 13959	2534
2,4-Dinitrophenol	µg/Kg	1169 to 4675	584
2,4-Dinitrotoluene (2,4-DNT)	µg/Kg	1248 to 5388	690
2,6-Dichlorophenol	µg/Kg	1831 to 7324	916
2,6-Dimethylphenol	µg/Kg	3033 to 12132	1516
2-Chloronaphthalene	µg/Kg	748 to 3699	492
2-Chlorophenol	µg/Kg	415 to 2942	421
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	µg/Kg	0.00 to 10347	1733
2-Methylphenol (o-Cresol)	µg/Kg	1306 to 10702	1566
2-Nitrophenol	µg/Kg	1534 to 11379	1641
3,4-Dimethylphenol	µg/Kg	2874 to 11495	1437
3+4-Methylphenol (m+p-Cresol)	µg/Kg	4054 to 16218	2027
4-Bromophenyl phenyl ether (BDE-3)	µg/Kg	2901 to 11437	1423
4-Chloro-3-methylphenol	µg/Kg	677 to 3464	464
4-Chlorophenyl phenylether	µg/Kg	756 to 3348	432
4-Methylphenol (p-Cresol)	µg/Kg	2647 to 10587	1323
4-Nitrophenol	µg/Kg	681 to 14762	2650
Acenaphthene	µg/Kg	2243 to 8736	1082
Acenaphthylene	µg/Kg	712 to 3183	412
Anthracene	µg/Kg	1218 to 4515	550
Benzo(a)anthracene	µg/Kg	2806 to 8696	982
Benzo(a)pyrene	µg/Kg	2512 to 9292	1130
Benzo(b)fluoranthene	µg/Kg	1197 to 4822	604
Benzo(b+k)fluoranthene	µg/Kg	2614 to 10454	1307



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## Description

Lot **LRAC8918**  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

Benzo(g,h,i)perylene	µg/Kg	489 to 2271	297
Benzo(k)fluoranthene	µg/Kg	892 to 3537	441
Butyl benzyl phthalate	µg/Kg	1255 to 5766	752
Carbazole	µg/Kg	2032 to 8792	1127
Chrysene	µg/Kg	669 to 2284	269
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	µg/Kg	765 to 5045	713
Dibenzo(a,h)anthracene	µg/Kg	1257 to 5583	721
Dibenzofuran	µg/Kg	2766 to 9493	1121
Dimethyl phthalate	µg/Kg	1842 to 7231	898
Di-n-butyl phthalate	µg/Kg	495 to 2947	409
Di-n-octyl phthalate	µg/Kg	690 to 4798	685
Fluoranthene	µg/Kg	984 to 4009	504
Fluorene	µg/Kg	1638 to 5810	695
Hexachlorobutadiene	µg/Kg	425 to 3329	484
Indeno(1,2,3-cd) pyrene	µg/Kg	870 to 6957	1015
Isophorone	µg/Kg	437 to 2792	392
Naphthalene	µg/Kg	1131 to 7784	1109
Nitrobenzene	µg/Kg	1024 to 6054	838
n-Nitrosodimethylamine	µg/Kg	632 to 2528	316
n-Nitrosodiphenylamine	µg/Kg	1142 to 4567	571
Pentachlorophenol	µg/Kg	341 to 7037	1209
Phenanthrene	µg/Kg	2307 to 7798	915
Phenol	µg/Kg	681 to 4639	660
Pyrene	µg/Kg	1118 to 4810	615
Pyridine	µg/Kg	403 to 1613	202

### Additional Information:

#### DESCRIPTION

The organic sample is a soil containing extractable BNAs for analysis by 8100, 8270, 8310 or equivalent methods.

This product consist of a 5 vials each containing 10g of soil for analysis of PAHs. Each vial is identical and has been tested how homogeneity. Only one vial is need for test the remaining vials are to be used for multiple methods or routine testing.

The soil has been sterilized to minimize degradation of the sample.

The sample has been sized to 100 mesh.

Required storage condition is 4°C.

The sample has been intentionally prepared with an apparent headspace.

#### STORAGE

The sample should be stored at 4°C. It has been determined to be stable for the duration of the expiration date.

After sub-sampling replace cap securely and store remaining sample at 4°C.

The shelf life of the product was determined by historic stability of similar CRM's. The expiration date may be extended based on stock and popularity upon successful stability testing by a 17025 accredited laboratory.



# Certificate of Analysis

## BNAs - Sandy Loam 1

*Certified  
Reference  
Material*

### Description

**Product ID** CRM143-50G  
**Lot** LRAC8918  
**Expiration Date** January 2024  
**Manufacturing Date** January 2021  
**Storage Conditions** Refrigerate  
**Solvent/Matrix** SOIL

Stability and shelf life after opening must be determined by the user, taking into account sampling frequency/volume and all local conditions.

### SAMPLE PREPARATION

Extract the complete contents of a single vial. Transfer entire contents of one vial to extraction vessel. Rinse vial and cap with extraction solvent.

Assume a 10g sample size for all calculations.

Note: Sample extracts and calibration solutions should be in the same solvent.

Report all results on a wet weight basis, do not correct for moisture.

NOTE: For method 8100 and using a packed column gas chromatographic method or cannot adequately resolve the following may coelute in four pairs of compounds: anthracene and phenanthrene; chrysene and benzo(a)anthracene; benzo(b)fluoranthene and benzo(k)fluoranthene; and dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene.

### SCOPE AND APPLICATION

The BNAs in Soil Certified Reference Material (CRM) consists of 5 10mL VOA vials, with a Teflon lined closures containing approximately 10 grams of soil, fortified with BNAs. Being a natural matrix waste sample the analyst is challenged by the same preparation problems, analytical interferences, etc. as is typical for similar matrices received by the laboratory for analysis.



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## Description

Lot **LRAC8918**  
Expiration Date January 2024  
Manufacturing Date January 2021  
Storage Conditions Refrigerate  
Solvent/Matrix SOIL

**1 Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.  
**4 Ucrm - Uncertainty** values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. K=2 unless specified. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**k:** Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Assume 2.0 for a **Confidence interval = 95%**

**6 Analytical Value-** For QC verification of the certified value only- not to be used in calculations. Represents the analytical data obtained by comparison to a standard as analyzed by the method described in the CoA or another acceptable method. The result may differ from the certified value and UCRM based on method uncertainty as well as the uncertainty associated with the standard used for comparison.

**Traceability:** The standard was manufactured under an ISO/IEC 17025:2017 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Homogeneity:** Homogeneity was assessed in accordance with ISO 17034:2016. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

Expiration is at end of month given on certificate and label.

MSDS reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH ISO/IEC 17025:2017 (ANAB Cert AT-1467) and ISO 17034:2016 (ANAB Cert AR-1470).



Andy Ommen - QC Manager



Mark Pooler - QA Supervisor

**Certification Date** January 05, 2021  
**Version** 0-152021





# Certificate of Analysis

**Product Name:** Toxic Substances Standard

**Product Number:** US-103N-1

**Lot Issue Date:** 25-May-2021

**Lot Number:** 0006609664

**Expiration Date:** 30-Jun-2024

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
benzoic acid	000065-85-0	RM01884	2005 ± 10 µg/mL
o-cresol	000095-48-7	RM12877	2005 ± 10 µg/mL
p-cresol	000106-44-5	RM01988	2005 ± 10 µg/mL
2,4,5-trichlorophenol	000095-95-4	NT00344	2004 ± 10 µg/mL

**Matrix:** methylene chloride (dichloromethane)

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

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*5/11/22*

**K004539**

toxic sub mix#1

Solvent / Lot: methylene chloride

Prep: 5/11/2022 by JZ

Exp: 6/30/2024

Location:



ISO 17034 Cert  
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

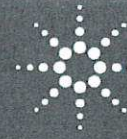
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[www.agilent.com/quality/](http://www.agilent.com/quality/)  
CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937

ISO 17034



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## Reference Material Certificate

Product Name: Phenols Standard

Lot Number: 0006648297

Product Number: US-107N-1

Lot Issue Date: 17-Nov-2021

Storage Conditions: Store at Room Temperature (15° to 30°C).

Expiration Date: 31-Dec-2024

Component Name	CERTIFIED VALUES			CAS#	Analyte Lot
	Concentration	Expanded Uncertainty			
4-chloro-3-methylphenol	2006	± 10 µg/mL		000059-50-7	RM01885
2-chlorophenol	2007	± 10 µg/mL		000095-57-8	RM01871
2,4-dichlorophenol	2005	± 10 µg/mL		000120-83-2	RM13878
2,4-dimethylphenol	2006	± 10 µg/mL		000105-67-9	RM13009
2,4-dinitrophenol	2006	± 10 µg/mL		000051-28-5	RM02112
2-methyl-4,6-dinitrophenol	2005	± 10 µg/mL		000534-52-1	RM02292
2-nitrophenol	2007	± 10 µg/mL		000088-75-5	RM13445
4-nitrophenol	2006	± 10 µg/mL		000100-02-7	RM03752
pentachlorophenol	2006	± 10 µg/mL		000087-86-5	RM02474
phenol	2006	± 10 µg/mL		000108-95-2	RM11471
2,4,6-trichlorophenol	2006	± 10 µg/mL		000088-06-2	RM18096

Matrix: methylene chloride (dichloromethane)

**Description:**

This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Safety:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this analytical reference material.

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Page: 1 of 2

CSD-QA-015.1

**K004540**

phenols mix

Solvent / Lot: methylene chloride

Prep: 5/11/2022 by JZ

Exp: 12/31/2024

Location:



ISO 17034



## Reference Material Certificate

Product Name: PAH Standard

Lot Number: 0006627349

Product Number: US-106N-1

Lot Issue Date: 17-Sep-2021

Storage Conditions: Store at Room Temperature (15° to 30°C).

Expiration Date: 31-Oct-2024

Component Name	CERTIFIED VALUES			CAS#	Analyte Lot
	Concentration	Expanded Uncertainty			
acenaphthene	2007	± 10 µg/mL		000083-32-9	RM10879
acenaphthylene	2004	± 10 µg/mL		000208-96-8	RM10891
anthracene	2006	± 10 µg/mL		000120-12-7	RM14212
benz[a]anthracene	2006	± 10 µg/mL		000056-55-3	RM16072
benzo[b]fluoranthene	2006	± 10 µg/mL		000205-99-2	RM14571
benzo[k]fluoranthene	2006	± 10 µg/mL		000207-08-9	RM18376
benzo[ghi]perylene	2006	± 10 µg/mL		000191-24-2	RM15761
benzo[a]pyrene	2006	± 10 µg/mL		000050-32-8	RM17573
chrysene	2007	± 10 µg/mL		000218-01-9	RM13771
dibenz[a,h]anthracene	2006	± 10 µg/mL		000053-70-3	RM06786
fluoranthene	2006	± 10 µg/mL		000206-44-0	RM12277
fluorene	2006	± 10 µg/mL		000086-73-7	RM09441
indeno[1,2,3-cd]pyrene	2006	± 10 µg/mL		000193-39-5	RM14192
naphthalene	2007	± 10 µg/mL		000091-20-3	RM10445
phenanthrene	2005	± 10 µg/mL		000085-01-8	RM10495
pyrene	2005	± 10 µg/mL		000129-00-0	RM16126

Matrix: methylene chloride/benzene (1:1)

**Description:**

This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**K004541**

SVOA PAH STD 2000ug/ml

Solvent / Lot: DCM/BENZENE

Prep: 5/11/2022 by JZ

Exp: 10/31/2024

Location: Fridge 19

Page: 1 of 2

CSD-QA-015.1



Reference Materials Producer  
Cert #2495.01



## Certificate of Analysis



Chemical Testing  
Cert #2495.02

**Catalog Number:** ECS-A-030 **Lot No.** AA210126005  
**Description:** Base/Neutrals Mix 1  
**Matrix:** Methylene Chloride **Manufactured Date:** 1-26-2021  
**Expiration Date:** 1-26-2024

This SPEXOrganics® Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for organic chromatography instrumentation such as GC, GC-MS, LC, and LC-MS. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

### Certified Compounds:

<u>Compound</u>	<u>CAS #</u>	<u>Labeled</u>	<u>Purity</u>	<u>Certified†</u>	<u>Uncertainty</u>
1,2,4-Trichlorobenzene	120-82-1	2000 µg/mL	99%	2010 µg/mL	± 50 µg/mL
1,2-Dichlorobenzene	95-50-1	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
1,3-Dichlorobenzene	541-73-1	2000 µg/mL	98%	2021 µg/mL	± 51 µg/mL
1,4-Dichlorobenzene	106-46-7	2000 µg/mL	99%	2012 µg/mL	± 50 µg/mL
2,4-Dinitrotoluene	121-14-2	2000 µg/mL	97%	2006 µg/mL	± 50 µg/mL
2,6-Dinitrotoluene	606-20-2	2000 µg/mL	99.6%	2012 µg/mL	± 50 µg/mL
2-Chloronaphthalene	91-58-7	2000 µg/mL	98%	2004 µg/mL	± 50 µg/mL
4-Bromodiphenyl ether	101-55-3	2000 µg/mL	99%	2022 µg/mL	± 51 µg/mL
4-Chlorophenyl-phenyl ether	7005-72-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Azobenzene	103-33-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Bis(2-chloro-1-methylethyl) ether	108-60-1	2000 µg/mL	98.9%	2010 µg/mL	± 50 µg/mL
bis(2-Chloroethoxy)methane	111-91-1	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
bis(2-Chloroethyl)ether	111-44-4	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
Bis(2-Ethylhexyl)phthalate	117-81-7	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Butylbenzyl phthalate	85-68-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Carbazole	86-74-8	2000 µg/mL	95%	2009 µg/mL	± 50 µg/mL
Di-n-butyl phthalate	84-74-2	2000 µg/mL	99%	2020 µg/mL	± 50 µg/mL
Di-n-octyl phthalate	117-84-0	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Diethyl phthalate	84-66-2	2000 µg/mL	99.5%	2002 µg/mL	± 50 µg/mL
Dimethyl phthalate	131-11-3	2000 µg/mL	99%	2006 µg/mL	± 50 µg/mL
Hexachlorobenzene	118-74-1	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachlorobutadiene	87-68-3	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
Hexachlorocyclopentadiene	77-47-4	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachloroethane	67-72-1	2000 µg/mL	98%	2003 µg/mL	± 50 µg/mL
Isophorone	78-59-1	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
N-Nitrosodi-n-propylamine	621-64-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
N-Nitrosodiphenylamine	86-30-6	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
Nitrobenzene	98-95-3	2000 µg/mL	99%	2001 µg/mL	± 50 µg/mL
Pyridine	110-86-1	2000 µg/mL	99%	2004 µg/mL	± 50 µg/mL
N-Nitrosodimethylamine	62-75-9	2000 µg/mL	97%	2000 µg/mL	± 50 µg/mL

## Certificate of Reference Material

**Catalog Number:** ECS-A-030 **Lot No.** AA210126005  
**Description:** Base/Neutrals Mix 1  
**Matrix:** Methylene Chloride **Manufactured Date:** 1-26-2021  
**Expiration Date:** 1-26-2024

### Final Solution Verification:

Final solution integrity verified by Gas Chromatography/Mass Spectrometry. The mass spectrum of each compound was confirmed against the NIST mass spectral database.

† Certified concentration based on gravimetric weights and corrected for the purity of the compound(s) used to prepare the standard. Analytical balance calibration is verified daily with C1 weight set #23-190006 which is registered with Atlantic Scale, and traceable to NIST and NJ Division of Weights and Measures.

This CRM is guaranteed stable and accurate to within the uncertainty listed for the certified value. This includes uncertainty components due to preparation, homogeneity, short term and long term stability. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further information, contact the Sales Support Department at crmsales@spexcsp.com.

Date of Certification: 1-26-2021

Certifying Officer: Shannon Mave

# Report of Certification

**Catalog Number:** ECS-A-030 **Lot No.** AA210126005  
**Description:** Base/Neutrals Mix 1  
**Matrix:** Methylene Chloride **Manufactured Date:** 1-26-2021  
**Expiration Date:** 1-26-2024

**This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 Quality System consistent with the following standards:**

- ISO 9001:2008: Quality management systems - Requirements - Certified by UL-DQS
- ISO 17025:2005: General Requirements for the Competence of Testing and Calibration Laboratories - Accredited by A2LA
- ISO Guide 34:2009: General Requirements for the Competence of Reference Material Producers - Accredited by A2LA
- ISO Guide 31:2000: Reference Materials - Contents of Certificates and Labels
- ISO Guide 35:2006: Reference Materials - General and statistical principals for certification
- Guide to the Expression of Uncertainty in Measurement 1997
- EURACHEM/CITAC Guide: Qualifying Uncertainty in Analytical Measurements - Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12-2000: Guidelines for the requirements for the competence of reference material producers
- ISO/REMCO N280

## **Storage Requirements:**

To ensure the stability of the product once it arrives in your laboratory, please store this product in a refrigerator (2°C to 8°C). Note: Shipping conditions may differ from storage conditions. The EXPIRATION DATE is calculated from the MANUFACTURED DATE using our stability data and is applicable only if the product is unopened and stored under the prescribed conditions.

## **Instructions for Use:**

Let material come to room temperature before use. Check for precipitate and if necessary sonicate for one minute. If compounds do not dissolve after one minute then sonicate further until the product is dissolved. A clear appearance is acceptable. The minimum recommended amount that should be removed from this vial is 5 µL with a 25 µL gas tight syringe. All solutions should be thoroughly mixed, by shaking, prior to use. All surfaces that come in contact with the solution must be thoroughly cleaned prior to use. Dilutions should be performed only with Class A volumetric glassware.

## **Material Source:**

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For assistance, please contact sales support at crmsales@spexcsp.com.

## **Method of Preparation:**

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, and analytical instrumentation have been qualified prior to use. The highest purity solvents and Class A / calibrated volumetrics have been used in all preparations.

## **Homogeneity:**

The homogeneity of this CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4300-HOMOGEN-1A. This is consistent with the intended use of this CRM. The Degree of Homogeneity, as expressed as maximum between-bottle variation, is 1.2%

## **Statistical Estimator and Confidence Limits:**

The Certified value 'X' as listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$  where X=certified value, U=expanded uncertainty, x=property value
- $U = k u_c$  where k=2 is the coverage factor at the 95% confidence level
- $u_c =$  combined standard uncertainty obtained by combining the individual compound standard uncertainty components  $u_i$ , where  $u_c = \sqrt{\sum u_i^2}$

## **Legal Notice:**

SPEX CertiPrep Certified Reference Materials are not for any cosmetic, drug, or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep be liable for any loss of profits or any incidental, special, or consequential damages.

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Phone: 1-732-549-7144 • Fax 1-732-603-9647







Reference Materials Producer  
Cert #2495.01



## Certificate of Analysis



Chemical Testing  
Cert #2495.02

**Catalog Number:** ECS-A-030

**Lot No.** AA210126005

**Description:** Base/Neutrals Mix 1

**Manufactured Date:** 1-26-2021

**Matrix:** Methylene Chloride

**Expiration Date:** 1-26-2024

This SPEXOrganics® Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for organic chromatography instrumentation such as GC, GC-MS, LC, and LC-MS. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

### Certified Compounds:

<u>Compound</u>	<u>CAS #</u>	<u>Labeled</u>	<u>Purity</u>	<u>Certified†</u>	<u>Uncertainty</u>
1,2,4-Trichlorobenzene	120-82-1	2000 µg/mL	99%	2010 µg/mL	± 50 µg/mL
1,2-Dichlorobenzene	95-50-1	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
1,3-Dichlorobenzene	541-73-1	2000 µg/mL	98%	2021 µg/mL	± 51 µg/mL
1,4-Dichlorobenzene	106-46-7	2000 µg/mL	99%	2012 µg/mL	± 50 µg/mL
2,4-Dinitrotoluene	121-14-2	2000 µg/mL	97%	2006 µg/mL	± 50 µg/mL
2,6-Dinitrotoluene	606-20-2	2000 µg/mL	99.6%	2012 µg/mL	± 50 µg/mL
2-Chloronaphthalene	91-58-7	2000 µg/mL	98%	2004 µg/mL	± 50 µg/mL
4-Bromodiphenyl ether	101-55-3	2000 µg/mL	99%	2022 µg/mL	± 51 µg/mL
4-Chlorophenyl-phenyl ether	7005-72-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Azobenzene	103-33-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Bis(2-chloro-1-methylethyl) ether	108-60-1	2000 µg/mL	98.9%	2010 µg/mL	± 50 µg/mL
bis(2-Chloroethoxy)methane	111-91-1	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
bis(2-Chloroethyl)ether	111-44-4	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
Bis(2-Ethylhexyl)phthalate	117-81-7	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Butylbenzyl phthalate	85-68-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Carbazole	86-74-8	2000 µg/mL	95%	2009 µg/mL	± 50 µg/mL
Di-n-butyl phthalate	84-74-2	2000 µg/mL	99%	2020 µg/mL	± 50 µg/mL
Di-n-octyl phthalate	117-84-0	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Diethyl phthalate	84-66-2	2000 µg/mL	99.5%	2002 µg/mL	± 50 µg/mL
Dimethyl phthalate	131-11-3	2000 µg/mL	99%	2006 µg/mL	± 50 µg/mL
Hexachlorobenzene	118-74-1	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachlorobutadiene	87-68-3	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
Hexachlorocyclopentadiene	77-47-4	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachloroethane	67-72-1	2000 µg/mL	98%	2003 µg/mL	± 50 µg/mL
Isophorone	78-59-1	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
N-Nitrosodi-n-propylamine	621-64-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
N-Nitrosodiphenylamine	86-30-6	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
Nitrobenzene	98-95-3	2000 µg/mL	99%	2001 µg/mL	± 50 µg/mL
Pyridine	110-86-1	2000 µg/mL	99%	2004 µg/mL	± 50 µg/mL
N-Nitrosodimethylamine	62-75-9	2000 µg/mL	97%	2000 µg/mL	± 50 µg/mL

K004542

## Certificate of Reference Material

**Catalog Number:** ECS-A-030

**Lot No.** AA210126005

**Description:** Base/Neutrals Mix 1

**Matrix:** Methylene Chloride

**Manufactured Date:** 1-26-2021

**Expiration Date:** 1-26-2024

### **Final Solution Verification:**

Final solution integrity verified by Gas Chromatography/Mass Spectrometry. The mass spectrum of each compound was confirmed against the NIST mass spectral database.

† Certified concentration based on gravimetric weights and corrected for the purity of the compound(s) used to prepare the standard. Analytical balance calibration is verified daily with C1 weight set #23-190006 which is registered with Atlantic Scale, and traceable to NIST and NJ Division of Weights and Measures.

This CRM is guaranteed stable and accurate to within the uncertainty listed for the certified value. This includes uncertainty components due to preparation, homogeneity, short term and long term stability. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further information, contact the Sales Support Department at crmsales@spexcsp.com.

Date of Certification: 1-26-2021

Certifying Officer: Shannon Moore

# Report of Certification

**Catalog Number:** ECS-A-030

**Lot No.** AA210126005

**Description:** Base/Neutrals Mix 1

**Matrix:** Methylene Chloride

**Manufactured Date:** 1-26-2021

**Expiration Date:** 1-26-2024

**This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 Quality System consistent with the following standards:**

- ISO 9001:2008: Quality management systems - Requirements - Certified by UL-DQS
- ISO 17025:2005: General Requirements for the Competence of Testing and Calibration Laboratories - Accredited by A2LA
- ISO Guide 34:2009: General Requirements for the Competence of Reference Material Producers - Accredited by A2LA
- ISO Guide 31:2000: Reference Materials - Contents of Certificates and Labels
- ISO Guide 35:2006: Reference Materials - General and statistical principals for certification
- Guide to the Expression of Uncertainty in Measurement 1997
- EURACHEM/CITAC Guide: Qualifying Uncertainty in Analytical Measurements - Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12-2000: Guidelines for the requirements for the competence of reference material producers
- ISO/REMCO N280

## **Storage Requirements:**

To ensure the stability of the product once it arrives in your laboratory, please store this product in a refrigerator (2°C to 8°C). Note: Shipping conditions may differ from storage conditions. The EXPIRATION DATE is calculated from the MANUFACTURED DATE using our stability data and is applicable only if the product is unopened and stored under the prescribed conditions.

## **Instructions for Use:**

Let material come to room temperature before use. Check for precipitate and if necessary sonicate for one minute. If compounds do not dissolve after one minute then sonicate further until the product is dissolved. A clear appearance is acceptable. The minimum recommended amount that should be removed from this vial is 5µL with a 25µL gas tight syringe. All solutions should be thoroughly mixed, by shaking, prior to use. All surfaces that come in contact with the solution must be thoroughly cleaned prior to use. Dilutions should be performed only with Class A volumetric glassware.

## **Material Source:**

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For assistance, please contact sales support at crmsales@spexcsp.com.

## **Method of Preparation:**

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, and analytical instrumentation have been qualified prior to use. The highest purity solvents and Class A / calibrated volumetrics have been used in all preparations.

## **Homogeneity:**

The homogeneity of this CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4300-HOMOGEN-1A. This is consistent with the intended use of this CRM. The Degree of Homogeneity, as expressed as maximum between-bottle variation, is 1.2%

## **Statistical Estimator and Confidence Limits:**

The Certified value 'X' as listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$  where X=certified value, U=expanded uncertainty, x=property value
- $U = k u_c$  where k=2 is the coverage factor at the 95% confidence level
- $u_c$  = combined standard uncertainty obtained by combining the individual compound standard uncertainty components  $u_i$ , where  $u_c = \sqrt{\sum u_i^2}$

## **Legal Notice:**

SPEX CertiPrep Certified Reference Materials are not for any cosmetic, drug, or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep be liable for any loss of profits or any incidental, special, or consequential damages.

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# Certificate of Analysis

**Product Name:** 1-Methylnaphthalene Standard

**Product Number:** EPA-1225-1

**Lot Issue Date:** 19-Jul-2021

**Lot Number:** 0006624769

**Expiration Date:** 31-Jul-2023

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
1-methylnaphthalene	000090-12-0	RM07712	999.3 ± 5.0 µg/mL

**Matrix:** methanol (methyl alcohol)

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

**Expiration of Certification:**

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

**Maintenance of Certification:**

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

**K004543**

1-Methylnaphthalene  
Solvent / Lot: MEOH  
Prep: 5/11/2022 by JZ  
Exp: 7/31/2023  
Location:

*JZ*  
*5/11/22*

**Sample lot approver:**

*Monica Bourgeois*  
Monica Bourgeois  
QMS Representative



ISO 17034 Cert  
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 1 of 1

[www.agilent.com/quality/](http://www.agilent.com/quality/)  
CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937





# Certificate of Analysis

**Product Name:** Toxic Substances Standard

**Product Number:** US-104N-1

**Lot Issue Date:** 02-Jul-2021

**Lot Number:** 0006620643

**Expiration Date:** 31-Jul-2023

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
aniline	000062-53-3	RM12853	2005 ± 10 µg/mL
benzyl alcohol	000100-51-6	RM10547	2004 ± 10 µg/mL
4-chloroaniline	000106-47-8	RM01886	2002 ± 10 µg/mL
dibenzofuran	000132-64-9	RM02077	2002 ± 10 µg/mL
2-methylnaphthalene	000091-57-6	RM01258	2006 ± 10 µg/mL
2-nitroaniline	000088-74-4	RM02402	2003 ± 10 µg/mL
3-nitroaniline	000099-09-2	RM02424	2003 ± 10 µg/mL
4-nitroaniline	000100-01-6	RM02425	2003 ± 10 µg/mL

**Matrix:** methylene chloride (dichloromethane)

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**K004544**

toxic sub mix#2

Solvent / Lot: methylene chloride

Prep: 5/11/2022 by JZ

Exp: 7/31/2023

Location:

*JZ* 05/11/22



ISO 17034 Cert  
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 1 of 2

[www.agilent.com/quality/](http://www.agilent.com/quality/)  
CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31493 Lot No.: A0181243
Description: CLP 04.1 BNA Surrogate Mix
CLP 04.1 BNA Surrogate Mix 1000-1500 µg/mL, Methylene Chloride, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: October 31, 2025 Storage: 10°C or colder
Handling: Sonicate prior to use. Ship: Ambient

Handwritten signature and date: 05/11/22

K004545
CLP 04.1 BNA SURR MIX
Solvent / Lot: AO175316
Prep: 5/11/2022 by JZ
Exp: 10/20/2025
Location:

Table with 7 columns: Elution Order, Compound, CAS #, Purity, Weight, Concentration, and Method. Contains 7 rows of data for various compounds like 2-Fluorophenol, Phenol-d6, 2-Chlorophenol-d4, 1,2-Dichlorobenzene-d4, Nitrobenzene-d5, 2-Fluorobiphenyl, and 2,4,6-Tribromophenol.

# Certificate of Analysis

**Produced by Phenova**

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com  
Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101246

**Lot Number:** CL17953

**Description:** Benzoic Acid

**Certification Date:** January 31, 2022

**Storage:** 4 °C

**Expiration Date:** January 31, 2032

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride

*Andrea Gill*

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzoic acid	65-85-0	2000	± 2.714%

**K004603**

Benzoic Acid @2000ug/ml

Solvent / Lot: N/A

Prep: 5/13/2022 by JZ

Exp: 1/31/2032

Location: GC

*5/13/22*



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03



# Certificate of Analysis

**Produced by Phenova**

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com  
Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101244

**Lot Number:** CL17662

**Description:** Benzidines Standard

**Certification Date:** December 2, 2021

**Storage:** 4 °C

**Expiration Date:** November 30, 2031

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride

*Andrea Gill*

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 0.211%
3,3'-Dichlorobenzidine	91-94-1	2000	± 1.305%

**K004604**

Benzidines std @2000ug/ml  
Solvent / Lot: Mecl2  
Prep: 5/13/2022 by JZ  
Exp: 11/30/2031  
Location: GC

*JZ 5/13/22*



Reference Material Producer  
Certificate No. 2427.02



phenova<sup>®</sup>  
Certified Reference Materials  
A Phenomenex  
Company

Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



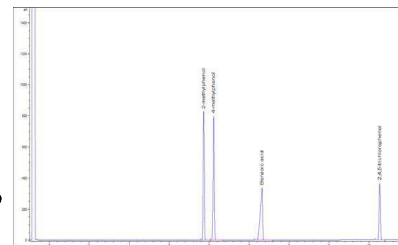
Chemical Testing Laboratory  
Certificate No. 2427.03



# Certificate of Analysis - Certified Reference Material

## EPA TCL Hazardous Substances Mix 1

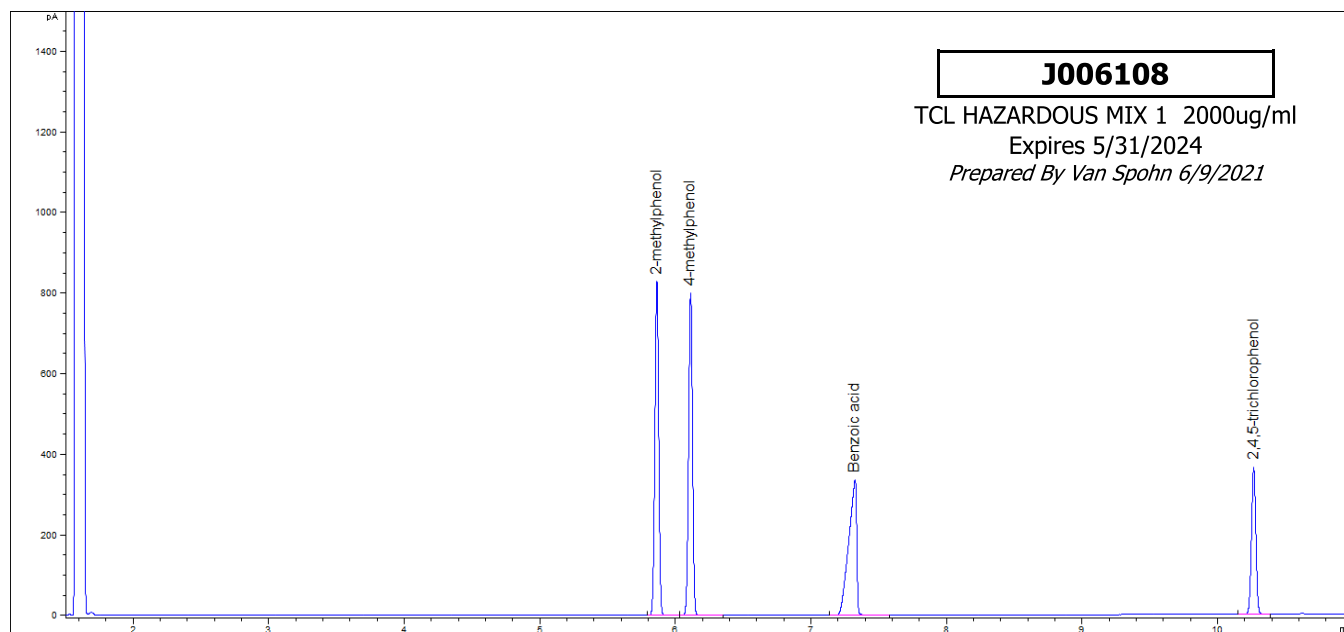
**Product no.:** 48907  
**Lot no.:** LRAC9610  
**Expiry Date:** May 2024  
**Manufacturing Date:** May 2021  
**Storage:** Refrigerate  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAC9610.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)



### Certified Values:

Analyte	Certified Value	Units	Raw Material Purity, %	Elution order	Raw Material Lot
2-METHYLPHENOL CAS# 95-48-7	2004 ± 9	µg/mL	99.0	1	G1735A
4-METHYLPHENOL CAS# 106-44-5	2004 ± 13	µg/mL	98.9	2	06921MG
BENZOIC ACID CAS# 65-85-0	2012 ± 6	µg/mL	99.9	3	LC16514
2,4,5-TRICHLOROPHENOL CAS# 95-95-4	2003 ± 6	µg/mL	99.9	4	JS00008

### Informational Values:



### Additional Information:

**Analytical Method Parameters:**  
 Column: Equity-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness (Column #98)  
 Carrier Gas: H<sub>2</sub>, Flow: 4.5 mL/min  
 Inlet Temperature: 170 °C, Injection Volume: 1 µL  
 Injection Mode: Split, Split Ratio: 20:1



Temperature Program: 80 °C @ 10 °C/min to 190 °C (Hold 5 min)  
Detector: FID  
Detector Temperature: 310 °C

**Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

**Accreditation:** Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

**Certificate issue date:** 20-May-2021



Handwritten signature of Andy Ommen in black ink.

Andy Ommen - QC Manager

Handwritten signature of Mark Pooler in black ink.

Mark Pooler - QA Supervisor

**Details on metrological traceability:** This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

**Associated uncertainty:** Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**Homogeneity assessment:** Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

**Stability assessment:**

Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

**Certificate of analysis revision history:**

Certificate version	Date	Reason for version
LRAC9610.01	20-May-2021	Original Release Date

**Disclaimer:** The purchaser is required to determine the suitability of this product for any particular application. Sigma-Aldrich RTC makes no warranty of any kind, express or implied, other than its products meet all quality control standards set by Sigma-Aldrich RTC. We do not guarantee that the product can be used for any particular application.

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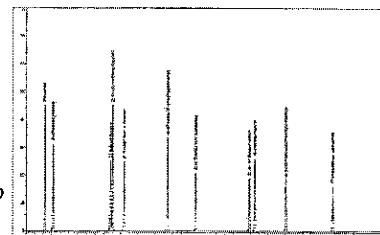
The life science business of Merck KGaA, Darmstadt, Germany  
operates as MilliporeSigma in the US and Canada.



# Certificate of Analysis - Certified Reference Material

## EPA TCL Phenols Mix

**Product no.:** 48904  
**Lot no.:** LRAD0139  
**Expiry Date:** July 2024  
**Manufacturing Date:** July 2021  
**Storage:** REFRIGERATE  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAD0139.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)



### Certified Values:

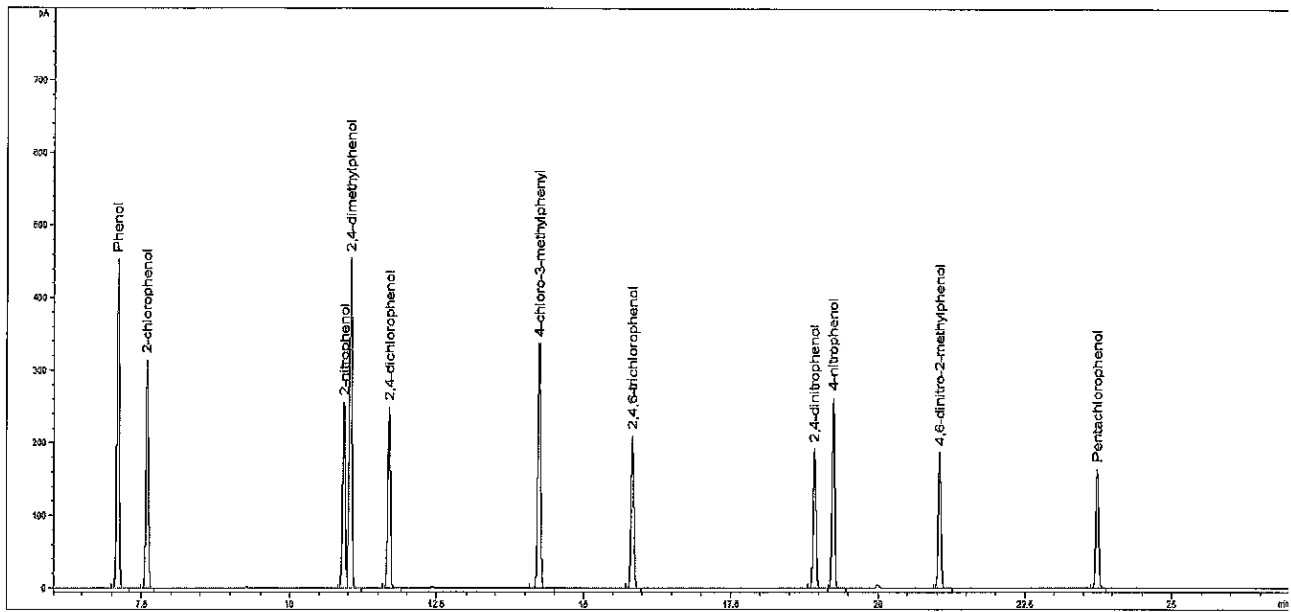
Analyte	Certified Value	Units	Raw Material Purity, %	Raw Material Lot
2-CHLOROPHENOL CAS# 95-57-8	2001 ± 25	µg/mL	99.9	STBG3033V
2-NITROPHENOL CAS# 88-75-5	1999 ± 18	µg/mL	99.3	15905BB
2,4-DIMETHYLPHENOL CAS# 105-67-9	2000 ± 14	µg/mL	99.2	05421CO
2,4-DICHLOROPHENOL CAS# 120-83-2	2000 ± 17	µg/mL	99.5	03221TN
4-CHLORO-3-METHYLPHENOL CAS# 59-50-7	2000 ± 5	µg/mL	99.9	JS00013
2,4,6-TRICHLOROPHENOL CAS# 88-06-2	2002 ± 5	µg/mL	99.5	04212PS
2,4-DINITROPHENOL CAS# 51-28-5	2000 ± 28	µg/mL	66.9	STBJ5751
4-NITROPHENOL CAS# 100-02-7	2000 ± 33	µg/mL	99.0	04628LT
2-METHYL-4,6-DINITROPHENOL CAS# 534-52-1	2000 ± 27	µg/mL	99.7	LC18338
PENTACHLOROPHENOL CAS# 87-86-5	1999 ± 25	µg/mL	97.9	MKCD2150

### ASSAY Method

#### J013597

TCL Phenols Mix 2000ug/ml  
 Solvent / Lot: LRAD0139  
 Prep: 12/30/2021 by VS  
 Exp: 7/31/2024  
 Location:





**METHOD: GC (Bellefonte Method )**

Column: SPB-5, 30 m x 0.53 mm I.D., 1.5 µm film thickness

Carrier Gas: H<sub>2</sub> Flow Rate: 4.5 mL/min

Inlet Temperature: 200 °C Injection Volume: 1.0 µL

Injection Mode: 25:1

Temperature Program: 80 °C (Hold 2 min) @ 6 °C/min to 260 °C (Hold 5 min)

Detector: FID Temperature: 310 °C

**Elution details:**

EO	RT(MIN)	ANALYTE
1	7.095	Phenol
2	7.585	2-chlorophenol
3	10.925	2-nitrophenol
4	11.037	2,4-dimethylphenol
5	11.696	2,4-dichlorophenol
6	14.242	4-chloro-3-methylphenol
7	15.842	2,4,6-trichlorophenol
8	18.93	2,4-dinitrophenol
9	19.25	4-nitrophenol
10	21.05	4,6-dinitro-2-methylphenol
11	23.752	Pentachlorophenol

**Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

**Accreditation:** Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

**Certificate issue date:** 12-Jul-2021



*Andy Ommen*

*Mark Pooler*

Andy Ommen - QC Manager

Mark Pooler - QA Supervisor

**Details on metrological traceability:**

This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

**Associated uncertainty:**

Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{homogeneity}^2 + u_{stability}^2}$$

**Homogeneity assessment:**

Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

**Stability assessment:**

Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

**Certificate of analysis revision history:**

<b>Certificate version</b>	<b>Date</b>	<b>Reason for version</b>
LRAD0139.01	12-Jul-2021	Original Release Date

**Disclaimer:** The purchaser is required to determine the suitability of this product for any particular application. Sigma-Aldrich RTC makes no warranty of any kind, express or implied, other than its products meet all quality control standards set by Sigma-Aldrich RTC. We do not guarantee that the product can be used for any particular application.

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.





110 Benner Circle  
 Bellefonte, PA 16823-8812  
 Tel: (800)356-1688  
 Fax: (814)353-1309

www.restek.com

**K007194**  
 CLP 04.1 BNA SURR MIX  
 Solvent / Lot: A0187400  
 Prep: 8/5/2022 by VS  
 Exp: 4/30/2026  
 Location:

IAL



# Certificate of Analysis



**FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.**

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

**Catalog No. :** 31493 **Lot No.:** A0187400  
**Description :** CLP 04.1 BNA Surrogate Mix  
CLP 04.1 BNA Surrogate Mix 1000-1500 µg/mL, Methylene Chloride, 1mL/ampul  
**Container Size :** 2 mL **Pkg Amt:** > 1 mL  
**Expiration Date :** April 30, 2026 **Storage:** 10°C or colder  
**Handling:** Sonicate prior to use. **Ship:** Ambient

## CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)			
			µg/mL	µg/mL	µg/mL	
1	2-Fluorophenol	1,508.0 µg/mL	+/-	8.9571	µg/mL	Gravimetric
	CAS # 367-12-4 (Lot STBJ3299)		+/-	44.0466	µg/mL	Unstressed
	Purity 99%		+/-	53.4340	µg/mL	Stressed
2	Phenol-d6	1,510.0 µg/mL	+/-	8.9689	µg/mL	Gravimetric
	CAS # 13127-88-3 (Lot SL210831)		+/-	44.1050	µg/mL	Unstressed
	Purity 99%		+/-	53.5049	µg/mL	Stressed
3	2-Chlorophenol-d4	1,512.0 µg/mL	+/-	8.9808	µg/mL	Gravimetric
	CAS # 93951-73-6 (Lot PR-30568)		+/-	44.1635	µg/mL	Unstressed
	Purity 99%		+/-	53.5758	µg/mL	Stressed
4	1,2-Dichlorobenzene-d4	1,004.0 µg/mL	+/-	5.9635	µg/mL	Gravimetric
	CAS # 2199-69-1 (Lot PR-32597)		+/-	29.3255	µg/mL	Unstressed
	Purity 99%		+/-	35.5754	µg/mL	Stressed
5	Nitrobenzene-d5	1,004.0 µg/mL	+/-	5.9635	µg/mL	Gravimetric
	CAS # 4165-60-0 (Lot PR-29940A)		+/-	29.3255	µg/mL	Unstressed
	Purity 99%		+/-	35.5754	µg/mL	Stressed
6	2-Fluorobiphenyl	1,004.0 µg/mL	+/-	5.9635	µg/mL	Gravimetric
	CAS # 321-60-8 (Lot 00021384)		+/-	29.3255	µg/mL	Unstressed
	Purity 99%		+/-	35.5754	µg/mL	Stressed
7	2,4,6-Tribromophenol	1,502.0 µg/mL	+/-	8.9214	µg/mL	Gravimetric
	CAS # 118-79-6 (Lot MKCJ7664)		+/-	43.8714	µg/mL	Unstressed
	Purity 99%		+/-	53.2214	µg/mL	Stressed



8	p-Terphenyl-d14		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 1718-51-0	(Lot PR-30504)		+/- 29.2671	µg/mL	Unstressed
	Purity 99%			+/- 35.5046	µg/mL	Stressed

**Solvent:** Methylene chloride  
**CAS #** 75-09-2  
**Purity** 99%

**Tech Tips:**

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

**Column:**  
30m x 0.25mm x 0.25µm  
Rtx-5 (cat.#10223)

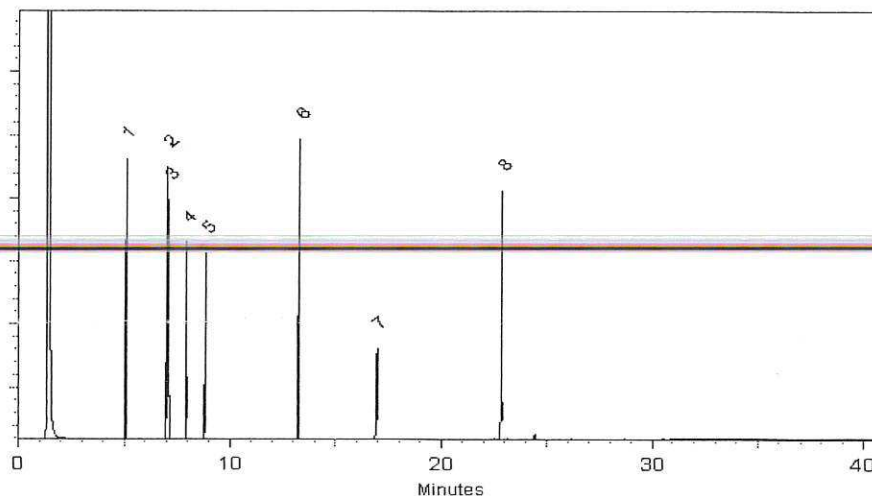
**Carrier Gas:**  
hydrogen-constant pressure 10 psi.

**Temp. Program:**  
40°C (hold 2 min.) to 330°C  
@ 10°C/min. (hold 10 min.)

**Inj. Temp:**  
250°C

**Det. Temp:**  
330°C

**Det. Type:**  
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

*Bryan Snyder*  
Bryan Snyder - Operations Tech I

**Date Mixed:** 17-Jul-2022      **Balance:** 1128353505

*Christie Mills*  
Christie Mills - Operations Tech II - ARM QC

**Date Passed:** 21-Jul-2022

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397

## General Certified Reference Material Notes

### Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

### Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ $\mu$ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

### Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value ( includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

$k$  is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-Us](http://www.restek.com/Contact-Us) for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at [www.restek.com/Contact-Us](http://www.restek.com/Contact-Us).
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

### Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

### Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



# Certificate of Analysis

**Produced by Phenova**

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com  
Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101444

**Lot Number:** CL18355

**Description:** 8270 Calibration Standard

**Certification Date:** July 25, 2022

**Storage:** -18 °C

**Expiration Date:** August 31, 2023

**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

**K007995**

SVOA-8270 LCS MIX 1000ug/ml

Solvent / Lot: N/A

Prep: 8/29/2022 by JZ

Exp: 8/31/2023

Location: FREEZER 44



Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Acenaphthene	83-32-9	1000	± 0.300%
Acenaphthylene	208-96-8	1000	± 0.225%
Anthracene	120-12-7	1000	± 6.858%
Azobenzene	103-33-3	1000	± 0.224%
Benzo(a)anthracene	56-55-3	1000	± 0.247%
Benzo(a)pyrene	50-32-8	1000	± 0.270%
Benzo(b)fluoranthene	205-99-2	1000	± 0.635%
Benzo(k)fluoranthene	207-08-9	1000	± 0.682%
Benzo(g,h,i)perylene	191-24-2	1000	± 0.272%
Benzyl alcohol	100-51-6	1000	± 0.231%
Benzyl butyl phthalate	85-68-7	1000	± 0.480%
bis(2-Chloroethoxy)methane	111-91-1	1000	± 0.479%
bis(2-Chloroethyl) ether	111-44-4	1000	± 0.479%
bis(2-Chloroisopropyl) ether	108-60-1	1000	± 0.550%
bis(2-Ethylhexyl) adipate	103-23-1	1000	± 0.479%
bis(2-Ethylhexyl) phthalate	117-81-7	1000	± 0.479%
4-Bromophenyl phenyl ether	101-55-3	1000	± 0.479%
Carbazole	86-74-8	1000	± 0.146%

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**Catalog No.:** AL0-101444

**Lot Number:** CL18355

**Description:** 8270 Calibration Standard

**Certification Date:** July 25, 2022

**Storage:** -18 °C

**Expiration Date:** August 31, 2023

**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
4-Chloroaniline	106-47-8	1000	± 0.300%
4-Chloro-3-methylphenol	59-50-7	1000	± 0.545%
2-Chloronaphthalene	91-58-7	1000	± 0.224%
2-Chlorophenol	95-57-8	1000	± 0.507%
4-Chlorophenyl phenyl ether	7005-72-3	1000	± 0.479%
Chrysene	218-01-9	1000	± 0.145%
Dibenz(a,h)anthracene	53-70-3	1000	± 1.058%
Dibenzofuran	132-64-9	1000	± 0.302%
Di-n-butyl phthalate	84-74-2	1000	± 0.518%
1,2-Dichlorobenzene	95-50-1	1000	± 0.247%
1,3-Dichlorobenzene	541-73-1	1000	± 0.225%
1,4-Dichlorobenzene	106-46-7	1000	± 0.224%
2,4-Dichlorophenol	120-83-2	1000	± 0.545%
Diethyl phthalate	84-66-2	1000	± 0.518%
2,4-Dimethylphenol	105-67-9	1000	± 0.507%
Dimethyl phthalate	131-11-3	1000	± 0.518%
1,2-Dinitrobenzene	528-29-0	1000	± 0.361%
1,3-Dinitrobenzene	99-65-0	1000	± 0.300%
1,4-Dinitrobenzene	100-25-4	1000	± 0.242%
2,4-Dinitrophenol	51-28-5	1000	± 0.545%
2,4-Dinitrotoluene	121-14-2	1000	± 1.128%

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**Catalog No.:** AL0-101444      **Lot Number:** CL18355  
**Description:** 8270 Calibration Standard      **Certification Date:** July 25, 2022  
**Storage:** -18 °C      **Expiration Date:** August 31, 2023  
**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2,6-Dinitrotoluene	606-20-2	1000	± 0.224%
Di-n-octyl phthalate	117-84-0	1000	± 0.486%
Fluoranthene	206-44-0	1000	± 0.224%
Fluorene	86-73-7	1000	± 0.224%
Hexachlorobenzene	118-74-1	1000	± 0.152%
Hexachlorobutadiene	87-68-3	1000	± 0.746%
Hexachlorocyclopentadiene	77-47-4	1000	± 0.153%
Hexachloroethane	67-72-1	1000	± 0.300%
Indeno(1,2,3-cd)pyrene	193-39-5	1000	± 0.883%
Isophorone	78-59-1	1000	± 0.145%
2-Methyl-4,6-dinitrophenol	534-52-1	1000	± 0.508%
1-Methylnaphthalene	90-12-0	1000	± 0.479%
2-Methylnaphthalene	91-57-6	1000	± 0.487%
2-Methylphenol	95-48-7	1000	± 0.545%
3-Methylphenol	108-39-4	500	± 0.279%
4-Methylphenol	106-44-5	500	± 0.399%
Naphthalene	91-20-3	1000	± 0.226%
2-Nitroaniline	88-74-4	1000	± 0.224%
3-Nitroaniline	99-09-2	1000	± 0.235%
4-Nitroaniline	100-01-6	1000	± 0.300%
Nitrobenzene	98-95-3	1000	± 0.300%



# Certificate of Analysis

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## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101444      **Lot Number:** CL18355  
**Description:** 8270 Calibration Standard      **Certification Date:** July 25, 2022  
**Storage:** -18 °C      **Expiration Date:** August 31, 2023  
**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2-Nitrophenol	88-75-5	1000	± 0.514%
4-Nitrophenol	100-02-7	1000	± 0.519%
N-Nitrosodimethylamine	62-75-9	1000	± 0.503%
N-Nitrosodiphenylamine	86-30-6	1000	± 0.476%
N-Nitrosodi-n-propylamine	621-64-7	1000	± 0.461%
Pentachlorophenol	87-86-5	1000	± 0.202%
Phenanthrene	85-01-8	1000	± 0.145%
Phenol	108-95-2	1000	± 0.545%
Pyrene	129-00-0	1000	± 0.147%
Pyridine	110-86-1	1000	± 0.503%
2,3,4,6-Tetrachlorophenol	58-90-2	1000	± 0.247%
2,3,5,6-Tetrachlorophenol	935-95-5	1000	± 0.247%
1,2,4-Trichlorobenzene	120-82-1	1000	± 0.224%
2,4,5-Trichlorophenol	95-95-4	1000	± 0.507%
2,4,6-Trichlorophenol	88-06-2	1000	± 0.509%

**Notes:** The proper chemical name for Bis(2-Chloroisopropyl) ether is 2,2'-oxybis(1-chloropropane). The analytical uncertainty contribution to the expanded uncertainty for 3 and 4-Methylphenol is measured as the total of the two analytes. N-Nitrosodiphenylamine presents as Diphenylamine at 854 µg/mL.

# Certificate of Analysis

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. Quality Standards: Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$u_{CRM} = \sqrt{u_M^2 + u_H^2 + u_{LTS}^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



# Certificate of Composition - Analytical Standard

## BASE STOCK

**Product no.:** 22523051  
**Lot no.:** LRAD2751  
**Expiry Date:** June 2024  
**Manufacturing Date:** June 2022  
**Storage:** REFRIGERATE  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAD2751.01 *(Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)*

Analyte	Assigned Value	Units	Raw Material Purity, %	Raw Material Lot
3,3'-DICHLOROBENZIDINE, 100MG, NEAT CAS# 91-94-1	799	µg/mL	99.8	LRAD2376
2,4-DINITROTOLUENE CAS# 121-14-2	801	µg/mL	97.8	LB46632
2,6-DINITROTOLUENE CAS# 606-20-2	800	µg/mL	99.2	11231AN
HEXACHLOROCYCLOPENTADIENE CAS# 77-47-4	800	µg/mL	96.0	LB95525
N-NITROSODIMETHYLAMINE CAS# 62-75-9	800	µg/mL	95.0	2019-030598 5
PERYLENE CAS# 198-55-0	200	µg/mL	99.6	04101PG
ANILINE CAS# 62-53-3	800	µg/mL	99.9	LA41596
4-CHLOROANILINE CAS# 106-47-8	800	µg/mL	100.0	MKBZ6909V
2-NITROANILINE CAS# 88-74-4	799	µg/mL	99.9	07411KN
3-NITROANILINE CAS# 99-09-2	800	µg/mL	99.9	LC09264
4-NITROANILINE CAS# 100-01-6	800	µg/mL	99.9	15609AA
PYRIDINE (LOW WATER) CAS# 110-86-1	800	µg/mL	100.0	SHBJ9218

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user's location. Open slowly and carefully to avoid dispersion of the material.



**Health and safety information:**

All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

**Certificate issue date:**

03 JUN 2022



Andy Ommen - QC Manager



Scott Stetler - QA Manager

**Certificate of analysis revision history:**

Certificate version	Date	Reason for version
LRAD2751.01	03 JUN 2022	Original Release Date

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# Certificate of Composition - Analytical Standard

## ACID STOCK

**Product no.:** 22523046  
**Lot no.:** LRAD2750  
**Expiry Date:** June 2024  
**Manufacturing Date:** June 2022  
**Storage:** REFRIGERATE  
**Solvent/Matrix:** DICHLOROMETHANE  
**Certificate version:** LRAD2750.01 (Note: Certificates may be updated due to the availability of new data. Check our website at: [www.sigma-aldrich.com](http://www.sigma-aldrich.com) for the most current version.)

Analyte	Assigned Value	Units	Raw Material Purity, %	Raw Material Lot
2,4-DIMETHYLPHENOL CAS# 105-67-9	800	µg/mL	99.9	LB88935
2,4-DICHLOROPHENOL CAS# 120-83-2	800	µg/mL	100.0	BCBZ6787
2,4,5-TRICHLOROPHENOL CAS# 95-95-4	801	µg/mL	99.9	JS00008
2,4-DINITROPHENOL CAS# 51-28-5	1799	µg/mL	66.9	STBJ5751
2,4,6-TRICHLOROPHENOL CAS# 88-06-2	800	µg/mL	98.7	LB82983
4-CHLORO-3-METHYLPHENOL CAS# 59-50-7	800	µg/mL	100.0	BCCD4461
4-NITROPHENOL CAS# 100-02-7	800	µg/mL	100.0	MKCN1089
2-METHYL-4,6-DINITROPHENOL CAS# 534-52-1	1800	µg/mL	100.0	BCBX5762
PENTACHLOROPHENOL CAS# 87-86-5	800	µg/mL	99.0	23614-01
BENZOIC ACID CAS# 65-85-0	1800	µg/mL	99.9	LC16514

**Measurement method:** Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

**Intended use:** Intended for R&D and Analytical Use only. Not for drug, household or other uses.

**Packaging:** 1 mL in amber ampule

**Instructions for handling and correct use:** Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user's location. Open slowly and carefully to avoid dispersion of the material.

**Health and safety information:** All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.



Certificate issue date:

03 JUN 2022



Andy Ommen - QC Manager



Scott Stetler - QA Manager

**Certificate of analysis revision history:**

Certificate version	Date	Reason for version
LRAD2750.01	03 JUN 2022	Original Release Date

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## Certified Reference Material

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**Catalog No.:** AL0-101244

**Lot Number:** CL18939

**Description:** Benzidines Standard

**Certification Date:** September 7, 2022

**Storage:** 4 °C

**Expiration Date:** August 31, 2032

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride



Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 3.812%
3,3'-Dichlorobenzidine	91-94-1	2000	± 1.419%

### L001288

Benzidines std @2000ug/ml  
Solvent / Lot: CL18939  
Prep: 2/7/2023 by VS  
Exp: 8/31/2032  
Location: GC



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## Certified Reference Material

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**Catalog No.:** AL0-101443

**Lot Number:** CL18741

**Description:** Aniline

**Certification Date:** July 21, 2022

**Storage:** 4 °C

**Expiration Date:** July 31, 2030

**Provided As:** 1 mL in 2 mL Ampoule in Methylene Chloride



Aaron Duker, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aniline	62-53-3	1000	± 1.719%

**L001290**

Aniline-1000ug/mL  
Solvent / Lot: CL18741  
Prep: 2/7/2023 by VS  
Exp: 7/31/2030  
Location: GC



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## Certified Reference Material

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**Catalog No.:** AL0-101444

**Lot Number:** CL18811

**Description:** 8270 Calibration Standard

**Certification Date:** August 9, 2022

**Storage:** -18 °C

**Expiration Date:** November 30, 2023

**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)



**L001291**  
SVOA-8270 LCS MIX 1000ug/ml  
Solvent / Lot: CL18811  
Prep: 2/7/2023 by VS  
Exp: 11/30/2023  
Location: FREEZER 44

Aaron Duker, Certified Reference Materials Manager

Component	CAS #	µg/mL	Expanded Uncertainty
Acenaphthene	83-32-9	1000	± 1.643%
Acenaphthylene	208-96-8	1000	± 1.317%
Anthracene	120-12-7	1000	± 2.136%
Azobenzene	103-33-3	1000	± 1.630%
Benzo(a)anthracene	56-55-3	1000	± 2.372%
Benzo(a)pyrene	50-32-8	1000	± 3.028%
Benzo(b)fluoranthene	205-99-2	1000	± 2.377%
Benzo(k)fluoranthene	207-08-9	1000	± 2.286%
Benzo(g,h,i)perylene	191-24-2	1000	± 2.561%
Benzyl alcohol	100-51-6	1000	± 1.803%
Benzyl butyl phthalate	85-68-7	1000	± 1.855%
bis(2-Chloroethoxy)methane	111-91-1	1000	± 1.626%
bis(2-Chloroethyl) ether	111-44-4	1000	± 1.776%
bis(2-Chloroisopropyl) ether	108-60-1	1000	± 2.406%
bis(2-Ethylhexyl) adipate	103-23-1	1000	± 2.415%
bis(2-Ethylhexyl) phthalate	117-81-7	1000	± 2.350%
4-Bromophenyl phenyl ether	101-55-3	1000	± 1.708%
Carbazole	86-74-8	1000	± 1.844%



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**Catalog No.:** AL0-101444

**Lot Number:** CL18811

**Description:** 8270 Calibration Standard

**Certification Date:** August 9, 2022

**Storage:** -18 °C

**Expiration Date:** November 30, 2023

**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
4-Chloroaniline	106-47-8	1000	± 2.831%
4-Chloro-3-methylphenol	59-50-7	1000	± 1.571%
2-Chloronaphthalene	91-58-7	1000	± 2.022%
2-Chlorophenol	95-57-8	1000	± 2.001%
4-Chlorophenyl phenyl ether	7005-72-3	1000	± 1.634%
Chrysene	218-01-9	1000	± 2.358%
Dibenz(a,h)anthracene	53-70-3	1000	± 2.452%
Dibenzofuran	132-64-9	1000	± 0.310%
Di-n-butyl phthalate	84-74-2	1000	± 2.347%
1,2-Dichlorobenzene	95-50-1	1000	± 1.803%
1,3-Dichlorobenzene	541-73-1	1000	± 1.808%
1,4-Dichlorobenzene	106-46-7	1000	± 1.503%
2,4-Dichlorophenol	120-83-2	1000	± 1.393%
Diethyl phthalate	84-66-2	1000	± 1.870%
2,4-Dimethylphenol	105-67-9	1000	± 2.495%
Dimethyl phthalate	131-11-3	1000	± 2.113%
1,2-Dinitrobenzene	528-29-0	1000	± 0.240%
1,3-Dinitrobenzene	99-65-0	1000	± 1.221%
1,4-Dinitrobenzene	100-25-4	1000	± 0.246%
2,4-Dinitrophenol	51-28-5	1000	± 0.519%
2,4-Dinitrotoluene	121-14-2	1000	± 2.242%



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**Catalog No.:** AL0-101444      **Lot Number:** CL18811  
**Description:** 8270 Calibration Standard      **Certification Date:** August 9, 2022  
**Storage:** -18 °C      **Expiration Date:** November 30, 2023  
**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2,6-Dinitrotoluene	606-20-2	1000	± 2.154%
Di-n-octyl phthalate	117-84-0	1000	± 2.670%
Fluoranthene	206-44-0	1000	± 2.103%
Fluorene	86-73-7	1000	± 0.890%
Hexachlorobenzene	118-74-1	1000	± 1.210%
Hexachlorobutadiene	87-68-3	1000	± 1.304%
Hexachlorocyclopentadiene	77-47-4	1000	± 1.510%
Hexachloroethane	67-72-1	1000	± 3.281%
Indeno(1,2,3-cd)pyrene	193-39-5	1000	± 1.921%
Isophorone	78-59-1	1000	± 2.022%
2-Methyl-4,6-dinitrophenol	534-52-1	1000	± 1.661%
1-Methylnaphthalene	90-12-0	1000	± 1.929%
2-Methylnaphthalene	91-57-6	1000	± 2.220%
2-Methylphenol	95-48-7	1000	± 2.168%
3-Methylphenol	108-39-4	500	± 1.025%
4-Methylphenol	106-44-5	500	± 1.064%
Naphthalene	91-20-3	1000	± 1.199%
2-Nitroaniline	88-74-4	1000	± 1.874%
3-Nitroaniline	99-09-2	1000	± 2.146%
4-Nitroaniline	100-01-6	1000	± 0.300%
Nitrobenzene	98-95-3	1000	± 1.704%



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**Storage:** -18 °C      **Expiration Date:** November 30, 2023  
**Provided As:** 1 mL in 2 mL Ampoule in MeCl<sub>2</sub>/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2-Nitrophenol	88-75-5	1000	± 2.051%
4-Nitrophenol	100-02-7	1000	± 1.413%
N-Nitrosodimethylamine	62-75-9	1000	± 0.545%
N-Nitrosodiphenylamine	86-30-6	1000	± 1.669%
N-Nitrosodi-n-propylamine	621-64-7	1000	± 0.712%
Pentachlorophenol	87-86-5	1000	± 2.454%
Phenanthrene	85-01-8	1000	± 2.072%
Phenol	108-95-2	1000	± 2.140%
Pyrene	129-00-0	1000	± 1.869%
Pyridine	110-86-1	1000	± 0.545%
2,3,4,6-Tetrachlorophenol	58-90-2	1000	± 2.552%
2,3,5,6-Tetrachlorophenol	935-95-5	1000	± 2.220%
1,2,4-Trichlorobenzene	120-82-1	1000	± 1.632%
2,4,5-Trichlorophenol	95-95-4	1000	± 1.596%
2,4,6-Trichlorophenol	88-06-2	1000	± 0.481%

**Notes:** The proper chemical name for Bis(2-Chloroisopropyl) ether is 2,2'-oxybis(1-chloropropane). The analytical uncertainty contribution to the expanded uncertainty for 3 and 4-Methylphenol is measured as the total of the two analytes. N-Nitrosodiphenylamine presents as Diphenylamine at 854 µg/mL.



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Chemical Testing Laboratory  
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3. **Intended Use:** The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. **Handling and Usage Notes:** Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. **Period of Validity:** The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03





Dual Column

LDW23-SS1818
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ORGANIC ANALYSIS DATA SHEET  
EPA 8081B

Laboratory: <u>Analytical Resources, LLC</u>		SDG: <u>23D0063</u>
Client: <u>Anchor QEA, LLC</u>		
Project: <u>AOC5 MR Phase 1</u>		
Matrix: <u>Solid</u>	Laboratory ID: <u>23D0063-01 A</u>	File ID: <u>23050211.D</u>
Sampled: <u>04/04/23 10:02</u>	Prepared: <u>04/17/23 12:27</u>	Analyzed: <u>05/02/23 16:29</u>
% Solids: <u>43.18</u>	Preparation: <u>EPA 3546 (Microwave)</u>	Initial/Final: <u>28.95 g Wet / 2.5 mL</u>
Batch: <u>BLD0299</u>	Sequence: <u>SLE0106</u>	Calibration: <u>GD00035</u>
Instrument: <u>ECD6</u>	Column 1: <u>STX-CLP</u>	Column 2: <u>STX-CLPII</u>

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
118-74-1	Hexachlorobenzene	1	1	0.50	0.14	0.50	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9996	4.37	54.6	30 - 160	
<i>Decachlorobiphenyl</i>	2	7.9996	7.73	96.7	30 - 160	
<i>Tetrachlorometaxylene</i>	1	7.9996	4.86	60.7	30 - 160	
<i>Tetrachlorometaxylene</i>	2	7.9996	5.94	74.2	30 - 160	

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230502.b/23050211.D  
Data file 2: /20230502.b/B20230502.b/23050211.D  
Method: \20230502.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: 23D0063-01  
Client ID:  
Injection Date: 02-MAY-2023 16:29  
Report Date: 05/05/2023 15:04  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	CLP2 Shift Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag	
----			4.763	0.001	14707	0.00	1.28	---	alpha-BHC
----			5.247	0.017	6192	0.00	1.36	---	beta-BHC
----			5.582	0.005	6887	0.00	0.68	---	delta-BHC
----			5.142	-0.010	4219	0.00	0.42	---	gamma-BHC (Lindane)
----			5.672	0.001	17023	0.00	1.93	---	Heptachlor
----			6.079	0.008	744423	0.00	81.25	---	Aldrin
----			----			0.00	0.00	---	Heptachlor epoxide b
----			7.152	-0.020	5968	0.00	0.87	---	Endosulfan I
----			7.440	-0.026	27536	0.00	3.66	---	Dieldrin
----			7.247	-0.010	31005	0.00	4.32	---	4,4'-DDE
----			7.811	0.021	101352	0.00	19.30	---	Endrin
----			8.001	0.000	41604	0.00	8.39	---	Endosulfan II
----			7.852	-0.010	52674	0.00	10.97	---	4,4'-DDD
----			8.626	0.028	46832	0.00	10.25	---	Endosulfan sulfate
----			8.180	-0.001	167717	0.00	34.63	---	4,4'-DDT
----			8.847	0.025	13216	0.00	6.36	---	Methoxychlor
----			9.131	0.012	53287	0.00	10.68	---	Endrin ketone
----			8.317	-0.014	19218	0.00	5.36	---	Endrin aldehyde
----			6.965	0.026	75571	0.00	9.77	---	trans-Chlordane
----			7.088	-0.012	8923	0.00	1.17	---	cis-Chlordane
----			2.477	0.024	1370	0.00	0.13	---	Hexachlorobutadiene
4.168	-0.007	17906	----			1.36	0.00	---	Hexachlorobenzene
3.813	-0.006	230767	4.128	-0.008	220370	24.28	29.70	20.1	Tetrachloro-m-xylene M
9.361	-0.005	138415	10.298	-0.008	121808	21.85	38.67	55.6*	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

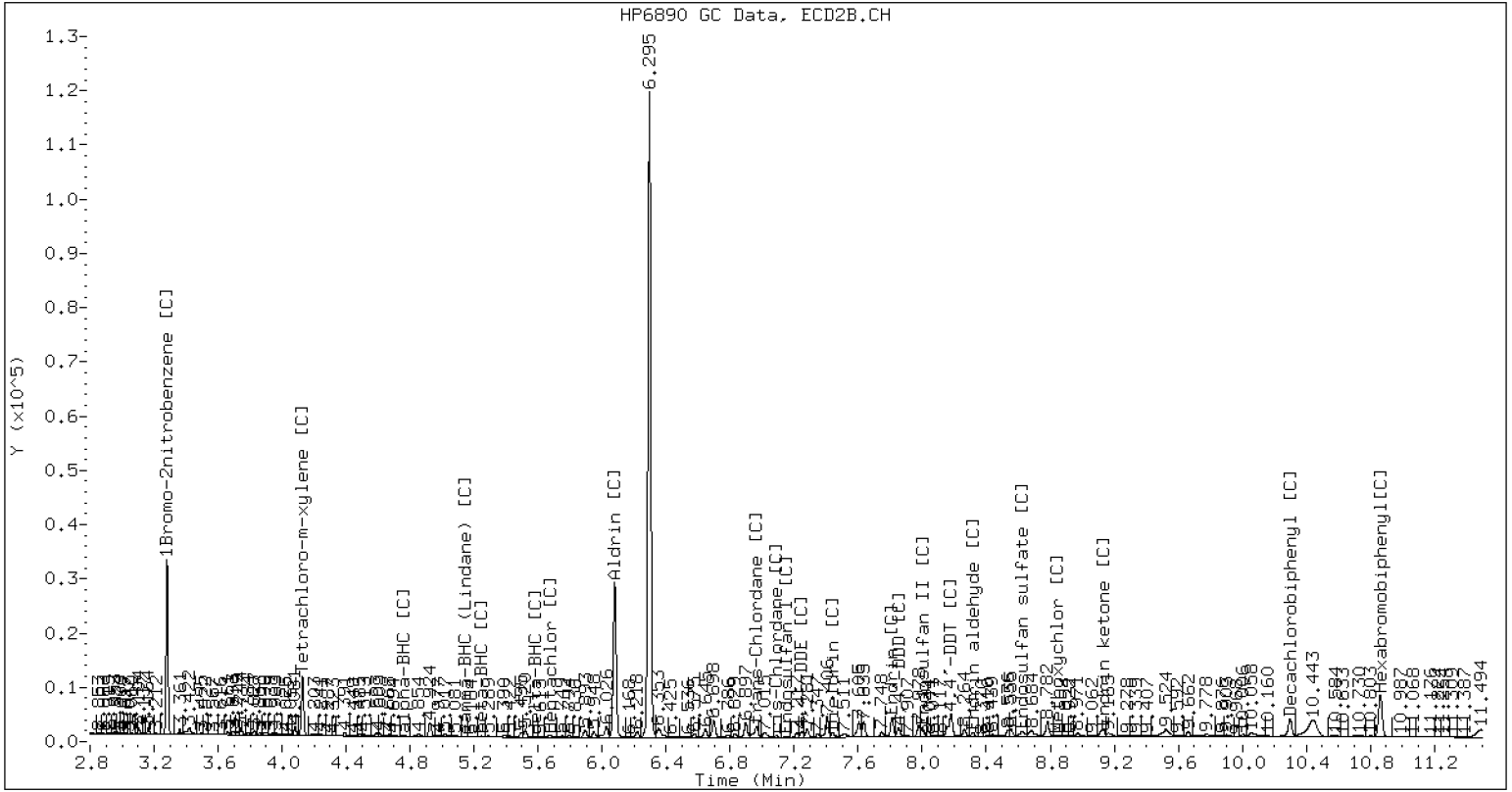
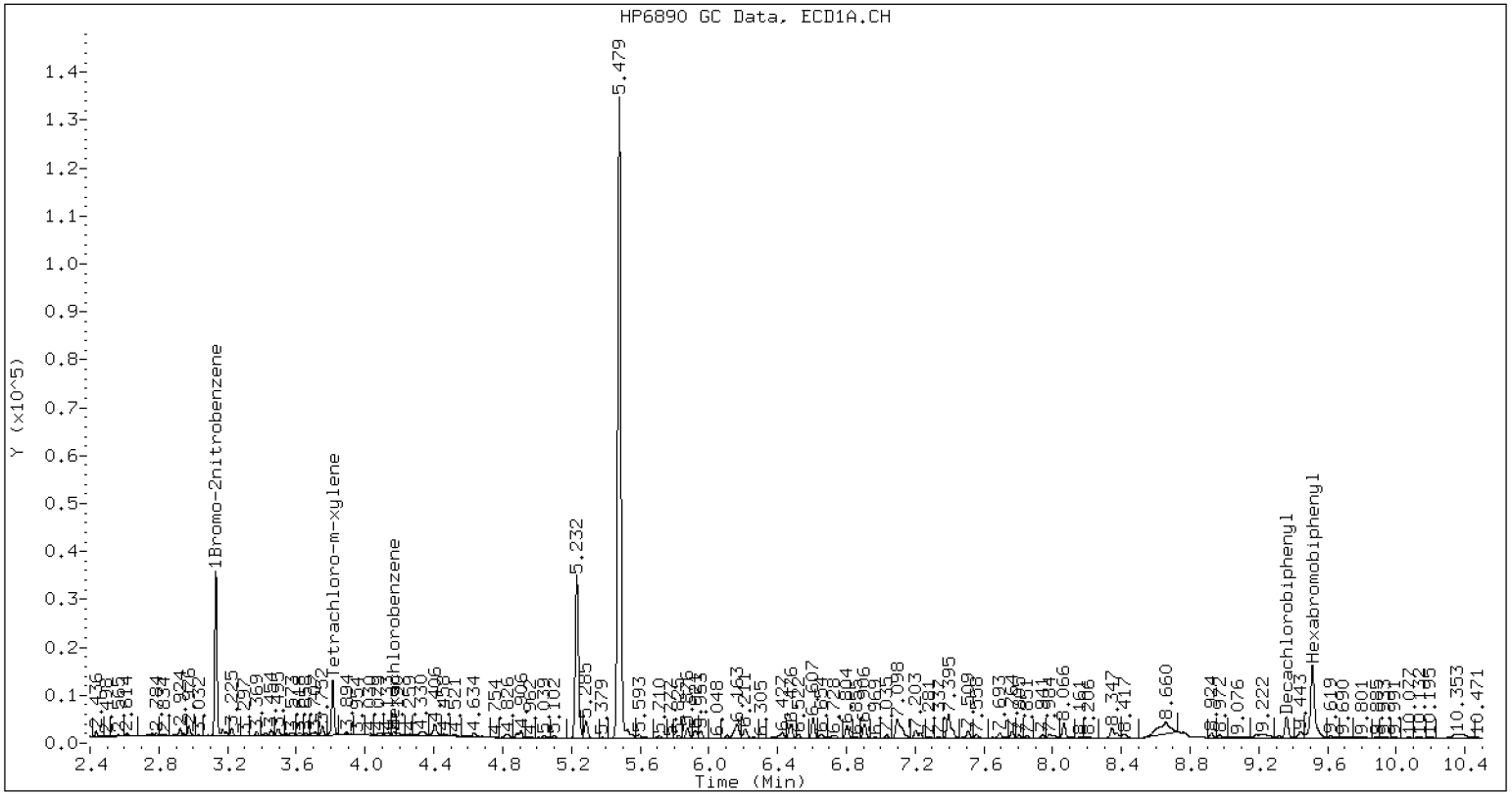
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	932757	679167	-27.2
Hexabromobiphenyl	745426	537085	-27.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1248665	539638	-56.8 <-
Hexabromobiphenyl	754634	260946	-65.4 <-

\* Standard Areas taken from Initial Cal Level 5

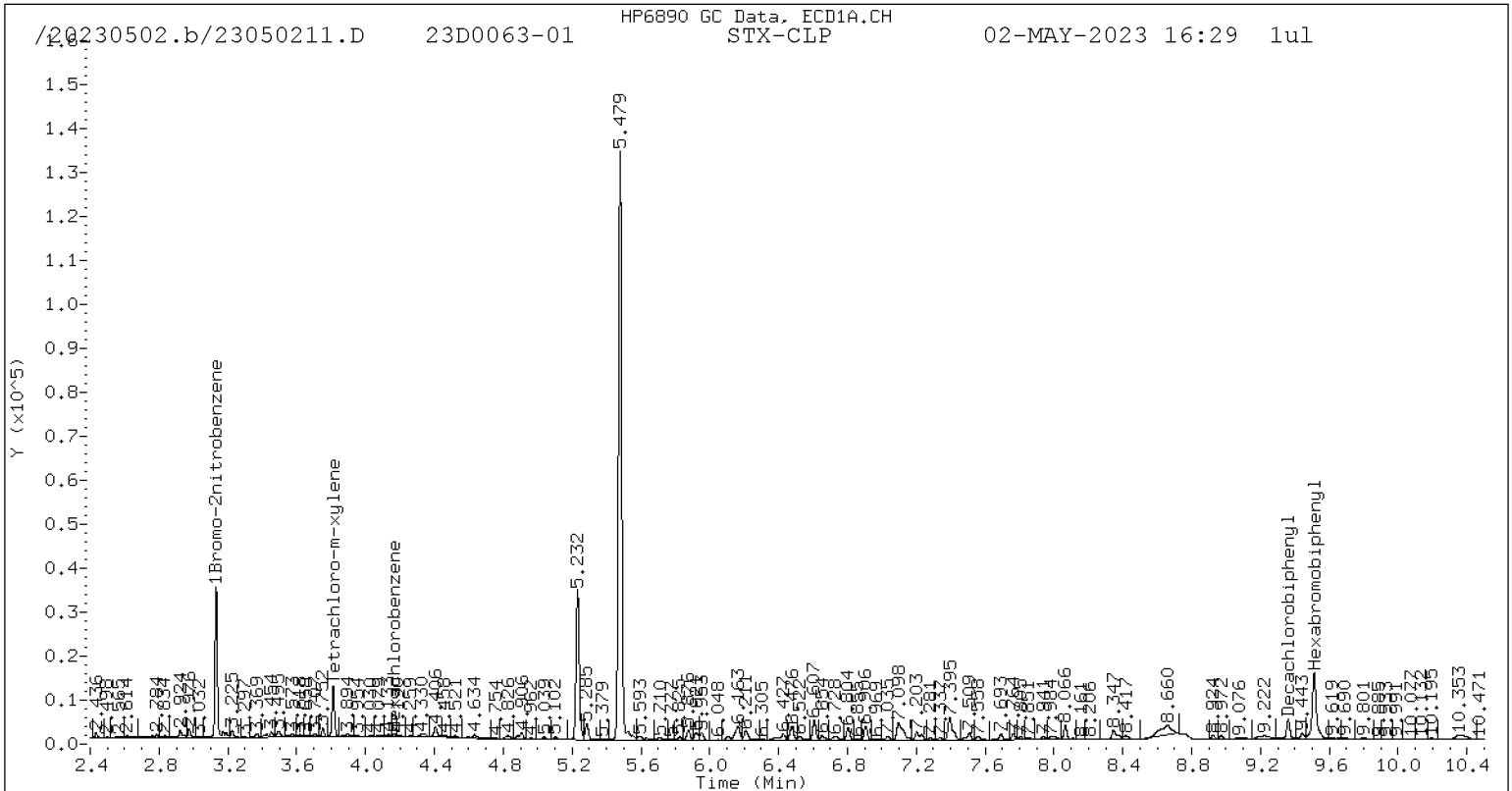
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

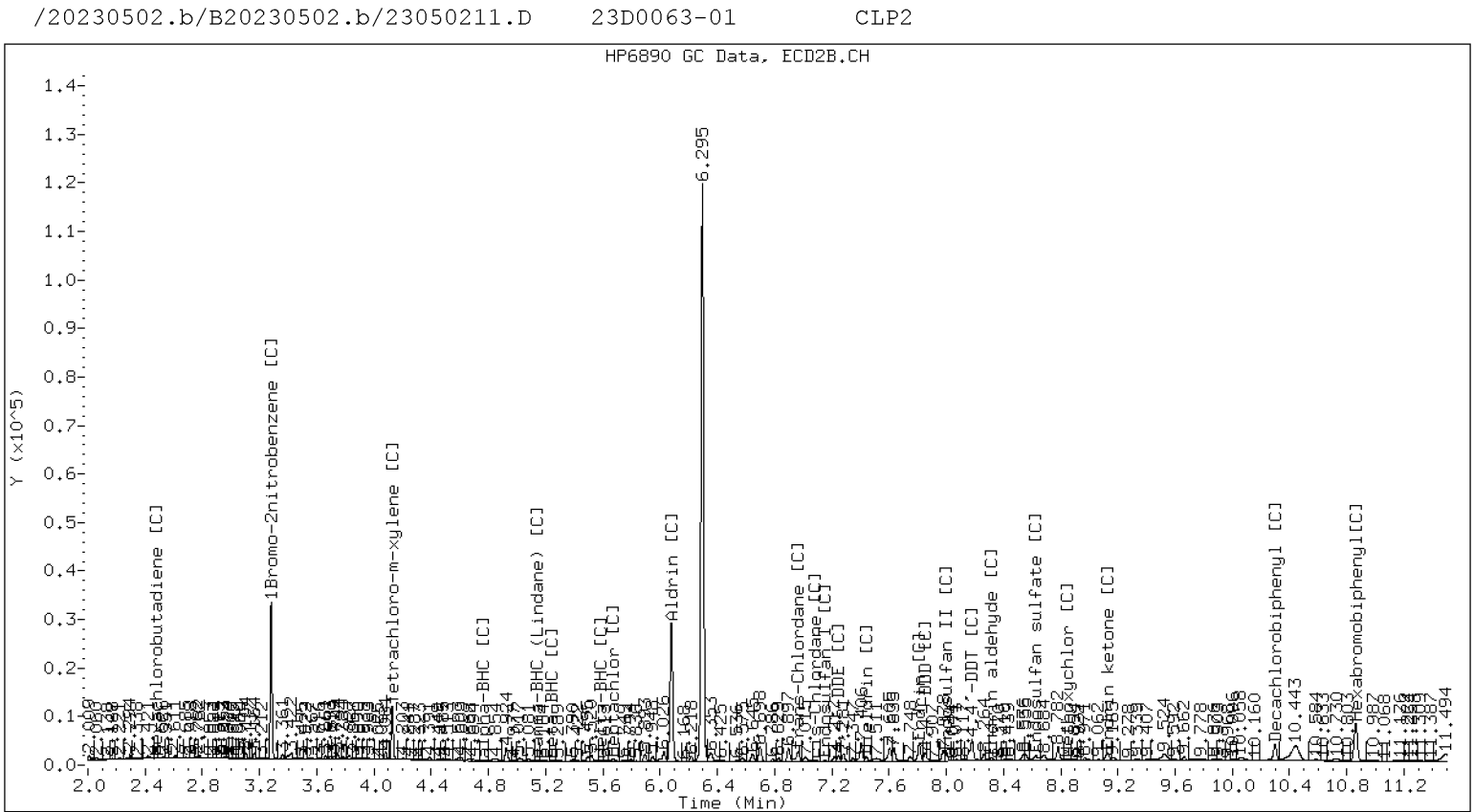




Pesticide Dual Column Chromatograms



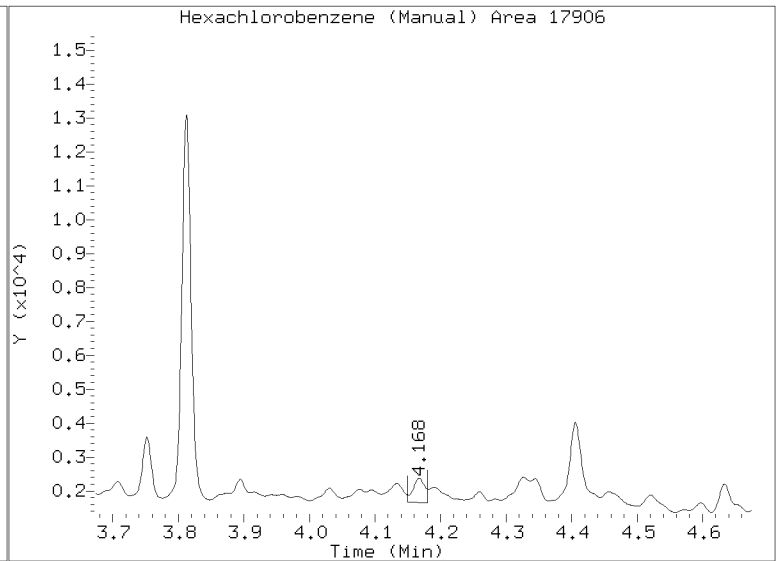
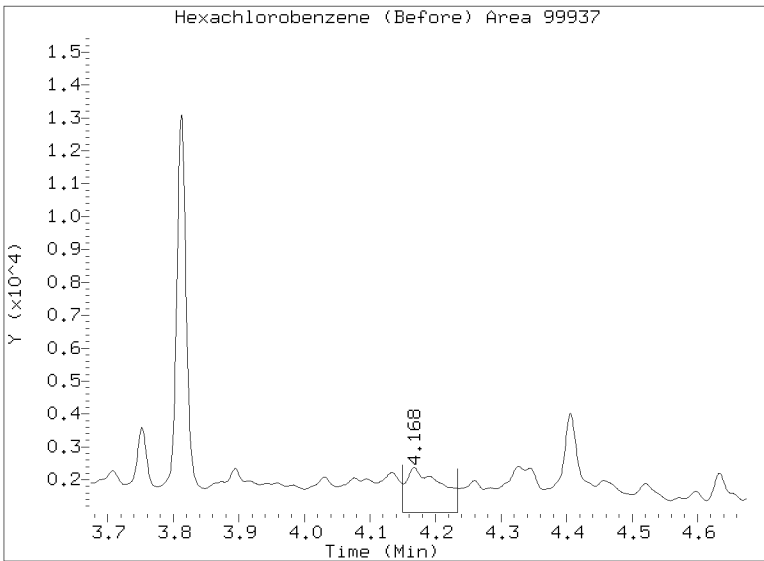
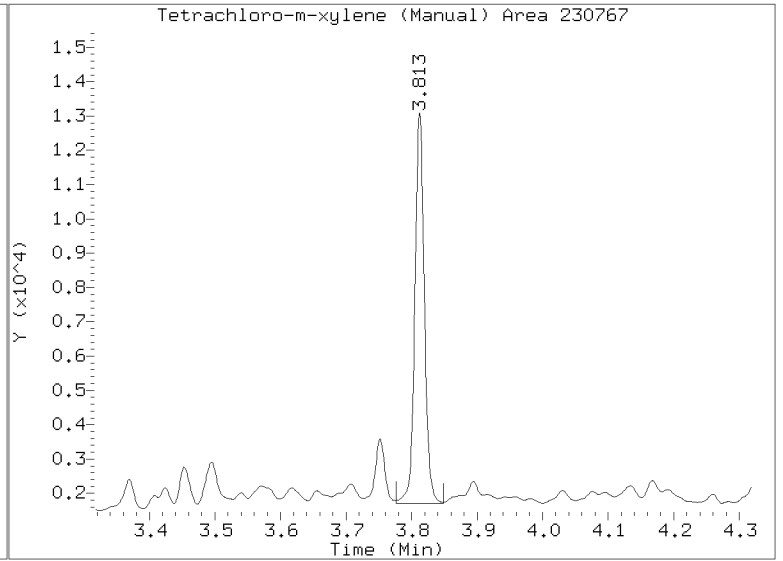
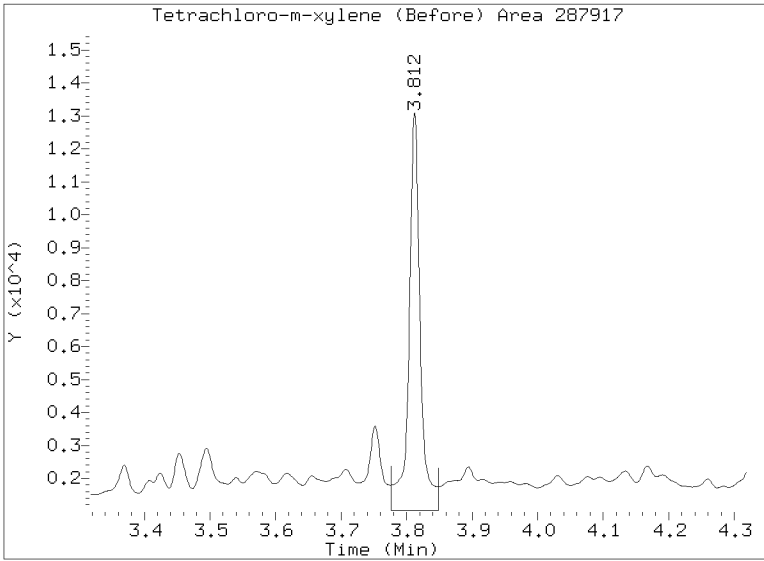
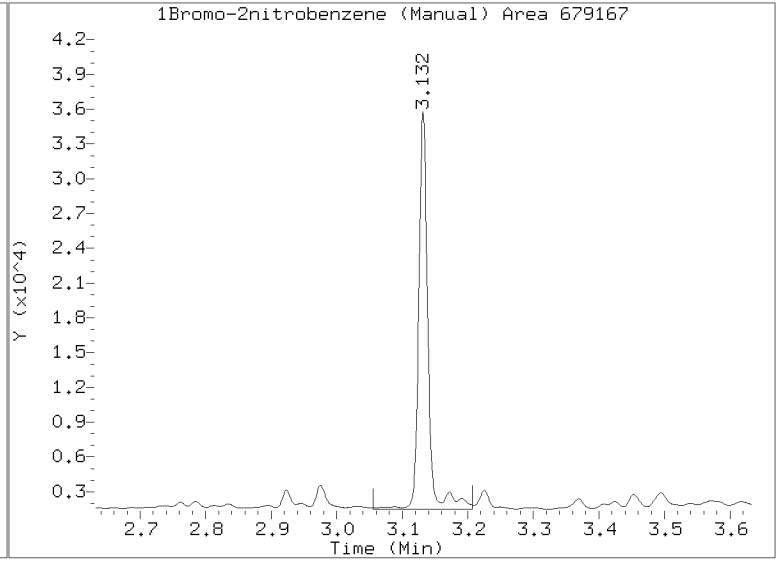
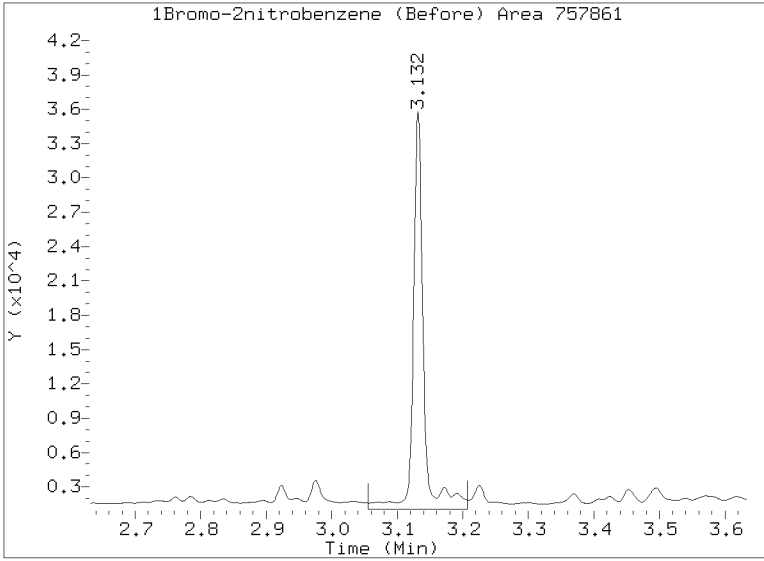
STX-CLP Manual Integration: YES



CLP-2 Manual Integration: NO

Manual Peak Adjustment Report, STX-CLP

Datafile: /20230502.b/23050211.D  
Injection Date: 02-MAY-2023 16:29  
Lab ID:23D0063-01 Client ID:  
Report Date: 05/05/2023 15:04

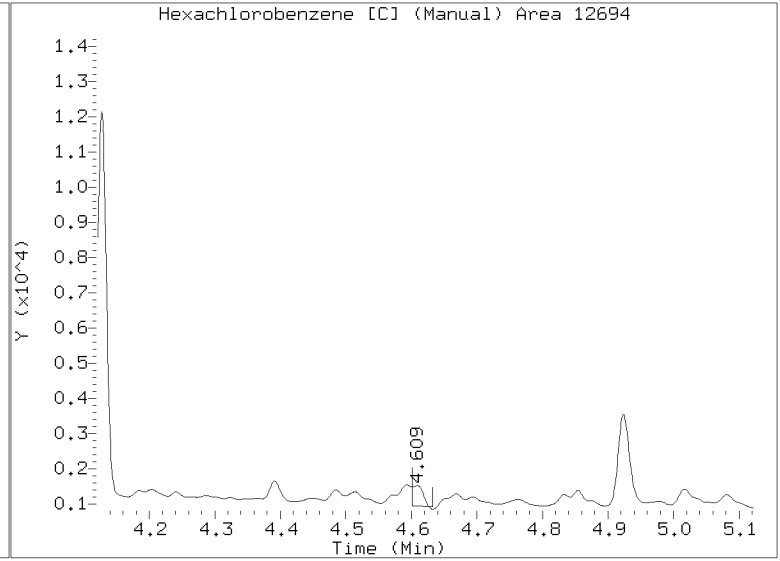
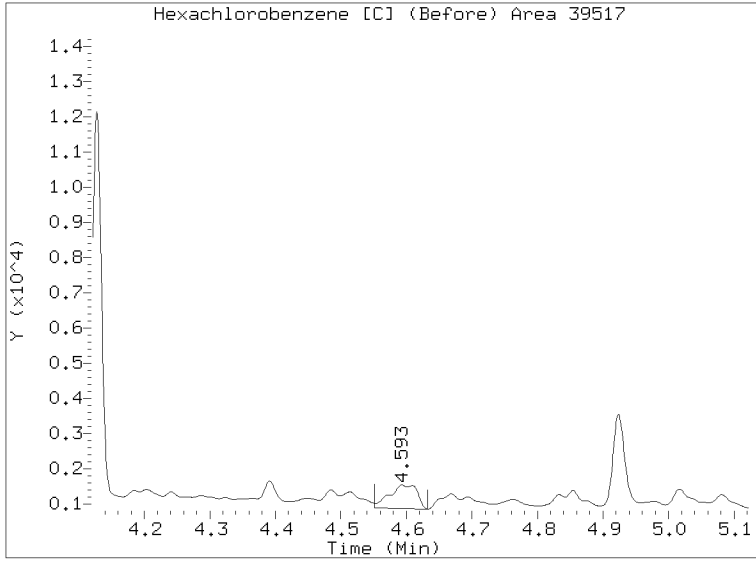


Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050211.D

Injection Date: 02-MAY-2023 16:29

Lab ID:23D0063-01 Client ID:





**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8081B**

Laboratory: <u>Analytical Resources, LLC</u>	SDG: <u>23D0063</u>
Client: <u>Anchor QEA, LLC</u>	
Project: <u>AOC5 MR Phase 1</u>	
Matrix: <u>Solid</u>	Laboratory ID: <u>23D0063-03 A</u>
	File ID: <u>23050212.D</u>
Sampled: <u>04/04/23 12:52</u>	Prepared: <u>04/17/23 12:27</u>
	Analyzed: <u>05/02/23 16:48</u>
% Solids: <u>35.11</u>	Preparation: <u>EPA 3546 (Microwave)</u>
	Initial/Final: <u>35.61 g Wet / 2.5 mL</u>
Batch: <u>BLD0299</u>	Sequence: <u>SLE0106</u>
	Calibration: <u>GD00035</u>
Instrument: <u>ECD6</u>	Column 1: <u>STX-CLP</u>
	Column 2: <u>STX-CLPII</u>

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
118-74-1	Hexachlorobenzene	1	1	0.50	0.14	0.50	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9983	6.76	84.5	30 - 160	
<i>Decachlorobiphenyl</i>	2	7.9983	7.57	94.6	30 - 160	
<i>Tetrachlorometaxylene</i>	1	7.9983	3.72	46.5	30 - 160	
<i>Tetrachlorometaxylene</i>	2	7.9983	5.86	73.3	30 - 160	

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230502.b/23050212.D  
Data file 2: /20230502.b/B20230502.b/23050212.D  
Method: \20230502.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: 23D0063-03  
Client ID:  
Injection Date: 02-MAY-2023 16:48  
Report Date: 05/05/2023 15:04  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Response	RT	CLP2 Col Shift Response	CLP2 Col Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.325	-0.008	92197	4.752	-0.010	6571	3.96	0.49	156.1*	alpha-BHC
----			5.247	0.017	10221	0.00	1.91	---	beta-BHC
4.906	0.005	84689	5.598	0.021	31774	4.02	2.65	40.9*	delta-BHC
4.648	0.011	103113	5.142	-0.010	6152	5.04	0.52	162.6*	gamma-BHC (Lindane)
5.100	-0.024	85199	5.672	0.001	20388	4.50	1.97	78.4*	Heptachlor
5.460	0.012	46917	6.064	-0.007	14261	2.44	1.32	59.1*	Aldrin
6.129	0.004	1435103	----			82.52	0.00	---	Heptachlor epoxide b
----			7.151	-0.021	3896	0.00	0.48	---	Endosulfan I
6.804	-0.024	83460	7.440	-0.026	26389	5.09	2.98	52.2*	Dieldrin
6.477	-0.012	101855	7.247	-0.010	35734	6.58	4.24	43.3*	4,4'-DDE
7.098	0.020	230122	7.811	0.021	101900	35.69	19.60	58.2*	Endrin
7.338	0.024	15185	8.001	0.000	50728	2.52	10.33	121.7*	Endosulfan II
----			7.852	-0.010	45740	0.00	9.62	---	4,4'-DDD
8.161	-0.016	5812	8.626	0.028	21635	1.02	4.78	129.6*	Endosulfan sulfate
----			8.180	-0.001	191580	0.00	39.95	---	4,4'-DDT
7.940	0.020	25484	8.849	0.027	3418	9.54	1.66	140.7*	Methoxychlor
8.479	0.027	3149	9.131	0.012	59572	0.48	12.06	184.5*	Endrin ketone
7.765	0.022	55369	8.318	-0.013	25226	12.02	7.10	51.4*	Endrin aldehyde
----			6.967	0.028	888680	0.00	97.79	---	trans-Chlordane
6.426	0.013	60732	7.089	-0.011	5927	3.56	0.66	137.2*	cis-Chlordane
2.282	-0.027	18528	----			0.77	0.00	---	Hexachlorobutadiene
4.167	-0.008	16497	4.614	-0.008	29864	0.80	2.54	104.2*	Hexachlorobenzene MN
3.812	-0.007	277471	4.128	-0.008	255745	18.62	29.33	44.7*	Tetrachloro-m-xylene
9.361	-0.005	148732	10.299	-0.007	118052	33.80	37.85	11.3	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

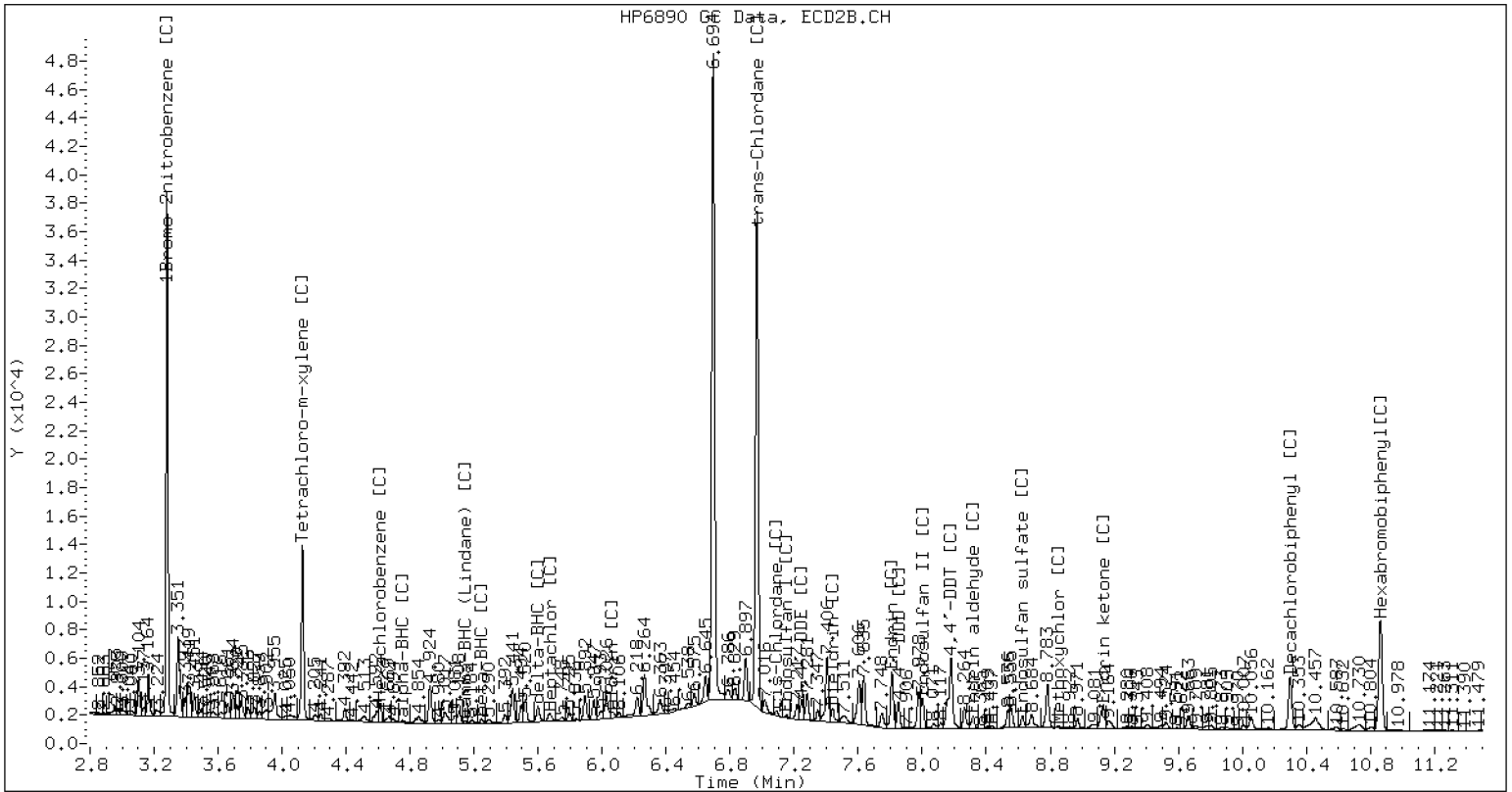
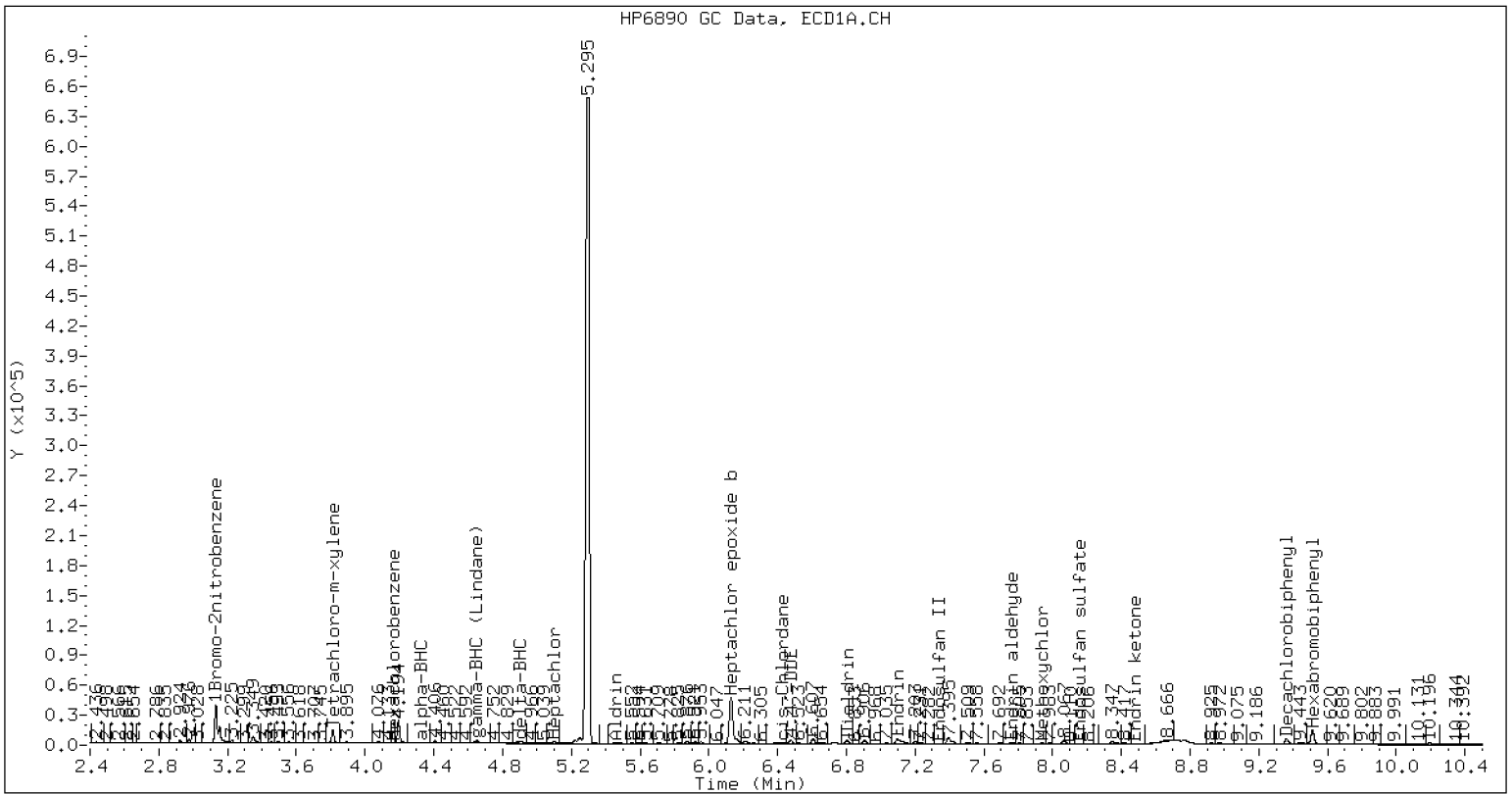
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	932757	1065073	14.2
Hexabromobiphenyl	745426	373072	-50.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1248665	634135	-49.2
Hexabromobiphenyl	754634	258374	-65.8 <-

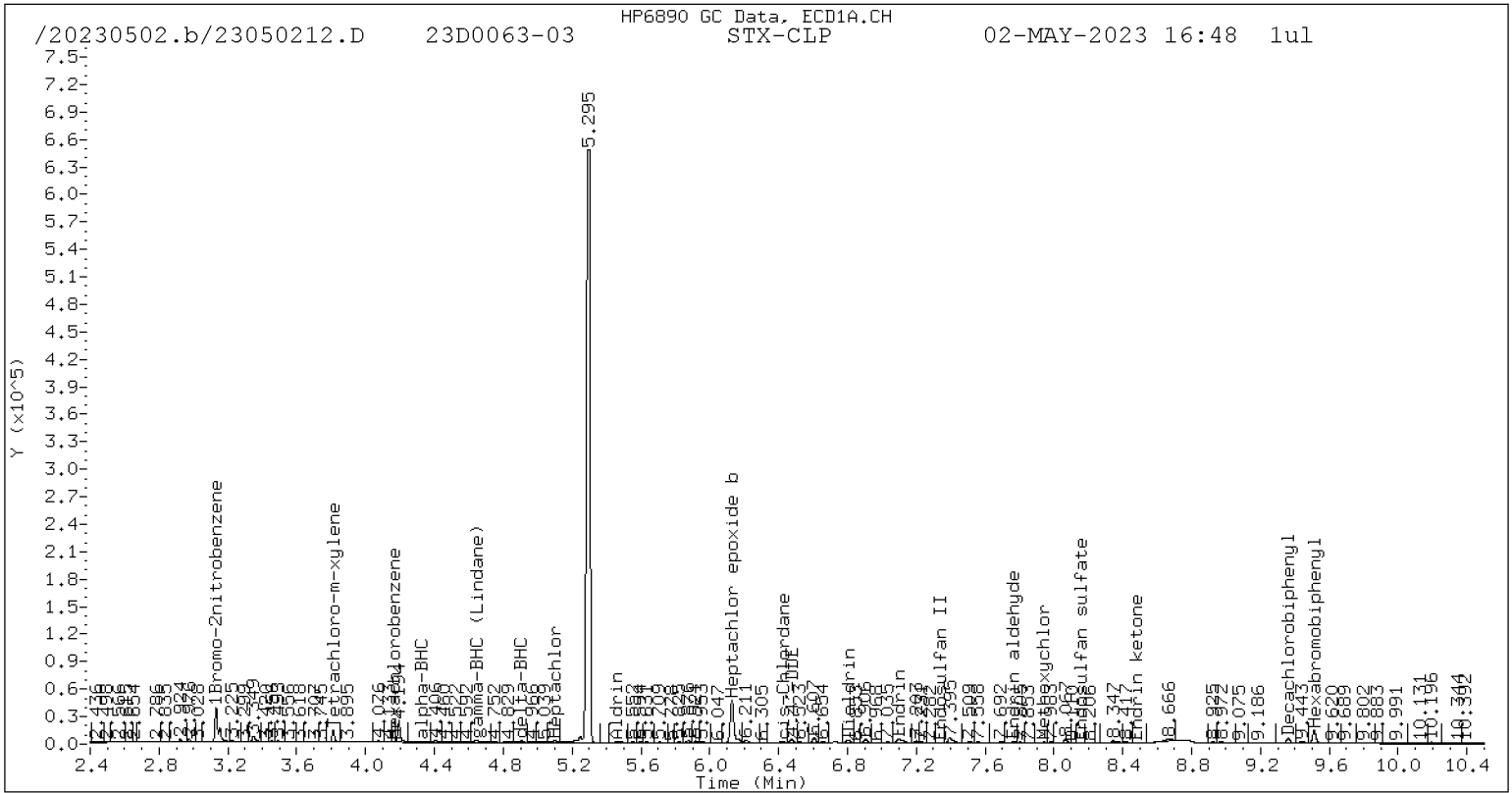
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

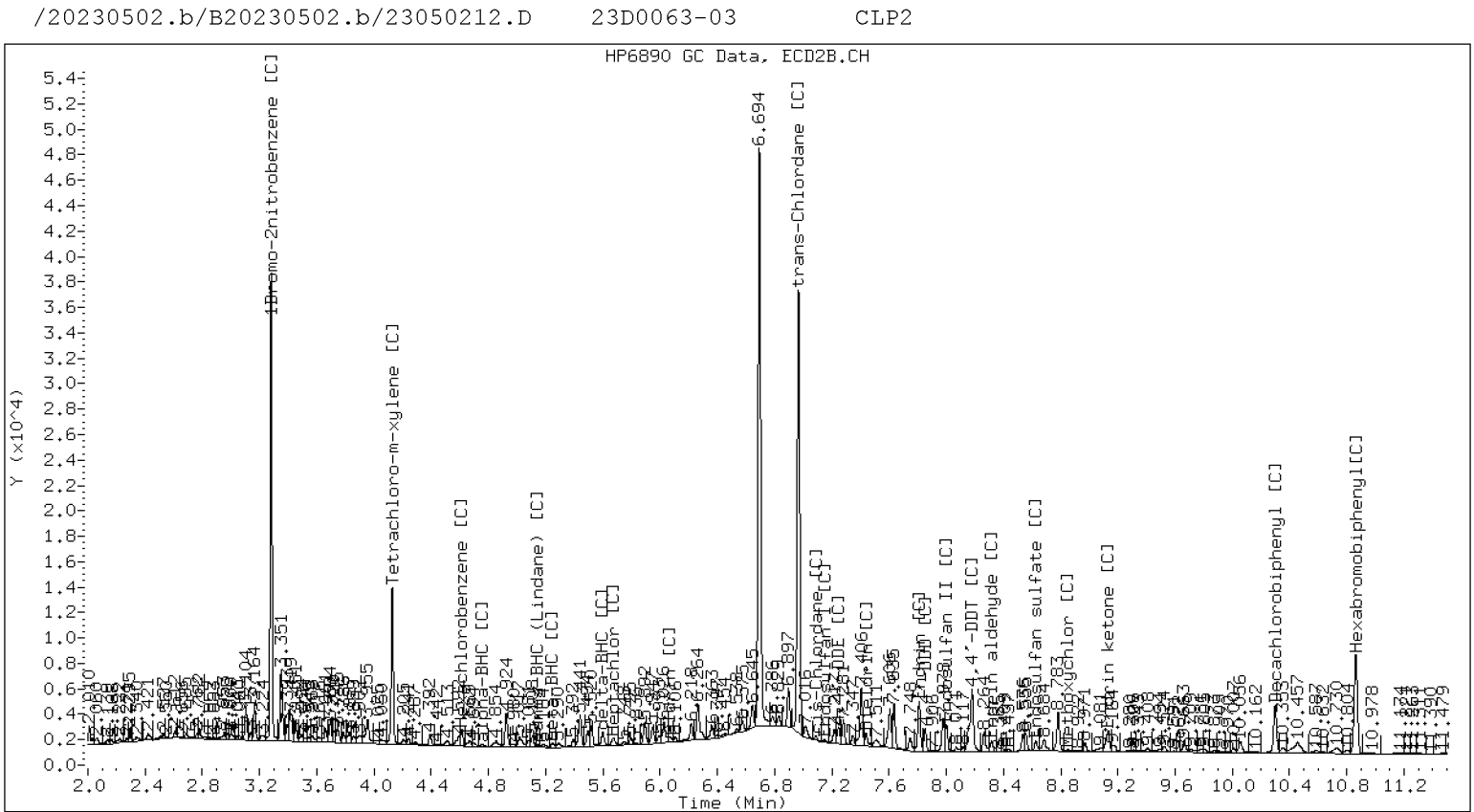
<- Indicates standard response outside Limits (-50 to +100%)



Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: YES

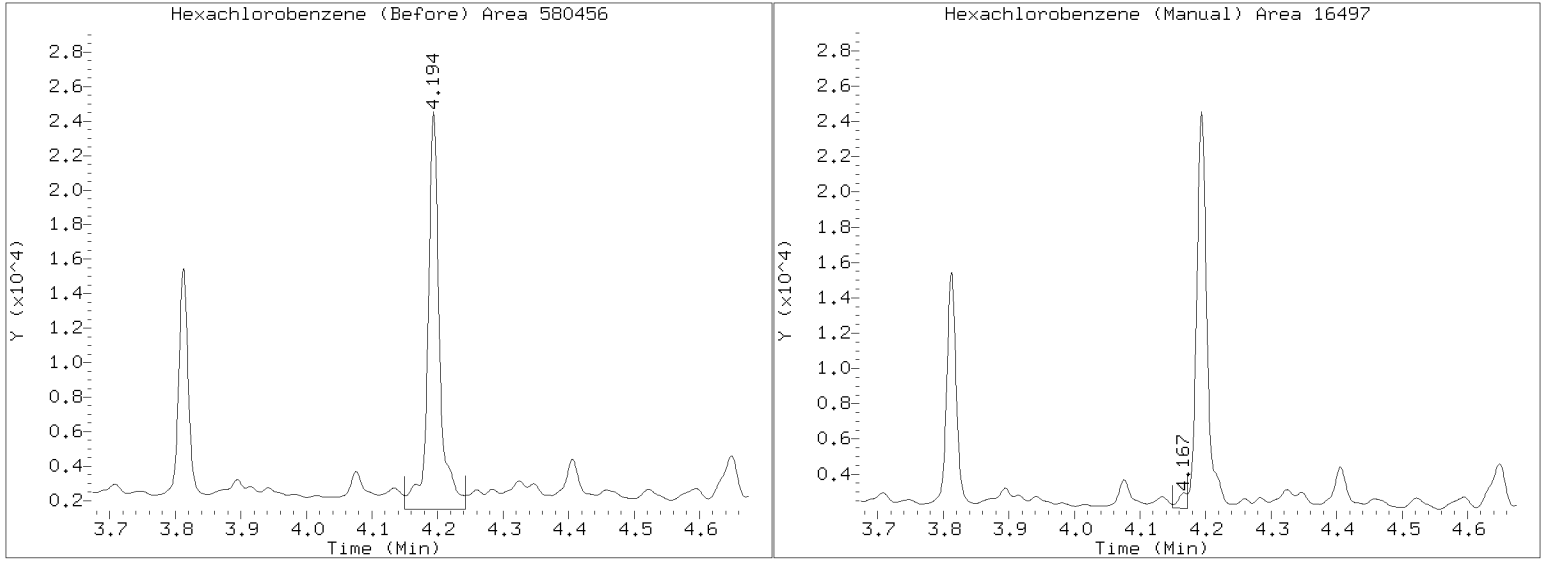


CLP-2 Manual Integration: YES



Manual Peak Adjustment Report, STX-CLP

Datafile: /20230502.b/23050212.D  
Injection Date: 02-MAY-2023 16:48  
Lab ID:23D0063-03 Client ID:  
Report Date: 05/05/2023 15:04

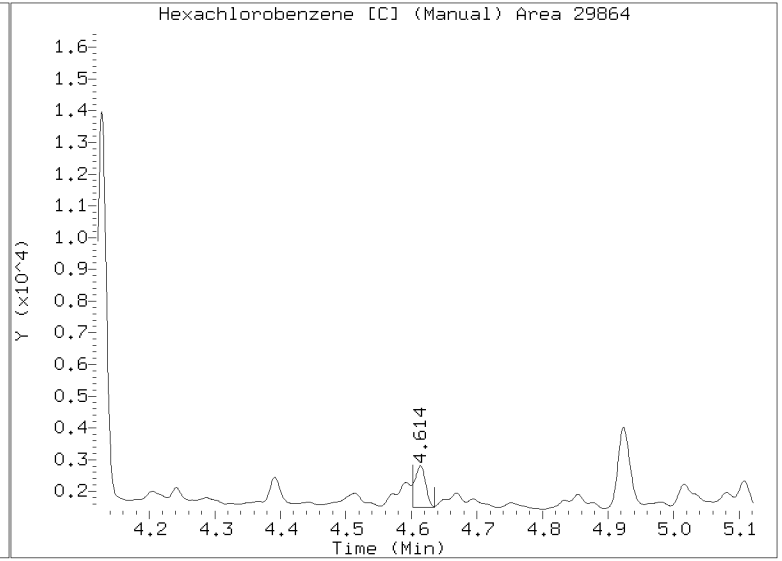
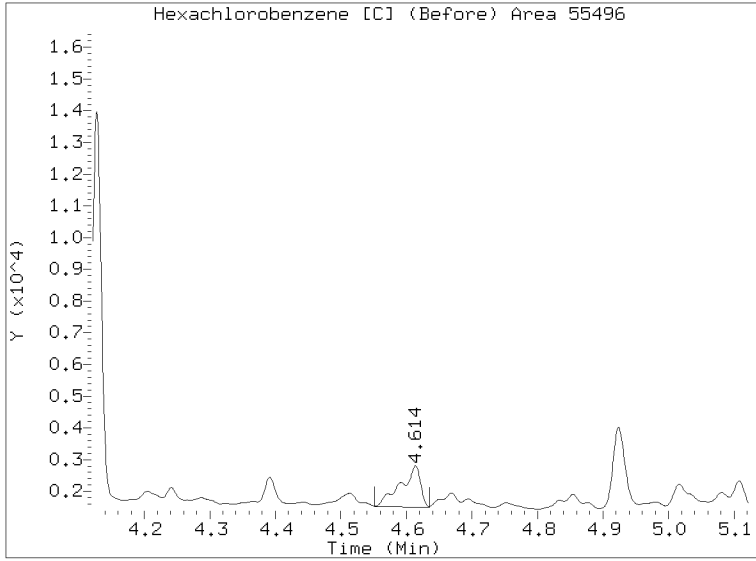


Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050212.D

Injection Date: 02-MAY-2023 16:48

Lab ID:23D0063-03 Client ID:







Batch: BLD0299

Prepared using: EPA 3546 (Microwave)

8081B Pest (PSDDA) in Solid (Version: HCB Only)

Matrix: Solid

Date Prepared: 4/17/23

Balance ID: B146462614

Set Up By: GTO 4/12/23

WO Comments

23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

The following standards may be missing from this batch!

Designator	Description
62	Toxaphene
44	WND
QLS 10	QLS Spike

Analysis: 8081B Pest (PSDDA)

Lab Number & Container	% Solids	Initial (g)		(REQ) GPC (1:1)	<input checked="" type="checkbox"/> Yes / No Acid Clean 5mL	(REQ) Sulfur C/U 4.5mL+0.5 mL <del>Ethyl Acetate</del>	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
		Target Dry: 12.5 (Wet)	Actual							
23D0037-01 A	56.6	(22.07)	22.47	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	
23D0037-03 A	71.7	(17.43)	17.43	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	
23D0063-01 A	43.2	(28.95)	28.45	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	
23D0063-03 A	35.1	(35.60)	35.61	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	

Batch QC

Lab Number	% Solids	Initial (g)		(REQ) GPC (1:1)	<input checked="" type="checkbox"/> Yes / No Acid Clean 5mL	(REQ) Sulfur C/U 4.5mL+0.5 mL <del>Ethyl Acetate</del>	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
		Target Dry: 12.5 (Wet)	Actual							
BLD0299-BLK1	100.0	(12.50)	12.50	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	
BLD0299-BS1	100.0	(12.50)	12.50	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	
BLD0299-BSD1	100.0	(12.50)	12.50	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	
BLD0299-MS1	71.7	(17.43)	17.43	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	Use 23D0037-03
BLD0299-MSD1	71.7	(17.43)	17.43	(1:1)	5mL	5mL	(2:5) 2mL	2.5	1.0	Use 23D0037-03

Client ID Verified By

Date

Preparation Reviewed By

Date

Extraction Date and Time



Batch: BLD0299

Prepared using: EPA 3546 (Microwave)  
8081B Pest (PSDDA) in Solid (Version: HCB Only)

**WO Comments**  
23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Prep Steps	Reagents Used	Standard ID
<b>Microwave</b> G 1 2 3 4/17/23 Analyst/Date	<b>Microwave</b> Analyst: JG Date: 4/17/23	
<b>Pre GPC KD</b> 100°C (No Exchange) 3 4 5 6 4/20/23 Analyst/Date	Hexane	L001957
	80:20 Hexane/Acetone	L002246
	1:1 Hexane/Acetone	L003045
	Neutral Glass Wool	L002037
<b>TurboVap</b> Pre GPC 1 2 3 4 5 WRN 4/21/23 Analyst/Date	Anhydrous Sodium Sulfate	L003261
	Pre GPC KD Analyst: CR Date: 4/20/23	
	Hexane	L001957
<b>Post GPC KD</b> 80 - 85°C Hexane Exchange (2 X 20 mL) 100°C 1 2 3 4 5 6 4/26/23 Analyst/Date	<del>Neutral Glass Wool</del>	
	GPC Filter Prep Analyst: MKS Date: 4/21/23	
	Methylene Chloride	K005941
	GPC Filter	L001799
<b>TurboVap</b> Pre-Cleanups 1 2 3 4 5 ZH 4/28/23 Analyst/Date	GPC Analyst: MKS Date: 4/25/23	
	Methylene Chloride	K005941
	GPC Calibration File	CLB0132
	Post GPC KD Analyst: CR Date: 4/26/23	
<b>TurboVap</b> Post-Cleanups 1 2 3 4 5 ZH 4/28/23 Analyst/Date	Methylene Chloride	K005941
	Hexane	L003500
	Vialing Analyst: ZH Date: 4/28/23	
<b>Vialing</b> ZH 4/28/23	Hexane	L003500
	Sulfuric Acid	L001033
	Ethyl Acetate	
	Tetrabutylammonium hydrogensulfate (TBAS)	L003024
	Sodium Sulfite	L002437

Surrogates & Spike Standards Used				
Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate	N L000773	50µL		
2µg/mL	Exp Date: 7/21/2023		G	J
Spike (Freezer)	3 L003590	100µL		
0.5/1/5µg/mL	Exp Date: 10/5/2023		G	J

**MANUALLY ENTER EXPIRATION DATES!**

(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards.

If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator in the Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).



Batch: BLD0299

Prepared using: EPA 3546 (Microwave)  
8081B Pest (PSDDA) in Solid (Version: HCB Only)

**WO Comments**

23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Analyst/Date	Silica Gel (SPE) Darts	
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Batch: BLD0299

Prepared using: EPA 3546 (Microwave)  
8081B Pest (PSDDA) in Solid (Version: HCB Only)

**WO Comments**  
23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Prep Instructions	
<p><b>SPECIAL INSTRUCTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Weigh into beakers-lightly dry with Sodium Sulfate.</li> <li>2. Transfer to microwave vessels.</li> <li>3. Add 1:1 Hex/ACE to the vessels (until solvent is 3" above soil layer after homogenization).</li> <li>4. Add surr/spike.</li> <li>5. Microwave on appropriate power setting determined by # of samples.</li> <li>6. After microwave-re-homogenize while hot then let cool 15 min in cold water. Re-homogenize while cool.</li> <li>7. Decant 1:1 Hex/ACE into Erlenmeyer flask using a funnel containing neutral glasswool.</li> <li>8. Rinse with Hexane.</li> <li>9. Microwave a 2nd time using 8:2 Hex/Ace (until solvent is 3" above soil layer after homogenization).</li> <li>10. Let cool and decant the solvent then empty the soil into the funnel and rinse with Hexane.</li> <li>11. KD to 5mL at 100°C. (NO HEXANE EXCHANGE).</li> <li>12. TurboVap</li> <li>13. GPC</li> <li>14. After GPC: KD at 80 - 85°C</li> <li>15. Exchange to Hexane at 100°C 2 x 20 mL).</li> <li>16. TurboVap.</li> <li>17. Cleanups, If Acid cleaning do not add Ethyl Acetate for Sulfur Clean. Do Not Acid Clean if Acid liable compounds are requested.</li> <li>18. Vial in Hexane.</li> </ol> <p>A. Need Total Solids Y <input type="checkbox"/> N <input checked="" type="checkbox"/></p> <p>B. Archive/Freeze <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/></p>	





Extraction Parameter: PEST Extraction Batch BLD0299

Total Solids Batch: BLD0066 Work Order(s): 23D0037

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)=	
<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= <u>φ1 - φ4</u>	<u>φ4/φ4/23</u>
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input checked="" type="checkbox"/> Oily, obvious fuel( <u>sulfur odors</u> )= <u>φ1 - φ4</u>	<u>φ4/φ4/23</u>
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input type="checkbox"/> Previously Frozen =	
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input checked="" type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<input checked="" type="checkbox"/> Share Samples Y/N <u>(N)</u>	<u>φ4/φ4/23</u>
<input checked="" type="checkbox"/> Multiple Jars Y/N <u>(N)</u>	<u>φ4/φ4/23</u>
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	





Extraction Parameter: PEST Extraction Batch BLD0299

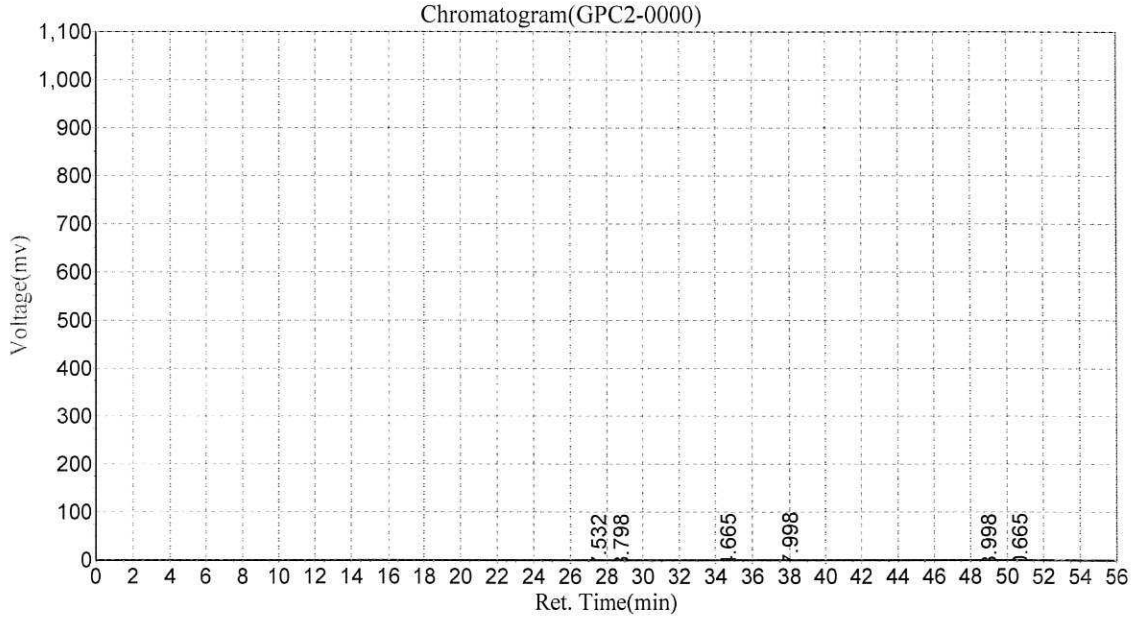
Total Solids Batch: BLD0093 Work Order(s): 23D0063

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input checked="" type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)= <u>01-04</u>	<u>CR 4/5/23</u>
<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= <u>01-04</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input checked="" type="checkbox"/> Previously Frozen = <u>01-04</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Other (Details)=	
<b>Aqueous:</b>	
<input checked="" type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<input checked="" type="checkbox"/> Share Samples Y/ <u>N</u>	<u>CR 4/5/23</u>
<input checked="" type="checkbox"/> Multiple Jars Y/ <u>N</u>	<u>CR 4/5/23</u>
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	

*BLK1*  
**BLD0299/531 23D0037/063/383/384/420/421/437**

Date:2023-04-25,3:23:39 PM  
 Data File:c:\n2000\data\gpc2\042523\GPC2-0000  
 Method File:E:\GPC2\_InHouse.mtd

Analyst:°NRB  
 Date/Time:2023-04-25,3:23:39 PM



**Results**

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		27.532	2146.889	105915.695	8.6265
2		28.798	2481.978	134405.594	10.9470
3		34.665	3231.000	253870.797	20.6770
4		37.998	3742.000	418651.188	34.0979
5		48.998	1559.923	157946.094	12.8643
6		50.665	1915.846	157000.875	12.7873
<b>Total</b>			15077.636	1227790.242	100.000

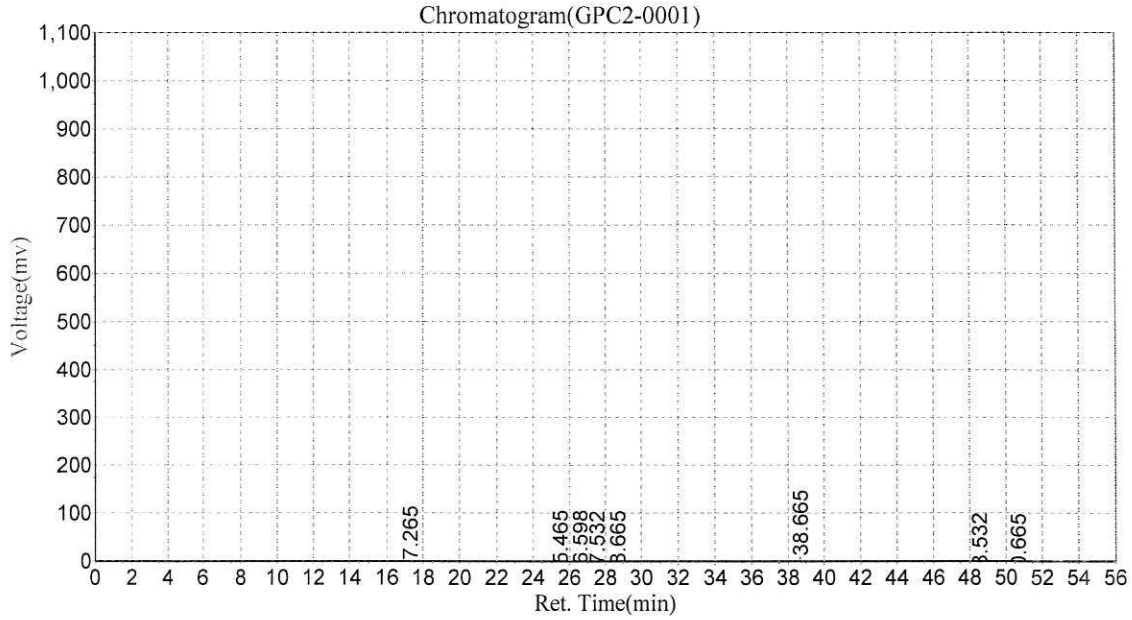
**Ingredient Table**

No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000

*BS1*  
**BLD0299/531 23D0037/063/383/384/420/421/437**

Date:2023-04-25,4:21:24 PM  
 Data File:c:\n2000\data\gpc2\042523\GPC2-0001  
 Method File:E:\GPC2\_InHouse.mtd

Analyst:°NRB  
 Date/Time:2023-04-25,4:21:25 PM



**Results**

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		17.265	9507.477	1010522.375	7.2888
2		25.465	2299.293	111419.445	0.8037
3		26.598	2491.413	132212.797	0.9536
4		27.532	2445.217	124656.164	0.8991
5		28.665	2698.337	148114.078	1.0683
6		38.665	49598.469	11506313.000	82.9936
7		48.532	4141.459	626959.500	4.5222
8		50.665	2501.703	203898.141	1.4707
<b>Total</b>			75683.368	13864095.500	100.000

**Ingredient Table**

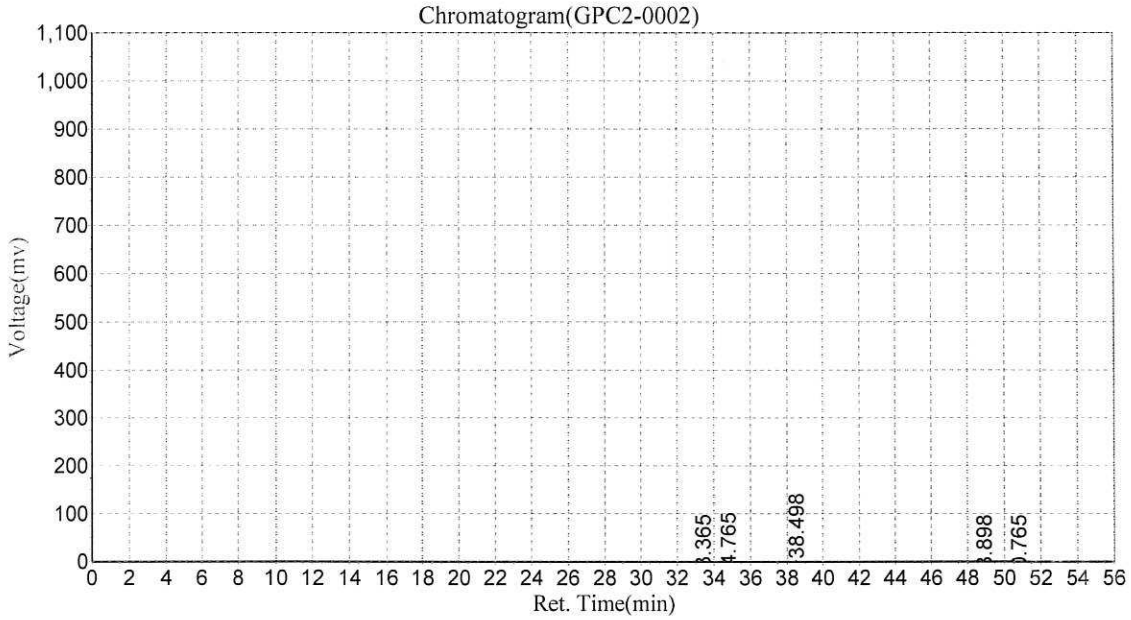
No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000



*13501*  
**BLD0299/531 23D0037/063/383/384/420/421/437**

Date:2023-04-25,5:19:06 PM  
Data File:c:\n2000\data\gpc2\042523\GPC2-0002  
Method File:E:\GPC2\_InHouse.mtd

Analyst:£°NRB  
Date/Time:2023-04-25,5:19:06 PM



**Results**

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		33.365	4369.271	198997.781	1.8688
2		34.765	7702.804	480655.781	4.5138
3		38.498	47004.559	9672687.000	90.8344
4		48.898	1595.065	172426.313	1.6192
5		50.765	1845.807	123935.500	1.1639
<b>Total</b>			62517.505	10648702.375	100.000

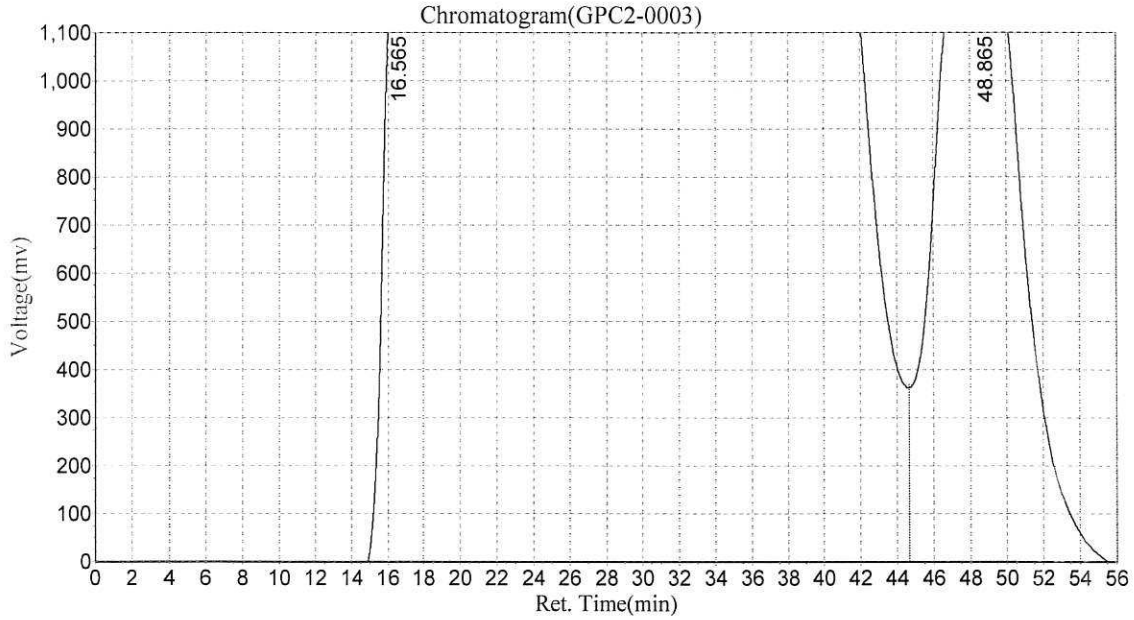
**Ingredient Table**

No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000

*MS 1*  
**BLD0299/531 23D0037/063/383/384/420/421/437**

Date:2023-04-25,6:16:53 PM  
Data File:c:\n2000\data\gpc2\042523\GPC2-0003  
Method File:E:\GPC2\_InHouse.mtd

Analyst:°NRB  
Date/Time:2023-04-25,6:16:53 PM



**Results**

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		16.565	1302428.625	2137846016.000	83.2646
2		48.865	1241410.750	429687168.000	16.7354
<b>Total</b>			2543839.375	2567533184.000	100.000

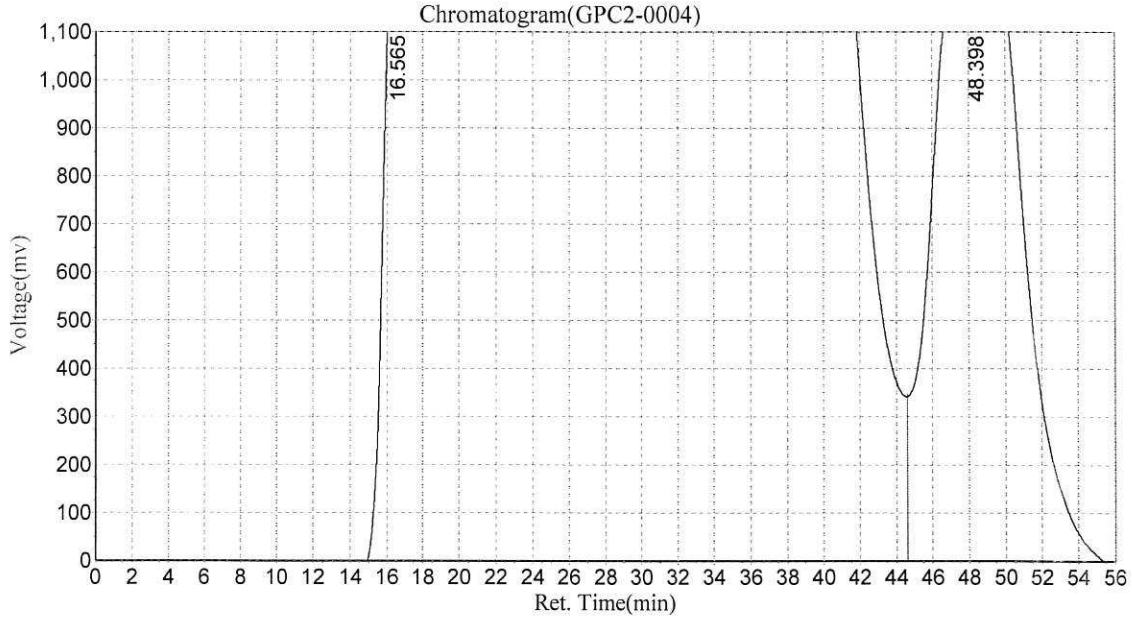
**Ingredient Table**

No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000

*m8P1*  
**BLD0299/531 23D0037/063/383/384/420/421/437**

Date:2023-04-25,7:14:35 PM  
Data File:c:\n2000\data\gpc2\042523\GPC2-0004  
Method File:E:\GPC2\_InHouse.mtd

Analyst£°NRB  
Date/Time2023-04-25,7:14:35 PM



**Results**

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		16.565	1294709.875	2114804608.000	82.7506
2		48.398	1243226.250	440831968.000	17.2494
<b>Total</b>			2537936.125	2555636576.000	100.000

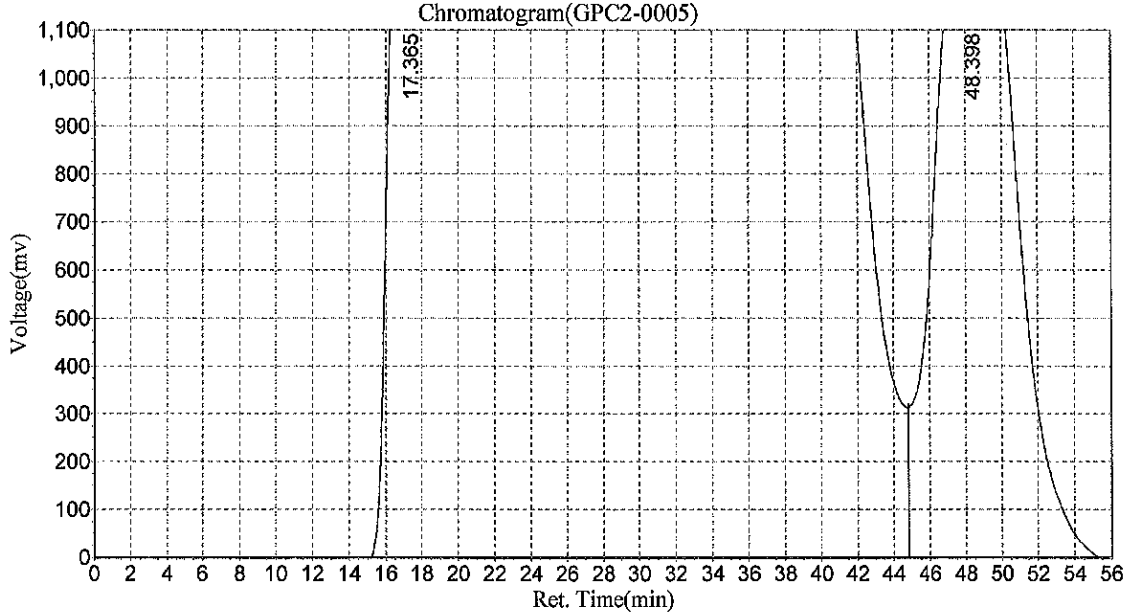
**Ingredient Table**

No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000

BLD0299/531 23D0037/063/383/384/420/421/437

Date:2023-04-25,8:12:23 PM  
Data File:c:\n2000\data\gpc2\042523\GPC2-0005  
Method File:E:\GPC2\_InHouse.mtd

Analyst:NRB  
Date/Time:2023-04-25,8:12:23 PM



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		17.365	1294975.000	2105306240.000	83.5022
2		48.398	1239238.375	415951872.000	16.4978
<b>Total</b>			2534213.375	2521258112.000	100.000

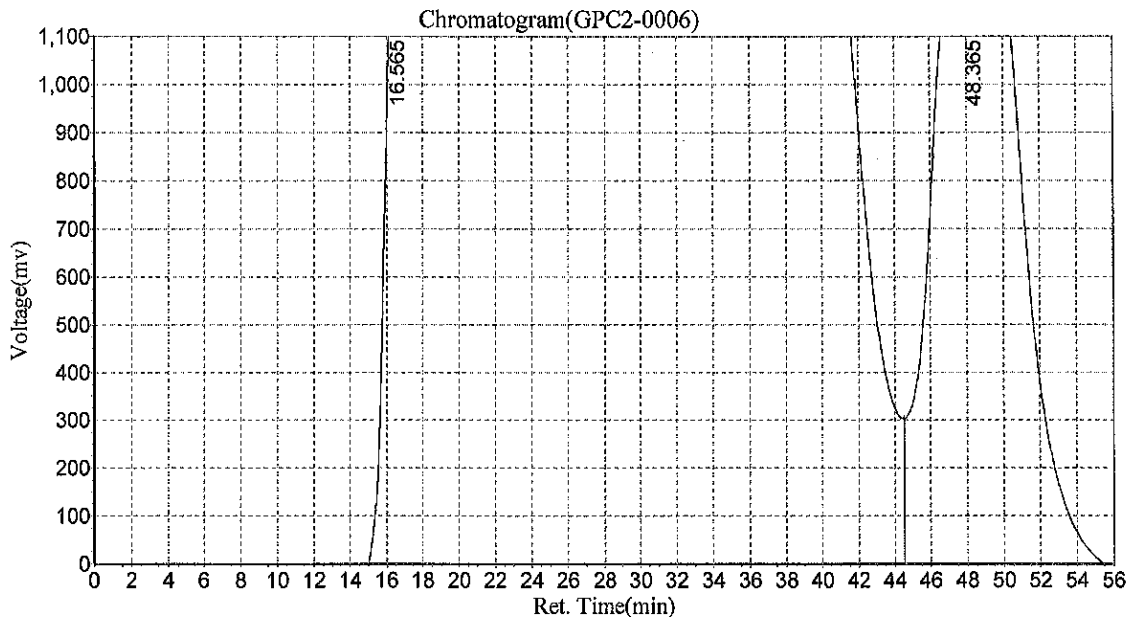
Ingredient Table

No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000

BLD0299/531 23D0037/063/383/384/420/421/437

Date:2023-04-25,9:10:04 PM  
 Data File:c:\n2000\data\gpc2\042523\GPC2-0006  
 Method File:E:\GPC2\_InHouse.mtd

Analyst:NRB  
 Date/Time:2023-04-25,9:10:04 PM



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		16.565	1295996.500	2093116928.000	82.2574
2		48.365	1245763.500	451475936.000	17.7426
<b>Total</b>			2541760.000	2544592864.000	100.000

Ingredient Table

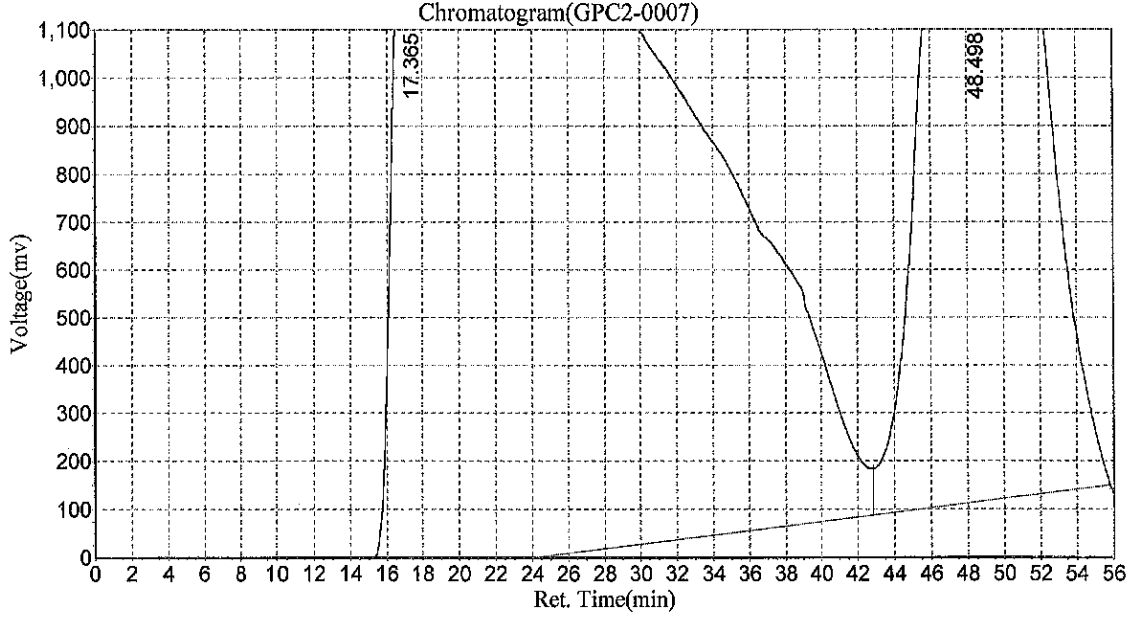
No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000



# BLD0299/531 23D0037/063/383/384/420/421/437

Date:2023-04-25,10:07:52 PM  
Data File:c:\n2000\data\gpc2\042523\GPC2-0007  
Method File:E:\GPC2\_InHouse.mtd

Analyst:NRB  
Date/Time:2023-04-25,10:07:53 PM



### Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		17.365	1283930.625	1514316672.000	72.2856
2		48.498	1130889.125	580592384.000	27.7144
<b>Total</b>			2414819.750	2094909056.000	100.000

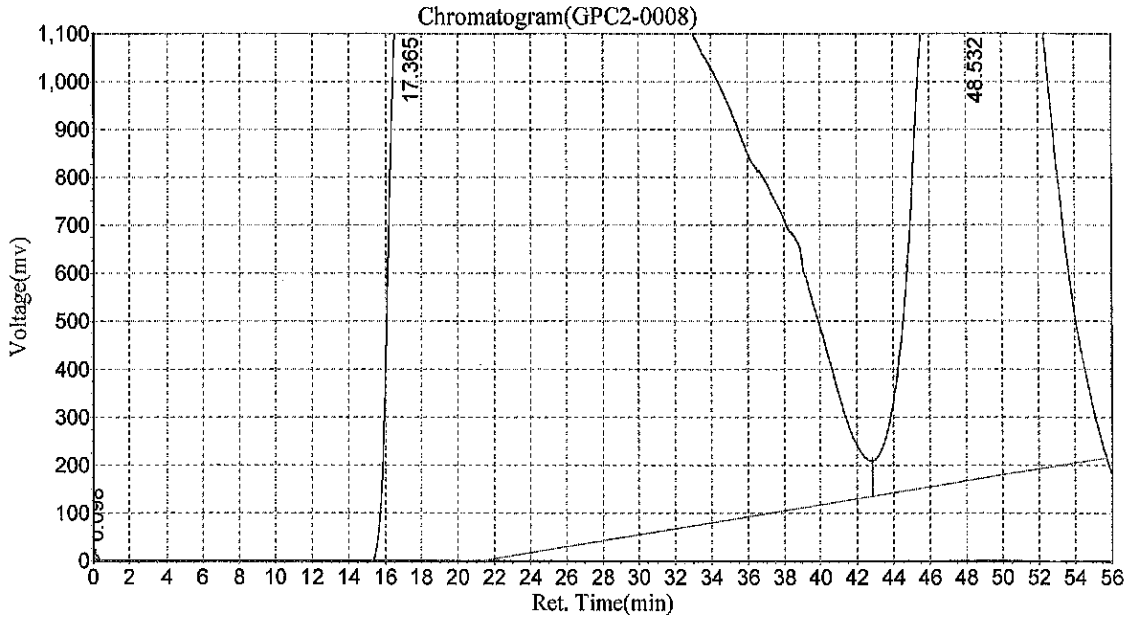
### Ingredient Table

No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000

03  
**BLD0299/531 23D0037/063/383/384/420/421/437**

Date:2023-04-25,11:05:34 PM  
 Data File:c:\n2000\data\gpc2\042523\GPC2-0008  
 Method File:E:\GPC2\_InHouse.mtd

Analyst:NRB  
 Date/Time:2023-04-25,11:05:34 PM



**Results**

Peak No.	Peak ID	Ret Time	Height	Area	Conc
1		0.098	8386.913	143551.016	0.0068
2		17.365	1276203.500	1571547648.000	74.0613
3		48.532	1074076.375	550264128.000	25.9319
<b>Total</b>			2358666.788	2121955327.016	100.000

**Ingredient Table**

No	Peak ID	Ret Time	Peak Width	Factor1	Factor2	ISTD Wt.
1	Collect Pest	29.000	0.010	0.00E+000	0.00E+000	0.0000
2	Dump Pest	46.000	0.010	0.00E+000	0.00E+000	0.0000
3	Dump BAN	48.000	0.010	0.00E+000	0.00E+000	0.0000
4	Collect BAN	24.000	0.010	0.00E+000	0.00E+000	0.0000



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0196

Cleanup Type: GPC

Cleanup Method: EPA 3640A GPC Cleanup 1:1

Analysis: EPA 8081B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1819	23D0063-03	23050212.D	04/28/2023	
Blank	BLD0299-BLK1	23050204.D	04/28/2023	
LDW23-SS1818	23D0063-01	23050211.D	04/28/2023	
LCS	BLD0299-BS1	23050205.D	04/28/2023	
LCS Dup	BLD0299-BSD1	23050206.D	04/28/2023	



**CLEANUP BENCH SHEET**

CLD0196

**Matrix: Solid      Cleanup using: Organics - EPA 3640A GPC Cleanup 1:1      Check Standard: CLB0132-GPC2      Printed: 4/28/2023 12:29:31PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23D0037-01	A	LDW23-SS1812	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0037-03	A	LDW23-SS1813	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0063-01	A	LDW23-SS1818	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0063-03	A	LDW23-SS1819	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
BLD0299-BLK1	-	Blank	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-BS1	-	LCS	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-BSD1	-	LCS Dup	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-MS1	-	Matrix Spike	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	4/28/2023	ZH	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0197

Cleanup Type: Sulfuric Acid

Cleanup Method: EPA 3665 Sulfuric Acid Cleanup - uL

Analysis: EPA 8081B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	BLD0299-BLK1	23050204.D	04/28/2023	
LCS Dup	BLD0299-BSD1	23050206.D	04/28/2023	
LCS	BLD0299-BS1	23050205.D	04/28/2023	
LDW23-SS1819	23D0063-03	23050212.D	04/28/2023	
LDW23-SS1818	23D0063-01	23050211.D	04/28/2023	



**CLEANUP BENCH SHEET**

CLD0197

Matrix: Solid

Cleanup using: Organics - EPA 3665 Sulfuric Acid Cleanup - uL

Printed: 4/28/2023 12:30:06PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23D0037-01	A	LDW23-SS1812	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0037-03	A	LDW23-SS1813	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0063-01	A	LDW23-SS1818	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0063-03	A	LDW23-SS1819	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
BLD0299-BLK1	-	Blank	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-BS1	-	LCS	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-BSD1	-	LCS Dup	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-MS1	-	Matrix Spike	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	4/28/2023	ZH	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0198

Cleanup Type: Sulfur

Cleanup Method: EPA 3660B Sulfur Cleanup - uL

Analysis: EPA 8081B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	BLD0299-BLK1	23050204.D	04/28/2023	
LCS Dup	BLD0299-BSD1	23050206.D	04/28/2023	
LDW23-SS1819	23D0063-03	23050212.D	04/28/2023	
LDW23-SS1818	23D0063-01	23050211.D	04/28/2023	
LCS	BLD0299-BS1	23050205.D	04/28/2023	



### CLEANUP BENCH SHEET

CLD0198

Matrix: Solid Cleanup using: Organics - EPA 3660B Sulfur Cleanup - uL

Printed: 4/28/2023 12:30:33PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23D0037-01	A	LDW23-SS1812	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0037-03	A	LDW23-SS1813	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0063-01	A	LDW23-SS1818	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0063-03	A	LDW23-SS1819	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
BLD0299-BLK1	-	Blank	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-BS1	-	LCS	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-BSD1	-	LCS Dup	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-MS1	-	Matrix Spike	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	4/28/2023	ZH	





## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0199

Cleanup Type: Silica Gel

Cleanup Method: EPA 3630C Silica Gel Cleanup - uL

Analysis: EPA 8081B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LCS	BLD0299-BS1	23050205.D	04/28/2023	
Blank	BLD0299-BLK1	23050204.D	04/28/2023	
LCS Dup	BLD0299-BSD1	23050206.D	04/28/2023	
LDW23-SS1819	23D0063-03	23050212.D	04/28/2023	
LDW23-SS1818	23D0063-01	23050211.D	04/28/2023	



**CLEANUP BENCH SHEET**

CLD0199

**Matrix: Solid**

**Cleanup using: Organics - EPA 3630C Silica Gel Cleanup - uL**

**Printed: 4/28/2023 12:30:59PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23D0037-01	A	LDW23-SS1812	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0037-03	A	LDW23-SS1813	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0063-01	A	LDW23-SS1818	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
23D0063-03	A	LDW23-SS1819	A 02	2.5	2.5	8081B Pest (PSDDA)	4/28/2023	ZH	
BLD0299-BLK1	-	Blank	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-BS1	-	LCS	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-BSD1	-	LCS Dup	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-MS1	-	Matrix Spike	-	2.5	2.5	-	4/28/2023	ZH	
BLD0299-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	4/28/2023	ZH	



**Form I**  
**METHOD BLANK DATA SHEET**  
**EPA 8081B**

Blank
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Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BLD0299-BLK1</u>
Sampled:	<u>N/A</u>	Prepared:	<u>04/17/23 12:27</u>
Solids:		Preparation:	<u>EPA 3546 (Microwave)</u>
Batch:	<u>BLD0299</u>	Sequence:	<u>SLE0106</u>
Instrument:	<u>ECD6</u>	Column:	<u>STX-CLP</u>
		File ID:	<u>23050204.D</u>
		Analyzed:	<u>05/02/23 14:19</u>
		Initial/Final:	<u>12.5 g / 2.5 mL</u>
		Calibration:	<u>GD00035</u>
		Cleanups:	<u>GPC, Silica Gel, Sulfur, Sulfuric Acid</u>

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg wet)	Q	DL	RL
118-74-1	Hexachlorobenzene	1	0.50	U	0.15	0.50
SURROGATES		ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl		8.0000	5.57	69.6	30 - 160	
Decachlorobiphenyl [2C]		8.0000	5.97	74.6	30 - 160	
Tetrachlorometaxylene		8.0000	5.13	64.2	30 - 160	
Tetrachlorometaxylene [2C]		8.0000	4.87	60.9	30 - 160	

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230502.b/23050204.D  
Data file 2: /20230502.b/B20230502.b/23050204.D  
Method: \20230502.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: BLD0299-BLK1  
Client ID:  
Injection Date: 02-MAY-2023 14:19  
Report Date: 05/05/2023 15:03  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
----	----	----	----	0.00	0.00	---	alpha-BHC
----	----	----	----	0.00	0.00	---	beta-BHC
----	----	----	----	0.00	0.00	---	delta-BHC
----	----	----	----	0.00	0.00	---	gamma-BHC (Lindane)
----	----	----	----	0.00	0.00	---	Heptachlor
----	----	----	----	0.00	0.00	---	Aldrin
----	----	----	----	0.00	0.00	---	Heptachlor epoxide b
----	----	----	----	0.00	0.00	---	Endosulfan I
----	----	----	----	0.00	0.00	---	Dieldrin
----	----	----	----	0.00	0.00	---	4,4'-DDE
----	----	----	----	0.00	0.00	---	Endrin
----	----	----	----	0.00	0.00	---	Endosulfan II
----	----	----	----	0.00	0.00	---	4,4'-DDD
----	----	----	----	0.00	0.00	---	Endosulfan sulfate
----	----	----	----	0.00	0.00	---	4,4'-DDT
----	----	----	----	0.00	0.00	---	Methoxychlor
----	----	----	----	0.00	0.00	---	Endrin ketone
----	----	----	----	0.00	0.00	---	Endrin aldehyde
----	----	----	----	0.00	0.00	---	trans-Chlordane
----	----	----	----	0.00	0.00	---	cis-Chlordane
----	----	----	----	0.00	0.00	---	Hexachlorobutadiene
4.167	-0.008 5449	----	----	0.41	0.00	---	Hexachlorobenzene
3.812	-0.007 245824	4.126	-0.010 245643	25.67	24.34	5.3	Tetrachloro-m-xylene
9.358	-0.008 190912	10.295	-0.011 162686	27.83	29.85	7.0	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

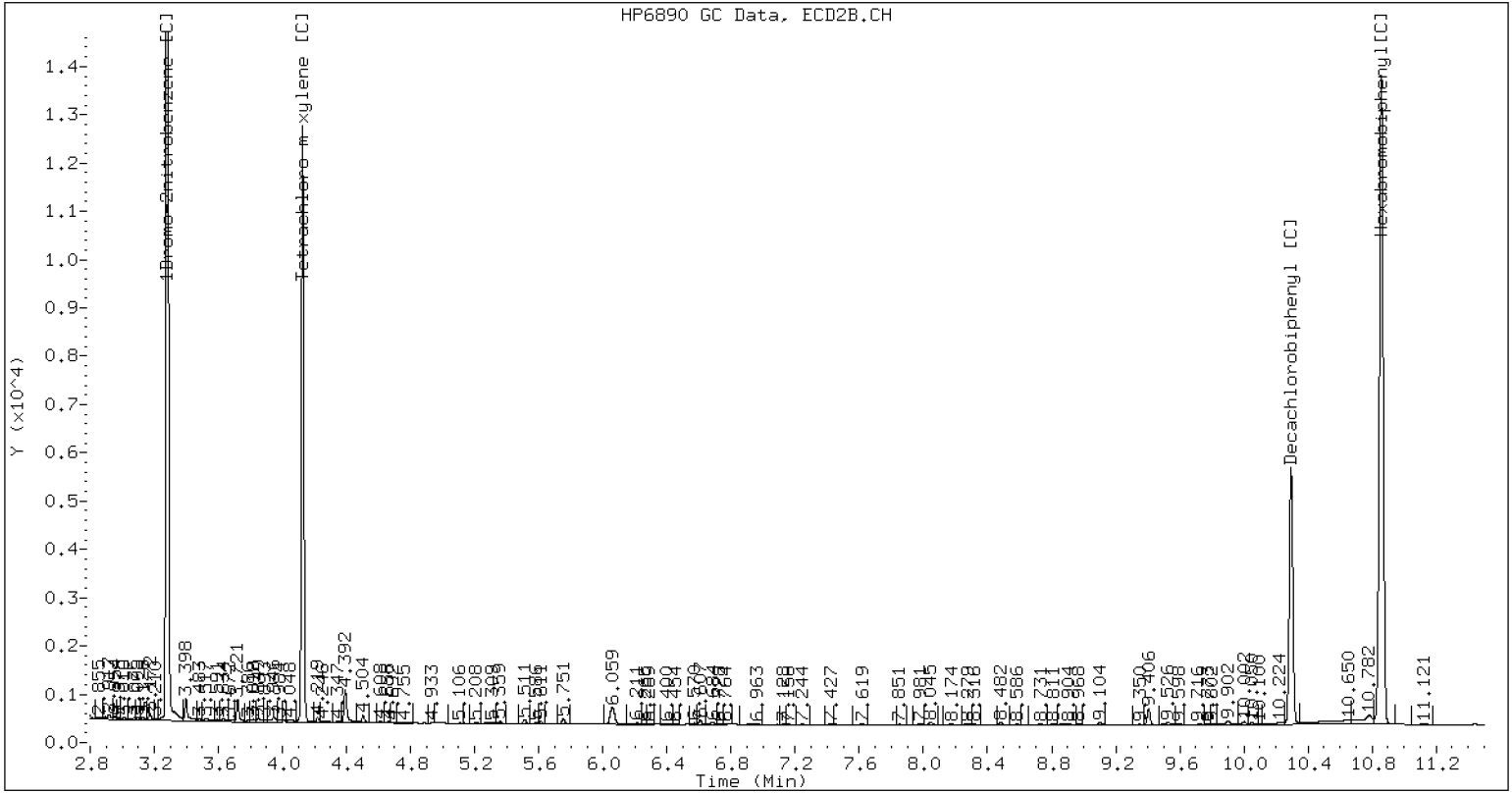
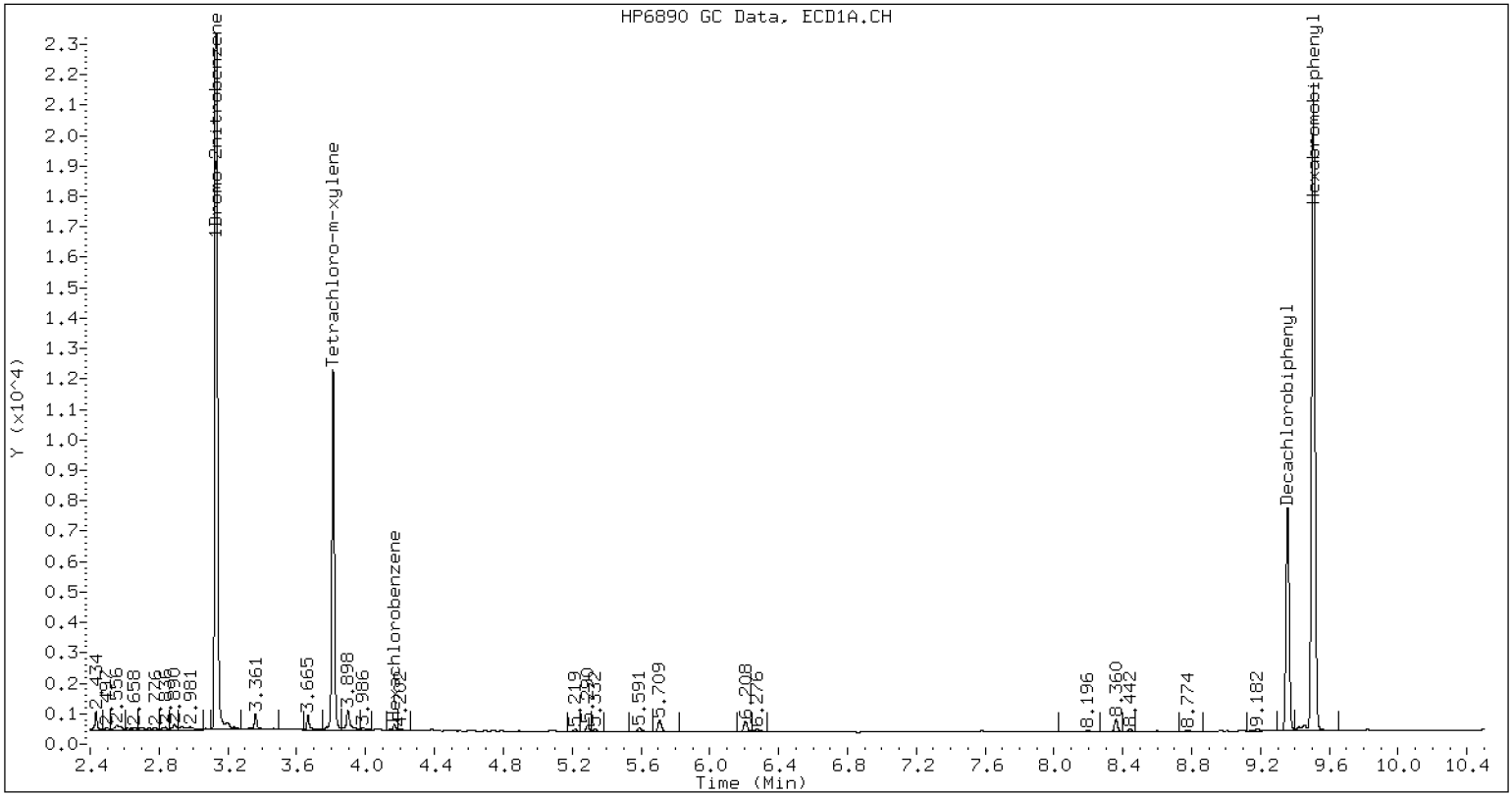
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	932757	684322	-26.6
Hexabromobiphenyl	745426	581553	-22.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1248665	733919	-41.2
Hexabromobiphenyl	754634	451527	-40.2

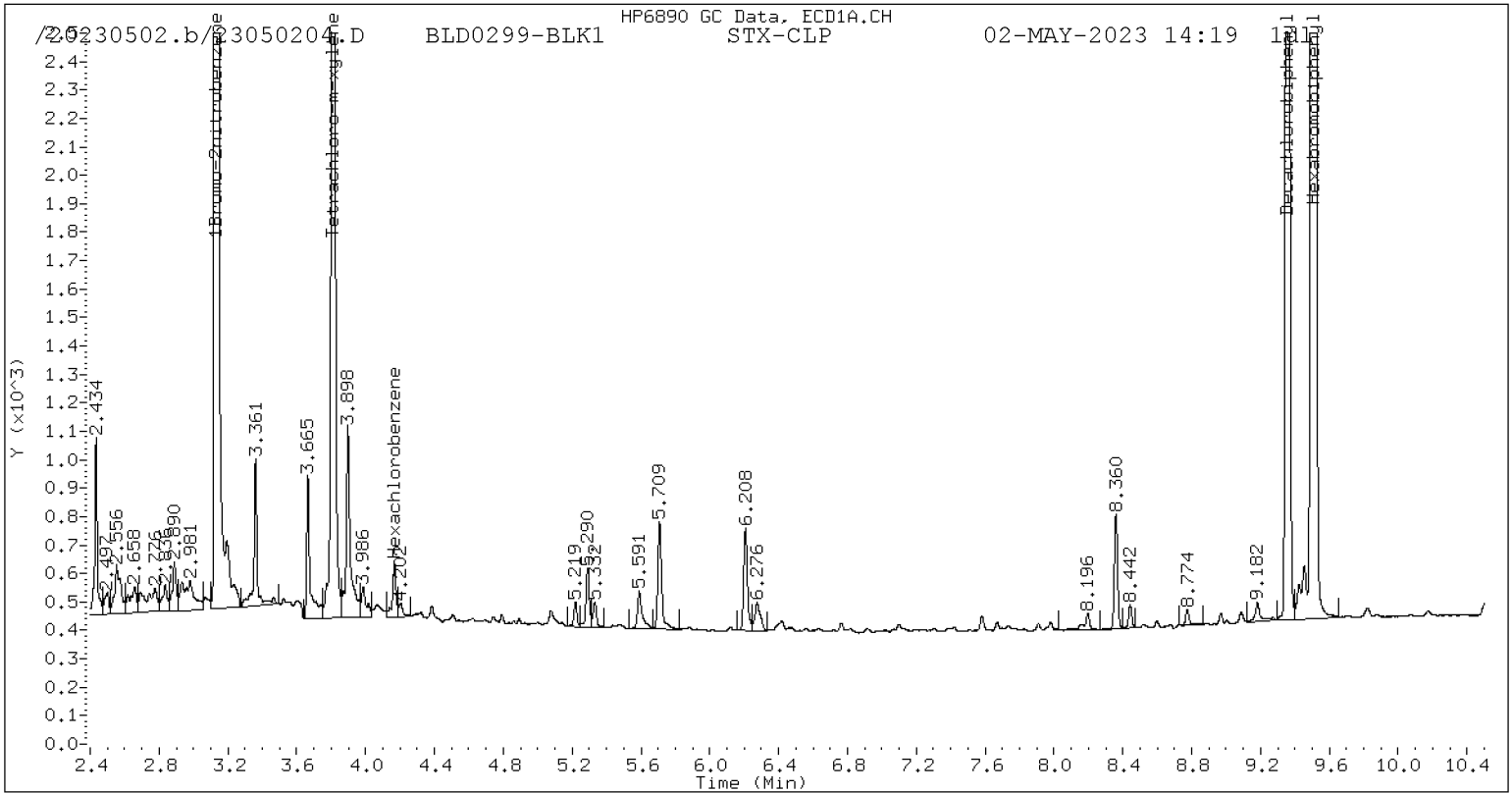
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

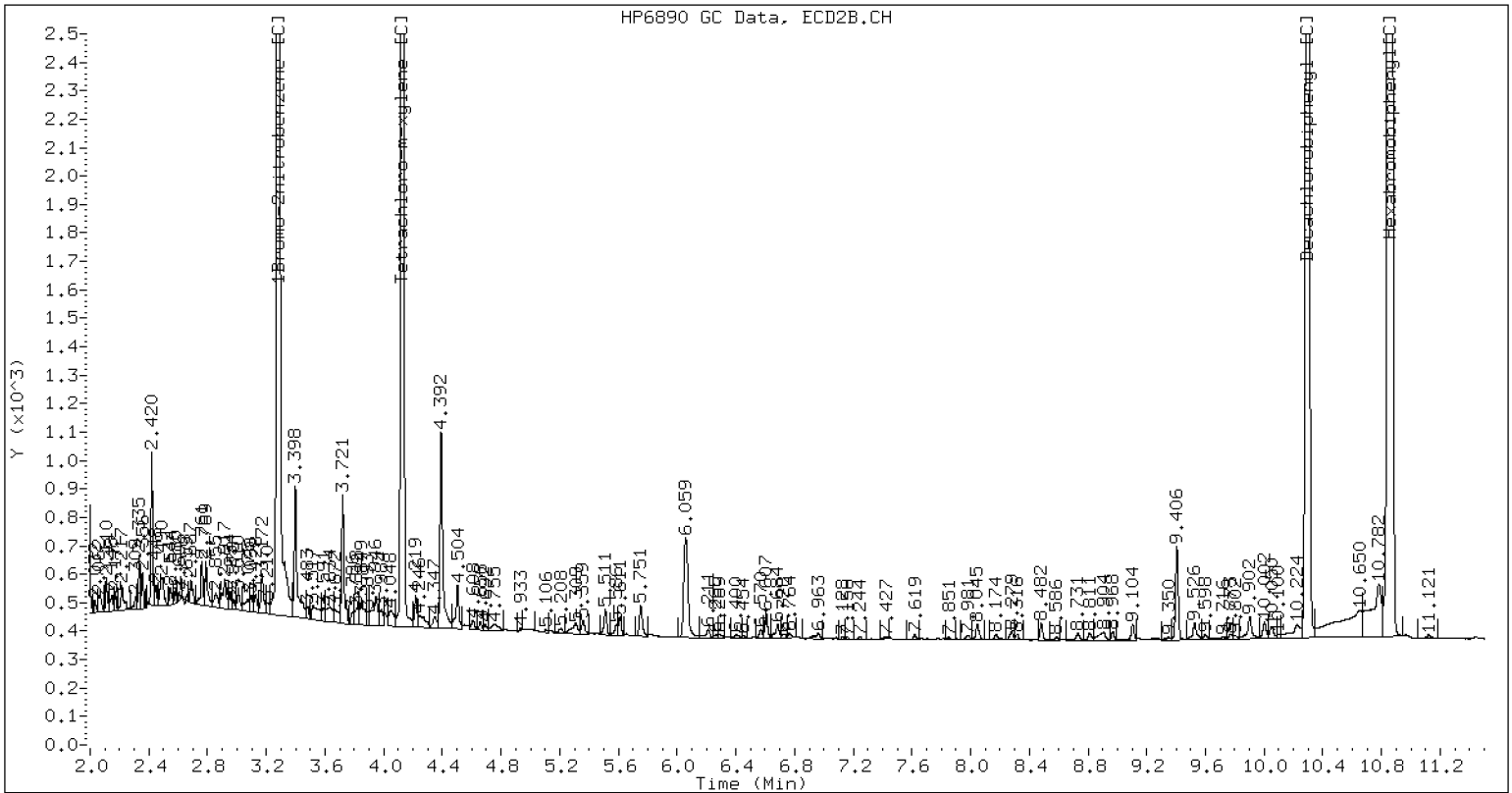


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: YES

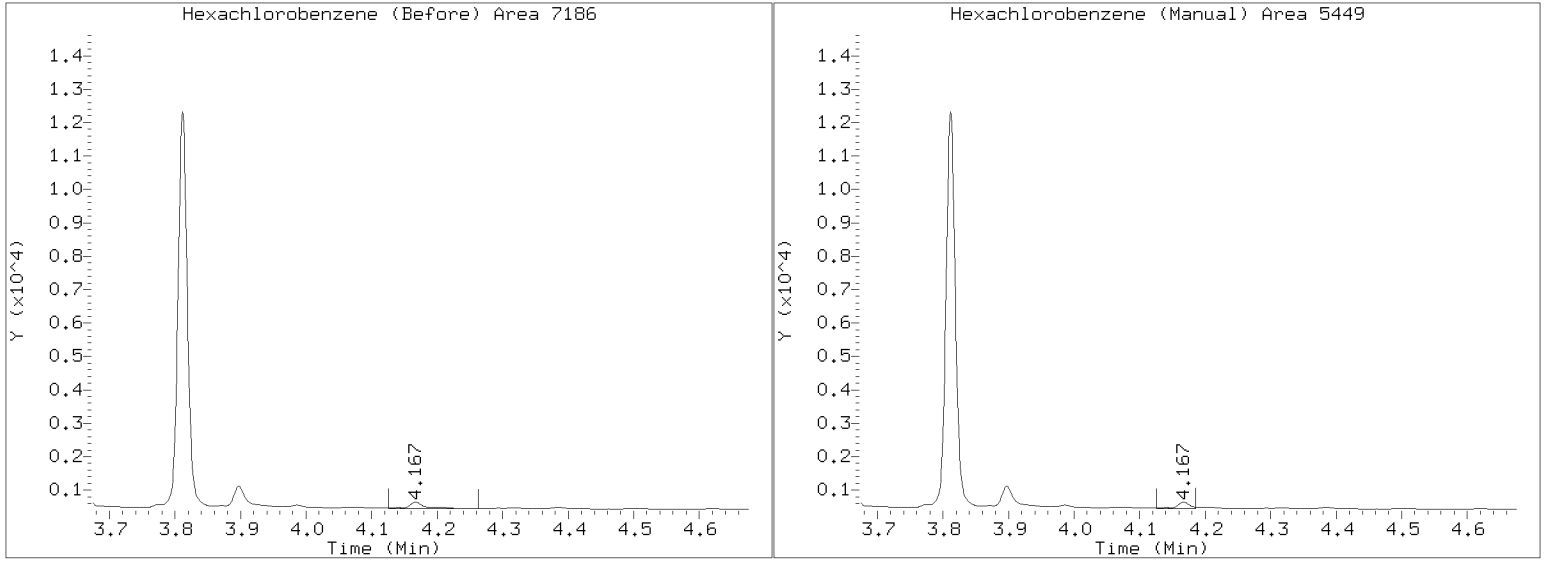
/20230502.b/B20230502.b/23050204.D BLD0299-BLK1 CLP2



CLP-2 Manual Integration: NO

Manual Peak Adjustment Report, STX-CLP

Datafile: /20230502.b/23050204.D  
Injection Date: 02-MAY-2023 14:19  
Lab ID:BLD0299-BLK1 Client ID:  
Report Date: 05/05/2023 15:03







**LCS / LCS DUPLICATE RECOVERY**  
**EPA 8081B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Analyzed:	<u>05/02/23 14:37</u>
Batch:	<u>BLD0299</u>	Laboratory ID:	<u>BLD0299-BS1</u>
Preparation:	<u>EPA 3546 (Microwave)</u>	Sequence Name:	<u>LCS</u>
Initial/Final:	<u>12.5 g / 2.5 mL</u>		

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Hexachlorobenzene	4.00	2.24		56.0	26 - 128

\* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Hexachlorobenzene	4.00	2.75		68.8	20.5	30	26 - 128

\* Indicates values outside of QC limits

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230502.b/23050205.D  
Data file 2: /20230502.b/B20230502.b/23050205.D  
Method: \20230502.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: BLD0299-BS1  
Client ID:  
Injection Date: 02-MAY-2023 14:37  
Report Date: 05/05/2023 15:03  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Response	RT	CLP2 Col Shift Response	CLP2 Col Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.325	-0.008	172769	4.751	-0.011	168666	10.84	11.06	2.0	alpha-BHC
4.708	-0.009	69207	5.218	-0.012	66747	10.88	11.02	1.3	beta-BHC
4.892	-0.009	164810	5.565	-0.012	145200	11.43	10.70	6.6	delta-BHC
4.628	-0.009	141895	5.140	-0.012	144515	10.13	10.78	6.2	gamma-BHC (Lindane)
5.116	-0.008	161447	5.658	-0.013	125738	12.46	10.70	15.2	Heptachlor
5.439	-0.009	144891	6.057	-0.014	120281	10.99	9.86	10.9	Aldrin
6.114	-0.011	129004	6.716	-0.013	114847	10.84	10.69	1.4	Heptachlor epoxide b
6.557	-0.010	196324	7.160	-0.012	172146	18.51	18.81	1.6	Endosulfan I
----			7.459	-0.007	881	0.00	0.09	---	Dieldrin
6.480	-0.009	253614	7.245	-0.012	225910	23.97	23.66	1.3	4,4'-DDE
----			7.787	-0.003	1717	0.00	0.19	---	Endrin
7.304	-0.010	75720	7.989	-0.012	49329	7.93	5.77	31.4	Endosulfan II
7.127	-0.009	217564	7.851	-0.011	190933	23.76	23.10	2.8	4,4'-DDD
8.168	-0.009	166680	8.587	-0.011	141942	18.51	18.05	2.5	Endosulfan sulfate
7.422	-0.009	234338	8.170	-0.011	193441	23.76	23.20	2.4	4,4'-DDT
7.910	-0.010	7597	8.810	-0.012	9097	1.80	2.54	34.3	Methoxychlor
8.442	-0.010	160156	9.109	-0.010	113596	15.58	13.23	16.4	Endrin ketone
7.733	-0.010	26108	8.320	-0.011	23606	3.58	3.82	6.5	Endrin aldehyde
6.257	-0.009	134131	6.928	-0.011	111491	11.52	10.82	6.2	trans-Chlordane
6.403	-0.010	129153	7.088	-0.012	115144	11.05	11.35	2.7	cis-Chlordane
2.303	-0.006	165511	2.447	-0.006	139012	10.07	10.04	0.3	Hexachlorobutadiene
4.167	-0.008	158013	4.611	-0.011	129919	11.21	9.76	13.8	Hexachlorobenzene
3.812	-0.007	263351	4.127	-0.009	241439	25.83	24.43	5.6	Tetrachloro-m-xylene
9.358	-0.008	186905	10.296	-0.010	157411	26.85	29.03	7.8	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

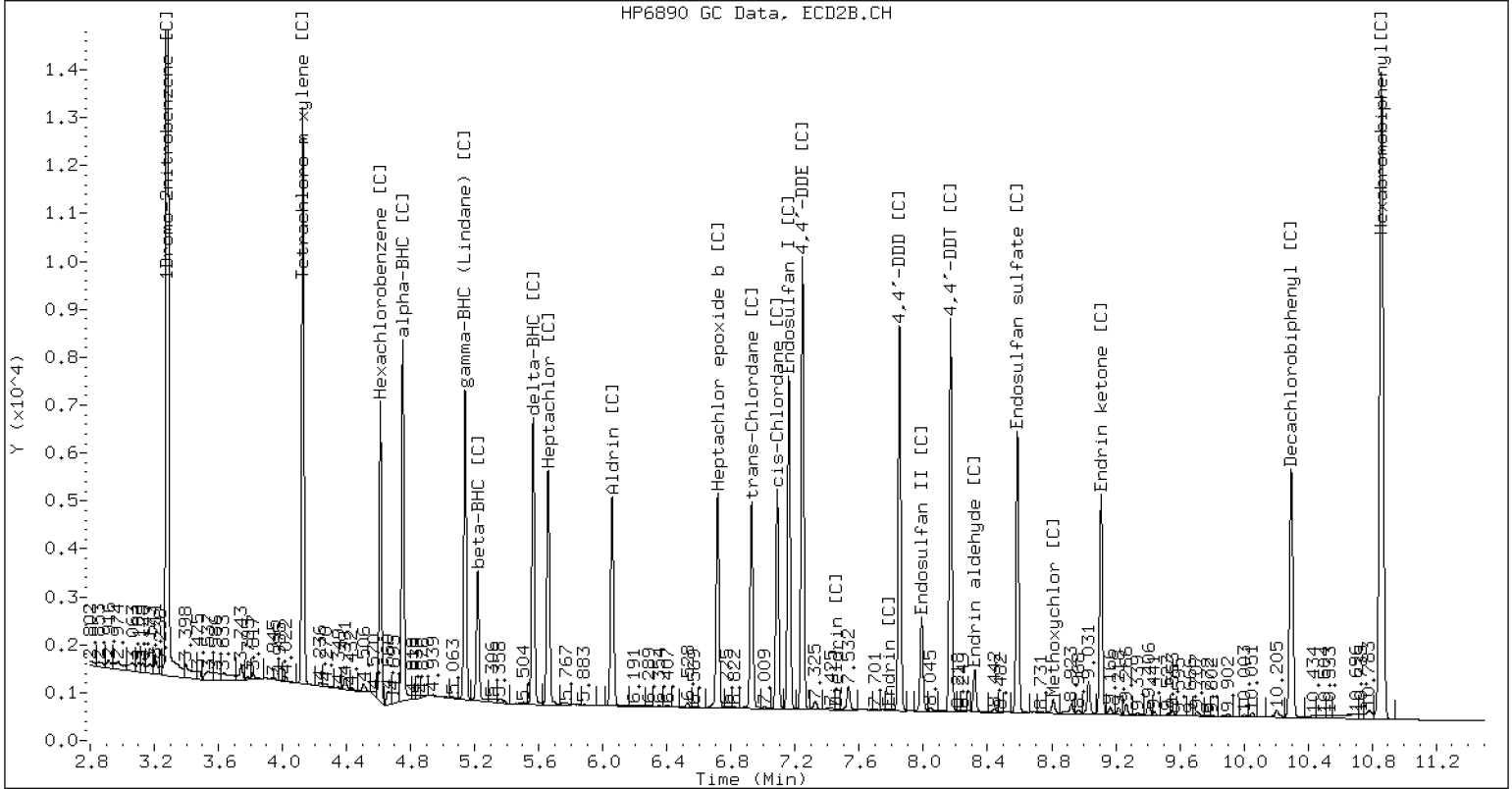
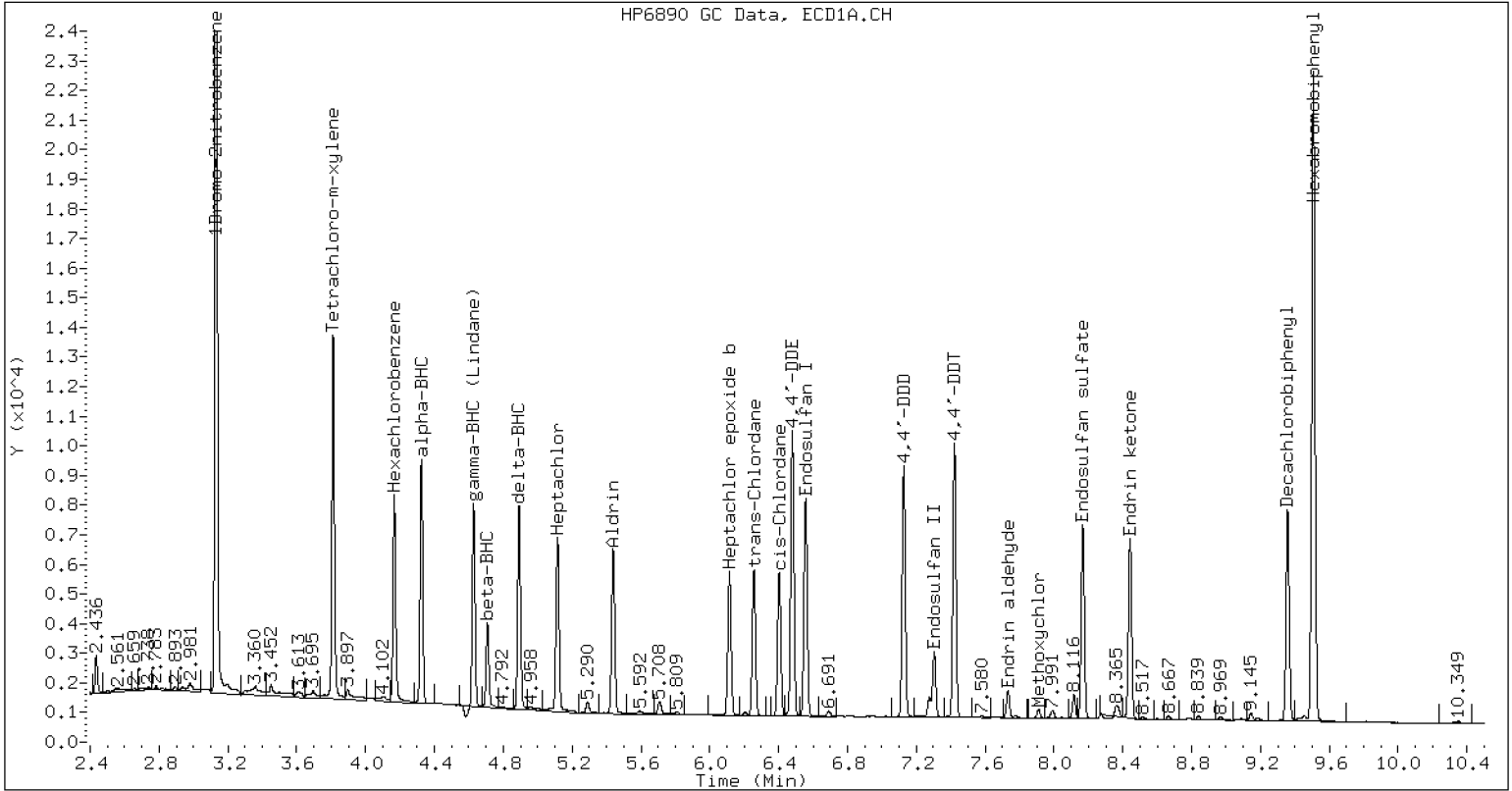
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	932757	728604	-21.9
Hexabromobiphenyl	745426	590277	-20.8

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1248665	718694	-42.4
Hexabromobiphenyl	754634	449270	-40.5

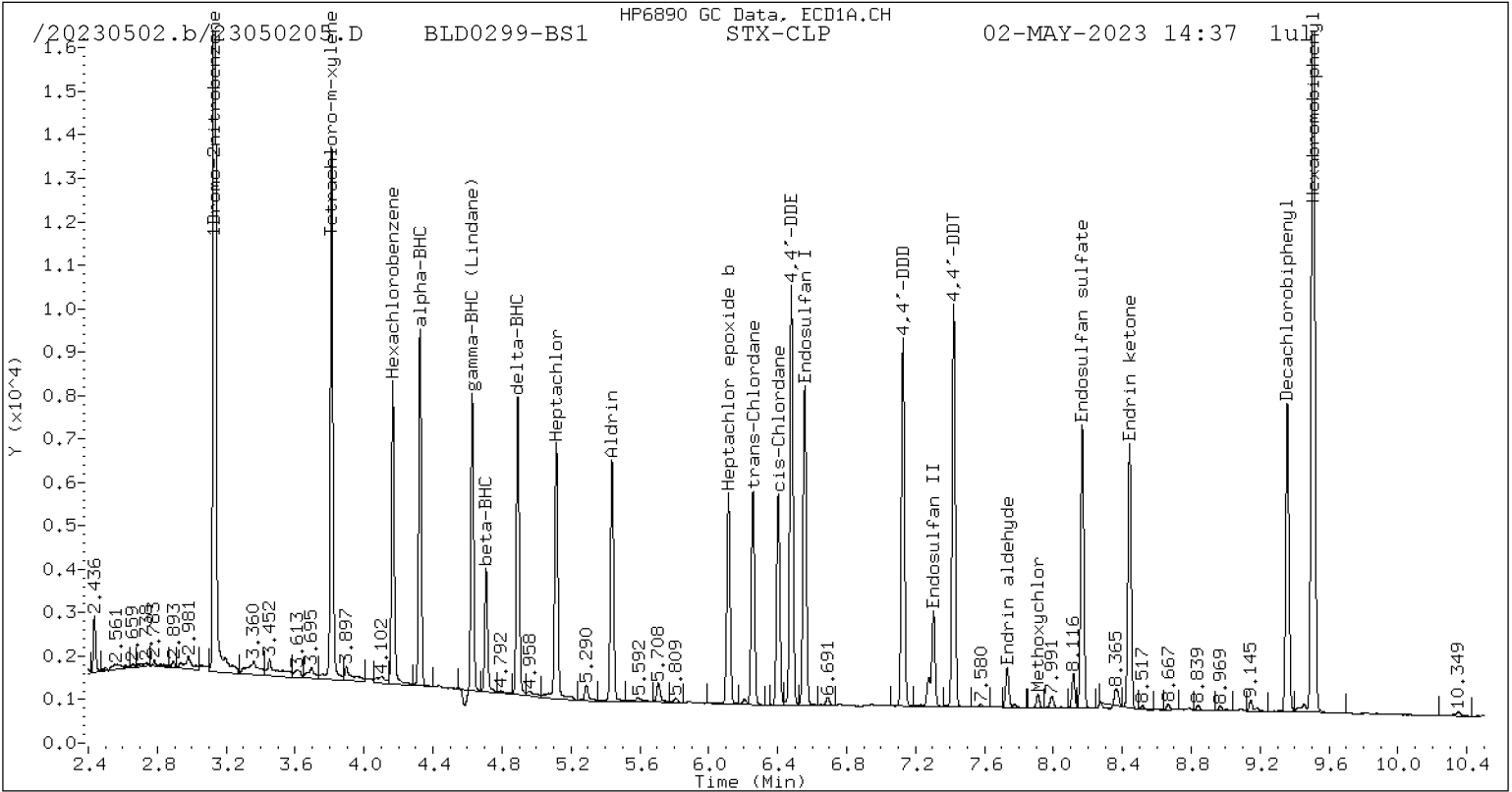
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

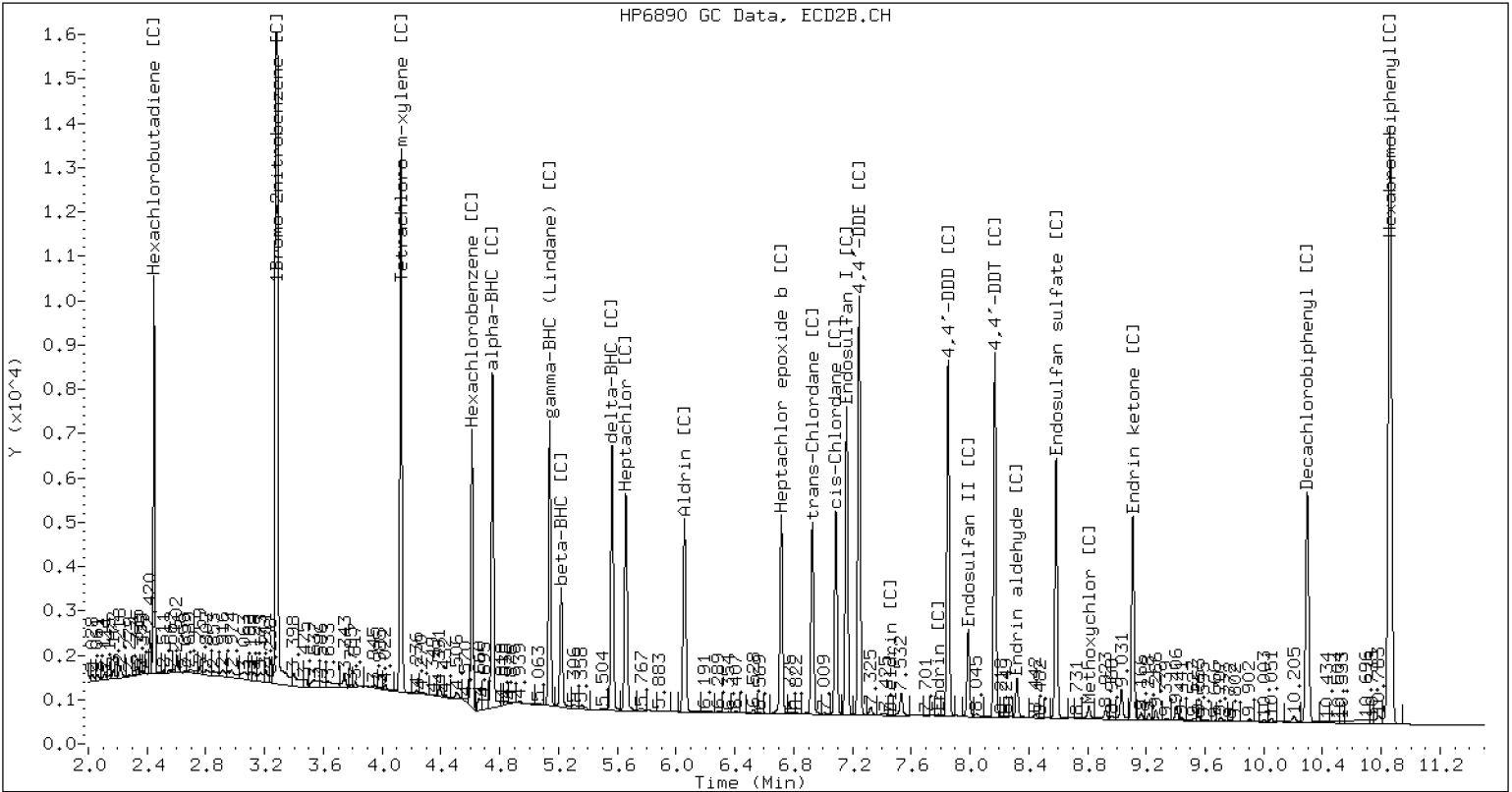


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230502.b/B20230502.b/23050205.D BLD0299-BS1 CLP2



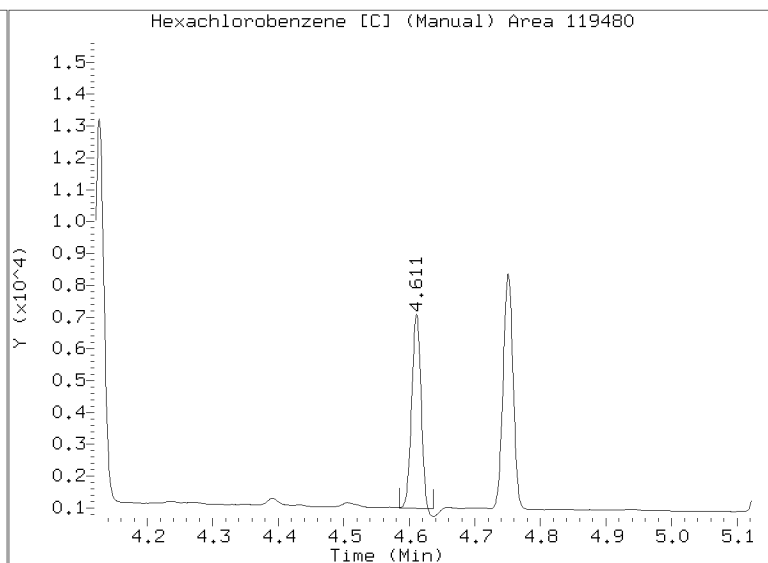
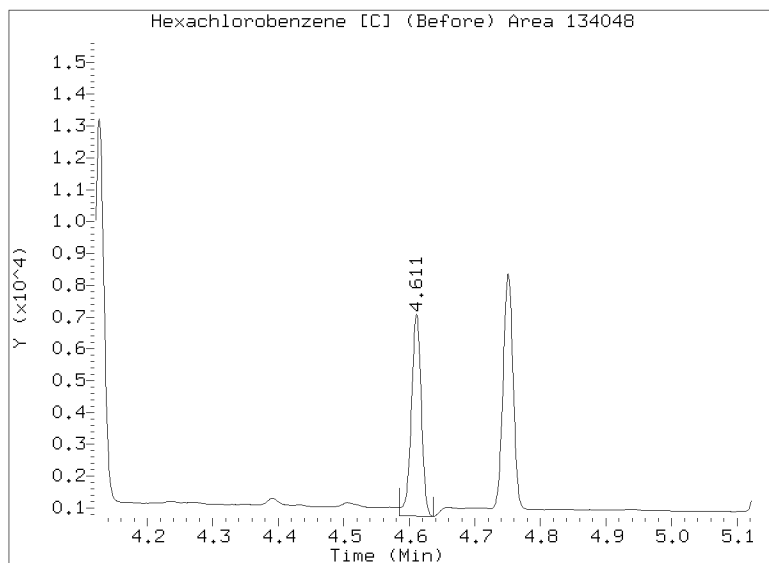
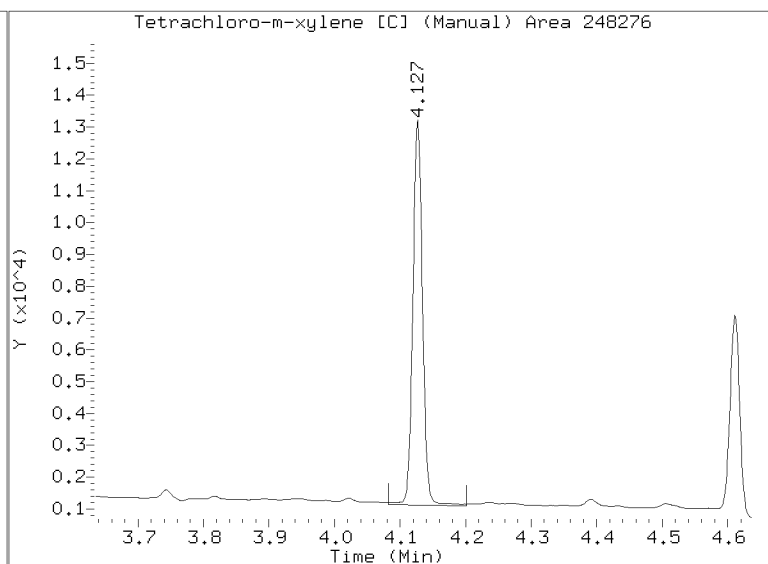
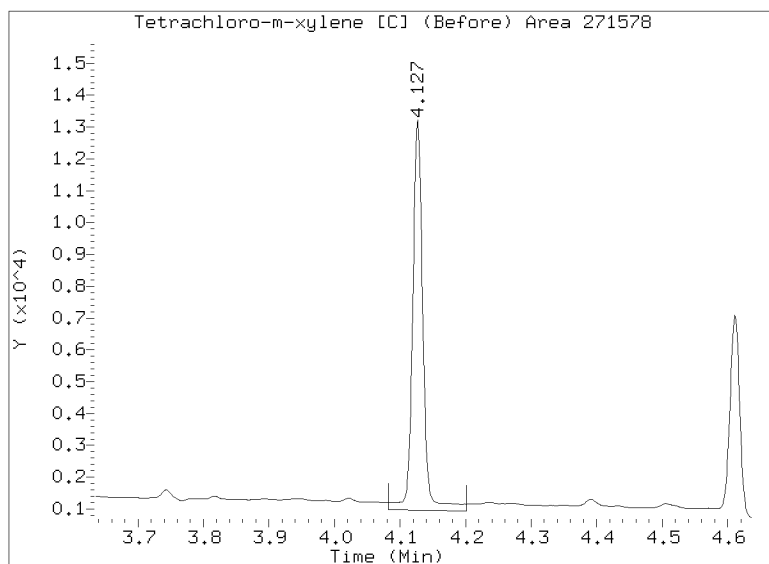
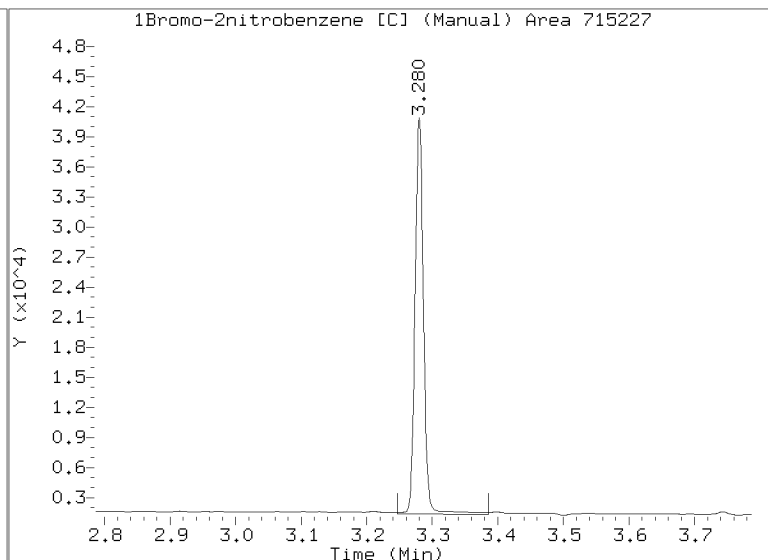
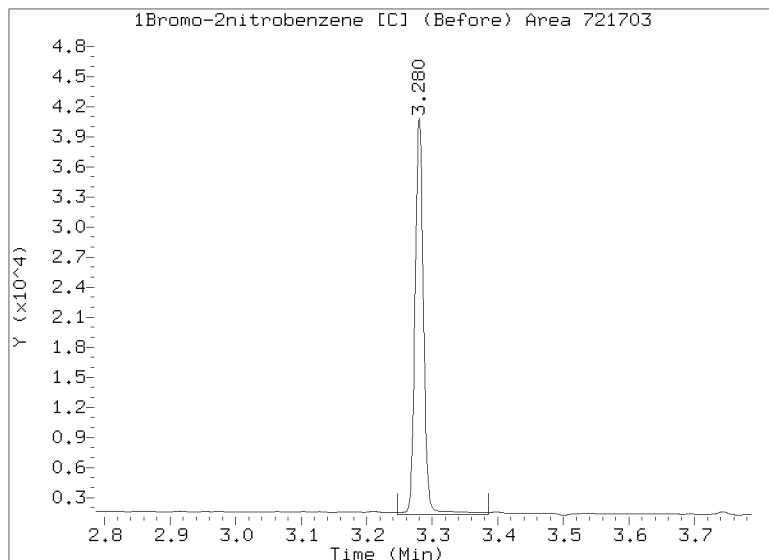
CLP-2 Manual Integration: NO

# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050205.D

Injection Date: 02-MAY-2023 14:37

Lab ID:BLD0299-BS1 Client ID:



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230502.b/23050206.D  
Data file 2: /20230502.b/B20230502.b/23050206.D  
Method: \20230502.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: BLD0299-BSD1  
Client ID:  
Injection Date: 02-MAY-2023 14:56  
Report Date: 05/05/2023 15:03  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Response	RT	CLP2 Col Shift Response	Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.324	-0.009	205295	4.751	-0.011	185530	12.95	12.37	4.6	alpha-BHC
4.708	-0.009	79993	5.218	-0.012	77698	12.64	13.04	3.1	beta-BHC
4.892	-0.009	189478	5.564	-0.013	165240	13.21	12.38	6.5	delta-BHC
4.628	-0.009	180586	5.140	-0.012	166914	12.97	12.66	2.4	gamma-BHC (Lindane)
5.116	-0.008	179053	5.658	-0.013	144414	13.89	12.49	10.6	Heptachlor
5.439	-0.009	166291	6.057	-0.014	136371	12.68	11.36	11.0	Aldrin
6.114	-0.011	151871	6.715	-0.014	132752	12.83	12.57	2.1	Heptachlor epoxide b
6.557	-0.010	240322	7.160	-0.012	207681	22.78	23.07	1.3	Endosulfan I
----			----			0.00	0.00	---	Dieldrin
6.479	-0.010	294788	7.245	-0.012	260118	28.01	27.70	1.1	4,4'-DDE
----			7.786	-0.004	3187	0.00	0.36	---	Endrin
7.303	-0.011	71637	7.988	-0.013	47827	7.54	5.68	28.0	Endosulfan II
7.127	-0.009	261791	7.850	-0.012	221512	28.74	27.20	5.5	4,4'-DDD
8.167	-0.010	195292	8.587	-0.011	160075	21.79	20.66	5.3	Endosulfan sulfate
7.421	-0.010	277569	8.169	-0.012	223515	28.29	27.21	3.9	4,4'-DDT
7.910	-0.010	7587	8.809	-0.013	5837	1.81	1.66	8.5	Methoxychlor
8.442	-0.010	191541	9.108	-0.011	136537	18.73	16.14	14.9	Endrin ketone
7.734	-0.009	13076	8.319	-0.012	17990	1.80	2.96	48.5*	Endrin aldehyde
6.256	-0.010	157575	6.927	-0.012	135295	13.61	13.36	1.9	trans-Chlordane
6.404	-0.009	149406	7.087	-0.013	131661	12.85	13.20	2.6	cis-Chlordane
2.303	-0.006	192263	2.447	-0.006	141411	11.76	10.39	12.4	Hexachlorobutadiene
4.166	-0.009	193095	4.612	-0.010	154561	13.77	11.80	15.4	Hexachlorobenzene
3.812	-0.007	316237	4.126	-0.010	285729	31.18	29.40	5.9	Tetrachloro-m-xylene
9.358	-0.008	211063	10.294	-0.012	175429	30.47	32.84	7.5	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	932757	724734	-22.3
Hexabromobiphenyl	745426	587296	-21.2

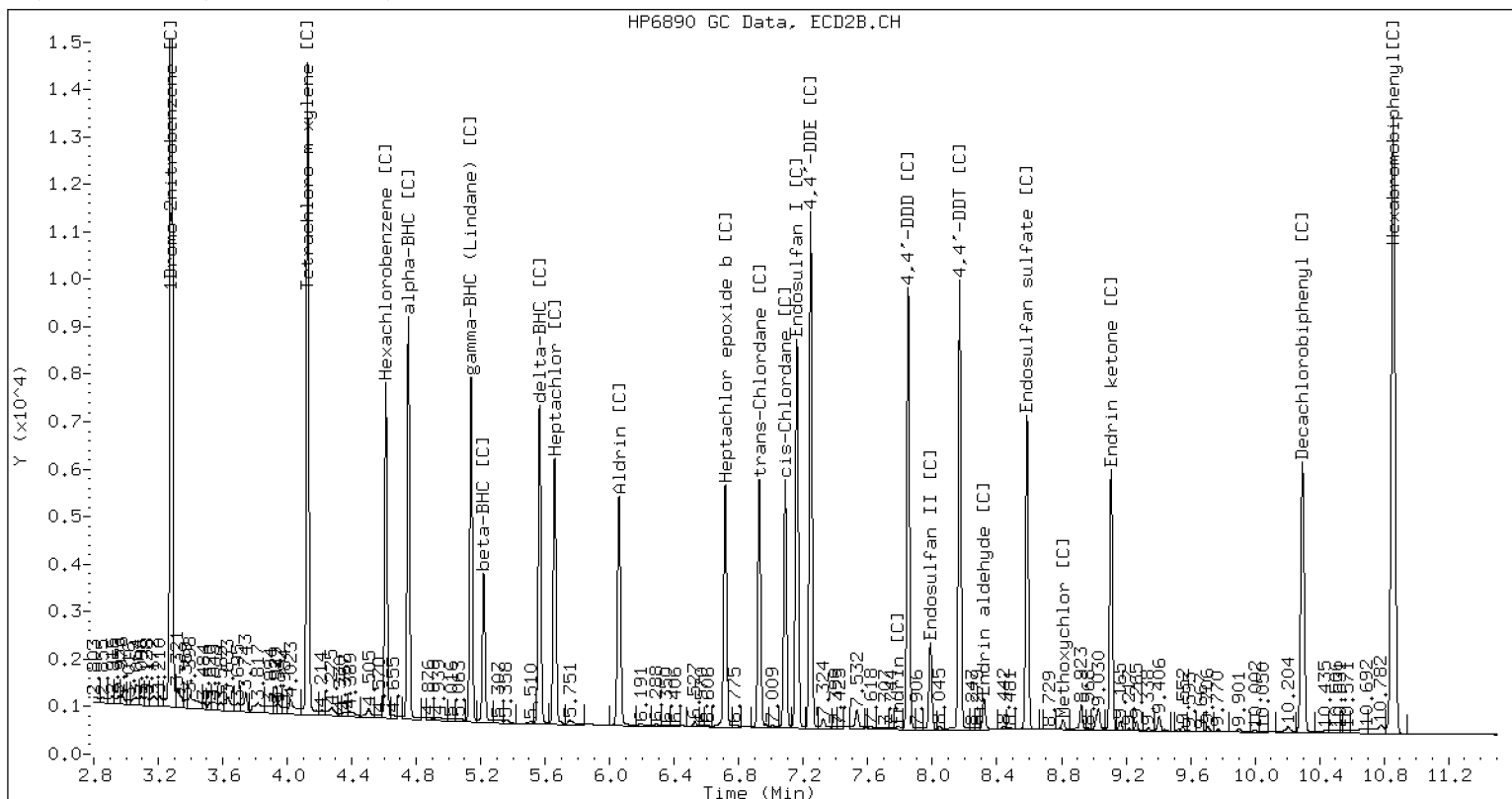
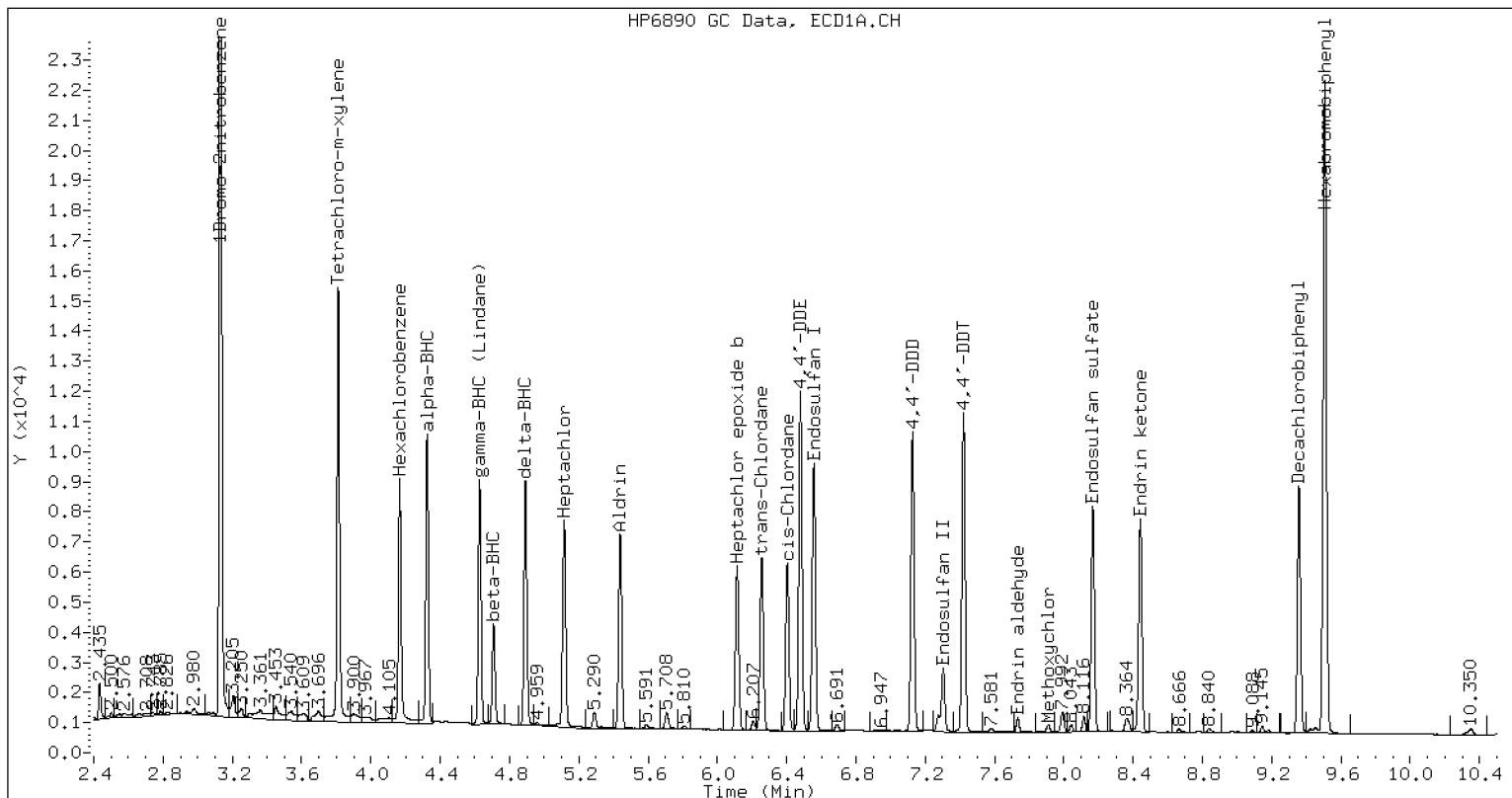
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1248665	706867	-43.4
Hexabromobiphenyl	754634	442553	-41.4

\* Standard Areas taken from Initial Cal Level 5

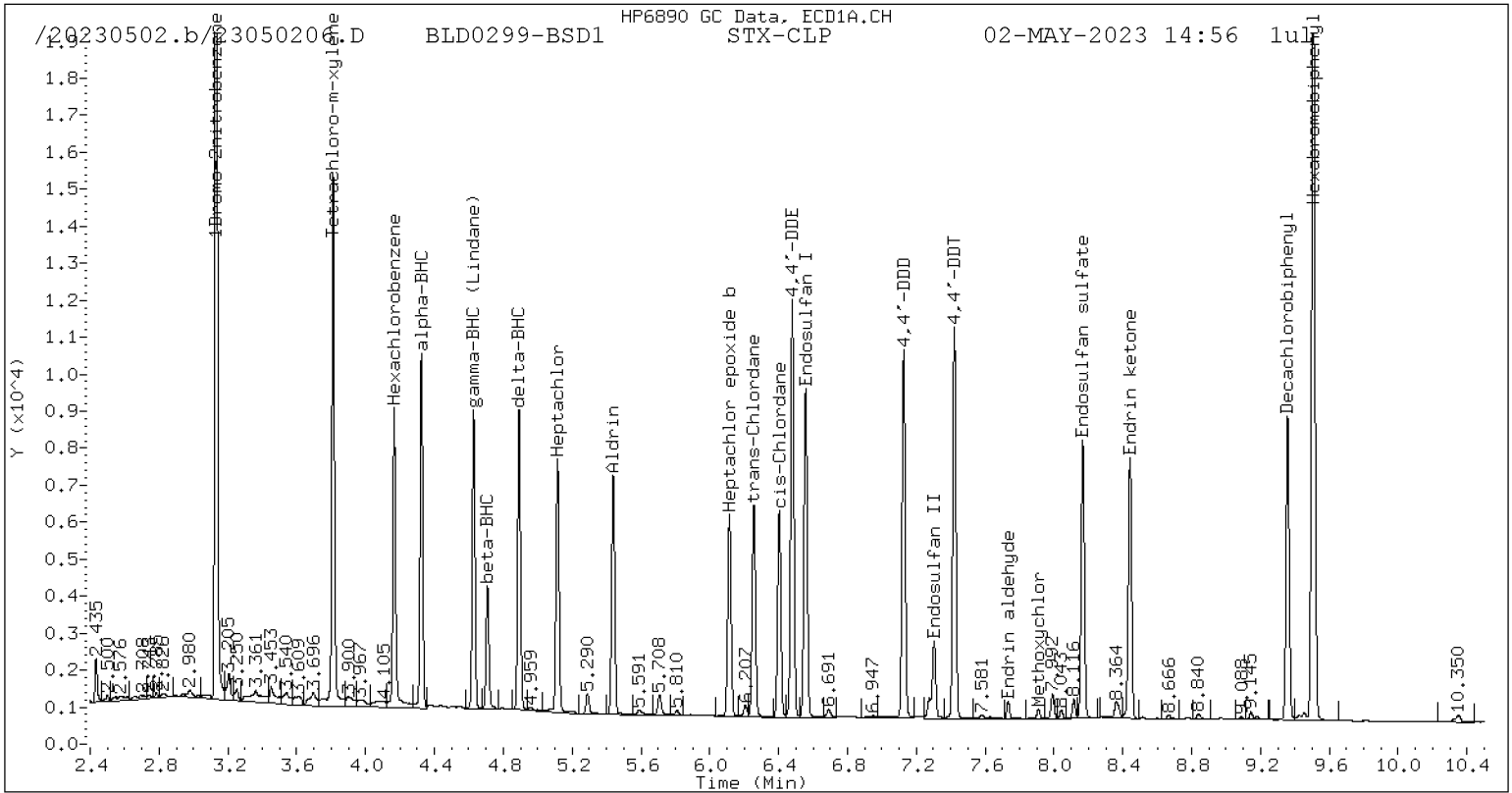
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)



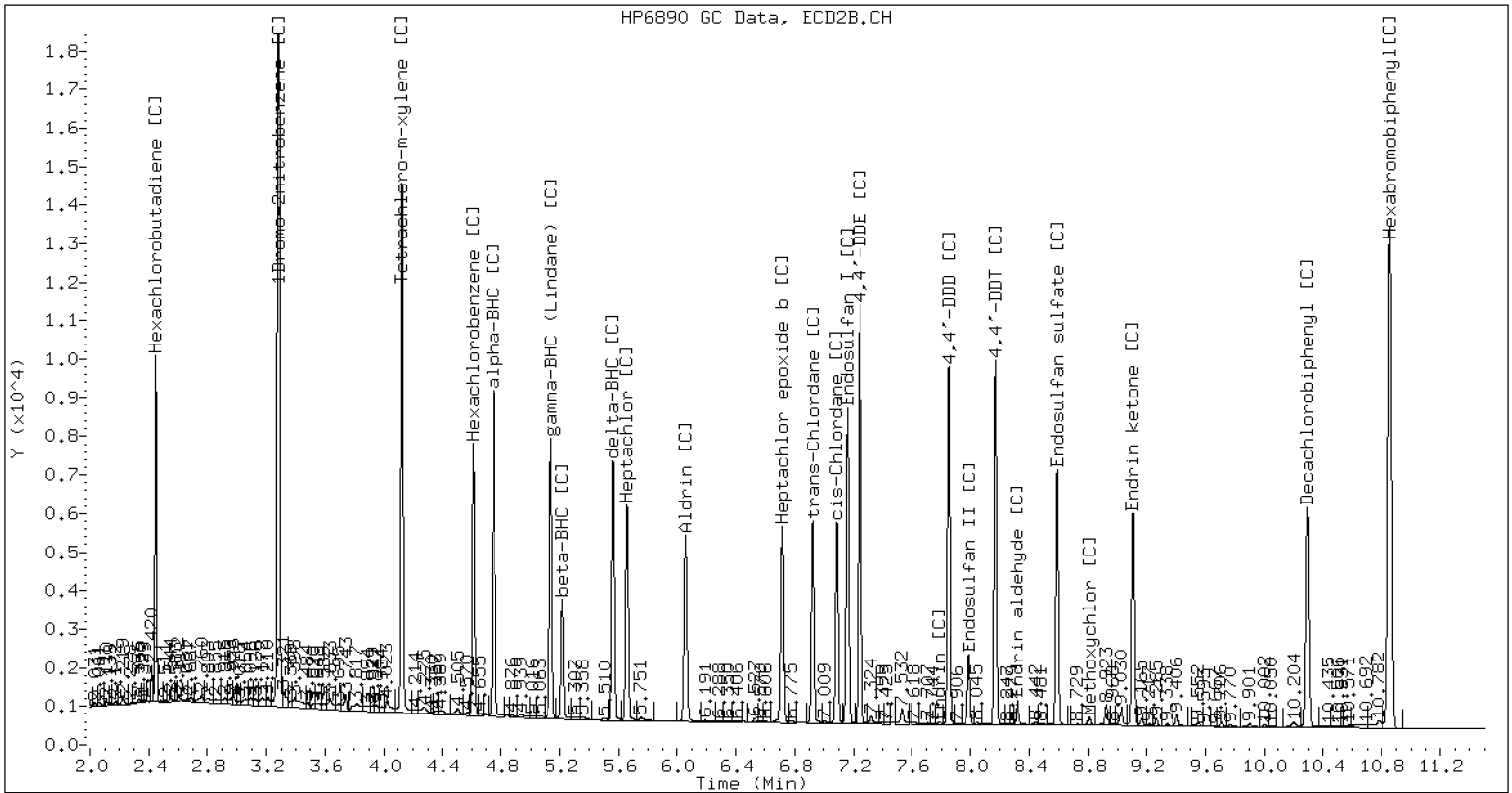


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230502.b/B20230502.b/23050206.D BLD0299-BSD1 CLP2



CLP-2 Manual Integration: NO



**INITIAL CALIBRATION DATA**  
**EPA 8081B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GD00035

Instrument: ECD6

Calibration Date: 04/12/2023

Column (1): STX-CLP

Calibration Comments: PEST

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
alpha-BHC	1.25	1.758446	2.5	1.793034	5	1.787921	10	1.820149	20	1.746397	40	1.716797
beta-BHC	1.25	0.788793	2.5	0.7569771	5	0.7155102	10	0.7014976	20	0.6678267	40	0.6501742
gamma-BHC (Lindane)	1.25	1.559693	2.5	1.583923	5	1.58235	10	1.598676	20	1.529273	40	1.499019
delta-BHC	1.25	1.59762	2.5	1.626931	5	1.624749	10	1.653082	20	1.588864	40	1.541049
Heptachlor	1.25	1.554443	2.5	1.531351	5	1.497087	10	1.483843	20	1.384618	40	1.315267
Aldrin	1.25	1.529504	2.5	1.520296	5	1.511018	10	1.51498	20	1.427754	40	1.370617
Heptachlor Epoxide	1.25	1.774611	2.5	1.354332	5	1.322607	10	1.304654	20	1.210437	40	1.144734
trans-Chlordane (beta-Chlordane)	1.25	1.354101	2.5	1.330731	5	1.314787	10	1.32467	20	1.257661	40	1.225936
cis-Chlordane (alpha-chlordane)	1.25	1.38132	2.5	1.354747	5	1.327406	10	1.32583	20	1.252433	40	1.214494
Endosulfan I	1.25	1.28039	2.5	1.251682	5	1.221496	10	1.216764	20	1.133363	40	1.073676
4,4'-DDE	2.5	1.241703	5	1.249274	10	1.223171	20	1.217063	40	1.137758	80	1.080812
Dieldrin	2.5	1.347435	5	1.34643	10	1.304895	20	1.291643	40	1.193947	80	1.121507
Endrin	2.5	1.575682	5	1.512382	10	1.454305	20	1.423573	40	1.325892	80	1.256508
Endosulfan II	2.5	1.477278	5	1.431992	10	1.365849	20	1.33268	40	1.230636	80	1.175313
4,4'-DDD	2.5	1.356339	5	1.32763	10	1.293997	20	1.288722	40	1.208437	80	1.161216
Endrin Aldehyde	2.5	1.143957	5	1.081014	10	1.040379	20	1.009159	40	0.9323716	80	0.8993666
4,4'-DDT	2.5	1.4624	5	1.433181	10	1.389521	20	1.379129	40	1.292845	80	1.257281
Endosulfan Sulfate	2.5	1.38827	5	1.353634	10	1.280024	20	1.24749	40	1.153021	80	1.114537
Endrin Ketone	2.5	1.700623	5	1.575155	10	1.435306	20	1.38817	40	1.277962	80	1.241808
Methoxychlor	12.5	0.7088741	25	0.6538653	50	0.6009621	100	0.5634784	200	0.512559	400	0.4973477
Hexachlorobutadiene	1.25	2.066765	2.5	1.98551	5	1.84558	10	1.819375	20	1.706219	40	1.655525
Hexachlorobenzene	1.25	1.762453	2.5	1.689934	5	1.607175	10	1.570994	20	1.468142	40	1.417979
Decachlorobiphenyl	2.5	1.222654	5	1.128374	10	0.9768294	20	0.9096561	40	0.8271431	80	0.8027704
Tetrachlorometaxylene	2.5	1.255658	5	1.227805	10	1.182654	20	1.158038	40	1.071055	80	1.01536



**INITIAL CALIBRATION DATA**  
**EPA 8081B**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00035	Instrument:	ECD6
Calibration Date:	04/12/2023	Column (1):	STX-CLP

Calibration Comments: PEST

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
alpha-BHC	80	1.622443										
beta-BHC	80	0.6090197										
gamma-BHC (Lindane)	80	1.407841										
delta-BHC	80	1.454462										
Heptachlor	80	1.192761										
Aldrin	80	1.256117										
Heptachlor Epoxide	80	1.032478										
trans-Chlordane (beta-Chlordane)	80	1.139256										
cis-Chlordane (alpha-chlordane)	80	1.125338										
Endosulfan I	80	0.9739344										
4,4'-DDE	160	0.9837787										
Dieldrin	160	1.020371										
Endrin	160	1.12944										
Endosulfan II	160	1.048725										
4,4'-DDD	160	1.049731										
Endrin Aldehyde	160	0.8100832										
4,4'-DDT	160	1.140812										
Endosulfan Sulfate	160	1.00702										
Endrin Ketone	160	1.130227										
Methoxychlor	800	0.4708452										
Hexachlorobutadiene	80	1.550879										
Hexachlorobenzene	80	1.319539										
Decachlorobiphenyl	160	0.7377625										
Tetrachlorometaxylene	160	0.9251255										







**INITIAL CALIBRATION DATA**  
**EPA 8081B**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00035	Instrument:	ECD6
Calibration Date:	04/12/2023	Column (1):	STX-CLP
Calibration Comments:	PEST		

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
alpha-BHC	1.749312	3.7	0.9991		LCOD ()	
beta-BHC	0.6985426	8.9	0.9989		LCOD ()	
gamma-BHC (Lindane)	1.537254	4.3	0.9989		LCOD ()	
delta-BHC	1.583822	4.2	0.9990		LCOD ()	
Heptachlor	1.422767	9.3	0.9971		LCOD ()	
Aldrin	1.447184	7.1	0.9977		LCOD ()	
Heptachlor Epoxide	1.306265	18.0	0.9970		LCOD ()	
trans-Chlordane (beta-Chlordane)	1.278163	5.9	0.9985		LCOD ()	
cis-Chlordane (alpha-chlordane)	1.283081	7.1	0.9983		LCOD ()	
Endosulfan I	1.164472	9.4	0.9970		LCOD ()	
4,4'-DDE	1.161937	8.6	0.9972		LCOD ()	
Dieldrin	1.232318	10.1	0.9971		LCOD ()	
Endrin	1.38254	11.2	0.9966		LCOD ()	
Endosulfan II	1.294639	11.7	0.9963		LCOD ()	
4,4'-DDD	1.240867	8.7	0.9970		LCOD ()	
Endrin Aldehyde	0.9880472	11.6	0.9970		LCOD ()	
4,4'-DDT	1.336453	8.4	0.9974		LCOD ()	
Endosulfan Sulfate	1.220571	11.2	0.9972		LCOD ()	
Endrin Ketone	1.39275	14.2	0.9978		LCOD ()	
Methoxychlor	0.5725617	15.2	0.9993		LCOD ()	
Hexachlorobutadiene	1.804265	10.1	0.9989		LCOD ()	
Hexachlorobenzene	1.548031	10.1	0.9986		LCOD ()	
Decachlorobiphenyl	0.9435985	18.9	0.9984		LCOD ()	
Tetrachlorometaxylene	1.119385	10.7	0.9974		LCOD ()	







**INITIAL CALIBRATION DATA**  
**EPA 8081B**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00035	Instrument:	ECD6
Calibration Date:	04/12/2023	Column (2):	STX-CLPII

Calibration Comments: PEST

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
alpha-BHC [2C]	80	1.64801										
beta-BHC [2C]	80	0.6083869										
gamma-BHC (Lindane) [2C]	80	1.419847										
delta-BHC [2C]	80	1.440628										
Heptachlor [2C]	80	1.152015										
Aldrin [2C]	80	1.223094										
Heptachlor Epoxide [2C]	80	0.9993275										
trans-Chlordane (beta-Chlordane) [2C]	80	1.05677										
cis-Chlordane (alpha-chlordane) [2C]	80	1.029771										
Endosulfan I [2C]	80	0.8963787										
4,4'-DDE [2C]	160	0.9086734										
Dieldrin [2C]	160	0.9646339										
Endrin [2C]	160	1.363992										
Endosulfan II [2C]	160	1.332182										
4,4'-DDD [2C]	160	1.319055										
Endrin Aldehyde [2C]	160	0.9507641										
4,4'-DDT [2C]	160	1.341072										
Endosulfan Sulfate [2C]	160	1.231965										
Endrin Ketone [2C]	160	1.326225										
Methoxychlor [2C]	800	0.5618064										
Hexachlorobutadiene [2C]	80	1.339018										
Hexachlorobenzene [2C]	80	1.294186										
Decachlorobiphenyl [2C]	160	0.8227871										
Tetrachlorometaxylene [2C]	160	0.9200768										



### INITIAL CALIBRATION DATA EPA 8081B

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00035	Instrument:	ECD6
Calibration Date:	04/12/2023	Column (2):	STX-CLPII

Calibration Comments: PEST

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	Conc		Conc		Conc		Conc		Conc		Conc	



**INITIAL CALIBRATION DATA**  
**EPA 8081B**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00035	Instrument:	ECD6
Calibration Date:	04/12/2023	Column (2):	STX-CLPII

Calibration Comments: PEST

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
	Conc		Conc		Conc		Conc		Conc		Conc	



**INITIAL CALIBRATION DATA**  
**EPA 8081B**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GD00035	Instrument:	ECD6
Calibration Date:	04/12/2023	Column (2):	STX-CLPII
Calibration Comments:	PEST		

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
alpha-BHC [2C]	1.697132	2.8	0.9995		LCOD ()	
beta-BHC [2C]	0.6741426	6.8	0.9993		LCOD ()	
gamma-BHC (Lindane) [2C]	1.4921	2.7	0.9993		LCOD ()	
delta-BHC [2C]	1.51078	2.8	0.9992		LCOD ()	
Heptachlor [2C]	1.308521	6.2	0.9978		LCOD ()	
Aldrin [2C]	1.358332	5.0	0.9981		LCOD ()	
Heptachlor Epoxide [2C]	1.195694	14.9	0.9980		LCOD ()	
trans-Chlordane (beta-Chlordane) [2C]	1.146512	4.1	0.9990		LCOD ()	
cis-Chlordane (alpha-chlordane) [2C]	1.129016	5.0	0.9991		LCOD ()	
Endosulfan I [2C]	1.01878	6.5	0.9981		LCOD ()	
4,4'-DDE [2C]	1.062934	8.0	0.9974		LCOD ()	
Dieldrin [2C]	1.11666	7.9	0.9982		LCOD ()	
Endrin [2C]	1.610157	9.4	0.9981		LCOD ()	
Endosulfan II [2C]	1.521076	8.2	0.9991		LCOD ()	
4,4'-DDD [2C]	1.471886	6.3	0.9991		LCOD ()	
Endrin Aldehyde [2C]	1.099808	9.4	0.9989		LCOD ()	
4,4'-DDT [2C]	1.484993	6.1	0.9993		LCOD ()	
Endosulfan Sulfate [2C]	1.400615	8.0	0.9990		LCOD ()	
Endrin Ketone [2C]	1.529495	10.0	0.9993		LCOD ()	
Methoxychlor [2C]	0.6367416	11.7	0.9999		LCOD ()	
Hexachlorobutadiene [2C]	1.540827	7.5	0.9979		LCOD ()	
Hexachlorobenzene [2C]	1.482121	8.1	0.9988		LCOD ()	
Decachlorobiphenyl [2C]	0.9656082	11.4	0.9994		LCOD ()	
Tetrachlorometaxylene [2C]	1.100056	9.8	0.9976		LCOD ()	



**ANALYSIS SEQUENCE**

**SLD0187**

Instrument: ECD6  
Calibration ID: UNASSIGNED

Printed: 4/14/2023 8:38:57AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0187-PEM1	QC		1		L002116	L000844		
SLD0187-CAL1	QC		2		L003348	L000844		
SLD0187-CAL2	QC		3		L003347	L000844		
SLD0187-CAL3	QC		4		L003346	L000844		
SLD0187-CAL4	QC		5		L003345	L000844		
SLD0187-CAL5	QC		6		L003344	L000844		
SLD0187-CAL6	QC		7		L003343	L000844		
SLD0187-CAL7	QC		8		L000560	L000844		
SLD0187-CAL8	QC		9		L003342	L000844		
SLD0187-CAL9	QC		10		L003341	L000844		
SLD0187-CALA	QC		11		L003340	L000844		
SLD0187-CALB	QC		12		L003339	L000844		
SLD0187-CALC	QC		13		L003338	L000844		
SLD0187-CALD	QC		14		L003337	L000844		
SLD0187-CALE	QC		15		L000377	L000844		
SLD0187-CALF	QC		16		L003398	L000844		
SLD0187-CALG	QC		17		L003397	L000844		
SLD0187-CALH	QC		18		L003396	L000844		
SLD0187-CALI	QC		19		L003395	L000844		
SLD0187-CALJ	QC		20		L003394	L000844		
SLD0187-CALK	QC		21		L003393	L000844		

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_



**ANALYSIS SEQUENCE**

**SLD0187**

Instrument: ECD6  
Calibration ID: UNASSIGNED

**Printed: 4/14/2023 8:38:57AM**

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0187-CALL	QC		22		L000559	L000844		
SLD0187-SCV1	QC		23		L003155	L000844		
SLD0187-SCV2	QC		24		L003156	L000844		
SLD0187-PEM2	QC		25		L002116	L000844		
SLD0187-ICV1	QC		26		L003344	L000844		
SLD0187-ICV2	QC		27		L003338	L000844		
BLD0075-BLK1	QC		28			L000844		
BLD0075-BS1	QC		29			L000844		
BLD0075-MRL1	QC		30			L000844		
23D0028-01	8081B Pest	E 01	31			L000844	Associated Earth Sciences, Inc	
SLD0187-PEM3	QC		32		L002116	L000844		
SLD0187-CCV1	QC		33		L003344	L000844		
SLD0187-CCV2	QC		34		L003338	L000844		
BLD0009-BLK1	QC		35			L000844		
BLD0009-BS1	QC		36			L000844		
BLD0009-BSD1	QC		37			L000844		
BLD0009-MS1	QC		38			L000844		
BLD0009-MSD1	QC		39			L000844		
23C0752-01	8081B Pest (PSDDA)	A 03	40			L000844	Anchor QEA, LLC	
23C0752-02	8081B Pest (PSDDA)	A 03	41			L000844	Anchor QEA, LLC	
23C0752-03	8081B Pest (PSDDA)	A 03	42			L000844	Anchor QEA, LLC	

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_



## GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230412.b

	Inject	Date/Time	Filename	DF	LabID	ClientID
1	12-APR-2023	14:57	23041202.D	1	SEQ-IB	
2	12-APR-2023	15:16	23041203.D	1	SEQ-PEM1	
3	12-APR-2023	15:34	23041204.D	1	SEQ-CAL1	
4	12-APR-2023	15:53	23041205.D	1	SEQ-CAL2	
5	12-APR-2023	16:11	23041206.D	1	SEQ-CAL3	
6	12-APR-2023	16:30	23041207.D	1	SEQ-CAL5	
7	12-APR-2023	16:48	23041208.D	1	SEQ-CAL4	
8	12-APR-2023	17:06	23041209.D	1	SEQ-CAL6	
9	12-APR-2023	17:25	23041210.D	1	SEQ-CAL7	
10	12-APR-2023	17:43	23041211.D	1	SEQ-CAL8	
11	12-APR-2023	18:02	23041212.D	1	SEQ-CAL9	
12	12-APR-2023	18:20	23041213.D	1	SEQ-CALA	
13	12-APR-2023	18:38	23041214.D	1	SEQ-CALB	
14	12-APR-2023	18:57	23041215.D	1	SEQ-CALC	
15	12-APR-2023	19:15	23041216.D	1	SEQ-CALD	
16	12-APR-2023	19:34	23041217.D	1	SEQ-CALE	
17	12-APR-2023	19:52	23041218.D	1	SEQ-CALF	
18	12-APR-2023	20:10	23041219.D	1	SEQ-CALG	
19	12-APR-2023	20:29	23041220.D	1	SEQ-CALH	
20	12-APR-2023	20:47	23041221.D	1	SEQ-CALI	
21	12-APR-2023	21:05	23041222.D	1	SEQ-CALJ	
22	12-APR-2023	21:24	23041223.D	1	SEQ-CALK	
23	12-APR-2023	21:42	23041224.D	1	SEQ-CALL	
24	12-APR-2023	22:00	23041225.D	1	SEQ-SCV1	
25	12-APR-2023	22:19	23041226.D	1	SEQ-SCV2	
26	12-APR-2023	22:37	23041227.D	1	SEQ-PEM2	
27	12-APR-2023	22:55	23041228.D	1	SEQ-ICV1	
28	12-APR-2023	23:14	23041229.D	1	SEQ-ICV2	
29	12-APR-2023	23:32	23041230.D	1	BLD0075-BLK1	
30	12-APR-2023	23:50	23041231.D	1	BLD0075-BS1	
31	13-APR-2023	00:09	23041232.D	1	BLD0075-MRL1	
32	13-APR-2023	00:27	23041233.D	1	23D0028-01	
33	13-APR-2023	00:45	23041234.D	1	SEQ-PEM3	
34	13-APR-2023	01:04	23041235.D	1	SEQ-CCV1	
35	13-APR-2023	01:22	23041236.D	1	SEQ-CCV2	
36	13-APR-2023	01:40	23041237.D	1	BLD0009-BLK1	
37	13-APR-2023	01:59	23041238.D	1	BLD0009-BS1	
38	13-APR-2023	02:17	23041239.D	1	BLD0009-BSD1	
39	13-APR-2023	02:35	23041240.D	1	BLD0009-MS1	
40	13-APR-2023	02:53	23041241.D	1	BLD0009-MSD1	
41	13-APR-2023	03:12	23041242.D	1	23C0752-01	
42	13-APR-2023	03:30	23041243.D	1	23C0752-02	
43	13-APR-2023	03:48	23041244.D	1	23C0752-03	
44	13-APR-2023	04:07	23041245.D	1	23C0752-04	
45	13-APR-2023	04:25	23041246.D	1	23C0752-06	
46	13-APR-2023	04:43	23041247.D	1	SEQ-PEM4	
47	13-APR-2023	05:02	23041248.D	1	SEQ-CCV3	
48	13-APR-2023	05:20	23041249.D	1	SEQ-CCV4	



MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230412.b

ARI Job No.: SEQ- Method: PEST.m Instrument: ecd6.i Date: 12-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1457	23041202.D	SEQ-IB		1	NO MANUAL INTEGRATION
1516	23041203.D	SEQ-PEM1		1	NO MANUAL INTEGRATION
1534	23041204.D	SEQ-CAL1		1	NO MANUAL INTEGRATION
1553	23041205.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
1611	23041206.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
1630	23041207.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
1648	23041208.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
1706	23041209.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
1725	23041210.D	SEQ-CAL7		1	alpha-BHC, beta-BHC, delta-BHC, gamma-BHC (Lindane), Heptachlor, Aldrin, Heptachlor epoxide b, Endosulfan I, Dieldrin, 4,4'-DDE, Endrin, Endosulfan II, 4,4'-DDD, Endosulfan sulfate, 4,4'-DDT, Methoxychlor, Endrin ketone, Endrin aldehyde, trans-Chlordane, cis-Chlordane, Hexachlorob
1743	23041211.D	SEQ-CAL8		1	NO MANUAL INTEGRATION
1802	23041212.D	SEQ-CAL9		1	NO MANUAL INTEGRATION
1820	23041213.D	SEQ-CALA		1	NO MANUAL INTEGRATION
1838	23041214.D	SEQ-CALB		1	NO MANUAL INTEGRATION
1857	23041215.D	SEQ-CALC		1	NO MANUAL INTEGRATION
1915	23041216.D	SEQ-CALD		1	NO MANUAL INTEGRATION
1934	23041217.D	SEQ-CALE		1	Oxychlordane, 2,4-DDE, trans-Nonachlor, 2,4-DDD, 2,4-DDT, cis-Nonachlor, Mirex,
1952	23041218.D	SEQ-CALF		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230412.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2010	23041219.D	SEQ-CALG	1		NO MANUAL INTEGRATION
2029	23041220.D	SEQ-CALH	1		NO MANUAL INTEGRATION
2047	23041221.D	SEQ-CALI	1		NO MANUAL INTEGRATION
2105	23041222.D	SEQ-CALJ	1		NO MANUAL INTEGRATION
2124	23041223.D	SEQ-CALK	1		NO MANUAL INTEGRATION
2142	23041224.D	SEQ-CALL	1		NO MANUAL INTEGRATION
2200	23041225.D	SEQ-SCV1	1		NO MANUAL INTEGRATION
2219	23041226.D	SEQ-SCV2	1		NO MANUAL INTEGRATION
2237	23041227.D	SEQ-PEM2	1		NO MANUAL INTEGRATION
2255	23041228.D	SEQ-ICV1	1		NO MANUAL INTEGRATION
2314	23041229.D	SEQ-ICV2	1		NO MANUAL INTEGRATION
2332	23041230.D	BLD0075-BLK1	1		NO MANUAL INTEGRATION
2350	23041231.D	BLD0075-BS1	1		NO MANUAL INTEGRATION
0009	23041232.D	BLD0075-MRL1	1		NO MANUAL INTEGRATION
0027	23041233.D	23D0028-01	1		NO MANUAL INTEGRATION
0045	23041234.D	SEQ-PEM3	1		Endrin, 4,4'-DDD,
0104	23041235.D	SEQ-CCV1	1		NO MANUAL INTEGRATION
0122	23041236.D	SEQ-CCV2	1		NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230412.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0140	23041237.D	BLD0009-BLK1		1	NO MANUAL INTEGRATION
0159	23041238.D	BLD0009-BS1		1	NO MANUAL INTEGRATION
0217	23041239.D	BLD0009-BSD1		1	NO MANUAL INTEGRATION
0235	23041240.D	BLD0009-MS1		1	Endrin, 4,4'-DDD, 4,4'-DDT,
0253	23041241.D	BLD0009-MSD1		1	Aldrin,
0312	23041242.D	23C0752-01		1	delta-BHC, gamma-BHC (Lindane), Endrin, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde, Toxaphene, cis-Nonachlor,
0330	23041243.D	23C0752-02		1	Endrin, 4,4'-DDD, 4,4'-DDT, trans-Chlordane, cis-Chlordane, Toxaphene, trans-Nonachlor, cis-Nonachlor, Chlordane (NOS),
0348	23041244.D	23C0752-03		1	Dieldrin, 4,4'-DDD, cis-Chlordane, Hexachlorobenzene, trans-Nonachlor, cis-Nonachlor, Chlordane (NOS),
0407	23041245.D	23C0752-04		1	delta-BHC, Endrin, 4,4'-DDD, 4,4'-DDT, trans-Chlordane, cis-Chlordane, Toxaphene, trans-Nonachlor, cis-Nonachlor, Chlordane (NOS),
0425	23041246.D	23C0752-06		1	Endrin, 4,4'-DDT, cis-Chlordane, Toxaphene, cis-Nonachlor, Mirex, Chlordane (NOS),
0443	23041247.D	SEQ-PEM4		1	Endrin, 4,4'-DDD,
0502	23041248.D	SEQ-CCV3		1	Hexabromobiphenyl,
0520	23041249.D	SEQ-CCV4		1	NO MANUAL INTEGRATION

Security Status Report

Date: 14-Apr-2023 08:24

23041202.D	Data Locked	yev, 14-
23041203.D	Data Locked	yev, 14-
23041204.D	Data Locked	yev, 14-
23041205.D	Data Locked	yev, 14-
23041206.D	Data Locked	yev, 14-
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23041210.D	Data Locked	yev, 14-
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23041212.D	Data Locked	yev, 14-
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23041214.D	Data Locked	yev, 14-
23041215.D	Data Locked	yev, 14-
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23041234.D	Data Locked	yev, 14-
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23041240.D	Data Locked	yev, 14-
23041241.D	Data Locked	yev, 14-
23041242.D	Data Locked	yev, 14-
23041243.D	Data Locked	yev, 14-
23041244.D	Data Locked	yev, 14-
23041245.D	Data Locked	yev, 14-
23041246.D	Data Locked	yev, 14-
23041247.D	Data Locked	yev, 14-
23041248.D	Data Locked	yev, 14-
23041249.D	Data Locked	yev, 14-

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m
Batch File: \\target\share\chem4\ecd6.i\20230412.b
Inst ID: ecd6.i

Table with 7 columns: ID, RT01, RT02, RT03, RT04, RT05, RT06, RT07. Rows include FILENAME, INJ. DATE, and INJ. TIME for each RT column.

Main data table with columns: Compound, RT01, RT02, RT03, RT04, RT05, RT06, RT07, EXPEC RT, RT WINDOW, AVG RT, STD DEV. Lists 17 compounds with their respective retention times and standard deviations.

Reviewer 1 \_\_\_\_\_ Date: \_\_\_\_\_
Reviewer 2 \_\_\_\_\_ Date: \_\_\_\_\_

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m  
Batch File: \\target\share\chem4\ecd6.i\20230412.b  
Inst ID: ecd6.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 4,4'-DDE	6.491	6.490	6.489	6.490	6.490	6.489	6.489	6.491	6.461-6.521	6.490	0.001
19 Dieldrin	6.828	6.828	6.828	6.828	6.828	6.829	6.828	6.828	6.798-6.858	6.828	0.000
20 Endrin	7.079	7.079	7.078	7.078	7.078	7.078	7.078	7.079	7.049-7.109	7.078	0.000
21 4,4'-DDD	7.138	7.138	7.137	7.137	7.137	7.137	7.136	7.138	7.108-7.168	7.137	0.001
22 Endosulfan II	7.315	7.315	7.315	7.315	7.314	7.314	7.314	7.315	7.285-7.345	7.315	0.000
23 4,4'-DDT	7.431	7.431	7.431	7.431	7.431	7.431	7.431	7.431	7.401-7.461	7.431	0.000
24 Endrin aldehyde	7.744	7.743	7.743	7.743	7.743	7.743	7.743	7.744	7.714-7.774	7.743	0.000
25 Methoxychlor	7.920	7.920	7.919	7.920	7.920	7.920	7.920	7.920	7.890-7.950	7.920	0.000
26 Endosulfan sulfate	8.178	8.178	8.177	8.177	8.178	8.178	8.177	8.178	8.148-8.208	8.178	0.000
27 Endrin ketone	8.453	8.453	8.452	8.452	8.452	8.452	8.452	8.453	8.423-8.482	8.452	0.000
28 Decachlorobiphenyl	9.367	9.367	9.366	9.366	9.366	9.367	9.366	9.367	9.337-9.397	9.366	0.000
29 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.765	3.735-3.795	+++++	+++++
30 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.881	4.851-4.911	+++++	+++++
31 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.359	5.329-5.389	+++++	+++++
32 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.765	3.735-3.795	+++++	+++++
33 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.418	4.388-4.448	+++++	+++++
34 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.257	5.227-5.287	+++++	+++++
35 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.045	6.015-6.075	+++++	+++++
36 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.301	8.271-8.331	+++++	+++++
37 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.259	11.229-11.289	+++++	+++++
38 Toxaphene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.430	7.400-7.460	+++++	+++++
39 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.106	6.076-6.136	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m  
Batch File: \\target\share\chem4\ecd6.i\20230412.b  
Inst ID: ecd6.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.682	6.652-6.712	+++++	+++++
41 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.959	6.929-6.989	+++++	+++++
42 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.774	1.744-1.804	+++++	+++++
43 Oxychlorane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.010	5.980-6.040	+++++	+++++
44 trans-Nonachlor	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.396	6.366-6.426	+++++	+++++
45 cis-Nonachlor	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.112	7.082-7.142	+++++	+++++
46 Mirex	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.086	8.056-8.116	+++++	+++++
47 bis-(2-ethylhexyl) Pht	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.156	20.126-20.186	+++++	+++++
48 Chlordane (NOS)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.593	5.563-5.623	+++++	+++++
49 Trifluralin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.319	6.289-6.349	+++++	+++++
50 Dacthal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.936	9.906-9.966	+++++	+++++
51 Oxadiazon	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.891	11.861-11.921	+++++	+++++
52 Kelthane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.827	14.797-14.857	+++++	+++++
53 Chlorpyrifos	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.750	9.720-9.780	+++++	+++++
54 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.107	9.077-9.137	+++++	+++++
55 Ethyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.251	10.221-10.281	+++++	+++++
56 Kepone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.588	6.558-6.618	+++++	+++++
57 1-Chloropyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.953	6.923-6.983	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m
Batch File: \\target\share\chem4\ecd6.i\20230412.b
Inst ID: ecd6.i

Table with 7 columns: ID, RT01, RT02, RT03, RT04, RT05, RT06, RT07. Rows include FILENAME, INJ. DATE, and INJ. TIME for each RT column.

Main data table with columns: Compound, RT01, RT02, RT03, RT04, RT05, RT06, RT07, EXPECT RT, RT WINDOW, AVG RT, STD DEV. Lists 17 compounds with their retention times and statistical data.

Reviewer 1 \_\_\_\_\_ Date: \_\_\_\_\_
Reviewer 2 \_\_\_\_\_ Date: \_\_\_\_\_



ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m  
Batch File: \\target\share\chem4\ecd6.i\20230412.b  
Inst ID: ecd6.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 4,4'-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.489	6.459-6.519	+++++	+++++
19 Dieldrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.828	6.798-6.858	+++++	+++++
20 Endrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.078	7.048-7.108	+++++	+++++
21 4,4'-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.136	7.106-7.166	+++++	+++++
22 Endosulfan II	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.314	7.284-7.344	+++++	+++++
23 4,4'-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.431	7.401-7.461	+++++	+++++
24 Endrin aldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.743	7.713-7.773	+++++	+++++
25 Methoxychlor	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.920	7.890-7.950	+++++	+++++
26 Endosulfan sulfate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.177	8.147-8.207	+++++	+++++
27 Endrin ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.452	8.422-8.482	+++++	+++++
28 Decachlorobiphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.366	9.336-9.396	+++++	+++++
29 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.765	3.735-3.795	+++++	+++++
30 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.881	4.851-4.911	+++++	+++++
31 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.359	5.329-5.389	+++++	+++++
32 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.765	3.735-3.795	+++++	+++++
33 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.418	4.388-4.448	+++++	+++++
34 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.257	5.227-5.287	+++++	+++++
35 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.045	6.015-6.075	+++++	+++++
36 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.301	8.271-8.331	+++++	+++++
37 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.259	11.229-11.289	+++++	+++++
38 Toxaphene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.430	7.400-7.460	+++++	+++++
39 2,4-DDE	+++++	6.106	6.106	6.106	6.106	6.106	6.105	6.106	6.076-6.136	6.106	0.001

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m  
Batch File: \\target\share\chem4\ecd6.i\20230412.b  
Inst ID: ecd6.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 2,4-DDD	+++++	6.682	6.682	6.682	6.681	6.681	6.681	6.682	6.652-6.712	6.681	0.000
41 2,4-DDT	+++++	6.959	6.959	6.960	6.959	6.958	6.959	6.959	6.929-6.989	6.959	0.000
42 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.774	1.744-1.804	+++++	+++++
43 Oxychlorane	+++++	6.010	6.009	6.010	6.010	6.010	6.009	6.010	5.980-6.040	6.010	0.000
44 trans-Nonachlor	+++++	6.396	6.396	6.396	6.396	6.395	6.395	6.396	6.366-6.426	6.395	0.000
45 cis-Nonachlor	+++++	7.112	7.112	7.112	7.112	7.112	7.112	7.112	7.082-7.142	7.112	0.000
46 Mirex	+++++	8.086	8.086	8.086	8.086	8.086	8.086	8.086	8.056-8.116	8.086	0.000
47 bis-(2-ethylhexyl) Pht	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.156	20.126-20.186	+++++	+++++
48 Chlordane (NOS)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.593	5.563-5.623	+++++	+++++
49 Trifluralin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.319	6.289-6.349	+++++	+++++
50 Dacthal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.936	9.906-9.966	+++++	+++++
51 Oxadiazon	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.891	11.861-11.921	+++++	+++++
52 Kelthane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.827	14.797-14.857	+++++	+++++
53 Chlorpyrifos	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.750	9.720-9.780	+++++	+++++
54 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.107	9.077-9.137	+++++	+++++
55 Ethyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.251	10.221-10.281	+++++	+++++
56 Kepone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.588	6.558-6.618	+++++	+++++
57 1-Chloropyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.953	6.923-6.983	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m\PESTB.m
Batch File: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b
Inst ID: ecd6.i

ID: RT01 RT02 RT03 RT04 RT05 RT06 RT07
FILENAME: 23041204 23041205 23041206 23041207 23041208 23041209 23041210
INJ. DATE: 12-APR-2023 12-APR-2023 12-APR-2023 12-APR-2023 12-APR-2023 12-APR-2023 12-APR-2023
INJ. TIME: 15:34 15:53 16:11 16:30 16:48 17:06 17:25

Table with 12 columns: Compound, RT01, RT02, RT03, RT04, RT05, RT06, RT07, EXPEC RT, RT WINDOW, AVG RT, STD DEV. Rows include compounds like Hexachlorobutadiene, Bromo-2nitrobenzene, Hexabromobiphenyl, Tetrachloro-m-xylene, Hexachlorobenzene, alpha-BHC, gamma-BHC (Lindane), beta-BHC, delta-BHC, Heptachlor, Chlorthalonil, Aldrin, Heptachlor Epoxide a, Heptachlor epoxide b, cis-Chlordane, trans-Chlordane, and Endosulfan I.

Reviewer 1 \_\_\_\_\_ Date: \_\_\_\_\_
Reviewer 2 \_\_\_\_\_ Date: \_\_\_\_\_

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m\PESTB.m  
Batch File: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b  
Inst ID: ecd6.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 4,4'-DDE [C]	7.257	7.257	7.257	7.257	7.257	7.257	7.257	7.257	7.227-7.287	7.257	0.000
19 Dieldrin [C]	7.466	7.466	7.465	7.466	7.466	7.466	7.466	7.466	7.436-7.496	7.466	0.000
20 Endrin [C]	7.789	7.790	7.789	7.790	7.789	7.790	7.790	7.790	7.760-7.820	7.790	0.000
21 4,4'-DDD [C]	7.862	7.862	7.862	7.862	7.862	7.862	7.862	7.862	7.832-7.892	7.862	0.000
22 Endosulfan II [C]	8.001	8.000	8.000	8.000	8.000	8.001	8.001	8.001	7.971-8.031	8.000	0.000
23 4,4'-DDT [C]	8.180	8.180	8.180	8.180	8.181	8.181	8.181	8.181	8.151-8.211	8.180	0.000
24 Endrin aldehyde [C]	8.331	8.331	8.330	8.331	8.331	8.332	8.331	8.331	8.301-8.361	8.331	0.000
25 Endosulfan sulfate [C]	8.598	8.598	8.597	8.598	8.598	8.598	8.598	8.598	8.568-8.628	8.598	0.000
26 Methoxychlor [C]	8.820	8.821	8.820	8.821	8.821	8.821	8.822	8.822	8.792-8.852	8.821	0.001
27 Endrin ketone [C]	9.119	9.119	9.119	9.119	9.119	9.120	9.119	9.119	9.089-9.149	9.119	0.000
28 Decachlorobiphenyl [C]	10.306	10.306	10.305	10.305	10.306	10.306	10.306	10.306	10.276-10.336	10.306	0.000
29 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.180	4.150-4.210	+++++	+++++
30 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.051	5.021-5.081	+++++	+++++
31 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.171	5.141-5.201	+++++	+++++
32 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.970	4.940-5.000	+++++	+++++
33 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.285	5.255-5.315	+++++	+++++
34 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.968	5.938-5.998	+++++	+++++
35 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.767	6.737-6.797	+++++	+++++
36 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.714	9.684-9.744	+++++	+++++
37 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.791	11.761-11.821	+++++	+++++
38 Toxaphene [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.440	7.410-7.470	+++++	+++++
39 2,4-DDE [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.921	6.891-6.951	+++++	+++++

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m\PESTB.m  
Batch File: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b  
Inst ID: ecd6.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 2,4-DDD [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.477	7.447-7.507	+++++	+++++
41 2,4-DDT [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.769-7.829	+++++	+++++
42 Hexachloroethane [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.676	1.646-1.706	+++++	+++++
43 Oxychlorane [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.624	6.594-6.654	+++++	+++++
44 trans-Nonachlor [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.039	7.009-7.069	+++++	+++++
45 cis-Nonachlor [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.859	7.829-7.889	+++++	+++++
46 Mirex [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.101	9.071-9.131	+++++	+++++
47 bis-(2-ethylhexyl) Pht	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.499	21.469-21.529	+++++	+++++
48 Chlordane (NOS) [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.612	5.582-5.642	+++++	+++++
49 Trifluralin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.871	4.841-4.901	+++++	+++++
50 Dacthal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.640	6.610-6.670	+++++	+++++
51 Oxadiazon	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.115	8.085-8.145	+++++	+++++
52 Kelthane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.286	11.256-11.316	+++++	+++++
53 Chlorpyrifos	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.527	6.497-6.557	+++++	+++++
54 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.342	6.312-6.372	+++++	+++++
55 Ethyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.841	6.811-6.871	+++++	+++++
56 Kepone [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.336	7.306-7.366	+++++	+++++
57 1-Chloropyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.745	7.715-7.775	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m\PESTB.m
Batch File: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b
Inst ID: ecd6.i

Table with 7 columns: ID, RT01, RT02, RT03, RT04, RT05, RT06, RT07. Rows include FILENAME, INJ. DATE, and INJ. TIME for each RT column.

Main data table with columns: Compound, RT01, RT02, RT03, RT04, RT05, RT06, RT07, EXPECT RT, RT WINDOW, AVG RT, STD DEV. Lists 17 compounds with their retention times and standard deviations.

Reviewer 1 \_\_\_\_\_ Date: \_\_\_\_\_
Reviewer 2 \_\_\_\_\_ Date: \_\_\_\_\_

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m\PESTB.m  
Batch File: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b  
Inst ID: ecd6.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 4,4'-DDE [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.257	7.227-7.287	+++++	+++++
19 Dieldrin [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.466	7.436-7.496	+++++	+++++
20 Endrin [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.790	7.760-7.820	+++++	+++++
21 4,4'-DDD [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.862	7.832-7.892	+++++	+++++
22 Endosulfan II [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.001	7.971-8.031	+++++	+++++
23 4,4'-DDT [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.181	8.151-8.211	+++++	+++++
24 Endrin aldehyde [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.331	8.301-8.361	+++++	+++++
25 Endosulfan sulfate [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.598	8.568-8.628	+++++	+++++
26 Methoxychlor [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.822	8.792-8.852	+++++	+++++
27 Endrin ketone [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.119	9.089-9.149	+++++	+++++
\$ 28 Decachlorobiphenyl [C]	+++++	+++++	+++++	10.309	10.309	10.309	10.308	10.306	10.276-10.336	10.309	0.001
29 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.180	4.150-4.210	+++++	+++++
30 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.051	5.021-5.081	+++++	+++++
31 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.171	5.141-5.201	+++++	+++++
32 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.970	4.940-5.000	+++++	+++++
33 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.285	5.255-5.315	+++++	+++++
34 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.968	5.938-5.998	+++++	+++++
35 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.767	6.737-6.797	+++++	+++++
36 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.714	9.684-9.744	+++++	+++++
37 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.791	11.761-11.821	+++++	+++++
38 Toxaphene [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.440	7.410-7.470	+++++	+++++
39 2,4-DDE [C]	6.922	6.921	6.921	6.922	6.921	6.921	6.921	6.921	6.891-6.951	6.921	0.000

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd6.i\20230412.b\PEST.m\PESTB.m  
Batch File: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b  
Inst ID: ecd6.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 2,4-DDD [C]	7.477	7.477	7.477	7.476	7.476	7.476	7.477	7.477	7.447-7.507	7.476	0.000
41 2,4-DDT [C]	7.799	7.798	7.799	7.799	7.799	7.798	7.799	7.799	7.769-7.829	7.799	0.000
42 Hexachloroethane [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.676	1.646-1.706	+++++	+++++
43 Oxychlorane [C]	6.624	6.624	6.624	6.624	6.624	6.624	6.624	6.624	6.594-6.654	6.624	0.000
44 trans-Nonachlor [C]	7.039	7.038	7.039	7.039	7.039	7.039	7.039	7.039	7.009-7.069	7.039	0.000
45 cis-Nonachlor [C]	7.859	7.858	7.859	7.859	7.859	7.858	7.859	7.859	7.829-7.889	7.859	0.000
46 Mirex [C]	9.102	9.101	9.101	9.101	9.101	9.101	9.101	9.101	9.071-9.131	9.101	0.000
47 bis-(2-ethylhexyl) Pht	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.499	21.469-21.529	+++++	+++++
48 Chlordane (NOS) [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.612	5.582-5.642	+++++	+++++
49 Trifluralin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.871	4.841-4.901	+++++	+++++
50 Dacthal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.640	6.610-6.670	+++++	+++++
51 Oxadiazon	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.115	8.085-8.145	+++++	+++++
52 Kelthane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.286	11.256-11.316	+++++	+++++
53 Chlorpyrifos	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.527	6.497-6.557	+++++	+++++
54 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.342	6.312-6.372	+++++	+++++
55 Ethyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.841	6.811-6.871	+++++	+++++
56 Kepone [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.336	7.306-7.366	+++++	+++++
57 1-Chloropyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.745	7.715-7.775	+++++	+++++



ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-APR-2023 15:34  
 End Cal Date : 12-APR-2023 21:42  
 Quant Method : ISTD  
 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd6.i\20230412.b\PEST.m  
 Last Edit : 13-Apr-2023 13:06 ecd6.i  
 Curve Type : Average

Calibration File Names:

Level 1: \\target\share\chem4\ecd6.i\20230412.b\23041218.D  
 Level 2: \\target\share\chem4\ecd6.i\20230412.b\23041219.D  
 Level 3: \\target\share\chem4\ecd6.i\20230412.b\23041220.D  
 Level 4: \\target\share\chem4\ecd6.i\20230412.b\23041221.D  
 Level 5: \\target\share\chem4\ecd6.i\20230412.b\23041222.D  
 Level 6: \\target\share\chem4\ecd6.i\20230412.b\23041223.D  
 Level 7: \\target\share\chem4\ecd6.i\20230412.b\23041224.D

Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
1 Hexachlorobutadiene	2.06676 1.55088	1.98551	1.84558	1.81938	1.70622	1.65553	1.80426	10.110
5 Hexachlorobenzene	1.76245 1.31954	1.68993	1.60717	1.57099	1.46814	1.41798	1.54803	10.064
6 alpha-BHC	1.75845 1.62244	1.79303	1.78792	1.82015	1.74640	1.71680	1.74931	3.739
7 gamma-BHC (Lindane)	1.55969 1.40784	1.58392	1.58235	1.59868	1.52927	1.49902	1.53725	4.344
8 beta-BHC	0.78879 0.60902	0.75698	0.71551	0.70150	0.66783	0.65017	0.69854	8.893
9 delta-BHC	1.59762 1.45446	1.62693	1.62475	1.65308	1.58886	1.54105	1.58382	4.244
10 Heptachlor	1.55444 1.19276	1.53135	1.49709	1.48384	1.38462	1.31527	1.42277	9.267
11 Aldrin	1.52950 1.25612	1.52030	1.51102	1.51498	1.42775	1.37062	1.44718	7.111

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-APR-2023 15:34  
 End Cal Date : 12-APR-2023 21:42  
 Quant Method : ISTD  
 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd6.i\20230412.b\PEST.m  
 Last Edit : 13-Apr-2023 13:06 ecd6.i  
 Curve Type : Average

Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
80.000 Level 7								
12 Chlorthalonil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
13 Heptachlor Epoxide a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
14 Heptachlor epoxide b	1.77461 1.03248	1.35433	1.32261	1.30465	1.21044	1.14473	1.30626	18.012
15 cis-Chlordane	1.38132 1.12534	1.35475	1.32741	1.32583	1.25243	1.21449	1.28308	7.051
16 trans-Chlordane	1.35410 1.13926	1.33073	1.31479	1.32467	1.25766	1.22594	1.27816	5.931
17 Endosulfan I	1.28039 0.97393	1.25168	1.22150	1.21676	1.13336	1.07368	1.16447	9.443
18 4,4'-DDE	1.24170 0.98378	1.24927	1.22317	1.21706	1.13776	1.08081	1.16194	8.584
19 Dieldrin	1.34743 1.02037	1.34643	1.30489	1.29164	1.19395	1.12151	1.23232	10.143
20 Endrin	1.57568 1.12944	1.51238	1.45431	1.42357	1.32589	1.25651	1.38254	11.211
21 4,4'-DDD	1.35634 1.04973	1.32763	1.29400	1.28872	1.20844	1.16122	1.24087	8.699
22 Endosulfan II	1.47728 1.04873	1.43199	1.36585	1.33268	1.23064	1.17531	1.29464	11.695

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-APR-2023 15:34  
 End Cal Date : 12-APR-2023 21:42  
 Quant Method : ISTD  
 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd6.i\20230412.b\PEST.m  
 Last Edit : 13-Apr-2023 13:06 ecd6.i  
 Curve Type : Average

Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
23 4,4'-DDT	1.46240 1.14081	1.43318	1.38952	1.37913	1.29284	1.25728	1.33645	8.438
24 Endrin aldehyde	1.14396 0.81008	1.08101	1.04038	1.00916	0.93237	0.89937	0.98805	11.597
25 Methoxychlor	0.70887 0.47085	0.65387	0.60096	0.56348	0.51256	0.49735	0.57256	15.240
26 Endosulfan sulfate	1.38827 1.00702	1.35363	1.28002	1.24749	1.15302	1.11454	1.22057	11.169
27 Endrin ketone	1.70062 1.13023	1.57515	1.43531	1.38817	1.27796	1.24181	1.39275	14.203
29 Aroclor-1016(1)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
30 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-APR-2023 15:34  
 End Cal Date : 12-APR-2023 21:42  
 Quant Method : ISTD  
 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd6.i\20230412.b\PEST.m  
 Last Edit : 13-Apr-2023 13:06 ecd6.i  
 Curve Type : Average

Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	80.000 Level 7	RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
31 Aroclor-1232 (1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
32 Aroclor-1242 (1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++

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(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(6)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
33 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
34 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++

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Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	80.000 Level 7	RRF	% RSD
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
35 Aroclor-1260(1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
36 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++

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Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
(5)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
37 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
38 Toxaphene(1)	0.02964 0.02076	0.03226	0.03521	0.03252	0.03126	0.02556	0.02960	16.566
(2)	0.04237 0.02651	0.04244	0.04595	0.04487	0.04047	0.03477	0.03962	17.214
(3)	0.05862 0.03584	0.05791	0.06487	0.06029	0.05391	0.04678	0.05403	18.141
(4)	0.04172 0.03028	0.04045	0.05069	0.04873	0.04618	0.04013	0.04260	16.014
(5)	0.02406 0.01877	0.02417	0.03063	0.02984	0.02781	0.02427	0.02565	15.995

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Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
39 2,4-DDE	80.000 Level 7	0.96271	0.96579	0.91868	0.86843	0.79752	0.87025	11.664
40 2,4-DDD	0.67816	0.88281	0.89873	0.85426	0.81245	0.75323	0.81327	10.387
41 2,4-DDT	0.81933	1.07731	1.07494	1.02816	0.97817	0.90679	0.98078	10.395
42 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
43 Oxychlordane	1.02406	1.26894	1.32532	1.26543	1.20607	1.12176	1.20193	9.252
44 trans-Nonachlor	1.23122	1.54141	1.51800	1.46473	1.41186	1.32985	1.41618	8.360
45 cis-Nonachlor	1.29610	1.59233	1.57870	1.52677	1.47421	1.39620	1.47739	7.740
46 Mirex	0.78527	0.99781	0.99695	0.94201	0.89770	0.84639	0.91102	9.320
47 bis-(2-ethylhexyl) Phthalate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
48 Chlordane (NOS) (1)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++



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Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
(3)	++++	++++	++++	++++	++++	++++	++++	++++
49 Trifluralin	++++	++++	++++	++++	++++	++++	++++	++++
50 Dacthal	++++	++++	++++	++++	++++	++++	++++	++++
51 Oxadiazon	++++	++++	++++	++++	++++	++++	++++	++++
52 Kelthane	++++	++++	++++	++++	++++	++++	++++	++++
53 Chlorpyrifos	++++	++++	++++	++++	++++	++++	++++	++++
54 Methyl Parathion	++++	++++	++++	++++	++++	++++	++++	++++
55 Ethyl Parathion	++++	++++	++++	++++	++++	++++	++++	++++
56 Kepone	++++	++++	++++	++++	++++	++++	++++	++++
57 1-Chloropyrene	++++	++++	++++	++++	++++	++++	++++	++++
\$ 4 Tetrachloro-m-xylene	1.25566  0.92513	1.22780	1.18265	1.15804	1.07105	1.01536	1.11939	10.740

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Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
80.000 Level 7								
\$ 28 Decachlorobiphenyl	1.22265	1.12837	0.97683	0.90966	0.82714	0.80277	0.94360	18.860

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 Last Edit : 13-Apr-2023 12:43 ecd6.i  
 Curve Type : Average

Calibration File Names:

Level 1: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b\23041218.D  
 Level 2: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b\23041219.D  
 Level 3: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b\23041220.D  
 Level 4: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b\23041221.D  
 Level 5: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b\23041222.D  
 Level 6: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b\23041223.D  
 Level 7: \\target\share\chem4\ecd6.i\20230412.b\B20230412.b\23041224.D

Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
1 Hexachlorobutadiene [C]	1.68175 1.33902	1.59096	1.60748	1.61038	1.49696	1.45925	1.54083	7.539
5 Hexachlorobenzene [C]	1.63765 1.29419	1.58192	1.53225	1.52323	1.42721	1.37840	1.48212	8.145
6 alpha-BHC [C]	1.63462 1.64801	1.67867	1.71056	1.77219	1.71975	1.71612	1.69713	2.779
7 gamma-BHC (Lindane) [C]	1.48009 1.41985	1.48711	1.51015	1.55733	1.49836	1.49181	1.49210	2.737
8 beta-BHC [C]	0.74714 0.60839	0.70583	0.68405	0.68422	0.64813	0.64123	0.67414	6.802
9 delta-BHC [C]	1.48755 1.44063	1.49763	1.52471	1.57911	1.52554	1.52030	1.51078	2.809
10 Heptachlor [C]	1.37389 1.15202	1.35320	1.35361	1.37453	1.29676	1.25563	1.30852	6.247
11 Chlorthalonil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
80.000 Level 7								
12 Aldrin [C]	1.39523 1.22309	1.38135	1.39556	1.42793	1.36125	1.32392	1.35833	4.993
13 Heptachlor Epoxide a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
14 Heptachlor epoxide b [C]	1.56323 0.99933	1.20249	1.18929	1.19890	1.12726	1.08936	1.19569	14.872
15 cis-Chlordane [C]	1.19498 1.02977	1.16010	1.15172	1.16525	1.10932	1.09197	1.12902	4.952
16 trans-Chlordane [C]	1.19368 1.05677	1.16300	1.16384	1.18747	1.13804	1.12279	1.14651	4.085
17 Endosulfan I [C]	1.08731 0.89638	1.05822	1.05274	1.06193	1.00305	0.97183	1.01878	6.548
18 4,4'-DDE [C]	1.12212 0.90867	1.12143	1.12052	1.12760	1.04668	0.99351	1.06293	7.992
19 Dieldrin [C]	1.19866 0.96463	1.18503	1.16992	1.16774	1.08900	1.04163	1.11666	7.871
20 Endrin [C]	1.78067 1.36399	1.74471	1.68317	1.66518	1.56413	1.46925	1.61016	9.423
21 4,4'-DDD [C]	1.57958 1.31906	1.54965	1.50467	1.51523	1.44353	1.39149	1.47189	6.277
22 Endosulfan II [C]	1.67704 1.33218	1.62917	1.57040	1.56415	1.47191	1.40267	1.52108	8.159

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23 4,4'-DDT [C]	1.60092 1.34107	1.55757	1.51411	1.52351	1.44879	1.40898	1.48499	6.076
24 Endrin aldehyde [C]	1.25337 0.95076	1.18287	1.12863	1.11827	1.05217	1.01258	1.09981	9.372
25 Endosulfan sulfate [C]	1.55683 1.23196	1.49557	1.43410	1.42713	1.35325	1.30546	1.40062	7.982
26 Methoxychlor [C]	0.75597 0.56181	0.70472	0.65874	0.63180	0.58097	0.56318	0.63674	11.732
27 Endrin ketone [C]	1.75477 1.32623	1.67216	1.56779	1.54355	1.44756	1.39441	1.52949	9.953
29 Aroclor-1016(1)	++++	++++	++++	++++	++++	++++	++++	++++
(2)	++++	++++	++++	++++	++++	++++	++++	++++
(3)	++++	++++	++++	++++	++++	++++	++++	++++
(4)	++++	++++	++++	++++	++++	++++	++++	++++
(5)	++++	++++	++++	++++	++++	++++	++++	++++
30 Aroclor-1221(1)	++++	++++	++++	++++	++++	++++	++++	++++

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Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
31 Aroclor-1232 (1)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
32 Aroclor-1242 (1)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	80.000 Level 7	RRF	% RSD
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
33 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
34 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++

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(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
35 Aroclor-1260(1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
36 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++



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37 Aroclor-1268 (1)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(4)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
(5)	+++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
38 Toxaphene [C] (1)	0.02960 0.01995	0.02897	0.02869	0.02664	0.02372	0.02271		0.02576	14.316
(2)	0.08918 0.05881	0.08648	0.08486	0.07864	0.06865	0.06553		0.07602	15.453
(3)	0.06792 0.04648	0.06646	0.06603	0.06172	0.05457	0.05229		0.05935	13.972
(4)	0.07276 0.05156	0.07135	0.06974	0.06542	0.05866	0.05671		0.06374	12.837
(5)	0.03882 0.02918	0.03832	0.03789	0.03573	0.03246	0.03203		0.03492	10.684
39 2,4-DDE [C]	0.75845 0.53401	0.72899	0.70778	0.69440	0.65651	0.59759		0.66825	11.787

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-APR-2023 15:34  
 End Cal Date : 12-APR-2023 21:42  
 Quant Method : ISTD  
 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd6.i\20230412.b\PEST.m\PESTB.m  
 Last Edit : 13-Apr-2023 12:43 ecd6.i  
 Curve Type : Average

Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD
40 2,4-DDD [C]	1.12937 0.84627	1.06142	1.05101	1.01695	0.98327	0.92485	1.00188	9.375
41 2,4-DDT [C]	1.28576 0.96934	1.20894	1.19812	1.16271	1.12721	1.06684	1.14556	9.038
42 Hexachloroethane [C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
43 Oxychlordan [C]	0.99553 0.78529	0.97475	0.94837	0.94350	0.90717	0.84779	0.91463	8.155
44 trans-Nonachlor [C]	1.85055 1.46338	1.66441	1.77907	1.73821	1.69126	1.60386	1.68439	7.480
45 cis-Nonachlor [C]	1.87416 1.53301	1.79479	1.80526	1.78076	1.73947	1.66348	1.74156	6.446
46 Mirex [C]	1.14525 0.87240	1.09368	1.04777	0.99189	0.96224	0.92321	1.00520	9.580
47 bis-(2-ethylhexyl) Phthalate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
48 Chlordane (NOS) [C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(2)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
(3)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

ARI Labs, Inc.

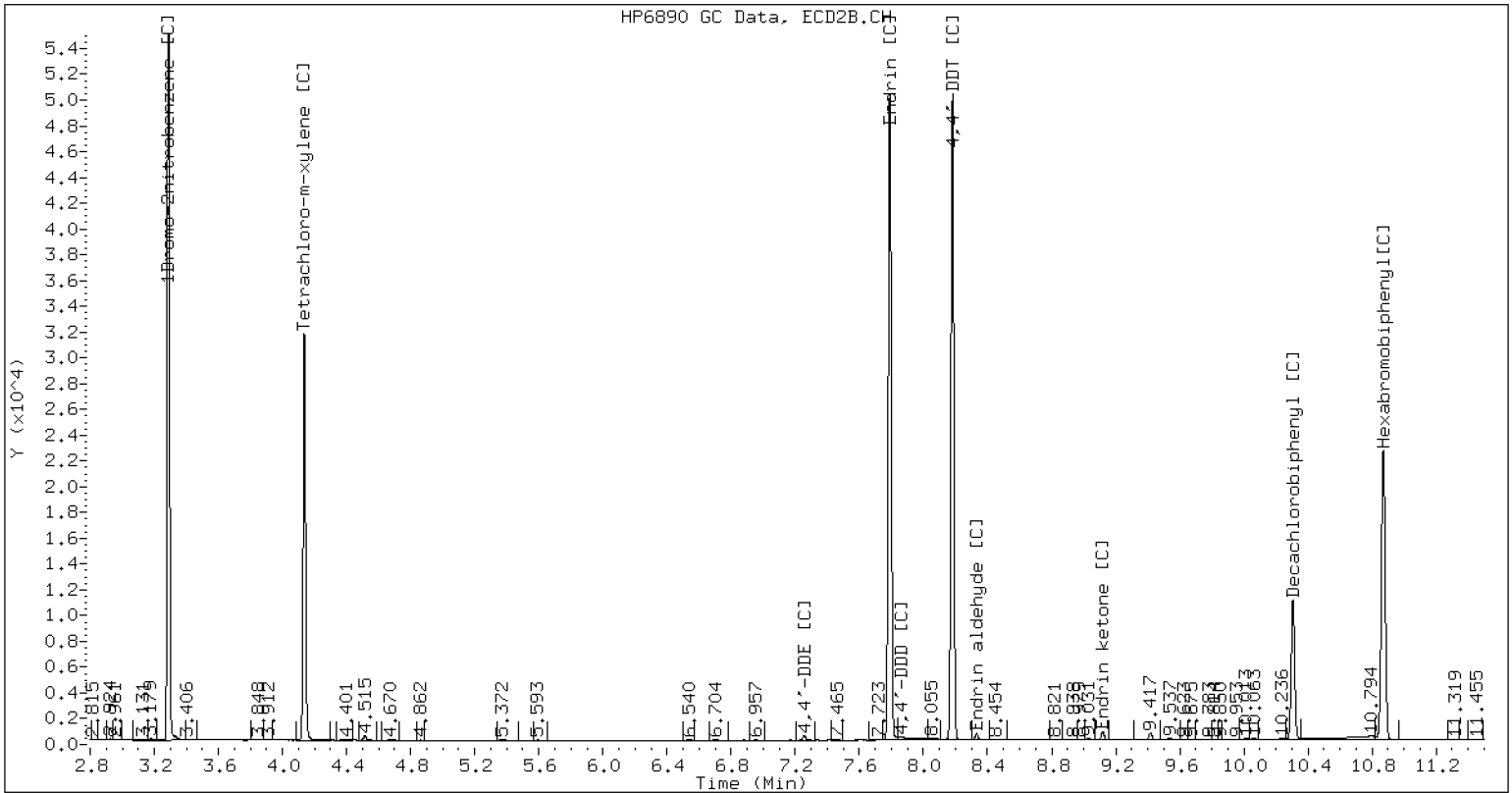
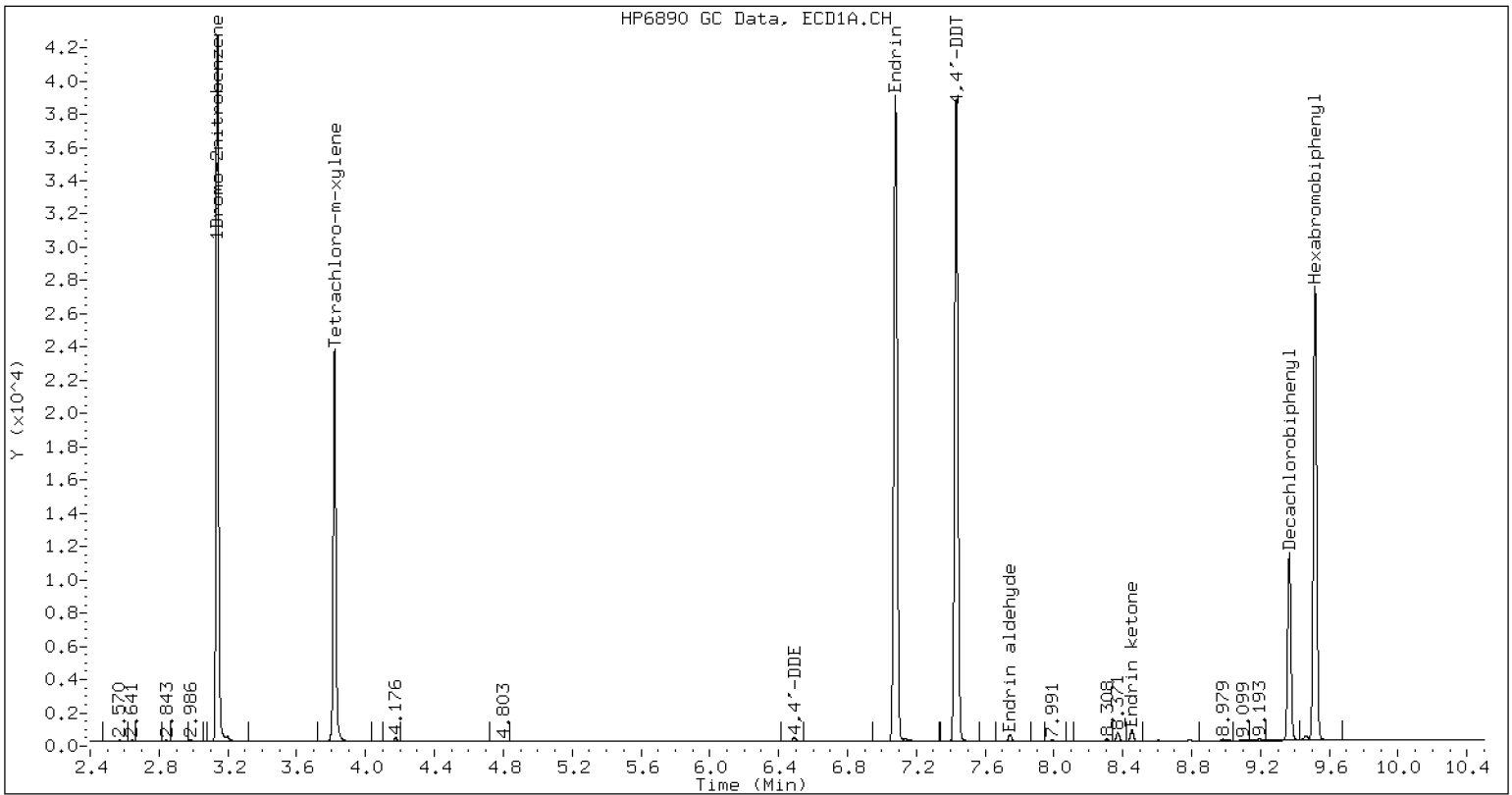
INITIAL CALIBRATION DATA

Start Cal Date : 12-APR-2023 15:34  
 End Cal Date : 12-APR-2023 21:42  
 Quant Method : ISTD  
 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd6.i\20230412.b\PEST.m\PESTB.m  
 Last Edit : 13-Apr-2023 12:43 ecd6.i  
 Curve Type : Average

Compound	1.250 Level 1	2.500 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	80.000 Level 7	RRF	% RSD
49 Trifluralin	++++	++++	++++	++++	++++	++++		++++	++++
50 Dacthal	++++	++++	++++	++++	++++	++++		++++	++++
51 Oxadiazon	++++	++++	++++	++++	++++	++++		++++	++++
52 Kelthane	++++	++++	++++	++++	++++	++++		++++	++++
53 Chlorpyrifos	++++	++++	++++	++++	++++	++++		++++	++++
54 Methyl Parathion	++++	++++	++++	++++	++++	++++		++++	++++
55 Ethyl Parathion	++++	++++	++++	++++	++++	++++		++++	++++
56 Kepone [C]	++++	++++	++++	++++	++++	++++		++++	++++
57 1-Chloropyrene	++++	++++	++++	++++	++++	++++		++++	++++
\$ 4 Tetrachloro-m-xylene [C]	1.21095	1.18796	1.16281	1.15216	1.06273	1.00371		1.10006	9.801
\$ 28 Decachlorobiphenyl [C]	1.11095	1.06919	1.03174	0.97149	0.89134	0.86176		0.96561	11.420







Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041204.D  
Data file 2: /20230412.b/B20230412.b/23041204.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL1  
Client ID:  
Injection Date: 12-APR-2023 15:34  
Report Date: 04/13/2023 12:57  
Units: ng/mL  
Dilution Factor: 1.000

STX-CLP Col			CLP2 Col			STX-CLP	CLP2	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
4.333	0.000	25454	4.761	-0.001	31321	1.26	1.20	4.3	alpha-BHC
4.718	0.000	11418	5.230	-0.000	14316	1.41	1.39	1.9	beta-BHC
4.902	0.000	23126	5.578	0.001	28503	1.26	1.23	2.4	delta-BHC
4.637	0.000	22577	5.152	-0.000	28360	1.27	1.24	2.3	gamma-BHC (Lindane)
5.125	0.000	22501	5.671	0.000	26325	1.37	1.31	4.0	Heptachlor
5.449	0.000	22140	6.070	-0.001	26734	1.32	1.28	2.9	Aldrin
6.127	0.000	25688	6.728	-0.001	29953	1.70	1.63	3.8	Heptachlor epoxide b
6.568	0.000	18534	7.172	0.000	20834	1.37	1.33	3.0	Endosulfan I
6.828	0.000	39009	7.466	0.000	45935	2.73	2.68	1.8	Dieldrin
6.491	0.000	35948	7.257	-0.000	43002	2.67	2.64	1.2	4,4'-DDE
7.079	0.000	36220	7.789	-0.001	40635	2.85	2.76	3.0	Endrin
7.315	0.000	33958	8.001	-0.000	38270	2.85	2.76	3.4	Endosulfan II
7.138	0.000	31178	7.862	0.000	36046	2.73	2.68	1.8	4,4'-DDD
8.178	0.000	31912	8.598	0.000	35527	2.84	2.78	2.3	Endosulfan sulfate
7.431	0.000	33616	8.180	-0.001	36533	2.74	2.70	1.5	4,4'-DDT
7.920	0.000	81474	8.820	-0.002	86256	15.48	14.84	4.2	Methoxychlor
8.453	0.000	39092	9.119	0.000	40044	3.05	2.87	6.2	Endrin ketone
7.744	0.000	26296	8.331	0.000	28602	2.89	2.85	1.6	Endrin aldehyde
6.267	0.000	19601	6.939	0.000	22872	1.32	1.30	1.7	trans-Chlordane
6.414	0.000	19995	7.099	-0.001	22897	1.35	1.32	1.7	cis-Chlordane
2.308	0.000	29917	2.452	-0.001	32224	1.43	1.36	4.8	Hexachlorobutadiene
4.175	0.000	25512	4.622	0.000	31379	1.42	1.38	3.0	Hexachlorobenzene
3.819	0.000	36352	4.136	-0.000	46406	2.80	2.75	1.9	Tetrachloro-m-xylene
9.367	0.000	28105	10.307	0.000	25352	3.24	2.88	11.9	Decachlorobiphenyl N

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	926418	7.2
Hexabromobiphenyl	663237	735580	10.9

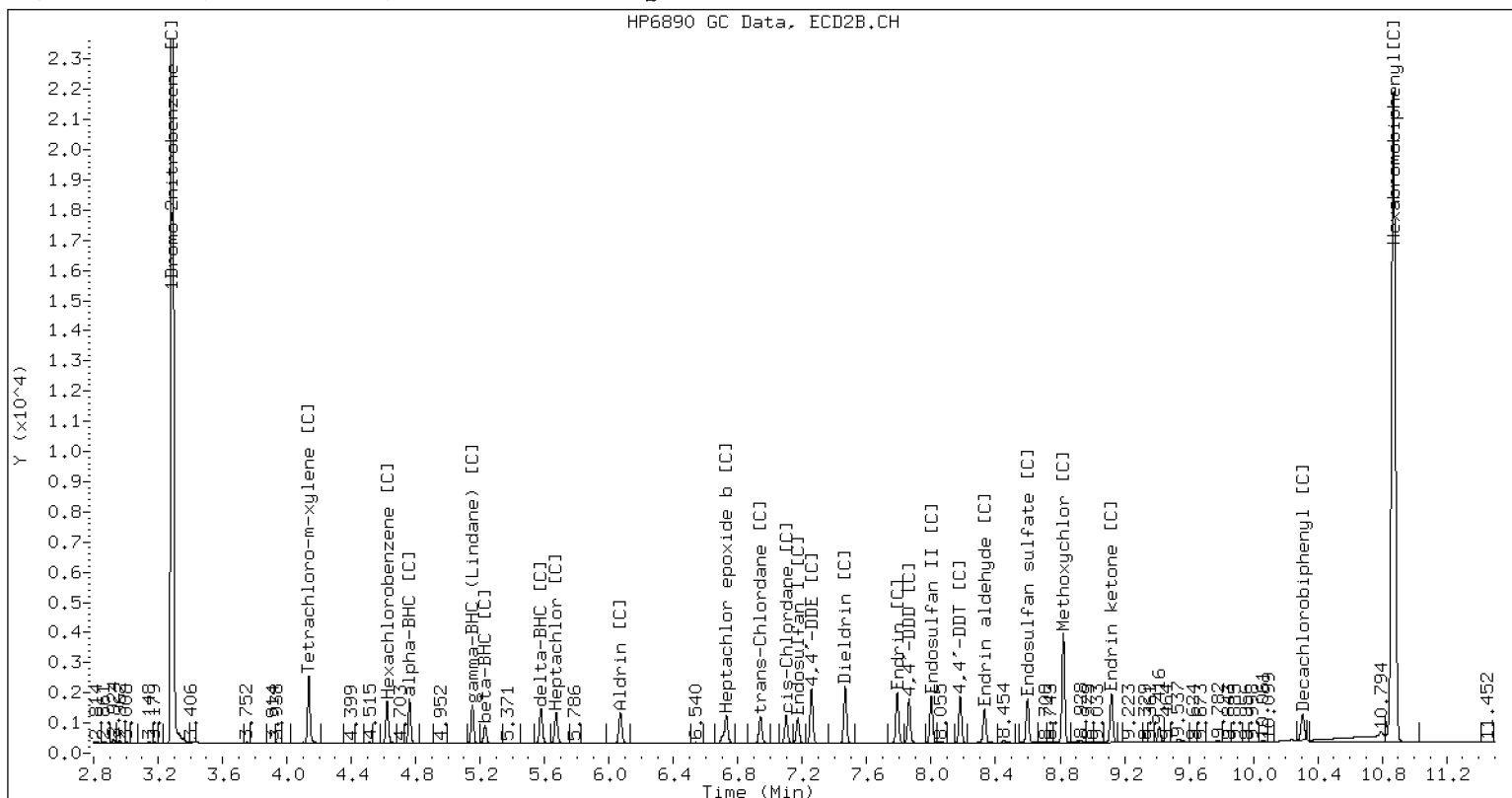
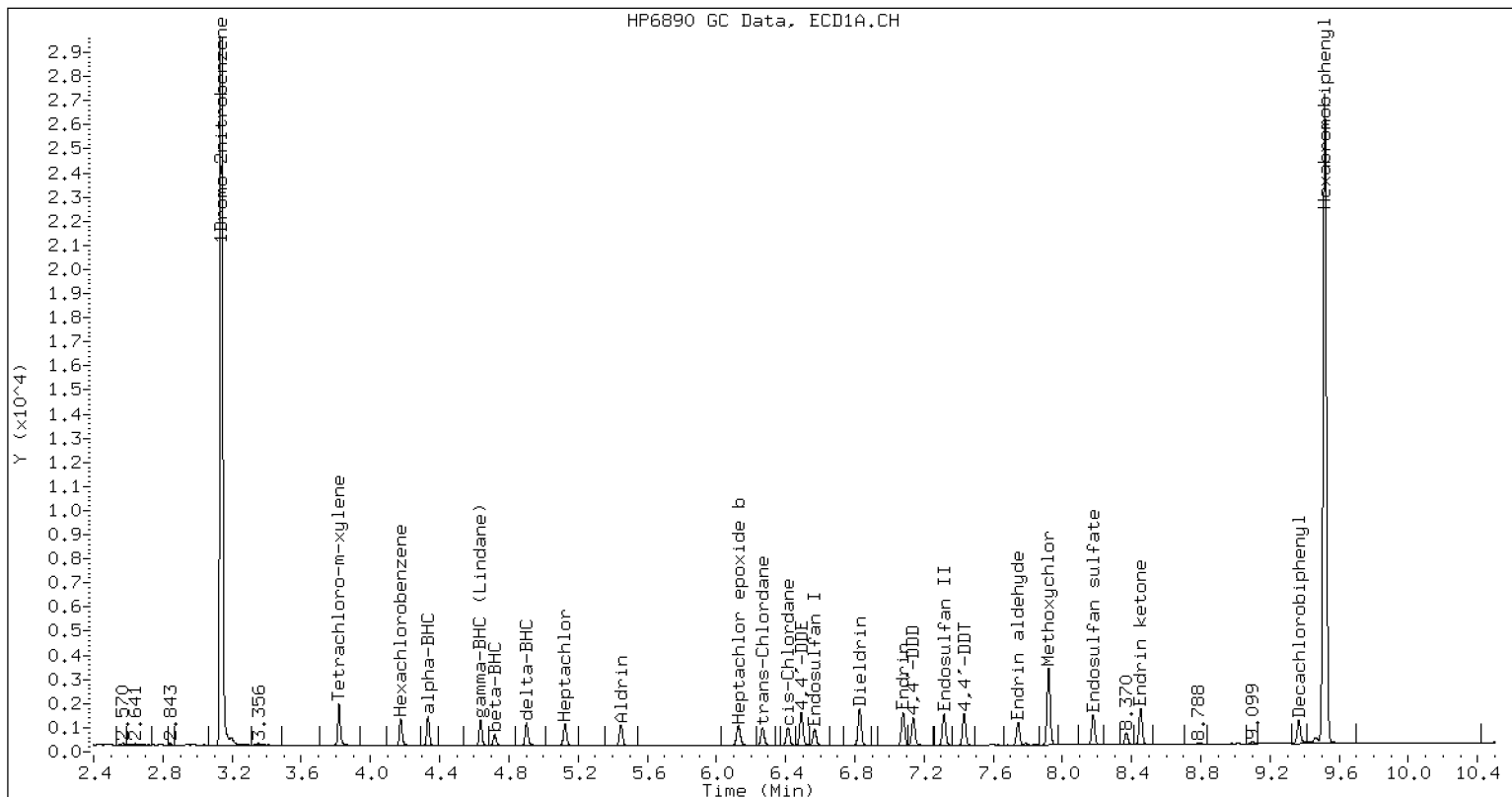
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1226303	-17.2
Hexabromobiphenyl	870561	730241	-16.1

\* Standard Areas taken from Initial Cal Level 5

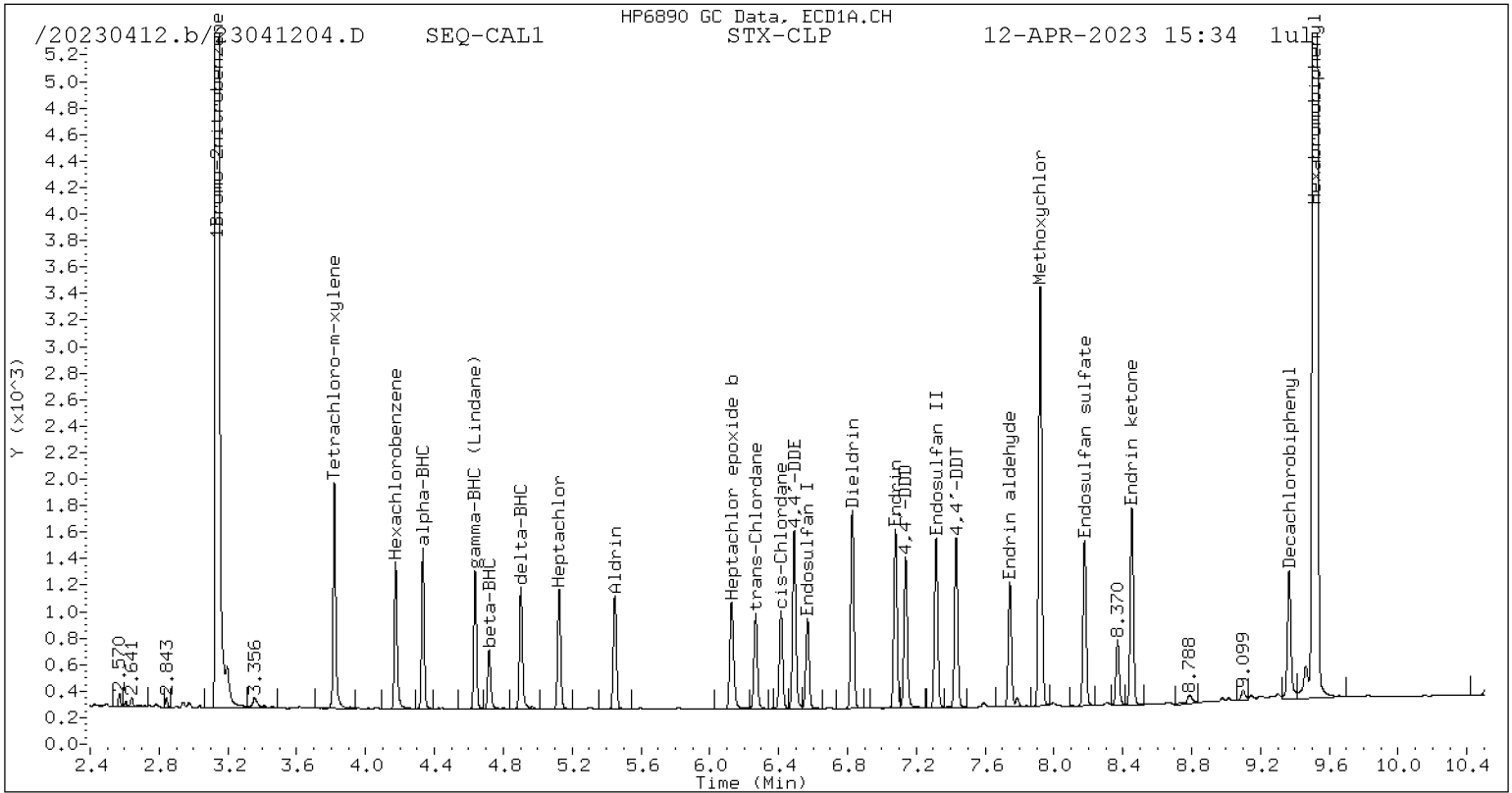
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)



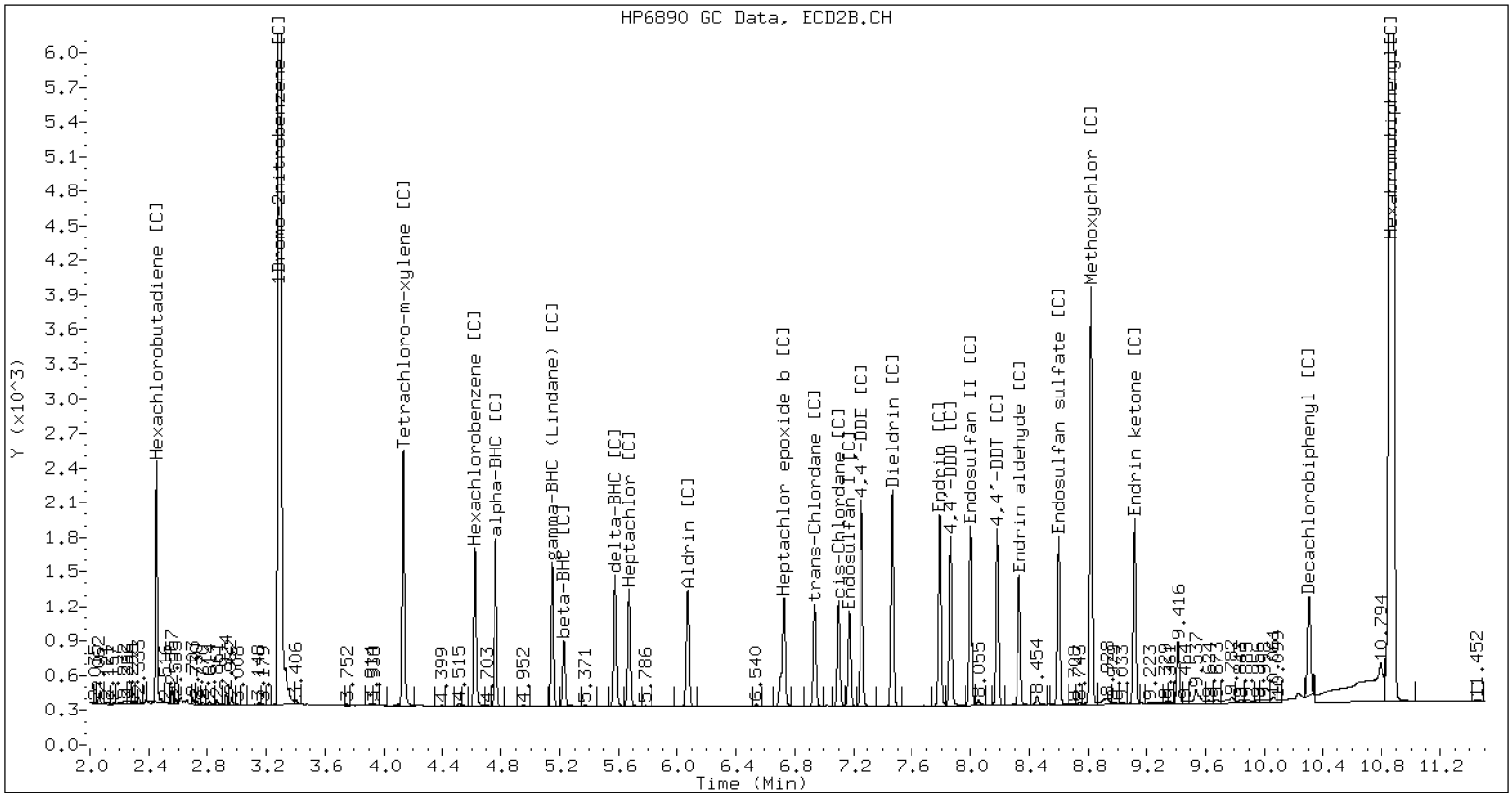


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041204.D SEQ-CAL1 CLP2



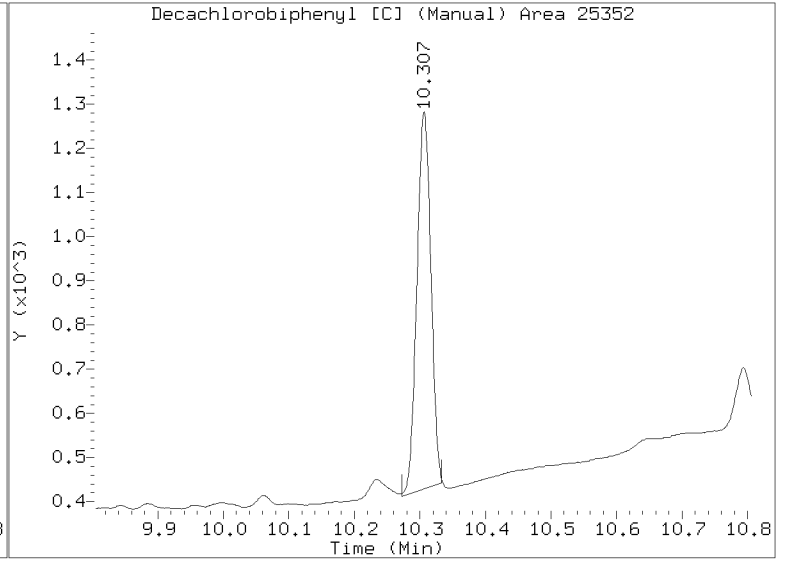
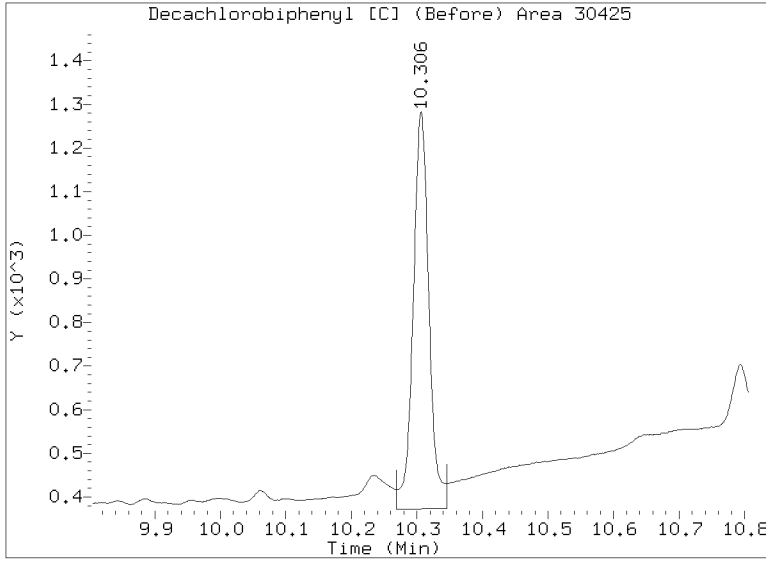
CLP-2 Manual Integration: YES

Manual Peak Adjustment Report, CLP-2

Datafile: /20230412.b/B20230412.b/23041204.D

Injection Date: 12-APR-2023 15:34

Lab ID:SEQ-CAL1 Client ID:



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041205.D  
Data file 2: /20230412.b/B20230412.b/23041205.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL2  
Client ID:  
Injection Date: 12-APR-2023 15:53  
Report Date: 04/13/2023 12:57  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	CLP2 Col Shift Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag	
4.334	0.000	51739	4.762	-0.000	64823	2.56	2.47	3.6	alpha-BHC
4.718	-0.000	21843	5.230	-0.000	27256	2.71	2.62	3.4	beta-BHC
4.902	-0.001	46946	5.577	0.000	57832	2.57	2.48	3.6	delta-BHC
4.637	0.000	45705	5.152	-0.000	57426	2.58	2.49	3.3	gamma-BHC (Lindane)
5.125	0.000	44188	5.671	0.000	52255	2.69	2.59	4.0	Heptachlor
5.449	-0.000	43869	6.070	-0.001	53342	2.63	2.54	3.2	Aldrin
6.125	-0.002	39080	6.728	-0.001	46435	2.59	2.51	3.0	Heptachlor epoxide b
6.567	-0.001	36118	7.172	0.000	40864	2.69	2.60	3.4	Endosulfan I
6.828	-0.000	77704	7.466	0.000	91522	5.46	5.31	2.9	Dieldrin
6.490	-0.001	72097	7.257	0.000	86610	5.38	5.28	1.9	4,4'-DDE
7.079	-0.000	69966	7.790	-0.000	80652	5.47	5.42	1.0	Endrin
7.315	-0.000	66247	8.000	-0.001	75311	5.53	5.36	3.2	Endosulfan II
7.138	-0.000	61419	7.862	-0.000	71635	5.35	5.26	1.6	4,4'-DDD
8.178	0.000	62622	8.598	0.000	69135	5.55	5.34	3.8	Endosulfan sulfate
7.431	-0.000	66302	8.180	-0.001	72001	5.36	5.24	2.2	4,4'-DDT
7.920	-0.000	151246	8.821	-0.001	162884	28.55	27.67	3.1	Methoxychlor
8.453	0.000	72870	9.119	0.000	77298	5.65	5.47	3.4	Endrin ketone
7.743	-0.000	50010	8.331	0.000	54680	5.47	5.38	1.7	Endrin aldehyde
6.267	-0.000	38399	6.940	0.001	44910	2.60	2.54	2.6	trans-Chlordane
6.414	0.000	39092	7.100	-0.000	44798	2.64	2.57	2.7	cis-Chlordane
2.308	0.000	57293	2.452	-0.001	61436	2.75	2.58	6.4	Hexachlorobutadiene
4.175	-0.000	48764	4.622	0.000	61087	2.73	2.67	2.3	Hexachlorobenzene
3.820	0.000	70858	4.136	0.000	91748	5.48	5.40	1.6	Tetrachloro-m-xylene
9.367	-0.000	52201	10.306	-0.000	49425	5.98	5.54	7.7	Decachlorobiphenyl N

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

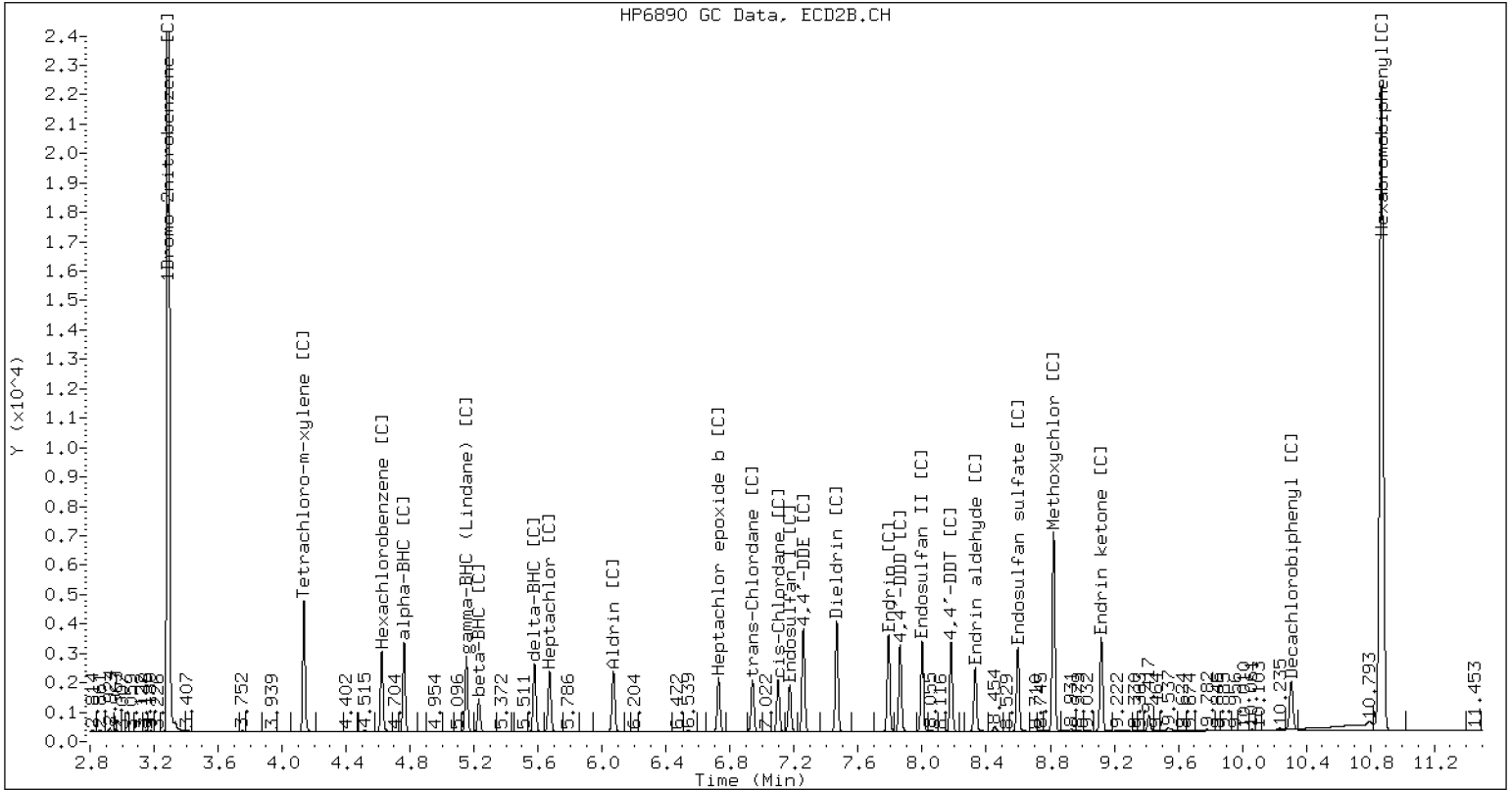
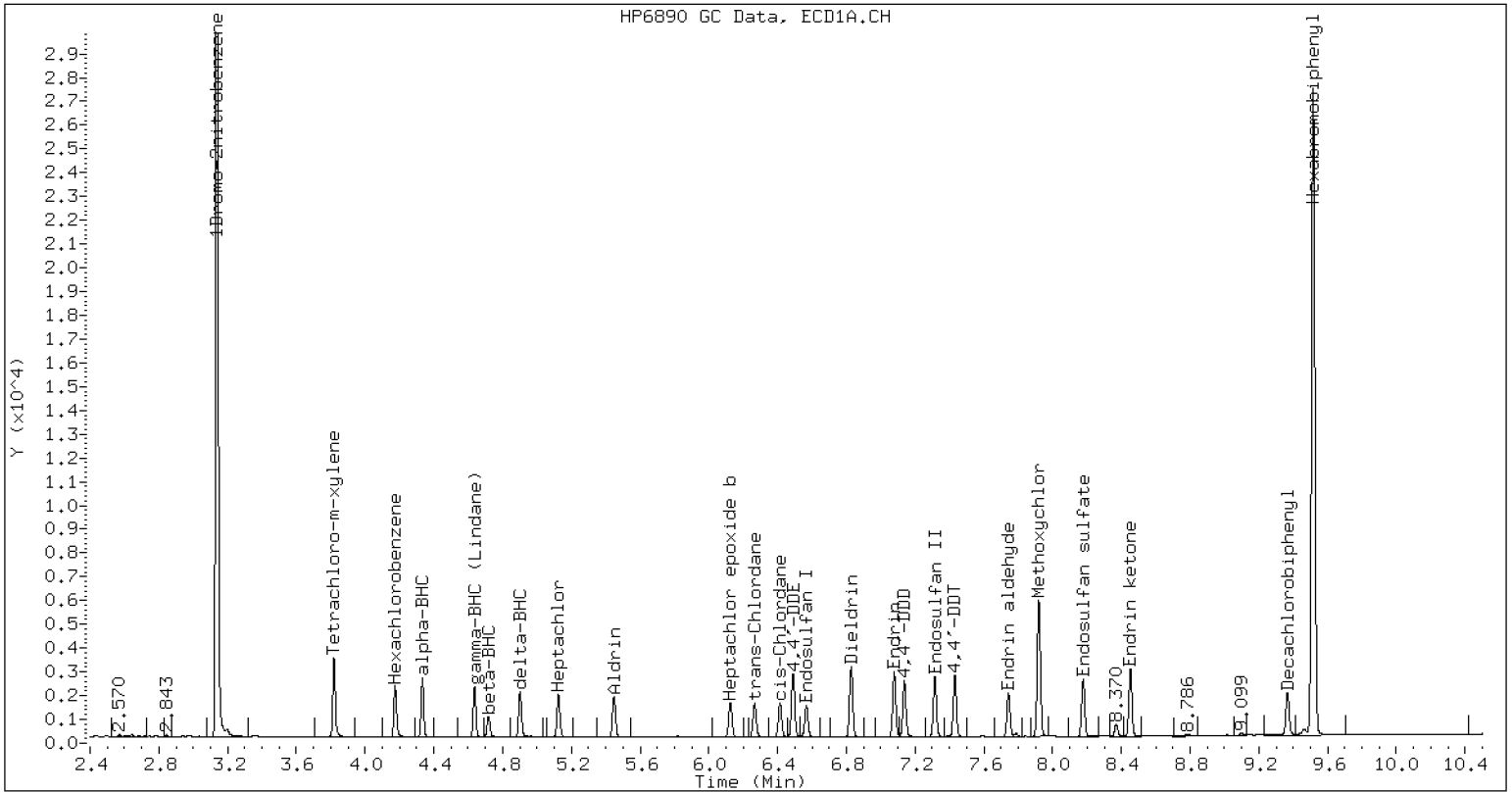
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	923378	6.8
Hexabromobiphenyl	663237	740194	11.6

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1235705	-16.6
Hexabromobiphenyl	870561	739625	-15.0

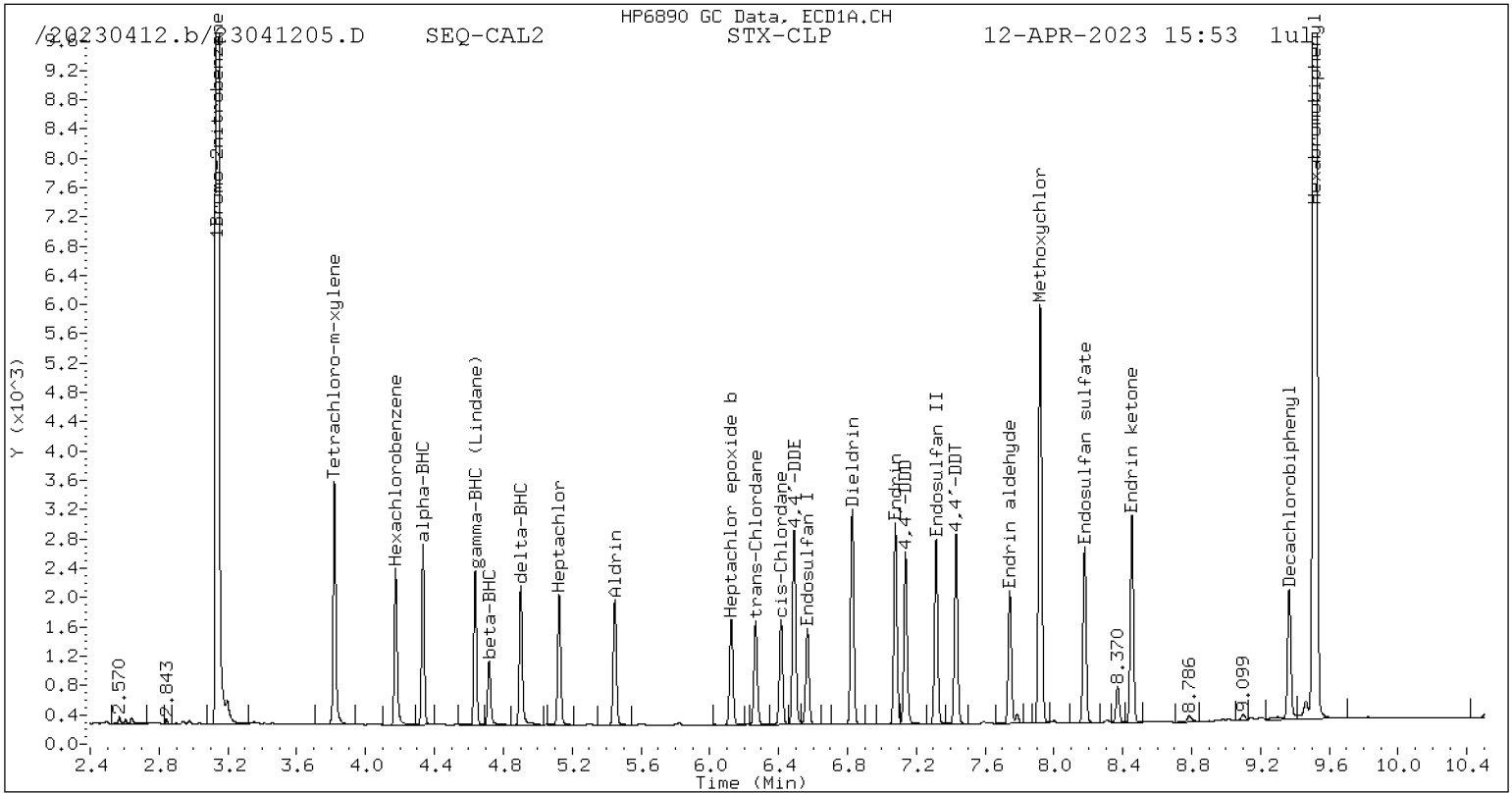
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

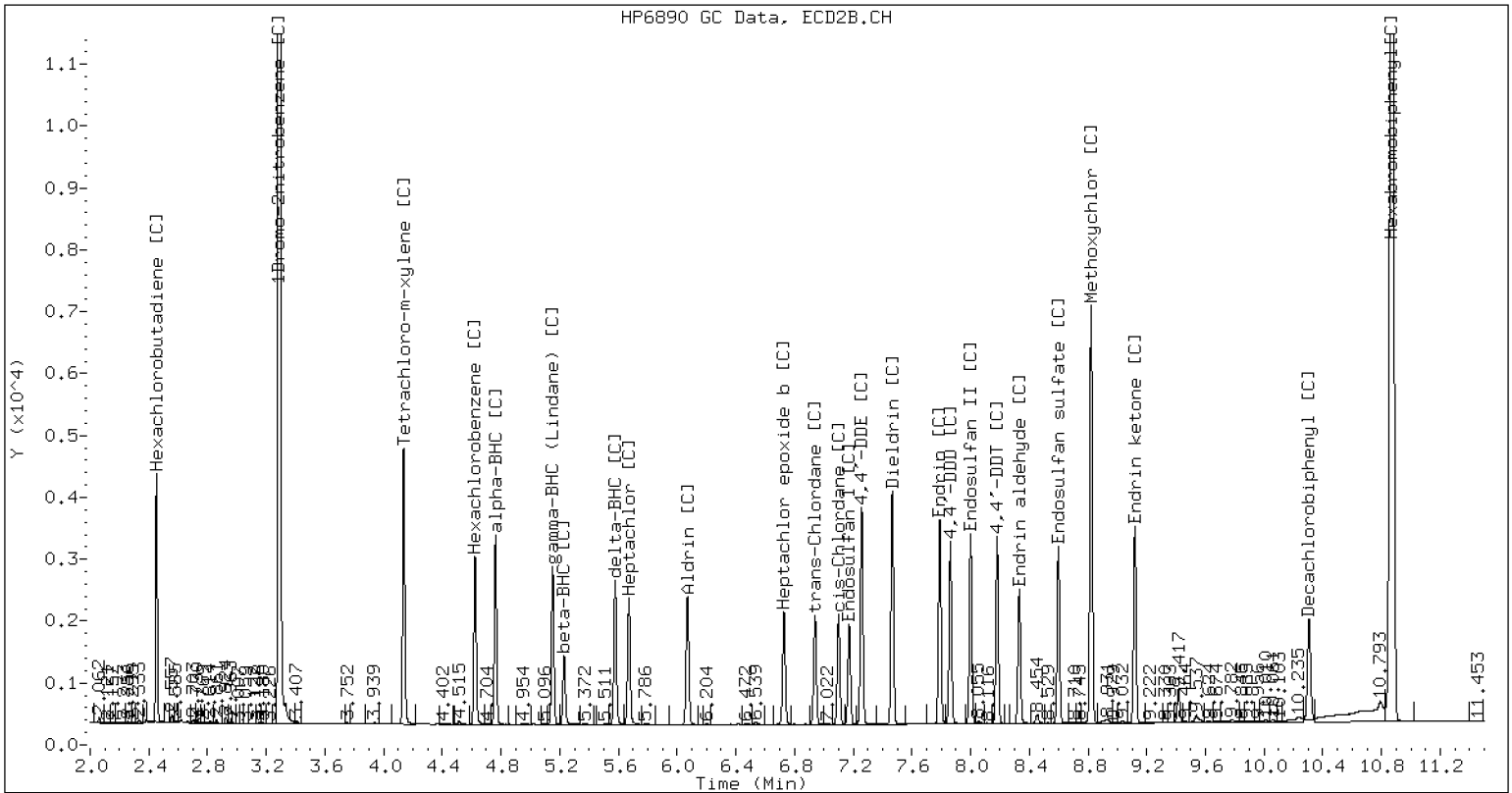


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041205.D SEQ-CAL2 CLP2



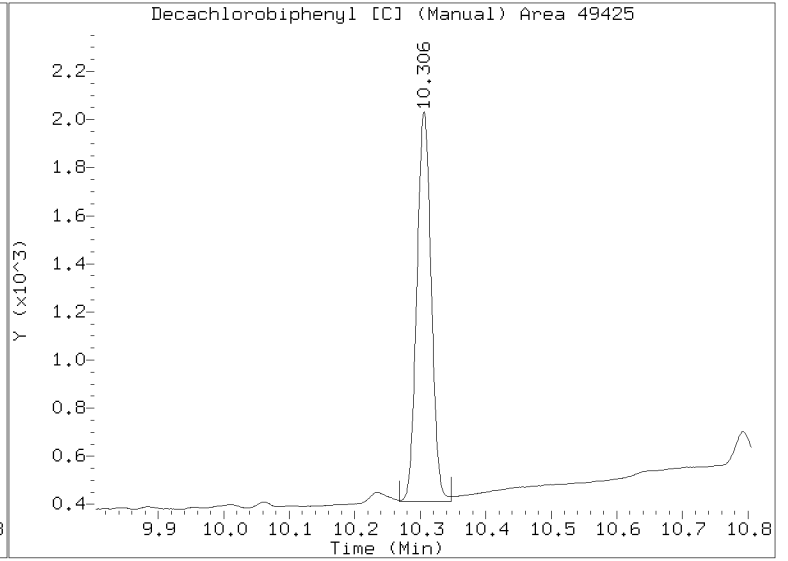
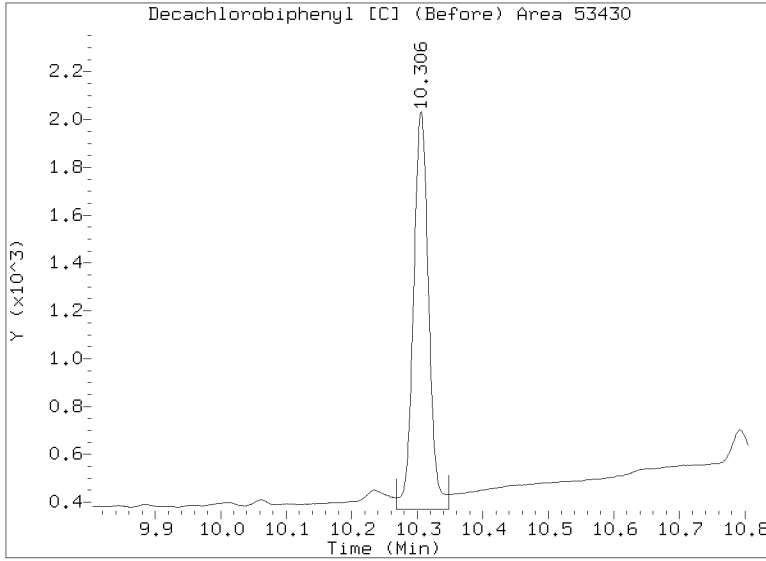
CLP-2 Manual Integration: YES

Manual Peak Adjustment Report, CLP-2

Datafile: /20230412.b/B20230412.b/23041205.D

Injection Date: 12-APR-2023 15:53

Lab ID:SEQ-CAL2 Client ID:





Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041206.D  
Data file 2: /20230412.b/B20230412.b/23041206.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL3  
Client ID:  
Injection Date: 12-APR-2023 16:11  
Report Date: 04/13/2023 12:57  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Response	RT	CLP2 Col Shift Response	CLP2 Col Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.333	0.000	103568	4.761	-0.001	131810	5.11	5.04	1.4	alpha-BHC
4.717	-0.001	41447	5.229	-0.001	52711	5.12	5.07	0.9	beta-BHC
4.902	-0.001	94116	5.576	-0.001	117489	5.13	5.05	1.6	delta-BHC
4.637	0.000	91660	5.151	-0.001	116367	5.15	5.06	1.7	gamma-BHC (Lindane)
5.125	-0.000	86721	5.670	-0.001	104305	5.26	5.17	1.7	Heptachlor
5.449	-0.000	87528	6.070	-0.001	107537	5.22	5.14	1.6	Aldrin
6.125	-0.002	76614	6.728	-0.001	91643	5.06	4.97	1.8	Heptachlor epoxide b
6.567	-0.001	70757	7.171	-0.001	81121	5.24	5.17	1.5	Endosulfan I
6.828	-0.000	151176	7.465	-0.001	180300	10.59	10.48	1.1	Dieldrin
6.489	-0.001	141708	7.257	-0.000	172687	10.53	10.54	0.1	4,4'-DDE
7.078	-0.001	135408	7.789	-0.001	157942	10.52	10.45	0.6	Endrin
7.315	-0.001	127172	8.000	-0.001	147360	10.55	10.32	2.2	Endosulfan II
7.137	-0.001	120482	7.862	-0.000	141192	10.43	10.22	2.0	4,4'-DDD
8.177	-0.001	119181	8.597	-0.001	134570	10.49	10.24	2.4	Endosulfan sulfate
7.431	-0.001	129376	8.180	-0.001	142078	10.40	10.20	2.0	4,4'-DDT
7.919	-0.001	279773	8.820	-0.002	309068	52.48	51.73	1.4	Methoxychlor
8.452	-0.000	133639	9.119	-0.000	147115	10.31	10.25	0.5	Endrin ketone
7.743	-0.001	96868	8.330	-0.001	105906	10.53	10.26	2.6	Endrin aldehyde
6.267	-0.000	76161	6.939	-0.000	89682	5.14	5.08	1.3	trans-Chlordane
6.414	-0.000	76892	7.099	-0.001	88748	5.17	5.10	1.4	cis-Chlordane
2.308	0.000	106908	2.452	-0.001	123867	5.11	5.22	2.0	Hexachlorobutadiene
4.175	-0.000	93098	4.622	-0.000	118070	5.19	5.17	0.4	Hexachlorobenzene
3.819	-0.000	137014	4.136	-0.000	179204	10.57	10.57	0.0	Tetrachloro-m-xylene
9.366	-0.001	90951	10.305	-0.001	96814	10.35	10.68	3.2	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

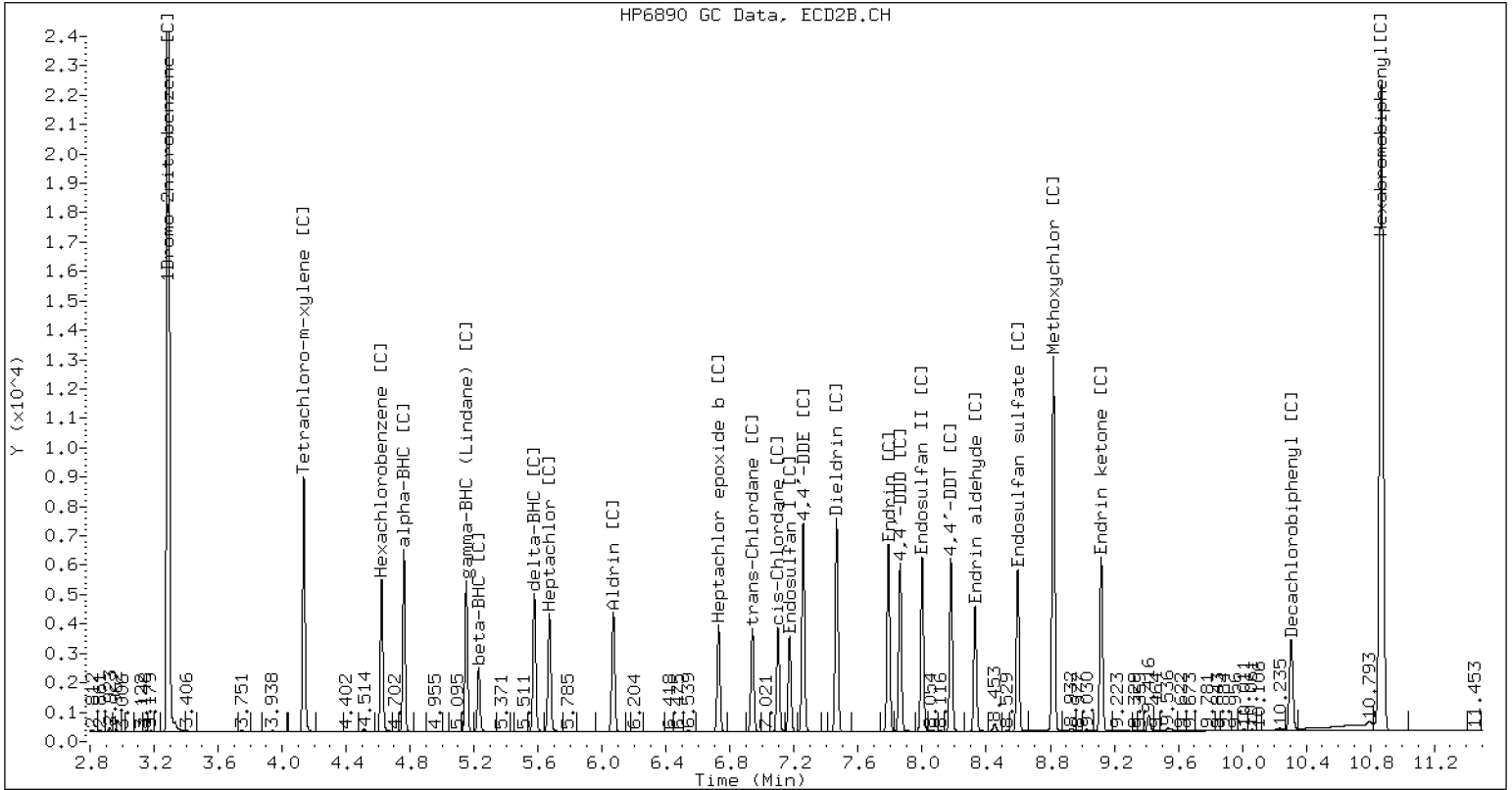
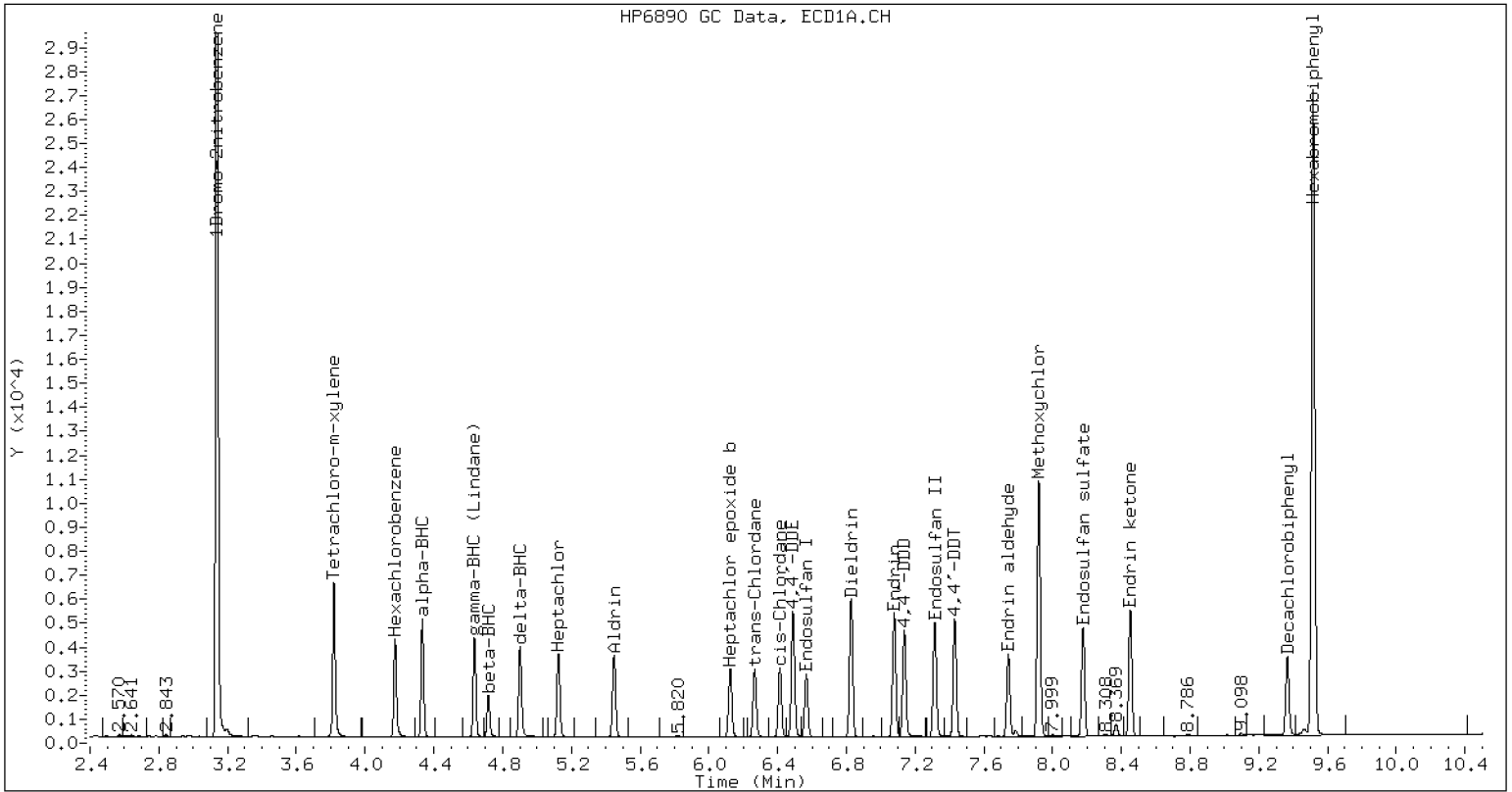
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	926824	7.2
Hexabromobiphenyl	663237	744867	12.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1232907	-16.7
Hexabromobiphenyl	870561	750687	-13.8

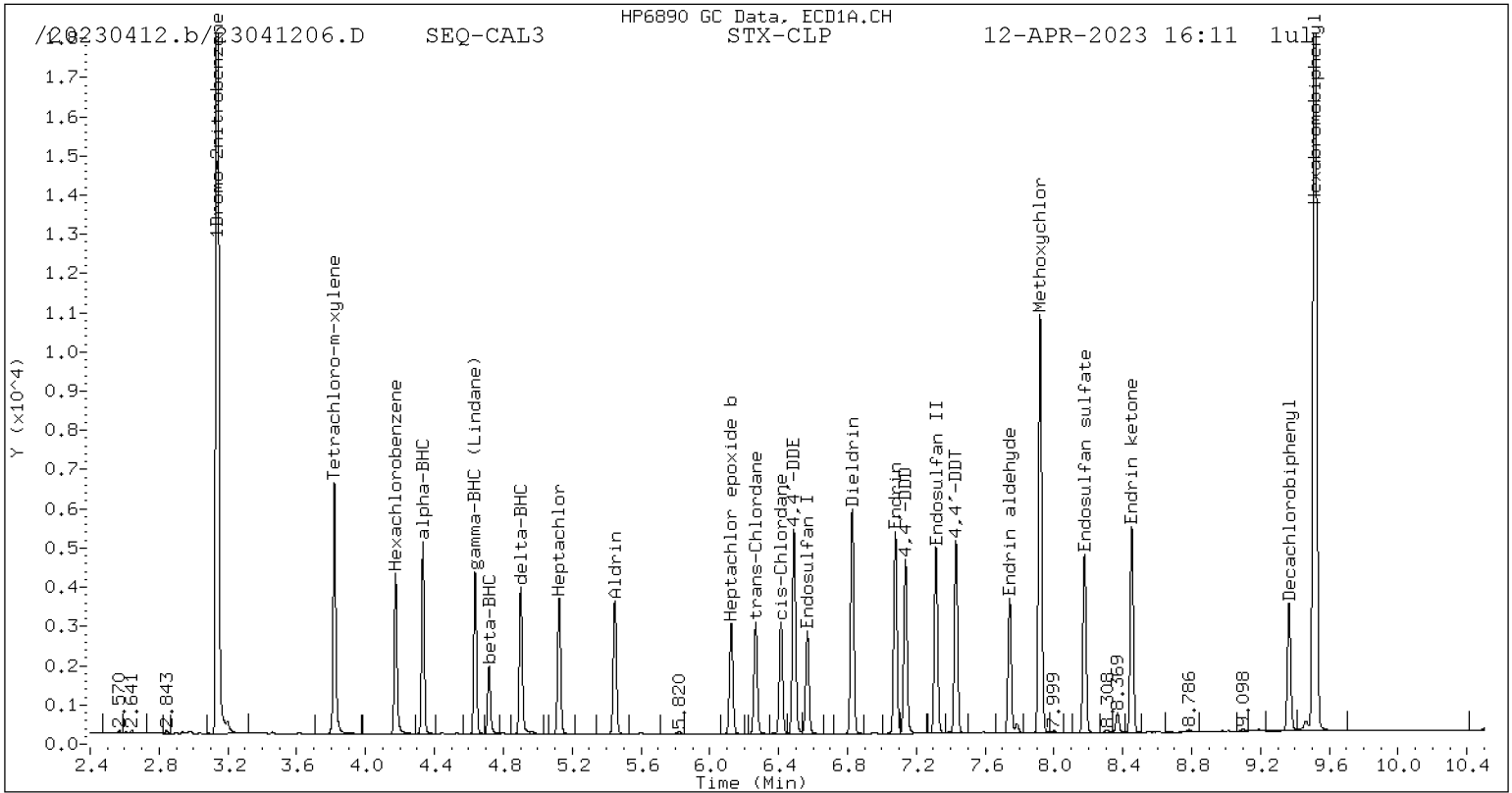
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

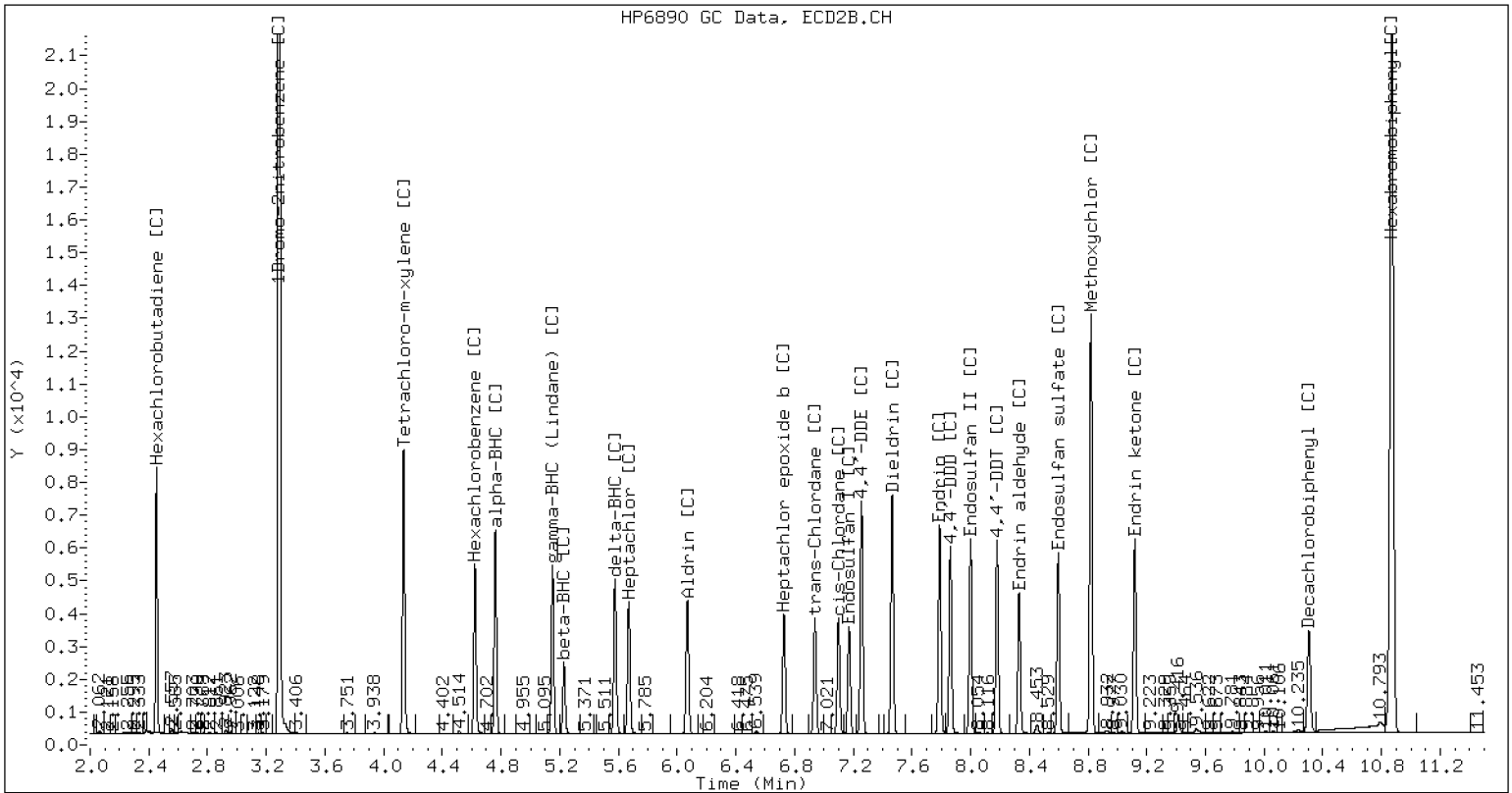


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041206.D SEQ-CAL3 CLP2



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041207.D  
Data file 2: /20230412.b/B20230412.b/23041207.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL5  
Client ID:  
Injection Date: 12-APR-2023 16:30  
Report Date: 04/13/2023 12:57  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Response	RT	CLP2 Col Shift Response	CLP2 Col Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.334	0.001	407241	4.762	0.000	536848	19.97	20.27	1.5	alpha-BHC
4.717	-0.001	155730	5.230	-0.000	202325	19.12	19.23	0.6	beta-BHC
4.902	-0.001	370506	5.577	-0.000	476223	20.06	20.20	0.7	delta-BHC
4.637	0.000	356610	5.152	-0.000	467736	19.90	20.08	0.9	gamma-BHC (Lindane)
5.125	0.000	322878	5.671	-0.000	404806	19.46	19.82	1.8	Heptachlor
5.449	0.000	332937	6.070	-0.001	424935	19.73	20.04	1.6	Aldrin
6.125	-0.002	282261	6.728	-0.001	351893	18.53	18.86	1.7	Heptachlor epoxide b
6.568	-0.000	264288	7.172	-0.000	313117	19.47	19.69	1.2	Endosulfan I
6.828	0.000	556831	7.466	-0.000	679897	38.75	39.01	0.7	Dieldrin
6.490	-0.001	530626	7.257	-0.000	653476	39.17	39.39	0.6	4,4'-DDE
7.078	-0.000	494177	7.790	-0.000	590171	38.36	38.86	1.3	Endrin
7.315	-0.001	458674	8.000	-0.001	555378	38.02	38.71	1.8	Endosulfan II
7.137	-0.001	450400	7.862	0.000	544668	38.95	39.23	0.7	4,4'-DDD
8.177	-0.001	429746	8.598	-0.000	510603	37.79	38.65	2.3	Endosulfan sulfate
7.431	-0.000	481860	8.180	-0.001	546653	38.69	39.02	0.8	4,4'-DDT
7.920	-0.001	955187	8.821	-0.001	1096057	179.04	182.48	1.9	Methoxychlor
8.452	-0.000	476313	9.119	-0.000	546190	36.70	37.86	3.1	Endrin ketone
7.743	-0.000	347507	8.331	0.000	397001	37.75	38.27	1.4	Endrin aldehyde
6.267	-0.000	293273	6.939	0.000	355259	19.68	19.85	0.9	trans-Chlordane
6.413	-0.001	292054	7.099	-0.001	346293	19.52	19.65	0.7	cis-Chlordane
2.309	0.001	397872	2.452	-0.001	467299	18.91	19.43	2.7	Hexachlorobutadiene
4.175	0.000	342355	4.623	0.001	445526	18.97	19.26	1.5	Hexachlorobenzene
3.819	0.000	499517	4.136	0.000	663494	38.27	38.64	1.0	Tetrachloro-m-xylene
9.366	-0.001	308287	10.305	-0.001	336318	35.06	36.92	5.2	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

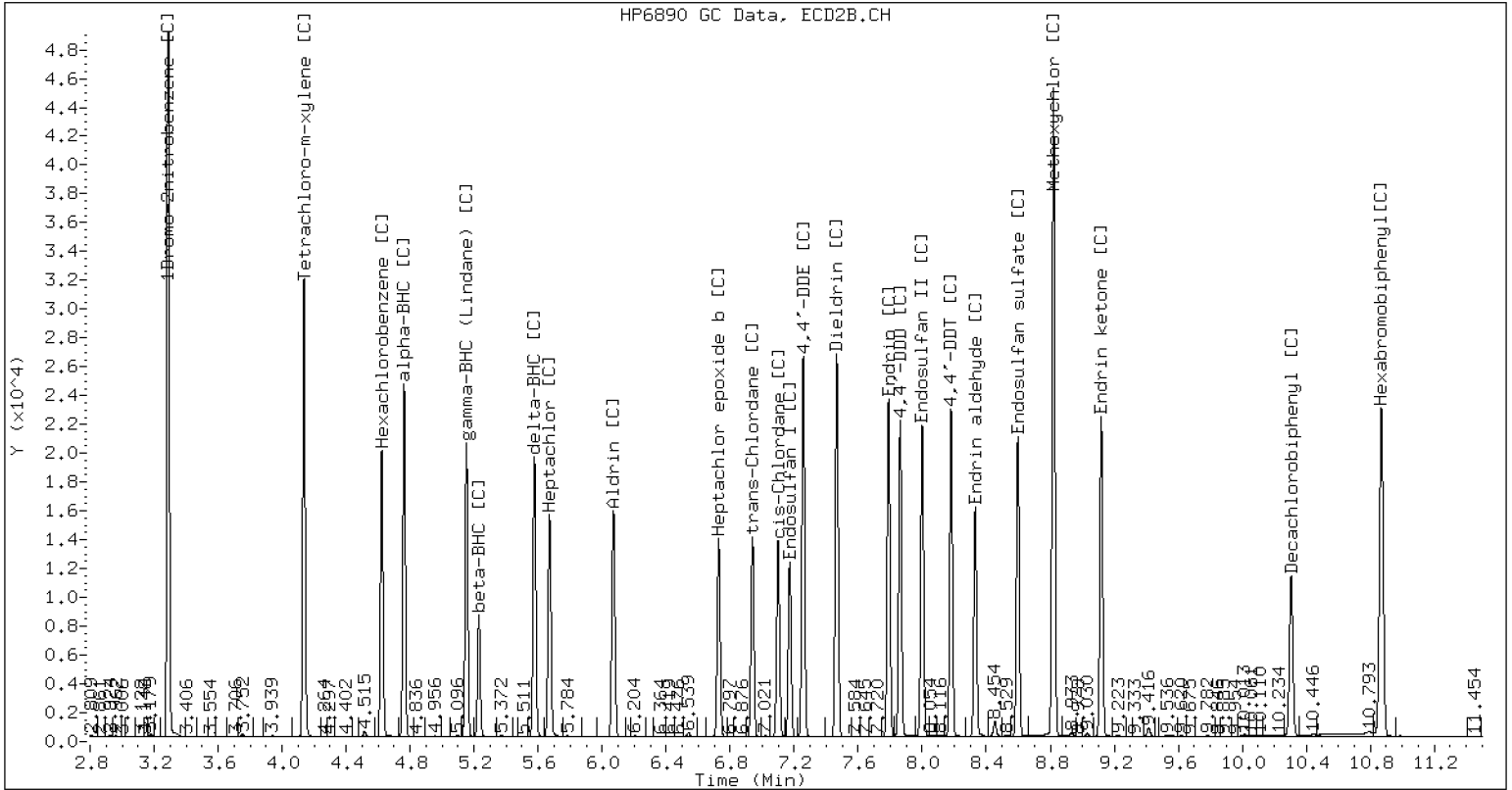
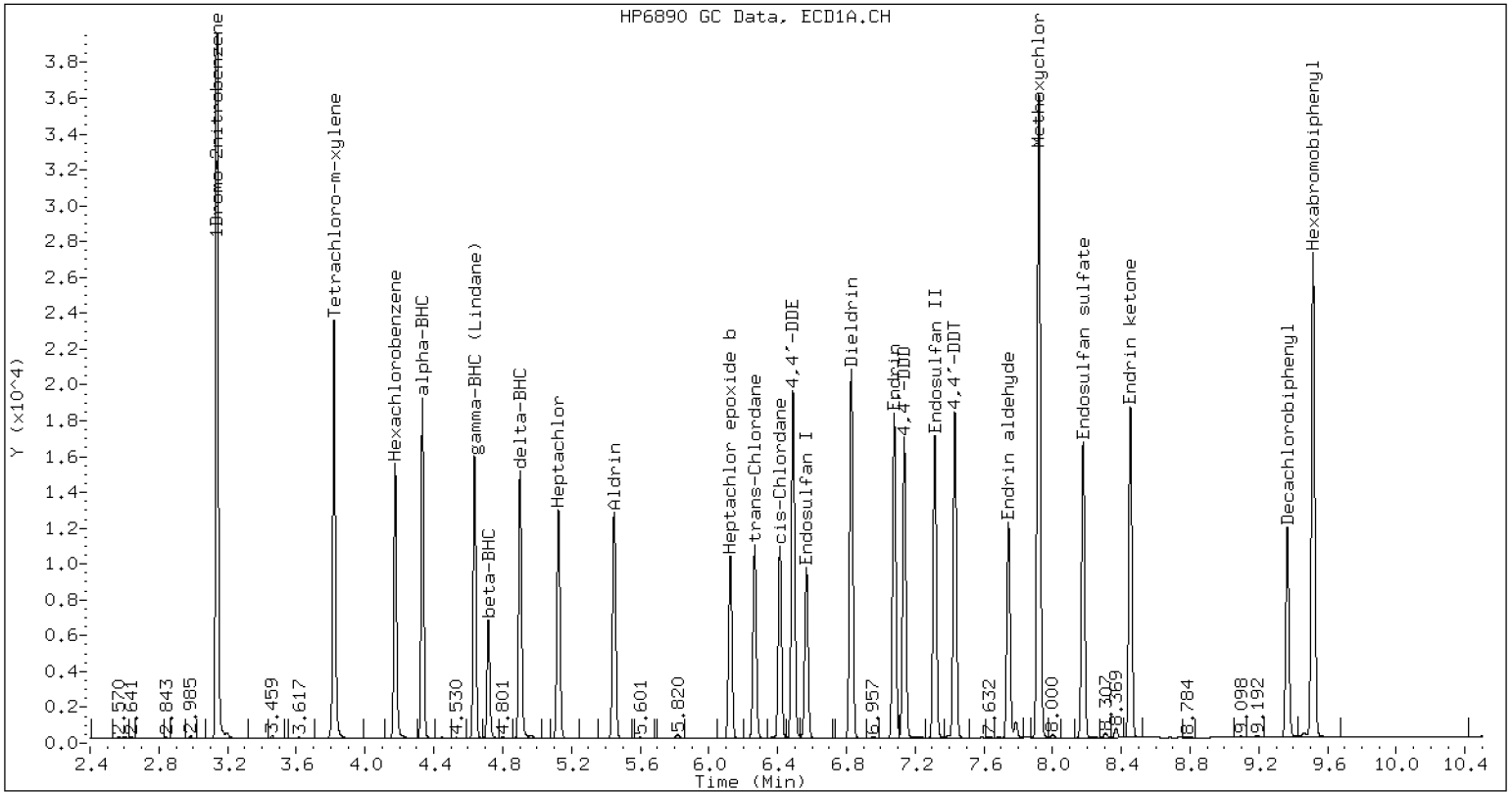
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	932757	7.9
Hexabromobiphenyl	663237	745426	12.4

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1248665	-15.7
Hexabromobiphenyl	870561	754634	-13.3

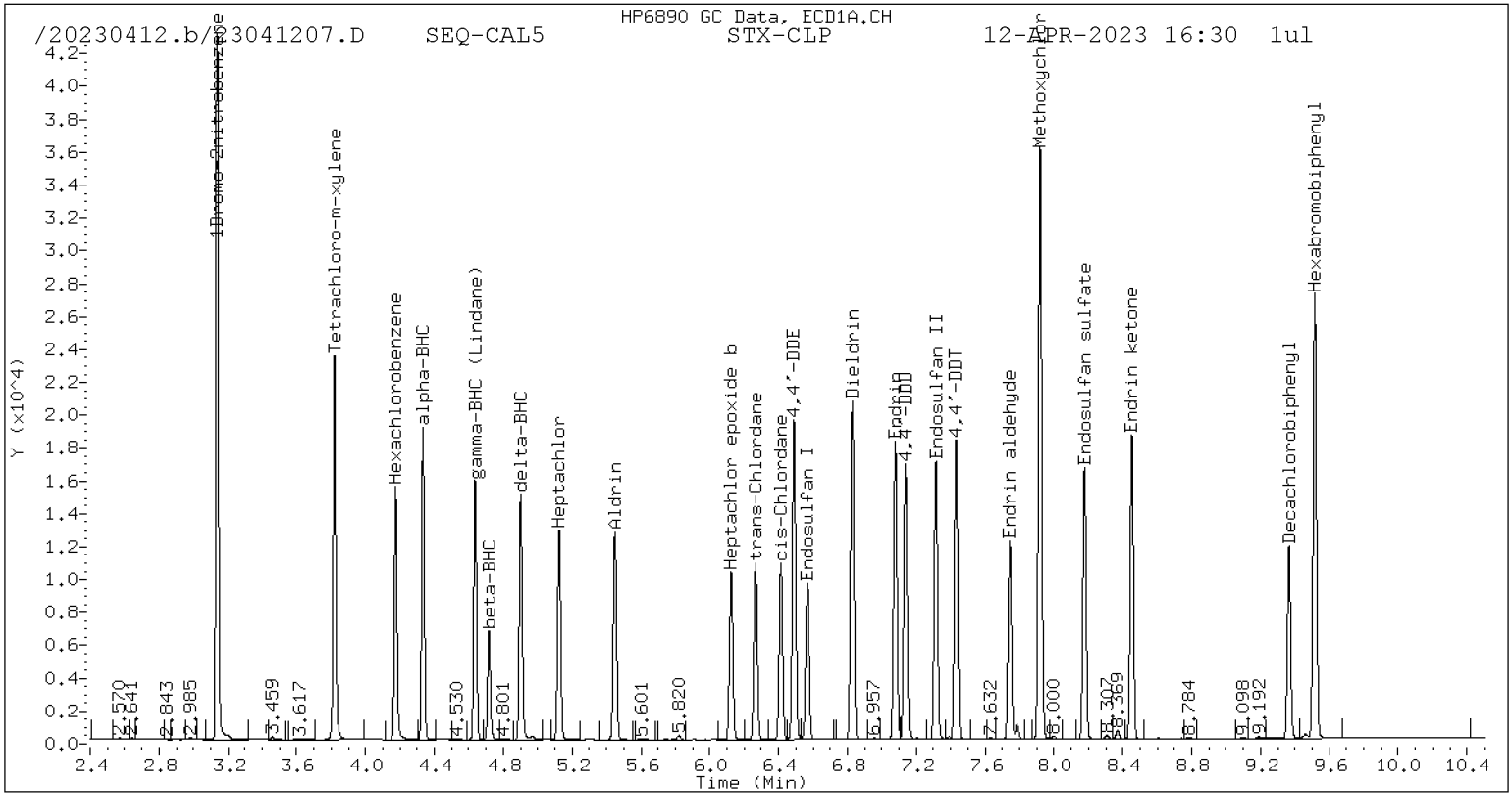
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

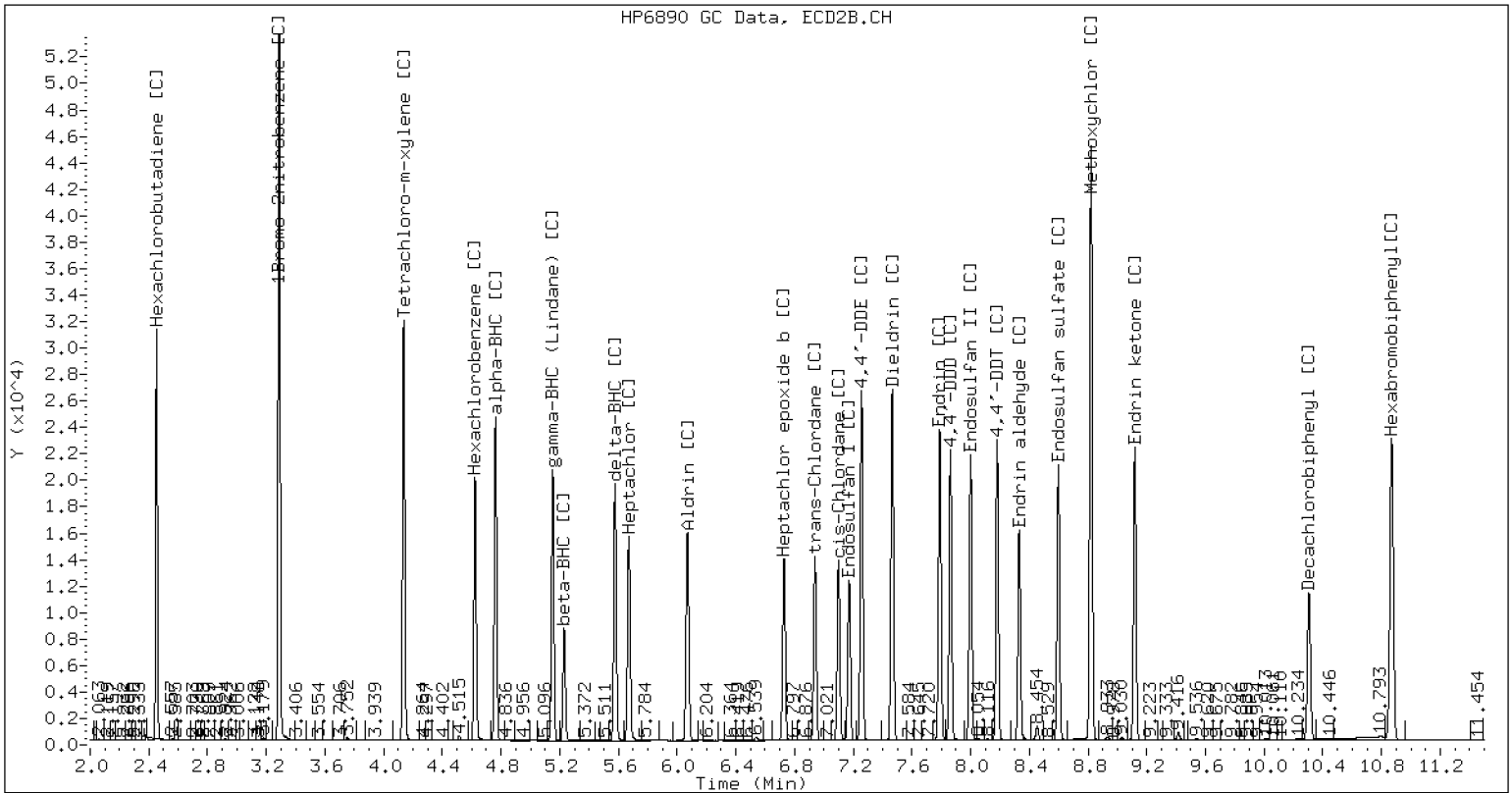


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041207.D SEQ-CAL5 CLP2



CLP-2 Manual Integration: NO



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041208.D  
Data file 2: /20230412.b/B20230412.b/23041208.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL4  
Client ID:  
Injection Date: 12-APR-2023 16:48  
Report Date: 04/13/2023 12:57  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Response	RT	CLP2 Col Shift Response	CLP2 Col Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.333	0.000	207054	4.762	-0.000	269032	10.40	10.44	0.4	alpha-BHC
4.717	-0.001	79800	5.230	-0.000	103870	10.04	10.15	1.1	beta-BHC
4.901	-0.001	188049	5.577	0.000	239720	10.44	10.45	0.1	delta-BHC
4.637	0.000	181860	5.152	-0.000	236414	10.40	10.44	0.4	gamma-BHC (Lindane)
5.125	0.000	168797	5.672	0.001	208664	10.43	10.50	0.7	Heptachlor
5.449	0.000	172339	6.070	-0.001	216770	10.47	10.51	0.4	Aldrin
6.125	-0.002	148413	6.728	-0.001	182002	9.99	10.03	0.4	Heptachlor epoxide b
6.567	-0.001	138415	7.172	0.000	161209	10.45	10.42	0.2	Endosulfan I
6.828	-0.000	293866	7.466	0.000	354543	20.96	20.91	0.2	Dieldrin
6.490	-0.001	276898	7.257	0.000	342356	20.95	21.22	1.3	4,4'-DDE
7.078	-0.001	260570	7.789	-0.001	308995	20.59	20.68	0.4	Endrin
7.314	-0.001	243933	8.000	-0.001	290249	20.59	20.57	0.1	Endosulfan II
7.137	-0.001	235887	7.862	0.000	281171	20.77	20.59	0.9	4,4'-DDD
8.178	-0.000	228340	8.598	-0.000	264823	20.44	20.38	0.3	Endosulfan sulfate
7.431	-0.001	252435	8.181	-0.000	282707	20.64	20.52	0.6	4,4'-DDT
7.920	-0.000	515694	8.821	-0.001	586198	98.41	99.22	0.8	Methoxychlor
8.452	-0.000	254090	9.119	-0.000	286425	19.93	20.18	1.2	Endrin ketone
7.743	-0.001	184716	8.331	0.000	207509	20.43	20.34	0.4	Endrin aldehyde
6.267	-0.000	150690	6.939	0.000	180266	10.36	10.36	0.1	trans-Chlordane
6.413	-0.001	150822	7.100	-0.000	176894	10.33	10.32	0.1	cis-Chlordane
2.308	0.000	206966	2.452	-0.001	244467	10.08	10.45	3.6	Hexachlorobutadiene
4.175	-0.000	178711	4.622	-0.000	231238	10.15	10.28	1.3	Hexachlorobenzene
3.819	0.000	263469	4.136	-0.000	349814	20.69	20.95	1.2	Tetrachloro-m-xylene
9.366	-0.001	166503	10.306	-0.000	180273	19.28	20.12	4.3	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

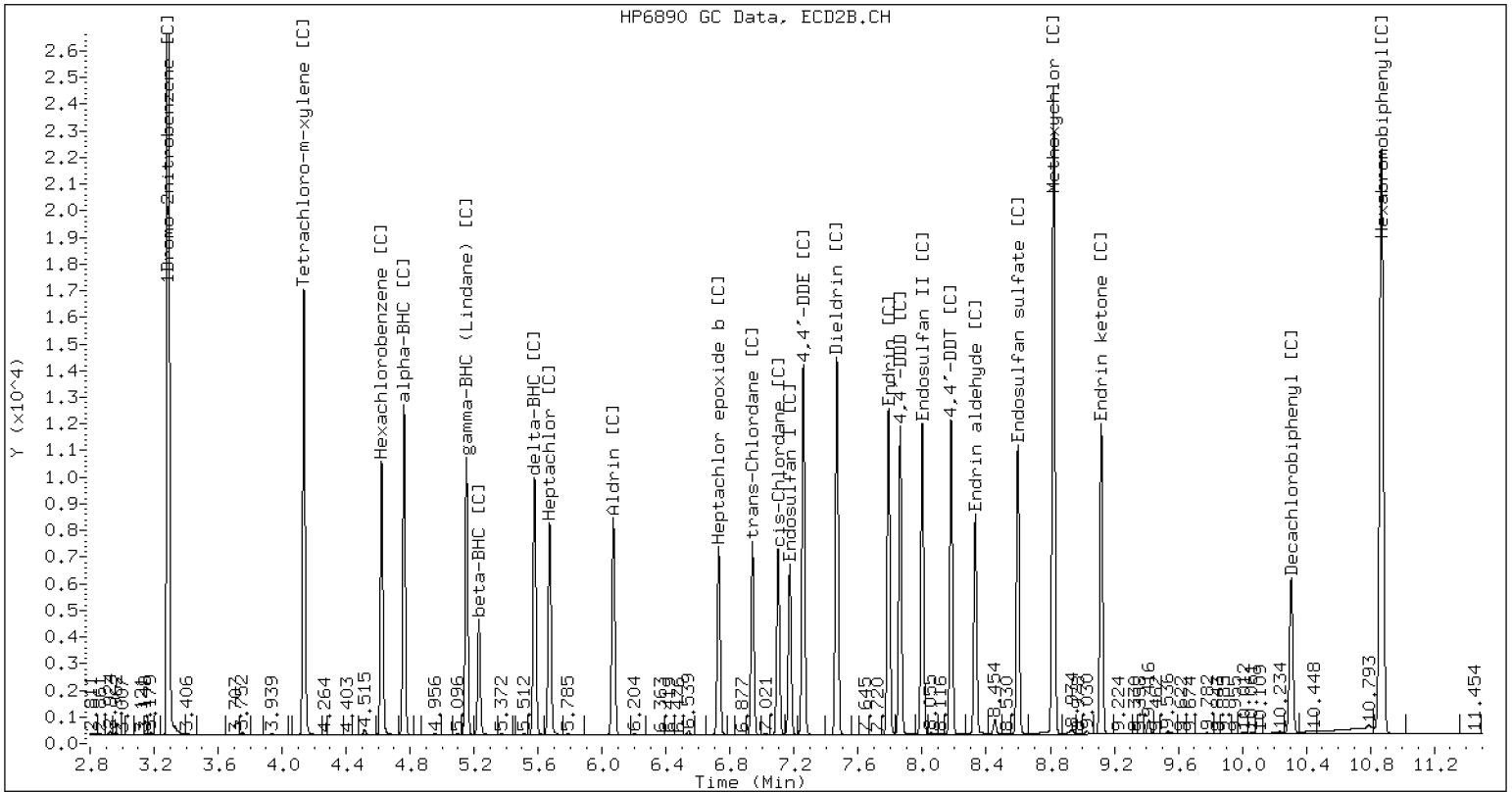
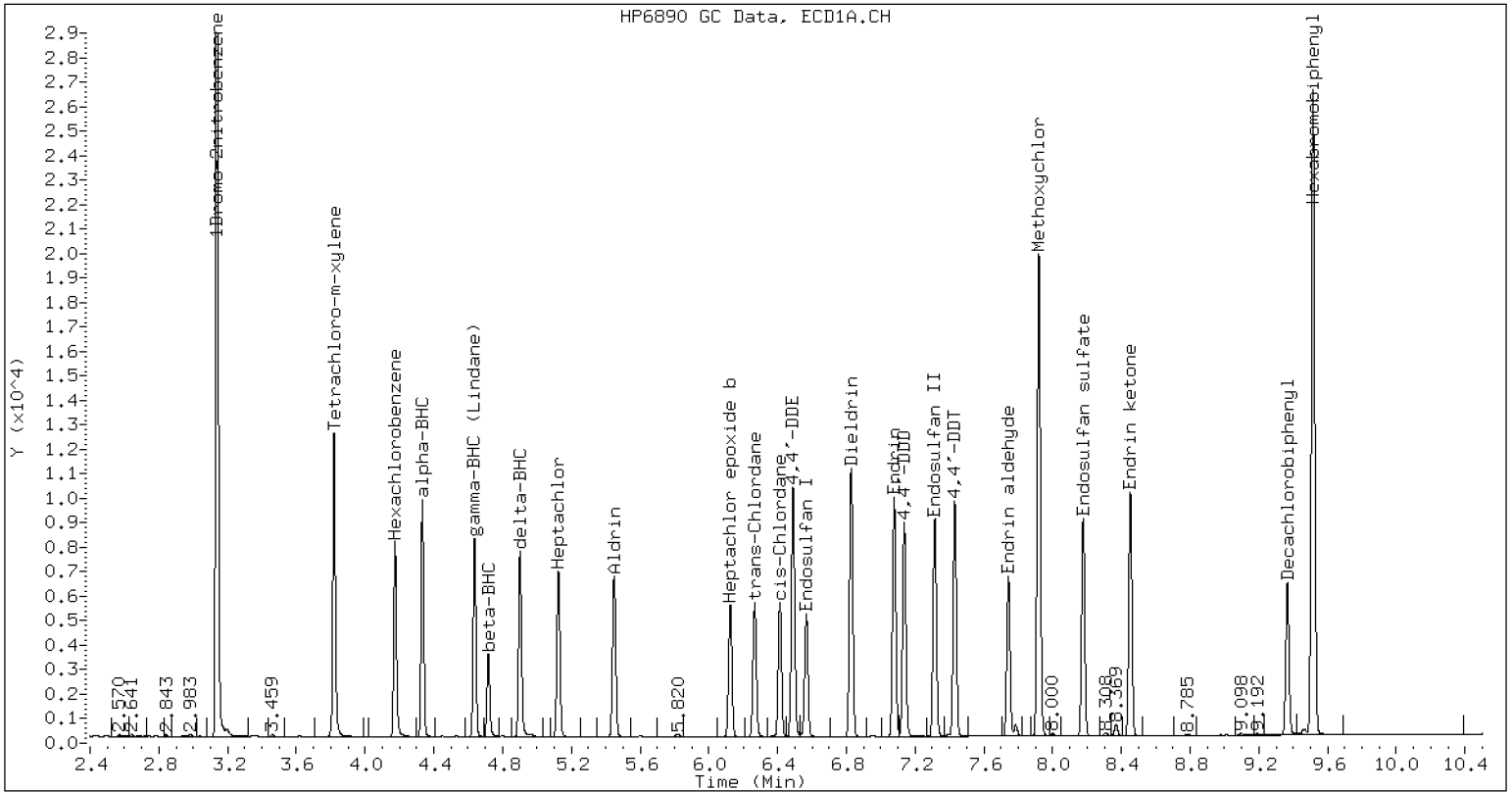
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	910053	5.3
Hexabromobiphenyl	663237	732158	10.4

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1214458	-18.0
Hexabromobiphenyl	870561	742252	-14.7

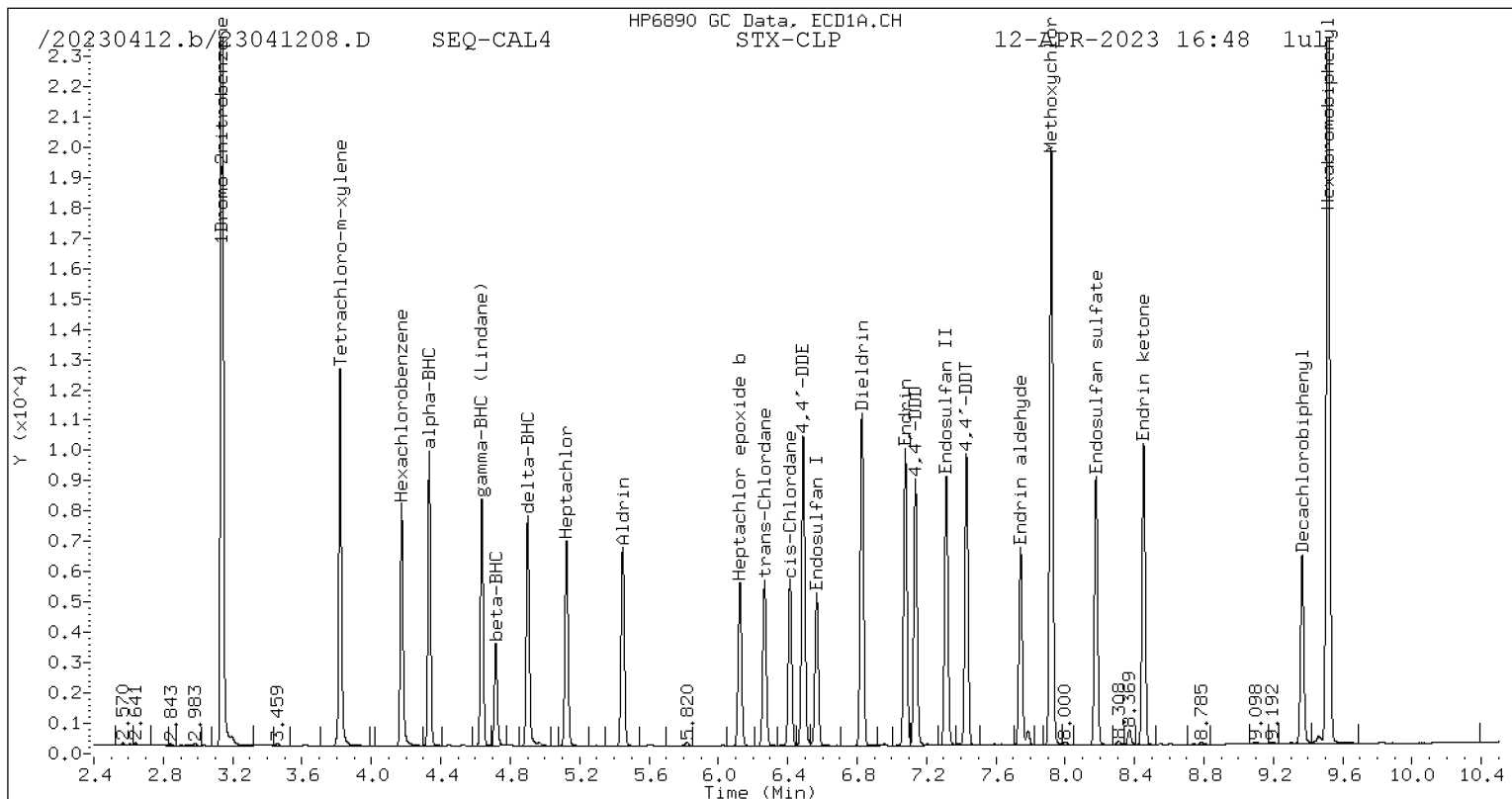
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

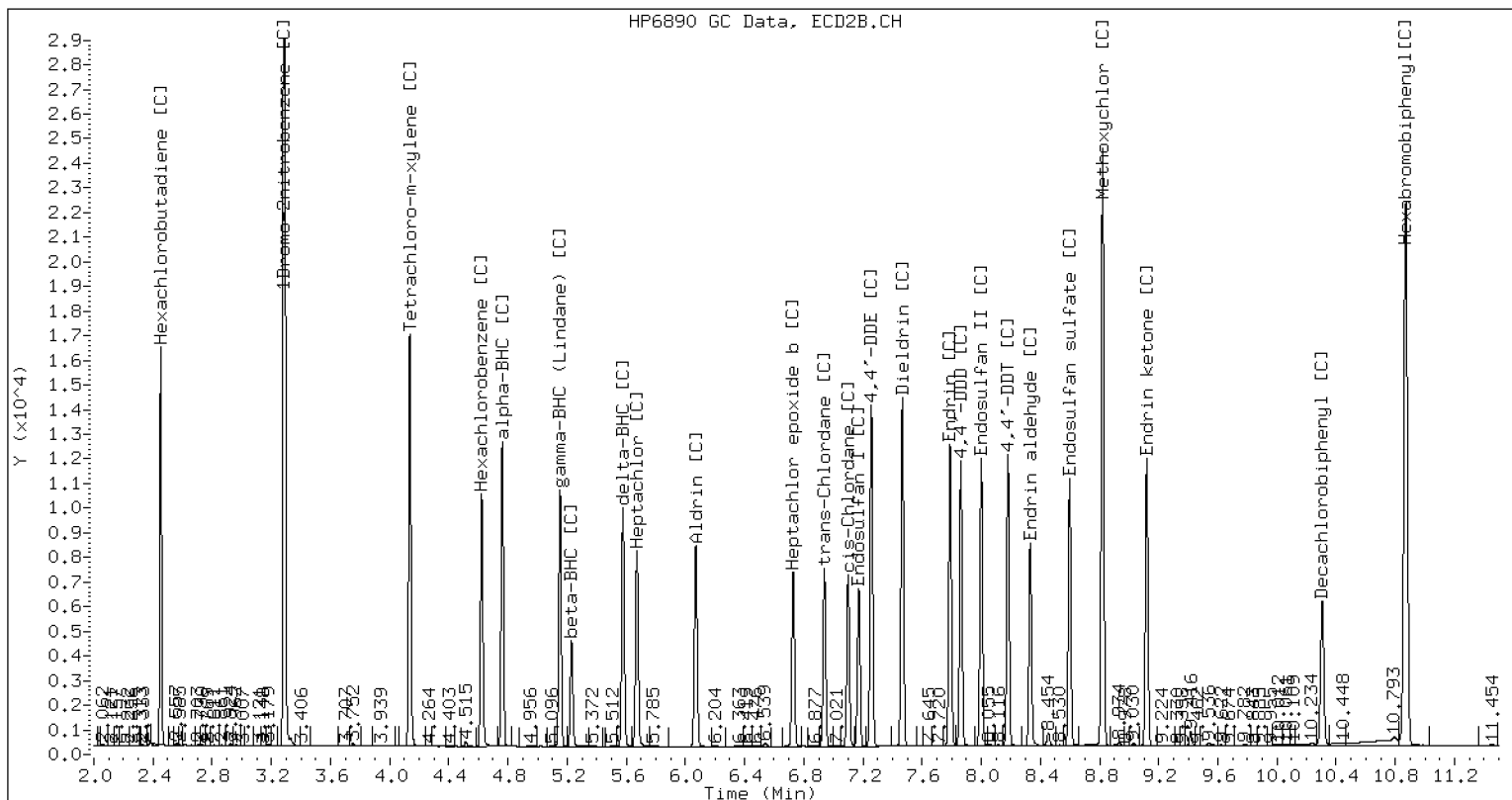


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041208.D SEQ-CAL4 CLP2



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041209.D  
Data file 2: /20230412.b/B20230412.b/23041209.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL6  
Client ID:  
Injection Date: 12-APR-2023 17:06  
Report Date: 04/13/2023 12:57  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	STX-CLP on col	CLP2 on col	RPD	Compound/Flag		
4.333	0.000	789082	4.762	0.000	1053745	39.26	40.45	3.0	alpha-BHC
4.717	-0.001	298836	5.230	-0.000	393735	37.23	38.05	2.2	beta-BHC
4.901	-0.001	708304	5.577	0.000	933504	38.92	40.25	3.4	delta-BHC
4.637	0.000	688986	5.152	-0.000	916016	39.01	39.99	2.5	gamma-BHC (Lindane)
5.125	-0.000	604529	5.671	0.000	770994	36.98	38.38	3.7	Heptachlor
5.448	-0.000	629969	6.071	-0.000	812922	37.88	38.99	2.9	Aldrin
6.125	-0.002	526148	6.729	-0.000	668897	35.05	36.44	3.9	Heptachlor epoxide b
6.567	-0.001	493488	7.173	0.001	596729	36.88	38.16	3.4	Endosulfan I
6.829	0.000	1030944	7.466	0.000	1279184	72.81	74.62	2.5	Dieldrin
6.489	-0.001	993535	7.257	0.000	1220084	74.41	74.77	0.5	4,4'-DDE
7.078	-0.001	907557	7.790	-0.000	1098211	72.71	73.00	0.4	Endrin
7.314	-0.001	848911	8.001	-0.000	1048450	72.63	73.77	1.6	Endosulfan II
7.137	-0.001	838729	7.862	0.000	1040087	74.86	75.63	1.0	4,4'-DDD
8.178	-0.000	805013	8.598	0.000	975785	73.05	74.56	2.1	Endosulfan sulfate
7.431	-0.000	908115	8.181	0.000	1053162	75.26	75.90	0.9	4,4'-DDT
7.920	-0.001	1796134	8.821	-0.001	2104774	347.45	353.79	1.8	Methoxychlor
8.452	-0.000	896939	9.120	0.001	1042272	71.33	72.93	2.2	Endrin ketone
7.743	-0.001	649599	8.332	0.001	756869	72.82	73.66	1.1	Endrin aldehyde
6.266	-0.000	563470	6.940	0.001	689422	38.37	39.17	2.1	trans-Chlordane
6.414	-0.000	558211	7.100	-0.000	670499	37.86	38.69	2.2	cis-Chlordane
2.309	0.001	760920	2.453	-0.000	896023	36.70	37.88	3.2	Hexachlorobutadiene
4.175	-0.000	651738	4.623	0.001	846379	36.64	37.20	1.5	Hexachlorobenzene
3.819	-0.000	933369	4.136	0.000	1232611	72.57	72.99	0.6	Tetrachloro-m-xylene
9.367	0.000	579829	10.306	0.000	644132	68.06	71.40	4.8	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

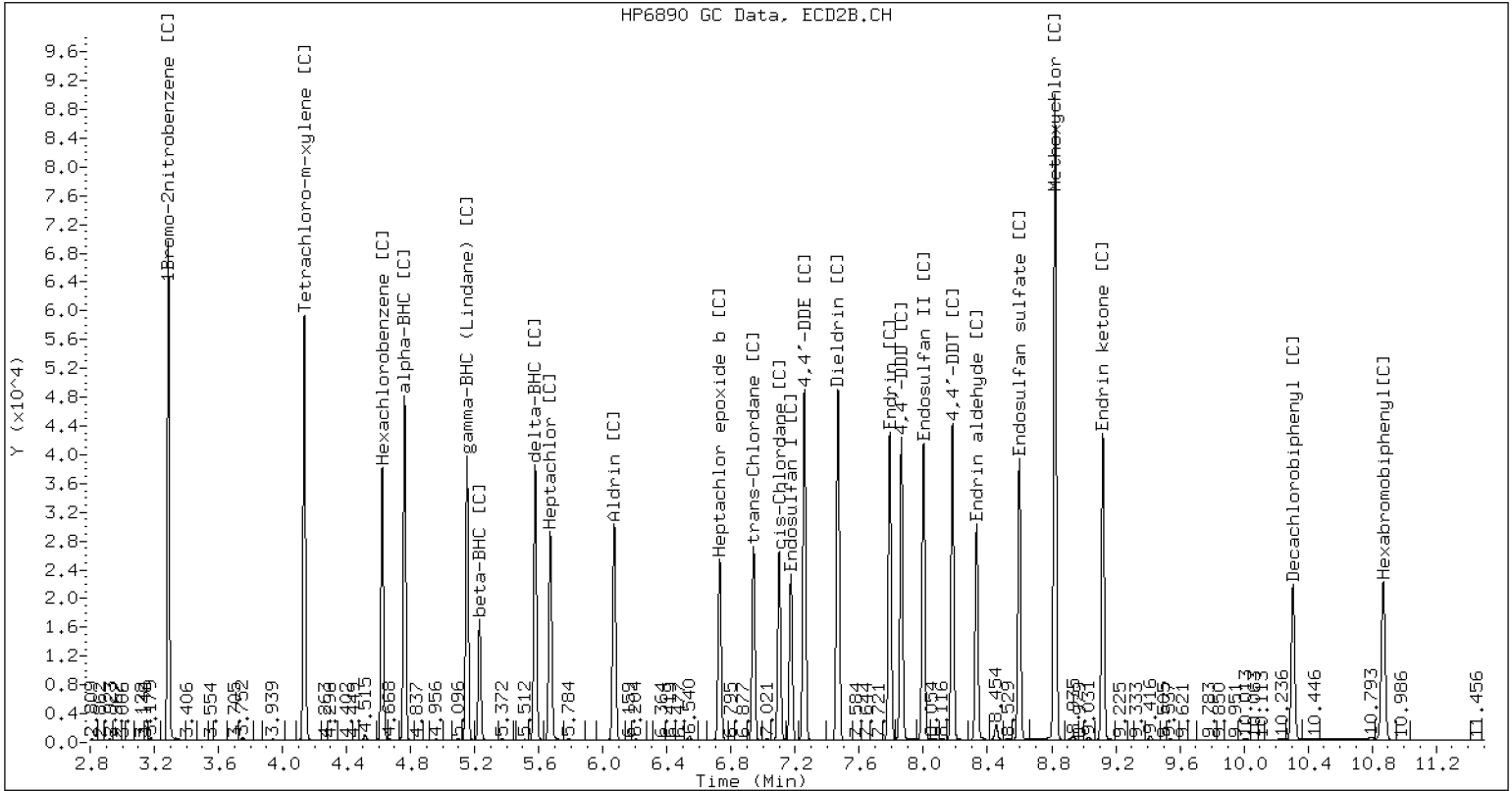
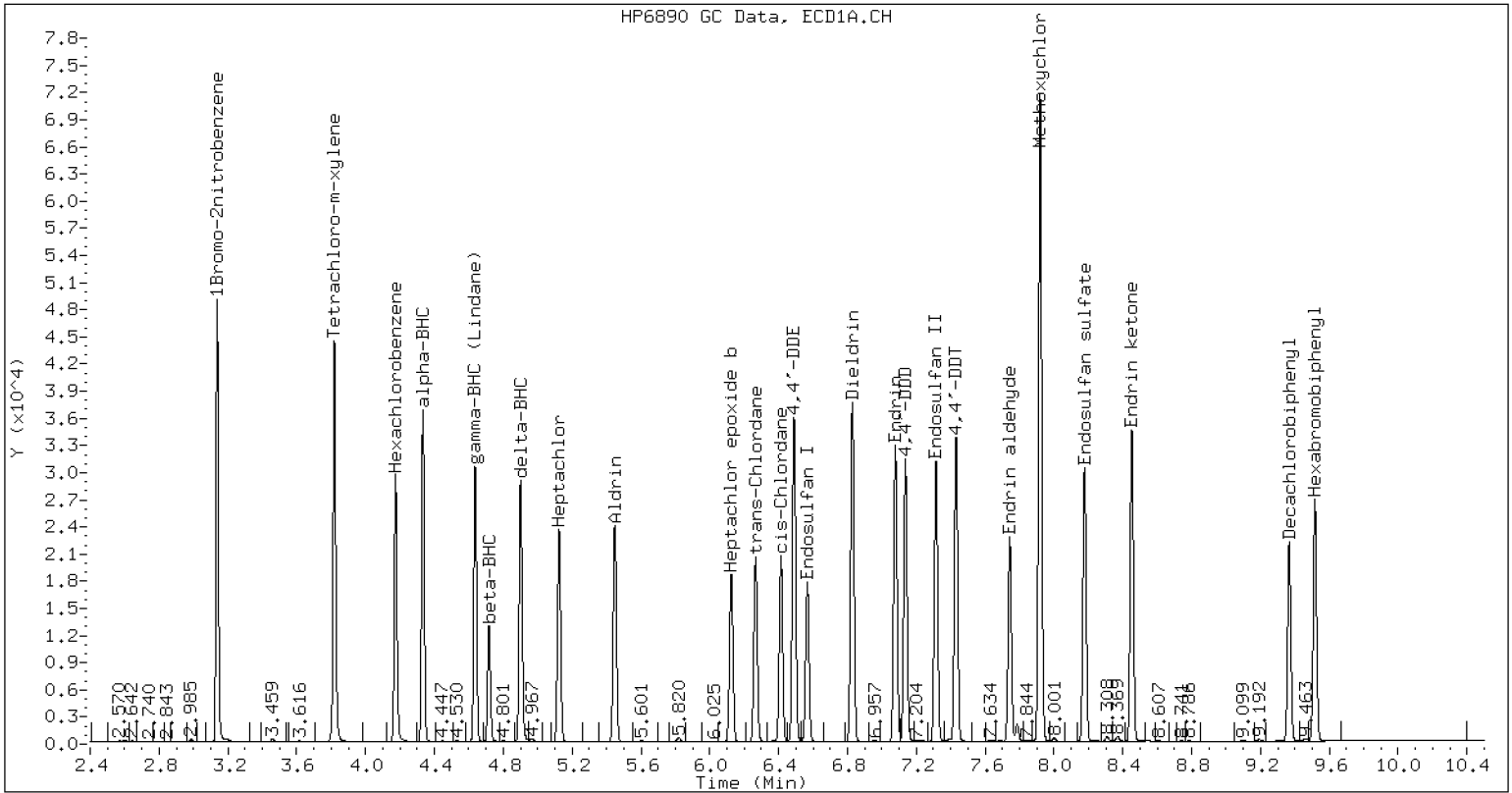
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	919249	6.4
Hexabromobiphenyl	663237	722285	8.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1228056	-17.1
Hexabromobiphenyl	870561	747465	-14.1

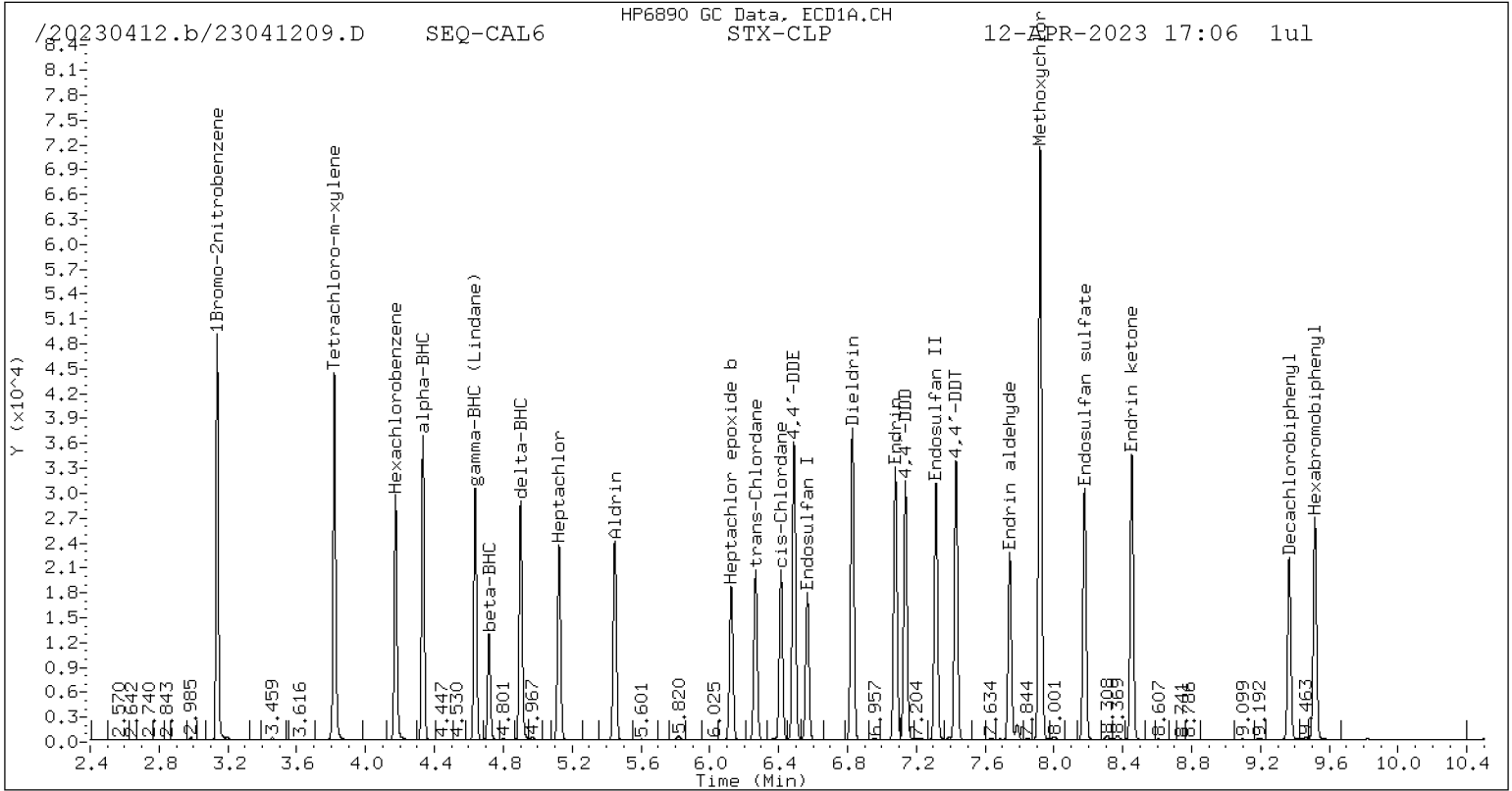
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

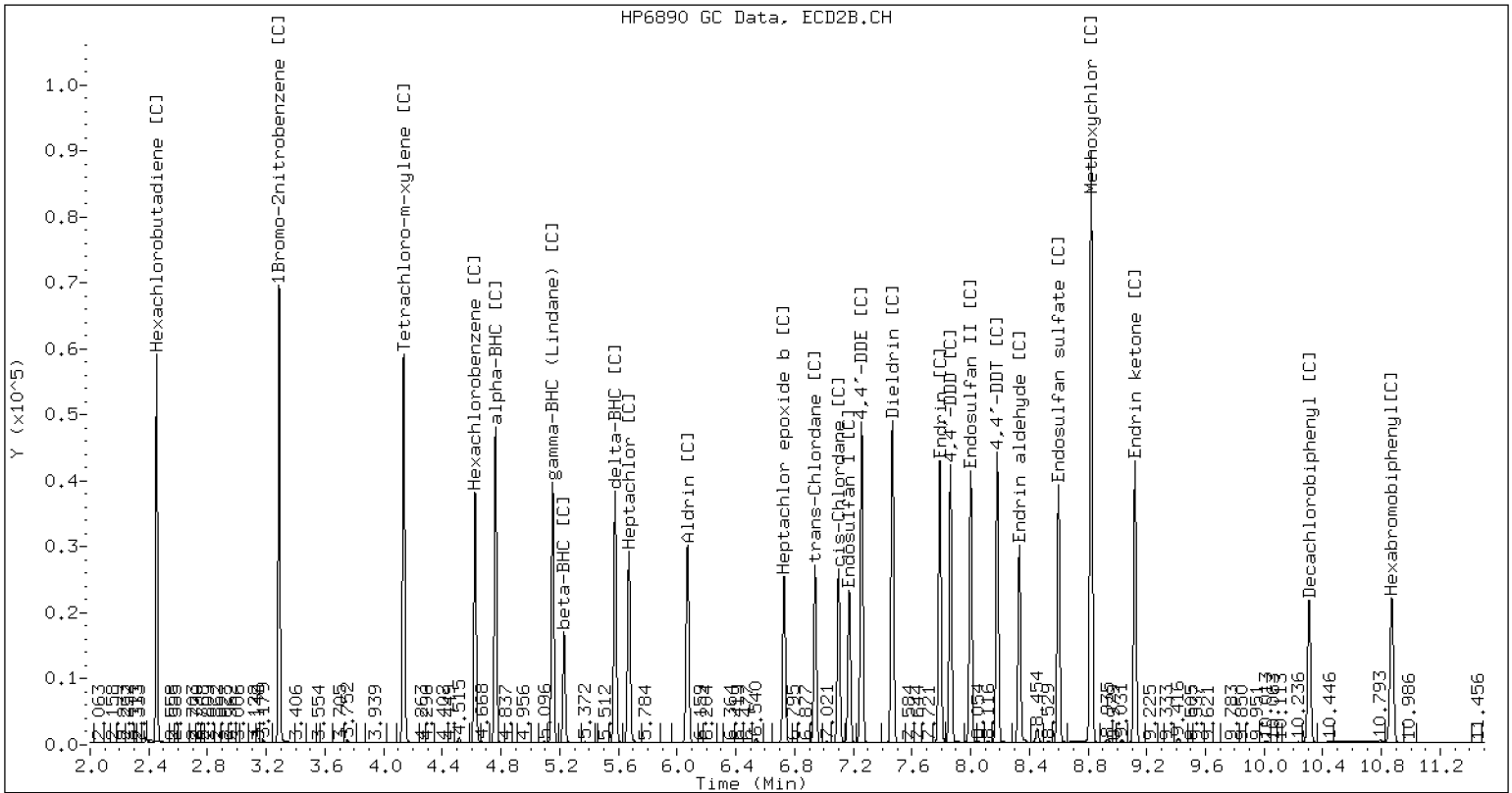


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041209.D SEQ-CAL6 CLP2



CLP-2 Manual Integration: NO



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041210.D  
Data file 2: /20230412.b/B20230412.b/23041210.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL7  
Client ID:  
Injection Date: 12-APR-2023 17:25  
Report Date: 04/13/2023 12:57  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.333	0.000	1504143	4.762	0.000	2036495	74.20 77.68 4.6 alpha-BHC M
4.717	-0.001	564613	5.230	-0.000	751802	69.75 72.20 3.5 beta-BHC M
4.901	-0.002	1348410	5.577	-0.000	1780227	73.47 76.29 3.8 delta-BHC M
4.637	-0.000	1305188	5.152	-0.000	1754548	73.27 76.13 3.8 gamma-BHC (Lindane) M
5.124	-0.001	1105791	5.671	-0.000	1423580	67.07 70.43 4.9 Heptachlor M
5.448	-0.000	1164527	6.071	-0.000	1511414	69.44 72.04 3.7 Aldrin M
6.125	-0.002	957195	6.729	-0.000	1234899	63.23 66.86 5.6 Heptachlor epoxide b M
6.567	-0.001	902920	7.172	0.000	1107682	66.91 70.39 5.1 Endosulfan I M
6.828	-0.000	1891941	7.466	0.000	2384054	132.48 138.22 4.2 Dieldrin M
6.489	-0.001	1824093	7.257	0.000	2245750	135.47 136.78 1.0 4,4'-DDE M
7.078	-0.001	1667189	7.790	0.000	2038096	130.71 135.54 3.6 Endrin M
7.314	-0.001	1548044	8.001	-0.000	1990565	129.61 140.13 7.8 Endosulfan II M
7.136	-0.002	1549529	7.862	0.000	1970951	135.35 143.39 5.8 4,4'-DDD M
8.177	-0.001	1486482	8.598	-0.000	1840819	132.01 140.73 6.4 Endosulfan sulfate M
7.431	-0.001	1683975	8.181	-0.000	2003848	136.58 144.49 5.6 4,4'-DDT M
7.920	-0.000	3475120	8.822	-0.000	4197295	657.88 705.85 7.0 Methoxychlor M
8.452	-0.001	1668350	9.119	0.000	1981664	129.84 138.74 6.6 Endrin ketone M
7.743	-0.001	1195780	8.331	0.000	1420645	131.18 138.32 5.3 Endrin aldehyde M
6.266	-0.001	1056187	6.939	0.000	1305882	71.31 73.74 3.4 trans-Chlordane M
6.413	-0.001	1043284	7.100	-0.000	1272519	70.16 72.97 3.9 cis-Chlordane M
2.309	0.001	1437797	2.453	0.000	1654665	68.77 69.52 1.1 Hexachlorobutadiene
4.175	-0.001	1223325	4.622	0.000	1599265	68.19 69.86 2.4 Hexachlorobenzene M
3.819	0.000	1715340	4.136	0.000	2273933	132.23 133.82 1.2 Tetrachloro-m-xylene M
9.366	-0.000	1089026	10.306	-0.000	1229420	125.10 136.33 8.6 Decachlorobiphenyl M

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

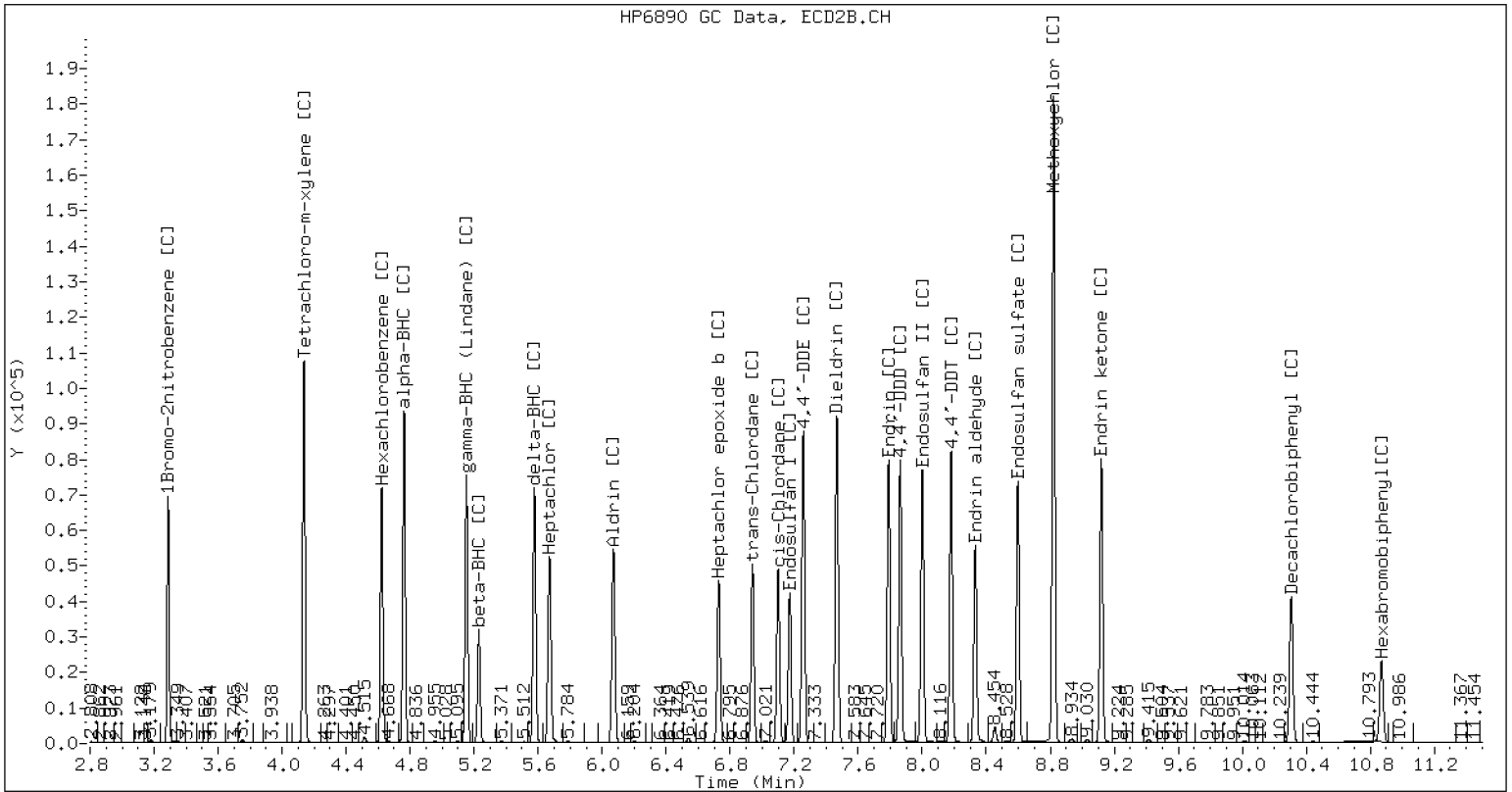
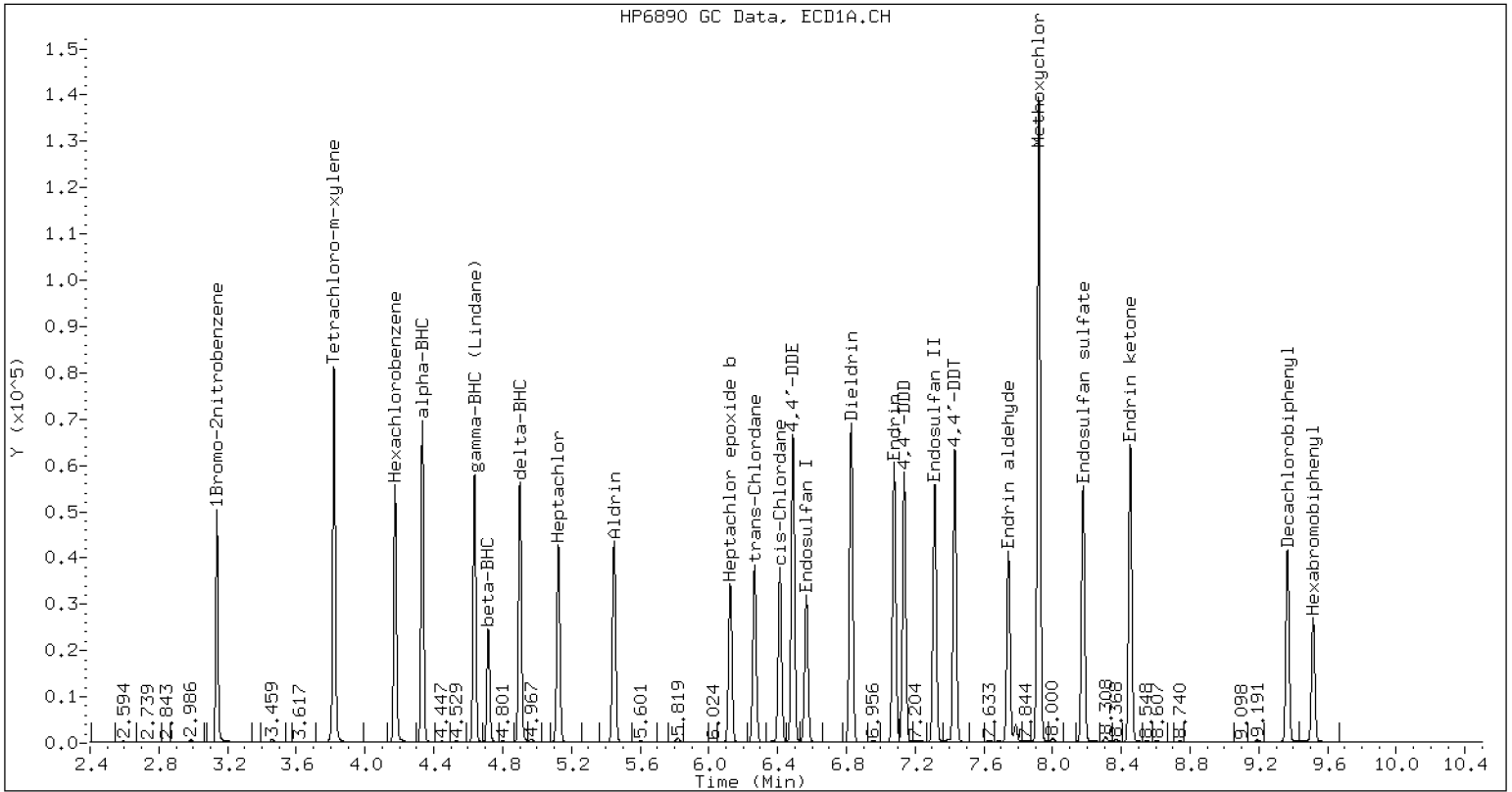
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	927085	7.3
Hexabromobiphenyl	663237	738060	11.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1235730	-16.6
Hexabromobiphenyl	870561	747107	-14.2

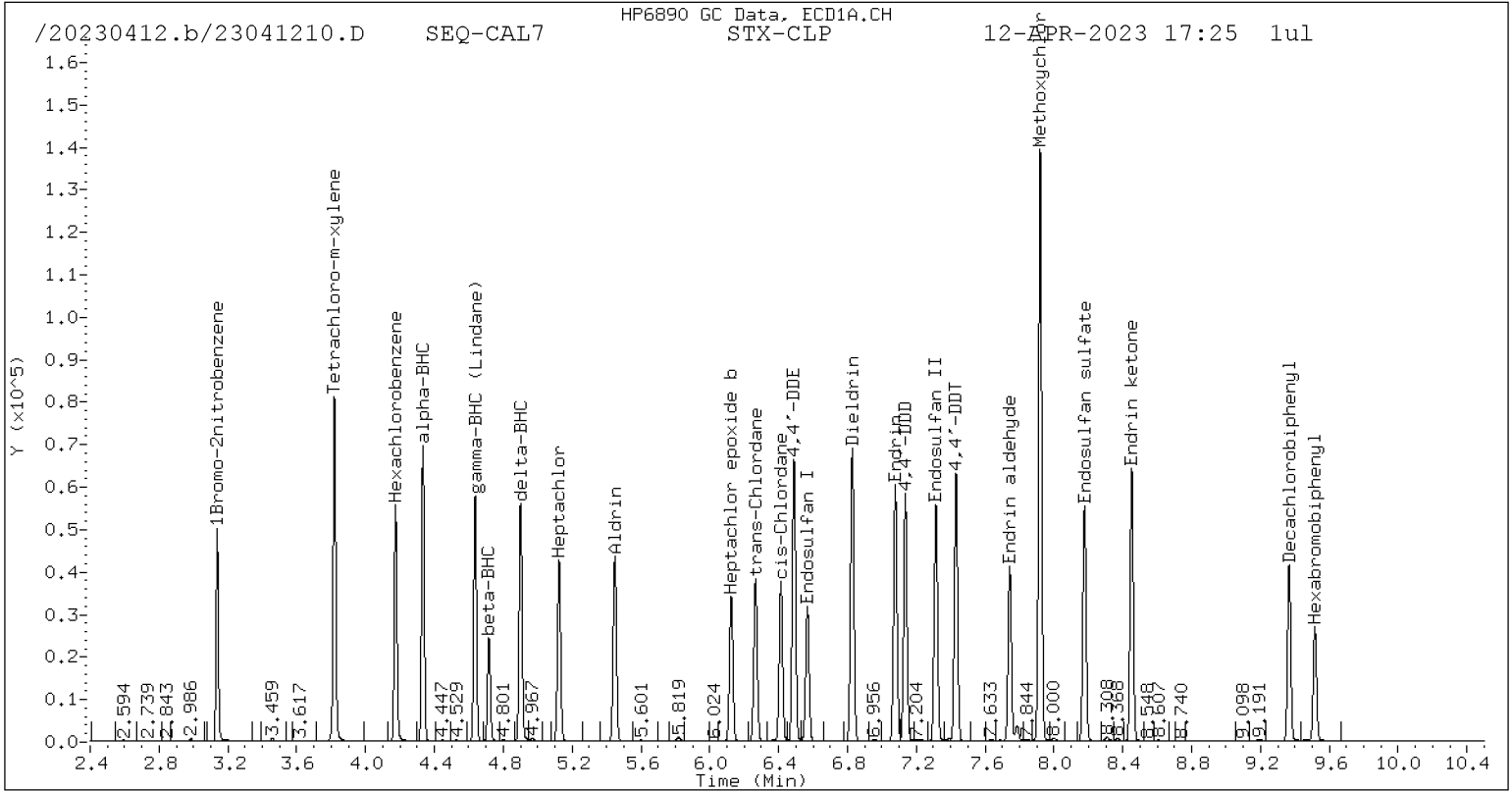
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

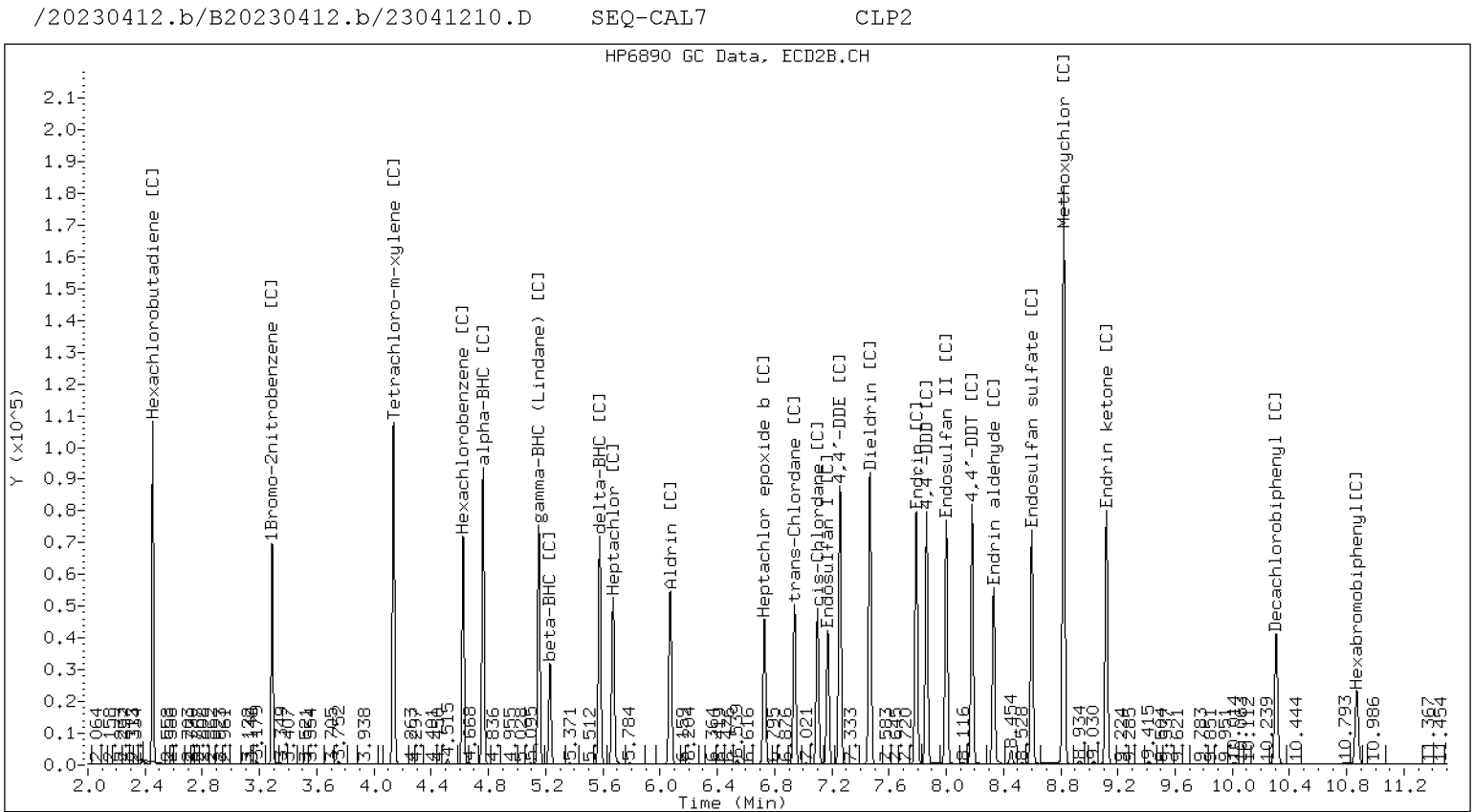
<- Indicates standard response outside Limits (-50 to +100%)



Pesticide Dual Column Chromatograms



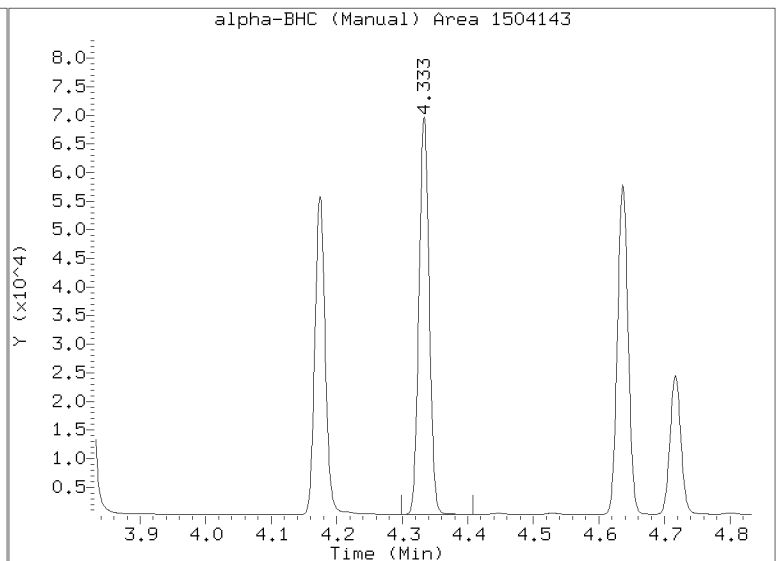
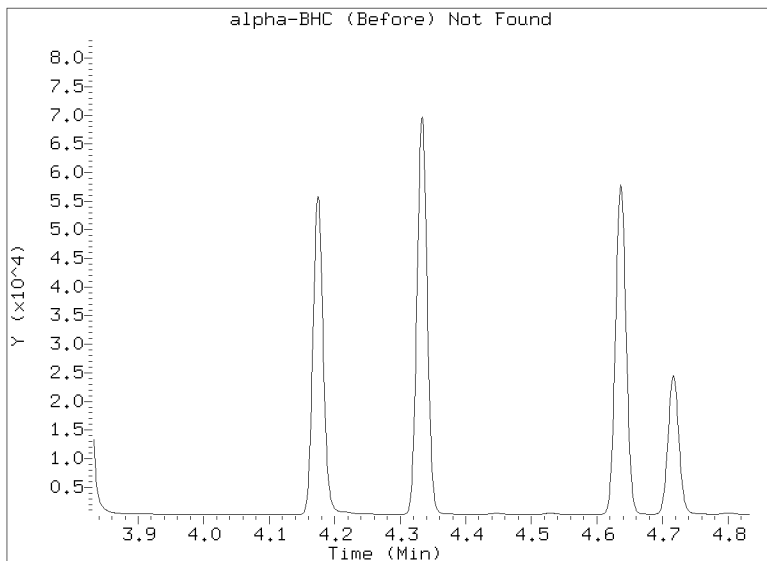
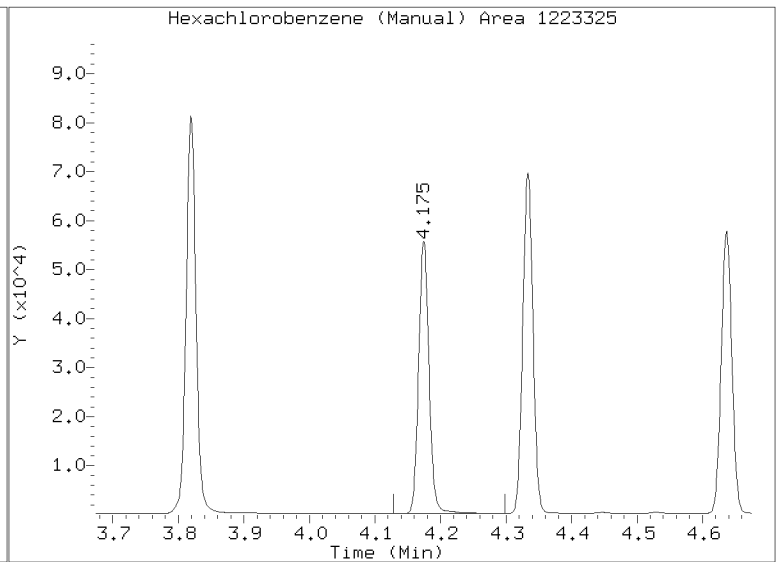
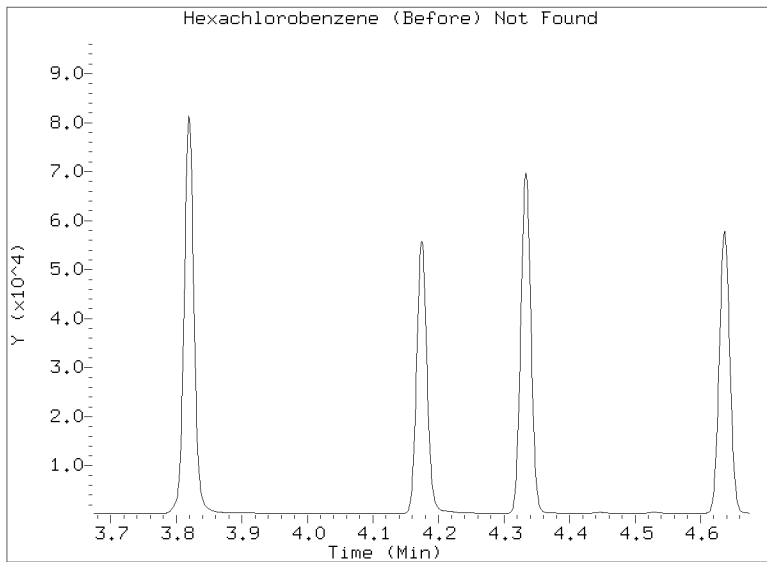
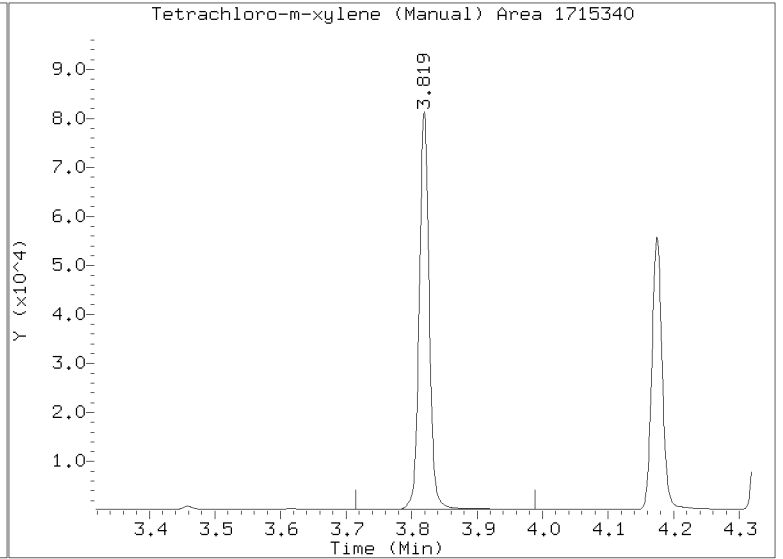
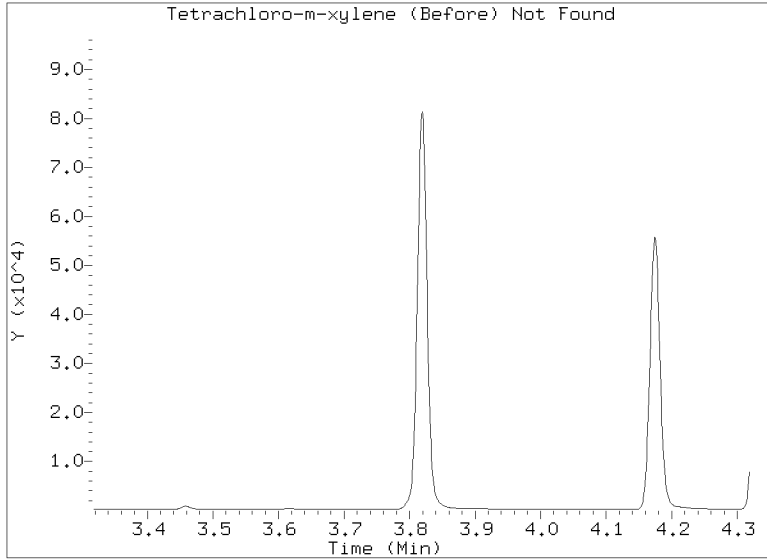
STX-CLP Manual Integration: YES



CLP-2 Manual Integration: YES

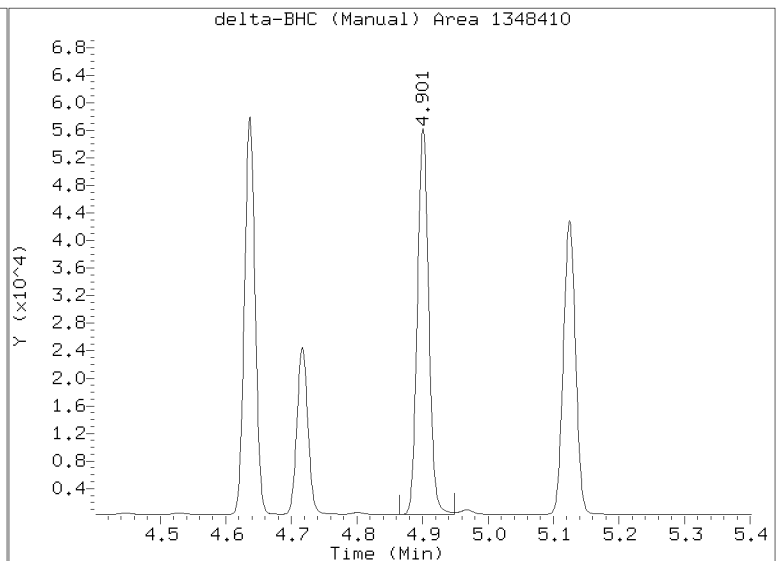
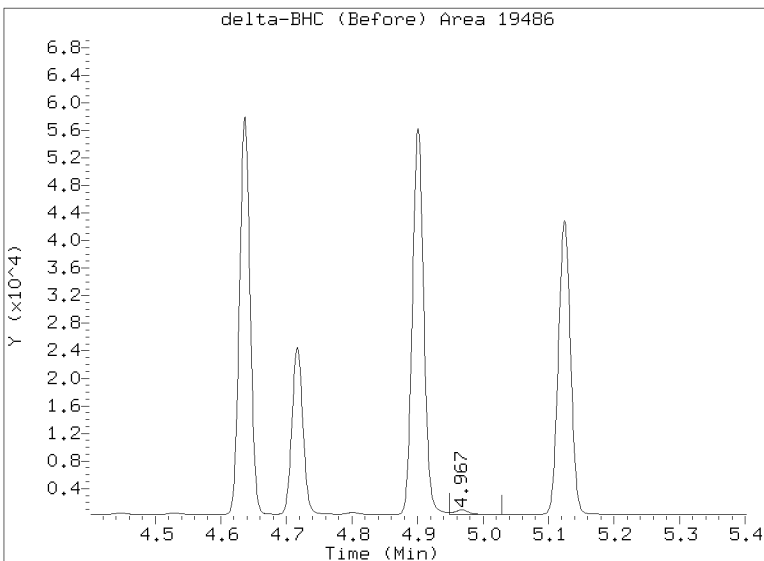
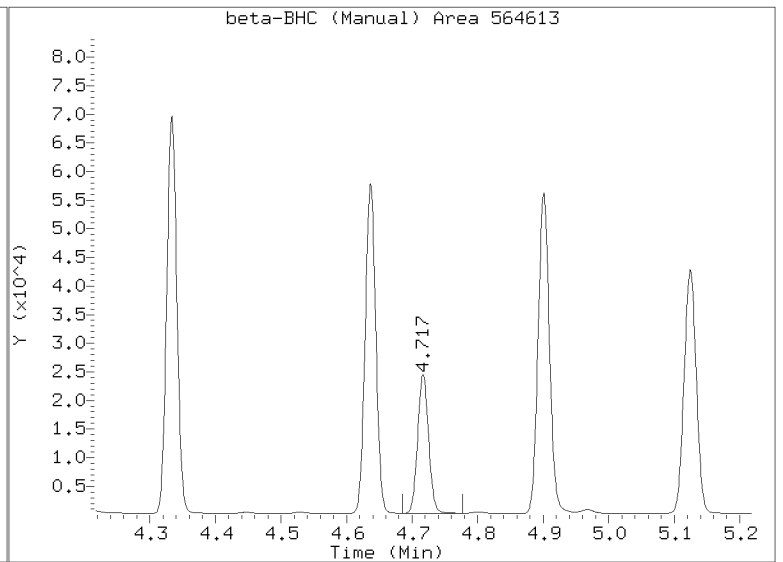
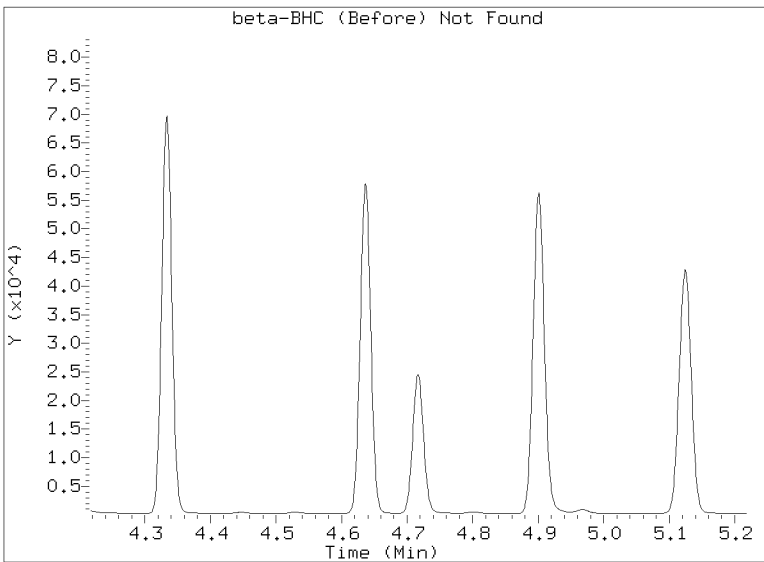
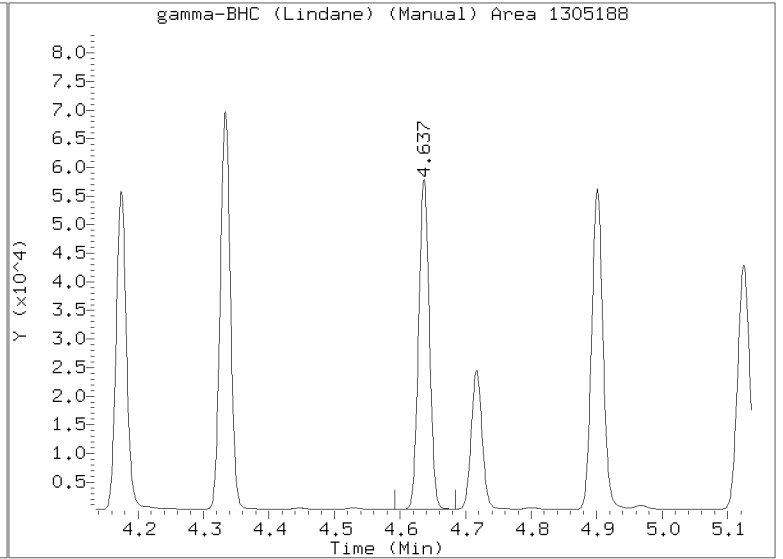
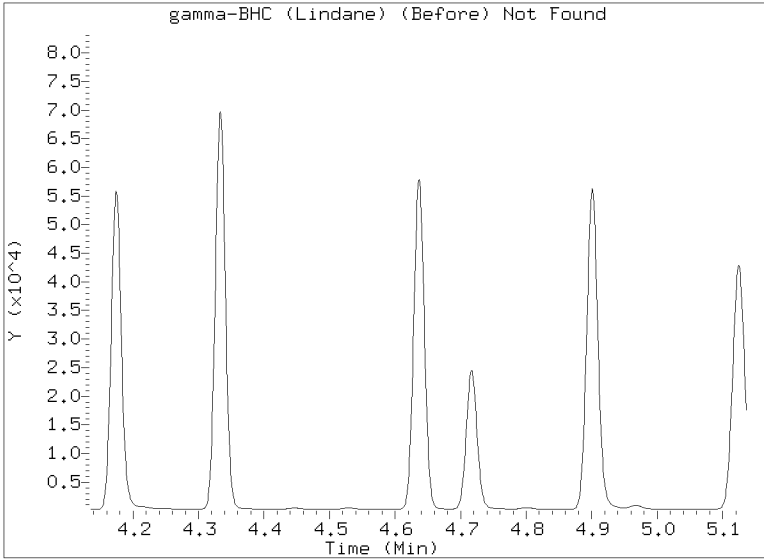
Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041210.D  
Injection Date: 12-APR-2023 17:25  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/13/2023 12:57



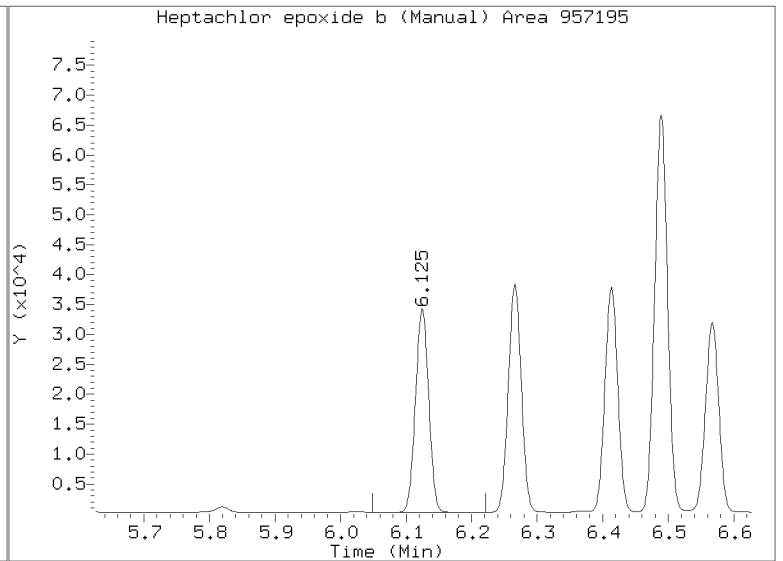
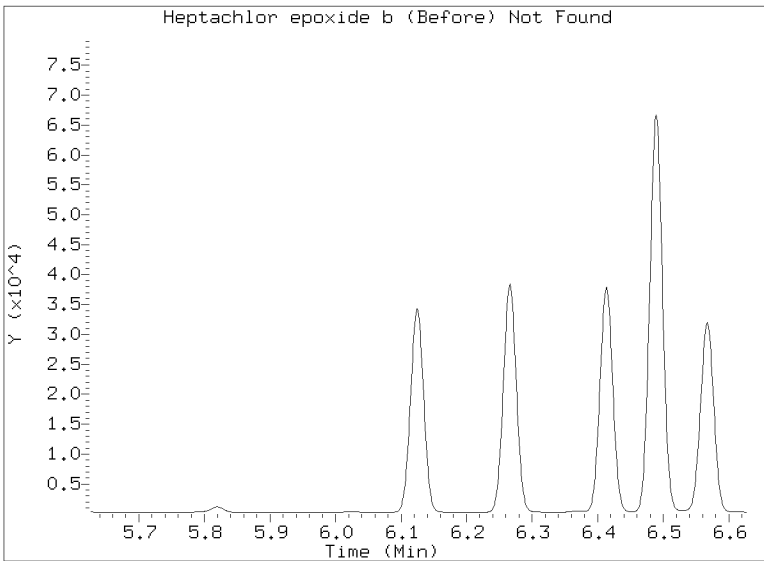
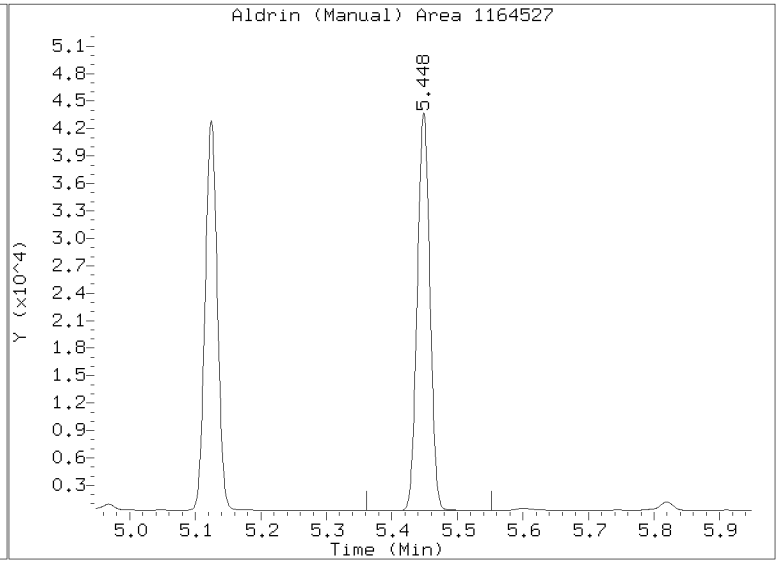
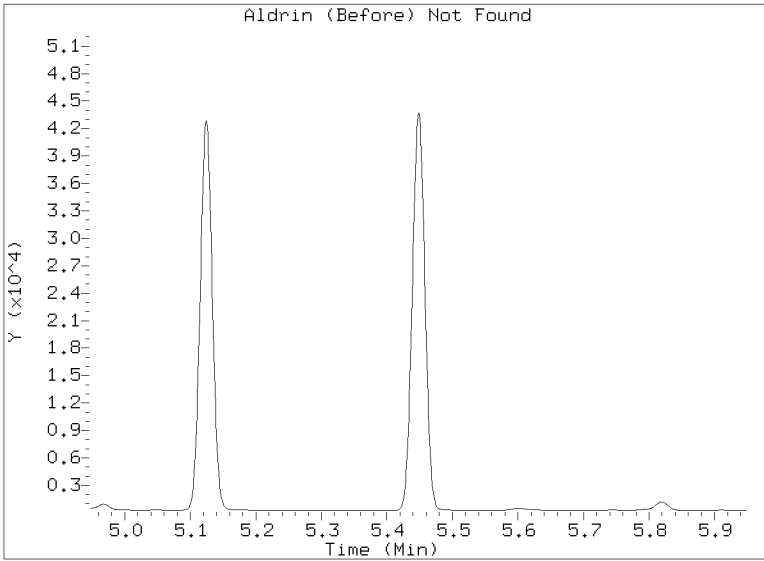
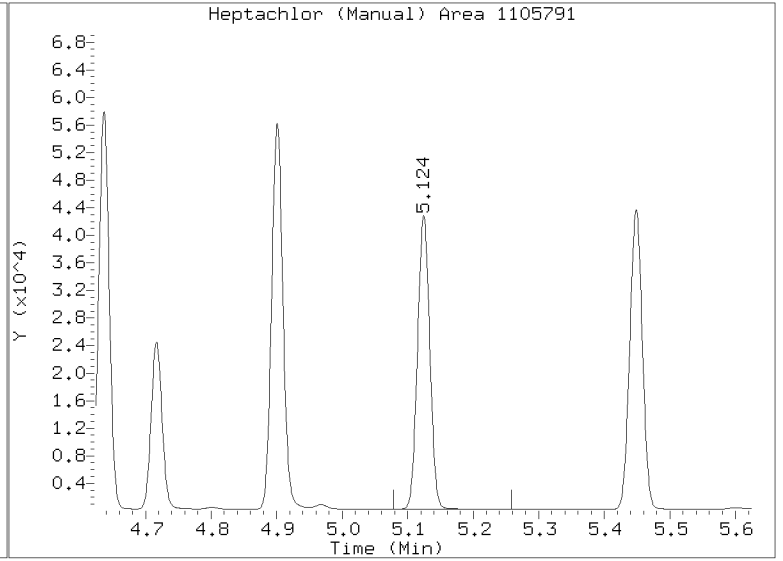
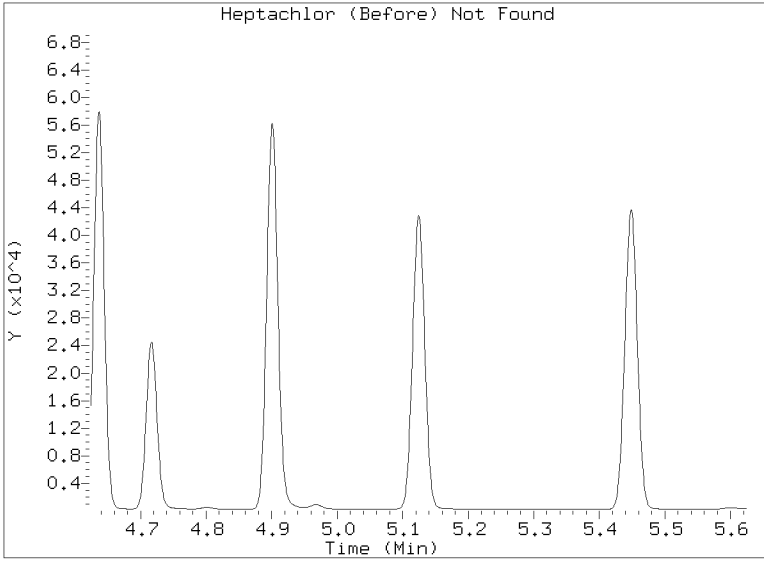
Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041210.D  
Injection Date: 12-APR-2023 17:25  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/13/2023 12:57



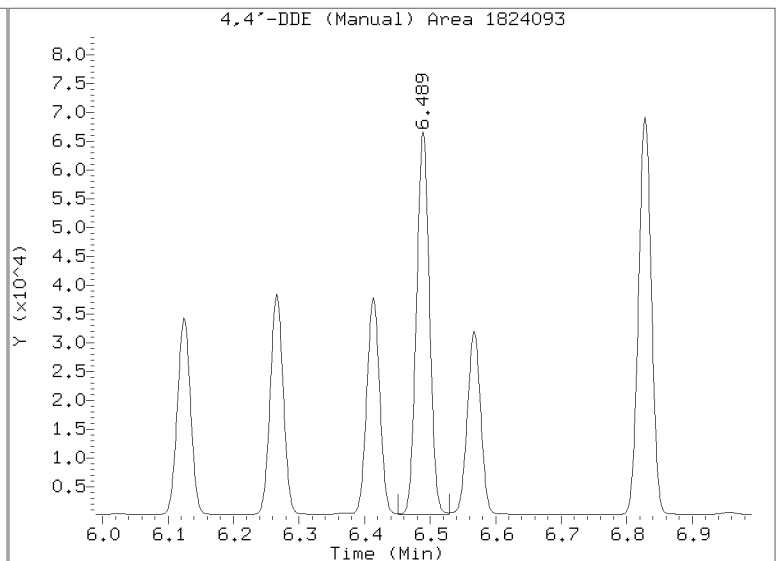
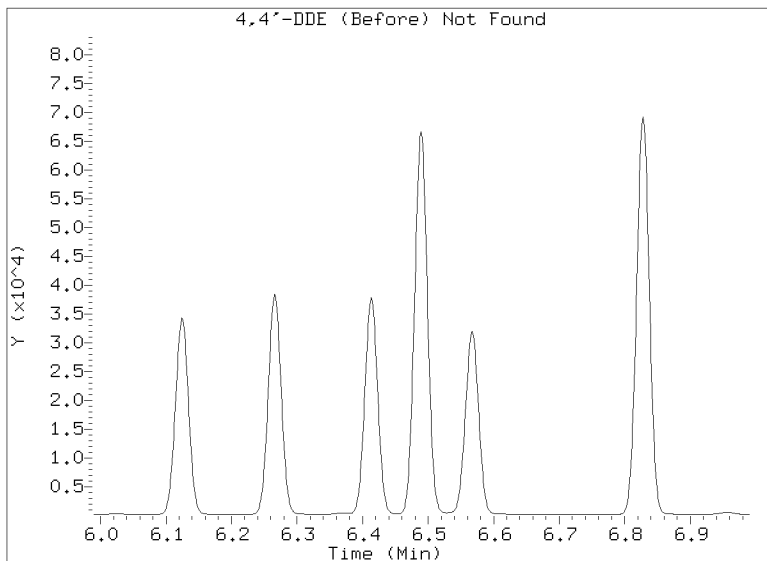
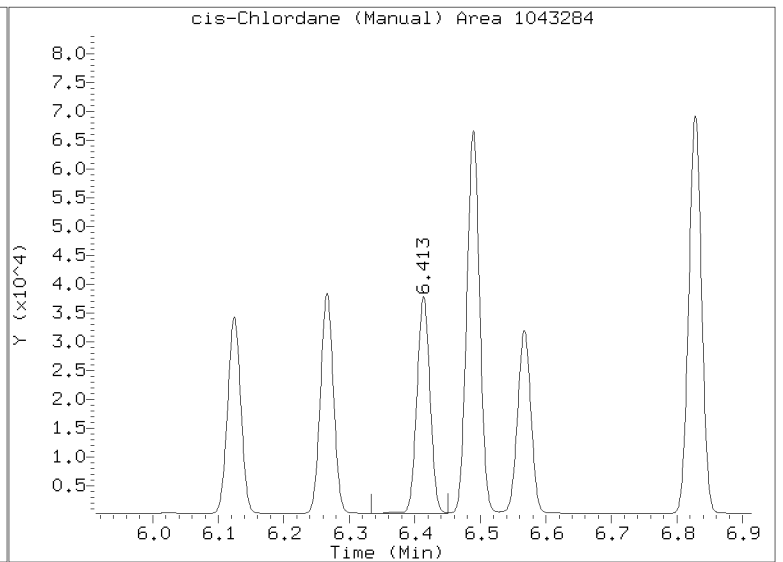
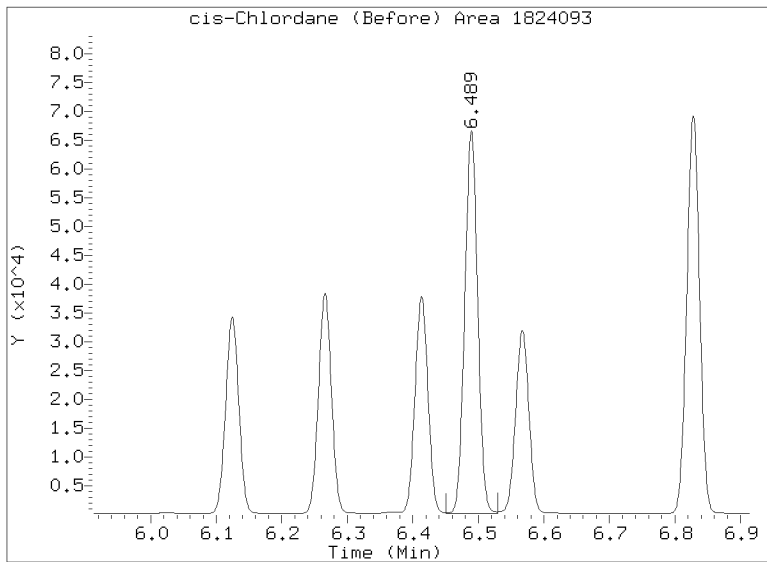
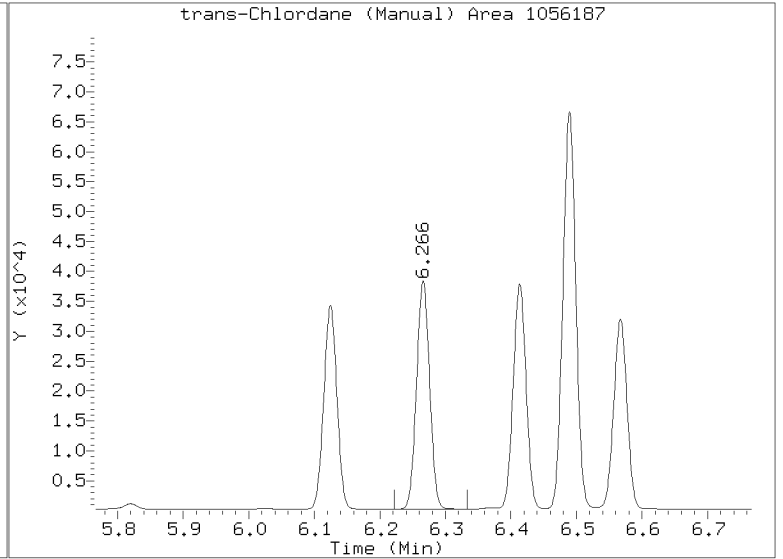
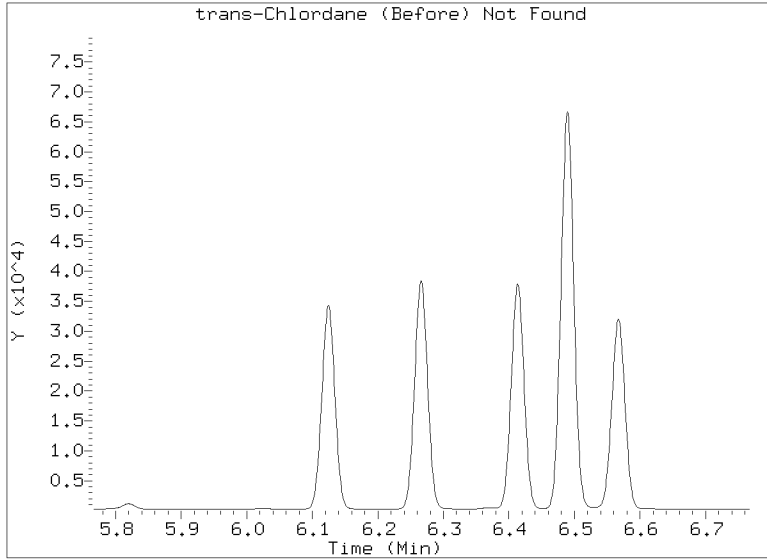
Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041210.D  
Injection Date: 12-APR-2023 17:25  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/13/2023 12:57



Manual Peak Adjustment Report, STX-CLP

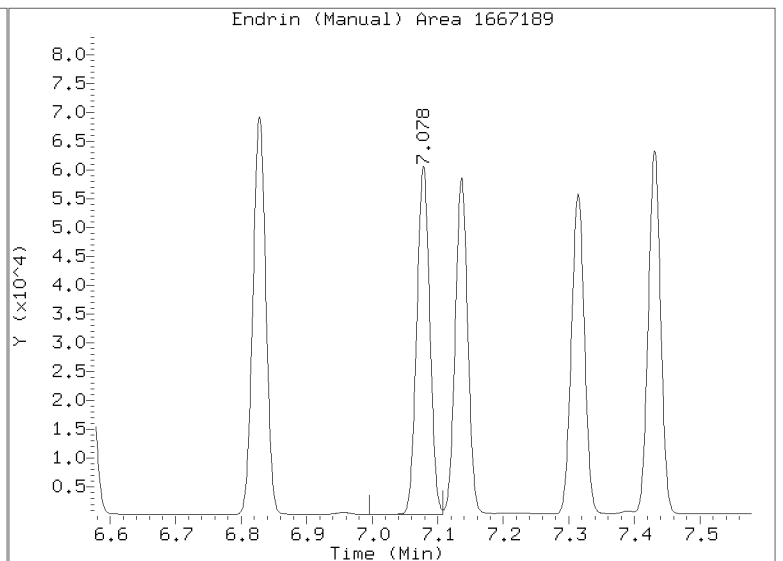
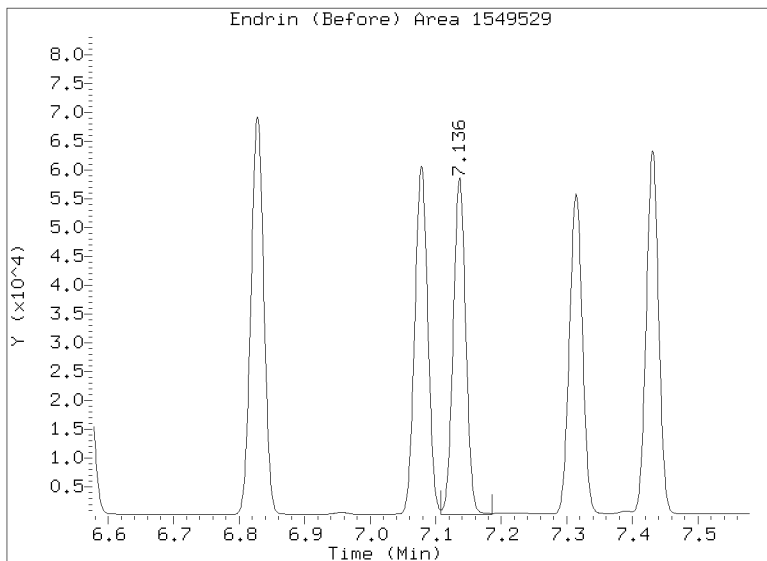
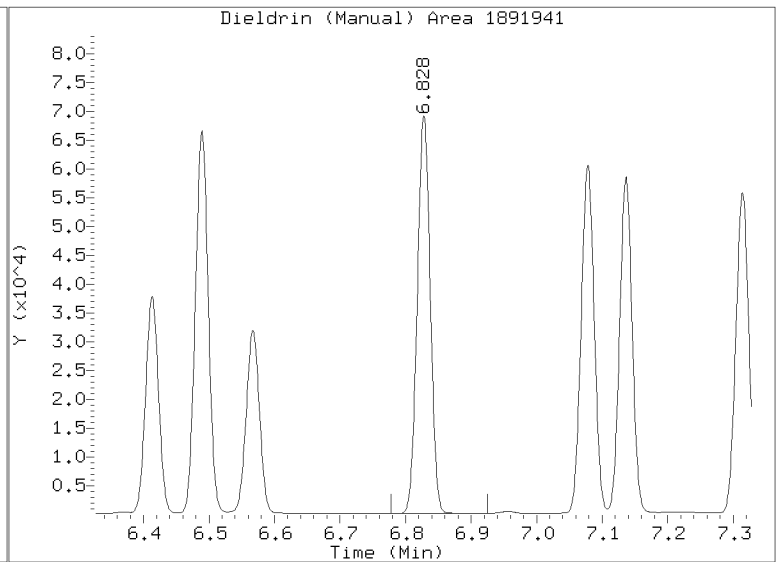
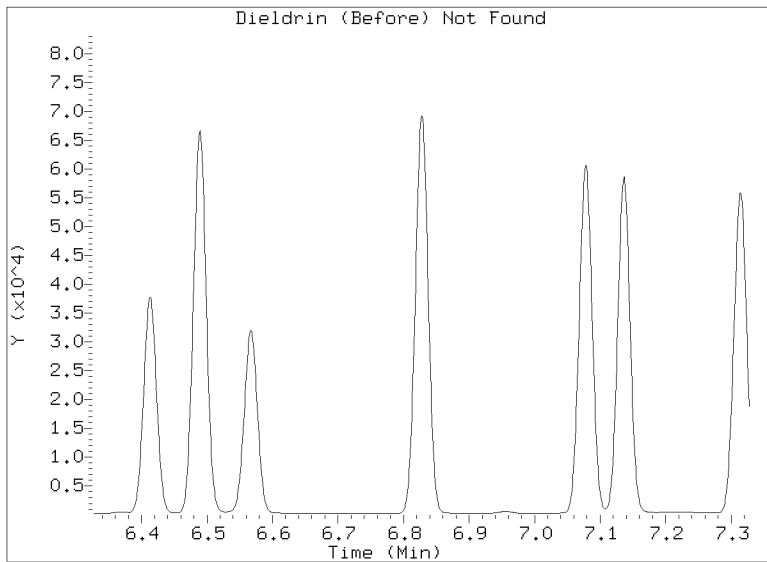
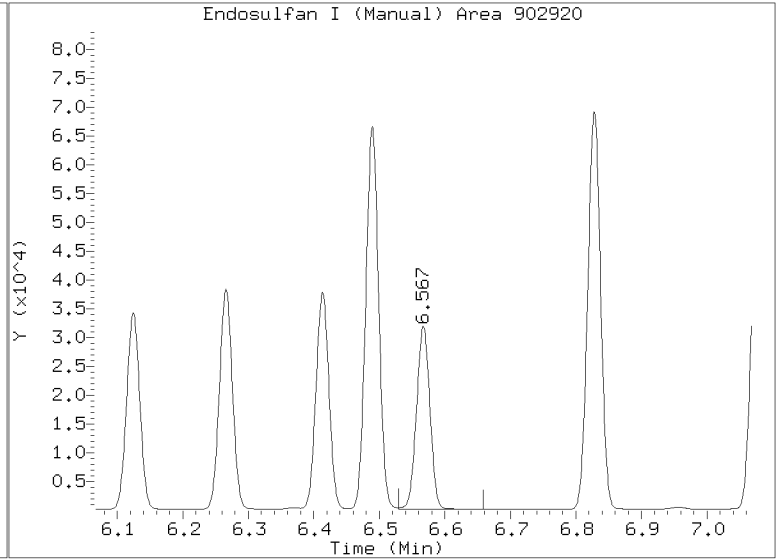
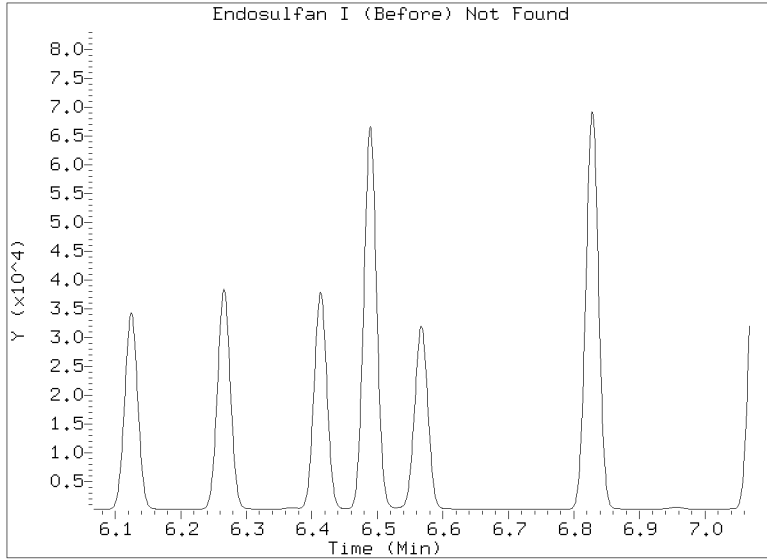
Datafile: /20230412.b/23041210.D  
Injection Date: 12-APR-2023 17:25  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/13/2023 12:57





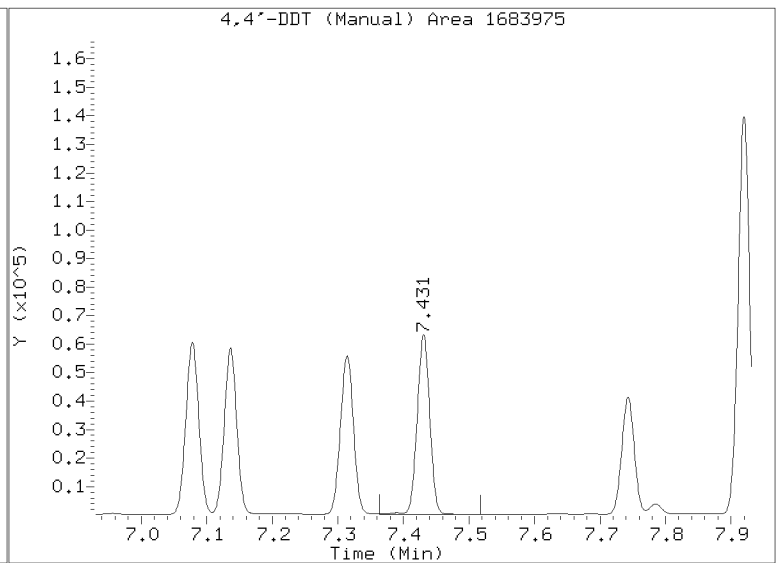
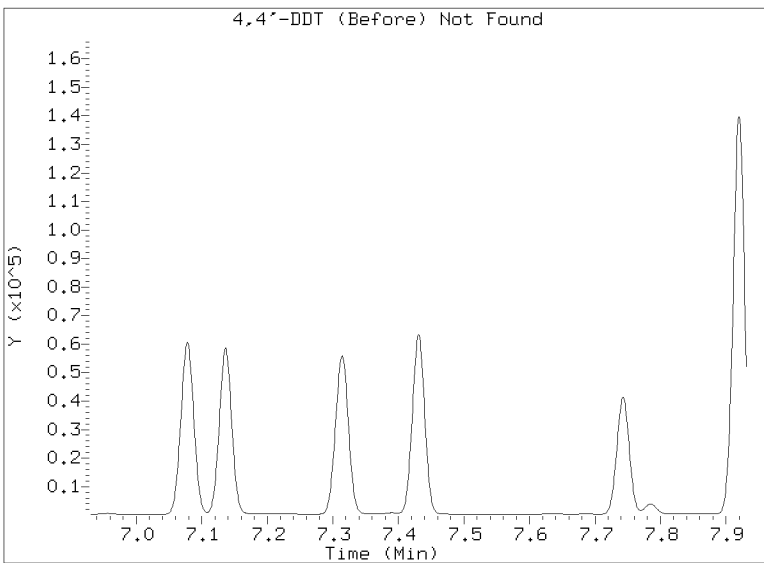
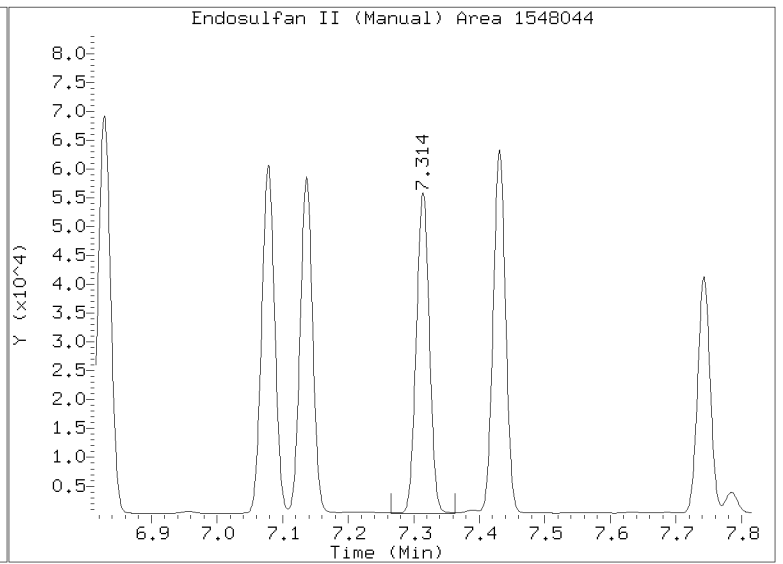
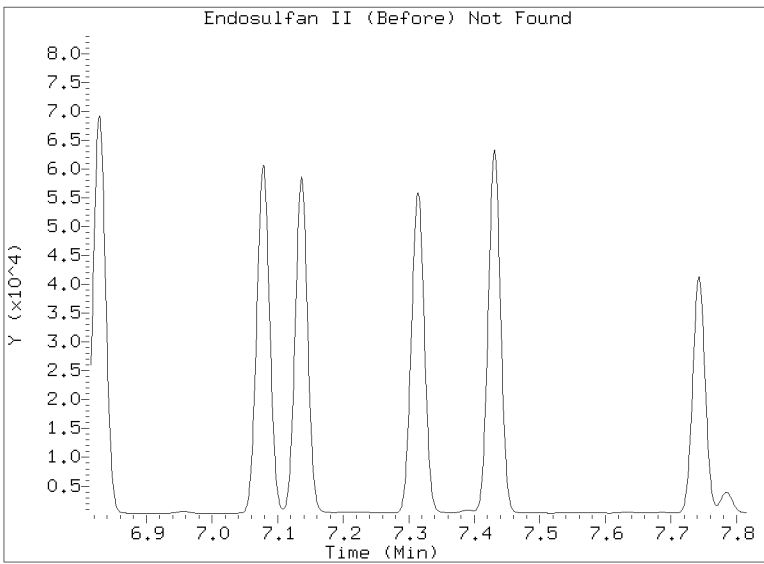
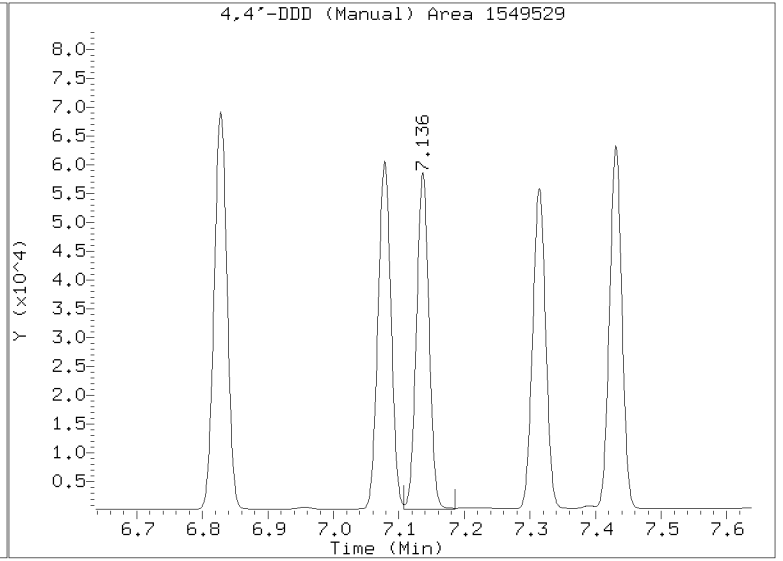
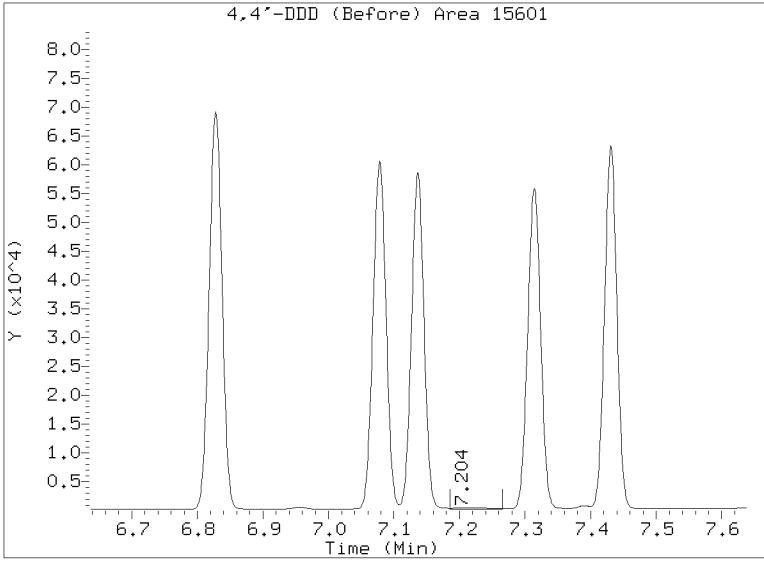
Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041210.D  
Injection Date: 12-APR-2023 17:25  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/13/2023 12:57



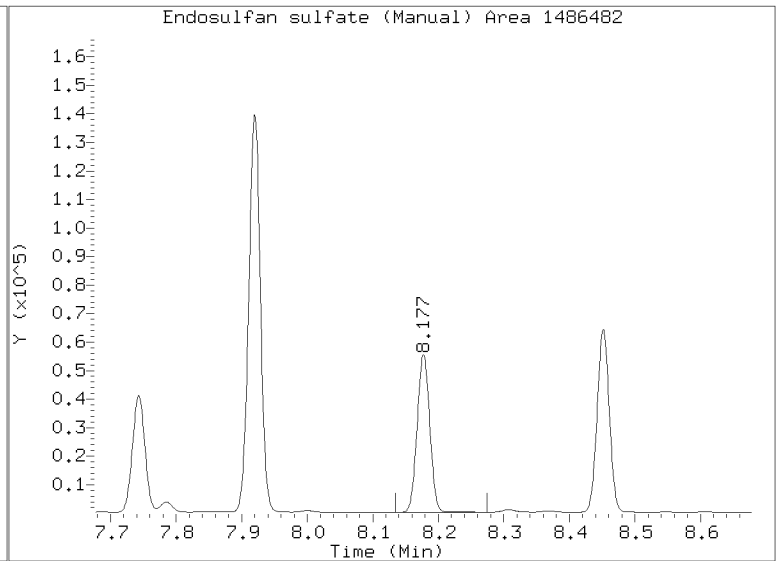
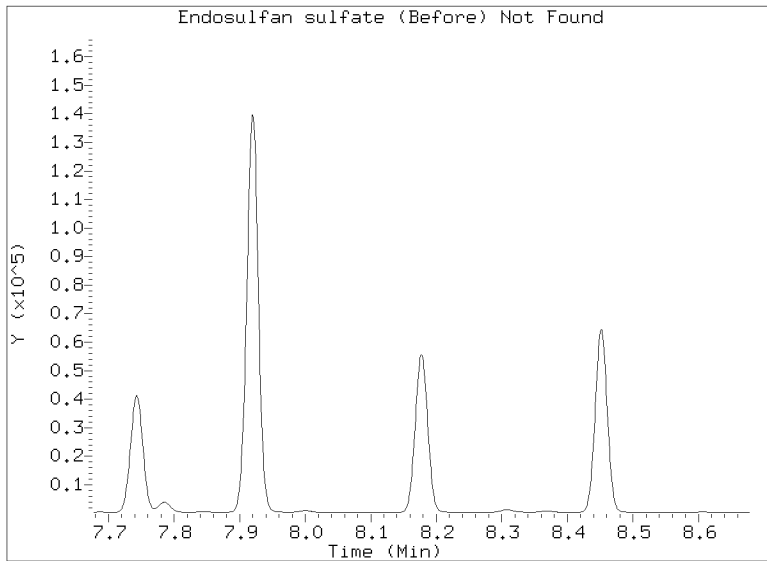
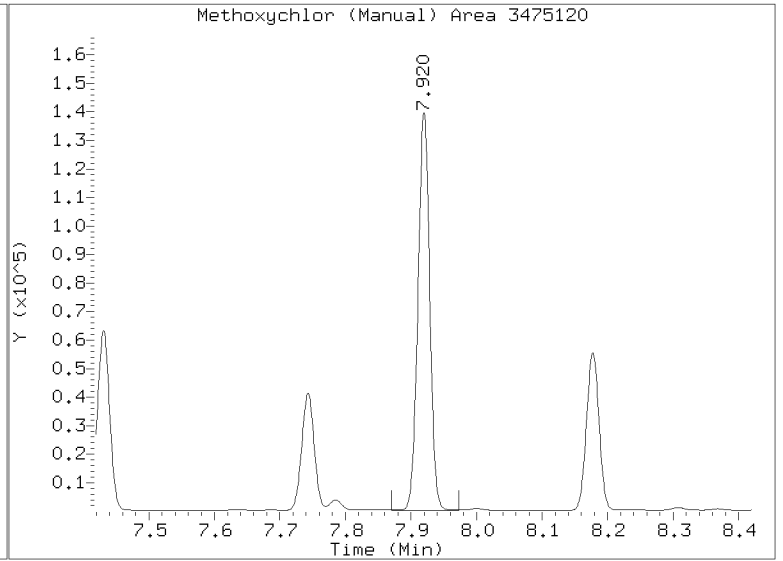
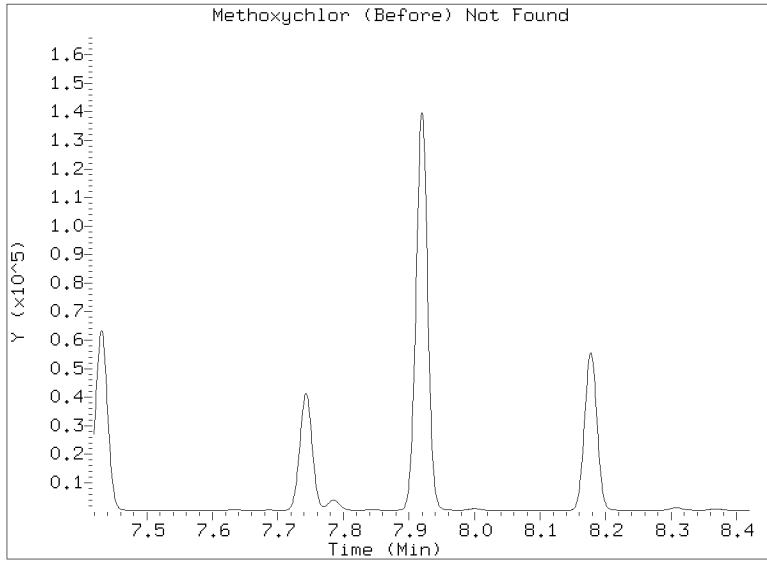
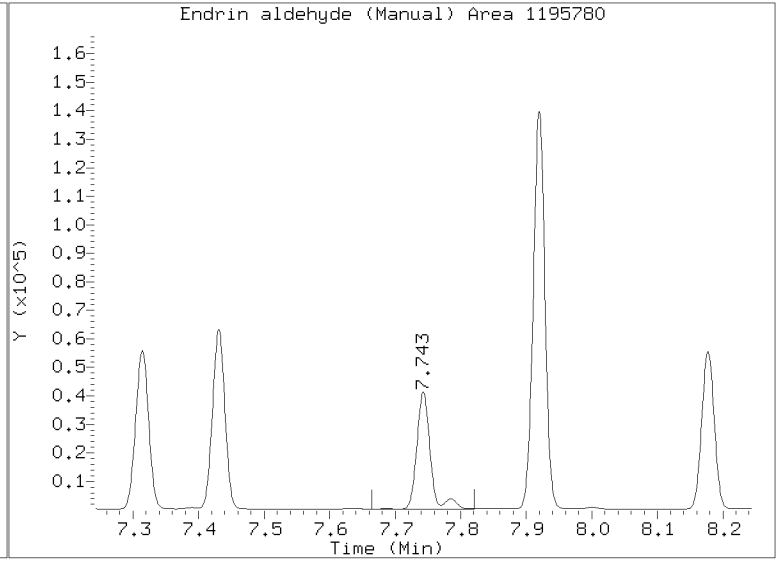
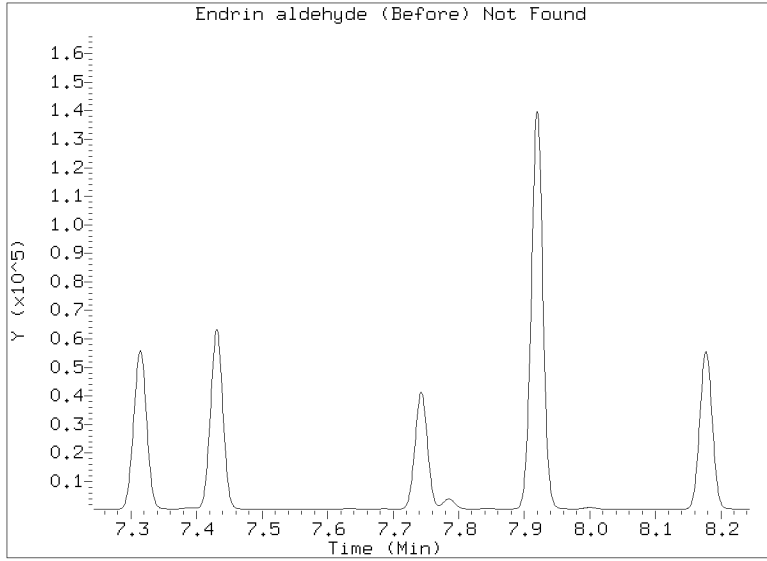
Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041210.D  
Injection Date: 12-APR-2023 17:25  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/13/2023 12:57



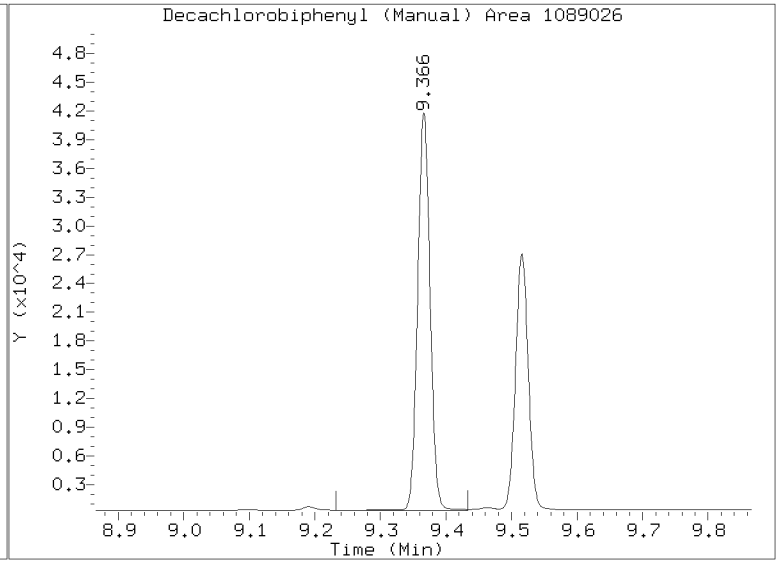
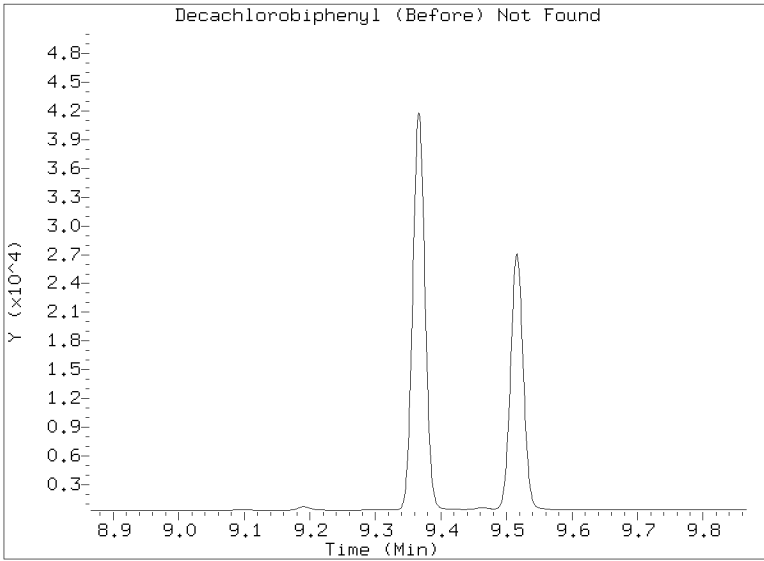
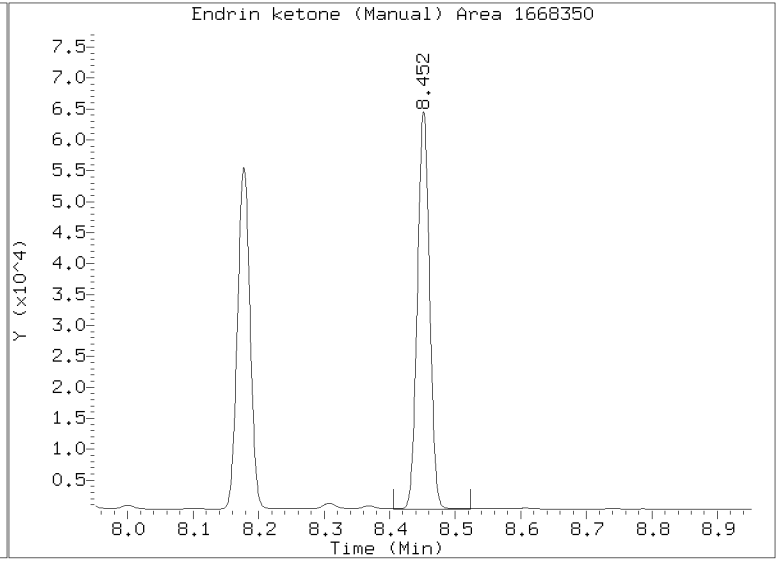
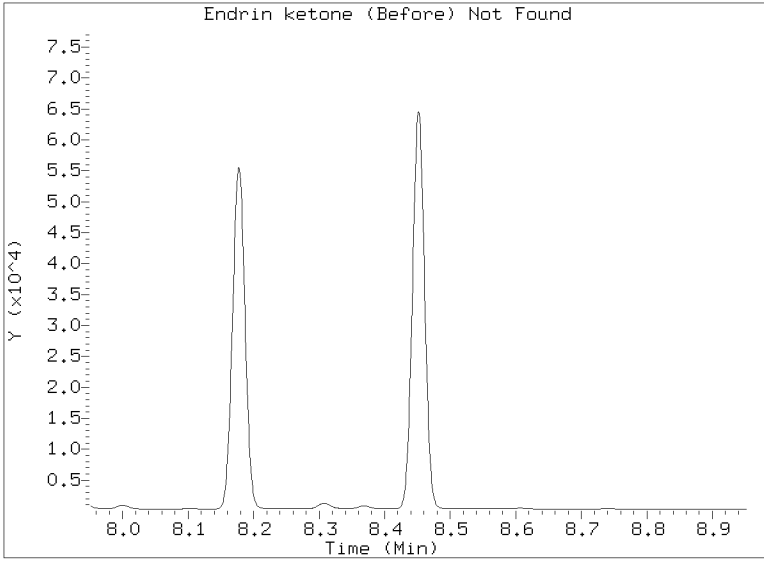
Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041210.D  
Injection Date: 12-APR-2023 17:25  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/13/2023 12:57



Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041210.D  
Injection Date: 12-APR-2023 17:25  
Lab ID:SEQ-CAL7 Client ID:  
Report Date: 04/13/2023 12:57

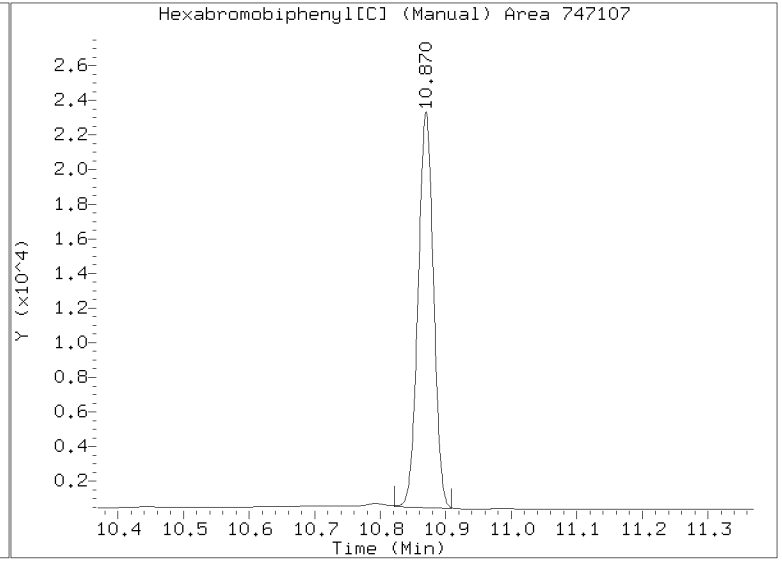
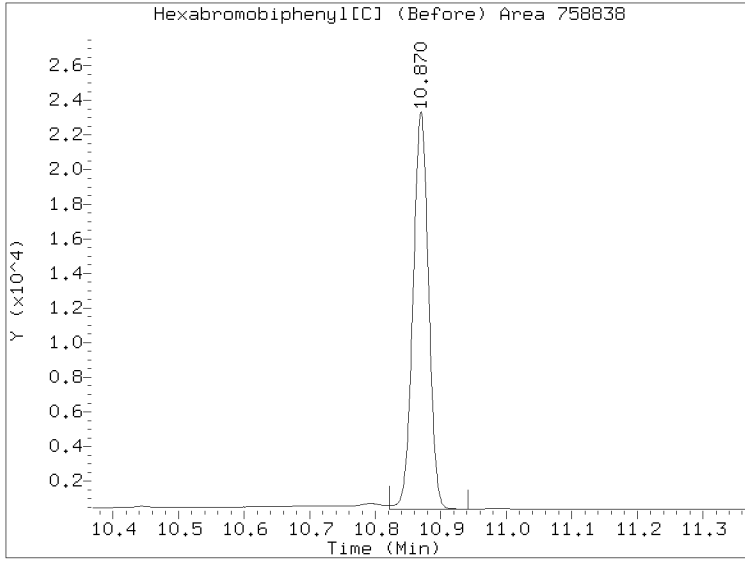


Manual Peak Adjustment Report, CLP-2

Datafile: /20230412.b/B20230412.b/23041210.D

Injection Date: 12-APR-2023 17:25

Lab ID:SEQ-CAL7 Client ID:



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041211.D  
Data file 2: /20230412.b/B20230412.b/23041211.D  
Method: \20230412.b\PEST.m  
Compound Sublist: WND.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL8  
Client ID:  
Injection Date: 12-APR-2023 17:43  
Report Date: 04/14/2023 09:40  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
6.010	0.001 32738	6.624 -0.000 38532	6.624	2.95	2.72	8.2	Oxychlorthane
6.106	0.001 23612	6.922 0.001 29356	6.922	2.94	2.84	3.6	2,4-DDE
6.396	0.001 37432	7.039 -0.000 43568	7.039	2.87	2.75	4.3	trans-Nonachlor
6.682	0.001 21548	7.477 -0.000 26589	7.477	2.87	2.82	2.0	2,4-DDD
6.959	0.001 26208	7.799 -0.000 30271	7.799	2.90	2.81	3.2	2,4-DDT
7.112	0.001 38299	7.859 -0.000 44124	7.859	2.81	2.69	4.4	cis-Nonachlor
8.086	0.001 25731	9.101 0.000 26963	9.101	3.06	2.85	7.3	Mirex N
----		----		0.00	0.00	---	Tetrachloro-m-xylene
----		----		0.00	0.00	---	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

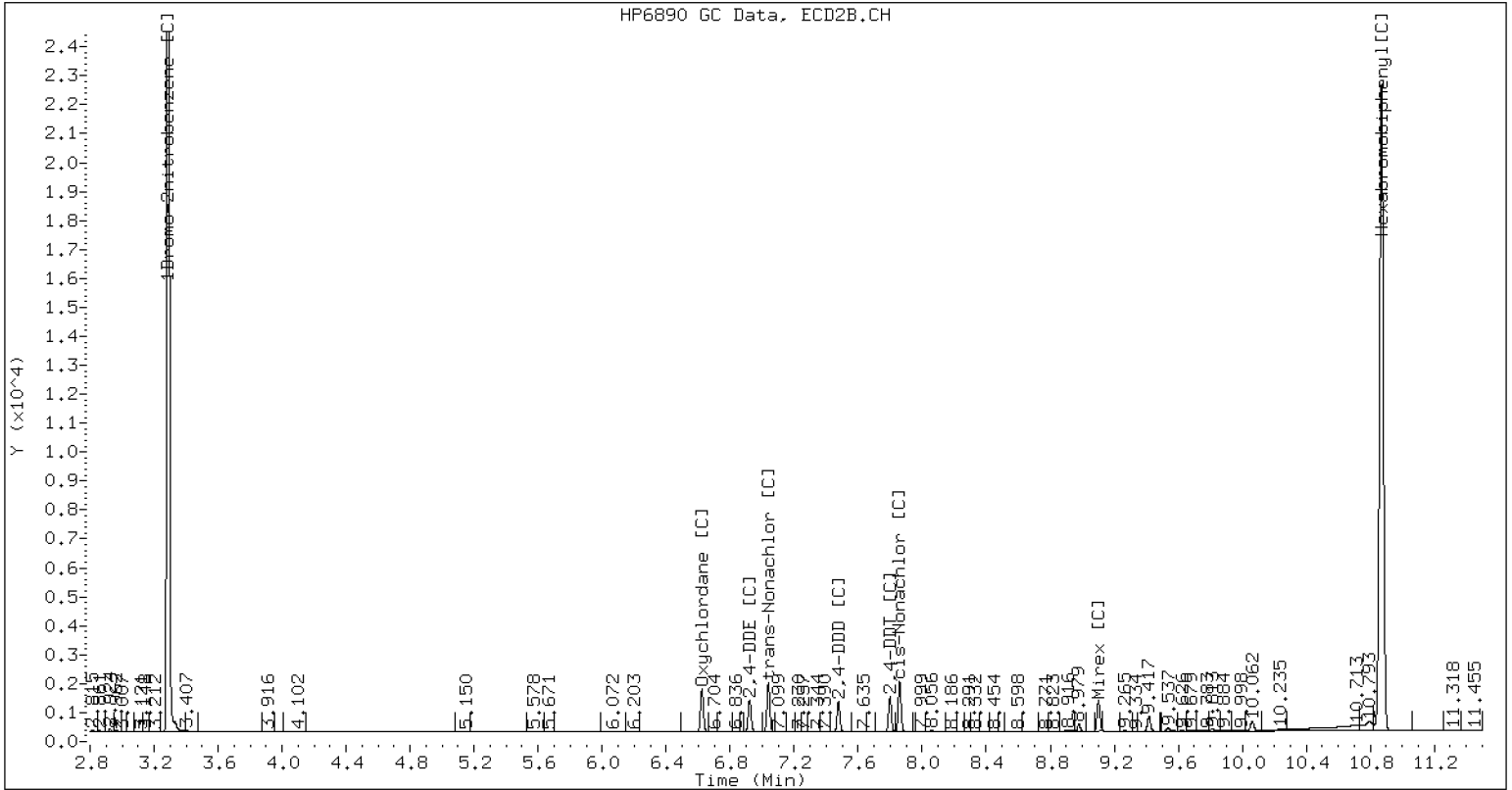
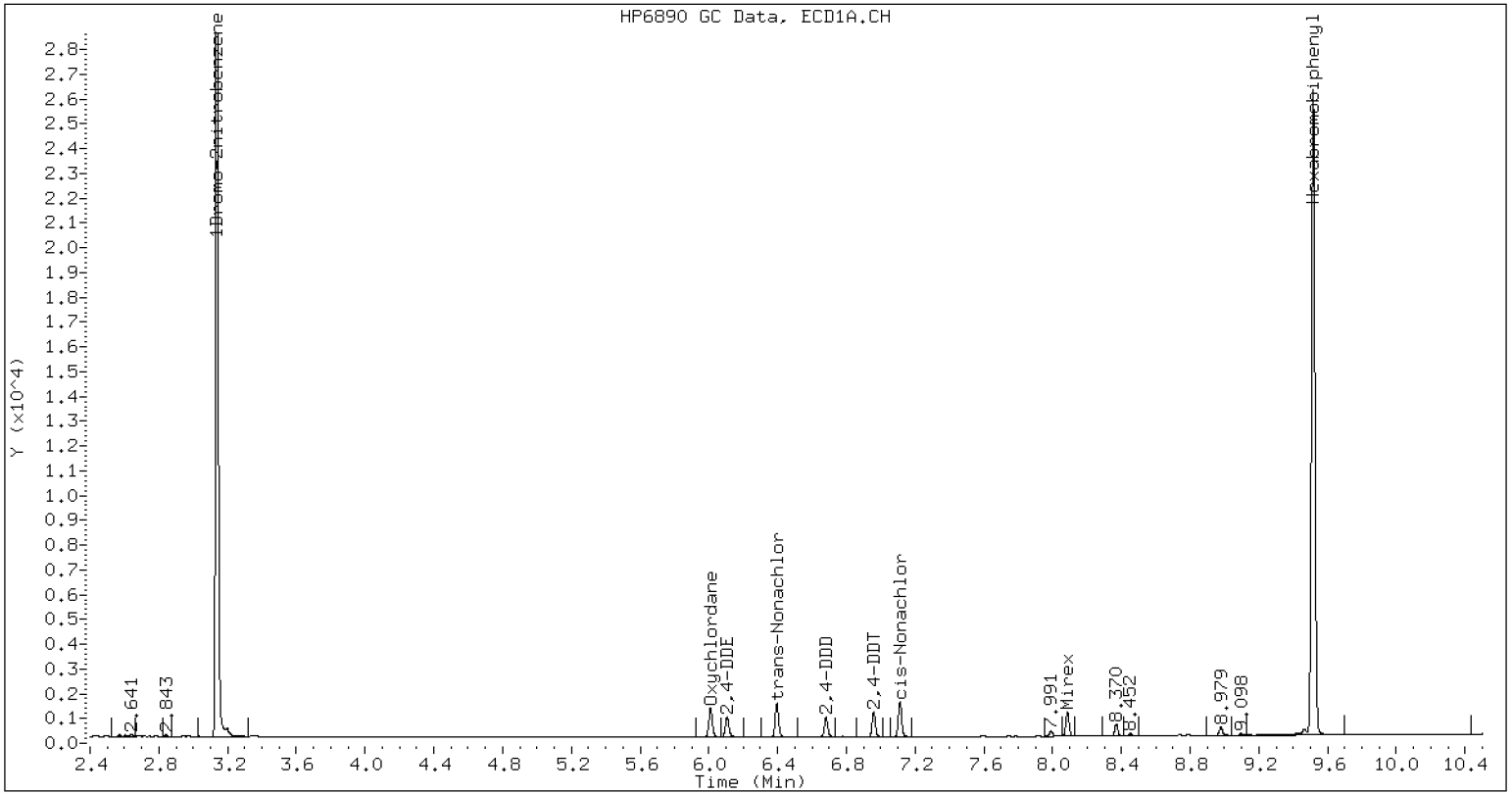
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	913523	5.7
Hexabromobiphenyl	663237	737594	11.2

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1238562	-16.4
Hexabromobiphenyl	870561	753386	-13.5

\* Standard Areas taken from Initial Cal Level 5

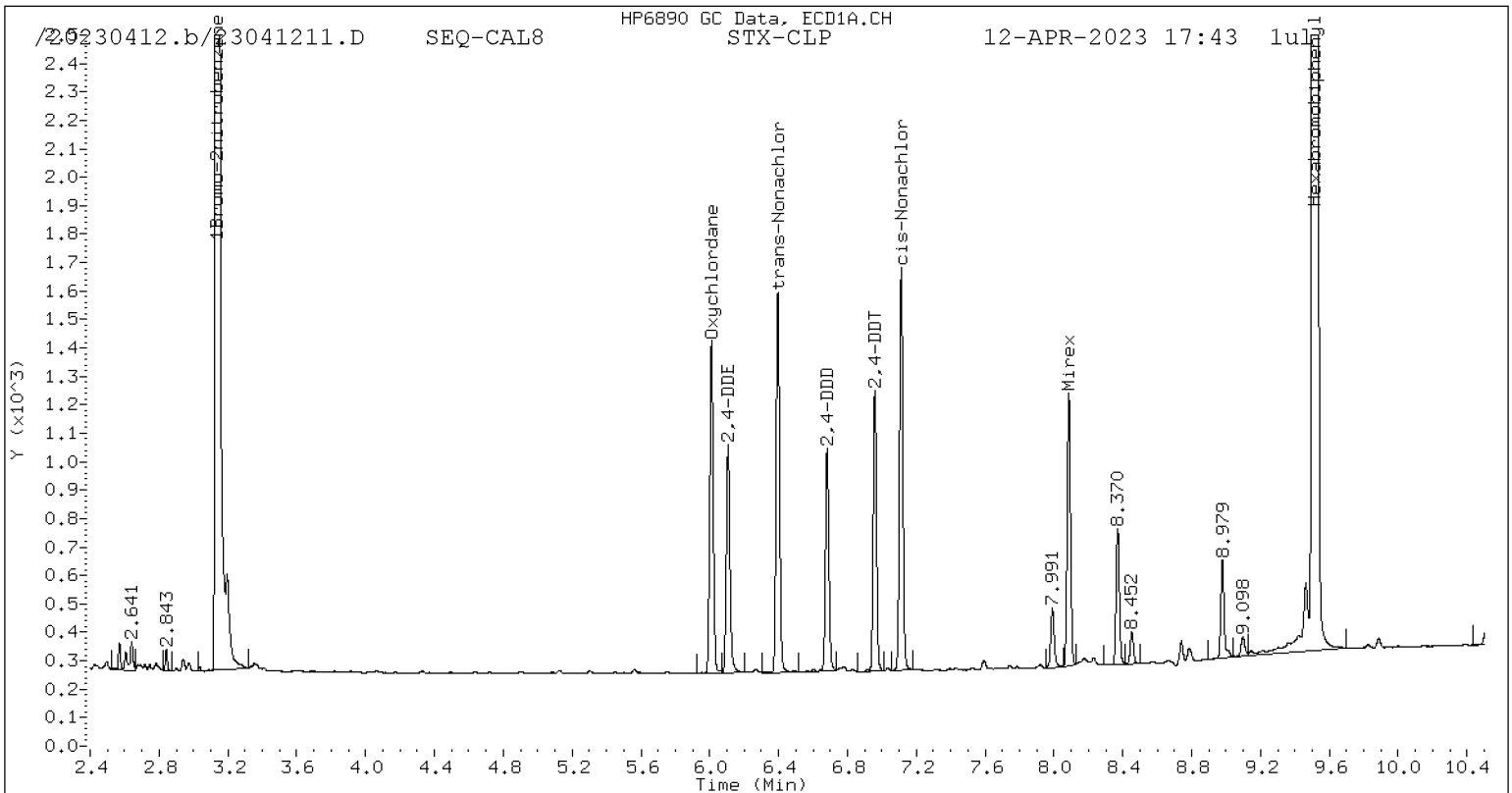
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)



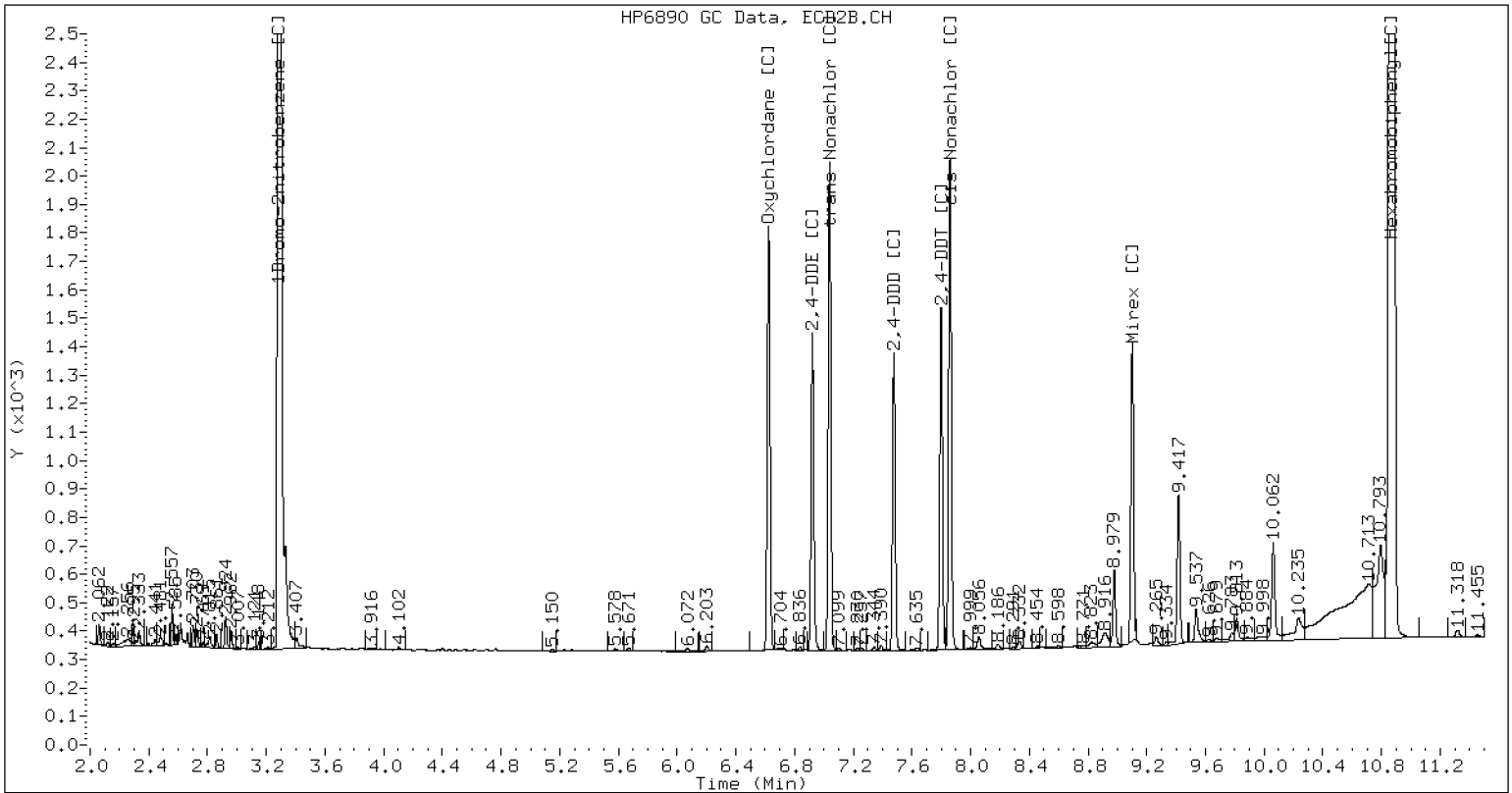


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

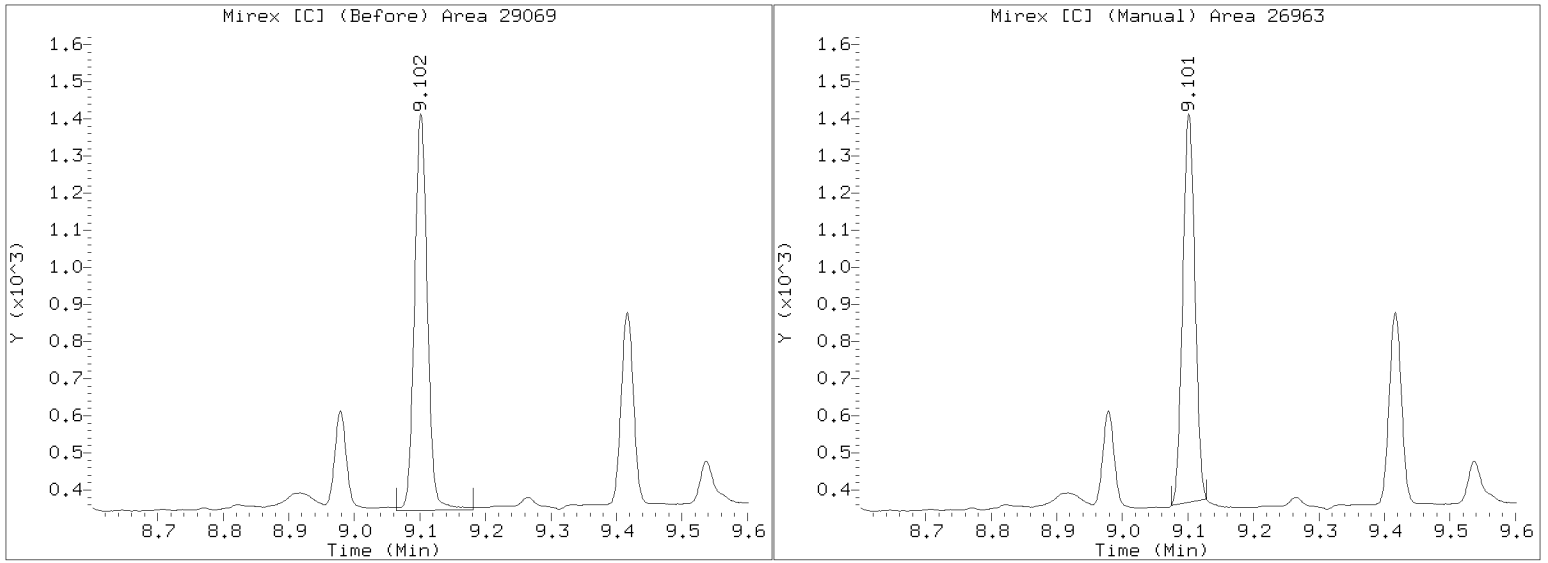
/20230412.b/B20230412.b/23041211.D SEQ-CAL8 CLP2



CLP-2 Manual Integration: YES

Manual Peak Adjustment Report, CLP-2

Datafile: /20230412.b/B20230412.b/23041211.D  
Injection Date: 12-APR-2023 17:43  
Lab ID:SEQ-CAL8 Client ID:



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041212.D  
Data file 2: /20230412.b/B20230412.b/23041212.D  
Method: \20230412.b\PEST.m  
Compound Sublist: WND.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CAL9  
Client ID:  
Injection Date: 12-APR-2023 18:02  
Report Date: 04/14/2023 09:40  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	CLP2 Col Shift Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
6.010	0.001 60226	6.624 -0.000	77029	5.15	5.33	3.5	Oxychlorane	
6.106	0.001 45692	6.921 0.000	57608	5.39	5.45	1.1	2,4-DDE	
6.396	0.001 73158	7.038 -0.001	81213	5.33	4.94	7.6	trans-Nonachlor	
6.682	0.001 41900	7.477 -0.000	51791	5.31	5.30	0.3	2,4-DDD	
6.959	0.000 51131	7.798 -0.001	58989	5.37	5.28	1.8	2,4-DDT	
7.112	0.000 75575	7.858 -0.001	87575	5.29	5.15	2.7	cis-Nonachlor	
8.086	0.001 47358	9.101 0.000	53365	5.31	5.44	2.5	Mirex	
----		----		0.00	0.00	---	Tetrachloro-m-xylene	
----		----		0.00	0.00	---	Decachlorobiphenyl	

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

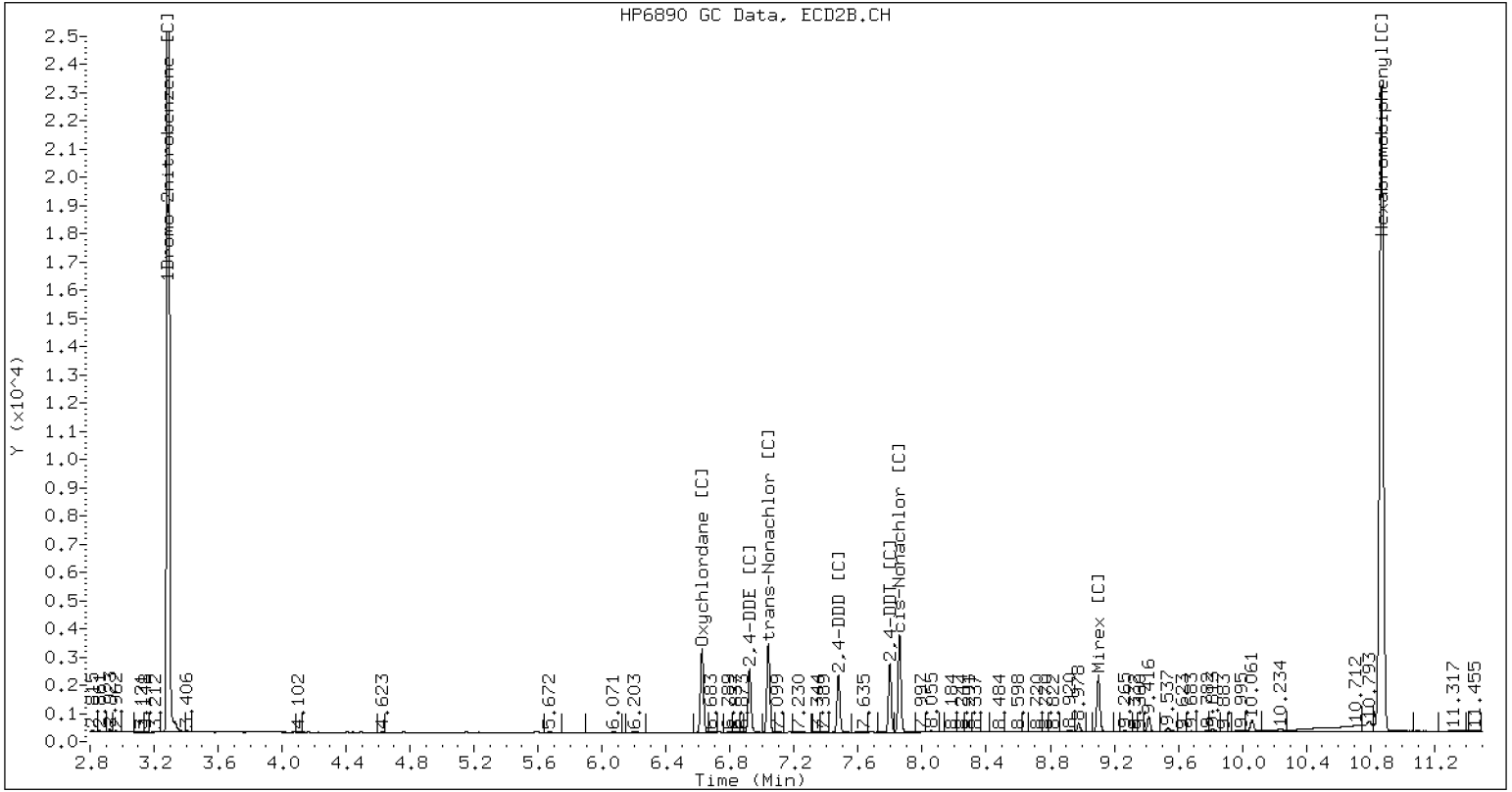
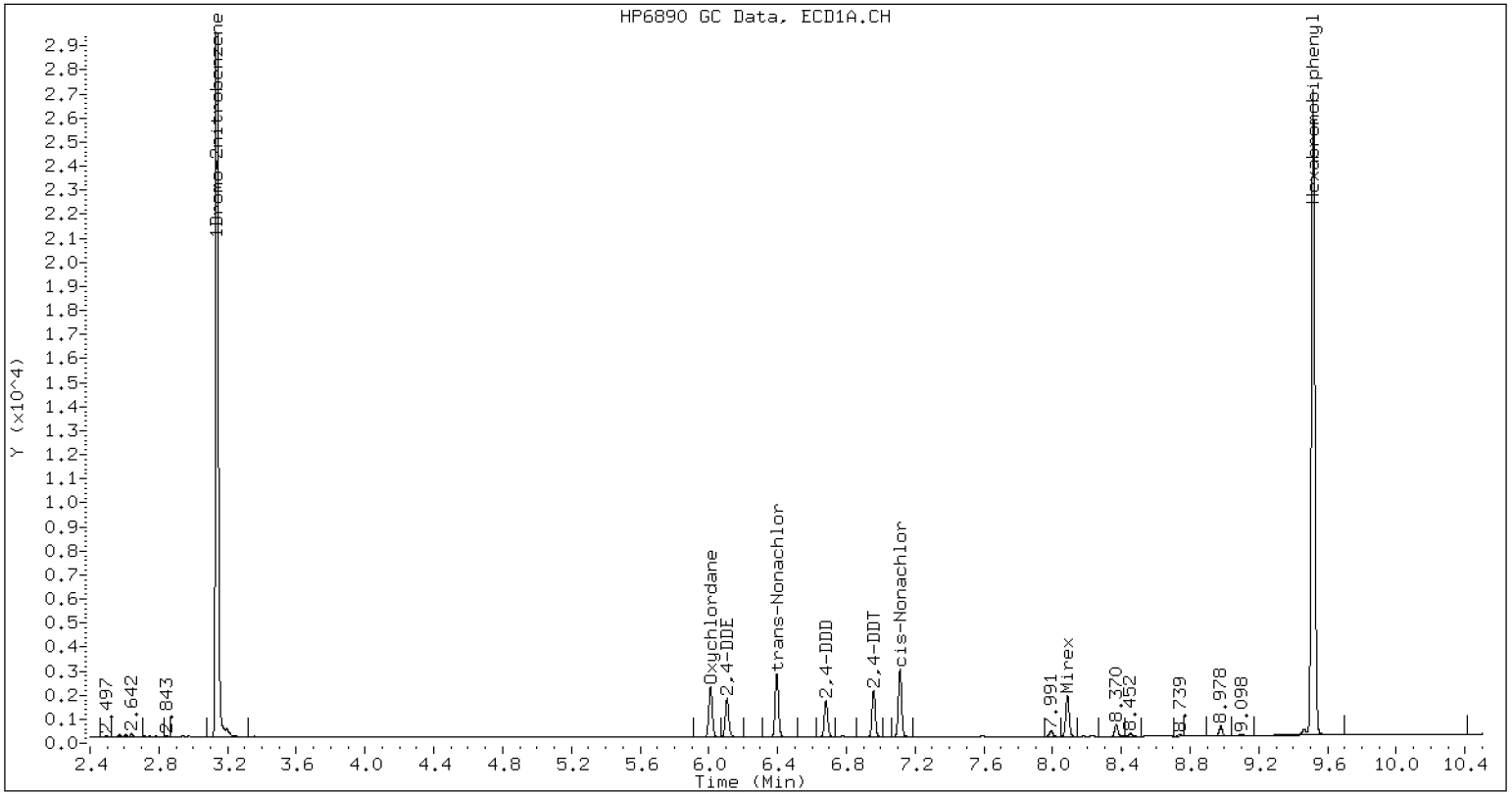
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	930904	7.7
Hexabromobiphenyl	663237	759389	14.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1264392	-14.6
Hexabromobiphenyl	870561	780703	-10.3

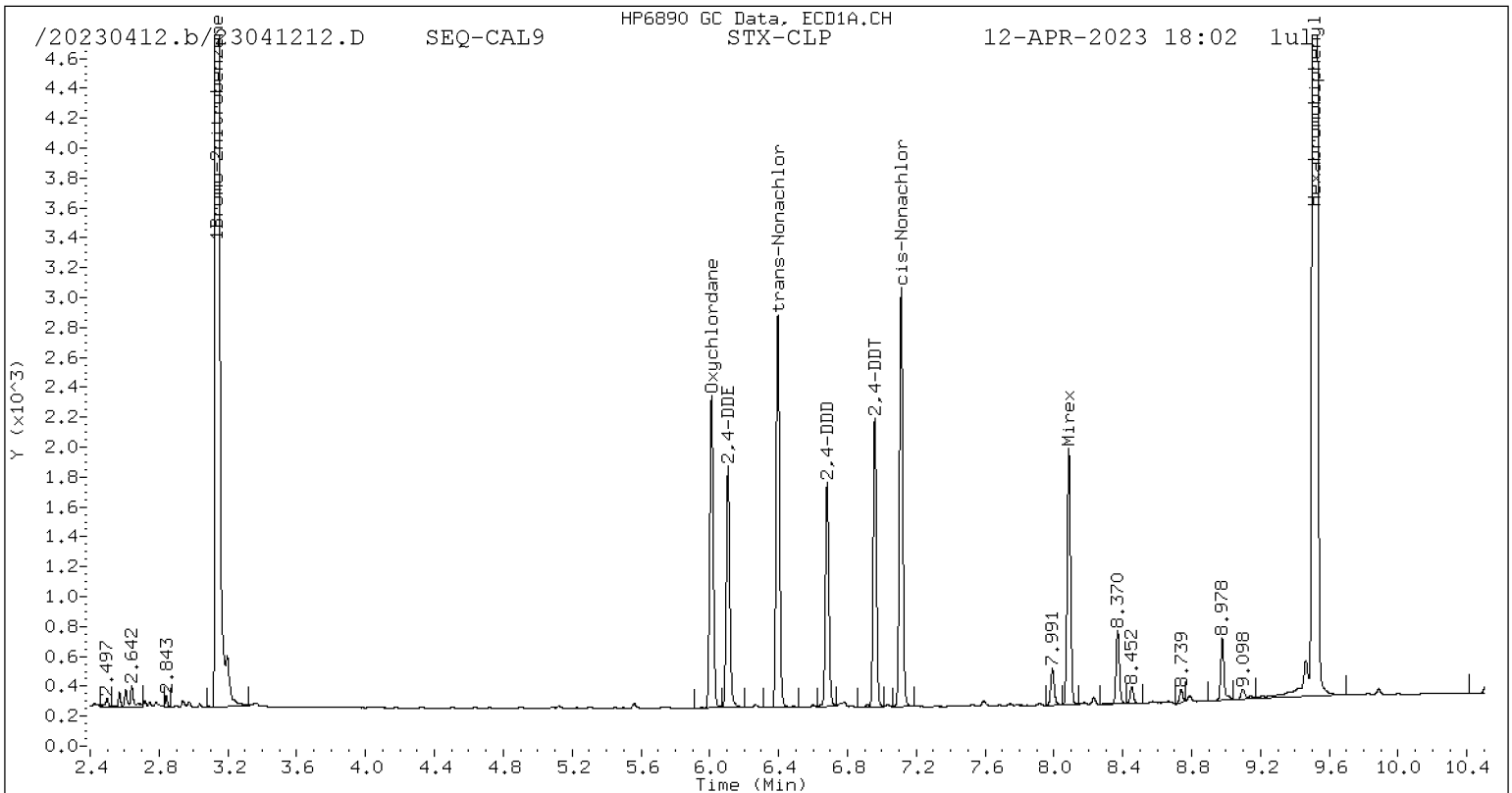
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

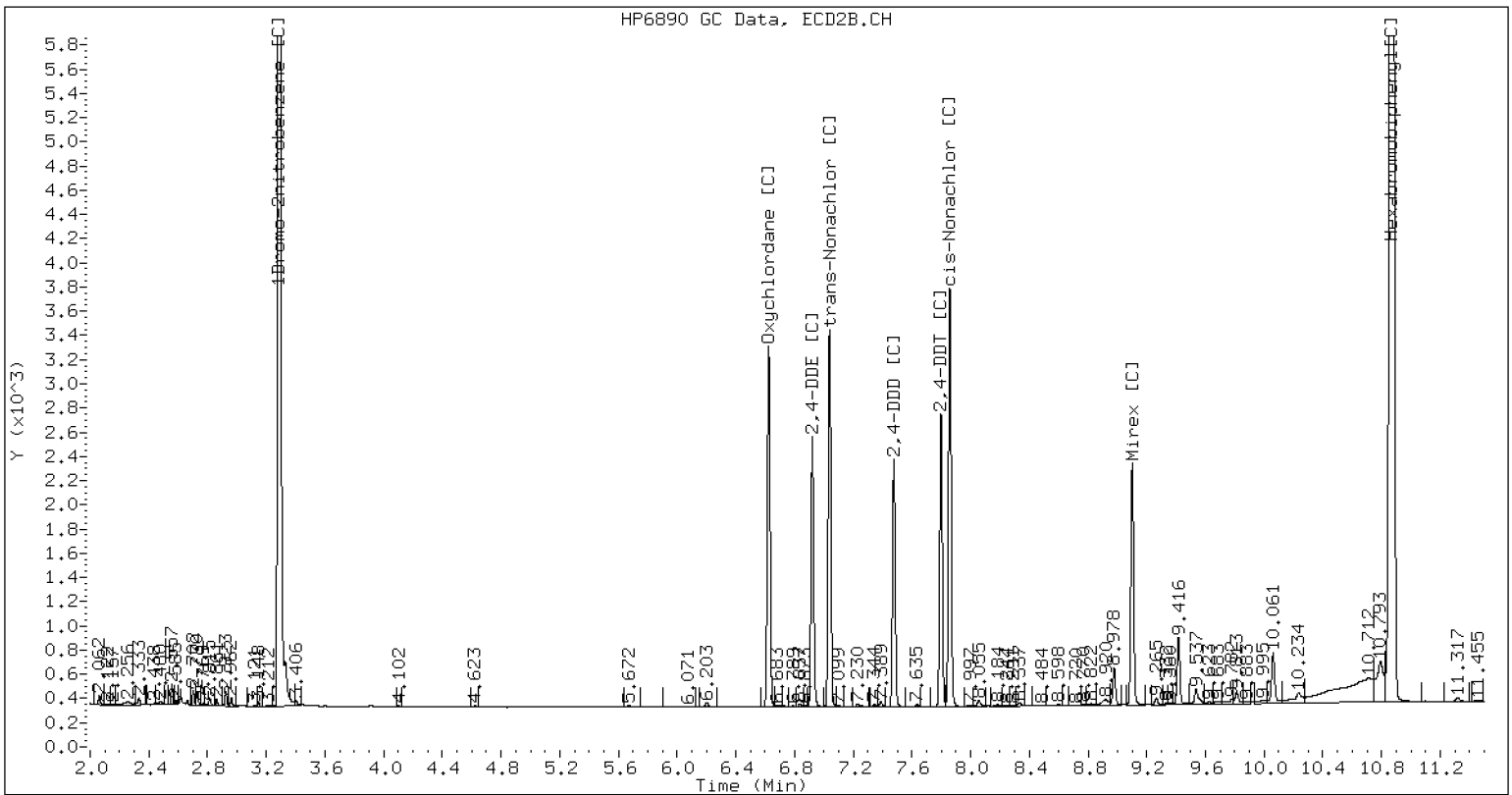


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041212.D SEQ-CAL9 CLP2



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041213.D  
Data file 2: /20230412.b/B20230412.b/23041213.D  
Method: \20230412.b\PEST.m  
Compound Sublist: WND.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALA  
Client ID:  
Injection Date: 12-APR-2023 18:20  
Report Date: 04/14/2023 09:40  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	STX-CLP on col	CLP2 on col	RPD	Compound/Flag		
6.009	-0.000	123278	6.624	0.000	151270	10.75	10.37	3.6	Oxychlorane
6.106	0.001	89835	6.921	0.000	112895	10.82	10.59	2.2	2,4-DDE
6.396	0.001	141201	7.039	-0.000	170866	10.50	10.56	0.6	trans-Nonachlor
6.682	0.001	83598	7.477	-0.000	100942	10.82	10.49	3.1	2,4-DDD
6.959	0.000	99988	7.799	-0.000	115070	10.72	10.46	2.4	2,4-DDT
7.112	0.000	146847	7.859	0.000	173382	10.50	10.37	1.3	cis-Nonachlor
8.086	0.001	92734	9.101	0.000	100630	10.60	10.42	1.7	Mirex
----			----			0.00	0.00	---	Tetrachloro-m-xylene
----			----			0.00	0.00	---	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	924798	7.0
Hexabromobiphenyl	663237	744140	12.2

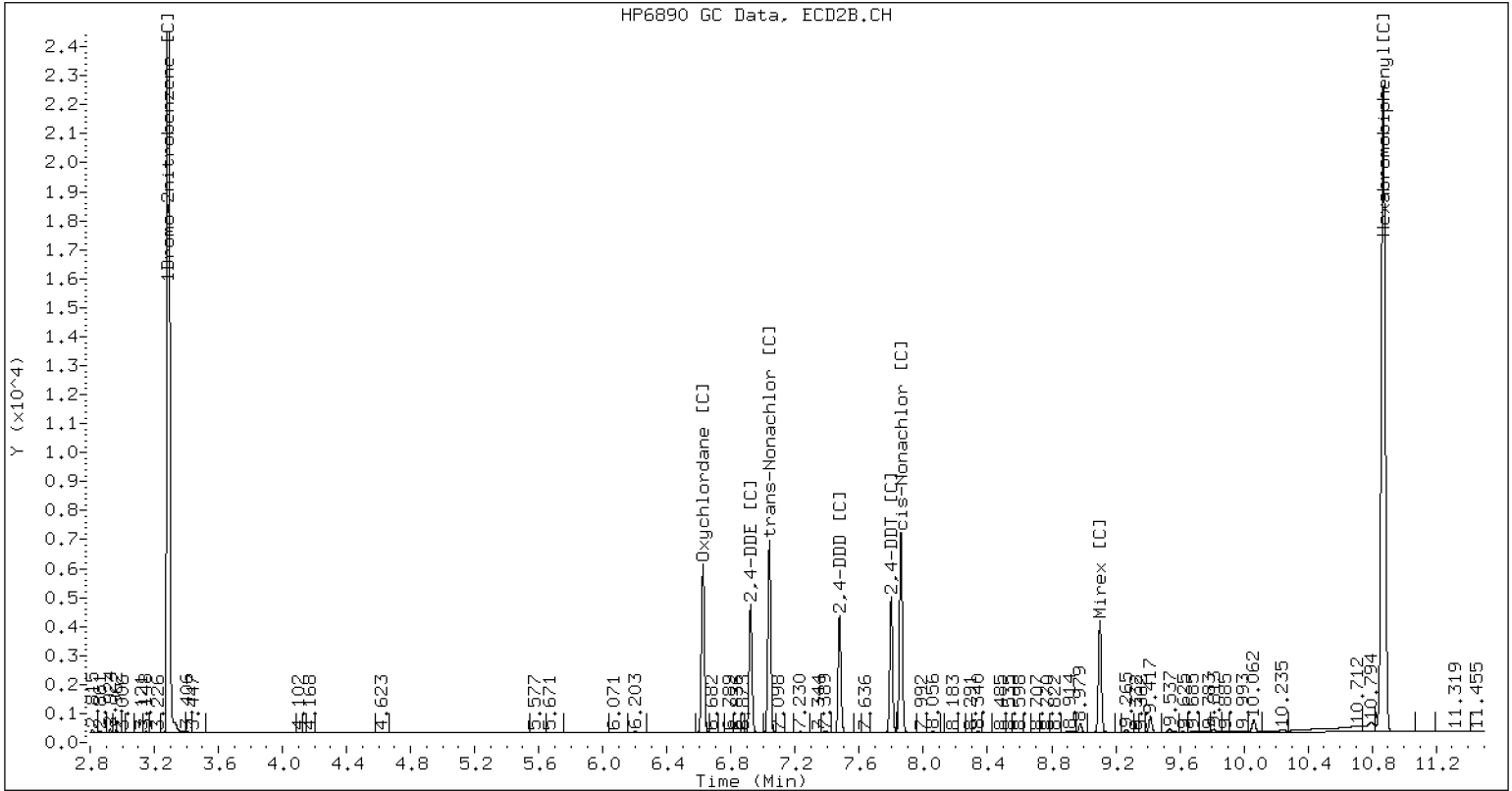
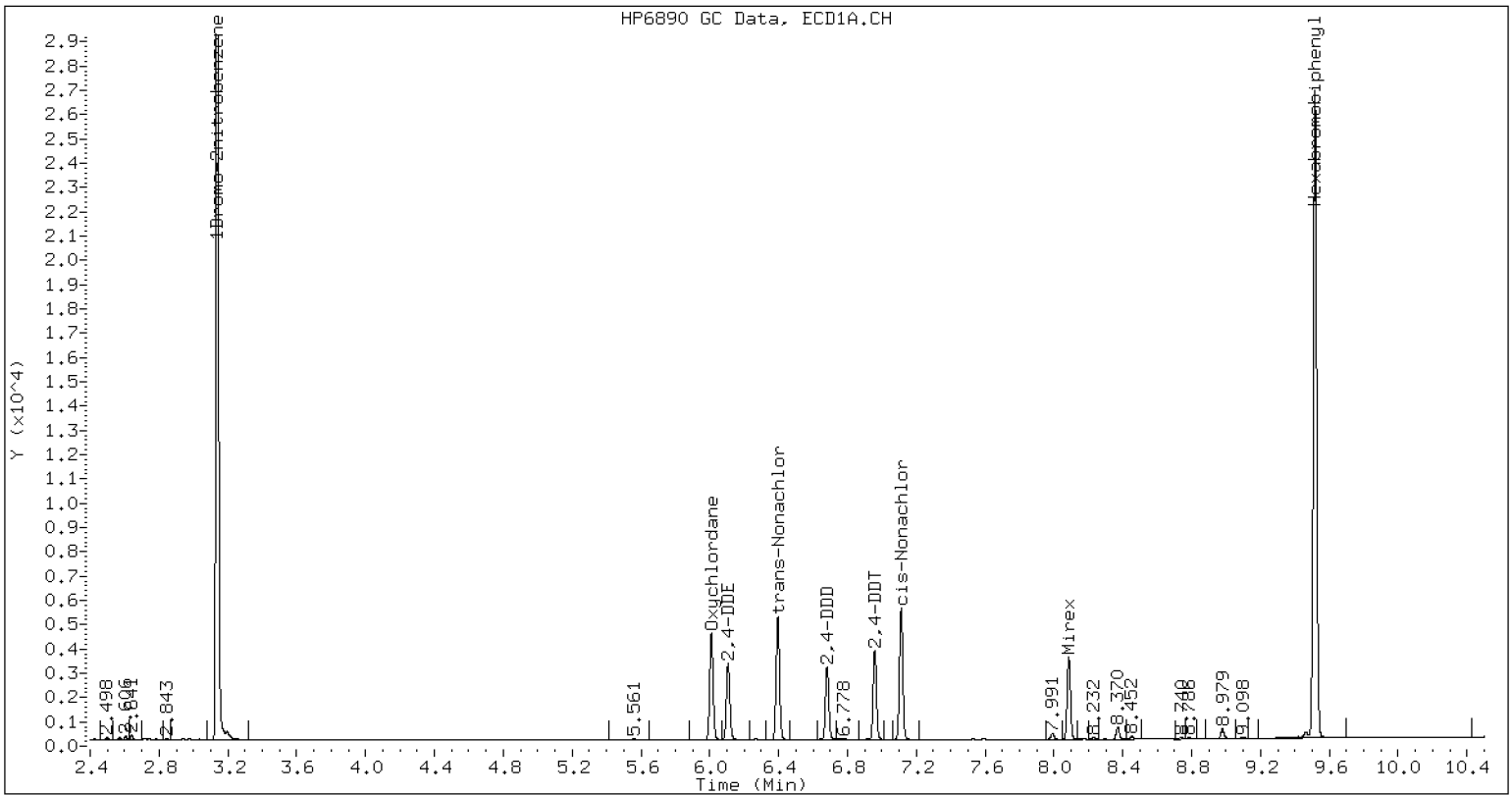
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1276044	-13.8
Hexabromobiphenyl	870561	768340	-11.7

\* Standard Areas taken from Initial Cal Level 5

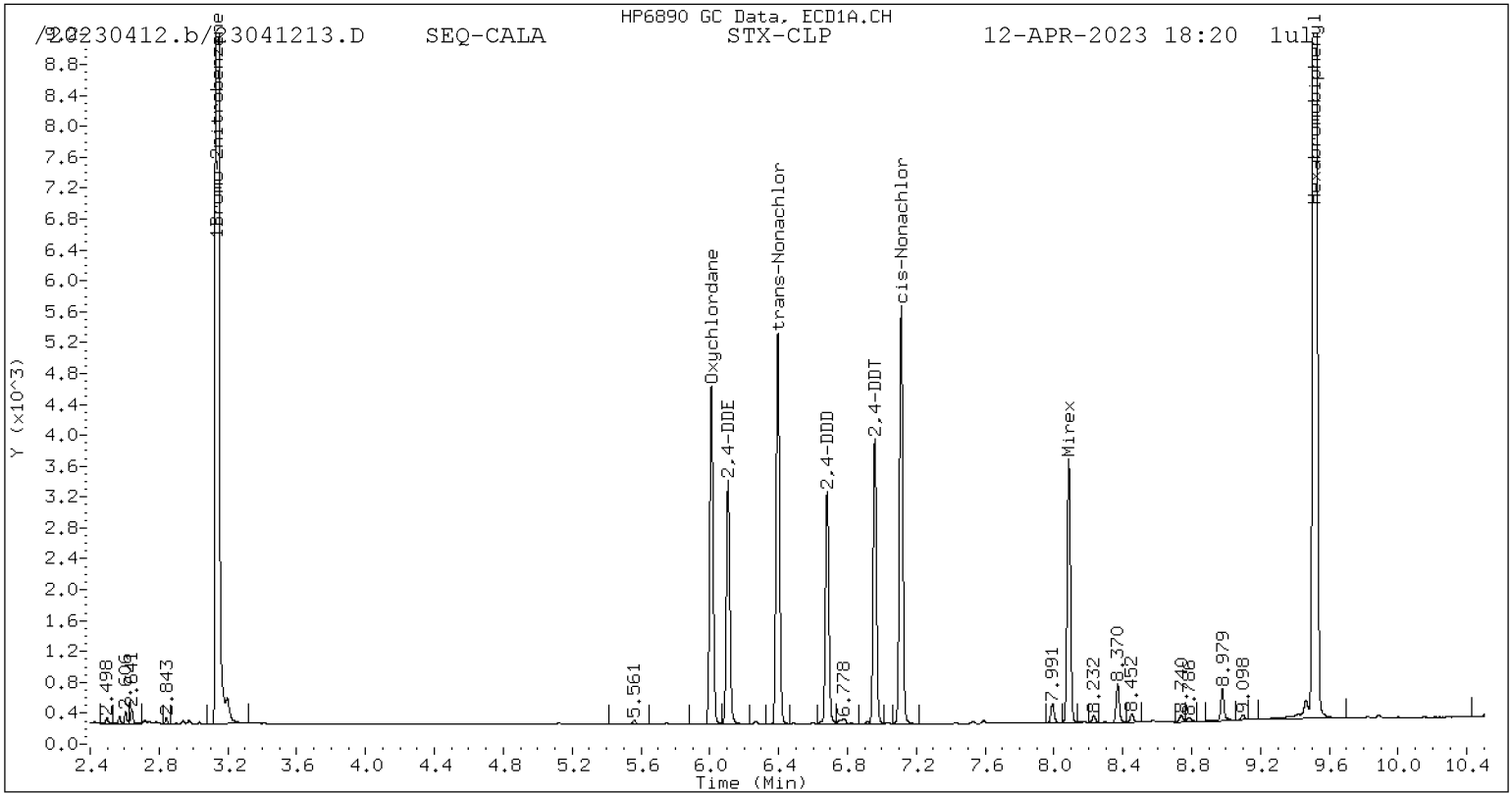
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)



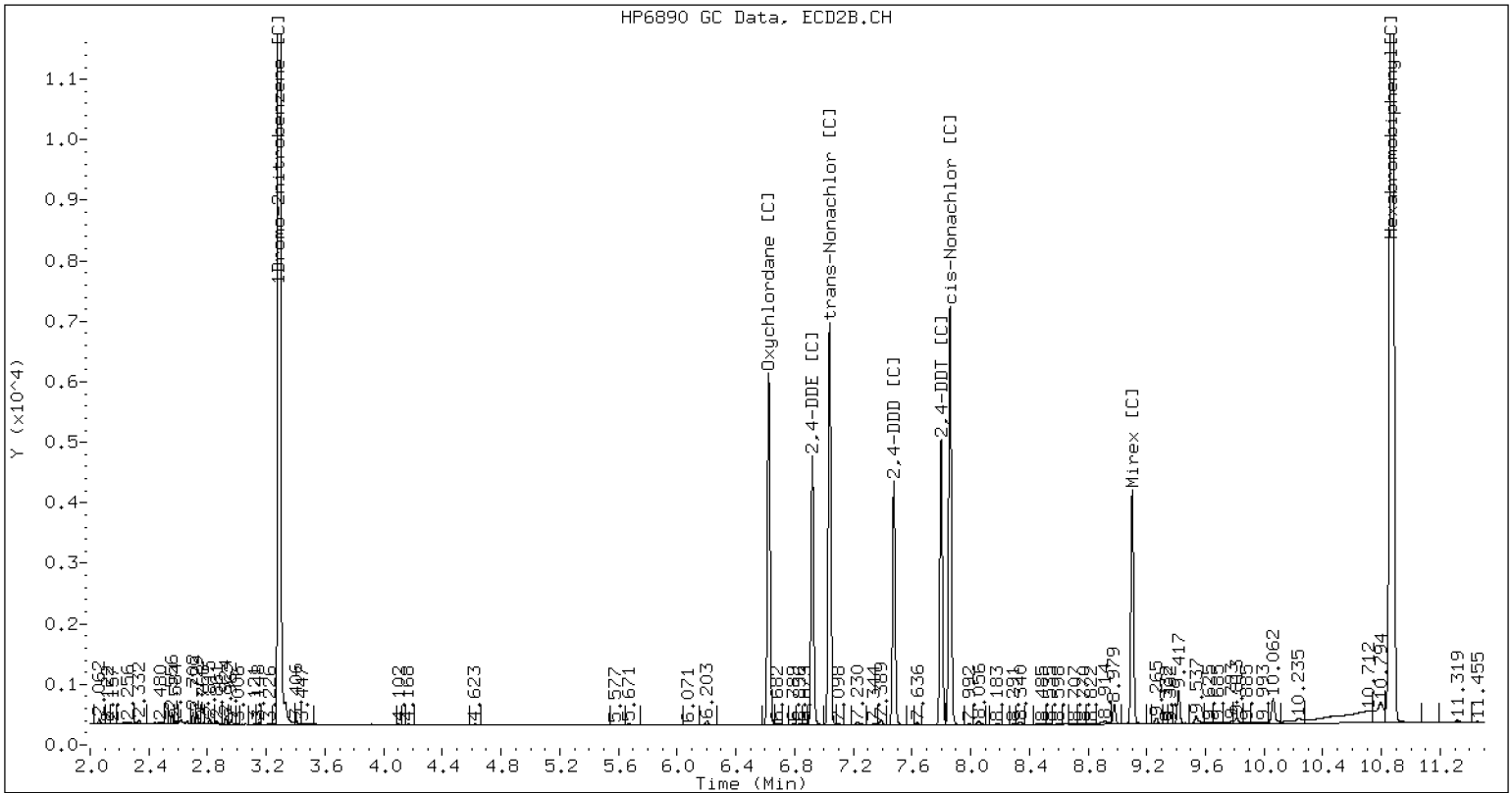


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041213.D SEQ-CALA CLP2



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041214.D  
Data file 2: /20230412.b/B20230412.b/23041214.D  
Method: \20230412.b\PEST.m  
Compound Sublist: WND.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALB  
Client ID:  
Injection Date: 12-APR-2023 18:38  
Report Date: 04/14/2023 09:40  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
6.010	0.000 234579	6.624 0.000 293794	6.624	20.52	20.63	0.5	Oxychlorthane
6.106	0.001 170299	6.922 0.001 216226	6.922	20.59	20.78	0.9	2,4-DDE
6.396	0.001 271524	7.039 0.000 333381	7.039	20.26	20.64	1.8	trans-Nonachlor
6.682	0.000 158357	7.476 -0.001 195047	7.476	20.57	20.30	1.3	2,4-DDD
6.960	0.001 190595	7.799 -0.000 223003	7.799	20.50	20.30	1.0	2,4-DDT
7.112	0.001 283023	7.859 0.000 341543	7.859	20.31	20.45	0.7	cis-Nonachlor
8.086	0.000 174624	9.101 0.000 190241	9.101	20.04	19.74	1.5	Mirex
----		----	----	0.00	0.00	---	Tetrachloro-m-xylene
----		10.309 0.003 2954	10.309	0.00	0.32	---	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

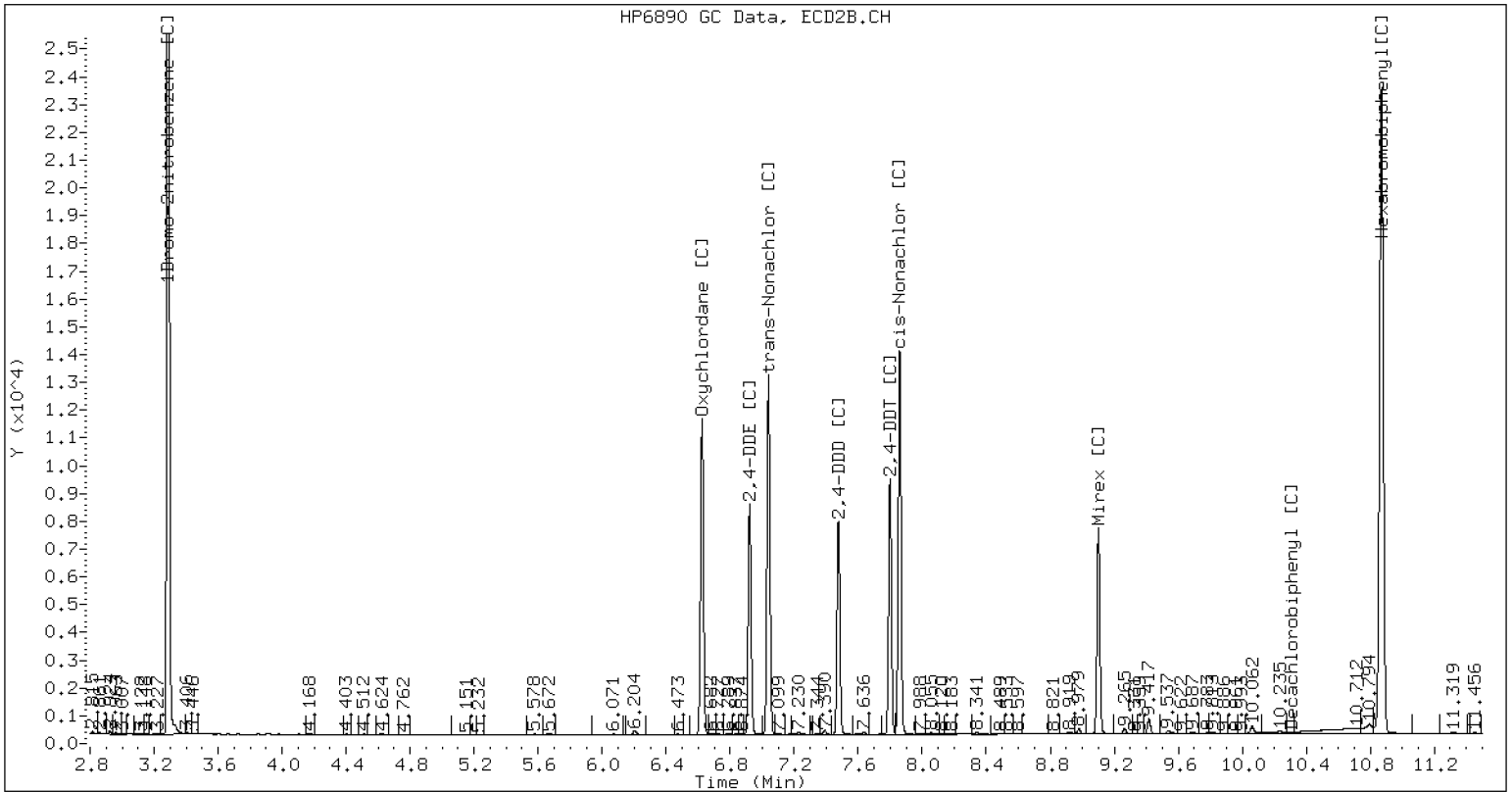
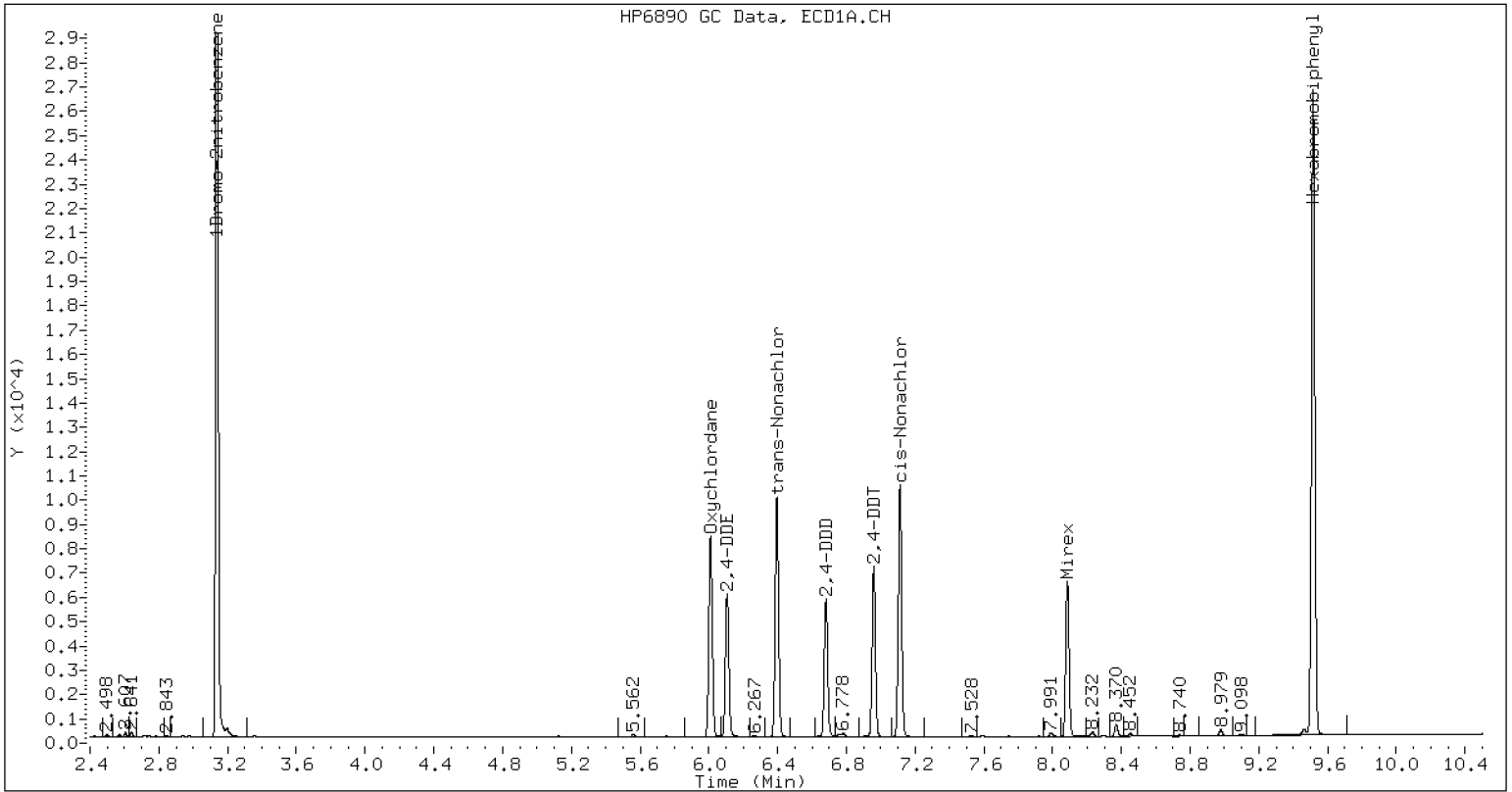
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	899601	4.1
Hexabromobiphenyl	663237	741497	11.8

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1245547	-15.9
Hexabromobiphenyl	870561	767183	-11.9

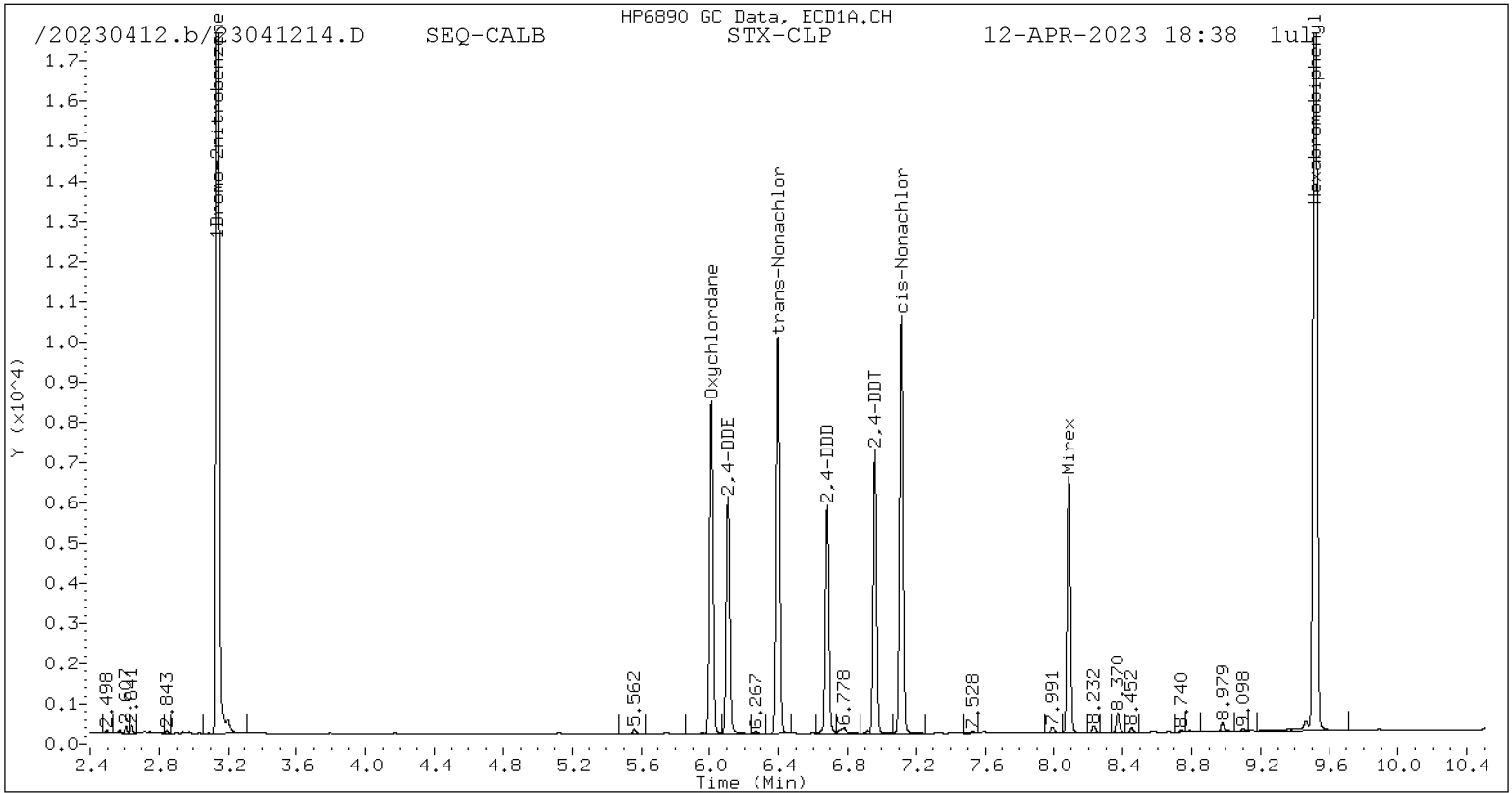
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

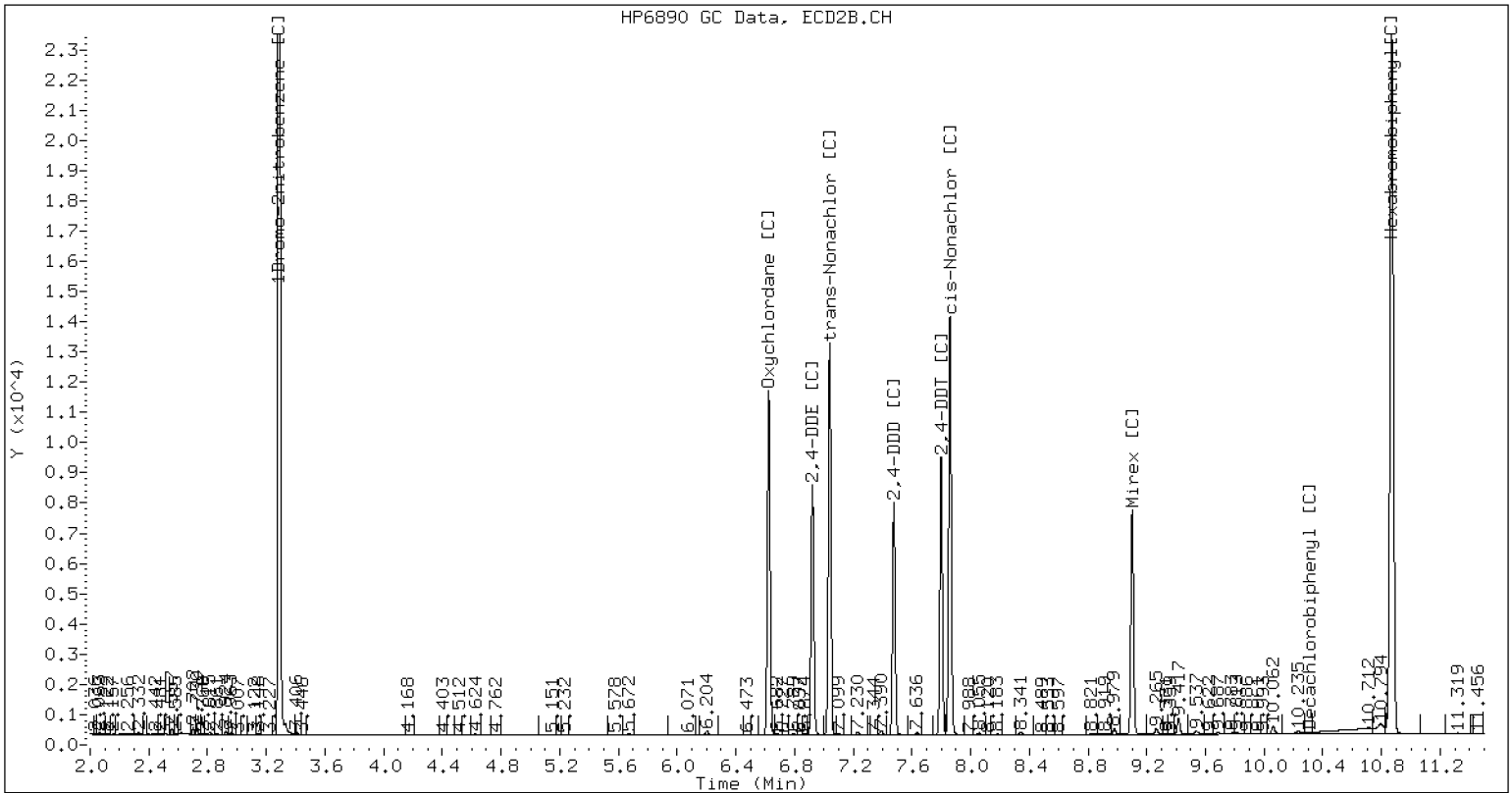


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041214.D SEQ-CALB CLP2



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041215.D  
 Data file 2: /20230412.b/B20230412.b/23041215.D  
 Method: \20230412.b\PEST.m  
 Compound Sublist: WND.sub  
 Instrument, Inj. Vol.: ecd6.i, 1ul  
 Operator: JGR

ARI ID: SEQ-CALC  
 Client ID:  
 Injection Date: 12-APR-2023 18:57  
 Report Date: 04/14/2023 09:40  
 Units: ng/mL  
 Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	CLP2 Shift Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag	
6.010	0.001	441791	6.624	0.000	561341	39.12	39.67	1.4	Oxychlorthane
6.106	0.001	318110	6.921	0.000	406232	38.93	39.30	0.9	2,4-DDE
6.396	0.001	517172	7.039	-0.000	640936	39.06	40.16	2.8	trans-Nonachlor
6.681	-0.000	297604	7.476	-0.001	372629	39.12	39.26	0.3	2,4-DDD
6.959	0.001	358310	7.799	-0.000	427178	39.01	39.36	0.9	2,4-DDT
7.112	0.000	540011	7.859	-0.000	659204	39.22	39.95	1.9	cis-Nonachlor
8.086	0.000	328833	9.101	-0.000	364657	38.19	38.29	0.3	Mirex
----			----			0.00	0.00	---	Tetrachloro-m-xylene
----			10.309	0.003	2755	0.00	0.30	---	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	887506	2.7
Hexabromobiphenyl	663237	732612	10.5

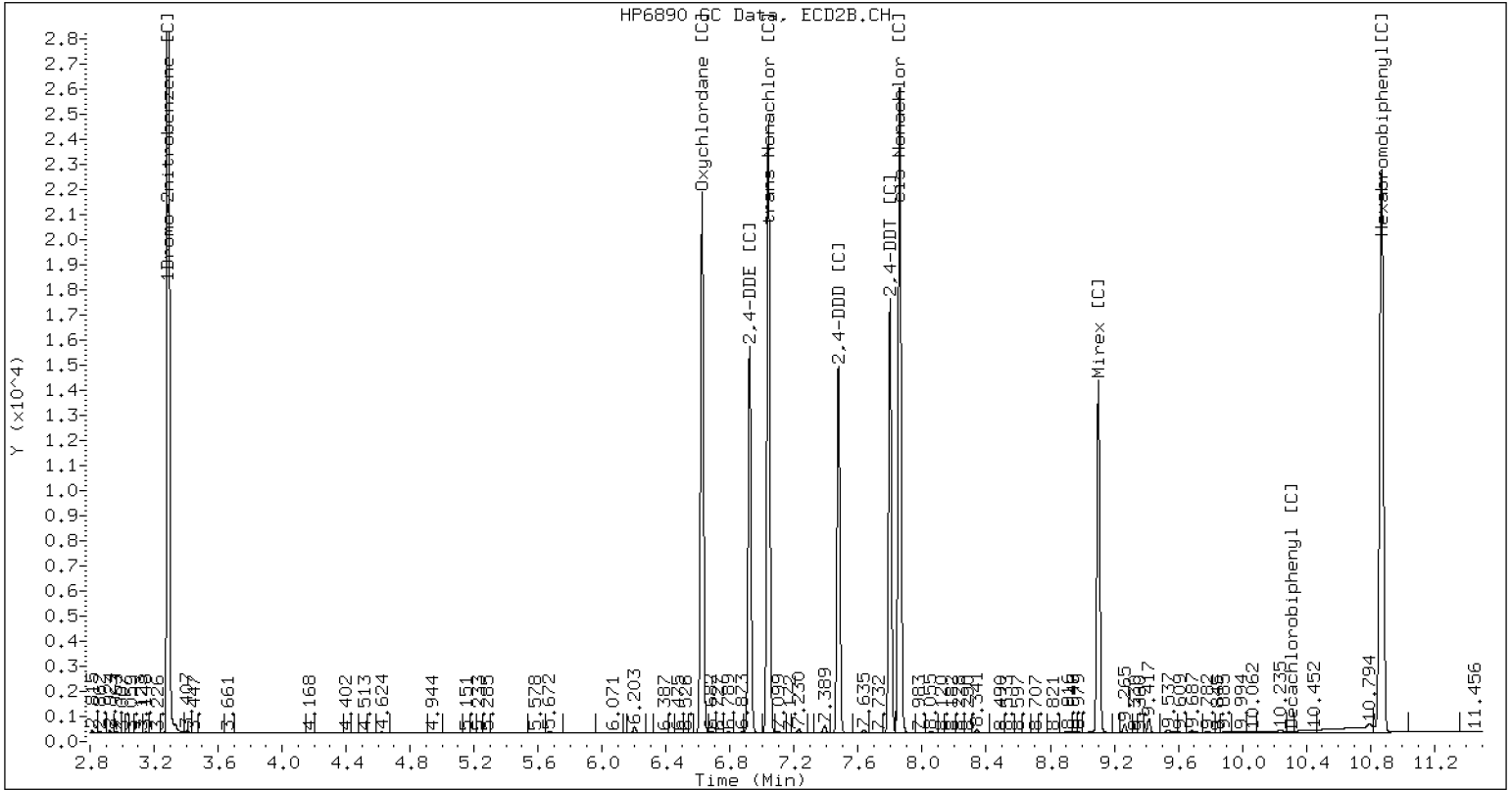
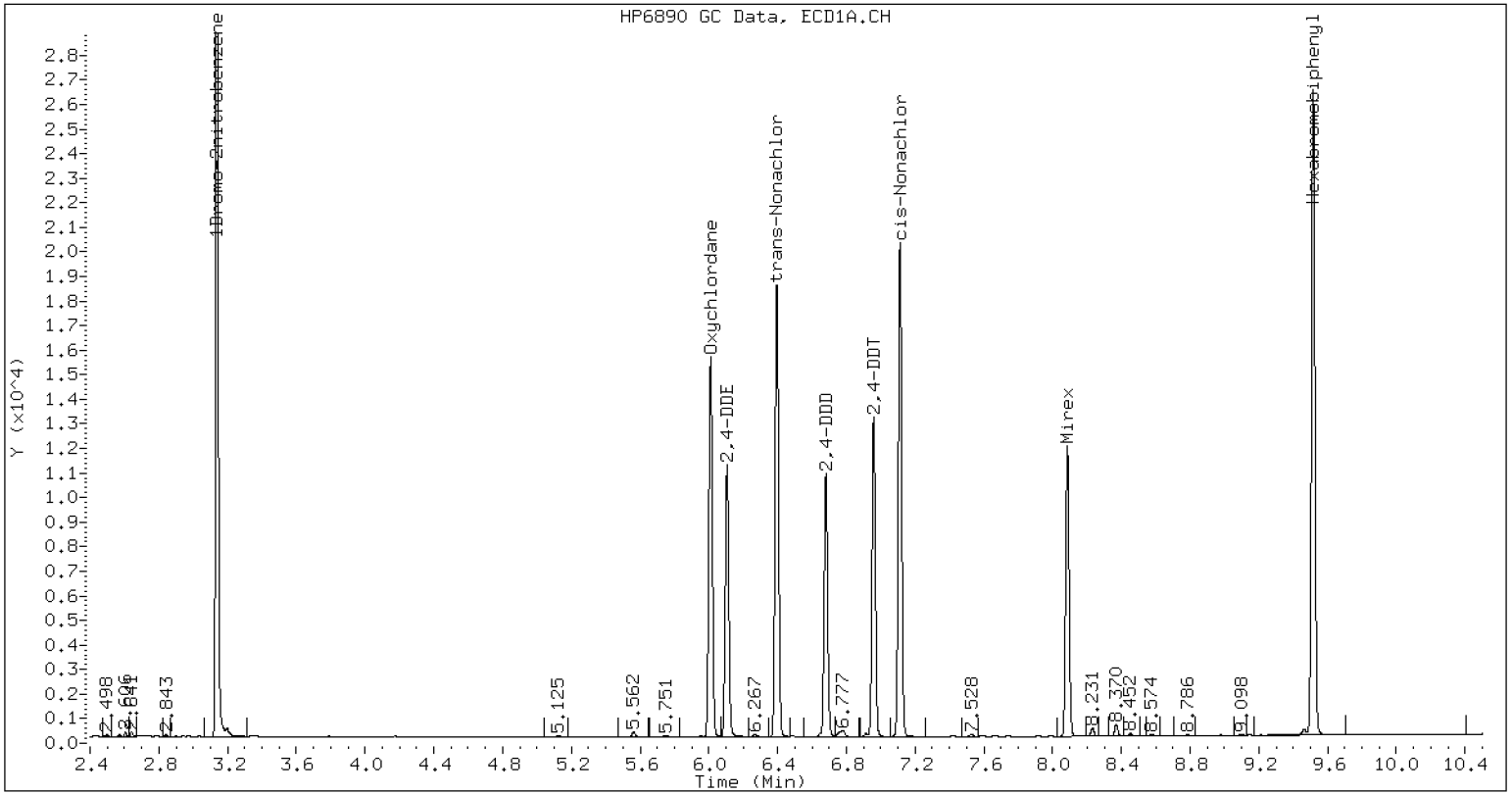
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1237559	-16.4
Hexabromobiphenyl	870561	757937	-12.9

\* Standard Areas taken from Initial Cal Level 5

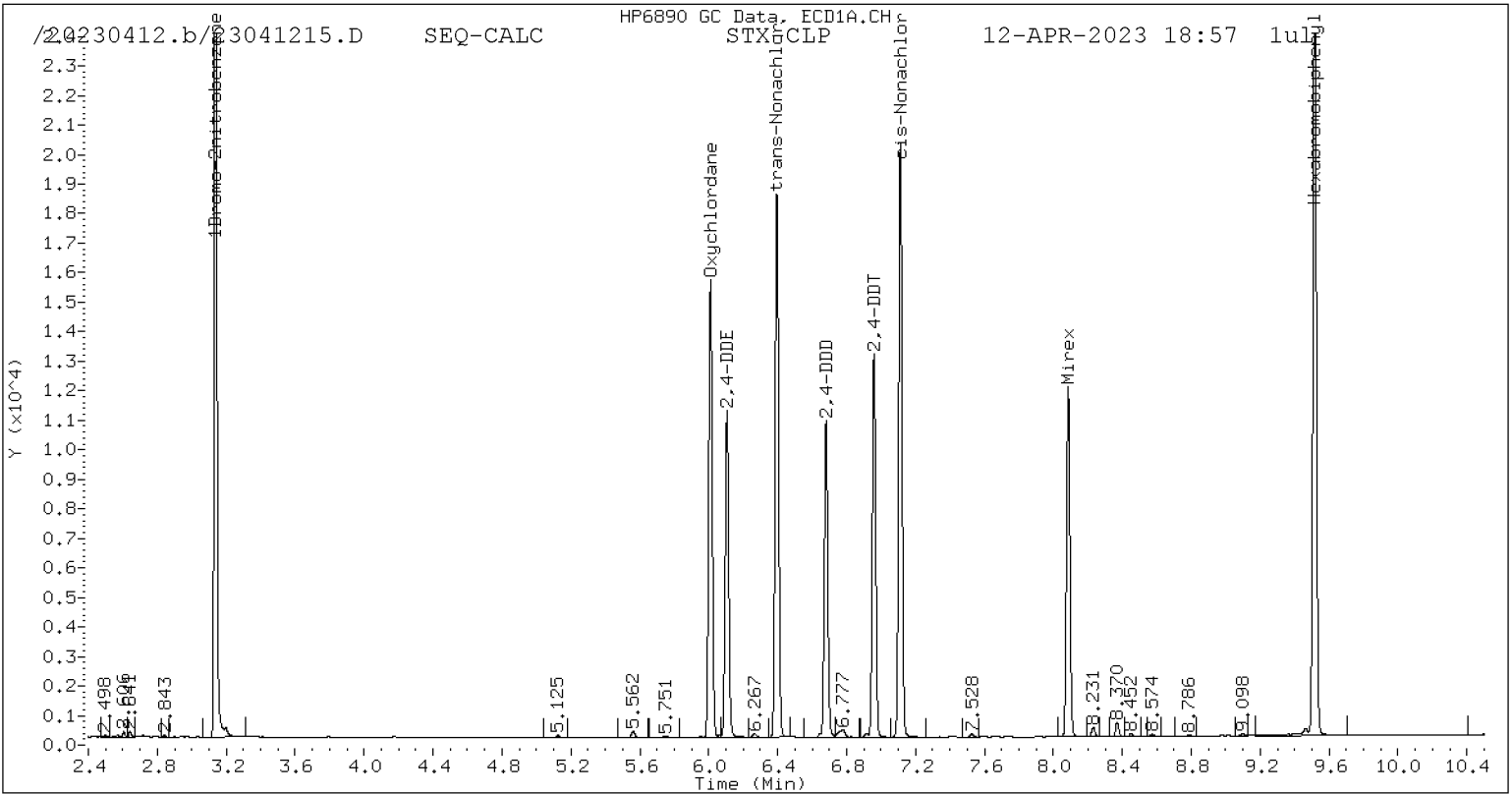
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

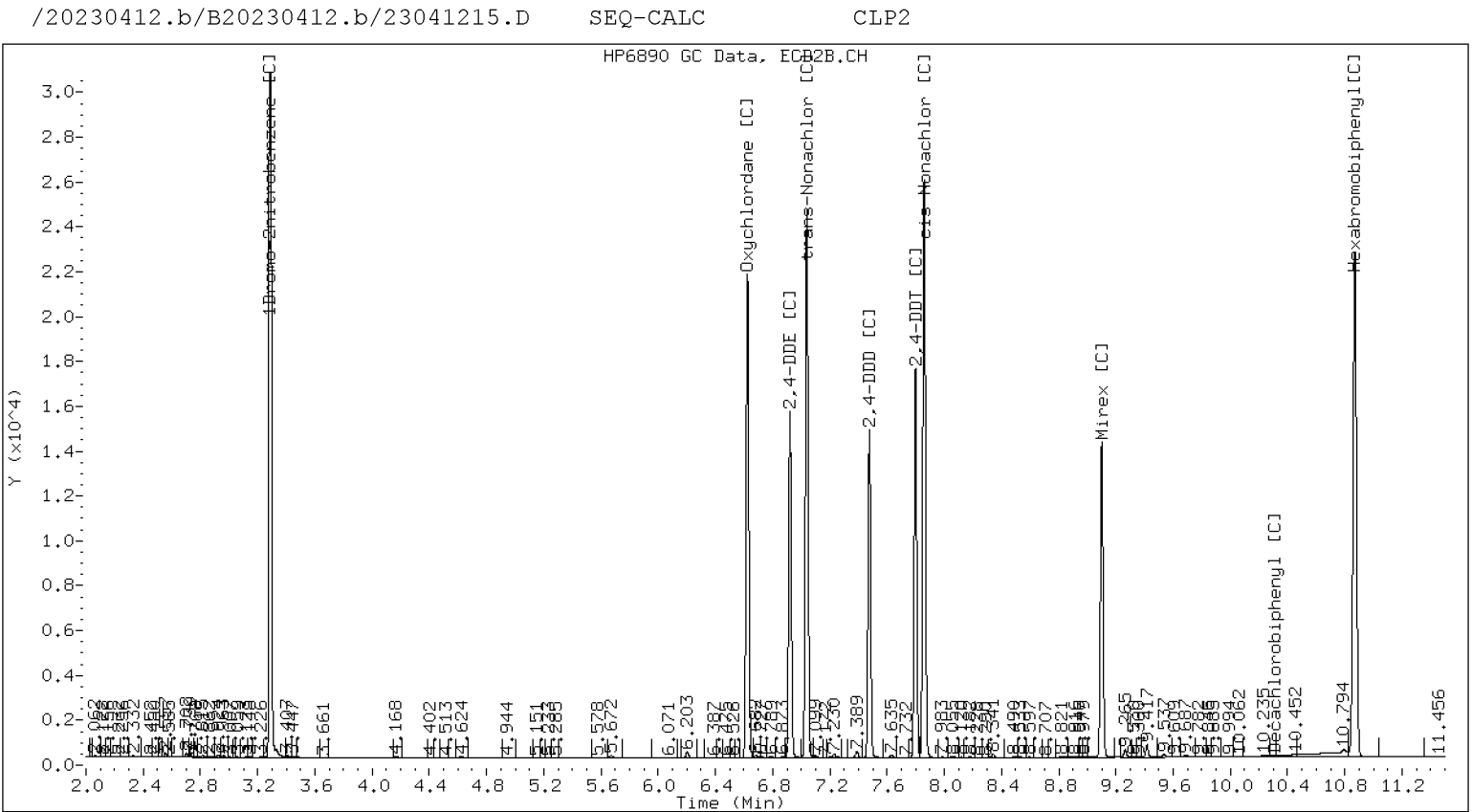




Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041216.D  
Data file 2: /20230412.b/B20230412.b/23041216.D  
Method: \20230412.b\PEST.m  
Compound Sublist: WND.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALD  
Client ID:  
Injection Date: 12-APR-2023 19:15  
Report Date: 04/14/2023 09:40  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	CLP2 Col Shift Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag	
6.010	0.000	817171	6.624	-0.000	1054911	72.77	74.15	1.9	Oxychlorane
6.106	0.001	580973	6.921	-0.000	743589	71.50	71.54	0.1	2,4-DDE
6.395	0.001	968759	7.039	-0.001	1211298	73.58	76.18	3.5	trans-Nonachlor
6.681	-0.000	548708	7.476	-0.001	698482	72.54	73.85	1.8	2,4-DDD
6.958	-0.000	660572	7.798	-0.001	805720	72.32	74.50	3.0	2,4-DDT
7.112	-0.000	1017099	7.858	-0.001	1256322	74.28	76.41	2.8	cis-Nonachlor
8.086	0.000	616577	9.101	0.000	697240	72.01	73.47	2.0	Mirex
----			4.135	-0.001	186	0.00	0.01	---	Tetrachloro-m-xylene
----			10.309	0.003	3002	0.00	0.33	---	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

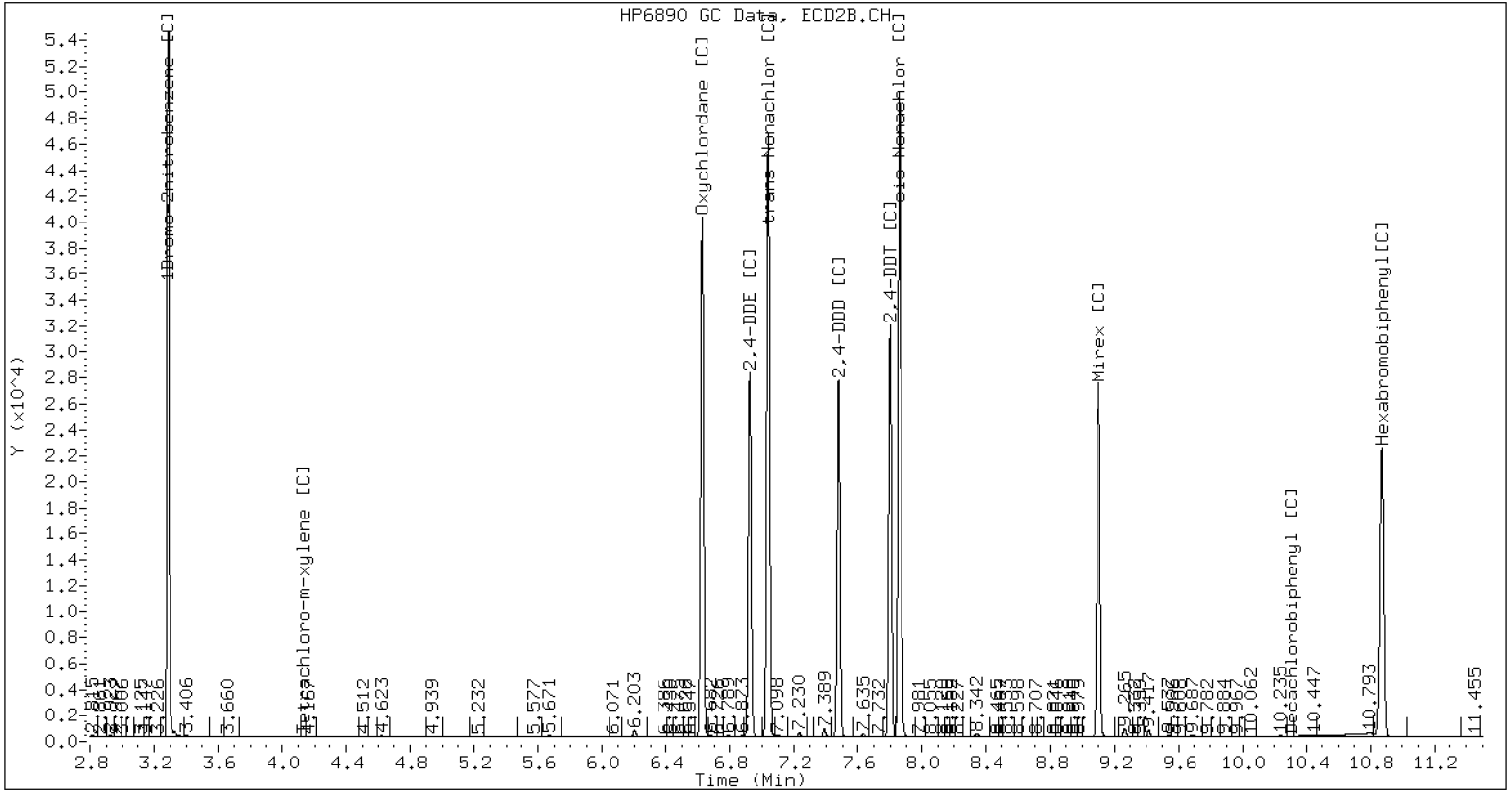
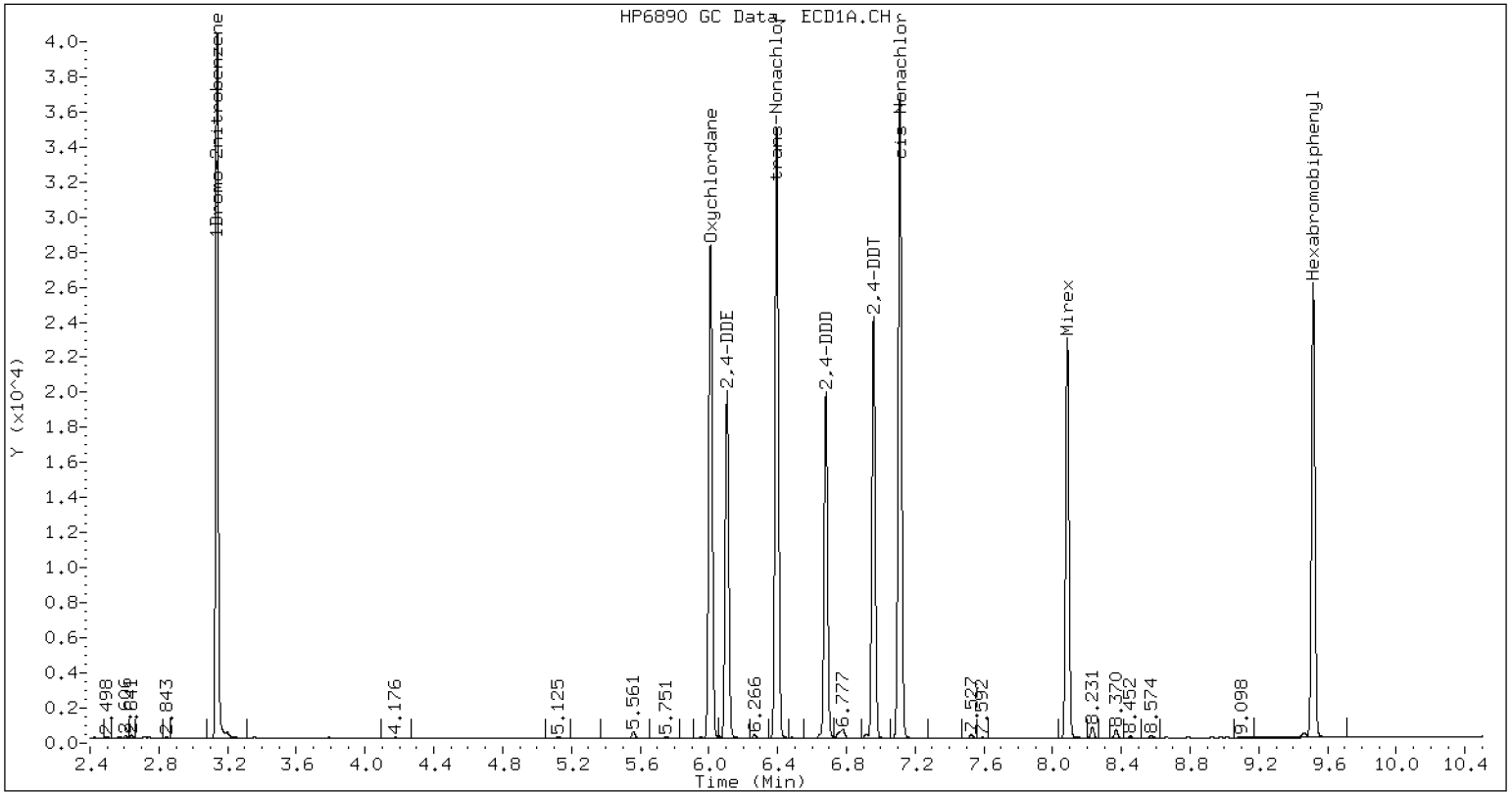
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	901377	4.3
Hexabromobiphenyl	663237	728475	9.8

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1244306	-16.0
Hexabromobiphenyl	870561	755238	-13.2

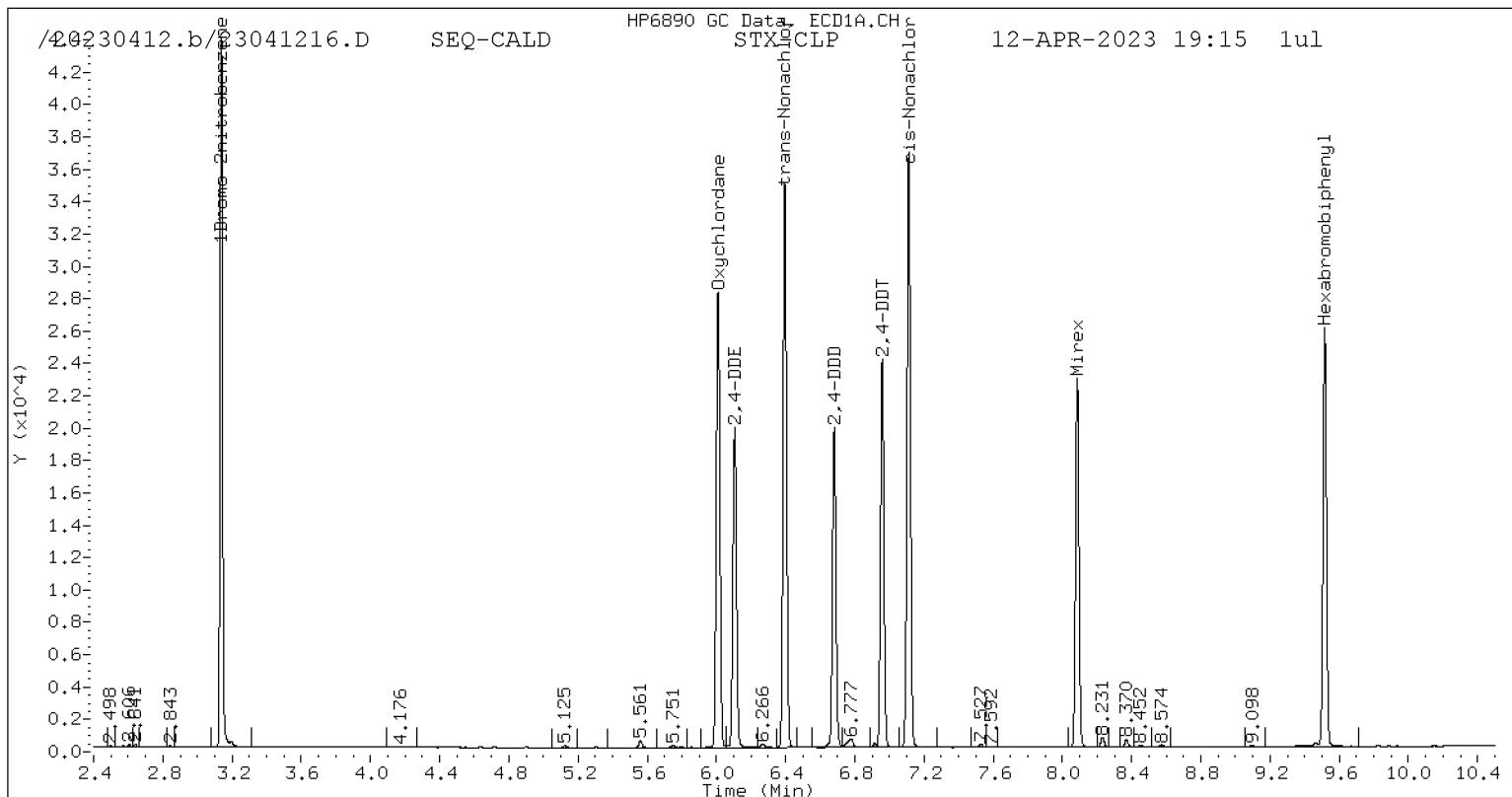
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

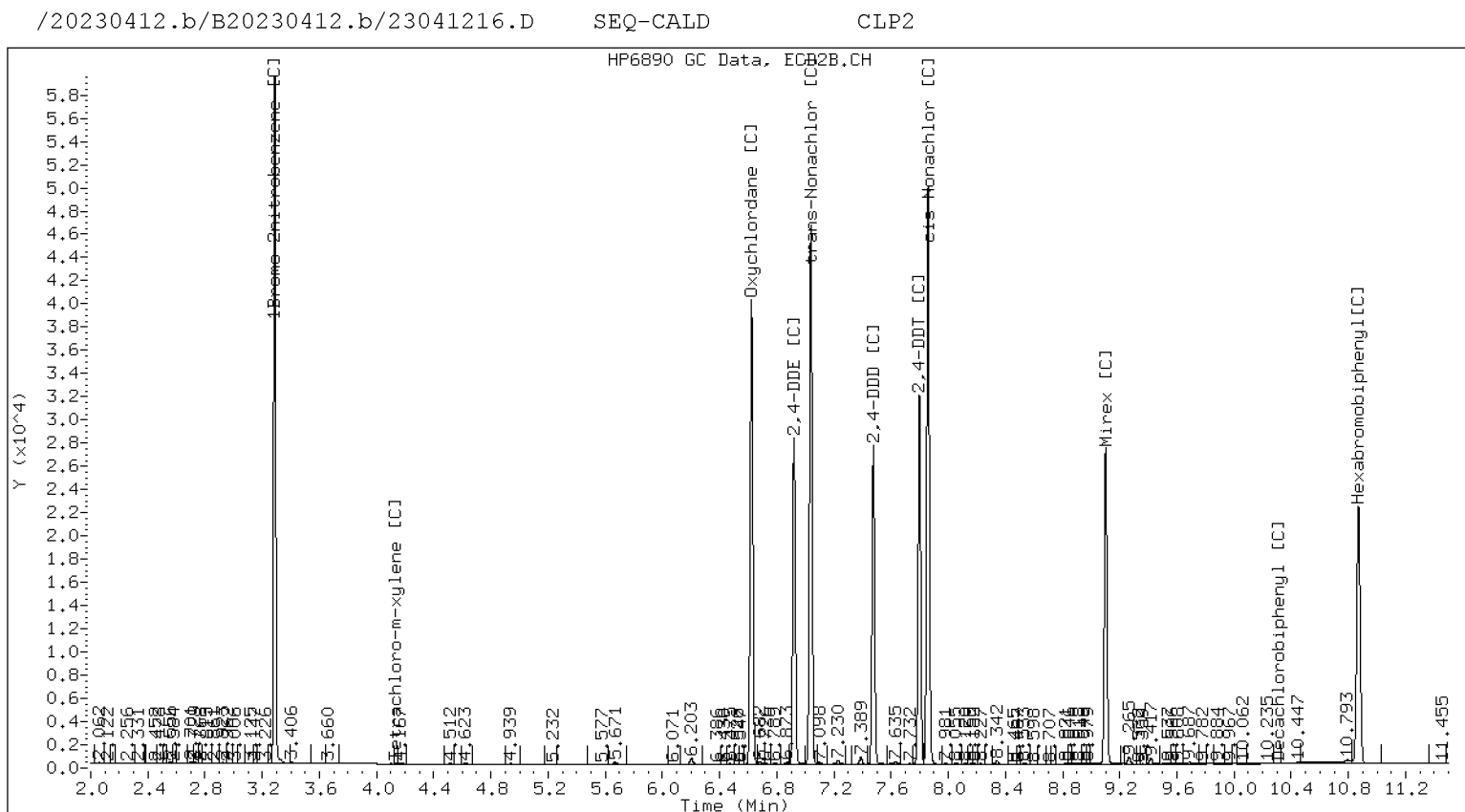
<- Indicates standard response outside Limits (-50 to +100%)



Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041217.D  
Data file 2: /20230412.b/B20230412.b/23041217.D  
Method: \20230412.b\PEST.m  
Compound Sublist: WND.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALE  
Client ID:  
Injection Date: 12-APR-2023 19:34  
Report Date: 04/14/2023 09:40  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
6.009	0.000 1520737	6.624 -0.000 1976637	6.624	132.87	137.37	3.3	Oxychlordane M
6.105	-0.000 1051945	6.921 -0.000 1344143	6.921	127.02	127.86	0.7	2,4-DDE M
6.395	0.000 1828376	7.039 -0.000 2280597	7.039	136.25	139.01	2.0	trans-Nonachlor M
6.681	0.000 1007071	7.477 -0.000 1318871	7.477	130.63	135.15	3.4	2,4-DDD M
6.959	0.000 1216718	7.799 -0.000 1510661	7.799	130.69	135.39	3.5	2,4-DDT M
7.112	0.000 1924725	7.859 0.000 2389114	7.859	137.91	140.84	2.1	cis-Nonachlor M
8.086	0.000 1166143	9.101 0.000 1359594	9.101	133.61	138.86	3.9	Mirex M
----		4.136 0.000 307	4.136	0.00	0.02	---	Tetrachloro-m-xylene
----		10.308 0.002 3667	10.308	0.00	0.39	---	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	923493	6.8
Hexabromobiphenyl	663237	742507	12.0

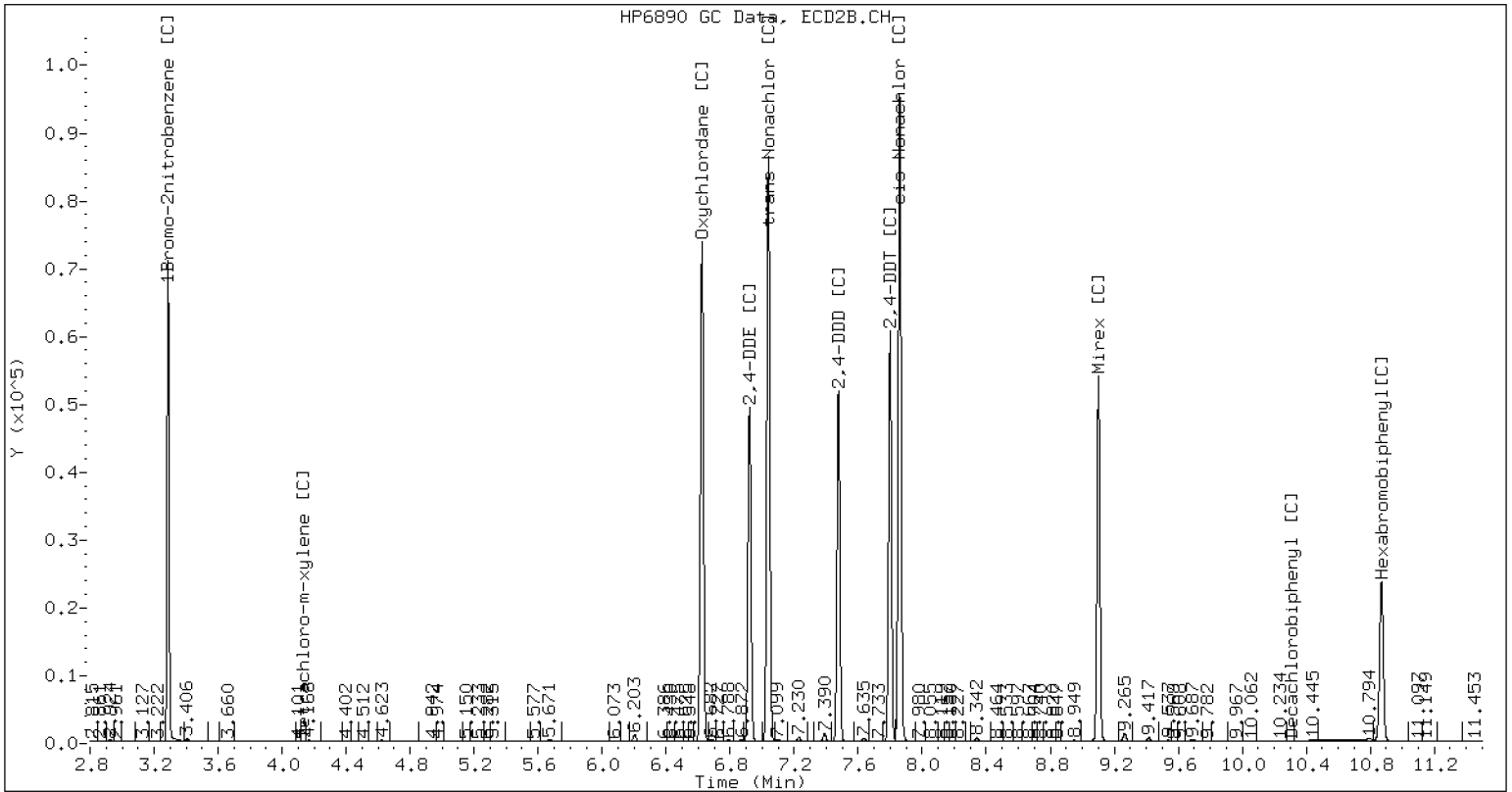
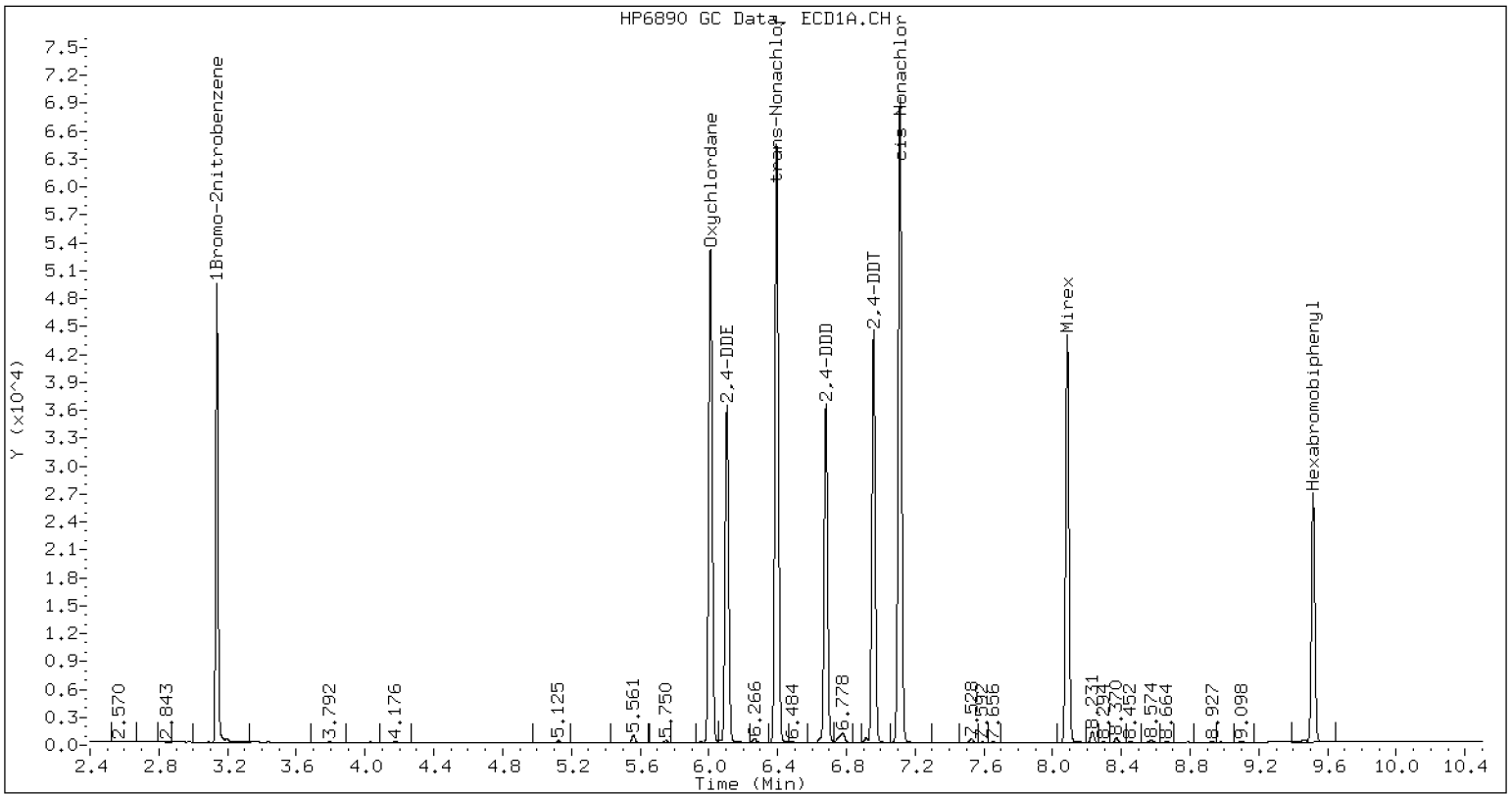
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1258546	-15.0
Hexabromobiphenyl	870561	779225	-10.5

\* Standard Areas taken from Initial Cal Level 5

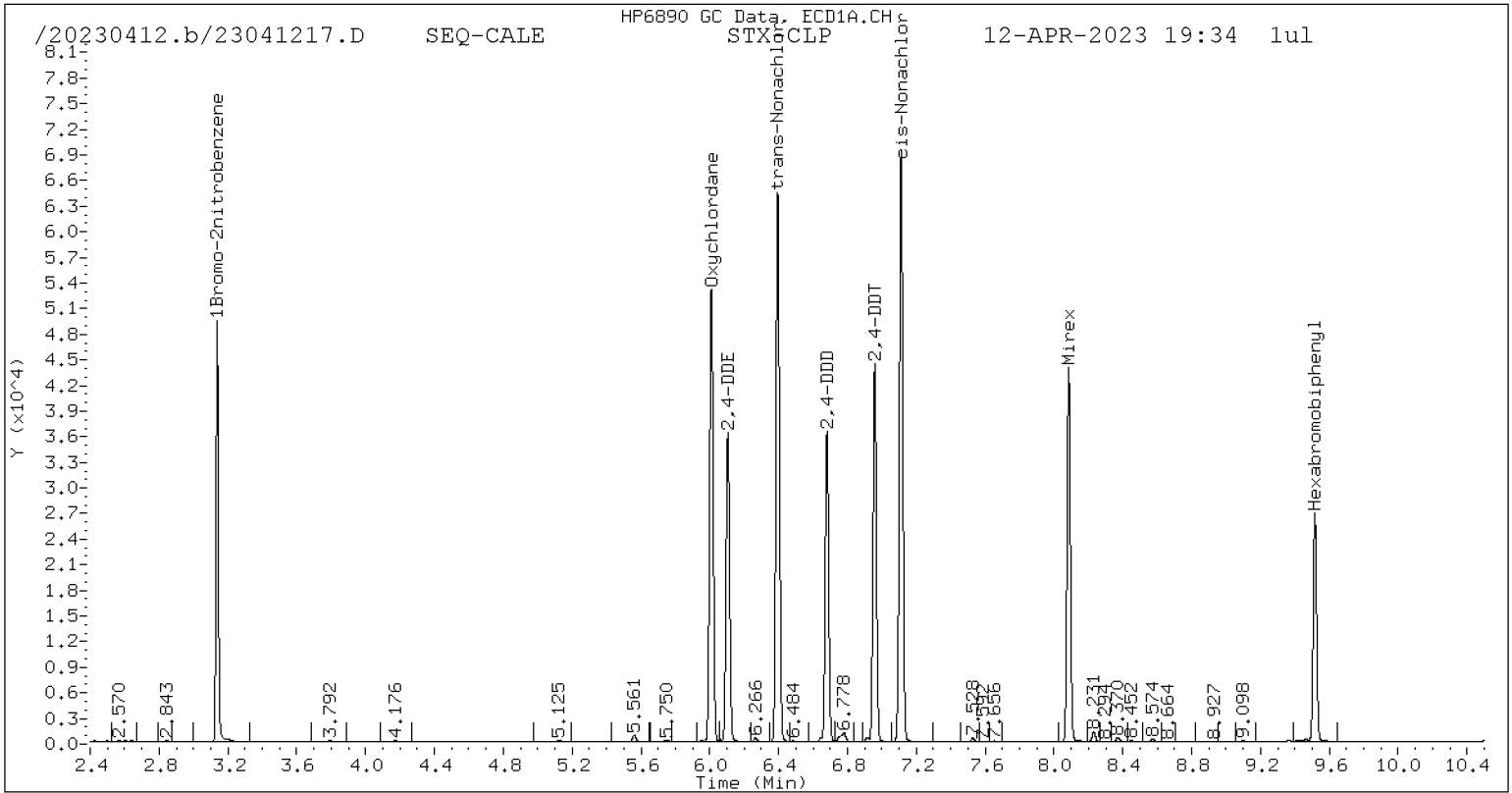
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

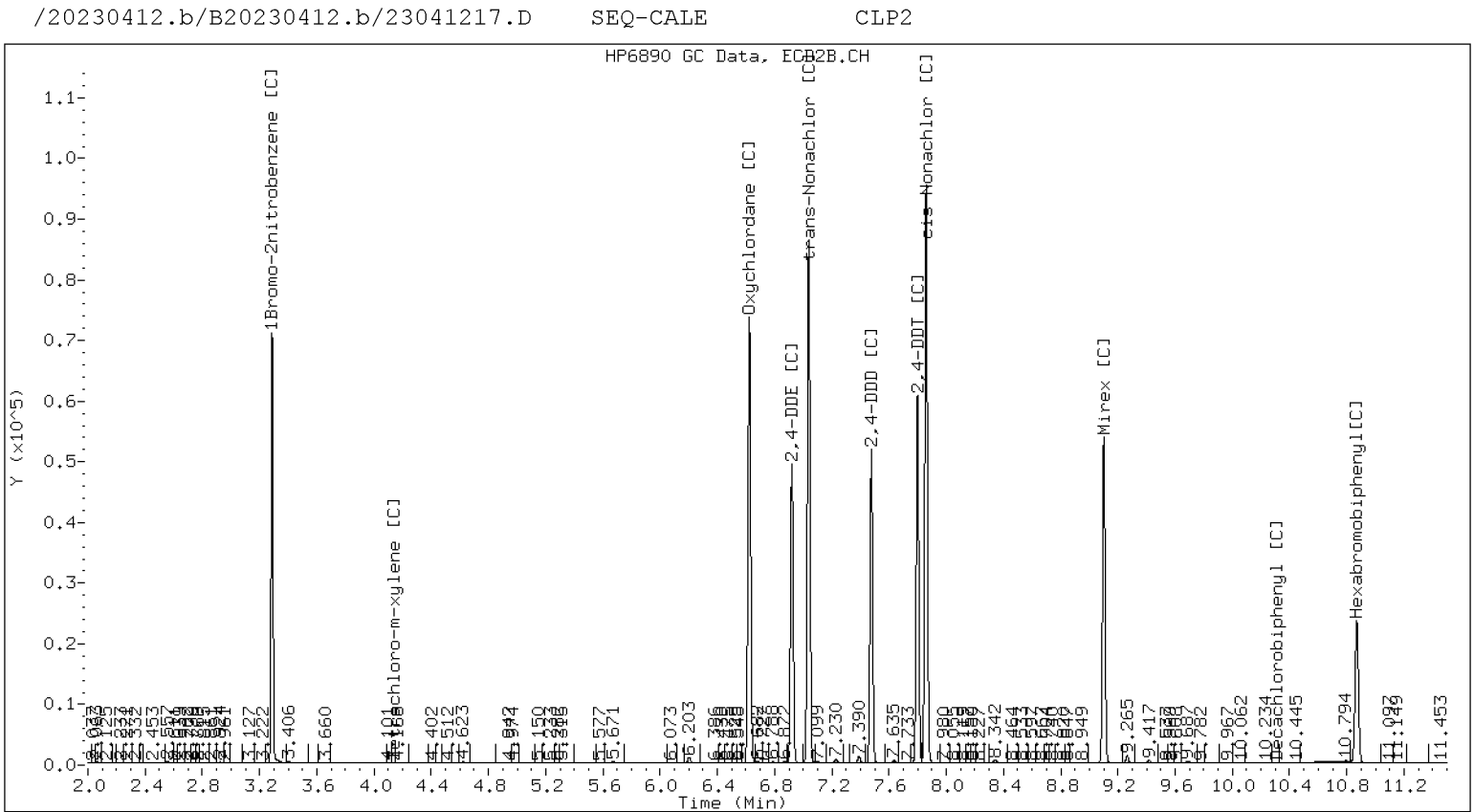




Pesticide Dual Column Chromatograms



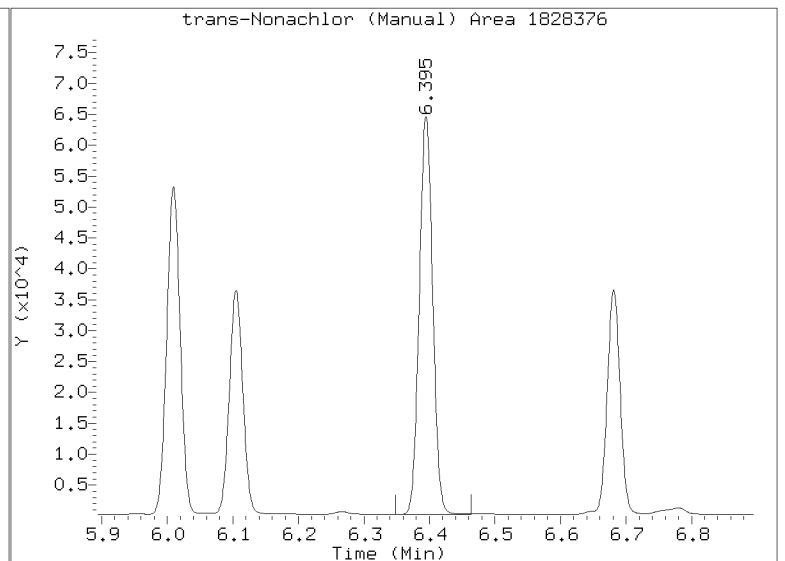
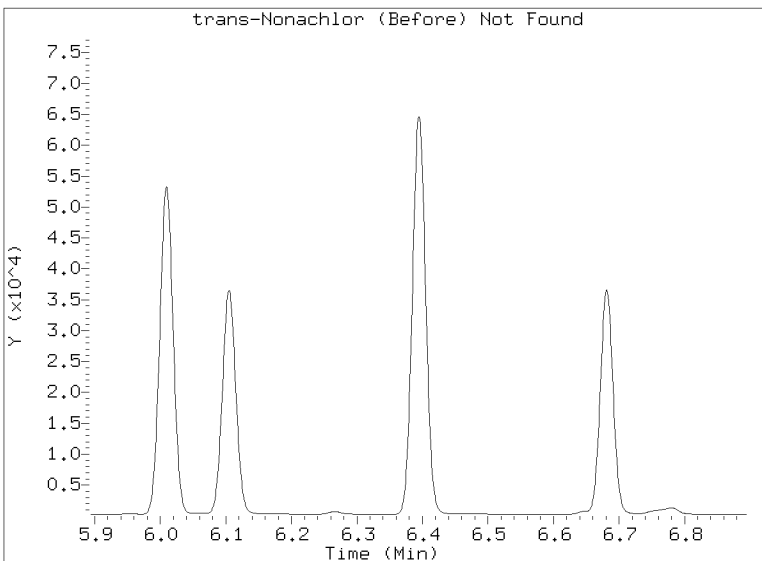
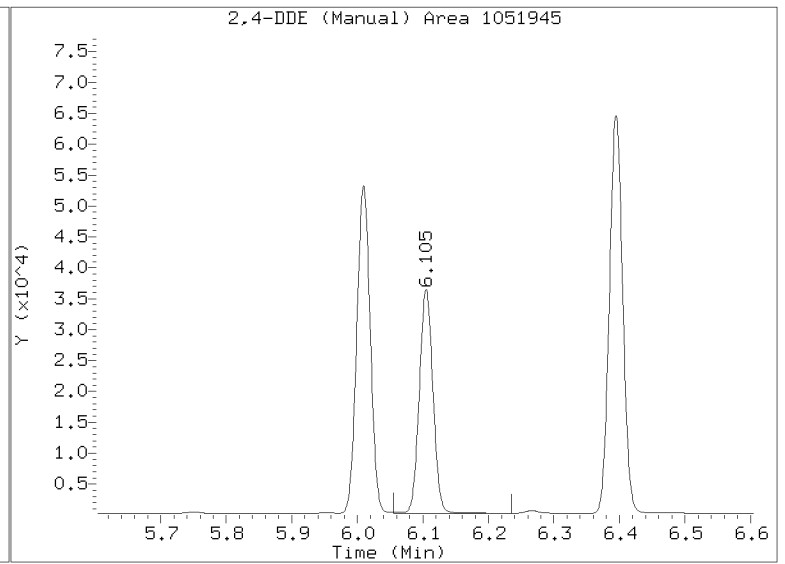
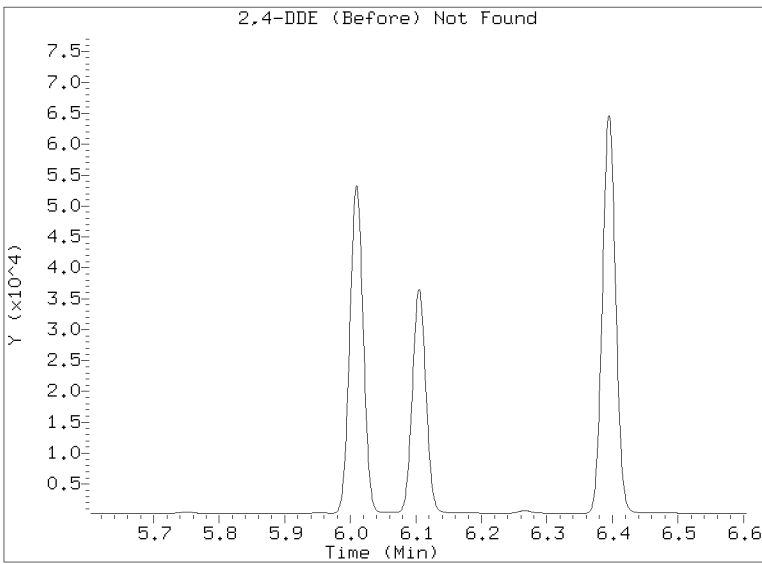
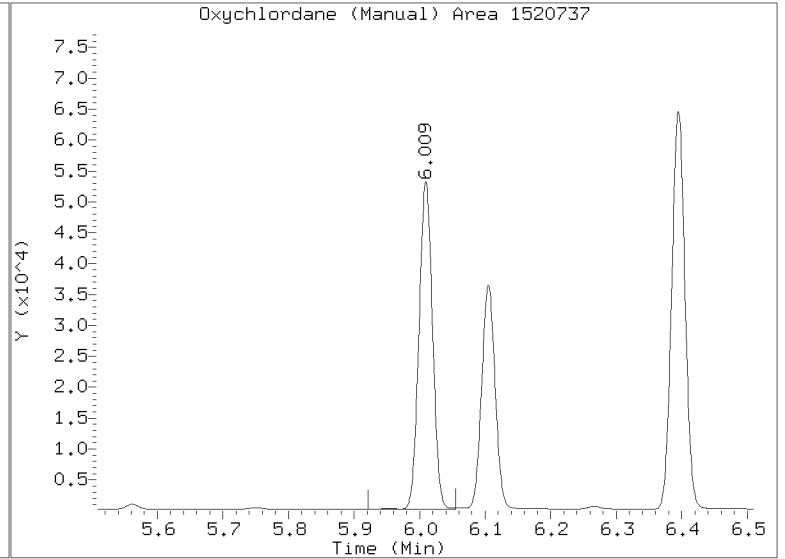
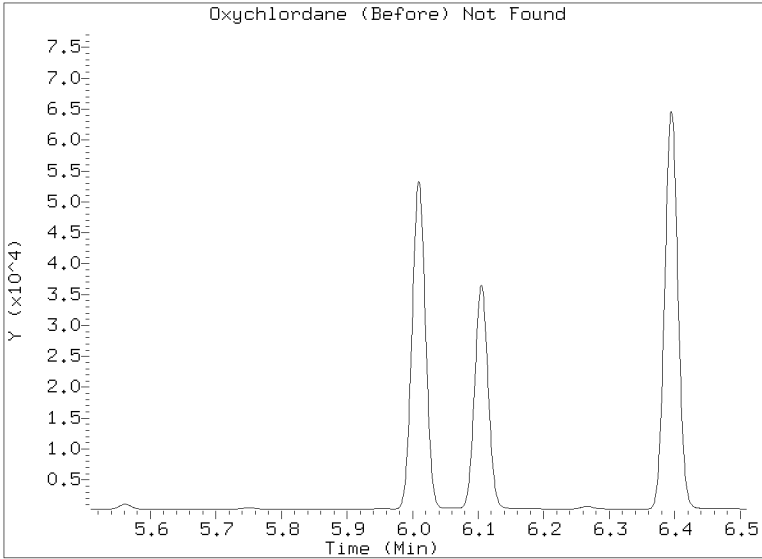
STX-CLP Manual Integration: YES



CLP-2 Manual Integration: NO

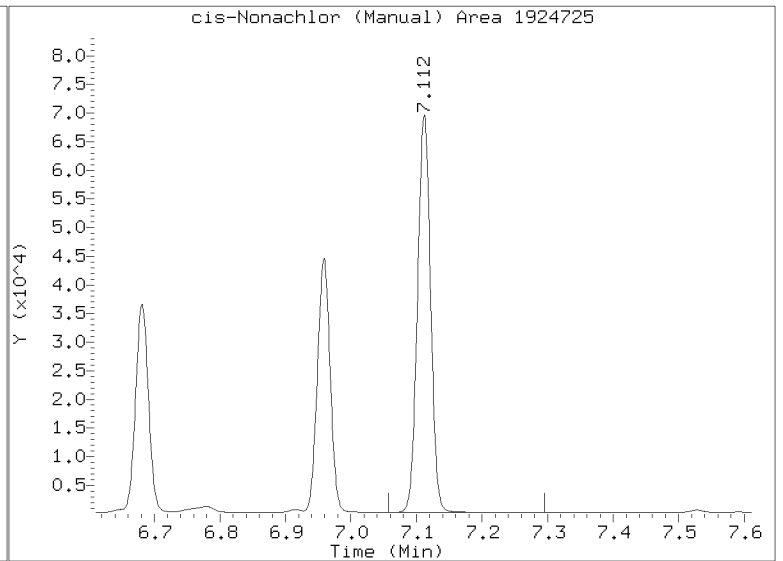
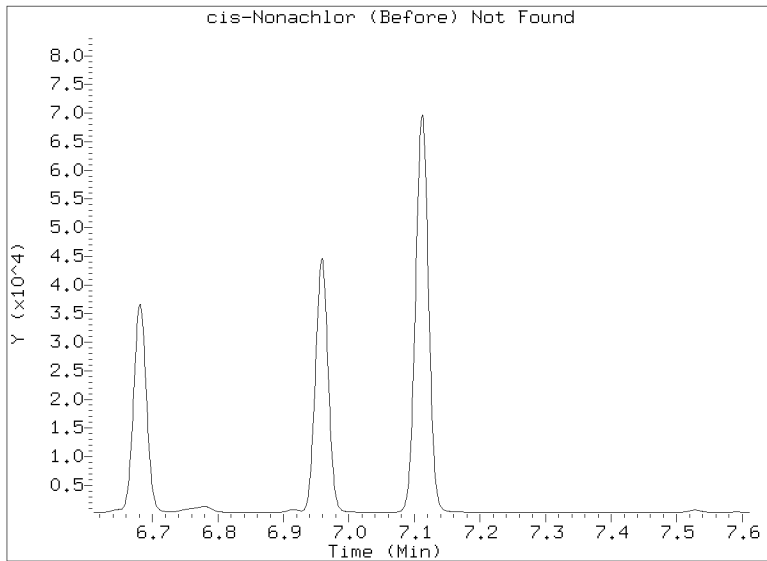
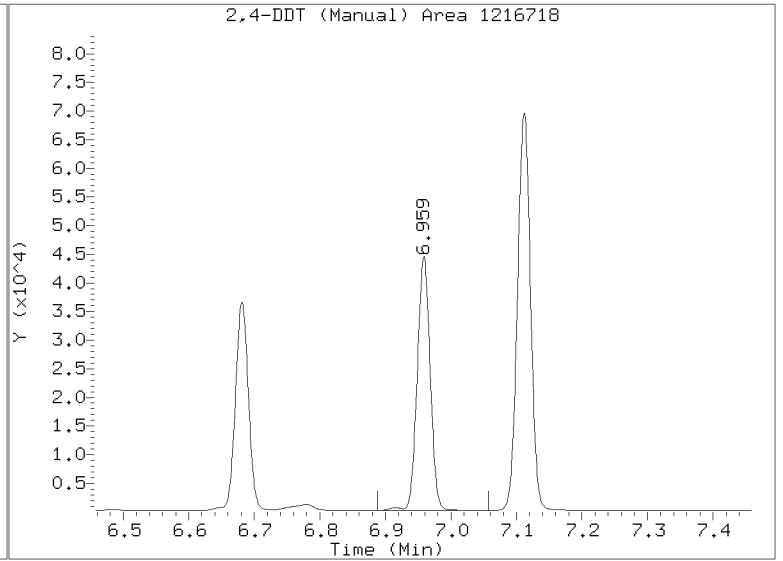
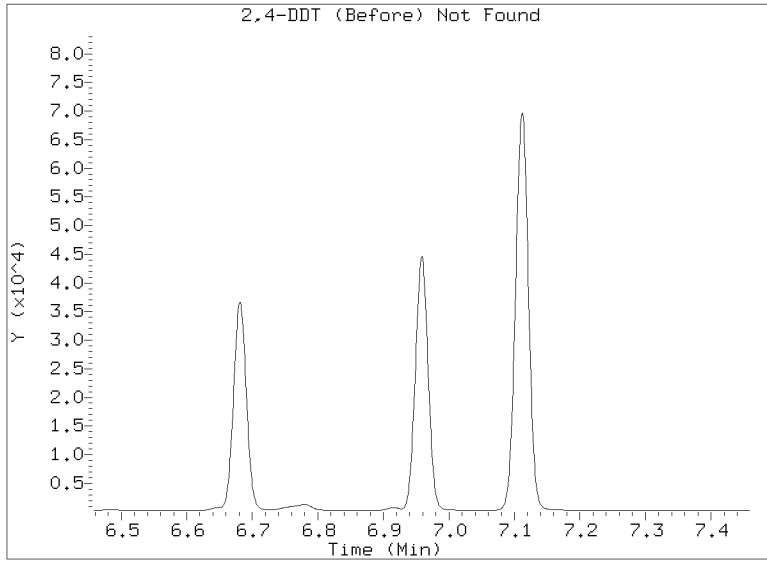
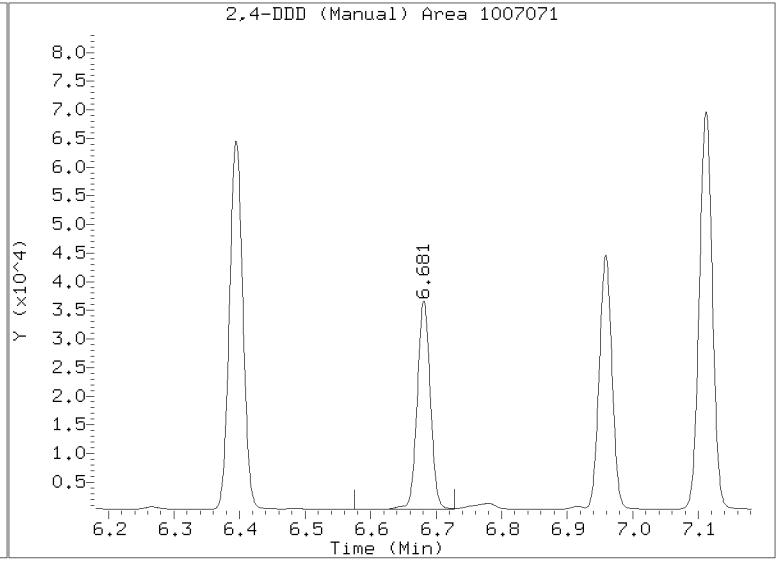
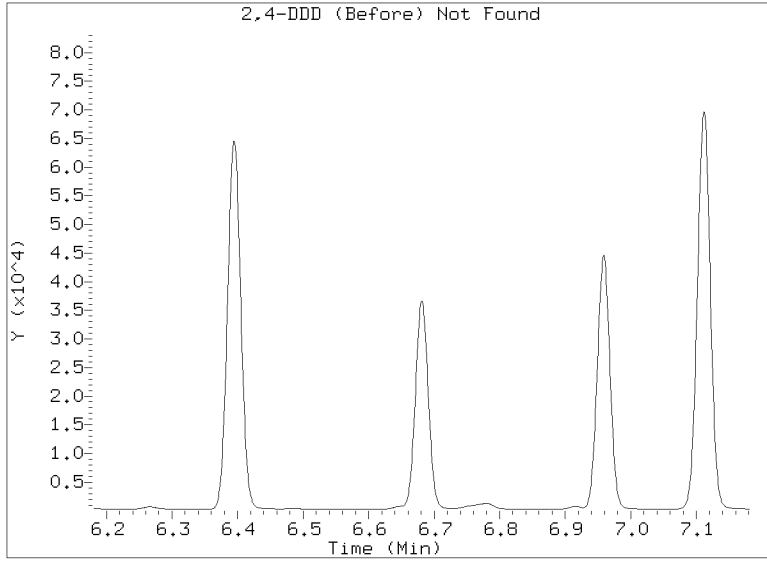
Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041217.D  
Injection Date: 12-APR-2023 19:34  
Lab ID:SEQ-CALE Client ID:  
Report Date: 04/14/2023 09:40



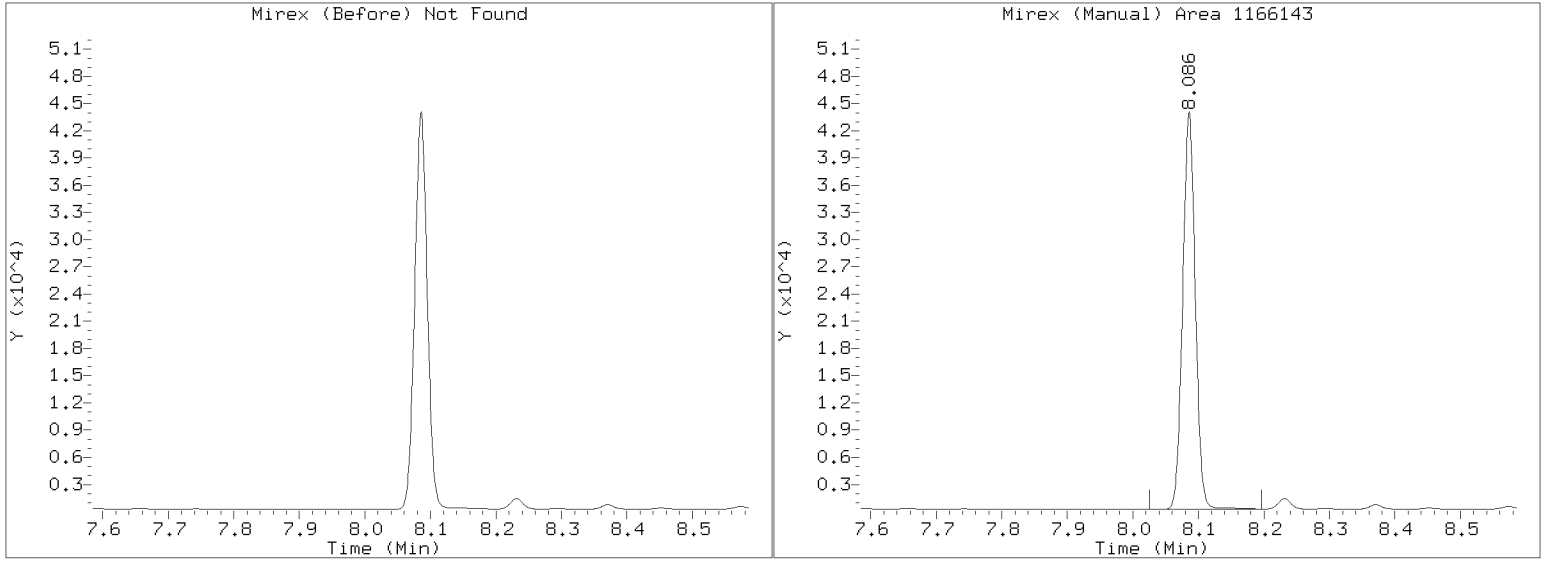
Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041217.D  
Injection Date: 12-APR-2023 19:34  
Lab ID:SEQ-CALE Client ID:  
Report Date: 04/14/2023 09:40



Manual Peak Adjustment Report, STX-CLP

Datafile: /20230412.b/23041217.D  
Injection Date: 12-APR-2023 19:34  
Lab ID:SEQ-CALE Client ID:  
Report Date: 04/14/2023 09:40

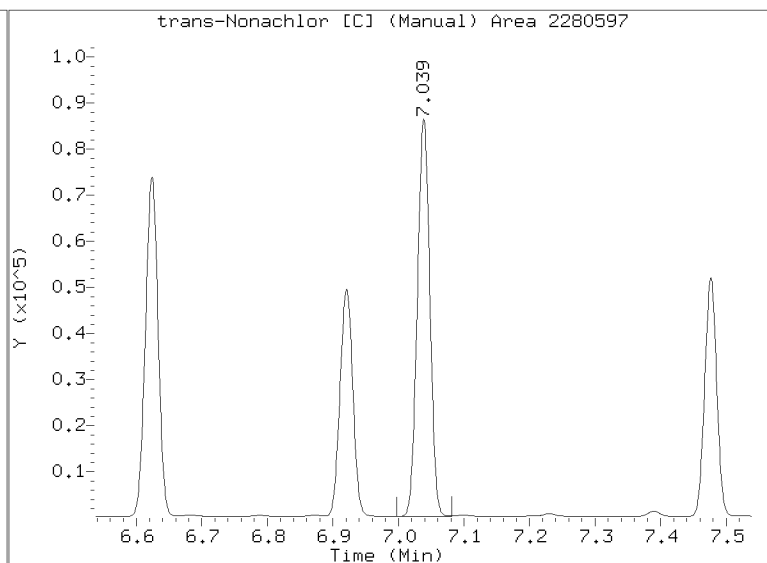
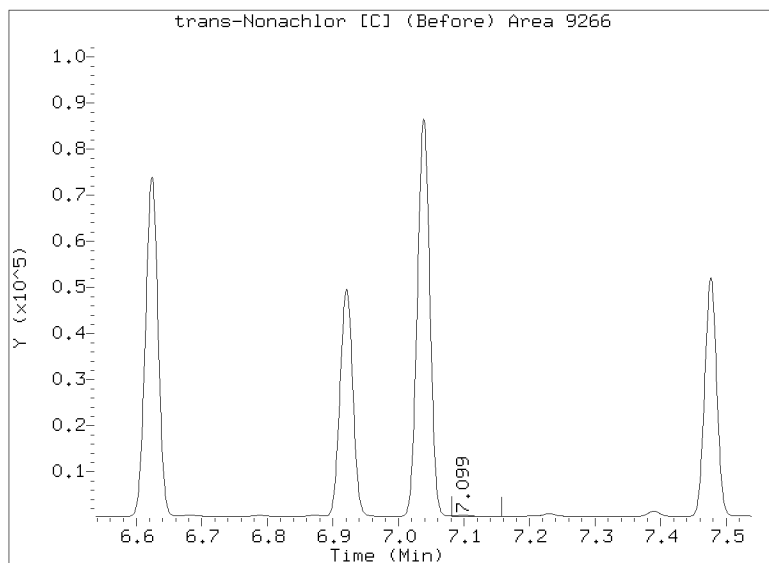
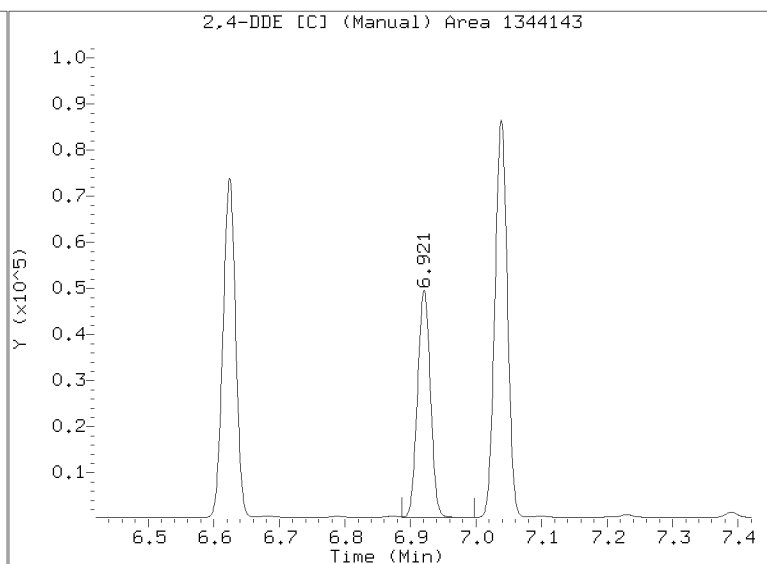
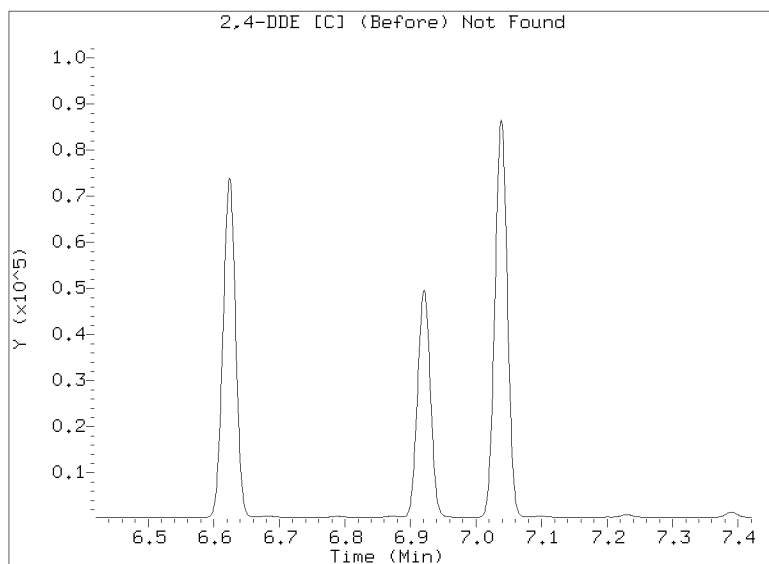
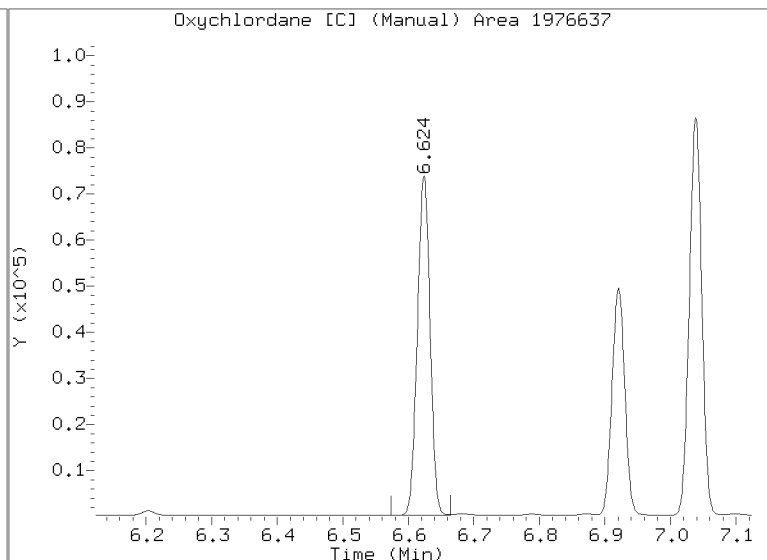
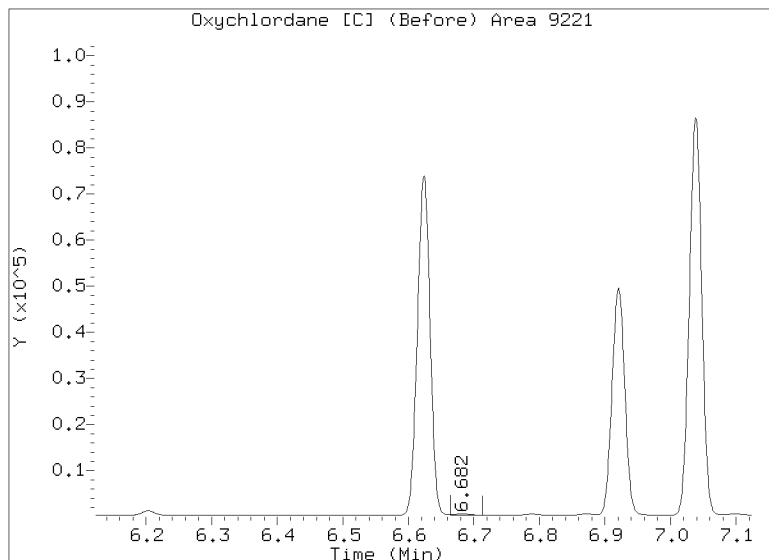


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230412.b/B20230412.b/23041217.D

Injection Date: 12-APR-2023 19:34

Lab ID:SEQ-CALE Client ID:

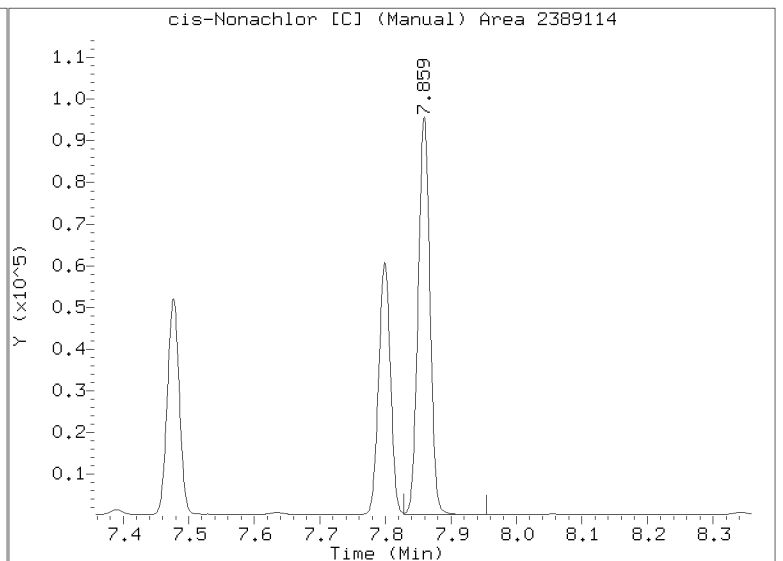
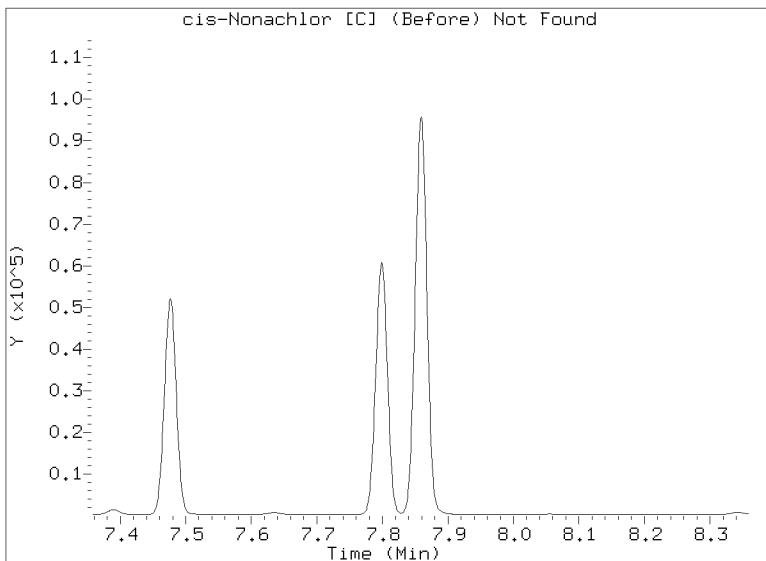
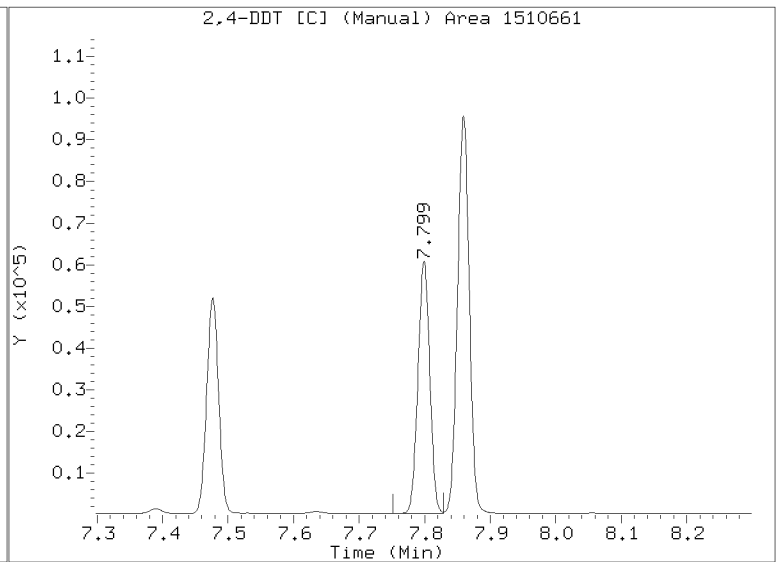
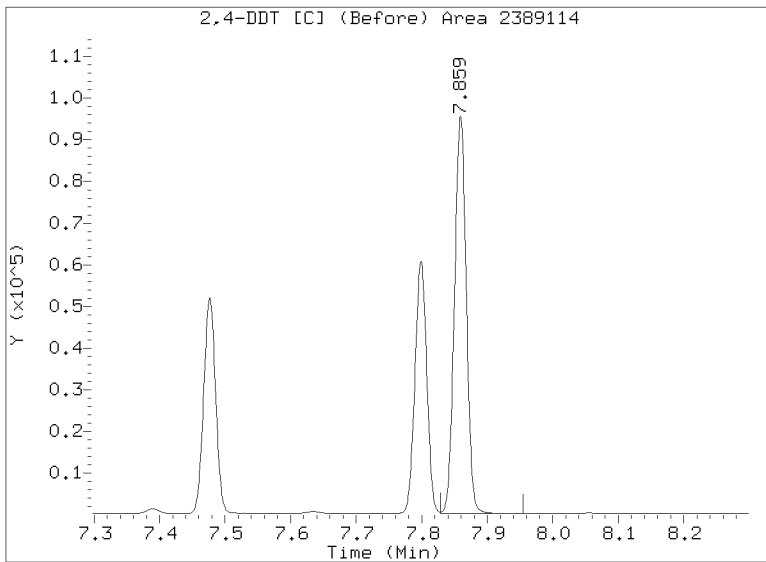
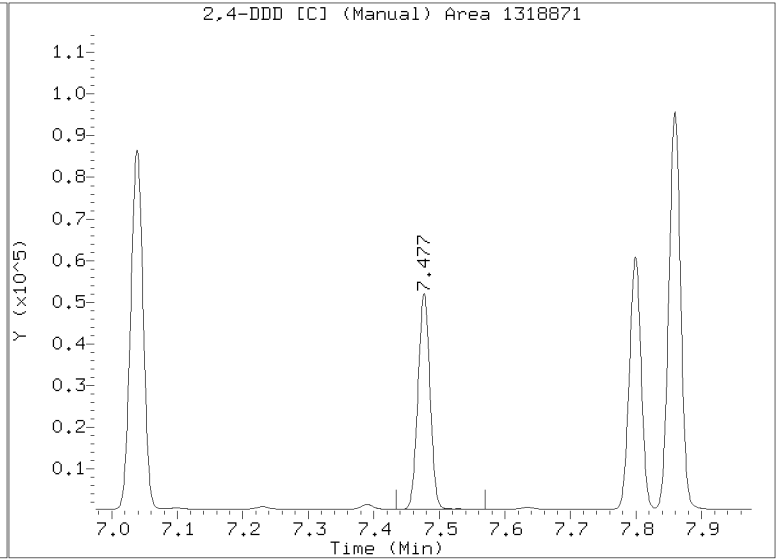
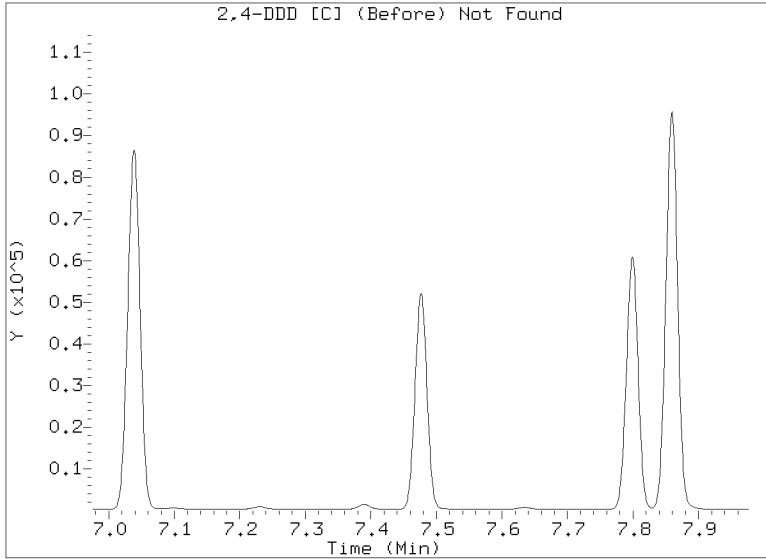


Manual Peak Adjustment Report, CLP-2

Datafile: /20230412.b/B20230412.b/23041217.D

Injection Date: 12-APR-2023 19:34

Lab ID:SEQ-CALE Client ID:

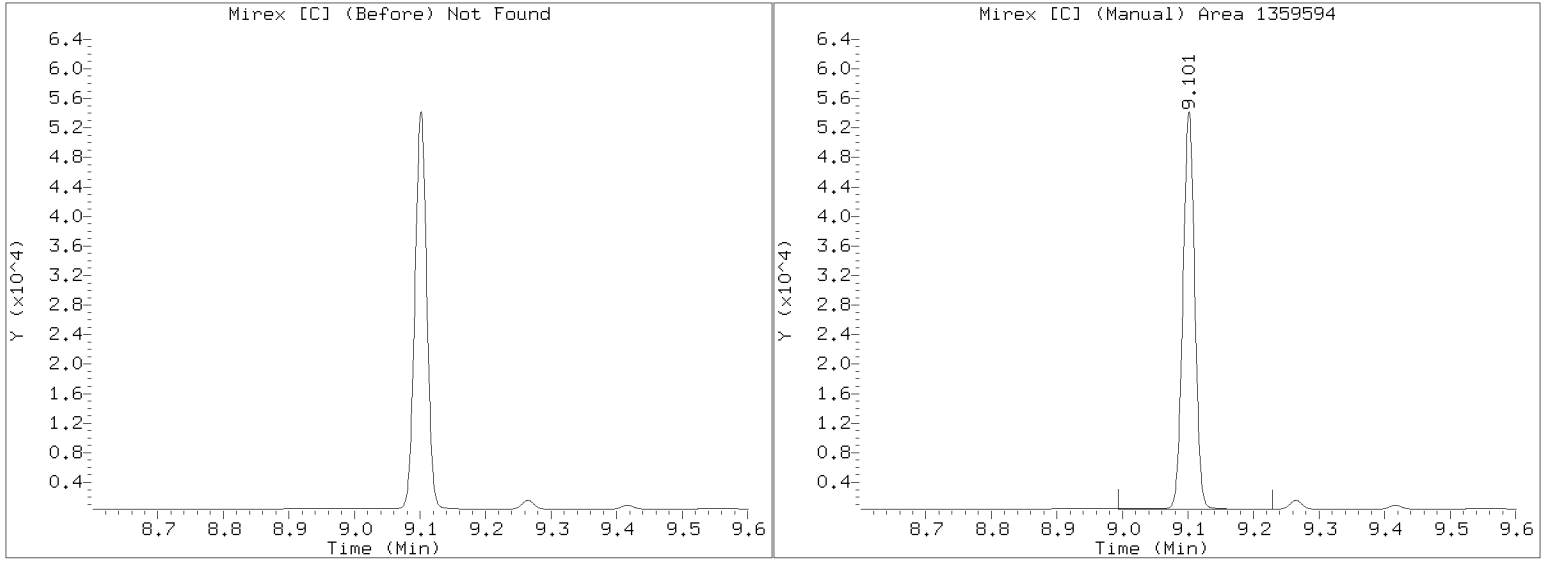


Manual Peak Adjustment Report, CLP-2

Datafile: /20230412.b/B20230412.b/23041217.D

Injection Date: 12-APR-2023 19:34

Lab ID:SEQ-CALE Client ID:





Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041218.D  
Data file 2: /20230412.b/B20230412.b/23041218.D  
Method: \20230412.b\PEST.m  
Compound Sublist: TOXAPH.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALF  
Client ID:  
Injection Date: 12-APR-2023 19:52  
Report Date: 04/13/2023 13:06  
Units: ng/mL  
Dilution Factor: 1.000

STX-CLP Col			CLP2 Col			STX-CLP	CLP2	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.820	0.001	13904	4.136	0.000	18748	1.09	1.07	1.1	Tetrachloro-m-xylene
9.367	0.001	24477	10.306	-0.000	31773	2.82	3.41	19.2	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

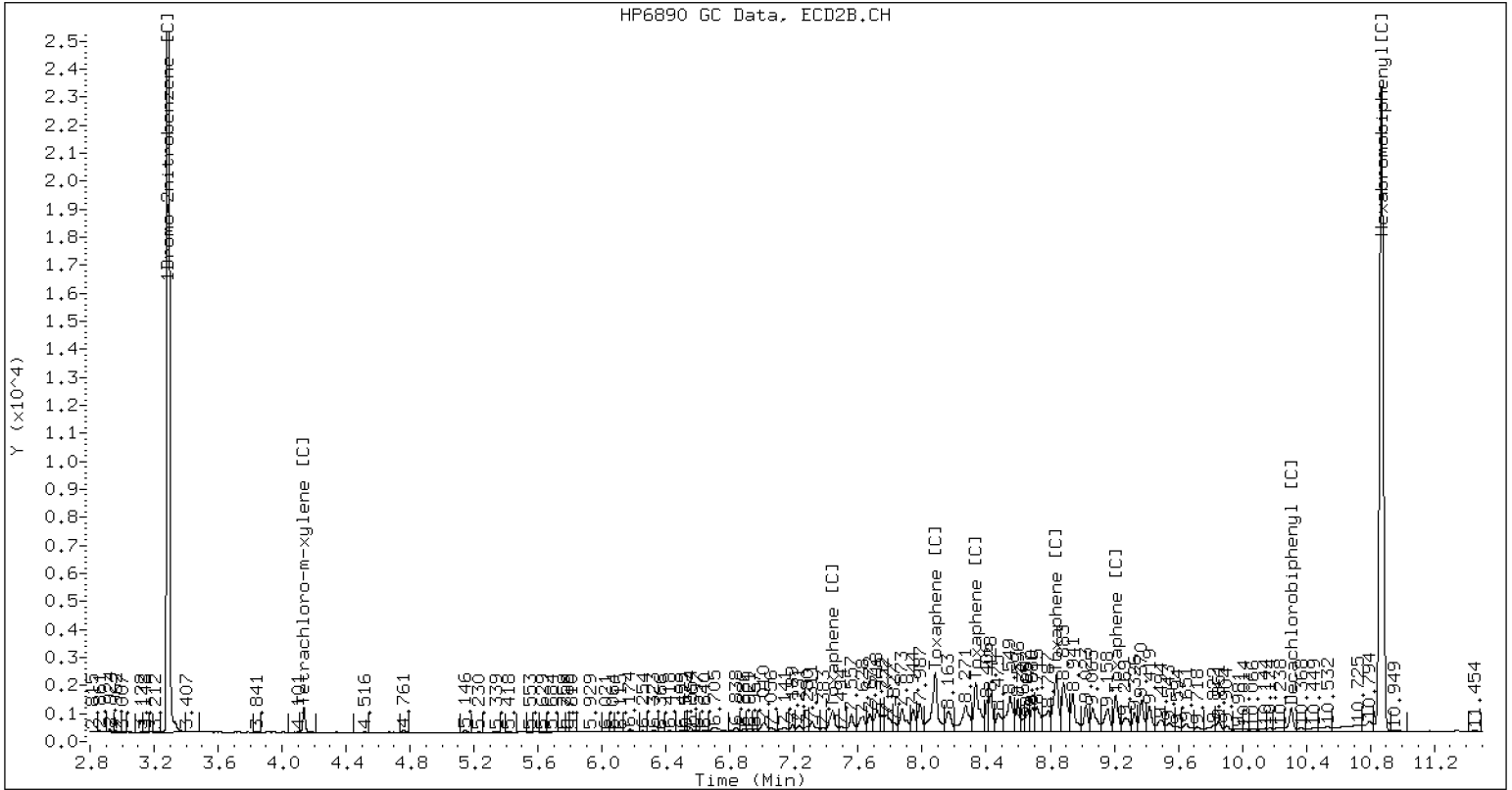
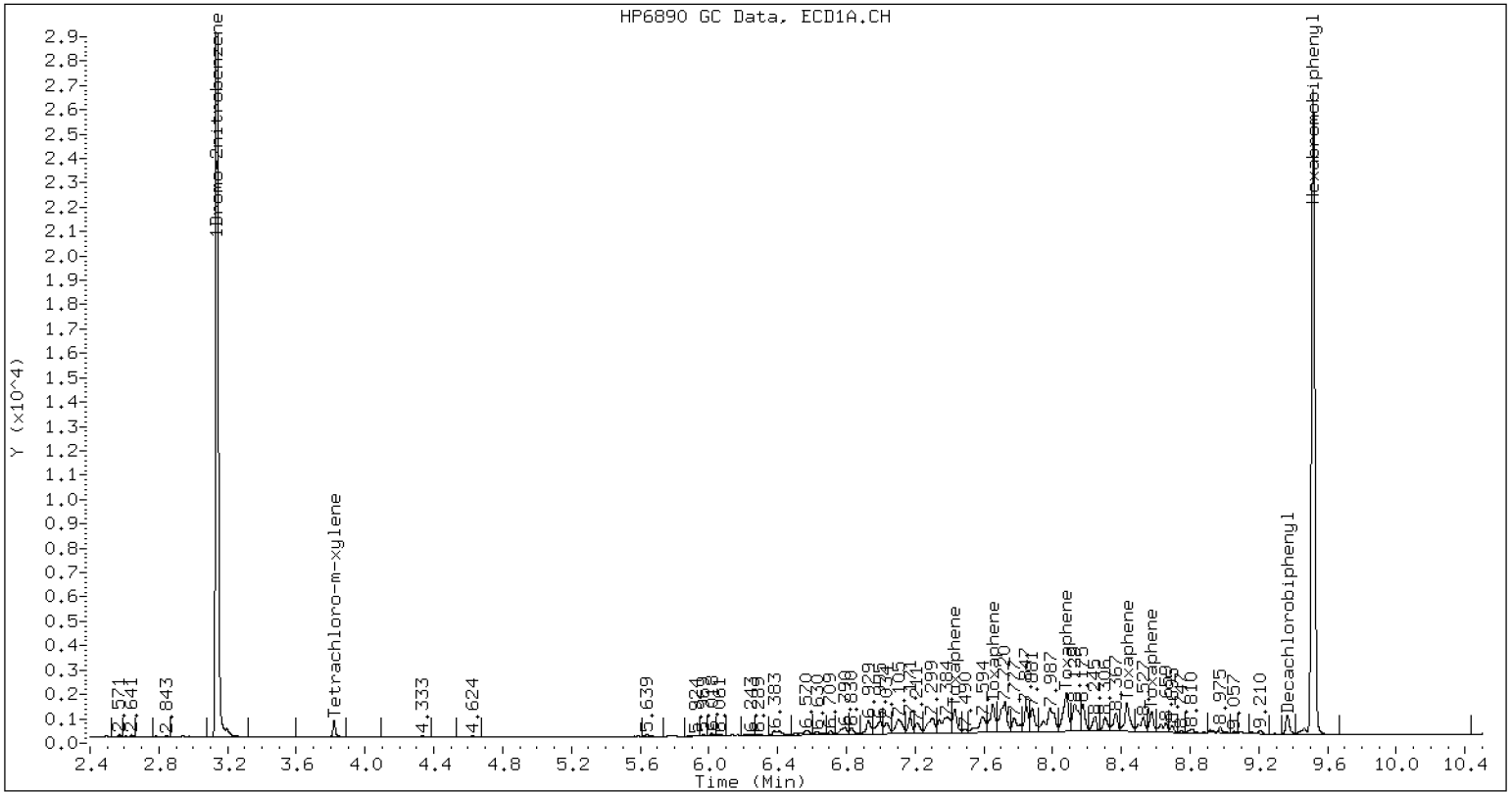
INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	914711	5.8
Hexabromobiphenyl	663237	736746	11.1

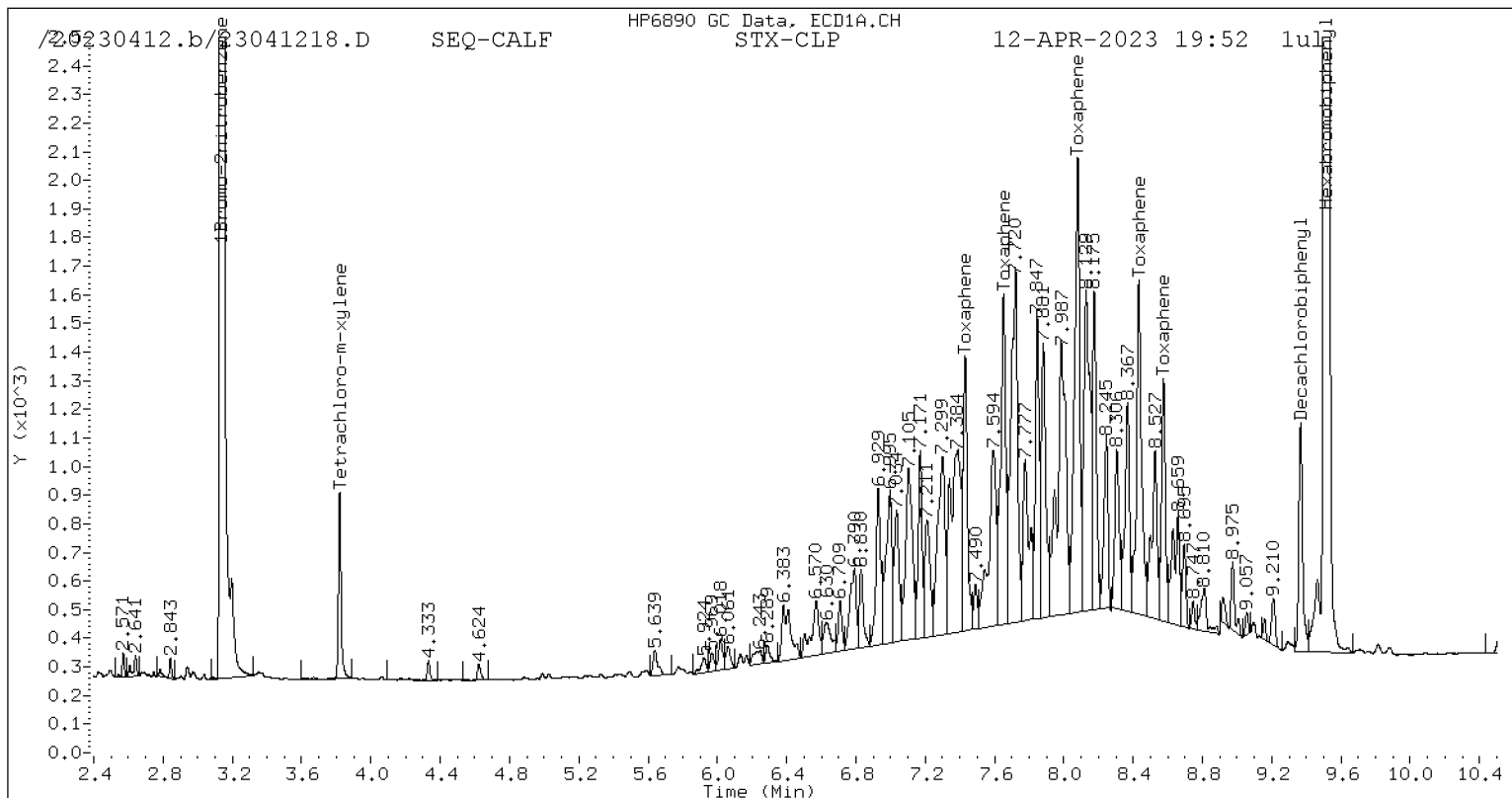
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1268733	-14.3
Hexabromobiphenyl	870561	770830	-11.5

\* Standard Areas taken from Initial Cal Level 5  
 Initial Calibration Date: 12-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

Cpnd	Peak#	RT	STX-CLP Col			Peak#	RT	CLP2 Col				
			Shift	Height	Amount			Shift	Height	Amount		
Toxaphene	1	7.430	-0.000	34115	125.1	1	7.440	0.000	35652	143.7		
Toxaphene	2	7.652	-0.001	48770	133.6	2	8.082	-0.001	107411	146.6		
Toxaphene	3	8.080	0.000	67485	135.6	3	8.335	-0.001	81808	143.0		
Toxaphene	4	8.433	0.000	48028	122.4	4	8.838	-0.001	87639	142.7		
Toxaphene	5	8.575	-0.000	27697	117.3	5	9.209	-0.001	46750	139.0		
Total STX-CLPAve (5 peaks):					126.820	Total CLP2Ave (5 peaks):					142.998	RPD = 12
Corrected Ave (5 peaks):					126.820	Corrected Ave (5 peaks):					142.998	RPD = 12

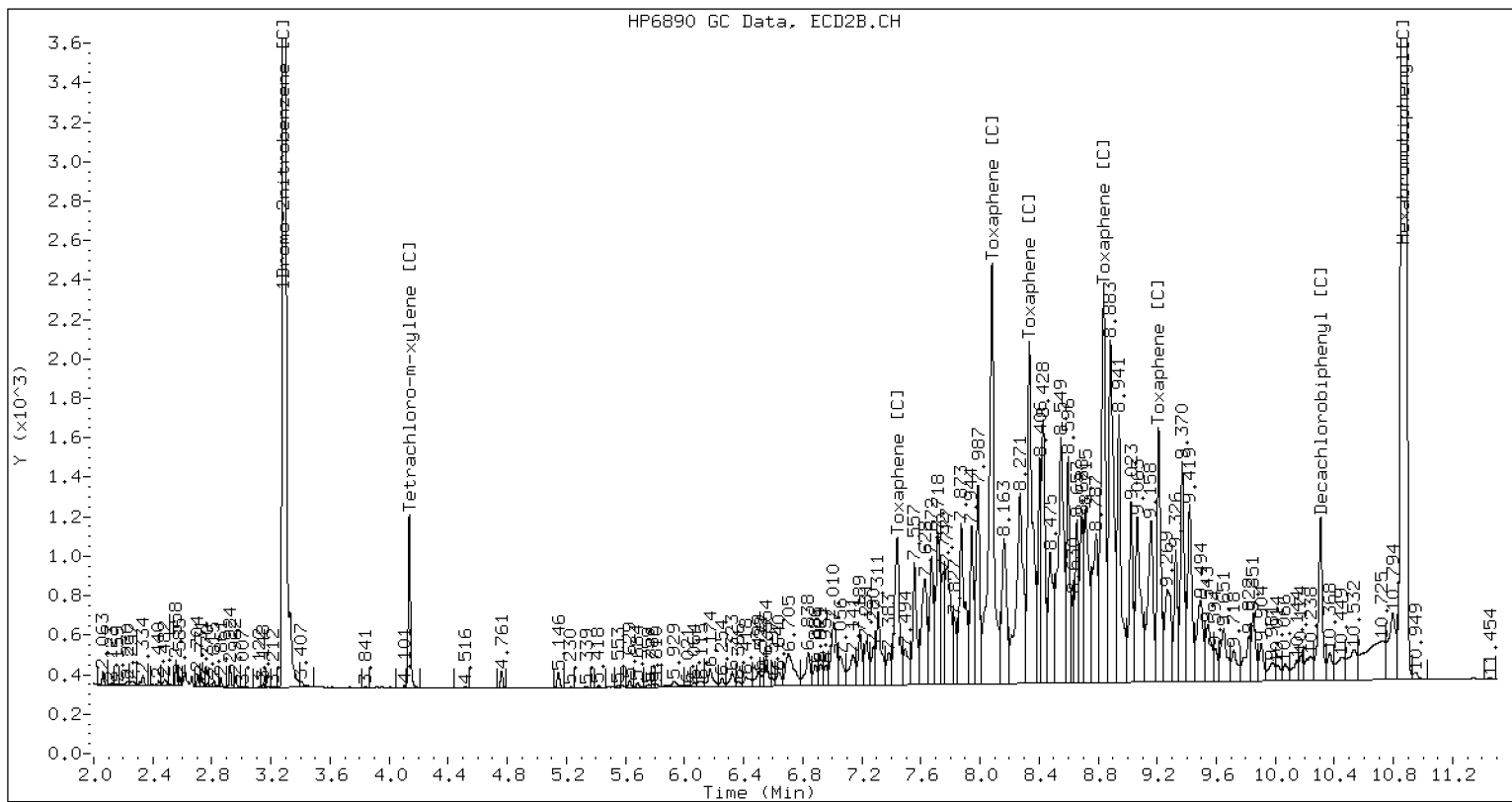


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041218.D SEQ-CALF CLP2



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041219.D  
Data file 2: /20230412.b/B20230412.b/23041219.D  
Method: \20230412.b\PEST.m  
Compound Sublist: TOXAPH.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALG  
Client ID:  
Injection Date: 12-APR-2023 20:10  
Report Date: 04/13/2023 13:06  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
3.820	0.001 27648	4.136 0.000 36736	4.136	2.17	2.11	2.6	Tetrachloro-m-xylene
9.367	0.001 43538	10.306 -0.000 56135	10.306	5.17	6.10	16.5	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

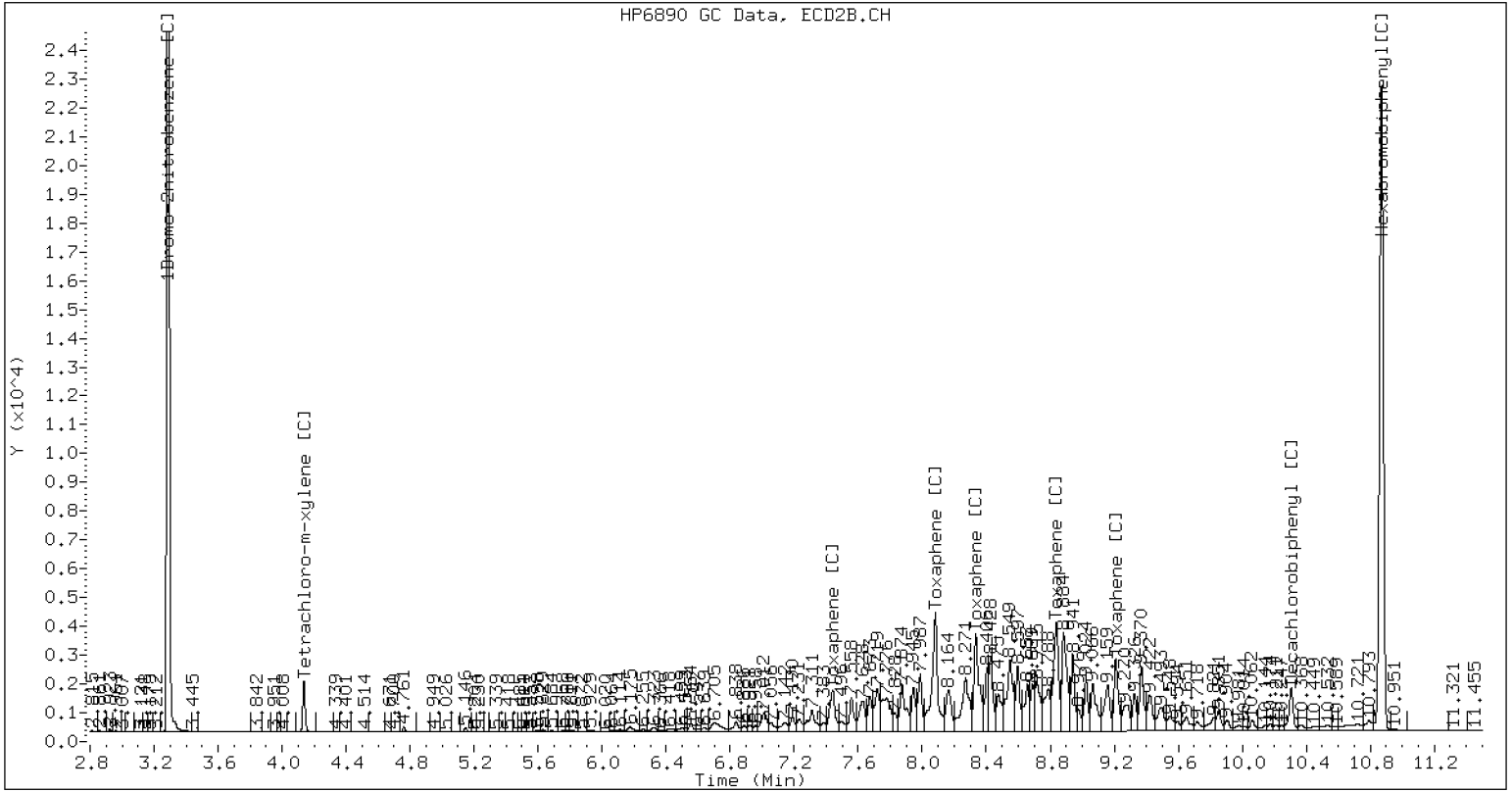
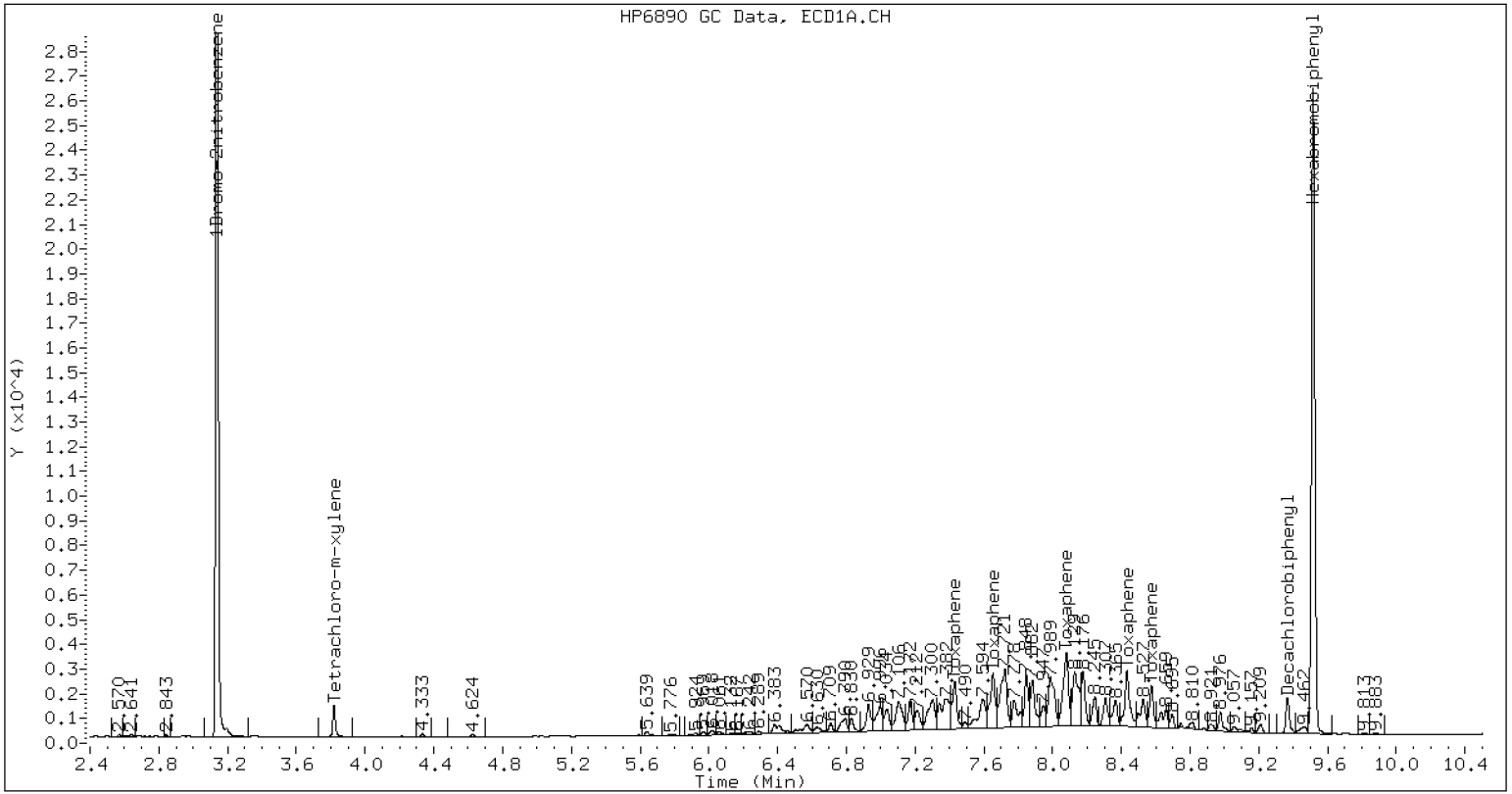
INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	911122	5.4
Hexabromobiphenyl	663237	714377	7.7

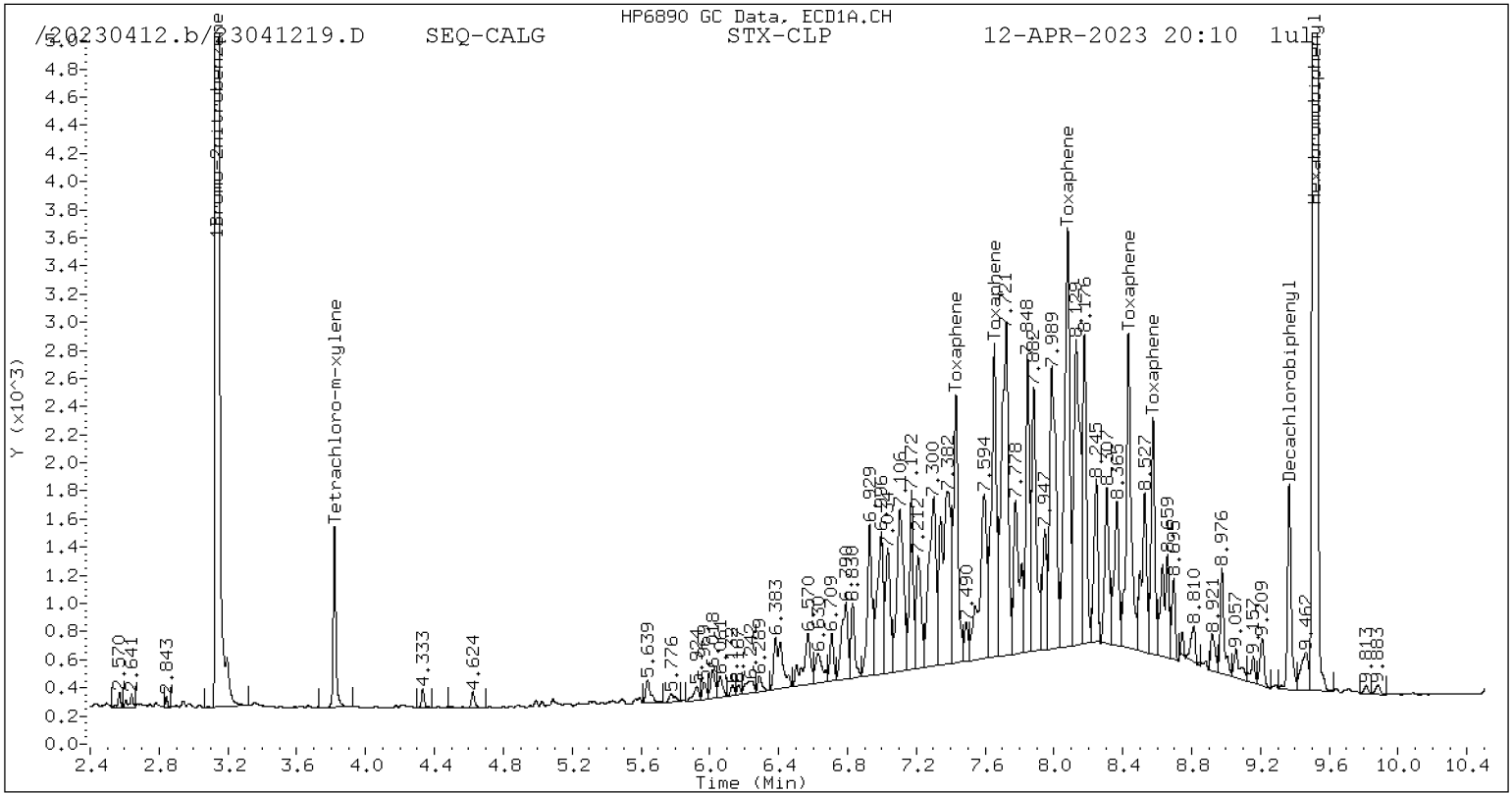
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1263997	-14.6
Hexabromobiphenyl	870561	762676	-12.4

\* Standard Areas taken from Initial Cal Level 5  
 Initial Calibration Date: 12-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

Cpnd	Peak#	RT	STX-CLP Col			Peak#	RT	CLP2 Col			Amount	
			Shift	Height	Amount			Shift	Height	Amount		
Toxaphene	1	7.430	0.000	72029	272.5	1	7.440	0.000	69042	281.2		
Toxaphene	2	7.653	0.000	94737	267.7	2	8.082	-0.001	206105	284.4		
Toxaphene	3	8.079	0.000	129282	268.0	3	8.335	-0.001	158407	279.9		
Toxaphene	4	8.433	0.000	90301	237.4	4	8.838	-0.001	170052	279.8		
Toxaphene	5	8.575	0.000	53948	235.5	5	9.209	-0.001	91320	274.3		
Total STX-CLPAve (5 peaks):					256.226	Total CLP2Ave (5 peaks):					279.934	RPD = 9
Corrected Ave (5 peaks):					256.226	Corrected Ave (5 peaks):					279.934	RPD = 9

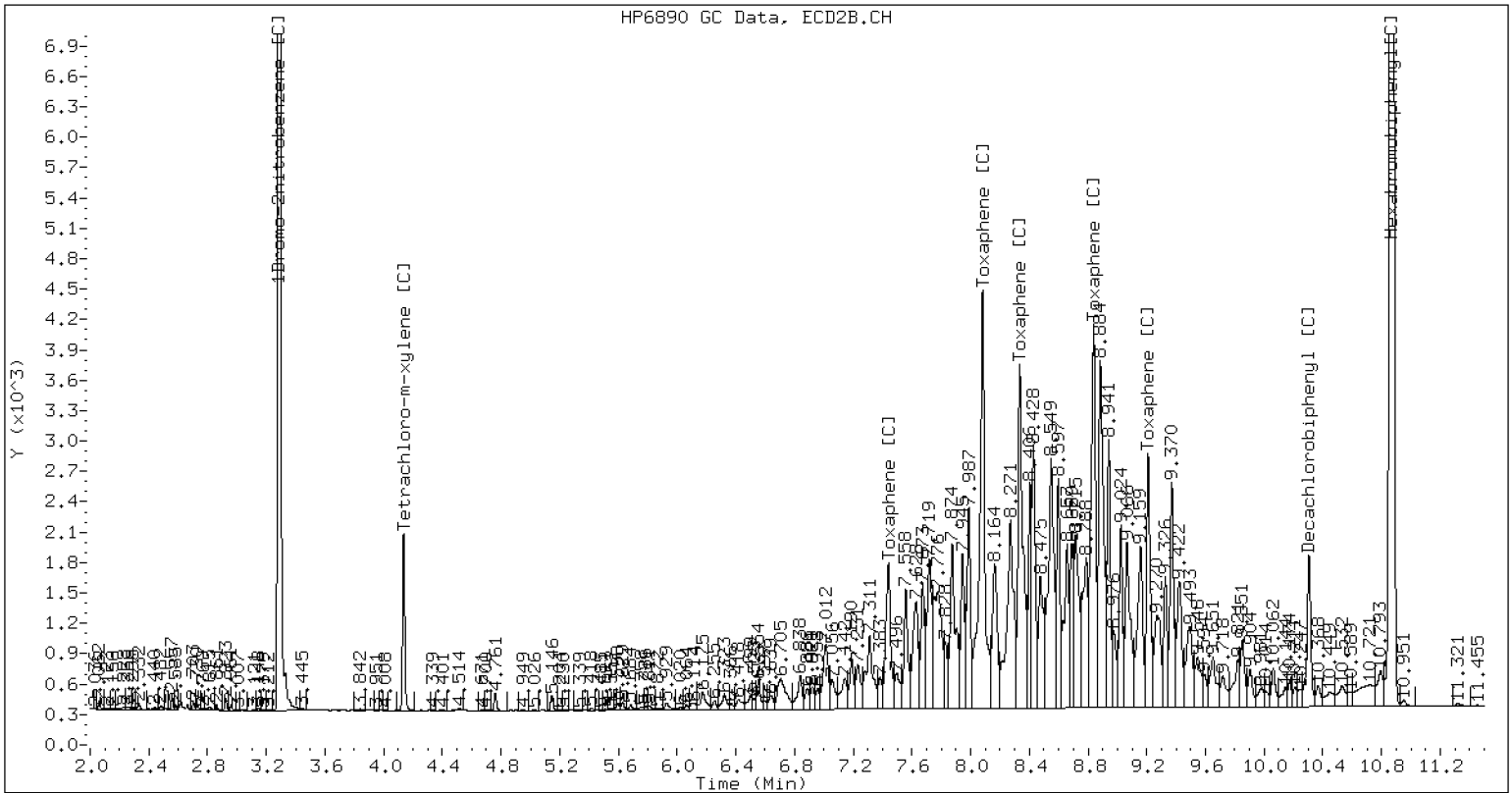


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041219.D SEQ-CALG CLP2



CLP-2 Manual Integration: NO



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041220.D  
Data file 2: /20230412.b/B20230412.b/23041220.D  
Method: \20230412.b\PEST.m  
Compound Sublist: TOXAPH.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALH  
Client ID:  
Injection Date: 12-APR-2023 20:29  
Report Date: 04/13/2023 13:06  
Units: ng/mL  
Dilution Factor: 1.000

STX-CLP Col			CLP2 Col			STX-CLP	CLP2	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.819	0.000	54190	4.136	-0.000	72947	4.30	4.19	2.4	Tetrachloro-m-xylene
9.367	0.001	84057	10.306	-0.000	112592	9.95	12.27	20.8	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	864333	901082	4.3
Hexabromobiphenyl	663237	716024	8.0

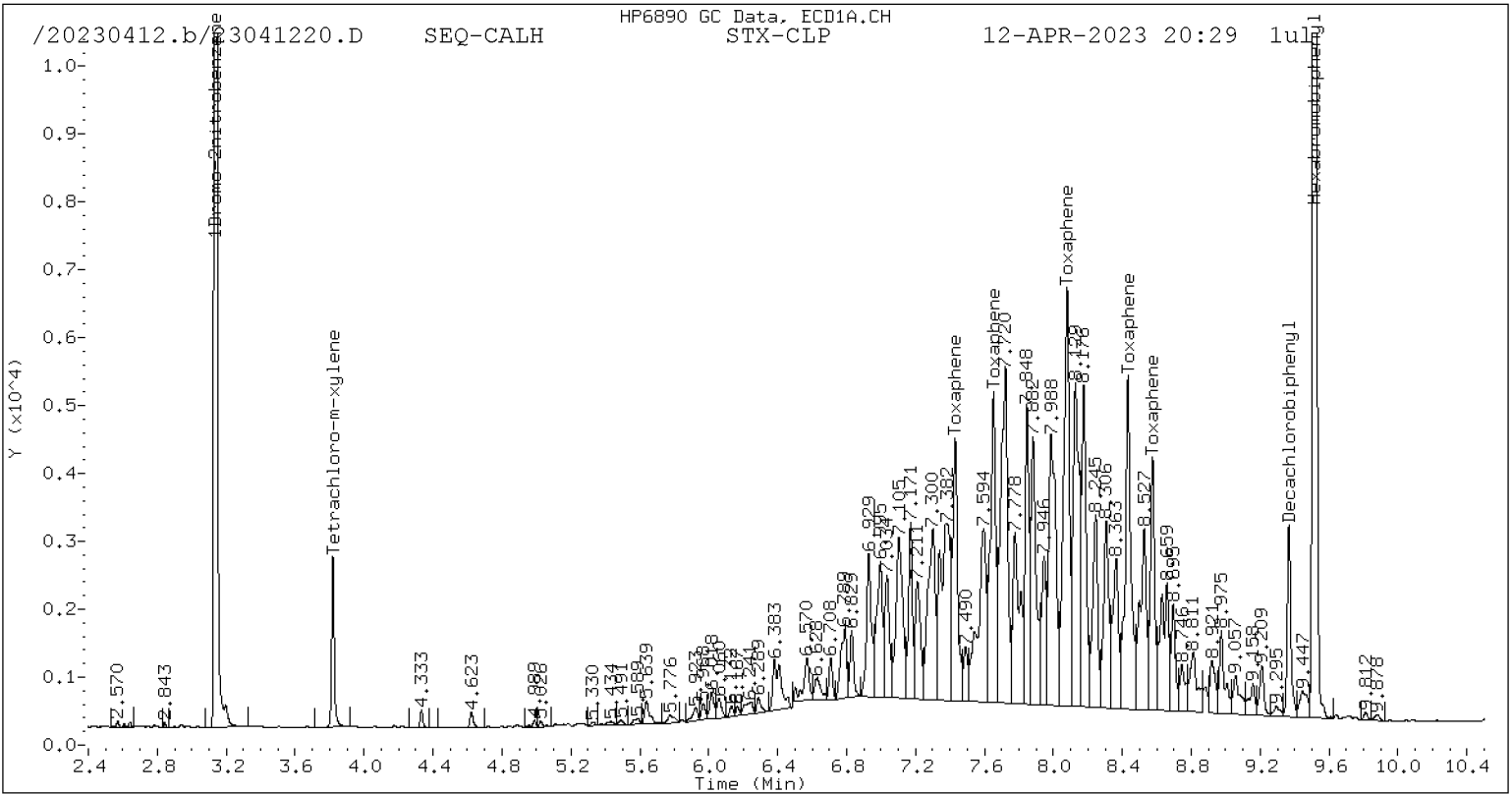
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1480846	1264745	-14.6
Hexabromobiphenyl	870561	760374	-12.7

\* Standard Areas taken from Initial Cal Level 5  
 Initial Calibration Date: 12-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

Cpnd	Peak#	RT	STX-CLP Col			Peak#	RT	CLP2 Col				
			Shift	Height	Amount			Shift	Height	Amount		
Toxaphene	1	7.430	0.000	157592	594.8	1	7.440	-0.000	136366	557.1		
Toxaphene	2	7.652	-0.001	205637	579.8	2	8.082	-0.001	403294	558.1		
Toxaphene	3	8.079	-0.000	290301	600.3	3	8.334	-0.002	313799	556.2		
Toxaphene	4	8.433	-0.000	226845	595.0	4	8.838	-0.001	331417	547.0		
Toxaphene	5	8.575	-0.000	137082	597.1	5	9.209	-0.001	180073	542.6		
Total STX-CLPAve (5 peaks):					593.415	Total CLP2Ave (5 peaks):					552.208	RPD = 7
Corrected Ave (5 peaks):					593.415	Corrected Ave (5 peaks):					552.208	RPD = 7

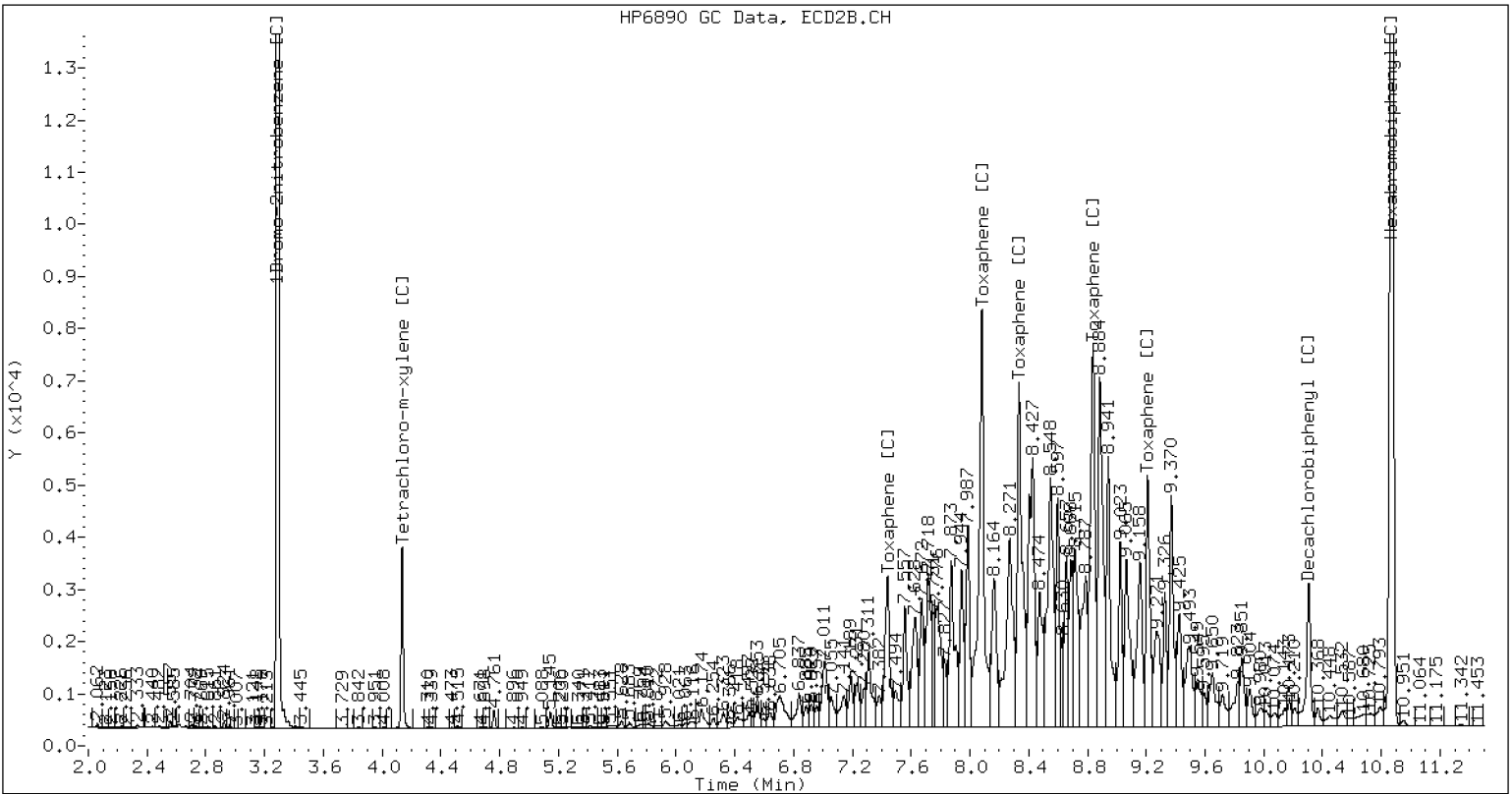


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041220.D SEQ-CALH CLP2



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041221.D  
Data file 2: /20230412.b/B20230412.b/23041221.D  
Method: \20230412.b\PEST.m  
Compound Sublist: TOXAPH.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALI  
Client ID:  
Injection Date: 12-APR-2023 20:47  
Report Date: 04/13/2023 13:06  
Units: ng/mL  
Dilution Factor: 1.000

STX-CLP Col			CLP2 Col			STX-CLP	CLP2	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.819	0.000	105882	4.136	-0.000	143630	8.24	8.18	0.8	Tetrachloro-m-xylene
9.367	0.001	153784	10.306	0.000	209053	17.55	21.94	22.3	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

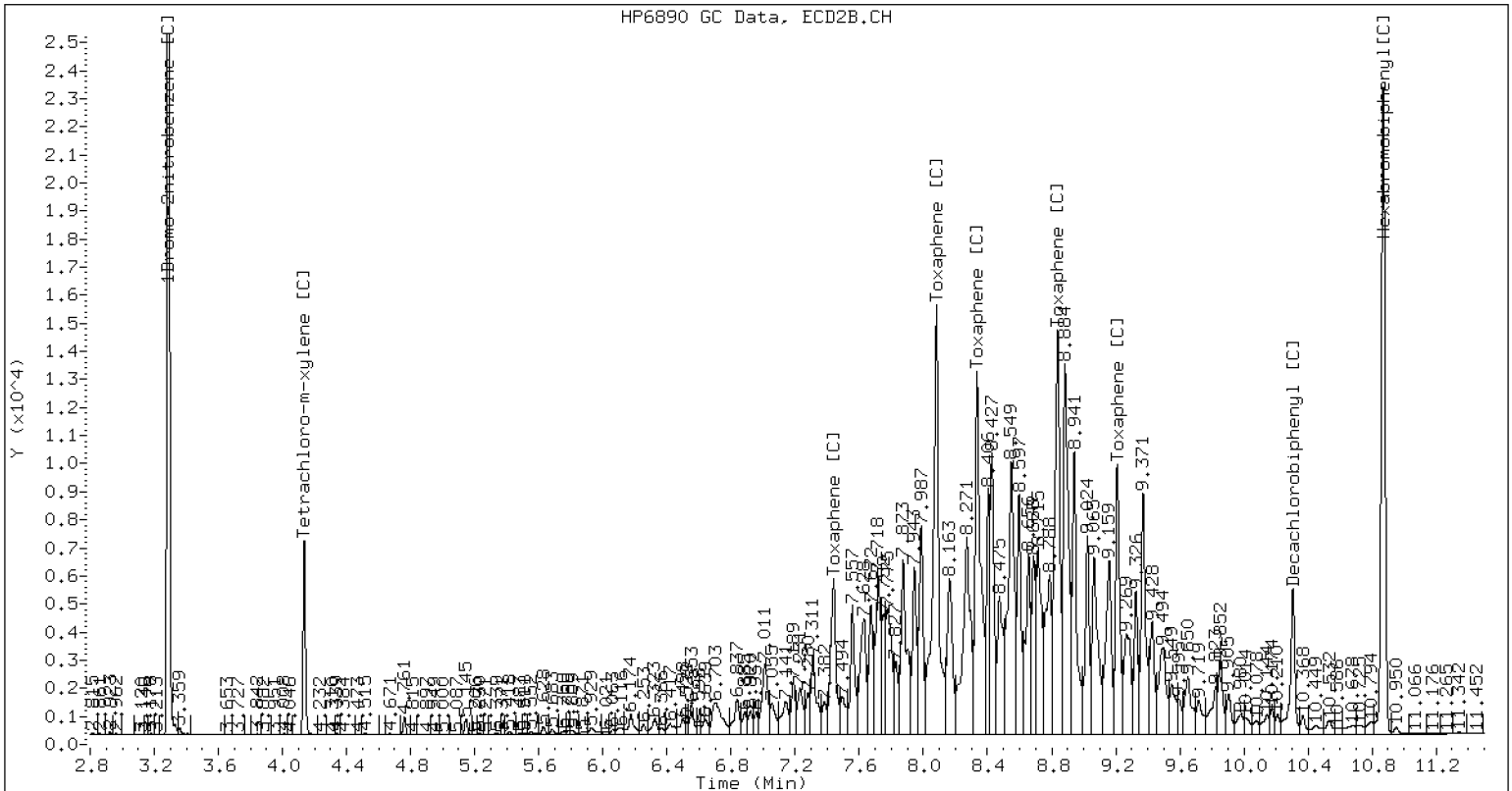
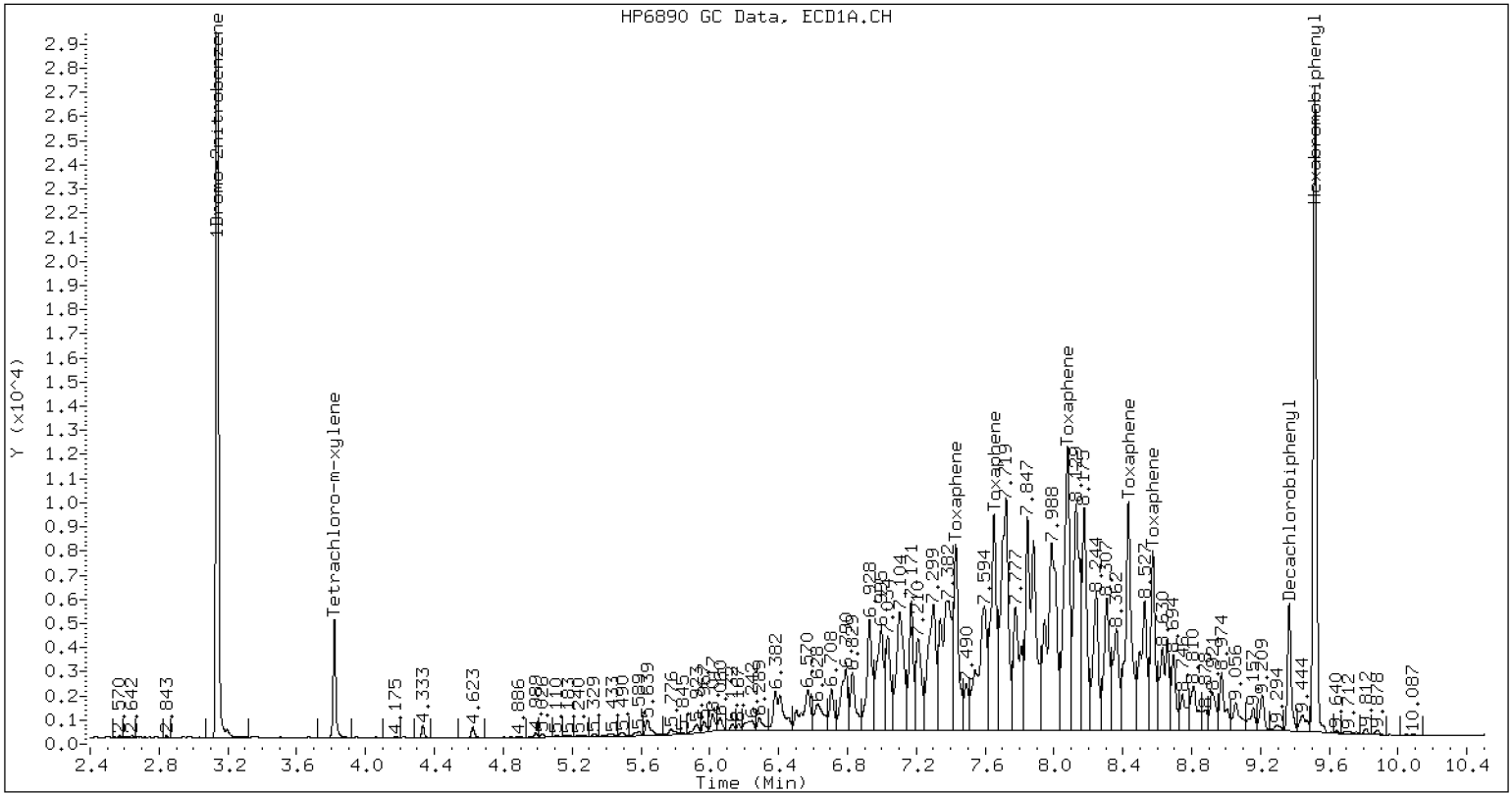
INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	918194	6.2
Hexabromobiphenyl	663237	742986	12.0

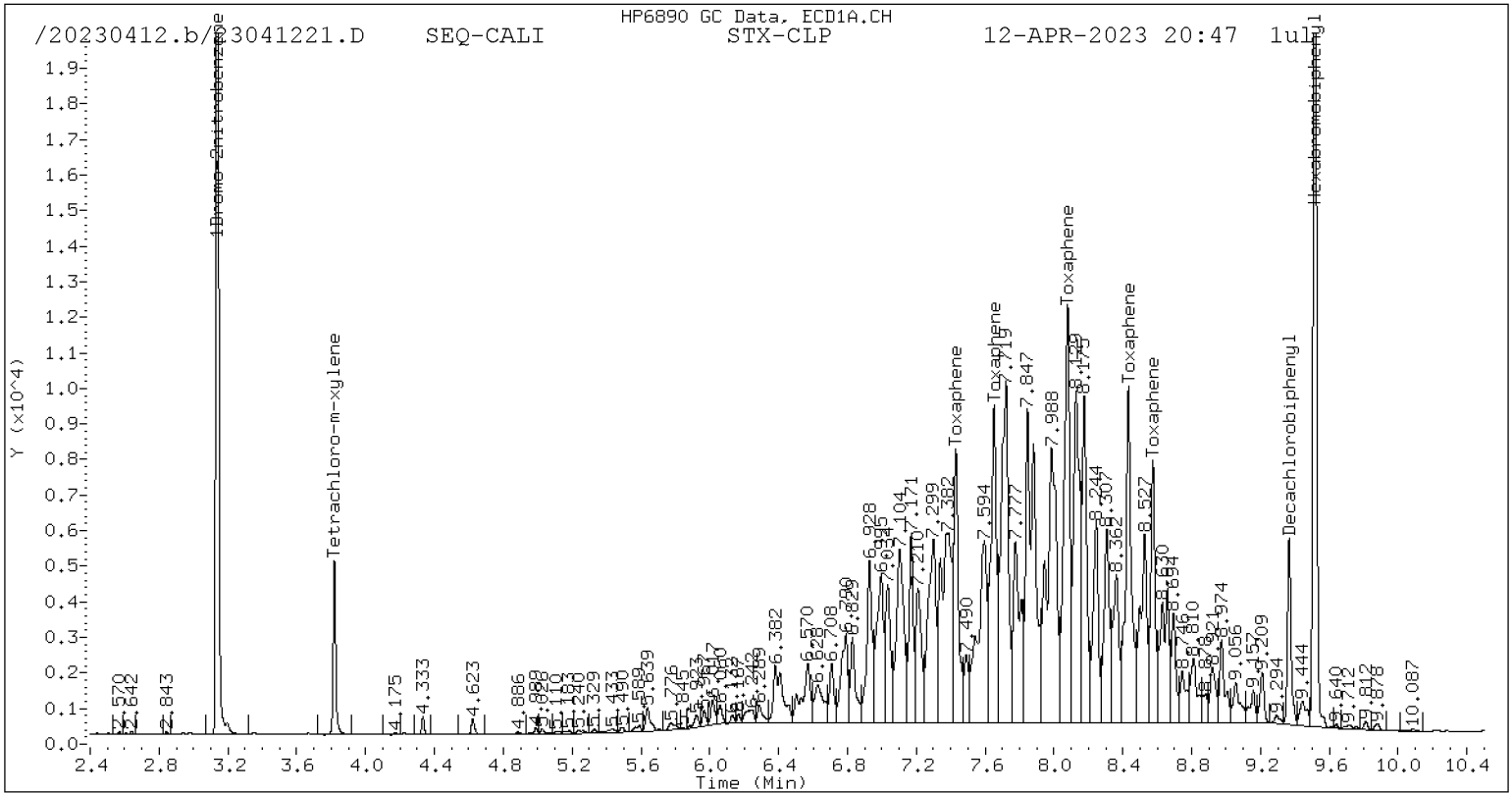
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1277652	-13.7
Hexabromobiphenyl	870561	789338	-9.3

\* Standard Areas taken from Initial Cal Level 5  
 Initial Calibration Date: 12-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

Cpnd	Peak#	RT	STX-CLP Col			Peak#	RT	CLP2 Col				
			Shift	Height	Amount			Shift	Height	Amount		
Toxaphene	1	7.429	-0.001	301979	1098.4	1	7.440	-0.000	262813	1034.2		
Toxaphene	2	7.652	-0.001	416680	1132.3	2	8.081	-0.002	775904	1034.4		
Toxaphene	3	8.078	-0.001	559891	1115.8	3	8.335	-0.001	609018	1039.9		
Toxaphene	4	8.433	-0.000	452584	1144.0	4	8.838	-0.001	645519	1026.4		
Toxaphene	5	8.574	-0.001	277122	1163.4	5	9.210	-0.000	352517	1023.2		
Total STX-CLPAve (5 peaks):					1130.762	Total CLP2Ave (5 peaks):					1031.622	RPD = 9
Corrected Ave (5 peaks):					1130.762	Corrected Ave (5 peaks):					1031.622	RPD = 9

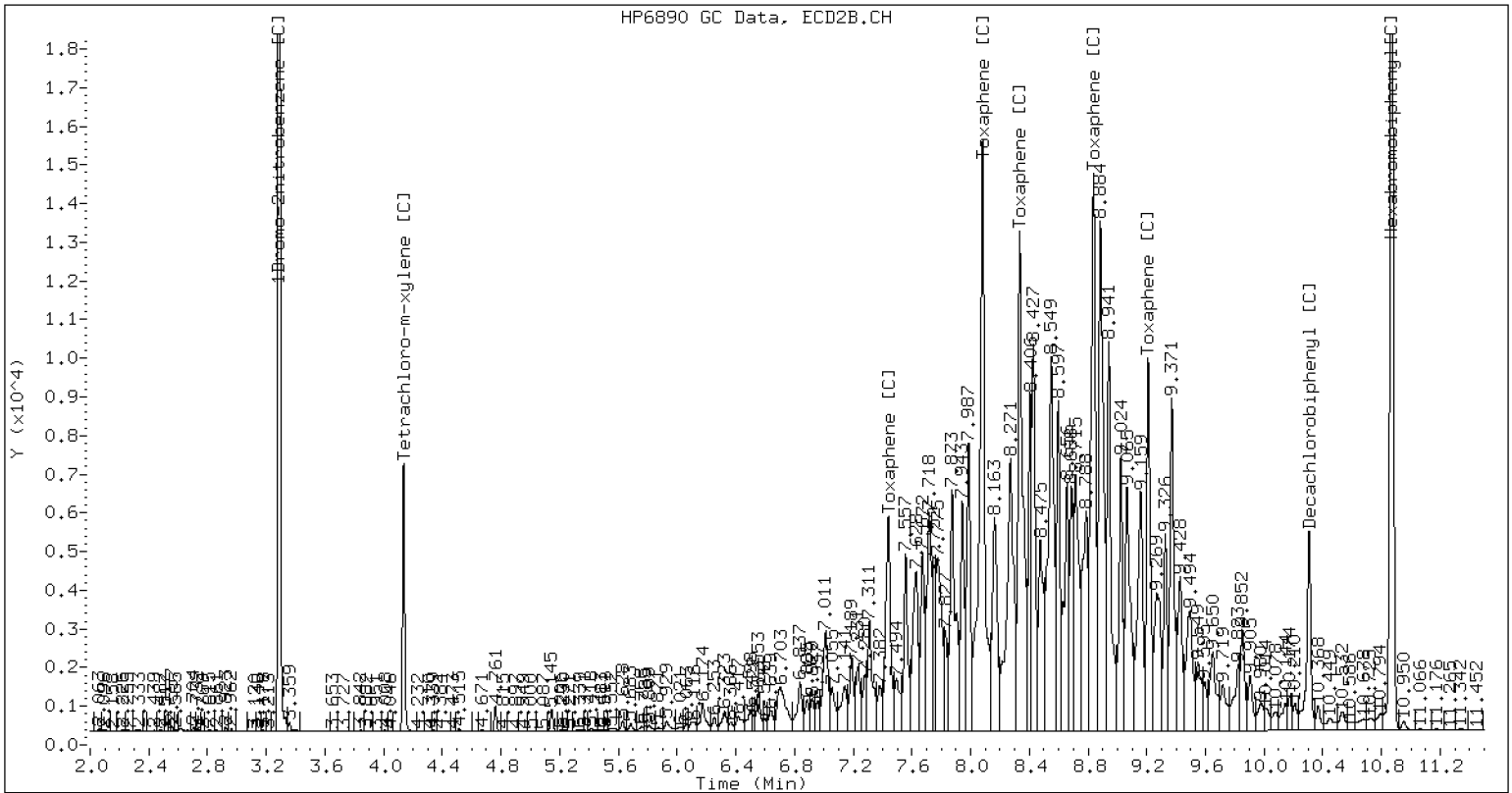


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041221.D SEQ-CALI CLP2



CLP-2 Manual Integration: NO



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041222.D  
Data file 2: /20230412.b/B20230412.b/23041222.D  
Method: \20230412.b\PEST.m  
Compound Sublist: TOXAPH.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALJ  
Client ID:  
Injection Date: 12-APR-2023 21:05  
Report Date: 04/13/2023 13:06  
Units: ng/mL  
Dilution Factor: 1.000

STX-CLP Col			CLP2 Col			STX-CLP	CLP2	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.819	0.000	252501	4.136	-0.000	349014	19.37	19.72	1.8	Tetrachloro-m-xylene
9.367	0.001	411141	10.306	-0.000	491352	42.72	47.90	11.4	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

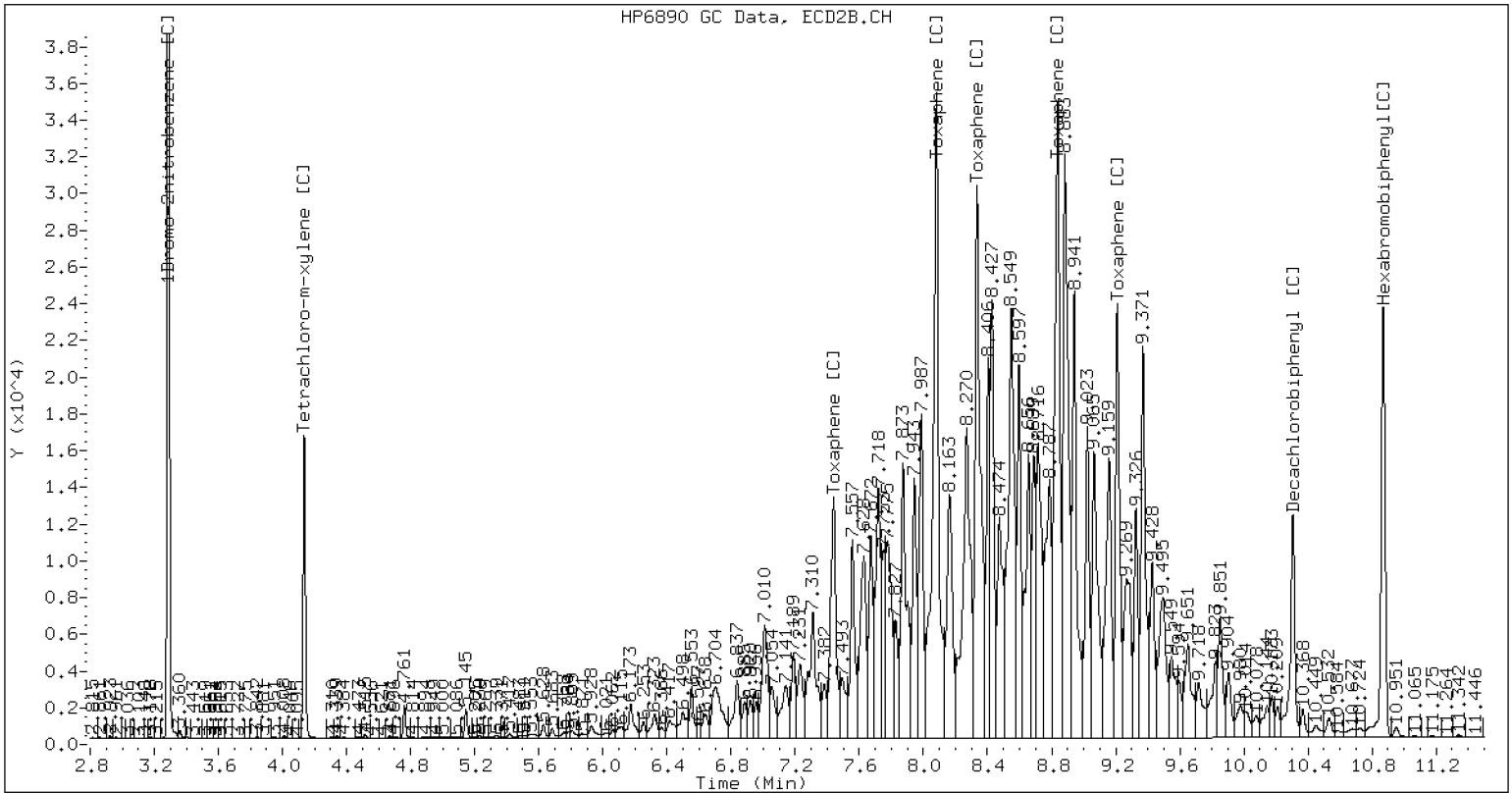
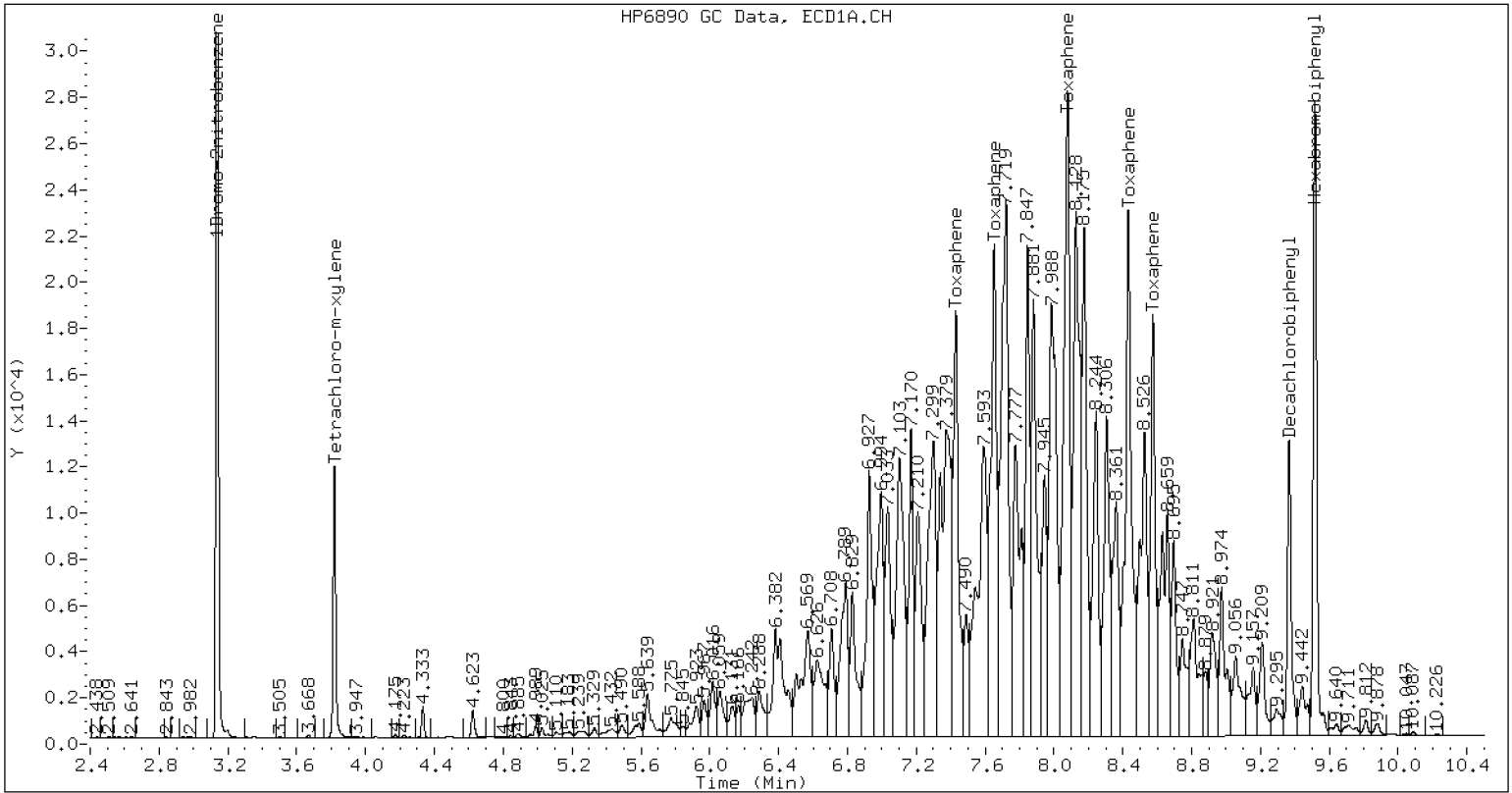
INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	931444	7.8
Hexabromobiphenyl	663237	816041	23.0

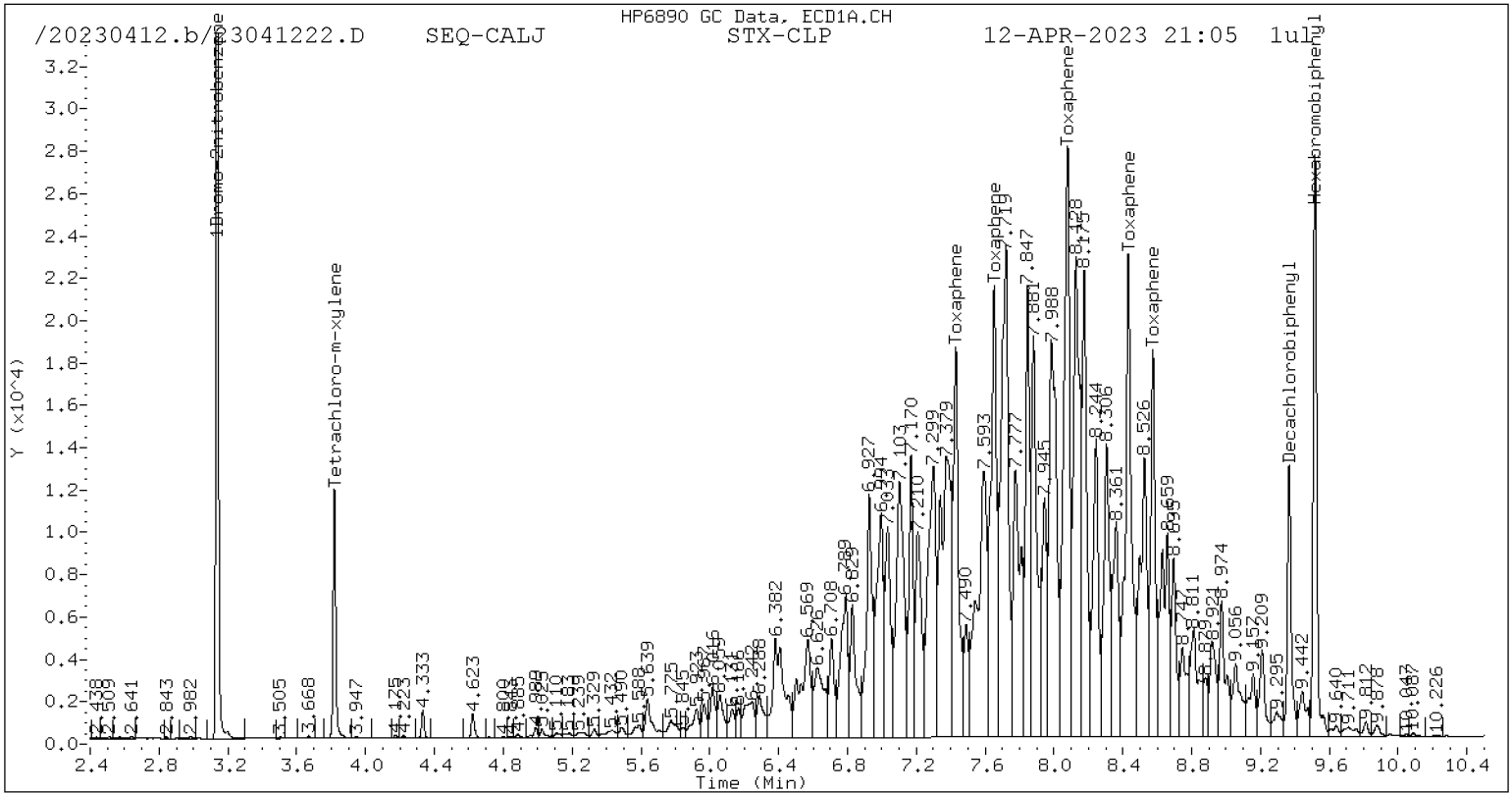
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1287009	-13.1
Hexabromobiphenyl	870561	849848	-2.4

\* Standard Areas taken from Initial Cal Level 5  
 Initial Calibration Date: 12-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

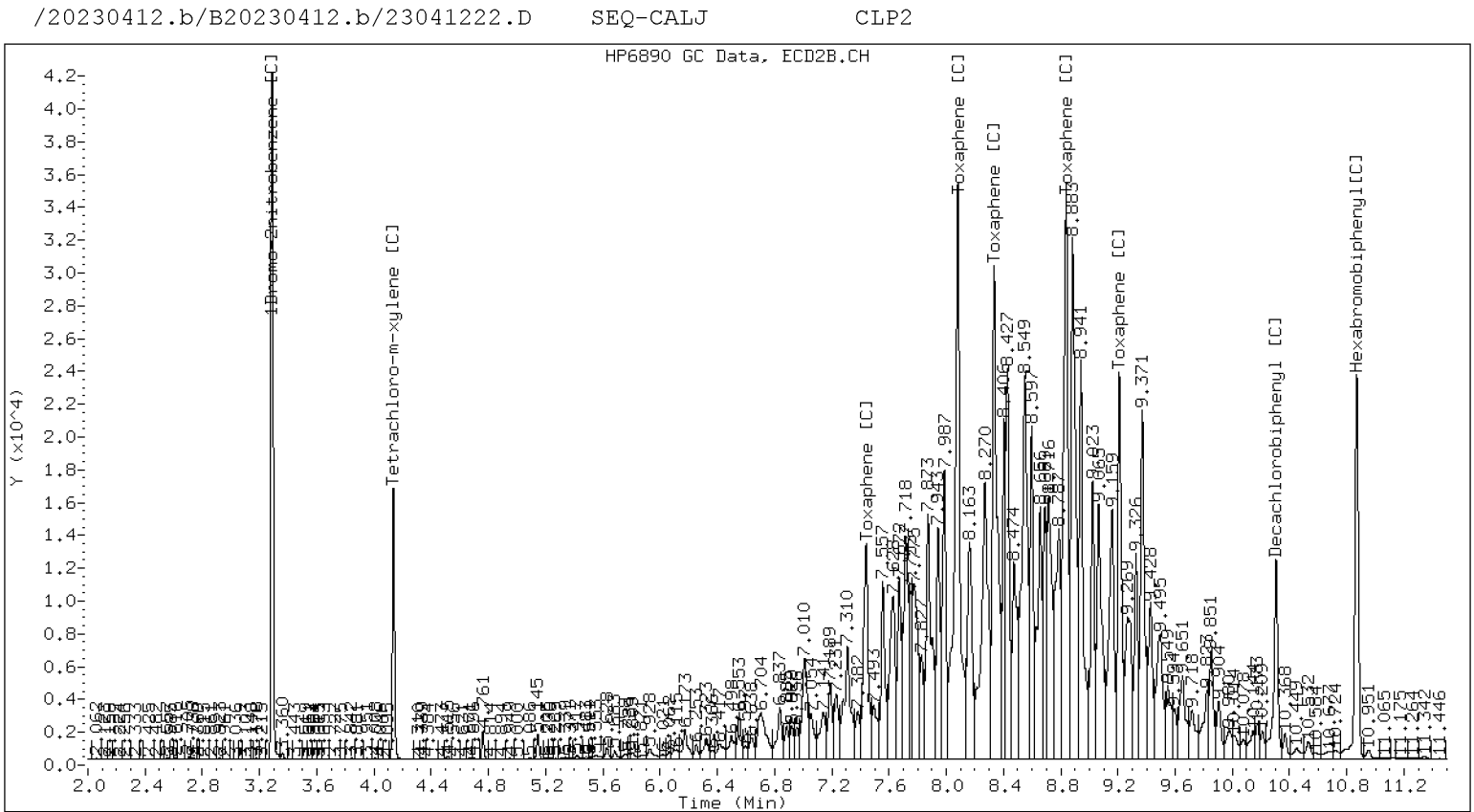
Cpnd	Peak#	RT	STX-CLP Col			Peak#	RT	CLP2 Col				
			Shift	Height	Amount			Shift	Height	Amount		
Toxaphene	1	7.429	-0.001	797088	2639.8	1	7.440	-0.000	629948	2302.4		
Toxaphene	2	7.652	-0.001	1032073	2553.4	2	8.081	-0.002	1823289	2257.7		
Toxaphene	3	8.078	-0.001	1374882	2494.6	3	8.335	-0.001	1449258	2298.5		
Toxaphene	4	8.432	-0.001	1177736	2710.5	4	8.838	-0.001	1557874	2300.6		
Toxaphene	5	8.575	-0.001	709132	2710.4	5	9.210	-0.001	862039	2324.0		
Total STX-CLPAve (5 peaks):					2621.744	Total CLP2Ave (5 peaks):					2296.637	RPD = 13
Corrected Ave (5 peaks):					2621.744	Corrected Ave (5 peaks):					2296.637	RPD = 13



Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO



CLP-2 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041223.D  
Data file 2: /20230412.b/B20230412.b/23041223.D  
Method: \20230412.b\PEST.m  
Compound Sublist: TOXAPH.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALK  
Client ID:  
Injection Date: 12-APR-2023 21:24  
Report Date: 04/13/2023 13:06  
Units: ng/mL  
Dilution Factor: 1.000

STX-CLP Col			CLP2 Col			STX-CLP	CLP2	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.820	0.001	478616	4.136	-0.000	664045	37.29	37.94	1.7	Tetrachloro-m-xylene
9.367	0.001	786481	10.307	0.001	944710	75.08	93.37	21.7	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

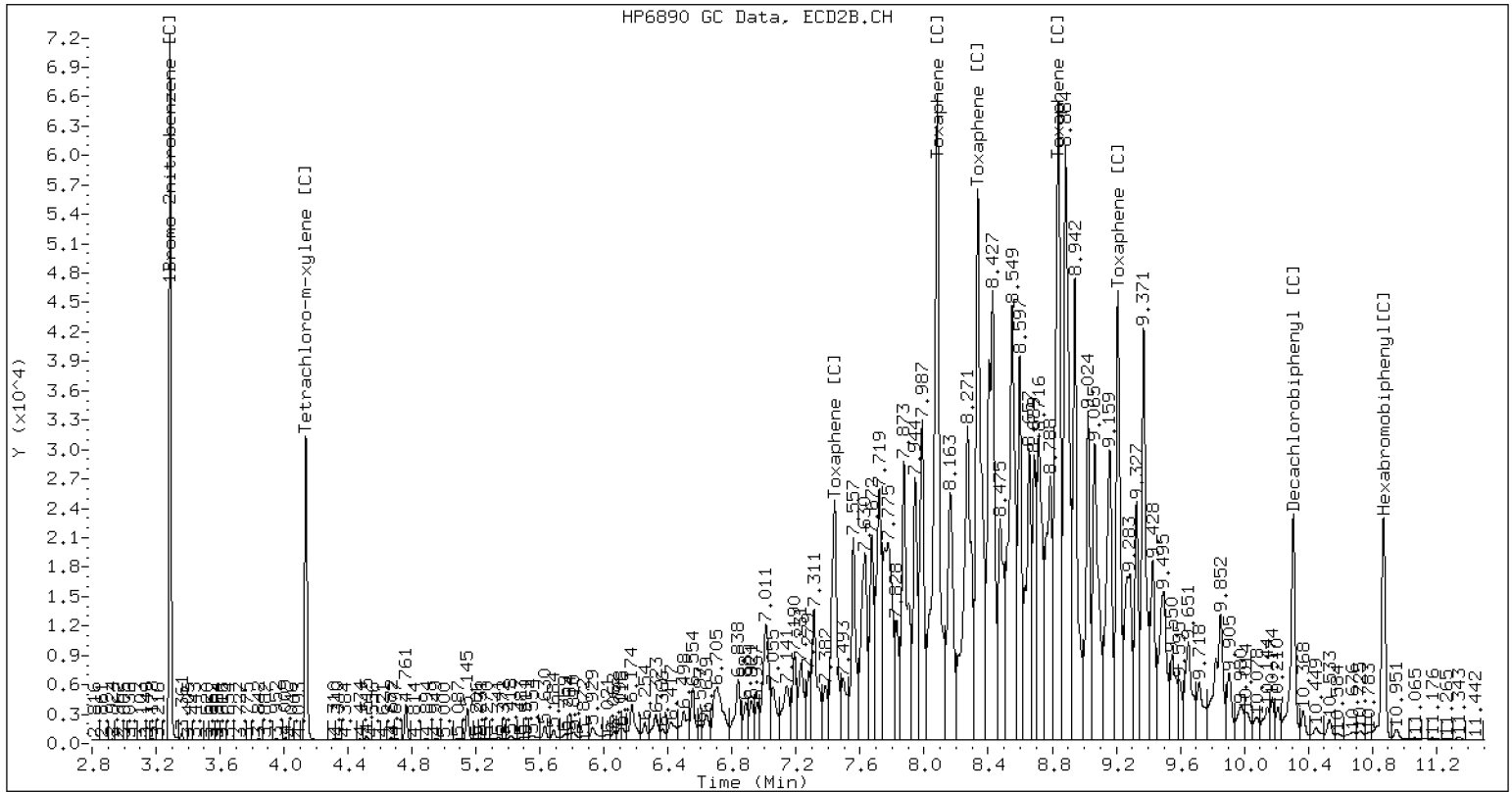
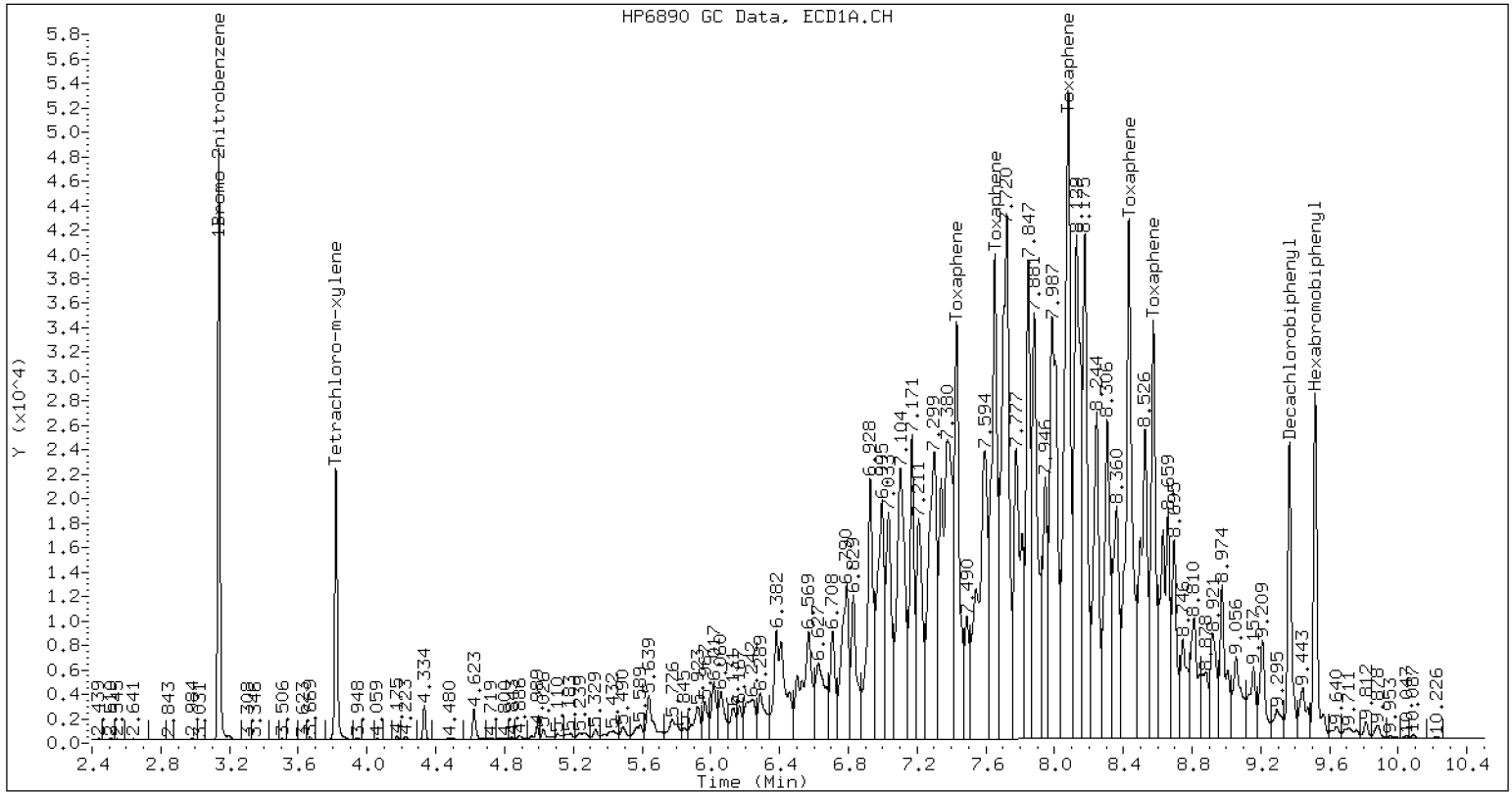
INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	917226	6.1
Hexabromobiphenyl	663237	888107	33.9

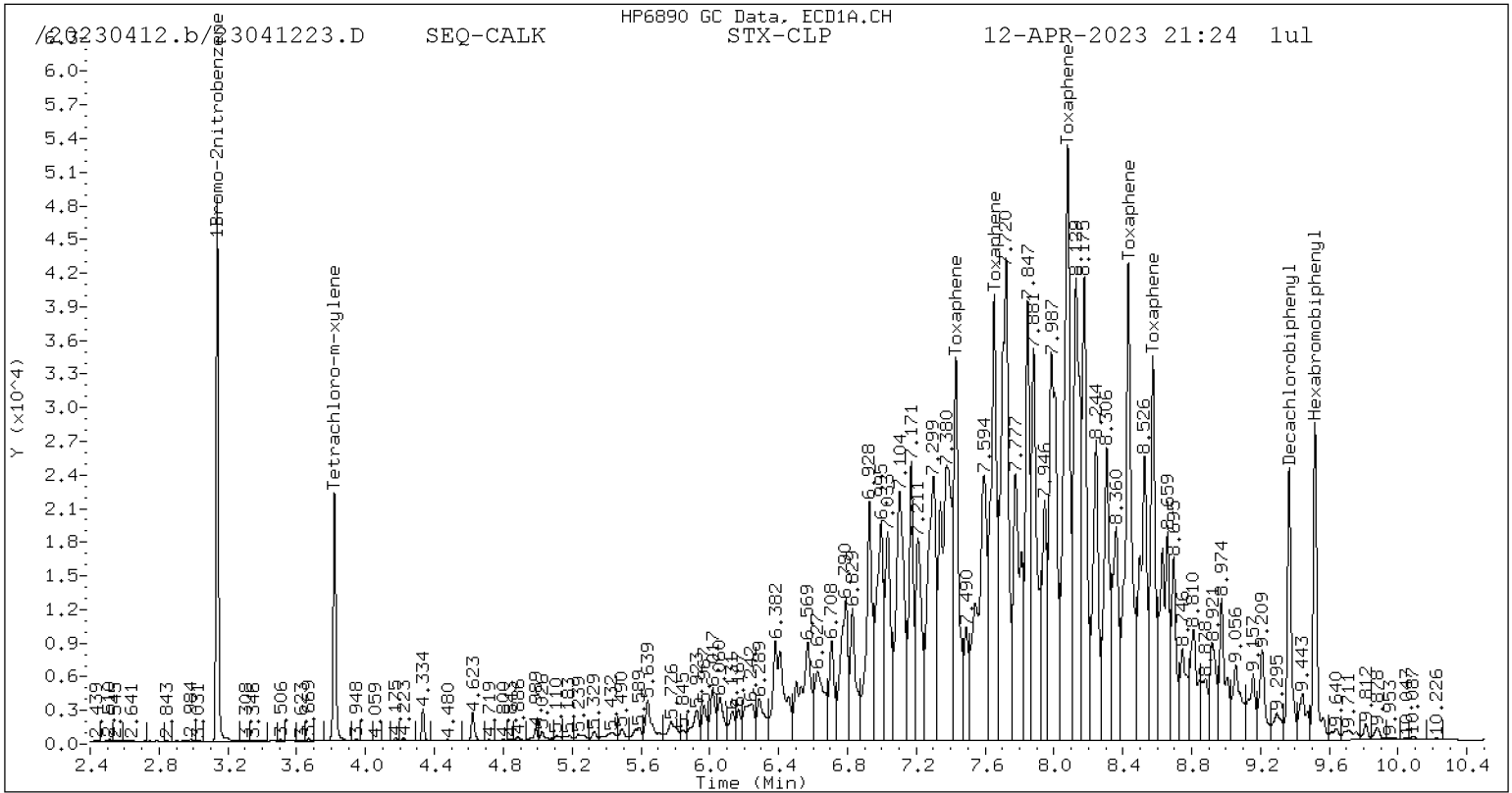
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1272946	-14.0
Hexabromobiphenyl	870561	838283	-3.7

\* Standard Areas taken from Initial Cal Level 5  
 Initial Calibration Date: 12-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

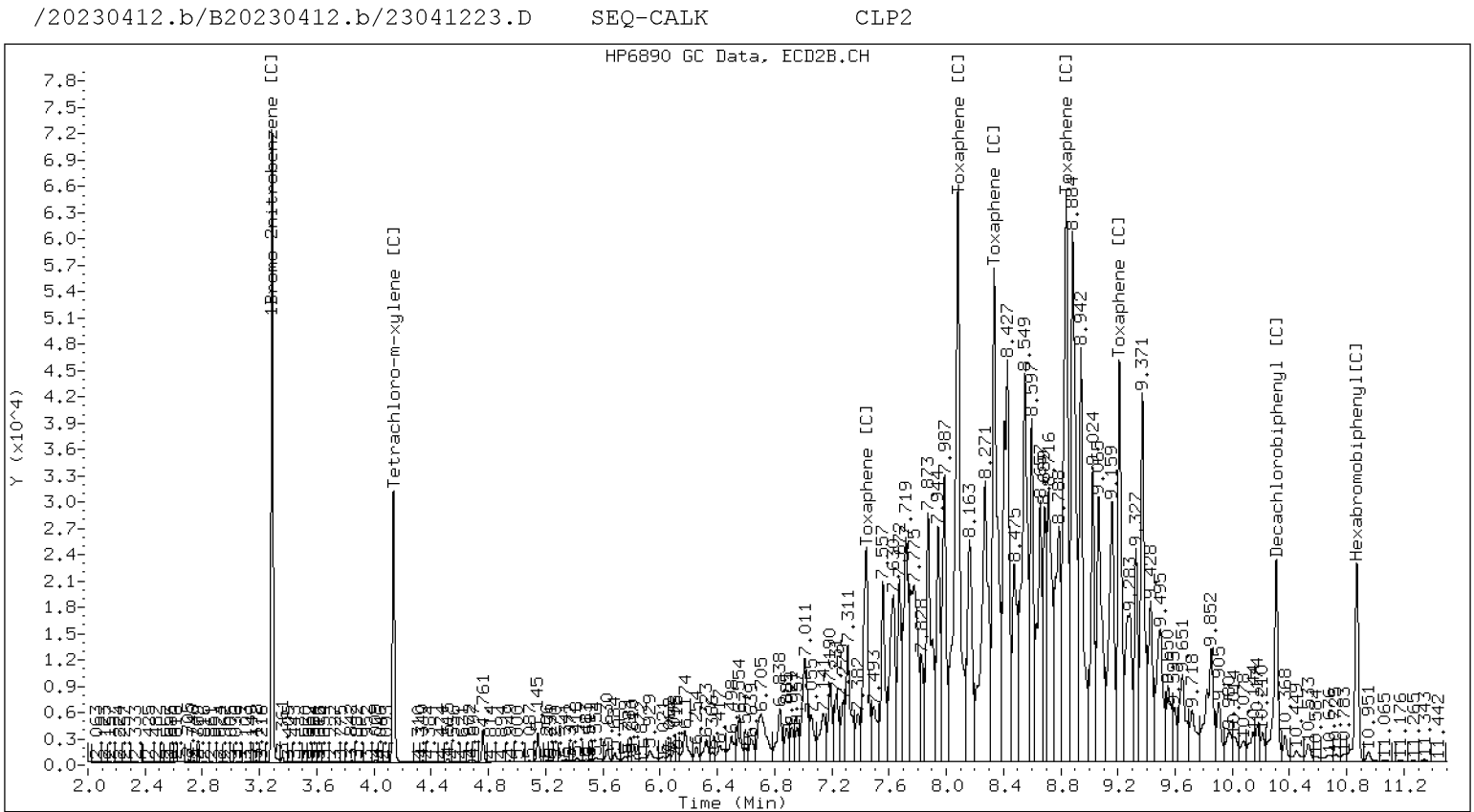
Cpnd	Peak#	RT	STX-CLP Col			Peak#	RT	CLP2 Col				
			Shift	Height	Amount			Shift	Height	Amount		
Toxaphene	1	7.429	-0.001	1418710	4317.2	1	7.440	0.000	1190021	4409.5		
Toxaphene	2	7.652	-0.001	1929987	4387.5	2	8.082	-0.001	3433292	4309.9		
Toxaphene	3	8.079	-0.000	2596396	4328.7	3	8.335	-0.001	2739705	4405.0		
Toxaphene	4	8.432	-0.000	2227368	4710.1	4	8.839	-0.000	2971015	4448.0		
Toxaphene	5	8.575	-0.001	1346952	4730.5	5	9.210	-0.000	1678180	4586.6		
Total STX-CLPAve (5 peaks):					4494.806	Total CLP2Ave (5 peaks):					4431.818	RPD = 1
Corrected Ave (5 peaks):					4494.806	Corrected Ave (5 peaks):					4431.818	RPD = 1



Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO



CLP-2 Manual Integration: NO



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041224.D  
Data file 2: /20230412.b/B20230412.b/23041224.D  
Method: \20230412.b\PEST.m  
Compound Sublist: TOXAPH.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CALL  
Client ID:  
Injection Date: 12-APR-2023 21:42  
Report Date: 04/13/2023 13:06  
Units: ng/mL  
Dilution Factor: 1.000

STX-CLP Col			CLP2 Col			STX-CLP	CLP2	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.819	0.000	895380	4.136	-0.000	1216061	70.47	70.31	0.2	Tetrachloro-m-xylene
9.366	0.000	1481211	10.306	-0.000	1790917	116.97	168.24	36.0	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

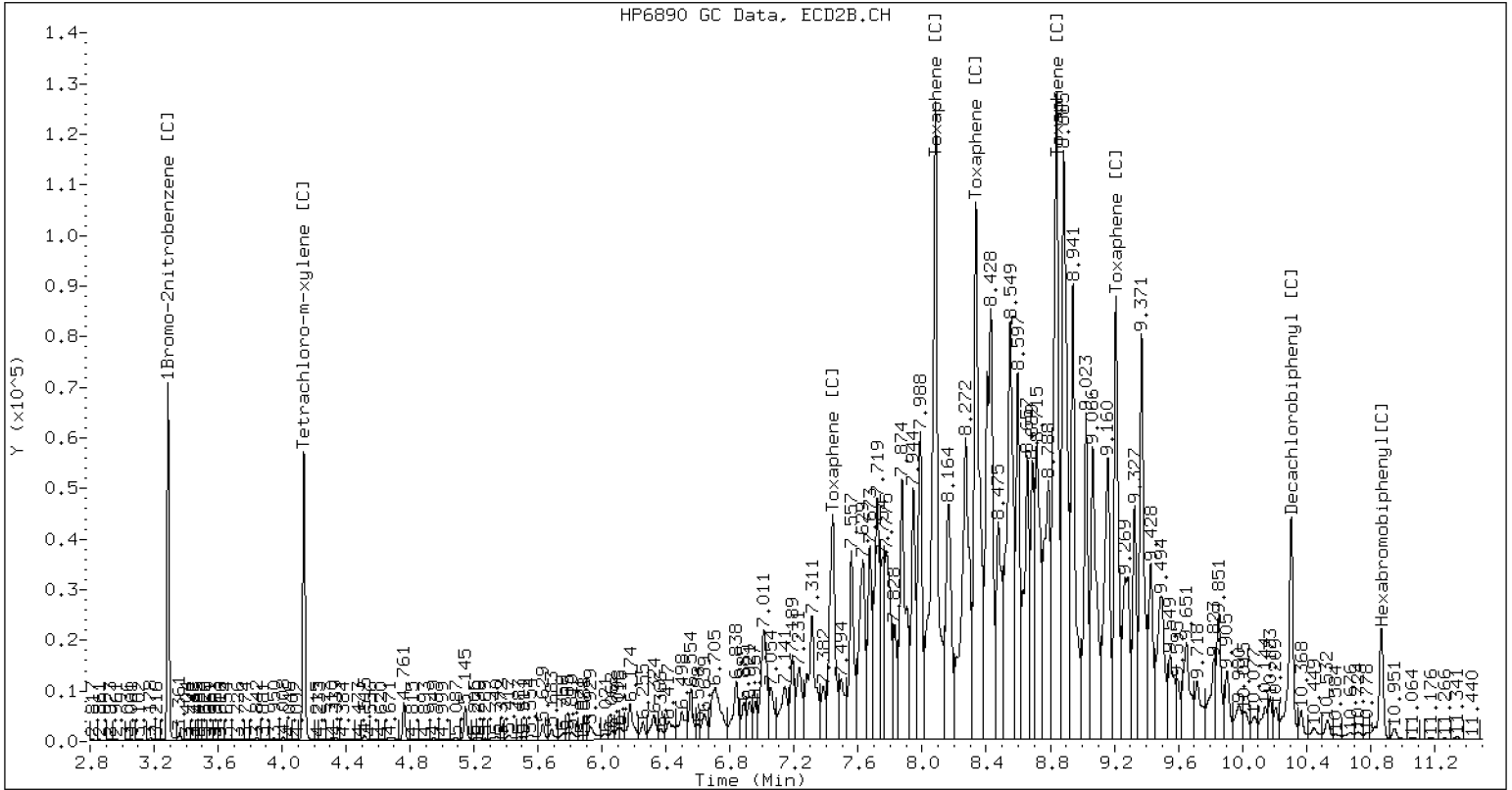
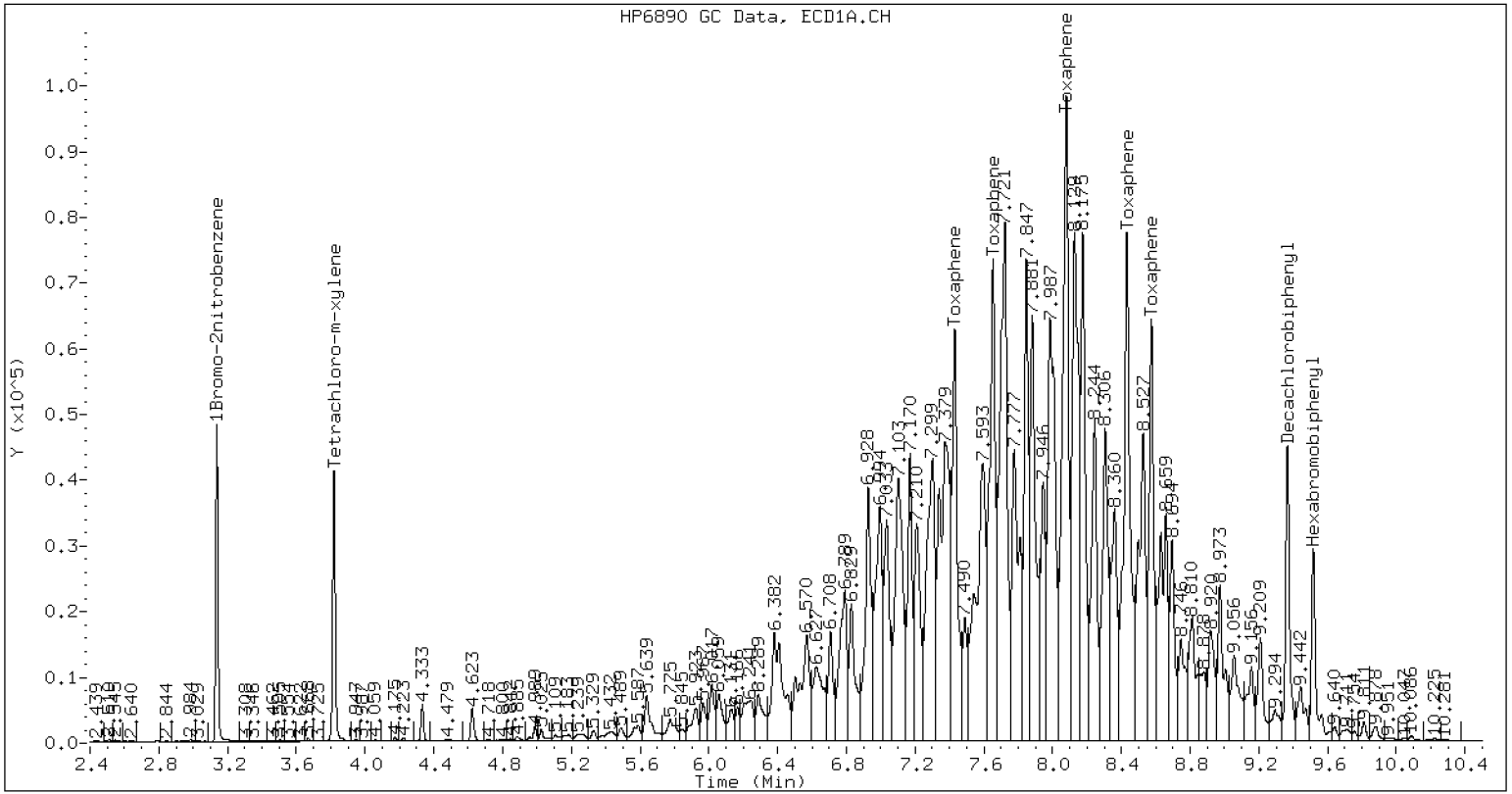
INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	908010	5.1
Hexabromobiphenyl	663237	1073617	61.9

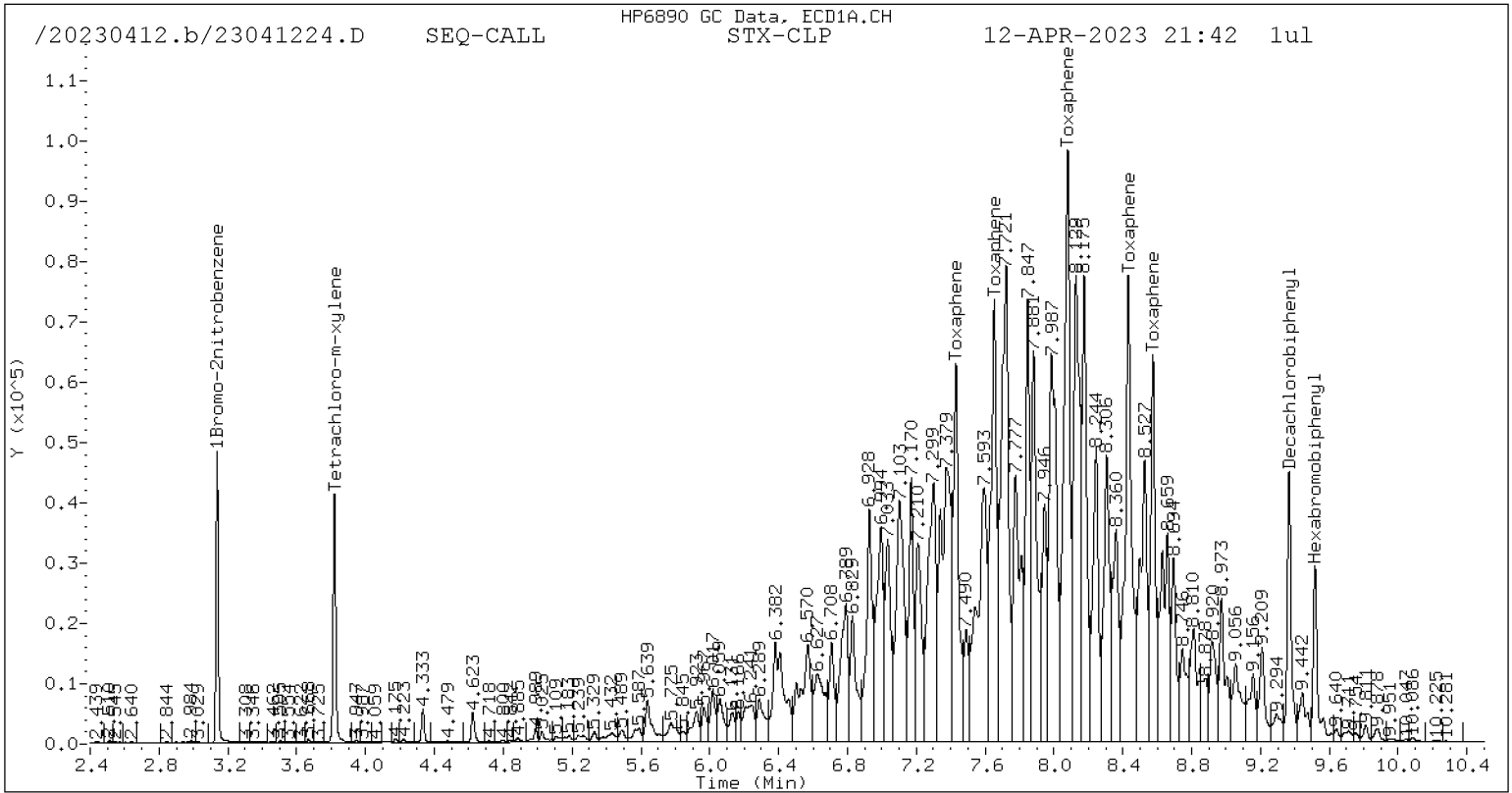
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	1257770	-15.1
Hexabromobiphenyl	870561	881950	1.3

\* Standard Areas taken from Initial Cal Level 5  
 Initial Calibration Date: 12-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

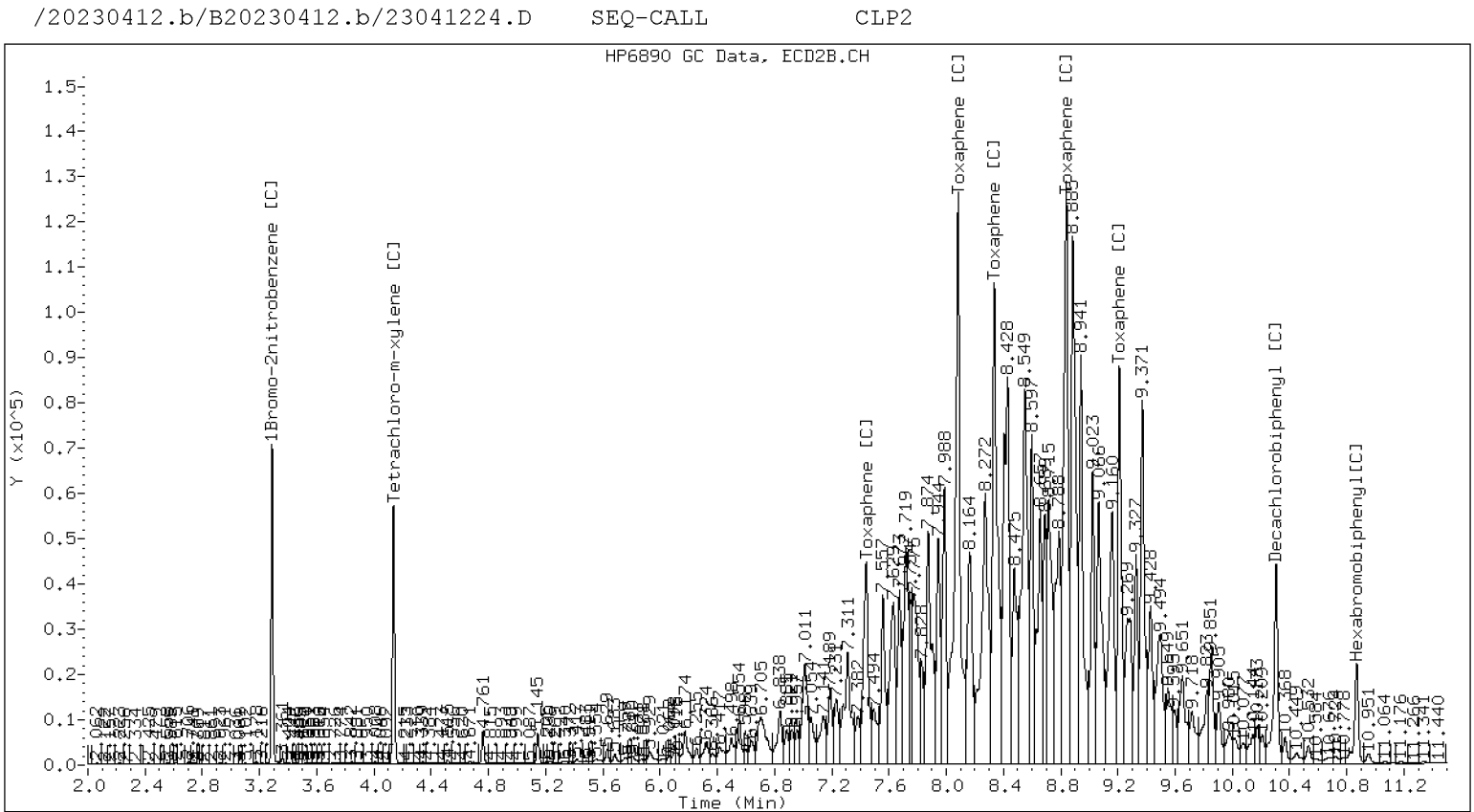
Cpnd	Peak#	RT	STX-CLP Col			Peak#	RT	CLP2 Col				
			Shift	Height	Amount			Shift	Height	Amount		
Toxaphene	1	7.430	-0.000	2786527	7014.4	1	7.440	0.000	2199872	7747.7		
Toxaphene	2	7.652	-0.001	3557899	6690.7	2	8.083	0.000	6483577	7736.1		
Toxaphene	3	8.079	-0.000	4809205	6632.4	3	8.336	-0.000	5124179	7830.9		
Toxaphene	4	8.432	-0.001	4063530	7108.2	4	8.839	0.000	5684314	8088.9		
Toxaphene	5	8.575	-0.001	2519164	7318.6	5	9.210	0.000	3217244	8357.7		
Total STX-CLPAve (5 peaks):					6952.870	Total CLP2Ave (5 peaks):					7952.272	RPD = 13
Corrected Ave (5 peaks):					6952.870	Corrected Ave (5 peaks):					7952.272	RPD = 13



Pesticide Dual Column Chromatograms



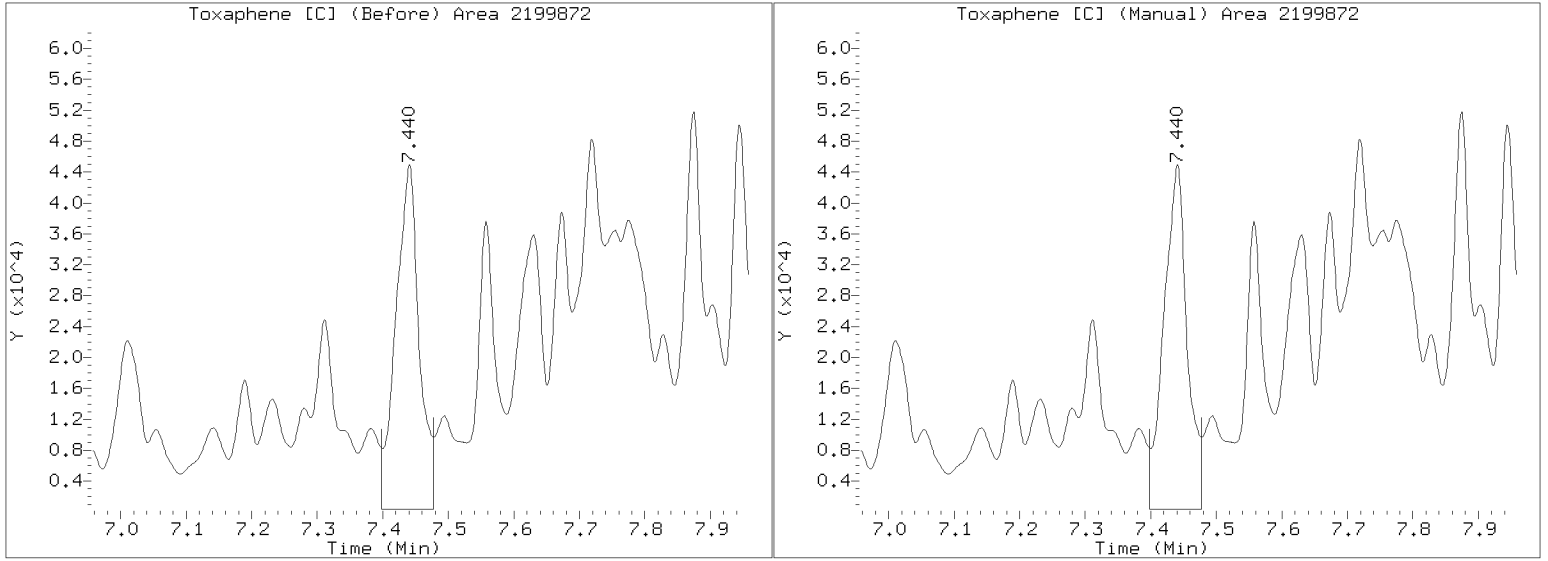
STX-CLP Manual Integration: NO



CLP-2 Manual Integration: NO

Manual Peak Adjustment Report, CLP-2

Datafile: /20230412.b/B20230412.b/23041224.D  
Injection Date: 12-APR-2023 21:42  
Lab ID:SEQ-CALL Client ID:





**INITIAL CALIBRATION CHECK**  
**EPA 8081B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD6</u>	Calibration:	<u>GD00035</u>
Lab File ID:	<u>23041228.D</u>	Calibration Date:	<u>04/12/2023</u>
Sequence:	<u>SLD0187</u>	Injection Date:	<u>04/12/23</u>
Lab Sample ID:	<u>SLD0187-ICV1</u>	Injection Time:	<u>22:55</u>
Sequence Name:	<u>INDA</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Hexachlorobenzene	L	20.000	17.7	1.5480310	1.3661750		-11.7	+/-20
Hexachlorobenzene [2C]	L	20.000	17.6	1.4821210	1.3050430		-11.9	+/-20
Decachlorobiphenyl	L	40.000	31.9	0.9435985	0.7530461		-20.2	+/-20 *
Decachlorobiphenyl [2C]	L	40.000	33.5	0.9656082	0.8094568		-16.2	+/-20
Tetrachlorometaxylene	L	40.000	35.4	1.1193850	0.9917150		-11.4	+/-20
Tetrachlorometaxylene [2C]	L	40.000	35.8	1.1000560	0.9834952		-10.6	+/-20

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041228.D  
Data file 2: /20230412.b/B20230412.b/23041228.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-ICV1  
Client ID:  
Injection Date: 12-APR-2023 22:55  
Report Date: 04/14/2023 08:20  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Shift Response	RT	CLP2 Col Shift Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag	
4.334	0.001	207474	4.761	-0.001	284638	17.97	18.02	0.3	alpha-BHC
4.718	0.001	79749	5.229	-0.001	108826	17.30	17.35	0.3	beta-BHC
4.902	0.001	188168	5.577	-0.000	236979	18.00	16.85	6.6	delta-BHC
4.637	0.000	181942	5.151	-0.001	248772	17.93	17.92	0.1	gamma-BHC (Lindane)
5.125	0.001	169303	5.671	-0.000	221956	18.03	18.23	1.1	Heptachlor
5.449	0.001	171374	6.070	-0.001	227085	17.94	17.96	0.1	Aldrin
6.125	0.000	147922	6.728	-0.001	191017	17.16	17.17	0.0	Heptachlor epoxide b
6.568	0.001	138197	7.172	-0.000	168955	17.98	17.82	0.9	Endosulfan I
6.828	0.000	292815	7.466	0.000	372477	36.01	35.84	0.5	Dieldrin
6.490	0.001	275927	7.257	0.000	356702	35.98	36.06	0.2	4,4'-DDE
7.079	0.001	245544	7.789	-0.001	306841	33.13	32.56	1.7	Endrin
7.314	0.000	244805	8.000	-0.001	303230	35.28	34.06	3.5	Endosulfan II
7.137	0.001	235742	7.862	-0.000	294896	35.44	34.23	3.5	4,4'-DDD
8.178	0.001	226658	8.597	-0.001	277723	34.64	33.88	2.2	Endosulfan sulfate
7.431	0.000	252763	8.180	-0.001	301143	35.28	34.65	1.8	4,4'-DDT
7.920	-0.000	503445	8.820	-0.002	607472	164.03	163.00	0.6	Methoxychlor
8.452	0.000	256795	9.119	-0.000	304196	34.40	33.98	1.2	Endrin ketone
7.743	-0.000	185676	8.331	-0.000	217531	35.06	33.79	3.7	Endrin aldehyde
6.267	0.001	150498	6.939	0.000	188905	17.84	17.70	0.8	trans-Chlordane
6.414	0.001	150678	7.099	-0.001	185516	17.79	17.66	0.8	cis-Chlordane
2.309	-0.000	207080	2.453	-0.000	181778	17.39	12.68	31.4	Hexachlorobutadiene
4.175	0.000	180316	4.622	0.000	242905	17.65	17.61	0.2	Hexachlorobenzene
3.820	0.001	261785	4.136	-0.000	366112	35.44	35.76	0.9	Tetrachloro-m-xylene
9.366	0.000	161464	10.306	0.000	189508	31.92	33.53	4.9	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	527944	-38.9
Hexabromobiphenyl	663237	428829	-35.3

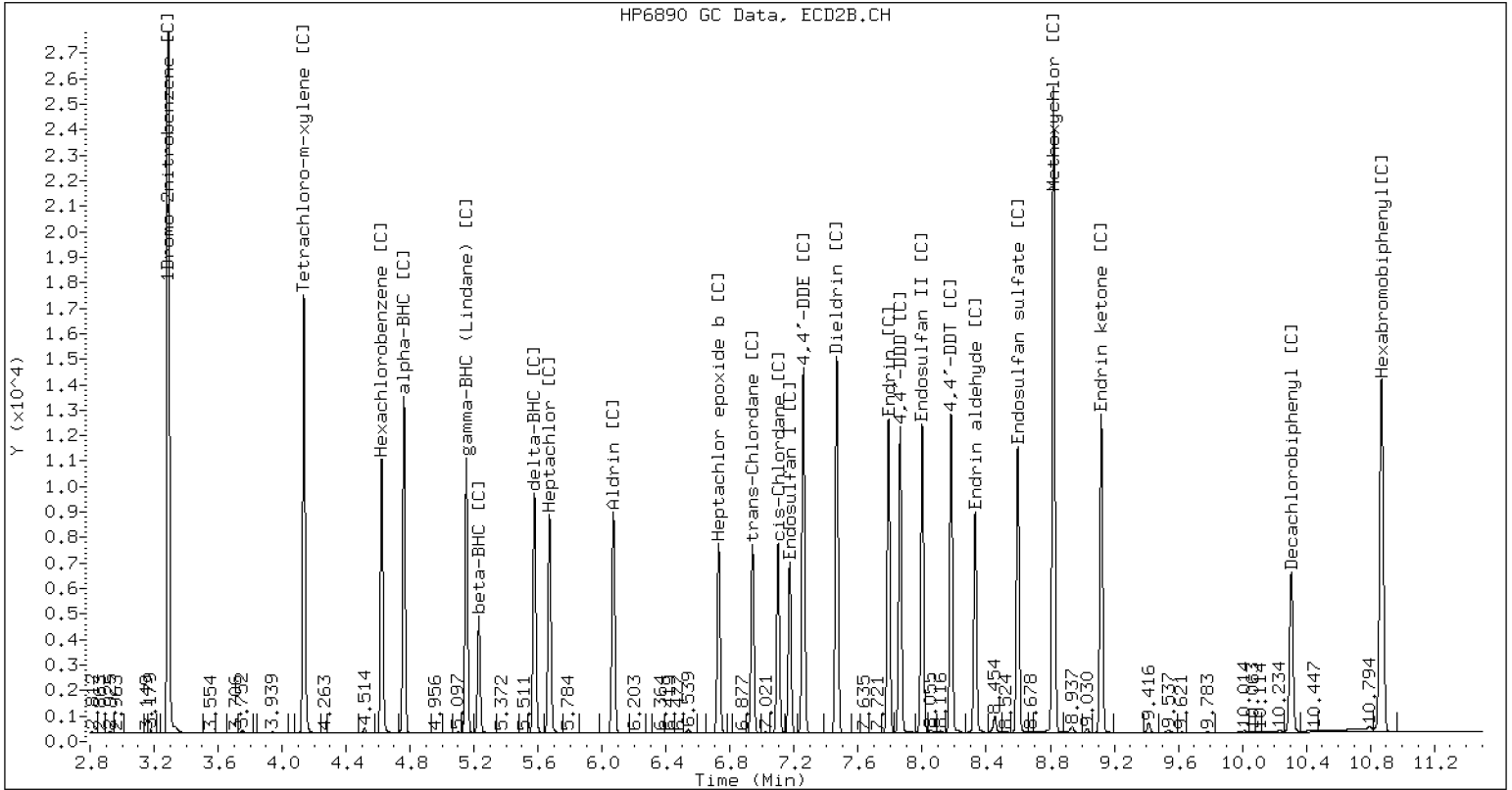
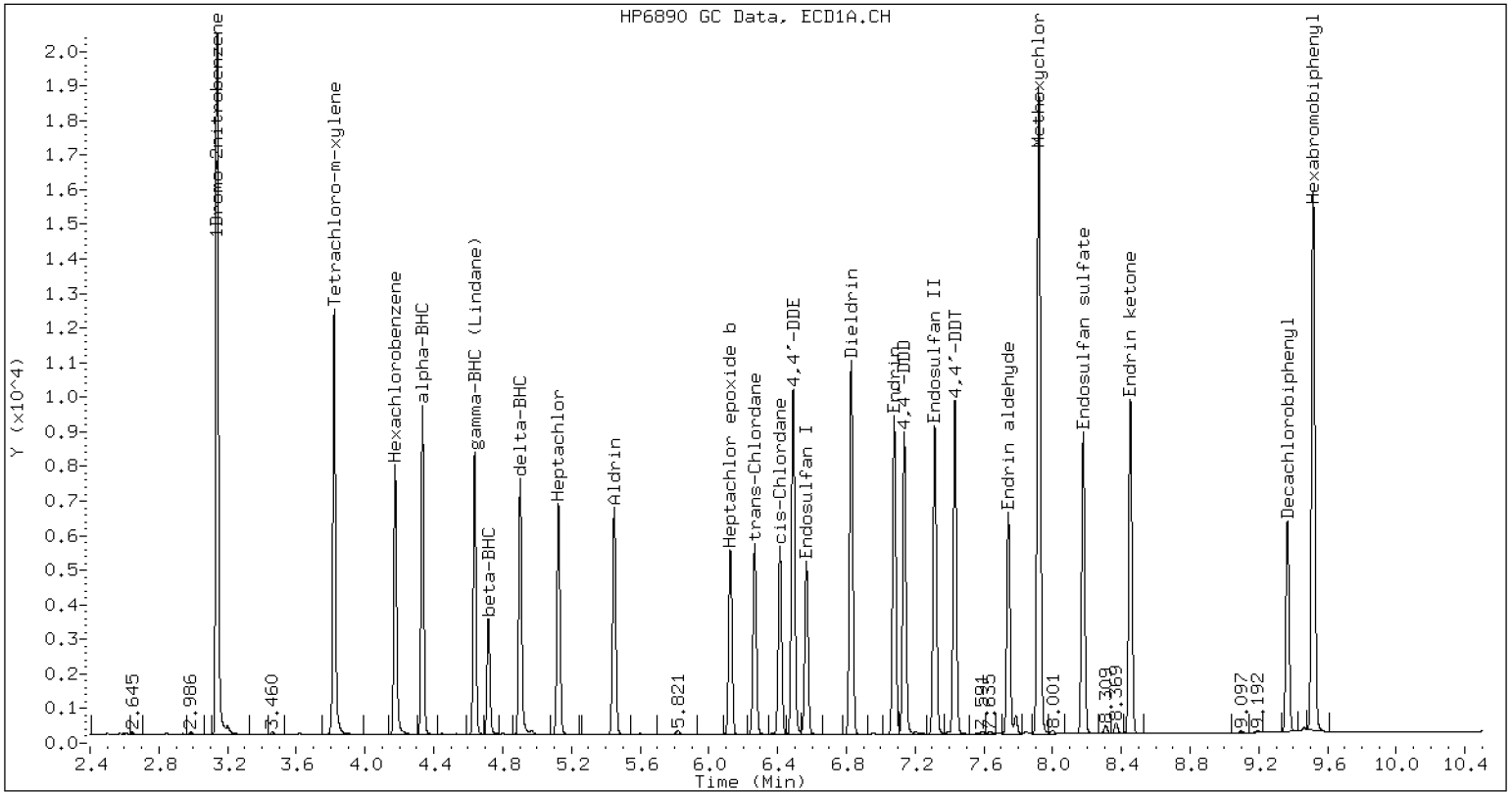
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	744512	-49.7
Hexabromobiphenyl	870561	468235	-46.2

\* Standard Areas taken from Initial Cal Level 5

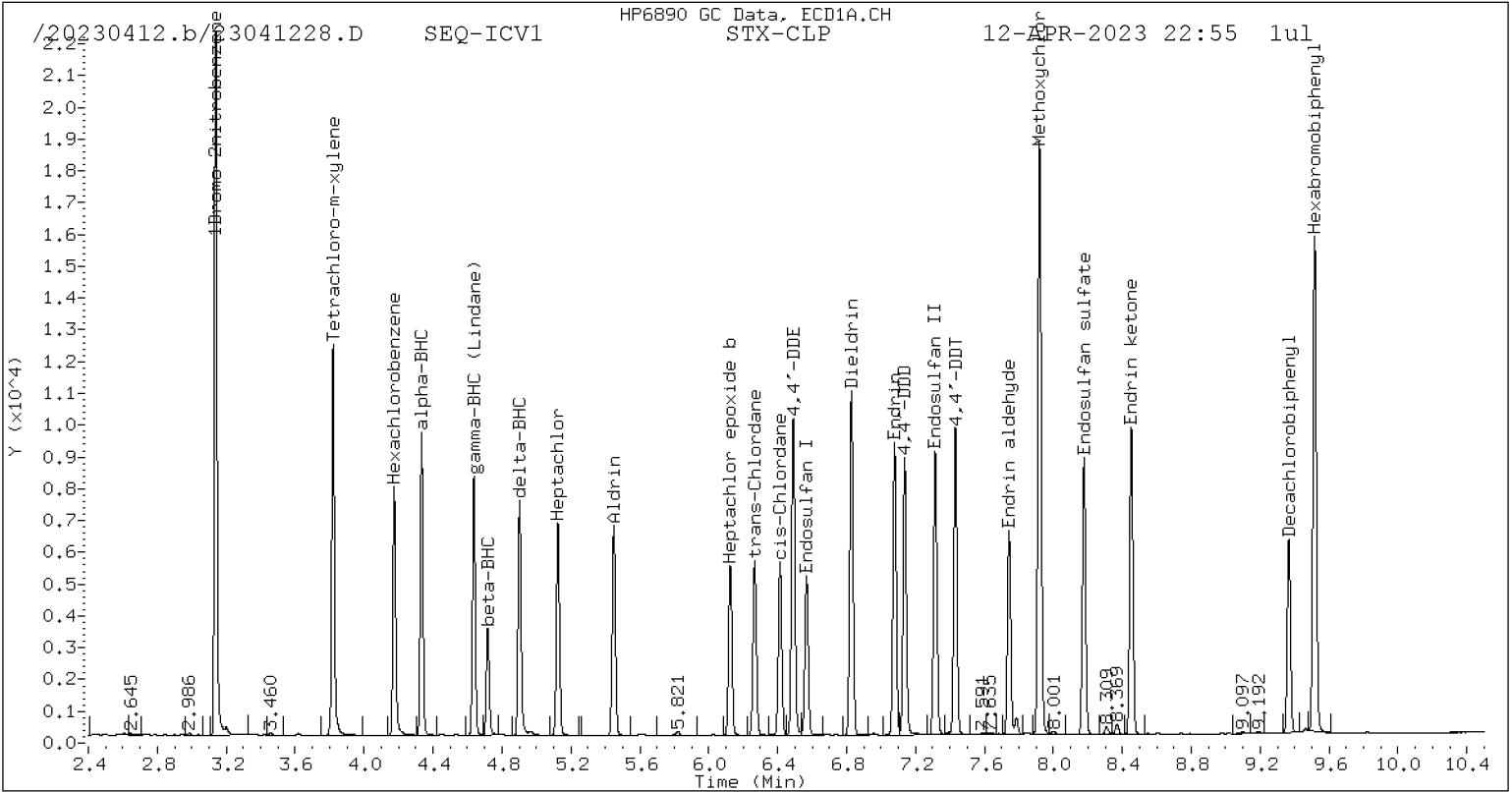
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)



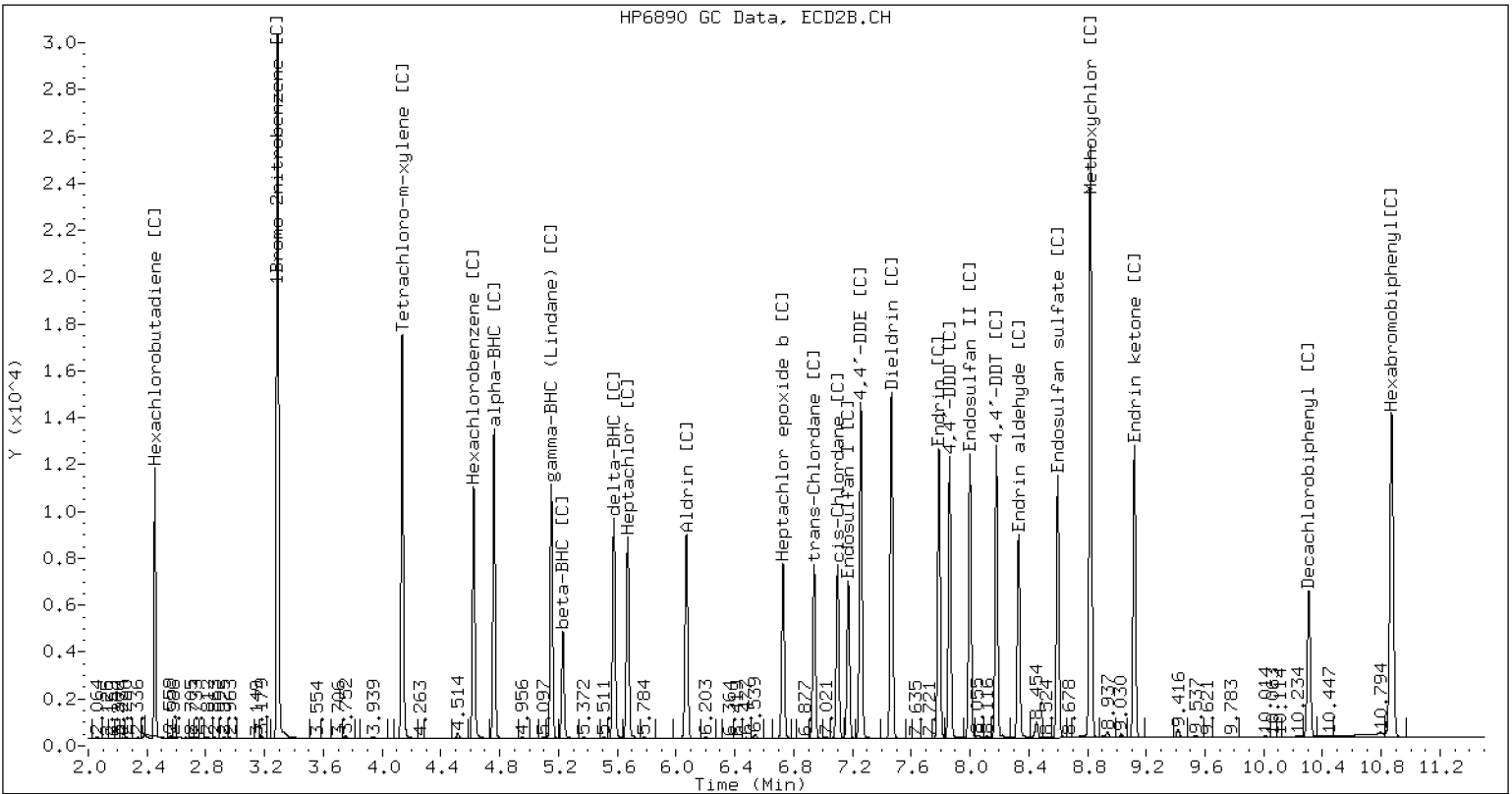


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041228.D SEQ-ICV1 CLP2



CLP-2 Manual Integration: NO



INITIAL CALIBRATION CHECK  
EPA 8081B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ECD6

Calibration: GD00035

Lab File ID: 23050203.D

Calibration Date: 04/12/2023

Sequence: SLE0106

Injection Date: 05/02/23

Lab Sample ID: SLE0106-ICV1

Injection Time: 14:00

Sequence Name: INDA

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
alpha-BHC	L	20.000	17.9	1.7493120	1.5659650		-10.5	+/-20
alpha-BHC [2C]	L	20.000	17.8	1.6971320	1.5127530		-10.9	+/-20
beta-BHC	L	20.000	17.2	0.6985426	0.6007490		-14.0	+/-20
beta-BHC [2C]	L	20.000	17.3	0.6741426	0.5834104		-13.5	+/-20
gamma-BHC (Lindane)	L	20.000	17.7	1.5372540	1.3633120		-11.3	+/-20
gamma-BHC (Lindane) [2C]	L	20.000	17.8	1.4921	1.3293490		-10.9	+/-20
delta-BHC	L	20.000	17.8	1.5838220	1.4133620		-10.8	+/-20
delta-BHC [2C]	L	20.000	17.4	1.5107800	1.3118500		-13.2	+/-20
Heptachlor	L	20.000	18.0	1.4227670	1.2801400		-10.0	+/-20
Heptachlor [2C]	L	20.000	17.9	1.3085210	1.1724450		-10.4	+/-20
Aldrin	L	20.000	18.1	1.4471840	1.3090880		-9.5	+/-20
Aldrin [2C]	L	20.000	18.0	1.3583320	1.2253600		-9.8	+/-20
Heptachlor Epoxide	L	20.000	17.2	1.3062650	1.1246540		-13.9	+/-20
Heptachlor Epoxide [2C]	L	20.000	17.2	1.1956940	1.0308100		-13.8	+/-20
trans-Chlordane (beta-Chlordane)	L	20.000	18.0	1.2781630	1.1472420		-10.2	+/-20
trans-Chlordane (beta-Chlordane) [2C]	L	20.000	17.8	1.1465120	1.0207280		-11.0	+/-20
cis-Chlordane (alpha-chlordane)	L	20.000	17.9	1.2830810	1.1488840		-10.5	+/-20
cis-Chlordane (alpha-chlordane) [2C]	L	20.000	17.8	1.1290160	1.0043400		-11.0	+/-20
Endosulfan I	L	20.000	18.2	1.1644720	1.0585270		-9.1	+/-20
Endosulfan I [2C]	L	20.000	17.9	1.0187800	0.9109591		-10.6	+/-20
4,4'-DDE	L	40.000	36.6	1.1619370	1.0618010		-8.6	+/-20
4,4'-DDE [2C]	L	40.000	36.5	1.0629340	0.9698446		-8.8	+/-20
Dieldrin	L	40.000	36.5	1.2323180	1.1233560		-8.8	+/-20
Dieldrin [2C]	L	40.000	35.8	1.1166600	1.0007490		-10.4	+/-20
Endrin	L	40.000	31.3	1.3825400	1.0804070		-21.9	+/-20 *
Endrin [2C]	L	40.000	31.3	1.6101570	1.2590140		-21.8	+/-20 *
Endosulfan II	L	40.000	34.3	1.2946390	1.1103320		-14.2	+/-20
Endosulfan II [2C]	L	40.000	34.2	1.5210760	1.3014530		-14.4	+/-20
4,4'-DDD	L	40.000	35.1	1.2408670	1.0882740		-12.3	+/-20
4,4'-DDD [2C]	L	40.000	34.0	1.4718860	1.2514160		-15.0	+/-20

\* Values outside of QC limits



INITIAL CALIBRATION CHECK  
EPA 8081B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ECD6

Calibration: GD00035

Lab File ID: 23050203.D

Calibration Date: 04/12/2023

Sequence: SLE0106

Injection Date: 05/02/23

Lab Sample ID: SLE0106-ICV1

Injection Time: 14:00

Sequence Name: INDA

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Endrin Aldehyde	L	40.000	34.3	0.9880472	0.8466115		-14.3	+/-20
Endrin Aldehyde [2C]	L	40.000	34.4	1.0998080	0.9445699		-14.1	+/-20
4,4'-DDT	L	40.000	34.4	1.3364530	1.1481980		-14.1	+/-20
4,4'-DDT [2C]	L	40.000	34.2	1.4849930	1.2696620		-14.5	+/-20
Endosulfan Sulfate	L	40.000	33.4	1.2205710	1.0181090		-16.6	+/-20
Endosulfan Sulfate [2C]	L	40.000	33.8	1.4006150	1.1825270		-15.6	+/-20
Endrin Ketone	L	40.000	33.7	1.3927500	1.1738660		-15.7	+/-20
Endrin Ketone [2C]	L	40.000	34.3	1.5294950	1.3100730		-14.3	+/-20
Methoxychlor	L	200.00	159	0.5725617	0.4552460		-20.5	+/-20 *
Methoxychlor [2C]	L	200.00	157	0.6367416	0.4983234		-21.7	+/-20 *
Hexachlorobutadiene	L	20.000	17.4	1.8042650	1.5675810		-13.1	+/-20
Hexachlorobutadiene [2C]	L	20.000	17.3	1.5408270	1.3361080		-13.3	+/-20
Hexachlorobenzene	L	20.000	17.2	1.5480310	1.3295080		-14.1	+/-20
Hexachlorobenzene [2C]	L	20.000	17.6	1.4821210	1.3044330		-12.0	+/-20
Decachlorobiphenyl	L	40.000	31.6	0.9435985	0.7446219		-21.1	+/-20
Decachlorobiphenyl [2C]	L	40.000	33.8	0.9656082	0.8148908		-15.6	+/-20
Tetrachlorometaxylene	L	40.000	35.6	1.1193850	0.9964366		-11.0	+/-20
Tetrachlorometaxylene [2C]	L	40.000	35.8	1.1000560	0.9857508		-10.4	+/-20

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230502.b/23050203.D  
Data file 2: /20230502.b/B20230502.b/23050203.D  
Method: \20230502.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SLE0106-ICV1  
Client ID:  
Injection Date: 02-MAY-2023 14:00  
Report Date: 05/05/2023 15:03  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Response	RT	CLP2 Col Shift Response	Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.327	-0.006	241262	4.752	-0.010	253121	17.90	17.83	0.4	alpha-BHC N
4.711	-0.006	92555	5.219	-0.011	97619	17.20	17.31	0.6	beta-BHC N
4.895	-0.006	217751	5.566	-0.011	219505	17.85	17.37	2.7	delta-BHC N
4.630	-0.007	210040	5.141	-0.011	222433	17.74	17.82	0.5	gamma-BHC (Lindane) N
5.118	-0.006	197226	5.660	-0.011	196179	18.00	17.92	0.4	Heptachlor N
5.441	-0.007	201686	6.059	-0.013	205033	18.09	18.04	0.3	Aldrin N
6.117	-0.008	173271	6.716	-0.013	172480	17.22	17.24	0.1	Heptachlor epoxide b N
6.559	-0.008	163083	7.160	-0.012	152426	18.18	17.88	1.6	Endosulfan I N
6.819	-0.009	346142	7.455	-0.011	334900	36.46	35.85	1.7	Dieldrin N
6.482	-0.007	327175	7.246	-0.011	324558	36.55	36.50	0.2	4,4'-DDE N
7.070	-0.008	278106	7.778	-0.012	263795	31.26	31.28	0.1	Endrin N
7.306	-0.008	285809	7.989	-0.012	272687	34.31	34.22	0.2	Endosulfan II N
7.129	-0.007	280131	7.851	-0.011	262203	35.08	34.01	3.1	4,4'-DDD N
8.168	-0.009	262070	8.588	-0.010	247769	33.37	33.77	1.2	Endosulfan sulfate N
7.423	-0.008	295556	8.170	-0.011	266026	34.37	34.20	0.5	4,4'-DDT N
7.912	-0.008	585921	8.810	-0.012	522056	159.02	156.52	1.6	Methoxychlor N
8.443	-0.009	302163	9.109	-0.010	274493	33.71	34.26	1.6	Endrin ketone N
7.734	-0.009	217925	8.321	-0.010	197911	34.27	34.35	0.2	Endrin aldehyde N
6.259	-0.007	176751	6.928	-0.011	170793	17.95	17.81	0.8	trans-Chlordane N
6.405	-0.008	177004	7.088	-0.012	168051	17.91	17.79	0.7	cis-Chlordane N
2.304	-0.005	241511	2.448	-0.005	223564	17.38	17.34	0.2	Hexachlorobutadiene N
4.168	-0.007	204832	4.613	-0.009	218264	17.18	17.60	2.4	Hexachlorobenzene
3.813	-0.006	307034	4.128	-0.008	329881	35.61	35.84	0.7	Tetrachloro-m-xylene
9.359	-0.007	191672	10.296	-0.010	170740	31.57	33.76	6.7	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

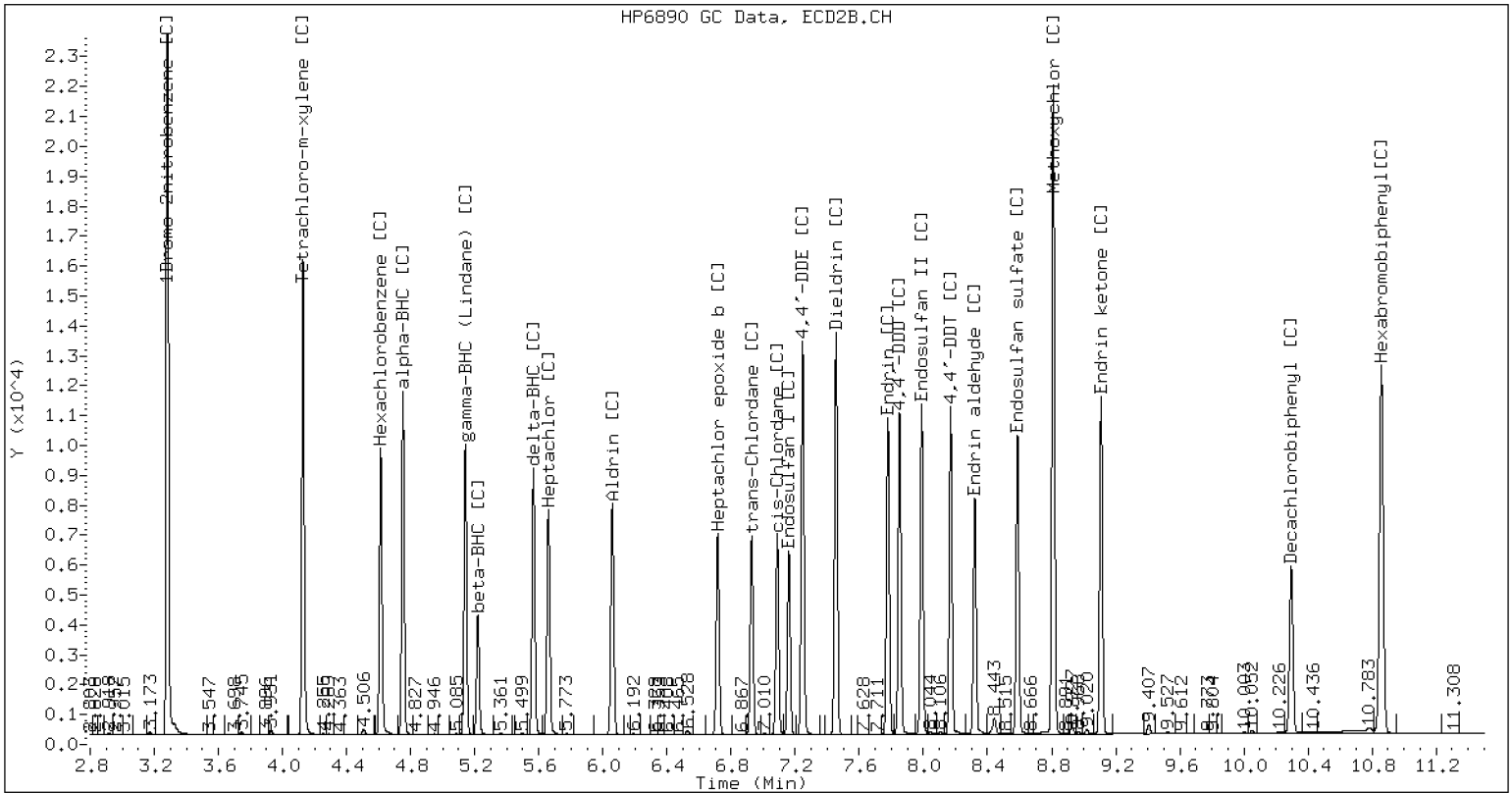
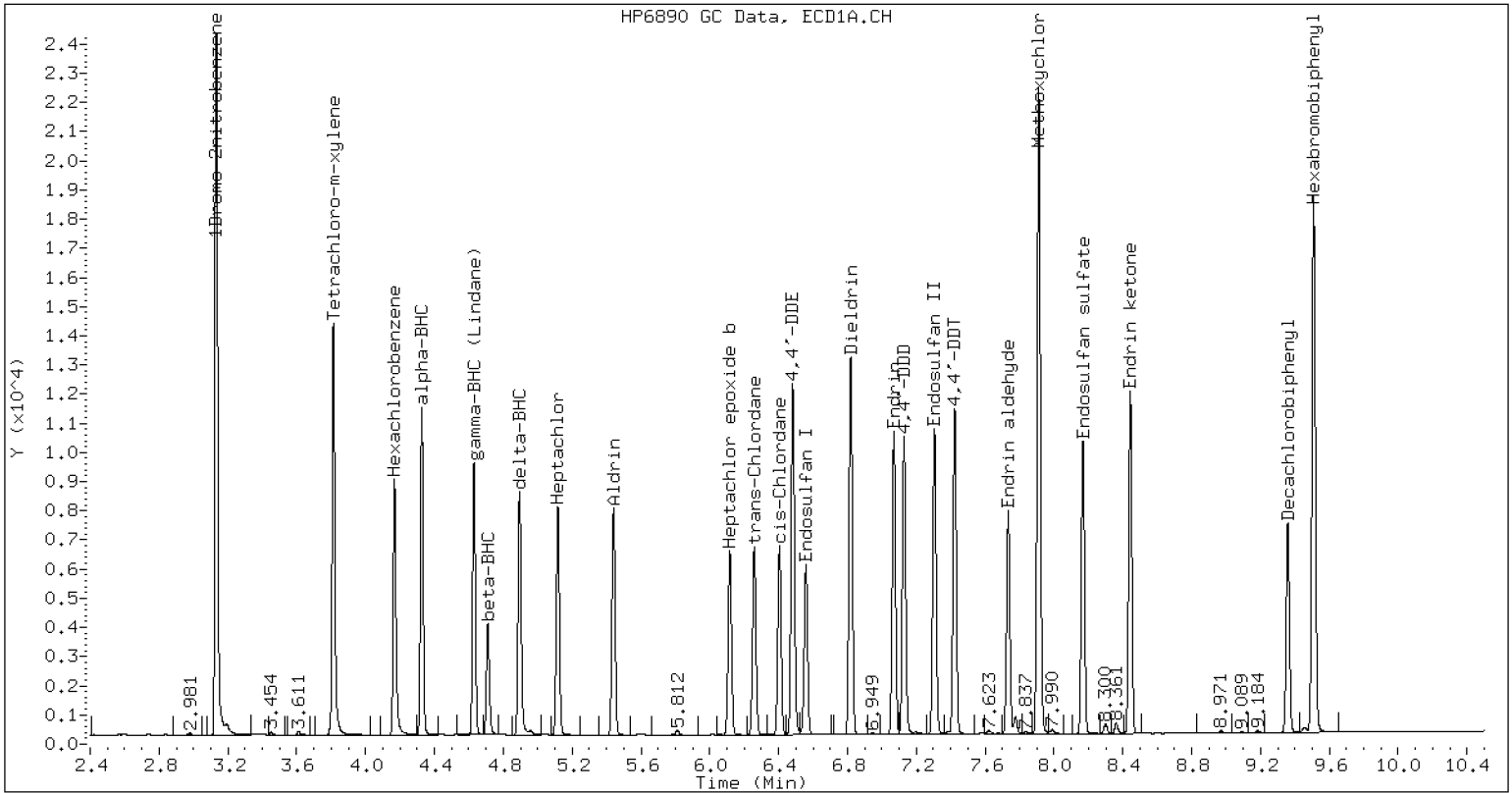
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	932757	616264	-33.9
Hexabromobiphenyl	745426	514817	-30.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1248665	669299	-46.4
Hexabromobiphenyl	754634	419050	-44.5

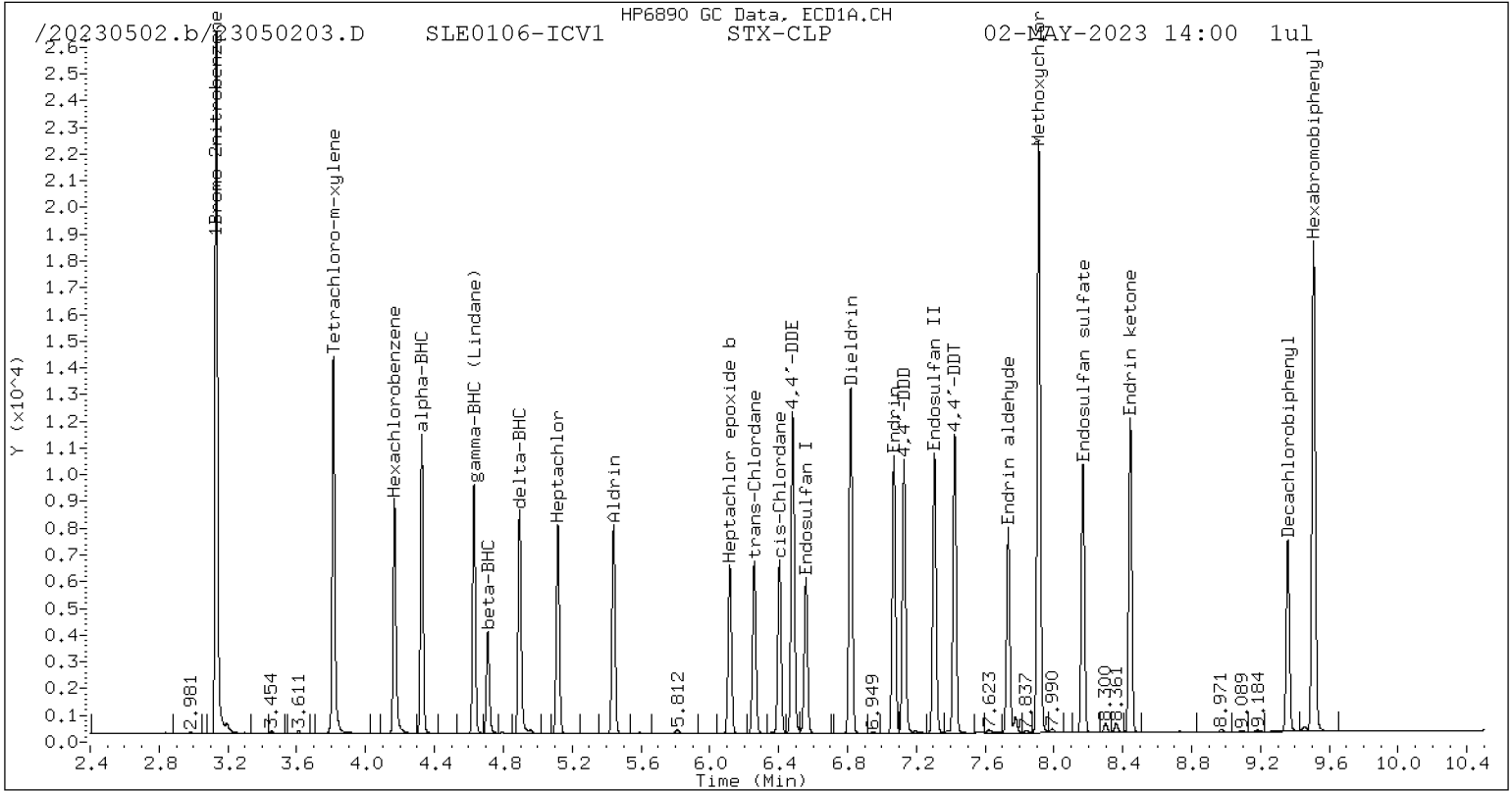
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

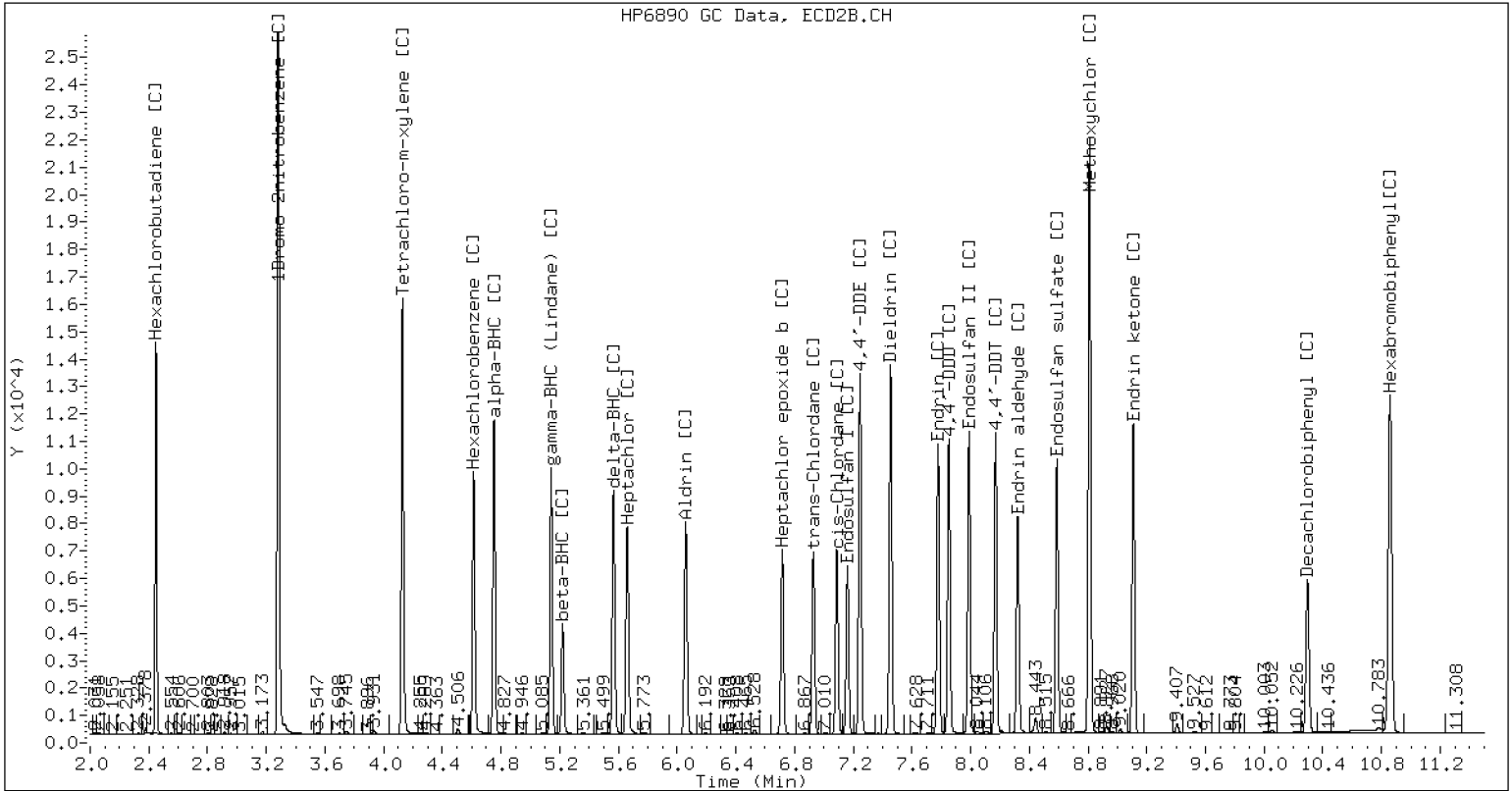


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230502.b/B20230502.b/23050203.D SLE0106-ICV1 CLP2



CLP-2 Manual Integration: YES

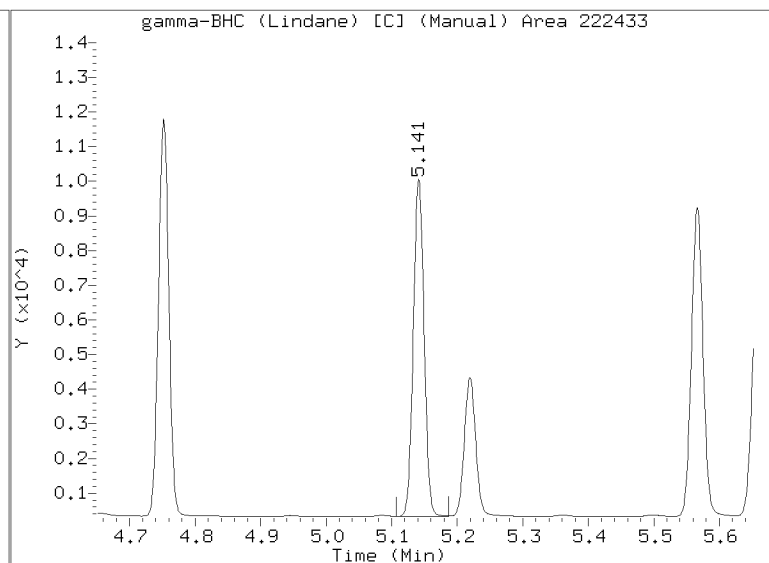
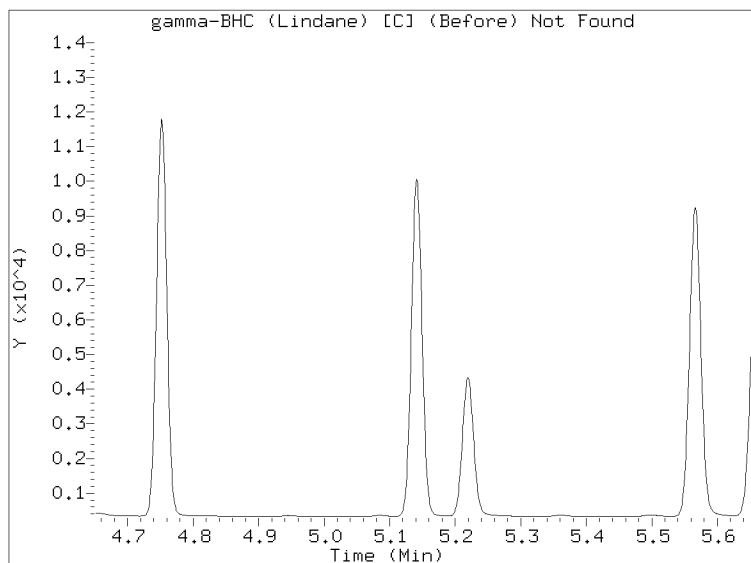
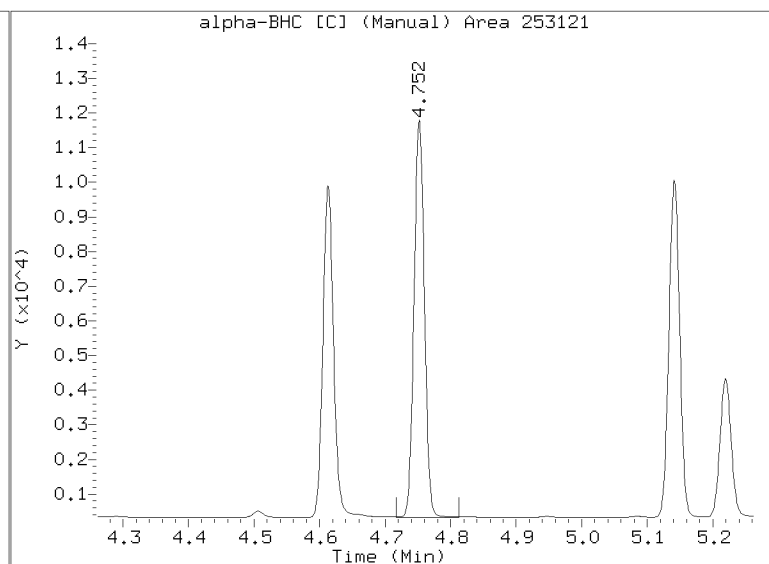
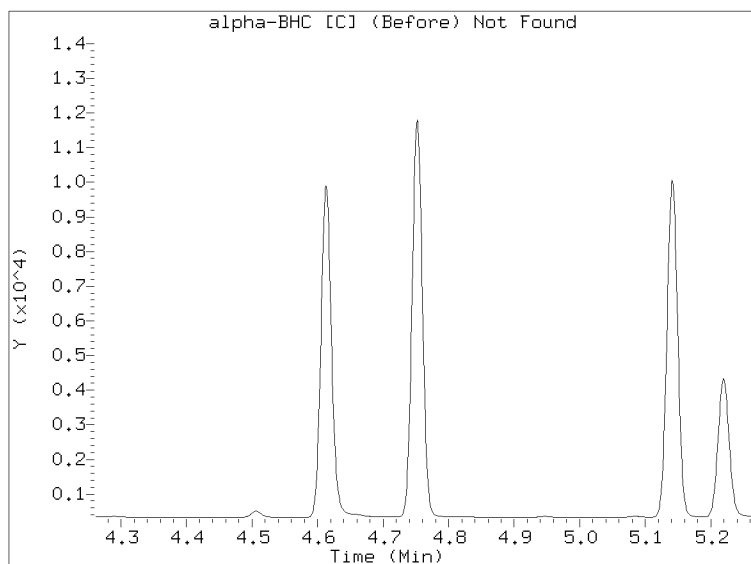
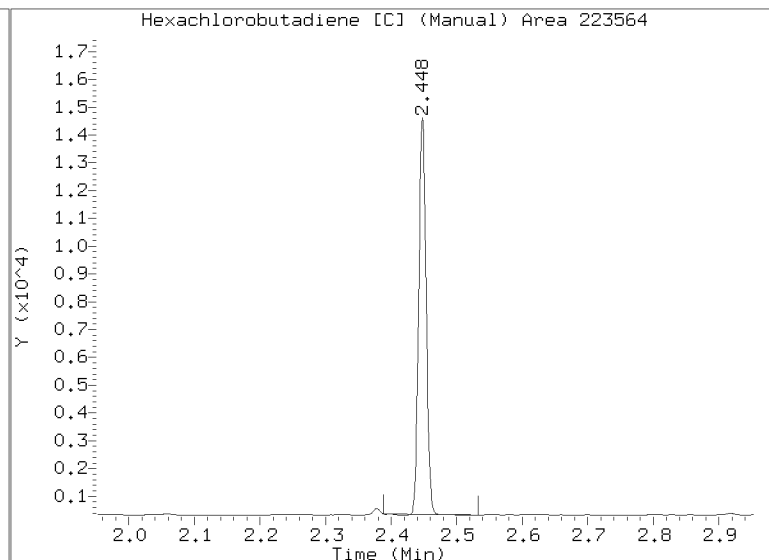
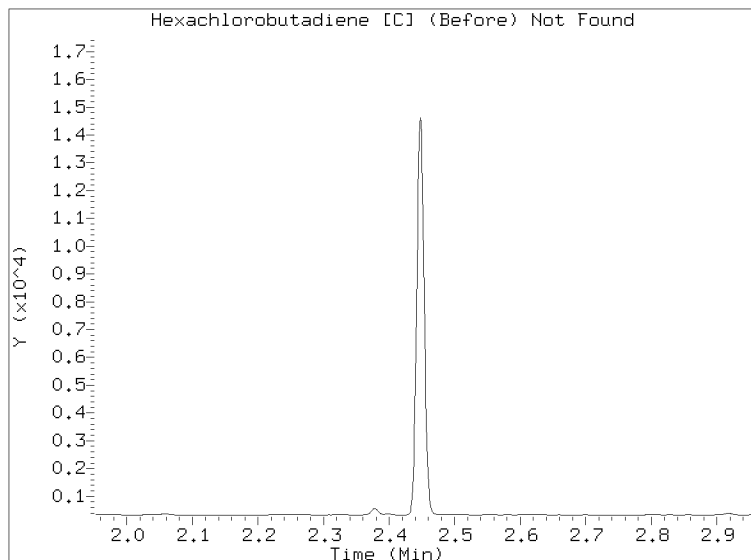


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050203.D

Injection Date: 02-MAY-2023 14:00

Lab ID:SLE0106-ICV1 Client ID:

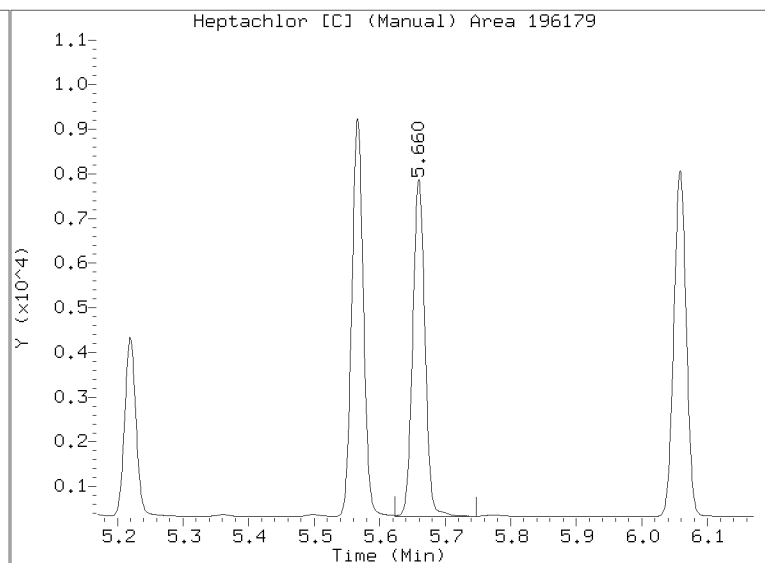
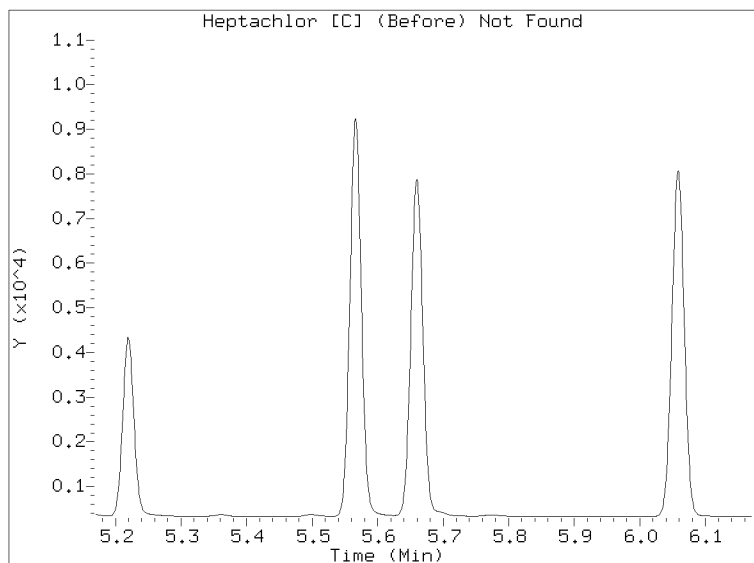
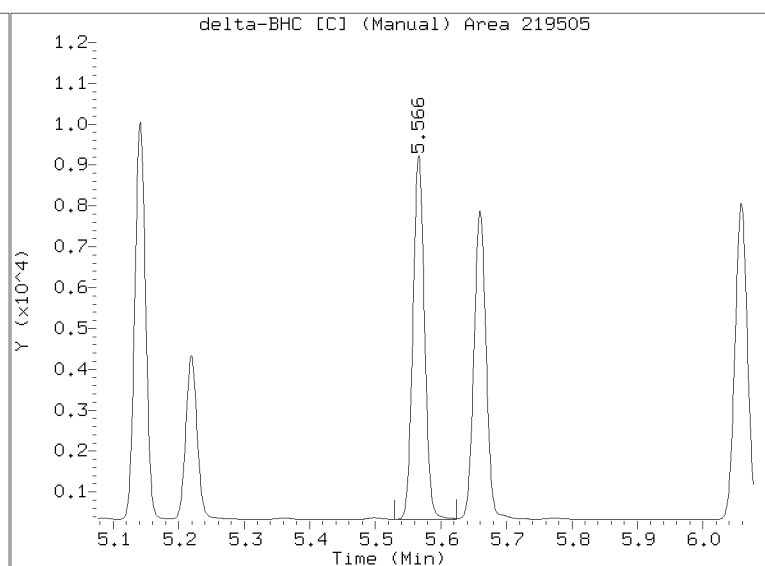
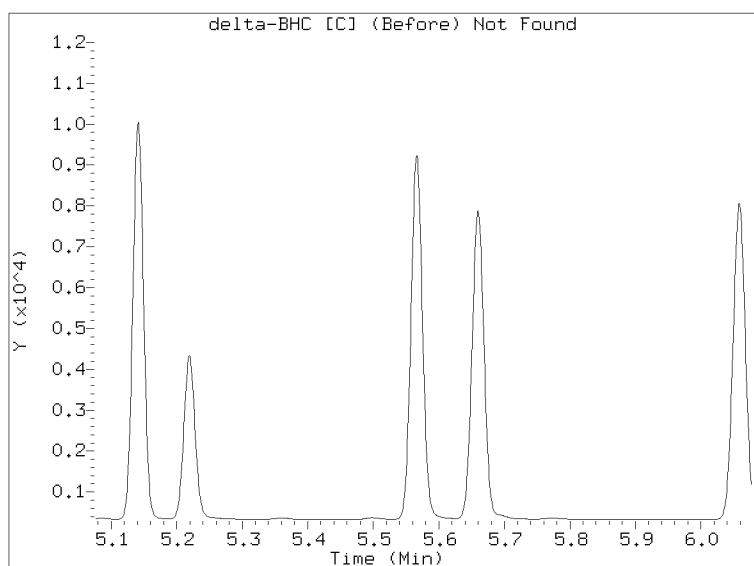
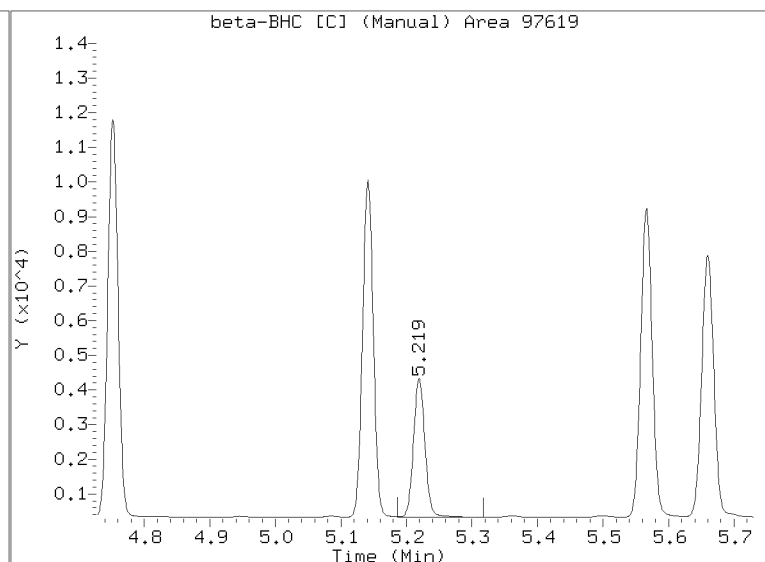
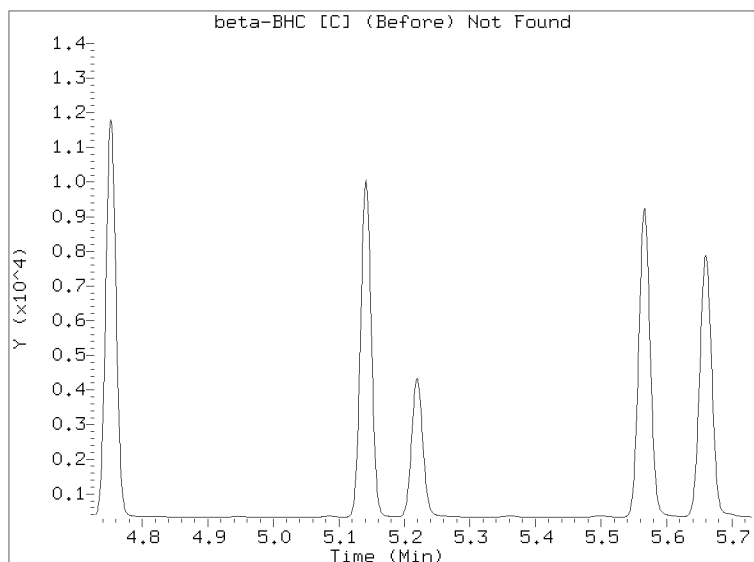


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050203.D

Injection Date: 02-MAY-2023 14:00

Lab ID:SLE0106-ICV1 Client ID:

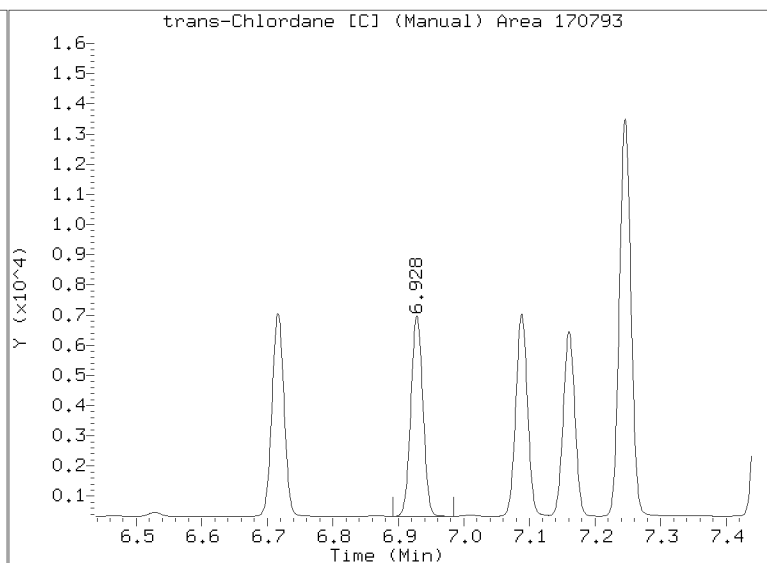
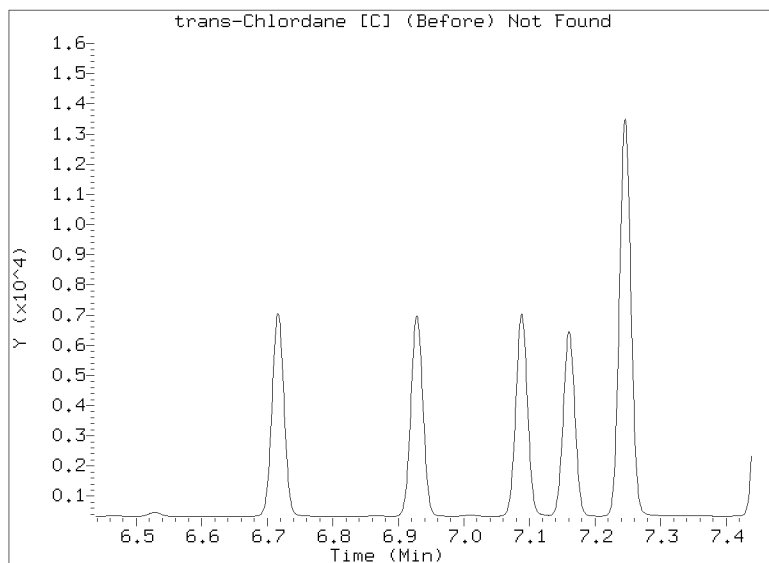
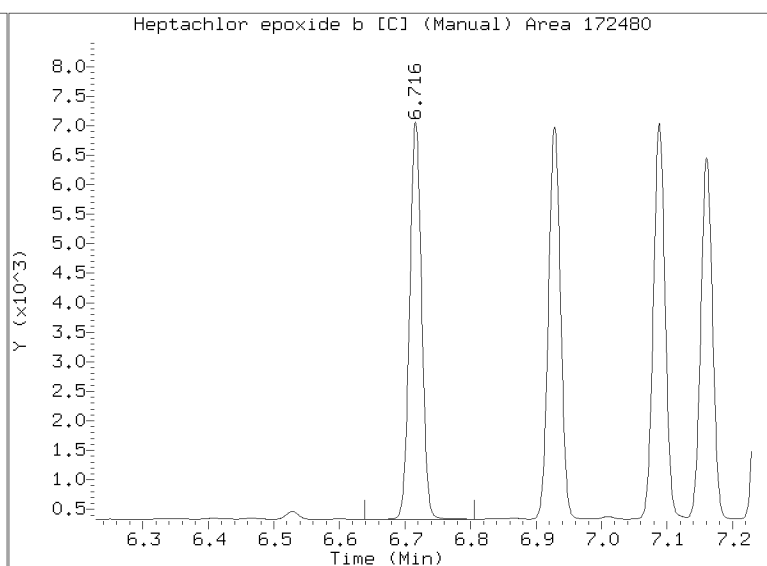
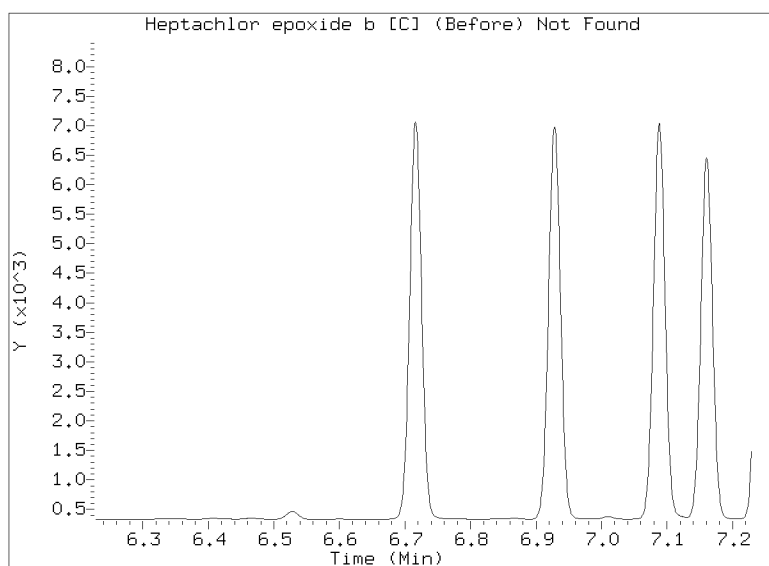
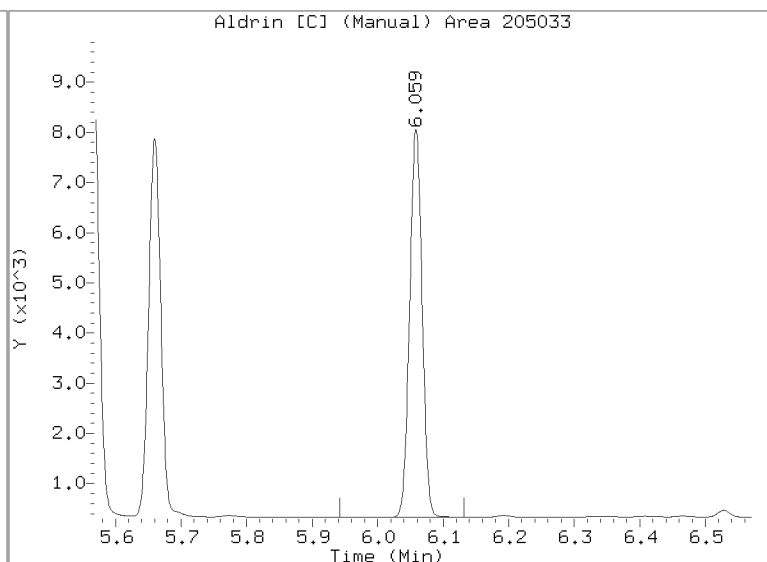
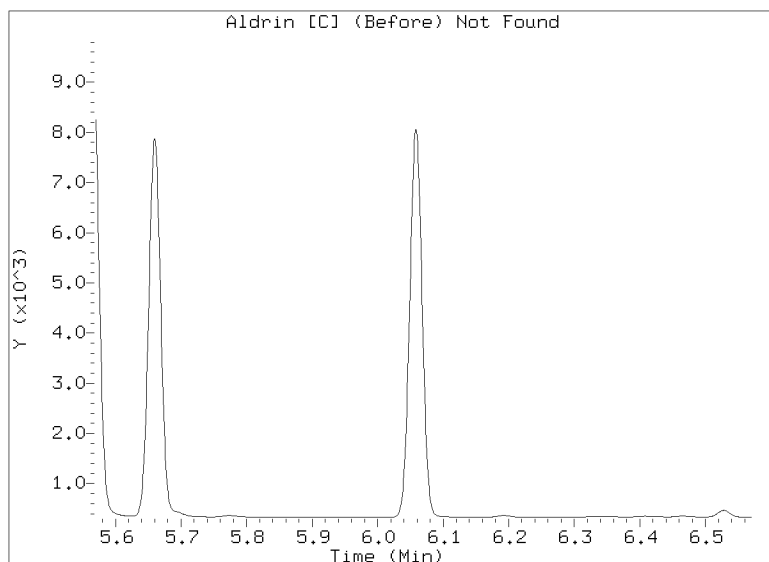


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050203.D

Injection Date: 02-MAY-2023 14:00

Lab ID: SLE0106-ICV1 Client ID:

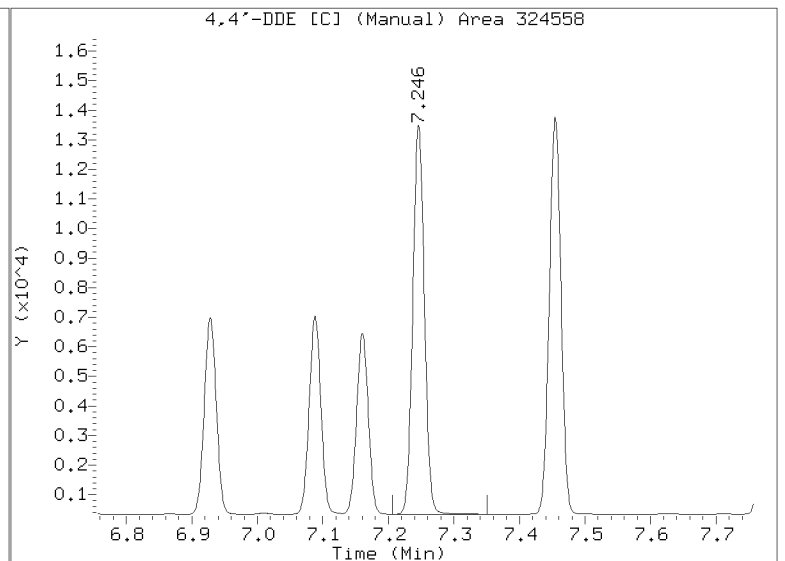
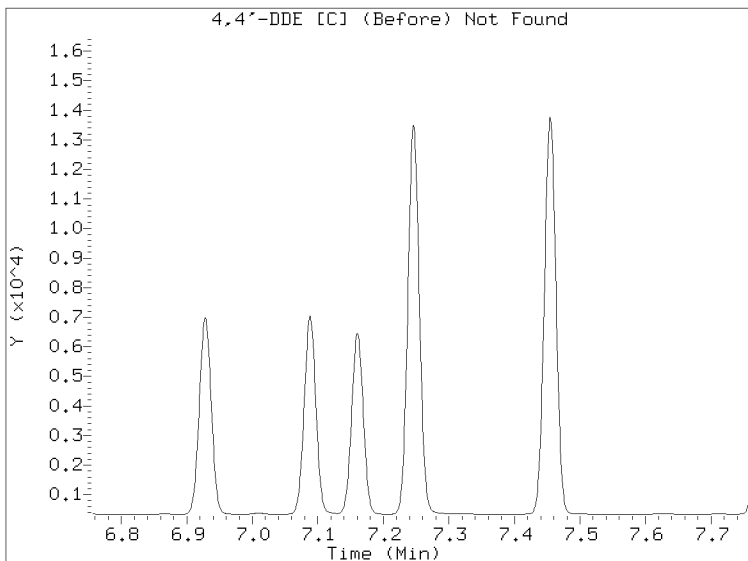
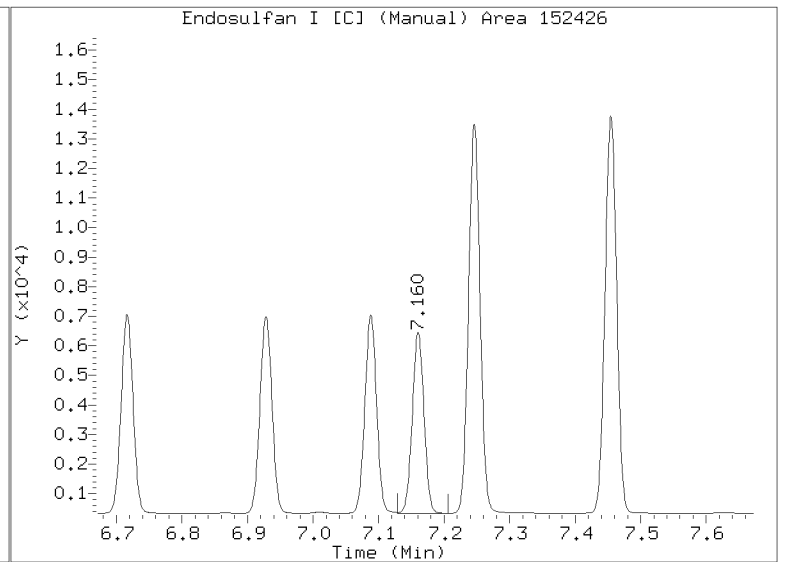
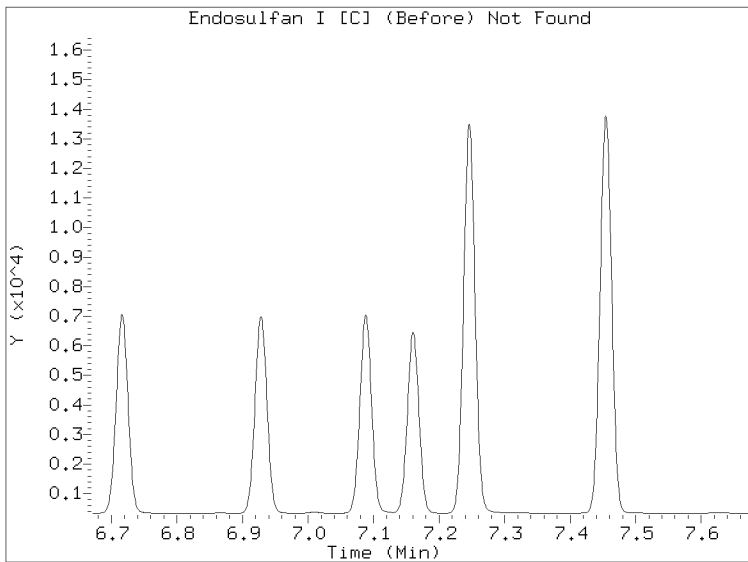
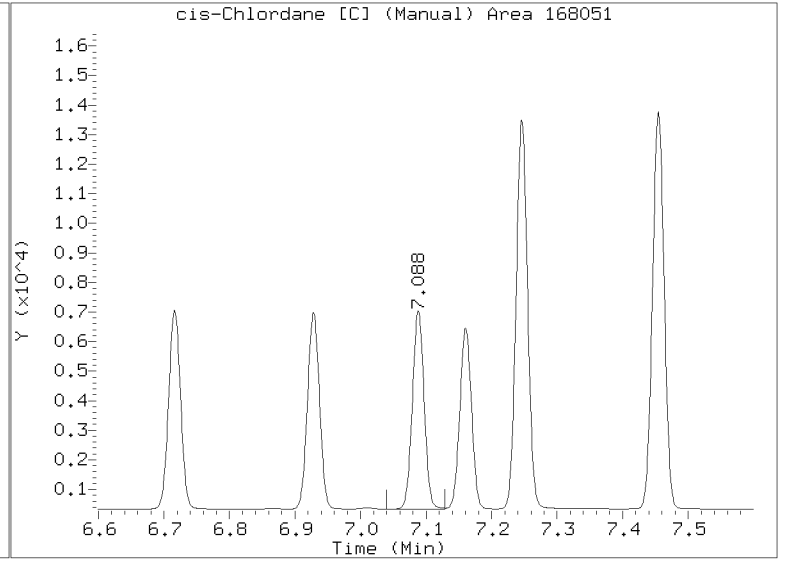
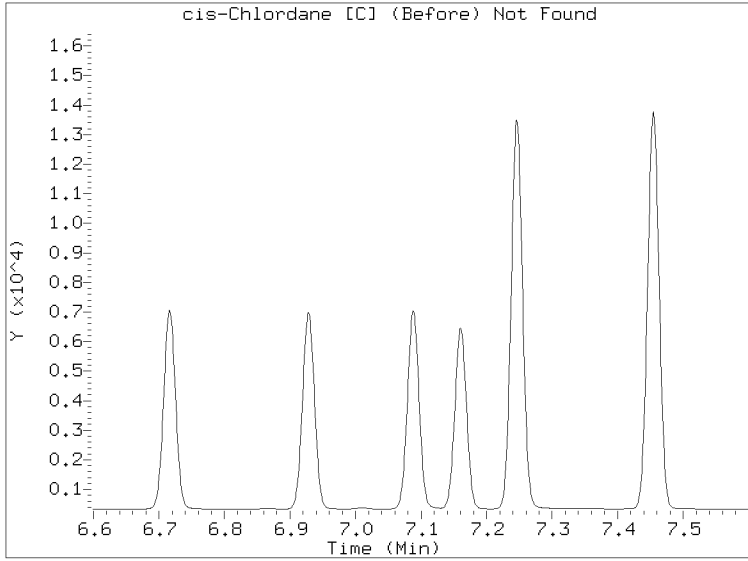


Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050203.D

Injection Date: 02-MAY-2023 14:00

Lab ID:SLE0106-ICV1 Client ID:

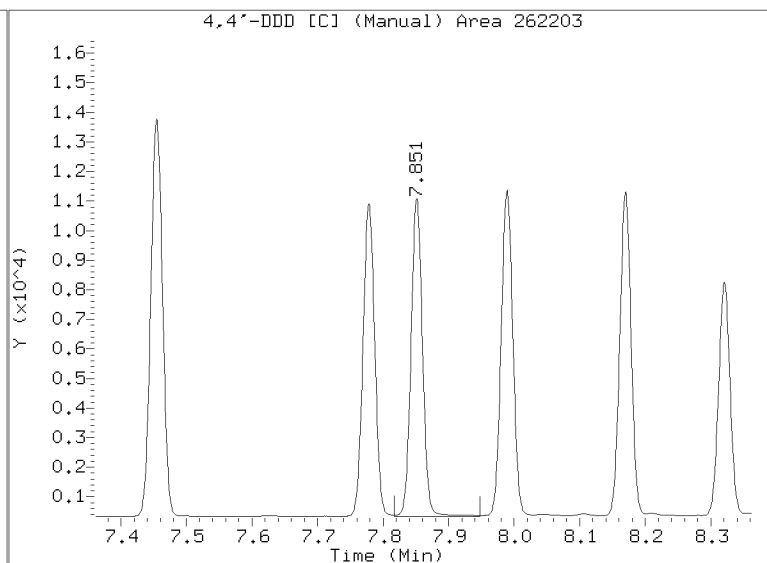
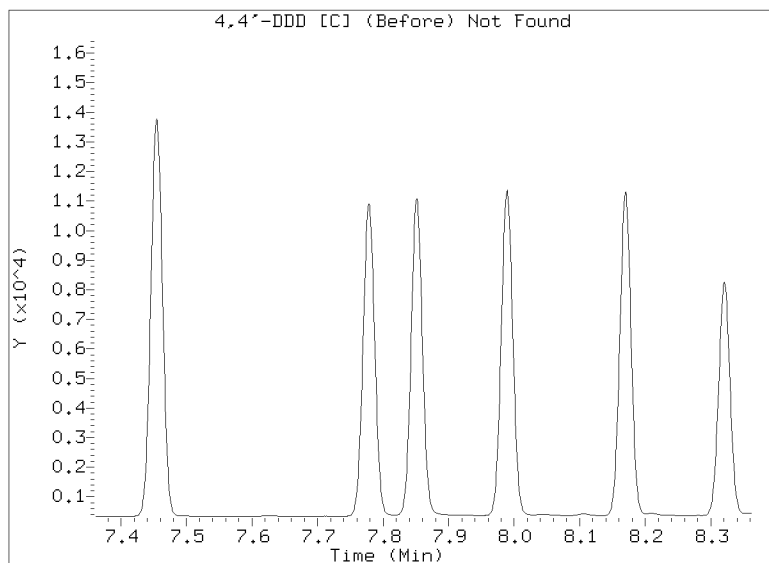
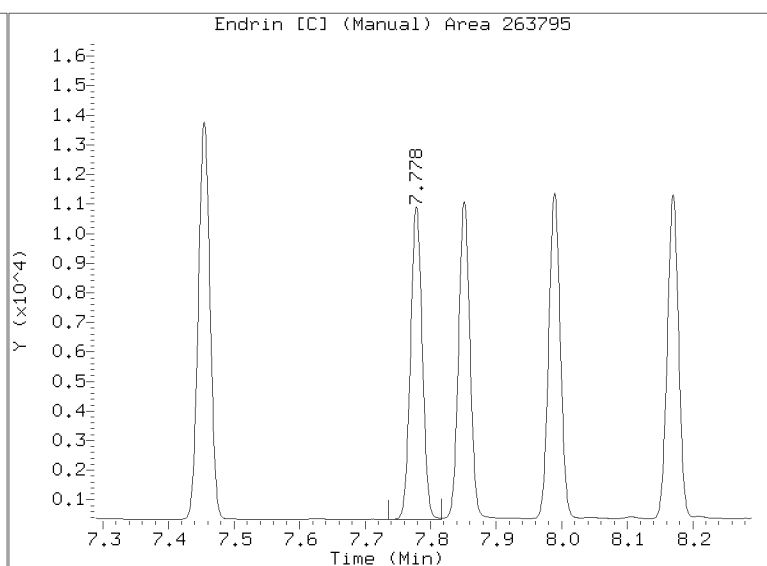
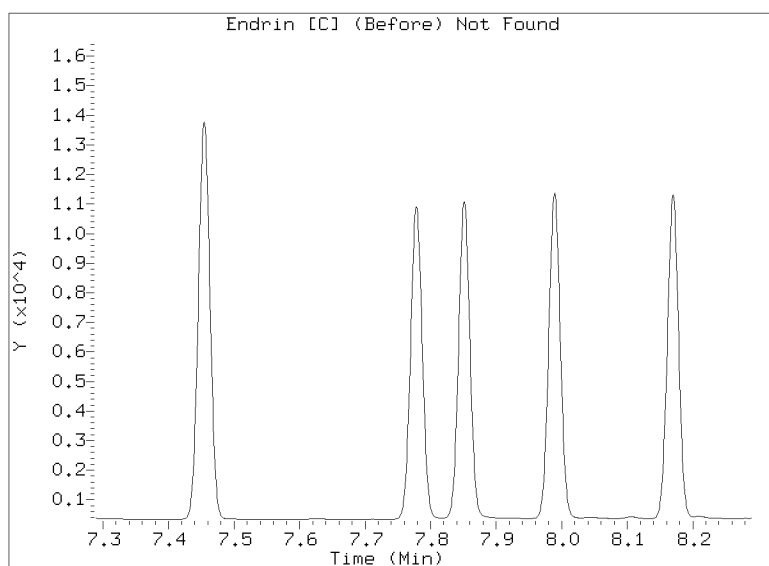
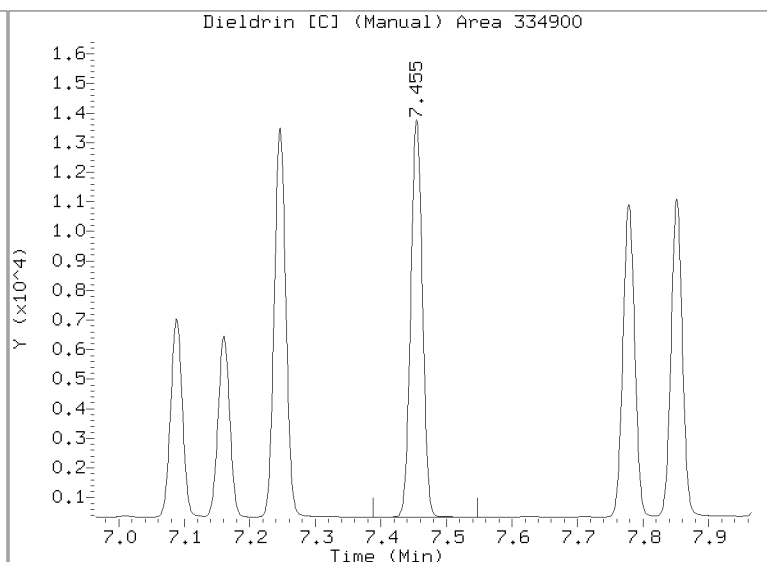
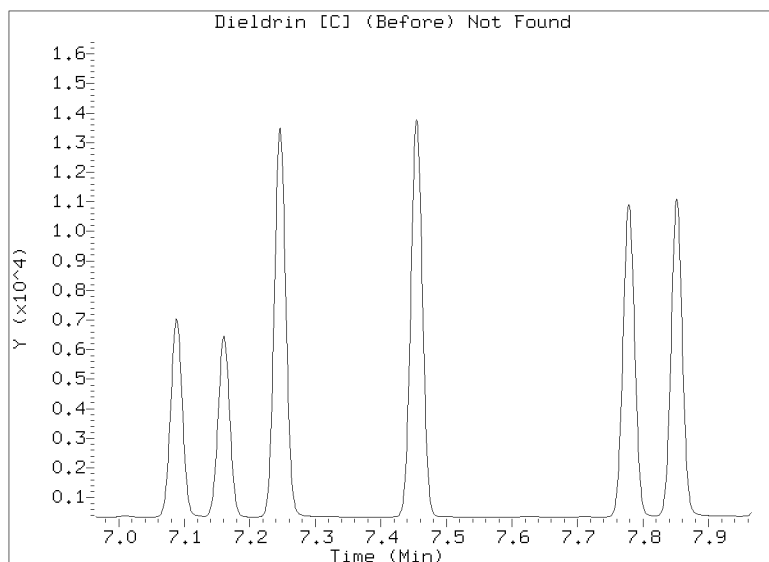


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050203.D

Injection Date: 02-MAY-2023 14:00

Lab ID:SLE0106-ICV1 Client ID:

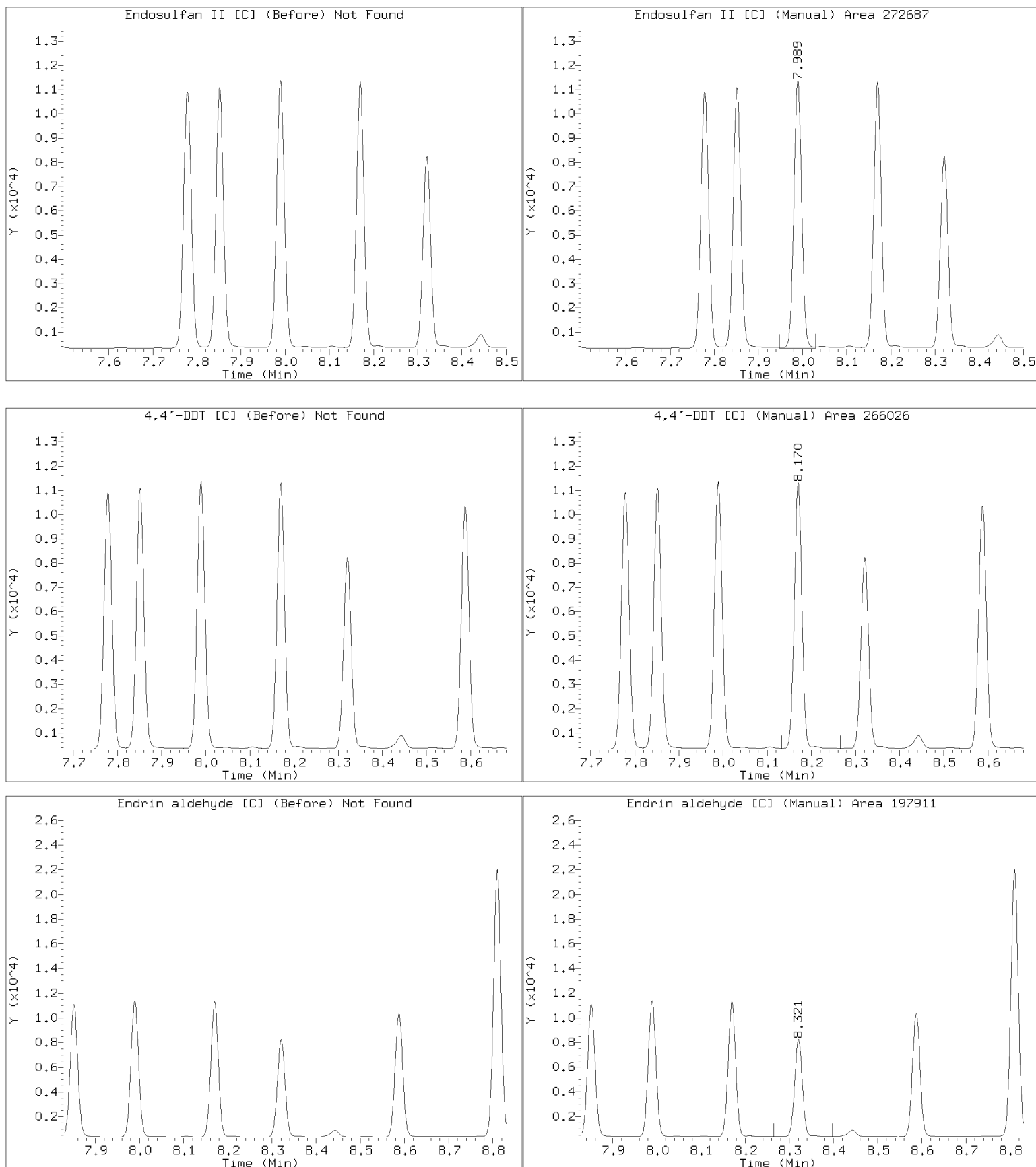


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050203.D

Injection Date: 02-MAY-2023 14:00

Lab ID:SLE0106-ICV1 Client ID:

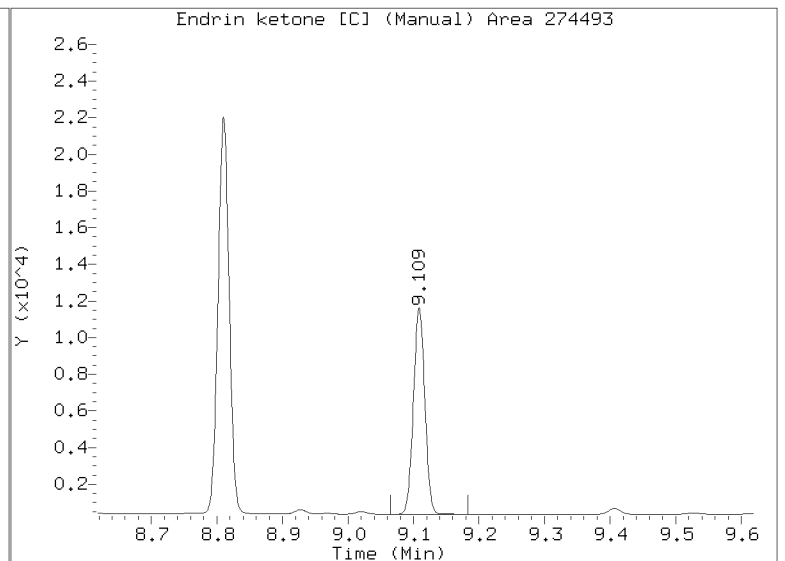
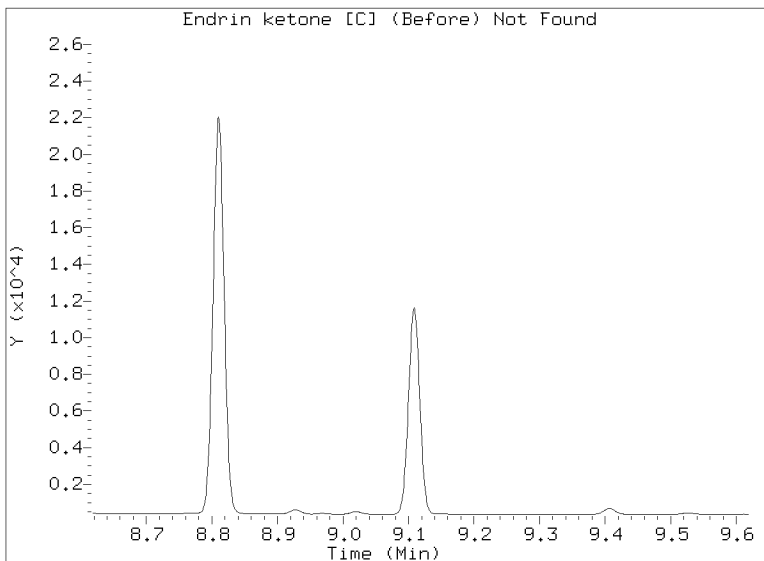
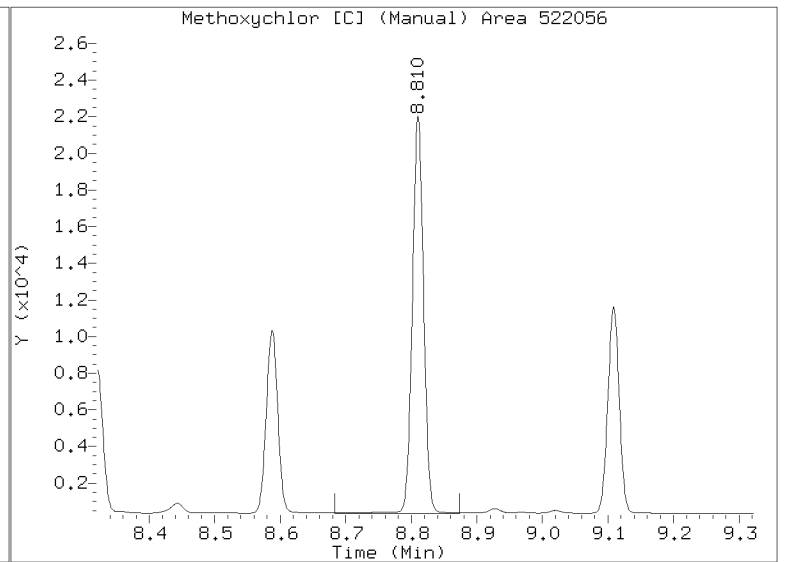
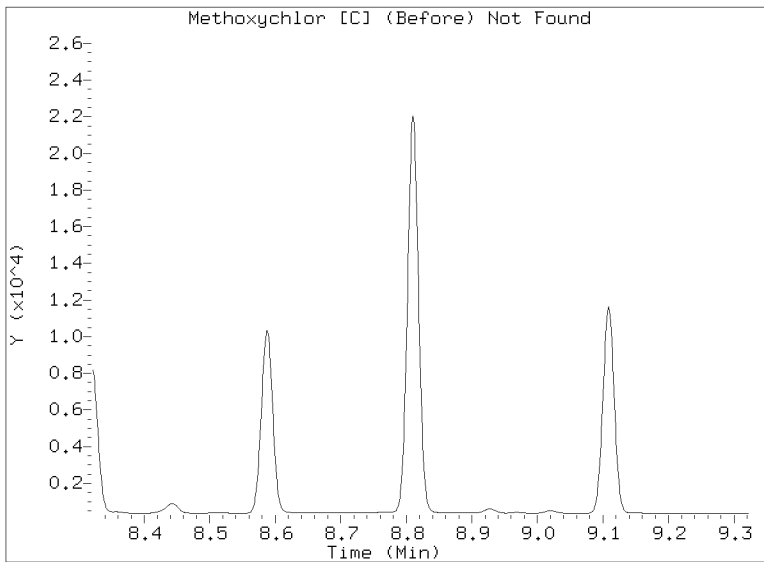
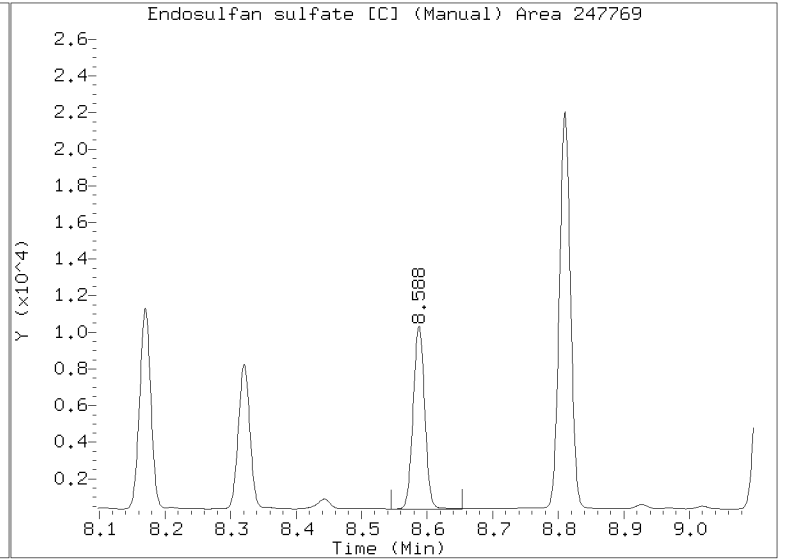
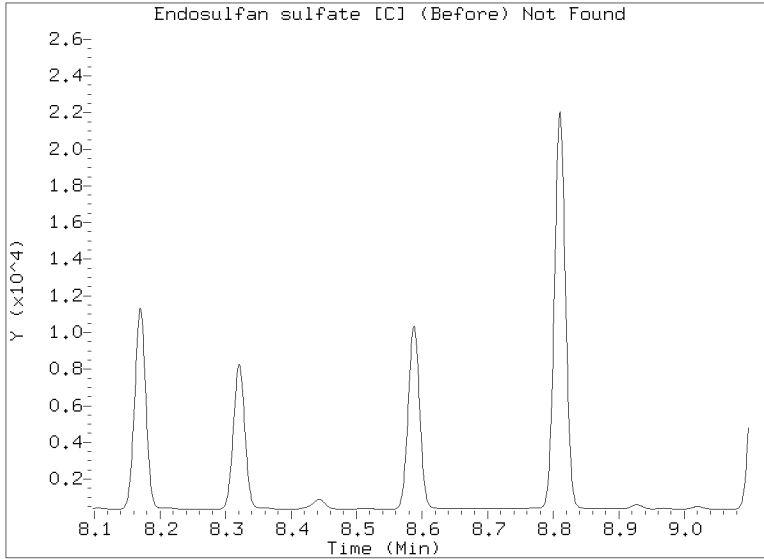


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050203.D

Injection Date: 02-MAY-2023 14:00

Lab ID:SLE0106-ICV1 Client ID:





**CONTINUING CALIBRATION CHECK**  
**EPA 8081B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD6</u>	Calibration:	<u>GD00035</u>
Lab File ID:	<u>23041235.D</u>	Calibration Date:	<u>04/12/2023</u>
Sequence:	<u>SLD0187</u>	Injection Date:	<u>04/13/23</u>
Lab Sample ID:	<u>SLD0187-CCV1</u>	Injection Time:	<u>01:04</u>
Sequence Name:	<u>INDA</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Hexachlorobenzene	L	20.000	17.7	1.5480310	1.3705910		-11.5	+/-20
Hexachlorobenzene [2C]	L	20.000	17.6	1.4821210	1.3041330		-12.0	+/-20
Decachlorobiphenyl	L	40.000	31.5	0.9435985	0.7437408		-21.2	+/-20 *
Decachlorobiphenyl [2C]	L	40.000	33.7	0.9656082	0.8132911		-15.8	+/-20
Tetrachlorometaxylene	L	40.000	35.5	1.1193850	0.9929160		-11.3	+/-20
Tetrachlorometaxylene [2C]	L	40.000	35.7	1.1000560	0.9804321		-10.9	+/-20

\* Values outside of QC limits



Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230412.b/23041235.D  
Data file 2: /20230412.b/B20230412.b/23041235.D  
Method: \20230412.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SEQ-CCV1  
Client ID:  
Injection Date: 13-APR-2023 01:04  
Report Date: 04/14/2023 08:21  
Units: ng/mL  
Dilution Factor: 1.000

STX-CLP Col			CLP2 Col			STX-CLP	CLP2	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
4.333	0.000	208008	4.761	-0.001	287888	18.06	18.02	0.2	alpha-BHC
4.717	0.000	79862	5.229	-0.001	109669	17.36	17.28	0.5	beta-BHC
4.902	0.001	188433	5.576	-0.001	237187	18.07	16.67	8.0	delta-BHC
4.636	-0.001	182247	5.151	-0.001	252117	18.00	17.94	0.3	gamma-BHC (Lindane)
5.124	0.000	169287	5.670	-0.001	224742	18.07	18.24	0.9	Heptachlor
5.448	0.000	171419	6.070	-0.001	229274	17.99	17.93	0.3	Aldrin
6.124	-0.001	148660	6.728	-0.001	192857	17.28	17.13	0.9	Heptachlor epoxide b
6.566	-0.001	138285	7.171	-0.001	170414	18.03	17.76	1.5	Endosulfan I
6.827	-0.001	293527	7.465	-0.001	375070	36.17	35.67	1.4	Dieldrin
6.489	-0.000	275619	7.256	-0.001	359780	36.02	35.95	0.2	4,4'-DDE
7.078	-0.000	245317	7.788	-0.002	307967	32.47	32.73	0.8	Endrin
7.313	-0.001	244401	7.999	-0.002	305137	34.55	34.32	0.6	Endosulfan II
7.136	0.000	235703	7.861	-0.001	297615	34.76	34.60	0.5	4,4'-DDD
8.177	-0.000	226454	8.596	-0.002	280518	33.95	34.27	0.9	Endosulfan sulfate
7.430	-0.001	252702	8.179	-0.002	304879	34.60	35.13	1.5	4,4'-DDT
7.918	-0.002	503978	8.819	-0.003	618699	161.08	166.25	3.2	Methoxychlor
8.451	-0.001	257108	9.118	-0.001	308074	33.78	34.46	2.0	Endrin ketone
7.742	-0.001	185692	8.330	-0.001	219950	34.39	34.22	0.5	Endrin aldehyde
6.266	-0.000	150597	6.938	-0.001	190549	17.89	17.65	1.4	trans-Chlordane
6.413	-0.000	150637	7.099	-0.001	186807	17.83	17.57	1.4	cis-Chlordane
2.309	-0.000	206970	2.453	-0.000	178864	17.42	12.33	34.2	Hexachlorobutadiene
4.175	-0.000	180515	4.622	-0.000	245593	17.71	17.60	0.6	Hexachlorobenzene
3.820	0.001	261546	4.136	-0.000	369268	35.48	35.65	0.5	Tetrachloro-m-xylene
9.366	-0.000	162565	10.304	-0.002	190132	31.53	33.69	6.6	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

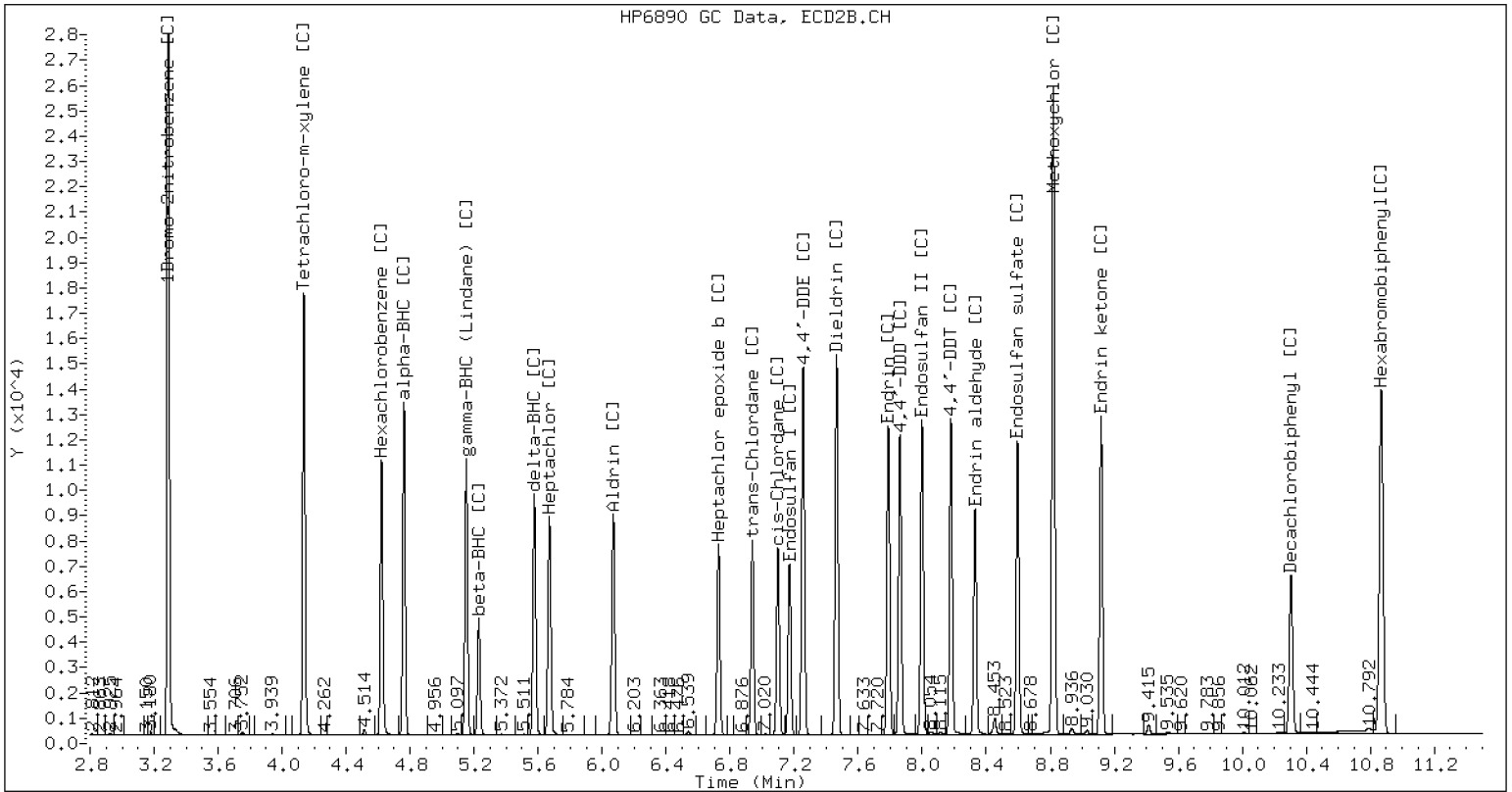
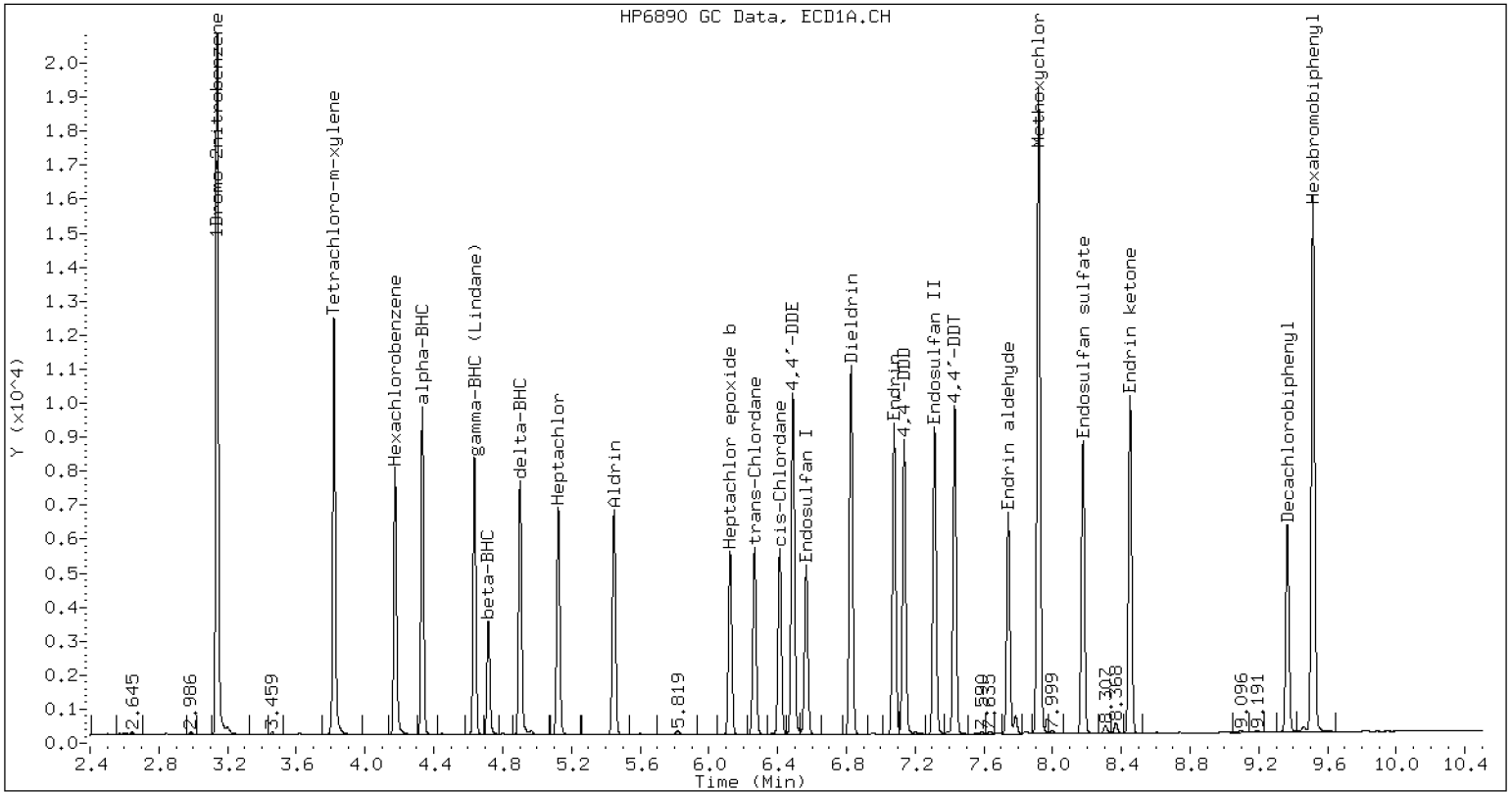
Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	864333	526824	-39.0
Hexabromobiphenyl	663237	437155	-34.1

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1480846	753276	-49.1
Hexabromobiphenyl	870561	467562	-46.3

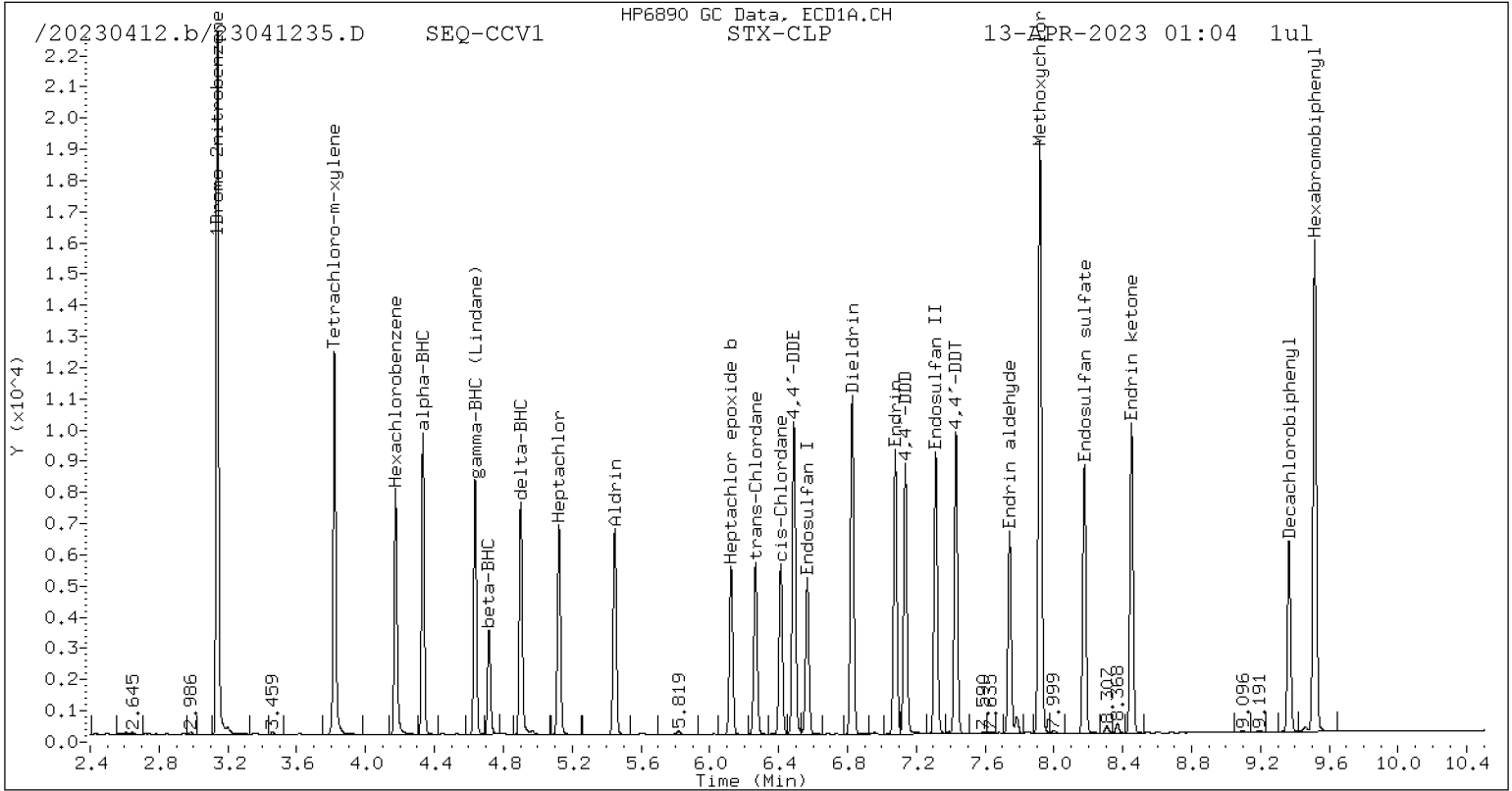
\* Standard Areas taken from Initial Cal Level 5

Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

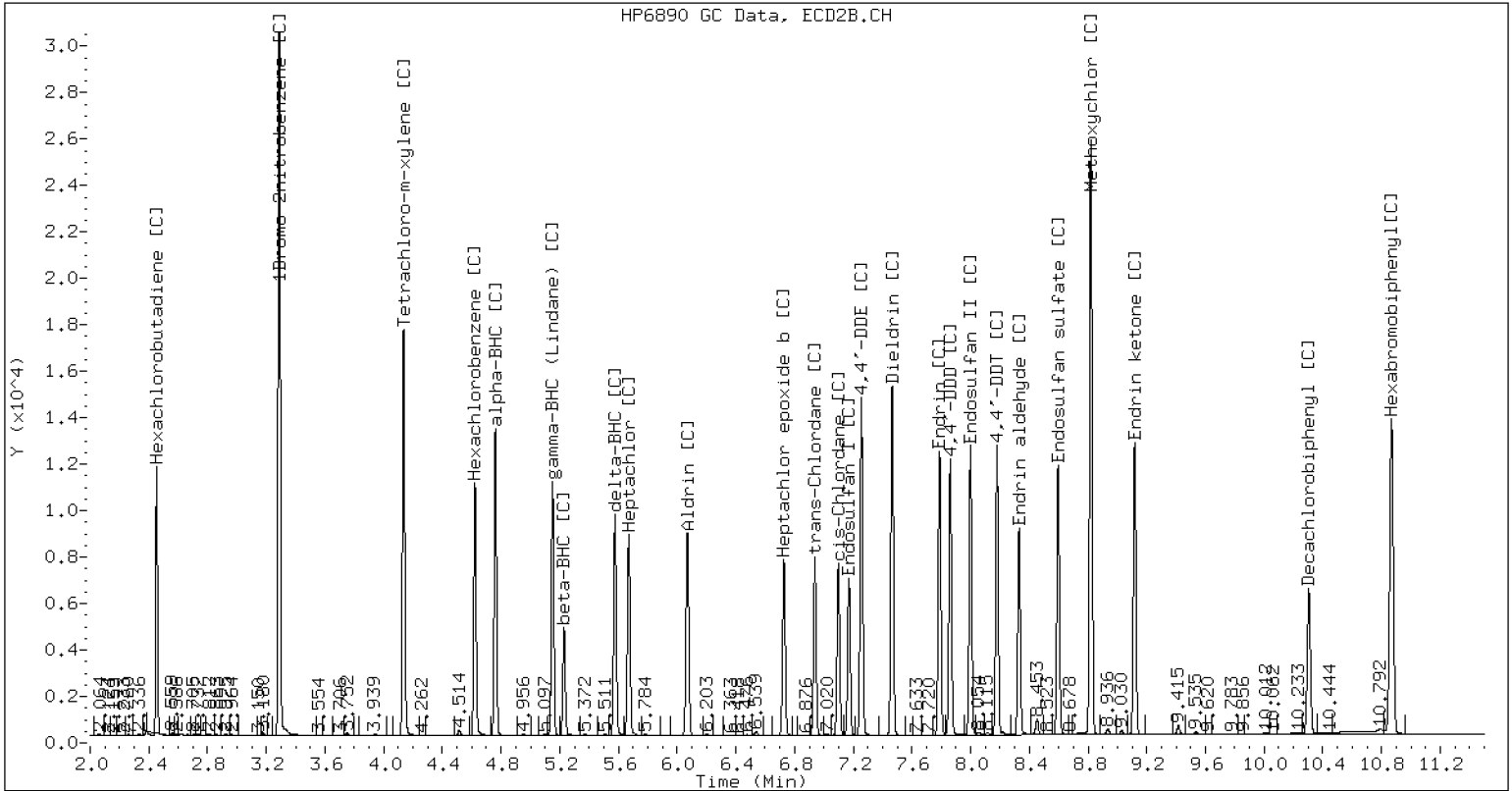


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230412.b/B20230412.b/23041235.D SEQ-CCV1 CLP2



CLP-2 Manual Integration: NO



CONTINUING CALIBRATION CHECK  
EPA 8081B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ECD6

Calibration: GD00035

Lab File ID: 23050221.D

Calibration Date: 04/12/2023

Sequence: SLE0106

Injection Date: 05/02/23

Lab Sample ID: SLE0106-CCV1

Injection Time: 19:35

Sequence Name: INDA

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
alpha-BHC	L	20.000	18.7	1.7493120	1.6374360		-6.4	+/-20
alpha-BHC [2C]	L	20.000	18.5	1.6971320	1.5732490		-7.3	+/-20
beta-BHC	L	20.000	17.8	0.6985426	0.6210694		-11.1	+/-20
beta-BHC [2C]	L	20.000	17.7	0.6741426	0.5965688		-11.5	+/-20
gamma-BHC (Lindane)	L	20.000	18.6	1.5372540	1.4304800		-6.9	+/-20
gamma-BHC (Lindane) [2C]	L	20.000	18.6	1.4921000	1.3883390		-7.0	+/-20
delta-BHC	L	20.000	18.4	1.5838220	1.4558120		-8.1	+/-20
delta-BHC [2C]	L	20.000	18.1	1.5107800	1.3641380		-9.7	+/-20
Heptachlor	L	20.000	18.2	1.4227670	1.2927420		-9.1	+/-20
Heptachlor [2C]	L	20.000	18.5	1.3085210	1.2104570		-7.5	+/-20
Aldrin	L	20.000	18.2	1.4471840	1.3172100		-9.0	+/-20
Aldrin [2C]	L	20.000	18.2	1.3583320	1.2377240		-8.9	+/-20
Heptachlor Epoxide	L	20.000	16.7	1.3062650	1.0920230		-16.4	+/-20
Heptachlor Epoxide [2C]	L	20.000	16.6	1.1956940	0.9899554		-17.2	+/-20
trans-Chlordane (beta-Chlordane)	L	20.000	17.7	1.2781630	1.1312860		-11.5	+/-20
trans-Chlordane (beta-Chlordane) [2C]	L	20.000	17.2	1.1465120	0.9858511		-14.0	+/-20
cis-Chlordane (alpha-chlordane)	L	20.000	17.4	1.2830810	1.1163020		-13.0	+/-20
cis-Chlordane (alpha-chlordane) [2C]	L	20.000	16.8	1.1290160	0.9465719		-16.2	+/-20
Endosulfan I	L	20.000	17.3	1.1644720	1.0064600		-13.6	+/-20
Endosulfan I [2C]	L	20.000	16.6	1.0187800	0.8481224		-16.8	+/-20
4,4'-DDE	L	40.000	35.8	1.1619370	1.0385900		-10.6	+/-20
4,4'-DDE [2C]	L	40.000	33.2	1.0629340	0.8828142		-16.9	+/-20
Dieldrin	L	40.000	34.5	1.2323180	1.0619980		-13.8	+/-20
Dieldrin [2C]	L	40.000	31.8	1.1166600	0.8888187		-20.4	+/-20 *
Endrin	L	40.000	37.7	1.3825400	1.3017190		-5.8	+/-20
Endrin [2C]	L	40.000	33.4	1.6101570	1.3438670		-16.5	+/-20
Endosulfan II	L	40.000	37.8	1.2946390	1.2247560		-5.4	+/-20
Endosulfan II [2C]	L	40.000	34.8	1.5210760	1.3237810		-13.0	+/-20
4,4'-DDD	L	40.000	39.7	1.2408670	1.2311980		-0.8	+/-20
4,4'-DDD [2C]	L	40.000	35.2	1.4718860	1.2964970		-11.9	+/-20
Endrin Aldehyde	L	40.000	36.5	0.9880472	0.9005362		-8.9	+/-20
Endrin Aldehyde [2C]	L	40.000	34.2	1.0998080	0.9409909		-14.4	+/-20
4,4'-DDT	L	40.000	38.8	1.3364530	1.2951250		-3.1	+/-20

\* Values outside of QC limits



**CONTINUING CALIBRATION CHECK  
EPA 8081B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD6</u>	Calibration:	<u>GD00035</u>
Lab File ID:	<u>23050221.D</u>	Calibration Date:	<u>04/12/2023</u>
Sequence:	<u>SLE0106</u>	Injection Date:	<u>05/02/23</u>
Lab Sample ID:	<u>SLE0106-CCV1</u>	Injection Time:	<u>19:35</u>
Sequence Name:	<u>INDA</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
4,4'-DDT [2C]	L	40.000	36.0	1.4849930	1.3362050		-10.0	+/-20
Endosulfan Sulfate	L	40.000	35.9	1.2205710	1.0965560		-10.2	+/-20
Endosulfan Sulfate [2C]	L	40.000	34.9	1.4006150	1.2228200		-12.7	+/-20
Endrin Ketone	L	40.000	35.2	1.3927500	1.2262730		-12.0	+/-20
Endrin Ketone [2C]	L	40.000	33.8	1.5294950	1.2906530		-15.6	+/-20
Methoxychlor	L	200.00	184	0.5725617	0.5273319		-7.9	+/-20
Methoxychlor [2C]	L	200.00	172	0.6367416	0.5487506		-13.8	+/-20
Hexachlorobutadiene	L	20.000	17.9	1.8042650	1.6106140		-10.7	+/-20
Hexachlorobutadiene [2C]	L	20.000	16.4	1.5408270	1.2614730		-18.1	+/-20
Hexachlorobenzene	L	20.000	17.2	1.5480310	1.3279080		-14.2	+/-20
Hexachlorobenzene [2C]	L	20.000	17.6	1.4821210	1.3070640		-11.8	+/-20
Decachlorobiphenyl	L	40.000	31.0	0.9435985	0.7322107		-22.4	+/-20
Decachlorobiphenyl [2C]	L	40.000	32.2	0.9656082	0.7772535		-19.5	+/-20
Tetrachlorometaxylene	L	40.000	35.6	1.1193850	0.9954747		-11.1	+/-20
Tetrachlorometaxylene [2C]	L	40.000	35.7	1.1000560	0.9824799		-10.7	+/-20

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 8081 Pesticide Quantitation Report

Data file 1: /20230502.b/23050221.D  
Data file 2: /20230502.b/B20230502.b/23050221.D  
Method: \20230502.b\PEST.m  
Compound Sublist: INDA.sub  
Instrument, Inj. Vol.: ecd6.i, 1ul  
Operator: JGR

ARI ID: SLE0106-CCV1  
Client ID:  
Injection Date: 02-MAY-2023 19:35  
Report Date: 05/05/2023 15:04  
Units: ng/mL  
Dilution Factor: 1.000

RT	STX-CLP Col Shift Response	CLP2 Col Response	RT	CLP2 Col Shift Response	CLP2 Col Response	STX-CLP on col	CLP2 on col	RPD	Compound/Flag
4.325	-0.008	494366	4.751	-0.011	496778	18.72	18.54	1.0	alpha-BHC
4.709	-0.008	187510	5.219	-0.011	188376	17.78	17.70	0.5	beta-BHC
4.893	-0.008	439531	5.566	-0.011	430748	18.38	18.06	1.8	delta-BHC
4.628	-0.009	431883	5.141	-0.011	438390	18.61	18.61	0.0	gamma-BHC (Lindane)
5.116	-0.008	390298	5.660	-0.011	382221	18.17	18.50	1.8	Heptachlor
5.440	-0.008	397685	6.059	-0.012	390831	18.20	18.22	0.1	Aldrin
6.116	-0.009	329698	6.717	-0.012	312594	16.72	16.56	1.0	Heptachlor epoxide b
6.558	-0.009	303865	7.162	-0.010	267808	17.29	16.65	3.8	Endosulfan I
6.819	-0.009	641266	7.455	-0.011	561317	34.47	31.84	7.9	Dieldrin
6.481	-0.008	627131	7.246	-0.011	557525	35.75	33.22	7.3	4,4'-DDE
7.069	-0.009	533624	7.779	-0.011	440584	37.66	33.38	12.0	Endrin
7.305	-0.009	502074	7.990	-0.011	433999	37.84	34.81	8.3	Endosulfan II
7.128	-0.008	504715	7.852	-0.010	425054	39.69	35.23	11.9	4,4'-DDD
8.168	-0.009	449520	8.588	-0.010	400899	35.94	34.92	2.9	Endosulfan sulfate
7.422	-0.009	530921	8.171	-0.010	438072	38.76	35.99	7.4	4,4'-DDT
7.911	-0.009	1080867	8.812	-0.011	899534	184.20	172.36	6.6	Methoxychlor
8.443	-0.009	502696	9.109	-0.010	423138	35.22	33.75	4.2	Endrin ketone
7.733	-0.010	369164	8.321	-0.010	308502	36.46	34.22	6.3	Endrin aldehyde
6.258	-0.008	341552	6.928	-0.011	311298	17.70	17.20	2.9	trans-Chlordane
6.404	-0.009	337028	7.089	-0.011	298895	17.40	16.77	3.7	cis-Chlordane
2.304	-0.005	486268	2.447	-0.006	398330	17.85	16.37	8.6	Hexachlorobutadiene
4.167	-0.008	400915	4.613	-0.009	412726	17.16	17.64	2.8	Hexachlorobenzene
3.812	-0.007	601097	4.127	-0.009	620467	35.57	35.72	0.4	Tetrachloro-m-xylene
9.358	-0.008	300161	10.295	-0.011	254821	31.04	32.20	3.7	Decachlorobiphenyl

\* Indicates RPD > 40%

A Indicates Peak Height was used for Column 1 quantitation instead of Area

B Indicates Peak Height was used for Column 2 quantitation instead of Area

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

~ Indicates recovery outside QC Limits

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	932757	1207659	29.5
Hexabromobiphenyl	745426	819876	10.0

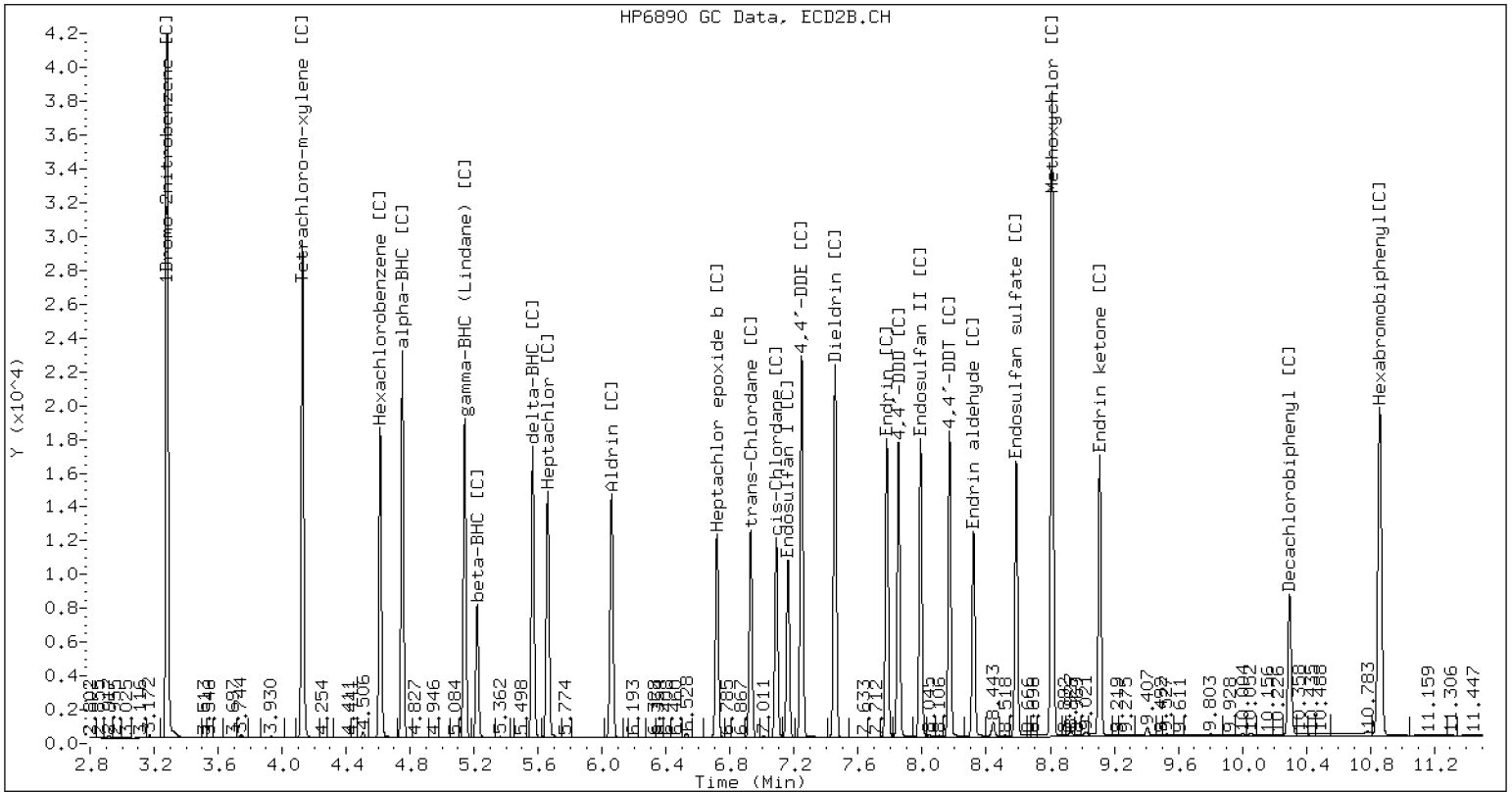
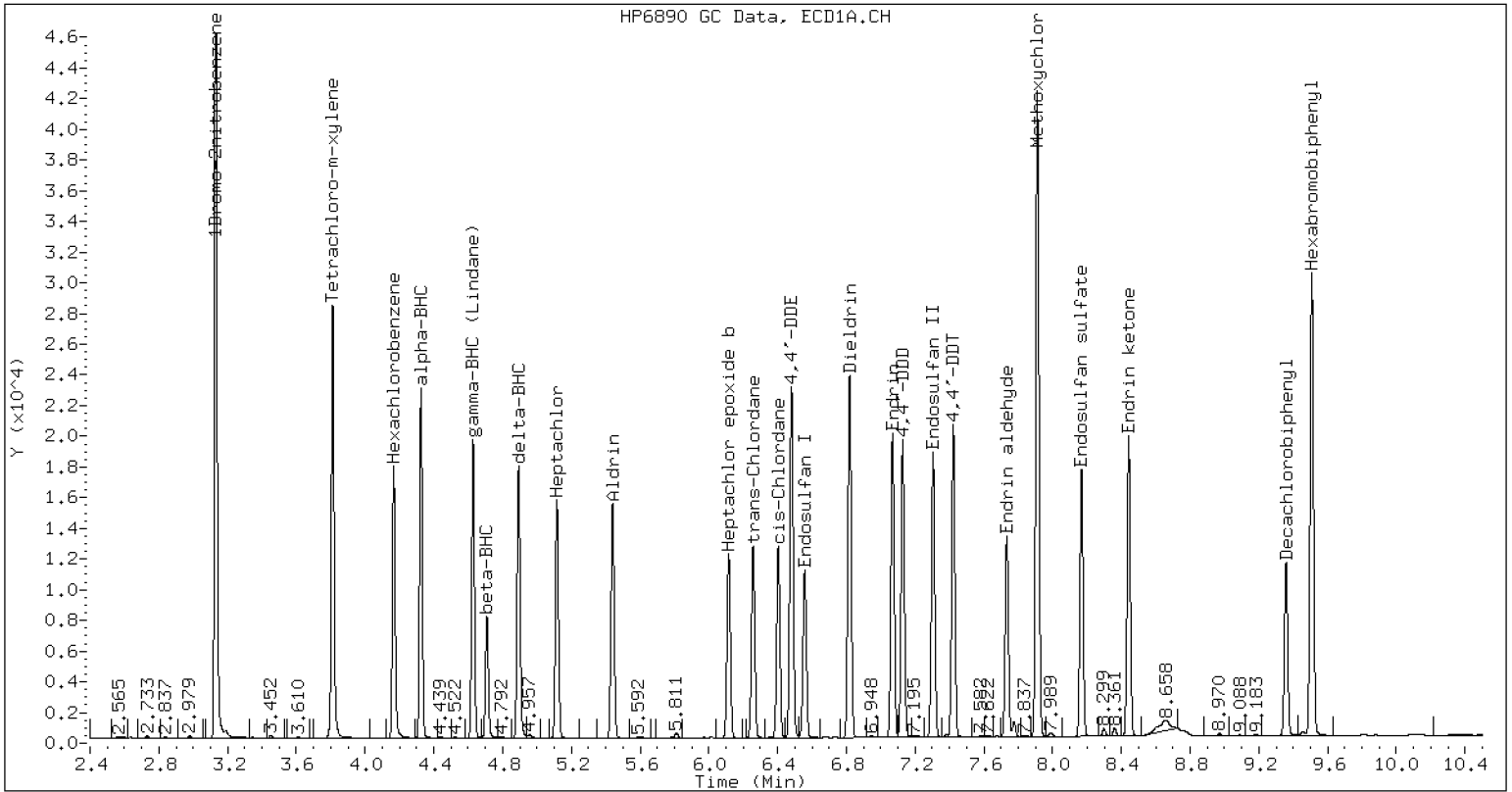
Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1248665	1263063	1.2
Hexabromobiphenyl	754634	655696	-13.1

\* Standard Areas taken from Initial Cal Level 5

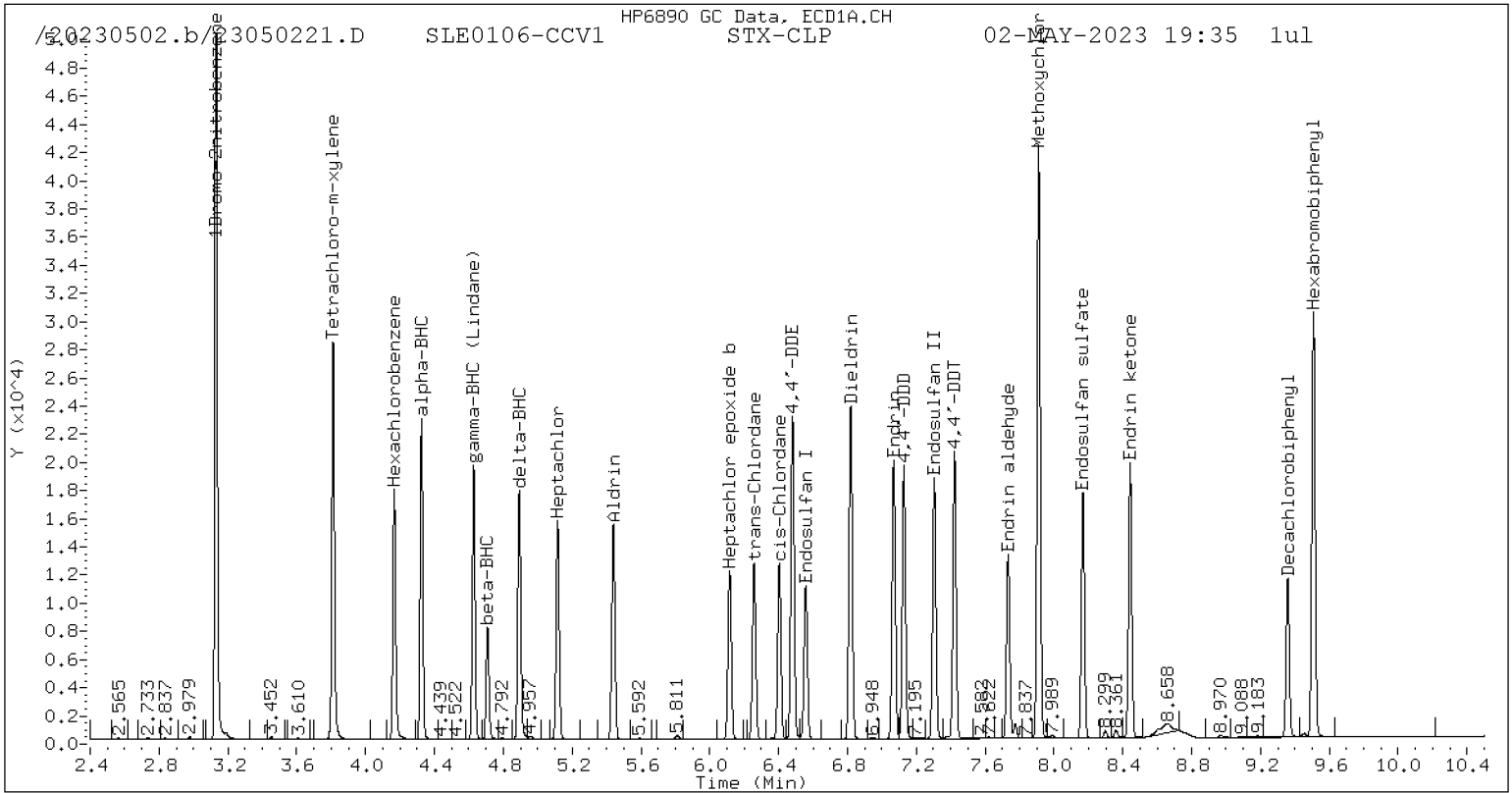
Initial Calibration Date: 12-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)



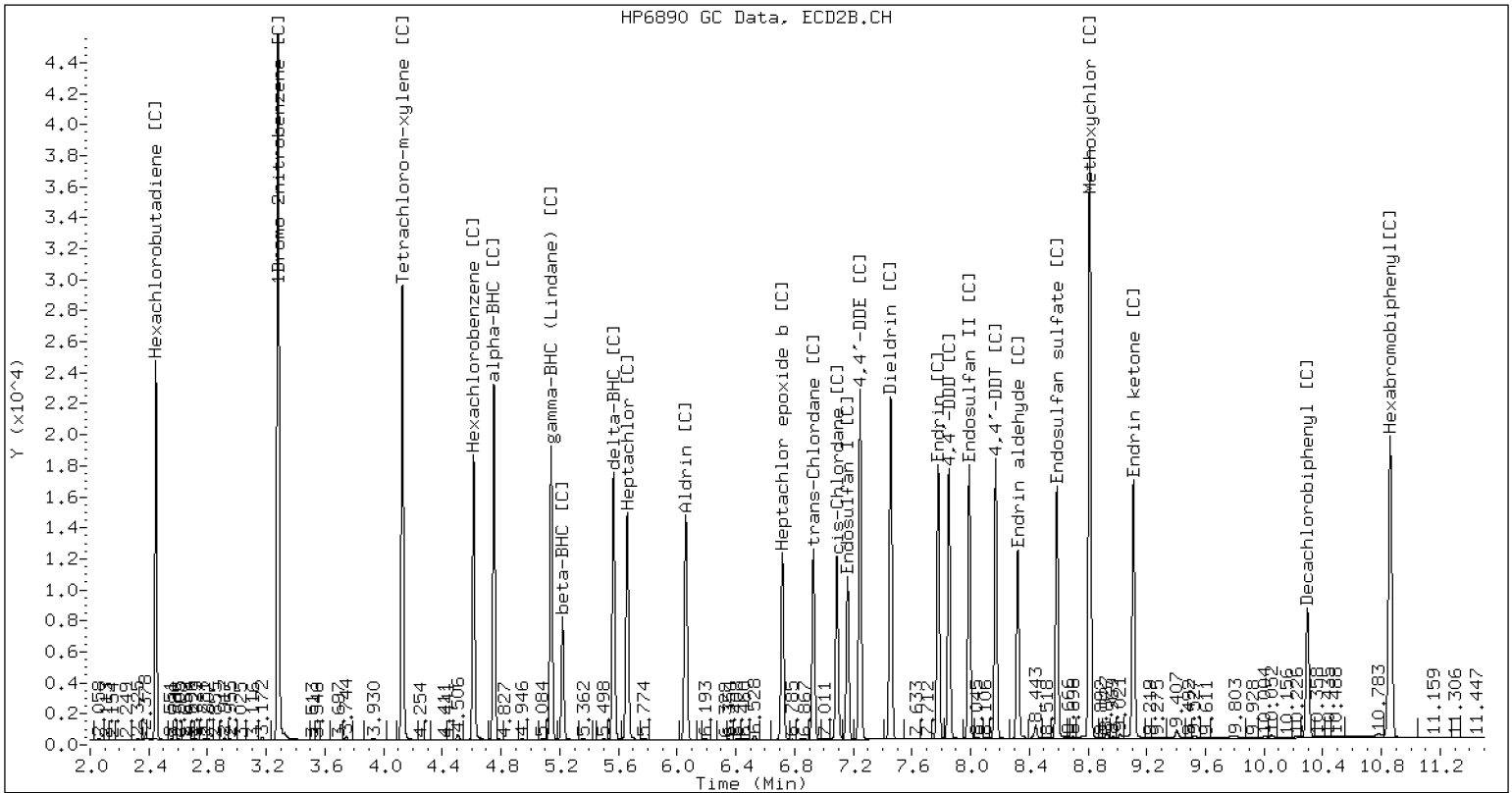


Pesticide Dual Column Chromatograms



STX-CLP Manual Integration: NO

/20230502.b/B20230502.b/23050221.D SLE0106-CCV1 CLP2



CLP-2 Manual Integration: NO



**PERFORMANCE EVALUATION DATA SHEET**

DS1

**EPA 8081B**

Laboratory: Analytical Resources, LLC

Laboratory ID: SLE0106-PEM1

File ID: 23050202.D

Client: Anchor QEA, LLC

Matrix: Water

Instrument: ECD6

Project: AOC5 MR Phase 1

Analyzed: 05/02/2023

Sequence: SLE0106

SDG: 23D0063

Calibration: GD00035

Column: 1

PEM COMPOUND	RT	Response
4,4'-DDE	6.48	5647
Endrin	7.07	609412
4,4'-DDD	7.13	7121
Endrin Aldehyde	7.74	34081
4,4'-DDT	7.42	643246
Endrin Ketone	8.44	39601

4,4'-DDT %Breakdown (1): 1.9

Endrin %Breakdown (1): 10.8



**PERFORMANCE EVALUATION DATA SHEET**

DS1

**EPA 8081B**

Laboratory: Analytical Resources, LLC

Laboratory ID: SLE0106-PEM1

File ID: 23050202.D

Client: Anchor QEA, LLC

Matrix: Water

Instrument: ECD6

Project: AOC5 MR Phase 1

Analyzed: 05/02/2023

Sequence: SLE0106

SDG: 23D0063

Calibration: GD00035

Column: 2

PEM COMPOUND	RT	Response
4,4'-DDE	7.25	6110
Endrin	7.78	618580
4,4'-DDD	7.85	15708
Endrin Aldehyde	8.32	27938
4,4'-DDT	8.17	617027
Endrin Ketone	9.11	32518

4,4'-DDT %Breakdown (1): 3.4

Endrin %Breakdown (1): 8.9

7E  
8081 DDT/ENDRIN BREAKDOWN VERIFICATION SUMMARY

Lab ID: SLE0106-PEM1

InstID,Data File: ecd6.i, 23050202.D

Analysis Date: 02-MAY-2023 13:42

Init. Calib. Date: 12-APR-2023

GC Column: STX-CLP1 ID: 0.53(mm)

COMPOUND	RT	AREA
1Bromo-2nitrobenzene	3.133	597294
4,4'-DDE	6.485	5647
Endrin	7.071	609412
4,4'-DDD	7.131	7121
4,4'-DDT	7.424	643246
Endrin ketone	8.444	39601
Endrin aldehyde	7.736	34081
Hexabromobiphenyl	9.509	490924
Tetrachloro-m-xylene	3.814	304900
Decachlorobiphenyl	9.359	182157

DDT Percent Breakdown = 1.9 %  
 $((5647+7121) * 100)/(5647+7121+643246)$

Endrin Percent Breakdown = 10.8 %  
 $((34081+39601) * 100)/(34081+39601+609412)$

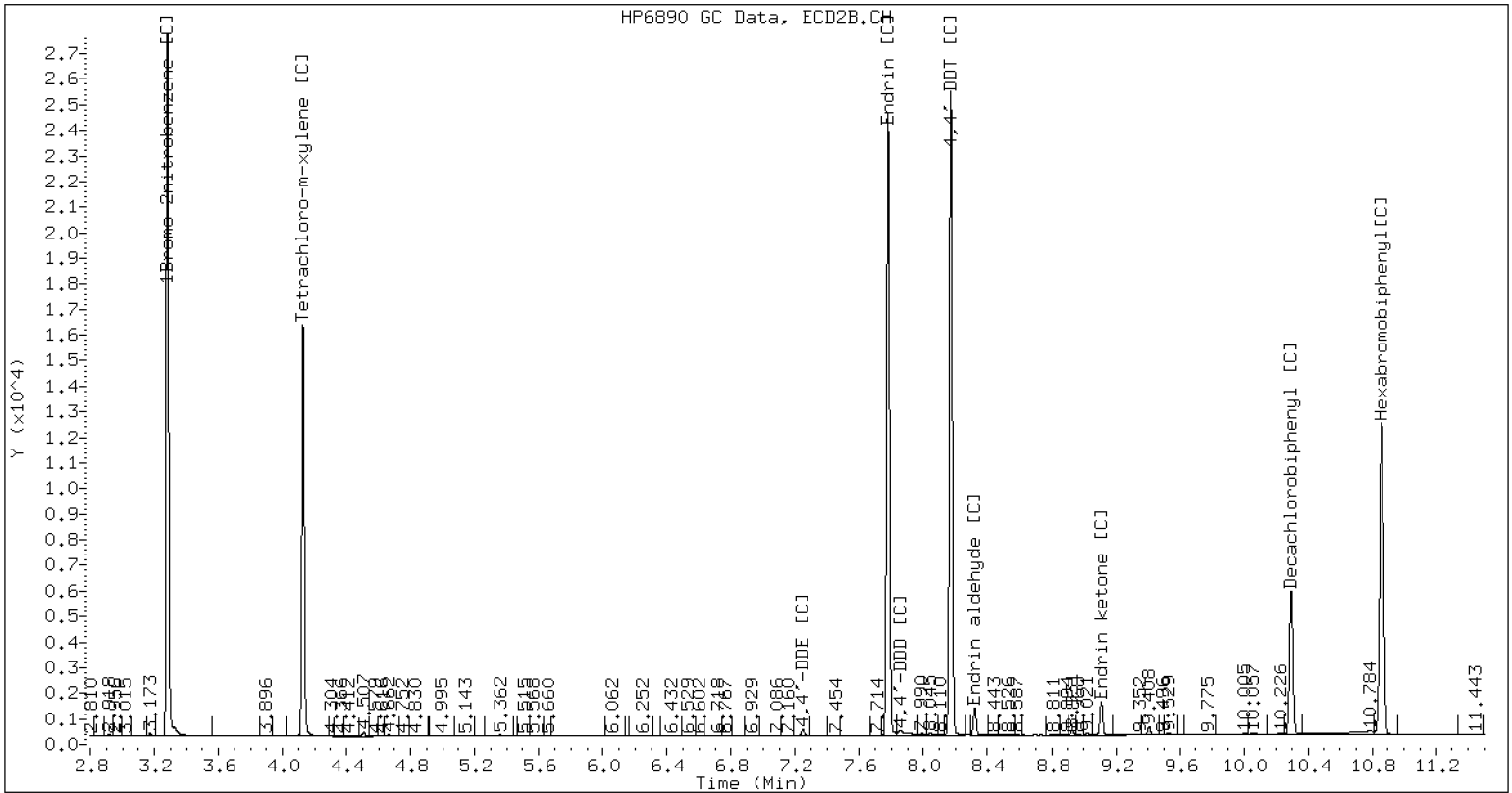
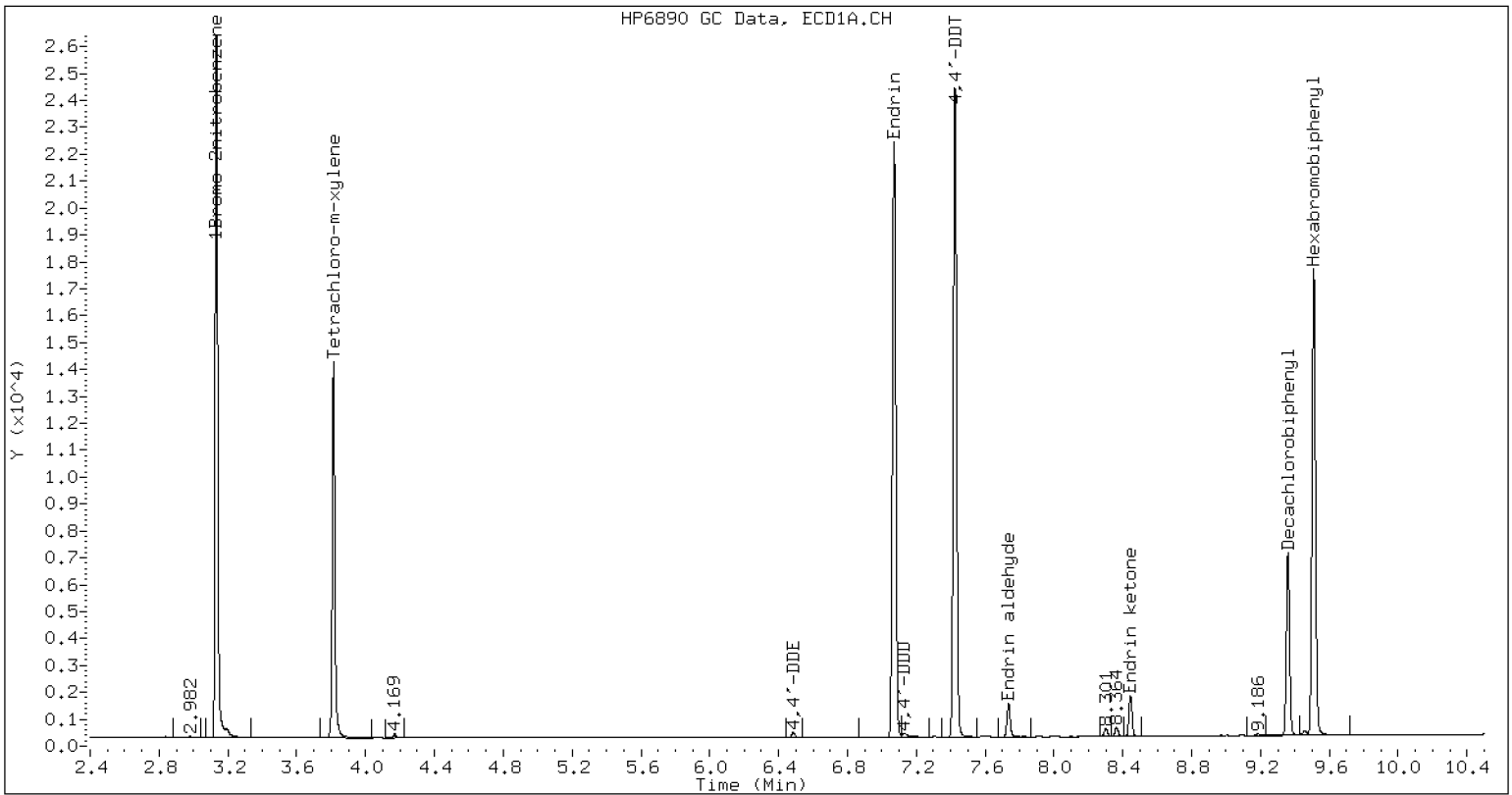
GC Column: STX-CLP2 ID: 0.53(mm)

COMPOUND	RT	AREA
1Bromo-2nitrobenzene [C]	3.281	675241
4,4'-DDE [C]	7.246	6110
Endrin [C]	7.779	618580
4,4'-DDD [C]	7.852	15708
4,4'-DDT [C]	8.171	617027
Endrin ketone [C]	9.110	32518
Endrin aldehyde [C]	8.321	27938
Hexabromobiphenyl [C]	10.860	416374
Tetrachloro-m-xylene [C]	4.128	339380
Decachlorobiphenyl [C]	10.297	172946

DDT Percent Breakdown = 3.4 %  
 $((6110+15708) * 100)/(6110+15708+617027)$

Endrin Percent Breakdown = 8.9 %  
 $((27938+32518) * 100)/(27938+32518+618580)$







**PERFORMANCE EVALUATION DATA SHEET**

DS2

**EPA 8081B**

Laboratory: Analytical Resources, LLC

Laboratory ID: SLE0106-PEM2

File ID: 23050220.D

Client: Anchor QEA, LLC

Matrix: Water

Instrument: ECD6

Project: AOC5 MR Phase 1

Analyzed: 05/02/2023

Sequence: SLE0106

SDG: 23D0063

Calibration: GD00035

Column: 1

PEM COMPOUND	RT	Response
4,4'-DDE	6.48	9965
Endrin	7.07	573954
4,4'-DDD	7.13	10951
Endrin Aldehyde	7.73	23833
4,4'-DDT	7.42	551555
Endrin Ketone	8.44	29512

4,4'-DDT %Breakdown (1): 3.7

Endrin %Breakdown (1): 8.5





**PERFORMANCE EVALUATION DATA SHEET**

DS2

**EPA 8081B**

Laboratory: Analytical Resources, LLC

Laboratory ID: SLE0106-PEM2

File ID: 23050220.D

Client: Anchor QEA, LLC

Matrix: Water

Instrument: ECD6

Project: AOC5 MR Phase 1

Analyzed: 05/02/2023

Sequence: SLE0106

SDG: 23D0063

Calibration: GD00035

Column: 2

PEM COMPOUND	RT	Response
4,4'-DDE	7.25	10781
Endrin	7.78	480478
4,4'-DDD	7.85	20281
Endrin Aldehyde	8.32	15773
4,4'-DDT	8.17	467277
Endrin Ketone	9.11	20035

4,4'-DDT %Breakdown (1): 6.2

Endrin %Breakdown (1): 6.9

7E  
8081 DDT/ENDRIN BREAKDOWN VERIFICATION SUMMARY

Lab ID: SLE0106-PEM2

InstID,Data File: ecd6.i, 23050220.D

Analysis Date: 02-MAY-2023 19:16

Init. Calib. Date: 12-APR-2023

GC Column: STX-CLP1 ID: 0.53(mm)

COMPOUND	RT	AREA
1Bromo-2nitrobenzene	3.133	617069
4,4'-DDE	6.482	9965
Endrin	7.069	573954
4,4'-DDD	7.129	10951
4,4'-DDT	7.423	551555
Endrin ketone	8.443	29512
Endrin aldehyde	7.735	23833
Hexabromobiphenyl	9.509	402314
Tetrachloro-m-xylene	3.813	299220
Decachlorobiphenyl	9.359	149088

DDT Percent Breakdown = 3.7 %  
 $((9965+10951) * 100)/(9965+10951+551555)$

Endrin Percent Breakdown = 8.5 %  
 $((23833+29512) * 100)/(23833+29512+573954)$

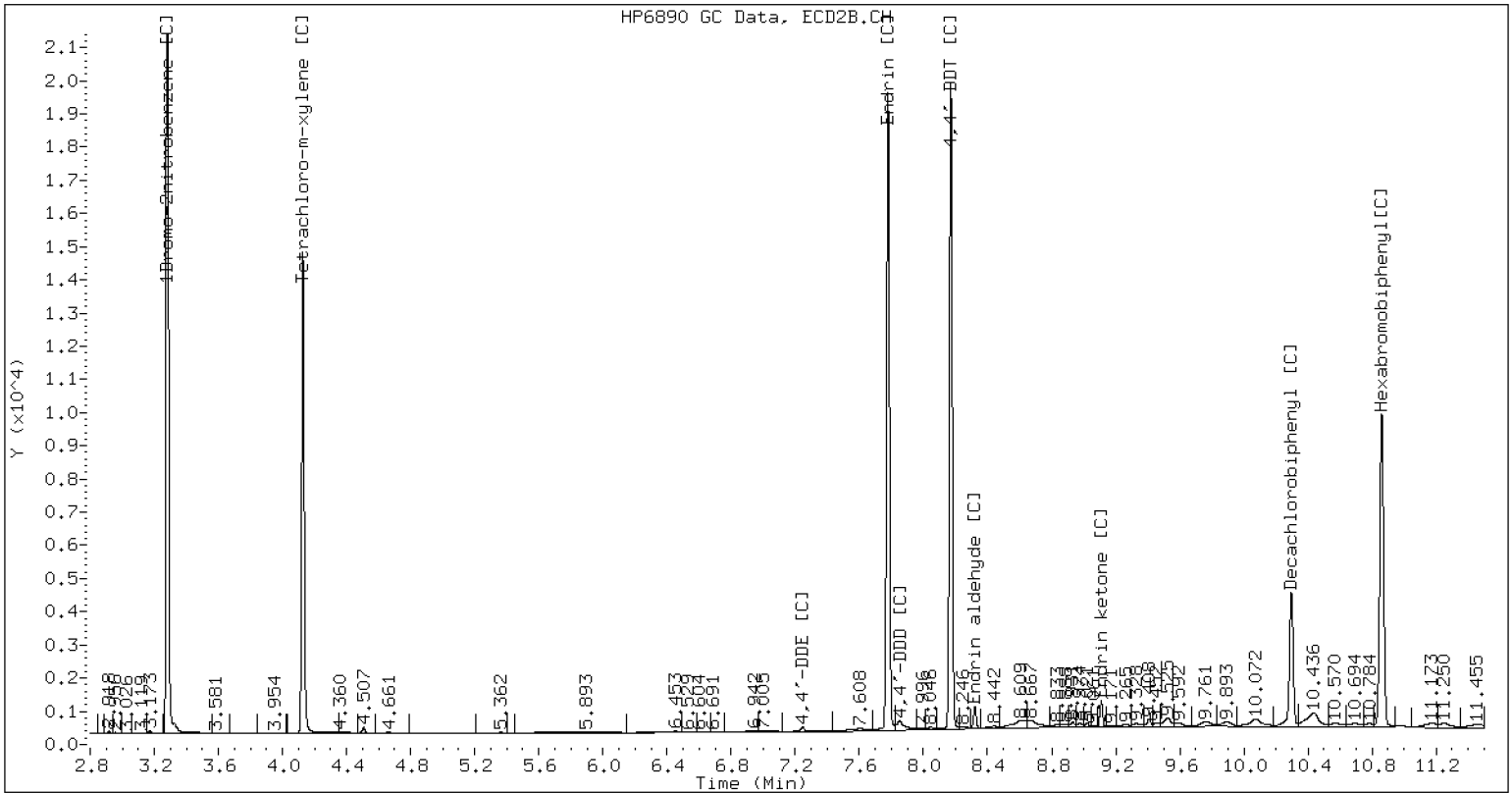
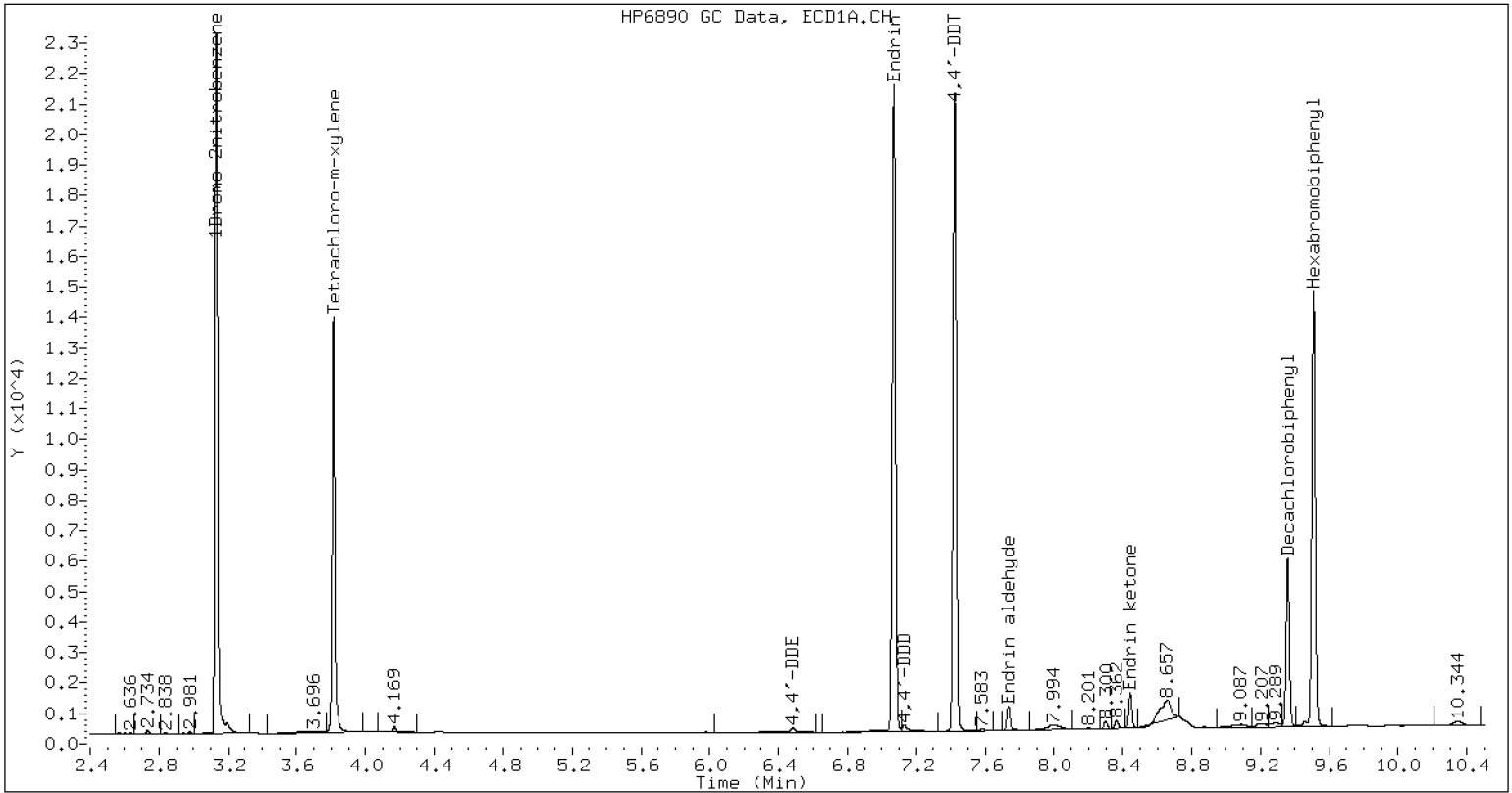
GC Column: STX-CLP2 ID: 0.53(mm)

COMPOUND	RT	AREA
1Bromo-2nitrobenzene [C]	3.281	620110
4,4'-DDE [C]	7.246	10781
Endrin [C]	7.779	480478
4,4'-DDD [C]	7.852	20281
4,4'-DDT [C]	8.172	467277
Endrin ketone [C]	9.110	20035
Endrin aldehyde [C]	8.322	15773
Hexabromobiphenyl [C]	10.861	324379
Tetrachloro-m-xylene [C]	4.128	312277
Decachlorobiphenyl [C]	10.297	138786

DDT Percent Breakdown = 6.2 %  
 $((10781+20281) * 100)/(10781+20281+467277)$

Endrin Percent Breakdown = 6.9 %  
 $((15773+20035) * 100)/(15773+20035+480478)$



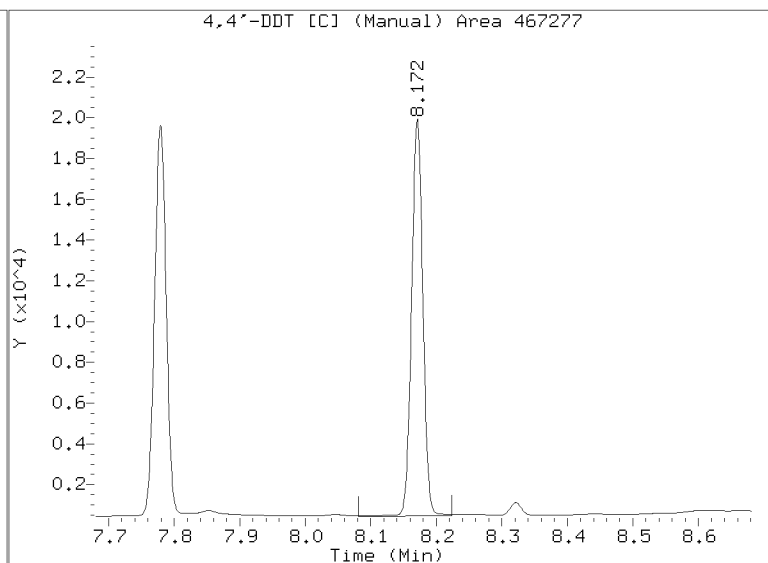
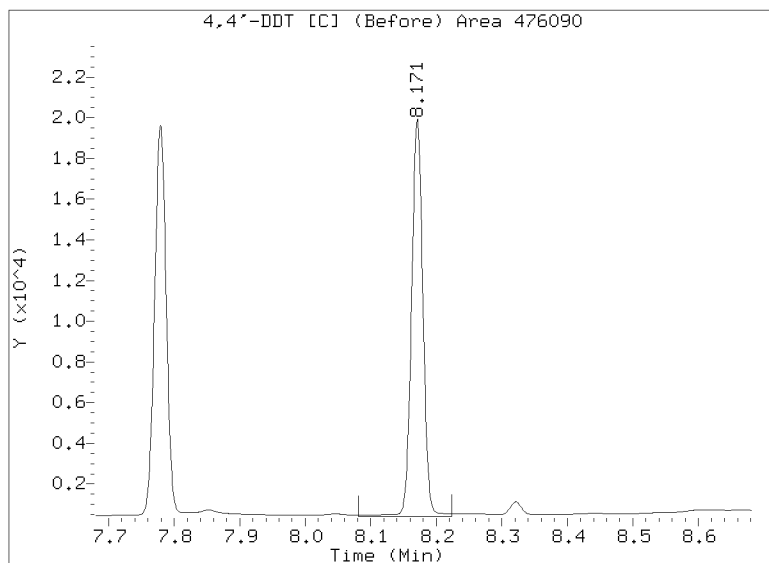
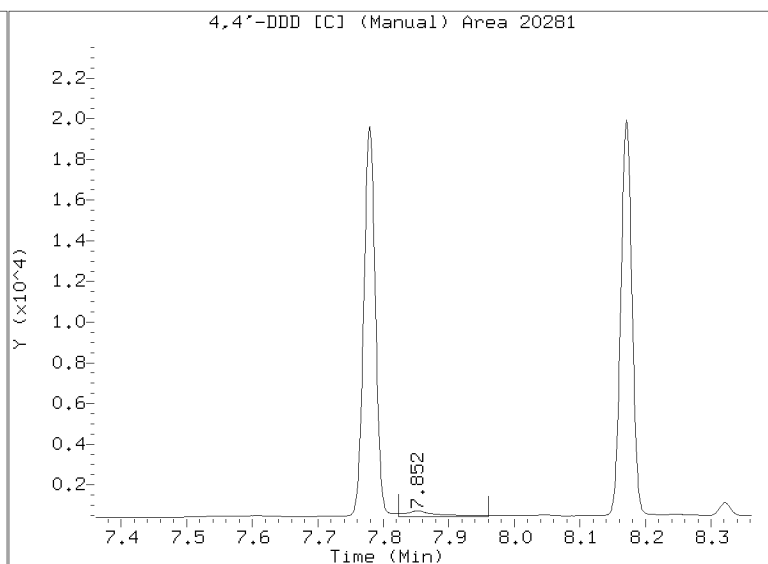
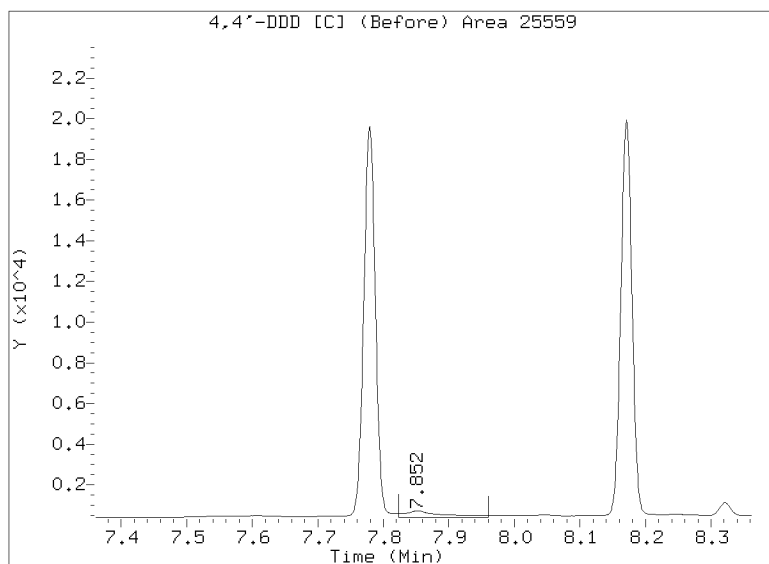
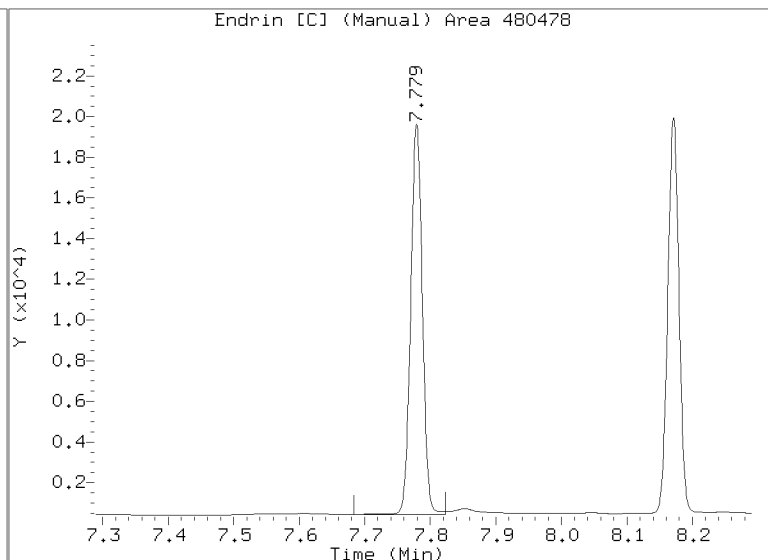
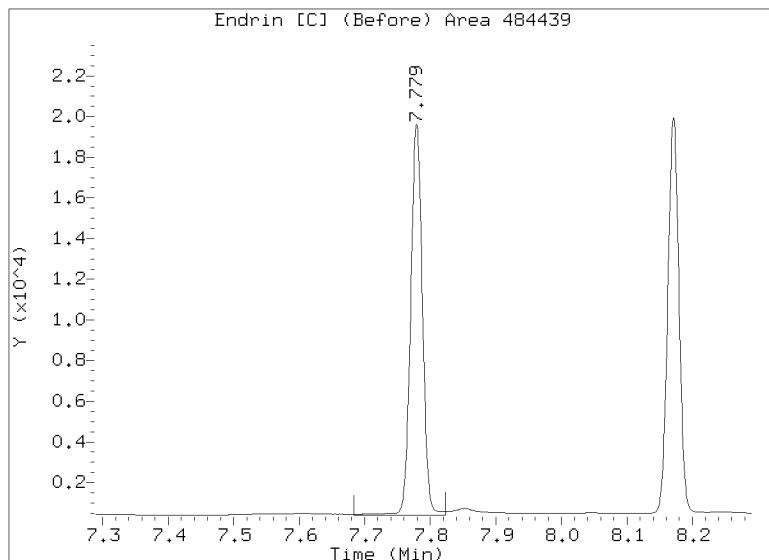


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050220.D

Injection Date: 02-MAY-2023 19:16

Lab ID: SLE0106-PEM2 Client ID:

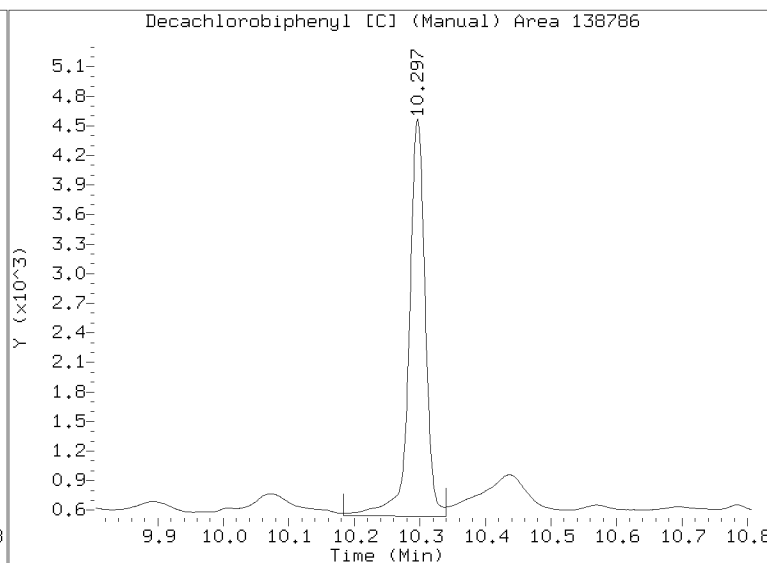
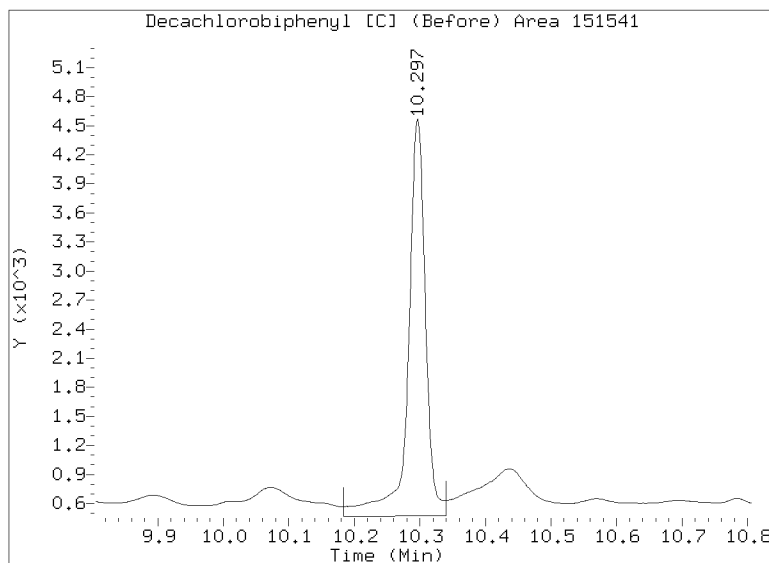
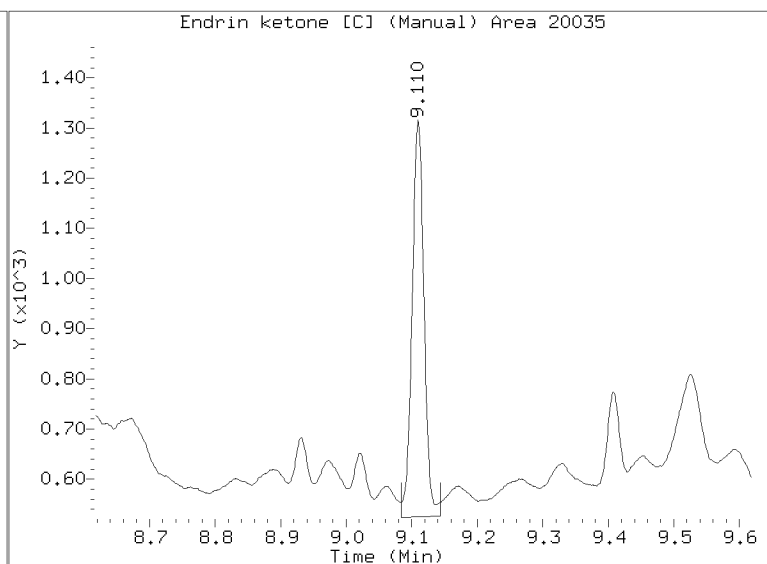
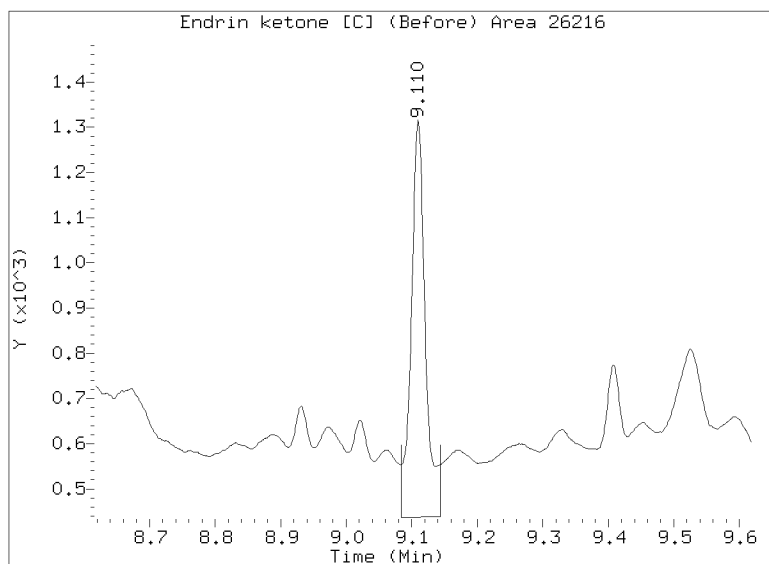
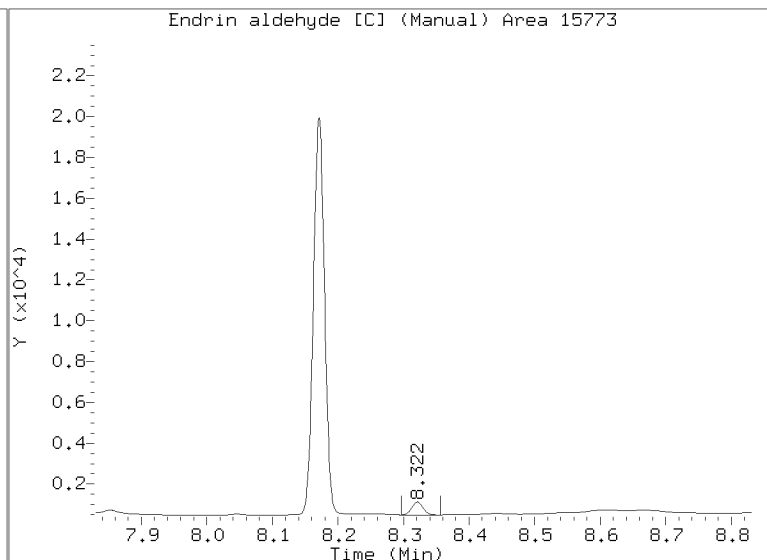
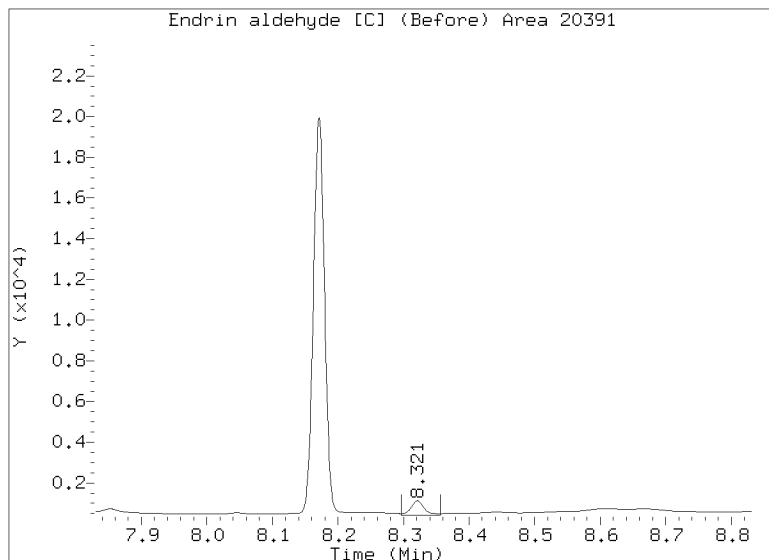


# Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050220.D

Injection Date: 02-MAY-2023 19:16

Lab ID: SLE0106-PEM2 Client ID:

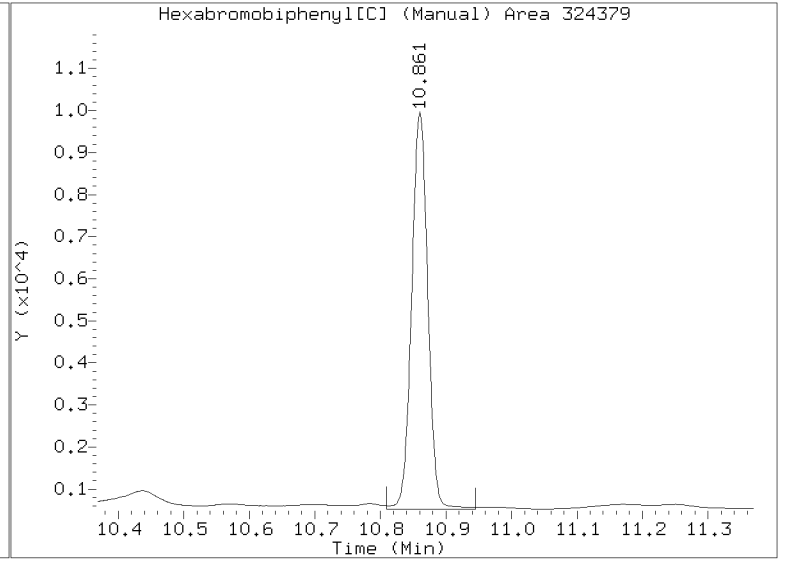
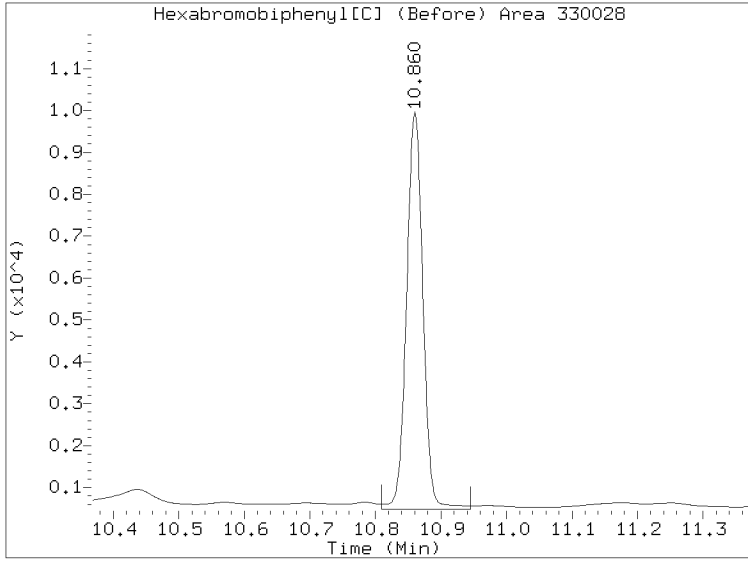


Manual Peak Adjustment Report, CLP-2

Datafile: /20230502.b/B20230502.b/23050220.D

Injection Date: 02-MAY-2023 19:16

Lab ID: SLE0106-PEM2 Client ID:





**Dual Column**

**ANALYSIS BATCH (SEQUENCE) SUMMARY**

**EPA 8081B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLD0187

Instrument: ECD6

Calibration: GD00035

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SLD0187-CAL1	23041204.D	23041204.D	NA	04/12/23 15:34
Cal Standard	SLD0187-CAL2	23041205.D	23041205.D	NA	04/12/23 15:53
Cal Standard	SLD0187-CAL3	23041206.D	23041206.D	NA	04/12/23 16:11
Cal Standard	SLD0187-CAL5	23041207.D	23041207.D	NA	04/12/23 16:30
Cal Standard	SLD0187-CAL4	23041208.D	23041208.D	NA	04/12/23 16:48
Cal Standard	SLD0187-CAL6	23041209.D	23041209.D	NA	04/12/23 17:06
Cal Standard	SLD0187-CAL7	23041210.D	23041210.D	NA	04/12/23 17:25
Initial Cal Check	SLD0187-ICV1	23041228.D	23041228.D	NA	04/12/23 22:55
Calibration Check	SLD0187-CCV1	23041235.D	23041235.D	NA	04/13/23 01:04





**ANALYSIS SEQUENCE**

**SLD0187**

Instrument: ECD6  
Calibration ID: UNASSIGNED

Printed: 4/14/2023 8:38:57AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0187-PEM1	QC		1		L002116	L000844		
SLD0187-CAL1	QC		2		L003348	L000844		
SLD0187-CAL2	QC		3		L003347	L000844		
SLD0187-CAL3	QC		4		L003346	L000844		
SLD0187-CAL4	QC		5		L003345	L000844		
SLD0187-CAL5	QC		6		L003344	L000844		
SLD0187-CAL6	QC		7		L003343	L000844		
SLD0187-CAL7	QC		8		L000560	L000844		
SLD0187-CAL8	QC		9		L003342	L000844		
SLD0187-CAL9	QC		10		L003341	L000844		
SLD0187-CALA	QC		11		L003340	L000844		
SLD0187-CALB	QC		12		L003339	L000844		
SLD0187-CALC	QC		13		L003338	L000844		
SLD0187-CALD	QC		14		L003337	L000844		
SLD0187-CALE	QC		15		L000377	L000844		
SLD0187-CALF	QC		16		L003398	L000844		
SLD0187-CALG	QC		17		L003397	L000844		
SLD0187-CALH	QC		18		L003396	L000844		
SLD0187-CALI	QC		19		L003395	L000844		
SLD0187-CALJ	QC		20		L003394	L000844		
SLD0187-CALK	QC		21		L003393	L000844		

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_



**ANALYSIS SEQUENCE**

**SLD0187**

Instrument: ECD6  
Calibration ID: UNASSIGNED

Printed: 4/14/2023 8:38:57AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0187-CALL	QC		22		L000559	L000844		
SLD0187-SCV1	QC		23		L003155	L000844		
SLD0187-SCV2	QC		24		L003156	L000844		
SLD0187-PEM2	QC		25		L002116	L000844		
SLD0187-ICV1	QC		26		L003344	L000844		
SLD0187-ICV2	QC		27		L003338	L000844		
BLD0075-BLK1	QC		28			L000844		
BLD0075-BS1	QC		29			L000844		
BLD0075-MRL1	QC		30			L000844		
23D0028-01	8081B Pest	E 01	31			L000844	Associated Earth Sciences, Inc	
SLD0187-PEM3	QC		32		L002116	L000844		
SLD0187-CCV1	QC		33		L003344	L000844		
SLD0187-CCV2	QC		34		L003338	L000844		
BLD0009-BLK1	QC		35			L000844		
BLD0009-BS1	QC		36			L000844		
BLD0009-BSD1	QC		37			L000844		
BLD0009-MS1	QC		38			L000844		
BLD0009-MSD1	QC		39			L000844		
23C0752-01	8081B Pest (PSDDA)	A 03	40			L000844	Anchor QEA, LLC	
23C0752-02	8081B Pest (PSDDA)	A 03	41			L000844	Anchor QEA, LLC	
23C0752-03	8081B Pest (PSDDA)	A 03	42			L000844	Anchor QEA, LLC	

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_



ANALYSIS SEQUENCE

SLD0187

Instrument: ECD6  
Calibration ID: UNASSIGNED

Printed: 4/14/2023 8:38:57AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
23C0752-04	8081B Pest (PSDDA)	A 03	43			L000844	Anchor QEA, LLC	
23C0752-06	8081B Pest (PSDDA)	A 03	44			L000844	Anchor QEA, LLC	
SLD0187-PEM4	QC		45		L002116	L000844		
SLD0187-CCV3	QC		46		L000845	L000844		
SLD0187-CCV4	QC		47		L003338	L000844		

\_\_\_\_\_  
Samples Loaded By                      Date

\_\_\_\_\_  
Data Processed By                      Date

## GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230412.b

	Inject	Date/Time	Filename	DF	LabID	ClientID
1	12-APR-2023	14:57	23041202.D	1	SEQ-IB	
2	12-APR-2023	15:16	23041203.D	1	SEQ-PEM1	
3	12-APR-2023	15:34	23041204.D	1	SEQ-CAL1	
4	12-APR-2023	15:53	23041205.D	1	SEQ-CAL2	
5	12-APR-2023	16:11	23041206.D	1	SEQ-CAL3	
6	12-APR-2023	16:30	23041207.D	1	SEQ-CAL5	
7	12-APR-2023	16:48	23041208.D	1	SEQ-CAL4	
8	12-APR-2023	17:06	23041209.D	1	SEQ-CAL6	
9	12-APR-2023	17:25	23041210.D	1	SEQ-CAL7	
10	12-APR-2023	17:43	23041211.D	1	SEQ-CAL8	
11	12-APR-2023	18:02	23041212.D	1	SEQ-CAL9	
12	12-APR-2023	18:20	23041213.D	1	SEQ-CALA	
13	12-APR-2023	18:38	23041214.D	1	SEQ-CALB	
14	12-APR-2023	18:57	23041215.D	1	SEQ-CALC	
15	12-APR-2023	19:15	23041216.D	1	SEQ-CALD	
16	12-APR-2023	19:34	23041217.D	1	SEQ-CALE	
17	12-APR-2023	19:52	23041218.D	1	SEQ-CALF	
18	12-APR-2023	20:10	23041219.D	1	SEQ-CALG	
19	12-APR-2023	20:29	23041220.D	1	SEQ-CALH	
20	12-APR-2023	20:47	23041221.D	1	SEQ-CALI	
21	12-APR-2023	21:05	23041222.D	1	SEQ-CALJ	
22	12-APR-2023	21:24	23041223.D	1	SEQ-CALK	
23	12-APR-2023	21:42	23041224.D	1	SEQ-CALL	
24	12-APR-2023	22:00	23041225.D	1	SEQ-SCV1	
25	12-APR-2023	22:19	23041226.D	1	SEQ-SCV2	
26	12-APR-2023	22:37	23041227.D	1	SEQ-PEM2	
27	12-APR-2023	22:55	23041228.D	1	SEQ-ICV1	
28	12-APR-2023	23:14	23041229.D	1	SEQ-ICV2	
29	12-APR-2023	23:32	23041230.D	1	BLD0075-BLK1	
30	12-APR-2023	23:50	23041231.D	1	BLD0075-BS1	
31	13-APR-2023	00:09	23041232.D	1	BLD0075-MRL1	
32	13-APR-2023	00:27	23041233.D	1	23D0028-01	
33	13-APR-2023	00:45	23041234.D	1	SEQ-PEM3	
34	13-APR-2023	01:04	23041235.D	1	SEQ-CCV1	
35	13-APR-2023	01:22	23041236.D	1	SEQ-CCV2	
36	13-APR-2023	01:40	23041237.D	1	BLD0009-BLK1	
37	13-APR-2023	01:59	23041238.D	1	BLD0009-BS1	
38	13-APR-2023	02:17	23041239.D	1	BLD0009-BSD1	
39	13-APR-2023	02:35	23041240.D	1	BLD0009-MS1	
40	13-APR-2023	02:53	23041241.D	1	BLD0009-MSD1	
41	13-APR-2023	03:12	23041242.D	1	23C0752-01	
42	13-APR-2023	03:30	23041243.D	1	23C0752-02	
43	13-APR-2023	03:48	23041244.D	1	23C0752-03	
44	13-APR-2023	04:07	23041245.D	1	23C0752-04	
45	13-APR-2023	04:25	23041246.D	1	23C0752-06	
46	13-APR-2023	04:43	23041247.D	1	SEQ-PEM4	
47	13-APR-2023	05:02	23041248.D	1	SEQ-CCV3	
48	13-APR-2023	05:20	23041249.D	1	SEQ-CCV4	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230412.b

ARI Job No.: SEQ- Method: PEST.m Instrument: ecd6.i Date: 12-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1457	23041202.D	SEQ-IB		1	NO MANUAL INTEGRATION
1516	23041203.D	SEQ-PEM1		1	NO MANUAL INTEGRATION
1534	23041204.D	SEQ-CAL1		1	NO MANUAL INTEGRATION
1553	23041205.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
1611	23041206.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
1630	23041207.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
1648	23041208.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
1706	23041209.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
1725	23041210.D	SEQ-CAL7		1	alpha-BHC, beta-BHC, delta-BHC, gamma-BHC (Lindane), Heptachlor, Aldrin, Heptachlor epoxide b, Endosulfan I, Dieldrin, 4,4'-DDE, Endrin, Endosulfan II, 4,4'-DDD, Endosulfan sulfate, 4,4'-DDT, Methoxychlor, Endrin ketone, Endrin aldehyde, trans-Chlordane, cis-Chlordane, Hexachlorob
1743	23041211.D	SEQ-CAL8		1	NO MANUAL INTEGRATION
1802	23041212.D	SEQ-CAL9		1	NO MANUAL INTEGRATION
1820	23041213.D	SEQ-CALA		1	NO MANUAL INTEGRATION
1838	23041214.D	SEQ-CALB		1	NO MANUAL INTEGRATION
1857	23041215.D	SEQ-CALC		1	NO MANUAL INTEGRATION
1915	23041216.D	SEQ-CALD		1	NO MANUAL INTEGRATION
1934	23041217.D	SEQ-CALE		1	Oxychlordane, 2,4-DDE, trans-Nonachlor, 2,4-DDD, 2,4-DDT, cis-Nonachlor, Mirex,
1952	23041218.D	SEQ-CALF		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230412.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2010	23041219.D	SEQ-CALG	1		NO MANUAL INTEGRATION
2029	23041220.D	SEQ-CALH	1		NO MANUAL INTEGRATION
2047	23041221.D	SEQ-CALI	1		NO MANUAL INTEGRATION
2105	23041222.D	SEQ-CALJ	1		NO MANUAL INTEGRATION
2124	23041223.D	SEQ-CALK	1		NO MANUAL INTEGRATION
2142	23041224.D	SEQ-CALL	1		NO MANUAL INTEGRATION
2200	23041225.D	SEQ-SCV1	1		NO MANUAL INTEGRATION
2219	23041226.D	SEQ-SCV2	1		NO MANUAL INTEGRATION
2237	23041227.D	SEQ-PEM2	1		NO MANUAL INTEGRATION
2255	23041228.D	SEQ-ICV1	1		NO MANUAL INTEGRATION
2314	23041229.D	SEQ-ICV2	1		NO MANUAL INTEGRATION
2332	23041230.D	BLD0075-BLK1	1		NO MANUAL INTEGRATION
2350	23041231.D	BLD0075-BS1	1		NO MANUAL INTEGRATION
0009	23041232.D	BLD0075-MRL1	1		NO MANUAL INTEGRATION
0027	23041233.D	23D0028-01	1		NO MANUAL INTEGRATION
0045	23041234.D	SEQ-PEM3	1		Endrin, 4,4'-DDD,
0104	23041235.D	SEQ-CCV1	1		NO MANUAL INTEGRATION
0122	23041236.D	SEQ-CCV2	1		NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230412.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0140	23041237.D	BLD0009-BLK1		1	NO MANUAL INTEGRATION
0159	23041238.D	BLD0009-BS1		1	NO MANUAL INTEGRATION
0217	23041239.D	BLD0009-BSD1		1	NO MANUAL INTEGRATION
0235	23041240.D	BLD0009-MS1		1	Endrin, 4,4'-DDD, 4,4'-DDT,
0253	23041241.D	BLD0009-MSD1		1	Aldrin,
0312	23041242.D	23C0752-01		1	delta-BHC, gamma-BHC (Lindane), Endrin, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde, Toxaphene, cis-Nonachlor,
0330	23041243.D	23C0752-02		1	Endrin, 4,4'-DDD, 4,4'-DDT, trans-Chlordane, cis-Chlordane, Toxaphene, trans-Nonachlor, cis-Nonachlor, Chlordane (NOS),
0348	23041244.D	23C0752-03		1	Dieldrin, 4,4'-DDD, cis-Chlordane, Hexachlorobenzene, trans-Nonachlor, cis-Nonachlor, Chlordane (NOS),
0407	23041245.D	23C0752-04		1	delta-BHC, Endrin, 4,4'-DDD, 4,4'-DDT, trans-Chlordane, cis-Chlordane, Toxaphene, trans-Nonachlor, cis-Nonachlor, Chlordane (NOS),
0425	23041246.D	23C0752-06		1	Endrin, 4,4'-DDT, cis-Chlordane, Toxaphene, cis-Nonachlor, Mirex, Chlordane (NOS),
0443	23041247.D	SEQ-PEM4		1	Endrin, 4,4'-DDD,
0502	23041248.D	SEQ-CCV3		1	Hexabromobiphenyl,
0520	23041249.D	SEQ-CCV4		1	NO MANUAL INTEGRATION

Security Status Report

Date: 14-Apr-2023 08:24

23041202.D	Data Locked	yev, 14-
23041203.D	Data Locked	yev, 14-
23041204.D	Data Locked	yev, 14-
23041205.D	Data Locked	yev, 14-
23041206.D	Data Locked	yev, 14-
23041207.D	Data Locked	yev, 14-
23041208.D	Data Locked	yev, 14-
23041209.D	Data Locked	yev, 14-
23041210.D	Data Locked	yev, 14-
23041211.D	Data Locked	yev, 14-
23041212.D	Data Locked	yev, 14-
23041213.D	Data Locked	yev, 14-
23041214.D	Data Locked	yev, 14-
23041215.D	Data Locked	yev, 14-
23041216.D	Data Locked	yev, 14-
23041217.D	Data Locked	yev, 14-
23041218.D	Data Locked	yev, 14-
23041219.D	Data Locked	yev, 14-
23041220.D	Data Locked	yev, 14-
23041221.D	Data Locked	yev, 14-
23041222.D	Data Locked	yev, 14-
23041223.D	Data Locked	yev, 14-
23041224.D	Data Locked	yev, 14-
23041225.D	Data Locked	yev, 14-
23041226.D	Data Locked	yev, 14-
23041227.D	Data Locked	yev, 14-
23041228.D	Data Locked	yev, 14-
23041229.D	Data Locked	yev, 14-
23041230.D	Data Locked	yev, 14-
23041231.D	Data Locked	yev, 14-
23041232.D	Data Locked	yev, 14-
23041233.D	Data Locked	yev, 14-
23041234.D	Data Locked	yev, 14-
23041235.D	Data Locked	yev, 14-
23041236.D	Data Locked	yev, 14-
23041237.D	Data Locked	yev, 14-
23041238.D	Data Locked	yev, 14-
23041239.D	Data Locked	yev, 14-
23041240.D	Data Locked	yev, 14-
23041241.D	Data Locked	yev, 14-
23041242.D	Data Locked	yev, 14-
23041243.D	Data Locked	yev, 14-
23041244.D	Data Locked	yev, 14-
23041245.D	Data Locked	yev, 14-
23041246.D	Data Locked	yev, 14-
23041247.D	Data Locked	yev, 14-
23041248.D	Data Locked	yev, 14-
23041249.D	Data Locked	yev, 14-





Dual Column  
ANALYSIS BATCH (SEQUENCE) SUMMARY  
EPA 8081B

Laboratory: Analytical Resources, LLC SDG: 23D0063  
Client: Anchor OEA, LLC Project: AOC5 MR Phase 1  
Sequence: SLE0106 Instrument: ECD6  
Calibration: GD00035

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Performance Mix	SLE0106-PEM1	23050202.D	23050202.D	NA	05/02/23 13:42
Initial Cal Check	SLE0106-ICV1	23050203.D	23050203.D	NA	05/02/23 14:00
Blank	BLD0299-BLK1	23050204.D	23050204.D	Solid	05/02/23 14:19
LCS	BLD0299-BS1	23050205.D	23050205.D	Solid	05/02/23 14:37
LCS Dup	BLD0299-BSD1	23050206.D	23050206.D	Solid	05/02/23 14:56
LDW23-SS1818	23D0063-01	23050211.D	23050211.D	Solid	05/02/23 16:29
LDW23-SS1819	23D0063-03	23050212.D	23050212.D	Solid	05/02/23 16:48
Performance Mix	SLE0106-PEM2	23050220.D	23050220.D	NA	05/02/23 19:16
Calibration Check	SLE0106-CCV1	23050221.D	23050221.D	NA	05/02/23 19:35



**ANALYSIS SEQUENCE**

**SLE0106**

Instrument: ECD6  
Calibration ID: GD00035

**Printed: 5/5/2023 2:31:30PM**

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLE0106-PEM1	QC		1		L002116	L000844		
SLE0106-ICV1	QC		2		L003344	L000844		
BLD0299-BLK1	QC		3			L000844		
BLD0299-BS1	QC		4			L000844		
BLD0299-BSD1	QC		5			L000844		
BLD0299-MS1	QC		6			L000844		
BLD0299-MSD1	QC		7			L000844		
23D0037-01	8081B Pest (PSDDA)	A 02	8			L000844	Anchor QEA, LLC	
23D0037-03	8081B Pest (PSDDA)	A 02	9			L000844	Anchor QEA, LLC	
23D0063-01	8081B Pest (PSDDA)	A 02	10			L000844	Anchor QEA, LLC	
23D0063-03	8081B Pest (PSDDA)	A 02	11			L000844	Anchor QEA, LLC	
BLD0325-BLK1	QC		12			L000844		
BLD0325-BS1	QC		13			L000844		
BLD0325-BSD1	QC		14			L000844		
BLD0325-MS1	QC		15			L000844		
BLD0325-MSD1	QC		16			L000844		
23D0136-01	8081B Pest (PSDDA)	A 02	17			L000844	Anchor QEA, LLC	
23D0136-03	8081B Pest (PSDDA)	A 01	18			L000844	Anchor QEA, LLC	
SLE0106-PEM2	QC		19		L002116	L000844		
SLE0106-CCV1	QC		20		L003344	L000844		

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_



**ANALYSIS SEQUENCE**

**SLE0106**

Instrument: ECD6  
Calibration ID: GD00035

**Printed: 5/5/2023 2:31:30PM**

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
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\_\_\_\_\_  
Samples Loaded By                      Date

\_\_\_\_\_  
Data Processed By                      Date

## GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230502.b

	Inject	Date/Time	Filename	DF	LabID	ClientID
1	02-MAY-2023	13:42	23050202.D	1	SLE0106-PEM1	
2	02-MAY-2023	14:00	23050203.D	1	SLE0106-ICV1	
3	02-MAY-2023	14:19	23050204.D	1	BLD0299-BLK1	
4	02-MAY-2023	14:37	23050205.D	1	BLD0299-BS1	
5	02-MAY-2023	14:56	23050206.D	1	BLD0299-BSD1	
6	02-MAY-2023	15:14	23050207.D	1	BLD0299-MS1	
7	02-MAY-2023	15:33	23050208.D	1	BLD0299-MSD1	
8	02-MAY-2023	15:52	23050209.D	1	23D0037-01	
9	02-MAY-2023	16:10	23050210.D	1	23D0037-03	
10	02-MAY-2023	16:29	23050211.D	1	23D0063-01	
11	02-MAY-2023	16:48	23050212.D	1	23D0063-03	
12	02-MAY-2023	17:06	23050213.D	1	BLD0325-BLK1	
13	02-MAY-2023	17:25	23050214.D	1	BLD03259-BS1	
14	02-MAY-2023	17:43	23050215.D	1	BLD0325-BSD1	
15	02-MAY-2023	18:02	23050216.D	1	BLD0325-MS1	
16	02-MAY-2023	18:21	23050217.D	1	BLD0325-MSD1	
17	02-MAY-2023	18:39	23050218.D	1	23D0136-01	
18	02-MAY-2023	18:58	23050219.D	1	23D0136-03	
19	02-MAY-2023	19:16	23050220.D	1	SLE0106-PEM2	
20	02-MAY-2023	19:35	23050221.D	1	SLE0106-CCV1	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230502.b

ARI Job No.: SLE0 Method: PEST.m Instrument: ecd6.i Date: 02-MAY-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1342	23050202.D	SLE0106-PEM1		1	NO MANUAL INTEGRATION
1400	23050203.D	SLE0106-ICV1		1	NO MANUAL INTEGRATION
1419	23050204.D	BLD0299-BLK1		1	Hexachlorobenzene,
1437	23050205.D	BLD0299-BS1		1	NO MANUAL INTEGRATION
1456	23050206.D	BLD0299-BS1		1	NO MANUAL INTEGRATION
1514	23050207.D	BLD0299-MS1		1	NO MANUAL INTEGRATION
1533	23050208.D	BLD0299-MS1		1	NO MANUAL INTEGRATION
1552	23050209.D	23D0037-01		1	Hexachlorobutadiene, Hexachlorobenzene,
1610	23050210.D	23D0037-03		1	1Bromo-2nitrobenzene, Hexachlorobenzene, Tetrachloro-m-xylene,
1629	23050211.D	23D0063-01		1	1Bromo-2nitrobenzene, Hexachlorobenzene, Tetrachloro-m-xylene,
1648	23050212.D	23D0063-03		1	Hexachlorobenzene,
1706	23050213.D	BLD0325-BLK1		1	1Bromo-2nitrobenzene, Tetrachloro-m-xylene,
1725	23050214.D	BLD03259-BS1		1	NO MANUAL INTEGRATION
1743	23050215.D	BLD0325-BS1		1	NO MANUAL INTEGRATION
1802	23050216.D	BLD0325-MS1		1	NO MANUAL INTEGRATION
1821	23050217.D	BLD0325-MS1		1	NO MANUAL INTEGRATION
1839	23050218.D	23D0136-01		1	1Bromo-2nitrobenzene, Hexachlorobenzene, Tetrachloro-m-xylene,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd6.i\20230502.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1858	23050219.D	23D0136-03	1		1Bromo-2nitrobenzene, Hexachlorobenzene, Tetrachloro-m-xylene,
1916	23050220.D	SLE0106-PEM2	1		NO MANUAL INTEGRATION
1935	23050221.D	SLE0106-CCV1	1		NO MANUAL INTEGRATION

Security Status Report

Date: 05-May-2023 15:15

23050202.D	Data Locked	yev, 05-
23050203.D	Data Locked	yev, 05-
23050204.D	Data Locked	yev, 05-
23050205.D	Data Locked	yev, 05-
23050206.D	Data Locked	yev, 05-
23050207.D	Data Locked	yev, 05-
23050208.D	Data Locked	yev, 05-
23050209.D	Data Locked	yev, 05-
23050210.D	Data Locked	yev, 05-
23050211.D	Data Locked	yev, 05-
23050212.D	Data Locked	yev, 05-
23050213.D	Data Locked	yev, 05-
23050214.D	Data Locked	yev, 05-
23050215.D	Data Locked	yev, 05-
23050216.D	Data Locked	yev, 05-
23050217.D	Data Locked	yev, 05-
23050218.D	Data Locked	yev, 05-
23050219.D	Data Locked	yev, 05-
23050220.D	Data Locked	yev, 05-
23050221.D	Data Locked	yev, 05-



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8081B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG/WO:	<u>23D0063</u>
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLD0187</u>	Instrument:	<u>ECD6</u>
Calibration:	<u>GD00035</u>	Calibration Date:	<u>04/12/2023</u>

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLD0187-ICV1 (Solid)</b>			Lab File ID: 23041228.D			Analyzed: 04/12/23 22:55		
Decachlorobiphenyl	40.000	79.8	80 - 120	9.366	9.365571	0.0004	+/-0.1	*
Decachlorobiphenyl [2C]	40.000	83.8	80 - 120	10.306	10.30529	0.0007	+/-0.1	
Tetrachlorometaxylene	40.000	88.6	80 - 120	3.82	3.819	0.0010	+/-0.1	
Tetrachlorometaxylene [2C]	40.000	89.4	80 - 120	4.135	4.135572	-0.0006	+/-0.1	
<b>SLD0187-CCV1 (Solid)</b>			Lab File ID: 23041235.D			Analyzed: 04/13/23 01:04		
Decachlorobiphenyl	40.000	78.8	80 - 120	9.365	9.365571	-0.0006	+/-0.1	*
Decachlorobiphenyl [2C]	40.000	84.2	80 - 120	10.304	10.30529	-0.0013	+/-0.1	
Tetrachlorometaxylene	40.000	88.7	80 - 120	3.819	3.819	0.0000	+/-0.1	
Tetrachlorometaxylene [2C]	40.000	89.1	80 - 120	4.135	4.135572	-0.0006	+/-0.1	





**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8081B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG/WO:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0106</u>	Instrument:	<u>ECD6</u>
Calibration:	<u>GD00035</u>	Calibration Date:	<u>04/12/2023</u>

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLE0106-PEM1 (Water)</b>			Lab File ID: 23050202.D		Analyzed: 05/02/23 13:42			
Decachlorobiphenyl	40.000	78.6	0 - 200	9.359	9.365571	-0.0066	+/-0.1	
Decachlorobiphenyl [2C]	40.000	86.0	0 - 200	10.296	10.30529	-0.0093	+/-0.1	
Tetrachlorometaxylene	40.000	91.2	0 - 200	3.814	3.819	-0.0050	+/-0.1	
Tetrachlorometaxylene [2C]	40.000	91.4	0 - 200	4.128	4.135572	-0.0076	+/-0.1	
<b>SLE0106-ICV1 (Water)</b>			Lab File ID: 23050203.D		Analyzed: 05/02/23 14:00			
Decachlorobiphenyl	40.000	78.9	80 - 120	9.358	9.365571	-0.0076	+/-0.1	
Decachlorobiphenyl [2C]	40.000	84.4	80 - 120	10.295	10.30529	-0.0103	+/-0.1	
Tetrachlorometaxylene	40.000	89.0	80 - 120	3.813	3.819	-0.0060	+/-0.1	
Tetrachlorometaxylene [2C]	40.000	89.6	80 - 120	4.127	4.135572	-0.0086	+/-0.1	
<b>BLD0299-BLK1 (Solid)</b>			Lab File ID: 23050204.D		Analyzed: 05/02/23 14:19			
Decachlorobiphenyl	8.0000	69.6	30 - 160	9.357	9.365571	-0.0086	+/-0.1	
Decachlorobiphenyl [2C]	8.0000	74.6	30 - 160	10.294	10.30529	-0.0113	+/-0.1	
Tetrachlorometaxylene	8.0000	64.2	30 - 160	3.811	3.819	-0.0080	+/-0.1	
Tetrachlorometaxylene [2C]	8.0000	60.9	30 - 160	4.125	4.135572	-0.0106	+/-0.1	
<b>BLD0299-BS1 (Solid)</b>			Lab File ID: 23050205.D		Analyzed: 05/02/23 14:37			
Decachlorobiphenyl	8.0000	67.1	30 - 160	9.357	9.365571	-0.0086	+/-0.1	
Decachlorobiphenyl [2C]	8.0000	72.6	30 - 160	10.295	10.30529	-0.0103	+/-0.1	
Tetrachlorometaxylene	8.0000	64.6	30 - 160	3.811	3.819	-0.0080	+/-0.1	
Tetrachlorometaxylene [2C]	8.0000	61.1	30 - 160	4.126	4.135572	-0.0096	+/-0.1	
<b>BLD0299-BSD1 (Solid)</b>			Lab File ID: 23050206.D		Analyzed: 05/02/23 14:56			
Decachlorobiphenyl	8.0000	76.2	30 - 160	9.357	9.365571	-0.0086	+/-0.1	
Decachlorobiphenyl [2C]	8.0000	82.1	30 - 160	10.294	10.30529	-0.0113	+/-0.1	
Tetrachlorometaxylene	8.0000	78.0	30 - 160	3.811	3.819	-0.0080	+/-0.1	
Tetrachlorometaxylene [2C]	8.0000	73.5	30 - 160	4.126	4.135572	-0.0096	+/-0.1	
<b>23D0063-01 (Solid)</b>			Lab File ID: 23050211.D		Analyzed: 05/02/23 16:29			
Decachlorobiphenyl	7.9996	54.6	30 - 160	9.361	9.365571	-0.0046	+/-0.1	
Decachlorobiphenyl [2C]	7.9996	96.7	30 - 160	10.298	10.30529	-0.0073	+/-0.1	
Tetrachlorometaxylene	7.9996	60.7	30 - 160	3.812	3.819	-0.0070	+/-0.1	
Tetrachlorometaxylene [2C]	7.9996	74.2	30 - 160	4.127	4.135572	-0.0086	+/-0.1	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8081B**

Laboratory: Analytical Resources, LLC

SDG/WO: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0106

Instrument: ECD6

Calibration: GD00035

Calibration Date: 04/12/2023

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>23D0063-03 (Solid)</b>		Lab File ID: 23050212.D			Analyzed: 05/02/23 16:48			
Decachlorobiphenyl	7.9983	84.5	30 - 160	9.361	9.365571	-0.0046	+/-0.1	
Decachlorobiphenyl [2C]	7.9983	94.6	30 - 160	10.299	10.30529	-0.0063	+/-0.1	
Tetrachlorometaxylene	7.9983	46.5	30 - 160	3.812	3.819	-0.0070	+/-0.1	
Tetrachlorometaxylene [2C]	7.9983	73.3	30 - 160	4.127	4.135572	-0.0086	+/-0.1	
<b>SLE0106-PEM2 (Water)</b>		Lab File ID: 23050220.D			Analyzed: 05/02/23 19:16			
Decachlorobiphenyl	40.000	78.5	0 - 200	9.358	9.365571	-0.0076	+/-0.1	
Decachlorobiphenyl [2C]	40.000	88.6	0 - 200	10.296	10.30529	-0.0093	+/-0.1	
Tetrachlorometaxylene	40.000	86.6	0 - 200	3.813	3.819	-0.0060	+/-0.1	
Tetrachlorometaxylene [2C]	40.000	91.6	0 - 200	4.127	4.135572	-0.0086	+/-0.1	
<b>SLE0106-CCV1 (Water)</b>		Lab File ID: 23050221.D			Analyzed: 05/02/23 19:35			
Decachlorobiphenyl	40.000	77.6	80 - 120	9.358	9.365571	-0.0076	+/-0.1	
Decachlorobiphenyl [2C]	40.000	80.5	80 - 120	10.295	10.30529	-0.0103	+/-0.1	
Tetrachlorometaxylene	40.000	88.9	80 - 120	3.811	3.819	-0.0080	+/-0.1	
Tetrachlorometaxylene [2C]	40.000	89.3	80 - 120	4.127	4.135572	-0.0086	+/-0.1	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8081B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLD0187

Instrument: ECD6

Calibration: GD00035

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Initial Cal Check (SLD0187-ICV1)</b>		(Solid)	Lab File ID: 23041228.D			Analyzed: 04/12/23 22:55			
1-Bromo-2-Nitrobenzene	527944	3.138	527944	3.138	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	428829	9.515	428829	9.515	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	744512	3.287	744512	3.287	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	468235	10.869	468235	10.869	100	50 - 200	0.000	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8081B**

Laboratory: Analytical Resources, LLC  
Client: Anchor QEA, LLC  
Sequence: SLE0106

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: ECD6  
Calibration: GD00035

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Performance Mix (SLE0106-PEM1)</b>		(Water)	Lab File ID: 23050202.D			Analyzed: 05/02/23 13:42			
1-Bromo-2-Nitrobenzene	597294	3.133	616264	3.132	97	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	490924	9.509	514817	9.508	95	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	675241	3.281	669299	3.281	101	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	416374	10.859	419050	10.857	99	50 - 200	0.002	+/-0.50	
<b>Initial Cal Check (SLE0106-ICV1)</b>		(Water)	Lab File ID: 23050203.D			Analyzed: 05/02/23 14:00			
1-Bromo-2-Nitrobenzene	616264	3.132	616264	3.132	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	514817	9.508	514817	9.508	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	669299	3.281	669299	3.281	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	419050	10.857	419050	10.857	100	50 - 200	0.000	+/-0.50	
<b>Blank (BLD0299-BLK1)</b>		(Solid)	Lab File ID: 23050204.D			Analyzed: 05/02/23 14:19			
1-Bromo-2-Nitrobenzene	684322	3.131	616264	3.132	111	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	581553	9.507	514817	9.508	113	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	733919	3.279	669299	3.281	110	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	451527	10.857	419050	10.857	108	50 - 200	0.000	+/-0.50	
<b>LCS (BLD0299-BS1)</b>		(Solid)	Lab File ID: 23050205.D			Analyzed: 05/02/23 14:37			
1-Bromo-2-Nitrobenzene	728604	3.131	616264	3.132	118	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	590277	9.507	514817	9.508	115	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	718694	3.28	669299	3.281	107	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	449270	10.858	419050	10.857	107	50 - 200	0.001	+/-0.50	
<b>LCS Dup (BLD0299-BSD1)</b>		(Solid)	Lab File ID: 23050206.D			Analyzed: 05/02/23 14:56			
1-Bromo-2-Nitrobenzene	724734	3.131	616264	3.132	118	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	587296	9.506	514817	9.508	114	50 - 200	-0.002	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	706867	3.28	669299	3.281	106	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	442553	10.857	419050	10.857	106	50 - 200	0.000	+/-0.50	
<b>LDW23-SS1818 (23D0063-01)</b>		(Solid)	Lab File ID: 23050211.D			Analyzed: 05/02/23 16:29			
1-Bromo-2-Nitrobenzene	679167	3.131	616264	3.132	110	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	537085	9.511	514817	9.508	104	50 - 200	0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	539638	3.28	669299	3.281	81	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	260946	10.862	419050	10.857	62	50 - 200	0.005	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8081B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0106

Instrument: ECD6

Calibration: GD00035

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>LDW23-SS1819 (23D0063-03 )</b>		(Solid)	Lab File ID: 23050212.D		Analyzed: 05/02/23 16:48				
1-Bromo-2-Nitrobenzene	1065073	3.132	616264	3.132	173	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	373072	9.511	514817	9.508	72	50 - 200	0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	634135	3.28	669299	3.281	95	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	258374	10.863	419050	10.857	62	50 - 200	0.006	+/-0.50	
<b>Performance Mix (SLE0106-PEM2 )</b>		(Water)	Lab File ID: 23050220.D		Analyzed: 05/02/23 19:16				
1-Bromo-2-Nitrobenzene	617069	3.132	616264	3.132	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	402314	9.508	514817	9.508	78	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	620110	3.281	669299	3.281	93	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	324379	10.86	419050	10.857	77	50 - 200	0.003	+/-0.50	



## HOLDING TIME SUMMARY

**Analysis: EPA 8081B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/17/23 12:27	13	14	05/02/23 16:29	15	40	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/17/23 12:27	12	14	05/02/23 16:48	15	40	

\* Indicates hold time exceedance.



**METHOD DETECTION  
AND REPORTING LIMITS**

**EPA 8081B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: ECD6

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
Hexachlorobenzene	0.15	0.50	ug/kg
Hexachlorobenzene [2C]	0.15	0.50	ug/kg

# CERTIFICATE OF ANALYSIS

**Catalog No:** S-279N  
**Description:** Tetrachloro-m-xylene  
**Lot:** 0052481B-1  
**Solvent:** N/A  
**Hazards:** Refer to SDS for complete safety information

**Date Certified:** Jul 28, 2005  
**Expiration:** Jul 28, 2015  
**Sample Size:** 100 mg  
**Components:** 1  
**Storage Condition:** Ambient (>5 °C)



Signal Word: Warning

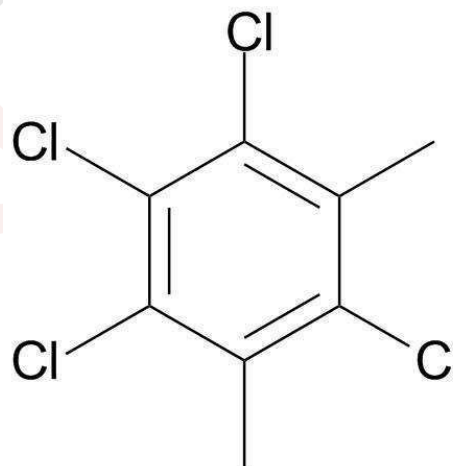
Certified Reference Material



Component	CAS #	Purity % (GC/FID)	Prepared Concentration	Certified Analyte Concentration <sup>1</sup>
Tetrachloro-meta-xylene	877-09-8	96.0	N/A	N/A

**Identification:**

Molecular formula: C<sub>8</sub>H<sub>6</sub>Cl<sub>4</sub>  
Molecular weight: 243.94



**C000147**

tetrachlorometaxylene  
Expires 1/15/2020

Prepared By Joshua Rains 1/15/2014

This Certified Reference Material was verified in accordance with ISO/IEC 17025

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

<sup>1</sup> The Uncertainty calculated for this product is ±2.4%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

Metrological traceability is established through in-house validated methods.

Purity, if stated, is equal to 100% minus found impurity components. Impurity components have not been identified.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By:

Larry Decker, Organic QC Manager





# AccuStandard

125 Market Street  
New Haven, CT 06513  
(203) 786-5290

## CERTIFICATE OF PRODUCT DATA

PRODUCT: C-209N

EXPIRATION: Jul 28, 2015

DESCRIPTION: 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

LOT #: 990521LB-AC

SOLVENT: N/A

This product is guaranteed accurate to  $\pm 0.5\%$  of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity % (GC/MS)	Prepared Concentration <sup>1</sup>	Certified Analyte Concentration <sup>2</sup>
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	100	N/A	N/A

2;

**C000148**

decachlorobiphenyl

Expires 1/15/2020

Prepared By Joshua Rains 1/15/2014

*\* I 1768 A*

Certified by:

*R. Cooper*

Please note: AccuStandard follows the U.S. conventions in reporting numerical values, on both certificates and labels.

A comma (,) is used to separate units of one-thousand or greater.  
A period (.) is used as a decimal place marker.

1. All weights are traceable through National Institute of Standards & Technology, Test No. 822/254480  
 2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is  $\pm 0.5\%$  which is the Combined Uncertainty  $U_c(y)$ . It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is  $U$  which is  $U_c(y) * K$  where  $K$  is the coverage factor at the 95% confidence level ( $K=2$ ).  
 3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

This product was manufactured in accordance to quality system requirements of ISO 9001:2000 and ISO 17025

*\* Recertified ~ 4-6-09 (S)*



**Analytical Standard Record**  
**Standard ID: C000148**

Printed: 4/23/2015 11:54:44AM

Description:	decachlorobiphenyl	Expires:	15-Jan-2020
Standard Type:	Other	Prepared:	15-Jan-2014
Solvent:	na/a	Prepared By:	Joshua Rains
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	27-Feb-2015 13:03 by JGR
Vendor:	Accustandard	Lot #:	9905211b-ac
Vendor Catalog #:			

**Comments**

see i1768a  
SOM calibrations added 06/12/14 sdrd

Analyte	CAS Number	Concentration	Units
Decachlorobiphenyl [2C]	2051-24-3	1000000	ug/mL
Decachlorobiphenyl	2051-24-3	1000000	ug/mL
DCB 1660 [2C]	2051-24-3	1000000	ug/mL
DCB 1660	2051-24-3	1000000	ug/mL
DCB [2C]	2051-24-3	1000000	ug/mL
DCB (A) [2C]	2051-24-3	1000000	ug/mL
DCB (A)	2051-24-3	1000000	ug/mL
DCB	2051-24-3	1000000	ug/mL

Reviewed By

Date

# CERTIFICATE OF ANALYSIS

**Catalog No:** APP-9-112-D-20X  
**Description:** Hexachlorobenzene in Dichloromethane  
**Lot:** 219051389  
**Solvent:** Dichloromethane  
**Hazards:** Refer to SDS for complete safety information

**Date Certified:** May 13, 2019  
**Expiration:** May 13, 2029  
**Sample Size:** 1 mL  
**Components:** 1  
**Storage Condition:** Ambient (>5 °C)



### Certified Reference Material



Component	CAS #	Purity % (GC/MS)	Prepared Concentration <sup>2</sup> (µg/mL)	Certified Analyte Concentration <sup>1</sup> (µg/mL)
Hexachlorobenzene	118-74-1	99.0	2002	1982



### J006504

Hexachlorobenzene  
Solvent / Lot: Dichloromethane  
Prep: 6/21/2021 by YZ  
Exp: 5/13/2029  
Location:

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

<sup>2</sup> All weights are traceable through NIST, Test No. 684/289871-17

<sup>1</sup> Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is  $\pm 2.4\%$ . This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Certified By:   
Larry Decker, Organic QC Manager

**1. Quality Standards:**

ISO 17034 – General Requirements for the Competence of Reference Material Producers ANAB Certificate Number AR-1463

ISO/IEC 17025 – General Requirements for the Competence of Testing And Calibration Laboratories ANAB Certificate Number AT-1339

ISO 9001:2015 – Quality Management System – Requirements Eagle Registrations Certificate Number 3774

**2 Intended Use:** The product covered by this certificate is designed for calibration or for use in quality control procedures for the specified chemical compounds listed on the reverse side. This product can be used for quantification and/or identification. This product can also be used as a reference material to validate analytical procedures, subject to the conditions under Section 7

**3 Manufacturing:** All balances are calibrated daily using an in-house procedure with weights that are compared annually to master weights and traceable to NIST. The balances are also calibrated annually by an ISO/IEC 17025 accredited calibration laboratory. Please refer to the NIST test number listed on the front of this certificate. Class A glassware is used in the manufacture and quality control of all standards and calibrated using an in-house procedure. Good Laboratory Practices have been used throughout the preparation of this

**4 Homogeneity:** This product is sufficiently homogeneous and any sample size would be within the uncertainty budget.

**5 Stability:** The manufacturer guarantees the stability of this solution through the expiration date stated on the label, when handled and stored according to the conditions stated on the label

**6 Uncertainty:** The uncertainty values as stated on the face of this certificate have been determined using the EURACHEM/CITAC Guide. We report a combined expanded uncertainty equal to the positive square root of the total variance of the uncertainty of the components using the following formula:  $u_a = \sqrt{(u(V))^2 + (u(m))^2 + (u(IV))^2 + (u(RO))^2}$  This formula represents uncertainty components from the mass, volume, short-term stability, long-term stability and homogeneity factors associated with the production of this product. The expanded uncertainty, assumes a normal distribution and a coverage factor of k=2 is chosen using approximately a 95% confidence level.

**7 Legal Notice and Limit of Liability:** This product is for routine laboratory analysis and research purposes only. The company's liability will be limited to replacement of product or refund of purchase price. Notice of claims must be made within thirty (30) days from date of delivery.

# CERTIFICATE OF ANALYSIS

**Catalog No:** M-8081-DS  
**Description:** 4,4'-DDT & Endrin  
**Lot:** 221031488-04  
**Solvent:** Hexane  
**Hazards:** Refer to SDS for complete safety information

**Date Certified:** Apr 8, 2022  
**Expiration:** May 8, 2023  
**Sample Size:** 1 mL  
**Components:** 2  
**Storage Condition:** Ambient (>5 °C)



Signal Word: Danger

Certified Reference Material



Component	CAS #	Purity % (GC/MS)	Prepared Concentration <sup>2</sup> (µg/mL)	Certified Analyte Concentration <sup>1</sup> (µg/mL)
4,4'-DDT	50-29-3	100.0	200.9	200.9
Endrin	72-20-8	99.8	200.0	199.6

K7002

This Certified Reference Material was verified in accordance with ISO/IEC 17025

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

<sup>2</sup> All weights are traceable through NIST, Test No. 684/289871-17

<sup>1</sup> Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is ±2.4%. This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By:

Larry Decker, Organic QC Manager



# CERTIFIED REFERENCE MATERIAL

110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: (800)356-1688  
Fax: (814)353-1309

www.restek.com

## Certificate of Analysis



### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

**Catalog No. :** 32292 **Lot No.:** A0185477

**Description :** Organochlorine Pesticide Mix AB # 2  
Organochlorine Pesticide Mix AB # 2 8-80 µg/mL, Hexane/Toluene(1:1), 1mL/ampul

**Container Size :** 2 mL **Pkg Amt:** > 1 mL

**Expiration Date :** May 31, 2026 **Storage:** 10°C or colder

**Ship:** Ambient

### CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	alpha-BHC	8.1 µg/mL	+/-	0.0660	µg/mL	Gravimetric
	CAS # 319-84-6 (Lot 12307600)		+/-	0.3703	µg/mL	Unstressed
	Purity 99%		+/-	0.5325	µg/mL	Stressed
2	gamma-BHC (Lindane)	8.0 µg/mL	+/-	0.0654	µg/mL	Gravimetric
	CAS # 58-89-9 (Lot 13087200)		+/-	0.3672	µg/mL	Unstressed
	Purity 99%		+/-	0.5281	µg/mL	Stressed
3	beta-BHC	8.1 µg/mL	+/-	0.0660	µg/mL	Gravimetric
	CAS # 319-85-7 (Lot 0588007-4)		+/-	0.3703	µg/mL	Unstressed
	Purity 99%		+/-	0.5325	µg/mL	Stressed
4	delta-BHC	8.1 µg/mL	+/-	0.0660	µg/mL	Gravimetric
	CAS # 319-86-8 (Lot 13112400)		+/-	0.3703	µg/mL	Unstressed
	Purity 99%		+/-	0.5325	µg/mL	Stressed
5	Heptachlor	8.0 µg/mL	+/-	0.0654	µg/mL	Gravimetric
	CAS # 76-44-8 (Lot 803759)		+/-	0.3672	µg/mL	Unstressed
	Purity 99%		+/-	0.5281	µg/mL	Stressed
6	Aldrin	8.1 µg/mL	+/-	0.0660	µg/mL	Gravimetric
	CAS # 309-00-2 (Lot 12983100)		+/-	0.3702	µg/mL	Unstressed
	Purity 96%		+/-	0.5323	µg/mL	Stressed
7	Heptachlor epoxide (isomer B)	8.1 µg/mL	+/-	0.0660	µg/mL	Gravimetric
	CAS # 1024-57-3 (Lot 13168200)		+/-	0.3703	µg/mL	Unstressed
	Purity 99%		+/-	0.5325	µg/mL	Stressed

8	trans-Chlordane <b>CAS #</b> 5103-74-2 <b>Purity</b> 98%	(Lot 32943)	8.0 µg/mL	+/- 0.0657 +/- 0.3689 +/- 0.5305	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	cis-Chlordane <b>CAS #</b> 5103-71-9 <b>Purity</b> 98%	(Lot 31766)	8.0 µg/mL	+/- 0.0657 +/- 0.3689 +/- 0.5305	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	Endosulfan I <b>CAS #</b> 959-98-8 <b>Purity</b> 99%	(Lot BCCF4060)	8.0 µg/mL	+/- 0.0654 +/- 0.3672 +/- 0.5281	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	4,4'-DDE <b>CAS #</b> 72-55-9 <b>Purity</b> 99%	(Lot GHYQG)	16.1 µg/mL	+/- 0.1314 +/- 0.7375 +/- 1.0606	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	Dieldrin <b>CAS #</b> 60-57-1 <b>Purity</b> 98%	(Lot 11129900)	16.1 µg/mL	+/- 0.1320 +/- 0.7408 +/- 1.0653	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	Endrin <b>CAS #</b> 72-20-8 <b>Purity</b> 99%	(Lot 13157400)	16.1 µg/mL	+/- 0.1320 +/- 0.7406 +/- 1.0650	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	4,4'-DDD <b>CAS #</b> 72-54-8 <b>Purity</b> 99%	(Lot HAN02)	16.1 µg/mL	+/- 0.1320 +/- 0.7406 +/- 1.0650	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Endosulfan II <b>CAS #</b> 33213-65-9 <b>Purity</b> 99%	(Lot 12448900)	16.0 µg/mL	+/- 0.1309 +/- 0.7345 +/- 1.0562	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	4,4'-DDT <b>CAS #</b> 50-29-3 <b>Purity</b> 98%	(Lot 220428JLM)	16.1 µg/mL	+/- 0.1315 +/- 0.7378 +/- 1.0610	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	Endrin aldehyde <b>CAS #</b> 7421-93-4 <b>Purity</b> 99%	(Lot 30720)	16.1 µg/mL	+/- 0.1314 +/- 0.7375 +/- 1.0606	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	Endosulfan sulfate <b>CAS #</b> 1031-07-8 <b>Purity</b> 99%	(Lot BCCB0424)	16.1 µg/mL	+/- 0.1320 +/- 0.7406 +/- 1.0650	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Methoxychlor <b>CAS #</b> 72-43-5 <b>Purity</b> 98%	(Lot 13027000)	80.2 µg/mL	+/- 0.5781 +/- 3.6697 +/- 5.2871	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Endrin ketone <b>CAS #</b> 53494-70-5 <b>Purity</b> 99%	(Lot 13026800)	16.1 µg/mL	+/- 0.1314 +/- 0.7375 +/- 1.0606	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

**Solvent:** Hexane/Toluene (50:50)  
**CAS #** 110-54-3/108-88-3  
**Purity** 99%

**Column:**  
30m x .25mm x .2um  
Rtx-CLP II (cat.# 11323)

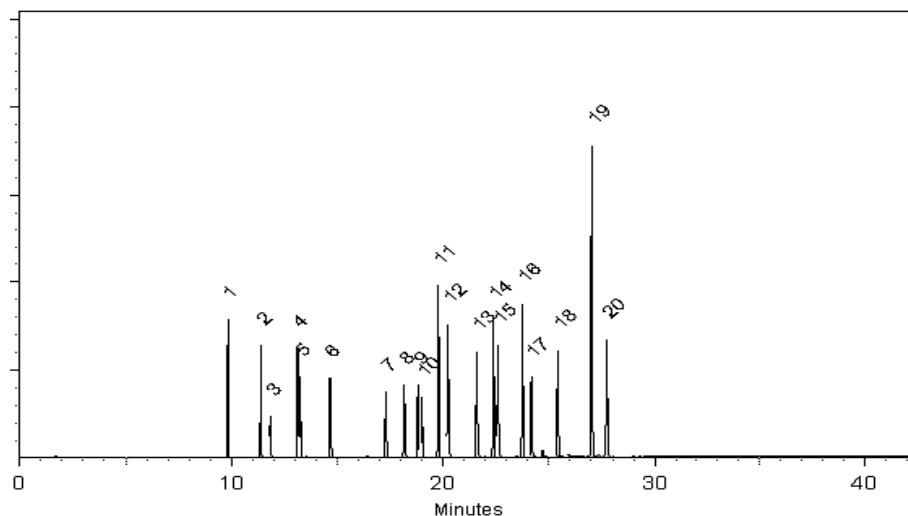
**Carrier Gas:**  
helium-constant pressure 20 psi.

**Temp. Program:**  
150°C to 300°C  
@ 4°C/min. ( hold 5 min.)

**Inj. Temp:**  
200°C

**Det. Temp:**  
300°C


**Det. Type:**  
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

  
Morgan Craighead - Mix Technician

**Date Mixed:** 19-May-2022      **Balance:** B442140311

  
Fang-Yun Lo - GC Analyst

**Date Passed:** 26-May-2022

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397



## General Certified Reference Material Notes

### Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

### Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

### Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value ( includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

*k* is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-Us](http://www.restek.com/Contact-Us) for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at [www.restek.com/Contact-Us](http://www.restek.com/Contact-Us).
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

### Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

### Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

# CERTIFICATE OF ANALYSIS

**Catalog No:** M-502-36-10X  
**Description:** Hexachlorobutadiene  
**Lot:** 222031188  
**Solvent:** Methanol  
**Hazards:** Refer to SDS for complete safety information

**Date Certified:** Mar 11, 2022  
**Expiration:** Apr 11, 2024  
**Sample Size:** 1 mL  
**Components:** 1  
**Storage Condition:** Ambient (>5 °C)



## Certified Reference Material



Component	CAS #	Purity % (GC/MS)	Prepared Concentration <sup>2</sup> (µg/mL)	Certified Analyte Concentration <sup>1</sup> (µg/mL)
Hexachlorobutadiene	87-68-3	98.0	2002	1962

This Certified Reference Material was verified in accordance with ISO/IEC 17025

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

<sup>2</sup> All weights are traceable through NIST, Test No. 684/289871-17

<sup>1</sup> Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is  $\pm 2.4\%$ . This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By:   
Larry Decker, Organic QC Manager

**1. Quality Standards:**

ISO 17034:2016 – General Requirements for the Competence of Reference Material Producers

ISO/IEC 17025:2017 – General Requirements for the Competence of Testing And Calibration Laboratories

ISO 9001:2015 – Quality Management System – Requirements  
Eagle Registrations

**2. Intended Use:** The product covered by this certificate is designed for calibration or for use in quality control procedures for the specified chemical compounds listed on the reverse side. This product can be used for quantification and/or identification. This product can also be used as a reference material to validate analytical procedures, subject to the conditions under Section 7.

**3. Manufacturing:** All balances are calibrated daily using an in-house procedure with weights that are compared annually to master weights and traceable to NIST. The balances are also calibrated annually by an ISO/IEC 17025 accredited calibration laboratory. Please refer to the NIST test number listed on the front of this certificate. Class A glassware is used in the manufacture and quality control of all standards. Good Laboratory Practices have been used throughout the preparation of this Standard.

**4. Homogeneity:** This product is sufficiently homogeneous and any sample size would be within the uncertainty budget.

**5. Stability:** The manufacturer guarantees the stability of this solution through the expiration date stated on the label, when handled and stored according to the conditions stated on the label

**6. Uncertainty:** The uncertainty values as stated on the face of this certificate have been determined using the EURACHEM/CITAC Guide. We report a combined expanded uncertainty equal to the positive square root of the total variance of the uncertainty of the components using the following formula:  $u_a = \sqrt{(u(V))^2 + (u(m))^2 + (u(IV))^2 + (u(RO))^2}$  This formula represents uncertainty components from the mass, volume, short-term stability, long-term stability and homogeneity factors associated with the production of this product. The expanded uncertainty, assumes a normal distribution and a coverage factor of  $k=2$  is chosen using approximately a 95% confidence level.

**7. Legal Notice and Limit of Liability:** This product is for routine laboratory analysis and research purposes only. The company's liability will be limited to replacement of product or refund of purchase price. Notice of claims must be made within thirty (30) days from date of delivery.

# CERTIFICATE OF ANALYSIS

**Catalog No:** M-502-36-10X

**Description:** Hexachlorobutadiene

**Lot:** 222031188

**Solvent:** Methanol

**Hazards:** Refer to SDS for complete safety information

**Date Certified:** Mar 11, 2022

**Expiration:** Apr 11, 2024

**Sample Size:** 1 mL

**Components:** 1

**Storage Condition:** Ambient (>5 °C)



Signal Word: Danger

Certified Reference Material



Component	CAS #	Purity % (GC/MS)	Prepared Concentration <sup>2</sup> (µg/mL)	Certified Analyte Concentration <sup>1</sup> (µg/mL)
Hexachlorobutadiene	87-68-3	98.0	2002	1962

K011468

This Certified Reference Material was verified in accordance with ISO/IEC 17025

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

<sup>2</sup> All weights are traceable through NIST, Test No. 684/289871-17

<sup>1</sup> Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is ±2.4%. This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By:

Larry Decker, Organic QC Manager



Dual Column

ORGANIC ANALYSIS DATA SHEET  
EPA 8082A

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>		
Project:	<u>AOC5 MR Phase 1</u>		
Matrix:	<u>Solid</u>	Laboratory ID:	<u>23D0063-01 A</u>
		File ID:	<u>05022326ECD7.D</u>
Sampled:	<u>04/04/23 10:02</u>	Prepared:	<u>04/17/23 13:36</u>
		Analyzed:	<u>05/02/23 19:59</u>
% Solids:	<u>43.18</u>	Preparation:	<u>EPA 3546 (Microwave)</u>
		Initial/Final:	<u>28.95 g Wet / 2.5 mL</u>
Batch:	<u>BLD0300</u>	Sequence:	<u>SLE0029</u>
		Calibration:	<u>GE00002</u>
Instrument:	<u>ECD7</u>	Column 1:	<u>ZB5</u>
		Column 2:	<u>ZB35</u>

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	5	20.0	7.8	20.0	U
11104-28-2	Aroclor 1221	1	5	20.0	7.8	20.0	U
11141-16-5	Aroclor 1232	1	5	20.0	7.8	20.0	U
53469-21-9	Aroclor 1242	1	5	20.0	7.8	20.0	U
12672-29-6	Aroclor 1248	2	5	33.8	7.8	20.0	D
11097-69-1	Aroclor 1254	2	5	55.6	7.8	20.0	D
11096-82-5	Aroclor 1260	2	5	50.0	2.9	20.0	D

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9996	6.93	86.7	40 - 126	
<i>Tetrachlorometaxylene</i>	1	7.9996	5.94	74.3	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9996	6.39	79.9	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9996	6.36	79.5	44 - 120	

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022326ECD7.D  
Data file 2: /230502.b/230502.b/05022326ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 23D0063-01RE1  
Client ID:  
Injection Date: 02-MAY-2023 19:59  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 5.0

SURROGATES

RT	ZB5 Col Shift	ZB5 Col Response	RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.762	-0.003	50826	5.644	-0.005	31367	5.9	6.4	6.8	Tetrachloro-m-xylene
13.852	-0.010	39522	14.073	-0.009	38047	6.9	6.4	8.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	585265	5.2
Hexabromobiphenyl	745660	525863	-29.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	351397	0.8
Hexabromobiphenyl	429949	367414	-14.5

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	---			0.0	1	---			0.0	
Aroclor-1016	2	---			0.0	2	---			0.0	
Aroclor-1016	3	---			0.0	3	---			0.0	
Aroclor-1016	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	---			0.0	
Aroclor-1221	3	---			0.0	3	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	---			0.0	
Aroclor-1232	3	---			0.0	3	---			0.0	
Aroclor-1232	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1242	1	---			0.0	1	---			0.0	
Aroclor-1242	2	---			0.0	2	---			0.0	
Aroclor-1242	3	---			0.0	3	---			0.0	
Aroclor-1242	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1248	1	8.366	-0.012	9455	21.1	1	8.268	-0.013	6822	37.0	
Aroclor-1248	2	8.537	-0.019	8567	22.8	2	8.675	-0.013	4816	29.7	
Aroclor-1248	3	8.955	-0.005	23478	21.0	3	9.118	-0.038	7211	36.2	
Aroclor-1248	4	9.256	-0.012	28937	49.2	4	9.536	-0.047	6860	32.3	
Total CollAve (4 peaks):				28.5	Total Col2Ave (4 peaks):				33.8	RPD = 17	
Corrected Ave (3 peaks):				21.6	Corrected Ave (3 peaks):				32.7	RPD = 41*	
Aroclor-1254	1	9.256	-0.016	28937	45.8	1	9.409	-0.019	16598	63.2	
Aroclor-1254	2	9.333	-0.024	13969	46.6	2	9.536	0.010	6860	42.8	
Aroclor-1254	3	9.629	-0.016	21568	54.0	3	9.926	-0.022	9307	43.8	
Aroclor-1254	4	9.760	-0.026	41890	51.6	4	10.078	-0.027	29144	63.3	
Aroclor-1254	5	10.093	-0.067	24688	41.2	5	10.325	-0.028	34484	65.2	
Total CollAve (5 peaks):				47.8	Total Col2Ave (5 peaks):				55.6	RPD = 15	
Corrected Ave (4 peaks):				46.3	Corrected Ave (4 peaks):				53.3	RPD = 14	
<b>49.5</b>											
Aroclor-1260	1	11.001	-0.015	15872	53.5	1	11.611	-0.014	15082	57.7	
Aroclor-1260	2	11.317	-0.017	11377	37.8	2	11.873	-0.018	25293	36.9	
Aroclor-1260	3	11.689	-0.022	34493	44.1	3	12.388	-0.018	10639	68.1	
Aroclor-1260	4	12.091	-0.027	16821	43.4	4	12.455	-0.020	17465	37.4	
Aroclor-1260	5	12.203	-0.014	6994	39.3	NS	---			----	
Total CollAve (5 peaks):				43.6	Total Col2Ave (4 peaks):				50.0	RPD = 14	
Corrected Ave (4 peaks):				41.2	Corrected Ave (3 peaks):				44.0	RPD = 7	
Aroclor-1262	1	---			0.0	1	---			0.0	
Aroclor-1262	2	---			0.0	2	---			0.0	
Aroclor-1262	3	---			0.0	3	---			0.0	
Aroclor-1262	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1268	1	---			0.0	1	---			0.0	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	---			0.0	3	---			0.0	
Aroclor-1268	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						

Total PCB Area Col1 (5.866 - 13.762) = 752018 Col1 Total PCB = 0.1 ppm\*  
Total PCB Area Col2 (5.749 - 13.983) = 494320 Col2 Total PCB = 0.1 ppm\*

\* Quantitated against AR1660 0.25ppm in Ical

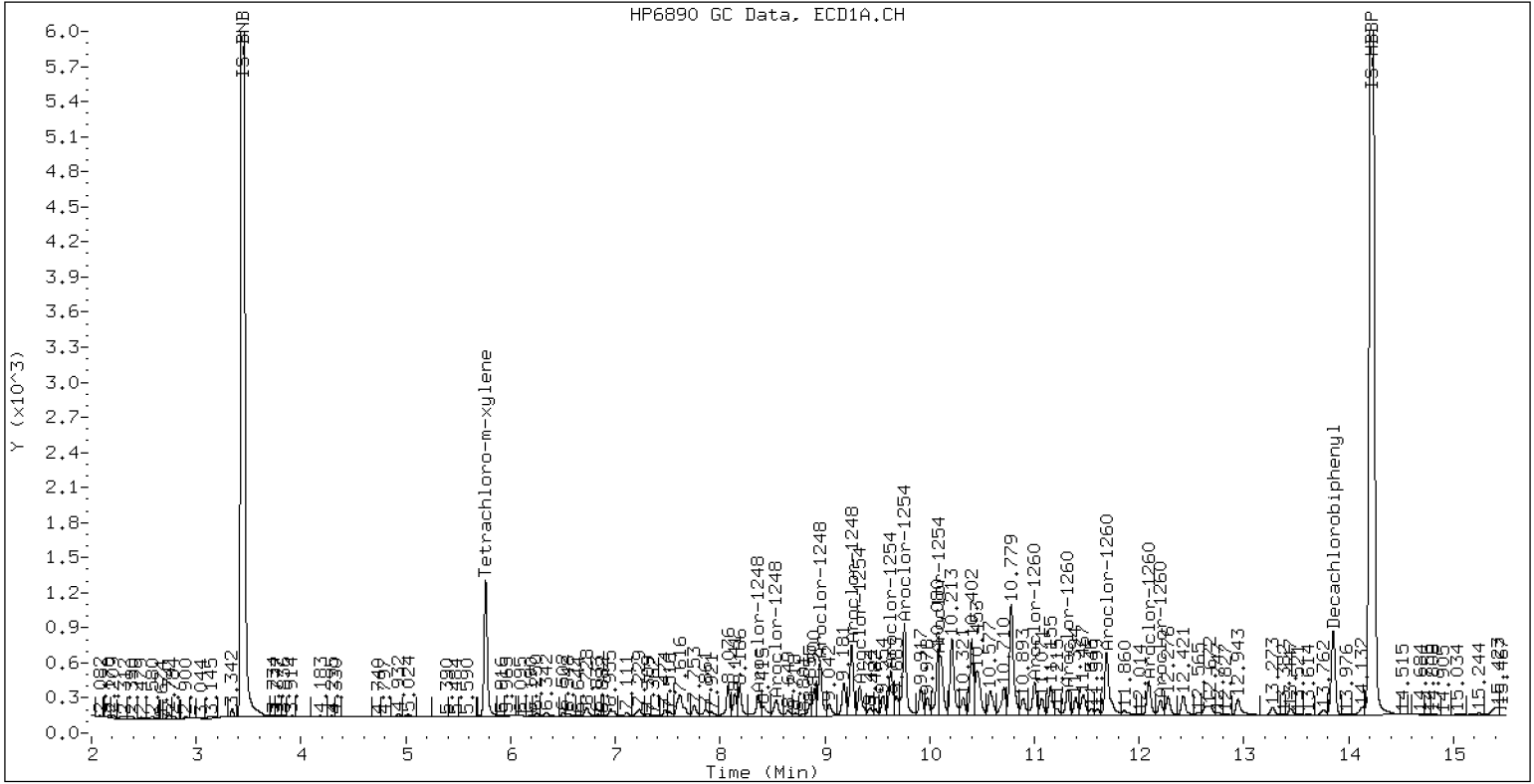
PCB-Form 10 Mod.



# PCB Dual Column Chromatograms

ECD7-ZB5 23D0063-01RE1

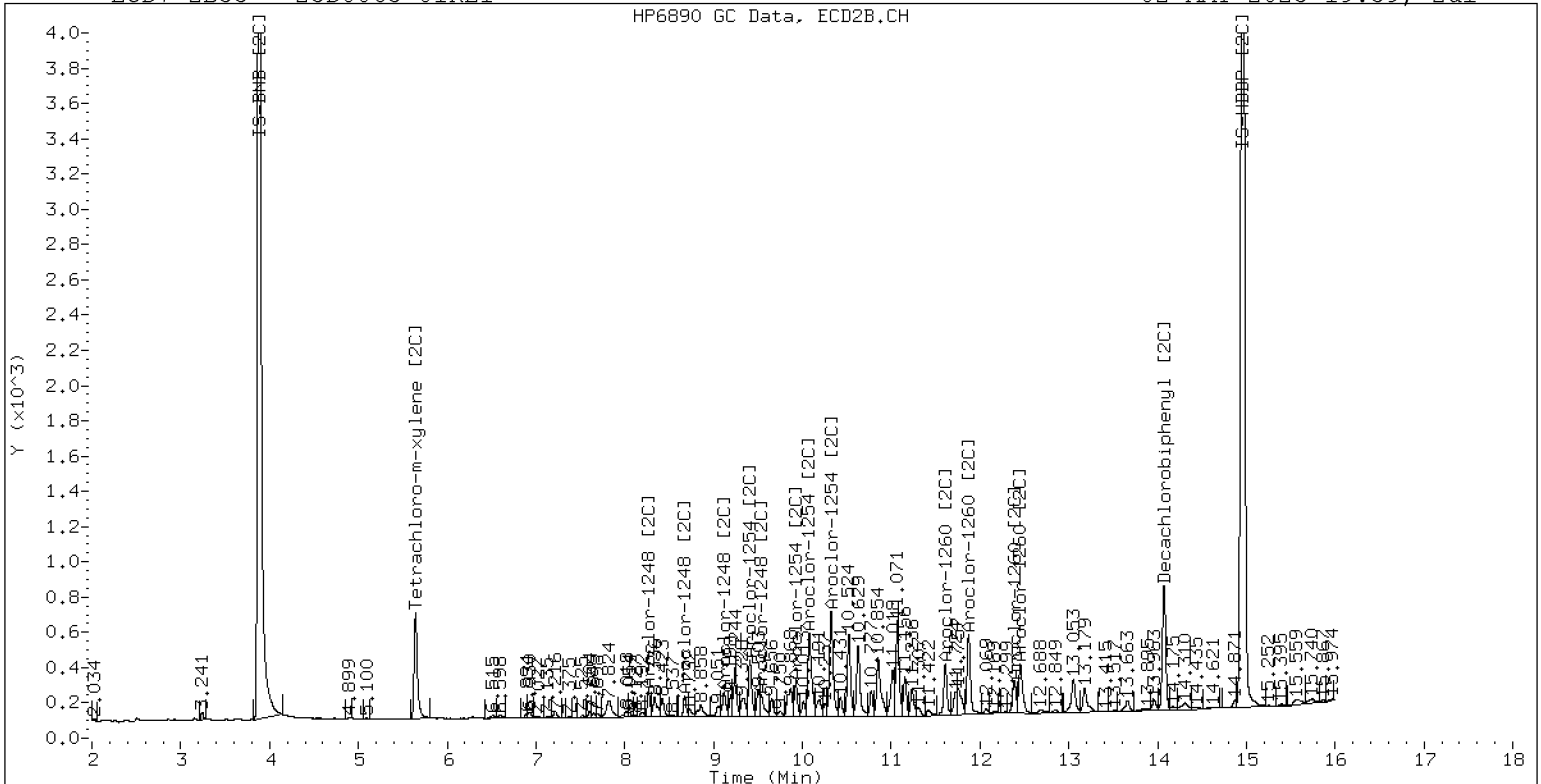
02-MAY-2023 19:59, 2u1



ZB-5 Manual Integration: YES

ECD7-ZB35 23D0063-01RE1

02-MAY-2023 19:59, 2u1



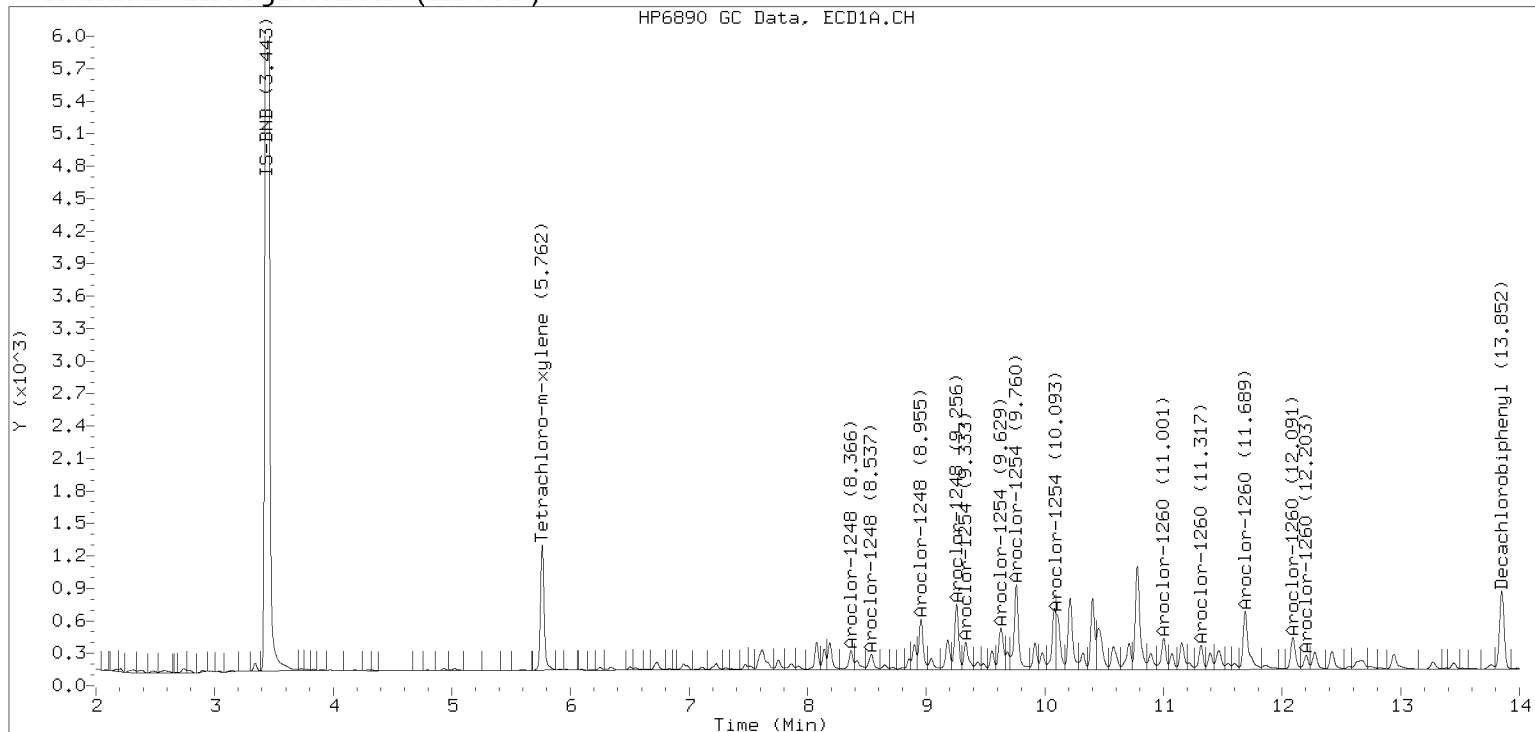
ZB-35 Manual Integration: NO

# Manual Peak Adjustment, ZB-5

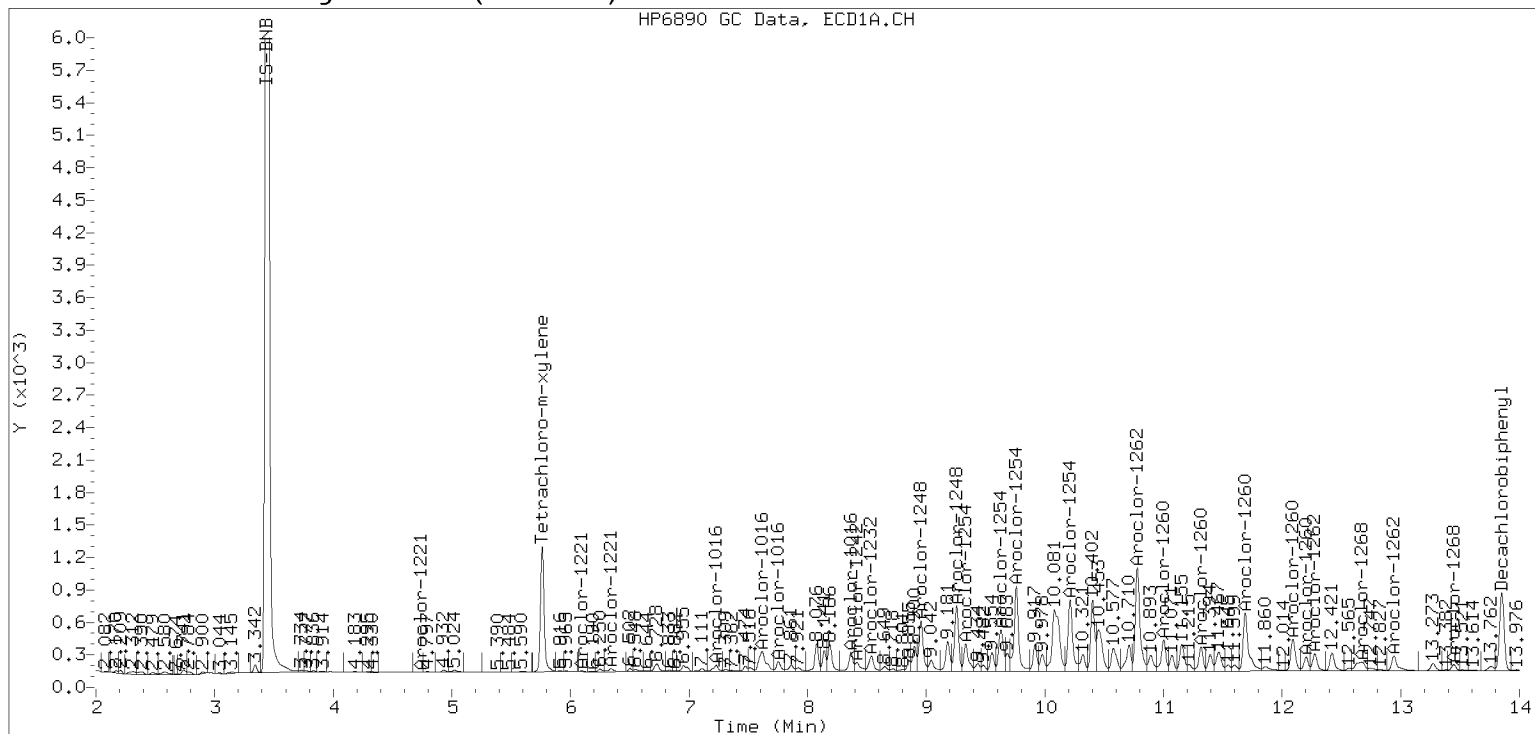
Datafile: ecd7.i/230502.b/05022326ECD7.D

Injection Date: 02-MAY-2023 19:59

## Manual Integration (After)



## Processed Integration (Before)





**Dual Column**

**LDW23-SC1818**

**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC SDG: 23D0063  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Solid Laboratory ID: 23D0063-02 A File ID: 05022327ECD7.D  
 Sampled: 04/04/23 10:25 Prepared: 04/17/23 13:36 Analyzed: 05/02/23 20:20  
 % Solids: 43.70 Preparation: EPA 3546 (Microwave) Initial/Final: 28.62 g Wet / 2.5 mL  
 Batch: BLD0300 Sequence: SLE0029 Calibration: GE00002  
 Instrument: ECD7 Column 1: ZB5 Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	5	20.0	7.8	20.0	U
11104-28-2	Aroclor 1221	1	5	20.0	7.8	20.0	U
11141-16-5	Aroclor 1232	1	5	20.0	7.8	20.0	U
53469-21-9	Aroclor 1242	1	5	20.0	7.8	20.0	U
12672-29-6	Aroclor 1248	2	5	61.6	7.8	20.0	D
11097-69-1	Aroclor 1254	2	5	96.9	7.8	20.0	D
11096-82-5	Aroclor 1260	2	5	75.8	2.9	20.0	D

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9956	7.04	88.0	40 - 126	
<i>Tetrachlorometaxylene</i>	1	7.9956	5.98	74.8	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9956	6.29	78.6	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9956	6.14	76.8	44 - 120	

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022327ECD7.D  
Data file 2: /230502.b/230502.b/05022327ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 23D0063-02RE1  
Client ID:  
Injection Date: 02-MAY-2023 20:20  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 5.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.763	-0.003	52454	5.645	-0.004	30547	6.0	6.1	2.7	Tetrachloro-m-xylene
13.851	-0.011	42365	14.073	-0.009	39109	7.0	6.3	11.3	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	599791	7.8
Hexabromobiphenyl	745660	554929	-25.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	354027	1.6
Hexabromobiphenyl	429949	383939	-10.7

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	---			0.0	1	---			0.0	
Aroclor-1016	2	---			0.0	2	---			0.0	
Aroclor-1016	3	---			0.0	3	---			0.0	
Aroclor-1016	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	---			0.0	
Aroclor-1221	3	---			0.0	3	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	---			0.0	
Aroclor-1232	3	---			0.0	3	---			0.0	
Aroclor-1232	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1242	1	---			0.0	1	---			0.0	
Aroclor-1242	2	---			0.0	2	---			0.0	
Aroclor-1242	3	---			0.0	3	---			0.0	
Aroclor-1242	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1248	1	8.365	-0.013	15583	34.0	1	8.268	-0.014	21398	115.2	
Aroclor-1248	2	8.531	-0.025	15279	39.8	2	8.674	-0.014	10973	67.1	
Aroclor-1248	3	8.954	-0.006	41308	36.0	3	9.192	0.036	9143	45.6	
Aroclor-1248	4	9.255	-0.013	47132	78.3	4	9.587	0.004	4009	18.7	
Total CollAve (4 peaks):				47.0	Total Col2Ave (4 peaks):				61.7	RPD = 27	
Corrected Ave (3 peaks):				36.6	Corrected Ave (3 peaks):				43.8	RPD = 18	
Aroclor-1254	1	9.255	-0.018	47132	72.7	1	9.407	-0.020	27046	102.2	
Aroclor-1254	2	9.332	-0.024	24266	79.0	2	9.500	-0.026	15011	93.1	
Aroclor-1254	3	9.626	-0.020	26114	63.8	3	9.925	-0.024	11961	55.8	
Aroclor-1254	4	9.757	-0.029	73879	88.8	4	10.077	-0.029	53969	116.3	
Aroclor-1254	5	10.092	-0.069	42141	68.6	5	10.323	-0.030	62441	117.1	
Total CollAve (5 peaks):				74.6	Total Col2Ave (5 peaks):				96.9	RPD = 26	
Corrected Ave (4 peaks):				71.0	Corrected Ave (4 peaks):				91.8	RPD = 26	
				<b>76.075</b>							
Aroclor-1260	1	11.002	-0.015	23216	74.1	1	11.610	-0.014	22573	82.6	
Aroclor-1260	2	11.317	-0.017	16876	53.1	2	11.871	-0.020	38410	53.6	
Aroclor-1260	3	11.688	-0.023	52582	63.8	3	12.387	-0.019	17736	108.7	
Aroclor-1260	4	12.090	-0.028	25421	62.2	4	12.453	-0.022	28646	58.6	
Aroclor-1260	5	12.201	-0.015	11587	61.7	NS	---			---	
Total CollAve (5 peaks):				63.0	Total Col2Ave (4 peaks):				75.9	RPD = 19	
Corrected Ave (4 peaks):				60.2	Corrected Ave (3 peaks):				65.0	RPD = 8	
Aroclor-1262	1	---			0.0	1	---			0.0	
Aroclor-1262	2	---			0.0	2	---			0.0	
Aroclor-1262	3	---			0.0	3	---			0.0	
Aroclor-1262	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1268	1	---			0.0	1	---			0.0	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	---			0.0	3	---			0.0	
Aroclor-1268	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						

Total PCB Area Col1 (5.866 - 13.762) = 1134234 Col1 Total PCB = 0.2 ppm\*  
Total PCB Area Col2 (5.749 - 13.983) = 800368 Col2 Total PCB = 0.2 ppm\*

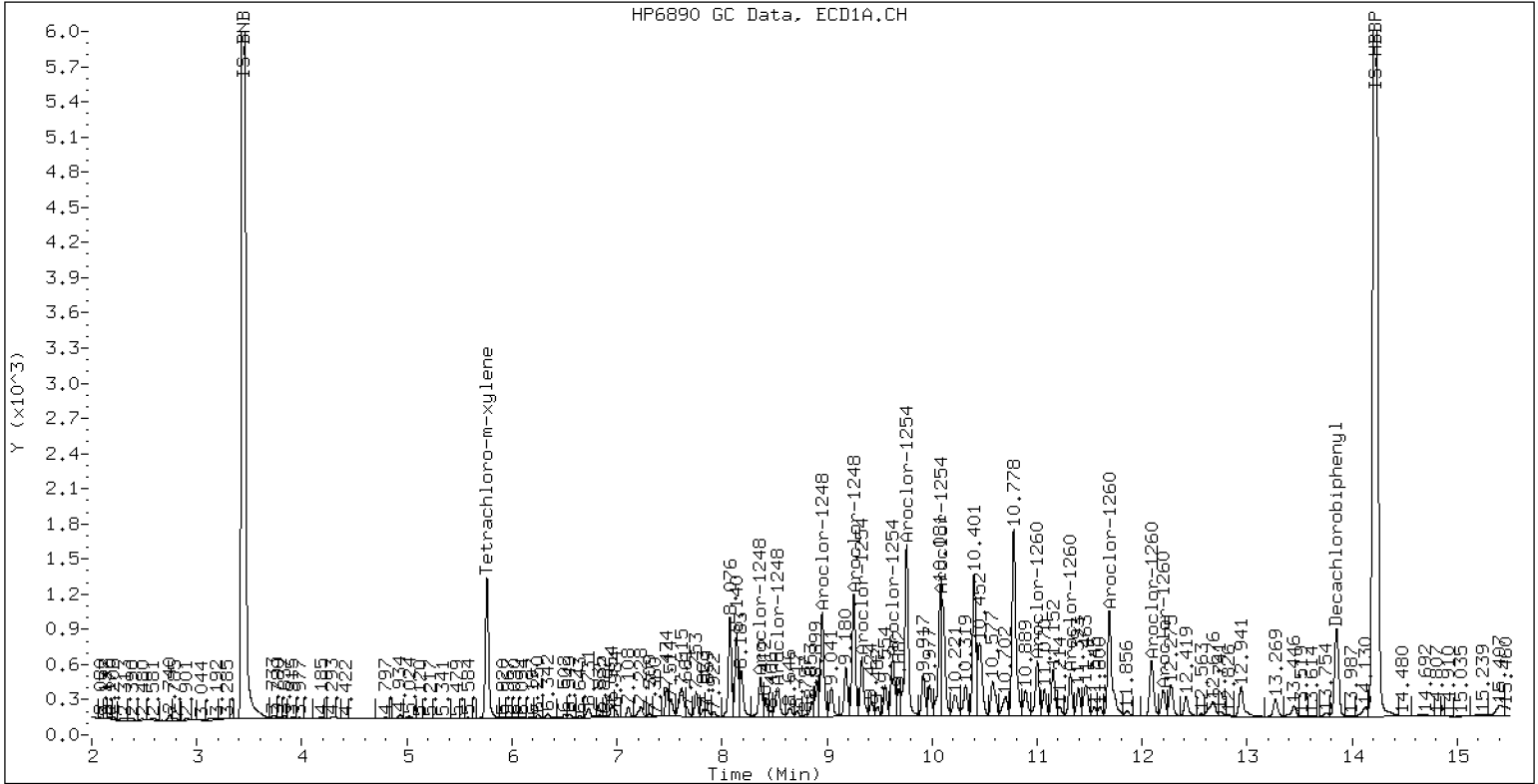
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 23D0063-02RE1

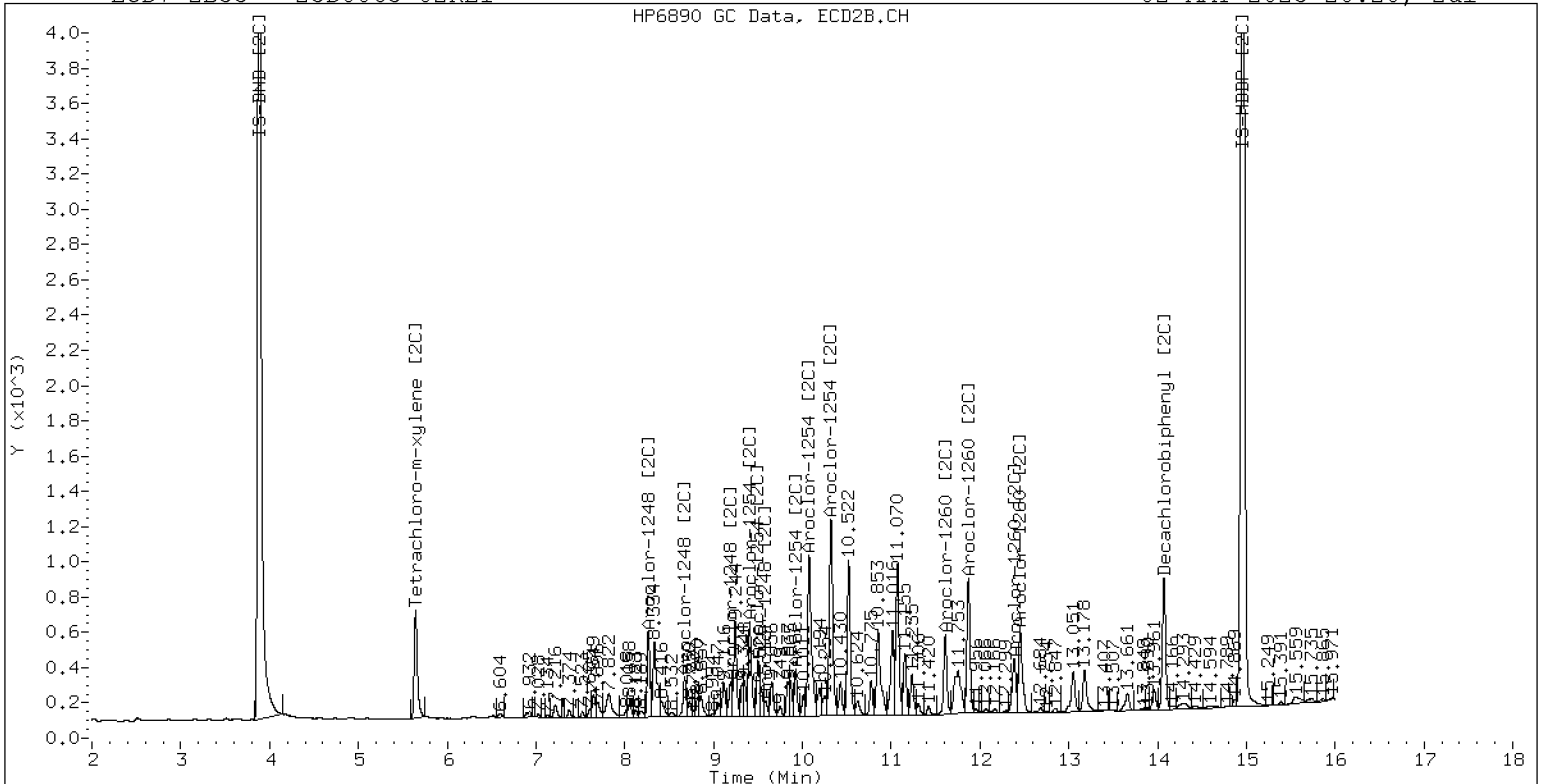
02-MAY-2023 20:20, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 23D0063-02RE1

02-MAY-2023 20:20, 2ul

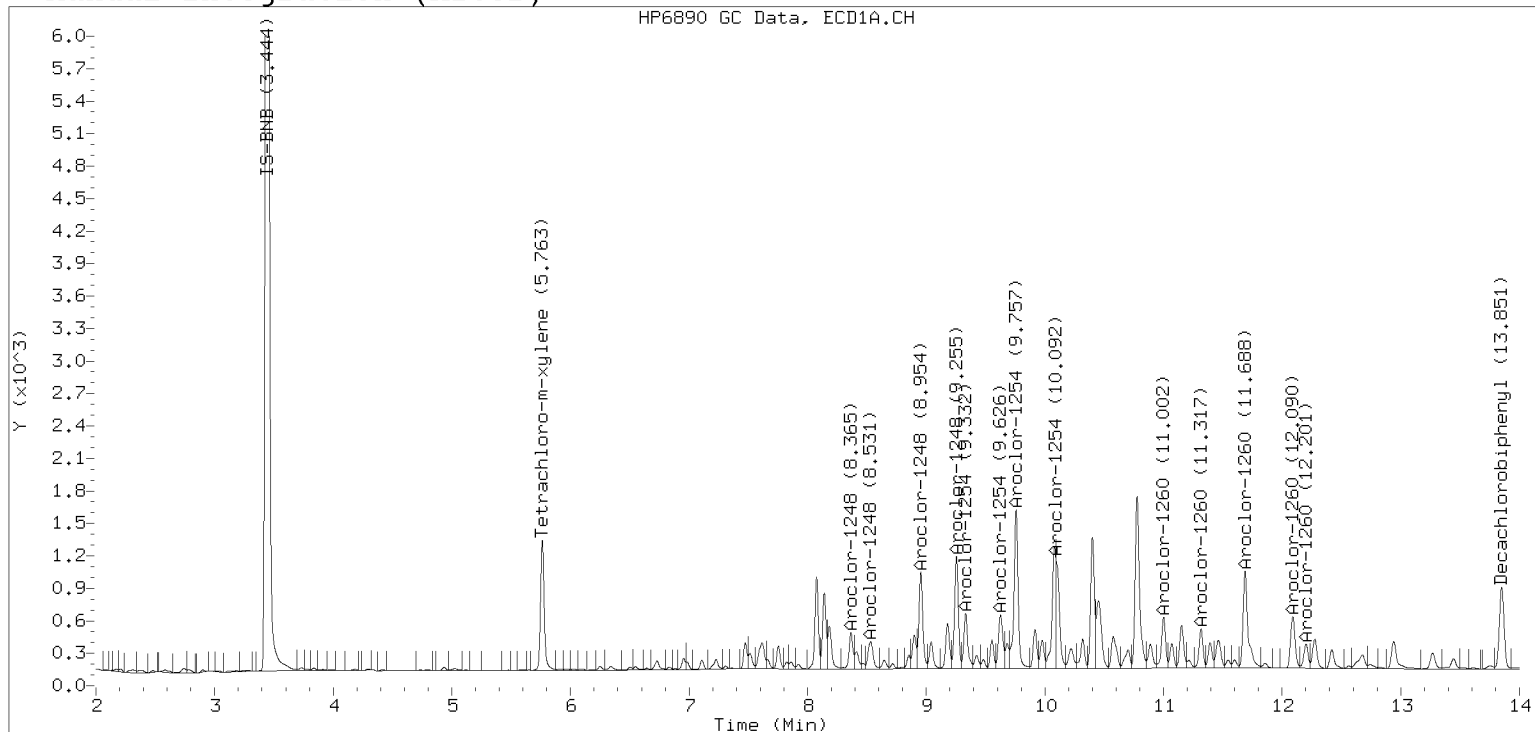


ZB-35 Manual Integration: YES

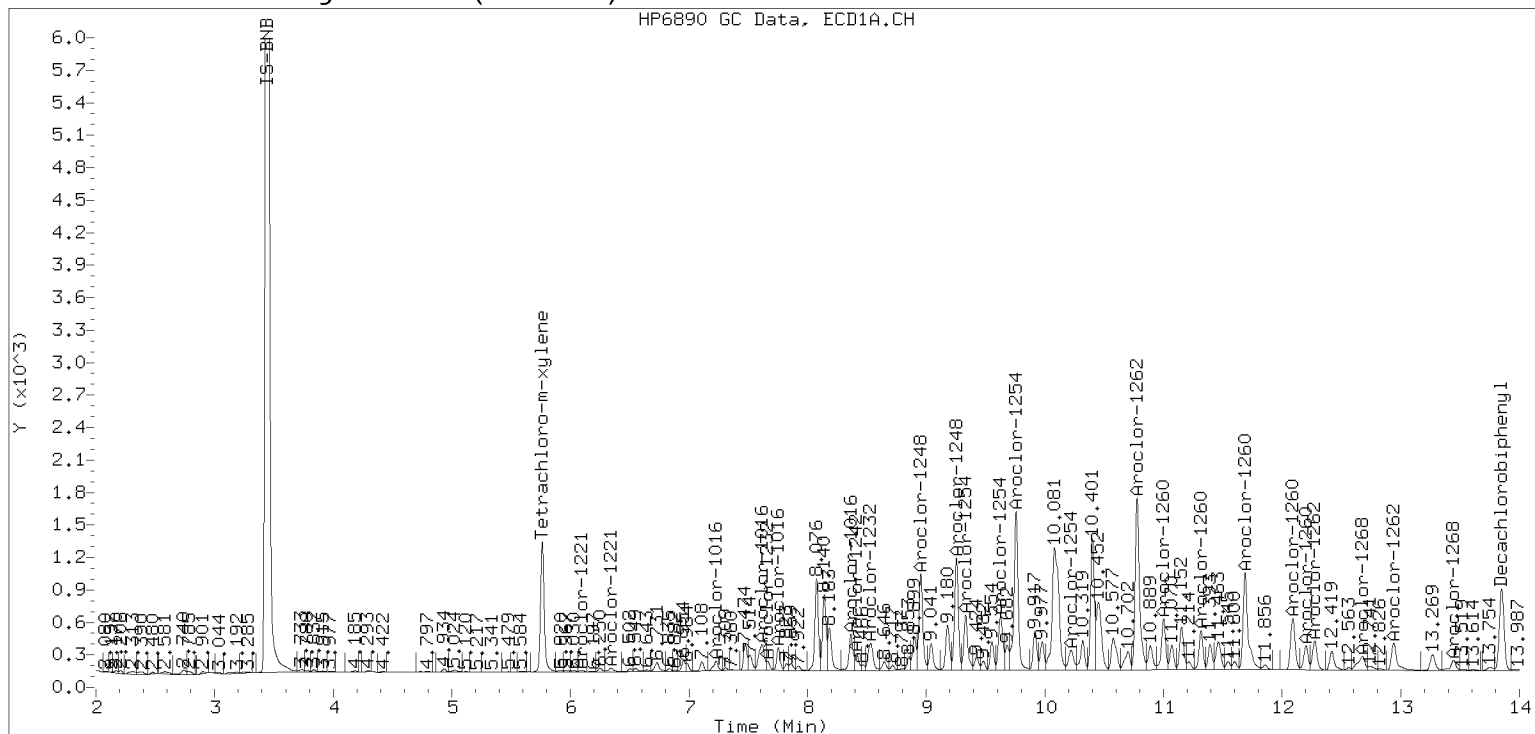
# Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/230502.b/05022327ECD7.D      Injection Date: 02-MAY-2023 20:20

## Manual Integration (After)



## Processed Integration (Before)

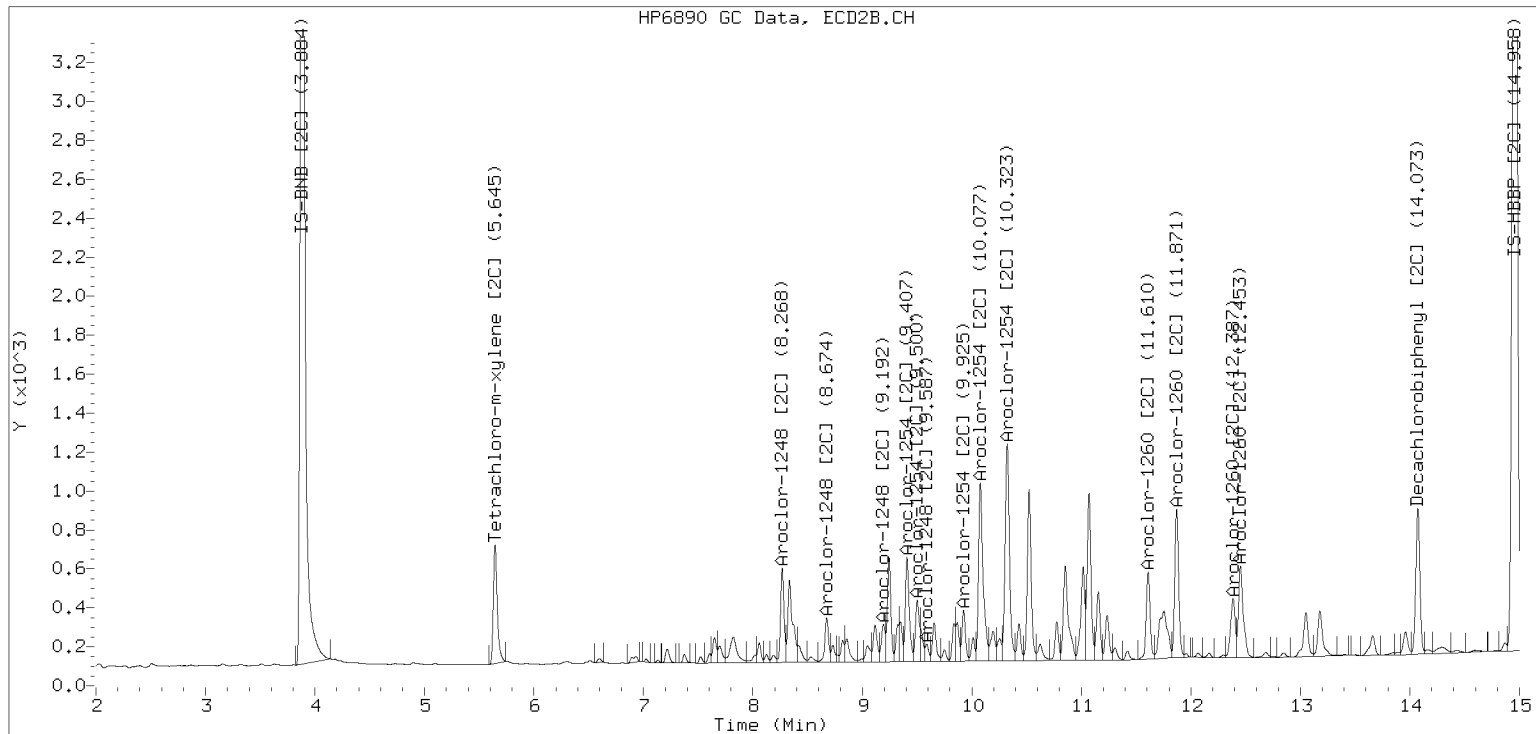




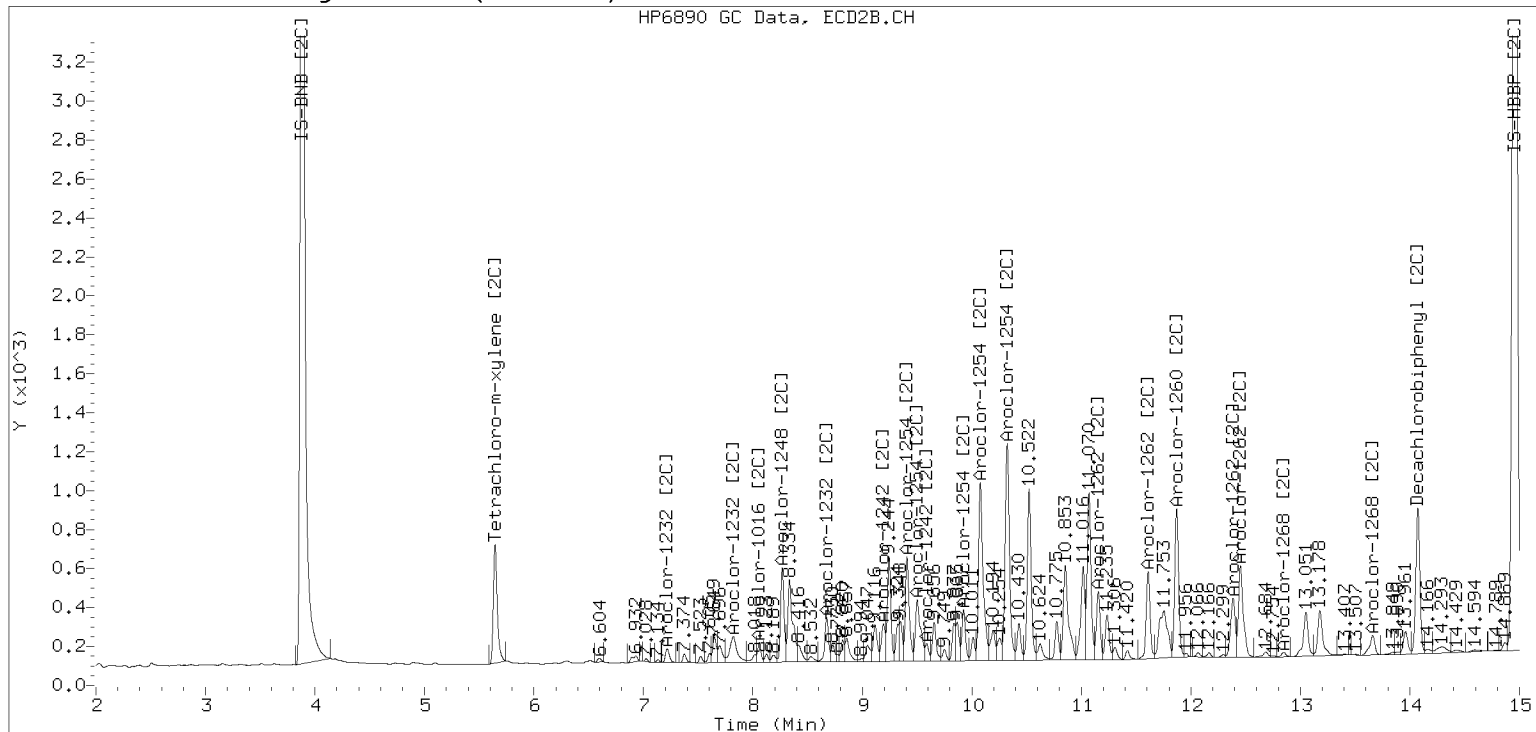
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230502.b/230502.b/05022327ECD7.D Injection Date: 02-MAY-2023

Manual Integration (After)



Processed Integration (Before)





ORGANIC ANALYSIS DATA SHEET  
EPA 8082A

Laboratory: Analytical Resources, LLC SDG: 23D0063  
Client: Anchor QEA, LLC  
Project: AOC5 MR Phase 1  
Matrix: Solid Laboratory ID: 23D0063-03 A File ID: 05022328ECD7.D  
Sampled: 04/04/23 12:52 Prepared: 04/17/23 13:36 Analyzed: 05/02/23 20:41  
% Solids: 35.11 Preparation: EPA 3546 (Microwave) Initial/Final: 35.68 g Wet / 2.5 mL  
Batch: BLD0300 Sequence: SLE0029 Calibration: GE00002  
Instrument: ECD7 Column 1: ZB5 Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	5	20.0	7.8	20.0	U
11104-28-2	Aroclor 1221	1	5	20.0	7.8	20.0	U
11141-16-5	Aroclor 1232	1	5	20.0	7.8	20.0	U
53469-21-9	Aroclor 1242	1	5	20.0	7.8	20.0	U
12672-29-6	Aroclor 1248	2	5	39.6	7.8	20.0	D
11097-69-1	Aroclor 1254	2	5	64.5	7.8	20.0	D
11096-82-5	Aroclor 1260	2	5	62.4	2.9	20.0	D

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9826	7.25	90.8	40 - 126	
<i>Tetrachlorometaxylene</i>	1	7.9826	5.98	75.0	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9826	6.54	81.9	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9826	6.48	81.1	44 - 120	

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022328ECD7.D  
Data file 2: /230502.b/230502.b/05022328ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 23D0063-03RE1  
Client ID:  
Injection Date: 02-MAY-2023 20:41  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 5.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.762	-0.003	50893	5.644	-0.005	31733	6.0	6.5	7.9	Tetrachloro-m-xylene
13.852	-0.010	43618	14.074	-0.009	40580	7.3	6.6	10.3	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	580705	4.4
Hexabromobiphenyl	745660	554090	-25.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	348171	-0.1
Hexabromobiphenyl	429949	382453	-11.0

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	---			0.0	1	---			0.0	
Aroclor-1016	2	---			0.0	2	---			0.0	
Aroclor-1016	3	---			0.0	3	---			0.0	
Aroclor-1016	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	---			0.0	
Aroclor-1221	3	---			0.0	3	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	---			0.0	
Aroclor-1232	3	---			0.0	3	---			0.0	
Aroclor-1232	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1242	1	---			0.0	1	---			0.0	
Aroclor-1242	2	---			0.0	2	---			0.0	
Aroclor-1242	3	---			0.0	3	---			0.0	
Aroclor-1242	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1248	1	8.365	-0.013	10944	24.6	1	8.267	-0.014	7711	42.2	
Aroclor-1248	2	8.534	-0.022	9840	26.4	2	8.673	-0.015	5714	35.5	
Aroclor-1248	3	8.953	-0.007	24877	22.4	3	9.192	0.036	7638	38.7	
Aroclor-1248	4	9.253	-0.015	30847	52.9	4	9.534	-0.049	8892	42.3	
Total CollAve (4 peaks):				31.6	Total Col2Ave (4 peaks):				39.7	RPD = 23	
Corrected Ave (3 peaks):				24.5	Corrected Ave (3 peaks):				38.8	RPD = 45*	
Aroclor-1254	1	9.253	-0.019	30847	49.2	1	9.407	-0.021	18611	71.5	
Aroclor-1254	2	9.330	-0.026	15381	51.7	2	9.534	0.008	8892	56.0	
Aroclor-1254	3	9.626	-0.019	24368	61.4	3	9.924	-0.024	10624	50.4	
Aroclor-1254	4	9.757	-0.029	44445	55.2	4	10.076	-0.030	32468	71.2	
Aroclor-1254	5	10.092	-0.068	26396	44.4	5	10.322	-0.032	38787	74.0	
Total CollAve (5 peaks):				52.4	Total Col2Ave (5 peaks):				64.6	RPD = 21	
Corrected Ave (4 peaks):				50.1	Corrected Ave (4 peaks):				62.3	RPD = 22	
<b>54.375</b>											
Aroclor-1260	1	11.001	-0.016	17159	54.8	1	11.609	-0.016	17047	62.7	
Aroclor-1260	2	11.315	-0.019	12841	40.5	2	11.870	-0.020	27006	37.8	
Aroclor-1260	3	11.687	-0.024	31204	37.9	3	12.381	-0.025	17693	108.8	
Aroclor-1260	4	12.089	-0.029	18512	45.3	4	12.453	-0.022	19863	40.8	
Aroclor-1260	5	12.202	-0.014	8894	47.5	NS	---			---	
Total CollAve (5 peaks):				45.2	Total Col2Ave (4 peaks):				62.5	RPD = 32	
Corrected Ave (4 peaks):				42.8	Corrected Ave (3 peaks):				47.1	RPD = 10	
Aroclor-1262	1	---			0.0	1	---			0.0	
Aroclor-1262	2	---			0.0	2	---			0.0	
Aroclor-1262	3	---			0.0	3	---			0.0	
Aroclor-1262	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1268	1	---			0.0	1	---			0.0	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	---			0.0	3	---			0.0	
Aroclor-1268	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						

Total PCB Area Col1 (5.866 - 13.762) = 856106 Col1 Total PCB = 0.1 ppm\*

Total PCB Area Col2 (5.749 - 13.983) = 556476 Col2 Total PCB = 0.1 ppm\*

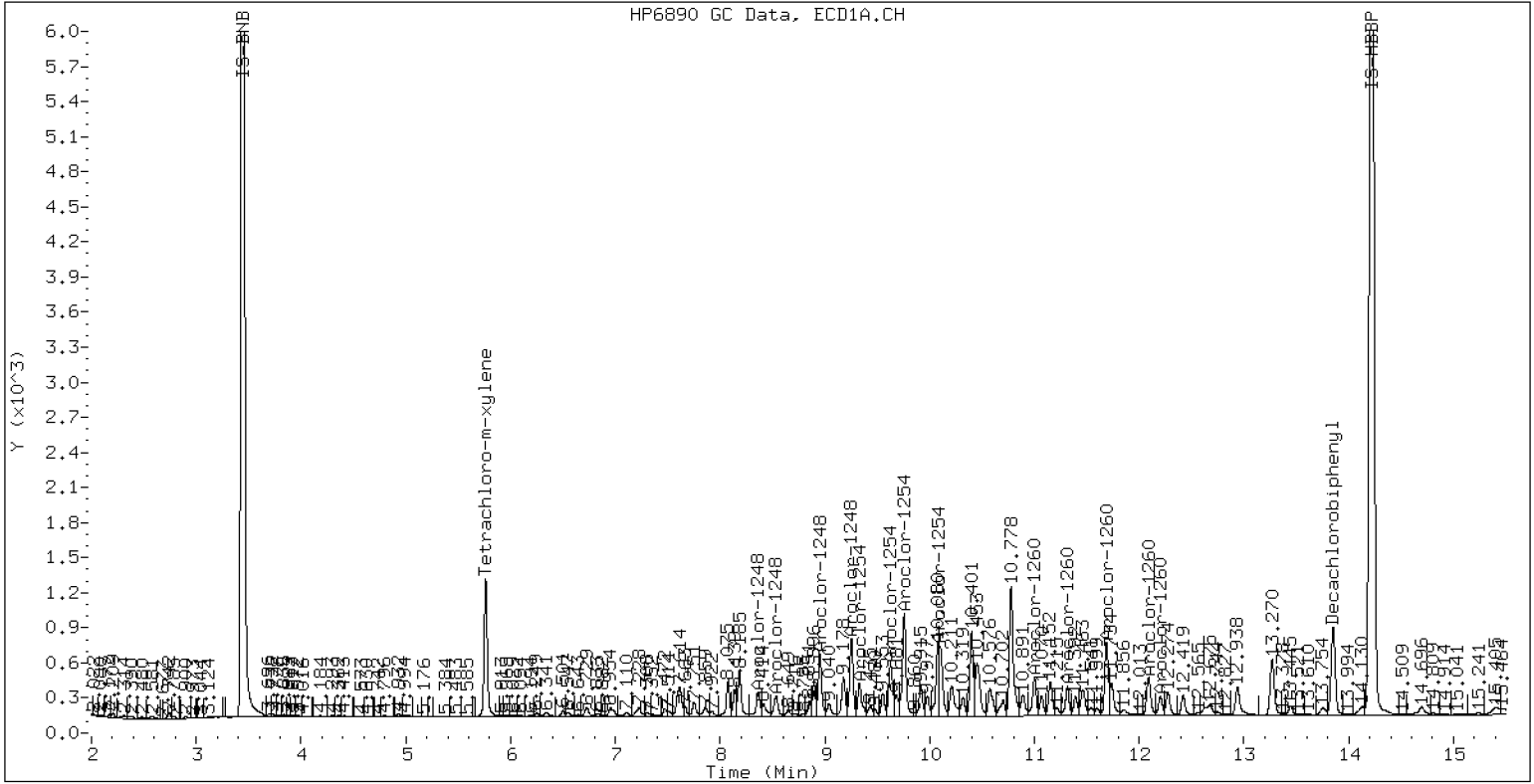
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 23D0063-03RE1

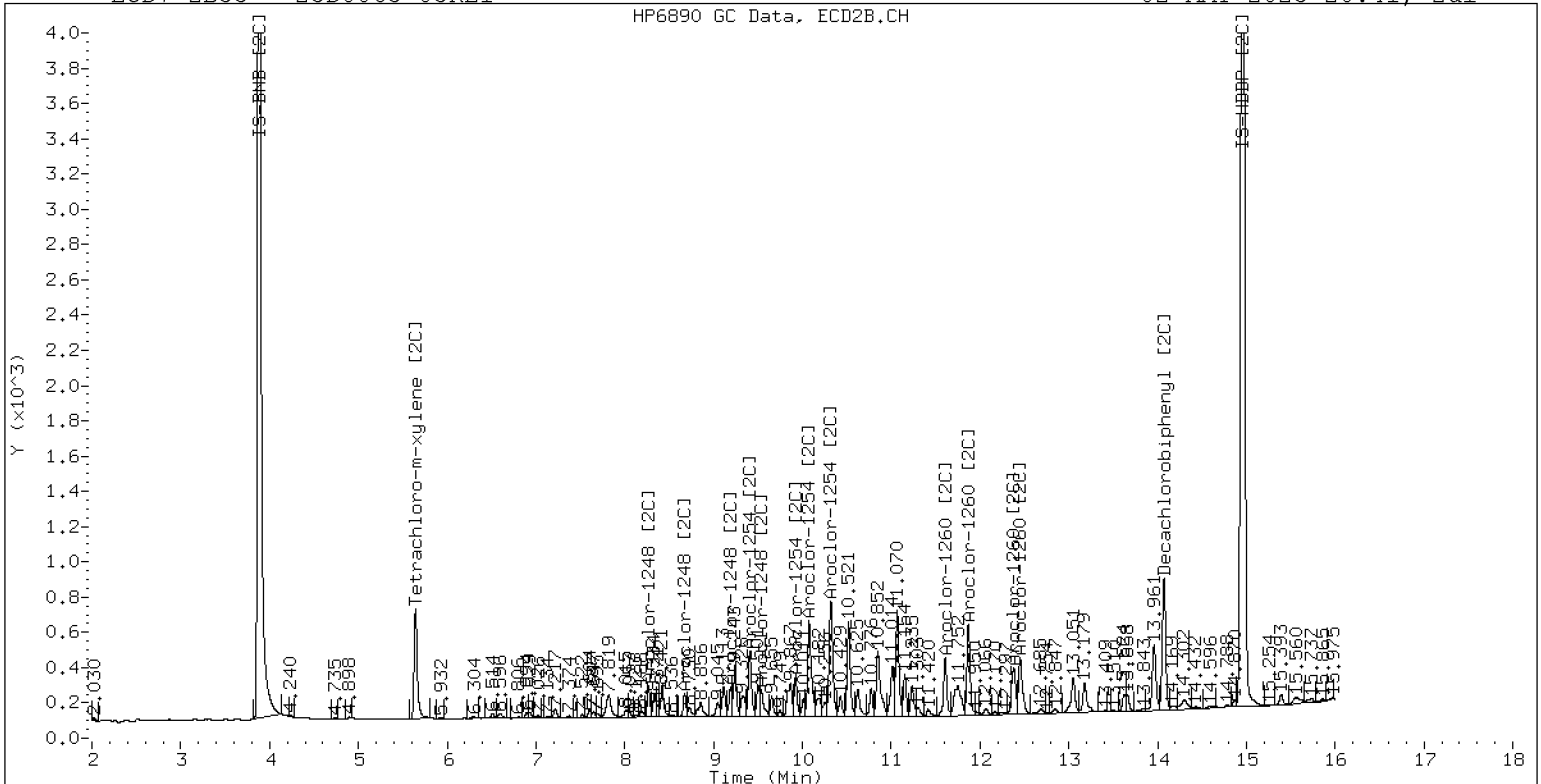
02-MAY-2023 20:41, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 23D0063-03RE1

02-MAY-2023 20:41, 2ul



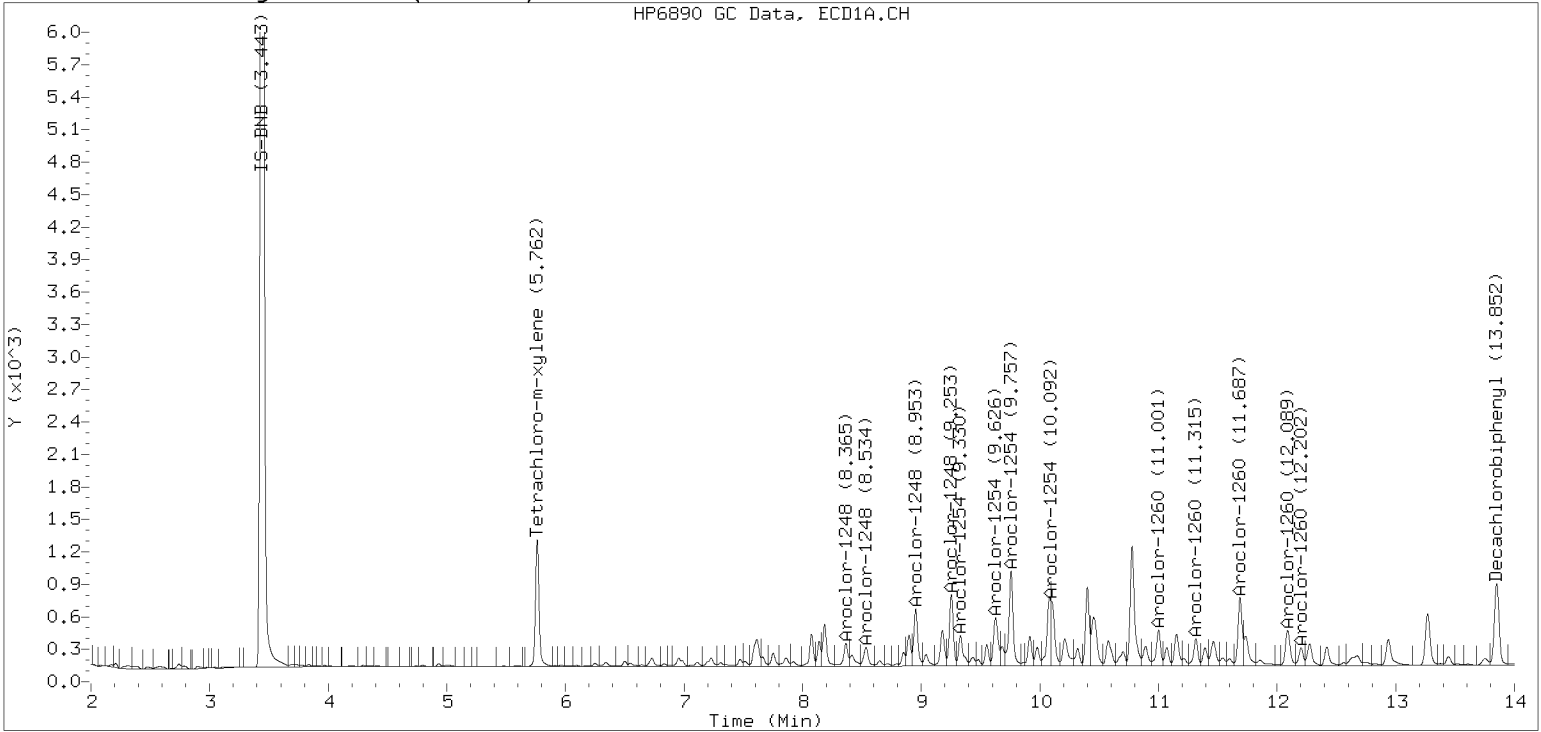
ZB-35 Manual Integration: NO

Manual Peak Adjustment, ZB-5

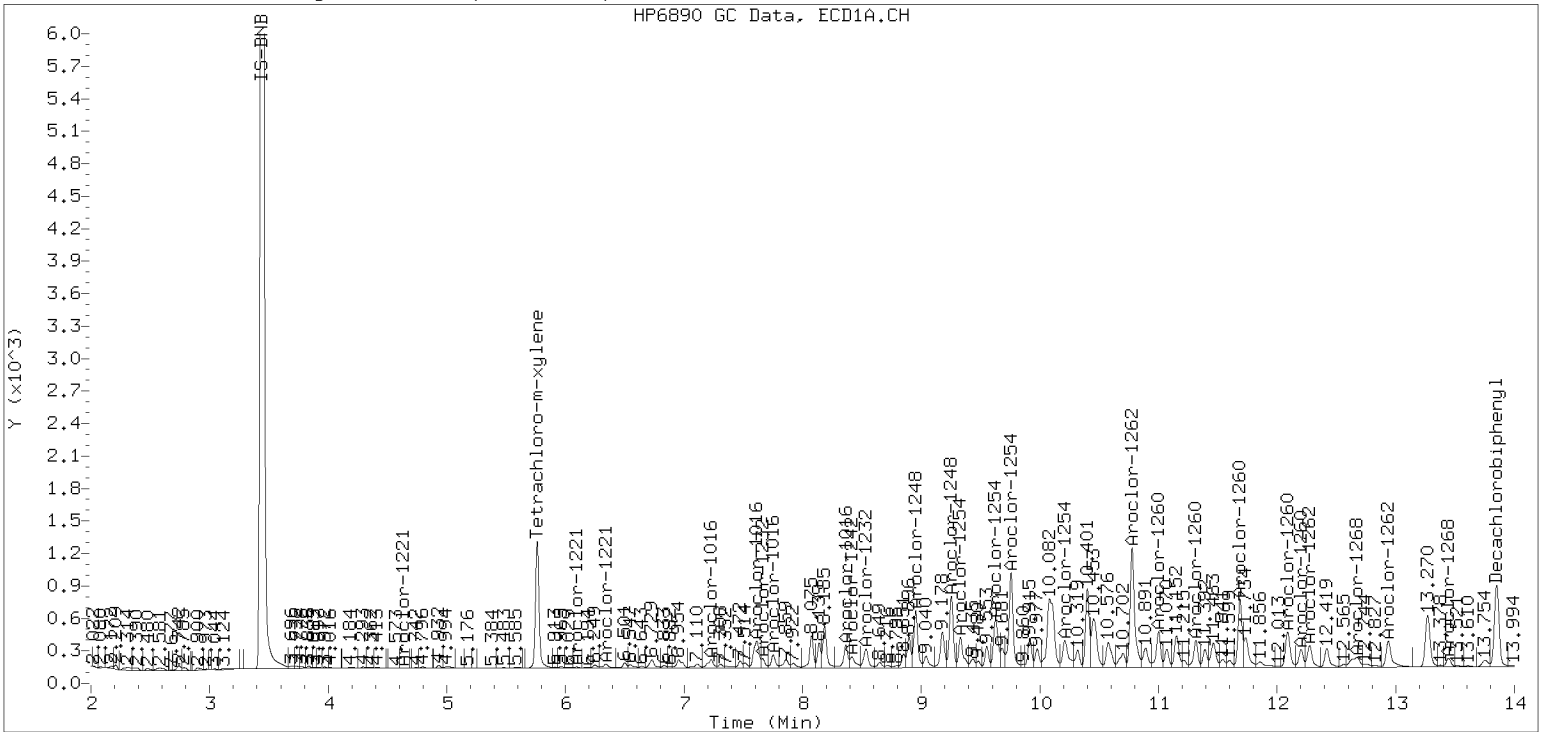
Datafile: ecd7.i/230502.b/05022328ECD7.D

Injection Date: 02-MAY-2023 20:41

Manual Integration (After)



Processed Integration (Before)





**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC SDG: 23D0063  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Solid Laboratory ID: 23D0063-04 A File ID: 05022329ECD7.D  
 Sampled: 04/04/23 13:12 Prepared: 04/17/23 13:36 Analyzed: 05/02/23 21:02  
 % Solids: 41.37 Preparation: EPA 3546 (Microwave) Initial/Final: 30.22 g Wet / 2.5 mL  
 Batch: BLD0300 Sequence: SLE0029 Calibration: GE00002  
 Instrument: ECD7 Column 1: ZB5 Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	5	20.0	7.8	20.0	U
11104-28-2	Aroclor 1221	1	5	20.0	7.8	20.0	U
11141-16-5	Aroclor 1232	1	5	20.0	7.8	20.0	U
53469-21-9	Aroclor 1242	1	5	20.0	7.8	20.0	U
12672-29-6	Aroclor 1248	2	5	56.8	7.8	20.0	D
11097-69-1	Aroclor 1254	2	5	87.9	7.8	20.0	D
11096-82-5	Aroclor 1260	2	5	66.6	2.9	20.0	D

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9987	7.37	92.1	40 - 126	
<i>Tetrachlorometaxylene</i>	1	7.9987	6.27	78.4	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9987	6.63	82.9	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9987	6.76	84.5	44 - 120	



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022329ECD7.D  
Data file 2: /230502.b/230502.b/05022329ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 23D0063-04RE1  
Client ID:  
Injection Date: 02-MAY-2023 21:02  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 5.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.763	-0.003	53813	5.644	-0.005	33604	6.3	6.8	7.4	Tetrachloro-m-xylene
13.852	-0.010	44268	14.073	-0.010	41379	7.4	6.6	10.5	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	586857	5.5
Hexabromobiphenyl	745660	554296	-25.7
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	354081	1.6
Hexabromobiphenyl	429949	385269	-10.4

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	---			0.0	1	---			0.0	
Aroclor-1016	2	---			0.0	2	---			0.0	
Aroclor-1016	3	---			0.0	3	---			0.0	
Aroclor-1016	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	---			0.0	
Aroclor-1221	3	---			0.0	3	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	---			0.0	
Aroclor-1232	3	---			0.0	3	---			0.0	
Aroclor-1232	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1242	1	---			0.0	1	---			0.0	
Aroclor-1242	2	---			0.0	2	---			0.0	
Aroclor-1242	3	---			0.0	3	---			0.0	
Aroclor-1242	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1248	1	8.365	-0.012	15145	33.7	1	8.268	-0.014	18641	100.3	
Aroclor-1248	2	8.532	-0.025	14403	38.3	2	8.674	-0.015	10419	63.7	
Aroclor-1248	3	8.955	-0.005	37322	33.3	3	9.192	0.036	9782	48.8	
Aroclor-1248	4	9.255	-0.013	43441	73.7	4	9.585	0.002	3105	14.5	
Total CollAve (4 peaks):				44.8	Total Col2Ave (4 peaks):				56.8	RPD = 24	
Corrected Ave (3 peaks):				35.1	Corrected Ave (3 peaks):				42.3	RPD = 19	
Aroclor-1254	1	9.255	-0.018	43441	68.5	1	9.407	-0.021	25032	94.6	
Aroclor-1254	2	9.332	-0.024	20544	68.4	2	9.501	-0.024	13450	83.4	
Aroclor-1254	3	9.626	-0.020	27608	68.9	3	9.924	-0.024	12352	57.6	
Aroclor-1254	4	9.757	-0.029	64889	79.7	4	10.076	-0.030	47852	103.1	
Aroclor-1254	5	10.094	-0.067	33717	56.1	5	10.322	-0.031	53710	100.7	
Total CollAve (5 peaks):				68.3	Total Col2Ave (5 peaks):				87.9	RPD = 25	
Corrected Ave (4 peaks):				65.5	Corrected Ave (4 peaks):				84.1	RPD = 25	
				<b>71.375</b>							
Aroclor-1260	1	11.001	-0.015	21381	68.3	1	11.610	-0.015	20836	76.0	
Aroclor-1260	2	11.316	-0.018	15681	49.4	2	11.870	-0.020	36371	50.6	
Aroclor-1260	3	11.688	-0.023	48931	59.4	3	12.387	-0.019	14353	87.6	
Aroclor-1260	4	12.089	-0.030	24666	60.4	4	12.453	-0.022	25570	52.2	
Aroclor-1260	5	12.202	-0.014	10716	57.2	NS	---			---	
Total CollAve (5 peaks):				58.9	Total Col2Ave (4 peaks):				66.6	RPD = 12	
Corrected Ave (4 peaks):				56.6	Corrected Ave (3 peaks):				59.6	RPD = 5	
Aroclor-1262	1	---			0.0	1	---			0.0	
Aroclor-1262	2	---			0.0	2	---			0.0	
Aroclor-1262	3	---			0.0	3	---			0.0	
Aroclor-1262	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1268	1	---			0.0	1	---			0.0	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	---			0.0	3	---			0.0	
Aroclor-1268	4	---			0.0	4	---			0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						

Total PCB Area Col1 (5.866 - 13.762) = 1045046 Col1 Total PCB = 0.1 ppm\*  
Total PCB Area Col2 (5.749 - 13.983) = 748057 Col2 Total PCB = 0.2 ppm\*

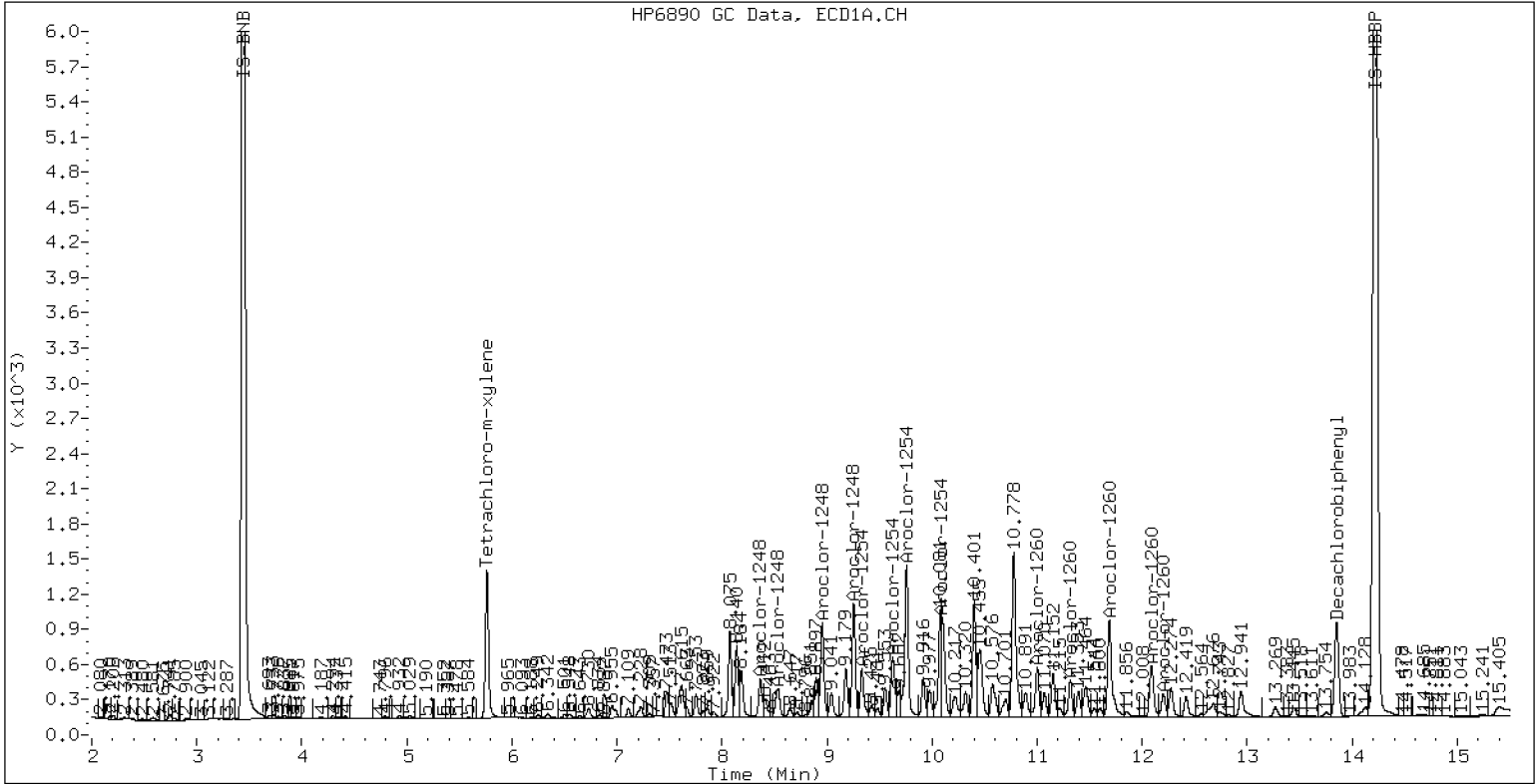
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 23D0063-04RE1

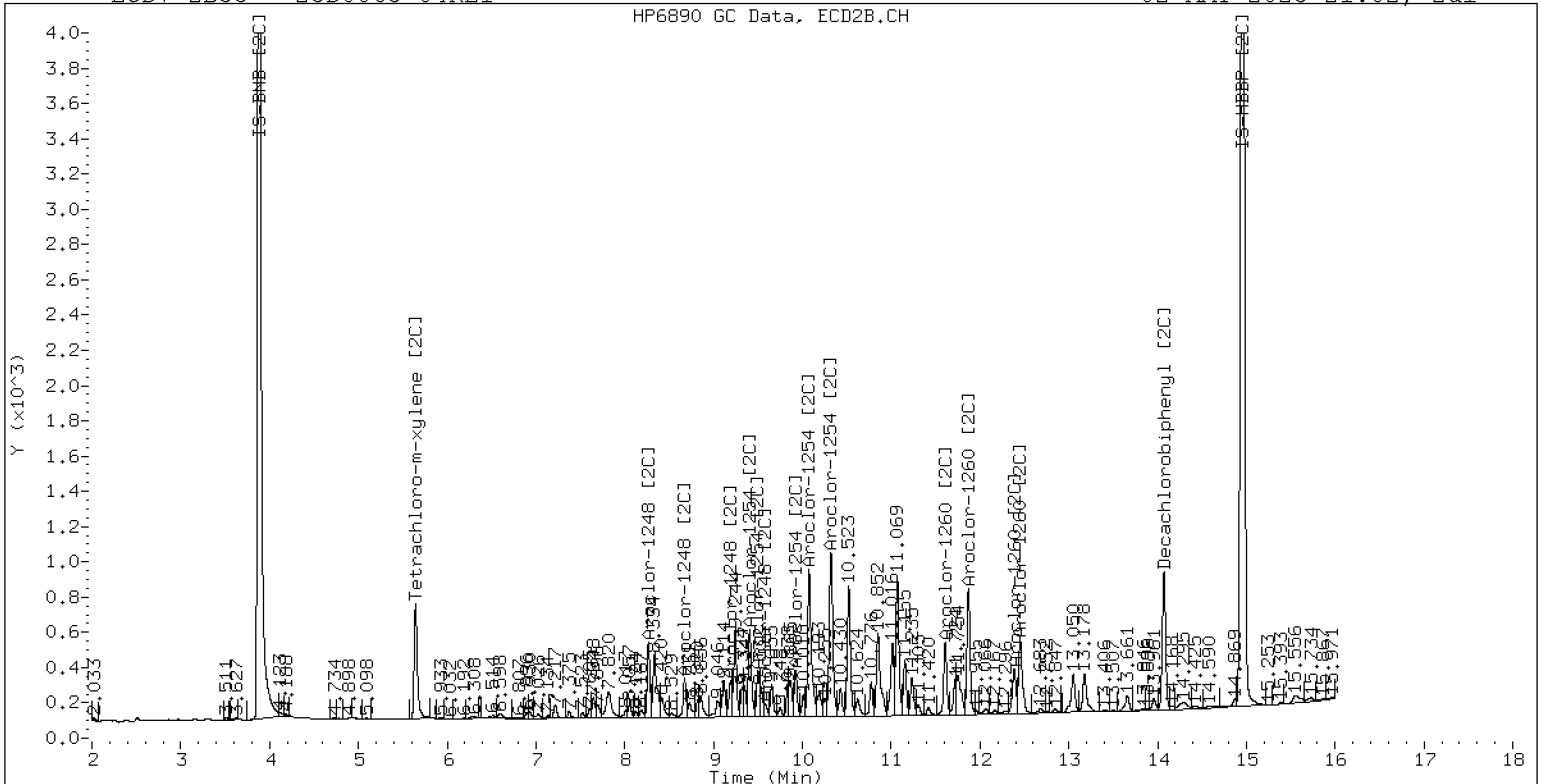
02-MAY-2023 21:02, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 23D0063-04RE1

02-MAY-2023 21:02, 2ul



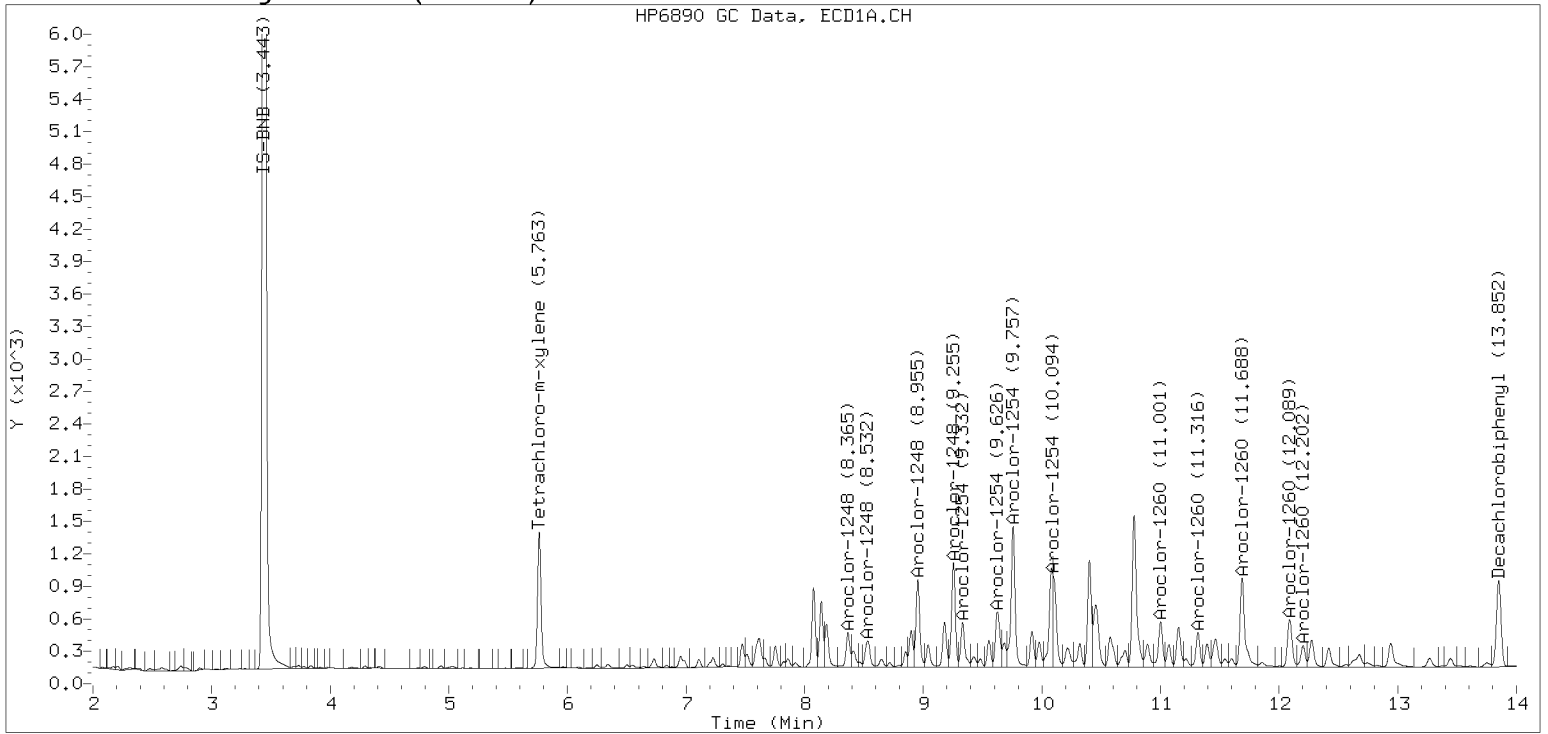
ZB-35 Manual Integration: YES

Manual Peak Adjustment, ZB-5

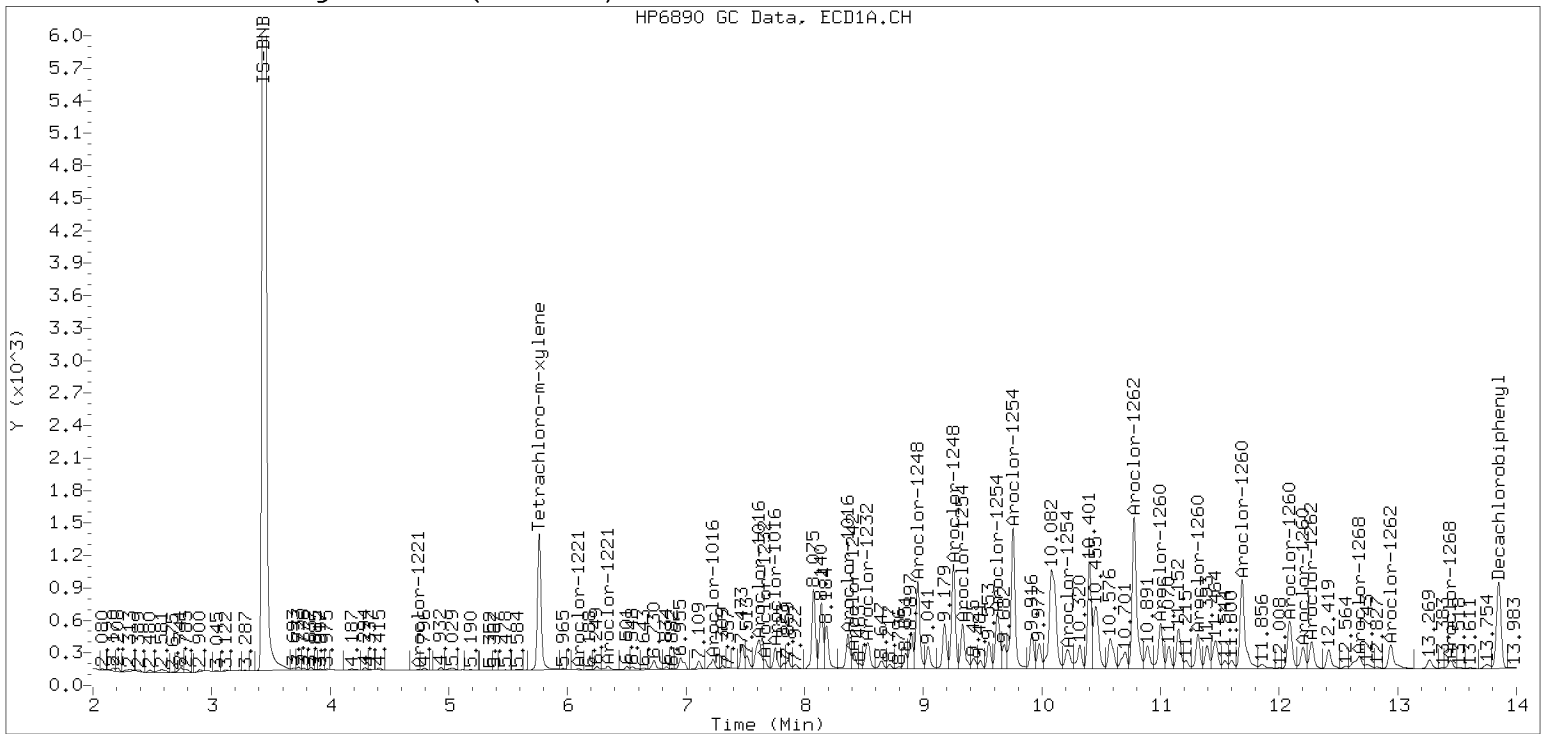
Datafile: ecd7.i/230502.b/05022329ECD7.D

Injection Date: 02-MAY-2023 21:02

Manual Integration (After)



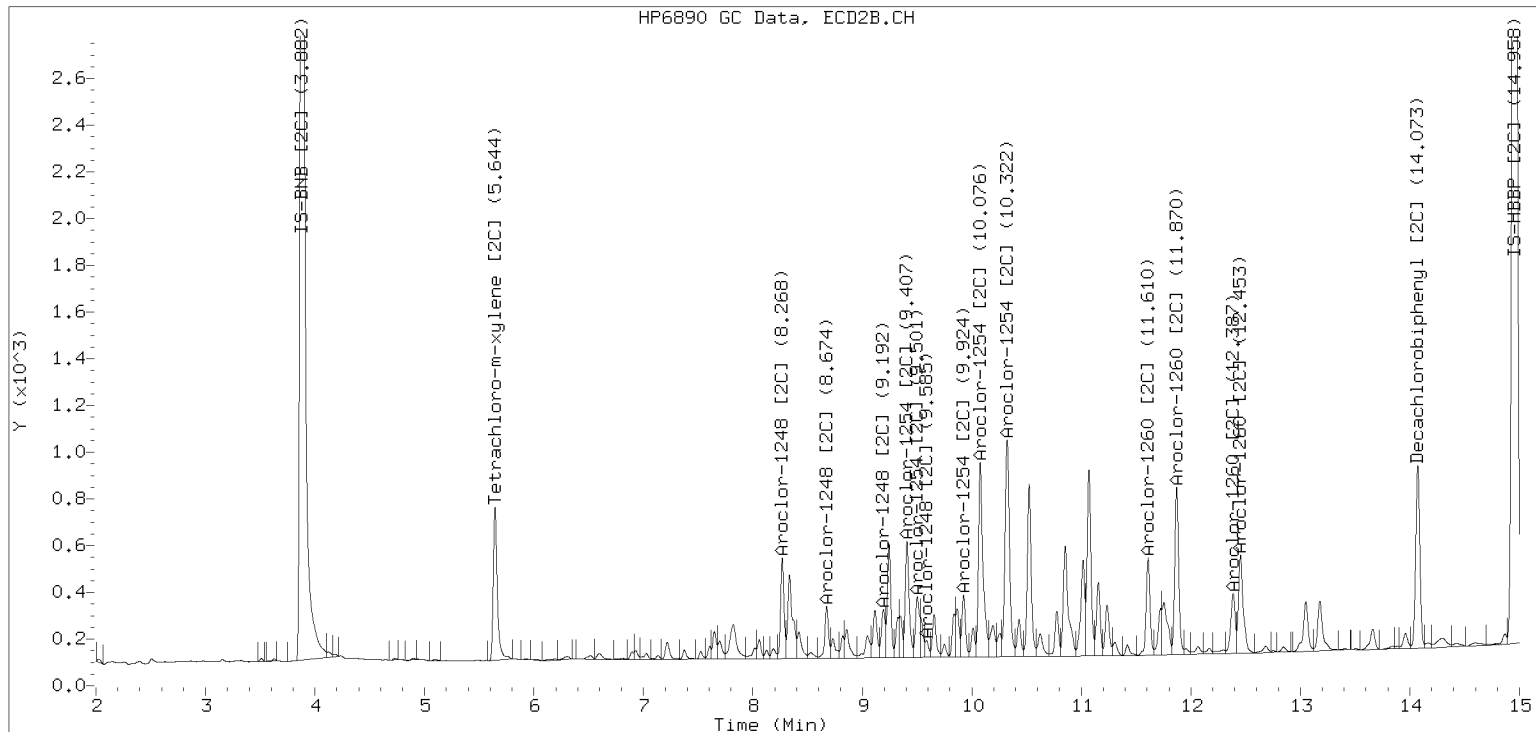
Processed Integration (Before)



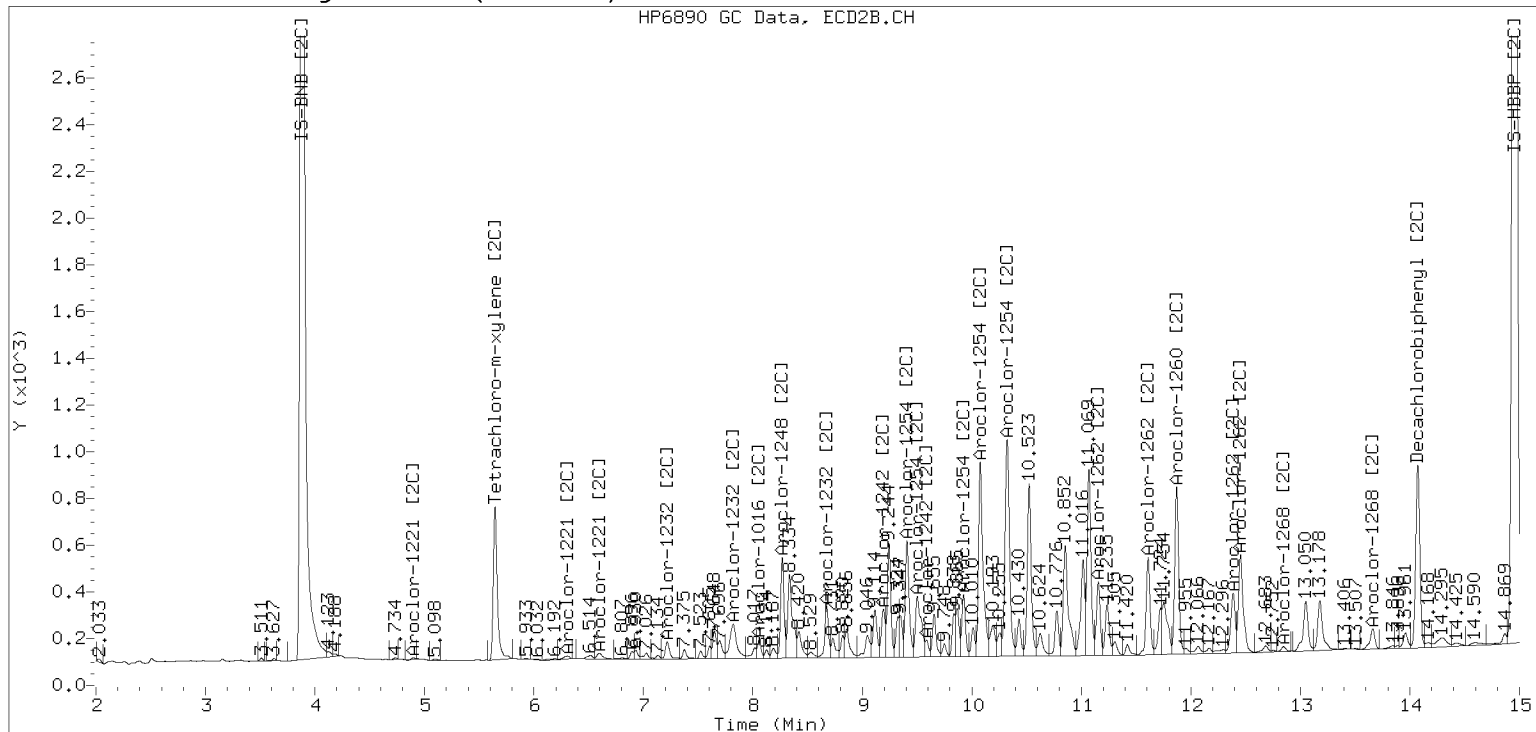
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230502.b/230502.b/05022329ECD7.D Injection Date: 02-MAY-2023

Manual Integration (After)



Processed Integration (Before)





**PREPARATION BATCH SUMMARY**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC                                  SDG: 23D0063  
Client: Anchor QEA, LLC    Project: AOC5 MR Phase 1  
Batch: BLD0300                                  Batch Matrix: Solid    Preparation: EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01	05022326ECD7.D	04/17/23 13:36	
LDW23-SC1818	23D0063-02	05022327ECD7.D	04/17/23 13:36	
LDW23-SS1819	23D0063-03	05022328ECD7.D	04/17/23 13:36	
LDW23-SC1819	23D0063-04	05022329ECD7.D	04/17/23 13:36	
Blank	BLD0300-BLK1	05022316ECD7.D	04/17/23 13:36	
LCS	BLD0300-BS1	05022317ECD7.D	04/17/23 13:36	
LCS Dup	BLD0300-BSD1	05022318ECD7.D	04/17/23 13:36	
Reference	BLD0300-SRM1	05022319ECD7.D	04/17/23 13:36	



Batch: BLD0300

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

Matrix: Solid

Date Prepared: 4/17/23

Balance ID: B146462614

Set Up By: CPD 4/12/23

WO Comments

23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
<H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

The following standards may be missing from this batch!

Designator	Description
QLS 5	QLS Spike

Analysis: 8082A PCB Solid 4

Lab Number & Container	% Solids	Initial (g)		(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL)	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
		Target Dry: 12.5 (Wet)	Actual						
23D0037-01 A	56.6	(22.07)	22.12	5mL	5mL	2mL	2.5	1.0	
23D0037-02 A	52.8	(23.68)	23.68	5mL	5mL	2mL	2.5	1.0	
23D0037-03 A	71.7	(17.43)	17.44	5mL	5mL	2mL	2.5	1.0	
23D0037-04 A	51.5	(24.30)	24.36	5mL	5mL	2mL	2.5	1.0	
23D0063-01 A	43.2	(28.95)	28.95	5mL	5mL	2mL	2.5	1.0	
23D0063-02 A	43.7	(28.60)	28.62	5mL	5mL	2mL	2.5	1.0	
23D0063-03 A	35.1	(35.60)	35.68	5mL	5mL	2mL	2.5	1.0	
23D0063-04 A	41.4	(30.22)	30.22	5mL	5mL	2mL	2.5	1.0	

Batch QC

Lab Number	% Solids	Initial (g)		(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL)	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
		Target Dry: 12.5 (Wet)	Actual						
BLD0300-BLK1	100.0	(12.50)	12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BLD0300-BS1	100.0	(12.50)	12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BLD0300-BSD1	100.0	(12.50)	12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BLD0300-MS1	71.7	(17.43)	17.43	5mL	5mL	2mL	2.5	1.0	Use 23D0037-03
BLD0300-MSD1	71.7	(17.43)	17.43	5mL	5mL	2mL	2.5	1.0	Use 23D0037-03
BLD0300-SRM1	100.0	(12.50)	2.50	5mL	5mL	2mL	2.5	1.0	Use K003636

+1g DI WATER

CPD 4/17/23

Checked/ID verified By

Date

LS 4/25/23

Preparation Reviewed By

Date

4/17/23 13:36

Extraction Date and Time





Batch: BLD0300

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

**WO Comments**  
 23D0037: <C>BPR SRM, MS, DUP</C> <M>BPR PS, MS/MSD</M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
 23D0063: <C>BPR SRM, MS, DUP</C> <M>BPR PS, MS/MSD</M> <E>BPR 8270E RM K000591, SIM PAH RM 1009127 PCB RM J006840-43, 7935-36,K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Prep Steps	Reagents Used	Surrogates & Spike Standards Used																					
<b>Microwave</b> 1 2 3 Analyst/Date: 4/17/23	<b>Station/Reagent</b> <b>Standard ID</b> <b>Microwave</b> Analyst: [Signature]      Date: 4/17/23 Neutral Glass Wool      L002037 1:1 Hexane/Acetone      L003045 Hexane      L001957 Anhydrous Sodium Sulfate      L003657	<table border="1"> <thead> <tr> <th>Type</th> <th>Vial ID / Standard ID</th> <th>Vol uL</th> <th>Analyst</th> <th>Witness</th> </tr> </thead> <tbody> <tr> <td>Surrogate</td> <td>N L000773</td> <td>50µL</td> <td rowspan="2">CJ</td> <td rowspan="2">[Signature]</td> </tr> <tr> <td>2µg/mL</td> <td>Exp Date: 7/21/23</td> <td></td> </tr> <tr> <td>Spike</td> <td>1 L001587</td> <td>63µL</td> <td rowspan="2">G</td> <td rowspan="2">[Signature]</td> </tr> <tr> <td>20µg/mL</td> <td>Exp Date: 8/13/23</td> <td></td> </tr> </tbody> </table>	Type	Vial ID / Standard ID	Vol uL	Analyst	Witness	Surrogate	N L000773	50µL	CJ	[Signature]	2µg/mL	Exp Date: 7/21/23		Spike	1 L001587	63µL	G	[Signature]	20µg/mL	Exp Date: 8/13/23	
Type	Vial ID / Standard ID	Vol uL	Analyst	Witness																			
Surrogate	N L000773	50µL	CJ	[Signature]																			
2µg/mL	Exp Date: 7/21/23																						
Spike	1 L001587	63µL	G	[Signature]																			
20µg/mL	Exp Date: 8/13/23																						
<b>KD</b> 100°C Hexane Exchange (2 X 20 mL) 1 2 3 4 5 6 Analyst/Date: 4/25/23	<b>KD</b> Analyst: [Signature]      Date: 4/25/23 Anhydrous Sodium Sulfate	<p><b>MANUALLY ENTER EXPIRATION DATES!</b></p> <p>(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards.</p> <p>If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator in the Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).</p>																					
<b>TurboVap Pre Cleanups</b> 1 2 3 4 5 Analyst/Date: 4/25/23	Hexane      L003500 <b>Vialing</b> Analyst: [Signature]      Date: 4/25/23 Hexane      L003500 Concentrated Sulfuric Acid      L001033																						
<b>TurboVap Post Cleanups</b> 1 2 3 4 5 Analyst/Date: 4/25/23	Silica Gel (SPE) Darts      L003344 Sodium Sulfite      L002437 Tetrabutylammonium hydrogensulfate (TBAS)      L003024																						
<b>Vialing</b> Analyst/Date: 4/25/23																							



Batch: BLD0300

Prepared using: EPA 3546 (Microwave)  
8082A PCB Solid 4 in Solid (Version:7 Aroclors)

**WO Comments**  
 23D0037: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)  
 23D0063: <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM K000591, SIM PAH RM I009127 PCB RM J006840-43, 7935-36, K011477-79, MS/MSD </E>  
 <H>BPR J006840-43, 7935-36, K011477-79, Dup </H> Store in freezer (except GS)

Prep Instructions	
<p><b>SPECIAL INSTRUCTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Weigh soil/sed into beakers-lightly dry with sodium sulfate.</li> <li>2. Transfer to microwave vessel(s). Note: (do not fill vessels more than 2/3rd full. Some samples may require two vessels).</li> <li>3. Add 1:1 Hexane/Acetone until the solvent layer is 3 inches above the soil layer after homogenization.</li> <li>4. Add surr/spike.</li> <li>5. Microwave on appropriate power setting determined by # of samples.</li> <li>6. After microwave-Re-homogenize while hot then cool vessels in R-05 15 minutes. Re-homogenize while cool.</li> <li>7. Decant 1:1 Hex/Ace into Erlenmeyer flask with sodium sulfate in bottom and funnel with neutral glasswool plug.</li> <li>8. Re-homogenize and rinse with 1:1 Hexane/Acetone.</li> <li>9. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane.</li> <li>10. KD on 100° bath.</li> <li>11. Exchange (2 X with 20mL) Hexane.</li> <li>12. TurboVap.</li> <li>13. Clean-ups.</li> <li>14. TurboVap.</li> <li>15. Vial with Hexane.</li> </ol> <p>A. Need Total Solids Y <input type="checkbox"/> N</p> <p>B. Archive/Freeze <input checked="" type="checkbox"/> Y N</p>	



Extraction Parameter: PUB Extraction Batch BLD0200

Total Solids Batch: BLD0066 Work Order(s): 23D0037

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)=	
<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= <u>φ1 - φ4</u>	<u>M φ4/φ4/23</u>
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input checked="" type="checkbox"/> Oily, obvious fuel/ <u>sulfur odors</u> = <u>φ1 - φ4</u>	<u>M φ4/φ4/23</u>
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input type="checkbox"/> Previously Frozen =	
<input type="checkbox"/> Other (Details)=	
<b>Aqueous:</b>	
<input checked="" type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<input checked="" type="checkbox"/> Share Samples Y/N <u>(N)</u>	<u>φ4/φ4/23</u>
<input checked="" type="checkbox"/> Multiple Jars Y/N <u>(N)</u>	<u>φ4/φ4/23</u>
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	





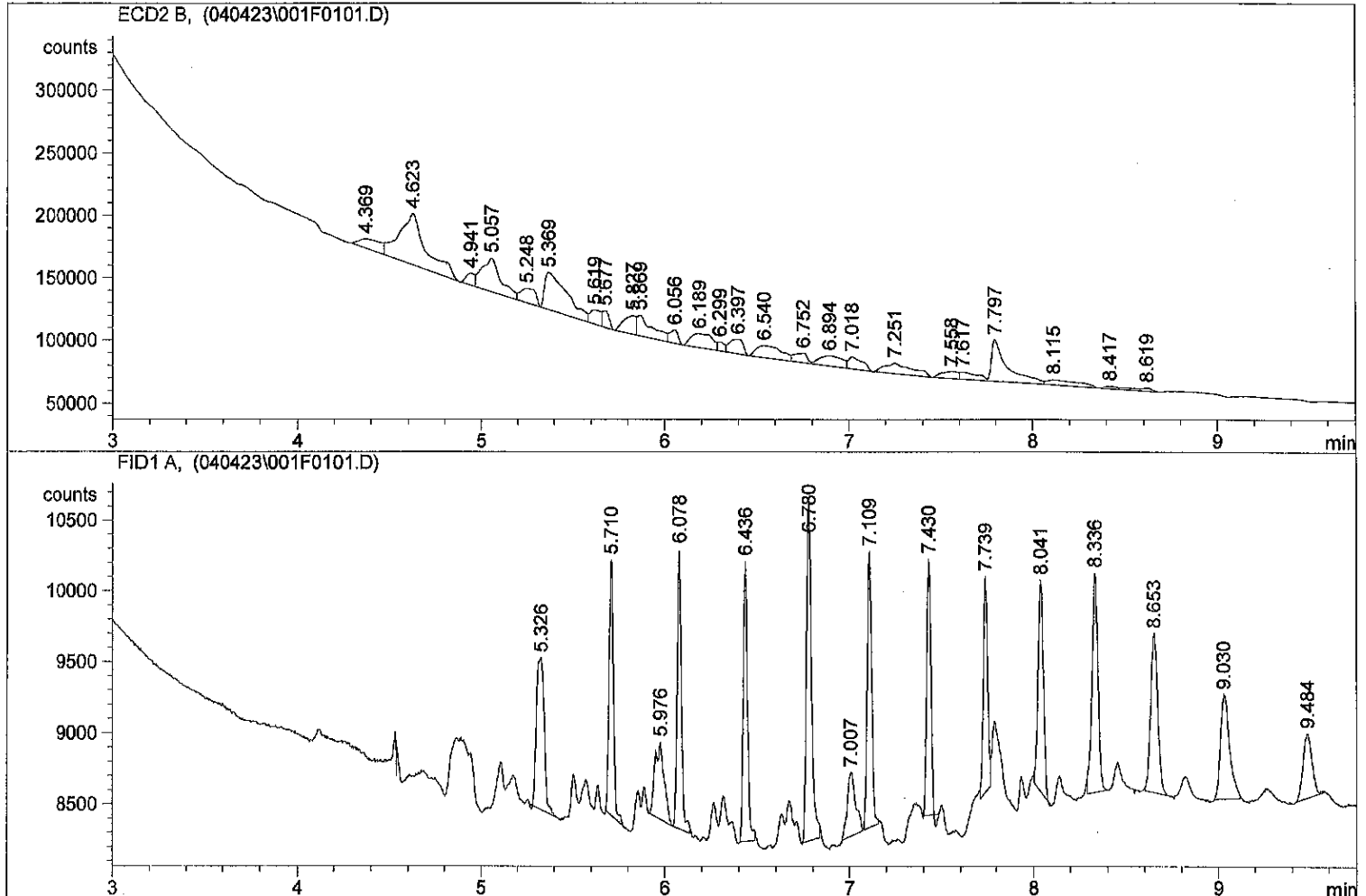
Extraction Parameter: PUB Extraction Batch BLD00300

Total Solids Batch: BLD0003 Work Order(s): 23D0063

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
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<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= 01-04	CR 4/5/23
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input checked="" type="checkbox"/> Previously Frozen = 01-04	CR 4/5/23
<input type="checkbox"/> Other (Details)=	
<b>Aqueous:</b>	
<input checked="" type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<input checked="" type="checkbox"/> Share Samples Y/N	CR 4/5/23
<input checked="" type="checkbox"/> Multiple Jars Y/N	CR 4/5/23
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	

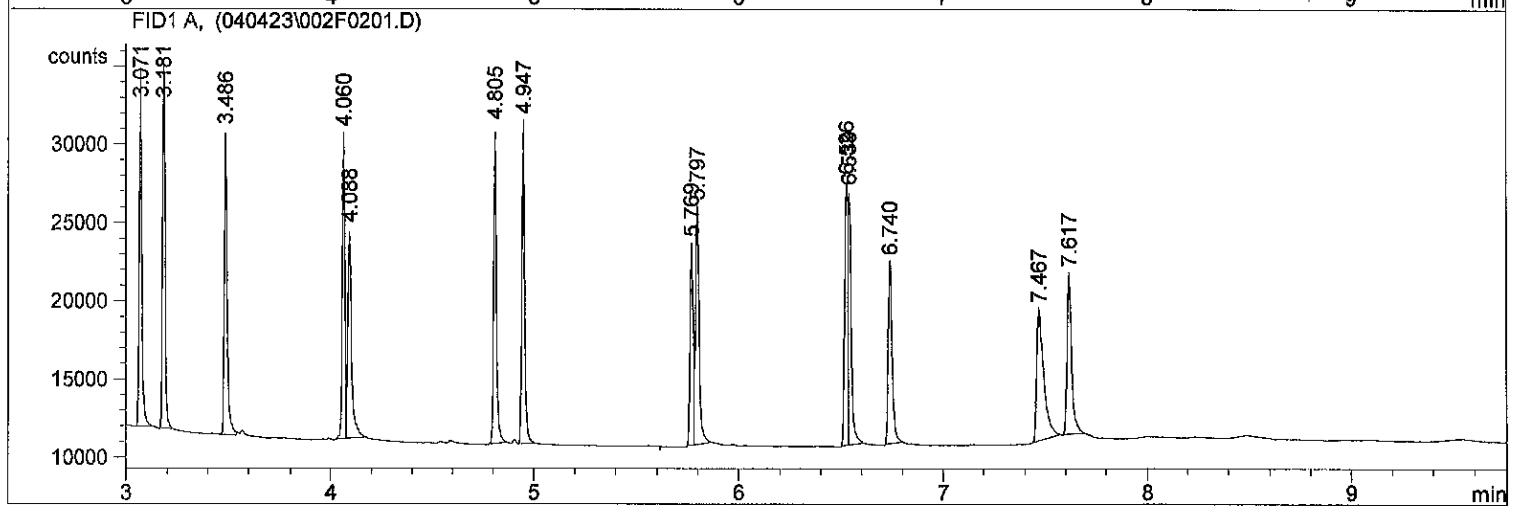
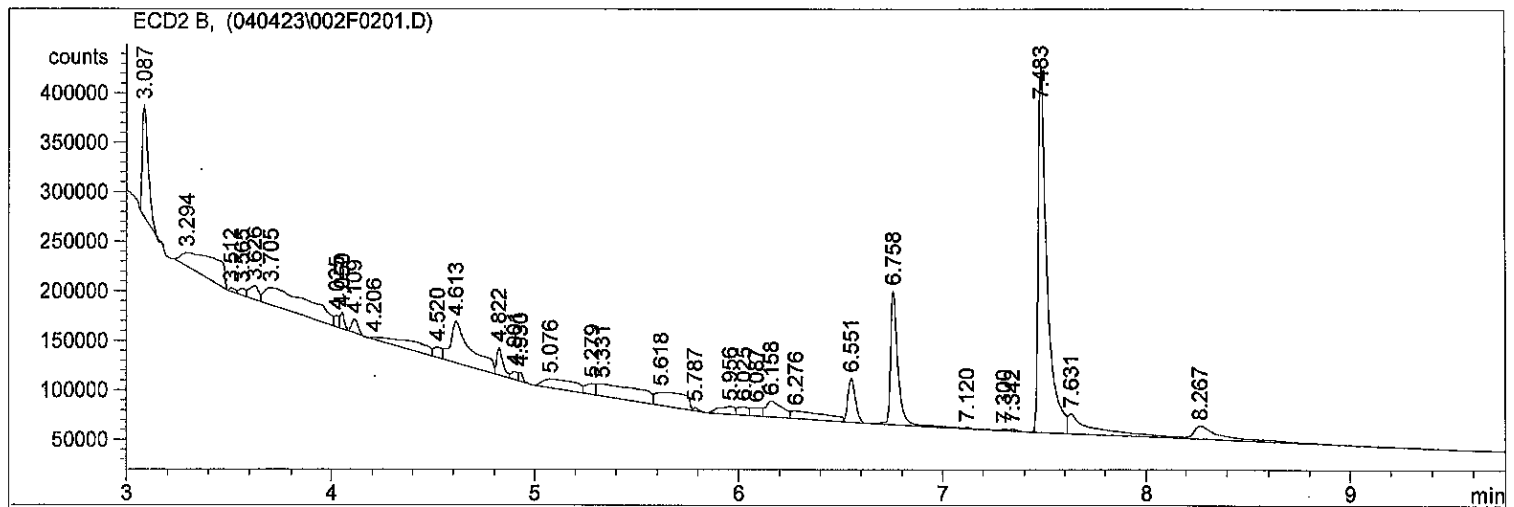
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Sample Name : DCM RINSE      Location : Vial 1  
Acq. Operator : YL      Inj : 1  
Inj Volume : 1 µl

Sequence File : C:\HPCHEM\1\SEQUENCE\040423.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD



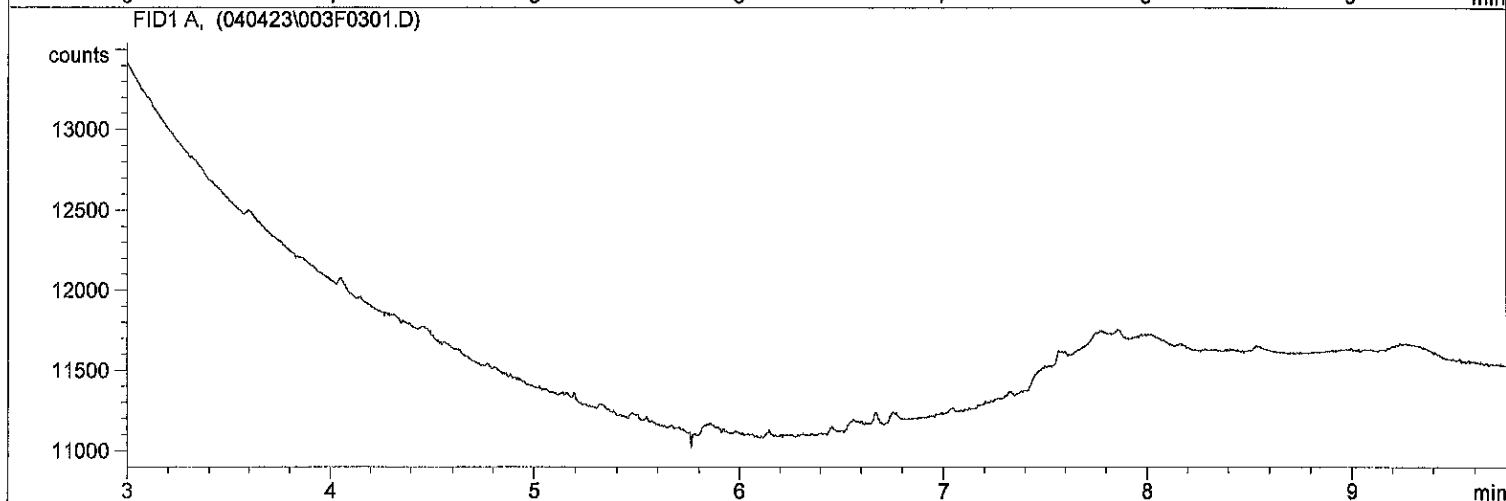
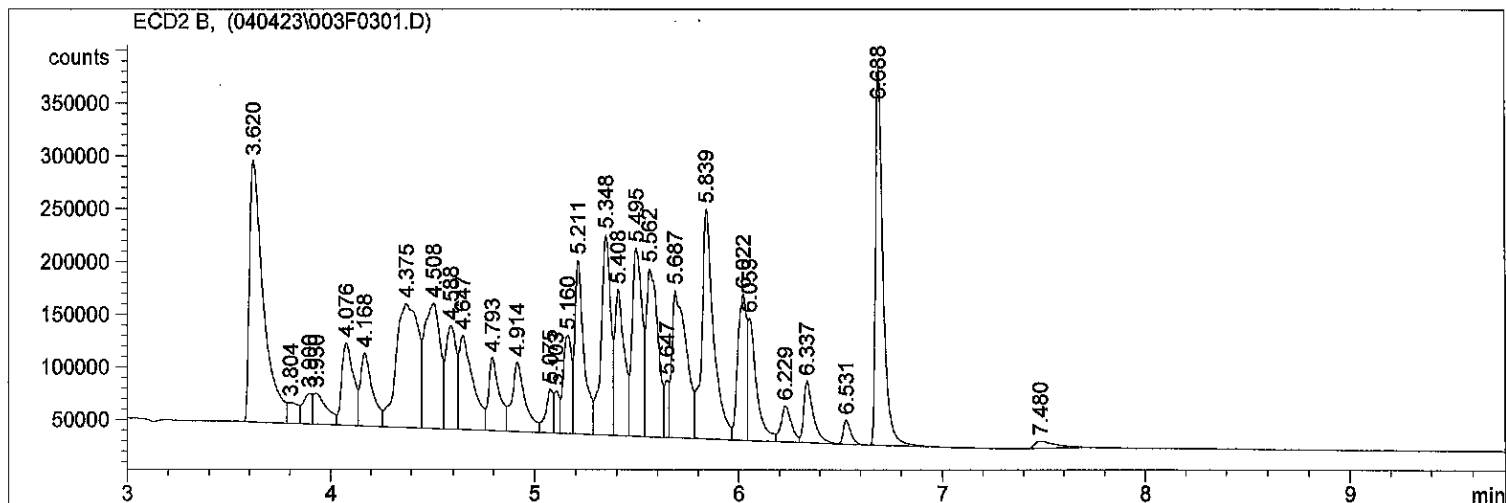
\*\*\* End of Report \*\*\*

Injection Date : 4/4/2023 2:33:23 PM      Seq. Line : 2  
Sample Name : PNA STD 10PPM                      Location : Vial 2  
Acq. Operator : YL                                      Inj : 1  
    Inj Volume : 1 µl  
Sequence File : C:\HPCHEM\1\SEQUENCE\040423.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
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SCREEN METHOD



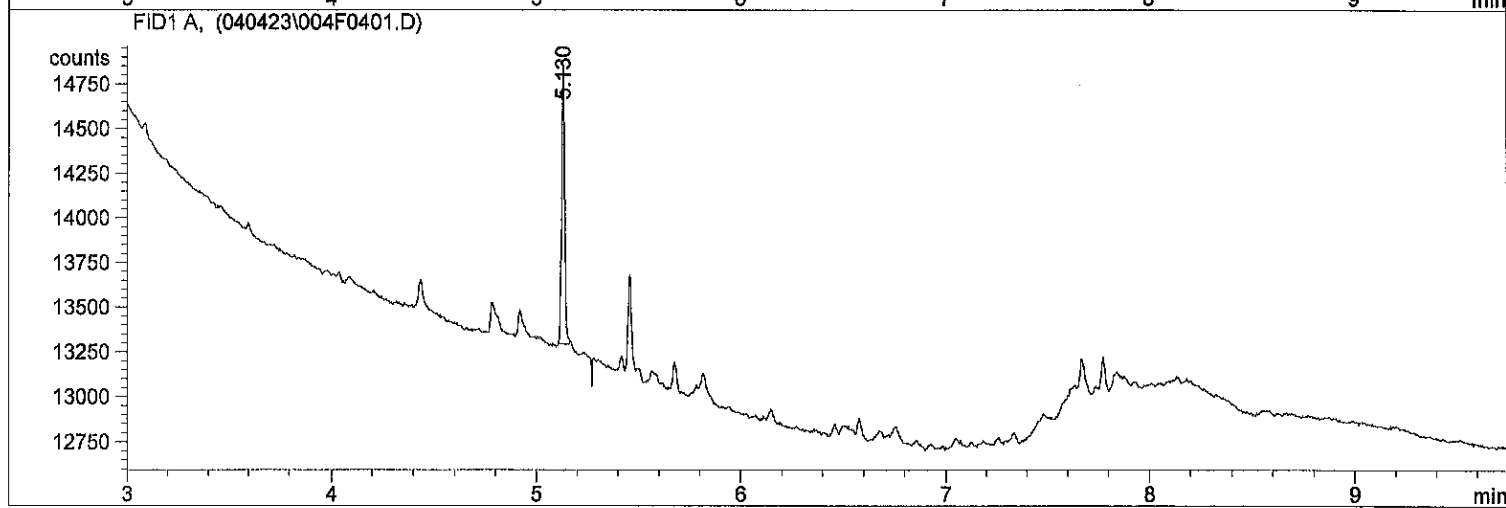
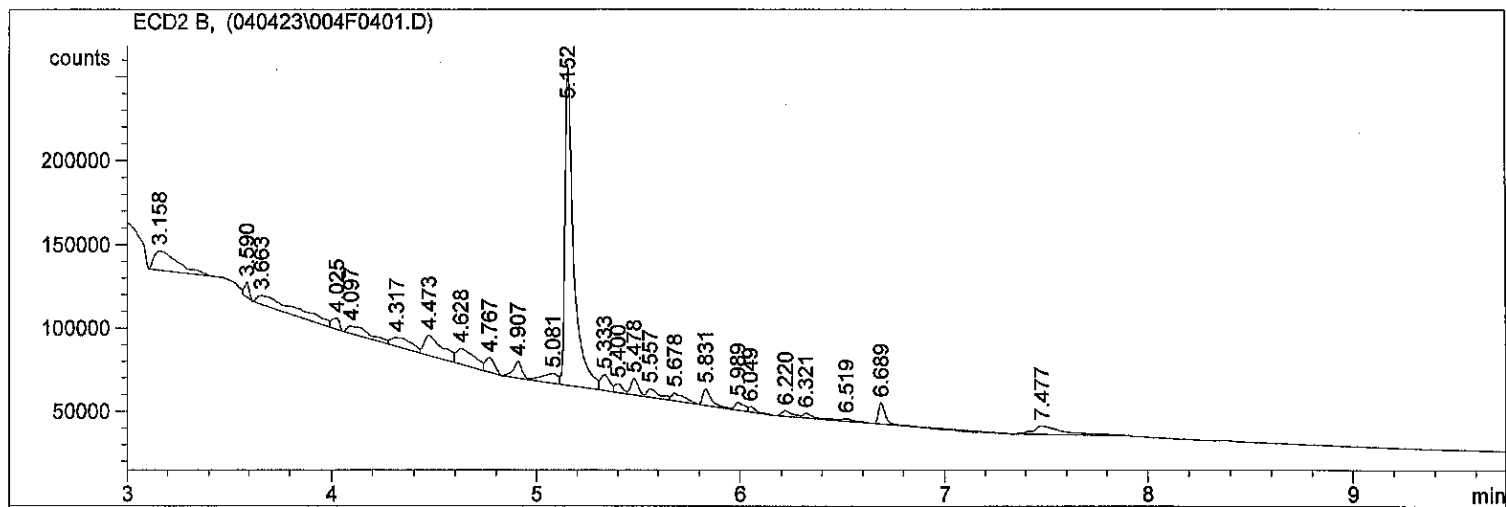
\*\*\* End of Report \*\*\*

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Injection Date : 4/4/2023 2:47:10 PM      Seq. Line : 3  
Sample Name : AR1660 1PP                    Location : Vial 3  
Acq. Operator : YL                            Inj : 1  
    Inj Volume : 1 µl  
Sequence File : C:\HPCHEM\1\SEQUENCE\040423.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD  
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\*\*\* End of Report \*\*\*

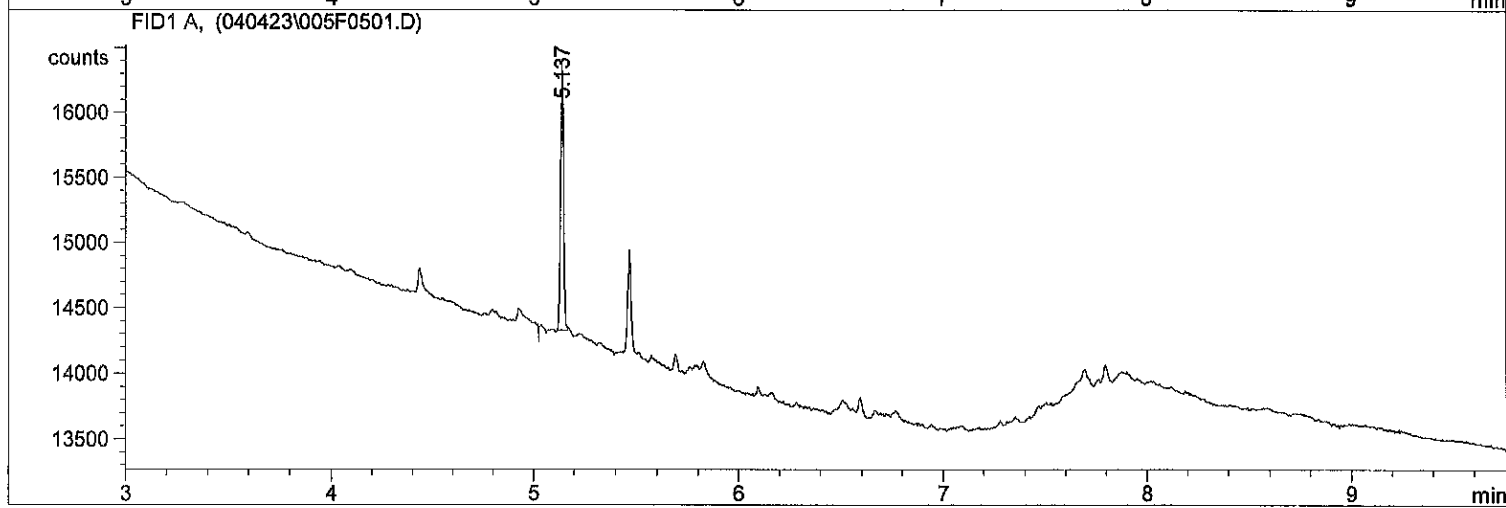
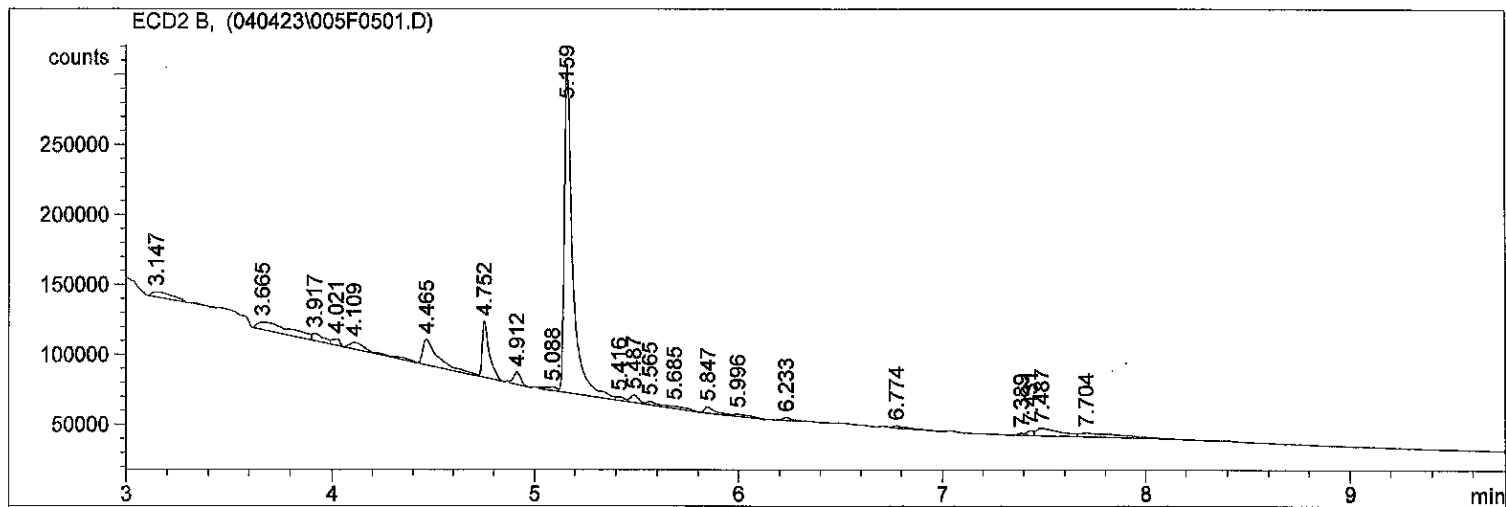
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Injection Date : 4/4/2023 3:01:36 PM      Seq. Line : 4  
Sample Name : 23D0037 01                    Location : Vial 4  
Acq. Operator : YL                            Inj : 1  
    Inj Volume : 1 µl  
Sequence File : C:\HPCHEM\1\SEQUENCE\040423.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD  
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\*\*\* End of Report \*\*\*

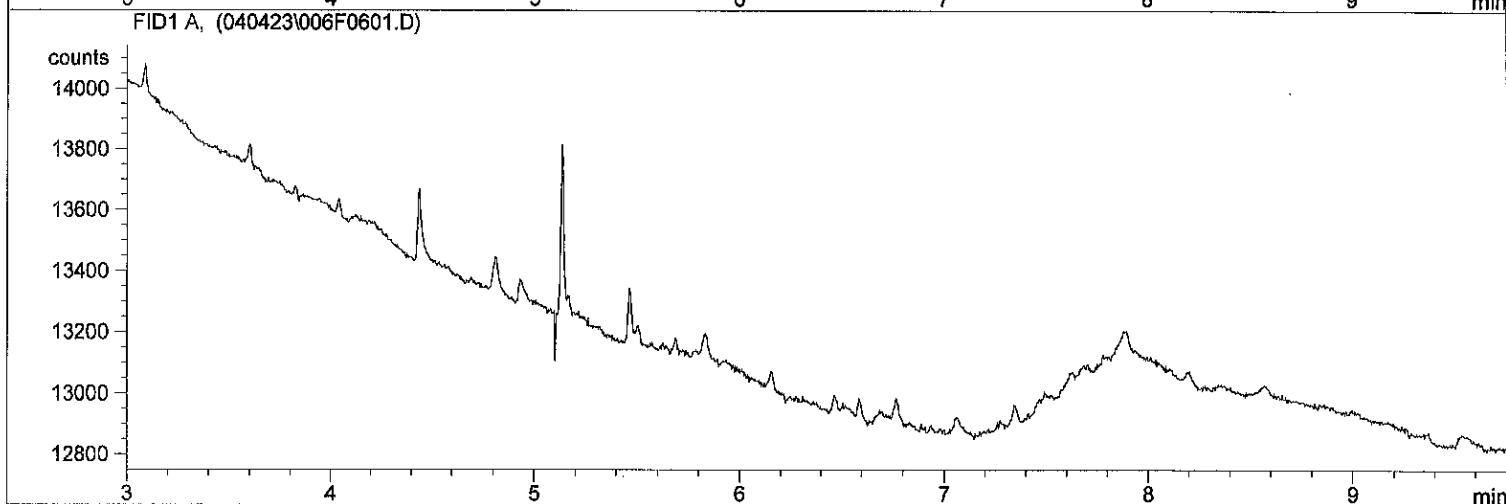
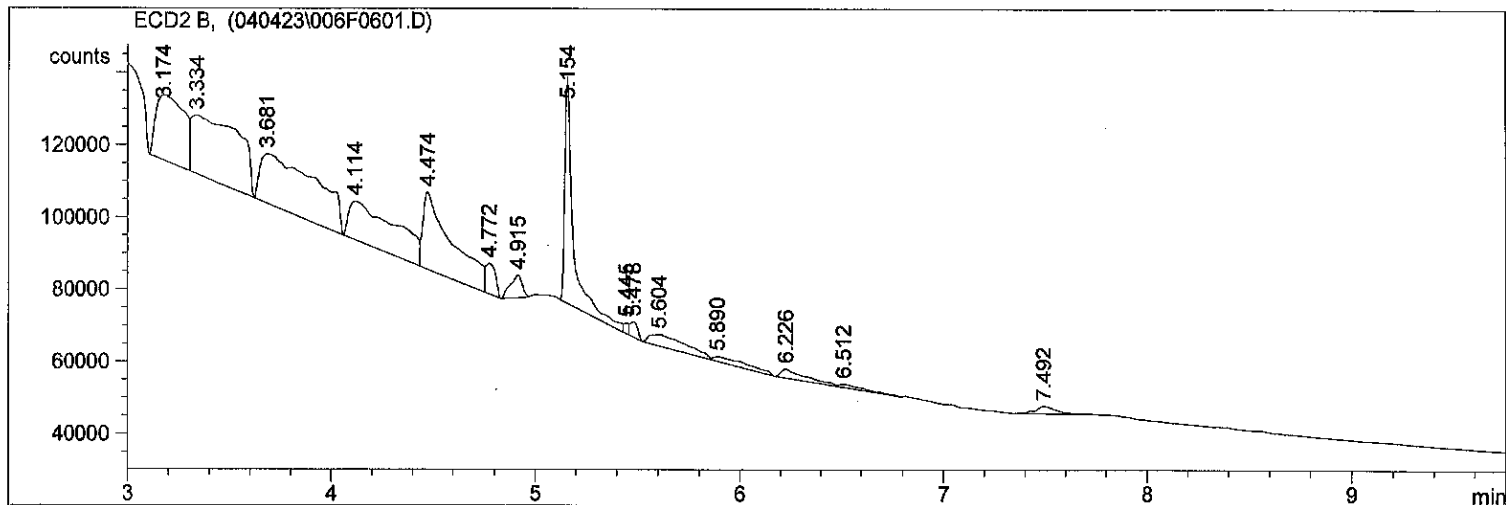


=====  
Injection Date : 4/4/2023 3:16:41 PM      Seq. Line : 5  
Sample Name : 23D0037 02                      Location : Vial 5  
Acq. Operator : YL                              Inj : 1  
   Inj Volume : 1 µl  
Sequence File : C:\HPCHEM\1\SEQUENCE\040423.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD  
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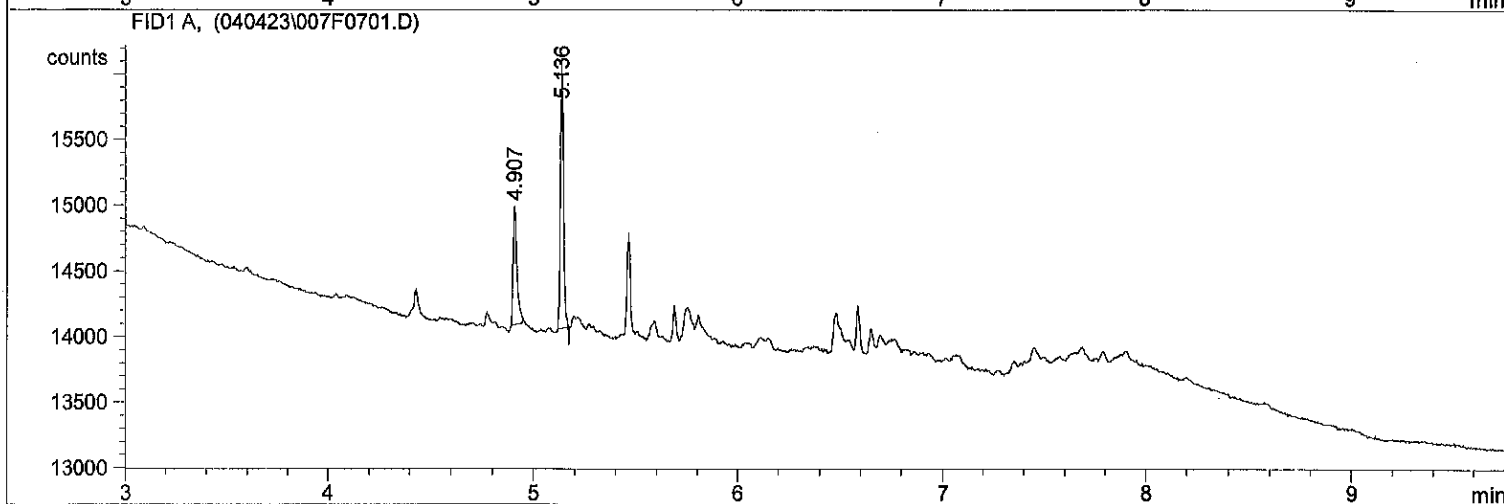
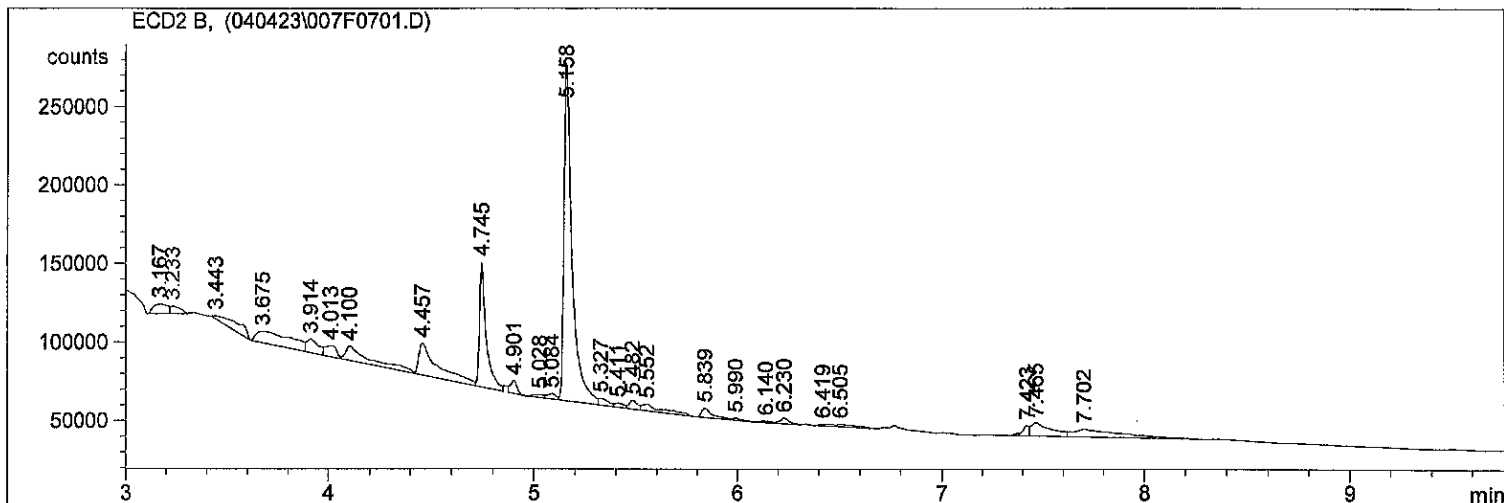
\*\*\* End of Report \*\*\*

Injection Date : 4/4/2023 3:31:40 PM      Seq. Line : 6  
Sample Name : 23D0037 03      Location : Vial 6  
Acq. Operator : YL      Inj : 1  
Inj Volume : 1 µl  
Sequence File : C:\HPCHEM\1\SEQUENCE\040423.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD



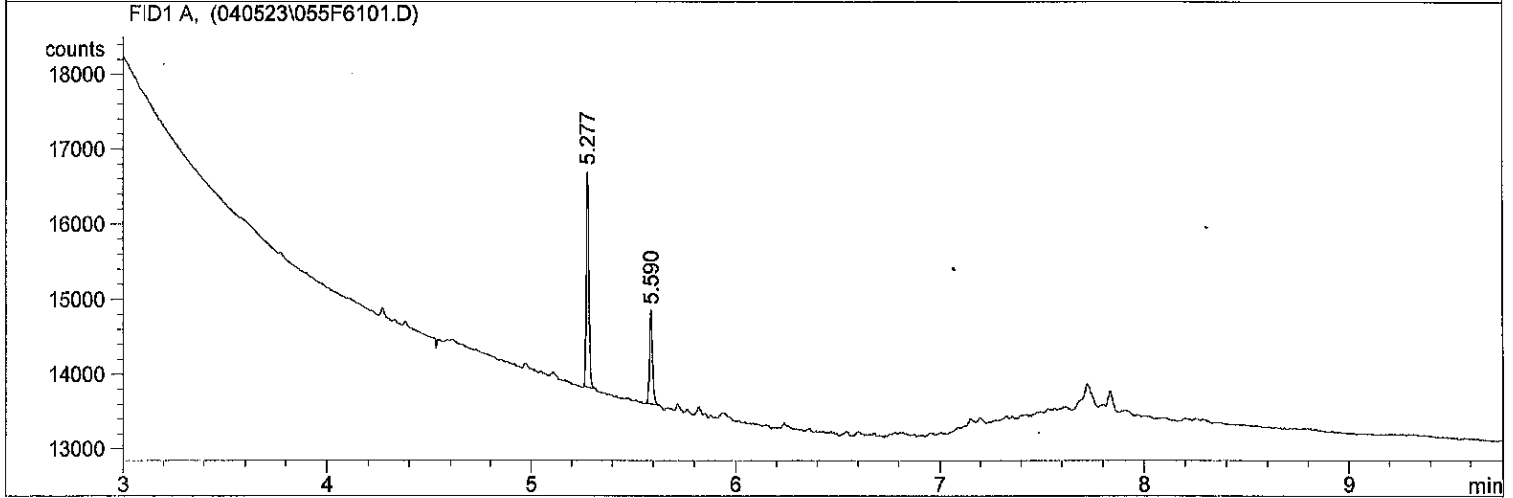
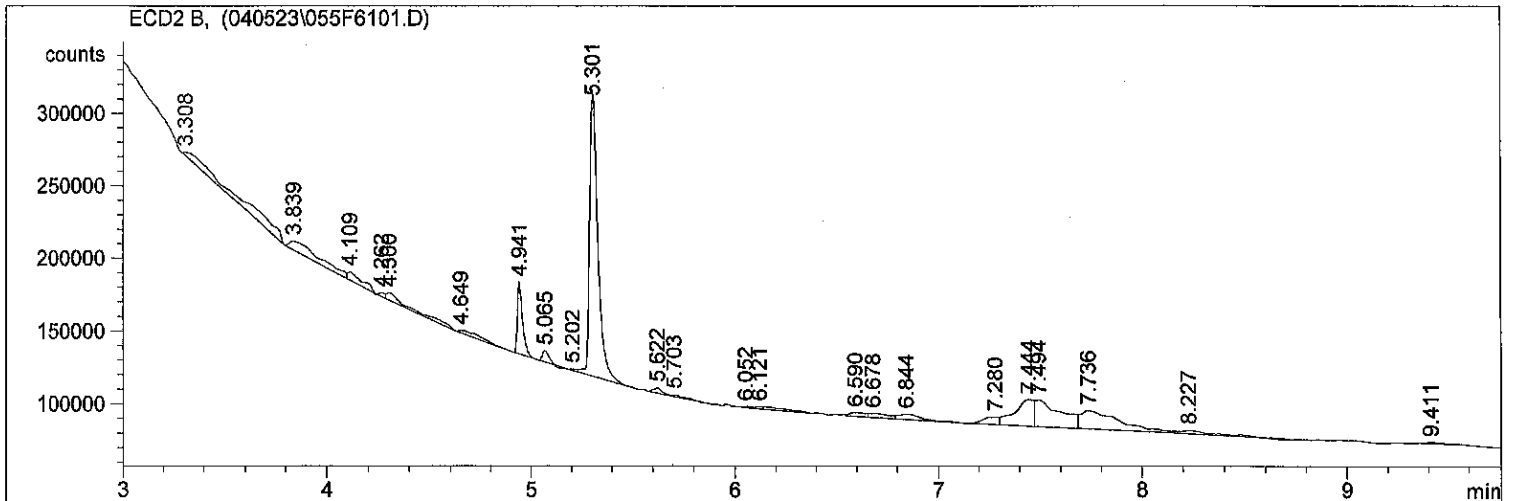
\*\*\* End of Report \*\*\*

=====  
Injection Date : 4/4/2023 3:46:41 PM      Seq. Line : 7  
Sample Name : 23D0037 04                    Location : Vial 7  
Acq. Operator : YL                            Inj : 1  
    Inj Volume : 1 µl  
  
Sequence File : C:\HPCHEM\1\SEQUENCE\040423.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD  
=====



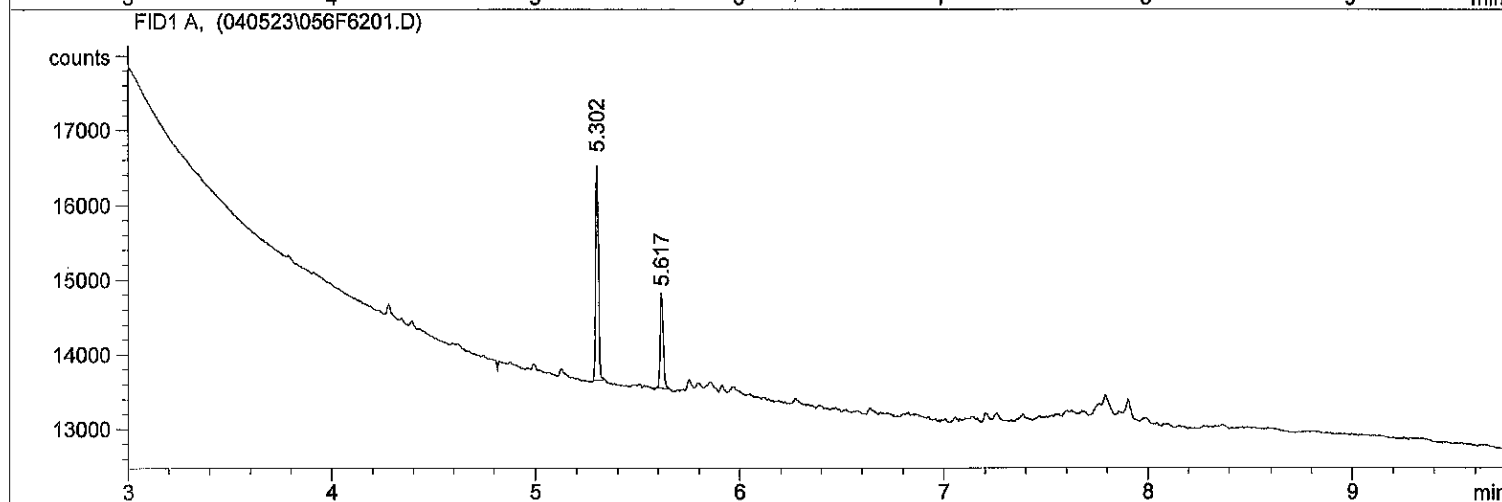
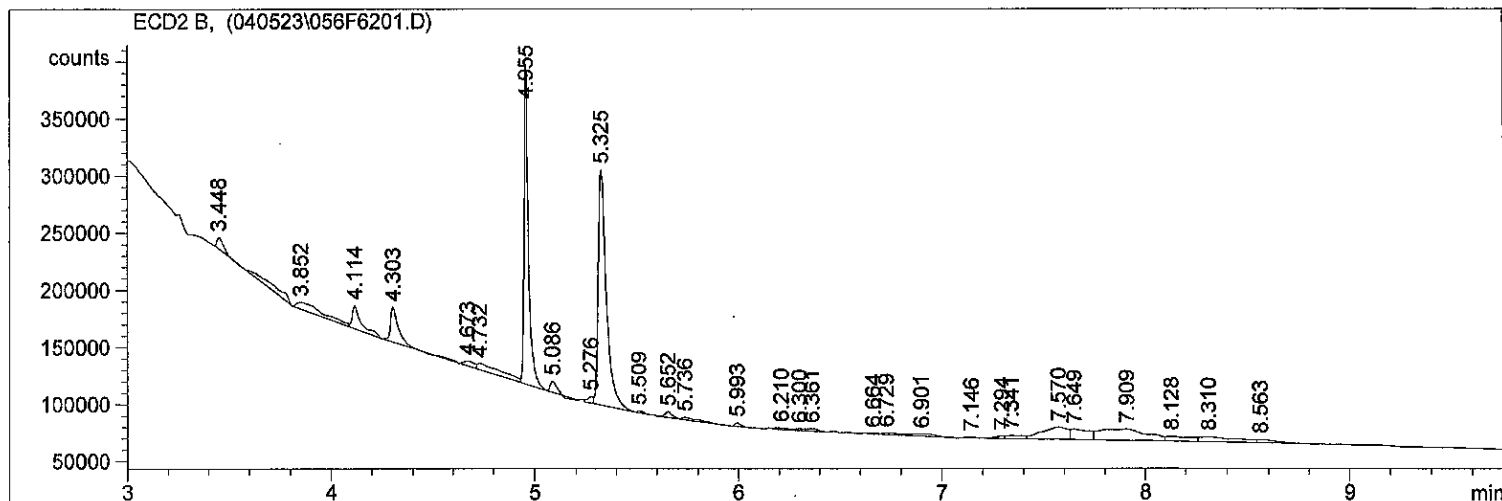
\*\*\* End of Report \*\*\*

=====  
Injection Date : 4/6/2023 1:40:38 AM                   Seq. Line : 61  
Sample Name     : 23D0063 01                            Location : Vial 55  
Acq. Operator   : CR                                     Inj : 1  
  Inj Volume : 1 µl  
  
Sequence File   : C:\HPCHEM\1\SEQUENCE\040523.S  
Method          : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed    : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD  
=====



\*\*\* End of Report \*\*\*

=====  
Injection Date : 4/6/2023 1:54:50 AM .Seq. Line : 62  
Sample Name : 23D0063 02 Location : Vial 56  
Acq. Operator : CR Inj : 1  
Inj Volume : 1 µl  
Sequence File : C:\HPCHEM\1\SEQUENCE\040523.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD  
=====

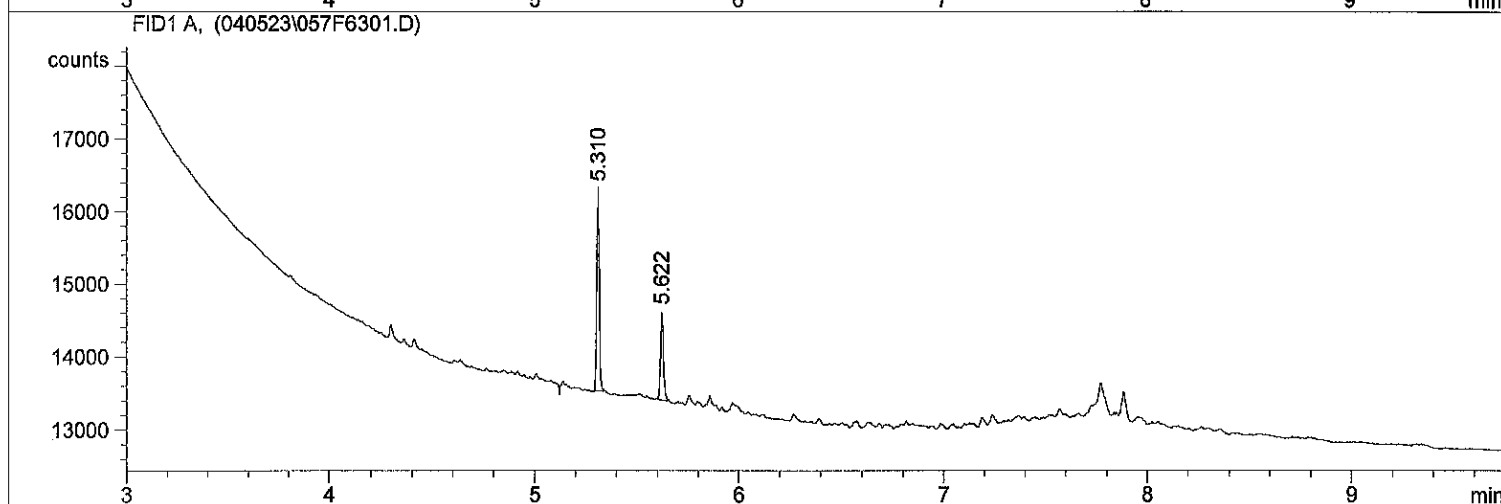
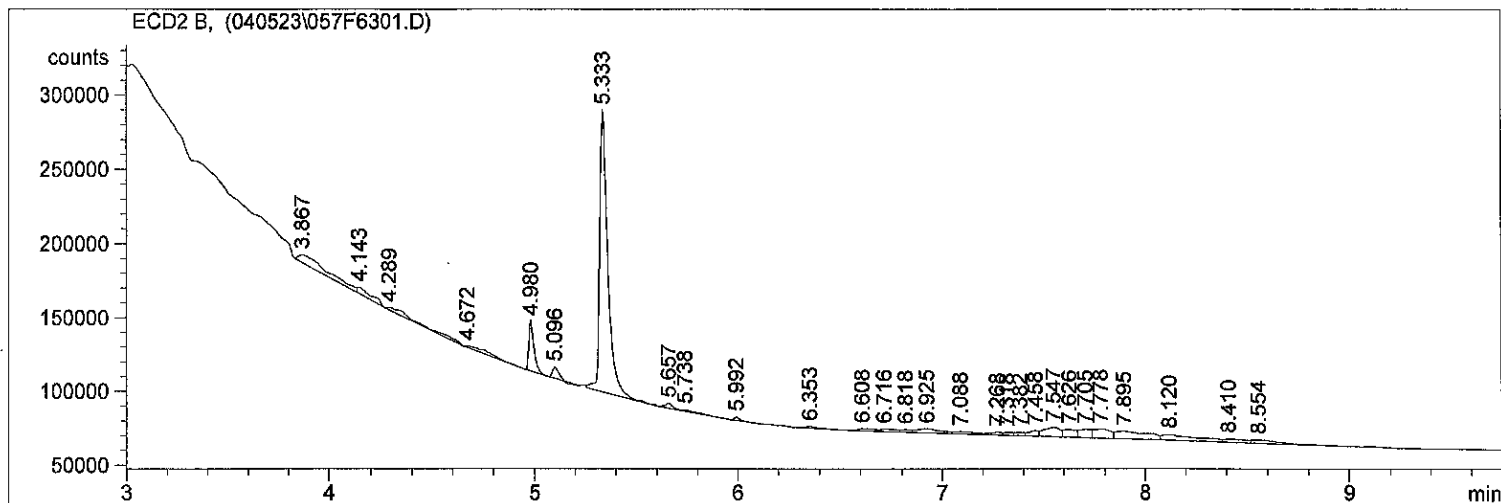


\*\*\* End of Report \*\*\*

```

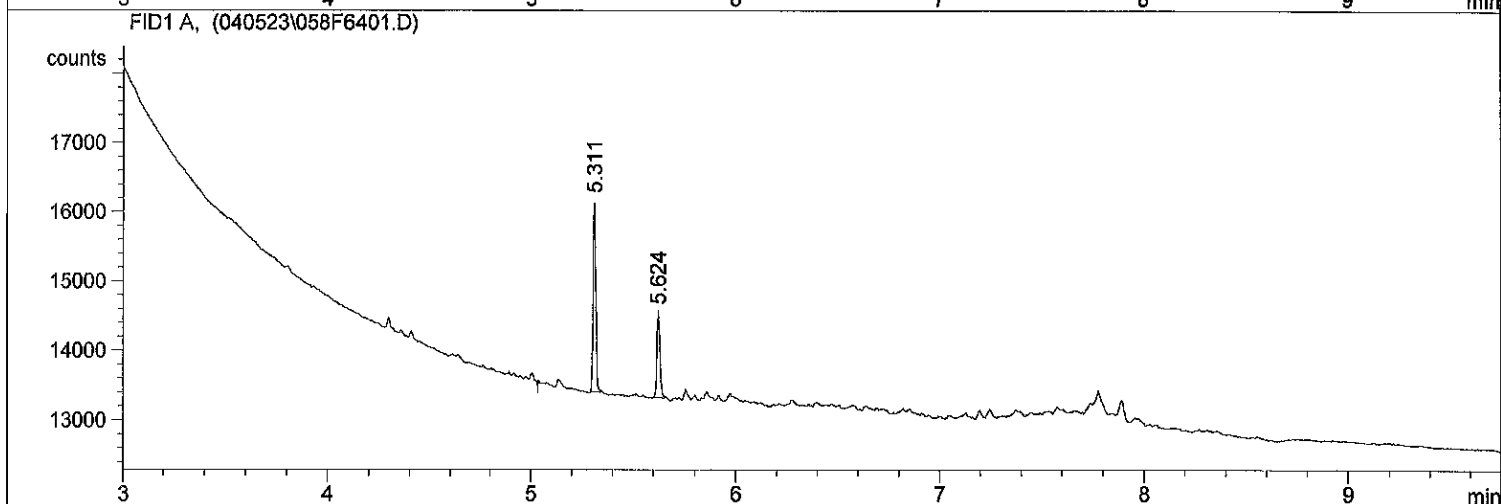
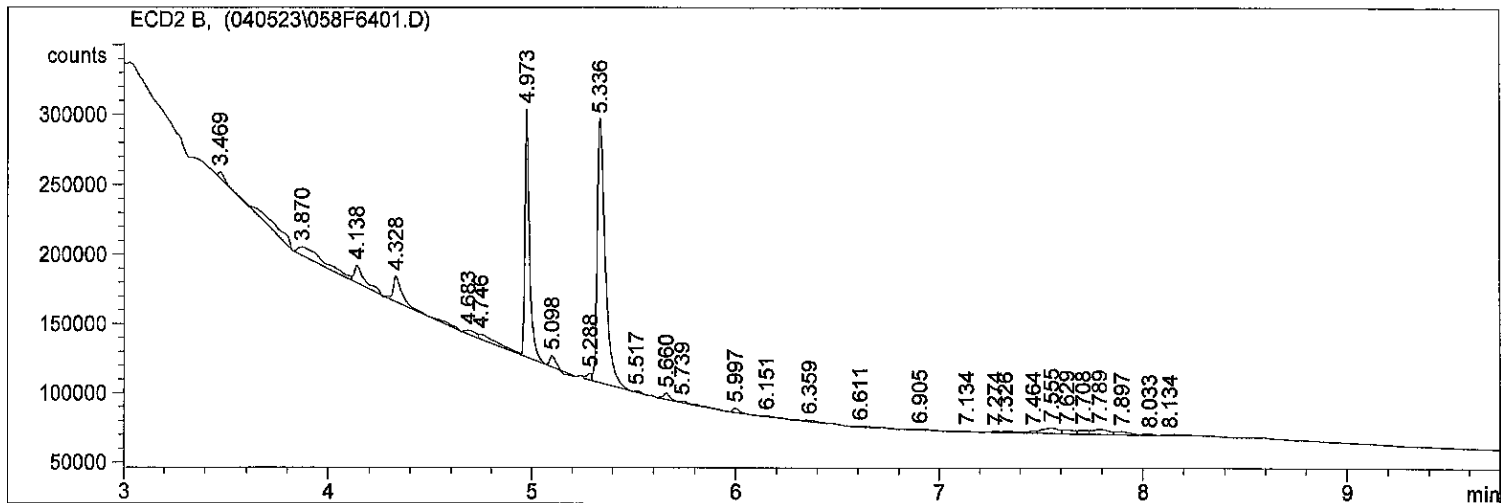
=====
Injection Date : 4/6/2023 2:08:38 AM      Seq. Line : 63
Sample Name    : 23D0063 03                Location  : Vial 57
Acq. Operator  : CR                        Inj      : 1
                                           Inj Volume : 1 µl

Sequence File  : C:\HPCHEM\1\SEQUENCE\040523.S
Method         : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed   : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD
=====
    
```



\*\*\* End of Report \*\*\*

=====  
Injection Date : 4/6/2023 2:22:52 AM      Seq. Line : 64  
Sample Name : 23D0063 04                      Location : Vial 58  
Acq. Operator : CR                              Inj : 1  
   Inj Volume : 1 µl  
  
Sequence File : C:\HPCHEM\1\SEQUENCE\040523.S  
Method : C:\HPCHEM\1\METHODS\SCREEN.M  
Last changed : 7/9/2021 3:37:33 AM by TW  
SCREEN METHOD  
=====



\*\*\* End of Report \*\*\*



### CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0175

Cleanup Type: Silica Gel

Cleanup Method: EPA 3630C Silica Gel Cleanup - uL

Analysis: EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1819	23D0063-03	05022328ECD7.D	04/25/2023	
Blank	BLD0300-BLK1	05022316ECD7.D	04/25/2023	
LCS	BLD0300-BS1	05022317ECD7.D	04/25/2023	
LCS Dup	BLD0300-BSD1	05022318ECD7.D	04/25/2023	
Reference	BLD0300-SRM1	05022319ECD7.D	04/25/2023	
LDW23-SC1818	23D0063-02	05022327ECD7.D	04/25/2023	
LDW23-SC1819	23D0063-04	05022329ECD7.D	04/25/2023	
LDW23-SS1818	23D0063-01	05022326ECD7.D	04/25/2023	





**CLEANUP BENCH SHEET**

CLD0175

Matrix: Solid

Cleanup using: Organics - EPA 3630C Silica Gel Cleanup - uL

Printed: 4/25/2023 2:37:42PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23D0037-01	A	LDW23-SS1812	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-02	A	LDW23-SC1812	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-03	A	LDW23-SS1813	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-04	A	LDW23-SC1813	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-01	A	LDW23-SS1818	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-02	A	LDW23-SC1818	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-03	A	LDW23-SS1819	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-04	A	LDW23-SC1819	A 01	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
BLD0300-BLK1	-	Blank	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-BS1	-	LCS	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-BSD1	-	LCS Dup	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-MS1	-	Matrix Spike	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-SRM1	-	Reference	-	2.5	2.5	-	4/25/2023	LMJ	



### CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0176

Cleanup Type: Sulfur

Cleanup Method: EPA 3660B Sulfur Cleanup - uL

Analysis: EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SC1819	23D0063-04	05022329ECD7.D	04/25/2023	
LCS	BLD0300-BS1	05022317ECD7.D	04/25/2023	
Blank	BLD0300-BLK1	05022316ECD7.D	04/25/2023	
LCS Dup	BLD0300-BSD1	05022318ECD7.D	04/25/2023	
Reference	BLD0300-SRM1	05022319ECD7.D	04/25/2023	
LDW23-SC1818	23D0063-02	05022327ECD7.D	04/25/2023	
LDW23-SS1818	23D0063-01	05022326ECD7.D	04/25/2023	
LDW23-SS1819	23D0063-03	05022328ECD7.D	04/25/2023	



**CLEANUP BENCH SHEET**

CLD0176

Matrix: Solid

Cleanup using: Organics - EPA 3660B Sulfur Cleanup - uL

Printed: 4/25/2023 2:38:12PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23D0037-01	A	LDW23-SS1812	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-02	A	LDW23-SC1812	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-03	A	LDW23-SS1813	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-04	A	LDW23-SC1813	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-01	A	LDW23-SS1818	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-02	A	LDW23-SC1818	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-03	A	LDW23-SS1819	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-04	A	LDW23-SC1819	A 01	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
BLD0300-BLK1	-	Blank	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-BS1	-	LCS	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-BSD1	-	LCS Dup	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-MS1	-	Matrix Spike	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-SRM1	-	Reference	-	2.5	2.5	-	4/25/2023	LMJ	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0177

Cleanup Type: Sulfuric Acid

Cleanup Method: EPA 3665 Sulfuric Acid Cleanup - uL

Analysis: EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01	05022326ECD7.D	04/25/2023	
LDW23-SC1818	23D0063-02	05022327ECD7.D	04/25/2023	
LCS	BLD0300-BS1	05022317ECD7.D	04/25/2023	
LCS Dup	BLD0300-BSD1	05022318ECD7.D	04/25/2023	
Reference	BLD0300-SRM1	05022319ECD7.D	04/25/2023	
LDW23-SS1819	23D0063-03	05022328ECD7.D	04/25/2023	
LDW23-SC1819	23D0063-04	05022329ECD7.D	04/25/2023	
Blank	BLD0300-BLK1	05022316ECD7.D	04/25/2023	



**CLEANUP BENCH SHEET**

CLD0177

Matrix: Solid      Cleanup using: Organics - EPA 3665 Sulfuric Acid Cleanup - uL      Printed: 4/25/2023 2:38:44PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23D0037-01	A	LDW23-SS1812	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-02	A	LDW23-SC1812	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-03	A	LDW23-SS1813	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0037-04	A	LDW23-SC1813	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-01	A	LDW23-SS1818	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-02	A	LDW23-SC1818	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-03	A	LDW23-SS1819	A 03	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
23D0063-04	A	LDW23-SC1819	A 01	2.5	2.5	8082A PCB Solid 4	4/25/2023	LMJ	
BLD0300-BLK1	-	Blank	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-BS1	-	LCS	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-BSD1	-	LCS Dup	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-MS1	-	Matrix Spike	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	4/25/2023	LMJ	
BLD0300-SRM1	-	Reference	-	2.5	2.5	-	4/25/2023	LMJ	



**Form I**  
**METHOD BLANK DATA SHEET**  
**EPA 8082A**

<b>Blank</b>
--------------

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BLD0300-BLK1</u>
Sampled:	<u>N/A</u>	Prepared:	<u>04/17/23 13:36</u>
Solids:		Preparation:	<u>EPA 3546 (Microwave)</u>
Batch:	<u>BLD0300</u>	Sequence:	<u>SLE0029</u>
Instrument:	<u>ECD7</u>	Column:	<u>ZB5</u>
		File ID:	<u>05022316ECD7.D</u>
		Analyzed:	<u>05/02/23 16:31</u>
		Initial/Final:	<u>12.5 g / 2.5 mL</u>
		Calibration:	<u>GE00002</u>
		Cleanups:	<u>Silica Gel, Sulfur, Sulfuric Acid</u>

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg wet)	Q	DL	RL
12674-11-2	Aroclor 1016	1	4.0	U	1.6	4.0
11104-28-2	Aroclor 1221	1	4.0	U	1.6	4.0
11141-16-5	Aroclor 1232	1	4.0	U	1.6	4.0
53469-21-9	Aroclor 1242	1	4.0	U	1.6	4.0
12672-29-6	Aroclor 1248	1	4.0	U	1.6	4.0
11097-69-1	Aroclor 1254	1	4.0	U	1.6	4.0
11096-82-5	Aroclor 1260	1	4.0	U	0.6	4.0

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl	8.0000	7.36	92.0	40 - 126	
Tetrachlorometaxylene	8.0000	6.44	80.4	44 - 120	
Decachlorobiphenyl [2C]	8.0000	7.46	93.2	40 - 126	
Tetrachlorometaxylene [2C]	8.0000	6.62	82.8	44 - 120	

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022316ECD7.D  
Data file 2: /230502.b/230502.b/05022316ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: BLD0300-BLK1  
Client ID:  
Injection Date: 02-MAY-2023 16:31  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col			ZB5	ZB35	RPD	Compound/Flag	
RT	Shift	Response	RT	Shift	Response	on col			on col
5.765	-0.001	252583	5.648	-0.001	140807	32.2	33.1	2.9	Tetrachloro-m-xylene
13.860	-0.002	359709	14.080	-0.002	277732	36.8	37.3	1.3	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	537152	-3.4
Hexabromobiphenyl	745660	901499	20.9
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	302835	-13.1
Hexabromobiphenyl	429949	460068	7.0

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				

Total PCB Area Coll (5.866 - 13.762) = 276981

Coll Total PCB = 0.0 ppm\*



Total PCB Area Col2 (5.749 - 13.983) = 26840 Col2 Total PCB = 0.0 ppm\*

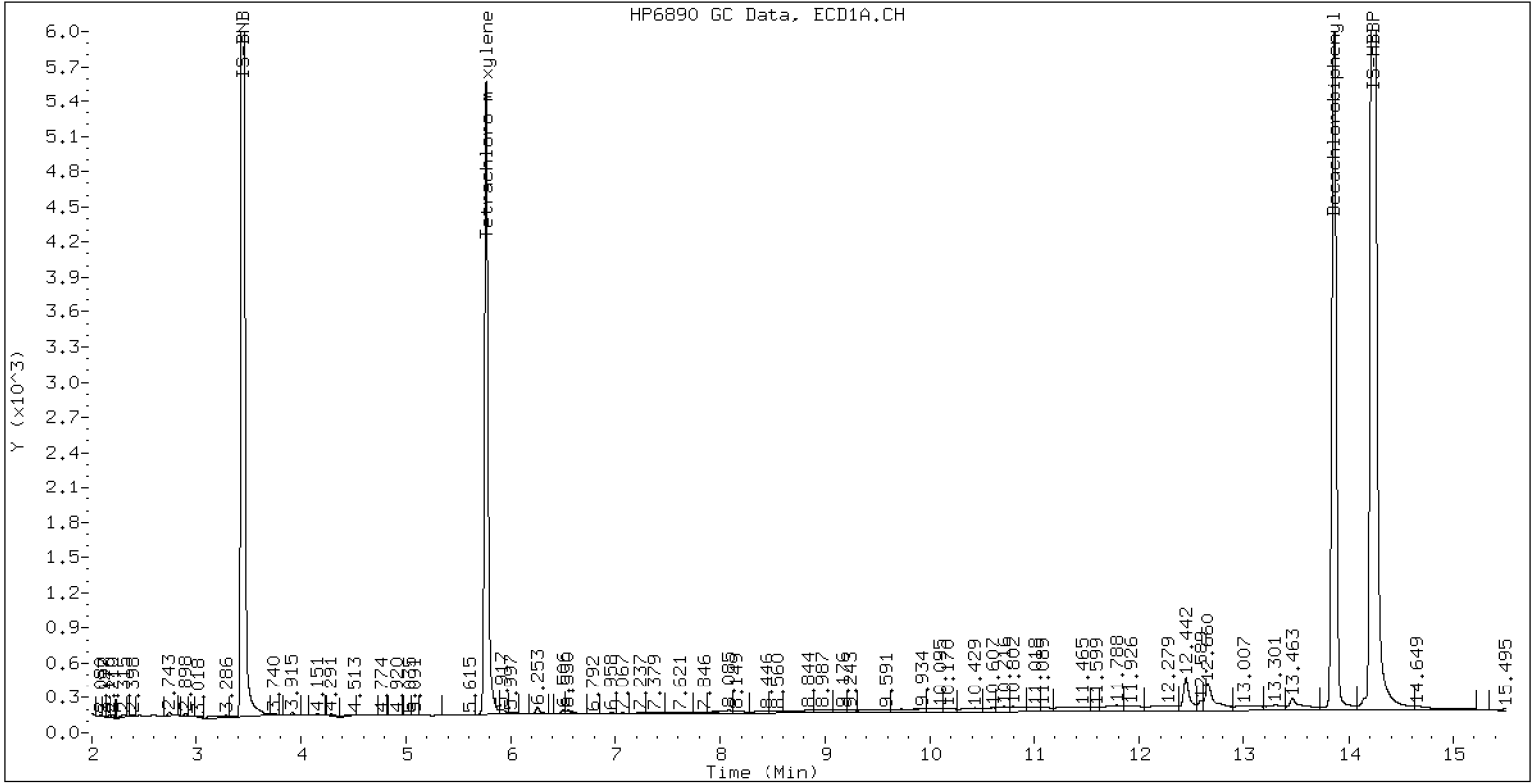
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 BLD0300-BLK1

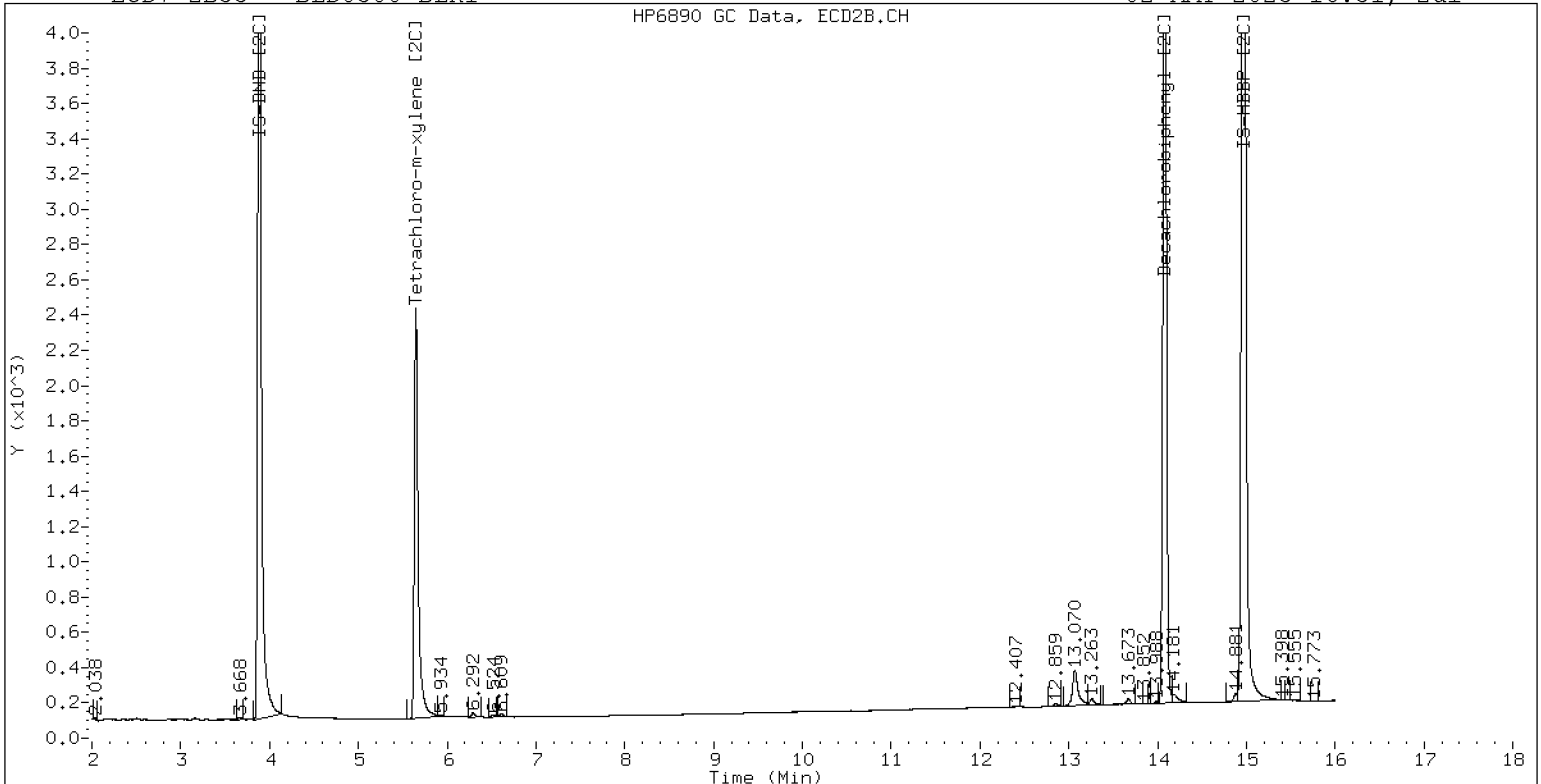
02-MAY-2023 16:31, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 BLD0300-BLK1

02-MAY-2023 16:31, 2u1



ZB-35 Manual Integration: NO



### LCS / LCS DUPLICATE RECOVERY EPA 8082A

Laboratory: <u>Analytical Resources, LLC</u>	SDG: <u>23D0063</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>AOC5 MR Phase 1</u>
Matrix: <u>Solid</u>	Analyzed: <u>05/02/23 16:52</u>
Batch: <u>BLD0300</u>	Laboratory ID: <u>BLD0300-BS1</u>
Preparation: <u>EPA 3546 (Microwave)</u>	Sequence Name: <u>LCS</u>
Initial/Final: <u>12.5 g / 2.5 mL</u>	

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Aroclor 1016	101	80.0		79.3	56 - 120
Aroclor 1260	101	82.5		81.8	58 - 120

\* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Aroclor 1016	101	83.0		82.4	3.72	30	56 - 120
Aroclor 1260 [2C]	101	86.9		86.2	9.28	30	58 - 120

\* Indicates values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022317ECD7.D  
Data file 2: /230502.b/230502.b/05022317ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: BLD0300-BS1  
Client ID:  
Injection Date: 02-MAY-2023 16:52  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	290267	5.649	-0.000	158026	34.6	33.0	4.6	Tetrachloro-m-xylene
13.859	-0.003	419372	14.080	-0.002	324636	39.3	39.6	0.9	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	574335	3.2
Hexabromobiphenyl	745660	985571	32.2
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	340720	-2.2
Hexabromobiphenyl	429949	506188	17.7

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.234	-0.003	83069	388.7	1	7.219	-0.003	69221	375.1
Aroclor-1016	2	7.621	-0.011	277772	471.7	2	7.831	-0.017	159847	438.3
Aroclor-1016	3	7.759	-0.006	130282	323.3	3	8.029	-0.029	78074	347.9
Aroclor-1016	4	8.372	-0.006	86167	415.8	4	8.276	-0.008	54504	326.0
Total CollAve (4 peaks):				399.9		Total Col2Ave (4 peaks):				371.8 RPD = 7
Corrected Ave (3 peaks):				376.0		Corrected Ave (3 peaks):				349.7 RPD = 7
Aroclor-1221	1	4.683	0.000	426	9.7	1	---			0.0
Aroclor-1221	2	6.091	-0.003	10604	120.2	2	6.263	-0.003	6484	120.0
Aroclor-1221	3	6.344	-0.002	51680	247.0	3	6.589	-0.005	30136	243.7
Total CollAve (3 peaks):				125.7		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.683	0.000	426	15.2	1	---			0.0
Aroclor-1232	2	6.091	-0.003	10604	171.5	2	7.219	-0.006	69221	848.6
Aroclor-1232	3	7.621	-0.031	277772	1132.8	3	7.831	-0.031	159847	993.0
Aroclor-1232	4	8.547	-0.016	113254	991.6	4	8.682	-0.011	50979	1028.4
Total CollAve (4 peaks):				577.8		Total Col2Ave (3 peaks):				956.7 RPD = 49*
Corrected Ave (3 peaks):				392.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.234	-0.002	83069	463.5	1	7.219	-0.003	69221	467.6
Aroclor-1242	2	7.621	-0.011	277772	567.0	2	7.831	-0.015	159847	539.8
Aroclor-1242	3	8.420	-0.005	53791	459.4	3	9.140	-0.018	10732	104.8
Aroclor-1242	4	8.547	-0.009	113254	464.6	4	9.562	-0.028	3812	36.3
Total CollAve (4 peaks):				488.6		Total Col2Ave (4 peaks):				287.1 RPD = 52*
Corrected Ave (3 peaks):				462.5		Corrected Ave (3 peaks):				202.9 RPD = 78*
Aroclor-1248	1	8.372	-0.005	86167	196.1	1	8.276	-0.006	54504	304.9
Aroclor-1248	2	8.547	-0.009	113254	307.8	2	8.682	-0.006	50979	324.0
Aroclor-1248	3	8.961	0.001	129206	117.7	3	9.140	-0.016	10732	55.6
Aroclor-1248	4	9.268	0.000	100940	175.0	4	9.562	-0.021	3812	18.5
Total CollAve (4 peaks):				199.1		Total Col2Ave (4 peaks):				175.8 RPD = 12
Corrected Ave (3 peaks):				162.9		Corrected Ave (3 peaks):				126.3 RPD = 25
Aroclor-1254	1	9.268	-0.004	100940	162.7	1	9.421	-0.007	49072	192.6
Aroclor-1254	2	---			0.0	2	9.562	0.036	3812	24.6
Aroclor-1254	3	9.637	-0.008	20154	51.4	3	9.942	-0.007	10681	51.8
Aroclor-1254	4	9.777	-0.009	56965	71.5	4	10.115	0.009	102719	230.1
Aroclor-1254	5	10.088	-0.072	274513	466.4	5	10.339	-0.015	137786	268.5
Total CollAve (4 peaks):				188.0		Total Col2Ave (5 peaks):				153.5 RPD = 20
Corrected Ave (3 peaks):				95.2		Corrected Ave (4 peaks):				124.8 RPD = 27
Aroclor-1260	1	11.012	-0.004	229777	412.9	1	11.619	-0.005	141476	392.9
Aroclor-1260	2	11.329	-0.005	239333	424.0	2	11.884	-0.006	366149	387.4
Aroclor-1260	3	11.703	-0.008	624671	426.4	3	12.400	-0.005	93050	432.4
Aroclor-1260	4	12.107	-0.012	295882	407.3	4	12.467	-0.008	239082	371.3
Aroclor-1260	5	12.212	-0.004	130564	391.7	NS	---			----
Total CollAve (5 peaks):				412.5		Total Col2Ave (4 peaks):				396.0 RPD = 4
Corrected Ave (4 peaks):				409.0		Corrected Ave (3 peaks):				383.9 RPD = 6
Aroclor-1262	1	10.796	-0.013	448955	1167.3	1	11.167	-0.006	136467	269.7
Aroclor-1262	2	12.212	-0.005	130564	194.4	2	11.619	-0.005	141476	331.9
Aroclor-1262	3	12.285	-0.007	161151	218.3	3	12.400	-0.003	93050	207.3
Aroclor-1262	4	12.955	-0.007	132776	223.0	4	12.467	-0.008	239082	308.2
Total CollAve (4 peaks):				450.7		Total Col2Ave (4 peaks):				279.3 RPD = 47*
Corrected Ave (3 peaks):				211.9		Corrected Ave (3 peaks):				261.7 RPD = 21
Aroclor-1268	1	12.212	-0.006	130564	77.2	1	12.400	-0.003	93050	79.5
Aroclor-1268	2	12.285	-0.005	161151	91.5	2	12.467	-0.005	239082	180.1
Aroclor-1268	3	12.689	0.020	112379	76.7	3	12.855	-0.003	7552	6.9
Aroclor-1268	4	13.455	-0.006	49555	11.7	4	13.671	-0.006	27627	8.3
Total CollAve (4 peaks):				64.3		Total Col2Ave (4 peaks):				68.7 RPD = 7
Corrected Ave (3 peaks):				55.2		Corrected Ave (3 peaks):				31.6 RPD = 54*

Total PCB Area Col1 (5.866 - 13.762) = 6140663 Col1 Total PCB = 0.9 ppm\*

Total PCB Area Col2 (5.749 - 13.983) = 3310963 Col2 Total PCB = 0.9 ppm\*

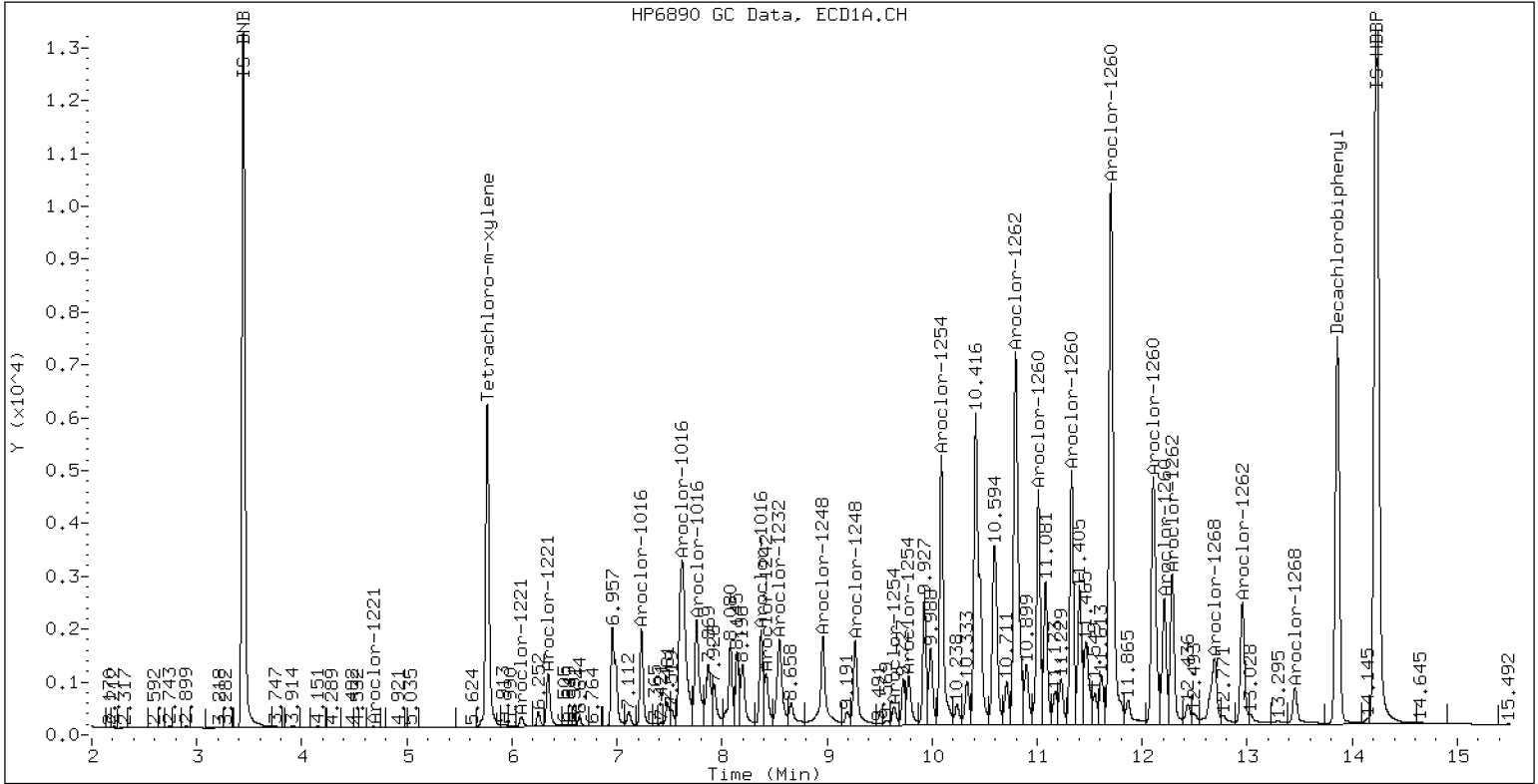
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

### PCB Dual Column Chromatograms

ECD7-ZB5 BLD0300-BS1

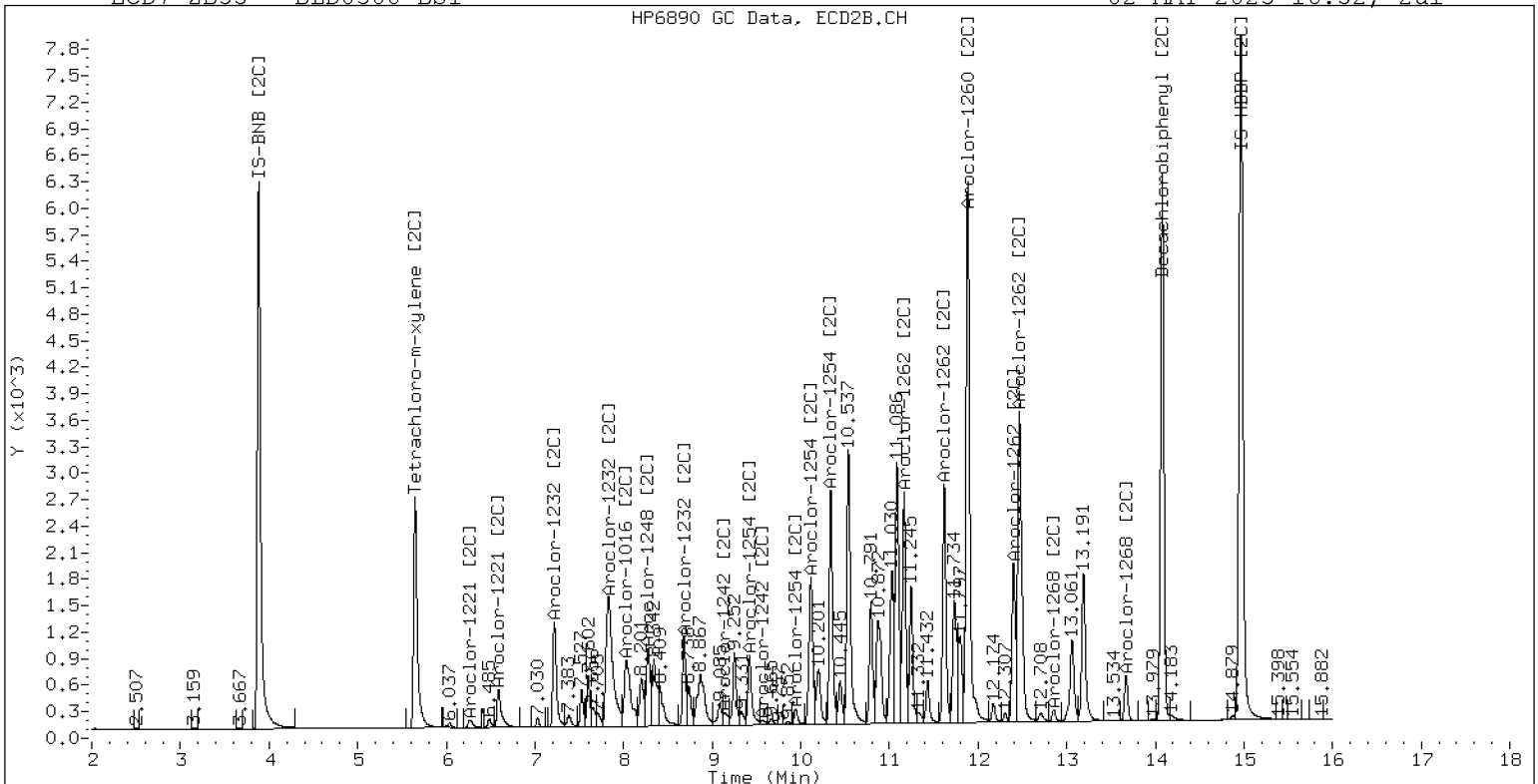
02-MAY-2023 16:52, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 BLD0300-BS1

02-MAY-2023 16:52, 2u1



ZB-35 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022318ECD7.D  
Data file 2: /230502.b/230502.b/05022318ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: BLD0300-BSD1  
Client ID:  
Injection Date: 02-MAY-2023 17:13  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.765	-0.000	284109	5.648	-0.001	152900	34.5	32.5	6.0	Tetrachloro-m-xylene
13.860	-0.002	444280	14.081	-0.002	335512	40.1	40.8	1.9	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	563850	1.4
Hexabromobiphenyl	745660	1022864	37.2

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	335231	-3.8
Hexabromobiphenyl	429949	507548	18.0

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)



ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.234	-0.003	85909	409.5	1	7.219	-0.003	68900	379.5	
Aroclor-1016	2	7.622	-0.010	281376	486.7	2	7.831	-0.017	159315	444.0	
Aroclor-1016	3	7.759	-0.006	133168	336.7	3	8.031	-0.027	78086	353.6	
Aroclor-1016	4	8.372	-0.006	86935	427.3	4	8.276	-0.007	54921	333.8	
Total CollAve (4 peaks):				415.0	Total Col2Ave (4 peaks):				377.7	RPD = 9	
Corrected Ave (3 peaks):				391.1	Corrected Ave (3 peaks):				355.7	RPD = 10	
Aroclor-1221	1	4.683	0.001	355	8.2	1	4.914	0.004	250	10.0	
Aroclor-1221	2	6.091	-0.002	11832	136.7	2	6.263	-0.003	6616	124.5	
Aroclor-1221	3	6.344	-0.002	53409	260.0	3	6.590	-0.004	29719	244.3	
Total CollAve (3 peaks):				135.0	Total Col2Ave (3 peaks):				126.3	RPD = 7	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.683	0.001	355	12.9	1	4.914	0.003	250	17.3	
Aroclor-1232	2	6.091	-0.002	11832	194.9	2	7.219	-0.006	68900	858.5	
Aroclor-1232	3	7.622	-0.029	281376	1168.8	3	7.831	-0.032	159315	1005.9	
Aroclor-1232	4	8.547	-0.016	115332	1028.6	4	8.682	-0.011	50266	1030.6	
Total CollAve (4 peaks):				601.3	Total Col2Ave (4 peaks):				728.1	RPD = 19	
Corrected Ave (3 peaks):				412.1	Corrected Ave (3 peaks):				627.2	RPD = 41*	
Aroclor-1242	1	7.234	-0.002	85909	488.3	1	7.219	-0.003	68900	473.1	
Aroclor-1242	2	7.622	-0.009	281376	585.1	2	7.831	-0.016	159315	546.8	
Aroclor-1242	3	8.419	-0.006	55387	481.8	3	9.139	-0.018	10937	108.5	
Aroclor-1242	4	8.547	-0.009	115332	481.9	4	9.564	-0.026	3754	36.3	
Total CollAve (4 peaks):				509.3	Total Col2Ave (4 peaks):				291.2	RPD = 54*	
Corrected Ave (3 peaks):				484.0	Corrected Ave (3 peaks):				206.0	RPD = 81*	
Aroclor-1248	1	8.372	-0.005	86935	201.5	1	8.276	-0.006	54921	312.3	
Aroclor-1248	2	8.547	-0.009	115332	319.3	2	8.682	-0.006	50266	324.7	
Aroclor-1248	3	8.961	0.001	135955	126.1	3	9.139	-0.016	10937	57.6	
Aroclor-1248	4	9.268	0.000	107965	190.7	4	9.564	-0.019	3754	18.5	
Total CollAve (4 peaks):				209.4	Total Col2Ave (4 peaks):				178.3	RPD = 16	
Corrected Ave (3 peaks):				172.8	Corrected Ave (3 peaks):				129.5	RPD = 29	
Aroclor-1254	1	9.268	-0.004	107965	177.3	1	9.420	-0.008	48641	194.1	
Aroclor-1254	2	---			0.0	2	9.564	0.038	3754	24.6	
Aroclor-1254	3	9.638	-0.008	21660	56.2	3	9.942	-0.007	10206	50.3	
Aroclor-1254	4	9.776	-0.010	58663	75.0	4	10.114	0.009	101553	231.2	
Aroclor-1254	5	10.088	-0.072	272322	471.3	5	10.338	-0.015	136080	269.6	
Total CollAve (4 peaks):				195.0	Total Col2Ave (5 peaks):				153.9	RPD = 24	
Corrected Ave (3 peaks):				102.8	Corrected Ave (4 peaks):				125.0	RPD = 19	
Aroclor-1260	1	11.013	-0.003	227622	394.1	1	11.619	-0.005	142671	395.1	
Aroclor-1260	2	11.330	-0.004	238835	407.7	2	11.887	-0.004	372062	392.6	
Aroclor-1260	3	11.704	-0.007	687785	452.4	3	12.401	-0.005	120820	559.9	
Aroclor-1260	4	12.110	-0.009	314954	417.8	4	12.469	-0.006	252053	390.4	
Aroclor-1260	5	12.214	-0.003	135573	391.9	NS	---			----	
Total CollAve (5 peaks):				412.8	Total Col2Ave (4 peaks):				434.5	RPD = 5	
Corrected Ave (4 peaks):				402.9	Corrected Ave (3 peaks):				392.7	RPD = 3	
Aroclor-1262	1	10.796	-0.013	439341	1100.7	1	11.167	-0.006	136705	269.4	
Aroclor-1262	2	12.214	-0.003	135573	194.5	2	11.619	-0.005	142671	333.8	
Aroclor-1262	3	12.288	-0.004	169884	221.7	3	12.401	-0.003	120820	268.4	
Aroclor-1262	4	12.957	-0.006	189643	306.9	4	12.469	-0.006	252053	324.0	
Total CollAve (4 peaks):				455.9	Total Col2Ave (4 peaks):				298.9	RPD = 42*	
Corrected Ave (3 peaks):				241.0	Corrected Ave (3 peaks):				287.3	RPD = 18	
Aroclor-1268	1	12.214	-0.005	135573	77.2	1	12.401	-0.003	120820	103.0	
Aroclor-1268	2	12.288	-0.002	169884	92.9	2	12.469	-0.003	252053	189.4	
Aroclor-1268	3	12.692	0.023	116123	76.4	3	12.856	-0.003	7910	7.2	
Aroclor-1268	4	13.456	-0.005	72799	16.6	4	13.671	-0.006	39874	11.9	
Total CollAve (4 peaks):				65.8	Total Col2Ave (4 peaks):				77.9	RPD = 17	

Corrected Ave (3 peaks): 56.7      Corrected Ave (3 peaks): 40.7      RPD = 33

Total PCB Area Col1 (5.866 - 13.762) = 6505743      Col1 Total PCB = 1.0 ppm\*  
Total PCB Area Col2 (5.749 - 13.983) = 3367225      Col2 Total PCB = 0.9 ppm\*

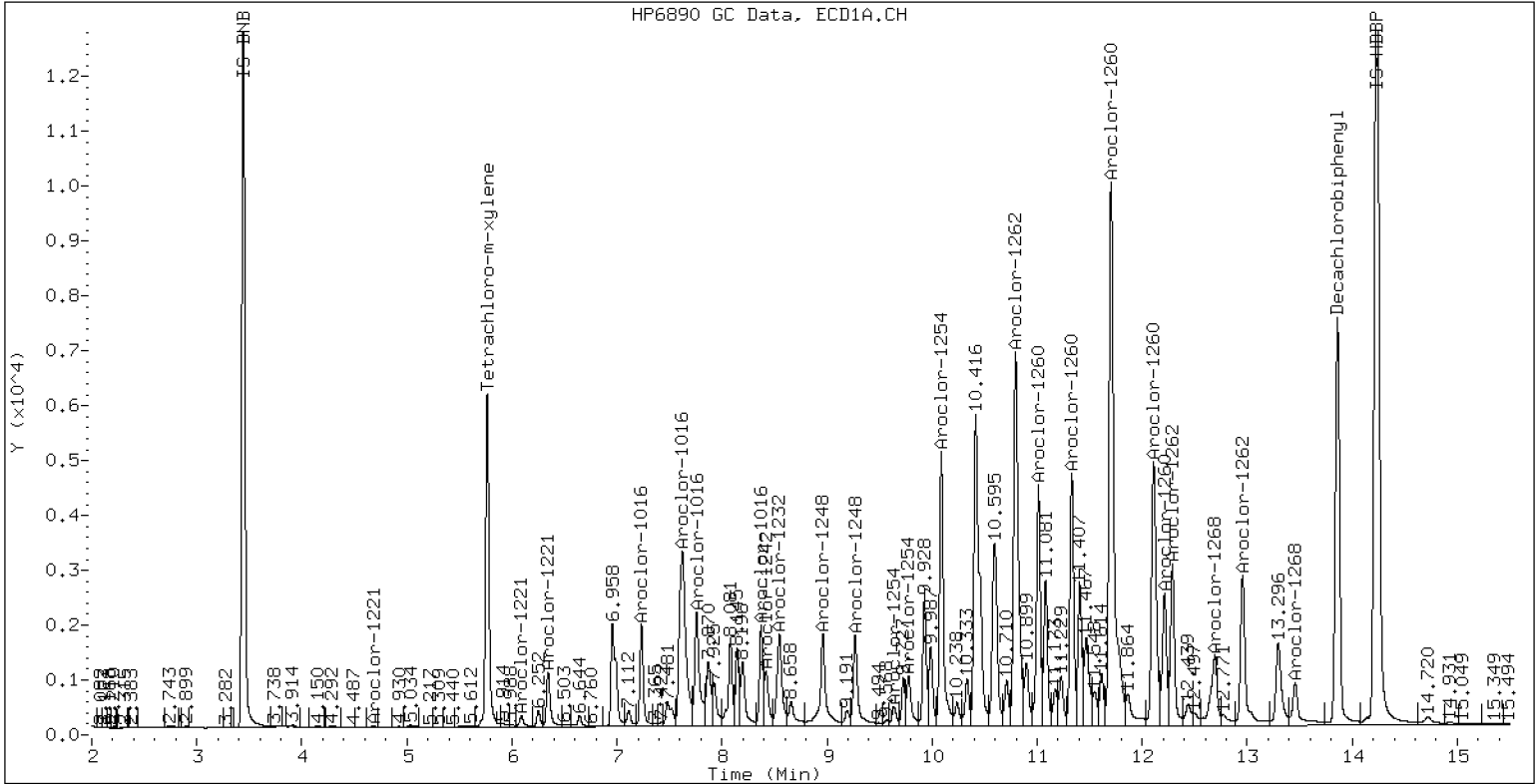
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 BLD0300-BSD1

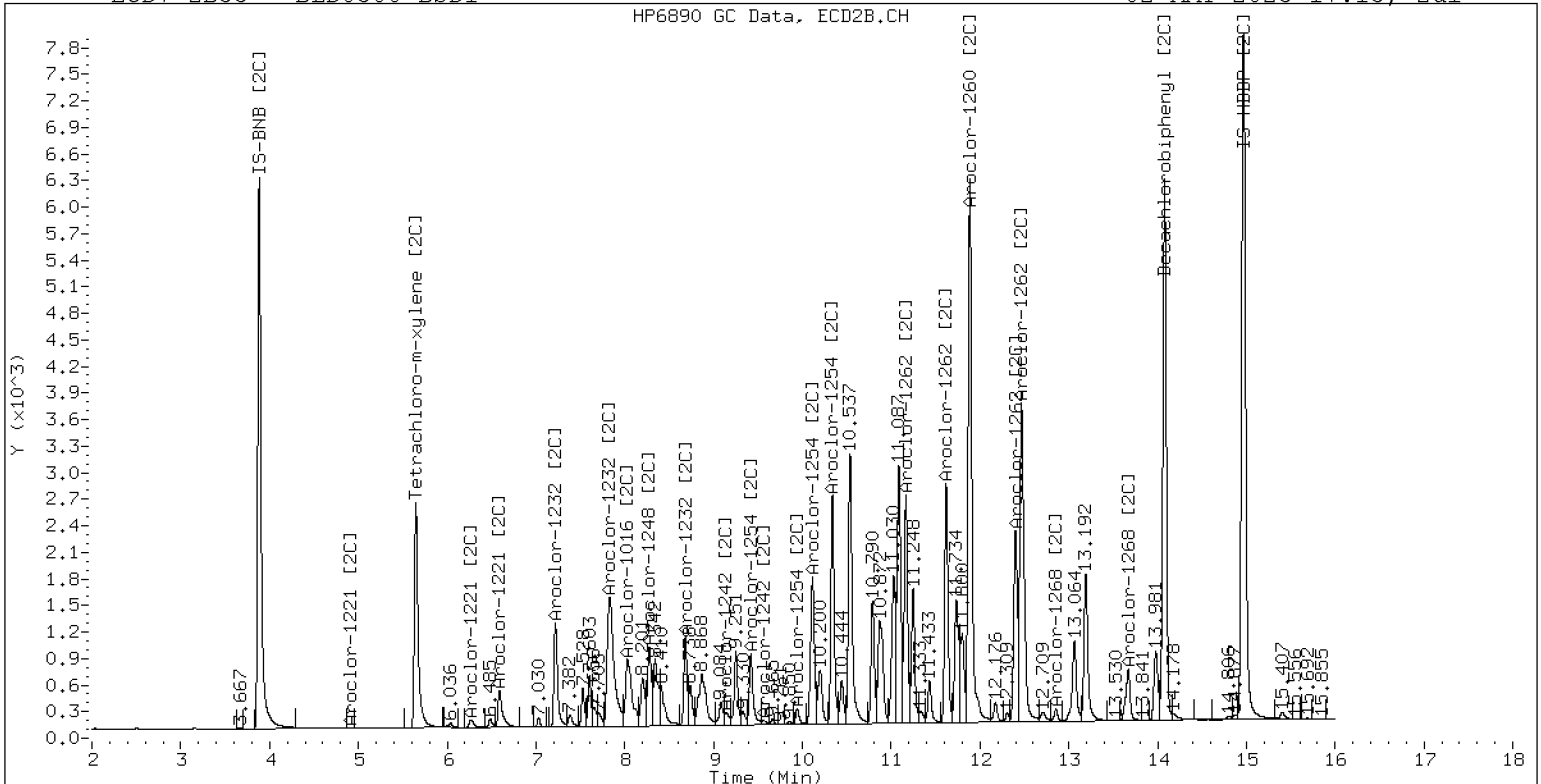
02-MAY-2023 17:13, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 BLD0300-BSD1

02-MAY-2023 17:13, 2u1



ZB-35 Manual Integration: NO



## STANDARD REFERENCE MATERIAL RECOVERY

### EPA 8082A

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Matrix:** Solid

**Laboratory ID:** BLD0300-SRM1

**Batch:** BLD0300

**Initial/Final:** 2.5 g / 2.5 mL

**Preparation:** EPA 3546 (Microwave)

**Analyzed:** 05/02/2023 17:33

**Standard ID:** K003636

**Expires:** 04/15/2023

**Standard Lot#:** PSRM0153

**Description:** Puget Sound reference-SRM

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Aroclor 1260	108.00	91.5	2.9	20.0		84.7	38 - 167
Aroclor 1260 [2C]	108.00	100	2.9	20.0		93.1	38 - 167

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022319ECD7.D  
Data file 2: /230502.b/230502.b/05022319ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: BLD0300-SRM1  
Client ID:  
Injection Date: 02-MAY-2023 17:33  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col			ZB5	ZB35	RPD	Compound/Flag	
RT	Shift	Response	RT	Shift	Response	on col			on col
5.763	-0.003	268842	5.644	-0.005	157551	33.4	34.8	4.0	Tetrachloro-m-xylene
13.855	-0.007	286652	14.075	-0.007	255675	37.0	35.4	4.2	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	550378	-1.1
Hexabromobiphenyl	745660	715577	-4.0

Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	322692	-7.4
Hexabromobiphenyl	429949	445637	3.6

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.201	-0.035	18129	88.5	1	7.225	0.003	4763	27.3	
Aroclor-1016	2	7.617	-0.015	9086	16.1	2	7.825	-0.023	8914	25.8	
Aroclor-1016	3	7.761	-0.004	5976	15.5	3	8.054	-0.004	2489	11.7	
Aroclor-1016	4	8.367	-0.011	7437	37.4	4	8.269	-0.014	5912	37.3	
Total CollAve (4 peaks):				39.4	Total Col2Ave (4 peaks):				25.5	RPD = 43*	
Corrected Ave (3 peaks):				23.0	Corrected Ave (3 peaks):				21.6	RPD = 6	
Aroclor-1221	1	4.733	0.051	351	8.3	1	4.896	-0.014	427	17.8	
Aroclor-1221	2	6.116	0.022	1162	13.7	2	6.311	0.046	8801	172.0	
Aroclor-1221	3	6.345	-0.002	3608	18.0	3	6.603	0.009	2660	22.7	
Total CollAve (3 peaks):				13.4	Total Col2Ave (3 peaks):				70.8	RPD = 137*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.733	0.051	351	13.1	1	4.896	-0.015	427	30.7	
Aroclor-1232	2	6.116	0.022	1162	19.6	2	7.225	0.000	4763	61.7	
Aroclor-1232	3	7.666	0.015	10519	44.8	3	7.825	-0.038	8914	58.5	
Aroclor-1232	4	8.538	-0.025	6604	60.3	4	8.677	-0.017	3896	83.0	
Total CollAve (4 peaks):				34.5	Total Col2Ave (4 peaks):				58.5	RPD = 52*	
Corrected Ave (3 peaks):				25.8	Corrected Ave (3 peaks):				50.3	RPD = 64*	
Aroclor-1242	1	7.201	-0.034	18129	105.6	1	7.225	0.003	4763	34.0	
Aroclor-1242	2	7.617	-0.014	9086	19.4	2	7.825	-0.022	8914	31.8	
Aroclor-1242	3	8.414	-0.010	3458	30.8	3	9.122	-0.035	5324	54.9	
Aroclor-1242	4	8.538	-0.017	6604	28.3	4	9.658	0.068	4693	47.1	
Total CollAve (4 peaks):				46.0	Total Col2Ave (4 peaks):				41.9	RPD = 9	
Corrected Ave (3 peaks):				26.1	Corrected Ave (3 peaks):				37.6	RPD = 36	
Aroclor-1248	1	8.367	-0.010	7437	17.7	1	8.269	-0.012	5912	34.9	
Aroclor-1248	2	8.538	-0.018	6604	18.7	2	8.677	-0.012	3896	26.1	
Aroclor-1248	3	8.956	-0.004	21168	20.1	3	9.122	-0.034	5324	29.1	
Aroclor-1248	4	9.258	-0.010	30399	55.0	4	9.541	-0.042	4921	25.2	
Total CollAve (4 peaks):				27.9	Total Col2Ave (4 peaks):				28.9	RPD = 3	
Corrected Ave (3 peaks):				18.8	Corrected Ave (3 peaks):				26.8	RPD = 35	
Aroclor-1254	1	9.258	-0.015	30399	51.1	1	9.411	-0.017	17874	74.1	
Aroclor-1254	2	9.335	-0.022	11173	39.7	2	9.541	0.016	4921	33.5	
Aroclor-1254	3	9.630	-0.016	18989	50.5	3	9.929	-0.020	8812	45.1	
Aroclor-1254	4	9.761	-0.024	46796	61.3	4	10.091	-0.015	35201	83.3	
Aroclor-1254	5	10.221	0.060	14164	25.1	5	10.329	-0.024	44955	92.5	
Total CollAve (5 peaks):				45.5	Total Col2Ave (5 peaks):				65.7	RPD = 36	
Corrected Ave (4 peaks):				41.6	Corrected Ave (4 peaks):				59.0	RPD = 35	
Aroclor-1260	1	11.004	-0.012	42482	105.1	1	11.611	-0.013	32570	102.7	
Aroclor-1260	2	11.317	-0.017	31947	77.9	2	11.874	-0.017	74165	89.1	
Aroclor-1260	3	11.691	-0.020	99335	93.4	3	12.392	-0.014	23901	126.1	
Aroclor-1260	4	12.094	-0.025	51109	96.9	4	12.458	-0.017	47606	84.0	
Aroclor-1260	5	12.204	-0.012	20344	84.1	NS	---			----	
Total CollAve (5 peaks):				91.5	Total Col2Ave (4 peaks):				100.5	RPD = 9	
Corrected Ave (4 peaks):				88.1	Corrected Ave (3 peaks):				91.9	RPD = 4	
Aroclor-1262	1	10.782	-0.027	92990	333.0	1	11.158	-0.015	29114	65.4	
Aroclor-1262	2	12.204	-0.013	20344	41.7	2	11.611	-0.013	32570	86.8	
Aroclor-1262	3	12.278	-0.014	25433	47.5	3	12.392	-0.012	23901	60.5	
Aroclor-1262	4	12.946	-0.017	26316	60.9	4	12.458	-0.018	47606	69.7	
Total CollAve (4 peaks):				120.8	Total Col2Ave (4 peaks):				70.6	RPD = 52*	
Corrected Ave (3 peaks):				50.0	Corrected Ave (3 peaks):				65.2	RPD = 26	
Aroclor-1268	1	12.204	-0.014	20344	16.6	1	12.392	-0.012	23901	23.2	
Aroclor-1268	2	12.278	-0.012	25433	19.9	2	12.458	-0.014	47606	40.7	
Aroclor-1268	3	12.676	0.007	13593	12.8	3	12.850	-0.009	1786	1.8	
Aroclor-1268	4	13.448	-0.013	7860	2.6	4	13.663	-0.014	7303	2.5	
Total CollAve (4 peaks):				12.9	Total Col2Ave (4 peaks):				17.1	RPD = 27	

Corrected Ave (3 peaks): 10.6      Corrected Ave (3 peaks): 9.2      RPD = 15

Total PCB Area Col1 (5.866 - 13.762) = 1205424      Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.749 - 13.983) = 804718      Col2 Total PCB = 0.2 ppm\*

\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.







**INITIAL CALIBRATION DATA**  
**EPA 8082A**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GE00002	Instrument:	ECD7
Calibration Date:	04/28/2023	Column (1):	ZB5

Calibration Comments: ECD7 PCB ICAL

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1016	250	5.056783E-02	20	4.721433E-02	50	0.0513125	1000	0.0466938	100	5.060817E-02	500	4.975368E-02
Aroclor-1016 (1)	250	3.263958E-02	20	2.818093E-02	50	3.456732E-02	1000	2.658949E-02	100	3.409616E-02	500	2.953707E-02
Aroclor-1016 (2)	250	8.726708E-02	20	6.830245E-02	50	7.643699E-02	1000	8.946717E-02	100	7.961956E-02	500	9.101418E-02
Aroclor-1016 (3)	250	0.0530806	20	6.490495E-02	50	6.485228E-02	1000	0.0429376	100	0.0582397	500	4.902967E-02
Aroclor-1016 (4)	250	2.928404E-02	20	0.027469	50	0.0293934	1000	2.778089E-02	100	3.047728E-02	500	2.943378E-02
Aroclor 1260	250	6.484954E-02	20	6.161974E-02	50	5.943495E-02	1000	5.513393E-02	100	0.0583577	500	5.569976E-02
Aroclor-1260 (1)	250	5.025046E-02	20	0.048291	50	4.640952E-02	1000	4.085685E-02	100	4.364709E-02	500	4.155521E-02
Aroclor-1260 (2)	250	5.079248E-02	20	0.0475396	50	4.625285E-02	1000	4.287829E-02	100	4.464574E-02	500	0.0428166
Aroclor-1260 (3)	250	0.1317499	20	0.121439	50	0.1205215	1000	0.1104033	100	0.1178843	500	0.1114432
Aroclor-1260 (4)	250	6.305458E-02	20	6.180665E-02	50	5.678142E-02	1000	5.671439E-02	100	5.824422E-02	500	5.717673E-02
Aroclor-1260 (5)	250	2.840029E-02	20	0.0290225	50	2.720953E-02	1000	2.481678E-02	100	2.736718E-02	500	2.550705E-02
Decachlorobiphenyl	40	0.8620444	3.2	0.9311091	8	0.9494266	160	0.7622335	16	0.8909056	80	0.807456
Tetrachlorometaxylene	40	1.205885	3.2	1.142339	8	1.245982	160	1.091444	16	1.176406	80	1.152149



**INITIAL CALIBRATION DATA**  
**EPA 8082A**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GE00002	Instrument:	ECD7
Calibration Date:	04/28/2023	Column (1):	ZB5

Calibration Comments: ECD7 PCB ICAL

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1221							250	1.584936E-02				
Aroclor-1221 (1)							250	6.123226E-03				
Aroclor-1221 (2)							250	0.0122844				
Aroclor-1221 (3)							250	2.914046E-02				
Aroclor 1232									250	1.564296E-02		
Aroclor-1232 (1)									250	3.893573E-03		
Aroclor-1232 (2)									250	8.613407E-03		
Aroclor-1232 (3)									250	3.415578E-02		
Aroclor-1232 (4)									250	0.0159091		
Aroclor 1242	250	3.752427E-02										
Aroclor-1242 (1)	250	0.0249622										
Aroclor-1242 (2)	250	6.823346E-02										
Aroclor-1242 (3)	250	2.294635E-02										
Aroclor-1242 (4)	250	3.395507E-02										
Aroclor 1248			250	8.080314E-02								
Aroclor-1248 (1)			250	3.865209E-02								
Aroclor-1248 (2)			250	5.125333E-02								
Aroclor-1248 (3)			250	0.1529725								
Aroclor-1248 (4)			250	8.033468E-02								
Aroclor 1254					250	7.026587E-02						
Aroclor-1254 (1)					250	8.641465E-02						
Aroclor-1254 (2)					250	4.095794E-02						
Aroclor-1254 (3)					250	0.054634						
Aroclor-1254 (4)					250	0.1109842						
Aroclor-1254 (5)					250	5.833854E-02						
Aroclor 1262							250	4.849915E-02				
Aroclor-1262 (1)							250	3.121886E-02				



**INITIAL CALIBRATION DATA**  
**EPA 8082A**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GE00002	Instrument:	ECD7
Calibration Date:	04/28/2023	Column (1):	ZB5

Calibration Comments: ECD7 PCB ICAL

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor-1262 (2)							250	5.451848E-02				
Aroclor-1262 (3)							250	5.992317E-02				
Aroclor-1262 (4)							250	0.0483361				
Aroclor 1268									250	0.1857986		
Aroclor-1268 (1)									250	0.1373364		
Aroclor-1268 (2)									250	0.1429928		
Aroclor-1268 (3)									250	0.1189357		
Aroclor-1268 (4)									250	0.3439297		









**INITIAL CALIBRATION DATA**  
**EPA 8082A**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GE00002	Instrument:	ECD7
Calibration Date:	04/28/2023	Column (2):	ZB35

Calibration Comments: ECD7 PCB ICAL

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1221 [2C]							250	1.588673E-02				
Aroclor-1221 (1) [2C]							250	5.938963E-03				
Aroclor-1221 (2) [2C]							250	1.268641E-02				
Aroclor-1221 (3) [2C]							250	2.903483E-02				
Aroclor 1232 [2C]									250	1.800803E-02		
Aroclor-1232 (1) [2C]									250	3.443199E-03		
Aroclor-1232 (2) [2C]									250	1.915234E-02		
Aroclor-1232 (3) [2C]									250	3.779751E-02		
Aroclor-1232 (4) [2C]									250	1.163907E-02		
Aroclor 1242 [2C]	250	3.825533E-02										
Aroclor-1242 (1) [2C]	250	3.475792E-02										
Aroclor-1242 (2) [2C]	250	6.953199E-02										
Aroclor-1242 (3) [2C]	250	2.404682E-02										
Aroclor-1242 (4) [2C]	250	2.468459E-02										
Aroclor 1248 [2C]			250	4.314235E-02								
Aroclor-1248 (1) [2C]			250	4.197231E-02								
Aroclor-1248 (2) [2C]			250	3.694382E-02								
Aroclor-1248 (3) [2C]			250	4.531488E-02								
Aroclor-1248 (4) [2C]			250	4.833837E-02								
Aroclor 1254 [2C]					250	7.399525E-02						
Aroclor-1254 (1) [2C]					250	0.0598131						
Aroclor-1254 (2) [2C]					250	3.645383E-02						
Aroclor-1254 (3) [2C]					250	4.841718E-02						
Aroclor-1254 (4) [2C]					250	0.1048212						
Aroclor-1254 (5) [2C]					250	0.120471						
Aroclor 1262 [2C]							250	0.0852231				
Aroclor-1262 (1) [2C]							250	7.997486E-02				



**INITIAL CALIBRATION DATA**  
**EPA 8082A**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GE00002	Instrument:	ECD7
Calibration Date:	04/28/2023	Column (2):	ZB35

Calibration Comments: ECD7 PCB ICAL

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor-1262 (2) [2C]							250	6.736027E-02				
Aroclor-1262 (3) [2C]							250	7.094302E-02				
Aroclor-1262 (4) [2C]							250	0.1226143				
Aroclor 1268 [2C]									250	0.2740532		
Aroclor-1268 (1) [2C]									250	0.1849198		
Aroclor-1268 (2) [2C]									250	0.2098056		
Aroclor-1268 (3) [2C]									250	0.1733282		
Aroclor-1268 (4) [2C]									250	0.5281591		





**INITIAL CALIBRATION DATA**  
**EPA 8082A**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GE00002	Instrument:	ECD7
Calibration Date:	04/28/2023	Column (2):	ZB35

Calibration Comments: ECD7 PCB ICAL

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016 [2C]	5.548297E-02	8.1			RSD (20)	
Aroclor-1016 (1) [2C]	4.332458E-02	9.1			RSD (20)	
Aroclor-1016 (2) [2C]	8.563631E-02	7.4			RSD (20)	
Aroclor-1016 (3) [2C]	5.371165E-02	18.7			RSD (20)	
Aroclor-1016 (4) [2C]	3.925935E-02	19.9			RSD (20)	
Aroclor 1221 [2C]		0.0			RSD (20)	
Aroclor-1221 (1) [2C]		0.0			RSD (20)	
Aroclor-1221 (2) [2C]		0.0			RSD (20)	
Aroclor-1221 (3) [2C]		0.0			RSD (20)	
Aroclor 1232 [2C]		0.0			RSD (20)	
Aroclor-1232 (1) [2C]		0.0			RSD (20)	
Aroclor-1232 (2) [2C]		0.0			RSD (20)	
Aroclor-1232 (3) [2C]		0.0			RSD (20)	
Aroclor-1232 (4) [2C]		0.0			RSD (20)	
Aroclor 1242 [2C]		0.0			RSD (20)	
Aroclor-1242 (1) [2C]		0.0			RSD (20)	
Aroclor-1242 (2) [2C]		0.0			RSD (20)	
Aroclor-1242 (3) [2C]		0.0			RSD (20)	
Aroclor-1242 (4) [2C]		0.0			RSD (20)	
Aroclor 1248 [2C]		0.0			RSD (20)	
Aroclor-1248 (1) [2C]		0.0			RSD (20)	
Aroclor-1248 (2) [2C]		0.0			RSD (20)	
Aroclor-1248 (3) [2C]		0.0			RSD (20)	
Aroclor-1248 (4) [2C]		0.0			RSD (20)	
Aroclor 1254 [2C]		0.0			RSD (20)	
Aroclor-1254 (1) [2C]		0.0			RSD (20)	
Aroclor-1254 (2) [2C]		0.0			RSD (20)	
Aroclor-1254 (3) [2C]		0.0			RSD (20)	
Aroclor-1254 (4) [2C]		0.0			RSD (20)	
Aroclor-1254 (5) [2C]		0.0			RSD (20)	



**INITIAL CALIBRATION DATA**  
**EPA 8082A**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GE00002	Instrument:	ECD7
Calibration Date:	04/28/2023	Column (2):	ZB35

Calibration Comments: ECD7 PCB ICAL

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1260 [2C]	0.0855158	6.6			RSD (20)	
Aroclor-1260 (1) [2C]	5.691539E-02	8.0			RSD (20)	
Aroclor-1260 (2) [2C]	0.149359	6.5			RSD (20)	
Aroclor-1260 (3) [2C]	3.401255E-02	4.3			RSD (20)	
Aroclor-1260 (4) [2C]	0.1017762	7.2			RSD (20)	
Aroclor 1262 [2C]		0.0			RSD (20)	
Aroclor-1262 (1) [2C]		0.0			RSD (20)	
Aroclor-1262 (2) [2C]		0.0			RSD (20)	
Aroclor-1262 (3) [2C]		0.0			RSD (20)	
Aroclor-1262 (4) [2C]		0.0			RSD (20)	
Aroclor 1268 [2C]		0.0			RSD (20)	
Aroclor-1268 (1) [2C]		0.0			RSD (20)	
Aroclor-1268 (2) [2C]		0.0			RSD (20)	
Aroclor-1268 (3) [2C]		0.0			RSD (20)	
Aroclor-1268 (4) [2C]		0.0			RSD (20)	
Decachlorobiphenyl [2C]	1.295491	3.5			RSD (20)	
Tetrachlorometaxylene [2C]	1.123153	5.5			RSD (20)	



## GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230428.b

	Inject	Date/Time	Filename	DF	LabID	ClientID
1	28-APR-2023	09:39	04282301ECD7.D	1	AR1660	
2	28-APR-2023	11:28	04282302ECD7.D	1		
3	28-APR-2023	11:59	04282303ECD7.D	1	IB	
4	28-APR-2023	12:20	04282304ECD7.D	1	0.25PPMAR1660	
5	28-APR-2023	12:41	04282305ECD7.D	1	0.02PPMAR1660	
6	28-APR-2023	13:02	04282306ECD7.D	1	0.05PPMAR1660	
7	28-APR-2023	13:23	04282307ECD7.D	1	1.0PPMAR1660	
8	28-APR-2023	13:43	04282308ECD7.D	1	0.1PPMAR1660	
9	28-APR-2023	14:04	04282309ECD7.D	1	0.5PPMAR1660	
10	28-APR-2023	14:25	04282310ECD7.D	1	0.25PPMAR1242	
11	28-APR-2023	14:46	04282311ECD7.D	1	0.25PPMAR1248	
12	28-APR-2023	15:07	04282312ECD7.D	1	0.25PPMAR1254	
13	28-APR-2023	15:28	04282313ECD7.D	1	0.25PPMAR2162	
14	28-APR-2023	15:49	04282314ECD7.D	1	0.25PPMAR3268	
15	28-APR-2023	16:09	04282315ECD7.D	1	AR1660SCV	
16	28-APR-2023	16:30	04282316ECD7.D	1	AR1242SCV	
17	28-APR-2023	16:51	04282317ECD7.D	1	AR1248SCV	
18	28-APR-2023	17:12	04282318ECD7.D	1	AR1254SCV	
19	28-APR-2023	17:33	04282319ECD7.D	1	AR2162SCV	
20	28-APR-2023	17:54	04282320ECD7.D	1	AR3268SCV	
21	28-APR-2023	18:15	04282321ECD7.D	1	DDTS	
22	28-APR-2023	18:35	04282322ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230428.b

ARI Job No.: AR16 Method: PCB.m Instrument: ecd7.i Date: 28-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0939	04282301ECD7.D	AR1660		1	NO MANUAL INTEGRATION
1128	04282302ECD7.D			1	NO MANUAL INTEGRATION
1159	04282303ECD7.D	IB		1	NO MANUAL INTEGRATION
1220	04282304ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1241	04282305ECD7.D	0.02PPMAR1660		1	Aroclor-1016,
1302	04282306ECD7.D	0.05PPMAR1660		1	Aroclor-1016,
1323	04282307ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
1343	04282308ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1404	04282309ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1425	04282310ECD7.D	0.25PPMAR1242		1	Aroclor-1242,
1446	04282311ECD7.D	0.25PPMAR1248		1	Aroclor-1248,
1507	04282312ECD7.D	0.25PPMAR1254		1	Aroclor-1254,
1528	04282313ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
1549	04282314ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
1609	04282315ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
1630	04282316ECD7.D	AR1242SCV		1	Aroclor-1242,
1651	04282317ECD7.D	AR1248SCV		1	Aroclor-1016, Aroclor-1242, Aroclor-1248,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230428.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1712	04282318ECD7.D	AR1254SCV		1	Aroclor-1254,
1733	04282319ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
1754	04282320ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
1815	04282321ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1835	04282322ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
0939	04282301ECD7.D	AR1660		1	NO MANUAL INTEGRATION
1128	04282302ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1159	04282303ECD7.D	IB		1	NO MANUAL INTEGRATION
1220	04282304ECD7.D	0.25PPMAR1660		1	IS-BNB [2C],
1241	04282305ECD7.D	0.02PPMAR1660		1	Aroclor-1016 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
1302	04282306ECD7.D	0.05PPMAR1660		1	Aroclor-1016 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
1323	04282307ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
1343	04282308ECD7.D	0.1PPMAR1660		1	Aroclor-1016 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
1404	04282309ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1425	04282310ECD7.D	0.25PPMAR1242		1	Aroclor-1242 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
1446	04282311ECD7.D	0.25PPMAR1248		1	Aroclor-1248 [2C],
1507	04282312ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
1528	04282313ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230428.b\230428.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1549	04282314ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
1609	04282315ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
1630	04282316ECD7.D	AR1242SCV		1	Aroclor-1242 [2C],
1651	04282317ECD7.D	AR1248SCV		1	Aroclor-1248 [2C],
1712	04282318ECD7.D	AR1254SCV		1	Aroclor-1254 [2C],
1733	04282319ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
1754	04282320ECD7.D	AR3268SCV		1	Aroclor-1232 [2C], Aroclor-1242 [2C], Aroclor-1248 [2C],
1815	04282321ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1835	04282322ECD7.D	DDT BD		1	NO MANUAL INTEGRATION

Security Status Report

Date: 01-May-2023 12:34

04282301ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282302ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282303ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282304ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282305ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282306ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282307ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282308ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282309ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282310ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282311ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282312ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282313ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282314ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282315ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282316ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282317ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282318ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282319ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282320ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282321ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282322ECD7.D	Data Locked	richardl, 01-May-2023 12:34



ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-APR-2023 12:20  
 End Cal Date : 28-APR-2023 15:49  
 Quant Method : ISTD  
 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m  
 Last Edit : 01-May-2023 12:04 richardl  
 Curve Type : Average

Calibration File Names:

Level 1: \\target\share\chem4\ecd7.i\230428.b\04282305ECD7.D  
 Level 2: \\target\share\chem4\ecd7.i\230428.b\04282306ECD7.D  
 Level 3: \\target\share\chem4\ecd7.i\230428.b\04282308ECD7.D  
 Level 4: \\target\share\chem4\ecd7.i\230428.b\04282304ECD7.D  
 Level 5: \\target\share\chem4\ecd7.i\230428.b\04282309ECD7.D  
 Level 6: \\target\share\chem4\ecd7.i\230428.b\04282307ECD7.D  
 Level 7: \\target\share\chem4\ecd7.i\230428.b\04282314ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
2 Aroclor-1221 (1)	+++++ 0.00612	+++++	+++++	+++++	+++++	+++++	0.00612	0.000
(2)	+++++ 0.01228	+++++	+++++	+++++	+++++	+++++	0.01228	0.000
(3)	+++++ 0.02914	+++++	+++++	+++++	+++++	+++++	0.02914	0.000
3 Aroclor-1242 (1)	+++++ 0.02496	+++++	+++++	+++++	+++++	+++++	0.02496	0.000
(2)	+++++ 0.06823	+++++	+++++	+++++	+++++	+++++	0.06823	0.000
(3)	+++++ 0.02295	+++++	+++++	+++++	+++++	+++++	0.02295	0.000
(4)	+++++ 0.03396	+++++	+++++	+++++	+++++	+++++	0.03396	0.000
4 Aroclor-1232 (1)	+++++ 0.00389	+++++	+++++	+++++	+++++	+++++	0.00389	0.000

ARI Labs, Inc.

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 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m  
 Last Edit : 01-May-2023 12:04 richardl  
 Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
(2)	++++ 0.00861	++++	++++	++++	++++	++++	0.00861	0.000
(3)	++++ 0.03416	++++	++++	++++	++++	++++	0.03416	0.000
(4)	++++ 0.01591	++++	++++	++++	++++	++++	0.01591	0.000
7 Aroclor-1016(1)	0.02818 ++++	0.03457	0.03410	0.03264	0.02954	0.02659	0.03094	10.674
(2)	0.06830 ++++	0.07644	0.07962	0.08727	0.09101	0.08947	0.08202	10.754
(3)	0.06455 ++++	0.06485	0.05824	0.05308	0.04903	0.04294	0.05545	15.773
(4)	0.02747 ++++	0.02939	0.03048	0.02928	0.02943	0.02778	0.02897	3.915
6 Aroclor-1248(1)	++++ 0.03865	++++	++++	++++	++++	++++	0.03865	0.000
(2)	++++ 0.05125	++++	++++	++++	++++	++++	0.05125	0.000
(3)	++++ 0.15297	++++	++++	++++	++++	++++	0.15297	0.000
(4)	++++ 0.08033	++++	++++	++++	++++	++++	0.08033	0.000

ARI Labs, Inc.

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 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m  
 Last Edit : 01-May-2023 12:04 richardl  
 Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
8 Aroclor-1254 (1)	++++ 0.08641	++++	++++	++++	++++	++++	0.08641	0.000
(2)	++++ 0.04096	++++	++++	++++	++++	++++	0.04096	0.000
(3)	++++ 0.05463	++++	++++	++++	++++	++++	0.05463	0.000
(4)	++++ 0.11098	++++	++++	++++	++++	++++	0.11098	0.000
(5)	++++ 0.05834	++++	++++	++++	++++	++++	0.05834	0.000
9 Aroclor-1260 (1)	0.04829 ++++	0.04641	0.04365	0.05025	0.04156	0.04086	0.04517	8.347
(2)	0.04754 ++++	0.04625	0.04465	0.05079	0.04282	0.04288	0.04582	6.686
(3)	0.12144 ++++	0.12052	0.11788	0.13175	0.11144	0.11040	0.11891	6.547
(4)	0.06181 ++++	0.05678	0.05824	0.06305	0.05718	0.05671	0.05896	4.697
(5)	0.02902 ++++	0.02721	0.02737	0.02840	0.02551	0.02482	0.02705	6.008
10 Aroclor-1262 (1)	++++ 0.03122	++++	++++	++++	++++	++++	0.03122	0.000

ARI Labs, Inc.

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 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m  
 Last Edit : 01-May-2023 12:04 richardl  
 Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.05452	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.05992	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.04834	0.000
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.13734	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.14299	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.11894	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.34393	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

ARI Labs, Inc.

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 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m  
 Last Edit : 01-May-2023 12:04 richardl  
 Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
1 Tetrachloro-m-xylene	1.14234	1.24598	1.17641	1.20588	1.15215	1.09144	1.16903	4.583
13 Decachlorobiphenyl	0.93111	0.94943	0.89091	0.86204	0.80746	0.76223	0.86720	8.319

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m\PCB2.m  
 Last Edit : 01-May-2023 12:08 richardl  
 Curve Type : Average

Calibration File Names:

Level 1: \\target\share\chem4\ecd7.i\230428.b\230428.b\04282305ECD7.D  
 Level 2: \\target\share\chem4\ecd7.i\230428.b\230428.b\04282306ECD7.D  
 Level 3: \\target\share\chem4\ecd7.i\230428.b\230428.b\04282308ECD7.D  
 Level 4: \\target\share\chem4\ecd7.i\230428.b\230428.b\04282304ECD7.D  
 Level 5: \\target\share\chem4\ecd7.i\230428.b\230428.b\04282309ECD7.D  
 Level 6: \\target\share\chem4\ecd7.i\230428.b\230428.b\04282307ECD7.D  
 Level 7: \\target\share\chem4\ecd7.i\230428.b\230428.b\04282314ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
1 Aroclor-1221 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00594	0.000
(2)	0.00594						0.00594	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01269	0.000
	0.01269						0.01269	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02903	0.000
	0.02903						0.02903	0.000
4 Aroclor-1232 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00344	0.000
(2)	0.00344						0.00344	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01915	0.000
	0.01915						0.01915	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.03780	0.000
	0.03780						0.03780	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.01164	0.000
	0.01164						0.01164	0.000
3 Aroclor-1242 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03476	0.000
	0.03476						0.03476	0.000

ARI Labs, Inc.

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 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m\PCB2.m  
 Last Edit : 01-May-2023 12:08 richardl  
 Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.06953	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02405	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02468	0.000
6 Aroclor-1248 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04197	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.03694	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.04531	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.04834	0.000
7 Aroclor-1016 [2C] (1)	0.04740	0.04741	0.04388	0.04342	0.04063	0.03722	0.04332	9.121
(2)	0.07387	0.09114	0.08361	0.08936	0.08908	0.08676	0.08564	7.382
(3)	0.06512	0.05809	0.05258	0.05114	0.04640	0.04283	0.05269	15.250
(4)	0.05180	0.04346	0.04067	0.03630	0.03328	0.03005	0.03926	19.938

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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 Origin : Disabled  
 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m\PCB2.m  
 Last Edit : 01-May-2023 12:08 richardl  
 Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
8 Aroclor-1254 [2C] (1)	++++ 0.05981	++++	++++	++++	++++	++++	0.05981	0.000
(2)	++++ 0.03645	++++	++++	++++	++++	++++	0.03645	0.000
(3)	++++ 0.04842	++++	++++	++++	++++	++++	0.04842	0.000
(4)	++++ 0.10482	++++	++++	++++	++++	++++	0.10482	0.000
(5)	++++ 0.12047	++++	++++	++++	++++	++++	0.12047	0.000
10 Aroclor-1262 [2C] (1)	++++ 0.07997	++++	++++	++++	++++	++++	0.07997	0.000
(2)	++++ 0.06736	++++	++++	++++	++++	++++	0.06736	0.000
(3)	++++ 0.07094	++++	++++	++++	++++	++++	0.07094	0.000
(4)	++++ 0.12261	++++	++++	++++	++++	++++	0.12261	0.000
9 Aroclor-1260 [2C] (1)	0.06087 ++++	0.06124	0.05563	0.06037	0.05254	0.05084	0.05692	8.013
(2)	0.15273 ++++	0.15952	0.14732	0.15991	0.13996	0.13672	0.14936	6.547



ARI Labs, Inc.

INITIAL CALIBRATION DATA

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 Target Version : 4.14  
 Integrator : HP Genie  
 Method file : \\target\share\chem4\ecd7.i\230428.b\PCB.m\PCB2.m  
 Last Edit : 01-May-2023 12:08 richardl  
 Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
(3)	0.03460 ++++	0.03532	0.03171	0.03559	0.03331	0.03355	0.03401	4.276
(4)	0.10747 ++++	0.10926	0.09914	0.10761	0.09551	0.09167	0.10178	7.232
11 Aroclor-1268 [2C] (1)	++++ 0.18492	++++	++++	++++	++++	++++	0.18492	0.000
(2)	++++ 0.20981	++++	++++	++++	++++	++++	0.20981	0.000
(3)	++++ 0.17333	++++	++++	++++	++++	++++	0.17333	0.000
(4)	++++ 0.52816	++++	++++	++++	++++	++++	0.52816	0.000
41 2,4-DDE [2C]	++++ ++++	++++	++++	++++	++++	++++	++++	++++
42 2,4-DDD [2C]	++++ ++++	++++	++++	++++	++++	++++	++++	++++
44 4,4-DDE [2C]	++++ ++++	++++	++++	++++	++++	++++	++++	++++
45 4,4-DDD/2,4-DDT [2C]	++++ ++++	++++	++++	++++	++++	++++	++++	++++
46 4,4-DDT [2C]	++++ ++++	++++	++++	++++	++++	++++	++++	++++

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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 Last Edit : 01-May-2023 12:08 richardl  
 Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 2 Tetrachloro-m-xylene [2C]	1.13569	1.23271	1.10013	1.13203	1.08593	1.05243	1.12315	5.511
\$ 13 Decachlorobiphenyl [2C]	1.22934	1.34263	1.28898	1.35065	1.28826	1.27309	1.29549	3.493

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230428.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230428.b
Inst ID: ecd7.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 04282304ECD7 04282305ECD7 04282306ECD7 04282307ECD7 04282308ECD7 04282309ECD7
INJ. DATE: 28-APR-2023 28-APR-2023 28-APR-2023 28-APR-2023 28-APR-2023 28-APR-2023
INJ. TIME: 12:20 12:41 13:02 13:23 13:43 14:04

Table with 11 columns: Compound, RT01, RT02, RT03, RT04, RT05, RT06, EXPEC RT, RT WINDOW, AVG RT, STD DEV. Rows include compounds like IS-BNB, Tetrachloro-m-xylene, Aroclor-1221, Aroclor-1242, Aroclor-1232, Aroclor-1016, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268, Decachlorobiphenyl, IS-HBBP, 2,4-DDE, 2,4-DDD, 2,4-DDT, 4,4-DDE.

Reviewer 1 \_\_\_\_\_ Date: \_\_\_\_\_
Reviewer 2 \_\_\_\_\_ Date: \_\_\_\_\_

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
 Batch File: \\target\share\chem4\ecd7.i\230428.b  
 Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	10.242	10.142-10.342	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.731	10.631-10.831	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230428.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230428.b\230428.b
Inst ID: ecd7.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 04282304ECD7 04282305ECD7 04282306ECD7 04282307ECD7 04282308ECD7 04282309ECD7
INJ. DATE: 28-APR-2023 28-APR-2023 28-APR-2023 28-APR-2023 28-APR-2023 28-APR-2023
INJ. TIME: 12:20 12:41 13:02 13:23 13:43 14:04

Table with 11 columns: Compound, RT01, RT02, RT03, RT04, RT05, RT06, EXPEC RT, RT WINDOW, AVG RT, STD DEV. Rows include various chemical compounds like IS-BNB, Tetrachloro-m-xylene, Aroclor-1221, etc.

Reviewer 1 \_\_\_\_\_ Date: \_\_\_\_\_
Reviewer 2 \_\_\_\_\_ Date: \_\_\_\_\_

ARI Labs, Inc.  
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230428.b\PCB.m\PCB2.m  
 Batch File: \\target\share\chem4\ecd7.i\230428.b\230428.b  
 Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.093	10.993-11.193	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.178	7.078-7.278	+++++	+++++

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282303ECD7.D  
Data file 2: /230428.b/230428.b/04282303ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: IB  
Client ID:  
Injection Date: 28-APR-2023 11:59  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.781	0.015	295586	5.649	-0.001	171130	36.4	35.5	2.5	Tetrachloro-m-xylene
13.867	0.006	243867	14.084	0.000	230484	35.5	37.0	4.0	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	555978	-0.1
Hexabromobiphenyl	745660	632957	-15.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	343614	-1.4
Hexabromobiphenyl	429949	384923	-10.5

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.298	0.033	1567	28.8
Aroclor-1221	3	---			0.0	3	6.608	0.014	415	3.3
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	11.072	0.054	359	1.0	1	---			0.0
Aroclor-1260	2	11.347	0.013	290	0.8	2	---			0.0
Aroclor-1260	3	11.661	-0.049	563	0.6	3	---			0.0
Aroclor-1260	4	12.133	0.018	348	0.7	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
Total CollAve (4 peaks): 0.8						Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	12.133	-0.083	348	0.8	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	13.029	0.067	476	1.2	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	12.133	-0.085	348	0.3	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.673	0.004	1144	1.2	3	12.862	0.004	682	0.8
Aroclor-1268	4	13.471	0.011	5377	2.0	4	13.681	0.004	1376	0.5
Total CollAve (3 peaks): 1.2						Col2Ave: <3 Quant Peaks				
Total PCB Area Coll1 (5.866 - 13.762) =					29258	Coll1 Total PCB = 0.0 ppm*				



Total PCB Area Col2 (5.751 - 13.984) = 12580 Col2 Total PCB = 0.0 ppm\*

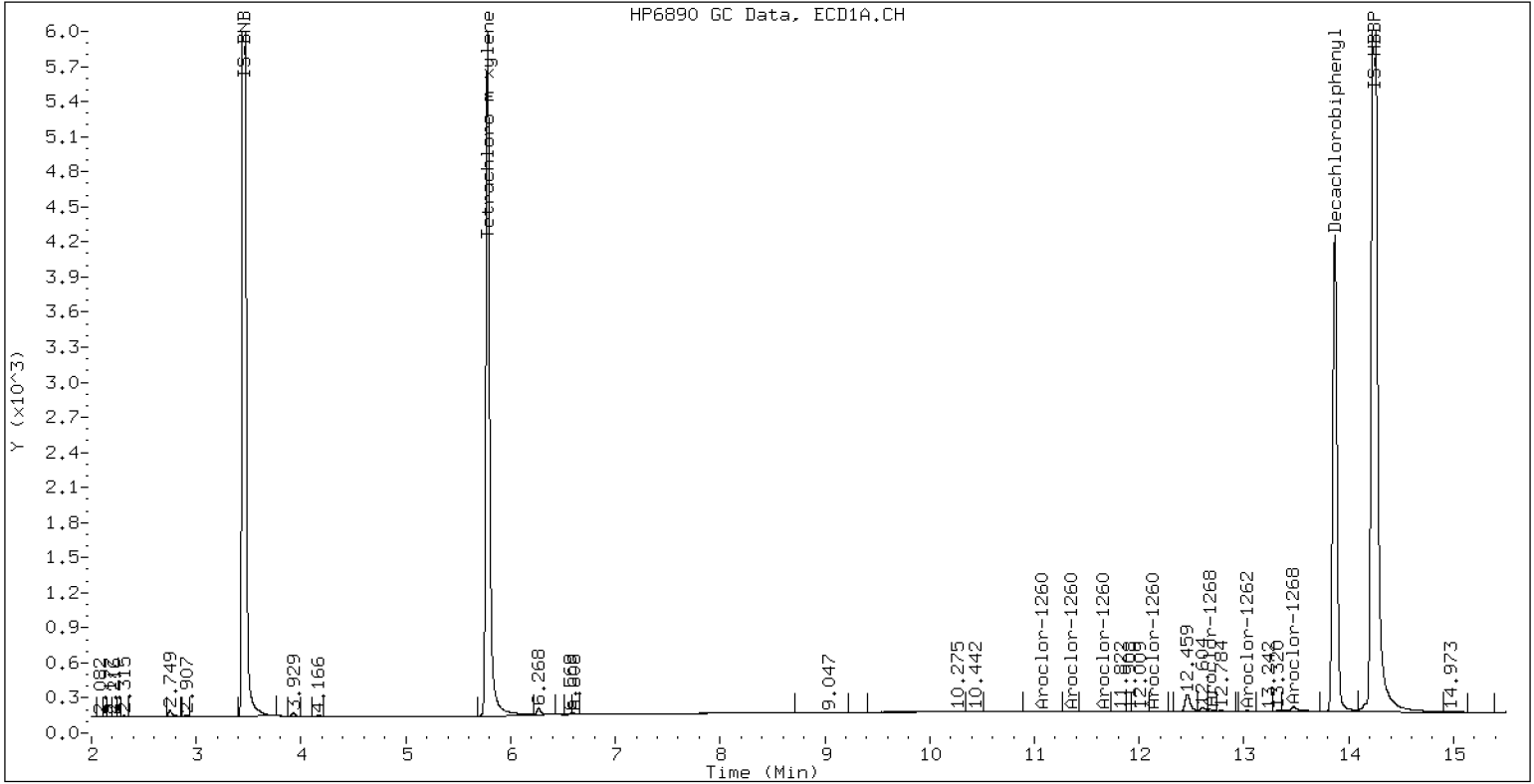
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 IB

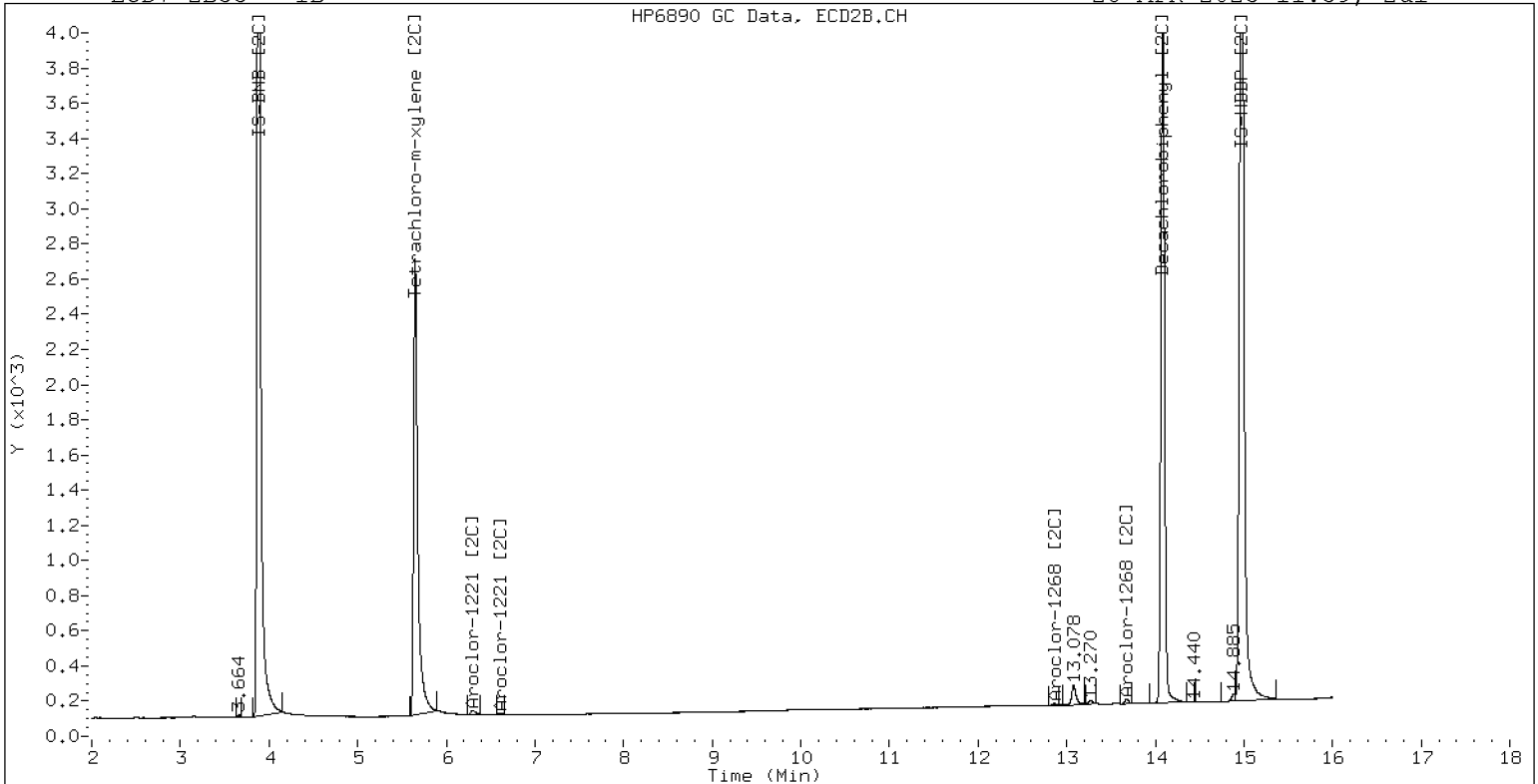
28-APR-2023 11:59, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 IB

28-APR-2023 11:59, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282304ECD7.D  
Data file 2: /230428.b/230428.b/04282304ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: AR1660.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660  
Client ID:  
Injection Date: 28-APR-2023 12:20  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.767	0.001	335394	5.650	-0.001	197250	41.3	40.3	2.3	Tetrachloro-m-xylene
13.861	-0.001	321396	14.085	0.001	290355	39.8	41.7	4.8	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	556262	0.0
Hexabromobiphenyl	745660	745660	0.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	348488	0.0
Hexabromobiphenyl	429949	429949	0.0

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col ZB35 Col

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.238	0.002	56738	263.8	1	7.224	0.003	47286	250.6	
Aroclor-1016	2	7.636	0.008	151698	266.0	2	7.857	0.013	97314	260.9	
Aroclor-1016	3	7.769	0.006	92271	239.1	3	8.062	0.007	55698	238.1	
Aroclor-1016	4	8.381	0.005	50905	252.7	4	8.286	0.005	39533	231.2	
Total CollAve (4 peaks):				255.4	Total Col2Ave (4 peaks):				245.2	RPD = 4	
Corrected Ave (3 peaks):				251.8	Corrected Ave (3 peaks):				239.9	RPD = 5	

CalAmt %D: 2.2 CalAmt %D: -1.9

Aroclor-1260	1	11.020	0.003	117093	278.1	1	11.626	0.002	81113	265.2	
Aroclor-1260	2	11.337	0.003	118356	277.1	2	11.895	0.003	214849	267.7	
Aroclor-1260	3	11.714	0.004	307002	277.0	3	12.408	0.001	47817	261.6	
Aroclor-1260	4	12.121	0.005	146929	267.3	4	12.477	0.002	144581	264.3	
Aroclor-1260	5	12.218	0.002	66178	262.4	NS	---			----	
Total CollAve (5 peaks):				272.4	Total Col2Ave (4 peaks):				264.7	RPD = 3	
Corrected Ave (4 peaks):				271.0	Corrected Ave (3 peaks):				263.7	RPD = 3	

CalAmt %D: 9.0 CalAmt %D: 5.9

Total PCB Area Coll (5.866 - 13.762) = 3329205 Coll Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 1991771 Col2 Total PCB = 0.5 ppm\*

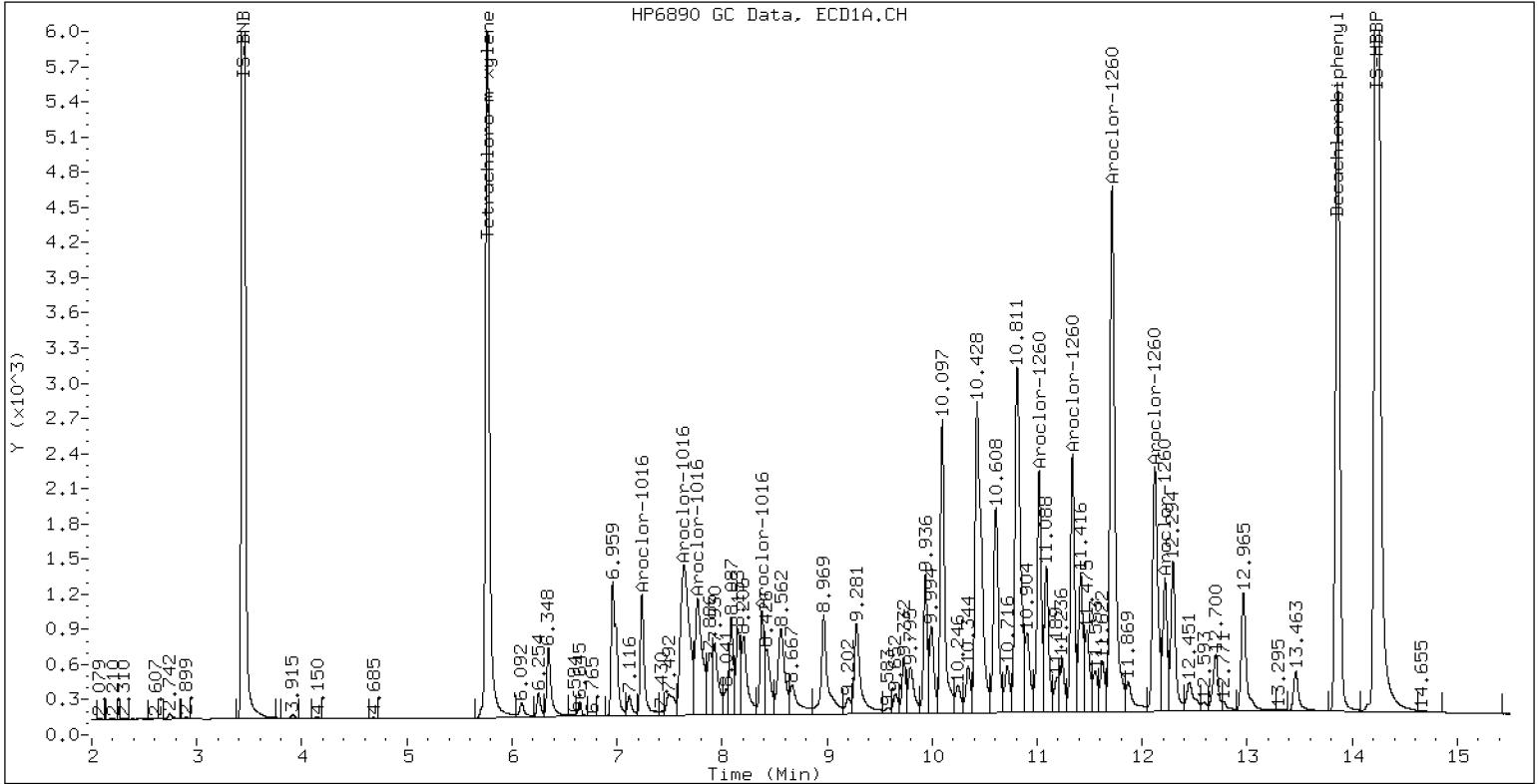
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1660

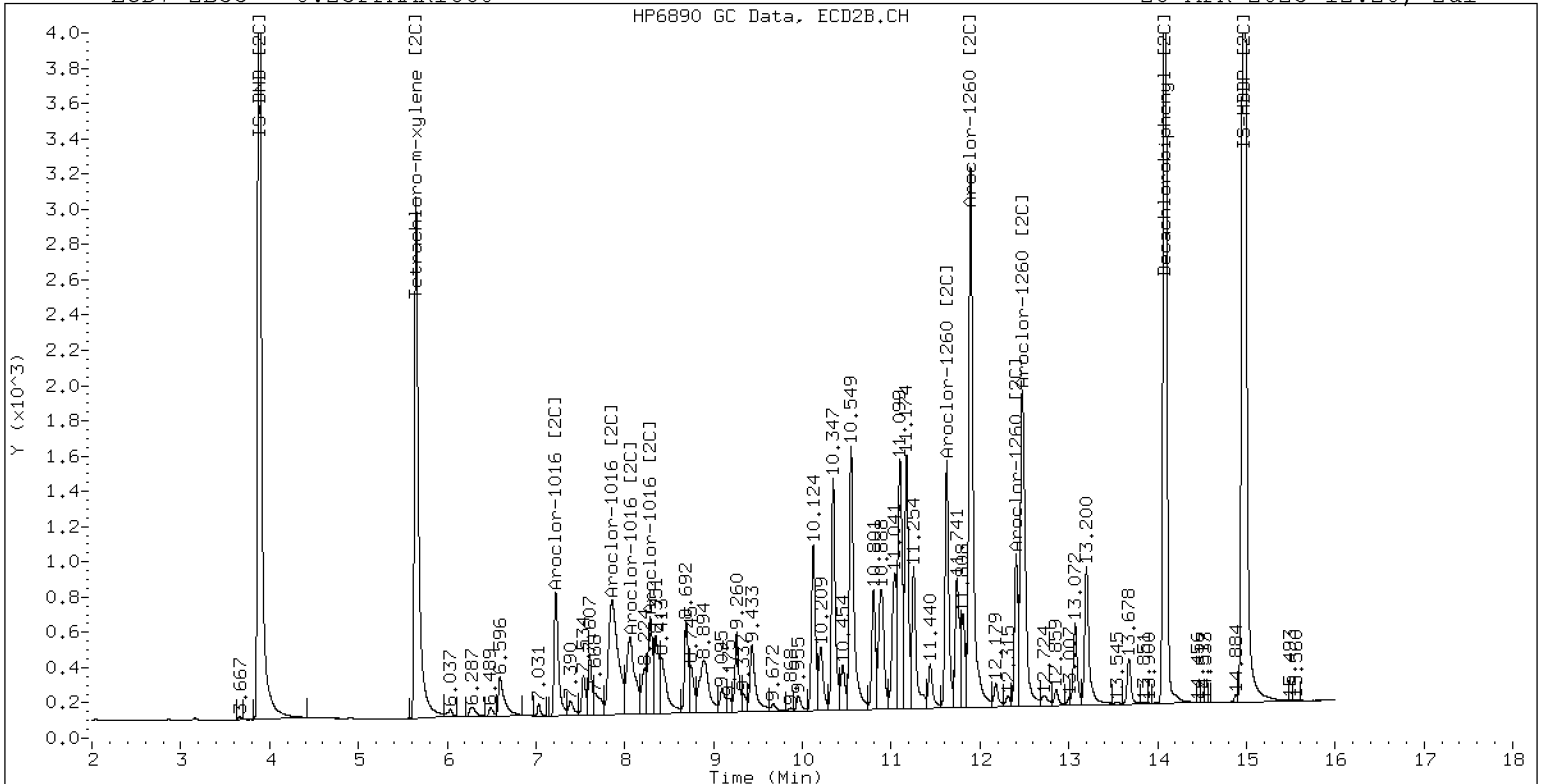
28-APR-2023 12:20, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1660

28-APR-2023 12:20, 2ul

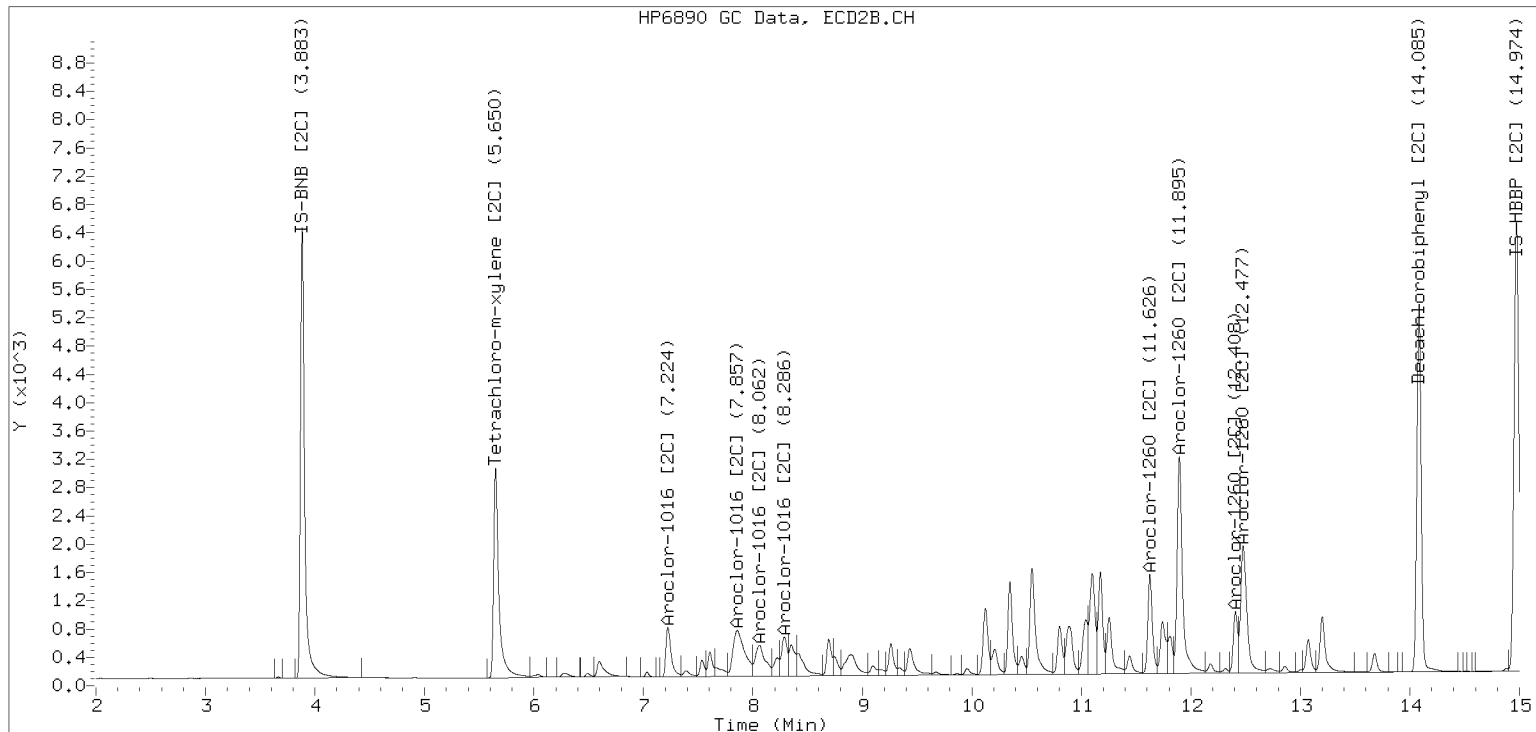


ZB-35 Manual Integration: YES

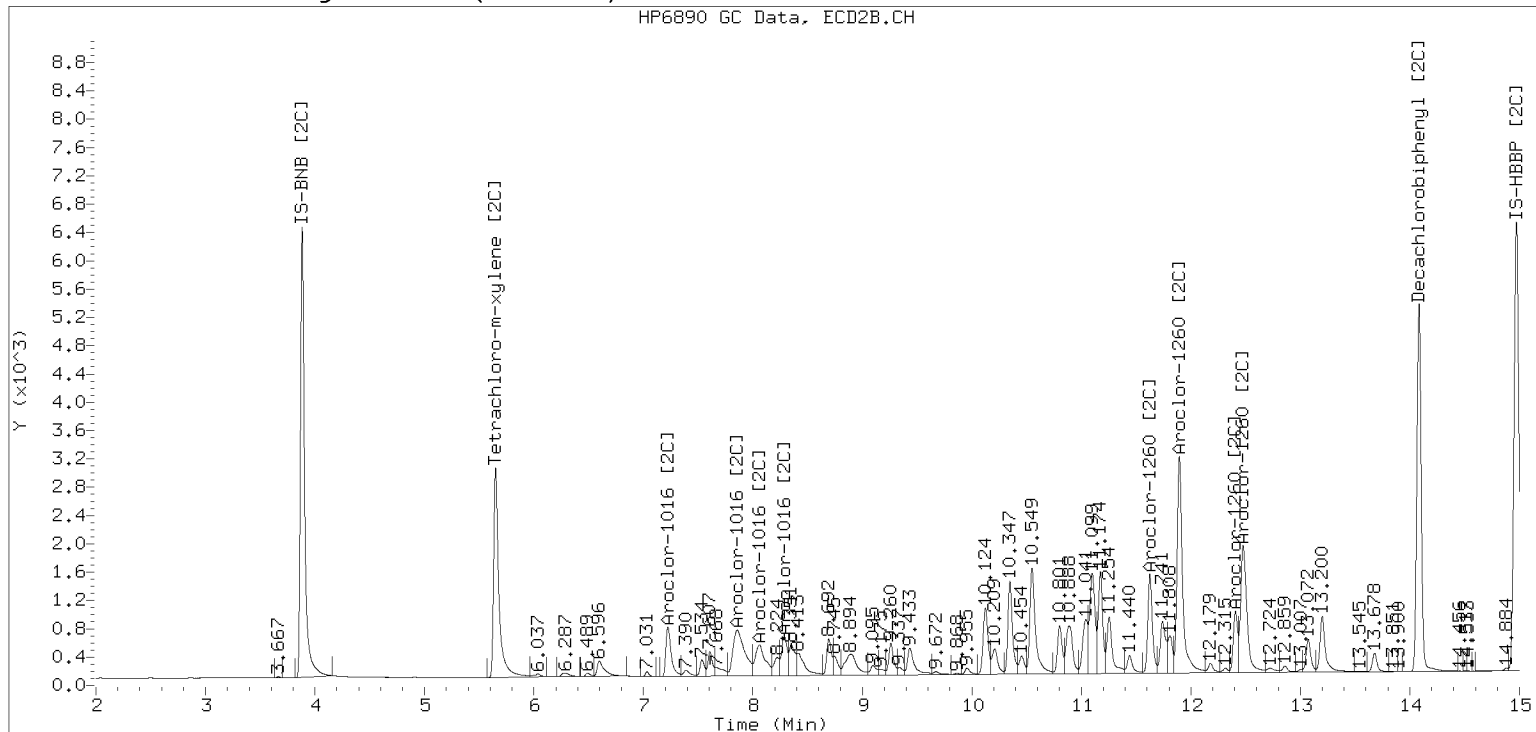
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282304ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282305ECD7.D                   ARI ID: 0.02PPMAR1660  
Data file 2: /230428.b/230428.b/04282305ECD7.D       Client ID:  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m   Injection Date: 28-APR-2023 12:41  
Compound Sublist: AR1660.sub                            Report Date: 05/01/2023 12:24  
Instrument, Inj. Vol.: ecd7.i, 2ul                     Matrix: NONE  
Quant Method: Internal Std                             Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	25930	5.651	0.000	16129	3.1	3.2	3.4	Tetrachloro-m-xylene
13.862	0.000	31723	14.084	0.000	22575	3.4	3.0	12.3	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	567476	2.0
Hexabromobiphenyl	745660	851753	14.2
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	355050	1.9
Hexabromobiphenyl	429949	459088	6.8

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.237	0.002	3998	18.2	1	7.227	0.005	4207	21.9	
Aroclor-1016	2	7.679	0.052	9690	16.7	2	7.887	0.043	6557	17.3	
Aroclor-1016	3	7.764	0.001	9208	23.4	3	8.065	0.010	6322	26.5	
Aroclor-1016	4	8.386	0.010	3897	19.0	4	8.294	0.013	4598	26.4	
Total CollAve (4 peaks):				19.3	Total Col2Ave (4 peaks):				23.0	RPD = 18	
Corrected Ave (3 peaks):				17.9	Corrected Ave (3 peaks):				21.8	RPD = 20	
CalAmt %D:				-3.5	CalAmt %D:				15.1		
Aroclor-1260	1	11.025	0.008	10283	21.4	1	11.630	0.006	6986	21.4	
Aroclor-1260	2	11.342	0.008	10123	20.8	2	11.901	0.009	17529	20.5	
Aroclor-1260	3	11.723	0.013	25859	20.4	3	12.412	0.005	3971	20.3	
Aroclor-1260	4	12.126	0.010	13161	21.0	4	12.484	0.009	12335	21.1	
Aroclor-1260	5	12.221	0.005	6180	21.5	NS	---			----	
Total CollAve (5 peaks):				21.0	Total Col2Ave (4 peaks):				20.8	RPD = 1	
Corrected Ave (4 peaks):				20.9	Corrected Ave (3 peaks):				20.6	RPD = 1	
CalAmt %D:				5.0	CalAmt %D:				4.1		

Total PCB Area Coll (5.866 - 13.762) = 306607 Coll Total PCB = 0.0 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 173055 Col2 Total PCB = 0.0 ppm\*

\* Quantitated against AR1660 0.25ppm in Ical

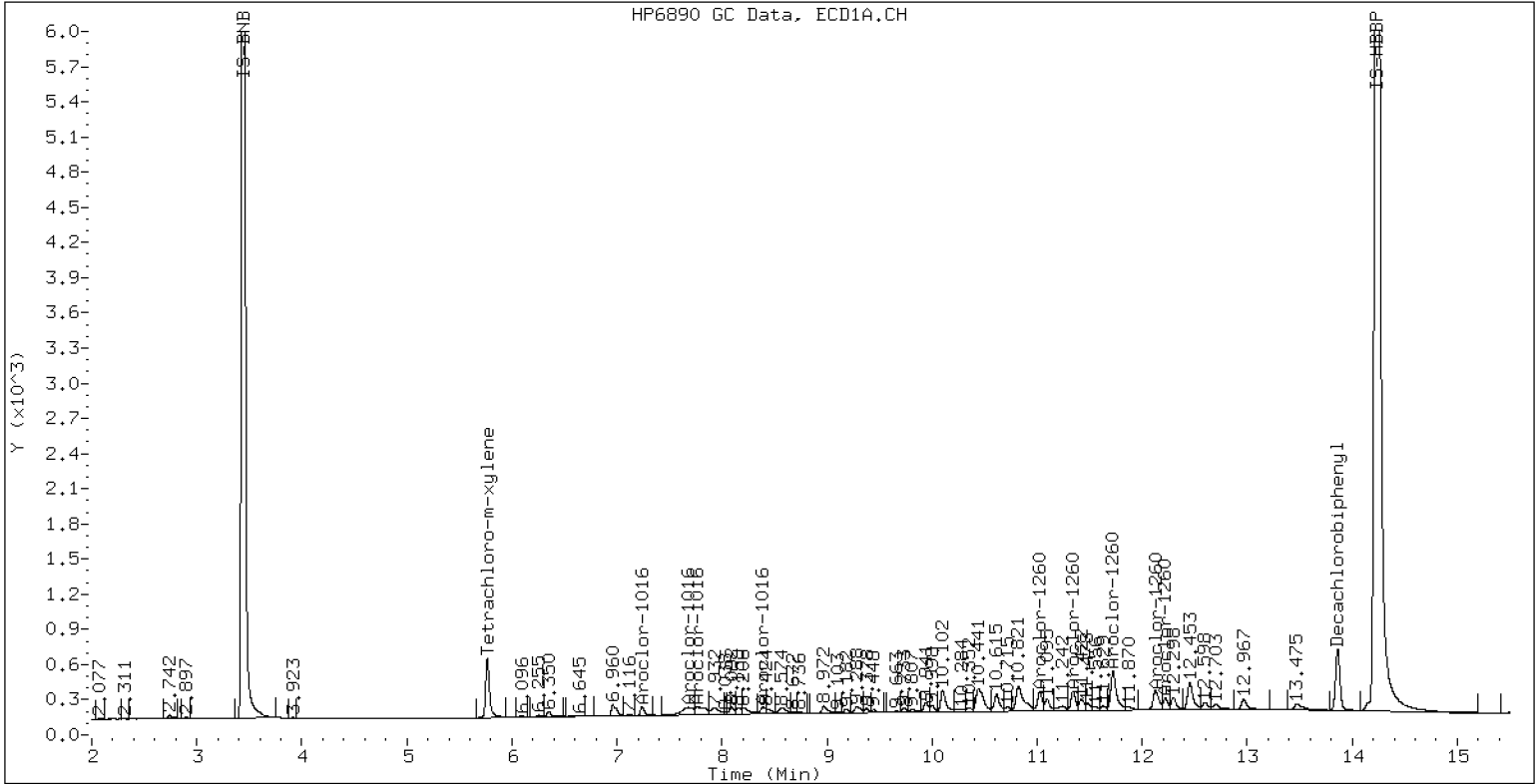
PCB-Form 10 Mod.



# PCB Dual Column Chromatograms

ECD7-ZB5 0.02PPMAR1660

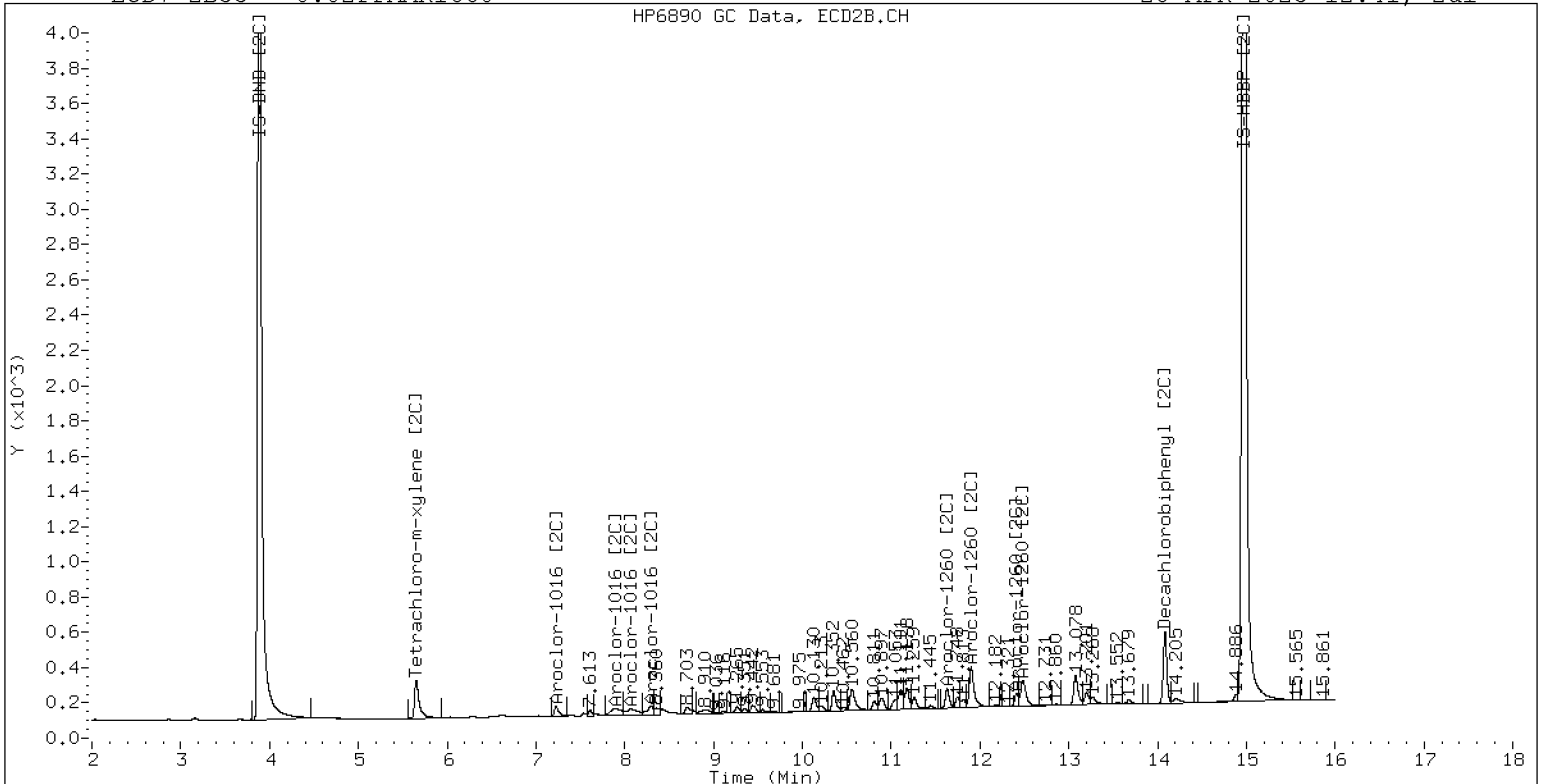
28-APR-2023 12:41, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 0.02PPMAR1660

28-APR-2023 12:41, 2ul

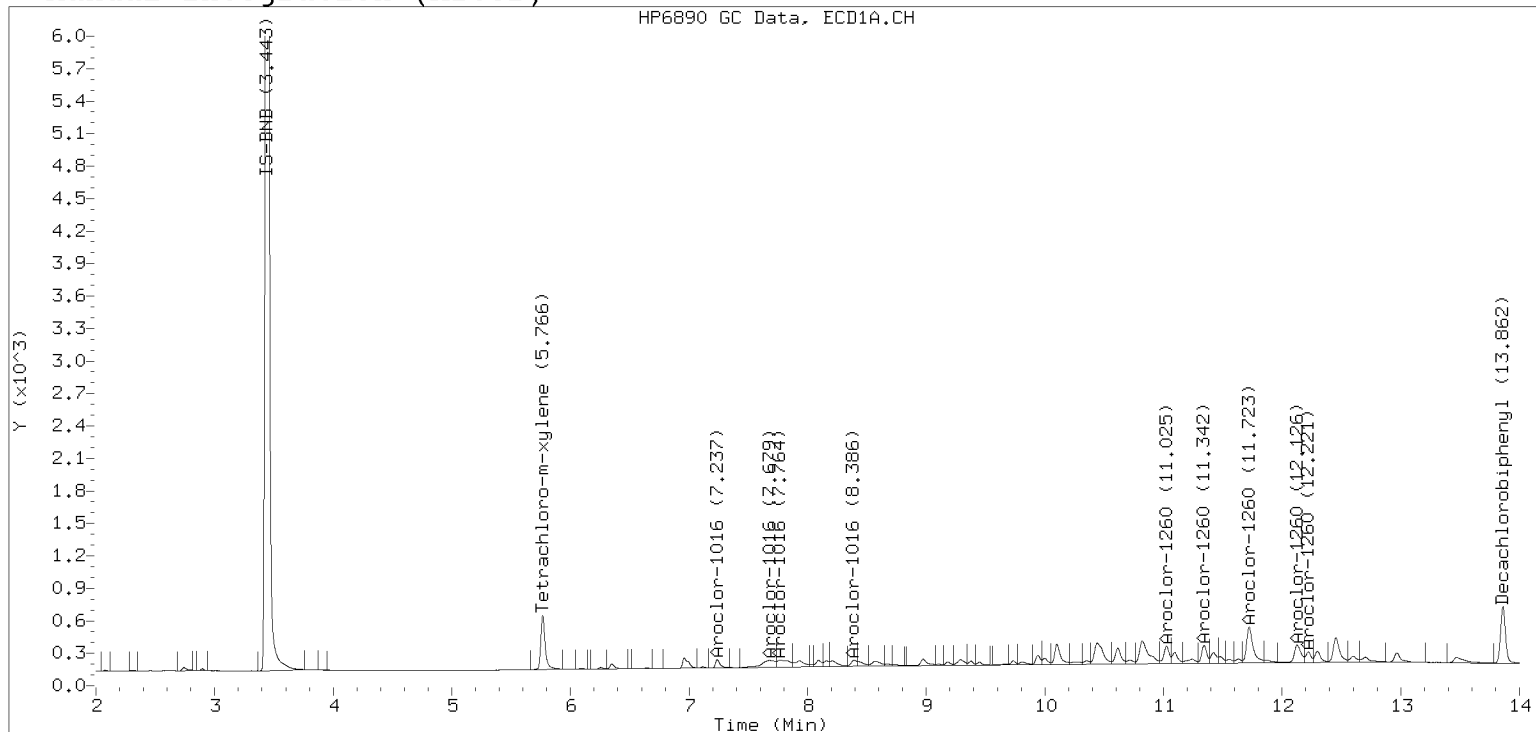


ZB-35 Manual Integration: YES

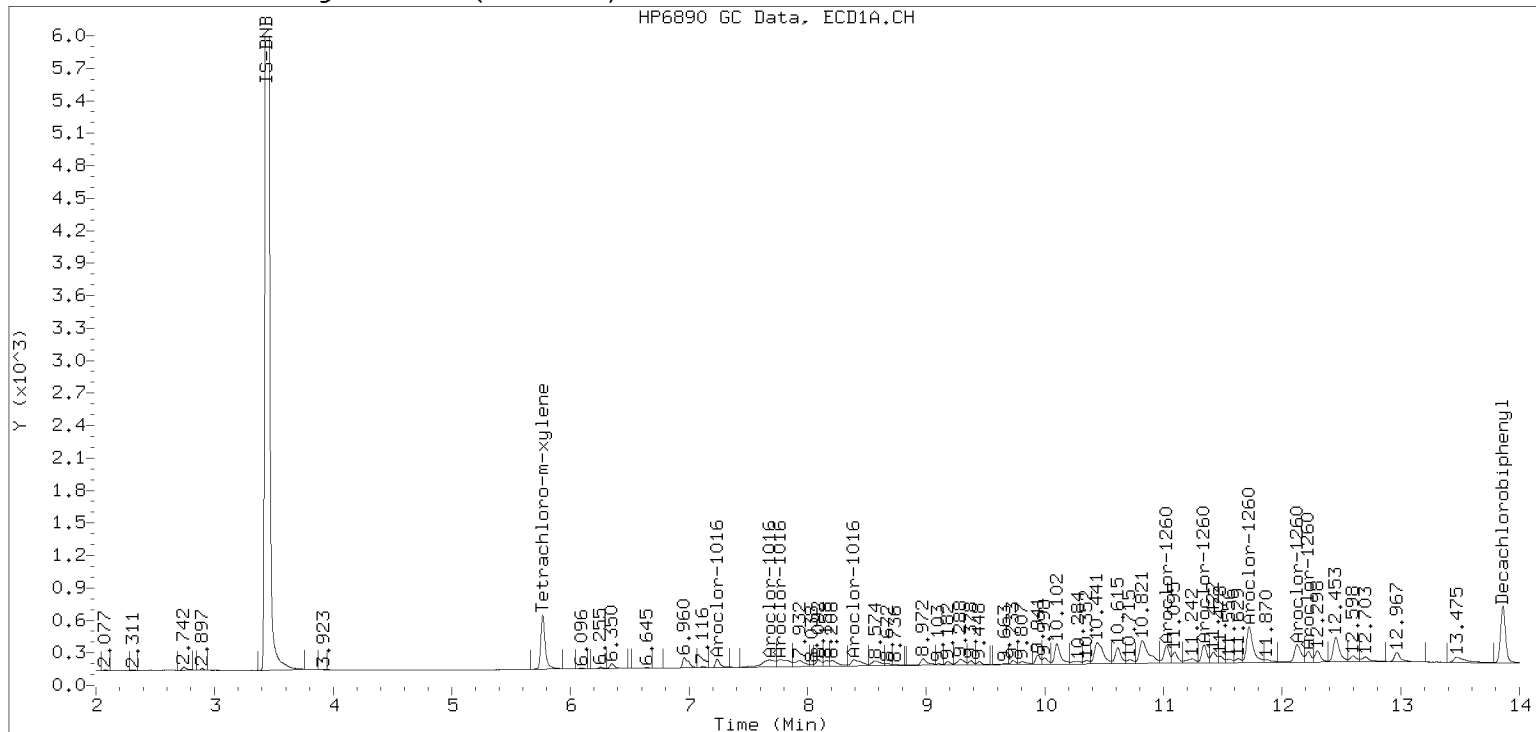
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/230428.b/04282305ECD7.D Injection Date: 28-APR-2023 12:41

Manual Integration (After)



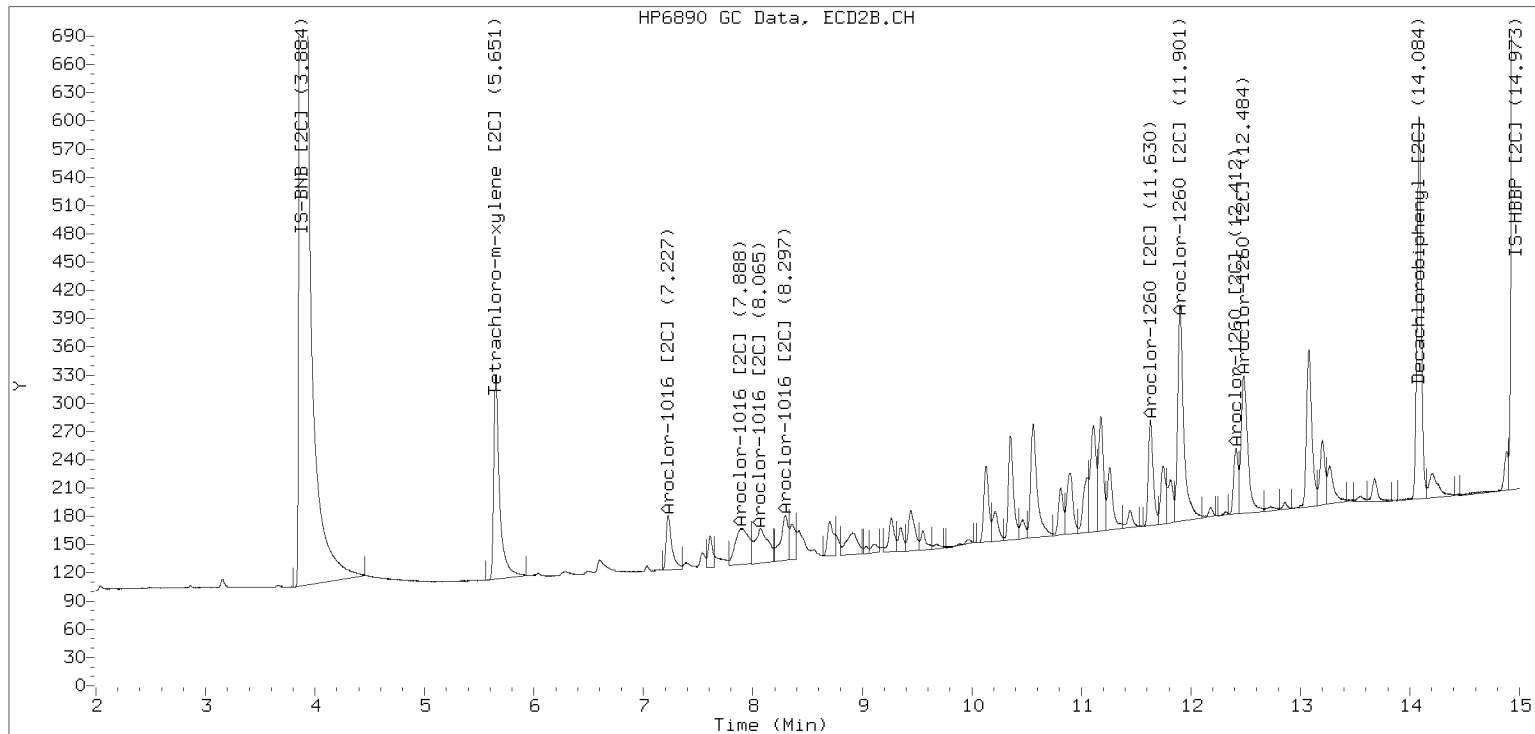
Processed Integration (Before)



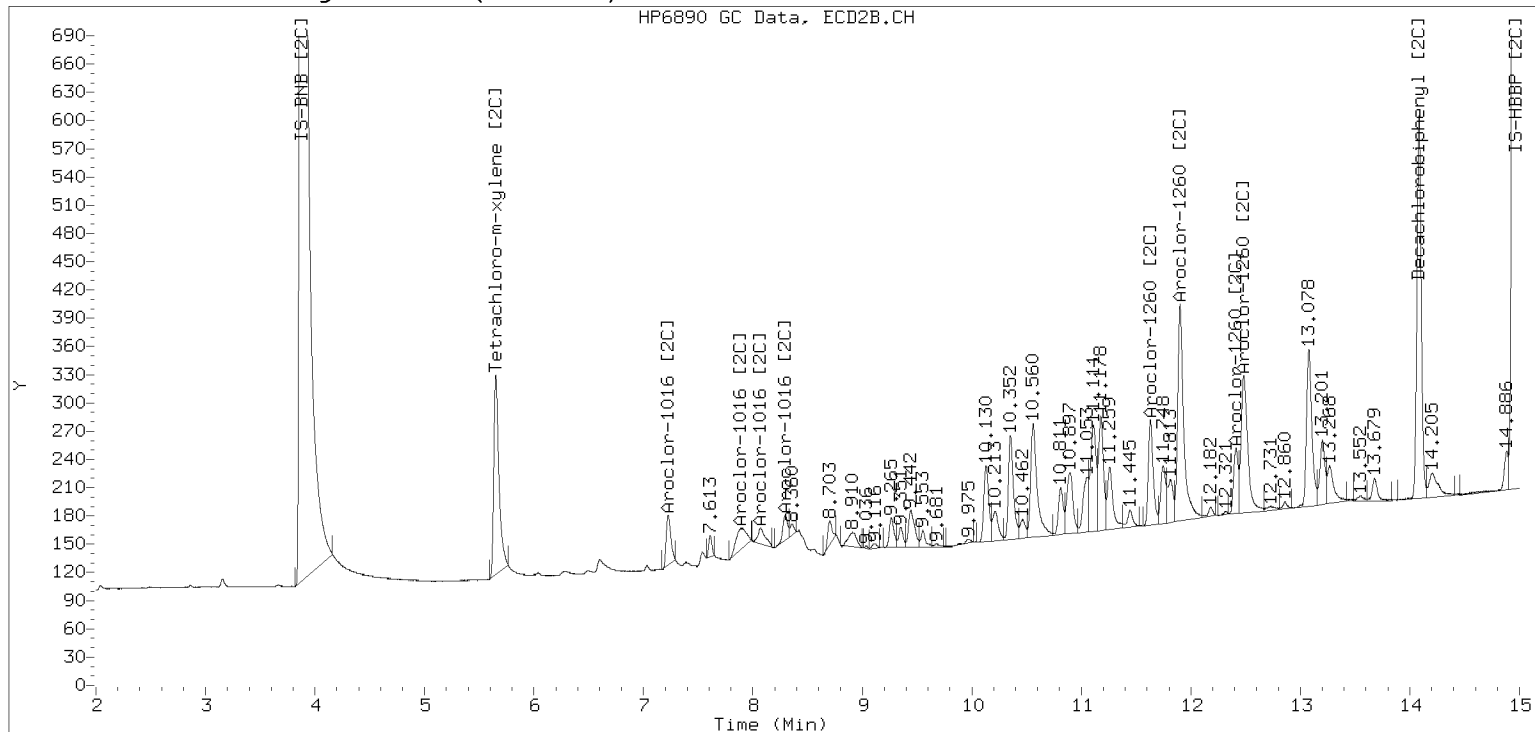
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282305ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282306ECD7.D                   ARI ID: 0.05PPMAR1660  
Data file 2: /230428.b/230428.b/04282306ECD7.D       Client ID:  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m   Injection Date: 28-APR-2023 13:02  
Compound Sublist: AR1660.sub                            Report Date: 05/01/2023 12:24  
Instrument, Inj. Vol.: ecd7.i, 2ul                     Matrix: NONE  
Quant Method: Internal Std                             Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.001	70435	5.651	-0.000	43764	8.5	8.8	2.9	Tetrachloro-m-xylene
13.864	0.002	86295	14.084	0.001	63377	8.8	8.3	5.5	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	565297	1.6
Hexabromobiphenyl	745660	908917	21.9

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	355024	1.9
Hexabromobiphenyl	429949	472035	9.8

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.238	0.002	12213	55.9	1	7.227	0.006	10519	54.7
Aroclor-1016	2	7.665	0.037	27006	46.6	2	7.886	0.041	20223	53.2
Aroclor-1016	3	7.771	0.008	22913	58.4	3	8.068	0.013	12890	54.1
Aroclor-1016	4	8.384	0.008	10385	50.7	4	8.291	0.010	9644	55.4
Total CollAve (4 peaks):				52.9		Total Col2Ave (4 peaks):				54.3 RPD = 3
Corrected Ave (3 peaks):				51.1		Corrected Ave (3 peaks):				54.0 RPD = 6
CalAmt %D:				5.8		CalAmt %D:				8.7
Aroclor-1260	1	11.023	0.005	26364	51.4	1	11.629	0.005	18068	53.8
Aroclor-1260	2	11.340	0.006	26275	50.5	2	11.899	0.007	47062	53.4
Aroclor-1260	3	11.719	0.009	68465	50.7	3	12.411	0.004	10421	51.9
Aroclor-1260	4	12.124	0.008	32256	48.2	4	12.482	0.007	32234	53.7
Aroclor-1260	5	12.220	0.004	15457	50.3	NS	---			----
Total CollAve (5 peaks):				50.2		Total Col2Ave (4 peaks):				53.2 RPD = 6
Corrected Ave (4 peaks):				49.9		Corrected Ave (3 peaks):				53.0 RPD = 6
CalAmt %D:				0.4		CalAmt %D:				6.4

Total PCB Area Coll (5.866 - 13.762) = 736093 Coll Total PCB = 0.1 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 450761 Col2 Total PCB = 0.1 ppm\*

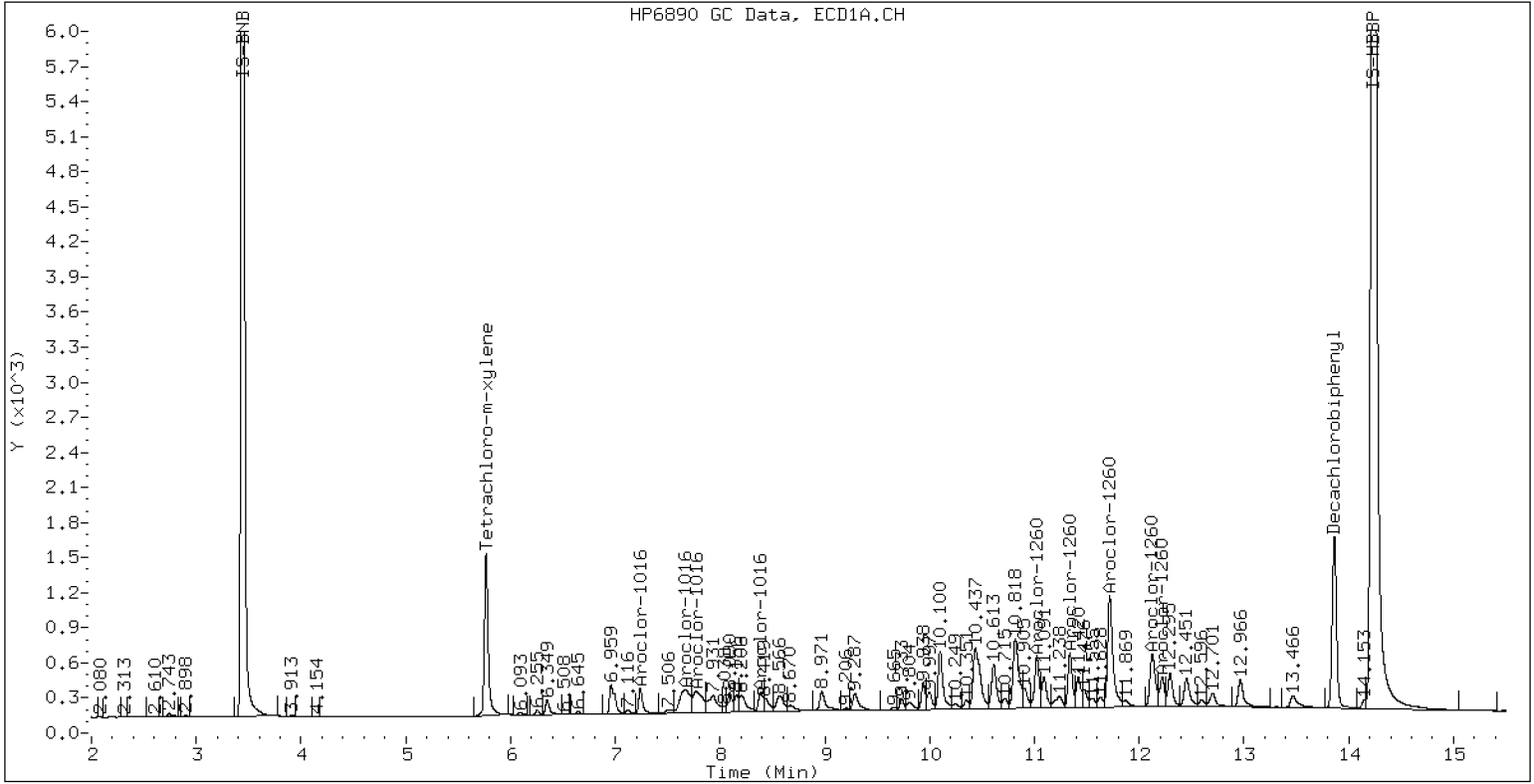
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 0.05PPMAR1660

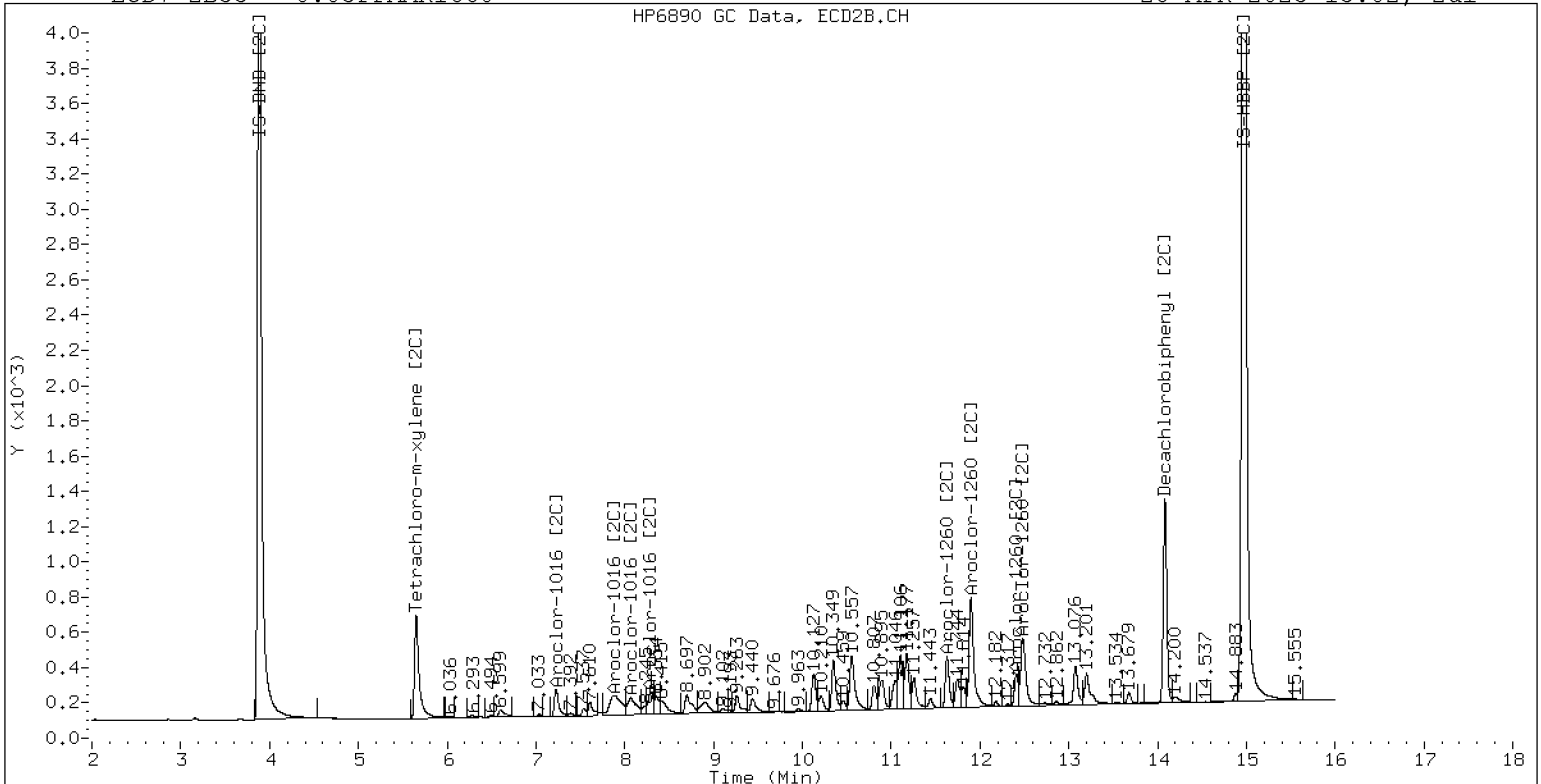
28-APR-2023 13:02, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 0.05PPMAR1660

28-APR-2023 13:02, 2ul

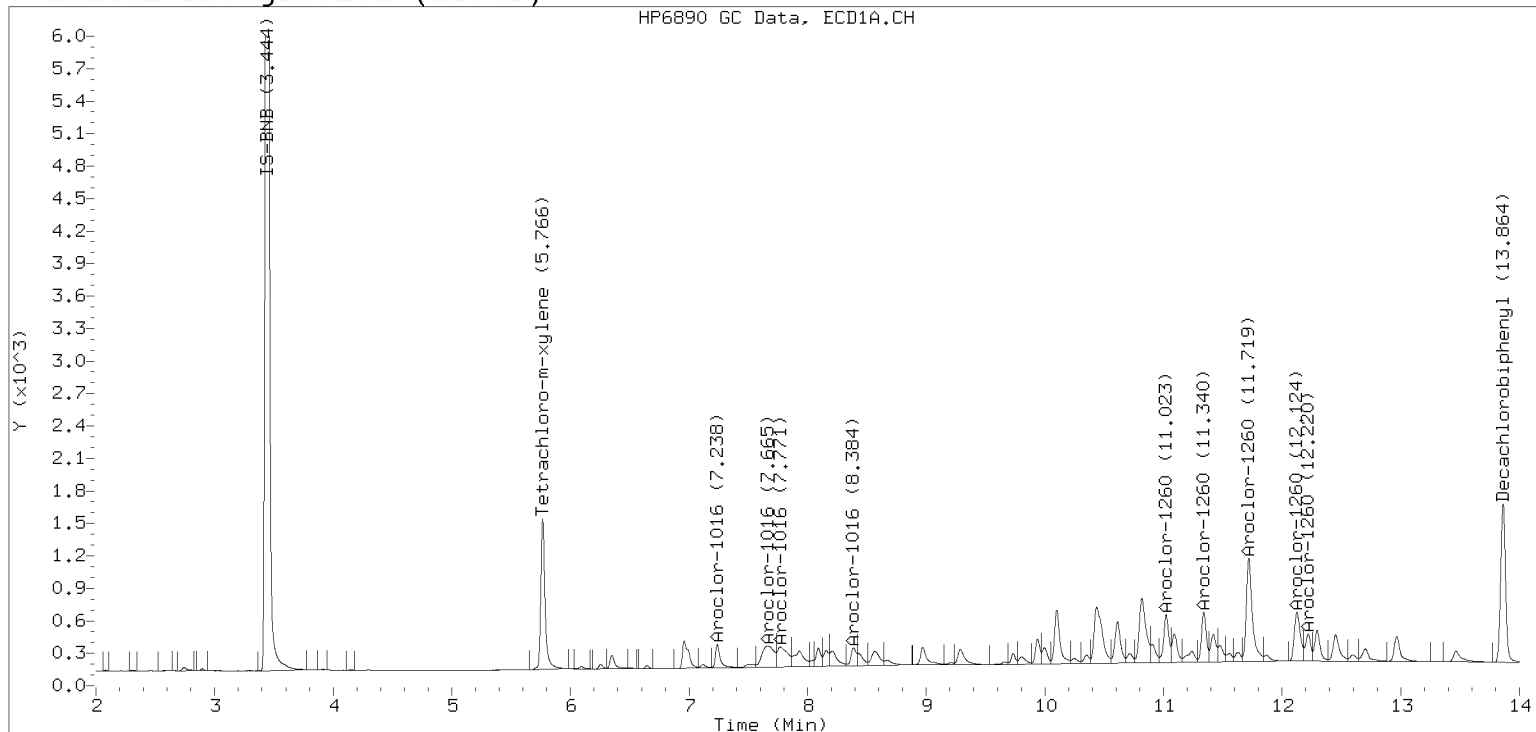


ZB-35 Manual Integration: YES

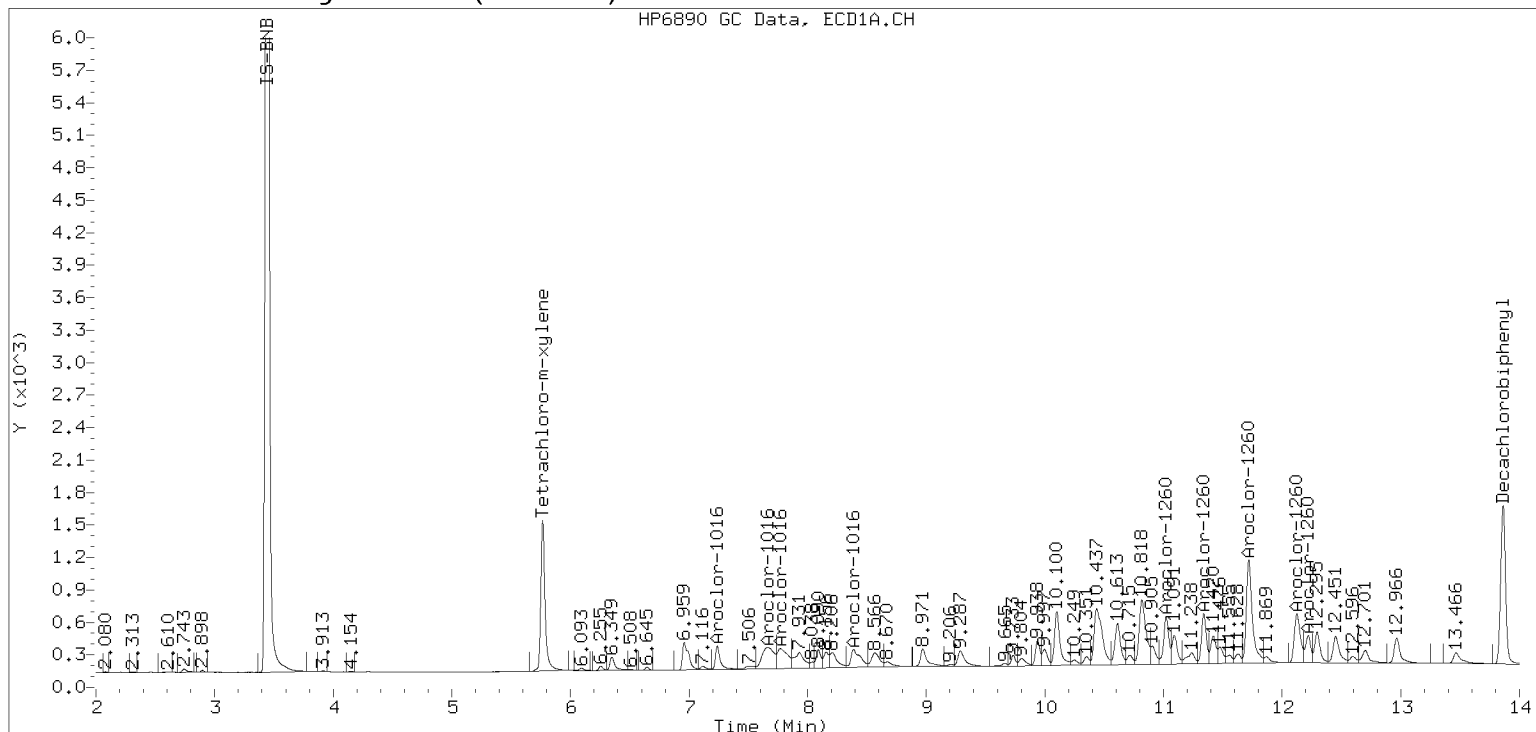
# Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/230428.b/04282306ECD7.D Injection Date: 28-APR-2023 13:02

## Manual Integration (After)



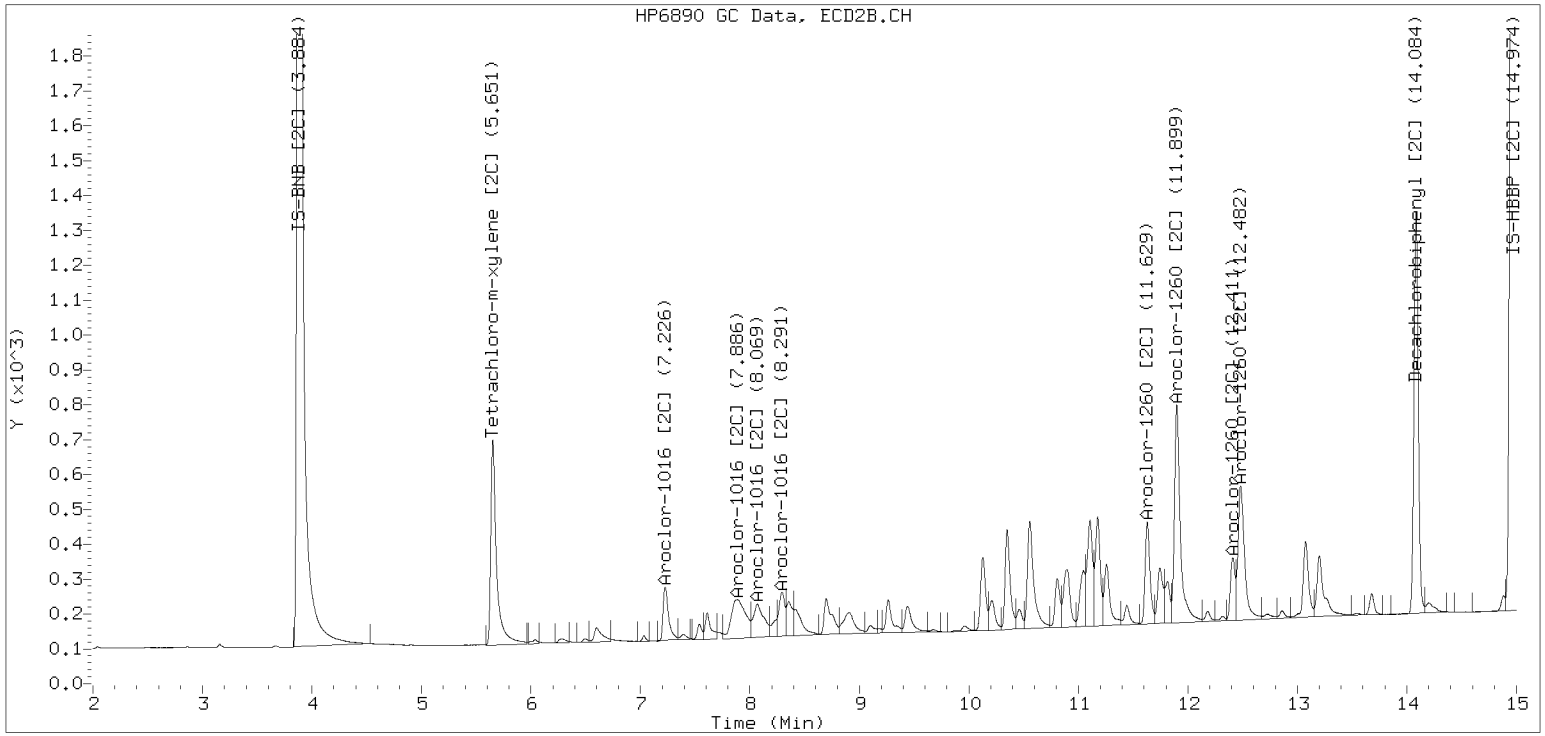
## Processed Integration (Before)



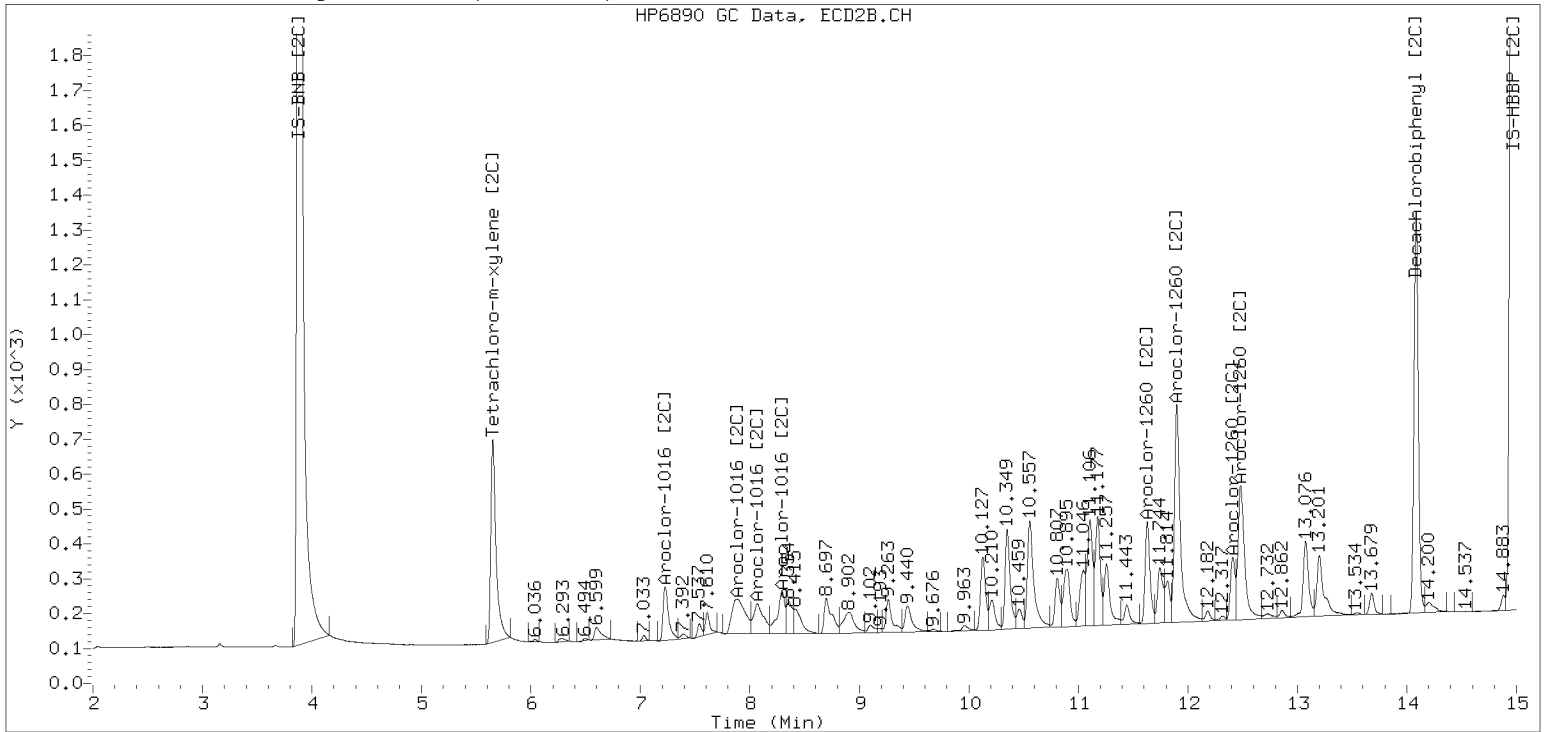
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282306ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282307ECD7.D  
Data file 2: /230428.b/230428.b/04282307ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: AR1660.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 1.0PPMAR1660  
Client ID:  
Injection Date: 28-APR-2023 13:23  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	ZB5 Col Response	RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.767	0.001	1267882	5.649	-0.002	750935	149.4	149.9	0.4	Tetrachloro-m-xylene
13.863	0.001	1438551	14.084	0.000	1240651	140.6	157.2	11.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	580828	4.4
Hexabromobiphenyl	745660	943642	26.6
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	356762	2.4
Hexabromobiphenyl	429949	487259	13.3

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.235	-0.000	193049	859.5	1	7.222	0.001	165989	859.1
Aroclor-1016	2	7.626	-0.002	649563	1090.8	2	7.834	-0.010	386907	1013.1
Aroclor-1016	3	7.760	-0.003	311742	773.5	3	8.031	-0.024	190988	797.3
Aroclor-1016	4	8.374	-0.002	201699	958.9	4	8.279	-0.002	134004	765.4
Total CollAve (4 peaks):				920.7		Total Col2Ave (4 peaks):				858.7 RPD = 7
Corrected Ave (3 peaks):				864.0		Corrected Ave (3 peaks):				807.3 RPD = 7
CalAmt %D:				-7.9		CalAmt %D:				-14.1
Aroclor-1260	1	11.015	-0.002	481928	904.5	1	11.623	-0.001	309672	893.3
Aroclor-1260	2	11.333	-0.001	505772	935.8	2	11.892	-0.000	832702	915.4
Aroclor-1260	3	11.708	-0.001	1302265	928.5	3	12.405	-0.002	204356	986.5
Aroclor-1260	4	12.113	-0.003	668976	961.9	4	12.474	-0.001	558330	900.7
Aroclor-1260	5	12.215	-0.001	292727	917.3	NS	---			----
Total CollAve (5 peaks):				929.6		Total Col2Ave (4 peaks):				924.0 RPD = 1
Corrected Ave (4 peaks):				921.5		Corrected Ave (3 peaks):				903.1 RPD = 2
CalAmt %D:				-7.0		CalAmt %D:				-7.6

Total PCB Area Coll (5.866 - 13.762) = 13445417 Coll Total PCB = 1.9 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 7592155 Col2 Total PCB = 1.9 ppm\*

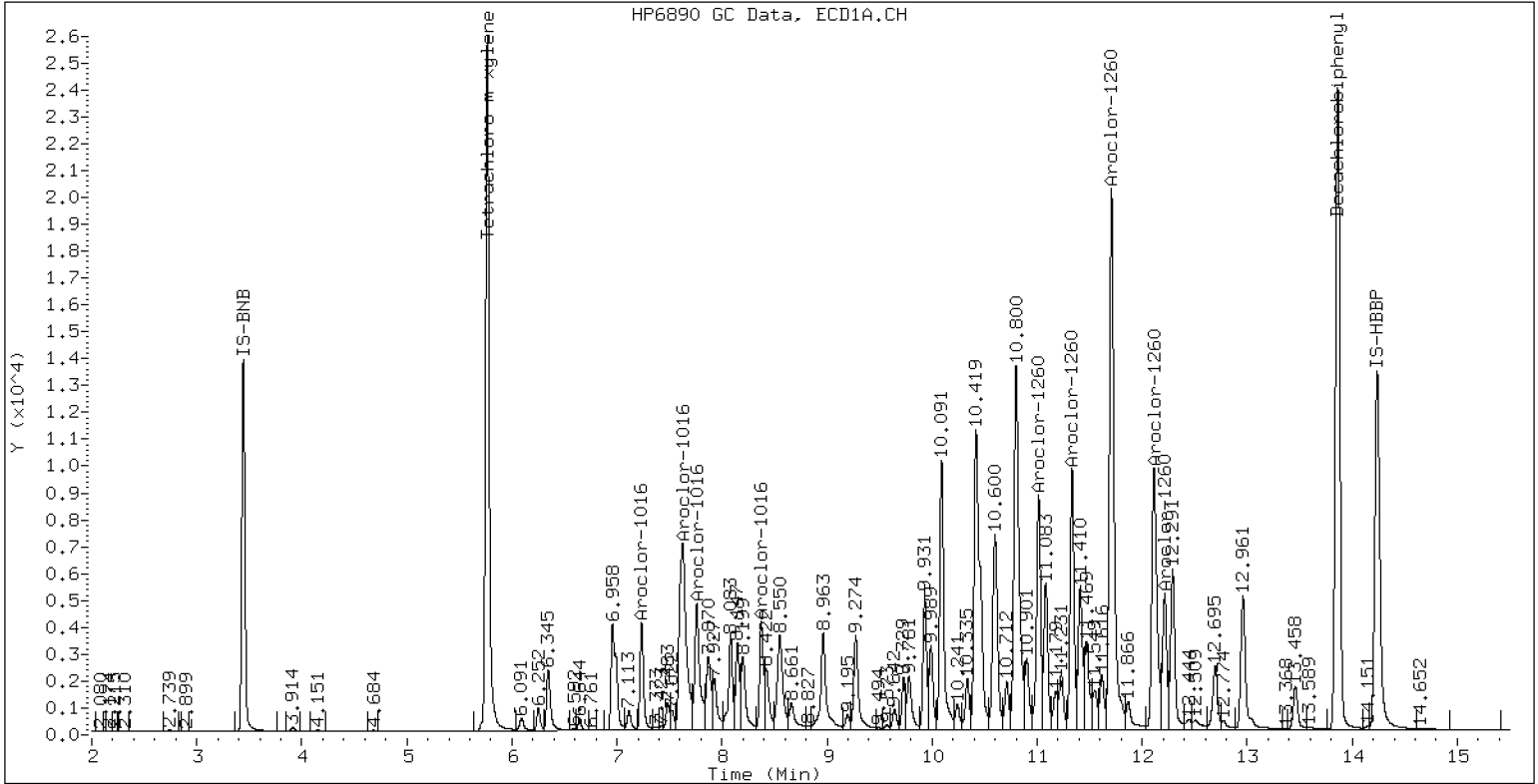
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 1.0PPMAR1660

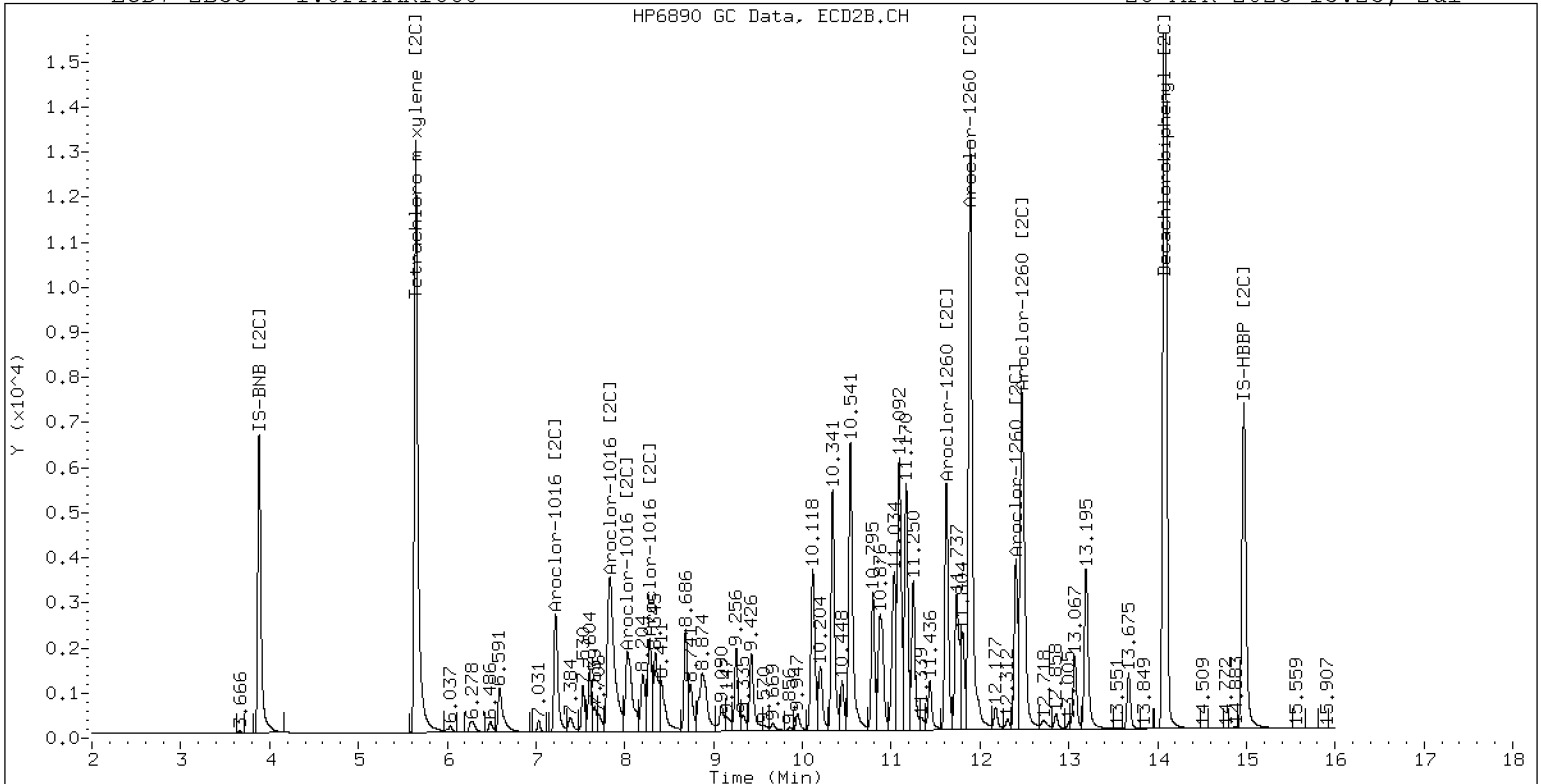
28-APR-2023 13:23, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 1.0PPMAR1660

28-APR-2023 13:23, 2u1



ZB-35 Manual Integration: NO

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282308ECD7.D  
Data file 2: /230428.b/230428.b/04282308ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: AR1660.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660  
Client ID:  
Injection Date: 28-APR-2023 13:43  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	134919	5.650	-0.000	78249	16.1	15.7	2.7	Tetrachloro-m-xylene
13.863	0.001	175853	14.084	0.001	126789	16.4	15.9	3.2	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	573437	3.1
Hexabromobiphenyl	745660	986934	32.4
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	355634	2.1
Hexabromobiphenyl	429949	491821	14.4

\* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.237	0.001	24440	110.2	1	7.225	0.004	19505	101.3
Aroclor-1016	2	7.647	0.019	57071	97.1	2	7.872	0.027	37166	97.6
Aroclor-1016	3	7.769	0.007	41746	104.9	3	8.064	0.010	23376	97.9
Aroclor-1016	4	8.384	0.008	21846	105.2	4	8.290	0.010	18078	103.6
Total CollAve (4 peaks):				104.4		Total Col2Ave (4 peaks):				100.1 RPD = 4
Corrected Ave (3 peaks):				102.4		Corrected Ave (3 peaks):				98.9 RPD = 3
CalAmt %D:				4.4		CalAmt %D:				0.1
Aroclor-1260	1	11.021	0.004	53846	96.6	1	11.627	0.003	34201	97.7
Aroclor-1260	2	11.338	0.004	55078	97.4	2	11.897	0.005	90569	98.6
Aroclor-1260	3	11.717	0.007	145430	99.1	3	12.408	0.002	19492	93.2
Aroclor-1260	4	12.123	0.008	71854	98.8	4	12.480	0.005	60947	97.4
Aroclor-1260	5	12.220	0.004	33762	101.2	NS	---			----
Total CollAve (5 peaks):				98.6		Total Col2Ave (4 peaks):				96.8 RPD = 2
Corrected Ave (4 peaks):				98.0		Corrected Ave (3 peaks):				96.1 RPD = 2
CalAmt %D:				-1.4		CalAmt %D:				-3.2

Total PCB Area Coll (5.866 - 13.762) = 1625145 Coll Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 833910 Col2 Total PCB = 0.2 ppm\*

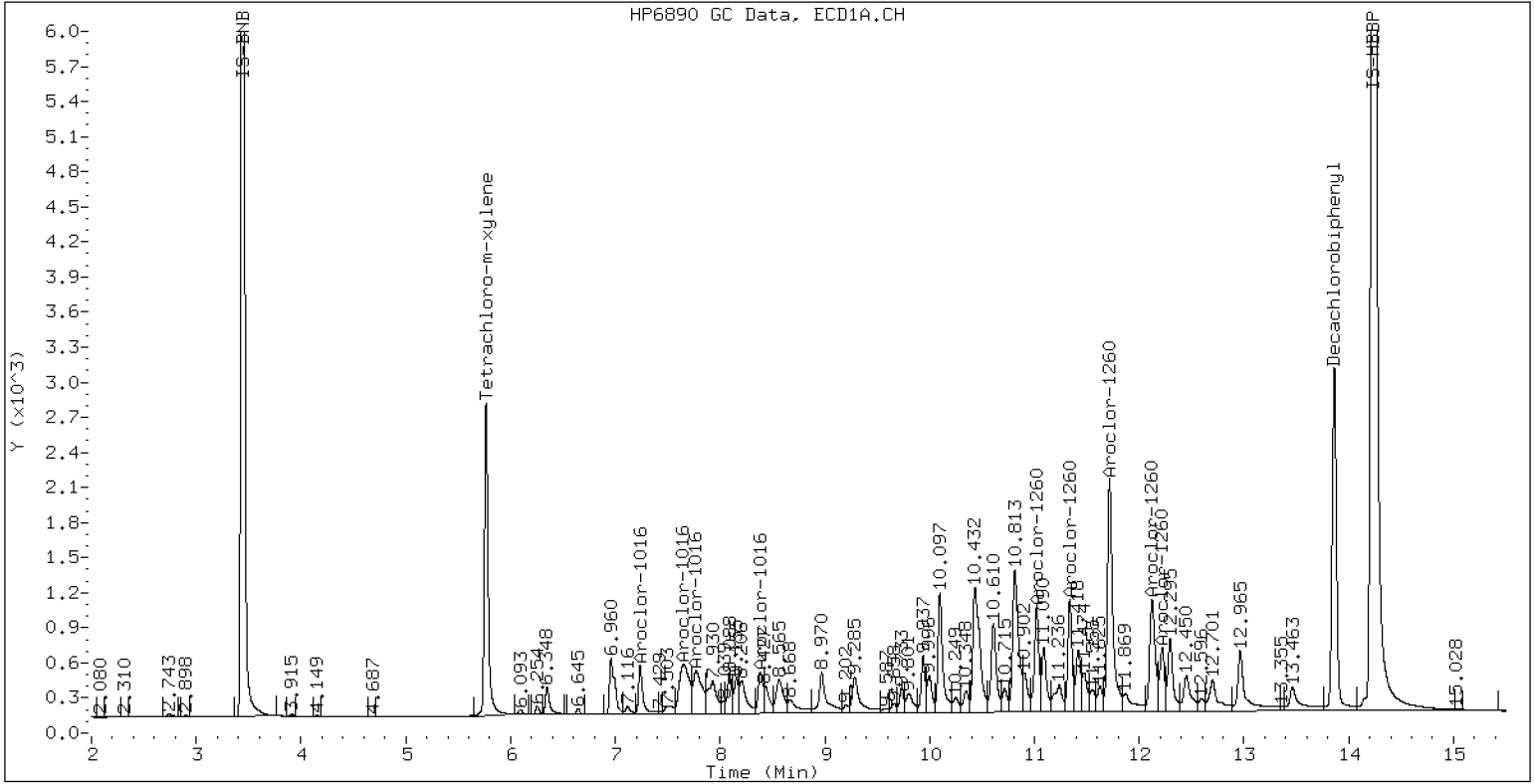
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 0.1PPMAR1660

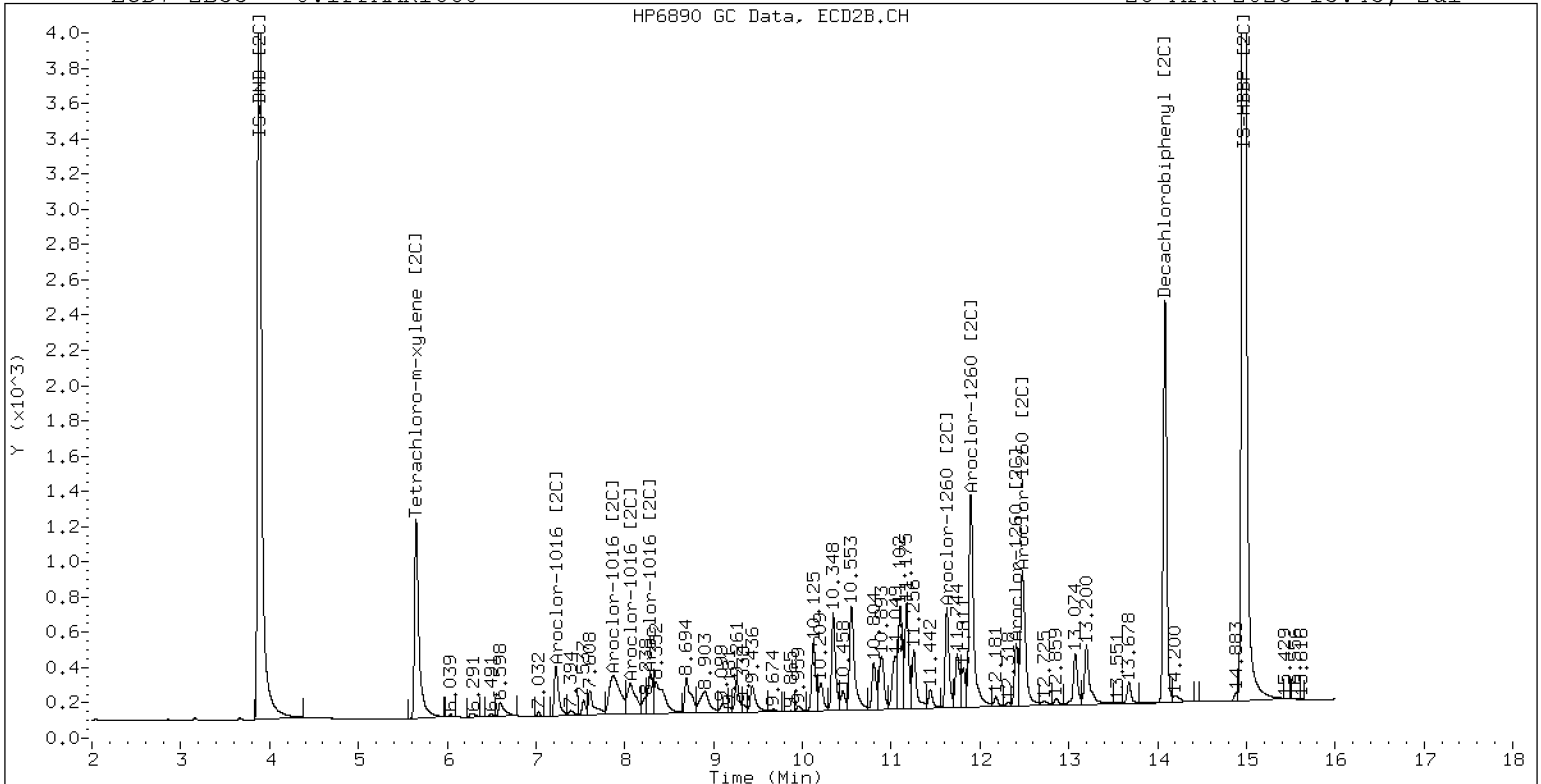
28-APR-2023 13:43, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 0.1PPMAR1660

28-APR-2023 13:43, 2u1

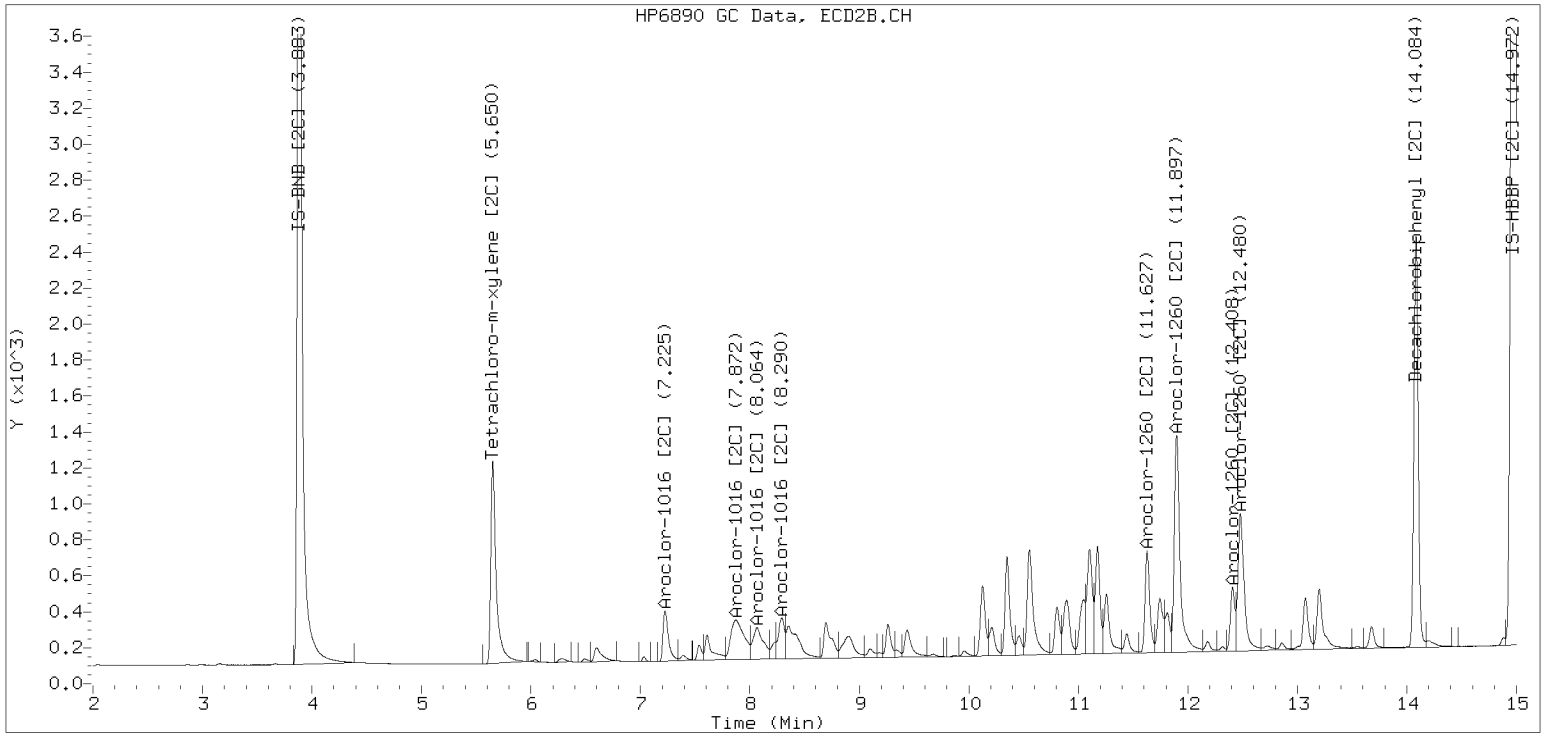


ZB-35 Manual Integration: YES

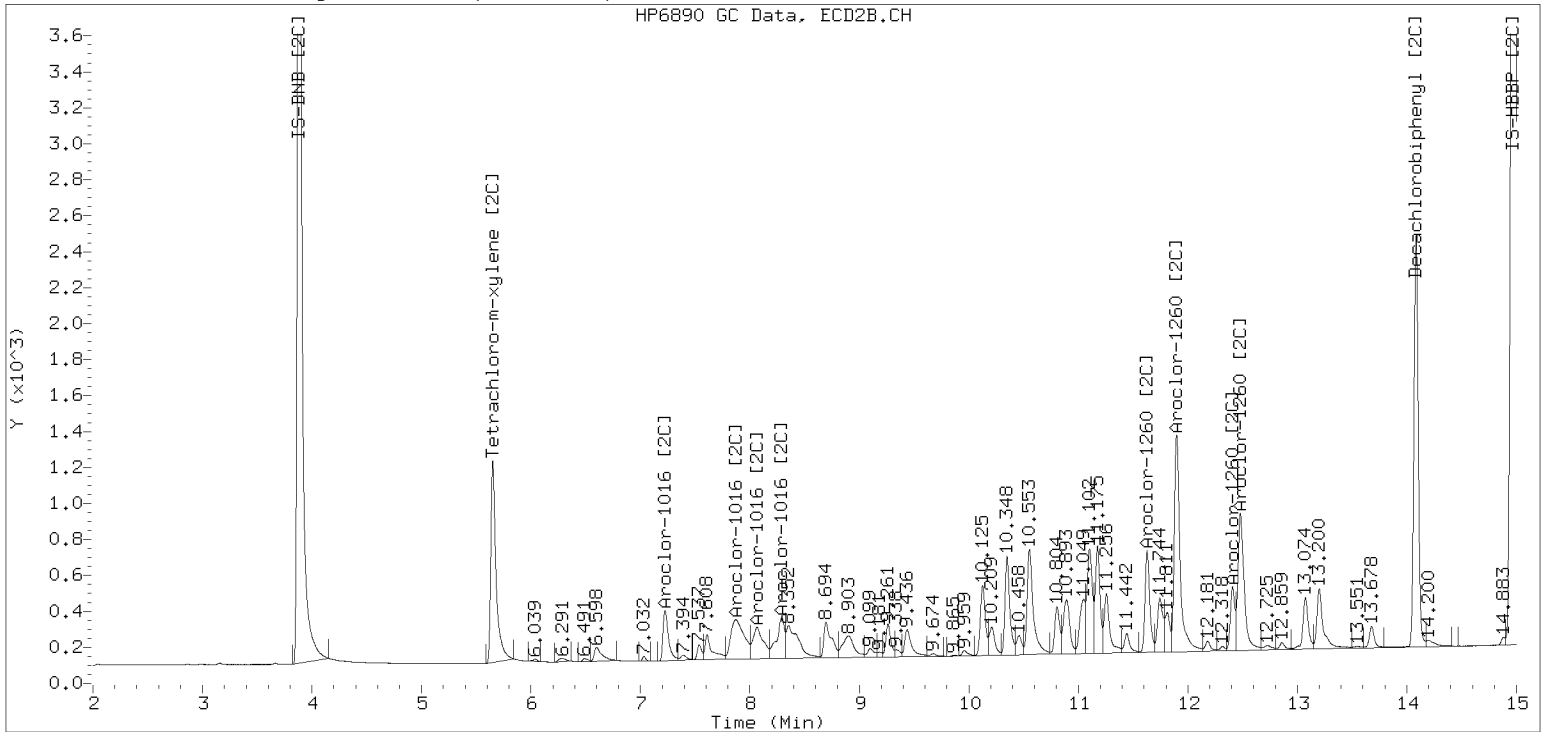
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282308ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282309ECD7.D  
Data file 2: /230428.b/230428.b/04282309ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: AR1660.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660  
Client ID:  
Injection Date: 28-APR-2023 14:04  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	-0.000	662131	5.650	-0.001	385316	78.8	77.3	1.9	Tetrachloro-m-xylene
13.862	-0.000	801241	14.083	-0.001	644223	74.5	79.6	6.6	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	574692	3.3
Hexabromobiphenyl	745660	992303	33.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	354825	1.8
Hexabromobiphenyl	429949	500074	16.3

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)



ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.235	0.000	106092	477.4	1	7.221	0.000	90096	468.9	
Aroclor-1016	2	7.628	0.000	326907	554.8	2	7.844	0.000	197556	520.1	
Aroclor-1016	3	7.763	0.000	176106	441.6	3	8.055	0.000	102895	431.9	
Aroclor-1016	4	8.376	0.000	105721	508.0	4	8.281	0.000	73793	423.8	
Total CollAve (4 peaks):				495.5		Total Col2Ave (4 peaks):				461.2	RPD = 7
Corrected Ave (3 peaks):				475.7		Corrected Ave (3 peaks):				441.5	RPD = 7

CalAmt %D: -0.9

CalAmt %D: -7.8

Aroclor-1260	1	11.017	0.000	257721	460.0	1	11.624	0.000	164199	461.5	
Aroclor-1260	2	11.333	0.000	265544	467.2	2	11.892	0.000	437446	468.5	
Aroclor-1260	3	11.710	0.000	691159	468.6	3	12.407	0.000	104099	489.6	
Aroclor-1260	4	12.116	0.000	354604	484.9	4	12.475	0.000	298513	469.2	
Aroclor-1260	5	12.216	0.000	158192	471.4	NS	---			----	
Total CollAve (5 peaks):				470.4		Total Col2Ave (4 peaks):				472.2	RPD = 0
Corrected Ave (4 peaks):				466.8		Corrected Ave (3 peaks):				466.4	RPD = 0

CalAmt %D: -5.9

CalAmt %D: -5.6

Total PCB Area Coll (5.866 - 13.762) = 7184678 Coll Total PCB = 1.0 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 3991357 Col2 Total PCB = 1.0 ppm\*

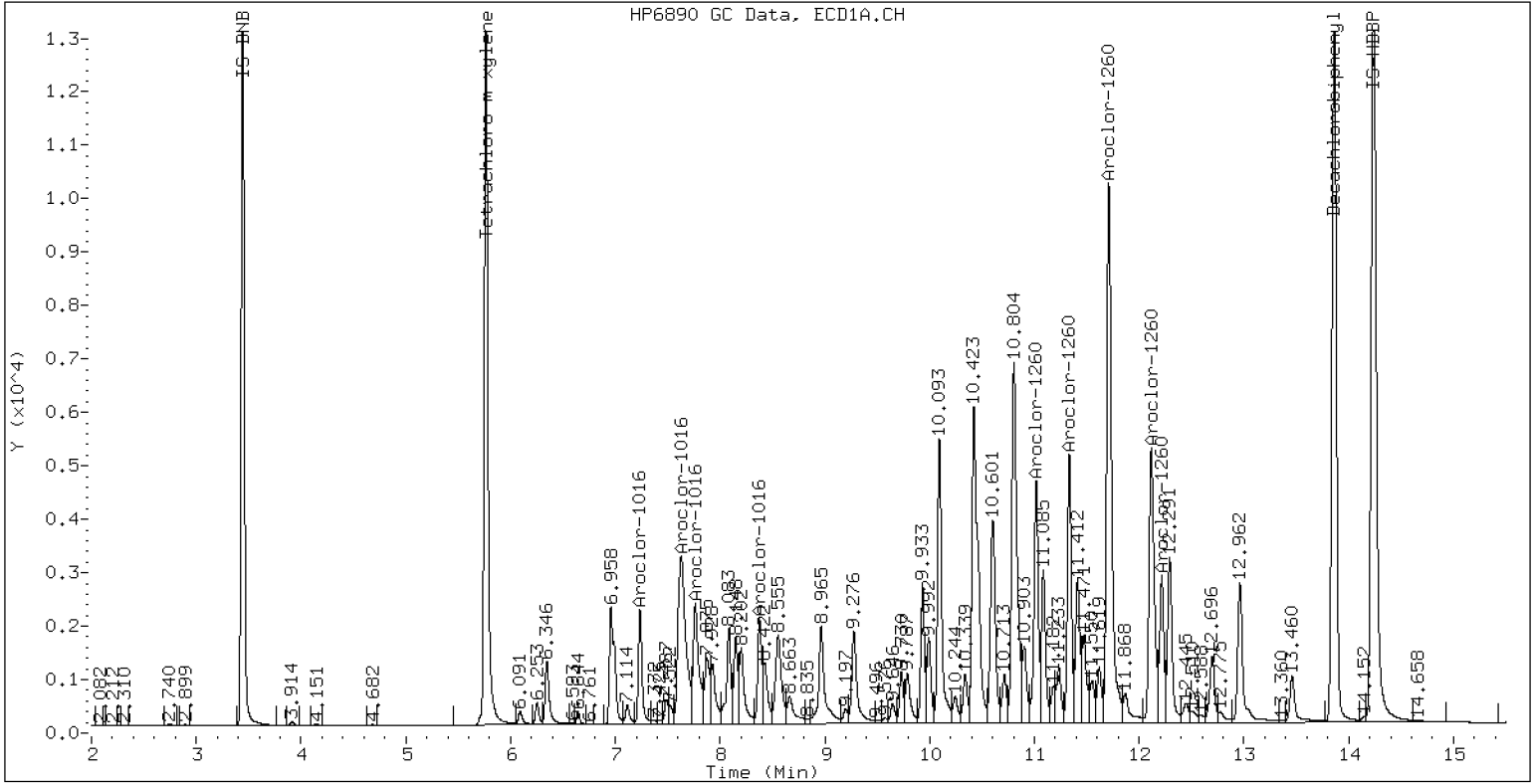
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 0.5PPMAR1660

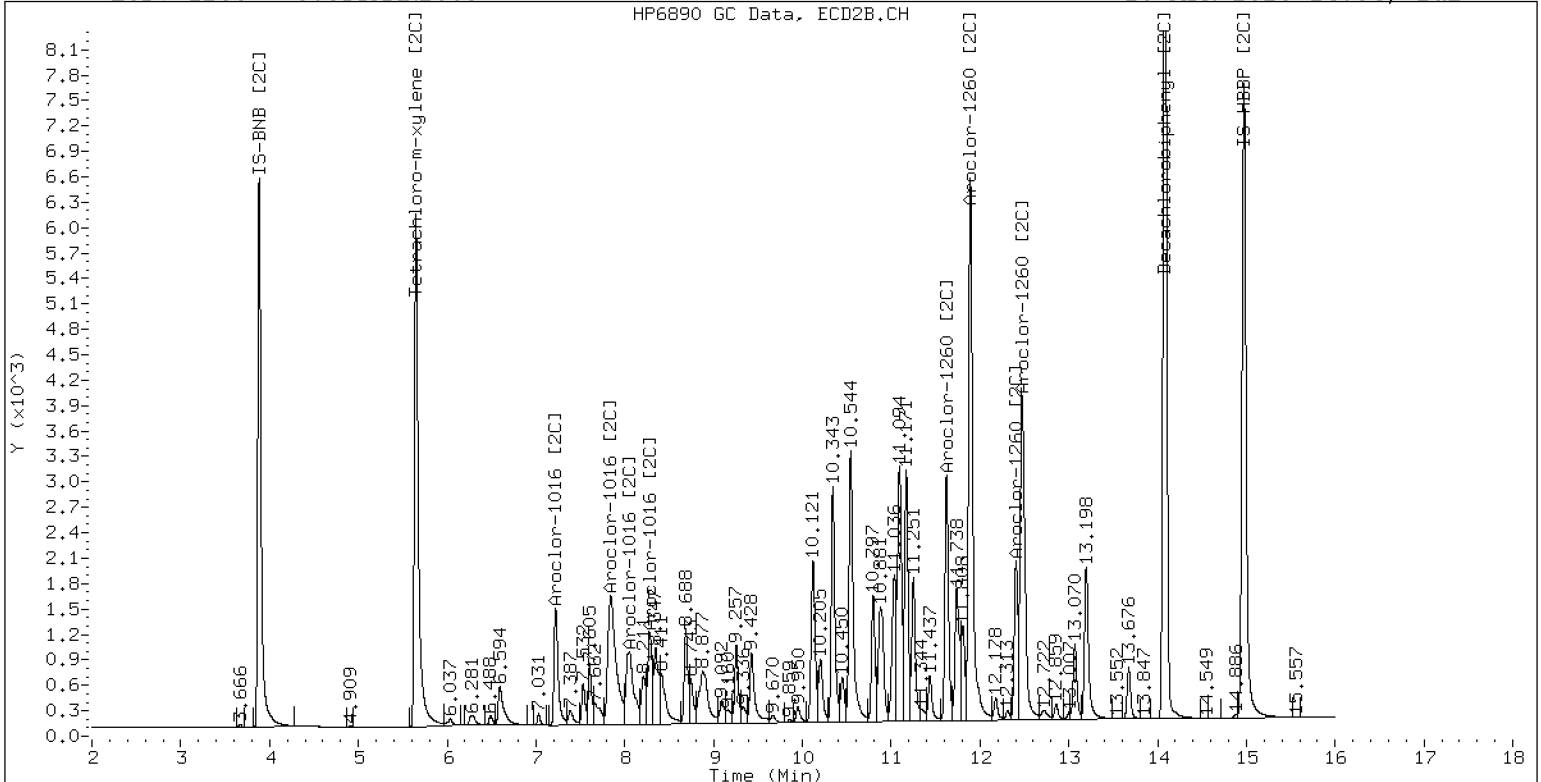
28-APR-2023 14:04, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 0.5PPMAR1660

28-APR-2023 14:04, 2u1

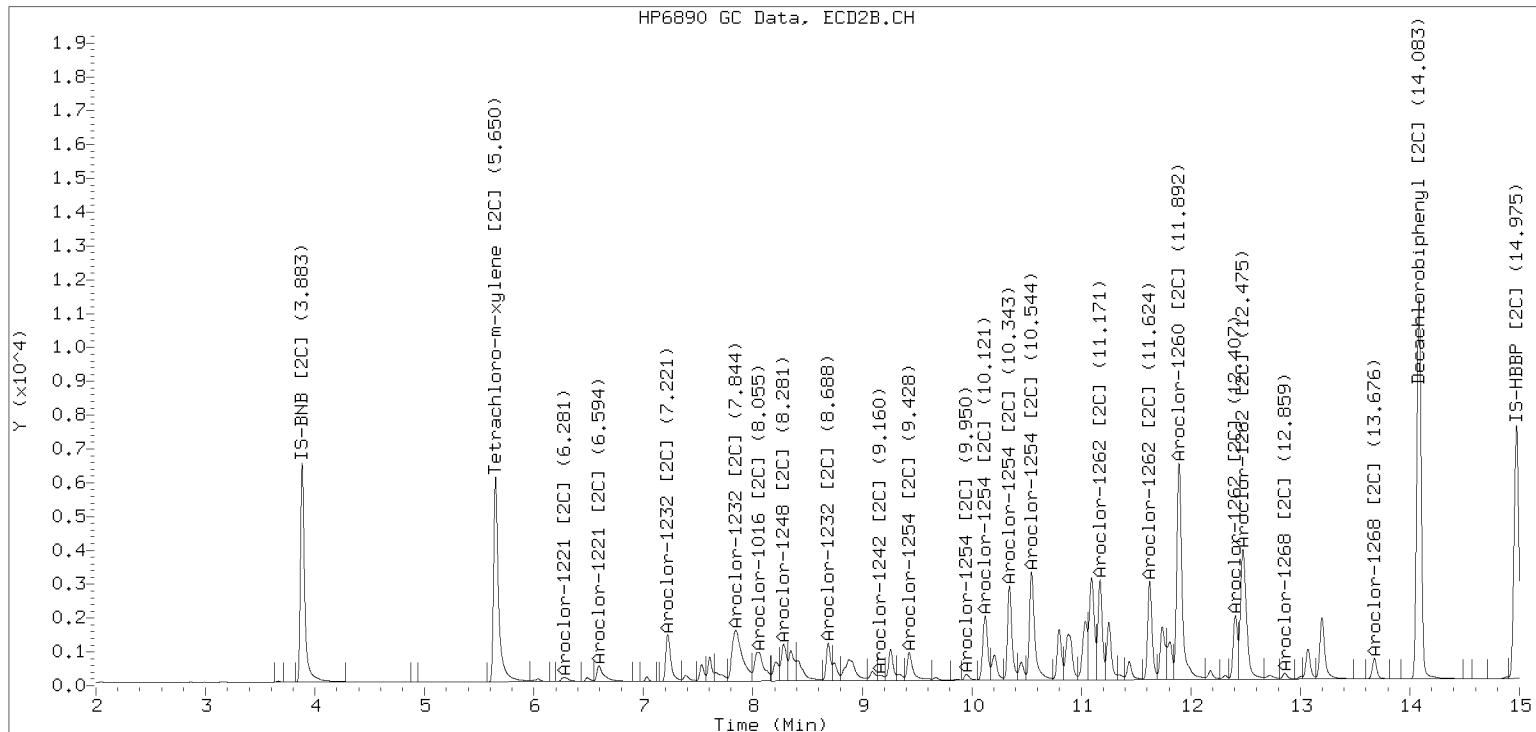


ZB-35 Manual Integration: NO

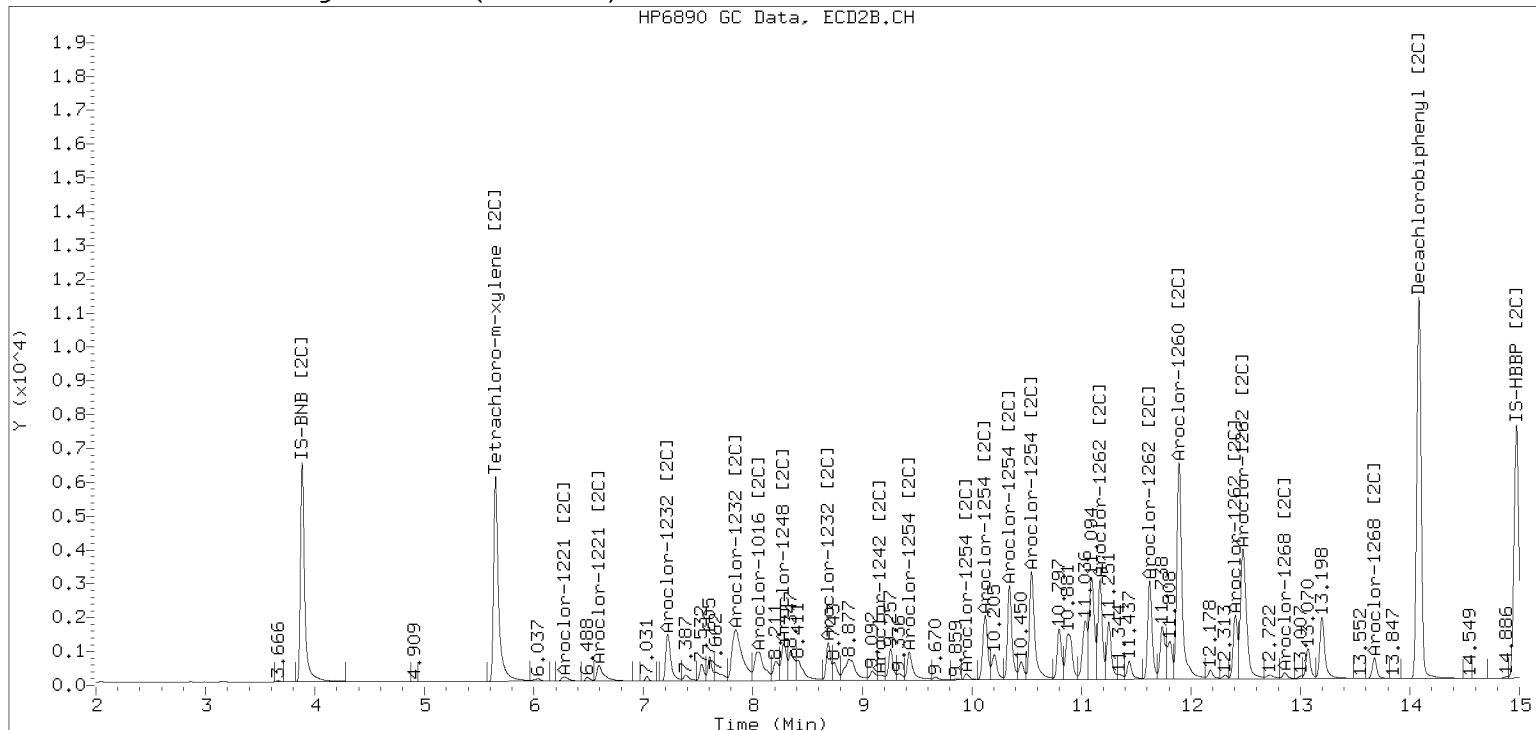
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282309ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282310ECD7.D  
 Data file 2: /230428.b/230428.b/04282310ECD7.D  
 Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
 Compound Sublist: AR1242.sub  
 Instrument, Inj. Vol.: ecd7.i, 2ul  
 Quant Method: Internal Std

ARI ID: 0.25PPMAR1242  
 Client ID:  
 Injection Date: 28-APR-2023 14:25  
 Report Date: 05/01/2023 12:24  
 Matrix: NONE  
 Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	402017	5.650	-0.000	234482	47.7	46.8	1.8	Tetrachloro-m-xylene
13.862	0.000	418478	14.083	-0.000	317420	35.9	38.5	7.0	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	577026	3.7
Hexabromobiphenyl	745660	1074625	44.1

Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	356744	2.4
Hexabromobiphenyl	429949	508972	18.4

\* Standard Areas taken from Initial Cal Level 3  
 Initial Calibration Date: 28-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col ZB35 Col

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1242	1	7.236	0.000	45012	250.0	1	7.222	0.000	38749	250.0	
Aroclor-1242	2	7.639	0.000	123039	250.0	2	7.859	0.000	77516	250.0	
Aroclor-1242	3	8.381	0.000	41377	250.0	3	9.167	0.000	26808	250.0	
Aroclor-1242	4	8.560	0.000	61228	250.0	4	9.603	0.000	27519	250.0	
Total Col1Ave (4 peaks):				250.0	Total Col2Ave (4 peaks):				250.0	RPD = 0	
Corrected Ave (3 peaks):				250.0	Corrected Ave (3 peaks):				250.0	RPD = 0	

Total PCB Area Col1 (5.866 - 13.762) = 1181918 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 622927 Col2 Total PCB = 0.2 ppm\*

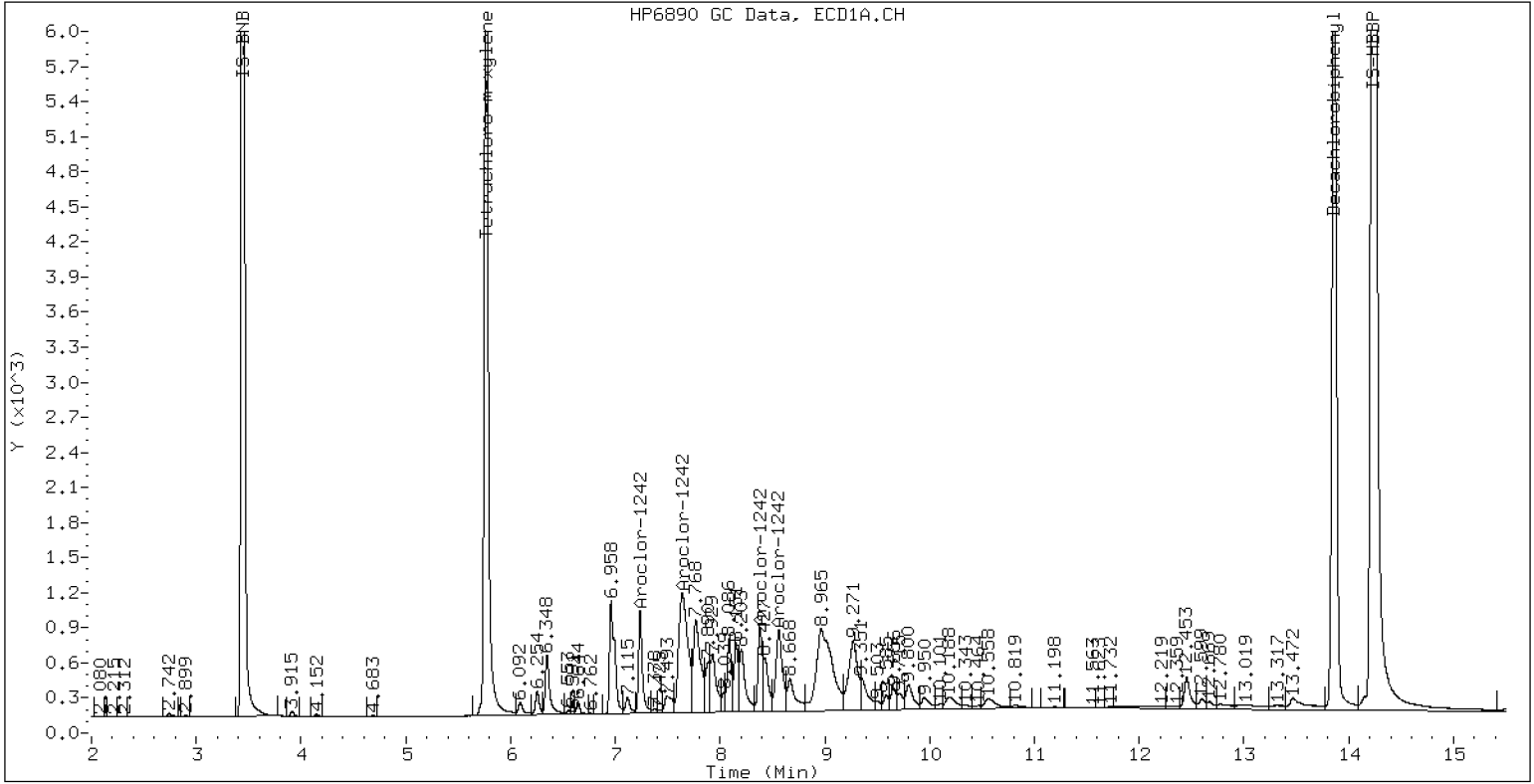
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1242

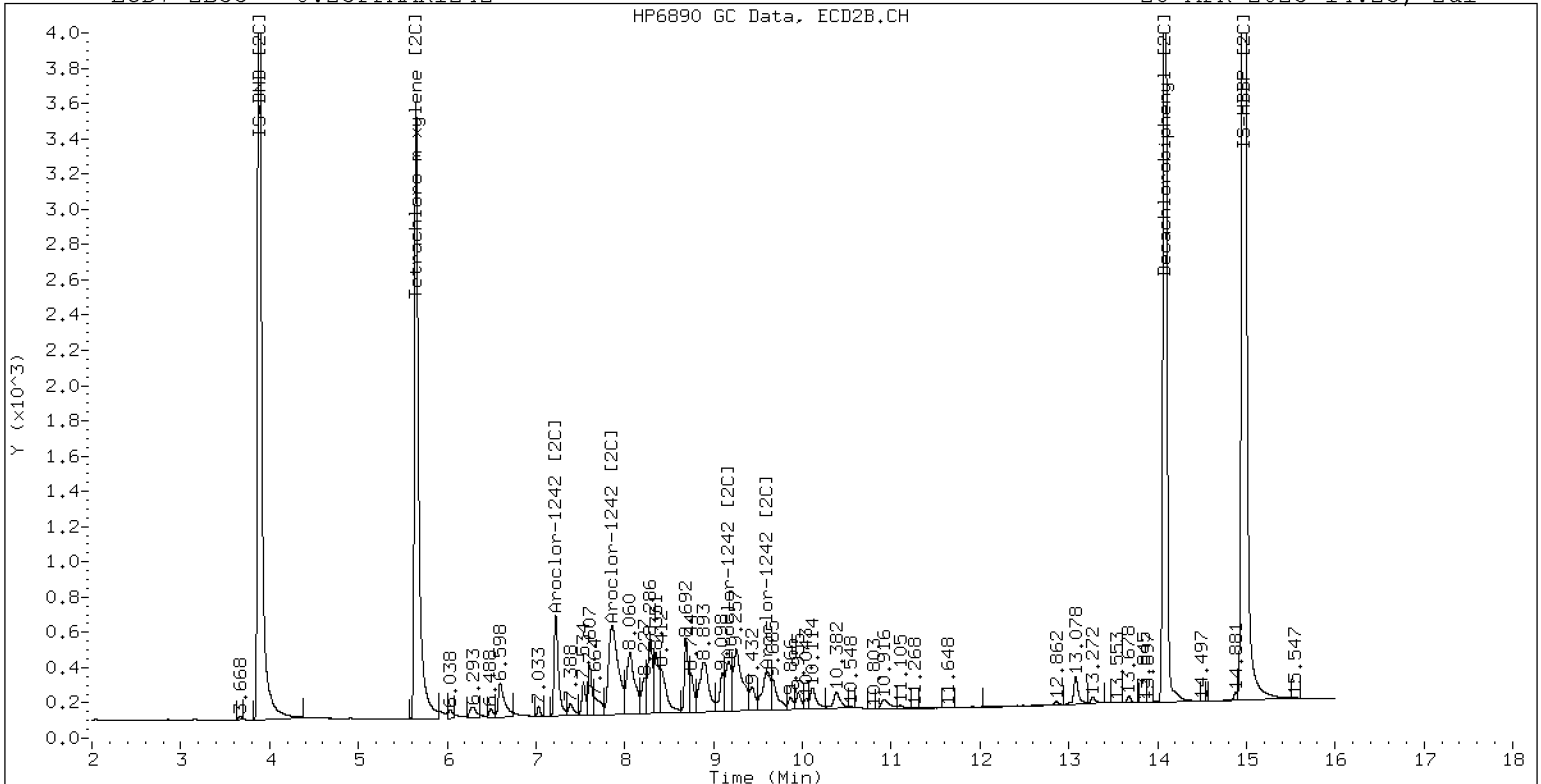
28-APR-2023 14:25, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 0.25PPMAR1242

28-APR-2023 14:25, 2ul



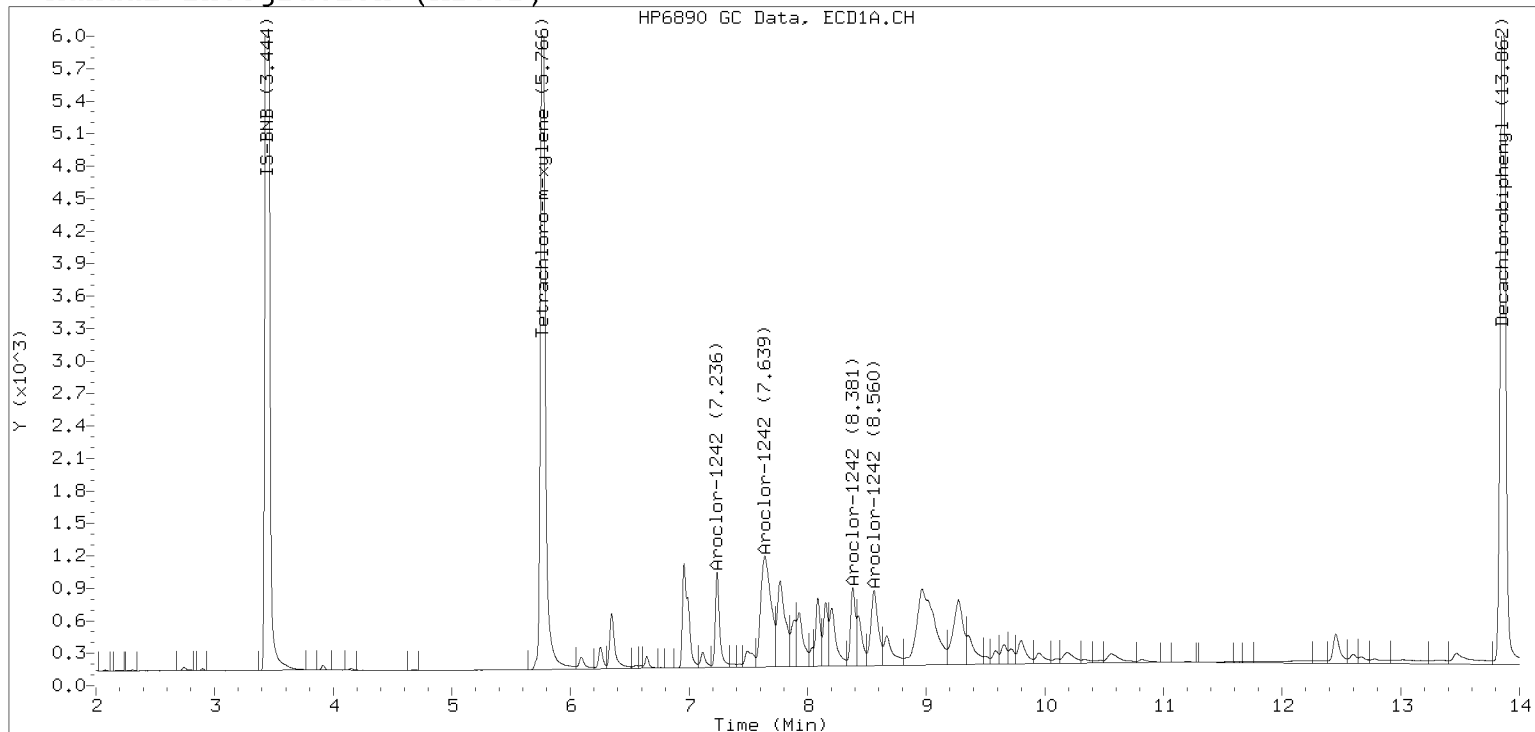
ZB-35 Manual Integration: YES

# Manual Peak Adjustment, ZB-5

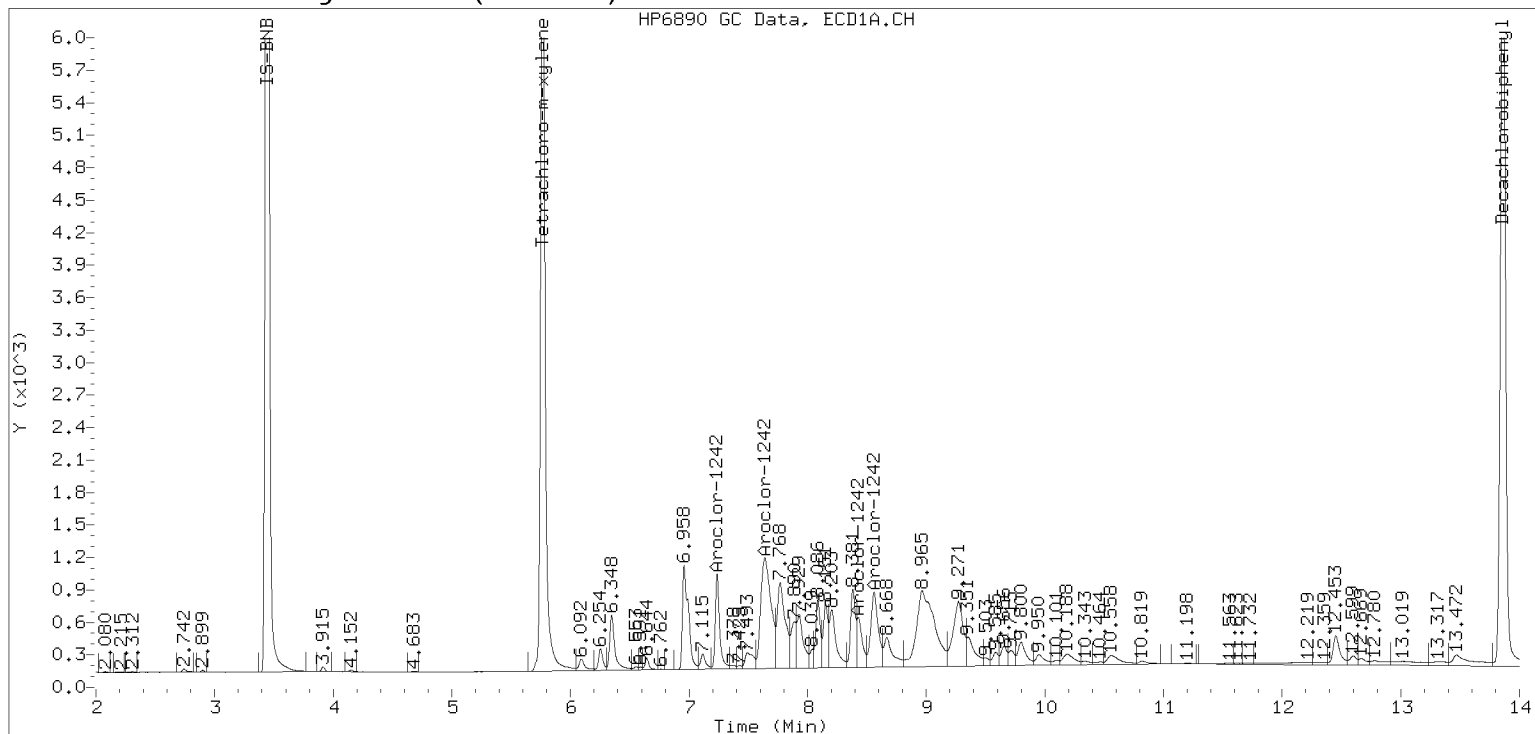
Datafile: ecd7.i/230428.b/04282310ECD7.D

Injection Date: 28-APR-2023 14:25

## Manual Integration (After)



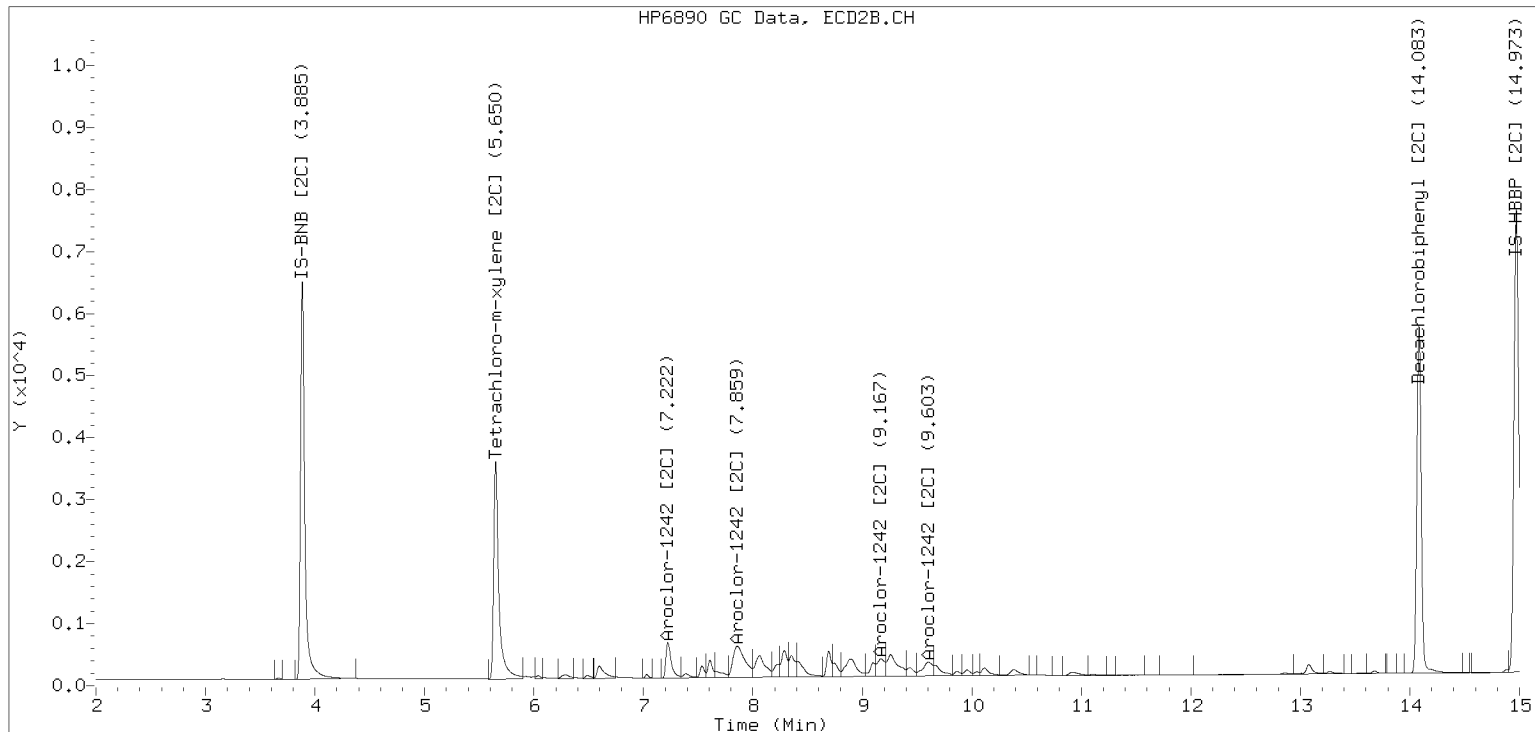
## Processed Integration (Before)



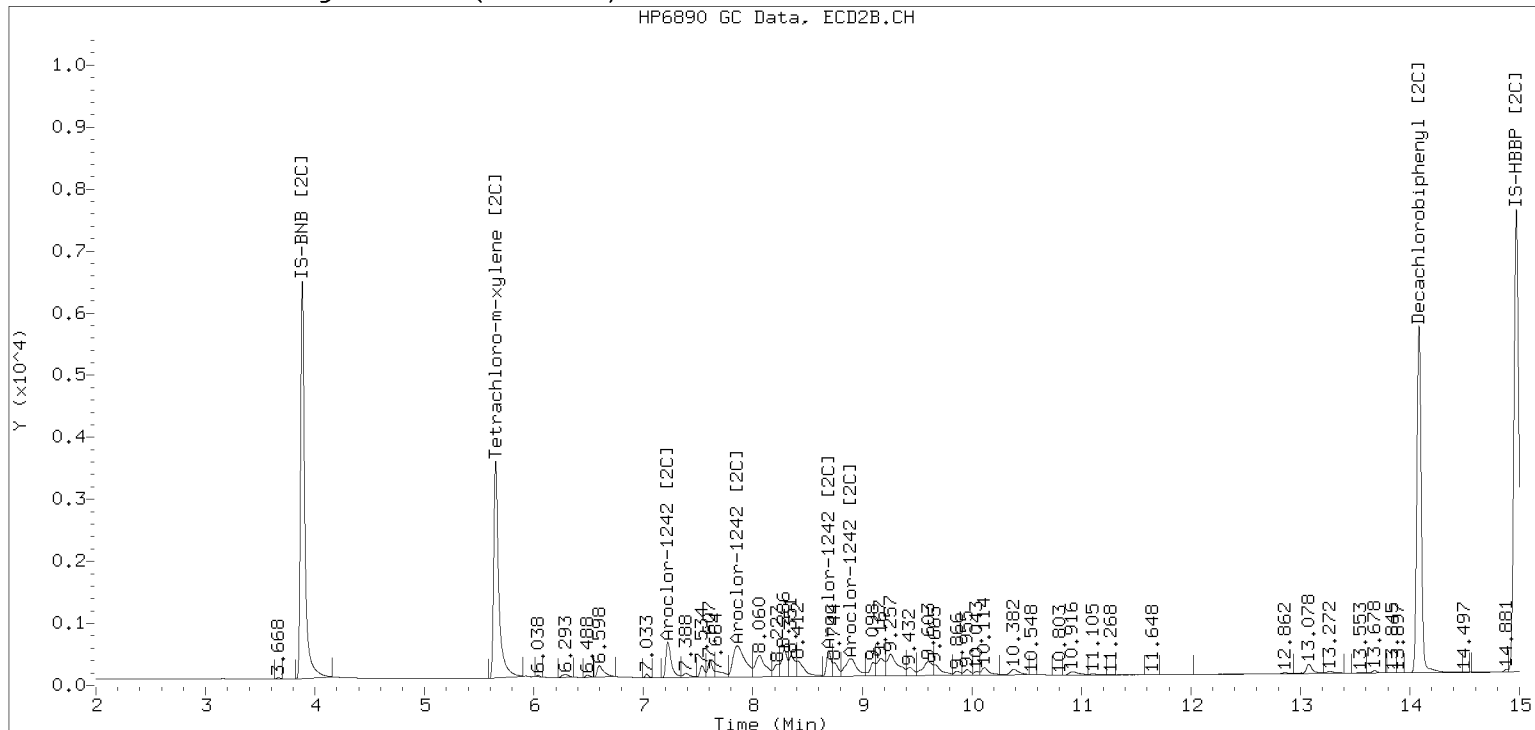
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282310ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282311ECD7.D  
Data file 2: /230428.b/230428.b/04282311ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: AR1248.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 0.25PPMAR1248  
Client ID:  
Injection Date: 28-APR-2023 14:46  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	327875	5.650	-0.001	186683	38.8	38.0	2.1	Tetrachloro-m-xylene
13.862	0.000	430037	14.083	-0.001	329800	37.0	39.2	5.9	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	578229	3.9
Hexabromobiphenyl	745660	1073041	43.9

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	350006	0.4
Hexabromobiphenyl	429949	519197	20.8

\* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	8.379	0.000	69843	250.0	1	8.285	0.000	45908	250.0
Aroclor-1248	2	8.559	0.000	92613	250.0	2	8.691	0.000	40408	250.0
Aroclor-1248	3	8.964	0.000	276416	250.0	3	9.164	0.000	49564	250.0
Aroclor-1248	4	9.271	0.000	145162	250.0	4	9.594	0.000	52871	250.0
Total Col1Ave (4 peaks):				250.0	Total Col2Ave (4 peaks):				250.0	RPD = 0
Corrected Ave (3 peaks):				250.0	Corrected Ave (3 peaks):				250.0	RPD = 0

Total PCB Area Col1 (5.866 - 13.762) = 1492838 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 815809 Col2 Total PCB = 0.2 ppm\*

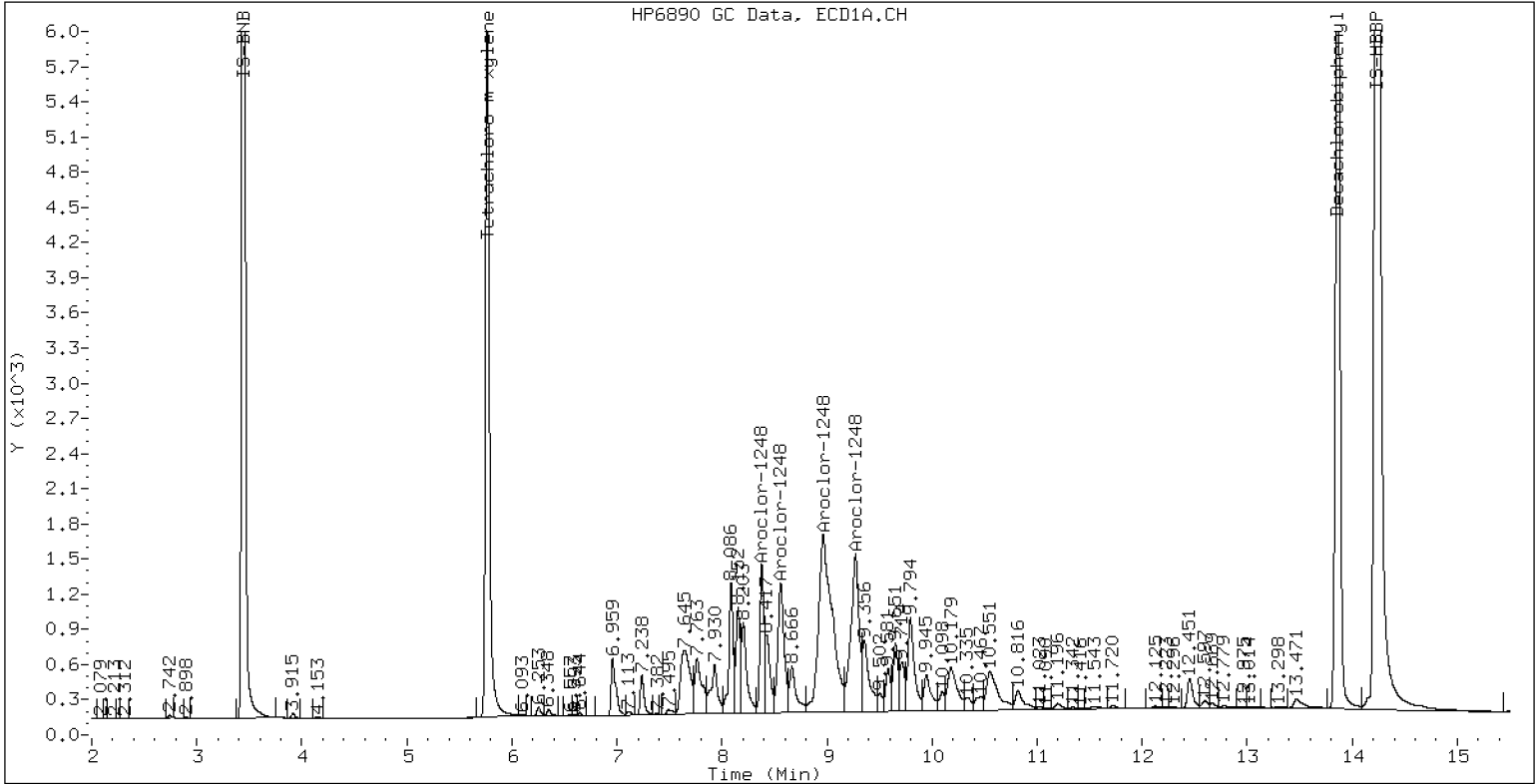
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1248

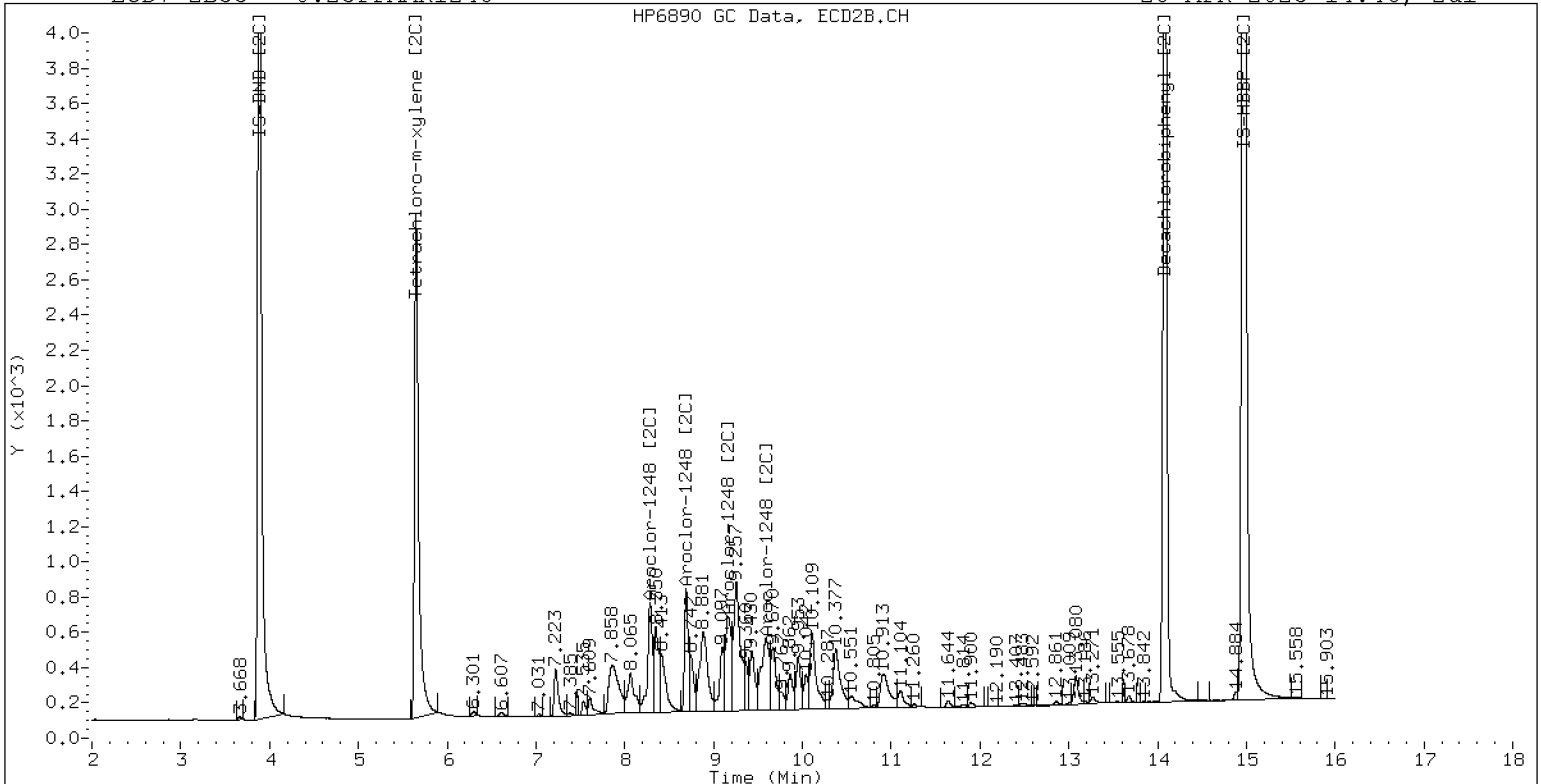
28-APR-2023 14:46, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 0.25PPMAR1248

28-APR-2023 14:46, 2ul



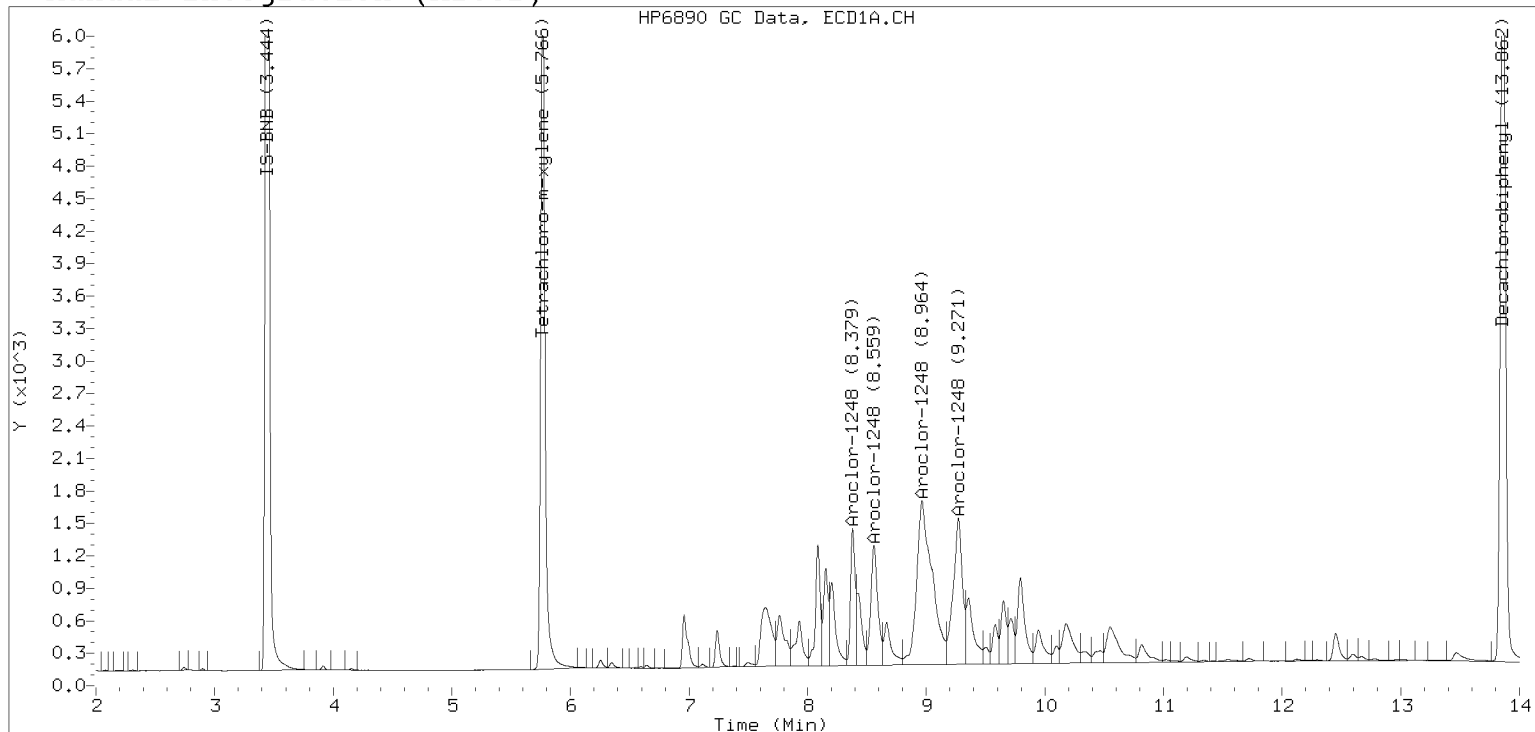
ZB-35 Manual Integration: YES

# Manual Peak Adjustment, ZB-5

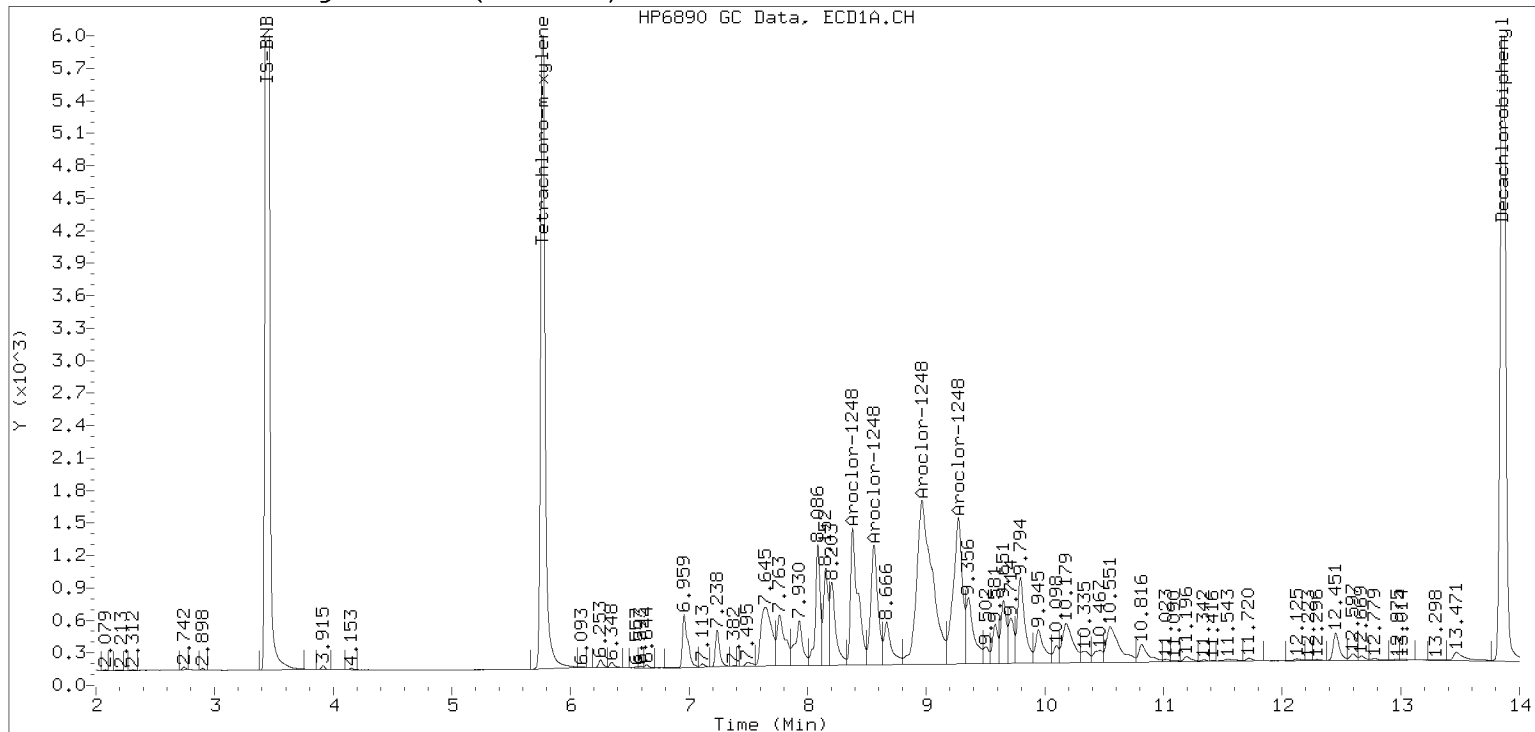
Datafile: ecd7.i/230428.b/04282311ECD7.D

Injection Date: 28-APR-2023 14:46

## Manual Integration (After)



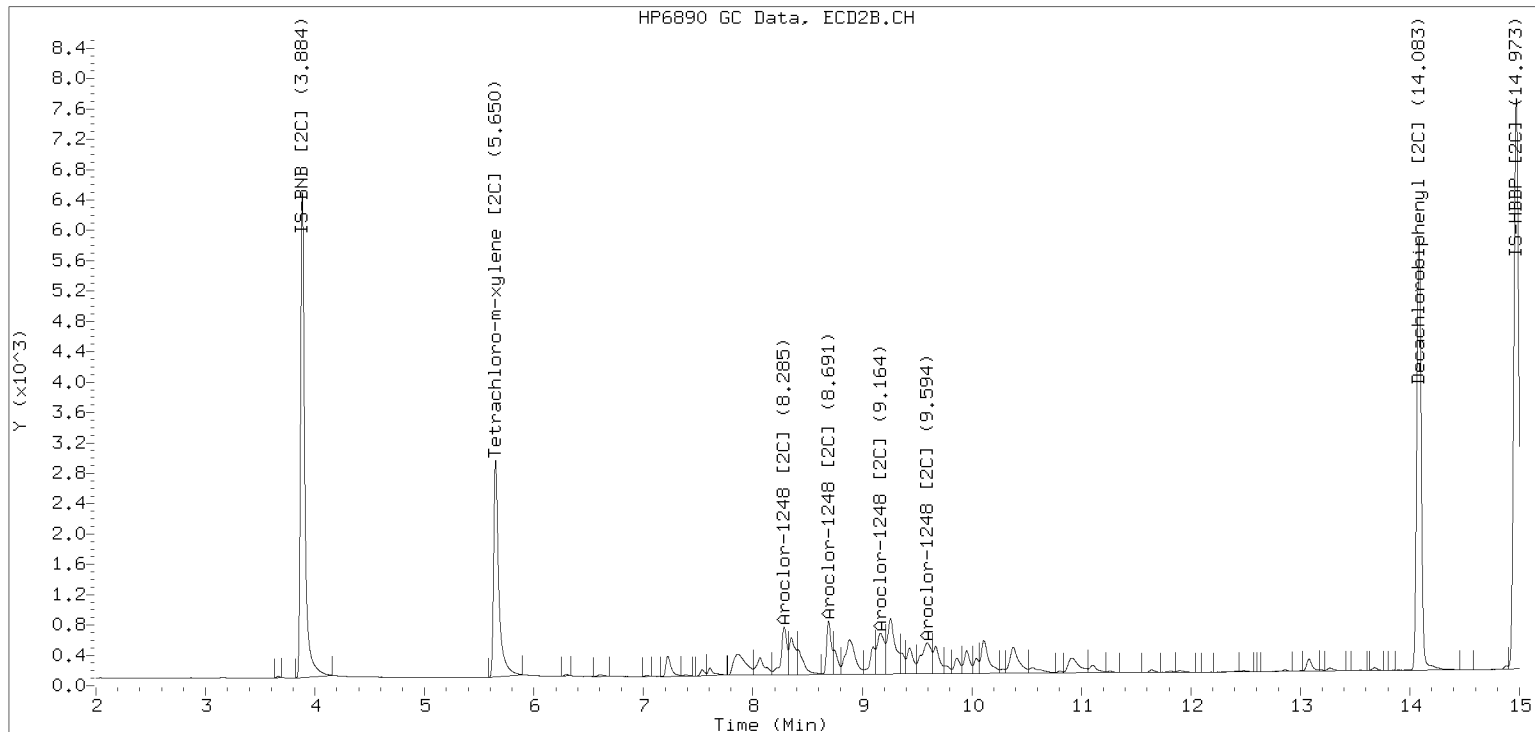
## Processed Integration (Before)



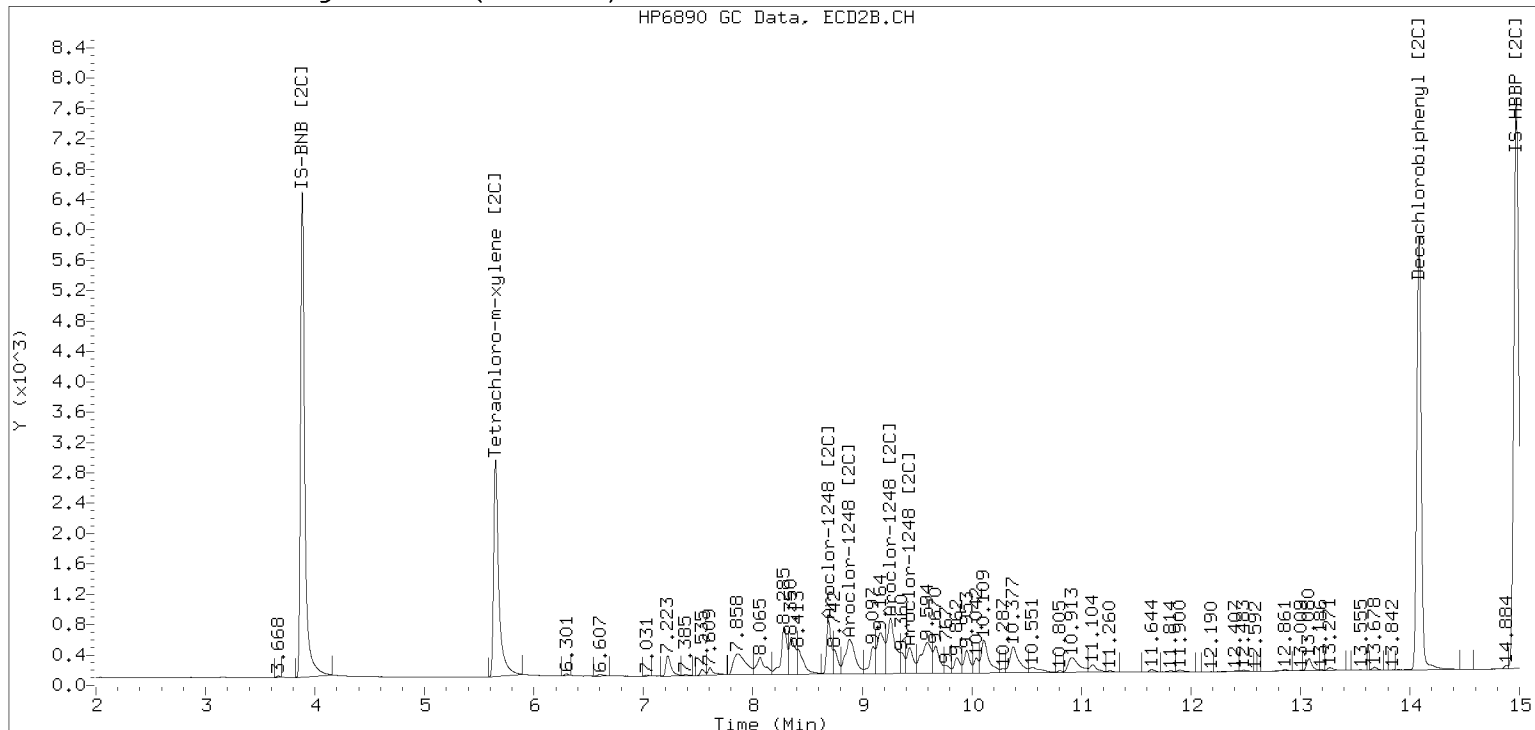
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282311ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282312ECD7.D  
Data file 2: /230428.b/230428.b/04282312ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: AR1254.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 0.25PPMAR1254  
Client ID:  
Injection Date: 28-APR-2023 15:07  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.767	0.001	328655	5.650	-0.000	184993	38.9	37.6	3.4	Tetrachloro-m-xylene
13.863	0.001	429537	14.084	0.000	334681	36.9	39.3	6.3	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	578576	4.0
Hexabromobiphenyl	745660	1074201	44.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	350778	0.7
Hexabromobiphenyl	429949	525817	22.3

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1254	1	9.276	0.000	156242	250.0	1	9.430	0.000	65566	250.0	
Aroclor-1254	2	9.358	0.000	74054	250.0	2	9.528	0.000	39960	250.0	
Aroclor-1254	3	9.648	0.000	98781	250.0	3	9.950	0.000	53074	250.0	
Aroclor-1254	4	9.790	0.000	200665	250.0	4	10.110	0.000	114903	250.0	
Aroclor-1254	5	10.168	0.000	105479	250.0	5	10.356	0.000	132058	250.0	
Total CollAve (5 peaks):				250.0		Total Col2Ave (5 peaks):				250.0	RPD = 0
Corrected Ave (4 peaks):				250.0		Corrected Ave (4 peaks):				250.0	RPD = 0

Total PCB Area Coll (5.866 - 13.762) = 2118035 Coll Total PCB = 0.3 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 1140217 Col2 Total PCB = 0.3 ppm\*

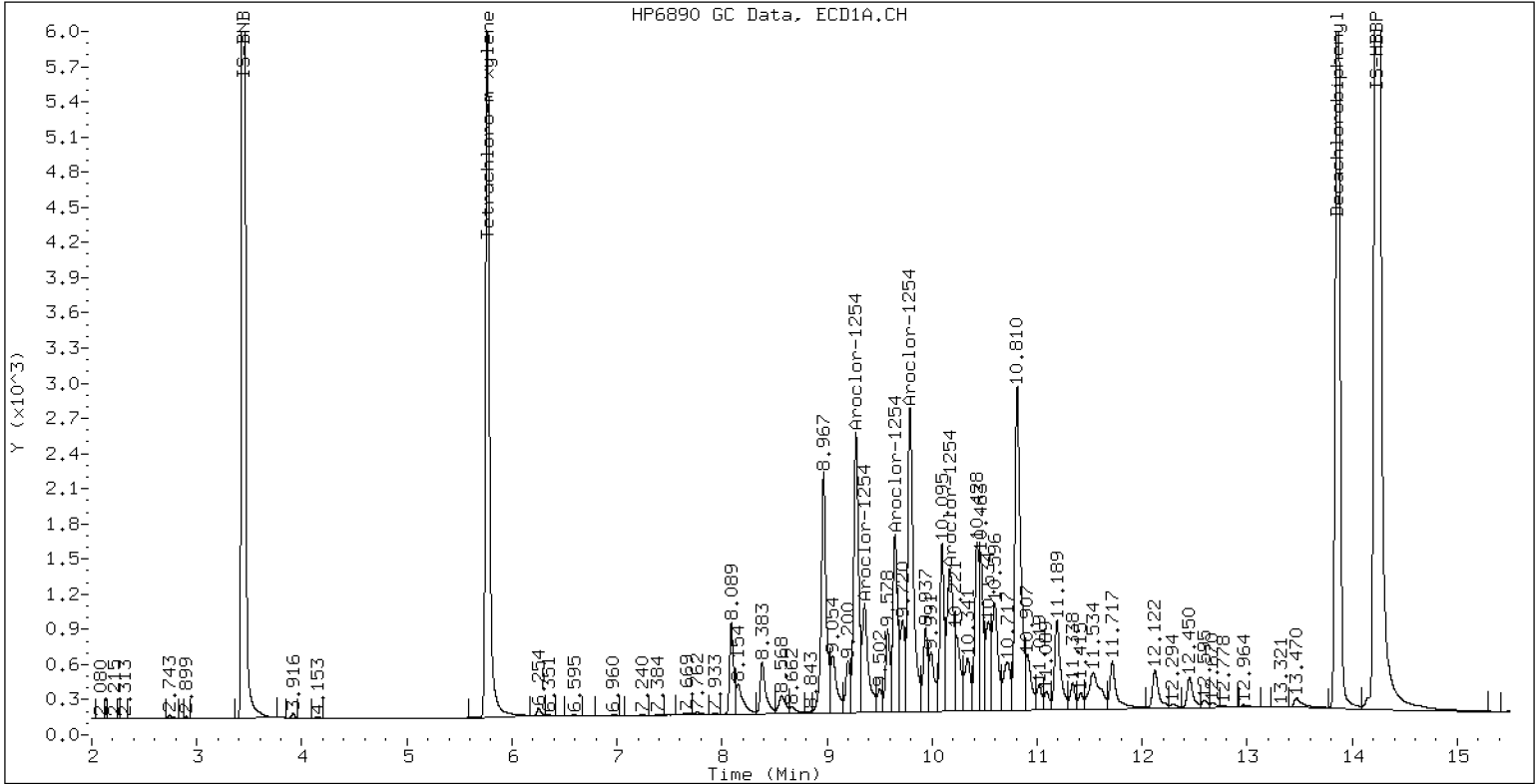
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1254

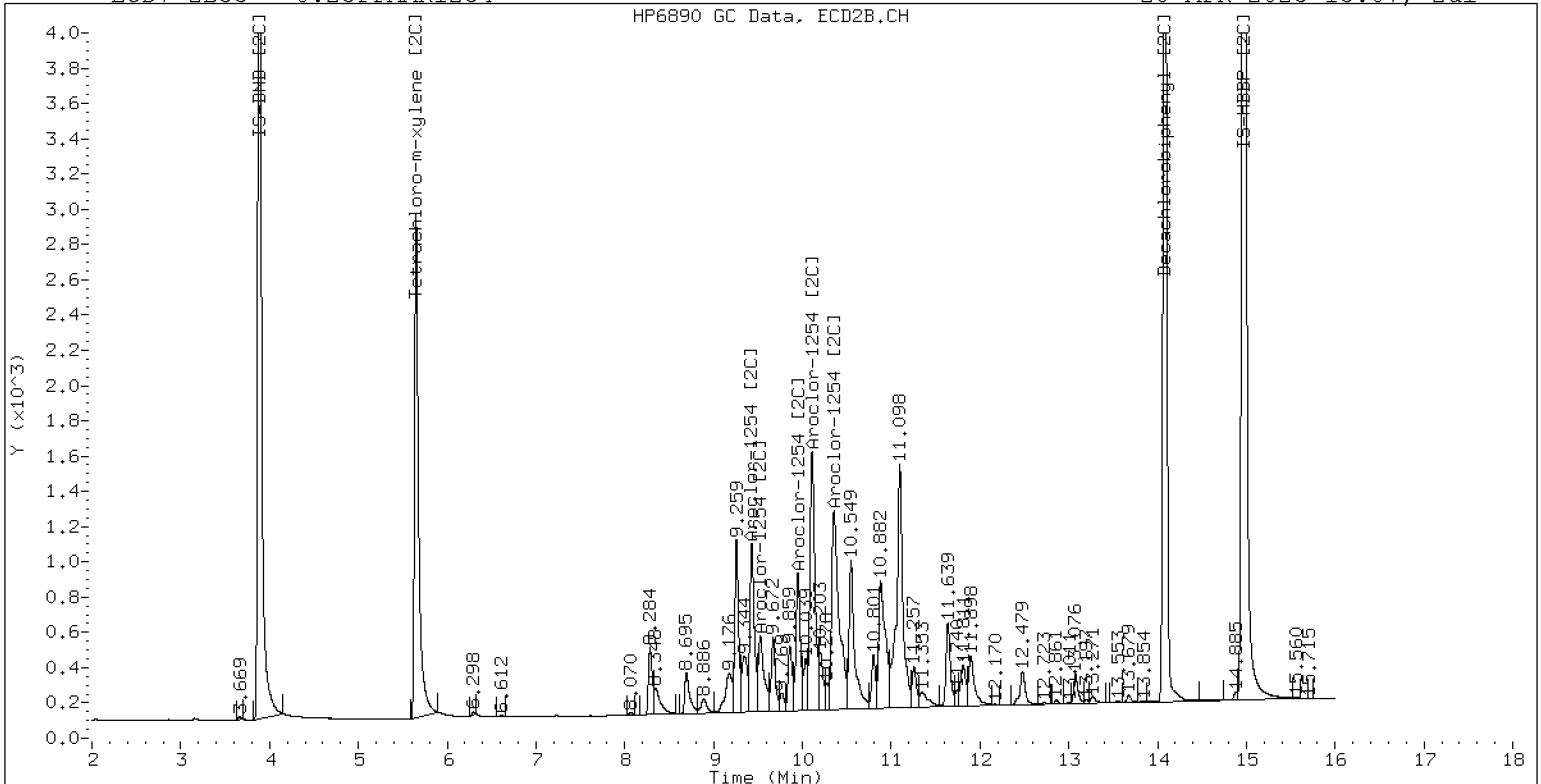
28-APR-2023 15:07, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 0.25PPMAR1254

28-APR-2023 15:07, 2ul



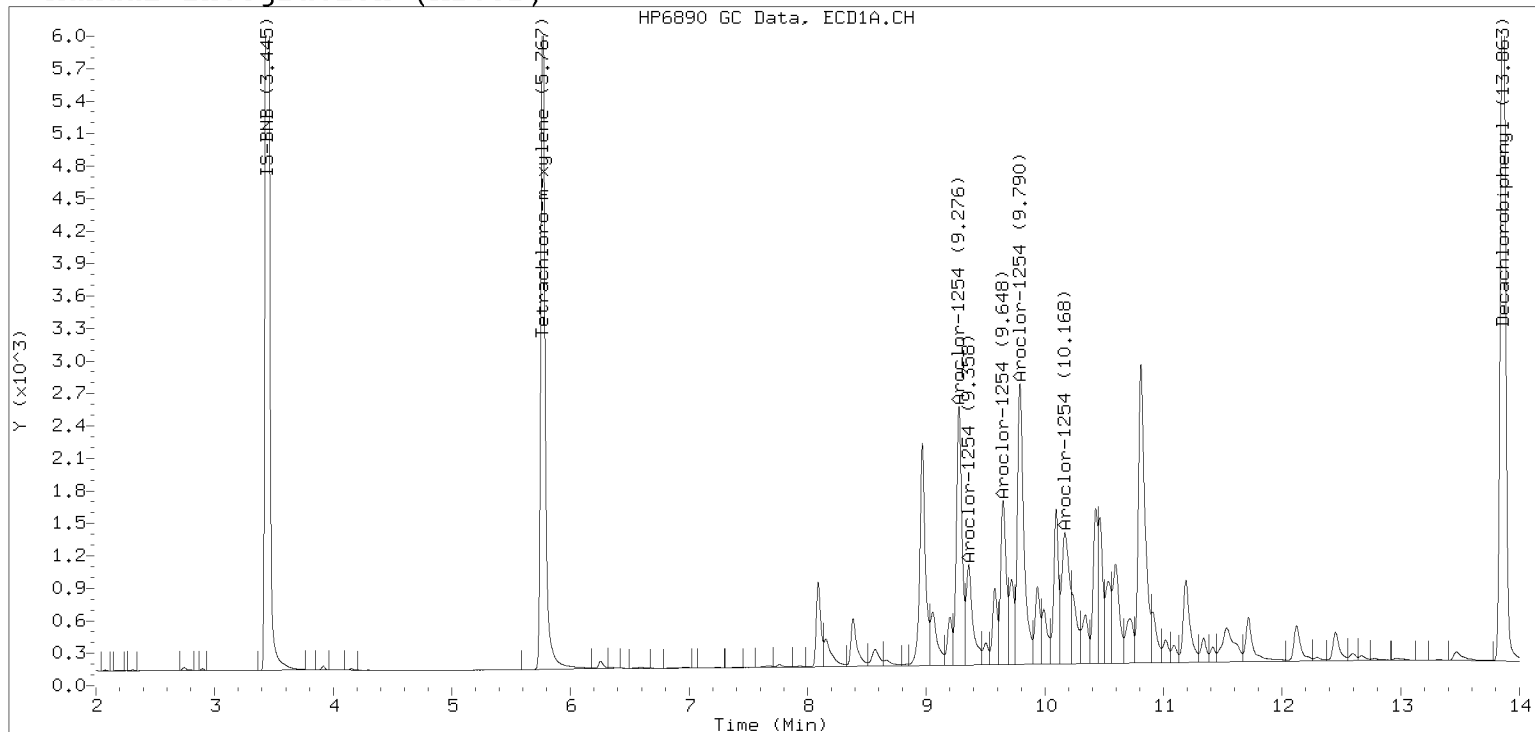
ZB-35 Manual Integration: NO



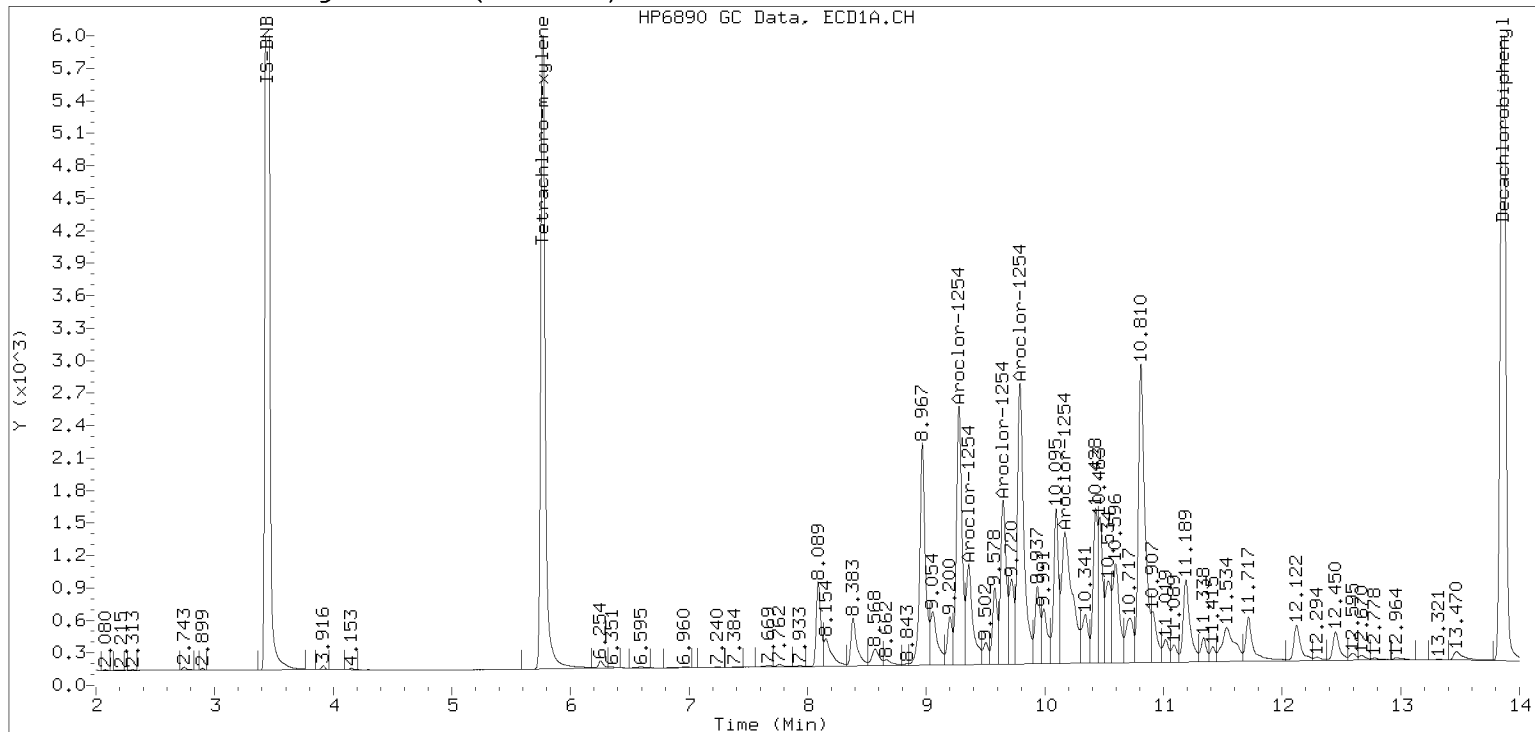
# Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/230428.b/04282312ECD7.D Injection Date: 28-APR-2023 15:07

## Manual Integration (After)



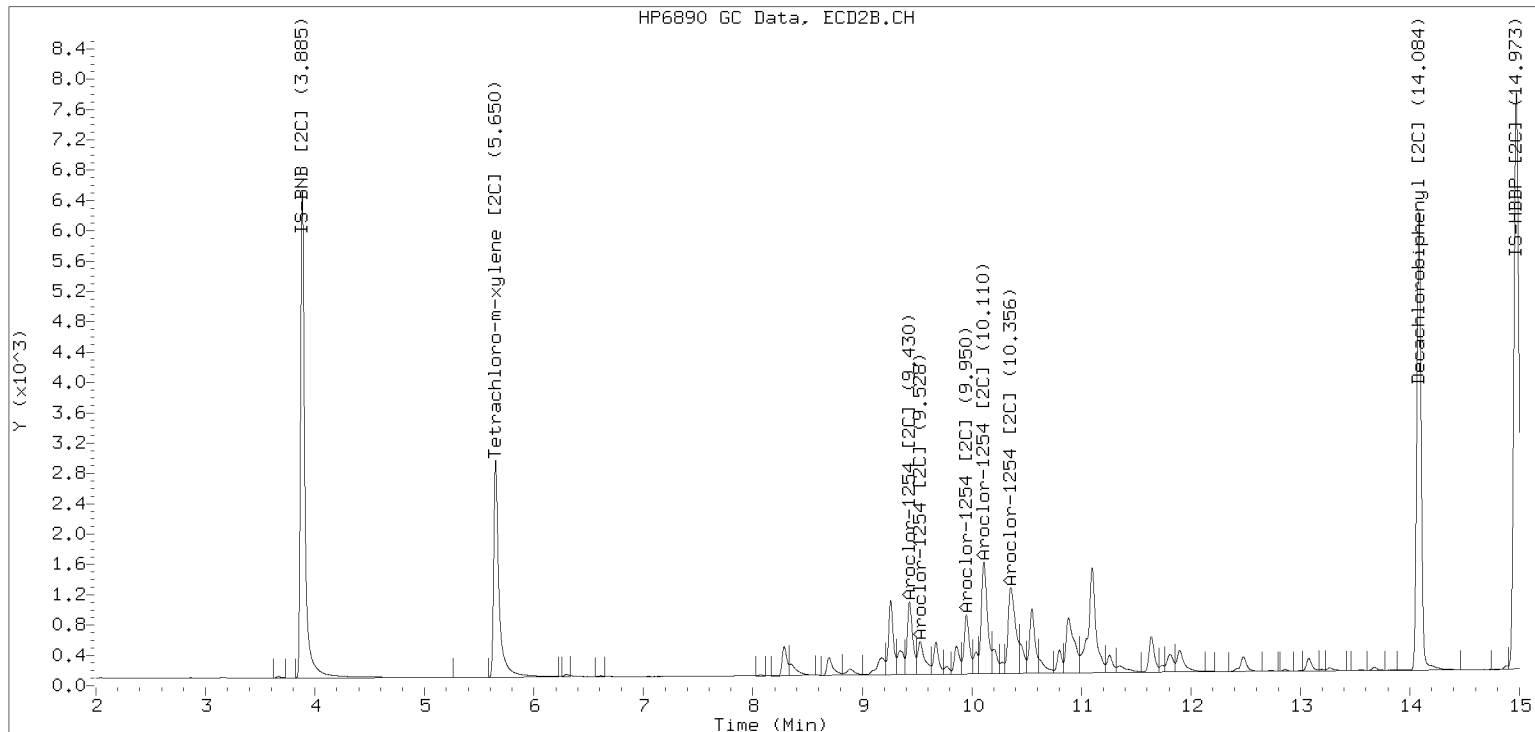
## Processed Integration (Before)



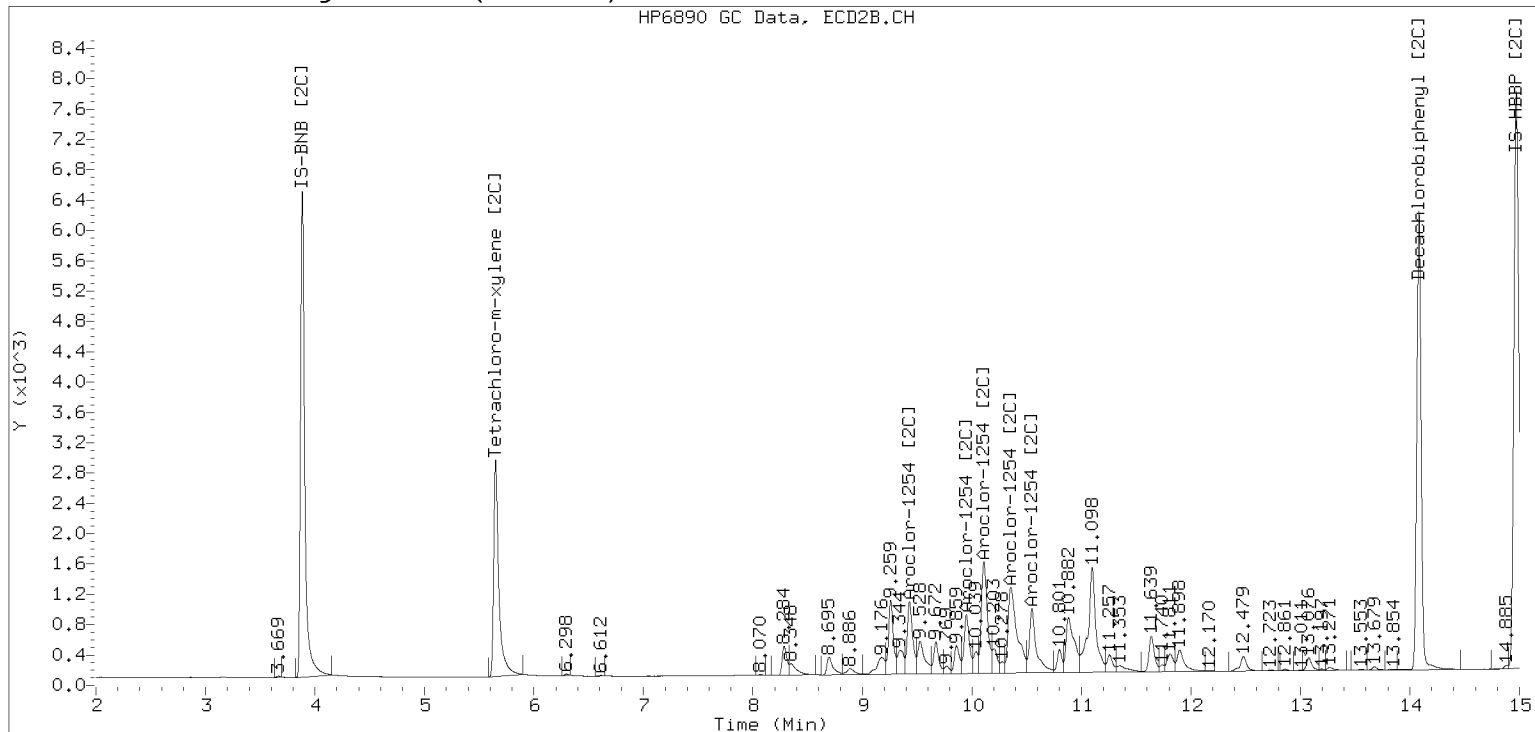
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282312ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282313ECD7.D  
 Data file 2: /230428.b/230428.b/04282313ECD7.D  
 Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
 Compound Sublist: AR2162.sub  
 Instrument, Inj. Vol.: ecd7.i, 2ul  
 Quant Method: Internal Std

ARI ID: 0.25PPMAR2162  
 Client ID:  
 Injection Date: 28-APR-2023 15:28  
 Report Date: 05/01/2023 12:24  
 Matrix: NONE  
 Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	332246	5.650	-0.000	190089	39.1	38.8	0.8	Tetrachloro-m-xylene
13.862	0.001	427054	14.084	0.000	328530	36.3	38.2	5.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	581811	4.6
Hexabromobiphenyl	745660	1086287	45.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	349098	0.2
Hexabromobiphenyl	429949	531347	23.6

\* Standard Areas taken from Initial Cal Level 3  
 Initial Calibration Date: 28-APR-2023  
 <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1221	1	4.682	0.000	11133	250.0	1	4.910	0.000	6479	250.0	
Aroclor-1221	2	6.093	0.000	22335	250.0	2	6.265	0.000	13840	250.0	
Aroclor-1221	3	6.346	0.000	52982	250.0	3	6.594	0.000	31675	250.0	
Total CollAve (3 peaks):				250.0		Total Col2Ave (3 peaks):				250.0	RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks					

Aroclor-1262	1	10.809	0.000	105977	250.0	1	11.173	0.000	132795	250.0	
Aroclor-1262	2	12.217	0.000	185071	250.0	2	11.624	0.000	111849	250.0	
Aroclor-1262	3	12.292	0.000	203418	250.0	3	12.403	0.000	117798	250.0	
Aroclor-1262	4	12.963	0.000	164084	250.0	4	12.475	0.000	203596	250.0	
Total CollAve (4 peaks):				250.0		Total Col2Ave (4 peaks):				250.0	RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):				250.0	RPD = 0

Total PCB Area Coll (5.866 - 13.762) = 2989194 Coll Total PCB = 0.4 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 1770720 Col2 Total PCB = 0.4 ppm\*

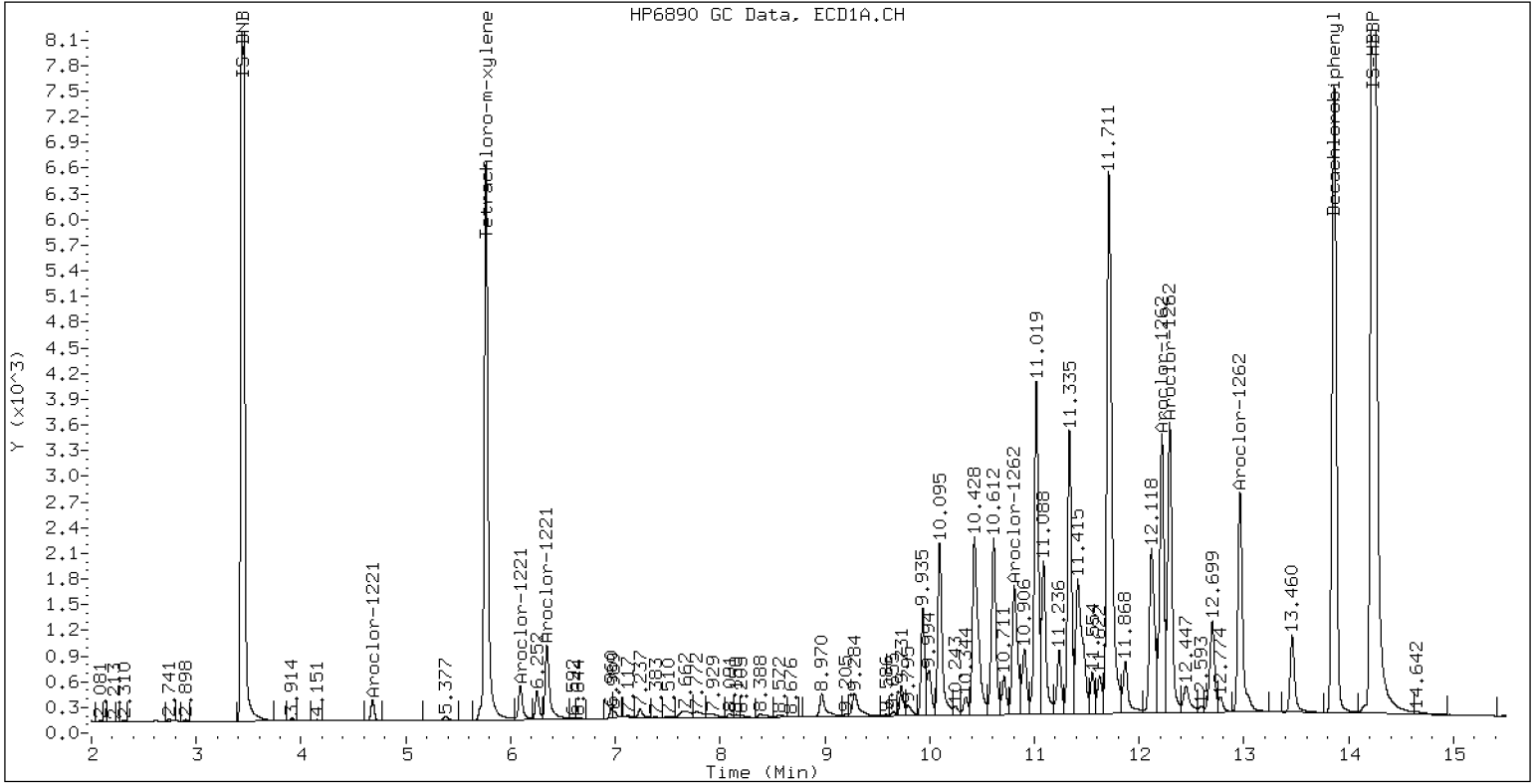
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR2162

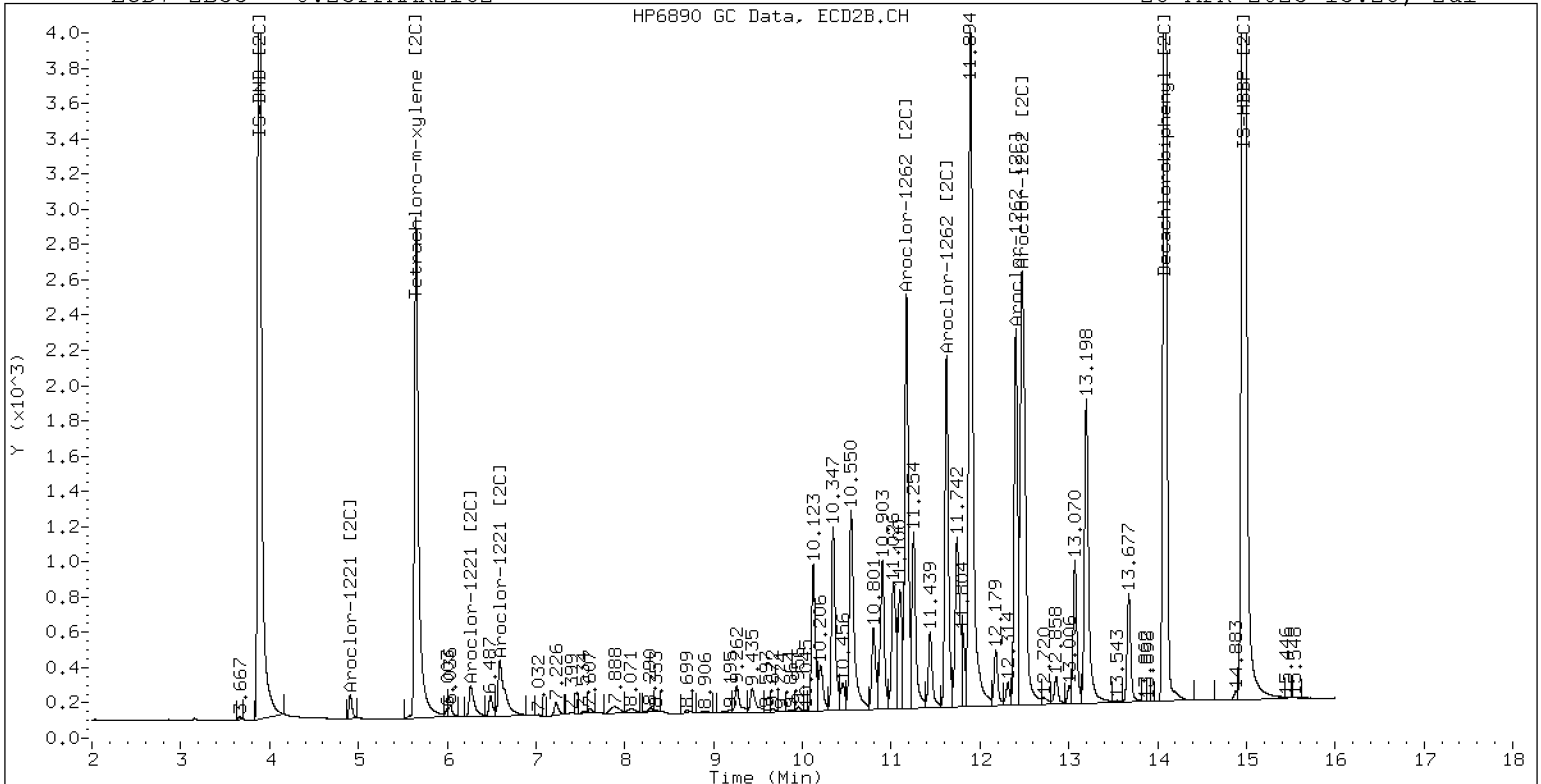
28-APR-2023 15:28, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR2162

28-APR-2023 15:28, 2ul

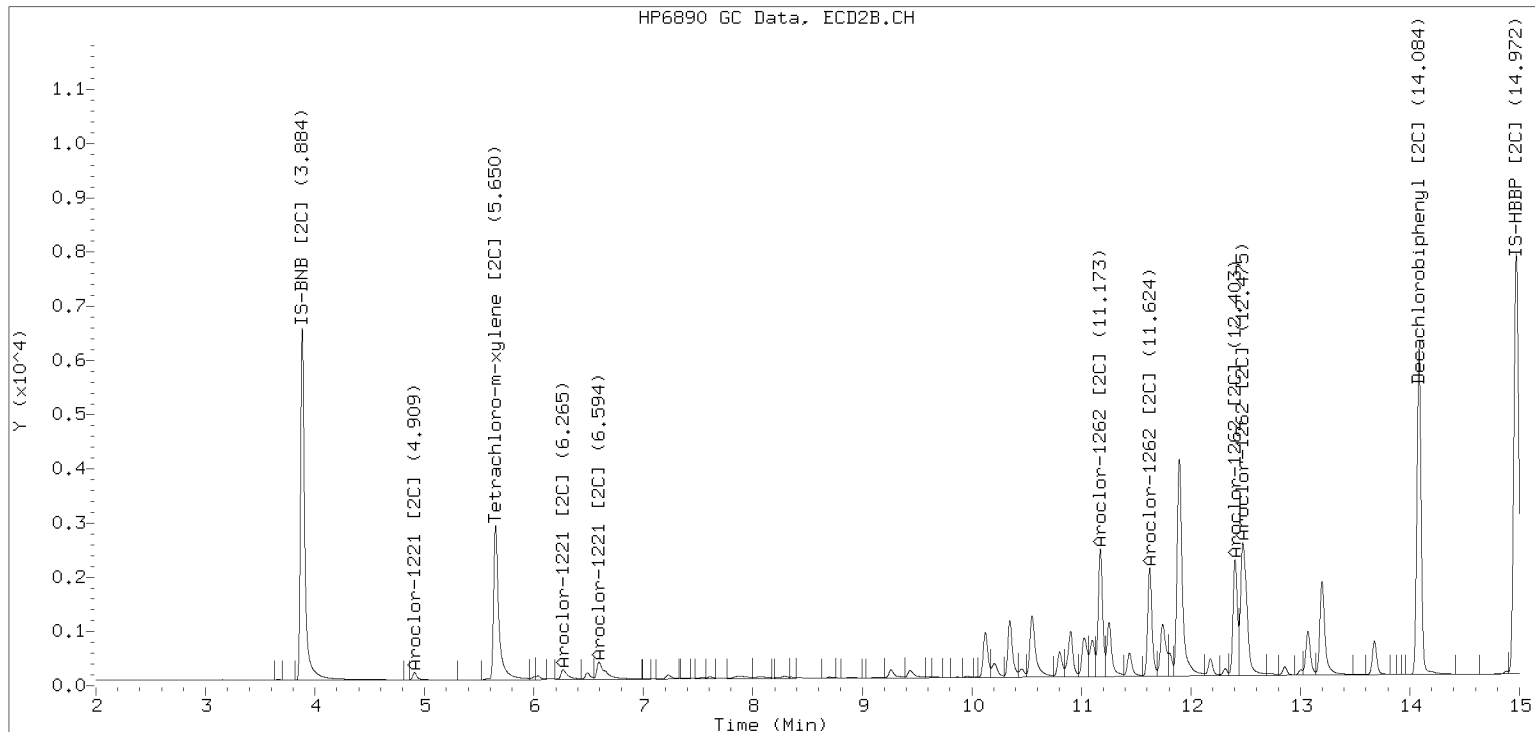


ZB-35 Manual Integration: NO

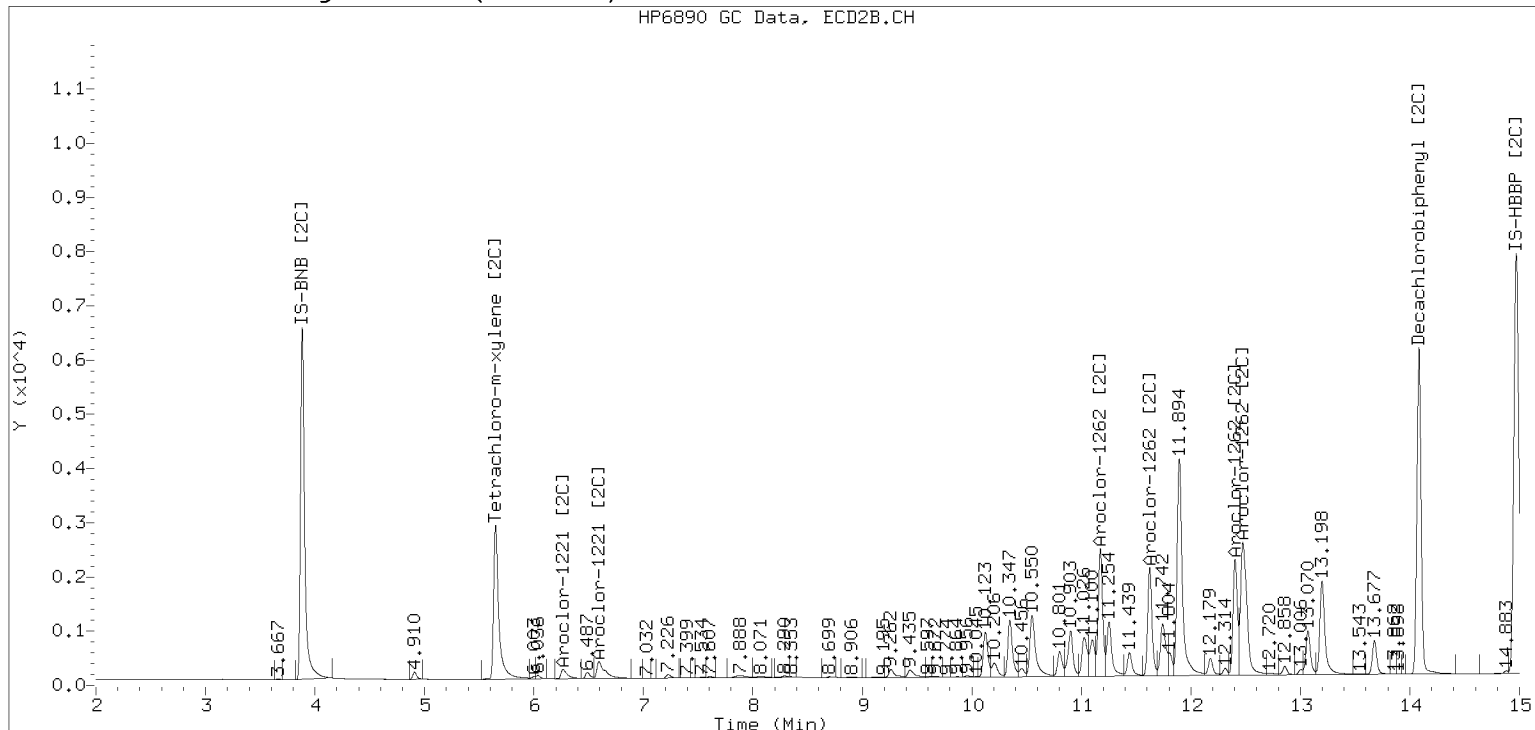
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282313ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282314ECD7.D  
Data file 2: /230428.b/230428.b/04282314ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: AR3268.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: 0.25PPMAR3268  
Client ID:  
Injection Date: 28-APR-2023 15:49  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	-0.000	337763	5.651	0.000	194138	39.8	39.5	0.9	Tetrachloro-m-xylene
13.860	-0.001	643123	14.084	0.000	501139	53.6	57.6	7.2	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	580156	4.3
Hexabromobiphenyl	745660	1107258	48.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	350186	0.5
Hexabromobiphenyl	429949	537160	24.9

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	4.682	0.000	7059	250.0	1	4.911	0.000	3768	250.0
Aroclor-1232	2	6.093	0.000	15616	250.0	2	7.225	0.000	20959	250.0
Aroclor-1232	3	7.651	0.000	61924	250.0	3	7.863	0.000	41363	250.0
Aroclor-1232	4	8.563	0.000	28843	250.0	4	8.694	0.000	12737	250.0
Total CollAve (4 peaks):				250.0		Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	12.218	0.000	475209	250.0	1	12.403	0.000	310411	250.0
Aroclor-1268	2	12.291	0.000	494781	250.0	2	12.472	0.000	352185	250.0
Aroclor-1268	3	12.669	0.000	411539	250.0	3	12.858	0.000	290953	250.0
Aroclor-1268	4	13.461	0.000	1190059	250.0	4	13.677	0.000	886581	250.0
Total CollAve (4 peaks):				250.0		Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Coll (5.866 - 13.762) = 3795737 Coll Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 2603857 Col2 Total PCB = 0.7 ppm\*

\* Quantitated against AR1660 0.25ppm in Ical

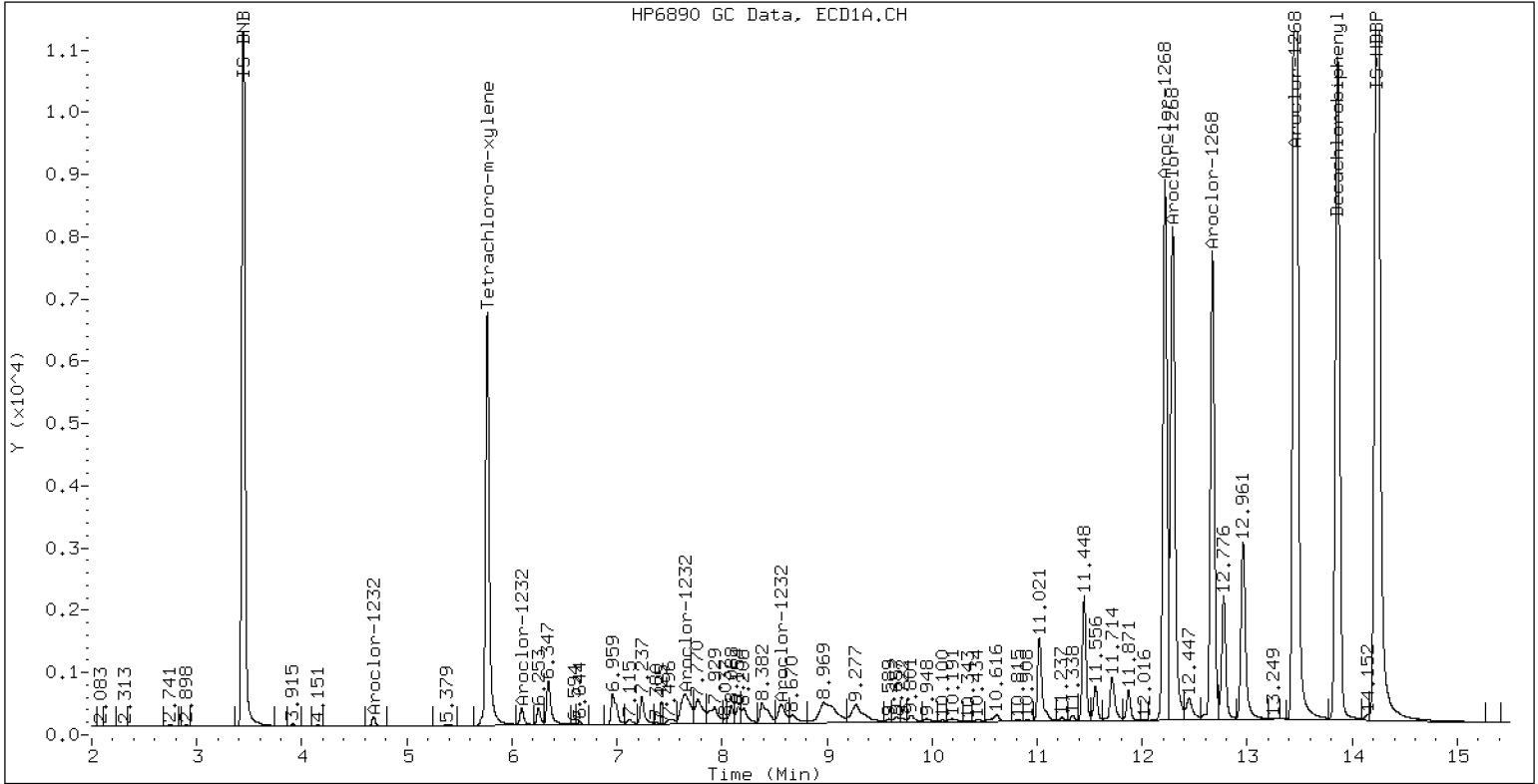
PCB-Form 10 Mod.



# PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR3268

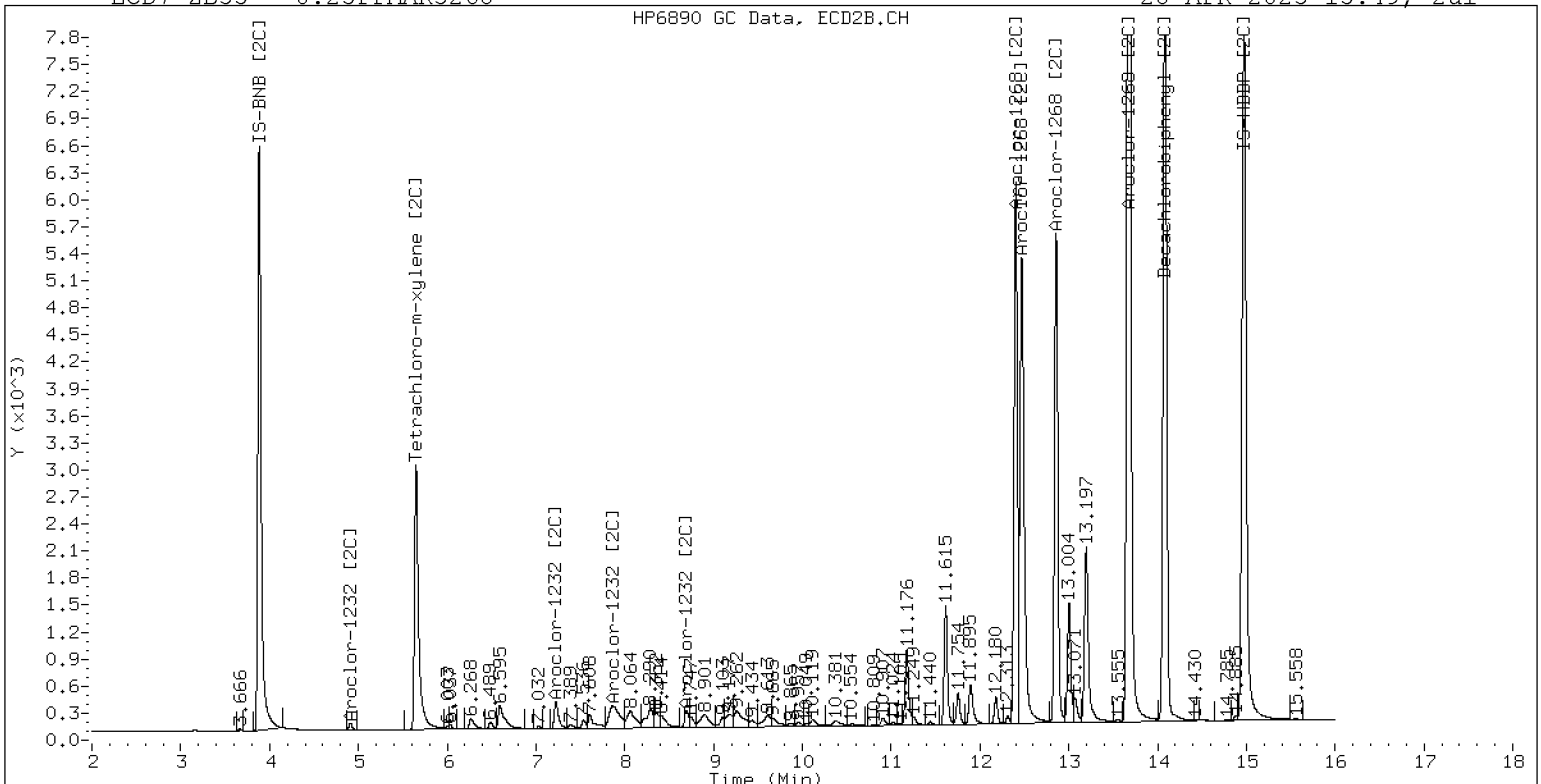
28-APR-2023 15:49, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR3268

28-APR-2023 15:49, 2ul

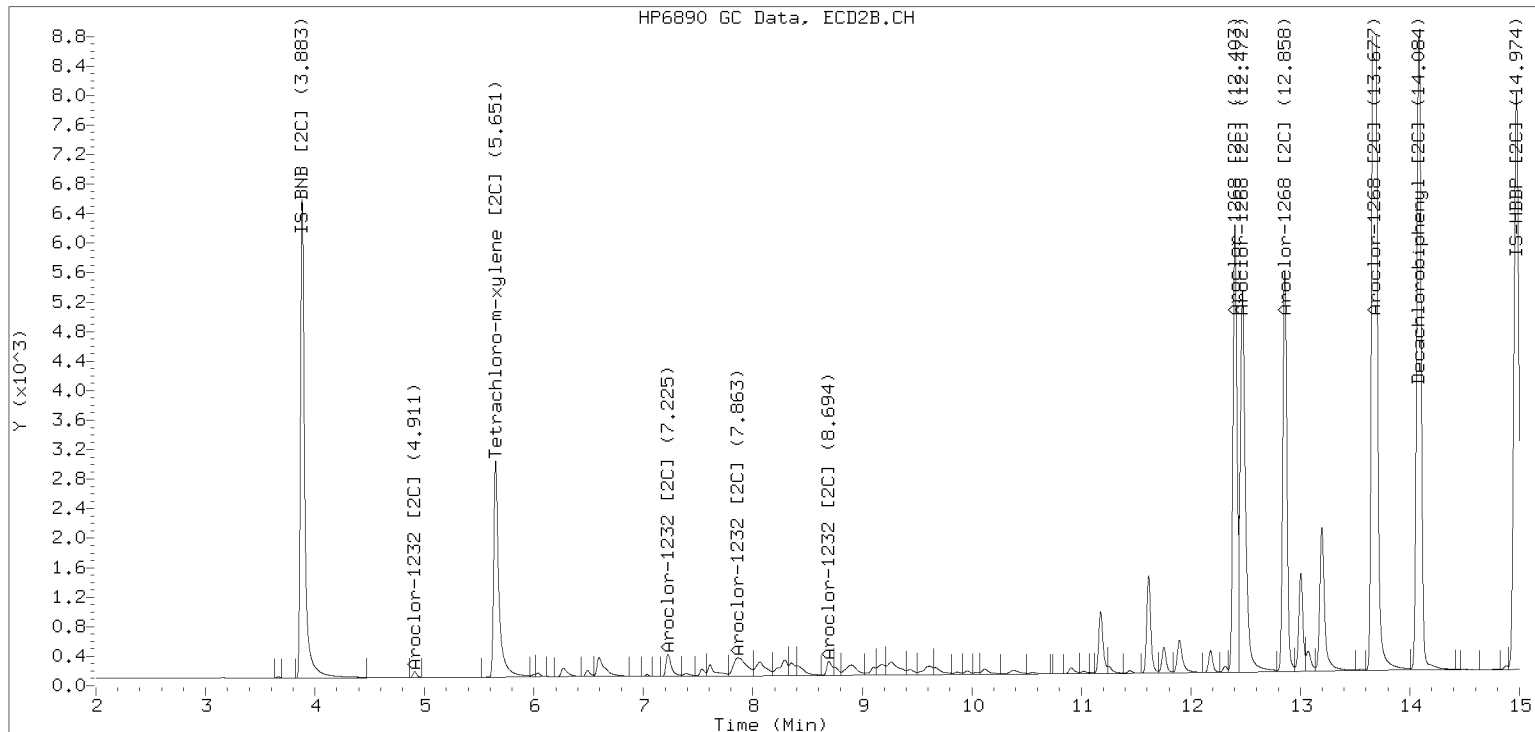


ZB-35 Manual Integration: NO

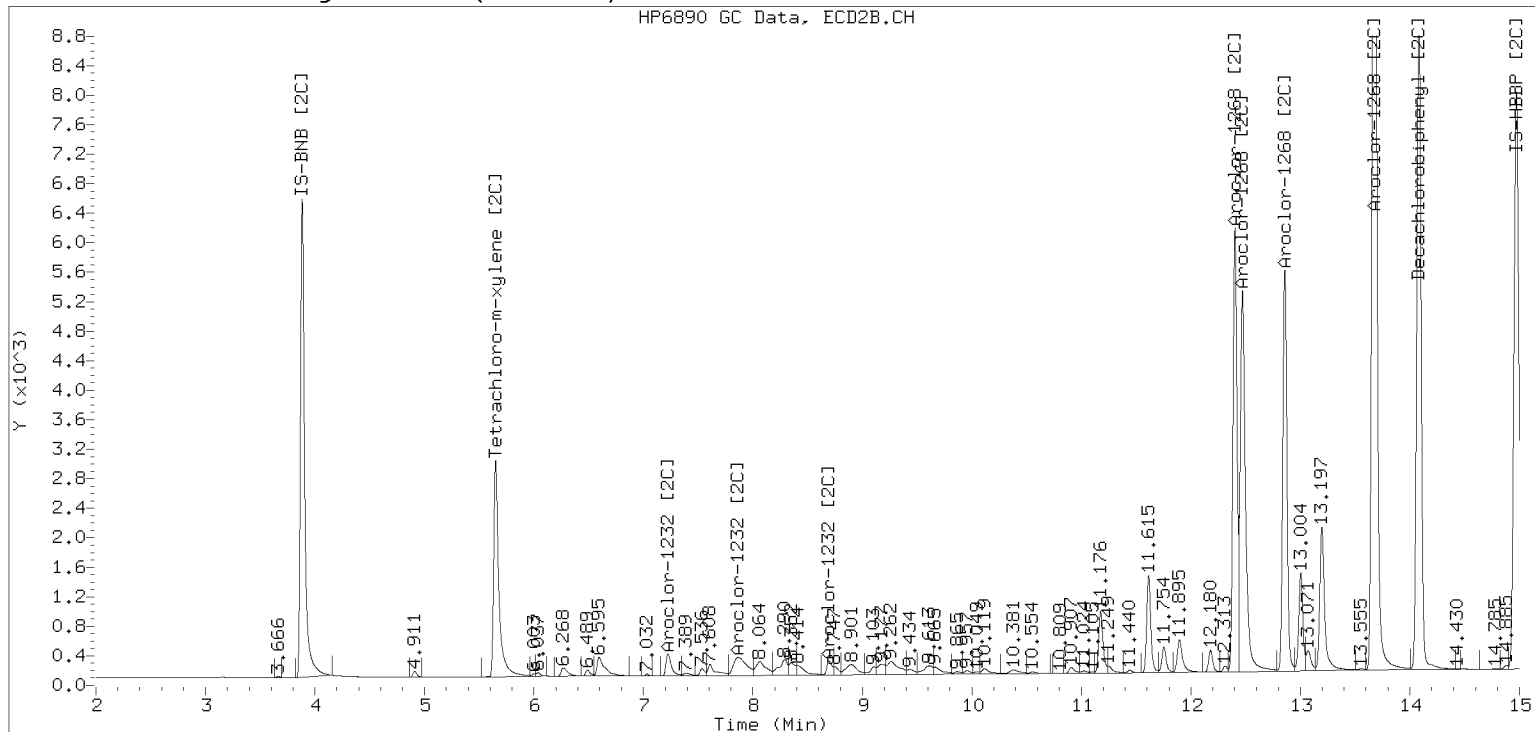
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282314ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282315ECD7.D  
Data file 2: /230428.b/230428.b/04282315ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1660SCV  
Client ID:  
Injection Date: 28-APR-2023 16:09  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col			ZB5	ZB35	RPD	Compound/Flag	
RT	Shift	Response	RT	Shift	Response	on col			on col
5.766	-0.000	328442	5.650	-0.000	184023	37.6	36.1	4.0	Tetrachloro-m-xylene
13.862	0.000	457973	14.083	-0.001	349905	36.6	38.9	6.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	597924	7.5
Hexabromobiphenyl	745660	1154377	54.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	362828	4.1
Hexabromobiphenyl	429949	555238	29.1

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.236	0.001	58167	251.6	1	7.223	0.002	49868	253.8
Aroclor-1016	2	7.636	0.008	162832	265.6	2	7.853	0.009	102116	262.9
Aroclor-1016	3	7.766	0.003	98114	236.5	3	8.060	0.005	57971	242.6
Aroclor-1016	4	8.378	0.002	55690	257.2	4	8.285	0.005	41472	232.9
Total CollAve (4 peaks):				252.7		Total Col2Ave (4 peaks):				248.1 RPD = 2
Corrected Ave (3 peaks):				248.4		Corrected Ave (3 peaks):				243.1 RPD = 2
Aroclor-1221	1	4.683	0.001	327	7.1	1	---			0.0
Aroclor-1221	2	6.092	-0.001	8500	92.6	2	6.279	0.013	4329	75.2
Aroclor-1221	3	6.347	0.001	39437	181.1	3	6.596	0.002	22951	174.3
Total CollAve (3 peaks):				93.6		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.683	0.001	327	11.2	1	---			0.0
Aroclor-1232	2	6.092	-0.001	8500	132.0	2	7.223	-0.002	49868	574.1
Aroclor-1232	3	7.636	-0.015	162832	637.9	3	7.853	-0.010	102116	595.7
Aroclor-1232	4	8.559	-0.004	77917	655.3	4	8.690	-0.003	33380	632.3
Total CollAve (4 peaks):				359.1		Total Col2Ave (3 peaks):				600.7 RPD = 50*
Corrected Ave (3 peaks):				260.4		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.236	-0.000	58167	311.8	1	7.223	0.001	49868	316.3
Aroclor-1242	2	7.636	-0.002	162832	319.3	2	7.853	-0.006	102116	323.8
Aroclor-1242	3	8.423	0.042	38520	224.6	3	8.690	-0.477	33380	306.1
Aroclor-1242	4	8.559	-0.002	77917	307.0	4	8.889	-0.714	53314	476.2
Total CollAve (4 peaks):				290.7		Total Col2Ave (4 peaks):				355.6 RPD = 20
Corrected Ave (3 peaks):				281.1		Corrected Ave (3 peaks):				315.4 RPD = 11
Aroclor-1248	1	8.378	-0.001	55690	192.8	1	8.690	0.406	33380	175.4
Aroclor-1248	2	8.559	-0.000	77917	203.4	2	8.889	0.198	53314	318.2
Aroclor-1248	3	8.966	0.002	73557	64.3	3	9.258	0.095	27563	134.1
Aroclor-1248	4	9.279	0.008	51235	85.3	4	9.431	-0.163	27687	126.3
Total CollAve (4 peaks):				136.5		Total Col2Ave (4 peaks):				188.5 RPD = 32
Corrected Ave (3 peaks):				114.1		Corrected Ave (3 peaks):				145.3 RPD = 24
Aroclor-1254	1	9.279	0.004	51235	79.3	1	9.431	0.001	27687	102.1
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	9.649	0.001	5569	13.6	3	9.953	0.003	2877	13.1
Aroclor-1254	4	9.790	0.001	20622	24.9	4	10.122	0.013	59350	124.8
Aroclor-1254	5	10.094	-0.074	163613	375.2	5	10.345	-0.011	83726	153.2
Total CollAve (4 peaks):				123.3		Total Col2Ave (4 peaks):				98.3 RPD = 23
Corrected Ave (3 peaks):				39.3		Corrected Ave (3 peaks):				80.0 RPD = 68*
Aroclor-1260	1	11.018	0.001	162373	249.1	1	11.624	0.000	96769	245.0
Aroclor-1260	2	11.335	0.002	163247	246.9	2	11.893	0.001	269412	259.9
Aroclor-1260	3	11.711	0.001	430555	250.9	3	12.406	-0.001	64881	274.8
Aroclor-1260	4	12.118	0.002	188077	221.1	4	12.476	0.001	182024	257.7
Aroclor-1260	5	12.216	0.000	99127	253.9	NS	---			----
Total CollAve (5 peaks):				244.4		Total Col2Ave (4 peaks):				259.3 RPD = 6
Corrected Ave (4 peaks):				242.0		Corrected Ave (3 peaks):				254.2 RPD = 5
Aroclor-1262	1	10.808	-0.000	229421	509.3	1	11.172	-0.001	104566	188.4
Aroclor-1262	2	12.216	-0.000	99127	126.0	2	11.624	0.000	96769	207.0
Aroclor-1262	3	12.292	0.000	123787	143.2	3	12.406	0.002	64881	131.8
Aroclor-1262	4	12.963	0.001	107216	153.7	4	12.476	0.001	182024	213.9
Total CollAve (4 peaks):				233.0		Total Col2Ave (4 peaks):				185.3 RPD = 23
Corrected Ave (3 peaks):				141.0		Corrected Ave (3 peaks):				175.7 RPD = 22
Aroclor-1268	1	12.216	-0.002	99127	50.0	1	12.406	0.002	64881	50.6
Aroclor-1268	2	12.292	0.002	123787	60.0	2	12.476	0.005	182024	125.0
Aroclor-1268	3	12.700	0.030	49518	28.9	3	12.859	0.000	4065	3.4
Aroclor-1268	4	13.461	0.000	25958	5.2	4	13.677	-0.000	14756	4.0
Total CollAve (4 peaks):				36.0		Total Col2Ave (4 peaks):				45.7 RPD = 24
Corrected Ave (3 peaks):				28.0		Corrected Ave (3 peaks):				19.3 RPD = 37

Total PCB Area Col1 (5.866 - 13.762) = 3921238 Col1 Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 2234032 Col2 Total PCB = 0.5 ppm\*

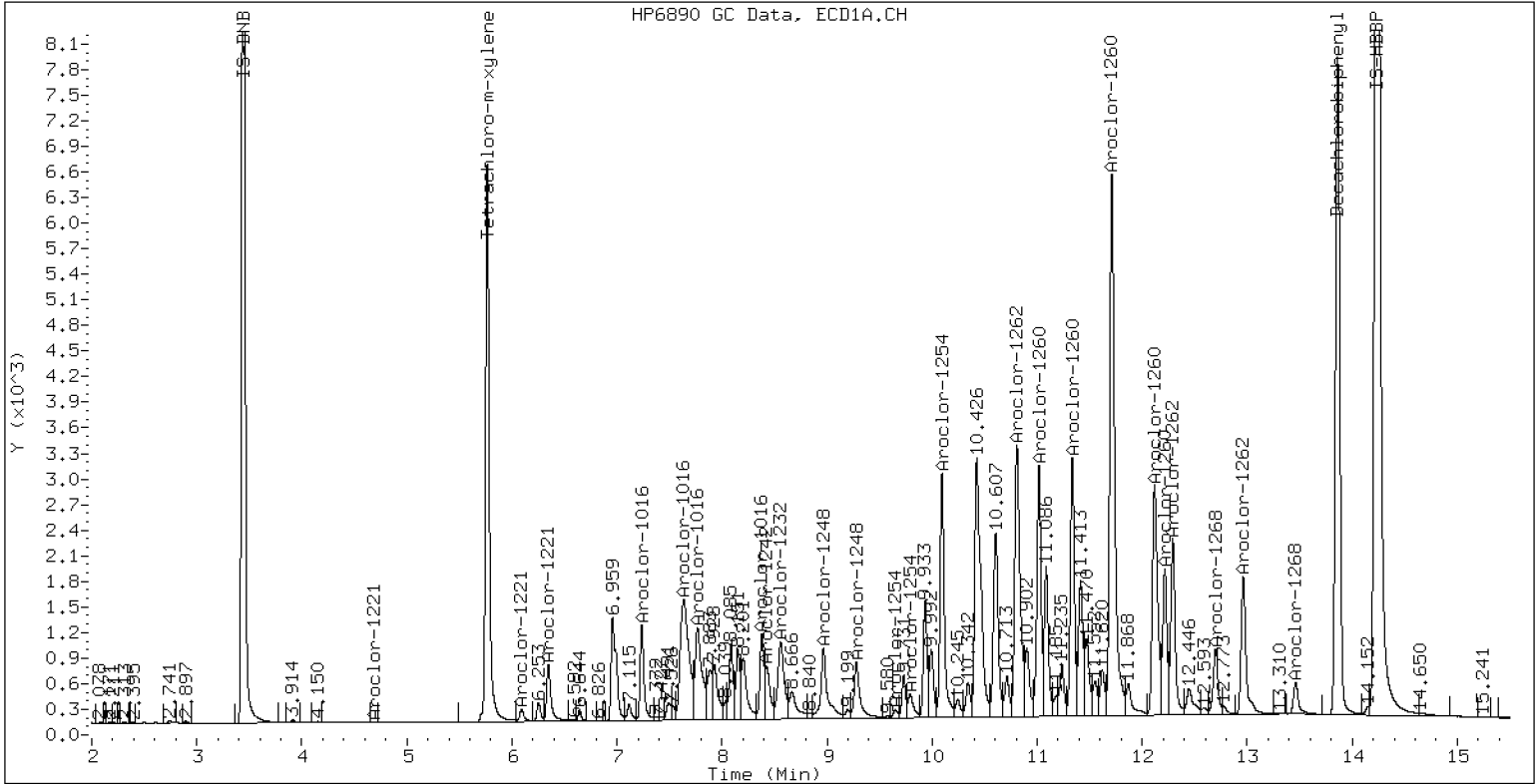
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV

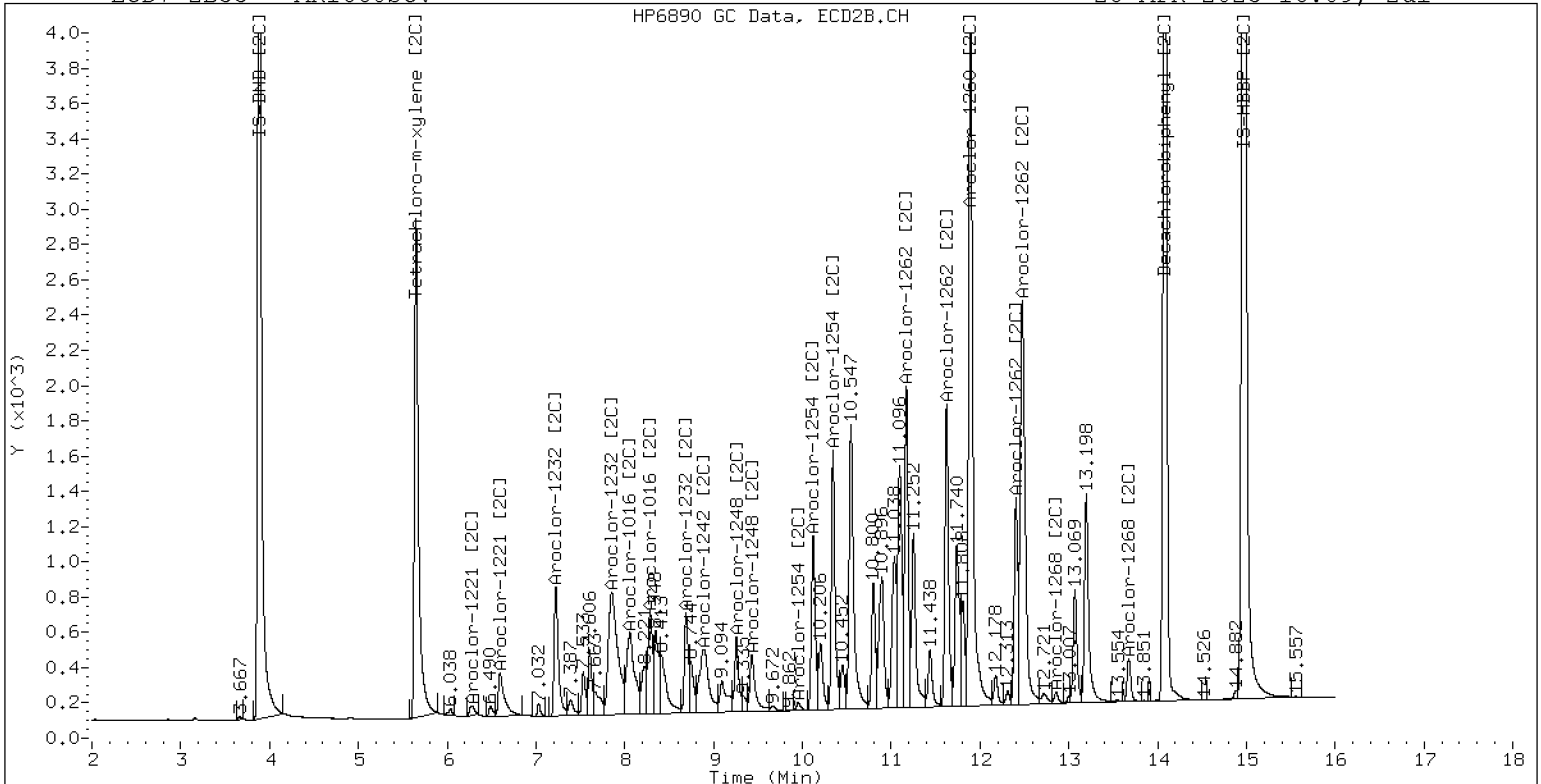
28-APR-2023 16:09, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV

28-APR-2023 16:09, 2ul

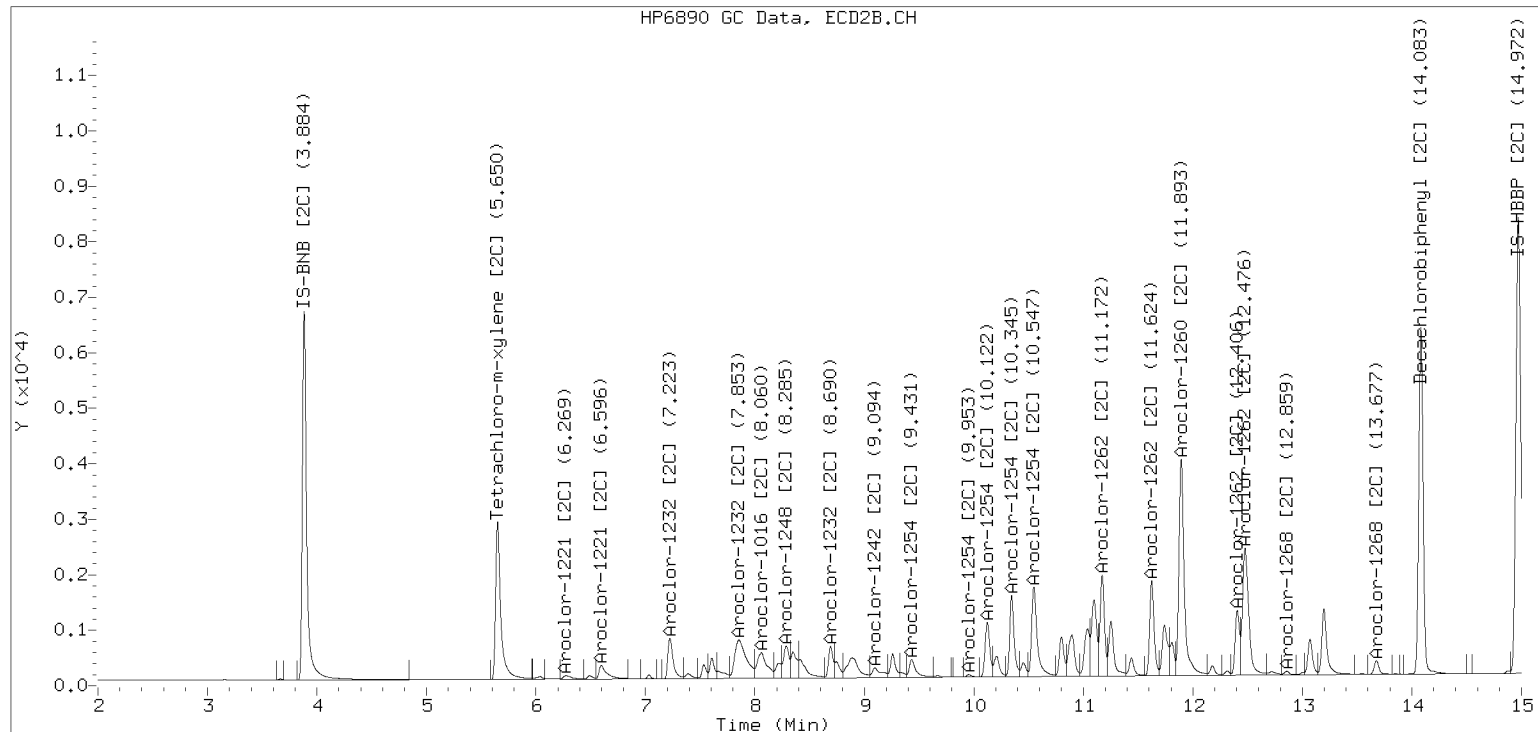


ZB-35 Manual Integration: NO

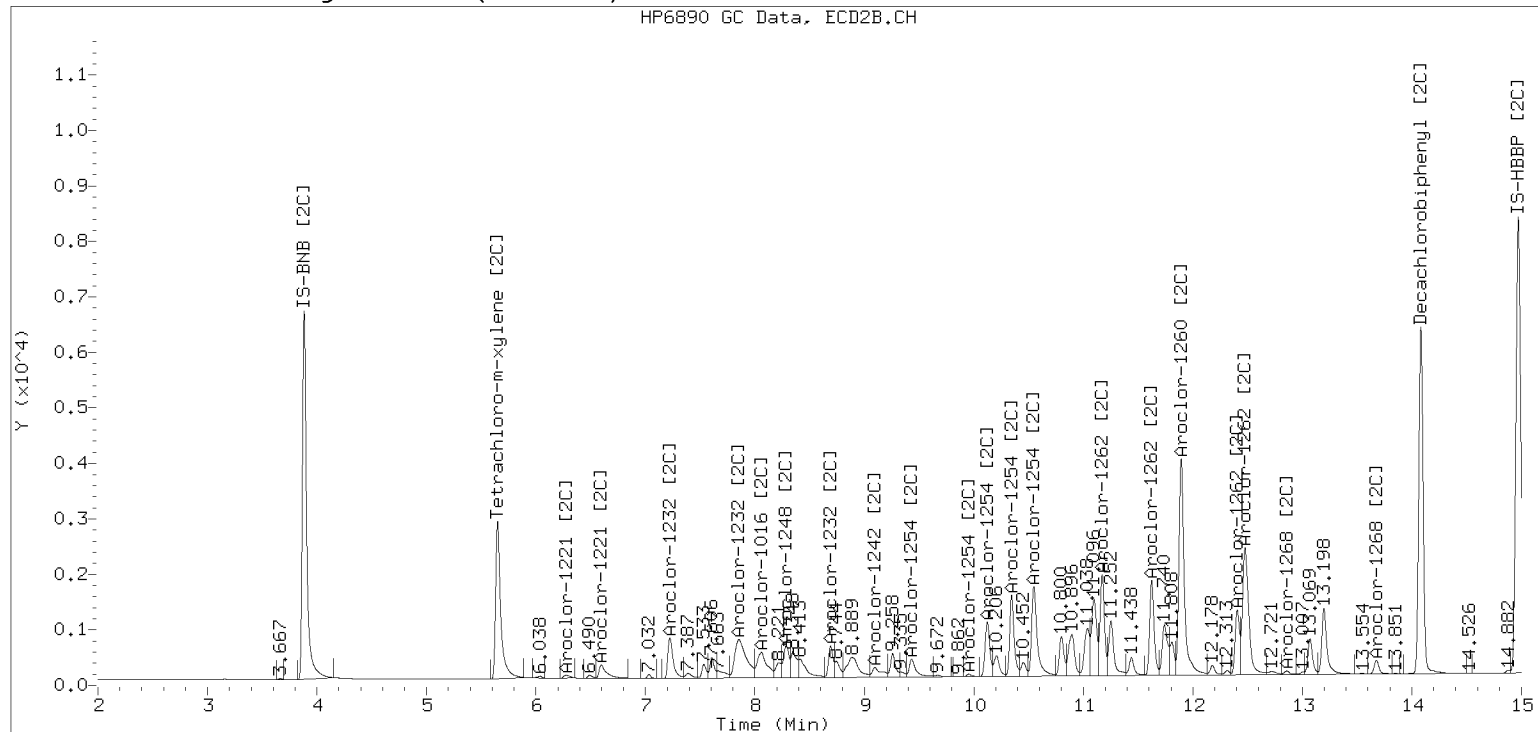
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282315ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282316ECD7.D  
Data file 2: /230428.b/230428.b/04282316ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1242SCV  
Client ID:  
Injection Date: 28-APR-2023 16:30  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	292500	5.650	-0.001	164326	33.9	32.6	3.7	Tetrachloro-m-xylene
13.864	0.002	517644	14.083	-0.001	393716	40.7	43.6	6.8	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	591263	6.3
Hexabromobiphenyl	745660	1174114	57.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	358789	3.0
Hexabromobiphenyl	429949	558275	29.8

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)



ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.237	0.001	42869	187.5	1	7.224	0.002	36830	189.5
Aroclor-1016	2	7.642	0.014	116563	192.3	2	7.859	0.015	74679	194.4
Aroclor-1016	3	7.767	0.004	72620	177.0	3	8.061	0.007	42627	180.4
Aroclor-1016	4	8.381	0.005	41808	195.2	4	8.287	0.006	31937	181.4
Total CollAve (4 peaks):				188.0		Total Col2Ave (4 peaks):				186.4 RPD = 1
Corrected Ave (3 peaks):				185.6		Corrected Ave (3 peaks):				183.8 RPD = 1
Aroclor-1221	1	4.687	0.005	261	5.8	1	---			0.0
Aroclor-1221	2	6.092	-0.002	5439	59.9	2	6.288	0.022	3034	53.3
Aroclor-1221	3	6.348	0.002	27795	129.1	3	6.597	0.003	16171	124.2
Total CollAve (3 peaks):				64.9		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.687	0.004	261	9.1	1	---			0.0
Aroclor-1232	2	6.092	-0.002	5439	85.4	2	7.224	-0.001	36830	428.8
Aroclor-1232	3	7.642	-0.009	116563	461.7	3	7.859	-0.003	74679	440.5
Aroclor-1232	4	8.560	-0.004	60506	514.6	4	8.693	-0.001	25516	488.8
Total CollAve (4 peaks):				267.7		Total Col2Ave (3 peaks):				452.7 RPD = 51*
Corrected Ave (3 peaks):				185.4		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.237	0.000	42869	232.4	1	7.224	0.002	36830	236.3
Aroclor-1242	2	7.642	0.003	116563	231.1	2	7.859	0.001	74679	239.5
Aroclor-1242	3	8.381	-0.000	41808	246.5	3	9.173	0.005	27704	256.9
Aroclor-1242	4	8.560	-0.001	60506	241.1	4	9.602	-0.001	29247	264.2
Total CollAve (4 peaks):				237.8		Total Col2Ave (4 peaks):				249.2 RPD = 5
Corrected Ave (3 peaks):				234.9		Corrected Ave (3 peaks):				244.2 RPD = 4
Aroclor-1248	1	8.381	0.002	41808	146.4	1	8.693	0.408	25516	135.6
Aroclor-1248	2	8.560	0.000	60506	159.7	2	8.890	0.199	41427	250.0
Aroclor-1248	3	8.967	0.003	153088	135.4	3	9.258	0.094	51085	251.4
Aroclor-1248	4	9.276	0.004	79463	133.8	4	9.433	-0.160	16032	74.0
Total CollAve (4 peaks):				143.8		Total Col2Ave (4 peaks):				177.7 RPD = 21
Corrected Ave (3 peaks):				138.5		Corrected Ave (3 peaks):				153.2 RPD = 10
Aroclor-1254	1	9.276	-0.000	79463	124.4	1	9.433	0.004	16032	59.8
Aroclor-1254	2	9.354	-0.004	29048	96.0	2	9.602	0.074	29247	178.9
Aroclor-1254	3	9.654	0.006	18218	45.1	3	9.955	0.005	10890	50.2
Aroclor-1254	4	9.799	0.009	31107	37.9	4	10.114	0.004	21158	45.0
Aroclor-1254	5	10.188	0.019	22524	52.2	5	10.380	0.024	20273	37.5
Total CollAve (5 peaks):				71.1		Total Col2Ave (5 peaks):				74.3 RPD = 4
Corrected Ave (4 peaks):				57.8		Corrected Ave (4 peaks):				48.1 RPD = 18
Aroclor-1260	1	11.022	0.005	1107	1.7	1	11.645	0.021	2082	5.2
Aroclor-1260	2	11.341	0.007	839	1.2	2	11.903	0.011	1433	1.4
Aroclor-1260	3	11.721	0.011	1240	0.7	3	12.477	0.071	1326	5.6
Aroclor-1260	4	12.127	0.011	1362	1.6	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
Total CollAve (4 peaks):				1.3		Total Col2Ave (3 peaks):				4.1 RPD = 103*
Corrected Ave (3 peaks):				1.2		Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.818	0.009	16810	36.7	1	11.105	-0.068	10045	18.0
Aroclor-1262	2	12.127	-0.090	1362	1.7	2	11.645	0.021	2082	4.4
Aroclor-1262	3	12.308	0.016	110	0.1	3	12.477	0.074	1326	2.7
Aroclor-1262	4	13.018	0.056	1070	1.5	4	---			0.0
Total CollAve (4 peaks):				10.0		Total Col2Ave (3 peaks):				8.4 RPD = 18
Corrected Ave (3 peaks):				1.1		Corrected Ave: < 3 Peaks				
Aroclor-1268	1	12.308	0.090	110	0.1	1	12.477	0.074	1326	1.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.671	0.001	2482	1.4	3	12.861	0.003	1233	1.0
Aroclor-1268	4	13.468	0.007	10976	2.2	4	13.676	-0.000	2739	0.7
Total CollAve (3 peaks):				1.2		Total Col2Ave (3 peaks):				0.9 RPD = 27
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.866 - 13.762) = 1193104 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 682890 Col2 Total PCB = 0.2 ppm\*

\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

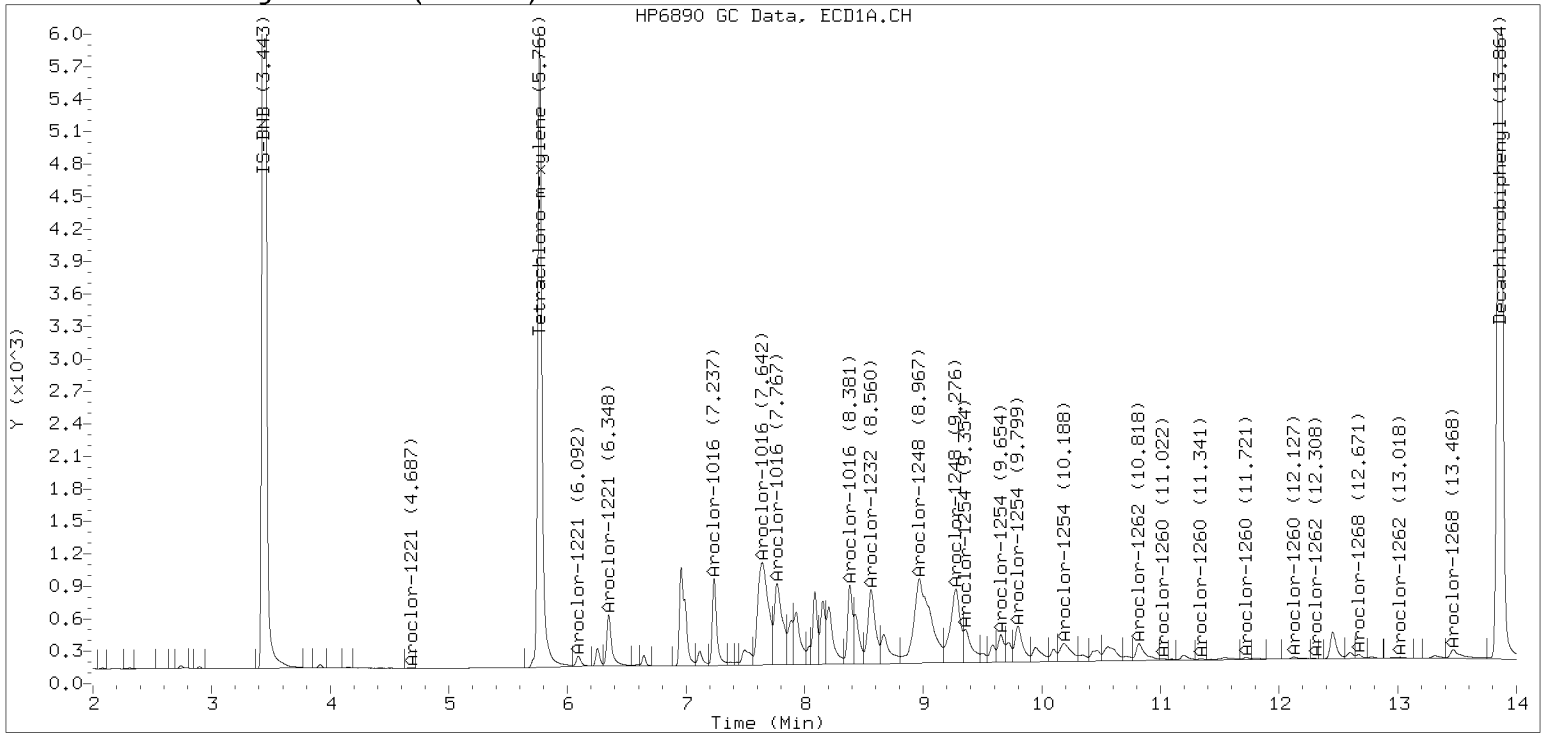


Manual Peak Adjustment, ZB-5

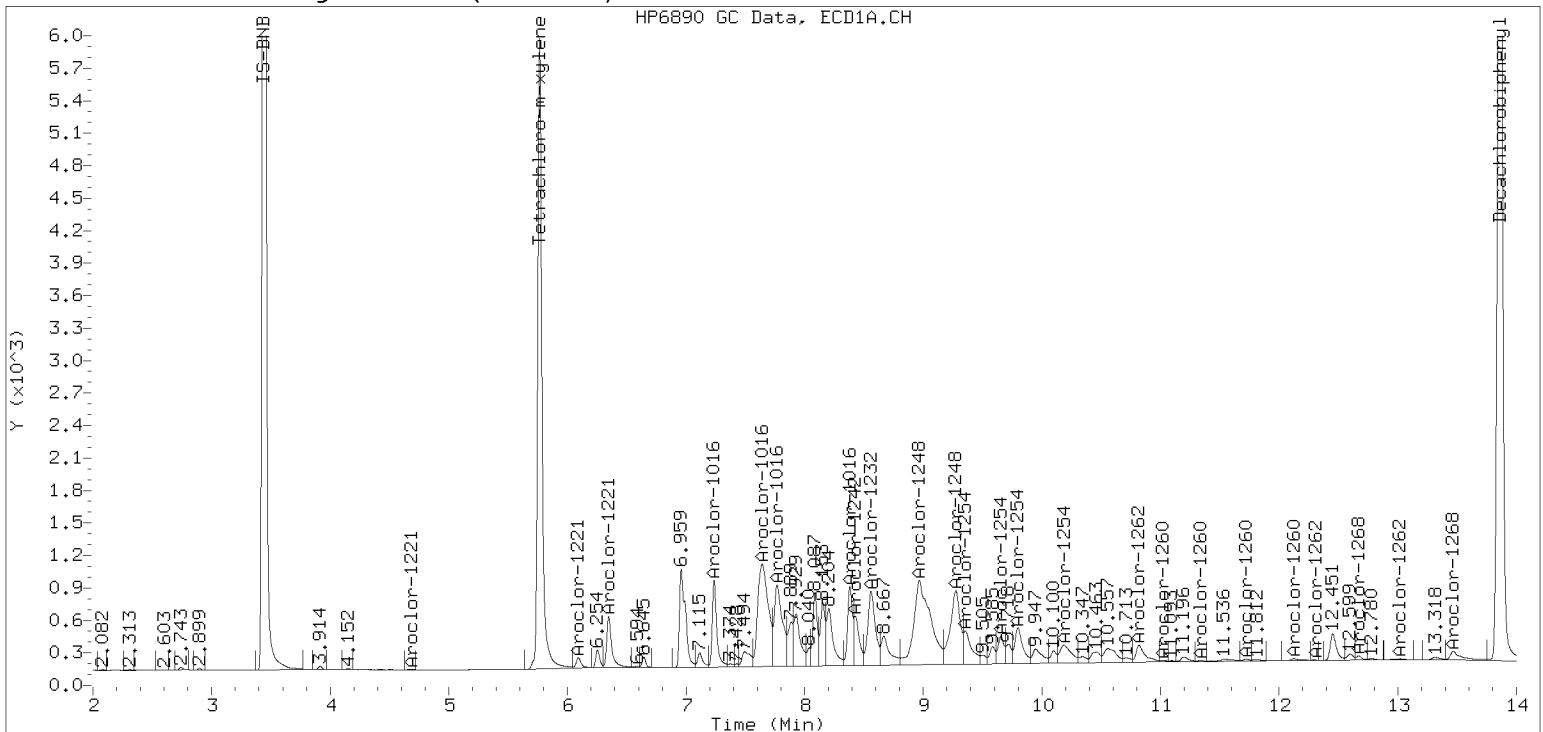
Datafile: ecd7.i/230428.b/04282316ECD7.D

Injection Date: 28-APR-2023 16:30

Manual Integration (After)



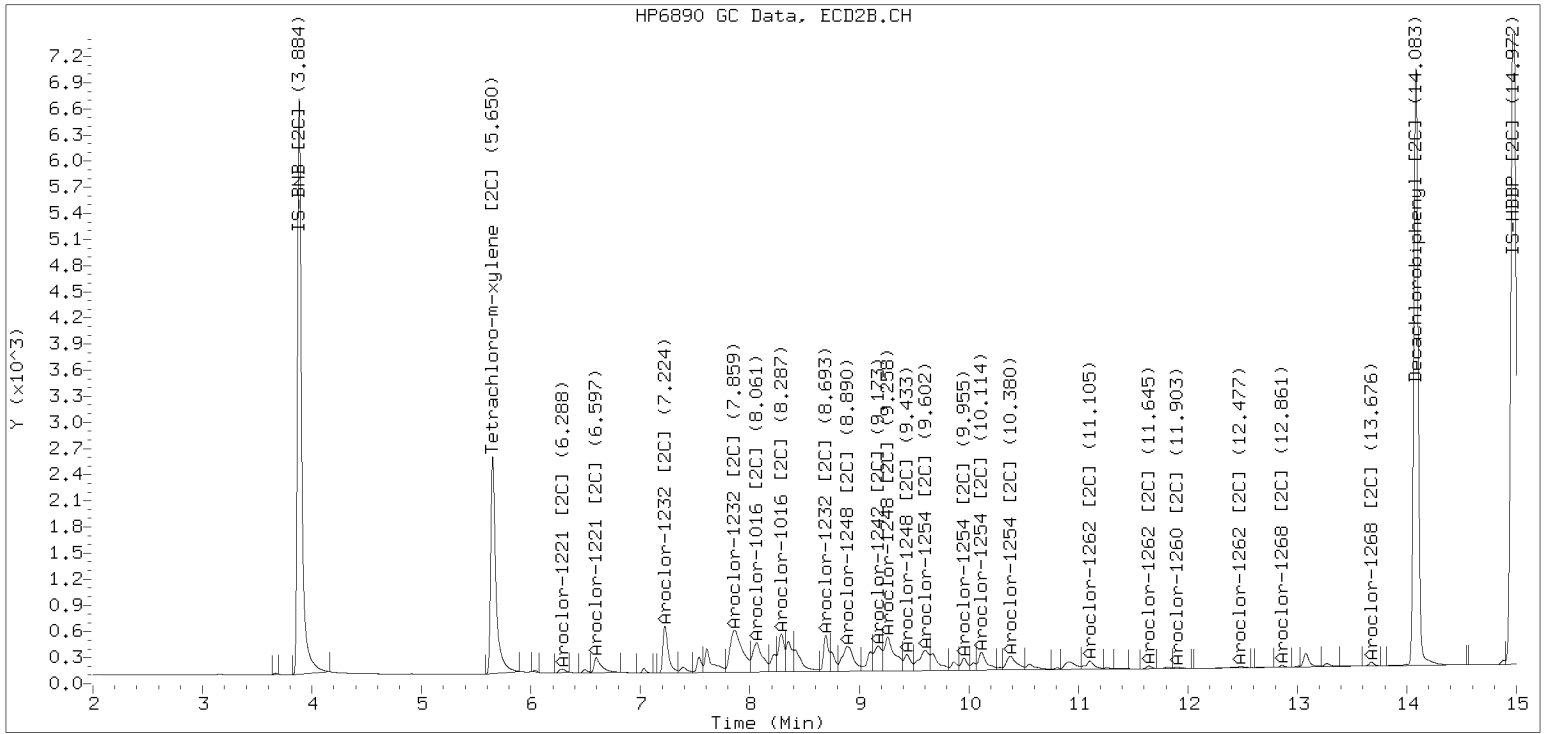
Processed Integration (Before)



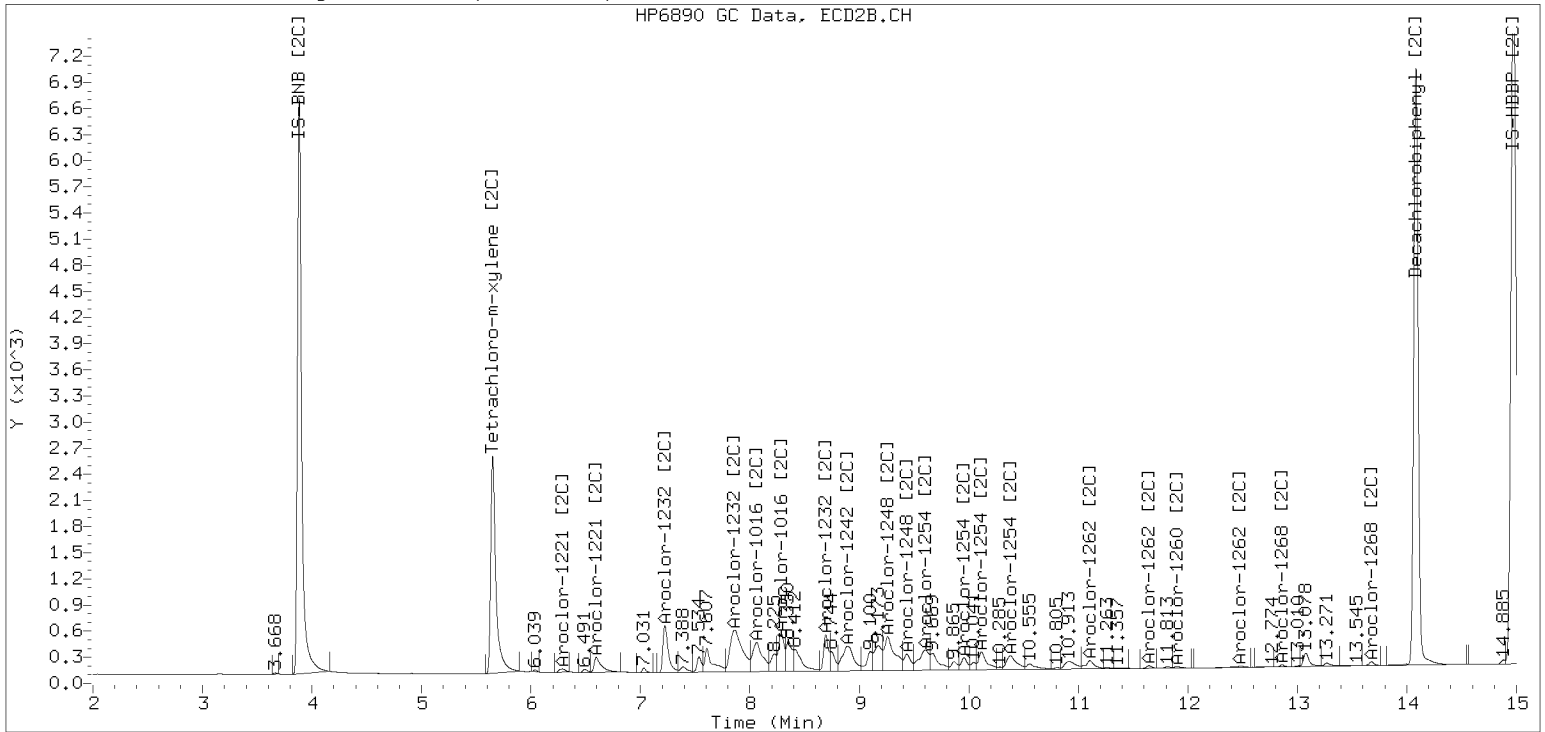
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282316ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282317ECD7.D  
Data file 2: /230428.b/230428.b/04282317ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1248SCV  
Client ID:  
Injection Date: 28-APR-2023 16:51  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	329945	5.650	-0.001	187741	37.4	36.7	1.8	Tetrachloro-m-xylene
13.863	0.002	459099	14.084	0.000	349285	34.9	38.0	8.5	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	604265	8.6
Hexabromobiphenyl	745660	1214161	62.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	364434	4.6
Hexabromobiphenyl	429949	568134	32.1

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.237	0.002	19001	81.3	1	7.223	0.002	18808	95.3
Aroclor-1016	2	7.640	0.012	74331	120.0	2	7.860	0.016	45610	116.9
Aroclor-1016	3	7.763	0.000	48390	115.4	3	8.066	0.011	19913	83.0
Aroclor-1016	4	8.380	0.004	75928	347.0	4	8.285	0.004	48388	270.6
Total CollAve (4 peaks):				165.9		Total Col2Ave (4 peaks):				141.4 RPD = 16
Corrected Ave (3 peaks):				105.6		Corrected Ave (3 peaks):				98.4 RPD = 7
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.088	-0.005	1143	12.3	2	6.298	0.033	1993	34.5
Aroclor-1221	3	6.349	0.002	3172	14.4	3	6.608	0.014	1326	10.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.088	-0.005	1143	17.6	2	7.223	-0.002	18808	215.6
Aroclor-1232	3	7.640	-0.012	74331	288.1	3	7.860	-0.003	45610	264.9
Aroclor-1232	4	8.559	-0.004	98972	823.6	4	8.691	-0.002	42787	807.0
Total CollAve (3 peaks):				376.4		Total Col2Ave (3 peaks):				429.1 RPD = 13
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.237	0.001	19001	100.8	1	7.223	0.001	18808	118.8
Aroclor-1242	2	7.640	0.001	74331	144.2	2	7.860	0.001	45610	144.0
Aroclor-1242	3	8.380	-0.001	75928	438.1	3	8.691	-0.476	42787	390.6
Aroclor-1242	4	8.559	-0.001	98972	385.9	4	8.885	-0.718	60719	540.0
Total CollAve (4 peaks):				267.2		Total Col2Ave (4 peaks):				298.3 RPD = 11
Corrected Ave (3 peaks):				210.3		Corrected Ave (3 peaks):				217.8 RPD = 4
Aroclor-1248	1	8.380	0.002	75928	260.1	1	8.285	0.000	48388	253.1
Aroclor-1248	2	8.559	0.000	98972	255.7	2	8.691	0.000	42787	254.2
Aroclor-1248	3	8.963	-0.001	294362	254.8	3	9.165	0.001	53988	261.5
Aroclor-1248	4	9.271	0.000	156668	258.2	4	9.587	-0.007	55820	253.5
Total CollAve (4 peaks):				257.2		Total Col2Ave (4 peaks):				255.6 RPD = 1
Corrected Ave (3 peaks):				256.2		Corrected Ave (3 peaks):				253.6 RPD = 1
Aroclor-1254	1	9.271	-0.004	156668	240.0	1	9.430	0.001	28754	105.5
Aroclor-1254	2	9.355	-0.004	60054	194.1	2	9.587	0.059	55820	336.1
Aroclor-1254	3	9.651	0.003	41060	99.5	3	9.952	0.002	23054	104.5
Aroclor-1254	4	9.793	0.004	73186	87.3	4	10.109	-0.001	44343	92.9
Aroclor-1254	5	10.182	0.013	49460	112.2	5	10.379	0.023	41423	75.5
Total CollAve (5 peaks):				146.6		Total Col2Ave (5 peaks):				142.9 RPD = 3
Corrected Ave (4 peaks):				123.3		Corrected Ave (4 peaks):				94.6 RPD = 26
Aroclor-1260	1	11.026	0.009	2009	2.9	1	11.643	0.019	2501	6.2
Aroclor-1260	2	11.340	0.006	1228	1.8	2	11.901	0.009	2130	2.0
Aroclor-1260	3	11.721	0.011	1976	1.1	3	12.414	0.007	826	3.4
Aroclor-1260	4	12.127	0.011	1326	1.5	4	12.479	0.004	1478	2.0
Aroclor-1260	5	12.220	0.004	573	1.4	NS	---			----
Total CollAve (5 peaks):				1.7		Total Col2Ave (4 peaks):				3.4 RPD = 65*
Corrected Ave (4 peaks):				1.4		Corrected Ave (3 peaks):				2.5 RPD = 54*
Aroclor-1262	1	10.818	0.009	19667	41.5	1	11.104	-0.069	9341	16.4
Aroclor-1262	2	12.220	0.003	573	0.7	2	11.643	0.019	2501	5.2
Aroclor-1262	3	12.296	0.004	674	0.7	3	12.414	0.010	826	1.6
Aroclor-1262	4	12.967	0.005	1383	1.9	4	12.479	0.004	1478	1.7
Total CollAve (4 peaks):				11.2		Total Col2Ave (4 peaks):				6.3 RPD = 57*
Corrected Ave (3 peaks):				1.1		Corrected Ave (3 peaks):				2.9 RPD = 88*
Aroclor-1268	1	12.220	0.002	573	0.3	1	12.414	0.011	826	0.6
Aroclor-1268	2	12.296	0.005	674	0.3	2	12.479	0.008	1478	1.0
Aroclor-1268	3	12.671	0.002	2312	1.3	3	12.861	0.002	1020	0.8
Aroclor-1268	4	13.469	0.008	7516	1.4	4	13.678	0.001	2531	0.7
Total CollAve (4 peaks):				0.8		Total Col2Ave (4 peaks):				0.8 RPD = 6
Corrected Ave (3 peaks):				0.6		Corrected Ave (3 peaks):				0.7 RPD = 13

Total PCB Area Col1 (5.866 - 13.762) = 1600602 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 860562 Col2 Total PCB = 0.2 ppm\*

\* Quantitated against AR1660 0.25ppm in Ical

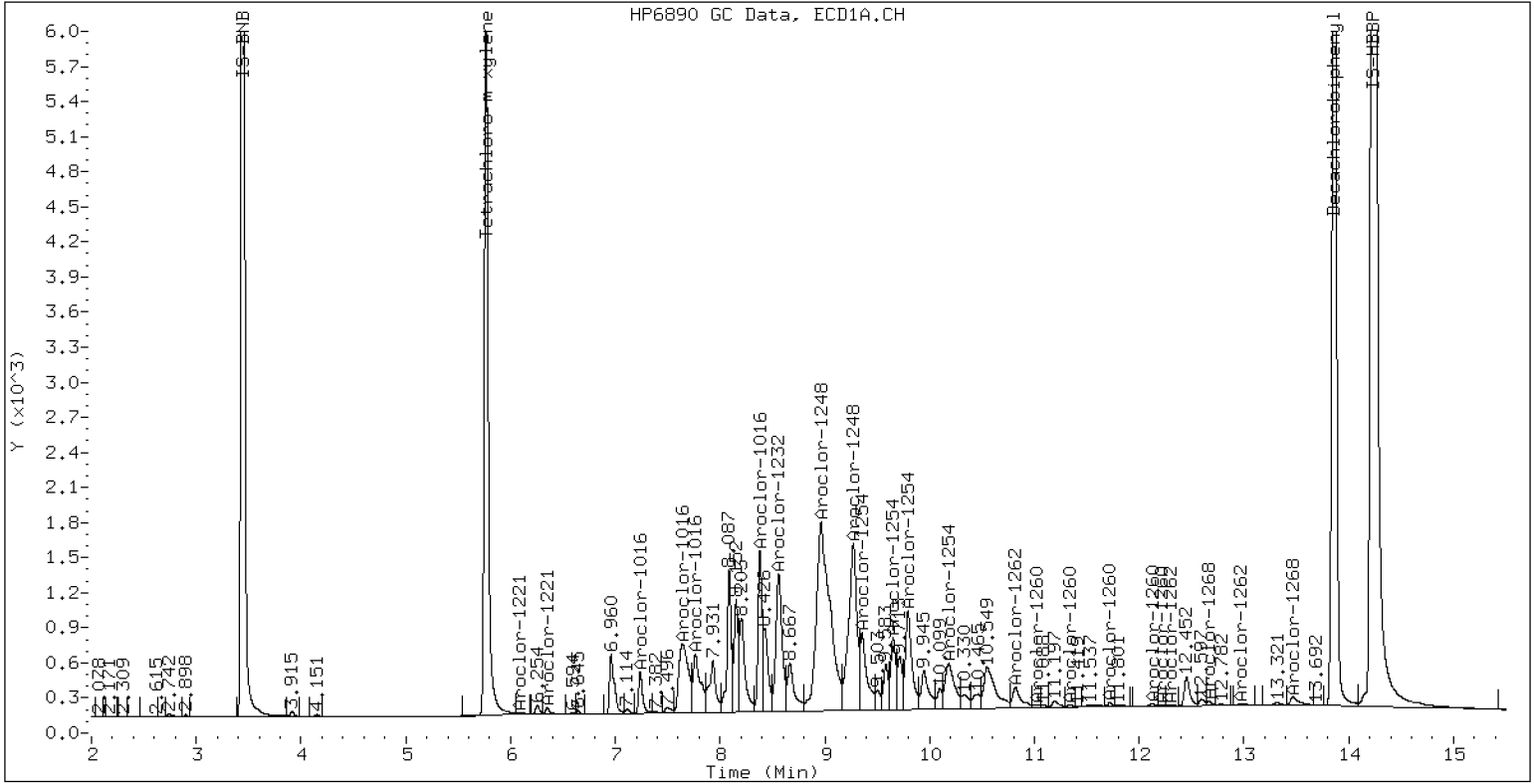
PCB-Form 10 Mod.



# PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV

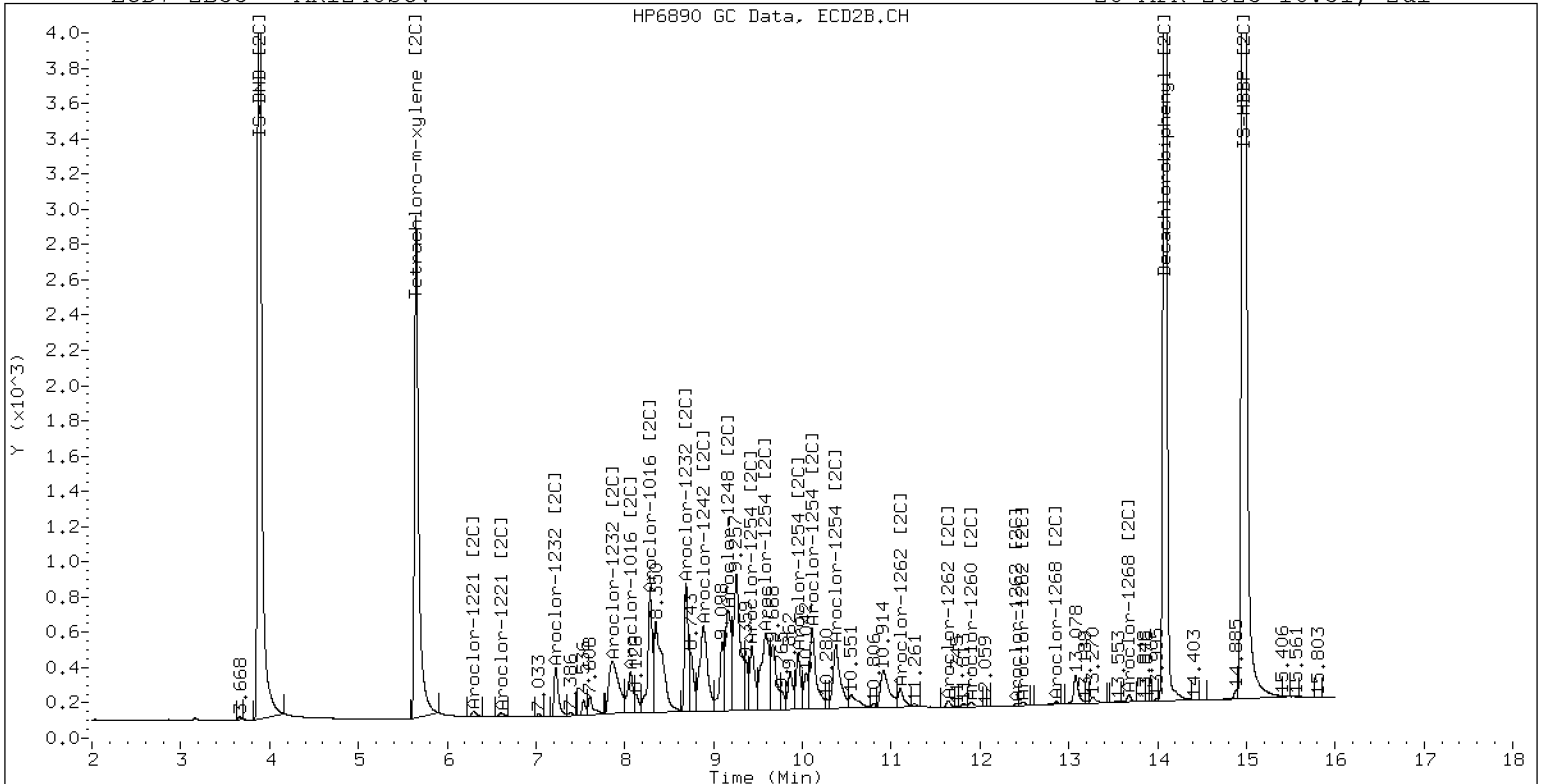
28-APR-2023 16:51, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1248SCV

28-APR-2023 16:51, 2ul



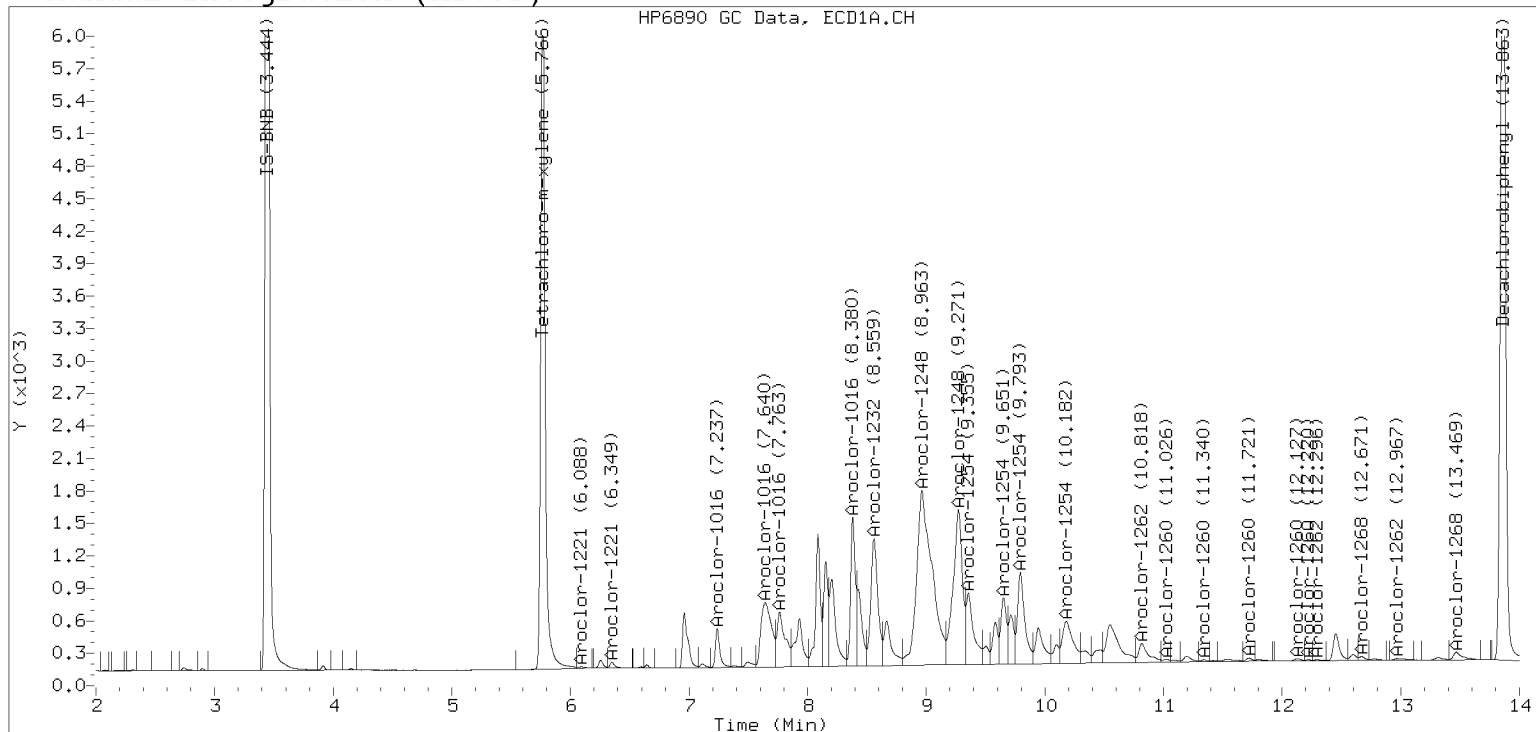
ZB-35 Manual Integration: YES

# Manual Peak Adjustment, ZB-5

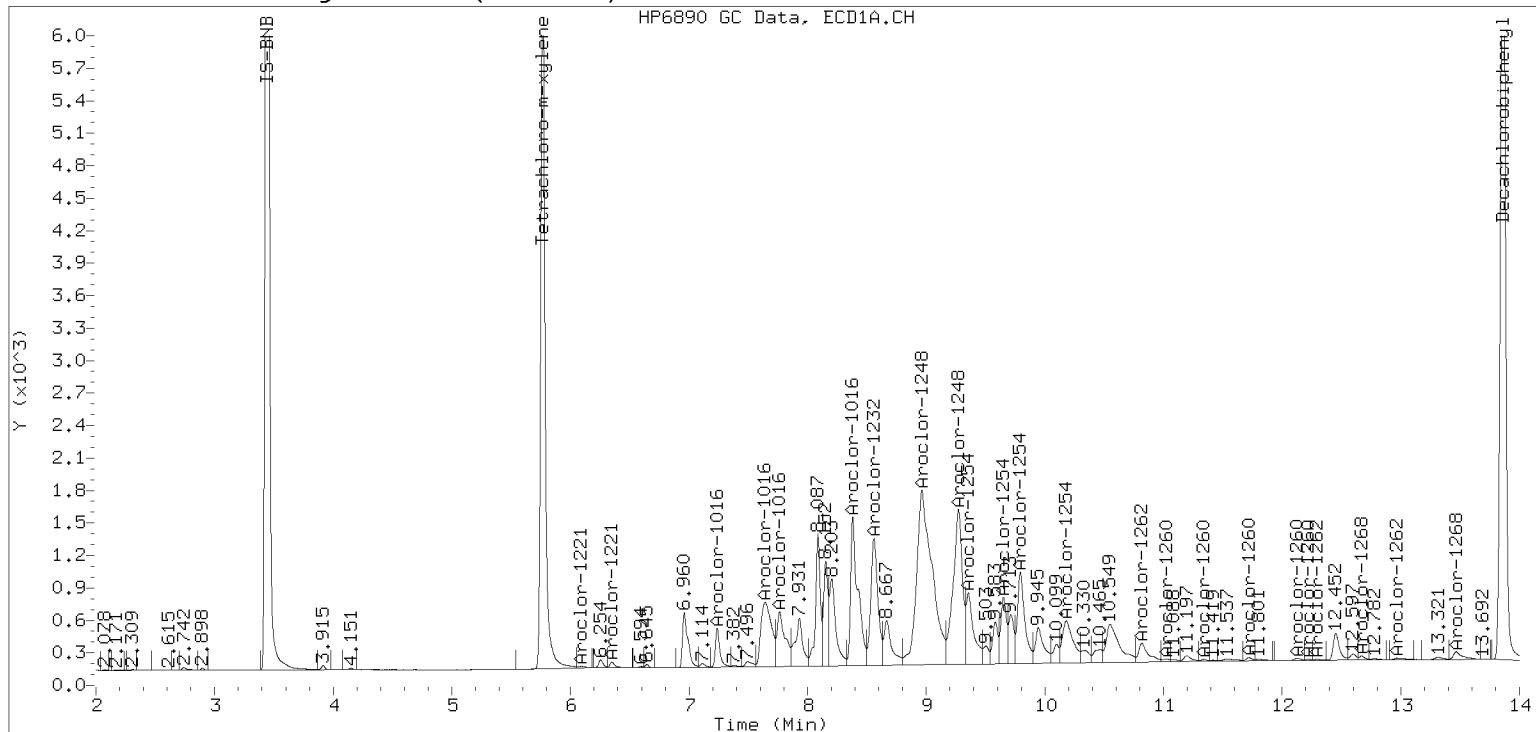
Datafile: ecd7.i/230428.b/04282317ECD7.D

Injection Date: 28-APR-2023 16:51

## Manual Integration (After)



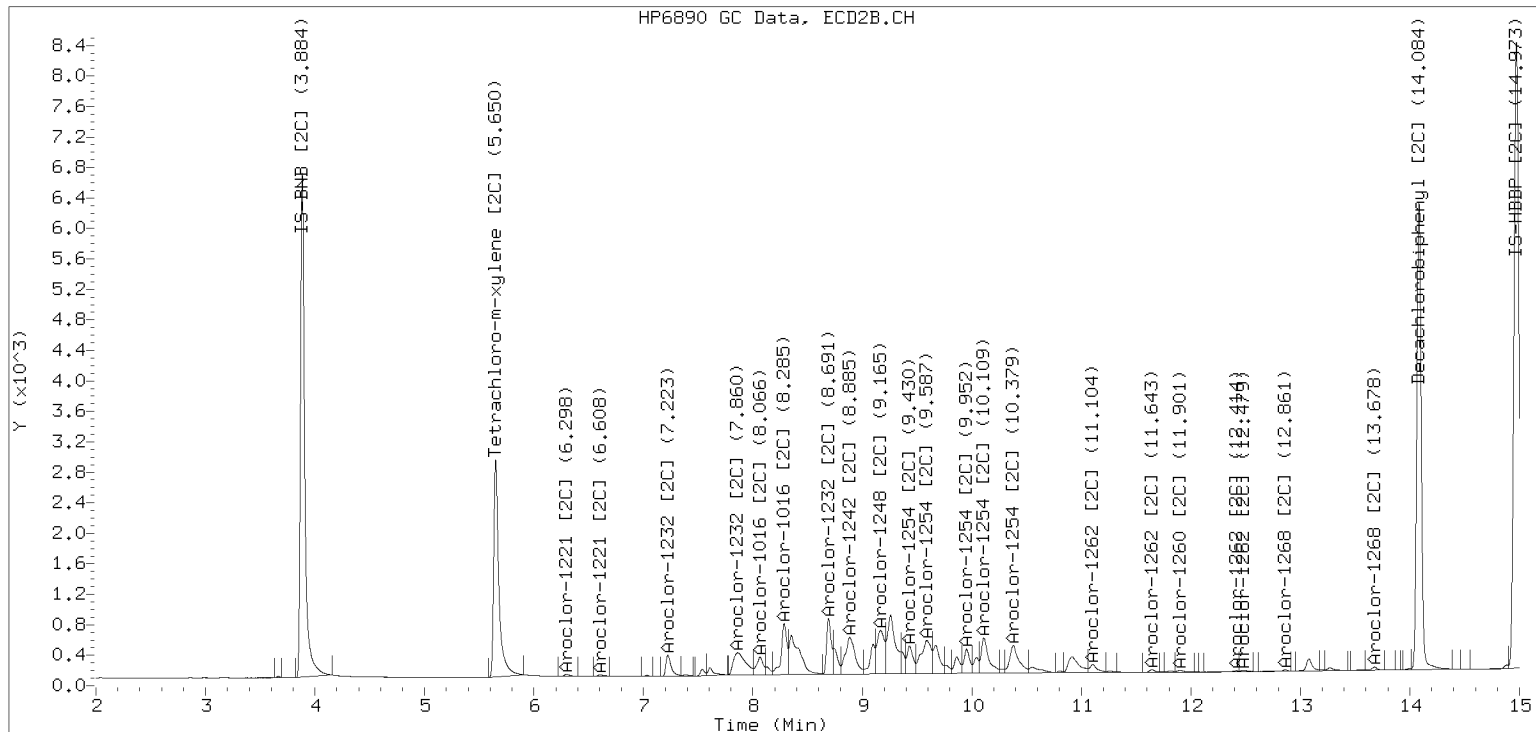
## Processed Integration (Before)



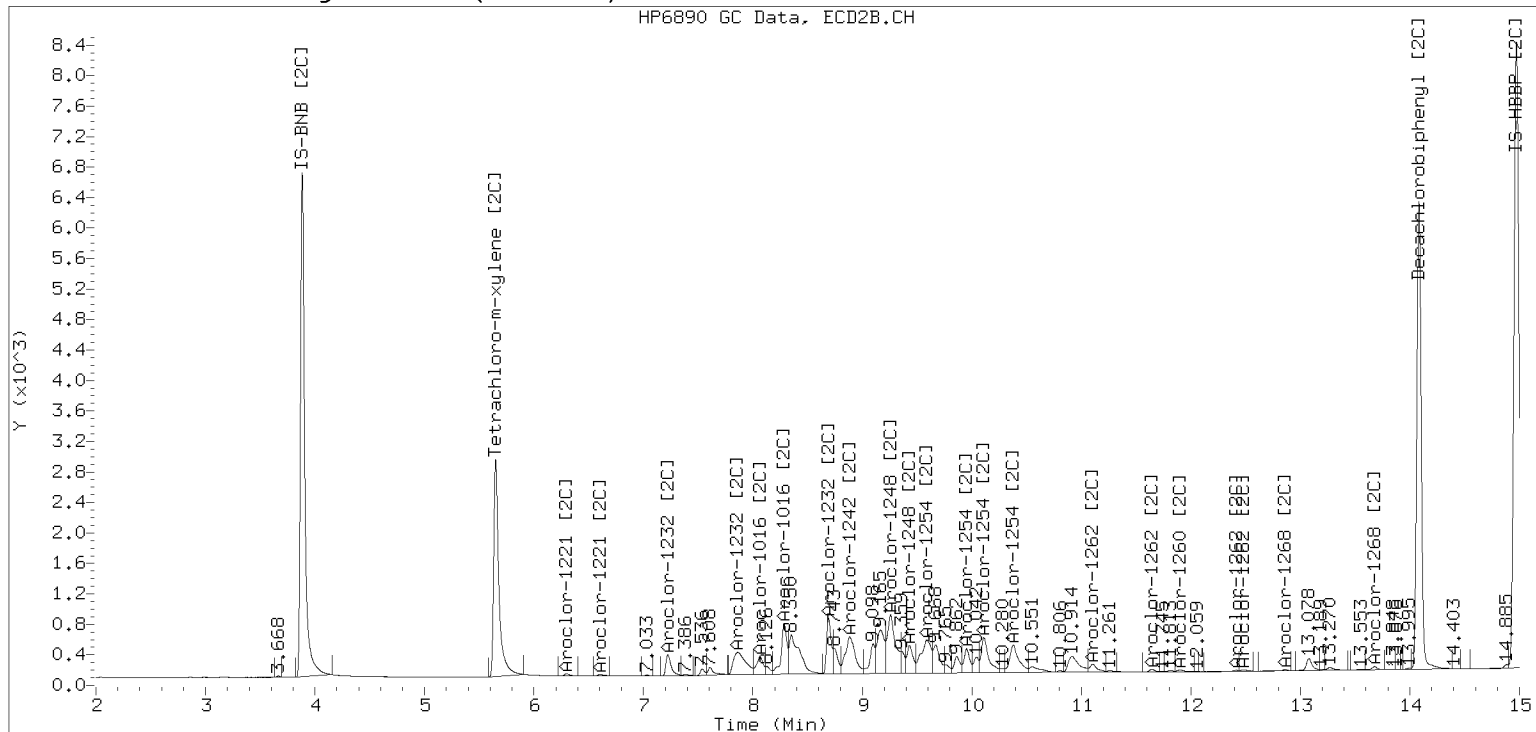
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282317ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282318ECD7.D  
Data file 2: /230428.b/230428.b/04282318ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1254SCV  
Client ID:  
Injection Date: 28-APR-2023 17:12  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	338365	5.650	-0.001	190789	38.3	37.3	2.7	Tetrachloro-m-xylene
13.863	0.001	478757	14.083	-0.001	359021	34.8	38.3	9.7	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	604006	8.6
Hexabromobiphenyl	745660	1269568	70.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	364366	4.6
Hexabromobiphenyl	429949	578129	34.5

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.239	0.004	417	1.8	1	7.234	0.013	203	1.0	
Aroclor-1016	2	7.672	0.044	1503	2.4	2	---			0.0	
Aroclor-1016	3	7.760	-0.003	1975	4.7	3	8.071	0.016	434	1.8	
Aroclor-1016	4	8.383	0.006	29140	133.2	4	8.285	0.004	22382	125.2	
Total CollAve (4 peaks):				35.5	Total Col2Ave (3 peaks):				42.7	RPD = 18	
Corrected Ave (3 peaks):				3.0	Corrected Ave: < 3 Peaks						
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	6.297	0.032	1765	30.5	
Aroclor-1221	3	---			0.0	3	6.613	0.019	308	2.3	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	7.234	0.010	203	2.3	
Aroclor-1232	3	7.672	0.020	1503	5.8	3	---			0.0	
Aroclor-1232	4	8.568	0.004	12422	103.4	4	8.695	0.001	16356	308.5	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1242	1	7.239	0.002	417	2.2	1	7.234	0.012	203	1.3	
Aroclor-1242	2	7.672	0.033	1503	2.9	2	---			0.0	
Aroclor-1242	3	8.383	0.001	29140	168.2	3	8.695	-0.473	16356	149.3	
Aroclor-1242	4	8.568	0.007	12422	48.5	4	8.889	-0.714	7125	63.4	
Total CollAve (4 peaks):				55.4	Total Col2Ave (3 peaks):				71.3	RPD = 25	
Corrected Ave (3 peaks):				17.9	Corrected Ave: < 3 Peaks						
Aroclor-1248	1	8.383	0.004	29140	99.9	1	8.695	0.410	16356	85.6	
Aroclor-1248	2	8.568	0.008	12422	32.1	2	8.889	0.198	7125	42.3	
Aroclor-1248	3	8.967	0.003	131799	114.1	3	9.259	0.095	58924	285.5	
Aroclor-1248	4	9.276	0.005	155956	257.1	4	9.430	-0.164	67213	305.3	
Total CollAve (4 peaks):				125.8	Total Col2Ave (4 peaks):				179.7	RPD = 35	
Corrected Ave (3 peaks):				82.0	Corrected Ave (3 peaks): 137.8 RPD = 51*						
Aroclor-1254	1	9.276	0.000	155956	239.0	1	9.430	0.000	67213	246.7	
Aroclor-1254	2	9.356	-0.002	75626	244.6	2	9.527	-0.001	39667	238.9	
Aroclor-1254	3	9.648	0.001	99996	242.4	3	9.950	-0.000	53621	243.2	
Aroclor-1254	4	9.788	-0.001	198294	236.6	4	10.109	-0.001	114263	239.3	
Aroclor-1254	5	10.164	-0.004	108093	245.4	5	10.355	-0.001	111846	203.8	
Total CollAve (5 peaks):				241.6	Total Col2Ave (5 peaks):				234.4	RPD = 3	
Corrected Ave (4 peaks):				240.7	Corrected Ave (4 peaks): 231.3 RPD = 4						
Aroclor-1260	1	11.018	0.001	14792	20.6	1	11.639	0.015	34047	82.8	
Aroclor-1260	2	11.338	0.005	15335	21.1	2	11.896	0.004	28313	26.2	
Aroclor-1260	3	11.716	0.006	37253	19.7	3	12.479	0.072	16654	67.8	
Aroclor-1260	4	12.122	0.006	28154	30.1	4	---			0.0	
Aroclor-1260	5	12.293	0.077	2641	6.2	NS	---			---	
Total CollAve (5 peaks):				19.5	Total Col2Ave (3 peaks):				58.9	RPD = 100*	
Corrected Ave (4 peaks):				16.9	Corrected Ave: < 3 Peaks						
Aroclor-1262	1	10.810	0.002	229213	462.7	1	11.097	-0.076	148180	256.4	
Aroclor-1262	2	12.293	0.076	2641	3.1	2	11.639	0.015	34047	69.9	
Aroclor-1262	3	---			0.0	3	12.479	0.076	16654	32.5	
Aroclor-1262	4	12.965	0.003	1702	2.2	4	---			0.0	
Total CollAve (3 peaks):				156.0	Total Col2Ave (3 peaks):				119.6	RPD = 26	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1268	1	12.293	0.075	2641	1.2	1	12.479	0.076	16654	12.5	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	12.672	0.003	2924	1.5	3	12.859	0.000	1168	0.9	
Aroclor-1268	4	13.468	0.007	11477	2.1	4	13.677	0.000	2357	0.6	
Total CollAve (3 peaks):				1.6	Total Col2Ave (3 peaks):				4.7	RPD = 97*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						

Total PCB Area Col1 (5.866 - 13.762) = 2154735 Col1 Total PCB = 0.3 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 1162346 Col2 Total PCB = 0.3 ppm\*

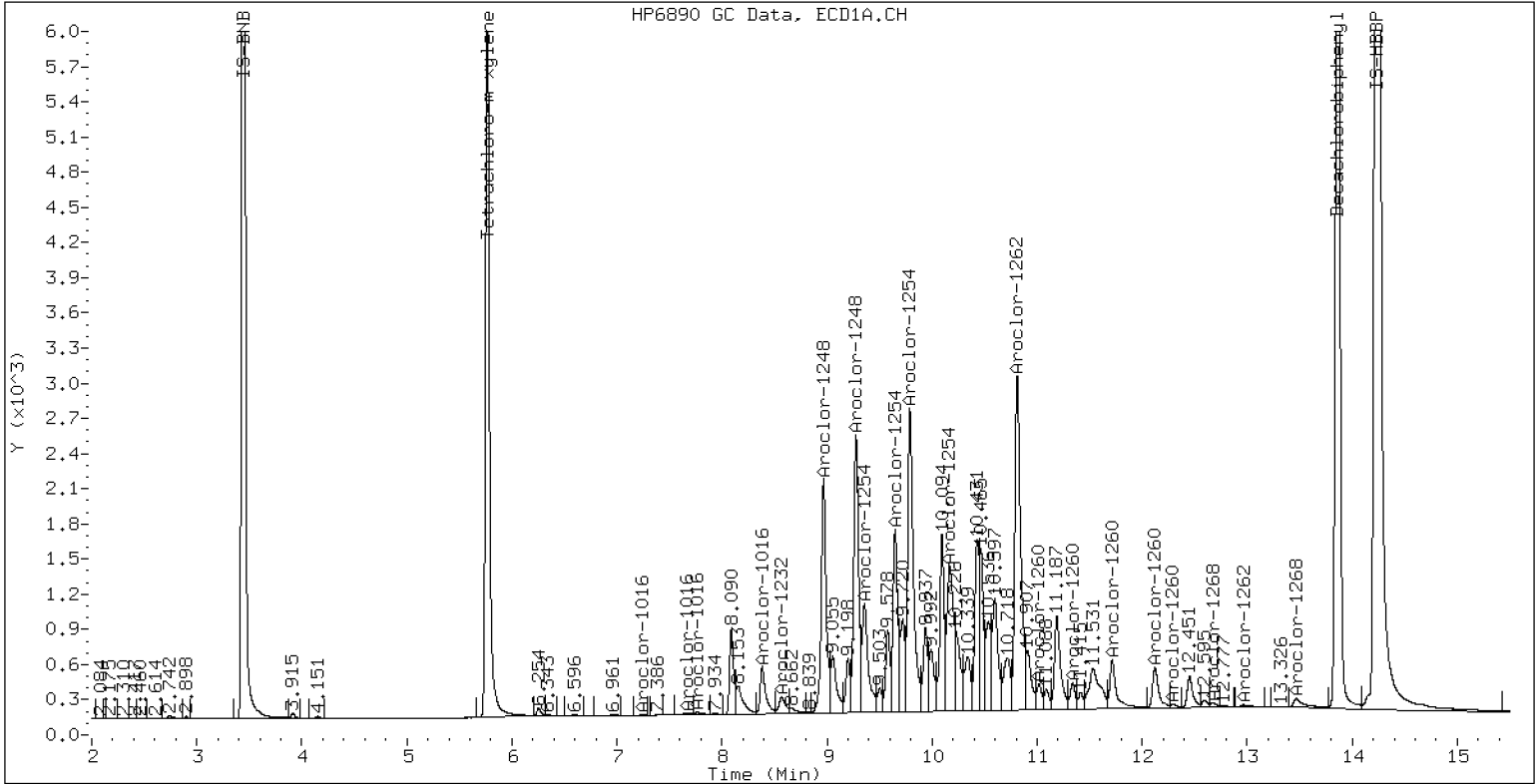
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV

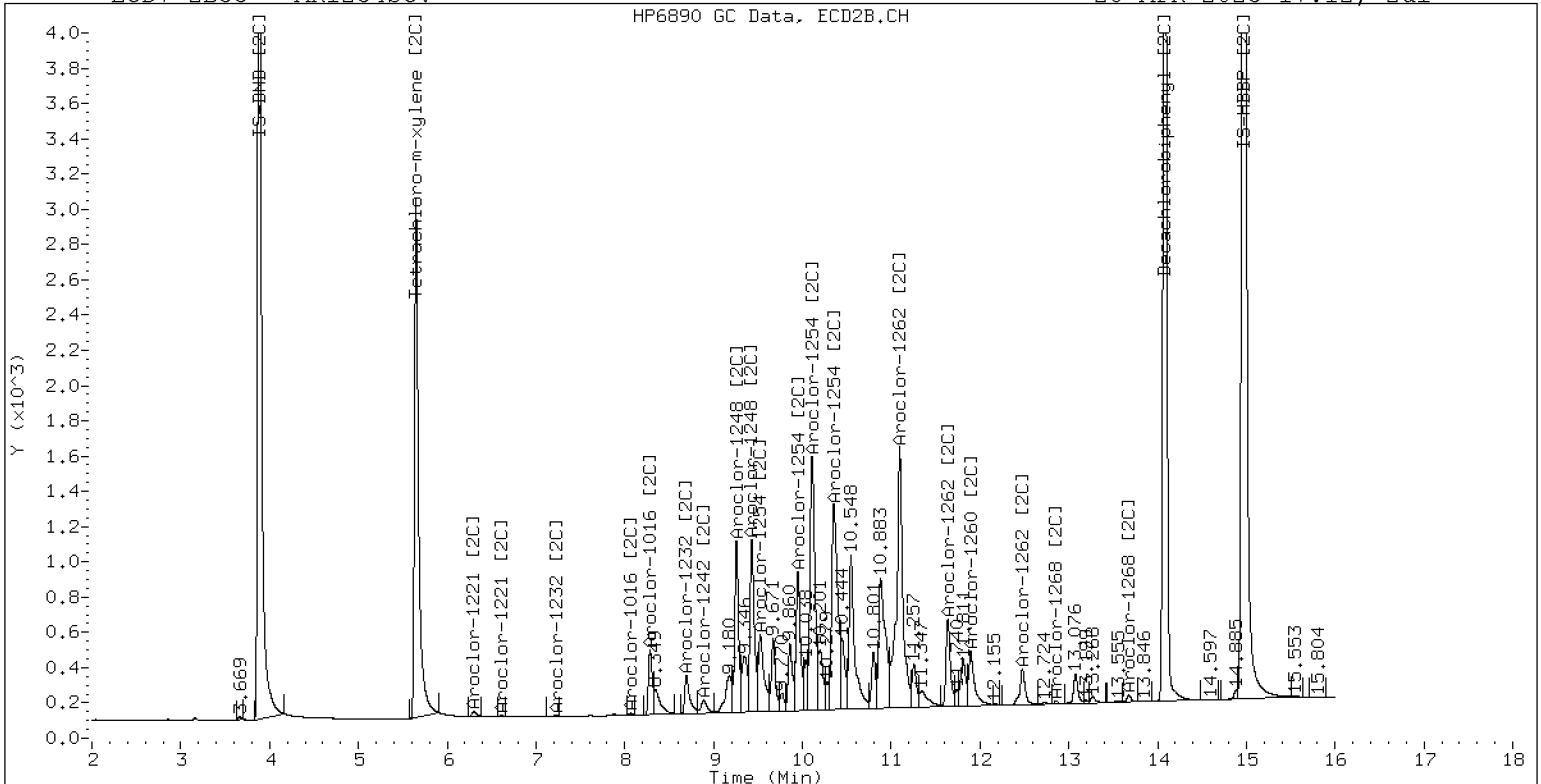
28-APR-2023 17:12, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1254SCV

28-APR-2023 17:12, 2ul



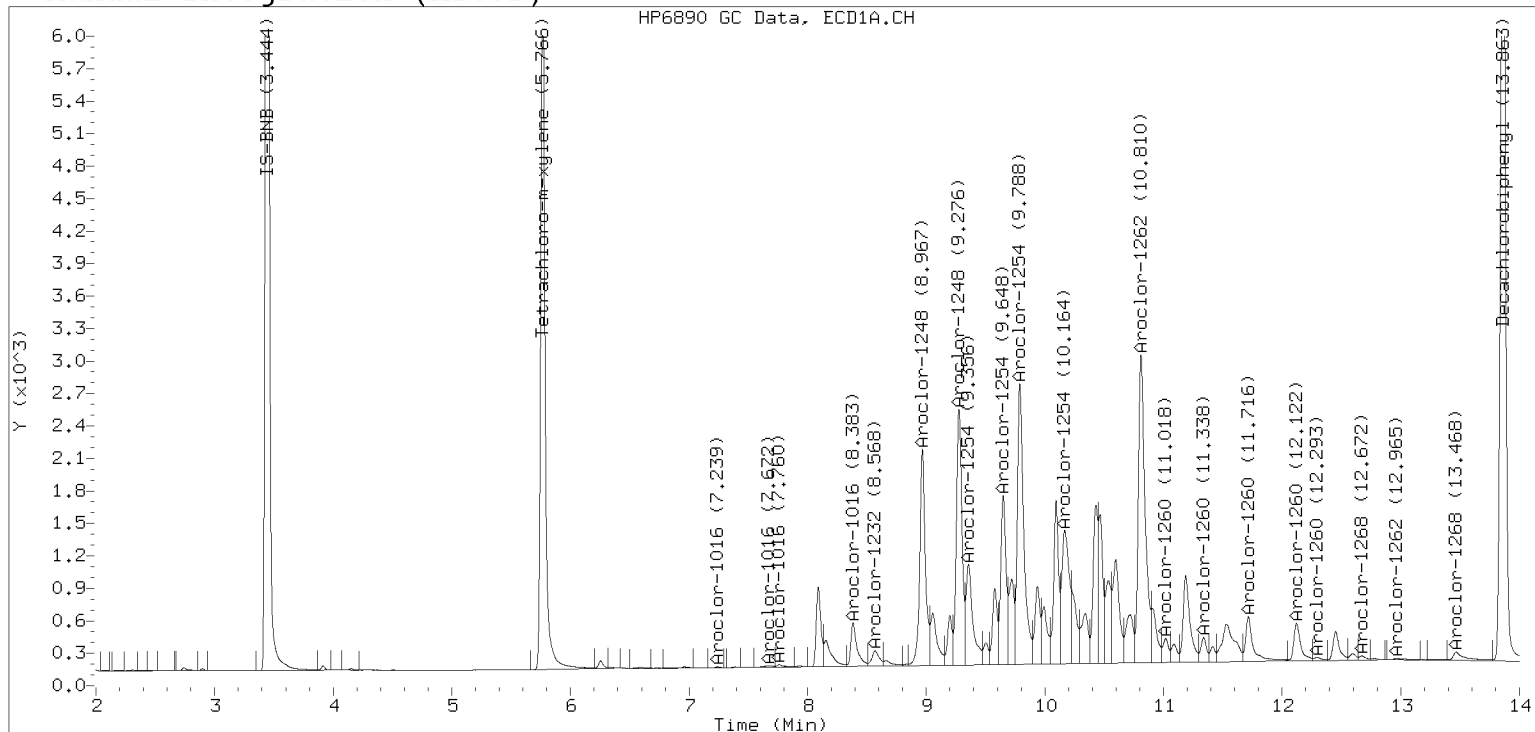
ZB-35 Manual Integration: YES

# Manual Peak Adjustment, ZB-5

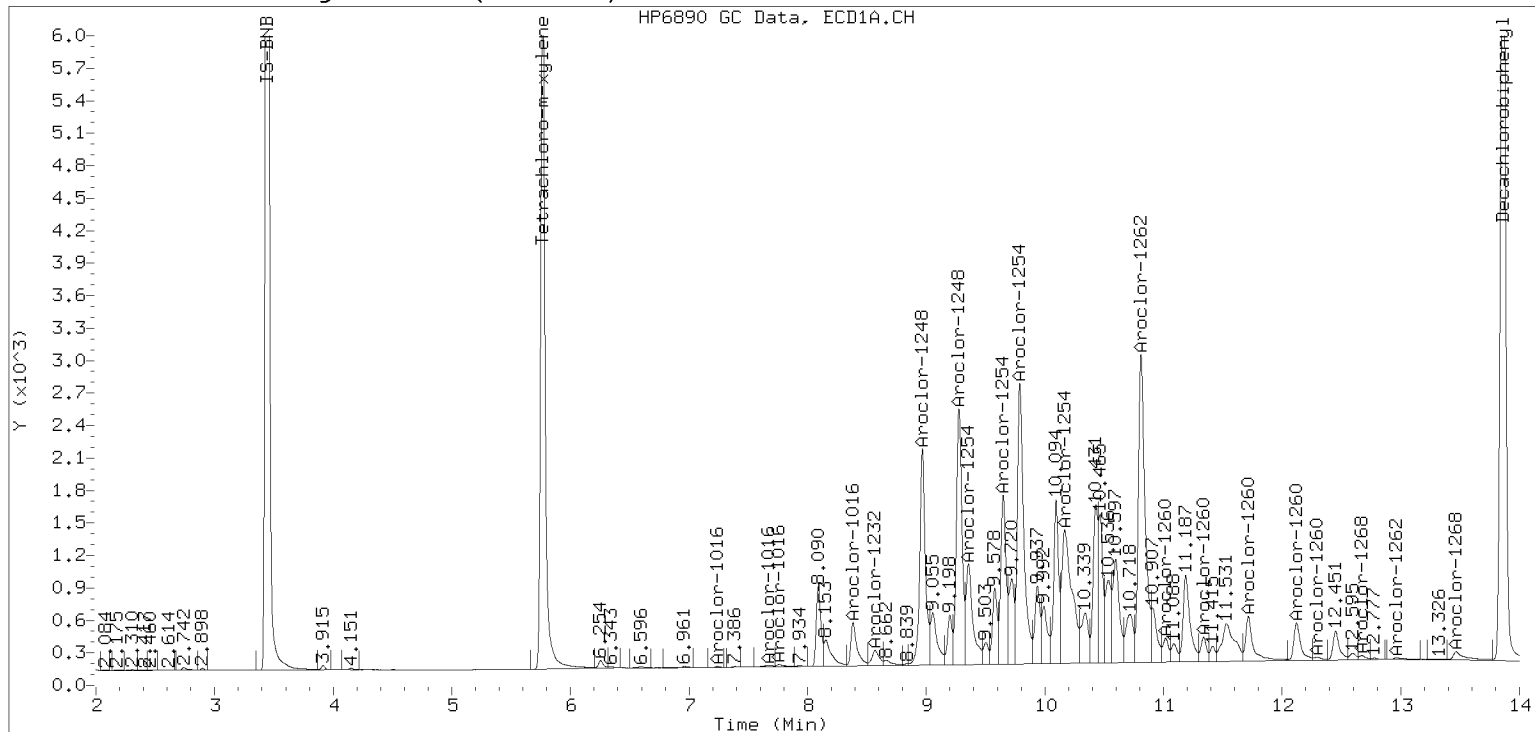
Datafile: ecd7.i/230428.b/04282318ECD7.D

Injection Date: 28-APR-2023 17:12

## Manual Integration (After)



## Processed Integration (Before)

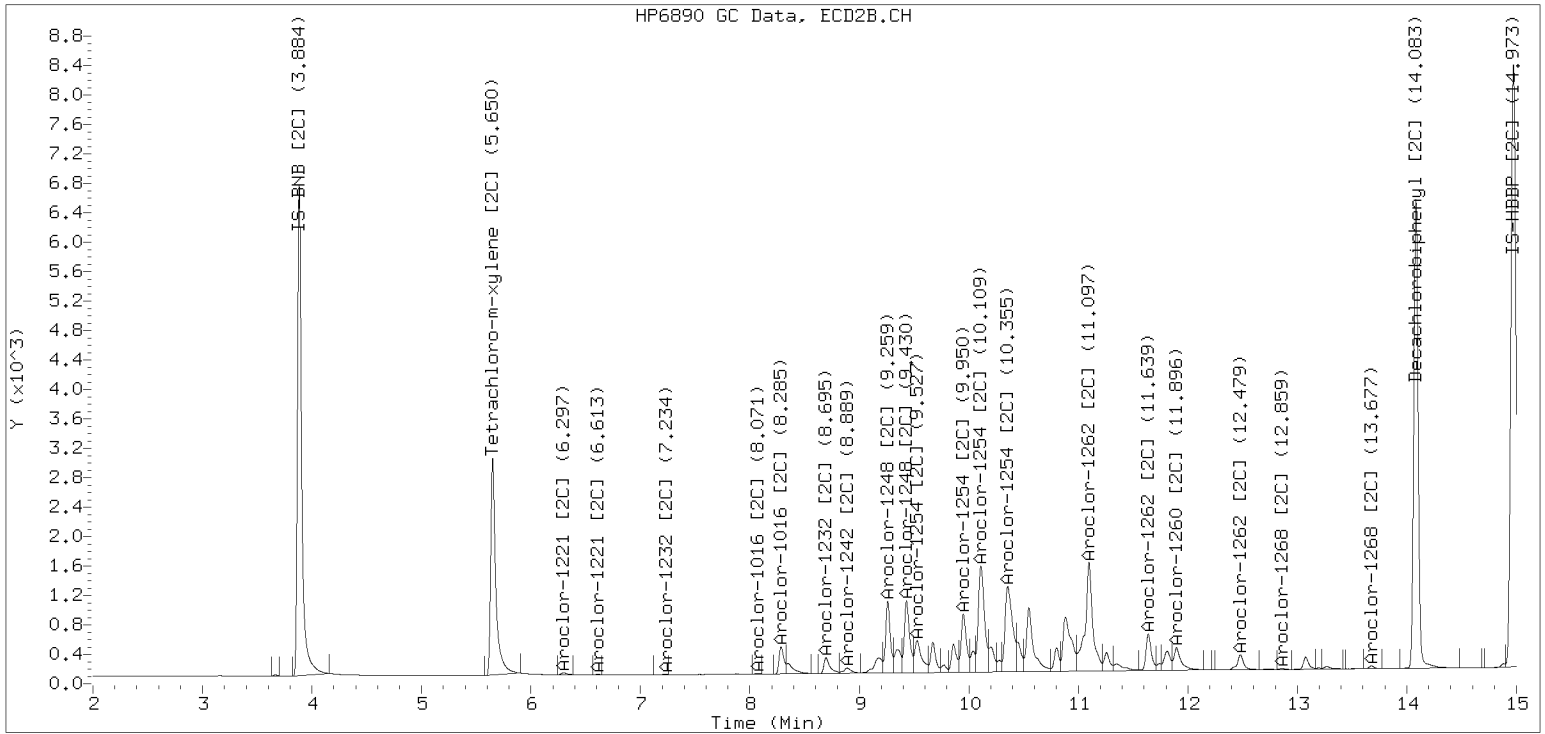




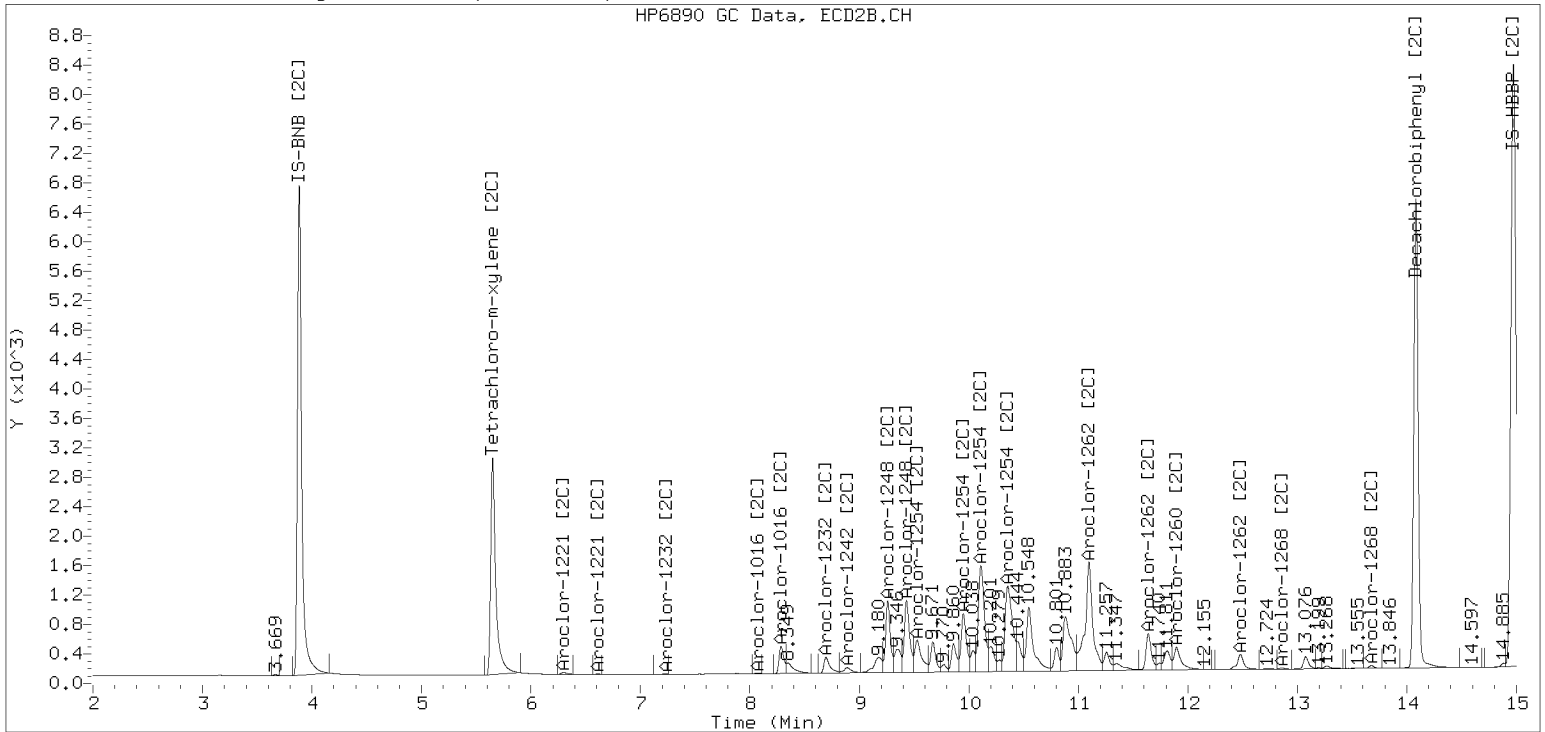
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282318ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282319ECD7.D  
Data file 2: /230428.b/230428.b/04282319ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR2162SCV  
Client ID:  
Injection Date: 28-APR-2023 17:33  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.767	0.001	336477	5.650	-0.001	192040	38.3	38.0	0.7	Tetrachloro-m-xylene
13.862	0.001	499246	14.084	-0.000	363267	35.9	38.9	8.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	601660	8.2
Hexabromobiphenyl	745660	1282462	72.0
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	359781	3.2
Hexabromobiphenyl	429949	576077	34.0

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.237	0.002	5001	21.5	1	7.227	0.005	3885	19.9	
Aroclor-1016	2	7.665	0.037	8647	14.0	2	7.887	0.043	4451	11.6	
Aroclor-1016	3	7.777	0.014	6495	15.6	3	8.066	0.012	2267	9.6	
Aroclor-1016	4	8.388	0.012	2933	13.5	4	8.290	0.009	1849	10.5	
Total CollAve (4 peaks):				16.1	Total Col2Ave (4 peaks):				12.9	RPD = 22	
Corrected Ave (3 peaks):				14.3	Corrected Ave (3 peaks):				10.5	RPD = 31	
Aroclor-1221	1	4.683	0.001	12932	280.8	1	4.911	0.000	7988	299.1	
Aroclor-1221	2	6.094	0.000	24389	264.0	2	6.265	-0.001	15133	265.2	
Aroclor-1221	3	6.348	0.002	57578	262.7	3	6.593	-0.000	34566	264.7	
Total CollAve (3 peaks):				269.2	Total Col2Ave (3 peaks):				276.3	RPD = 3	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.683	0.001	12932	441.6	1	4.911	-0.001	7988	515.9	
Aroclor-1232	2	6.094	0.001	24389	376.5	2	7.227	0.002	3885	45.1	
Aroclor-1232	3	7.665	0.013	8647	33.7	3	7.887	0.025	4451	26.2	
Aroclor-1232	4	8.569	0.006	1975	16.5	4	8.699	0.005	1706	32.6	
Total CollAve (4 peaks):				217.1	Total Col2Ave (4 peaks):				154.9	RPD = 33	
Corrected Ave (3 peaks):				142.2	Corrected Ave (3 peaks):				34.6	RPD = 122*	
Aroclor-1242	1	7.237	0.001	5001	26.6	1	7.227	0.005	3885	24.9	
Aroclor-1242	2	7.665	0.026	8647	16.9	2	7.887	0.029	4451	14.2	
Aroclor-1242	3	8.388	0.006	2933	17.0	3	8.699	-0.469	1706	15.8	
Aroclor-1242	4	8.569	0.009	1975	7.7	4	8.906	-0.697	1208	10.9	
Total CollAve (4 peaks):				17.1	Total Col2Ave (4 peaks):				16.4	RPD = 4	
Corrected Ave (3 peaks):				13.9	Corrected Ave (3 peaks):				13.6	RPD = 2	
Aroclor-1248	1	8.388	0.009	2933	10.1	1	8.699	0.414	1706	9.0	
Aroclor-1248	2	8.569	0.010	1975	5.1	2	8.906	0.215	1208	7.3	
Aroclor-1248	3	8.970	0.006	23869	20.7	3	9.261	0.098	12638	62.0	
Aroclor-1248	4	9.284	0.013	28188	46.7	4	9.437	-0.157	13948	64.2	
Total CollAve (4 peaks):				20.7	Total Col2Ave (4 peaks):				35.6	RPD = 53*	
Corrected Ave (3 peaks):				12.0	Corrected Ave (3 peaks):				26.1	RPD = 74*	
Aroclor-1254	1	9.284	0.009	28188	43.4	1	9.437	0.007	13948	51.9	
Aroclor-1254	2	---			0.0	2	---			0.0	
Aroclor-1254	3	9.654	0.006	4038	9.8	3	9.958	0.008	1791	8.2	
Aroclor-1254	4	9.795	0.005	11586	13.9	4	10.124	0.014	55476	117.7	
Aroclor-1254	5	10.096	-0.072	138022	314.6	5	10.346	-0.010	70184	129.5	
Total CollAve (4 peaks):				95.4	Total Col2Ave (4 peaks):				76.8	RPD = 22	
Corrected Ave (3 peaks):				22.4	Corrected Ave (3 peaks):				59.3	RPD = 90*	
Aroclor-1260	1	11.019	0.002	240553	332.2	1	11.623	-0.001	124057	302.7	
Aroclor-1260	2	11.335	0.002	202728	276.0	2	11.893	0.001	303878	282.5	
Aroclor-1260	3	11.713	0.003	494200	259.3	3	12.405	-0.002	129175	527.4	
Aroclor-1260	4	12.118	0.002	155139	164.1	4	12.475	0.000	226410	308.9	
Aroclor-1260	5	12.217	0.001	214340	494.2	NS	---			----	
Total CollAve (5 peaks):				305.2	Total Col2Ave (4 peaks):				355.4	RPD = 15	
Corrected Ave (4 peaks):				257.9	Corrected Ave (3 peaks):				298.1	RPD = 14	
Aroclor-1262	1	10.809	0.000	123367	246.5	1	11.173	-0.000	146790	254.9	
Aroclor-1262	2	12.217	0.001	214340	245.2	2	11.623	-0.001	124057	255.8	
Aroclor-1262	3	12.293	0.001	236304	246.0	3	12.405	0.001	129175	252.9	
Aroclor-1262	4	12.963	0.001	216573	279.5	4	12.475	-0.000	226410	256.4	
Total CollAve (4 peaks):				254.3	Total Col2Ave (4 peaks):				255.0	RPD = 0	
Corrected Ave (3 peaks):				245.9	Corrected Ave (3 peaks):				254.5	RPD = 3	
Aroclor-1268	1	12.217	-0.001	214340	97.4	1	12.405	0.001	129175	97.0	
Aroclor-1268	2	12.293	0.002	236304	103.1	2	12.475	0.004	226410	149.9	
Aroclor-1268	3	12.700	0.031	85797	45.0	3	12.859	0.001	9727	7.8	
Aroclor-1268	4	13.461	0.001	83654	15.2	4	13.678	0.001	40997	10.8	
Total CollAve (4 peaks):				65.2	Total Col2Ave (4 peaks):				66.4	RPD = 2	

Corrected Ave (3 peaks): 52.5      Corrected Ave (3 peaks): 38.5      RPD = 31

Total PCB Area Col1 (5.866 - 13.762) = 3513270      Col1 Total PCB = 0.5 ppm\*  
Total PCB Area Col2 (5.751 - 13.984) = 1957095      Col2 Total PCB = 0.5 ppm\*

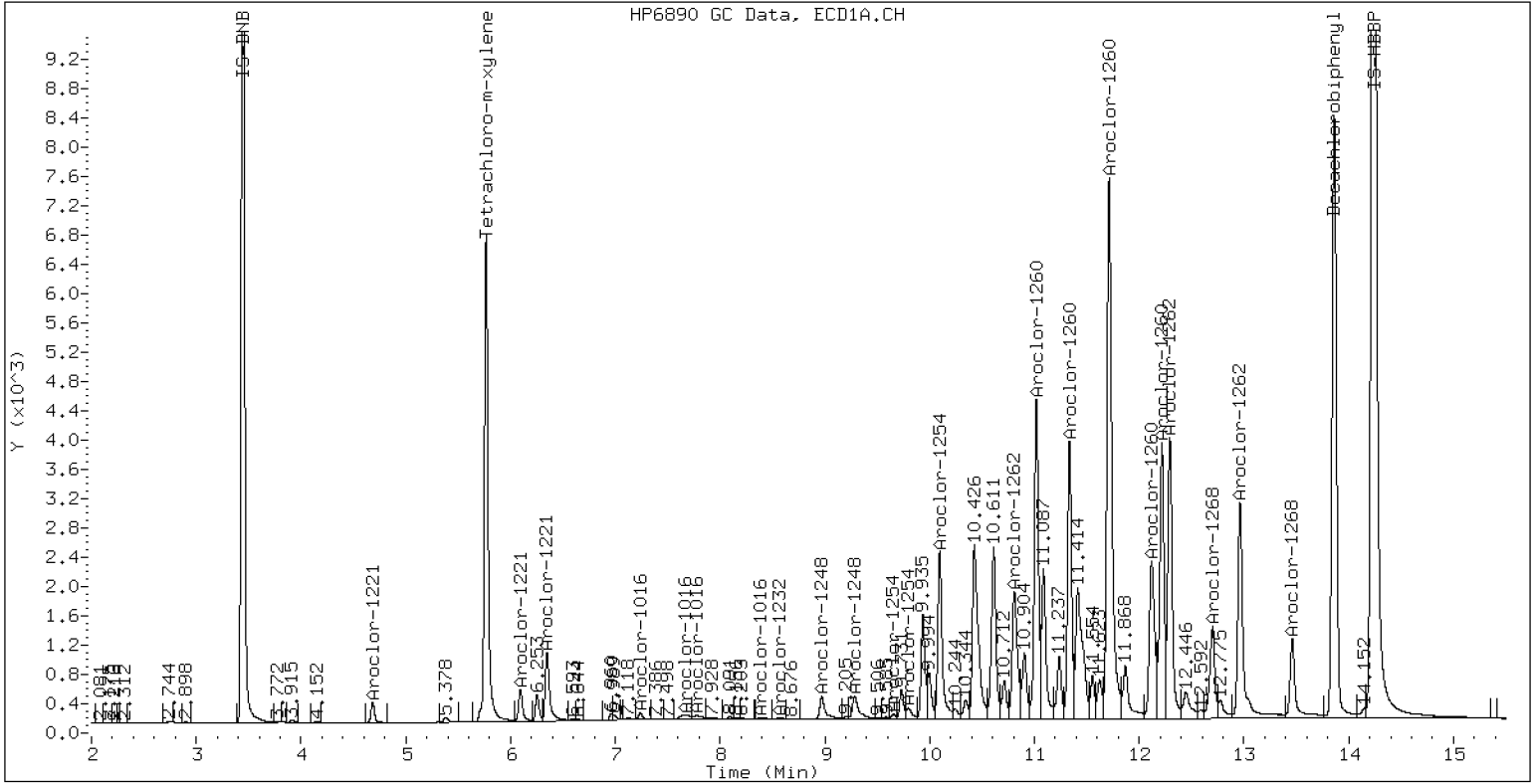
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV

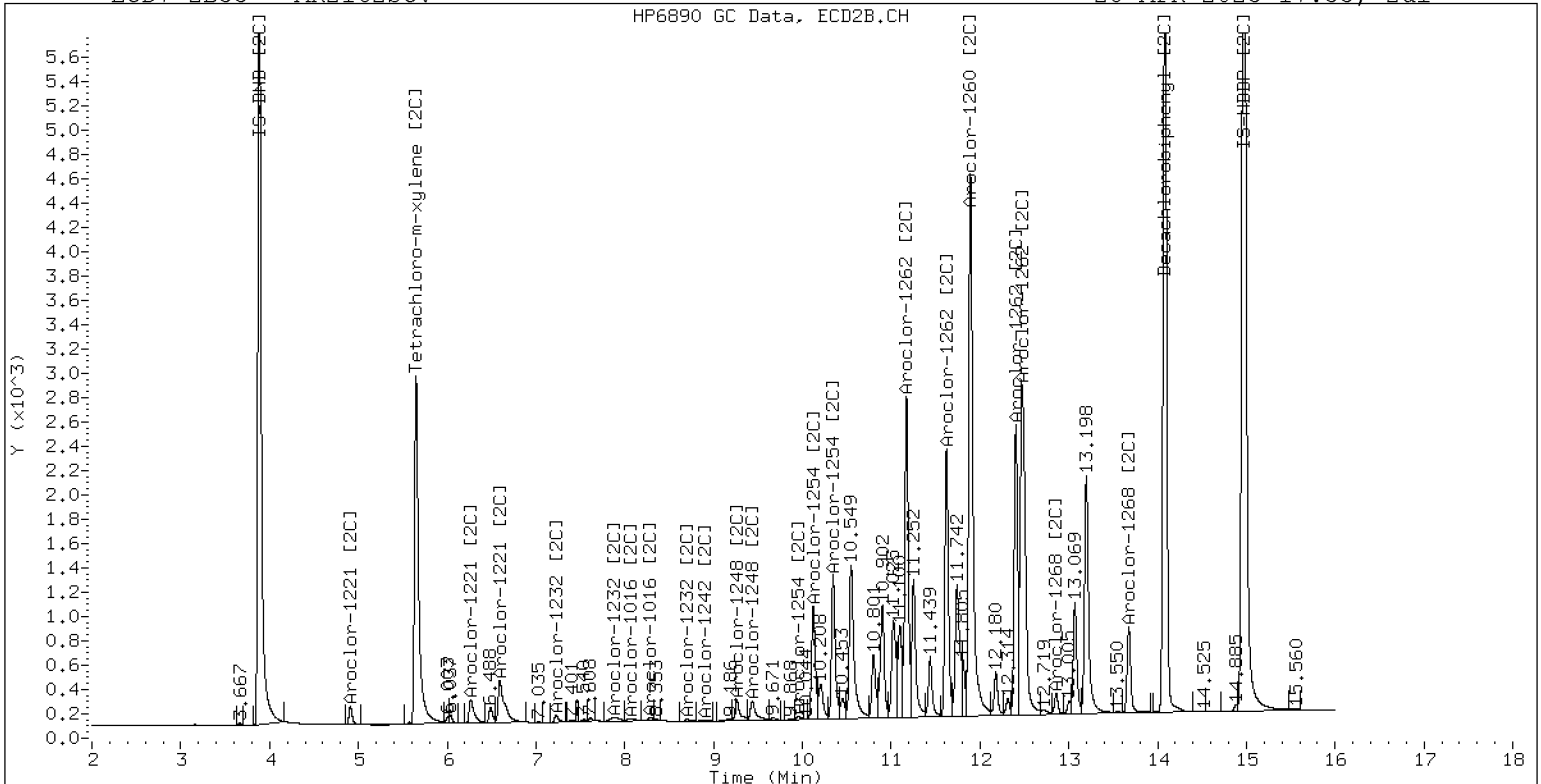
28-APR-2023 17:33, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV

28-APR-2023 17:33, 2u1

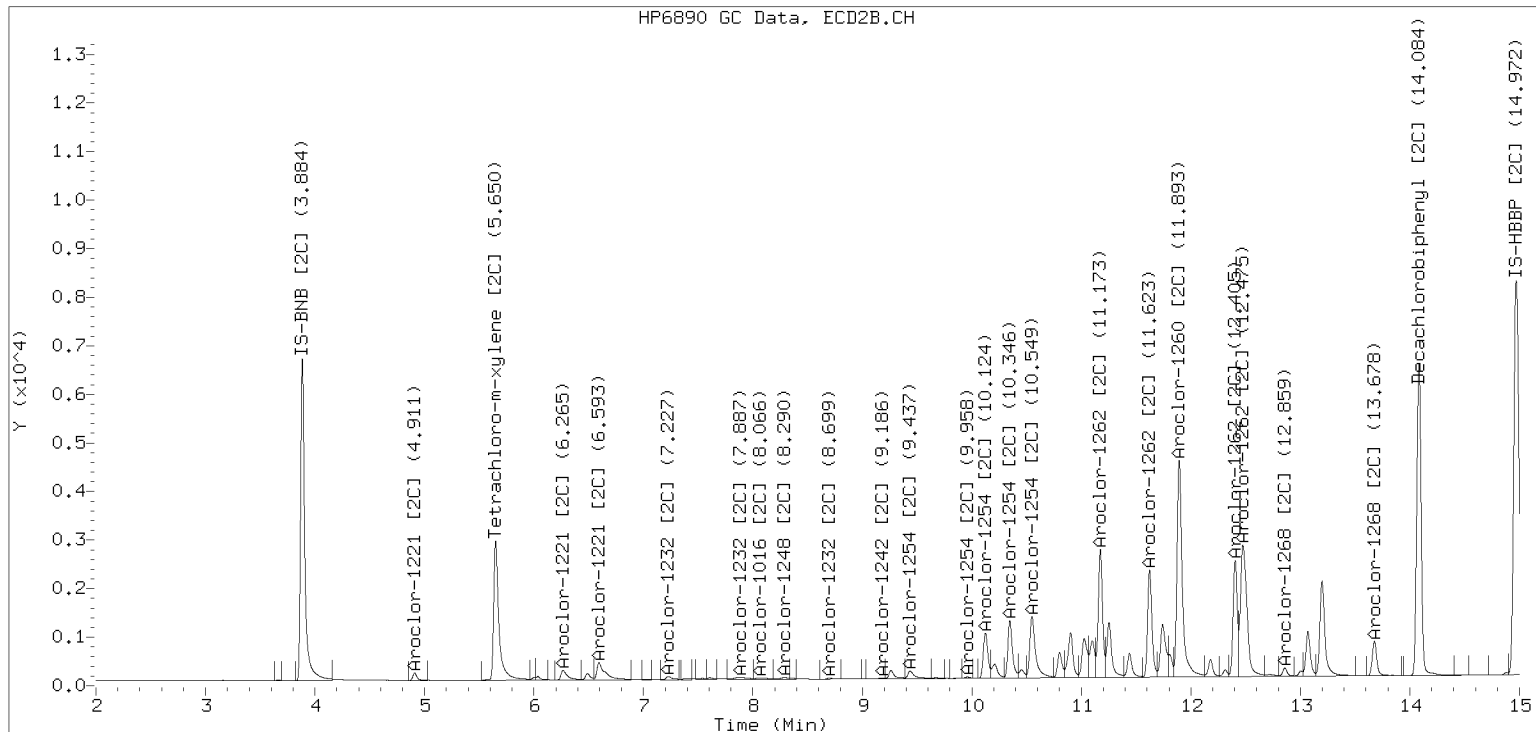


ZB-35 Manual Integration: NO

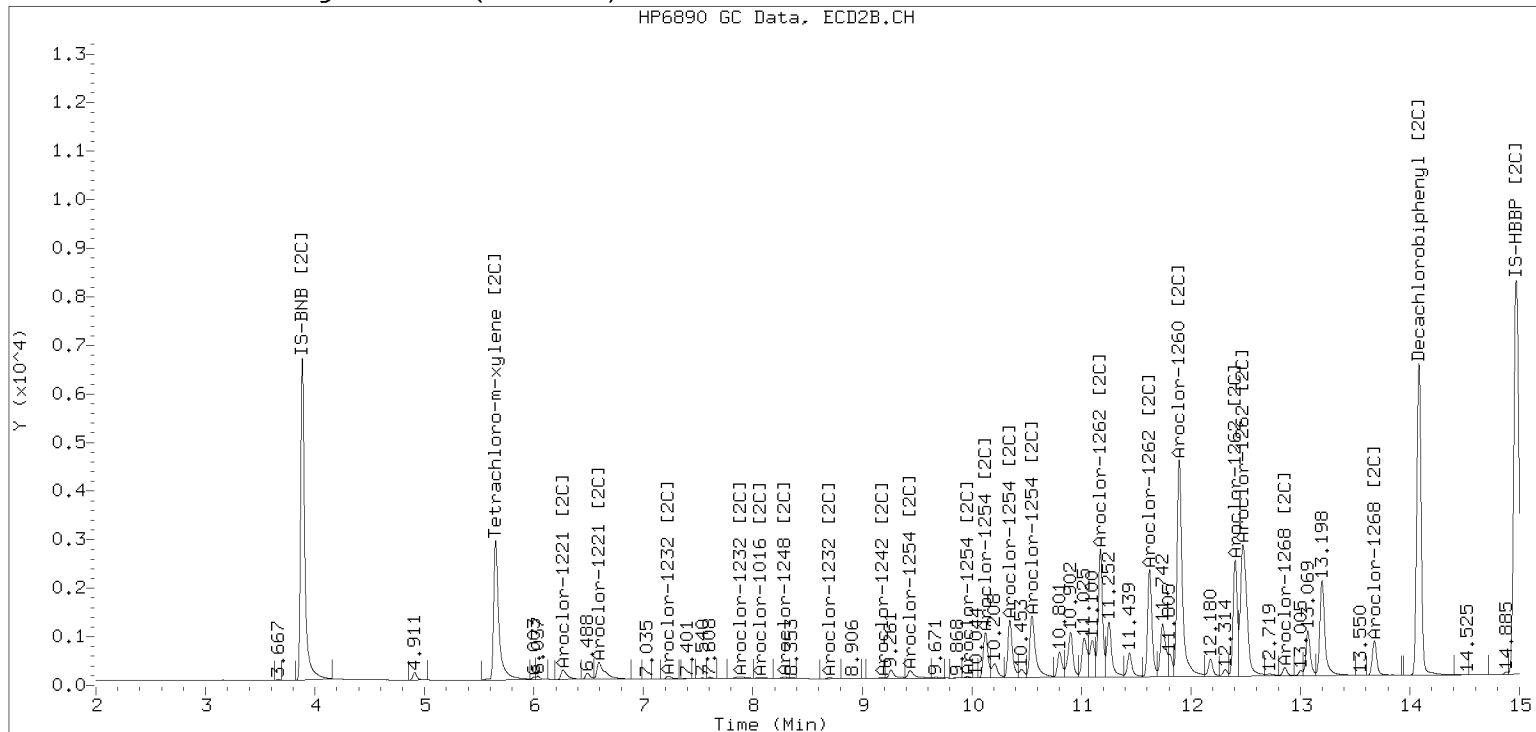
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282319ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282320ECD7.D  
Data file 2: /230428.b/230428.b/04282320ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR3268SCV  
Client ID:  
Injection Date: 28-APR-2023 17:54  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col			ZB5	ZB35	RPD	Compound/Flag	
RT	Shift	Response	RT	Shift	Response	on col			on col
5.767	0.001	344701	5.650	-0.000	190884	39.7	38.1	4.2	Tetrachloro-m-xylene
13.863	0.002	748678	14.083	-0.001	556825	54.3	60.0	10.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	594267	6.8
Hexabromobiphenyl	745660	1272651	70.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	357253	2.5
Hexabromobiphenyl	429949	572751	33.2

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.238	0.002	27428	119.4	1	7.224	0.003	22212	114.8	
Aroclor-1016	2	7.645	0.018	67306	110.5	2	7.864	0.020	43795	114.5	
Aroclor-1016	3	7.770	0.007	44634	108.2	3	8.063	0.009	25689	109.2	
Aroclor-1016	4	8.384	0.008	23868	110.9	4	8.289	0.008	18313	104.5	
Total CollAve (4 peaks):				112.2	Total Col2Ave (4 peaks):				110.7	RPD = 1	
Corrected Ave (3 peaks):				109.9	Corrected Ave (3 peaks):				109.4	RPD = 0	
Aroclor-1221	1	4.684	0.002	6934	152.4	1	4.912	0.002	3754	141.5	
Aroclor-1221	2	6.095	0.001	14371	157.5	2	6.267	0.002	8987	158.6	
Aroclor-1221	3	6.348	0.002	41876	193.5	3	6.596	0.002	24420	188.3	
Total CollAve (3 peaks):				167.8	Total Col2Ave (3 peaks):				162.8	RPD = 3	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.684	0.002	6934	239.7	1	4.912	0.001	3754	244.1	
Aroclor-1232	2	6.095	0.001	14371	224.6	2	7.224	-0.001	22212	259.7	
Aroclor-1232	3	7.645	-0.006	67306	265.3	3	7.864	0.002	43795	259.5	
Aroclor-1232	4	8.564	0.001	33203	281.0	4	8.693	-0.001	13696	263.5	
Total CollAve (4 peaks):				252.6	Total Col2Ave (4 peaks):				256.7	RPD = 2	
Corrected Ave (3 peaks):				243.2	Corrected Ave (3 peaks):				254.4	RPD = 5	
Aroclor-1242	1	7.238	0.001	27428	147.9	1	7.224	0.002	22212	143.1	
Aroclor-1242	2	7.645	0.007	67306	132.8	2	7.864	0.006	43795	141.0	
Aroclor-1242	3	8.428	0.047	16206	95.1	3	8.693	-0.475	13696	127.5	
Aroclor-1242	4	8.564	0.004	33203	131.6	4	8.897	-0.706	21265	192.9	
Total CollAve (4 peaks):				126.9	Total Col2Ave (4 peaks):				151.1	RPD = 17	
Corrected Ave (3 peaks):				119.8	Corrected Ave (3 peaks):				137.2	RPD = 14	
Aroclor-1248	1	8.384	0.005	23868	83.1	1	8.693	0.408	13696	73.1	
Aroclor-1248	2	8.564	0.005	33203	87.2	2	8.897	0.206	21265	128.9	
Aroclor-1248	3	8.968	0.004	84096	74.0	3	9.261	0.097	25621	126.6	
Aroclor-1248	4	9.276	0.005	56986	95.5	4	9.433	-0.160	6057	28.1	
Total CollAve (4 peaks):				85.0	Total Col2Ave (4 peaks):				89.2	RPD = 5	
Corrected Ave (3 peaks):				81.4	Corrected Ave (3 peaks):				75.9	RPD = 7	
Aroclor-1254	1	9.276	0.000	56986	88.8	1	9.433	0.004	6057	22.7	
Aroclor-1254	2	---			0.0	2	9.609	0.081	13368	82.1	
Aroclor-1254	3	9.660	0.012	7875	19.4	3	9.958	0.008	2781	12.9	
Aroclor-1254	4	9.800	0.010	12771	15.5	4	10.117	0.007	5502	11.8	
Aroclor-1254	5	10.183	0.015	9957	23.0	5	10.379	0.024	5042	9.4	
Total CollAve (4 peaks):				36.7	Total Col2Ave (5 peaks):				27.8	RPD = 28	
Corrected Ave (3 peaks):				19.3	Corrected Ave (4 peaks):				14.2	RPD = 31	
Aroclor-1260	1	11.023	0.005	98362	136.9	1	11.614	-0.010	74582	183.0	
Aroclor-1260	2	11.337	0.004	8979	12.3	2	11.895	0.003	33641	31.5	
Aroclor-1260	3	11.714	0.004	59413	31.4	3	12.402	-0.005	335038	1375.9	
Aroclor-1260	4	---			0.0	4	12.470	-0.005	380342	522.0	
Aroclor-1260	5	12.219	0.003	530793	1233.3	NS	---			----	
Total CollAve (4 peaks):				353.5	Total Col2Ave (4 peaks):				528.1	RPD = 40	
Corrected Ave (3 peaks):				60.2	Corrected Ave (3 peaks):				245.5	RPD = 121*	
Aroclor-1262	1	10.815	0.006	5713	11.5	1	11.176	0.003	58379	102.0	
Aroclor-1262	2	12.219	0.002	530793	612.0	2	11.614	-0.010	74582	154.7	
Aroclor-1262	3	12.291	-0.001	548779	575.7	3	12.402	-0.002	335038	659.6	
Aroclor-1262	4	12.960	-0.003	218981	284.8	4	12.470	-0.005	380342	433.3	
Total CollAve (4 peaks):				371.0	Total Col2Ave (4 peaks):				337.4	RPD = 9	
Corrected Ave (3 peaks):				290.7	Corrected Ave (3 peaks):				230.0	RPD = 23	
Aroclor-1268	1	12.219	0.000	530793	243.0	1	12.402	-0.001	335038	253.1	
Aroclor-1268	2	12.291	0.000	548779	241.2	2	12.470	-0.001	380342	253.2	
Aroclor-1268	3	12.669	0.000	449251	237.4	3	12.859	0.001	314079	253.1	
Aroclor-1268	4	13.461	-0.000	1338158	244.6	4	13.676	-0.001	976802	258.3	
Total CollAve (4 peaks):				241.6	Total Col2Ave (4 peaks):				254.4	RPD = 5	



Corrected Ave (3 peaks): 240.5      Corrected Ave (3 peaks): 253.1      RPD = 5

Total PCB Area Col1 (5.866 - 13.762) = 4336494      Col1 Total PCB = 0.6 ppm\*  
Total PCB Area Col2 (5.751 - 13.984) = 2807426      Col2 Total PCB = 0.7 ppm\*

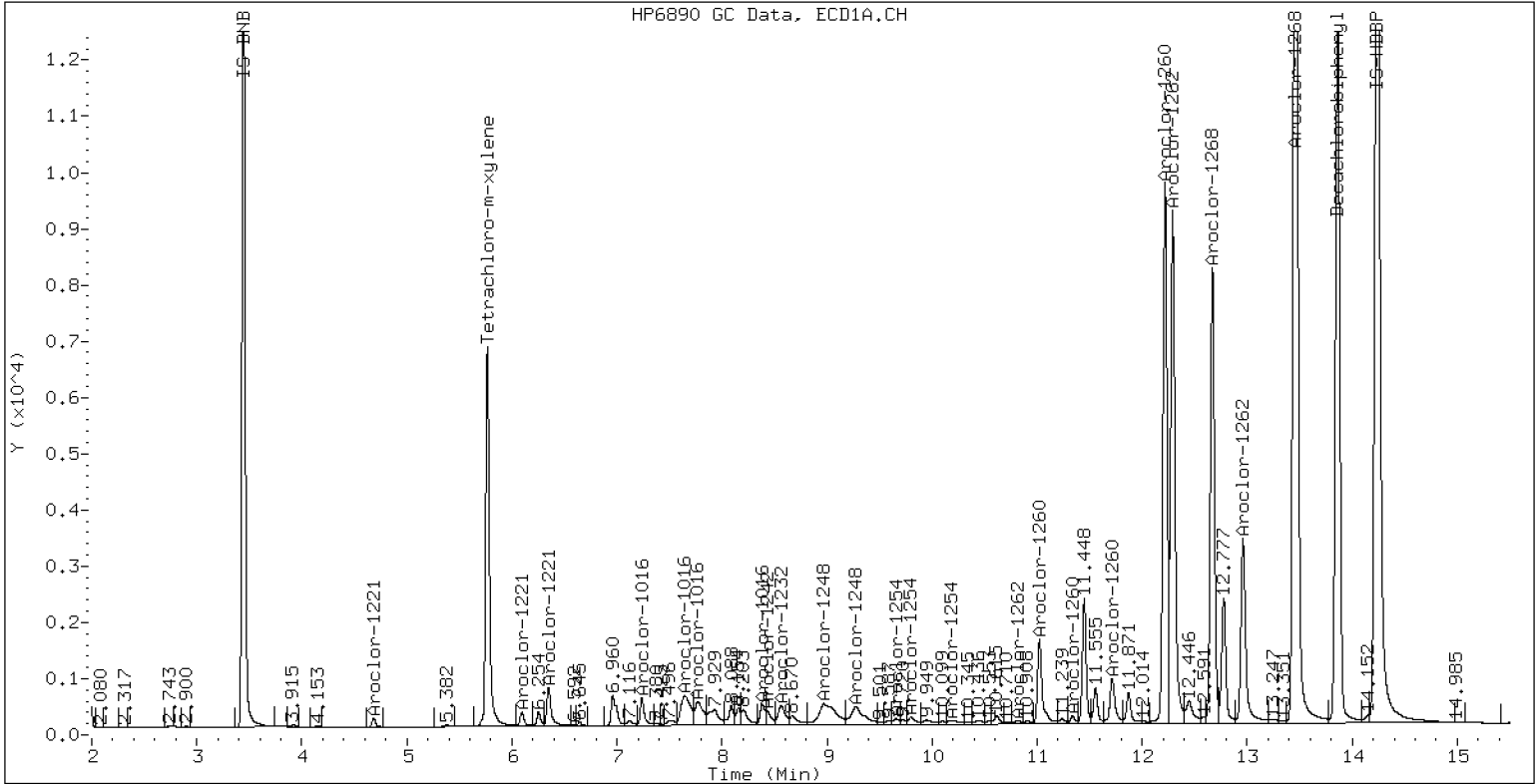
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV

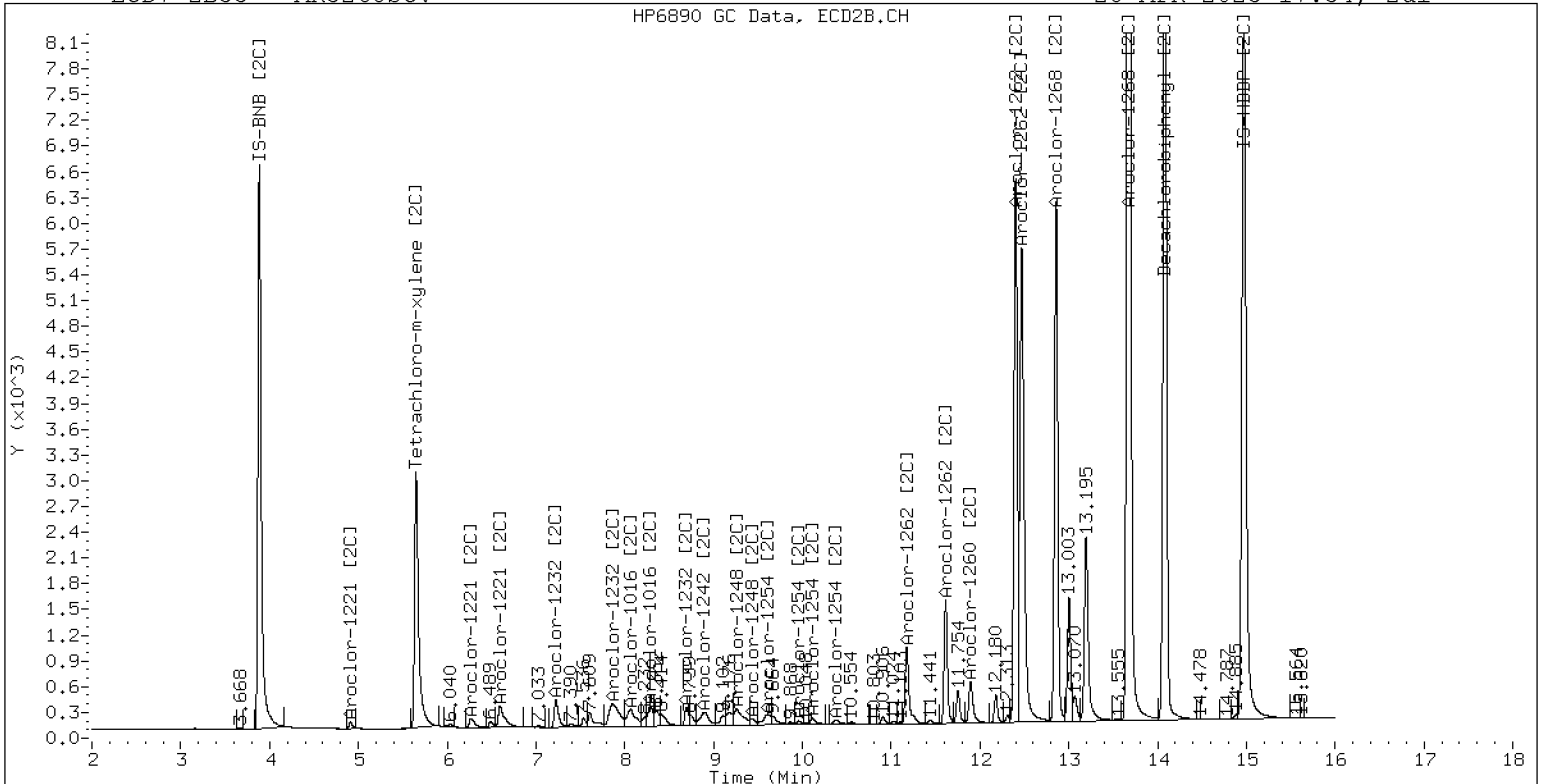
28-APR-2023 17:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV

28-APR-2023 17:54, 2ul

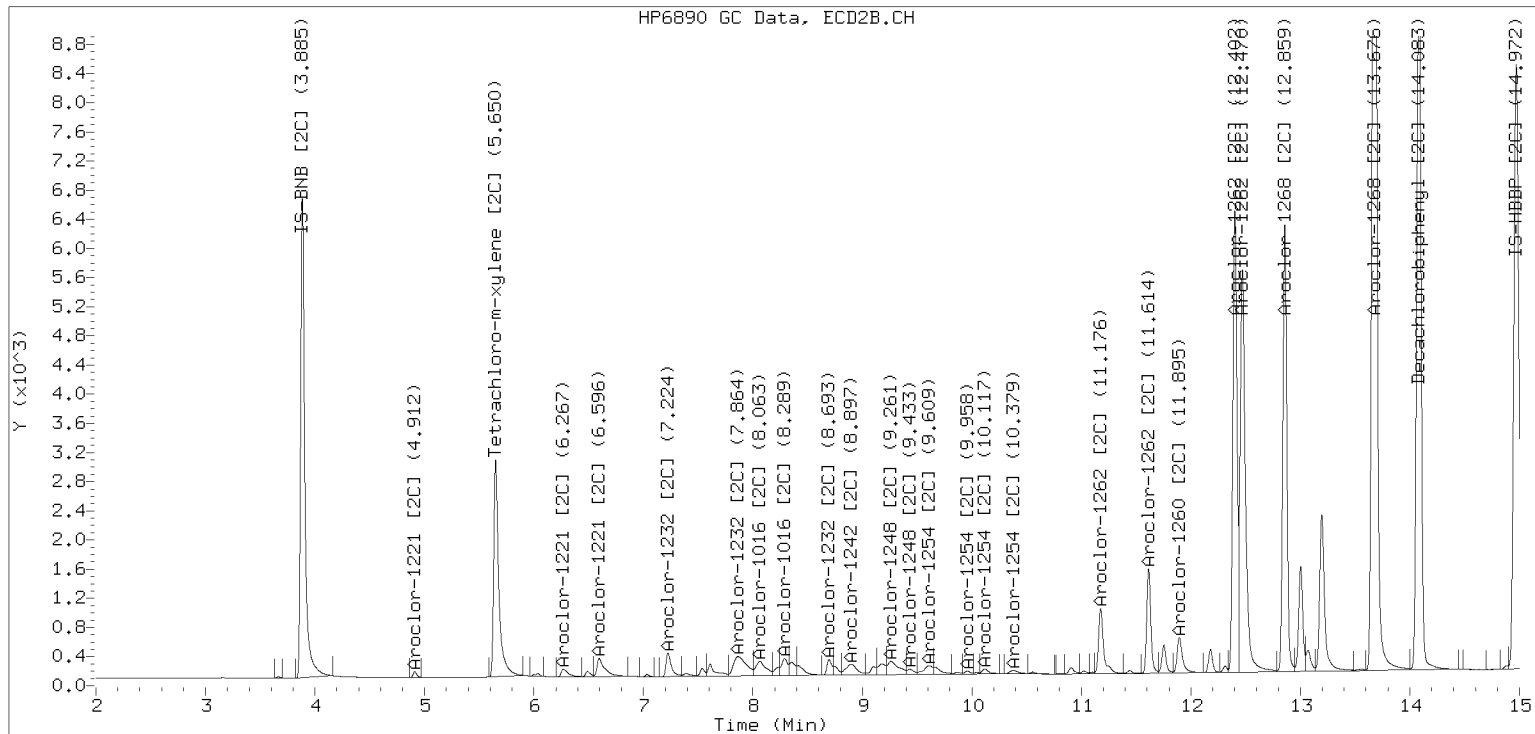


ZB-35 Manual Integration: YES

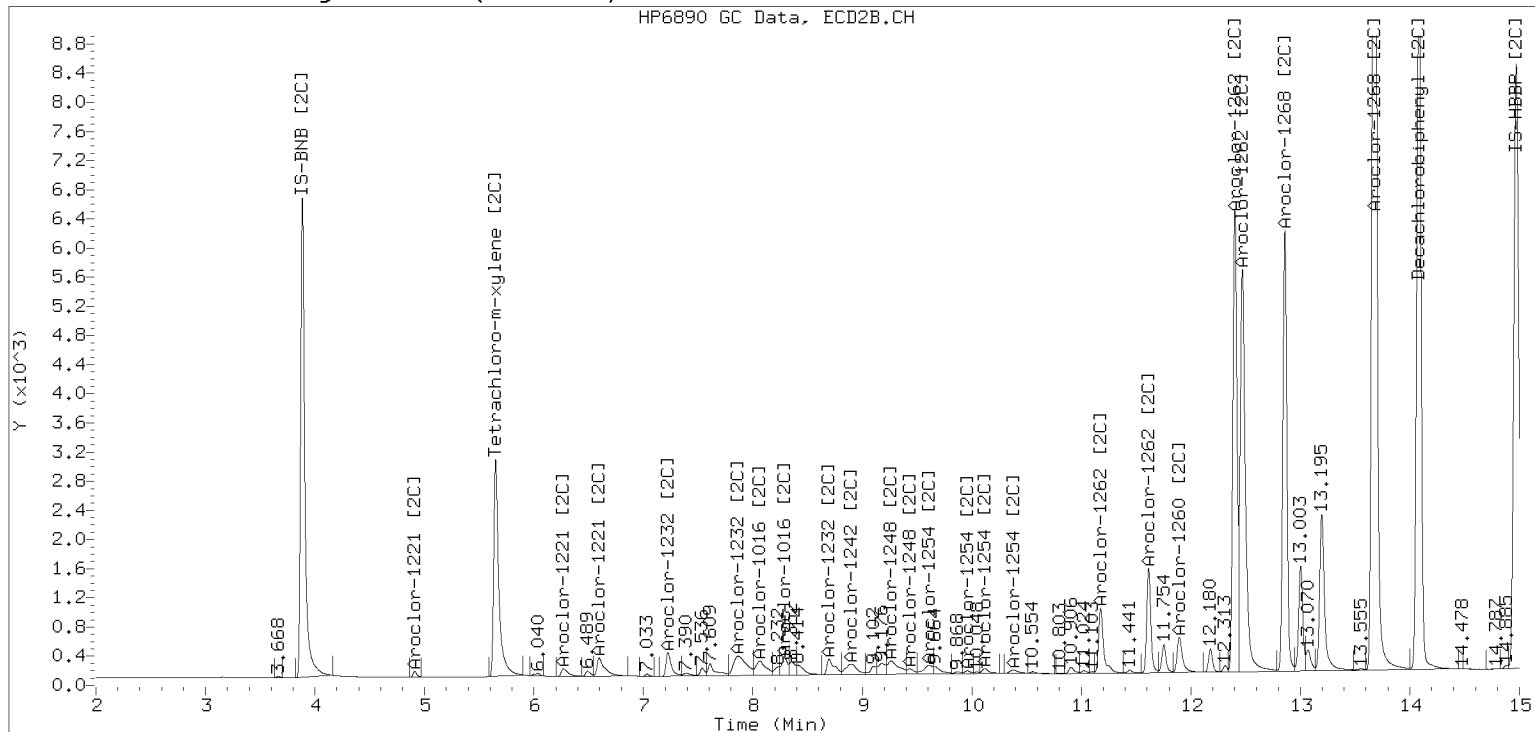
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282320ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.  
8082 DDT SCREEN REPORT

Data file 1: /230428.b/04282321ECD7.D

ARI ID: DDTS

RT	ZB5 Col Shift Response		ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag	
9.237	0.000	691585	9.891	0.000	694558	0.000	0.000	----	2,4-DDE
0.000	-10.293	0	10.655	0.000	754211	0.000	0.000#	----	2,4-DDT
9.665	0.000	1165023	10.187	0.000	529858	0.000	0.000	----	4,4-DDE
10.242	0.000	1836599	10.655	0.000	754211	0.000	0.000#	----	4,4-DDD

# Indicates value is from co-eluting peaks

\* Indicates RPD > 40%

Analytical Resources Inc.  
8082 DDT SCREEN REPORT

Data file 1: /230428.b/04282322ECD7.D

ARI ID: DDT BD

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
9.256	0.019	5776	9.913	0.023	12156	0.000	0.000	----	2,4-DDE
0.000	-10.293	0	10.662	0.007	305670	0.000	0.000#	----	2,4-DDT
9.682	0.017	14639	10.110	-0.077	600	0.000	0.000	----	4,4-DDE
10.250	0.007	480371	10.662	0.007	305670	0.000	0.000#	----	4,4-DDD

# Indicates value is from co-eluting peaks

\* Indicates RPD > 40%



**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8082A**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00002

**Laboratory ID:** SLD0427-SCV1

**Sequence:** SLD0427

**Sequence Name:** AR1660SCV1

**Standard ID:** L002065

<b>ANALYTE</b>	<b>EXPECTED (ug/L)</b>	<b>FOUND (ug/L)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
Aroclor 1016	250.00	253	1.1	20.00
Aroclor 1016 [2C]	250.00	248	-0.8	20.00
Aroclor 1260	250.00	244	-2.2	20.00
Aroclor 1260 [2C]	250.00	259	3.7	20.00
Decachlorobiphenyl	40.000	36.6	-8.5	20.00
Tetrachlorometaxylene	40.000	37.6	-6.0	20.00
Decachlorobiphenyl [2C]	40.000	38.9	-2.7	20.00
Tetrachlorometaxylene [2C]	40.000	36.1	-9.7	20.00

\* Indicates values outside of QC limits  
[2C] indicates second-column analyte.

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282315ECD7.D  
Data file 2: /230428.b/230428.b/04282315ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1660SCV  
Client ID:  
Injection Date: 28-APR-2023 16:09  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col			ZB5	ZB35	RPD	Compound/Flag	
RT	Shift	Response	RT	Shift	Response	on col			on col
5.766	-0.000	328442	5.650	-0.000	184023	37.6	36.1	4.0	Tetrachloro-m-xylene
13.862	0.000	457973	14.083	-0.001	349905	36.6	38.9	6.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	597924	7.5
Hexabromobiphenyl	745660	1154377	54.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	362828	4.1
Hexabromobiphenyl	429949	555238	29.1

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.236	0.001	58167	251.6	1	7.223	0.002	49868	253.8
Aroclor-1016	2	7.636	0.008	162832	265.6	2	7.853	0.009	102116	262.9
Aroclor-1016	3	7.766	0.003	98114	236.5	3	8.060	0.005	57971	242.6
Aroclor-1016	4	8.378	0.002	55690	257.2	4	8.285	0.005	41472	232.9
Total CollAve (4 peaks):				252.7		Total Col2Ave (4 peaks):				248.1 RPD = 2
Corrected Ave (3 peaks):				248.4		Corrected Ave (3 peaks):				243.1 RPD = 2
Aroclor-1221	1	4.683	0.001	327	7.1	1	---			0.0
Aroclor-1221	2	6.092	-0.001	8500	92.6	2	6.279	0.013	4329	75.2
Aroclor-1221	3	6.347	0.001	39437	181.1	3	6.596	0.002	22951	174.3
Total CollAve (3 peaks):				93.6		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.683	0.001	327	11.2	1	---			0.0
Aroclor-1232	2	6.092	-0.001	8500	132.0	2	7.223	-0.002	49868	574.1
Aroclor-1232	3	7.636	-0.015	162832	637.9	3	7.853	-0.010	102116	595.7
Aroclor-1232	4	8.559	-0.004	77917	655.3	4	8.690	-0.003	33380	632.3
Total CollAve (4 peaks):				359.1		Total Col2Ave (3 peaks):				600.7 RPD = 50*
Corrected Ave (3 peaks):				260.4		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.236	-0.000	58167	311.8	1	7.223	0.001	49868	316.3
Aroclor-1242	2	7.636	-0.002	162832	319.3	2	7.853	-0.006	102116	323.8
Aroclor-1242	3	8.423	0.042	38520	224.6	3	8.690	-0.477	33380	306.1
Aroclor-1242	4	8.559	-0.002	77917	307.0	4	8.889	-0.714	53314	476.2
Total CollAve (4 peaks):				290.7		Total Col2Ave (4 peaks):				355.6 RPD = 20
Corrected Ave (3 peaks):				281.1		Corrected Ave (3 peaks):				315.4 RPD = 11
Aroclor-1248	1	8.378	-0.001	55690	192.8	1	8.690	0.406	33380	175.4
Aroclor-1248	2	8.559	-0.000	77917	203.4	2	8.889	0.198	53314	318.2
Aroclor-1248	3	8.966	0.002	73557	64.3	3	9.258	0.095	27563	134.1
Aroclor-1248	4	9.279	0.008	51235	85.3	4	9.431	-0.163	27687	126.3
Total CollAve (4 peaks):				136.5		Total Col2Ave (4 peaks):				188.5 RPD = 32
Corrected Ave (3 peaks):				114.1		Corrected Ave (3 peaks):				145.3 RPD = 24
Aroclor-1254	1	9.279	0.004	51235	79.3	1	9.431	0.001	27687	102.1
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	9.649	0.001	5569	13.6	3	9.953	0.003	2877	13.1
Aroclor-1254	4	9.790	0.001	20622	24.9	4	10.122	0.013	59350	124.8
Aroclor-1254	5	10.094	-0.074	163613	375.2	5	10.345	-0.011	83726	153.2
Total CollAve (4 peaks):				123.3		Total Col2Ave (4 peaks):				98.3 RPD = 23
Corrected Ave (3 peaks):				39.3		Corrected Ave (3 peaks):				80.0 RPD = 68*
Aroclor-1260	1	11.018	0.001	162373	249.1	1	11.624	0.000	96769	245.0
Aroclor-1260	2	11.335	0.002	163247	246.9	2	11.893	0.001	269412	259.9
Aroclor-1260	3	11.711	0.001	430555	250.9	3	12.406	-0.001	64881	274.8
Aroclor-1260	4	12.118	0.002	188077	221.1	4	12.476	0.001	182024	257.7
Aroclor-1260	5	12.216	0.000	99127	253.9	NS	---			----
Total CollAve (5 peaks):				244.4		Total Col2Ave (4 peaks):				259.3 RPD = 6
Corrected Ave (4 peaks):				242.0		Corrected Ave (3 peaks):				254.2 RPD = 5
Aroclor-1262	1	10.808	-0.000	229421	509.3	1	11.172	-0.001	104566	188.4
Aroclor-1262	2	12.216	-0.000	99127	126.0	2	11.624	0.000	96769	207.0
Aroclor-1262	3	12.292	0.000	123787	143.2	3	12.406	0.002	64881	131.8
Aroclor-1262	4	12.963	0.001	107216	153.7	4	12.476	0.001	182024	213.9
Total CollAve (4 peaks):				233.0		Total Col2Ave (4 peaks):				185.3 RPD = 23
Corrected Ave (3 peaks):				141.0		Corrected Ave (3 peaks):				175.7 RPD = 22
Aroclor-1268	1	12.216	-0.002	99127	50.0	1	12.406	0.002	64881	50.6
Aroclor-1268	2	12.292	0.002	123787	60.0	2	12.476	0.005	182024	125.0
Aroclor-1268	3	12.700	0.030	49518	28.9	3	12.859	0.000	4065	3.4
Aroclor-1268	4	13.461	0.000	25958	5.2	4	13.677	-0.000	14756	4.0
Total CollAve (4 peaks):				36.0		Total Col2Ave (4 peaks):				45.7 RPD = 24
Corrected Ave (3 peaks):				28.0		Corrected Ave (3 peaks):				19.3 RPD = 37



Total PCB Area Col1 (5.866 - 13.762) = 3921238 Col1 Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 2234032 Col2 Total PCB = 0.5 ppm\*

\* Quantitated against AR1660 0.25ppm in Ical

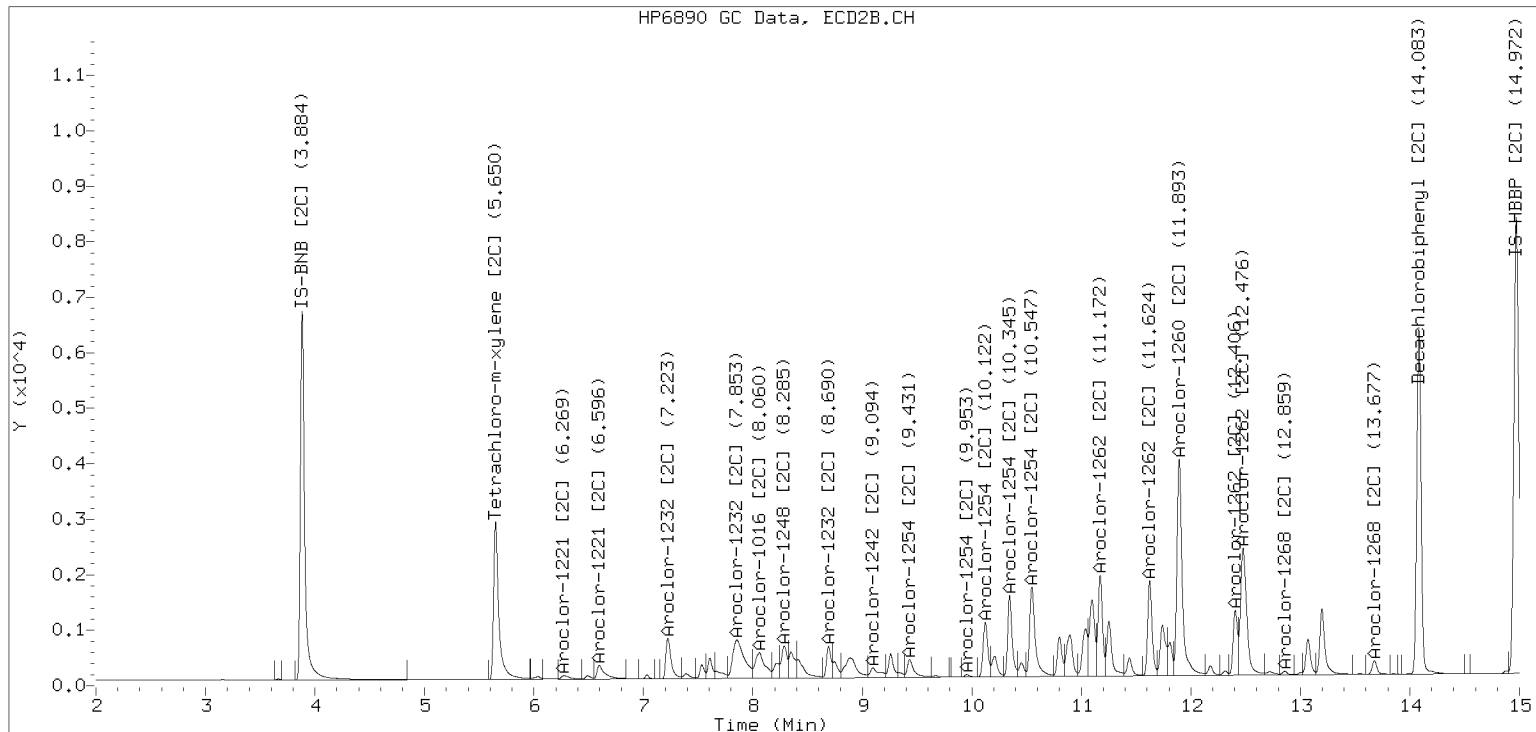
PCB-Form 10 Mod.



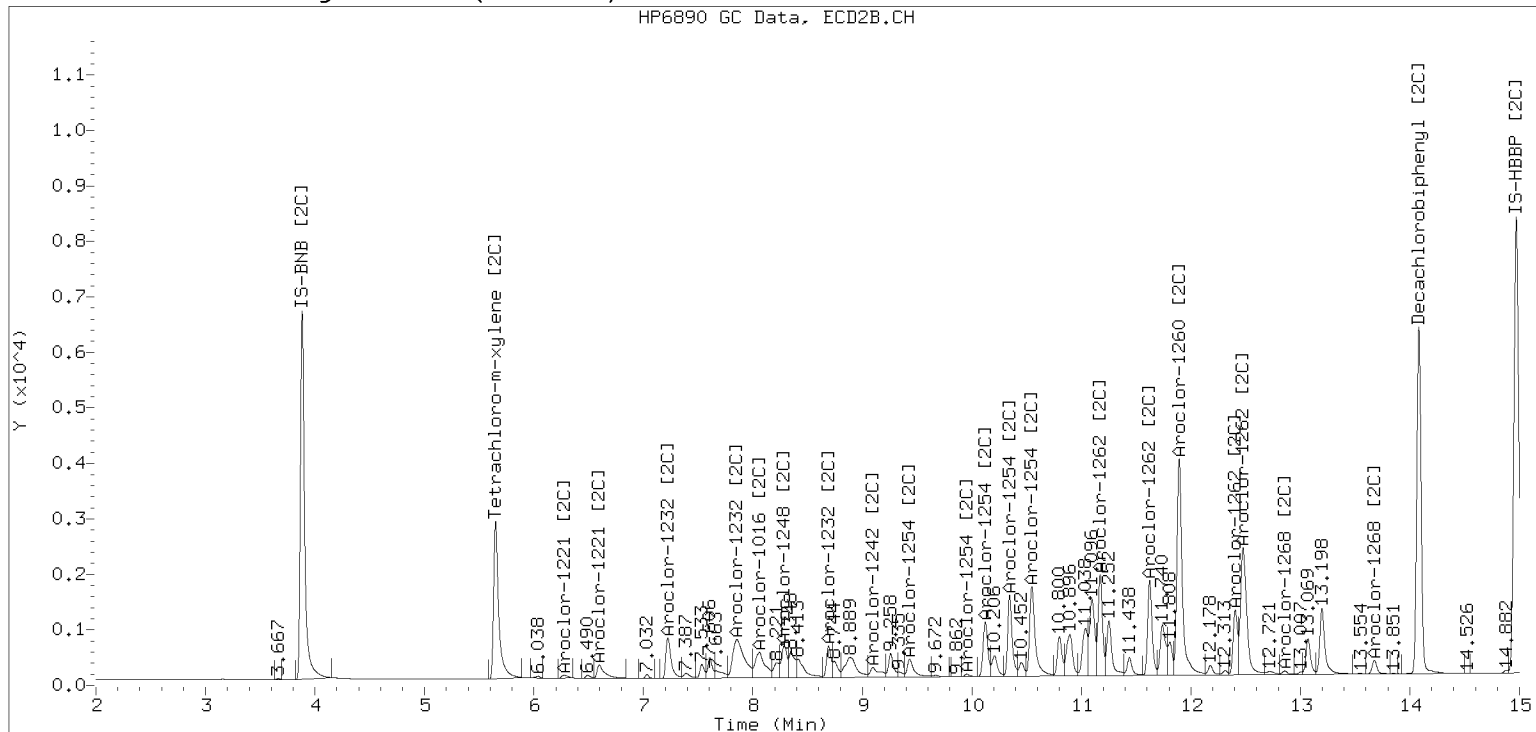
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282315ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8082A**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00002

**Laboratory ID:** SLD0427-SCV2

**Sequence:** SLD0427

**Sequence Name:** AR1242SCV2

**Standard ID:** L003970

<b>ANALYTE</b>	<b>EXPECTED (ug/L)</b>	<b>FOUND (ug/L)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
Aroclor 1242	250.00	238	-4.9	20.00
Aroclor 1242 [2C]	250.00	249	-0.3	20.00
Decachlorobiphenyl	40.000	40.7	1.7	20.00
Tetrachlorometaxylene	40.000	33.9	-15.4	20.00
Decachlorobiphenyl [2C]	40.000	43.6	8.9	20.00
Tetrachlorometaxylene [2C]	40.000	32.6	-18.4	20.00

\* Indicates values outside of QC limits

[2C] indicates second-column analyte.

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282316ECD7.D  
Data file 2: /230428.b/230428.b/04282316ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1242SCV  
Client ID:  
Injection Date: 28-APR-2023 16:30  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col			ZB5	ZB35	RPD	Compound/Flag	
RT	Shift	Response	RT	Shift	Response	on col			on col
5.766	0.000	292500	5.650	-0.001	164326	33.9	32.6	3.7	Tetrachloro-m-xylene
13.864	0.002	517644	14.083	-0.001	393716	40.7	43.6	6.8	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	591263	6.3
Hexabromobiphenyl	745660	1174114	57.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	358789	3.0
Hexabromobiphenyl	429949	558275	29.8

\* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.237	0.001	42869	187.5	1	7.224	0.002	36830	189.5
Aroclor-1016	2	7.642	0.014	116563	192.3	2	7.859	0.015	74679	194.4
Aroclor-1016	3	7.767	0.004	72620	177.0	3	8.061	0.007	42627	180.4
Aroclor-1016	4	8.381	0.005	41808	195.2	4	8.287	0.006	31937	181.4
Total CollAve (4 peaks):				188.0		Total Col2Ave (4 peaks):				186.4 RPD = 1
Corrected Ave (3 peaks):				185.6		Corrected Ave (3 peaks):				183.8 RPD = 1
Aroclor-1221	1	4.687	0.005	261	5.8	1	---			0.0
Aroclor-1221	2	6.092	-0.002	5439	59.9	2	6.288	0.022	3034	53.3
Aroclor-1221	3	6.348	0.002	27795	129.1	3	6.597	0.003	16171	124.2
Total CollAve (3 peaks):				64.9		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.687	0.004	261	9.1	1	---			0.0
Aroclor-1232	2	6.092	-0.002	5439	85.4	2	7.224	-0.001	36830	428.8
Aroclor-1232	3	7.642	-0.009	116563	461.7	3	7.859	-0.003	74679	440.5
Aroclor-1232	4	8.560	-0.004	60506	514.6	4	8.693	-0.001	25516	488.8
Total CollAve (4 peaks):				267.7		Total Col2Ave (3 peaks):				452.7 RPD = 51*
Corrected Ave (3 peaks):				185.4		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.237	0.000	42869	232.4	1	7.224	0.002	36830	236.3
Aroclor-1242	2	7.642	0.003	116563	231.1	2	7.859	0.001	74679	239.5
Aroclor-1242	3	8.381	-0.000	41808	246.5	3	9.173	0.005	27704	256.9
Aroclor-1242	4	8.560	-0.001	60506	241.1	4	9.602	-0.001	29247	264.2
Total CollAve (4 peaks):				237.8		Total Col2Ave (4 peaks):				249.2 RPD = 5
Corrected Ave (3 peaks):				234.9		Corrected Ave (3 peaks):				244.2 RPD = 4
Aroclor-1248	1	8.381	0.002	41808	146.4	1	8.693	0.408	25516	135.6
Aroclor-1248	2	8.560	0.000	60506	159.7	2	8.890	0.199	41427	250.0
Aroclor-1248	3	8.967	0.003	153088	135.4	3	9.258	0.094	51085	251.4
Aroclor-1248	4	9.276	0.004	79463	133.8	4	9.433	-0.160	16032	74.0
Total CollAve (4 peaks):				143.8		Total Col2Ave (4 peaks):				177.7 RPD = 21
Corrected Ave (3 peaks):				138.5		Corrected Ave (3 peaks):				153.2 RPD = 10
Aroclor-1254	1	9.276	-0.000	79463	124.4	1	9.433	0.004	16032	59.8
Aroclor-1254	2	9.354	-0.004	29048	96.0	2	9.602	0.074	29247	178.9
Aroclor-1254	3	9.654	0.006	18218	45.1	3	9.955	0.005	10890	50.2
Aroclor-1254	4	9.799	0.009	31107	37.9	4	10.114	0.004	21158	45.0
Aroclor-1254	5	10.188	0.019	22524	52.2	5	10.380	0.024	20273	37.5
Total CollAve (5 peaks):				71.1		Total Col2Ave (5 peaks):				74.3 RPD = 4
Corrected Ave (4 peaks):				57.8		Corrected Ave (4 peaks):				48.1 RPD = 18
Aroclor-1260	1	11.022	0.005	1107	1.7	1	11.645	0.021	2082	5.2
Aroclor-1260	2	11.341	0.007	839	1.2	2	11.903	0.011	1433	1.4
Aroclor-1260	3	11.721	0.011	1240	0.7	3	12.477	0.071	1326	5.6
Aroclor-1260	4	12.127	0.011	1362	1.6	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			---
Total CollAve (4 peaks):				1.3		Total Col2Ave (3 peaks):				4.1 RPD = 103*
Corrected Ave (3 peaks):				1.2		Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.818	0.009	16810	36.7	1	11.105	-0.068	10045	18.0
Aroclor-1262	2	12.127	-0.090	1362	1.7	2	11.645	0.021	2082	4.4
Aroclor-1262	3	12.308	0.016	110	0.1	3	12.477	0.074	1326	2.7
Aroclor-1262	4	13.018	0.056	1070	1.5	4	---			0.0
Total CollAve (4 peaks):				10.0		Total Col2Ave (3 peaks):				8.4 RPD = 18
Corrected Ave (3 peaks):				1.1		Corrected Ave: < 3 Peaks				
Aroclor-1268	1	12.308	0.090	110	0.1	1	12.477	0.074	1326	1.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.671	0.001	2482	1.4	3	12.861	0.003	1233	1.0
Aroclor-1268	4	13.468	0.007	10976	2.2	4	13.676	-0.000	2739	0.7
Total CollAve (3 peaks):				1.2		Total Col2Ave (3 peaks):				0.9 RPD = 27
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.866 - 13.762) = 1193104 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 682890 Col2 Total PCB = 0.2 ppm\*

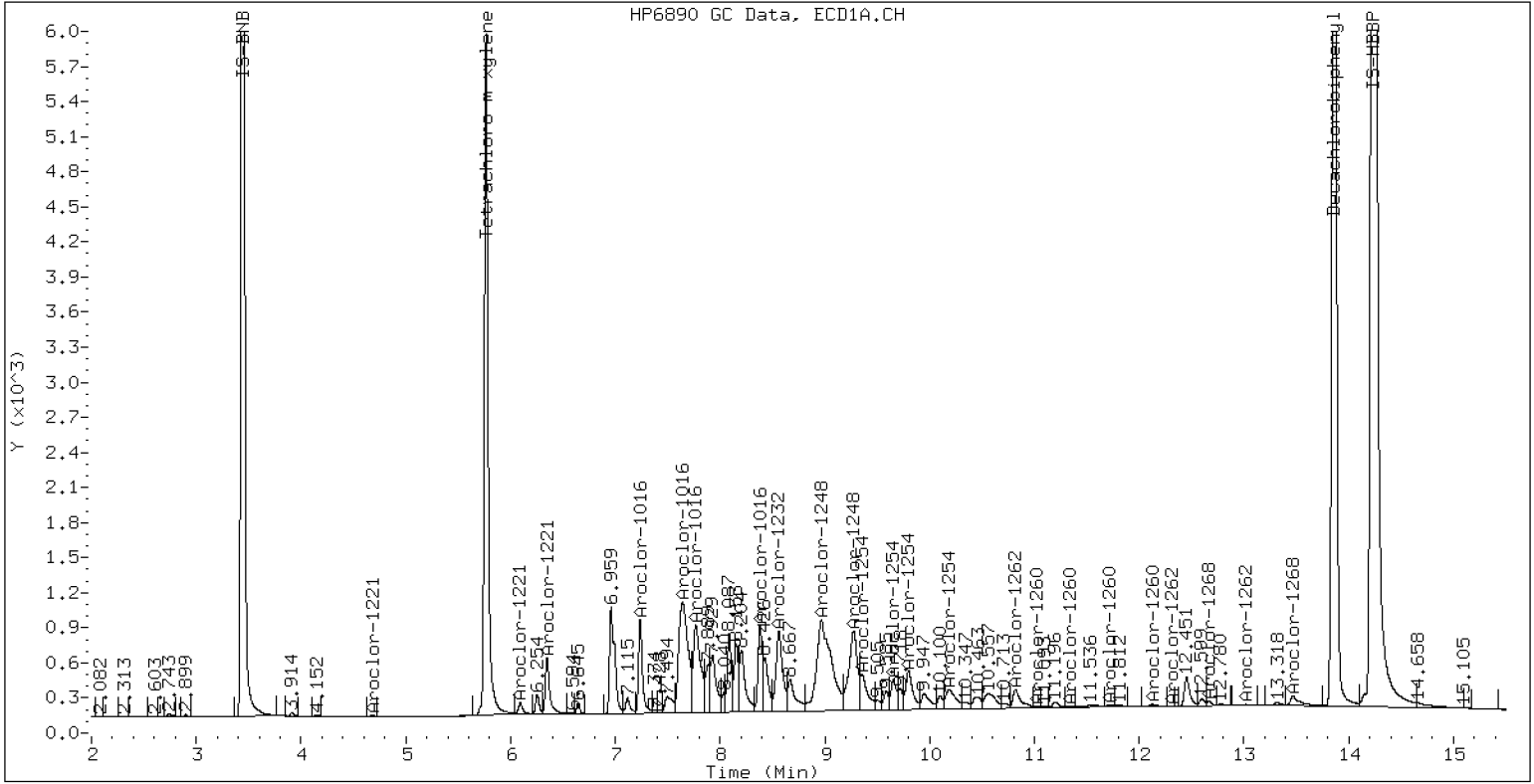
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV

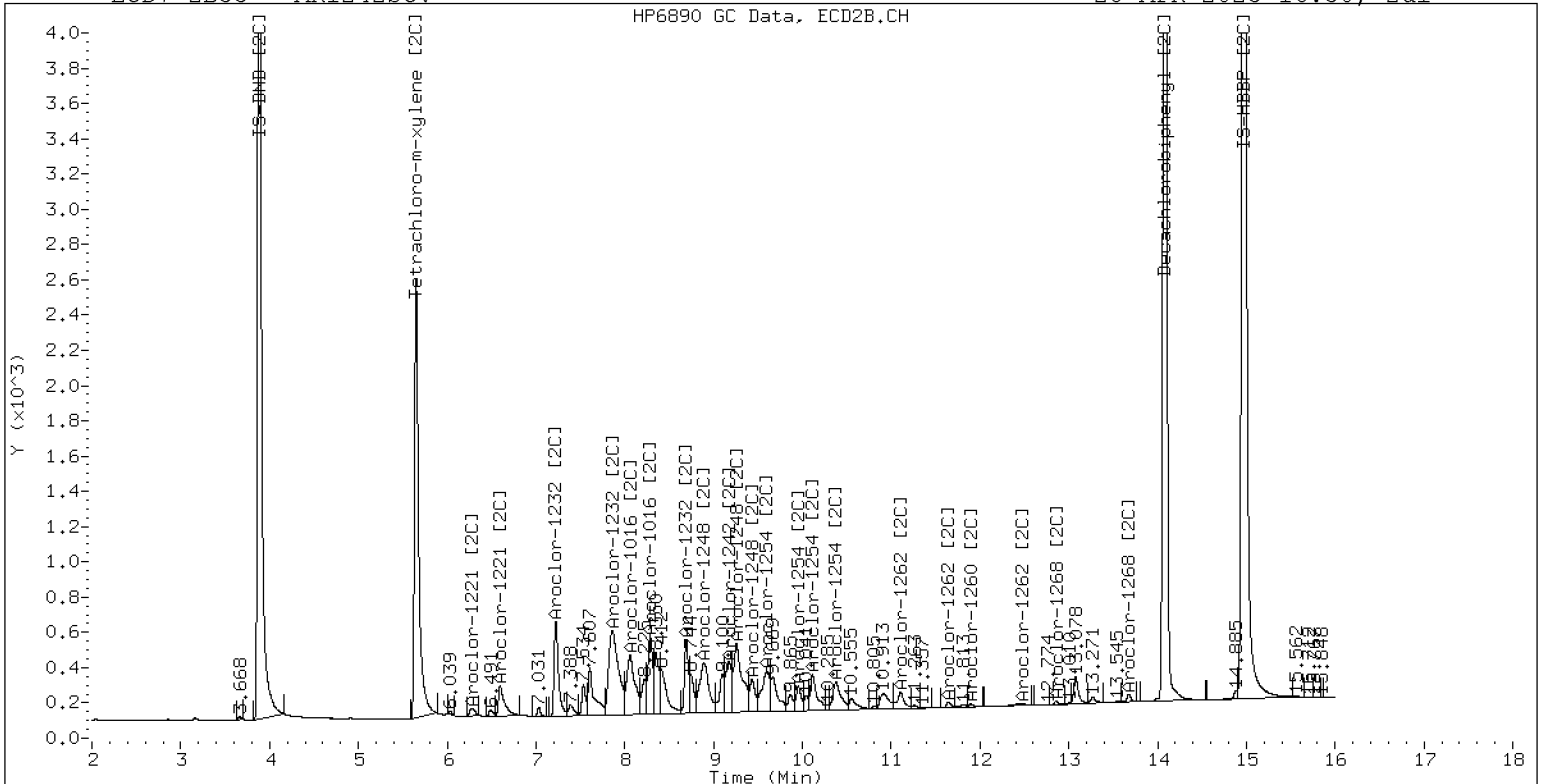
28-APR-2023 16:30, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1242SCV

28-APR-2023 16:30, 2ul



ZB-35 Manual Integration: YES

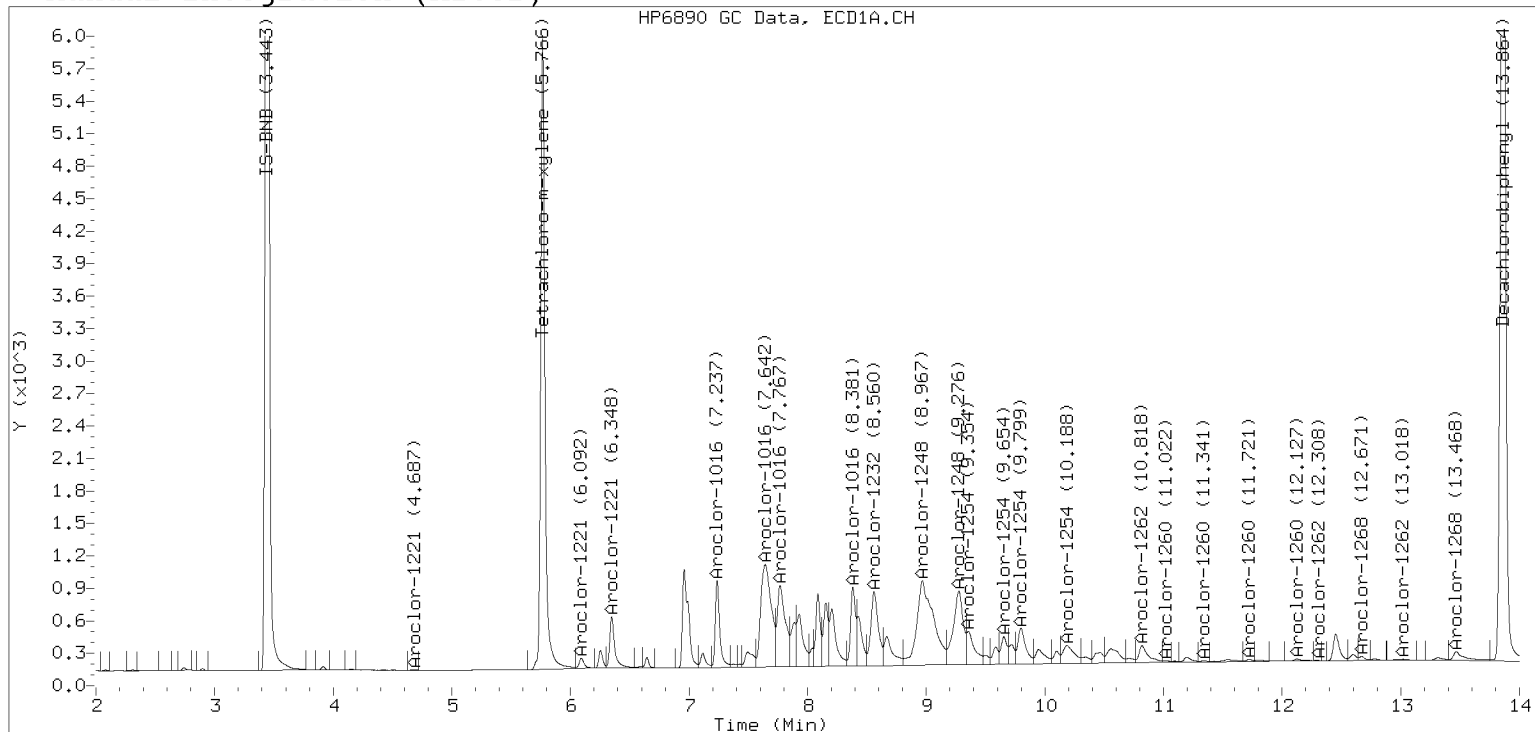


# Manual Peak Adjustment, ZB-5

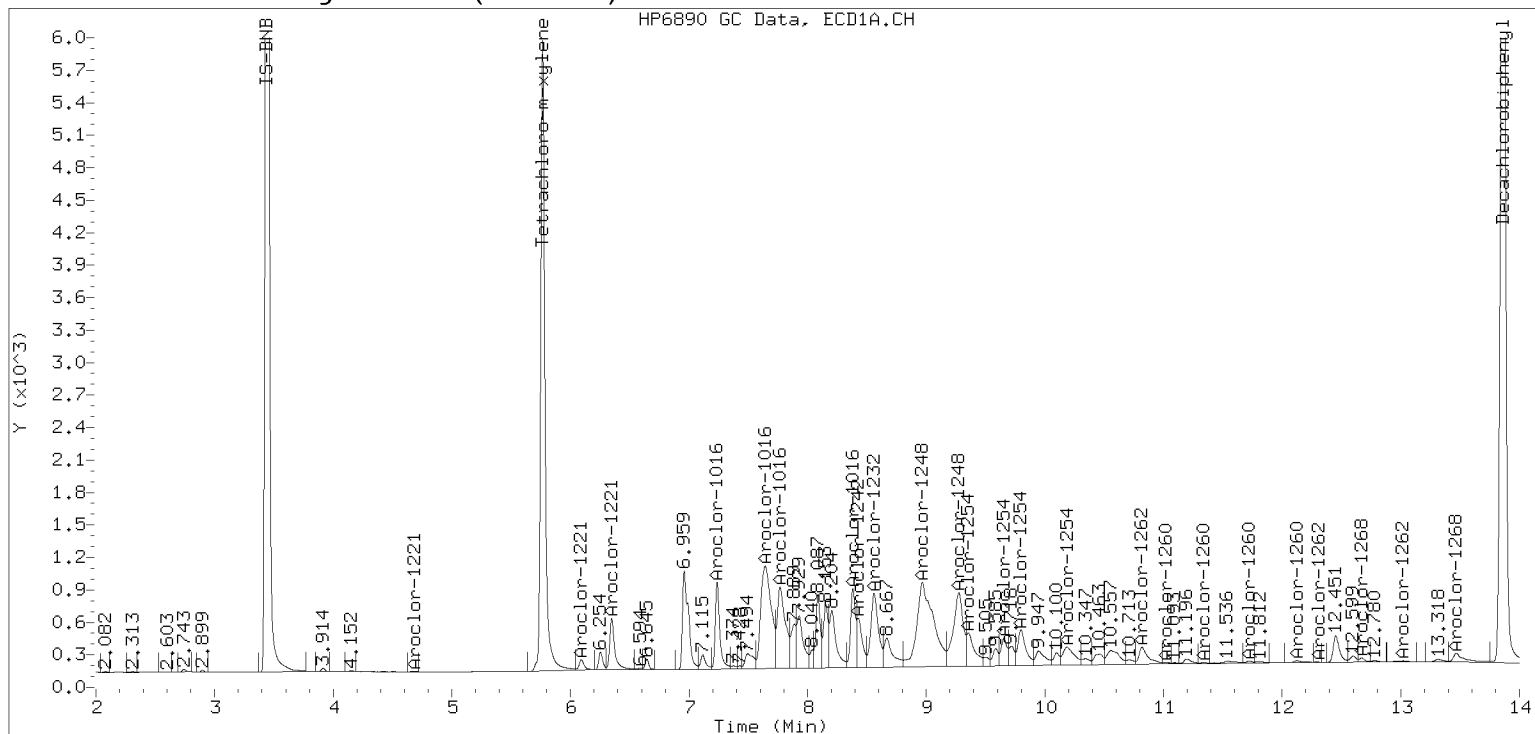
Datafile: ecd7.i/230428.b/04282316ECD7.D

Injection Date: 28-APR-2023 16:30

## Manual Integration (After)



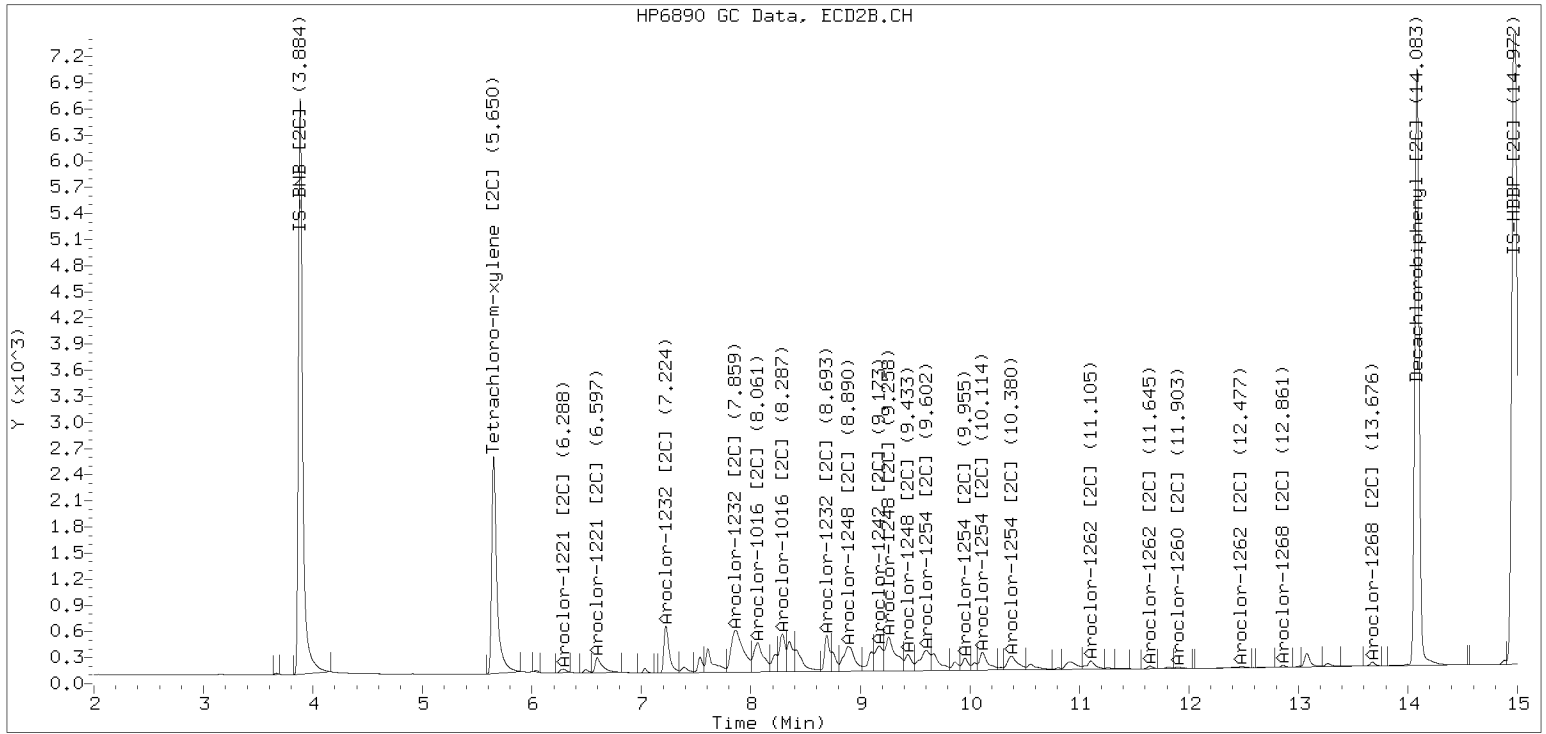
## Processed Integration (Before)



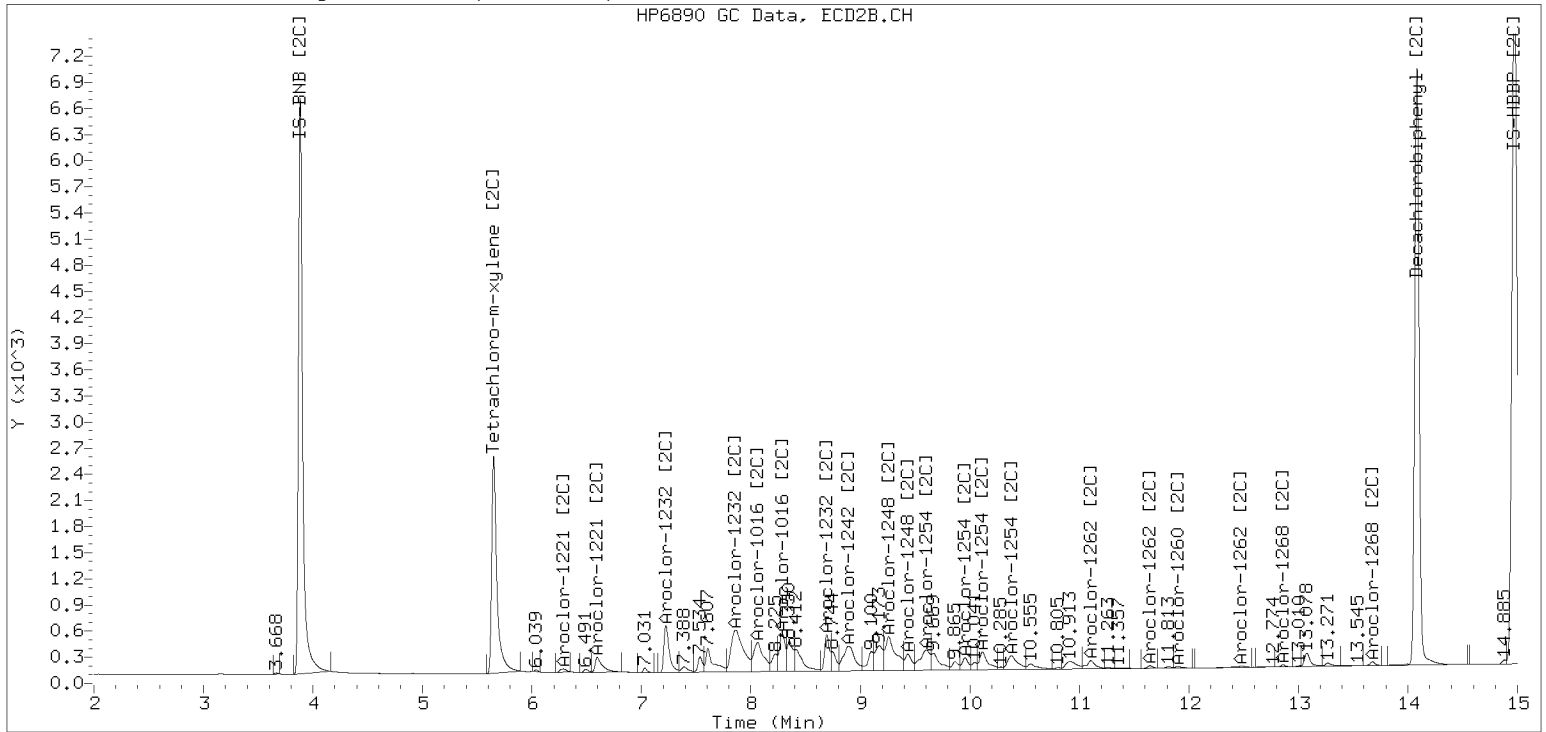
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282316ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8082A**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00002

**Laboratory ID:** SLD0427-SCV3

**Sequence:** SLD0427

**Sequence Name:** AR1248SCV3

**Standard ID:** L002066

<b>ANALYTE</b>	<b>EXPECTED (ug/L)</b>	<b>FOUND (ug/L)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
Aroclor 1248	250.00	257	2.9	20.00
Aroclor 1248 [2C]	250.00	256	2.2	20.00
Decachlorobiphenyl	40.000	34.9	-12.8	20.00
Tetrachlorometaxylene	40.000	37.4	-6.6	20.00
Decachlorobiphenyl [2C]	40.000	38.0	-5.1	20.00
Tetrachlorometaxylene [2C]	40.000	36.7	-8.3	20.00

\* Indicates values outside of QC limits

[2C] indicates second-column analyte.

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282317ECD7.D  
Data file 2: /230428.b/230428.b/04282317ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1248SCV  
Client ID:  
Injection Date: 28-APR-2023 16:51  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	329945	5.650	-0.001	187741	37.4	36.7	1.8	Tetrachloro-m-xylene
13.863	0.002	459099	14.084	0.000	349285	34.9	38.0	8.5	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	604265	8.6
Hexabromobiphenyl	745660	1214161	62.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	364434	4.6
Hexabromobiphenyl	429949	568134	32.1

\* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.237	0.002	19001	81.3	1	7.223	0.002	18808	95.3
Aroclor-1016	2	7.640	0.012	74331	120.0	2	7.860	0.016	45610	116.9
Aroclor-1016	3	7.763	0.000	48390	115.4	3	8.066	0.011	19913	83.0
Aroclor-1016	4	8.380	0.004	75928	347.0	4	8.285	0.004	48388	270.6
Total CollAve (4 peaks):				165.9		Total Col2Ave (4 peaks):				141.4 RPD = 16
Corrected Ave (3 peaks):				105.6		Corrected Ave (3 peaks):				98.4 RPD = 7
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.088	-0.005	1143	12.3	2	6.298	0.033	1993	34.5
Aroclor-1221	3	6.349	0.002	3172	14.4	3	6.608	0.014	1326	10.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.088	-0.005	1143	17.6	2	7.223	-0.002	18808	215.6
Aroclor-1232	3	7.640	-0.012	74331	288.1	3	7.860	-0.003	45610	264.9
Aroclor-1232	4	8.559	-0.004	98972	823.6	4	8.691	-0.002	42787	807.0
Total CollAve (3 peaks):				376.4		Total Col2Ave (3 peaks):				429.1 RPD = 13
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.237	0.001	19001	100.8	1	7.223	0.001	18808	118.8
Aroclor-1242	2	7.640	0.001	74331	144.2	2	7.860	0.001	45610	144.0
Aroclor-1242	3	8.380	-0.001	75928	438.1	3	8.691	-0.476	42787	390.6
Aroclor-1242	4	8.559	-0.001	98972	385.9	4	8.885	-0.718	60719	540.0
Total CollAve (4 peaks):				267.2		Total Col2Ave (4 peaks):				298.3 RPD = 11
Corrected Ave (3 peaks):				210.3		Corrected Ave (3 peaks):				217.8 RPD = 4
Aroclor-1248	1	8.380	0.002	75928	260.1	1	8.285	0.000	48388	253.1
Aroclor-1248	2	8.559	0.000	98972	255.7	2	8.691	0.000	42787	254.2
Aroclor-1248	3	8.963	-0.001	294362	254.8	3	9.165	0.001	53988	261.5
Aroclor-1248	4	9.271	0.000	156668	258.2	4	9.587	-0.007	55820	253.5
Total CollAve (4 peaks):				257.2		Total Col2Ave (4 peaks):				255.6 RPD = 1
Corrected Ave (3 peaks):				256.2		Corrected Ave (3 peaks):				253.6 RPD = 1
Aroclor-1254	1	9.271	-0.004	156668	240.0	1	9.430	0.001	28754	105.5
Aroclor-1254	2	9.355	-0.004	60054	194.1	2	9.587	0.059	55820	336.1
Aroclor-1254	3	9.651	0.003	41060	99.5	3	9.952	0.002	23054	104.5
Aroclor-1254	4	9.793	0.004	73186	87.3	4	10.109	-0.001	44343	92.9
Aroclor-1254	5	10.182	0.013	49460	112.2	5	10.379	0.023	41423	75.5
Total CollAve (5 peaks):				146.6		Total Col2Ave (5 peaks):				142.9 RPD = 3
Corrected Ave (4 peaks):				123.3		Corrected Ave (4 peaks):				94.6 RPD = 26
Aroclor-1260	1	11.026	0.009	2009	2.9	1	11.643	0.019	2501	6.2
Aroclor-1260	2	11.340	0.006	1228	1.8	2	11.901	0.009	2130	2.0
Aroclor-1260	3	11.721	0.011	1976	1.1	3	12.414	0.007	826	3.4
Aroclor-1260	4	12.127	0.011	1326	1.5	4	12.479	0.004	1478	2.0
Aroclor-1260	5	12.220	0.004	573	1.4	NS	---			----
Total CollAve (5 peaks):				1.7		Total Col2Ave (4 peaks):				3.4 RPD = 65*
Corrected Ave (4 peaks):				1.4		Corrected Ave (3 peaks):				2.5 RPD = 54*
Aroclor-1262	1	10.818	0.009	19667	41.5	1	11.104	-0.069	9341	16.4
Aroclor-1262	2	12.220	0.003	573	0.7	2	11.643	0.019	2501	5.2
Aroclor-1262	3	12.296	0.004	674	0.7	3	12.414	0.010	826	1.6
Aroclor-1262	4	12.967	0.005	1383	1.9	4	12.479	0.004	1478	1.7
Total CollAve (4 peaks):				11.2		Total Col2Ave (4 peaks):				6.3 RPD = 57*
Corrected Ave (3 peaks):				1.1		Corrected Ave (3 peaks):				2.9 RPD = 88*
Aroclor-1268	1	12.220	0.002	573	0.3	1	12.414	0.011	826	0.6
Aroclor-1268	2	12.296	0.005	674	0.3	2	12.479	0.008	1478	1.0
Aroclor-1268	3	12.671	0.002	2312	1.3	3	12.861	0.002	1020	0.8
Aroclor-1268	4	13.469	0.008	7516	1.4	4	13.678	0.001	2531	0.7
Total CollAve (4 peaks):				0.8		Total Col2Ave (4 peaks):				0.8 RPD = 6
Corrected Ave (3 peaks):				0.6		Corrected Ave (3 peaks):				0.7 RPD = 13

Total PCB Area Col1 (5.866 - 13.762) = 1600602 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 860562 Col2 Total PCB = 0.2 ppm\*

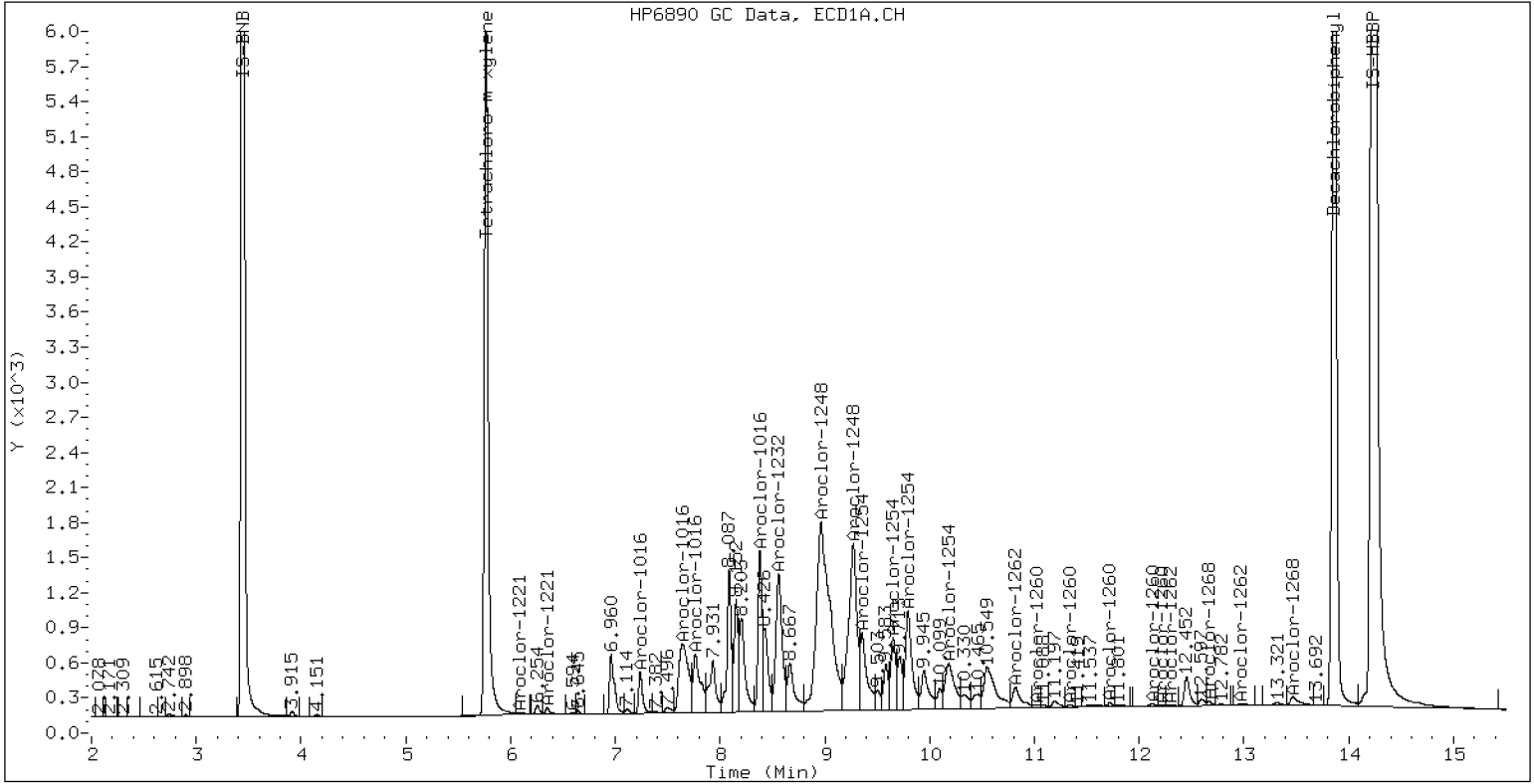
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV

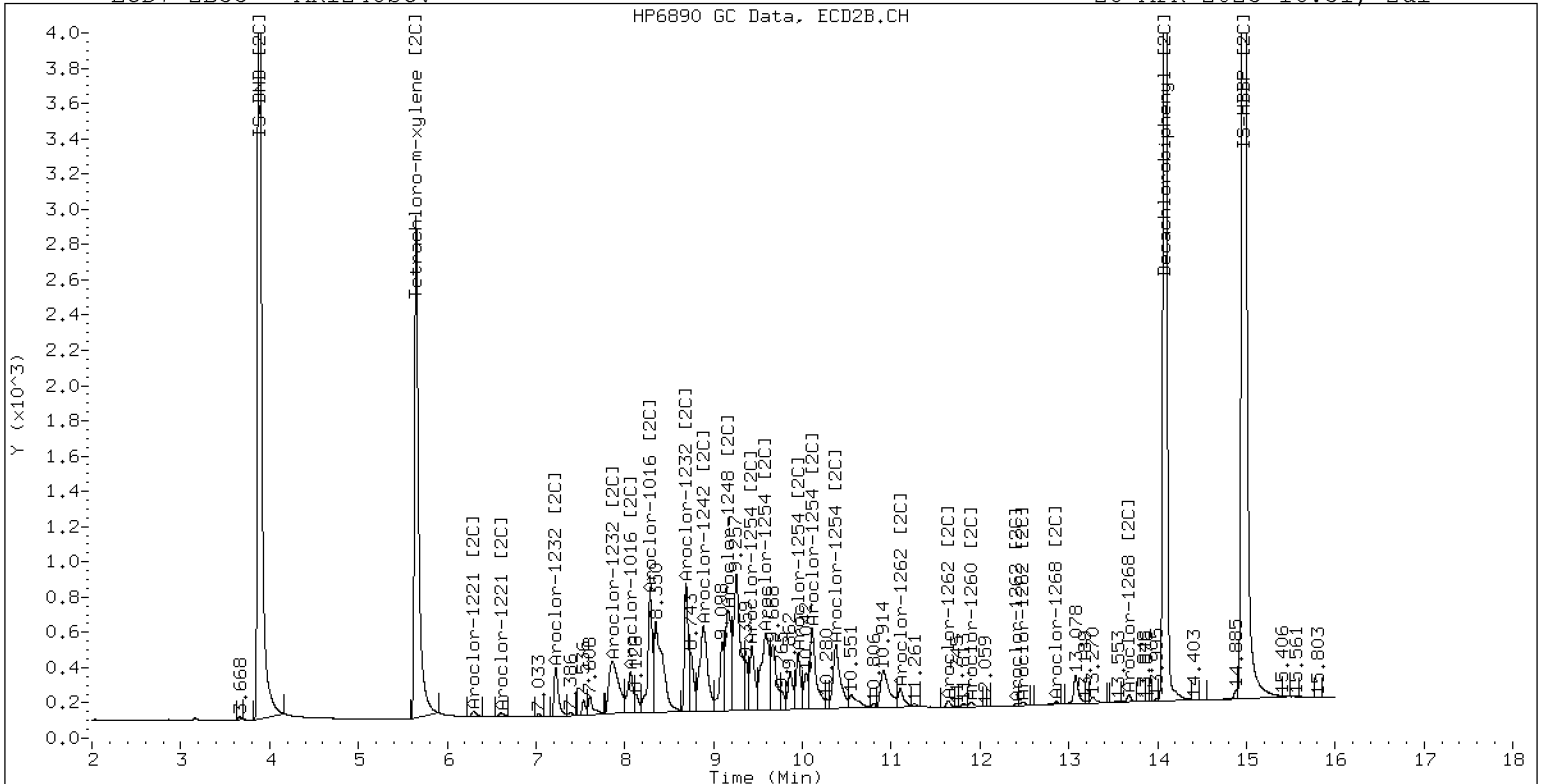
28-APR-2023 16:51, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1248SCV

28-APR-2023 16:51, 2ul



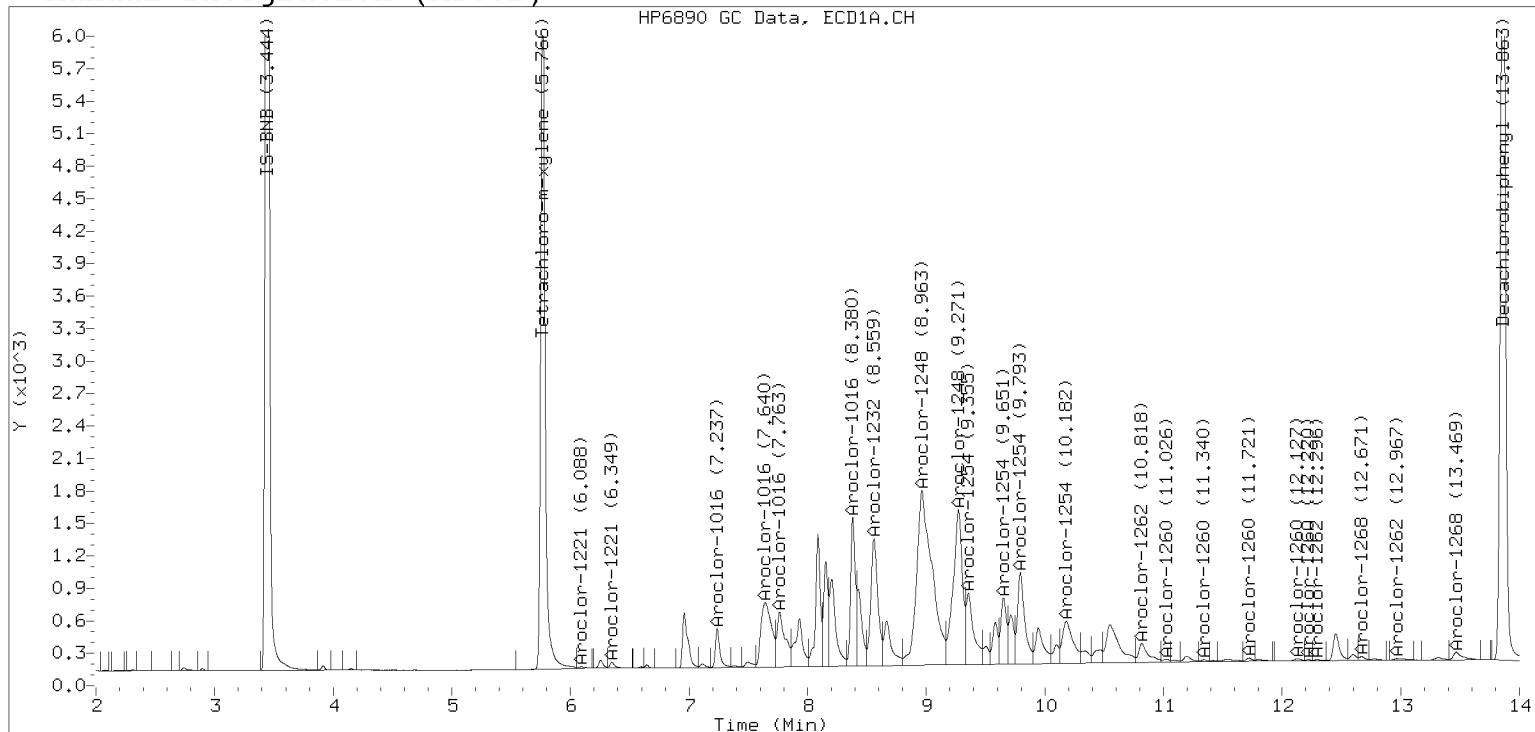
ZB-35 Manual Integration: YES

# Manual Peak Adjustment, ZB-5

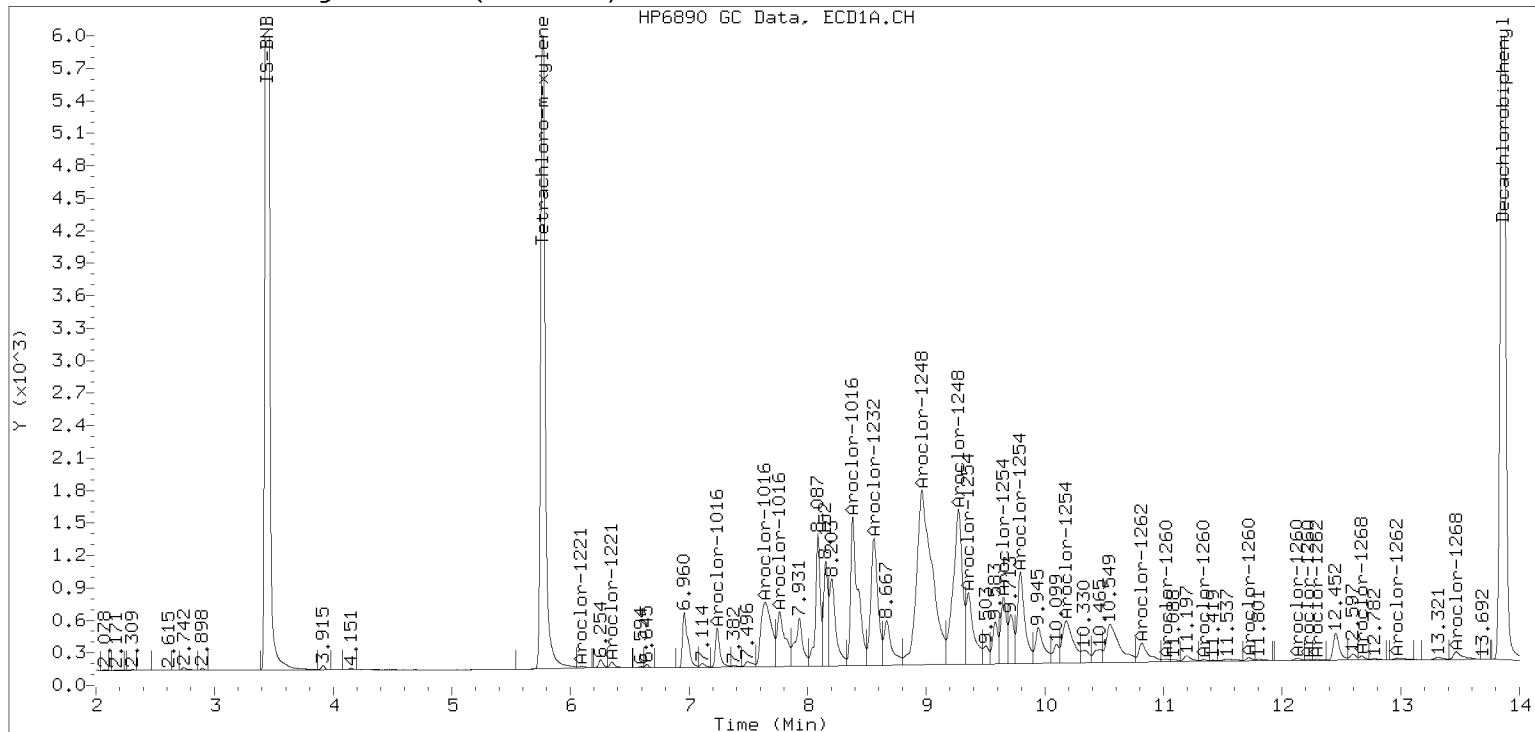
Datafile: ecd7.i/230428.b/04282317ECD7.D

Injection Date: 28-APR-2023 16:51

## Manual Integration (After)



## Processed Integration (Before)

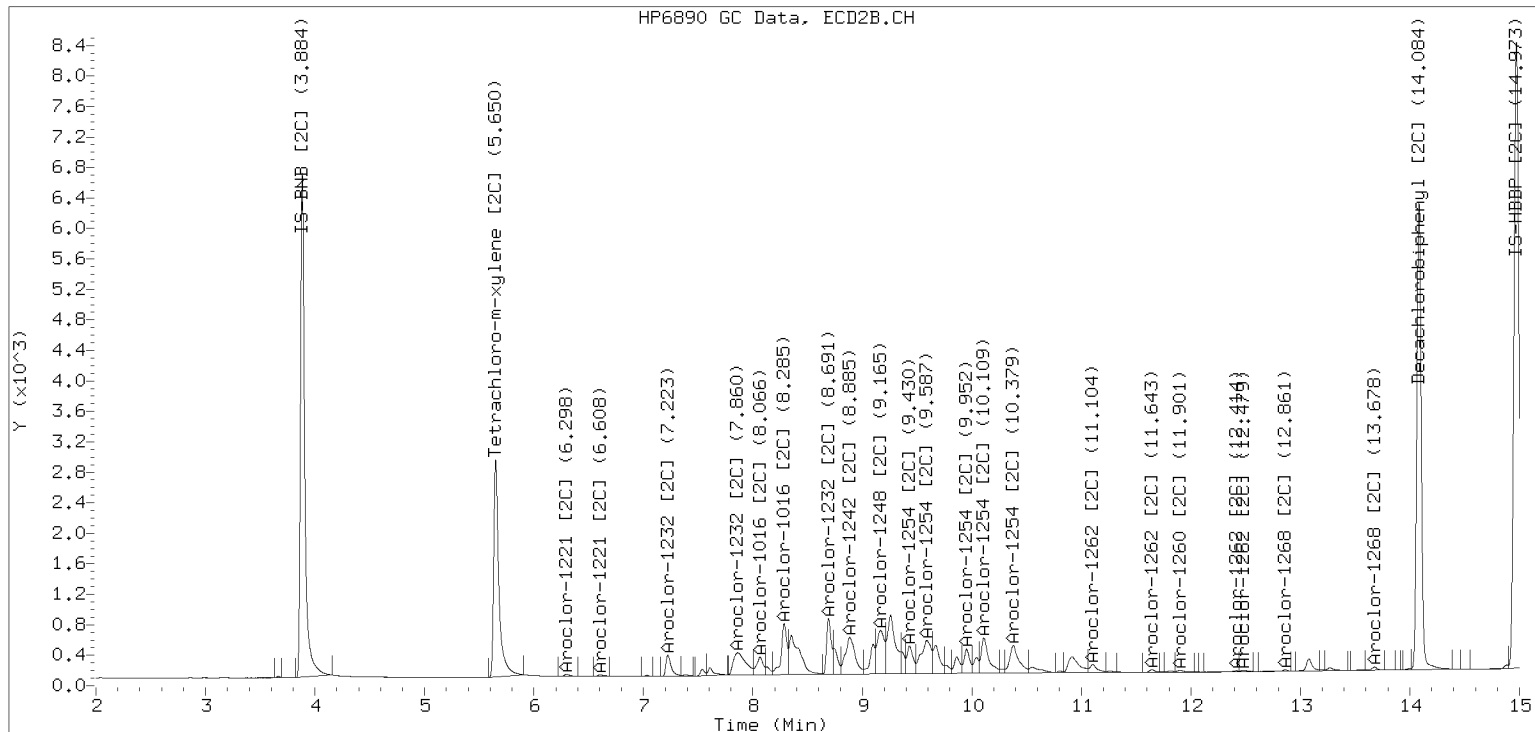




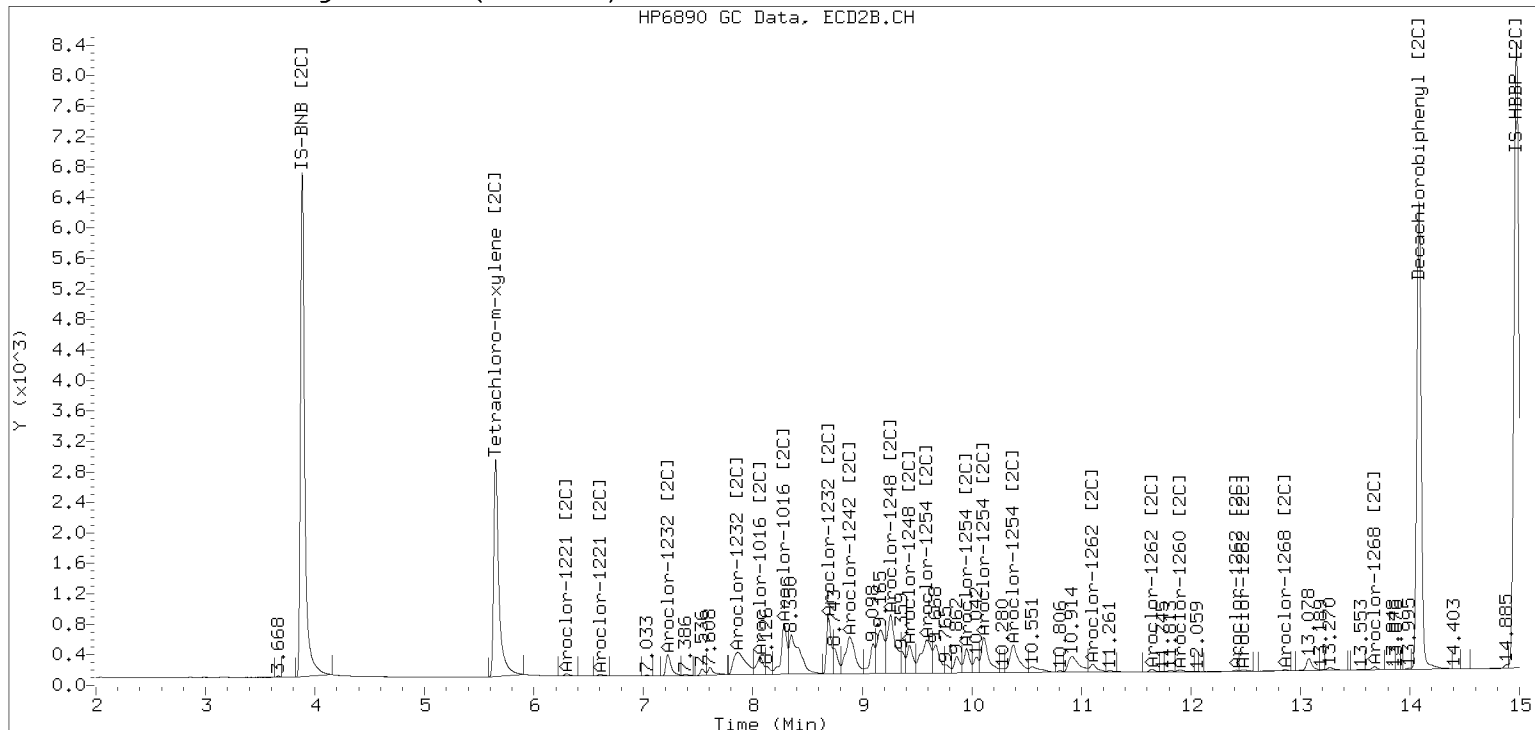
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282317ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8082A**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00002

**Laboratory ID:** SLD0427-SCV4

**Sequence:** SLD0427

**Sequence Name:** AR1254SCV4

**Standard ID:** L002067

<b>ANALYTE</b>	<b>EXPECTED (ug/L)</b>	<b>FOUND (ug/L)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
Aroclor 1254	250.00	242	-3.4	20.00
Aroclor 1254 [2C]	250.00	234	-6.2	20.00
Decachlorobiphenyl	40.000	34.8	-13.0	20.00
Tetrachlorometaxylene	40.000	38.3	-4.2	20.00
Decachlorobiphenyl [2C]	40.000	38.3	-4.1	20.00
Tetrachlorometaxylene [2C]	40.000	37.3	-6.8	20.00

\* Indicates values outside of QC limits  
[2C] indicates second-column analyte.

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282318ECD7.D  
Data file 2: /230428.b/230428.b/04282318ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1254SCV  
Client ID:  
Injection Date: 28-APR-2023 17:12  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	338365	5.650	-0.001	190789	38.3	37.3	2.7	Tetrachloro-m-xylene
13.863	0.001	478757	14.083	-0.001	359021	34.8	38.3	9.7	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	604006	8.6
Hexabromobiphenyl	745660	1269568	70.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	364366	4.6
Hexabromobiphenyl	429949	578129	34.5

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.239	0.004	417	1.8	1	7.234	0.013	203	1.0	
Aroclor-1016	2	7.672	0.044	1503	2.4	2	---			0.0	
Aroclor-1016	3	7.760	-0.003	1975	4.7	3	8.071	0.016	434	1.8	
Aroclor-1016	4	8.383	0.006	29140	133.2	4	8.285	0.004	22382	125.2	
Total CollAve (4 peaks):				35.5	Total Col2Ave (3 peaks):				42.7	RPD = 18	
Corrected Ave (3 peaks):				3.0	Corrected Ave: < 3 Peaks						
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	6.297	0.032	1765	30.5	
Aroclor-1221	3	---			0.0	3	6.613	0.019	308	2.3	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	7.234	0.010	203	2.3	
Aroclor-1232	3	7.672	0.020	1503	5.8	3	---			0.0	
Aroclor-1232	4	8.568	0.004	12422	103.4	4	8.695	0.001	16356	308.5	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1242	1	7.239	0.002	417	2.2	1	7.234	0.012	203	1.3	
Aroclor-1242	2	7.672	0.033	1503	2.9	2	---			0.0	
Aroclor-1242	3	8.383	0.001	29140	168.2	3	8.695	-0.473	16356	149.3	
Aroclor-1242	4	8.568	0.007	12422	48.5	4	8.889	-0.714	7125	63.4	
Total CollAve (4 peaks):				55.4	Total Col2Ave (3 peaks):				71.3	RPD = 25	
Corrected Ave (3 peaks):				17.9	Corrected Ave: < 3 Peaks						
Aroclor-1248	1	8.383	0.004	29140	99.9	1	8.695	0.410	16356	85.6	
Aroclor-1248	2	8.568	0.008	12422	32.1	2	8.889	0.198	7125	42.3	
Aroclor-1248	3	8.967	0.003	131799	114.1	3	9.259	0.095	58924	285.5	
Aroclor-1248	4	9.276	0.005	155956	257.1	4	9.430	-0.164	67213	305.3	
Total CollAve (4 peaks):				125.8	Total Col2Ave (4 peaks):				179.7	RPD = 35	
Corrected Ave (3 peaks):				82.0	Corrected Ave (3 peaks): 137.8 RPD = 51*						
Aroclor-1254	1	9.276	0.000	155956	239.0	1	9.430	0.000	67213	246.7	
Aroclor-1254	2	9.356	-0.002	75626	244.6	2	9.527	-0.001	39667	238.9	
Aroclor-1254	3	9.648	0.001	99996	242.4	3	9.950	-0.000	53621	243.2	
Aroclor-1254	4	9.788	-0.001	198294	236.6	4	10.109	-0.001	114263	239.3	
Aroclor-1254	5	10.164	-0.004	108093	245.4	5	10.355	-0.001	111846	203.8	
Total CollAve (5 peaks):				241.6	Total Col2Ave (5 peaks):				234.4	RPD = 3	
Corrected Ave (4 peaks):				240.7	Corrected Ave (4 peaks): 231.3 RPD = 4						
Aroclor-1260	1	11.018	0.001	14792	20.6	1	11.639	0.015	34047	82.8	
Aroclor-1260	2	11.338	0.005	15335	21.1	2	11.896	0.004	28313	26.2	
Aroclor-1260	3	11.716	0.006	37253	19.7	3	12.479	0.072	16654	67.8	
Aroclor-1260	4	12.122	0.006	28154	30.1	4	---			0.0	
Aroclor-1260	5	12.293	0.077	2641	6.2	NS	---			---	
Total CollAve (5 peaks):				19.5	Total Col2Ave (3 peaks):				58.9	RPD = 100*	
Corrected Ave (4 peaks):				16.9	Corrected Ave: < 3 Peaks						
Aroclor-1262	1	10.810	0.002	229213	462.7	1	11.097	-0.076	148180	256.4	
Aroclor-1262	2	12.293	0.076	2641	3.1	2	11.639	0.015	34047	69.9	
Aroclor-1262	3	---			0.0	3	12.479	0.076	16654	32.5	
Aroclor-1262	4	12.965	0.003	1702	2.2	4	---			0.0	
Total CollAve (3 peaks):				156.0	Total Col2Ave (3 peaks):				119.6	RPD = 26	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1268	1	12.293	0.075	2641	1.2	1	12.479	0.076	16654	12.5	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	12.672	0.003	2924	1.5	3	12.859	0.000	1168	0.9	
Aroclor-1268	4	13.468	0.007	11477	2.1	4	13.677	0.000	2357	0.6	
Total CollAve (3 peaks):				1.6	Total Col2Ave (3 peaks):				4.7	RPD = 97*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						

Total PCB Area Col1 (5.866 - 13.762) = 2154735 Col1 Total PCB = 0.3 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 1162346 Col2 Total PCB = 0.3 ppm\*

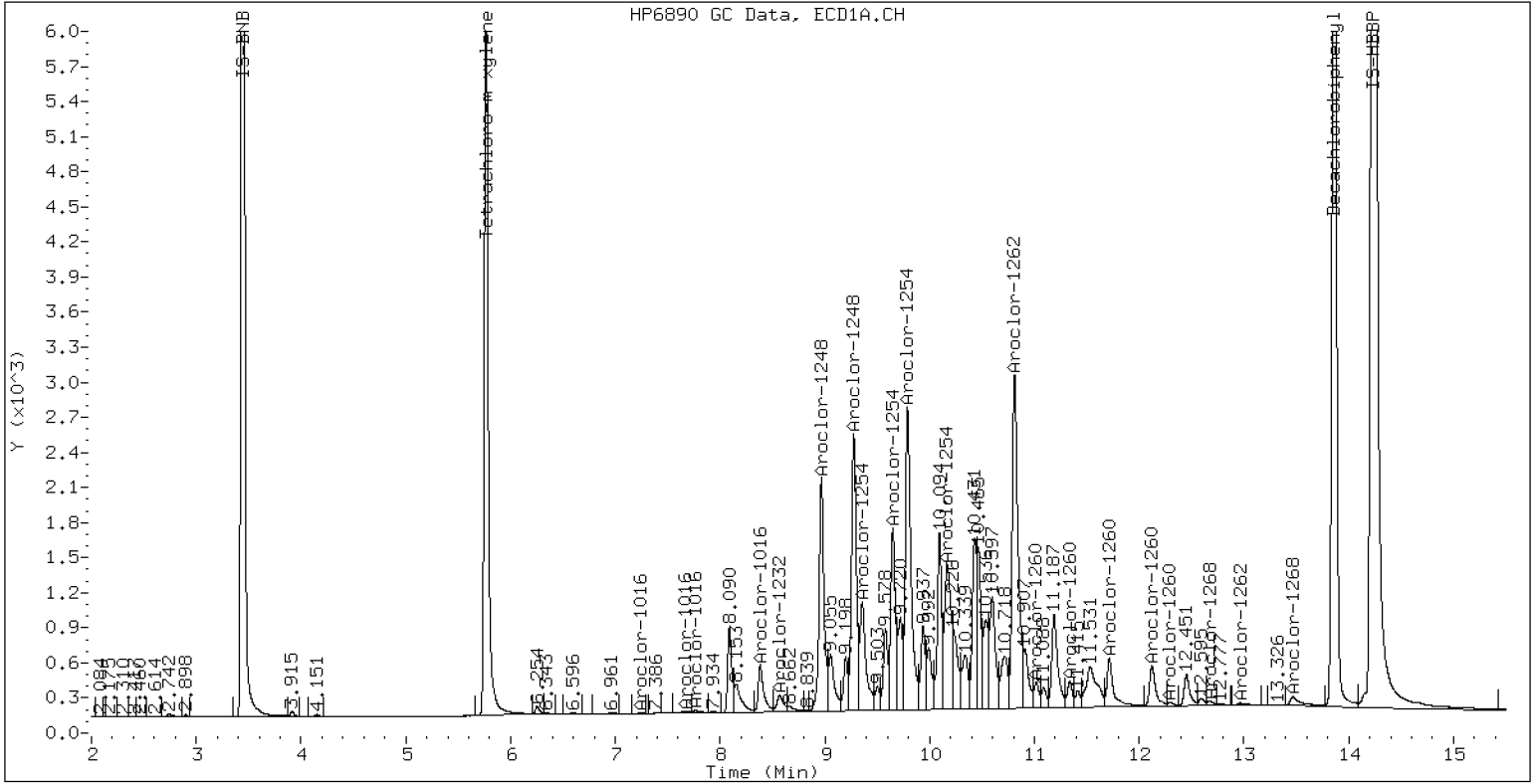
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV

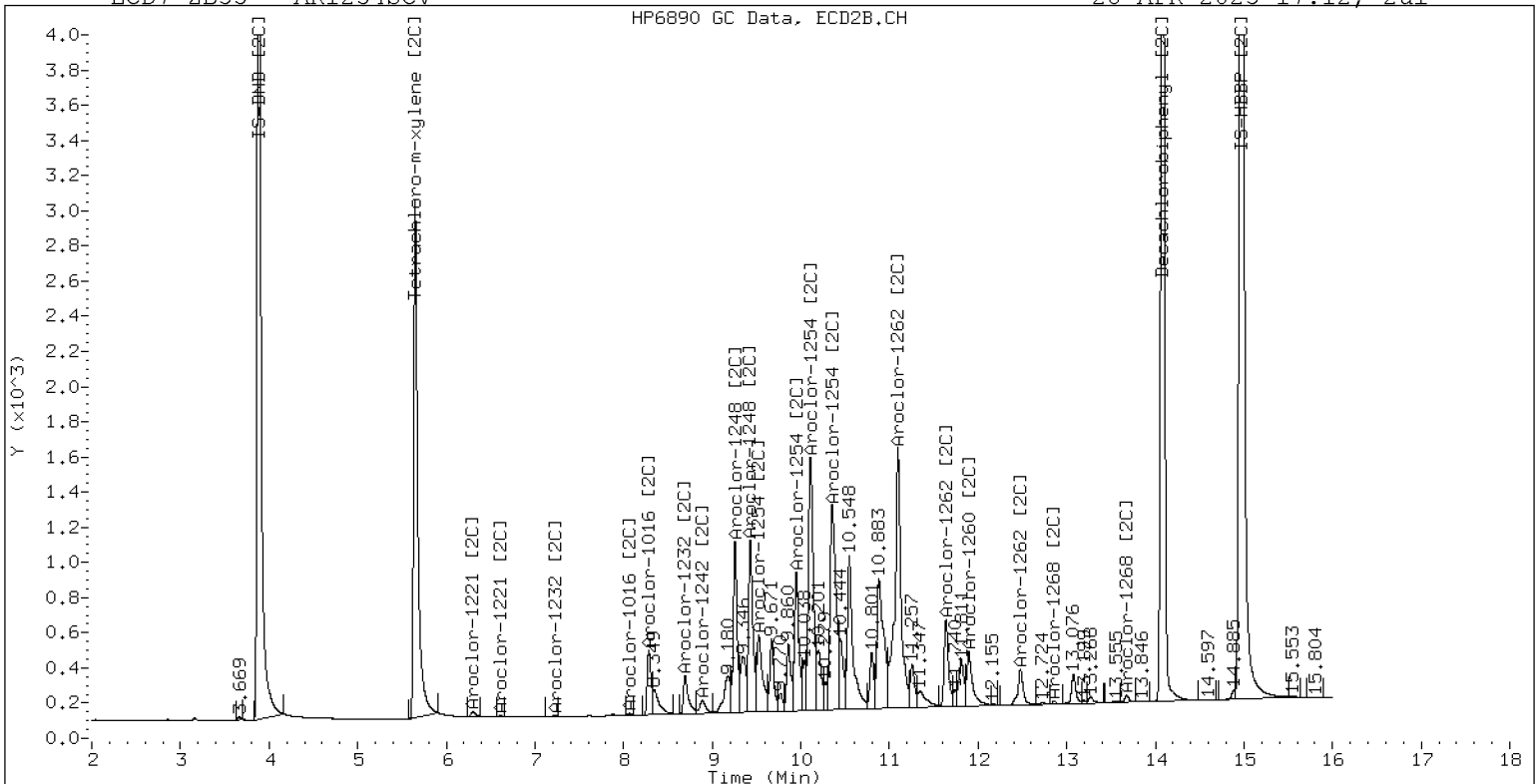
28-APR-2023 17:12, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1254SCV

28-APR-2023 17:12, 2ul



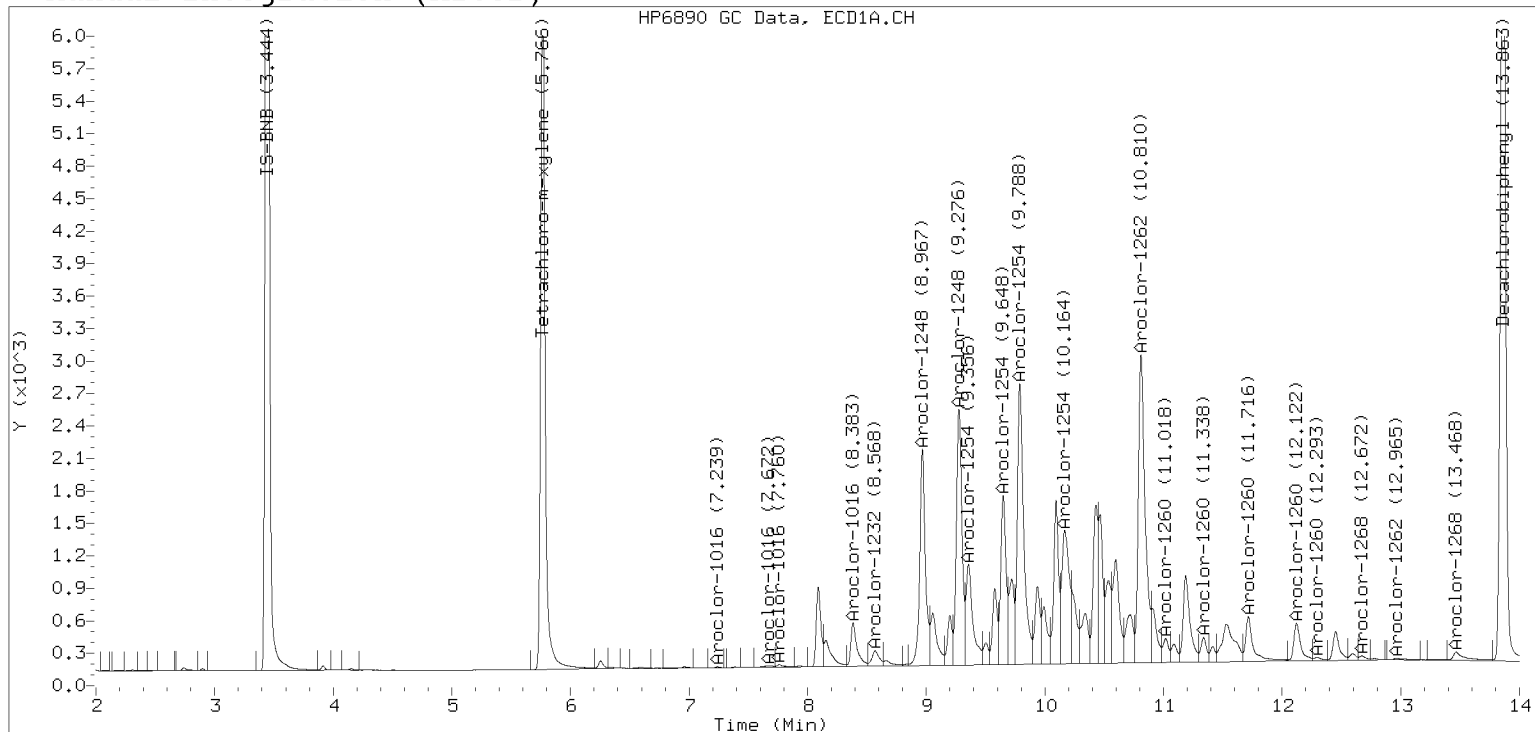
ZB-35 Manual Integration: YES

# Manual Peak Adjustment, ZB-5

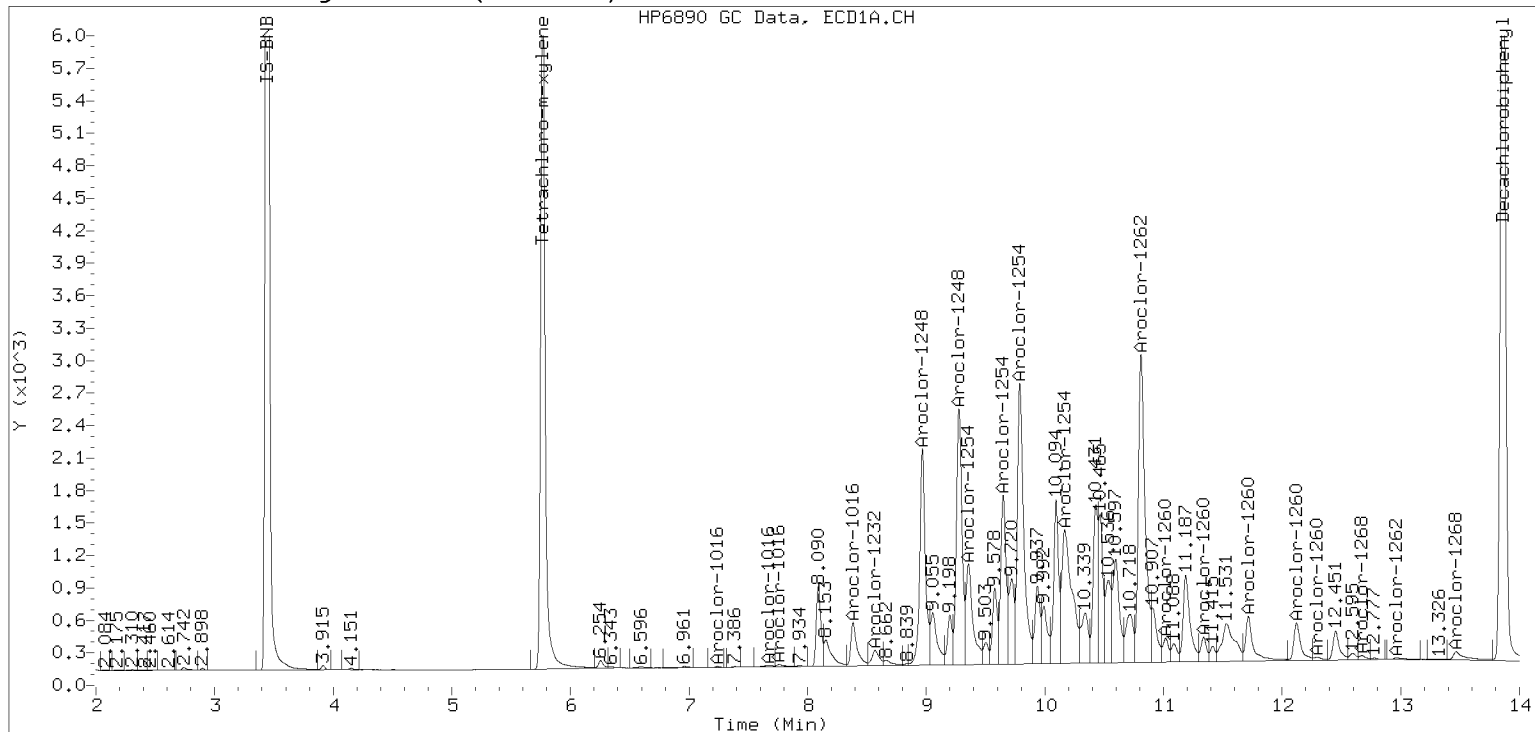
Datafile: ecd7.i/230428.b/04282318ECD7.D

Injection Date: 28-APR-2023 17:12

## Manual Integration (After)



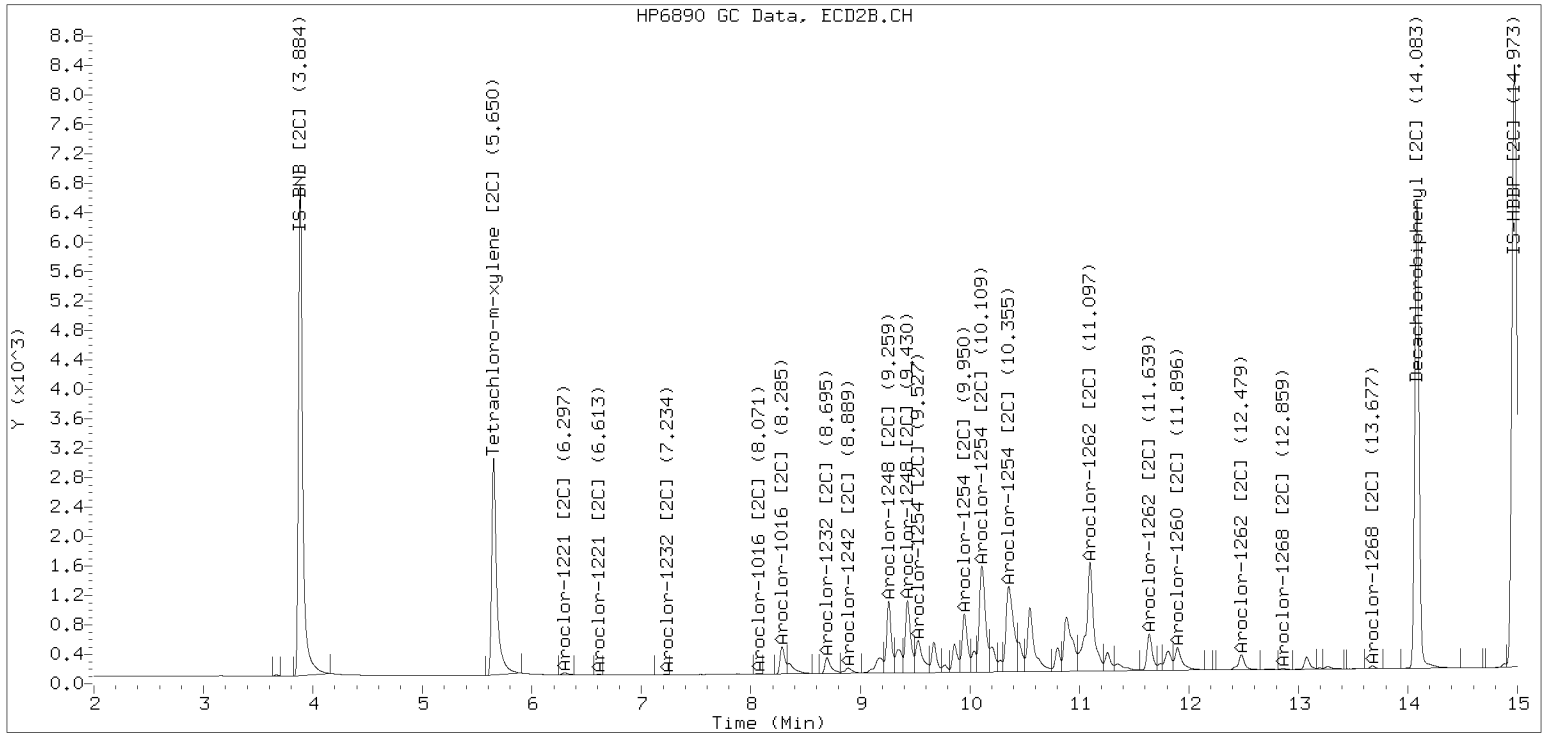
## Processed Integration (Before)



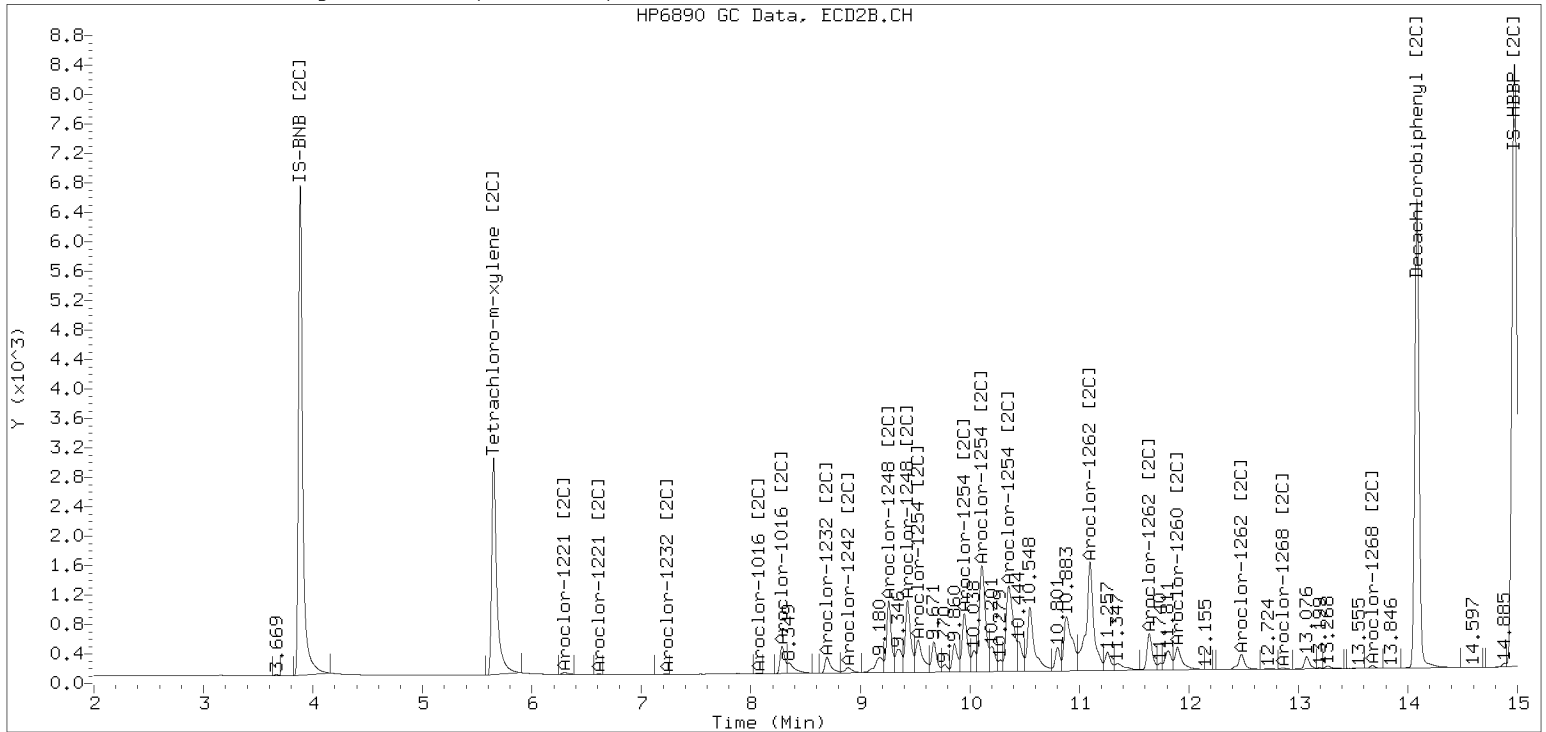
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282318ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)







**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8082A**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00002

**Laboratory ID:** SLD0427-SCV5

**Sequence:** SLD0427

**Sequence Name:** AR2162SCV5

**Standard ID:** L002068

<b>ANALYTE</b>	<b>EXPECTED (ug/L)</b>	<b>FOUND (ug/L)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
Aroclor 1221	250.00	269	7.7	20.00
Aroclor 1221 [2C]	250.00	276	10.5	20.00
Aroclor 1262	250.00	254	1.7	20.00
Aroclor 1262 [2C]	250.00	255	2.0	20.00
Decachlorobiphenyl	40.000	35.9	-10.2	20.00
Tetrachlorometaxylene	40.000	38.3	-4.3	20.00
Decachlorobiphenyl [2C]	40.000	38.9	-2.6	20.00
Tetrachlorometaxylene [2C]	40.000	38.0	-5.0	20.00

\* Indicates values outside of QC limits  
[2C] indicates second-column analyte.

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282319ECD7.D  
Data file 2: /230428.b/230428.b/04282319ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR2162SCV  
Client ID:  
Injection Date: 28-APR-2023 17:33  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.767	0.001	336477	5.650	-0.001	192040	38.3	38.0	0.7	Tetrachloro-m-xylene
13.862	0.001	499246	14.084	-0.000	363267	35.9	38.9	8.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	601660	8.2
Hexabromobiphenyl	745660	1282462	72.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	359781	3.2
Hexabromobiphenyl	429949	576077	34.0

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.237	0.002	5001	21.5	1	7.227	0.005	3885	19.9	
Aroclor-1016	2	7.665	0.037	8647	14.0	2	7.887	0.043	4451	11.6	
Aroclor-1016	3	7.777	0.014	6495	15.6	3	8.066	0.012	2267	9.6	
Aroclor-1016	4	8.388	0.012	2933	13.5	4	8.290	0.009	1849	10.5	
Total CollAve (4 peaks):				16.1	Total Col2Ave (4 peaks):				12.9	RPD = 22	
Corrected Ave (3 peaks):				14.3	Corrected Ave (3 peaks):				10.5	RPD = 31	
Aroclor-1221	1	4.683	0.001	12932	280.8	1	4.911	0.000	7988	299.1	
Aroclor-1221	2	6.094	0.000	24389	264.0	2	6.265	-0.001	15133	265.2	
Aroclor-1221	3	6.348	0.002	57578	262.7	3	6.593	-0.000	34566	264.7	
Total CollAve (3 peaks):				269.2	Total Col2Ave (3 peaks):				276.3	RPD = 3	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.683	0.001	12932	441.6	1	4.911	-0.001	7988	515.9	
Aroclor-1232	2	6.094	0.001	24389	376.5	2	7.227	0.002	3885	45.1	
Aroclor-1232	3	7.665	0.013	8647	33.7	3	7.887	0.025	4451	26.2	
Aroclor-1232	4	8.569	0.006	1975	16.5	4	8.699	0.005	1706	32.6	
Total CollAve (4 peaks):				217.1	Total Col2Ave (4 peaks):				154.9	RPD = 33	
Corrected Ave (3 peaks):				142.2	Corrected Ave (3 peaks):				34.6	RPD = 122*	
Aroclor-1242	1	7.237	0.001	5001	26.6	1	7.227	0.005	3885	24.9	
Aroclor-1242	2	7.665	0.026	8647	16.9	2	7.887	0.029	4451	14.2	
Aroclor-1242	3	8.388	0.006	2933	17.0	3	8.699	-0.469	1706	15.8	
Aroclor-1242	4	8.569	0.009	1975	7.7	4	8.906	-0.697	1208	10.9	
Total CollAve (4 peaks):				17.1	Total Col2Ave (4 peaks):				16.4	RPD = 4	
Corrected Ave (3 peaks):				13.9	Corrected Ave (3 peaks):				13.6	RPD = 2	
Aroclor-1248	1	8.388	0.009	2933	10.1	1	8.699	0.414	1706	9.0	
Aroclor-1248	2	8.569	0.010	1975	5.1	2	8.906	0.215	1208	7.3	
Aroclor-1248	3	8.970	0.006	23869	20.7	3	9.261	0.098	12638	62.0	
Aroclor-1248	4	9.284	0.013	28188	46.7	4	9.437	-0.157	13948	64.2	
Total CollAve (4 peaks):				20.7	Total Col2Ave (4 peaks):				35.6	RPD = 53*	
Corrected Ave (3 peaks):				12.0	Corrected Ave (3 peaks):				26.1	RPD = 74*	
Aroclor-1254	1	9.284	0.009	28188	43.4	1	9.437	0.007	13948	51.9	
Aroclor-1254	2	---			0.0	2	---			0.0	
Aroclor-1254	3	9.654	0.006	4038	9.8	3	9.958	0.008	1791	8.2	
Aroclor-1254	4	9.795	0.005	11586	13.9	4	10.124	0.014	55476	117.7	
Aroclor-1254	5	10.096	-0.072	138022	314.6	5	10.346	-0.010	70184	129.5	
Total CollAve (4 peaks):				95.4	Total Col2Ave (4 peaks):				76.8	RPD = 22	
Corrected Ave (3 peaks):				22.4	Corrected Ave (3 peaks):				59.3	RPD = 90*	
Aroclor-1260	1	11.019	0.002	240553	332.2	1	11.623	-0.001	124057	302.7	
Aroclor-1260	2	11.335	0.002	202728	276.0	2	11.893	0.001	303878	282.5	
Aroclor-1260	3	11.713	0.003	494200	259.3	3	12.405	-0.002	129175	527.4	
Aroclor-1260	4	12.118	0.002	155139	164.1	4	12.475	0.000	226410	308.9	
Aroclor-1260	5	12.217	0.001	214340	494.2	NS	---			----	
Total CollAve (5 peaks):				305.2	Total Col2Ave (4 peaks):				355.4	RPD = 15	
Corrected Ave (4 peaks):				257.9	Corrected Ave (3 peaks):				298.1	RPD = 14	
Aroclor-1262	1	10.809	0.000	123367	246.5	1	11.173	-0.000	146790	254.9	
Aroclor-1262	2	12.217	0.001	214340	245.2	2	11.623	-0.001	124057	255.8	
Aroclor-1262	3	12.293	0.001	236304	246.0	3	12.405	0.001	129175	252.9	
Aroclor-1262	4	12.963	0.001	216573	279.5	4	12.475	-0.000	226410	256.4	
Total CollAve (4 peaks):				254.3	Total Col2Ave (4 peaks):				255.0	RPD = 0	
Corrected Ave (3 peaks):				245.9	Corrected Ave (3 peaks):				254.5	RPD = 3	
Aroclor-1268	1	12.217	-0.001	214340	97.4	1	12.405	0.001	129175	97.0	
Aroclor-1268	2	12.293	0.002	236304	103.1	2	12.475	0.004	226410	149.9	
Aroclor-1268	3	12.700	0.031	85797	45.0	3	12.859	0.001	9727	7.8	
Aroclor-1268	4	13.461	0.001	83654	15.2	4	13.678	0.001	40997	10.8	
Total CollAve (4 peaks):				65.2	Total Col2Ave (4 peaks):				66.4	RPD = 2	

Corrected Ave (3 peaks): 52.5      Corrected Ave (3 peaks): 38.5      RPD = 31

Total PCB Area Col1 (5.866 - 13.762) = 3513270      Col1 Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 1957095      Col2 Total PCB = 0.5 ppm\*

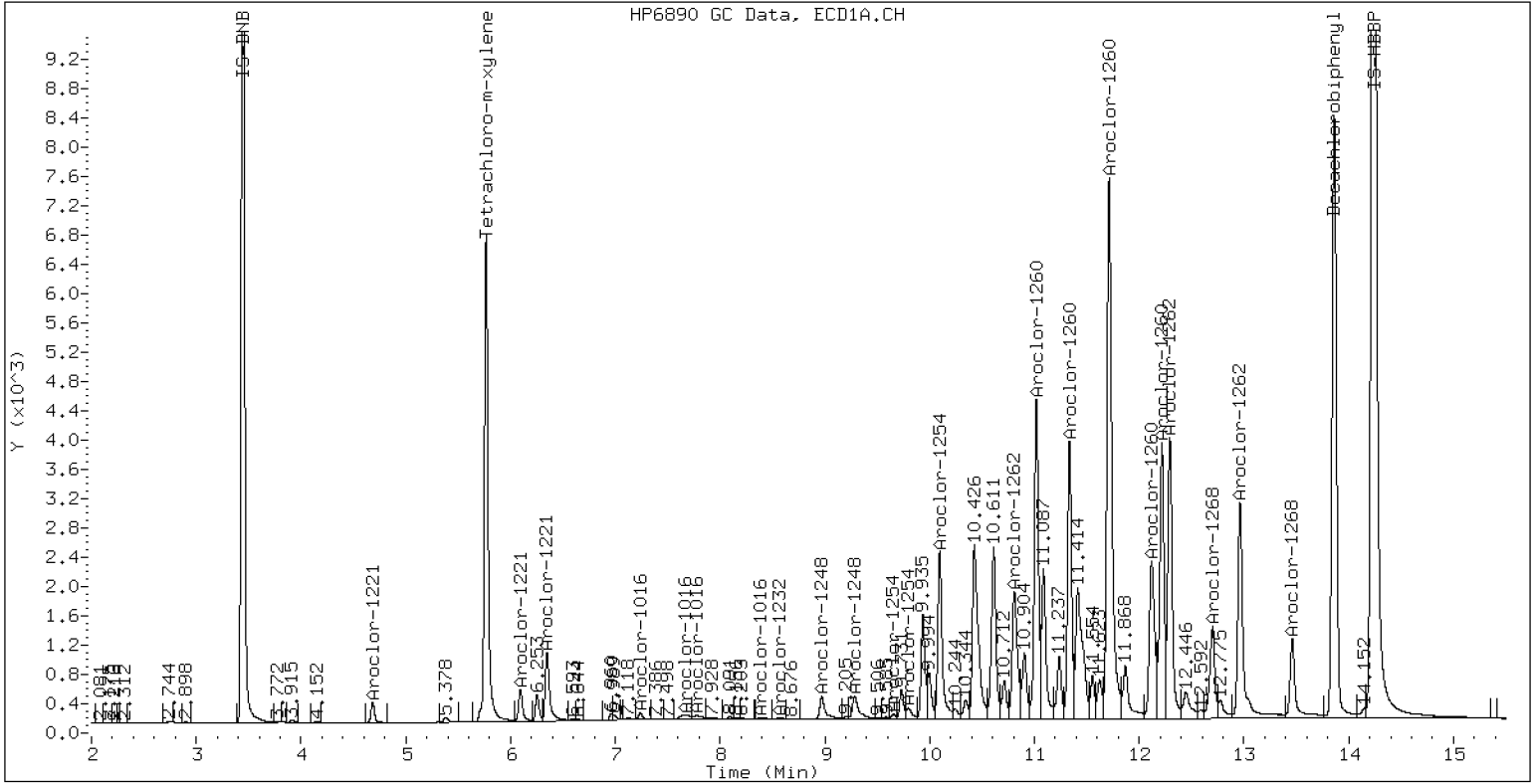
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV

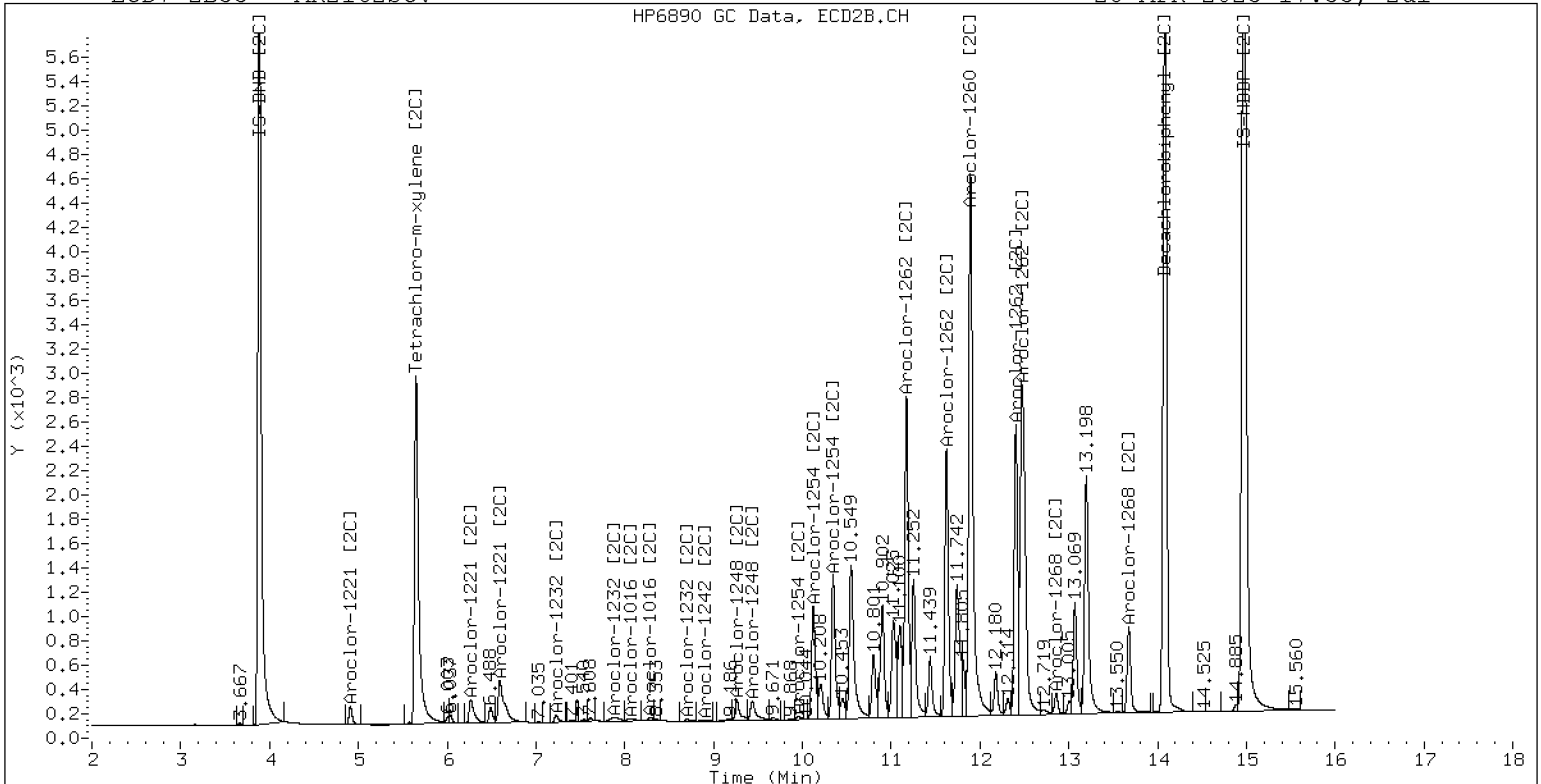
28-APR-2023 17:33, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV

28-APR-2023 17:33, 2ul

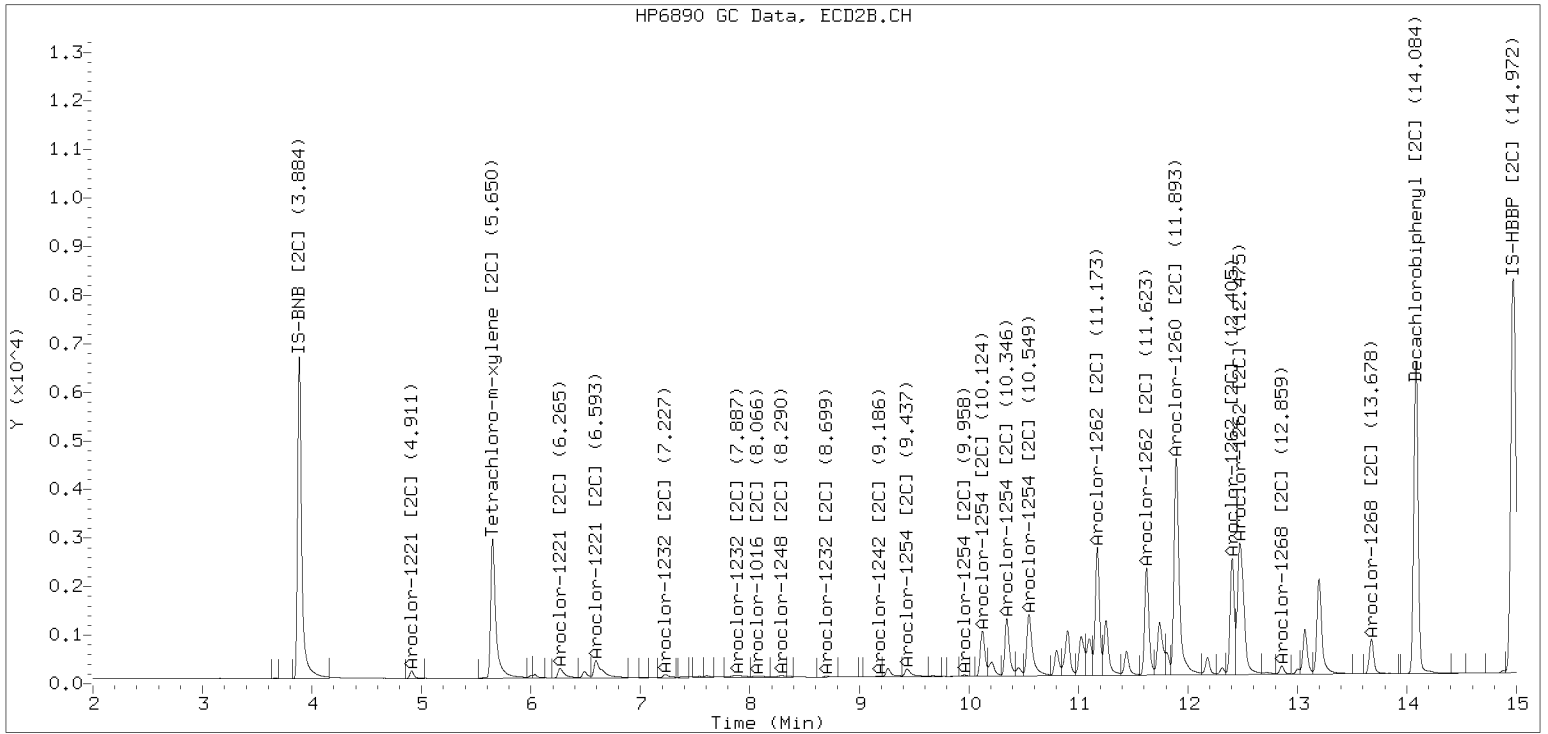


ZB-35 Manual Integration: NO

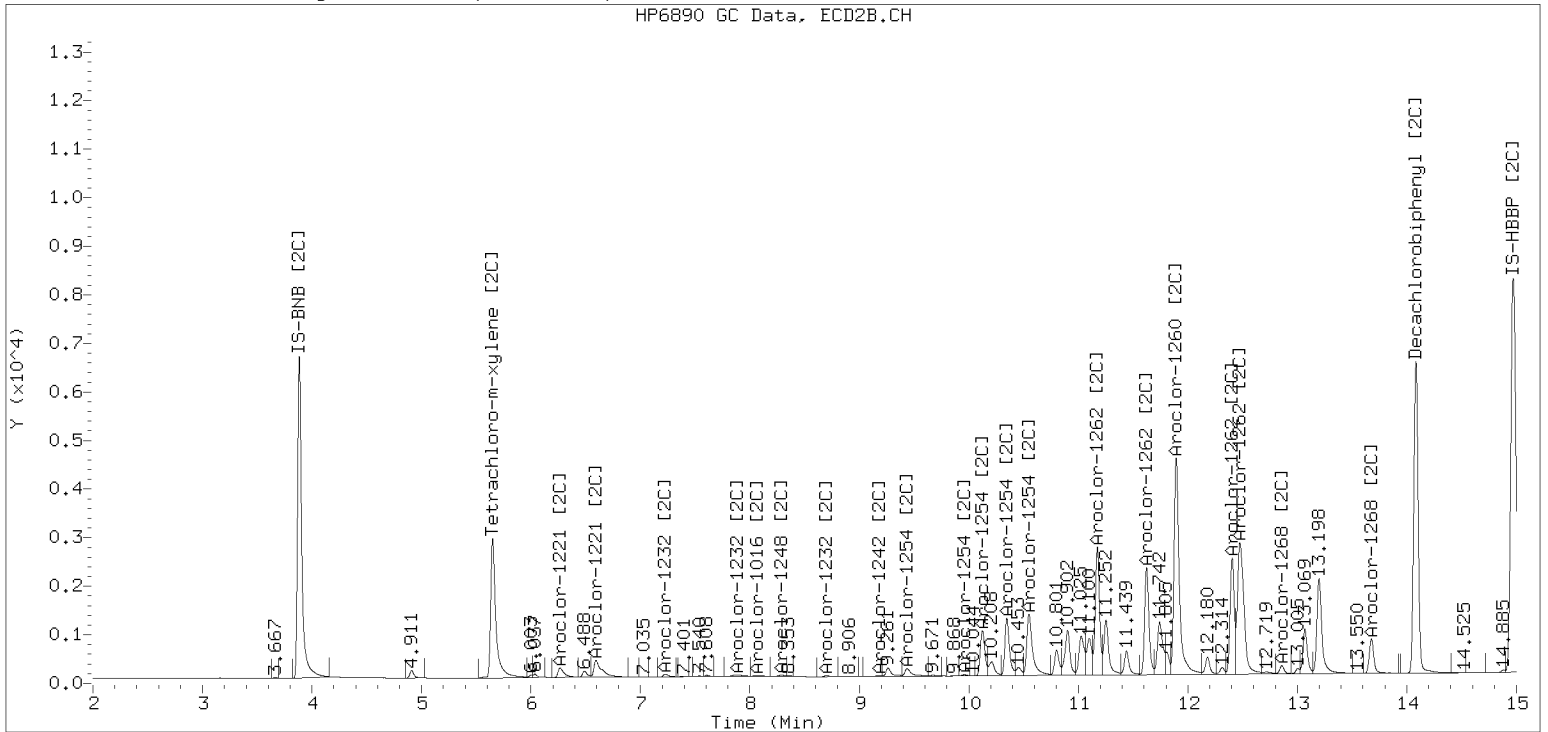
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282319ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 8082A**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00002

**Laboratory ID:** SLD0427-SCV6

**Sequence:** SLD0427

**Sequence Name:** AR3268SCV6

**Standard ID:** L002069

<b>ANALYTE</b>	<b>EXPECTED (ug/L)</b>	<b>FOUND (ug/L)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
Aroclor 1232	250.00	253	1.1	20.00
Aroclor 1232 [2C]	250.00	257	2.7	20.00
Aroclor 1268	250.00	242	-3.4	20.00
Aroclor 1268 [2C]	250.00	254	1.8	20.00
Decachlorobiphenyl	40.000	54.3	35.7	20.00
Tetrachlorometaxylene	40.000	39.7	-0.8	20.00
Decachlorobiphenyl [2C]	40.000	60.0	50.1	20.00
Tetrachlorometaxylene [2C]	40.000	38.1	-4.9	20.00

\* Indicates values outside of QC limits  
[2C] indicates second-column analyte.

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282320ECD7.D  
Data file 2: /230428.b/230428.b/04282320ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR3268SCV  
Client ID:  
Injection Date: 28-APR-2023 17:54  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.767	0.001	344701	5.650	-0.000	190884	39.7	38.1	4.2	Tetrachloro-m-xylene
13.863	0.002	748678	14.083	-0.001	556825	54.3	60.0	10.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	594267	6.8
Hexabromobiphenyl	745660	1272651	70.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	357253	2.5
Hexabromobiphenyl	429949	572751	33.2

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)



ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.238	0.002	27428	119.4	1	7.224	0.003	22212	114.8
Aroclor-1016	2	7.645	0.018	67306	110.5	2	7.864	0.020	43795	114.5
Aroclor-1016	3	7.770	0.007	44634	108.2	3	8.063	0.009	25689	109.2
Aroclor-1016	4	8.384	0.008	23868	110.9	4	8.289	0.008	18313	104.5
Total CollAve (4 peaks):				112.2		Total Col2Ave (4 peaks):				110.7 RPD = 1
Corrected Ave (3 peaks):				109.9		Corrected Ave (3 peaks):				109.4 RPD = 0
Aroclor-1221	1	4.684	0.002	6934	152.4	1	4.912	0.002	3754	141.5
Aroclor-1221	2	6.095	0.001	14371	157.5	2	6.267	0.002	8987	158.6
Aroclor-1221	3	6.348	0.002	41876	193.5	3	6.596	0.002	24420	188.3
Total CollAve (3 peaks):				167.8		Total Col2Ave (3 peaks):				162.8 RPD = 3
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.684	0.002	6934	239.7	1	4.912	0.001	3754	244.1
Aroclor-1232	2	6.095	0.001	14371	224.6	2	7.224	-0.001	22212	259.7
Aroclor-1232	3	7.645	-0.006	67306	265.3	3	7.864	0.002	43795	259.5
Aroclor-1232	4	8.564	0.001	33203	281.0	4	8.693	-0.001	13696	263.5
Total CollAve (4 peaks):				252.6		Total Col2Ave (4 peaks):				256.7 RPD = 2
Corrected Ave (3 peaks):				243.2		Corrected Ave (3 peaks):				254.4 RPD = 5
Aroclor-1242	1	7.238	0.001	27428	147.9	1	7.224	0.002	22212	143.1
Aroclor-1242	2	7.645	0.007	67306	132.8	2	7.864	0.006	43795	141.0
Aroclor-1242	3	8.428	0.047	16206	95.1	3	8.693	-0.475	13696	127.5
Aroclor-1242	4	8.564	0.004	33203	131.6	4	8.897	-0.706	21265	192.9
Total CollAve (4 peaks):				126.9		Total Col2Ave (4 peaks):				151.1 RPD = 17
Corrected Ave (3 peaks):				119.8		Corrected Ave (3 peaks):				137.2 RPD = 14
Aroclor-1248	1	8.384	0.005	23868	83.1	1	8.693	0.408	13696	73.1
Aroclor-1248	2	8.564	0.005	33203	87.2	2	8.897	0.206	21265	128.9
Aroclor-1248	3	8.968	0.004	84096	74.0	3	9.261	0.097	25621	126.6
Aroclor-1248	4	9.276	0.005	56986	95.5	4	9.433	-0.160	6057	28.1
Total CollAve (4 peaks):				85.0		Total Col2Ave (4 peaks):				89.2 RPD = 5
Corrected Ave (3 peaks):				81.4		Corrected Ave (3 peaks):				75.9 RPD = 7
Aroclor-1254	1	9.276	0.000	56986	88.8	1	9.433	0.004	6057	22.7
Aroclor-1254	2	---			0.0	2	9.609	0.081	13368	82.1
Aroclor-1254	3	9.660	0.012	7875	19.4	3	9.958	0.008	2781	12.9
Aroclor-1254	4	9.800	0.010	12771	15.5	4	10.117	0.007	5502	11.8
Aroclor-1254	5	10.183	0.015	9957	23.0	5	10.379	0.024	5042	9.4
Total CollAve (4 peaks):				36.7		Total Col2Ave (5 peaks):				27.8 RPD = 28
Corrected Ave (3 peaks):				19.3		Corrected Ave (4 peaks):				14.2 RPD = 31
Aroclor-1260	1	11.023	0.005	98362	136.9	1	11.614	-0.010	74582	183.0
Aroclor-1260	2	11.337	0.004	8979	12.3	2	11.895	0.003	33641	31.5
Aroclor-1260	3	11.714	0.004	59413	31.4	3	12.402	-0.005	335038	1375.9
Aroclor-1260	4	---			0.0	4	12.470	-0.005	380342	522.0
Aroclor-1260	5	12.219	0.003	530793	1233.3	NS	---			----
Total CollAve (4 peaks):				353.5		Total Col2Ave (4 peaks):				528.1 RPD = 40
Corrected Ave (3 peaks):				60.2		Corrected Ave (3 peaks):				245.5 RPD = 121*
Aroclor-1262	1	10.815	0.006	5713	11.5	1	11.176	0.003	58379	102.0
Aroclor-1262	2	12.219	0.002	530793	612.0	2	11.614	-0.010	74582	154.7
Aroclor-1262	3	12.291	-0.001	548779	575.7	3	12.402	-0.002	335038	659.6
Aroclor-1262	4	12.960	-0.003	218981	284.8	4	12.470	-0.005	380342	433.3
Total CollAve (4 peaks):				371.0		Total Col2Ave (4 peaks):				337.4 RPD = 9
Corrected Ave (3 peaks):				290.7		Corrected Ave (3 peaks):				230.0 RPD = 23
Aroclor-1268	1	12.219	0.000	530793	243.0	1	12.402	-0.001	335038	253.1
Aroclor-1268	2	12.291	0.000	548779	241.2	2	12.470	-0.001	380342	253.2
Aroclor-1268	3	12.669	0.000	449251	237.4	3	12.859	0.001	314079	253.1
Aroclor-1268	4	13.461	-0.000	1338158	244.6	4	13.676	-0.001	976802	258.3
Total CollAve (4 peaks):				241.6		Total Col2Ave (4 peaks):				254.4 RPD = 5

Corrected Ave (3 peaks): 240.5      Corrected Ave (3 peaks): 253.1      RPD = 5

Total PCB Area Col1 (5.866 - 13.762) = 4336494      Col1 Total PCB = 0.6 ppm\*  
Total PCB Area Col2 (5.751 - 13.984) = 2807426      Col2 Total PCB = 0.7 ppm\*

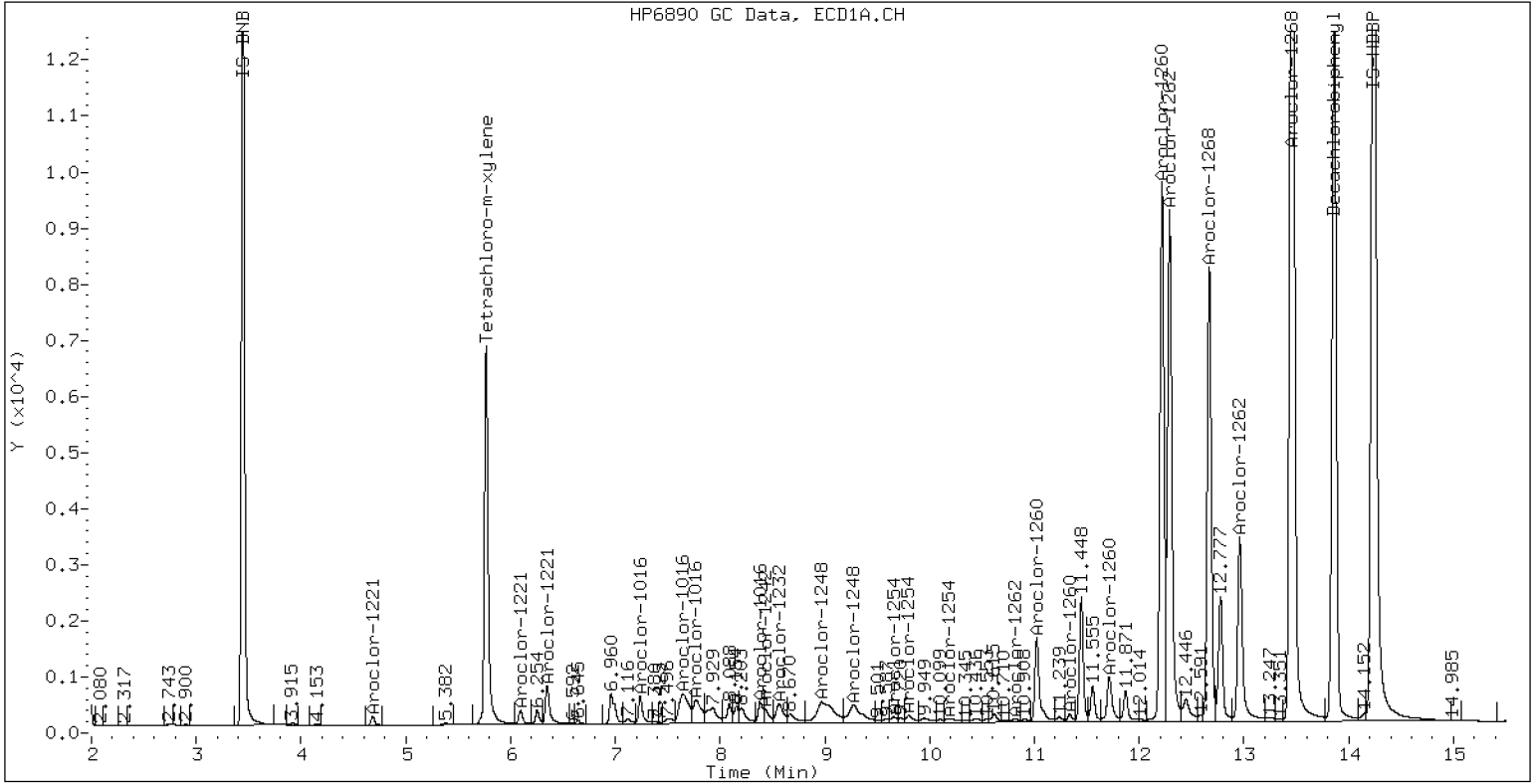
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV

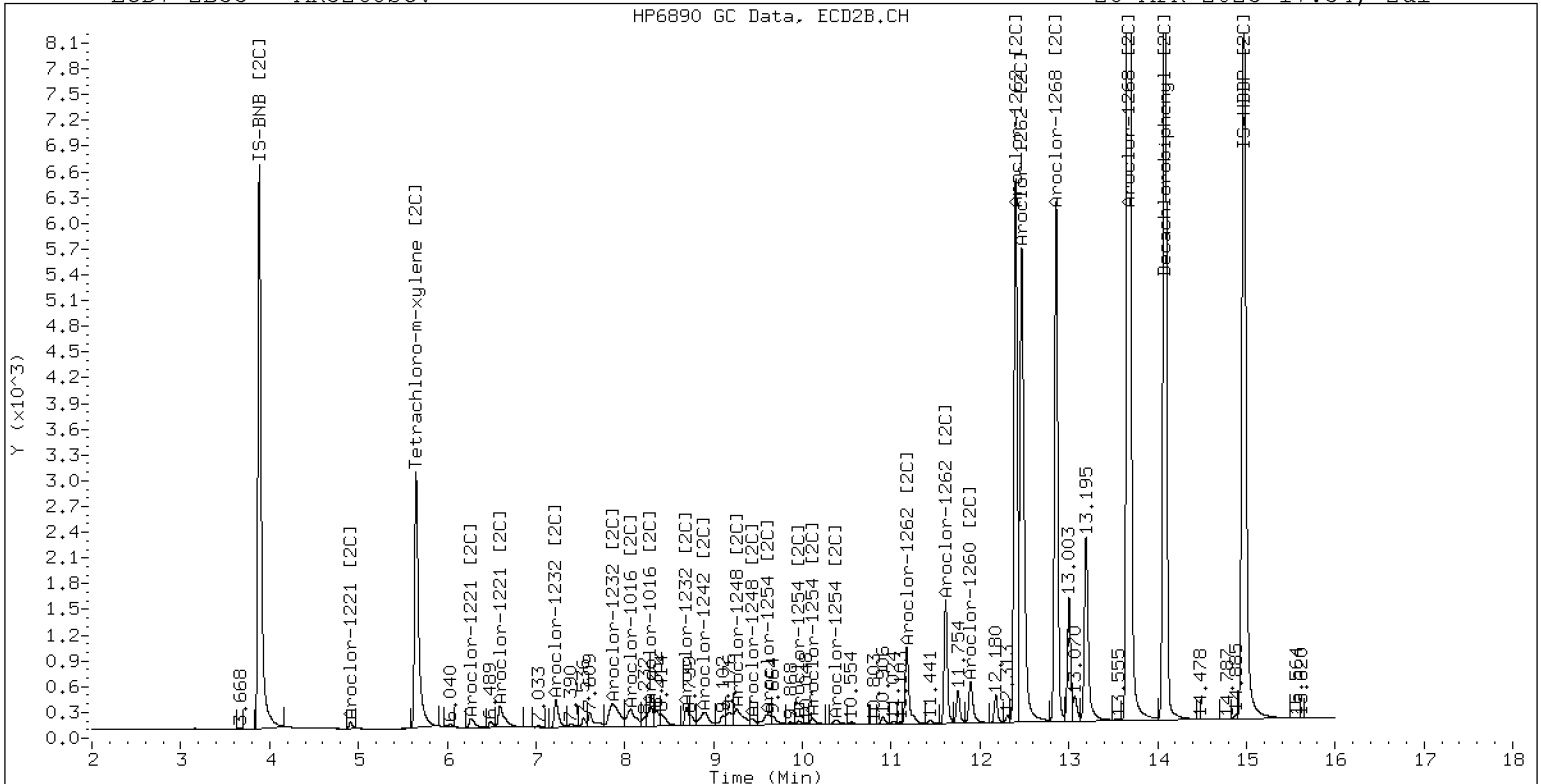
28-APR-2023 17:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV

28-APR-2023 17:54, 2ul

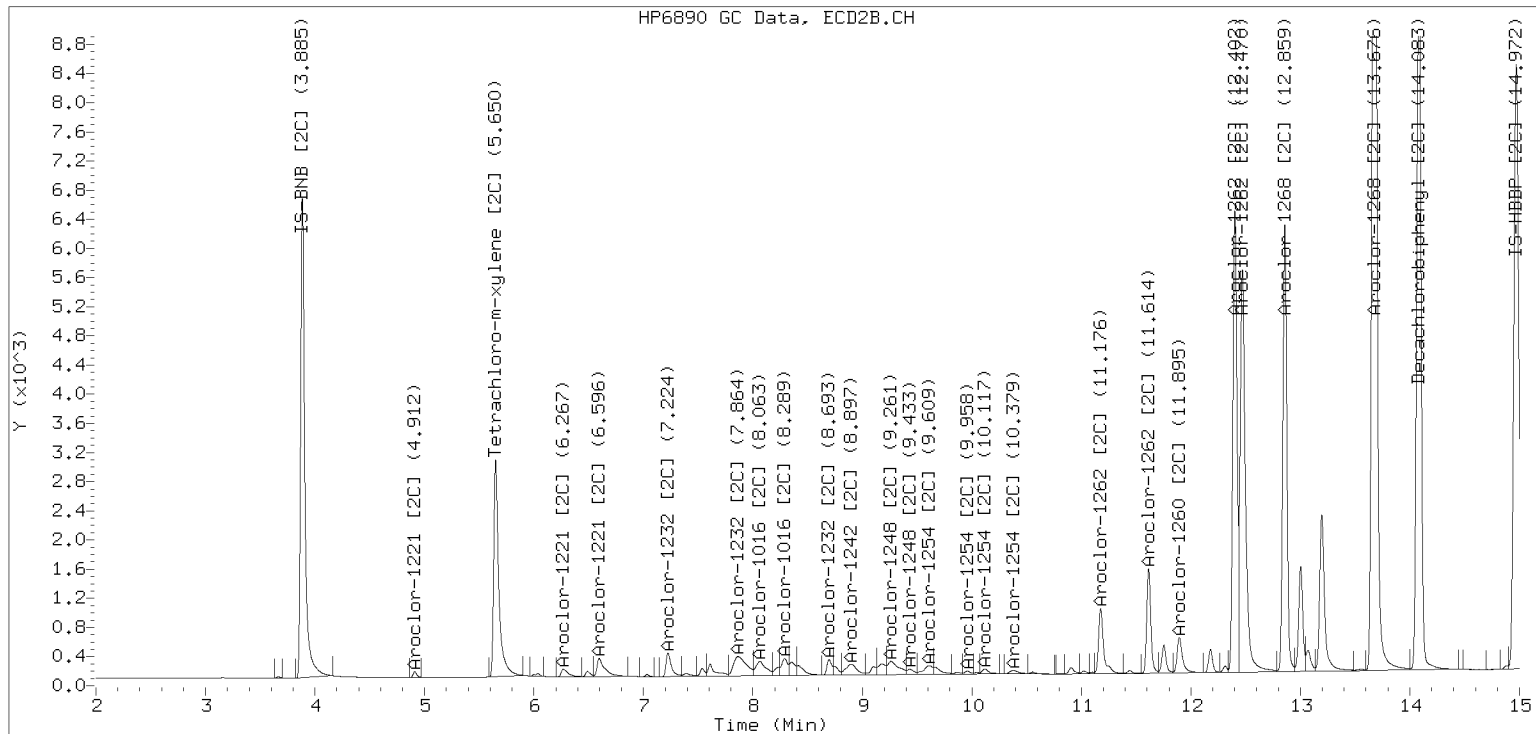


ZB-35 Manual Integration: YES

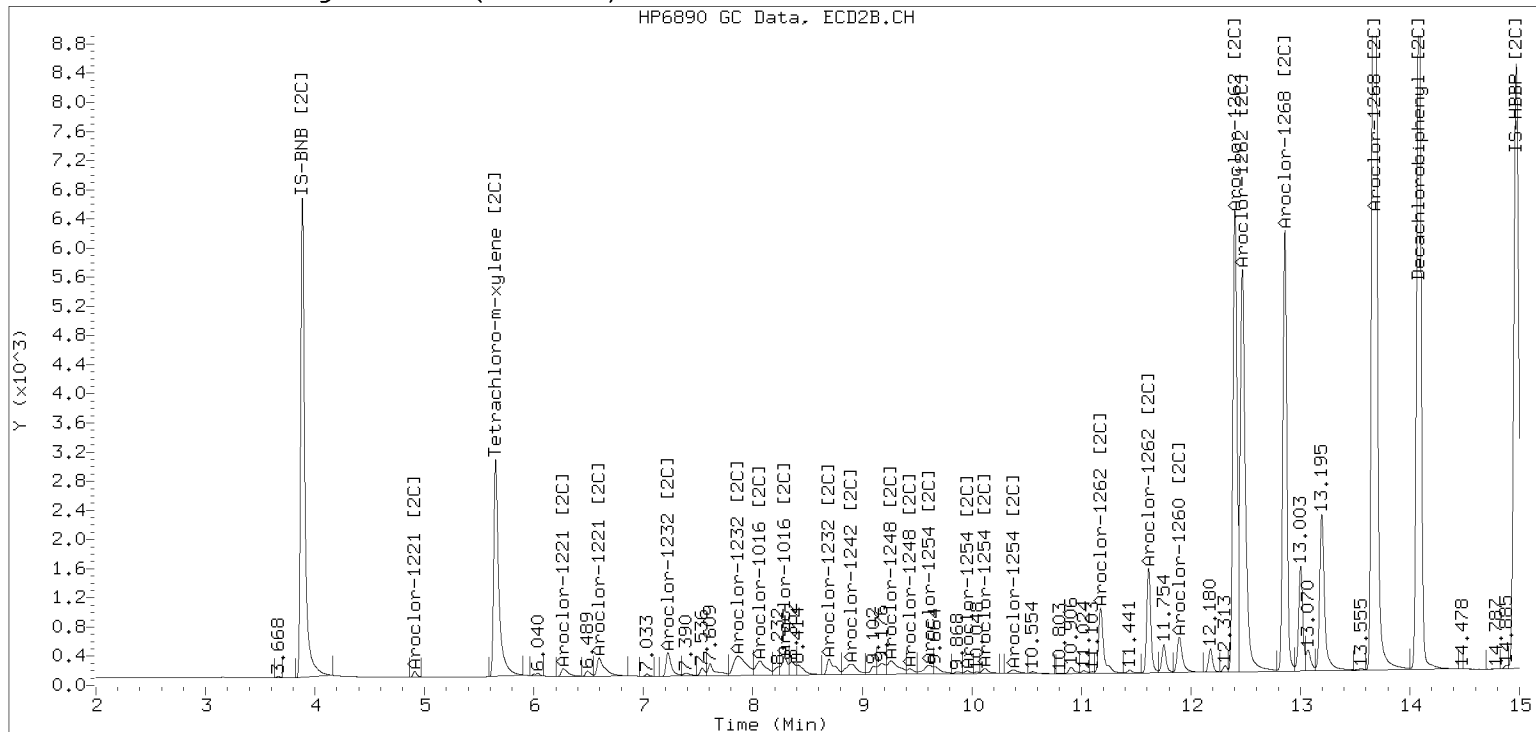
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282320ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**INITIAL CALIBRATION CHECK**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ECD7

Calibration: GE00002

Lab File ID: 05022307ECD7.D

Calibration Date: 04/28/2023

Sequence: SLE0029

Injection Date: 05/02/23

Lab Sample ID: SLE0029-ICV1

Injection Time: 13:23

Sequence Name: AR1254ICV1

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	252	0.0702659	0.0758963		0.8	+/-20
Aroclor-1254 (1)	A	250.00	234	0.0864147	0.0808793			
Aroclor-1254 (2)	A	250.00	244	0.0409579	0.0399497			
Aroclor-1254 (3)	A	250.00	263	0.0546340	0.0575179			
Aroclor-1254 (4)	A	250.00	265	0.1109842	0.1177748			
Aroclor-1254 (5)	A	250.00	254	0.0583385	0.0833598			
Aroclor 1254 [2C]	A	250.00	270	0.0739953	0.0799936		7.9	+/-20
Aroclor-1254 (1) [2C]	A	250.00	274	0.0598131	0.0655693			
Aroclor-1254 (2) [2C]	A	250.00	269	0.0364538	0.0392646			
Aroclor-1254 (3) [2C]	A	250.00	265	0.0484172	0.0512634			
Aroclor-1254 (4) [2C]	A	250.00	267	0.1048212	0.1119048			
Aroclor-1254 (5) [2C]	A	250.00	274	0.1204710	0.1319659			
Decachlorobiphenyl	A	40.000	38.1	0.8671959	0.8258731		-4.8	+/-20
Tetrachlorometaxylene	A	40.000	38.9	1.1690340	1.1370750		-2.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.3	1.2954910	1.2394460		-4.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.1	1.1231530	1.1273020		0.3	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022307ECD7.D  
Data file 2: /230502.b/230502.b/05022307ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: AR1254.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1254ICV1  
Client ID:  
Injection Date: 02-MAY-2023 13:23  
Report Date: 05/02/2023 14:47  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	313923	5.650	0.001	172869	38.9	40.1	3.1	Tetrachloro-m-xylene
13.861	0.001	347885	14.082	0.002	271158	38.1	38.3	0.5	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	552159	-0.7
Hexabromobiphenyl	745660	842466	13.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	306695	-12.0
Hexabromobiphenyl	429949	437547	1.8

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1254	1	9.271	-0.004	139557	234.0	1	9.428	0.000	62843	274.1	
Aroclor-1254	2	9.355	-0.004	68933	243.8	2	9.524	0.000	37632	269.3	
Aroclor-1254	3	9.646	-0.002	99247	263.2	3	9.947	0.000	49132	264.7	
Aroclor-1254	4	9.787	-0.003	203220	265.3	4	10.104	0.000	107252	266.9	
Aroclor-1254	5	10.162	-0.007	143837	254.2	5	10.351	0.000	126479	273.9	
Total CollAve (5 peaks):				252.1		Total Col2Ave (5 peaks):				269.8	RPD = 7
Corrected Ave (4 peaks):				248.8		Corrected Ave (4 peaks):				268.7	RPD = 8
CalAmt %D:				0.8		CalAmt %D:				7.9	

Total PCB Area Col1 (5.866 - 13.760) = 2129267 Col1 Total PCB = 0.3 ppm\*

Total PCB Area Col2 (5.748 - 13.981) = 1069464 Col2 Total PCB = 0.3 ppm\*

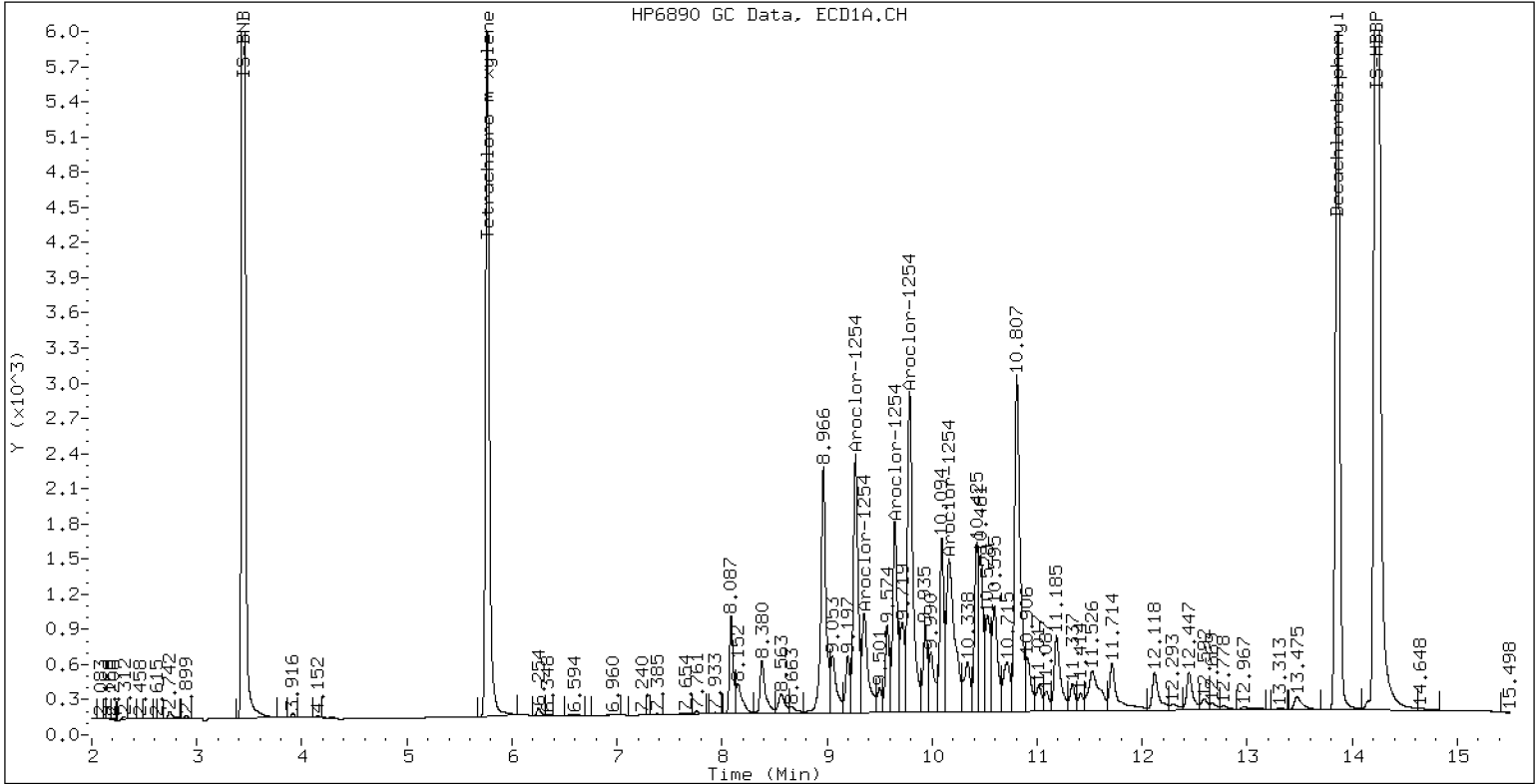
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1

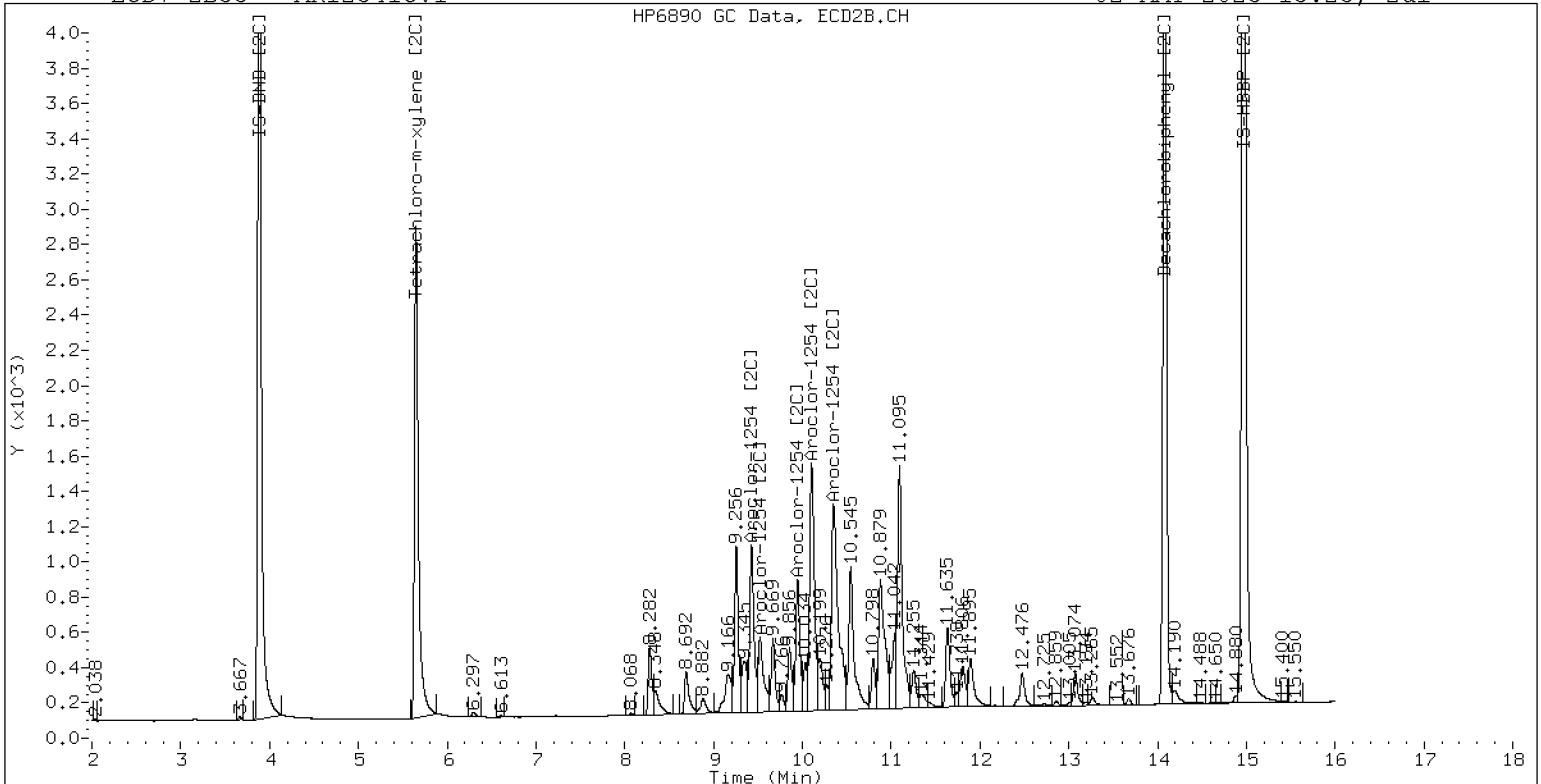
02-MAY-2023 13:23, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1

02-MAY-2023 13:23, 2ul



ZB-35 Manual Integration: NO





**INITIAL CALIBRATION CHECK**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ECD7

Calibration: GE00002

Lab File ID: 05022308ECD7.D

Calibration Date: 04/28/2023

Sequence: SLE0029

Injection Date: 05/02/23

Lab Sample ID: SLE0029-ICV2

Injection Time: 13:44

Sequence Name: AR1660ICV2

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	261	0.0493584	0.0522769		4.3	+/-20
Aroclor-1016 (1)	A	250.00	250	0.0309351	0.0297848		0.0	
Aroclor-1016 (2)	A	250.00	290	0.0820179	0.0950972		16.0	
Aroclor-1016 (3)	A	250.00	240	0.0555075	0.0538926		-4.0	
Aroclor-1016 (4)	A	250.00	263	0.0289731	0.0303329		5.2	
Aroclor 1016 [2C]	A	250.00	281	0.0554830	0.0638546		12.4	+/-20
Aroclor-1016 (1) [2C]	A	250.00	305	0.0433246	0.0528424		22.0	
Aroclor-1016 (2) [2C]	A	250.00	330	0.0856363	0.1129318		32.0	
Aroclor-1016 (3) [2C]	A	250.00	240	0.0537117	0.0505229		-4.0	
Aroclor-1016 (4) [2C]	A	250.00	249	0.0392594	0.0391213		-0.4	
Aroclor 1260	A	250.00	266	0.0591826	0.0636416		6.3	+/-20
Aroclor-1260 (1)	A	250.00	282	0.0451684	0.0509899		12.8	
Aroclor-1260 (2)	A	250.00	274	0.0458209	0.0502357		9.6	
Aroclor-1260 (3)	A	250.00	283	0.1189069	0.1346822		13.2	
Aroclor-1260 (4)	A	250.00	228	0.0589630	0.0539154		-8.8	
Aroclor-1260 (5)	A	250.00	262	0.0270539	0.0283849		4.8	
Aroclor 1260 [2C]	A	250.00	247	0.0855158	0.0841686		-1.2	+/-20
Aroclor-1260 (1) [2C]	A	250.00	243	0.0569154	0.0553722		-2.8	
Aroclor-1260 (2) [2C]	A	250.00	247	0.1493590	0.1474117		-1.2	
Aroclor-1260 (3) [2C]	A	250.00	254	0.0340126	0.0345712		1.6	
Aroclor-1260 (4) [2C]	A	250.00	244	0.1017762	0.0993192		-2.4	
Decachlorobiphenyl	A	40.000	39.8	0.8671959	0.8618546		-0.5	+/-20
Tetrachlorometaxylene	A	40.000	40.6	1.1690340	1.1875130		1.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.3	1.2954910	1.2737920		-1.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	46.1	1.1231530	1.2953060		15.3	+/-20

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022308ECD7.D  
Data file 2: /230502.b/230502.b/05022308ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: AR1660.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1660ICV2  
Client ID:  
Injection Date: 02-MAY-2023 13:44  
Report Date: 05/02/2023 14:47  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col		ZB5	ZB35	RPD	Compound/Flag
RT	Shift Response	RT	Shift Response	on col	on col		
5.765	-0.001	334855	0.000	40.6	46.1	12.7	Tetrachloro-m-xylene
13.860	0.000	374453	0.000	39.8	39.3	1.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	563960	1.4
Hexabromobiphenyl	745660	868947	16.5
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	281447	-19.2
Hexabromobiphenyl	429949	443625	3.2

\* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.236	0.001	52492	250.2	1	7.220	0.000	46476	304.9
Aroclor-1016	2	7.629	0.002	167597	289.9	2	7.846	0.000	99326	329.7
Aroclor-1016	3	7.763	0.000	94979	240.1	3	8.055	0.000	44436	239.7
Aroclor-1016	4	8.377	0.001	53458	262.7	4	8.281	0.000	34408	249.1
Total CollAve (4 peaks):				260.7		Total Col2Ave (4 peaks):				280.9 RPD = 7
Corrected Ave (3 peaks):				251.0		Corrected Ave (3 peaks):				264.6 RPD = 5
CalAmt %D:				4.3		CalAmt %D:				12.3
Aroclor-1260	1	11.016	-0.001	138461	282.2	1	11.623	0.000	76764	243.2
Aroclor-1260	2	11.333	-0.000	136413	274.1	2	11.891	0.000	204361	246.7
Aroclor-1260	3	11.709	-0.001	365724	283.2	3	12.404	0.000	47927	254.1
Aroclor-1260	4	12.117	0.002	146405	228.6	4	12.473	0.000	137689	244.0
Aroclor-1260	5	12.215	-0.001	77078	262.3	NS	---			----
Total CollAve (5 peaks):				266.1		Total Col2Ave (4 peaks):				247.0 RPD = 7
Corrected Ave (4 peaks):				261.8		Corrected Ave (3 peaks):				244.6 RPD = 7
CalAmt %D:				6.4		CalAmt %D:				-1.2

Total PCB Area Coll (5.866 - 13.760) = 3704161 Coll Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.748 - 13.981) = 1898967 Col2 Total PCB = 0.6 ppm\*

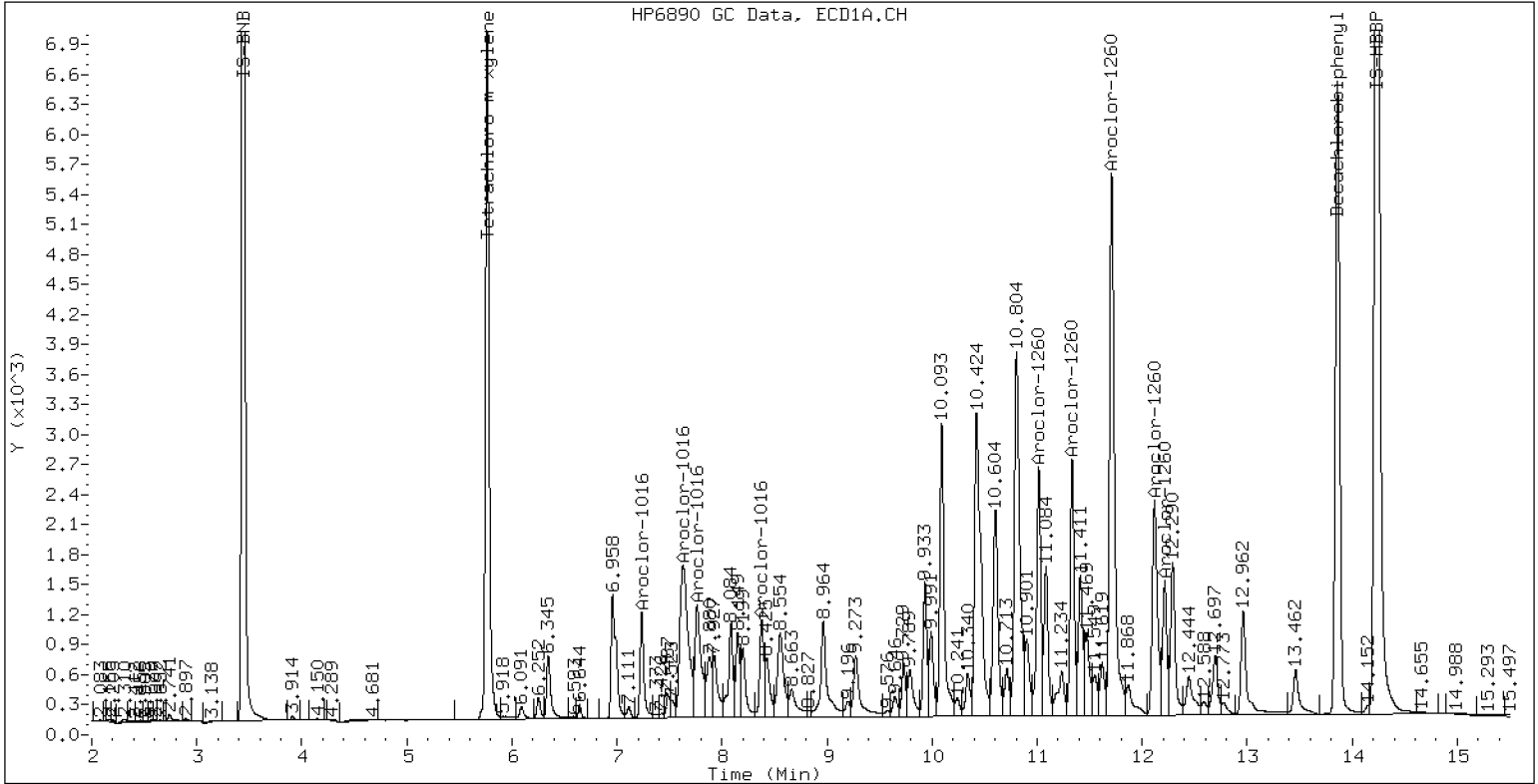
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2

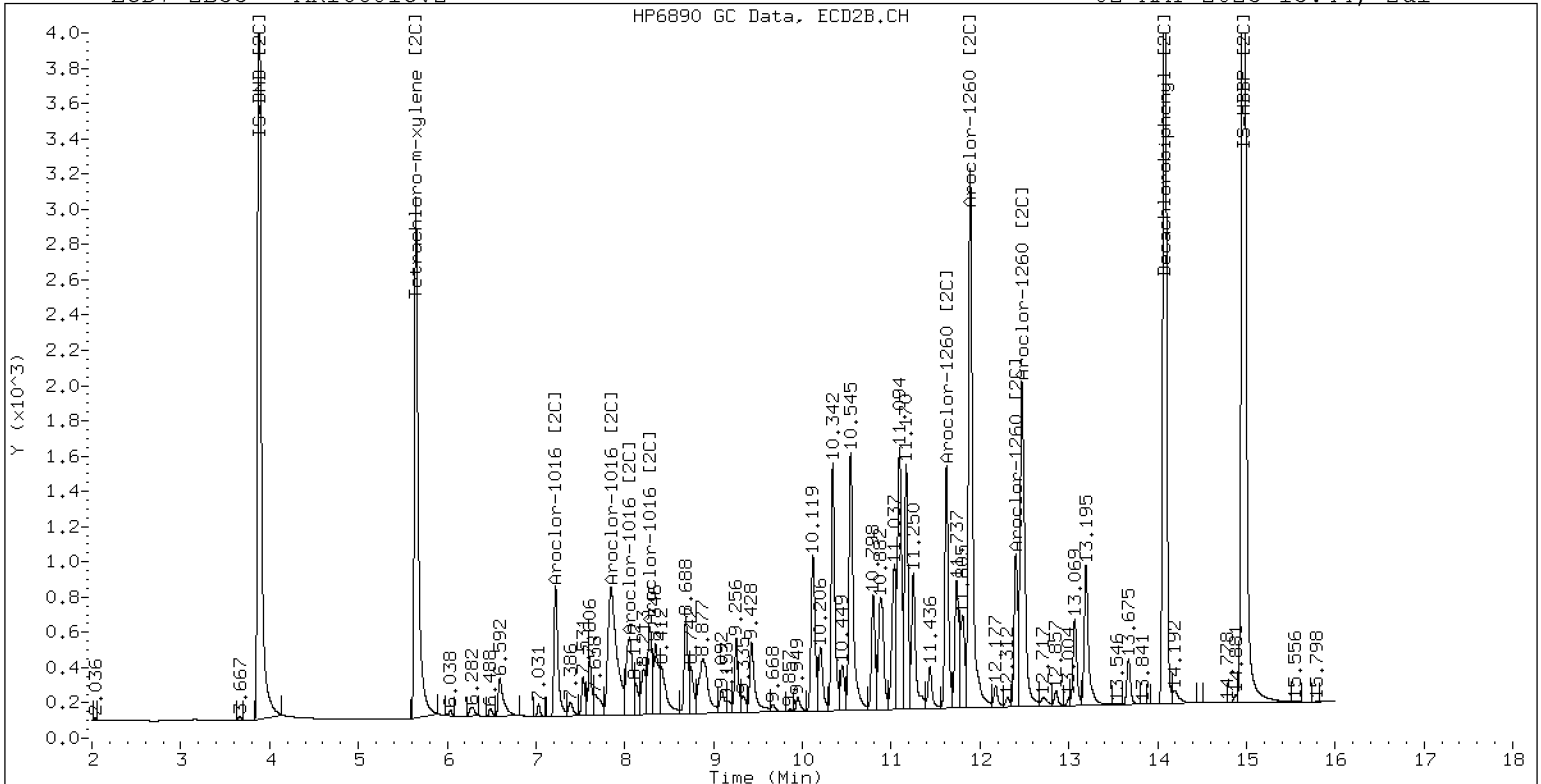
02-MAY-2023 13:44, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660ICV2

02-MAY-2023 13:44, 2ul

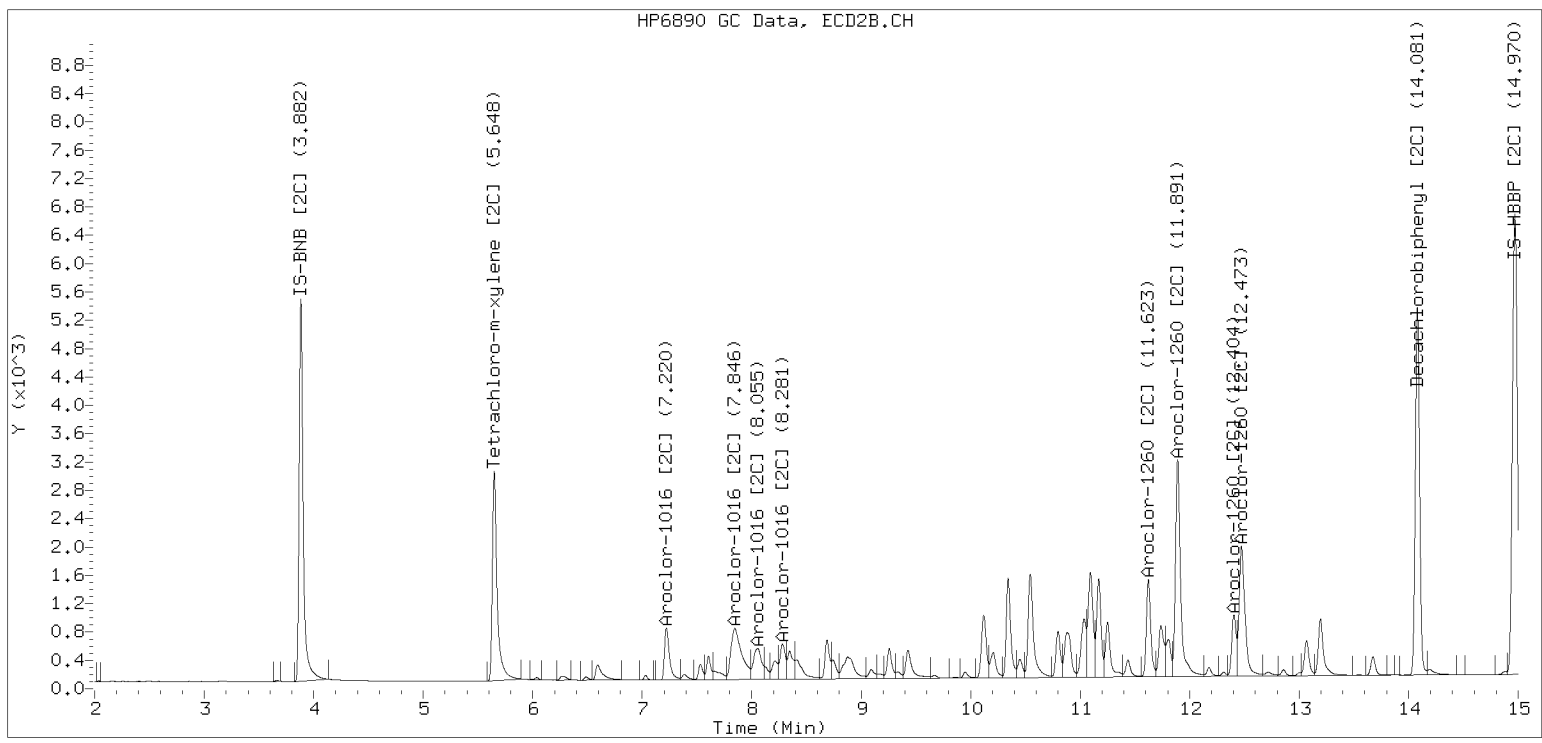


ZB-35 Manual Integration: YES

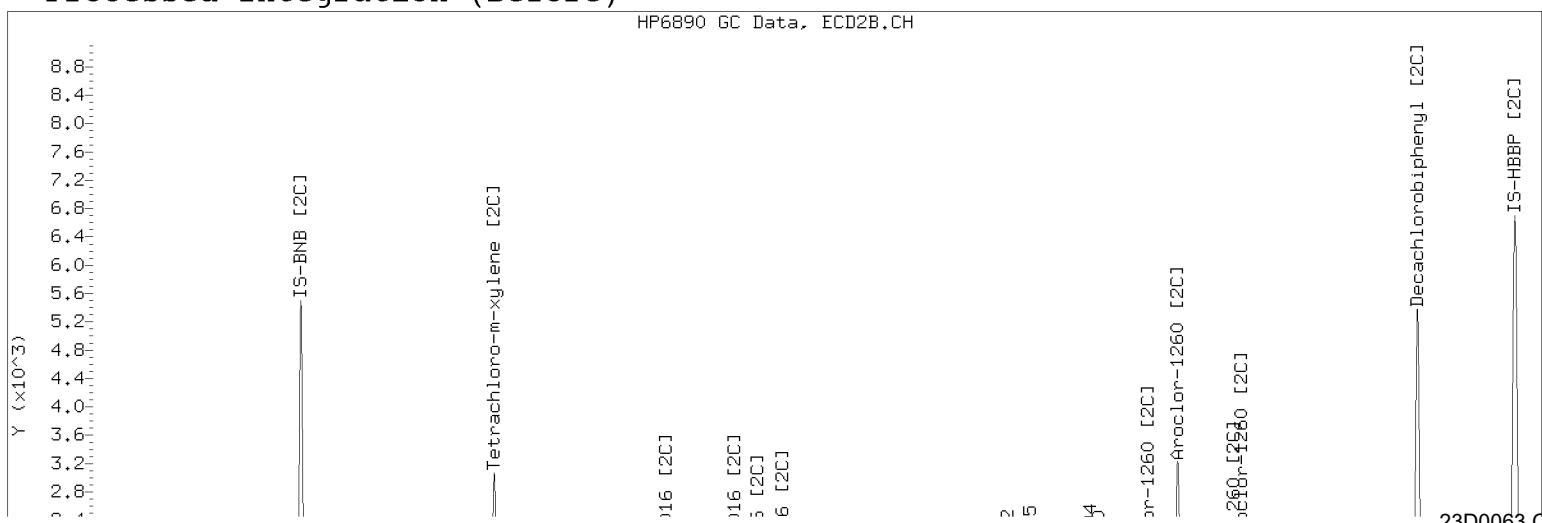
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230502.b/230502.b/05022308ECD7.D Injection Date: 02-MAY-2023 13:44

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>04282315ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLD0427</u>	Injection Date:	<u>04/28/23</u>
Lab Sample ID:	<u>SLD0427-SCV1</u>	Injection Time:	<u>16:09</u>
Sequence Name:	<u>AR1660SCV1</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	253	0.0493584	0.0501472		1.1	+/-20
Aroclor 1016 [2C]	A	250.00	248	0.0554830	0.0554372		-0.8	+/-20
Aroclor 1260	A	250.00	244	0.0591826	0.0578461		-2.2	+/-20
Aroclor 1260 [2C]	A	250.00	259	0.0855158	0.0883349		3.7	+/-20
Decachlorobiphenyl	A	40.000	36.6	0.8671959	0.7934548		-8.5	+/-20
Tetrachlorometaxylene	A	40.000	37.6	1.1690340	1.0986080		-6.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.9	1.2954910	1.2603780		-2.7	+/-20
Tetrachlorometaxylene [2C]	A	40.000	36.1	1.1231530	1.0143810		-9.7	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282315ECD7.D  
Data file 2: /230428.b/230428.b/04282315ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1660SCV  
Client ID:  
Injection Date: 28-APR-2023 16:09  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col			ZB5	ZB35	RPD	Compound/Flag	
RT	Shift	Response	RT	Shift	Response	on col			on col
5.766	-0.000	328442	5.650	-0.000	184023	37.6	36.1	4.0	Tetrachloro-m-xylene
13.862	0.000	457973	14.083	-0.001	349905	36.6	38.9	6.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	597924	7.5
Hexabromobiphenyl	745660	1154377	54.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	362828	4.1
Hexabromobiphenyl	429949	555238	29.1

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.236	0.001	58167	251.6	1	7.223	0.002	49868	253.8
Aroclor-1016	2	7.636	0.008	162832	265.6	2	7.853	0.009	102116	262.9
Aroclor-1016	3	7.766	0.003	98114	236.5	3	8.060	0.005	57971	242.6
Aroclor-1016	4	8.378	0.002	55690	257.2	4	8.285	0.005	41472	232.9
Total CollAve (4 peaks):				252.7		Total Col2Ave (4 peaks):				248.1 RPD = 2
Corrected Ave (3 peaks):				248.4		Corrected Ave (3 peaks):				243.1 RPD = 2
Aroclor-1221	1	4.683	0.001	327	7.1	1	---			0.0
Aroclor-1221	2	6.092	-0.001	8500	92.6	2	6.279	0.013	4329	75.2
Aroclor-1221	3	6.347	0.001	39437	181.1	3	6.596	0.002	22951	174.3
Total CollAve (3 peaks):				93.6		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.683	0.001	327	11.2	1	---			0.0
Aroclor-1232	2	6.092	-0.001	8500	132.0	2	7.223	-0.002	49868	574.1
Aroclor-1232	3	7.636	-0.015	162832	637.9	3	7.853	-0.010	102116	595.7
Aroclor-1232	4	8.559	-0.004	77917	655.3	4	8.690	-0.003	33380	632.3
Total CollAve (4 peaks):				359.1		Total Col2Ave (3 peaks):				600.7 RPD = 50*
Corrected Ave (3 peaks):				260.4		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.236	-0.000	58167	311.8	1	7.223	0.001	49868	316.3
Aroclor-1242	2	7.636	-0.002	162832	319.3	2	7.853	-0.006	102116	323.8
Aroclor-1242	3	8.423	0.042	38520	224.6	3	8.690	-0.477	33380	306.1
Aroclor-1242	4	8.559	-0.002	77917	307.0	4	8.889	-0.714	53314	476.2
Total CollAve (4 peaks):				290.7		Total Col2Ave (4 peaks):				355.6 RPD = 20
Corrected Ave (3 peaks):				281.1		Corrected Ave (3 peaks):				315.4 RPD = 11
Aroclor-1248	1	8.378	-0.001	55690	192.8	1	8.690	0.406	33380	175.4
Aroclor-1248	2	8.559	-0.000	77917	203.4	2	8.889	0.198	53314	318.2
Aroclor-1248	3	8.966	0.002	73557	64.3	3	9.258	0.095	27563	134.1
Aroclor-1248	4	9.279	0.008	51235	85.3	4	9.431	-0.163	27687	126.3
Total CollAve (4 peaks):				136.5		Total Col2Ave (4 peaks):				188.5 RPD = 32
Corrected Ave (3 peaks):				114.1		Corrected Ave (3 peaks):				145.3 RPD = 24
Aroclor-1254	1	9.279	0.004	51235	79.3	1	9.431	0.001	27687	102.1
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	9.649	0.001	5569	13.6	3	9.953	0.003	2877	13.1
Aroclor-1254	4	9.790	0.001	20622	24.9	4	10.122	0.013	59350	124.8
Aroclor-1254	5	10.094	-0.074	163613	375.2	5	10.345	-0.011	83726	153.2
Total CollAve (4 peaks):				123.3		Total Col2Ave (4 peaks):				98.3 RPD = 23
Corrected Ave (3 peaks):				39.3		Corrected Ave (3 peaks):				80.0 RPD = 68*
Aroclor-1260	1	11.018	0.001	162373	249.1	1	11.624	0.000	96769	245.0
Aroclor-1260	2	11.335	0.002	163247	246.9	2	11.893	0.001	269412	259.9
Aroclor-1260	3	11.711	0.001	430555	250.9	3	12.406	-0.001	64881	274.8
Aroclor-1260	4	12.118	0.002	188077	221.1	4	12.476	0.001	182024	257.7
Aroclor-1260	5	12.216	0.000	99127	253.9	NS	---			----
Total CollAve (5 peaks):				244.4		Total Col2Ave (4 peaks):				259.3 RPD = 6
Corrected Ave (4 peaks):				242.0		Corrected Ave (3 peaks):				254.2 RPD = 5
Aroclor-1262	1	10.808	-0.000	229421	509.3	1	11.172	-0.001	104566	188.4
Aroclor-1262	2	12.216	-0.000	99127	126.0	2	11.624	0.000	96769	207.0
Aroclor-1262	3	12.292	0.000	123787	143.2	3	12.406	0.002	64881	131.8
Aroclor-1262	4	12.963	0.001	107216	153.7	4	12.476	0.001	182024	213.9
Total CollAve (4 peaks):				233.0		Total Col2Ave (4 peaks):				185.3 RPD = 23
Corrected Ave (3 peaks):				141.0		Corrected Ave (3 peaks):				175.7 RPD = 22
Aroclor-1268	1	12.216	-0.002	99127	50.0	1	12.406	0.002	64881	50.6
Aroclor-1268	2	12.292	0.002	123787	60.0	2	12.476	0.005	182024	125.0
Aroclor-1268	3	12.700	0.030	49518	28.9	3	12.859	0.000	4065	3.4
Aroclor-1268	4	13.461	0.000	25958	5.2	4	13.677	-0.000	14756	4.0
Total CollAve (4 peaks):				36.0		Total Col2Ave (4 peaks):				45.7 RPD = 24
Corrected Ave (3 peaks):				28.0		Corrected Ave (3 peaks):				19.3 RPD = 37



Total PCB Area Col1 (5.866 - 13.762) = 3921238 Col1 Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 2234032 Col2 Total PCB = 0.5 ppm\*

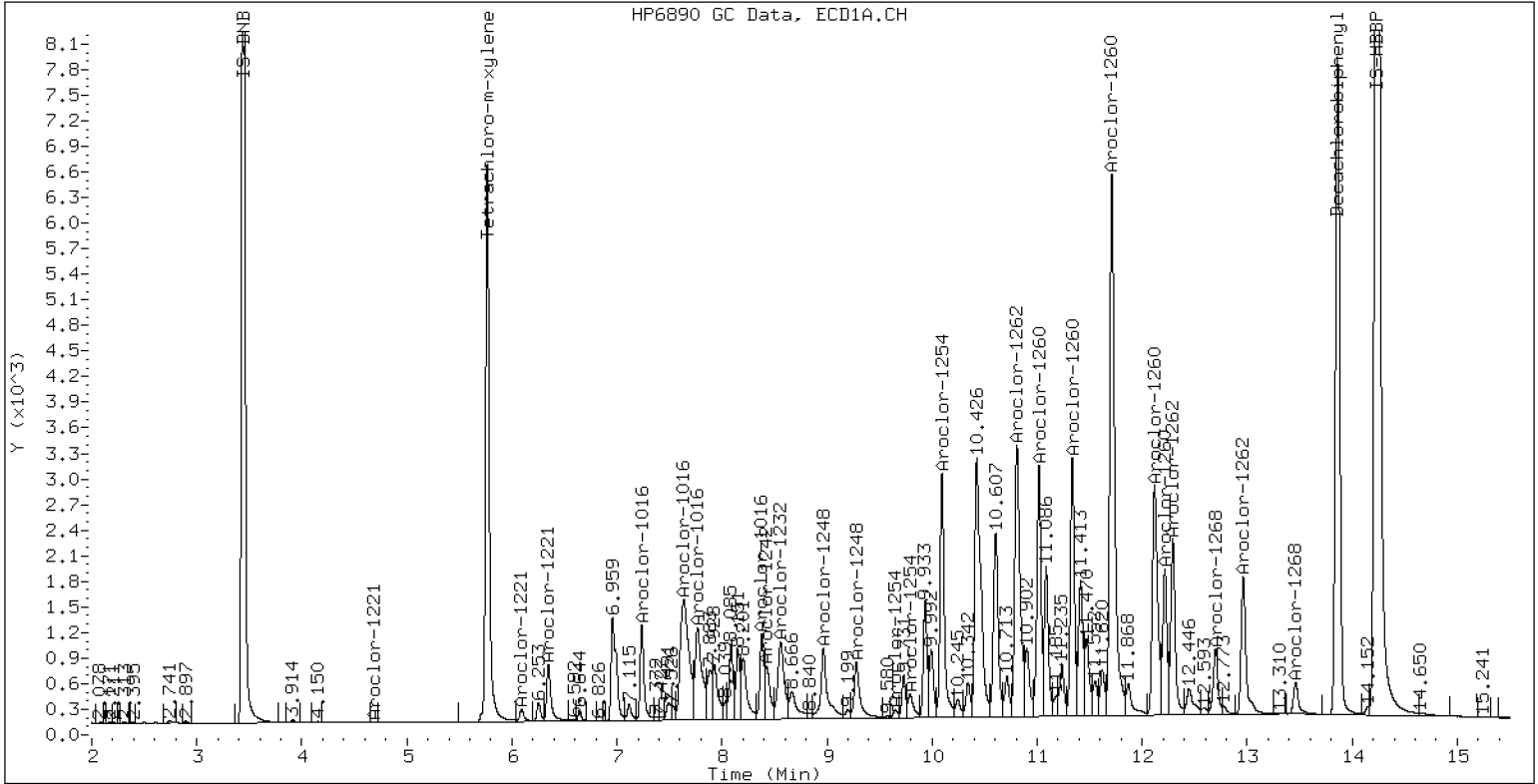
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV

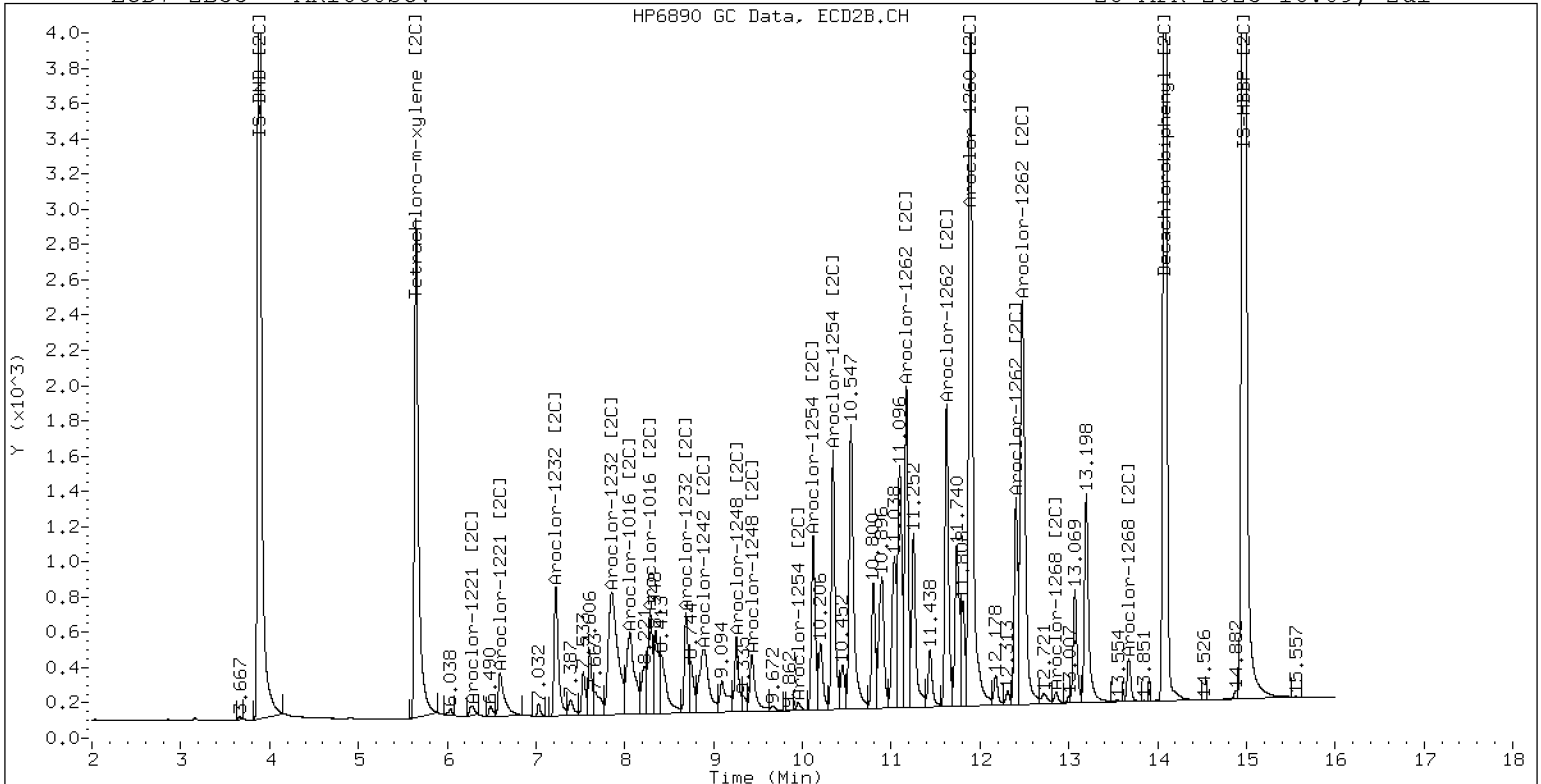
28-APR-2023 16:09, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV

28-APR-2023 16:09, 2ul

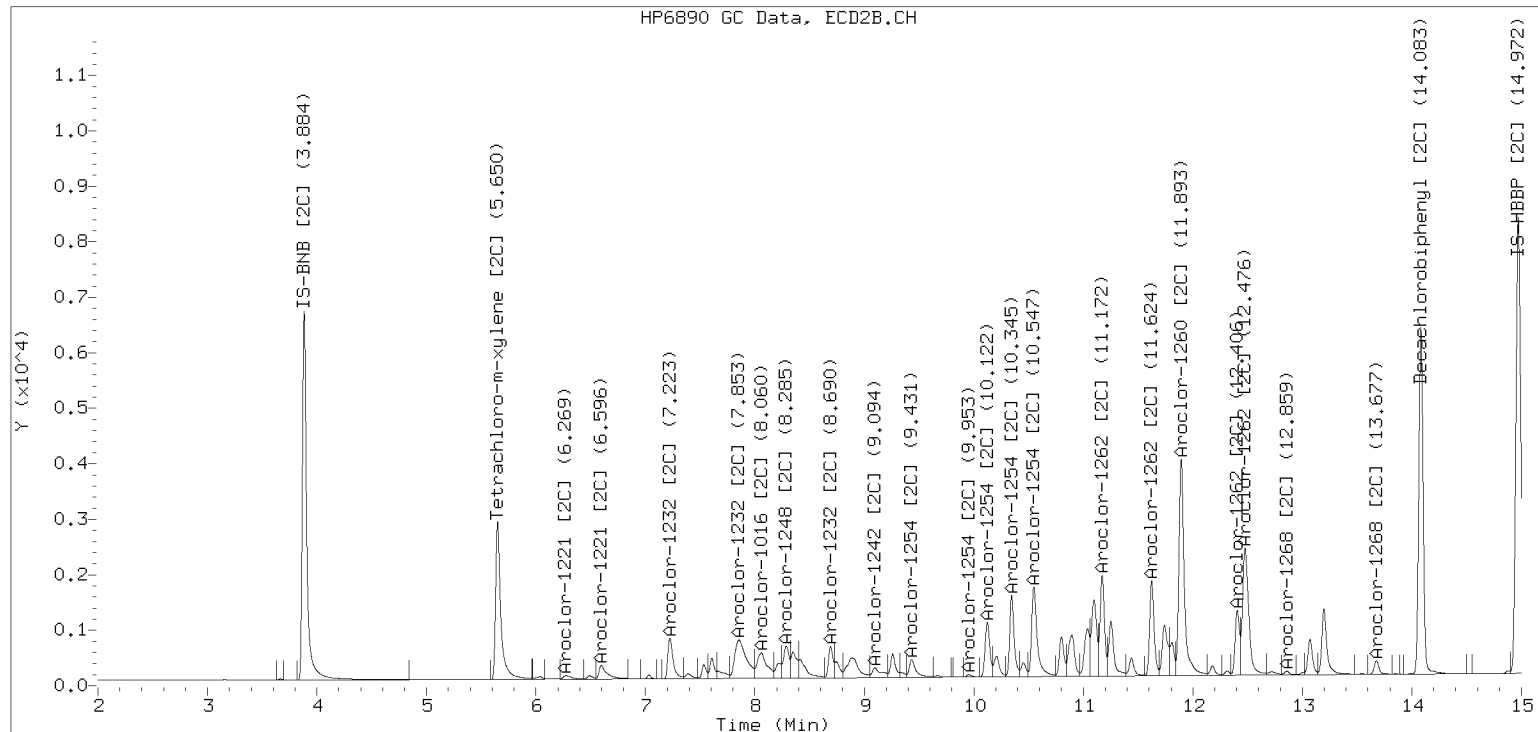


ZB-35 Manual Integration: NO

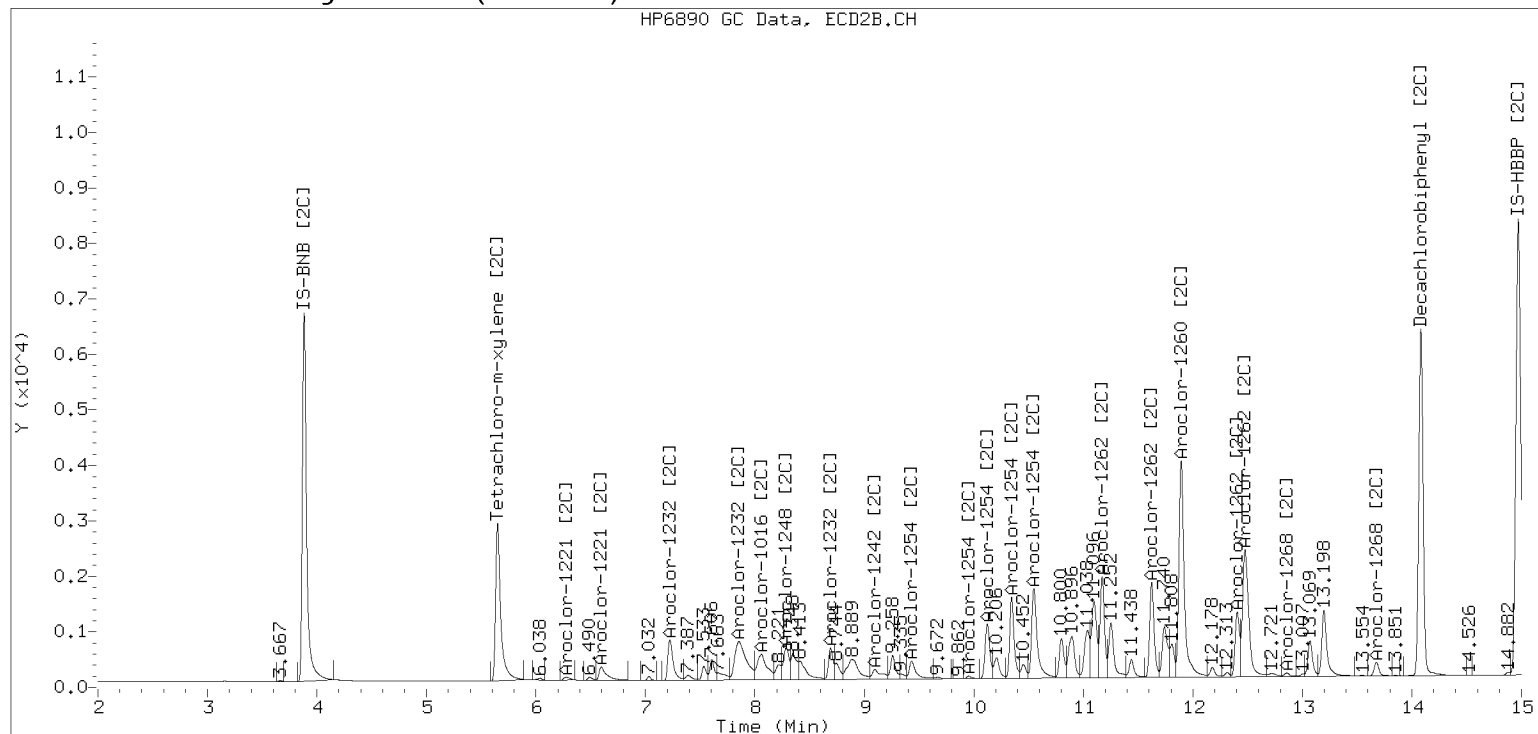
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282315ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>04282316ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLD0427</u>	Injection Date:	<u>04/28/23</u>
Lab Sample ID:	<u>SLD0427-SCV2</u>	Injection Time:	<u>16:30</u>
Sequence Name:	<u>AR1242SCV2</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	238	0.0375243	0.0354152		-4.9	+/-20
Aroclor 1242 [2C]	A	250.00	249	0.0382553	0.0375619		-0.3	+/-20
Decachlorobiphenyl	A	40.000	40.7	0.8671959	0.8817611		1.7	+/-20
Tetrachlorometaxylene	A	40.000	33.9	1.1690340	0.9894074		-15.4	+/-20
Decachlorobiphenyl [2C]	A	40.000	43.6	1.2954910	1.4104730		8.9	+/-20
Tetrachlorometaxylene [2C]	A	40.000	32.6	1.1231530	0.9160036		-18.4	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282316ECD7.D  
Data file 2: /230428.b/230428.b/04282316ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1242SCV  
Client ID:  
Injection Date: 28-APR-2023 16:30  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	292500	5.650	-0.001	164326	33.9	32.6	3.7	Tetrachloro-m-xylene
13.864	0.002	517644	14.083	-0.001	393716	40.7	43.6	6.8	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	591263	6.3
Hexabromobiphenyl	745660	1174114	57.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	358789	3.0
Hexabromobiphenyl	429949	558275	29.8

\* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.237	0.001	42869	187.5	1	7.224	0.002	36830	189.5
Aroclor-1016	2	7.642	0.014	116563	192.3	2	7.859	0.015	74679	194.4
Aroclor-1016	3	7.767	0.004	72620	177.0	3	8.061	0.007	42627	180.4
Aroclor-1016	4	8.381	0.005	41808	195.2	4	8.287	0.006	31937	181.4
Total CollAve (4 peaks):				188.0		Total Col2Ave (4 peaks):				186.4 RPD = 1
Corrected Ave (3 peaks):				185.6		Corrected Ave (3 peaks):				183.8 RPD = 1
Aroclor-1221	1	4.687	0.005	261	5.8	1	---			0.0
Aroclor-1221	2	6.092	-0.002	5439	59.9	2	6.288	0.022	3034	53.3
Aroclor-1221	3	6.348	0.002	27795	129.1	3	6.597	0.003	16171	124.2
Total CollAve (3 peaks):				64.9		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.687	0.004	261	9.1	1	---			0.0
Aroclor-1232	2	6.092	-0.002	5439	85.4	2	7.224	-0.001	36830	428.8
Aroclor-1232	3	7.642	-0.009	116563	461.7	3	7.859	-0.003	74679	440.5
Aroclor-1232	4	8.560	-0.004	60506	514.6	4	8.693	-0.001	25516	488.8
Total CollAve (4 peaks):				267.7		Total Col2Ave (3 peaks):				452.7 RPD = 51*
Corrected Ave (3 peaks):				185.4		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.237	0.000	42869	232.4	1	7.224	0.002	36830	236.3
Aroclor-1242	2	7.642	0.003	116563	231.1	2	7.859	0.001	74679	239.5
Aroclor-1242	3	8.381	-0.000	41808	246.5	3	9.173	0.005	27704	256.9
Aroclor-1242	4	8.560	-0.001	60506	241.1	4	9.602	-0.001	29247	264.2
Total CollAve (4 peaks):				237.8		Total Col2Ave (4 peaks):				249.2 RPD = 5
Corrected Ave (3 peaks):				234.9		Corrected Ave (3 peaks):				244.2 RPD = 4
Aroclor-1248	1	8.381	0.002	41808	146.4	1	8.693	0.408	25516	135.6
Aroclor-1248	2	8.560	0.000	60506	159.7	2	8.890	0.199	41427	250.0
Aroclor-1248	3	8.967	0.003	153088	135.4	3	9.258	0.094	51085	251.4
Aroclor-1248	4	9.276	0.004	79463	133.8	4	9.433	-0.160	16032	74.0
Total CollAve (4 peaks):				143.8		Total Col2Ave (4 peaks):				177.7 RPD = 21
Corrected Ave (3 peaks):				138.5		Corrected Ave (3 peaks):				153.2 RPD = 10
Aroclor-1254	1	9.276	-0.000	79463	124.4	1	9.433	0.004	16032	59.8
Aroclor-1254	2	9.354	-0.004	29048	96.0	2	9.602	0.074	29247	178.9
Aroclor-1254	3	9.654	0.006	18218	45.1	3	9.955	0.005	10890	50.2
Aroclor-1254	4	9.799	0.009	31107	37.9	4	10.114	0.004	21158	45.0
Aroclor-1254	5	10.188	0.019	22524	52.2	5	10.380	0.024	20273	37.5
Total CollAve (5 peaks):				71.1		Total Col2Ave (5 peaks):				74.3 RPD = 4
Corrected Ave (4 peaks):				57.8		Corrected Ave (4 peaks):				48.1 RPD = 18
Aroclor-1260	1	11.022	0.005	1107	1.7	1	11.645	0.021	2082	5.2
Aroclor-1260	2	11.341	0.007	839	1.2	2	11.903	0.011	1433	1.4
Aroclor-1260	3	11.721	0.011	1240	0.7	3	12.477	0.071	1326	5.6
Aroclor-1260	4	12.127	0.011	1362	1.6	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
Total CollAve (4 peaks):				1.3		Total Col2Ave (3 peaks):				4.1 RPD = 103*
Corrected Ave (3 peaks):				1.2		Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.818	0.009	16810	36.7	1	11.105	-0.068	10045	18.0
Aroclor-1262	2	12.127	-0.090	1362	1.7	2	11.645	0.021	2082	4.4
Aroclor-1262	3	12.308	0.016	110	0.1	3	12.477	0.074	1326	2.7
Aroclor-1262	4	13.018	0.056	1070	1.5	4	---			0.0
Total CollAve (4 peaks):				10.0		Total Col2Ave (3 peaks):				8.4 RPD = 18
Corrected Ave (3 peaks):				1.1		Corrected Ave: < 3 Peaks				
Aroclor-1268	1	12.308	0.090	110	0.1	1	12.477	0.074	1326	1.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.671	0.001	2482	1.4	3	12.861	0.003	1233	1.0
Aroclor-1268	4	13.468	0.007	10976	2.2	4	13.676	-0.000	2739	0.7
Total CollAve (3 peaks):				1.2		Total Col2Ave (3 peaks):				0.9 RPD = 27
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.866 - 13.762) = 1193104 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 682890 Col2 Total PCB = 0.2 ppm\*

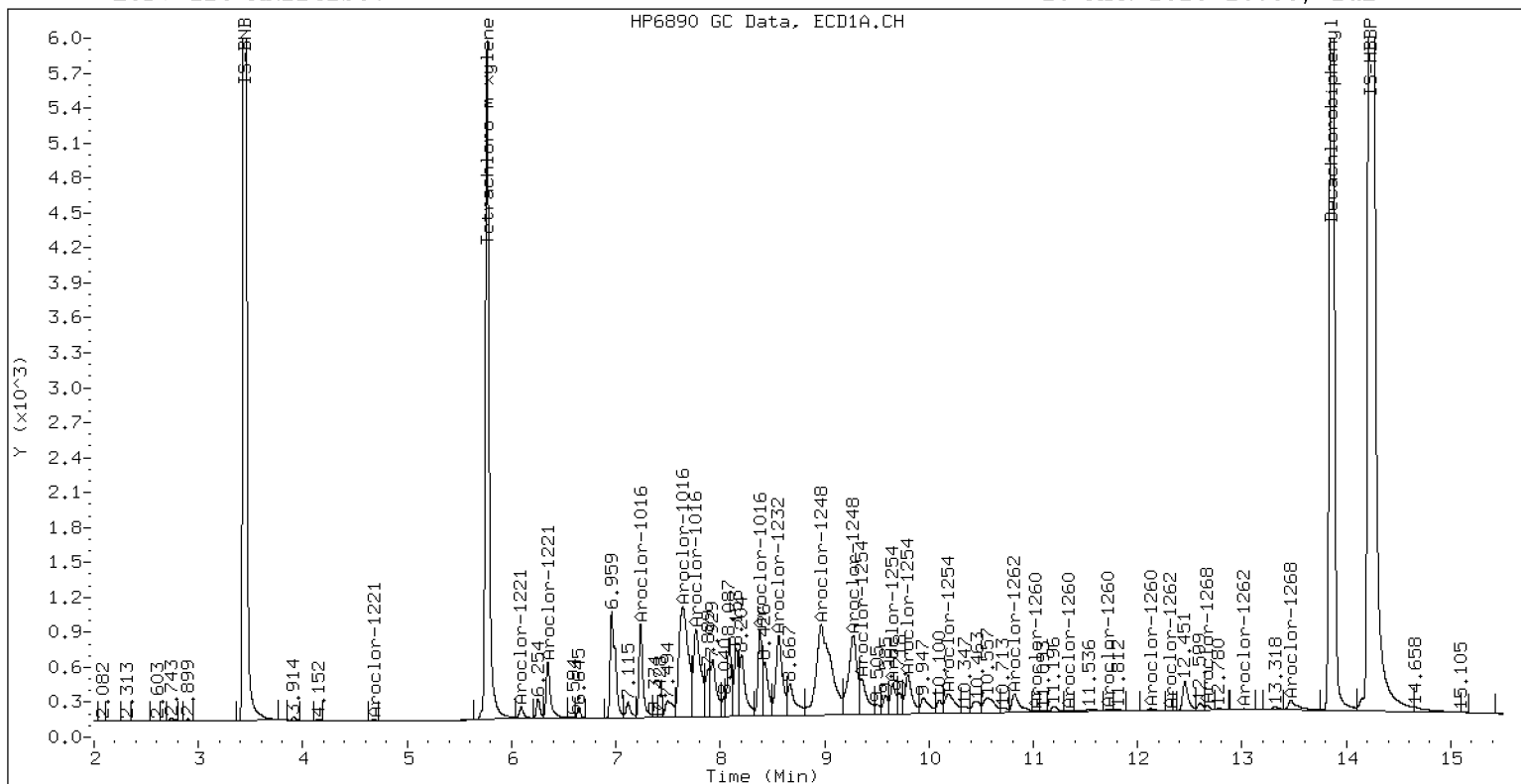
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

### PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV

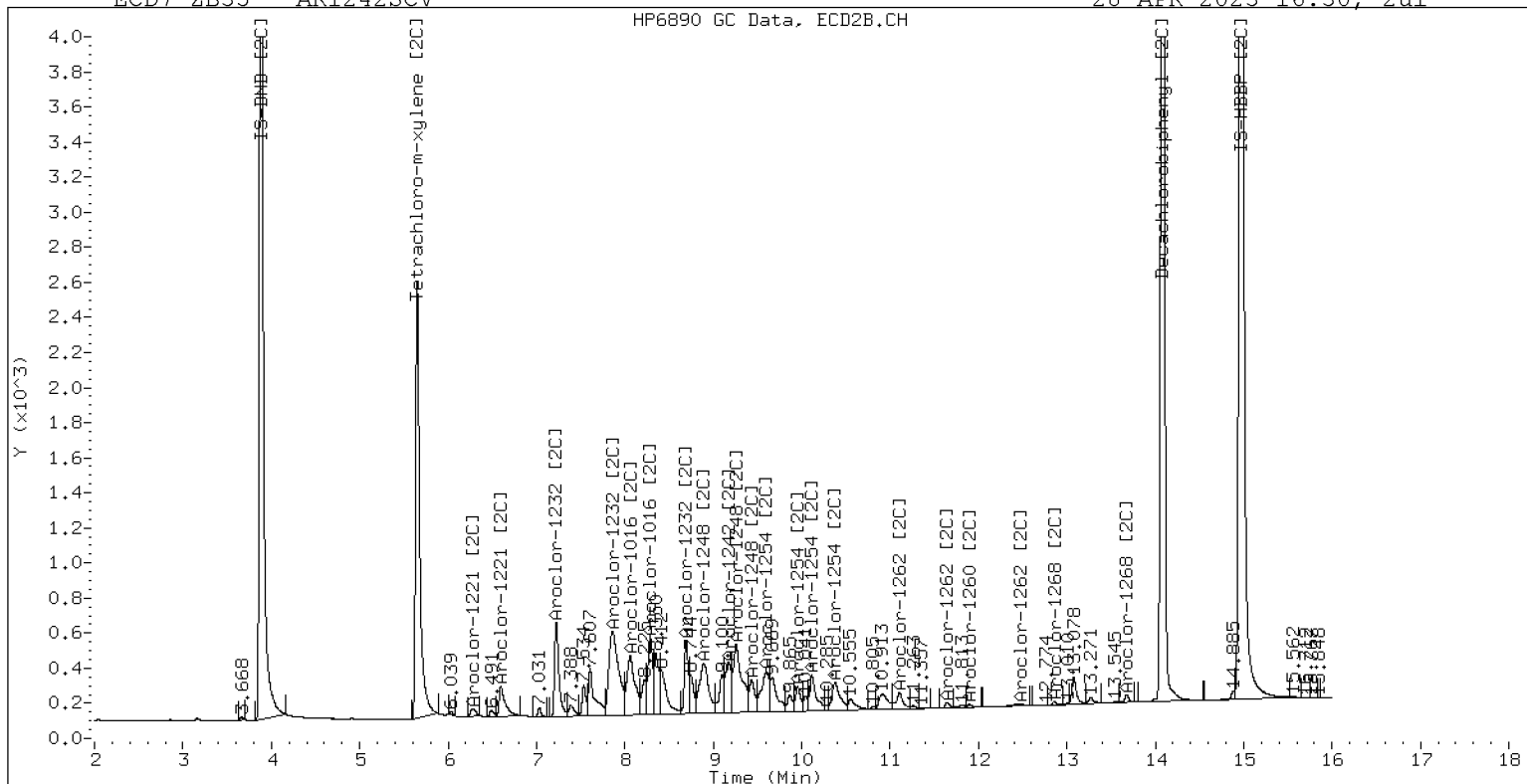
28-APR-2023 16:30, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1242SCV

28-APR-2023 16:30, 2ul



ZB-35 Manual Integration: YES

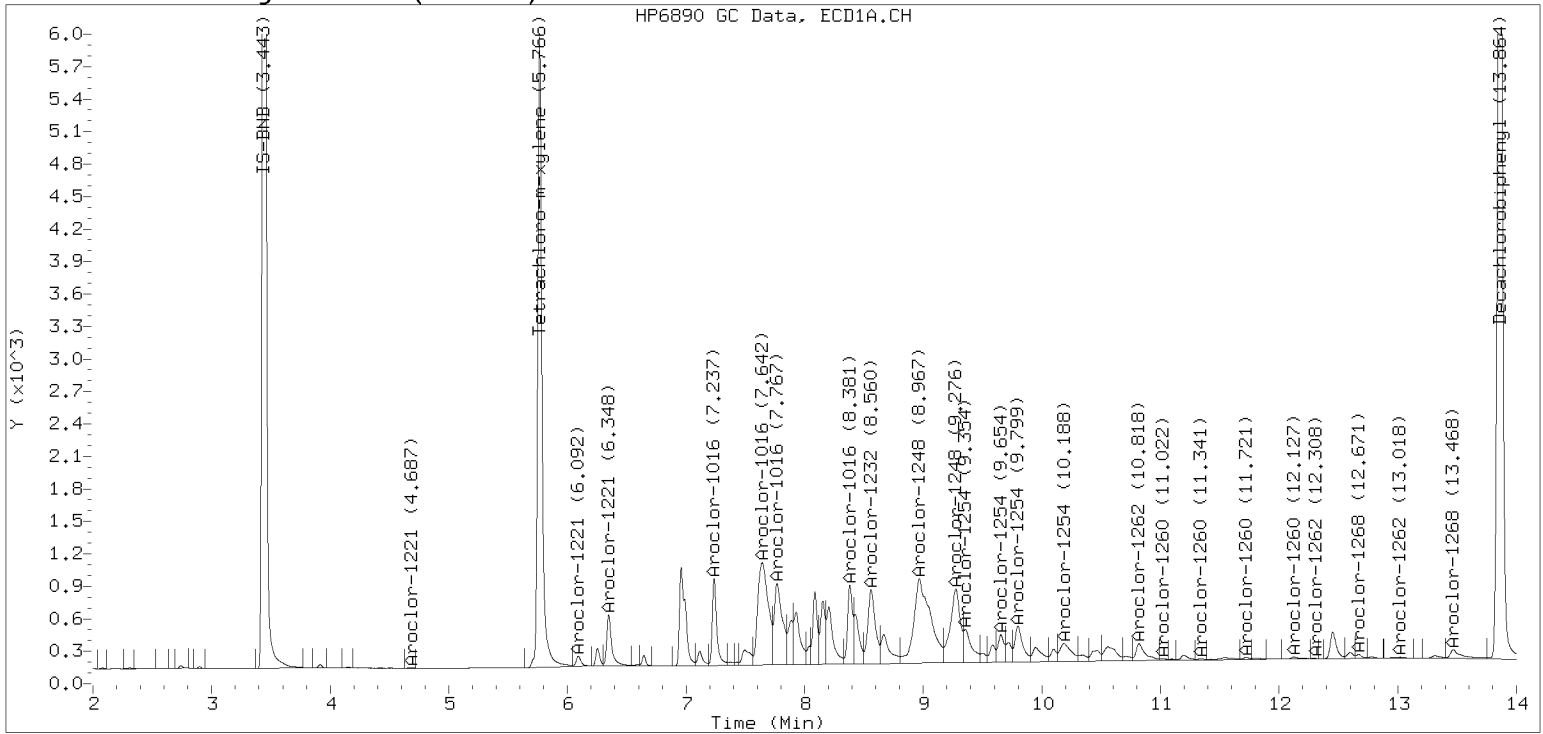


Manual Peak Adjustment, ZB-5

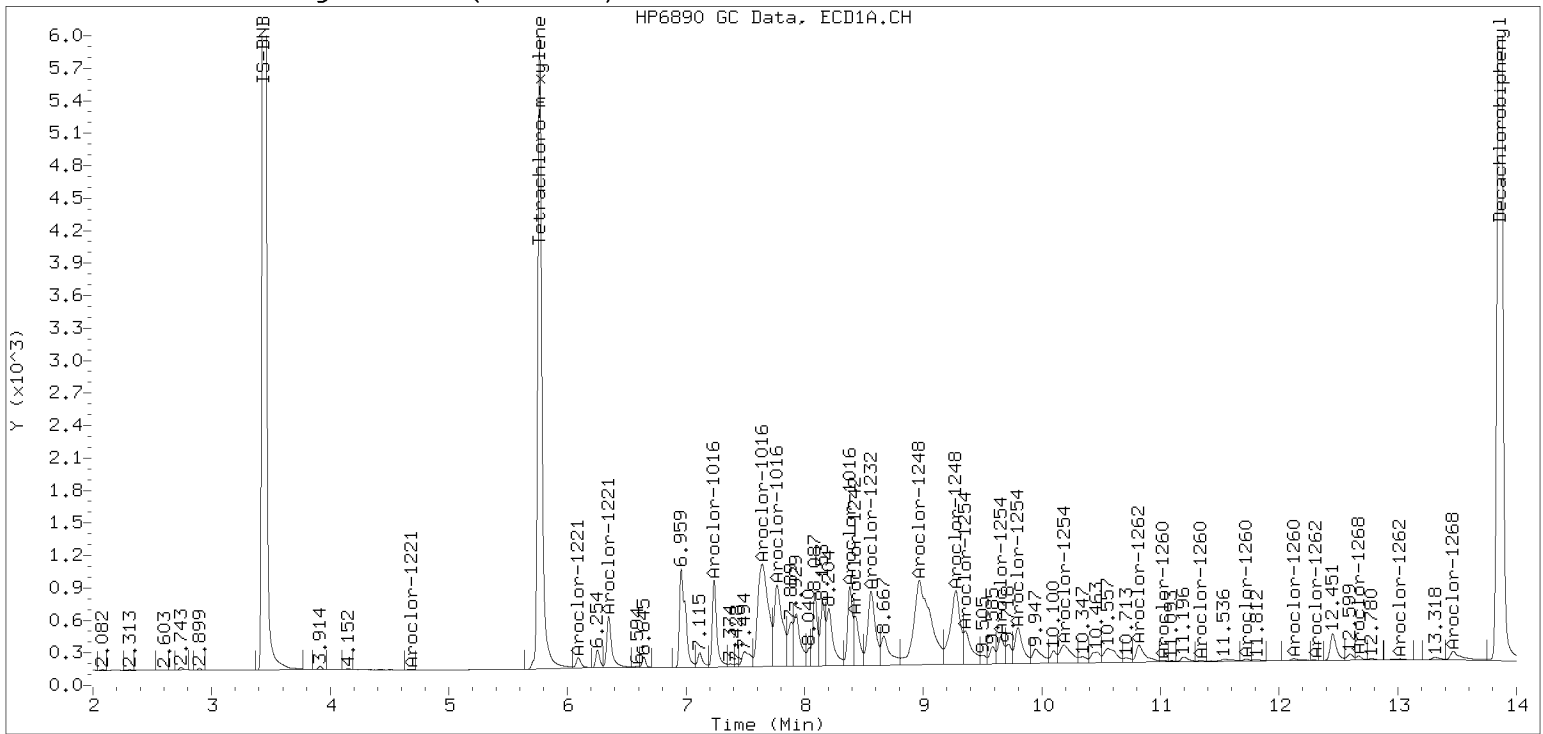
Datafile: ecd7.i/230428.b/04282316ECD7.D

Injection Date: 28-APR-2023 16:30

Manual Integration (After)



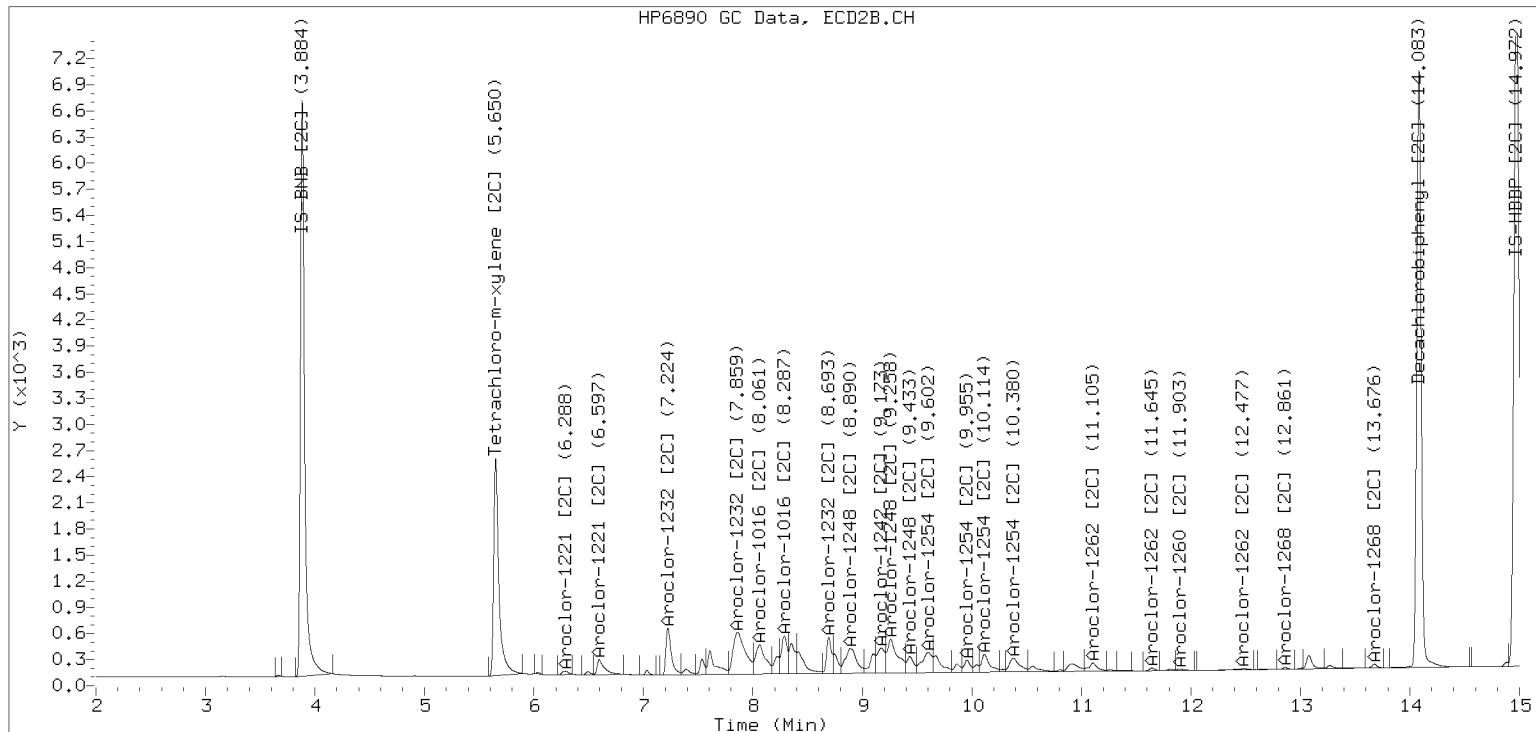
Processed Integration (Before)



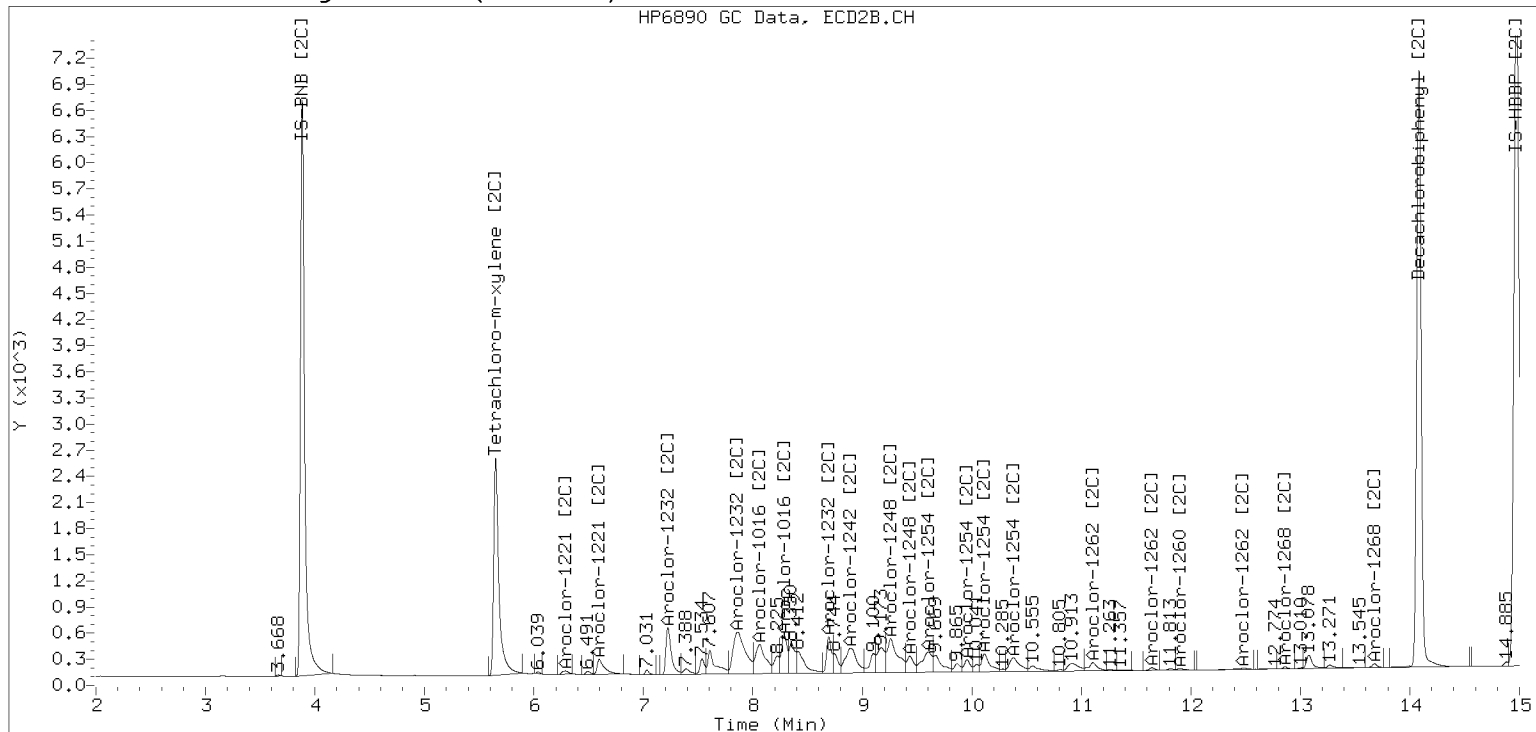
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282316ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>04282317ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLD0427</u>	Injection Date:	<u>04/28/23</u>
Lab Sample ID:	<u>SLD0427-SCV3</u>	Injection Time:	<u>16:51</u>
Sequence Name:	<u>AR1248SCV3</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	257	0.0808031	0.0828683		2.9	+/-20
Aroclor 1248 [2C]	A	250.00	256	0.0431424	0.0441195		2.2	+/-20
Decachlorobiphenyl	A	40.000	34.9	0.8671959	0.7562407		-12.8	+/-20
Tetrachlorometaxylene	A	40.000	37.4	1.1690340	1.0920540		-6.6	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.0	1.2954910	1.2295870		-5.1	+/-20
Tetrachlorometaxylene [2C]	A	40.000	36.7	1.1231530	1.0303160		-8.3	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282317ECD7.D  
Data file 2: /230428.b/230428.b/04282317ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1248SCV  
Client ID:  
Injection Date: 28-APR-2023 16:51  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	329945	5.650	-0.001	187741	37.4	36.7	1.8	Tetrachloro-m-xylene
13.863	0.002	459099	14.084	0.000	349285	34.9	38.0	8.5	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	604265	8.6
Hexabromobiphenyl	745660	1214161	62.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	364434	4.6
Hexabromobiphenyl	429949	568134	32.1

\* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.237	0.002	19001	81.3	1	7.223	0.002	18808	95.3
Aroclor-1016	2	7.640	0.012	74331	120.0	2	7.860	0.016	45610	116.9
Aroclor-1016	3	7.763	0.000	48390	115.4	3	8.066	0.011	19913	83.0
Aroclor-1016	4	8.380	0.004	75928	347.0	4	8.285	0.004	48388	270.6
Total CollAve (4 peaks):				165.9		Total Col2Ave (4 peaks):				141.4 RPD = 16
Corrected Ave (3 peaks):				105.6		Corrected Ave (3 peaks):				98.4 RPD = 7
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.088	-0.005	1143	12.3	2	6.298	0.033	1993	34.5
Aroclor-1221	3	6.349	0.002	3172	14.4	3	6.608	0.014	1326	10.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.088	-0.005	1143	17.6	2	7.223	-0.002	18808	215.6
Aroclor-1232	3	7.640	-0.012	74331	288.1	3	7.860	-0.003	45610	264.9
Aroclor-1232	4	8.559	-0.004	98972	823.6	4	8.691	-0.002	42787	807.0
Total CollAve (3 peaks):				376.4		Total Col2Ave (3 peaks):				429.1 RPD = 13
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.237	0.001	19001	100.8	1	7.223	0.001	18808	118.8
Aroclor-1242	2	7.640	0.001	74331	144.2	2	7.860	0.001	45610	144.0
Aroclor-1242	3	8.380	-0.001	75928	438.1	3	8.691	-0.476	42787	390.6
Aroclor-1242	4	8.559	-0.001	98972	385.9	4	8.885	-0.718	60719	540.0
Total CollAve (4 peaks):				267.2		Total Col2Ave (4 peaks):				298.3 RPD = 11
Corrected Ave (3 peaks):				210.3		Corrected Ave (3 peaks):				217.8 RPD = 4
Aroclor-1248	1	8.380	0.002	75928	260.1	1	8.285	0.000	48388	253.1
Aroclor-1248	2	8.559	0.000	98972	255.7	2	8.691	0.000	42787	254.2
Aroclor-1248	3	8.963	-0.001	294362	254.8	3	9.165	0.001	53988	261.5
Aroclor-1248	4	9.271	0.000	156668	258.2	4	9.587	-0.007	55820	253.5
Total CollAve (4 peaks):				257.2		Total Col2Ave (4 peaks):				255.6 RPD = 1
Corrected Ave (3 peaks):				256.2		Corrected Ave (3 peaks):				253.6 RPD = 1
Aroclor-1254	1	9.271	-0.004	156668	240.0	1	9.430	0.001	28754	105.5
Aroclor-1254	2	9.355	-0.004	60054	194.1	2	9.587	0.059	55820	336.1
Aroclor-1254	3	9.651	0.003	41060	99.5	3	9.952	0.002	23054	104.5
Aroclor-1254	4	9.793	0.004	73186	87.3	4	10.109	-0.001	44343	92.9
Aroclor-1254	5	10.182	0.013	49460	112.2	5	10.379	0.023	41423	75.5
Total CollAve (5 peaks):				146.6		Total Col2Ave (5 peaks):				142.9 RPD = 3
Corrected Ave (4 peaks):				123.3		Corrected Ave (4 peaks):				94.6 RPD = 26
Aroclor-1260	1	11.026	0.009	2009	2.9	1	11.643	0.019	2501	6.2
Aroclor-1260	2	11.340	0.006	1228	1.8	2	11.901	0.009	2130	2.0
Aroclor-1260	3	11.721	0.011	1976	1.1	3	12.414	0.007	826	3.4
Aroclor-1260	4	12.127	0.011	1326	1.5	4	12.479	0.004	1478	2.0
Aroclor-1260	5	12.220	0.004	573	1.4	NS	---			----
Total CollAve (5 peaks):				1.7		Total Col2Ave (4 peaks):				3.4 RPD = 65*
Corrected Ave (4 peaks):				1.4		Corrected Ave (3 peaks):				2.5 RPD = 54*
Aroclor-1262	1	10.818	0.009	19667	41.5	1	11.104	-0.069	9341	16.4
Aroclor-1262	2	12.220	0.003	573	0.7	2	11.643	0.019	2501	5.2
Aroclor-1262	3	12.296	0.004	674	0.7	3	12.414	0.010	826	1.6
Aroclor-1262	4	12.967	0.005	1383	1.9	4	12.479	0.004	1478	1.7
Total CollAve (4 peaks):				11.2		Total Col2Ave (4 peaks):				6.3 RPD = 57*
Corrected Ave (3 peaks):				1.1		Corrected Ave (3 peaks):				2.9 RPD = 88*
Aroclor-1268	1	12.220	0.002	573	0.3	1	12.414	0.011	826	0.6
Aroclor-1268	2	12.296	0.005	674	0.3	2	12.479	0.008	1478	1.0
Aroclor-1268	3	12.671	0.002	2312	1.3	3	12.861	0.002	1020	0.8
Aroclor-1268	4	13.469	0.008	7516	1.4	4	13.678	0.001	2531	0.7
Total CollAve (4 peaks):				0.8		Total Col2Ave (4 peaks):				0.8 RPD = 6
Corrected Ave (3 peaks):				0.6		Corrected Ave (3 peaks):				0.7 RPD = 13

Total PCB Area Col1 (5.866 - 13.762) = 1600602 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 860562 Col2 Total PCB = 0.2 ppm\*

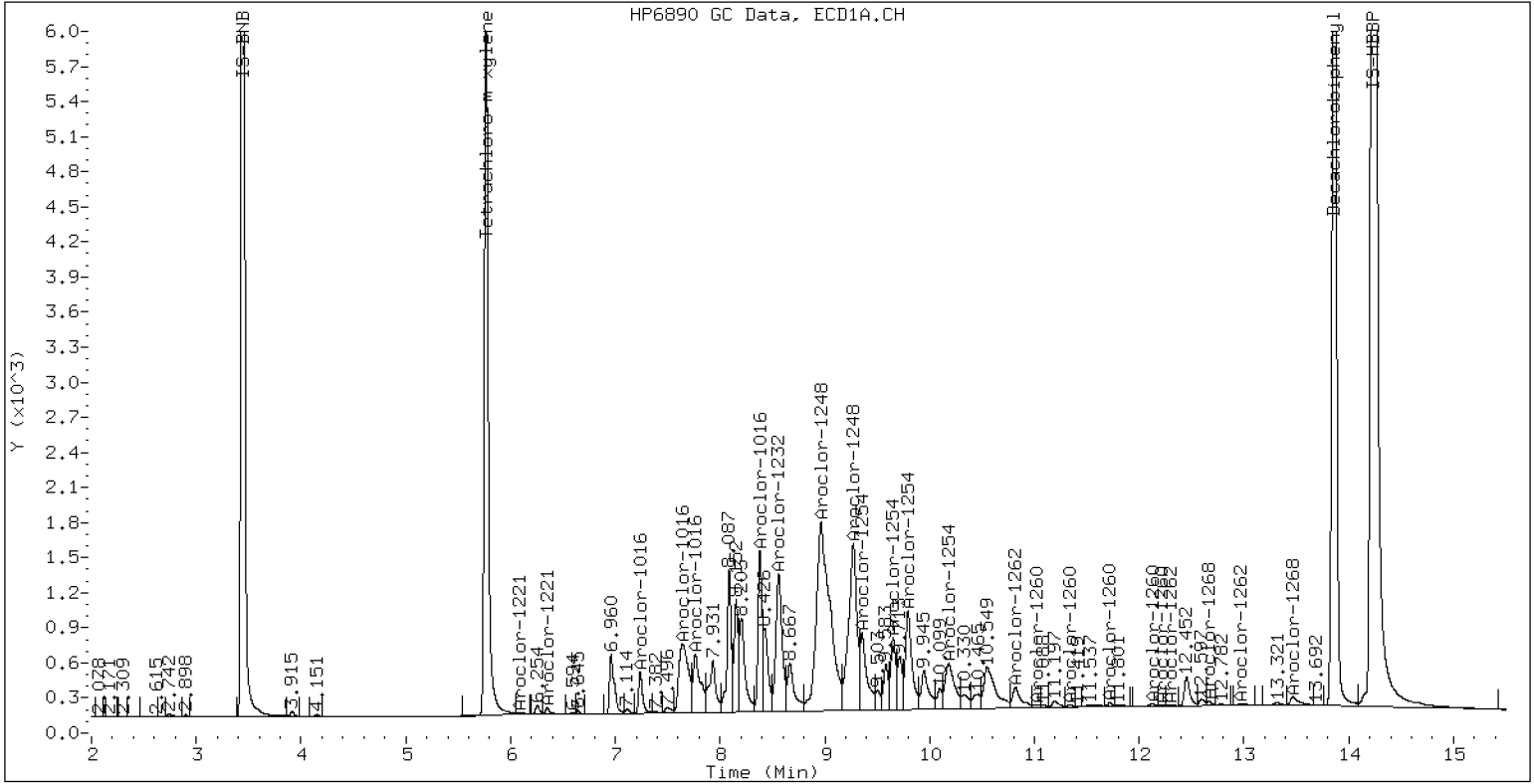
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV

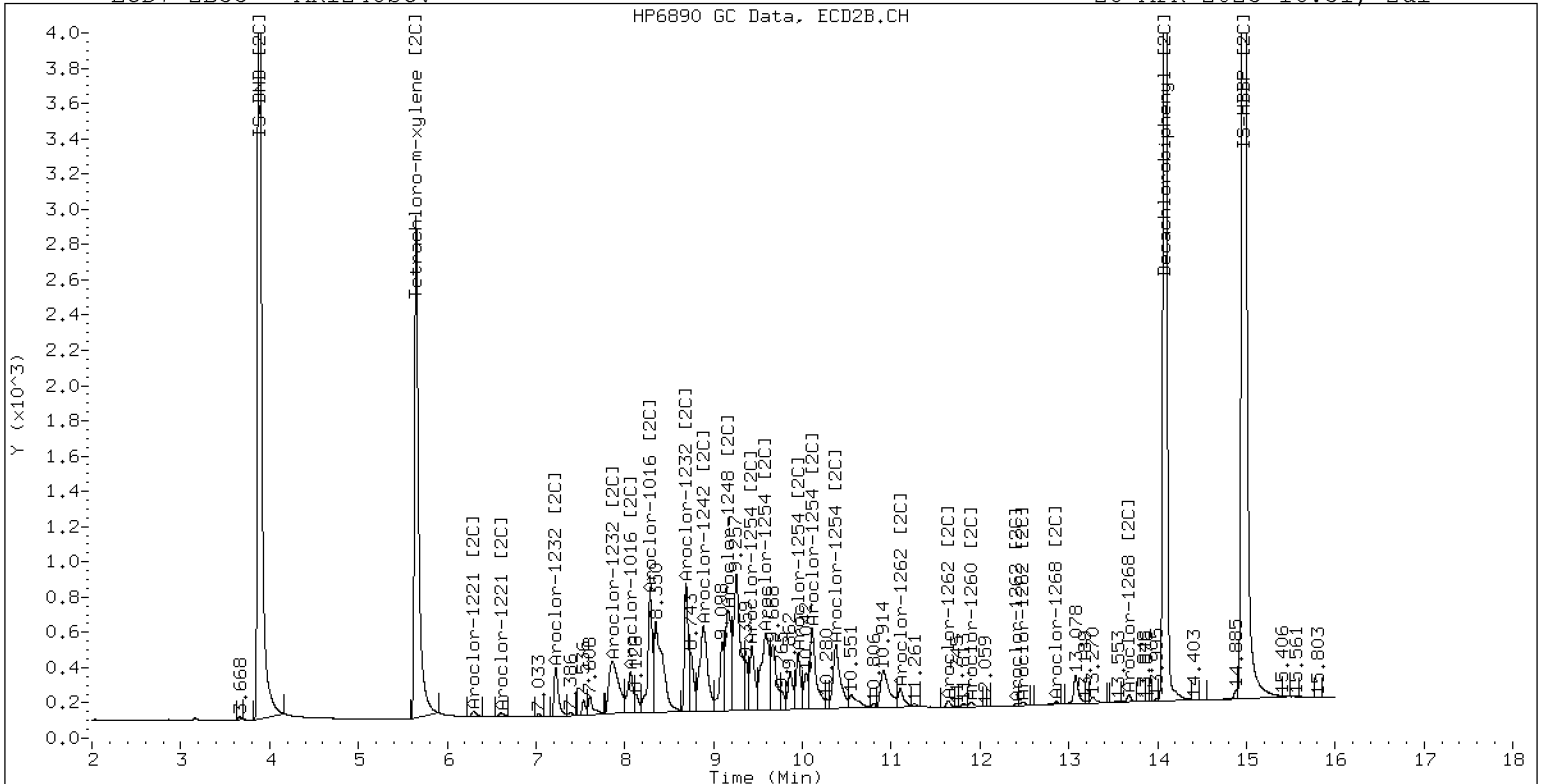
28-APR-2023 16:51, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1248SCV

28-APR-2023 16:51, 2ul



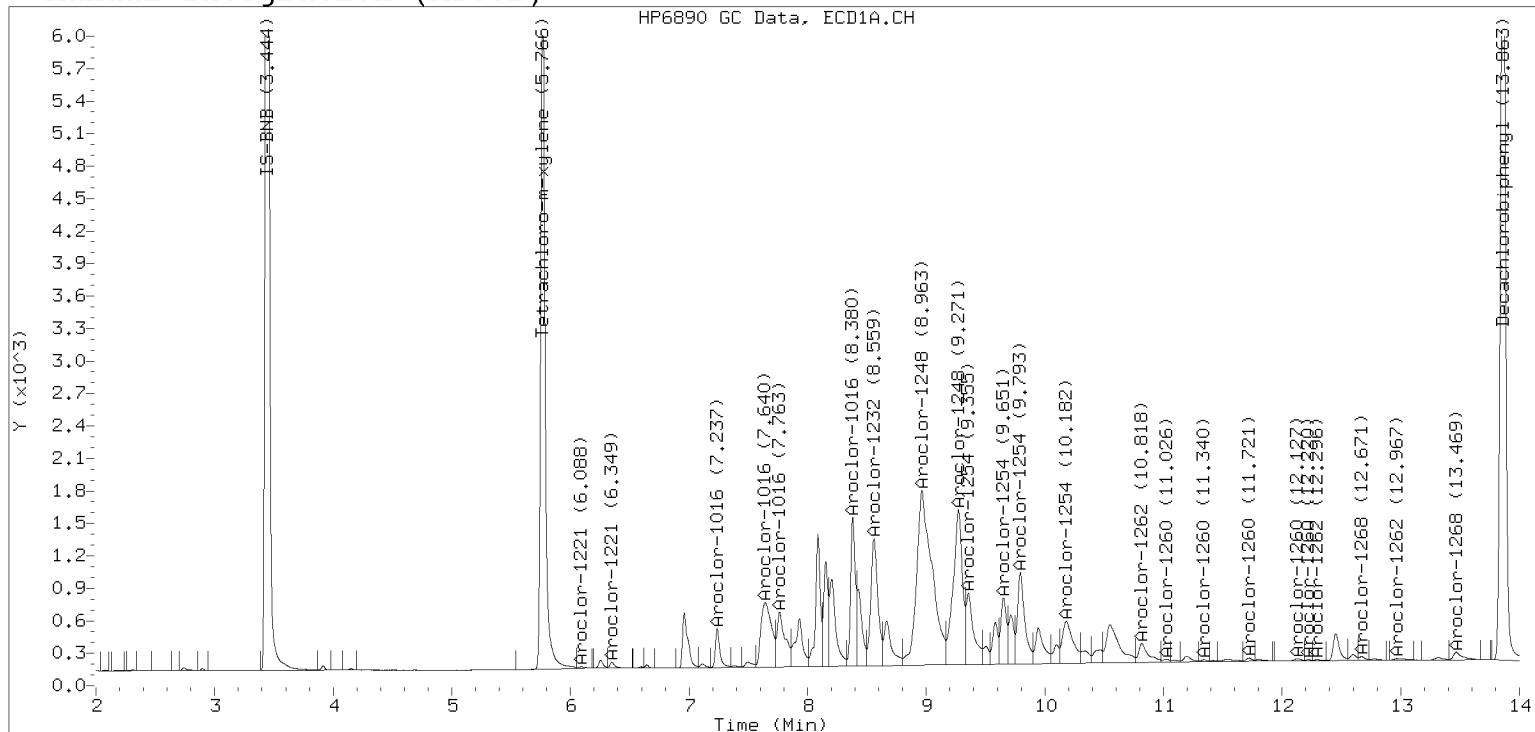
ZB-35 Manual Integration: YES

# Manual Peak Adjustment, ZB-5

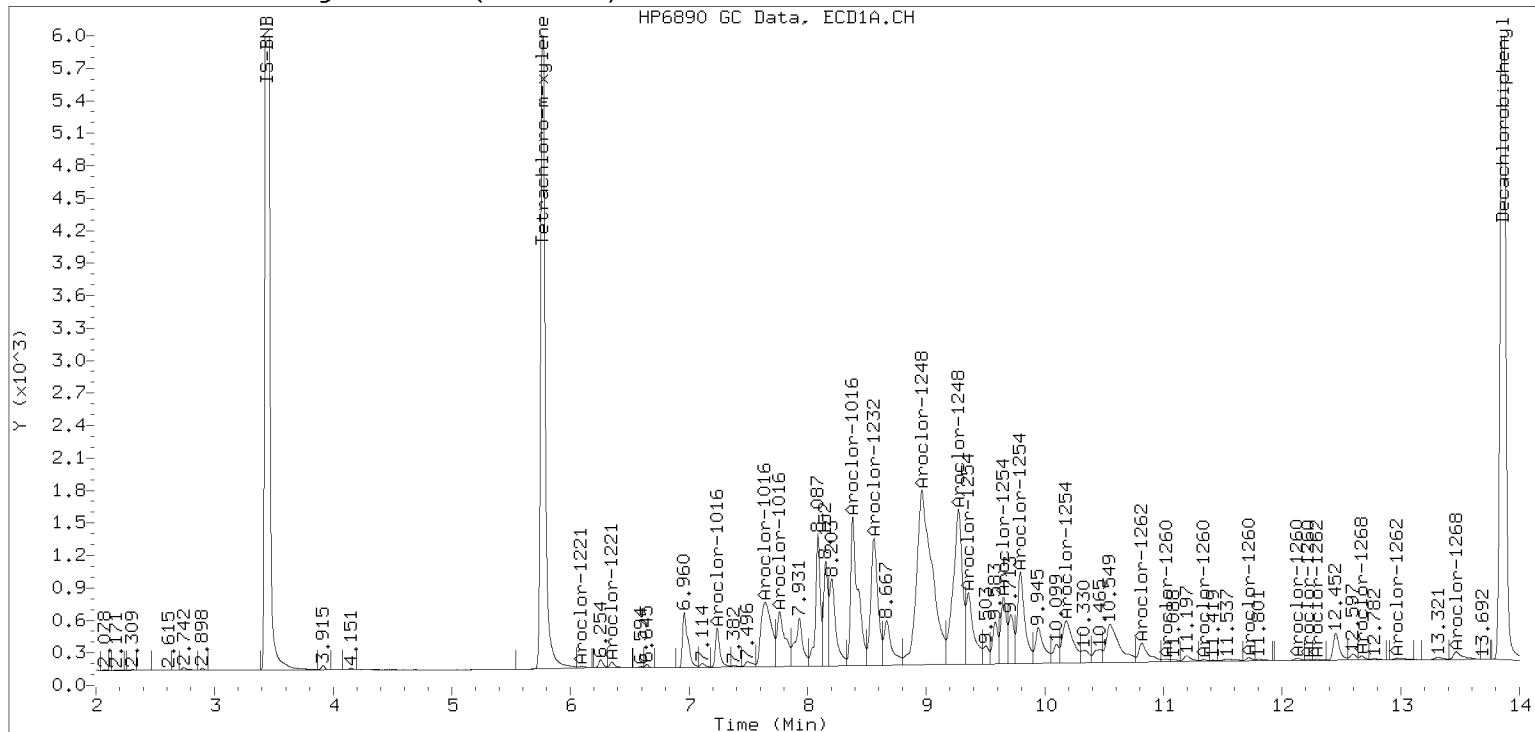
Datafile: ecd7.i/230428.b/04282317ECD7.D

Injection Date: 28-APR-2023 16:51

## Manual Integration (After)



## Processed Integration (Before)

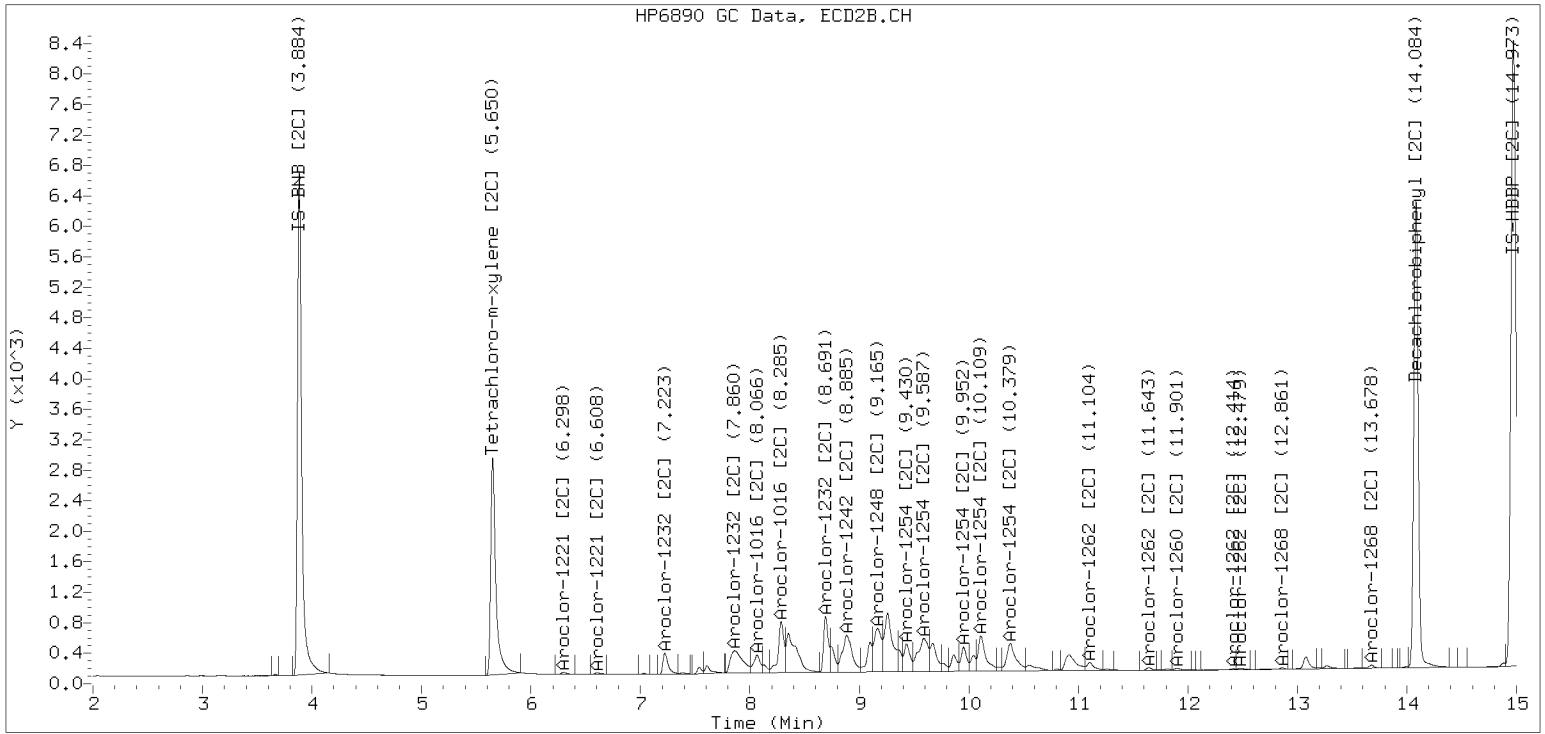




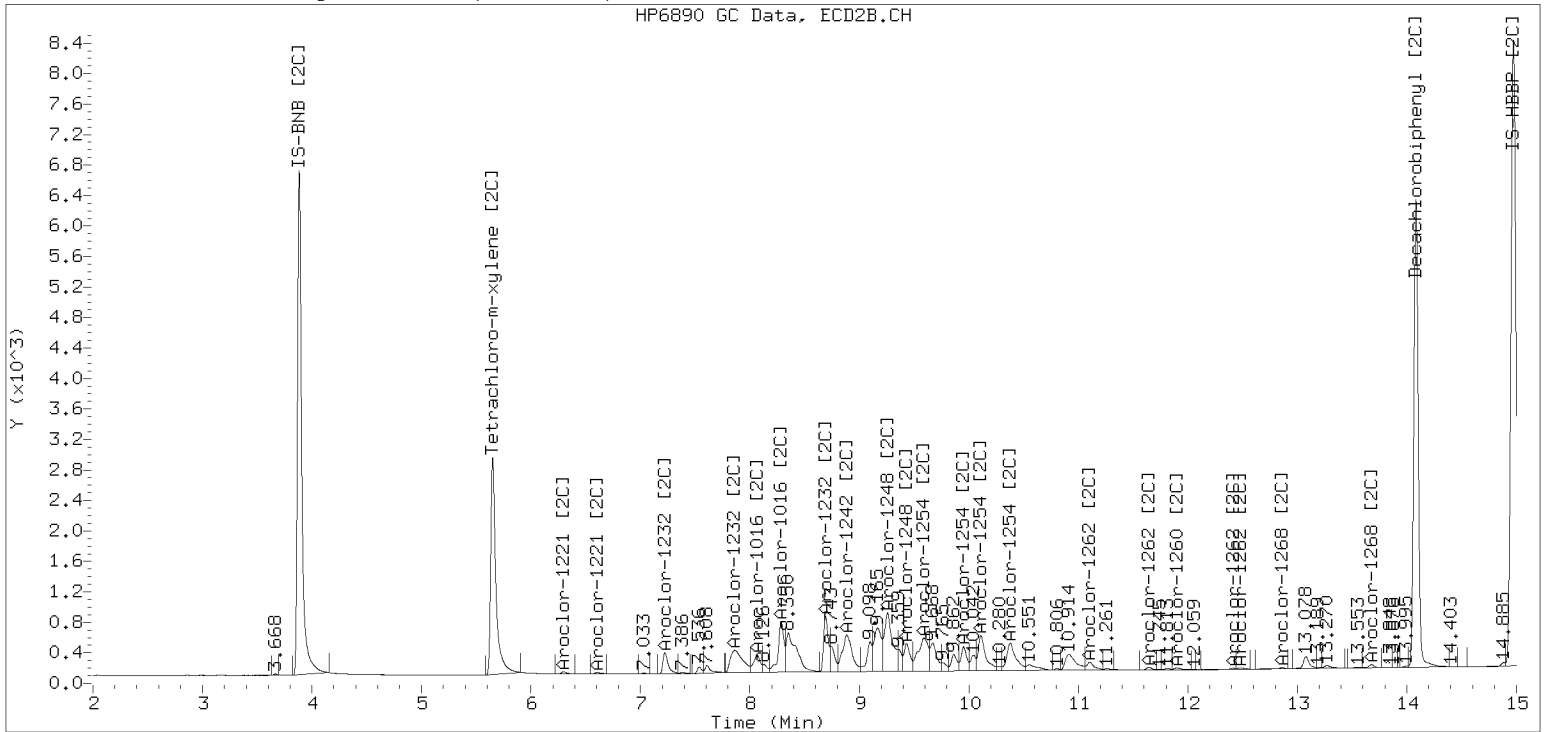
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282317ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>04282318ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLD0427</u>	Injection Date:	<u>04/28/23</u>
Lab Sample ID:	<u>SLD0427-SCV4</u>	Injection Time:	<u>17:12</u>
Sequence Name:	<u>AR1254SCV4</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	242	0.0702659	0.0675983		-3.4	+/-20
Aroclor 1254 [2C]	A	250.00	234	0.0739953	0.0679071		-6.2	+/-20
Decachlorobiphenyl	A	40.000	34.8	0.8671959	0.7542046		-13.0	+/-20
Tetrachlorometaxylene	A	40.000	38.3	1.1690340	1.1204030		-4.2	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.3	1.2954910	1.2420100		-4.1	+/-20
Tetrachlorometaxylene [2C]	A	40.000	37.3	1.1231530	1.0472380		-6.8	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282318ECD7.D  
Data file 2: /230428.b/230428.b/04282318ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1254SCV  
Client ID:  
Injection Date: 28-APR-2023 17:12  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	338365	5.650	-0.001	190789	38.3	37.3	2.7	Tetrachloro-m-xylene
13.863	0.001	478757	14.083	-0.001	359021	34.8	38.3	9.7	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	604006	8.6
Hexabromobiphenyl	745660	1269568	70.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	364366	4.6
Hexabromobiphenyl	429949	578129	34.5

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.239	0.004	417	1.8	1	7.234	0.013	203	1.0	
Aroclor-1016	2	7.672	0.044	1503	2.4	2	---			0.0	
Aroclor-1016	3	7.760	-0.003	1975	4.7	3	8.071	0.016	434	1.8	
Aroclor-1016	4	8.383	0.006	29140	133.2	4	8.285	0.004	22382	125.2	
Total CollAve (4 peaks):				35.5	Total Col2Ave (3 peaks):				42.7	RPD = 18	
Corrected Ave (3 peaks):				3.0	Corrected Ave: < 3 Peaks						
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	6.297	0.032	1765	30.5	
Aroclor-1221	3	---			0.0	3	6.613	0.019	308	2.3	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	7.234	0.010	203	2.3	
Aroclor-1232	3	7.672	0.020	1503	5.8	3	---			0.0	
Aroclor-1232	4	8.568	0.004	12422	103.4	4	8.695	0.001	16356	308.5	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Aroclor-1242	1	7.239	0.002	417	2.2	1	7.234	0.012	203	1.3	
Aroclor-1242	2	7.672	0.033	1503	2.9	2	---			0.0	
Aroclor-1242	3	8.383	0.001	29140	168.2	3	8.695	-0.473	16356	149.3	
Aroclor-1242	4	8.568	0.007	12422	48.5	4	8.889	-0.714	7125	63.4	
Total CollAve (4 peaks):				55.4	Total Col2Ave (3 peaks):				71.3	RPD = 25	
Corrected Ave (3 peaks):				17.9	Corrected Ave: < 3 Peaks						
Aroclor-1248	1	8.383	0.004	29140	99.9	1	8.695	0.410	16356	85.6	
Aroclor-1248	2	8.568	0.008	12422	32.1	2	8.889	0.198	7125	42.3	
Aroclor-1248	3	8.967	0.003	131799	114.1	3	9.259	0.095	58924	285.5	
Aroclor-1248	4	9.276	0.005	155956	257.1	4	9.430	-0.164	67213	305.3	
Total CollAve (4 peaks):				125.8	Total Col2Ave (4 peaks):				179.7	RPD = 35	
Corrected Ave (3 peaks):				82.0	Corrected Ave (3 peaks): 137.8 RPD = 51*						
Aroclor-1254	1	9.276	0.000	155956	239.0	1	9.430	0.000	67213	246.7	
Aroclor-1254	2	9.356	-0.002	75626	244.6	2	9.527	-0.001	39667	238.9	
Aroclor-1254	3	9.648	0.001	99996	242.4	3	9.950	-0.000	53621	243.2	
Aroclor-1254	4	9.788	-0.001	198294	236.6	4	10.109	-0.001	114263	239.3	
Aroclor-1254	5	10.164	-0.004	108093	245.4	5	10.355	-0.001	111846	203.8	
Total CollAve (5 peaks):				241.6	Total Col2Ave (5 peaks):				234.4	RPD = 3	
Corrected Ave (4 peaks):				240.7	Corrected Ave (4 peaks): 231.3 RPD = 4						
Aroclor-1260	1	11.018	0.001	14792	20.6	1	11.639	0.015	34047	82.8	
Aroclor-1260	2	11.338	0.005	15335	21.1	2	11.896	0.004	28313	26.2	
Aroclor-1260	3	11.716	0.006	37253	19.7	3	12.479	0.072	16654	67.8	
Aroclor-1260	4	12.122	0.006	28154	30.1	4	---			0.0	
Aroclor-1260	5	12.293	0.077	2641	6.2	NS	---			---	
Total CollAve (5 peaks):				19.5	Total Col2Ave (3 peaks):				58.9	RPD = 100*	
Corrected Ave (4 peaks):				16.9	Corrected Ave: < 3 Peaks						
Aroclor-1262	1	10.810	0.002	229213	462.7	1	11.097	-0.076	148180	256.4	
Aroclor-1262	2	12.293	0.076	2641	3.1	2	11.639	0.015	34047	69.9	
Aroclor-1262	3	---			0.0	3	12.479	0.076	16654	32.5	
Aroclor-1262	4	12.965	0.003	1702	2.2	4	---			0.0	
Total CollAve (3 peaks):				156.0	Total Col2Ave (3 peaks):				119.6	RPD = 26	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1268	1	12.293	0.075	2641	1.2	1	12.479	0.076	16654	12.5	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	12.672	0.003	2924	1.5	3	12.859	0.000	1168	0.9	
Aroclor-1268	4	13.468	0.007	11477	2.1	4	13.677	0.000	2357	0.6	
Total CollAve (3 peaks):				1.6	Total Col2Ave (3 peaks):				4.7	RPD = 97*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						

Total PCB Area Col1 (5.866 - 13.762) = 2154735 Col1 Total PCB = 0.3 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 1162346 Col2 Total PCB = 0.3 ppm\*

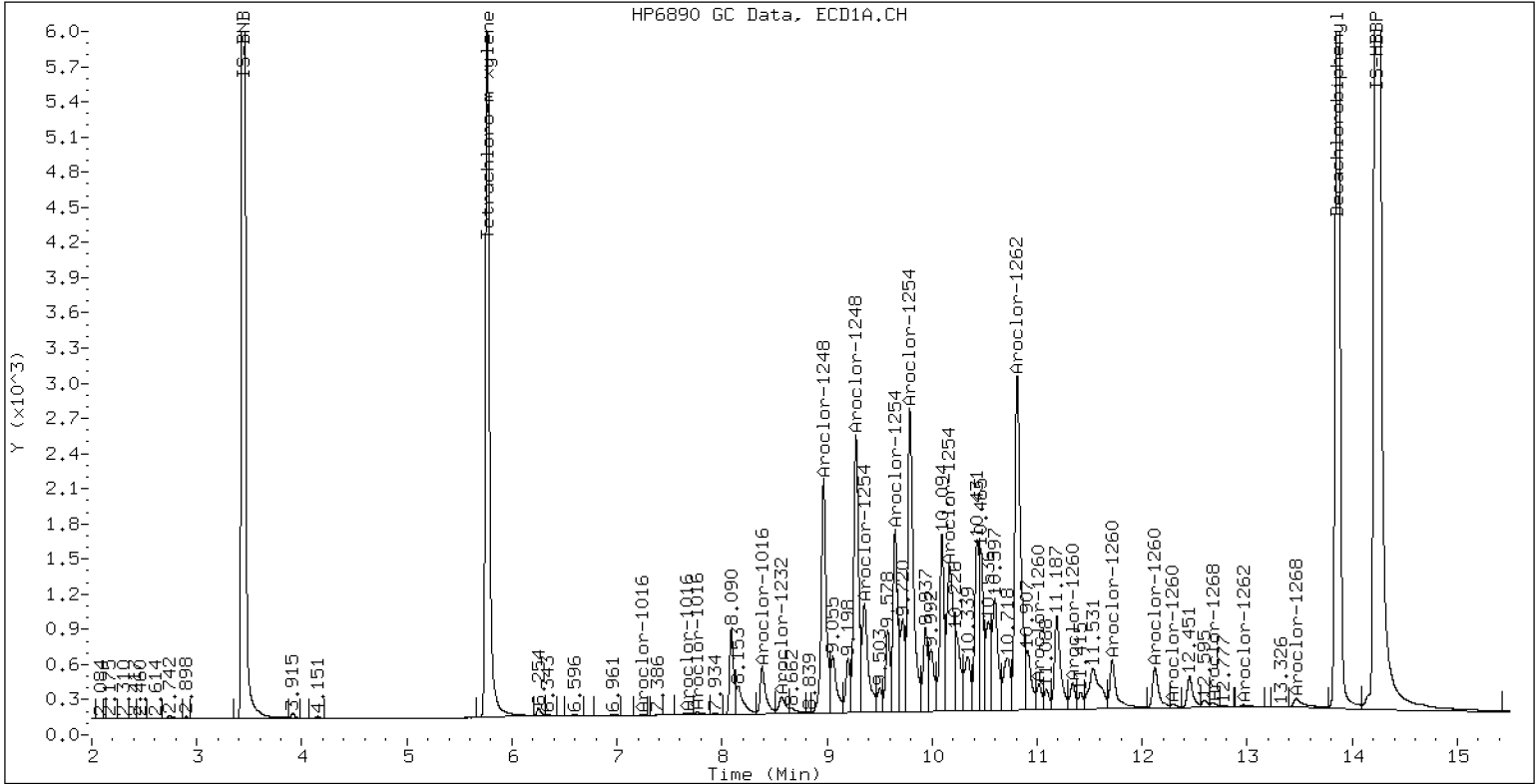
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV

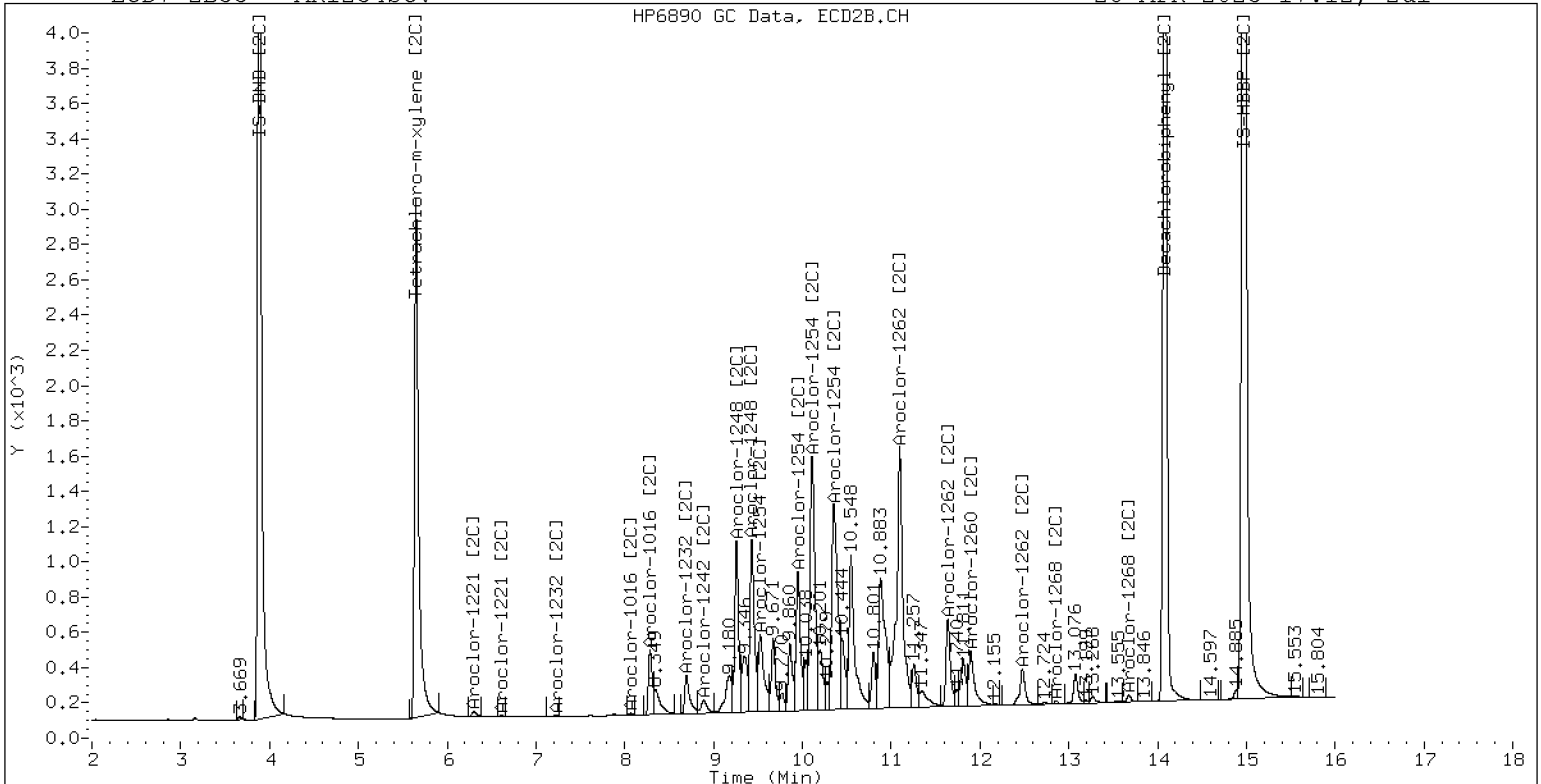
28-APR-2023 17:12, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1254SCV

28-APR-2023 17:12, 2ul



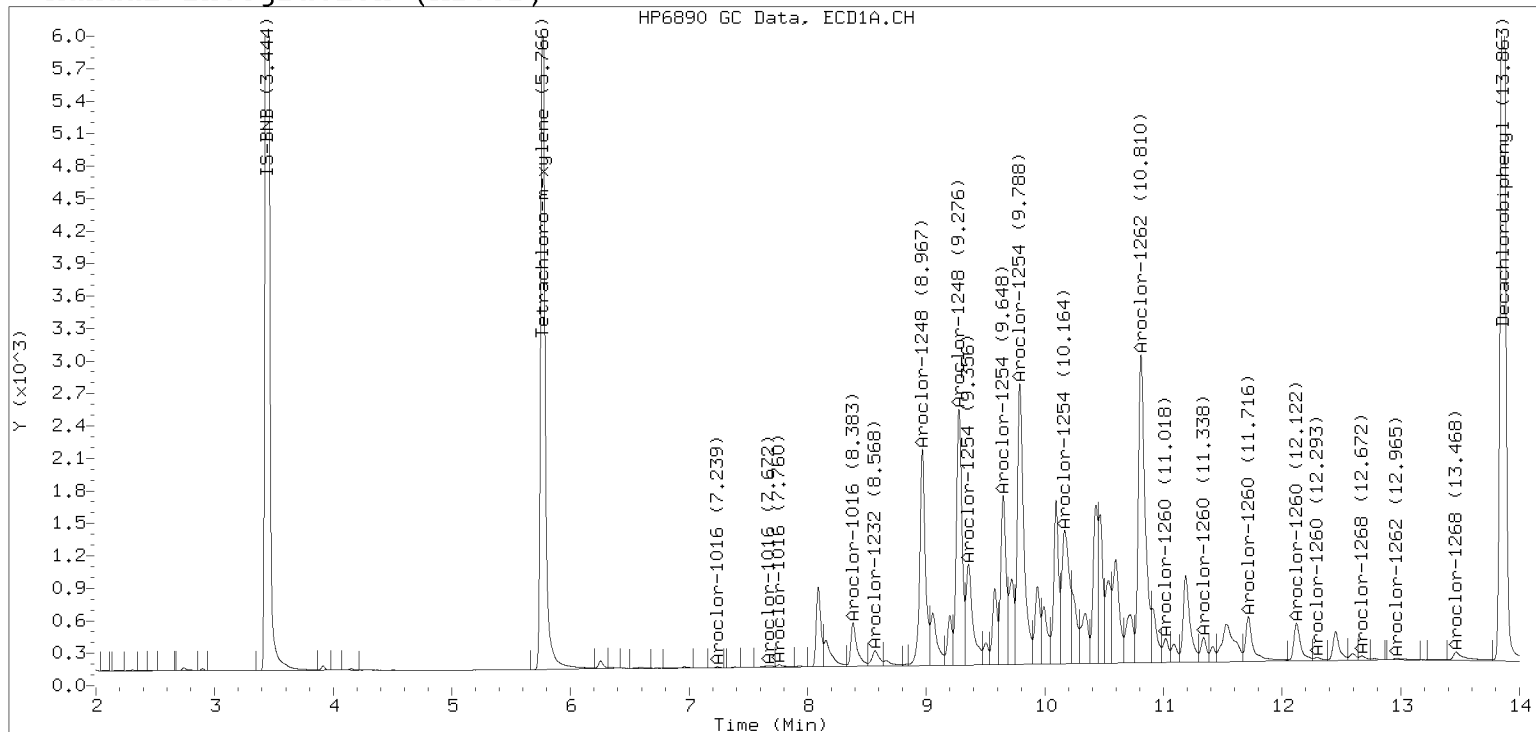
ZB-35 Manual Integration: YES

# Manual Peak Adjustment, ZB-5

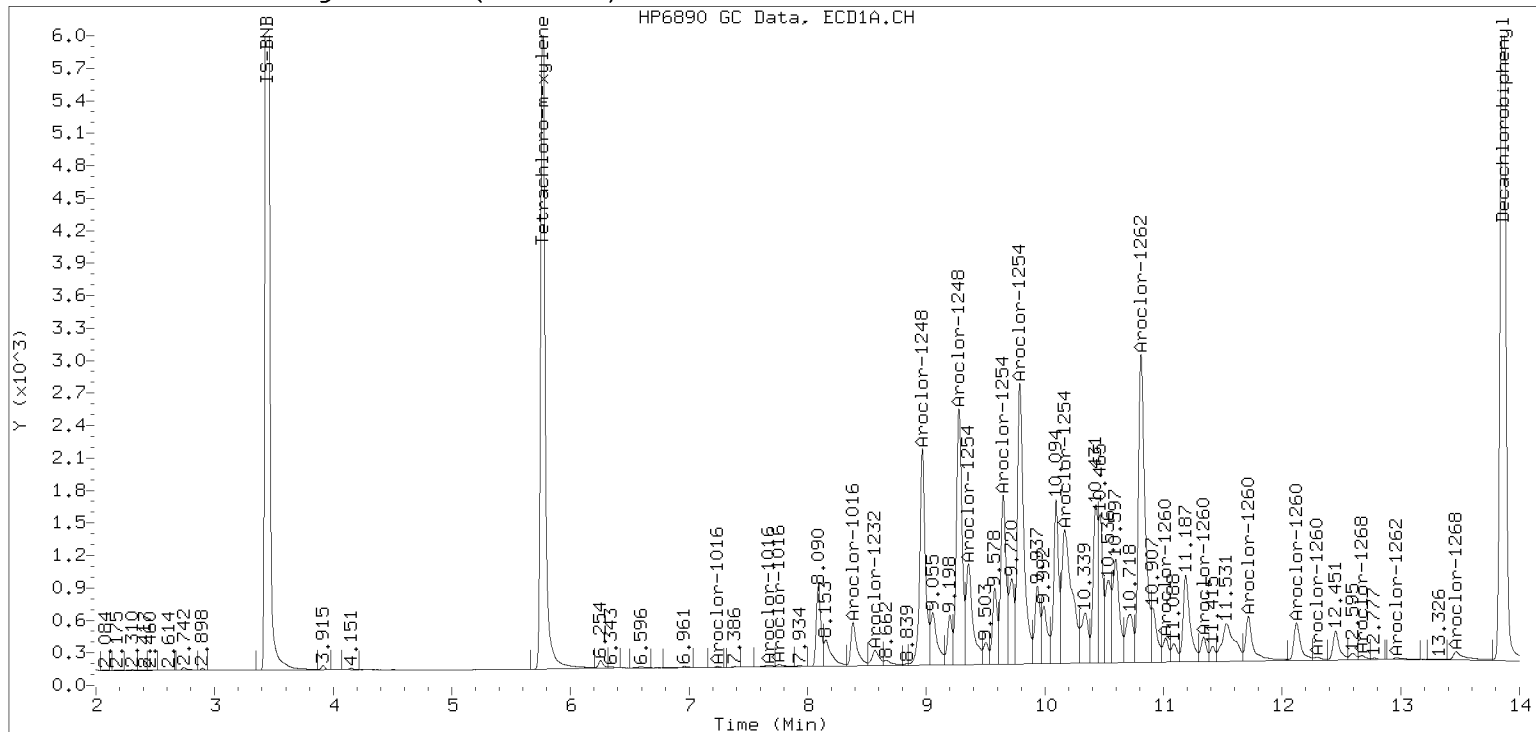
Datafile: ecd7.i/230428.b/04282318ECD7.D

Injection Date: 28-APR-2023 17:12

## Manual Integration (After)



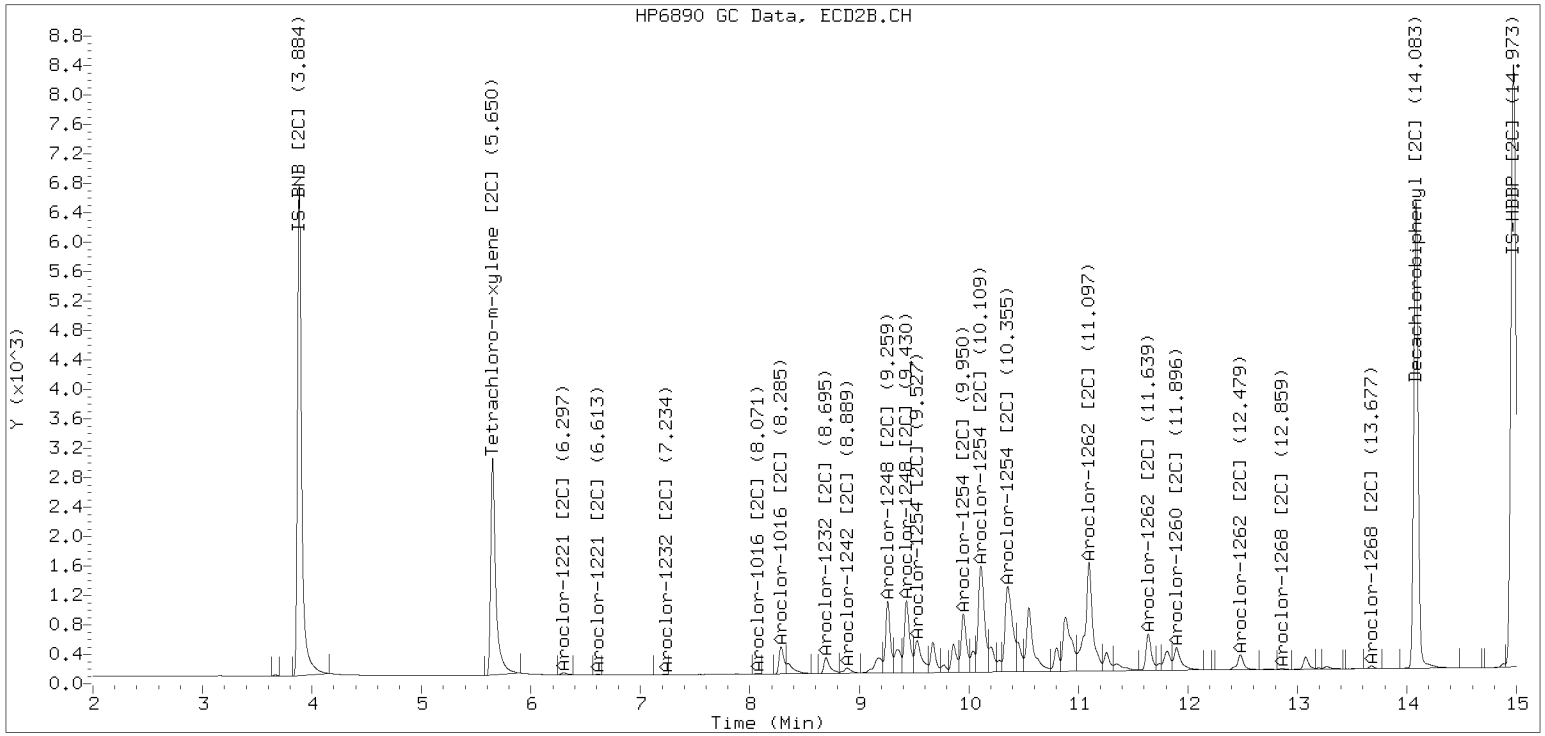
## Processed Integration (Before)



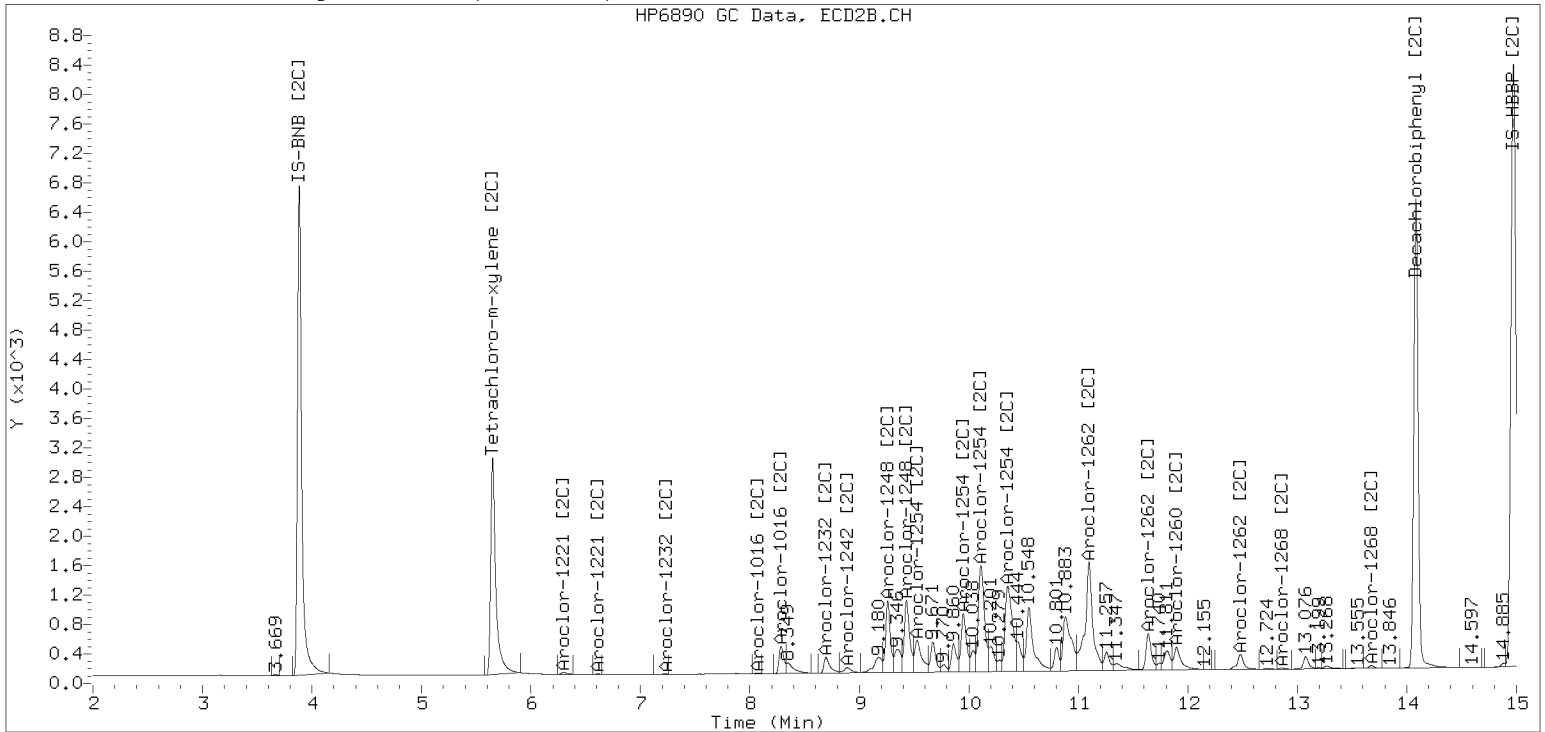
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282318ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)







**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>04282319ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLD0427</u>	Injection Date:	<u>04/28/23</u>
Lab Sample ID:	<u>SLD0427-SCV5</u>	Injection Time:	<u>17:33</u>
Sequence Name:	<u>AR2162SCV5</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1221	A	250.00	269	0.0158494	0.0168244		7.7	+/-20
Aroclor 1221 [2C]	A	250.00	276	0.0158867	0.0171029		10.5	+/-20
Aroclor 1262	A	250.00	254	0.0484992	0.0493166		1.7	+/-20
Aroclor 1262 [2C]	A	250.00	255	0.0852231	0.0869928		2.0	+/-20
Decachlorobiphenyl	A	40.000	35.9	0.8671959	0.7785743		-10.2	+/-20
Tetrachlorometaxylene	A	40.000	38.3	1.1690340	1.1184950		-4.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.9	1.2954910	1.2611750		-2.6	+/-20
Tetrachlorometaxylene [2C]	A	40.000	38.0	1.1231530	1.0675380		-5.0	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282319ECD7.D  
Data file 2: /230428.b/230428.b/04282319ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR2162SCV  
Client ID:  
Injection Date: 28-APR-2023 17:33  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.767	0.001	336477	5.650	-0.001	192040	38.3	38.0	0.7	Tetrachloro-m-xylene
13.862	0.001	499246	14.084	-0.000	363267	35.9	38.9	8.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	601660	8.2
Hexabromobiphenyl	745660	1282462	72.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	359781	3.2
Hexabromobiphenyl	429949	576077	34.0

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.237	0.002	5001	21.5	1	7.227	0.005	3885	19.9	
Aroclor-1016	2	7.665	0.037	8647	14.0	2	7.887	0.043	4451	11.6	
Aroclor-1016	3	7.777	0.014	6495	15.6	3	8.066	0.012	2267	9.6	
Aroclor-1016	4	8.388	0.012	2933	13.5	4	8.290	0.009	1849	10.5	
Total CollAve (4 peaks):				16.1	Total Col2Ave (4 peaks):				12.9	RPD = 22	
Corrected Ave (3 peaks):				14.3	Corrected Ave (3 peaks):				10.5	RPD = 31	
Aroclor-1221	1	4.683	0.001	12932	280.8	1	4.911	0.000	7988	299.1	
Aroclor-1221	2	6.094	0.000	24389	264.0	2	6.265	-0.001	15133	265.2	
Aroclor-1221	3	6.348	0.002	57578	262.7	3	6.593	-0.000	34566	264.7	
Total CollAve (3 peaks):				269.2	Total Col2Ave (3 peaks):				276.3	RPD = 3	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.683	0.001	12932	441.6	1	4.911	-0.001	7988	515.9	
Aroclor-1232	2	6.094	0.001	24389	376.5	2	7.227	0.002	3885	45.1	
Aroclor-1232	3	7.665	0.013	8647	33.7	3	7.887	0.025	4451	26.2	
Aroclor-1232	4	8.569	0.006	1975	16.5	4	8.699	0.005	1706	32.6	
Total CollAve (4 peaks):				217.1	Total Col2Ave (4 peaks):				154.9	RPD = 33	
Corrected Ave (3 peaks):				142.2	Corrected Ave (3 peaks):				34.6	RPD = 122*	
Aroclor-1242	1	7.237	0.001	5001	26.6	1	7.227	0.005	3885	24.9	
Aroclor-1242	2	7.665	0.026	8647	16.9	2	7.887	0.029	4451	14.2	
Aroclor-1242	3	8.388	0.006	2933	17.0	3	8.699	-0.469	1706	15.8	
Aroclor-1242	4	8.569	0.009	1975	7.7	4	8.906	-0.697	1208	10.9	
Total CollAve (4 peaks):				17.1	Total Col2Ave (4 peaks):				16.4	RPD = 4	
Corrected Ave (3 peaks):				13.9	Corrected Ave (3 peaks):				13.6	RPD = 2	
Aroclor-1248	1	8.388	0.009	2933	10.1	1	8.699	0.414	1706	9.0	
Aroclor-1248	2	8.569	0.010	1975	5.1	2	8.906	0.215	1208	7.3	
Aroclor-1248	3	8.970	0.006	23869	20.7	3	9.261	0.098	12638	62.0	
Aroclor-1248	4	9.284	0.013	28188	46.7	4	9.437	-0.157	13948	64.2	
Total CollAve (4 peaks):				20.7	Total Col2Ave (4 peaks):				35.6	RPD = 53*	
Corrected Ave (3 peaks):				12.0	Corrected Ave (3 peaks):				26.1	RPD = 74*	
Aroclor-1254	1	9.284	0.009	28188	43.4	1	9.437	0.007	13948	51.9	
Aroclor-1254	2	---			0.0	2	---			0.0	
Aroclor-1254	3	9.654	0.006	4038	9.8	3	9.958	0.008	1791	8.2	
Aroclor-1254	4	9.795	0.005	11586	13.9	4	10.124	0.014	55476	117.7	
Aroclor-1254	5	10.096	-0.072	138022	314.6	5	10.346	-0.010	70184	129.5	
Total CollAve (4 peaks):				95.4	Total Col2Ave (4 peaks):				76.8	RPD = 22	
Corrected Ave (3 peaks):				22.4	Corrected Ave (3 peaks):				59.3	RPD = 90*	
Aroclor-1260	1	11.019	0.002	240553	332.2	1	11.623	-0.001	124057	302.7	
Aroclor-1260	2	11.335	0.002	202728	276.0	2	11.893	0.001	303878	282.5	
Aroclor-1260	3	11.713	0.003	494200	259.3	3	12.405	-0.002	129175	527.4	
Aroclor-1260	4	12.118	0.002	155139	164.1	4	12.475	0.000	226410	308.9	
Aroclor-1260	5	12.217	0.001	214340	494.2	NS	---			----	
Total CollAve (5 peaks):				305.2	Total Col2Ave (4 peaks):				355.4	RPD = 15	
Corrected Ave (4 peaks):				257.9	Corrected Ave (3 peaks):				298.1	RPD = 14	
Aroclor-1262	1	10.809	0.000	123367	246.5	1	11.173	-0.000	146790	254.9	
Aroclor-1262	2	12.217	0.001	214340	245.2	2	11.623	-0.001	124057	255.8	
Aroclor-1262	3	12.293	0.001	236304	246.0	3	12.405	0.001	129175	252.9	
Aroclor-1262	4	12.963	0.001	216573	279.5	4	12.475	-0.000	226410	256.4	
Total CollAve (4 peaks):				254.3	Total Col2Ave (4 peaks):				255.0	RPD = 0	
Corrected Ave (3 peaks):				245.9	Corrected Ave (3 peaks):				254.5	RPD = 3	
Aroclor-1268	1	12.217	-0.001	214340	97.4	1	12.405	0.001	129175	97.0	
Aroclor-1268	2	12.293	0.002	236304	103.1	2	12.475	0.004	226410	149.9	
Aroclor-1268	3	12.700	0.031	85797	45.0	3	12.859	0.001	9727	7.8	
Aroclor-1268	4	13.461	0.001	83654	15.2	4	13.678	0.001	40997	10.8	
Total CollAve (4 peaks):				65.2	Total Col2Ave (4 peaks):				66.4	RPD = 2	

Corrected Ave (3 peaks): 52.5      Corrected Ave (3 peaks): 38.5      RPD = 31

Total PCB Area Col1 (5.866 - 13.762) = 3513270      Col1 Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 1957095      Col2 Total PCB = 0.5 ppm\*

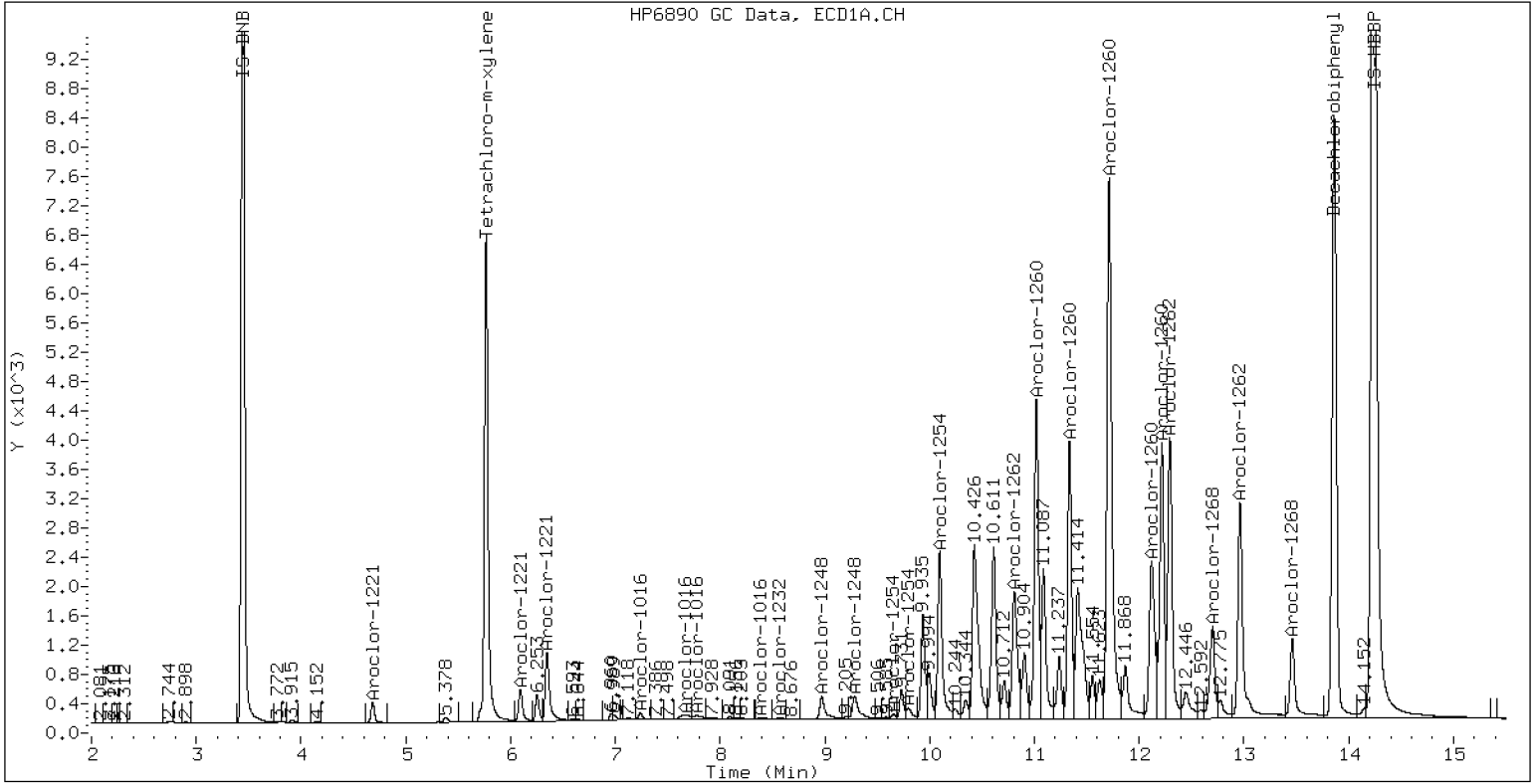
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV

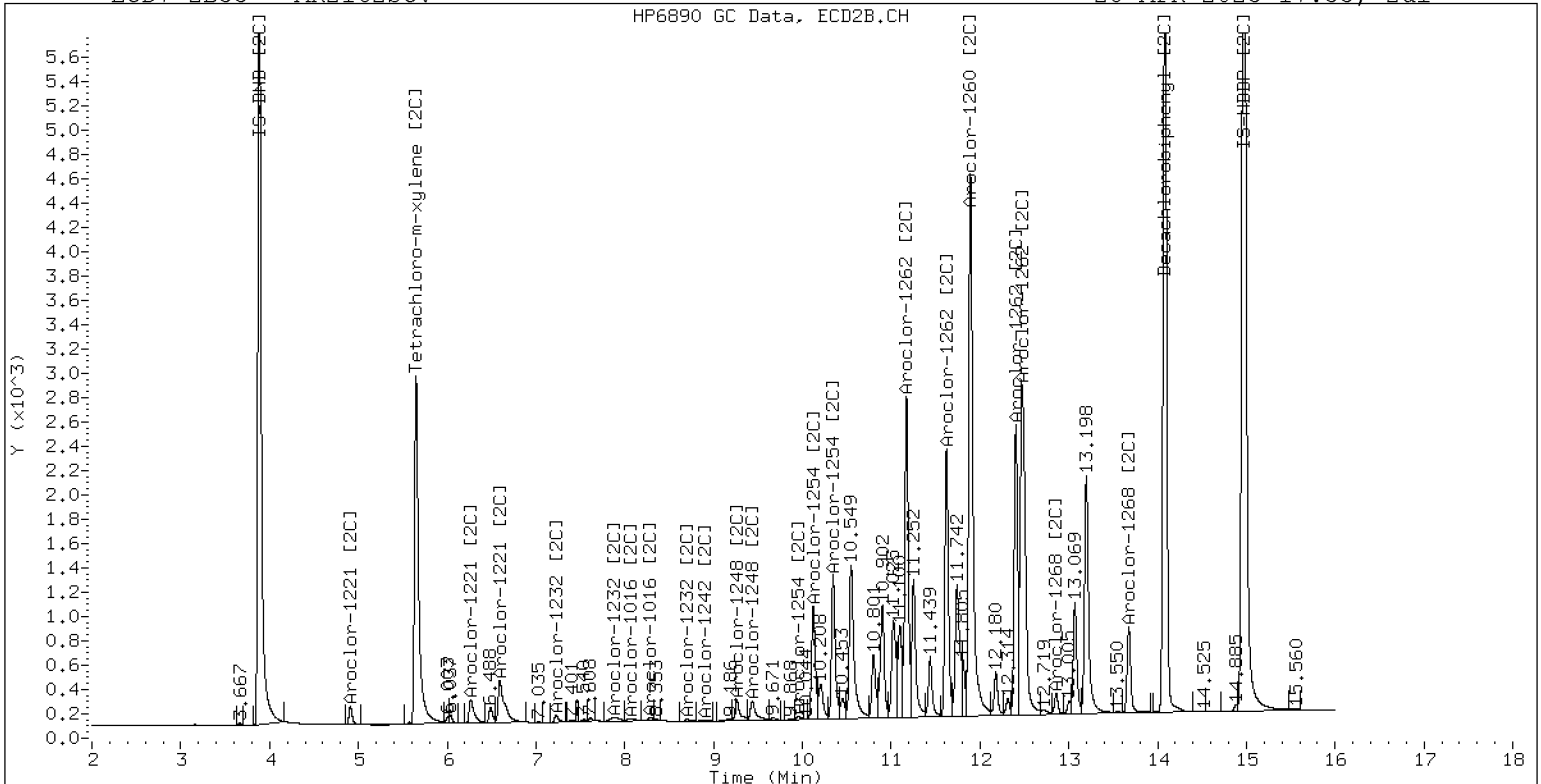
28-APR-2023 17:33, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV

28-APR-2023 17:33, 2u1

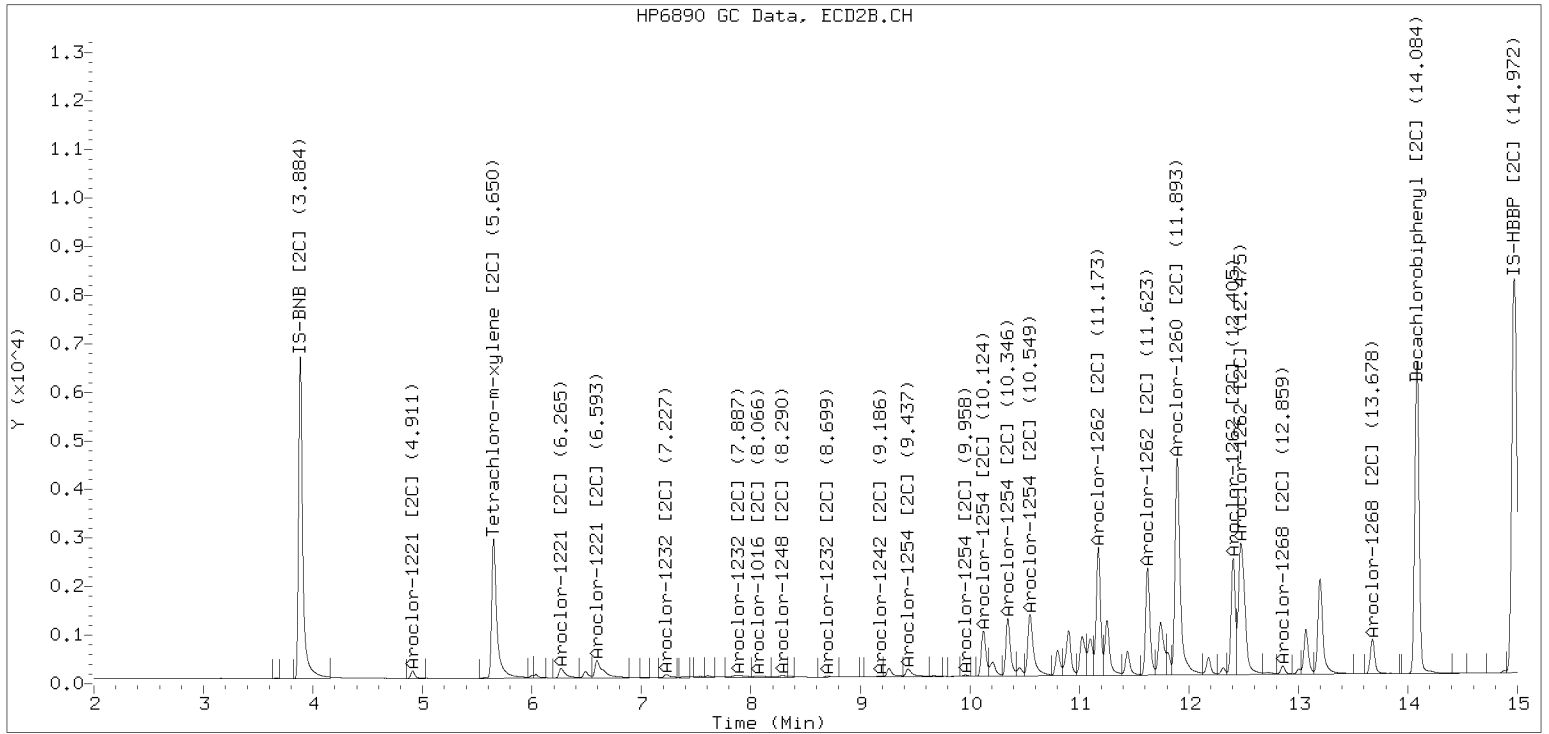


ZB-35 Manual Integration: NO

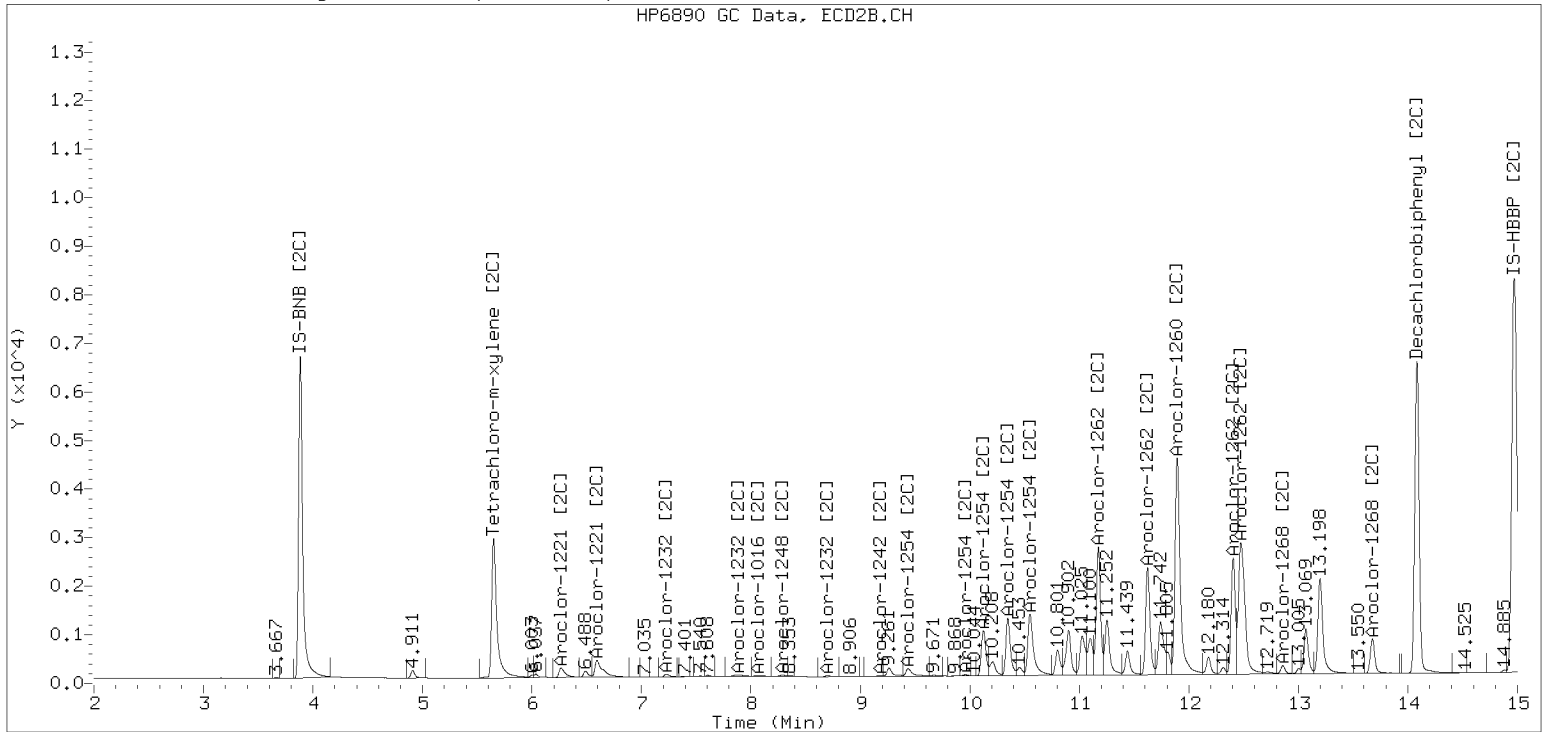
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282319ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>04282320ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLD0427</u>	Injection Date:	<u>04/28/23</u>
Lab Sample ID:	<u>SLD0427-SCV6</u>	Injection Time:	<u>17:54</u>
Sequence Name:	<u>AR3268SCV6</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1232	A	250.00	253	0.0156430	0.0163986		1.1	+/-20
Aroclor 1232 [2C]	A	250.00	257	0.0180080	0.0186886		2.7	+/-20
Aroclor 1268	A	250.00	242	0.1857986	0.1802210		-3.4	+/-20
Aroclor 1268 [2C]	A	250.00	254	0.2740532	0.2802281		1.8	+/-20
Decachlorobiphenyl	A	40.000	54.3	0.8671959	1.1765650		35.7	+/-20
Tetrachlorometaxylene	A	40.000	39.7	1.1690340	1.1600880		-0.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	60.0	1.2954910	1.9443880		50.1	+/-20
Tetrachlorometaxylene [2C]	A	40.000	38.1	1.1231530	1.0686210		-4.9	+/-20

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230428.b/04282320ECD7.D  
Data file 2: /230428.b/230428.b/04282320ECD7.D  
Method: \\target\share\chem4\ecd7.i\230428.b\PCB.m  
Compound Sublist: PCB.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR3268SCV  
Client ID:  
Injection Date: 28-APR-2023 17:54  
Report Date: 05/01/2023 12:24  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col			ZB5	ZB35	RPD	Compound/Flag	
RT	Shift	Response	RT	Shift	Response	on col			on col
5.767	0.001	344701	5.650	-0.000	190884	39.7	38.1	4.2	Tetrachloro-m-xylene
13.863	0.002	748678	14.083	-0.001	556825	54.3	60.0	10.1	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	556262	594267	6.8
Hexabromobiphenyl	745660	1272651	70.7

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	348488	357253	2.5
Hexabromobiphenyl	429949	572751	33.2

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)



ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.238	0.002	27428	119.4	1	7.224	0.003	22212	114.8
Aroclor-1016	2	7.645	0.018	67306	110.5	2	7.864	0.020	43795	114.5
Aroclor-1016	3	7.770	0.007	44634	108.2	3	8.063	0.009	25689	109.2
Aroclor-1016	4	8.384	0.008	23868	110.9	4	8.289	0.008	18313	104.5
Total CollAve (4 peaks):				112.2		Total Col2Ave (4 peaks):				110.7 RPD = 1
Corrected Ave (3 peaks):				109.9		Corrected Ave (3 peaks):				109.4 RPD = 0
Aroclor-1221	1	4.684	0.002	6934	152.4	1	4.912	0.002	3754	141.5
Aroclor-1221	2	6.095	0.001	14371	157.5	2	6.267	0.002	8987	158.6
Aroclor-1221	3	6.348	0.002	41876	193.5	3	6.596	0.002	24420	188.3
Total CollAve (3 peaks):				167.8		Total Col2Ave (3 peaks):				162.8 RPD = 3
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.684	0.002	6934	239.7	1	4.912	0.001	3754	244.1
Aroclor-1232	2	6.095	0.001	14371	224.6	2	7.224	-0.001	22212	259.7
Aroclor-1232	3	7.645	-0.006	67306	265.3	3	7.864	0.002	43795	259.5
Aroclor-1232	4	8.564	0.001	33203	281.0	4	8.693	-0.001	13696	263.5
Total CollAve (4 peaks):				252.6		Total Col2Ave (4 peaks):				256.7 RPD = 2
Corrected Ave (3 peaks):				243.2		Corrected Ave (3 peaks):				254.4 RPD = 5
Aroclor-1242	1	7.238	0.001	27428	147.9	1	7.224	0.002	22212	143.1
Aroclor-1242	2	7.645	0.007	67306	132.8	2	7.864	0.006	43795	141.0
Aroclor-1242	3	8.428	0.047	16206	95.1	3	8.693	-0.475	13696	127.5
Aroclor-1242	4	8.564	0.004	33203	131.6	4	8.897	-0.706	21265	192.9
Total CollAve (4 peaks):				126.9		Total Col2Ave (4 peaks):				151.1 RPD = 17
Corrected Ave (3 peaks):				119.8		Corrected Ave (3 peaks):				137.2 RPD = 14
Aroclor-1248	1	8.384	0.005	23868	83.1	1	8.693	0.408	13696	73.1
Aroclor-1248	2	8.564	0.005	33203	87.2	2	8.897	0.206	21265	128.9
Aroclor-1248	3	8.968	0.004	84096	74.0	3	9.261	0.097	25621	126.6
Aroclor-1248	4	9.276	0.005	56986	95.5	4	9.433	-0.160	6057	28.1
Total CollAve (4 peaks):				85.0		Total Col2Ave (4 peaks):				89.2 RPD = 5
Corrected Ave (3 peaks):				81.4		Corrected Ave (3 peaks):				75.9 RPD = 7
Aroclor-1254	1	9.276	0.000	56986	88.8	1	9.433	0.004	6057	22.7
Aroclor-1254	2	---			0.0	2	9.609	0.081	13368	82.1
Aroclor-1254	3	9.660	0.012	7875	19.4	3	9.958	0.008	2781	12.9
Aroclor-1254	4	9.800	0.010	12771	15.5	4	10.117	0.007	5502	11.8
Aroclor-1254	5	10.183	0.015	9957	23.0	5	10.379	0.024	5042	9.4
Total CollAve (4 peaks):				36.7		Total Col2Ave (5 peaks):				27.8 RPD = 28
Corrected Ave (3 peaks):				19.3		Corrected Ave (4 peaks):				14.2 RPD = 31
Aroclor-1260	1	11.023	0.005	98362	136.9	1	11.614	-0.010	74582	183.0
Aroclor-1260	2	11.337	0.004	8979	12.3	2	11.895	0.003	33641	31.5
Aroclor-1260	3	11.714	0.004	59413	31.4	3	12.402	-0.005	335038	1375.9
Aroclor-1260	4	---			0.0	4	12.470	-0.005	380342	522.0
Aroclor-1260	5	12.219	0.003	530793	1233.3	NS	---			----
Total CollAve (4 peaks):				353.5		Total Col2Ave (4 peaks):				528.1 RPD = 40
Corrected Ave (3 peaks):				60.2		Corrected Ave (3 peaks):				245.5 RPD = 121*
Aroclor-1262	1	10.815	0.006	5713	11.5	1	11.176	0.003	58379	102.0
Aroclor-1262	2	12.219	0.002	530793	612.0	2	11.614	-0.010	74582	154.7
Aroclor-1262	3	12.291	-0.001	548779	575.7	3	12.402	-0.002	335038	659.6
Aroclor-1262	4	12.960	-0.003	218981	284.8	4	12.470	-0.005	380342	433.3
Total CollAve (4 peaks):				371.0		Total Col2Ave (4 peaks):				337.4 RPD = 9
Corrected Ave (3 peaks):				290.7		Corrected Ave (3 peaks):				230.0 RPD = 23
Aroclor-1268	1	12.219	0.000	530793	243.0	1	12.402	-0.001	335038	253.1
Aroclor-1268	2	12.291	0.000	548779	241.2	2	12.470	-0.001	380342	253.2
Aroclor-1268	3	12.669	0.000	449251	237.4	3	12.859	0.001	314079	253.1
Aroclor-1268	4	13.461	-0.000	1338158	244.6	4	13.676	-0.001	976802	258.3
Total CollAve (4 peaks):				241.6		Total Col2Ave (4 peaks):				254.4 RPD = 5

Corrected Ave (3 peaks): 240.5      Corrected Ave (3 peaks): 253.1      RPD = 5

Total PCB Area Col1 (5.866 - 13.762) = 4336494      Col1 Total PCB = 0.6 ppm\*

Total PCB Area Col2 (5.751 - 13.984) = 2807426      Col2 Total PCB = 0.7 ppm\*

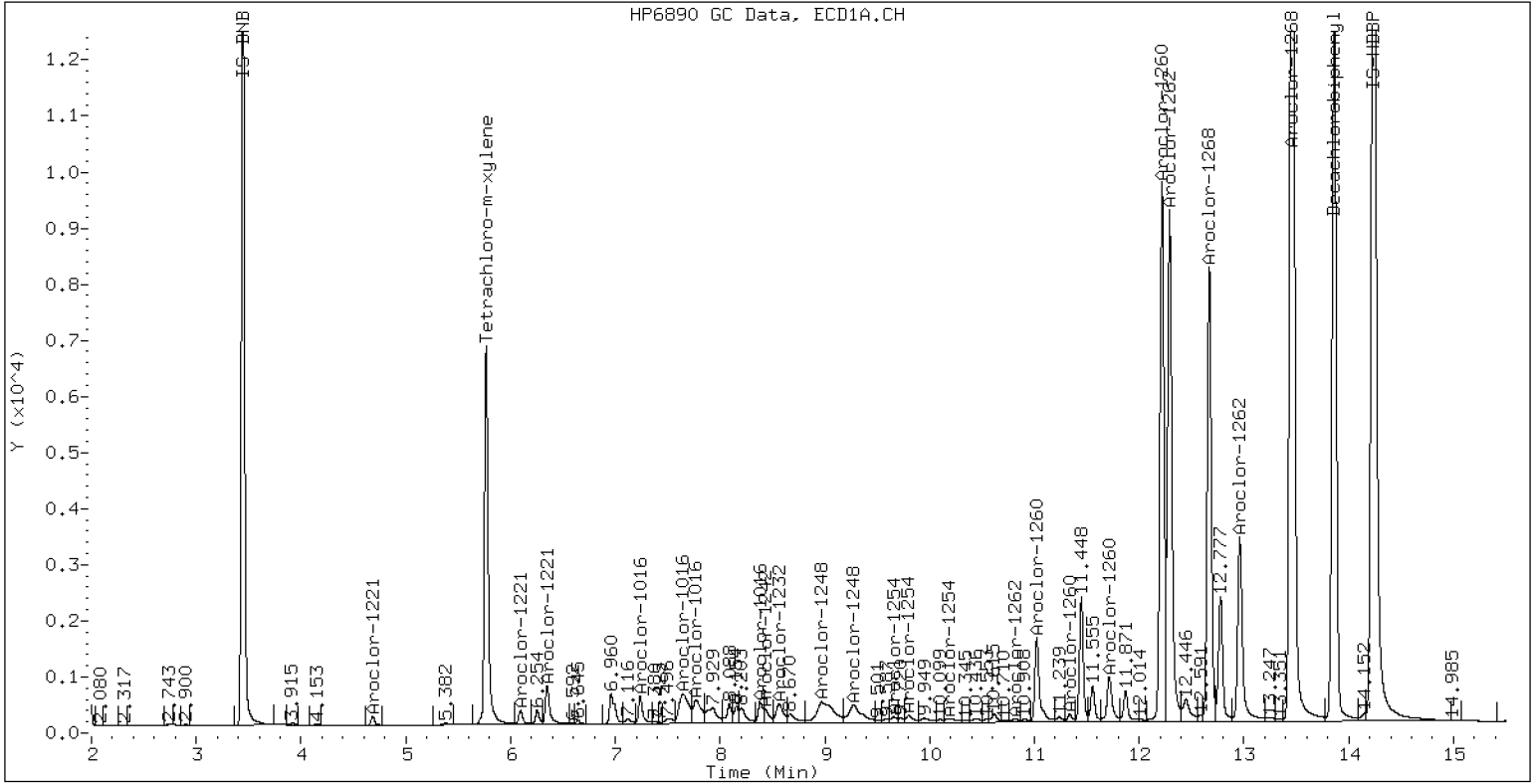
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV

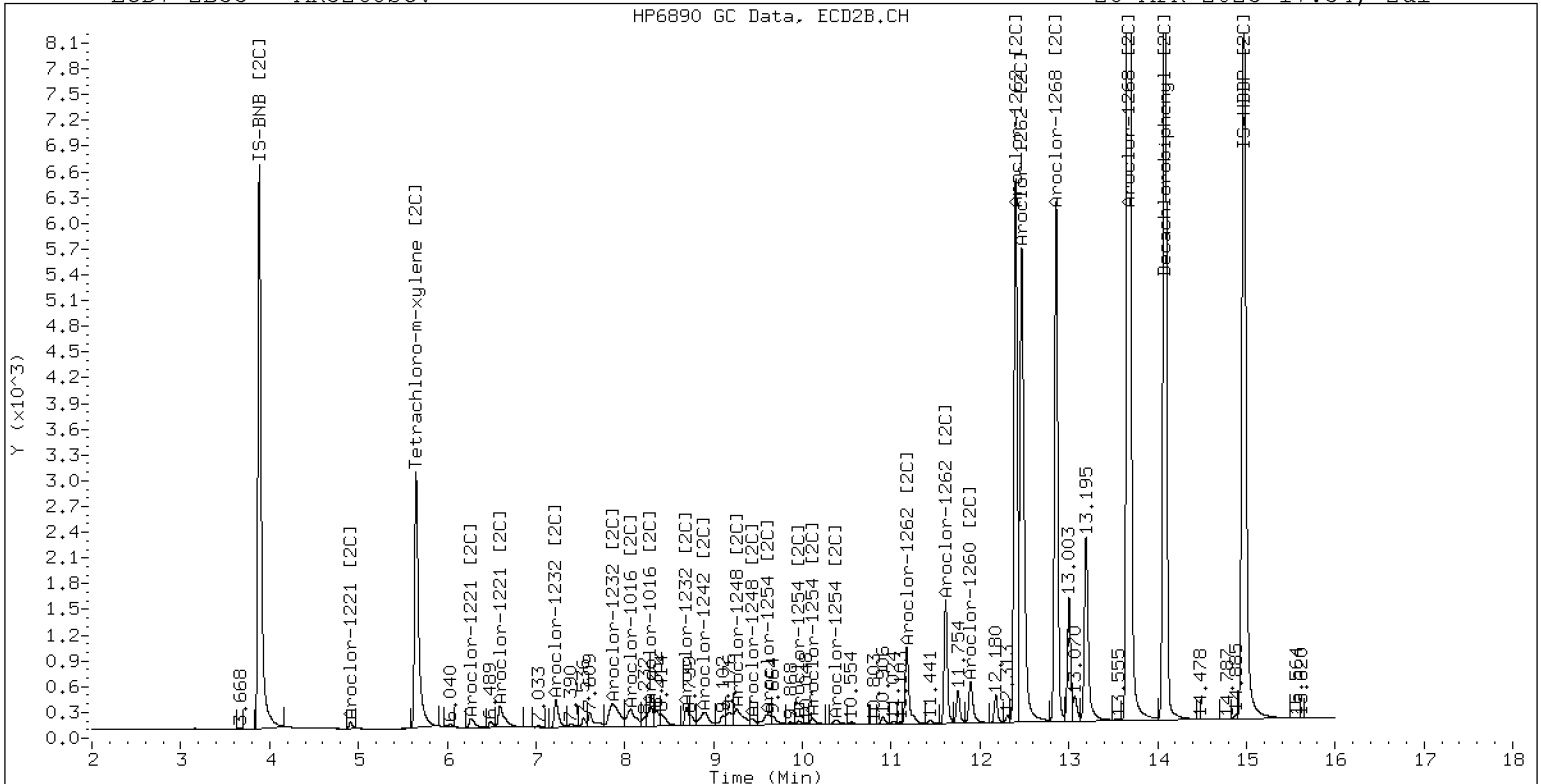
28-APR-2023 17:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV

28-APR-2023 17:54, 2ul

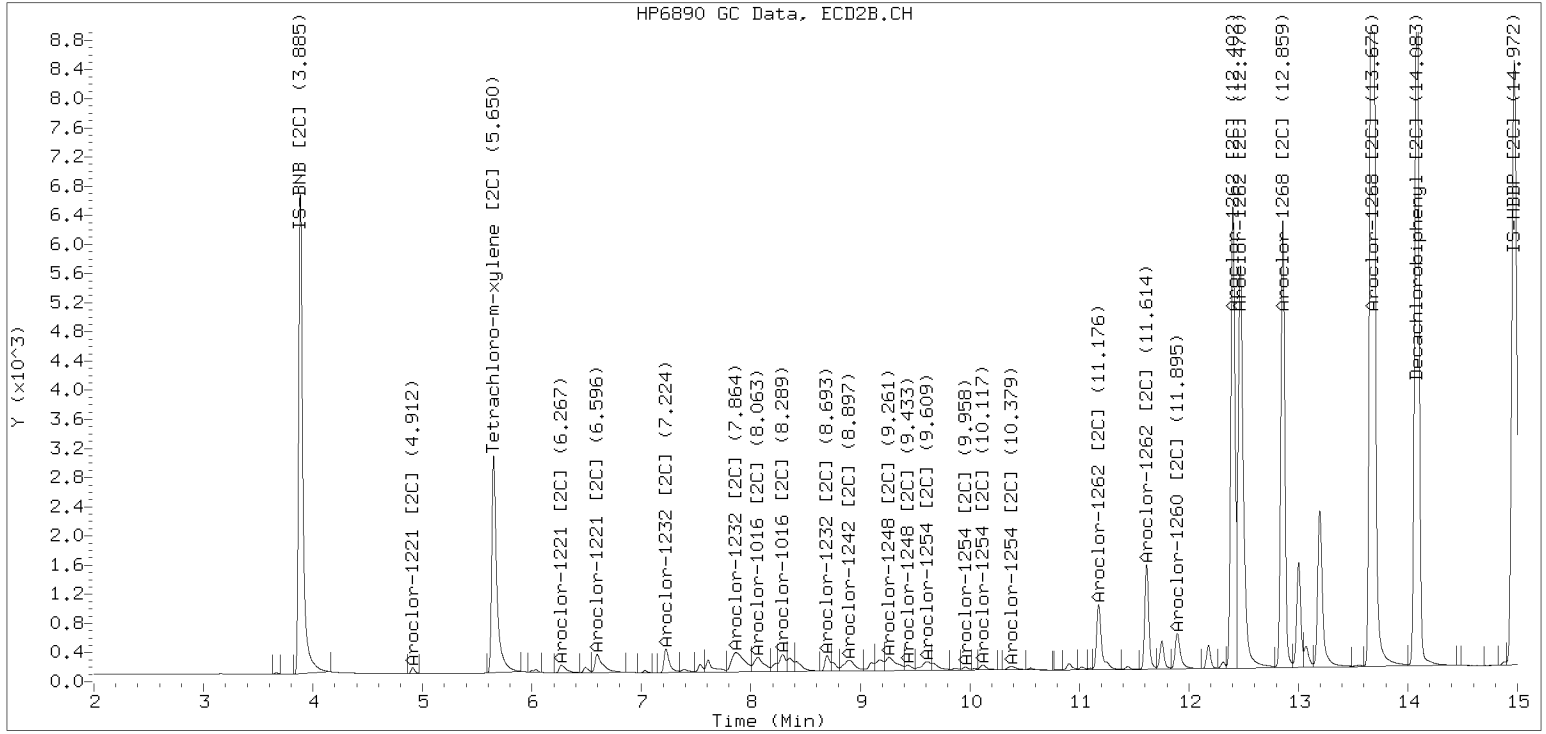


ZB-35 Manual Integration: YES

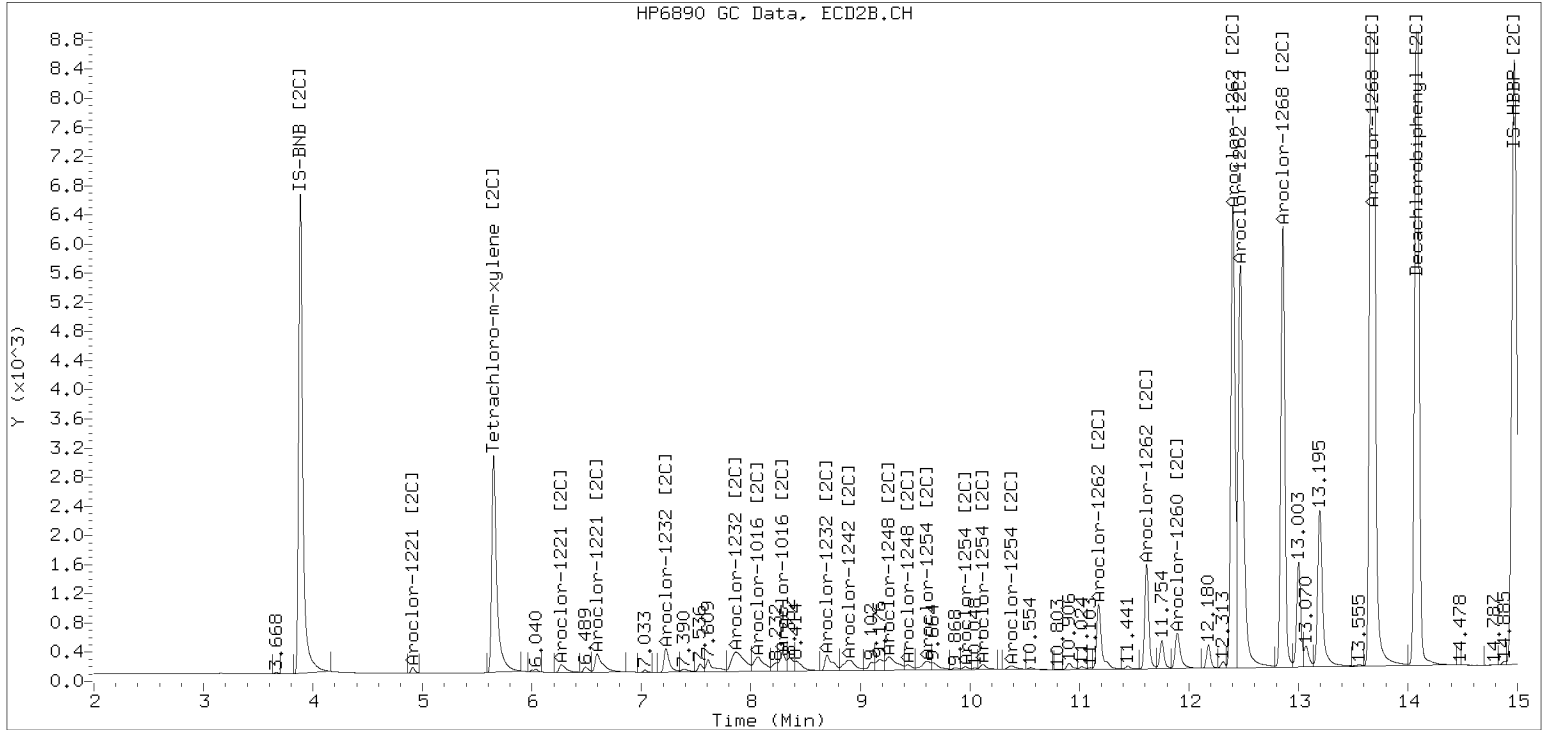
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230428.b/230428.b/04282320ECD7.D Injection Date: 28-APR-2023

Manual Integration (After)



Processed Integration (Before)





**CONTINUING CALIBRATION CHECK**  
**EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>05022314ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLE0029</u>	Injection Date:	<u>05/02/23</u>
Lab Sample ID:	<u>SLE0029-CCV1</u>	Injection Time:	<u>15:49</u>
Sequence Name:	<u>AR1248CCV1</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	232	0.0808031	0.0825809		-7.1	+/-20
Aroclor-1248 (1)	A	250.00	166		0.0407748			
Aroclor-1248 (2)	A	250.00	256		0.0524824			
Aroclor-1248 (3)	A	250.00	255		0.1560695			
Aroclor-1248 (4)	A	250.00	252		0.0809969			
Aroclor 1248 [2C]	A	250.00	263	0.0431424	0.0454425		5.3	+/-20
Aroclor-1248 (1) [2C]	A	250.00	265		0.0445118			
Aroclor-1248 (2) [2C]	A	250.00	263		0.0388649			
Aroclor-1248 (3) [2C]	A	250.00	255		0.0462090			
Aroclor-1248 (4) [2C]	A	250.00	270		0.0521845			
Decachlorobiphenyl	A	40.000	36.3	0.8671959	0.7869299		-9.3	+/-20
Tetrachlorometaxylene	A	40.000	39.0	1.1690340	1.1412640		-2.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.2	1.2954910	1.2034880		-7.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	38.8	1.1231530	1.0888680		-3.0	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022314ECD7.D  
Data file 2: /230502.b/230502.b/05022314ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: AR1248.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1248CCV1  
Client ID:  
Injection Date: 02-MAY-2023 15:49  
Report Date: 05/02/2023 16:36  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.001	319814	5.650	0.001	180764	39.0	38.8	0.7	Tetrachloro-m-xylene
13.862	0.002	320779	14.083	0.001	284413	36.3	37.2	2.3	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	560456	0.8
Hexabromobiphenyl	745660	815267	9.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	332022	-4.7
Hexabromobiphenyl	429949	472648	9.9

\* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1248	1	8.378	-0.001	71414	166.6	1	8.282	0.000	46184	265.1	
Aroclor-1248	2	8.556	-0.003	91919	256.0	2	8.688	0.000	40325	263.0	
Aroclor-1248	3	8.960	-0.004	273344	255.1	3	9.156	0.000	47945	254.9	
Aroclor-1248	4	9.268	-0.003	141860	252.1	4	9.583	0.000	54145	269.9	
Total CollAve (4 peaks):				232.4		Total Col2Ave (4 peaks):				263.2	RPD = 12
Corrected Ave (3 peaks):				224.6		Corrected Ave (3 peaks):				261.0	RPD = 15
CalAmt %D:				-7.0		CalAmt %D:				5.3	

Total PCB Area Col1 (5.865 - 13.760) = 1467012 Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.749 - 13.982) = 804987 Col2 Total PCB = 0.2 ppm\*

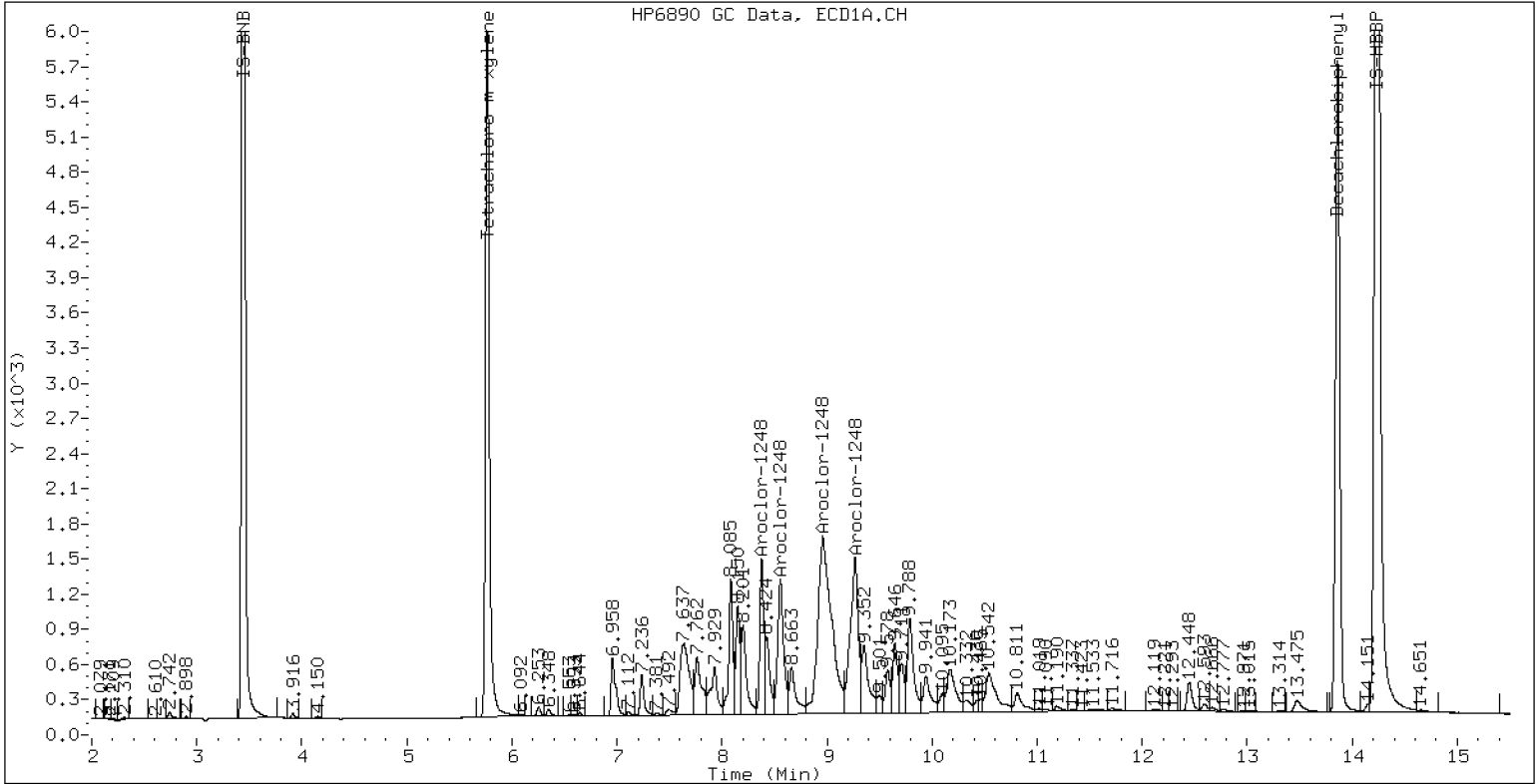
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1

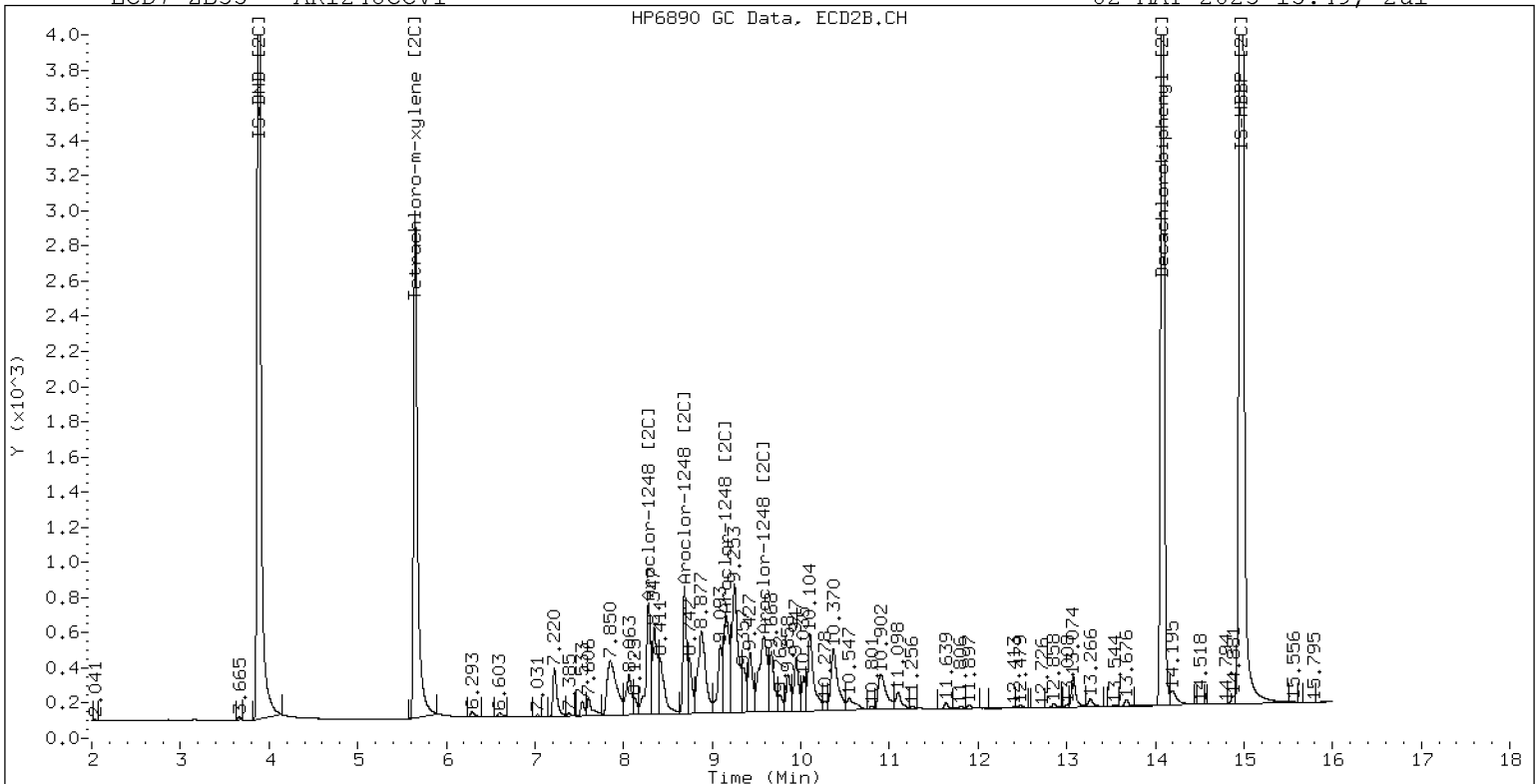
02-MAY-2023 15:49, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV1

02-MAY-2023 15:49, 2ul



ZB-35 Manual Integration: NO





**CONTINUING CALIBRATION CHECK**  
**EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>05022315ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLE0029</u>	Injection Date:	<u>05/02/23</u>
Lab Sample ID:	<u>SLE0029-CCV2</u>	Injection Time:	<u>16:10</u>
Sequence Name:	<u>AR1660CCV2</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	258	0.0493584	0.0519462		3.2	+/-20
Aroclor-1016 (1)	A	250.00	250	0.0309351	0.0297961		0.0	
Aroclor-1016 (2)	A	250.00	291	0.0820179	0.0956215		16.4	
Aroclor-1016 (3)	A	250.00	235	0.0555075	0.0528520		-6.0	
Aroclor-1016 (4)	A	250.00	256	0.0289731	0.0295154		2.4	
Aroclor 1016 [2C]	A	250.00	283	0.0554830	0.0642518		13.2	+/-20
Aroclor-1016 (1) [2C]	A	250.00	307	0.0433246	0.0532682		22.8	
Aroclor-1016 (2) [2C]	A	250.00	330	0.0856363	0.1130258		32.0	
Aroclor-1016 (3) [2C]	A	250.00	241	0.0537117	0.0507748		-3.6	
Aroclor-1016 (4) [2C]	A	250.00	254	0.0392594	0.0399385		1.6	
Aroclor 1260	A	250.00	245	0.0591826	0.0587948		-1.8	+/-20
Aroclor-1260 (1)	A	250.00	263	0.0451684	0.0474543		5.2	
Aroclor-1260 (2)	A	250.00	253	0.0458209	0.0463971		1.2	
Aroclor-1260 (3)	A	250.00	263	0.1189069	0.1249337		5.2	
Aroclor-1260 (4)	A	250.00	209	0.0589630	0.0493584		-16.4	
Aroclor-1260 (5)	A	250.00	239	0.0270539	0.0258304		-4.4	
Aroclor 1260 [2C]	A	250.00	230	0.0855158	0.0788438		-7.9	+/-20
Aroclor-1260 (1) [2C]	A	250.00	224	0.0569154	0.0511155		-10.4	
Aroclor-1260 (2) [2C]	A	250.00	231	0.1493590	0.1380678		-7.6	
Aroclor-1260 (3) [2C]	A	250.00	235	0.0340126	0.0319904		-6.0	
Aroclor-1260 (4) [2C]	A	250.00	231	0.1017762	0.0942015		-7.6	
Decachlorobiphenyl	A	40.000	38.4	0.8671959	0.8336346		-4.0	+/-20
Tetrachlorometaxylene	A	40.000	40.6	1.1690340	1.1864030		1.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.6	1.2954910	1.2503520		-3.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	45.8	1.1231530	1.2867590		14.5	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022315ECD7.D  
Data file 2: /230502.b/230502.b/05022315ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: AR1660.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1660CCV2  
Client ID:  
Injection Date: 02-MAY-2023 16:10  
Report Date: 05/02/2023 16:36  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.001	334804	5.649	0.000	182393	40.6	45.8	12.1	Tetrachloro-m-xylene
13.860	-0.000	380242	14.082	0.000	298436	38.5	38.6	0.4	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	564402	1.5
Hexabromobiphenyl	745660	912251	22.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	283492	-18.7
Hexabromobiphenyl	429949	477363	11.0

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.237	0.000	52553	250.2	1	7.221	0.000	47191	307.4	
Aroclor-1016	2	7.632	0.003	168653	291.5	2	7.848	0.000	100131	330.0	
Aroclor-1016	3	7.765	0.001	93218	235.4	3	8.054	0.000	44982	240.9	
Aroclor-1016	4	8.378	0.001	52058	255.6	4	8.282	0.000	35382	254.3	
Total CollAve (4 peaks):				258.2		Total Col2Ave (4 peaks):				283.1	RPD = 9
Corrected Ave (3 peaks):				247.1		Corrected Ave (3 peaks):				267.5	RPD = 8
CalAmt %D:				3.3		CalAmt %D:				13.3	
Aroclor-1260	1	11.017	0.001	135282	262.7	1	11.623	0.000	76252	224.5	
Aroclor-1260	2	11.334	0.001	132268	253.1	2	11.890	0.000	205964	231.1	
Aroclor-1260	3	11.710	0.001	356159	262.7	3	12.405	0.000	47722	235.1	
Aroclor-1260	4	12.117	-0.001	140710	209.3	4	12.474	0.000	140526	231.4	
Aroclor-1260	5	12.216	0.001	73637	238.7	NS	---			----	
Total CollAve (5 peaks):				245.3		Total Col2Ave (4 peaks):				230.5	RPD = 6
Corrected Ave (4 peaks):				240.9		Corrected Ave (3 peaks):				229.0	RPD = 5
CalAmt %D:				-1.9		CalAmt %D:				-7.8	

Total PCB Area Coll (5.865 - 13.760) = 3614926 Coll Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.749 - 13.982) = 1914988 Col2 Total PCB = 0.6 ppm\*

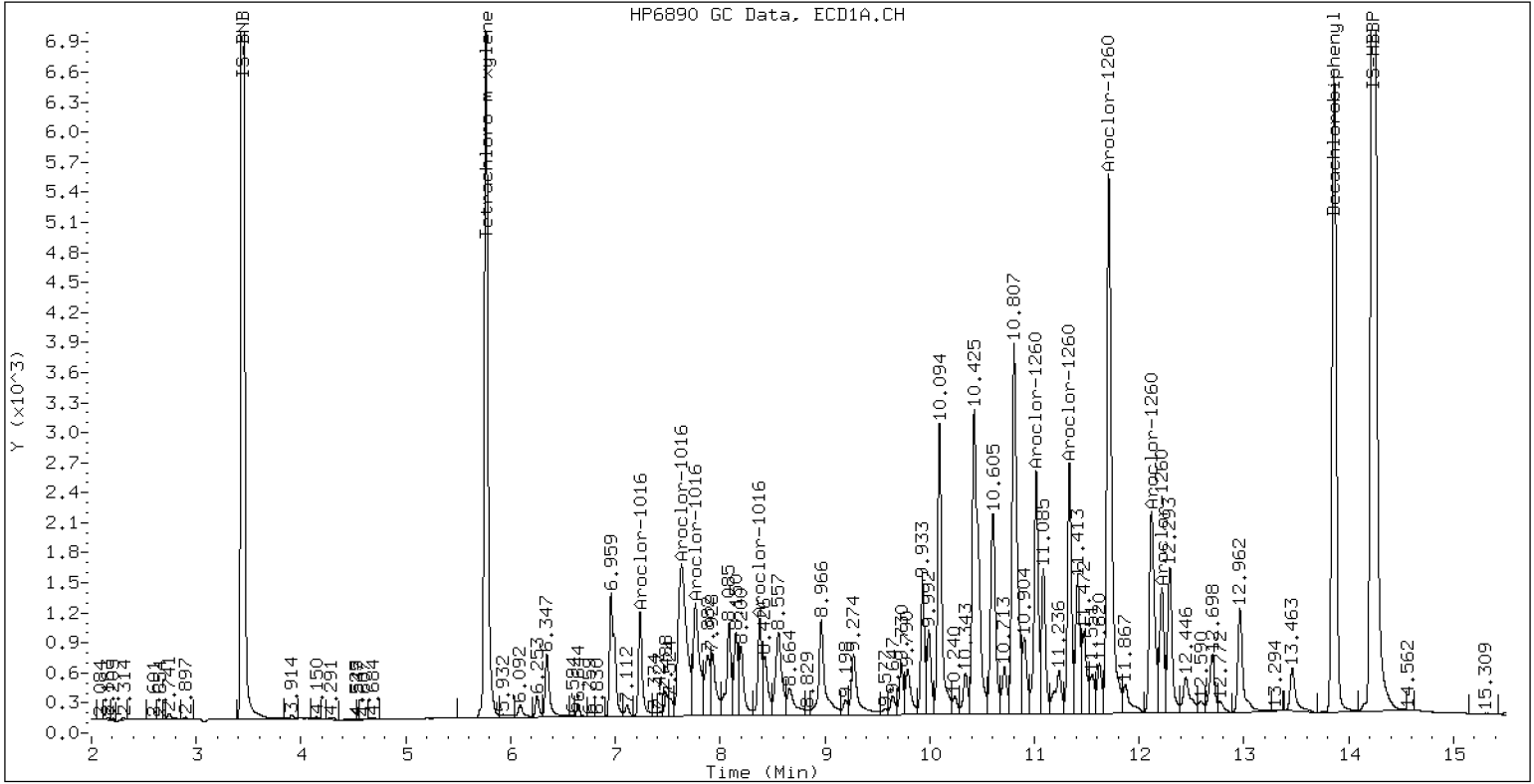
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2

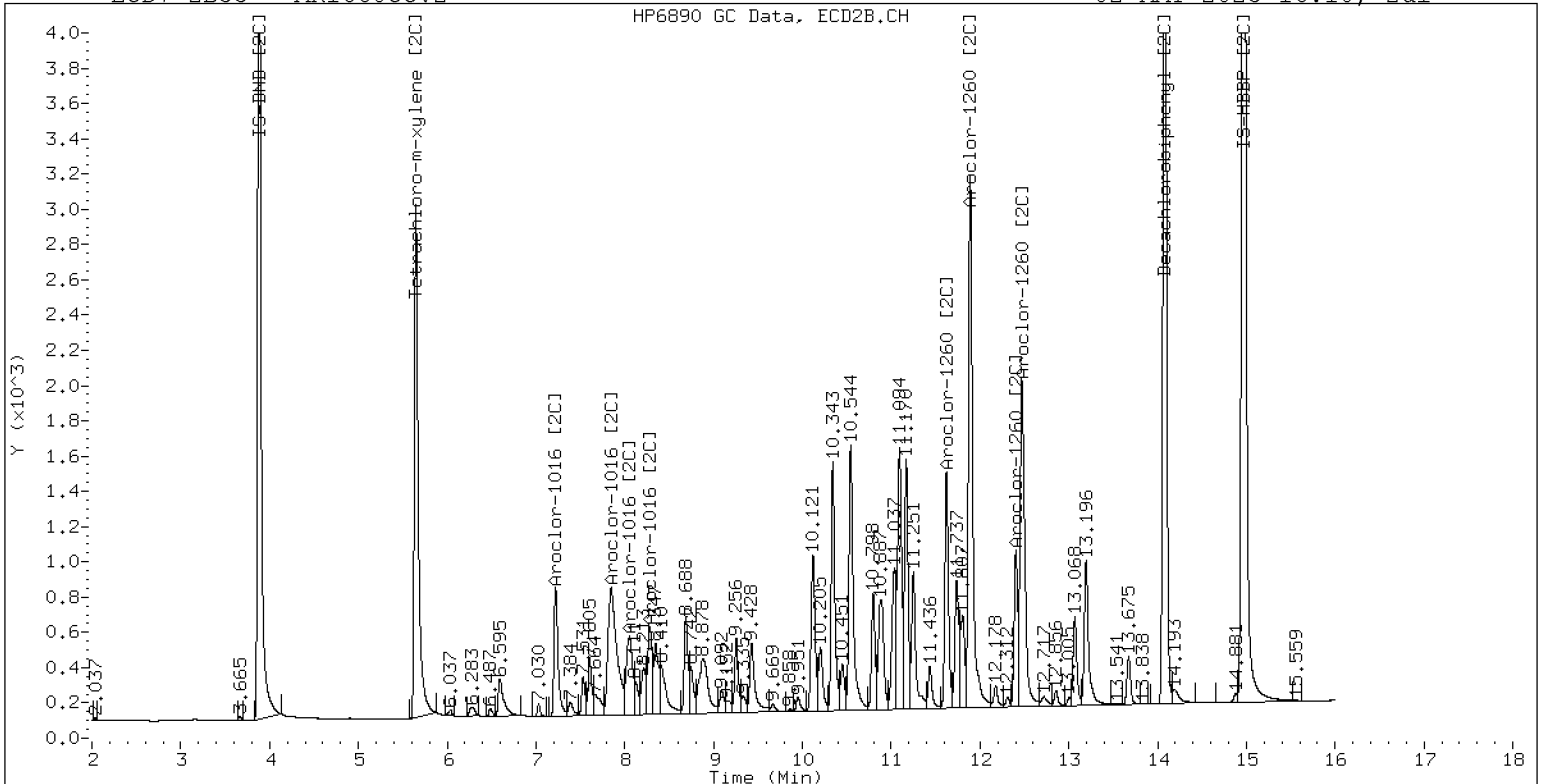
02-MAY-2023 16:10, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2

02-MAY-2023 16:10, 2ul

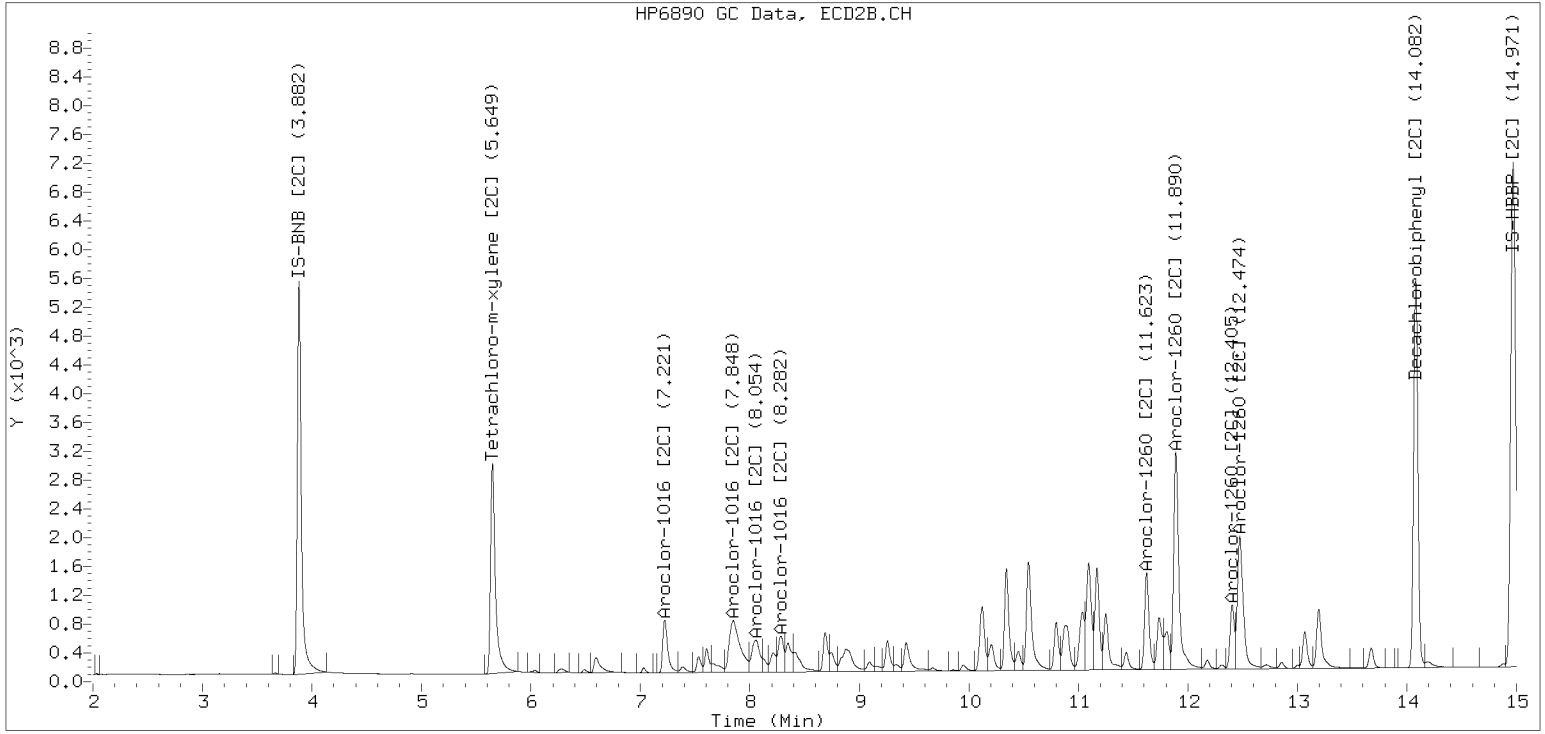


ZB-35 Manual Integration: YES

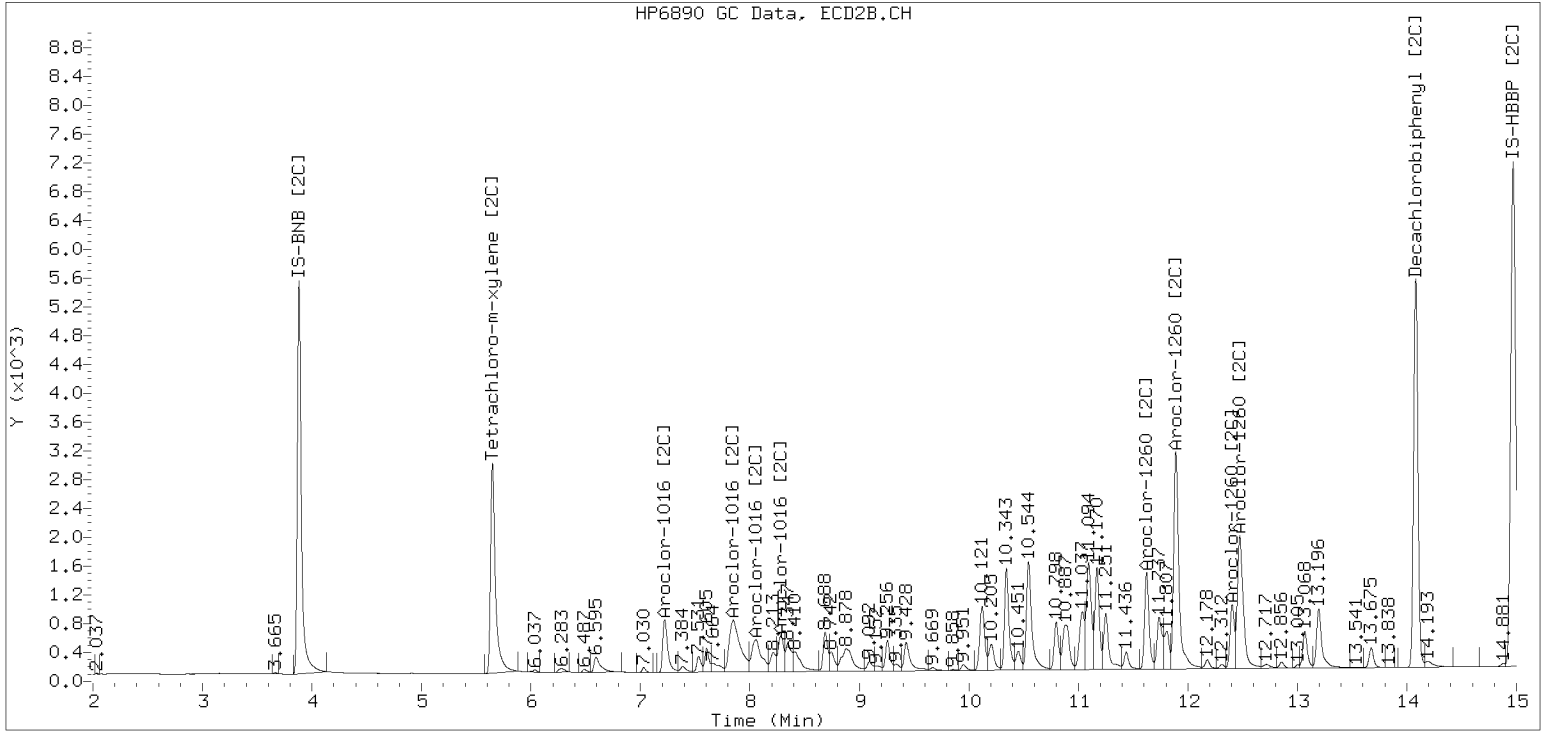
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230502.b/230502.b/05022315ECD7.D Injection Date: 02-MAY-2023

Manual Integration (After)



Processed Integration (Before)





**CONTINUING CALIBRATION CHECK**  
**EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>05022330ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLE0029</u>	Injection Date:	<u>05/02/23</u>
Lab Sample ID:	<u>SLE0029-CCV3</u>	Injection Time:	<u>21:23</u>
Sequence Name:	<u>AR1242CCV3</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	257	0.0375243	0.0376183		2.8	+/-20
Aroclor-1242 (1)	A	250.00	251		0.0250613			
Aroclor-1242 (2)	A	250.00	272		0.0741401			
Aroclor-1242 (3)	A	250.00	246		0.0160413			
Aroclor-1242 (4)	A	250.00	259		0.0352306			
Aroclor 1242 [2C]	A	250.00	273	0.0382553	0.0420062		9.3	+/-20
Aroclor-1242 (1) [2C]	A	250.00	267		0.0370745			
Aroclor-1242 (2) [2C]	A	250.00	279		0.0776484			
Aroclor-1242 (3) [2C]	A	250.00	267		0.0256503			
Aroclor-1242 (4) [2C]	A	250.00	280		0.0276516			
Decachlorobiphenyl	A	40.000	36.2	0.8671959	0.7859002		-9.5	+/-20
Tetrachlorometaxylene	A	40.000	47.8	1.1690340	1.3960730		19.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.1	1.2954910	1.2333160		-4.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	48.4	1.1231530	1.3579020		21.0	+/-20 *

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022330ECD7.D  
Data file 2: /230502.b/230502.b/05022330ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: AR1242.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1242CCV3  
Client ID:  
Injection Date: 02-MAY-2023 21:23  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	396718	5.648	-0.000	224944	47.8	48.4	1.2	Tetrachloro-m-xylene
13.861	-0.001	287120	14.082	-0.000	248422	36.3	38.1	4.9	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	568334	2.2
Hexabromobiphenyl	745660	730678	-2.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	331311	-4.9
Hexabromobiphenyl	429949	402852	-6.3

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1242	1	7.235	0.000	44510	251.0	1	7.222	0.000	38385	266.7	
Aroclor-1242	2	7.632	0.000	131676	271.6	2	7.847	0.000	80393	279.2	
Aroclor-1242	3	8.425	0.000	28490	245.9	3	9.158	0.000	26557	266.7	
Aroclor-1242	4	8.555	0.000	62571	259.4	4	9.590	0.000	28629	280.0	
Total CollAve (4 peaks):				257.0		Total Col2Ave (4 peaks):				273.1	RPD = 6
Corrected Ave (3 peaks):				252.1		Corrected Ave (3 peaks):				270.8	RPD = 7
CalAmt %D:				2.8		CalAmt %D:				9.3	

Total PCB Area Col1 (5.866 - 13.762) = 1122339      Col1 Total PCB = 0.2 ppm\*

Total PCB Area Col2 (5.749 - 13.983) = 607990      Col2 Total PCB = 0.2 ppm\*

\* Quantitated against AR1660 0.25ppm in Ical

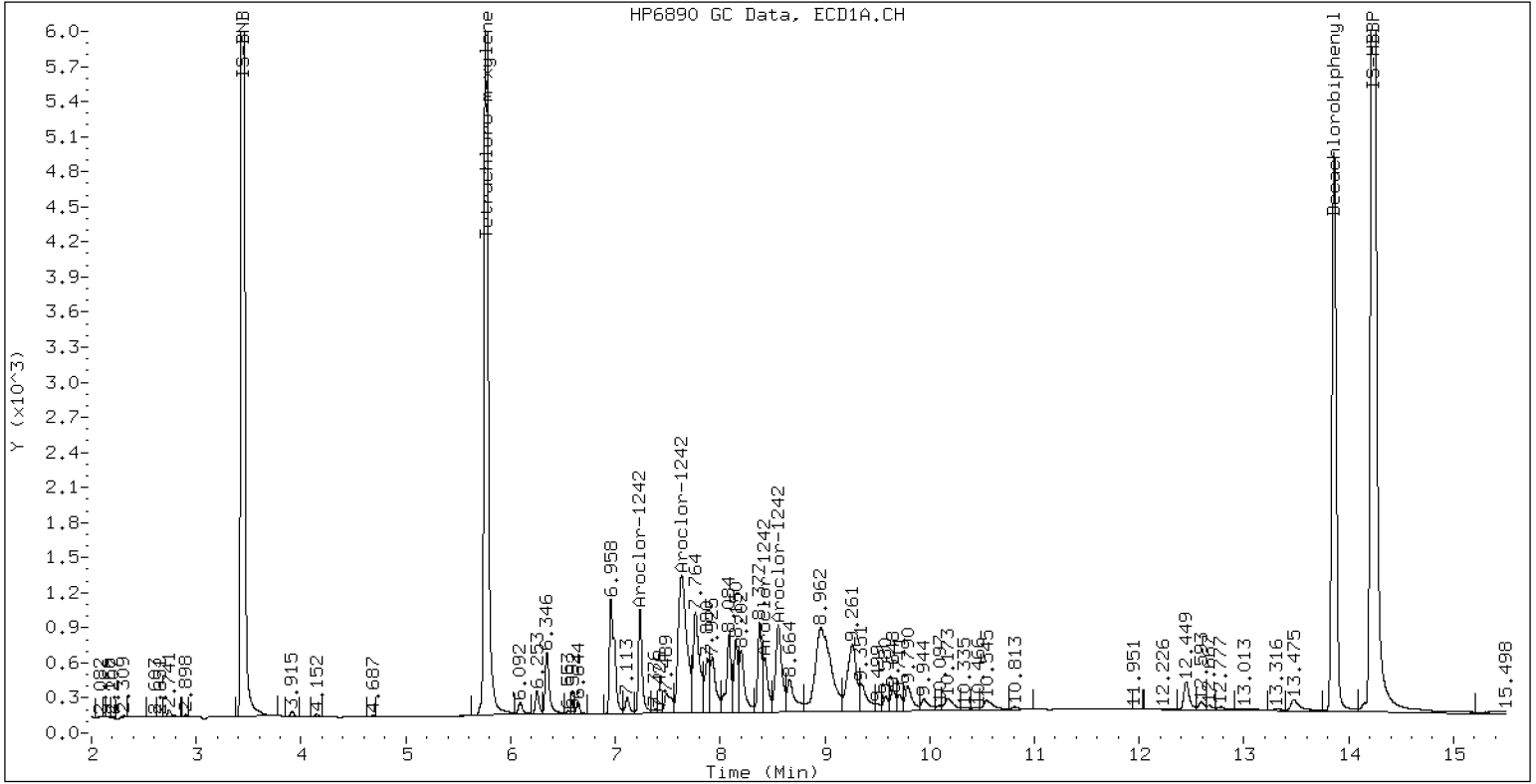
PCB-Form 10 Mod.



PCB Dual Column Chromatograms

ECD7-ZB5 AR1242CCV3

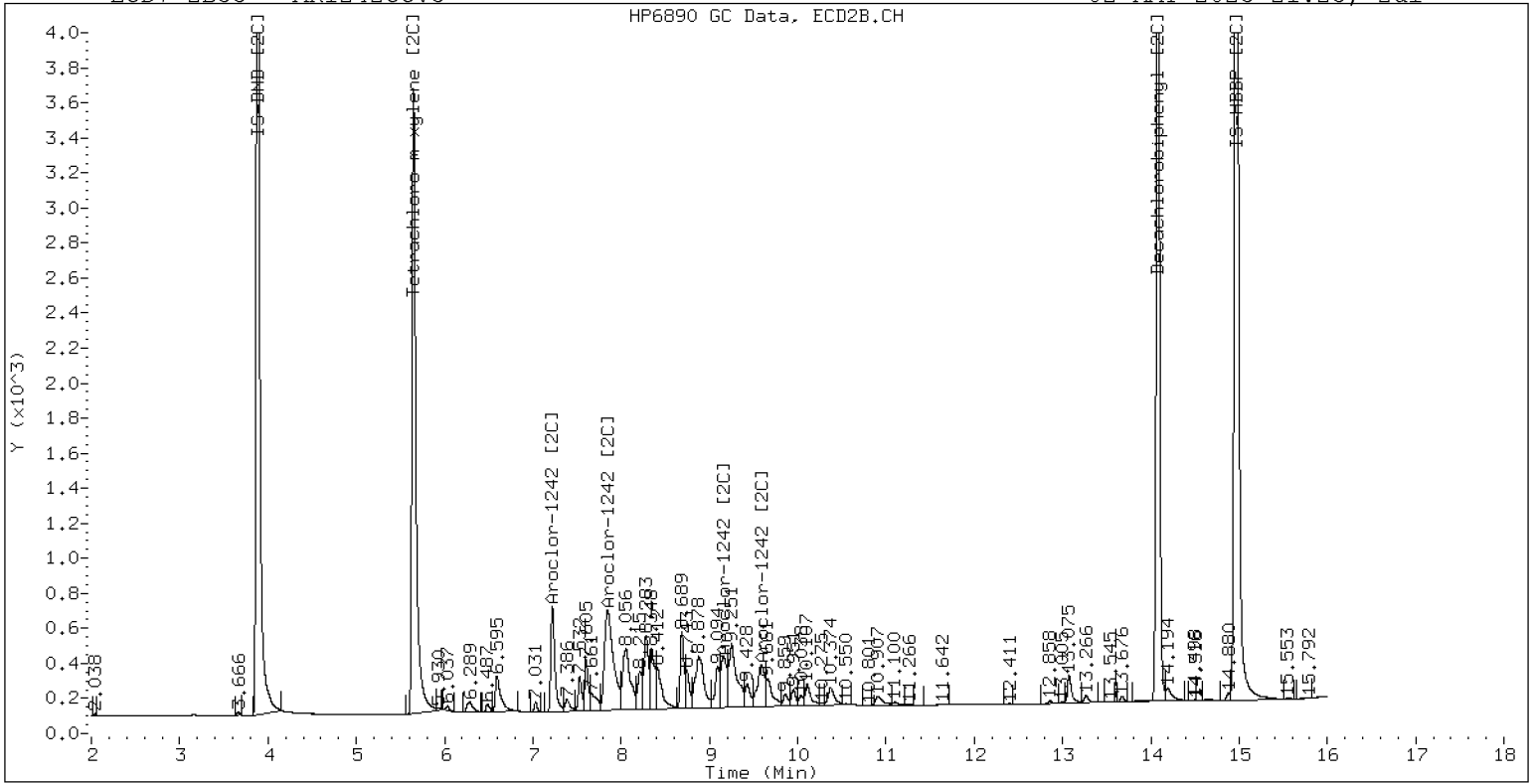
02-MAY-2023 21:23, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242CCV3

02-MAY-2023 21:23, 2ul



ZB-35 Manual Integration: NO



Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022331ECD7.D  
Data file 2: /230502.b/230502.b/05022331ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: AR1660.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1660CCV4  
Client ID:  
Injection Date: 02-MAY-2023 21:44  
Report Date: 05/03/2023 09:34  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

ZB5 Col		ZB35 Col		ZB5	ZB35	RPD	Compound/Flag		
RT	Shift Response	RT	Shift Response	on col	on col				
5.767	0.001	342238	5.649	0.000	188457	40.4	46.1	13.1	Tetrachloro-m-xylene
13.862	0.000	354673	14.081	-0.001	281429	40.0	40.5	1.2	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	579374	4.2
Hexabromobiphenyl	745660	817095	9.6

Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	291215	-16.4
Hexabromobiphenyl	429949	428987	-0.2

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.236	0.000	53422	247.8	1	7.222	-0.000	48446	307.2
Aroclor-1016	2	7.630	-0.002	174200	293.3	2	7.843	-0.005	104432	335.0
Aroclor-1016	3	7.764	-0.001	96624	237.7	3	8.043	-0.015	45483	237.1
Aroclor-1016	4	8.377	-0.002	54362	260.0	4	8.280	-0.003	35239	246.6
Total CollAve (4 peaks):				259.7		Total Col2Ave (4 peaks):				281.5 RPD = 8
Corrected Ave (3 peaks):				248.5		Corrected Ave (3 peaks):				263.6 RPD = 6

CalAmt %D: 3.9

CalAmt %D: 12.6

Aroclor-1260	1	11.017	0.001	122467	265.5	1	11.623	-0.001	75487	247.3
Aroclor-1260	2	11.334	0.000	121261	259.1	2	11.890	-0.000	201190	251.2
Aroclor-1260	3	11.710	-0.001	332846	274.1	3	12.405	-0.001	46404	254.4
Aroclor-1260	4	12.115	-0.003	137411	228.2	4	12.473	-0.001	132135	242.1
Aroclor-1260	5	12.215	-0.001	71839	260.0	NS	---			----
Total CollAve (5 peaks):				257.4		Total Col2Ave (4 peaks):				248.8 RPD = 3
Corrected Ave (4 peaks):				253.2		Corrected Ave (3 peaks):				246.9 RPD = 3

CalAmt %D: 2.9

CalAmt %D: -0.5

Total PCB Area Coll (5.866 - 13.762) = 3485750 Coll Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.749 - 13.983) = 1908113 Col2 Total PCB = 0.6 ppm\*

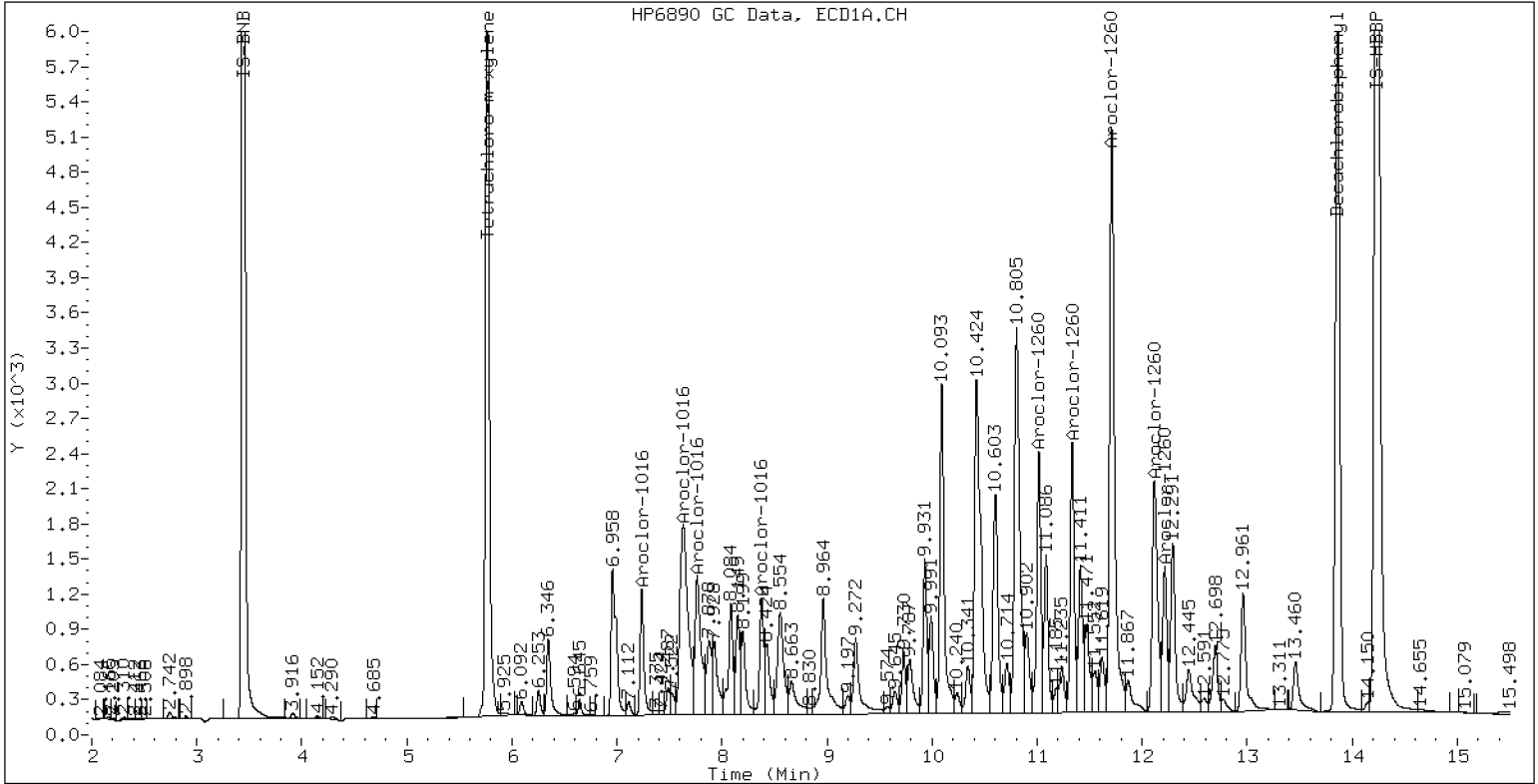
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV4

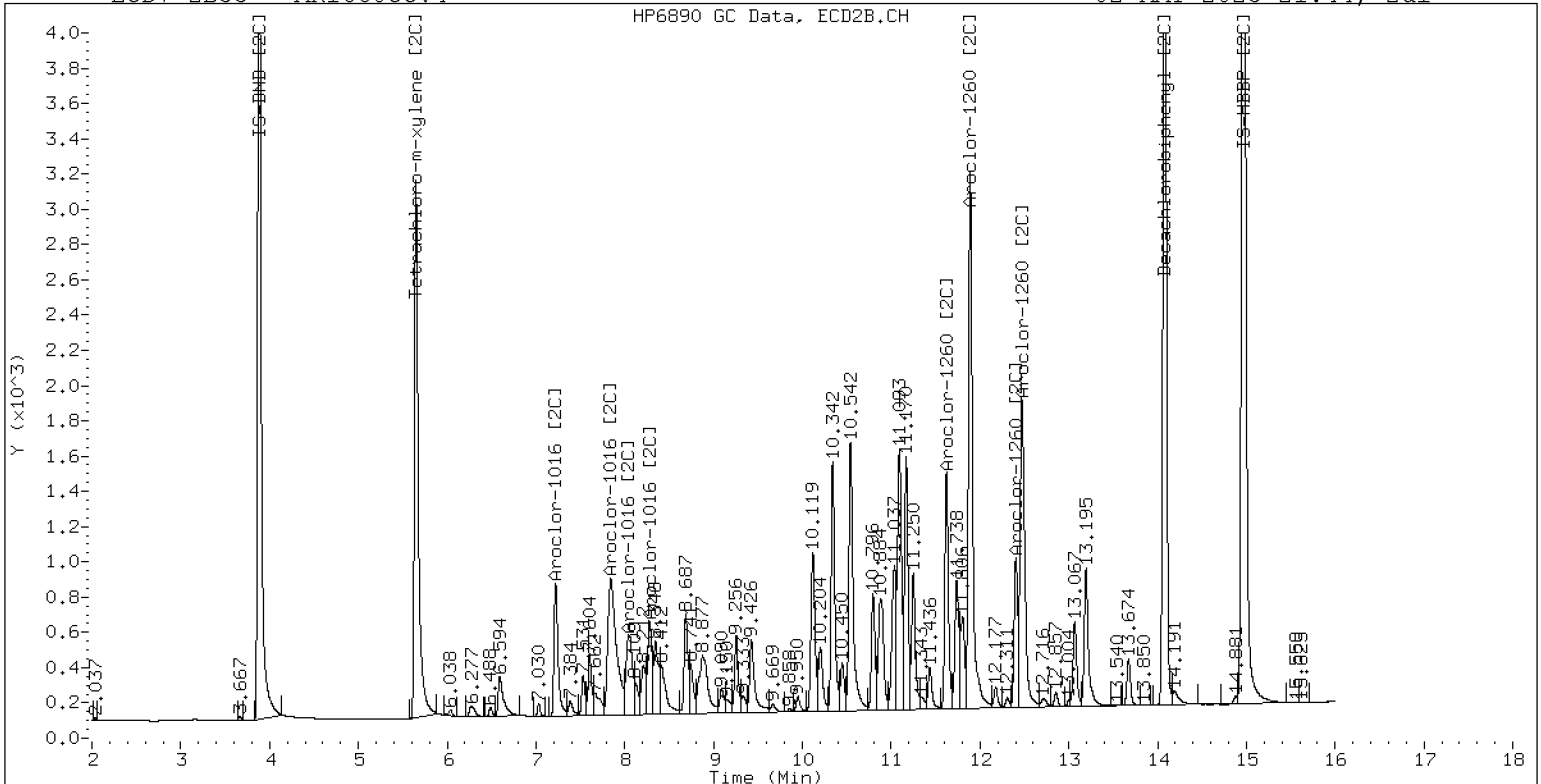
02-MAY-2023 21:44, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV4

02-MAY-2023 21:44, 2ul

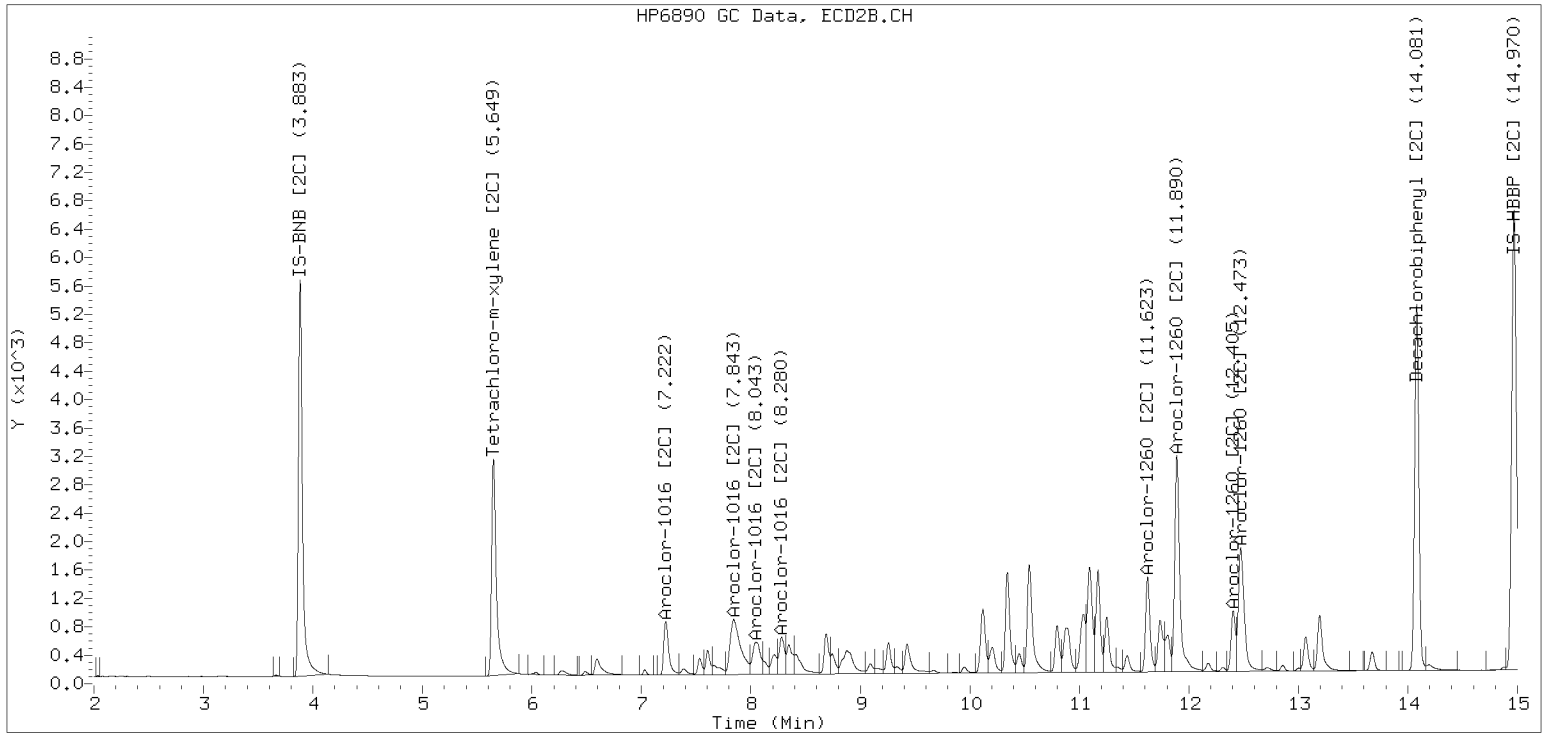


ZB-35 Manual Integration: YES

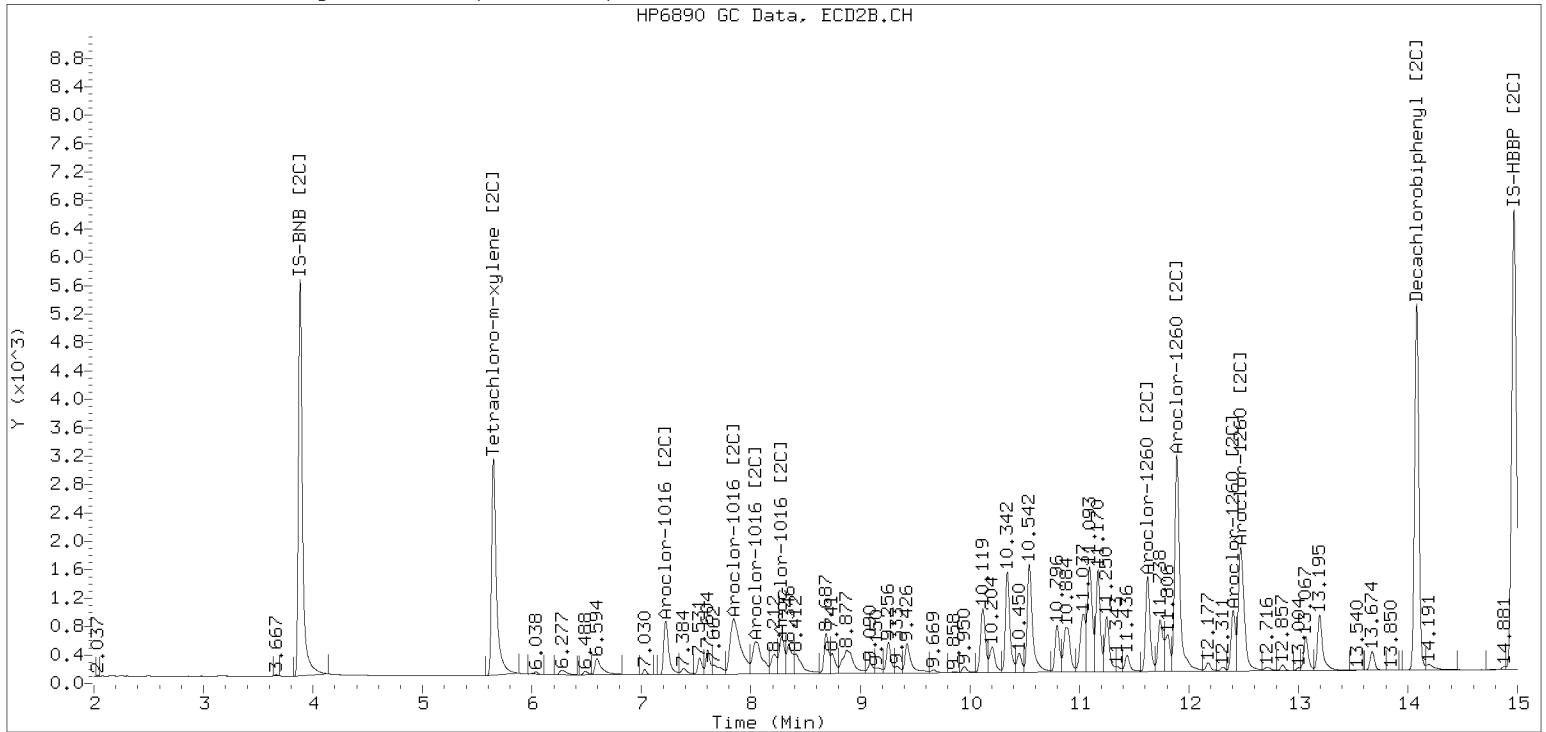
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230502.b/230502.b/05022331ECD7.D Injection Date: 02-MAY-2023

Manual Integration (After)



Processed Integration (Before)





CONTINUING CALIBRATION CHECK  
EPA 8082A

Laboratory: Analytical Resources, LLC                      SDG: 23D0063  
Client: Anchor QEA, LLC    Project: AOC5 MR Phase 1  
Instrument ID: ECD7    Calibration: GE00002  
Lab File ID: 05022351ECD7.D    Calibration Date: 04/28/2023  
Sequence: SLE0029    Injection Date: 05/03/23  
Lab Sample ID: SLE0029-CCV5    Injection Time: 04:41  
Sequence Name: AR1254CCV5

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	208	0.0702659	0.0623428		-16.8	+/-20
Aroclor-1254 (1)	A	250.00	205		0.0709024			
Aroclor-1254 (2)	A	250.00	207		0.0338912			
Aroclor-1254 (3)	A	250.00	216		0.0473197			
Aroclor-1254 (4)	A	250.00	211		0.0936261			
Aroclor-1254 (5)	A	250.00	201		0.0659748			
Aroclor 1254 [2C]	A	250.00	244	0.0739953	0.0716548		-2.4	+/-20
Aroclor-1254 (1) [2C]	A	250.00	251		0.0600651			
Aroclor-1254 (2) [2C]	A	250.00	255		0.0372022			
Aroclor-1254 (3) [2C]	A	250.00	238		0.0461614			
Aroclor-1254 (4) [2C]	A	250.00	236		0.0989080			
Aroclor-1254 (5) [2C]	A	250.00	240		0.1159374			
Decachlorobiphenyl	A	40.000	36.3	0.8671959	0.7879929		-9.3	+/-20
Tetrachlorometaxylene	A	40.000	38.7	1.1690340	1.1305690		-3.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	36.7	1.2954910	1.1886820		-8.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.2	1.1231530	1.1274930		0.5	+/-20

\* Values outside of QC limits

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022351ECD7.D  
Data file 2: /230502.b/230502.b/05022351ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: AR1254.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1254CCV5  
Client ID:  
Injection Date: 03-MAY-2023 04:41  
Report Date: 05/03/2023 09:35  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.001	327930	5.650	0.001	184282	38.7	40.2	3.7	Tetrachloro-m-xylene
13.862	0.001	234801	14.084	0.001	231727	36.3	36.7	1.0	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	580115	4.3
Hexabromobiphenyl	745660	595947	-20.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	326888	-6.2
Hexabromobiphenyl	429949	389889	-9.3

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023  
<- Indicates standard response outside Limits (-50 to +100%)



ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1254	1	9.272	0.000	128536	205.1	1	9.428	0.000	61358	251.1	
Aroclor-1254	2	9.356	0.000	61440	206.9	2	9.526	0.000	38003	255.1	
Aroclor-1254	3	9.646	0.000	85784	216.5	3	9.948	0.000	47155	238.4	
Aroclor-1254	4	9.786	0.000	169731	210.9	4	10.106	0.000	101037	235.9	
Aroclor-1254	5	10.161	0.000	119603	201.2	5	10.353	0.000	118433	240.6	
Total CollAve (5 peaks):				208.1		Total Col2Ave (5 peaks):				244.2	RPD = 16
Corrected Ave (4 peaks):				206.0		Corrected Ave (4 peaks):				241.5	RPD = 16
CalAmt %D:				-16.8		CalAmt %D:				-2.3	

Total PCB Area Col1 (5.866 - 13.762) = 1740905 Col1 Total PCB = 0.3 ppm\*

Total PCB Area Col2 (5.749 - 13.983) = 1003774 Col2 Total PCB = 0.3 ppm\*

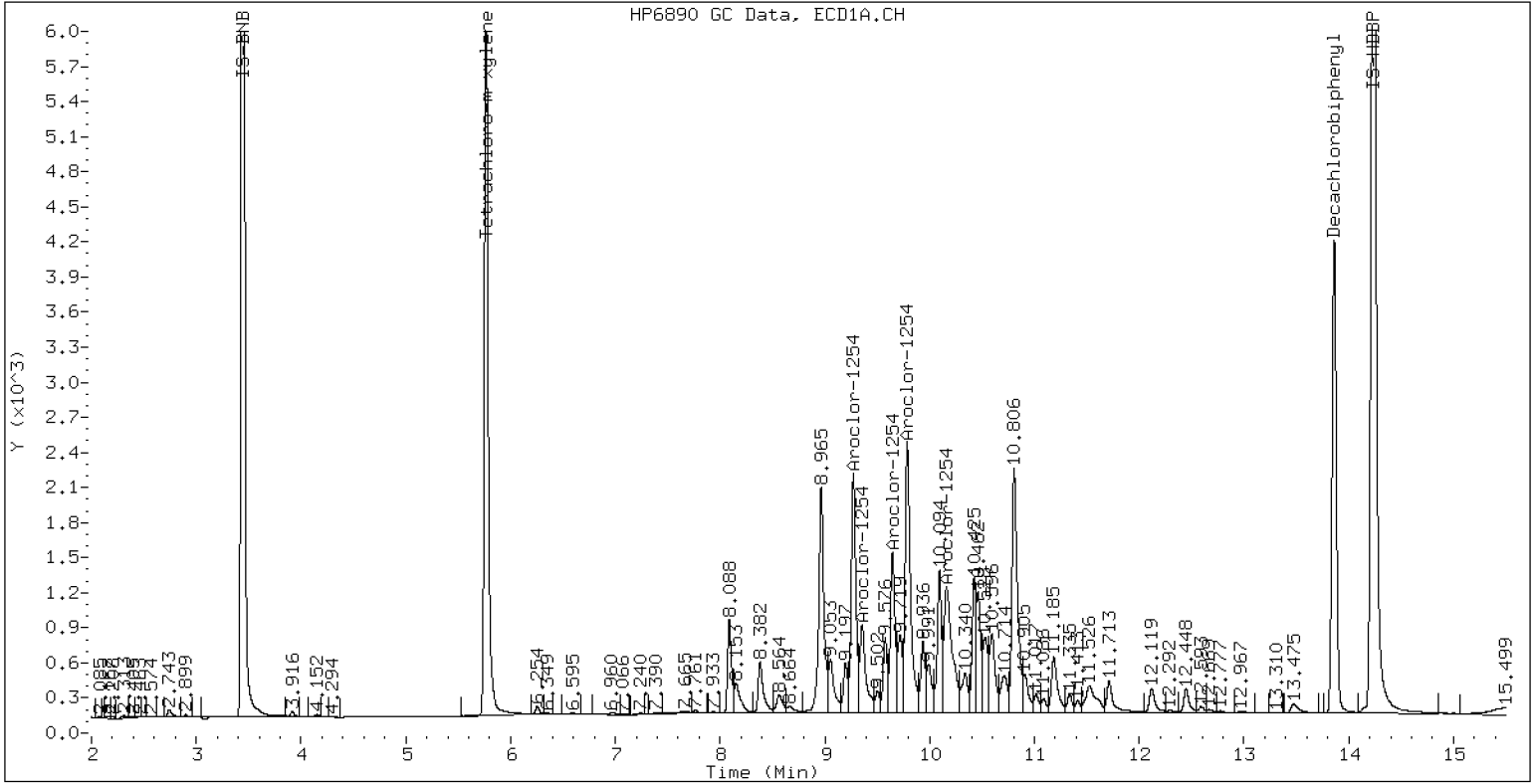
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1254CCV5

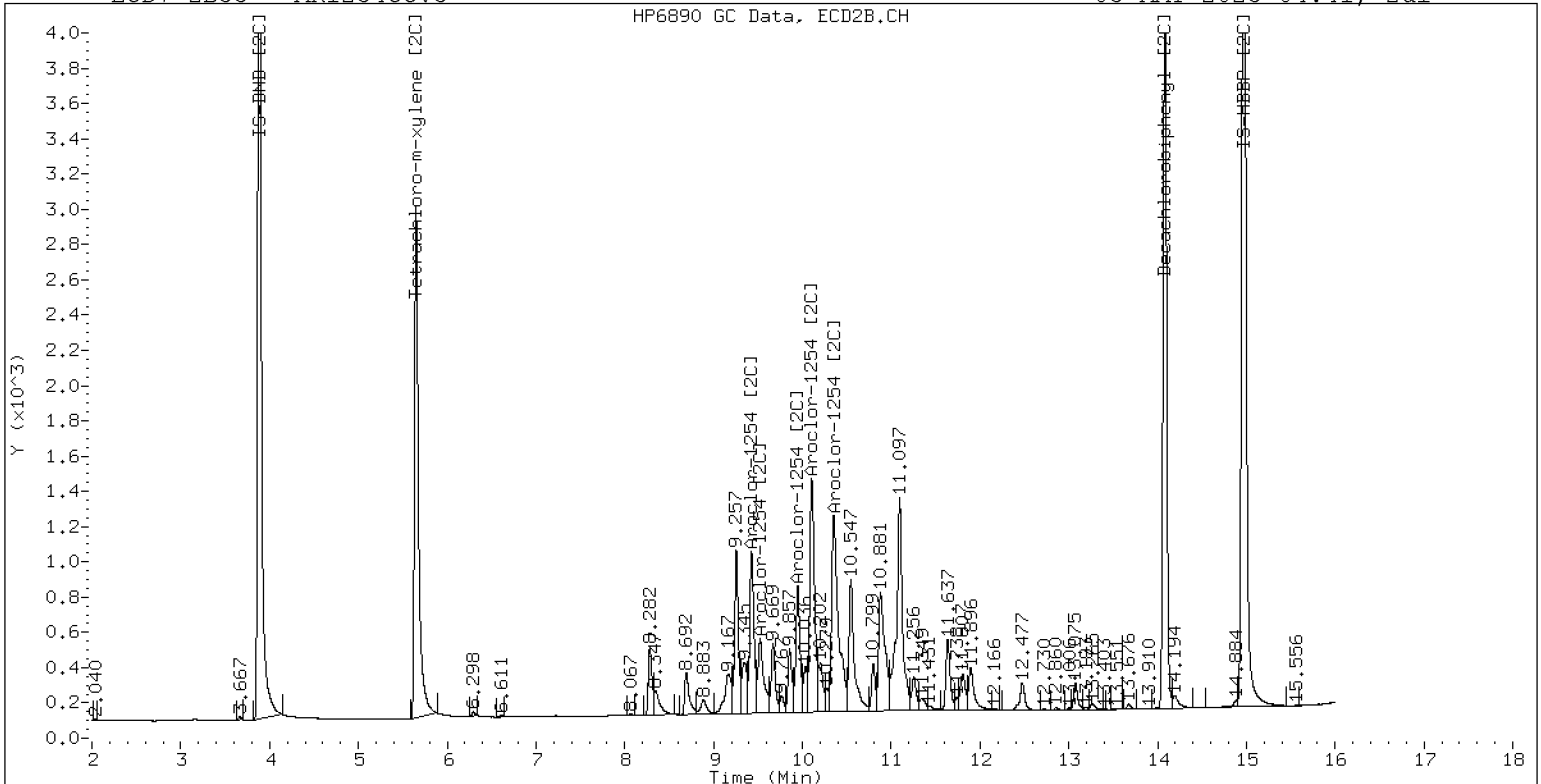
03-MAY-2023 04:41, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254CCV5

03-MAY-2023 04:41, 2ul



ZB-35 Manual Integration: NO



**CONTINUING CALIBRATION CHECK**  
**EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>ECD7</u>	Calibration:	<u>GE00002</u>
Lab File ID:	<u>05022352ECD7.D</u>	Calibration Date:	<u>04/28/2023</u>
Sequence:	<u>SLE0029</u>	Injection Date:	<u>05/03/23</u>
Lab Sample ID:	<u>SLE0029-CCV6</u>	Injection Time:	<u>05:02</u>
Sequence Name:	<u>AR1660CCV6</u>		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	256	0.0493584	0.0517993		2.5	+/-20
Aroclor-1016 (1)	A	250.00	244	0.0309351	0.0290830		-2.4	
Aroclor-1016 (2)	A	250.00	291	0.0820179	0.0955693		16.4	
Aroclor-1016 (3)	A	250.00	238	0.0555075	0.0534855		-4.8	
Aroclor-1016 (4)	A	250.00	252	0.0289731	0.0290593		0.8	
Aroclor 1016 [2C]	A	250.00	288	0.0554830	0.0651635		15.0	+/-20
Aroclor-1016 (1) [2C]	A	250.00	311	0.0433246	0.0538405		24.4	
Aroclor-1016 (2) [2C]	A	250.00	334	0.0856363	0.1144168		33.6	
Aroclor-1016 (3) [2C]	A	250.00	245	0.0537117	0.0516173		-2.0	
Aroclor-1016 (4) [2C]	A	250.00	260	0.0392594	0.0407793		4.0	
Aroclor 1260	A	250.00	248	0.0591826	0.0593902		-0.6	+/-20
Aroclor-1260 (1)	A	250.00	274	0.0451684	0.0495661		9.6	
Aroclor-1260 (2)	A	250.00	262	0.0458209	0.0479757		4.8	
Aroclor-1260 (3)	A	250.00	263	0.1189069	0.1250456		5.2	
Aroclor-1260 (4)	A	250.00	207	0.0589630	0.0488779		-17.2	
Aroclor-1260 (5)	A	250.00	236	0.0270539	0.0254856		-5.6	
Aroclor 1260 [2C]	A	250.00	238	0.0855158	0.0816236		-4.8	+/-20
Aroclor-1260 (1) [2C]	A	250.00	233	0.0569154	0.0531088		-6.8	
Aroclor-1260 (2) [2C]	A	250.00	243	0.1493590	0.1451160		-2.8	
Aroclor-1260 (3) [2C]	A	250.00	242	0.0340126	0.0329624		-3.2	
Aroclor-1260 (4) [2C]	A	250.00	234	0.1017762	0.0953071		-6.4	
Decachlorobiphenyl	A	40.000	38.9	0.8671959	0.8443898		-2.8	+/-20
Tetrachlorometaxylene	A	40.000	41.3	1.1690340	1.2074910		3.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.5	1.2954910	1.2785670		-1.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	46.0	1.1231530	1.2927510		15.0	+/-20

\* Values outside of QC limits

Analytical Resources Inc.  
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230502.b/05022352ECD7.D  
Data file 2: /230502.b/230502.b/05022352ECD7.D  
Method: \\target\share\chem4\ecd7.i\230502.b\PCB.m  
Compound Sublist: AR1660.sub  
Instrument, Inj. Vol.: ecd7.i, 2ul  
Quant Method: Internal Std

ARI ID: AR1660CCV6  
Client ID:  
Injection Date: 03-MAY-2023 05:02  
Report Date: 05/03/2023 09:35  
Matrix: NONE  
Dilution Factor: 1.0

SURROGATES

RT	ZB5 Col Shift	Response	RT	ZB35 Col Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.766	0.000	357872	5.649	0.000	193519	41.3	46.0	10.8	Tetrachloro-m-xylene
13.862	0.000	354322	14.083	0.000	294899	38.9	39.5	1.4	Decachlorobiphenyl

\* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	556262	592753	6.6
Hexabromobiphenyl	745660	839238	12.5
Column 2			
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	348488	299391	-14.1
Hexabromobiphenyl	429949	461296	7.3

\* Standard Areas taken from Initial Cal Level 3  
Initial Calibration Date: 28-APR-2023

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.236	0.000	53872	244.3	1	7.222	0.000	50373	310.7
Aroclor-1016	2	7.632	0.000	177028	291.3	2	7.848	0.000	107048	334.0
Aroclor-1016	3	7.765	0.000	99074	238.3	3	8.058	0.000	48293	244.9
Aroclor-1016	4	8.379	0.000	53828	251.7	4	8.283	0.000	38153	259.7
Total CollAve (4 peaks):				256.4		Total Col2Ave (4 peaks):				287.3 RPD = 11
Corrected Ave (3 peaks):				244.7		Corrected Ave (3 peaks):				271.8 RPD = 10
CalAmt %D:				2.5		CalAmt %D:				14.9
Aroclor-1260	1	11.016	0.000	129993	274.3	1	11.624	0.000	76559	233.3
Aroclor-1260	2	11.334	0.000	125822	261.8	2	11.891	0.000	209192	242.9
Aroclor-1260	3	11.711	0.000	327947	262.9	3	12.406	0.000	47517	242.3
Aroclor-1260	4	12.118	0.000	128188	207.2	4	12.475	0.000	137390	234.1
Aroclor-1260	5	12.216	0.000	66839	235.5	NS	---			----
Total CollAve (5 peaks):				248.4		Total Col2Ave (4 peaks):				238.1 RPD = 4
Corrected Ave (4 peaks):				241.9		Corrected Ave (3 peaks):				236.6 RPD = 2
CalAmt %D:				-0.7		CalAmt %D:				-4.7

Total PCB Area Coll (5.866 - 13.762) = 3550802 Coll Total PCB = 0.5 ppm\*

Total PCB Area Col2 (5.749 - 13.983) = 1961601 Col2 Total PCB = 0.6 ppm\*

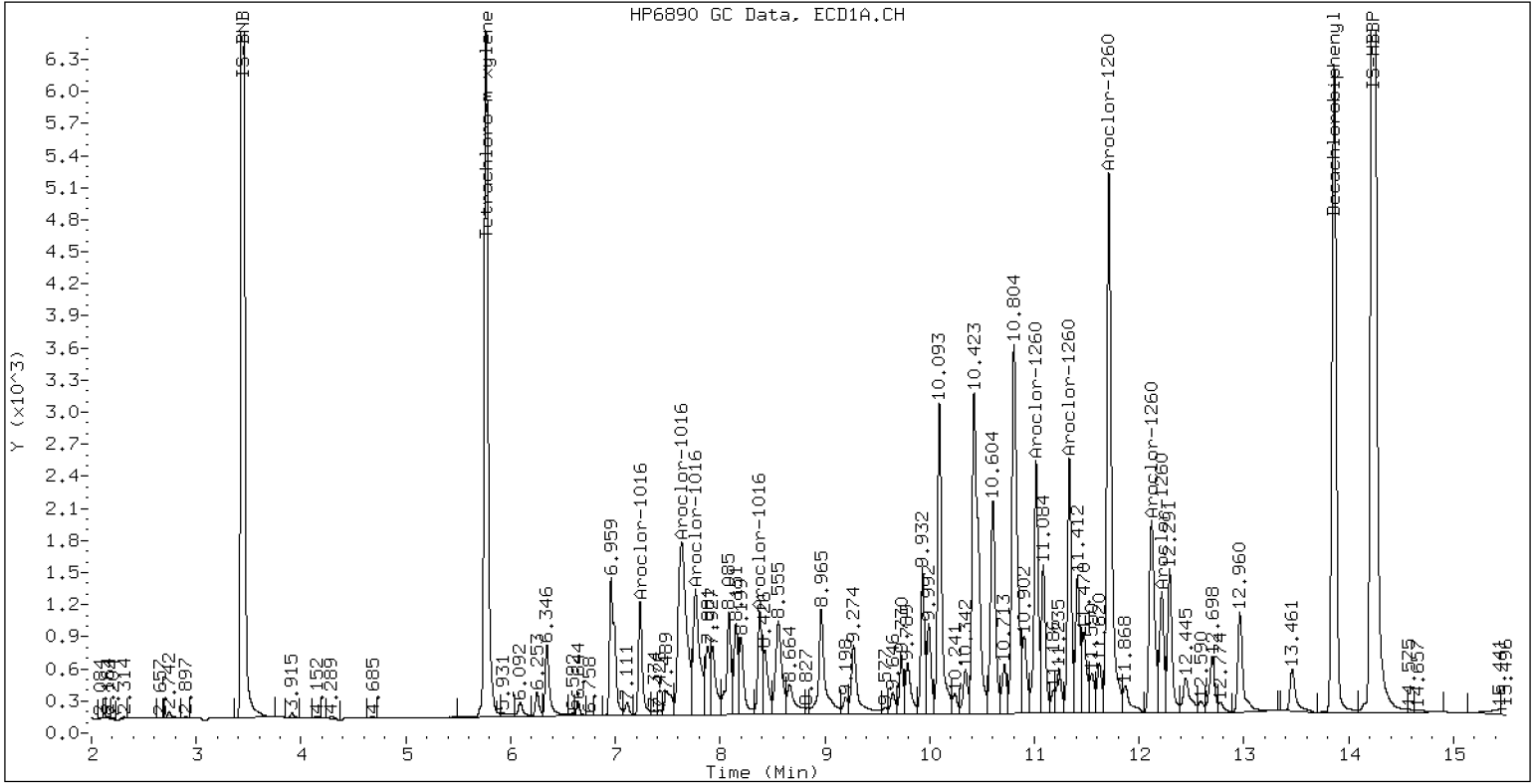
\* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

# PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV6

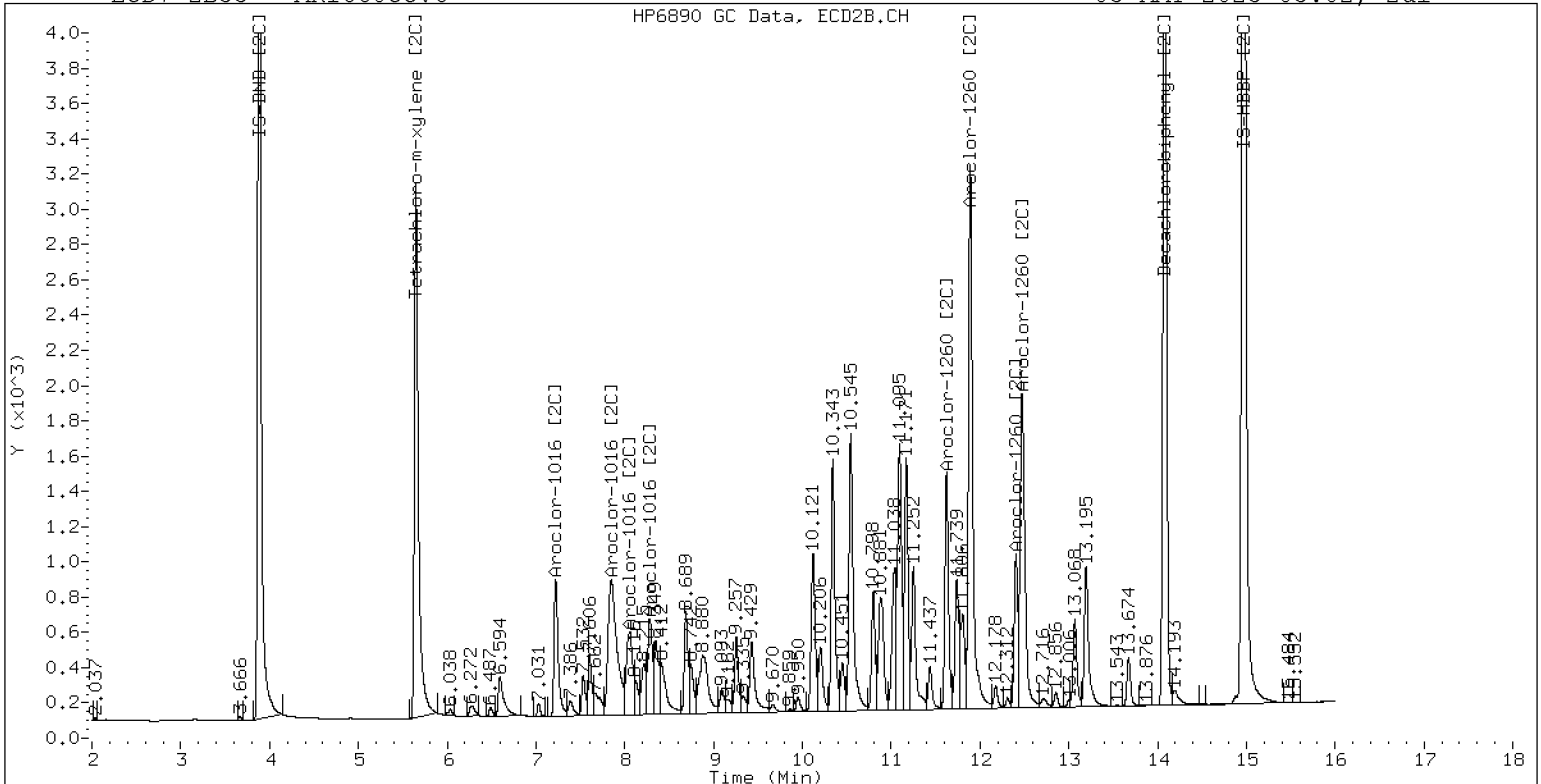
03-MAY-2023 05:02, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV6

03-MAY-2023 05:02, 2ul

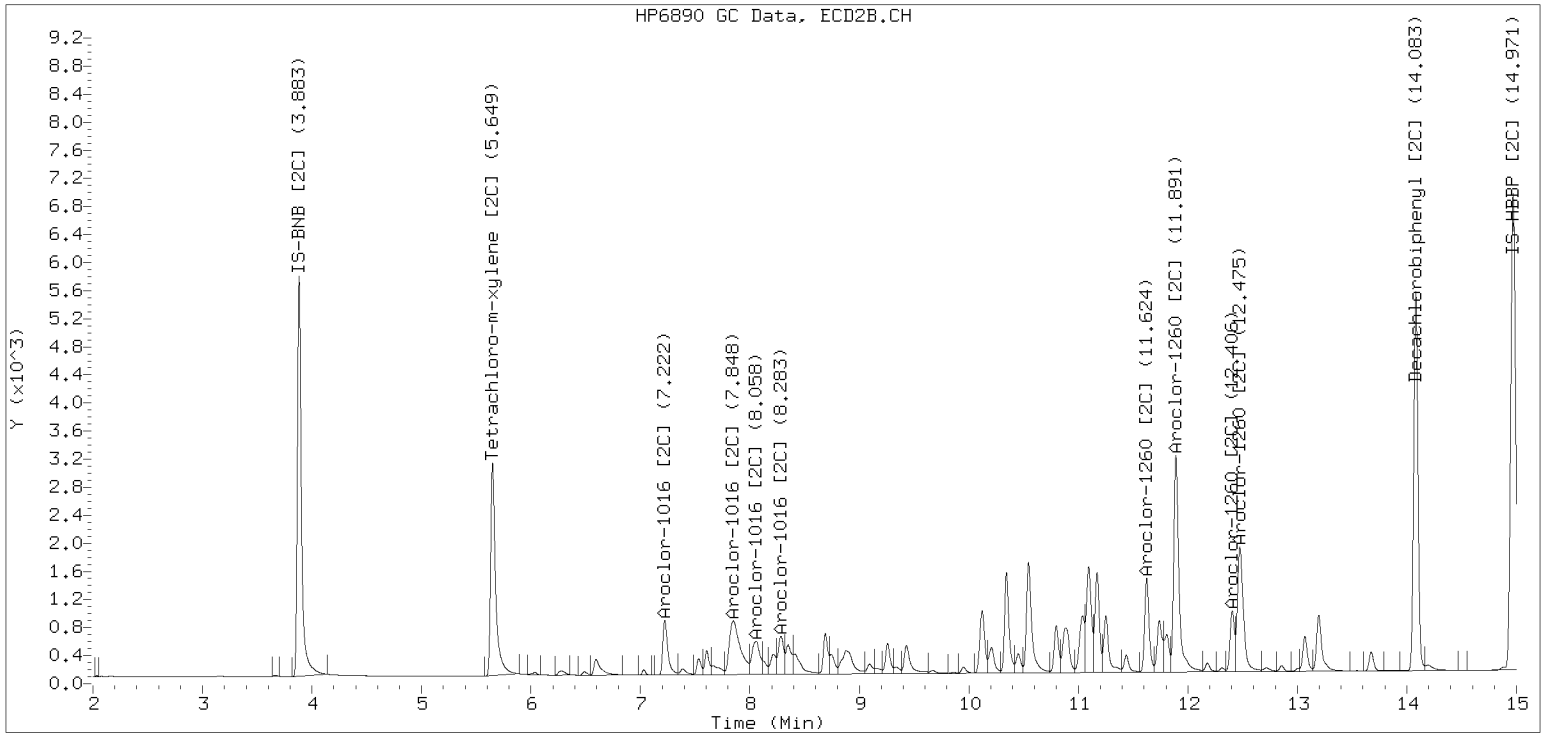


ZB-35 Manual Integration: YES

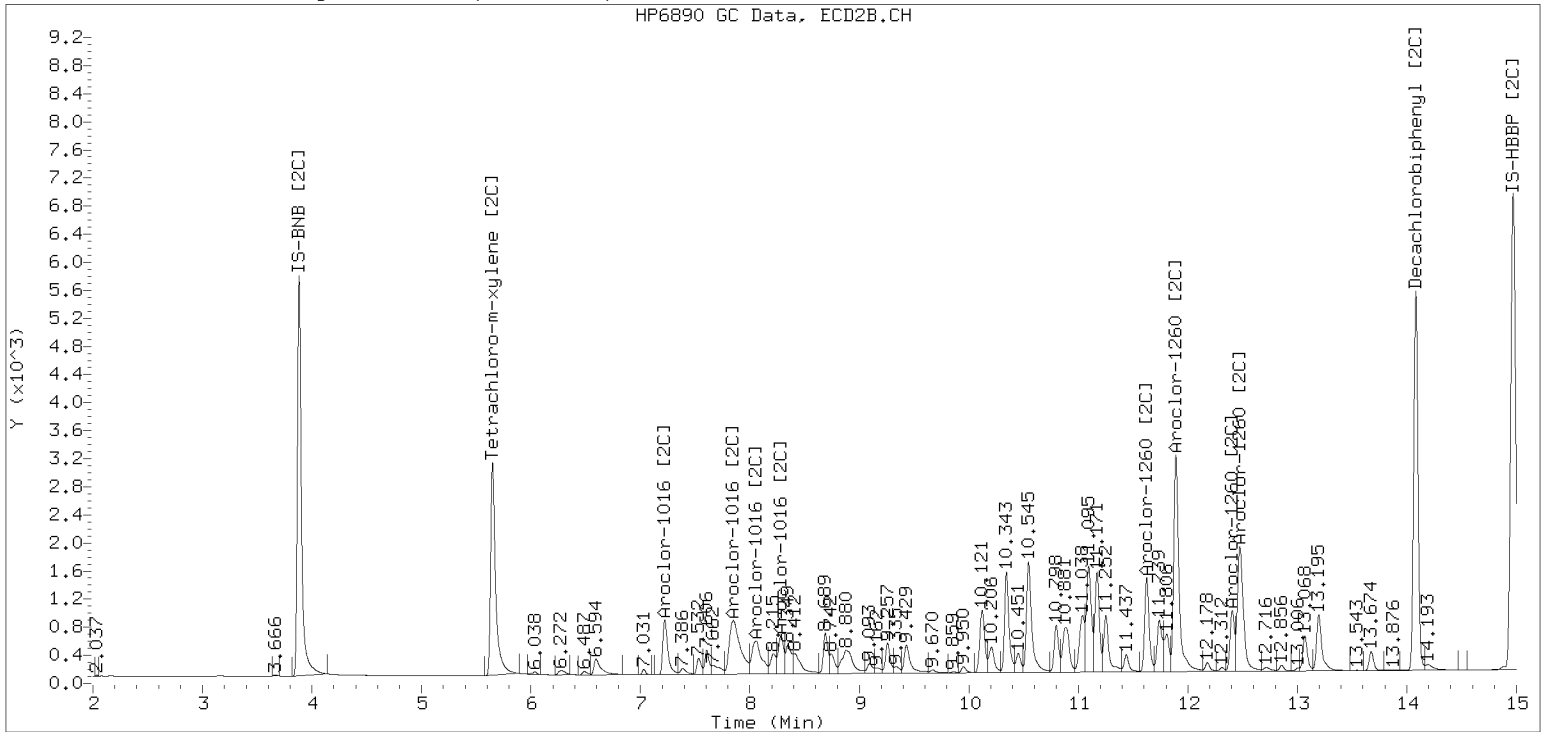
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230502.b/230502.b/05022352ECD7.D Injection Date: 03-MAY-2023

Manual Integration (After)



Processed Integration (Before)





Dual Column  
ANALYSIS BATCH (SEQUENCE) SUMMARY  
EPA 8082A

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLD0427

Instrument: ECD7

Calibration: GE00002

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SLD0427-CAL1	04282304ECD7.D	04282304ECD7.D	NA	04/28/23 12:20
Cal Standard	SLD0427-CAL2	04282305ECD7.D	04282305ECD7.D	NA	04/28/23 12:41
Cal Standard	SLD0427-CAL3	04282306ECD7.D	04282306ECD7.D	NA	04/28/23 13:02
Cal Standard	SLD0427-CAL4	04282307ECD7.D	04282307ECD7.D	NA	04/28/23 13:23
Cal Standard	SLD0427-CAL5	04282308ECD7.D	04282308ECD7.D	NA	04/28/23 13:43
Cal Standard	SLD0427-CAL6	04282309ECD7.D	04282309ECD7.D	NA	04/28/23 14:04
Cal Standard	SLD0427-CAL7	04282310ECD7.D	04282310ECD7.D	NA	04/28/23 14:25
Cal Standard	SLD0427-CAL8	04282311ECD7.D	04282311ECD7.D	NA	04/28/23 14:46
Cal Standard	SLD0427-CAL9	04282312ECD7.D	04282312ECD7.D	NA	04/28/23 15:07
Cal Standard	SLD0427-CALA	04282313ECD7.D	04282313ECD7.D	NA	04/28/23 15:28
Cal Standard	SLD0427-CALB	04282314ECD7.D	04282314ECD7.D	NA	04/28/23 15:49
Secondary Cal Check	SLD0427-SCV1	04282315ECD7.D	04282315ECD7.D	NA	04/28/23 16:09
Secondary Cal Check	SLD0427-SCV2	04282316ECD7.D	04282316ECD7.D	NA	04/28/23 16:30
Secondary Cal Check	SLD0427-SCV3	04282317ECD7.D	04282317ECD7.D	NA	04/28/23 16:51
Secondary Cal Check	SLD0427-SCV4	04282318ECD7.D	04282318ECD7.D	NA	04/28/23 17:12
Secondary Cal Check	SLD0427-SCV5	04282319ECD7.D	04282319ECD7.D	NA	04/28/23 17:33
Secondary Cal Check	SLD0427-SCV6	04282320ECD7.D	04282320ECD7.D	NA	04/28/23 17:54





### ANALYSIS SEQUENCE

**SLD0427**

Instrument: ECD7  
Calibration ID: GE00002

**Printed: 5/1/2023 12:46:09PM**

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0427-CAL1	QC		1		L000856	L000844		
SLD0427-CAL2	QC		2		L000859	L000844		
SLD0427-CAL3	QC		3		L000858	L000844		
SLD0427-CAL4	QC		4		L000731	L000844		
SLD0427-CAL5	QC		5		L000857	L000844		
SLD0427-CAL6	QC		6		L000855	L000844		
SLD0427-CAL7	QC		7		L000860	L000844		
SLD0427-CAL8	QC		8		L000861	L000844		
SLD0427-CAL9	QC		9		L000862	L000844		
SLD0427-CALA	QC		10		L000863	L000844		
SLD0427-CALB	QC		11		L000864	L000844		
SLD0427-SCV1	QC		12		L002065	L000844		
SLD0427-SCV2	QC		13		L003970	L000844		
SLD0427-SCV3	QC		14		L002066	L000844		
SLD0427-SCV4	QC		15		L002067	L000844		
SLD0427-SCV5	QC		16		L002068	L000844		
SLD0427-SCV6	QC		17		L002069	L000844		

\_\_\_\_\_  
Samples Loaded By                                  Date

\_\_\_\_\_  
Data Processed By                                  Date

## GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230428.b

	Inject	Date/Time	Filename	DF	LabID	ClientID
1	28-APR-2023	09:39	04282301ECD7.D	1	AR1660	
2	28-APR-2023	11:28	04282302ECD7.D	1		
3	28-APR-2023	11:59	04282303ECD7.D	1	IB	
4	28-APR-2023	12:20	04282304ECD7.D	1	0.25PPMAR1660	
5	28-APR-2023	12:41	04282305ECD7.D	1	0.02PPMAR1660	
6	28-APR-2023	13:02	04282306ECD7.D	1	0.05PPMAR1660	
7	28-APR-2023	13:23	04282307ECD7.D	1	1.0PPMAR1660	
8	28-APR-2023	13:43	04282308ECD7.D	1	0.1PPMAR1660	
9	28-APR-2023	14:04	04282309ECD7.D	1	0.5PPMAR1660	
10	28-APR-2023	14:25	04282310ECD7.D	1	0.25PPMAR1242	
11	28-APR-2023	14:46	04282311ECD7.D	1	0.25PPMAR1248	
12	28-APR-2023	15:07	04282312ECD7.D	1	0.25PPMAR1254	
13	28-APR-2023	15:28	04282313ECD7.D	1	0.25PPMAR2162	
14	28-APR-2023	15:49	04282314ECD7.D	1	0.25PPMAR3268	
15	28-APR-2023	16:09	04282315ECD7.D	1	AR1660SCV	
16	28-APR-2023	16:30	04282316ECD7.D	1	AR1242SCV	
17	28-APR-2023	16:51	04282317ECD7.D	1	AR1248SCV	
18	28-APR-2023	17:12	04282318ECD7.D	1	AR1254SCV	
19	28-APR-2023	17:33	04282319ECD7.D	1	AR2162SCV	
20	28-APR-2023	17:54	04282320ECD7.D	1	AR3268SCV	
21	28-APR-2023	18:15	04282321ECD7.D	1	DDTS	
22	28-APR-2023	18:35	04282322ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230428.b

ARI Job No.: AR16 Method: PCB.m Instrument: ecd7.i Date: 28-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0939	04282301ECD7.D	AR1660		1	NO MANUAL INTEGRATION
1128	04282302ECD7.D			1	NO MANUAL INTEGRATION
1159	04282303ECD7.D	IB		1	NO MANUAL INTEGRATION
1220	04282304ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1241	04282305ECD7.D	0.02PPMAR1660		1	Aroclor-1016,
1302	04282306ECD7.D	0.05PPMAR1660		1	Aroclor-1016,
1323	04282307ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
1343	04282308ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1404	04282309ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1425	04282310ECD7.D	0.25PPMAR1242		1	Aroclor-1242,
1446	04282311ECD7.D	0.25PPMAR1248		1	Aroclor-1248,
1507	04282312ECD7.D	0.25PPMAR1254		1	Aroclor-1254,
1528	04282313ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
1549	04282314ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
1609	04282315ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
1630	04282316ECD7.D	AR1242SCV		1	Aroclor-1242,
1651	04282317ECD7.D	AR1248SCV		1	Aroclor-1016, Aroclor-1242, Aroclor-1248,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230428.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1712	04282318ECD7.D	AR1254SCV		1	Aroclor-1254,
1733	04282319ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
1754	04282320ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
1815	04282321ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1835	04282322ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
0939	04282301ECD7.D	AR1660		1	NO MANUAL INTEGRATION
1128	04282302ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1159	04282303ECD7.D	IB		1	NO MANUAL INTEGRATION
1220	04282304ECD7.D	0.25PPMAR1660		1	IS-BNB [2C],
1241	04282305ECD7.D	0.02PPMAR1660		1	Aroclor-1016 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
1302	04282306ECD7.D	0.05PPMAR1660		1	Aroclor-1016 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
1323	04282307ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
1343	04282308ECD7.D	0.1PPMAR1660		1	Aroclor-1016 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
1404	04282309ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1425	04282310ECD7.D	0.25PPMAR1242		1	Aroclor-1242 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
1446	04282311ECD7.D	0.25PPMAR1248		1	Aroclor-1248 [2C],
1507	04282312ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
1528	04282313ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230428.b\230428.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1549	04282314ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
1609	04282315ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
1630	04282316ECD7.D	AR1242SCV		1	Aroclor-1242 [2C],
1651	04282317ECD7.D	AR1248SCV		1	Aroclor-1248 [2C],
1712	04282318ECD7.D	AR1254SCV		1	Aroclor-1254 [2C],
1733	04282319ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
1754	04282320ECD7.D	AR3268SCV		1	Aroclor-1232 [2C], Aroclor-1242 [2C], Aroclor-1248 [2C],
1815	04282321ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1835	04282322ECD7.D	DDT BD		1	NO MANUAL INTEGRATION

Security Status Report

Date: 01-May-2023 12:34

04282301ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282302ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282303ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282304ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282305ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282306ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282307ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282308ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282309ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282310ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282311ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282312ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282313ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282314ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282315ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282316ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282317ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282318ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282319ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282320ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282321ECD7.D	Data Locked	richardl, 01-May-2023 12:34
04282322ECD7.D	Data Locked	richardl, 01-May-2023 12:34



**Dual Column**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8082A**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0029</u>	Instrument:	<u>ECD7</u>
		Calibration:	<u>GE00002</u>

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Initial Cal Check	SLE0029-ICV1	05022307ECD7.D	05022307ECD7.D	NA	05/02/23 13:23
Initial Cal Check	SLE0029-ICV2	05022308ECD7.D	05022308ECD7.D	NA	05/02/23 13:44
Calibration Check	SLE0029-CCV1	05022314ECD7.D	05022314ECD7.D	NA	05/02/23 15:49
Calibration Check	SLE0029-CCV2	05022315ECD7.D	05022315ECD7.D	NA	05/02/23 16:10
Blank	BLD0300-BLK1	05022316ECD7.D	05022316ECD7.D	Solid	05/02/23 16:31
LCS	BLD0300-BS1	05022317ECD7.D	05022317ECD7.D	Solid	05/02/23 16:52
LCS Dup	BLD0300-BSD1	05022318ECD7.D	05022318ECD7.D	Solid	05/02/23 17:13
Reference	BLD0300-SRM1	05022319ECD7.D	05022319ECD7.D	Solid	05/02/23 17:33
LDW23-SS1818	23D0063-01	05022326ECD7.D	05022326ECD7.D	Solid	05/02/23 19:59
LDW23-SC1818	23D0063-02	05022327ECD7.D	05022327ECD7.D	Solid	05/02/23 20:20
LDW23-SS1819	23D0063-03	05022328ECD7.D	05022328ECD7.D	Solid	05/02/23 20:41
LDW23-SC1819	23D0063-04	05022329ECD7.D	05022329ECD7.D	Solid	05/02/23 21:02
Calibration Check	SLE0029-CCV3	05022330ECD7.D	05022330ECD7.D	NA	05/02/23 21:23
Calibration Check	SLE0029-CCV4	05022331ECD7.D	05022331ECD7.D	NA	05/02/23 21:44
Calibration Check	SLE0029-CCV5	05022351ECD7.D	05022351ECD7.D	NA	05/03/23 04:41
Calibration Check	SLE0029-CCV6	05022352ECD7.D	05022352ECD7.D	NA	05/03/23 05:02



**ANALYSIS SEQUENCE**

**SLE0029**

Instrument: ECD7  
Calibration ID: GE00002

Printed: 5/3/2023 10:17:49AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLE0029-ICV1	QC		1		L000862	L000844		
SLE0029-ICV2	QC		2		L000856	L000844		
BLE0011-BLK1	QC		3			L000844		
BLE0011-BS1	QC		4			L000844		
BLE0011-BSD1	QC		5			L000844		
23D0677-01	082A PCB Medium Level Oil	A 01	6			L000844	The Boeing Company [Auburn]	
SLE0029-CCV1	QC		7		L000861	L000844		
SLE0029-CCV2	QC		8		L000856	L000844		
BLD0300-BLK1	QC		9			L000844		
BLD0300-BS1	QC		10			L000844		
BLD0300-BSD1	QC		11			L000844		
BLD0300-SRM1	QC		12			L000844		
23D0037-01	8082A PCB Solid 4	A 03	13			L000844	Anchor QEA, LLC	
23D0037-02	8082A PCB Solid 4	A 03	14			L000844	Anchor QEA, LLC	
23D0037-03	8082A PCB Solid 4	A 03	15			L000844	Anchor QEA, LLC	
BLD0300-MS1	QC		16			L000844		
BLD0300-MSD1	QC		17			L000844		
23D0037-04	8082A PCB Solid 4	A 03	18			L000844	Anchor QEA, LLC	
23D0063-01	8082A PCB Solid 4	A 03	19			L000844	Anchor QEA, LLC	
23D0063-02	8082A PCB Solid 4	A 03	20			L000844	Anchor QEA, LLC	
23D0063-03	8082A PCB Solid 4	A 03	21			L000844	Anchor QEA, LLC	

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_





**ANALYSIS SEQUENCE**

**SLE0029**

Instrument: ECD7  
Calibration ID: GE00002

Printed: 5/3/2023 10:17:49AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
23D0063-04	8082A PCB Solid 4	A 01	22			L000844	Anchor QEA, LLC	
SLE0029-CCV3	QC		23		L000860	L000844		
SLE0029-CCV4	QC		24		L000856	L000844		
BLD0328-BLK1	QC		25			L000844		
BLD0328-BS1	QC		26			L000844		
BLD0328-BSD1	QC		27			L000844		
BLD0328-SRM1	QC		28			L000844		
23D0136-01	8082A PCB Solid 4	A 03	29			L000844	Anchor QEA, LLC	
23D0136-02	8082A PCB Solid 4	A 02	30			L000844	Anchor QEA, LLC	
BLD0328-MS1	QC		31			L000844		
BLD0328-MSD1	QC		32			L000844		
23D0136-03	8082A PCB Solid 4	A 02	33			L000844	Anchor QEA, LLC	
23D0136-04	8082A PCB Solid 4	A 01	34			L000844	Anchor QEA, LLC	
BLD0531-BLK1	QC		35			L000844		
BLD0531-BS1	QC		36			L000844		
BLD0531-BSD1	QC		37			L000844		
23D0383-01	PCB (20 ug/kg) or (MTCA 0.	A 01	38			L000844	Nucor Steel Corporation	
23D0384-01	PCB (20 ug/kg) or (MTCA 0.	B 01	39			L000844	Nucor Steel Corporation	
23D0420-01	PCB (20 ug/kg) or (MTCA 0.	C 01	40			L000844	Nucor Steel Corporation	
23D0421-01	PCB (20 ug/kg) or (MTCA 0.	C 01	41			L000844	Nucor Steel Corporation	
23D0437-01	PCB (20 ug/kg) or (MTCA 0.	E 01	42			L000844	Seattle Public Utilities	

Samples Loaded By \_\_\_\_\_ Date \_\_\_\_\_

Data Processed By \_\_\_\_\_ Date \_\_\_\_\_



**ANALYSIS SEQUENCE**

**SLE0029**

Instrument: ECD7  
Calibration ID: GE00002

**Printed: 5/3/2023 10:17:49AM**

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
23D0437-02	PCB (20 ug/kg) or (MTCA 0.	F 01	43			L000844	Seattle Public Utilities	
SLE0029-CCV5	QC		44		L000862	L000844		
SLE0029-CCV6	QC		45		L000856	L000844		

\_\_\_\_\_  
Samples Loaded By Date

\_\_\_\_\_  
Data Processed By Date

## GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230502.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	02-MAY-2023 11:18	05022301ECD7.D	1	AR1660	
2	02-MAY-2023 11:38	05022302ECD7.D	1	AR1254	
3	02-MAY-2023 11:59	05022303ECD7.D	1	AR1248	
4	02-MAY-2023 12:20	05022304ECD7.D	1	AR1242	
5	02-MAY-2023 12:41	05022305ECD7.D	1	AR1660	
6	02-MAY-2023 13:02	05022306ECD7.D	1	DDTS	
7	02-MAY-2023 13:23	05022307ECD7.D	1	AR1254ICV1	
8	02-MAY-2023 13:44	05022308ECD7.D	1	AR1660ICV2	
9	02-MAY-2023 14:05	05022309ECD7.D	1	BLE0011-BLK1	
10	02-MAY-2023 14:26	05022310ECD7.D	1	BLE0011-BS1	
11	02-MAY-2023 14:46	05022311ECD7.D	1	BLE0011-BSD1	
12	02-MAY-2023 15:07	05022312ECD7.D	1	23D0677-01	
13	02-MAY-2023 15:28	05022313ECD7.D	5	23D0677-01RE1	
14	02-MAY-2023 15:49	05022314ECD7.D	1	AR1248CCV1	
15	02-MAY-2023 16:10	05022315ECD7.D	1	AR1660CCV2	
16	02-MAY-2023 16:31	05022316ECD7.D	1	BLD0300-BLK1	
17	02-MAY-2023 16:52	05022317ECD7.D	1	BLD0300-BS1	
18	02-MAY-2023 17:13	05022318ECD7.D	1	BLD0300-BSD1	
19	02-MAY-2023 17:33	05022319ECD7.D	1	BLD0300-SRM1	
20	02-MAY-2023 17:54	05022320ECD7.D	5	23D0037-01RE1	
21	02-MAY-2023 18:15	05022321ECD7.D	5	23D0037-02RE1	
22	02-MAY-2023 18:36	05022322ECD7.D	5	23D0037-03RE1	
23	02-MAY-2023 18:57	05022323ECD7.D	5	BLD0300-MS1RE1	
24	02-MAY-2023 19:18	05022324ECD7.D	5	BLD0300-MSD1RE	
25	02-MAY-2023 19:39	05022325ECD7.D	5	23D0037-04RE1	
26	02-MAY-2023 19:59	05022326ECD7.D	5	23D0063-01RE1	
27	02-MAY-2023 20:20	05022327ECD7.D	5	23D0063-02RE1	
28	02-MAY-2023 20:41	05022328ECD7.D	5	23D0063-03RE1	
29	02-MAY-2023 21:02	05022329ECD7.D	5	23D0063-04RE1	
30	02-MAY-2023 21:23	05022330ECD7.D	1	AR1242CCV3	
31	02-MAY-2023 21:44	05022331ECD7.D	1	AR1660CCV4	
32	02-MAY-2023 22:05	05022332ECD7.D	1	BLD0328-BLK1	
33	02-MAY-2023 22:25	05022333ECD7.D	1	BLD0328-BS1	
34	02-MAY-2023 22:46	05022334ECD7.D	1	BLD0328-BSD1	
35	02-MAY-2023 23:07	05022335ECD7.D	1	BLD0328-SRM1	
36	02-MAY-2023 23:28	05022336ECD7.D	5	23D0136-01RE1	
37	02-MAY-2023 23:49	05022337ECD7.D	5	23D0136-02RE1	
38	03-MAY-2023 00:10	05022338ECD7.D	5	BLD0328-MS1RE1	
39	03-MAY-2023 00:31	05022339ECD7.D	5	BLD0328-MSD1RE	
40	03-MAY-2023 00:51	05022340ECD7.D	5	23D0136-03RE1	
41	03-MAY-2023 01:12	05022341ECD7.D	5	23D0136-04RE1	
42	03-MAY-2023 01:33	05022342ECD7.D	1	BLD0531-BLK1	
43	03-MAY-2023 01:54	05022343ECD7.D	1	BLD0531-BS1	
44	03-MAY-2023 02:15	05022344ECD7.D	1	BLD0531-BSD1	
45	03-MAY-2023 02:36	05022345ECD7.D	1	23D0383-01	
46	03-MAY-2023 02:56	05022346ECD7.D	1	23D0384-01	
47	03-MAY-2023 03:17	05022347ECD7.D	1	23D0420-01	
48	03-MAY-2023 03:38	05022348ECD7.D	1	23D0421-01	
49	03-MAY-2023 03:59	05022349ECD7.D	1	23D0437-01	
50	03-MAY-2023 04:20	05022350ECD7.D	1	23D0437-02	

	Inject	Date/Time	Filename	DF	LabID	ClientID
51	03-MAY-2023	04:41	05022351ECD7.D	1	AR1254CCV5	
52	03-MAY-2023	05:02	05022352ECD7.D	1	AR1660CCV6	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230502.b

ARI Job No.: AR16 Method: PCB.m Instrument: ecd7.i Date: 02-MAY-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1118	05022301ECD7.D	AR1660		1	NO MANUAL INTEGRATION
1138	05022302ECD7.D	AR1254		1	NO MANUAL INTEGRATION
1159	05022303ECD7.D	AR1248		1	NO MANUAL INTEGRATION
1220	05022304ECD7.D	AR1242		1	NO MANUAL INTEGRATION
1241	05022305ECD7.D	AR1660		1	NO MANUAL INTEGRATION
1302	05022306ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1323	05022307ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1344	05022308ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1405	05022309ECD7.D	BLE0011-BLK1		1	NO MANUAL INTEGRATION
1426	05022310ECD7.D	BLE0011-BS1		1	NO MANUAL INTEGRATION
1446	05022311ECD7.D	BLE0011-BS1		1	NO MANUAL INTEGRATION
1507	05022312ECD7.D	23D0677-01		1	NO MANUAL INTEGRATION
1528	05022313ECD7.D	23D0677-01RE1		5	NO MANUAL INTEGRATION
1549	05022314ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1610	05022315ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1631	05022316ECD7.D	BLD0300-BLK1		1	NO MANUAL INTEGRATION
1652	05022317ECD7.D	BLD0300-BS1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230502.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1713	05022318ECD7.D	BLD0300-BSD1		1	NO MANUAL INTEGRATION
1733	05022319ECD7.D	BLD0300-SRM1		1	NO MANUAL INTEGRATION
1754	05022320ECD7.D	23D0037-01RE1		5	Aroclor-1254, Aroclor-1260,
1815	05022321ECD7.D	23D0037-02RE1		5	Aroclor-1254, Aroclor-1260,
1836	05022322ECD7.D	23D0037-03RE1		5	Aroclor-1254, Aroclor-1260,
1857	05022323ECD7.D	BLD0300-MS1RE1		5	Aroclor-1254, Aroclor-1260,
1918	05022324ECD7.D	BLD0300-MSD1RE		5	Aroclor-1254,
1939	05022325ECD7.D	23D0037-04RE1		5	Aroclor-1254,
1959	05022326ECD7.D	23D0063-01RE1		5	Aroclor-1254,
2020	05022327ECD7.D	23D0063-02RE1		5	Aroclor-1254,
2041	05022328ECD7.D	23D0063-03RE1		5	Aroclor-1254,
2102	05022329ECD7.D	23D0063-04RE1		5	Aroclor-1254,
2123	05022330ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
2144	05022331ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
2205	05022332ECD7.D	BLD0328-BLK1		1	NO MANUAL INTEGRATION
2225	05022333ECD7.D	BLD0328-BS1		1	NO MANUAL INTEGRATION
2246	05022334ECD7.D	BLD0328-BSD1		1	NO MANUAL INTEGRATION
2307	05022335ECD7.D	BLD0328-SRM1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230502.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2328	05022336ECD7.D	23D0136-01RE1		5	Aroclor-1254,
2349	05022337ECD7.D	23D0136-02RE1		5	Aroclor-1254,
0010	05022338ECD7.D	BLD0328-MS1RE1		5	NO MANUAL INTEGRATION
0031	05022339ECD7.D	BLD0328-MSD1RE		5	Aroclor-1254,
0051	05022340ECD7.D	23D0136-03RE1		5	Aroclor-1254,
0112	05022341ECD7.D	23D0136-04RE1		5	Aroclor-1254,
0133	05022342ECD7.D	BLD0531-BLK1		1	NO MANUAL INTEGRATION
0154	05022343ECD7.D	BLD0531-BS1		1	NO MANUAL INTEGRATION
0215	05022344ECD7.D	BLD0531-BSD1		1	NO MANUAL INTEGRATION
0236	05022345ECD7.D	23D0383-01		1	Aroclor-1260,
0256	05022346ECD7.D	23D0384-01		1	NO MANUAL INTEGRATION
0317	05022347ECD7.D	23D0420-01		1	Aroclor-1254,
0338	05022348ECD7.D	23D0421-01		1	Aroclor-1254, Aroclor-1260,
0359	05022349ECD7.D	23D0437-01		1	Aroclor-1254, Aroclor-1260,
0420	05022350ECD7.D	23D0437-02		1	Aroclor-1254,
0441	05022351ECD7.D	AR1254CCV5		1	NO MANUAL INTEGRATION
0502	05022352ECD7.D	AR1660CCV6		1	NO MANUAL INTEGRATION
1118	05022301ECD7.D	AR1660		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230502.b\230502.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1138	05022302ECD7.D	AR1254		1	NO MANUAL INTEGRATION
1159	05022303ECD7.D	AR1248		1	NO MANUAL INTEGRATION
1220	05022304ECD7.D	AR1242		1	NO MANUAL INTEGRATION
1241	05022305ECD7.D	AR1660		1	NO MANUAL INTEGRATION
1302	05022306ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1323	05022307ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1344	05022308ECD7.D	AR1660ICV2		1	Aroclor-1016 [2C],
1405	05022309ECD7.D	BLE0011-BLK1		1	NO MANUAL INTEGRATION
1426	05022310ECD7.D	BLE0011-BS1		1	NO MANUAL INTEGRATION
1446	05022311ECD7.D	BLE0011-BSD1		1	NO MANUAL INTEGRATION
1507	05022312ECD7.D	23D0677-01		1	NO MANUAL INTEGRATION
1528	05022313ECD7.D	23D0677-01RE1		5	NO MANUAL INTEGRATION
1549	05022314ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1610	05022315ECD7.D	AR1660CCV2		1	Aroclor-1016 [2C],
1631	05022316ECD7.D	BLD0300-BLK1		1	NO MANUAL INTEGRATION
1652	05022317ECD7.D	BLD0300-BS1		1	NO MANUAL INTEGRATION
1713	05022318ECD7.D	BLD0300-BSD1		1	NO MANUAL INTEGRATION
1733	05022319ECD7.D	BLD0300-SRMI		1	NO MANUAL INTEGRATION



MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230502.b\230502.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1754	05022320ECD7.D	23D0037-01RE1		5	Aroclor-1254 [2C],
1815	05022321ECD7.D	23D0037-02RE1		5	Aroclor-1254 [2C],
1836	05022322ECD7.D	23D0037-03RE1		5	Aroclor-1254 [2C],
1857	05022323ECD7.D	BLD0300-MS1RE1		5	NO MANUAL INTEGRATION
1918	05022324ECD7.D	BLD0300-MSD1RE		5	NO MANUAL INTEGRATION
1939	05022325ECD7.D	23D0037-04RE1		5	Aroclor-1254 [2C],
1959	05022326ECD7.D	23D0063-01RE1		5	NO MANUAL INTEGRATION
2020	05022327ECD7.D	23D0063-02RE1		5	Aroclor-1254 [2C],
2041	05022328ECD7.D	23D0063-03RE1		5	NO MANUAL INTEGRATION
2102	05022329ECD7.D	23D0063-04RE1		5	Aroclor-1254 [2C],
2123	05022330ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
2144	05022331ECD7.D	AR1660CCV4		1	Aroclor-1016 [2C],
2205	05022332ECD7.D	BLD0328-BLK1		1	NO MANUAL INTEGRATION
2225	05022333ECD7.D	BLD0328-BS1		1	NO MANUAL INTEGRATION
2246	05022334ECD7.D	BLD0328-BSD1		1	NO MANUAL INTEGRATION
2307	05022335ECD7.D	BLD0328-SRM1		1	NO MANUAL INTEGRATION
2328	05022336ECD7.D	23D0136-01RE1		5	NO MANUAL INTEGRATION
2349	05022337ECD7.D	23D0136-02RE1		5	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230502.b\230502.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0010	05022338ECD7.D	BLD0328-MS1RE1		5	NO MANUAL INTEGRATION
0031	05022339ECD7.D	BLD0328-MSD1RE		5	NO MANUAL INTEGRATION
0051	05022340ECD7.D	23D0136-03RE1		5	NO MANUAL INTEGRATION
0112	05022341ECD7.D	23D0136-04RE1		5	NO MANUAL INTEGRATION
0133	05022342ECD7.D	BLD0531-BLK1		1	NO MANUAL INTEGRATION
0154	05022343ECD7.D	BLD0531-BS1		1	NO MANUAL INTEGRATION
0215	05022344ECD7.D	BLD0531-BSD1		1	NO MANUAL INTEGRATION
0236	05022345ECD7.D	23D0383-01		1	NO MANUAL INTEGRATION
0256	05022346ECD7.D	23D0384-01		1	NO MANUAL INTEGRATION
0317	05022347ECD7.D	23D0420-01		1	NO MANUAL INTEGRATION
0338	05022348ECD7.D	23D0421-01		1	Aroclor-1260 [2C],
0359	05022349ECD7.D	23D0437-01		1	Aroclor-1260 [2C],
0420	05022350ECD7.D	23D0437-02		1	NO MANUAL INTEGRATION
0441	05022351ECD7.D	AR1254CCV5		1	NO MANUAL INTEGRATION
0502	05022352ECD7.D	AR1660CCV6		1	Aroclor-1016 [2C],

Security Status Report

Date: 03-May-2023 10:16

05022301ECD7.D	Data Locked	richardl, 03-May-2023 10:16
05022302ECD7.D	Data Locked	richardl, 03-May-2023 10:16
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05022350ECD7.D	Data Locked	richardl, 03-May-2023 10:16
05022351ECD7.D	Data Locked	richardl, 03-May-2023 10:16
05022352ECD7.D	Data Locked	richardl, 03-May-2023 10:16



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC SDG/WO: 23D0063  
 Client: Anchor QEA, LLC Project: AOC5 MR Phase 1  
 Sequence: SLD0427 Instrument: ECD7  
 Calibration: GE00002 Calibration Date: 04/28/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLD0427-SCV1 (Water)</b>			Lab File ID: 04282315ECD7.D			Analyzed: 04/28/23 16:09		
Decachlorobiphenyl	40.000	91.5	80 - 120	13.861	13.862	-0.0010	N/A	
Tetrachlorometaxylene	40.000	94.0	80 - 120	5.765	5.765833	-0.0008	N/A	
Decachlorobiphenyl [2C]	40.000	97.3	80 - 120	14.082	14.08367	-0.0017	N/A	
Tetrachlorometaxylene [2C]	40.000	90.3	80 - 120	5.65	5.6495	0.0005	N/A	
<b>SLD0427-SCV2 (Water)</b>			Lab File ID: 04282316ECD7.D			Analyzed: 04/28/23 16:30		
Decachlorobiphenyl	40.000	102	80 - 120	13.863	13.862	0.0010	N/A	
Tetrachlorometaxylene	40.000	84.6	80 - 120	5.766	5.765833	0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	109	80 - 120	14.083	14.08367	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	81.6	80 - 120	5.649	5.6495	-0.0005	N/A	
<b>SLD0427-SCV3 (Water)</b>			Lab File ID: 04282317ECD7.D			Analyzed: 04/28/23 16:51		
Decachlorobiphenyl	40.000	87.2	80 - 120	13.863	13.862	0.0010	N/A	
Tetrachlorometaxylene	40.000	93.4	80 - 120	5.766	5.765833	0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	94.9	80 - 120	14.083	14.08367	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	91.7	80 - 120	5.649	5.6495	-0.0005	N/A	
<b>SLD0427-SCV4 (Water)</b>			Lab File ID: 04282318ECD7.D			Analyzed: 04/28/23 17:12		
Decachlorobiphenyl	40.000	87.0	80 - 120	13.863	13.862	0.0010	N/A	
Tetrachlorometaxylene	40.000	95.8	80 - 120	5.765	5.765833	-0.0008	N/A	
Decachlorobiphenyl [2C]	40.000	95.9	80 - 120	14.083	14.08367	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	93.2	80 - 120	5.65	5.6495	0.0005	N/A	
<b>SLD0427-SCV5 (Water)</b>			Lab File ID: 04282319ECD7.D			Analyzed: 04/28/23 17:33		
Decachlorobiphenyl	40.000	89.8	80 - 120	13.862	13.862	0.0000	N/A	
Tetrachlorometaxylene	40.000	95.7	80 - 120	5.766	5.765833	0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	97.4	80 - 120	14.083	14.08367	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	95.0	80 - 120	5.65	5.6495	0.0005	N/A	
<b>SLD0427-SCV6 (Water)</b>			Lab File ID: 04282320ECD7.D			Analyzed: 04/28/23 17:54		
Decachlorobiphenyl	40.000	136	80 - 120	13.863	13.862	0.0010	N/A	
Tetrachlorometaxylene	40.000	99.2	80 - 120	5.766	5.765833	0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	150	80 - 120	14.083	14.08367	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	95.1	80 - 120	5.65	5.6495	0.0005	N/A	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC  
Client: Anchor OEA, LLC  
Sequence: SLE0029  
Calibration: GE00002

SDG/WO: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: ECD7  
Calibration Date: 04/28/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLE0029-ICV1 (Solid)</b> Lab File ID: 05022307ECD7.D Analyzed: 05/02/23 13:23								
Decachlorobiphenyl	40.000	95.3	80 - 120	13.861	13.862	-0.0010	N/A	
Tetrachlorometaxylene	40.000	97.3	80 - 120	5.766	5.765833	0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	95.8	80 - 120	14.082	14.08367	-0.0017	N/A	
Tetrachlorometaxylene [2C]	40.000	100	80 - 120	5.649	5.6495	-0.0005	N/A	
<b>SLE0029-ICV2 (Solid)</b> Lab File ID: 05022308ECD7.D Analyzed: 05/02/23 13:44								
Decachlorobiphenyl	40.000	99.5	80 - 120	13.86	13.862	-0.0020	N/A	
Tetrachlorometaxylene	40.000	102	80 - 120	5.765	5.765833	-0.0008	N/A	
Decachlorobiphenyl [2C]	40.000	98.3	80 - 120	14.08	14.08367	-0.0037	N/A	
Tetrachlorometaxylene [2C]	40.000	115	80 - 120	5.648	5.6495	-0.0015	N/A	
<b>SLE0029-CCV1 (Solid)</b> Lab File ID: 05022314ECD7.D Analyzed: 05/02/23 15:49								
Decachlorobiphenyl	40.000	90.8	80 - 120	13.862	13.862	0.0000	N/A	
Tetrachlorometaxylene	40.000	97.5	80 - 120	5.766	5.765833	0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	93.0	80 - 120	14.082	14.08367	-0.0017	N/A	
Tetrachlorometaxylene [2C]	40.000	97.0	80 - 120	5.65	5.6495	0.0005	N/A	
<b>SLE0029-CCV2 (Solid)</b> Lab File ID: 05022315ECD7.D Analyzed: 05/02/23 16:10								
Decachlorobiphenyl	40.000	96.0	80 - 120	13.86	13.862	-0.0020	N/A	
Tetrachlorometaxylene	40.000	102	80 - 120	5.765	5.765833	-0.0008	N/A	
Decachlorobiphenyl [2C]	40.000	96.5	80 - 120	14.081	14.08367	-0.0027	N/A	
Tetrachlorometaxylene [2C]	40.000	115	80 - 120	5.648	5.6495	-0.0015	N/A	
<b>BLD0300-BLK1 (Solid)</b> Lab File ID: 05022316ECD7.D Analyzed: 05/02/23 16:31								
Decachlorobiphenyl	8.0000	92.0	40 - 126	13.859	13.862	-0.0030	N/A	
Tetrachlorometaxylene	8.0000	80.4	44 - 120	5.764	5.765833	-0.0018	N/A	
Decachlorobiphenyl [2C]	8.0000	93.2	40 - 126	14.08	14.08367	-0.0037	N/A	
Tetrachlorometaxylene [2C]	8.0000	82.8	44 - 120	5.648	5.6495	-0.0015	N/A	
<b>BLD0300-BS1 (Solid)</b> Lab File ID: 05022317ECD7.D Analyzed: 05/02/23 16:52								
Decachlorobiphenyl	8.0000	98.1	40 - 126	13.858	13.862	-0.0040	N/A	
Tetrachlorometaxylene	8.0000	86.5	44 - 120	5.765	5.765833	-0.0008	N/A	
Decachlorobiphenyl [2C]	8.0000	99.0	40 - 126	14.08	14.08367	-0.0037	N/A	
Tetrachlorometaxylene [2C]	8.0000	82.6	44 - 120	5.648	5.6495	-0.0015	N/A	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC  
Client: Anchor QEA, LLC  
Sequence: SLE0029  
Calibration: GE00002

SDG/WO: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: ECD7  
Calibration Date: 04/28/2023

Surrogate Compound	Spike Level ug/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>BLD0300-BSD1 (Solid)</b> Lab File ID: 05022318ECD7.D Analyzed: 05/02/23 17:13								
Decachlorobiphenyl	8.0000	100	40 - 126	13.86	13.862	-0.0020	N/A	
Tetrachlorometaxylene	8.0000	86.2	44 - 120	5.765	5.765833	-0.0008	N/A	
Decachlorobiphenyl [2C]	8.0000	102	40 - 126	14.08	14.08367	-0.0037	N/A	
Tetrachlorometaxylene [2C]	8.0000	81.2	44 - 120	5.648	5.6495	-0.0015	N/A	
<b>BLD0300-SRM1 (Solid)</b> Lab File ID: 05022319ECD7.D Analyzed: 05/02/23 17:33								
Decachlorobiphenyl	40.000	92.4	40 - 126	13.854	13.862	-0.0080	N/A	
Tetrachlorometaxylene	40.000	83.6	44 - 120	5.762	5.765833	-0.0038	N/A	
Decachlorobiphenyl [2C]	40.000	88.6	40 - 126	14.075	14.08367	-0.0087	N/A	
Tetrachlorometaxylene [2C]	40.000	86.9	44 - 120	5.643	5.6495	-0.0065	N/A	
<b>23D0063-01 (Solid)</b> Lab File ID: 05022326ECD7.D Analyzed: 05/02/23 19:59								
Decachlorobiphenyl	7.9996	86.7	40 - 126	13.852	13.862	-0.0100	N/A	
Tetrachlorometaxylene	7.9996	74.3	44 - 120	5.762	5.765833	-0.0038	N/A	
Decachlorobiphenyl [2C]	7.9996	79.9	40 - 126	14.073	14.08367	-0.0107	N/A	
Tetrachlorometaxylene [2C]	7.9996	79.5	44 - 120	5.643	5.6495	-0.0065	N/A	
<b>23D0063-02 (Solid)</b> Lab File ID: 05022327ECD7.D Analyzed: 05/02/23 20:20								
Decachlorobiphenyl	7.9956	88.0	40 - 126	13.851	13.862	-0.0110	N/A	
Tetrachlorometaxylene	7.9956	74.8	44 - 120	5.762	5.765833	-0.0038	N/A	
Decachlorobiphenyl [2C]	7.9956	78.6	40 - 126	14.073	14.08367	-0.0107	N/A	
Tetrachlorometaxylene [2C]	7.9956	76.8	44 - 120	5.645	5.6495	-0.0045	N/A	
<b>23D0063-03 (Solid)</b> Lab File ID: 05022328ECD7.D Analyzed: 05/02/23 20:41								
Decachlorobiphenyl	7.9826	90.8	40 - 126	13.851	13.862	-0.0110	N/A	
Tetrachlorometaxylene	7.9826	75.0	44 - 120	5.762	5.765833	-0.0038	N/A	
Decachlorobiphenyl [2C]	7.9826	81.9	40 - 126	14.073	14.08367	-0.0107	N/A	
Tetrachlorometaxylene [2C]	7.9826	81.1	44 - 120	5.644	5.6495	-0.0055	N/A	
<b>23D0063-04 (Solid)</b> Lab File ID: 05022329ECD7.D Analyzed: 05/02/23 21:02								
Decachlorobiphenyl	7.9987	92.1	40 - 126	13.851	13.862	-0.0110	N/A	
Tetrachlorometaxylene	7.9987	78.4	44 - 120	5.762	5.765833	-0.0038	N/A	
Decachlorobiphenyl [2C]	7.9987	82.9	40 - 126	14.072	14.08367	-0.0117	N/A	
Tetrachlorometaxylene [2C]	7.9987	84.5	44 - 120	5.644	5.6495	-0.0055	N/A	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC

SDG/WO: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0029

Instrument: ECD7

Calibration: GE00002

Calibration Date: 04/28/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SLE0029-CCV3 (Solid)</b>		Lab File ID: 05022330ECD7.D			Analyzed: 05/02/23 21:23			
Decachlorobiphenyl	40.000	90.5	80 - 120	13.861	13.862	-0.0010	N/A	
Tetrachlorometaxylene	40.000	120	80 - 120	5.765	5.765833	-0.0008	N/A	
Decachlorobiphenyl [2C]	40.000	95.3	80 - 120	14.082	14.08367	-0.0017	N/A	
Tetrachlorometaxylene [2C]	40.000	121	80 - 120	5.648	5.6495	-0.0015	N/A	*
<b>SLE0029-CCV4 (Solid)</b>		Lab File ID: 05022331ECD7.D			Analyzed: 05/02/23 21:44			
Decachlorobiphenyl	40.000	100	80 - 120	13.862	13.862	0.0000	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.766	5.765833	0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	101	80 - 120	14.081	14.08367	-0.0027	N/A	
Tetrachlorometaxylene [2C]	40.000	115	80 - 120	5.649	5.6495	-0.0005	N/A	
<b>SLE0029-CCV5 (Solid)</b>		Lab File ID: 05022351ECD7.D			Analyzed: 05/03/23 04:41			
Decachlorobiphenyl	40.000	90.8	80 - 120	13.862	13.862	0.0000	N/A	
Tetrachlorometaxylene	40.000	96.8	80 - 120	5.766	5.765833	0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	91.8	80 - 120	14.083	14.08367	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.649	5.6495	-0.0005	N/A	
<b>SLE0029-CCV6 (Solid)</b>		Lab File ID: 05022352ECD7.D			Analyzed: 05/03/23 05:02			
Decachlorobiphenyl	40.000	97.3	80 - 120	13.861	13.862	-0.0010	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.765	5.765833	-0.0008	N/A	
Decachlorobiphenyl [2C]	40.000	98.8	80 - 120	14.082	14.08367	-0.0017	N/A	
Tetrachlorometaxylene [2C]	40.000	115	80 - 120	5.648	5.6495	-0.0015	N/A	





**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC  
Client: Anchor QEA, LLC  
Sequence: SLD0427

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: ECD7  
Calibration: GE00002

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Secondary Cal Check (SLD0427-SCV1)</b>		(Water)	Lab File ID: 04282315ECD7.D			Analyzed: 04/28/23 16:09			
1-Bromo-2-Nitrobenzene	597924	3.443	556262	3.443	107	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	1154377	14.239	745660	14.239	155	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	362828	3.883	348488	3.883	104	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	555238	14.972	429949	14.973	129	50 - 200	-0.001	+/-0.50	
<b>Secondary Cal Check (SLD0427-SCV2)</b>		(Water)	Lab File ID: 04282316ECD7.D			Analyzed: 04/28/23 16:30			
1-Bromo-2-Nitrobenzene	591263	3.443	556262	3.443	106	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	1174114	14.239	745660	14.239	157	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	358789	3.883	348488	3.883	103	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	558275	14.972	429949	14.973	130	50 - 200	-0.001	+/-0.50	
<b>Secondary Cal Check (SLD0427-SCV3)</b>		(Water)	Lab File ID: 04282317ECD7.D			Analyzed: 04/28/23 16:51			
1-Bromo-2-Nitrobenzene	604265	3.443	556262	3.443	109	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	1214161	14.238	745660	14.239	163	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	364434	3.883	348488	3.883	105	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	568134	14.973	429949	14.973	132	50 - 200	0.000	+/-0.50	
<b>Secondary Cal Check (SLD0427-SCV4)</b>		(Water)	Lab File ID: 04282318ECD7.D			Analyzed: 04/28/23 17:12			
1-Bromo-2-Nitrobenzene	604006	3.444	556262	3.443	109	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	1269568	14.24	745660	14.239	170	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	364366	3.884	348488	3.883	105	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	578129	14.973	429949	14.973	134	50 - 200	0.000	+/-0.50	
<b>Secondary Cal Check (SLD0427-SCV5)</b>		(Water)	Lab File ID: 04282319ECD7.D			Analyzed: 04/28/23 17:33			
1-Bromo-2-Nitrobenzene	601660	3.444	556262	3.443	108	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	1282462	14.242	745660	14.239	172	50 - 200	0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	359781	3.884	348488	3.883	103	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	576077	14.971	429949	14.973	134	50 - 200	-0.002	+/-0.50	
<b>Secondary Cal Check (SLD0427-SCV6)</b>		(Water)	Lab File ID: 04282320ECD7.D			Analyzed: 04/28/23 17:54			
1-Bromo-2-Nitrobenzene	594267	3.445	556262	3.443	107	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl	1272651	14.241	745660	14.239	171	50 - 200	0.002	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	357253	3.884	348488	3.883	103	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	572751	14.972	429949	14.973	133	50 - 200	-0.001	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC  
Client: Anchor QEA, LLC  
Sequence: SLE0029

SDG: 23D0063  
Project: AOC5 MR Phase 1  
Instrument: ECD7  
Calibration: GE00002

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Initial Cal Check (SLE0029-ICV1)</b>		(Solid)	Lab File ID: 05022307ECD7.D			Analyzed: 05/02/23 13:23			
1-Bromo-2-Nitrobenzene	552159	3.444	552159	3.444	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	842466	14.238	842466	14.238	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	306695	3.884	306695	3.884	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	437547	14.97	437547	14.97	100	50 - 200	0.000	+/-0.50	
<b>Initial Cal Check (SLE0029-ICV2)</b>		(Solid)	Lab File ID: 05022308ECD7.D			Analyzed: 05/02/23 13:44			
1-Bromo-2-Nitrobenzene	563960	3.443	563960	3.443	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	868947	14.237	868947	14.237	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	281447	3.882	281447	3.882	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	443625	14.97	443625	14.97	100	50 - 200	0.000	+/-0.50	
<b>Blank (BLD0300-BLK1)</b>		(Solid)	Lab File ID: 05022316ECD7.D			Analyzed: 05/02/23 16:31			
1-Bromo-2-Nitrobenzene	537152	3.444	563960	3.443	95	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	901499	14.234	868947	14.237	104	50 - 200	-0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	302835	3.883	281447	3.882	108	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	460068	14.969	443625	14.97	104	50 - 200	-0.001	+/-0.50	
<b>LCS (BLD0300-BS1)</b>		(Solid)	Lab File ID: 05022317ECD7.D			Analyzed: 05/02/23 16:52			
1-Bromo-2-Nitrobenzene	574335	3.444	563960	3.443	102	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	985571	14.232	868947	14.237	113	50 - 200	-0.005	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	340720	3.883	281447	3.882	121	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	506188	14.966	443625	14.97	114	50 - 200	-0.004	+/-0.50	
<b>LCS Dup (BLD0300-BSD1)</b>		(Solid)	Lab File ID: 05022318ECD7.D			Analyzed: 05/02/23 17:13			
1-Bromo-2-Nitrobenzene	563850	3.443	563960	3.443	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	1022864	14.233	868947	14.237	118	50 - 200	-0.004	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	335231	3.883	281447	3.882	119	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	507548	14.969	443625	14.97	114	50 - 200	-0.001	+/-0.50	
<b>Reference (BLD0300-SRM1)</b>		(Solid)	Lab File ID: 05022319ECD7.D			Analyzed: 05/02/23 17:33			
1-Bromo-2-Nitrobenzene	550378	3.443	563960	3.443	98	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	715577	14.224	868947	14.237	82	50 - 200	-0.013	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	322692	3.882	281447	3.882	115	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	445637	14.961	443625	14.97	100	50 - 200	-0.009	+/-0.50	



**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0029

Instrument: ECD7

Calibration: GE00002

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>LDW23-SS1818 (23D0063-01 )</b>		(Solid)	Lab File ID: 05022326ECD7.D			Analyzed: 05/02/23 19:59			
1-Bromo-2-Nitrobenzene	585265	3.443	563960	3.443	104	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	525863	14.221	868947	14.237	61	50 - 200	-0.016	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	351397	3.882	281447	3.882	125	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	367414	14.958	443625	14.97	83	50 - 200	-0.012	+/-0.50	
<b>LDW23-SC1818 (23D0063-02 )</b>		(Solid)	Lab File ID: 05022327ECD7.D			Analyzed: 05/02/23 20:20			
1-Bromo-2-Nitrobenzene	599791	3.443	563960	3.443	106	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	554929	14.218	868947	14.237	64	50 - 200	-0.019	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	354027	3.883	281447	3.882	126	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	383939	14.957	443625	14.97	87	50 - 200	-0.013	+/-0.50	
<b>LDW23-SS1819 (23D0063-03 )</b>		(Solid)	Lab File ID: 05022328ECD7.D			Analyzed: 05/02/23 20:41			
1-Bromo-2-Nitrobenzene	580705	3.443	563960	3.443	103	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	554090	14.219	868947	14.237	64	50 - 200	-0.018	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	348171	3.882	281447	3.882	124	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	382453	14.958	443625	14.97	86	50 - 200	-0.012	+/-0.50	
<b>LDW23-SC1819 (23D0063-04 )</b>		(Solid)	Lab File ID: 05022329ECD7.D			Analyzed: 05/02/23 21:02			
1-Bromo-2-Nitrobenzene	586857	3.443	563960	3.443	104	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	554296	14.219	868947	14.237	64	50 - 200	-0.018	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	354081	3.882	281447	3.882	126	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	385269	14.958	443625	14.97	87	50 - 200	-0.012	+/-0.50	



## DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>		
Client:	<u>Anchor OEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>		
Matrix:	<u>Sediment</u>	Laboratory ID:	<u>23D0063-01</u>	File ID:	<u>05022326ECD7.D</u>
Sampled:	<u>04/04/23 10:02</u>	Prepared:	<u>04/17/23 13:36</u>	Analyzed:	<u>05/02/23 19:59</u>
Solids:	<u>43.18</u>	Preparation:	<u>EPA 3546 (Microwave)</u>	Instrument:	<u>ECD7</u>
Batch:	<u>BLD0300</u>	Sequence:	<u>SLE0029</u>		
GC Column(1):	<u>ZB5</u>	GC Column(2):	<u>ZB35</u>		

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	1	8.365	8.378	0.013	17609.25	28.5	17.
	* 2	8.268	8.284	0.016	6427.25	33.8	
Aroclor 1254	1	9.256	9.275	0.019	26210.4	49.5	11.6
	* 2	9.409	9.429	0.02	19278.6	55.6	
Aroclor 1260	1	11.001	11.01983	0.0188	17111.4	43.6	13.7
	* 2	11.61	11.62633	0.0163	17119.75	50.0	

\* Column used for quantitation





### DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Sediment</u>	Laboratory ID:	<u>23D0063-03</u>
Sampled:	<u>04/04/23 12:52</u>	Prepared:	<u>04/17/23 13:36</u>
Solids:	<u>35.11</u>	Preparation:	<u>EPA 3546 (Microwave)</u>
Batch:	<u>BLD0300</u>	Sequence:	<u>SLE0029</u>
GC Column(1):	<u>ZB5</u>	GC Column(2):	<u>ZB35</u>

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	1	8.364	8.378	0.014	19127	31.5	22.8
	* 2	8.267	8.284	0.017	7488.75	39.6	
Aroclor 1254	1	9.253	9.275	0.022	28287.4	54.3	17.2
	* 2	9.407	9.429	0.022	21876.4	64.5	
Aroclor 1260	1	11	11.01983	0.0198	17722	45.1	32.2
	* 2	11.608	11.62633	0.0183	20402.25	62.4	

\* Column used for quantitation





## HOLDING TIME SUMMARY

**Analysis: EPA 8082A**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/17/23 13:36	13	14	05/02/23 19:59	15	40	
LDW23-SC1818 23D0063-02	04/04/23 10:25	04/04/23 15:10	04/17/23 13:36	13	14	05/02/23 20:20	15	40	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/17/23 13:36	13	14	05/02/23 20:41	15	40	
LDW23-SC1819 23D0063-04	04/04/23 13:12	04/04/23 15:10	04/17/23 13:36	13	14	05/02/23 21:02	15	40	

\* Indicates hold time exceedance.





**METHOD DETECTION  
AND REPORTING LIMITS**  
**EPA 8082A**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: ECD7

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
Aroclor 1016	1.6	4.0	ug/kg
Aroclor 1016 [2C]	1.6	4.0	ug/kg
Aroclor 1221	1.6	4.0	ug/kg
Aroclor 1221 [2C]	1.6	4.0	ug/kg
Aroclor 1232	1.6	4.0	ug/kg
Aroclor 1232 [2C]	1.6	4.0	ug/kg
Aroclor 1242	1.6	4.0	ug/kg
Aroclor 1242 [2C]	1.6	4.0	ug/kg
Aroclor 1248	1.6	4.0	ug/kg
Aroclor 1248 [2C]	1.6	4.0	ug/kg
Aroclor 1254	1.6	4.0	ug/kg
Aroclor 1254 [2C]	1.6	4.0	ug/kg
Aroclor 1260	0.6	4.0	ug/kg
Aroclor 1260 [2C]	0.6	4.0	ug/kg

# CERTIFICATE OF ANALYSIS

**Catalog No:** S-279N  
**Description:** Tetrachloro-m-xylene  
**Lot:** 0052481B-1  
**Solvent:** N/A  
**Hazards:** Refer to SDS for complete safety information

**Date Certified:** Jul 28, 2005  
**Expiration:** Jul 28, 2015  
**Sample Size:** 100 mg  
**Components:** 1  
**Storage Condition:** Ambient (>5 °C)



Signal Word: Warning

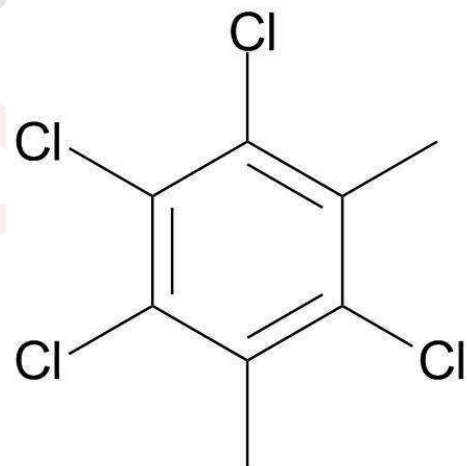
Certified Reference Material



Component	CAS #	Purity % (GC/FID)	Prepared Concentration	Certified Analyte Concentration <sup>1</sup>
Tetrachloro-meta-xylene	877-09-8	96.0	N/A	N/A

**Identification:**

Molecular formula: C<sub>8</sub>H<sub>6</sub>Cl<sub>4</sub>  
Molecular weight: 243.94



**C000147**

tetrachlorometaxylene

Expires 1/15/2020

Prepared By Joshua Rains 1/15/2014

This Certified Reference Material was verified in accordance with ISO/IEC 17025

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

<sup>1</sup> The Uncertainty calculated for this product is  $\pm 2.4\%$ . These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

Metrological traceability is established through in-house validated methods.

Purity, if stated, is equal to 100% minus found impurity components. Impurity components have not been identified.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By:

Larry Decker, Organic QC Manager



# AccuStandard

125 Market Street  
New Haven, CT 06513  
(203) 786-5290

## CERTIFICATE OF PRODUCT DATA

PRODUCT: C-209N

EXPIRATION: Jul 28, 2015

DESCRIPTION: 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

LOT #: 990521LB-AC

SOLVENT: N/A

This product is guaranteed accurate to  $\pm 0.5\%$  of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity % (GC/MS)	Prepared Concentration <sup>1</sup>	Certified Analyte Concentration <sup>2</sup>
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	100	N/A	N/A

2;

**C000148**

decachlorobiphenyl  
Expires 1/15/2020

Prepared By Joshua Rains 1/15/2014

*\* I 1768 A*

Certified by: *R. Cooper*

Please note: AccuStandard follows the U.S. conventions in reporting numerical values, on both certificates and labels.

A comma (,) is used to separate units of one-thousand or greater.  
A period (.) is used as a decimal place marker.

1. All weights are traceable through National Institute of Standards & Technology, Test No. 822/254480  
 2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is  $\pm 0.5\%$  which is the Combined Uncertainty  $U_c(y)$ . It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is  $U$  which is  $U_c(y) * K$  where  $K$  is the coverage factor at the 95% confidence level ( $K=2$ ).  
 3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

This product was manufactured in accordance to quality system requirements of ISO 9001:2000 and ISO 17025

*\* Recertified ~ 4-6-09 (S)*



**Analytical Standard Record**  
**Standard ID: C000148**

Printed: 4/23/2015 11:54:44AM

Description:	decachlorobiphenyl	Expires:	15-Jan-2020
Standard Type:	Other	Prepared:	15-Jan-2014
Solvent:	na/a	Prepared By:	Joshua Rains
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	27-Feb-2015 13:03 by JGR
Vendor:	Accustandard	Lot #:	9905211b-ac
Vendor Catalog #:			

**Comments**

see i1768a  
SOM calibrations added 06/12/14 sdrd

Analyte	CAS Number	Concentration	Units
Decachlorobiphenyl [2C]	2051-24-3	1000000	ug/mL
Decachlorobiphenyl	2051-24-3	1000000	ug/mL
DCB 1660 [2C]	2051-24-3	1000000	ug/mL
DCB 1660	2051-24-3	1000000	ug/mL
DCB [2C]	2051-24-3	1000000	ug/mL
DCB (A) [2C]	2051-24-3	1000000	ug/mL
DCB (A)	2051-24-3	1000000	ug/mL
DCB	2051-24-3	1000000	ug/mL

Reviewed By

Date

# Certificate of Analysis



Phenova Certified Reference Materials are sold by Phenomenex.

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Access your MSDS and digital C of A at [www.phenomenex.com/mysupport](http://www.phenomenex.com/mysupport). Re-order at [www.phenomenex.com/standards](http://www.phenomenex.com/standards)

## Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

**Catalog No.:** AL0-101461

**Lot Number:** CL13053

**Description:** Aroclor 1254

**Certification Date:** November 29, 2018

**Storage:** 4 °C

**Expiration Date:** November 30, 2026

**Provided As:** 1 mL in 2 mL Ampoule in Hexane

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1254	11097-69-1	1000	± 0.246%

I 09808  
Recd.   
02/24/20



Reference Material Producer  
Certificate No. 2427.02



Manufactured by Phenova, Inc.

Phenova's testing and calibration results are internationally recognized through the ILAC-MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03

IL11110613\_US

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## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101468

**Lot Number:** CL14017

**Description:** Aroclor 1221

**Certification Date:** August 20, 2019

**Storage:** 4 °C

**Expiration Date:** August 31, 2027

**Provided As:** 1 mL in 2 mL Ampoule in Isooctane

*Andrea Gill*

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1221	11104-28-2	1000	± 0.553%

J006466  
Recd of  
06/18/21



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Chemical Testing Laboratory  
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1. **Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. **Quality Standards:** Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. **Intended Use:** The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. **Handling and Usage Notes:** Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$u_{CRM} = k \sqrt{u_M^2 + u_H^2 + u_{LTS}^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. **Period of Validity:** The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
Certificate No. 2427.02



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Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



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## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101469

**Lot Number:** CL14914

**Description:** Aroclor 1232

**Certification Date:** January 31, 2020

**Storage:** 4 °C

**Expiration Date:** January 31, 2028

**Provided As:** 1 mL in 2 mL Ampoule in Isooctane



Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1232	11141-16-5	1000	± 0.738%

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06/18/21



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Chemical Testing Laboratory  
Certificate No. 2427.03



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1. **Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. **Quality Standards:** Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. **Intended Use:** The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. **Handling and Usage Notes:** Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. **Period of Validity:** The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



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## Certified Reference Material

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**Catalog No.:** AL0-101470

**Lot Number:** CL14018

**Description:** Aroclor 1242

**Certification Date:** August 20, 2019

**Storage:** 4 °C

**Expiration Date:** August 31, 2027

**Provided As:** 1 mL in 2 mL Ampoule in Isooctane



Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1242	53469-21-9	1000	± 0.553%

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06/18/21



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Certificate No. 2427.03

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1. **Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. **Quality Standards:** Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. **Intended Use:** The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. **Handling and Usage Notes:** Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$u_{CRM} = k\sqrt{u_M^2 + u_H^2 + u_{LTS}^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. **Period of Validity:** The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

<sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.

<sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.

<sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.

<sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.

<sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
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# Certificate of Analysis

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## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101471

**Lot Number:** CL15384

**Description:** Aroclor 1248

**Certification Date:** June 19, 2020

**Storage:** 4 °C

**Expiration Date:** June 30, 2028

**Provided As:** 1 mL in 2 mL Ampoule in Isooctane

*Andrea L Gill*

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1248	12672-29-6	1000	± 0.520%

*# J006469  
Reed, JR  
06/18/21*



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Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



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Page 2 of 2

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- 1. Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
- 2. Quality Standards:** Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
- 3. Intended Use:** The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
- 4. Handling and Usage Notes:** Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
- 5. Hazardous Situation:** The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
- 6. Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
- 7. Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
- 8. Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
- 9. Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).  
$$u_{CRM} = k\sqrt{u_M^2 + u_H^2 + u_{LTS}^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.
- 10. Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
- 11. Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
- 12. Period of Validity:** The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



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## Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

**Catalog No.:** AL0-101474

**Lot Number:** CL11330

**Description:** Aroclor 1262

**Certification Date:** May 15, 2015

**Storage:** 4 °C

**Expiration Date:** April 30, 2023

**Provided As:** 1 mL in 2 mL Ampoule in Isooctane

**Revision Date:** April 2, 2018

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1262	37324-23-5	1000	± 0.516%

J 00647H  
Reed JK  
06/18/21



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Manufactured by Phenova, Inc.

Phenova's testing and calibration results are internationally recognized through the ILAC-MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.



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1. **Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
  2. **Quality Standards:** Phenova is accredited by A2LA to ISO Guide 34<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
  3. **Intended Use:** The product is manufactured for use in the calibration and calibration verification of chromatographic instrumentation performed in routine laboratory analysis.
  4. **Instruction:** Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all certified analytes in the mixture.
  5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Material Safety Data Sheet (MSDS) is available at [www.phenomenex.com/mysupport](http://www.phenomenex.com/mysupport).
  6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
  7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
  8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
  9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).  
$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$
- Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.
10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO Guide 34. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
  11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO Guide 34.
  12. **Period of Validity:** The Certified Values and their uncertainties are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31:2000(E) – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35:2006(E) – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO Guide 34:2009(E) – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025:2005(E) – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
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## Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

**Catalog No.:** AL0-101475

**Lot Number:** CL11331

**Description:** Aroclor 1268

**Certification Date:** May 15, 2015

**Storage:** 4 °C

**Expiration Date:** April 30, 2023

**Provided As:** 1 mL in 2 mL Ampoule in Isooctane

**Revision Date:** April 2, 2018

*Andrea Gill*

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1268	11100-14-4	1000	± 0.516%

J006472  
Rec'd. JK  
06/18/21



Reference Material Producer  
Certificate No. 2427.02



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1. **Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. **Quality Standards:** Phenova is accredited by A2LA to ISO Guide 34<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. **Intended Use:** The product is manufactured for use in the calibration and calibration verification of chromatographic instrumentation performed in routine laboratory analysis.
4. **Instruction:** Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all certified analytes in the mixture.
5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Material Safety Data Sheet (MSDS) is available at [www.phenomenex.com/mysupport](http://www.phenomenex.com/mysupport).
6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k \cdot \sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO Guide 34. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO Guide 34.
12. **Period of Validity:** The Certified Values and their uncertainties are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31:2000(E) – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35:2006(E) – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO Guide 34:2009(E) – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025:2005(E) – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



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# Certificate of Analysis

## Aroclor 1016 Solution

Product Number: PP-282

Page: 1 of 1

Lot Number: CR-0761

Lot Issue Date: 28-Feb-2017

Expiration Date: 31-Mar-2025

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1016	012674-11-2	NT01016	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

*K1254  
Recd JP  
02/05/17*

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.



ISO 9001  
Registered  
TUV USA, Inc.

John Russo  
President

Monica Bourgeois  
Director of QA/RA



# Certificate of Analysis

**Product Name:** Aroclor 1260 Standard

**Product Number:** PP-362-1

**Lot Issue Date:** 20-Jan-2021

**Lot Number:** 0006582048

**Expiration Date:** 28-Feb-2025

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1260	011096-82-5	NT01023	100.4 ± 0.5 µg/mL

**Matrix:** isooctane (2,2,4-trimethylpentane)

K 1255

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

**Expiration of Certification:**

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

**Maintenance of Certification:**

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

**Sample lot approver:**

Monica Bourgeois

QMS Representative



ISO 17034 Cert  
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 1 of 1

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CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937



ISO 17034



Agilent

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## Reference Material Certificate

**Product Name:** Aroclor 1248 Standard **Lot Number:** 0006626997  
**Product Number:** PP-342-1 **Lot Issue Date:** 17-Aug-2021  
**Storage Conditions:** Store at Room Temperature (15° to 30°C). **Expiration Date:** 30-Sep-2025

Component Name	CERTIFIED VALUES			CAS#	Analyte Lot
	Concentration	Expanded Uncertainty			
Aroclor 1248	100.3	± 0.5 µg/mL		012672-29-6	NT01582

**Matrix:** isooctane (2,2,4-trimethylpentane)

K1257

**Description:**

This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Safety:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this analytical reference material.

**Intended Use:**

This analytical reference standard is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Expiration of Certification:**

The certification of this analytical reference standard is valid until the expiration date specified above, provided the material is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the material is damaged, contaminated, or otherwise modified.



# Certificate of Analysis

## Aroclor 1254 Solution

Product Number: PP-352

Page: 1 of 1

Lot Number: CS-2321

Lot Issue Date: 04-May-2018

Expiration Date: 31-May-2026

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1254	011097-69-1	RM00922	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

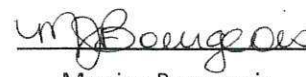
K-1250

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.



ISO 9001  
Registered  
TUV USA, Inc.

  
John Russo  
President

  
Monica Bourgeois  
Director of QA/RA



# Certificate of Analysis

**Product Name:** Aroclor 1221 Standard

**Product Number:** PP-292-1

**Lot Issue Date:** 28-Apr-2020

**Lot Number:** 0006535333

**Expiration Date:** 31-May-2024

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system, and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1221	011104-28-2	RM04278	100.2 ± 0.5 µg/mL

**Matrix:** isooctane (2,2,4-trimethylpentane)

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

K1259

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

**Expiration of Certification:**

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

**Maintenance of Certification:**

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

**Sample lot approver:**

Monica Bourgeois  
QMS Representative



ISO 17034 Cert No.  
AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

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ISO 17025 Cert  
No. AT-1937





# Certificate of Analysis ISO 17034

## Aroclor 1262 Standard

Product Number: PP-372-1

Page: 1 of 1

Lot Number: 0006499800

Lot Issue Date: 04-Nov-2019

Expiration Date: 30-Nov-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent Technologies ISO 9001 registered quality system. A review of the gravimetric preparation data by our ISO 17025 accredited laboratory serves to verify the concentration of each analyte. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1262	037324-23-5	RM14263	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1260

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois  
QMS Representative



ISO 17034 Cert No.  
AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026  
registered ISO 9001 Quality Management System



ISO 17025 Cert No.  
AT-1937



# Certificate of Analysis ISO 17034

## Aroclor 1232 Standard

**Product Number:** PP-302-1

**Page:** 1 of 1

**Lot Number:** CF-2197A

**Lot Issue Date:** 05-Jul-2016

**Expiration Date:** 31-Aug-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1232	011141-16-5	NT01717	100.4 ± 0.5 µg/mL

**Matrix:** isooctane (2,2,4-trimethylpentane)

**Storage:** Store at Room Temperature (15° to 30°C).

K1261

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

  
Monica Bourgeois  
QMS Representative



ISO 17034 Cert No.  
AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026  
registered ISO 9001 Quality Management System



ISO17025 Cert No.  
AT-1937





# Certificate of Analysis

**Product Name:** Aroclor 1268 Standard

**Product Number:** PP-382-1

**Lot Issue Date:** 09-Feb-2021

**Lot Number:** 0006587800

**Expiration Date:** 31-Mar-2029

**Description:**

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1268	011100-14-4	RM00937	100.0 ± 0.5 µg/mL

**Matrix:** isooctane (2,2,4-trimethylpentane)

**Storage Conditions:** Store at Room Temperature (15° to 30°C).

K1262

**Traceability:**

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

**Homogeneity:**

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

**Intended Use:**

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

**Instructions for Use:**

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

**Hazards:**

Refer to the Safety Data Sheet on [www.agilent.com](http://www.agilent.com) for information regarding this RM.

**Expiration of Certification:**

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

**Maintenance of Certification:**

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

**Sample lot approver:**

Monica Bourgeois  
QMS Representative



ISO 17034 Cert  
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

Page: 1 of 1

[www.agilent.com/quality/](http://www.agilent.com/quality/)  
CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937

# Recipient Copy

## CHAIN-OF-CUSTODY RECORD

COC No. 15355

Order Number: CB014770

Date Shipped: 4/14/2022

AirBill No(s):

From: QATS LABORATORY  
 2700 CHANDLER AVENUE, BLDG. B  
 LAS VEGAS, NV 89120  
 PHONE: 1-702-895-8712

To: Kelly Bottem  
 Analytical Resources, Inc.  
 4611 S. 134th Place SUITE 100  
 Tukwila WA 98168  
 206-695-6211

519204140499

*1003635*  
*1003636*

Sample ID	Sigma ID	Qty	Description/Remarks	→ Catalogue Number
PSRM0152	SR0431	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0153	SR0431	1	PUGET SOUND SEDIMENT RM	PS-SRM
<p>ANACORTES OUTFALL</p> <p style="text-align: right;"><i>Q 04/14/2022</i></p>				

Please use the enclosed Sample Preparation Instructions. If catalogue number(s) are listed at the top of the Sample Preparation Instructions use the Sample Preparation Instructions with catalogue number(s) matching the catalogue number(s) of each of the samples listed above.

Relinquished by: (Signature) <i>[Signature]</i>	Date/Time <i>1400</i> <i>04/14/2022</i>	Received by: (Signature) <i>[Signature]</i>	Date/Time <i>04/15/22</i> <i>10:25</i>
--	--	--	--

Custody Seal(s): Present/Absent	Remarks:
------------------------------------	----------

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
---------------------------------	-----------	-----------------------------	-----------





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY  
"An ISO 9001:2015 Certified Program"

Instructions for QATS Catalog Number: PS-SRM  
Marine Sediment: CDD/CDF/CB Congeners/Aroclors

**PUGET SOUND SEDIMENT REFERENCE MATERIAL**  
**QATS LABORATORY INSTRUCTIONS FOR**  
**HRGC/HRMS CDD/CDF/CB CONGENER AND GC/ECD AROCLOR ANALYSIS**

**NOTE:** These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocols or your contract, disregard these instructions.

**APPLICATION:** For the analysis of CDD/CDF and CB Congener analytes using project-specified HRGC/HRMS methods, and Aroclors using project-specified GC/ECD methods.

**CAUTION:** Read instructions carefully before opening bottles and proceeding with the analyses.

Contains CDD/CDF, CB Congener, and/or Aroclors  
**HAZARDOUS MATERIAL**  
Safety Data Sheets  
Available Upon Request

**(A) SAMPLE DESCRIPTION**

Enclosed is a Puget Sound (Washington State) Sediment Reference Material (SRM) set for chlorinated dibenzo-p-dioxins/chlorinated dibenzofurans (CDD/CDF), and/or chlorinated biphenyl (CB) congener analysis using project-specified high resolution gas chromatography/ high resolution mass spectrometry (HRGC/HRMS) methods. This SRM is also suitable for Aroclors analysis using project-specified gas chromatography/electron capture detection (GC/ECD) methods. This set consists of one (1) or more bottles, each with approximately 30 grams of Puget Sound SRM containing CDD/CDF, CB Congener, and/or Aroclor analytes. Check the chain-of-custody record to determine the number of bottles provided for CDD/CDF, CB Congener, and/or Aroclor analysis. None of the bottles are to be opened until SRM preparation/analysis is to occur.

**CAUTION:** The SRM could contain compounds that are light sensitive and should be protected from light during storage. Store the SRM at  $\leq 6^{\circ}\text{C}$ , preferably at  $< 0^{\circ}\text{C}$ , until SRM preparation and analysis is to occur. Allow the bottle(s) to reach ambient temperature before opening.

**(B) BREAKAGE OR MISSING ITEMS**

Check the contents of the shipment carefully for any broken, leaking, or missing items. Refer to the enclosed chain-of-custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY  
APTIM Federal Services, LLC  
2700 Chandler Avenue - Building C  
Las Vegas, NV 89120





**(C) ANALYSIS REQUIREMENTS**

The SRM is to be analyzed as described in the project-specified methods employed for the analysis of CDD/CDF and/or CB Congener analytes using HRGC/HRMS instrumentation and/or Aroclors using GC/ECD instrumentation. These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the project-specified methods, or your contract, disregard these instructions.

**(D) SAMPLE ANALYSIS**

**General Instructions**

The SRM contains CDD/CDF, CB Congener, and Aroclor analytes which are known or suspected to have severe health effects. Employing appropriate safety precautions, this SRM is to be handled, prepared, and analyzed exactly as you would process samples received from a known or suspected hazardous waste site. The SRM should be handled only by trained and experienced analysts in facilities expressly designed to handle such materials. When calculating the concentrations of analytes, use 0% as the soil moisture content.

Allow the bottle(s) to reach ambient temperature before opening and removing gravimetric amounts for sample preparation. To begin the extraction and analysis procedure, break the seal and open the bottle carefully. Weigh out the appropriate aliquot for extraction and analysis as prescribed in the project-specified methods (typically 10 grams for HRGC/HRMS methods and 30 grams for GC/ECD methods), or in accordance with your contract.

Proceed immediately with the extraction and analysis as described in the project-specified methods or your contract.

**(E) REPORTING**

Report the results for the prepared SRM as received.

Report the analytical results for the SRM to EPA or other appropriate Agency, using the format and other instructions for submission of data packages as specified in your contract.



# Certificate of Analysis



Phenova Certified Reference Materials are sold by Phenomenex.

411 Madrid Ave., Torrance, CA 90501 USA ■ Tel: 310-212-0555 ■ Fax: 310-328-7768 ■ info@phenomenex.com

Access your MSDS and digital C of A at [www.phenomenex.com/mysupport](http://www.phenomenex.com/mysupport). Re-order at [www.phenomenex.com/standards](http://www.phenomenex.com/standards)

## Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

**Catalog No.:** AL0-101467

**Lot Number:** CL12975

**Description:** Aroclor 1016

**Certification Date:** November 19, 2018

**Storage:** 4 °C

**Expiration Date:** October 31, 2026

**Provided As:** 1 mL in 2 mL Ampoule in Isooctane

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1016	12674-11-2	1000	± 0.553%

12975



Reference Material Producer  
Certificate No. 2427.02



Manufactured by Phenova, Inc.

Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03

IL11110613\_US

# Certificate of Analysis



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1. **Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. **Quality Standards:** Phenova is accredited by A2LA to ISO Guide 34<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. **Intended Use:** The product is manufactured for use in the calibration and calibration verification of chromatographic instrumentation performed in routine laboratory analysis.
4. **Instruction:** Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all certified analytes in the mixture.
5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Material Safety Data Sheet (MSDS) is available at [www.phenomenex.com/mysupport](http://www.phenomenex.com/mysupport).
6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).  
$$u_{CRM} = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.
10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO Guide 34. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO Guide 34.
12. **Period of Validity:** The Certified Values and their uncertainties are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

<sup>1</sup> ISO Guide 31:2000(E) – Reference Materials – Contents of Certificates and Labels.

<sup>2</sup> ISO Guide 35:2006(E) – Reference Material – General and Statistical Principles for Certification.

<sup>3</sup> ISO Guide 34:2009(E) – General Requirements for the Competence of Reference Material Producers.

<sup>4</sup> ISO/IEC 17025:2005(E) – General Requirements for the Competence of Testing and Calibration Laboratories.

<sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
Certificate No. 2427.02



Manufactured by Phenova, Inc.

Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03

IL111063\_US

# Certificate of Analysis

**Produced by Phenova**

6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com  
Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

## Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

**Catalog No.:** AL0-101462

**Lot Number:** CL18021

**Description:** Aroclor 1260

**Certification Date:** February 14, 2022

**Storage:** 4 °C

**Expiration Date:** February 28, 2030

**Provided As:** 1 mL in 2 mL Ampoule in Hexane

*Andrea L Gill*

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1260	11096-82-5	1000	± 0.553%

K005830



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03

# Certificate of Analysis



Page 2 of 2

## Produced by Phenova

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Access your Safety Data Sheets and digital Certificates at [www.phenova.com/documents](http://www.phenova.com/documents).

1. **Quality Document:** This Certificate of Analysis has been created in accordance with ISO Guide 31<sup>1</sup> and ISO Guide 35.<sup>2</sup>
2. **Quality Standards:** Phenova is accredited by A2LA to ISO 17034<sup>3</sup> and ISO/IEC 17025<sup>4</sup> as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.
3. **Intended Use:** The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.
4. **Handling and Usage Notes:** Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.
5. **Hazardous Situation:** The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at [www.phenova.com/documents](http://www.phenova.com/documents).
6. **Level of Homogeneity:** The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.
7. **Certified Value:** Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.
8. **Raw Materials and Purity:** Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.
9. **Expanded Uncertainty:** The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98<sup>5</sup> and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$u_{CRM} = k\sqrt{u_M^2 + u_H^2 + u_{LTS}^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. **Metrological Traceability:** The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.
11. **Values Obtained During Product Testing:** This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.
12. **Period of Validity:** The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

## References:

- <sup>1</sup> ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
- <sup>2</sup> ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
- <sup>3</sup> ISO 17034 – General Requirements for the Competence of Reference Material Producers.
- <sup>4</sup> ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
- <sup>5</sup> ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)



Reference Material Producer  
Certificate No. 2427.02



Phenova is an accredited ISO/IEC 17034 Reference Material  
Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.



Chemical Testing Laboratory  
Certificate No. 2427.03





Form 1  
ORGANIC ANALYSIS DATA SHEET  
EPA 1613B  
Dioxins/Furans by HRGC/HRMS

Laboratory: Analytical Resources, LLC SDG: 23D0063  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment Laboratory ID: 23D0063-01 C File ID: 23051504  
 Sampled: 04/04/23 10:02 Prepared: 04/25/23 14:15 Analyzed: 05/15/23 13:59  
 % Solids: 40.43 Preparation: EPA 1613 Initial/Final: 24.74 g Wet / 20 uL  
 Result Basis: Dry Sequence: SLE0240 Calibration: GC00015  
 Batch: BLD0657 Instrument: AUTOSPEC01 Column: RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.655	0.655-0.886	0.221	1.00	1.20	ng/kg	
1746-01-6	2,3,7,8-TCDD	1	0.570	0.655-0.886	0.095	1.00	0.512	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.640	1.318-1.783	0.256	1.00	1.07	ng/kg	
57117-31-4	2,3,4,7,8-PeCDF	1	1.938	1.318-1.783	0.229	1.00	1.87	ng/kg	EMPC
40321-76-4	1,2,3,7,8-PeCDD	1	1.457	1.318-1.783	0.241	1.00	1.58	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.287	1.054-1.426	0.128	1.00	5.78	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.318	1.054-1.426	0.125	1.00	2.08	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.424	1.054-1.426	0.132	1.00	2.73	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.218	1.054-1.426	0.130	1.00	1.28	ng/kg	
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.108	1.054-1.426	0.222	1.00	1.85	ng/kg	
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.130	1.054-1.426	0.206	1.00	6.73	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.177	1.054-1.426	0.235	1.00	4.68	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.040	0.893-1.208	0.172	1.00	45.7	ng/kg	
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.118	0.893-1.208	0.245	1.00	4.15	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.050	0.893-1.208	0.403	2.50	221	ng/kg	
39001-02-0	OCDF	1	0.958	0.757-1.024	0.274	2.50	153	ng/kg	
3268-87-9	OCDD	1	0.861	0.757-1.024	0.592	10.0	1930	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	22.6	ng/kg	
41903-57-5	Total TCDD	1	0.000			1.00	5.26	ng/kg	
30402-15-4	Total PeCDF	1	0.000			1.00	23.5	ng/kg	
36088-22-9	Total PeCDD	1	0.000			1.00	6.09	ng/kg	
55684-94-1	Total HxCDF	1	0.000			1.00	66.7	ng/kg	
34465-46-8	Total HxCDD	1	0.000			1.00	68.1	ng/kg	
38998-75-3	Total HpCDF	1	0.000			1.00	165	ng/kg	
37871-00-4	Total HpCDD	1	0.000			1.00	581	ng/kg	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 8.65  
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 8.65



**Form 2**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 1613B**  
**Dioxins/Furans by HRGC/HRMS**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Sediment</u>	Laboratory ID:	<u>23D0063-01</u>
Sampled:	<u>04/04/23 10:02</u>	Prepared:	<u>04/25/23 14:15</u>
Solids Wt%:	<u>40.43</u>	Preparation:	<u>EPA 1613</u>
Result Basis:	<u>Dry</u>	Sequence:	<u>SLE0240</u>
Batch:	<u>BLD0657</u>	Instrument:	<u>AUTOSPEC01</u>
		File ID:	<u>23051504</u>
		Analyzed:	<u>05/15/23 13:59</u>
		Initial/Final:	<u>24.74 g / 20 uL</u>
		Calibration:	<u>GC00015</u>
		Column:	<u>RTX-Dioxin2</u>

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.770	0.655-0.886	0.116	89.5	24 - 169 %	
13C12-2,3,7,8-TCDD		0.788	0.655-0.886	0.114	98.0	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.495	1.318-1.783	0.176	89.5	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.506	1.318-1.783	0.195	95.9	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.567	1.318-1.783	0.156	104	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.507	0.434-0.587	0.171	78.9	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.497	0.434-0.587	0.144	79.6	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.510	0.434-0.587	0.177	81.6	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.504	0.434-0.587	0.214	94.6	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.325	1.054-1.426	0.173	89.9	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.256	1.054-1.426	0.149	90.3	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.431	0.374-0.506	0.230	86.1	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.438	0.374-0.506	0.268	86.8	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.062	0.893-1.208	0.196	92.2	23 - 140 %	
13C12-OCDD		0.895	0.757-1.024	0.229	100	17 - 157 %	
37C14-2,3,7,8-TCDD		328.000		0.048	94.1	35 - 197 %	

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
 Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time  
 Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.718	1.001	2.420e3	3.696e3	0.702	0.655	0.770	1963	3427	4.48e4	5.40e4	22.8	15.8	NO	dd	dd	0.602
12378-PeCDF	29.867	1.001	2.515e3	1.534e3	0.679	1.640	1.550	2390	2427	3.44e4	2.55e4	14.4	10.5	NO	bb	bb	0.537
23478-PeCDF	31.204	1.001	5.206e3	2.687e3	0.786	1.938	1.550	2390	2427	6.87e4	4.04e4	28.7	16.7	YES	db	bb	0.937
123478-HxCDF	34.825	1.001	1.817e4	1.412e4	1.166	1.287	1.240	1974	1622	2.75e5	2.24e5	139.2	138.2	NO	dd	dd	2.890
234678-HxCDF	35.794	0.999	8.759e3	6.151e3	1.140	1.424	1.240	1974	1622	9.42e4	6.84e4	47.7	42.2	NO	bb	bb	1.366
123678-HxCDF	34.958	1.000	7.416e3	5.628e3	1.091	1.318	1.240	1974	1622	9.57e4	7.75e4	48.5	47.8	NO	dd	dd	1.042
123789-HxCDF	36.830	1.000	3.671e3	3.014e3	1.137	1.218	1.240	1974	1622	5.25e4	4.82e4	26.6	29.7	NO	bd	MM	0.642
1234678-HpCDF	38.702	1.001	9.358e4	9.000e4	1.003	1.040	1.050	2112	1659	1.52e6	1.46e6	720.3	880.4	NO	bb	bb	22.845
1234789-HpCDF	40.919	1.000	7.252e3	6.486e3	0.953	1.118	1.050	2112	1659	1.04e5	9.34e4	49.4	56.3	NO	bb	bb	2.076
OCDF	45.126	1.006	2.326e5	2.427e5	0.778	0.958	0.890	1119	2310	2.59e6	2.89e6	2312.3	1249.2	NO	bd	bb	76.631
2378-TCDD	26.354	1.001	1.204e3	2.113e3	1.149	0.570	0.770	1518	1456	2.04e4	3.59e4	13.4	24.6	YES	bd	dd	0.256
12378-PeCDD	31.460	1.001	4.098e3	2.813e3	1.022	1.457	1.550	1986	2855	5.71e4	4.06e4	28.7	14.2	NO	MM	bb	0.789
123478-HxCDD	35.939	1.000	4.511e3	4.070e3	0.996	1.108	1.240	2389	2911	7.99e4	6.75e4	33.4	23.2	NO	bd	bd	0.928
123678-HxCDD	36.062	1.000	1.940e4	1.717e4	1.001	1.130	1.240	2389	2911	3.02e5	2.56e5	126.6	87.9	NO	dd	dd	3.368
123789-HxCDD	36.451	1.011	1.157e4	9.825e3	0.907	1.177	1.240	2389	2911	1.83e5	1.44e5	76.8	49.3	NO	bb	dd	2.342
1234678-HpCDD	40.184	1.000	4.733e5	4.508e5	1.039	1.050	1.050	4321	3578	7.08e6	6.92e6	1638.8	1935.0	NO	bb	bb	110.533
OCDD	44.888	1.000	3.277e6	3.807e6	0.920	0.861	0.890	5005	3760	4.20e7	4.87e7	8386.1	12964.1	NO	bb	bb	965.573
13C-2378-TCDF	25.690	1.007	6.305e5	8.187e5	1.620	0.770	0.770	2243	2647	9.08e6	1.18e7	4047.7	4454.7	NO	bb	bb	89.505
13C-12378-PeCDF	29.844	1.169	6.649e5	4.446e5	1.240	1.495	1.550	2597	3061	9.95e6	6.68e6	3829.5	2183.2	NO	bb	bb	89.499
13C-23478-PeCDF	31.181	1.222	6.437e5	4.275e5	1.118	1.506	1.550	2597	3061	9.63e6	6.37e6	3706.6	2081.8	NO	bb	bb	95.892
13C-123478-HxCDF	34.803	0.955	3.225e5	6.356e5	1.168	0.507	0.510	2399	2908	4.88e6	9.68e6	2032.9	3330.8	NO	bd	bd	78.915
13C-123678-HxCDF	34.947	0.959	3.809e5	7.666e5	1.386	0.497	0.510	2399	2908	5.27e6	1.04e7	2197.3	3579.7	NO	dd	db	79.642
13C-234678-HxCDF	35.817	0.983	3.233e5	6.343e5	1.129	0.510	0.510	2399	2908	4.86e6	9.45e6	2024.6	3251.4	NO	bb	bb	81.606
13C-123789-HxCDF	36.841	1.011	3.070e5	6.090e5	0.932	0.504	0.510	2399	2908	4.89e6	9.62e6	2039.1	3307.8	NO	bb	bb	94.615
13C-1234678-HpCDF	38.680	1.062	2.412e5	5.600e5	0.895	0.431	0.440	2146	3339	3.95e6	9.19e6	1841.5	2751.1	NO	bb	bb	86.127
13C-1234789-HpCDF	40.908	1.123	2.116e5	4.828e5	0.770	0.438	0.440	2146	3339	2.95e6	6.78e6	1377.2	2029.5	NO	bb	bb	86.819
13C-1234-TCDD	25.520	0.000	4.450e5	5.544e5	1.000	0.803	0.770	1877	1530	6.94e6	8.60e6	3694.7	5622.4	NO	bb	bb	100.000
13C-2378-TCDD	26.325	1.032	4.973e5	6.308e5	1.152	0.788	0.770	1877	1530	7.22e6	9.12e6	3846.1	5961.4	NO	bb	bb	97.954
13C-12378-PeCDD	31.438	1.232	5.235e5	3.341e5	0.829	1.567	1.550	1851	1496	7.18e6	4.57e6	3881.9	3053.9	NO	bd	bb	103.542
13C-123478-HxCDD	35.928	0.986	5.294e5	3.997e5	0.995	1.325	1.240	2324	2263	8.18e6	6.41e6	3521.7	2833.2	NO	bd	bd	89.862
13C-123678-HxCDD	36.050	0.990	6.042e5	4.809e5	1.157	1.256	1.240	2324	2263	8.59e6	6.82e6	3696.5	3013.3	NO	db	db	90.274
13C-1234678-HpCDD	40.173	1.103	4.144e5	3.903e5	0.840	1.062	1.050	1946	2440	5.82e6	5.45e6	2991.1	2232.6	NO	bd	bb	92.175
13C-OCDD	44.879	1.232	7.531e5	8.418e5	0.767	0.895	0.890	2056	2611	9.12e6	1.02e7	4436.5	3897.0	NO	bb	bb	199.984
13C-123789-HxCDD	36.429	0.000	5.812e5	4.579e5	1.000	1.269	1.240	2324	2263	8.92e6	7.11e6	3840.6	3141.1	NO	bb	bb	100.000
37CL-2378-TCDD	26.354	1.033	4.842e5		1.288			1612		7.18e6		4453.8			bb		37.623

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
 Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time  
 Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.201	0.864	1.130e3	1.181e3	0.802	0.957	0.770	1963	3427	1.84e4	2.15e4	9.4	6.3	YES	bb	bb	0.199
1289-TCDF	27.116	1.056	5.151e2	4.335e2	0.678	1.188	0.770	1963	3427	1.04e4	7.60e3	5.3	2.2	YES	bb	bd	0.097
13468-PECDF					1.246		1.550	1250	1955								
12389-PECDF					0.496		1.550	2390	2427								
123468-HXCDF	33.154	0.953	1.800e4	1.361e4	1.169	1.322	1.240	1974	1622	2.68e5	2.15e5	135.5	132.6	NO	bd	bb	2.822
1368-TCDD	23.486	0.892	3.607e3	4.634e3	1.015	0.778	0.770	1518	1456	5.81e4	7.09e4	38.2	48.7	NO	bd	bd	0.719
1289-TCDD					0.909		0.770	1518	1456								
12479-PECDD	28.786	0.916	9.624e3	6.433e3	2.301	1.496	1.550	1986	2855	8.83e4	6.25e4	44.5	21.9	NO	MM	MM	0.814
12389-PECDD	31.839	1.013	7.589e2	7.745e2	1.184	0.980	1.550	1986	2855	1.26e4	1.21e4	6.3	4.3	YES	bb	bb	0.151
124679-HXCDD	33.933	0.944	6.454e4	5.173e4	1.115	1.248	1.240	2389	2911	9.83e5	7.93e5	411.3	272.4	NO	bb	bb	11.218
1234679-HPCDD	39.148	0.974	8.345e5	8.111e5	1.137	1.029	1.050	4321	3578	1.32e7	1.28e7	3058.4	3568.9	NO	bb	bb	179.887
Total-tetrafurans			5.073e4		0.727			1963		7.17e5							11.304
Total-penta1			4.048e4					1250		5.66e5							6.658
Total-pentafurans			2.290e4		0.654			2390		2.38e5							5.073
Total-hexafurans			2.113e5		1.141			1974		3.06e6							33.359
Total-heptafurans			3.099e5		0.978			2112		4.96e6							82.647
Total-Furans			8.681e5		0.922			1963		1.21e7							215.692
Total-tetradoxins			1.313e4		1.024			1518		1.98e5							2.632
Total-pentadoxins			2.487e4		1.502			1986		2.96e5							3.046
Total-hexadoxins			1.896e5		1.005			2389		2.60e6							34.064
Total-heptadoxins			1.308e6		1.088			4321		2.03e7							290.419
Total-Dioxins			4.812e6		1.130			1518		6.54e7							1295.735
Total-TEQ			5.680e6					1518		7.75e7							1511.427
FUNCTION1 PFK			5.548e5					276207		8.47e6							
FUNCTION2 PFK			1.900e6					190325		4.41e6							0.000
FUNCTION3 PFK			0.000e0					195594		0.00e0							
FUNCTION4 PFK			0.000e0					175734		0.00e0							
FUNCTION5 PFK			7.033e5					159779		1.09e7							
FUNCTION1 HXCD...			7.114e3					935		1.24e5							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			1.141e3					835		2.40e4							0.000
FUNCTION3 OCDPE			6.125e2					866		1.77e4							0.000
FUNCTION4 NCDPE			8.852e4					986		1.40e6							0.000
FUNCTION5 DCDPE			9.613e2					894		8.67e3							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

**Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07****Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27****ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk****TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.97	4.408e3	6.075e3	0.727	0.73	0.77	28.0	YES	NO	db	db	0.995
2	Total-tetrafurans	23.71	2.959e3	4.452e3	0.727	0.66	0.77	24.0	YES	NO	dd	dd	0.703
3	Total-tetrafurans	23.46	4.874e3	5.686e3	0.727	0.86	0.77	36.1	YES	NO	dd	dd	1.002
4	Total-tetrafurans	23.36	7.543e3	9.513e3	0.727	0.79	0.77	48.4	YES	NO	dd	dd	1.619
5	Total-tetrafurans	23.05	5.278e3	6.816e3	0.727	0.77	0.77	39.2	YES	NO	bd	bd	1.148
6	Total-tetrafurans	22.47	2.069e3	2.592e3	0.727	0.80	0.77	14.6	YES	NO	bb	db	0.442
7	Total-tetrafurans	25.93	2.976e3	4.113e3	0.727	0.72	0.77	21.4	YES	NO	db	db	0.673
8	Total-tetrafurans	25.84	2.241e3	3.406e3	0.727	0.66	0.77	19.2	YES	NO	dd	dd	0.536
9	2378-TCDF	25.72	2.420e3	3.696e3	0.702	0.65	0.77	22.8	YES	NO	dd	dd	0.602
10	Total-tetrafurans	25.48	5.384e3	8.085e3	0.727	0.67	0.77	29.9	YES	NO	bb	dd	1.278
11	Total-tetrafurans	24.80	2.159e3	2.883e3	0.727	0.75	0.77	17.4	YES	NO	bb	bb	0.479
12	Total-tetrafurans	24.46	2.095e3	2.376e3	0.727	0.88	0.77	17.9	YES	NO	dd	dd	0.424
13	Total-tetrafurans	24.38	4.084e3	5.366e3	0.727	0.76	0.77	26.4	YES	NO	dd	bd	0.897
14	Total-tetrafurans	27.33	2.234e3	3.092e3	0.727	0.72	0.77	19.9	YES	NO	bb	bb	0.506

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.13	4.048e4	2.726e4		1.48	1.55	452.8	YES	NO	bb	bb	6.658

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDF	29.87	2.515e3	1.534e3	0.679	1.64	1.55	14.4	YES	NO	bb	bb	0.537
2	Total-pentafurans	28.81	2.039e4	1.195e4	0.654	1.71	1.55	85.3	YES	NO	MM	db	4.536

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

**ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk****HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123678-HxCDF	34.96	7.416e3	5.628e3	1.091	1.32	1.24	48.5	YES	NO	dd	dd	1.042
2	123478-HxCDF	34.82	1.817e4	1.412e4	1.166	1.29	1.24	139.2	YES	NO	dd	dd	2.890
3	Total-hexafurans	34.20	9.177e4	7.462e4	1.141	1.23	1.24	717.3	YES	NO	bb	bb	14.665
4	Total-hexafurans	33.90	1.869e3	1.475e3	1.141	1.27	1.24	13.8	YES	NO	bb	bb	0.295
5	Total-hexafurans	33.37	6.107e4	4.714e4	1.141	1.30	1.24	414.4	YES	NO	dd	bd	9.537
6	123468-HxCDF	33.15	1.800e4	1.361e4	1.169	1.32	1.24	135.5	YES	NO	bd	bb	2.822
7	123789-HxCDF	36.83	3.671e3	3.014e3	1.137	1.22	1.24	26.6	YES	NO	bd	MM	0.642
8	234678-HxCDF	35.79	8.759e3	6.151e3	1.140	1.42	1.24	47.7	YES	NO	bb	bb	1.366
9	Total-hexafurans	35.30	6.251e2	4.979e2	1.141	1.26	1.24	5.4	YES	NO	bb	bb	0.099

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.70	9.358e4	9.000e4	1.003	1.04	1.05	720.3	YES	NO	bb	bb	22.845
2	1234789-HpCDF	40.92	7.252e3	6.486e3	0.953	1.12	1.05	49.4	YES	NO	bb	bb	2.076
3	Total-heptafurans	39.36	2.091e5	2.132e5	0.978	0.98	1.05	1577.5	YES	NO	bb	bb	57.726

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
 Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time  
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ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

## Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.97	4.408e3	6.075e3	0.727	0.73	0.77	28.0	YES	NO	db	db	0.995
2	Total-tetrafurans	23.71	2.959e3	4.452e3	0.727	0.66	0.77	24.0	YES	NO	dd	dd	0.703
3	Total-tetrafurans	23.46	4.874e3	5.686e3	0.727	0.86	0.77	36.1	YES	NO	dd	dd	1.002
4	Total-tetrafurans	23.36	7.543e3	9.513e3	0.727	0.79	0.77	48.4	YES	NO	dd	dd	1.619
5	Total-tetrafurans	23.05	5.278e3	6.816e3	0.727	0.77	0.77	39.2	YES	NO	bd	bd	1.148
6	Total-tetrafurans	22.47	2.069e3	2.592e3	0.727	0.80	0.77	14.6	YES	NO	bb	db	0.442
7	Total-Furans	21.62	1.101e2	1.614e2	0.922	0.68	0.77	1.1	NO	NO	bb	bb	0.020
8	Total-tetrafurans	25.93	2.976e3	4.113e3	0.727	0.72	0.77	21.4	YES	NO	db	db	0.673
9	Total-tetrafurans	25.84	2.241e3	3.406e3	0.727	0.66	0.77	19.2	YES	NO	dd	dd	0.536
10	2378-TCDF	25.72	2.420e3	3.696e3	0.702	0.65	0.77	22.8	YES	NO	dd	dd	0.602
11	Total-tetrafurans	25.48	5.384e3	8.085e3	0.727	0.67	0.77	29.9	YES	NO	bb	dd	1.278
12	Total-tetrafurans	24.80	2.159e3	2.883e3	0.727	0.75	0.77	17.4	YES	NO	bb	bb	0.479
13	Total-tetrafurans	24.46	2.095e3	2.376e3	0.727	0.88	0.77	17.9	YES	NO	dd	dd	0.424
14	Total-tetrafurans	24.38	4.084e3	5.366e3	0.727	0.76	0.77	26.4	YES	NO	dd	bd	0.897
15	Total-tetrafurans	27.33	2.234e3	3.092e3	0.727	0.72	0.77	19.9	YES	NO	bb	bb	0.506
16	12378-PeCDF	29.87	2.515e3	1.534e3	0.679	1.64	1.55	14.4	YES	NO	bb	bb	0.537
17	Total-pentafurans	28.81	2.039e4	1.195e4	0.654	1.71	1.55	85.3	YES	NO	MM	db	4.536
18	123678-HxCDF	34.96	7.416e3	5.628e3	1.091	1.32	1.24	48.5	YES	NO	dd	dd	1.042
19	123478-HxCDF	34.82	1.817e4	1.412e4	1.166	1.29	1.24	139.2	YES	NO	dd	dd	2.890
20	Total-hexafurans	34.20	9.177e4	7.462e4	1.141	1.23	1.24	717.3	YES	NO	bb	bb	14.665
21	Total-hexafurans	33.90	1.869e3	1.475e3	1.141	1.27	1.24	13.8	YES	NO	bb	bb	0.295
22	Total-hexafurans	33.37	6.107e4	4.714e4	1.141	1.30	1.24	414.4	YES	NO	dd	bd	9.537
23	123468-HXCDF	33.15	1.800e4	1.361e4	1.169	1.32	1.24	135.5	YES	NO	bd	bb	2.822
24	123789-HxCDF	36.83	3.671e3	3.014e3	1.137	1.22	1.24	26.6	YES	NO	bd	MM	0.642
25	234678-HxCDF	35.79	8.759e3	6.151e3	1.140	1.42	1.24	47.7	YES	NO	bb	bb	1.366
26	Total-hexafurans	35.30	6.251e2	4.979e2	1.141	1.26	1.24	5.4	YES	NO	bb	bb	0.099
27	1234678-HpCDF	38.70	9.358e4	9.000e4	1.003	1.04	1.05	720.3	YES	NO	bb	bb	22.845
28	1234789-HpCDF	40.92	7.252e3	6.486e3	0.953	1.12	1.05	49.4	YES	NO	bb	bb	2.076
29	Total-heptafurans	39.36	2.091e5	2.132e5	0.978	0.98	1.05	1577.5	YES	NO	bb	bb	57.726
30	OCDF	45.13	2.326e5	2.427e5	0.778	0.96	0.89	2312.3	YES	NO	bd	bb	76.631
31	Total-penta1	27.13	4.048e4	2.726e4		1.48	1.55	452.8	YES	NO	bb	bb	6.658

ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	24.97	1.545e3	2.035e3	1.024	0.76	0.77	14.8	YES	NO	bb	bb	0.310
2	Total-tetradoxins	24.69	1.073e3	1.359e3	1.024	0.79	0.77	9.4	YES	NO	bb	bd	0.210
3	Total-tetradoxins	24.47	1.389e3	1.863e3	1.024	0.75	0.77	15.5	YES	NO	bb	bb	0.281
4	Total-tetradoxins	23.97	5.609e2	7.437e2	1.024	0.75	0.77	7.0	YES	NO	bb	db	0.113
5	Total-tetradoxins	23.75	2.212e3	3.012e3	1.024	0.73	0.77	24.3	YES	NO	bb	dd	0.452
6	1368-TCDD	23.49	3.607e3	4.634e3	1.015	0.78	0.77	38.2	YES	NO	bd	bd	0.719
7	Total-tetradoxins	26.49	6.413e2	8.586e2	1.024	0.75	0.77	6.3	YES	NO	dd	dd	0.130
8	Total-tetradoxins	25.97	1.446e3	1.931e3	1.024	0.75	0.77	10.8	YES	NO	bd	bb	0.292
9	Total-tetradoxins	25.34	6.530e2	7.783e2	1.024	0.84	0.77	4.0	YES	NO	bb	db	0.124

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadoxins	30.38	3.226e3	2.251e3	1.502	1.43	1.55	17.0	YES	NO	db	db	0.425
2	Total-pentadoxins	30.07	4.026e3	2.482e3	1.502	1.62	1.55	29.3	YES	NO	dd	bd	0.505
3	Total-pentadoxins	29.24	2.502e3	1.864e3	1.502	1.34	1.55	20.8	YES	NO	bb	bb	0.339
4	12378-PeCDD	31.46	4.098e3	2.813e3	1.022	1.46	1.55	28.7	YES	NO	MM	bb	0.789
5	Total-pentadoxins	30.77	1.392e3	8.633e2	1.502	1.61	1.55	8.8	YES	NO	bb	bb	0.175
6	12479-PECDD	28.79	9.624e3	6.433e3	2.301	1.50	1.55	44.5	YES	NO	MM	MM	0.814

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.45	1.157e4	9.825e3	0.907	1.18	1.24	76.8	YES	NO	bb	dd	2.342
2	123678-HxCDD	36.06	1.940e4	1.717e4	1.001	1.13	1.24	126.6	YES	NO	dd	dd	3.368
3	123478-HxCDD	35.94	4.511e3	4.070e3	0.996	1.11	1.24	33.4	YES	NO	bd	bd	0.928
4	Total-hexadoxins	35.17	1.126e4	1.002e4	1.005	1.12	1.24	73.0	YES	NO	db	db	2.102
5	Total-hexadoxins	35.07	6.549e4	5.402e4	1.005	1.21	1.24	280.2	YES	NO	bd	bd	11.811
6	Total-hexadoxins	34.70	1.280e4	1.042e4	1.005	1.23	1.24	88.3	YES	NO	bb	bb	2.295
7	124679-HXCDD	33.93	6.454e4	5.173e4	1.115	1.25	1.24	411.3	YES	NO	bb	bb	11.218

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.18	4.733e5	4.508e5	1.039	1.05	1.05	1638.8	YES	NO	bb	bb	110.533
2	1234679-HPCDD	39.15	8.345e5	8.111e5	1.137	1.03	1.05	3058.4	YES	NO	bb	bb	179.887



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

**ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk****Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	24.97	1.545e3	2.035e3	1.024	0.76	0.77	14.8	YES	NO	bb	bb	0.310
2	Total-tetradoxins	24.69	1.073e3	1.359e3	1.024	0.79	0.77	9.4	YES	NO	bb	bd	0.210
3	Total-tetradoxins	24.47	1.389e3	1.863e3	1.024	0.75	0.77	15.5	YES	NO	bb	bb	0.281
4	Total-tetradoxins	23.97	5.609e2	7.437e2	1.024	0.75	0.77	7.0	YES	NO	bb	db	0.113
5	Total-tetradoxins	23.75	2.212e3	3.012e3	1.024	0.73	0.77	24.3	YES	NO	bb	dd	0.452
6	1368-TCDD	23.49	3.607e3	4.634e3	1.015	0.78	0.77	38.2	YES	NO	bd	bd	0.719
7	Total-tetradoxins	26.49	6.413e2	8.586e2	1.024	0.75	0.77	6.3	YES	NO	dd	dd	0.130
8	Total-tetradoxins	25.97	1.446e3	1.931e3	1.024	0.75	0.77	10.8	YES	NO	bd	bb	0.292
9	Total-tetradoxins	25.34	6.530e2	7.783e2	1.024	0.84	0.77	4.0	YES	NO	bb	db	0.124
10	Total-pentadoxins	30.38	3.226e3	2.251e3	1.502	1.43	1.55	17.0	YES	NO	db	db	0.425
11	Total-pentadoxins	30.07	4.026e3	2.482e3	1.502	1.62	1.55	29.3	YES	NO	dd	bd	0.505
12	Total-pentadoxins	29.24	2.502e3	1.864e3	1.502	1.34	1.55	20.8	YES	NO	bb	bb	0.339
13	12378-PeCDD	31.46	4.098e3	2.813e3	1.022	1.46	1.55	28.7	YES	NO	MM	bb	0.789
14	Total-pentadoxins	30.77	1.392e3	8.633e2	1.502	1.61	1.55	8.8	YES	NO	bb	bb	0.175
15	123789-HxCDD	36.45	1.157e4	9.825e3	0.907	1.18	1.24	76.8	YES	NO	bb	dd	2.342
16	123678-HxCDD	36.06	1.940e4	1.717e4	1.001	1.13	1.24	126.6	YES	NO	dd	dd	3.368
17	123478-HxCDD	35.94	4.511e3	4.070e3	0.996	1.11	1.24	33.4	YES	NO	bd	bd	0.928
18	Total-hexadoxins	35.17	1.126e4	1.002e4	1.005	1.12	1.24	73.0	YES	NO	db	db	2.102
19	Total-hexadoxins	35.07	6.549e4	5.402e4	1.005	1.21	1.24	280.2	YES	NO	bd	bd	11.811
20	Total-hexadoxins	34.70	1.280e4	1.042e4	1.005	1.23	1.24	88.3	YES	NO	bb	bb	2.295
21	124679-HXCDD	33.93	6.454e4	5.173e4	1.115	1.25	1.24	411.3	YES	NO	bb	bb	11.218
22	1234678-HpCDD	40.18	4.733e5	4.508e5	1.039	1.05	1.05	1638.8	YES	NO	bb	bb	110.533
23	1234679-HPCDD	39.15	8.345e5	8.111e5	1.137	1.03	1.05	3058.4	YES	NO	bb	bb	179.887
24	OCDD	44.89	3.277e6	3.807e6	0.920	0.86	0.89	8386.1	YES	NO	bb	bb	965.573
25	12479-PECDD	28.79	9.624e3	6.433e3	2.301	1.50	1.55	44.5	YES	NO	MM	MM	0.814

## Quantify Totals Report MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.97	4.408e3	6.075e3	0.727	0.73	0.77	28.0	YES	NO	db	db	0.995
2	Total-tetrafurans	23.71	2.959e3	4.452e3	0.727	0.66	0.77	24.0	YES	NO	dd	dd	0.703
3	Total-tetrafurans	23.46	4.874e3	5.686e3	0.727	0.86	0.77	36.1	YES	NO	dd	dd	1.002
4	Total-tetrafurans	23.36	7.543e3	9.513e3	0.727	0.79	0.77	48.4	YES	NO	dd	dd	1.619
5	Total-tetrafurans	23.05	5.278e3	6.816e3	0.727	0.77	0.77	39.2	YES	NO	bd	bd	1.148
6	Total-tetrafurans	22.47	2.069e3	2.592e3	0.727	0.80	0.77	14.6	YES	NO	bb	db	0.442
7	Total-Furans	21.62	1.101e2	1.614e2	0.922	0.68	0.77	1.1	NO	NO	bb	bb	0.020
8	Total-tetrafurans	25.93	2.976e3	4.113e3	0.727	0.72	0.77	21.4	YES	NO	db	db	0.673
9	Total-tetrafurans	25.84	2.241e3	3.406e3	0.727	0.66	0.77	19.2	YES	NO	dd	dd	0.536
10	2378-TCDF	25.72	2.420e3	3.696e3	0.702	0.65	0.77	22.8	YES	NO	dd	dd	0.602
11	Total-tetrafurans	25.48	5.384e3	8.085e3	0.727	0.67	0.77	29.9	YES	NO	bb	dd	1.278
12	Total-tetrafurans	24.80	2.159e3	2.883e3	0.727	0.75	0.77	17.4	YES	NO	bb	bb	0.479
13	Total-tetrafurans	24.46	2.095e3	2.376e3	0.727	0.88	0.77	17.9	YES	NO	dd	dd	0.424
14	Total-tetrafurans	24.38	4.084e3	5.366e3	0.727	0.76	0.77	26.4	YES	NO	dd	bd	0.897
15	Total-tetrafurans	27.33	2.234e3	3.092e3	0.727	0.72	0.77	19.9	YES	NO	bb	bb	0.506
16	12378-PeCDF	29.87	2.515e3	1.534e3	0.679	1.64	1.55	14.4	YES	NO	bb	bb	0.537
17	Total-pentafurans	28.81	2.039e4	1.195e4	0.654	1.71	1.55	85.3	YES	NO	MM	db	4.536
18	123678-HxCDF	34.96	7.416e3	5.628e3	1.091	1.32	1.24	48.5	YES	NO	dd	dd	1.042
19	123478-HxCDF	34.82	1.817e4	1.412e4	1.166	1.29	1.24	139.2	YES	NO	dd	dd	2.890
20	Total-hexafurans	34.20	9.177e4	7.462e4	1.141	1.23	1.24	717.3	YES	NO	bb	bb	14.665
21	Total-hexafurans	33.90	1.869e3	1.475e3	1.141	1.27	1.24	13.8	YES	NO	bb	bb	0.295
22	Total-hexafurans	33.37	6.107e4	4.714e4	1.141	1.30	1.24	414.4	YES	NO	dd	bd	9.537
23	123468-HXCDF	33.15	1.800e4	1.361e4	1.169	1.32	1.24	135.5	YES	NO	bd	bb	2.822
24	123789-HxCDF	36.83	3.671e3	3.014e3	1.137	1.22	1.24	26.6	YES	NO	bd	MM	0.642
25	234678-HxCDF	35.79	8.759e3	6.151e3	1.140	1.42	1.24	47.7	YES	NO	bb	bb	1.366
26	Total-hexafurans	35.30	6.251e2	4.979e2	1.141	1.26	1.24	5.4	YES	NO	bb	bb	0.099
27	1234678-HpCDF	38.70	9.358e4	9.000e4	1.003	1.04	1.05	720.3	YES	NO	bb	bb	22.845
28	1234789-HpCDF	40.92	7.252e3	6.486e3	0.953	1.12	1.05	49.4	YES	NO	bb	bb	2.076
29	Total-heptafurans	39.36	2.091e5	2.132e5	0.978	0.98	1.05	1577.5	YES	NO	bb	bb	57.726
30	OCDF	45.13	2.326e5	2.427e5	0.778	0.96	0.89	2312.3	YES	NO	bd	bb	76.631
31	Total-penta1	27.13	4.048e4	2.726e4		1.48	1.55	452.8	YES	NO	bb	bb	6.658
32	Total-tetradioxins	24.97	1.545e3	2.035e3	1.024	0.76	0.77	14.8	YES	NO	bb	bb	0.310
33	Total-tetradioxins	24.69	1.073e3	1.359e3	1.024	0.79	0.77	9.4	YES	NO	bb	bd	0.210
34	Total-tetradioxins	24.47	1.389e3	1.863e3	1.024	0.75	0.77	15.5	YES	NO	bb	bb	0.281
35	Total-tetradioxins	23.97	5.609e2	7.437e2	1.024	0.75	0.77	7.0	YES	NO	bb	db	0.113
36	Total-tetradioxins	23.75	2.212e3	3.012e3	1.024	0.73	0.77	24.3	YES	NO	bb	dd	0.452
37	1368-TCDD	23.49	3.607e3	4.634e3	1.015	0.78	0.77	38.2	YES	NO	bd	bd	0.719

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

**ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk****TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-tetradoxins	26.49	6.413e2	8.586e2	1.024	0.75	0.77	6.3	YES	NO	dd	dd	0.130
39	Total-tetradoxins	25.97	1.446e3	1.931e3	1.024	0.75	0.77	10.8	YES	NO	bd	bb	0.292
40	Total-tetradoxins	25.34	6.530e2	7.783e2	1.024	0.84	0.77	4.0	YES	NO	bb	db	0.124
41	Total-pentadoxins	30.38	3.226e3	2.251e3	1.502	1.43	1.55	17.0	YES	NO	db	db	0.425
42	Total-pentadoxins	30.07	4.026e3	2.482e3	1.502	1.62	1.55	29.3	YES	NO	dd	bd	0.505
43	Total-pentadoxins	29.24	2.502e3	1.864e3	1.502	1.34	1.55	20.8	YES	NO	bb	bb	0.339
44	12378-PeCDD	31.46	4.098e3	2.813e3	1.022	1.46	1.55	28.7	YES	NO	MM	bb	0.789
45	Total-pentadoxins	30.77	1.392e3	8.633e2	1.502	1.61	1.55	8.8	YES	NO	bb	bb	0.175
46	123789-HxCDD	36.45	1.157e4	9.825e3	0.907	1.18	1.24	76.8	YES	NO	bb	dd	2.342
47	123678-HxCDD	36.06	1.940e4	1.717e4	1.001	1.13	1.24	126.6	YES	NO	dd	dd	3.368
48	123478-HxCDD	35.94	4.511e3	4.070e3	0.996	1.11	1.24	33.4	YES	NO	bd	bd	0.928
49	Total-hexadoxins	35.17	1.126e4	1.002e4	1.005	1.12	1.24	73.0	YES	NO	db	db	2.102
50	Total-hexadoxins	35.07	6.549e4	5.402e4	1.005	1.21	1.24	280.2	YES	NO	bd	bd	11.811
51	Total-hexadoxins	34.70	1.280e4	1.042e4	1.005	1.23	1.24	88.3	YES	NO	bb	bb	2.295
52	124679-HXCDD	33.93	6.454e4	5.173e4	1.115	1.25	1.24	411.3	YES	NO	bb	bb	11.218
53	1234678-HpCDD	40.18	4.733e5	4.508e5	1.039	1.05	1.05	1638.8	YES	NO	bb	bb	110.533
54	1234679-HPCDD	39.15	8.345e5	8.111e5	1.137	1.03	1.05	3058.4	YES	NO	bb	bb	179.887
55	OCDD	44.89	3.277e6	3.807e6	0.920	0.86	0.89	8386.1	YES	NO	bb	bb	965.573
56	12479-PECDD	28.79	9.624e3	6.433e3	2.301	1.50	1.55	44.5	YES	NO	MM	MM	0.814

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

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**ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk****PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.49	7.953e4					2.2	NO		bb		
2	FUNCTION1 PFK	22.67	1.328e4					0.7	NO		bb		
3	FUNCTION1 PFK	22.41	6.759e3					0.9	NO		bb		
4	FUNCTION1 PFK	22.26	2.026e4					1.4	NO		bb		
5	FUNCTION1 PFK	21.24	2.466e4					1.8	NO		bb		
6	FUNCTION1 PFK	21.11	4.959e3					0.7	NO		bb		
7	FUNCTION1 PFK	27.17	6.748e3					1.0	NO		bb		
8	FUNCTION1 PFK	26.88	2.976e4					1.5	NO		bb		
9	FUNCTION1 PFK	26.58	1.013e4					1.1	NO		db		
10	FUNCTION1 PFK	26.54	1.422e4					1.4	NO		bd		
11	FUNCTION1 PFK	26.35	2.900e4					0.5	NO		bb		
12	FUNCTION1 PFK	26.09	1.214e5					3.9	YES		db		
13	FUNCTION1 PFK	26.00	3.282e4					2.3	NO		bd		
14	FUNCTION1 PFK	25.72	7.694e3					1.0	NO		bb		
15	FUNCTION1 PFK	25.28	4.199e4					2.2	NO		db		
16	FUNCTION1 PFK	25.18	4.470e4					2.1	NO		dd		
17	FUNCTION1 PFK	25.07	2.350e4					1.5	NO		bd		
18	FUNCTION1 PFK	24.83	1.826e4					1.5	NO		bb		
19	FUNCTION1 PFK	24.62	1.763e3					0.5	NO		bb		
20	FUNCTION1 PFK	24.14	1.846e4					1.4	NO		bb		
21	FUNCTION1 PFK	23.97	1.537e3					0.4	NO		bb		
22	FUNCTION1 PFK	23.91	3.335e3					0.6	NO		bb		

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.67	7.509e5					4.4	YES		bb		0.000
2	FUNCTION2 PFK	29.16	1.149e6					18.7	YES		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
 Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time  
 Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.38	3.746e3					0.9	NO		bd		
2	FUNCTION5 PFK	44.17	1.424e3					0.6	NO		bb		
3	FUNCTION5 PFK	43.96	8.815e3					1.3	NO		bb		
4	FUNCTION5 PFK	43.84	2.415e3					0.8	NO		bb		
5	FUNCTION5 PFK	43.63	3.017e3					0.7	NO		bb		
6	FUNCTION5 PFK	43.45	6.286e3					1.4	NO		db		
7	FUNCTION5 PFK	43.34	6.509e4					5.7	YES		dd		
8	FUNCTION5 PFK	43.19	2.486e5					11.4	YES		dd		
9	FUNCTION5 PFK	43.13	1.769e5					13.1	YES		dd		
10	FUNCTION5 PFK	43.03	1.126e5					16.3	YES		bd		
11	FUNCTION5 PFK	45.89	4.672e3					1.0	NO		db		
12	FUNCTION5 PFK	45.82	6.733e3					1.3	NO		bd		
13	FUNCTION5 PFK	45.68	2.496e3					0.9	NO		db		
14	FUNCTION5 PFK	45.61	3.296e3					0.7	NO		bd		
15	FUNCTION5 PFK	45.39	1.402e3					0.6	NO		db		
16	FUNCTION5 PFK	45.35	3.879e3					0.8	NO		dd		
17	FUNCTION5 PFK	45.30	6.959e3					1.4	NO		bd		
18	FUNCTION5 PFK	45.01	4.549e3					1.1	NO		bb		
19	FUNCTION5 PFK	44.91	5.796e2					0.4	NO		bb		
20	FUNCTION5 PFK	44.85	1.289e4					2.1	NO		db		
21	FUNCTION5 PFK	44.78	7.468e3					1.7	NO		dd		
22	FUNCTION5 PFK	44.74	6.313e3					1.5	NO		dd		
23	FUNCTION5 PFK	44.69	5.587e3					1.2	NO		bd		
24	FUNCTION5 PFK	44.41	7.520e3					1.3	NO		db		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

**ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk****ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	21.86	1.460e2					3.8	YES		bb		0.000
2	FUNCTION1 HXCD...	25.87	2.232e3					37.1	YES		db		0.000
3	FUNCTION1 HXCD...	25.76	2.732e2					4.6	YES		dd		0.000
4	FUNCTION1 HXCD...	25.69	1.544e2					4.3	YES		dd		0.000
5	FUNCTION1 HXCD...	25.62	2.742e2					8.3	YES		bd		0.000
6	FUNCTION1 HXCD...	24.90	7.228e1					1.8	NO		db		0.000
7	FUNCTION1 HXCD...	24.79	2.122e2					3.7	YES		bd		0.000
8	FUNCTION1 HXCD...	24.46	1.191e2					2.1	NO		db		0.000
9	FUNCTION1 HXCD...	24.43	1.055e2					1.8	NO		dd		0.000
10	FUNCTION1 HXCD...	24.28	1.451e2					2.6	NO		bd		0.000
11	FUNCTION1 HXCD...	23.71	3.306e2					5.3	YES		bb		0.000
12	FUNCTION1 HXCD...	23.61	1.445e2					4.4	YES		bb		0.000
13	FUNCTION1 HXCD...	23.42	9.790e1					1.3	NO		db		0.000
14	FUNCTION1 HXCD...	23.32	7.159e1					1.4	NO		bd		0.000
15	FUNCTION1 HXCD...	22.48	7.322e1					1.5	NO		bb		0.000
16	FUNCTION1 HXCD...	22.27	4.472e2					7.1	YES		db		0.000
17	FUNCTION1 HXCD...	22.10	4.065e2					6.0	YES		bd		0.000
18	FUNCTION1 HXCD...	27.44	1.892e2					3.5	YES		bb		0.000
19	FUNCTION1 HXCD...	27.09	3.166e2					8.6	YES		bb		0.000
20	FUNCTION1 HXCD...	26.73	3.191e2					4.3	YES		bb		0.000
21	FUNCTION1 HXCD...	26.55	1.952e2					4.7	YES		bb		0.000
22	FUNCTION1 HXCD...	26.34	1.842e2					5.3	YES		bb		0.000
23	FUNCTION1 HXCD...	26.11	6.040e2					9.5	YES		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:57:31 Pacific Daylight Time

**ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk****ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.17	1.355e2					3.4	YES		db		0.000
2	FUNCTION2 HPCD...	32.12	8.060e1					2.2	NO		bd		0.000
3	FUNCTION2 HPCD...	30.84	8.324e1					2.2	NO		bb		0.000
4	FUNCTION2 HPCD...	30.02	8.479e1					2.6	NO		db		0.000
5	FUNCTION2 HPCD...	29.96	7.356e1					1.9	NO		dd		0.000
6	FUNCTION2 HPCD...	29.86	1.554e2					3.5	YES		bd		0.000
7	FUNCTION2 HPCD...	29.50	7.081e1					3.4	YES		bb		0.000
8	FUNCTION2 HPCD...	29.04	8.728e1					1.8	NO		bb		0.000
9	FUNCTION2 HPCD...	28.91	3.701e2					7.7	YES		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.25	7.244e1					3.4	YES		db		0.000
2	FUNCTION3 OCDPE	37.18	1.581e2					5.0	YES		bd		0.000
3	FUNCTION3 OCDPE	37.10	1.640e2					8.2	YES		bb		0.000
4	FUNCTION3 OCDPE	34.16	8.620e1					1.9	NO		bb		0.000
5	FUNCTION3 OCDPE	33.06	1.317e2					2.0	NO		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.59	2.625e2					7.9	YES		db		0.000
2	FUNCTION4 NCDPE	38.36	8.814e4					1406.8	YES		bd		0.000
3	FUNCTION4 NCDPE	38.08	1.150e2					2.9	NO		bb		0.000

**ETHERS6**

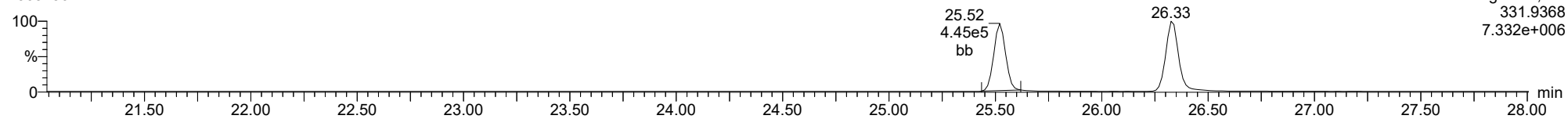
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.91	9.613e2					9.7	YES		bb		0.000

**Method:** T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

**ID:** 23D0063-01, **Name:** 23051504, **Date:** 15-May-2023, **Time:** 13:59:30, **Conditions:** AUTOSPEC01, **User:** pk

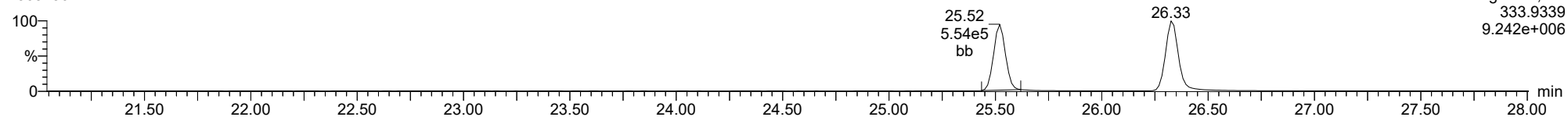
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23051504



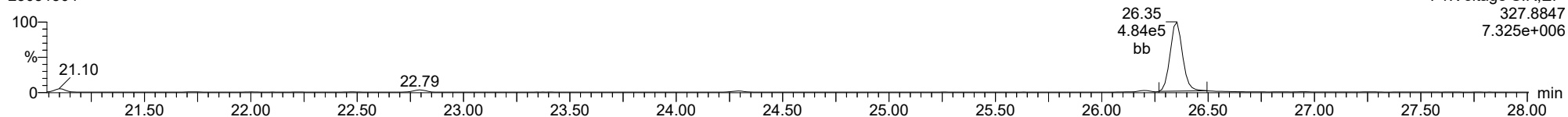
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23051504



**37CL-2378-TCDD**

23051504

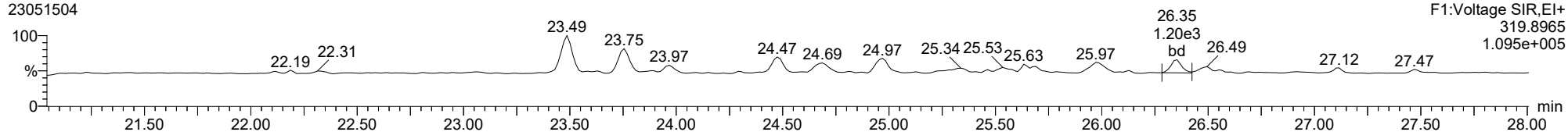




ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

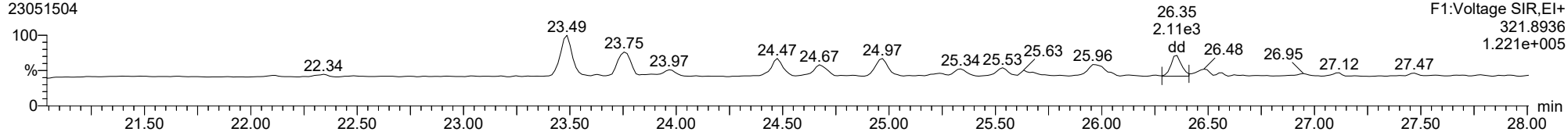
**2378-TCDD**

23051504



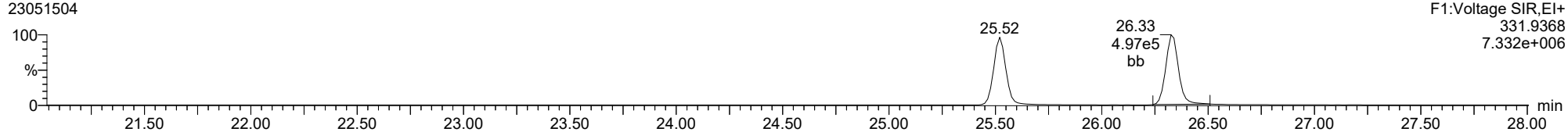
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23051504



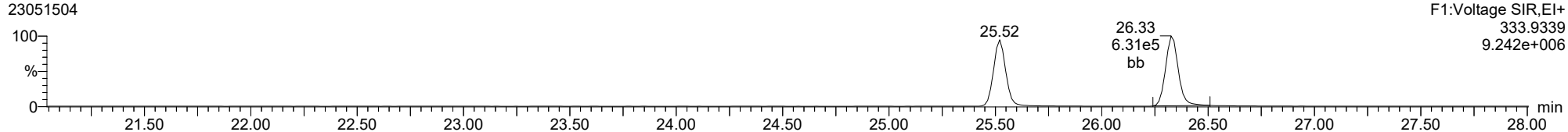
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23051504



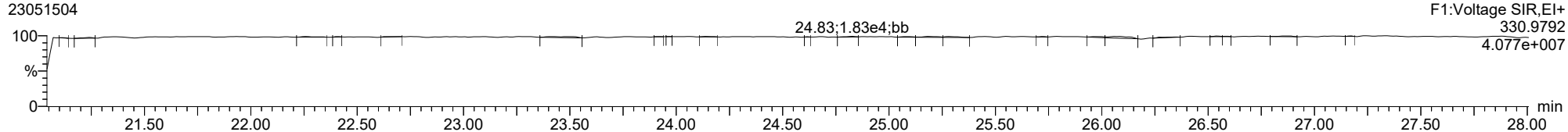
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23051504



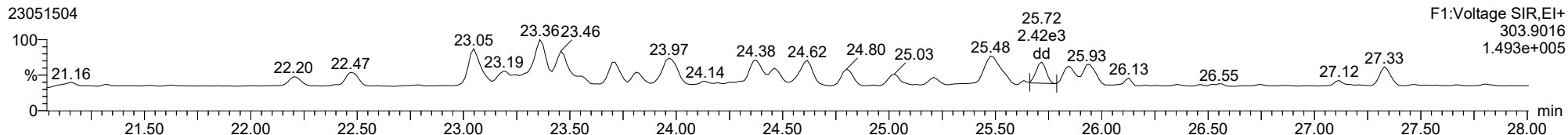
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23051504

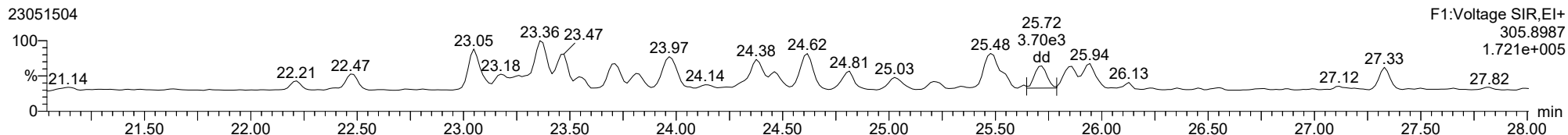


ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

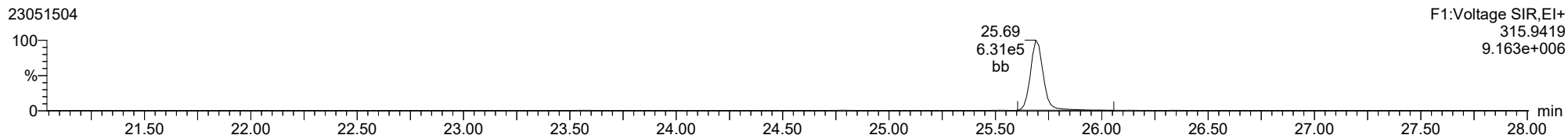
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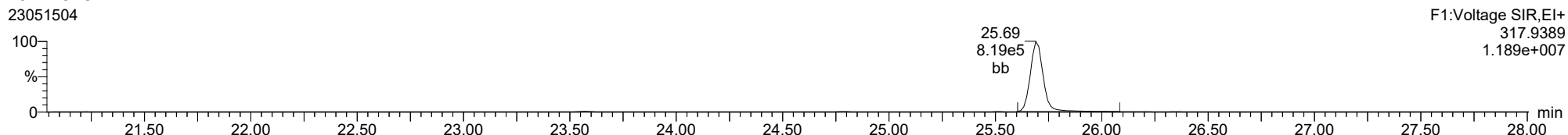
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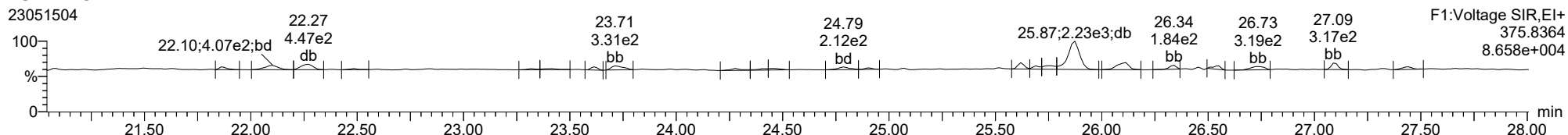
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**13C-2378-TCDF**



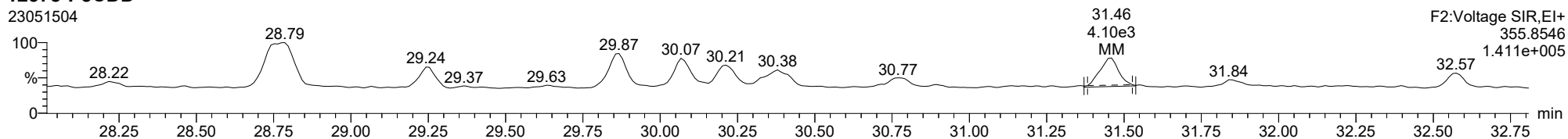
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ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

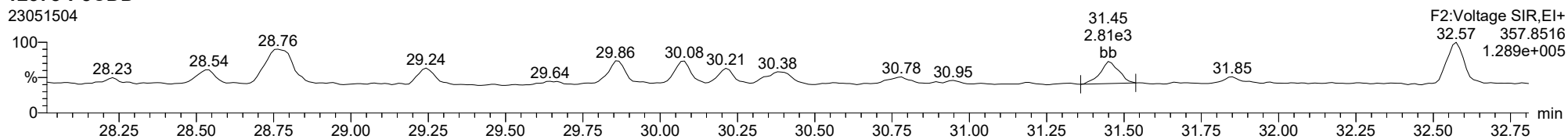
**12378-PeCDD**

23051504



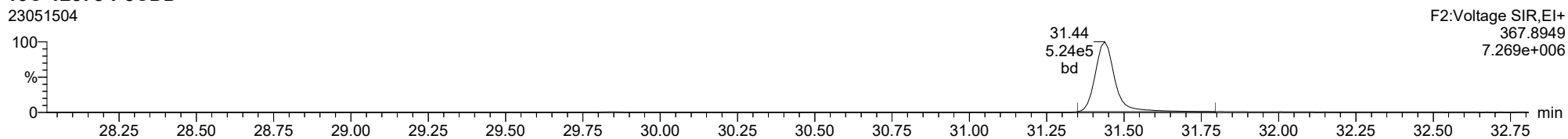
**12378-PeCDD**

23051504



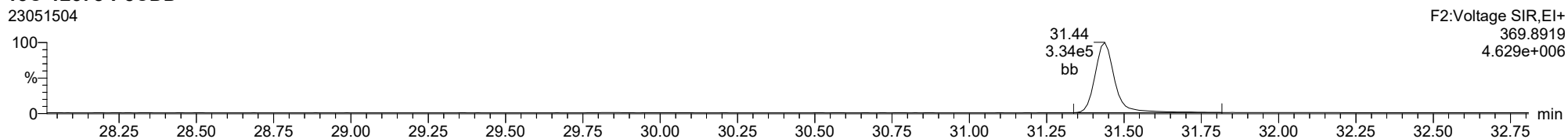
**13C-12378-PeCDD**

23051504



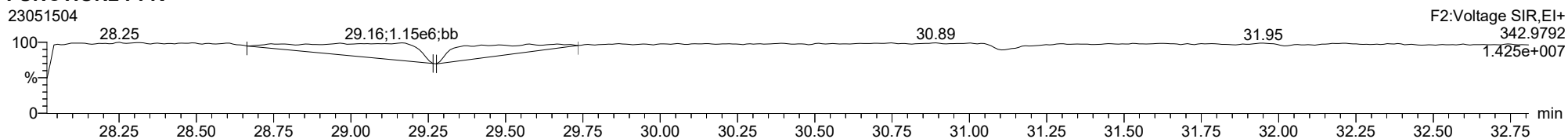
**13C-12378-PeCDD**

23051504



**FUNCTION2 PFK**

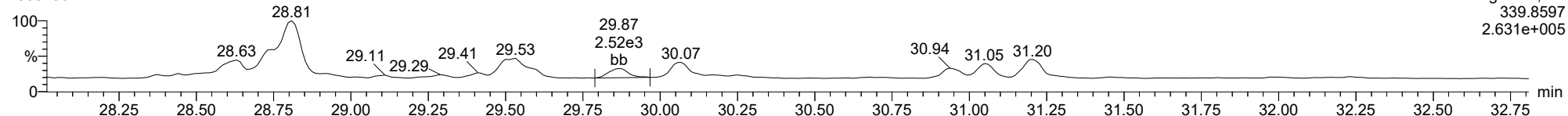
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ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

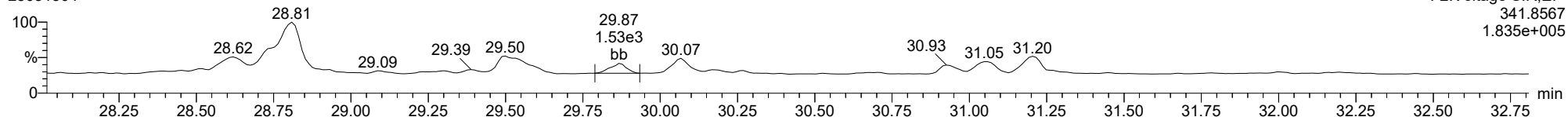
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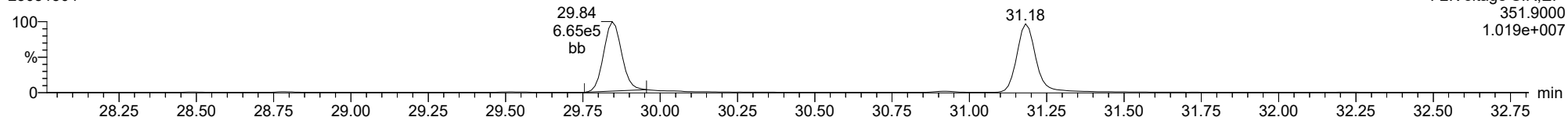
**12378-PeCDF**

23051504



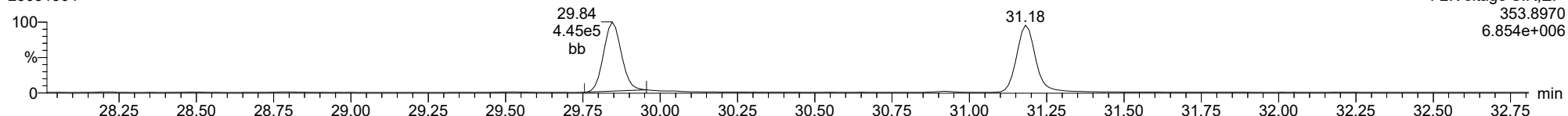
**13C-12378-PeCDF**

23051504



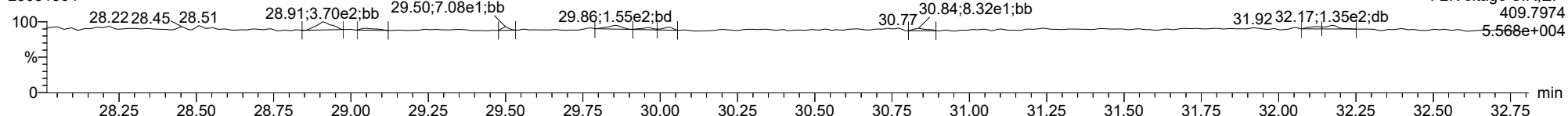
**13C-12378-PeCDF**

23051504



**FUNCTION2 HPCDPE**

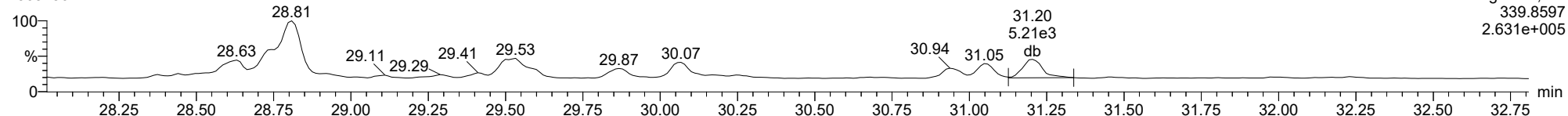
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ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

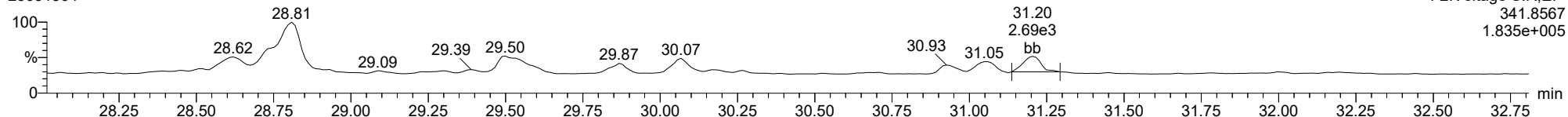
**23478-PeCDF**

23051504



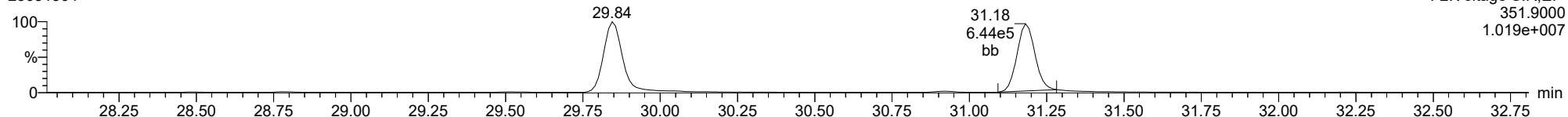
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23051504



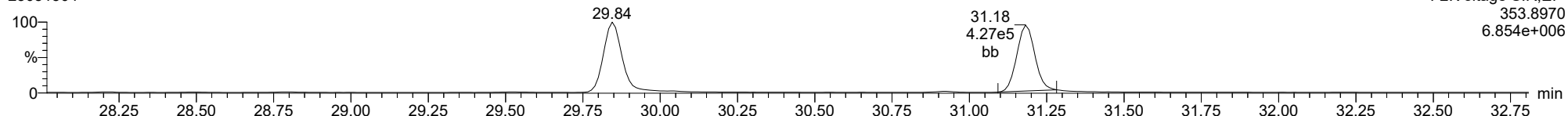
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23051504



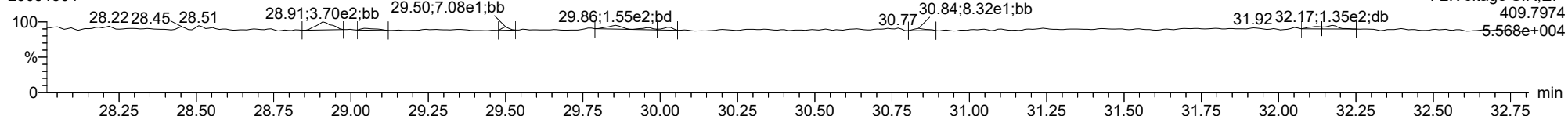
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23051504



**FUNCTION2 HPCDPE**

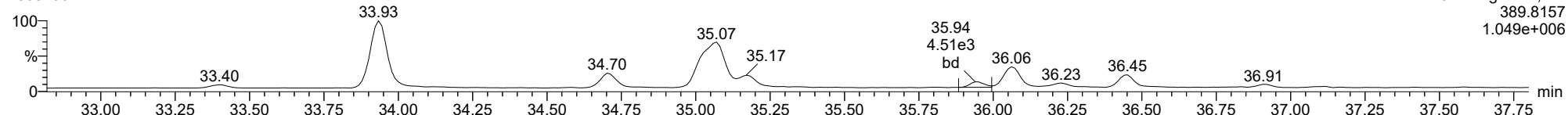
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ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

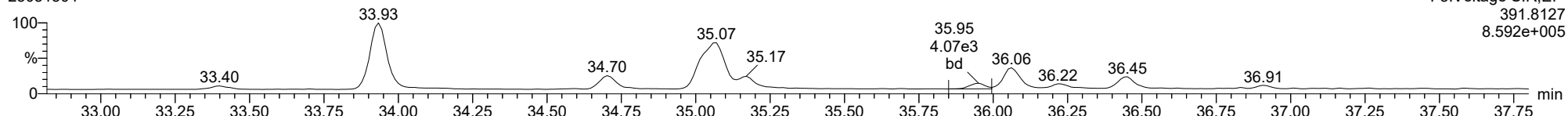
123478-HxCDD

23051504



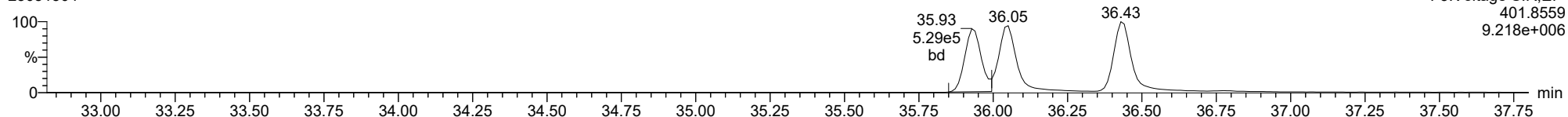
123478-HxCDD

23051504



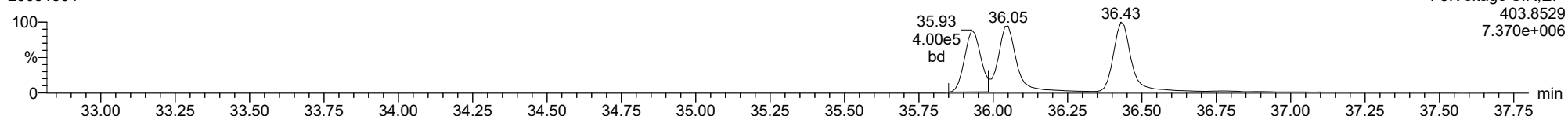
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23051504



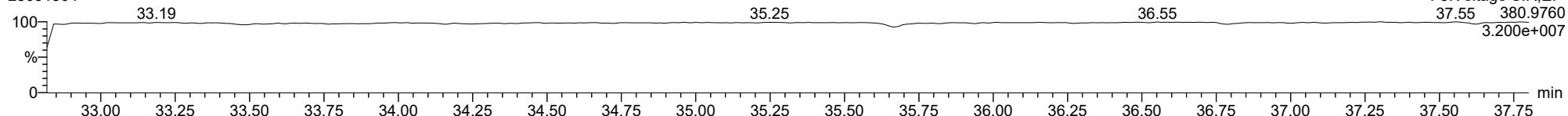
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23051504



FUNCTION3 PFK

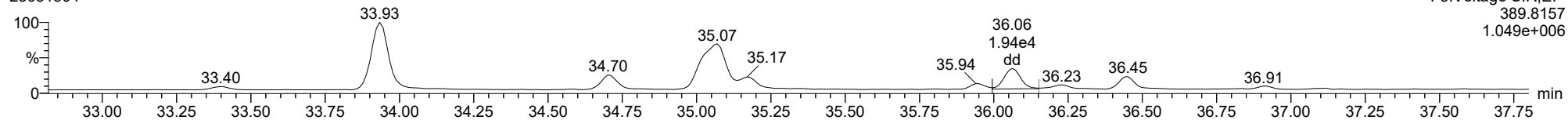
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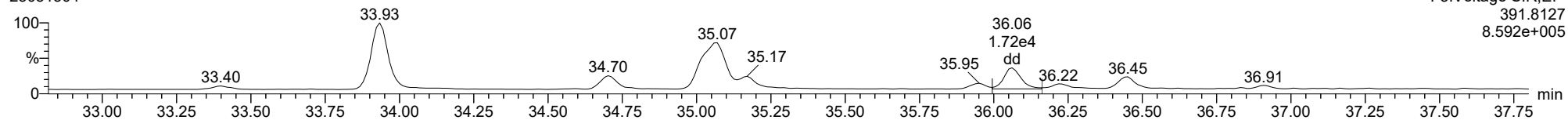
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23051504



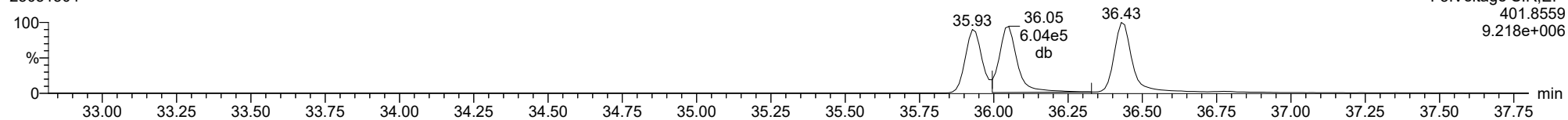
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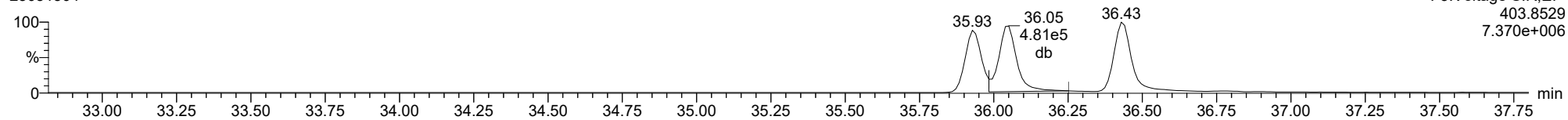
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23051504



13C-123678-HxCDD

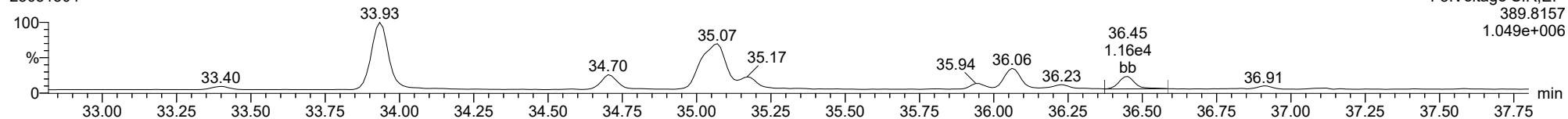
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ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

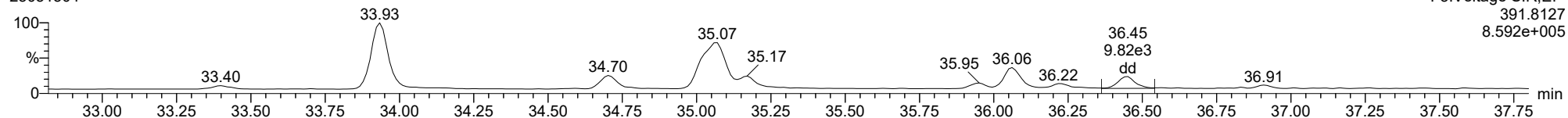
123789-HxCDD

23051504



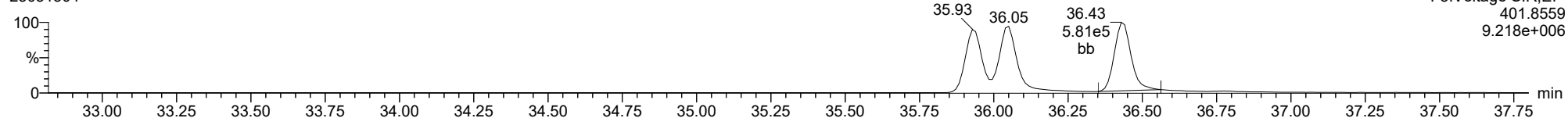
123789-HxCDD

23051504



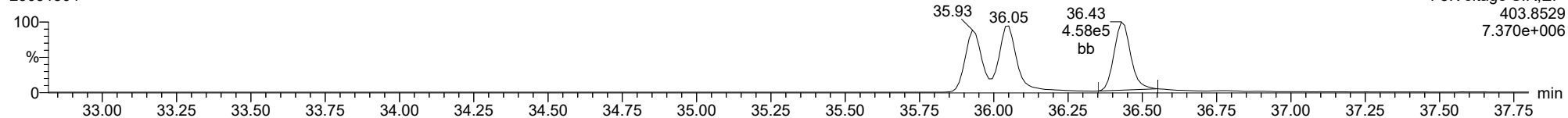
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23051504



13C-123789-HxCDD

23051504

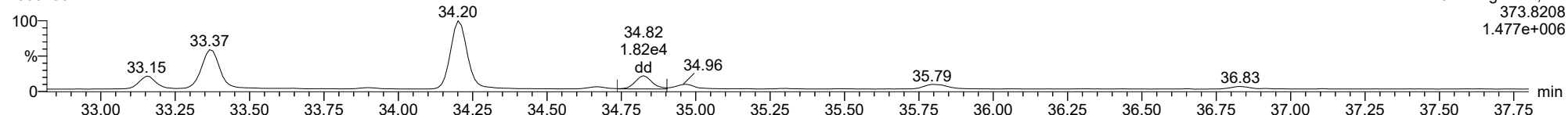




ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

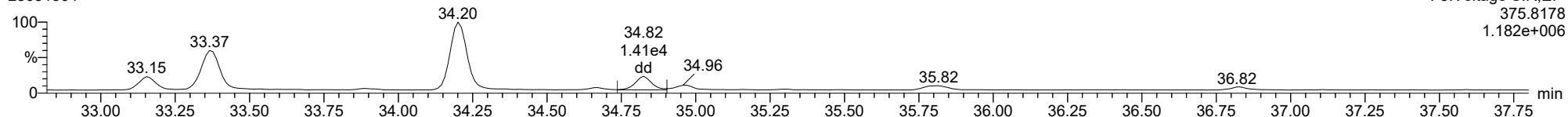
123478-HxCDF

23051504



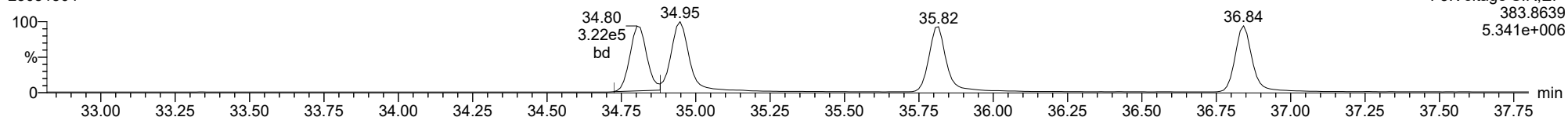
123478-HxCDF

23051504



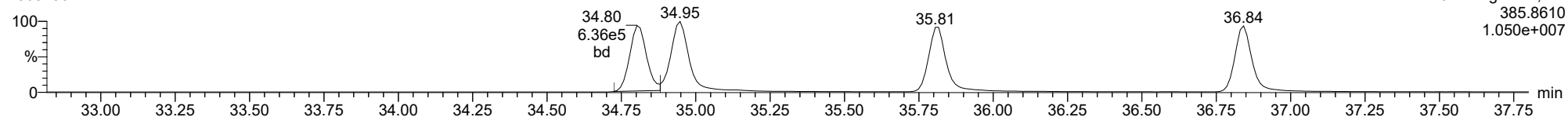
13C-123478-HxCDF

23051504



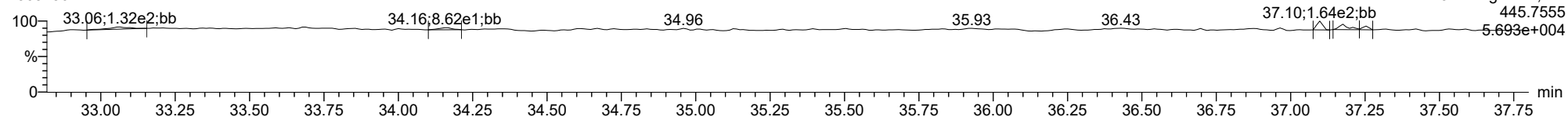
13C-123478-HxCDF

23051504



FUNCTION3 OCDPE

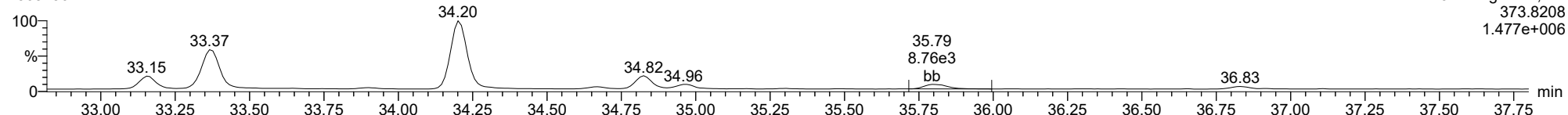
23051504



ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

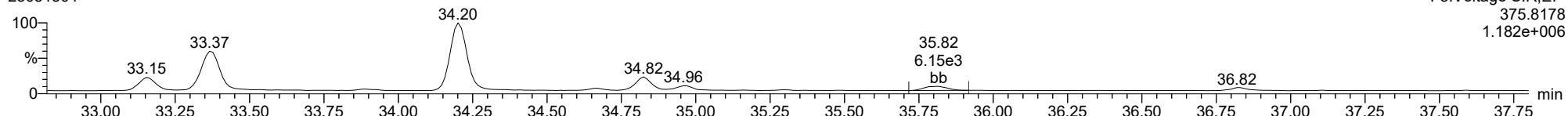
**234678-HxCDF**

23051504



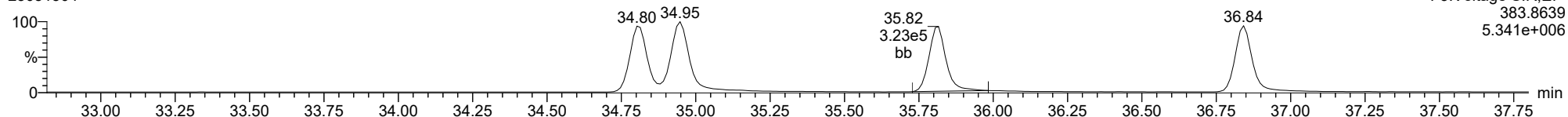
**234678-HxCDF**

23051504



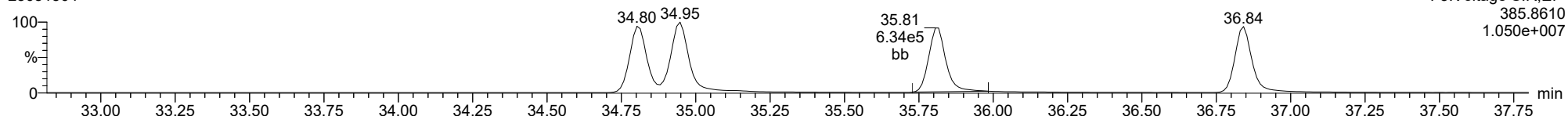
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23051504



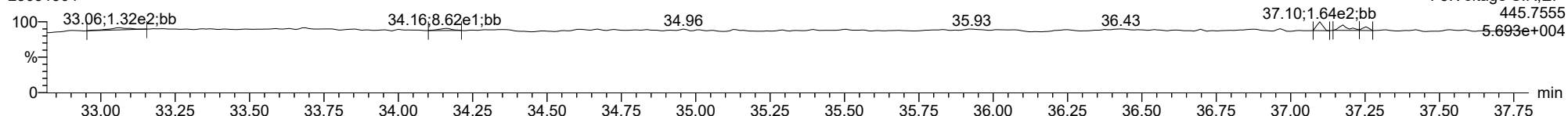
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23051504



**FUNCTION3 OCDPE**

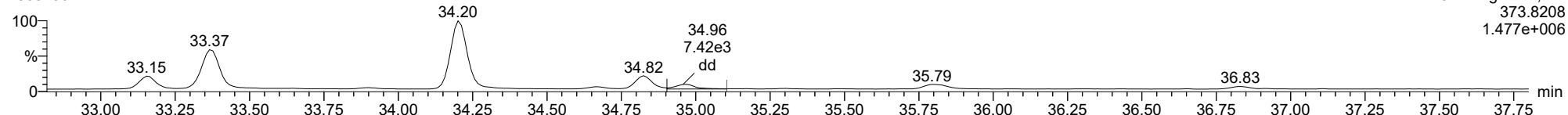
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ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

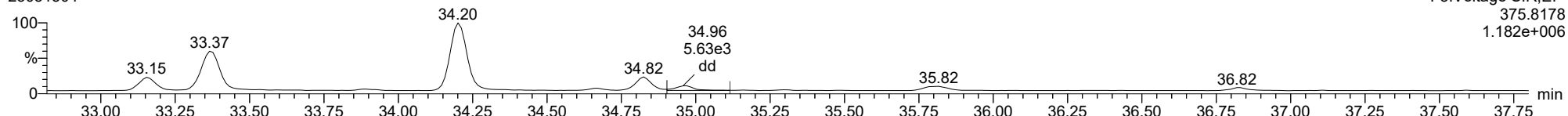
123678-HxCDF

23051504



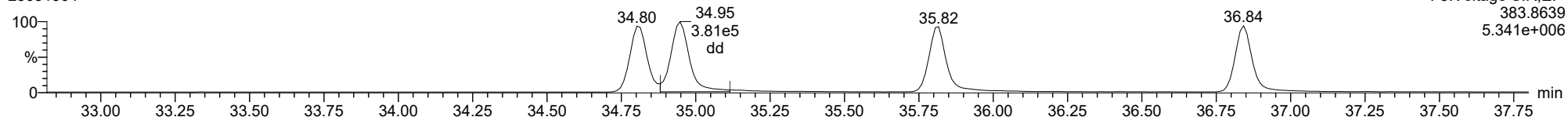
123678-HxCDF

23051504



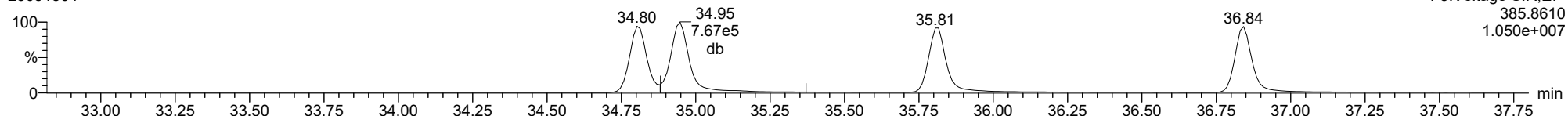
13C-123678-HxCDF

23051504



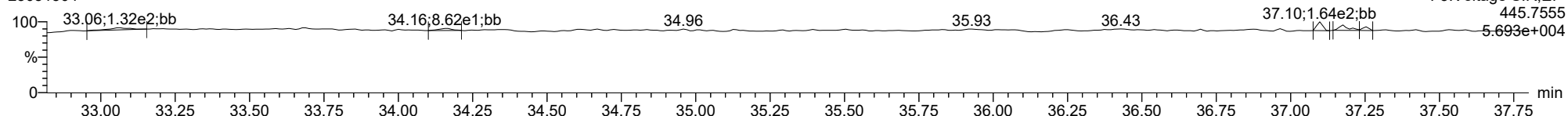
13C-123678-HxCDF

23051504



FUNCTION3 OCDPE

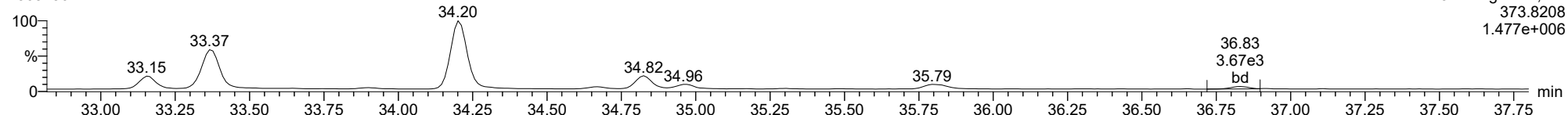
23051504



ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

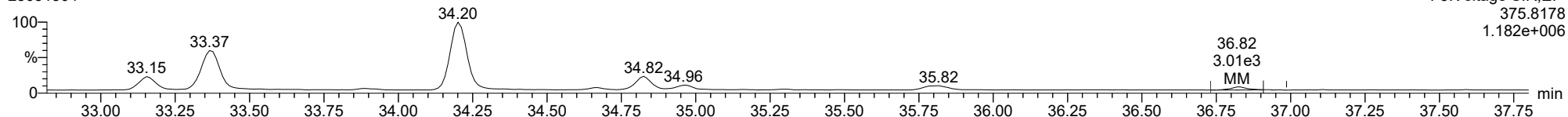
123789-HxCDF

23051504



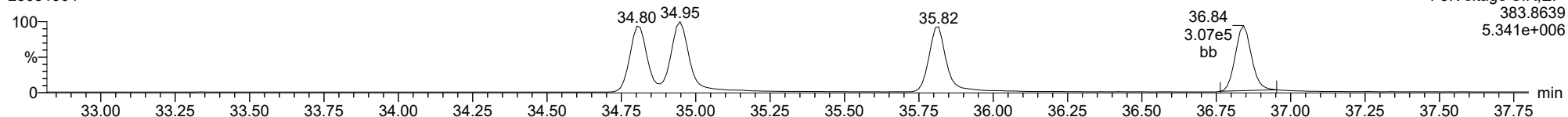
123789-HxCDF

23051504



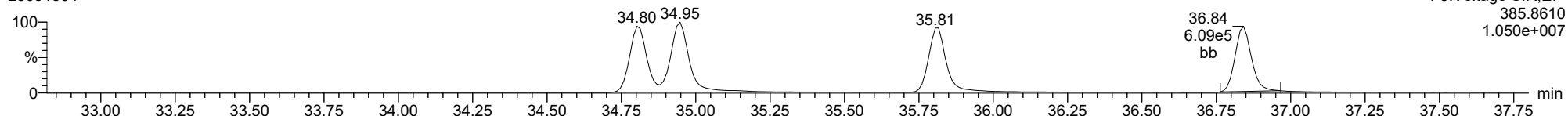
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23051504



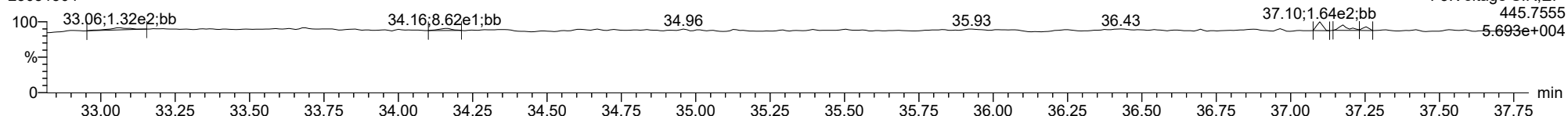
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23051504



FUNCTION3 OCDPE

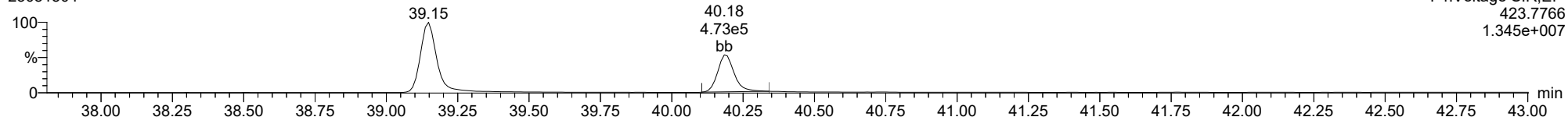
23051504



ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

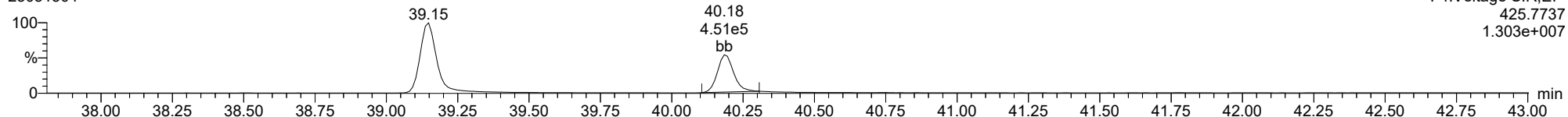
1234678-HpCDD

23051504



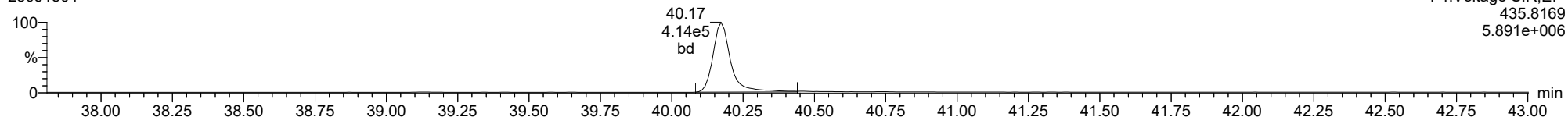
1234678-HpCDD

23051504



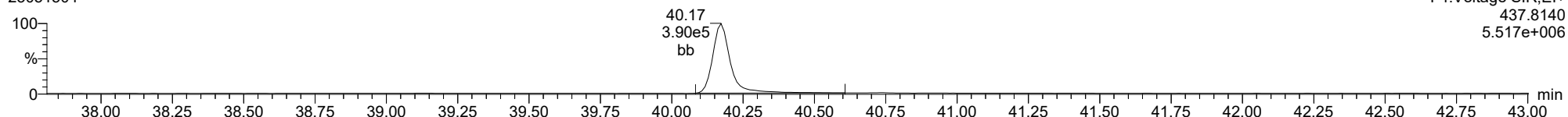
13C-1234678-HpCDD

23051504



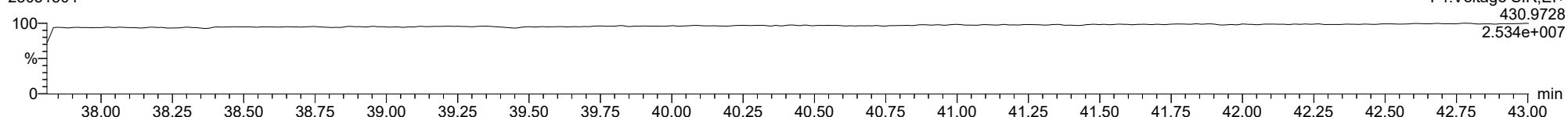
13C-1234678-HpCDD

23051504



FUNCTION4 PFK

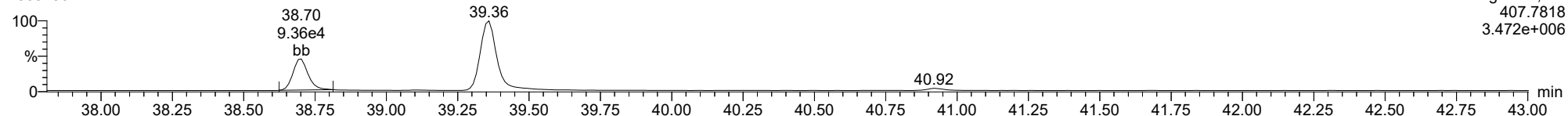
23051504



ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

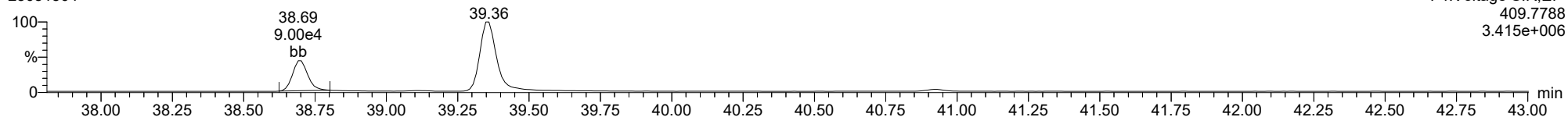
**1234678-HpCDF**

23051504



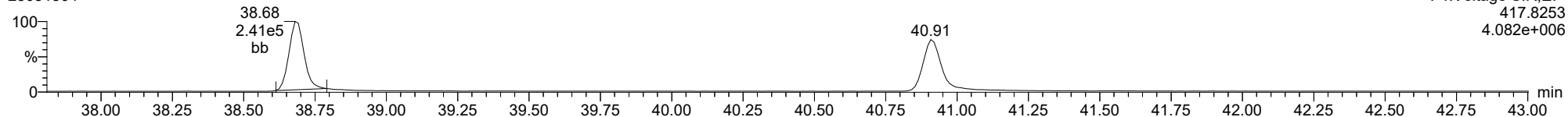
**1234678-HpCDF**

23051504



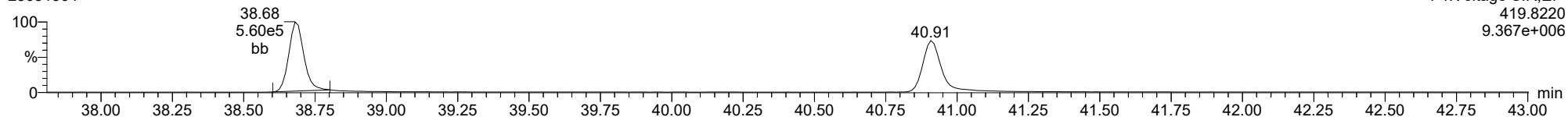
**13C-1234678-HpCDF**

23051504



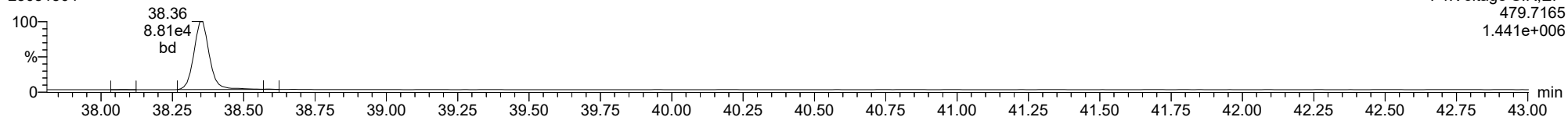
**13C-1234678-HpCDF**

23051504



**FUNCTION4 NCDPE**

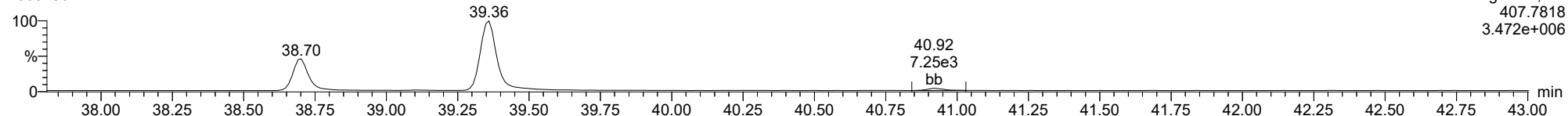
23051504



ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

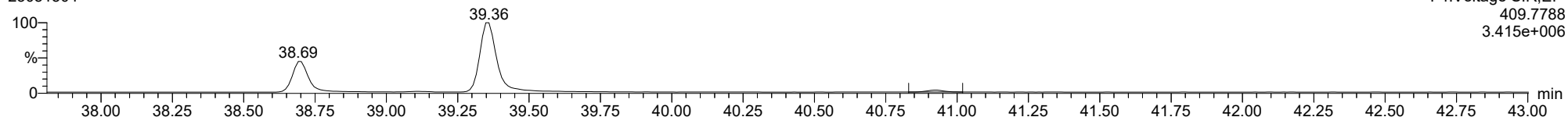
**1234789-HpCDF**

23051504



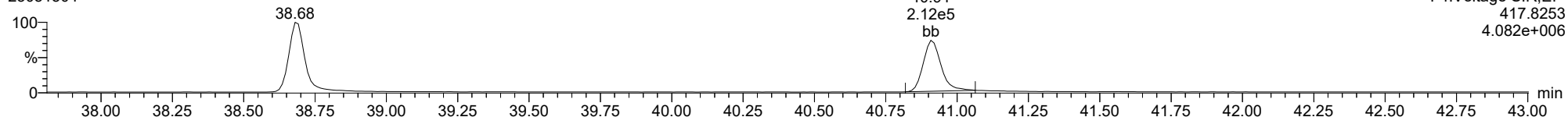
**1234789-HpCDF**

23051504



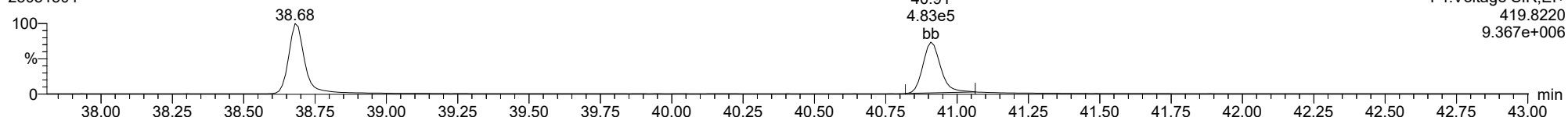
**13C-1234789-HpCDF**

23051504



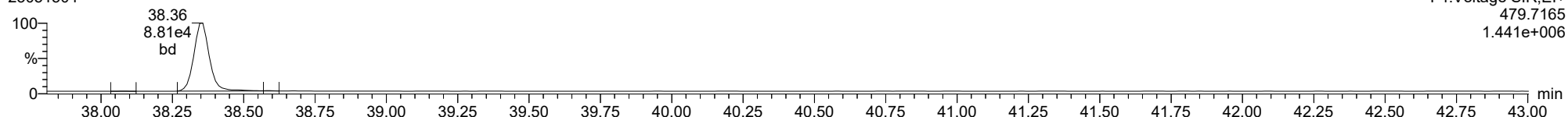
**13C-1234789-HpCDF**

23051504



**FUNCTION4 NCDPE**

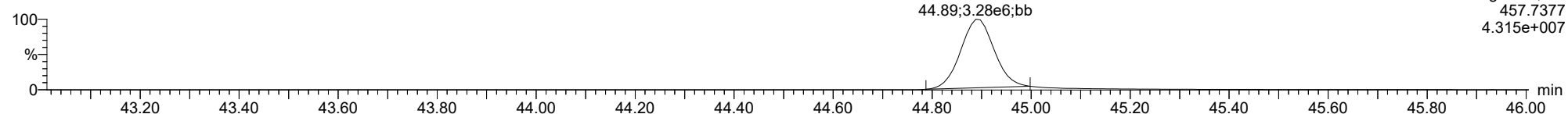
23051504



ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

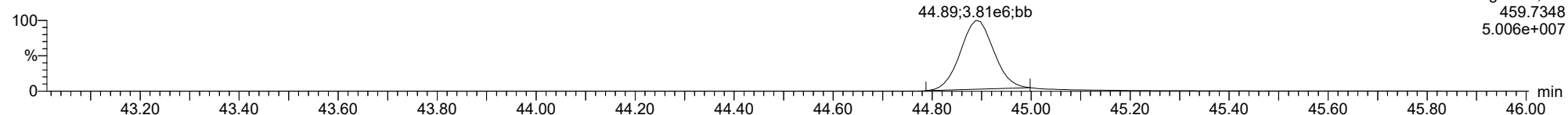
**OCDD**

23051504



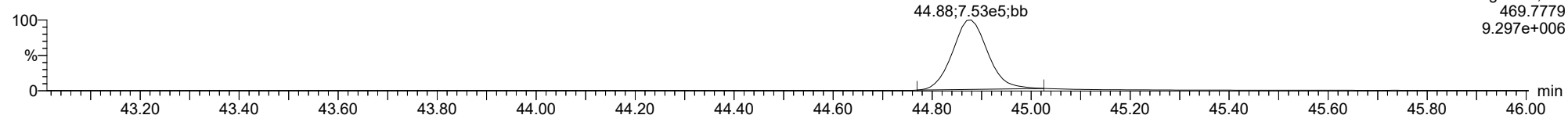
**OCDD**

23051504



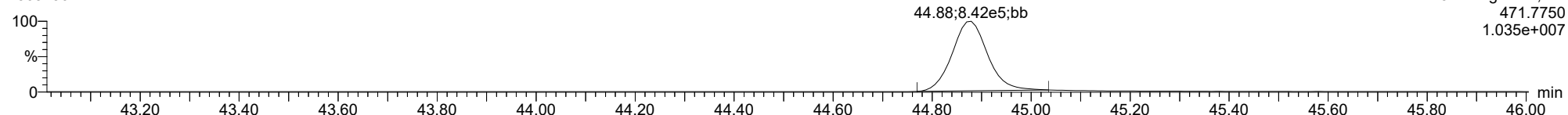
**13C-OCDD**

23051504



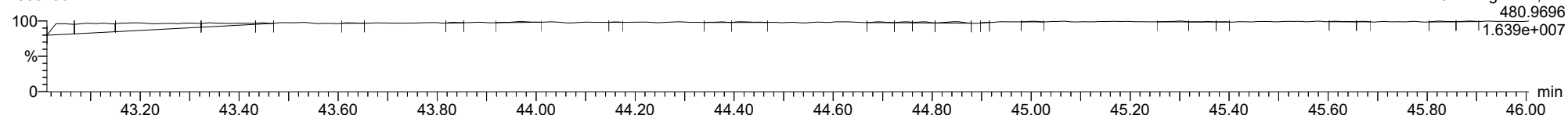
**13C-OCDD**

23051504



**FUNCTION5 PFK**

23051504

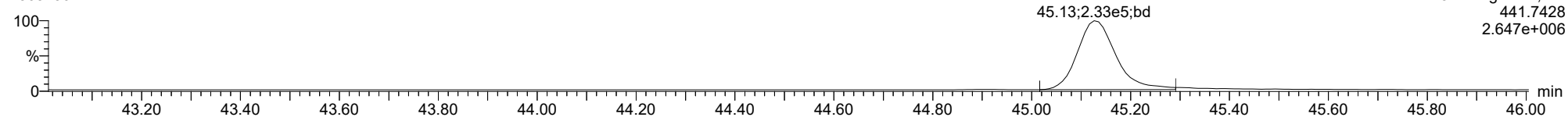




ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

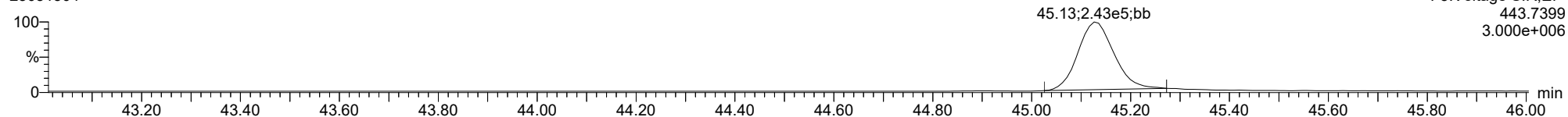
**OCDF**

23051504



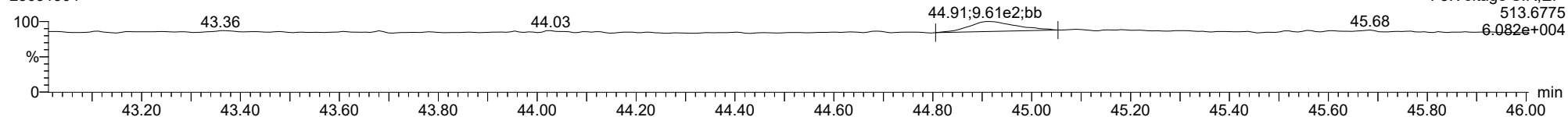
**OCDF**

23051504



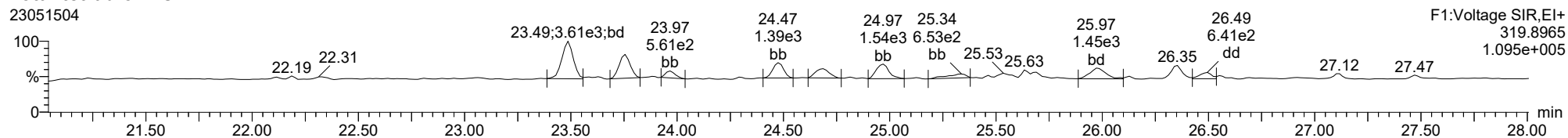
**FUNCTION5 DCDPE**

23051504

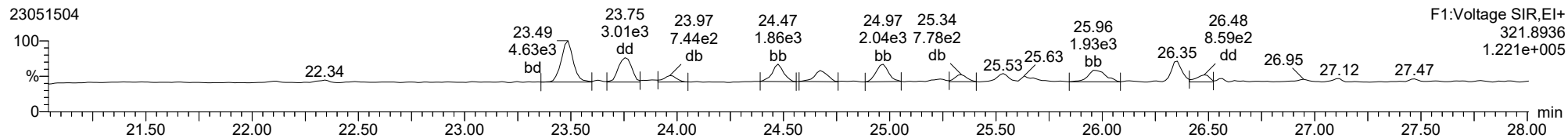


ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

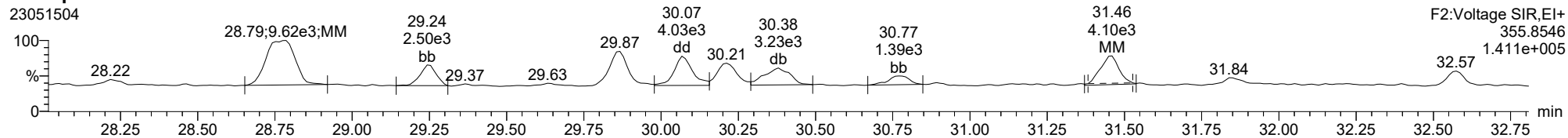
**Total-tetradioxins**



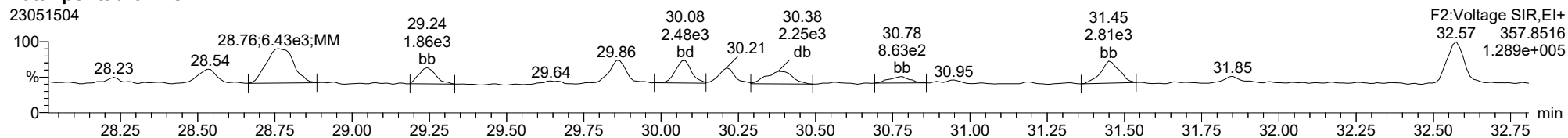
**Total-tetradioxins**



**Total-pentadioxins**



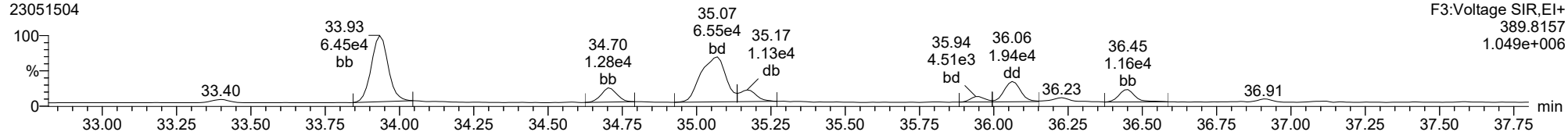
**Total-pentadioxins**



ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

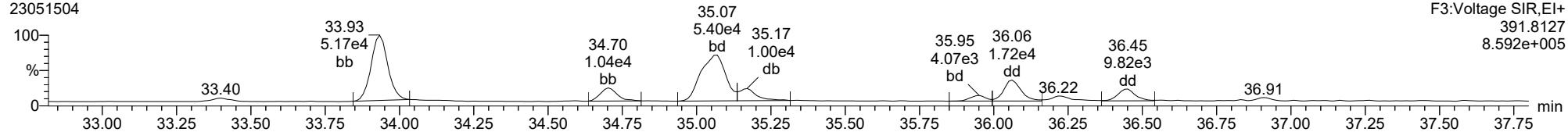
### Total-hexadioxins

23051504



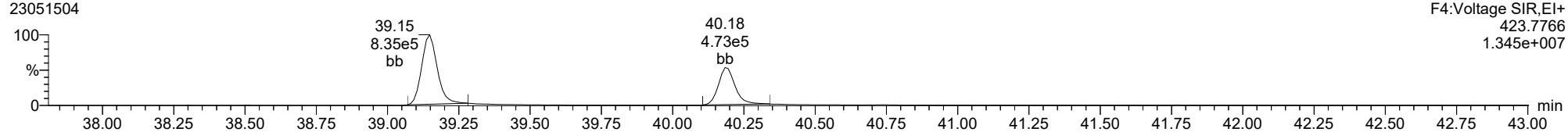
### Total-hexadioxins

23051504



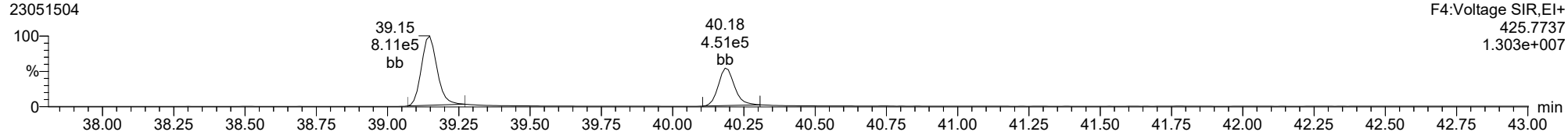
### Total-heptadioxins

23051504



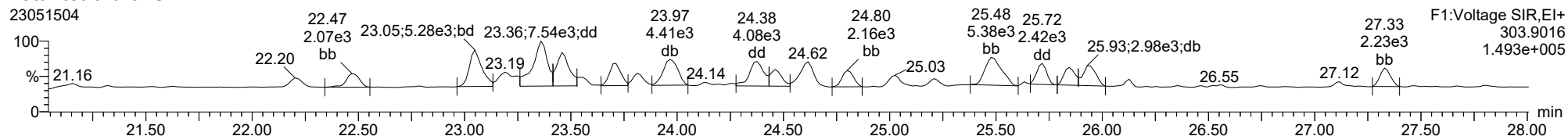
### Total-heptadioxins

23051504

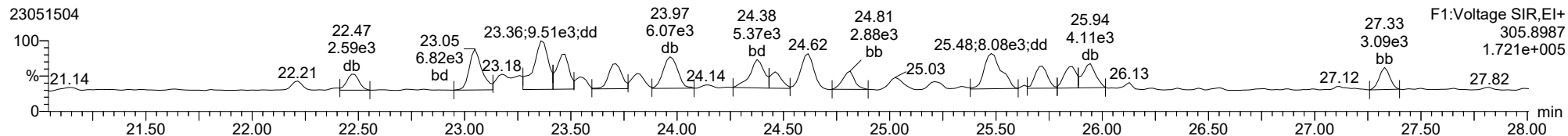


ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

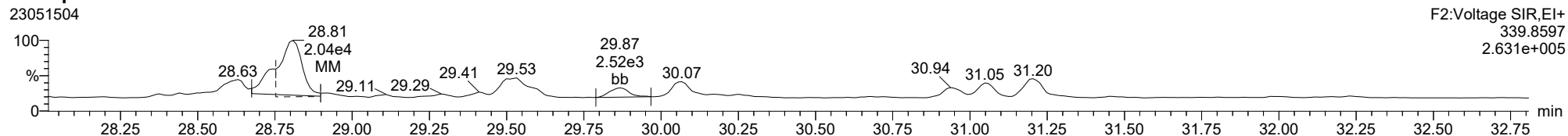
**Total-tetrafurans**



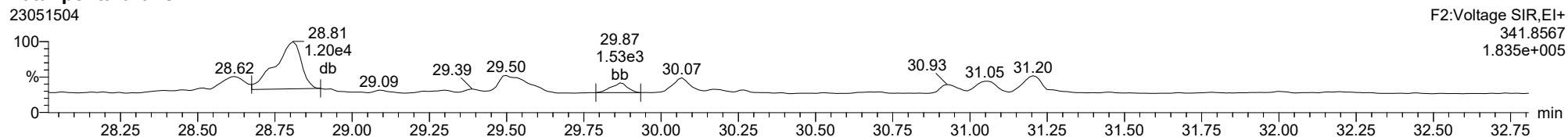
**Total-tetrafurans**



**Total-pentafurans**



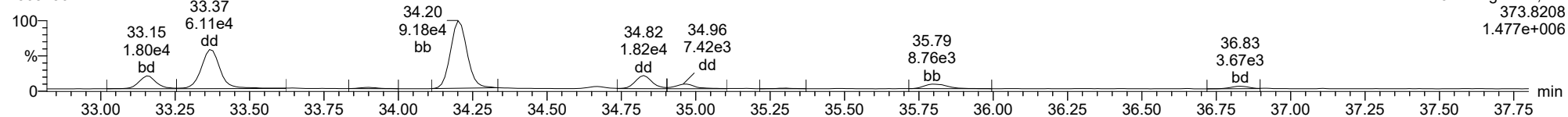
**Total-pentafurans**



ID: 23D0063-01, Name: 23051504, Date: 15-May-2023, Time: 13:59:30, Conditions: AUTOSPEC01, User: pk

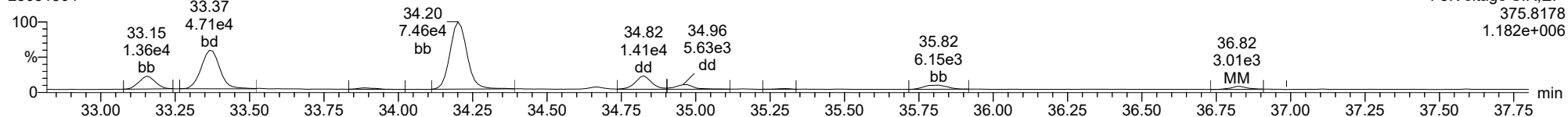
**Total-hexafurans**

23051504



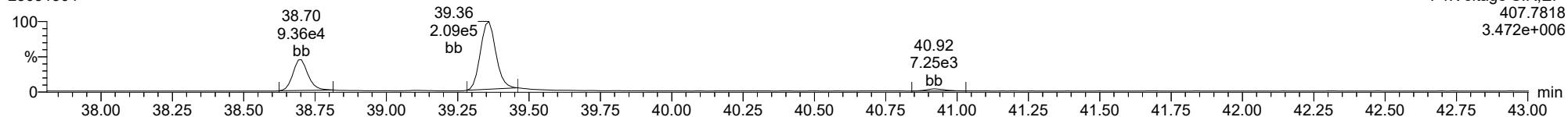
**Total-hexafurans**

23051504



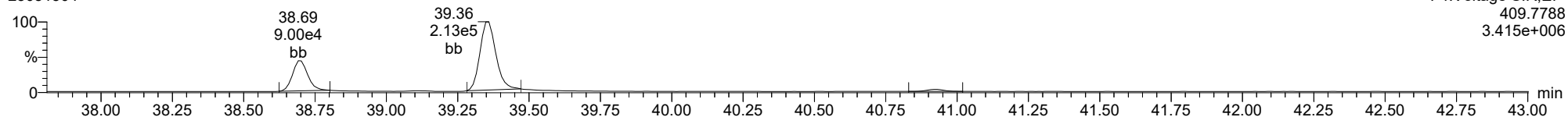
**Total-heptafurans**

23051504



**Total-heptafurans**

23051504





Form 1  
ORGANIC ANALYSIS DATA SHEET  
EPA 1613B  
Dioxins/Furans by HRGC/HRMS

Laboratory: Analytical Resources, LLC SDG: 23D0063  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment Laboratory ID: 23D0063-03 C File ID: 23051104  
 Sampled: 04/04/23 12:52 Prepared: 04/25/23 14:15 Analyzed: 05/11/23 13:49  
 % Solids: 35.65 Preparation: EPA 1613 Initial/Final: 28.06 g Wet / 20 uL  
 Result Basis: Dry Sequence: SLE0195 Calibration: GC00015  
 Batch: BLD0657 Instrument: AUTOSPEC01 Column: RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.793	0.655-0.886	0.220	1.00	1.49	ng/kg	
1746-01-6	2,3,7,8-TCDD	1	0.520	0.655-0.886	0.100	1.00	0.475	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.746	1.318-1.783	0.182	1.00	1.20	ng/kg	
57117-31-4	2,3,4,7,8-PeCDF	1	1.633	1.318-1.783	0.163	1.00	2.15	ng/kg	
40321-76-4	1,2,3,7,8-PeCDD	1	1.540	1.318-1.783	0.242	1.00	1.87	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.301	1.054-1.426	0.131	1.00	6.63	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.298	1.054-1.426	0.133	1.00	2.19	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.235	1.054-1.426	0.140	1.00	3.07	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.271	1.054-1.426	0.144	1.00	1.33	ng/kg	
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.256	1.054-1.426	0.214	1.00	2.30	ng/kg	
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.223	1.054-1.426	0.210	1.00	8.64	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.183	1.054-1.426	0.233	1.00	5.21	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.069	0.893-1.208	0.250	1.00	69.4	ng/kg	
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.051	0.893-1.208	0.353	1.00	6.06	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.031	0.893-1.208	0.586	2.50	317	ng/kg	
39001-02-0	OCDF	1	0.910	0.757-1.024	0.493	2.50	303	ng/kg	
3268-87-9	OCDD	1	0.873	0.757-1.024	0.542	10.0	2520	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	22.5	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	2.00	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	28.2	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	7.69	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	85.4	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	76.4	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	286	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	739	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 10.88  
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 10.88



**Form 2**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 1613B**  
**Dioxins/Furans by HRGC/HRMS**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Sediment</u>	Laboratory ID:	<u>23D0063-03</u>
Sampled:	<u>04/04/23 12:52</u>	Prepared:	<u>04/25/23 14:15</u>
Solids Wt%:	<u>35.65</u>	Preparation:	<u>EPA 1613</u>
Result Basis:	<u>Dry</u>	Sequence:	<u>SLE0195</u>
Batch:	<u>BLD0657</u>	Instrument:	<u>AUTOSPEC01</u>
		File ID:	<u>23051104</u>
		Analyzed:	<u>05/11/23 13:49</u>
		Initial/Final:	<u>28.06 g / 20 uL</u>
		Calibration:	<u>GC00015</u>
		Column:	<u>RTX-Dioxin2</u>

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.773	0.655-0.886	0.110	92.4	24 - 169 %	
13C12-2,3,7,8-TCDD		0.780	0.655-0.886	0.142	95.0	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.509	1.318-1.783	0.201	104	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.557	1.318-1.783	0.223	112	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.656	1.318-1.783	0.162	102	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.505	0.434-0.587	0.182	81.5	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.481	0.434-0.587	0.153	77.0	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.512	0.434-0.587	0.188	83.2	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.506	0.434-0.587	0.228	82.6	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.262	1.054-1.426	0.154	87.2	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.238	1.054-1.426	0.132	85.9	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.453	0.374-0.506	0.221	98.3	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.454	0.374-0.506	0.257	104	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.070	0.893-1.208	0.192	89.6	23 - 140 %	
13C12-OCDD		0.924	0.757-1.024	0.192	105	17 - 157 %	
37C14-2,3,7,8-TCDD		328.000		0.066	95.8	35 - 197 %	

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

**Method:** T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

**ID:** 23D0063-03, **Name:** 23051104, **Date:** 11-May-2023, **Time:** 13:49:56, **Conditions:** AUTOSPEC01, **User:** pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.704	1.000	2.543e3	3.206e3	0.702	0.793	0.770	1958	2118	3.86e4	4.64e4	19.7	21.9	NO	dd	bd	0.745
12378-PeCDF	29.855	1.001	2.468e3	1.413e3	0.679	1.746	1.550	1445	1507	3.89e4	2.11e4	26.9	14.0	NO	bb	bb	0.602
23478-PeCDF	31.192	1.001	4.827e3	2.955e3	0.786	1.633	1.550	1445	1507	7.75e4	4.49e4	53.7	29.8	NO	db	bb	1.075
123478-HxCDF	34.825	1.001	1.651e4	1.269e4	1.166	1.301	1.240	1529	1424	2.57e5	1.92e5	168.3	135.0	NO	dd	bd	3.314
234678-HxCDF	35.827	1.000	7.195e3	5.825e3	1.140	1.235	1.240	1529	1424	7.22e4	5.81e4	47.2	40.8	NO	bb	bb	1.533
123678-HxCDF	34.958	1.000	5.717e3	4.403e3	1.091	1.298	1.240	1529	1424	8.69e4	6.51e4	56.9	45.7	NO	db	db	1.095
123789-HxCDF	36.819	1.000	2.591e3	2.038e3	1.137	1.271	1.240	1529	1424	4.07e4	3.33e4	26.6	23.4	NO	bd	bd	0.667
1234678-HpCDF	38.691	1.000	1.256e5	1.175e5	1.003	1.069	1.050	2498	2321	2.08e6	1.91e6	833.8	821.8	NO	bb	bb	34.703
1234789-HpCDF	40.919	1.000	9.401e3	8.949e3	0.953	1.051	1.050	2498	2321	1.35e5	1.30e5	54.1	55.8	NO	bb	bb	3.029
OCDF	45.126	1.006	3.598e5	3.953e5	0.778	0.910	0.890	3260	1532	4.30e6	4.71e6	1319.0	3072.0	NO	bb	bb	151.510
2378-TCDD	26.339	1.000	7.501e2	1.444e3	1.149	0.520	0.770	1183	1065	1.22e4	2.13e4	10.3	20.0	YES	bb	bd	0.237
12378-PeCDD	31.449	1.000	3.609e3	2.343e3	1.022	1.540	1.550	1531	1945	5.13e4	3.00e4	33.5	15.4	NO	bb	bb	0.934
123478-HxCDD	35.961	1.000	4.389e3	3.494e3	0.996	1.256	1.240	2215	1646	7.35e4	6.03e4	33.2	36.6	NO	bd	bd	1.150
123678-HxCDD	36.084	1.000	1.877e4	1.534e4	1.001	1.223	1.240	2215	1646	2.91e5	2.45e5	131.6	148.7	NO	dd	dd	4.321
123789-HxCDD	36.463	1.011	9.469e3	8.003e3	0.907	1.183	1.240	2215	1646	1.53e5	1.23e5	69.0	74.7	NO	bb	bb	2.608
1234678-HpCDD	40.184	1.001	4.995e5	4.844e5	1.039	1.031	1.050	3887	5293	7.60e6	7.41e6	1954.7	1400.2	NO	bb	bb	158.591
OCDD	44.879	1.000	3.461e6	3.963e6	0.920	0.873	0.890	3070	3155	4.33e7	4.96e7	14116.1	15736.8	NO	bb	bb	1259.330
13C-2378-TCDF	25.690	1.007	4.795e5	6.202e5	1.620	0.773	0.770	1803	1490	6.90e6	8.91e6	3825.8	5978.6	NO	bb	bb	92.426
13C-12378-PeCDF	29.833	1.169	5.709e5	3.783e5	1.240	1.509	1.550	2498	2118	8.60e6	5.73e6	3443.2	2706.2	NO	bb	bb	104.198
13C-23478-PeCDF	31.170	1.221	5.610e5	3.602e5	1.118	1.557	1.550	2498	2118	8.39e6	5.44e6	3360.0	2570.5	NO	bb	bb	112.225
13C-123478-HxCDF	34.803	0.955	2.535e5	5.022e5	1.168	0.505	0.510	1646	2774	3.87e6	7.67e6	2353.8	2763.3	NO	bd	bd	81.539
13C-123678-HxCDF	34.947	0.959	2.751e5	5.719e5	1.386	0.481	0.510	1646	2774	3.96e6	7.78e6	2407.8	2802.6	NO	db	db	77.002
13C-234678-HxCDF	35.827	0.983	2.522e5	4.928e5	1.129	0.512	0.510	1646	2774	3.75e6	7.30e6	2277.9	2632.7	NO	bb	bb	83.162
13C-123789-HxCDF	36.830	1.010	2.051e5	4.056e5	0.932	0.506	0.510	1646	2774	3.64e6	7.21e6	2211.5	2598.7	NO	bb	bb	82.617
13C-1234678-HpCDF	38.680	1.061	2.176e5	4.806e5	0.895	0.453	0.440	1625	2499	3.59e6	8.02e6	2211.1	3210.6	NO	bb	bb	98.316
13C-1234789-HpCDF	40.897	1.122	1.985e5	4.371e5	0.770	0.454	0.440	1625	2499	2.69e6	5.99e6	1653.4	2397.9	NO	bb	bb	104.081
13C-1234-TCDD	25.520	0.000	3.241e5	4.103e5	1.000	0.790	0.770	1832	1199	4.91e6	6.26e6	2677.6	5220.7	NO	bb	bb	100.000
13C-2378-TCDD	26.325	1.032	3.525e5	4.518e5	1.152	0.780	0.770	1832	1199	5.14e6	6.55e6	2805.1	5465.4	NO	bb	bb	95.041
13C-12378-PeCDD	31.438	1.232	3.887e5	2.347e5	0.829	1.656	1.550	1212	1274	5.26e6	3.20e6	4339.0	2509.5	NO	bb	bd	102.436
13C-123478-HxCDD	35.950	0.986	3.841e5	3.045e5	0.995	1.262	1.240	1825	1354	6.07e6	4.82e6	3324.9	3560.9	NO	bd	bd	87.239
13C-123678-HxCDD	36.072	0.990	4.363e5	3.523e5	1.157	1.238	1.240	1825	1354	6.10e6	4.93e6	3341.2	3642.8	NO	db	db	85.938
13C-1234678-HpCDD	40.161	1.102	3.086e5	2.885e5	0.840	1.070	1.050	1684	1667	4.67e6	4.45e6	2775.0	2669.8	NO	bb	bb	89.591
13C-OCDD	44.869	1.231	6.157e5	6.659e5	0.767	0.924	0.890	1537	1527	7.20e6	7.81e6	4683.8	5112.5	NO	bd	bb	210.493
13C-123789-HxCDD	36.451	0.000	4.393e5	3.541e5	1.000	1.241	1.240	1825	1354	6.91e6	5.56e6	3786.5	4109.1	NO	bb	bb	100.000
37CL-2378-TCDD	26.339	1.032	3.623e5		1.288			1580		5.14e6		3250.7			bb		38.311



Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.215	0.865	7.758e2	1.199e3	0.802	0.647	0.770	1958	2118	1.49e4	1.83e4	7.6	8.6	YES	bb	bb	0.224
1289-TCDF					0.678		0.770	1958	2118								
13468-PECDF					1.246		1.550	857	778								
12389-PECDF	32.229	1.080	4.255e2	2.593e2	0.496	1.641	1.550	1445	1507	6.92e3	5.05e3	4.8	3.4	NO	db	bb	0.145
123468-HXCDF	33.153	0.953	1.519e4	1.184e4	1.169	1.283	1.240	1529	1424	2.35e5	1.84e5	153.9	129.3	NO	bb	bb	3.059
1368-TCDD	23.472	0.892	2.894e3	3.179e3	1.015	0.910	0.770	1183	1065	4.55e4	5.15e4	38.4	48.3	YES	bb	bb	0.744
1289-TCDD					0.909		0.770	1183	1065								
12479-PECDD	28.786	0.916	8.168e3	5.904e3	2.301	1.383	1.550	1531	1945	7.73e4	6.07e4	50.5	31.2	NO	bb	bb	0.981
12389-PECDD	31.850	1.013	1.168e3	6.585e2	1.184	1.774	1.550	1531	1945	1.40e4	1.25e4	9.2	6.4	NO	bb	bb	0.248
124679-HXCDD	33.933	0.944	4.995e4	3.979e4	1.115	1.256	1.240	2215	1646	7.38e5	5.84e5	333.1	354.8	NO	bb	bb	11.683
1234679-HPCDD	39.136	0.975	7.316e5	7.016e5	1.137	1.043	1.050	3887	5293	1.19e7	1.14e7	3053.4	2161.9	NO	bb	bb	211.133
Total-tetrafurans			3.979e4		0.727			1958		5.40e5							11.248
Total-penta1			3.351e4					857		4.78e5							6.440
Total-pentafurans			2.968e4		0.654			1445		3.71e5							7.687
Total-hexafurans			2.013e5		1.141			1529		3.05e6							42.712
Total-heptafurans			4.809e5		0.978			2498		7.82e6							143.217
Total-Furans			1.146e6		0.922			1958		1.66e7							363.001
Total-tetradoxins			3.668e3		1.024			1183		4.89e4							1.002
Total-pentadoxins			2.245e4		1.502			1531		2.87e5							3.847
Total-hexadoxins			1.580e5		1.005			2215		2.14e6							38.237
Total-heptadoxins			1.231e6		1.088			3887		1.95e7							369.723
Total-Dioxins			4.876e6		1.130			1183		6.53e7							1672.139
Total-TEQ			6.022e6					1183		8.19e7							2035.141
FUNCTION1 PFK			2.896e7					433475		7.17e7							
FUNCTION2 PFK			1.576e7					284830		1.50e8							0.000
FUNCTION3 PFK			1.002e7					360587		2.38e7							0.000
FUNCTION4 PFK			1.017e4					280234		5.33e5							
FUNCTION5 PFK			8.175e6					198451		5.82e6							
FUNCTION1 HXCD...			3.070e3					762		4.47e4							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			2.215e2					724		5.49e3							0.000
FUNCTION3 OCDPE			5.987e2					638		1.18e4							0.000
FUNCTION4 NCDPE			5.641e4					776		9.65e5							0.000
FUNCTION5 DCDPE			7.802e2					739		8.16e3							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16

Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.70	2.976e3	3.765e3	0.727	0.79	0.77	26.5	YES	NO	bd	bd	0.843
2	Total-tetrafurans	23.54	6.846e2	9.453e2	0.727	0.72	0.77	7.1	YES	NO	db	db	0.204
3	Total-tetrafurans	23.46	3.480e3	5.015e3	0.727	0.69	0.77	27.7	YES	NO	dd	dd	1.063
4	Total-tetrafurans	23.03	4.641e3	5.775e3	0.727	0.80	0.77	35.3	YES	NO	bd	bd	1.303
5	Total-tetrafurans	22.47	1.689e3	2.282e3	0.727	0.74	0.77	11.8	YES	NO	bb	bb	0.497
6	Total-tetrafurans	25.84	2.094e3	2.601e3	0.727	0.80	0.77	15.2	YES	NO	dd	dd	0.587
7	2378-TCDF	25.70	2.543e3	3.206e3	0.702	0.79	0.77	19.7	YES	NO	dd	bd	0.745
8	Total-tetrafurans	25.48	6.310e3	7.406e3	0.727	0.85	0.77	36.2	YES	NO	bd	bb	1.716
9	Total-tetrafurans	25.01	1.501e3	1.836e3	0.727	0.82	0.77	9.3	YES	NO	bd	bb	0.417
10	Total-tetrafurans	24.60	3.732e3	4.909e3	0.727	0.76	0.77	24.4	YES	NO	db	db	1.081
11	Total-tetrafurans	24.38	3.920e3	4.669e3	0.727	0.84	0.77	25.5	YES	NO	dd	dd	1.074
12	Total-tetrafurans	23.97	4.246e3	5.117e3	0.727	0.83	0.77	23.8	YES	NO	dd	db	1.171
13	Total-tetrafurans	23.81	1.977e3	2.397e3	0.727	0.82	0.77	13.4	YES	NO	dd	dd	0.547

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.13	3.351e4	2.255e4		1.49	1.55	557.6	YES	NO	bb	bb	6.440

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.62	6.314e3	4.156e3	0.654	1.52	1.55	45.9	YES	NO	dd	dd	1.712
2	12389-PECDF	32.23	4.255e2	2.593e2	0.496	1.64	1.55	4.8	YES	NO	db	bb	0.145
3	Total-pentafurans	31.98	4.505e2	2.551e2	0.654	1.77	1.55	4.9	YES	NO	bb	bb	0.115
4	23478-PeCDF	31.19	4.827e3	2.955e3	0.786	1.63	1.55	53.7	YES	NO	db	bb	1.075
5	Total-pentafurans	31.05	3.575e3	2.056e3	0.654	1.74	1.55	32.3	YES	NO	dd	db	0.921
6	Total-pentafurans	30.94	2.752e3	1.821e3	0.654	1.51	1.55	27.7	YES	NO	bd	bd	0.748
7	12378-PeCDF	29.86	2.468e3	1.413e3	0.679	1.75	1.55	26.9	YES	NO	bb	bb	0.602
8	Total-pentafurans	29.50	7.968e3	5.105e3	0.654	1.56	1.55	51.4	YES	NO	db	db	2.138
9	Total-pentafurans	29.39	9.037e2	5.087e2	0.654	1.78	1.55	9.0	YES	NO	dd	bd	0.231

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

**ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk**

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.82	2.591e3	2.038e3	1.137	1.27	1.24	26.6	YES	NO	bd	bd	0.667
2	234678-HxCDF	35.83	7.195e3	5.825e3	1.140	1.24	1.24	47.2	YES	NO	bb	bb	1.533
3	123678-HxCDF	34.96	5.717e3	4.403e3	1.091	1.30	1.24	56.9	YES	NO	db	db	1.095
4	123478-HxCDF	34.82	1.651e4	1.269e4	1.166	1.30	1.24	168.3	YES	NO	dd	bd	3.314
5	Total-hexafurans	34.67	2.552e3	1.898e3	1.141	1.34	1.24	27.0	YES	NO	bd	bb	0.528
6	Total-hexafurans	34.20	9.718e4	7.872e4	1.141	1.23	1.24	995.8	YES	NO	bb	bb	20.853
7	Total-hexafurans	33.89	1.584e3	1.287e3	1.141	1.23	1.24	14.4	YES	NO	bb	bb	0.340
8	Total-hexafurans	33.37	5.277e4	4.274e4	1.141	1.23	1.24	507.2	YES	NO	bb	bb	11.323
9	123468-HxCDF	33.15	1.519e4	1.184e4	1.169	1.28	1.24	153.9	YES	NO	bb	bb	3.059

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.92	9.401e3	8.949e3	0.953	1.05	1.05	54.1	YES	NO	bb	bb	3.029
2	Total-heptafurans	39.35	3.437e5	3.399e5	0.978	1.01	1.05	2229.1	YES	NO	bb	bb	104.805
3	Total-heptafurans	39.10	2.246e3	2.186e3	0.978	1.03	1.05	14.0	YES	NO	bb	bb	0.680
4	1234678-HpCDF	38.69	1.256e5	1.175e5	1.003	1.07	1.05	833.8	YES	NO	bb	bb	34.703

## Quantify Totals Report MassLynx V4.1 SCN903

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

## Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.70	2.976e3	3.765e3	0.727	0.79	0.77	26.5	YES	NO	bd	bd	0.843
2	Total-tetrafurans	23.54	6.846e2	9.453e2	0.727	0.72	0.77	7.1	YES	NO	db	db	0.204
3	Total-tetrafurans	23.46	3.480e3	5.015e3	0.727	0.69	0.77	27.7	YES	NO	dd	dd	1.063
4	Total-tetrafurans	23.03	4.641e3	5.775e3	0.727	0.80	0.77	35.3	YES	NO	bd	bd	1.303
5	Total-tetrafurans	22.47	1.689e3	2.282e3	0.727	0.74	0.77	11.8	YES	NO	bb	bb	0.497
6	Total-Furans	21.14	8.844e2	1.018e3	0.922	0.87	0.77	6.1	YES	NO	bd	bd	0.188
7	Total-tetrafurans	25.84	2.094e3	2.601e3	0.727	0.80	0.77	15.2	YES	NO	dd	dd	0.587
8	2378-TCDF	25.70	2.543e3	3.206e3	0.702	0.79	0.77	19.7	YES	NO	dd	bd	0.745
9	Total-tetrafurans	25.48	6.310e3	7.406e3	0.727	0.85	0.77	36.2	YES	NO	bd	bb	1.716
10	Total-tetrafurans	25.01	1.501e3	1.836e3	0.727	0.82	0.77	9.3	YES	NO	bd	bb	0.417
11	Total-tetrafurans	24.60	3.732e3	4.909e3	0.727	0.76	0.77	24.4	YES	NO	db	db	1.081
12	Total-tetrafurans	24.38	3.920e3	4.669e3	0.727	0.84	0.77	25.5	YES	NO	dd	dd	1.074
13	Total-tetrafurans	23.97	4.246e3	5.117e3	0.727	0.83	0.77	23.8	YES	NO	dd	db	1.171
14	Total-tetrafurans	23.81	1.977e3	2.397e3	0.727	0.82	0.77	13.4	YES	NO	dd	dd	0.547
15	Total-pentafurans	28.62	6.314e3	4.156e3	0.654	1.52	1.55	45.9	YES	NO	dd	dd	1.712
16	12389-PECDF	32.23	4.255e2	2.593e2	0.496	1.64	1.55	4.8	YES	NO	db	bb	0.145
17	Total-pentafurans	31.98	4.505e2	2.551e2	0.654	1.77	1.55	4.9	YES	NO	bb	bb	0.115
18	23478-PeCDF	31.19	4.827e3	2.955e3	0.786	1.63	1.55	53.7	YES	NO	db	bb	1.075
19	Total-pentafurans	31.05	3.575e3	2.056e3	0.654	1.74	1.55	32.3	YES	NO	dd	db	0.921
20	Total-pentafurans	30.94	2.752e3	1.821e3	0.654	1.51	1.55	27.7	YES	NO	bd	bd	0.748
21	12378-PeCDF	29.86	2.468e3	1.413e3	0.679	1.75	1.55	26.9	YES	NO	bb	bb	0.602
22	Total-pentafurans	29.50	7.968e3	5.105e3	0.654	1.56	1.55	51.4	YES	NO	db	db	2.138
23	Total-pentafurans	29.39	9.037e2	5.087e2	0.654	1.78	1.55	9.0	YES	NO	dd	bd	0.231
24	123789-HxCDF	36.82	2.591e3	2.038e3	1.137	1.27	1.24	26.6	YES	NO	bd	bd	0.667
25	234678-HxCDF	35.83	7.195e3	5.825e3	1.140	1.24	1.24	47.2	YES	NO	bb	bb	1.533
26	123678-HxCDF	34.96	5.717e3	4.403e3	1.091	1.30	1.24	56.9	YES	NO	db	db	1.095
27	123478-HxCDF	34.82	1.651e4	1.269e4	1.166	1.30	1.24	168.3	YES	NO	dd	bd	3.314
28	Total-hexafurans	34.67	2.552e3	1.898e3	1.141	1.34	1.24	27.0	YES	NO	bd	bb	0.528
29	Total-hexafurans	34.20	9.718e4	7.872e4	1.141	1.23	1.24	995.8	YES	NO	bb	bb	20.853
30	Total-hexafurans	33.89	1.584e3	1.287e3	1.141	1.23	1.24	14.4	YES	NO	bb	bb	0.340
31	Total-hexafurans	33.37	5.277e4	4.274e4	1.141	1.23	1.24	507.2	YES	NO	bb	bb	11.323
32	123468-HXCDF	33.15	1.519e4	1.184e4	1.169	1.28	1.24	153.9	YES	NO	bb	bb	3.059
33	1234789-HpCDF	40.92	9.401e3	8.949e3	0.953	1.05	1.05	54.1	YES	NO	bb	bb	3.029
34	Total-heptafurans	39.35	3.437e5	3.399e5	0.978	1.01	1.05	2229.1	YES	NO	bb	bb	104.805
35	Total-heptafurans	39.10	2.246e3	2.186e3	0.978	1.03	1.05	14.0	YES	NO	bb	bb	0.680
36	1234678-HpCDF	38.69	1.256e5	1.175e5	1.003	1.07	1.05	833.8	YES	NO	bb	bb	34.703
37	OCDF	45.13	3.598e5	3.953e5	0.778	0.91	0.89	1319.0	YES	NO	bb	bb	151.510

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

**ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-penta1	27.13	3.351e4	2.255e4		1.49	1.55	557.6	YES	NO	bb	bb	6.440

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.53	5.455e2	6.873e2	1.024	0.79	0.77	7.0	YES	NO	bb	bb	0.150
2	Total-tetradioxins	24.67	8.046e2	1.116e3	1.024	0.72	0.77	8.4	YES	NO	bb	bb	0.233
3	Total-tetradioxins	24.47	1.162e3	1.414e3	1.024	0.82	0.77	16.3	YES	NO	bb	bb	0.313
4	Total-tetradioxins	25.97	1.155e3	1.372e3	1.024	0.84	0.77	9.6	YES	NO	bb	bb	0.307

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.85	1.168e3	6.585e2	1.184	1.77	1.55	9.2	YES	NO	bb	bb	0.248
2	12378-PeCDD	31.45	3.609e3	2.343e3	1.022	1.54	1.55	33.5	YES	NO	bb	bb	0.934
3	Total-pentadioxins	30.06	3.587e3	2.310e3	1.502	1.55	1.55	34.2	YES	NO	bd	bb	0.630
4	Total-pentadioxins	29.87	4.032e3	2.709e3	1.502	1.49	1.55	37.1	YES	NO	bb	bb	0.720
5	Total-pentadioxins	29.24	1.887e3	1.256e3	1.502	1.50	1.55	23.0	YES	NO	bb	bb	0.336
6	12479-PECDD	28.79	8.168e3	5.904e3	2.301	1.38	1.55	50.5	YES	NO	bb	bb	0.981

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	34.70	1.015e4	7.910e3	1.005	1.28	1.24	73.1	YES	NO	bb	bb	2.434
2	124679-HxCDD	33.93	4.995e4	3.979e4	1.115	1.26	1.24	333.1	YES	NO	bb	bb	11.683
3	123789-HxCDD	36.46	9.469e3	8.003e3	0.907	1.18	1.24	69.0	YES	NO	bb	bb	2.608
4	Total-hexadioxins	36.25	3.554e3	3.085e3	1.005	1.15	1.24	22.2	YES	NO	db	db	0.895
5	123678-HxCDD	36.08	1.877e4	1.534e4	1.001	1.22	1.24	131.6	YES	NO	dd	dd	4.321
6	123478-HxCDD	35.96	4.389e3	3.494e3	0.996	1.26	1.24	33.2	YES	NO	bd	bd	1.150
7	Total-hexadioxins	35.17	7.502e3	5.779e3	1.005	1.30	1.24	46.4	YES	NO	dd	db	1.790
8	Total-hexadioxins	35.07	5.426e4	4.487e4	1.005	1.21	1.24	258.5	YES	NO	bd	bd	13.357

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.18	4.995e5	4.844e5	1.039	1.03	1.05	1954.7	YES	NO	bb	bb	158.591
2	1234679-HPCDD	39.14	7.316e5	7.016e5	1.137	1.04	1.05	3053.4	YES	NO	bb	bb	211.133

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

**ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk**

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	25.53	5.455e2	6.873e2	1.024	0.79	0.77	7.0	YES	NO	bb	bb	0.150
2	Total-tetradoxins	24.67	8.046e2	1.116e3	1.024	0.72	0.77	8.4	YES	NO	bb	bb	0.233
3	Total-tetradoxins	24.47	1.162e3	1.414e3	1.024	0.82	0.77	16.3	YES	NO	bb	bb	0.313
4	Total-tetradoxins	25.97	1.155e3	1.372e3	1.024	0.84	0.77	9.6	YES	NO	bb	bb	0.307
5	12389-PECDD	31.85	1.168e3	6.585e2	1.184	1.77	1.55	9.2	YES	NO	bb	bb	0.248
6	12378-PeCDD	31.45	3.609e3	2.343e3	1.022	1.54	1.55	33.5	YES	NO	bb	bb	0.934
7	Total-pentadoxins	30.06	3.587e3	2.310e3	1.502	1.55	1.55	34.2	YES	NO	bd	bb	0.630
8	Total-pentadoxins	29.87	4.032e3	2.709e3	1.502	1.49	1.55	37.1	YES	NO	bb	bb	0.720
9	Total-pentadoxins	29.24	1.887e3	1.256e3	1.502	1.50	1.55	23.0	YES	NO	bb	bb	0.336
10	12479-PECDD	28.79	8.168e3	5.904e3	2.301	1.38	1.55	50.5	YES	NO	bb	bb	0.981
11	Total-hexadoxins	34.70	1.015e4	7.910e3	1.005	1.28	1.24	73.1	YES	NO	bb	bb	2.434
12	124679-HXCDD	33.93	4.995e4	3.979e4	1.115	1.26	1.24	333.1	YES	NO	bb	bb	11.683
13	123789-HxCDD	36.46	9.469e3	8.003e3	0.907	1.18	1.24	69.0	YES	NO	bb	bb	2.608
14	Total-hexadoxins	36.25	3.554e3	3.085e3	1.005	1.15	1.24	22.2	YES	NO	db	db	0.895
15	123678-HxCDD	36.08	1.877e4	1.534e4	1.001	1.22	1.24	131.6	YES	NO	dd	dd	4.321
16	123478-HxCDD	35.96	4.389e3	3.494e3	0.996	1.26	1.24	33.2	YES	NO	bd	bd	1.150
17	Total-hexadoxins	35.17	7.502e3	5.779e3	1.005	1.30	1.24	46.4	YES	NO	dd	db	1.790
18	Total-hexadoxins	35.07	5.426e4	4.487e4	1.005	1.21	1.24	258.5	YES	NO	bd	bd	13.357
19	1234678-HpCDD	40.18	4.995e5	4.844e5	1.039	1.03	1.05	1954.7	YES	NO	bb	bb	158.591
20	1234679-HPCDD	39.14	7.316e5	7.016e5	1.137	1.04	1.05	3053.4	YES	NO	bb	bb	211.133
21	OCDD	44.88	3.461e6	3.963e6	0.920	0.87	0.89	14116.1	YES	NO	bb	bb	1259.3...

## Quantify Totals Report MassLynx V4.1 SCN903

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.70	2.976e3	3.765e3	0.727	0.79	0.77	26.5	YES	NO	bd	bd	0.843
2	Total-tetrafurans	23.54	6.846e2	9.453e2	0.727	0.72	0.77	7.1	YES	NO	db	db	0.204
3	Total-tetrafurans	23.46	3.480e3	5.015e3	0.727	0.69	0.77	27.7	YES	NO	dd	dd	1.063
4	Total-tetrafurans	23.03	4.641e3	5.775e3	0.727	0.80	0.77	35.3	YES	NO	bd	bd	1.303
5	Total-tetrafurans	22.47	1.689e3	2.282e3	0.727	0.74	0.77	11.8	YES	NO	bb	bb	0.497
6	Total-Furans	21.14	8.844e2	1.018e3	0.922	0.87	0.77	6.1	YES	NO	bd	bd	0.188
7	Total-tetrafurans	25.84	2.094e3	2.601e3	0.727	0.80	0.77	15.2	YES	NO	dd	dd	0.587
8	2378-TCDF	25.70	2.543e3	3.206e3	0.702	0.79	0.77	19.7	YES	NO	dd	bd	0.745
9	Total-tetrafurans	25.48	6.310e3	7.406e3	0.727	0.85	0.77	36.2	YES	NO	bd	bb	1.716
10	Total-tetrafurans	25.01	1.501e3	1.836e3	0.727	0.82	0.77	9.3	YES	NO	bd	bb	0.417
11	Total-tetrafurans	24.60	3.732e3	4.909e3	0.727	0.76	0.77	24.4	YES	NO	db	db	1.081
12	Total-tetrafurans	24.38	3.920e3	4.669e3	0.727	0.84	0.77	25.5	YES	NO	dd	dd	1.074
13	Total-tetrafurans	23.97	4.246e3	5.117e3	0.727	0.83	0.77	23.8	YES	NO	dd	db	1.171
14	Total-tetrafurans	23.81	1.977e3	2.397e3	0.727	0.82	0.77	13.4	YES	NO	dd	dd	0.547
15	Total-pentafurans	28.62	6.314e3	4.156e3	0.654	1.52	1.55	45.9	YES	NO	dd	dd	1.712
16	12389-PECDF	32.23	4.255e2	2.593e2	0.496	1.64	1.55	4.8	YES	NO	db	bb	0.145
17	Total-pentafurans	31.98	4.505e2	2.551e2	0.654	1.77	1.55	4.9	YES	NO	bb	bb	0.115
18	23478-PeCDF	31.19	4.827e3	2.955e3	0.786	1.63	1.55	53.7	YES	NO	db	bb	1.075
19	Total-pentafurans	31.05	3.575e3	2.056e3	0.654	1.74	1.55	32.3	YES	NO	dd	db	0.921
20	Total-pentafurans	30.94	2.752e3	1.821e3	0.654	1.51	1.55	27.7	YES	NO	bd	bd	0.748
21	12378-PeCDF	29.86	2.468e3	1.413e3	0.679	1.75	1.55	26.9	YES	NO	bb	bb	0.602
22	Total-pentafurans	29.50	7.968e3	5.105e3	0.654	1.56	1.55	51.4	YES	NO	db	db	2.138
23	Total-pentafurans	29.39	9.037e2	5.087e2	0.654	1.78	1.55	9.0	YES	NO	dd	bd	0.231
24	123789-HxCDF	36.82	2.591e3	2.038e3	1.137	1.27	1.24	26.6	YES	NO	bd	bd	0.667
25	234678-HxCDF	35.83	7.195e3	5.825e3	1.140	1.24	1.24	47.2	YES	NO	bb	bb	1.533
26	123678-HxCDF	34.96	5.717e3	4.403e3	1.091	1.30	1.24	56.9	YES	NO	db	db	1.095
27	123478-HxCDF	34.82	1.651e4	1.269e4	1.166	1.30	1.24	168.3	YES	NO	dd	bd	3.314
28	Total-hexafurans	34.67	2.552e3	1.898e3	1.141	1.34	1.24	27.0	YES	NO	bd	bb	0.528
29	Total-hexafurans	34.20	9.718e4	7.872e4	1.141	1.23	1.24	995.8	YES	NO	bb	bb	20.853
30	Total-hexafurans	33.89	1.584e3	1.287e3	1.141	1.23	1.24	14.4	YES	NO	bb	bb	0.340
31	Total-hexafurans	33.37	5.277e4	4.274e4	1.141	1.23	1.24	507.2	YES	NO	bb	bb	11.323
32	123468-HXCDF	33.15	1.519e4	1.184e4	1.169	1.28	1.24	153.9	YES	NO	bb	bb	3.059
33	1234789-HpCDF	40.92	9.401e3	8.949e3	0.953	1.05	1.05	54.1	YES	NO	bb	bb	3.029
34	Total-heptafurans	39.35	3.437e5	3.399e5	0.978	1.01	1.05	2229.1	YES	NO	bb	bb	104.805
35	Total-heptafurans	39.10	2.246e3	2.186e3	0.978	1.03	1.05	14.0	YES	NO	bb	bb	0.680
36	1234678-HpCDF	38.69	1.256e5	1.175e5	1.003	1.07	1.05	833.8	YES	NO	bb	bb	34.703
37	OCDF	45.13	3.598e5	3.953e5	0.778	0.91	0.89	1319.0	YES	NO	bb	bb	151.510

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

**ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk**

**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-penta1	27.13	3.351e4	2.255e4		1.49	1.55	557.6	YES	NO	bb	bb	6.440
39	Total-tetradioxins	25.53	5.455e2	6.873e2	1.024	0.79	0.77	7.0	YES	NO	bb	bb	0.150
40	Total-tetradioxins	24.67	8.046e2	1.116e3	1.024	0.72	0.77	8.4	YES	NO	bb	bb	0.233
41	Total-tetradioxins	24.47	1.162e3	1.414e3	1.024	0.82	0.77	16.3	YES	NO	bb	bb	0.313
42	Total-tetradioxins	25.97	1.155e3	1.372e3	1.024	0.84	0.77	9.6	YES	NO	bb	bb	0.307
43	12389-PECDD	31.85	1.168e3	6.585e2	1.184	1.77	1.55	9.2	YES	NO	bb	bb	0.248
44	12378-PeCDD	31.45	3.609e3	2.343e3	1.022	1.54	1.55	33.5	YES	NO	bb	bb	0.934
45	Total-pentadioxins	30.06	3.587e3	2.310e3	1.502	1.55	1.55	34.2	YES	NO	bd	bb	0.630
46	Total-pentadioxins	29.87	4.032e3	2.709e3	1.502	1.49	1.55	37.1	YES	NO	bb	bb	0.720
47	Total-pentadioxins	29.24	1.887e3	1.256e3	1.502	1.50	1.55	23.0	YES	NO	bb	bb	0.336
48	12479-PECDD	28.79	8.168e3	5.904e3	2.301	1.38	1.55	50.5	YES	NO	bb	bb	0.981
49	Total-hexadioxins	34.70	1.015e4	7.910e3	1.005	1.28	1.24	73.1	YES	NO	bb	bb	2.434
50	124679-HxCDD	33.93	4.995e4	3.979e4	1.115	1.26	1.24	333.1	YES	NO	bb	bb	11.683
51	123789-HxCDD	36.46	9.469e3	8.003e3	0.907	1.18	1.24	69.0	YES	NO	bb	bb	2.608
52	Total-hexadioxins	36.25	3.554e3	3.085e3	1.005	1.15	1.24	22.2	YES	NO	db	db	0.895
53	123678-HxCDD	36.08	1.877e4	1.534e4	1.001	1.22	1.24	131.6	YES	NO	dd	dd	4.321
54	123478-HxCDD	35.96	4.389e3	3.494e3	0.996	1.26	1.24	33.2	YES	NO	bd	bd	1.150
55	Total-hexadioxins	35.17	7.502e3	5.779e3	1.005	1.30	1.24	46.4	YES	NO	dd	db	1.790
56	Total-hexadioxins	35.07	5.426e4	4.487e4	1.005	1.21	1.24	258.5	YES	NO	bd	bd	13.357
57	1234678-HpCDD	40.18	4.995e5	4.844e5	1.039	1.03	1.05	1954.7	YES	NO	bb	bb	158.591
58	1234679-HPCDD	39.14	7.316e5	7.016e5	1.137	1.04	1.05	3053.4	YES	NO	bb	bb	211.133
59	OCDD	44.88	3.461e6	3.963e6	0.920	0.87	0.89	14116.1	YES	NO	bb	bb	1259.3...

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.83	8.303e5					3.0	YES		bb		
2	FUNCTION1 PFK	23.30	9.488e5					8.3	YES		bb		
3	FUNCTION1 PFK	21.93	4.130e5					7.6	YES		bb		
4	FUNCTION1 PFK	21.40	4.295e5					7.6	YES		bb		
5	FUNCTION1 PFK	21.13	1.664e6					22.7	YES		bb		
6	FUNCTION1 PFK	27.89	4.729e6					28.4	YES		bb		
7	FUNCTION1 PFK	27.36	7.392e6					51.5	YES		db		
8	FUNCTION1 PFK	26.93	1.256e7					36.4	YES		bd		



## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

## PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.35	1.931e5					14.2	YES		bd		0.000
2	FUNCTION2 PFK	29.15	2.846e6					34.9	YES		db		0.000
3	FUNCTION2 PFK	28.92	2.900e5					30.9	YES		dd		0.000
4	FUNCTION2 PFK	28.88	6.377e5					29.6	YES		dd		0.000
5	FUNCTION2 PFK	28.75	1.184e6					28.5	YES		dd		0.000
6	FUNCTION2 PFK	28.64	3.723e5					24.0	YES		dd		0.000
7	FUNCTION2 PFK	28.49	1.398e6					26.3	YES		dd		0.000
8	FUNCTION2 PFK	28.36	6.099e5					24.9	YES		dd		0.000
9	FUNCTION2 PFK	28.28	4.452e5					24.0	YES		dd		0.000
10	FUNCTION2 PFK	28.24	3.364e5					22.0	YES		dd		0.000
11	FUNCTION2 PFK	28.16	3.297e5					21.3	YES		dd		0.000
12	FUNCTION2 PFK	28.13	5.584e5					20.6	YES		bd		0.000
13	FUNCTION2 PFK	31.21	6.346e4					3.4	YES		bd		0.000
14	FUNCTION2 PFK	31.05	3.554e5					8.4	YES		db		0.000
15	FUNCTION2 PFK	30.88	9.153e4					6.2	YES		dd		0.000
16	FUNCTION2 PFK	30.84	6.663e4					5.6	YES		dd		0.000
17	FUNCTION2 PFK	30.79	1.012e5					5.7	YES		dd		0.000
18	FUNCTION2 PFK	30.69	7.574e4					4.1	YES		dd		0.000
19	FUNCTION2 PFK	30.65	2.075e4					2.6	NO		dd		0.000
20	FUNCTION2 PFK	30.61	3.810e4					2.4	NO		bd		0.000
21	FUNCTION2 PFK	30.45	9.318e2					0.3	NO		bb		0.000
22	FUNCTION2 PFK	30.26	1.471e4					0.0	NO		db		0.000
23	FUNCTION2 PFK	30.09	1.463e5					6.2	YES		dd		0.000
24	FUNCTION2 PFK	29.90	5.850e5					15.5	YES		dd		0.000
25	FUNCTION2 PFK	29.86	2.038e5					16.4	YES		dd		0.000
26	FUNCTION2 PFK	29.83	5.492e5					16.4	YES		dd		0.000
27	FUNCTION2 PFK	29.60	1.109e6					24.3	YES		dd		0.000
28	FUNCTION2 PFK	29.45	1.287e6					27.1	YES		dd		0.000
29	FUNCTION2 PFK	32.76	3.247e4					3.5	YES		db		0.000
30	FUNCTION2 PFK	32.72	7.164e4					5.1	YES		dd		0.000
31	FUNCTION2 PFK	32.62	2.040e5					8.7	YES		dd		0.000
32	FUNCTION2 PFK	32.60	2.300e5					8.7	YES		bd		0.000
33	FUNCTION2 PFK	32.35	4.402e5					12.8	YES		db		0.000
34	FUNCTION2 PFK	32.30	1.812e5					10.4	YES		dd		0.000
35	FUNCTION2 PFK	32.17	3.136e5					8.6	YES		dd		0.000
36	FUNCTION2 PFK	32.11	9.206e4					6.3	YES		bd		0.000
37	FUNCTION2 PFK	31.95	8.898e4					5.6	YES		db		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION2 PFK	31.92	1.195e5					5.9	YES		dd		0.000
39	FUNCTION2 PFK	31.82	5.151e4					3.0	YES		bd		0.000
40	FUNCTION2 PFK	31.68	9.055e2					0.3	NO		bb		0.000
41	FUNCTION2 PFK	31.39	1.473e4					1.0	NO		bb		0.000
42	FUNCTION2 PFK	31.27	1.350e4					1.2	NO		db		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.12	1.425e5					2.7	NO		bb		0.000
2	FUNCTION3 PFK	36.94	2.354e6					30.0	YES		bb		0.000
3	FUNCTION3 PFK	36.50	7.520e6					33.3	YES		bb		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	37.92	1.017e4					1.9	NO		bb		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.31	5.001e4					4.0	YES		db		
2	FUNCTION5 PFK	43.85	8.125e6					25.3	YES		bd		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	26.09	3.885e2					8.0	YES		bb		0.000
2	FUNCTION1 HXCD...	25.87	1.384e3					27.6	YES		db		0.000
3	FUNCTION1 HXCD...	25.75	4.430e2					5.9	YES		bd		0.000
4	FUNCTION1 HXCD...	23.81	7.718e1					1.8	NO		db		0.000
5	FUNCTION1 HXCD...	23.73	2.091e2					5.0	YES		bd		0.000
6	FUNCTION1 HXCD...	22.29	2.034e2					3.6	YES		bb		0.000
7	FUNCTION1 HXCD...	22.09	1.830e2					3.4	YES		bb		0.000
8	FUNCTION1 HXCD...	21.86	1.819e2					3.5	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:25:14 Pacific Daylight Time

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.05	1.001e2					3.2	YES		bb		0.000
2	FUNCTION2 HPCD...	28.91	1.214e2					4.4	YES		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.46	2.307e2					6.4	YES		bb		0.000
2	FUNCTION3 OCDPE	33.08	1.069e2					5.6	YES		db		0.000
3	FUNCTION3 OCDPE	33.04	2.611e2					6.4	YES		bd		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.35	5.641e4					1244.5	YES		bb		0.000

**ETHERS6**

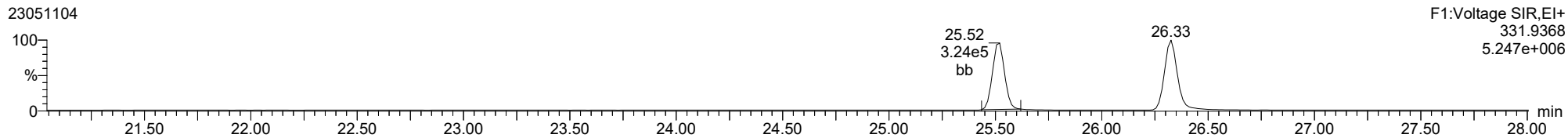
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.91	7.802e2					11.0	YES		bb		0.000

Method: T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16  
Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

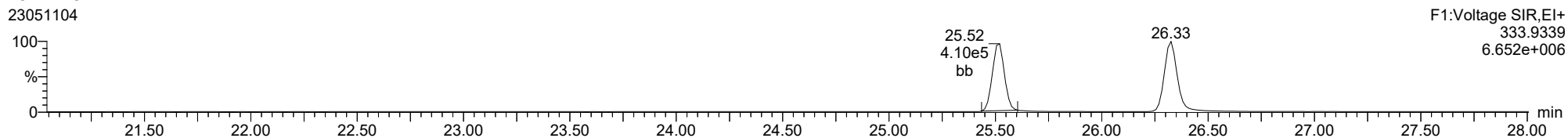
**13C-1234-TCDD**

23051104



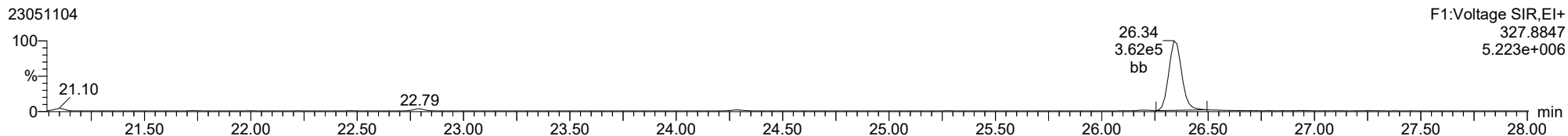
**13C-1234-TCDD**

23051104



**37CL-2378-TCDD**

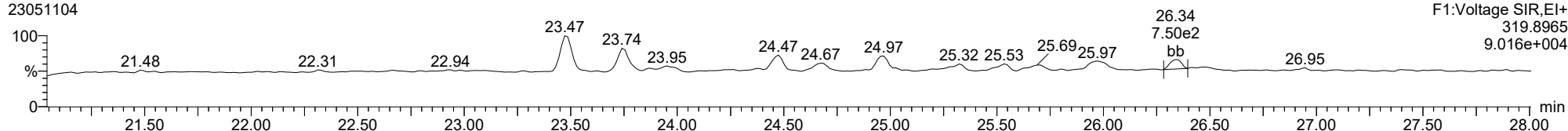
23051104



ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

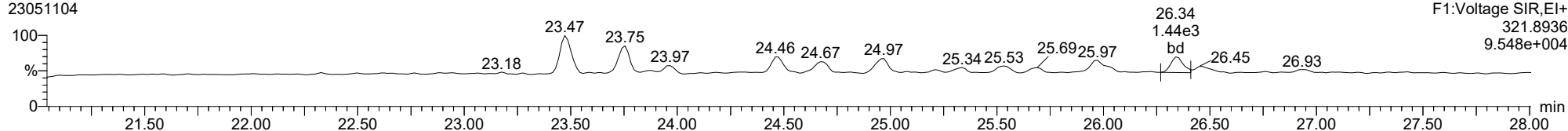
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23051104



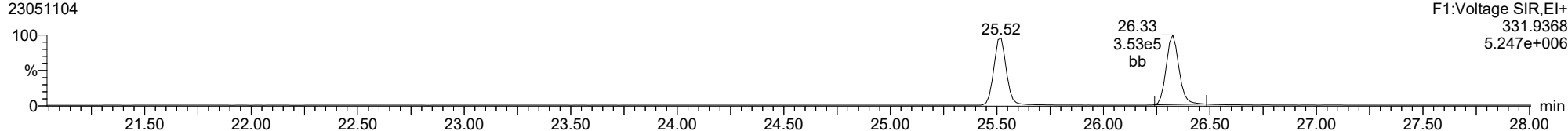
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23051104



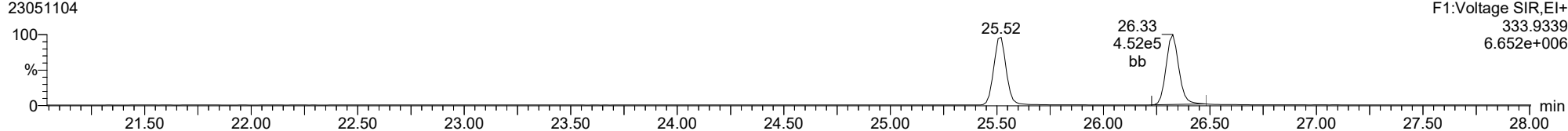
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23051104



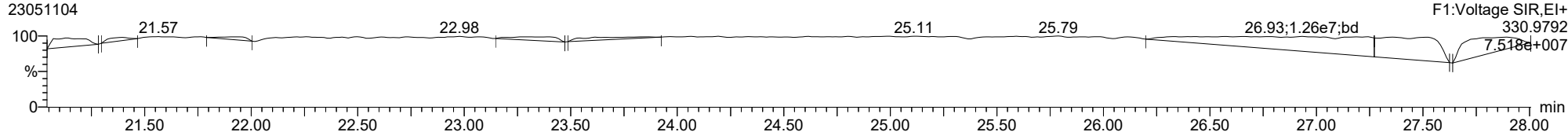
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23051104



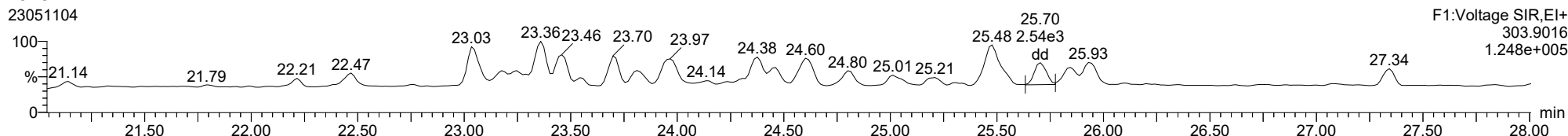
**FUNCTION1 PFK**

23051104

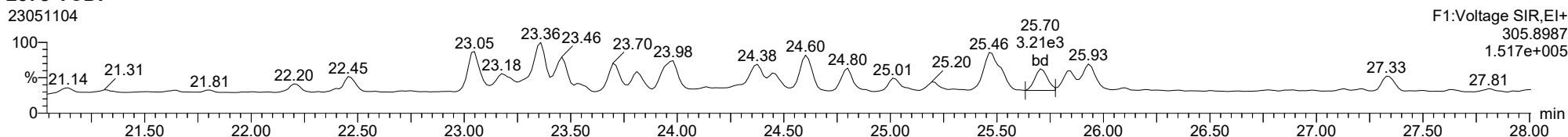


ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

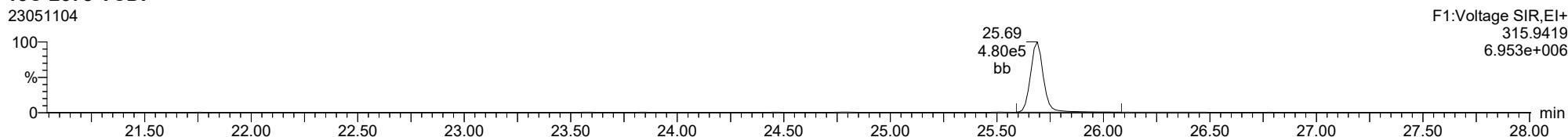
**2378-TCDF**



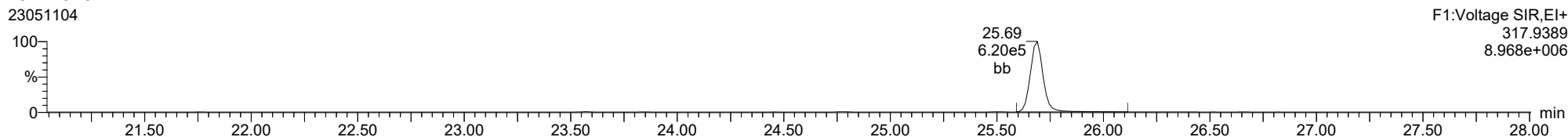
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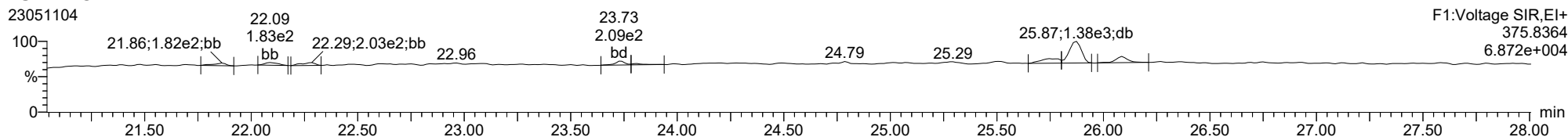
**13C-2378-TCDF**



**13C-2378-TCDF**



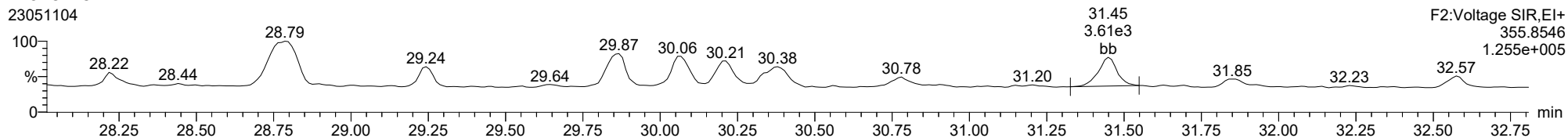
**FUNCTION1 HXCDPE**



ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

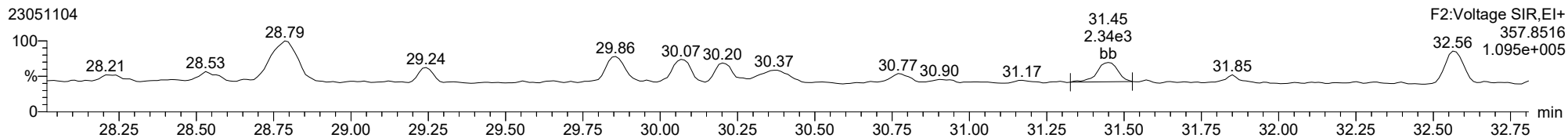
**12378-PeCDD**

23051104



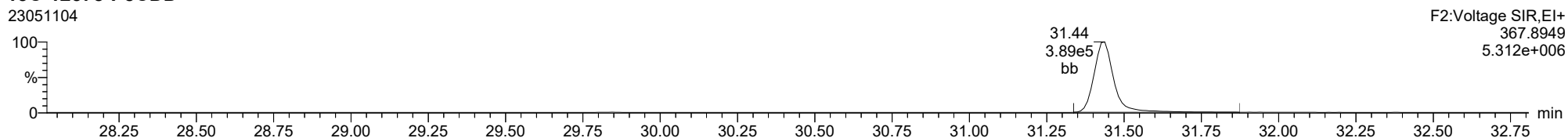
**12378-PeCDD**

23051104



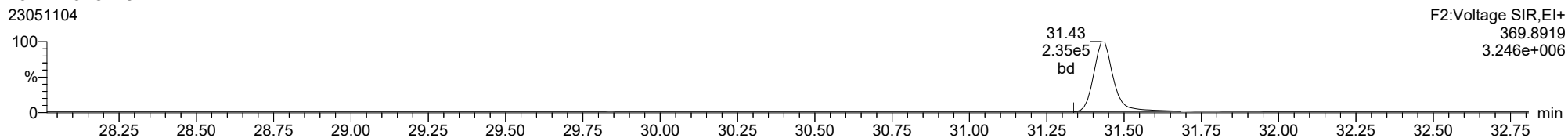
**13C-12378-PeCDD**

23051104



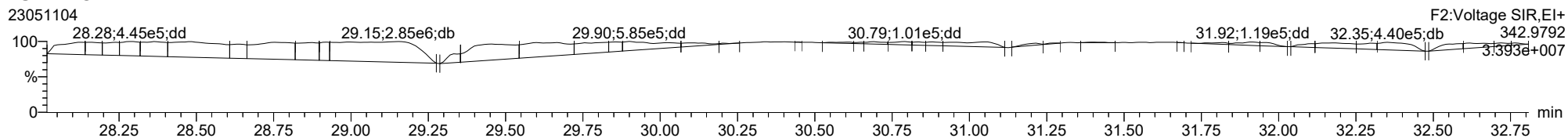
**13C-12378-PeCDD**

23051104



**FUNCTION2 PFK**

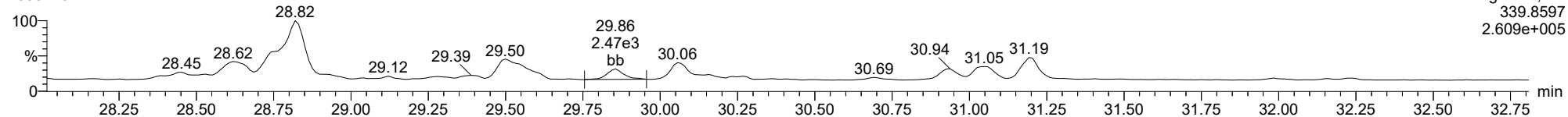
23051104



ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

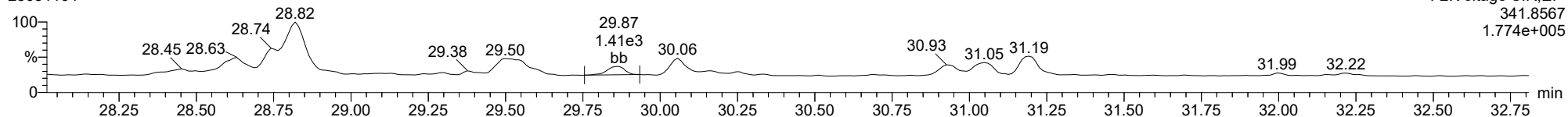
**12378-PeCDF**

23051104



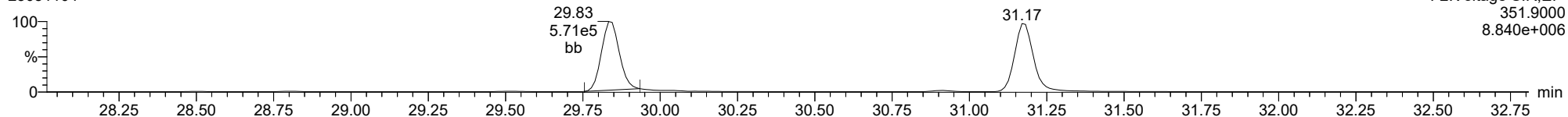
**12378-PeCDF**

23051104



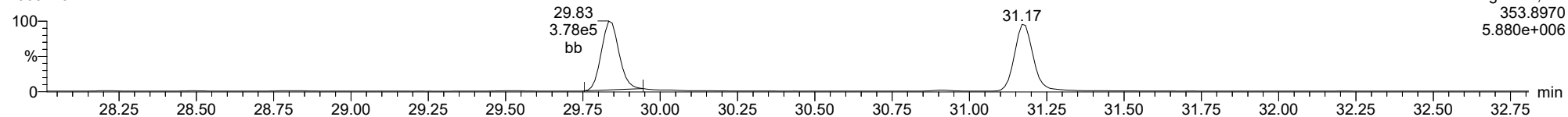
**13C-12378-PeCDF**

23051104



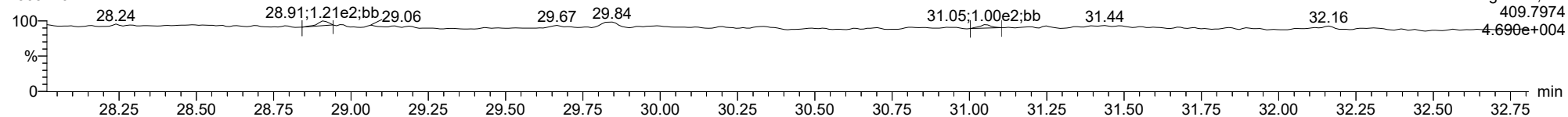
**13C-12378-PeCDF**

23051104



**FUNCTION2 HPCDPE**

23051104

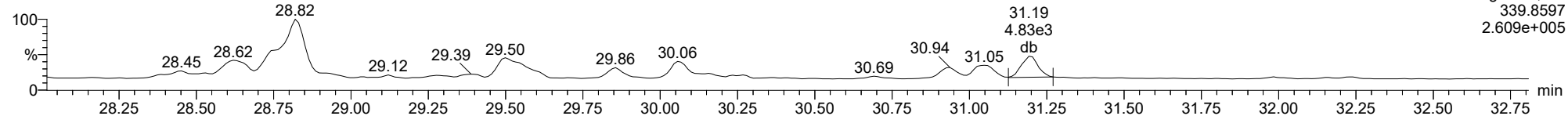




ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

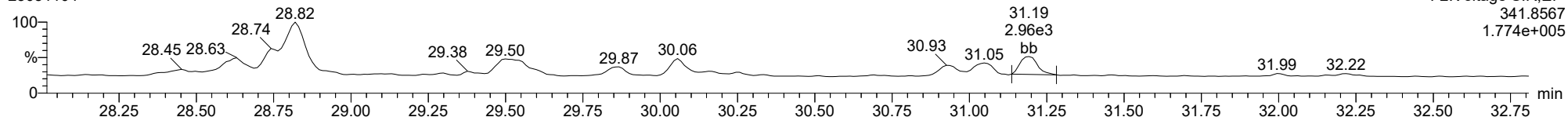
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23051104



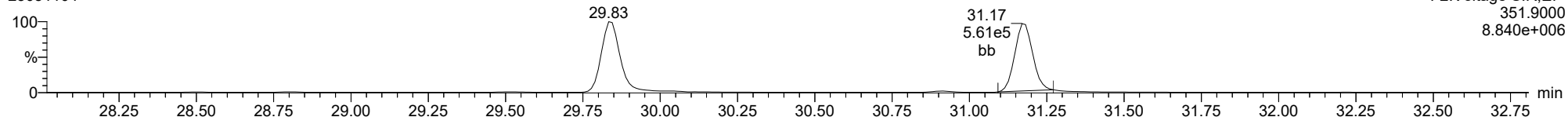
**23478-PeCDF**

23051104



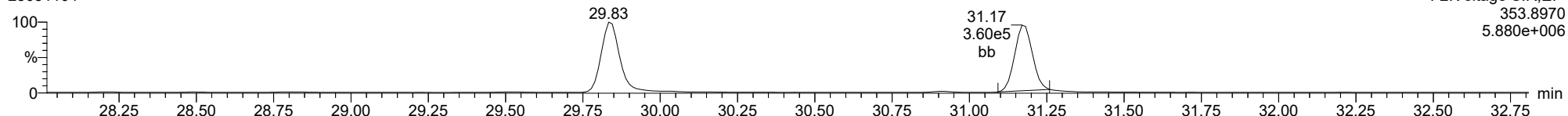
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23051104



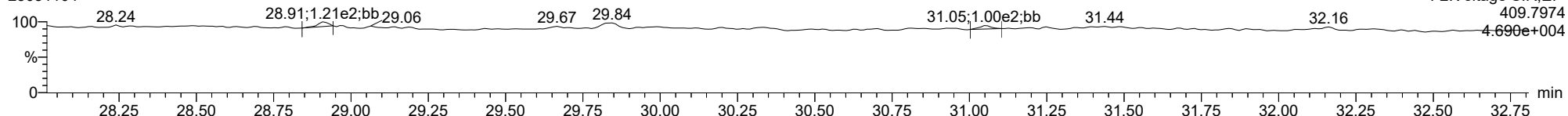
**13C-23478-PeCDF**

23051104



**FUNCTION2 HPCDPE**

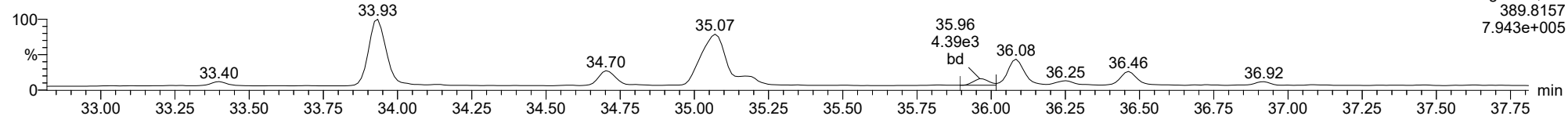
23051104



ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

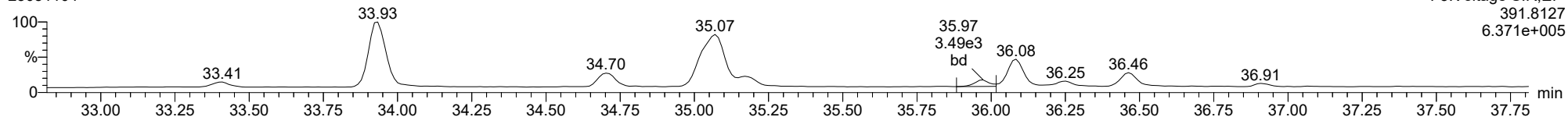
123478-HxCDD

23051104



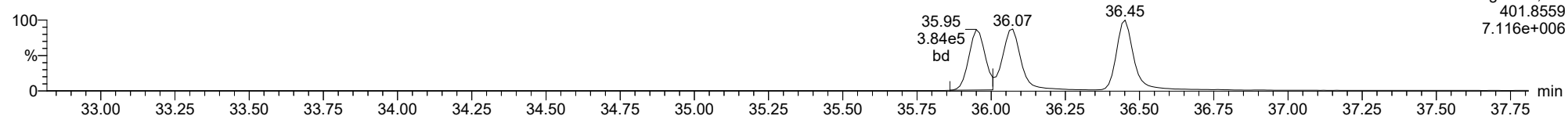
123478-HxCDD

23051104



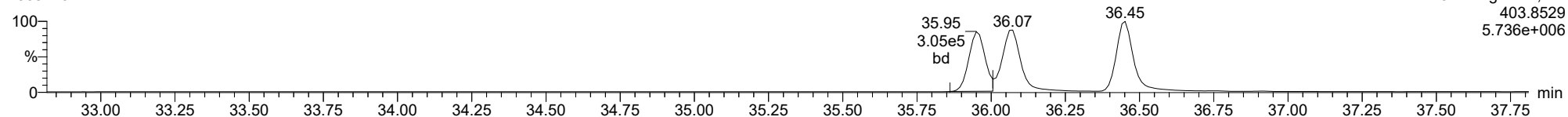
13C-123478-HxCDD

23051104



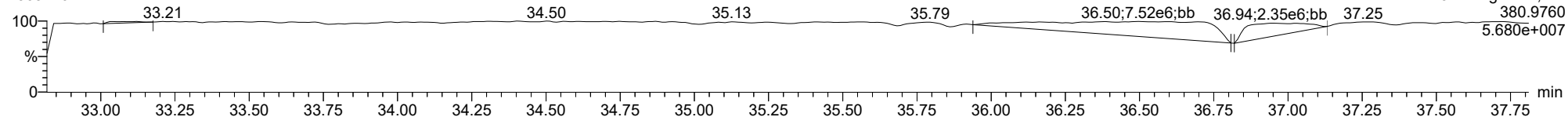
13C-123478-HxCDD

23051104



FUNCTION3 PFK

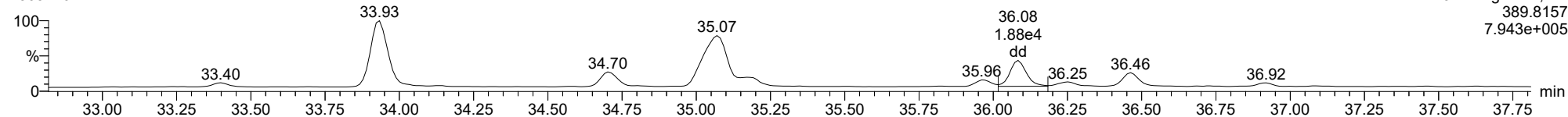
23051104



ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

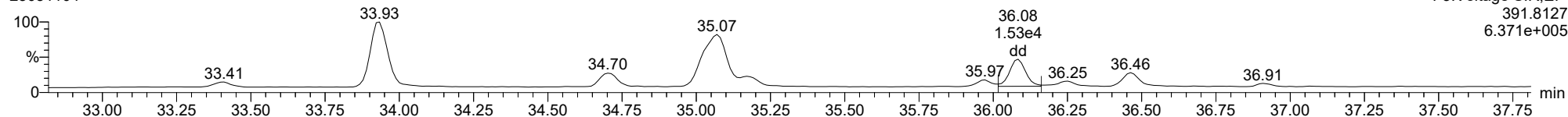
**123678-HxCDD**

23051104



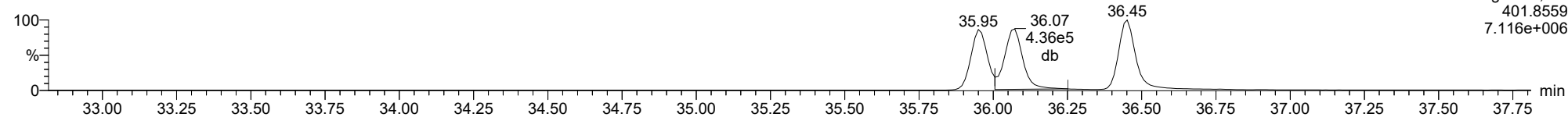
**123678-HxCDD**

23051104



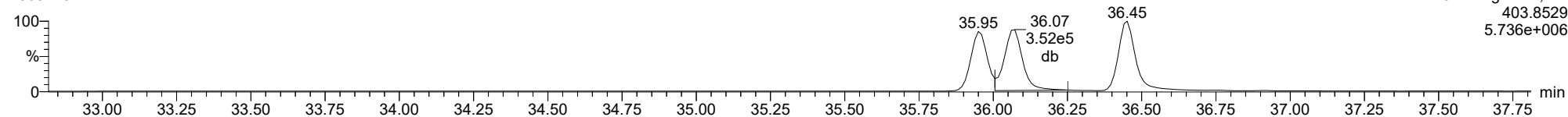
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23051104



**13C-123678-HxCDD**

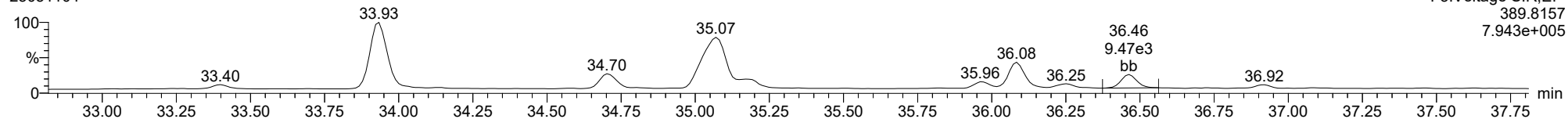
23051104



ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

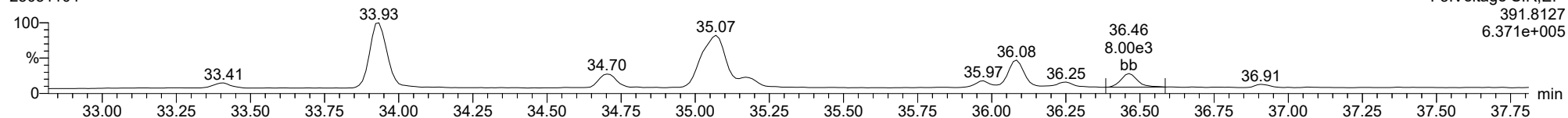
**123789-HxCDD**

23051104



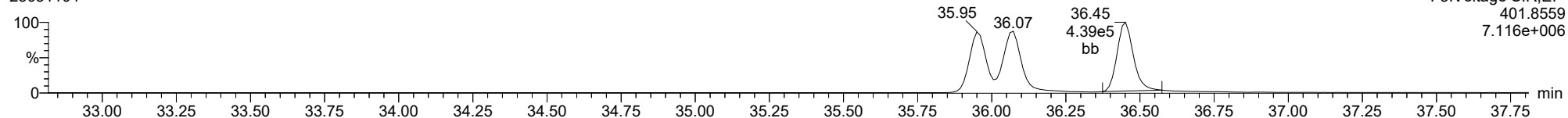
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23051104



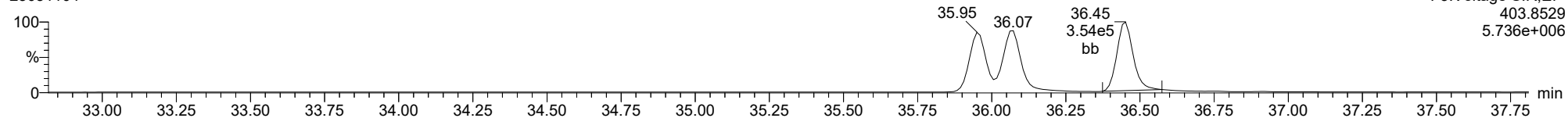
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23051104



**13C-123789-HxCDD**

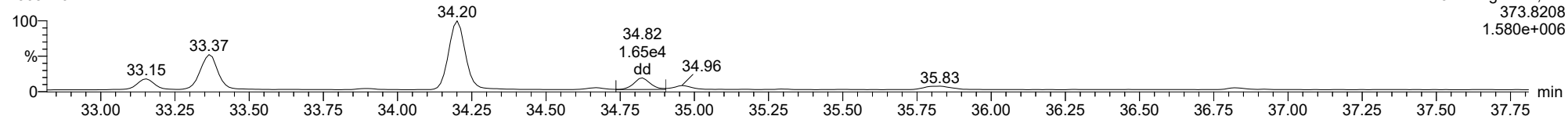
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ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

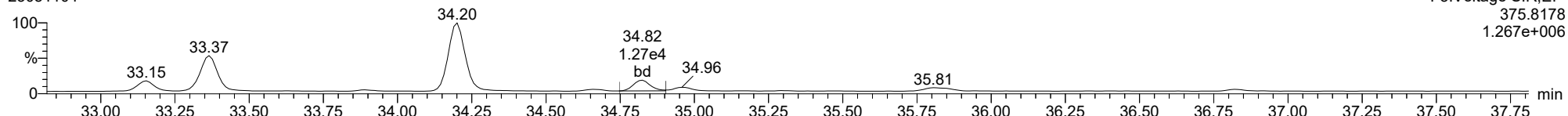
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23051104



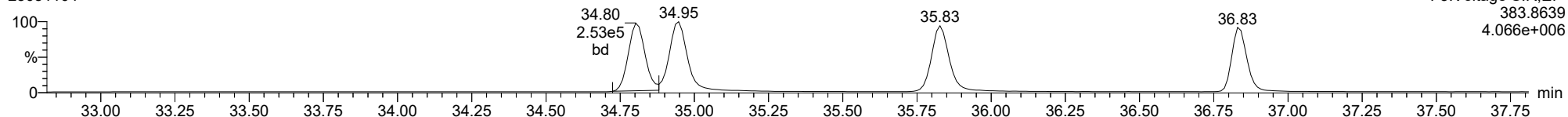
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23051104



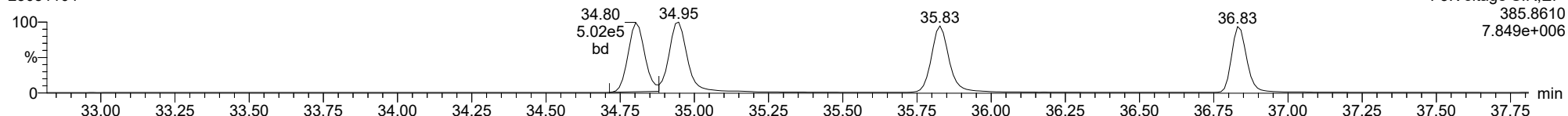
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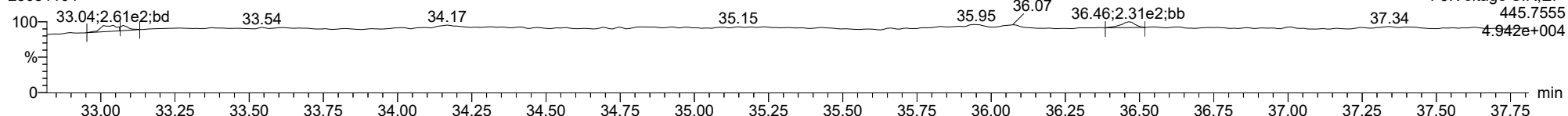
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23051104



**FUNCTION3 OCDPE**

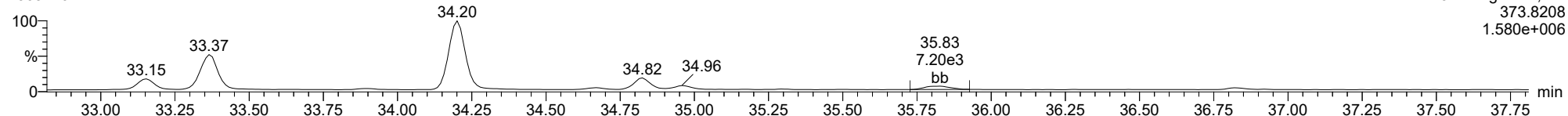
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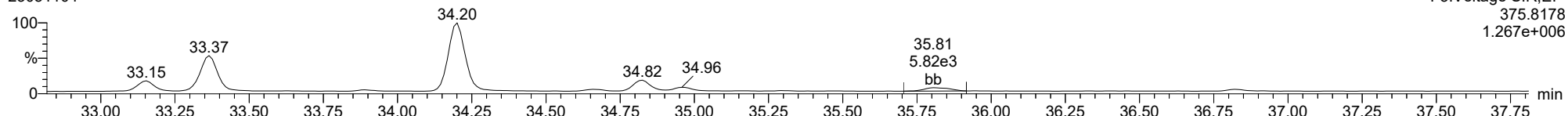
**234678-HxCDF**

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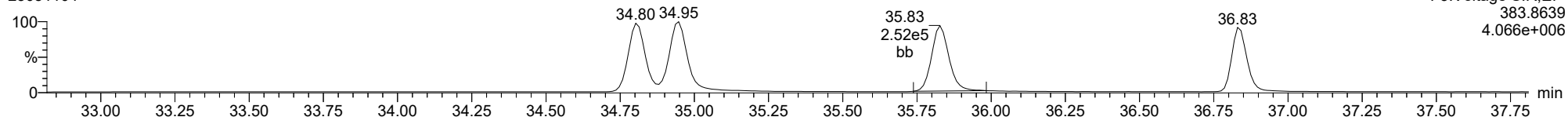
**234678-HxCDF**

23051104



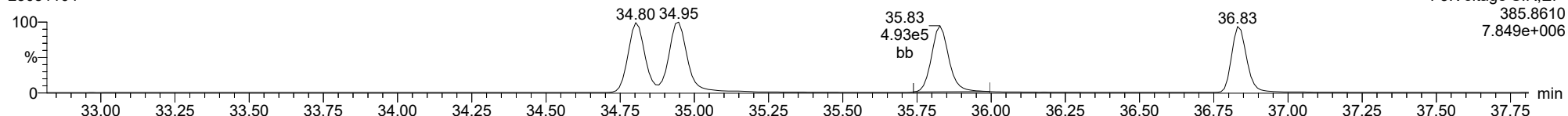
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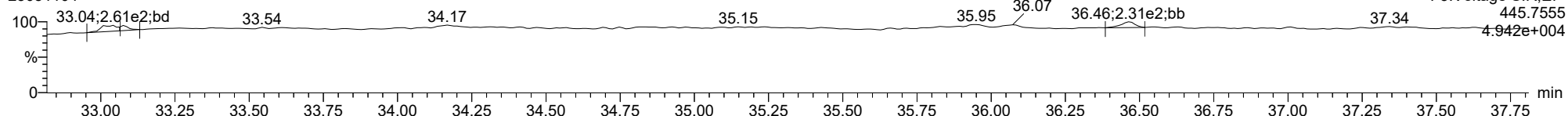
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23051104



**FUNCTION3 OCDPE**

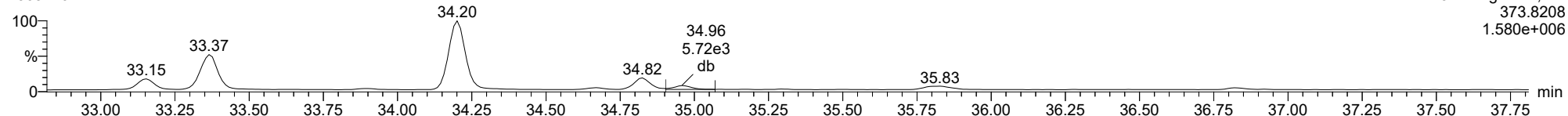
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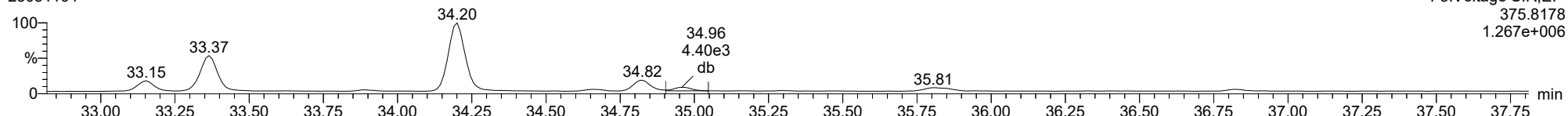
123678-HxCDF

23051104



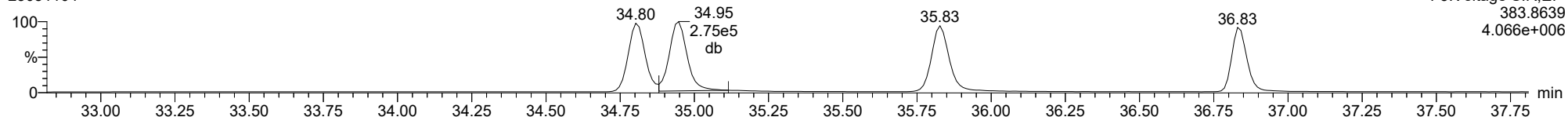
123678-HxCDF

23051104



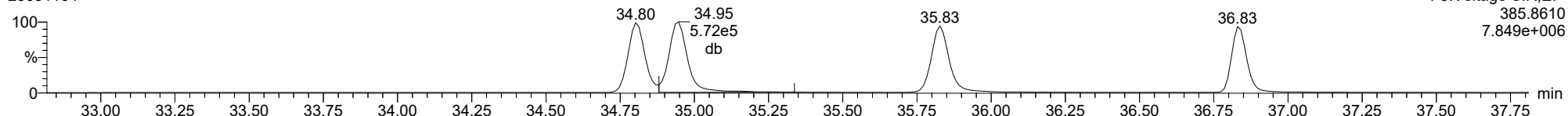
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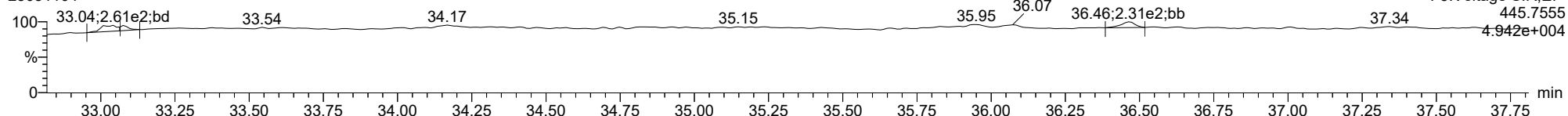
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23051104



FUNCTION3 OCDPE

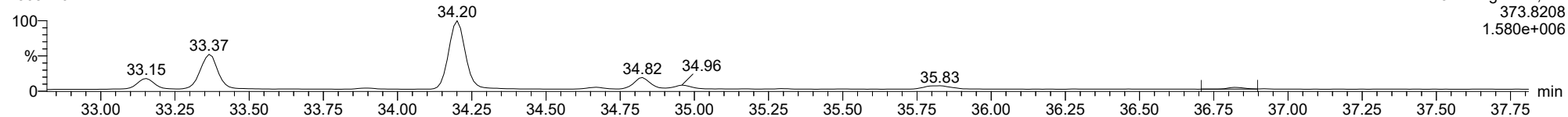
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ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

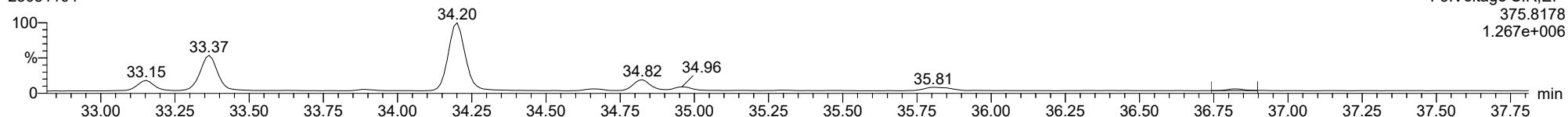
123789-HxCDF

23051104



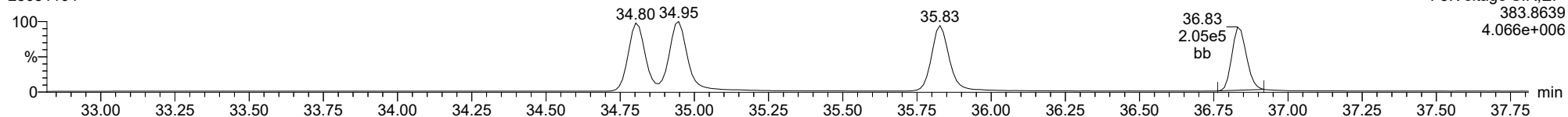
123789-HxCDF

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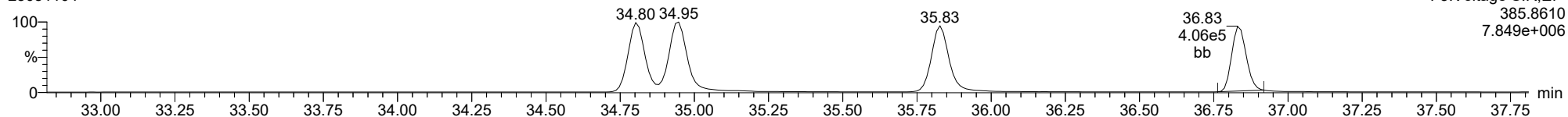
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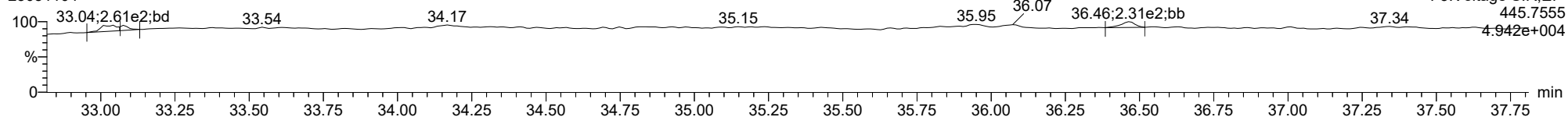
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23051104



FUNCTION3 OCDPE

23051104

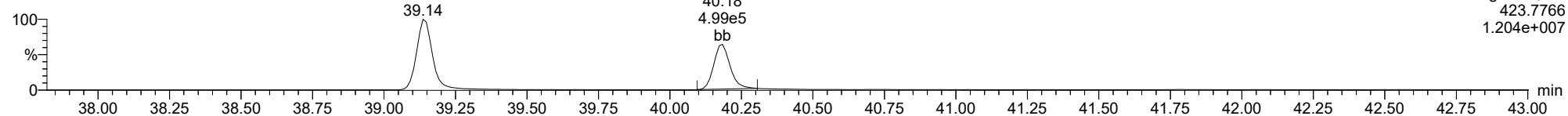




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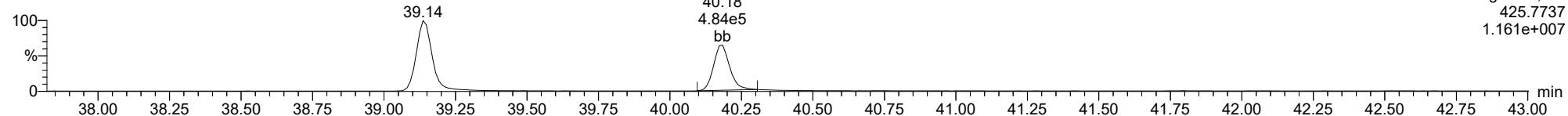
1234678-HpCDD

23051104



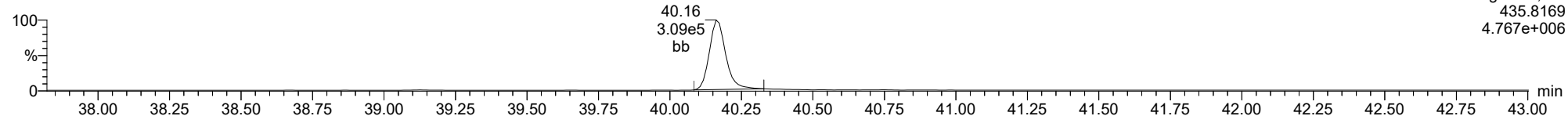
1234678-HpCDD

23051104



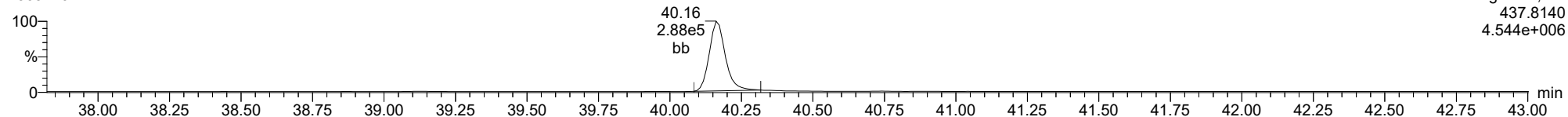
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23051104



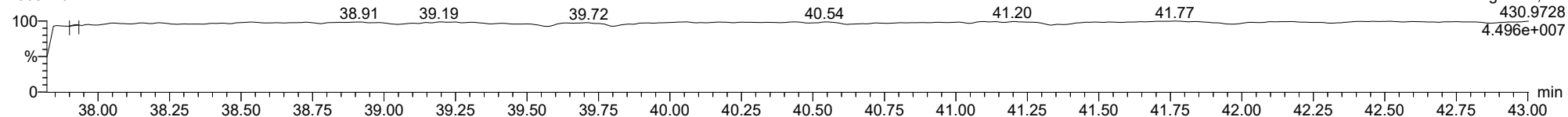
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23051104



FUNCTION4 PFK

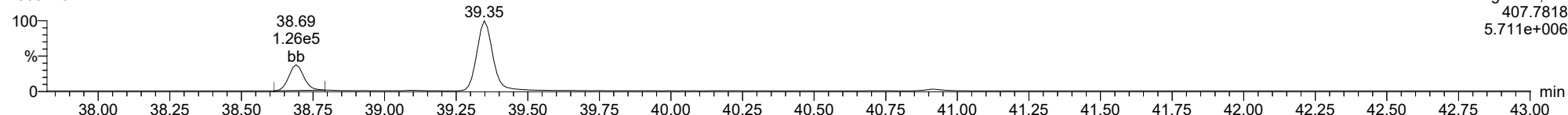
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ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

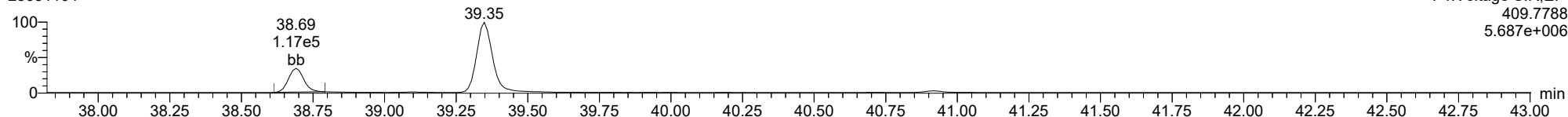
**1234678-HpCDF**

23051104



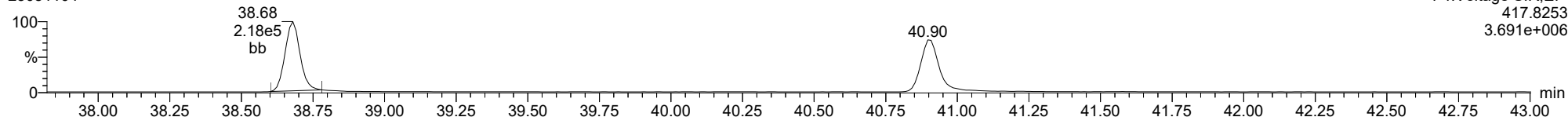
**1234678-HpCDF**

23051104



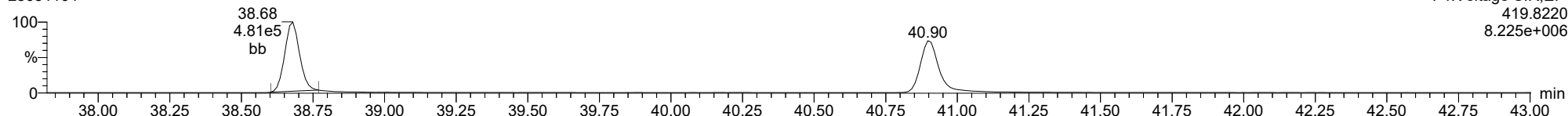
**13C-1234678-HpCDF**

23051104



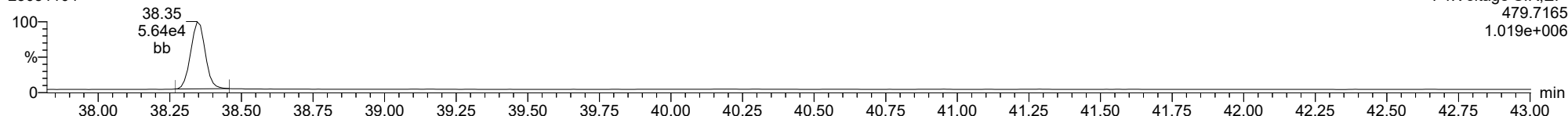
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23051104



**FUNCTION4 NCDPE**

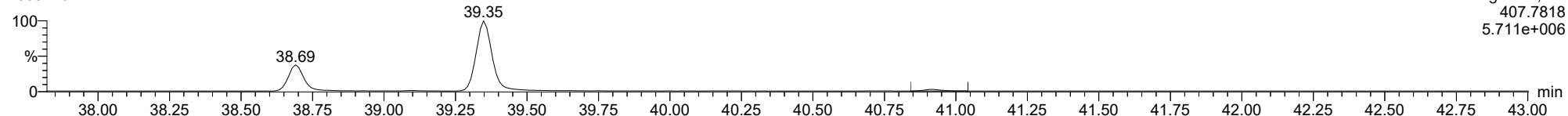
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ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

**1234789-HpCDF**

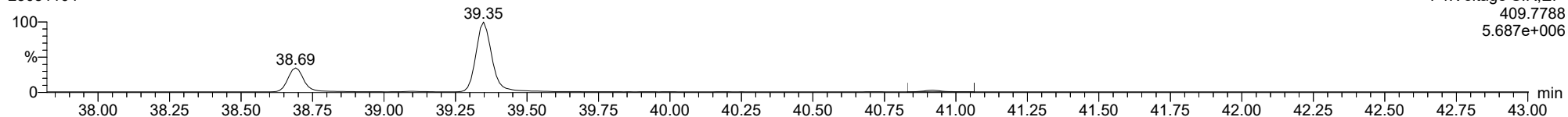
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F4:Voltage SIR,El+  
407.7818  
5.711e+006

**1234789-HpCDF**

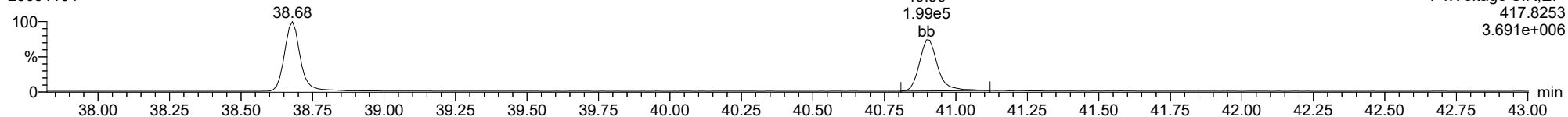
23051104



F4:Voltage SIR,El+  
409.7788  
5.687e+006

**13C-1234789-HpCDF**

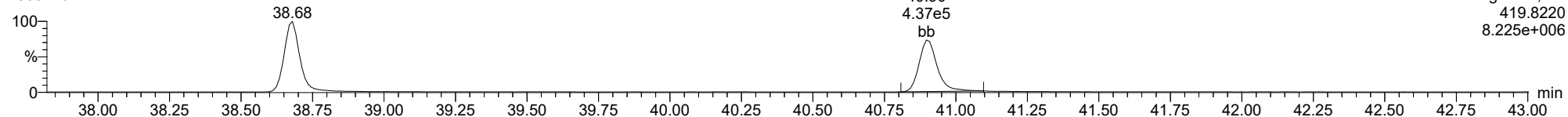
23051104



F4:Voltage SIR,El+  
417.8253  
3.691e+006

**13C-1234789-HpCDF**

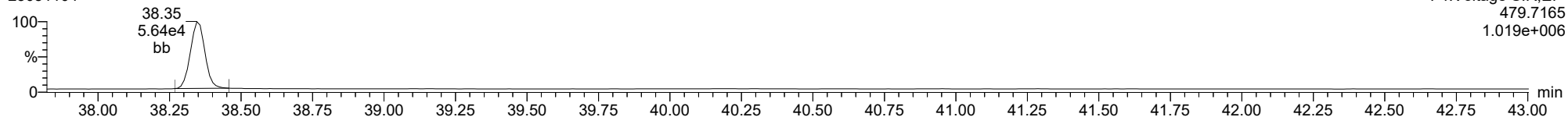
23051104



F4:Voltage SIR,El+  
419.8220  
8.225e+006

**FUNCTION4 NCDPE**

23051104

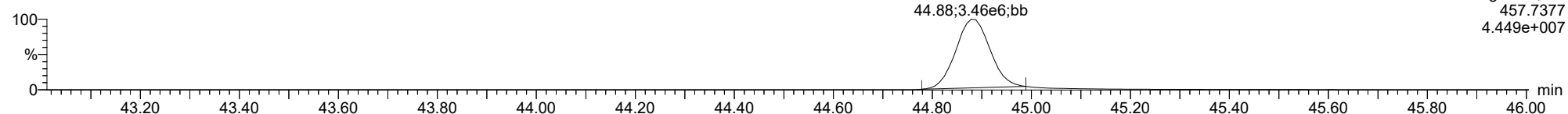


F4:Voltage SIR,El+  
479.7165  
1.019e+006

ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

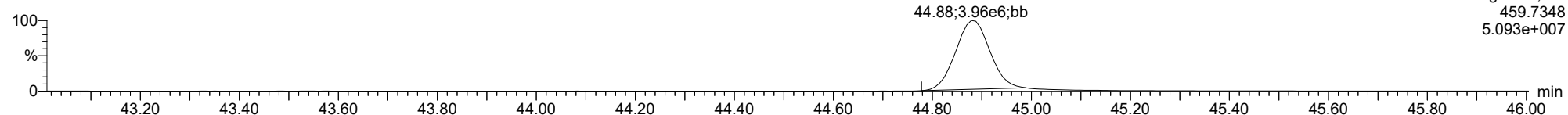
**OCDD**

23051104



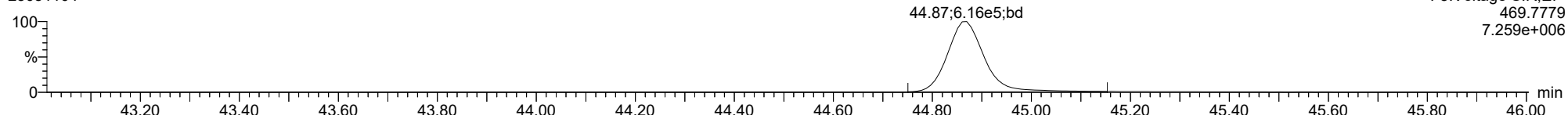
**OCDD**

23051104



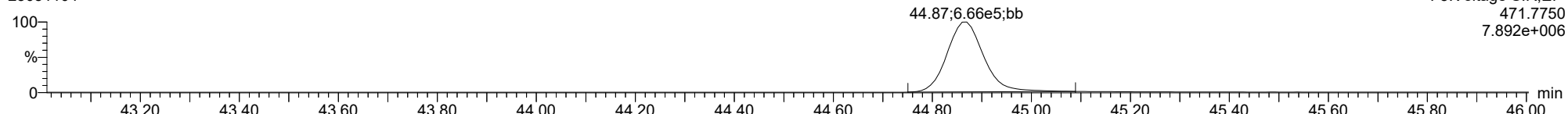
**13C-OCDD**

23051104



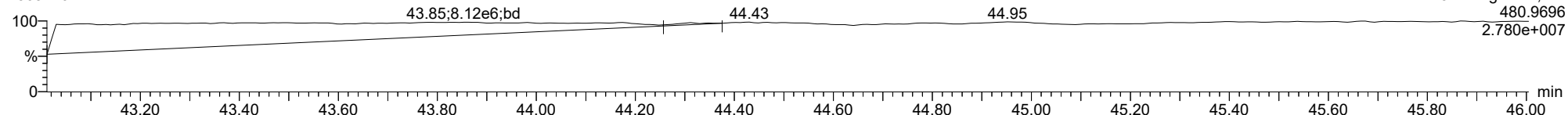
**13C-OCDD**

23051104

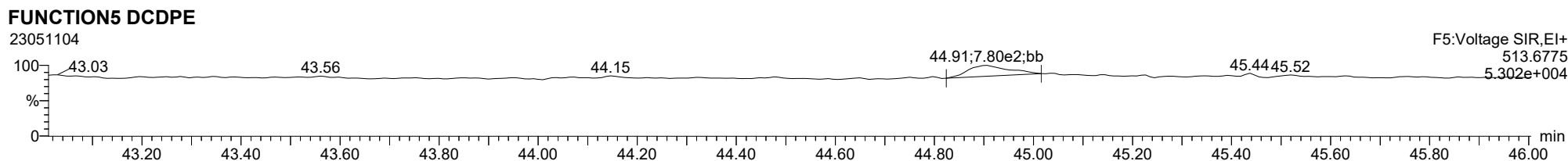
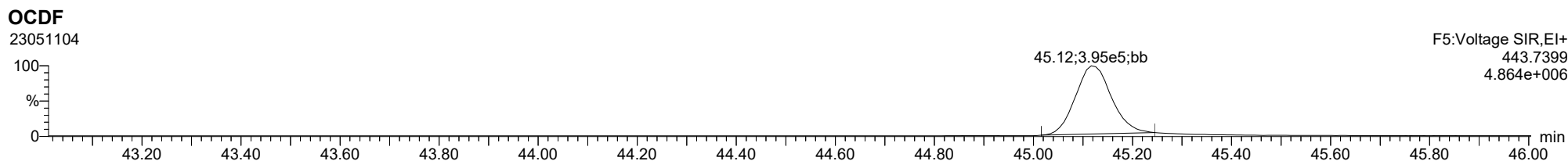
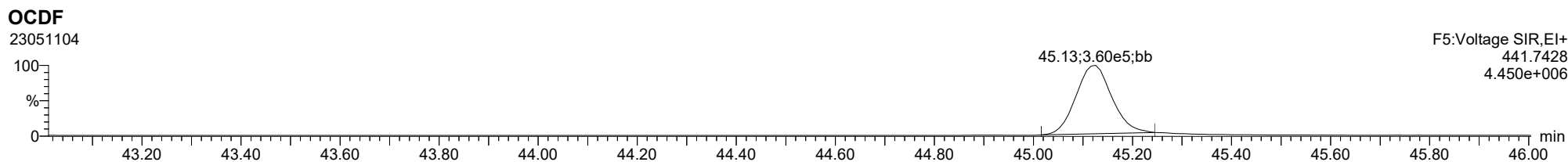


**FUNCTION5 PFK**

23051104

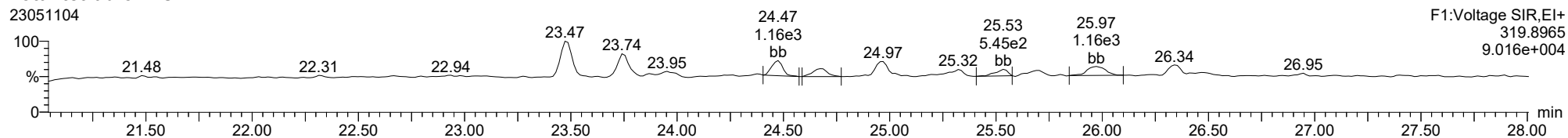


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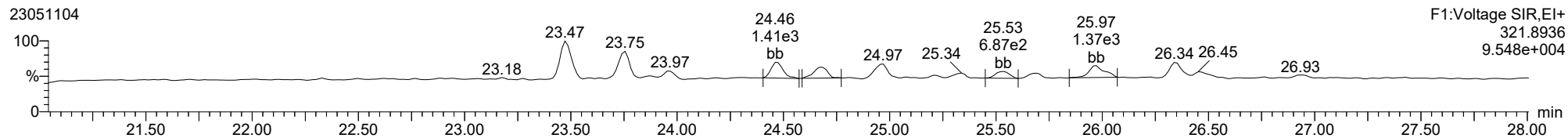


ID: 23D0063-03, Name: 23051104, Date: 11-May-2023, Time: 13:49:56, Conditions: AUTOSPEC01, User: pk

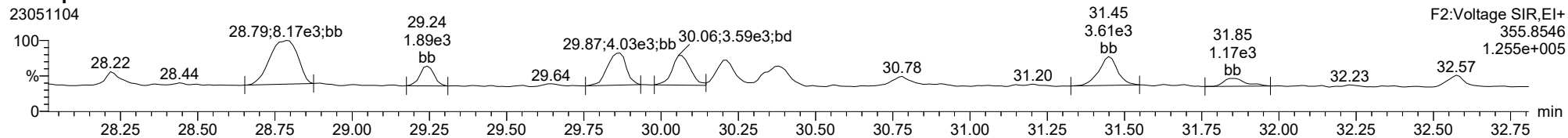
**Total-tetradioxins**



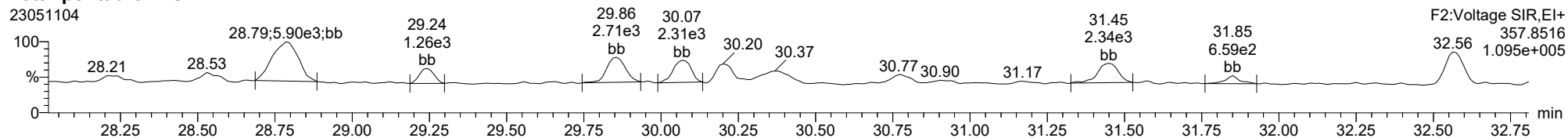
**Total-tetradioxins**



**Total-pentadioxins**



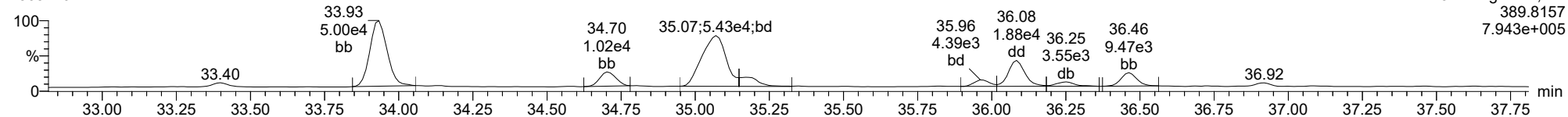
**Total-pentadioxins**



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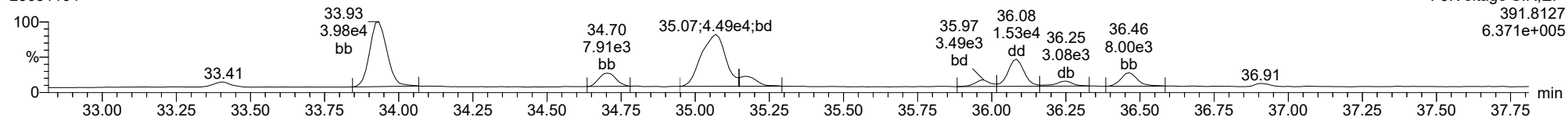
**Total-hexadioxins**

23051104



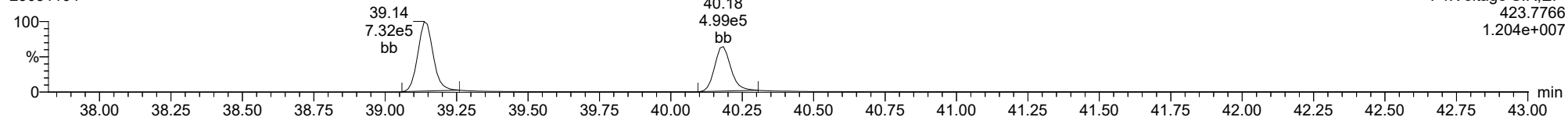
**Total-hexadioxins**

23051104



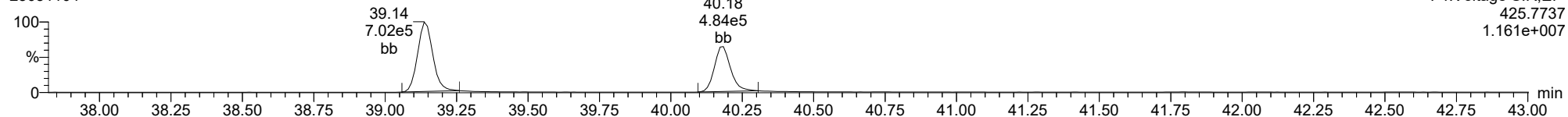
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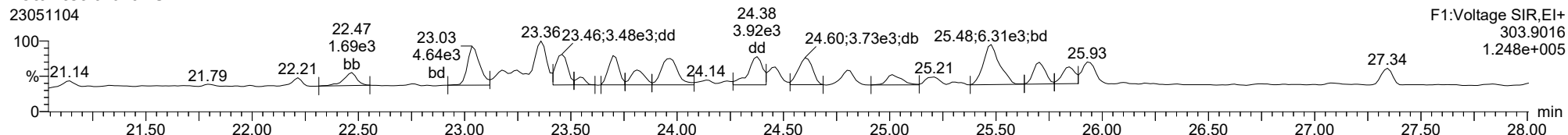
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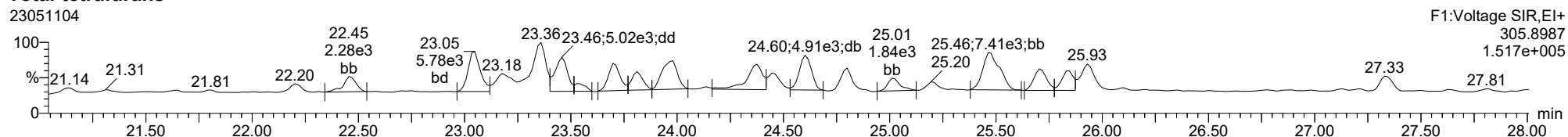


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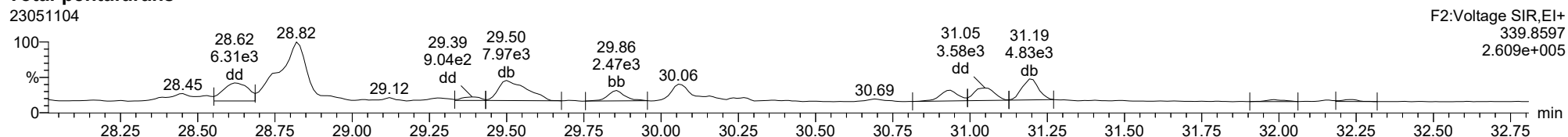
**Total-tetrafurans**



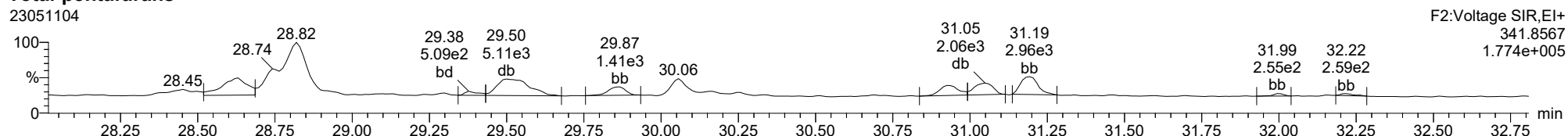
**Total-tetrafurans**



**Total-pentafurans**



**Total-pentafurans**

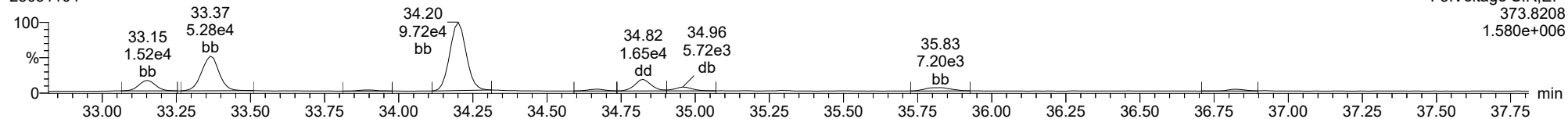




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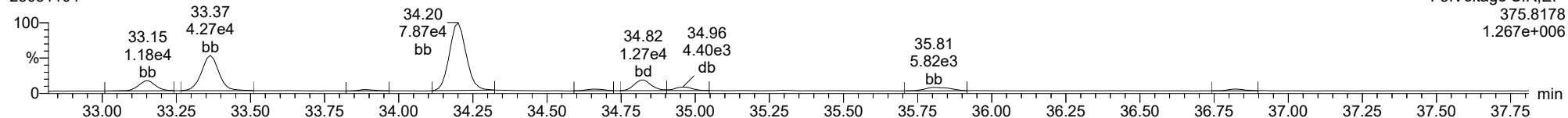
**Total-hexafluorans**

23051104



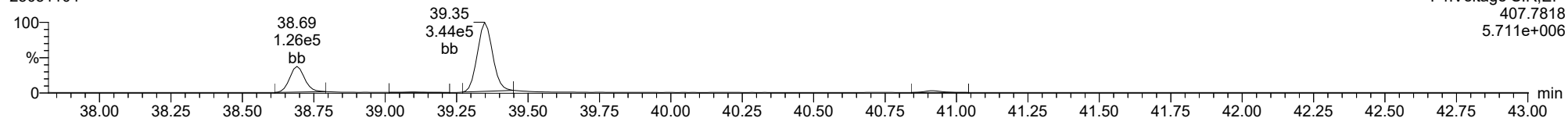
**Total-hexafluorans**

23051104



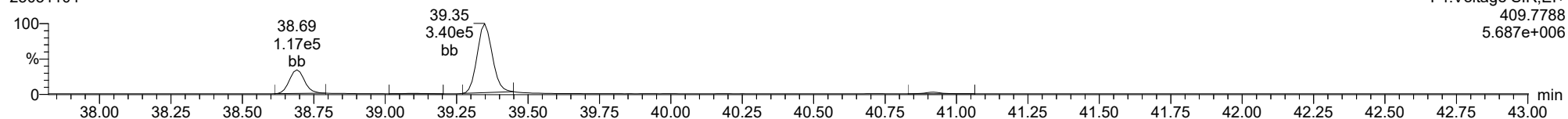
**Total-heptafluorans**

23051104



**Total-heptafluorans**

23051104





**PREPARATION BATCH SUMMARY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Batch: BLD0657

Batch Matrix: Solid

Preparation: EPA 1613

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01	23051504	04/25/23 14:15	From BLD0240 by NPL on 24-Apr-2023
LDW23-SS1819	23D0063-03	23051104	04/25/23 14:15	From BLD0240 by NPL on 24-Apr-2023
Blank	BLD0657-BLK2	23050121A	04/25/23 14:15	
LCS	BLD0657-BS2	23050122A	04/25/23 14:15	
LDW23-SS1818	BLD0657-DUP1	23050925	04/25/23 14:15	
Reference	BLD0657-SRM1	23050924	04/25/23 14:15	



Analytical Resources, LLC  
Analytical Chemists and Consultants

HRGCMS Dioxin/Furan Preparation Bench Sheet EPA Methods 8290A, 1613B or HRSM02.1

Batch: BLD0657

Solid Samples

From BLD0240 on 24-Apr-2023 by NPL

**ARI Work Orders:** 23C0761,23C0765,23D0063,23D0136

**Matrix (circle one)** Soil Sediment Oil Tissue

**Extraction Method** Start Date/Time: End Date/Time:  
Soxhlet SepF Shake out 4/25/23 14:15 4/26/23 0626

Reagents/Equipment Used	NA	ID / Lot Number	Initials	Date
Glasswool		J012850	TW	5/11/23
Basic Silica		L000710	TW	5/11/23
Acid Silica		L0004519	TW	5/11/23
Activated Florisil		R005956	TW	5/11/23
Balance		24650344	TW	4/25/23
Toluene		L003023	TW	4/25/23
Hexane		L003500	TW	4/26/23
CH2Cl2		L002621	TW	5/11/23
H2SO4		<del>L001033</del> L001033	TW	4/26/23
Na2SO4		L003875	TW	4/25/23
Other ( RM )		L001275	TW	4/25/23
0% Silica		L002081	TW	5/11/23
Nonane		H006038	TW	5/11/23

Lab Number & Container	Sample Name	% Solids	Sample Weight Equal to dry (g)		RotoVap 45 °C	Water Trap Vol (mL)	Final Vol. (uL)
			(Target Dry)	Actual			
23C0761-03 A	PCB988	81.07	(12.34)	12.34	1/2	2.0	20
23C0761-08 A	PCB9C0	85.82	(11.65)	11.68	1/2	1.5	20
23C0761-09 A	PCB9C1	63.95	(15.64)	15.65	1/2	4.5	20
23C0765-03 A	PCB9C2	67.15	(14.89)	14.93	1/2	4.5	20
23C0765-06 A	PCB9C7	70.64	(14.16)	14.16	1/2	4.0	20
23D0063-01 C	LDW23-SS1818	40.43	(24.73)	24.74	1/2	12.0	20
<del>23D0063-01B C</del>	<del>LDW23-SS1818</del>	<del>40.43</del>	<del>(24.73)</del>	<del>24.74</del>	<del>1/2</del>	<del>12.0</del>	<del>20</del>
23D0063-03 C	LDW23-SS1819	35.65	(28.05)	28.06	1/2	12.0	20
23D0136-01 A	LDW23-SS1804	48.26	(20.72)	20.74	1/2	7.5	20
BLD0657-BLK1	DBLK25	100	0		1/2	0.0	20
BLD0657-BS1	DLCS25	100	0		1/2	0.0	20
BLD0657-BSD1	DLCS25	100	0		1/2	0.0	20
BLD0657-DUP1	23D0063-01C Duplicate	40.43	(24.73)	24.74	1/2	12.0	20
BLD0657-SRM1	Reference	100	0	10.03	1/2	0.0	20
Prep Analyst / Date:				TW 4/25/23		TW 4/26/23	

Standards Used	Vol	ID / Lot Number	Concentration	Expiration Date	Analyst	Witness	Date
Recovery Standard	1.0 mL	L003529	2/4 ng/mL	4/5/24	TW	AL	4/25/23
OPR	1.0 mL	L000046	0.2/1.0/2.0 ng/mL	1/3/24	TW	AL	4/25/23
<del>QCS Standard</del>	<del>1.0 mL</del>	<del></del>	<del>0.1/0.05/0.1 ng/mL</del>	<del></del>	<del></del>	<del></del>	<del></del>
Clean-up Standard	1.0 mL	L003530	0.8 ng/mL	4/5/24	TW	LD	5/11/23

Verify Client ID

Analyst / Date: TW 4/25/23

Acid Clean  Y  N

Analyst / Date: TW 4/26/23

Silica-Florisil Clean  Y  N

Analyst / Date: TW 5/11/23

Alfred 5/1/23  
Supervisor Review By Date



Batch: BLD0657

Solid Samples

From BLD0240 on 24-Apr-2023 by NPL

**ARI Work Orders:** 23C0761,23C0765,23D0063,23D0136

**Matrix (circle one)**  Soil    Sediment    Oil    Tissue

**Extraction Method** Start Date/Time:    End Date/Time:

Soxhlet    SepF Shake out

Reagents/Equipment Used	NA	ID / Lot Number	Initials	Date
Glasswool				
Basic Silica				
Acid Silica				
Activated Florisil				
Balance		24650344		
Toluene				
Hexane				
CH2Cl2				
H2SO4				
Na2SO4				
Other ( RM )				
0% Silica				
Nonane				

Lab Number & Container	Sample Name	% Solids	Sample Weight Equal to dry (g) (Target Dry)    Actual	RotoVap 45 °C	Water Trap Vol (mL)	Final Vol. (uL)
23C0761-03 A	PCB988	81.07	(12.34)	1 / 2		20
23C0761-08 A	PCB9C0	85.82	(11.65)	1 / 2		20
23C0761-09 A	PCB9C1	63.95	(15.64)	1 / 2		20
23C0765-03 A	PCB9C2	67.15	(14.89)	1 / 2		20
23C0765-06 A	PCB9C7	70.64	(14.16)	1 / 2		20
23D0063-01 C	LDW23-SS1818	40.43	(24.73)	1 / 2		20
<del>23D0063-01 REF C</del>	<del>LDW23-SS1818</del>	<del>40.43</del>	<del>(24.73)</del>	<del>1 / 2</del>		<del>20</del>
23D0063-03 C	LDW23-SS1819	35.65	(28.05)	1 / 2		20
23D0136-01 A	LDW23-SS1804	48.26	(20.72)	1 / 2		20
BLD0657-BLK1	DBLK25	100	0	1 / 2		20
BLD0657-BS1	DLCS25	100	0	1 / 2		20
BLD0657-BSD1	DLCSD25	100	0	1 / 2		20
BLD0657-DUP1	23D0063-01C Duplicate	40.43	(24.73)	1 / 2		20
BLD0657-SRM1	Reference	100	0	1 / 2		20

Prep Analyst / Date:

Standards Used	Vol	ID / Lot Number	Concentration	Expiration Date	Analyst	Witness	Date
Recovery Standard	1.0 mL		2/4 ng/mL				
OPR	1.0 mL		0.2/1.0/2.0 ng/mL				
<del>QCS Standard</del>	<del>1.0 mL</del>		<del>0.1/0.05/0.1 ng/mL</del>				
Clean-up Standard	1.0 mL		0.8 ng/mL				

Verify Client ID

Analyst / Date:

Acid Clean  
 Y     N

Analyst / Date:

Silica-Florisil Clean  
 Y     N

Analyst / Date:

Supervisor Review By    Date





Batch ID: BLD0657

Work Order: 23C0761, 23C0765, 23D0063, 23D0136

Extraction Parameter: Dioxin

ARI Analyst: TW

ARI Sample ID	300 mL Flat Bottom	Small Soxhlet	Large Soxhlet	250 mL Beaker	Funnel	Column	Florisil Column	Turbo Tube	Sep Funnel	Erlenmeyer Flask	Centrifuge Bottle	Turbo-Vap	Vortex Mixer	Heating Mantle
BLD0657 - BLK1	83	7		4	21	229	115	35				4	4	A1
- BSI	19	59		32	67	35	4	71				4	4	A2
- BSD1	16	60		33	82	43	103	81				4	4	A3
- DCP1	9		32	12	26	42	158	83				4	4	A5
- SRM1	60	25		23	30	185	164	28				4	4	A6
23C0761 - 03	59	94		20	19	24	21	39				4	4	B1
- 08	8	79		50	11	57	36	76				4	4	B2
- 09	21	46		9	76	121	63	5				4	4	B3
23C0765 - 03	56	27		30	14	34	35	58				4	4	B4
- 06	11	74		27	88	27	61	37				4	4	B5
23D0063 - 01	7		68	19	47	72	71	82				4	4	B6
- 03	15		35	51	70	44	64	41				4	4	C1
23D0136 - 01	43		1	18	61	15	123	10				4	4	C2
												4	4	
												4	4	
												4	4	
												4	4	
												4	4	
												4	4	
												4	4	
												4	4	
												4	4	



Analytical Resources, Incorporated  
Analytical Chemists and Consultants

Dioxin Extraction Laboratory – Glassware

Batch ID: BLOWZ48 Work Order: Z309701, Z308705, Z300063, Z300136 Extraction Parameter: DIOXIN ARI Analyst: LO

ARI Sample ID	300 mL Flat Bottom	Small Soxhlet	Large Soxhlet	250 mL Beaker	Funnel	Column	Florisil Column	Turbo Tube	Sep Funnel	Erlenmeyer Flask	Centrifuge Bottle	Turbo-Vap	Vortex Mixer	Heating Mantle
BLOWZ48 - BLK1	9	27	/	9	14	220	4	32	/	/	/	4	4	A1
-BS1	10	25		24	82	42	37	33				4	4	A2
-BS01	46	24		58	67	15	54	28				4	4	A3
-DVP1	34	10		51	70	20	104	71				4	4	A5
-SRM1	14	94		29	38	43	67	8				4	4	A6
Z308701 - 03A	2	46		49	65	78	63	35				4	4	B1
-08A	19	79		88	11	41	37	83				4	4	B2
-09A	48	7		1	19	191	142	29				4	4	B3
Z308705 - 05A	32	74		18	88	34	61	18				4	4	B4
-06A	30	88		6	40	57	64	82				4	4	B5
Z300063 - 01C	25	/	24	19	24	31	29	81	4	4	B6			
-03C	20		68	52	62	27	87	34	4	4	C1			
Z300136 - 01A	39	10	32	37	59	121	183	41	/	/	4	4	C2	
											4	4		
											4	4		
											4	4		
											4	4		
											4	4		
											4	4		
											4	4		
											4	4		
											4	4		

TOTAL SOLIDS BENCHSHEET						Batch:	BLD0086		
Method HRSM01.2						Date:	4/10/2023 0:00		
(dry at 110 C)						Analyst:	LD		
Instrumentation						Drying Oven:	18		
						Analytical Balance:	24650344		
Batch drying time			Oven Temp, C				TS (%) calculated as:		
Record times as mm/dd/yy hh:mm			Final dry wt (g) = (Dry Wt - Tare Wt)				Oven Temps, °C		
Date/time in oven:	4/10/2023 14:41		108	TS = (Final Dry Wt X 100)/(sample & dish -dish tare)				Start Temp:	108
Date/time out:	4/11/2023 7:14		111					End Temp:	111
Elapsed hrs:	16.5								
SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted			
23C0761-0801	0.7900	11.6700	9.6100	8.82	81.07%	No			
23C0765-06	0.8000	11.8700	8.6200	7.82	70.64%	No			
23D0063-01	0.8000	10.9900	4.9200	4.12	40.43%	No			
23D0063-03	0.8400	11.7800	4.7400	3.90	35.65%	No			
23D0136-01	0.8300	11.4800	5.9700	5.14	48.26%	No			

TOTAL SOLIDS BENCHSHEET						Batch:	BLD0088
Method HRSM01.2						Date:	4-18-23
(dry at 110 C)						Analyst:	LD
Instrumentation						Drying Oven:	18
						Analytical Balance:	Z4650344
Batch drying time			Oven Temp, C	TS (%) calculated as:		Oven Temps, °C	
Record times as mm/dd/yy hh:mm				Final dry wt (g) = (Dry Wt - Tare Wt)		Start Temp: 108	
Date/time in oven:	09/10/23	14:41	108	TS = (Final Dry Wt X 100) / (sample & dish - dish tare)		End Temp: 111	
Date/time out:	09/11/23	7:14	111				
Elapsed hrs:	0.0						
SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted	
23C0761-01	0.79	11.67	9.01			No	
23C0765-06	0.88	11.87	8.62			No	
23D0063-01	0.98	10.99	4.92			No	
23D0063-03	0.94	11.78	4.74			No	
23D0136-01	0.85	11.48	5.97			No	





Extraction Parameter: Dioxin Extraction Batch: BLD0657  
~~BLD065~~  
u 5/12/23

Total Solids Batch: BLD086 Work Order(s): 23C0761, 765, 23D063, 130

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input checked="" type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)= <u>23C0761-08A, 23C0765-03A</u>	<u>u 5/12/23</u>
<input checked="" type="checkbox"/> Standing Water Decanted (Not shared)= <u>1 mL in 761-06, 5 mL in 761-03 &amp; 130-01</u> <u>~10 mL in 063-01 and -03</u>	<u>LD 4/18/23</u>
<input type="checkbox"/> Standing Water Homogenized (Shared samples)= <u>u 5/12/23 23C0765-03A</u>	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input checked="" type="checkbox"/> Rocks (%+size)? <u>~1" in 130-01, 1/4-1/2 in. in size sample 130-01</u> <u>~1" in 761-06, 1/2 in. in size sample 765-06, 1/2 inch in size sample 761-03</u>	<u>LD 4/18/23</u>
<input checked="" type="checkbox"/> Organics (Leaves/sticks/grass)= <u>23C0761-09</u>	<u>u 5/12/23</u>
<input checked="" type="checkbox"/> Oily, obvious fuel/sulfur odors= <u>skunky odor in 761-03, 063-01 &amp; 03</u> <u>monocyclic in 130-01</u>	<u>LD 4/18/23</u>
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input type="checkbox"/> Previously Frozen =	
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input checked="" type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
<u>sample 063-01 went dry due to broken sealant. zero water in</u>	<u>LD 4/13/23</u>
<u>completely</u>	
<u>- sample 761-03 Bump on Recovery, loss of ~10%</u>	<u>LD 4/13/23</u>
<u>765-03 = Bump on Recovery &lt; 5% loss</u>	<u>JW 4/26/23</u>
<input type="checkbox"/> Share Samples Y / N	
<input type="checkbox"/> Multiple Jars Y / N	
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0095

Cleanup Type: Sulfuric Acid

Cleanup Method: EPA 3665 Sulfuric Acid Cleanup - uL

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01	23051504	04/14/2023	
LDW23-SS1819	23D0063-03	23051104	04/14/2023	



## CLEANUP BENCH SHEET

CLD0095

Matrix: Solid      Cleanup using: HRGCMS - EPA 3665 Sulfuric Acid Cleanup - uL

Printed: 4/17/2023 9:30:25AM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0761-03	A	PCB988	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0761-08	A	PCB9C0	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0761-09	A	PCB9C1	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0765-03	A	PCB9C2	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0765-06	A	PCB9C7	A 01	20	20	HRSM02.x	4/14/2023	LD	
23D0063-01	C	LDW23-SS1818	C 01	20	20	HRSM02.x	4/14/2023	LD	
23D0063-01	C	LDW23-SS1818	C 01	20	20	1613B Dioxin	4/14/2023	LD	
23D0063-03	C	LDW23-SS1819	C 01	20	20	1613B Dioxin	4/14/2023	LD	
23D0136-01	A	LDW23-SS1804	A 01	20	20	1613B Dioxin	4/14/2023	LD	
BLD0240-BLK1	-	DBLK12	-	20	20	-	4/14/2023	LD	
BLD0240-BS1	-	DLCS12	-	20	20	-	4/14/2023	LD	
BLD0240-BSD1	-	DLCSD12	-	20	20	-	4/14/2023	LD	
BLD0240-DUP1	-	Duplicate	-	20	20	-	4/14/2023	LD	
BLD0240-SRM1	-	Reference	-	20	20	-	4/14/2023	LD	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0096

Cleanup Type: Silica Gel

Cleanup Method: EPA 3630C Silica Gel Cleanup - uL

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1819	23D0063-03	23051104	04/14/2023	
LDW23-SS1818	23D0063-01	23051504	04/14/2023	



## CLEANUP BENCH SHEET

CLD0096

Matrix: Solid

Cleanup using: HRGCMS - EPA 3630C Silica Gel Cleanup - uL

Printed: 4/17/2023 9:31:16AM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0761-03	A	PCB988	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0761-08	A	PCB9C0	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0761-09	A	PCB9C1	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0765-03	A	PCB9C2	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0765-06	A	PCB9C7	A 01	20	20	HRSM02.x	4/14/2023	LD	
23D0063-01	C	LDW23-SS1818	C 01	20	20	HRSM02.x	4/14/2023	LD	
23D0063-01	C	LDW23-SS1818	C 01	20	20	1613B Dioxin	4/14/2023	LD	
23D0063-03	C	LDW23-SS1819	C 01	20	20	1613B Dioxin	4/14/2023	LD	
23D0136-01	A	LDW23-SS1804	A 01	20	20	1613B Dioxin	4/14/2023	LD	
BLD0240-BLK1	-	DBLK12	-	20	20	-	4/14/2023	LD	
BLD0240-BS1	-	DLCS12	-	20	20	-	4/14/2023	LD	
BLD0240-BSD1	-	DLCSD12	-	20	20	-	4/14/2023	LD	
BLD0240-DUP1	-	Duplicate	-	20	20	-	4/14/2023	LD	
BLD0240-SRM1	-	Reference	-	20	20	-	4/14/2023	LD	



**Analytical Resources, LLC**  
Analytical Chemists and Consultants

## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLD0097

Cleanup Type: Florisil

Cleanup Method: EPA 3620B Florisil Cleanup (uL)

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1819	23D0063-03	23051104	04/14/2023	
LDW23-SS1818	23D0063-01	23051504	04/14/2023	



## CLEANUP BENCH SHEET

CLD0097

Matrix: Solid

Cleanup using: HRGCMS - EPA 3620B Florisil Cleanup (uL)

Check Standard: CKK0015-FLO1

Printed: 4/17/2023 9:32:05AM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0761-03	A	PCB988	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0761-08	A	PCB9C0	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0761-09	A	PCB9C1	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0765-03	A	PCB9C2	A 01	20	20	HRSM02.x	4/14/2023	LD	
23C0765-06	A	PCB9C7	A 01	20	20	HRSM02.x	4/14/2023	LD	
23D0063-01	C	LDW23-SS1818	C 01	20	20	HRSM02.x	4/14/2023	LD	
23D0063-01	C	LDW23-SS1818	C 01	20	20	1613B Dioxin	4/14/2023	LD	
23D0063-03	C	LDW23-SS1819	C 01	20	20	1613B Dioxin	4/14/2023	LD	
23D0136-01	A	LDW23-SS1804	A 01	20	20	1613B Dioxin	4/14/2023	LD	
BLD0240-BLK1	-	DBLK12	-	20	20	-	4/14/2023	LD	
BLD0240-BS1	-	DLCS12	-	20	20	-	4/14/2023	LD	
BLD0240-BSD1	-	DLCSD12	-	20	20	-	4/14/2023	LD	
BLD0240-DUP1	-	Duplicate	-	20	20	-	4/14/2023	LD	
BLD0240-SRM1	-	Reference	-	20	20	-	4/14/2023	LD	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLE0004

Cleanup Type: Sulfuric Acid

Cleanup Method: EPA 3665 Sulfuric Acid Cleanup - uL

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1819	23D0063-03	23051104	04/26/2023	
Reference	BLD0657-SRM1	23050924	04/26/2023	
Duplicate	BLD0657-DUP1	23050925	04/26/2023	
LDW23-SS1818	23D0063-01	23051504	04/26/2023	





## CLEANUP BENCH SHEET

CLE0004

Matrix: Solid      Cleanup using: HRGCMS - EPA 3665 Sulfuric Acid Cleanup - uL

Printed: 5/1/2023 11:38:00AM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0761-03	A	PCB988	A 06	20	20	HRSM02.x	4/26/2023	TW	
23C0761-08	A	PCB9C0	A 06	20	20	HRSM02.x	4/26/2023	TW	
23C0761-09	A	PCB9C1	A 06	20	20	HRSM02.x	4/26/2023	TW	
23C0765-03	A	PCB9C2	A 06	20	20	HRSM02.x	4/26/2023	TW	
23C0765-06	A	PCB9C7	A 06	20	20	HRSM02.x	4/26/2023	TW	
23D0063-01	C	LDW23-SS1818	C 02	20	20	1613B Dioxin	4/26/2023	TW	
23D0063-01RE1	C	LDW23-SS1818	C 02	20	20	HRSM02.x	4/26/2023	TW	
23D0063-03	C	LDW23-SS1819	C 02	20	20	1613B Dioxin	4/26/2023	TW	
23D0136-01	A	LDW23-SS1804	A 06	20	20	1613B Dioxin	4/26/2023	TW	
BLD0657-BLK1	-	DBLK25	-	20	20	-	4/26/2023	TW	
BLD0657-BS1	-	DLCS25	-	20	20	-	4/26/2023	TW	
BLD0657-BSD1	-	DLCSD25	-	20	20	-	4/26/2023	TW	
BLD0657-DUP1	-	Duplicate	-	20	20	-	4/26/2023	TW	
BLD0657-SRM1	-	Reference	-	20	20	-	4/26/2023	TW	



**Analytical Resources, LLC**  
Analytical Chemists and Consultants

## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLE0005

Cleanup Type: Silica Gel

Cleanup Method: EPA 3630C Silica Gel Cleanup - uL

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01	23051504	05/01/2023	
LDW23-SS1819	23D0063-03	23051104	05/01/2023	
Duplicate	BLD0657-DUP1	23050925	05/01/2023	
Reference	BLD0657-SRM1	23050924	05/01/2023	



### CLEANUP BENCH SHEET

CLE0005

Matrix: Solid

Cleanup using: HRGCMS - EPA 3630C Silica Gel Cleanup - uL

Printed: 5/1/2023 11:38:42AM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0761-03	A	PCB988	A 06	20	20	HRSM02.x	5/1/2023	TW	
23C0761-08	A	PCB9C0	A 06	20	20	HRSM02.x	5/1/2023	TW	
23C0761-09	A	PCB9C1	A 06	20	20	HRSM02.x	5/1/2023	TW	
23C0765-03	A	PCB9C2	A 06	20	20	HRSM02.x	5/1/2023	TW	
23C0765-06	A	PCB9C7	A 06	20	20	HRSM02.x	5/1/2023	TW	
23D0063-01	C	LDW23-SS1818	C 02	20	20	1613B Dioxin	5/1/2023	TW	
23D0063-01RE1	C	LDW23-SS1818	C 02	20	20	HRSM02.x	5/1/2023	TW	
23D0063-03	C	LDW23-SS1819	C 02	20	20	1613B Dioxin	5/1/2023	TW	
23D0136-01	A	LDW23-SS1804	A 06	20	20	1613B Dioxin	5/1/2023	TW	
BLD0657-BLK1	-	DBLK25	-	20	20	-	5/1/2023	TW	
BLD0657-BS1	-	DLCS25	-	20	20	-	5/1/2023	TW	
BLD0657-BSD1	-	DLCSD25	-	20	20	-	5/1/2023	TW	
BLD0657-DUP1	-	Duplicate	-	20	20	-	5/1/2023	TW	
BLD0657-SRM1	-	Reference	-	20	20	-	5/1/2023	TW	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Cleanup Batch: CLE0006

Cleanup Type: Florisil

Cleanup Method: EPA 3620B Florisil Cleanup (uL)

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Duplicate	BLD0657-DUP1	23050925	05/01/2023	
Reference	BLD0657-SRM1	23050924	05/01/2023	
LDW23-SS1819	23D0063-03	23051104	05/01/2023	
LDW23-SS1818	23D0063-01	23051504	05/01/2023	



## CLEANUP BENCH SHEET

CLE0006

Matrix: Solid

Cleanup using: HRGCMS - EPA 3620B Florisil Cleanup (uL)

Check Standard: CKK0015-FLO1

Printed: 5/1/2023 11:39:16AM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0761-03	A	PCB988	A 06	20	20	HRSM02.x	5/1/2023	TW	
23C0761-08	A	PCB9C0	A 06	20	20	HRSM02.x	5/1/2023	TW	
23C0761-09	A	PCB9C1	A 06	20	20	HRSM02.x	5/1/2023	TW	
23C0765-03	A	PCB9C2	A 06	20	20	HRSM02.x	5/1/2023	TW	
23C0765-06	A	PCB9C7	A 06	20	20	HRSM02.x	5/1/2023	TW	
23D0063-01	C	LDW23-SS1818	C 02	20	20	1613B Dioxin	5/1/2023	TW	
23D0063-01RE1	C	LDW23-SS1818	C 02	20	20	HRSM02.x	5/1/2023	TW	
23D0063-03	C	LDW23-SS1819	C 02	20	20	1613B Dioxin	5/1/2023	TW	
23D0136-01	A	LDW23-SS1804	A 06	20	20	1613B Dioxin	5/1/2023	TW	
BLD0657-BLK1	-	DBLK25	-	20	20	-	5/1/2023	TW	
BLD0657-BS1	-	DLCS25	-	20	20	-	5/1/2023	TW	
BLD0657-BSD1	-	DLCSD25	-	20	20	-	5/1/2023	TW	
BLD0657-DUP1	-	Duplicate	-	20	20	-	5/1/2023	TW	
BLD0657-SRM1	-	Reference	-	20	20	-	5/1/2023	TW	



Blank

**Form 1**  
**METHOD BLANK DATA SHEET**  
**EPA 1613B**  
**Dioxins/Furans by HRGC/HRMS**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BLD0657-BLK2</u>
Sampled:	<u>N/A</u>	File ID:	<u>23050121A</u>
Solids Wt%:		Prepared:	<u>04/25/23 14:15</u>
Result Basis:	<u>Dry</u>	Analyzed:	<u>05/02/23 02:53</u>
Batch:	<u>BLD0657</u>	Preparation:	<u>EPA 1613</u>
		Initial/Final:	<u>10 g / 20 uL</u>
		Sequence:	<u>SLE0060</u>
		Calibration:	<u>GC00015</u>
		Instrument:	<u>AUTOSPEC01</u>
		Column:	<u>RTX-Dioxin2</u>

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.000	0.655-0.886	0.179	1.00	ND	ng/kg	U
1746-01-6	2,3,7,8-TCDD	1	0.000	0.655-0.886	0.134	1.00	ND	ng/kg	U
57117-41-6	1,2,3,7,8-PeCDF	1	0.000	1.318-1.783	0.199	1.00	ND	ng/kg	U
57117-31-4	2,3,4,7,8-PeCDF	1	0.000	1.318-1.783	0.186	1.00	ND	ng/kg	U
40321-76-4	1,2,3,7,8-PeCDD	1	0.000	1.318-1.783	0.220	1.00	ND	ng/kg	U
70648-26-9	1,2,3,4,7,8-HxCDF	1	0.000	1.054-1.426	0.118	1.00	ND	ng/kg	U
57117-44-9	1,2,3,6,7,8-HxCDF	1	0.000	1.054-1.426	0.106	1.00	ND	ng/kg	U
60851-34-5	2,3,4,6,7,8-HxCDF	1	0.000	1.054-1.426	0.125	1.00	ND	ng/kg	U
72918-21-9	1,2,3,7,8,9-HxCDF	1	0.000	1.054-1.426	0.194	1.00	ND	ng/kg	U
39227-28-6	1,2,3,4,7,8-HxCDD	1	0.000	1.054-1.426	0.238	1.00	ND	ng/kg	U
57653-85-7	1,2,3,6,7,8-HxCDD	1	0.000	1.054-1.426	0.215	1.00	ND	ng/kg	U
19408-74-3	1,2,3,7,8,9-HxCDD	1	0.000	1.054-1.426	0.248	1.00	ND	ng/kg	U
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	0.000	0.893-1.208	0.156	1.00	ND	ng/kg	U
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	0.000	0.893-1.208	0.251	1.00	ND	ng/kg	U
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	0.000	0.893-1.208	0.272	2.50	ND	ng/kg	U
39001-02-0	OCDF	1	0.000	0.757-1.024	0.564	2.50	ND	ng/kg	U
3268-87-9	OCDD	1	0.825	0.757-1.024	0.425	10.0	0.661	ng/kg	J

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	ND	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	ND	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	ND	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	ND	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	ND	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	ND	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	ND	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	ND	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.000
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	0.283



Blank

**Form 2**  
**METHOD BLANK DATA SHEET**  
**EPA 1613B**  
**Dioxins/Furans by HRGC/HRMS**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BLD0657-BLK2</u>
Sampled:	<u>N/A</u>	Prepared:	<u>04/25/23 14:15</u>
Solids Wt%:	<u>0.00</u>	Preparation:	<u>EPA 1613</u>
Result Basis:	<u>Dry</u>	Sequence:	<u>SLE0060</u>
Batch:	<u>BLD0657</u>	Instrument:	<u>AUTOSPEC01</u>
		File ID:	<u>23050121A</u>
		Analyzed:	<u>05/02/23 02:53</u>
		Initial/Final:	<u>10 g / 20 uL</u>
		Calibration:	<u>GC00015</u>
		Column:	<u>RTX-Dioxin2</u>

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF	1	0.756	0.655-0.886	0.16	81.8	24 - 169 %	
13C12-2,3,7,8-TCDD	1	0.779	0.655-0.886	0.23	92.9	25 - 164 %	
13C12-1,2,3,7,8-PeCDF	1	1.510	1.318-1.783	0.51	91.5	24 - 185 %	
13C12-2,3,4,7,8-PeCDF	1	1.541	1.318-1.783	0.57	95.7	21 - 178 %	
13C12-1,2,3,7,8-PeCDD	1	1.744	1.318-1.783	0.25	59.7	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF	1	0.527	0.434-0.587	1.02	106	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF	1	0.444	0.434-0.587	0.86	117	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF	1	0.479	0.434-0.587	1.05	111	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF	1	0.578	0.434-0.587	1.28	99.2	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD	1	1.327	1.054-1.426	0.60	99.7	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD	1	1.173	1.054-1.426	0.52	104	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF	1	0.452	0.374-0.506	1.02	107	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF	1	0.414	0.374-0.506	1.18	98.2	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD	1	1.047	0.893-1.208	0.79	89.9	23 - 140 %	
13C12-OCDD	1	0.904	0.757-1.024	1.24	92.1	17 - 157 %	
37Cl4-2,3,7,8-TCDD	1	328.000		0.12	93.5	35 - 197 %	

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
 Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
 Printed: Wednesday, May 10, 2023 16:27:54 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230501.mdb 02 May 2023 09:11:55  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF					0.702		0.770	652	847								
12378-PeCDF					0.679		1.550	477	917								
23478-PeCDF					0.786		1.550	477	917								
123478-HxCDF					1.166		1.240	436	535								
234678-HxCDF					1.140		1.240	436	535								
123678-HxCDF					1.091		1.240	436	535								
123789-HxCDF					1.137		1.240	436	535								
1234678-HpCDF					1.003		1.050	443	436								
1234789-HpCDF					0.953		1.050	443	436								
OCDF					0.778		0.890	518	721								
2378-TCDD					1.149		0.770	1066	537								
12378-PeCDD					1.022		1.550	647	366								
123478-HxCDD					0.996		1.240	591	824								
123678-HxCDD					1.001		1.240	591	824								
123789-HxCDD					0.907		1.240	591	824								
1234678-HpCDD					1.039		1.050	528	549								
OCDD	44.706	1.001	2.406e2	2.916e2	0.920	0.825	0.890	489	614	4.65e3	7.03e3	9.5	11.4	NO	db	db	0.331
13C-2378-TCDF	25.520	1.007	2.395e5	3.168e5	1.620	0.756	0.770	1286	1389	3.09e6	4.09e6	2399.7	2947.4	NO	bd	bb	81.845
13C-12378-PeCDF	29.669	1.170	2.864e5	1.897e5	1.240	1.510	1.550	2622	3870	3.72e6	2.36e6	1418.9	608.8	NO	bd	bb	91.489
13C-23478-PeCDF	31.006	1.223	2.720e5	1.766e5	1.118	1.541	1.550	2622	3870	3.46e6	2.23e6	1320.1	576.8	NO	bd	bd	95.660
13C-123478-HxCDF	34.639	0.955	1.057e5	2.005e5	1.168	0.527	0.510	3421	3169	1.47e6	2.89e6	428.6	911.0	NO	bd	bd	105.903
13C-123678-HxCDF	34.784	0.959	1.231e5	2.775e5	1.386	0.444	0.510	3421	3169	1.54e6	3.12e6	451.2	985.3	NO	db	db	116.754
13C-234678-HxCDF	35.653	0.983	1.002e5	2.091e5	1.129	0.479	0.510	3421	3169	1.33e6	2.70e6	387.6	851.1	NO	bb	bd	110.662
13C-123789-HxCDF	36.689	1.011	8.384e4	1.449e5	0.932	0.578	0.510	3421	3169	9.68e5	1.87e6	282.9	590.0	NO	bb	bb	99.207
13C-1234678-HpCDF	38.525	1.062	7.376e4	1.631e5	0.895	0.452	0.440	1740	3295	1.05e6	2.35e6	601.7	713.9	NO	bb	bb	106.915
13C-1234789-HpCDF	40.742	1.123	5.476e4	1.324e5	0.770	0.414	0.440	1740	3295	6.44e5	1.51e6	370.1	456.9	NO	bd	bb	98.217
13C-1234-TCDD	25.351	0.000	1.876e5	2.320e5	1.000	0.809	0.770	1606	1060	2.74e6	3.43e6	1707.5	3236.3	NO	bb	bb	100.000
13C-2378-TCDD	26.156	1.032	1.965e5	2.524e5	1.152	0.779	0.770	1606	1060	2.72e6	3.53e6	1695.9	3325.1	NO	bb	bb	92.859
13C-12378-PeCDD	31.262	1.233	1.319e5	7.565e4	0.829	1.744	1.550	1154	965	1.72e6	9.41e5	1489.1	974.3	NO	MM	bd	59.700
13C-123478-HxCDD	35.764	0.986	1.400e5	1.055e5	0.995	1.327	1.240	1824	1496	2.04e6	1.60e6	1118.6	1067.2	NO	bd	bd	99.678
13C-123678-HxCDD	35.887	0.989	1.610e5	1.373e5	1.157	1.173	1.240	1824	1496	2.14e6	1.73e6	1170.5	1153.6	NO	db	db	104.193
13C-1234678-HpCDD	40.007	1.103	9.566e4	9.135e4	0.840	1.047	1.050	1688	1964	1.17e6	1.12e6	692.8	570.5	NO	bb	bd	89.942
13C-OCDD	44.669	1.231	1.661e5	1.838e5	0.767	0.904	0.890	2797	2457	1.61e6	1.75e6	575.1	713.2	NO	bd	bd	184.216
13C-123789-HxCDD	36.277	0.000	1.384e5	1.091e5	1.000	1.268	1.240	1824	1496	1.86e6	1.46e6	1018.3	979.0	NO	bb	bb	100.000
37CL-2378-TCDD	26.170	1.032	2.020e5		1.288			1616		2.70e6		1669.6			bd		37.384



Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
 Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
 Printed: Wednesday, May 10, 2023 16:27:54 Pacific Daylight Time

ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					0.802		0.770	652	847								
1289-TCDF					0.678		0.770	652	847								
13468-PECDF					1.246		1.550	512	898								
12389-PECDF					0.496		1.550	477	917								
123468-HXCDF					1.169		1.240	436	535								
1368-TCDD					1.015		0.770	1066	537								
1289-TCDD					0.909		0.770	1066	537								
12479-PECDD					2.301		1.550	647	366								
12389-PECDD					1.184		1.550	647	366								
124679-HXCDD					1.115		1.240	591	824								
1234679-HPCDD	38.981	0.974	1.894e2	7.256e1	1.137	2.611	1.050	528	549	4.25e3	1.62e3	8.1	3.0	YES	bb	bb	0.123
Total-tetrafurans			0.000e0		0.727			652		0.00e0							
Total-penta1			0.000e0					512		0.00e0							
Total-pentafurans			0.000e0		0.654			477		0.00e0							
Total-hexafurans			0.000e0		1.141			436		0.00e0							
Total-heptafurans			0.000e0		0.978			443		0.00e0							
Total-Furans			0.000e0		0.922			652		0.00e0							
Total-tetradoxins			0.000e0		1.024			1066		0.00e0							
Total-pentadoxins			0.000e0		1.502			647		0.00e0							
Total-hexadoxins			0.000e0		1.005			591		0.00e0							
Total-heptadoxins			0.000e0		1.088			528		0.00e0							
Total-Dioxins			2.406e2		1.130			1066		4.65e3							0.331
Total-TEQ			2.406e2					1066		4.65e3							0.331
FUNCTION1 PFK			5.361e5					335102		1.04e7							
FUNCTION2 PFK			1.684e5					204641		5.66e6							0.000
FUNCTION3 PFK			5.301e7					204692		1.97e8							0.000
FUNCTION4 PFK			3.785e4					254899		9.26e5							
FUNCTION5 PFK			1.659e5					153444		6.10e6							
FUNCTION1 HXCD...			4.938e2					466		7.11e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			4.389e2					884		1.03e4							0.000
FUNCTION3 OCDPE			1.757e2					365		1.93e3							0.000
FUNCTION4 NCDPE			1.488e2					582		2.82e3							0.000
FUNCTION5 DCDPE			0.000e0					430		0.00e0							

**Quantify Totals Report MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
Printed: Wednesday, May 10, 2023 16:27:54 Pacific Daylight Time

**Method:** T:\Autospec\Methods\Dioxin230501.mdb 02 May 2023 09:11:55

**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

**ID:** DBLK25, **Name:** 23050121, **Date:** 02-May-2023, **Time:** 02:53:26, **Conditions:** AUTOSPEC01, **User:** pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
Printed: Wednesday, May 10, 2023 16:27:54 Pacific Daylight Time

ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	OCDD	44.71	2.406e2	2.916e2	0.920	0.82	0.89	9.5	YES	NO	db	db	0.331

**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
 Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
 Printed: Wednesday, May 10, 2023 16:27:54 Pacific Daylight Time

**ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk**

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	25.12	2.401e4					1.5	NO		bb		
2	FUNCTION1 PFK	24.88	5.894e4					1.8	NO		bb		
3	FUNCTION1 PFK	24.73	4.709e4					1.9	NO		bb		
4	FUNCTION1 PFK	24.53	3.796e4					1.7	NO		bb		
5	FUNCTION1 PFK	24.40	7.741e3					0.7	NO		bb		
6	FUNCTION1 PFK	24.32	2.101e3					0.4	NO		bb		
7	FUNCTION1 PFK	24.04	9.018e3					0.9	NO		bb		
8	FUNCTION1 PFK	23.73	4.685e4					1.5	NO		bb		
9	FUNCTION1 PFK	23.33	2.028e4					0.9	NO		bb		
10	FUNCTION1 PFK	22.36	1.321e4					1.1	NO		bb		
11	FUNCTION1 PFK	22.30	1.366e4					1.5	NO		db		
12	FUNCTION1 PFK	22.27	1.765e4					1.9	NO		bd		
13	FUNCTION1 PFK	21.51	1.422e4					1.3	NO		db		
14	FUNCTION1 PFK	21.31	9.995e4					2.8	NO		bd		
15	FUNCTION1 PFK	21.20	4.960e3					1.1	NO		bb		
16	FUNCTION1 PFK	21.16	1.476e4					1.0	NO		bb		
17	FUNCTION1 PFK	27.71	3.205e4					1.9	NO		db		
18	FUNCTION1 PFK	27.65	1.195e4					1.3	NO		bd		
19	FUNCTION1 PFK	27.31	1.435e4					1.2	NO		bb		
20	FUNCTION1 PFK	26.33	2.850e3					0.6	NO		bb		
21	FUNCTION1 PFK	26.27	1.642e4					1.1	NO		db		
22	FUNCTION1 PFK	26.20	1.115e4					1.2	NO		bd		
23	FUNCTION1 PFK	25.79	3.835e3					0.8	NO		bb		
24	FUNCTION1 PFK	25.27	1.114e4					1.2	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
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ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	30.08	9.793e3					1.4	NO		bb		0.000
2	FUNCTION2 PFK	29.81	5.256e3					0.8	NO		bb		0.000
3	FUNCTION2 PFK	28.79	1.764e4					2.2	NO		db		0.000
4	FUNCTION2 PFK	28.76	1.980e4					2.2	NO		bd		0.000
5	FUNCTION2 PFK	28.38	1.092e4					1.7	NO		bb		0.000
6	FUNCTION2 PFK	28.00	1.840e3					0.8	NO		bb		0.000
7	FUNCTION2 PFK	27.94	1.357e4					2.1	NO		bb		0.000
8	FUNCTION2 PFK	32.41	5.114e3					1.0	NO		bb		0.000
9	FUNCTION2 PFK	32.30	4.485e3					0.9	NO		db		0.000
10	FUNCTION2 PFK	32.27	5.188e3					1.2	NO		bd		0.000
11	FUNCTION2 PFK	32.13	2.197e3					0.7	NO		bb		0.000
12	FUNCTION2 PFK	31.74	8.786e3					1.8	NO		db		0.000
13	FUNCTION2 PFK	31.71	1.551e4					1.9	NO		bd		0.000
14	FUNCTION2 PFK	31.28	5.186e3					1.0	NO		bb		0.000
15	FUNCTION2 PFK	31.23	1.625e3					0.7	NO		bb		0.000
16	FUNCTION2 PFK	31.04	1.165e4					1.4	NO		bb		0.000
17	FUNCTION2 PFK	30.88	5.387e3					1.1	NO		bb		0.000
18	FUNCTION2 PFK	30.74	9.391e3					1.6	NO		bb		0.000
19	FUNCTION2 PFK	30.45	4.497e3					1.0	NO		bb		0.000
20	FUNCTION2 PFK	30.37	7.979e3					1.3	NO		bb		0.000
21	FUNCTION2 PFK	30.15	2.598e3					0.7	NO		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
 Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
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**ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk**

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	32.89	1.057e7					157.9	YES		bd		0.000
2	FUNCTION3 PFK	36.56	3.158e4					2.3	NO		db		0.000
3	FUNCTION3 PFK	36.48	1.085e4					1.9	NO		bd		0.000
4	FUNCTION3 PFK	36.40	1.079e3					0.5	NO		bb		0.000
5	FUNCTION3 PFK	36.31	1.702e3					0.5	NO		bb		0.000
6	FUNCTION3 PFK	35.98	1.905e3					0.6	NO		bb		0.000
7	FUNCTION3 PFK	35.93	4.136e3					1.0	NO		db		0.000
8	FUNCTION3 PFK	35.81	2.295e4					1.2	NO		bd		0.000
9	FUNCTION3 PFK	35.55	4.587e4					5.3	YES		db		0.000
10	FUNCTION3 PFK	35.06	2.617e6					33.8	YES		dd		0.000
11	FUNCTION3 PFK	34.79	1.815e6					49.0	YES		dd		0.000
12	FUNCTION3 PFK	34.54	5.729e6					64.1	YES		dd		0.000
13	FUNCTION3 PFK	34.12	1.454e7					88.5	YES		dd		0.000
14	FUNCTION3 PFK	33.52	7.459e6					121.9	YES		dd		0.000
15	FUNCTION3 PFK	33.20	2.793e6					139.3	YES		dd		0.000
16	FUNCTION3 PFK	33.17	1.279e6					140.9	YES		dd		0.000
17	FUNCTION3 PFK	33.01	6.069e6					151.0	YES		dd		0.000
18	FUNCTION3 PFK	37.15	3.558e3					0.8	NO		bb		0.000
19	FUNCTION3 PFK	37.00	1.074e3					0.5	NO		bb		0.000
20	FUNCTION3 PFK	36.88	1.425e4					1.8	NO		bb		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.95	2.324e3					0.8	NO		bb		
2	FUNCTION4 PFK	37.74	3.553e4					2.8	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
 Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
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**ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk**

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.93	8.681e3					1.5	NO		db		
2	FUNCTION5 PFK	43.86	4.517e3					1.3	NO		dd		
3	FUNCTION5 PFK	43.84	6.998e3					1.8	NO		dd		
4	FUNCTION5 PFK	43.78	6.787e3					1.2	NO		bd		
5	FUNCTION5 PFK	43.55	3.330e3					1.2	NO		bb		
6	FUNCTION5 PFK	43.37	6.415e3					1.3	NO		bb		
7	FUNCTION5 PFK	43.28	5.529e3					1.4	NO		bb		
8	FUNCTION5 PFK	43.15	4.462e3					1.5	NO		bb		
9	FUNCTION5 PFK	43.09	9.499e3					2.5	NO		bb		
10	FUNCTION5 PFK	45.52	1.961e3					0.6	NO		db		
11	FUNCTION5 PFK	45.49	1.885e3					0.7	NO		bd		
12	FUNCTION5 PFK	45.40	3.340e3					0.9	NO		bb		
13	FUNCTION5 PFK	45.36	5.840e3					1.6	NO		bb		
14	FUNCTION5 PFK	45.05	3.643e3					1.0	NO		bb		
15	FUNCTION5 PFK	44.95	1.592e3					0.6	NO		bb		
16	FUNCTION5 PFK	44.91	9.940e3					1.6	NO		bb		
17	FUNCTION5 PFK	44.55	6.818e3					1.7	NO		db		
18	FUNCTION5 PFK	44.50	4.655e3					1.3	NO		bd		
19	FUNCTION5 PFK	44.46	6.097e3					1.7	NO		db		
20	FUNCTION5 PFK	44.42	1.873e4					3.0	NO		bd		
21	FUNCTION5 PFK	44.27	8.248e3					1.9	NO		db		
22	FUNCTION5 PFK	44.23	8.757e3					1.8	NO		bd		
23	FUNCTION5 PFK	44.16	3.588e3					1.2	NO		bb		
24	FUNCTION5 PFK	44.05	7.815e3					1.3	NO		db		
25	FUNCTION5 PFK	43.98	5.746e3					1.3	NO		bd		
26	FUNCTION5 PFK	45.93	2.551e3					1.0	NO		bb		
27	FUNCTION5 PFK	45.89	2.286e3					0.9	NO		bb		
28	FUNCTION5 PFK	45.79	8.025e2					0.5	NO		bb		
29	FUNCTION5 PFK	45.74	4.665e3					1.2	NO		bb		
30	FUNCTION5 PFK	45.69	7.334e2					0.5	NO		bb		

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
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ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

#### ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	26.82	7.673e1					2.3	NO		bb		0.000
2	FUNCTION1 HXCD...	26.17	8.681e1					2.7	NO		bb		0.000
3	FUNCTION1 HXCD...	25.87	9.447e1					2.7	NO		bb		0.000
4	FUNCTION1 HXCD...	25.36	1.008e2					3.6	YES		bb		0.000
5	FUNCTION1 HXCD...	21.55	1.350e2					4.1	YES		bb		0.000

#### ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

#### ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.48	7.530e1					1.9	NO		bb		0.000
2	FUNCTION2 HPCD...	29.33	1.478e2					3.2	YES		db		0.000
3	FUNCTION2 HPCD...	29.25	1.232e2					2.7	NO		bd		0.000
4	FUNCTION2 HPCD...	28.21	9.261e1					3.8	YES		bb		0.000

#### ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.13	8.786e1					2.6	NO		bb		0.000
2	FUNCTION3 OCDPE	32.74	8.781e1					2.7	NO		bb		0.000

#### ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.66	7.028e1					2.5	NO		bb		0.000
2	FUNCTION4 NCDPE	37.66	7.847e1					2.4	NO		bb		0.000

#### ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

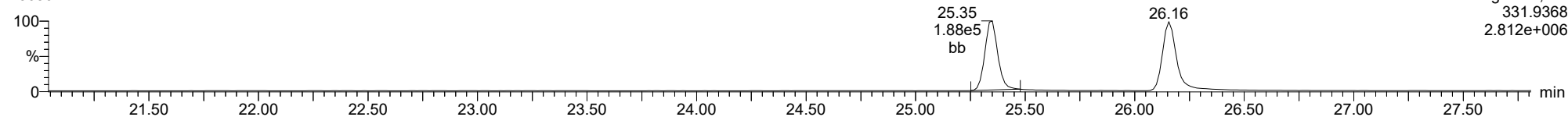


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ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

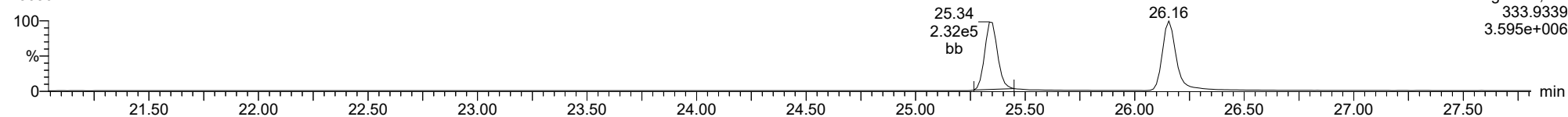
**13C-1234-TCDD**

23050121



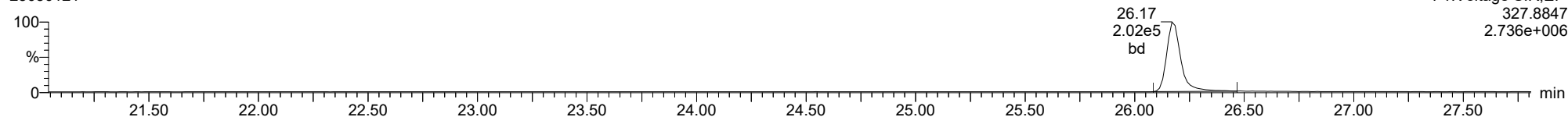
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23050121



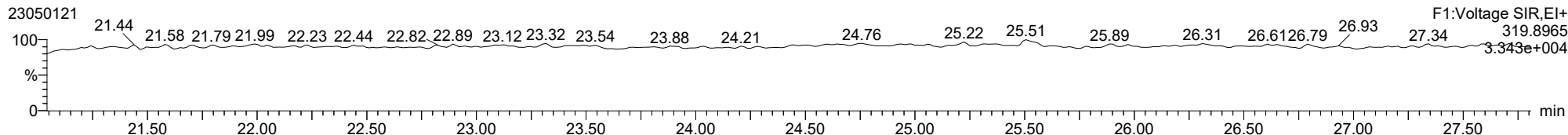
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23050121

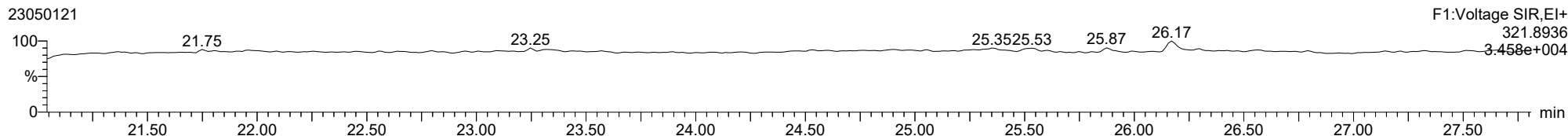


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

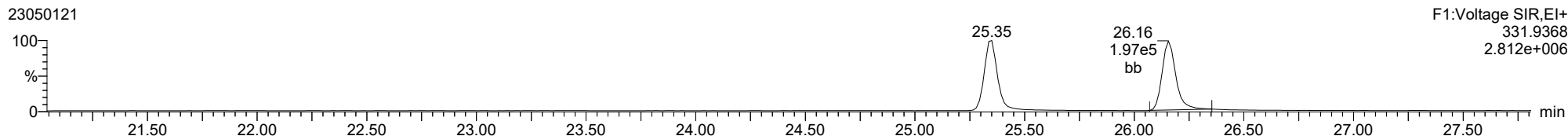
**2378-TCDD**



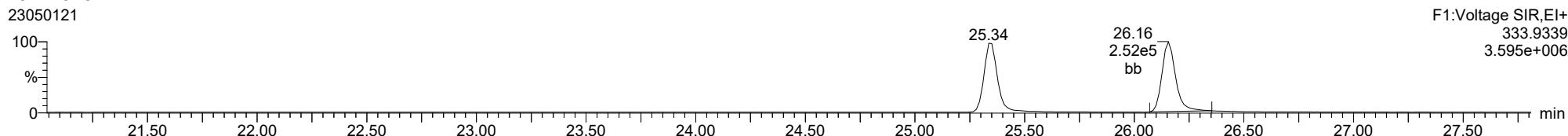
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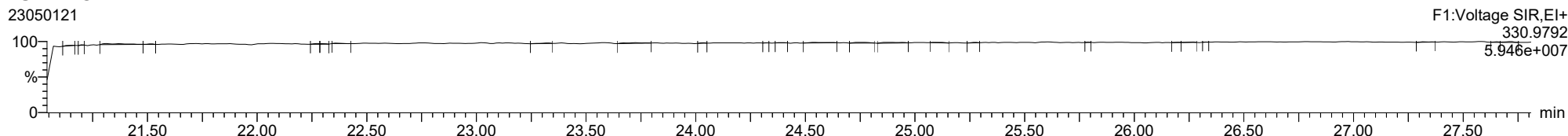
**13C-2378-TCDD**



**13C-2378-TCDD**

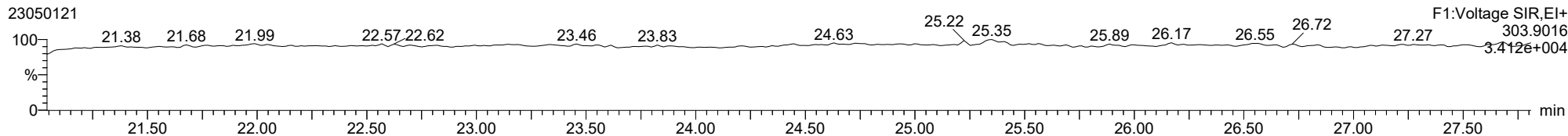


**FUNCTION1 PFK**

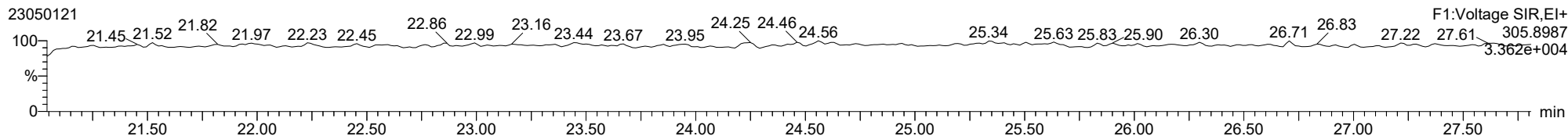


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

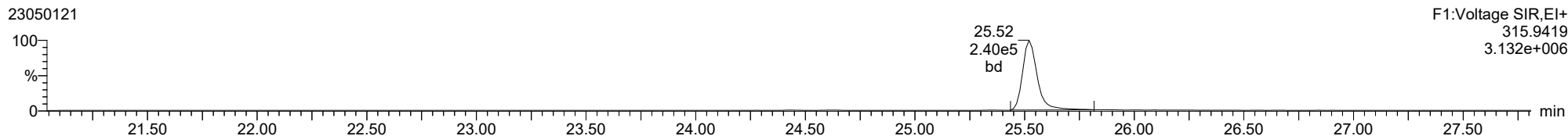
2378-TCDF



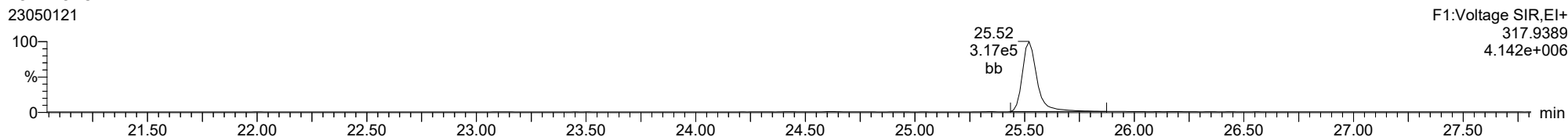
2378-TCDF



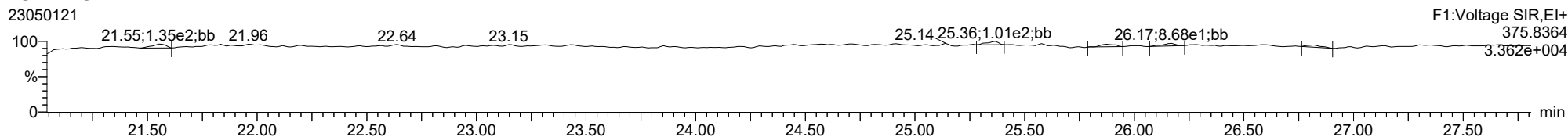
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13C-2378-TCDF

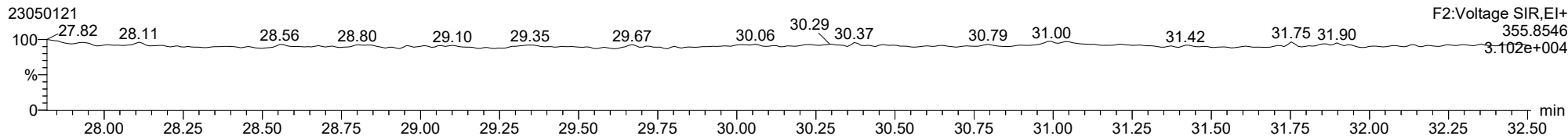


FUNCTION1 HXCDPE

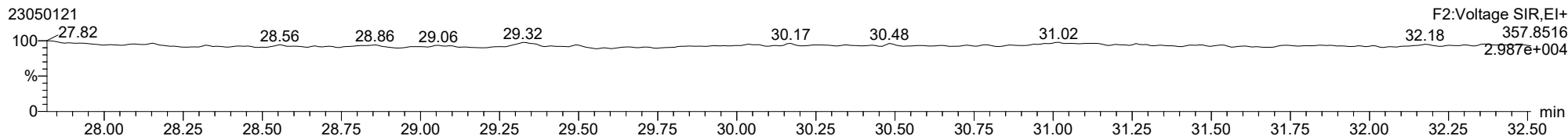


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

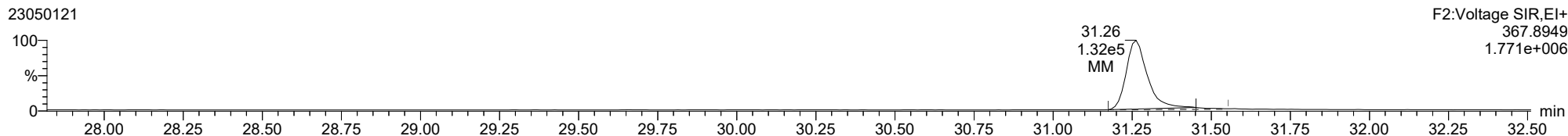
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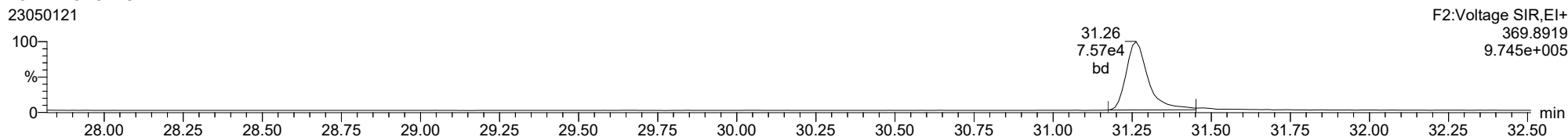
**12378-PeCDD**



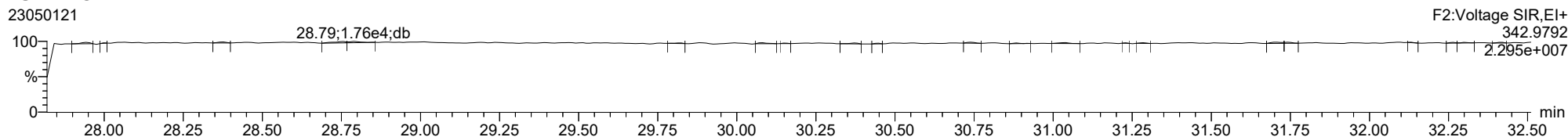
**13C-12378-PeCDD**



**13C-12378-PeCDD**

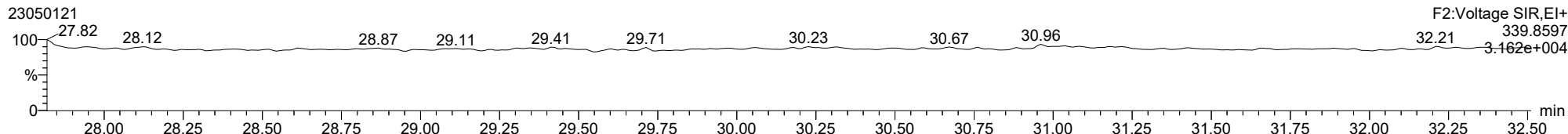


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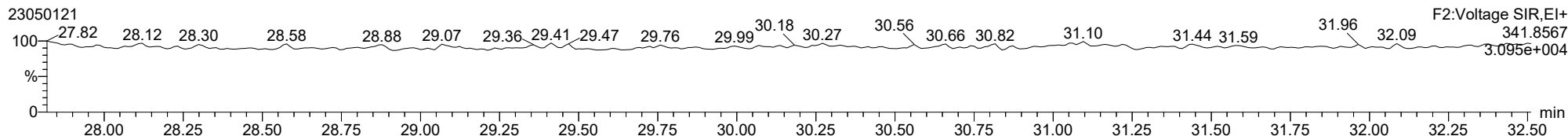


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

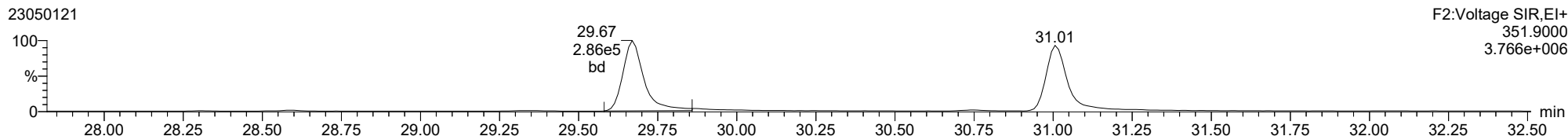
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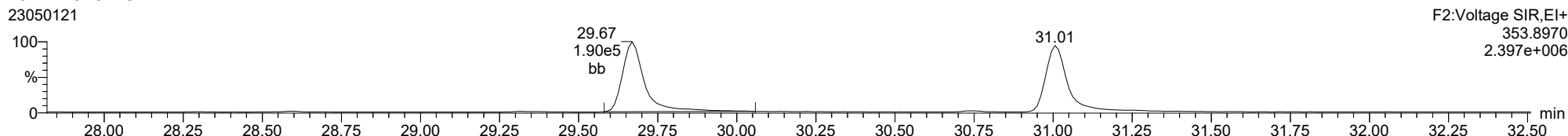
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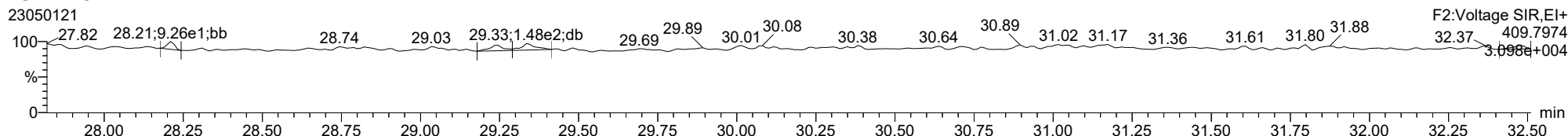
**13C-12378-PeCDF**



**13C-12378-PeCDF**

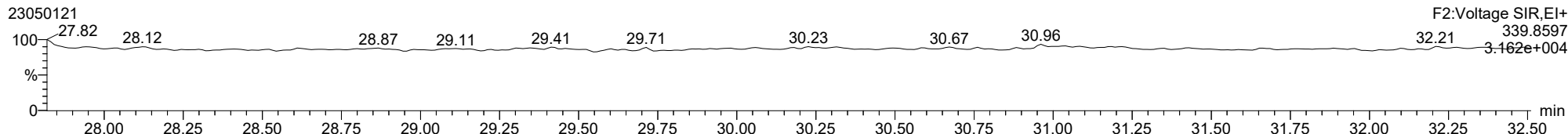


**FUNCTION2 HPCDPE**

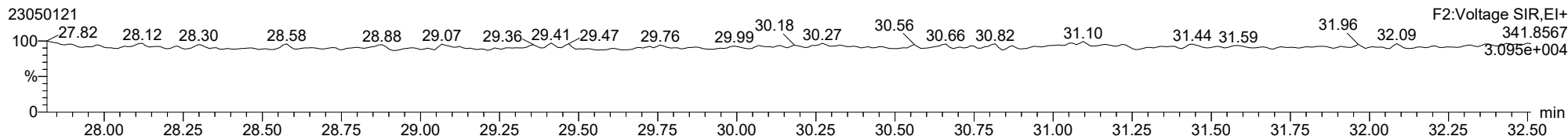


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

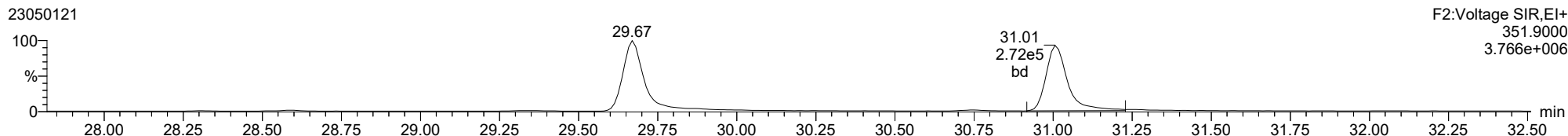
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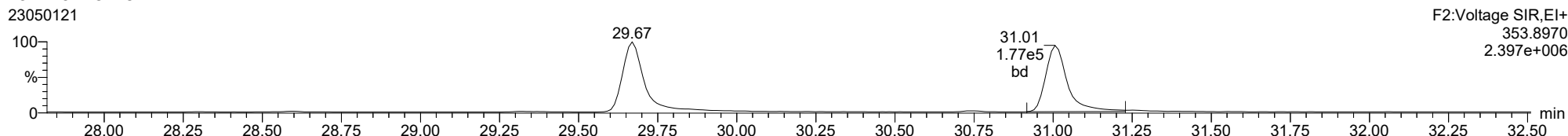
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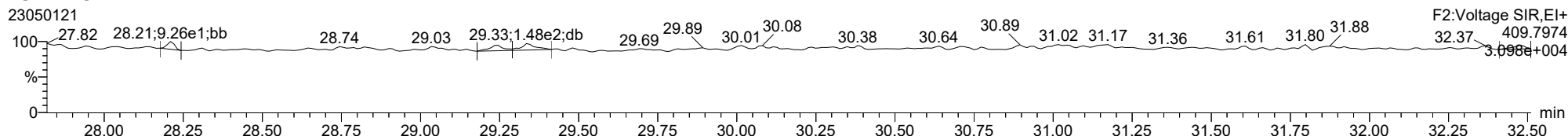
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**13C-23478-PeCDF**

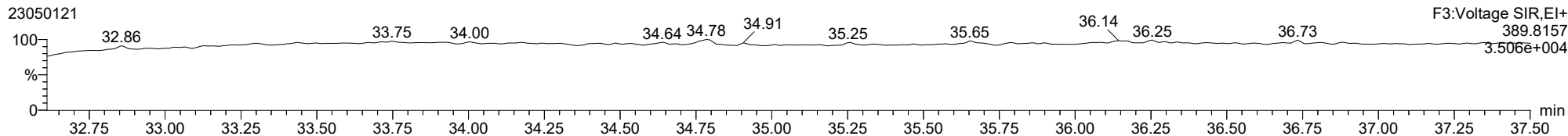


**FUNCTION2 HPCDPE**

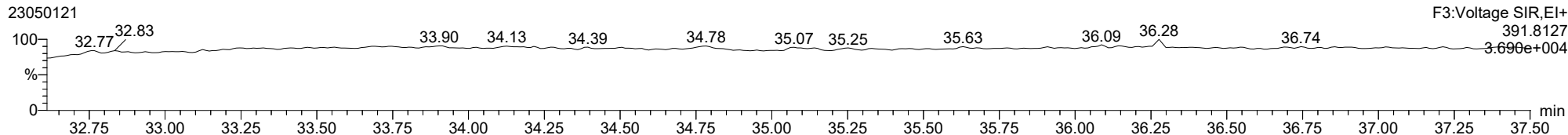


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

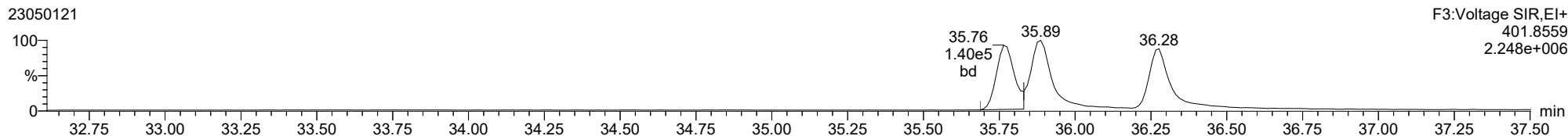
123478-HxCDD



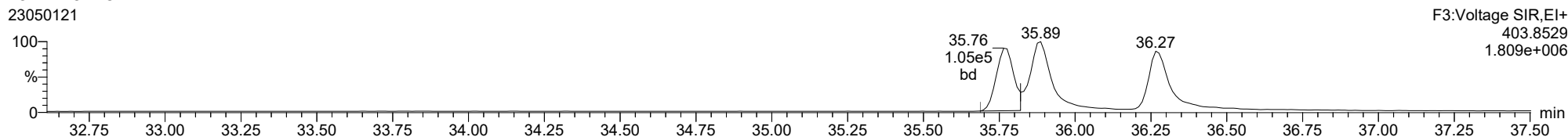
123478-HxCDD



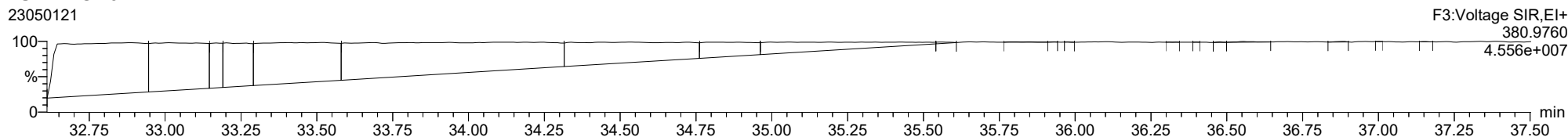
13C-123478-HxCDD



13C-123478-HxCDD

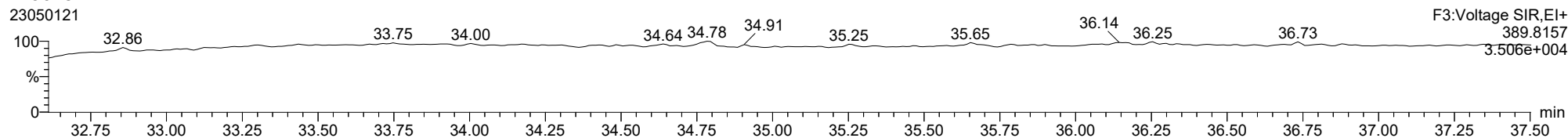


FUNCTION3 PFK

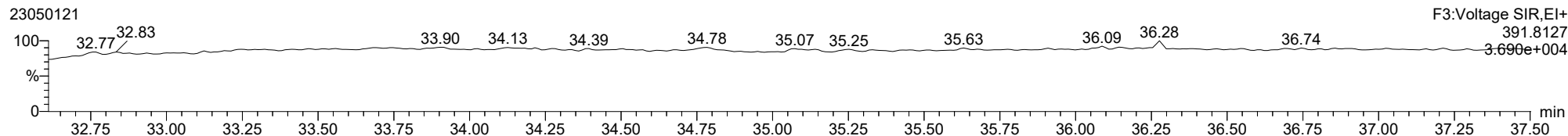


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

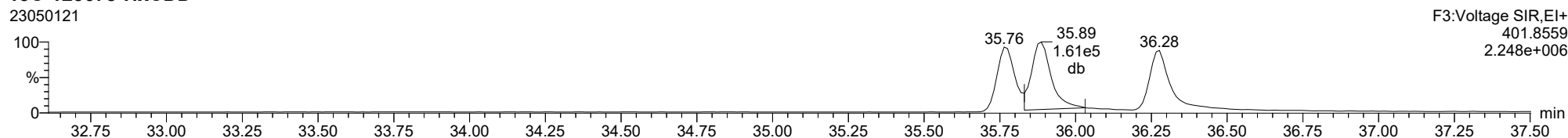
123678-HxCDD



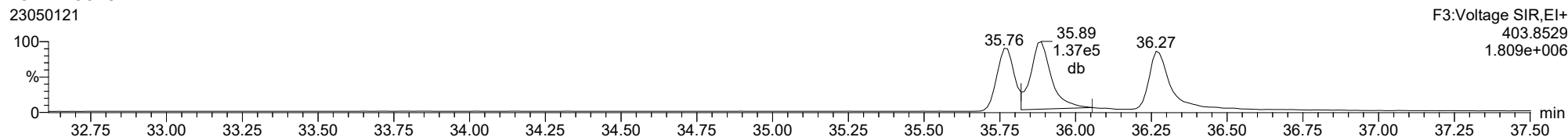
123678-HxCDD



13C-123678-HxCDD



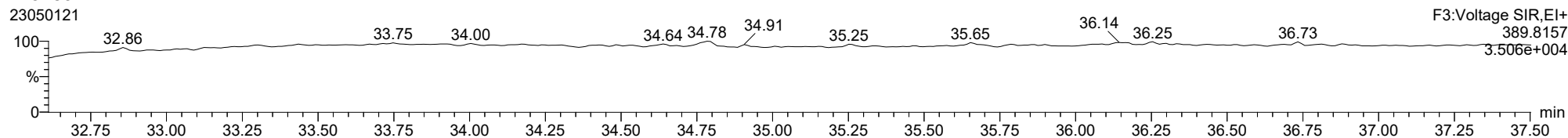
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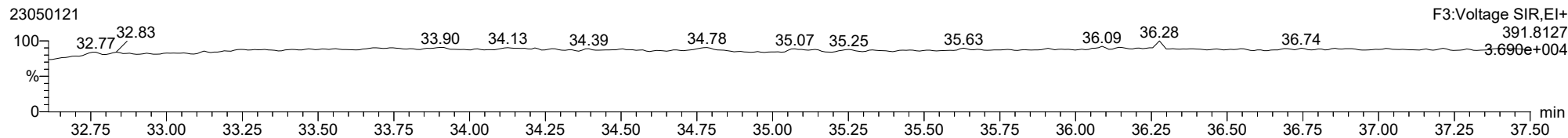


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

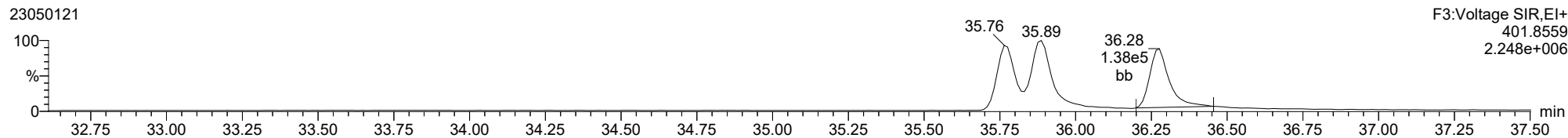
123789-HxCDD



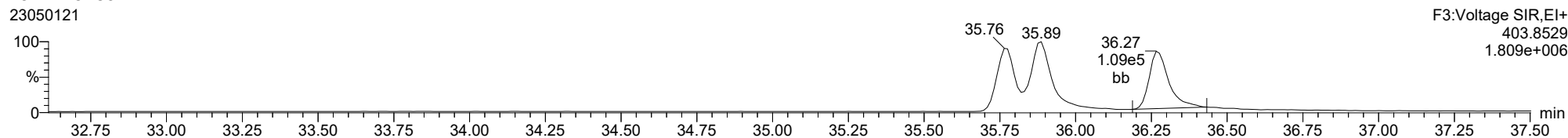
123789-HxCDD



13C-123789-HxCDD

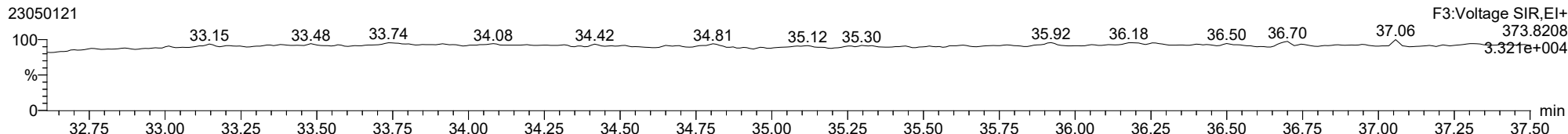


13C-123789-HxCDD

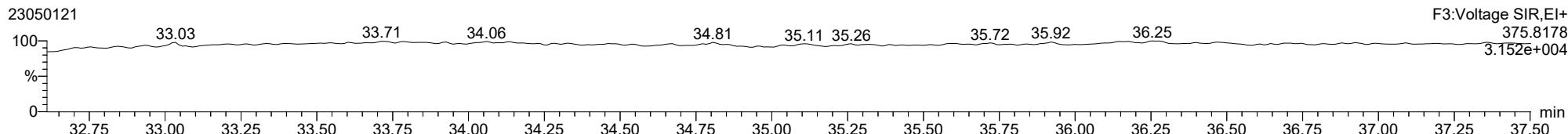


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

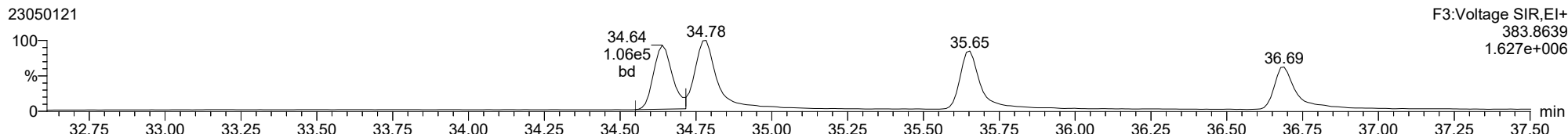
123478-HxCDF



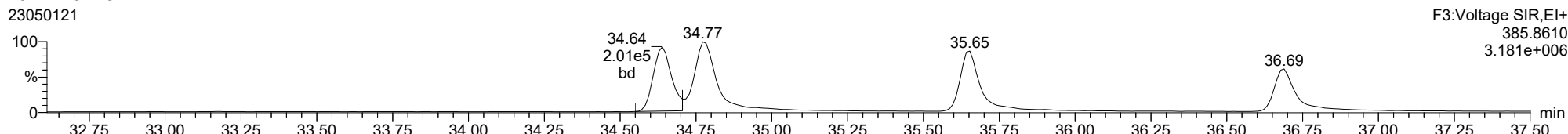
123478-HxCDF



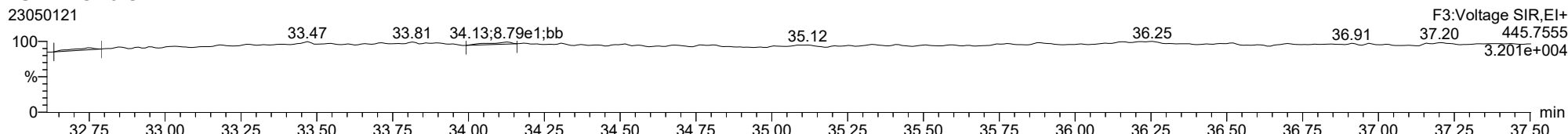
13C-123478-HxCDF



13C-123478-HxCDF



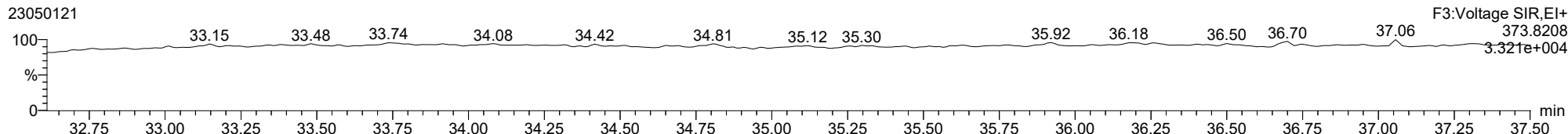
FUNCTION3 OCDPE



ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

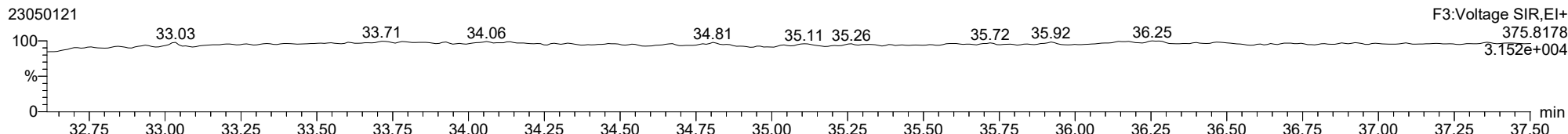
**234678-HxCDF**

23050121



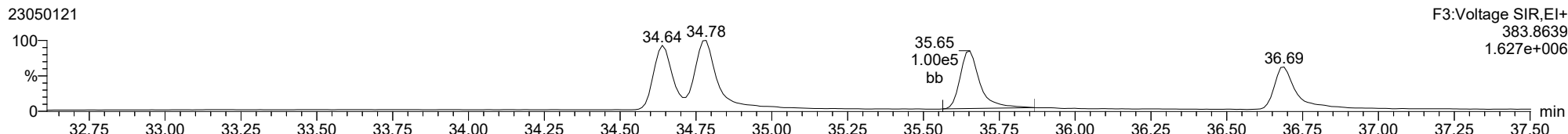
**234678-HxCDF**

23050121



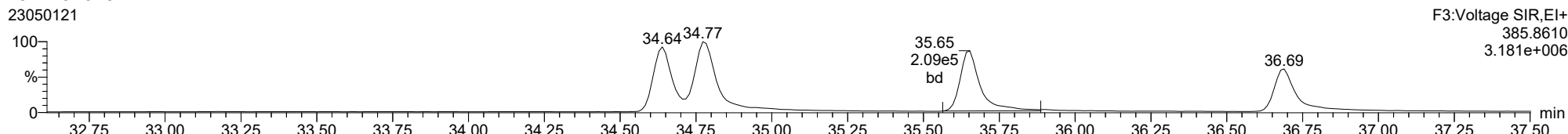
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23050121



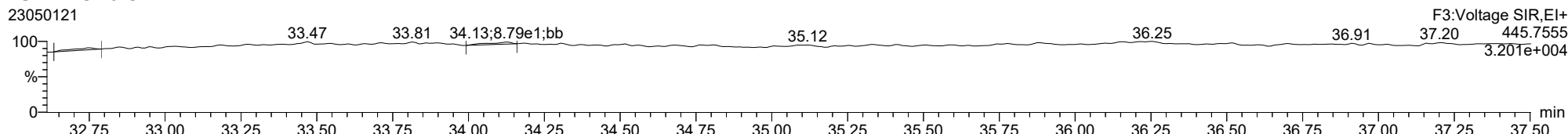
**13C-234678-HxCDF**

23050121



**FUNCTION3 OCDPE**

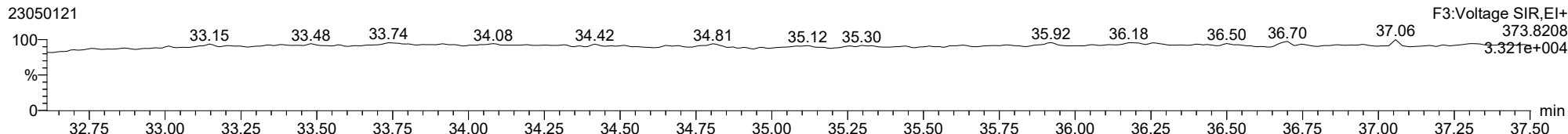
23050121



ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

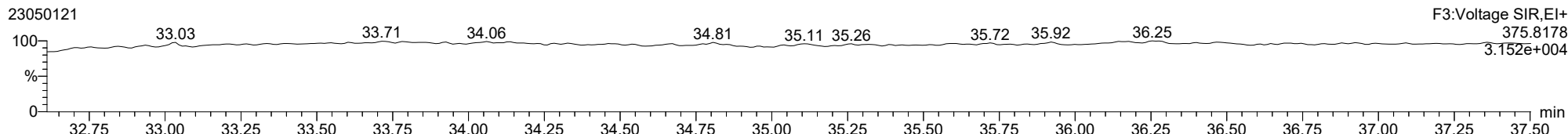
**123678-HxCDF**

23050121



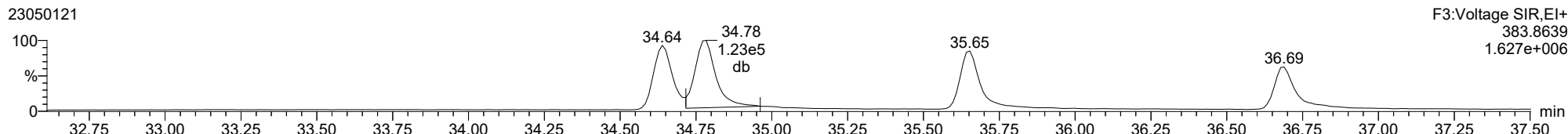
**123678-HxCDF**

23050121



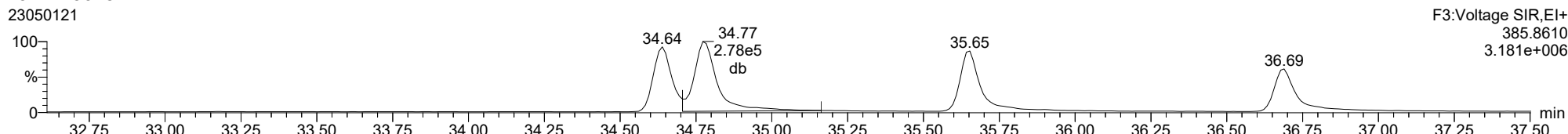
**13C-123678-HxCDF**

23050121



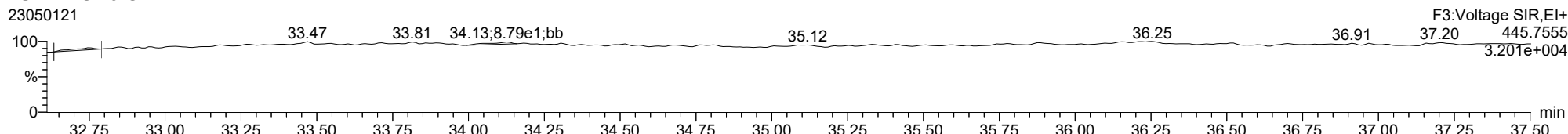
**13C-123678-HxCDF**

23050121



**FUNCTION3 OCDPE**

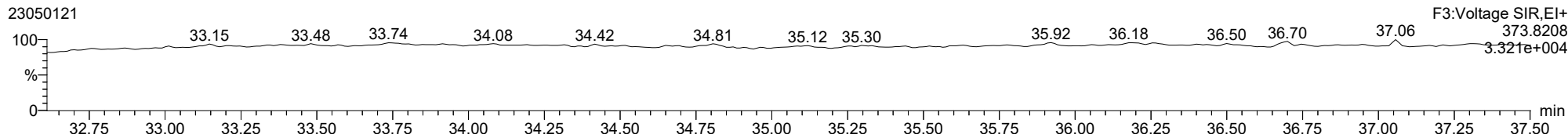
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ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

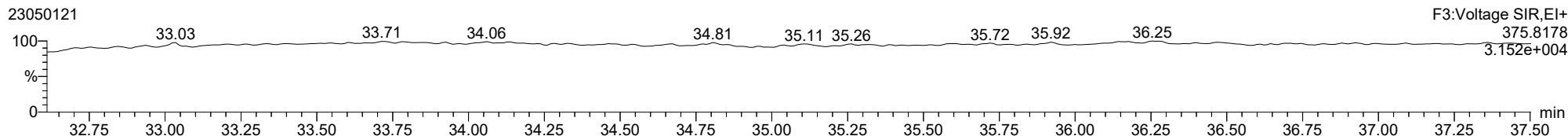
**123789-HxCDF**

23050121



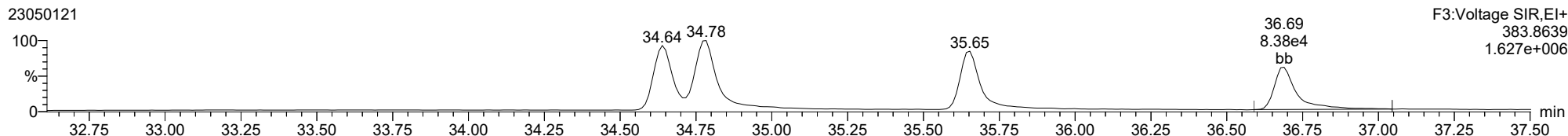
**123789-HxCDF**

23050121



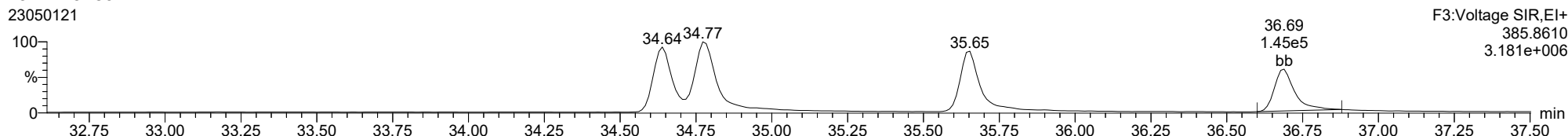
**13C-123789-HxCDF**

23050121



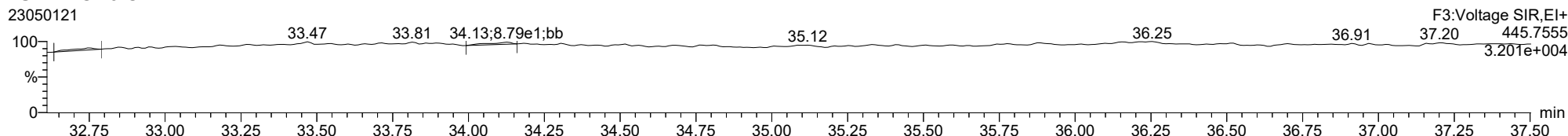
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23050121



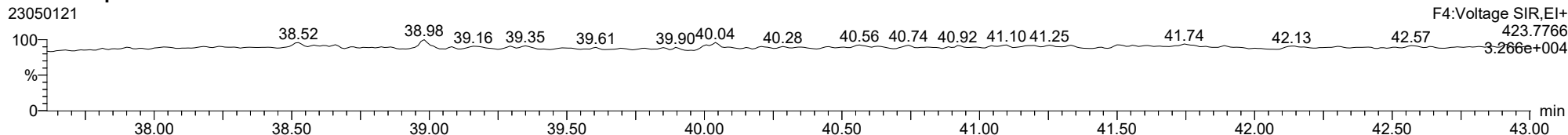
**FUNCTION3 OCDPE**

23050121

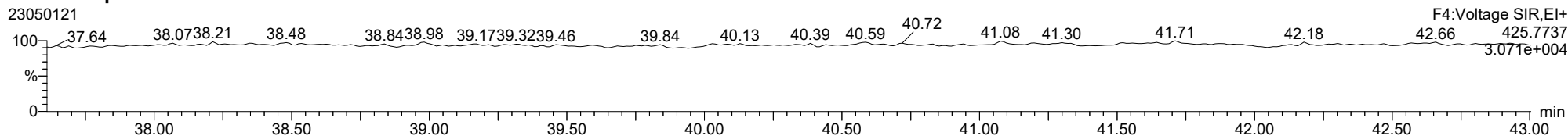


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

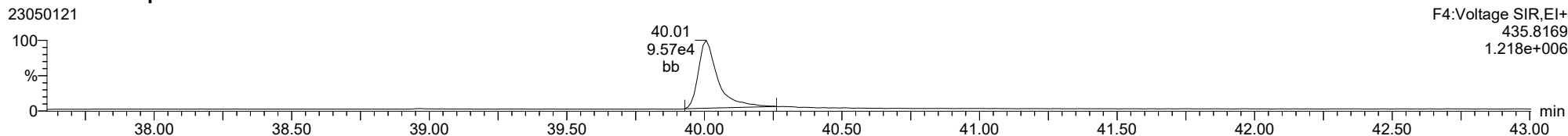
1234678-HpCDD



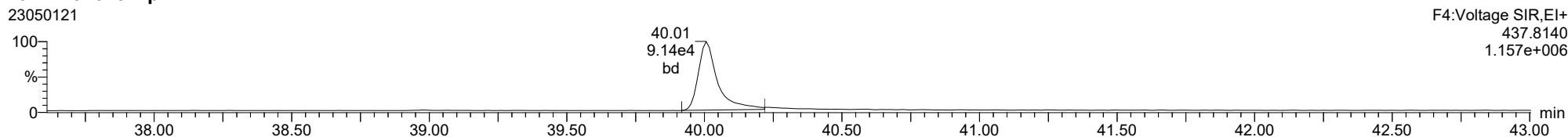
1234678-HpCDD



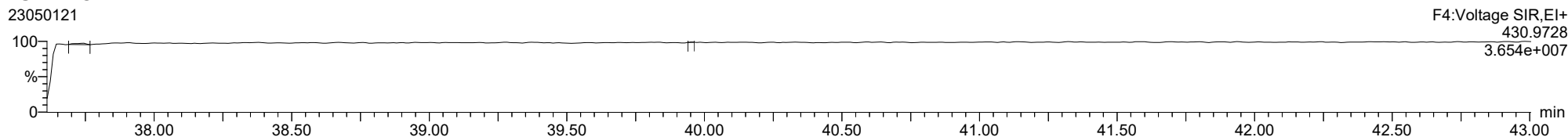
13C-1234678-HpCDD



13C-1234678-HpCDD

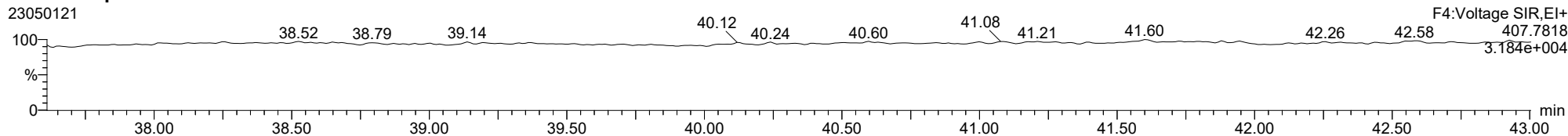


FUNCTION4 PFK

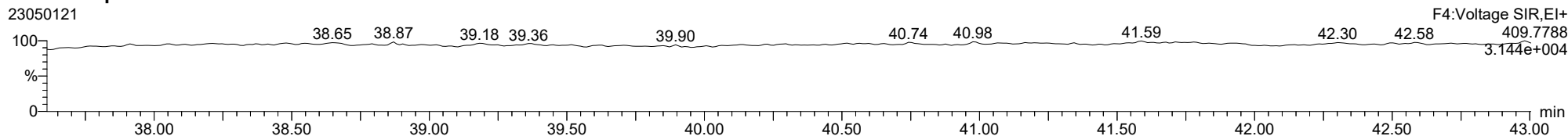


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

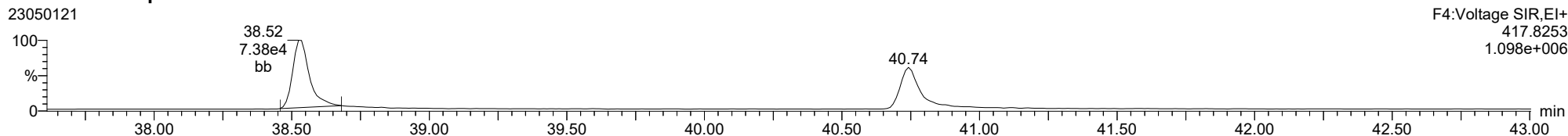
**1234678-HpCDF**



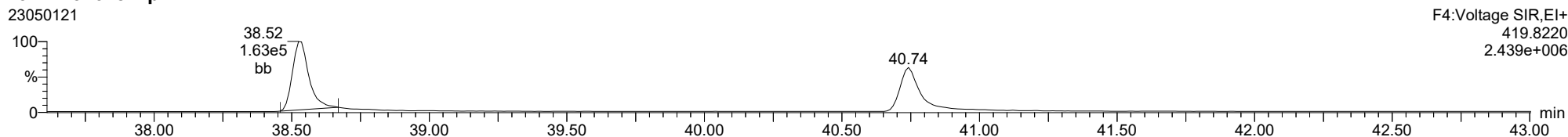
**1234678-HpCDF**



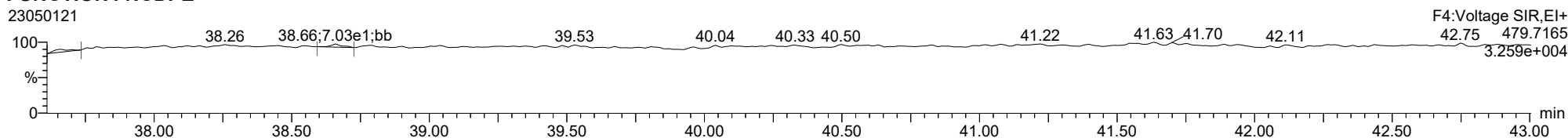
**13C-1234678-HpCDF**



**13C-1234678-HpCDF**

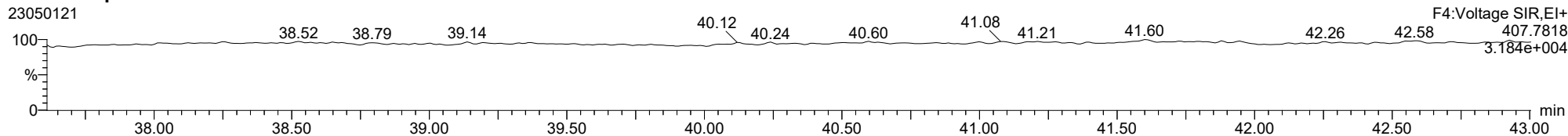


**FUNCTION4 NCDPE**

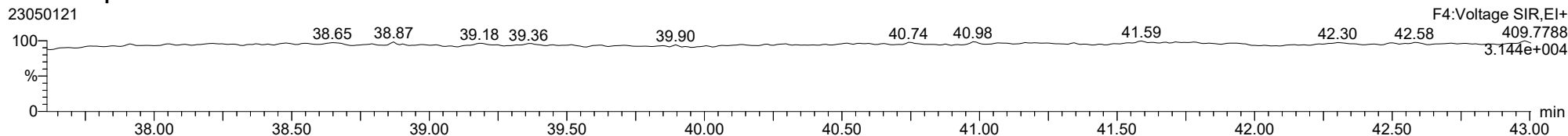


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

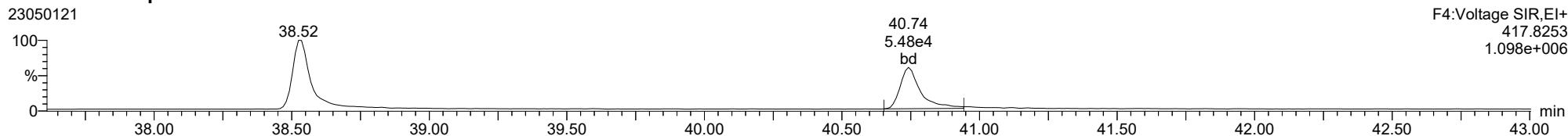
**1234789-HpCDF**



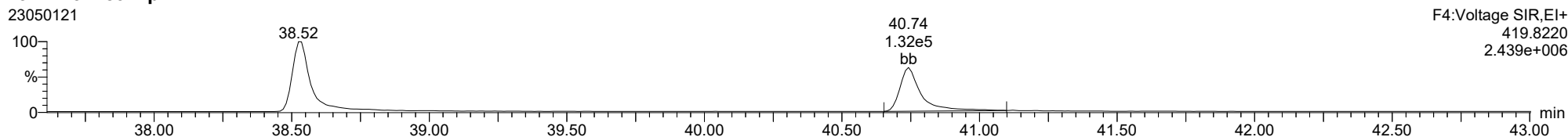
**1234789-HpCDF**



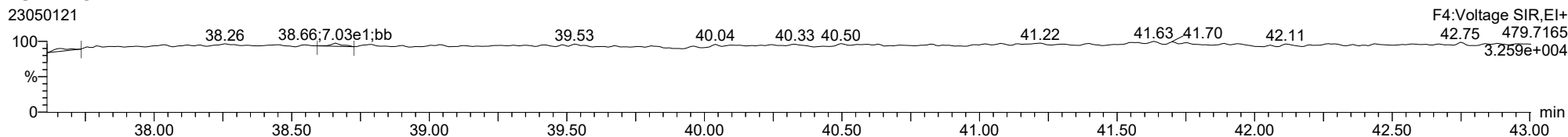
**13C-1234789-HpCDF**



**13C-1234789-HpCDF**



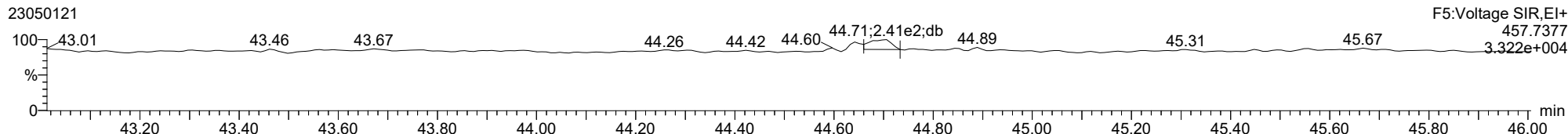
**FUNCTION4 NCDPE**



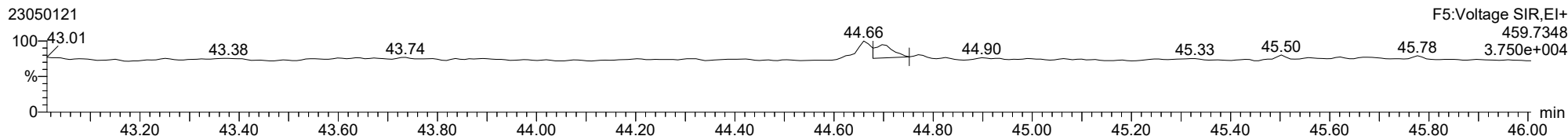


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

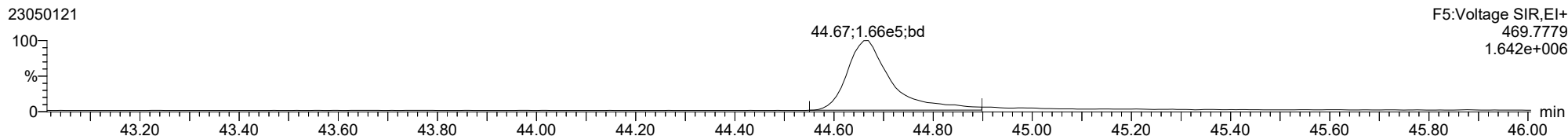
**OCDD**



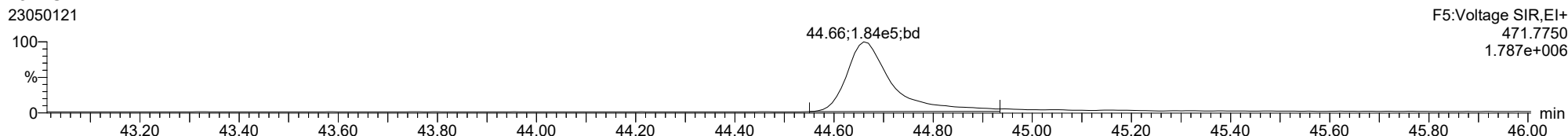
**OCDD**



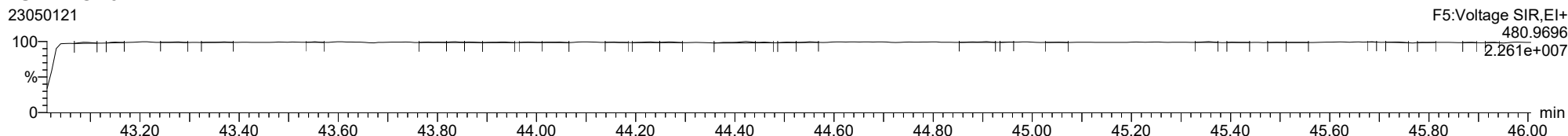
**13C-OCDD**



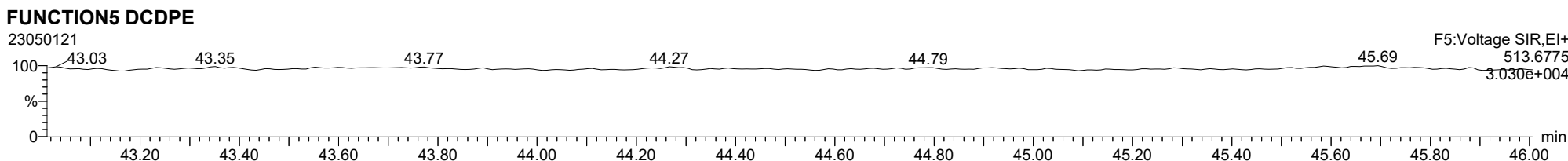
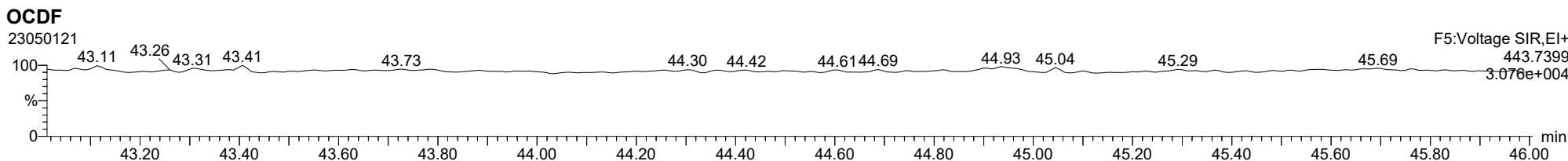
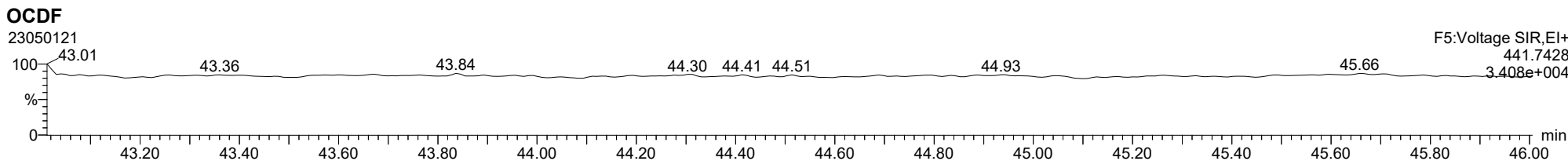
**13C-OCDD**



**FUNCTION5 PFK**

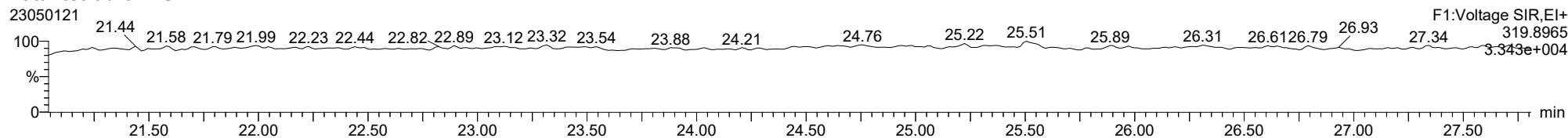


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

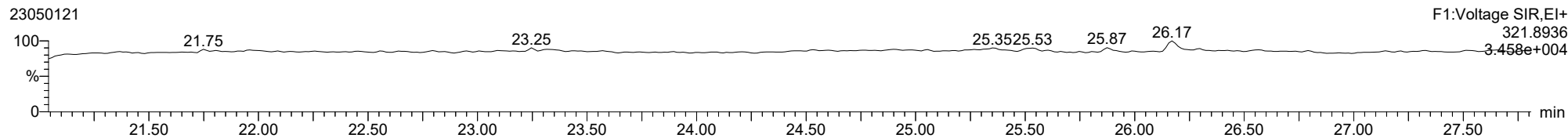


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

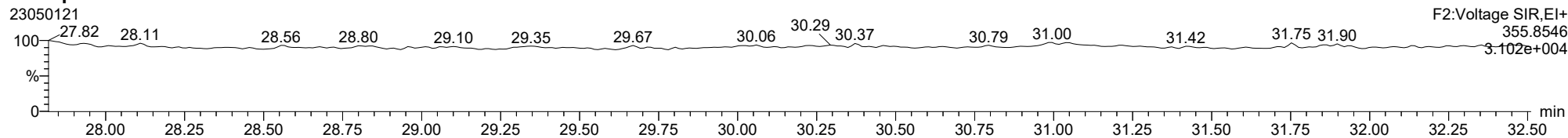
**Total-tetradioxins**



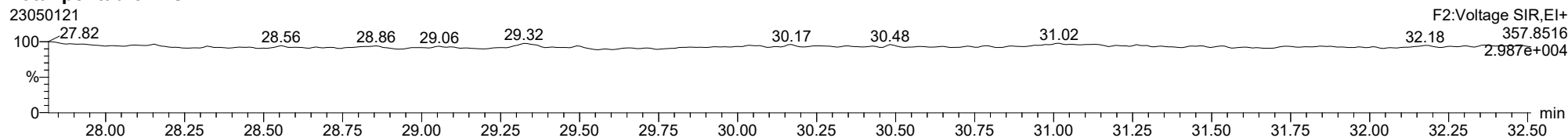
**Total-tetradioxins**



**Total-pentadioxins**

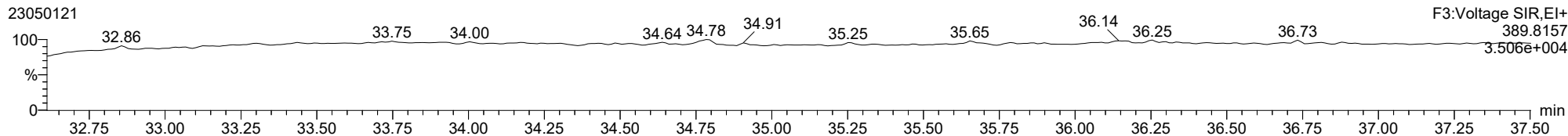


**Total-pentadioxins**

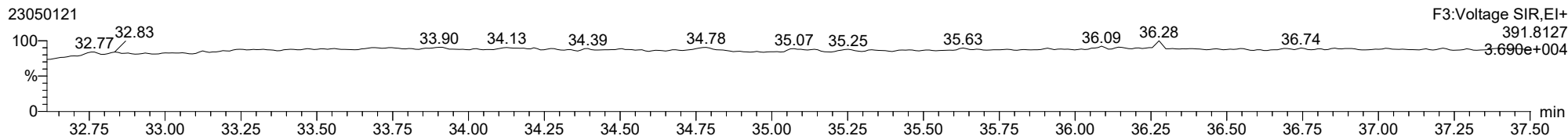


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

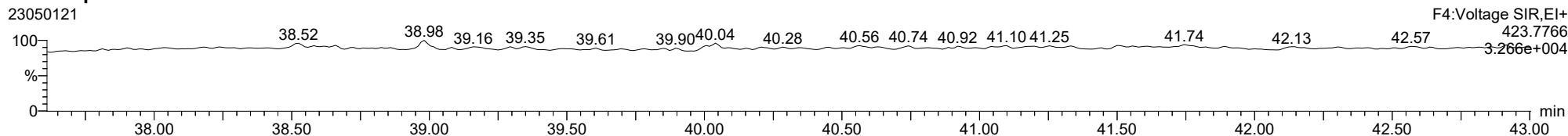
**Total-hexadioxins**



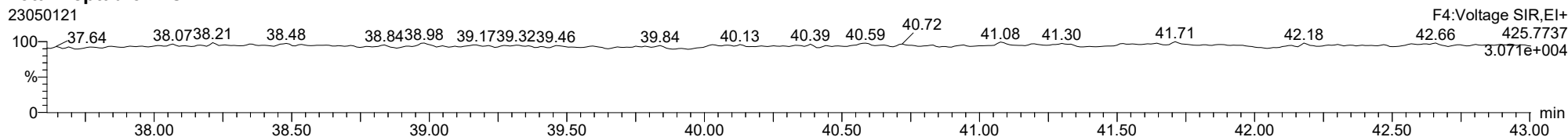
**Total-hexadioxins**



**Total-heptadioxins**

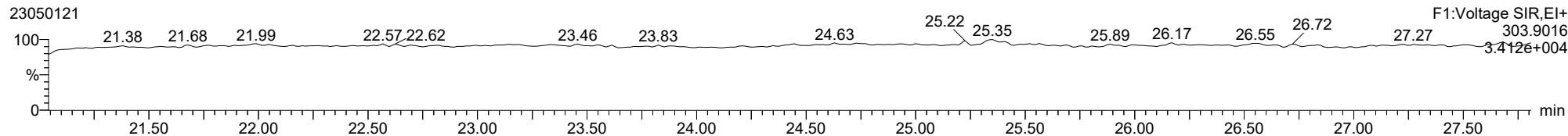


**Total-heptadioxins**

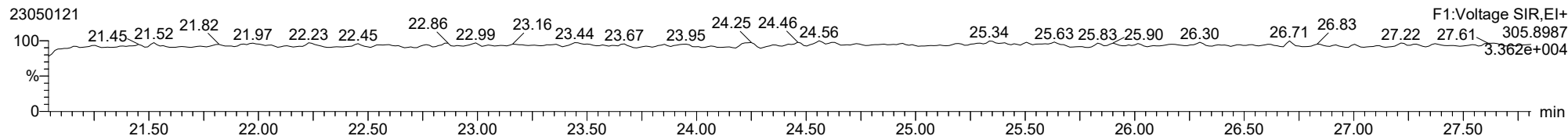


ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

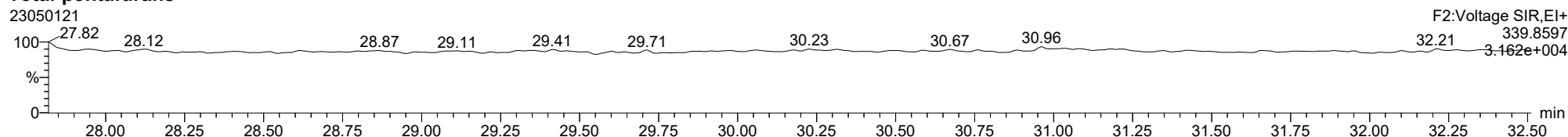
**Total-tetrafurans**



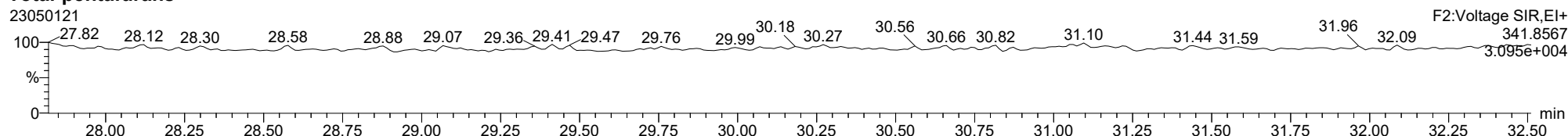
**Total-tetrafurans**



**Total-pentafurans**



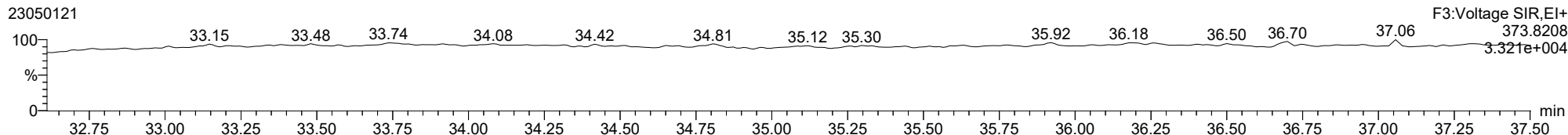
**Total-pentafurans**



ID: DBLK25, Name: 23050121, Date: 02-May-2023, Time: 02:53:26, Conditions: AUTOSPEC01, User: pk

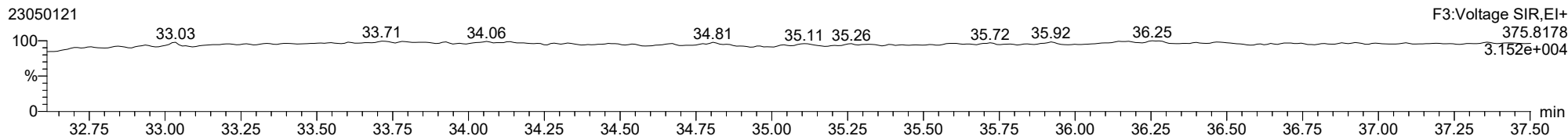
**Total-hexafurans**

23050121



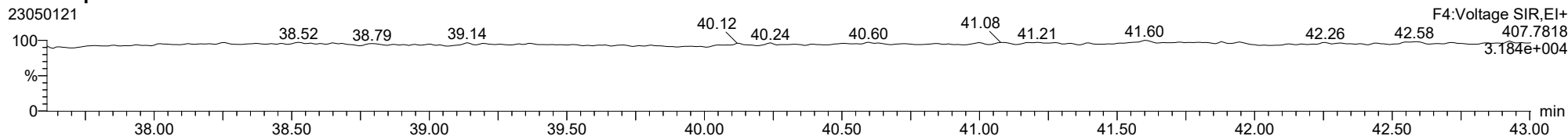
**Total-hexafurans**

23050121



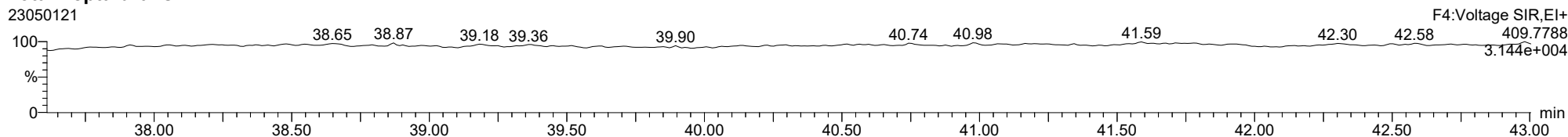
**Total-heptafurans**

23050121



**Total-heptafurans**

23050121





**LCS RECOVERY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Analyzed: 05/02/23 03:42

Batch: BLD0657

Laboratory ID: BLD0657-BS2

Preparation: EPA 1613

Sequence Name: LCS

Initial/Final: 10 g / 20 uL

COMPOUND	SPIKE ADDED (ng/kg wet)	LCS CONCENTRATION (ng/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
2,3,7,8-TCDF	20.0	19.3		96.3	75 - 158
2,3,7,8-TCDD	20.0	19.7		98.7	67 - 158
1,2,3,7,8-PeCDF	100	122		122	80 - 134
2,3,4,7,8-PeCDF	100	122		122	68 - 160
1,2,3,7,8-PeCDD	100	128		128	70 - 142
1,2,3,4,7,8-HxCDF	100	101		101	72 - 134
1,2,3,6,7,8-HxCDF	100	121		121	84 - 130
2,3,4,6,7,8-HxCDF	100	111		111	70 - 156
1,2,3,7,8,9-HxCDF	100	107		107	78 - 130
1,2,3,4,7,8-HxCDD	100	100		100	70 - 164
1,2,3,6,7,8-HxCDD	100	115		115	76 - 134
1,2,3,7,8,9-HxCDD	100	117		117	64 - 162
1,2,3,4,6,7,8-HpCDF	100	104		104	82 - 122
1,2,3,4,7,8,9-HpCDF	100	113		113	78 - 138
1,2,3,4,6,7,8-HpCDD	100	96.3		96.3	70 - 140
OCDF	200	176		88.2	63 - 170
OCDD	200	208	B	104	78 - 144

\* Indicates values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
 Last Altered: Wednesday, May 10, 2023 16:26:38 Pacific Daylight Time  
 Printed: Wednesday, May 10, 2023 16:28:06 Pacific Daylight Time

**Method: T:\Autospec\Methods\Dioxin230501.mdb 02 May 2023 09:11:55**  
**Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27**

**ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk**

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.549	1.001	1.570e4	2.013e4	0.702	0.780	0.770	609	945	2.13e5	3.03e5	350.6	320.6	NO	bb	bb	9.629
12378-PeCDF	29.691	1.001	1.182e5	7.631e4	0.679	1.549	1.550	1698	1859	1.72e6	1.08e6	1012.9	582.8	NO	bb	bb	60.848
23478-PeCDF	31.028	1.001	1.209e5	7.666e4	0.786	1.577	1.550	1698	1859	1.73e6	1.09e6	1017.3	583.7	NO	bb	bb	60.756
123478-HxCDF	34.661	1.001	9.812e4	7.975e4	1.166	1.230	1.240	1871	1817	1.42e6	1.13e6	759.3	624.3	NO	bd	bd	50.749
234678-HxCDF	35.664	1.000	1.007e5	8.170e4	1.140	1.233	1.240	1871	1817	1.30e6	1.07e6	694.3	588.3	NO	bd	bd	55.579
123678-HxCDF	34.795	1.000	1.278e5	1.030e5	1.091	1.241	1.240	1871	1817	1.58e6	1.27e6	842.6	698.8	NO	dd	dd	60.547
123789-HxCDF	36.700	1.000	7.638e4	6.082e4	1.137	1.256	1.240	1871	1817	9.76e5	7.59e5	521.7	417.7	NO	bd	bd	53.476
1234678-HpCDF	38.547	1.000	6.577e4	6.372e4	1.003	1.032	1.050	3496	1601	9.90e5	9.79e5	283.1	611.5	NO	bb	bb	51.784
1234789-HpCDF	40.764	1.001	4.849e4	4.712e4	0.953	1.029	1.050	3496	1601	5.73e5	5.50e5	163.8	343.3	NO	bd	bd	56.262
OCDF	44.916	1.006	5.529e4	6.097e4	0.778	0.907	0.890	1533	2962	6.07e5	7.07e5	396.0	238.8	NO	bb	bb	88.209
2378-TCDD	26.170	1.001	2.106e4	2.849e4	1.149	0.739	0.770	886	769	2.88e5	3.92e5	325.0	509.0	NO	bd	bd	9.869
12378-PeCDD	31.285	1.001	8.781e4	5.420e4	1.022	1.620	1.550	1439	885	1.28e6	7.62e5	891.7	861.3	NO	bb	bb	64.102
123478-HxCDD	35.786	1.001	7.105e4	5.565e4	0.996	1.277	1.240	1036	1402	1.11e6	8.38e5	1067.9	597.8	NO	bd	bd	50.080
123678-HxCDD	35.898	1.000	8.905e4	6.856e4	1.001	1.299	1.240	1036	1402	1.21e6	9.56e5	1163.5	682.1	NO	db	db	57.258
123789-HxCDD	36.288	1.011	7.583e4	6.511e4	0.907	1.165	1.240	1036	1402	1.02e6	7.93e5	985.3	565.5	NO	bd	bd	58.729
1234678-HpCDD	40.029	1.000	5.103e4	4.959e4	1.039	1.029	1.050	1489	1882	7.09e5	6.89e5	476.3	366.4	NO	bb	bb	48.155
OCDD	44.678	1.000	7.340e4	8.881e4	0.920	0.826	0.890	1813	2387	7.58e5	8.95e5	418.2	374.9	NO	bd	bd	104.056
13C-2378-TCDF	25.520	1.007	2.276e5	3.028e5	1.620	0.752	0.770	1857	1497	3.09e6	4.13e6	1665.2	2761.8	NO	bd	bb	81.721
13C-12378-PeCDF	29.669	1.170	2.878e5	1.829e5	1.240	1.574	1.550	2857	2253	3.60e6	2.38e6	1259.6	1058.7	NO	bb	bd	94.730
13C-23478-PeCDF	31.006	1.223	2.488e5	1.648e5	1.118	1.510	1.550	2857	2253	3.32e6	2.20e6	1161.7	974.5	NO	bb	bb	92.373
13C-123478-HxCDF	34.639	0.955	1.016e5	1.990e5	1.168	0.510	0.510	1944	3121	1.47e6	2.87e6	756.3	918.4	NO	bd	bd	101.114
13C-123678-HxCDF	34.784	0.959	1.204e5	2.291e5	1.386	0.525	0.510	1944	3121	1.61e6	3.09e6	828.9	988.8	NO	db	db	99.053
13C-234678-HxCDF	35.653	0.983	9.613e4	1.919e5	1.129	0.501	0.510	1944	3121	1.34e6	2.61e6	687.2	836.9	NO	bb	bb	100.230
13C-123789-HxCDF	36.689	1.011	7.454e4	1.511e5	0.932	0.493	0.510	1944	3121	1.03e6	1.98e6	530.2	634.4	NO	bb	bb	95.175
13C-1234678-HpCDF	38.536	1.062	7.600e4	1.733e5	0.895	0.438	0.440	1952	2626	1.11e6	2.53e6	569.8	964.1	NO	bb	bb	109.454
13C-1234789-HpCDF	40.742	1.123	5.739e4	1.209e5	0.770	0.475	0.440	1952	2626	6.34e5	1.42e6	324.8	540.4	NO	bd	bb	91.034
13C-1234-TCDD	25.351	0.000	1.768e5	2.238e5	1.000	0.790	0.770	2069	1090	2.68e6	3.38e6	1296.7	3104.8	NO	bb	bb	100.000
13C-2378-TCDD	26.156	1.032	1.937e5	2.434e5	1.152	0.796	0.770	2069	1090	2.74e6	3.48e6	1324.8	3191.7	NO	bb	bb	94.693
13C-12378-PeCDD	31.262	1.233	1.363e5	8.052e4	0.829	1.693	1.550	989	843	1.72e6	1.03e6	1742.8	1225.6	NO	bb	bd	65.302
13C-123478-HxCDD	35.764	0.986	1.413e5	1.128e5	0.995	1.253	1.240	1798	1346	2.11e6	1.69e6	1174.2	1258.1	NO	bd	bd	100.378
13C-123678-HxCDD	35.887	0.989	1.595e5	1.155e5	1.157	1.380	1.240	1798	1346	2.28e6	1.68e6	1267.3	1251.4	NO	db	db	93.440
13C-1234678-HpCDD	40.018	1.103	1.049e5	9.625e4	0.840	1.090	1.050	1331	1687	1.24e6	1.14e6	933.4	673.6	NO	bb	bd	94.088
13C-OCDD	44.660	1.231	1.620e5	1.769e5	0.767	0.915	0.890	2185	1918	1.61e6	1.80e6	738.8	936.9	NO	bd	bd	173.552
13C-123789-HxCDD	36.277	0.000	1.448e5	1.097e5	1.000	1.320	1.240	1798	1346	1.87e6	1.48e6	1037.9	1098.7	NO	bb	bb	100.000
37CL-2378-TCDD	26.170	1.032	1.963e5		1.288			1458		2.63e6		1800.9			bb		38.056



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ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					0.802		0.770	609	945								
1289-TCDF					0.678		0.770	609	945								
13468-PECDF					1.246		1.550	600	830								
12389-PECDF					0.496		1.550	1698	1859								
123468-HXCDF					1.169		1.240	1871	1817								
1368-TCDD					1.015		0.770	886	769								
1289-TCDD					0.909		0.770	886	769								
12479-PECDD					2.301		1.550	1439	885								
12389-PECDD					1.184		1.550	1439	885								
124679-HXCDD					1.115		1.240	1036	1402								
1234679-HPCDD	38.993	0.974	3.402e2	4.980e2	1.137	0.683	1.050	1489	1882	5.99e3	8.58e3	4.0	4.6	YES	bb	bb	0.367
Total-tetrafurans			1.570e4		0.727			609		2.13e5							9.629
Total-penta1			0.000e0					600		0.00e0							
Total-pentafurans			2.391e5		0.654			1698		3.45e6							121.604
Total-hexafurans			4.030e5		1.141			1871		5.27e6							220.351
Total-heptafurans			1.143e5		0.978			3496		1.56e6							108.047
Total-Furans			8.274e5		0.922			609		1.11e7							547.840
Total-tetradoxins			2.156e4		1.024			886		2.94e5							10.108
Total-pentadoxins			8.781e4		1.502			1439		1.28e6							64.102
Total-hexadoxins			2.359e5		1.005			1036		3.33e6							166.067
Total-heptadoxins			5.103e4		1.088			1489		7.09e5							48.155
Total-Dioxins			4.697e5		1.130			886		6.38e6							392.488
Total-TEQ			1.297e6					886		1.75e7							940.328
FUNCTION1 PFK			5.223e5					357736		1.07e7							
FUNCTION2 PFK			3.871e5					168572		1.11e7							0.000
FUNCTION3 PFK			3.310e7					285059		1.45e7							0.000
FUNCTION4 PFK			1.984e5					204830		6.56e6							
FUNCTION5 PFK			1.173e7					132788		8.87e7							
FUNCTION1 HXCD...			8.392e2					528		1.06e4							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			1.041e3					1123		2.34e4							0.000
FUNCTION3 OCDPE			2.440e2					516		3.27e3							0.000
FUNCTION4 NCDPE			1.653e2					610		6.08e3							0.000
FUNCTION5 DCDPE			8.711e1					406		1.92e3							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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Method: T:\Autospec\Methods\Dioxin230501.mdb 02 May 2023 09:11:55

Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.55	1.570e4	2.013e4	0.702	0.78	0.77	350.6	YES	NO	bb	bb	9.629

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.03	1.209e5	7.666e4	0.786	1.58	1.55	1017.3	YES	NO	bb	bb	60.756
2	12378-PeCDF	29.69	1.182e5	7.631e4	0.679	1.55	1.55	1012.9	YES	NO	bb	bb	60.848

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	234678-HxCDF	35.66	1.007e5	8.170e4	1.140	1.23	1.24	694.3	YES	NO	bd	bd	55.579
2	123678-HxCDF	34.79	1.278e5	1.030e5	1.091	1.24	1.24	842.6	YES	NO	dd	dd	60.547
3	123478-HxCDF	34.66	9.812e4	7.975e4	1.166	1.23	1.24	759.3	YES	NO	bd	bd	50.749
4	123789-HxCDF	36.70	7.638e4	6.082e4	1.137	1.26	1.24	521.7	YES	NO	bd	bd	53.476

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.76	4.849e4	4.712e4	0.953	1.03	1.05	163.8	YES	NO	bd	bd	56.262
2	1234678-HpCDF	38.55	6.577e4	6.372e4	1.003	1.03	1.05	283.1	YES	NO	bb	bb	51.784

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.55	1.570e4	2.013e4	0.702	0.78	0.77	350.6	YES	NO	bb	bb	9.629
2	23478-PeCDF	31.03	1.209e5	7.666e4	0.786	1.58	1.55	1017.3	YES	NO	bb	bb	60.756
3	12378-PeCDF	29.69	1.182e5	7.631e4	0.679	1.55	1.55	1012.9	YES	NO	bb	bb	60.848
4	234678-HxCDF	35.66	1.007e5	8.170e4	1.140	1.23	1.24	694.3	YES	NO	bd	bd	55.579
5	123678-HxCDF	34.79	1.278e5	1.030e5	1.091	1.24	1.24	842.6	YES	NO	dd	dd	60.547
6	123478-HxCDF	34.66	9.812e4	7.975e4	1.166	1.23	1.24	759.3	YES	NO	bd	bd	50.749
7	123789-HxCDF	36.70	7.638e4	6.082e4	1.137	1.26	1.24	521.7	YES	NO	bd	bd	53.476
8	1234789-HpCDF	40.76	4.849e4	4.712e4	0.953	1.03	1.05	163.8	YES	NO	bd	bd	56.262
9	1234678-HpCDF	38.55	6.577e4	6.372e4	1.003	1.03	1.05	283.1	YES	NO	bb	bb	51.784
10	OCDF	44.92	5.529e4	6.097e4	0.778	0.91	0.89	396.0	YES	NO	bb	bb	88.209

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.17	2.106e4	2.849e4	1.149	0.74	0.77	325.0	YES	NO	bd	bd	9.869
2	Total-tetradoxins	25.79	4.977e2	5.740e2	1.024	0.87	0.77	6.7	YES	NO	bb	bb	0.239

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.28	8.781e4	5.420e4	1.022	1.62	1.55	891.7	YES	NO	bb	bb	64.102

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.29	7.583e4	6.511e4	0.907	1.16	1.24	985.3	YES	NO	bd	bd	58.729
2	123678-HxCDD	35.90	8.905e4	6.856e4	1.001	1.30	1.24	1163.5	YES	NO	db	db	57.258
3	123478-HxCDD	35.79	7.105e4	5.565e4	0.996	1.28	1.24	1067.9	YES	NO	bd	bd	50.080

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.03	5.103e4	4.959e4	1.039	1.03	1.05	476.3	YES	NO	bb	bb	48.155

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.17	2.106e4	2.849e4	1.149	0.74	0.77	325.0	YES	NO	bd	bd	9.869
2	Total-tetradiioxins	25.79	4.977e2	5.740e2	1.024	0.87	0.77	6.7	YES	NO	bb	bb	0.239
3	12378-PeCDD	31.28	8.781e4	5.420e4	1.022	1.62	1.55	891.7	YES	NO	bb	bb	64.102
4	123789-HxCDD	36.29	7.583e4	6.511e4	0.907	1.16	1.24	985.3	YES	NO	bd	bd	58.729
5	123678-HxCDD	35.90	8.905e4	6.856e4	1.001	1.30	1.24	1163.5	YES	NO	db	db	57.258
6	123478-HxCDD	35.79	7.105e4	5.565e4	0.996	1.28	1.24	1067.9	YES	NO	bd	bd	50.080
7	1234678-HpCDD	40.03	5.103e4	4.959e4	1.039	1.03	1.05	476.3	YES	NO	bb	bb	48.155
8	OCDD	44.68	7.340e4	8.881e4	0.920	0.83	0.89	418.2	YES	NO	bd	bd	104.056

**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.55	1.570e4	2.013e4	0.702	0.78	0.77	350.6	YES	NO	bb	bb	9.629
2	23478-PeCDF	31.03	1.209e5	7.666e4	0.786	1.58	1.55	1017.3	YES	NO	bb	bb	60.756
3	12378-PeCDF	29.69	1.182e5	7.631e4	0.679	1.55	1.55	1012.9	YES	NO	bb	bb	60.848
4	234678-HxCDF	35.66	1.007e5	8.170e4	1.140	1.23	1.24	694.3	YES	NO	bd	bd	55.579
5	123678-HxCDF	34.79	1.278e5	1.030e5	1.091	1.24	1.24	842.6	YES	NO	dd	dd	60.547
6	123478-HxCDF	34.66	9.812e4	7.975e4	1.166	1.23	1.24	759.3	YES	NO	bd	bd	50.749
7	123789-HxCDF	36.70	7.638e4	6.082e4	1.137	1.26	1.24	521.7	YES	NO	bd	bd	53.476
8	1234789-HpCDF	40.76	4.849e4	4.712e4	0.953	1.03	1.05	163.8	YES	NO	bd	bd	56.262
9	1234678-HpCDF	38.55	6.577e4	6.372e4	1.003	1.03	1.05	283.1	YES	NO	bb	bb	51.784
10	OCDF	44.92	5.529e4	6.097e4	0.778	0.91	0.89	396.0	YES	NO	bb	bb	88.209
11	2378-TCDD	26.17	2.106e4	2.849e4	1.149	0.74	0.77	325.0	YES	NO	bd	bd	9.869
12	Total-tetradiioxins	25.79	4.977e2	5.740e2	1.024	0.87	0.77	6.7	YES	NO	bb	bb	0.239
13	12378-PeCDD	31.28	8.781e4	5.420e4	1.022	1.62	1.55	891.7	YES	NO	bb	bb	64.102
14	123789-HxCDD	36.29	7.583e4	6.511e4	0.907	1.16	1.24	985.3	YES	NO	bd	bd	58.729
15	123678-HxCDD	35.90	8.905e4	6.856e4	1.001	1.30	1.24	1163.5	YES	NO	db	db	57.258
16	123478-HxCDD	35.79	7.105e4	5.565e4	0.996	1.28	1.24	1067.9	YES	NO	bd	bd	50.080
17	1234678-HpCDD	40.03	5.103e4	4.959e4	1.039	1.03	1.05	476.3	YES	NO	bb	bb	48.155
18	OCDD	44.68	7.340e4	8.881e4	0.920	0.83	0.89	418.2	YES	NO	bd	bd	104.056

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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 Printed: Wednesday, May 10, 2023 16:28:06 Pacific Daylight Time

**ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk**

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.57	2.166e3					0.4	NO		db		
2	FUNCTION1 PFK	22.51	1.583e4					1.3	NO		bd		
3	FUNCTION1 PFK	22.31	3.667e4					1.3	NO		bb		
4	FUNCTION1 PFK	21.92	7.350e4					2.8	NO		db		
5	FUNCTION1 PFK	21.81	2.436e4					1.5	NO		bd		
6	FUNCTION1 PFK	21.42	1.028e4					1.4	NO		db		
7	FUNCTION1 PFK	21.41	2.170e4					1.3	NO		bd		
8	FUNCTION1 PFK	21.18	5.078e4					2.4	NO		bb		
9	FUNCTION1 PFK	27.24	2.074e4					1.0	NO		db		
10	FUNCTION1 PFK	27.17	1.076e4					1.0	NO		bd		
11	FUNCTION1 PFK	27.12	2.778e3					0.5	NO		bb		
12	FUNCTION1 PFK	26.41	5.986e3					0.8	NO		bb		
13	FUNCTION1 PFK	25.92	2.494e4					1.1	NO		bb		
14	FUNCTION1 PFK	25.63	1.203e4					1.0	NO		bb		
15	FUNCTION1 PFK	25.53	1.652e4					0.8	NO		db		
16	FUNCTION1 PFK	25.48	2.551e4					1.4	NO		bd		
17	FUNCTION1 PFK	25.28	6.804e3					0.7	NO		bb		
18	FUNCTION1 PFK	24.87	1.304e4					0.9	NO		bb		
19	FUNCTION1 PFK	23.81	6.489e4					2.3	NO		bb		
20	FUNCTION1 PFK	23.37	3.567e4					1.4	NO		db		
21	FUNCTION1 PFK	23.32	1.611e4					1.4	NO		bd		
22	FUNCTION1 PFK	22.95	9.679e3					0.9	NO		bb		
23	FUNCTION1 PFK	22.85	1.152e4					1.1	NO		bb		
24	FUNCTION1 PFK	22.78	8.066e3					1.0	NO		bb		
25	FUNCTION1 PFK	27.36	2.004e3					0.4	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230501IHQC.qld  
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**ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk**

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.23	1.509e4					2.3	NO		dd		0.000
2	FUNCTION2 PFK	29.18	6.930e3					1.6	NO		dd		0.000
3	FUNCTION2 PFK	29.13	4.055e3					0.9	NO		bd		0.000
4	FUNCTION2 PFK	28.83	4.540e3					1.1	NO		db		0.000
5	FUNCTION2 PFK	28.79	1.061e4					1.7	NO		bd		0.000
6	FUNCTION2 PFK	28.50	3.552e3					0.8	NO		bb		0.000
7	FUNCTION2 PFK	28.39	1.344e4					1.6	NO		bb		0.000
8	FUNCTION2 PFK	28.20	1.465e4					2.0	NO		db		0.000
9	FUNCTION2 PFK	28.15	1.018e4					1.9	NO		dd		0.000
10	FUNCTION2 PFK	28.11	1.218e4					2.2	NO		dd		0.000
11	FUNCTION2 PFK	28.05	1.991e4					2.6	NO		dd		0.000
12	FUNCTION2 PFK	28.01	1.170e4					1.9	NO		dd		0.000
13	FUNCTION2 PFK	27.96	1.090e4					1.9	NO		dd		0.000
14	FUNCTION2 PFK	27.90	1.356e4					2.2	NO		bd		0.000
15	FUNCTION2 PFK	30.99	6.095e3					1.2	NO		bb		0.000
16	FUNCTION2 PFK	30.65	2.369e3					0.6	NO		bb		0.000
17	FUNCTION2 PFK	30.58	9.303e3					2.0	NO		db		0.000
18	FUNCTION2 PFK	30.50	8.841e3					1.4	NO		bd		0.000
19	FUNCTION2 PFK	30.42	1.811e4					2.3	NO		db		0.000
20	FUNCTION2 PFK	30.36	8.492e3					1.5	NO		dd		0.000
21	FUNCTION2 PFK	30.33	4.068e3					0.9	NO		bd		0.000
22	FUNCTION2 PFK	30.27	1.958e3					0.7	NO		bb		0.000
23	FUNCTION2 PFK	30.15	4.872e3					1.1	NO		db		0.000
24	FUNCTION2 PFK	30.09	7.590e3					1.4	NO		bd		0.000
25	FUNCTION2 PFK	29.76	4.144e3					0.9	NO		db		0.000
26	FUNCTION2 PFK	29.72	5.964e3					1.5	NO		dd		0.000
27	FUNCTION2 PFK	29.68	5.010e3					1.3	NO		bd		0.000
28	FUNCTION2 PFK	29.37	6.353e3					1.5	NO		bb		0.000
29	FUNCTION2 PFK	29.32	5.080e3					1.4	NO		db		0.000
30	FUNCTION2 PFK	29.29	1.013e4					1.7	NO		dd		0.000
31	FUNCTION2 PFK	32.31	2.702e4					1.5	NO		bb		0.000
32	FUNCTION2 PFK	32.24	3.621e3					1.0	NO		bb		0.000
33	FUNCTION2 PFK	32.13	6.447e3					1.3	NO		db		0.000
34	FUNCTION2 PFK	32.09	3.417e3					0.9	NO		bd		0.000
35	FUNCTION2 PFK	32.03	1.215e4					2.0	NO		db		0.000
36	FUNCTION2 PFK	31.94	2.145e4					1.9	NO		bd		0.000
37	FUNCTION2 PFK	31.88	4.750e3					1.4	NO		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION2 PFK	31.80	5.515e3					0.5	NO		bb		0.000
39	FUNCTION2 PFK	31.65	1.516e3					0.5	NO		bb		0.000
40	FUNCTION2 PFK	31.53	1.144e4					2.1	NO		db		0.000
41	FUNCTION2 PFK	31.49	9.762e3					1.9	NO		dd		0.000
42	FUNCTION2 PFK	31.44	6.144e3					1.2	NO		bd		0.000
43	FUNCTION2 PFK	31.38	7.977e3					1.5	NO		bb		0.000
44	FUNCTION2 PFK	31.28	2.977e3					0.8	NO		bb		0.000
45	FUNCTION2 PFK	31.06	3.258e3					0.9	NO		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	36.10	1.747e6					15.8	YES		bb		0.000
2	FUNCTION3 PFK	33.96	3.135e7					35.2	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.11	6.743e3					1.2	NO		bb		
2	FUNCTION4 PFK	40.05	8.866e3					1.0	NO		bb		
3	FUNCTION4 PFK	39.40	4.378e3					1.0	NO		bb		
4	FUNCTION4 PFK	39.10	7.840e3					1.4	NO		bb		
5	FUNCTION4 PFK	38.65	2.085e3					0.6	NO		db		
6	FUNCTION4 PFK	38.58	1.908e4					1.7	NO		bd		
7	FUNCTION4 PFK	38.42	2.901e4					2.7	NO		bb		
8	FUNCTION4 PFK	38.37	7.515e3					1.3	NO		bb		
9	FUNCTION4 PFK	38.26	3.244e3					0.8	NO		bb		
10	FUNCTION4 PFK	38.17	7.754e3					0.8	NO		bb		
11	FUNCTION4 PFK	38.09	9.760e2					0.4	NO		bb		
12	FUNCTION4 PFK	38.00	5.082e3					1.0	NO		bb		
13	FUNCTION4 PFK	37.70	6.602e3					1.3	NO		bb		
14	FUNCTION4 PFK	42.95	4.540e3					0.9	NO		bb		
15	FUNCTION4 PFK	42.86	3.672e3					0.8	NO		bb		
16	FUNCTION4 PFK	42.42	3.036e3					0.7	NO		bb		
17	FUNCTION4 PFK	42.26	9.862e2					0.4	NO		bb		
18	FUNCTION4 PFK	42.21	3.089e3					0.8	NO		bb		
19	FUNCTION4 PFK	42.08	4.526e3					0.7	NO		bb		
20	FUNCTION4 PFK	41.97	4.791e3					1.1	NO		bb		
21	FUNCTION4 PFK	41.82	8.208e3					1.4	NO		bb		
22	FUNCTION4 PFK	41.76	1.651e4					2.4	NO		db		
23	FUNCTION4 PFK	41.71	5.344e3					1.2	NO		bd		
24	FUNCTION4 PFK	41.51	7.383e3					1.3	NO		bb		
25	FUNCTION4 PFK	41.08	1.503e3					0.7	NO		bb		
26	FUNCTION4 PFK	41.03	9.987e3					1.3	NO		bb		
27	FUNCTION4 PFK	40.54	5.253e3					1.2	NO		bb		
28	FUNCTION4 PFK	40.37	1.427e3					0.5	NO		bb		
29	FUNCTION4 PFK	40.30	8.986e3					1.5	NO		bb		



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**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.19	3.337e3					1.2	NO		bb		
2	FUNCTION5 PFK	45.14	2.023e3					0.8	NO		db		
3	FUNCTION5 PFK	45.11	1.312e3					0.8	NO		bd		
4	FUNCTION5 PFK	44.97	7.873e3					1.1	NO		bb		
5	FUNCTION5 PFK	44.65	3.738e5					7.6	YES		db		
6	FUNCTION5 PFK	44.43	1.454e5					20.7	YES		dd		
7	FUNCTION5 PFK	44.11	2.106e6					39.7	YES		dd		
8	FUNCTION5 PFK	43.90	4.264e5					51.8	YES		dd		
9	FUNCTION5 PFK	43.85	2.579e5					54.1	YES		dd		
10	FUNCTION5 PFK	43.82	6.190e5					56.6	YES		dd		
11	FUNCTION5 PFK	43.68	8.920e5					63.4	YES		dd		
12	FUNCTION5 PFK	43.32	3.540e6					84.7	YES		dd		
13	FUNCTION5 PFK	43.20	1.283e6					91.6	YES		dd		
14	FUNCTION5 PFK	43.17	4.455e5					92.4	YES		dd		
15	FUNCTION5 PFK	43.10	1.602e6					96.8	YES		bd		
16	FUNCTION5 PFK	45.88	7.379e3					1.4	NO		bb		
17	FUNCTION5 PFK	45.67	6.835e3					1.7	NO		bb		
18	FUNCTION5 PFK	45.42	5.438e3					1.3	NO		bb		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.41	1.593e2					3.2	YES		bb		0.000
2	FUNCTION1 HXCD...	26.74	8.251e1					2.7	NO		db		0.000
3	FUNCTION1 HXCD...	26.65	1.262e2					4.0	YES		dd		0.000
4	FUNCTION1 HXCD...	26.59	1.059e2					3.1	YES		dd		0.000
5	FUNCTION1 HXCD...	26.51	1.210e2					2.4	NO		bd		0.000
6	FUNCTION1 HXCD...	25.65	1.373e2					2.1	NO		bb		0.000
7	FUNCTION1 HXCD...	24.35	1.068e2					2.7	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	30.43	1.120e2					1.7	NO		bd		0.000
2	FUNCTION2 HPCD...	30.13	8.765e1					2.1	NO		bb		0.000
3	FUNCTION2 HPCD...	29.10	7.123e1					1.3	NO		db		0.000
4	FUNCTION2 HPCD...	29.00	9.658e1					2.0	NO		bd		0.000
5	FUNCTION2 HPCD...	31.31	1.169e2					2.4	NO		db		0.000
6	FUNCTION2 HPCD...	31.23	1.170e2					1.9	NO		bd		0.000
7	FUNCTION2 HPCD...	31.13	7.156e1					2.2	NO		bb		0.000
8	FUNCTION2 HPCD...	31.07	7.093e1					2.4	NO		bb		0.000
9	FUNCTION2 HPCD...	30.82	1.379e2					1.5	NO		bb		0.000
10	FUNCTION2 HPCD...	30.60	8.189e1					1.7	NO		db		0.000
11	FUNCTION2 HPCD...	30.54	7.770e1					1.6	NO		dd		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	35.74	9.981e1					3.0	NO		db		0.000
2	FUNCTION3 OCDPE	35.67	1.442e2					3.4	YES		bd		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.29	7.471e1					3.3	YES		bb		0.000
2	FUNCTION4 NCDPE	37.96	9.056e1					6.7	YES		bb		0.000

**ETHERS6**

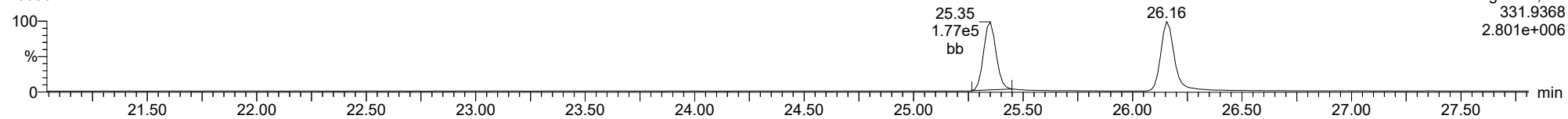
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.09	8.711e1					4.7	YES		bb		0.000

**Method:** T:\Autospec\Methods\Dioxin230501.mdb 02 May 2023 09:11:55  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

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**13C-1234-TCDD**

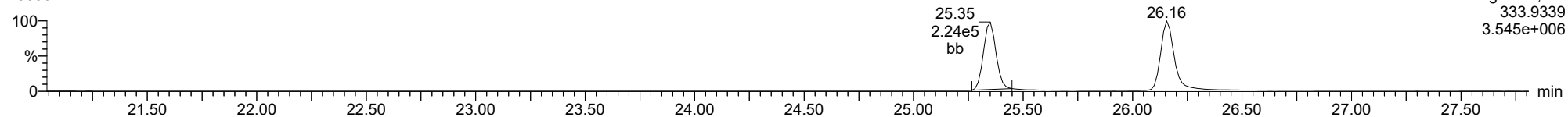
23050122



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2.801e+006

**13C-1234-TCDD**

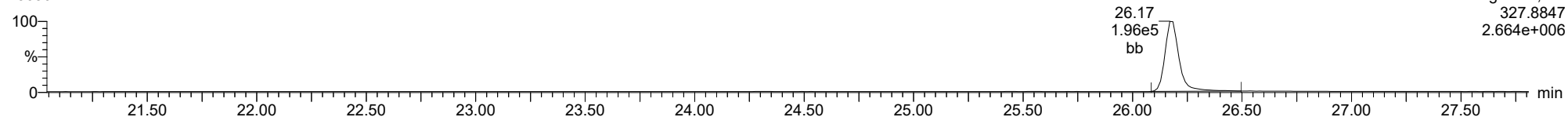
23050122



F1:Voltage SIR,El+  
333.9339  
3.545e+006

**37CL-2378-TCDD**

23050122

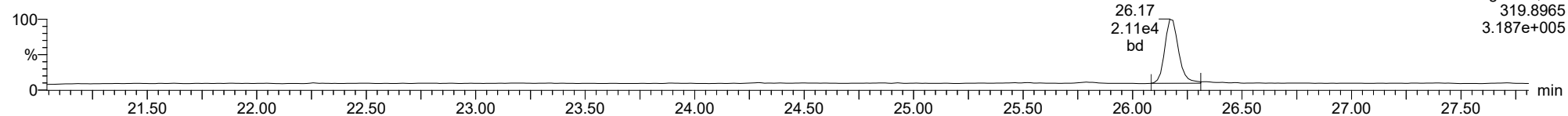


F1:Voltage SIR,El+  
327.8847  
2.664e+006

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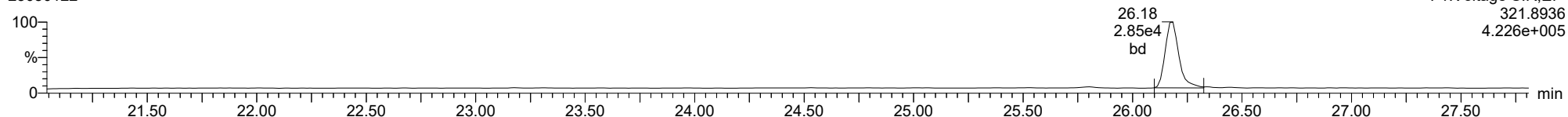
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23050122



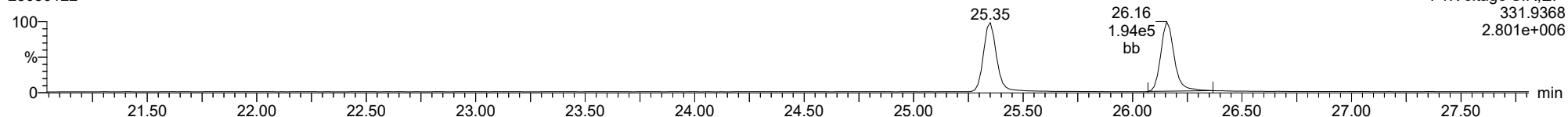
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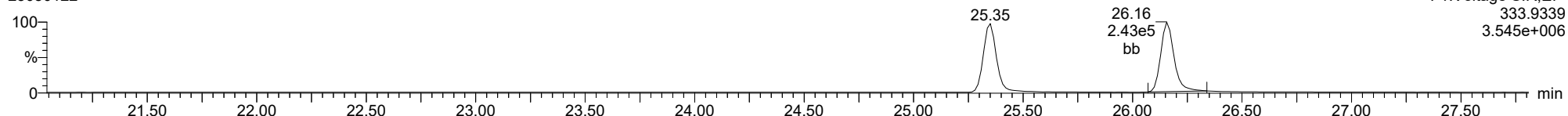
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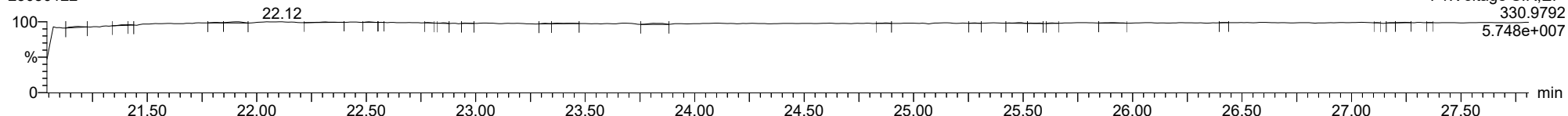
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23050122



**FUNCTION1 PFK**

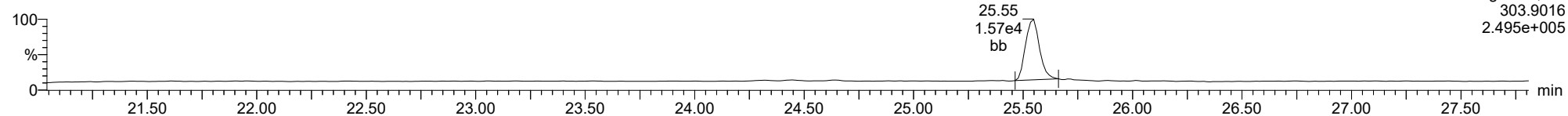
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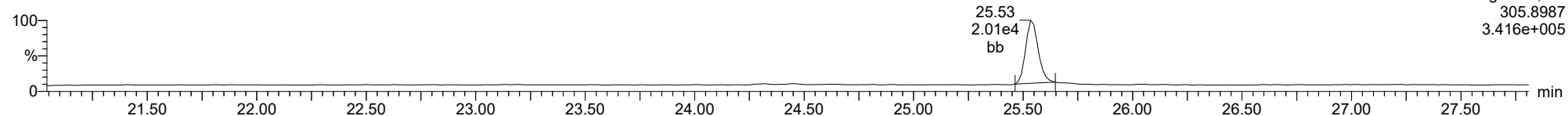
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23050122



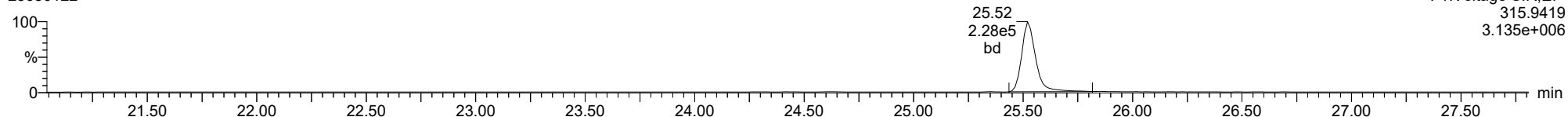
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23050122



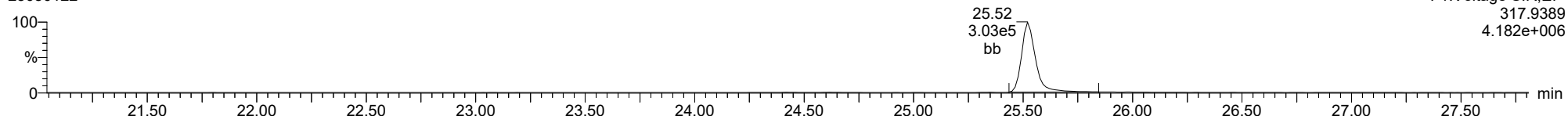
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23050122



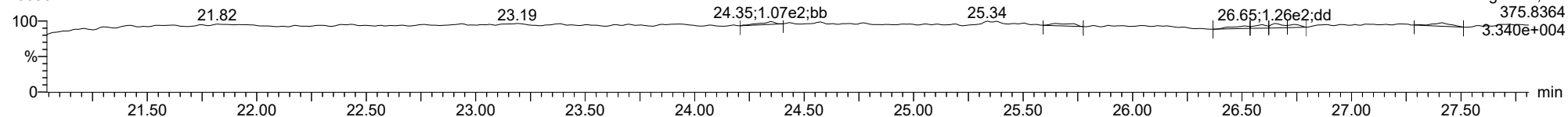
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23050122



**FUNCTION1 HXCDPE**

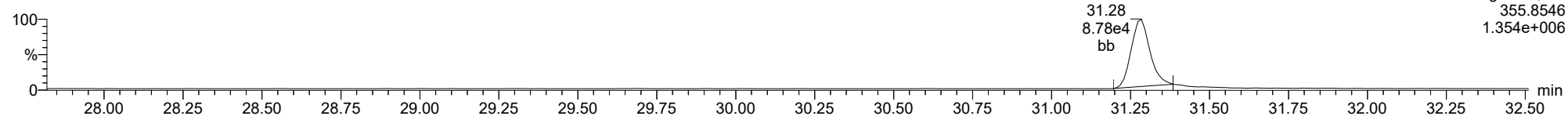
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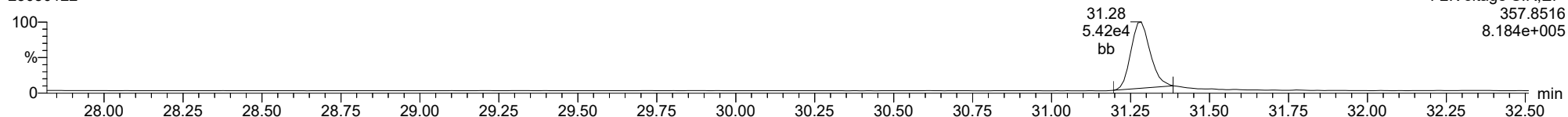
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23050122



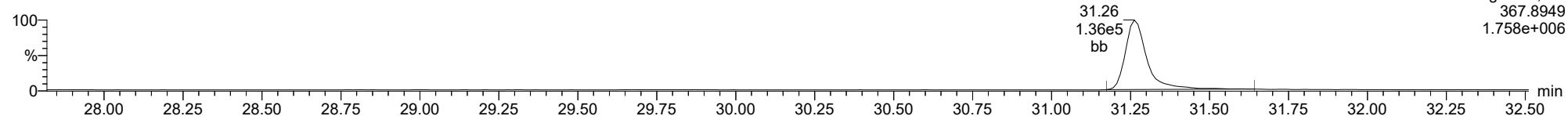
**12378-PeCDD**

23050122



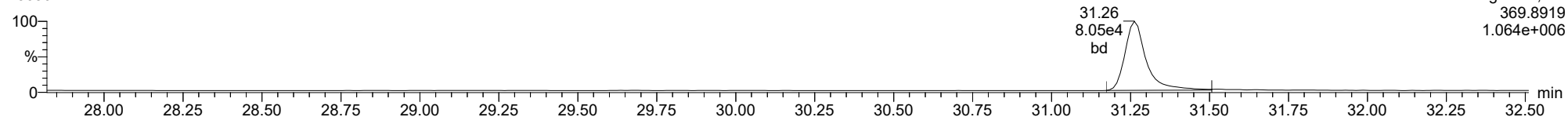
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23050122



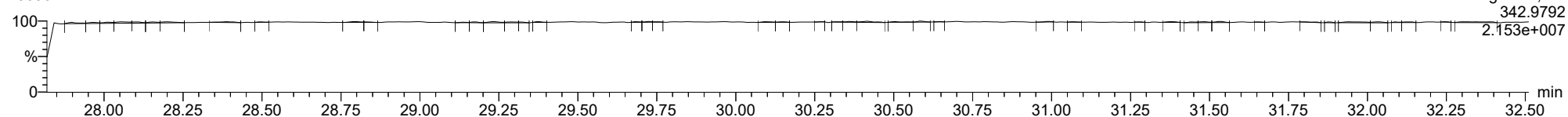
**13C-12378-PeCDD**

23050122



**FUNCTION2 PFK**

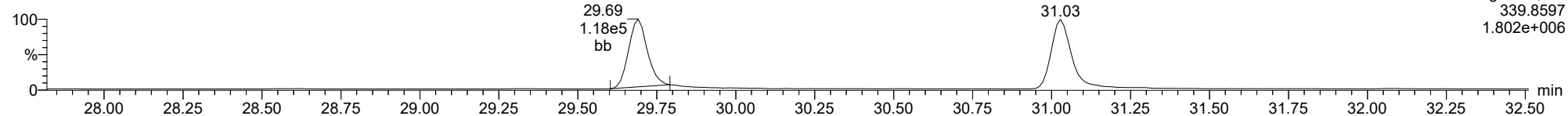
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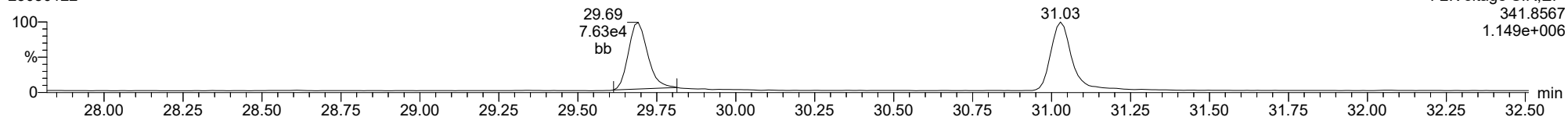
**12378-PeCDF**

23050122



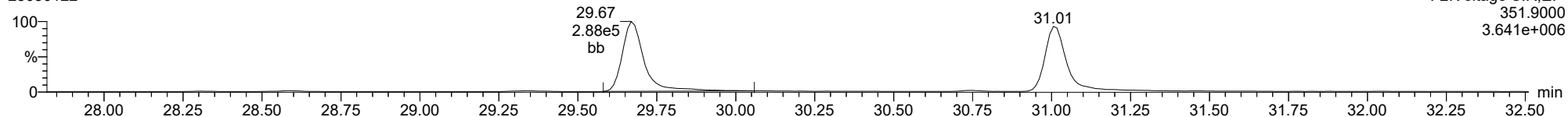
**12378-PeCDF**

23050122



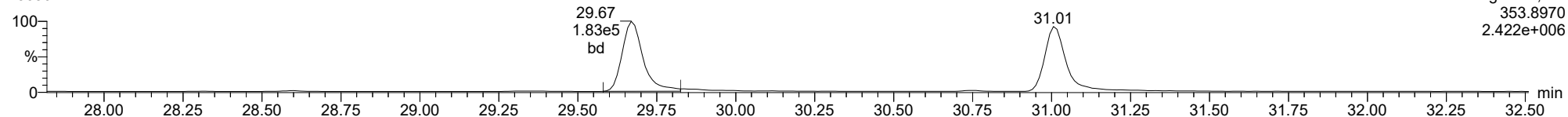
**13C-12378-PeCDF**

23050122



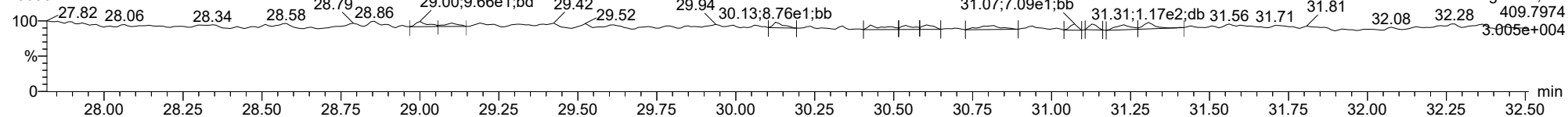
**13C-12378-PeCDF**

23050122



**FUNCTION2 HPCDPE**

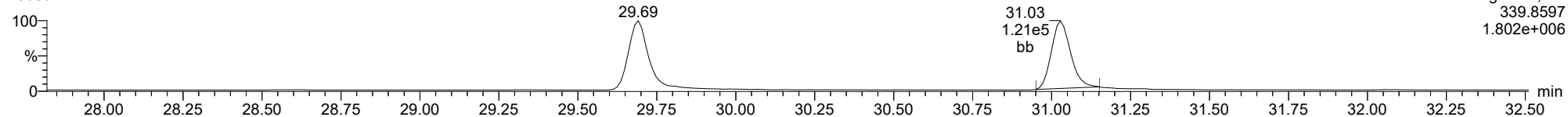
23050122



ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

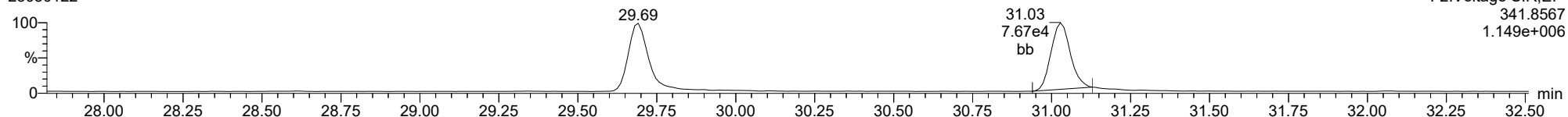
**23478-PeCDF**

23050122



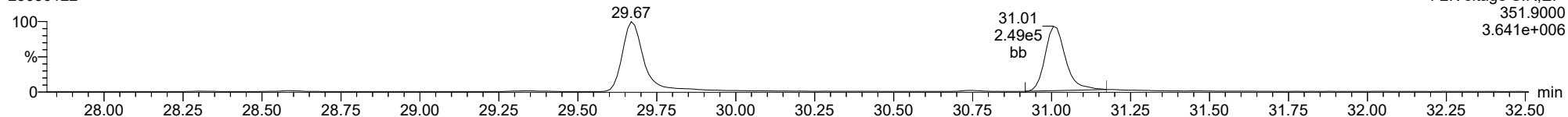
**23478-PeCDF**

23050122



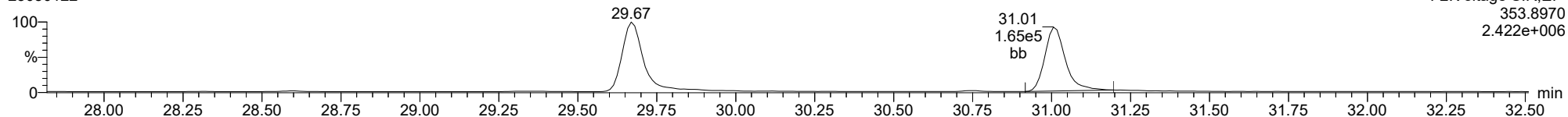
**13C-23478-PeCDF**

23050122



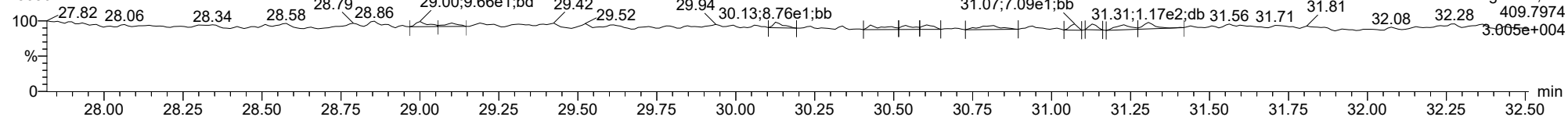
**13C-23478-PeCDF**

23050122



**FUNCTION2 HPCDPE**

23050122

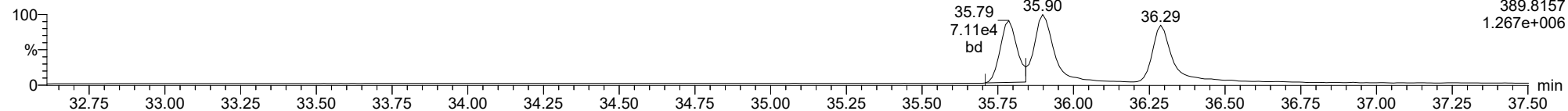




ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

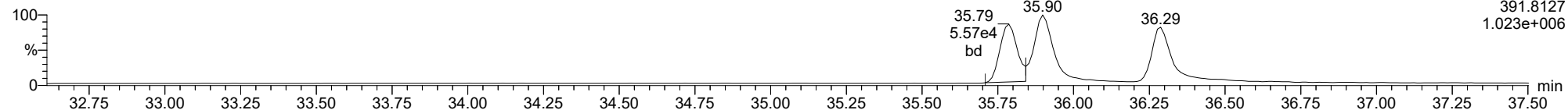
**123478-HxCDD**

23050122



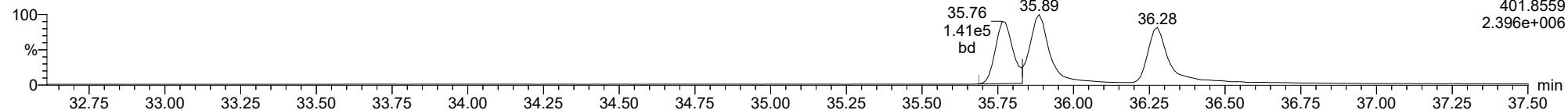
**123478-HxCDD**

23050122



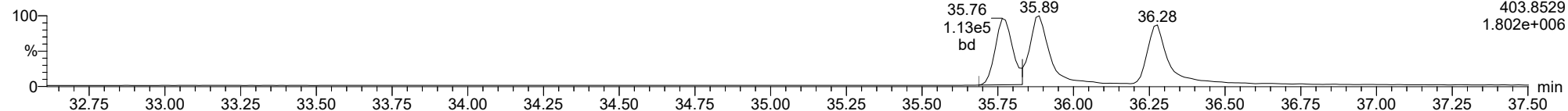
**13C-123478-HxCDD**

23050122



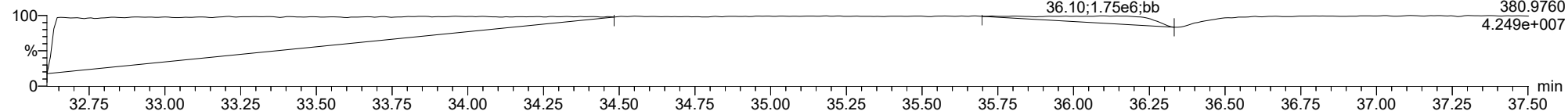
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23050122



**FUNCTION3 PFK**

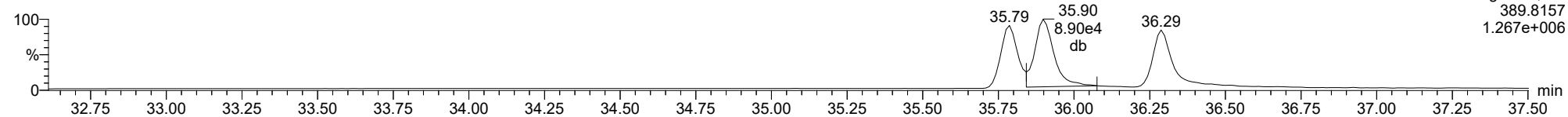
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ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

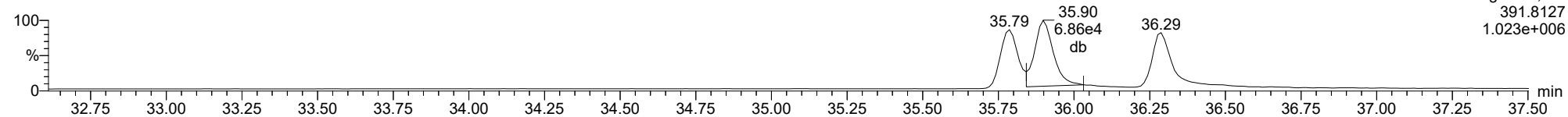
**123678-HxCDD**

23050122



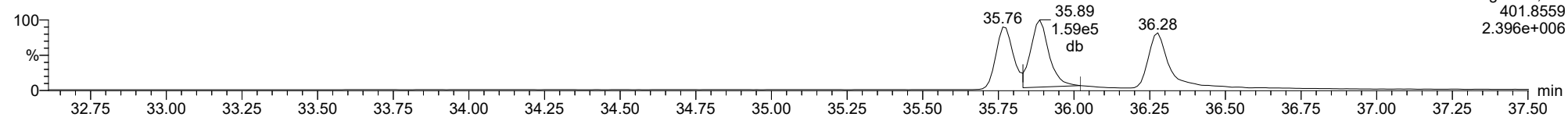
**123678-HxCDD**

23050122



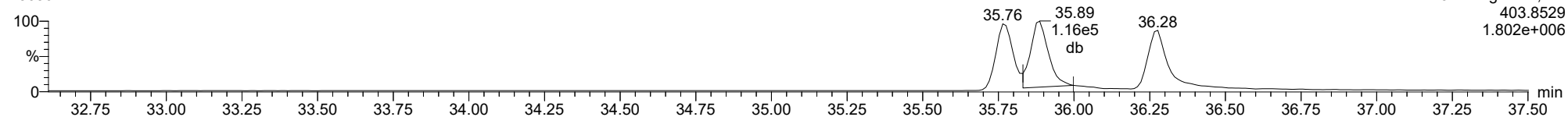
**13C-123678-HxCDD**

23050122



**13C-123678-HxCDD**

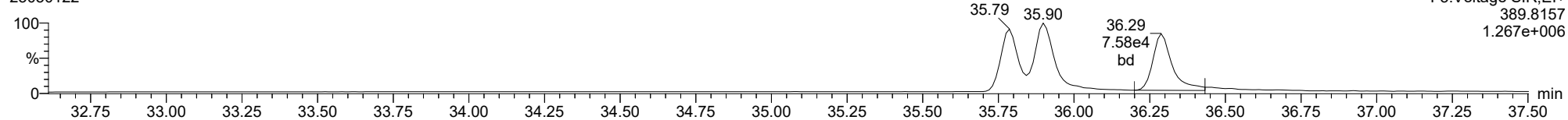
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ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

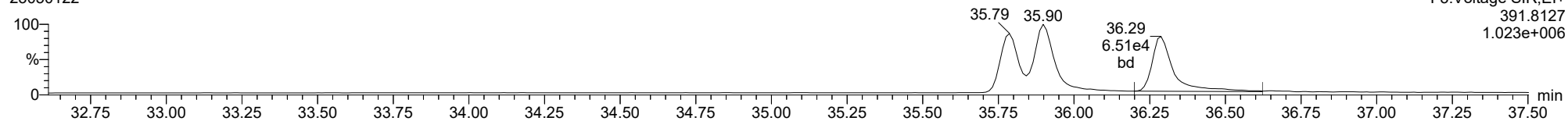
**123789-HxCDD**

23050122



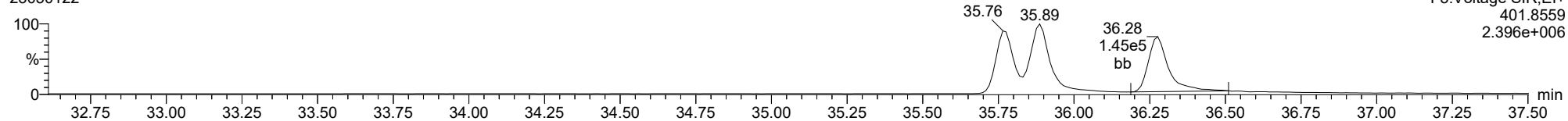
**123789-HxCDD**

23050122



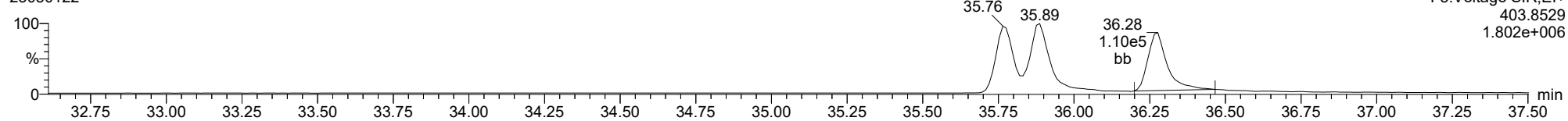
**13C-123789-HxCDD**

23050122



**13C-123789-HxCDD**

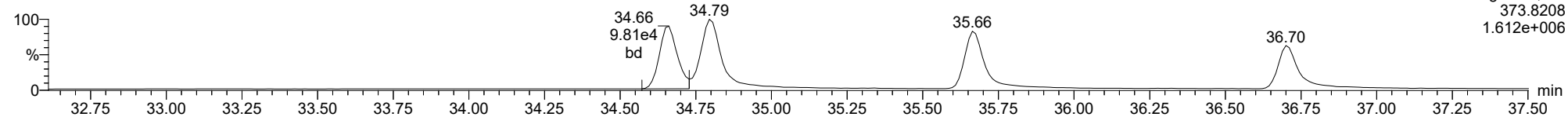
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ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

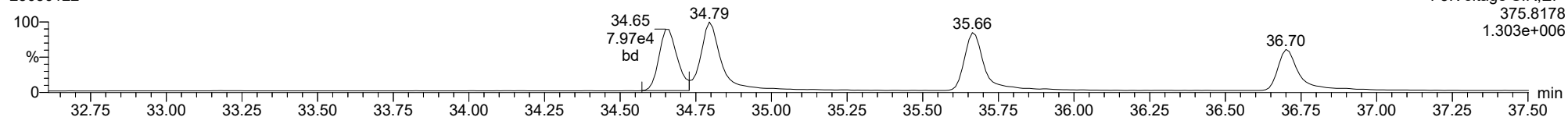
**123478-HxCDF**

23050122



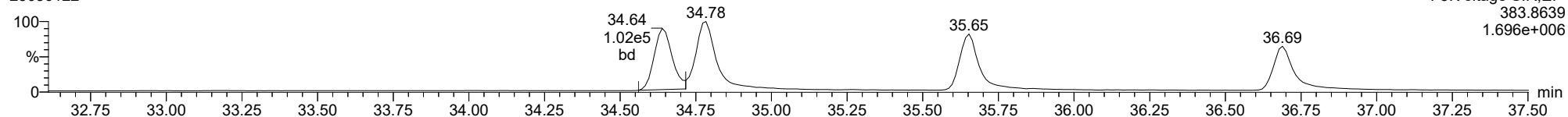
**123478-HxCDF**

23050122



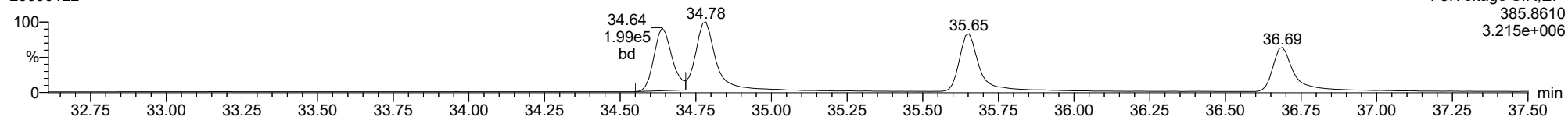
**13C-123478-HxCDF**

23050122



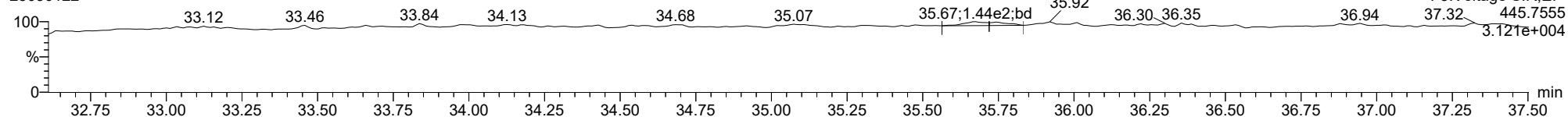
**13C-123478-HxCDF**

23050122



**FUNCTION3 OCDPE**

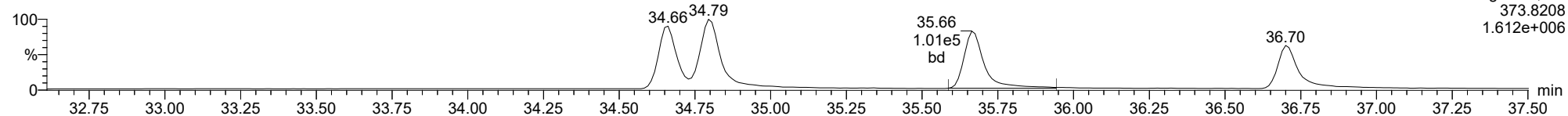
23050122



ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

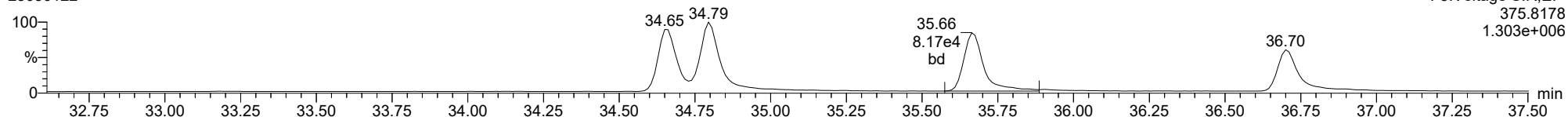
**234678-HxCDF**

23050122



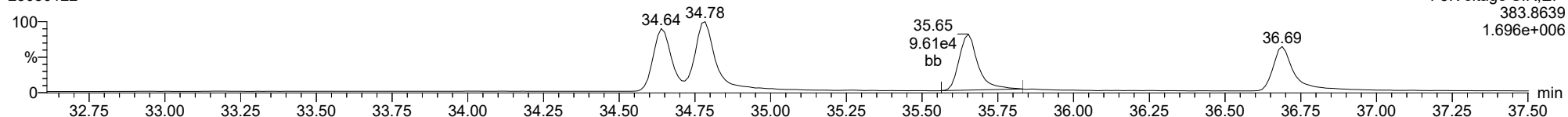
**234678-HxCDF**

23050122



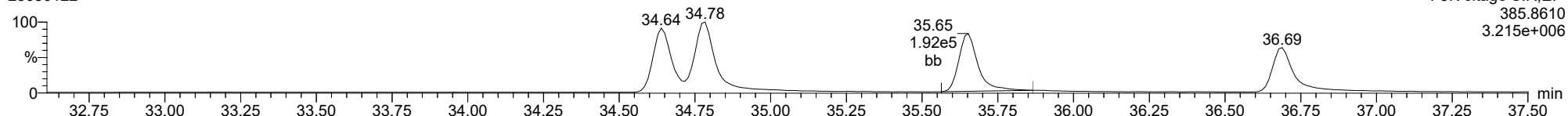
**13C-234678-HxCDF**

23050122



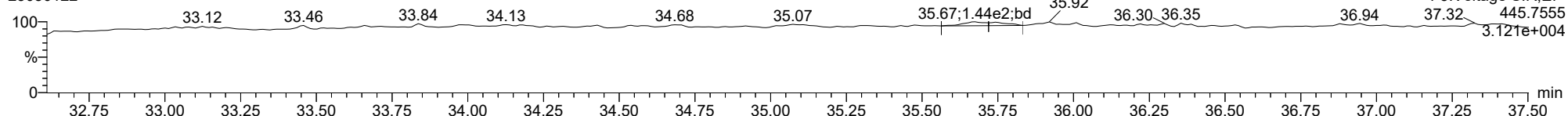
**13C-234678-HxCDF**

23050122



**FUNCTION3 OCDPE**

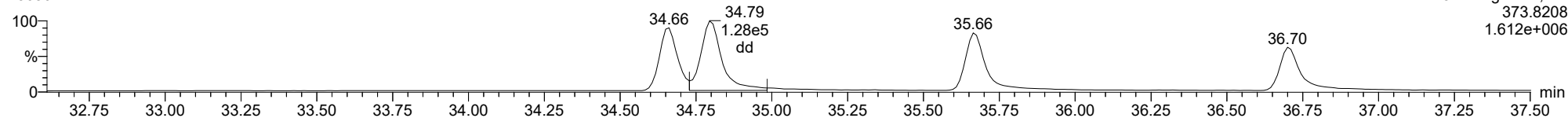
23050122



ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

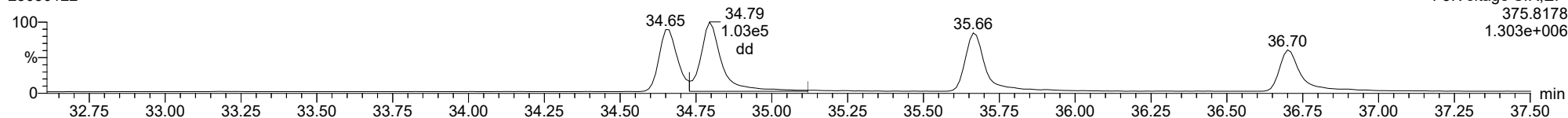
**123678-HxCDF**

23050122



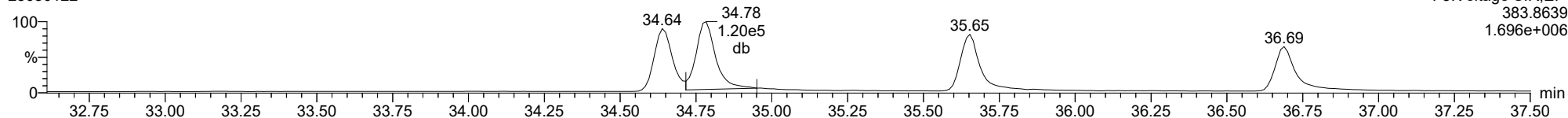
**123678-HxCDF**

23050122



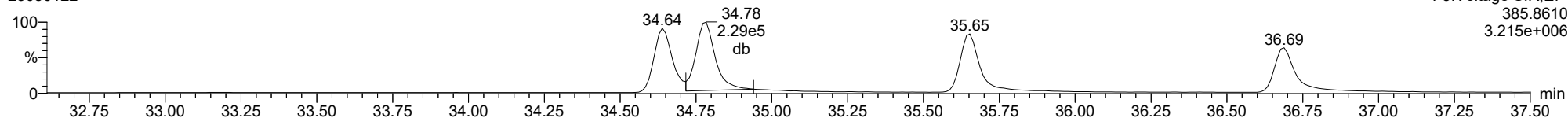
**13C-123678-HxCDF**

23050122



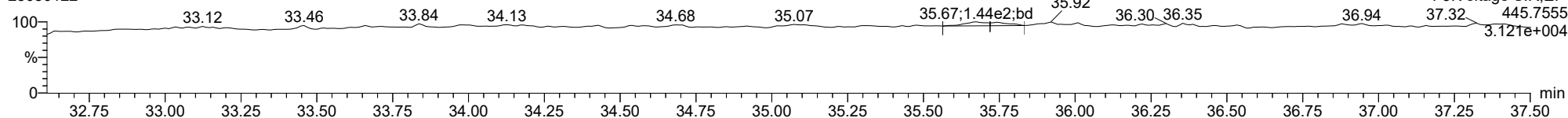
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23050122



**FUNCTION3 OCDPE**

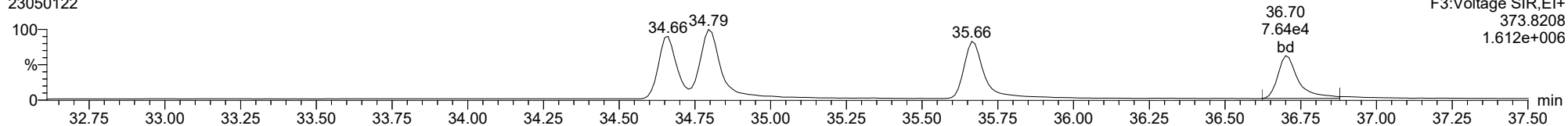
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ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

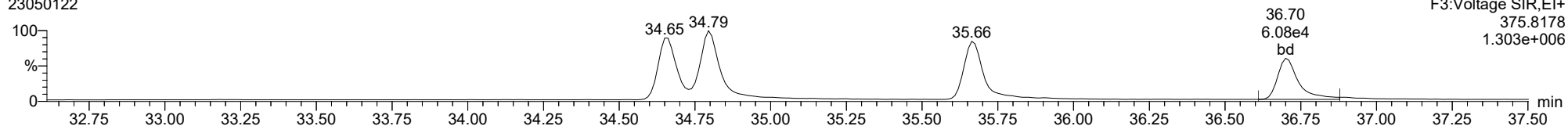
**123789-HxCDF**

23050122



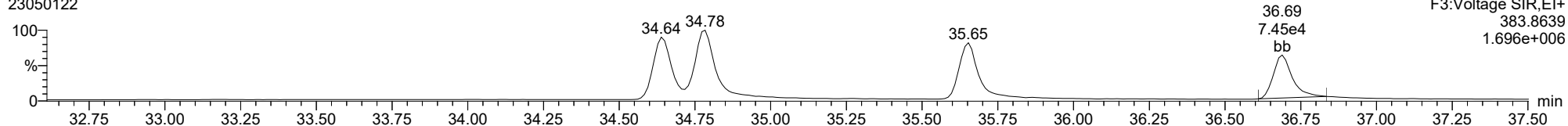
**123789-HxCDF**

23050122



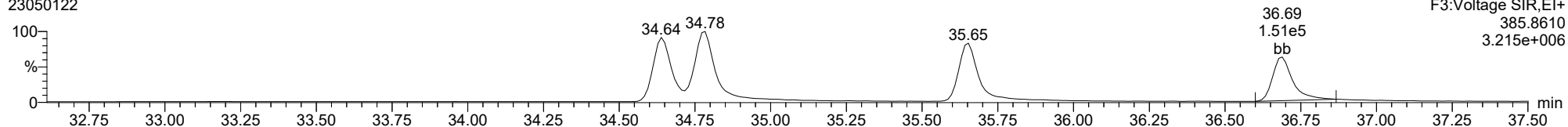
**13C-123789-HxCDF**

23050122



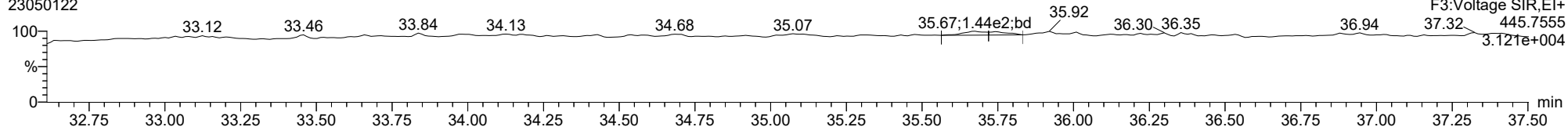
**13C-123789-HxCDF**

23050122



**FUNCTION3 OCDPE**

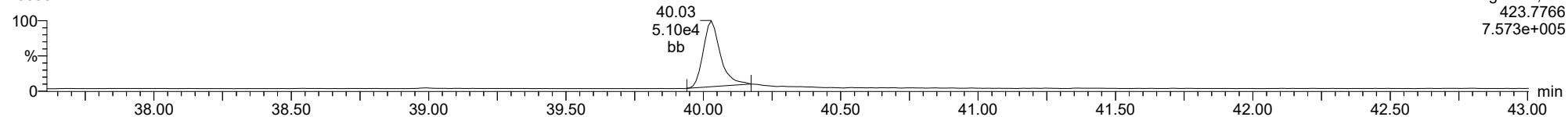
23050122



ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDD**

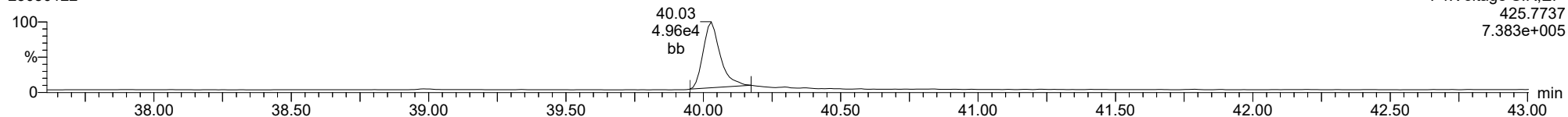
23050122



F4:Voltage SIR,EI+  
423.7766  
7.573e+005

**1234678-HpCDD**

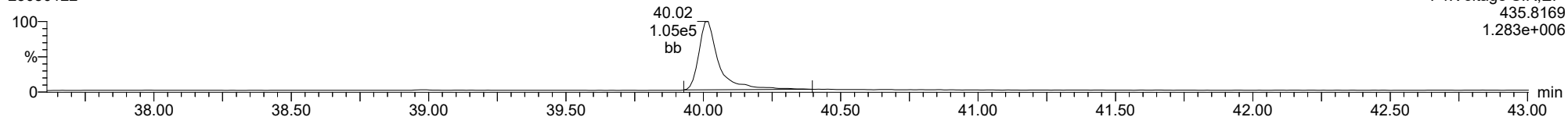
23050122



F4:Voltage SIR,EI+  
425.7737  
7.383e+005

**13C-1234678-HpCDD**

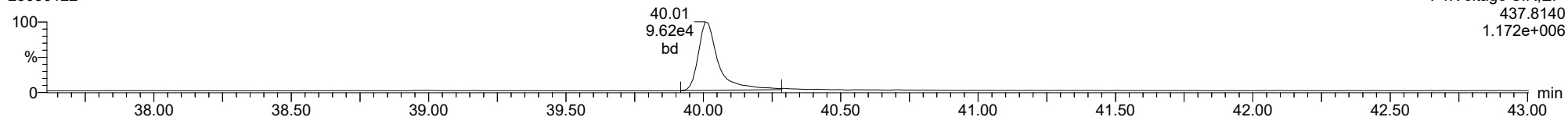
23050122



F4:Voltage SIR,EI+  
435.8169  
1.283e+006

**13C-1234678-HpCDD**

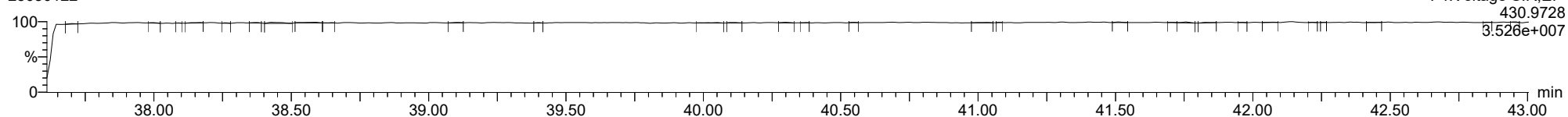
23050122



F4:Voltage SIR,EI+  
437.8140  
1.172e+006

**FUNCTION4 PFK**

23050122



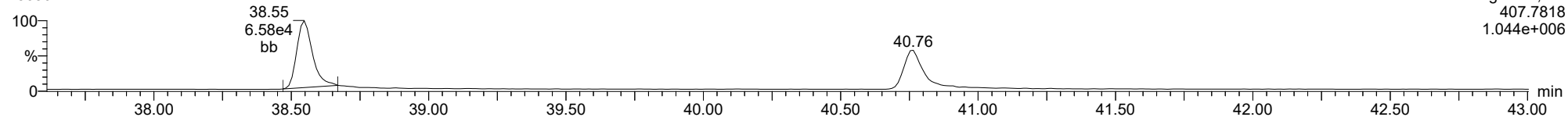
F4:Voltage SIR,EI+  
430.9728  
3.526e+007



ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDF**

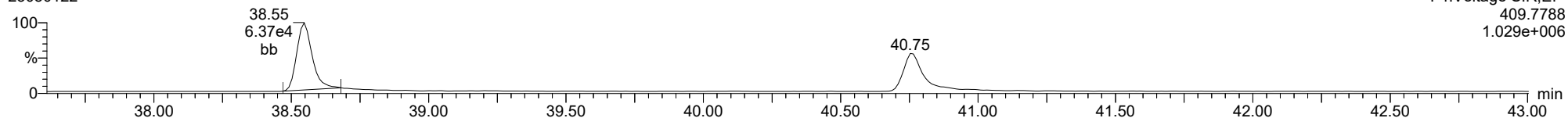
23050122



F4:Voltage SIR,EI+  
407.7818  
1.044e+006

**1234678-HpCDF**

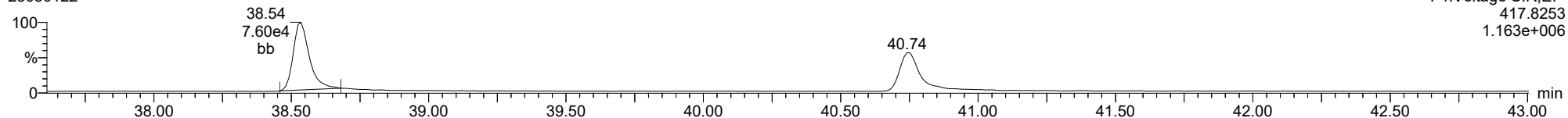
23050122



F4:Voltage SIR,EI+  
409.7788  
1.029e+006

**13C-1234678-HpCDF**

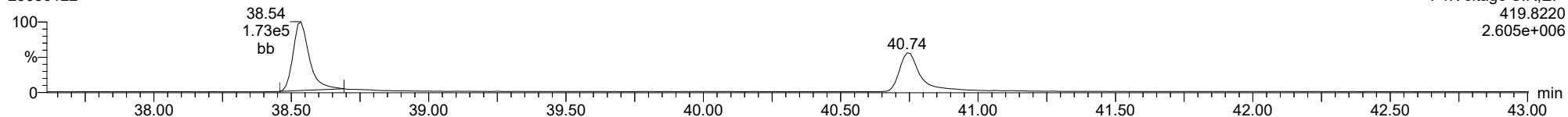
23050122



F4:Voltage SIR,EI+  
417.8253  
1.163e+006

**13C-1234678-HpCDF**

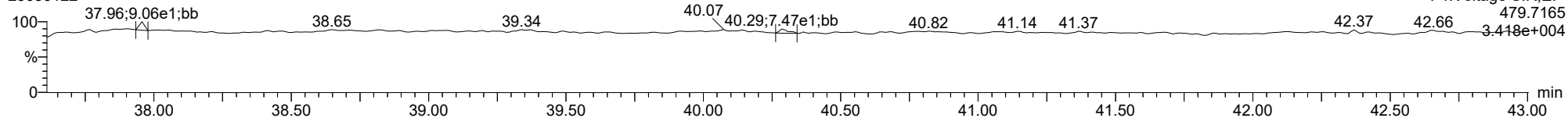
23050122



F4:Voltage SIR,EI+  
419.8220  
2.605e+006

**FUNCTION4 NCDPE**

23050122

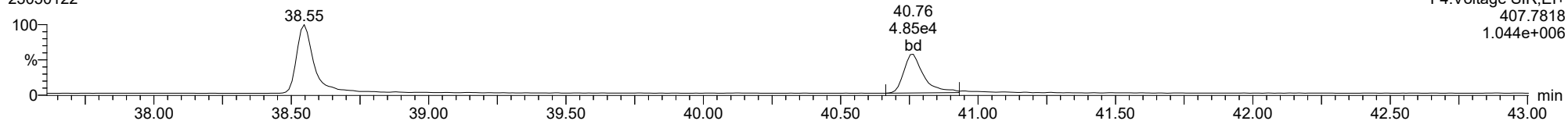


F4:Voltage SIR,EI+  
479.7165  
3.418e+004

ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

**1234789-HpCDF**

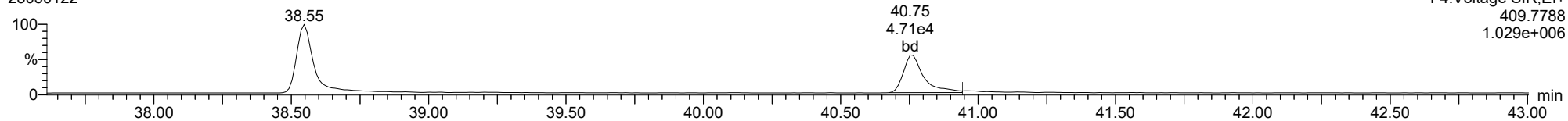
23050122



F4:Voltage SIR,El+  
407.7818  
1.044e+006

**1234789-HpCDF**

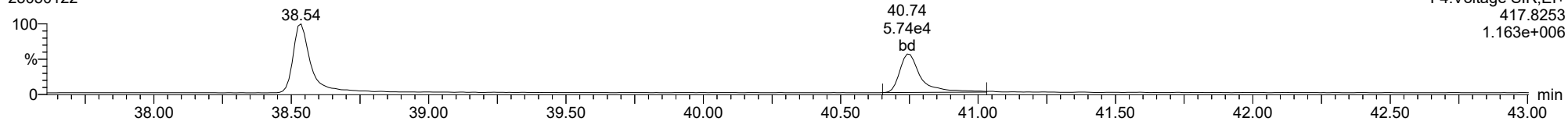
23050122



F4:Voltage SIR,El+  
409.7788  
1.029e+006

**13C-1234789-HpCDF**

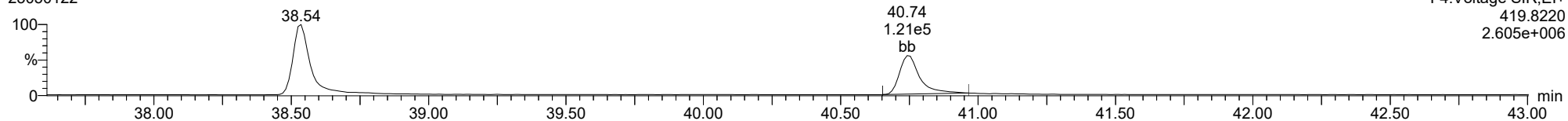
23050122



F4:Voltage SIR,El+  
417.8253  
1.163e+006

**13C-1234789-HpCDF**

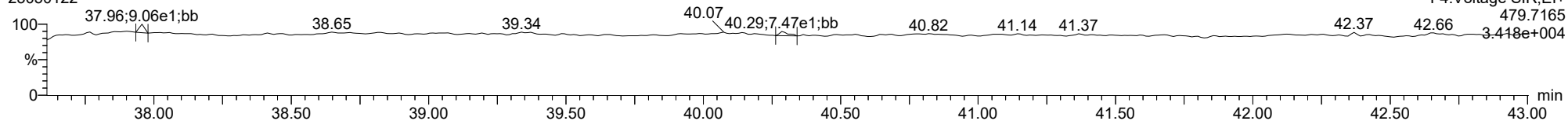
23050122



F4:Voltage SIR,El+  
419.8220  
2.605e+006

**FUNCTION4 NCDPE**

23050122

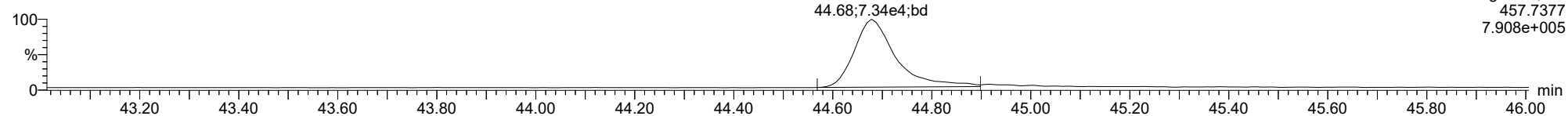


F4:Voltage SIR,El+  
479.7165  
3.41e+004

ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

**OCDD**

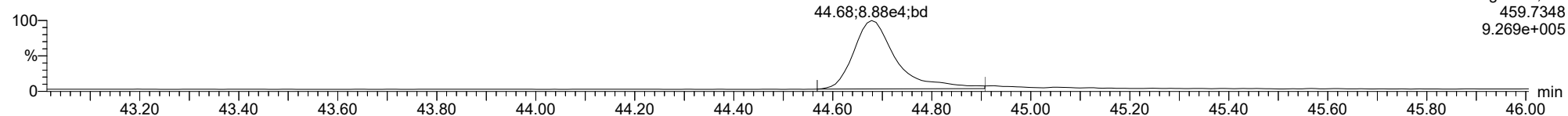
23050122



F5:Voltage SIR,EI+  
457.7377  
7.908e+005

**OCDD**

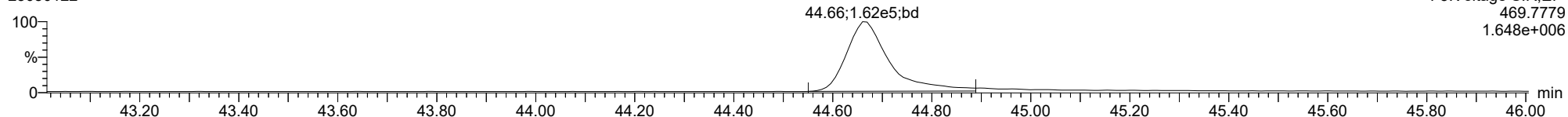
23050122



F5:Voltage SIR,EI+  
459.7348  
9.269e+005

**13C-OCDD**

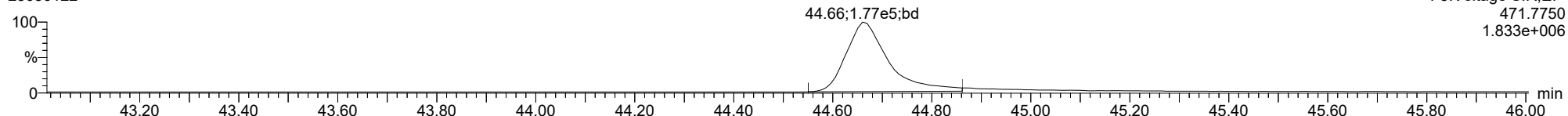
23050122



F5:Voltage SIR,EI+  
469.7779  
1.648e+006

**13C-OCDD**

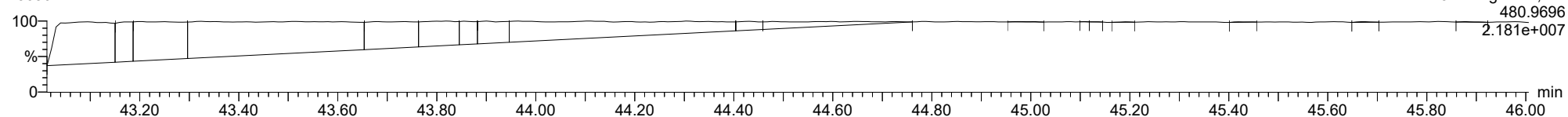
23050122



F5:Voltage SIR,EI+  
471.7750  
1.833e+006

**FUNCTION5 PFK**

23050122

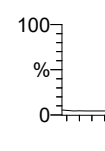


F5:Voltage SIR,EI+  
480.9696  
2.181e+007

ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

**OCDF**

23050122

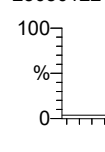


44.92;5.53e4;bb

F5:Voltage SIR,EI+  
441.7428  
6.594e+005

**OCDF**

23050122

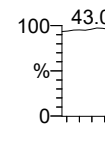


44.92;6.10e4;bb

F5:Voltage SIR,EI+  
443.7399  
7.699e+005

**FUNCTION5 DCDPE**

23050122



43.07

43.32

43.86

44.09;8.71e1;bb

44.48

44.84

44.98

45.16

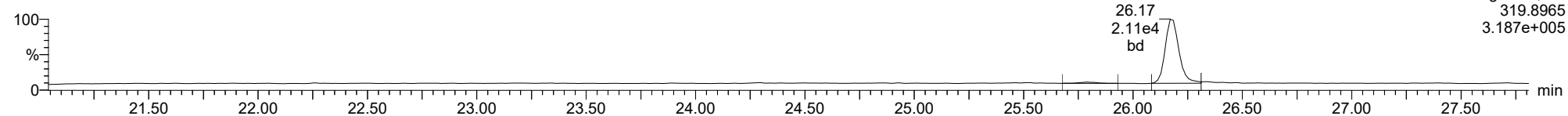
45.62

F5:Voltage SIR,EI+  
513.6775  
3.008e+004

ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

**Total-tetradioxins**

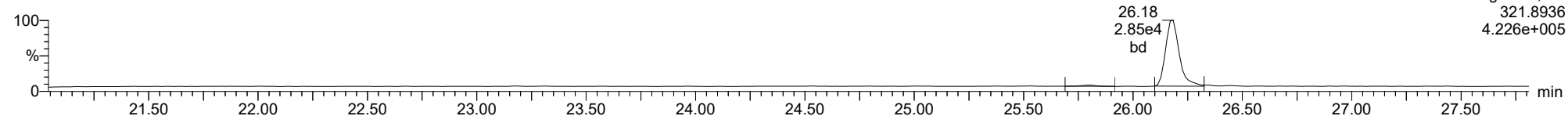
23050122



F1:Voltage SIR,EI+  
319.8965  
3.187e+005

**Total-tetradioxins**

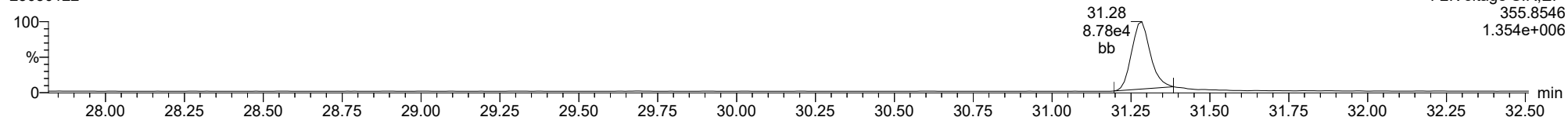
23050122



F1:Voltage SIR,EI+  
321.8936  
4.226e+005

**Total-pentadioxins**

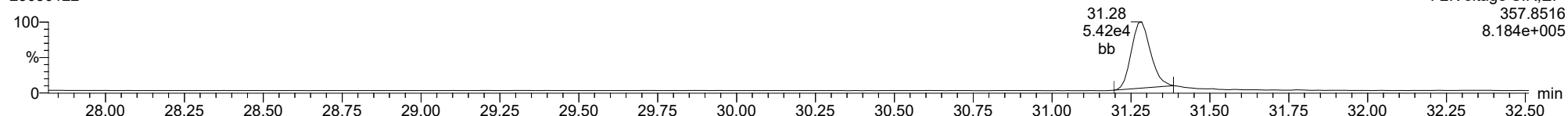
23050122



F2:Voltage SIR,EI+  
355.8546  
1.354e+006

**Total-pentadioxins**

23050122

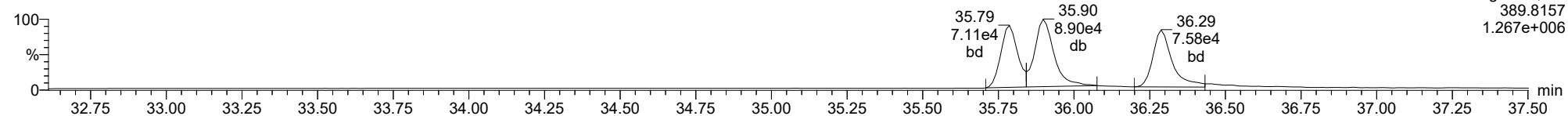


F2:Voltage SIR,EI+  
357.8516  
8.184e+005

ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

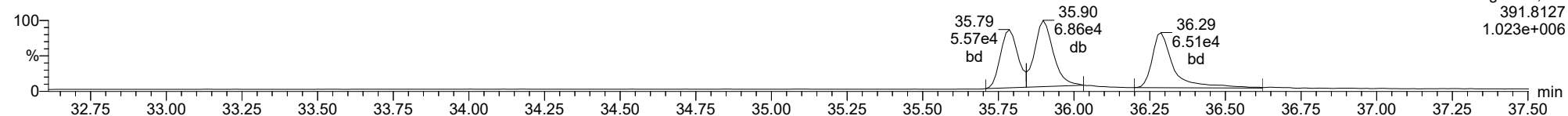
**Total-hexadioxins**

23050122



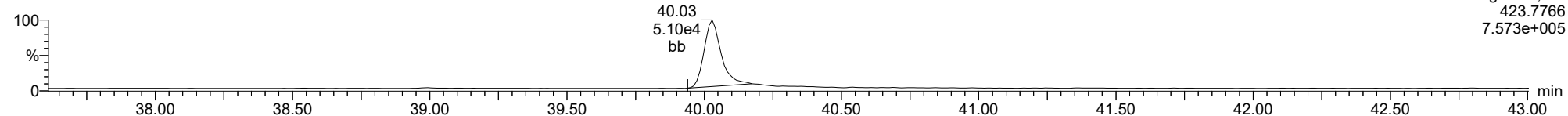
**Total-hexadioxins**

23050122



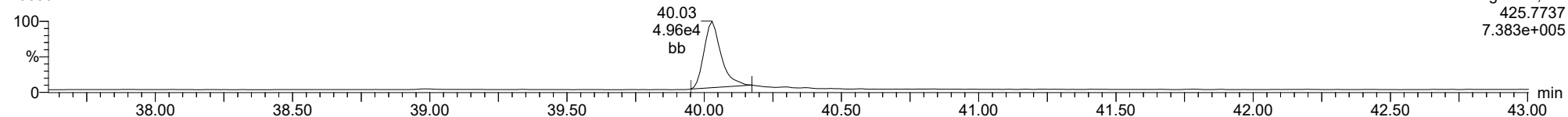
**Total-heptadioxins**

23050122



**Total-heptadioxins**

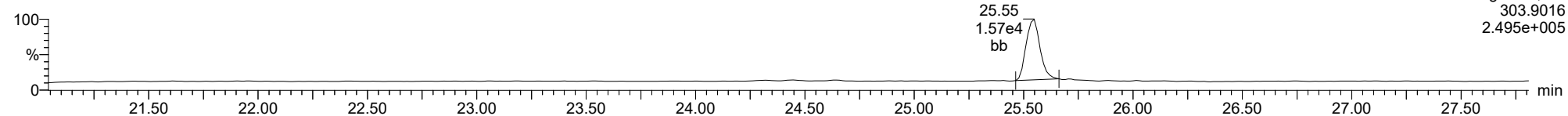
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ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

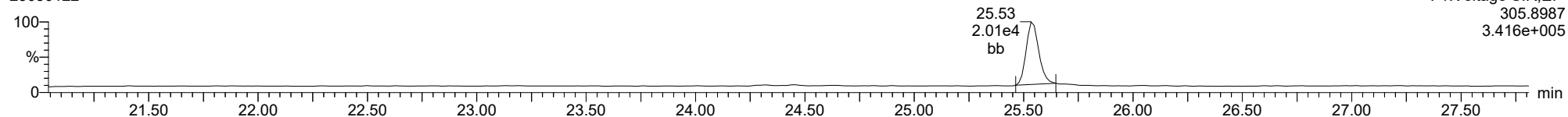
**Total-tetrafurans**

23050122



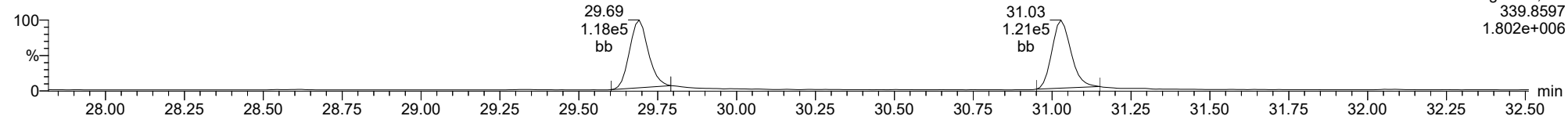
**Total-tetrafurans**

23050122



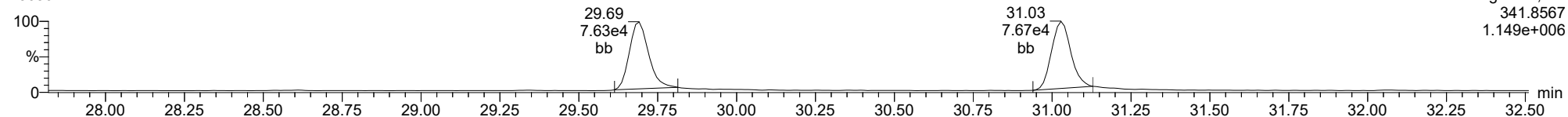
**Total-pentafurans**

23050122



**Total-pentafurans**

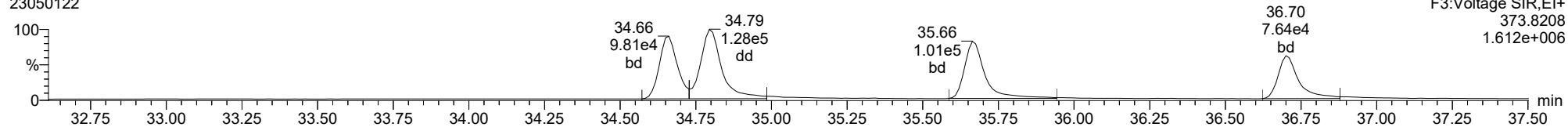
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ID: DLCS25, Name: 23050122, Date: 02-May-2023, Time: 03:42:31, Conditions: AUTOSPEC01, User: pk

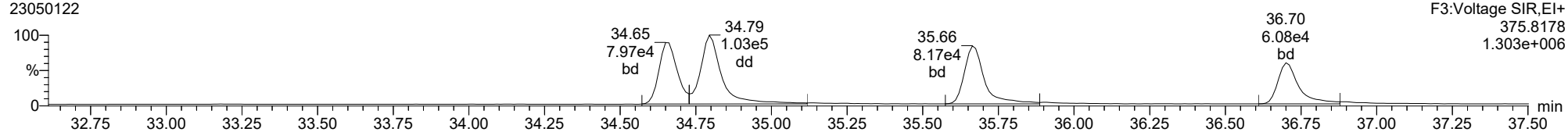
**Total-hexafurans**

23050122



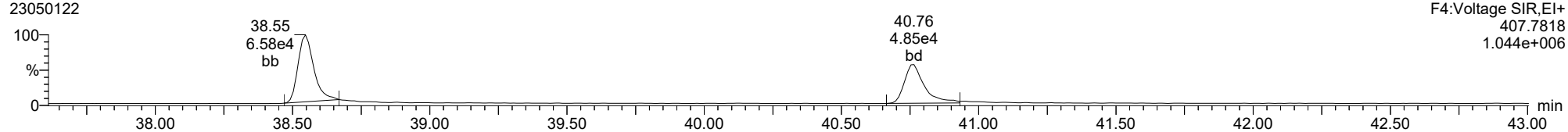
**Total-hexafurans**

23050122



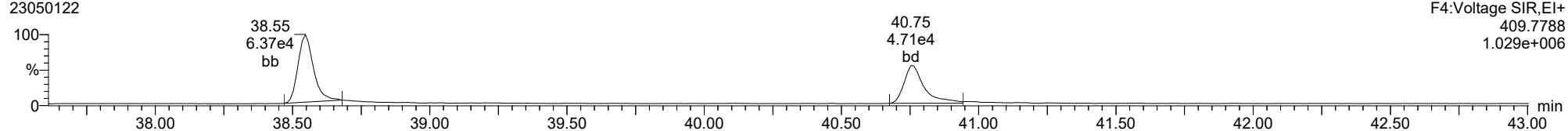
**Total-heptafurans**

23050122



**Total-heptafurans**

23050122







**DUPLICATES**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Laboratory ID: BLD0657-DUP1

Batch: BLD0657

Lab Source ID: 23D0063-01

Preparation: EPA 1613

Initial/Final: 24.74 g / 20 uL

Source Sample Name: LDW23-SS1818

% Solids: 40.43

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
2,3,7,8-TCDF	25	1.20	1.87	43.5	
2,3,7,8-TCDD	25	0.512	0.522	1.96	
1,2,3,7,8-PeCDF	25	1.07	1.33	21.1	
2,3,4,7,8-PeCDF	25	1.87	2.25	18.1	
1,2,3,7,8-PeCDD	25	1.58	2.09	27.8	
1,2,3,4,7,8-HxCDF	25	5.78	7.68	28.2	
1,2,3,6,7,8-HxCDF	25	2.08	2.27	8.42	
2,3,4,6,7,8-HxCDF	25	2.73	2.64	3.33	
1,2,3,7,8,9-HxCDF	25	1.28	1.42	10.0	
1,2,3,4,7,8-HxCDD	25	1.85	2.34	23.1	
1,2,3,6,7,8-HxCDD	25	6.73	9.13	30.2	
1,2,3,7,8,9-HxCDD	25	4.68	5.28	12.1	
1,2,3,4,6,7,8-HpCDF	25	45.7	71.1	43.5	
1,2,3,4,7,8,9-HpCDF	25	4.15	7.11	52.6	
1,2,3,4,6,7,8-HpCDD	25	221	315	35.1	
OCDF	25	153	308	67.0	*
OCDD	25	1930	2870	39.3	*
Total TCDF	200	22.6	27.4	19.1	
Total TCDD	200	5.26	3.26	46.9	
Total PeCDF	200	23.5	34.5	38.0	
Total PeCDD	200	6.09	9.32	42.0	
Total HxCDF	200	66.7	86.5	25.9	
Total HxCDD	200	68.1	86.8	24.1	
Total HpCDF	200	165	291	55.2	
Total HpCDD	200	581	823	34.6	
13C12-2,3,7,8-TCDF		179	206		
13C12-2,3,7,8-TCDD		196	222		

\* Values outside of QC limits

L Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD



**DUPLICATES**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Laboratory ID: BLD0657-DUP1

Batch: BLD0657

Lab Source ID: 23D0063-01

Preparation: EPA 1613

Initial/Final: 24.74 g / 20 uL

Source Sample Name: LDW23-SS1818

% Solids: 40.43

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
13C12-1,2,3,7,8-PeCDF		179	245		
13C12-2,3,4,7,8-PeCDF		192	257		
13C12-1,2,3,7,8-PeCDD		207	237		
13C12-1,2,3,4,7,8-HxCDF		158	180		
13C12-1,2,3,6,7,8-HxCDF		159	163		
13C12-2,3,4,6,7,8-HxCDF		163	177		
13C12-1,2,3,7,8,9-HxCDF		189	126		
13C12-1,2,3,4,7,8-HxCDD		180	192		
13C12-1,2,3,6,7,8-HxCDD		181	177		
13C12-1,2,3,4,6,7,8-HpCDF		172	203		
13C12-1,2,3,4,7,8,9-HpCDF		174	211		
13C12-1,2,3,4,6,7,8-HpCDD		184	193		
13C12-OCDD		400	439		
37Cl4-2,3,7,8-TCDD		75.2	83.6		

\*: Values outside of QC limits

L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/-RL instead of 20% RPD

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:14 Pacific Daylight Time

**Method: T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56**  
**Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27**

**ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk**

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.718	1.001	2.920e3	3.612e3	0.702	0.809	0.770	1332	1034	4.05e4	5.26e4	30.4	50.9	NO	dd	dd	0.936
12378-PeCDF	29.878	1.001	2.381e3	1.701e3	0.679	1.400	1.550	1520	1747	3.82e4	2.16e4	25.1	12.3	NO	bb	bb	0.664
23478-PeCDF	31.215	1.001	4.575e3	2.970e3	0.786	1.540	1.550	1520	1747	7.64e4	4.65e4	50.3	26.6	NO	bb	db	1.124
123478-HxCDF	34.869	1.001	1.780e4	1.403e4	1.166	1.269	1.240	1485	1019	2.58e5	2.07e5	174.0	203.2	NO	dd	dd	3.839
234678-HxCDF	35.871	0.999	7.103e3	3.113e3	1.140	2.282	1.240	1485	1019	6.36e4	4.94e4	42.8	48.5	YES	bb	MM	1.321
123678-HxCDF	35.003	1.000	4.969e3	4.516e3	1.091	1.100	1.240	1485	1019	6.78e4	6.59e4	45.6	64.7	NO	db	db	1.134
123789-HxCDF	36.863	1.000	1.838e3	1.377e3	1.137	1.335	1.240	1485	1019	4.21e4	3.37e4	28.4	33.1	NO	bb	bb	0.709
1234678-HpCDF	38.713	1.000	1.116e5	1.074e5	1.003	1.039	1.050	2065	1793	1.82e6	1.78e6	879.2	991.6	NO	bb	bb	35.539
1234789-HpCDF	40.952	1.000	9.551e3	9.134e3	0.953	1.046	1.050	2065	1793	1.38e5	1.40e5	66.8	77.9	NO	bb	bb	3.556
OCDF	45.152	1.005	3.262e5	3.564e5	0.778	0.915	0.890	1259	1701	4.04e6	4.50e6	3212.6	2646.3	NO	bb	bb	153.804
2378-TCDD	26.367	1.000	8.386e2	1.447e3	1.149	0.580	0.770	919	1366	1.20e4	2.01e4	13.1	14.7	YES	bd	bd	0.261
12378-PeCDD	31.471	1.001	3.901e3	2.347e3	1.022	1.662	1.550	2231	1751	4.91e4	3.33e4	22.0	19.0	NO	bb	bb	1.043
123478-HxCDD	36.028	1.000	3.976e3	3.558e3	0.996	1.118	1.240	1694	1711	5.88e4	5.81e4	34.7	34.0	NO	bd	bd	1.170
123678-HxCDD	36.150	1.001	1.701e4	1.474e4	1.001	1.154	1.240	1694	1711	2.54e5	2.18e5	149.9	127.6	NO	dd	dd	4.567
123789-HxCDD	36.540	1.011	8.998e3	7.080e3	0.907	1.271	1.240	1694	1711	1.33e5	1.10e5	78.4	64.6	NO	bb	bb	2.643
1234678-HpCDD	40.205	1.000	4.601e5	4.417e5	1.039	1.042	1.050	4090	3739	7.13e6	6.88e6	1743.5	1841.2	NO	bb	bb	157.650
OCDD	44.915	1.000	3.535e6	4.012e6	0.920	0.881	0.890	2999	2888	4.59e7	5.22e7	15293.7	18070.8	NO	bb	bb	1437.840
13C-2378-TCDF	25.704	1.007	4.346e5	5.600e5	1.620	0.776	0.770	1552	1378	6.57e6	8.50e6	4231.2	6170.6	NO	bb	bb	103.129
13C-12378-PeCDF	29.855	1.169	5.480e5	3.567e5	1.240	1.537	1.550	2759	1929	8.34e6	5.47e6	3021.8	2834.8	NO	bb	bb	122.519
13C-23478-PeCDF	31.192	1.222	5.167e5	3.374e5	1.118	1.531	1.550	2759	1929	7.88e6	5.20e6	2854.7	2696.5	NO	bb	bb	128.356
13C-123478-HxCDF	34.847	0.954	2.394e5	4.716e5	1.168	0.508	0.510	1413	2607	3.60e6	7.05e6	2544.7	2704.1	NO	bd	bd	89.805
13C-123678-HxCDF	34.992	0.958	2.599e5	5.071e5	1.386	0.512	0.510	1413	2607	3.63e6	7.09e6	2568.5	2718.8	NO	dd	dd	81.625
13C-234678-HxCDF	35.894	0.983	2.296e5	4.487e5	1.129	0.512	0.510	1413	2607	3.36e6	6.48e6	2376.5	2485.1	NO	bb	bb	88.632
13C-123789-HxCDF	36.874	1.010	1.335e5	2.650e5	0.932	0.504	0.510	1413	2607	3.60e6	7.22e6	2545.3	2769.2	NO	bb	bb	63.120
13C-1234678-HpCDF	38.701	1.060	1.913e5	4.231e5	0.895	0.452	0.440	2618	2205	3.22e6	7.13e6	1229.8	3231.3	NO	bb	bb	101.279
13C-1234789-HpCDF	40.930	1.121	1.697e5	3.816e5	0.770	0.445	0.440	2618	2205	2.45e6	5.48e6	936.2	2483.7	NO	bb	bb	105.686
13C-1234-TCDD	25.534	0.000	2.627e5	3.325e5	1.000	0.790	0.770	958	982	4.00e6	5.06e6	4179.0	5151.9	NO	bb	bb	100.000
13C-2378-TCDD	26.353	1.032	3.333e5	4.290e5	1.152	0.777	0.770	958	982	4.74e6	6.11e6	4951.8	6223.9	NO	bb	bb	111.118
13C-12378-PeCDD	31.448	1.232	3.616e5	2.244e5	0.829	1.611	1.550	1097	1109	5.09e6	3.19e6	4643.8	2878.8	NO	bd	bb	118.777
13C-123478-HxCDD	36.016	0.986	3.614e5	2.853e5	0.995	1.267	1.240	1596	1664	5.59e6	4.44e6	3504.1	2666.0	NO	bd	bd	95.908
13C-123678-HxCDD	36.128	0.989	3.866e5	3.081e5	1.157	1.255	1.240	1596	1664	5.57e6	4.44e6	3490.1	2667.4	NO	db	db	88.618
13C-1234678-HpCDD	40.194	1.101	2.889e5	2.616e5	0.840	1.104	1.050	1529	1762	4.27e6	3.98e6	2789.9	2261.2	NO	bd	bb	96.693
13C-OCDD	44.905	1.230	5.440e5	5.971e5	0.767	0.911	0.890	1859	1791	6.66e6	7.32e6	3584.0	4084.7	NO	bb	bb	219.409
13C-123789-HxCDD	36.518	0.000	3.737e5	3.040e5	1.000	1.229	1.240	1596	1664	5.48e6	4.41e6	3435.3	2651.0	NO	bb	bb	100.000
37CL-2378-TCDD	26.367	1.033	3.204e5		1.288			1020		4.56e6		4465.8			bb		41.794

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
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**ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk**

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.243	0.865	9.379e2	1.332e3	0.802	0.704	0.770	1332	1034	1.69e4	1.73e4	12.7	16.8	NO	bb	bb	0.285
1289-TCDF	27.201	1.058	3.573e2	6.026e2	0.678	0.593	0.770	1332	1034	4.50e3	6.10e3	3.4	5.9	YES	dd	bd	0.142
13468-PECDF					1.246		1.550	725	851								
12389-PECDF					0.496		1.550	1520	1747								
123468-HXCDF	33.175	0.952	1.388e4	1.115e4	1.169	1.245	1.240	1485	1019	2.10e5	1.63e5	141.3	159.6	NO	bb	bb	3.010
1368-TCDD	23.500	0.892	2.314e3	3.490e3	1.015	0.663	0.770	919	1366	3.71e4	5.50e4	40.4	40.2	NO	bb	bb	0.750
1289-TCDD					0.909		0.770	919	1366								
12479-PECDD					2.301		1.550	2231	1751								
12389-PECDD					1.184		1.550	2231	1751								
124679-HXCDD	33.966	0.943	5.550e4	4.413e4	1.115	1.258	1.240	1694	1711	8.48e5	6.61e5	500.3	386.3	NO	bb	bb	13.810
1234679-HPCDD	39.169	0.975	8.108e5	7.800e5	1.137	1.039	1.050	4090	3739	1.33e7	1.27e7	3249.8	3400.4	NO	bb	bb	254.190
Total-tetrafurans			4.245e4		0.727			1332		5.89e5							13.695
Total-penta1			3.000e4					725		4.30e5							6.088
Total-pentafurans			3.943e4		0.654			1520		5.12e5							11.149
Total-hexafurans			1.776e5		1.141			1485		2.69e6							43.268
Total-heptafurans			4.296e5		0.978			2065		6.95e6							145.713
Total-Furans			1.046e6		0.922			1332		1.52e7							373.750
Total-tetradiioxins			5.356e3		1.024			919		8.18e4							1.633
Total-pentadiioxins			2.334e4		1.502			2231		2.71e5							4.664
Total-hexadiioxins			1.645e5		1.005			1694		2.21e6							43.387
Total-heptadiioxins			1.271e6		1.088			4090		2.04e7							411.840
Total-Dioxins			5.000e6		1.130			919		6.88e7							1899.363
Total-TEQ			6.045e6					919		8.41e7							2273.113
FUNCTION1 PFK			1.934e7					147695		1.40e8							
FUNCTION2 PFK			7.430e5					77168		1.88e6							0.000
FUNCTION3 PFK			4.213e6					96240		1.34e7							0.000
FUNCTION4 PFK			7.246e5					99869		2.94e6							
FUNCTION5 PFK			0.000e0					65191		0.00e0							
FUNCTION1 HXCD...			5.708e3					655		9.08e4							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			7.430e2					669		1.37e4							0.000
FUNCTION3 OCDPE			1.435e3					1047		2.31e4							0.000
FUNCTION4 NCDPE			6.425e4					824		1.14e6							0.000
FUNCTION5 DCDPE			4.445e2					530		5.66e3							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:14 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56

Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.95	3.180e3	4.177e3	0.727	0.76	0.77	27.5	YES	NO	db	db	1.018
2	Total-tetrafurans	23.83	1.475e3	1.975e3	0.727	0.75	0.77	16.4	YES	NO	dd	dd	0.477
3	Total-tetrafurans	23.71	2.688e3	3.890e3	0.727	0.69	0.77	33.3	YES	NO	dd	dd	0.910
4	Total-tetrafurans	23.56	9.985e2	1.372e3	0.727	0.73	0.77	12.9	YES	NO	dd	dd	0.328
5	Total-tetrafurans	23.46	3.346e3	4.630e3	0.727	0.72	0.77	39.0	YES	NO	dd	dd	1.103
6	Total-tetrafurans	23.37	5.742e3	7.538e3	0.727	0.76	0.77	58.2	YES	NO	dd	dd	1.837
7	Total-tetrafurans	23.06	4.051e3	5.429e3	0.727	0.75	0.77	42.5	YES	NO	bd	bd	1.311
8	1368-TCDF	22.24	9.379e2	1.332e3	0.802	0.70	0.77	12.7	YES	NO	bb	bb	0.285
9	Total-tetrafurans	26.11	4.919e2	7.407e2	0.727	0.66	0.77	5.6	YES	NO	db	dd	0.170
10	Total-tetrafurans	25.86	3.611e3	4.344e3	0.727	0.83	0.77	37.5	YES	NO	dd	dd	1.100
11	2378-TCDF	25.72	2.920e3	3.612e3	0.702	0.81	0.77	30.4	YES	NO	dd	dd	0.936
12	Total-tetrafurans	25.49	5.101e3	6.012e3	0.727	0.85	0.77	36.4	YES	NO	dd	bd	1.537
13	Total-tetrafurans	24.81	1.867e3	2.720e3	0.727	0.69	0.77	22.3	YES	NO	bb	bb	0.634
14	Total-tetrafurans	24.62	3.083e3	4.685e3	0.727	0.66	0.77	32.5	YES	NO	db	db	1.074
15	Total-tetrafurans	24.46	1.700e3	2.489e3	0.727	0.68	0.77	17.6	YES	NO	dd	dd	0.579
16	Total-tetrafurans	27.36	1.258e3	1.603e3	0.727	0.78	0.77	17.4	YES	NO	db	db	0.396

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.19	3.000e4	2.050e4		1.46	1.55	592.9	YES	NO	bb	bb	6.088

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	30.95	2.311e3	1.374e3	0.654	1.68	1.55	22.8	YES	NO	bd	bd	0.641
2	Total-pentafurans	30.08	3.003e3	1.942e3	0.654	1.55	1.55	32.4	YES	NO	bd	bd	0.860
3	12378-PeCDF	29.88	2.381e3	1.701e3	0.679	1.40	1.55	25.1	YES	NO	bb	bb	0.664
4	Total-pentafurans	28.92	1.799e4	1.168e4	0.654	1.54	1.55	118.7	YES	NO	db	db	5.160
5	Total-pentafurans	28.71	6.083e3	4.345e3	0.654	1.40	1.55	57.4	YES	NO	dd	bd	1.813
6	23478-PeCDF	31.21	4.575e3	2.970e3	0.786	1.54	1.55	50.3	YES	NO	bb	db	1.124
7	Total-pentafurans	31.06	3.086e3	2.010e3	0.654	1.54	1.55	30.2	YES	NO	db	dd	0.886

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:14 Pacific Daylight Time

**ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk**

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.86	1.838e3	1.377e3	1.137	1.33	1.24	28.4	YES	NO	bb	bb	0.709
2	Total-hexafurans	35.35	6.980e2	4.943e2	1.141	1.41	1.24	6.5	YES	NO	bb	bb	0.164
3	123678-HxCDF	35.00	4.969e3	4.516e3	1.091	1.10	1.24	45.6	YES	NO	db	db	1.134
4	123478-HxCDF	34.87	1.780e4	1.403e4	1.166	1.27	1.24	174.0	YES	NO	dd	dd	3.839
5	Total-hexafurans	34.70	2.204e3	1.840e3	1.141	1.20	1.24	23.8	YES	NO	bd	bd	0.555
6	Total-hexafurans	34.23	8.707e4	7.048e4	1.141	1.24	1.24	882.8	YES	NO	bb	bb	21.627
7	Total-hexafurans	33.92	1.473e3	1.289e3	1.141	1.14	1.24	15.9	YES	NO	bb	bb	0.379
8	Total-hexafurans	33.40	4.768e4	3.864e4	1.141	1.23	1.24	492.0	YES	NO	bb	bb	11.850
9	123468-HXCDF	33.18	1.388e4	1.115e4	1.169	1.24	1.24	141.3	YES	NO	bb	bb	3.010

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.95	9.551e3	9.134e3	0.953	1.05	1.05	66.8	YES	NO	bb	bb	3.556
2	Total-heptafurans	39.37	3.066e5	2.974e5	0.978	1.03	1.05	2404.4	YES	NO	bb	bb	105.951
3	Total-heptafurans	39.12	1.843e3	1.958e3	0.978	0.94	1.05	13.9	YES	NO	bd	bb	0.667
4	1234678-HpCDF	38.71	1.116e5	1.074e5	1.003	1.04	1.05	879.2	YES	NO	bb	bb	35.539

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\2305091HA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:14 Pacific Daylight Time

ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

## Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.95	3.180e3	4.177e3	0.727	0.76	0.77	27.5	YES	NO	db	db	1.018
2	Total-tetrafurans	23.83	1.475e3	1.975e3	0.727	0.75	0.77	16.4	YES	NO	dd	dd	0.477
3	Total-tetrafurans	23.71	2.688e3	3.890e3	0.727	0.69	0.77	33.3	YES	NO	dd	dd	0.910
4	Total-tetrafurans	23.56	9.985e2	1.372e3	0.727	0.73	0.77	12.9	YES	NO	dd	dd	0.328
5	Total-tetrafurans	23.46	3.346e3	4.630e3	0.727	0.72	0.77	39.0	YES	NO	dd	dd	1.103
6	Total-tetrafurans	23.37	5.742e3	7.538e3	0.727	0.76	0.77	58.2	YES	NO	dd	dd	1.837
7	Total-tetrafurans	23.06	4.051e3	5.429e3	0.727	0.75	0.77	42.5	YES	NO	bd	bd	1.311
8	1368-TCDF	22.24	9.379e2	1.332e3	0.802	0.70	0.77	12.7	YES	NO	bb	bb	0.285
9	Total-tetrafurans	26.11	4.919e2	7.407e2	0.727	0.66	0.77	5.6	YES	NO	db	dd	0.170
10	Total-tetrafurans	25.86	3.611e3	4.344e3	0.727	0.83	0.77	37.5	YES	NO	dd	dd	1.100
11	2378-TCDF	25.72	2.920e3	3.612e3	0.702	0.81	0.77	30.4	YES	NO	dd	dd	0.936
12	Total-tetrafurans	25.49	5.101e3	6.012e3	0.727	0.85	0.77	36.4	YES	NO	dd	bd	1.537
13	Total-tetrafurans	24.81	1.867e3	2.720e3	0.727	0.69	0.77	22.3	YES	NO	bb	bb	0.634
14	Total-tetrafurans	24.62	3.083e3	4.685e3	0.727	0.66	0.77	32.5	YES	NO	db	db	1.074
15	Total-tetrafurans	24.46	1.700e3	2.489e3	0.727	0.68	0.77	17.6	YES	NO	dd	dd	0.579
16	Total-Furans	27.65	1.436e2	1.734e2	0.922	0.83	0.77	2.1	NO	NO	bb	bb	0.035
17	Total-tetrafurans	27.36	1.258e3	1.603e3	0.727	0.78	0.77	17.4	YES	NO	db	db	0.396
18	Total-pentafurans	30.95	2.311e3	1.374e3	0.654	1.68	1.55	22.8	YES	NO	bd	bd	0.641
19	Total-pentafurans	30.08	3.003e3	1.942e3	0.654	1.55	1.55	32.4	YES	NO	bd	bd	0.860
20	12378-PeCDF	29.88	2.381e3	1.701e3	0.679	1.40	1.55	25.1	YES	NO	bb	bb	0.664
21	Total-pentafurans	28.92	1.799e4	1.168e4	0.654	1.54	1.55	118.7	YES	NO	db	db	5.160
22	Total-pentafurans	28.71	6.083e3	4.345e3	0.654	1.40	1.55	57.4	YES	NO	dd	bd	1.813
23	23478-PeCDF	31.21	4.575e3	2.970e3	0.786	1.54	1.55	50.3	YES	NO	bb	db	1.124
24	Total-pentafurans	31.06	3.086e3	2.010e3	0.654	1.54	1.55	30.2	YES	NO	db	dd	0.886
25	123789-HxCDF	36.86	1.838e3	1.377e3	1.137	1.33	1.24	28.4	YES	NO	bb	bb	0.709
26	Total-hexafurans	35.35	6.980e2	4.943e2	1.141	1.41	1.24	6.5	YES	NO	bb	bb	0.164
27	123678-HxCDF	35.00	4.969e3	4.516e3	1.091	1.10	1.24	45.6	YES	NO	db	db	1.134
28	123478-HxCDF	34.87	1.780e4	1.403e4	1.166	1.27	1.24	174.0	YES	NO	dd	dd	3.839
29	Total-hexafurans	34.70	2.204e3	1.840e3	1.141	1.20	1.24	23.8	YES	NO	bd	bd	0.555
30	Total-hexafurans	34.23	8.707e4	7.048e4	1.141	1.24	1.24	882.8	YES	NO	bb	bb	21.627
31	Total-hexafurans	33.92	1.473e3	1.289e3	1.141	1.14	1.24	15.9	YES	NO	bb	bb	0.379
32	Total-hexafurans	33.40	4.768e4	3.864e4	1.141	1.23	1.24	492.0	YES	NO	bb	bb	11.850
33	123468-HXCDF	33.18	1.388e4	1.115e4	1.169	1.24	1.24	141.3	YES	NO	bb	bb	3.010
34	1234789-HpCDF	40.95	9.551e3	9.134e3	0.953	1.05	1.05	66.8	YES	NO	bb	bb	3.556
35	Total-heptafurans	39.37	3.066e5	2.974e5	0.978	1.03	1.05	2404.4	YES	NO	bb	bb	105.951
36	Total-heptafurans	39.12	1.843e3	1.958e3	0.978	0.94	1.05	13.9	YES	NO	bd	bb	0.667
37	1234678-HpCDF	38.71	1.116e5	1.074e5	1.003	1.04	1.05	879.2	YES	NO	bb	bb	35.539

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	OCDF	45.15	3.262e5	3.564e5	0.778	0.92	0.89	3212.6	YES	NO	bb	bb	153.804
39	Total-penta1	27.19	3.000e4	2.050e4		1.46	1.55	592.9	YES	NO	bb	bb	6.088

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	25.99	9.841e2	1.300e3	1.024	0.76	0.77	13.6	YES	NO	bd	bb	0.292
2	Total-tetradoxins	25.55	4.728e2	7.151e2	1.024	0.66	0.77	7.6	YES	NO	bd	bd	0.152
3	Total-tetradoxins	23.75	1.585e3	1.836e3	1.024	0.86	0.77	27.5	YES	NO	bd	bb	0.438
4	1368-TCDD	23.50	2.314e3	3.490e3	1.015	0.66	0.77	40.4	YES	NO	bb	bb	0.750

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	30.39	3.279e3	2.023e3	1.502	1.62	1.55	14.3	YES	NO	dd	bb	0.602
2	Total-pentadioxins	30.09	3.298e3	2.060e3	1.502	1.60	1.55	20.1	YES	NO	bd	bd	0.609
3	Total-pentadioxins	29.88	3.793e3	2.614e3	1.502	1.45	1.55	26.3	YES	NO	bb	bb	0.728
4	Total-pentadioxins	28.89	7.530e3	4.854e3	1.502	1.55	1.55	30.1	YES	NO	bb	bb	1.407
5	12378-PeCDD	31.47	3.901e3	2.347e3	1.022	1.66	1.55	22.0	YES	NO	bb	bb	1.043
6	Total-pentadioxins	30.78	1.534e3	8.846e2	1.502	1.73	1.55	8.8	YES	NO	bb	bb	0.275

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.54	8.998e3	7.080e3	0.907	1.27	1.24	78.4	YES	NO	bb	bb	2.643
2	Total-hexadioxins	36.32	4.101e3	3.132e3	1.005	1.31	1.24	31.1	YES	NO	db	db	1.073
3	123678-HxCDD	36.15	1.701e4	1.474e4	1.001	1.15	1.24	149.9	YES	NO	dd	dd	4.567
4	123478-HxCDD	36.03	3.976e3	3.558e3	0.996	1.12	1.24	34.7	YES	NO	bd	bd	1.170
5	Total-hexadioxins	35.23	8.575e3	6.157e3	1.005	1.39	1.24	80.5	YES	NO	db	db	2.186
6	Total-hexadioxins	35.11	5.534e4	4.508e4	1.005	1.23	1.24	326.1	YES	NO	bd	bd	14.902
7	Total-hexadioxins	34.75	1.103e4	9.424e3	1.005	1.17	1.24	101.5	YES	NO	bb	bb	3.035
8	124679-HXCDD	33.97	5.550e4	4.413e4	1.115	1.26	1.24	500.3	YES	NO	bb	bb	13.810



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk**

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.21	4.601e5	4.417e5	1.039	1.04	1.05	1743.5	YES	NO	bb	bb	157.650
2	1234679-HPCDD	39.17	8.108e5	7.800e5	1.137	1.04	1.05	3249.8	YES	NO	bb	bb	254.190

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	25.99	9.841e2	1.300e3	1.024	0.76	0.77	13.6	YES	NO	bd	bb	0.292
2	Total-tetradoxins	25.55	4.728e2	7.151e2	1.024	0.66	0.77	7.6	YES	NO	bd	bd	0.152
3	Total-tetradoxins	23.75	1.585e3	1.836e3	1.024	0.86	0.77	27.5	YES	NO	bd	bb	0.438
4	1368-TCDD	23.50	2.314e3	3.490e3	1.015	0.66	0.77	40.4	YES	NO	bb	bb	0.750
5	Total-pentadoxins	30.39	3.279e3	2.023e3	1.502	1.62	1.55	14.3	YES	NO	dd	bb	0.602
6	Total-pentadoxins	30.09	3.298e3	2.060e3	1.502	1.60	1.55	20.1	YES	NO	bd	bd	0.609
7	Total-pentadoxins	29.88	3.793e3	2.614e3	1.502	1.45	1.55	26.3	YES	NO	bb	bb	0.728
8	Total-pentadoxins	28.89	7.530e3	4.854e3	1.502	1.55	1.55	30.1	YES	NO	bb	bb	1.407
9	12378-PeCDD	31.47	3.901e3	2.347e3	1.022	1.66	1.55	22.0	YES	NO	bb	bb	1.043
10	Total-pentadoxins	30.78	1.534e3	8.846e2	1.502	1.73	1.55	8.8	YES	NO	bb	bb	0.275
11	123789-HxCDD	36.54	8.998e3	7.080e3	0.907	1.27	1.24	78.4	YES	NO	bb	bb	2.643
12	Total-hexadoxins	36.32	4.101e3	3.132e3	1.005	1.31	1.24	31.1	YES	NO	db	db	1.073
13	123678-HxCDD	36.15	1.701e4	1.474e4	1.001	1.15	1.24	149.9	YES	NO	dd	dd	4.567
14	123478-HxCDD	36.03	3.976e3	3.558e3	0.996	1.12	1.24	34.7	YES	NO	bd	bd	1.170
15	Total-hexadoxins	35.23	8.575e3	6.157e3	1.005	1.39	1.24	80.5	YES	NO	db	db	2.186
16	Total-hexadoxins	35.11	5.534e4	4.508e4	1.005	1.23	1.24	326.1	YES	NO	bd	bd	14.902
17	Total-hexadoxins	34.75	1.103e4	9.424e3	1.005	1.17	1.24	101.5	YES	NO	bb	bb	3.035
18	124679-HXCDD	33.97	5.550e4	4.413e4	1.115	1.26	1.24	500.3	YES	NO	bb	bb	13.810
19	1234678-HpCDD	40.21	4.601e5	4.417e5	1.039	1.04	1.05	1743.5	YES	NO	bb	bb	157.650
20	1234679-HPCDD	39.17	8.108e5	7.800e5	1.137	1.04	1.05	3249.8	YES	NO	bb	bb	254.190
21	OCDD	44.91	3.535e6	4.012e6	0.920	0.88	0.89	15293.7	YES	NO	bb	bb	1437.8...

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.95	3.180e3	4.177e3	0.727	0.76	0.77	27.5	YES	NO	db	db	1.018
2	Total-tetrafurans	23.83	1.475e3	1.975e3	0.727	0.75	0.77	16.4	YES	NO	dd	dd	0.477
3	Total-tetrafurans	23.71	2.688e3	3.890e3	0.727	0.69	0.77	33.3	YES	NO	dd	dd	0.910
4	Total-tetrafurans	23.56	9.985e2	1.372e3	0.727	0.73	0.77	12.9	YES	NO	dd	dd	0.328
5	Total-tetrafurans	23.46	3.346e3	4.630e3	0.727	0.72	0.77	39.0	YES	NO	dd	dd	1.103
6	Total-tetrafurans	23.37	5.742e3	7.538e3	0.727	0.76	0.77	58.2	YES	NO	dd	dd	1.837
7	Total-tetrafurans	23.06	4.051e3	5.429e3	0.727	0.75	0.77	42.5	YES	NO	bd	bd	1.311
8	1368-TCDF	22.24	9.379e2	1.332e3	0.802	0.70	0.77	12.7	YES	NO	bb	bb	0.285
9	Total-tetrafurans	26.11	4.919e2	7.407e2	0.727	0.66	0.77	5.6	YES	NO	db	dd	0.170
10	Total-tetrafurans	25.86	3.611e3	4.344e3	0.727	0.83	0.77	37.5	YES	NO	dd	dd	1.100
11	2378-TCDF	25.72	2.920e3	3.612e3	0.702	0.81	0.77	30.4	YES	NO	dd	dd	0.936
12	Total-tetrafurans	25.49	5.101e3	6.012e3	0.727	0.85	0.77	36.4	YES	NO	dd	bd	1.537
13	Total-tetrafurans	24.81	1.867e3	2.720e3	0.727	0.69	0.77	22.3	YES	NO	bb	bb	0.634
14	Total-tetrafurans	24.62	3.083e3	4.685e3	0.727	0.66	0.77	32.5	YES	NO	db	db	1.074
15	Total-tetrafurans	24.46	1.700e3	2.489e3	0.727	0.68	0.77	17.6	YES	NO	dd	dd	0.579
16	Total-Furans	27.65	1.436e2	1.734e2	0.922	0.83	0.77	2.1	NO	NO	bb	bb	0.035
17	Total-tetrafurans	27.36	1.258e3	1.603e3	0.727	0.78	0.77	17.4	YES	NO	db	db	0.396
18	Total-pentafurans	30.95	2.311e3	1.374e3	0.654	1.68	1.55	22.8	YES	NO	bd	bd	0.641
19	Total-pentafurans	30.08	3.003e3	1.942e3	0.654	1.55	1.55	32.4	YES	NO	bd	bd	0.860
20	12378-PeCDF	29.88	2.381e3	1.701e3	0.679	1.40	1.55	25.1	YES	NO	bb	bb	0.664
21	Total-pentafurans	28.92	1.799e4	1.168e4	0.654	1.54	1.55	118.7	YES	NO	db	db	5.160
22	Total-pentafurans	28.71	6.083e3	4.345e3	0.654	1.40	1.55	57.4	YES	NO	dd	bd	1.813
23	23478-PeCDF	31.21	4.575e3	2.970e3	0.786	1.54	1.55	50.3	YES	NO	bb	db	1.124
24	Total-pentafurans	31.06	3.086e3	2.010e3	0.654	1.54	1.55	30.2	YES	NO	db	dd	0.886
25	123789-HxCDF	36.86	1.838e3	1.377e3	1.137	1.33	1.24	28.4	YES	NO	bb	bb	0.709
26	Total-hexafurans	35.35	6.980e2	4.943e2	1.141	1.41	1.24	6.5	YES	NO	bb	bb	0.164
27	123678-HxCDF	35.00	4.969e3	4.516e3	1.091	1.10	1.24	45.6	YES	NO	db	db	1.134
28	123478-HxCDF	34.87	1.780e4	1.403e4	1.166	1.27	1.24	174.0	YES	NO	dd	dd	3.839
29	Total-hexafurans	34.70	2.204e3	1.840e3	1.141	1.20	1.24	23.8	YES	NO	bd	bd	0.555
30	Total-hexafurans	34.23	8.707e4	7.048e4	1.141	1.24	1.24	882.8	YES	NO	bb	bb	21.627
31	Total-hexafurans	33.92	1.473e3	1.289e3	1.141	1.14	1.24	15.9	YES	NO	bb	bb	0.379
32	Total-hexafurans	33.40	4.768e4	3.864e4	1.141	1.23	1.24	492.0	YES	NO	bb	bb	11.850
33	123468-HXCDF	33.18	1.388e4	1.115e4	1.169	1.24	1.24	141.3	YES	NO	bb	bb	3.010
34	1234789-HpCDF	40.95	9.551e3	9.134e3	0.953	1.05	1.05	66.8	YES	NO	bb	bb	3.556
35	Total-heptafurans	39.37	3.066e5	2.974e5	0.978	1.03	1.05	2404.4	YES	NO	bb	bb	105.951
36	Total-heptafurans	39.12	1.843e3	1.958e3	0.978	0.94	1.05	13.9	YES	NO	bd	bb	0.667
37	1234678-HpCDF	38.71	1.116e5	1.074e5	1.003	1.04	1.05	879.2	YES	NO	bb	bb	35.539

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:14 Pacific Daylight Time

**ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk**

**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	OCDF	45.15	3.262e5	3.564e5	0.778	0.92	0.89	3212.6	YES	NO	bb	bb	153.804
39	Total-penta1	27.19	3.000e4	2.050e4		1.46	1.55	592.9	YES	NO	bb	bb	6.088
40	Total-tetradioxins	25.99	9.841e2	1.300e3	1.024	0.76	0.77	13.6	YES	NO	bd	bb	0.292
41	Total-tetradioxins	25.55	4.728e2	7.151e2	1.024	0.66	0.77	7.6	YES	NO	bd	bd	0.152
42	Total-tetradioxins	23.75	1.585e3	1.836e3	1.024	0.86	0.77	27.5	YES	NO	bd	bb	0.438
43	1368-TCDD	23.50	2.314e3	3.490e3	1.015	0.66	0.77	40.4	YES	NO	bb	bb	0.750
44	Total-pentadioxins	30.39	3.279e3	2.023e3	1.502	1.62	1.55	14.3	YES	NO	dd	bb	0.602
45	Total-pentadioxins	30.09	3.298e3	2.060e3	1.502	1.60	1.55	20.1	YES	NO	bd	bd	0.609
46	Total-pentadioxins	29.88	3.793e3	2.614e3	1.502	1.45	1.55	26.3	YES	NO	bb	bb	0.728
47	Total-pentadioxins	28.89	7.530e3	4.854e3	1.502	1.55	1.55	30.1	YES	NO	bb	bb	1.407
48	12378-PeCDD	31.47	3.901e3	2.347e3	1.022	1.66	1.55	22.0	YES	NO	bb	bb	1.043
49	Total-pentadioxins	30.78	1.534e3	8.846e2	1.502	1.73	1.55	8.8	YES	NO	bb	bb	0.275
50	123789-HxCDD	36.54	8.998e3	7.080e3	0.907	1.27	1.24	78.4	YES	NO	bb	bb	2.643
51	Total-hexadioxins	36.32	4.101e3	3.132e3	1.005	1.31	1.24	31.1	YES	NO	db	db	1.073
52	123678-HxCDD	36.15	1.701e4	1.474e4	1.001	1.15	1.24	149.9	YES	NO	dd	dd	4.567
53	123478-HxCDD	36.03	3.976e3	3.558e3	0.996	1.12	1.24	34.7	YES	NO	bd	bd	1.170
54	Total-hexadioxins	35.23	8.575e3	6.157e3	1.005	1.39	1.24	80.5	YES	NO	db	db	2.186
55	Total-hexadioxins	35.11	5.534e4	4.508e4	1.005	1.23	1.24	326.1	YES	NO	bd	bd	14.902
56	Total-hexadioxins	34.75	1.103e4	9.424e3	1.005	1.17	1.24	101.5	YES	NO	bb	bb	3.035
57	124679-HXCDD	33.97	5.550e4	4.413e4	1.115	1.26	1.24	500.3	YES	NO	bb	bb	13.810
58	1234678-HpCDD	40.21	4.601e5	4.417e5	1.039	1.04	1.05	1743.5	YES	NO	bb	bb	157.650
59	1234679-HPCDD	39.17	8.108e5	7.800e5	1.137	1.04	1.05	3249.8	YES	NO	bb	bb	254.190
60	OCDD	44.91	3.535e6	4.012e6	0.920	0.88	0.89	15293.7	YES	NO	bb	bb	1437.8...

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

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 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:14 Pacific Daylight Time

ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

## PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.53	2.842e5					25.8	YES		dd		
2	FUNCTION1 PFK	22.43	3.097e5					26.7	YES		dd		
3	FUNCTION1 PFK	22.33	1.040e6					32.3	YES		dd		
4	FUNCTION1 PFK	22.14	4.215e5					31.0	YES		bd		
5	FUNCTION1 PFK	21.95	6.679e5					31.7	YES		db		
6	FUNCTION1 PFK	21.75	5.528e5					25.1	YES		dd		
7	FUNCTION1 PFK	21.58	6.233e5					22.0	YES		dd		
8	FUNCTION1 PFK	21.40	3.077e5					16.3	YES		dd		
9	FUNCTION1 PFK	21.31	1.526e5					11.5	YES		dd		
10	FUNCTION1 PFK	21.10	1.234e5					7.4	YES		bd		
11	FUNCTION1 PFK	24.74	3.852e5					14.4	YES		dd		
12	FUNCTION1 PFK	24.49	4.273e5					17.4	YES		dd		
13	FUNCTION1 PFK	24.33	3.131e5					16.1	YES		dd		
14	FUNCTION1 PFK	24.18	3.914e5					18.8	YES		dd		
15	FUNCTION1 PFK	23.97	7.287e5					21.3	YES		dd		
16	FUNCTION1 PFK	23.77	4.712e5					20.7	YES		dd		
17	FUNCTION1 PFK	23.63	3.309e5					21.3	YES		dd		
18	FUNCTION1 PFK	23.53	3.263e5					21.7	YES		dd		
19	FUNCTION1 PFK	23.36	7.304e5					25.1	YES		dd		
20	FUNCTION1 PFK	23.19	2.386e5					18.8	YES		dd		
21	FUNCTION1 PFK	23.05	3.126e5					26.3	YES		dd		
22	FUNCTION1 PFK	22.99	3.444e5					28.4	YES		dd		
23	FUNCTION1 PFK	22.92	3.371e5					28.0	YES		dd		
24	FUNCTION1 PFK	22.81	3.295e5					27.5	YES		dd		
25	FUNCTION1 PFK	22.75	3.305e5					28.1	YES		dd		
26	FUNCTION1 PFK	22.62	3.746e5					28.4	YES		dd		
27	FUNCTION1 PFK	27.54	1.033e6					52.0	YES		db		
28	FUNCTION1 PFK	27.38	8.782e5					46.0	YES		dd		
29	FUNCTION1 PFK	27.21	1.102e6					42.5	YES		dd		
30	FUNCTION1 PFK	27.00	1.335e6					35.2	YES		dd		
31	FUNCTION1 PFK	26.75	5.792e5					26.8	YES		dd		
32	FUNCTION1 PFK	26.59	6.320e5					21.2	YES		dd		
33	FUNCTION1 PFK	26.35	2.813e5					11.9	YES		bd		
34	FUNCTION1 PFK	25.82	6.319e4					4.6	YES		bb		
35	FUNCTION1 PFK	25.62	1.243e5					7.5	YES		db		
36	FUNCTION1 PFK	25.45	1.680e5					8.4	YES		dd		
37	FUNCTION1 PFK	25.31	9.925e4					9.4	YES		dd		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:14 Pacific Daylight Time

**ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk**

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	25.21	1.369e5					10.6	YES		dd		
39	FUNCTION1 PFK	25.12	1.410e5					12.3	YES		dd		
40	FUNCTION1 PFK	25.05	1.274e5					12.7	YES		dd		
41	FUNCTION1 PFK	25.00	2.322e5					13.0	YES		dd		
42	FUNCTION1 PFK	24.83	2.504e5					14.4	YES		dd		
43	FUNCTION1 PFK	27.92	1.301e6					25.4	YES		bb		

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.69	7.430e5					24.4	YES		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.22	9.692e5					38.2	YES		db		0.000
2	FUNCTION3 PFK	37.11	1.434e5					20.4	YES		dd		0.000
3	FUNCTION3 PFK	36.93	1.804e5					23.2	YES		bd		0.000
4	FUNCTION3 PFK	36.54	2.514e6					44.9	YES		bb		0.000
5	FUNCTION3 PFK	33.05	4.064e5					12.5	YES		bb		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	41.91	4.332e4					5.2	YES		bb		
2	FUNCTION4 PFK	41.23	8.634e4					5.3	YES		bb		
3	FUNCTION4 PFK	39.75	1.724e5					8.5	YES		bb		
4	FUNCTION4 PFK	39.35	4.225e5					10.5	YES		bb		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509\HA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
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**ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk**

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.64	7.485e1					2.2	NO		bb		0.000
2	FUNCTION1 HXCD...	26.73	1.824e2					4.5	YES		bb		0.000
3	FUNCTION1 HXCD...	26.10	6.739e2					16.9	YES		bb		0.000
4	FUNCTION1 HXCD...	25.89	3.382e3					83.0	YES		db		0.000
5	FUNCTION1 HXCD...	25.73	5.676e2					12.6	YES		bd		0.000
6	FUNCTION1 HXCD...	25.29	7.539e1					2.5	NO		bb		0.000
7	FUNCTION1 HXCD...	25.10	1.851e2					4.2	YES		bb		0.000
8	FUNCTION1 HXCD...	24.81	1.383e2					4.0	YES		db		0.000
9	FUNCTION1 HXCD...	24.77	8.475e1					3.5	YES		bd		0.000
10	FUNCTION1 HXCD...	22.30	3.438e2					5.2	YES		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	29.86	4.232e2					12.1	YES		bb		0.000
2	FUNCTION2 HPCD...	28.96	3.198e2					8.5	YES		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.19	1.435e2					5.8	YES		db		0.000
2	FUNCTION3 OCDPE	34.16	8.907e2					5.3	YES		bd		0.000
3	FUNCTION3 OCDPE	36.79	7.562e1					1.6	NO		bb		0.000
4	FUNCTION3 OCDPE	35.31	1.257e2					2.2	NO		bb		0.000
5	FUNCTION3 OCDPE	34.37	1.997e2					7.2	YES		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.44	8.285e1					2.5	NO		bb		0.000
2	FUNCTION4 NCDPE	38.37	6.417e4					1377.3	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

**ETHERS6**

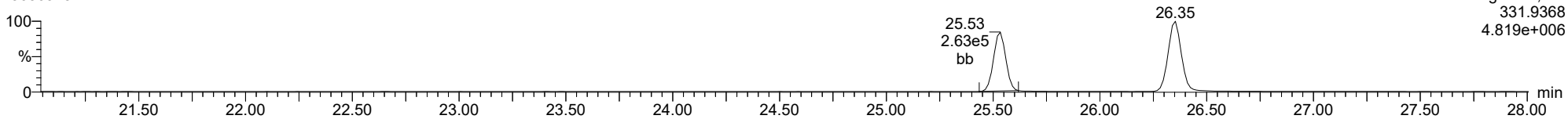
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1	FUNCTION5 DCDPE	44.93	4.445e2					10.7	YES		bb		0.000

**Method:** T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

**ID:** BLD0657-DUP1, **Name:** 23050925, **Date:** 10-May-2023, **Time:** 08:44:23, **Conditions:** AUTOSPEC01, **User:** pk

**13C-1234-TCDD**

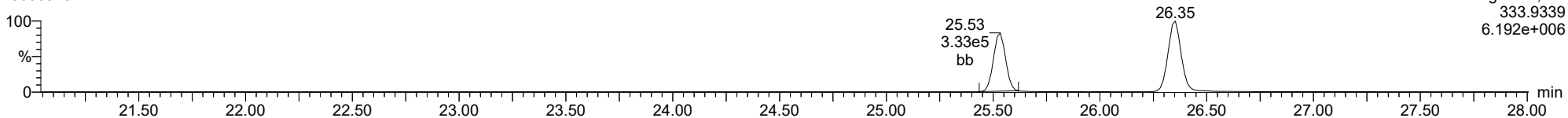
23050925



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4.819e+006

**13C-1234-TCDD**

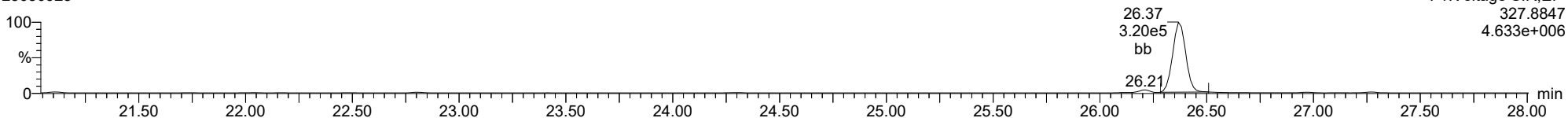
23050925



F1:Voltage SIR,El+  
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6.192e+006

**37CL-2378-TCDD**

23050925



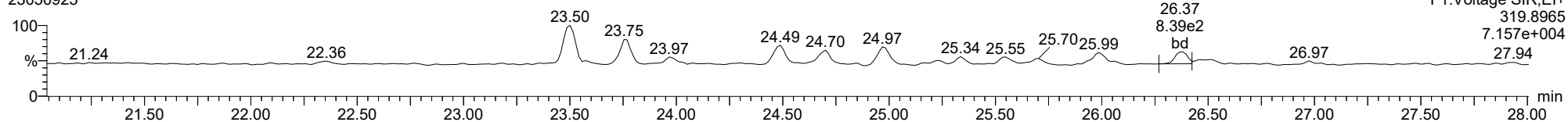
F1:Voltage SIR,El+  
327.8847  
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

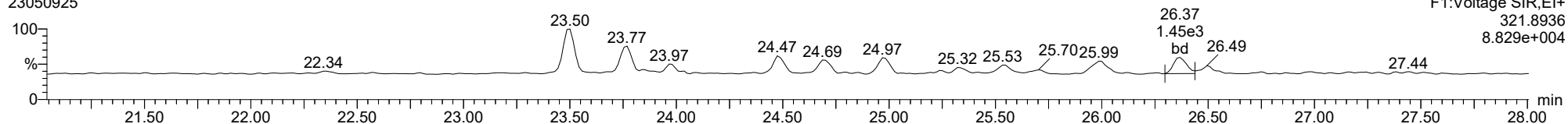
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23050925



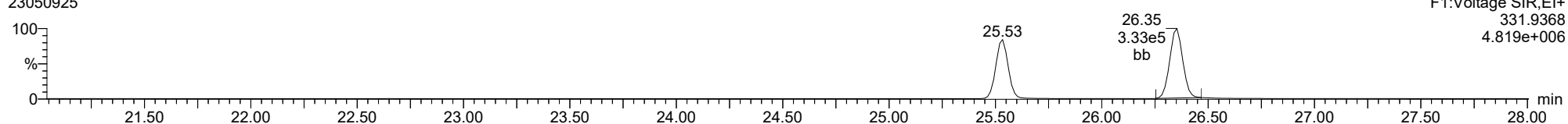
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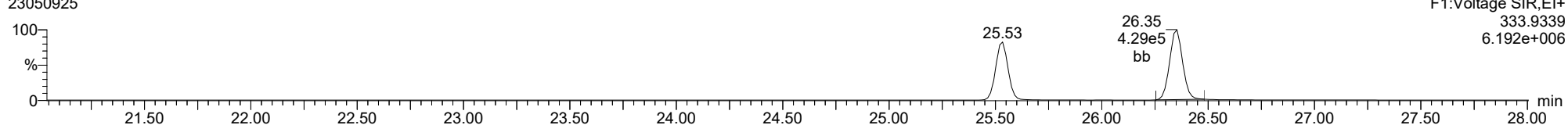
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23050925



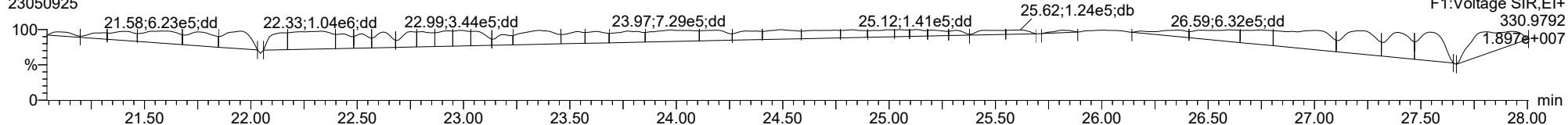
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23050925



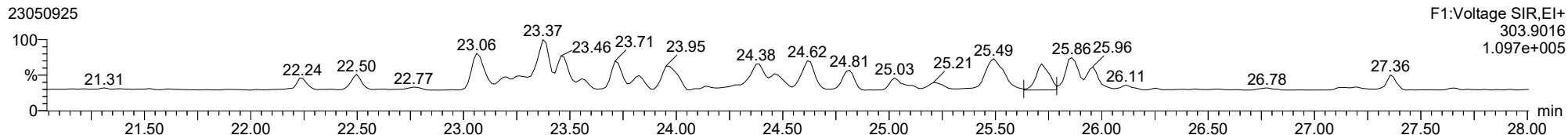
**FUNCTION1 PFK**

23050925

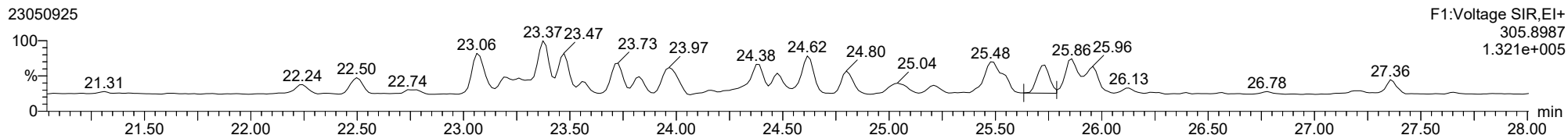


ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

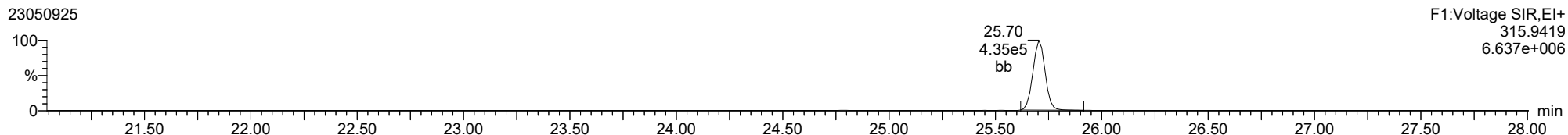
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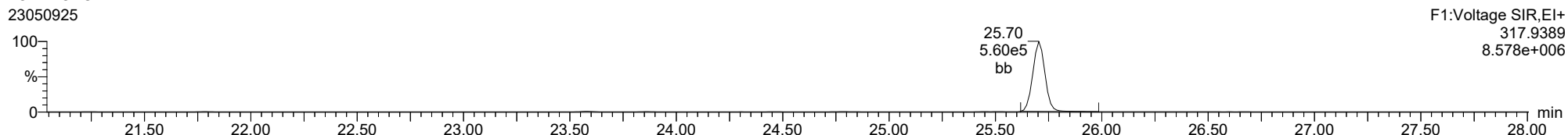
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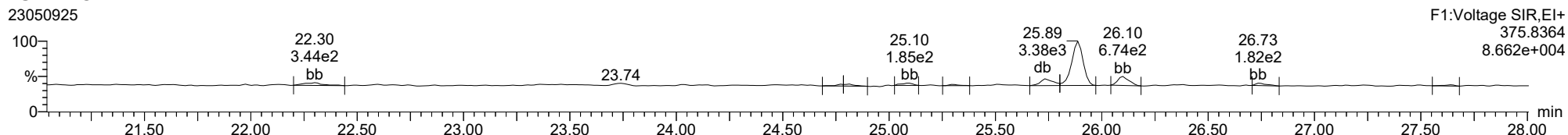
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**13C-2378-TCDF**



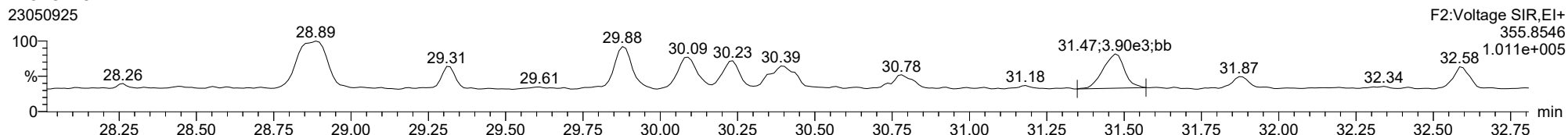
**FUNCTION1 HXCDPE**



ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

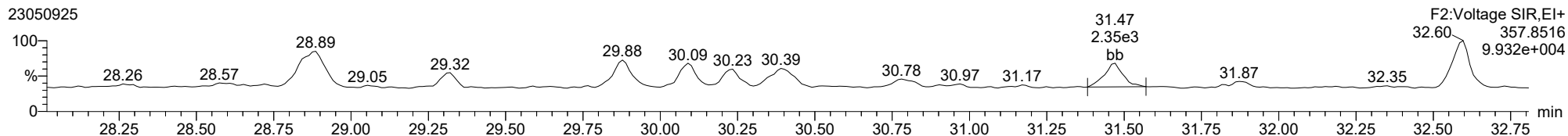
**12378-PeCDD**

23050925



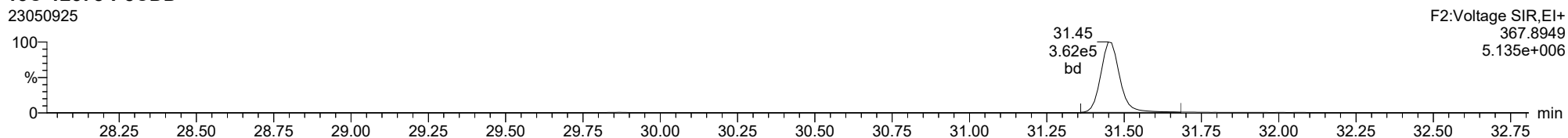
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23050925



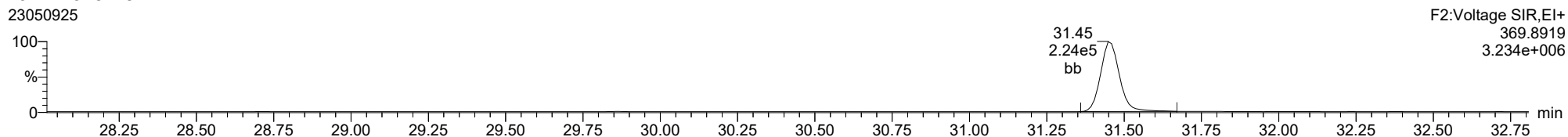
**13C-12378-PeCDD**

23050925



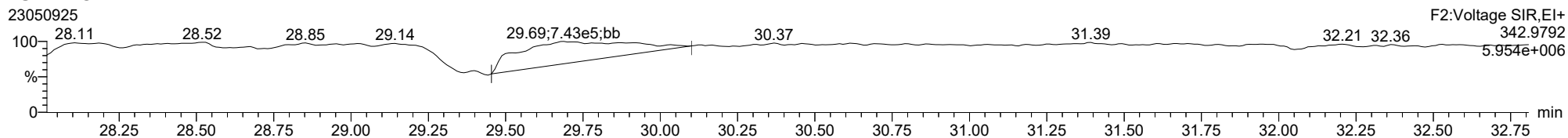
**13C-12378-PeCDD**

23050925



**FUNCTION2 PFK**

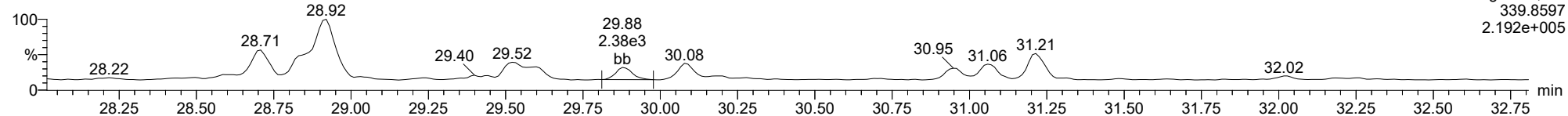
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

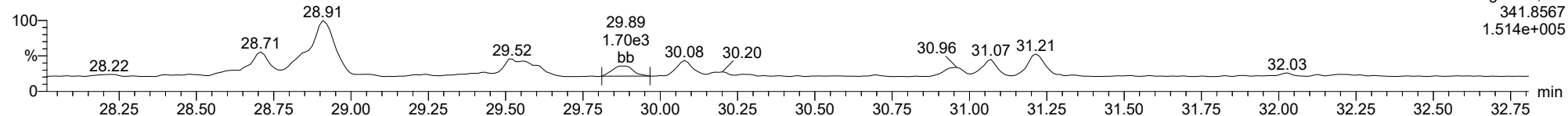
**12378-PeCDF**

23050925



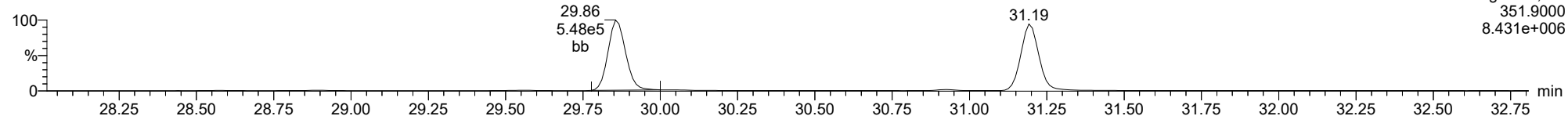
**12378-PeCDF**

23050925



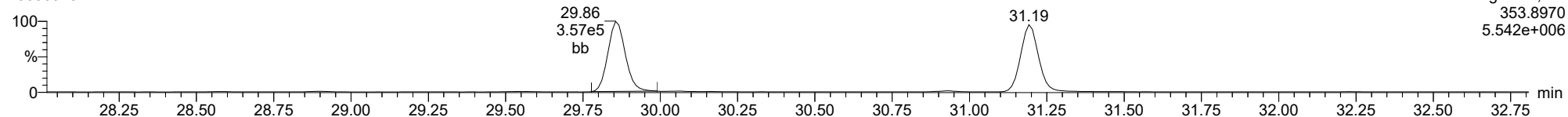
**13C-12378-PeCDF**

23050925



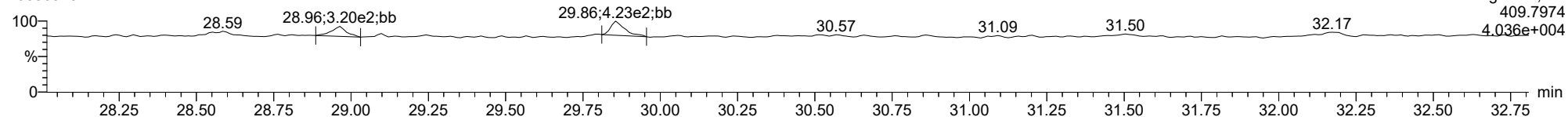
**13C-12378-PeCDF**

23050925



**FUNCTION2 HPCDPE**

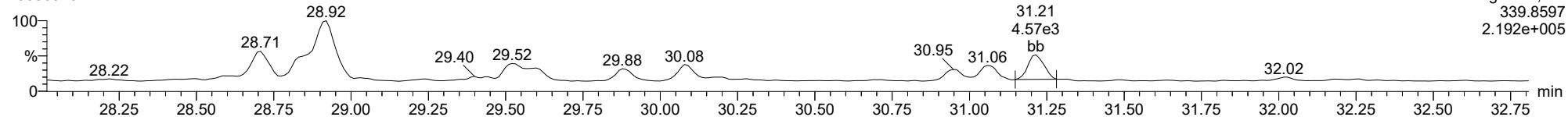
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

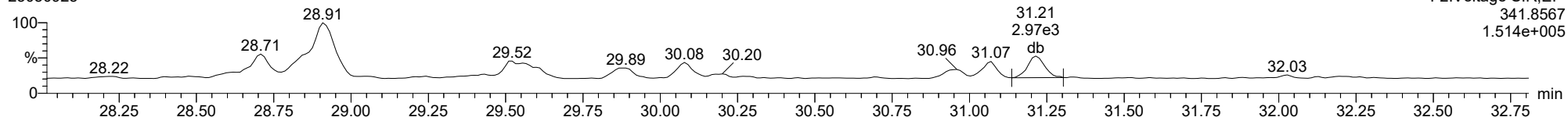
**23478-PeCDF**

23050925



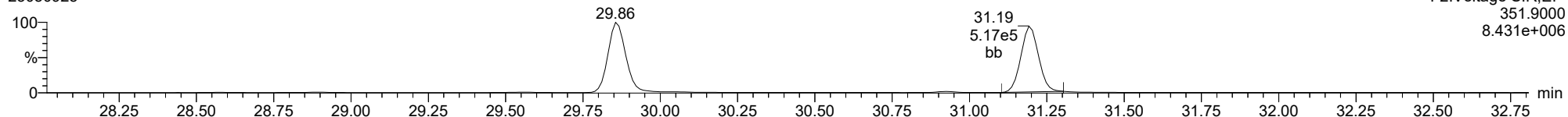
**23478-PeCDF**

23050925



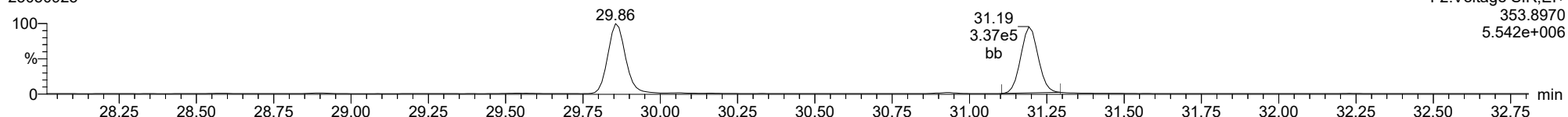
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23050925



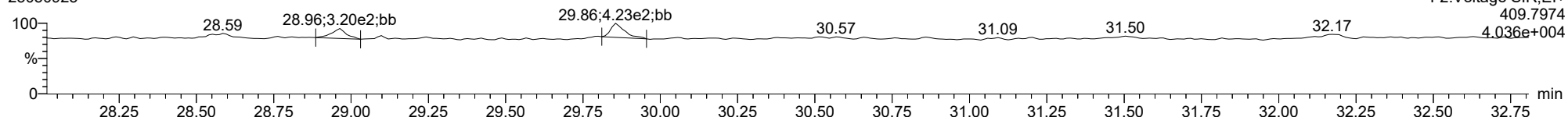
**13C-23478-PeCDF**

23050925



**FUNCTION2 HPCDPE**

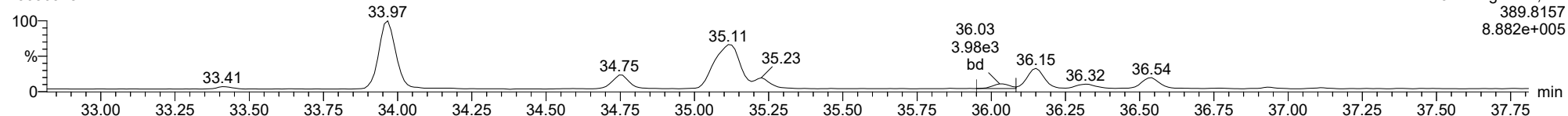
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

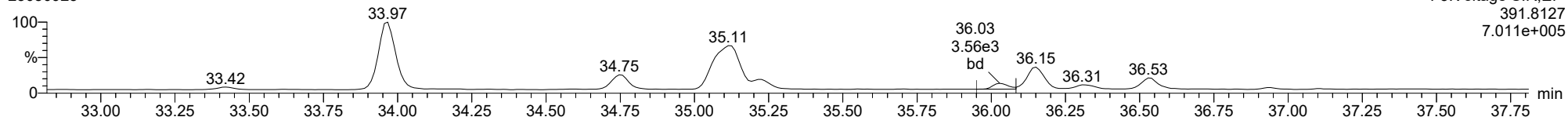
123478-HxCDD

23050925



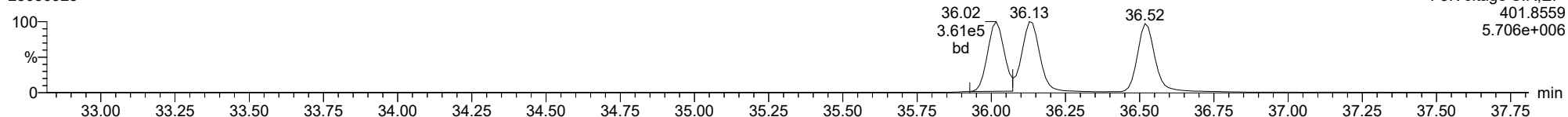
123478-HxCDD

23050925



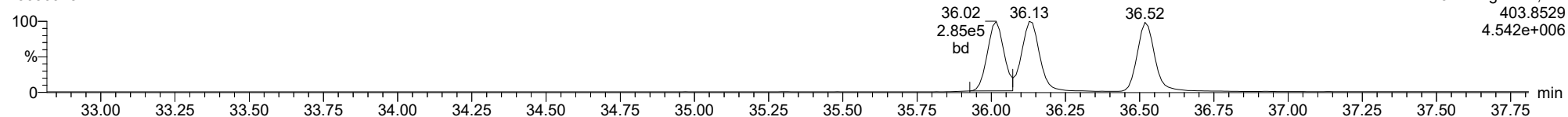
13C-123478-HxCDD

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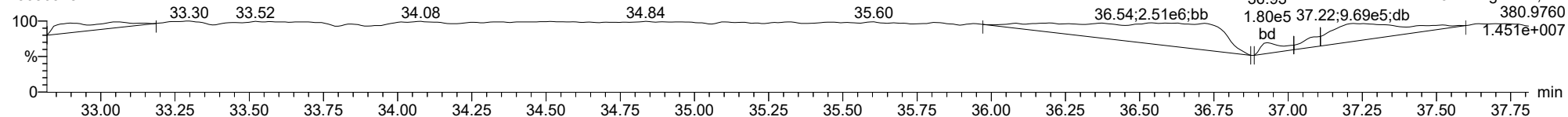
13C-123478-HxCDD

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FUNCTION3 PFK

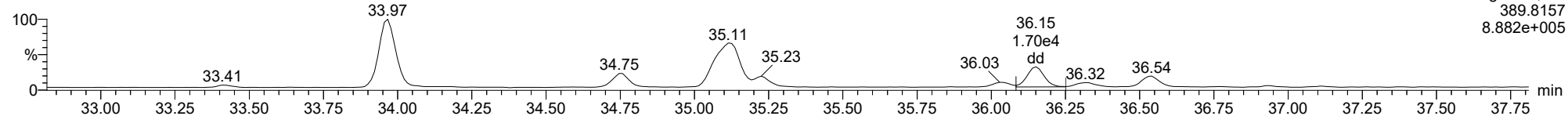
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

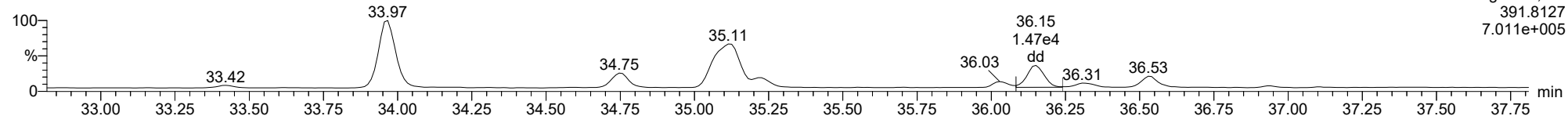
**123678-HxCDD**

23050925



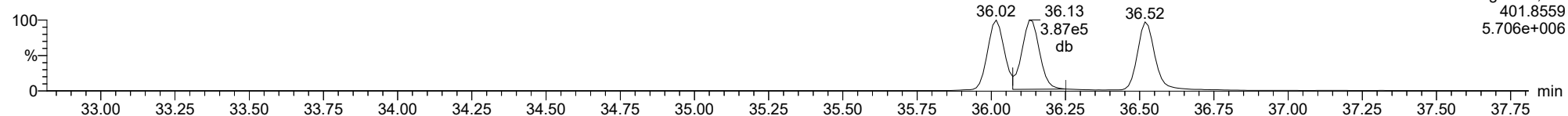
**123678-HxCDD**

23050925



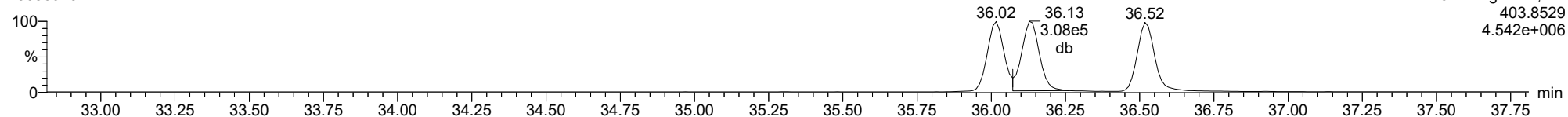
**13C-123678-HxCDD**

23050925



**13C-123678-HxCDD**

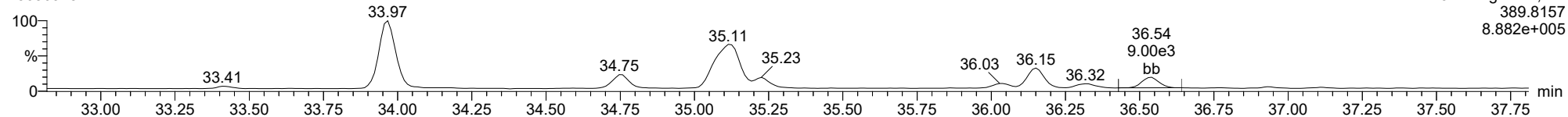
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

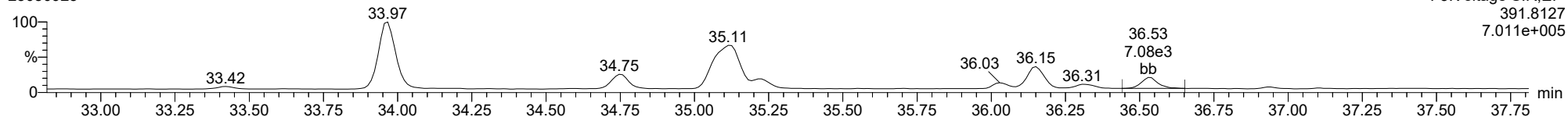
**123789-HxCDD**

23050925



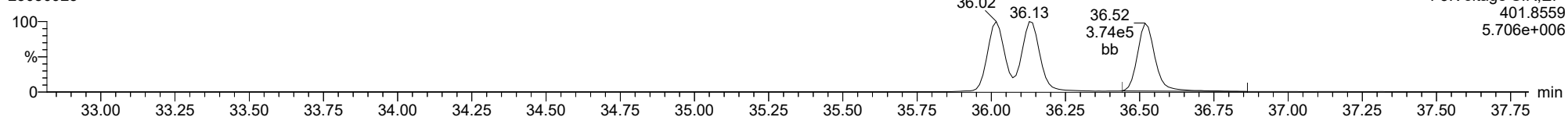
**123789-HxCDD**

23050925



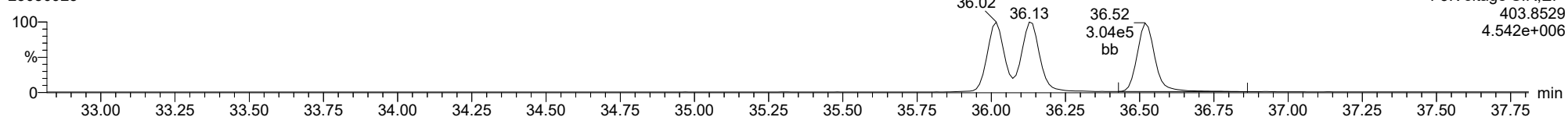
**13C-123789-HxCDD**

23050925



**13C-123789-HxCDD**

23050925

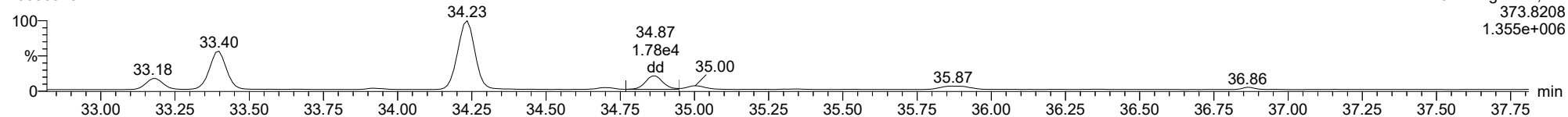




ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

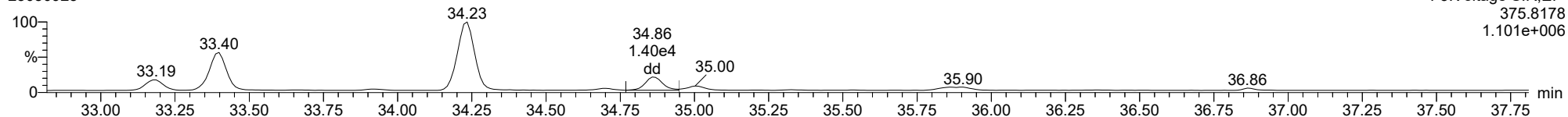
123478-HxCDF

23050925



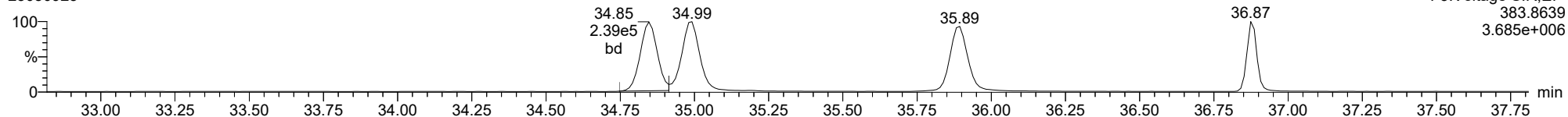
123478-HxCDF

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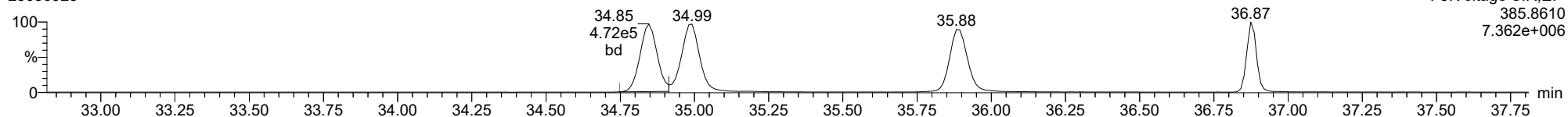
13C-123478-HxCDF

23050925



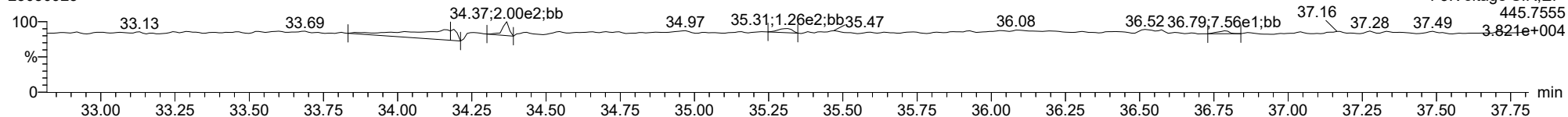
13C-123478-HxCDF

23050925



FUNCTION3 OCDPE

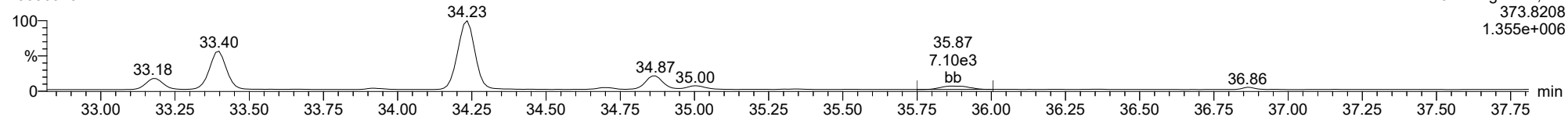
23050925



ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

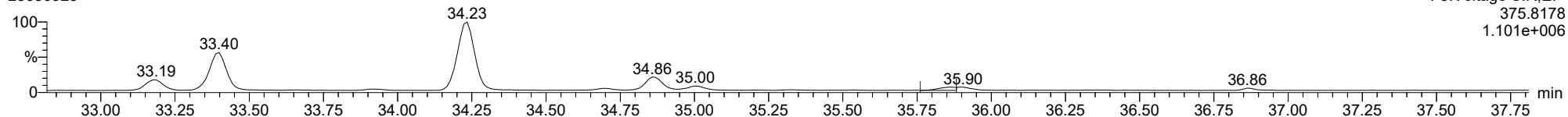
234678-HxCDF

23050925



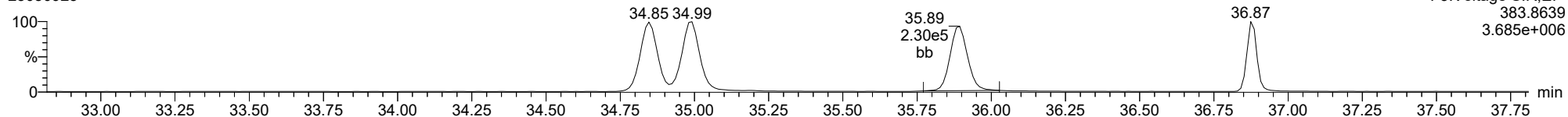
234678-HxCDF

23050925



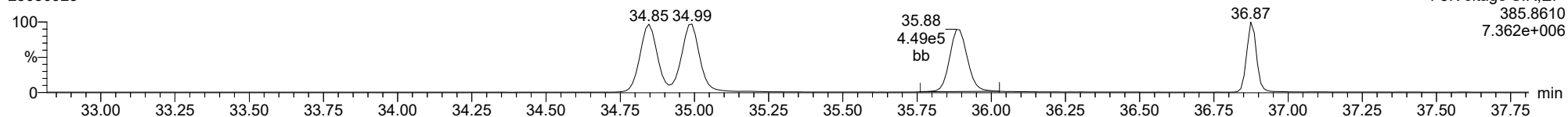
13C-234678-HxCDF

23050925



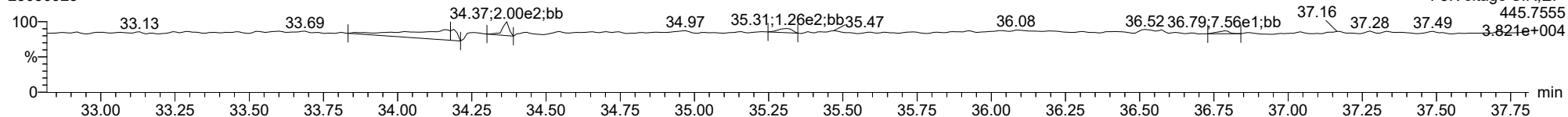
13C-234678-HxCDF

23050925



FUNCTION3 OCDPE

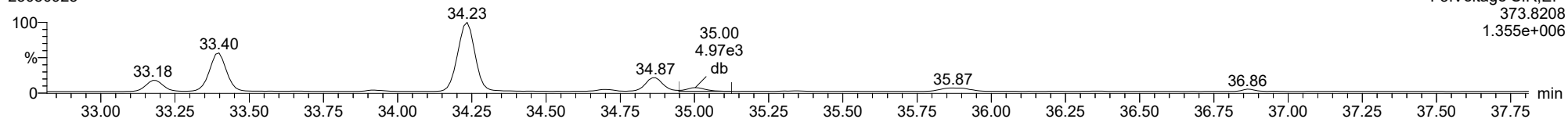
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

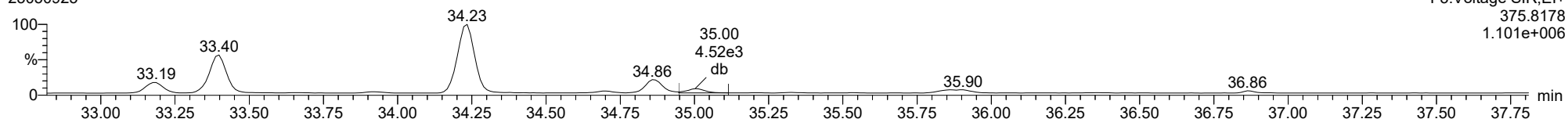
**123678-HxCDF**

23050925



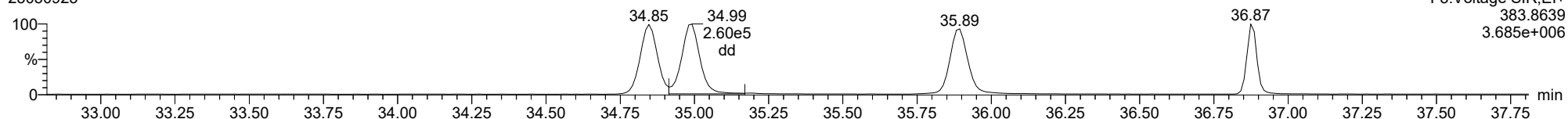
**123678-HxCDF**

23050925



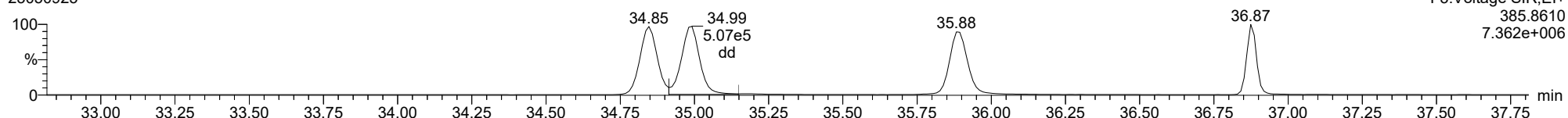
**13C-123678-HxCDF**

23050925



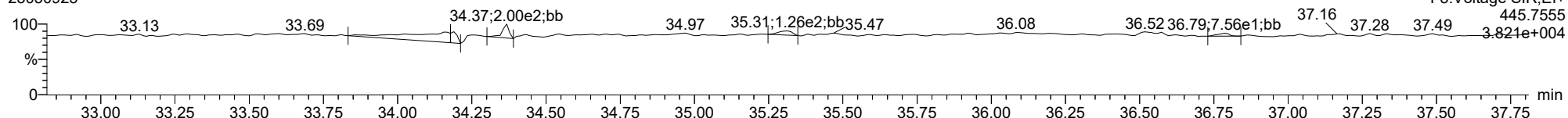
**13C-123678-HxCDF**

23050925



**FUNCTION3 OCDPE**

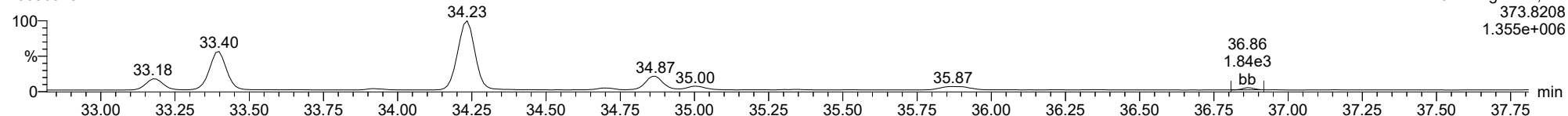
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

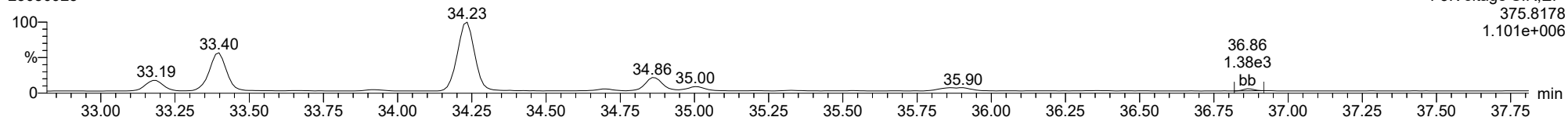
**123789-HxCDF**

23050925



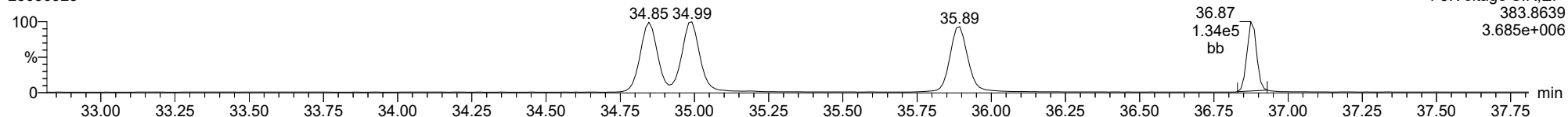
**123789-HxCDF**

23050925



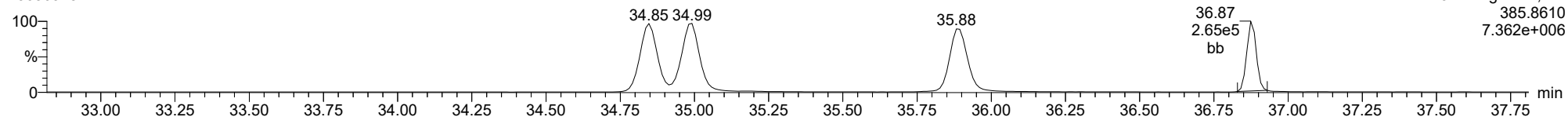
**13C-123789-HxCDF**

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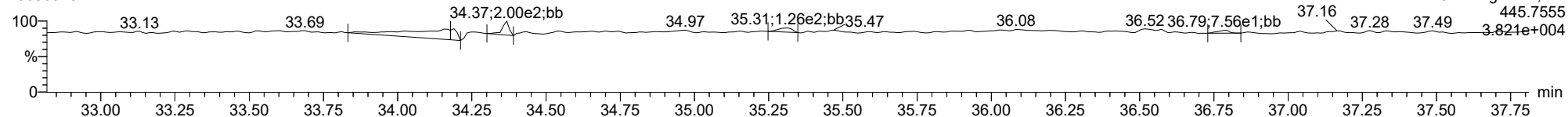
**13C-123789-HxCDF**

23050925



**FUNCTION3 OCDPE**

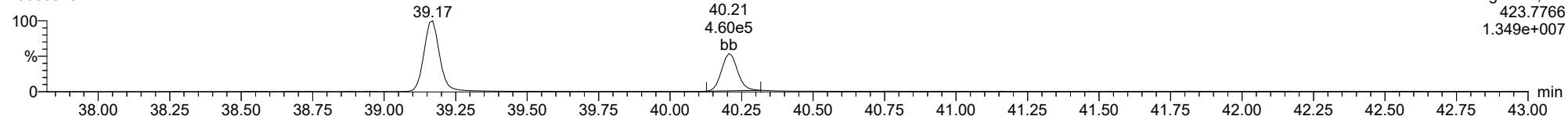
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

1234678-HpCDD

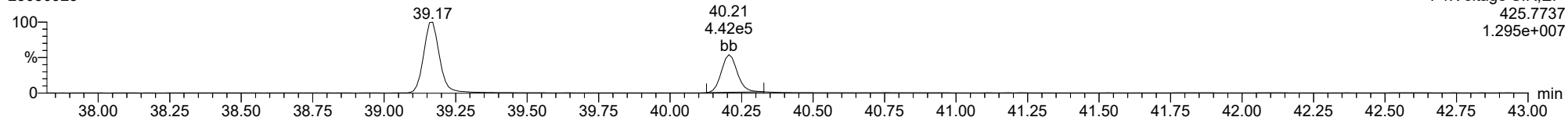
23050925



F4:Voltage SIR,EI+  
423.7766  
1.349e+007

1234678-HpCDD

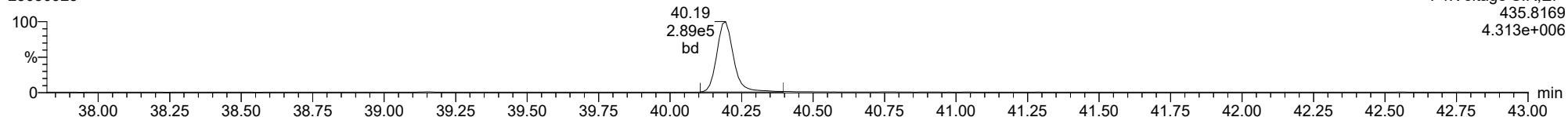
23050925



F4:Voltage SIR,EI+  
425.7737  
1.295e+007

13C-1234678-HpCDD

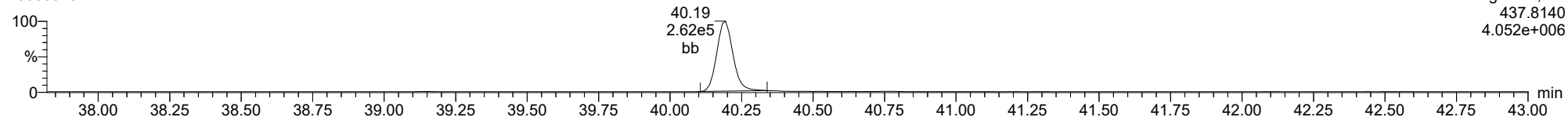
23050925



F4:Voltage SIR,EI+  
435.8169  
4.313e+006

13C-1234678-HpCDD

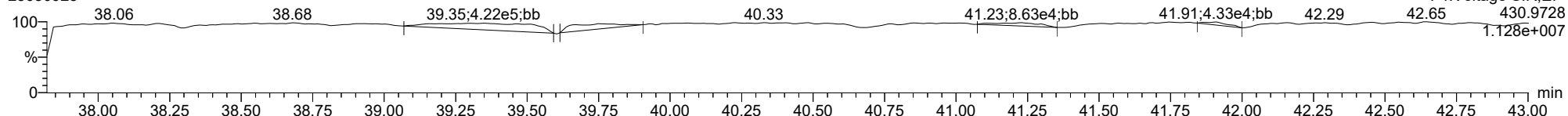
23050925



F4:Voltage SIR,EI+  
437.8140  
4.052e+006

FUNCTION4 PFK

23050925

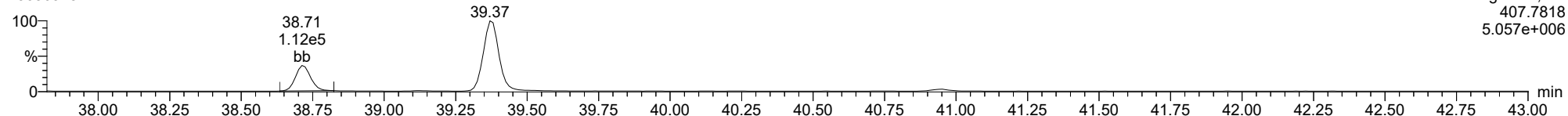


F4:Voltage SIR,EI+  
430.9728  
1.128e+007

ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDF**

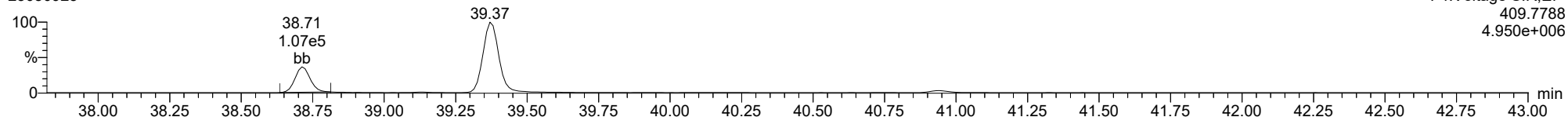
23050925



F4:Voltage SIR,El+  
409.7818  
5.057e+006

**1234678-HpCDF**

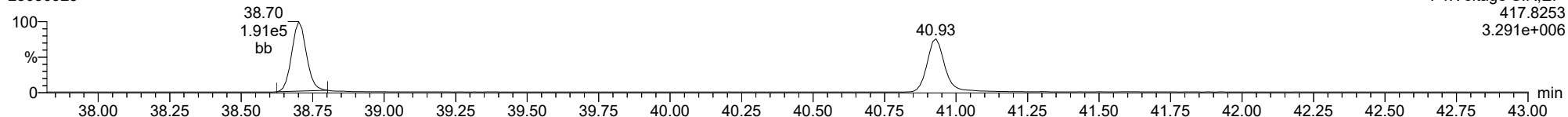
23050925



F4:Voltage SIR,El+  
409.7788  
4.950e+006

**13C-1234678-HpCDF**

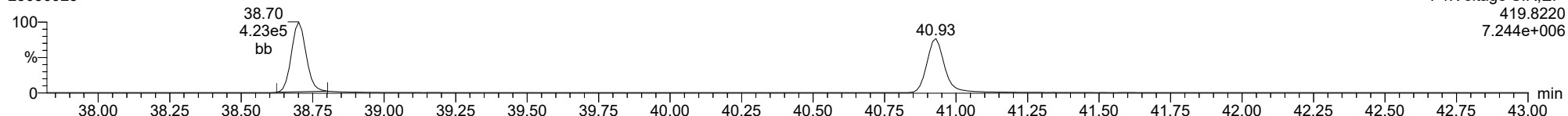
23050925



F4:Voltage SIR,El+  
417.8253  
3.291e+006

**13C-1234678-HpCDF**

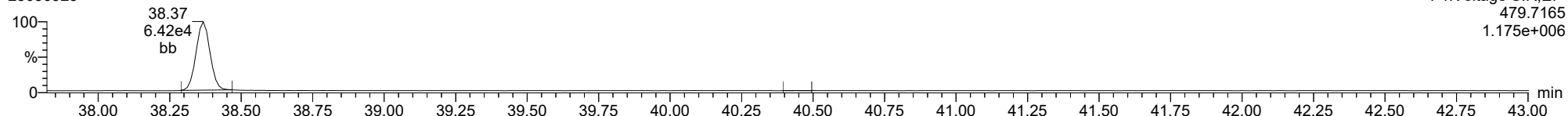
23050925



F4:Voltage SIR,El+  
419.8220  
7.244e+006

**FUNCTION4 NCDPE**

23050925

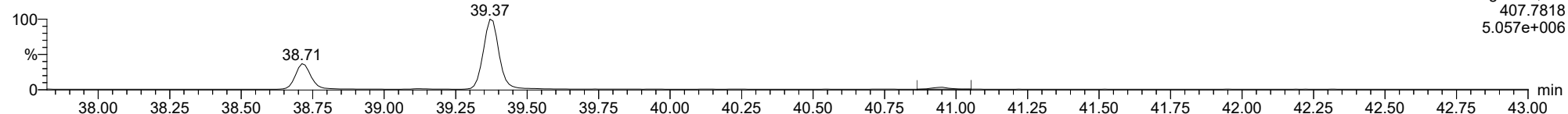


F4:Voltage SIR,El+  
479.7165  
1.175e+006

ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

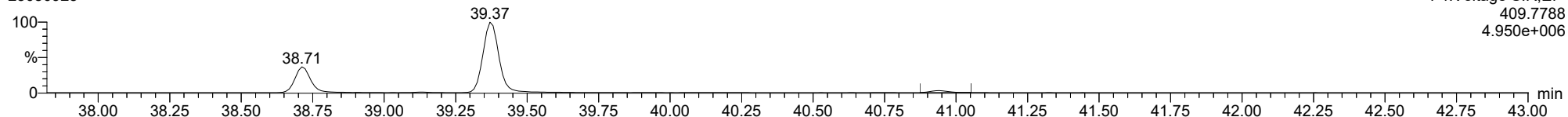
**1234789-HpCDF**

23050925



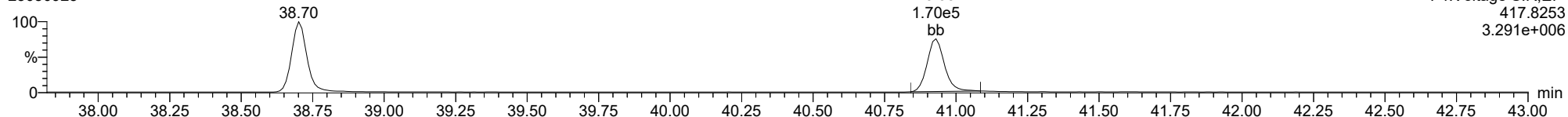
**1234789-HpCDF**

23050925



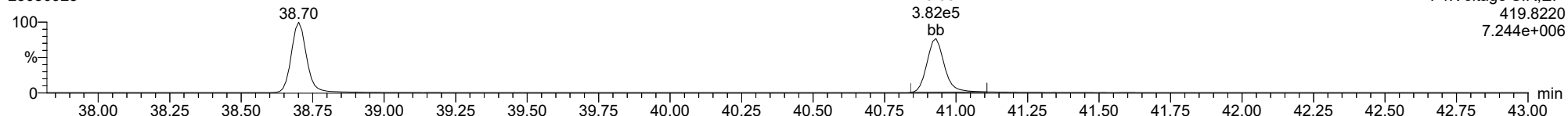
**13C-1234789-HpCDF**

23050925



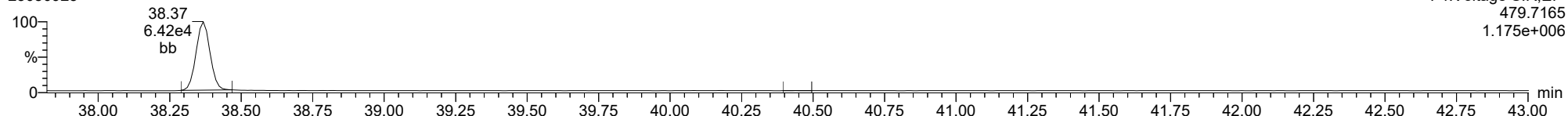
**13C-1234789-HpCDF**

23050925



**FUNCTION4 NCDPE**

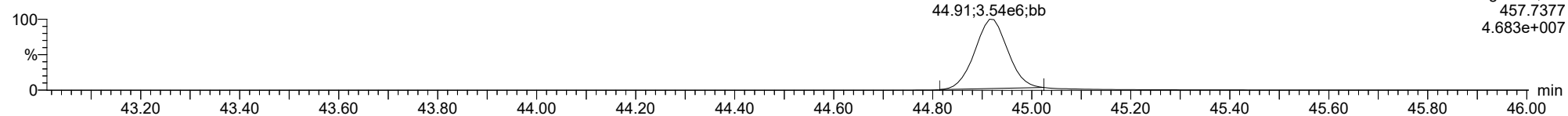
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ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

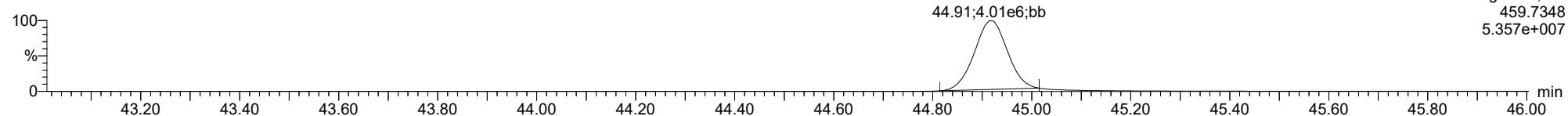
**OCDD**

23050925



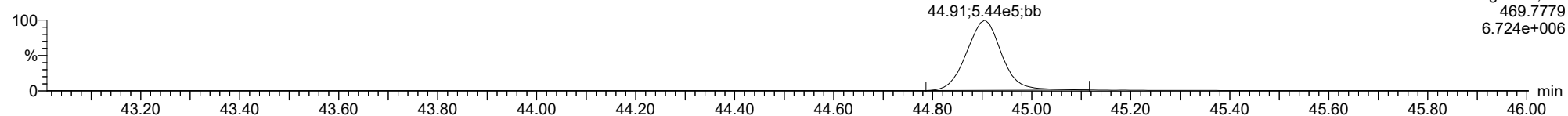
**OCDD**

23050925



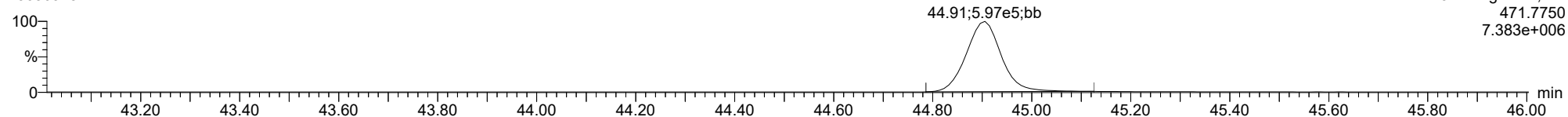
**13C-OCDD**

23050925



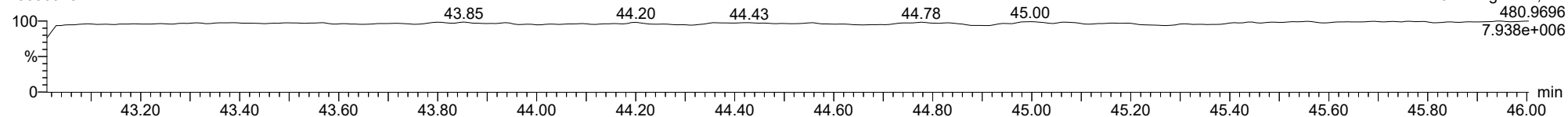
**13C-OCDD**

23050925



**FUNCTION5 PFK**

23050925

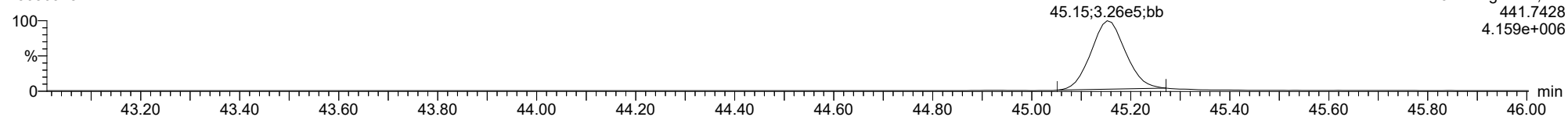




ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

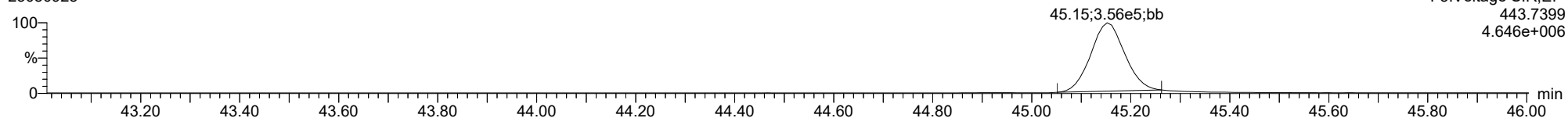
**OCDF**

23050925



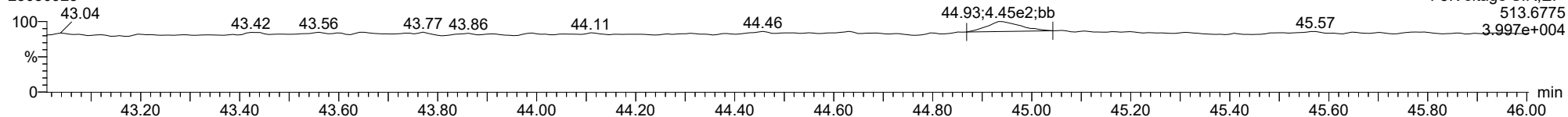
**OCDF**

23050925



**FUNCTION5 DCDPE**

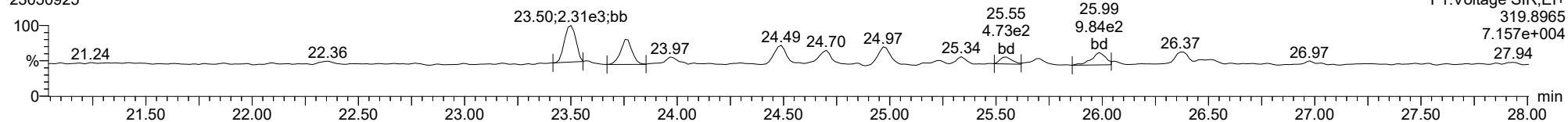
23050925



ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

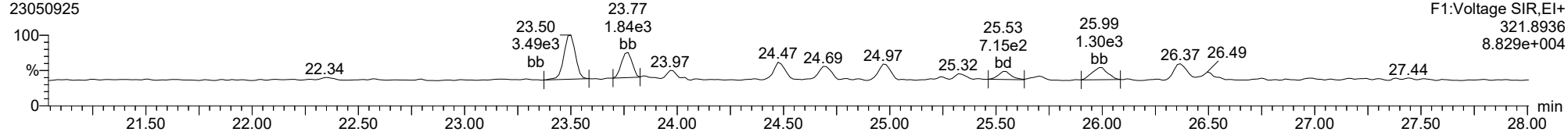
**Total-tetradioxins**

23050925



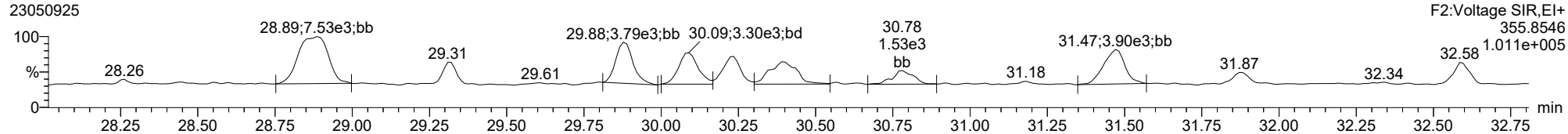
**Total-tetradioxins**

23050925



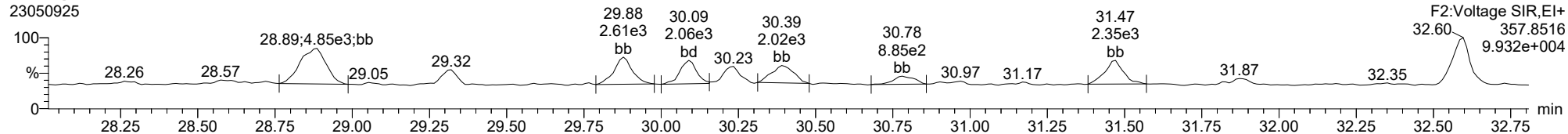
**Total-pentadioxins**

23050925



**Total-pentadioxins**

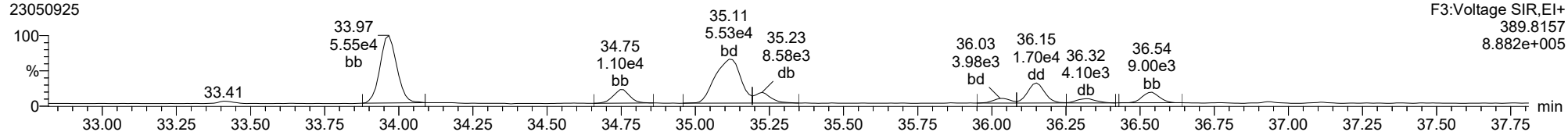
23050925



ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

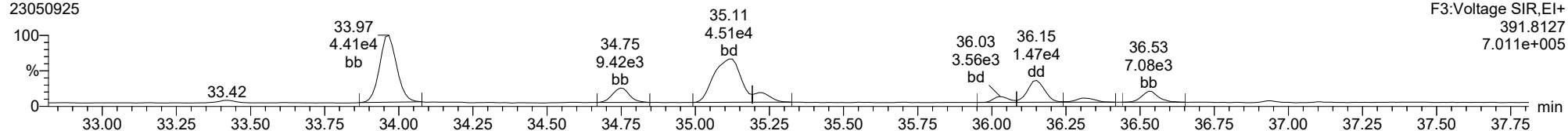
**Total-hexadioxins**

23050925



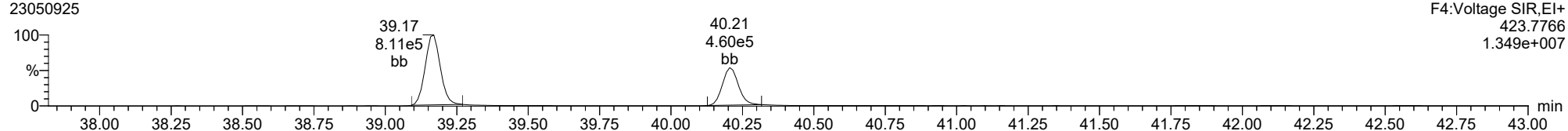
**Total-hexadioxins**

23050925



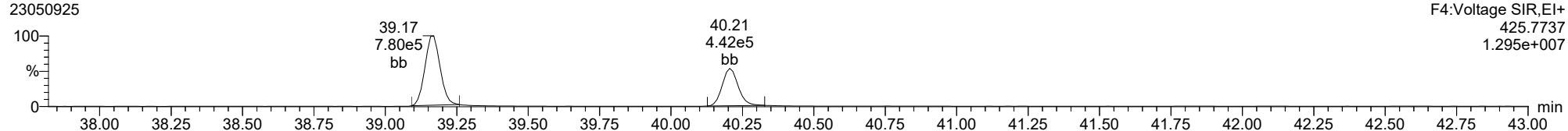
**Total-heptadioxins**

23050925



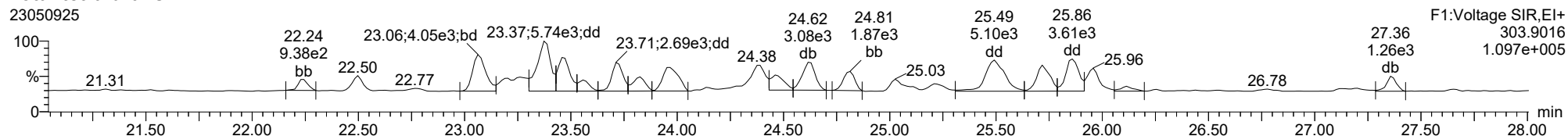
**Total-heptadioxins**

23050925

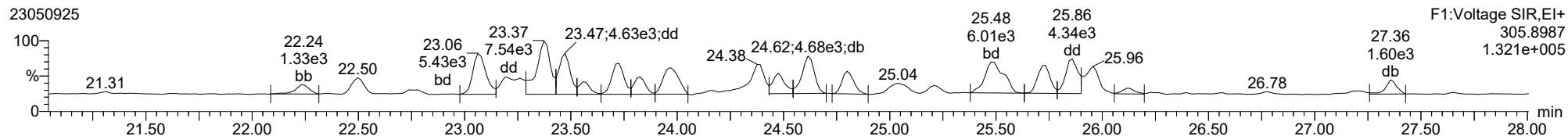


ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

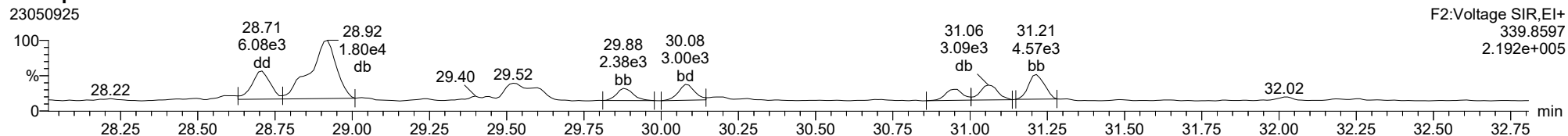
**Total-tetrafurans**



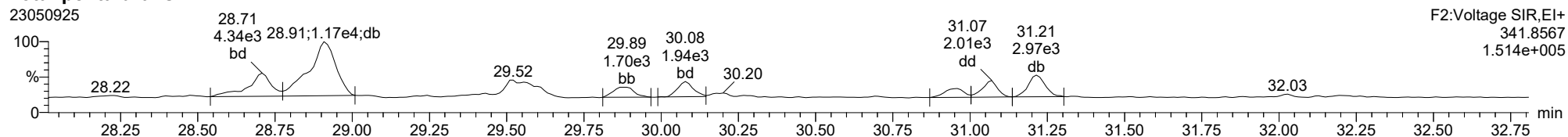
**Total-tetrafurans**



**Total-pentafurans**



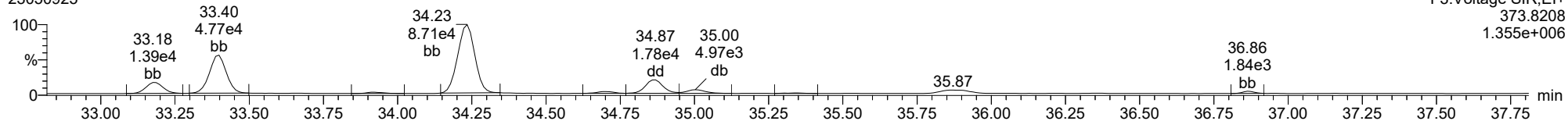
**Total-pentafurans**



ID: BLD0657-DUP1, Name: 23050925, Date: 10-May-2023, Time: 08:44:23, Conditions: AUTOSPEC01, User: pk

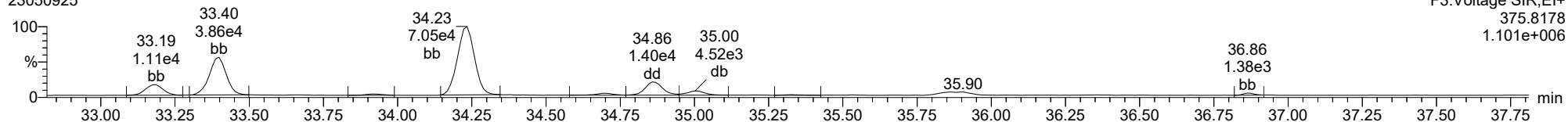
**Total-hexafurans**

23050925



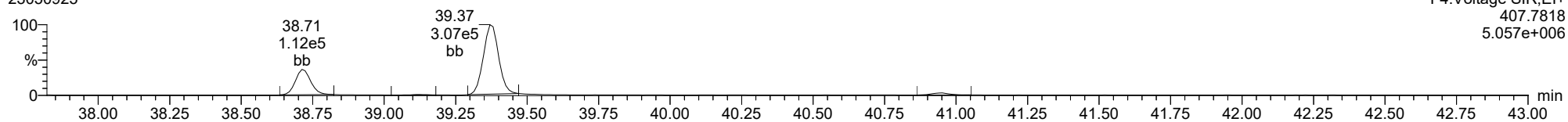
**Total-hexafurans**

23050925



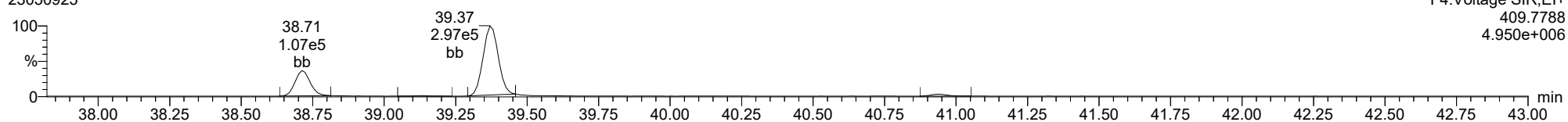
**Total-heptafurans**

23050925



**Total-heptafurans**

23050925





**STANDARD REFERENCE MATERIAL RECOVERY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Laboratory ID: BLD0657-SRM1

Batch: BLD0657

Initial/Final: 10.03 g / 20 uL

Preparation: EPA 1613

Analyzed: 05/10/2023 7:55

Standard ID: L001275

Expires: 08/05/2023

Standard Lot#: PSRM0174

Description: Puget Sound reference-SRM

ANALYTE	TRUE (ng/kg wet)	FOUND (ng/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
2,3,7,8-TCDF	1.1100	1.02	0.203	0.997		91.6	50 - 150
2,3,7,8-TCDD	1.0500	0.924	0.150	0.997	J	88.0	50 - 150
1,2,3,7,8-PeCDF	1.2300	1.02	0.239	0.997		82.9	50 - 150
2,3,4,7,8-PeCDF	1.0700	0.830	0.219	0.997	J	77.6	50 - 150
1,2,3,7,8-PeCDD	1.0800	1.23	0.197	0.997		114	50 - 150
1,2,3,4,7,8-HxCDF	3.0200	2.54	0.279	0.997		84.2	50 - 150
1,2,3,6,7,8-HxCDF	1.0900	1.00	0.199	0.997		91.8	50 - 150
2,3,4,6,7,8-HxCDF	1.8300	1.90	0.169	0.997		104	50 - 150
1,2,3,7,8,9-HxCDF	0.51100	0.438	0.189	0.997	EMPC, J	85.7	50 - 150
1,2,3,4,7,8-HxCDD	1.5900	1.36	0.177	0.997	EMPC	85.4	50 - 150
1,2,3,6,7,8-HxCDD	3.8800	3.28	0.179	0.997		84.5	50 - 150
1,2,3,7,8,9-HxCDD	3.0400	2.71	0.219	0.997		89.0	50 - 150
1,2,3,4,6,7,8-HpCDF	18.700	22.2	0.209	0.997		118	50 - 150
1,2,3,4,7,8,9-HpCDF	1.6300	1.47	0.239	0.997		89.9	50 - 150
1,2,3,4,6,7,8-HpCDD	90.600	98.8	0.558	2.49		109	50 - 150
OCDF	58.400	63.4	1.10	2.49		109	50 - 150
OCDD	811.00	816	4.59	9.97	B	101	50 - 150

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:00 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.704	1.001	1.931e3	2.281e3	0.702	0.847	0.770	1348	2756	2.57e4	3.42e4	19.0	12.4	NO	dd	bd	0.510
12378-PeCDF	29.844	1.000	2.259e3	1.302e3	0.679	1.736	1.550	1494	1518	3.67e4	1.90e4	24.6	12.5	NO	bb	bb	0.512
23478-PeCDF	31.192	1.001	1.904e3	1.201e3	0.786	1.585	1.550	1494	1518	3.30e4	1.61e4	22.1	10.6	NO	MM	bb	0.416
123478-HxCDF	34.813	1.001	6.498e3	4.782e3	1.166	1.359	1.240	853	989	9.96e4	7.36e4	116.8	74.4	NO	dd	dd	1.275
234678-HxCDF	35.816	1.000	4.403e3	3.948e3	1.140	1.115	1.240	853	989	4.68e4	4.08e4	54.8	41.3	NO	bb	bd	0.953
123678-HxCDF	34.958	1.001	2.657e3	1.912e3	1.091	1.390	1.240	853	989	3.58e4	2.84e4	42.0	28.7	NO	db	db	0.502
123789-HxCDF	36.819	1.000	7.916e2	8.807e2	1.137	0.899	1.240	853	989	1.41e4	1.39e4	16.5	14.1	YES	bb	bb	0.220
1234678-HpCDF	38.680	1.000	3.328e4	3.223e4	1.003	1.033	1.050	1761	1340	5.07e5	5.15e5	288.1	384.7	NO	bb	bb	11.109
1234789-HpCDF	40.908	1.000	1.990e3	2.221e3	0.953	0.896	1.050	1761	1340	3.23e4	2.99e4	18.3	22.3	NO	bb	bb	0.735
OCDF	45.107	1.006	6.639e4	7.422e4	0.778	0.895	0.890	1046	751	7.89e5	8.99e5	754.4	1197.1	NO	bb	bb	31.800
2378-TCDD	26.339	1.001	1.913e3	2.863e3	1.149	0.668	0.770	1018	618	2.99e4	4.10e4	29.4	66.4	NO	bd	bd	0.464
12378-PeCDD	31.449	1.001	2.532e3	1.454e3	1.022	1.741	1.550	1546	1421	3.44e4	2.04e4	22.2	14.3	NO	bd	bb	0.615
123478-HxCDD	35.961	1.000	2.424e3	2.389e3	0.996	1.015	1.240	1662	1458	3.61e4	3.51e4	21.7	24.1	YES	bd	bd	0.681
123678-HxCDD	36.072	1.000	6.676e3	6.194e3	1.001	1.078	1.240	1662	1458	1.08e5	9.06e4	65.0	62.1	NO	db	MM	1.643
123789-HxCDD	36.451	1.011	4.736e3	4.449e3	0.907	1.065	1.240	1662	1458	7.56e4	6.37e4	45.5	43.7	NO	bb	bb	1.357
1234678-HpCDD	40.172	1.000	1.484e5	1.422e5	1.039	1.044	1.050	3190	2181	2.25e6	2.13e6	705.6	977.3	NO	bb	bb	49.528
OCDD	44.869	1.000	1.002e6	1.137e6	0.920	0.881	0.890	2912	1679	1.26e7	1.46e7	4337.5	8691.9	NO	bb	bb	409.065
13C-2378-TCDF	25.676	1.007	5.202e5	6.571e5	1.620	0.792	0.770	1736	1439	7.61e6	9.73e6	4383.9	6763.5	NO	bb	bd	91.753
13C-12378-PeCDF	29.833	1.170	6.185e5	4.062e5	1.240	1.523	1.550	2793	2840	8.90e6	5.78e6	3186.6	2036.1	NO	bd	bd	104.304
13C-23478-PeCDF	31.170	1.222	5.773e5	3.717e5	1.118	1.553	1.550	2793	2840	8.58e6	5.55e6	3072.4	1953.3	NO	bb	bb	107.197
13C-123478-HxCDF	34.791	0.955	2.532e5	5.055e5	1.168	0.501	0.510	1743	2517	3.85e6	7.60e6	2208.1	3021.7	NO	bd	bd	77.371
13C-123678-HxCDF	34.936	0.959	2.953e5	5.398e5	1.386	0.547	0.510	1743	2517	4.10e6	7.81e6	2351.9	3101.7	NO	dd	db	71.754
13C-234678-HxCDF	35.816	0.983	2.655e5	5.033e5	1.129	0.527	0.510	1743	2517	3.73e6	7.36e6	2142.8	2924.0	NO	bd	bb	81.103
13C-123789-HxCDF	36.830	1.011	2.247e5	4.448e5	0.932	0.505	0.510	1743	2517	4.11e6	8.10e6	2358.2	3218.1	NO	bb	bb	85.592
13C-1234678-HpCDF	38.668	1.061	1.793e5	4.086e5	0.895	0.439	0.440	2067	2277	3.03e6	6.71e6	1464.3	2945.6	NO	bb	bb	78.235
13C-1234789-HpCDF	40.897	1.122	1.795e5	4.218e5	0.770	0.426	0.440	2067	2277	2.50e6	5.67e6	1210.1	2491.0	NO	bb	bb	93.069
13C-1234-TCDD	25.506	0.000	3.460e5	4.459e5	1.000	0.776	0.770	1881	1127	5.32e6	6.84e6	2828.7	6068.5	NO	bb	bb	100.000
13C-2378-TCDD	26.311	1.032	3.937e5	5.031e5	1.152	0.783	0.770	1881	1127	5.61e6	7.19e6	2981.3	6377.8	NO	bb	bb	98.266
13C-12378-PeCDD	31.426	1.232	3.898e5	2.446e5	0.829	1.594	1.550	1136	1313	5.42e6	3.39e6	4768.9	2578.5	NO	bd	bd	96.659
13C-123478-HxCDD	35.950	0.987	3.970e5	3.127e5	0.995	1.270	1.240	1799	1152	5.92e6	4.68e6	3291.3	4059.7	NO	bd	bd	84.961
13C-123678-HxCDD	36.061	0.990	4.376e5	3.449e5	1.157	1.269	1.240	1799	1152	6.26e6	5.00e6	3478.9	4337.6	NO	db	db	80.590
13C-1234678-HpCDD	40.161	1.102	2.973e5	2.674e5	0.840	1.112	1.050	1937	1586	4.18e6	3.85e6	2157.3	2424.1	NO	bb	bb	80.065
13C-OCDD	44.851	1.231	5.382e5	5.988e5	0.767	0.899	0.890	1195	1004	6.10e6	6.88e6	5108.6	6853.2	NO	bd	bd	176.483
13C-123789-HxCDD	36.440	0.000	4.661e5	3.733e5	1.000	1.249	1.240	1799	1152	6.87e6	5.46e6	3821.0	4738.6	NO	bb	bd	100.000
37CL-2378-TCDD	26.339	1.033	3.739e5		1.288			982		5.52e6		5624.1			bb		36.663

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:00 Pacific Daylight Time

ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.201	0.865	2.768e2	5.924e2	0.802	0.467	0.770	1348	2756	5.63e3	9.10e3	4.2	3.3	YES	bb	bb	0.092
1289-TCDF					0.678		0.770	1348	2756								
13468-PECDF					1.246		1.550	703	764								
12389-PECDF					0.496		1.550	1494	1518								
123468-HXCDF	33.142	0.953	5.506e3	4.482e3	1.169	1.229	1.240	853	989	8.81e4	6.89e4	103.2	69.7	NO	bb	bb	1.126
1368-TCDD	23.472	0.892	1.839e3	1.550e3	1.015	1.186	0.770	1018	618	2.53e4	2.65e4	24.9	42.9	YES	bb	bb	0.372
1289-TCDD					0.909		0.770	1018	618								
12479-PECDD	28.753	0.915	2.350e3	2.038e3	2.301	1.153	1.550	1546	1421	4.20e4	2.56e4	27.1	18.0	YES	bd	bb	0.300
12389-PECDD	31.839	1.013	5.263e2	3.227e2	1.184	1.631	1.550	1546	1421	6.64e3	5.94e3	4.3	4.2	NO	bb	bb	0.113
124679-HXCDD	33.922	0.944	1.877e4	1.534e4	1.115	1.223	1.240	1662	1458	2.71e5	2.32e5	163.0	158.9	NO	bb	bb	4.310
1234679-HPCDD	39.136	0.975	2.216e5	2.156e5	1.137	1.028	1.050	3190	2181	3.53e6	3.40e6	1106.1	1557.1	NO	bb	bb	68.114
Total-tetrafurans			2.435e4		0.727			1348		3.42e5							6.517
Total-penta1			1.699e4					703		2.41e5							3.002
Total-pentafurans			1.100e4		0.654			1494		1.64e5							2.725
Total-hexafurans			6.347e4		1.141			853		9.43e5							13.106
Total-heptafurans			1.028e5		0.978			1761		1.63e6							34.883
Total-Furans			2.850e5		0.922			1348		4.10e6							92.034
Total-tetradoxins			6.662e3		1.024			1018		1.02e5							1.621
Total-pentadoxins			7.699e3		1.502			1546		1.15e5							1.546
Total-hexadoxins			5.860e4		1.005			1662		7.66e5							14.122
Total-heptadoxins			3.700e5		1.088			3190		5.78e6							117.642
Total-Dioxins			1.445e6		1.130			1018		1.94e7							543.995
Total-TEQ			1.730e6					1018		2.35e7							636.028
FUNCTION1 PFK			4.776e7					125834		2.81e7							
FUNCTION2 PFK			1.643e5					107400		4.59e5							0.000
FUNCTION3 PFK			2.791e6					128271		5.12e6							0.000
FUNCTION4 PFK			0.000e0					136511		0.00e0							
FUNCTION5 PFK			7.044e4					102936		1.94e6							
FUNCTION1 HXCD...			2.444e3					857		4.00e4							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			3.773e2					704		7.53e3							0.000
FUNCTION3 OCDPE			1.099e2					487		1.64e3							0.000
FUNCTION4 NCDPE			1.781e4					650		2.99e5							0.000
FUNCTION5 DCDPE			7.001e1					530		1.46e3							0.000



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:00 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56

Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.45	4.546e3	6.048e3	0.727	0.75	0.77	49.1	YES	NO	dd	dd	1.238
2	Total-tetrafurans	24.38	1.504e3	1.948e3	0.727	0.77	0.77	16.5	YES	NO	dd	dd	0.403
3	Total-tetrafurans	23.95	1.655e3	1.872e3	0.727	0.88	0.77	12.7	YES	NO	db	bb	0.412
4	Total-tetrafurans	23.70	1.123e3	1.489e3	0.727	0.75	0.77	12.8	YES	NO	dd	bd	0.305
5	Total-tetrafurans	23.44	1.352e3	1.891e3	0.727	0.71	0.77	15.3	YES	NO	dd	dd	0.379
6	Total-tetrafurans	23.36	1.959e3	2.515e3	0.727	0.78	0.77	20.0	YES	NO	dd	dd	0.523
7	Total-tetrafurans	23.03	2.453e3	3.091e3	0.727	0.79	0.77	24.3	YES	NO	bd	bd	0.648
8	Total-tetrafurans	25.92	1.260e3	1.884e3	0.727	0.67	0.77	14.6	YES	NO	db	dd	0.367
9	2378-TCDF	25.70	1.931e3	2.281e3	0.702	0.85	0.77	19.0	YES	NO	dd	bd	0.510
10	Total-tetrafurans	25.52	7.067e2	9.421e2	0.727	0.75	0.77	10.2	YES	NO	dd	db	0.193
11	Total-tetrafurans	25.45	1.258e3	1.687e3	0.727	0.75	0.77	14.4	YES	NO	bd	bd	0.344
12	Total-tetrafurans	24.79	2.795e3	3.393e3	0.727	0.82	0.77	29.1	YES	NO	bb	bb	0.723
13	Total-tetrafurans	24.60	1.813e3	2.231e3	0.727	0.81	0.77	15.5	YES	NO	db	db	0.473

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	26.79	4.950e2	3.063e2		1.62	1.55	10.6	YES	NO	db	db	0.085
2	Total-penta1	26.69	8.097e2	6.127e2		1.32	1.55	16.7	YES	NO	bd	bd	0.151
3	Total-penta1	27.54	5.830e2	3.360e2		1.74	1.55	9.6	YES	NO	bb	bb	0.098
4	Total-penta1	27.13	1.510e4	9.970e3		1.51	1.55	305.5	YES	NO	bd	bd	2.668

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.80	5.474e3	3.892e3	0.654	1.41	1.55	48.5	YES	NO	db	db	1.451
2	23478-PeCDF	31.19	1.904e3	1.201e3	0.786	1.58	1.55	22.1	YES	NO	MM	bb	0.416
3	Total-pentafurans	31.05	1.360e3	8.701e2	0.654	1.56	1.55	14.5	YES	NO	dd	db	0.346
4	12378-PeCDF	29.84	2.259e3	1.302e3	0.679	1.74	1.55	24.6	YES	NO	bb	bb	0.512

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:00 Pacific Daylight Time

**ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk**

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexafurans	33.35	1.894e4	1.507e4	1.141	1.26	1.24	336.2	YES	NO	bb	bb	3.935
2	123468-HxCDF	33.14	5.506e3	4.482e3	1.169	1.23	1.24	103.2	YES	NO	bb	bb	1.126
3	234678-HxCDF	35.82	4.403e3	3.948e3	1.140	1.12	1.24	54.8	YES	NO	bb	bd	0.953
4	123678-HxCDF	34.96	2.657e3	1.912e3	1.091	1.39	1.24	42.0	YES	NO	db	db	0.502
5	123478-HxCDF	34.81	6.498e3	4.782e3	1.166	1.36	1.24	116.8	YES	NO	dd	dd	1.275
6	Total-hexafurans	34.19	2.546e4	2.050e4	1.141	1.24	1.24	452.1	YES	NO	bb	bb	5.316

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	39.34	6.754e4	6.645e4	0.978	1.02	1.05	616.4	YES	NO	bb	bb	23.039
2	1234678-HpCDF	38.68	3.328e4	3.223e4	1.003	1.03	1.05	288.1	YES	NO	bb	bb	11.109
3	1234789-HpCDF	40.91	1.990e3	2.221e3	0.953	0.90	1.05	18.3	YES	NO	bb	bb	0.735

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:00 Pacific Daylight Time

**ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.45	4.546e3	6.048e3	0.727	0.75	0.77	49.1	YES	NO	dd	dd	1.238
2	Total-tetrafurans	24.38	1.504e3	1.948e3	0.727	0.77	0.77	16.5	YES	NO	dd	dd	0.403
3	Total-tetrafurans	23.95	1.655e3	1.872e3	0.727	0.88	0.77	12.7	YES	NO	db	bb	0.412
4	Total-tetrafurans	23.70	1.123e3	1.489e3	0.727	0.75	0.77	12.8	YES	NO	dd	bd	0.305
5	Total-tetrafurans	23.44	1.352e3	1.891e3	0.727	0.71	0.77	15.3	YES	NO	dd	dd	0.379
6	Total-tetrafurans	23.36	1.959e3	2.515e3	0.727	0.78	0.77	20.0	YES	NO	dd	dd	0.523
7	Total-tetrafurans	23.03	2.453e3	3.091e3	0.727	0.79	0.77	24.3	YES	NO	bd	bd	0.648
8	Total-tetrafurans	25.92	1.260e3	1.884e3	0.727	0.67	0.77	14.6	YES	NO	db	dd	0.367
9	2378-TCDF	25.70	1.931e3	2.281e3	0.702	0.85	0.77	19.0	YES	NO	dd	bd	0.510
10	Total-tetrafurans	25.52	7.067e2	9.421e2	0.727	0.75	0.77	10.2	YES	NO	dd	db	0.193
11	Total-tetrafurans	25.45	1.258e3	1.687e3	0.727	0.75	0.77	14.4	YES	NO	bd	bd	0.344
12	Total-tetrafurans	24.79	2.795e3	3.393e3	0.727	0.82	0.77	29.1	YES	NO	bb	bb	0.723
13	Total-tetrafurans	24.60	1.813e3	2.231e3	0.727	0.81	0.77	15.5	YES	NO	db	db	0.473
14	Total-pentafurans	28.80	5.474e3	3.892e3	0.654	1.41	1.55	48.5	YES	NO	db	db	1.451
15	23478-PeCDF	31.19	1.904e3	1.201e3	0.786	1.58	1.55	22.1	YES	NO	MM	bb	0.416
16	Total-pentafurans	31.05	1.360e3	8.701e2	0.654	1.56	1.55	14.5	YES	NO	dd	db	0.346
17	12378-PeCDF	29.84	2.259e3	1.302e3	0.679	1.74	1.55	24.6	YES	NO	bb	bb	0.512
18	Total-hexafurans	33.35	1.894e4	1.507e4	1.141	1.26	1.24	336.2	YES	NO	bb	bb	3.935
19	123468-HxCDF	33.14	5.506e3	4.482e3	1.169	1.23	1.24	103.2	YES	NO	bb	bb	1.126
20	234678-HxCDF	35.82	4.403e3	3.948e3	1.140	1.12	1.24	54.8	YES	NO	bb	bd	0.953
21	123678-HxCDF	34.96	2.657e3	1.912e3	1.091	1.39	1.24	42.0	YES	NO	db	db	0.502
22	123478-HxCDF	34.81	6.498e3	4.782e3	1.166	1.36	1.24	116.8	YES	NO	dd	dd	1.275
23	Total-hexafurans	34.19	2.546e4	2.050e4	1.141	1.24	1.24	452.1	YES	NO	bb	bb	5.316
24	Total-heptafurans	39.34	6.754e4	6.645e4	0.978	1.02	1.05	616.4	YES	NO	bb	bb	23.039
25	1234678-HpCDF	38.68	3.328e4	3.223e4	1.003	1.03	1.05	288.1	YES	NO	bb	bb	11.109
26	1234789-HpCDF	40.91	1.990e3	2.221e3	0.953	0.90	1.05	18.3	YES	NO	bb	bb	0.735
27	OCDF	45.11	6.639e4	7.422e4	0.778	0.89	0.89	754.4	YES	NO	bb	bb	31.800
28	Total-penta1	26.79	4.950e2	3.063e2		1.62	1.55	10.6	YES	NO	db	db	0.085
29	Total-penta1	26.69	8.097e2	6.127e2		1.32	1.55	16.7	YES	NO	bd	bd	0.151
30	Total-penta1	27.54	5.830e2	3.360e2		1.74	1.55	9.6	YES	NO	bb	bb	0.098
31	Total-penta1	27.13	1.510e4	9.970e3		1.51	1.55	305.5	YES	NO	bd	bd	2.668

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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

## TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	24.95	1.285e3	1.530e3	1.024	0.84	0.77	17.2	YES	NO	bb	bb	0.306
2	Total-tetradoxins	24.46	1.243e3	1.419e3	1.024	0.88	0.77	20.0	YES	NO	bb	bb	0.290
3	2378-TCDD	26.34	1.913e3	2.863e3	1.149	0.67	0.77	29.4	YES	NO	bd	bd	0.464
4	Total-tetradoxins	25.97	7.484e2	8.797e2	1.024	0.85	0.77	8.6	YES	NO	bb	bb	0.177
5	Total-tetradoxins	25.52	1.473e3	2.053e3	1.024	0.72	0.77	25.6	YES	NO	bb	bb	0.384

## PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadoxins	30.19	9.855e2	6.640e2	1.502	1.48	1.55	11.7	YES	NO	bb	db	0.173
2	Total-pentadoxins	30.07	1.830e3	1.190e3	1.502	1.54	1.55	20.4	YES	NO	bb	dd	0.317
3	Total-pentadoxins	29.84	1.825e3	1.300e3	1.502	1.40	1.55	15.7	YES	NO	bb	bd	0.328
4	12389-PECDD	31.84	5.263e2	3.227e2	1.184	1.63	1.55	4.3	YES	NO	bb	bb	0.113
5	12378-PeCDD	31.45	2.532e3	1.454e3	1.022	1.74	1.55	22.2	YES	NO	bd	bb	0.615

## HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.45	4.736e3	4.449e3	0.907	1.06	1.24	45.5	YES	NO	bb	bb	1.357
2	123678-HxCDD	36.07	6.676e3	6.194e3	1.001	1.08	1.24	65.0	YES	NO	db	MM	1.643
3	Total-hexadoxins	35.16	2.390e3	1.769e3	1.005	1.35	1.24	25.3	YES	NO	db	db	0.555
4	Total-hexadoxins	35.06	2.171e4	1.777e4	1.005	1.22	1.24	127.1	YES	NO	bd	bd	5.266
5	Total-hexadoxins	34.70	4.313e3	3.108e3	1.005	1.39	1.24	35.0	YES	NO	bb	bb	0.990
6	124679-HXCDD	33.92	1.877e4	1.534e4	1.115	1.22	1.24	163.0	YES	NO	bb	bb	4.310

## HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234679-HPCDD	39.14	2.216e5	2.156e5	1.137	1.03	1.05	1106.1	YES	NO	bb	bb	68.114
2	1234678-HpCDD	40.17	1.484e5	1.422e5	1.039	1.04	1.05	705.6	YES	NO	bb	bb	49.528

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk**

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	24.95	1.285e3	1.530e3	1.024	0.84	0.77	17.2	YES	NO	bb	bb	0.306
2	Total-tetradoxins	24.46	1.243e3	1.419e3	1.024	0.88	0.77	20.0	YES	NO	bb	bb	0.290
3	2378-TCDD	26.34	1.913e3	2.863e3	1.149	0.67	0.77	29.4	YES	NO	bd	bd	0.464
4	Total-tetradoxins	25.97	7.484e2	8.797e2	1.024	0.85	0.77	8.6	YES	NO	bb	bb	0.177
5	Total-tetradoxins	25.52	1.473e3	2.053e3	1.024	0.72	0.77	25.6	YES	NO	bb	bb	0.384
6	Total-pentadoxins	30.19	9.855e2	6.640e2	1.502	1.48	1.55	11.7	YES	NO	bb	db	0.173
7	Total-pentadoxins	30.07	1.830e3	1.190e3	1.502	1.54	1.55	20.4	YES	NO	bb	dd	0.317
8	Total-pentadoxins	29.84	1.825e3	1.300e3	1.502	1.40	1.55	15.7	YES	NO	bb	bd	0.328
9	12389-PECDD	31.84	5.263e2	3.227e2	1.184	1.63	1.55	4.3	YES	NO	bb	bb	0.113
10	12378-PeCDD	31.45	2.532e3	1.454e3	1.022	1.74	1.55	22.2	YES	NO	bd	bb	0.615
11	123789-HxCDD	36.45	4.736e3	4.449e3	0.907	1.06	1.24	45.5	YES	NO	bb	bb	1.357
12	123678-HxCDD	36.07	6.676e3	6.194e3	1.001	1.08	1.24	65.0	YES	NO	db	MM	1.643
13	Total-hexadoxins	35.16	2.390e3	1.769e3	1.005	1.35	1.24	25.3	YES	NO	db	db	0.555
14	Total-hexadoxins	35.06	2.171e4	1.777e4	1.005	1.22	1.24	127.1	YES	NO	bd	bd	5.266
15	Total-hexadoxins	34.70	4.313e3	3.108e3	1.005	1.39	1.24	35.0	YES	NO	bb	bb	0.990
16	124679-HXCDD	33.92	1.877e4	1.534e4	1.115	1.22	1.24	163.0	YES	NO	bb	bb	4.310
17	1234679-HPCDD	39.14	2.216e5	2.156e5	1.137	1.03	1.05	1106.1	YES	NO	bb	bb	68.114
18	1234678-HpCDD	40.17	1.484e5	1.422e5	1.039	1.04	1.05	705.6	YES	NO	bb	bb	49.528
19	OCDD	44.87	1.002e6	1.137e6	0.920	0.88	0.89	4337.5	YES	NO	bb	bb	409.065

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.45	4.546e3	6.048e3	0.727	0.75	0.77	49.1	YES	NO	dd	dd	1.238
2	Total-tetrafurans	24.38	1.504e3	1.948e3	0.727	0.77	0.77	16.5	YES	NO	dd	dd	0.403
3	Total-tetrafurans	23.95	1.655e3	1.872e3	0.727	0.88	0.77	12.7	YES	NO	db	bb	0.412
4	Total-tetrafurans	23.70	1.123e3	1.489e3	0.727	0.75	0.77	12.8	YES	NO	dd	bd	0.305
5	Total-tetrafurans	23.44	1.352e3	1.891e3	0.727	0.71	0.77	15.3	YES	NO	dd	dd	0.379
6	Total-tetrafurans	23.36	1.959e3	2.515e3	0.727	0.78	0.77	20.0	YES	NO	dd	dd	0.523
7	Total-tetrafurans	23.03	2.453e3	3.091e3	0.727	0.79	0.77	24.3	YES	NO	bd	bd	0.648
8	Total-tetrafurans	25.92	1.260e3	1.884e3	0.727	0.67	0.77	14.6	YES	NO	db	dd	0.367
9	2378-TCDF	25.70	1.931e3	2.281e3	0.702	0.85	0.77	19.0	YES	NO	dd	bd	0.510
10	Total-tetrafurans	25.52	7.067e2	9.421e2	0.727	0.75	0.77	10.2	YES	NO	dd	db	0.193
11	Total-tetrafurans	25.45	1.258e3	1.687e3	0.727	0.75	0.77	14.4	YES	NO	bd	bd	0.344
12	Total-tetrafurans	24.79	2.795e3	3.393e3	0.727	0.82	0.77	29.1	YES	NO	bb	bb	0.723
13	Total-tetrafurans	24.60	1.813e3	2.231e3	0.727	0.81	0.77	15.5	YES	NO	db	db	0.473
14	Total-penta furans	28.80	5.474e3	3.892e3	0.654	1.41	1.55	48.5	YES	NO	db	db	1.451
15	23478-PeCDF	31.19	1.904e3	1.201e3	0.786	1.58	1.55	22.1	YES	NO	MM	bb	0.416
16	Total-penta furans	31.05	1.360e3	8.701e2	0.654	1.56	1.55	14.5	YES	NO	dd	db	0.346
17	12378-PeCDF	29.84	2.259e3	1.302e3	0.679	1.74	1.55	24.6	YES	NO	bb	bb	0.512
18	Total-hexa furans	33.35	1.894e4	1.507e4	1.141	1.26	1.24	336.2	YES	NO	bb	bb	3.935
19	123468-HxCDF	33.14	5.506e3	4.482e3	1.169	1.23	1.24	103.2	YES	NO	bb	bb	1.126
20	234678-HxCDF	35.82	4.403e3	3.948e3	1.140	1.12	1.24	54.8	YES	NO	bb	bd	0.953
21	123678-HxCDF	34.96	2.657e3	1.912e3	1.091	1.39	1.24	42.0	YES	NO	db	db	0.502
22	123478-HxCDF	34.81	6.498e3	4.782e3	1.166	1.36	1.24	116.8	YES	NO	dd	dd	1.275
23	Total-hexa furans	34.19	2.546e4	2.050e4	1.141	1.24	1.24	452.1	YES	NO	bb	bb	5.316
24	Total-hepta furans	39.34	6.754e4	6.645e4	0.978	1.02	1.05	616.4	YES	NO	bb	bb	23.039
25	1234678-HpCDF	38.68	3.328e4	3.223e4	1.003	1.03	1.05	288.1	YES	NO	bb	bb	11.109
26	1234789-HpCDF	40.91	1.990e3	2.221e3	0.953	0.90	1.05	18.3	YES	NO	bb	bb	0.735
27	OCDF	45.11	6.639e4	7.422e4	0.778	0.89	0.89	754.4	YES	NO	bb	bb	31.800
28	Total-penta 1	26.79	4.950e2	3.063e2		1.62	1.55	10.6	YES	NO	db	db	0.085
29	Total-penta 1	26.69	8.097e2	6.127e2		1.32	1.55	16.7	YES	NO	bd	bd	0.151
30	Total-penta 1	27.54	5.830e2	3.360e2		1.74	1.55	9.6	YES	NO	bb	bb	0.098
31	Total-penta 1	27.13	1.510e4	9.970e3		1.51	1.55	305.5	YES	NO	bd	bd	2.668
32	Total-tetra dioxins	24.95	1.285e3	1.530e3	1.024	0.84	0.77	17.2	YES	NO	bb	bb	0.306
33	Total-tetra dioxins	24.46	1.243e3	1.419e3	1.024	0.88	0.77	20.0	YES	NO	bb	bb	0.290
34	2378-TCDD	26.34	1.913e3	2.863e3	1.149	0.67	0.77	29.4	YES	NO	bd	bd	0.464
35	Total-tetra dioxins	25.97	7.484e2	8.797e2	1.024	0.85	0.77	8.6	YES	NO	bb	bb	0.177
36	Total-tetra dioxins	25.52	1.473e3	2.053e3	1.024	0.72	0.77	25.6	YES	NO	bb	bb	0.384
37	Total-penta dioxins	30.19	9.855e2	6.640e2	1.502	1.48	1.55	11.7	YES	NO	bb	db	0.173

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-pentadioxins	30.07	1.830e3	1.190e3	1.502	1.54	1.55	20.4	YES	NO	bb	dd	0.317
39	Total-pentadioxins	29.84	1.825e3	1.300e3	1.502	1.40	1.55	15.7	YES	NO	bb	bd	0.328
40	12389-PECDD	31.84	5.263e2	3.227e2	1.184	1.63	1.55	4.3	YES	NO	bb	bb	0.113
41	12378-PeCDD	31.45	2.532e3	1.454e3	1.022	1.74	1.55	22.2	YES	NO	bd	bb	0.615
42	123789-HxCDD	36.45	4.736e3	4.449e3	0.907	1.06	1.24	45.5	YES	NO	bb	bb	1.357
43	123678-HxCDD	36.07	6.676e3	6.194e3	1.001	1.08	1.24	65.0	YES	NO	db	MM	1.643
44	Total-hexadioxins	35.16	2.390e3	1.769e3	1.005	1.35	1.24	25.3	YES	NO	db	db	0.555
45	Total-hexadioxins	35.06	2.171e4	1.777e4	1.005	1.22	1.24	127.1	YES	NO	bd	bd	5.266
46	Total-hexadioxins	34.70	4.313e3	3.108e3	1.005	1.39	1.24	35.0	YES	NO	bb	bb	0.990
47	124679-HXCDD	33.92	1.877e4	1.534e4	1.115	1.22	1.24	163.0	YES	NO	bb	bb	4.310
48	1234679-HPCDD	39.14	2.216e5	2.156e5	1.137	1.03	1.05	1106.1	YES	NO	bb	bb	68.114
49	1234678-HpCDD	40.17	1.484e5	1.422e5	1.039	1.04	1.05	705.6	YES	NO	bb	bb	49.528
50	OCDD	44.87	1.002e6	1.137e6	0.920	0.88	0.89	4337.5	YES	NO	bb	bb	409.065

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	27.91	1.312e6					26.1	YES		bb		
2	FUNCTION1 PFK	24.70	3.906e7					68.1	YES		db		
3	FUNCTION1 PFK	22.33	2.766e6					49.8	YES		dd		
4	FUNCTION1 PFK	21.93	4.346e6					47.2	YES		dd		
5	FUNCTION1 PFK	21.10	2.728e5					31.9	YES		bd		

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.22	1.643e5					4.3	YES		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.21	1.006e6					11.7	YES		bb		0.000
2	FUNCTION3 PFK	36.61	1.785e6					28.2	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:00 Pacific Daylight Time

**ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk**

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.73	2.594e3					0.9	NO		db		
2	FUNCTION5 PFK	44.70	1.373e3					0.7	NO		bd		
3	FUNCTION5 PFK	44.38	2.645e3					1.2	NO		bb		
4	FUNCTION5 PFK	44.13	2.679e3					0.7	NO		bb		
5	FUNCTION5 PFK	43.85	1.212e4					0.8	NO		bb		
6	FUNCTION5 PFK	43.27	3.461e3					1.3	NO		db		
7	FUNCTION5 PFK	43.19	5.849e3					1.6	NO		dd		
8	FUNCTION5 PFK	43.16	3.222e3					1.4	NO		dd		
9	FUNCTION5 PFK	43.12	3.709e3					1.6	NO		dd		
10	FUNCTION5 PFK	43.06	9.071e3					2.3	NO		bd		
11	FUNCTION5 PFK	45.95	7.673e3					1.7	NO		bb		
12	FUNCTION5 PFK	45.78	3.897e3					1.1	NO		bb		
13	FUNCTION5 PFK	45.72	2.839e3					1.2	NO		bb		
14	FUNCTION5 PFK	45.17	5.935e3					1.6	NO		bb		
15	FUNCTION5 PFK	44.83	3.369e3					0.9	NO		bb		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.26	7.543e1					1.3	NO		bb		0.000
2	FUNCTION1 HXCD...	26.10	4.365e2					7.2	YES		bb		0.000
3	FUNCTION1 HXCD...	25.87	9.421e2					19.4	YES		db		0.000
4	FUNCTION1 HXCD...	25.75	2.335e2					4.2	YES		bd		0.000
5	FUNCTION1 HXCD...	24.95	7.972e1					1.3	NO		bb		0.000
6	FUNCTION1 HXCD...	23.73	8.264e1					2.1	NO		bb		0.000
7	FUNCTION1 HXCD...	22.92	1.129e2					1.4	NO		bb		0.000
8	FUNCTION1 HXCD...	22.27	2.848e2					6.5	YES		db		0.000
9	FUNCTION1 HXCD...	22.07	1.066e2					1.6	NO		bd		0.000
10	FUNCTION1 HXCD...	21.96	8.994e1					1.8	NO		bb		0.000



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:20:00 Pacific Daylight Time

ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	29.83	2.749e2					7.6	YES		bb		0.000
2	FUNCTION2 HPCD...	28.22	1.025e2					3.1	YES		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.43	1.099e2					3.4	YES		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.35	1.781e4					459.8	YES		bb		0.000

**ETHERS6**

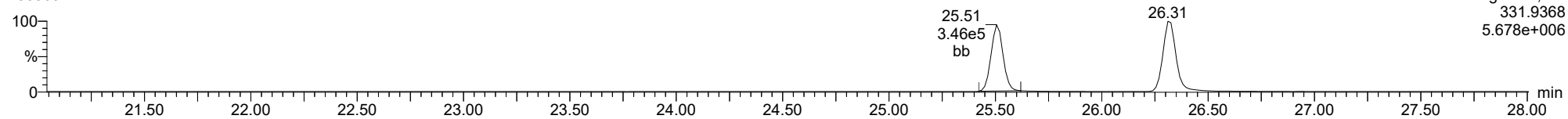
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	43.75	7.001e1					2.7	NO		bb		0.000

**Method:** T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

**ID:** BLD0657-SRM1, **Name:** 23050924, **Date:** 10-May-2023, **Time:** 07:55:32, **Conditions:** AUTOSPEC01, **User:** pk

**13C-1234-TCDD**

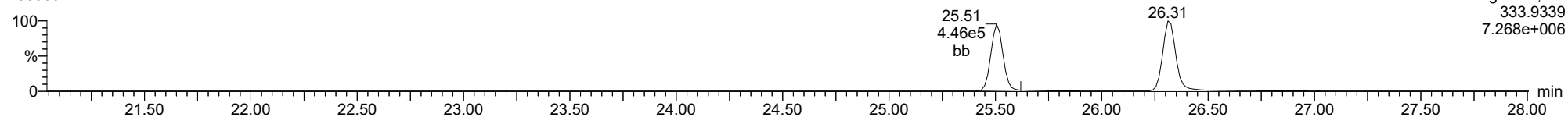
23050924



F1:Voltage SIR,El+  
331.9368  
5.678e+006

**13C-1234-TCDD**

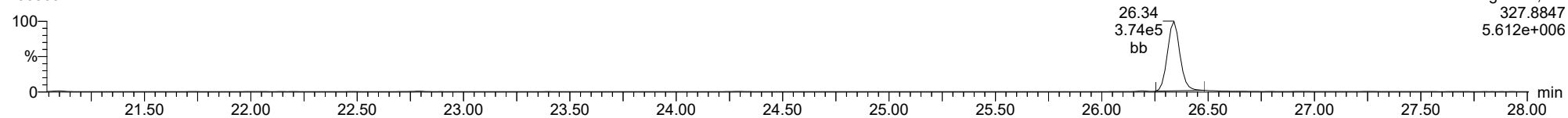
23050924



F1:Voltage SIR,El+  
333.9339  
7.268e+006

**37CL-2378-TCDD**

23050924

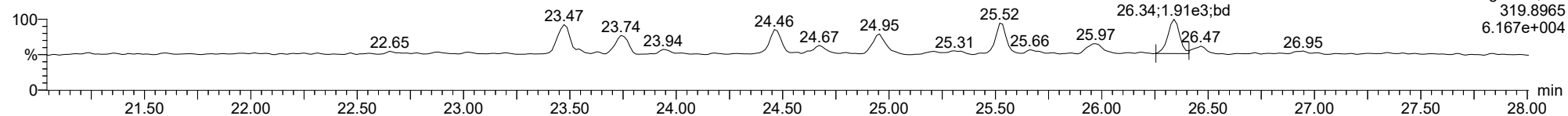


F1:Voltage SIR,El+  
327.8847  
5.612e+006

ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

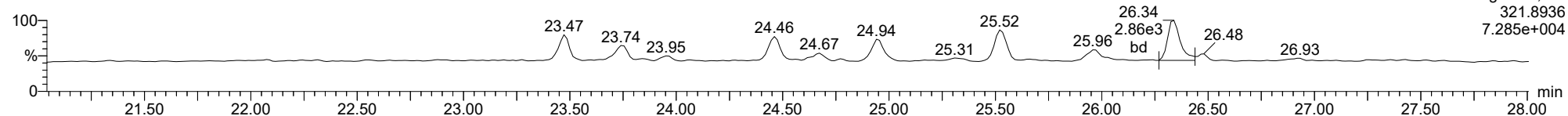
**2378-TCDD**

23050924



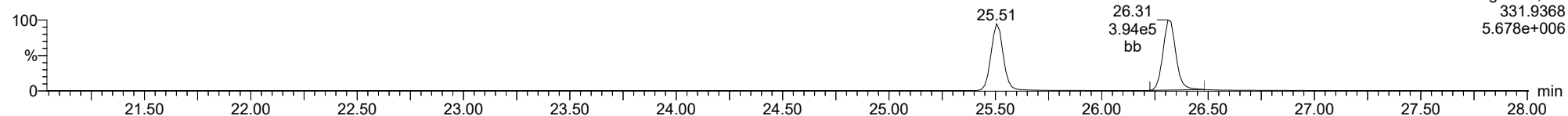
**2378-TCDD**

23050924



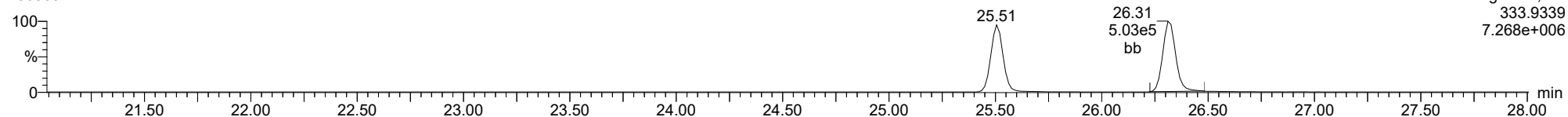
**13C-2378-TCDD**

23050924



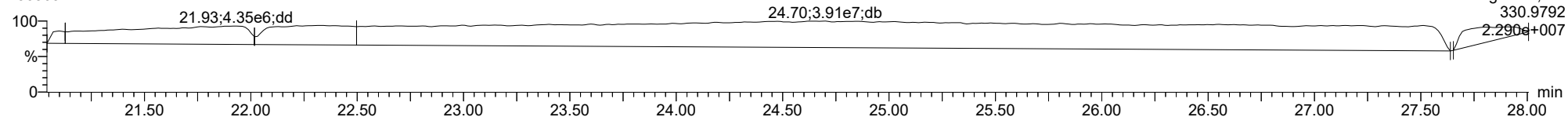
**13C-2378-TCDD**

23050924



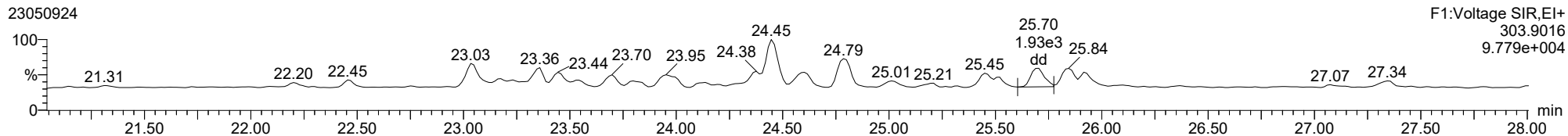
**FUNCTION1 PFK**

23050924

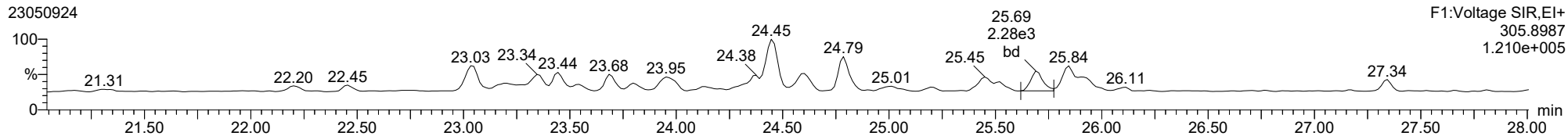


ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

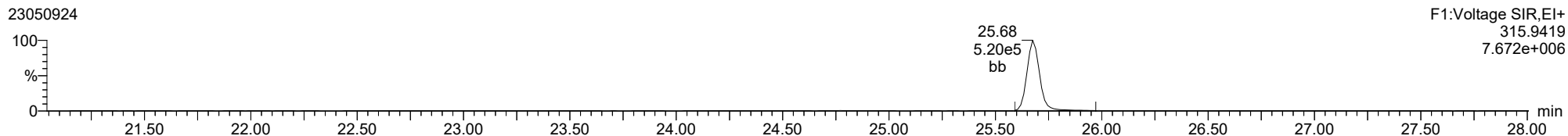
**2378-TCDF**



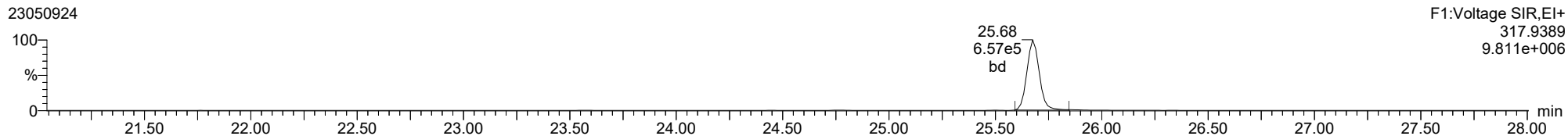
**2378-TCDF**



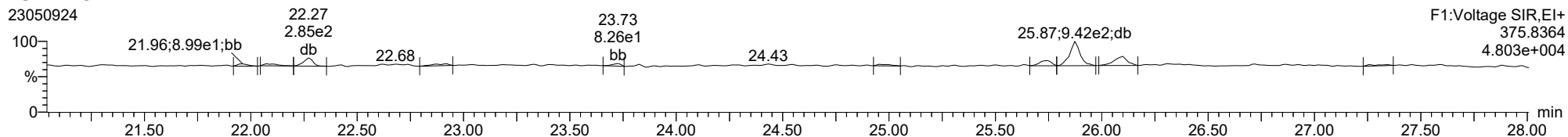
**13C-2378-TCDF**



**13C-2378-TCDF**



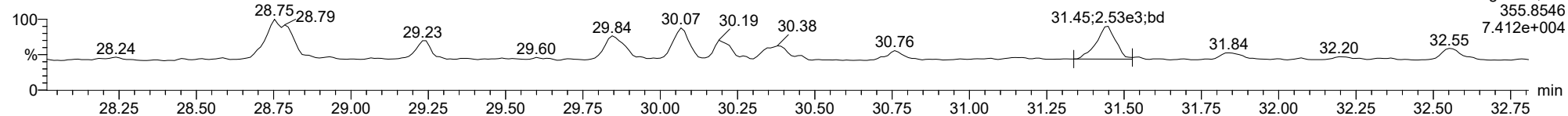
**FUNCTION1 HXCDPE**



ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

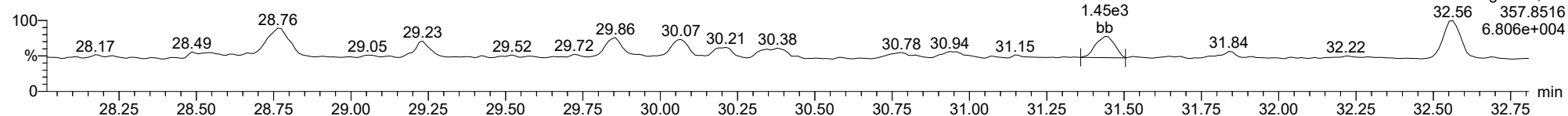
**12378-PeCDD**

23050924



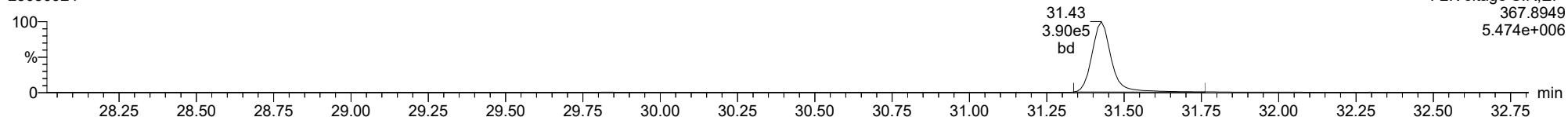
**12378-PeCDD**

23050924



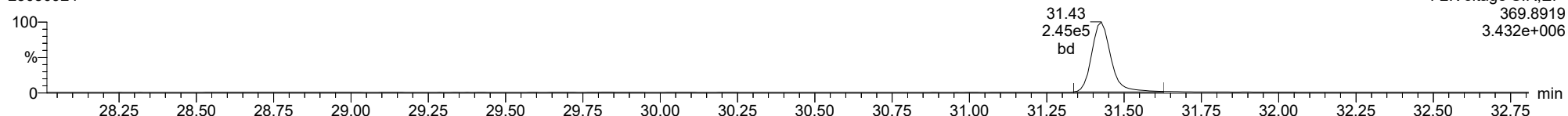
**13C-12378-PeCDD**

23050924



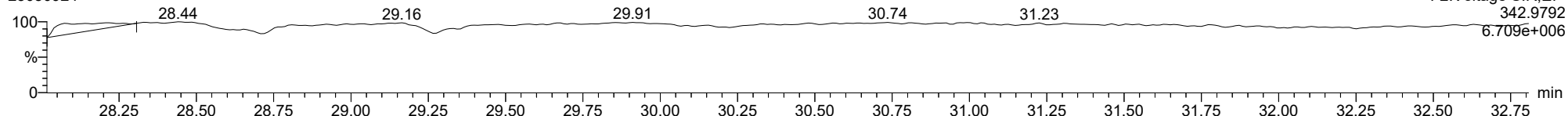
**13C-12378-PeCDD**

23050924



**FUNCTION2 PFK**

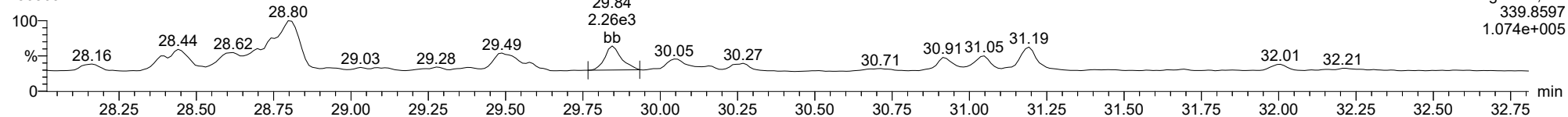
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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

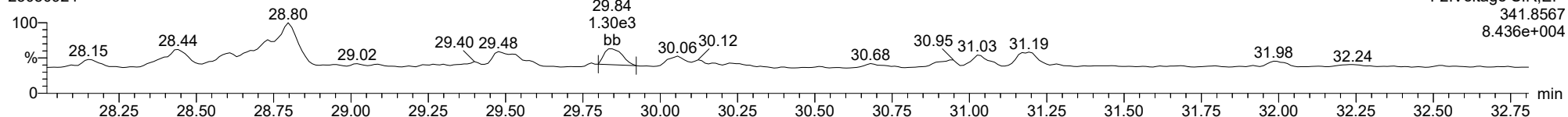
**12378-PeCDF**

23050924



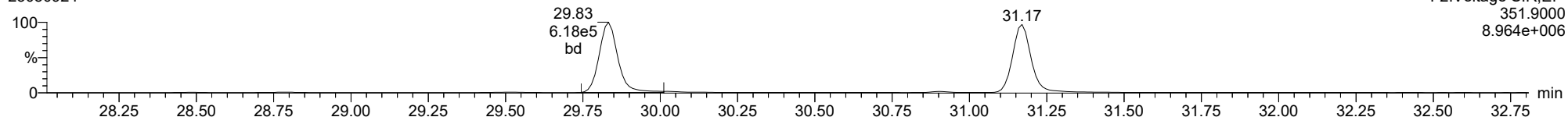
**12378-PeCDF**

23050924



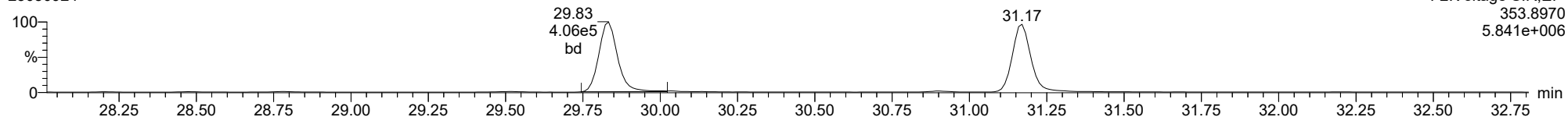
**13C-12378-PeCDF**

23050924



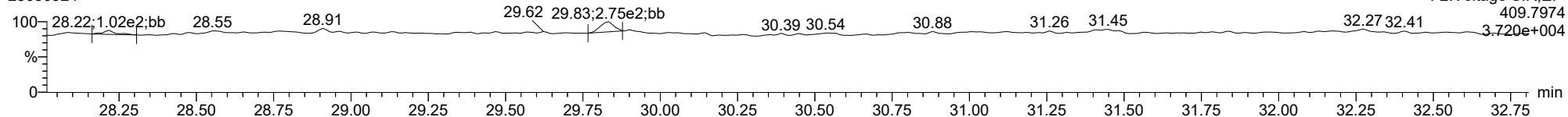
**13C-12378-PeCDF**

23050924



**FUNCTION2 HPCDPE**

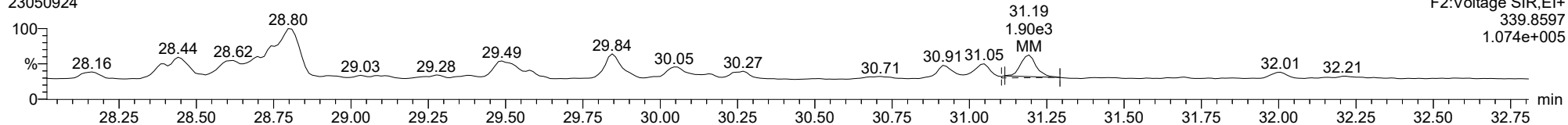
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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

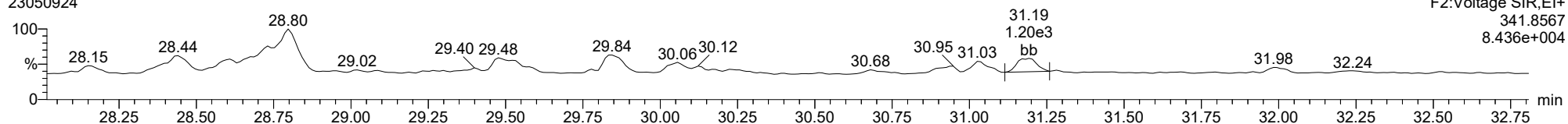
**23478-PeCDF**

23050924



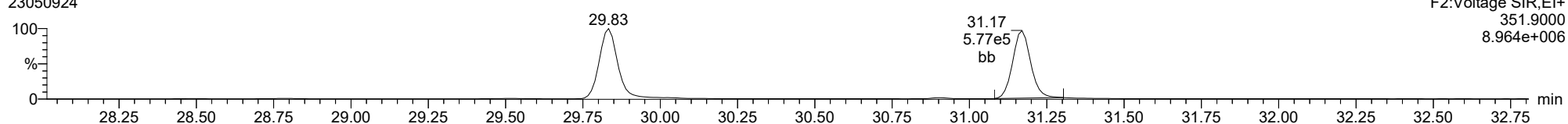
**23478-PeCDF**

23050924



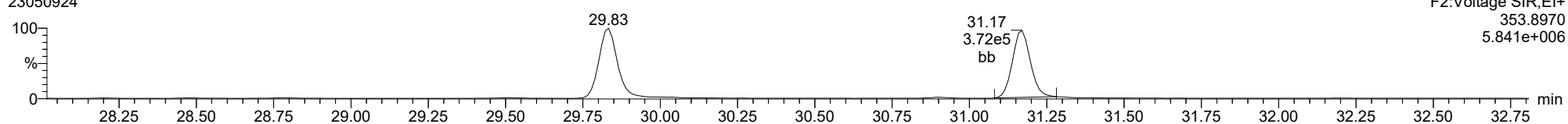
**13C-23478-PeCDF**

23050924



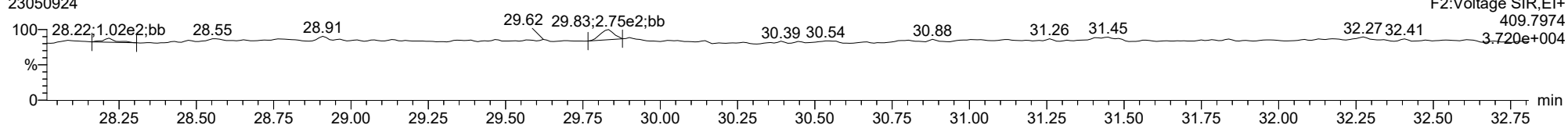
**13C-23478-PeCDF**

23050924



**FUNCTION2 HPCDPE**

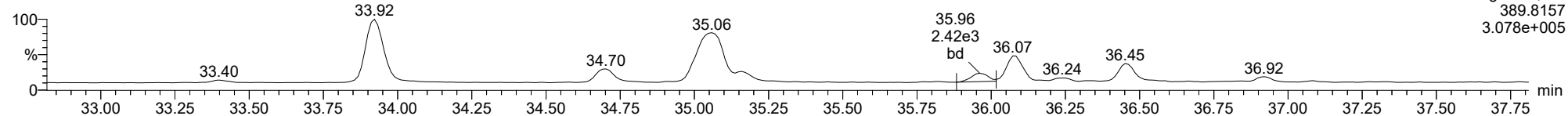
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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

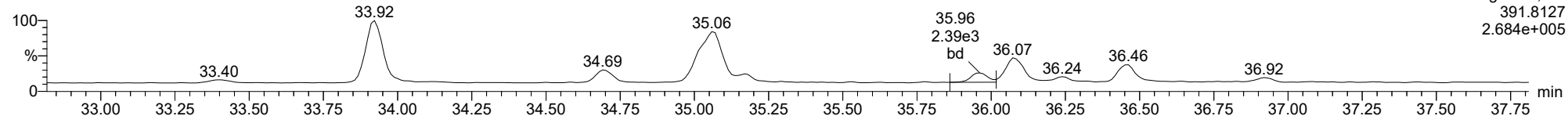
**123478-HxCDD**

23050924



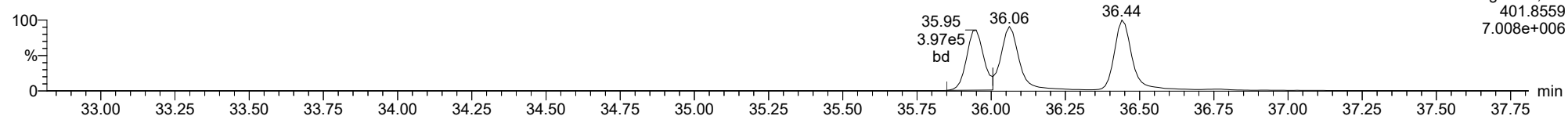
**123478-HxCDD**

23050924



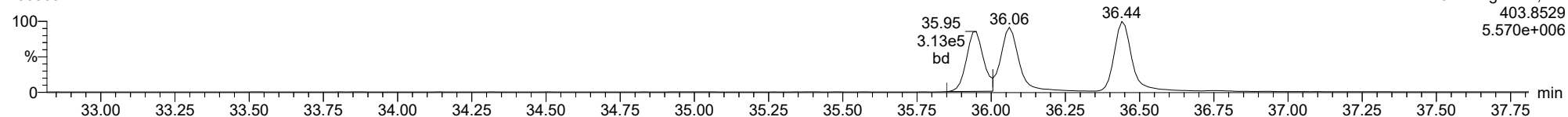
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23050924



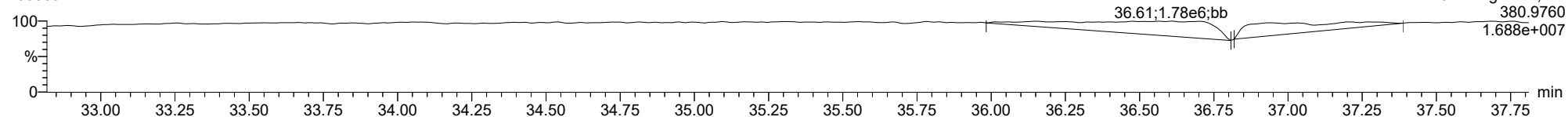
**13C-123478-HxCDD**

23050924



**FUNCTION3 PFK**

23050924

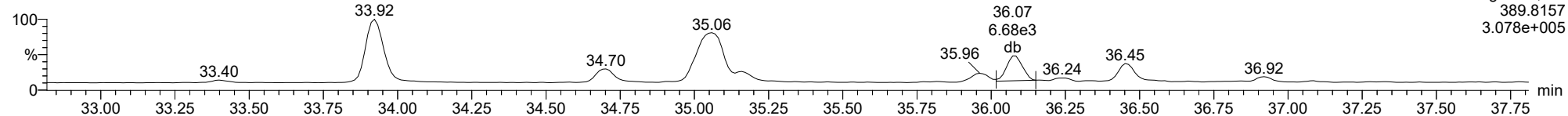




ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

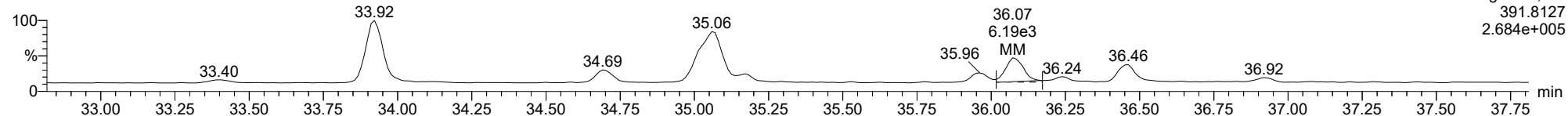
**123678-HxCDD**

23050924



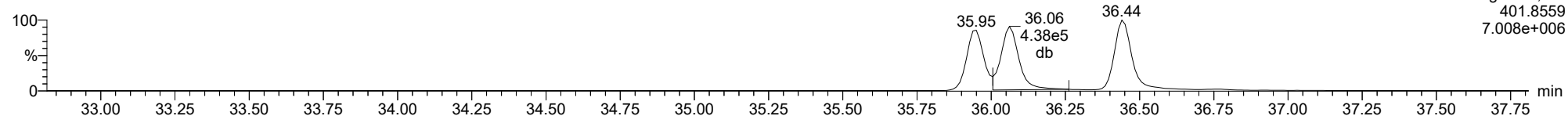
**123678-HxCDD**

23050924



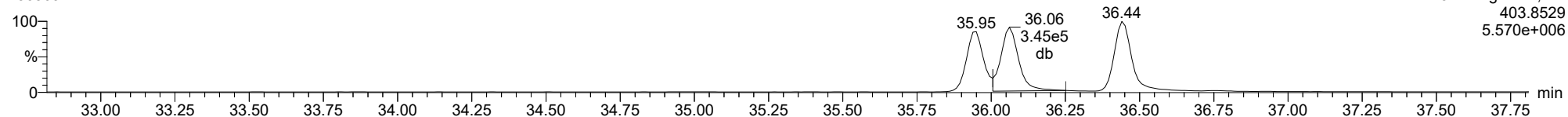
**13C-123678-HxCDD**

23050924



**13C-123678-HxCDD**

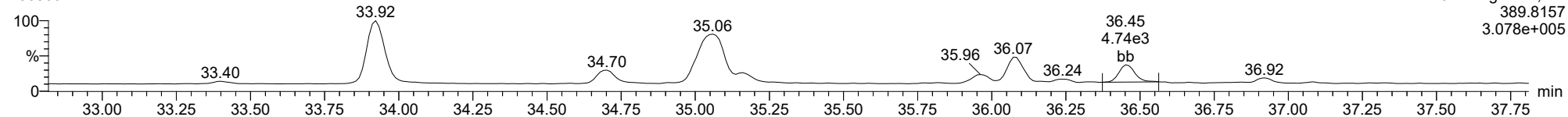
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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

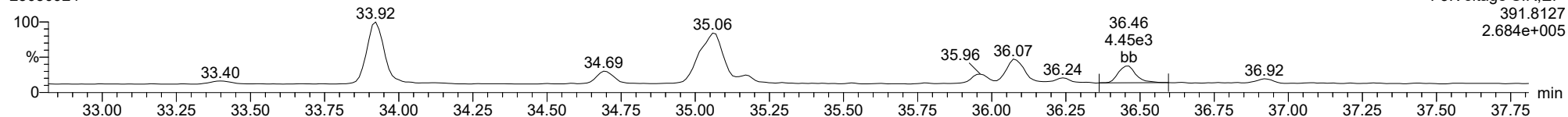
**123789-HxCDD**

23050924



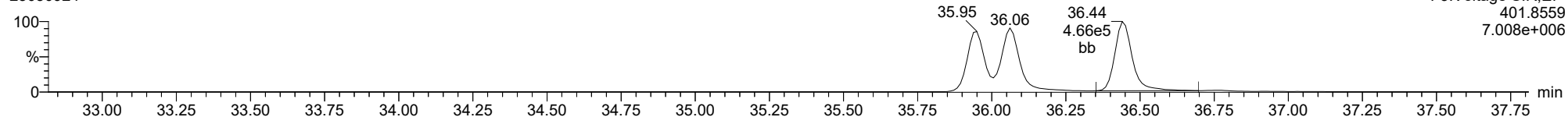
**123789-HxCDD**

23050924



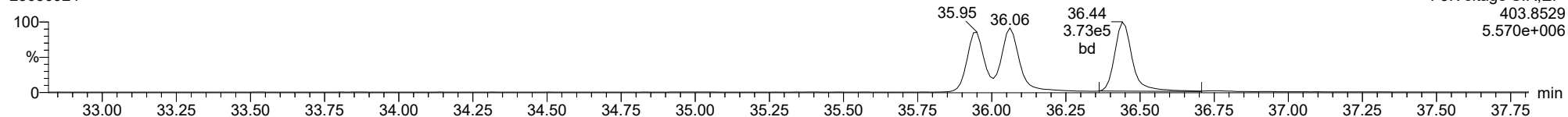
**13C-123789-HxCDD**

23050924



**13C-123789-HxCDD**

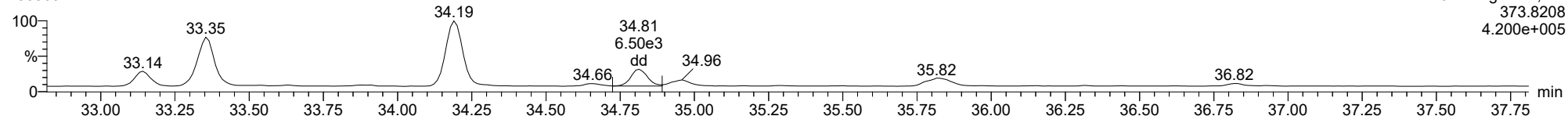
23050924



ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

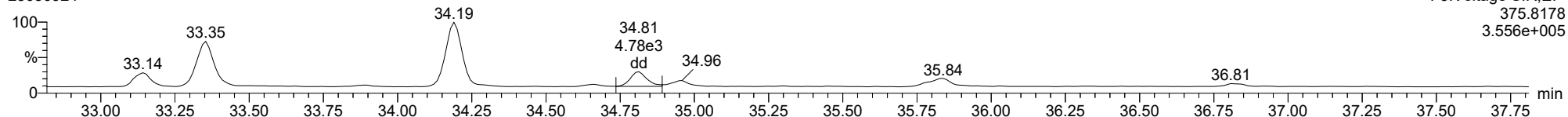
123478-HxCDF

23050924



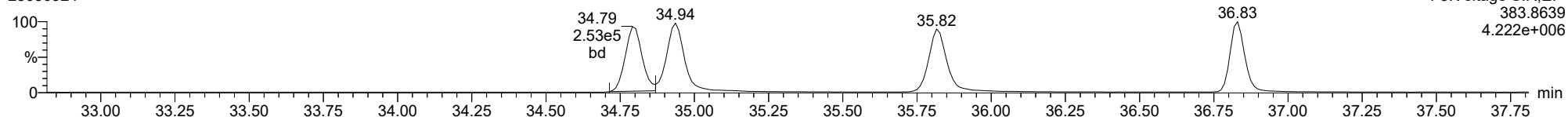
123478-HxCDF

23050924



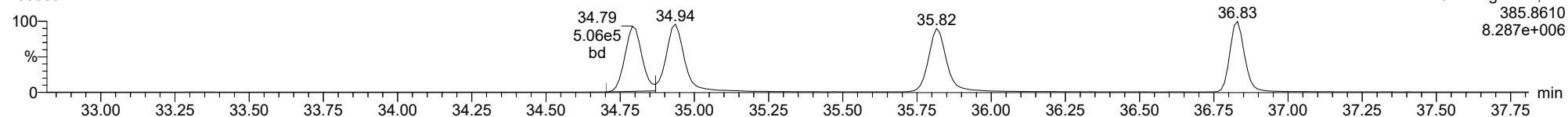
13C-123478-HxCDF

23050924



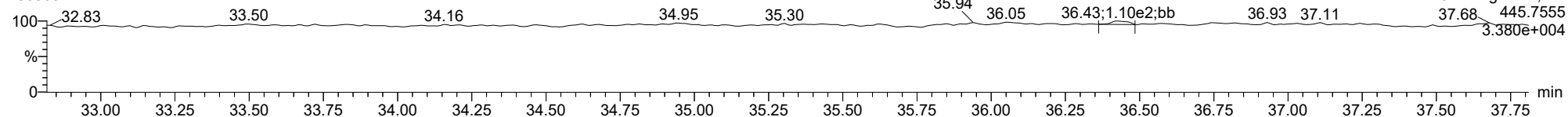
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23050924



FUNCTION3 OCDPE

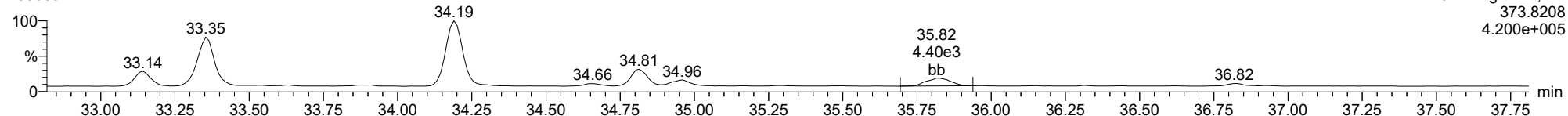
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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

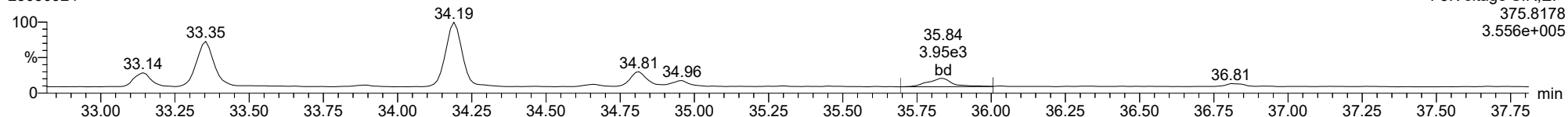
**234678-HxCDF**

23050924



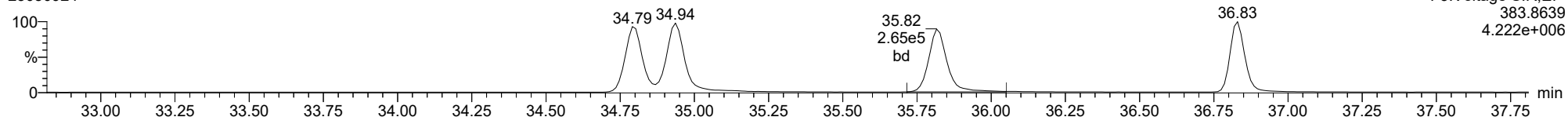
**234678-HxCDF**

23050924



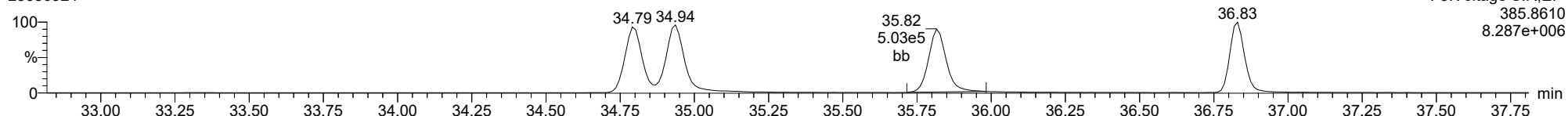
**13C-234678-HxCDF**

23050924



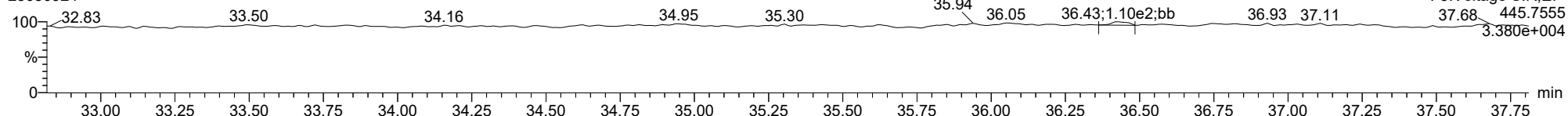
**13C-234678-HxCDF**

23050924



**FUNCTION3 OCDPE**

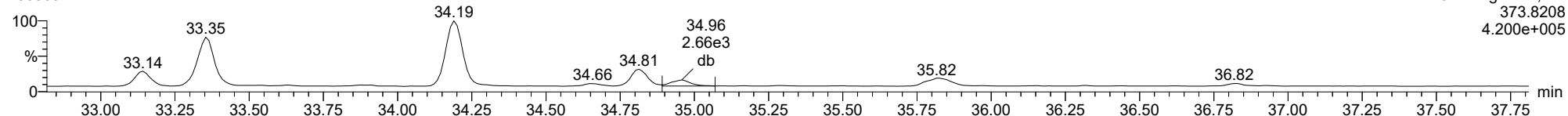
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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

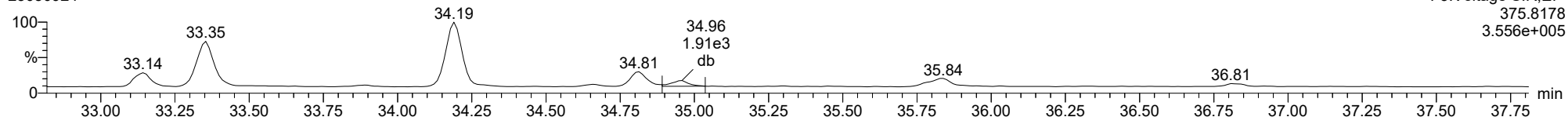
123678-HxCDF

23050924



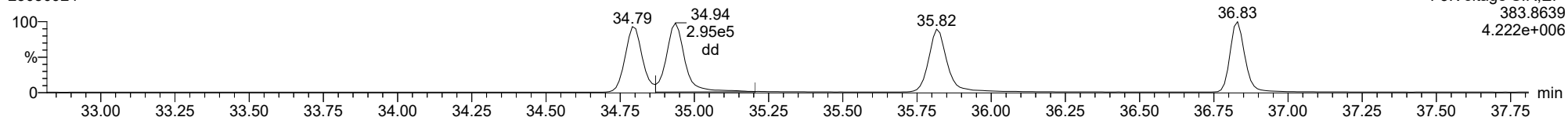
123678-HxCDF

23050924



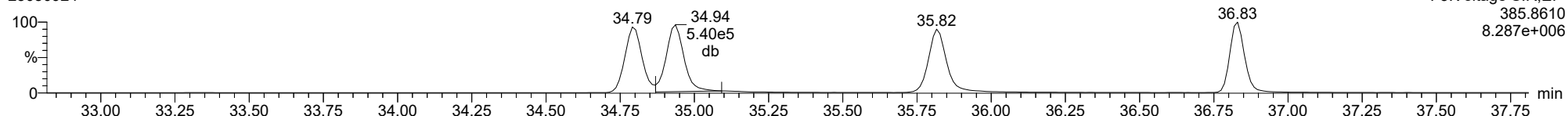
13C-123678-HxCDF

23050924



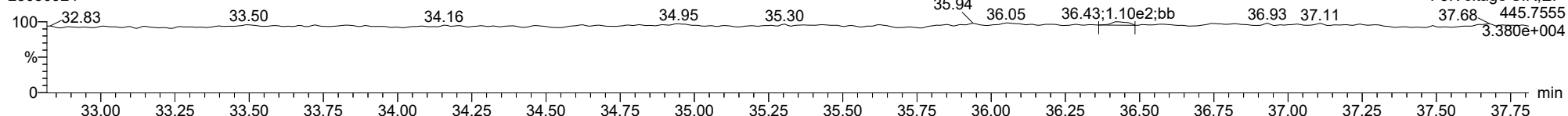
13C-123678-HxCDF

23050924



FUNCTION3 OCDPE

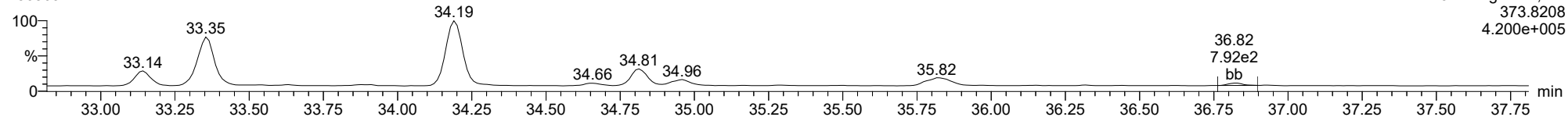
23050924



ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

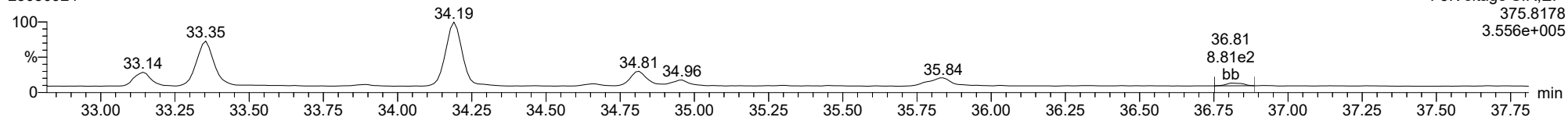
123789-HxCDF

23050924



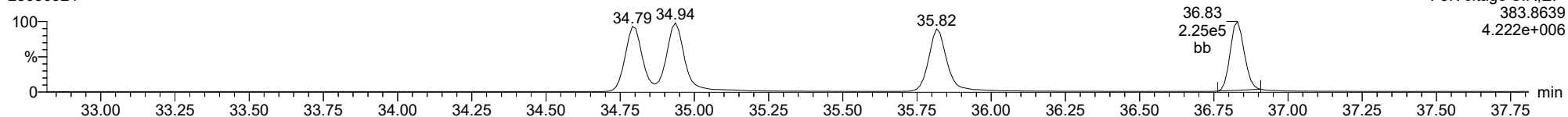
123789-HxCDF

23050924



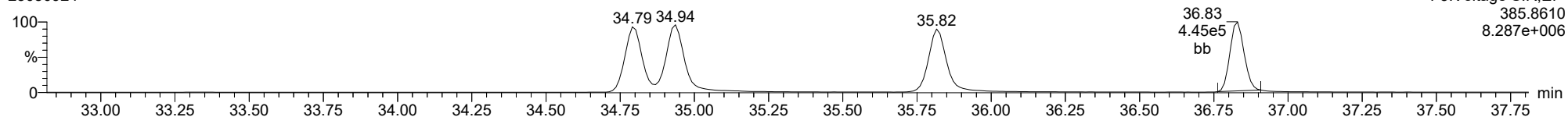
13C-123789-HxCDF

23050924



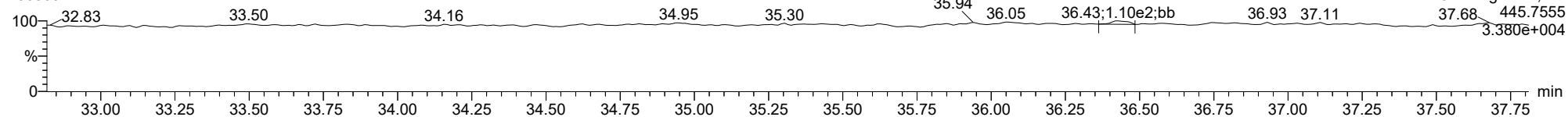
13C-123789-HxCDF

23050924



FUNCTION3 OCDPE

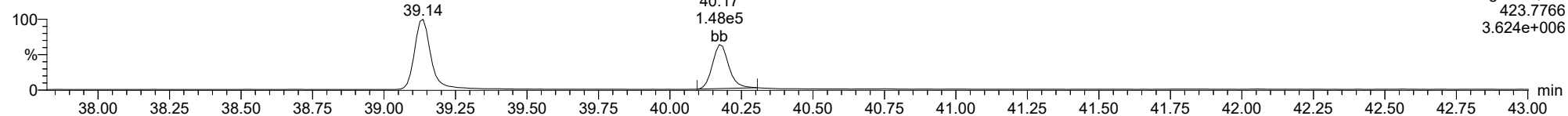
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ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

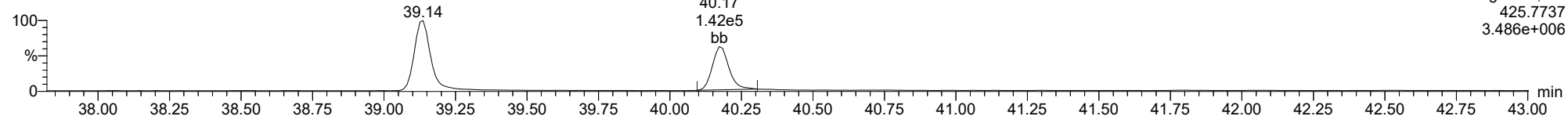
**1234678-HpCDD**

23050924



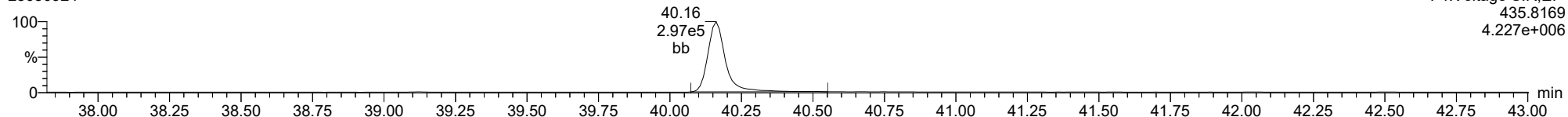
**1234678-HpCDD**

23050924



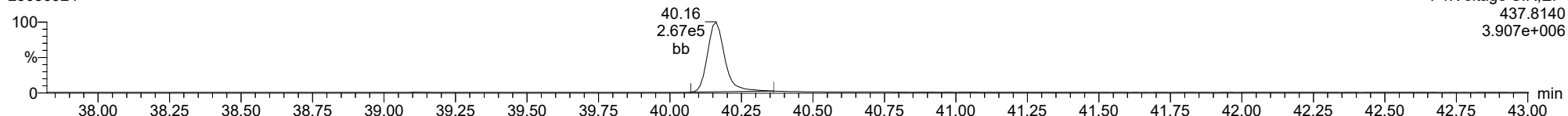
**13C-1234678-HpCDD**

23050924



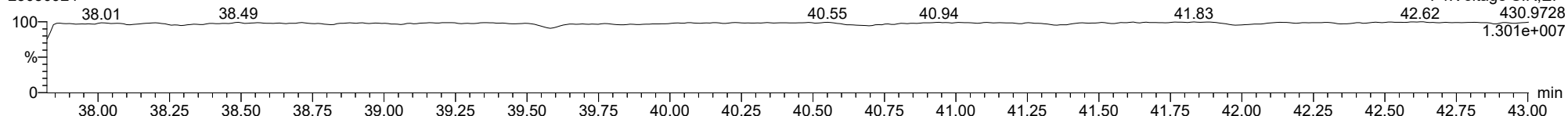
**13C-1234678-HpCDD**

23050924



**FUNCTION4 PFK**

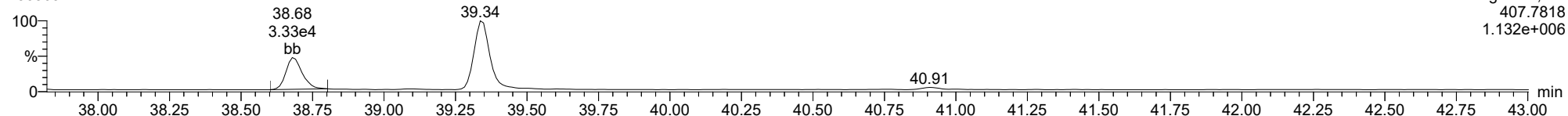
23050924



ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

1234678-HpCDF

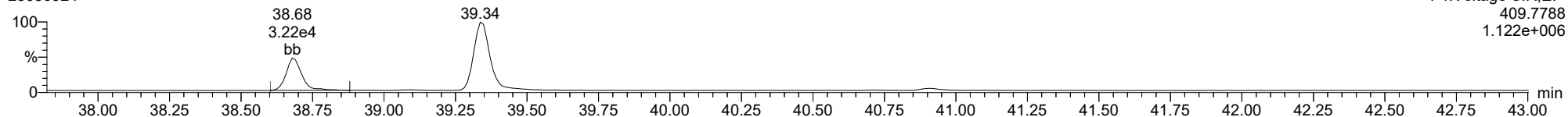
23050924



F4:Voltage SIR,El+  
409.7818  
1.132e+006

1234678-HpCDF

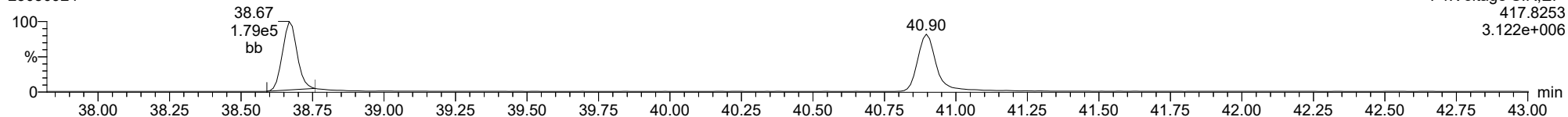
23050924



F4:Voltage SIR,El+  
409.7788  
1.122e+006

13C-1234678-HpCDF

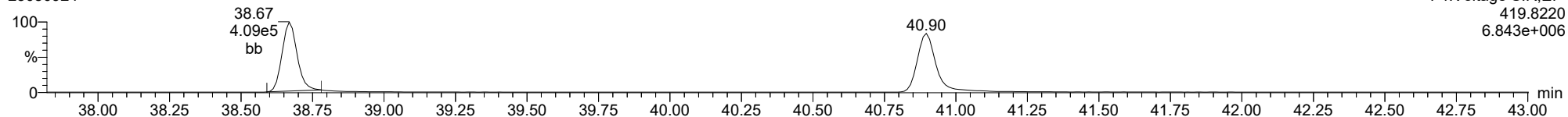
23050924



F4:Voltage SIR,El+  
417.8253  
3.122e+006

13C-1234678-HpCDF

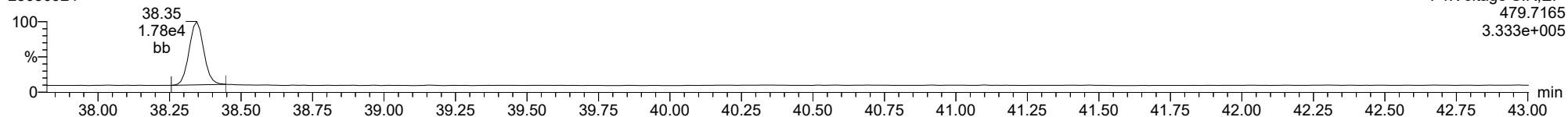
23050924



F4:Voltage SIR,El+  
419.8220  
6.843e+006

FUNCTION4 NCDPE

23050924



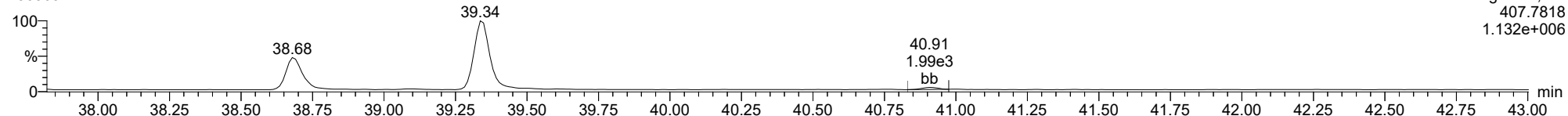
F4:Voltage SIR,El+  
479.7165  
3.333e+005



ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

**1234789-HpCDF**

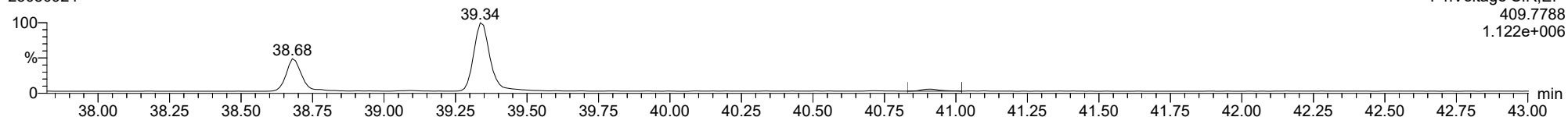
23050924



F4:Voltage SIR,El+  
407.7818  
1.132e+006

**1234789-HpCDF**

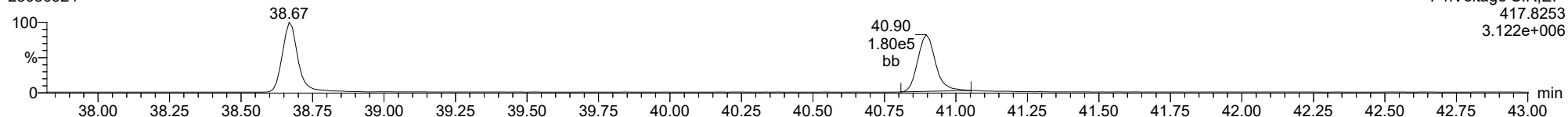
23050924



F4:Voltage SIR,El+  
409.7788  
1.122e+006

**13C-1234789-HpCDF**

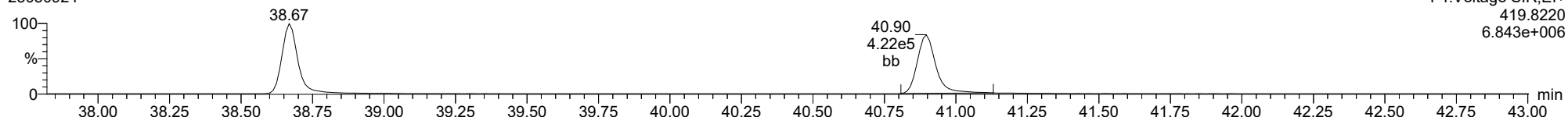
23050924



F4:Voltage SIR,El+  
417.8253  
3.122e+006

**13C-1234789-HpCDF**

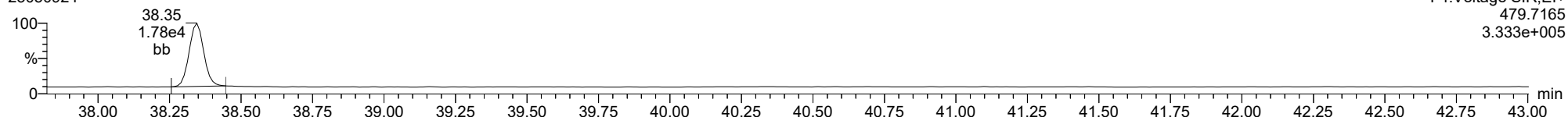
23050924



F4:Voltage SIR,El+  
419.8220  
6.843e+006

**FUNCTION4 NCDPE**

23050924

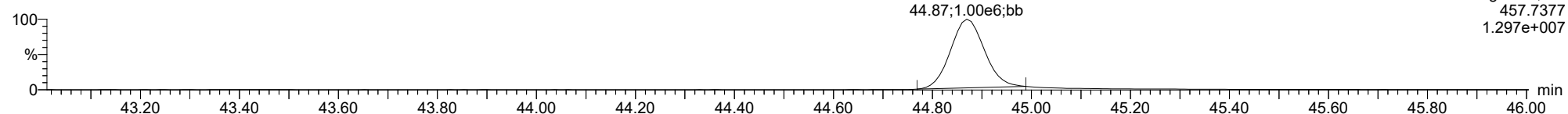


F4:Voltage SIR,El+  
479.7165  
3.333e+005

ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

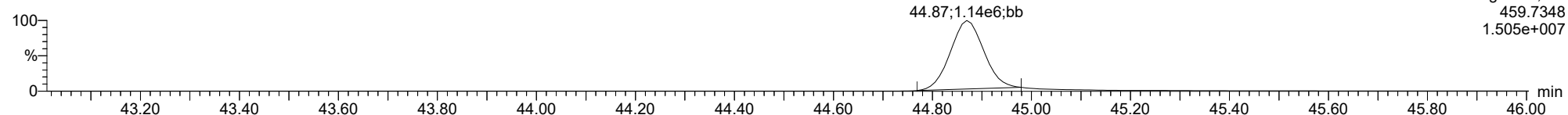
**OCDD**

23050924



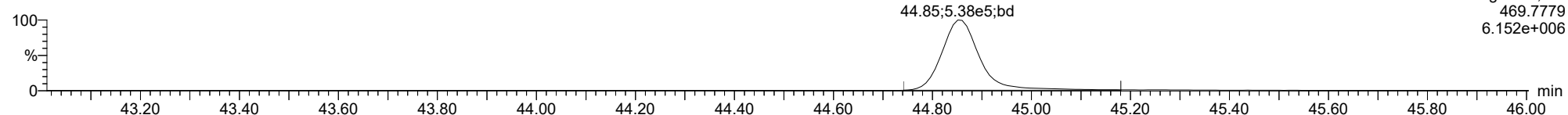
**OCDD**

23050924



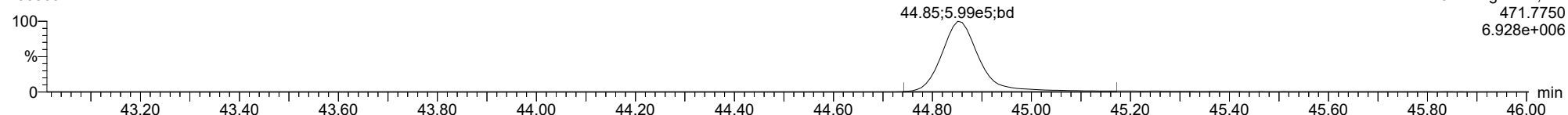
**13C-OCDD**

23050924



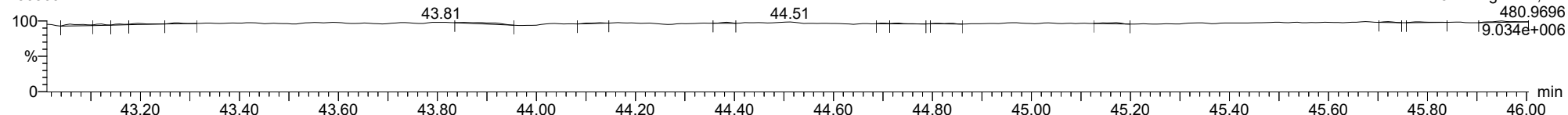
**13C-OCDD**

23050924



**FUNCTION5 PFK**

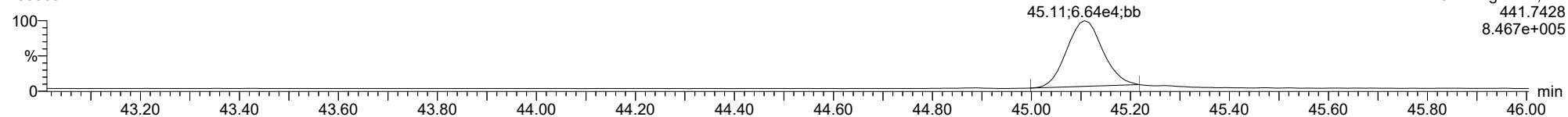
23050924



ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

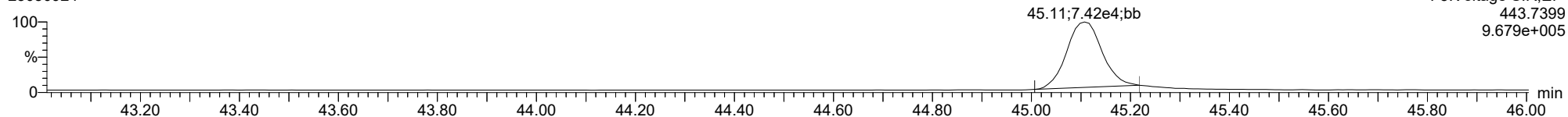
**OCDF**

23050924



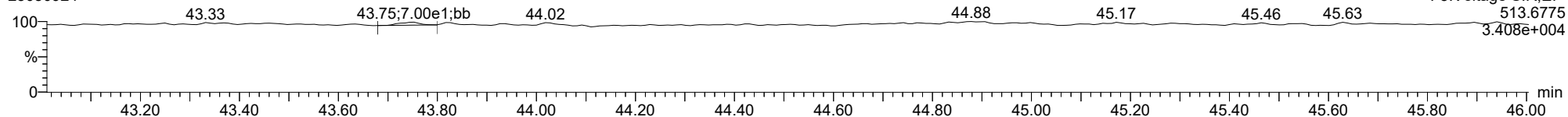
**OCDF**

23050924



**FUNCTION5 DCDPE**

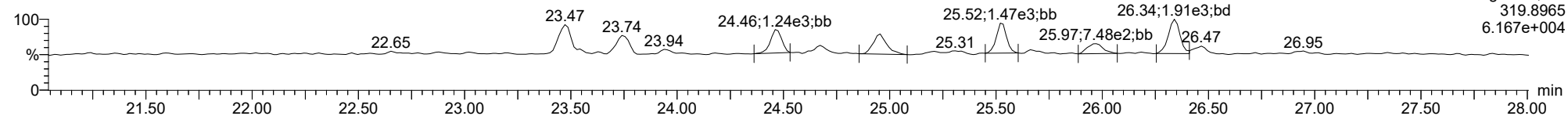
23050924



ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

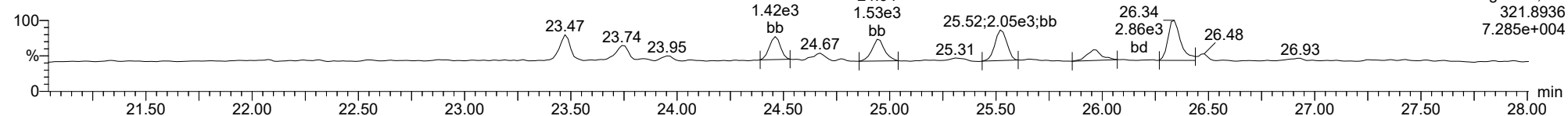
**Total-tetradioxins**

23050924



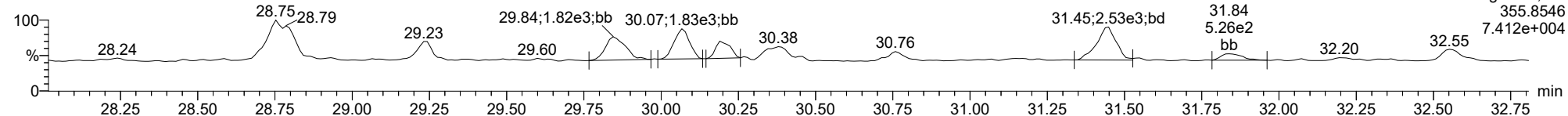
**Total-tetradioxins**

23050924



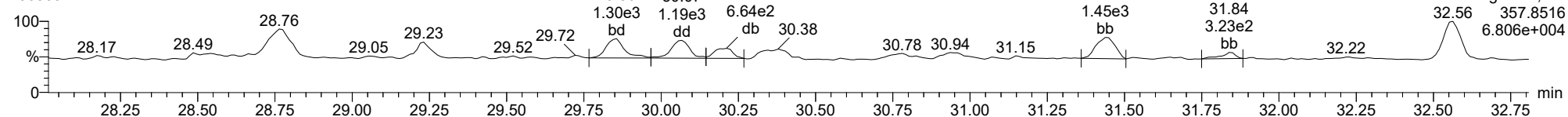
**Total-pentadioxins**

23050924



**Total-pentadioxins**

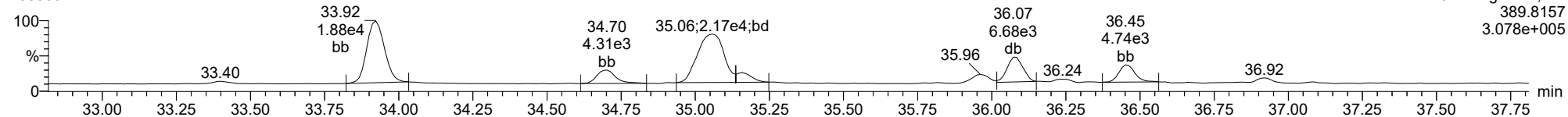
23050924



ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

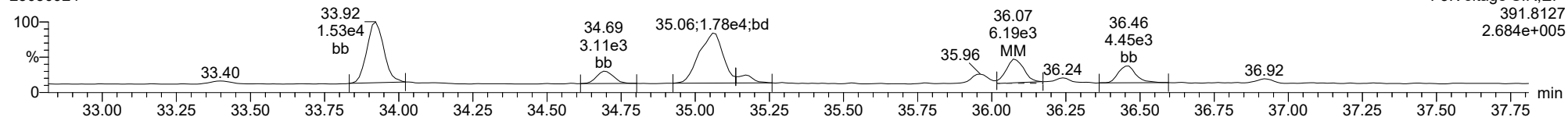
### Total-hexadioxins

23050924



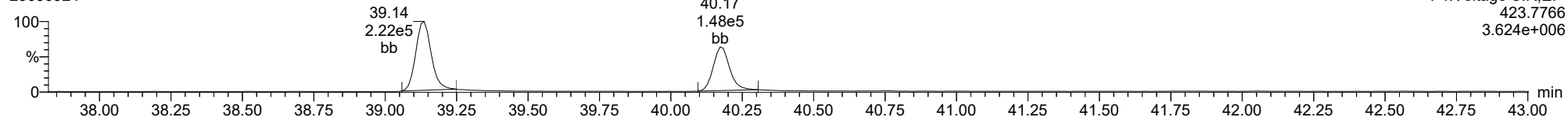
### Total-hexadioxins

23050924



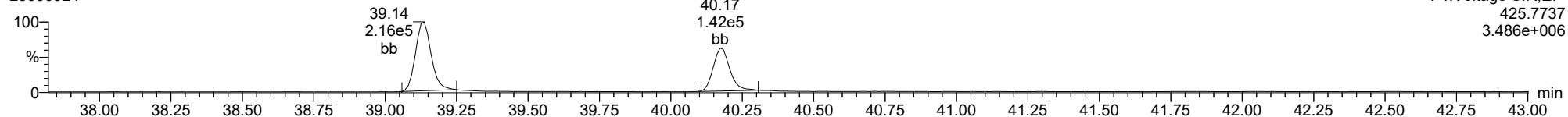
### Total-heptadioxins

23050924



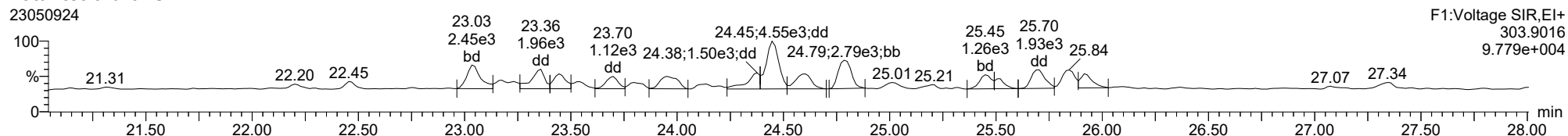
### Total-heptadioxins

23050924

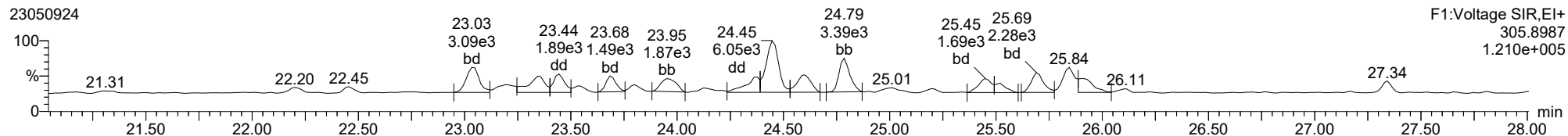


ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

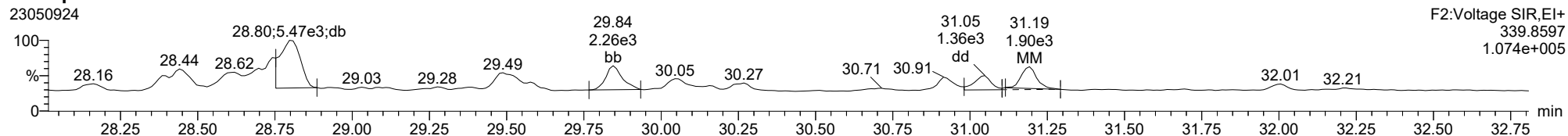
**Total-tetrafurans**



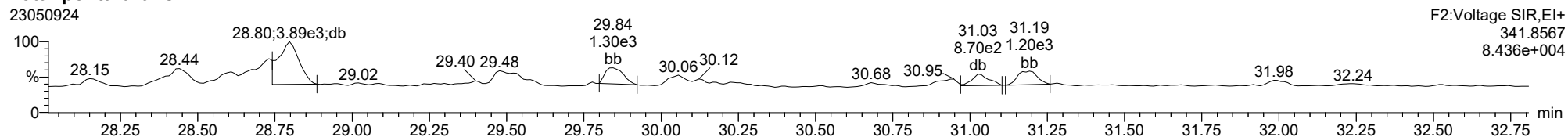
**Total-tetrafurans**



**Total-pentafurans**

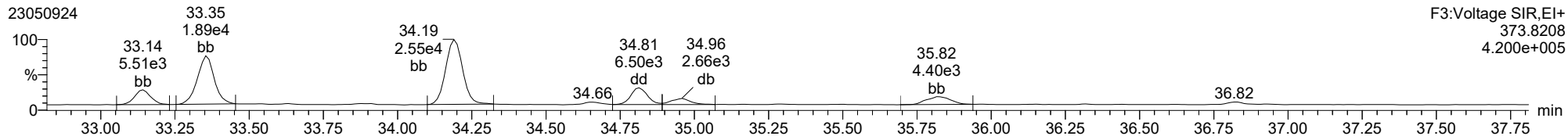


**Total-pentafurans**

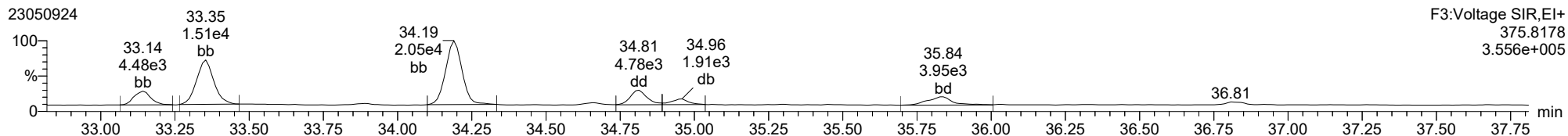


ID: BLD0657-SRM1, Name: 23050924, Date: 10-May-2023, Time: 07:55:32, Conditions: AUTOSPEC01, User: pk

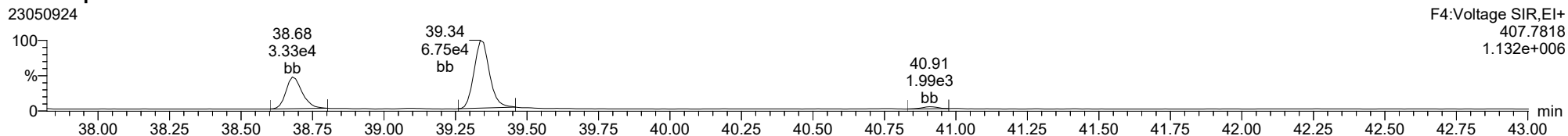
**Total-hexafurans**



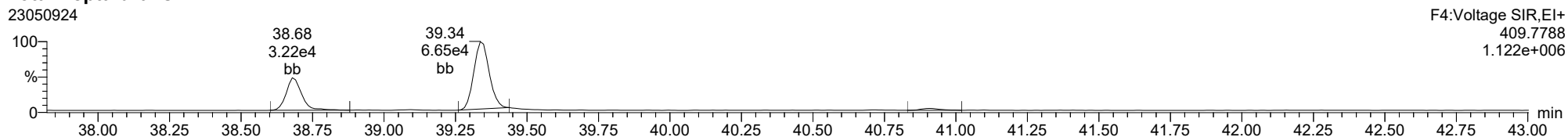
**Total-hexafurans**



**Total-heptafurans**



**Total-heptafurans**





**INITIAL CALIBRATION DATA**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GC00015

Instrument: AUTOSPEC01

Calibration Date: 03/03/2023

Column (1): RTX-Dioxin2

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
2,3,7,8-TCDF			0.5	0.6926363	2	0.6813224	10	0.7107923	40	0.719723	200	0.7031621
2,3,7,8-TCDD			0.5	1.116738	2	1.187915	10	1.134128	40	1.147736	200	1.156792
1,2,3,7,8-PeCDF	0.5	0.7064839	2.5	0.5889757	10	0.710829	50	0.6668491	200	0.6891968	1000	0.7130453
2,3,4,7,8-PeCDF	0.5	0.7979673	2.5	0.750268	10	0.8092124	50	0.7777683	200	0.7907891	1000	0.7910175
1,2,3,7,8-PeCDD	0.5	1.103364	2.5	0.959607	10	1.01992	50	1.019473	200	1.01999	1000	1.008719
1,2,3,4,7,8-HxCDF	0.5	1.217557	2.5	1.181192	10	1.149885	50	1.142227	200	1.15269	1000	1.152678
1,2,3,6,7,8-HxCDF	0.5	1.080855	2.5	1.053928	10	1.175308	50	1.102076	200	1.035098	1000	1.097184
2,3,4,6,7,8-HxCDF	0.5	1.045907	2.5	1.140857	10	1.199347	50	1.11691	200	1.197861	1000	1.13731
1,2,3,7,8,9-HxCDF	0.5	1.190403	2.5	1.119796	10	1.130872	50	1.147742	200	1.139146	1000	1.094601
1,2,3,4,7,8-HxCDD	0.5	1.079554	2.5	0.961704	10	0.973768	50	0.967789	200	0.9862736	1000	1.004325
1,2,3,6,7,8-HxCDD	0.5	0.9586431	2.5	0.9983677	10	0.9838912	50	1.030566	200	1.022077	1000	1.012084
1,2,3,7,8,9-HxCDD	0.5	0.930997	2.5	0.8854269	10	0.8092562	50	0.9267543	200	0.9251392	1000	0.9651099
1,2,3,4,6,7,8-HpCDF	0.5	0.934103	2.5	1.075239	10	1.011687	50	0.9661089	200	1.026311	1000	1.004508
1,2,3,4,7,8,9-HpCDF	0.5	0.8861422	2.5	0.8930411	10	1.006144	50	0.9387033	200	0.9934576	1000	1.001203
1,2,3,4,6,7,8-HpCDD	0.5	1.103772	2.5	0.971421	10	1.040117	50	1.038088	200	1.030577	1000	1.050103
OCDF	1	0.8118871	5	0.7091624	20	0.7657645	100	0.7266152	400	0.8162858	2000	0.8371317
OCDD			5	1.012935	20	0.8906655	100	0.878436	400	0.9061913	2000	0.9115405
13C12-2,3,7,8-TCDF	100	1.631571	100	1.588495	100	1.670669	100	1.492829	100	1.645068	100	1.692541
13C12-2,3,7,8-TCDD	100	1.103543	100	1.165686	100	1.103763	100	1.147762	100	1.181831	100	1.211872
13C12-1,2,3,7,8-PeCDF	100	1.373516	100	0.8861478	100	1.254697	100	1.157546	100	1.425701	100	1.345107
13C12-2,3,4,7,8-PeCDF	100	1.219579	100	0.8983995	100	1.113808	100	0.8611233	100	1.32733	100	1.286474
13C12-1,2,3,7,8-PeCDD	100	0.9177021	100	0.7002528	100	0.8365419	100	0.5962156	100	0.9821822	100	0.939983
13C12-1,2,3,4,7,8-HxCDF	100	1.152029	100	1.095885	100	1.513935	100	1.121285	100	1.094572	100	1.032122
13C12-1,2,3,6,7,8-HxCDF	100	1.353853	100	1.348693	100	1.689158	100	1.367383	100	1.37092	100	1.188788
13C12-2,3,4,6,7,8-HxCDF	100	1.092029	100	1.127896	100	1.240354	100	1.126074	100	1.087409	100	1.101774
13C12-1,2,3,7,8,9-HxCDF	100	0.8958406	100	0.9493947	100	0.9152119	100	0.9630403	100	0.8996667	100	0.9673701
13C12-1,2,3,4,7,8-HxCDD	100	0.9718531	100	0.9656819	100	1.113686	100	0.9864835	100	0.9766715	100	0.95586
13C12-1,2,3,6,7,8-HxCDD	100	1.184228	100	1.157253	100	1.278683	100	1.163318	100	1.111106	100	1.045546







**INITIAL CALIBRATION DATA**  
**EPA 1613B**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GC00015	Instrument:	AUTOSPEC01
Calibration Date:	03/03/2023	Column (1):	RTX-Dioxin2

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
2,3,7,8-TCDF	0.7015272	2.1			RSD ()	
2,3,7,8-TCDD	1.148662	2.3			RSD ()	
1,2,3,7,8-PeCDF	0.67923	7.0			RSD ()	
2,3,4,7,8-PeCDF	0.7861704	2.6			RSD ()	
1,2,3,7,8-PeCDD	1.021845	4.5			RSD ()	
1,2,3,4,7,8-HxCDF	1.166038	2.4			RSD ()	
1,2,3,6,7,8-HxCDF	1.090741	4.5			RSD ()	
2,3,4,6,7,8-HxCDF	1.139699	5.0			RSD ()	
1,2,3,7,8,9-HxCDF	1.137093	2.8			RSD ()	
1,2,3,4,7,8-HxCDD	0.9955689	4.4			RSD ()	
1,2,3,6,7,8-HxCDD	1.000938	2.7			RSD ()	
1,2,3,7,8,9-HxCDD	0.9071139	6.0			RSD ()	
1,2,3,4,6,7,8-HpCDF	1.002993	4.9			RSD ()	
1,2,3,4,7,8,9-HpCDF	0.9531152	5.8			RSD ()	
1,2,3,4,6,7,8-HpCDD	1.039013	4.1			RSD ()	
OCDF	0.7778078	6.7			RSD ()	
OCDD	0.9199537	5.8			RSD ()	
13C12-2,3,7,8-TCDF	1.620196	4.4			RSD ()	
13C12-2,3,7,8-TCDD	1.152409	3.8			RSD ()	
13C12-1,2,3,7,8-PeCDF	1.240452	15.9			RSD ()	
13C12-2,3,4,7,8-PeCDF	1.117786	17.7			RSD ()	
13C12-1,2,3,7,8-PeCDD	0.8288129	18.3			RSD ()	
13C12-1,2,3,4,7,8-HxCDF	1.168305	14.9			RSD ()	
13C12-1,2,3,6,7,8-HxCDF	1.386466	11.8			RSD ()	
13C12-2,3,4,6,7,8-HxCDF	1.129256	5.0			RSD ()	
13C12-1,2,3,7,8,9-HxCDF	0.9317541	3.4			RSD ()	
13C12-1,2,3,4,7,8-HxCDD	0.9950393	5.9			RSD ()	
13C12-1,2,3,6,7,8-HxCDD	1.156689	6.7			RSD ()	
13C12-1,2,3,4,6,7,8-HpCDF	0.8952017	13.8			RSD ()	
13C12-1,2,3,4,7,8,9-HpCDF	0.7697516	11.7			RSD ()	
13C12-1,2,3,4,6,7,8-HpCDD	0.8401226	11.5			RSD ()	



**INITIAL CALIBRATION DATA**  
**EPA 1613B**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Calibration:	GC00015	Instrument:	AUTOSPEC01
Calibration Date:	03/03/2023	Column (1):	RTX-Dioxin2

<b>COMPOUND</b>	<b>Mean RRF</b>	<b>RRF RSD</b>	<b>Linear COD</b>	<b>Quad COD</b>	<b>Limit Type &amp; Limit</b>	<b>Q</b>
13C12-OCDD	0.7674714	13.4			RSD ()	
37C14-2,3,7,8-TCDD	1.287804	12.2			RSD ()	
13C12-1,2,3,4-TCDD	1	0.0			RSD ()	
13C12-1,2,3,7,8,9-HxCDD	1	0.0			RSD ()	



ANALYSIS SEQUENCE

SLC0045

Instrument: AUTOSPEC01      HRGCMS Column ID: K2310  
Calibration ID: GC00015      Tune File: FEB0923\_1-5  
EM Voltage: 350      Resolution check times : 9:51, 18:18

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLC0045-ICV1	CS3W1	QC		1	K009821		03/03/2023 09:51	23030302	PK	
SLC0045-RES1	ISCW1	QC		2	L002084		03/03/2023 10:39	23030303	PK	
SLC0045-CAL1	CSLCW	QC		3	I005460		03/03/2023 11:28	23030304	PK	
SLC0045-CAL2	CS1CW	QC		4	I005456		03/03/2023 12:23	23030305	PK	
SLC0045-CAL3	CS2CW	QC		5	I005457		03/03/2023 13:16	23030306	PK	
SLC0045-CAL4	CS3CW	QC		6	K009821		03/03/2023 14:06	23030307	PK	
SLC0045-CAL5	CS4CW	QC		7	I005458		03/03/2023 14:59	23030308	PK	
SLC0045-CAL6	CS5CW	QC		8	I005459		03/03/2023 15:47	23030309	PK	
SLC0045-SCV1	ICVCW	QC		9	H008219		03/03/2023 16:36	23030310	PK	
SLC0045-CCV1	CS3V4	QC		10	K009821		03/03/2023 17:25	23030311	PK	
SLC0045-RES2	ISCV4	QC		11	L002084		03/03/2023 18:18	23030312	PK	

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld

Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time

3/6/23 PK

Printed: Monday, March 06, 2023 10:58:44 Pacific Standard Time

Event	Details	Sample ID
Process Extract		
Process Integrate		
Process Calibrate		
Process Quantify		
Dataset Created		
Peak deleted	Sample:23030304, Compound:TD, RT:26.410	1
Peak deleted	Sample:23030304, Compound:OD, RT:44.990	1
Peak deleted	Sample:23030304, Compound:TF, RT:25.774	1
Pre modification peak	Sample:23030305, Compound:TF, RT:25.774	2
Peak modified	Sample:23030305, Compound:TF, RT:25.774	2
Pre modification peak	Sample:23030304, Compound:HPD, RT:40.261	1
Peak modified	Sample:23030304, Compound:HPD, RT:40.261	1
Peak deleted	Sample:23030308, Compound:PF, RT:32.328	5
Peak deleted	Sample:23030309, Compound:PF, RT:32.307	6
Peak deleted	Sample:23030309, Compound:HF, RT:33.220	6
Peak deleted	Sample:23030309, Compound:TD, RT:27.017	6
Peak deleted	Sample:23030309, Compound:PD, RT:31.995	6
Peak deleted	Sample:23030309, Compound:PD, RT:31.917	6
Peak deleted	Sample:23030308, Compound:HD, RT:34.000	5
Peak deleted	Sample:23030308, Compound:HPD, RT:39.225	5
Peak deleted	Sample:23030309, Compound:HPD, RT:39.214	6
Pre modification peak	Sample:23030305, Compound:OF, RT:45.237	2
Peak modified	Sample:23030305, Compound:OF, RT:45.237	2
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230303\CIH.qld'	

Dataset: T:\Autospec\Processed Data Batch\230303IHOP.qld  
 Last Altered: Monday, March 06, 2023 11:36:30 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:37:17 Pacific Standard Time

**Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50**  
**Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27**

**ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk**

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.788	1.001	4.469e4	5.839e4	0.702	0.765	0.770	894	1638	6.87e5	9.09e5	769.3	554.8	NO	bb	bb	9.550
12378-PeCDF	29.956	1.001	2.355e5	1.540e5	0.679	1.529	1.550	2187	1572	3.61e6	2.40e6	1652.4	1526.9	NO	bb	bb	49.641
23478-PeCDF	31.293	1.001	2.214e5	1.482e5	0.786	1.494	1.550	2187	1572	3.41e6	2.30e6	1560.8	1464.8	NO	bb	bb	47.528
123478-HxCDF	34.914	1.001	2.600e5	2.102e5	1.166	1.237	1.240	1592	1910	4.13e6	3.31e6	2594.2	1730.9	NO	bd	bd	47.118
234678-HxCDF	35.917	1.001	2.733e5	2.175e5	1.140	1.257	1.240	1592	1910	4.33e6	3.47e6	2719.2	1818.9	NO	bb	bb	49.341
123678-HxCDF	35.048	1.000	2.727e5	2.151e5	1.091	1.268	1.240	1592	1910	4.23e6	3.33e6	2659.9	1743.3	NO	db	db	49.569
123789-HxCDF	36.941	1.000	2.420e5	1.912e5	1.137	1.266	1.240	1592	1910	3.95e6	3.13e6	2482.2	1637.3	NO	bb	bb	46.959
1234678-HpCDF	38.780	1.000	1.767e5	1.776e5	1.003	0.995	1.050	1849	2300	2.99e6	3.02e6	1618.0	1311.0	NO	bb	bb	47.490
1234789-HpCDF	41.019	1.000	1.595e5	1.575e5	0.953	1.013	1.050	1849	2300	2.36e6	2.33e6	1274.2	1012.6	NO	bb	bb	50.221
OCDF	45.246	1.005	2.326e5	2.612e5	0.778	0.891	0.890	910	1225	2.82e6	3.14e6	3100.2	2559.9	NO	bb	bb	88.591
2378-TCDD	26.438	1.001	5.709e4	7.150e4	1.149	0.798	0.770	1506	757	9.09e5	1.12e6	603.1	1485.0	NO	bb	bb	9.450
12378-PeCDD	31.549	1.001	2.156e5	1.424e5	1.022	1.514	1.550	2044	1419	3.32e6	2.17e6	1626.0	1530.4	NO	bb	bb	49.654
123478-HxCDD	36.028	1.000	2.225e5	1.815e5	0.996	1.226	1.240	1845	1377	3.65e6	2.93e6	1979.4	2130.4	NO	bd	bd	50.053
123678-HxCDD	36.150	1.000	2.361e5	1.995e5	1.001	1.184	1.240	1845	1377	3.83e6	3.15e6	2076.5	2285.7	NO	db	db	49.648
123789-HxCDD	36.529	1.011	2.267e5	1.883e5	0.907	1.204	1.240	1845	1377	3.65e6	3.02e6	1979.8	2191.3	NO	bb	bb	54.229
1234678-HpCDD	40.284	1.001	1.918e5	1.891e5	1.039	1.015	1.050	2026	1655	2.99e6	2.92e6	1477.4	1764.9	NO	bb	bb	47.619
OCDD	45.008	1.000	3.015e5	3.475e5	0.920	0.868	0.890	1418	1100	3.70e6	4.29e6	2606.9	3904.9	NO	bb	bb	98.432
13C-2378-TCDF	25.774	1.007	6.611e5	8.775e5	1.620	0.753	0.770	2458	1918	1.00e7	1.34e7	4080.0	6997.2	NO	bb	bb	94.015
13C-12378-PeCDF	29.934	1.169	6.937e5	4.618e5	1.240	1.502	1.550	2176	1857	1.07e7	7.10e6	4925.2	3826.5	NO	bb	bb	92.213
13C-23478-PeCDF	31.271	1.221	5.928e5	3.963e5	1.118	1.496	1.550	2176	1857	9.20e6	6.25e6	4229.1	3368.5	NO	bb	bb	87.601
13C-123478-HxCDF	34.891	0.955	2.871e5	5.687e5	1.168	0.505	0.510	1657	1593	4.56e6	9.04e6	2750.7	5674.1	NO	bd	bd	84.013
13C-123678-HxCDF	35.036	0.959	3.069e5	5.954e5	1.386	0.515	0.510	1657	1593	4.75e6	9.14e6	2868.0	5738.5	NO	db	db	74.642
13C-234678-HxCDF	35.894	0.983	2.954e5	5.775e5	1.129	0.512	0.510	1657	1593	4.85e6	9.48e6	2926.1	5951.0	NO	bb	bb	88.651
13C-123789-HxCDF	36.930	1.011	2.724e5	5.390e5	0.932	0.505	0.510	1657	1593	4.39e6	8.57e6	2648.2	5379.8	NO	bb	bb	99.871
13C-1234678-HpCDF	38.769	1.062	2.262e5	5.177e5	0.895	0.437	0.440	2036	2545	3.83e6	8.70e6	1881.8	3416.5	NO	bb	bb	95.295
13C-1234789-HpCDF	41.008	1.123	1.995e5	4.627e5	0.770	0.431	0.440	2036	2545	2.95e6	6.70e6	1450.8	2632.3	NO	bb	bb	98.667
13C-1234-TCDD	25.605	0.000	4.500e5	5.601e5	1.000	0.803	0.770	1910	1117	7.08e6	8.81e6	3705.2	7891.1	NO	bb	bb	100.000
13C-2378-TCDD	26.424	1.032	5.241e5	6.605e5	1.152	0.794	0.770	1910	1117	7.92e6	9.96e6	4144.8	8917.7	NO	bb	bb	101.762
13C-12378-PeCDD	31.527	1.231	4.348e5	2.708e5	0.829	1.606	1.550	951	872	6.72e6	4.16e6	7062.4	4771.1	NO	bb	bb	84.283
13C-123478-HxCDD	36.017	0.986	4.575e5	3.533e5	0.995	1.295	1.240	1714	1036	7.67e6	5.90e6	4475.1	5696.2	NO	bd	bd	93.458
13C-123678-HxCDD	36.139	0.990	4.929e5	3.835e5	1.157	1.285	1.240	1714	1036	7.72e6	6.07e6	4504.9	5859.4	NO	db	db	86.905
13C-1234678-HpCDD	40.262	1.103	3.870e5	3.828e5	0.840	1.011	1.050	1736	1260	5.92e6	5.62e6	3411.3	4462.2	NO	bb	bb	105.085
13C-OCDD	44.999	1.232	6.781e5	7.554e5	0.767	0.898	0.890	1440	1232	8.22e6	9.13e6	5710.3	7413.0	NO	bb	bb	214.218
13C-123789-HxCDD	36.518	0.000	4.889e5	3.830e5	1.000	1.277	1.240	1714	1036	7.91e6	6.13e6	4618.2	5918.8	NO	bb	bb	100.000
37CL-2378-TCDD	26.438	1.033	1.177e5		1.288			2053		1.80e6		877.6			bb		9.046

Dataset: T:\Autospec\Processed Data Batch\230303IHOP.qld  
 Last Altered: Monday, March 06, 2023 11:36:30 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:37:17 Pacific Standard Time

ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.285	0.865	4.825e4	6.619e4	0.802	0.729	0.770	894	1638	7.69e5	1.08e6	860.8	657.5	NO	bb	bb	9.280
1289-TCDF	27.286	1.059	4.233e4	5.922e4	0.678	0.715	0.770	894	1638	6.48e5	8.96e5	725.0	547.0	NO	db	db	9.735
13468-PECDF	27.145	0.907	4.529e5	2.964e5	1.246	1.528	1.550	639	866	7.07e6	4.64e6	11052.6	5356.5	NO	bb	bb	52.031
12389-PECDF	32.329	1.080	1.727e5	1.137e5	0.496	1.519	1.550	2187	1572	2.66e6	1.70e6	1217.2	1080.5	NO	bb	bb	49.938
123468-HXCDF	33.243	0.953	2.450e5	1.964e5	1.169	1.248	1.240	1592	1910	3.71e6	2.99e6	2333.1	1567.3	NO	bb	bb	44.113
1368-TCDD	23.571	0.892	5.082e4	6.674e4	1.015	0.761	0.770	1506	757	8.30e5	1.09e6	551.2	1438.0	NO	bb	bb	9.774
1289-TCDD	27.031	1.023	4.817e4	6.482e4	0.909	0.743	0.770	1506	757	7.39e5	9.76e5	490.7	1289.2	NO	bb	bb	10.496
12479-PECDD	28.831	0.914	4.117e5	2.743e5	2.301	1.501	1.550	2044	1419	3.99e6	2.64e6	1950.7	1862.6	NO	bb	bb	42.238
12389-PECDD	31.939	1.013	2.280e5	1.502e5	1.184	1.518	1.550	2044	1419	3.50e6	2.32e6	1711.4	1633.6	NO	bb	bb	45.288
124679-HXCDD	34.022	0.945	2.111e5	1.738e5	1.115	1.214	1.240	1845	1377	3.36e6	2.72e6	1819.4	1971.8	NO	bb	bb	42.563
1234679-HPCDD	39.236	0.975	2.063e5	2.043e5	1.137	1.010	1.050	2026	1655	3.38e6	3.38e6	1668.0	2041.4	NO	bb	bb	46.924
Total-tetrafurans			1.368e5		0.727			894		2.13e6							28.888
Total-penta1			4.529e5					639		7.07e6							52.031
Total-pentafurans			6.685e5		0.654			2187		1.03e7							156.333
Total-hexafurans			1.293e6		1.141			1592		2.04e7							237.100
Total-heptafurans			3.381e5		0.978			1849		5.38e6							98.217
Total-Furans			3.122e6		0.922			894		4.80e7							661.160
Total-tetradoxins			2.626e5		1.024			1506		3.74e6							49.711
Total-pentadoxins			8.563e5		1.502			2044		1.08e7							137.339
Total-hexadoxins			8.975e5		1.005			1845		1.45e7							196.701
Total-heptadoxins			3.982e5		1.088			2026		6.38e6							94.566
Total-Dioxins			2.716e6		1.130			1506		3.92e7							576.750
Total-TEQ			5.838e6					1506		8.72e7							1237.909
FUNCTION1 PFK			0.000e0					705807		0.00e0							
FUNCTION2 PFK			1.098e6					272509		2.65e6							0.000
FUNCTION3 PFK			8.030e5					419872		3.44e6							0.000
FUNCTION4 PFK			2.346e5					346452		6.90e6							
FUNCTION5 PFK			5.429e4					176842		2.44e6							
FUNCTION1 HXCD...			8.708e2					511		1.38e4							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			1.374e3					1181		2.70e4							0.000
FUNCTION3 OCDPE			4.232e2					570		6.10e3							0.000
FUNCTION4 NCDPE			7.938e2					683		4.57e3							0.000
FUNCTION5 DCDPE			0.000e0					526		0.00e0							

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303IHOP.qld  
 Last Altered: Monday, March 06, 2023 11:36:30 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:37:17 Pacific Standard Time

Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50

Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.29	4.233e4	5.922e4	0.678	0.71	0.77	725.0	YES	NO	db	db	9.735
2	Total-tetrafurans	27.16	6.976e2	1.059e3	0.727	0.66	0.77	14.1	YES	NO	bd	bd	0.157
3	2378-TCDF	25.79	4.469e4	5.839e4	0.702	0.77	0.77	769.3	YES	NO	bb	bb	9.550
4	Total-tetrafurans	24.88	4.805e2	5.664e2	0.727	0.85	0.77	7.5	YES	NO	bb	bb	0.094
5	Total-tetrafurans	24.57	3.491e2	4.664e2	0.727	0.75	0.77	6.2	YES	NO	bd	bd	0.073
6	1368-TCDF	22.29	4.825e4	6.619e4	0.802	0.73	0.77	860.8	YES	NO	bb	bb	9.280

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDFF	27.14	4.529e5	2.964e5	1.246	1.53	1.55	11052.6	YES	NO	bb	bb	52.031

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDF	29.96	2.355e5	1.540e5	0.679	1.53	1.55	1652.4	YES	NO	bb	bb	49.641
2	Total-pentafurans	28.81	3.891e4	2.579e4	0.654	1.51	1.55	273.1	YES	NO	bb	bb	9.226
3	12389-PECDF	32.33	1.727e5	1.137e5	0.496	1.52	1.55	1217.2	YES	NO	bb	bb	49.938
4	23478-PeCDF	31.29	2.214e5	1.482e5	0.786	1.49	1.55	1560.8	YES	NO	bb	bb	47.528

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.94	2.420e5	1.912e5	1.137	1.27	1.24	2482.2	YES	NO	bb	bb	46.959
2	234678-HxCDF	35.92	2.733e5	2.175e5	1.140	1.26	1.24	2719.2	YES	NO	bb	bb	49.341
3	123678-HxCDF	35.05	2.727e5	2.151e5	1.091	1.27	1.24	2659.9	YES	NO	db	db	49.569
4	123478-HxCDF	34.91	2.600e5	2.102e5	1.166	1.24	1.24	2594.2	YES	NO	bd	bd	47.118
5	123468-HXCDF	33.24	2.450e5	1.964e5	1.169	1.25	1.24	2333.1	YES	NO	bb	bb	44.113



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	41.38	1.097e2	1.037e2	0.978	1.06	1.05	1.8	NO	NO	bb	bb	0.031
2	1234789-HpCDF	41.02	1.595e5	1.575e5	0.953	1.01	1.05	1274.2	YES	NO	bb	bb	50.221
3	Total-heptafurans	39.45	1.654e3	1.420e3	0.978	1.17	1.05	14.3	YES	NO	bb	bb	0.447
4	Total-heptafurans	39.28	9.725e1	9.433e1	0.978	1.03	1.05	1.5	NO	NO	bb	bb	0.028
5	1234678-HpCDF	38.78	1.767e5	1.776e5	1.003	1.00	1.05	1618.0	YES	NO	bb	bb	47.490

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.29	4.233e4	5.922e4	0.678	0.71	0.77	725.0	YES	NO	db	db	9.735
2	Total-tetrafurans	27.16	6.976e2	1.059e3	0.727	0.66	0.77	14.1	YES	NO	bd	bd	0.157
3	2378-TCDF	25.79	4.469e4	5.839e4	0.702	0.77	0.77	769.3	YES	NO	bb	bb	9.550
4	Total-tetrafurans	24.88	4.805e2	5.664e2	0.727	0.85	0.77	7.5	YES	NO	bb	bb	0.094
5	Total-tetrafurans	24.57	3.491e2	4.664e2	0.727	0.75	0.77	6.2	YES	NO	bd	bd	0.073
6	1368-TCDF	22.29	4.825e4	6.619e4	0.802	0.73	0.77	860.8	YES	NO	bb	bb	9.280
7	12378-PeCDF	29.96	2.355e5	1.540e5	0.679	1.53	1.55	1652.4	YES	NO	bb	bb	49.641
8	Total-pentafurans	28.81	3.891e4	2.579e4	0.654	1.51	1.55	273.1	YES	NO	bb	bb	9.226
9	12389-PECDF	32.33	1.727e5	1.137e5	0.496	1.52	1.55	1217.2	YES	NO	bb	bb	49.938
10	23478-PeCDF	31.29	2.214e5	1.482e5	0.786	1.49	1.55	1560.8	YES	NO	bb	bb	47.528
11	123789-HxCDF	36.94	2.420e5	1.912e5	1.137	1.27	1.24	2482.2	YES	NO	bb	bb	46.959
12	234678-HxCDF	35.92	2.733e5	2.175e5	1.140	1.26	1.24	2719.2	YES	NO	bb	bb	49.341
13	123678-HxCDF	35.05	2.727e5	2.151e5	1.091	1.27	1.24	2659.9	YES	NO	db	db	49.569
14	123478-HxCDF	34.91	2.600e5	2.102e5	1.166	1.24	1.24	2594.2	YES	NO	bd	bd	47.118
15	123468-HXCDF	33.24	2.450e5	1.964e5	1.169	1.25	1.24	2333.1	YES	NO	bb	bb	44.113
16	Total-heptafurans	41.38	1.097e2	1.037e2	0.978	1.06	1.05	1.8	NO	NO	bb	bb	0.031
17	1234789-HpCDF	41.02	1.595e5	1.575e5	0.953	1.01	1.05	1274.2	YES	NO	bb	bb	50.221
18	Total-heptafurans	39.45	1.654e3	1.420e3	0.978	1.17	1.05	14.3	YES	NO	bb	bb	0.447
19	Total-heptafurans	39.28	9.725e1	9.433e1	0.978	1.03	1.05	1.5	NO	NO	bb	bb	0.028
20	1234678-HpCDF	38.78	1.767e5	1.776e5	1.003	1.00	1.05	1618.0	YES	NO	bb	bb	47.490
21	OCDF	45.25	2.326e5	2.612e5	0.778	0.89	0.89	3100.2	YES	NO	bb	bb	88.591
22	13468-PECDF	27.14	4.529e5	2.964e5	1.246	1.53	1.55	11052.6	YES	NO	bb	bb	52.031

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TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDD	23.57	5.082e4	6.674e4	1.015	0.76	0.77	551.2	YES	NO	bb	bb	9.774
2	1289-TCDD	27.03	4.817e4	6.482e4	0.909	0.74	0.77	490.7	YES	NO	bb	bb	10.496
3	2378-TCDD	26.44	5.709e4	7.150e4	1.149	0.80	0.77	603.1	YES	NO	bb	bb	9.450
4	Total-tetradoxins	26.11	8.149e4	1.045e5	1.024	0.78	0.77	583.1	YES	NO	bb	bb	15.330
5	Total-tetradoxins	25.62	2.499e4	3.156e4	1.024	0.79	0.77	257.1	YES	NO	bb	bb	4.660

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.94	2.280e5	1.502e5	1.184	1.52	1.55	1711.4	YES	NO	bb	bb	45.288
2	12378-PeCDD	31.55	2.156e5	1.424e5	1.022	1.51	1.55	1626.0	YES	NO	bb	bb	49.654
3	Total-pentadoxins	30.87	1.016e3	6.817e2	1.502	1.49	1.55	7.9	YES	NO	bb	bb	0.160
4	12479-PECDD	28.83	4.117e5	2.743e5	2.301	1.50	1.55	1950.7	YES	NO	bb	bb	42.238

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.53	2.267e5	1.883e5	0.907	1.20	1.24	1979.8	YES	NO	bb	bb	54.229
2	123678-HxCDD	36.15	2.361e5	1.995e5	1.001	1.18	1.24	2076.5	YES	NO	db	db	49.648
3	123478-HxCDD	36.03	2.225e5	1.815e5	0.996	1.23	1.24	1979.4	YES	NO	bd	bd	50.053
4	Total-hexadoxins	35.14	9.946e2	7.755e2	1.005	1.28	1.24	9.3	YES	NO	db	bd	0.209
5	124679-HXCDD	34.02	2.111e5	1.738e5	1.115	1.21	1.24	1819.4	YES	NO	bb	bb	42.563

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234679-HPCDD	39.24	2.063e5	2.043e5	1.137	1.01	1.05	1668.0	YES	NO	bb	bb	46.924
2	Total-heptadoxins	40.58	1.040e2	8.729e1	1.088	1.19	1.05	2.1	NO	NO	bb	bb	0.023
3	1234678-HpCDD	40.28	1.918e5	1.891e5	1.039	1.01	1.05	1477.4	YES	NO	bb	bb	47.619

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDD	23.57	5.082e4	6.674e4	1.015	0.76	0.77	551.2	YES	NO	bb	bb	9.774
2	1289-TCDD	27.03	4.817e4	6.482e4	0.909	0.74	0.77	490.7	YES	NO	bb	bb	10.496
3	2378-TCDD	26.44	5.709e4	7.150e4	1.149	0.80	0.77	603.1	YES	NO	bb	bb	9.450
4	Total-tetradoxins	26.11	8.149e4	1.045e5	1.024	0.78	0.77	583.1	YES	NO	bb	bb	15.330
5	Total-tetradoxins	25.62	2.499e4	3.156e4	1.024	0.79	0.77	257.1	YES	NO	bb	bb	4.660
6	12389-PECDD	31.94	2.280e5	1.502e5	1.184	1.52	1.55	1711.4	YES	NO	bb	bb	45.288
7	12378-PeCDD	31.55	2.156e5	1.424e5	1.022	1.51	1.55	1626.0	YES	NO	bb	bb	49.654
8	Total-pentadoxins	30.87	1.016e3	6.817e2	1.502	1.49	1.55	7.9	YES	NO	bb	bb	0.160
9	12479-PECDD	28.83	4.117e5	2.743e5	2.301	1.50	1.55	1950.7	YES	NO	bb	bb	42.238
10	123789-HxCDD	36.53	2.267e5	1.883e5	0.907	1.20	1.24	1979.8	YES	NO	bb	bb	54.229
11	123678-HxCDD	36.15	2.361e5	1.995e5	1.001	1.18	1.24	2076.5	YES	NO	db	db	49.648
12	123478-HxCDD	36.03	2.225e5	1.815e5	0.996	1.23	1.24	1979.4	YES	NO	bd	bd	50.053
13	Total-hexadoxins	35.14	9.946e2	7.755e2	1.005	1.28	1.24	9.3	YES	NO	db	bd	0.209
14	124679-HXCDD	34.02	2.111e5	1.738e5	1.115	1.21	1.24	1819.4	YES	NO	bb	bb	42.563
15	1234679-HPCDD	39.24	2.063e5	2.043e5	1.137	1.01	1.05	1668.0	YES	NO	bb	bb	46.924
16	Total-heptadoxins	40.58	1.040e2	8.729e1	1.088	1.19	1.05	2.1	NO	NO	bb	bb	0.023
17	1234678-HpCDD	40.28	1.918e5	1.891e5	1.039	1.01	1.05	1477.4	YES	NO	bb	bb	47.619
18	OCDD	45.01	3.015e5	3.475e5	0.920	0.87	0.89	2606.9	YES	NO	bb	bb	98.432

## Quantify Totals Report MassLynx V4.1 SCN909

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## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.29	4.233e4	5.922e4	0.678	0.71	0.77	725.0	YES	NO	db	db	9.735
2	Total-tetrafurans	27.16	6.976e2	1.059e3	0.727	0.66	0.77	14.1	YES	NO	bd	bd	0.157
3	2378-TCDF	25.79	4.469e4	5.839e4	0.702	0.77	0.77	769.3	YES	NO	bb	bb	9.550
4	Total-tetrafurans	24.88	4.805e2	5.664e2	0.727	0.85	0.77	7.5	YES	NO	bb	bb	0.094
5	Total-tetrafurans	24.57	3.491e2	4.664e2	0.727	0.75	0.77	6.2	YES	NO	bd	bd	0.073
6	1368-TCDF	22.29	4.825e4	6.619e4	0.802	0.73	0.77	860.8	YES	NO	bb	bb	9.280
7	12378-PeCDF	29.96	2.355e5	1.540e5	0.679	1.53	1.55	1652.4	YES	NO	bb	bb	49.641
8	Total-pentafurans	28.81	3.891e4	2.579e4	0.654	1.51	1.55	273.1	YES	NO	bb	bb	9.226
9	12389-PECDF	32.33	1.727e5	1.137e5	0.496	1.52	1.55	1217.2	YES	NO	bb	bb	49.938
10	23478-PeCDF	31.29	2.214e5	1.482e5	0.786	1.49	1.55	1560.8	YES	NO	bb	bb	47.528
11	123789-HxCDF	36.94	2.420e5	1.912e5	1.137	1.27	1.24	2482.2	YES	NO	bb	bb	46.959
12	234678-HxCDF	35.92	2.733e5	2.175e5	1.140	1.26	1.24	2719.2	YES	NO	bb	bb	49.341
13	123678-HxCDF	35.05	2.727e5	2.151e5	1.091	1.27	1.24	2659.9	YES	NO	db	db	49.569
14	123478-HxCDF	34.91	2.600e5	2.102e5	1.166	1.24	1.24	2594.2	YES	NO	bd	bd	47.118
15	123468-HXCDF	33.24	2.450e5	1.964e5	1.169	1.25	1.24	2333.1	YES	NO	bb	bb	44.113
16	Total-heptafurans	41.38	1.097e2	1.037e2	0.978	1.06	1.05	1.8	NO	NO	bb	bb	0.031
17	1234789-HpCDF	41.02	1.595e5	1.575e5	0.953	1.01	1.05	1274.2	YES	NO	bb	bb	50.221
18	Total-heptafurans	39.45	1.654e3	1.420e3	0.978	1.17	1.05	14.3	YES	NO	bb	bb	0.447
19	Total-heptafurans	39.28	9.725e1	9.433e1	0.978	1.03	1.05	1.5	NO	NO	bb	bb	0.028
20	1234678-HpCDF	38.78	1.767e5	1.776e5	1.003	1.00	1.05	1618.0	YES	NO	bb	bb	47.490
21	OCDF	45.25	2.326e5	2.612e5	0.778	0.89	0.89	3100.2	YES	NO	bb	bb	88.591
22	13468-PECDF	27.14	4.529e5	2.964e5	1.246	1.53	1.55	11052.6	YES	NO	bb	bb	52.031
23	1368-TCDD	23.57	5.082e4	6.674e4	1.015	0.76	0.77	551.2	YES	NO	bb	bb	9.774
24	1289-TCDD	27.03	4.817e4	6.482e4	0.909	0.74	0.77	490.7	YES	NO	bb	bb	10.496
25	2378-TCDD	26.44	5.709e4	7.150e4	1.149	0.80	0.77	603.1	YES	NO	bb	bb	9.450
26	Total-tetradioxins	26.11	8.149e4	1.045e5	1.024	0.78	0.77	583.1	YES	NO	bb	bb	15.330
27	Total-tetradioxins	25.62	2.499e4	3.156e4	1.024	0.79	0.77	257.1	YES	NO	bb	bb	4.660
28	12389-PECDD	31.94	2.280e5	1.502e5	1.184	1.52	1.55	1711.4	YES	NO	bb	bb	45.288
29	12378-PeCDD	31.55	2.156e5	1.424e5	1.022	1.51	1.55	1626.0	YES	NO	bb	bb	49.654
30	Total-pentadioxins	30.87	1.016e3	6.817e2	1.502	1.49	1.55	7.9	YES	NO	bb	bb	0.160
31	12479-PECDD	28.83	4.117e5	2.743e5	2.301	1.50	1.55	1950.7	YES	NO	bb	bb	42.238
32	123789-HxCDD	36.53	2.267e5	1.883e5	0.907	1.20	1.24	1979.8	YES	NO	bb	bb	54.229
33	123678-HxCDD	36.15	2.361e5	1.995e5	1.001	1.18	1.24	2076.5	YES	NO	db	db	49.648
34	123478-HxCDD	36.03	2.225e5	1.815e5	0.996	1.23	1.24	1979.4	YES	NO	bd	bd	50.053
35	Total-hexadioxins	35.14	9.946e2	7.755e2	1.005	1.28	1.24	9.3	YES	NO	db	bd	0.209
36	124679-HXCDD	34.02	2.111e5	1.738e5	1.115	1.21	1.24	1819.4	YES	NO	bb	bb	42.563
37	1234679-HPCDD	39.24	2.063e5	2.043e5	1.137	1.01	1.05	1668.0	YES	NO	bb	bb	46.924

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-heptadioxins	40.58	1.040e2	8.729e1	1.088	1.19	1.05	2.1	NO	NO	bb	bb	0.023
39	1234678-HpCDD	40.28	1.918e5	1.891e5	1.039	1.01	1.05	1477.4	YES	NO	bb	bb	47.619
40	OCDD	45.01	3.015e5	3.475e5	0.920	0.87	0.89	2606.9	YES	NO	bb	bb	98.432

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	30.96	1.058e5					1.1	NO		bb		0.000
2	FUNCTION2 PFK	30.15	5.471e5					3.7	YES		bb		0.000
3	FUNCTION2 PFK	28.28	4.455e5					4.9	YES		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	35.89	2.667e5					4.7	YES		bb		0.000
2	FUNCTION3 PFK	33.03	5.362e5					3.5	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.07	4.905e4					2.0	NO		db		
2	FUNCTION4 PFK	37.96	1.071e4					1.3	NO		bd		
3	FUNCTION4 PFK	37.89	4.848e3					0.7	NO		bb		
4	FUNCTION4 PFK	42.18	1.359e4					1.2	NO		bb		
5	FUNCTION4 PFK	41.91	8.056e3					0.9	NO		db		
6	FUNCTION4 PFK	41.83	2.292e4					1.6	NO		bd		
7	FUNCTION4 PFK	41.77	1.673e4					1.5	NO		bb		
8	FUNCTION4 PFK	41.48	1.418e4					1.4	NO		bb		
9	FUNCTION4 PFK	41.32	2.104e3					0.5	NO		bb		
10	FUNCTION4 PFK	41.13	8.695e3					1.0	NO		bb		
11	FUNCTION4 PFK	40.63	8.163e3					0.8	NO		bb		
12	FUNCTION4 PFK	40.08	1.008e4					1.1	NO		db		
13	FUNCTION4 PFK	40.04	1.572e4					1.4	NO		bd		
14	FUNCTION4 PFK	39.51	7.181e3					1.0	NO		bb		
15	FUNCTION4 PFK	39.44	5.021e3					0.7	NO		bb		
16	FUNCTION4 PFK	38.96	9.511e3					1.3	NO		db		
17	FUNCTION4 PFK	38.92	2.806e4					1.5	NO		bd		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	42.57	1.411e3					0.9	NO		bb		
2	FUNCTION5 PFK	45.95	2.307e4					3.9	YES		bb		
3	FUNCTION5 PFK	45.69	1.018e3					0.6	NO		bb		
4	FUNCTION5 PFK	45.54	1.146e3					0.7	NO		bb		
5	FUNCTION5 PFK	45.12	9.805e3					2.3	NO		bb		
6	FUNCTION5 PFK	44.83	5.276e3					1.3	NO		bb		
7	FUNCTION5 PFK	44.58	5.554e3					1.4	NO		bb		
8	FUNCTION5 PFK	44.38	2.760e3					0.9	NO		db		
9	FUNCTION5 PFK	44.35	3.252e3					1.1	NO		bd		
10	FUNCTION5 PFK	42.99	9.959e2					0.6	NO		bb		

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**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.01	7.970e1					3.2	YES		bb		0.000
2	FUNCTION1 HXCD...	23.47	8.919e1					3.0	YES		db		0.000
3	FUNCTION1 HXCD...	23.40	8.065e1					2.9	NO		dd		0.000
4	FUNCTION1 HXCD...	23.32	1.305e2					3.4	YES		dd		0.000
5	FUNCTION1 HXCD...	23.22	1.146e2					2.8	NO		bd		0.000
6	FUNCTION1 HXCD...	22.41	7.936e1					4.3	YES		bb		0.000
7	FUNCTION1 HXCD...	27.40	7.698e1					2.2	NO		bb		0.000
8	FUNCTION1 HXCD...	27.14	1.376e2					3.3	YES		bb		0.000
9	FUNCTION1 HXCD...	25.79	8.222e1					1.9	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.53	2.999e2					2.9	NO		bb		0.000
2	FUNCTION2 HPCD...	31.17	3.219e2					4.5	YES		bb		0.000
3	FUNCTION2 HPCD...	29.58	8.369e1					1.2	NO		db		0.000
4	FUNCTION2 HPCD...	29.50	8.185e1					1.4	NO		bd		0.000
5	FUNCTION2 HPCD...	29.43	9.066e1					2.2	NO		bb		0.000
6	FUNCTION2 HPCD...	28.26	1.049e2					2.5	NO		db		0.000
7	FUNCTION2 HPCD...	28.22	1.658e2					2.8	NO		bd		0.000
8	FUNCTION2 HPCD...	28.15	1.360e2					3.3	YES		db		0.000
9	FUNCTION2 HPCD...	28.11	8.921e1					2.1	NO		bd		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.53	2.562e2					6.2	YES		bb		0.000
2	FUNCTION3 OCDPE	36.14	1.671e2					4.5	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303IHOP.qld  
Last Altered: Monday, March 06, 2023 11:36:30 Pacific Standard Time  
Printed: Monday, March 06, 2023 11:37:17 Pacific Standard Time

**ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk**

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.04	8.282e1					2.4	NO		bb		0.000
2	FUNCTION4 NCDPE	38.07	5.777e2					4.3	YES		bb		0.000
3	FUNCTION4 NCDPE	37.82	1.333e2					0.0	NO		bb		0.000

**ETHERS6**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

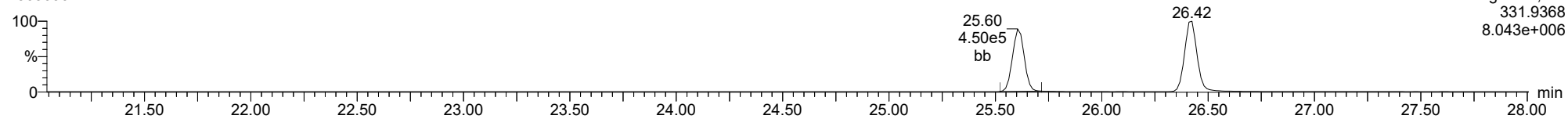


**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS3W1, **Name:** 23030302, **Date:** 03-Mar-2023, **Time:** 09:51:40, **Conditions:** AUTOSPEC01, **User:** pk

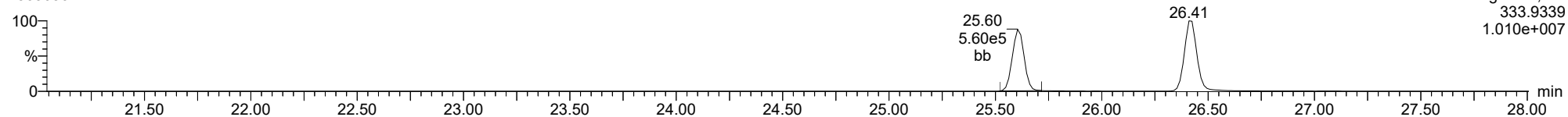
**13C-1234-TCDD**

23030302



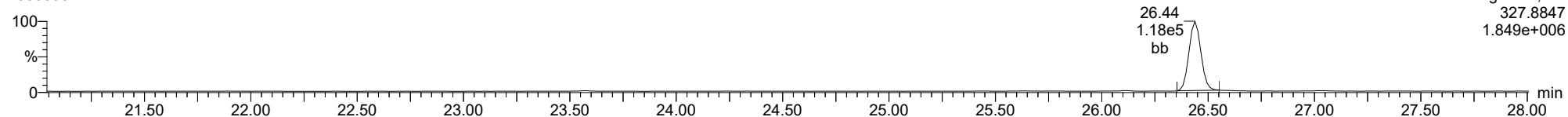
**13C-1234-TCDD**

23030302



**37CL-2378-TCDD**

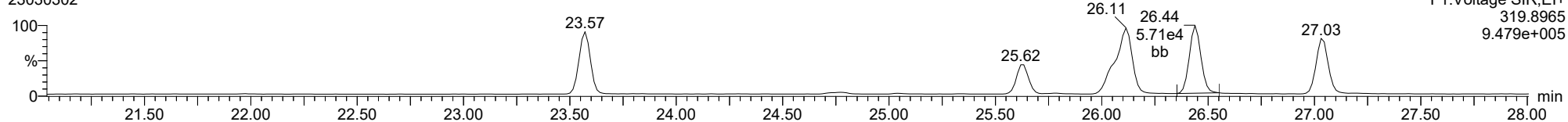
23030302



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

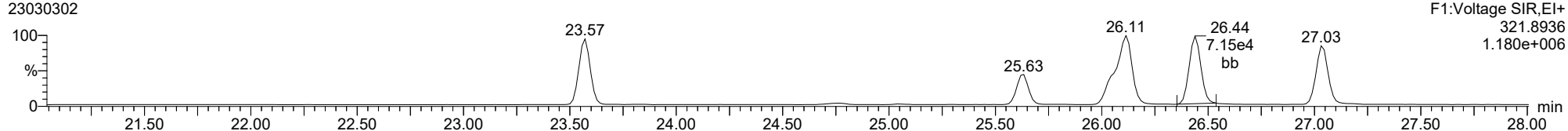
**2378-TCDD**

23030302



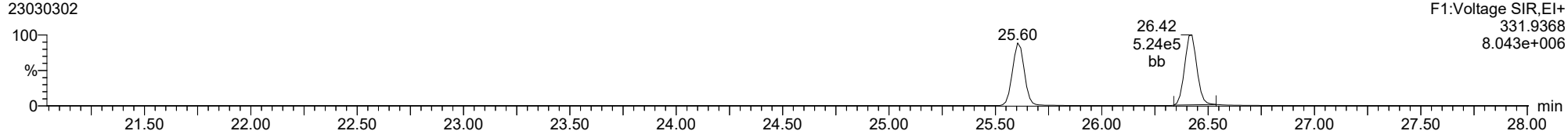
**2378-TCDD**

23030302



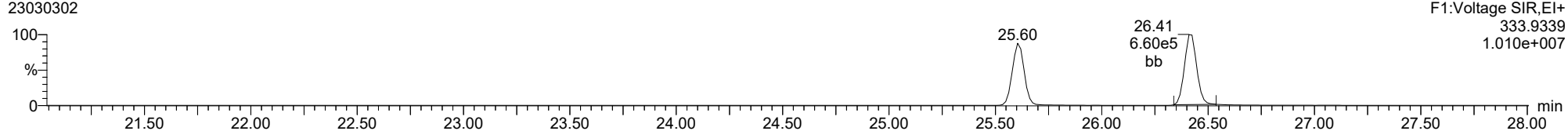
**13C-2378-TCDD**

23030302



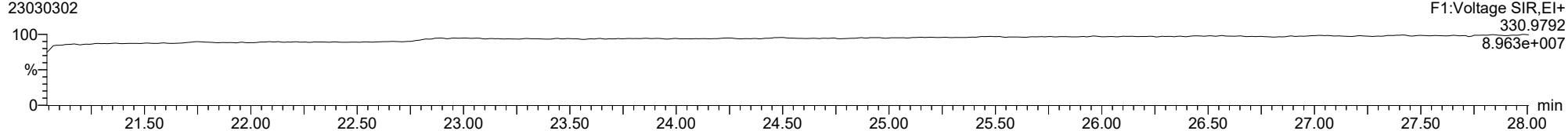
**13C-2378-TCDD**

23030302



**FUNCTION1 PFK**

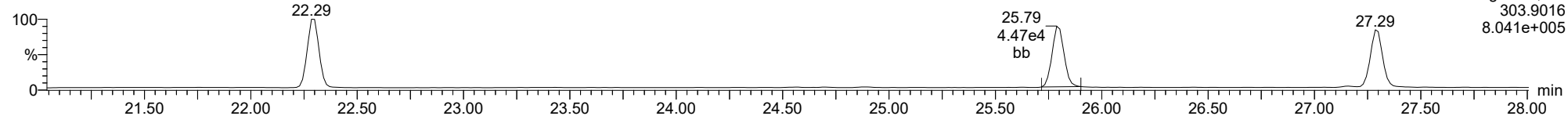
23030302



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

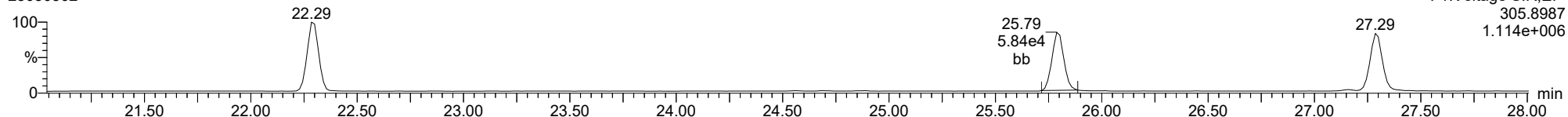
**2378-TCDF**

23030302



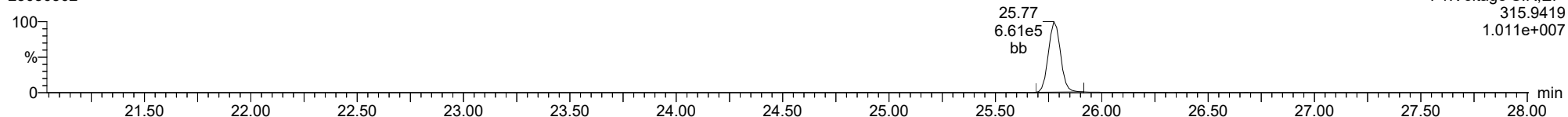
**2378-TCDF**

23030302



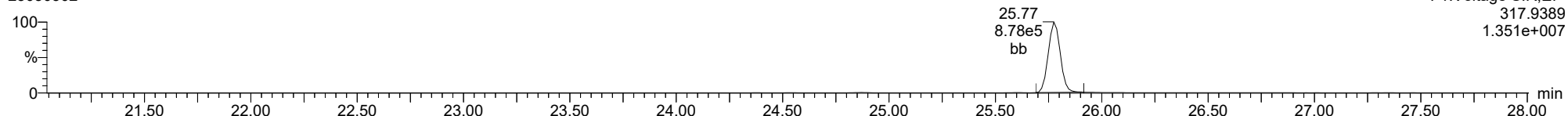
**13C-2378-TCDF**

23030302



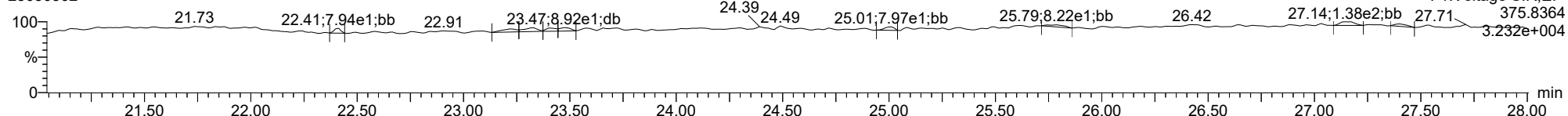
**13C-2378-TCDF**

23030302



**FUNCTION1 HXCDPE**

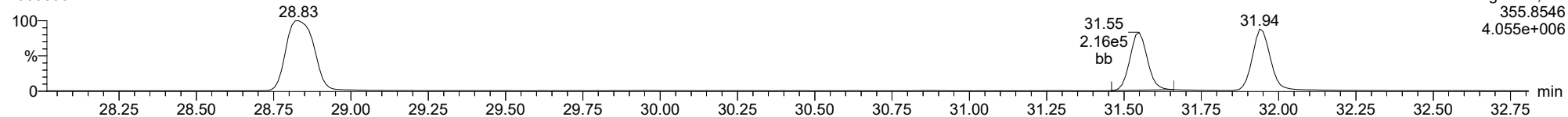
23030302



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

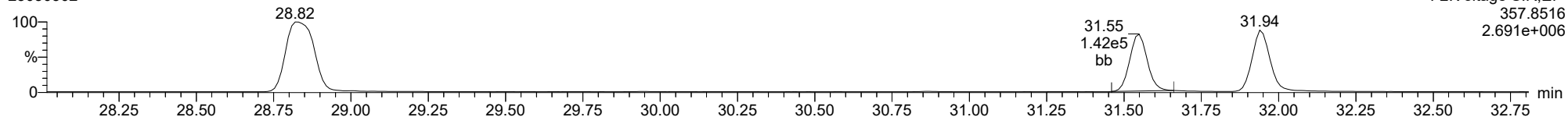
**12378-PeCDD**

23030302



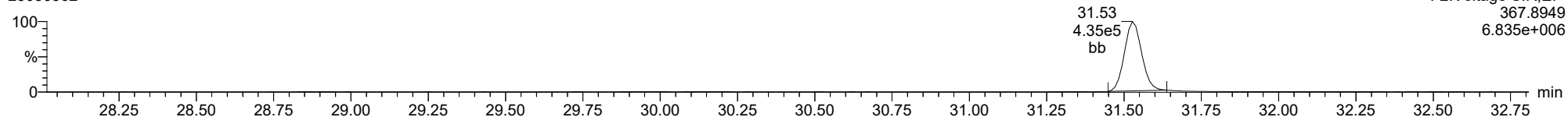
**12378-PeCDD**

23030302



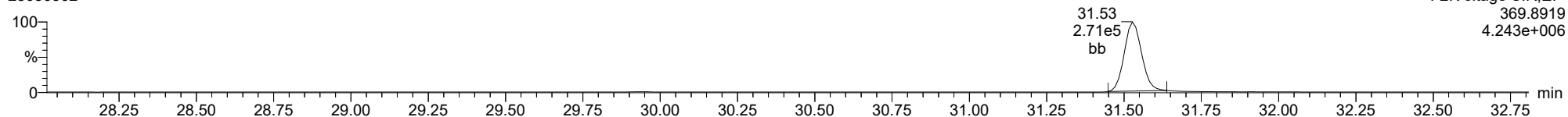
**13C-12378-PeCDD**

23030302



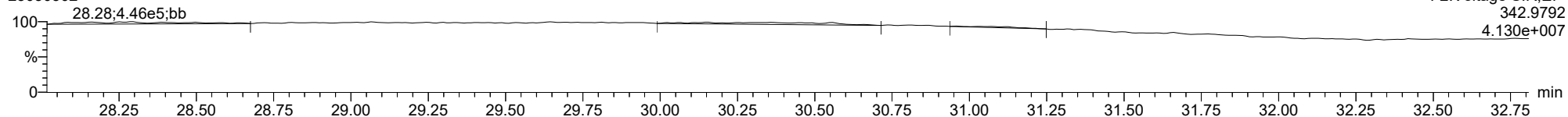
**13C-12378-PeCDD**

23030302



**FUNCTION2 PFK**

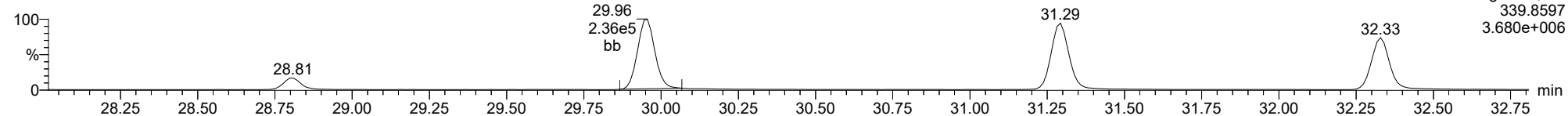
23030302



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

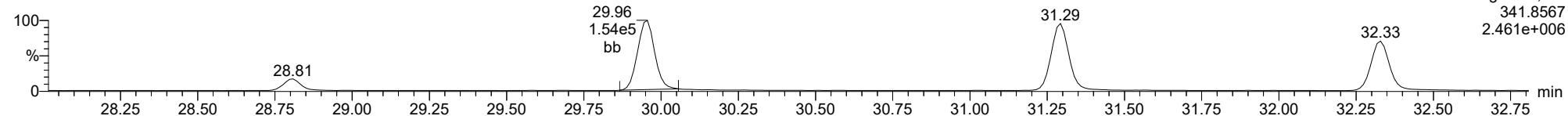
**12378-PeCDF**

23030302



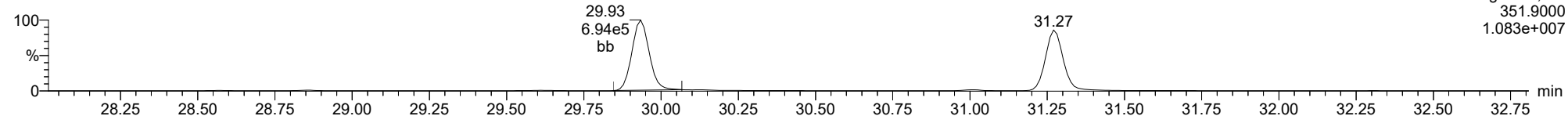
**12378-PeCDF**

23030302



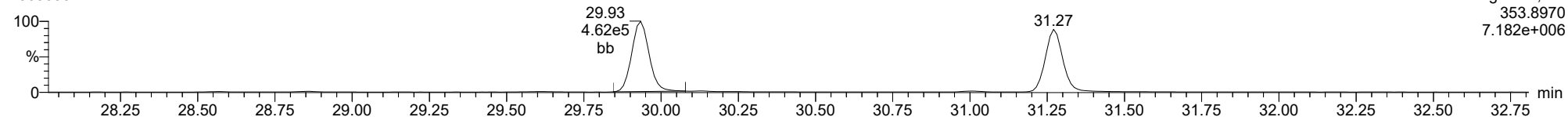
**13C-12378-PeCDF**

23030302



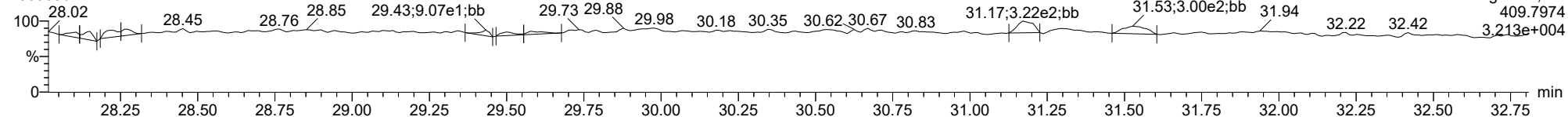
**13C-12378-PeCDF**

23030302



**FUNCTION2 HPCDPE**

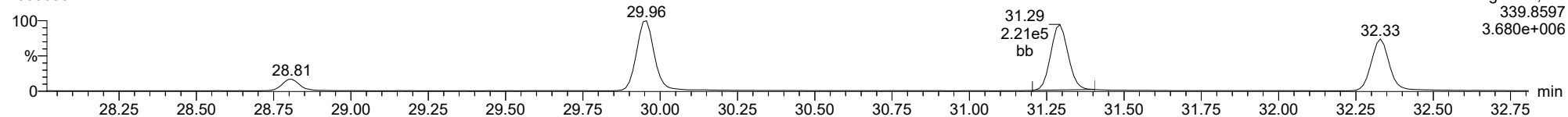
23030302



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

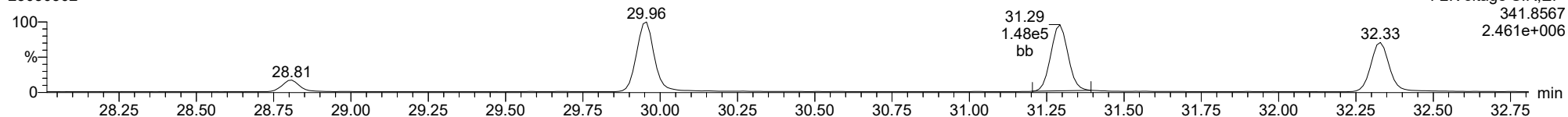
**23478-PeCDF**

23030302



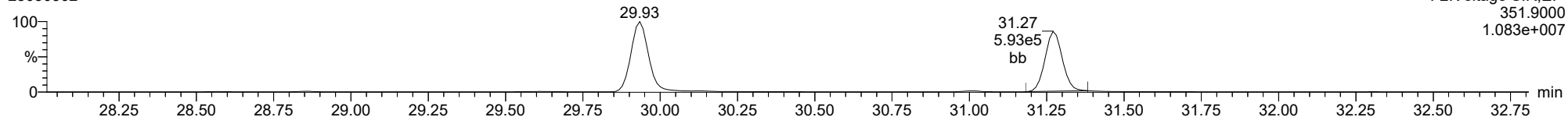
**23478-PeCDF**

23030302



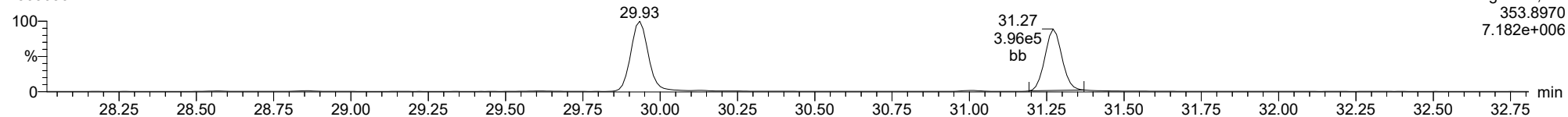
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23030302



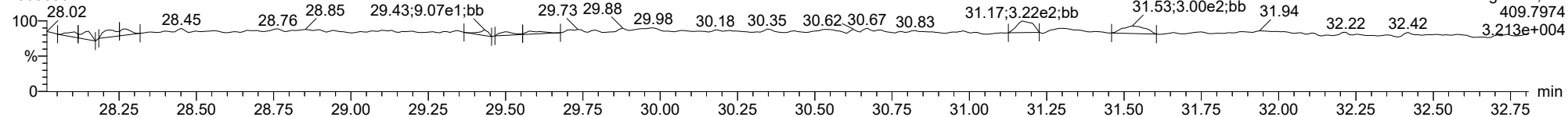
**13C-23478-PeCDF**

23030302



**FUNCTION2 HPCDPE**

23030302

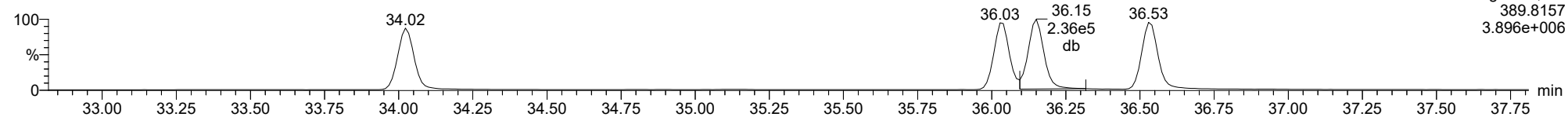




ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

**123678-HxCDD**

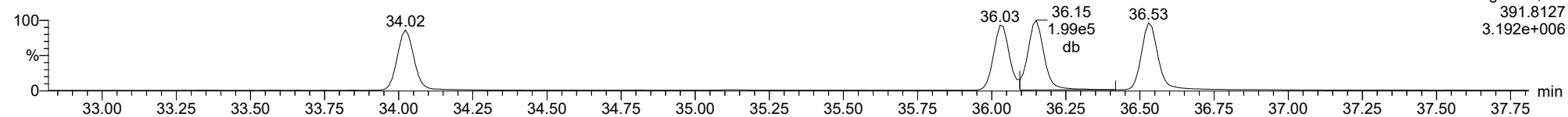
23030302



F3:Voltage SIR,EI+  
389.8157  
3.896e+006

**123678-HxCDD**

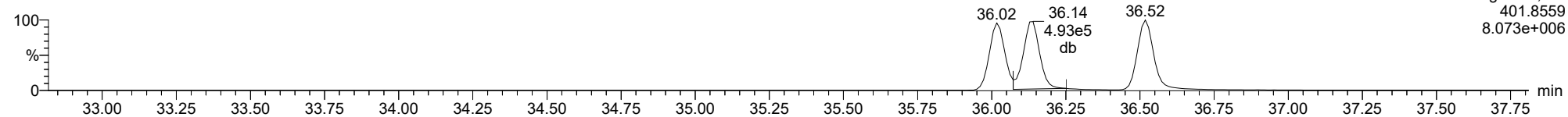
23030302



F3:Voltage SIR,EI+  
391.8127  
3.192e+006

**13C-123678-HxCDD**

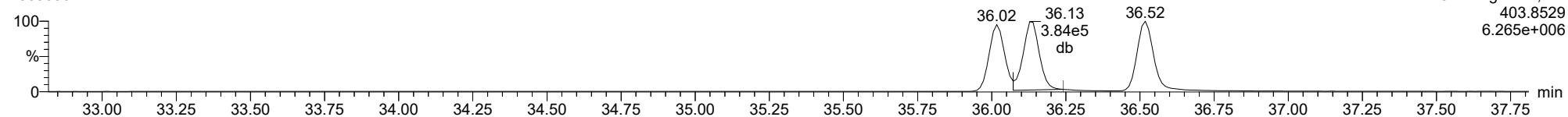
23030302



F3:Voltage SIR,EI+  
401.8559  
8.073e+006

**13C-123678-HxCDD**

23030302



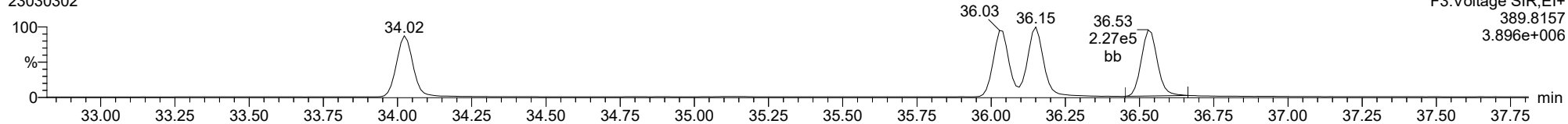
F3:Voltage SIR,EI+  
403.8529  
6.265e+006



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

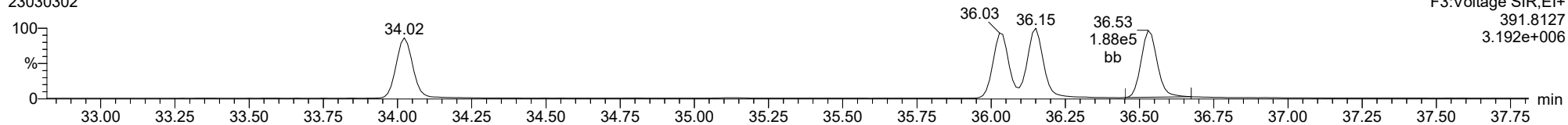
**123789-HxCDD**

23030302



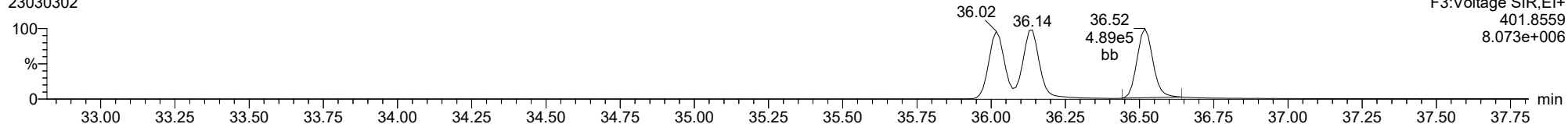
**123789-HxCDD**

23030302



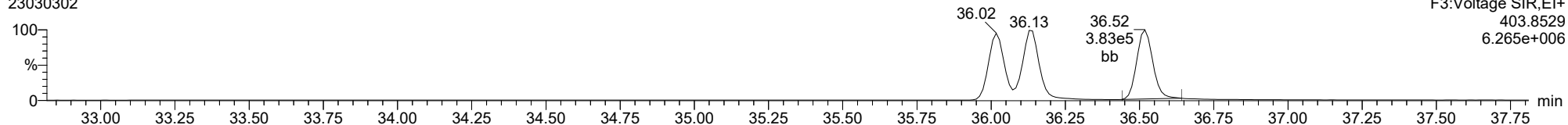
**13C-123789-HxCDD**

23030302



**13C-123789-HxCDD**

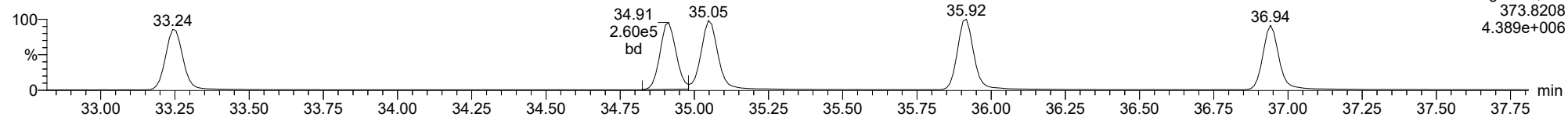
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ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

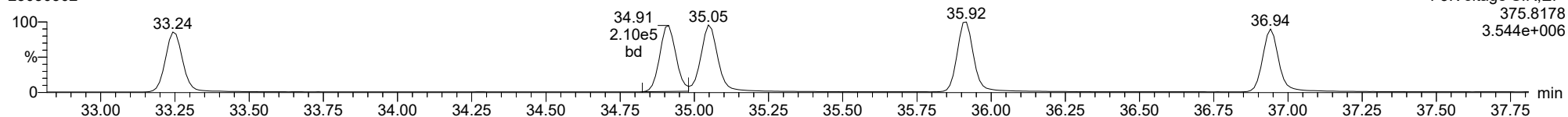
123478-HxCDF

23030302



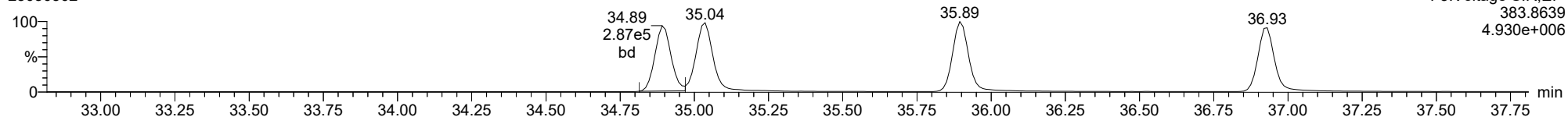
123478-HxCDF

23030302



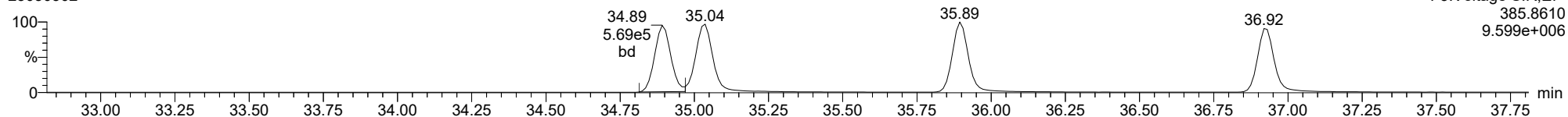
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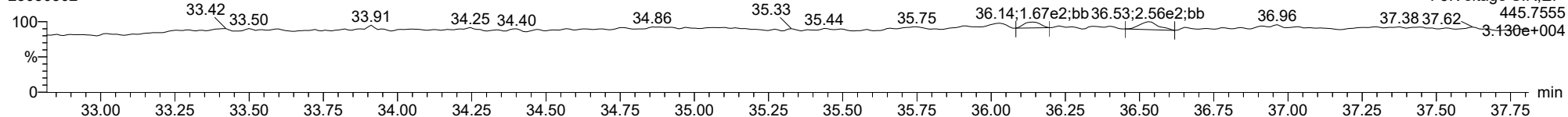
13C-123478-HxCDF

23030302



FUNCTION3 OCDPE

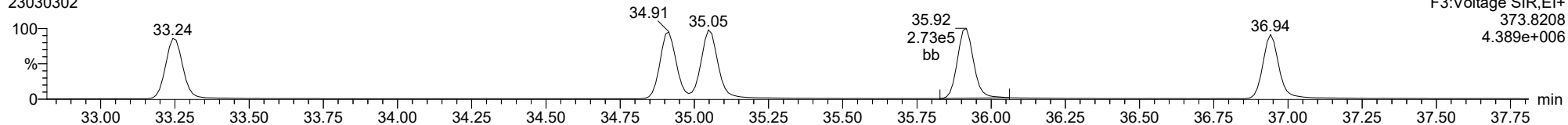
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ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

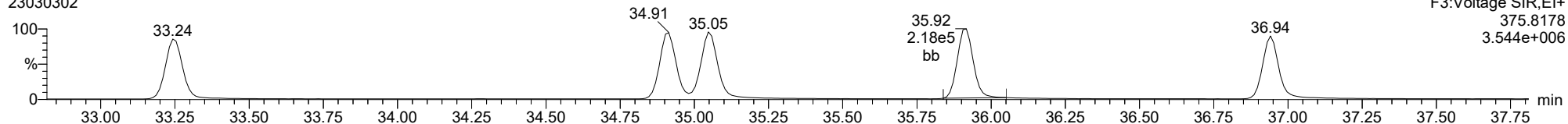
**234678-HxCDF**

23030302



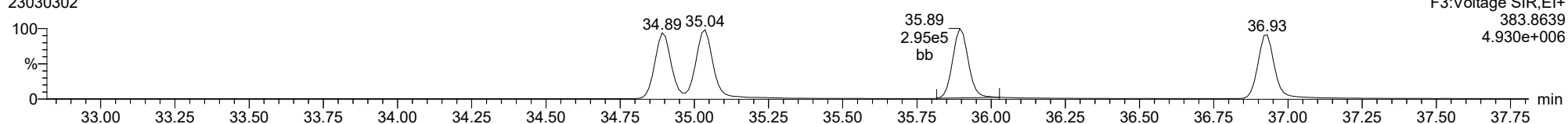
**234678-HxCDF**

23030302



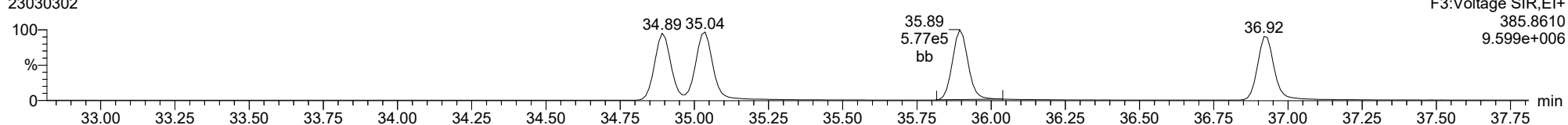
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23030302



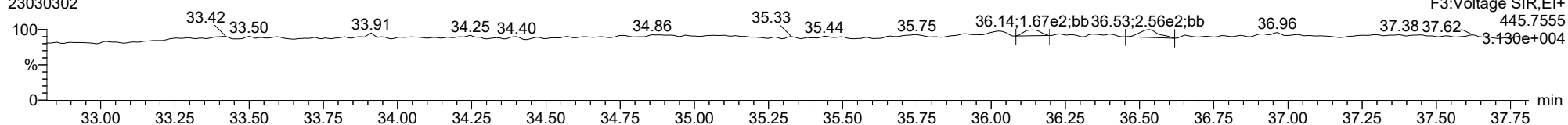
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23030302



**FUNCTION3 OCDPE**

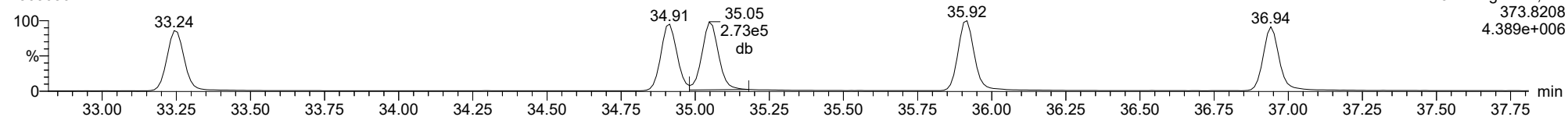
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ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

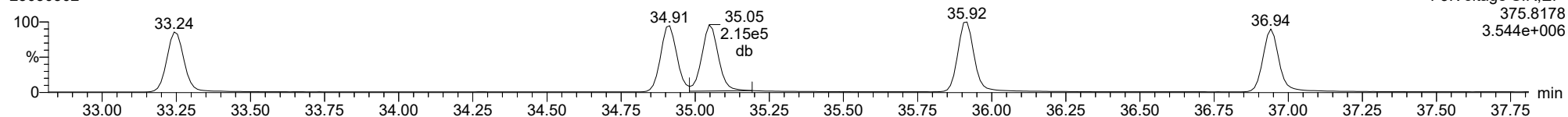
123678-HxCDF

23030302



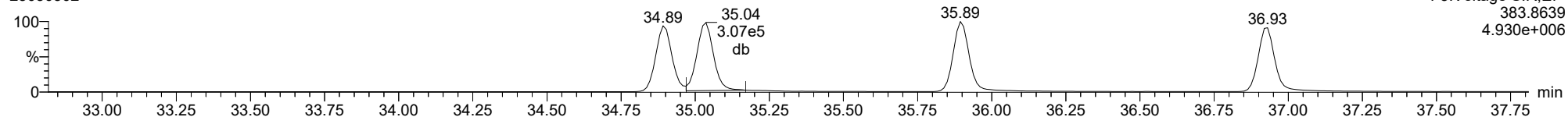
123678-HxCDF

23030302



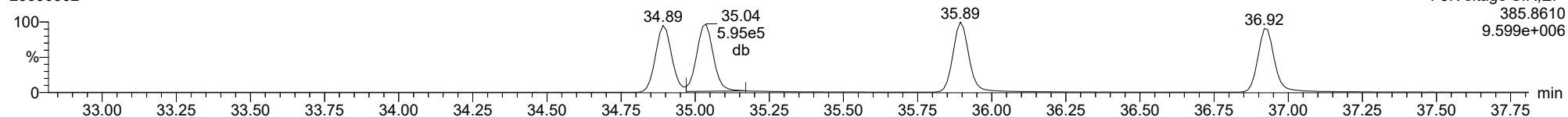
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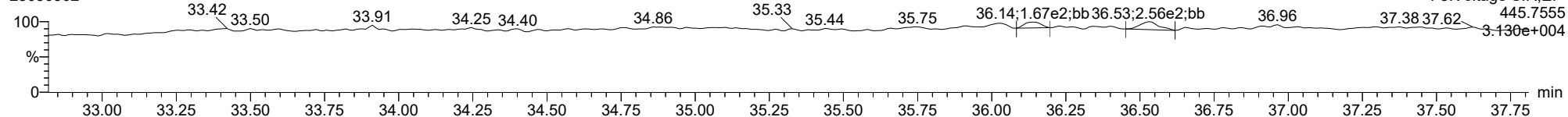
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FUNCTION3 OCDPE

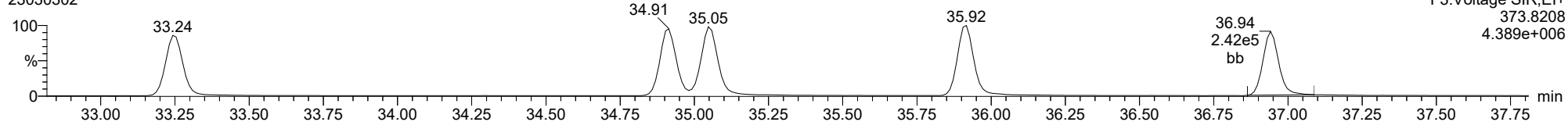
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ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

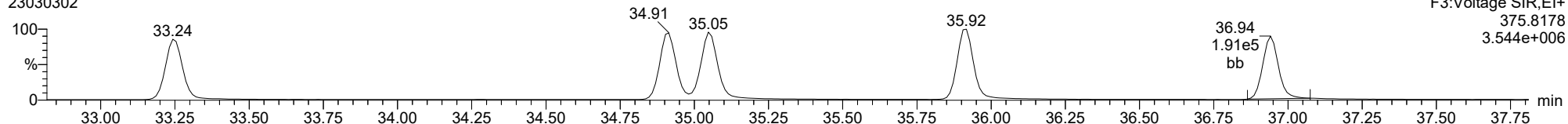
123789-HxCDF

23030302



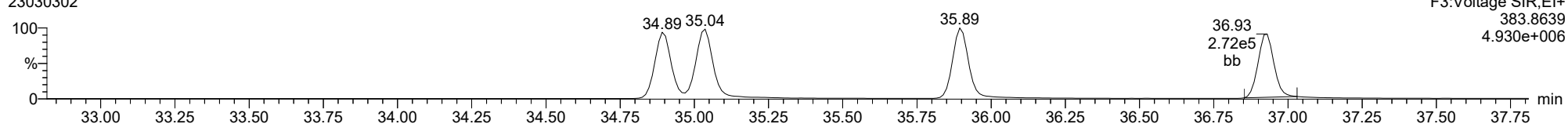
123789-HxCDF

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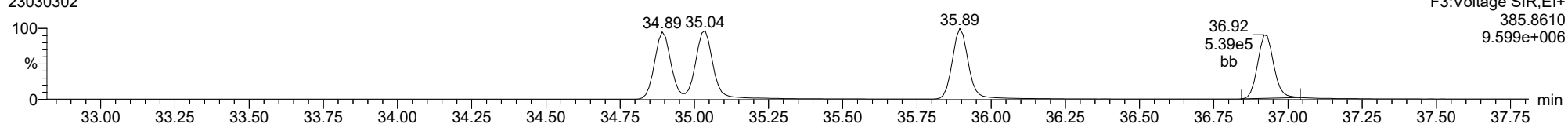
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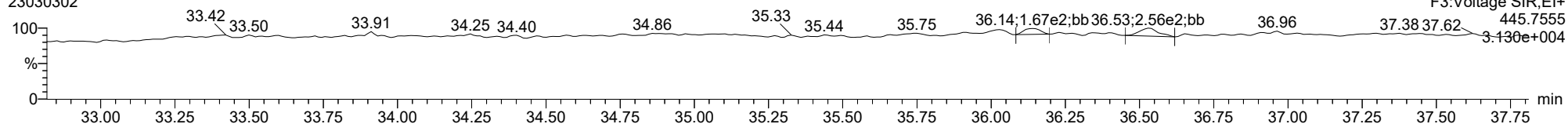
13C-123789-HxCDF

23030302



FUNCTION3 OCDPE

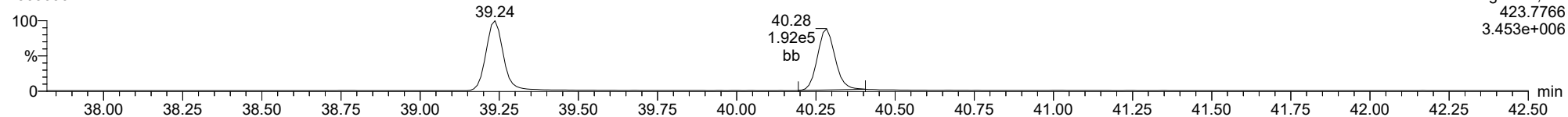
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ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDD**

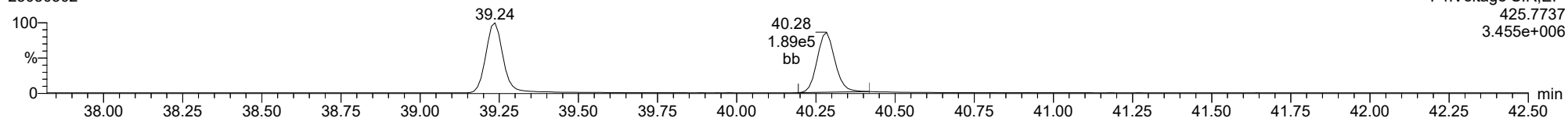
23030302



F4:Voltage SIR,EI+  
423.7766  
3.453e+006

**1234678-HpCDD**

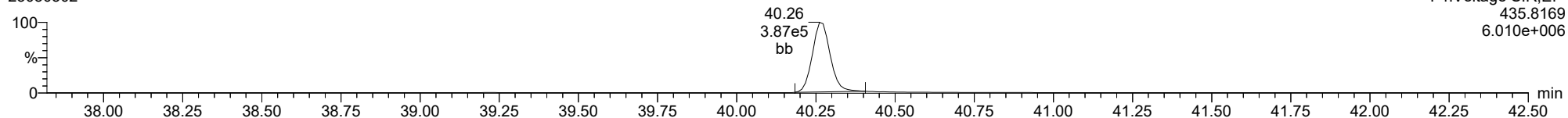
23030302



F4:Voltage SIR,EI+  
425.7737  
3.455e+006

**13C-1234678-HpCDD**

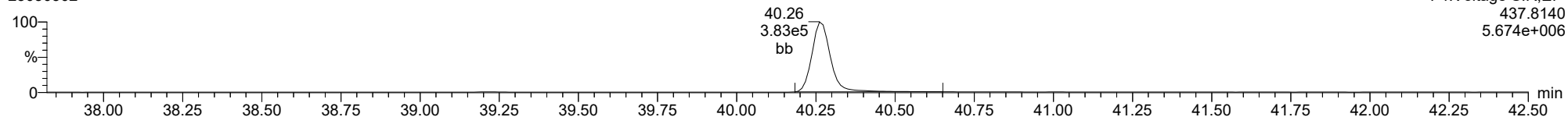
23030302



F4:Voltage SIR,EI+  
435.8169  
6.010e+006

**13C-1234678-HpCDD**

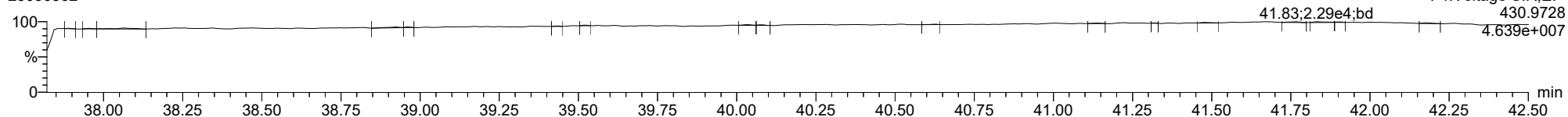
23030302



F4:Voltage SIR,EI+  
437.8140  
5.674e+006

**FUNCTION4 PFK**

23030302

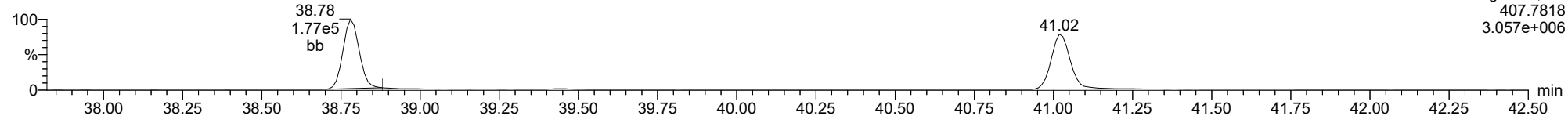


F4:Voltage SIR,EI+  
430.9728  
4.639e+007

ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

1234678-HpCDF

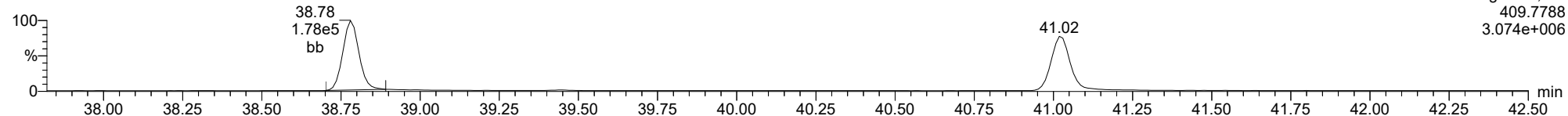
23030302



F4:Voltage SIR,EI+  
407.7818  
3.057e+006

1234678-HpCDF

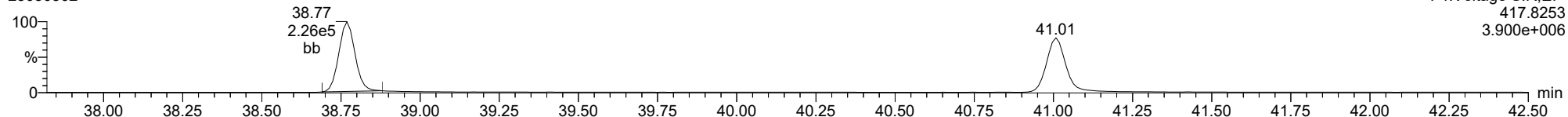
23030302



F4:Voltage SIR,EI+  
409.7788  
3.074e+006

13C-1234678-HpCDF

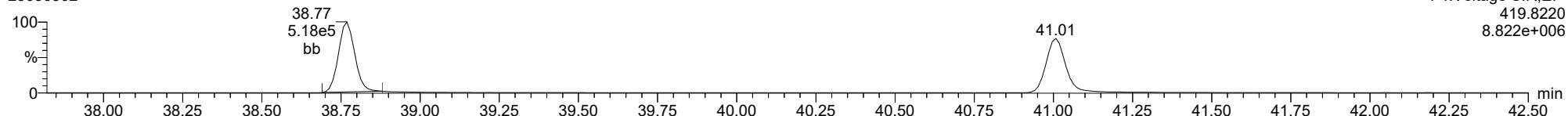
23030302



F4:Voltage SIR,EI+  
417.8253  
3.900e+006

13C-1234678-HpCDF

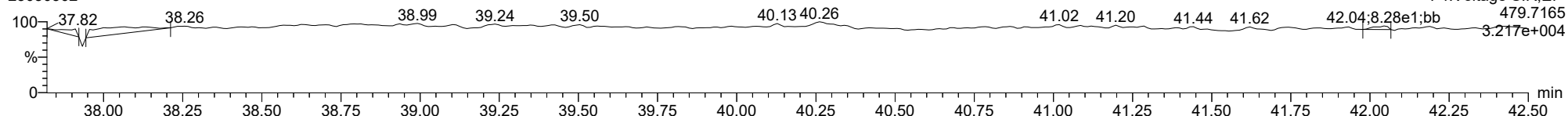
23030302



F4:Voltage SIR,EI+  
419.8220  
8.822e+006

FUNCTION4 NCDPE

23030302

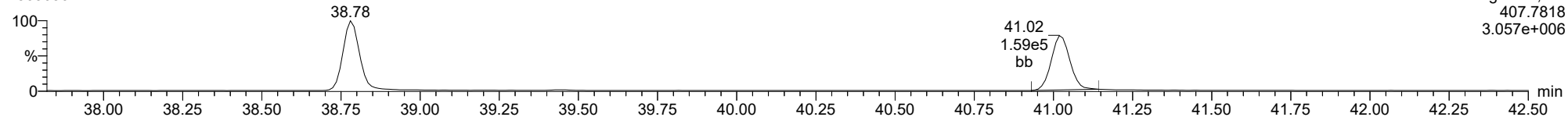


F4:Voltage SIR,EI+  
479.7165  
3.217e+004

ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

**1234789-HpCDF**

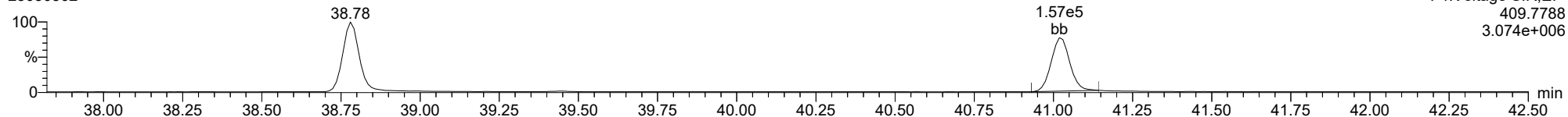
23030302



F4:Voltage SIR,EI+  
407.7818  
3.057e+006

**1234789-HpCDF**

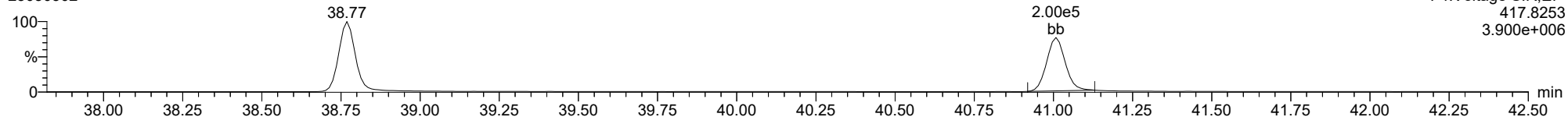
23030302



F4:Voltage SIR,EI+  
409.7788  
3.074e+006

**13C-1234789-HpCDF**

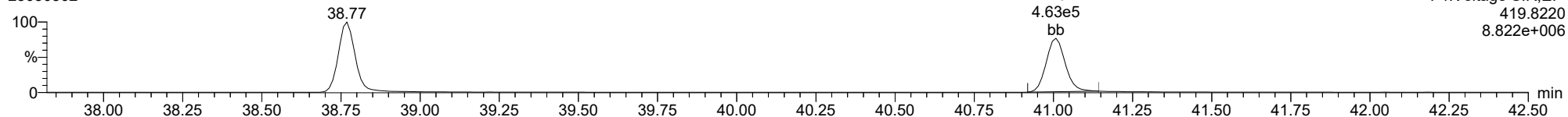
23030302



F4:Voltage SIR,EI+  
417.8253  
3.900e+006

**13C-1234789-HpCDF**

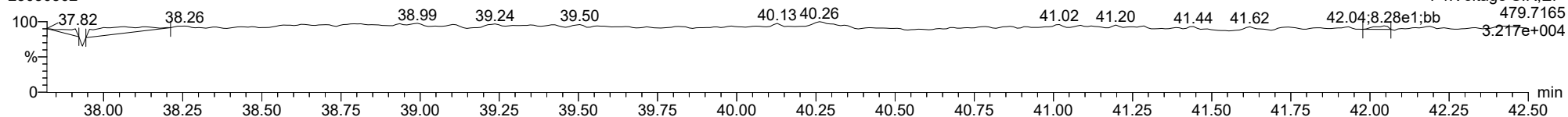
23030302



F4:Voltage SIR,EI+  
419.8220  
8.822e+006

**FUNCTION4 NCDPE**

23030302



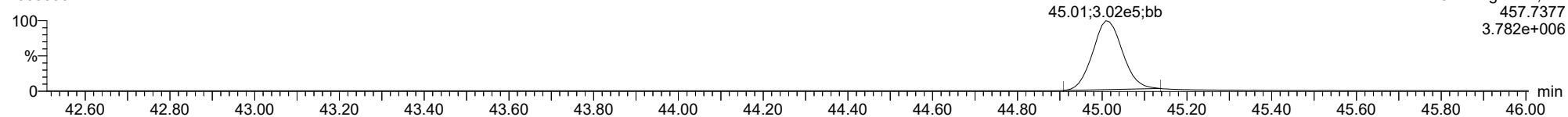
F4:Voltage SIR,EI+  
479.7165  
3.217e+004



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

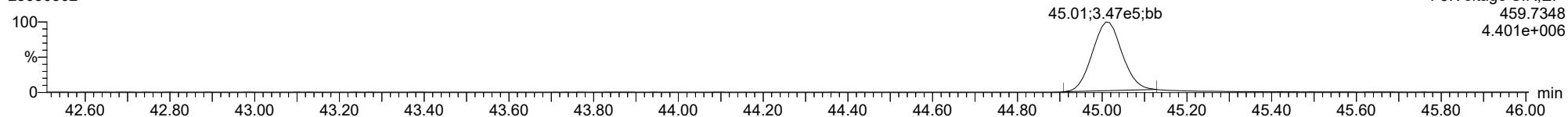
**OCDD**

23030302



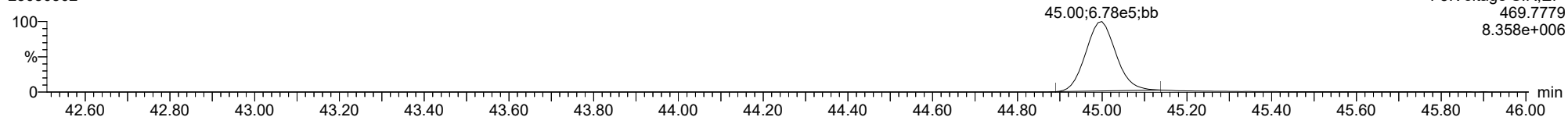
**OCDD**

23030302



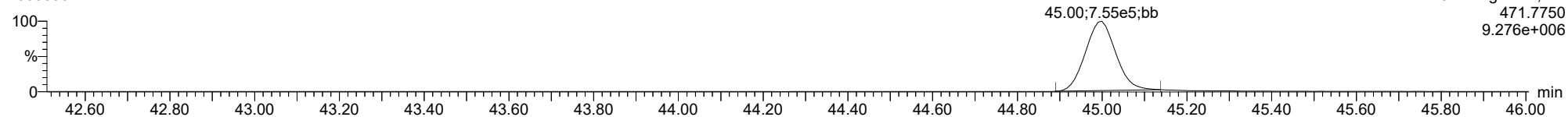
**13C-OCDD**

23030302



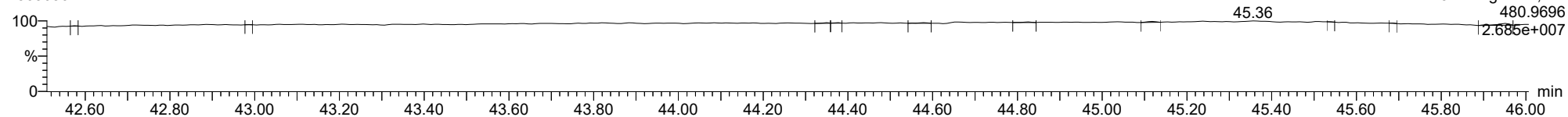
**13C-OCDD**

23030302



**FUNCTION5 PFK**

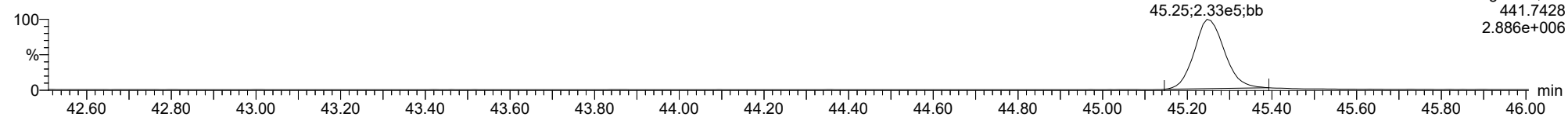
23030302



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

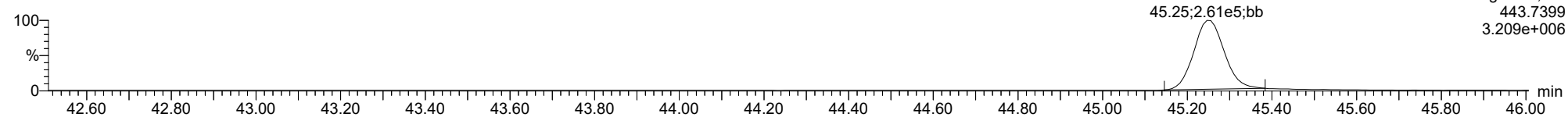
**OCDF**

23030302



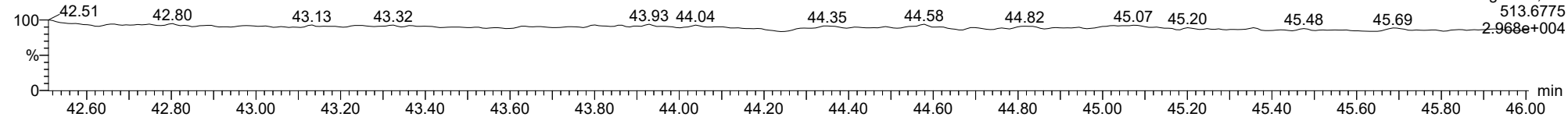
**OCDF**

23030302



**FUNCTION5 DCDPE**

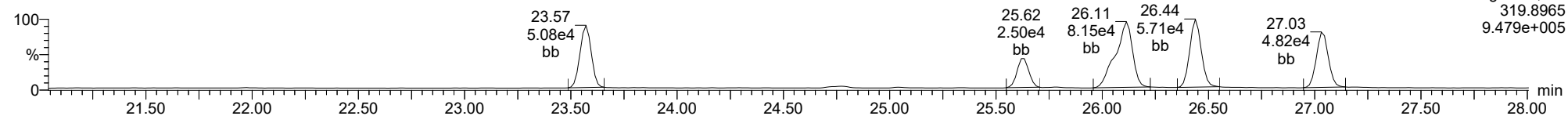
23030302



ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

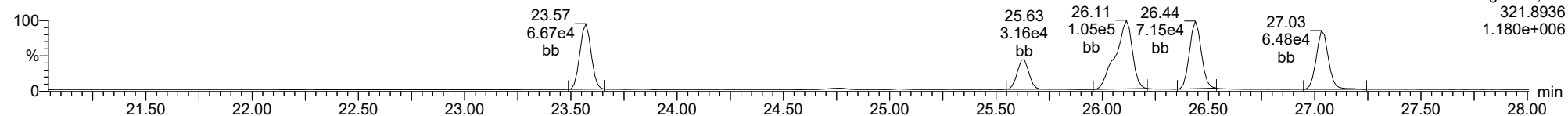
**Total-tetradioxins**

23030302



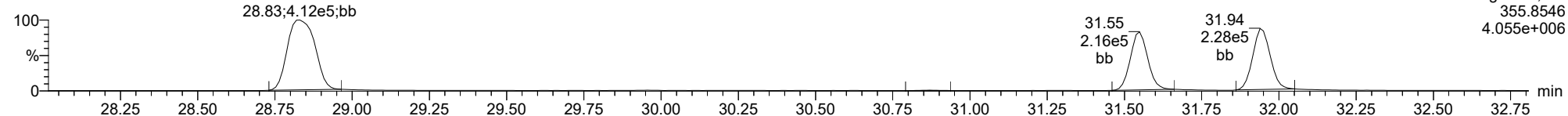
**Total-tetradioxins**

23030302



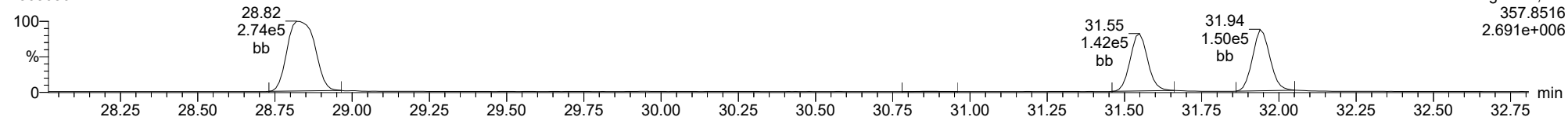
**Total-pentadioxins**

23030302



**Total-pentadioxins**

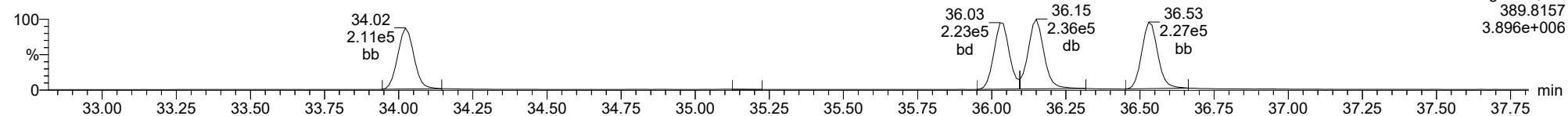
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ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

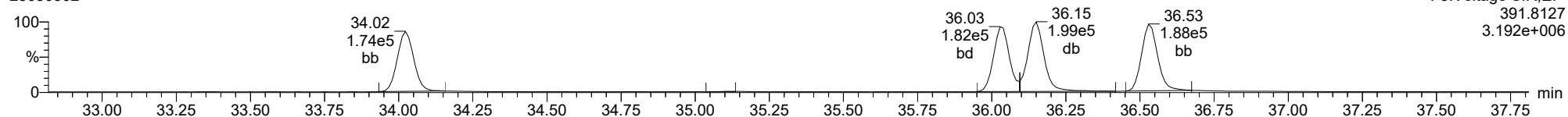
**Total-hexadioxins**

23030302



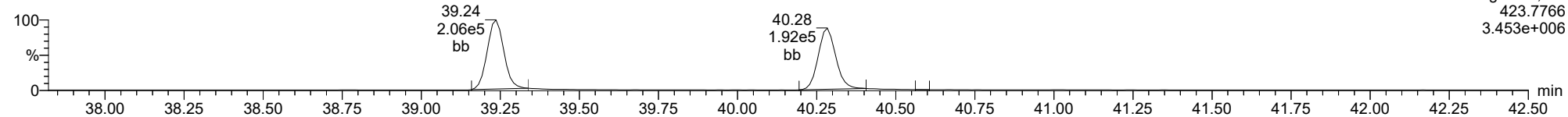
**Total-hexadioxins**

23030302



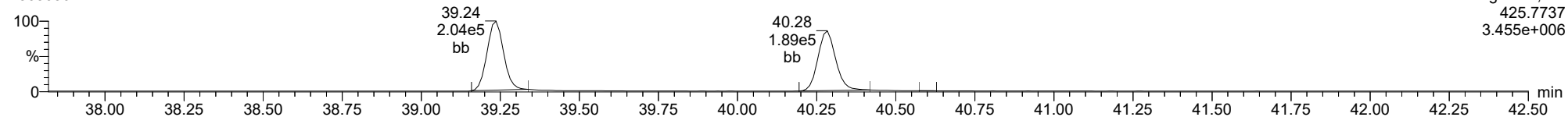
**Total-heptadioxins**

23030302



**Total-heptadioxins**

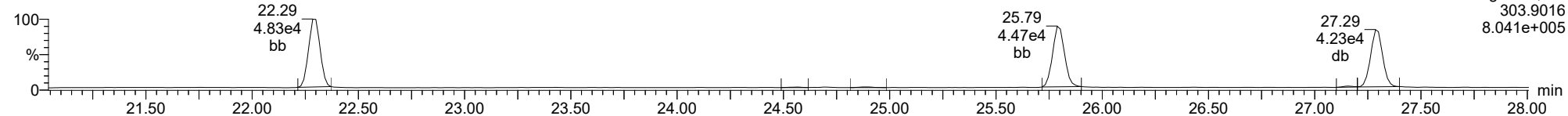
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ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

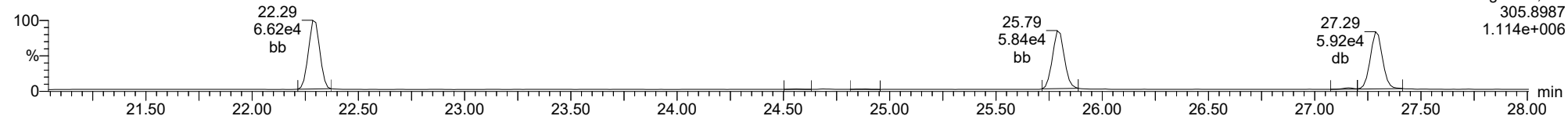
**Total-tetrafurans**

23030302



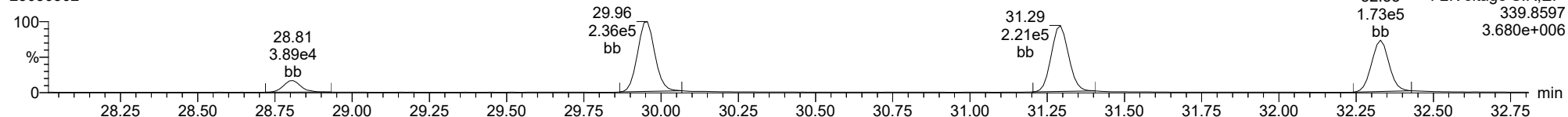
**Total-tetrafurans**

23030302



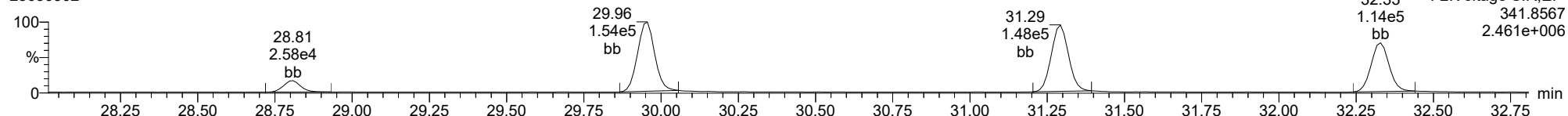
**Total-pentafurans**

23030302



**Total-pentafurans**

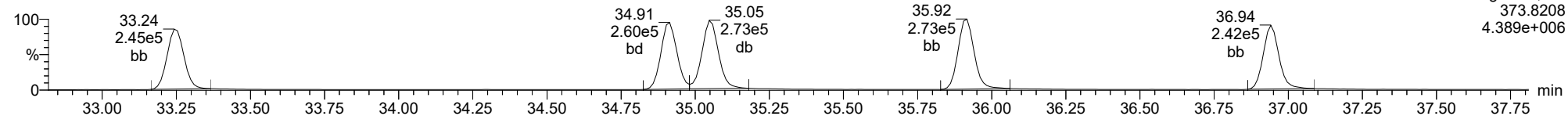
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ID: CS3W1, Name: 23030302, Date: 03-Mar-2023, Time: 09:51:40, Conditions: AUTOSPEC01, User: pk

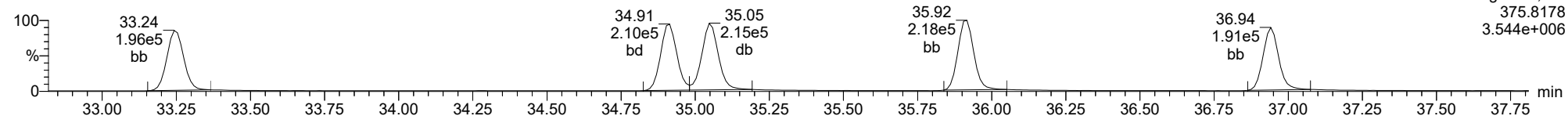
**Total-hexafurans**

23030302



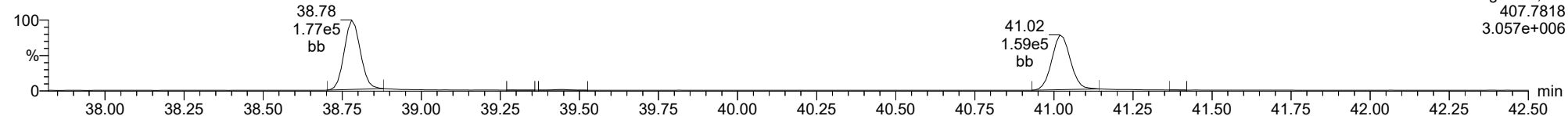
**Total-hexafurans**

23030302



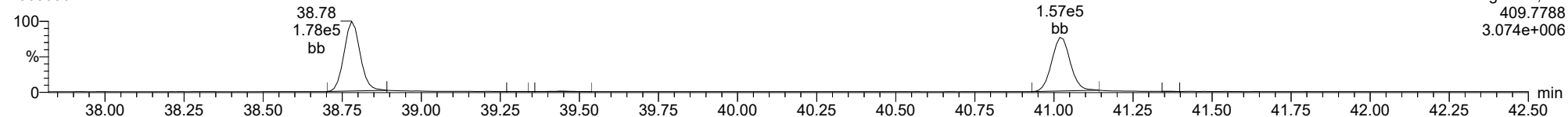
**Total-heptafurans**

23030302



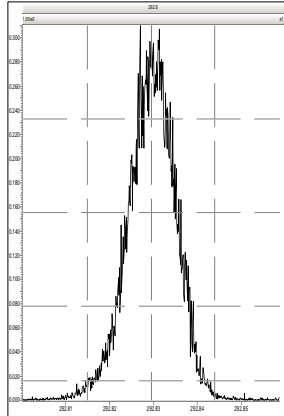
**Total-heptafurans**

23030302

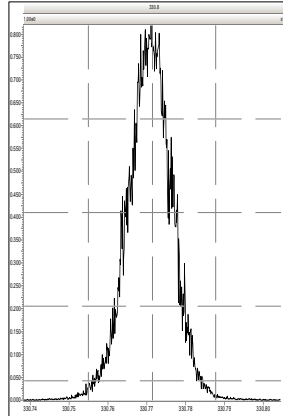


Printed: Friday, March 03, 2023 09:51:10 Pacific Standard Time

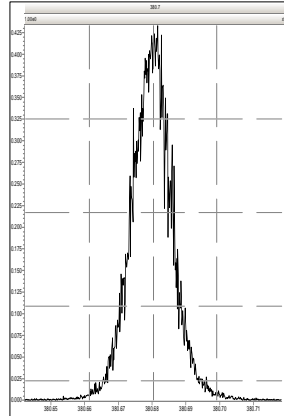
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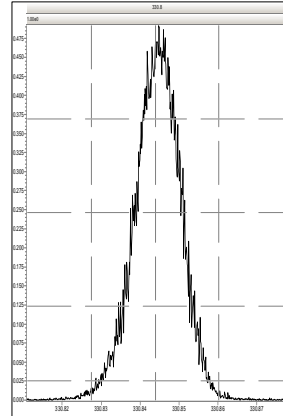
M 330.9792 R 12378



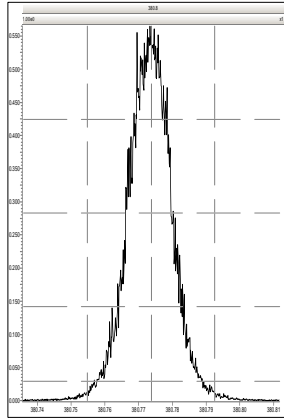
M 380.9760 R 13750



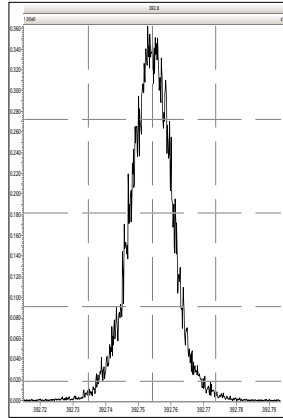
M 330.9792 R 11876



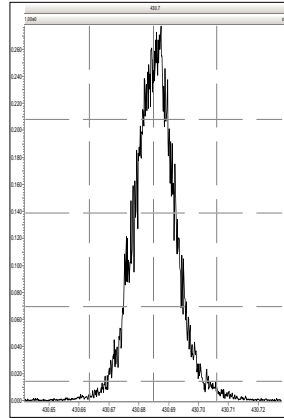
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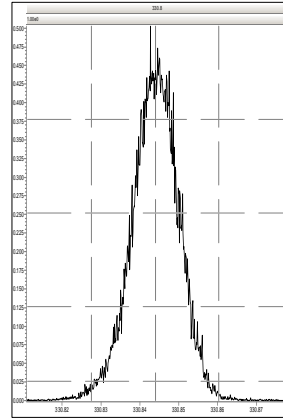
M 392.9760 R 12762



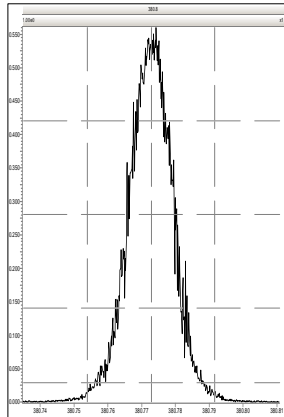
M 430.9728 R 13440



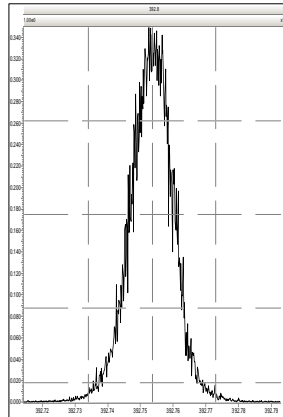
M 330.9792 R 11574



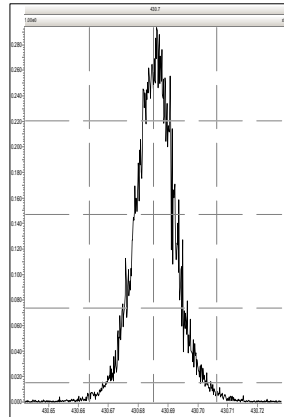
M 380.9760 R 12376



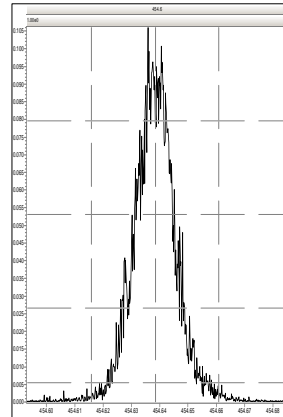
M 392.9760 R 13122



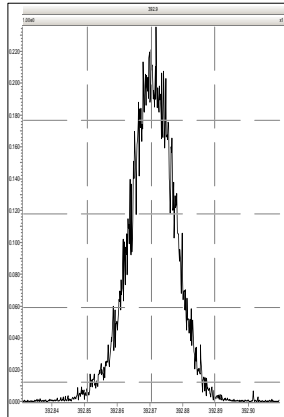
M 430.9728 R 12938



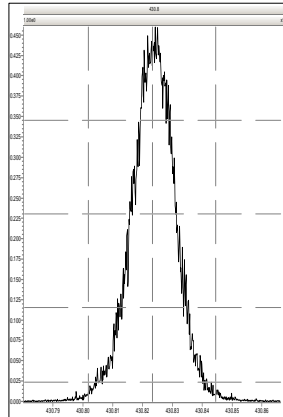
M 454.9728 R 14513



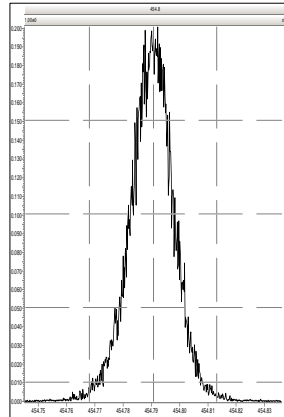
M 392.9760 R 12109



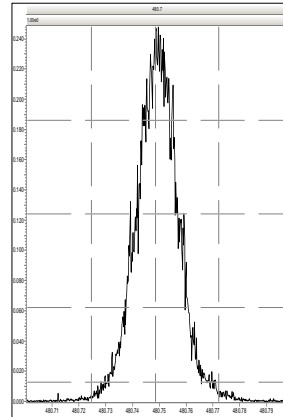
M 430.9728 R 12594



M 454.9728 R 12801

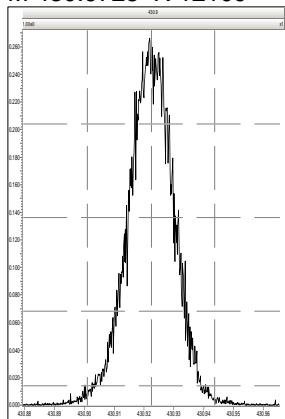


M 480.9696 R 12854

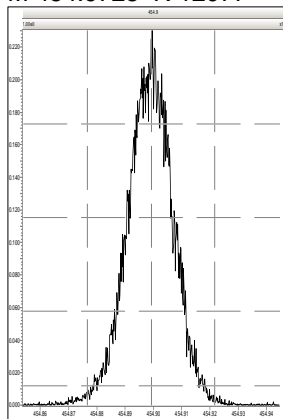


Printed: Friday, March 03, 2023 09:51:10 Pacific Standard Time

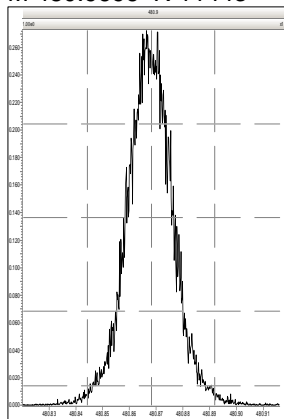
M 430.9728 R 12109



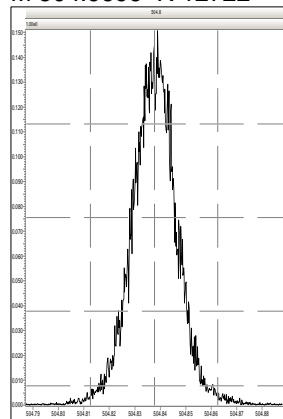
M 454.9728 R 12077



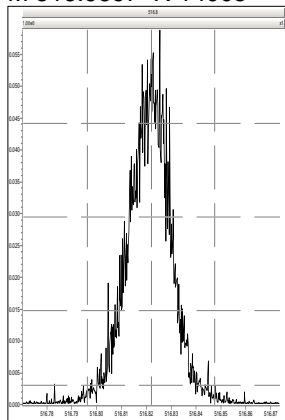
M 480.9696 R 11443



M 504.9696 R 12722



M 516.9697 R 14005



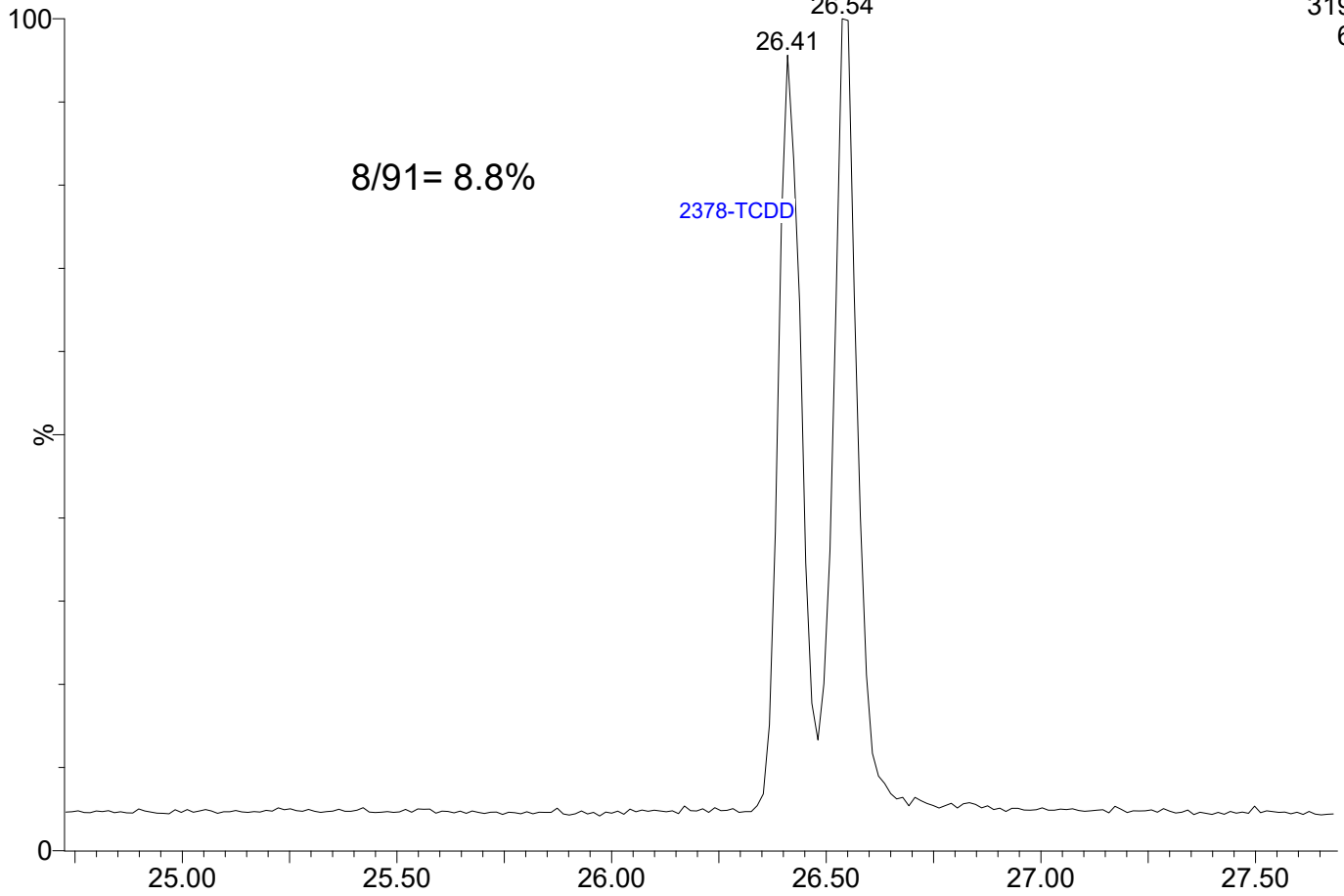


23030303

1: Voltage SIR 14 Channels EI+

319.8965

6.27e5

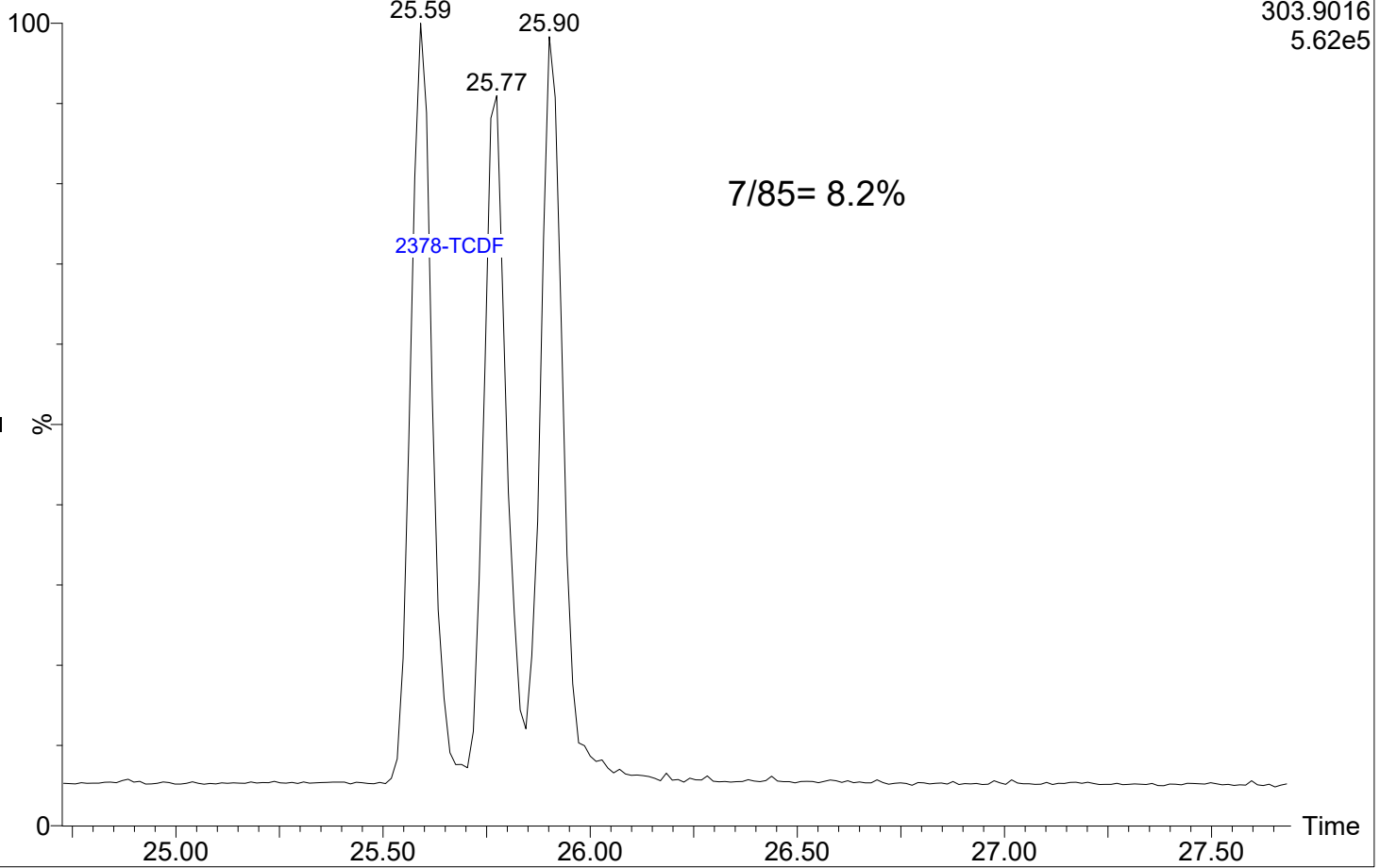


23030303

1: Voltage SIR 14 Channels EI+

303.9016

5.62e5



Dataset: T:\Autospec\Processed Data Batch\230303ICIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:33:58 Pacific Standard Time

**Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50**  
**Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27**

**ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk**

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF					0.702		0.770	1141	1568								
12378-PeCDF	29.922	1.000	2.331e3	1.631e3	0.679	1.429	1.550	717	1165	3.89e4	2.49e4	54.3	21.4	NO	bb	bd	0.520
23478-PeCDF	31.270	1.001	2.446e3	1.527e3	0.786	1.602	1.550	717	1165	3.60e4	2.25e4	50.1	19.4	NO	bb	bb	0.508
123478-HxCDF	34.891	1.001	2.740e3	2.578e3	1.166	1.063	1.240	675	706	4.36e4	3.63e4	64.6	51.5	NO	bd	bd	0.522
234678-HxCDF	35.894	1.001	2.363e3	1.967e3	1.140	1.201	1.240	675	706	3.52e4	3.17e4	52.2	44.9	NO	bb	bb	0.459
123678-HxCDF	35.025	1.000	2.955e3	2.593e3	1.091	1.140	1.240	675	706	3.97e4	3.71e4	58.8	52.6	NO	db	dd	0.495
123789-HxCDF	36.919	1.000	2.292e3	1.751e3	1.137	1.309	1.240	675	706	3.51e4	2.45e4	52.0	34.7	NO	bd	bb	0.523
1234678-HpCDF	38.769	1.001	1.264e3	1.356e3	1.003	0.932	1.050	1176	1150	2.17e4	2.11e4	18.4	18.3	NO	bd	bb	0.466
1234789-HpCDF	40.997	1.000	1.144e3	1.036e3	0.953	1.105	1.050	1176	1150	1.78e4	1.51e4	15.1	13.1	NO	bb	bd	0.465
OCDF	45.228	1.006	2.105e3	2.214e3	0.778	0.951	0.890	762	984	2.31e4	2.16e4	30.2	22.0	NO	bb	bb	1.044
2378-TCDD					1.149		0.770	1186	741								
12378-PeCDD	31.527	1.001	2.628e3	1.506e3	1.022	1.745	1.550	935	615	3.66e4	1.58e4	39.1	25.7	NO	bb	bb	0.540
123478-HxCDD	36.016	1.001	2.113e3	1.865e3	0.996	1.133	1.240	725	812	3.30e4	2.93e4	45.6	36.1	NO	dd	bd	0.542
123678-HxCDD	36.128	1.001	2.428e3	1.876e3	1.001	1.294	1.240	725	812	3.70e4	2.39e4	51.1	29.5	NO	db	db	0.479
123789-HxCDD	36.507	1.011	2.154e3	1.651e3	0.907	1.304	1.240	725	812	3.30e4	2.34e4	45.5	28.9	NO	bd	bb	0.513
1234678-HpCDD	40.261	1.000	1.634e3	1.397e3	1.039	1.170	1.050	985	1205	2.31e4	2.24e4	23.5	18.6	NO	MM	bb	0.531
OCDD					0.920		0.890	1090	941								
13C-2378-TCDF	25.746	1.007	5.730e5	7.592e5	1.620	0.755	0.770	2498	2006	8.42e6	1.11e7	3371.3	5556.4	NO	bb	bb	100.702
13C-12378-PeCDF	29.911	1.169	6.805e5	4.409e5	1.240	1.543	1.550	2678	2220	9.20e6	6.10e6	3433.8	2749.3	NO	bb	bd	110.727
13C-23478-PeCDF	31.248	1.222	6.001e5	3.956e5	1.118	1.517	1.550	2678	2220	8.66e6	5.74e6	3235.2	2585.6	NO	bb	bb	109.107
13C-123478-HxCDF	34.869	0.955	2.965e5	5.770e5	1.168	0.514	0.510	1558	3112	4.38e6	8.54e6	2813.2	2745.5	NO	bd	bd	98.607
13C-123678-HxCDF	35.014	0.959	3.446e5	6.820e5	1.386	0.505	0.510	1558	3112	4.56e6	9.02e6	2927.1	2898.6	NO	db	dd	97.648
13C-234678-HxCDF	35.872	0.983	2.821e5	5.460e5	1.129	0.517	0.510	1558	3112	4.13e6	8.00e6	2652.6	2572.0	NO	bb	bb	96.703
13C-123789-HxCDF	36.908	1.011	2.282e5	4.511e5	0.932	0.506	0.510	1558	3112	3.31e6	6.47e6	2122.2	2079.8	NO	bb	bb	96.146
13C-1234678-HpCDF	38.746	1.062	1.794e5	3.814e5	0.895	0.470	0.440	2435	3572	2.60e6	5.93e6	1069.0	1659.1	NO	bd	bb	82.620
13C-1234789-HpCDF	40.986	1.123	1.404e5	3.516e5	0.770	0.399	0.440	2435	3572	1.98e6	4.51e6	813.8	1262.1	NO	bb	bb	84.288
13C-1234-TCDD	25.576	0.000	3.640e5	4.524e5	1.000	0.805	0.770	1931	1352	5.55e6	6.91e6	2875.2	5114.0	NO	bb	bb	100.000
13C-2378-TCDD	26.396	1.032	4.012e5	4.998e5	1.152	0.803	0.770	1931	1352	5.75e6	7.10e6	2979.4	5249.9	NO	bb	bb	95.760
13C-12378-PeCDD	31.504	1.232	4.613e5	2.880e5	0.829	1.602	1.550	1401	1533	6.70e6	4.14e6	4781.1	2700.1	NO	bb	bb	110.725
13C-123478-HxCDD	35.994	0.986	4.133e5	3.236e5	0.995	1.277	1.240	1744	1461	6.55e6	5.10e6	3756.0	3493.2	NO	bd	bd	97.670
13C-123678-HxCDD	36.106	0.989	5.195e5	3.785e5	1.157	1.372	1.240	1744	1461	6.84e6	5.29e6	3920.0	3622.3	NO	db	db	102.381
13C-1234678-HpCDD	40.250	1.103	2.785e5	2.707e5	0.840	1.029	1.050	1497	2275	3.82e6	3.65e6	2553.8	1605.5	NO	bb	bd	86.201
13C-OCDD	44.972	1.232	5.210e5	5.429e5	0.767	0.960	0.890	2989	1436	5.87e6	6.48e6	1964.2	4513.5	NO	bd	bb	182.810
13C-123789-HxCDD	36.496	0.000	4.181e5	3.402e5	1.000	1.229	1.240	1744	1461	6.11e6	4.85e6	3503.9	3317.8	NO	bb	bb	100.000
37CL-2378-TCDD	26.410	1.033	1.287e3		1.288			1959		1.53e4		7.8			db		0.122

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:33:58 Pacific Standard Time

ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					0.802		0.770	1141	1568								
1289-TCDF					0.678		0.770	1141	1568								
13468-PECDF					1.246		1.550	669	893								
12389-PECDF					0.496		1.550	717	1165								
123468-HXCDF					1.169		1.240	675	706								
1368-TCDD					1.015		0.770	1186	741								
1289-TCDD					0.909		0.770	1186	741								
12479-PECDD					2.301		1.550	935	615								
12389-PECDD					1.184		1.550	935	615								
124679-HXCDD					1.115		1.240	725	812								
1234679-HPCDD					1.137		1.050	985	1205								
Total-tetrafurans			0.000e0		0.727			1141		0.00e0							
Total-penta1			0.000e0					669		0.00e0							
Total-pentafurans			4.777e3		0.654			717		7.49e4							1.028
Total-hexafurans			1.035e4		1.141			675		1.54e5							2.000
Total-heptafurans			2.408e3		0.978			1176		3.94e4							0.931
Total-Furans			1.971e4		0.922			1141		2.93e5							5.016
Total-tetradoxins			0.000e0		1.024			1186		0.00e0							
Total-pentadoxins			2.628e3		1.502			935		3.66e4							0.540
Total-hexadoxins			6.694e3		1.005			725		1.03e5							1.534
Total-heptadoxins			1.634e3		1.088			985		2.31e4							0.531
Total-Dioxins			1.096e4		1.130			1186		1.63e5							2.605
Total-TEQ			3.067e4					1186		4.55e5							7.621
FUNCTION1 PFK			3.116e6					620464		1.62e6							
FUNCTION2 PFK			1.698e6					301200		2.24e6							0.000
FUNCTION3 PFK			5.380e7					450736		2.93e7							0.000
FUNCTION4 PFK			1.391e7					291095		1.60e7							
FUNCTION5 PFK			7.208e4					238350		2.59e6							
FUNCTION1 HXCD...			4.809e2					559		5.84e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			8.084e2					933		1.50e4							0.000
FUNCTION3 OCDPE			0.000e0					494		0.00e0							
FUNCTION4 NCDPE			6.931e2					845		1.26e4							0.000
FUNCTION5 DCDPE			7.511e2					821		1.86e4							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:33:58 Pacific Standard Time

**Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50**

**Calibration: T:\Autospec\Curves\230303\CIH.cdb 06 Mar 2023 10:57:27**

**ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk**

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.27	2.446e3	1.527e3	0.786	1.60	1.55	50.1	YES	NO	bb	bb	0.508
2	12378-PeCDF	29.92	2.331e3	1.631e3	0.679	1.43	1.55	54.3	YES	NO	bb	bd	0.520

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.92	2.292e3	1.751e3	1.137	1.31	1.24	52.0	YES	NO	bd	bb	0.523
2	234678-HxCDF	35.89	2.363e3	1.967e3	1.140	1.20	1.24	52.2	YES	NO	bb	bb	0.459
3	123678-HxCDF	35.03	2.955e3	2.593e3	1.091	1.14	1.24	58.8	YES	NO	db	dd	0.495
4	123478-HxCDF	34.89	2.740e3	2.578e3	1.166	1.06	1.24	64.6	YES	NO	bd	bd	0.522

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.77	1.264e3	1.356e3	1.003	0.93	1.05	18.4	YES	NO	bd	bb	0.466
2	1234789-HpCDF	41.00	1.144e3	1.036e3	0.953	1.10	1.05	15.1	YES	NO	bb	bd	0.465

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
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**ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-Furans	21.68	7.033e1	1.021e2	0.922	0.69	0.77	1.5	NO	NO	bb	bb	0.014
2	123789-HxCDF	36.92	2.292e3	1.751e3	1.137	1.31	1.24	52.0	YES	NO	bd	bb	0.523
3	234678-HxCDF	35.89	2.363e3	1.967e3	1.140	1.20	1.24	52.2	YES	NO	bb	bb	0.459
4	123678-HxCDF	35.03	2.955e3	2.593e3	1.091	1.14	1.24	58.8	YES	NO	db	dd	0.495
5	123478-HxCDF	34.89	2.740e3	2.578e3	1.166	1.06	1.24	64.6	YES	NO	bd	bd	0.522
6	23478-PeCDF	31.27	2.446e3	1.527e3	0.786	1.60	1.55	50.1	YES	NO	bb	bb	0.508
7	12378-PeCDF	29.92	2.331e3	1.631e3	0.679	1.43	1.55	54.3	YES	NO	bb	bd	0.520
8	1234678-HpCDF	38.77	1.264e3	1.356e3	1.003	0.93	1.05	18.4	YES	NO	bd	bb	0.466
9	1234789-HpCDF	41.00	1.144e3	1.036e3	0.953	1.10	1.05	15.1	YES	NO	bb	bd	0.465
10	OCDF	45.23	2.105e3	2.214e3	0.778	0.95	0.89	30.2	YES	NO	bb	bb	1.044

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.53	2.628e3	1.506e3	1.022	1.75	1.55	39.1	YES	NO	bb	bb	0.540

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.51	2.154e3	1.651e3	0.907	1.30	1.24	45.5	YES	NO	bd	bb	0.513
2	123678-HxCDD	36.13	2.428e3	1.876e3	1.001	1.29	1.24	51.1	YES	NO	db	db	0.479
3	123478-HxCDD	36.02	2.113e3	1.865e3	0.996	1.13	1.24	45.6	YES	NO	dd	bd	0.542

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	1.634e3	1.397e3	1.039	1.17	1.05	23.5	YES	NO	MM	bb	0.531

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
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**ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk**

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.53	2.628e3	1.506e3	1.022	1.75	1.55	39.1	YES	NO	bb	bb	0.540
2	123789-HxCDD	36.51	2.154e3	1.651e3	0.907	1.30	1.24	45.5	YES	NO	bd	bb	0.513
3	123678-HxCDD	36.13	2.428e3	1.876e3	1.001	1.29	1.24	51.1	YES	NO	db	db	0.479
4	123478-HxCDD	36.02	2.113e3	1.865e3	0.996	1.13	1.24	45.6	YES	NO	dd	bd	0.542
5	1234678-HpCDD	40.26	1.634e3	1.397e3	1.039	1.17	1.05	23.5	YES	NO	MM	bb	0.531

**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-Furans	21.68	7.033e1	1.021e2	0.922	0.69	0.77	1.5	NO	NO	bb	bb	0.014
2	123789-HxCDF	36.92	2.292e3	1.751e3	1.137	1.31	1.24	52.0	YES	NO	bd	bb	0.523
3	234678-HxCDF	35.89	2.363e3	1.967e3	1.140	1.20	1.24	52.2	YES	NO	bb	bb	0.459
4	123678-HxCDF	35.03	2.955e3	2.593e3	1.091	1.14	1.24	58.8	YES	NO	db	dd	0.495
5	123478-HxCDF	34.89	2.740e3	2.578e3	1.166	1.06	1.24	64.6	YES	NO	bd	bd	0.522
6	23478-PeCDF	31.27	2.446e3	1.527e3	0.786	1.60	1.55	50.1	YES	NO	bb	bb	0.508
7	12378-PeCDF	29.92	2.331e3	1.631e3	0.679	1.43	1.55	54.3	YES	NO	bb	bd	0.520
8	1234678-HpCDF	38.77	1.264e3	1.356e3	1.003	0.93	1.05	18.4	YES	NO	bd	bb	0.466
9	1234789-HpCDF	41.00	1.144e3	1.036e3	0.953	1.10	1.05	15.1	YES	NO	bb	bd	0.465
10	OCDF	45.23	2.105e3	2.214e3	0.778	0.95	0.89	30.2	YES	NO	bb	bb	1.044
11	12378-PeCDD	31.53	2.628e3	1.506e3	1.022	1.75	1.55	39.1	YES	NO	bb	bb	0.540
12	123789-HxCDD	36.51	2.154e3	1.651e3	0.907	1.30	1.24	45.5	YES	NO	bd	bb	0.513
13	123678-HxCDD	36.13	2.428e3	1.876e3	1.001	1.29	1.24	51.1	YES	NO	db	db	0.479
14	123478-HxCDD	36.02	2.113e3	1.865e3	0.996	1.13	1.24	45.6	YES	NO	dd	bd	0.542
15	1234678-HpCDD	40.26	1.634e3	1.397e3	1.039	1.17	1.05	23.5	YES	NO	MM	bb	0.531

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	24.18	3.116e6					2.6	NO		bb		

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	30.19	1.560e6					3.1	YES		bb		0.000
2	FUNCTION2 PFK	28.13	1.376e5					4.3	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
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**ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk**

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.12	2.560e6					15.7	YES		db		0.000
2	FUNCTION3 PFK	36.37	7.058e6					24.4	YES		dd		0.000
3	FUNCTION3 PFK	36.11	4.418e7					24.8	YES		bd		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	42.43	1.404e5					1.6	NO		bb		
2	FUNCTION4 PFK	37.89	1.377e7					53.2	YES		bb		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.15	7.152e3					1.1	NO		bb		
2	FUNCTION5 PFK	45.07	1.178e3					0.5	NO		bb		
3	FUNCTION5 PFK	44.98	1.177e3					0.5	NO		bb		
4	FUNCTION5 PFK	44.19	7.772e3					0.8	NO		bb		
5	FUNCTION5 PFK	43.72	7.921e3					1.3	NO		bb		
6	FUNCTION5 PFK	43.60	4.474e3					0.7	NO		bb		
7	FUNCTION5 PFK	43.17	6.636e3					1.2	NO		bb		
8	FUNCTION5 PFK	43.01	5.001e3					0.7	NO		bb		
9	FUNCTION5 PFK	42.76	1.253e4					1.4	NO		bb		
10	FUNCTION5 PFK	45.91	8.220e3					0.4	NO		bb		
11	FUNCTION5 PFK	45.75	6.523e3					1.4	NO		bb		
12	FUNCTION5 PFK	45.25	3.501e3					0.7	NO		bb		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.60	9.542e1					2.4	NO		bb		0.000
2	FUNCTION1 HXCD...	26.42	7.837e1					1.9	NO		bb		0.000
3	FUNCTION1 HXCD...	25.58	1.709e2					3.5	YES		bb		0.000
4	FUNCTION1 HXCD...	23.40	1.362e2					2.7	NO		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:33:58 Pacific Standard Time

**ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk**

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.36	1.308e2					1.8	NO		bb		0.000
2	FUNCTION2 HPCD...	31.75	8.377e1					1.7	NO		bb		0.000
3	FUNCTION2 HPCD...	31.30	1.170e2					2.2	NO		db		0.000
4	FUNCTION2 HPCD...	31.24	1.138e2					2.6	NO		bd		0.000
5	FUNCTION2 HPCD...	30.92	1.786e2					3.2	YES		bb		0.000
6	FUNCTION2 HPCD...	30.04	8.034e1					1.7	NO		bb		0.000
7	FUNCTION2 HPCD...	29.47	1.041e2					2.9	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.04	9.826e1					2.2	NO		bb		0.000
2	FUNCTION4 NCDPE	41.83	1.085e2					2.1	NO		bb		0.000
3	FUNCTION4 NCDPE	41.67	8.318e1					2.8	NO		db		0.000
4	FUNCTION4 NCDPE	41.58	1.047e2					2.5	NO		bd		0.000
5	FUNCTION4 NCDPE	41.32	1.741e2					2.4	NO		bb		0.000
6	FUNCTION4 NCDPE	41.15	1.244e2					2.8	NO		bb		0.000

**ETHERS6**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	43.53	7.557e1					1.5	NO		bb		0.000
2	FUNCTION5 DCDPE	43.39	1.767e2					2.9	NO		bb		0.000
3	FUNCTION5 DCDPE	43.31	8.303e1					2.9	NO		db		0.000
4	FUNCTION5 DCDPE	43.27	1.217e2					4.5	YES		bd		0.000
5	FUNCTION5 DCDPE	43.04	1.550e2					3.9	YES		bb		0.000
6	FUNCTION5 DCDPE	42.73	1.390e2					7.0	YES		bb		0.000

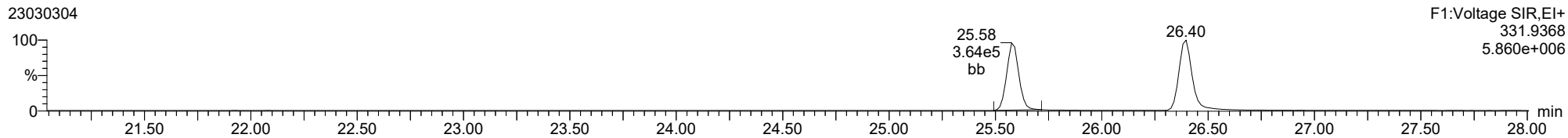


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**Calibration:** T:\Autospec\Curves\230303\CIH.cdb 06 Mar 2023 10:57:27

**ID:** CSLCW, **Name:** 23030304, **Date:** 03-Mar-2023, **Time:** 11:28:13, **Conditions:** AUTOSPEC01, **User:** pk

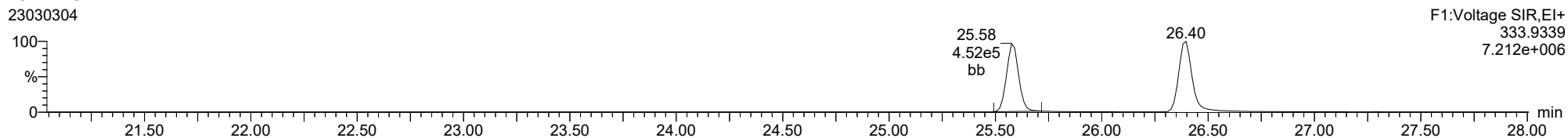
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23030304



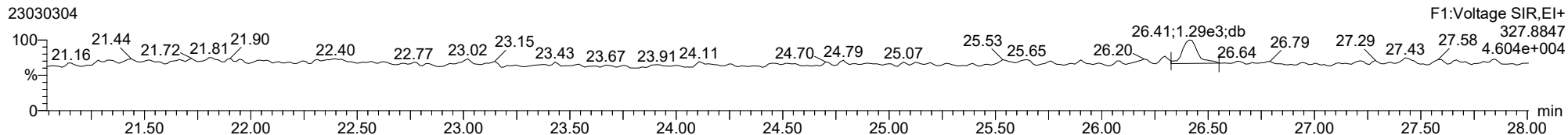
**13C-1234-TCDD**

23030304



**37CL-2378-TCDD**

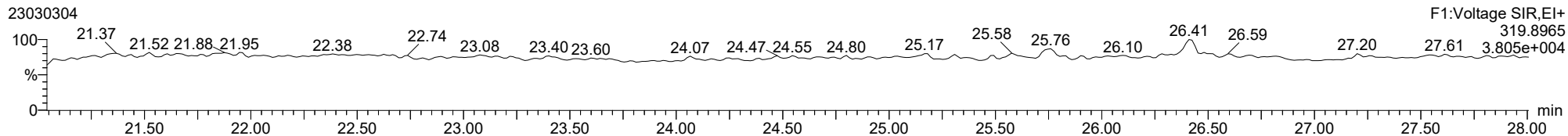
23030304



ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

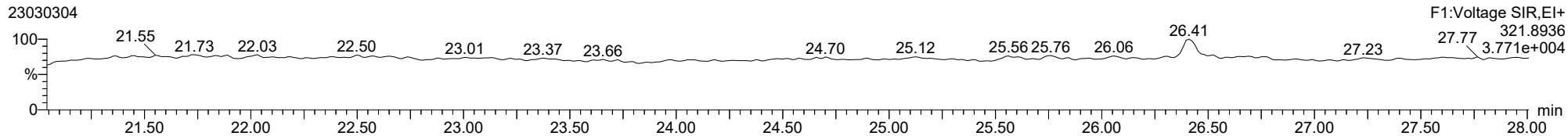
**2378-TCDD**

23030304



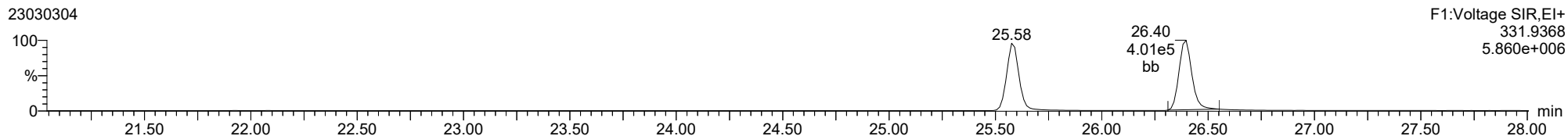
**2378-TCDD**

23030304



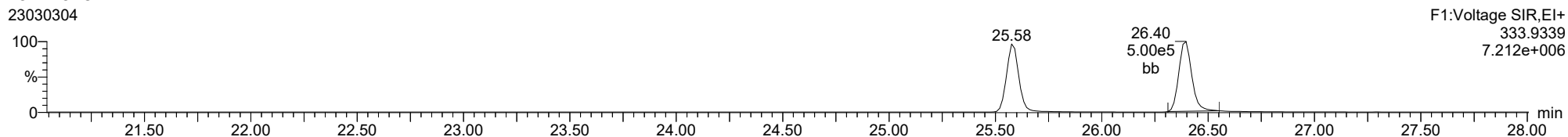
**13C-2378-TCDD**

23030304



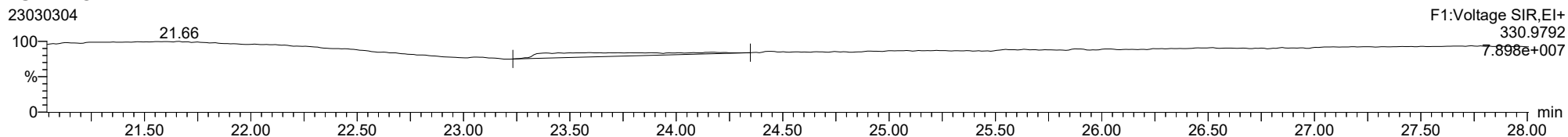
**13C-2378-TCDD**

23030304



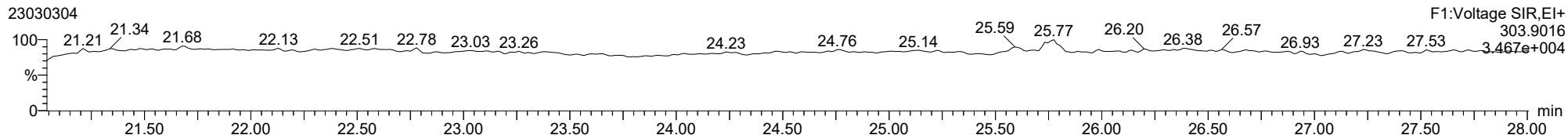
**FUNCTION1 PFK**

23030304

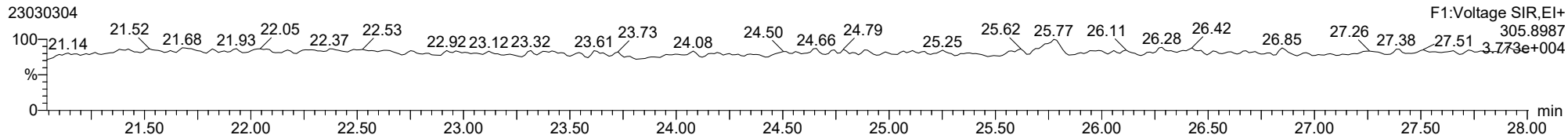


ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

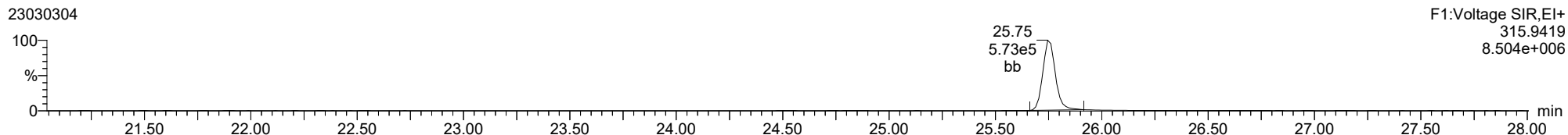
**2378-TCDF**



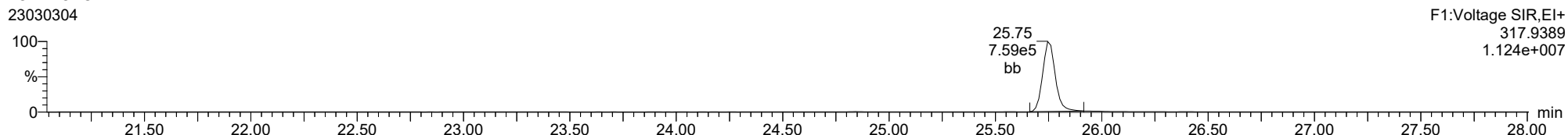
**2378-TCDF**



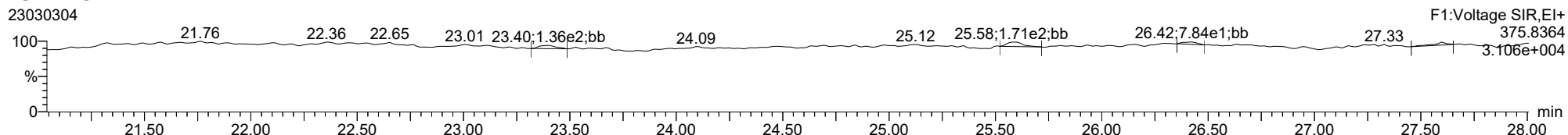
**13C-2378-TCDF**



**13C-2378-TCDF**



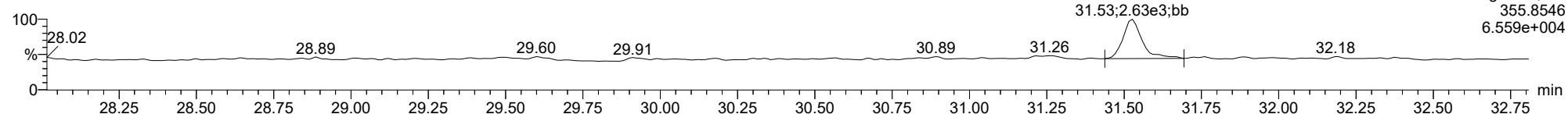
**FUNCTION1 HXCDPE**



ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

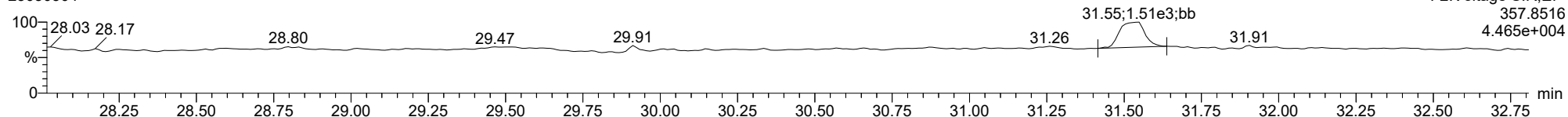
**12378-PeCDD**

23030304



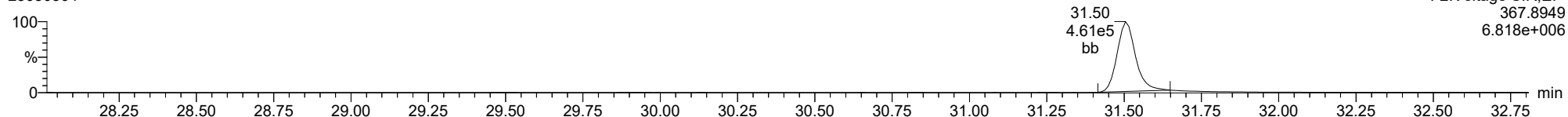
**12378-PeCDD**

23030304



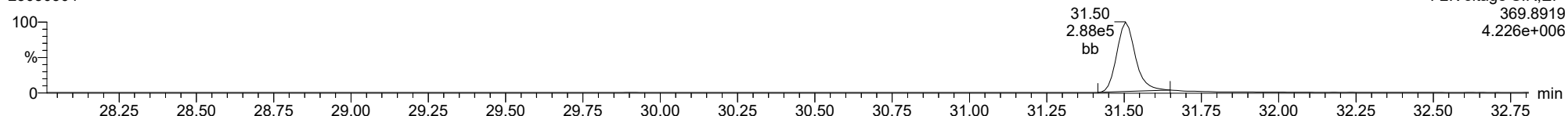
**13C-12378-PeCDD**

23030304



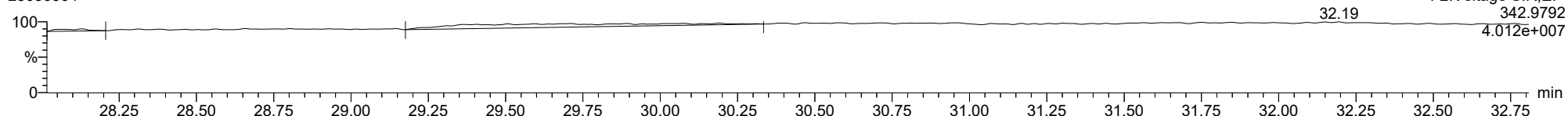
**13C-12378-PeCDD**

23030304



**FUNCTION2 PFK**

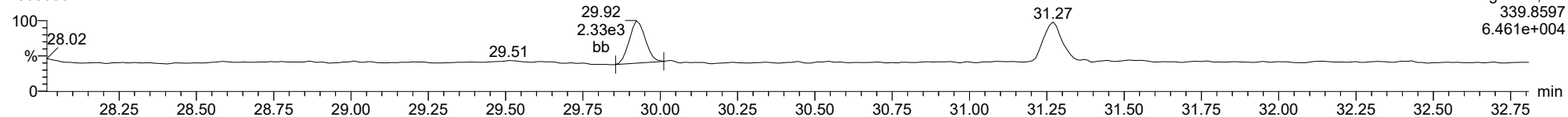
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ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

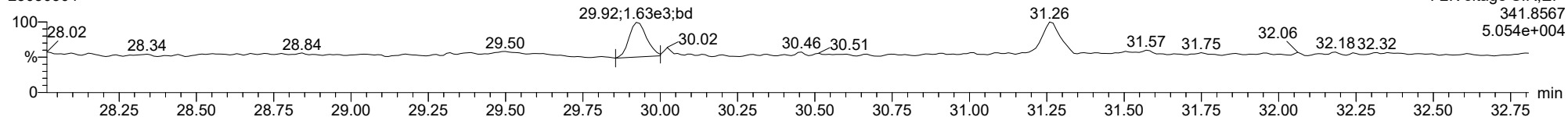
**12378-PeCDF**

23030304



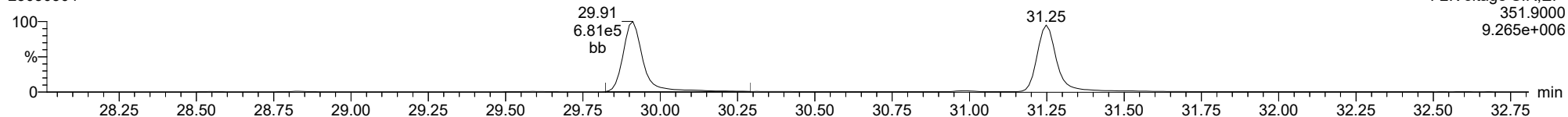
**12378-PeCDF**

23030304



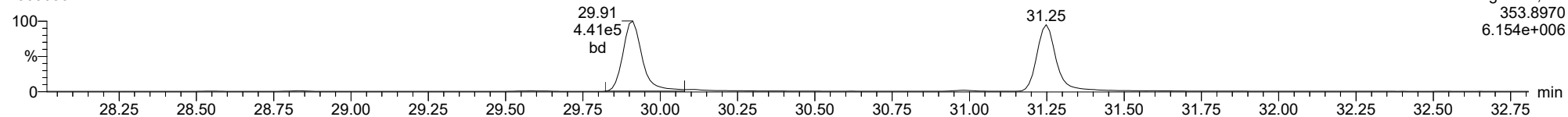
**13C-12378-PeCDF**

23030304



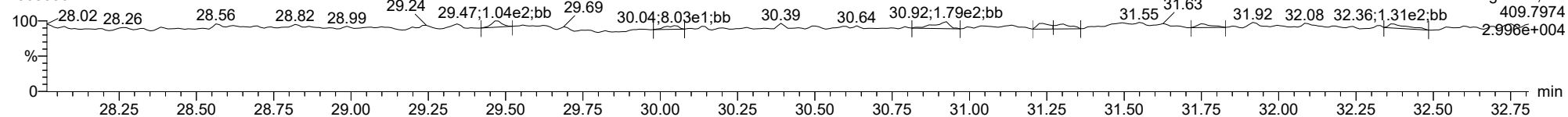
**13C-12378-PeCDF**

23030304



**FUNCTION2 HPCDPE**

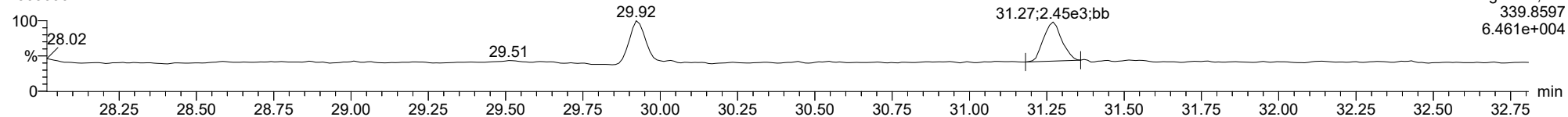
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ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

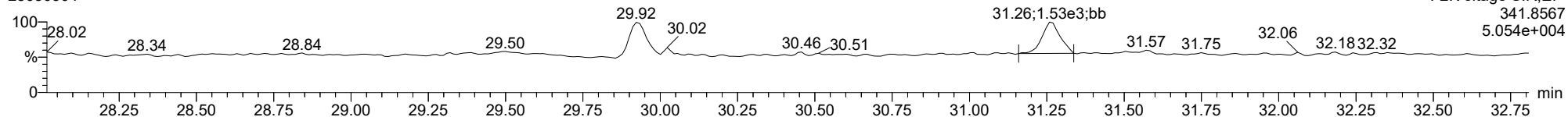
**23478-PeCDF**

23030304



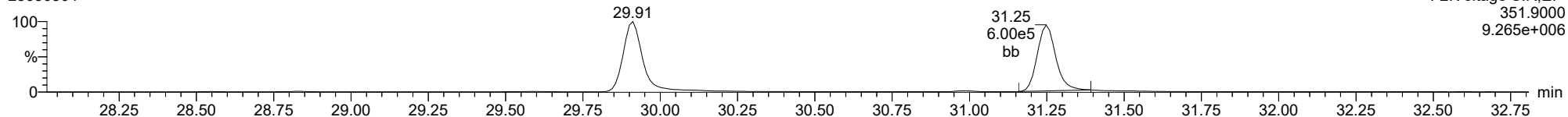
**23478-PeCDF**

23030304



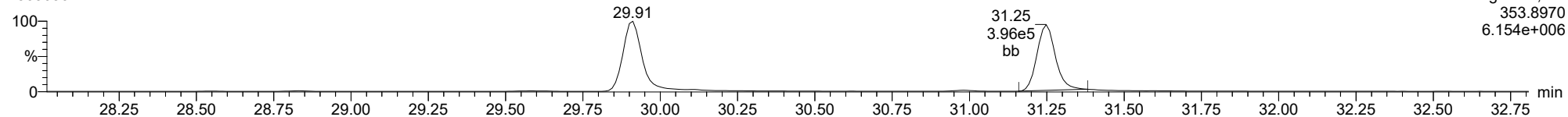
**13C-23478-PeCDF**

23030304



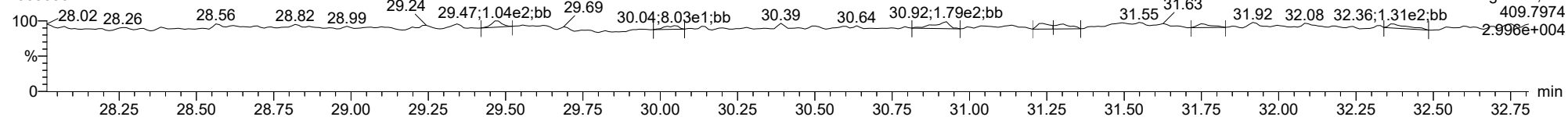
**13C-23478-PeCDF**

23030304



**FUNCTION2 HPCDPE**

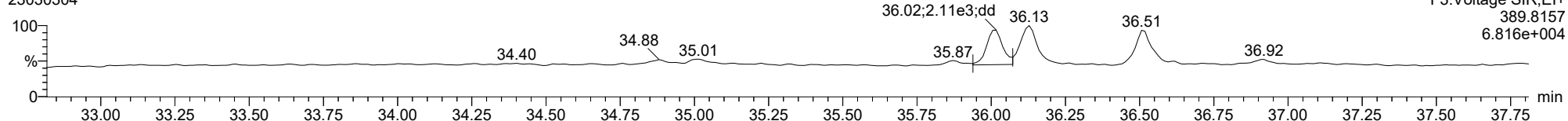
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ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

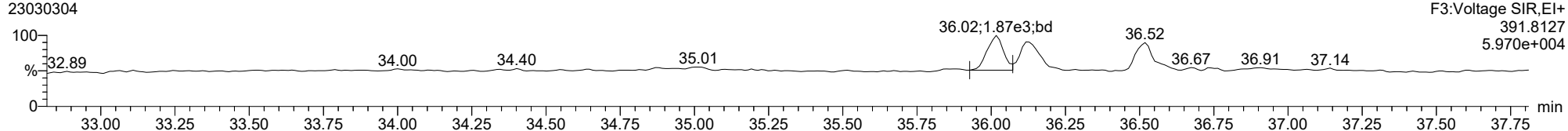
**123478-HxCDD**

23030304



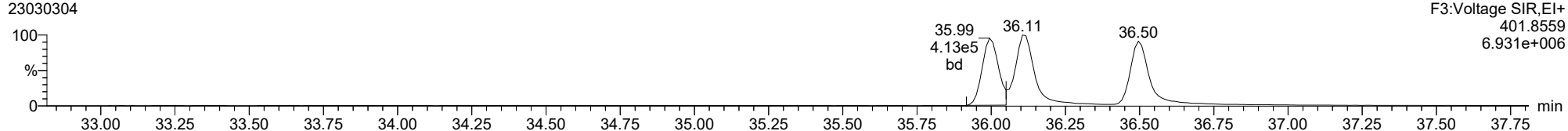
**123478-HxCDD**

23030304



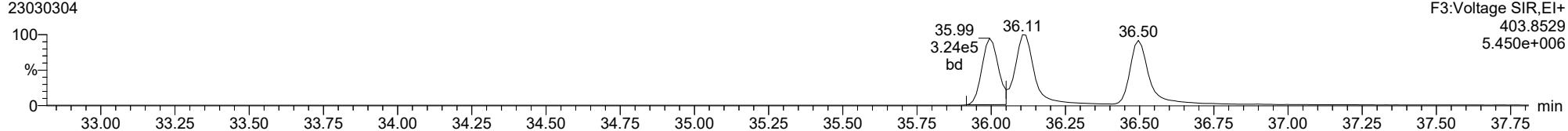
**13C-123478-HxCDD**

23030304



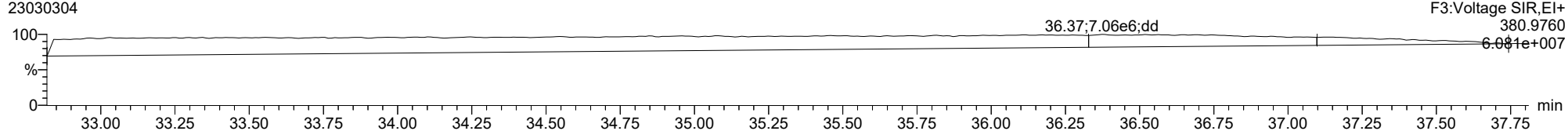
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23030304



**FUNCTION3 PFK**

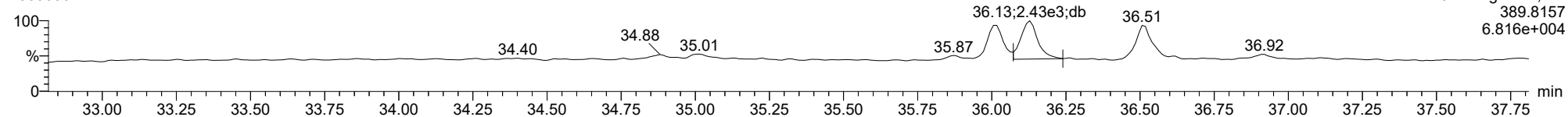
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ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

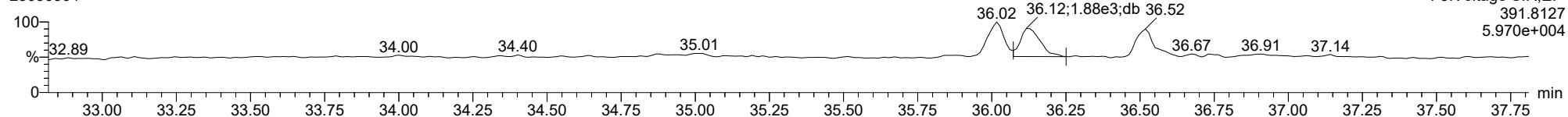
**123678-HxCDD**

23030304



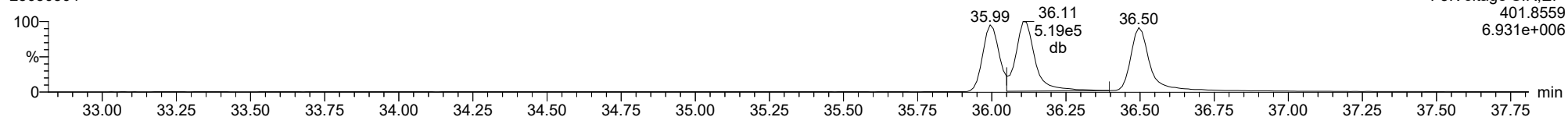
**123678-HxCDD**

23030304



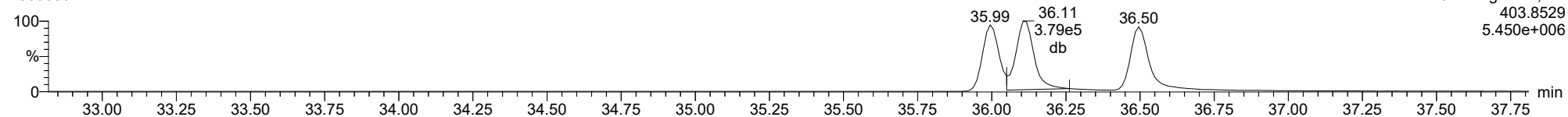
**13C-123678-HxCDD**

23030304



**13C-123678-HxCDD**

23030304

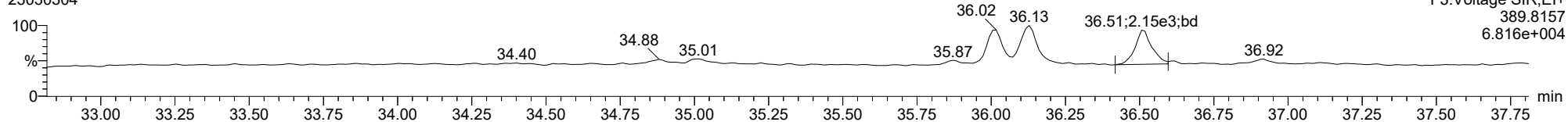




ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

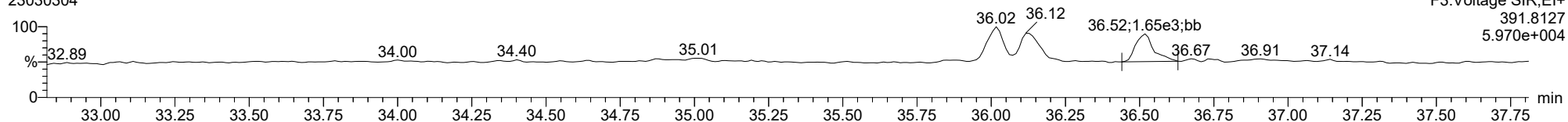
123789-HxCDD

23030304



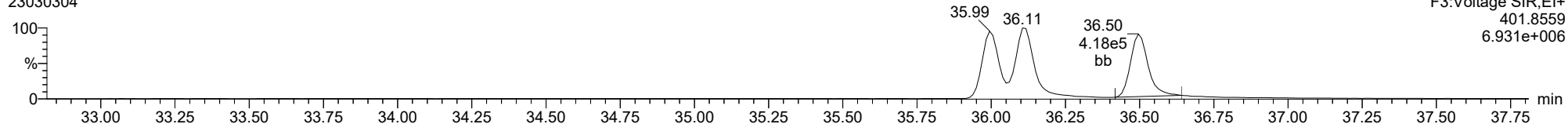
123789-HxCDD

23030304



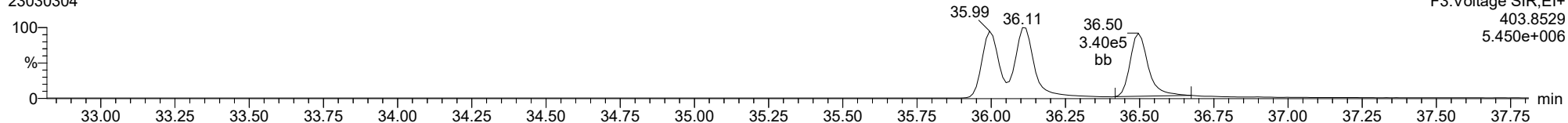
13C-123789-HxCDD

23030304



13C-123789-HxCDD

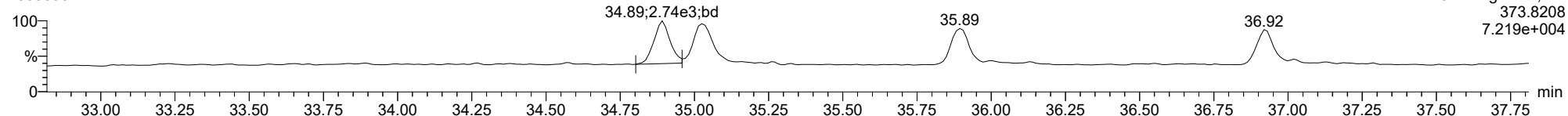
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ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

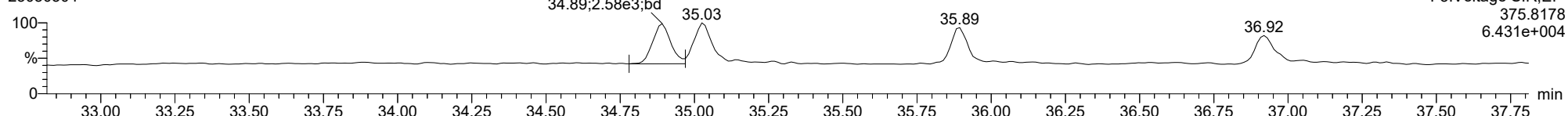
123478-HxCDF

23030304



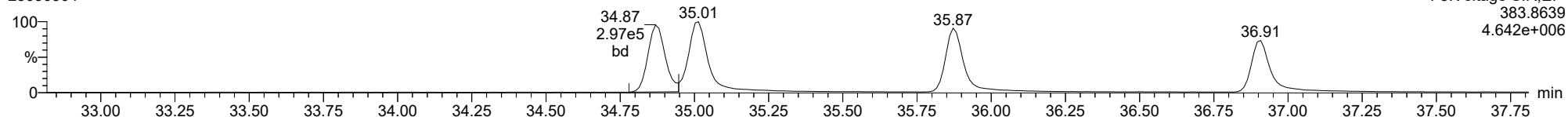
123478-HxCDF

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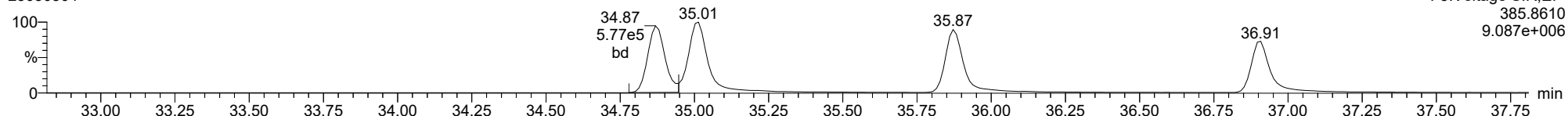
13C-123478-HxCDF

23030304



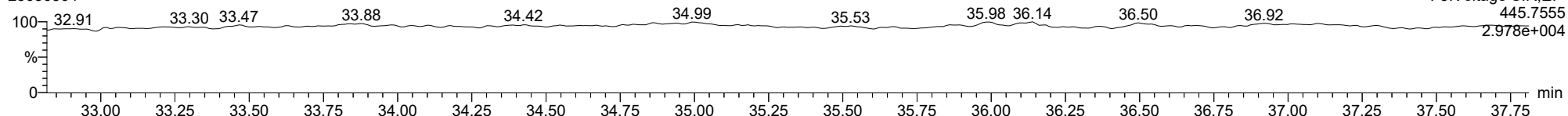
13C-123478-HxCDF

23030304



FUNCTION3 OCDPE

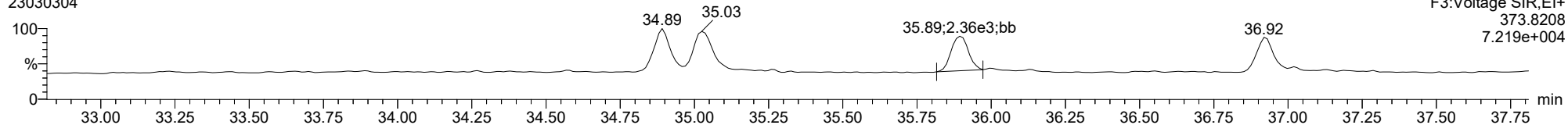
23030304



ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

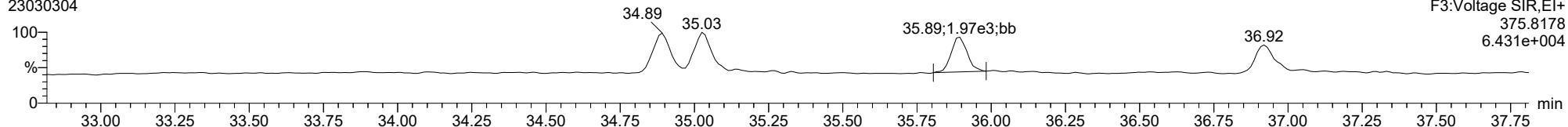
**234678-HxCDF**

23030304



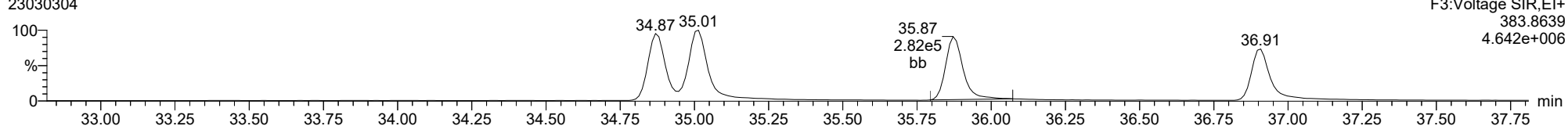
**234678-HxCDF**

23030304



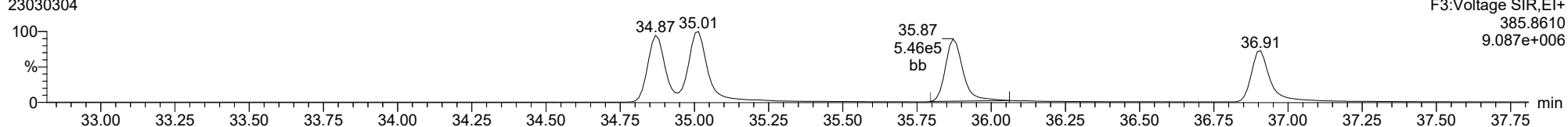
**13C-234678-HxCDF**

23030304



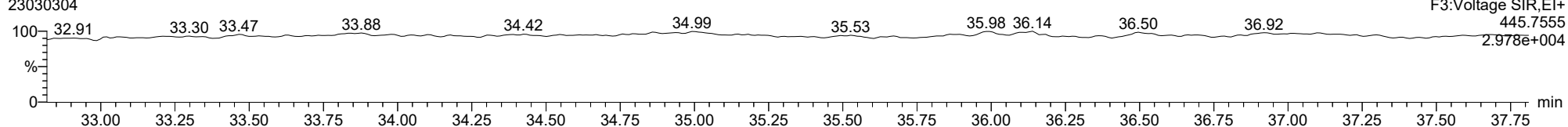
**13C-234678-HxCDF**

23030304



**FUNCTION3 OCDPE**

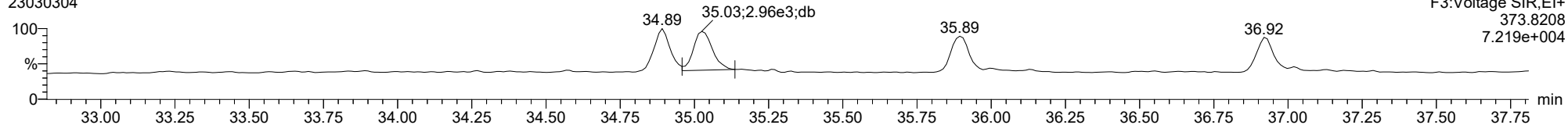
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ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

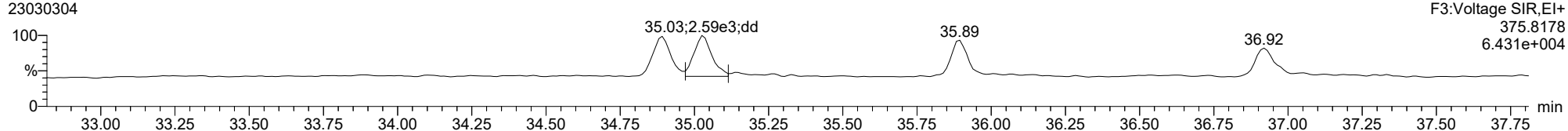
**123678-HxCDF**

23030304



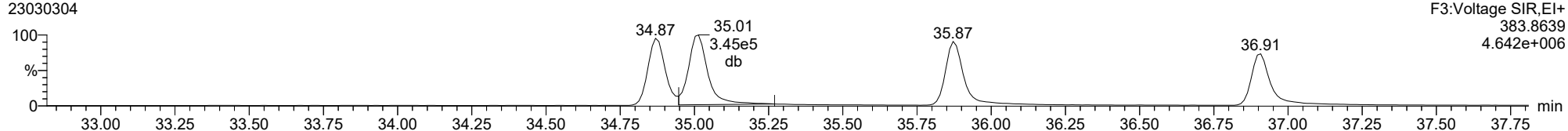
**123678-HxCDF**

23030304



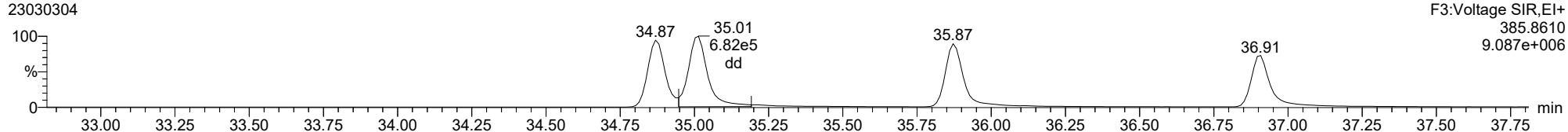
**13C-123678-HxCDF**

23030304



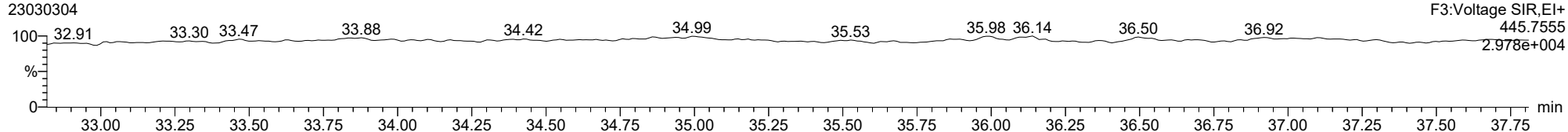
**13C-123678-HxCDF**

23030304



**FUNCTION3 OCDPE**

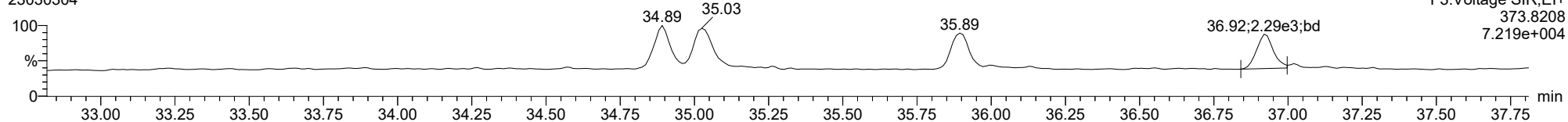
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ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

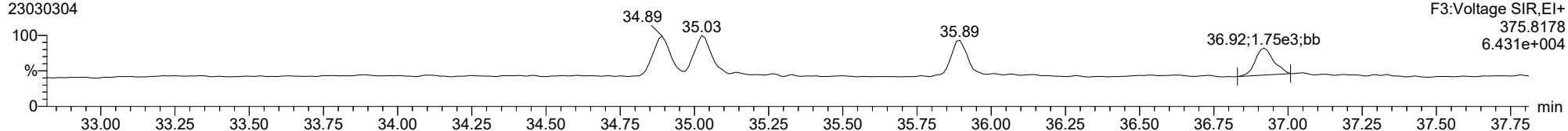
**123789-HxCDF**

23030304



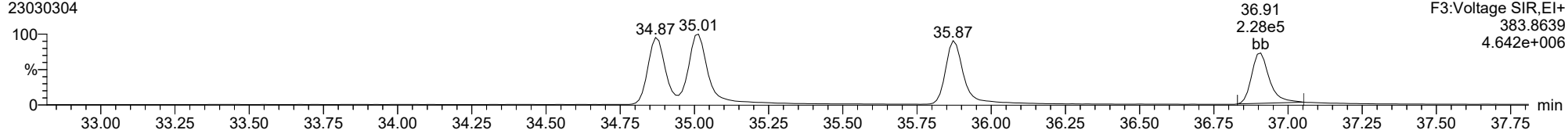
**123789-HxCDF**

23030304



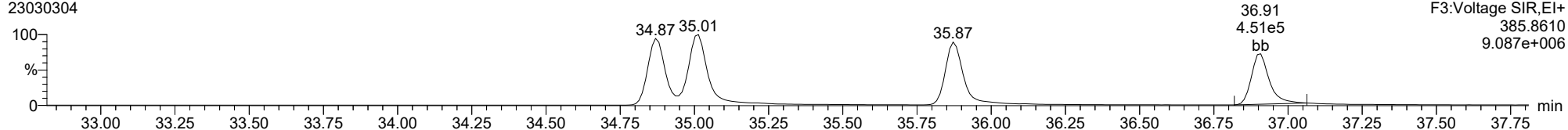
**13C-123789-HxCDF**

23030304



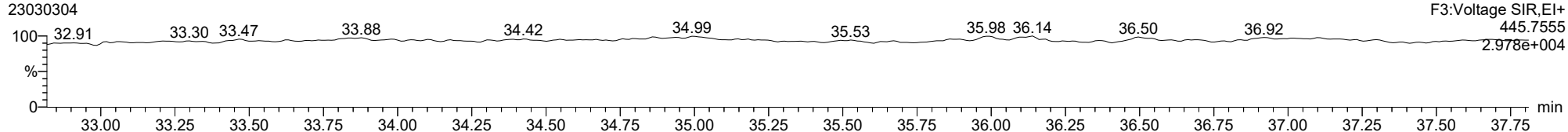
**13C-123789-HxCDF**

23030304



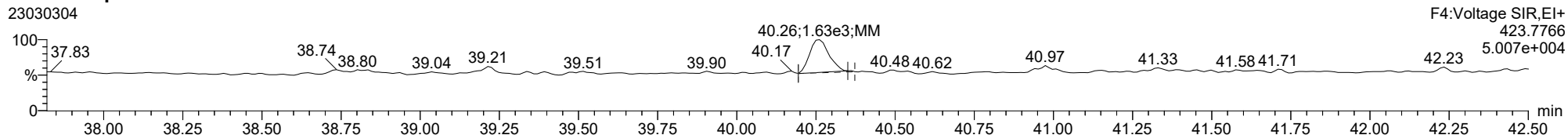
**FUNCTION3 OCDPE**

23030304

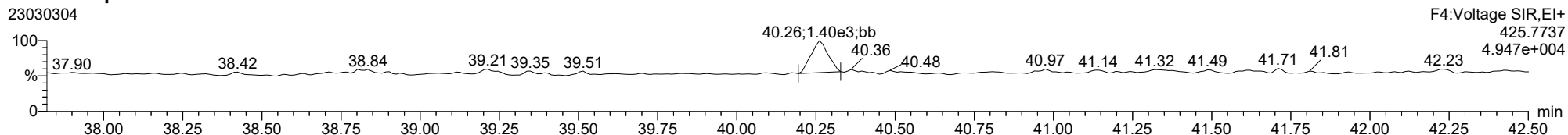


ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

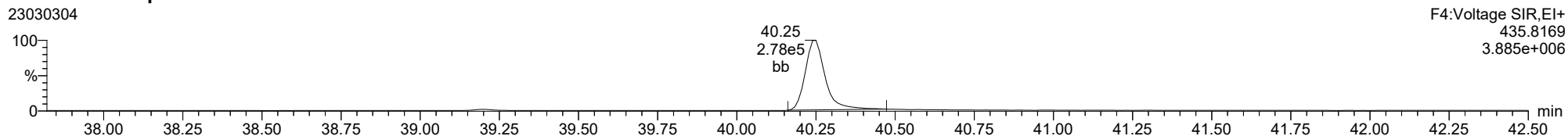
**1234678-HpCDD**



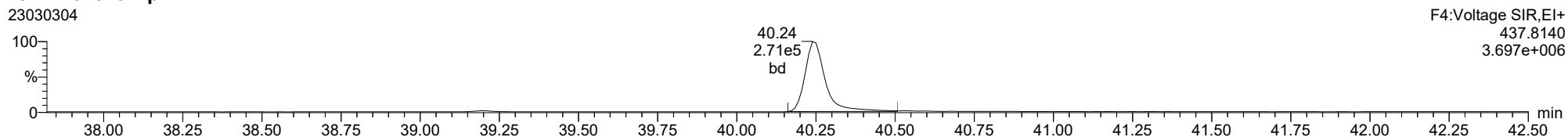
**1234678-HpCDD**



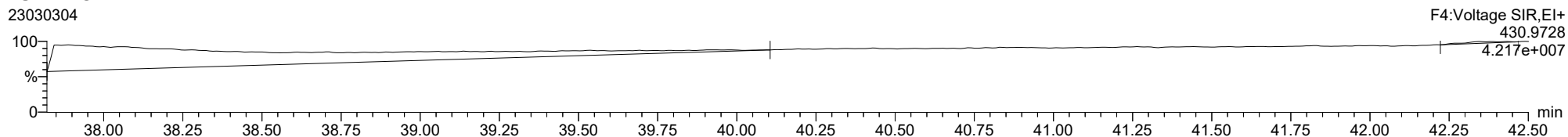
**13C-1234678-HpCDD**



**13C-1234678-HpCDD**



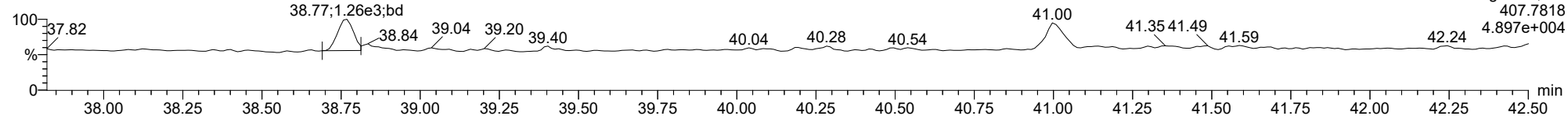
**FUNCTION4 PFK**



ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

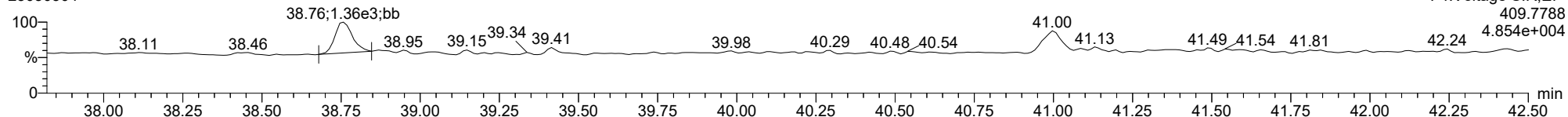
**1234678-HpCDF**

23030304



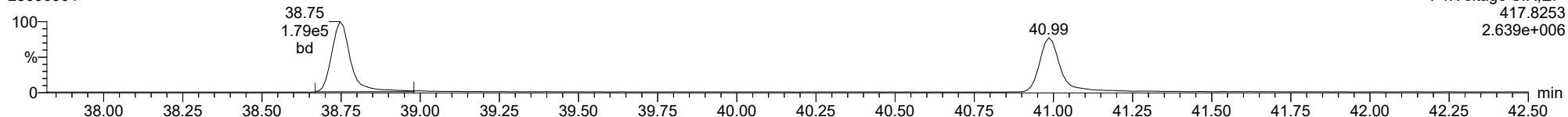
**1234678-HpCDF**

23030304



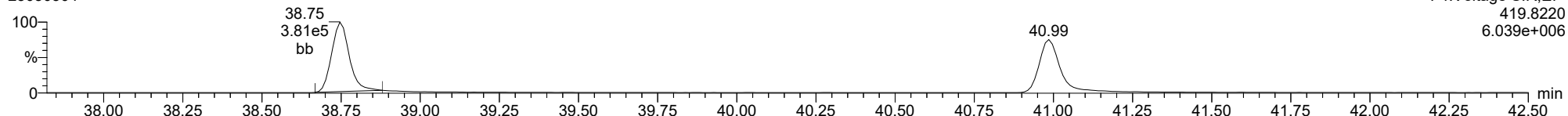
**13C-1234678-HpCDF**

23030304



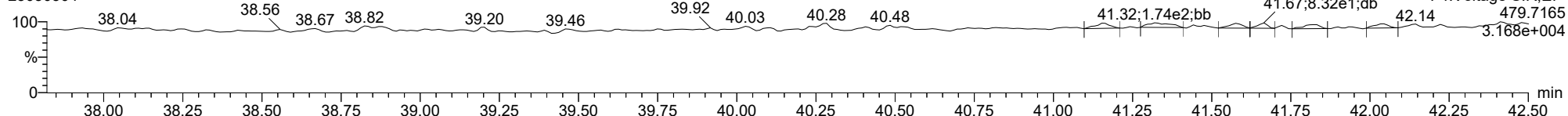
**13C-1234678-HpCDF**

23030304



**FUNCTION4 NCDPE**

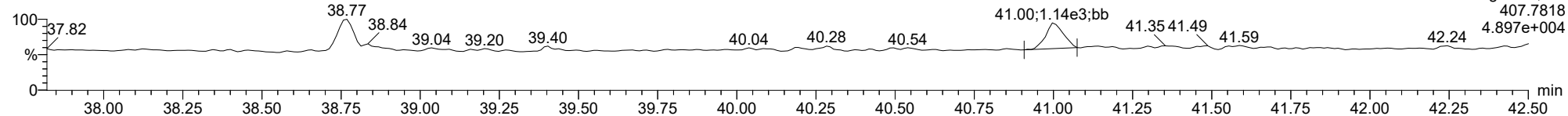
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ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

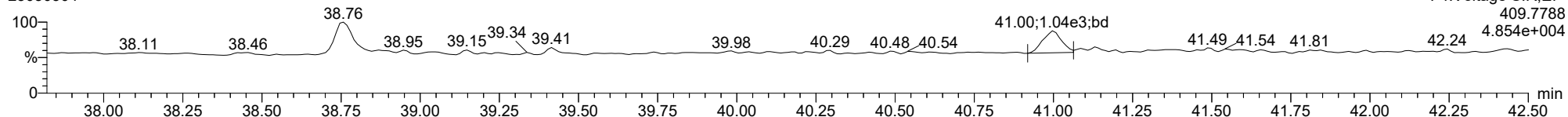
1234789-HpCDF

23030304



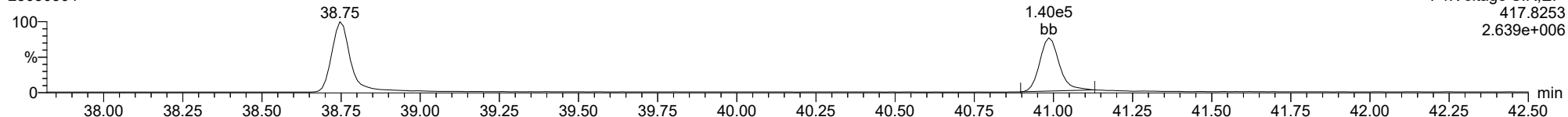
1234789-HpCDF

23030304



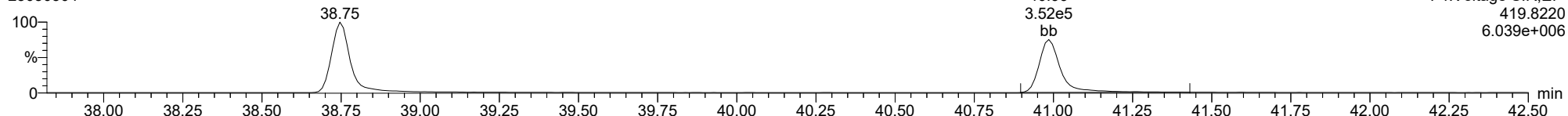
13C-1234789-HpCDF

23030304



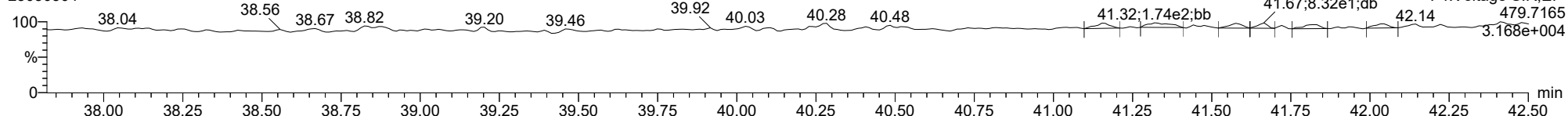
13C-1234789-HpCDF

23030304



FUNCTION4 NCDPE

23030304

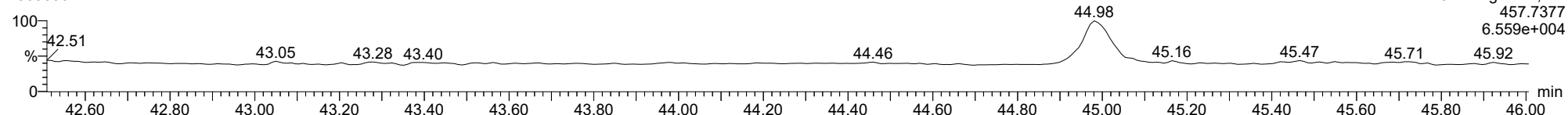




ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

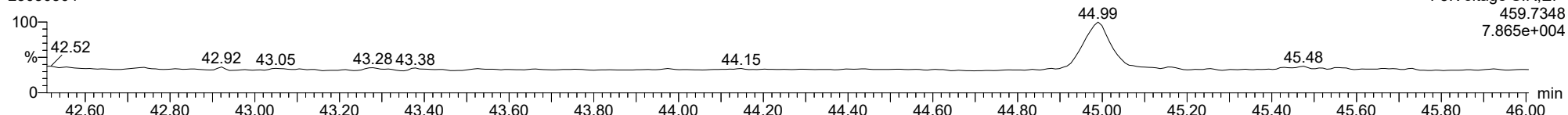
**OCDD**

23030304



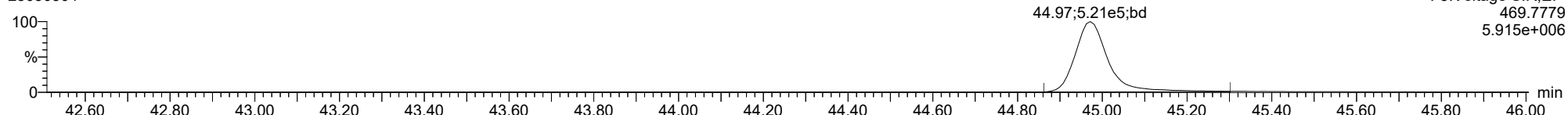
**OCDD**

23030304



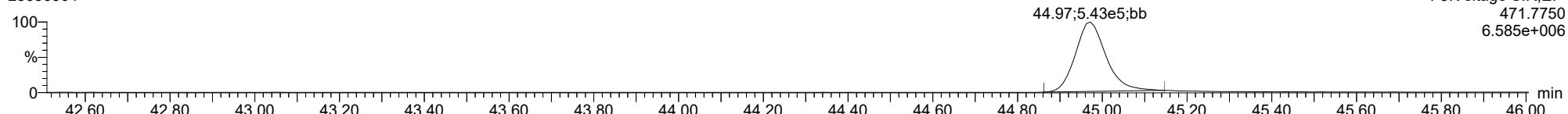
**13C-OCDD**

23030304



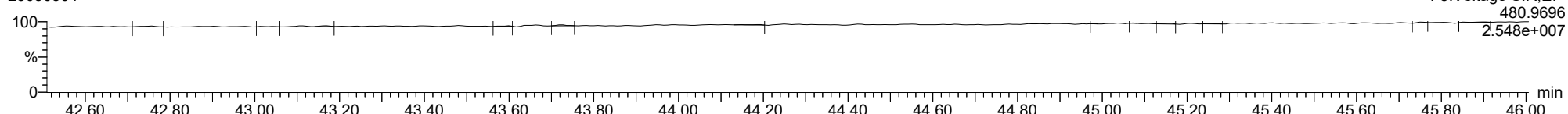
**13C-OCDD**

23030304



**FUNCTION5 PFK**

23030304



ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

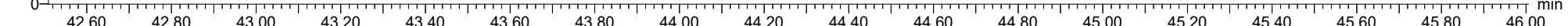
**OCDF**

23030304

100-42.51

%

0



F5:Voltage SIR,EI+  
441.7428  
4.982e+004

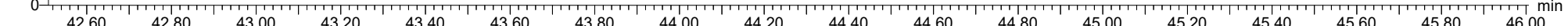
**OCDF**

23030304

100-42.51

%

0



F5:Voltage SIR,EI+  
443.7399  
4.786e+004

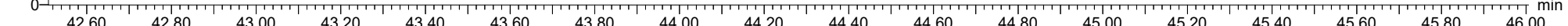
**FUNCTION5 DCDPE**

23030304

100-42.73;1.39e2;bb

%

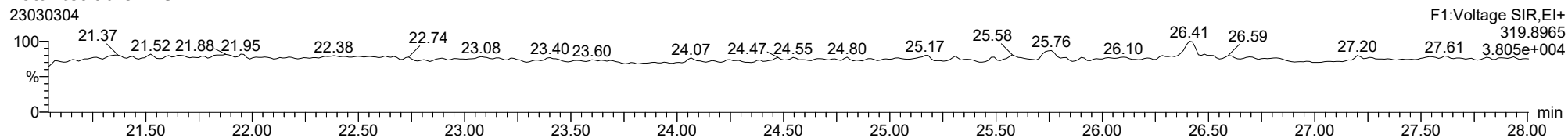
0



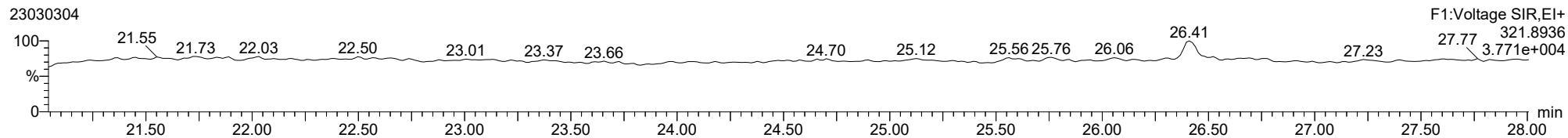
F5:Voltage SIR,EI+  
513.6775  
3.310e+004

ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

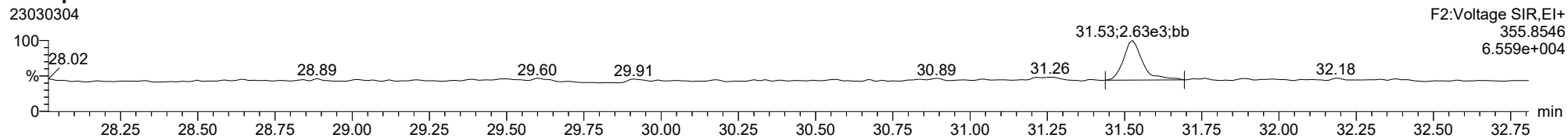
**Total-tetradioxins**



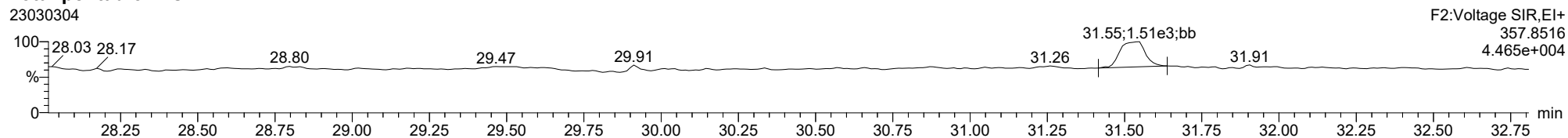
**Total-tetradioxins**



**Total-pentadioxins**



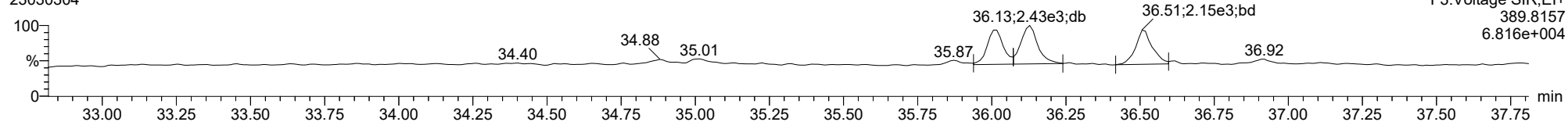
**Total-pentadioxins**



ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

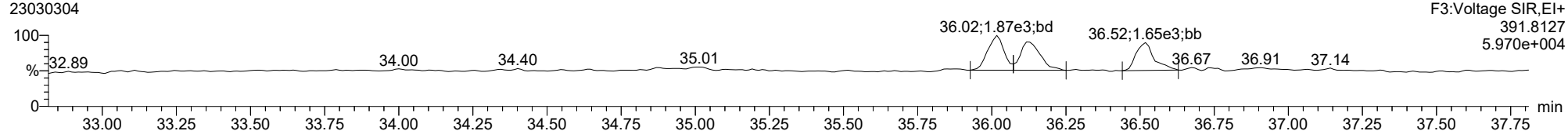
### Total-hexadioxins

23030304



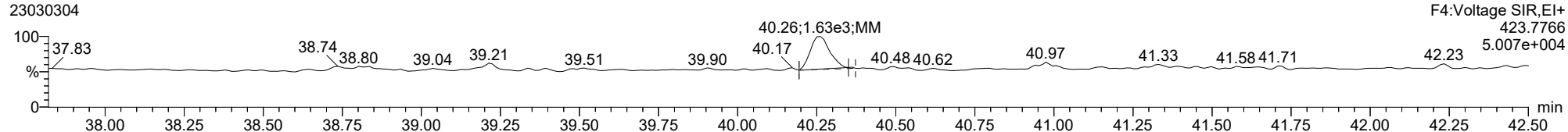
### Total-hexadioxins

23030304



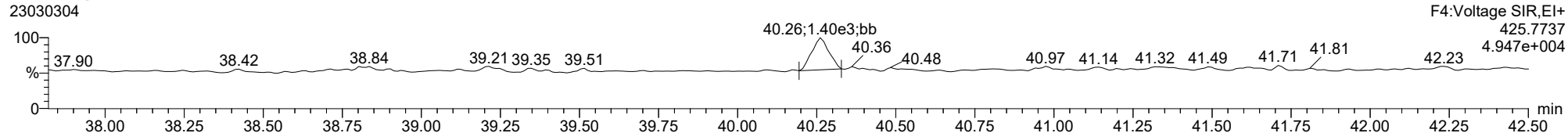
### Total-heptadioxins

23030304



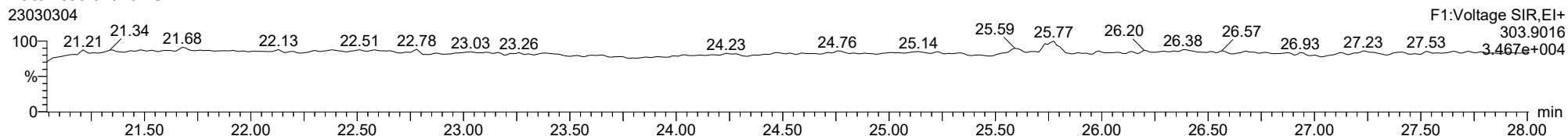
### Total-heptadioxins

23030304

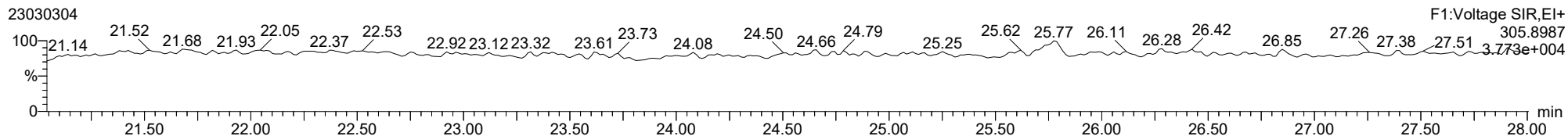


ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

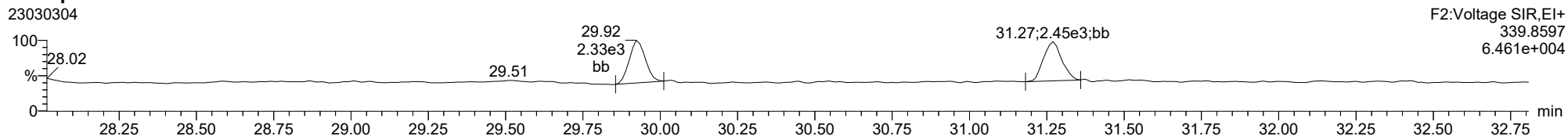
**Total-tetrafurans**



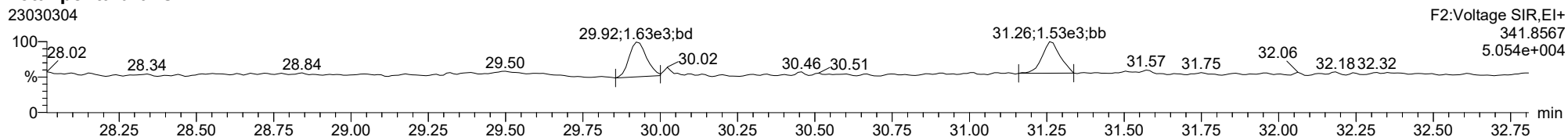
**Total-tetrafurans**



**Total-pentafurans**



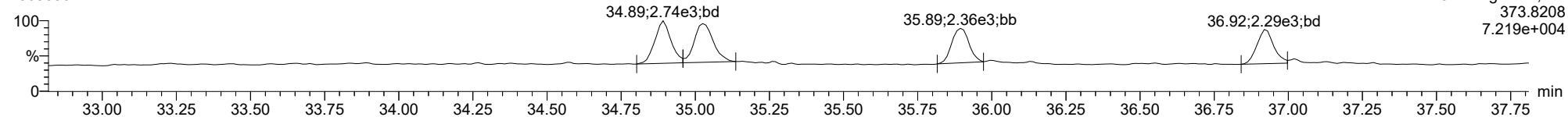
**Total-pentafurans**



ID: CSLCW, Name: 23030304, Date: 03-Mar-2023, Time: 11:28:13, Conditions: AUTOSPEC01, User: pk

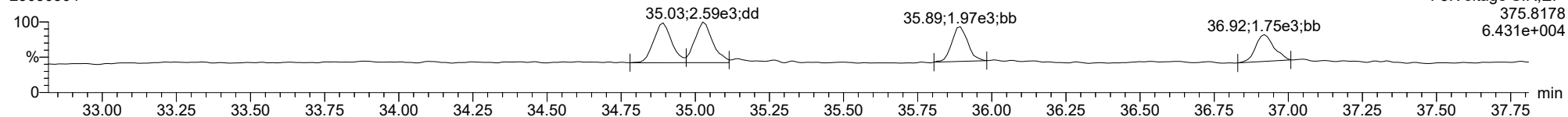
**Total-hexafurans**

23030304



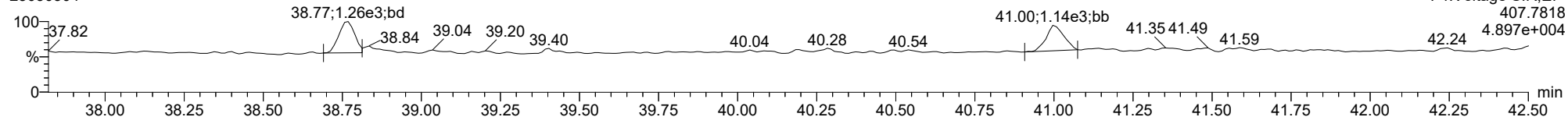
**Total-hexafurans**

23030304



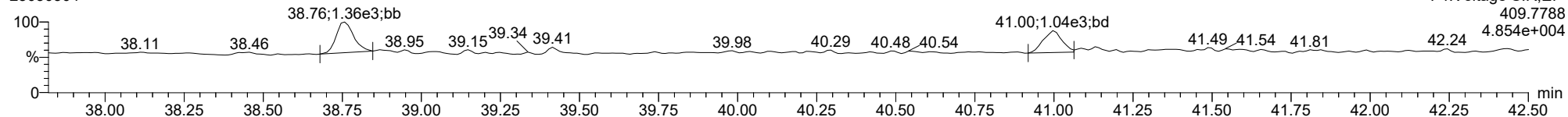
**Total-heptafurans**

23030304



**Total-heptafurans**

23030304



Dataset: T:\Autospec\Processed Data Batch\230303ICIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:10 Pacific Standard Time

**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS1CW, **Name:** 23030305, **Date:** 03-Mar-2023, **Time:** 12:23:58, **Conditions:** AUTOSPEC01, **User:** pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.788	1.001	1.705e3	2.516e3	0.702	0.678	0.770	886	1799	2.34e4	3.87e4	26.4	21.5	NO	bb	MM	0.494
12378-PeCDF	29.933	1.000	5.914e3	4.099e3	0.679	1.442	1.550	1151	1276	9.10e4	6.48e4	79.1	50.8	NO	bb	bb	2.168
23478-PeCDF	31.270	1.000	7.974e3	4.958e3	0.786	1.608	1.550	1151	1276	1.22e5	6.97e4	106.1	54.6	NO	bb	bb	2.386
123478-HxCDF	34.891	1.000	1.063e4	7.851e3	1.166	1.354	1.240	1046	1170	1.58e5	1.17e5	151.4	100.1	NO	bd	bd	2.532
234678-HxCDF	35.894	1.000	1.057e4	7.802e3	1.140	1.354	1.240	1046	1170	1.51e5	1.18e5	143.9	100.6	NO	bb	bb	2.503
123678-HxCDF	35.036	1.001	1.161e4	8.676e3	1.091	1.339	1.240	1046	1170	1.53e5	1.27e5	146.1	108.8	NO	dd	dd	2.416
123789-HxCDF	36.930	1.001	8.482e3	6.693e3	1.137	1.267	1.240	1046	1170	1.18e5	8.92e4	112.7	76.2	NO	bd	bb	2.462
1234678-HpCDF	38.768	1.000	7.253e3	6.596e3	1.003	1.100	1.050	811	627	1.05e5	9.73e4	128.9	155.1	NO	bb	bb	2.680
1234789-HpCDF	41.008	1.000	5.116e3	5.234e3	0.953	0.978	1.050	811	627	7.22e4	7.17e4	89.0	114.3	NO	bb	bb	2.342
OCDF	45.237	1.006	5.981e3	6.798e3	0.778	0.880	0.890	709	890	6.92e4	8.13e4	97.6	91.3	NO	MM	bd	4.559
2378-TCDD	26.424	1.001	2.272e3	2.723e3	1.149	0.834	0.770	1286	820	3.35e4	3.73e4	26.0	45.5	NO	bb	bb	0.486
12378-PeCDD	31.538	1.001	7.831e3	5.061e3	1.022	1.548	1.550	902	618	1.00e5	7.05e4	111.4	114.0	NO	bb	bd	2.348
123478-HxCDD	36.016	1.000	7.381e3	5.875e3	0.996	1.256	1.240	655	843	1.17e5	9.68e4	178.2	114.9	NO	bd	bd	2.415
123678-HxCDD	36.139	1.001	9.152e3	7.340e3	1.001	1.247	1.240	655	843	1.26e5	9.90e4	192.8	117.4	NO	db	dd	2.494
123789-HxCDD	36.518	1.011	7.480e3	5.936e3	0.907	1.260	1.240	655	843	1.06e5	8.62e4	162.4	102.3	NO	bd	bd	2.440
1234678-HpCDD	40.272	1.001	6.283e3	5.832e3	1.039	1.077	1.050	694	917	8.98e4	8.16e4	129.4	89.0	NO	bb	bd	2.337
OCDD	44.999	1.000	8.578e3	9.676e3	0.920	0.887	0.890	635	634	9.84e4	1.12e5	154.9	175.9	NO	bd	bb	5.505
13C-2378-TCDF	25.760	1.007	5.230e5	6.960e5	1.620	0.752	0.770	2566	1723	7.68e6	1.02e7	2994.2	5911.4	NO	bb	bb	98.043
13C-12378-PeCDF	29.922	1.169	4.082e5	2.718e5	1.240	1.502	1.550	3092	2294	5.44e6	3.64e6	1758.1	1584.9	NO	bd	bb	71.437
13C-23478-PeCDF	31.259	1.222	4.106e5	2.788e5	1.118	1.473	1.550	3092	2294	5.91e6	4.02e6	1912.5	1751.3	NO	bb	bb	80.373
13C-123478-HxCDF	34.880	0.955	2.117e5	4.140e5	1.168	0.511	0.510	1778	2186	3.18e6	6.21e6	1786.5	2841.3	NO	bd	bd	93.801
13C-123678-HxCDF	35.014	0.959	2.754e5	4.947e5	1.386	0.557	0.510	1778	2186	3.40e6	6.43e6	1911.3	2941.0	NO	db	db	97.276
13C-234678-HxCDF	35.882	0.983	2.122e5	4.318e5	1.129	0.491	0.510	1778	2186	3.04e6	5.98e6	1709.4	2734.1	NO	bb	bd	99.880
13C-123789-HxCDF	36.908	1.011	1.853e5	3.568e5	0.932	0.519	0.510	1778	2186	2.62e6	5.01e6	1471.0	2293.6	NO	bb	bb	101.893
13C-1234678-HpCDF	38.757	1.062	1.579e5	3.573e5	0.895	0.442	0.440	2049	3174	2.36e6	5.45e6	1151.3	1718.3	NO	bb	bb	100.794
13C-1234789-HpCDF	40.997	1.123	1.372e5	3.264e5	0.770	0.420	0.440	2049	3174	1.74e6	3.92e6	851.0	1236.7	NO	bd	bd	105.482
13C-1234-TCDD	25.591	0.000	3.429e5	4.245e5	1.000	0.808	0.770	2519	1748	5.22e6	6.49e6	2072.6	3712.2	NO	bb	bb	100.000
13C-2378-TCDD	26.396	1.031	3.982e5	4.964e5	1.152	0.802	0.770	2519	1748	5.51e6	6.93e6	2188.2	3962.8	NO	bb	bb	101.152
13C-12378-PeCDD	31.515	1.232	3.242e5	2.131e5	0.829	1.521	1.550	1586	877	4.46e6	2.78e6	2809.5	3168.1	NO	bb	bd	84.489
13C-123478-HxCDD	36.005	0.986	3.100e5	2.413e5	0.995	1.285	1.240	2517	1649	4.83e6	3.77e6	1920.9	2283.3	NO	bd	bd	97.050
13C-123678-HxCDD	36.117	0.989	3.700e5	2.908e5	1.157	1.273	1.240	2517	1649	5.06e6	4.03e6	2012.2	2442.3	NO	db	db	100.049
13C-1234678-HpCDD	40.250	1.102	2.556e5	2.433e5	0.840	1.051	1.050	2183	1602	3.48e6	3.29e6	1594.9	2052.3	NO	bb	bb	103.999
13C-OCDD	44.980	1.232	3.386e5	3.823e5	0.767	0.886	0.890	3187	1733	3.80e6	4.27e6	1193.7	2462.5	NO	bb	bb	164.498
13C-123789-HxCDD	36.507	0.000	3.194e5	2.515e5	1.000	1.270	1.240	2517	1649	4.46e6	3.59e6	1770.5	2177.4	NO	bb	bb	100.000
37CL-2378-TCDD	26.424	1.033	5.065e3		1.288			2040		7.28e4		35.7			bb		0.513

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:10 Pacific Standard Time

ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					0.802		0.770	886	1799								
1289-TCDF					0.678		0.770	886	1799								
13468-PECDF					1.246		1.550	811	1221								
12389-PECDF					0.496		1.550	1151	1276								
123468-HXCDF					1.169		1.240	1046	1170								
1368-TCDD					1.015		0.770	1286	820								
1289-TCDD					0.909		0.770	1286	820								
12479-PECDD					2.301		1.550	902	618								
12389-PECDD					1.184		1.550	902	618								
124679-HXCDD					1.115		1.240	655	843								
1234679-HPCDD					1.137		1.050	694	917								
Total-tetrafurans			1.705e3		0.727			886		2.34e4							0.494
Total-penta1			0.000e0					811		0.00e0							
Total-pentafurans			1.389e4		0.654			1151		2.13e5							4.554
Total-hexafurans			4.139e4		1.141			1046		5.82e5							9.938
Total-heptafurans			1.237e4		0.978			811		1.77e5							5.023
Total-Furans			7.533e4		0.922			886		1.06e6							24.566
Total-tetradoxins			2.272e3		1.024			1286		3.35e4							0.486
Total-pentadoxins			7.831e3		1.502			902		1.00e5							2.348
Total-hexadoxins			2.401e4		1.005			655		3.49e5							7.349
Total-heptadoxins			6.283e3		1.088			694		8.98e4							2.337
Total-Dioxins			4.898e4		1.130			1286		6.72e5							18.025
Total-TEQ			1.243e5					1286		1.74e6							42.592
FUNCTION1 PFK			0.000e0					501375		0.00e0							
FUNCTION2 PFK			7.687e6					300953		7.99e6							0.000
FUNCTION3 PFK			1.081e7					473463		1.95e7							0.000
FUNCTION4 PFK			1.035e7					332160		2.87e6							
FUNCTION5 PFK			6.101e5					195111		8.38e5							
FUNCTION1 HXCD...			6.739e2					611		6.36e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			7.361e2					923		1.83e4							0.000
FUNCTION3 OCDPE			2.008e2					596		2.61e3							0.000
FUNCTION4 NCDPE			9.397e1					539		1.40e3							0.000
FUNCTION5 DCDPE			1.677e2					561		3.39e3							0.000



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:10 Pacific Standard Time

**Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50**

**Calibration: T:\Autospec\Curves\230303\CIH.cdb 06 Mar 2023 10:57:27**

**ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk**

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.79	1.705e3	2.516e3	0.702	0.68	0.77	26.4	YES	NO	bb	MM	0.494

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.27	7.974e3	4.958e3	0.786	1.61	1.55	106.1	YES	NO	bb	bb	2.386
2	12378-PeCDF	29.93	5.914e3	4.099e3	0.679	1.44	1.55	79.1	YES	NO	bb	bb	2.168

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.93	8.482e3	6.693e3	1.137	1.27	1.24	112.7	YES	NO	bd	bb	2.462
2	234678-HxCDF	35.89	1.057e4	7.802e3	1.140	1.35	1.24	143.9	YES	NO	bb	bb	2.503
3	Total-hexafurans	35.23	1.011e2	8.523e1	1.141	1.19	1.24	2.2	NO	NO	db	db	0.025
4	123678-HxCDF	35.04	1.161e4	8.676e3	1.091	1.34	1.24	146.1	YES	NO	dd	dd	2.416
5	123478-HxCDF	34.89	1.063e4	7.851e3	1.166	1.35	1.24	151.4	YES	NO	bd	bd	2.532

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.77	7.253e3	6.596e3	1.003	1.10	1.05	128.9	YES	NO	bb	bb	2.680
2	1234789-HpCDF	41.01	5.116e3	5.234e3	0.953	0.98	1.05	89.0	YES	NO	bb	bb	2.342

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:10 Pacific Standard Time

**ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.27	7.974e3	4.958e3	0.786	1.61	1.55	106.1	YES	NO	bb	bb	2.386
2	12378-PeCDF	29.93	5.914e3	4.099e3	0.679	1.44	1.55	79.1	YES	NO	bb	bb	2.168
3	2378-TCDF	25.79	1.705e3	2.516e3	0.702	0.68	0.77	26.4	YES	NO	bb	MM	0.494
4	123789-HxCDF	36.93	8.482e3	6.693e3	1.137	1.27	1.24	112.7	YES	NO	bd	bb	2.462
5	234678-HxCDF	35.89	1.057e4	7.802e3	1.140	1.35	1.24	143.9	YES	NO	bb	bb	2.503
6	Total-hexa-furans	35.23	1.011e2	8.523e1	1.141	1.19	1.24	2.2	NO	NO	db	db	0.025
7	123678-HxCDF	35.04	1.161e4	8.676e3	1.091	1.34	1.24	146.1	YES	NO	dd	dd	2.416
8	123478-HxCDF	34.89	1.063e4	7.851e3	1.166	1.35	1.24	151.4	YES	NO	bd	bd	2.532
9	1234678-HpCDF	38.77	7.253e3	6.596e3	1.003	1.10	1.05	128.9	YES	NO	bb	bb	2.680
10	OCDF	45.24	5.981e3	6.798e3	0.778	0.88	0.89	97.6	YES	NO	MM	bd	4.559
11	1234789-HpCDF	41.01	5.116e3	5.234e3	0.953	0.98	1.05	89.0	YES	NO	bb	bb	2.342

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.42	2.272e3	2.723e3	1.149	0.83	0.77	26.0	YES	NO	bb	bb	0.486

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.54	7.831e3	5.061e3	1.022	1.55	1.55	111.4	YES	NO	bb	bd	2.348

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.52	7.480e3	5.936e3	0.907	1.26	1.24	162.4	YES	NO	bd	bd	2.440
2	123678-HxCDD	36.14	9.152e3	7.340e3	1.001	1.25	1.24	192.8	YES	NO	db	dd	2.494
3	123478-HxCDD	36.02	7.381e3	5.875e3	0.996	1.26	1.24	178.2	YES	NO	bd	bd	2.415

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.27	6.283e3	5.832e3	1.039	1.08	1.05	129.4	YES	NO	bb	bd	2.337

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:10 Pacific Standard Time

ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.42	2.272e3	2.723e3	1.149	0.83	0.77	26.0	YES	NO	bb	bb	0.486
2	123789-HxCDD	36.52	7.480e3	5.936e3	0.907	1.26	1.24	162.4	YES	NO	bd	bd	2.440
3	123678-HxCDD	36.14	9.152e3	7.340e3	1.001	1.25	1.24	192.8	YES	NO	db	dd	2.494
4	123478-HxCDD	36.02	7.381e3	5.875e3	0.996	1.26	1.24	178.2	YES	NO	bd	bd	2.415
5	12378-PeCDD	31.54	7.831e3	5.061e3	1.022	1.55	1.55	111.4	YES	NO	bb	bd	2.348
6	1234678-HpCDD	40.27	6.283e3	5.832e3	1.039	1.08	1.05	129.4	YES	NO	bb	bd	2.337
7	OCDD	45.00	8.578e3	9.676e3	0.920	0.89	0.89	154.9	YES	NO	bd	bb	5.505

**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.27	7.974e3	4.958e3	0.786	1.61	1.55	106.1	YES	NO	bb	bb	2.386
2	12378-PeCDF	29.93	5.914e3	4.099e3	0.679	1.44	1.55	79.1	YES	NO	bb	bb	2.168
3	2378-TCDF	25.79	1.705e3	2.516e3	0.702	0.68	0.77	26.4	YES	NO	bb	MM	0.494
4	123789-HxCDF	36.93	8.482e3	6.693e3	1.137	1.27	1.24	112.7	YES	NO	bd	bb	2.462
5	234678-HxCDF	35.89	1.057e4	7.802e3	1.140	1.35	1.24	143.9	YES	NO	bb	bb	2.503
6	Total-hexafurans	35.23	1.011e2	8.523e1	1.141	1.19	1.24	2.2	NO	NO	db	db	0.025
7	123678-HxCDF	35.04	1.161e4	8.676e3	1.091	1.34	1.24	146.1	YES	NO	dd	dd	2.416
8	123478-HxCDF	34.89	1.063e4	7.851e3	1.166	1.35	1.24	151.4	YES	NO	bd	bd	2.532
9	1234678-HpCDF	38.77	7.253e3	6.596e3	1.003	1.10	1.05	128.9	YES	NO	bb	bb	2.680
10	OCDF	45.24	5.981e3	6.798e3	0.778	0.88	0.89	97.6	YES	NO	MM	bd	4.559
11	1234789-HpCDF	41.01	5.116e3	5.234e3	0.953	0.98	1.05	89.0	YES	NO	bb	bb	2.342
12	2378-TCDD	26.42	2.272e3	2.723e3	1.149	0.83	0.77	26.0	YES	NO	bb	bb	0.486
13	123789-HxCDD	36.52	7.480e3	5.936e3	0.907	1.26	1.24	162.4	YES	NO	bd	bd	2.440
14	123678-HxCDD	36.14	9.152e3	7.340e3	1.001	1.25	1.24	192.8	YES	NO	db	dd	2.494
15	123478-HxCDD	36.02	7.381e3	5.875e3	0.996	1.26	1.24	178.2	YES	NO	bd	bd	2.415
16	12378-PeCDD	31.54	7.831e3	5.061e3	1.022	1.55	1.55	111.4	YES	NO	bb	bd	2.348
17	1234678-HpCDD	40.27	6.283e3	5.832e3	1.039	1.08	1.05	129.4	YES	NO	bb	bd	2.337
18	OCDD	45.00	8.578e3	9.676e3	0.920	0.89	0.89	154.9	YES	NO	bd	bb	5.505

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:10 Pacific Standard Time

ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

### PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	30.41	6.929e5					4.3	YES		bb		0.000
2	FUNCTION2 PFK	28.05	6.994e6					22.3	YES		bb		0.000

### PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.60	1.788e4					1.3	NO		bb		0.000
2	FUNCTION3 PFK	36.61	1.585e4					1.4	NO		bb		0.000
3	FUNCTION3 PFK	36.53	6.942e3					0.8	NO		bb		0.000
4	FUNCTION3 PFK	33.99	9.502e3					0.9	NO		bb		0.000
5	FUNCTION3 PFK	33.78	4.298e6					7.0	YES		db		0.000
6	FUNCTION3 PFK	33.15	6.467e6					29.8	YES		bd		0.000

### PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.85	1.035e7					8.6	YES		bb		

### PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	42.97	6.101e5					4.3	YES		bb		

### ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.27	8.033e1					1.9	NO		bb		0.000
2	FUNCTION1 HXCD...	24.98	2.706e2					3.4	YES		bb		0.000
3	FUNCTION1 HXCD...	22.17	1.286e2					2.0	NO		bb		0.000
4	FUNCTION1 HXCD...	21.47	8.089e1					1.9	NO		bb		0.000
5	FUNCTION1 HXCD...	21.17	1.135e2					1.3	NO		bb		0.000

### ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:10 Pacific Standard Time

**ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk**

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.66	1.045e2					4.3	YES		db		0.000
2	FUNCTION2 HPCD...	32.58	1.134e2					3.0	NO		bd		0.000
3	FUNCTION2 HPCD...	31.88	7.272e1					1.9	NO		bb		0.000
4	FUNCTION2 HPCD...	30.71	7.070e1					1.8	NO		bb		0.000
5	FUNCTION2 HPCD...	30.13	1.134e2					2.5	NO		bb		0.000
6	FUNCTION2 HPCD...	28.92	7.142e1					2.0	NO		bb		0.000
7	FUNCTION2 HPCD...	28.66	9.983e1					2.2	NO		bb		0.000
8	FUNCTION2 HPCD...	28.24	9.016e1					2.1	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.50	2.008e2					4.4	YES		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	41.59	9.397e1					2.6	NO		bb		0.000

**ETHERS6**

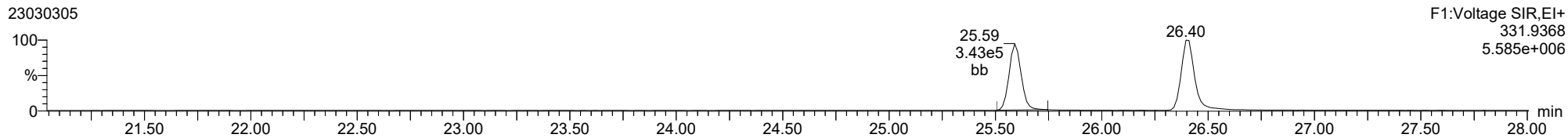
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1	FUNCTION5 DCDPE	44.72	7.355e1					2.5	NO		bb		0.000
2	FUNCTION5 DCDPE	44.30	9.416e1					3.6	YES		bb		0.000

Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

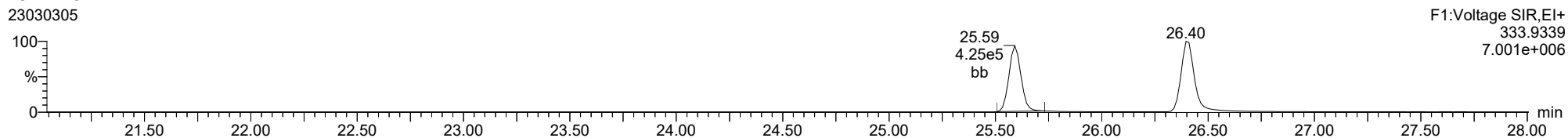
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23030305



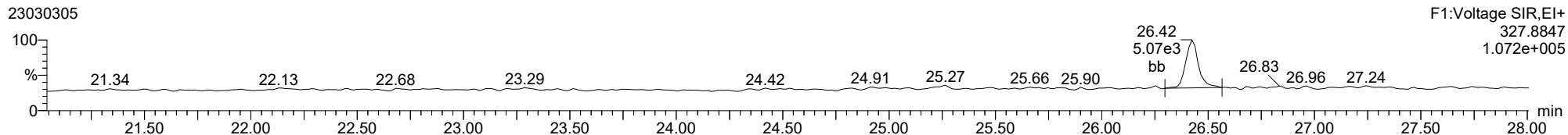
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23030305



**37CL-2378-TCDD**

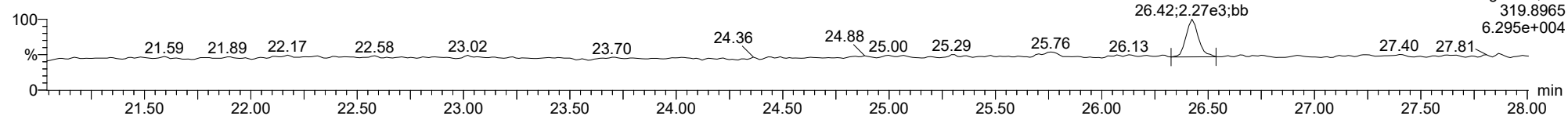
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ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

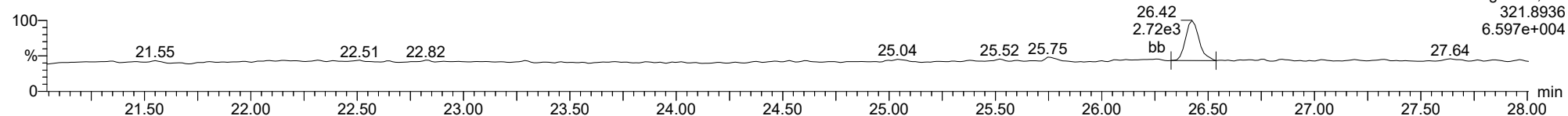
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23030305



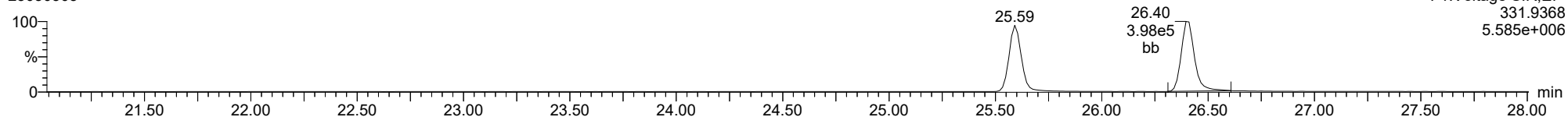
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23030305



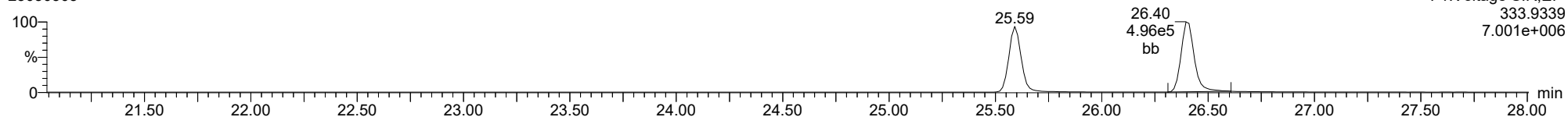
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23030305



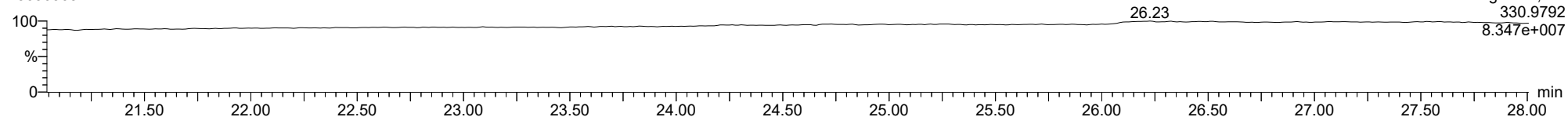
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23030305



**FUNCTION1 PFK**

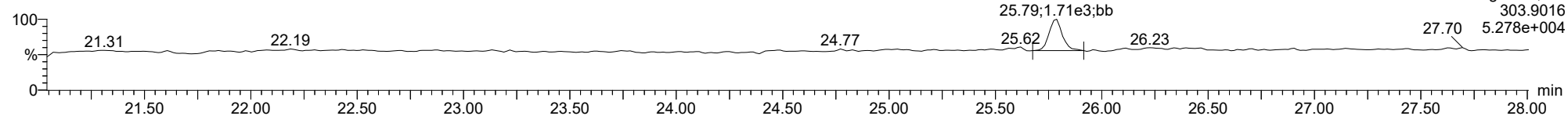
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ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

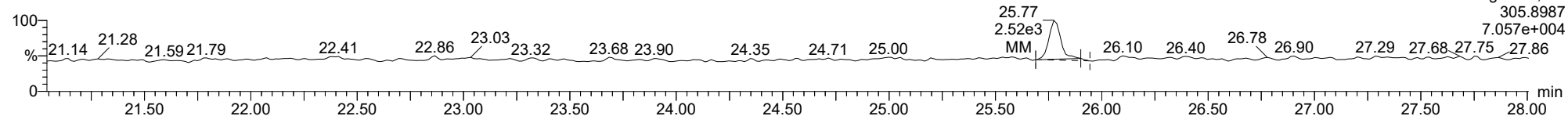
**2378-TCDF**

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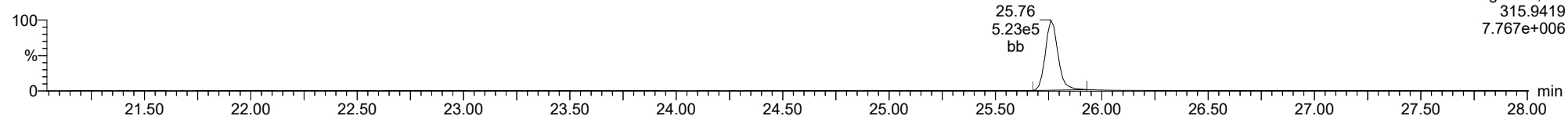
**2378-TCDF**

23030305



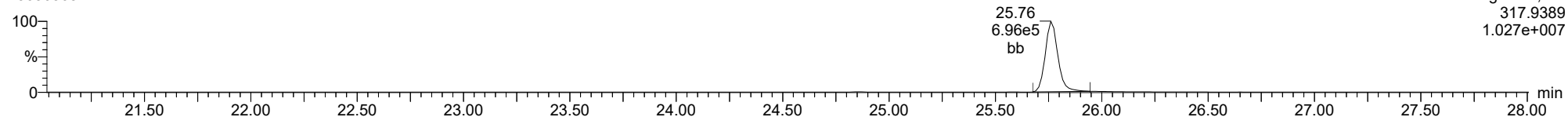
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23030305



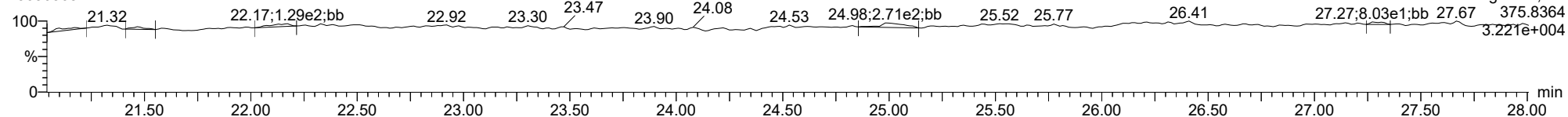
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23030305



**FUNCTION1 HXCDPE**

23030305

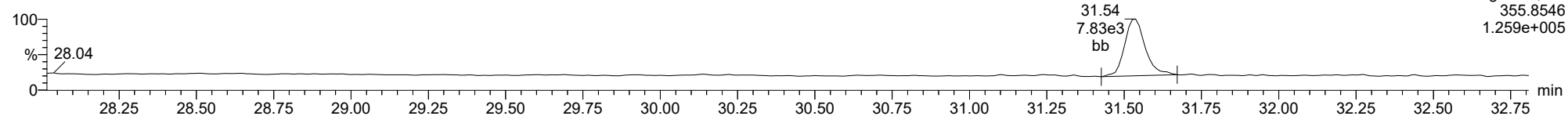




ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

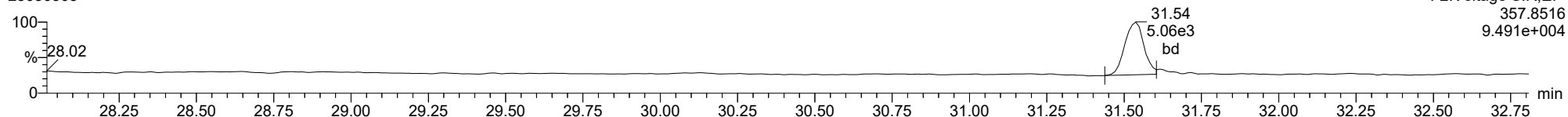
**12378-PeCDD**

23030305



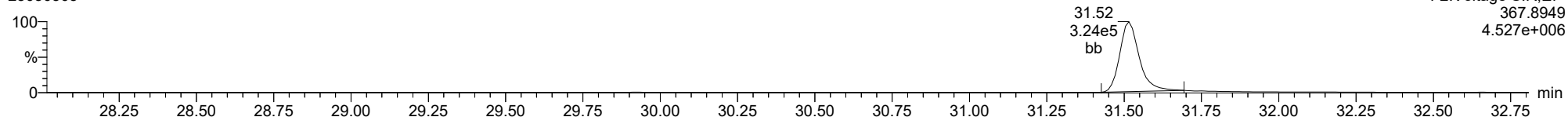
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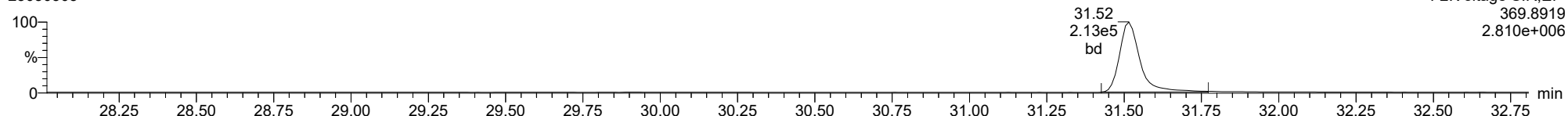
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23030305



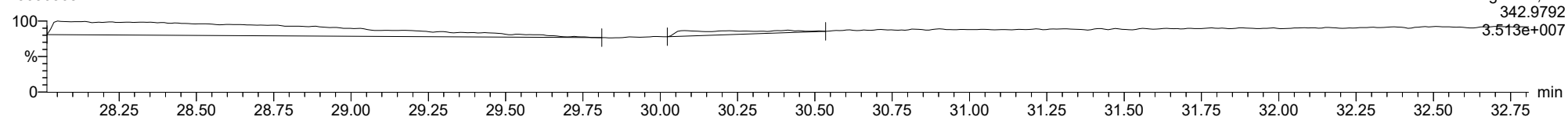
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23030305



**FUNCTION2 PFK**

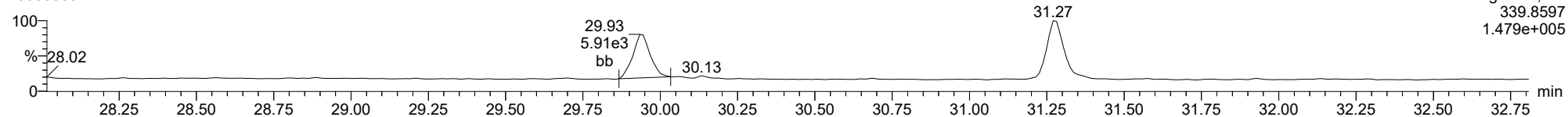
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ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

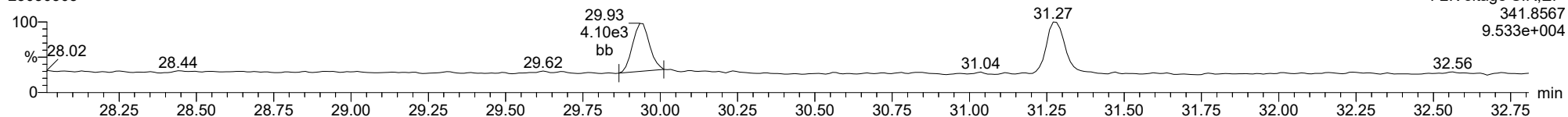
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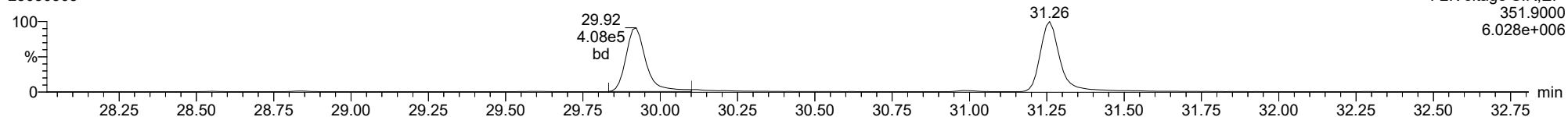
**12378-PeCDF**

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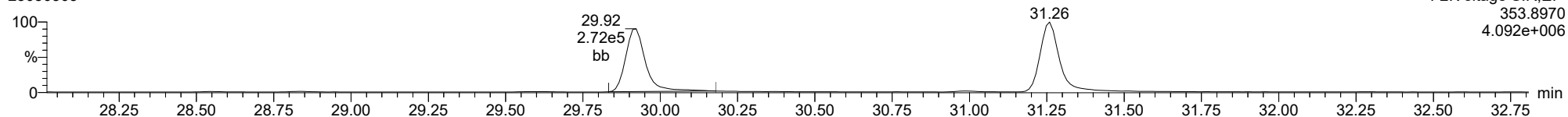
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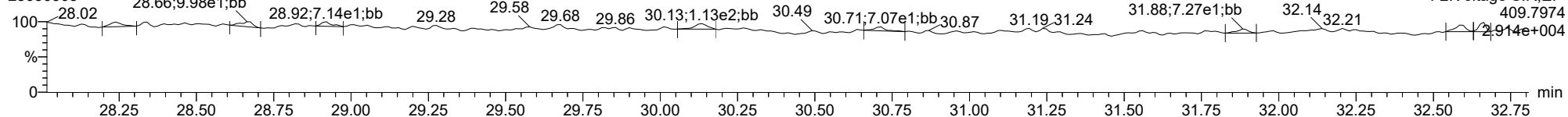
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23030305



**FUNCTION2 HPCDPE**

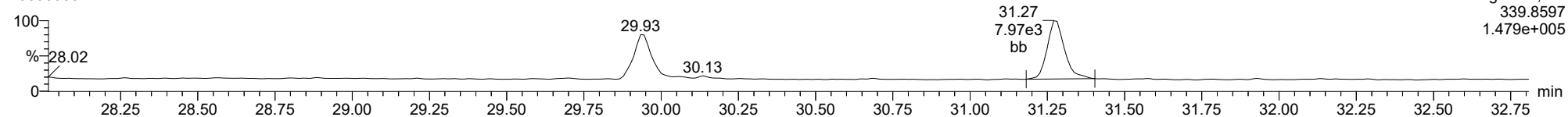
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ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

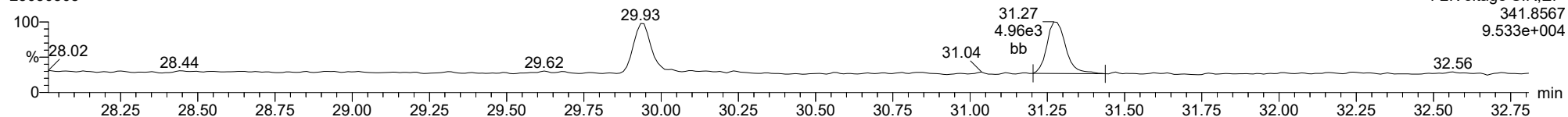
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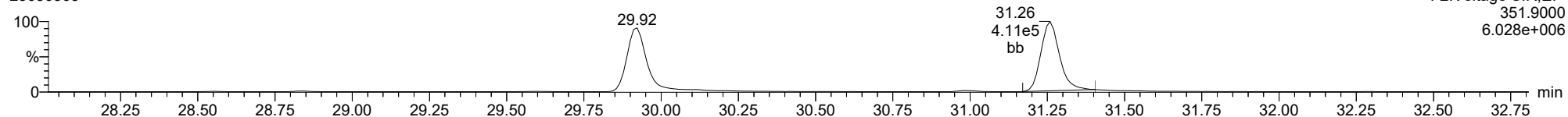
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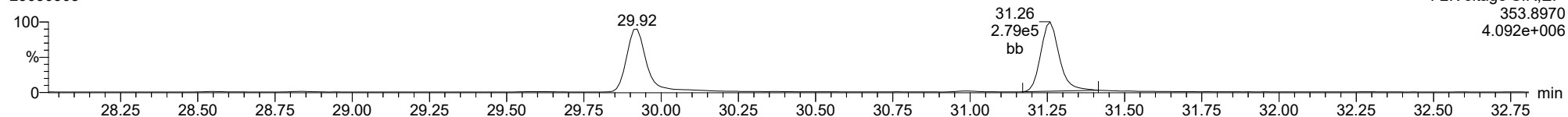
**13C-23478-PeCDF**

23030305



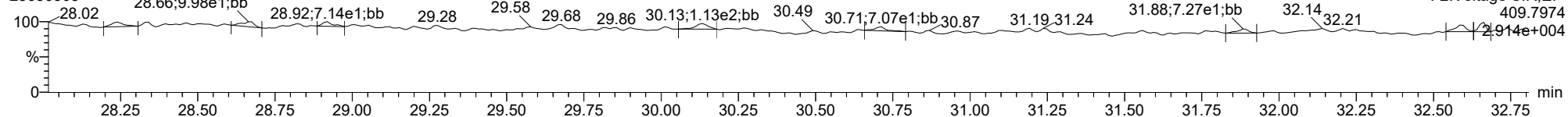
**13C-23478-PeCDF**

23030305



**FUNCTION2 HPCDPE**

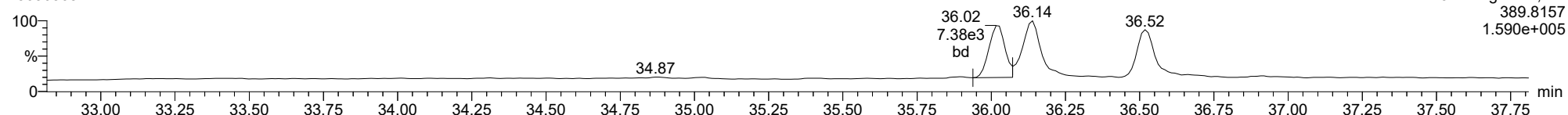
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ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

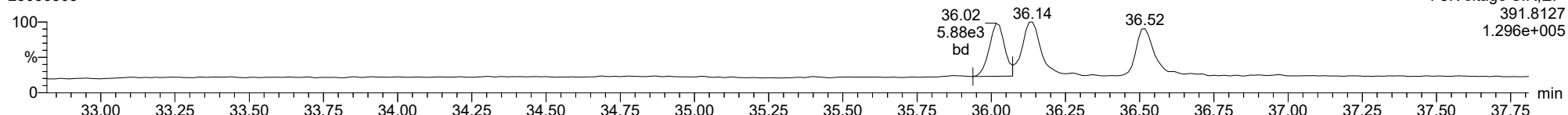
**123478-HxCDD**

23030305



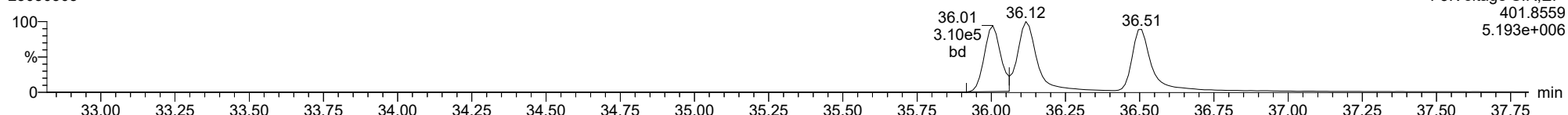
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23030305



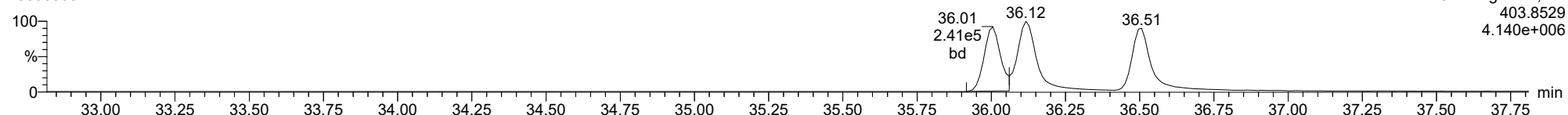
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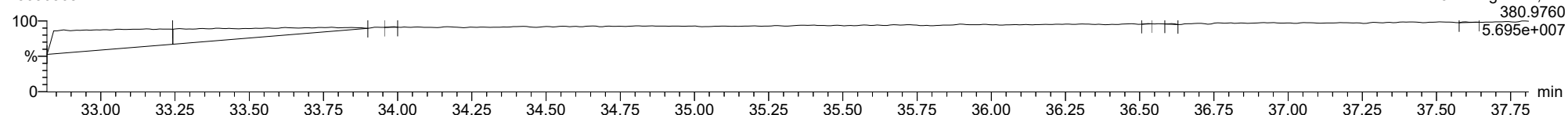
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23030305



**FUNCTION3 PFK**

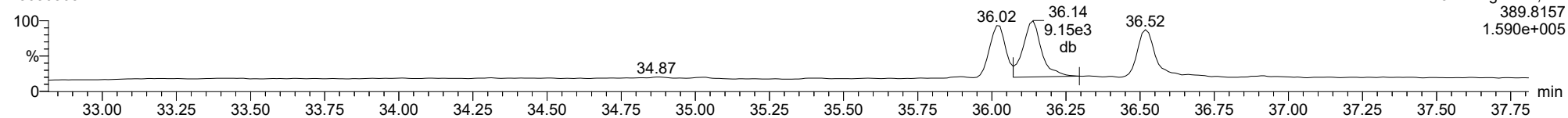
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ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

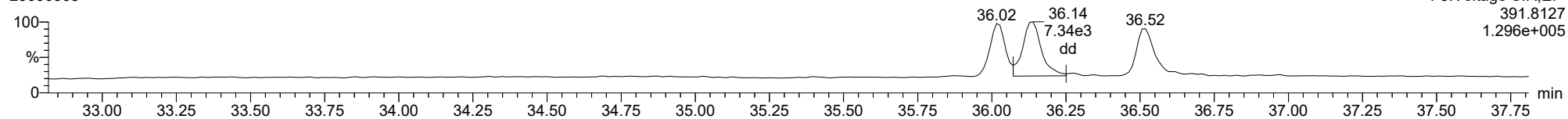
**123678-HxCDD**

23030305



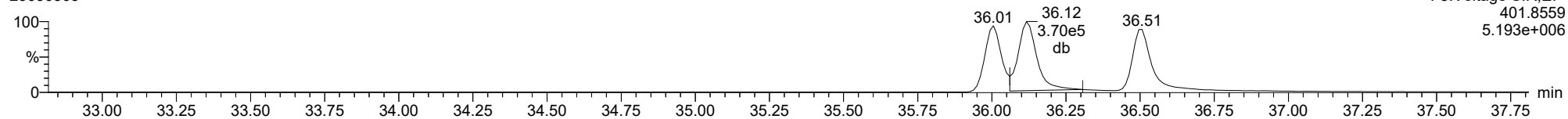
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23030305



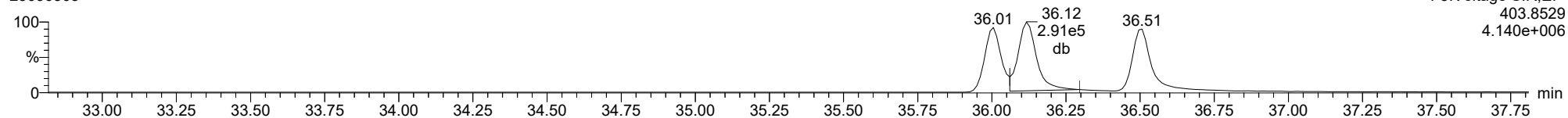
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23030305



**13C-123678-HxCDD**

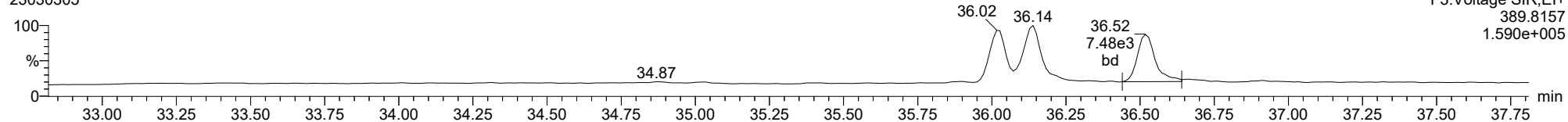
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ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

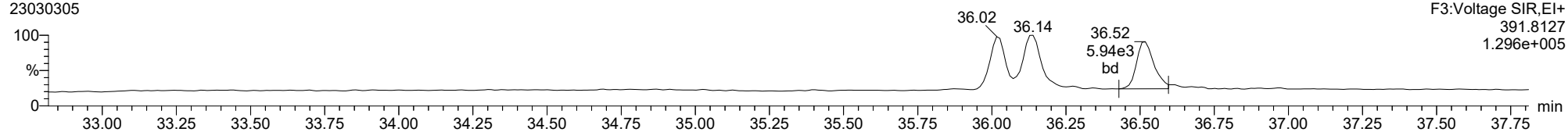
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23030305



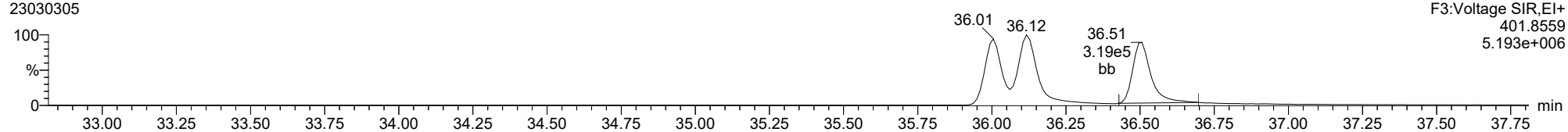
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23030305



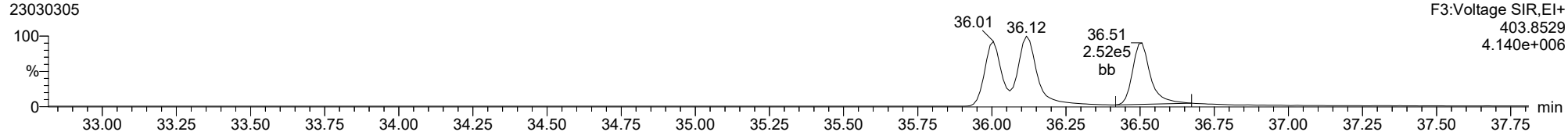
**13C-123789-HxCDD**

23030305



**13C-123789-HxCDD**

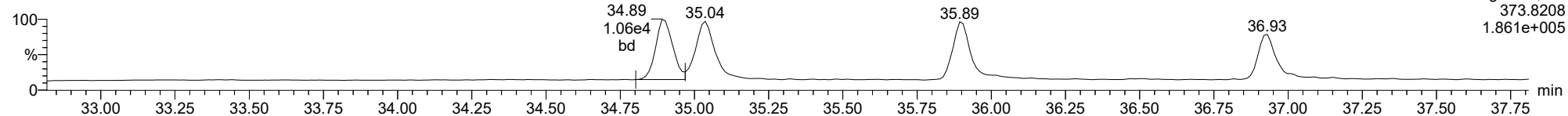
23030305



ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

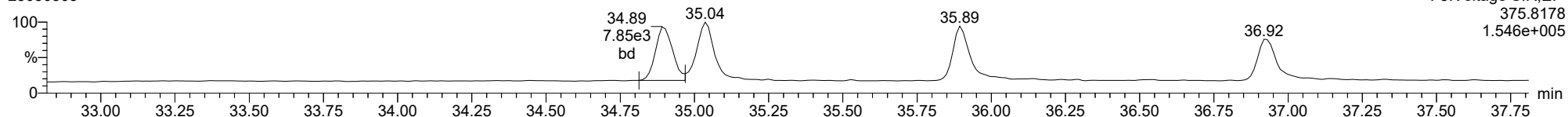
**123478-HxCDF**

23030305



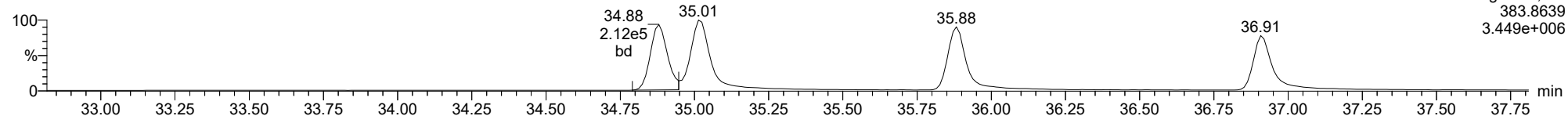
**123478-HxCDF**

23030305



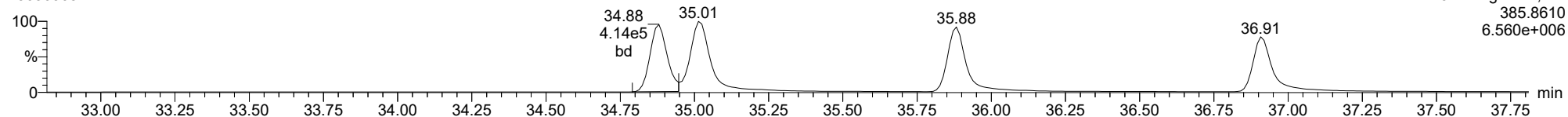
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23030305



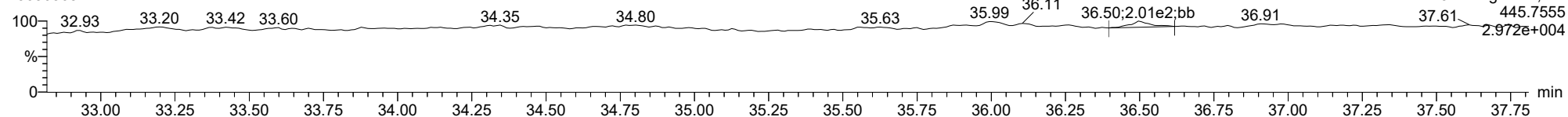
**13C-123478-HxCDF**

23030305



**FUNCTION3 OCDPE**

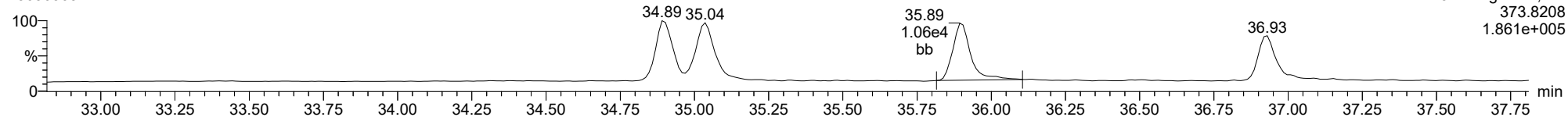
23030305



ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

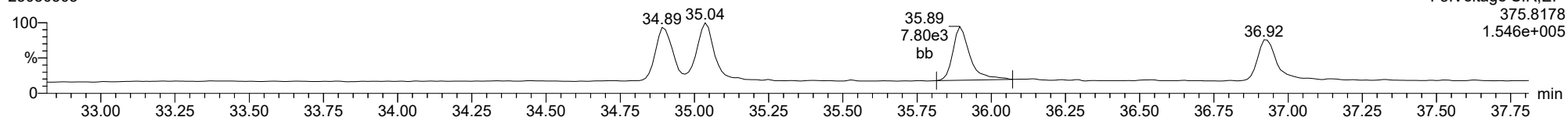
**234678-HxCDF**

23030305



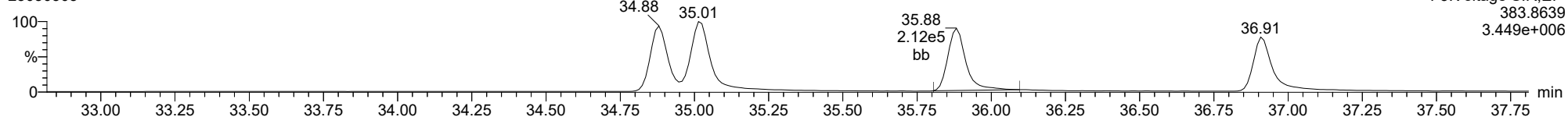
**234678-HxCDF**

23030305



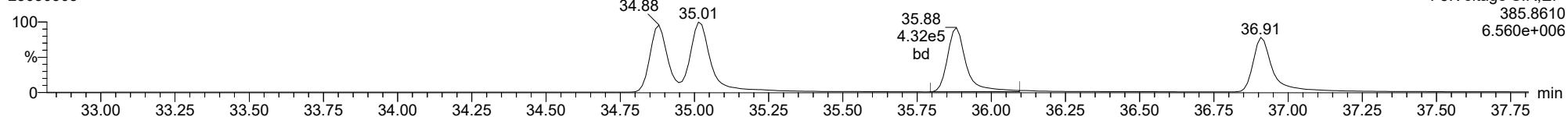
**13C-234678-HxCDF**

23030305



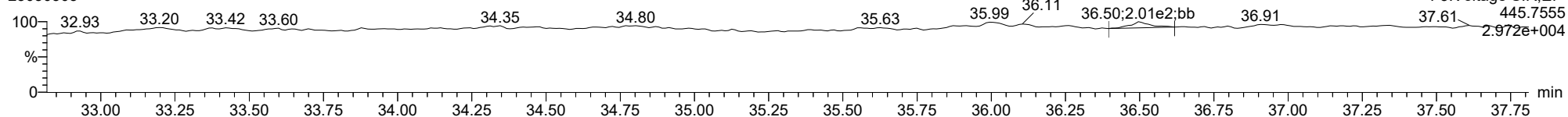
**13C-234678-HxCDF**

23030305



**FUNCTION3 OCDPE**

23030305

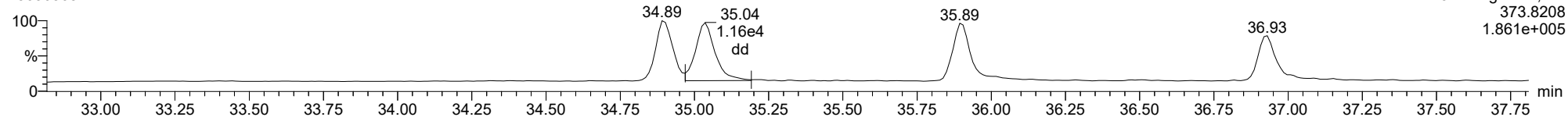




ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

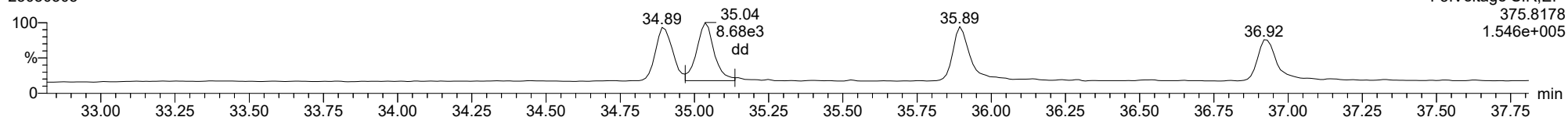
**123678-HxCDF**

23030305



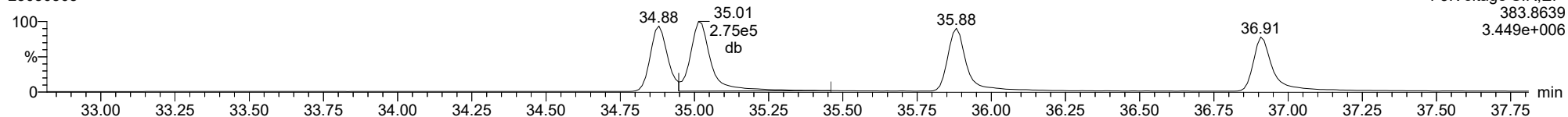
**123678-HxCDF**

23030305



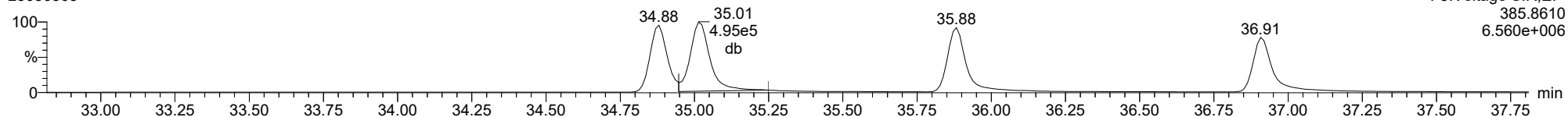
**13C-123678-HxCDF**

23030305



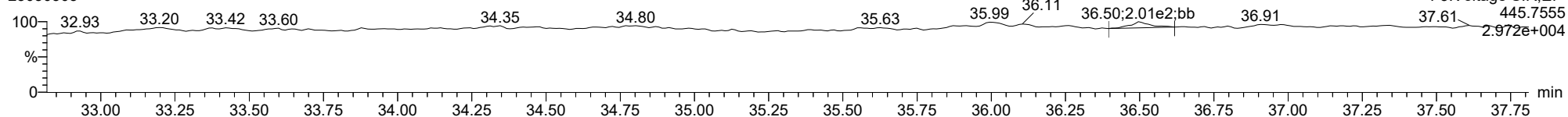
**13C-123678-HxCDF**

23030305



**FUNCTION3 OCDPE**

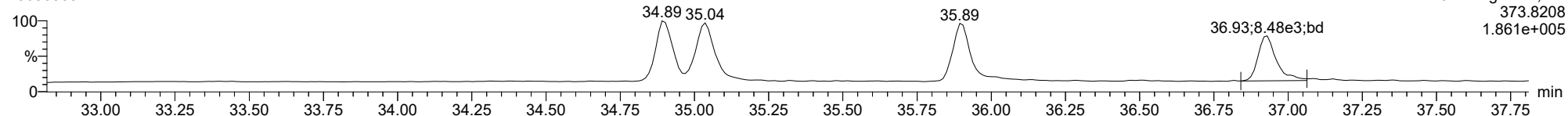
23030305



ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

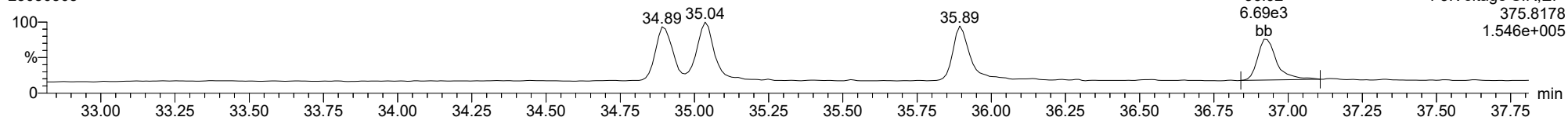
**123789-HxCDF**

23030305



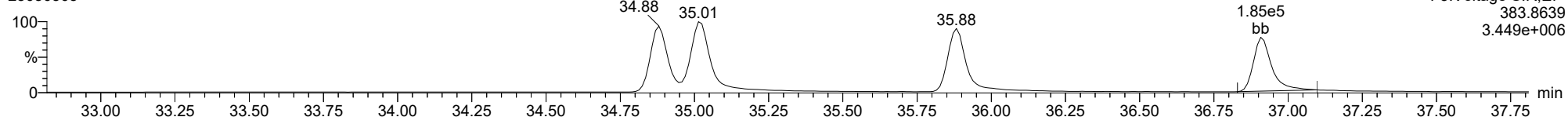
**123789-HxCDF**

23030305



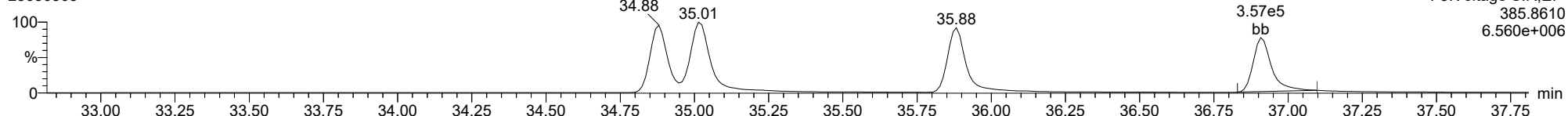
**13C-123789-HxCDF**

23030305



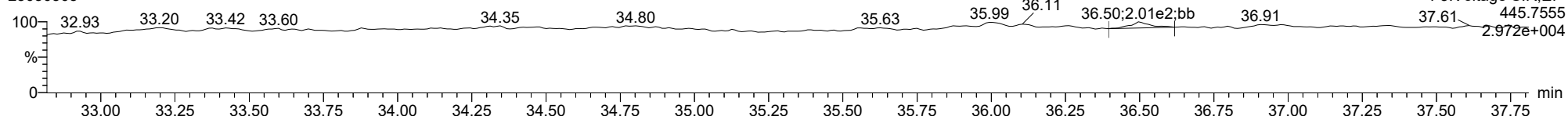
**13C-123789-HxCDF**

23030305



**FUNCTION3 OCDPE**

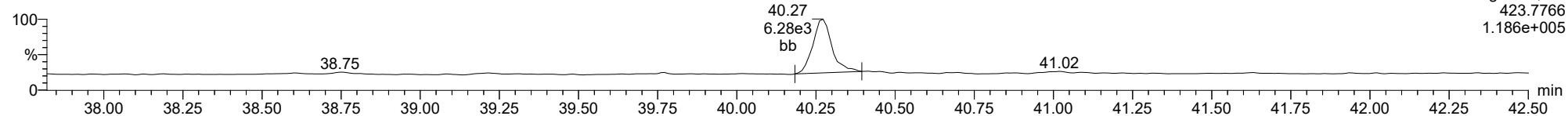
23030305



ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

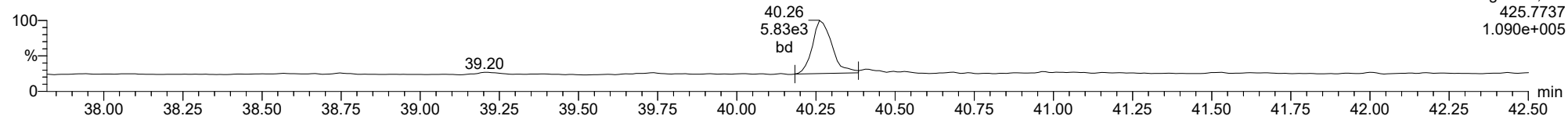
**1234678-HpCDD**

23030305



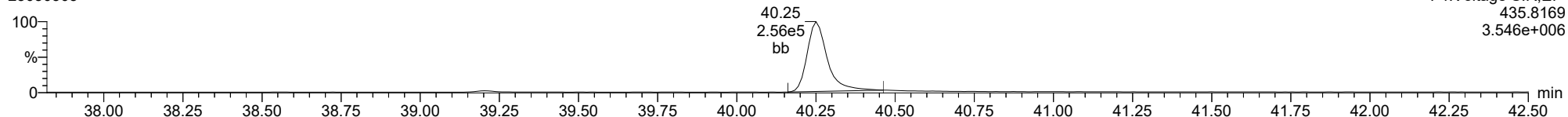
**1234678-HpCDD**

23030305



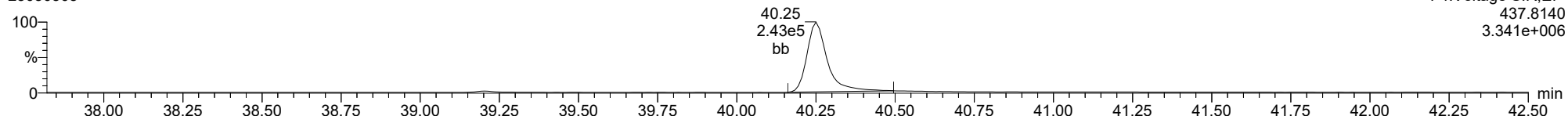
**13C-1234678-HpCDD**

23030305



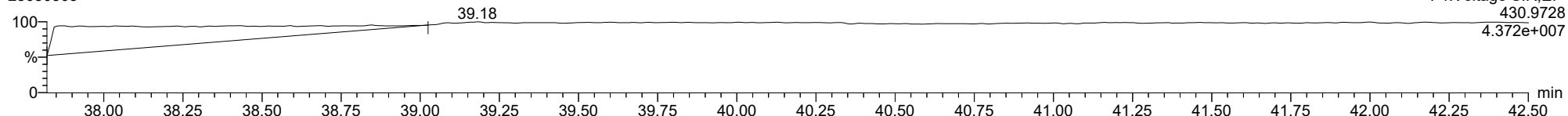
**13C-1234678-HpCDD**

23030305



**FUNCTION4 PFK**

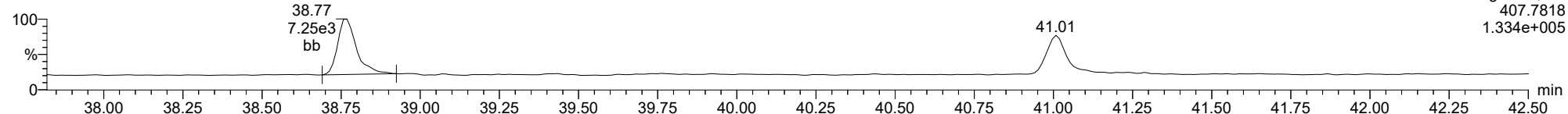
23030305



ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

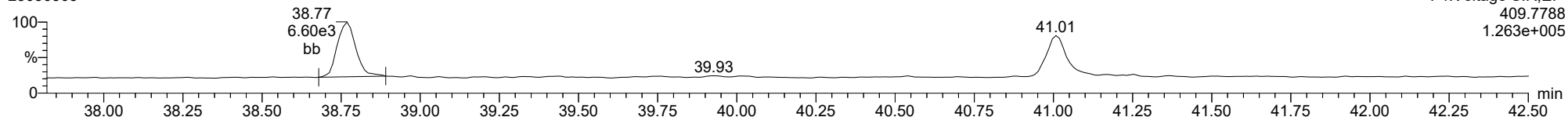
1234678-HpCDF

23030305



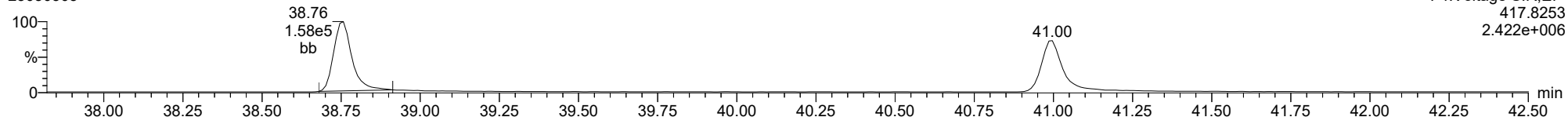
1234678-HpCDF

23030305



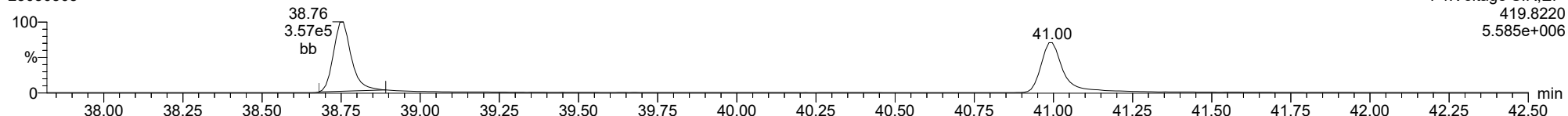
13C-1234678-HpCDF

23030305



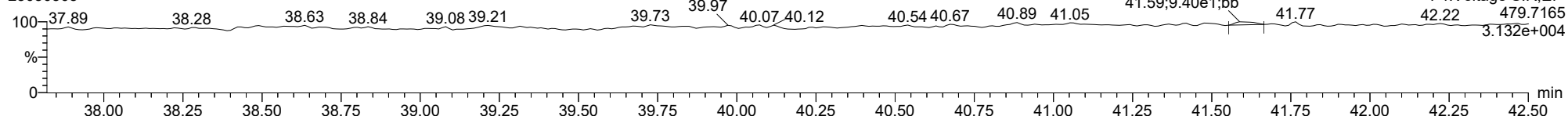
13C-1234678-HpCDF

23030305



FUNCTION4 NCDPE

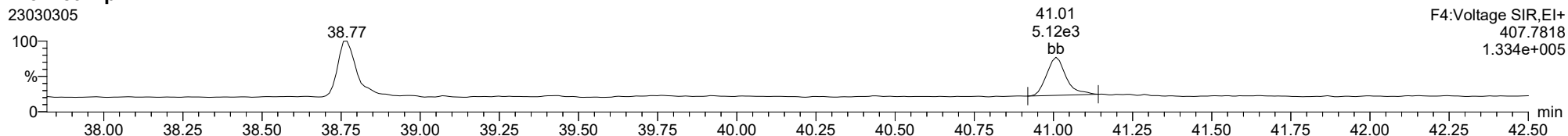
23030305



ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF

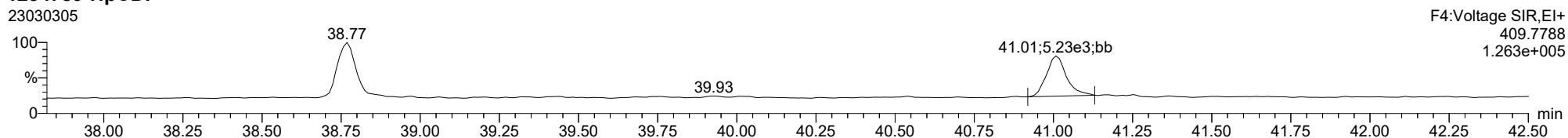
23030305



F4:Voltage SIR,EI+  
409.7818  
1.334e+005

1234789-HpCDF

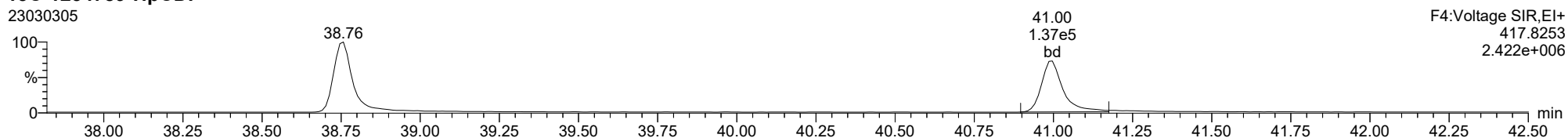
23030305



F4:Voltage SIR,EI+  
409.7788  
1.263e+005

13C-1234789-HpCDF

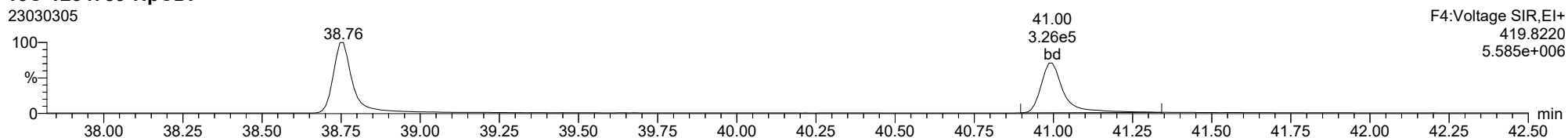
23030305



F4:Voltage SIR,EI+  
417.8253  
2.422e+006

13C-1234789-HpCDF

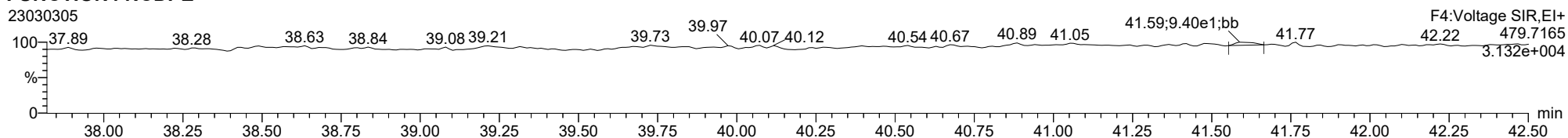
23030305



F4:Voltage SIR,EI+  
419.8220  
5.585e+006

FUNCTION4 NCDPE

23030305



F4:Voltage SIR,EI+  
42.22  
479.7165  
3.132e+004

ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

**OCDD**

23030305

100  
%  
0

45.00;8.58e3;bd

F5:Voltage SIR,EI+  
457.7377  
1.243e+005

42.51  
42.60 42.80 43.00 43.20 43.40 43.60 43.80 44.00 44.20 44.40 44.60 44.80 45.00 45.20 45.40 45.60 45.80 46.00 min

**OCDD**

23030305

100  
%  
0

45.00;9.68e3;bb

F5:Voltage SIR,EI+  
459.7348  
1.384e+005

42.51  
42.60 42.80 43.00 43.20 43.40 43.60 43.80 44.00 44.20 44.40 44.60 44.80 45.00 45.20 45.40 45.60 45.80 46.00 min

**13C-OCDD**

23030305

100  
%  
0

44.98;3.39e5;bb

F5:Voltage SIR,EI+  
469.7779  
3.894e+006

42.60 42.80 43.00 43.20 43.40 43.60 43.80 44.00 44.20 44.40 44.60 44.80 45.00 45.20 45.40 45.60 45.80 46.00 min

**13C-OCDD**

23030305

100  
%  
0

44.98;3.82e5;bb

F5:Voltage SIR,EI+  
471.7750  
4.349e+006

42.60 42.80 43.00 43.20 43.40 43.60 43.80 44.00 44.20 44.40 44.60 44.80 45.00 45.20 45.40 45.60 45.80 46.00 min

**FUNCTIONS PFK**

23030305

100  
%  
0

43.52

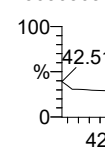
F5:Voltage SIR,EI+  
480.9696  
2.456e+007

42.60 42.80 43.00 43.20 43.40 43.60 43.80 44.00 44.20 44.40 44.60 44.80 45.00 45.20 45.40 45.60 45.80 46.00 min

ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

**OCDF**

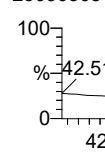
23030305



F5:Voltage SIR,EI+  
441.7428  
9.546e+004

**OCDF**

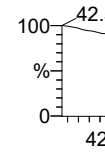
23030305



F5:Voltage SIR,EI+  
443.7399  
1.080e+005

**FUNCTION5 DCDPE**

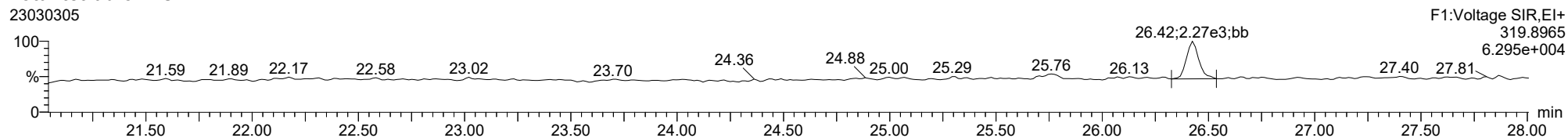
23030305



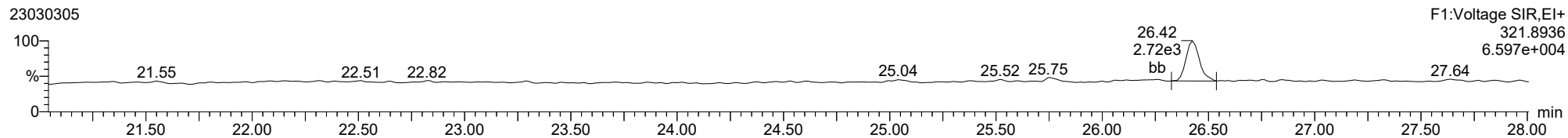
F5:Voltage SIR,EI+  
513.6775  
3.020e+004

ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

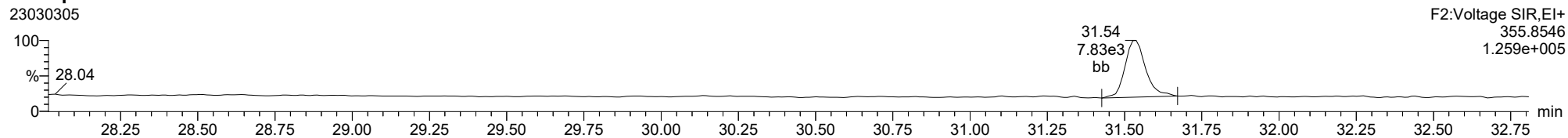
**Total-tetradioxins**



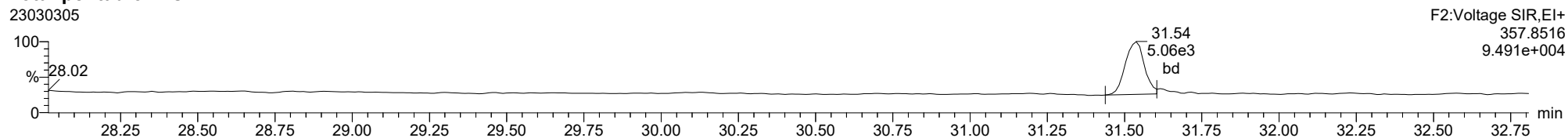
**Total-tetradioxins**



**Total-pentadioxins**



**Total-pentadioxins**

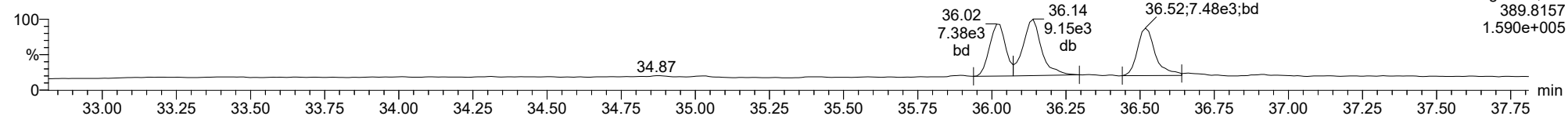




ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

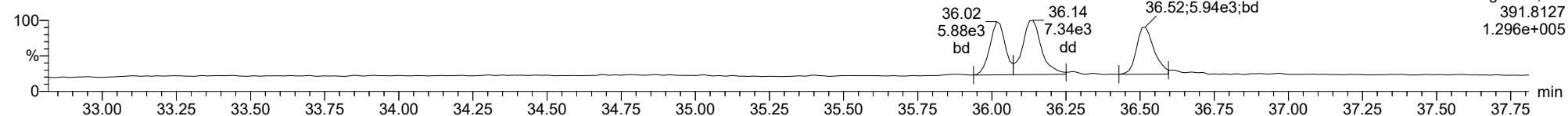
**Total-hexadioxins**

23030305



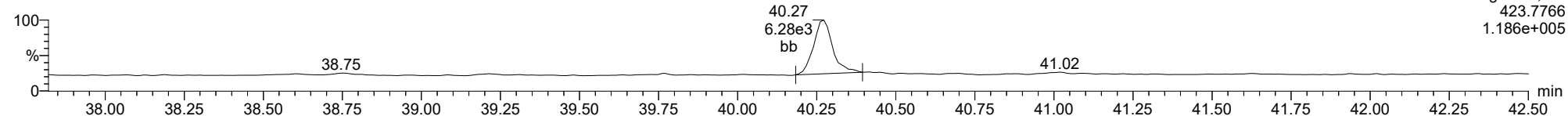
**Total-hexadioxins**

23030305



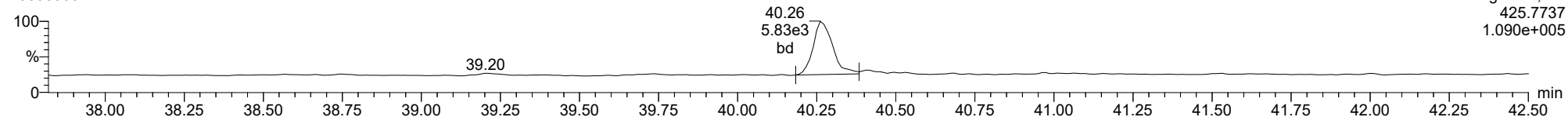
**Total-heptadioxins**

23030305



**Total-heptadioxins**

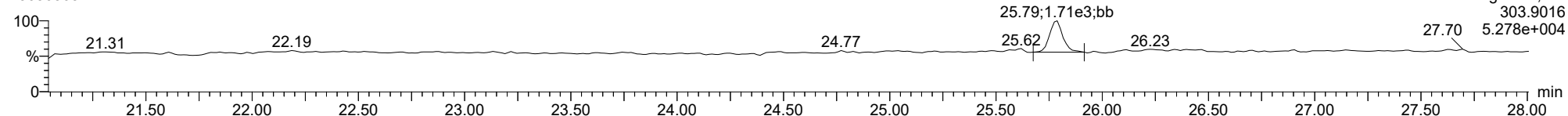
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ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

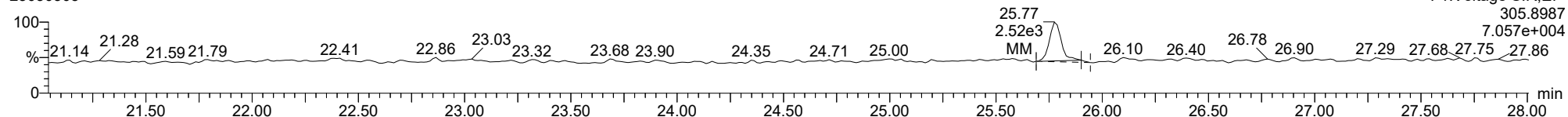
**Total-tetrafurans**

23030305



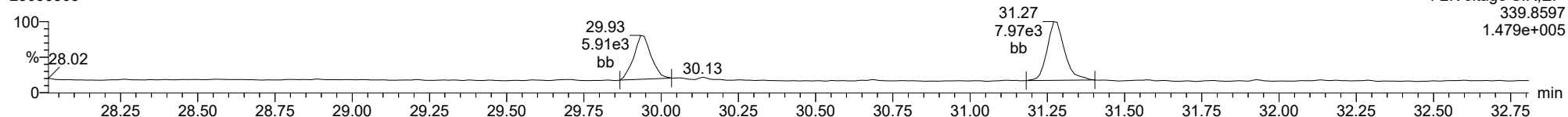
**Total-tetrafurans**

23030305



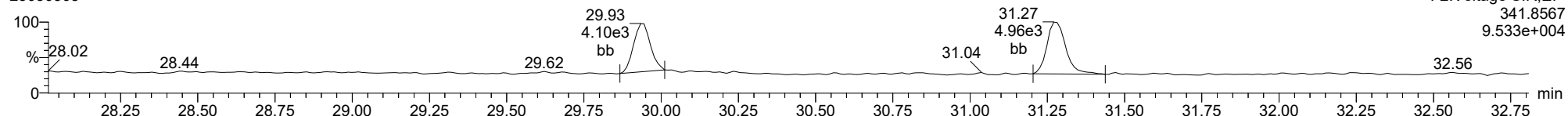
**Total-pentafurans**

23030305



**Total-pentafurans**

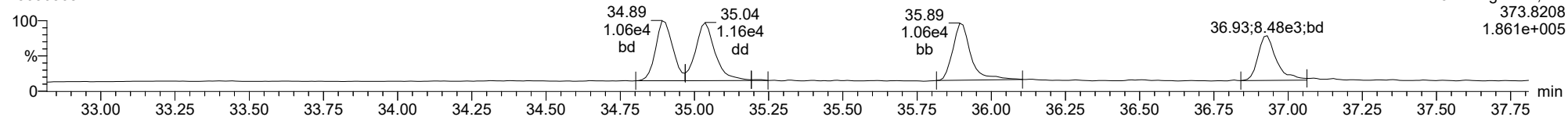
23030305



ID: CS1CW, Name: 23030305, Date: 03-Mar-2023, Time: 12:23:58, Conditions: AUTOSPEC01, User: pk

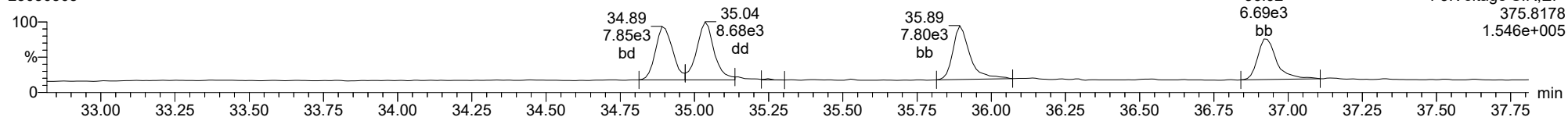
**Total-hexafurans**

23030305



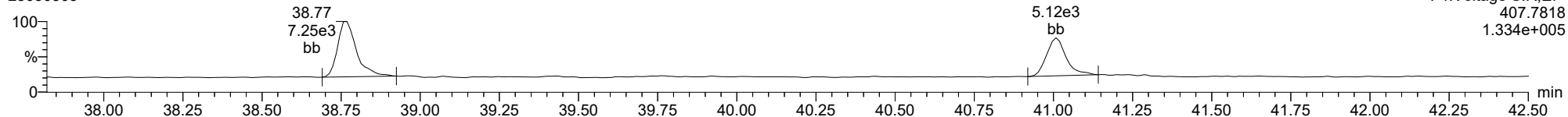
**Total-hexafurans**

23030305



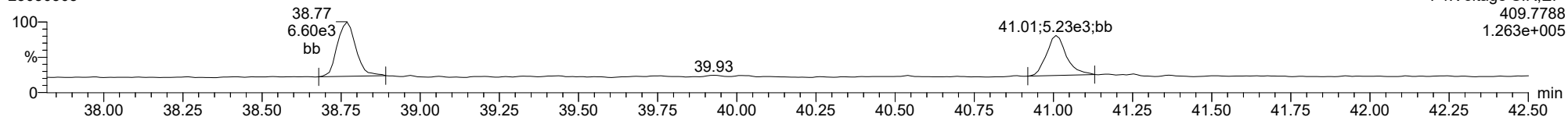
**Total-heptafurans**

23030305



**Total-heptafurans**

23030305



Dataset: T:\Autospec\Processed Data Batch\230303ICIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:24 Pacific Standard Time

**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS2CW, **Name:** 23030306, **Date:** 03-Mar-2023, **Time:** 13:16:24, **Conditions:** AUTOSPEC01, **User:** pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.789	1.001	8.311e3	1.080e4	0.702	0.769	0.770	1017	2375	1.17e5	1.59e5	114.9	67.2	NO	bd	bb	1.942
12378-PeCDF	29.945	1.001	4.669e4	2.820e4	0.679	1.656	1.550	1114	1452	6.51e5	4.26e5	583.9	293.2	NO	bd	bb	10.465
23478-PeCDF	31.282	1.000	4.676e4	2.892e4	0.786	1.617	1.550	1114	1452	6.63e5	4.21e5	595.0	289.8	NO	bb	bb	10.293
123478-HxCDF	34.903	1.000	5.097e4	3.855e4	1.166	1.322	1.240	1081	974	7.67e5	5.88e5	709.2	604.2	NO	bd	bd	9.861
234678-HxCDF	35.906	1.000	4.287e4	3.364e4	1.140	1.274	1.240	1081	974	6.16e5	4.95e5	570.0	508.0	NO	bd	bb	10.523
123678-HxCDF	35.048	1.001	5.830e4	4.380e4	1.091	1.331	1.240	1081	974	7.78e5	6.16e5	719.4	632.0	NO	dd	db	10.775
123789-HxCDF	36.942	1.001	3.050e4	2.273e4	1.137	1.342	1.240	1081	974	4.14e5	3.24e5	383.3	332.2	NO	bb	bb	9.945
1234678-HpCDF	38.780	1.001	2.871e4	2.660e4	1.003	1.079	1.050	1234	1299	4.33e5	4.29e5	350.5	330.3	NO	bd	bb	10.087
1234789-HpCDF	41.020	1.000	2.198e4	2.032e4	0.953	1.082	1.050	1234	1299	3.09e5	2.76e5	250.5	212.3	NO	bb	bb	10.556
OCDF	45.247	1.006	3.160e4	3.327e4	0.778	0.950	0.890	832	1108	3.53e5	3.88e5	424.8	350.5	NO	bd	bb	19.690
2378-TCDD	26.438	1.001	9.033e3	1.299e4	1.149	0.696	0.770	1078	937	1.34e5	1.84e5	124.1	196.6	NO	bb	bb	2.068
12378-PeCDD	31.538	1.000	4.287e4	2.877e4	1.022	1.490	1.550	1012	882	6.26e5	3.88e5	618.4	440.6	NO	bb	bb	9.981
123478-HxCDD	36.028	1.001	3.011e4	2.566e4	0.996	1.173	1.240	1087	1355	4.81e5	4.17e5	442.1	307.5	NO	bd	bd	9.781
123678-HxCDD	36.140	1.000	3.660e4	2.810e4	1.001	1.303	1.240	1087	1355	5.13e5	3.98e5	471.9	293.4	NO	dd	db	9.830
123789-HxCDD	36.530	1.011	2.694e4	2.285e4	0.907	1.179	1.240	1087	1355	3.87e5	3.22e5	355.7	237.4	NO	bb	bb	8.921
1234678-HpCDD	40.273	1.000	2.448e4	2.664e4	1.039	0.919	1.050	853	881	3.43e5	3.58e5	402.1	405.9	NO	bb	bd	10.011
OCDD	45.009	1.000	3.531e4	4.015e4	0.920	0.879	0.890	1050	1012	4.08e5	4.99e5	388.3	492.6	NO	bb	bb	19.363
13C-2378-TCDF	25.774	1.007	6.035e5	7.993e5	1.620	0.755	0.770	2457	1835	8.64e6	1.14e7	3516.1	6186.3	NO	bb	bb	103.115
13C-12378-PeCDF	29.923	1.169	6.526e5	4.010e5	1.240	1.628	1.550	3002	2090	8.73e6	5.82e6	2907.1	2783.7	NO	bb	bb	101.148
13C-23478-PeCDF	31.271	1.221	5.554e5	3.799e5	1.118	1.462	1.550	3002	2090	8.01e6	5.41e6	2667.8	2586.4	NO	bb	bb	99.644
13C-123478-HxCDF	34.892	0.956	2.641e5	5.144e5	1.168	0.513	0.510	1857	2488	3.90e6	7.62e6	2100.8	3063.0	NO	bd	bd	129.584
13C-123678-HxCDF	35.026	0.959	2.932e5	5.755e5	1.386	0.510	0.510	1857	2488	4.18e6	8.13e6	2249.4	3269.5	NO	db	db	121.832
13C-234678-HxCDF	35.895	0.983	2.180e5	4.199e5	1.129	0.519	0.510	1857	2488	3.14e6	6.08e6	1689.2	2442.9	NO	bb	bb	109.838
13C-123789-HxCDF	36.920	1.011	1.570e5	3.137e5	0.932	0.501	0.510	1857	2488	2.29e6	4.45e6	1232.1	1790.1	NO	bb	bb	98.225
13C-1234678-HpCDF	38.758	1.062	1.644e5	3.823e5	0.895	0.430	0.440	2012	3375	2.57e6	5.95e6	1277.0	1763.6	NO	bb	bb	118.766
13C-1234789-HpCDF	40.998	1.123	1.271e5	2.934e5	0.770	0.433	0.440	2012	3375	1.71e6	4.02e6	850.7	1191.4	NO	bb	bb	106.228
13C-1234-TCDD	25.605	0.000	3.763e5	4.634e5	1.000	0.812	0.770	2552	2183	5.75e6	7.05e6	2254.8	3231.1	NO	bb	bb	100.000
13C-2378-TCDD	26.410	1.031	4.085e5	5.183e5	1.152	0.788	0.770	2552	2183	5.98e6	7.56e6	2342.4	3461.2	NO	bb	bb	95.779
13C-12378-PeCDD	31.527	1.231	4.337e5	2.688e5	0.829	1.614	1.550	1077	1542	6.15e6	3.74e6	5715.6	2425.2	NO	bb	bb	100.933
13C-123478-HxCDD	36.006	0.986	3.223e5	2.505e5	0.995	1.287	1.240	2237	1883	4.87e6	3.76e6	2175.2	1999.6	NO	bd	bd	111.924
13C-123678-HxCDD	36.129	0.990	3.608e5	2.967e5	1.157	1.216	1.240	2237	1883	5.10e6	4.02e6	2277.5	2137.4	NO	db	db	110.547
13C-1234678-HpCDD	40.262	1.103	2.573e5	2.341e5	0.840	1.099	1.050	2349	1481	3.41e6	3.22e6	1450.8	2172.3	NO	bd	bb	113.737
13C-OCDD	44.991	1.232	4.017e5	4.455e5	0.767	0.902	0.890	2278	1800	4.53e6	5.05e6	1990.6	2807.7	NO	bb	bb	214.651
13C-123789-HxCDD	36.507	0.000	2.902e5	2.240e5	1.000	1.296	1.240	2237	1883	4.20e6	3.27e6	1878.6	1737.5	NO	bb	bb	100.000
37CL-2378-TCDD	26.424	1.032	1.977e4		1.288			2484		2.93e5		117.9			bb		1.828

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Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					0.802		0.770	1017	2375								
1289-TCDF					0.678		0.770	1017	2375								
13468-PECDF					1.246		1.550	633	1159								
12389-PECDF					0.496		1.550	1114	1452								
123468-HXCDF					1.169		1.240	1081	974								
1368-TCDD					1.015		0.770	1078	937								
1289-TCDD					0.909		0.770	1078	937								
12479-PECDD					2.301		1.550	1012	882								
12389-PECDD					1.184		1.550	1012	882								
124679-HXCDD					1.115		1.240	1087	1355								
1234679-HPCDD					1.137		1.050	853	881								
Total-tetrafurans			8.311e3		0.727			1017		1.17e5							1.942
Total-penta1			0.000e0					633		0.00e0							
Total-pentafurans			9.345e4		0.654			1114		1.31e6							20.758
Total-hexafurans			1.826e5		1.141			1081		2.58e6							41.105
Total-heptafurans			5.070e4		0.978			1234		7.42e5							20.643
Total-Furans			3.667e5		0.922			1017		5.10e6							104.140
Total-tetradoxins			9.033e3		1.024			1078		1.34e5							2.068
Total-pentadoxins			4.287e4		1.502			1012		6.26e5							9.981
Total-hexadoxins			9.364e4		1.005			1087		1.38e6							28.532
Total-heptadoxins			2.448e4		1.088			853		3.43e5							10.011
Total-Dioxins			2.053e5		1.130			1078		2.89e6							69.955
Total-TEQ			5.720e5					1078		7.99e6							174.095
FUNCTION1 PFK			1.995e6					567717		7.69e6							
FUNCTION2 PFK			1.258e5					282093		4.74e6							0.000
FUNCTION3 PFK			4.711e7					382868		3.34e7							0.000
FUNCTION4 PFK			2.092e7					278389		1.32e7							
FUNCTION5 PFK			6.777e4					239180		2.68e6							
FUNCTION1 HXCD...			0.000e0					613		0.00e0							
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			1.408e2					965		2.85e3							0.000
FUNCTION3 OCDPE			0.000e0					571		0.00e0							
FUNCTION4 NCDPE			3.810e2					638		4.39e3							0.000
FUNCTION5 DCDPE			0.000e0					603		0.00e0							

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50

Calibration: T:\Autospec\Curves\230303\CIH.cdb 06 Mar 2023 10:57:27

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**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.79	8.311e3	1.080e4	0.702	0.77	0.77	114.9	YES	NO	bd	bb	1.942

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.28	4.676e4	2.892e4	0.786	1.62	1.55	595.0	YES	NO	bb	bb	10.293
2	12378-PeCDF	29.94	4.669e4	2.820e4	0.679	1.66	1.55	583.9	YES	NO	bd	bb	10.465

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.94	3.050e4	2.273e4	1.137	1.34	1.24	383.3	YES	NO	bb	bb	9.945
2	234678-HxCDF	35.91	4.287e4	3.364e4	1.140	1.27	1.24	570.0	YES	NO	bd	bb	10.523
3	123678-HxCDF	35.05	5.830e4	4.380e4	1.091	1.33	1.24	719.4	YES	NO	dd	db	10.775
4	123478-HxCDF	34.90	5.097e4	3.855e4	1.166	1.32	1.24	709.2	YES	NO	bd	bd	9.861

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.02	2.198e4	2.032e4	0.953	1.08	1.05	250.5	YES	NO	bb	bb	10.556
2	1234678-HpCDF	38.78	2.871e4	2.660e4	1.003	1.08	1.05	350.5	YES	NO	bd	bb	10.087

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.28	4.676e4	2.892e4	0.786	1.62	1.55	595.0	YES	NO	bb	bb	10.293
2	12378-PeCDF	29.94	4.669e4	2.820e4	0.679	1.66	1.55	583.9	YES	NO	bd	bb	10.465
3	2378-TCDF	25.79	8.311e3	1.080e4	0.702	0.77	0.77	114.9	YES	NO	bd	bb	1.942
4	123789-HxCDF	36.94	3.050e4	2.273e4	1.137	1.34	1.24	383.3	YES	NO	bb	bb	9.945
5	234678-HxCDF	35.91	4.287e4	3.364e4	1.140	1.27	1.24	570.0	YES	NO	bd	bb	10.523
6	123678-HxCDF	35.05	5.830e4	4.380e4	1.091	1.33	1.24	719.4	YES	NO	dd	db	10.775
7	123478-HxCDF	34.90	5.097e4	3.855e4	1.166	1.32	1.24	709.2	YES	NO	bd	bd	9.861
8	1234789-HpCDF	41.02	2.198e4	2.032e4	0.953	1.08	1.05	250.5	YES	NO	bb	bb	10.556
9	1234678-HpCDF	38.78	2.871e4	2.660e4	1.003	1.08	1.05	350.5	YES	NO	bd	bb	10.087
10	OCDF	45.25	3.160e4	3.327e4	0.778	0.95	0.89	424.8	YES	NO	bd	bb	19.690

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.44	9.033e3	1.299e4	1.149	0.70	0.77	124.1	YES	NO	bb	bb	2.068

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.54	4.287e4	2.877e4	1.022	1.49	1.55	618.4	YES	NO	bb	bb	9.981

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.53	2.694e4	2.285e4	0.907	1.18	1.24	355.7	YES	NO	bb	bb	8.921
2	123678-HxCDD	36.14	3.660e4	2.810e4	1.001	1.30	1.24	471.9	YES	NO	dd	db	9.830
3	123478-HxCDD	36.03	3.011e4	2.566e4	0.996	1.17	1.24	442.1	YES	NO	bd	bd	9.781

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.27	2.448e4	2.664e4	1.039	0.92	1.05	402.1	YES	NO	bb	bd	10.011

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**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.54	4.287e4	2.877e4	1.022	1.49	1.55	618.4	YES	NO	bb	bb	9.981
2	2378-TCDD	26.44	9.033e3	1.299e4	1.149	0.70	0.77	124.1	YES	NO	bb	bb	2.068
3	123789-HxCDD	36.53	2.694e4	2.285e4	0.907	1.18	1.24	355.7	YES	NO	bb	bb	8.921
4	123678-HxCDD	36.14	3.660e4	2.810e4	1.001	1.30	1.24	471.9	YES	NO	dd	db	9.830
5	123478-HxCDD	36.03	3.011e4	2.566e4	0.996	1.17	1.24	442.1	YES	NO	bd	bd	9.781
6	1234678-HpCDD	40.27	2.448e4	2.664e4	1.039	0.92	1.05	402.1	YES	NO	bb	bd	10.011
7	OCDD	45.01	3.531e4	4.015e4	0.920	0.88	0.89	388.3	YES	NO	bb	bb	19.363

**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.28	4.676e4	2.892e4	0.786	1.62	1.55	595.0	YES	NO	bb	bb	10.293
2	12378-PeCDF	29.94	4.669e4	2.820e4	0.679	1.66	1.55	583.9	YES	NO	bd	bb	10.465
3	2378-TCDF	25.79	8.311e3	1.080e4	0.702	0.77	0.77	114.9	YES	NO	bd	bb	1.942
4	123789-HxCDF	36.94	3.050e4	2.273e4	1.137	1.34	1.24	383.3	YES	NO	bb	bb	9.945
5	234678-HxCDF	35.91	4.287e4	3.364e4	1.140	1.27	1.24	570.0	YES	NO	bd	bb	10.523
6	123678-HxCDF	35.05	5.830e4	4.380e4	1.091	1.33	1.24	719.4	YES	NO	dd	db	10.775
7	123478-HxCDF	34.90	5.097e4	3.855e4	1.166	1.32	1.24	709.2	YES	NO	bd	bd	9.861
8	1234789-HpCDF	41.02	2.198e4	2.032e4	0.953	1.08	1.05	250.5	YES	NO	bb	bb	10.556
9	1234678-HpCDF	38.78	2.871e4	2.660e4	1.003	1.08	1.05	350.5	YES	NO	bd	bb	10.087
10	OCDF	45.25	3.160e4	3.327e4	0.778	0.95	0.89	424.8	YES	NO	bd	bb	19.690
11	12378-PeCDD	31.54	4.287e4	2.877e4	1.022	1.49	1.55	618.4	YES	NO	bb	bb	9.981
12	2378-TCDD	26.44	9.033e3	1.299e4	1.149	0.70	0.77	124.1	YES	NO	bb	bb	2.068
13	123789-HxCDD	36.53	2.694e4	2.285e4	0.907	1.18	1.24	355.7	YES	NO	bb	bb	8.921
14	123678-HxCDD	36.14	3.660e4	2.810e4	1.001	1.30	1.24	471.9	YES	NO	dd	db	9.830
15	123478-HxCDD	36.03	3.011e4	2.566e4	0.996	1.17	1.24	442.1	YES	NO	bd	bd	9.781
16	1234678-HpCDD	40.27	2.448e4	2.664e4	1.039	0.92	1.05	402.1	YES	NO	bb	bd	10.011
17	OCDD	45.01	3.531e4	4.015e4	0.920	0.88	0.89	388.3	YES	NO	bb	bb	19.363

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	25.73	8.333e5					6.7	YES		bb		
2	FUNCTION1 PFK	21.10	1.162e6					6.9	YES		bb		



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**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.61	1.110e4					1.3	NO		bb		0.000
2	FUNCTION2 PFK	28.31	1.183e4					1.5	NO		bb		0.000
3	FUNCTION2 PFK	31.85	7.066e3					1.3	NO		bb		0.000
4	FUNCTION2 PFK	31.75	1.168e4					1.4	NO		bb		0.000
5	FUNCTION2 PFK	30.95	1.613e4					2.1	NO		bb		0.000
6	FUNCTION2 PFK	30.06	7.806e3					1.3	NO		bb		0.000
7	FUNCTION2 PFK	29.77	1.198e4					1.4	NO		bb		0.000
8	FUNCTION2 PFK	29.47	1.476e4					2.1	NO		bb		0.000
9	FUNCTION2 PFK	29.28	1.360e4					2.0	NO		db		0.000
10	FUNCTION2 PFK	29.22	1.980e4					2.4	NO		bd		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.30	3.856e7					44.6	YES		db		0.000
2	FUNCTION3 PFK	33.18	8.558e6					42.7	YES		bd		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.24	1.285e7					8.2	YES		db		
2	FUNCTION4 PFK	38.41	8.070e6					39.3	YES		bd		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	42.68	1.647e4					1.8	NO		bb		
2	FUNCTION5 PFK	45.75	3.282e3					1.0	NO		bb		
3	FUNCTION5 PFK	45.28	6.957e3					1.1	NO		bb		
4	FUNCTION5 PFK	44.90	6.364e3					1.0	NO		bb		
5	FUNCTION5 PFK	44.84	1.531e3					0.5	NO		bb		
6	FUNCTION5 PFK	44.40	6.282e3					1.0	NO		bb		
7	FUNCTION5 PFK	44.21	4.626e3					1.1	NO		bb		
8	FUNCTION5 PFK	44.03	7.842e3					1.2	NO		bb		
9	FUNCTION5 PFK	43.96	6.415e3					1.4	NO		bb		
10	FUNCTION5 PFK	43.84	7.992e3					1.2	NO		bb		

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ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.54	1.408e2					3.0	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.65	1.069e2					1.9	NO		bb		0.000
2	FUNCTION4 NCDPE	40.25	1.358e2					2.2	NO		bb		0.000
3	FUNCTION4 NCDPE	41.02	1.383e2					2.8	NO		bb		0.000

**ETHERS6**

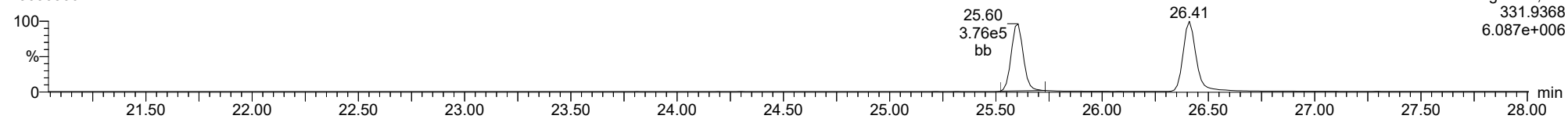
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

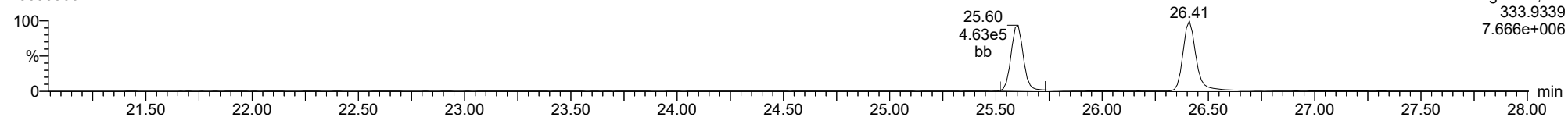
**13C-1234-TCDD**

23030306



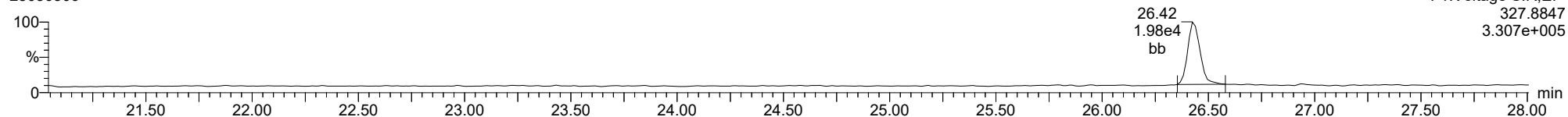
**13C-1234-TCDD**

23030306



**37CL-2378-TCDD**

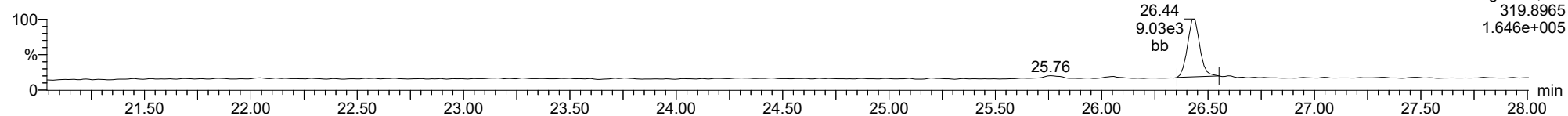
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

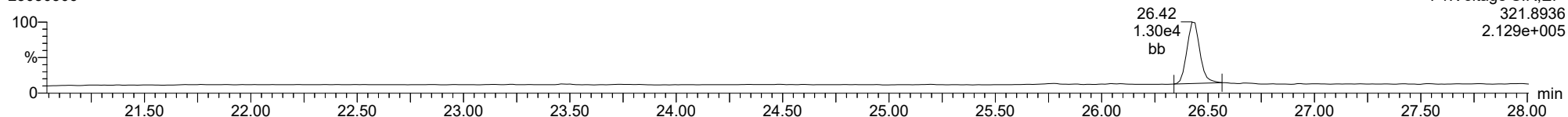
**2378-TCDD**

23030306



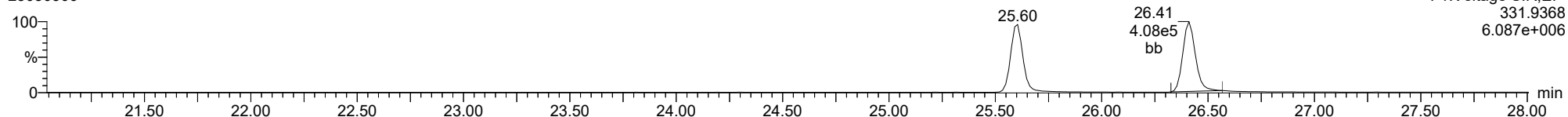
**2378-TCDD**

23030306



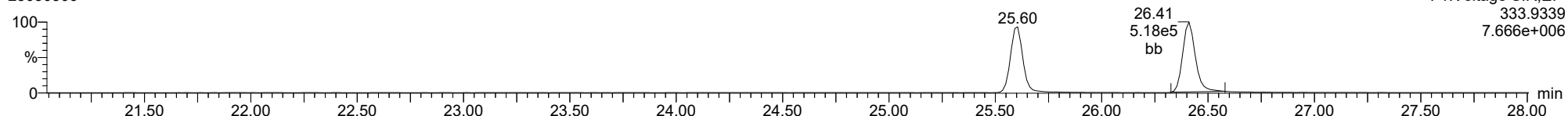
**13C-2378-TCDD**

23030306



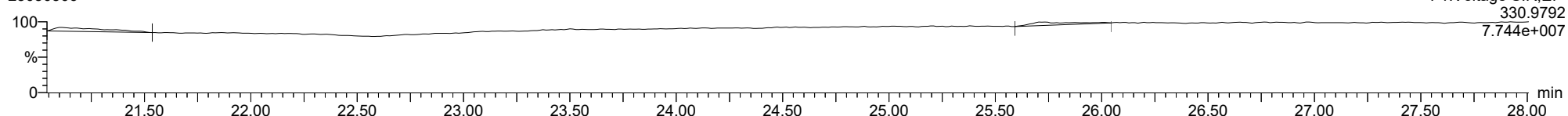
**13C-2378-TCDD**

23030306



**FUNCTION1 PFK**

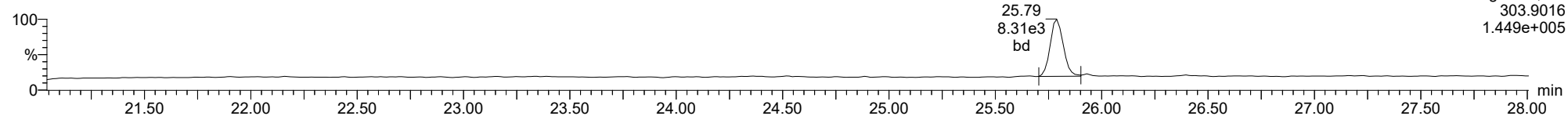
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

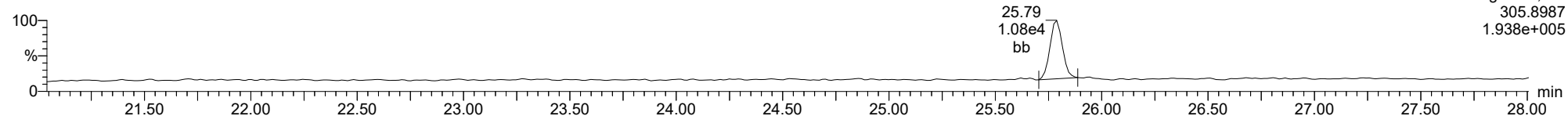
**2378-TCDF**

23030306



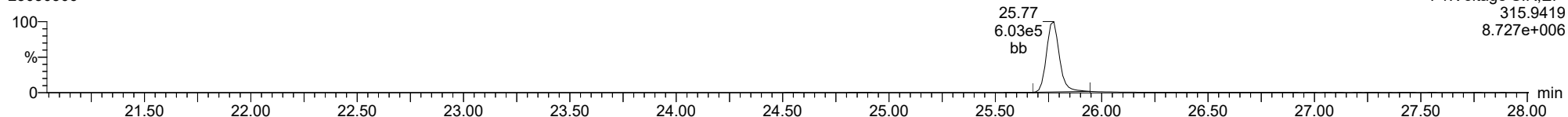
**2378-TCDF**

23030306



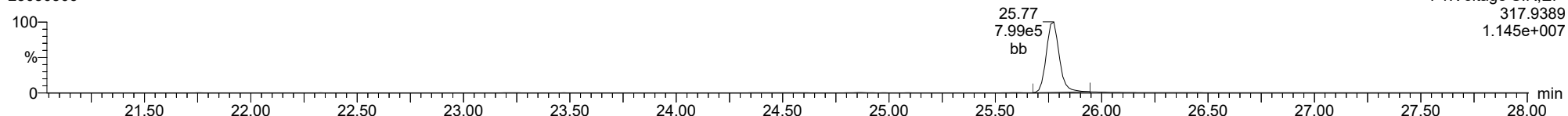
**13C-2378-TCDF**

23030306



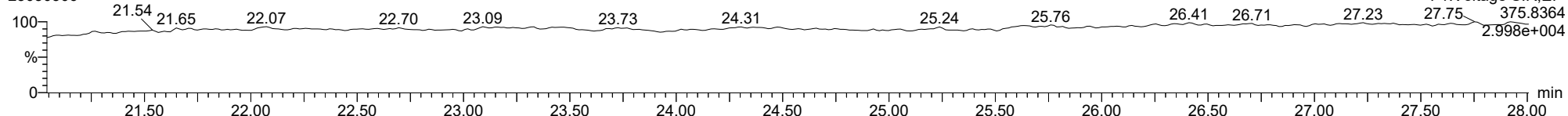
**13C-2378-TCDF**

23030306



**FUNCTION1 HXCDFE**

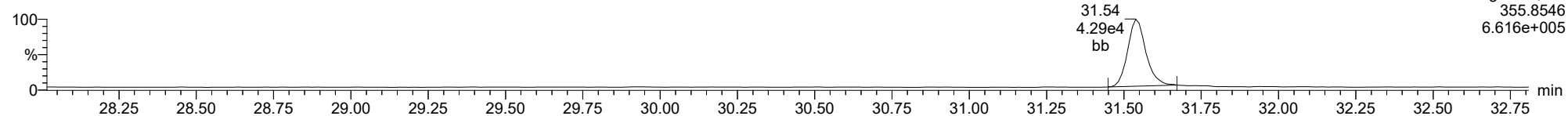
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

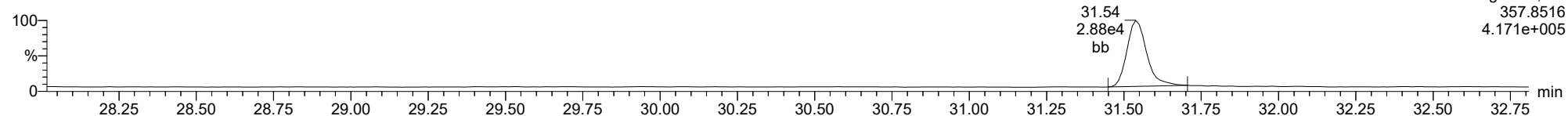
**12378-PeCDD**

23030306



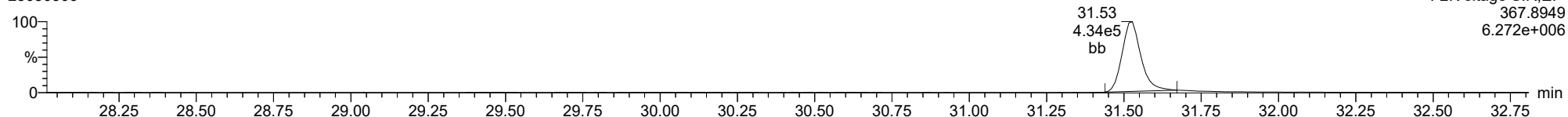
**12378-PeCDD**

23030306



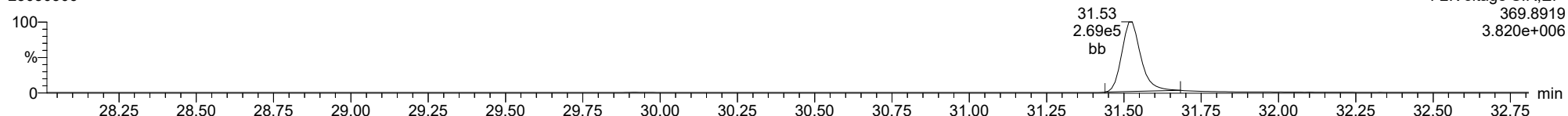
**13C-12378-PeCDD**

23030306



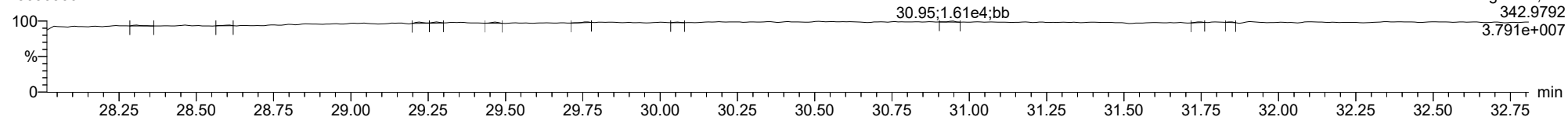
**13C-12378-PeCDD**

23030306



**FUNCTION2 PFK**

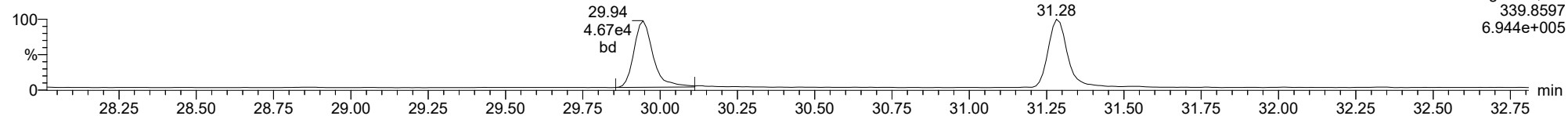
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

**12378-PeCDF**

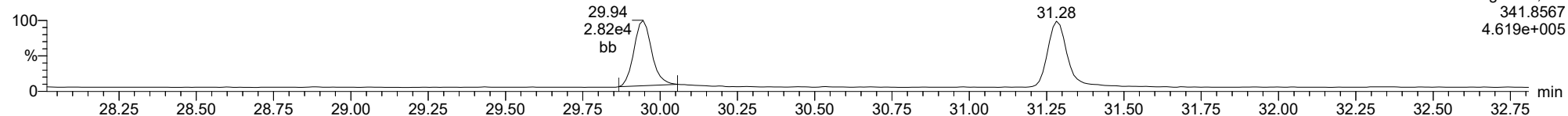
23030306



F2:Voltage SIR,EI+  
339.8597  
6.944e+005

**12378-PeCDF**

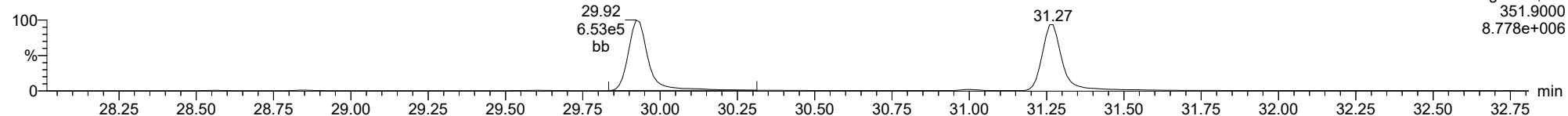
23030306



F2:Voltage SIR,EI+  
341.8567  
4.619e+005

**13C-12378-PeCDF**

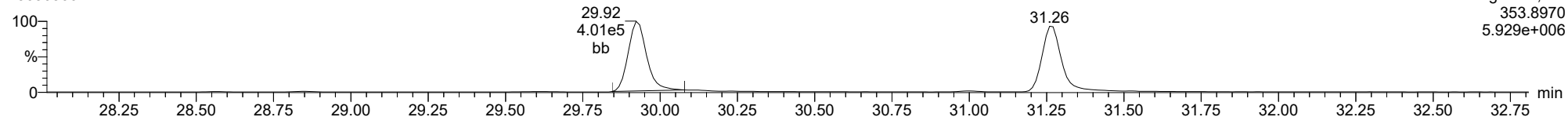
23030306



F2:Voltage SIR,EI+  
351.9000  
8.778e+006

**13C-12378-PeCDF**

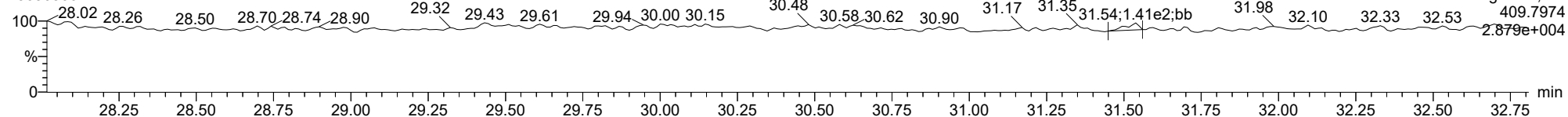
23030306



F2:Voltage SIR,EI+  
353.8970  
5.929e+006

**FUNCTION2 HPCDPE**

23030306

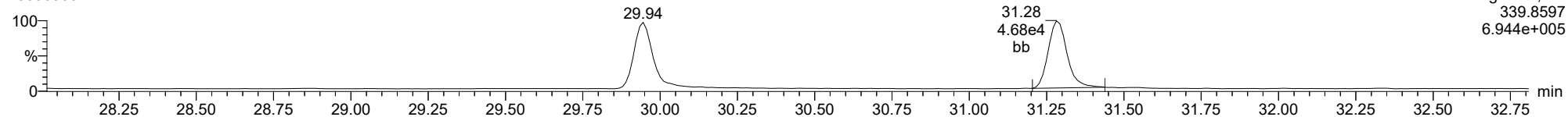


F2:Voltage SIR,EI+  
409.7974  
2.879e+004

ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

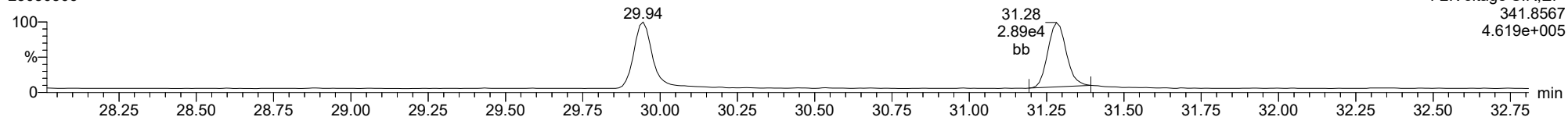
**23478-PeCDF**

23030306



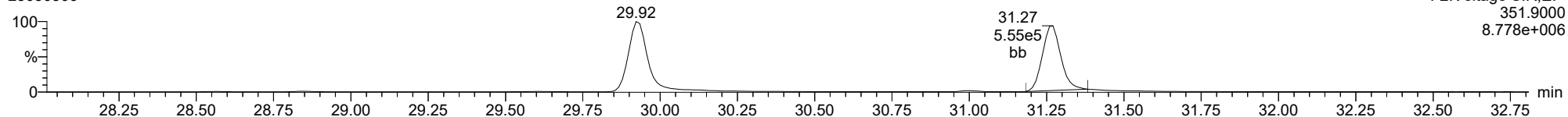
**23478-PeCDF**

23030306



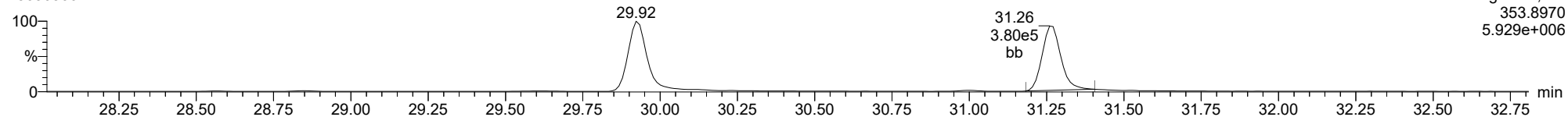
**13C-23478-PeCDF**

23030306



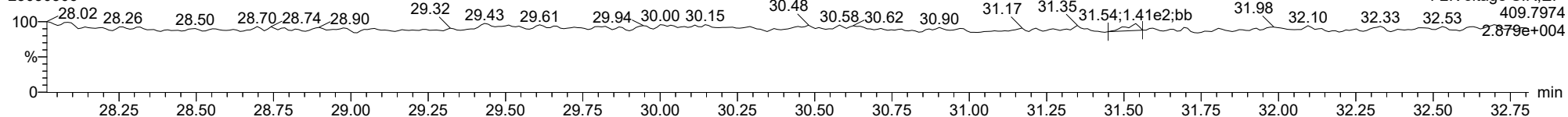
**13C-23478-PeCDF**

23030306



**FUNCTION2 HPCDPE**

23030306

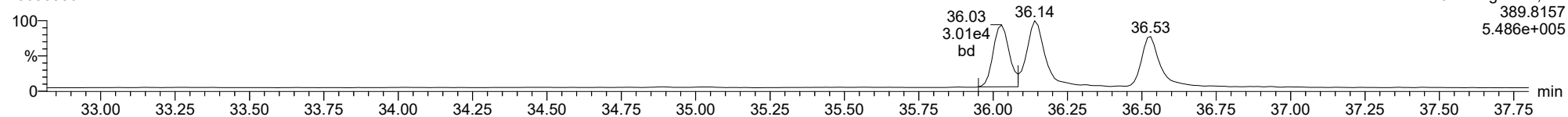




ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

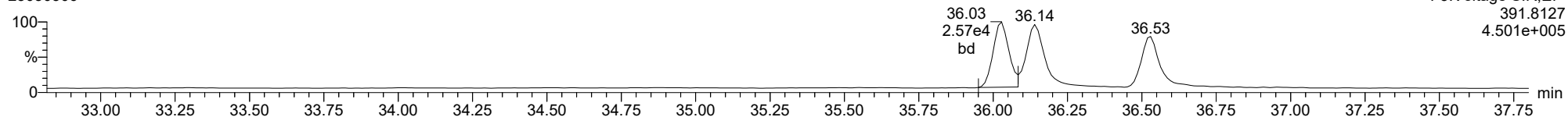
**123478-HxCDD**

23030306



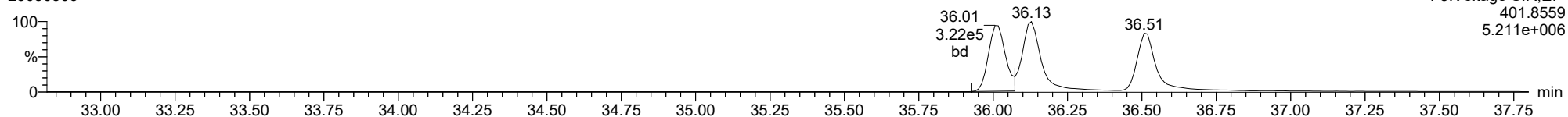
**123478-HxCDD**

23030306



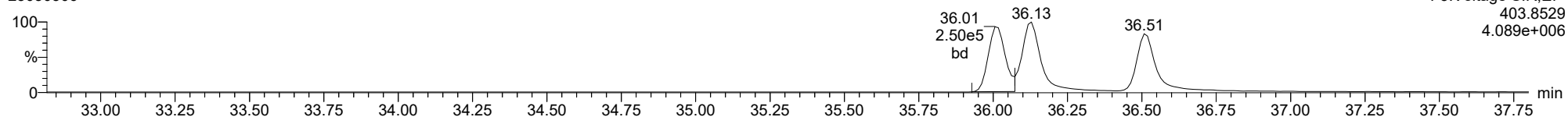
**13C-123478-HxCDD**

23030306



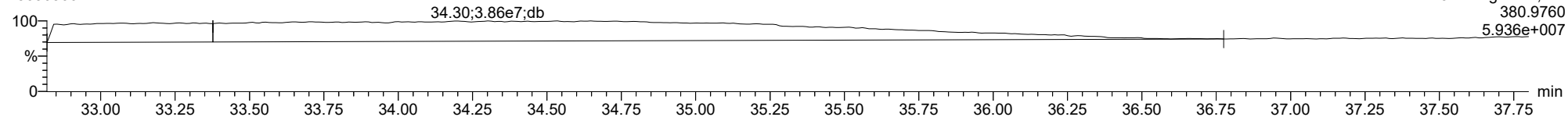
**13C-123478-HxCDD**

23030306



**FUNCTION3 PFK**

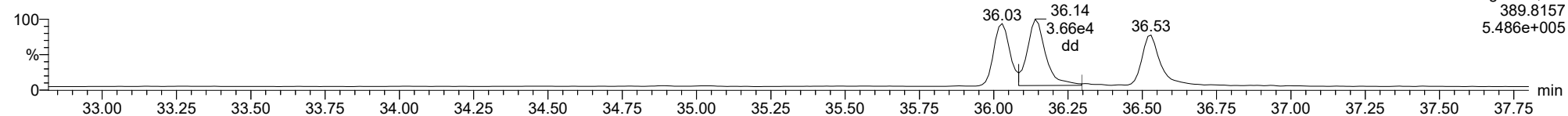
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

**123678-HxCDD**

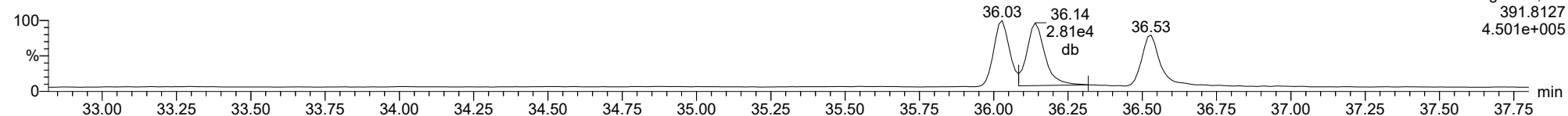
23030306



F3:Voltage SIR,EI+  
389.8157  
5.486e+005

**123678-HxCDD**

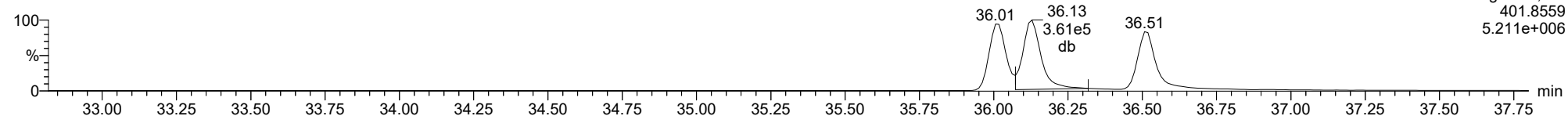
23030306



F3:Voltage SIR,EI+  
391.8127  
4.501e+005

**13C-123678-HxCDD**

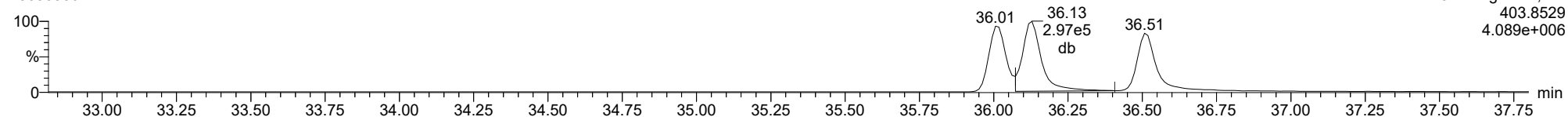
23030306



F3:Voltage SIR,EI+  
401.8559  
5.211e+006

**13C-123678-HxCDD**

23030306

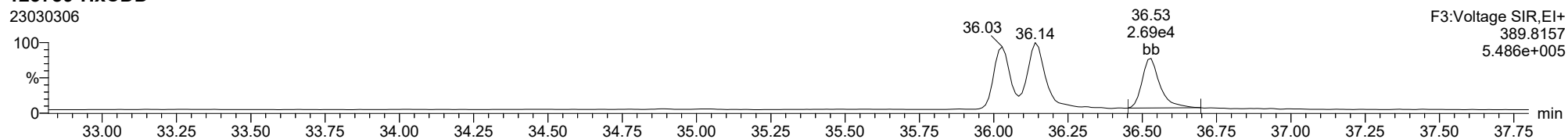


F3:Voltage SIR,EI+  
403.8529  
4.089e+006

ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

**123789-HxCDD**

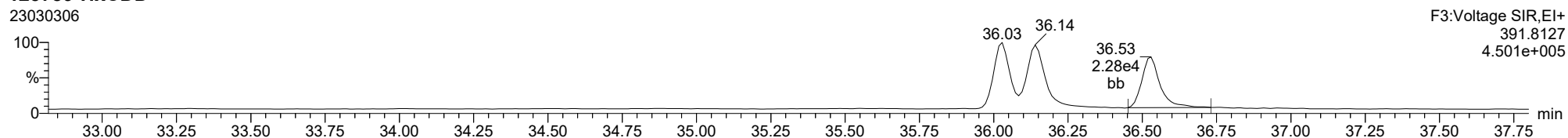
23030306



F3:Voltage SIR,EI+  
389.8157  
5.486e+005

**123789-HxCDD**

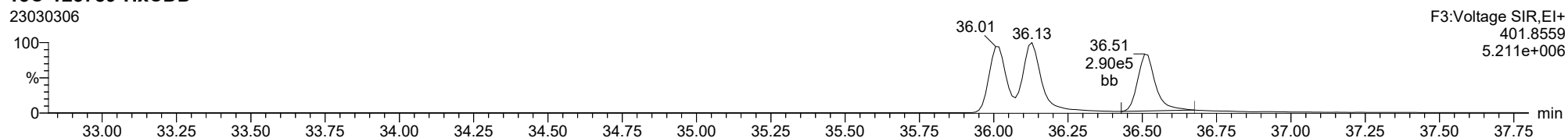
23030306



F3:Voltage SIR,EI+  
391.8127  
4.501e+005

**13C-123789-HxCDD**

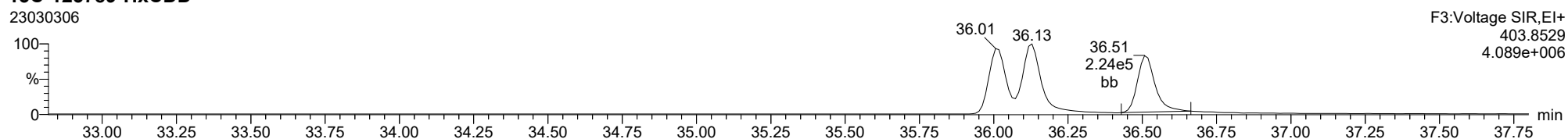
23030306



F3:Voltage SIR,EI+  
401.8559  
5.211e+006

**13C-123789-HxCDD**

23030306

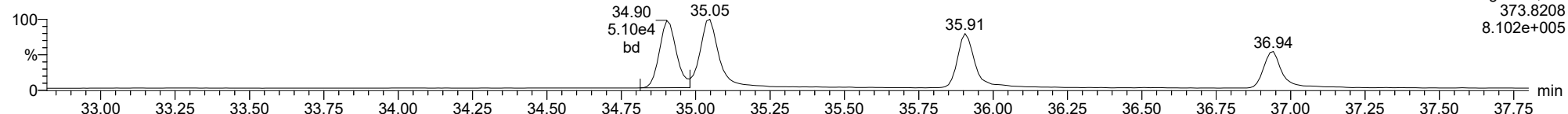


F3:Voltage SIR,EI+  
403.8529  
4.089e+006

ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

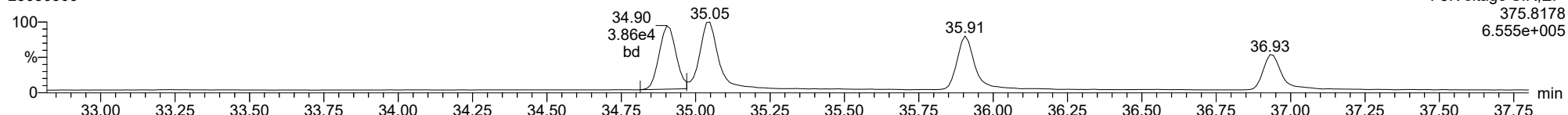
**123478-HxCDF**

23030306



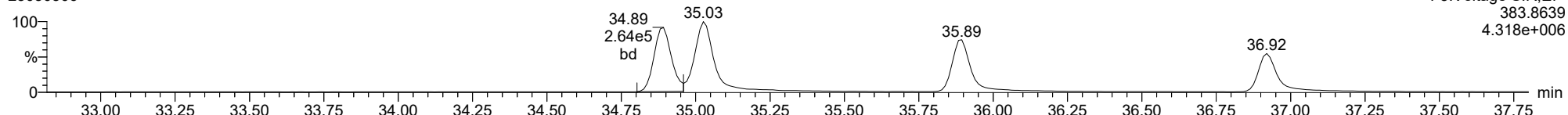
**123478-HxCDF**

23030306



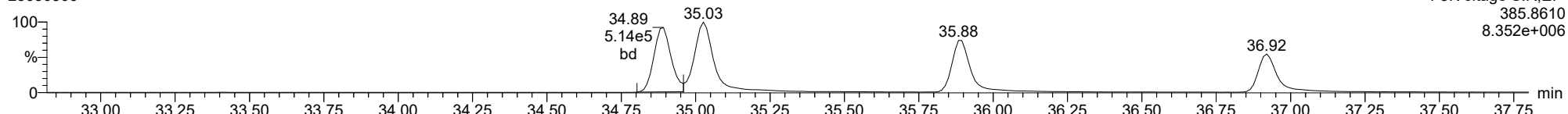
**13C-123478-HxCDF**

23030306



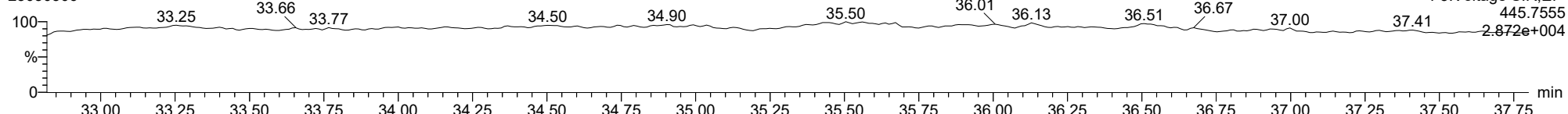
**13C-123478-HxCDF**

23030306



**FUNCTION3 OCDPE**

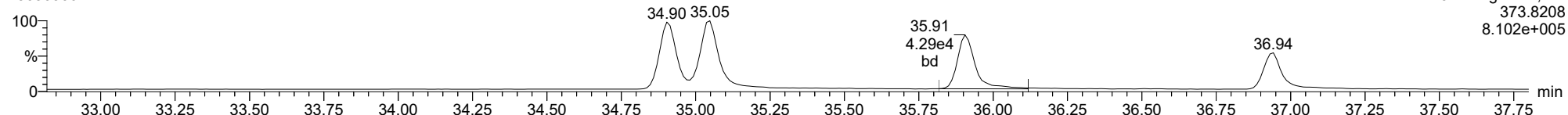
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

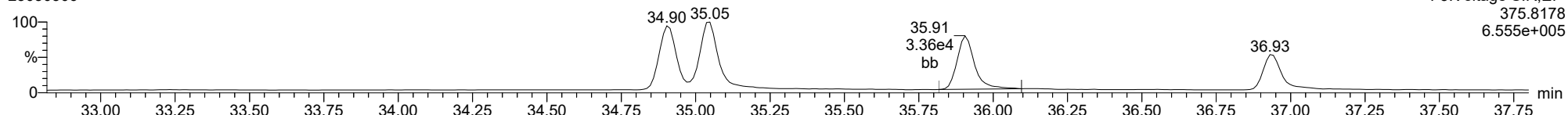
**234678-HxCDF**

23030306



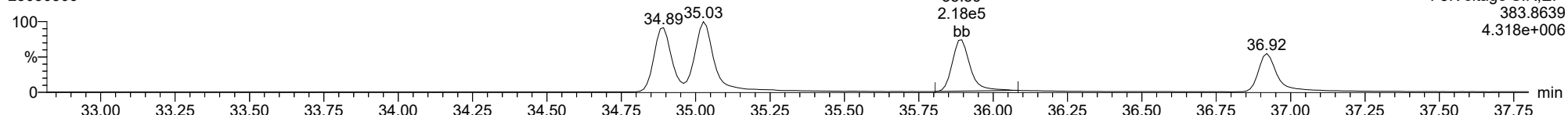
**234678-HxCDF**

23030306



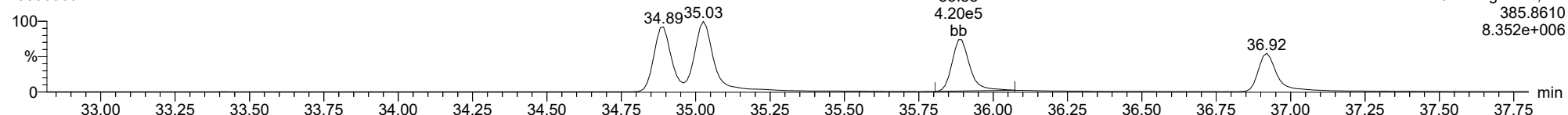
**13C-234678-HxCDF**

23030306



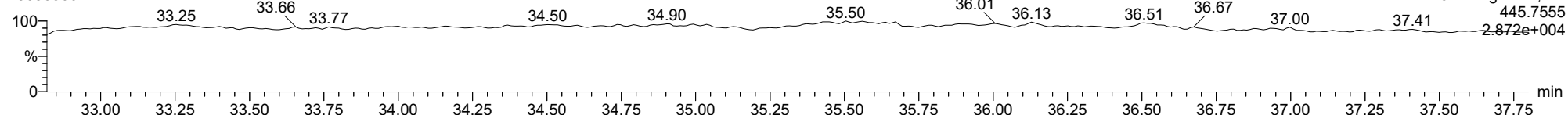
**13C-234678-HxCDF**

23030306



**FUNCTION3 OCDPE**

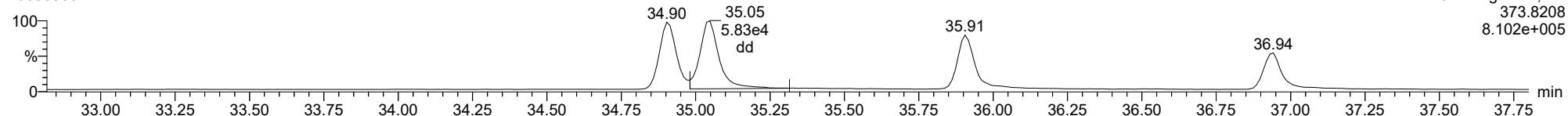
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

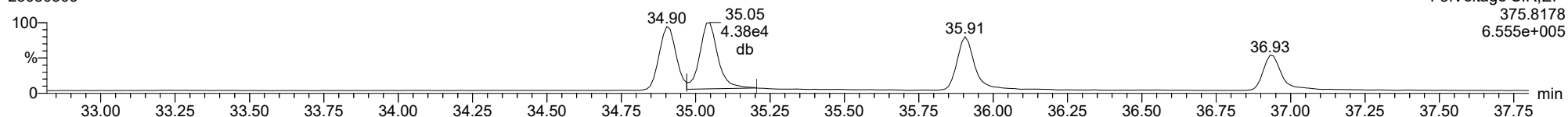
**123678-HxCDF**

23030306



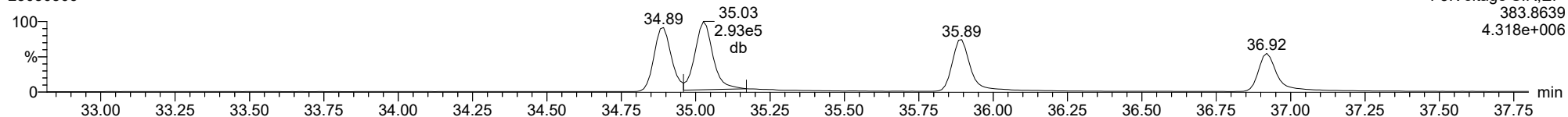
**123678-HxCDF**

23030306



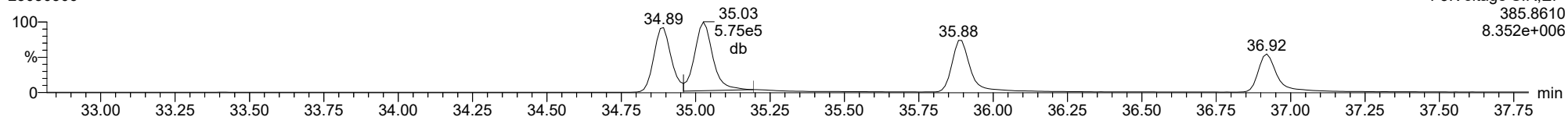
**13C-123678-HxCDF**

23030306



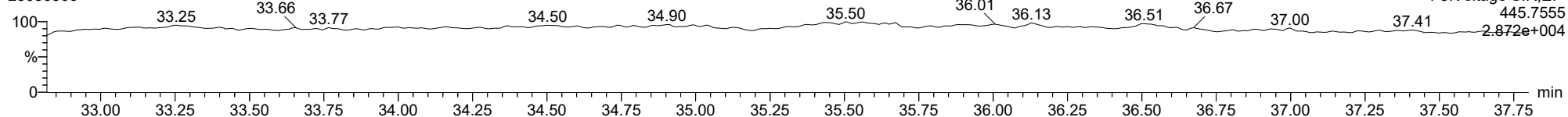
**13C-123678-HxCDF**

23030306



**FUNCTION3 OCDPE**

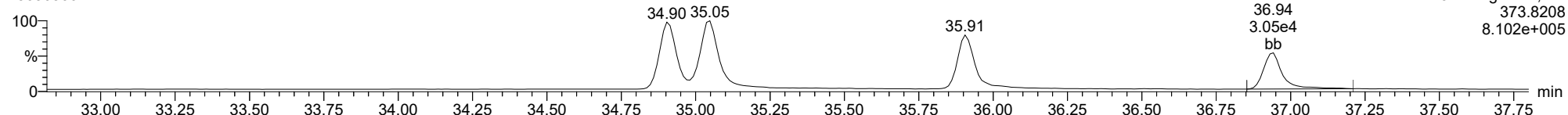
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

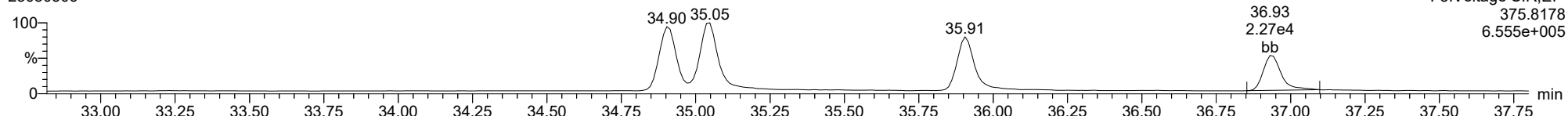
**123789-HxCDF**

23030306



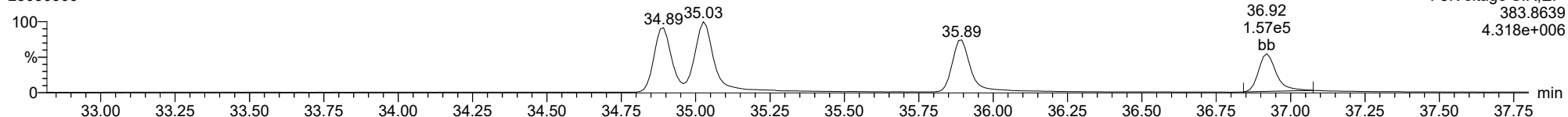
**123789-HxCDF**

23030306



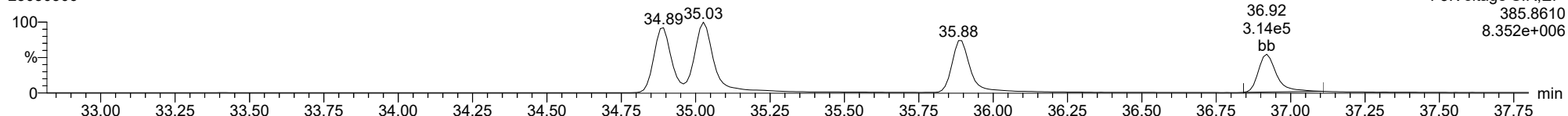
**13C-123789-HxCDF**

23030306



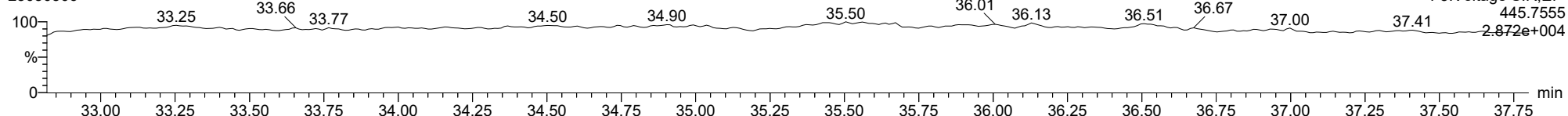
**13C-123789-HxCDF**

23030306



**FUNCTION3 OCDPE**

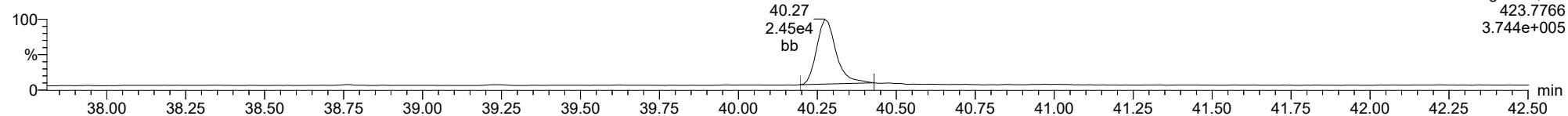
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDD**

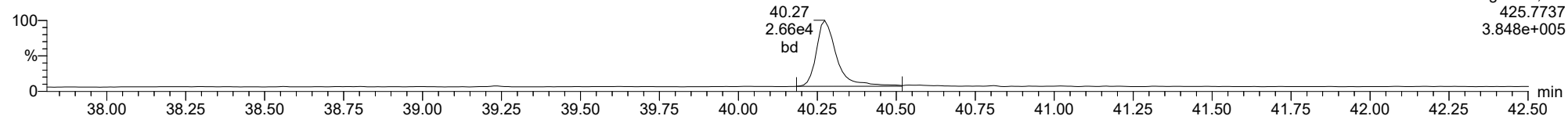
23030306



F4:Voltage SIR,El+  
423.7766  
3.744e+005

**1234678-HpCDD**

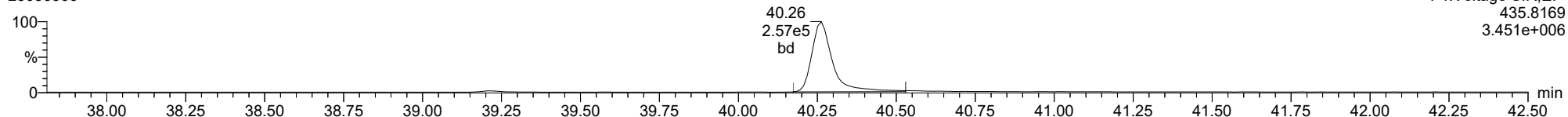
23030306



F4:Voltage SIR,El+  
425.7737  
3.848e+005

**13C-1234678-HpCDD**

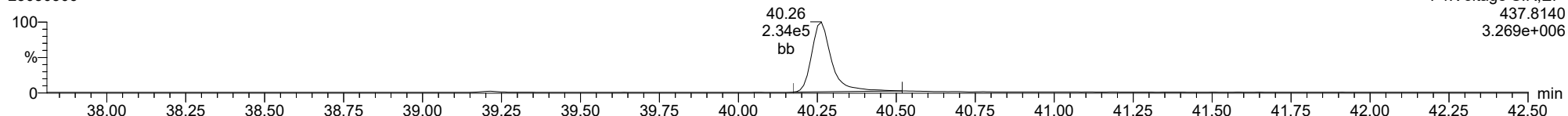
23030306



F4:Voltage SIR,El+  
435.8169  
3.451e+006

**13C-1234678-HpCDD**

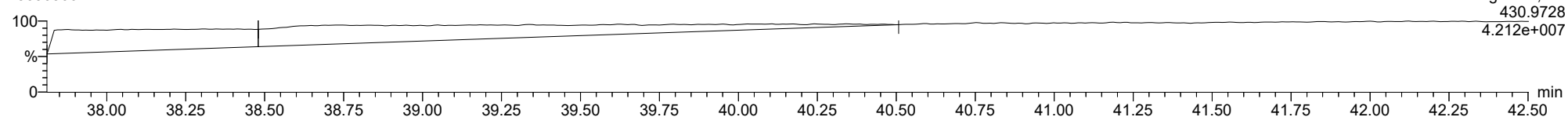
23030306



F4:Voltage SIR,El+  
437.8140  
3.269e+006

**FUNCTION4 PFK**

23030306



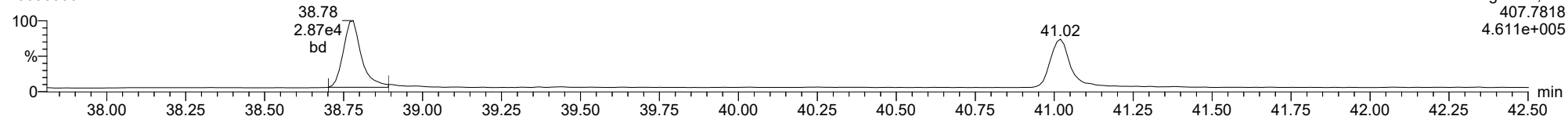
F4:Voltage SIR,El+  
430.9728  
4.212e+007



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

1234678-HpCDF

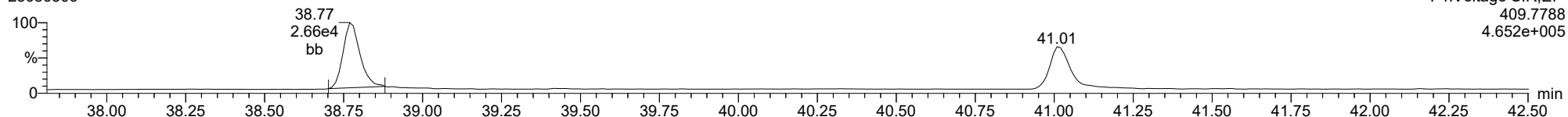
23030306



F4:Voltage SIR,El+  
407.7818  
4.611e+005

1234678-HpCDF

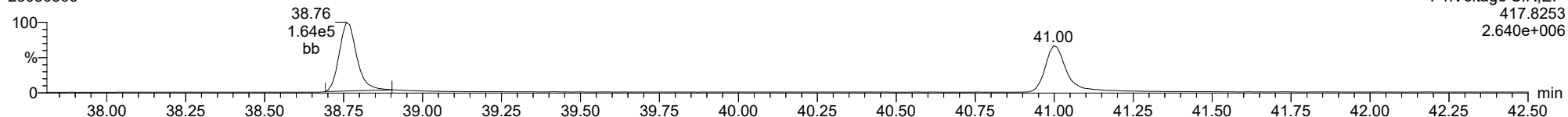
23030306



F4:Voltage SIR,El+  
409.7788  
4.652e+005

13C-1234678-HpCDF

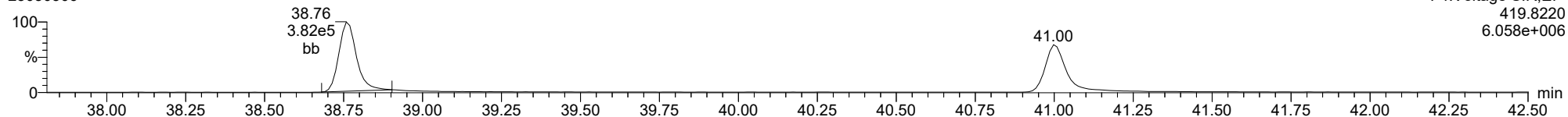
23030306



F4:Voltage SIR,El+  
417.8253  
2.640e+006

13C-1234678-HpCDF

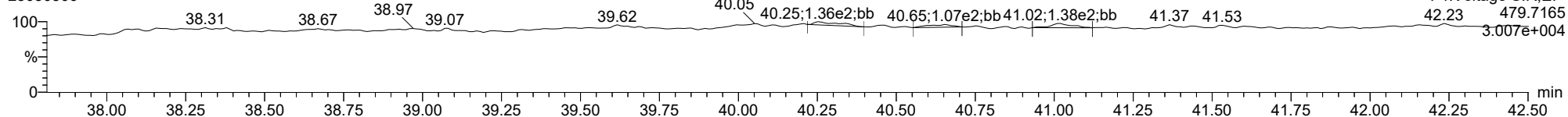
23030306



F4:Voltage SIR,El+  
419.8220  
6.058e+006

FUNCTION4 NCDPE

23030306

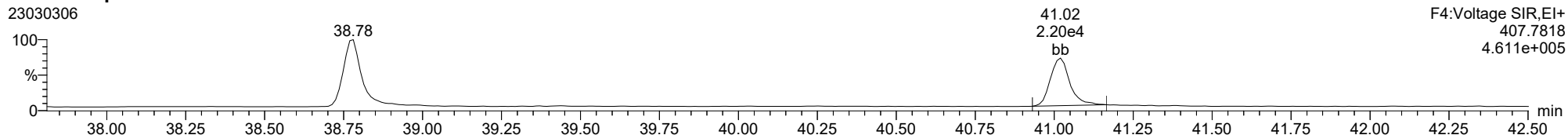


F4:Voltage SIR,El+  
42.23 479.7165  
3.007e+004

ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF

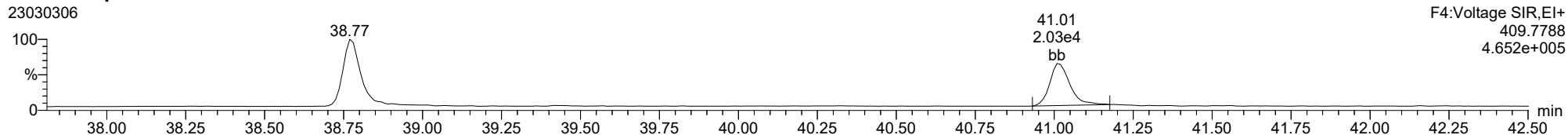
23030306



F4:Voltage SIR,EI+  
407.7818  
4.611e+005

1234789-HpCDF

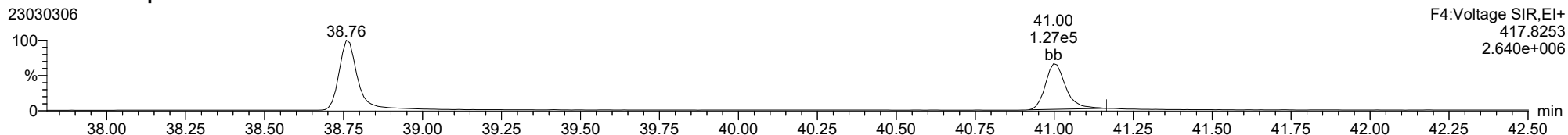
23030306



F4:Voltage SIR,EI+  
409.7788  
4.652e+005

13C-1234789-HpCDF

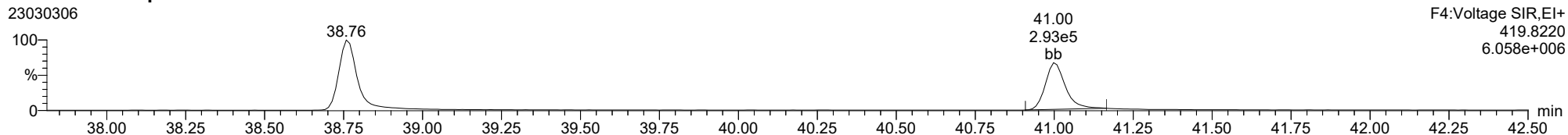
23030306



F4:Voltage SIR,EI+  
417.8253  
2.640e+006

13C-1234789-HpCDF

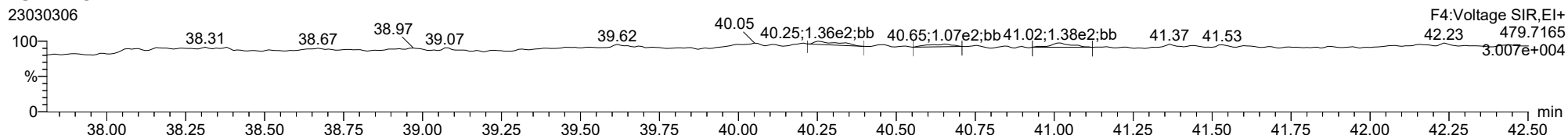
23030306



F4:Voltage SIR,EI+  
419.8220  
6.058e+006

FUNCTION4 NCDPE

23030306

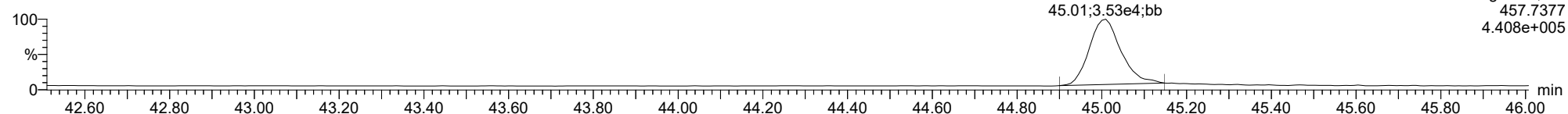


F4:Voltage SIR,EI+  
479.7165  
3.007e+004

ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

**OCDD**

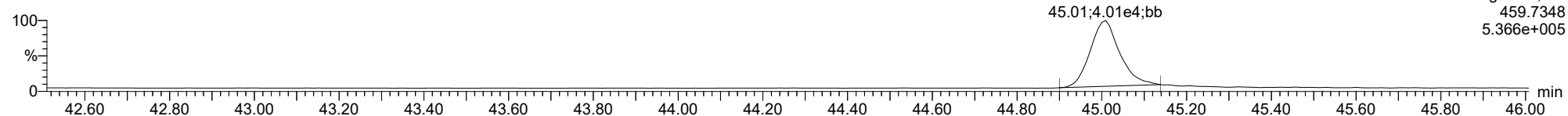
23030306



F5:Voltage SIR,EI+  
457.7377  
4.408e+005

**OCDD**

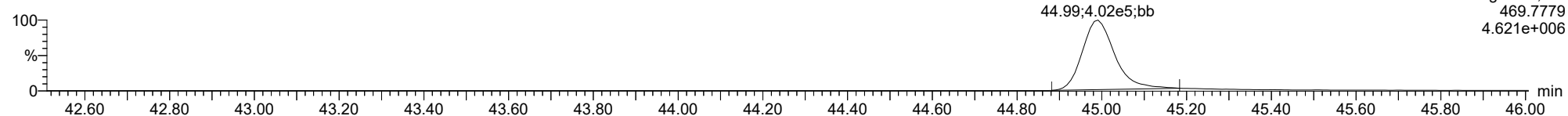
23030306



F5:Voltage SIR,EI+  
459.7348  
5.366e+005

**13C-OCDD**

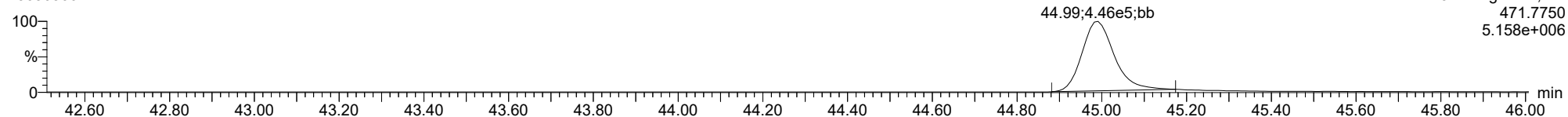
23030306



F5:Voltage SIR,EI+  
469.7779  
4.621e+006

**13C-OCDD**

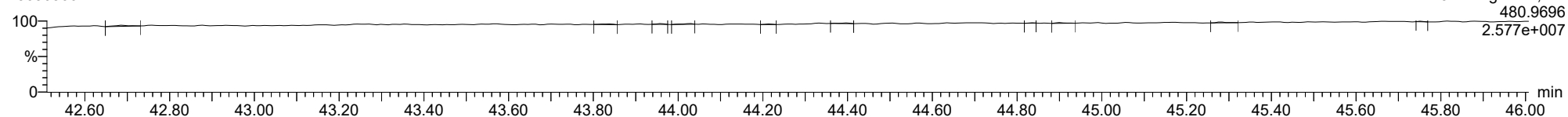
23030306



F5:Voltage SIR,EI+  
471.7750  
5.158e+006

**FUNCTION5 PFK**

23030306

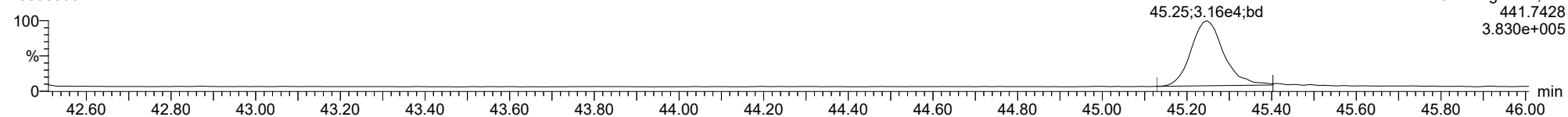


F5:Voltage SIR,EI+  
480.9696  
2.577e+007

ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

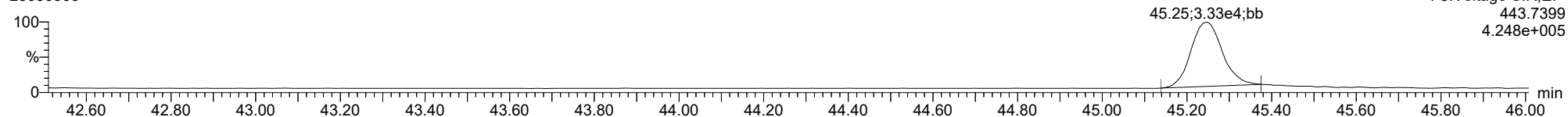
**OCDF**

23030306



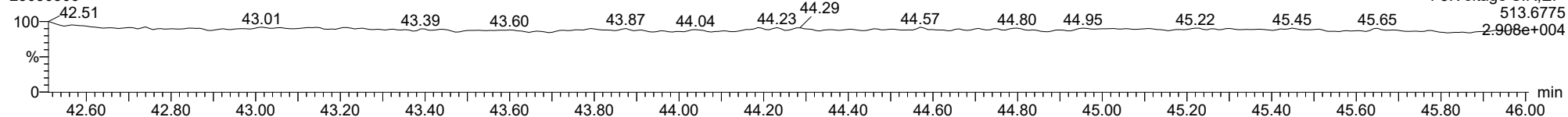
**OCDF**

23030306



**FUNCTION5 DCDPE**

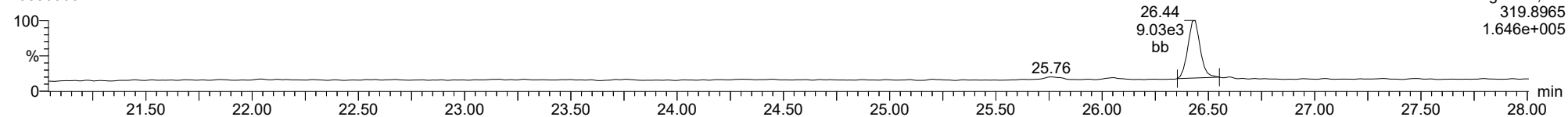
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

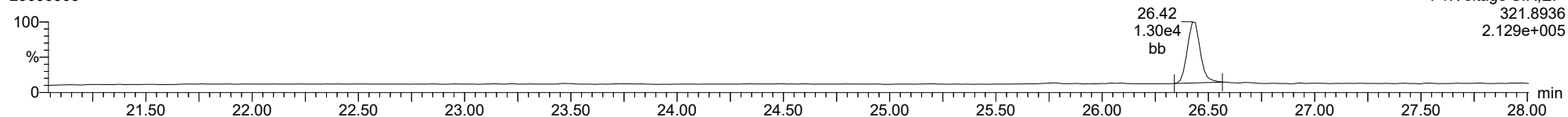
**Total-tetradioxins**

23030306



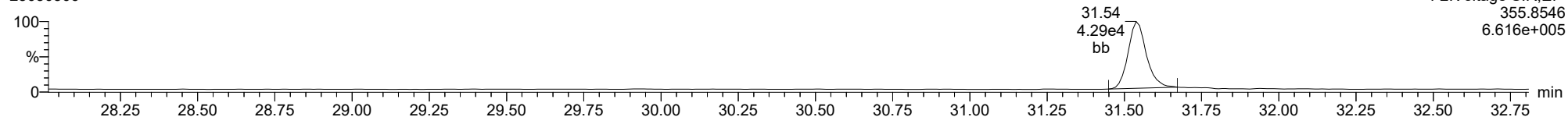
**Total-tetradioxins**

23030306



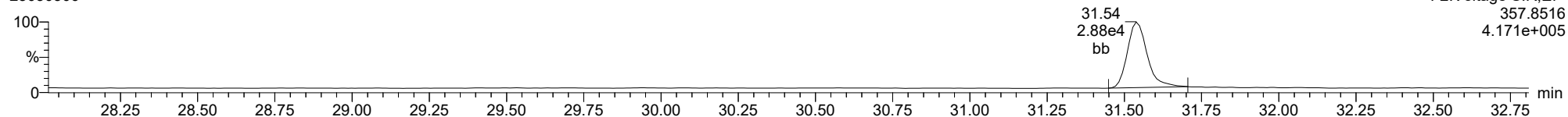
**Total-pentadioxins**

23030306



**Total-pentadioxins**

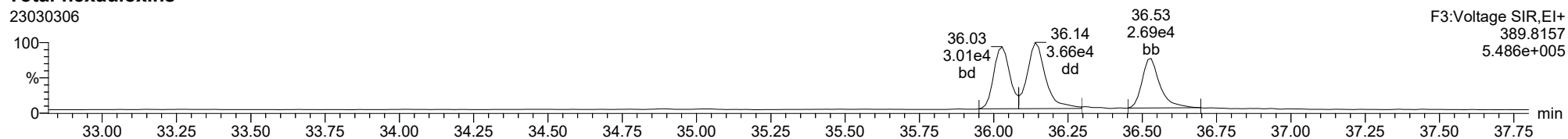
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ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

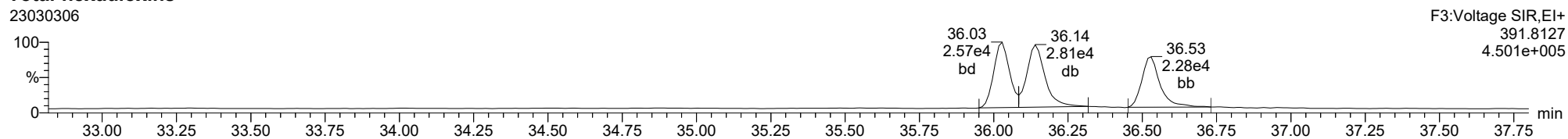
**Total-hexadioxins**

23030306



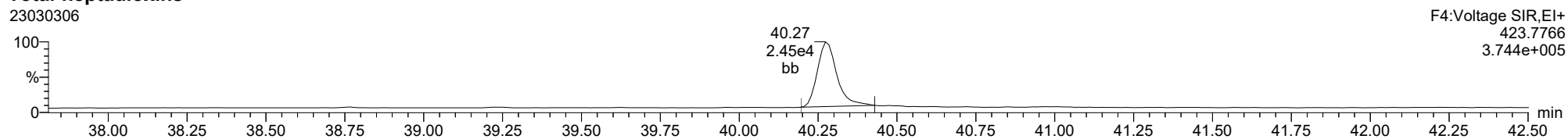
**Total-hexadioxins**

23030306



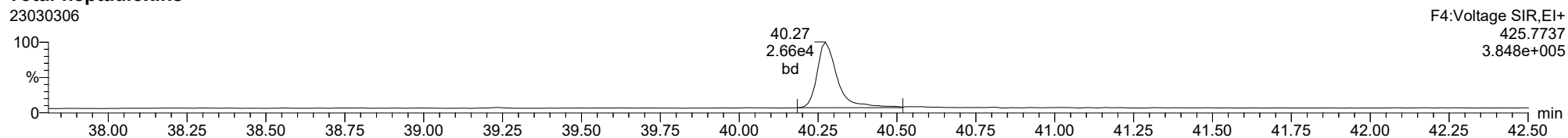
**Total-heptadioxins**

23030306



**Total-heptadioxins**

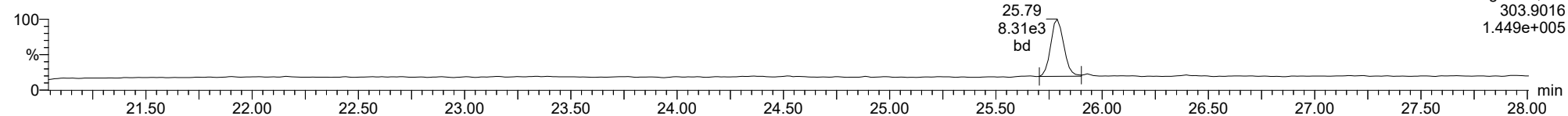
23030306



ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

**Total-tetrafurans**

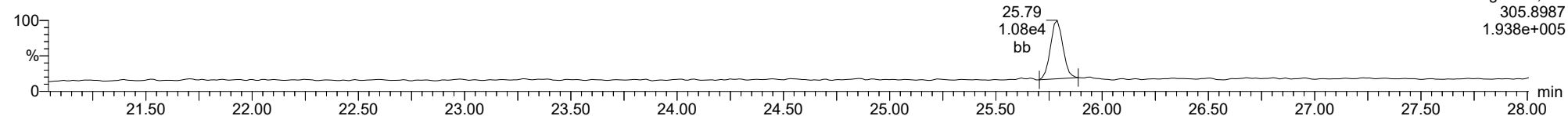
23030306



F1:Voltage SIR,EI+  
303.9016  
1.449e+005

**Total-tetrafurans**

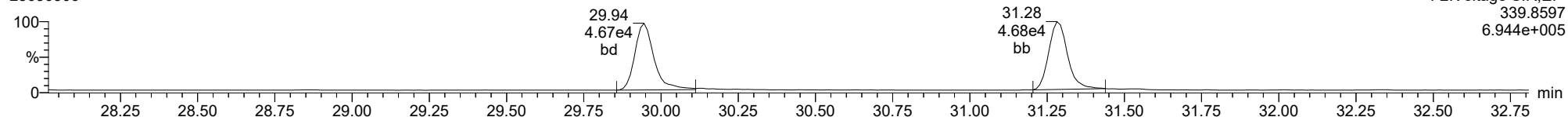
23030306



F1:Voltage SIR,EI+  
305.8987  
1.938e+005

**Total-pentafurans**

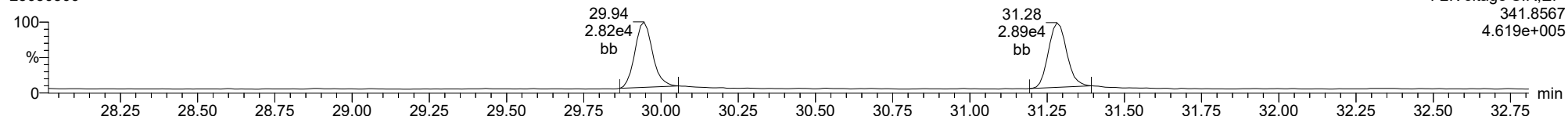
23030306



F2:Voltage SIR,EI+  
339.8597  
6.944e+005

**Total-pentafurans**

23030306

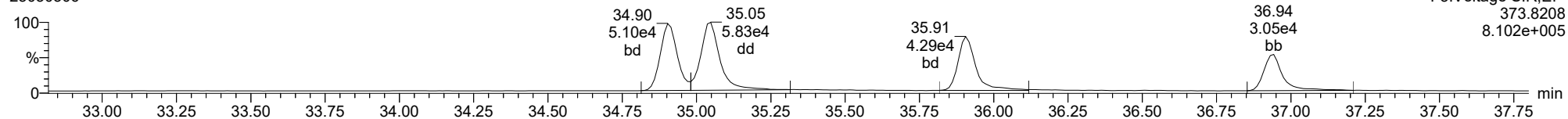


F2:Voltage SIR,EI+  
341.8567  
4.619e+005

ID: CS2CW, Name: 23030306, Date: 03-Mar-2023, Time: 13:16:24, Conditions: AUTOSPEC01, User: pk

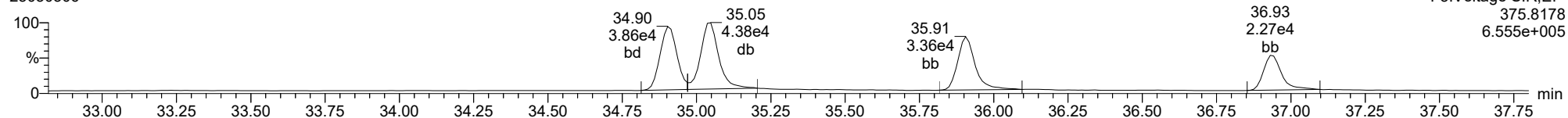
**Total-hexafurans**

23030306



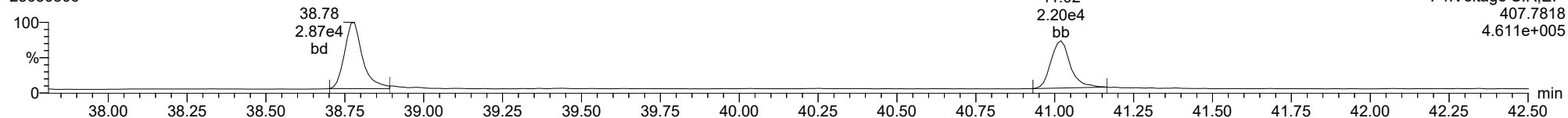
**Total-hexafurans**

23030306



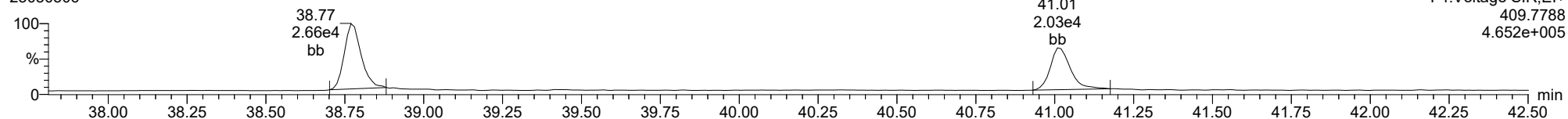
**Total-heptafurans**

23030306



**Total-heptafurans**

23030306





Dataset: T:\Autospec\Processed Data Batch\230303ICIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:37 Pacific Standard Time

**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS3CW, **Name:** 23030307, **Date:** 03-Mar-2023, **Time:** 14:06:39, **Conditions:** AUTOSPEC01, **User:** pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.788	1.001	4.563e4	6.298e4	0.702	0.724	0.770	1455	2151	7.03e5	9.46e5	483.4	440.0	NO	bb	bb	10.132
12378-PeCDF	29.945	1.001	2.374e5	1.577e5	0.679	1.505	1.550	2714	2519	3.51e6	2.28e6	1294.3	903.8	NO	bb	bb	49.089
23478-PeCDF	31.282	1.001	2.063e5	1.364e5	0.786	1.512	1.550	2714	2519	3.03e6	1.99e6	1118.0	788.5	NO	bb	bb	49.466
123478-HxCDF	34.903	1.000	2.473e5	1.941e5	1.166	1.275	1.240	3008	2708	3.76e6	2.98e6	1248.4	1099.9	NO	bd	bd	48.979
234678-HxCDF	35.905	1.000	2.404e5	1.930e5	1.140	1.246	1.240	3008	2708	3.53e6	2.85e6	1172.2	1053.8	NO	bb	bb	49.000
123678-HxCDF	35.048	1.001	2.970e5	2.223e5	1.091	1.336	1.240	3008	2708	3.95e6	3.09e6	1312.5	1142.3	NO	db	db	50.520
123789-HxCDF	36.942	1.001	2.103e5	1.706e5	1.137	1.233	1.240	3008	2708	2.89e6	2.30e6	959.2	849.3	NO	bd	bd	50.468
1234678-HpCDF	38.780	1.000	1.592e5	1.601e5	1.003	0.994	1.050	2672	2189	2.51e6	2.53e6	939.2	1157.5	NO	bb	bb	48.161
1234789-HpCDF	41.019	1.000	1.361e5	1.443e5	0.953	0.943	1.050	2672	2189	1.84e6	1.86e6	689.1	851.7	NO	bb	bd	49.244
OCDF	45.247	1.006	2.019e5	2.478e5	0.778	0.815	0.890	1393	1380	2.32e6	2.62e6	1663.0	1900.3	NO	bb	bd	93.418
2378-TCDD	26.424	1.000	5.877e4	7.446e4	1.149	0.789	0.770	1483	1021	8.00e5	1.03e6	539.5	1013.7	NO	bd	bb	9.873
12378-PeCDD	31.538	1.000	1.890e5	1.221e5	1.022	1.548	1.550	1651	2172	2.74e6	1.77e6	1662.3	815.6	NO	bb	bb	49.884
123478-HxCDD	36.028	1.000	1.812e5	1.479e5	0.996	1.225	1.240	1690	2600	2.90e6	2.38e6	1717.5	913.7	NO	bd	bd	48.605
123678-HxCDD	36.139	1.000	2.270e5	1.862e5	1.001	1.219	1.240	1690	2600	3.05e6	2.54e6	1803.3	977.3	NO	db	db	51.480
123789-HxCDD	36.529	1.011	1.887e5	1.546e5	0.907	1.221	1.240	1690	2600	2.71e6	2.20e6	1606.4	846.3	NO	bb	bb	51.083
1234678-HpCDD	40.273	1.000	1.573e5	1.681e5	1.039	0.936	1.050	2523	2313	2.21e6	2.22e6	874.4	957.9	NO	bb	bd	49.956
OCDD	45.009	1.000	2.508e5	2.930e5	0.920	0.856	0.890	1279	1652	2.91e6	3.41e6	2272.5	2065.6	NO	bb	bb	95.487
13C-2378-TCDF	25.774	1.007	6.575e5	8.705e5	1.620	0.755	0.770	2127	1667	9.70e6	1.27e7	4562.2	7600.8	NO	bb	bb	92.139
13C-12378-PeCDF	29.922	1.169	7.106e5	4.742e5	1.240	1.498	1.550	3150	3257	9.76e6	6.54e6	3098.5	2009.5	NO	bd	bd	93.316
13C-23478-PeCDF	31.259	1.221	5.241e5	3.573e5	1.118	1.467	1.550	3150	3257	7.68e6	5.27e6	2437.6	1617.5	NO	bb	bb	77.038
13C-123478-HxCDF	34.891	0.956	2.605e5	5.124e5	1.168	0.508	0.510	2130	2302	3.94e6	7.71e6	1851.1	3349.5	NO	bd	bd	95.975
13C-123678-HxCDF	35.025	0.959	3.029e5	6.396e5	1.386	0.474	0.510	2130	2302	4.25e6	8.39e6	1994.1	3646.7	NO	db	db	98.624
13C-234678-HxCDF	35.894	0.983	2.705e5	5.057e5	1.129	0.535	0.510	2130	2302	3.77e6	7.17e6	1772.4	3115.7	NO	bd	bb	99.718
13C-123789-HxCDF	36.919	1.011	2.253e5	4.385e5	0.932	0.514	0.510	2130	2302	3.30e6	6.48e6	1548.0	2814.2	NO	bb	bb	103.358
13C-1234678-HpCDF	38.769	1.062	2.032e5	4.578e5	0.895	0.444	0.440	2209	3025	3.15e6	7.13e6	1428.1	2357.0	NO	bb	bb	107.118
13C-1234789-HpCDF	41.008	1.123	1.757e5	4.217e5	0.770	0.417	0.440	2209	3025	2.29e6	5.20e6	1036.4	1717.4	NO	bb	bb	112.595
13C-1234-TCDD	25.605	0.000	4.555e5	5.681e5	1.000	0.802	0.770	2485	1606	6.85e6	8.57e6	2757.9	5335.2	NO	bb	bb	100.000
13C-2378-TCDD	26.410	1.031	5.228e5	6.520e5	1.152	0.802	0.770	2485	1606	7.70e6	9.63e6	3097.5	5999.3	NO	bb	bb	99.597
13C-12378-PeCDD	31.527	1.231	3.747e5	2.356e5	0.829	1.590	1.550	1413	1348	5.28e6	3.29e6	3736.6	2437.5	NO	bb	bb	71.936
13C-123478-HxCDD	36.017	0.986	3.837e5	2.963e5	0.995	1.295	1.240	1796	1719	5.91e6	4.54e6	3293.9	2638.3	NO	bd	bd	99.140
13C-123678-HxCDD	36.128	0.989	4.675e5	3.344e5	1.157	1.398	1.240	1796	1719	6.38e6	4.87e6	3554.2	2831.4	NO	db	db	100.573
13C-1234678-HpCDD	40.262	1.102	3.210e5	3.059e5	0.840	1.049	1.050	2165	1959	4.38e6	4.15e6	2024.2	2117.7	NO	bb	bb	108.247
13C-OCDD	44.990	1.232	6.075e5	6.305e5	0.767	0.963	0.890	2629	1930	6.50e6	7.26e6	2473.3	3761.0	NO	bd	bb	234.029
13C-123789-HxCDD	36.518	0.000	3.849e5	3.043e5	1.000	1.265	1.240	1796	1719	5.52e6	4.36e6	3076.5	2537.0	NO	bb	bb	100.000
37CL-2378-TCDD	26.424	1.032	1.159e5		1.288			2383		1.68e6		703.2			bb		8.796

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:37 Pacific Standard Time

ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.285	0.865	5.143e4	7.104e4	0.802	0.724	0.770	1455	2151	8.64e5	1.17e6	593.7	544.2	NO	bb	bb	10.000
1289-TCDF	27.286	1.059	4.449e4	5.910e4	0.678	0.753	0.770	1455	2151	6.41e5	8.65e5	440.8	402.3	NO	bb	db	10.000
13468-PECDF	27.144	0.907	4.471e5	2.913e5	1.246	1.535	1.550	765	1431	6.85e6	4.42e6	8952.4	3092.4	NO	bb	bb	50.000
12389-PECDF	32.318	1.080	1.756e5	1.185e5	0.496	1.482	1.550	2714	2519	2.46e6	1.67e6	905.1	663.5	NO	bb	bb	50.000
123468-HXCDF	33.243	0.953	2.474e5	2.044e5	1.169	1.210	1.240	3008	2708	3.57e6	2.89e6	1187.3	1066.9	NO	bb	bd	50.000
1368-TCDD	23.557	0.892	5.333e4	6.596e4	1.015	0.808	0.770	1483	1021	8.25e5	1.09e6	556.5	1064.4	NO	bb	bb	10.000
1289-TCDD	27.031	1.023	4.649e4	6.027e4	0.909	0.771	0.770	1483	1021	6.71e5	8.87e5	452.4	868.9	NO	bb	bb	10.000
12479-PECDD	28.830	0.914	4.152e5	2.870e5	2.301	1.447	1.550	1651	2172	3.89e6	2.64e6	2354.1	1214.5	NO	bb	bd	50.000
12389-PECDD	31.939	1.013	2.202e5	1.409e5	1.184	1.563	1.550	1651	2172	2.97e6	1.93e6	1798.8	887.7	NO	bd	bd	50.000
124679-HXCDD	34.011	0.944	2.133e5	1.659e5	1.115	1.286	1.240	1690	2600	2.98e6	2.42e6	1762.3	930.8	NO	bd	bb	50.000
1234679-HPCDD	39.225	0.974	1.868e5	1.696e5	1.137	1.101	1.050	2523	2313	2.68e6	2.60e6	1062.7	1125.2	NO	bd	bb	50.000
Total-tetrafurans			1.415e5		0.727			1455		2.21e6							30.132
Total-penta1			4.471e5					765		6.85e6							50.000
Total-pentafurans			6.595e5		0.654			2714		9.58e6							158.378
Total-hexafurans			1.243e6		1.141			3008		1.77e7							249.074
Total-heptafurans			2.965e5		0.978			2672		4.37e6							97.824
Total-Furans			2.990e6		0.922			1455		4.30e7							678.826
Total-tetradoxins			2.666e5		1.024			1483		3.52e6							50.252
Total-pentadoxins			8.253e5		1.502			1651		9.61e6							150.025
Total-hexadoxins			8.102e5		1.005			1690		1.16e7							201.167
Total-heptadoxins			3.440e5		1.088			2523		4.89e6							99.956
Total-Dioxins			2.497e6		1.130			1483		3.26e7							596.887
Total-TEQ			5.487e6					1483		7.56e7							1275.713
FUNCTION1 PFK			2.078e5					640846		4.44e6							
FUNCTION2 PFK			1.544e7					302960		1.17e7							0.000
FUNCTION3 PFK			6.335e6					441696		3.43e7							0.000
FUNCTION4 PFK			1.606e7					302692		2.36e6							
FUNCTION5 PFK			3.357e4					240421		1.60e6							
FUNCTION1 HXCD...			1.444e3					587		1.68e4							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			9.034e2					1003		1.66e4							0.000
FUNCTION3 OCDPE			5.560e2					494		8.57e3							0.000
FUNCTION4 NCDPE			9.205e2					776		1.78e4							0.000
FUNCTION5 DCDPE			9.291e1					548		1.29e3							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:37 Pacific Standard Time

Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50

Calibration: T:\Autospec\Curves\230303\CIH.cdb 06 Mar 2023 10:57:27

ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.29	4.449e4	5.910e4	0.678	0.75	0.77	440.8	YES	NO	bb	db	10.000
2	2378-TCDF	25.79	4.563e4	6.298e4	0.702	0.72	0.77	483.4	YES	NO	bb	bb	10.132
3	1368-TCDF	22.29	5.143e4	7.104e4	0.802	0.72	0.77	593.7	YES	NO	bb	bb	10.000

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.14	4.471e5	2.913e5	1.246	1.53	1.55	8952.4	YES	NO	bb	bb	50.000

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDF	32.32	1.756e5	1.185e5	0.496	1.48	1.55	905.1	YES	NO	bb	bb	50.000
2	23478-PeCDF	31.28	2.063e5	1.364e5	0.786	1.51	1.55	1118.0	YES	NO	bb	bb	49.466
3	Total-pentafurans	30.13	4.319e2	3.264e2	0.654	1.32	1.55	1.8	NO	NO	bb	bb	0.112
4	12378-PeCDF	29.94	2.374e5	1.577e5	0.679	1.51	1.55	1294.3	YES	NO	bb	bb	49.089
5	Total-pentafurans	28.80	3.978e4	2.583e4	0.654	1.54	1.55	212.5	YES	NO	bb	bb	9.712

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexafurans	37.33	5.073e2	4.522e2	1.141	1.12	1.24	4.2	YES	NO	db	dd	0.107
2	123789-HxCDF	36.94	2.103e5	1.706e5	1.137	1.23	1.24	959.2	YES	NO	bd	bd	50.468
3	234678-HxCDF	35.91	2.404e5	1.930e5	1.140	1.25	1.24	1172.2	YES	NO	bb	bb	49.000
4	123678-HxCDF	35.05	2.970e5	2.223e5	1.091	1.34	1.24	1312.5	YES	NO	db	db	50.520
5	123478-HxCDF	34.90	2.473e5	1.941e5	1.166	1.27	1.24	1248.4	YES	NO	bd	bd	48.979
6	123468-HXCDF	33.24	2.474e5	2.044e5	1.169	1.21	1.24	1187.3	YES	NO	bb	bd	50.000

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.02	1.361e5	1.443e5	0.953	0.94	1.05	689.1	YES	NO	bb	bd	49.244
2	Total-heptafurans	39.44	1.302e3	1.273e3	0.978	1.02	1.05	8.5	YES	NO	bb	bb	0.418
3	1234678-HpCDF	38.78	1.592e5	1.601e5	1.003	0.99	1.05	939.2	YES	NO	bb	bb	48.161

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

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## Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.29	4.449e4	5.910e4	0.678	0.75	0.77	440.8	YES	NO	bb	db	10.000
2	2378-TCDF	25.79	4.563e4	6.298e4	0.702	0.72	0.77	483.4	YES	NO	bb	bb	10.132
3	1368-TCDF	22.29	5.143e4	7.104e4	0.802	0.72	0.77	593.7	YES	NO	bb	bb	10.000
4	12389-PECDF	32.32	1.756e5	1.185e5	0.496	1.48	1.55	905.1	YES	NO	bb	bb	50.000
5	23478-PeCDF	31.28	2.063e5	1.364e5	0.786	1.51	1.55	1118.0	YES	NO	bb	bb	49.466
6	Total-pentafurans	30.13	4.319e2	3.264e2	0.654	1.32	1.55	1.8	NO	NO	bb	bb	0.112
7	12378-PeCDF	29.94	2.374e5	1.577e5	0.679	1.51	1.55	1294.3	YES	NO	bb	bb	49.089
8	Total-pentafurans	28.80	3.978e4	2.583e4	0.654	1.54	1.55	212.5	YES	NO	bb	bb	9.712
9	Total-hexafurans	37.33	5.073e2	4.522e2	1.141	1.12	1.24	4.2	YES	NO	db	dd	0.107
10	123789-HxCDF	36.94	2.103e5	1.706e5	1.137	1.23	1.24	959.2	YES	NO	bd	bd	50.468
11	234678-HxCDF	35.91	2.404e5	1.930e5	1.140	1.25	1.24	1172.2	YES	NO	bb	bb	49.000
12	123678-HxCDF	35.05	2.970e5	2.223e5	1.091	1.34	1.24	1312.5	YES	NO	db	db	50.520
13	123478-HxCDF	34.90	2.473e5	1.941e5	1.166	1.27	1.24	1248.4	YES	NO	bd	bd	48.979
14	123468-HXCDF	33.24	2.474e5	2.044e5	1.169	1.21	1.24	1187.3	YES	NO	bb	bd	50.000
15	1234789-HpCDF	41.02	1.361e5	1.443e5	0.953	0.94	1.05	689.1	YES	NO	bb	bd	49.244
16	Total-heptafurans	39.44	1.302e3	1.273e3	0.978	1.02	1.05	8.5	YES	NO	bb	bb	0.418
17	1234678-HpCDF	38.78	1.592e5	1.601e5	1.003	0.99	1.05	939.2	YES	NO	bb	bb	48.161
18	OCDF	45.25	2.019e5	2.478e5	0.778	0.81	0.89	1663.0	YES	NO	bb	bd	93.418
19	13468-PECDF	27.14	4.471e5	2.913e5	1.246	1.53	1.55	8952.4	YES	NO	bb	bb	50.000

## TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDD	23.56	5.333e4	6.596e4	1.015	0.81	0.77	556.5	YES	NO	bb	bb	10.000
2	1289-TCDD	27.03	4.649e4	6.027e4	0.909	0.77	0.77	452.4	YES	NO	bb	bb	10.000
3	2378-TCDD	26.42	5.877e4	7.446e4	1.149	0.79	0.77	539.5	YES	NO	bd	bb	9.873
4	Total-tetradoxins	26.10	8.105e4	1.035e5	1.024	0.78	0.77	553.1	YES	NO	bb	bb	15.333
5	Total-tetradoxins	25.62	2.642e4	3.299e4	1.024	0.80	0.77	267.0	YES	NO	bd	bb	4.937
6	Total-tetradoxins	25.04	5.856e2	7.161e2	1.024	0.82	0.77	7.0	YES	NO	bb	bb	0.108

## PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.94	2.202e5	1.409e5	1.184	1.56	1.55	1798.8	YES	NO	bd	bd	50.000
2	12378-PeCDD	31.54	1.890e5	1.221e5	1.022	1.55	1.55	1662.3	YES	NO	bb	bb	49.884
3	Total-pentadoxins	30.88	8.263e2	4.657e2	1.502	1.77	1.55	8.6	YES	NO	bb	bb	0.141
4	12479-PECDD	28.83	4.152e5	2.870e5	2.301	1.45	1.55	2354.1	YES	NO	bb	bd	50.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.53	1.887e5	1.546e5	0.907	1.22	1.24	1606.4	YES	NO	bb	bb	51.083
2	123678-HxCDD	36.14	2.270e5	1.862e5	1.001	1.22	1.24	1803.3	YES	NO	db	db	51.480
3	123478-HxCDD	36.03	1.812e5	1.479e5	0.996	1.23	1.24	1717.5	YES	NO	bd	bd	48.605
4	124679-HXCDD	34.01	2.133e5	1.659e5	1.115	1.29	1.24	1762.3	YES	NO	bd	bb	50.000

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.27	1.573e5	1.681e5	1.039	0.94	1.05	874.4	YES	NO	bb	bd	49.956
2	1234679-HPCDD	39.23	1.868e5	1.696e5	1.137	1.10	1.05	1062.7	YES	NO	bd	bb	50.000

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDD	23.56	5.333e4	6.596e4	1.015	0.81	0.77	556.5	YES	NO	bb	bb	10.000
2	1289-TCDD	27.03	4.649e4	6.027e4	0.909	0.77	0.77	452.4	YES	NO	bb	bb	10.000
3	2378-TCDD	26.42	5.877e4	7.446e4	1.149	0.79	0.77	539.5	YES	NO	bd	bb	9.873
4	Total-tetradoxins	26.10	8.105e4	1.035e5	1.024	0.78	0.77	553.1	YES	NO	bb	bb	15.333
5	Total-tetradoxins	25.62	2.642e4	3.299e4	1.024	0.80	0.77	267.0	YES	NO	bd	bb	4.937
6	Total-tetradoxins	25.04	5.856e2	7.161e2	1.024	0.82	0.77	7.0	YES	NO	bb	bb	0.108
7	12389-PECDD	31.94	2.202e5	1.409e5	1.184	1.56	1.55	1798.8	YES	NO	bd	bd	50.000
8	12378-PeCDD	31.54	1.890e5	1.221e5	1.022	1.55	1.55	1662.3	YES	NO	bb	bb	49.884
9	Total-pentadoxins	30.88	8.263e2	4.657e2	1.502	1.77	1.55	8.6	YES	NO	bb	bb	0.141
10	12479-PECDD	28.83	4.152e5	2.870e5	2.301	1.45	1.55	2354.1	YES	NO	bb	bd	50.000
11	123789-HxCDD	36.53	1.887e5	1.546e5	0.907	1.22	1.24	1606.4	YES	NO	bb	bb	51.083
12	123678-HxCDD	36.14	2.270e5	1.862e5	1.001	1.22	1.24	1803.3	YES	NO	db	db	51.480
13	123478-HxCDD	36.03	1.812e5	1.479e5	0.996	1.23	1.24	1717.5	YES	NO	bd	bd	48.605
14	124679-HXCDD	34.01	2.133e5	1.659e5	1.115	1.29	1.24	1762.3	YES	NO	bd	bb	50.000
15	1234678-HpCDD	40.27	1.573e5	1.681e5	1.039	0.94	1.05	874.4	YES	NO	bb	bd	49.956
16	1234679-HPCDD	39.23	1.868e5	1.696e5	1.137	1.10	1.05	1062.7	YES	NO	bd	bb	50.000
17	OCDD	45.01	2.508e5	2.930e5	0.920	0.86	0.89	2272.5	YES	NO	bb	bb	95.487

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

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## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.29	4.449e4	5.910e4	0.678	0.75	0.77	440.8	YES	NO	bb	db	10.000
2	2378-TCDF	25.79	4.563e4	6.298e4	0.702	0.72	0.77	483.4	YES	NO	bb	bb	10.132
3	1368-TCDF	22.29	5.143e4	7.104e4	0.802	0.72	0.77	593.7	YES	NO	bb	bb	10.000
4	12389-PECDF	32.32	1.756e5	1.185e5	0.496	1.48	1.55	905.1	YES	NO	bb	bb	50.000
5	23478-PeCDF	31.28	2.063e5	1.364e5	0.786	1.51	1.55	1118.0	YES	NO	bb	bb	49.466
6	Total-pentafurans	30.13	4.319e2	3.264e2	0.654	1.32	1.55	1.8	NO	NO	bb	bb	0.112
7	12378-PeCDF	29.94	2.374e5	1.577e5	0.679	1.51	1.55	1294.3	YES	NO	bb	bb	49.089
8	Total-pentafurans	28.80	3.978e4	2.583e4	0.654	1.54	1.55	212.5	YES	NO	bb	bb	9.712
9	Total-hexafurans	37.33	5.073e2	4.522e2	1.141	1.12	1.24	4.2	YES	NO	db	dd	0.107
10	123789-HxCDF	36.94	2.103e5	1.706e5	1.137	1.23	1.24	959.2	YES	NO	bd	bd	50.468
11	234678-HxCDF	35.91	2.404e5	1.930e5	1.140	1.25	1.24	1172.2	YES	NO	bb	bb	49.000
12	123678-HxCDF	35.05	2.970e5	2.223e5	1.091	1.34	1.24	1312.5	YES	NO	db	db	50.520
13	123478-HxCDF	34.90	2.473e5	1.941e5	1.166	1.27	1.24	1248.4	YES	NO	bd	bd	48.979
14	123468-HXCDF	33.24	2.474e5	2.044e5	1.169	1.21	1.24	1187.3	YES	NO	bb	bd	50.000
15	1234789-HpCDF	41.02	1.361e5	1.443e5	0.953	0.94	1.05	689.1	YES	NO	bb	bd	49.244
16	Total-heptafurans	39.44	1.302e3	1.273e3	0.978	1.02	1.05	8.5	YES	NO	bb	bb	0.418
17	1234678-HpCDF	38.78	1.592e5	1.601e5	1.003	0.99	1.05	939.2	YES	NO	bb	bb	48.161
18	OCDF	45.25	2.019e5	2.478e5	0.778	0.81	0.89	1663.0	YES	NO	bb	bd	93.418
19	13468-PECDF	27.14	4.471e5	2.913e5	1.246	1.53	1.55	8952.4	YES	NO	bb	bb	50.000
20	1368-TCDD	23.56	5.333e4	6.596e4	1.015	0.81	0.77	556.5	YES	NO	bb	bb	10.000
21	1289-TCDD	27.03	4.649e4	6.027e4	0.909	0.77	0.77	452.4	YES	NO	bb	bb	10.000
22	2378-TCDD	26.42	5.877e4	7.446e4	1.149	0.79	0.77	539.5	YES	NO	bd	bb	9.873
23	Total-tetradiioxins	26.10	8.105e4	1.035e5	1.024	0.78	0.77	553.1	YES	NO	bb	bb	15.333
24	Total-tetradiioxins	25.62	2.642e4	3.299e4	1.024	0.80	0.77	267.0	YES	NO	bd	bb	4.937
25	Total-tetradiioxins	25.04	5.856e2	7.161e2	1.024	0.82	0.77	7.0	YES	NO	bb	bb	0.108
26	12389-PECDD	31.94	2.202e5	1.409e5	1.184	1.56	1.55	1798.8	YES	NO	bd	bd	50.000
27	12378-PeCDD	31.54	1.890e5	1.221e5	1.022	1.55	1.55	1662.3	YES	NO	bb	bb	49.884
28	Total-pentadiioxins	30.88	8.263e2	4.657e2	1.502	1.77	1.55	8.6	YES	NO	bb	bb	0.141
29	12479-PECDD	28.83	4.152e5	2.870e5	2.301	1.45	1.55	2354.1	YES	NO	bb	bd	50.000
30	123789-HxCDD	36.53	1.887e5	1.546e5	0.907	1.22	1.24	1606.4	YES	NO	bb	bb	51.083
31	123678-HxCDD	36.14	2.270e5	1.862e5	1.001	1.22	1.24	1803.3	YES	NO	db	db	51.480
32	123478-HxCDD	36.03	1.812e5	1.479e5	0.996	1.23	1.24	1717.5	YES	NO	bd	bd	48.605
33	124679-HXCDD	34.01	2.133e5	1.659e5	1.115	1.29	1.24	1762.3	YES	NO	bd	bb	50.000
34	1234678-HpCDD	40.27	1.573e5	1.681e5	1.039	0.94	1.05	874.4	YES	NO	bb	bd	49.956
35	1234679-HPCDD	39.23	1.868e5	1.696e5	1.137	1.10	1.05	1062.7	YES	NO	bd	bb	50.000
36	OCDD	45.01	2.508e5	2.930e5	0.920	0.86	0.89	2272.5	YES	NO	bb	bb	95.487

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld

Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time

Printed: Monday, March 06, 2023 11:34:37 Pacific Standard Time

**ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk****PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	27.24	1.621e5					3.0	YES		bb		
2	FUNCTION1 PFK	26.04	7.004e3					0.8	NO		bb		
3	FUNCTION1 PFK	25.20	1.505e4					1.0	NO		bb		
4	FUNCTION1 PFK	24.33	1.235e4					0.8	NO		bb		
5	FUNCTION1 PFK	23.94	5.589e3					0.6	NO		bb		
6	FUNCTION1 PFK	23.61	5.711e3					0.6	NO		bb		

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.40	1.216e5					2.2	NO		bb		0.000
2	FUNCTION2 PFK	29.43	1.324e7					19.8	YES		db		0.000
3	FUNCTION2 PFK	28.41	2.080e6					16.6	YES		bd		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:37 Pacific Standard Time

**ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk**

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.64	4.177e4					1.9	NO		bb		0.000
2	FUNCTION3 PFK	33.49	1.199e5					5.0	YES		db		0.000
3	FUNCTION3 PFK	33.44	2.654e6					7.0	YES		dd		0.000
4	FUNCTION3 PFK	33.06	2.958e6					23.7	YES		bd		0.000
5	FUNCTION3 PFK	35.38	2.169e4					1.0	NO		bb		0.000
6	FUNCTION3 PFK	35.25	5.928e3					0.6	NO		bb		0.000
7	FUNCTION3 PFK	35.11	7.037e3					0.7	NO		bb		0.000
8	FUNCTION3 PFK	34.99	1.627e4					1.0	NO		bb		0.000
9	FUNCTION3 PFK	34.92	1.103e4					1.1	NO		db		0.000
10	FUNCTION3 PFK	34.86	1.305e4					1.0	NO		bd		0.000
11	FUNCTION3 PFK	34.80	9.642e3					0.9	NO		bb		0.000
12	FUNCTION3 PFK	34.66	1.233e4					0.9	NO		db		0.000
13	FUNCTION3 PFK	34.64	7.688e3					0.8	NO		bd		0.000
14	FUNCTION3 PFK	34.57	9.132e3					0.8	NO		bb		0.000
15	FUNCTION3 PFK	34.47	7.208e3					0.8	NO		bb		0.000
16	FUNCTION3 PFK	34.31	1.503e4					1.0	NO		bb		0.000
17	FUNCTION3 PFK	34.22	2.675e4					1.4	NO		bb		0.000
18	FUNCTION3 PFK	34.01	3.007e4					2.1	NO		db		0.000
19	FUNCTION3 PFK	33.97	1.328e4					1.1	NO		bd		0.000
20	FUNCTION3 PFK	33.91	6.249e3					0.6	NO		bb		0.000
21	FUNCTION3 PFK	36.99	2.219e4					1.1	NO		bd		0.000
22	FUNCTION3 PFK	36.87	2.133e3					0.4	NO		bb		0.000
23	FUNCTION3 PFK	36.83	5.225e3					0.6	NO		bb		0.000
24	FUNCTION3 PFK	36.70	4.929e4					1.7	NO		bb		0.000
25	FUNCTION3 PFK	36.43	1.980e4					1.2	NO		bb		0.000
26	FUNCTION3 PFK	36.38	7.184e3					0.9	NO		bb		0.000
27	FUNCTION3 PFK	36.27	4.220e3					0.5	NO		bb		0.000
28	FUNCTION3 PFK	36.24	2.102e3					0.4	NO		bb		0.000
29	FUNCTION3 PFK	36.19	3.748e3					0.5	NO		bb		0.000
30	FUNCTION3 PFK	35.87	3.133e4					1.6	NO		db		0.000
31	FUNCTION3 PFK	35.83	1.912e4					1.5	NO		bd		0.000
32	FUNCTION3 PFK	35.78	2.675e3					0.4	NO		db		0.000
33	FUNCTION3 PFK	35.74	3.023e4					1.5	NO		dd		0.000
34	FUNCTION3 PFK	35.67	1.673e4					1.4	NO		bd		0.000
35	FUNCTION3 PFK	35.58	2.145e4					1.4	NO		db		0.000
36	FUNCTION3 PFK	35.53	1.268e4					1.1	NO		bd		0.000
37	FUNCTION3 PFK	37.67	2.243e4					1.6	NO		bb		0.000



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**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	37.45	8.583e3					0.7	NO		db		0.000
39	FUNCTION3 PFK	37.43	4.891e3					0.7	NO		bd		0.000
40	FUNCTION3 PFK	37.30	6.956e3					0.6	NO		bb		0.000
41	FUNCTION3 PFK	37.23	5.682e3					0.7	NO		db		0.000
42	FUNCTION3 PFK	37.20	9.815e3					0.9	NO		dd		0.000
43	FUNCTION3 PFK	37.15	5.475e3					0.6	NO		dd		0.000
44	FUNCTION3 PFK	37.11	7.631e3					0.8	NO		bd		0.000
45	FUNCTION3 PFK	37.06	2.709e4					1.4	NO		db		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.40	1.889e5					2.4	NO		bb		
2	FUNCTION4 PFK	39.68	1.587e7					5.4	YES		bb		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.63	9.422e3					1.5	NO		bb		
2	FUNCTION5 PFK	43.24	1.576e3					0.7	NO		bb		
3	FUNCTION5 PFK	43.00	1.263e4					1.7	NO		bb		
4	FUNCTION5 PFK	45.90	6.371e3					1.4	NO		bb		
5	FUNCTION5 PFK	45.34	1.310e3					0.6	NO		bb		
6	FUNCTION5 PFK	43.79	2.270e3					0.7	NO		bb		

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**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.16	2.360e2					3.4	YES		bb		0.000
2	FUNCTION1 HXCD...	26.52	1.410e2					3.2	YES		db		0.000
3	FUNCTION1 HXCD...	26.41	1.480e2					3.3	YES		bd		0.000
4	FUNCTION1 HXCD...	26.16	8.707e1					1.9	NO		db		0.000
5	FUNCTION1 HXCD...	26.10	7.515e1					2.1	NO		bd		0.000
6	FUNCTION1 HXCD...	25.79	8.971e1					2.2	NO		bb		0.000
7	FUNCTION1 HXCD...	25.63	1.156e2					2.5	NO		bb		0.000
8	FUNCTION1 HXCD...	24.52	1.119e2					2.7	NO		db		0.000
9	FUNCTION1 HXCD...	24.43	1.844e2					3.5	YES		bd		0.000
10	FUNCTION1 HXCD...	23.75	1.728e2					2.1	NO		bb		0.000
11	FUNCTION1 HXCD...	21.31	8.251e1					1.7	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.95	1.010e2					1.7	NO		bb		0.000
2	FUNCTION2 HPCD...	31.18	4.333e2					5.6	YES		bb		0.000
3	FUNCTION2 HPCD...	30.70	7.244e1					2.1	NO		bb		0.000
4	FUNCTION2 HPCD...	30.31	7.131e1					1.6	NO		bb		0.000
5	FUNCTION2 HPCD...	29.76	7.422e1					1.6	NO		bb		0.000
6	FUNCTION2 HPCD...	29.04	7.307e1					1.9	NO		bb		0.000
7	FUNCTION2 HPCD...	28.55	7.813e1					2.1	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.51	1.400e2					5.4	YES		bb		0.000
2	FUNCTION3 OCDPE	35.04	1.909e2					5.6	YES		db		0.000
3	FUNCTION3 OCDPE	34.94	2.251e2					6.4	YES		bd		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk**

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.60	9.374e1					3.5	YES		bb		0.000
2	FUNCTION4 NCDPE	40.25	1.903e2					3.2	YES		bb		0.000
3	FUNCTION4 NCDPE	39.09	7.390e1					1.9	NO		bb		0.000
4	FUNCTION4 NCDPE	38.97	7.768e1					2.4	NO		bb		0.000
5	FUNCTION4 NCDPE	41.21	8.604e1					3.3	YES		bb		0.000
6	FUNCTION4 NCDPE	41.01	1.089e2					3.1	YES		bb		0.000
7	FUNCTION4 NCDPE	40.86	1.930e2					2.9	NO		db		0.000
8	FUNCTION4 NCDPE	40.74	9.692e1					2.6	NO		bd		0.000

**ETHERS6**

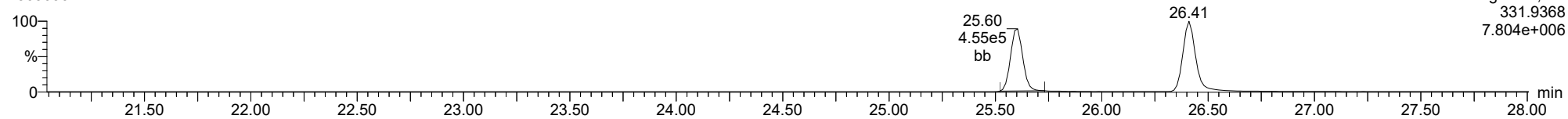
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.90	9.291e1					2.4	NO		bb		0.000

Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

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**13C-1234-TCDD**

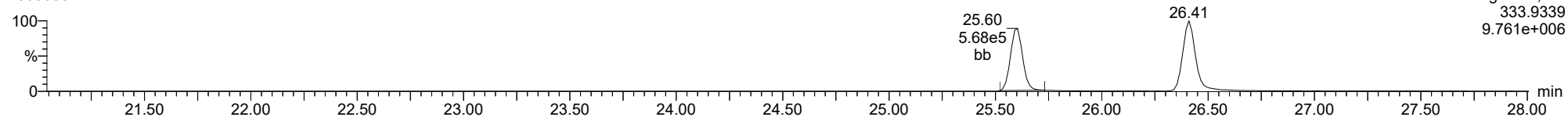
23030307



F1:Voltage SIR,El+  
331.9368  
7.804e+006

**13C-1234-TCDD**

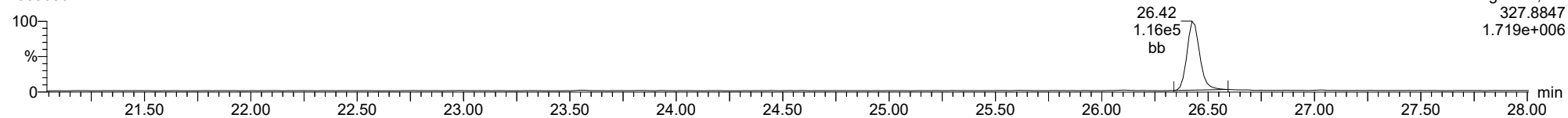
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F1:Voltage SIR,El+  
333.9339  
9.761e+006

**37CL-2378-TCDD**

23030307

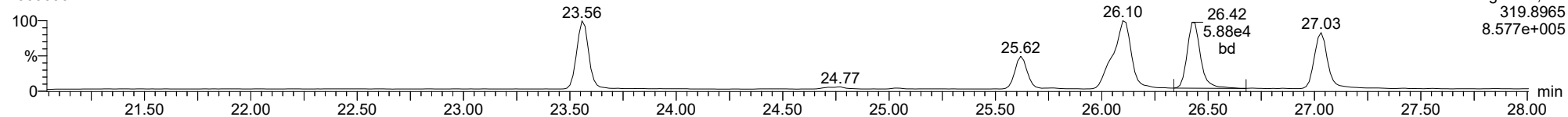


F1:Voltage SIR,El+  
327.8847  
1.719e+006

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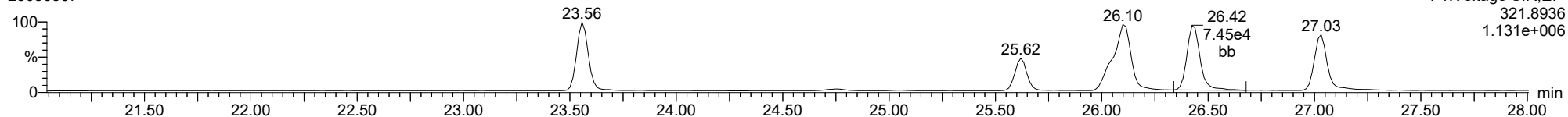
**2378-TCDD**

23030307



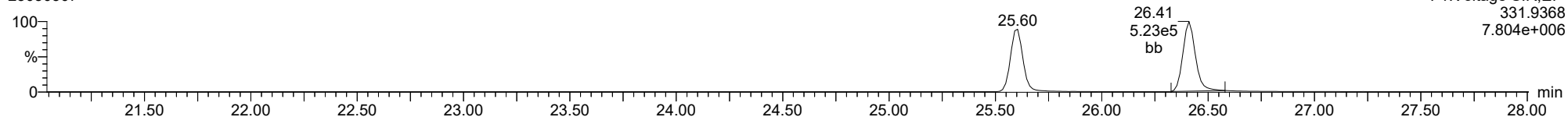
**2378-TCDD**

23030307



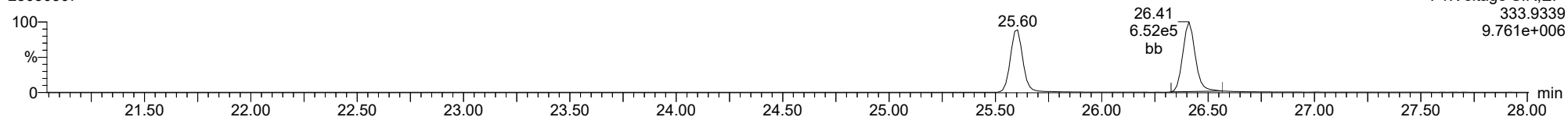
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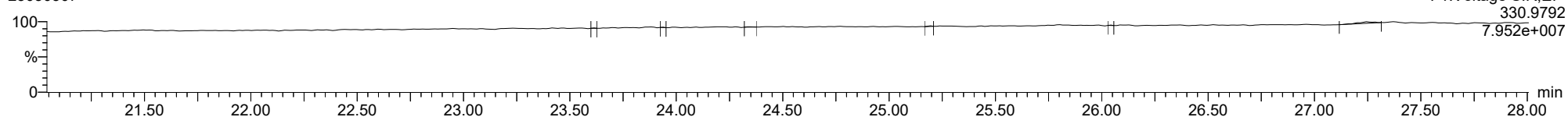
**13C-2378-TCDD**

23030307



**FUNCTION1 PFK**

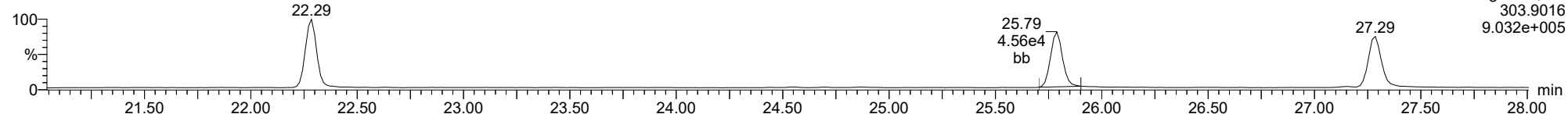
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ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

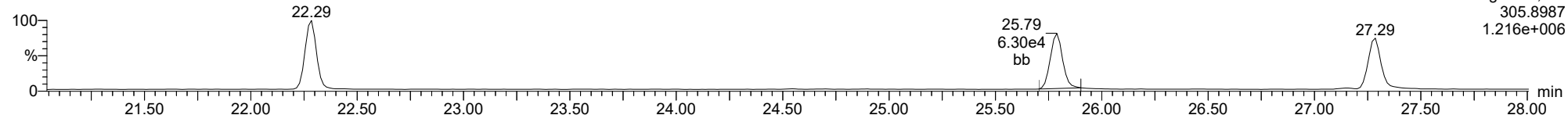
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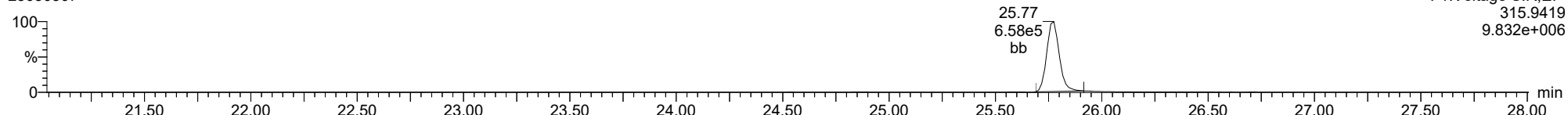
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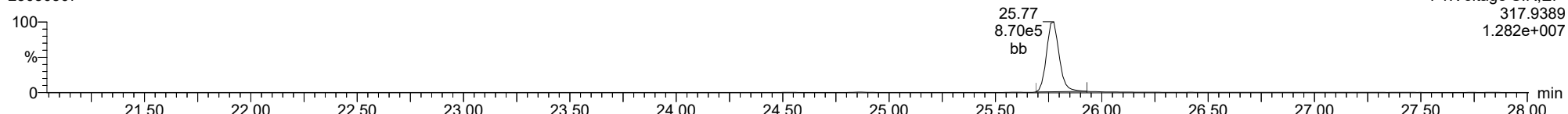
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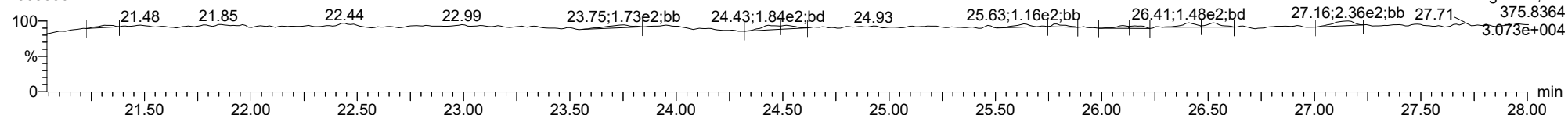
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23030307



**FUNCTION1 HXCDPE**

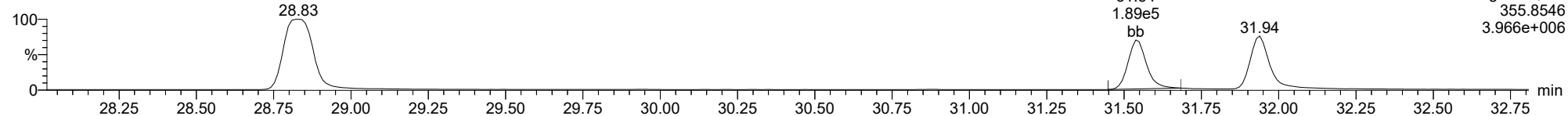
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ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

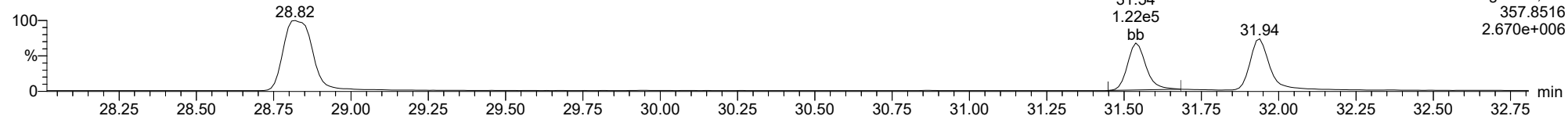
**12378-PeCDD**

23030307



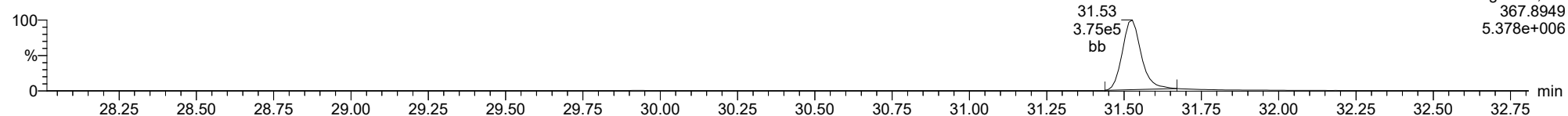
**12378-PeCDD**

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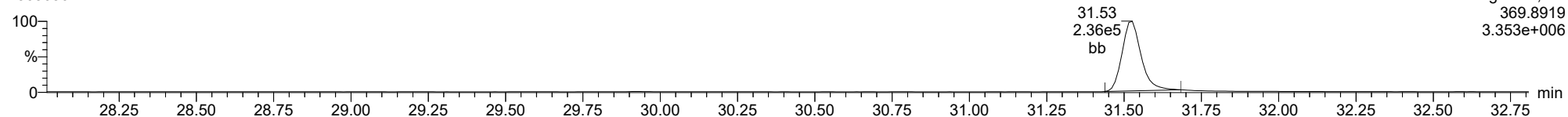
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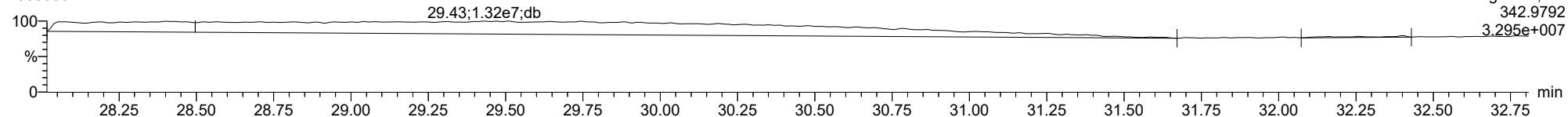
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23030307



**FUNCTION2 PFK**

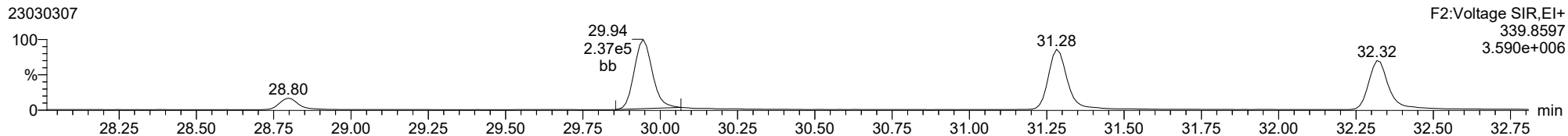
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ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

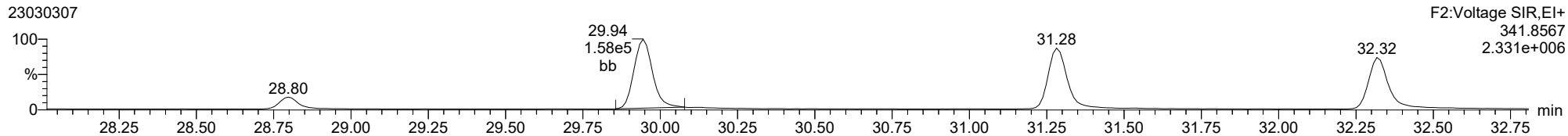
**12378-PeCDF**

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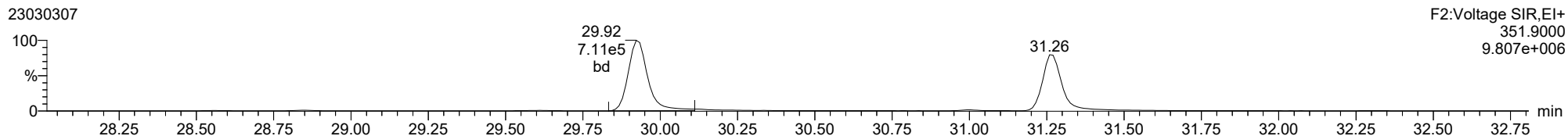
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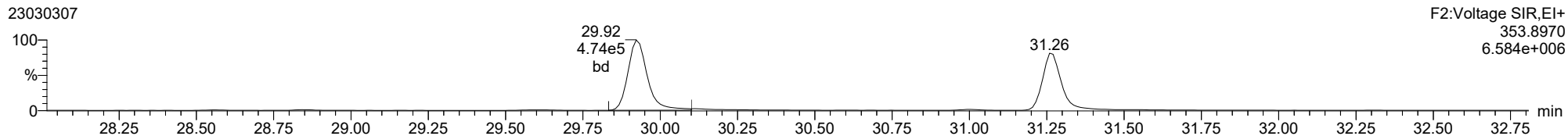
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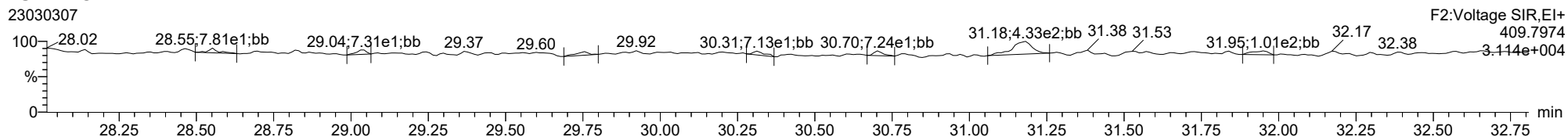
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23030307



**FUNCTION2 HPCDPE**

23030307

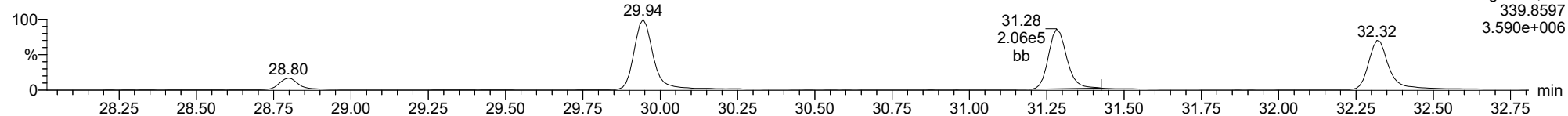




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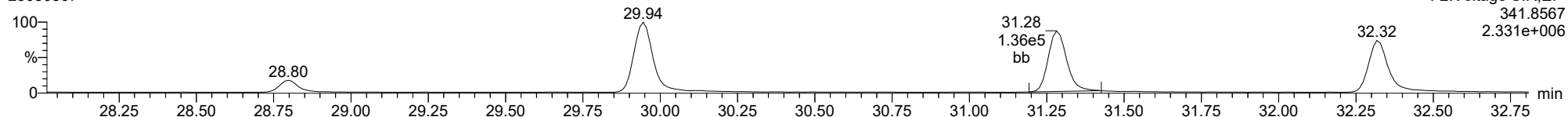
**23478-PeCDF**

23030307



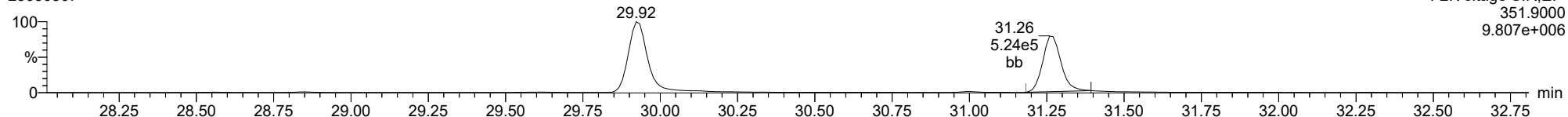
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23030307



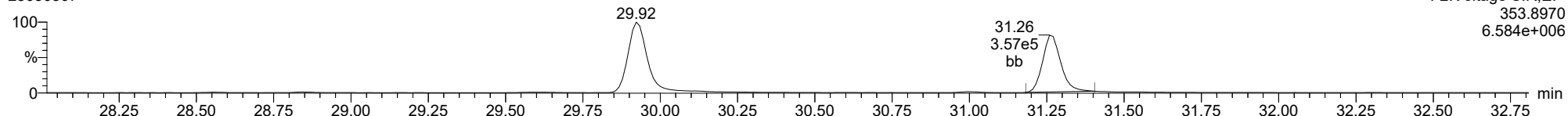
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23030307



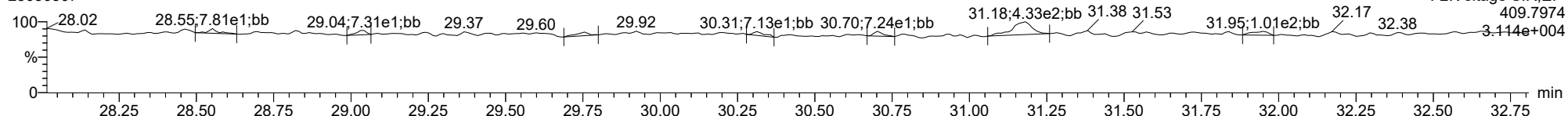
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23030307



**FUNCTION2 HPCDPE**

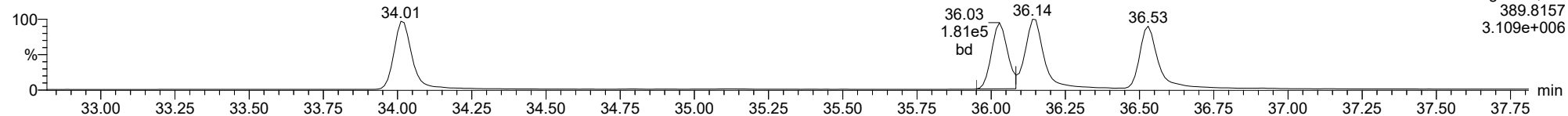
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ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

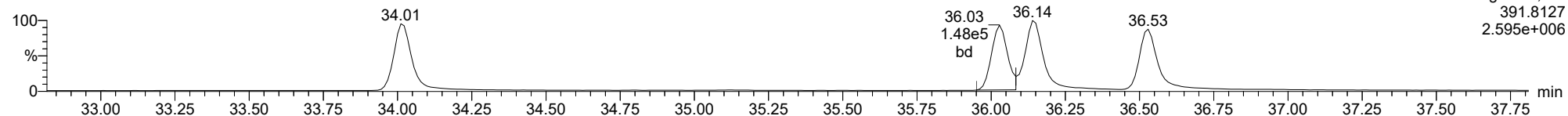
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23030307



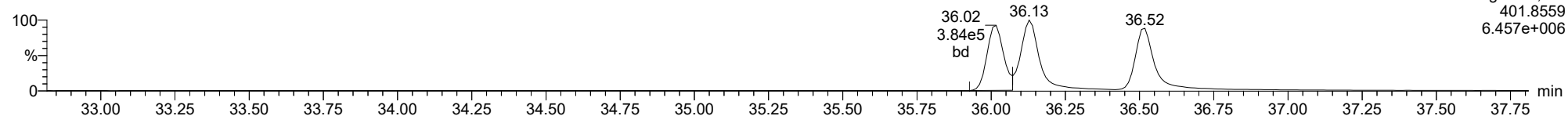
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23030307



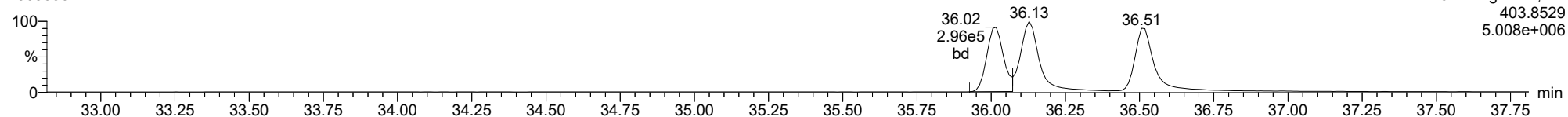
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23030307



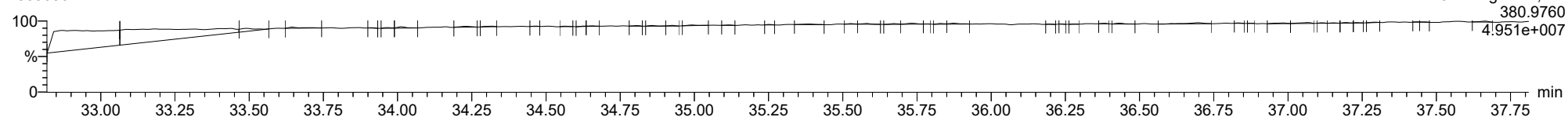
**13C-123478-HxCDD**

23030307



**FUNCTION3 PFK**

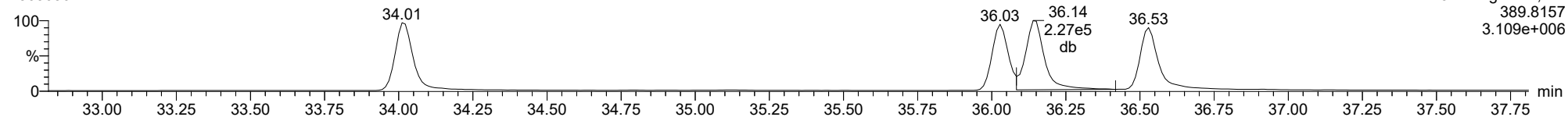
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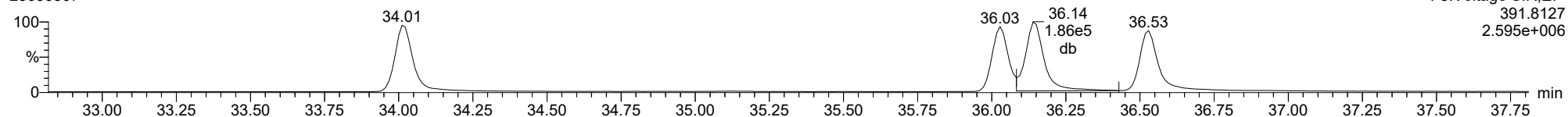
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23030307



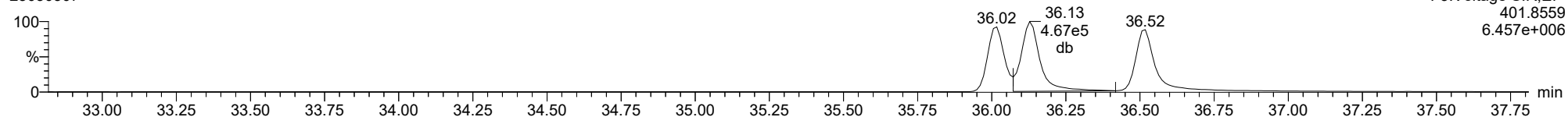
**123678-HxCDD**

23030307



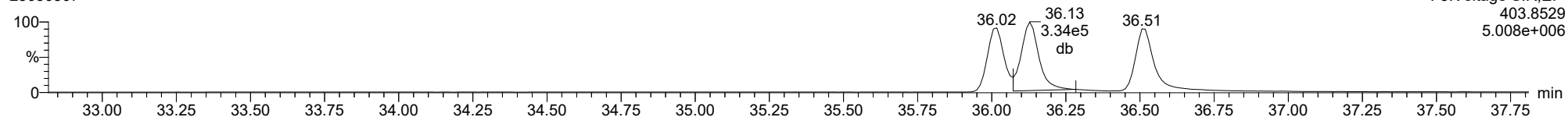
**13C-123678-HxCDD**

23030307



**13C-123678-HxCDD**

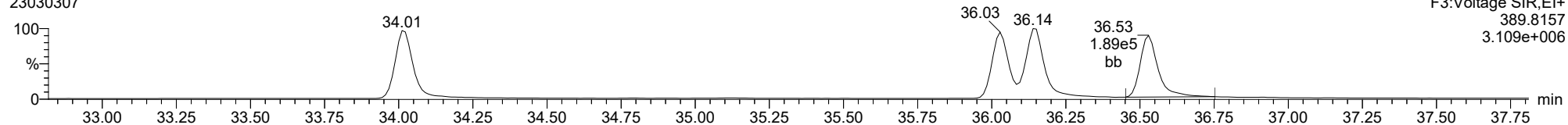
23030307



ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

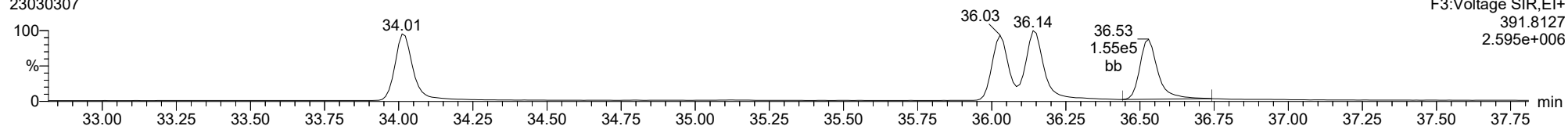
**123789-HxCDD**

23030307



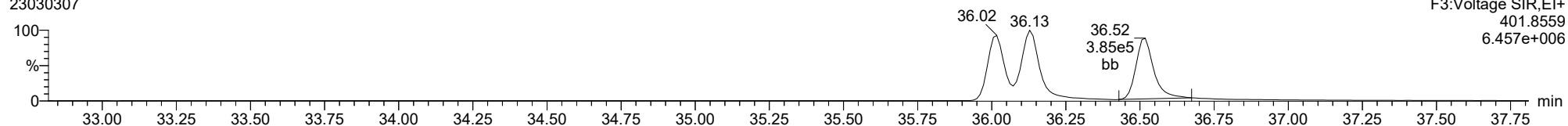
**123789-HxCDD**

23030307



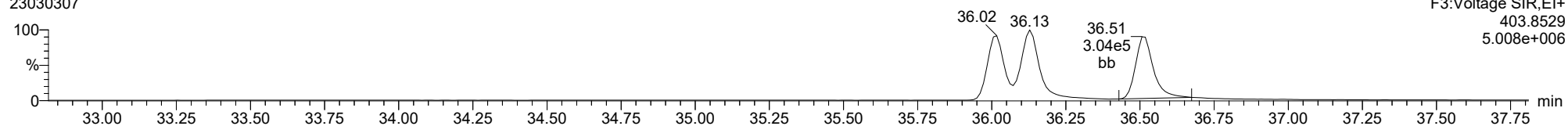
**13C-123789-HxCDD**

23030307



**13C-123789-HxCDD**

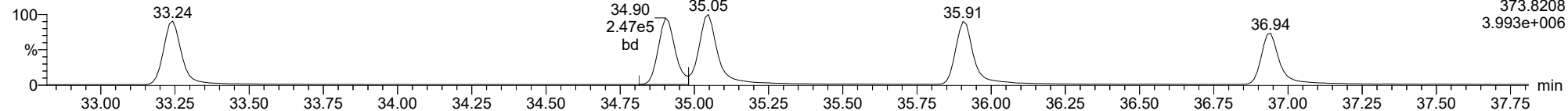
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ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

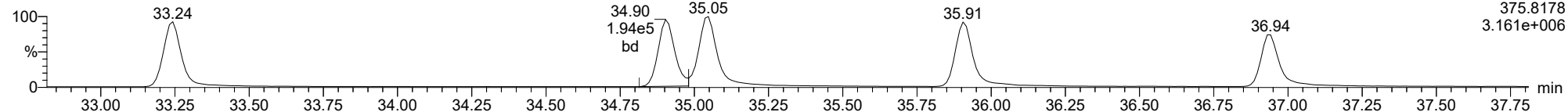
123478-HxCDF

23030307



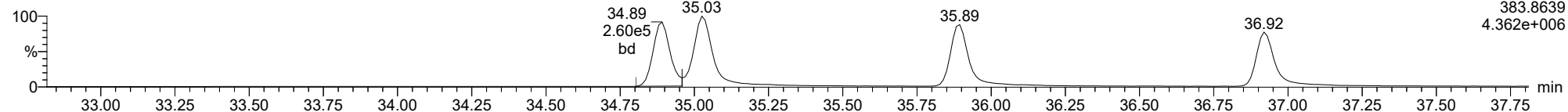
123478-HxCDF

23030307



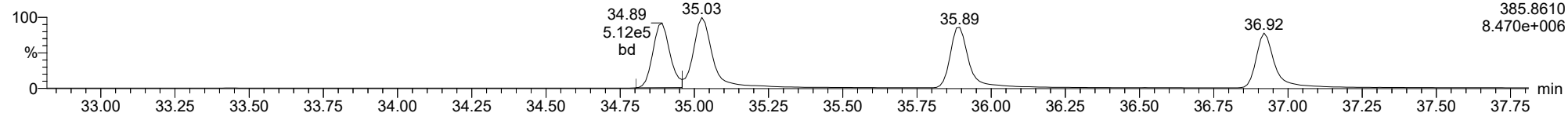
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23030307



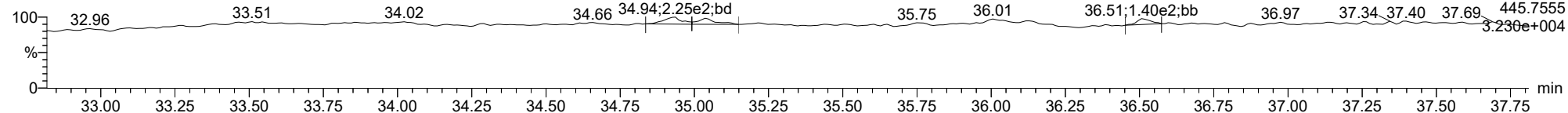
13C-123478-HxCDF

23030307



FUNCTION3 OCDPE

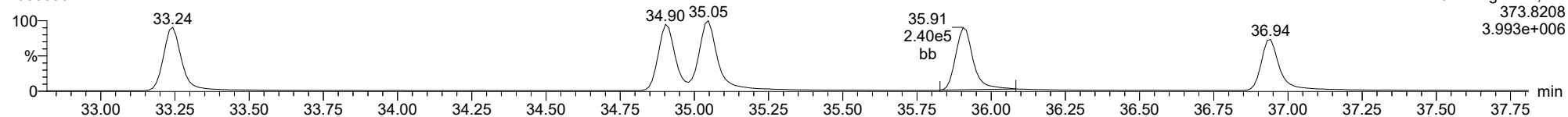
23030307



ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

**234678-HxCDF**

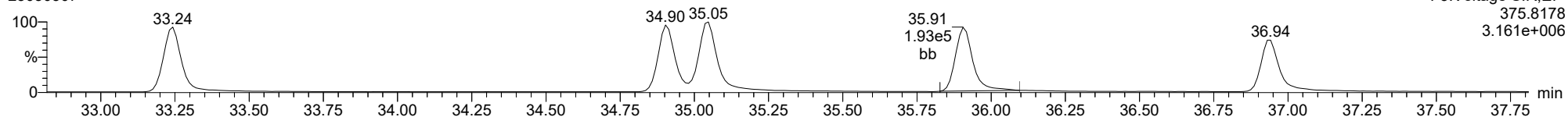
23030307



F3:Voltage SIR,El+  
373.8208  
3.993e+006

**234678-HxCDF**

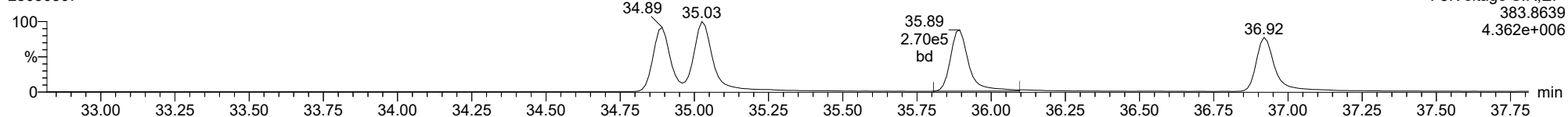
23030307



F3:Voltage SIR,El+  
375.8178  
3.161e+006

**13C-234678-HxCDF**

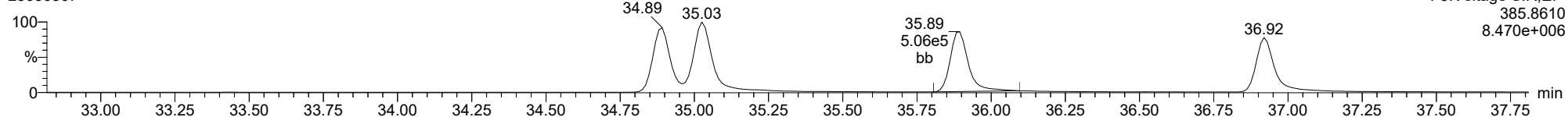
23030307



F3:Voltage SIR,El+  
383.8639  
4.362e+006

**13C-234678-HxCDF**

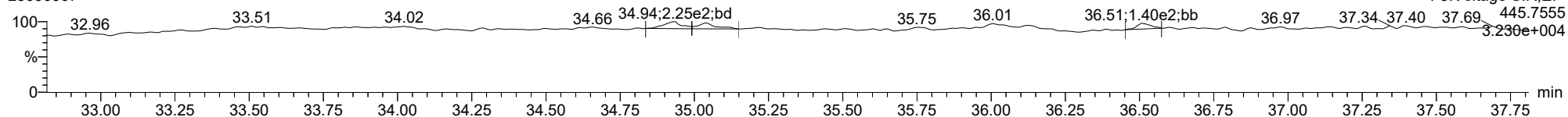
23030307



F3:Voltage SIR,El+  
385.8610  
8.470e+006

**FUNCTION3 OCDPE**

23030307

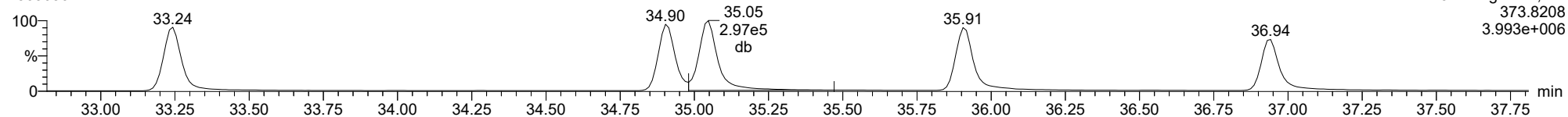


F3:Voltage SIR,El+  
445.7555  
3.230e+004

ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

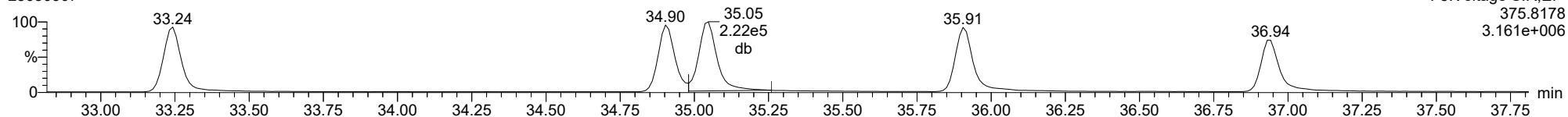
123678-HxCDF

23030307



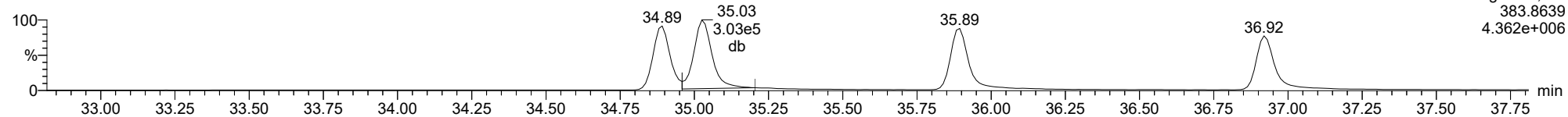
123678-HxCDF

23030307



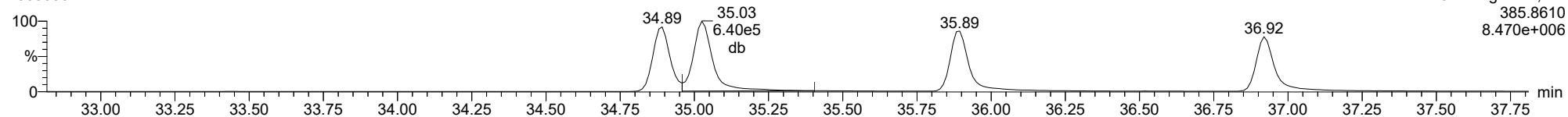
13C-123678-HxCDF

23030307



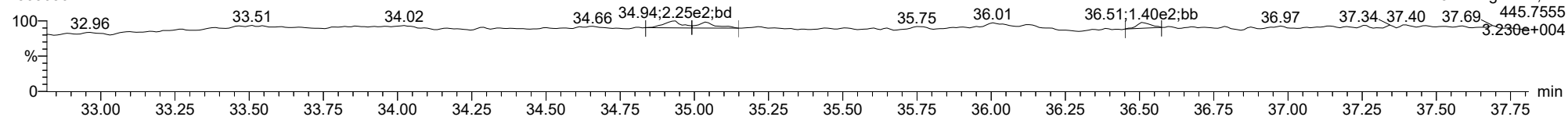
13C-123678-HxCDF

23030307



FUNCTION3 OCDPE

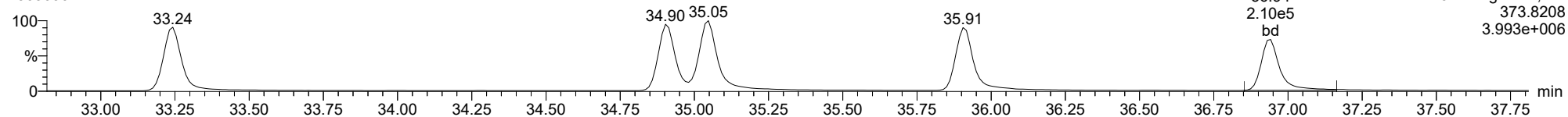
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ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

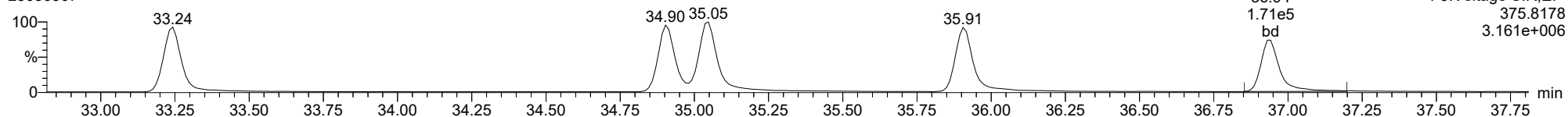
**123789-HxCDF**

23030307



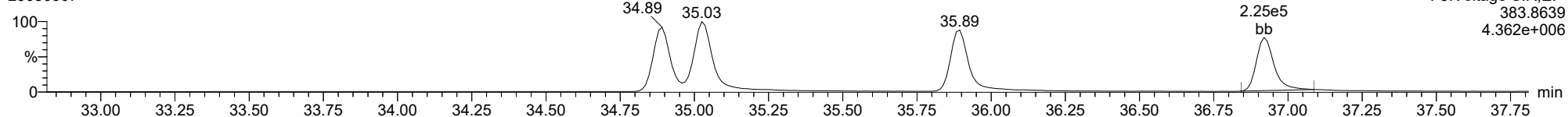
**123789-HxCDF**

23030307



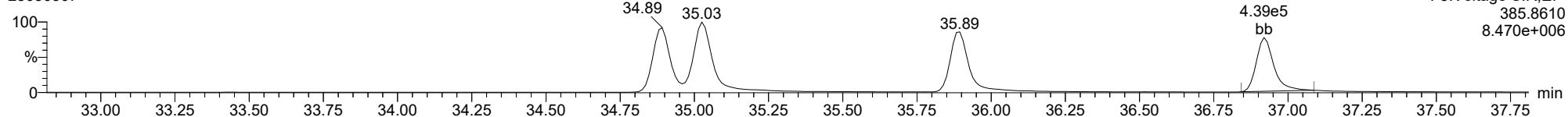
**13C-123789-HxCDF**

23030307



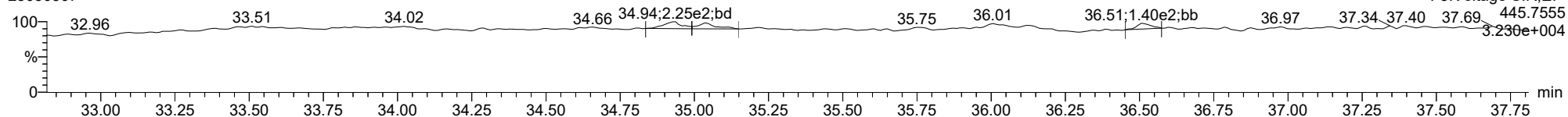
**13C-123789-HxCDF**

23030307



**FUNCTION3 OCDPE**

23030307

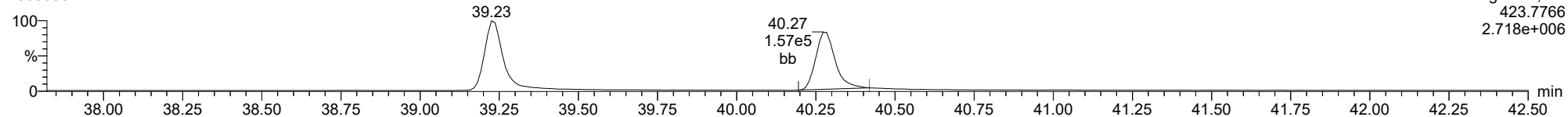




ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

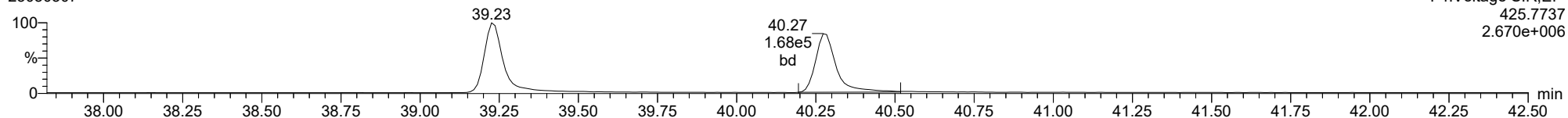
**1234678-HpCDD**

23030307



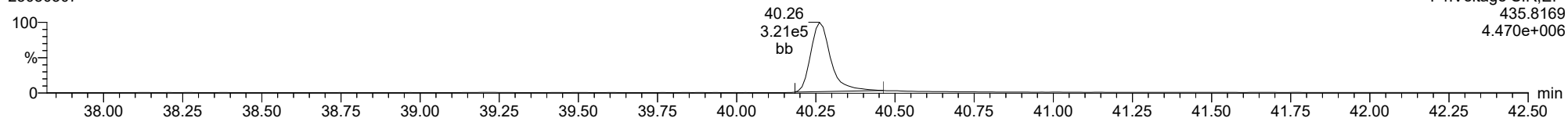
**1234678-HpCDD**

23030307



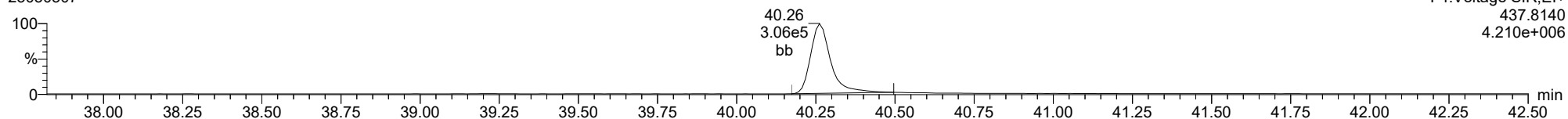
**13C-1234678-HpCDD**

23030307



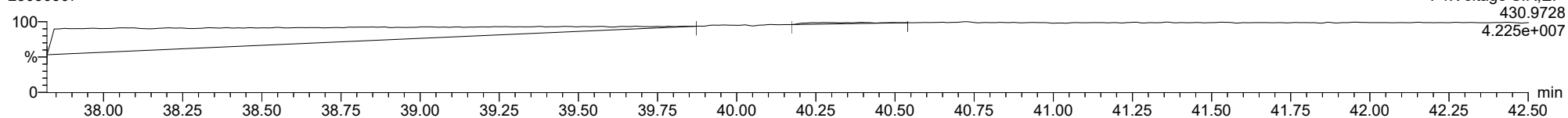
**13C-1234678-HpCDD**

23030307



**FUNCTION4 PFK**

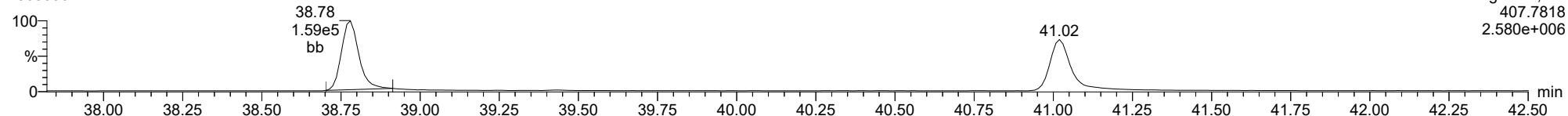
23030307



ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

1234678-HpCDF

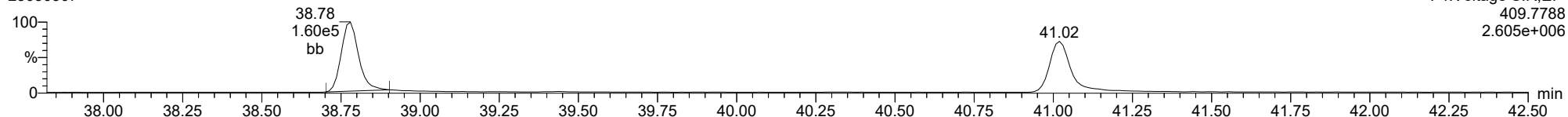
23030307



F4:Voltage SIR,EI+  
407.7818  
2.580e+006

1234678-HpCDF

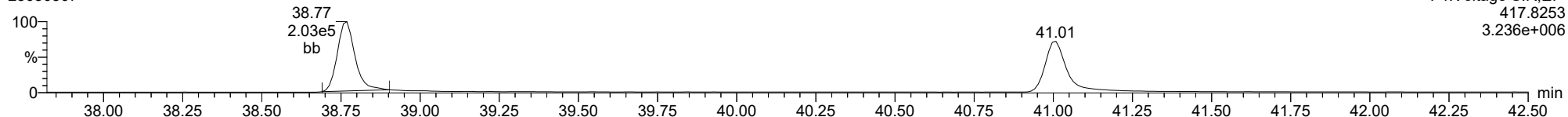
23030307



F4:Voltage SIR,EI+  
409.7788  
2.605e+006

13C-1234678-HpCDF

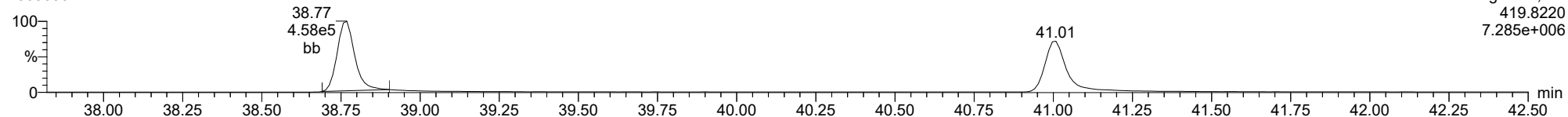
23030307



F4:Voltage SIR,EI+  
417.8253  
3.236e+006

13C-1234678-HpCDF

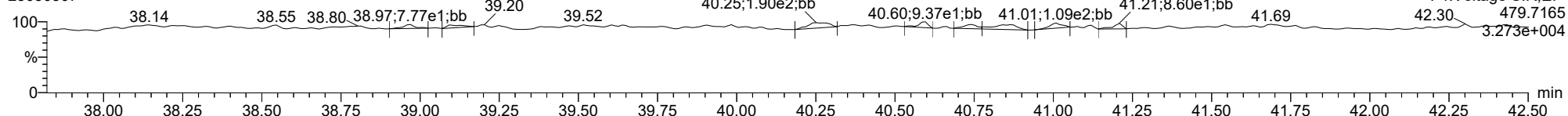
23030307



F4:Voltage SIR,EI+  
419.8220  
7.285e+006

FUNCTION4 NCDPE

23030307

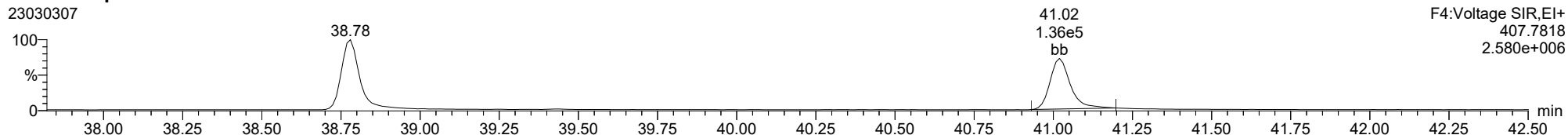


F4:Voltage SIR,EI+  
479.7165  
3.273e+004

ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF

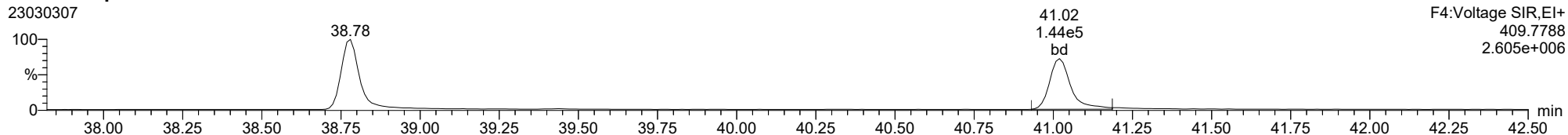
23030307



F4:Voltage SIR,El+  
407.7818  
2.580e+006

1234789-HpCDF

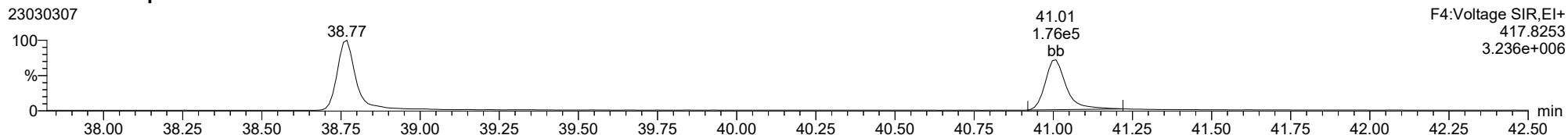
23030307



F4:Voltage SIR,El+  
409.7788  
2.605e+006

13C-1234789-HpCDF

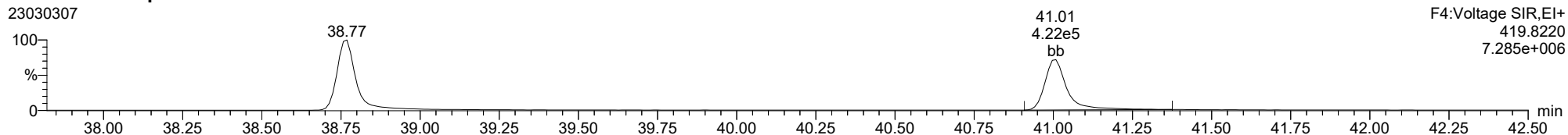
23030307



F4:Voltage SIR,El+  
417.8253  
3.236e+006

13C-1234789-HpCDF

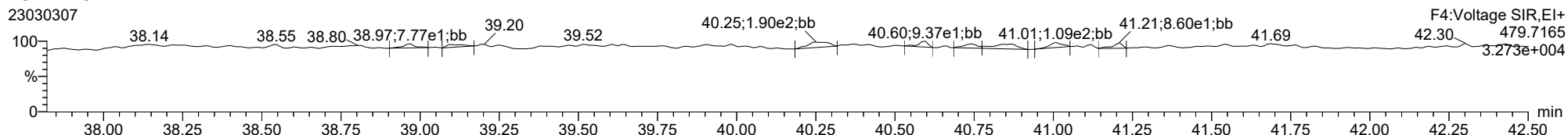
23030307



F4:Voltage SIR,El+  
419.8220  
7.285e+006

FUNCTION4 NCDPE

23030307

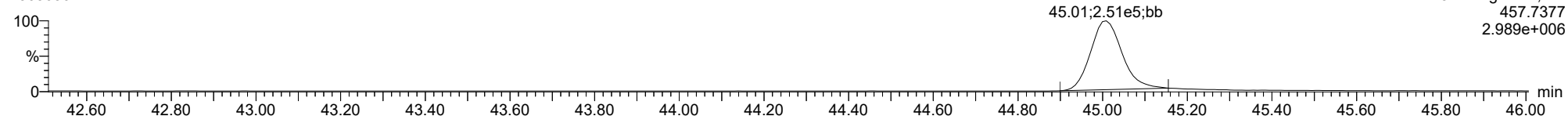


F4:Voltage SIR,El+  
479.7165  
3.273e+004

ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

**OCDD**

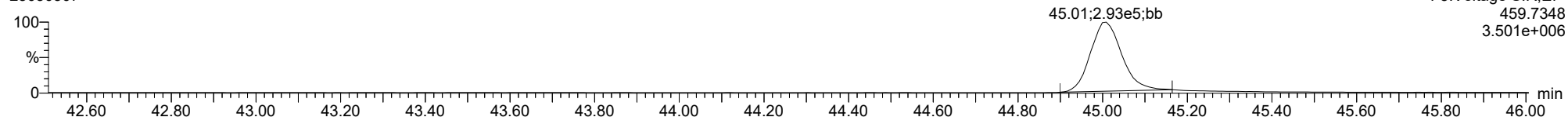
23030307



F5:Voltage SIR,EI+  
457.7377  
2.989e+006

**OCDD**

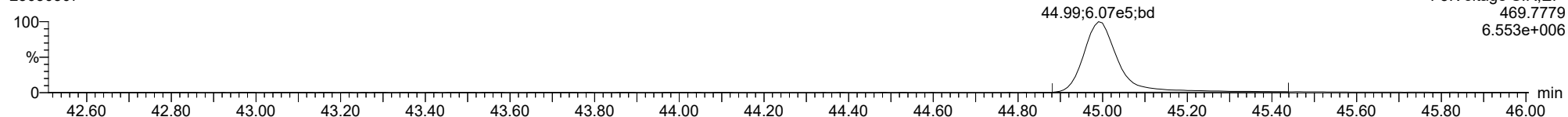
23030307



F5:Voltage SIR,EI+  
459.7348  
3.501e+006

**13C-OCDD**

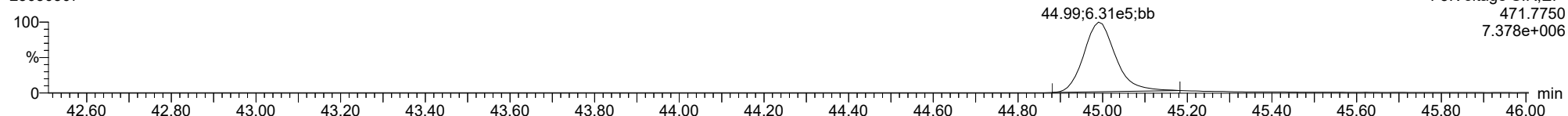
23030307



F5:Voltage SIR,EI+  
469.7779  
6.553e+006

**13C-OCDD**

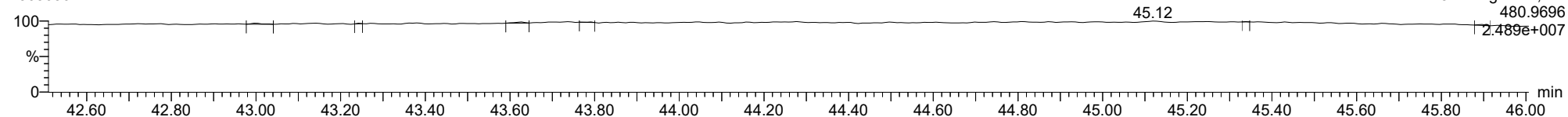
23030307



F5:Voltage SIR,EI+  
471.7750  
7.378e+006

**FUNCTION5 PFK**

23030307

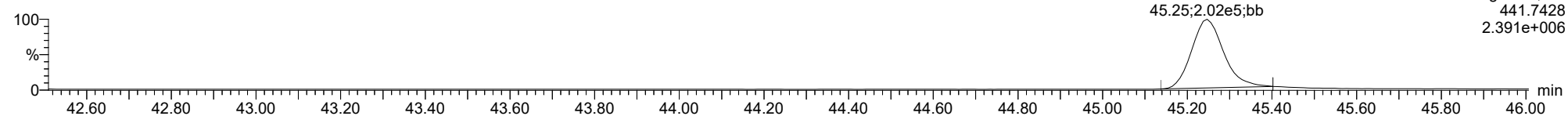


F5:Voltage SIR,EI+  
480.9696  
2.489e+007

ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

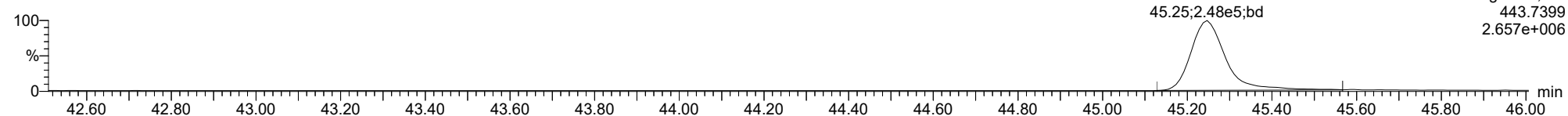
**OCDF**

23030307



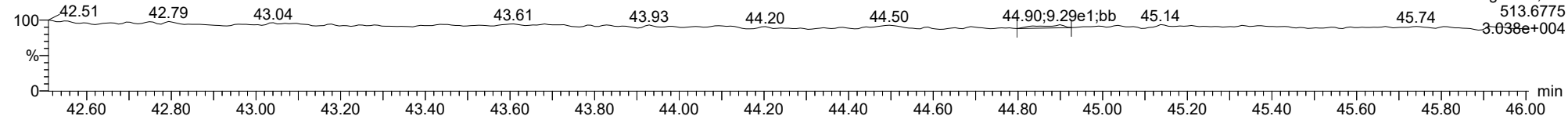
**OCDF**

23030307



**FUNCTION5 DCDPE**

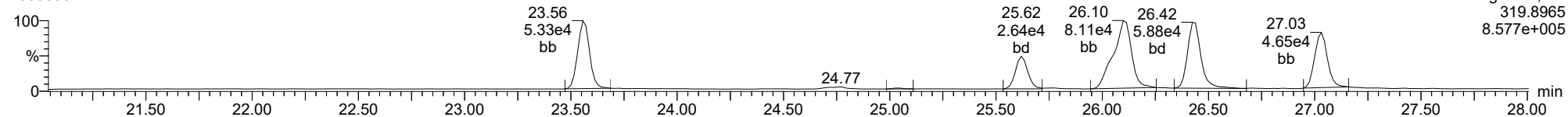
23030307



ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

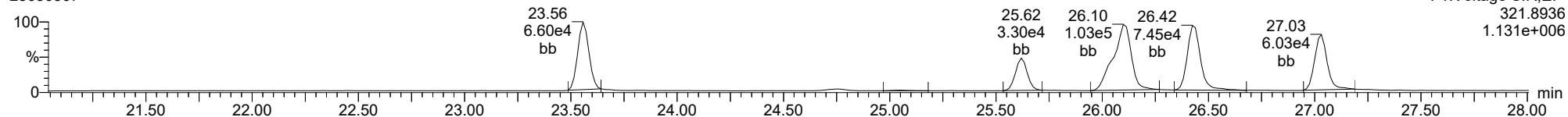
**Total-tetradioxins**

23030307



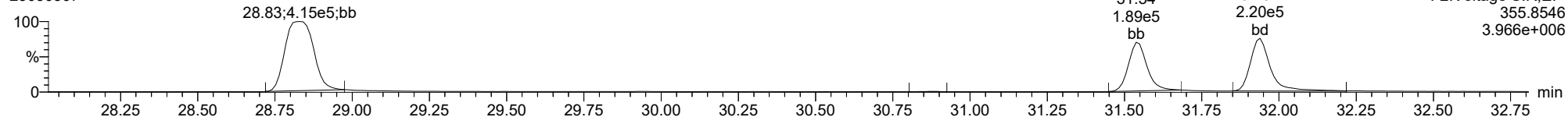
**Total-tetradioxins**

23030307



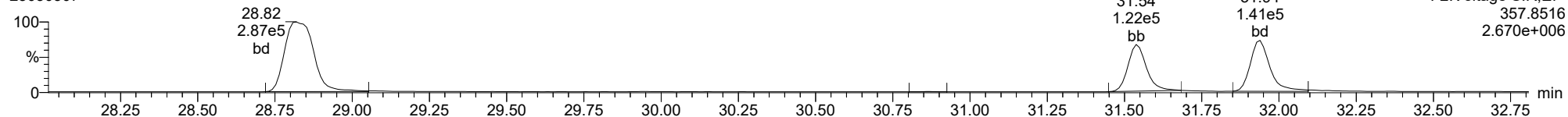
**Total-pentadioxins**

23030307



**Total-pentadioxins**

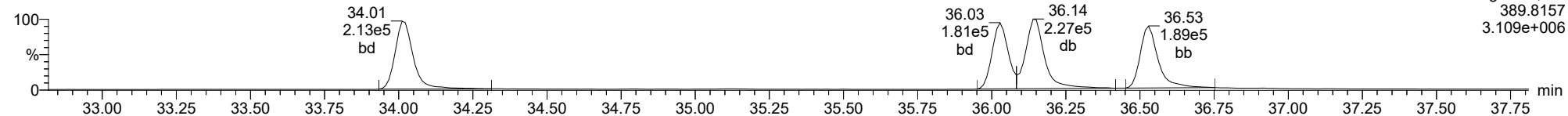
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ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

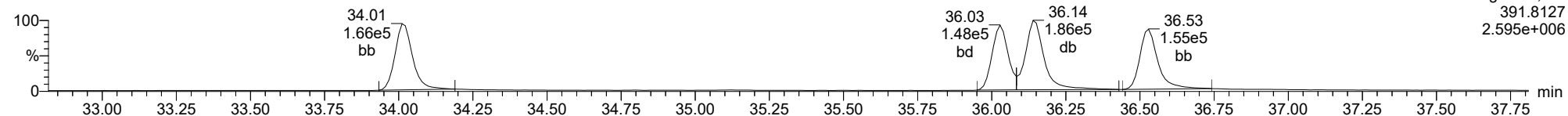
**Total-hexadioxins**

23030307



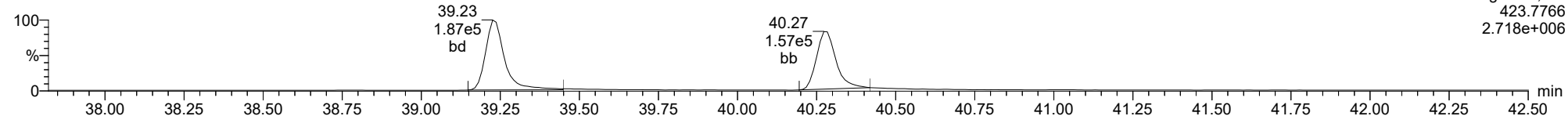
**Total-hexadioxins**

23030307



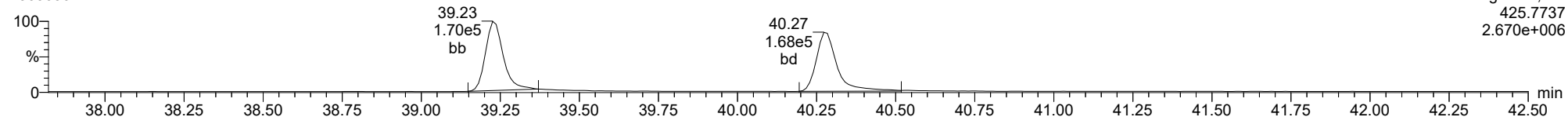
**Total-heptadioxins**

23030307



**Total-heptadioxins**

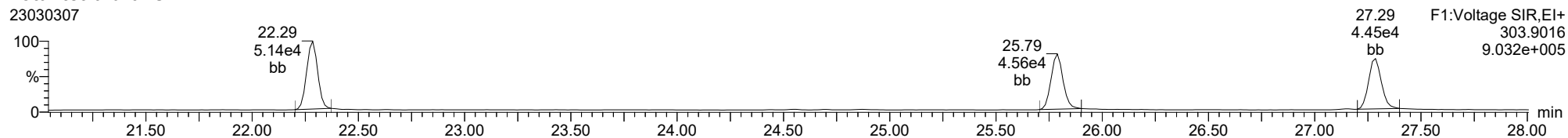
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ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

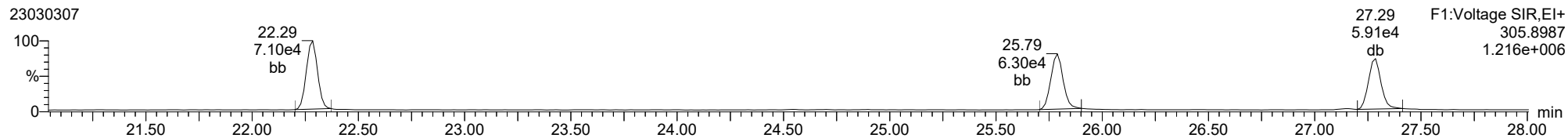
**Total-tetrafurans**

23030307



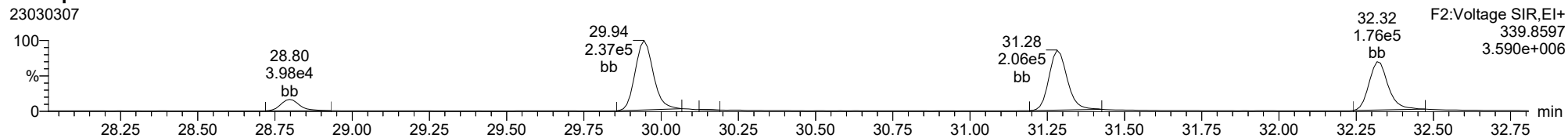
**Total-tetrafurans**

23030307



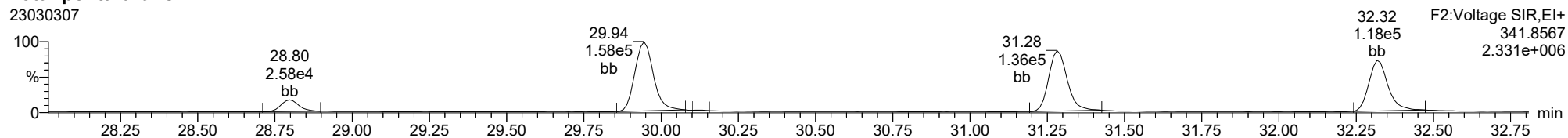
**Total-pentafurans**

23030307



**Total-pentafurans**

23030307

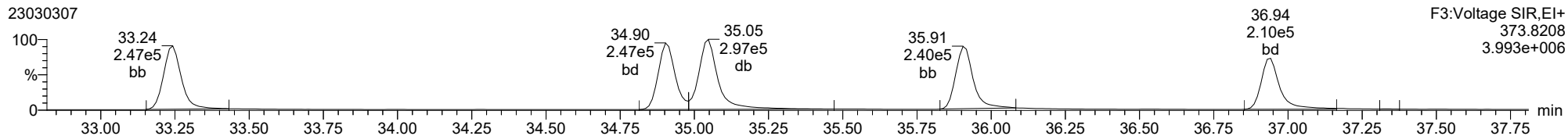




ID: CS3CW, Name: 23030307, Date: 03-Mar-2023, Time: 14:06:39, Conditions: AUTOSPEC01, User: pk

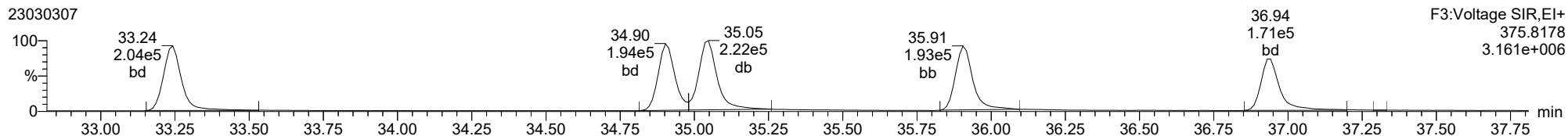
**Total-hexafurans**

23030307



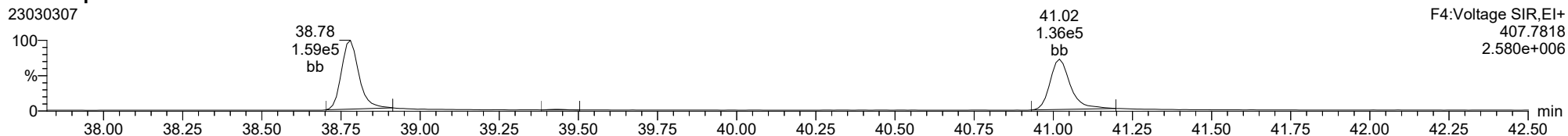
**Total-hexafurans**

23030307



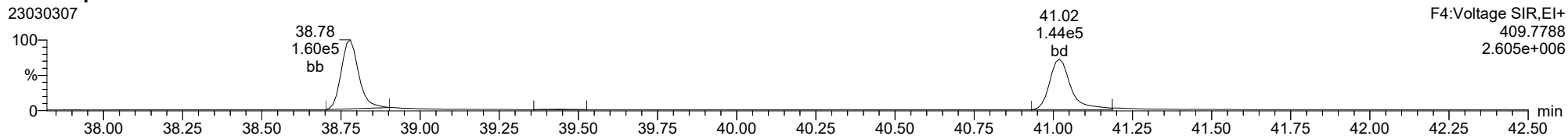
**Total-heptafurans**

23030307



**Total-heptafurans**

23030307



Dataset: T:\Autospec\Processed Data Batch\230303ICIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:51 Pacific Standard Time

**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS4CW, **Name:** 23030308, **Date:** 03-Mar-2023, **Time:** 14:59:53, **Conditions:** AUTOSPEC01, **User:** pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.788	1.001	2.145e5	2.910e5	0.702	0.737	0.770	1085	2356	3.19e6	4.36e6	2939.3	1849.8	NO	bb	bb	41.038
12378-PeCDF	29.944	1.000	1.256e6	8.416e5	0.679	1.492	1.550	4273	3650	1.86e7	1.25e7	4360.5	3425.9	NO	bb	bb	202.935
23478-PeCDF	31.292	1.001	1.346e6	8.943e5	0.786	1.505	1.550	4273	3650	2.02e7	1.34e7	4738.5	3680.0	NO	bb	bb	201.175
123478-HxCDF	34.913	1.001	1.546e6	1.218e6	1.166	1.269	1.240	1919	2508	2.36e7	1.86e7	12323.4	7421.9	NO	bd	bd	197.711
234678-HxCDF	35.916	1.001	1.547e6	1.307e6	1.140	1.184	1.240	1919	2508	2.33e7	1.85e7	12125.4	7387.3	NO	bb	bd	210.207
123678-HxCDF	35.047	1.000	1.740e6	1.369e6	1.091	1.271	1.240	1919	2508	2.57e7	2.04e7	13394.0	8153.6	NO	db	db	189.797
123789-HxCDF	36.941	1.000	1.209e6	1.036e6	1.137	1.167	1.240	1919	2508	1.81e7	1.44e7	9441.6	5749.5	NO	bb	bd	200.361
1234678-HpCDF	38.779	1.000	8.720e5	8.418e5	1.003	1.036	1.050	3326	3780	1.44e7	1.42e7	4339.3	3745.4	NO	bb	bb	204.650
1234789-HpCDF	41.019	1.000	7.221e5	7.262e5	0.953	0.994	1.050	3326	3780	1.01e7	1.02e7	3041.3	2689.4	NO	bb	bb	208.465
OCDF	45.255	1.006	1.195e6	1.333e6	0.778	0.897	0.890	1809	2070	1.43e7	1.59e7	7923.8	7701.9	NO	bb	bb	419.788
2378-TCDD	26.438	1.001	2.573e5	3.218e5	1.149	0.799	0.770	1559	1107	3.81e6	4.84e6	2446.0	4371.1	NO	bb	bb	39.968
12378-PeCDD	31.549	1.001	1.294e6	8.446e5	1.022	1.532	1.550	1566	1736	1.89e7	1.24e7	12077.0	7164.9	NO	bb	bb	199.637
123478-HxCDD	36.027	1.000	1.162e6	9.482e5	0.996	1.225	1.240	1816	1276	1.93e7	1.57e7	10622.2	12327.7	NO	bd	bd	198.133
123678-HxCDD	36.150	1.001	1.363e6	1.125e6	1.001	1.212	1.240	1816	1276	1.97e7	1.61e7	10823.8	12618.8	NO	db	db	204.224
123789-HxCDD	36.528	1.011	1.168e6	9.477e5	0.907	1.232	1.240	1816	1276	1.77e7	1.44e7	9764.9	11291.0	NO	bb	bb	203.974
1234678-HpCDD	40.283	1.001	8.284e5	8.038e5	1.039	1.031	1.050	3177	2938	1.22e7	1.19e7	3841.2	4046.8	NO	bb	bb	198.376
OCDD	45.008	1.000	1.293e6	1.512e6	0.920	0.855	0.890	1475	2373	1.59e7	1.85e7	10744.0	7810.6	NO	bb	bb	394.016
13C-2378-TCDF	25.774	1.007	7.645e5	9.914e5	1.620	0.771	0.770	1843	2282	1.15e7	1.49e7	6238.3	6526.6	NO	bb	bb	101.535
13C-12378-PeCDF	29.933	1.169	9.119e5	6.098e5	1.240	1.495	1.550	3738	4574	1.28e7	8.50e6	3418.3	1857.5	NO	bd	bd	114.934
13C-23478-PeCDF	31.270	1.221	8.522e5	5.645e5	1.118	1.510	1.550	3738	4574	1.28e7	8.47e6	3423.2	1851.3	NO	bb	bb	118.746
13C-123478-HxCDF	34.891	0.956	4.043e5	7.946e5	1.168	0.509	0.510	3379	2646	6.26e6	1.23e7	1851.5	4643.3	NO	bd	bd	93.689
13C-123678-HxCDF	35.036	0.959	5.122e5	9.895e5	1.386	0.518	0.510	3379	2646	6.72e6	1.32e7	1988.7	4975.1	NO	db	dd	98.879
13C-234678-HxCDF	35.894	0.983	4.066e5	7.845e5	1.129	0.518	0.510	3379	2646	6.03e6	1.18e7	1785.1	4452.3	NO	bb	bb	96.294
13C-123789-HxCDF	36.930	1.011	3.312e5	6.542e5	0.932	0.506	0.510	3379	2646	4.85e6	9.52e6	1434.9	3598.2	NO	bb	bb	96.556
13C-1234678-HpCDF	38.768	1.062	2.524e5	5.825e5	0.895	0.433	0.440	1935	3511	4.16e6	9.49e6	2148.5	2703.4	NO	bb	bb	85.151
13C-1234789-HpCDF	41.007	1.123	2.205e5	5.084e5	0.770	0.434	0.440	1935	3511	3.02e6	6.92e6	1559.8	1971.4	NO	bb	bb	86.451
13C-1234-TCDD	25.605	0.000	4.743e5	5.931e5	1.000	0.800	0.770	2271	1813	7.33e6	9.12e6	3228.4	5028.5	NO	bb	bb	100.000
13C-2378-TCDD	26.410	1.031	5.640e5	6.974e5	1.152	0.809	0.770	2271	1813	8.09e6	1.01e7	3563.4	5571.0	NO	bb	bb	102.553
13C-12378-PeCDD	31.526	1.231	6.480e5	4.003e5	0.829	1.619	1.550	1212	1529	9.47e6	5.85e6	7814.9	3827.1	NO	bb	bb	118.505
13C-123478-HxCDD	36.016	0.986	6.052e5	4.646e5	0.995	1.303	1.240	1807	1475	9.78e6	7.54e6	5412.5	5108.2	NO	bd	bd	98.154
13C-123678-HxCDD	36.127	0.989	6.753e5	5.418e5	1.157	1.246	1.240	1807	1475	1.01e7	8.01e6	5594.1	5426.8	NO	db	db	96.059
13C-1234678-HpCDD	40.261	1.102	3.968e5	3.950e5	0.840	1.005	1.050	2357	2248	5.68e6	5.37e6	2408.3	2387.8	NO	bb	bb	86.051
13C-OCDD	44.999	1.232	7.332e5	8.149e5	0.767	0.900	0.890	1459	1173	8.67e6	9.61e6	5943.8	8191.6	NO	bb	bb	184.151
13C-123789-HxCDD	36.518	0.000	6.173e5	4.781e5	1.000	1.291	1.240	1807	1475	9.34e6	7.24e6	5171.1	4908.4	NO	bb	bb	100.000
37CL-2378-TCDD	26.438	1.033	5.280e5		1.288			2576		7.74e6		3003.1			bb		38.410

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					0.802		0.770	1085	2356								
1289-TCDF					0.678		0.770	1085	2356								
13468-PECDF					1.246		1.550	728	1112								
12389-PECDF					0.496		1.550	4273	3650								
123468-HXCDF					1.169		1.240	1919	2508								
1368-TCDD					1.015		0.770	1559	1107								
1289-TCDD					0.909		0.770	1559	1107								
12479-PECDD					2.301		1.550	1566	1736								
12389-PECDD					1.184		1.550	1566	1736								
124679-HXCDD					1.115		1.240	1816	1276								
1234679-HPCDD					1.137		1.050	3177	2938								
Total-tetrafurans			2.178e5		0.727			1085		3.24e6							41.692
Total-penta1			0.000e0					728		0.00e0							
Total-pentafurans			2.604e6		0.654			4273		3.89e7							404.382
Total-hexafurans			6.043e6		1.141			1919		9.07e7							798.266
Total-heptafurans			1.594e6		0.978			3326		2.45e7							413.115
Total-Furans			1.165e7		0.922			1085		1.72e8							2077.243
Total-tetradoxins			2.634e5		1.024			1559		3.88e6							41.026
Total-pentadoxins			1.295e6		1.502			1566		1.89e7							199.743
Total-hexadoxins			3.693e6		1.005			1816		5.67e7							606.331
Total-heptadoxins			8.286e5		1.088			3177		1.22e7							198.425
Total-Dioxins			7.373e6		1.130			1559		1.08e8							1439.540
Total-TEQ			1.903e7					1559		2.79e8							3516.783
FUNCTION1 PFK			2.654e6					566854		2.19e6							
FUNCTION2 PFK			2.398e5					242860		6.75e6							0.000
FUNCTION3 PFK			5.441e7					394639		2.11e7							0.000
FUNCTION4 PFK			0.000e0					306708		0.00e0							
FUNCTION5 PFK			3.395e4					230570		1.65e6							
FUNCTION1 HXCD...			4.934e2					625		6.74e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			1.574e3					915		2.35e4							0.000
FUNCTION3 OCDPE			8.696e2					844		1.47e4							0.000
FUNCTION4 NCDPE			3.767e2					925		5.85e3							0.000
FUNCTION5 DCDPE			0.000e0					629		0.00e0							

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50

**Calibration:** T:\Autospec\Curves\230303\CIH.cdb 06 Mar 2023 10:57:27

**ID:** CS4CW, **Name:** 23030308, **Date:** 03-Mar-2023, **Time:** 14:59:53, **Conditions:** AUTOSPEC01, **User:** pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.79	2.145e5	2.910e5	0.702	0.74	0.77	2939.3	YES	NO	bb	bb	41.038
2	Total-tetrafurans	24.88	1.531e3	2.327e3	0.727	0.66	0.77	20.3	YES	NO	bb	bb	0.302
3	Total-tetrafurans	24.56	1.778e3	2.714e3	0.727	0.66	0.77	29.5	YES	NO	bb	bb	0.352

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	31.01	1.644e3	9.764e2	0.654	1.68	1.55	5.6	YES	NO	db	bd	0.273
2	12378-PeCDF	29.94	1.256e6	8.416e5	0.679	1.49	1.55	4360.5	YES	NO	bb	bb	202.935
3	23478-PeCDF	31.29	1.346e6	8.943e5	0.786	1.51	1.55	4738.5	YES	NO	bb	bb	201.175

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.94	1.209e6	1.036e6	1.137	1.17	1.24	9441.6	YES	NO	bb	bd	200.361
2	234678-HxCDF	35.92	1.547e6	1.307e6	1.140	1.18	1.24	12125.4	YES	NO	bb	bd	210.207
3	Total-hexafurans	35.77	1.562e2	1.389e2	1.141	1.12	1.24	3.4	NO	NO	bb	bb	0.021
4	123678-HxCDF	35.05	1.740e6	1.369e6	1.091	1.27	1.24	13394.0	YES	NO	db	db	189.797
5	123478-HxCDF	34.91	1.546e6	1.218e6	1.166	1.27	1.24	12323.4	YES	NO	bd	bd	197.711
6	Total-hexafurans	34.76	1.255e3	1.100e3	1.141	1.14	1.24	11.9	YES	NO	bb	bb	0.169

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.78	8.720e5	8.418e5	1.003	1.04	1.05	4339.3	YES	NO	bb	bb	204.650
2	1234789-HpCDF	41.02	7.221e5	7.262e5	0.953	0.99	1.05	3041.3	YES	NO	bb	bb	208.465

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.79	2.145e5	2.910e5	0.702	0.74	0.77	2939.3	YES	NO	bb	bb	41.038
2	Total-tetrafurans	24.88	1.531e3	2.327e3	0.727	0.66	0.77	20.3	YES	NO	bb	bb	0.302
3	Total-tetrafurans	24.56	1.778e3	2.714e3	0.727	0.66	0.77	29.5	YES	NO	bb	bb	0.352
4	Total-pentafurans	31.01	1.644e3	9.764e2	0.654	1.68	1.55	5.6	YES	NO	db	bd	0.273
5	12378-PeCDF	29.94	1.256e6	8.416e5	0.679	1.49	1.55	4360.5	YES	NO	bb	bb	202.935
6	23478-PeCDF	31.29	1.346e6	8.943e5	0.786	1.51	1.55	4738.5	YES	NO	bb	bb	201.175
7	123789-HxCDF	36.94	1.209e6	1.036e6	1.137	1.17	1.24	9441.6	YES	NO	bb	bd	200.361
8	234678-HxCDF	35.92	1.547e6	1.307e6	1.140	1.18	1.24	12125.4	YES	NO	bb	bd	210.207
9	Total-hexafurans	35.77	1.562e2	1.389e2	1.141	1.12	1.24	3.4	NO	NO	bb	bb	0.021
10	123678-HxCDF	35.05	1.740e6	1.369e6	1.091	1.27	1.24	13394.0	YES	NO	db	db	189.797
11	123478-HxCDF	34.91	1.546e6	1.218e6	1.166	1.27	1.24	12323.4	YES	NO	bd	bd	197.711
12	Total-hexafurans	34.76	1.255e3	1.100e3	1.141	1.14	1.24	11.9	YES	NO	bb	bb	0.169
13	1234678-HpCDF	38.78	8.720e5	8.418e5	1.003	1.04	1.05	4339.3	YES	NO	bb	bb	204.650
14	1234789-HpCDF	41.02	7.221e5	7.262e5	0.953	0.99	1.05	3041.3	YES	NO	bb	bb	208.465
15	OCDF	45.26	1.195e6	1.333e6	0.778	0.90	0.89	7923.8	YES	NO	bb	bb	419.788

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.44	2.573e5	3.218e5	1.149	0.80	0.77	2446.0	YES	NO	bb	bb	39.968
2	Total-tetradoxins	26.06	6.115e3	7.563e3	1.024	0.81	0.77	45.2	YES	NO	bb	bb	1.059

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.55	1.294e6	8.446e5	1.022	1.53	1.55	12077.0	YES	NO	bb	bb	199.637
2	Total-pentadoxins	29.94	9.896e2	6.778e2	1.502	1.46	1.55	7.8	YES	NO	bb	bb	0.106

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.53	1.168e6	9.477e5	0.907	1.23	1.24	9764.9	YES	NO	bb	bb	203.974
2	123678-HxCDD	36.15	1.363e6	1.125e6	1.001	1.21	1.24	10823.8	YES	NO	db	db	204.224
3	123478-HxCDD	36.03	1.162e6	9.482e5	0.996	1.23	1.24	10622.2	YES	NO	bd	bd	198.133

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptadioxins	40.57	2.148e2	2.026e2	1.088	1.06	1.05	2.3	NO	NO	bb	bb	0.048
2	1234678-HpCDD	40.28	8.284e5	8.038e5	1.039	1.03	1.05	3841.2	YES	NO	bb	bb	198.376

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.44	2.573e5	3.218e5	1.149	0.80	0.77	2446.0	YES	NO	bb	bb	39.968
2	Total-tetradioxins	26.06	6.115e3	7.563e3	1.024	0.81	0.77	45.2	YES	NO	bb	bb	1.059
3	12378-PeCDD	31.55	1.294e6	8.446e5	1.022	1.53	1.55	12077.0	YES	NO	bb	bb	199.637
4	Total-pentadioxins	29.94	9.896e2	6.778e2	1.502	1.46	1.55	7.8	YES	NO	bb	bb	0.106
5	123789-HxCDD	36.53	1.168e6	9.477e5	0.907	1.23	1.24	9764.9	YES	NO	bb	bb	203.974
6	123678-HxCDD	36.15	1.363e6	1.125e6	1.001	1.21	1.24	10823.8	YES	NO	db	db	204.224
7	123478-HxCDD	36.03	1.162e6	9.482e5	0.996	1.23	1.24	10622.2	YES	NO	bd	bd	198.133
8	Total-heptadioxins	40.57	2.148e2	2.026e2	1.088	1.06	1.05	2.3	NO	NO	bb	bb	0.048
9	1234678-HpCDD	40.28	8.284e5	8.038e5	1.039	1.03	1.05	3841.2	YES	NO	bb	bb	198.376
10	OCDD	45.01	1.293e6	1.512e6	0.920	0.86	0.89	10744.0	YES	NO	bb	bb	394.016

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**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.79	2.145e5	2.910e5	0.702	0.74	0.77	2939.3	YES	NO	bb	bb	41.038
2	Total-tetrafurans	24.88	1.531e3	2.327e3	0.727	0.66	0.77	20.3	YES	NO	bb	bb	0.302
3	Total-tetrafurans	24.56	1.778e3	2.714e3	0.727	0.66	0.77	29.5	YES	NO	bb	bb	0.352
4	Total-pentafurans	31.01	1.644e3	9.764e2	0.654	1.68	1.55	5.6	YES	NO	db	bd	0.273
5	12378-PeCDF	29.94	1.256e6	8.416e5	0.679	1.49	1.55	4360.5	YES	NO	bb	bb	202.935
6	23478-PeCDF	31.29	1.346e6	8.943e5	0.786	1.51	1.55	4738.5	YES	NO	bb	bb	201.175
7	123789-HxCDF	36.94	1.209e6	1.036e6	1.137	1.17	1.24	9441.6	YES	NO	bb	bd	200.361
8	234678-HxCDF	35.92	1.547e6	1.307e6	1.140	1.18	1.24	12125.4	YES	NO	bb	bd	210.207
9	Total-hexafurans	35.77	1.562e2	1.389e2	1.141	1.12	1.24	3.4	NO	NO	bb	bb	0.021
10	123678-HxCDF	35.05	1.740e6	1.369e6	1.091	1.27	1.24	13394.0	YES	NO	db	db	189.797
11	123478-HxCDF	34.91	1.546e6	1.218e6	1.166	1.27	1.24	12323.4	YES	NO	bd	bd	197.711
12	Total-hexafurans	34.76	1.255e3	1.100e3	1.141	1.14	1.24	11.9	YES	NO	bb	bb	0.169
13	1234678-HpCDF	38.78	8.720e5	8.418e5	1.003	1.04	1.05	4339.3	YES	NO	bb	bb	204.650
14	1234789-HpCDF	41.02	7.221e5	7.262e5	0.953	0.99	1.05	3041.3	YES	NO	bb	bb	208.465
15	OCDF	45.26	1.195e6	1.333e6	0.778	0.90	0.89	7923.8	YES	NO	bb	bb	419.788
16	2378-TCDD	26.44	2.573e5	3.218e5	1.149	0.80	0.77	2446.0	YES	NO	bb	bb	39.968
17	Total-tetradiioxins	26.06	6.115e3	7.563e3	1.024	0.81	0.77	45.2	YES	NO	bb	bb	1.059
18	12378-PeCDD	31.55	1.294e6	8.446e5	1.022	1.53	1.55	12077.0	YES	NO	bb	bb	199.637
19	Total-pentadiioxins	29.94	9.896e2	6.778e2	1.502	1.46	1.55	7.8	YES	NO	bb	bb	0.106
20	123789-HxCDD	36.53	1.168e6	9.477e5	0.907	1.23	1.24	9764.9	YES	NO	bb	bb	203.974
21	123678-HxCDD	36.15	1.363e6	1.125e6	1.001	1.21	1.24	10823.8	YES	NO	db	db	204.224
22	123478-HxCDD	36.03	1.162e6	9.482e5	0.996	1.23	1.24	10622.2	YES	NO	bd	bd	198.133
23	Total-heptadiioxins	40.57	2.148e2	2.026e2	1.088	1.06	1.05	2.3	NO	NO	bb	bb	0.048
24	1234678-HpCDD	40.28	8.284e5	8.038e5	1.039	1.03	1.05	3841.2	YES	NO	bb	bb	198.376
25	OCDD	45.01	1.293e6	1.512e6	0.920	0.86	0.89	10744.0	YES	NO	bb	bb	394.016

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	26.75	1.219e6					0.4	NO		bb		
2	FUNCTION1 PFK	21.17	1.435e6					3.4	YES		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:51 Pacific Standard Time

**ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk**

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.26	4.048e3					0.9	NO		bb		0.000
2	FUNCTION2 PFK	28.22	4.511e3					0.9	NO		bb		0.000
3	FUNCTION2 PFK	28.09	1.180e4					1.6	NO		bb		0.000
4	FUNCTION2 PFK	32.40	7.400e3					1.4	NO		bd		0.000
5	FUNCTION2 PFK	31.78	3.780e3					0.8	NO		db		0.000
6	FUNCTION2 PFK	31.75	1.880e3					0.6	NO		bd		0.000
7	FUNCTION2 PFK	31.70	9.648e3					1.7	NO		db		0.000
8	FUNCTION2 PFK	31.63	2.054e4					2.2	NO		bd		0.000
9	FUNCTION2 PFK	31.52	5.247e4					2.4	NO		db		0.000
10	FUNCTION2 PFK	31.37	1.454e4					1.4	NO		bd		0.000
11	FUNCTION2 PFK	31.10	7.031e3					1.1	NO		bb		0.000
12	FUNCTION2 PFK	30.32	1.036e4					1.3	NO		bb		0.000
13	FUNCTION2 PFK	30.01	2.058e3					0.8	NO		bb		0.000
14	FUNCTION2 PFK	29.82	6.711e3					1.2	NO		db		0.000
15	FUNCTION2 PFK	29.78	1.288e4					1.7	NO		bd		0.000
16	FUNCTION2 PFK	29.02	5.997e3					0.8	NO		bb		0.000
17	FUNCTION2 PFK	28.82	2.827e4					1.7	NO		bb		0.000
18	FUNCTION2 PFK	28.47	4.519e3					0.9	NO		bb		0.000
19	FUNCTION2 PFK	28.42	5.823e3					1.1	NO		bb		0.000
20	FUNCTION2 PFK	32.71	1.137e4					1.6	NO		bb		0.000
21	FUNCTION2 PFK	32.44	1.418e4					1.8	NO		db		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	36.64	7.406e6					25.3	YES		db		0.000
2	FUNCTION3 PFK	36.25	4.701e7					28.1	YES		bd		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:34:51 Pacific Standard Time

**ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk**

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.68	7.516e3					1.5	NO		bb		
2	FUNCTION5 PFK	45.50	5.255e3					1.2	NO		bb		
3	FUNCTION5 PFK	43.66	5.108e3					1.2	NO		bb		
4	FUNCTION5 PFK	43.06	3.867e3					1.1	NO		bb		
5	FUNCTION5 PFK	42.63	1.220e4					2.1	NO		bb		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	21.64	8.072e1					1.8	NO		bb		0.000
2	FUNCTION1 HXCD...	21.44	1.165e2					2.1	NO		db		0.000
3	FUNCTION1 HXCD...	21.34	7.544e1					2.3	NO		bd		0.000
4	FUNCTION1 HXCD...	26.42	1.399e2					2.7	NO		bb		0.000
5	FUNCTION1 HXCD...	21.99	8.086e1					2.0	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.18	1.574e3					25.7	YES		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.15	3.227e2					5.7	YES		db		0.000
2	FUNCTION3 OCDPE	36.03	2.331e2					4.4	YES		bd		0.000
3	FUNCTION3 OCDPE	35.36	1.234e2					4.0	YES		bb		0.000
4	FUNCTION3 OCDPE	35.06	1.904e2					3.3	YES		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	39.00	2.677e2					3.2	YES		bb		0.000
2	FUNCTION4 NCDPE	38.18	1.090e2					3.1	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
Printed: Monday, March 06, 2023 11:34:51 Pacific Standard Time

**ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk**

**ETHERS6**

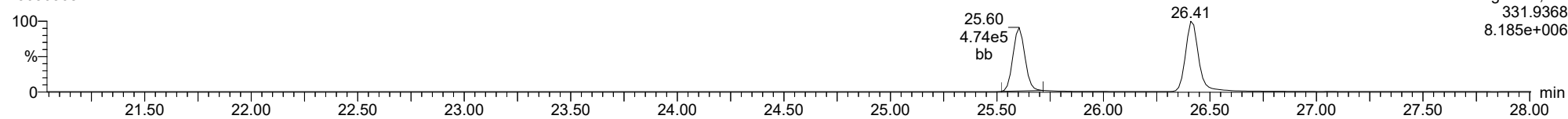
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS4CW, **Name:** 23030308, **Date:** 03-Mar-2023, **Time:** 14:59:53, **Conditions:** AUTOSPEC01, **User:** pk

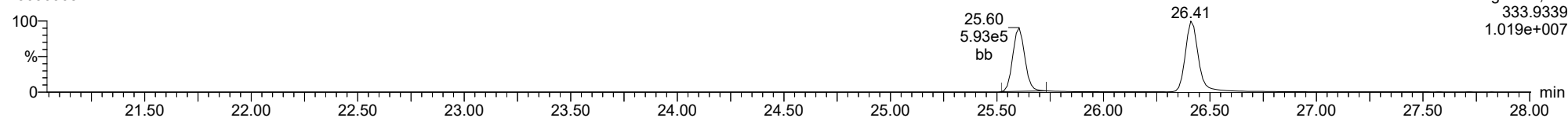
**13C-1234-TCDD**

23030308



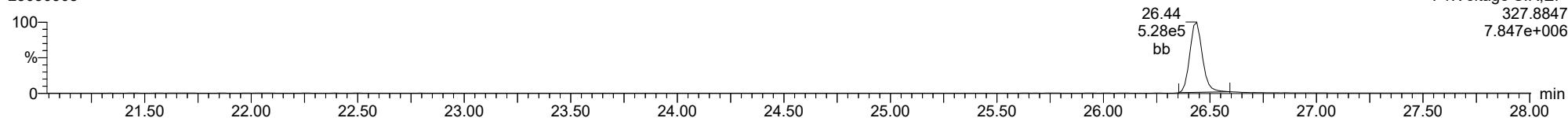
**13C-1234-TCDD**

23030308



**37CL-2378-TCDD**

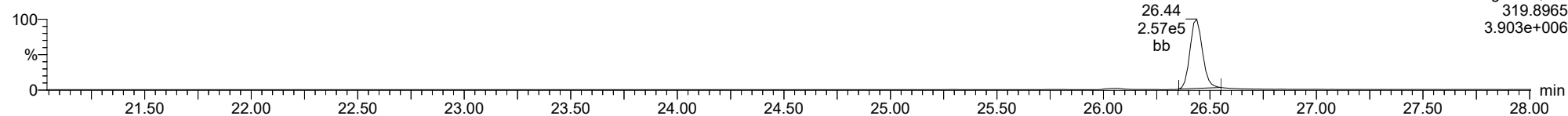
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

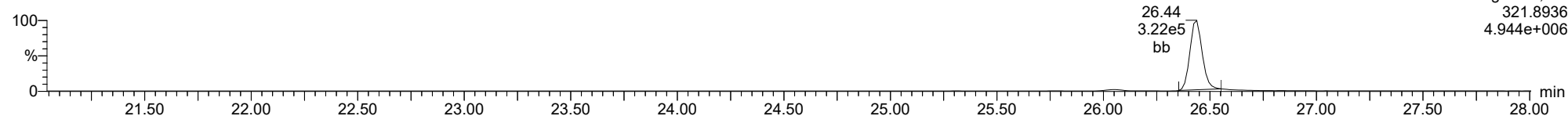
**2378-TCDD**

23030308



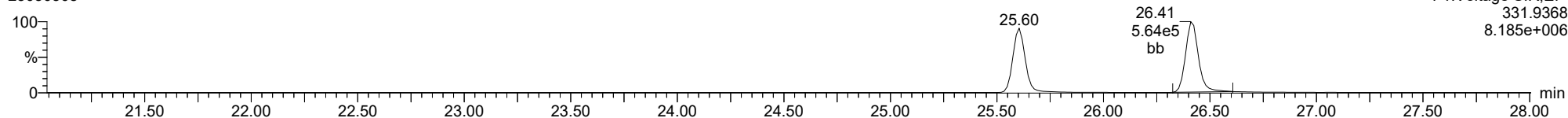
**2378-TCDD**

23030308



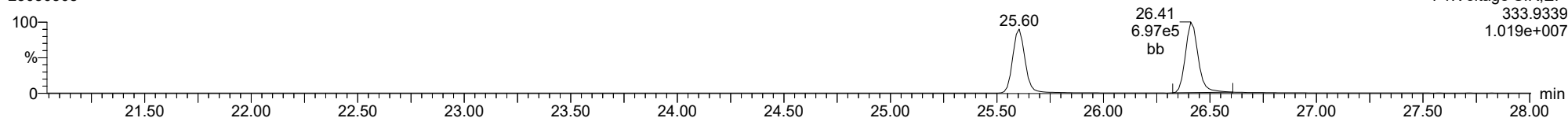
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23030308



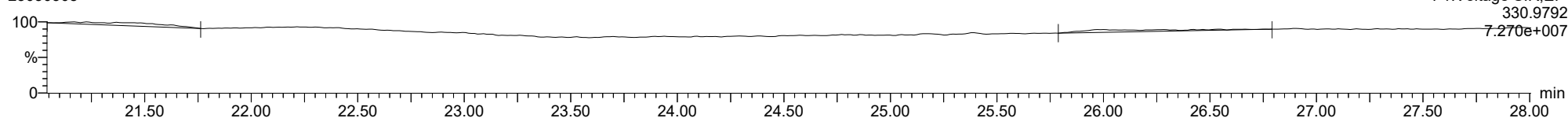
**13C-2378-TCDD**

23030308



**FUNCTION1 PFK**

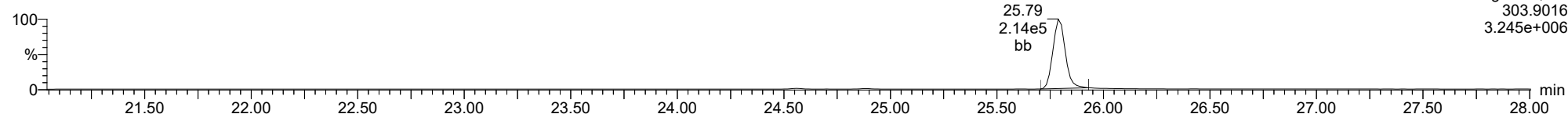
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

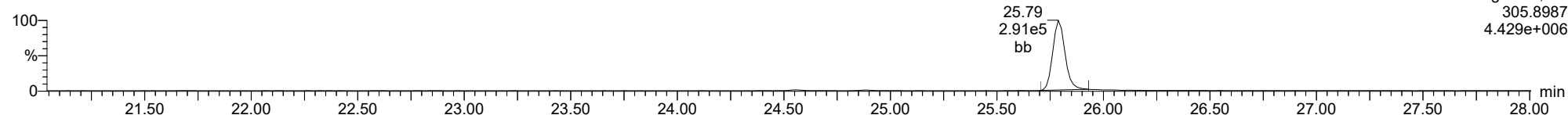
**2378-TCDF**

23030308



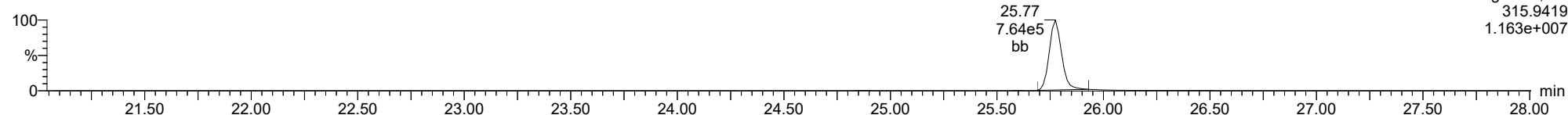
**2378-TCDF**

23030308



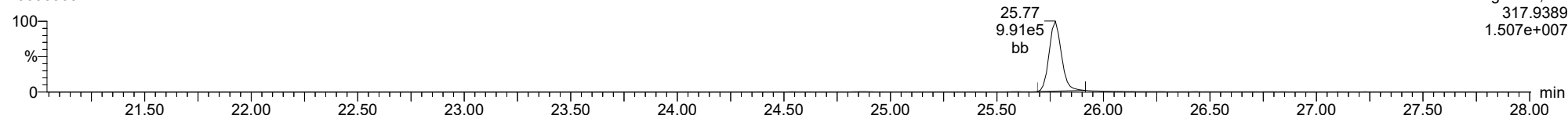
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23030308



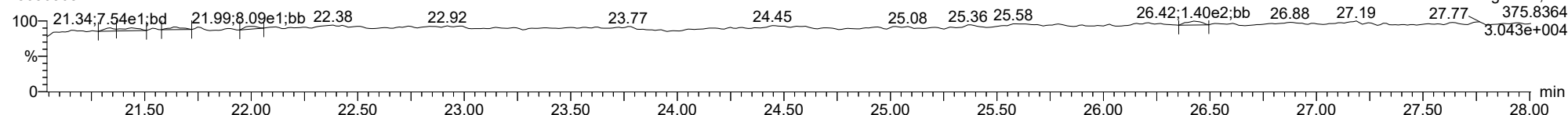
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23030308



**FUNCTION1 HXCDFE**

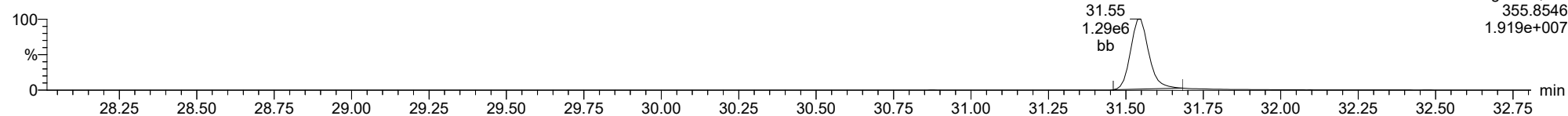
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

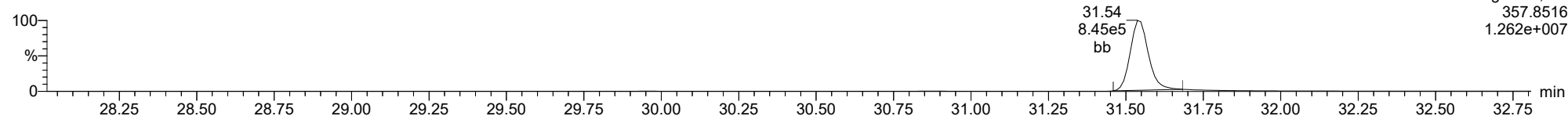
**12378-PeCDD**

23030308



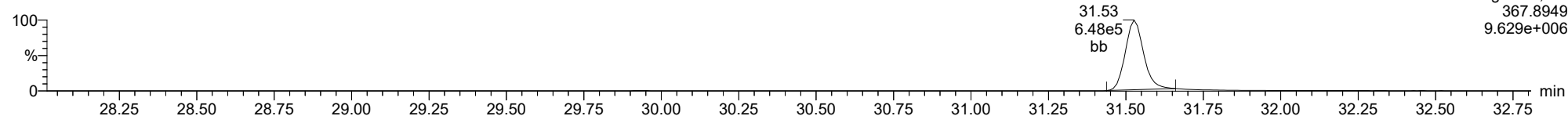
**12378-PeCDD**

23030308



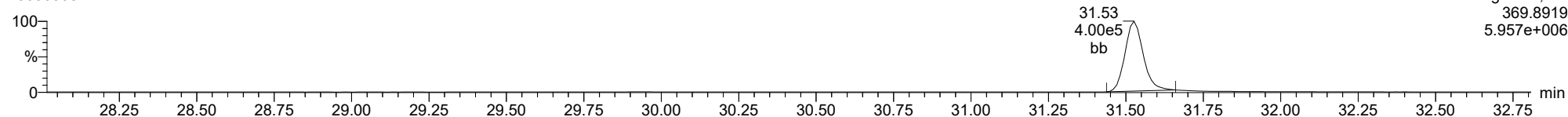
**13C-12378-PeCDD**

23030308



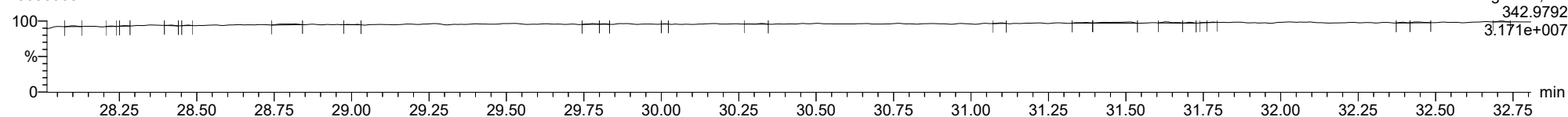
**13C-12378-PeCDD**

23030308



**FUNCTION2 PFK**

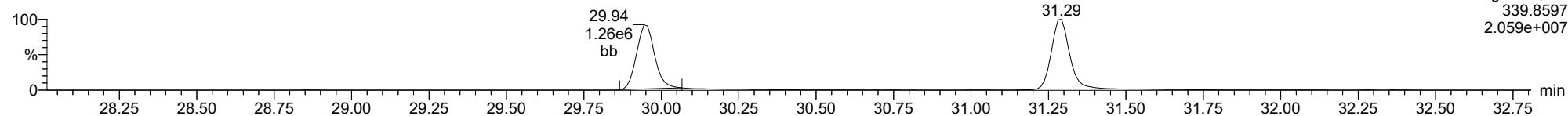
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

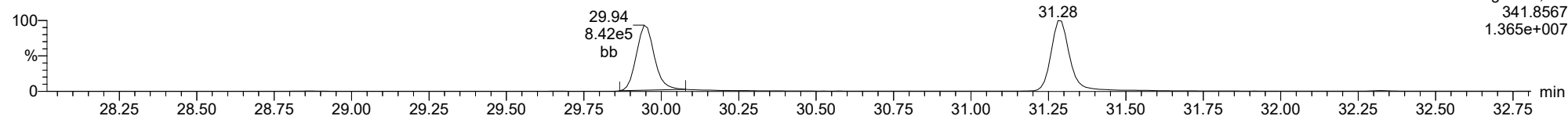
**12378-PeCDF**

23030308



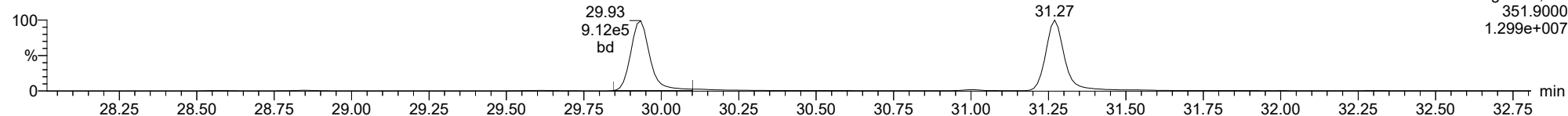
**12378-PeCDF**

23030308



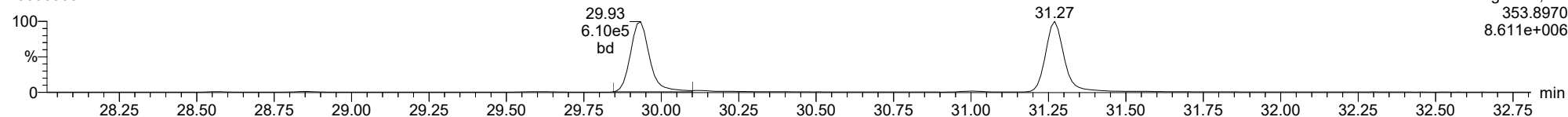
**13C-12378-PeCDF**

23030308



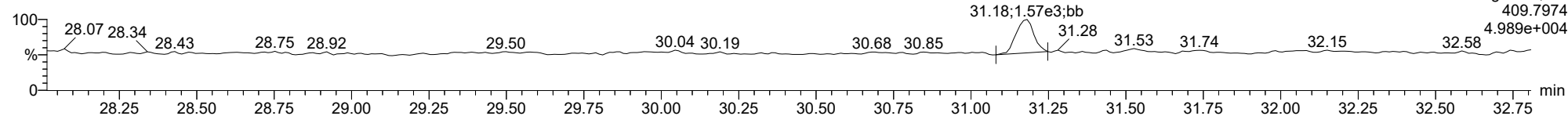
**13C-12378-PeCDF**

23030308



**FUNCTION2 HPCDPE**

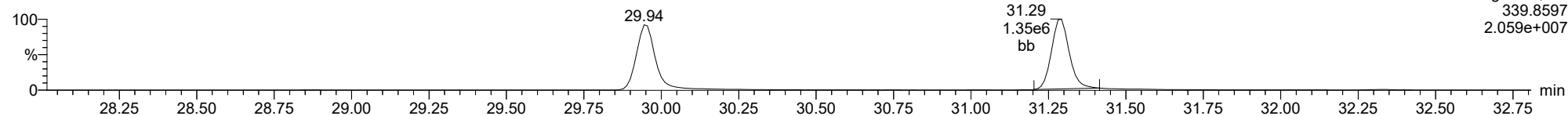
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

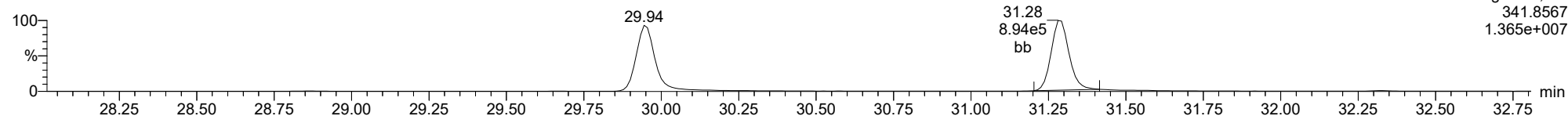
**23478-PeCDF**

23030308



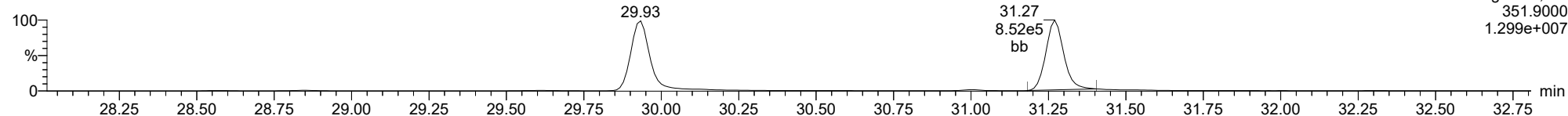
**23478-PeCDF**

23030308



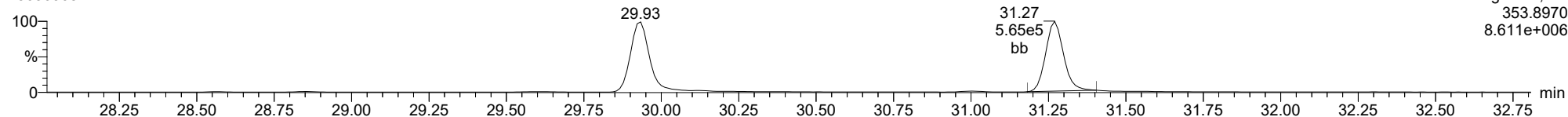
**13C-23478-PeCDF**

23030308



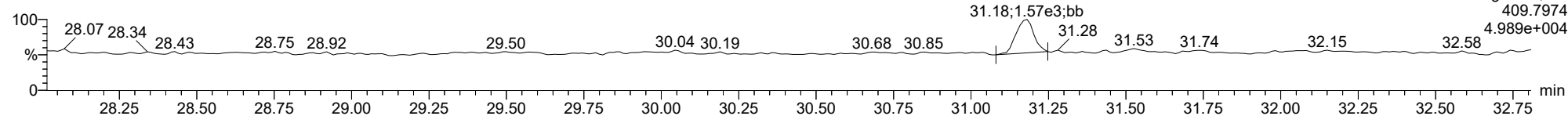
**13C-23478-PeCDF**

23030308



**FUNCTION2 HPCDPE**

23030308

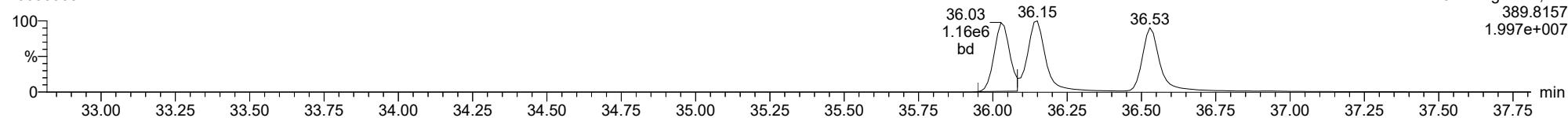




ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

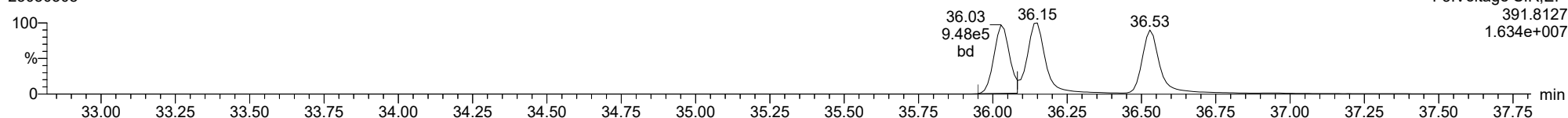
**123478-HxCDD**

23030308



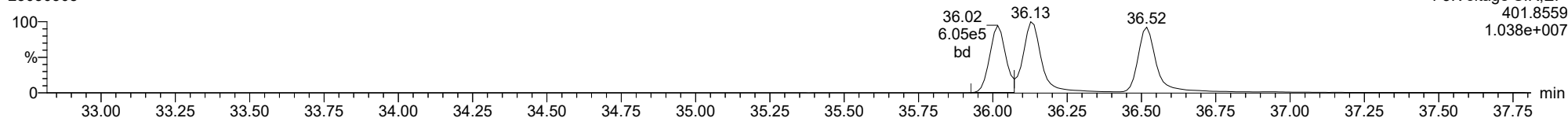
**123478-HxCDD**

23030308



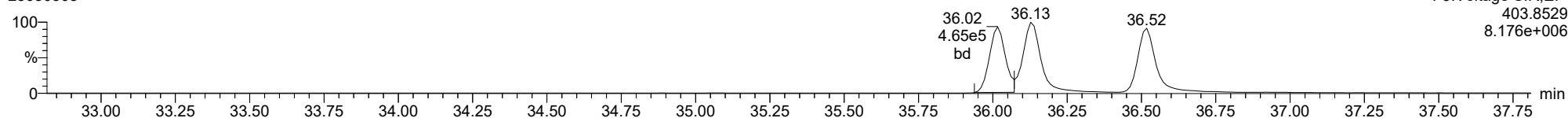
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23030308



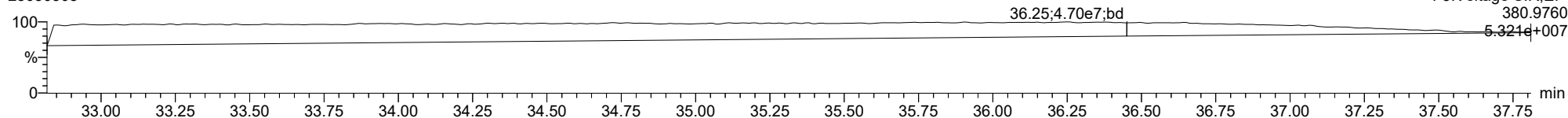
**13C-123478-HxCDD**

23030308



**FUNCTION3 PFK**

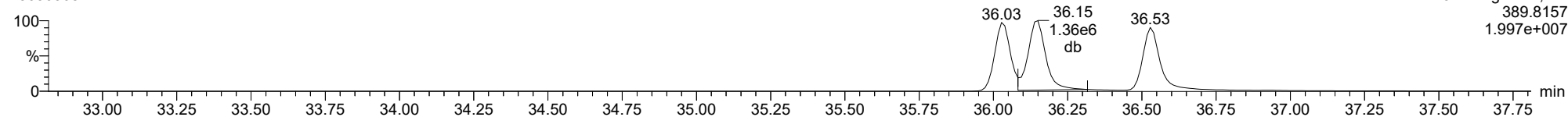
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

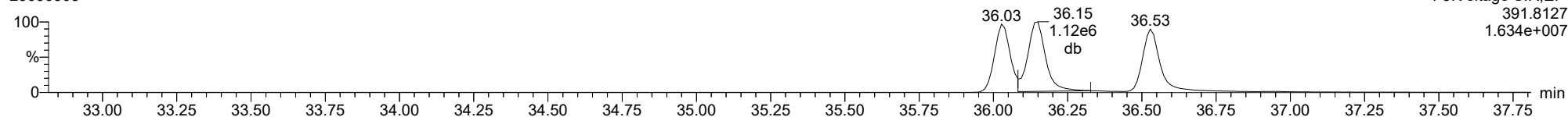
**123678-HxCDD**

23030308



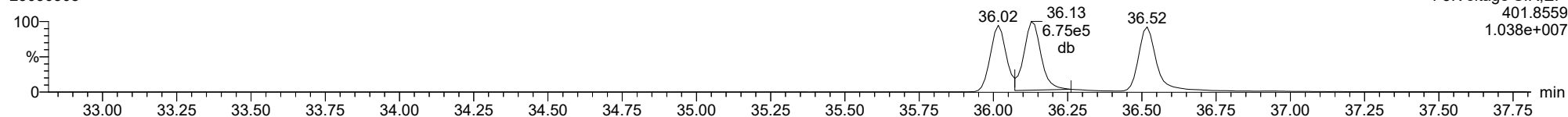
**123678-HxCDD**

23030308



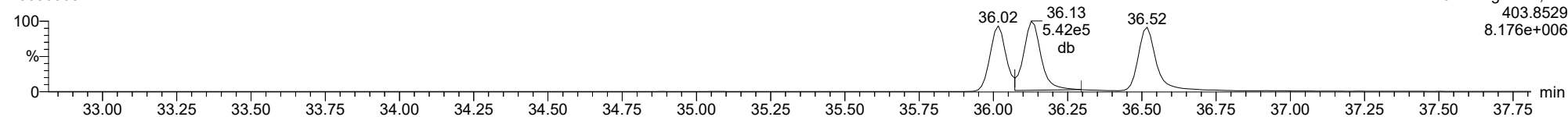
**13C-123678-HxCDD**

23030308



**13C-123678-HxCDD**

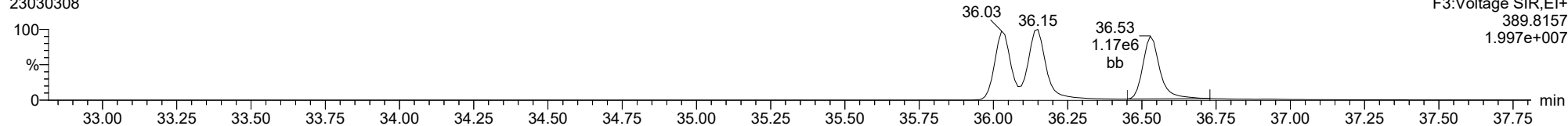
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

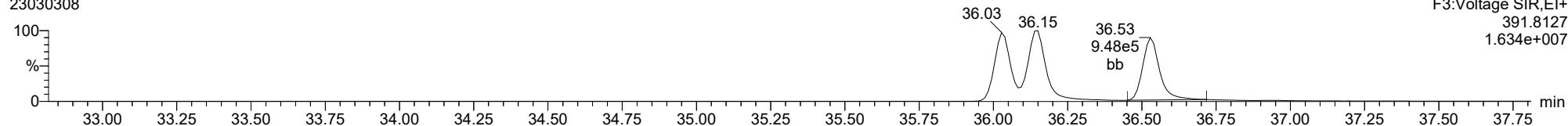
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23030308



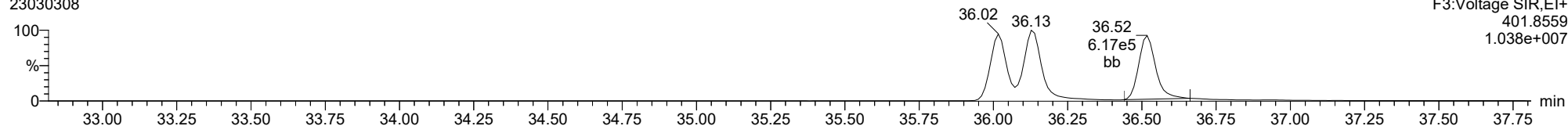
**123789-HxCDD**

23030308



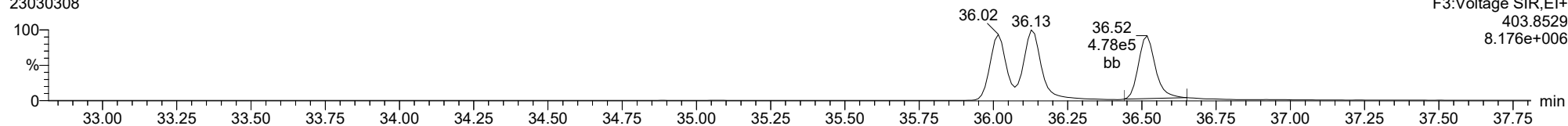
**13C-123789-HxCDD**

23030308



**13C-123789-HxCDD**

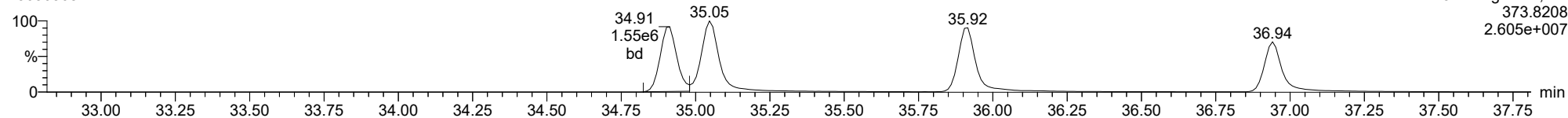
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

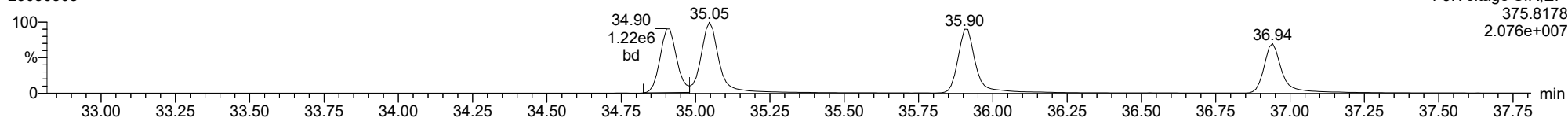
**123478-HxCDF**

23030308



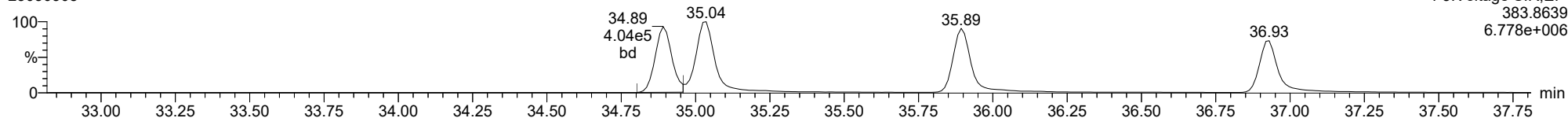
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23030308



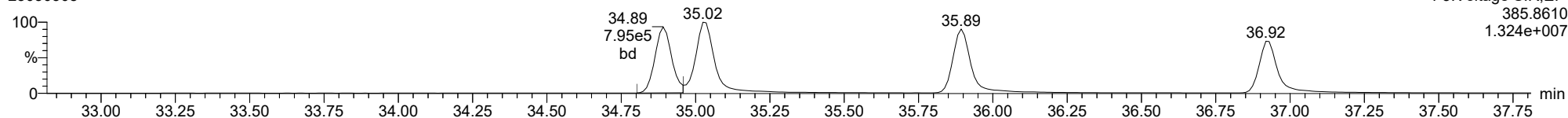
**13C-123478-HxCDF**

23030308



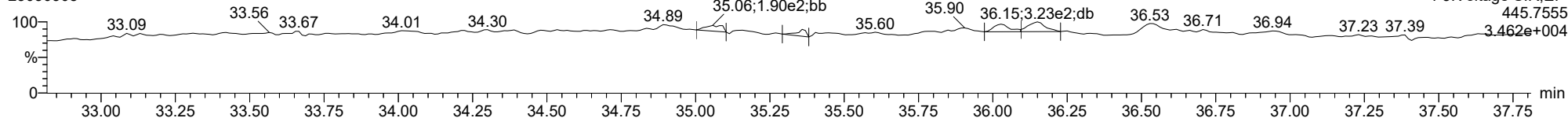
**13C-123478-HxCDF**

23030308



**FUNCTION3 OCDPE**

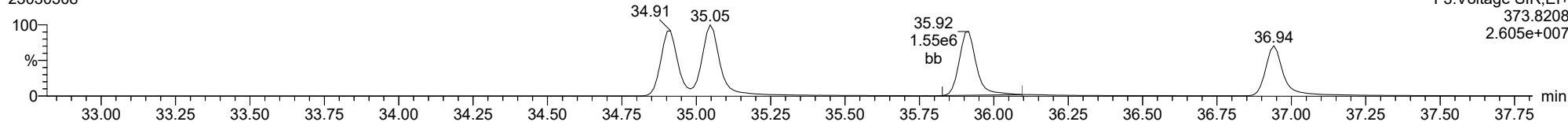
23030308



ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

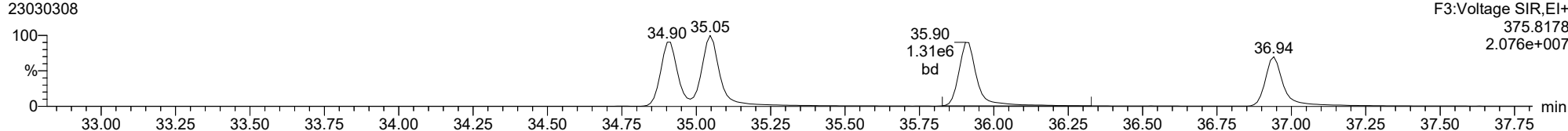
**234678-HxCDF**

23030308



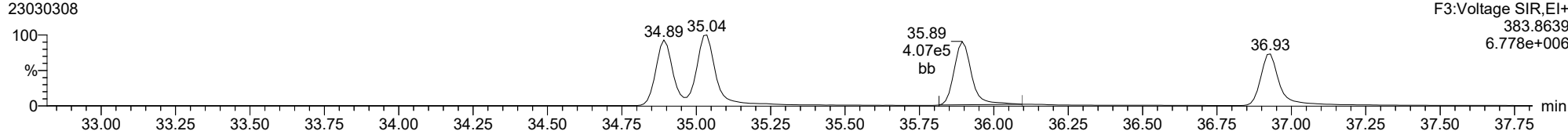
**234678-HxCDF**

23030308



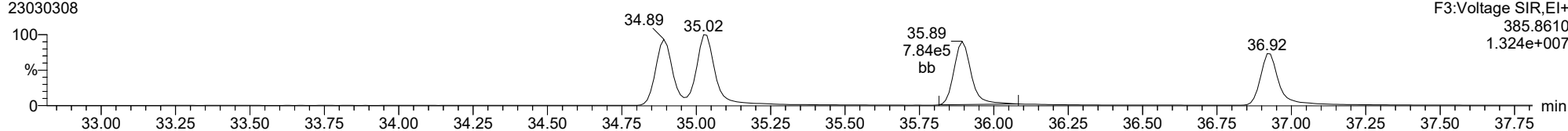
**13C-234678-HxCDF**

23030308



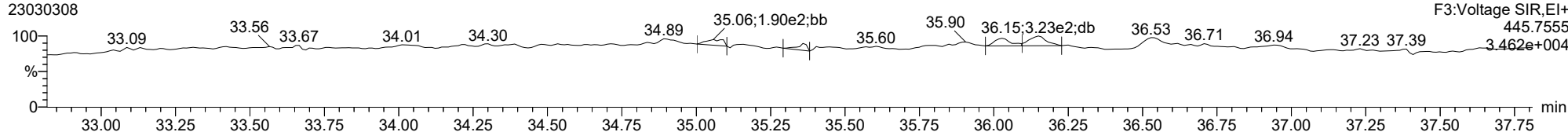
**13C-234678-HxCDF**

23030308



**FUNCTION3 OCDPE**

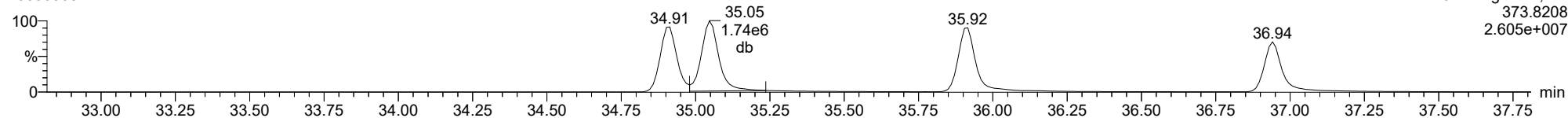
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

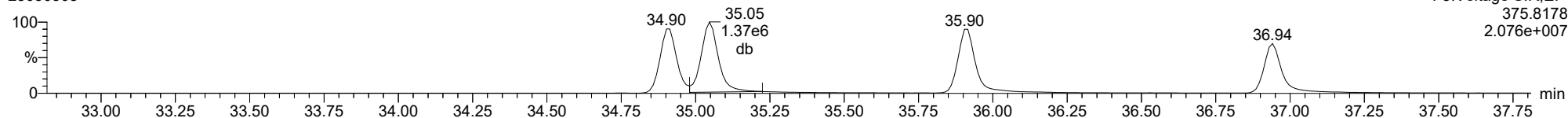
123678-HxCDF

23030308



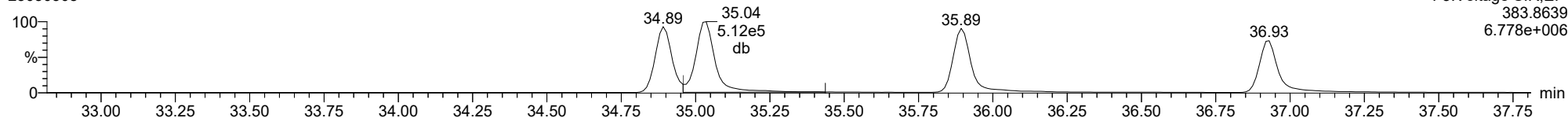
123678-HxCDF

23030308



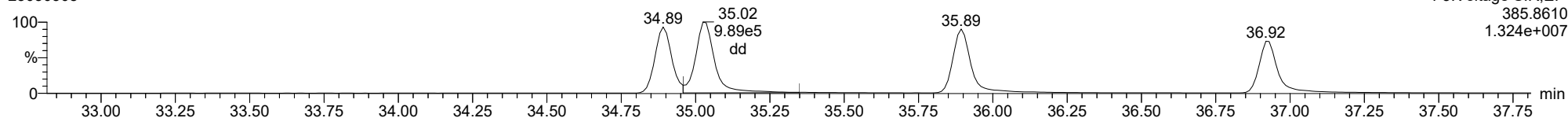
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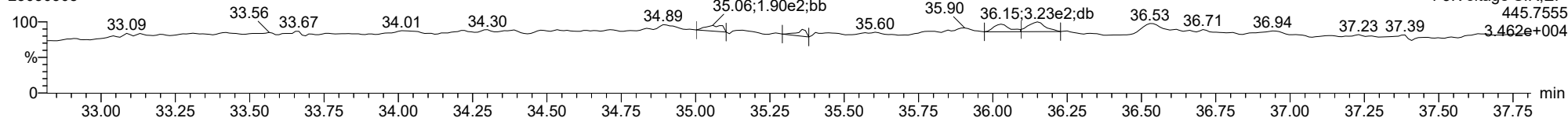
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23030308



FUNCTION3 OCDPE

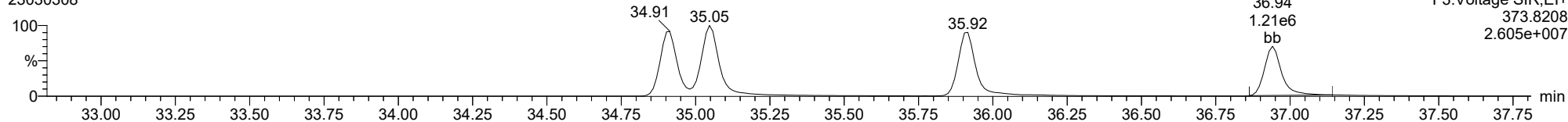
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

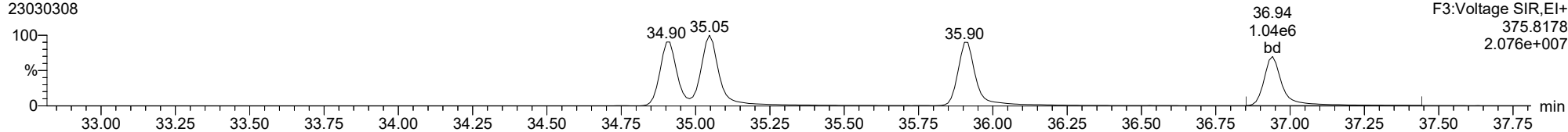
**123789-HxCDF**

23030308



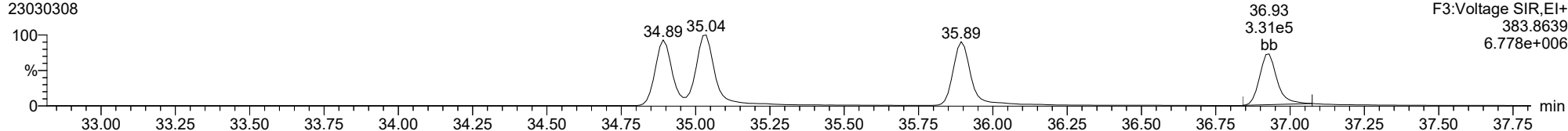
**123789-HxCDF**

23030308



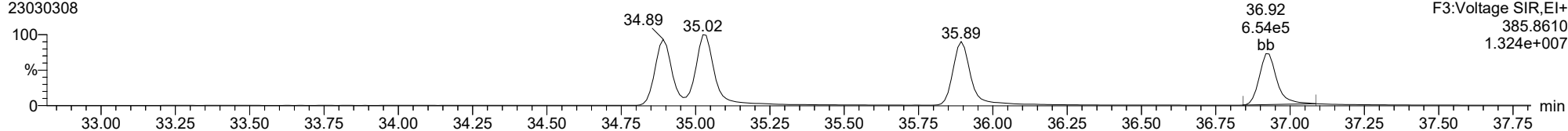
**13C-123789-HxCDF**

23030308



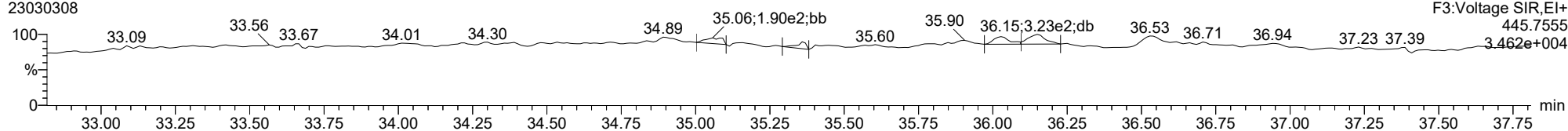
**13C-123789-HxCDF**

23030308



**FUNCTION3 OCDPE**

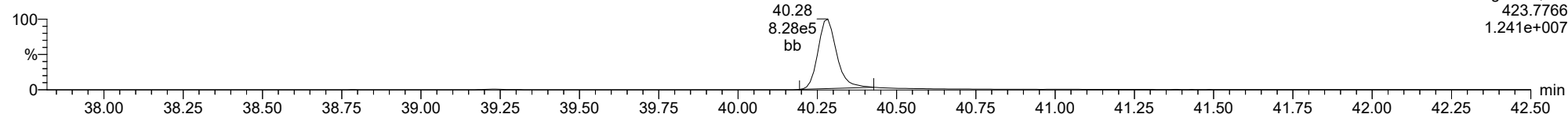
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

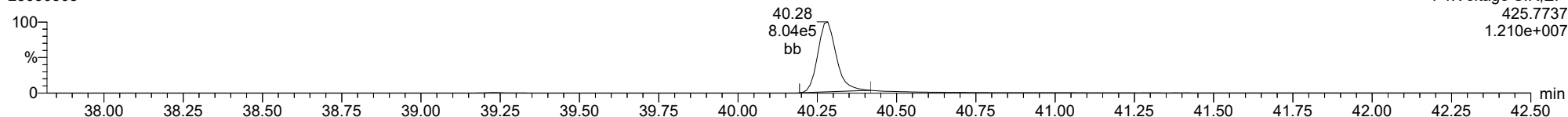
**1234678-HpCDD**

23030308



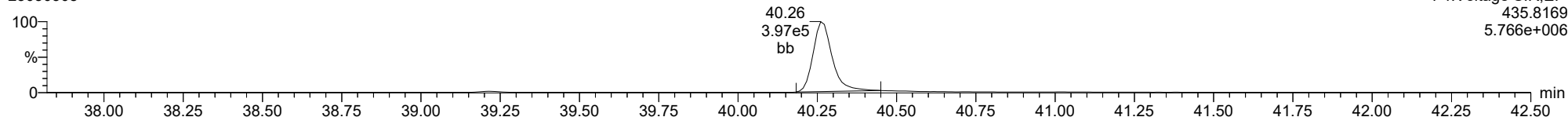
**1234678-HpCDD**

23030308



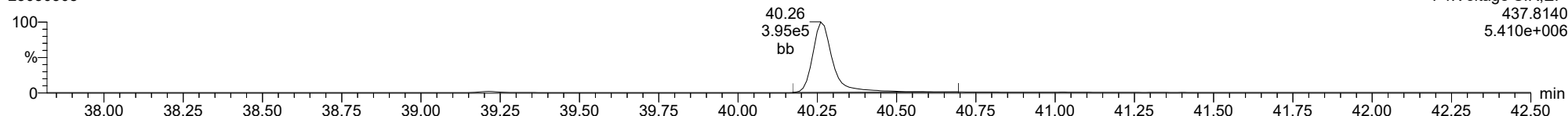
**13C-1234678-HpCDD**

23030308



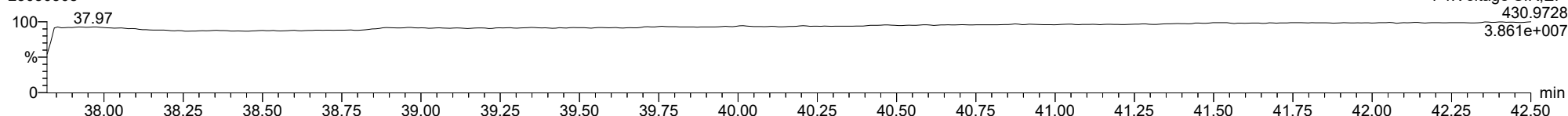
**13C-1234678-HpCDD**

23030308



**FUNCTION4 PFK**

23030308

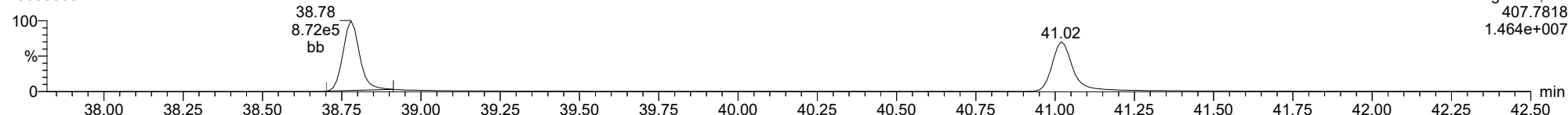




ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

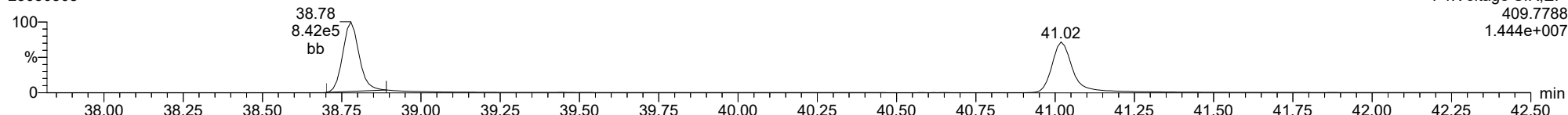
1234678-HpCDF

23030308



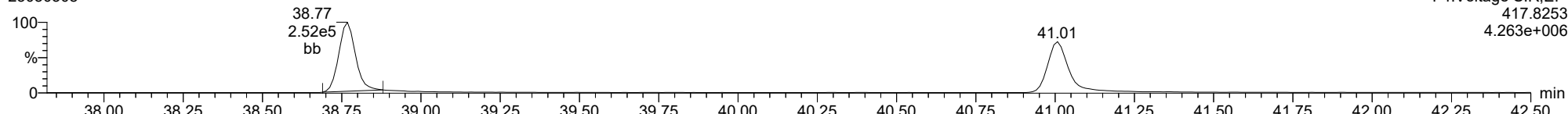
1234678-HpCDF

23030308



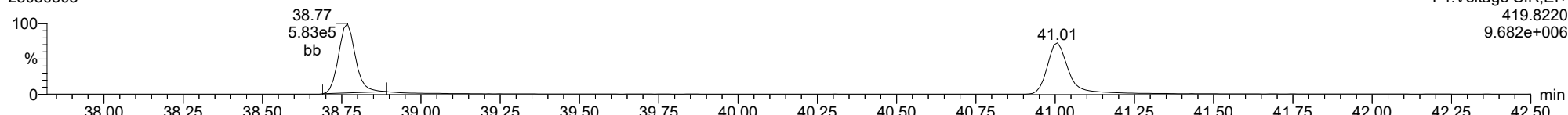
13C-1234678-HpCDF

23030308



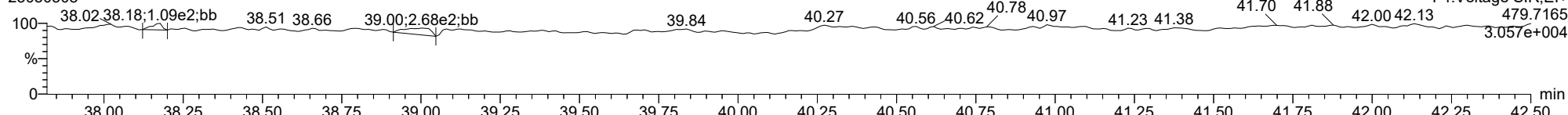
13C-1234678-HpCDF

23030308



FUNCTION4 NCDPE

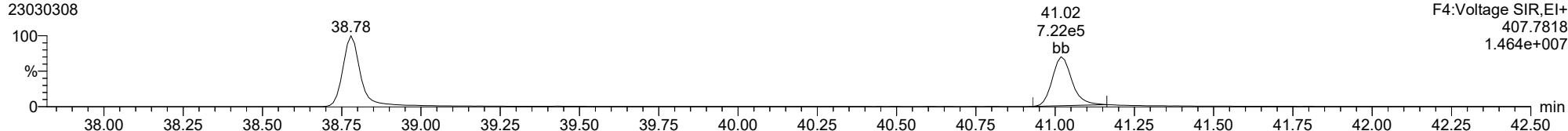
23030308



ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

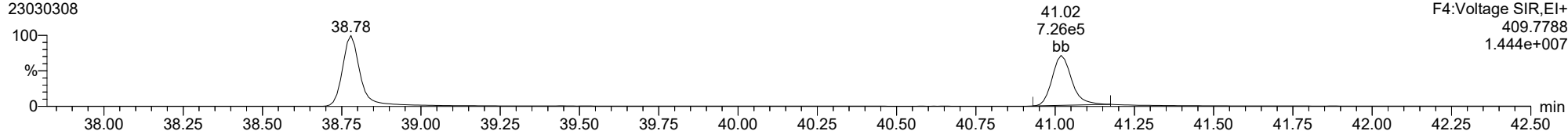
**1234789-HpCDF**

23030308



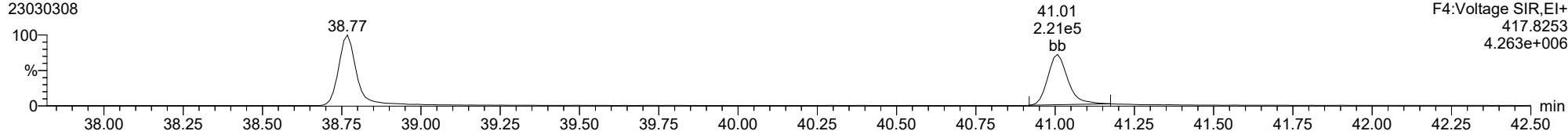
**1234789-HpCDF**

23030308



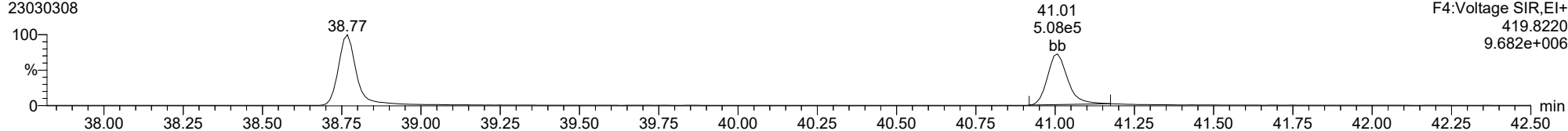
**13C-1234789-HpCDF**

23030308



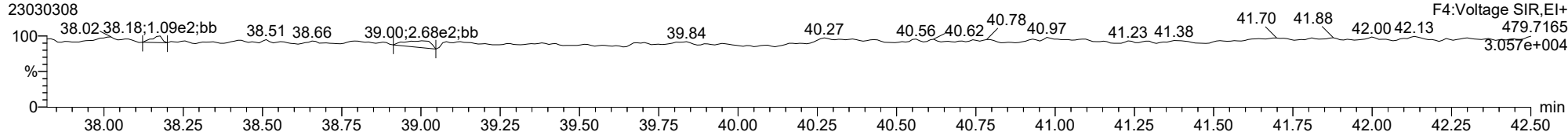
**13C-1234789-HpCDF**

23030308



**FUNCTION4 NCDPE**

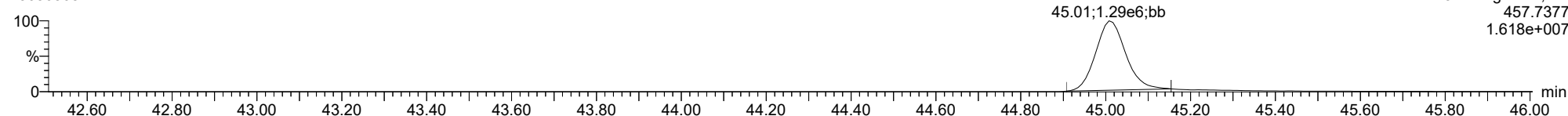
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

**OCDD**

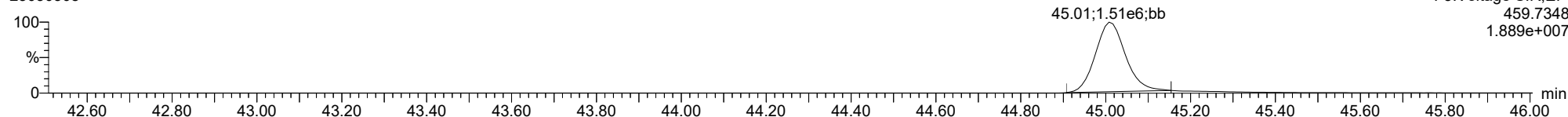
23030308



F5:Voltage SIR,EI+  
457.7377  
1.618e+007

**OCDD**

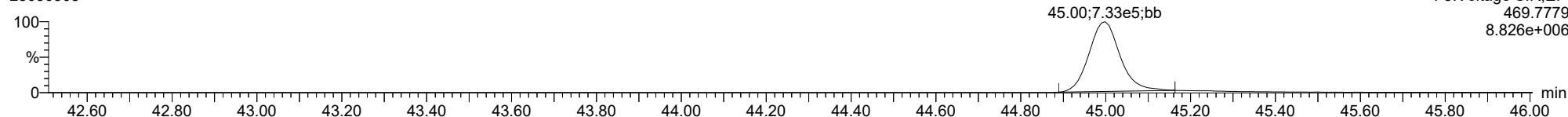
23030308



F5:Voltage SIR,EI+  
459.7348  
1.889e+007

**13C-OCDD**

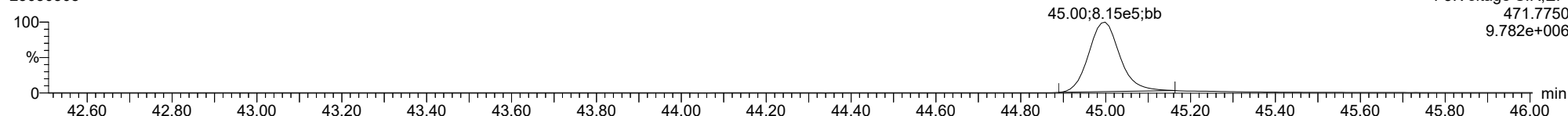
23030308



F5:Voltage SIR,EI+  
469.7779  
8.826e+006

**13C-OCDD**

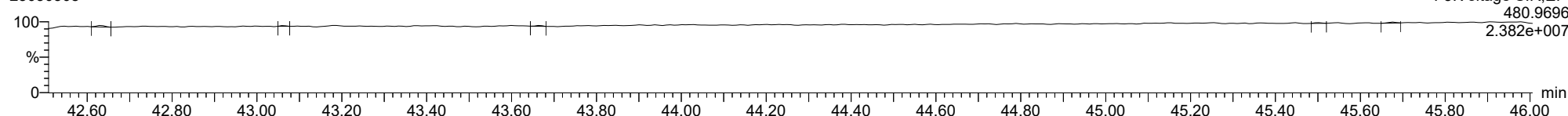
23030308



F5:Voltage SIR,EI+  
471.7750  
9.782e+006

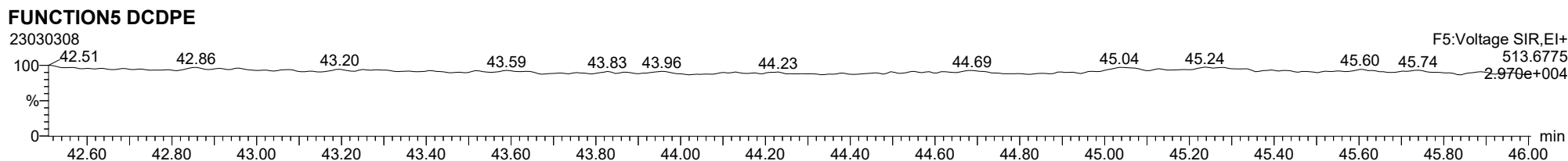
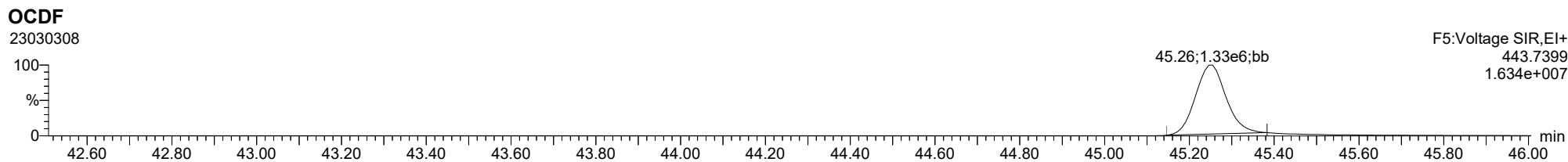
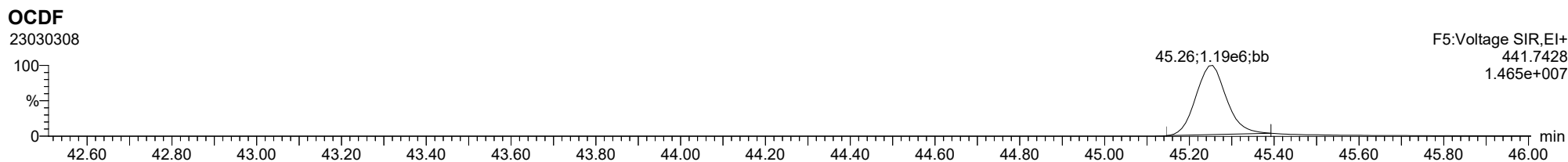
**FUNCTION5 PFK**

23030308



F5:Voltage SIR,EI+  
480.9696  
2.382e+007

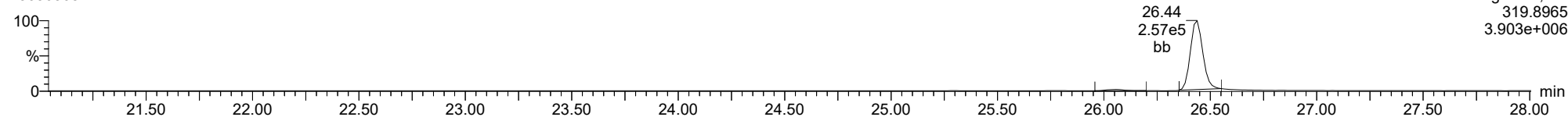
ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk



ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

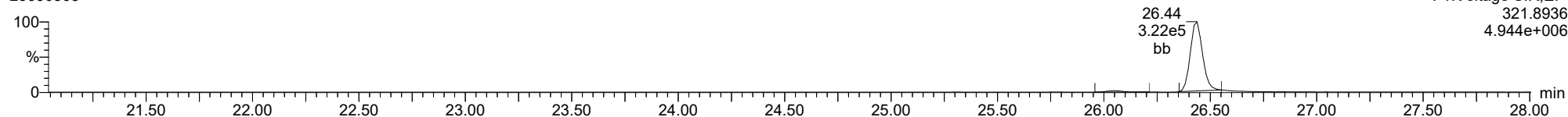
**Total-tetradioxins**

23030308



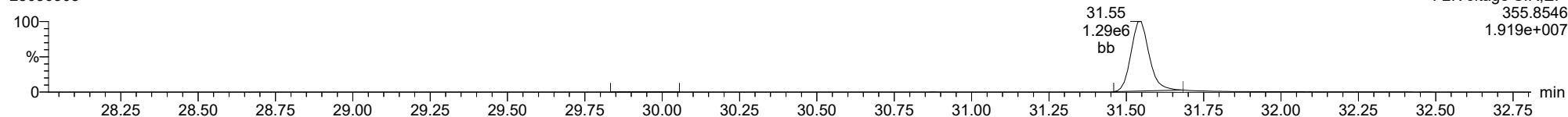
**Total-tetradioxins**

23030308



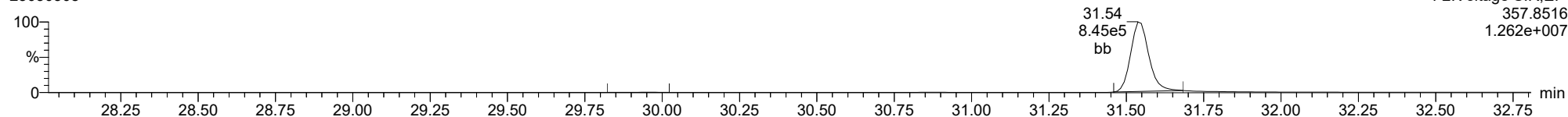
**Total-pentadioxins**

23030308



**Total-pentadioxins**

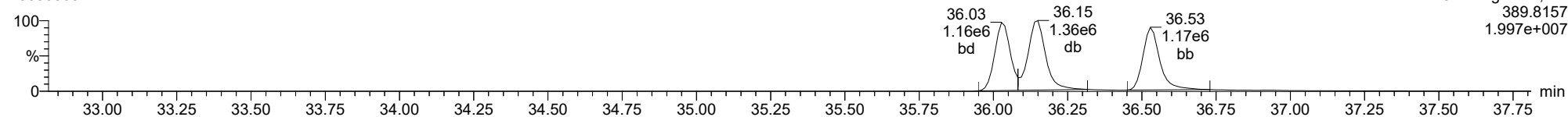
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

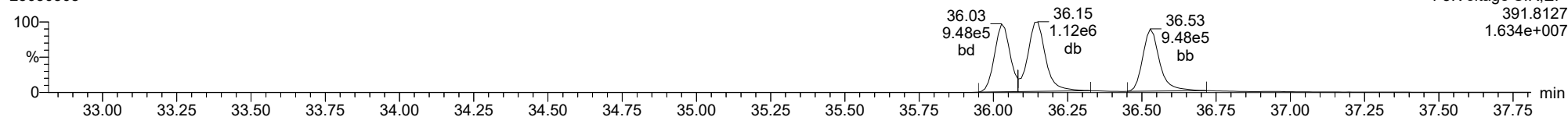
**Total-hexadioxins**

23030308



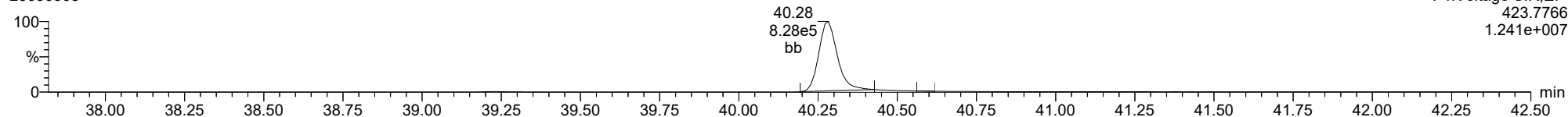
**Total-hexadioxins**

23030308



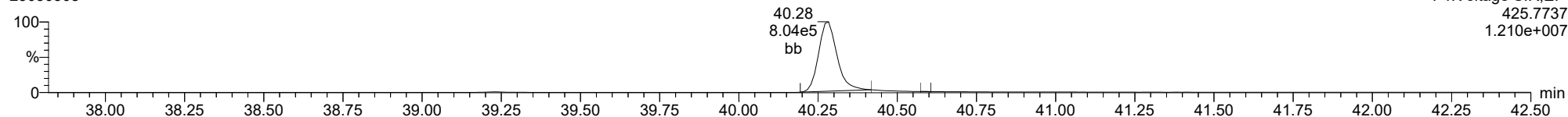
**Total-heptadioxins**

23030308



**Total-heptadioxins**

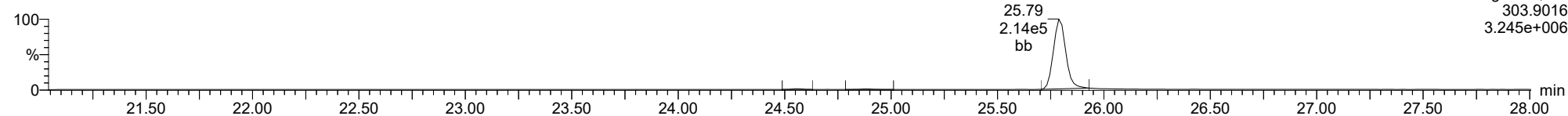
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

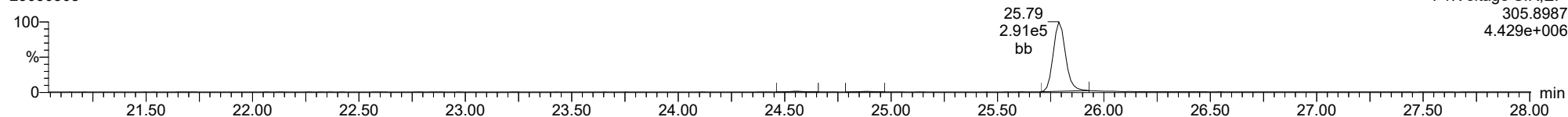
**Total-tetrafurans**

23030308



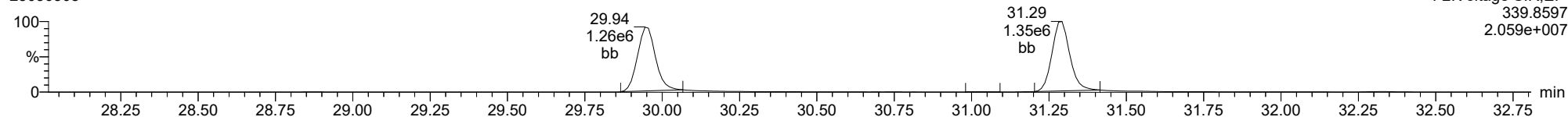
**Total-tetrafurans**

23030308



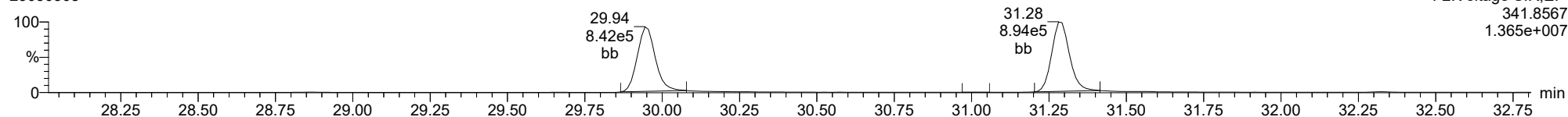
**Total-pentafurans**

23030308



**Total-pentafurans**

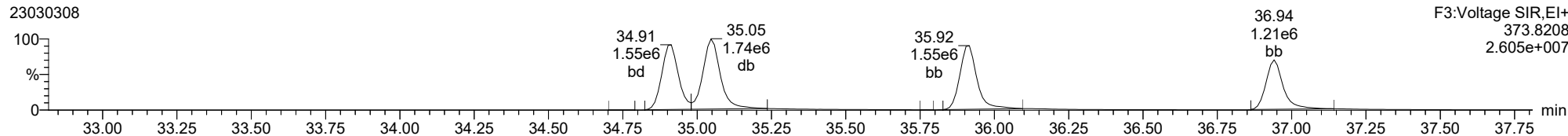
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ID: CS4CW, Name: 23030308, Date: 03-Mar-2023, Time: 14:59:53, Conditions: AUTOSPEC01, User: pk

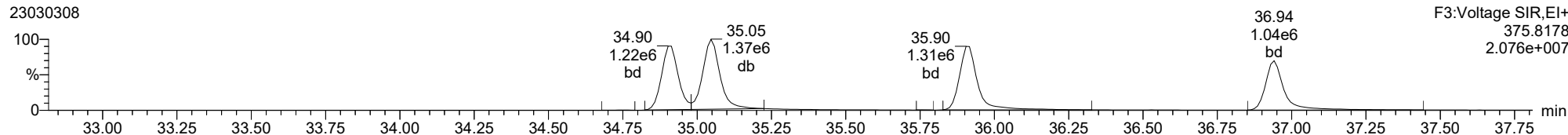
**Total-hexafurans**

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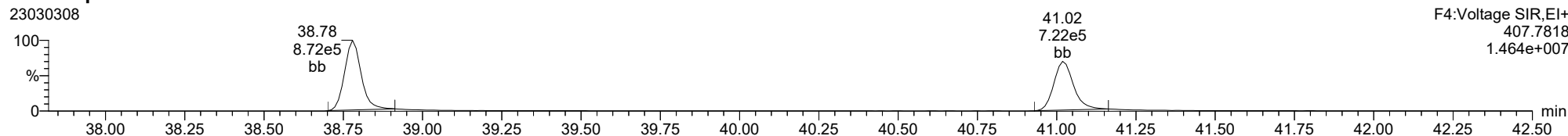
**Total-hexafurans**

23030308



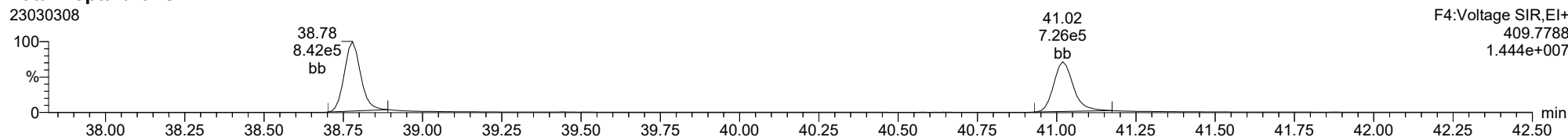
**Total-heptafurans**

23030308



**Total-heptafurans**

23030308





Dataset: T:\Autospec\Processed Data Batch\230303ICIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:35:04 Pacific Standard Time

**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS5CW, **Name:** 23030309, **Date:** 03-Mar-2023, **Time:** 15:47:43, **Conditions:** AUTOSPEC01, **User:** pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.774	1.000	1.334e6	1.787e6	0.702	0.746	0.770	1816	2705	2.07e7	2.78e7	11389.3	10270.6	NO	bb	bb	200.466
12378-PeCDF	29.934	1.000	7.598e6	4.979e6	0.679	1.526	1.550	4787	5694	1.20e8	7.84e7	24983.0	13764.4	NO	bb	bb	1049.785
23478-PeCDF	31.271	1.000	8.034e6	5.310e6	0.786	1.513	1.550	4787	5694	1.23e8	8.18e7	25734.3	14361.4	NO	bb	bb	1006.165
123478-HxCDF	34.903	1.001	7.954e6	6.371e6	1.166	1.248	1.240	1657	3079	1.28e8	1.02e8	76946.6	33145.2	NO	bd	bd	988.542
234678-HxCDF	35.894	1.000	8.440e6	6.648e6	1.140	1.270	1.240	1657	3079	1.32e8	1.04e8	79492.3	33730.7	NO	bd	bd	997.904
123678-HxCDF	35.036	1.000	8.729e6	6.976e6	1.091	1.251	1.240	1657	3079	1.37e8	1.09e8	82564.4	35544.8	NO	db	db	1005.907
123789-HxCDF	36.930	1.000	7.107e6	5.643e6	1.137	1.259	1.240	1657	3079	1.15e8	9.05e7	69330.3	29396.1	NO	bb	bb	962.631
1234678-HpCDF	38.769	1.000	5.729e6	5.700e6	1.003	1.005	1.050	5984	6276	9.87e7	9.77e7	16498.3	15567.0	NO	bb	bb	1001.511
1234789-HpCDF	41.008	1.000	4.891e6	4.848e6	0.953	1.009	1.050	5984	6276	7.31e7	7.29e7	12213.8	11617.0	NO	bb	bb	1050.453
OCDF	45.246	1.006	8.007e6	9.001e6	0.778	0.890	0.890	617	1698	1.01e8	1.14e8	163878.0	67066.1	NO	bb	bb	2152.541
2378-TCDD	26.424	1.001	1.623e6	2.053e6	1.149	0.791	0.770	1583	1421	2.49e7	3.15e7	15719.4	22173.2	NO	bb	bb	201.416
12378-PeCDD	31.527	1.000	7.500e6	4.933e6	1.022	1.520	1.550	3207	3258	1.15e8	7.59e7	35906.6	23308.0	NO	bb	bb	987.154
123478-HxCDD	36.017	1.000	6.446e6	5.113e6	0.996	1.261	1.240	1269	1319	1.05e8	8.63e7	82869.7	65420.3	NO	bd	bd	1008.795
123678-HxCDD	36.139	1.001	6.944e6	5.798e6	1.001	1.198	1.240	1269	1319	1.11e8	8.98e7	87214.8	68064.1	NO	db	db	1011.135
123789-HxCDD	36.518	1.011	6.387e6	5.242e6	0.907	1.218	1.240	1269	1319	1.04e8	8.52e7	81996.1	64539.0	NO	bb	bb	1063.935
1234678-HpCDD	40.273	1.000	5.468e6	5.342e6	1.039	1.023	1.050	4639	3285	8.81e7	8.56e7	19002.3	26055.7	NO	bb	bb	1010.673
OCDD	45.008	1.000	8.523e6	9.997e6	0.920	0.853	0.890	1224	2738	1.09e8	1.28e8	89206.2	46574.8	NO	bb	bb	1981.710
13C-2378-TCDF	25.760	1.007	9.657e5	1.254e6	1.620	0.770	0.770	2759	1757	1.47e7	1.88e7	5325.4	10693.5	NO	bb	bb	104.465
13C-12378-PeCDF	29.923	1.169	1.058e6	7.059e5	1.240	1.499	1.550	2137	2181	1.59e7	1.06e7	7426.1	4845.6	NO	bb	bb	108.437
13C-23478-PeCDF	31.259	1.222	1.010e6	6.768e5	1.118	1.492	1.550	2137	2181	1.54e7	1.03e7	7192.1	4709.7	NO	bb	bb	115.091
13C-123478-HxCDF	34.880	0.955	4.197e5	8.230e5	1.168	0.510	0.510	2074	3087	6.86e6	1.33e7	3308.7	4323.9	NO	bd	bd	88.344
13C-123678-HxCDF	35.025	0.959	4.843e5	9.471e5	1.386	0.511	0.510	2074	3087	7.37e6	1.42e7	3551.0	4614.4	NO	db	db	85.742
13C-234678-HxCDF	35.883	0.983	4.483e5	8.783e5	1.129	0.510	0.510	2074	3087	6.95e6	1.37e7	3352.7	4438.0	NO	bd	bd	97.566
13C-123789-HxCDF	36.919	1.011	3.958e5	7.690e5	0.932	0.515	0.510	2074	3087	6.35e6	1.23e7	3061.9	3979.7	NO	bb	bb	103.822
13C-1234678-HpCDF	38.757	1.062	3.445e5	7.933e5	0.895	0.434	0.440	2404	3556	5.77e6	1.33e7	2401.1	3732.0	NO	bb	bb	105.552
13C-1234789-HpCDF	40.997	1.123	2.963e5	6.765e5	0.770	0.438	0.440	2404	3556	4.35e6	9.96e6	1811.4	2800.3	NO	bb	bb	104.955
13C-1234-TCDD	25.591	0.000	5.845e5	7.267e5	1.000	0.804	0.770	2994	1335	8.98e6	1.11e7	2999.9	8316.3	NO	bb	bb	100.000
13C-2378-TCDD	26.396	1.031	7.030e5	8.860e5	1.152	0.794	0.770	2994	1335	1.05e7	1.32e7	3492.1	9847.6	NO	bb	bb	105.160
13C-12378-PeCDD	31.515	1.232	7.626e5	4.699e5	0.829	1.623	1.550	1207	1205	1.17e7	7.16e6	9657.3	5939.7	NO	bb	bb	113.413
13C-123478-HxCDD	36.006	0.986	6.492e5	5.017e5	0.995	1.294	1.240	1422	1281	1.08e7	8.26e6	7562.7	6444.6	NO	bd	bd	96.063
13C-123678-HxCDD	36.117	0.989	7.072e5	5.517e5	1.157	1.282	1.240	1422	1281	1.11e7	8.74e6	7828.3	6824.3	NO	db	db	90.391
13C-1234678-HpCDD	40.262	1.103	5.341e5	4.953e5	0.840	1.078	1.050	2026	1583	8.10e6	7.45e6	3998.5	4702.7	NO	bb	bb	101.765
13C-OCDD	44.990	1.232	9.650e5	1.067e6	0.767	0.905	0.890	1467	1005	1.21e7	1.35e7	8264.7	13401.8	NO	bb	bb	219.862
13C-123789-HxCDD	36.507	0.000	6.722e5	5.319e5	1.000	1.264	1.240	1422	1281	1.10e7	8.62e6	7719.2	6727.3	NO	bb	bb	100.000
37CL-2378-TCDD	26.424	1.033	3.368e6		1.288			2667		5.07e7		19022.1			bb		199.444

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Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					0.802		0.770	1816	2705								
1289-TCDF					0.678		0.770	1816	2705								
13468-PECDF					1.246		1.550	665	1133								
12389-PECDF					0.496		1.550	4787	5694								
123468-HXCDF					1.169		1.240	1657	3079								
1368-TCDD					1.015		0.770	1583	1421								
1289-TCDD					0.909		0.770	1583	1421								
12479-PECDD					2.301		1.550	3207	3258								
12389-PECDD					1.184		1.550	3207	3258								
124679-HXCDD					1.115		1.240	1269	1319								
1234679-HPCDD					1.137		1.050	4639	3285								
Total-tetrafurans			1.355e6		0.727			1816		2.10e7						203.619	
Total-penta1			0.000e0					665		0.00e0							
Total-pentafurans			1.567e7		0.654			4787		2.43e8						2061.969	
Total-hexafurans			3.237e7		1.141			1657		5.13e8						3971.633	
Total-heptafurans			1.063e7		0.978			5984		1.72e8						2053.620	
Total-Furans			6.803e7		0.922			1816		1.05e9						10443.382	
Total-tetradoxins			1.660e6		1.024			1583		2.53e7						206.551	
Total-pentadoxins			7.518e6		1.502			3207		1.15e8						988.757	
Total-hexadoxins			1.981e7		1.005			1269		3.20e8						3089.249	
Total-heptadoxins			5.468e6		1.088			4639		8.81e7						1010.701	
Total-Dioxins			4.298e7		1.130			1583		6.58e8						7276.969	
Total-TEQ			1.110e8					1583		1.71e9						17720.350	
FUNCTION1 PFK			8.364e4					590794		3.29e6							
FUNCTION2 PFK			1.452e7					287139		1.24e7						0.000	
FUNCTION3 PFK			2.904e5					447834		7.86e6						0.000	
FUNCTION4 PFK			1.983e5					258971		5.49e6							
FUNCTION5 PFK			1.360e5					213310		3.56e6							
FUNCTION1 HXCD...			9.848e2					660		1.37e4						0.000	
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			9.974e3					875		1.52e5						0.000	
FUNCTION3 OCDPE			5.118e3					487		5.72e4						0.000	
FUNCTION4 NCDPE			1.842e3					616		1.81e4						0.000	
FUNCTION5 DCDPE			3.423e3					534		2.47e4						0.000	

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50

Calibration: T:\Autospec\Curves\230303\CIH.cdb 06 Mar 2023 10:57:27

ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.77	1.334e6	1.787e6	0.702	0.75	0.77	11389.3	YES	NO	bb	bb	200.466
2	Total-tetrafurans	24.87	8.544e3	1.186e4	0.727	0.72	0.77	70.8	YES	NO	bb	bb	1.264
3	Total-tetrafurans	24.67	1.054e3	1.493e3	0.727	0.71	0.77	9.1	YES	NO	db	db	0.158
4	Total-tetrafurans	24.55	1.152e4	1.641e4	0.727	0.70	0.77	91.4	YES	NO	bd	bd	1.731

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.27	8.034e6	5.310e6	0.786	1.51	1.55	25734.3	YES	NO	bb	bb	1006.1...
2	Total-pentafurans	31.00	7.155e3	5.348e3	0.654	1.34	1.55	24.5	YES	NO	bb	bb	1.108
3	Total-pentafurans	30.22	6.707e3	3.991e3	0.654	1.68	1.55	18.6	YES	NO	bb	bb	0.948
4	12378-PeCDF	29.93	7.598e6	4.979e6	0.679	1.53	1.55	24983.0	YES	NO	bb	bb	1049.7...
5	Total-pentafurans	29.57	3.743e3	2.429e3	0.654	1.54	1.55	12.5	YES	NO	bd	bd	0.547
6	Total-pentafurans	28.85	2.348e4	1.505e4	0.654	1.56	1.55	59.4	YES	NO	bb	bb	3.415

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123678-HxCDF	35.04	8.729e6	6.976e6	1.091	1.25	1.24	82564.4	YES	NO	db	db	1005.9...
2	123478-HxCDF	34.90	7.954e6	6.371e6	1.166	1.25	1.24	76946.6	YES	NO	bd	bd	988.542
3	Total-hexafurans	34.75	7.748e3	5.706e3	1.141	1.36	1.24	87.3	YES	NO	bb	bb	0.913
4	Total-hexafurans	33.44	5.026e3	3.534e3	1.141	1.42	1.24	38.8	YES	NO	db	bb	0.581
5	123789-HxCDF	36.93	7.107e6	5.643e6	1.137	1.26	1.24	69330.3	YES	NO	bb	bb	962.631
6	Total-hexafurans	36.53	1.628e4	1.267e4	1.141	1.29	1.24	124.4	YES	NO	dd	bd	1.966
7	Total-hexafurans	36.13	1.100e5	8.424e4	1.141	1.31	1.24	706.6	YES	NO	dd	dd	13.189
8	234678-HxCDF	35.89	8.440e6	6.648e6	1.140	1.27	1.24	79492.3	YES	NO	bd	bd	997.904

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

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## HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.01	4.891e6	4.848e6	0.953	1.01	1.05	12213.8	YES	NO	bb	bb	1050.4...
2	Total-heptafurans	39.43	9.256e3	7.833e3	0.978	1.18	1.05	24.5	YES	NO	bb	bb	1.656
3	1234678-HpCDF	38.77	5.729e6	5.700e6	1.003	1.01	1.05	16498.3	YES	NO	bb	bb	1001.5...

## Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.77	1.334e6	1.787e6	0.702	0.75	0.77	11389.3	YES	NO	bb	bb	200.466
2	Total-tetrafurans	24.87	8.544e3	1.186e4	0.727	0.72	0.77	70.8	YES	NO	bb	bb	1.264
3	Total-tetrafurans	24.67	1.054e3	1.493e3	0.727	0.71	0.77	9.1	YES	NO	db	db	0.158
4	Total-tetrafurans	24.55	1.152e4	1.641e4	0.727	0.70	0.77	91.4	YES	NO	bd	bd	1.731
5	23478-PeCDF	31.27	8.034e6	5.310e6	0.786	1.51	1.55	25734.3	YES	NO	bb	bb	1006.1...
6	Total-pentafurans	31.00	7.155e3	5.348e3	0.654	1.34	1.55	24.5	YES	NO	bb	bb	1.108
7	Total-pentafurans	30.22	6.707e3	3.991e3	0.654	1.68	1.55	18.6	YES	NO	bb	bb	0.948
8	12378-PeCDF	29.93	7.598e6	4.979e6	0.679	1.53	1.55	24983.0	YES	NO	bb	bb	1049.7...
9	Total-pentafurans	29.57	3.743e3	2.429e3	0.654	1.54	1.55	12.5	YES	NO	bd	bd	0.547
10	Total-pentafurans	28.85	2.348e4	1.505e4	0.654	1.56	1.55	59.4	YES	NO	bb	bb	3.415
11	123678-HxCDF	35.04	8.729e6	6.976e6	1.091	1.25	1.24	82564.4	YES	NO	db	db	1005.9...
12	123478-HxCDF	34.90	7.954e6	6.371e6	1.166	1.25	1.24	76946.6	YES	NO	bd	bd	988.542
13	Total-hexafurans	34.75	7.748e3	5.706e3	1.141	1.36	1.24	87.3	YES	NO	bb	bb	0.913
14	Total-hexafurans	33.44	5.026e3	3.534e3	1.141	1.42	1.24	38.8	YES	NO	db	bb	0.581
15	123789-HxCDF	36.93	7.107e6	5.643e6	1.137	1.26	1.24	69330.3	YES	NO	bb	bb	962.631
16	Total-hexafurans	36.53	1.628e4	1.267e4	1.141	1.29	1.24	124.4	YES	NO	dd	bd	1.966
17	Total-hexafurans	36.13	1.100e5	8.424e4	1.141	1.31	1.24	706.6	YES	NO	dd	dd	13.189
18	234678-HxCDF	35.89	8.440e6	6.648e6	1.140	1.27	1.24	79492.3	YES	NO	bd	bd	997.904
19	1234789-HpCDF	41.01	4.891e6	4.848e6	0.953	1.01	1.05	12213.8	YES	NO	bb	bb	1050.4...
20	Total-heptafurans	39.43	9.256e3	7.833e3	0.978	1.18	1.05	24.5	YES	NO	bb	bb	1.656
21	1234678-HpCDF	38.77	5.729e6	5.700e6	1.003	1.01	1.05	16498.3	YES	NO	bb	bb	1001.5...
22	OCDF	45.25	8.007e6	9.001e6	0.778	0.89	0.89	16387...	YES	NO	bb	bb	2152.5...

## TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.42	1.623e6	2.053e6	1.149	0.79	0.77	15719.4	YES	NO	bb	bb	201.416
2	Total-tetradioxins	26.03	3.492e4	4.469e4	1.024	0.78	0.77	261.5	YES	NO	bb	bb	4.891
3	Total-tetradioxins	25.59	3.088e2	4.283e2	1.024	0.72	0.77	3.2	YES	NO	bb	bb	0.045
4	Total-tetradioxins	25.29	1.293e3	1.946e3	1.024	0.66	0.77	15.2	YES	NO	bb	bb	0.199

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	30.29	1.049e3	6.224e2	1.502	1.68	1.55	4.4	YES	NO	dd	db	0.090
2	Total-pentadioxins	30.15	1.847e3	1.302e3	1.502	1.42	1.55	8.1	YES	NO	dd	dd	0.170
3	Total-pentadioxins	29.93	6.137e3	4.352e3	1.502	1.41	1.55	24.1	YES	NO	bd	bd	0.567
4	12378-PeCDD	31.53	7.500e6	4.933e6	1.022	1.52	1.55	35906.6	YES	NO	bb	bb	987.154
5	Total-pentadioxins	30.86	8.777e3	5.596e3	1.502	1.57	1.55	39.8	YES	NO	bd	bb	0.776

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	36.92	3.612e4	2.906e4	1.005	1.24	1.24	377.1	YES	NO	bb	bb	5.383
2	123789-HxCDD	36.52	6.387e6	5.242e6	0.907	1.22	1.24	81996.1	YES	NO	bb	bb	1063.9...
3	123678-HxCDD	36.14	6.944e6	5.798e6	1.001	1.20	1.24	87214.8	YES	NO	db	db	1011.1...
4	123478-HxCDD	36.02	6.446e6	5.113e6	0.996	1.26	1.24	82869.7	YES	NO	bd	bd	1008.7...

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptadioxins	40.66	1.670e2	1.486e2	1.088	1.12	1.05	0.0	NO	NO	bb	bb	0.028
2	1234678-HpCDD	40.27	5.468e6	5.342e6	1.039	1.02	1.05	19002.3	YES	NO	bb	bb	1010.6...

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.42	1.623e6	2.053e6	1.149	0.79	0.77	15719.4	YES	NO	bb	bb	201.416
2	Total-tetradoxins	26.03	3.492e4	4.469e4	1.024	0.78	0.77	261.5	YES	NO	bb	bb	4.891
3	Total-tetradoxins	25.59	3.088e2	4.283e2	1.024	0.72	0.77	3.2	YES	NO	bb	bb	0.045
4	Total-tetradoxins	25.29	1.293e3	1.946e3	1.024	0.66	0.77	15.2	YES	NO	bb	bb	0.199
5	Total-pentadoxins	30.29	1.049e3	6.224e2	1.502	1.68	1.55	4.4	YES	NO	dd	db	0.090
6	Total-pentadoxins	30.15	1.847e3	1.302e3	1.502	1.42	1.55	8.1	YES	NO	dd	dd	0.170
7	Total-pentadoxins	29.93	6.137e3	4.352e3	1.502	1.41	1.55	24.1	YES	NO	bd	bd	0.567
8	12378-PeCDD	31.53	7.500e6	4.933e6	1.022	1.52	1.55	35906.6	YES	NO	bb	bb	987.154
9	Total-pentadoxins	30.86	8.777e3	5.596e3	1.502	1.57	1.55	39.8	YES	NO	bd	bb	0.776
10	Total-hexadoxins	36.92	3.612e4	2.906e4	1.005	1.24	1.24	377.1	YES	NO	bb	bb	5.383
11	123789-HxCDD	36.52	6.387e6	5.242e6	0.907	1.22	1.24	81996.1	YES	NO	bb	bb	1063.9...
12	123678-HxCDD	36.14	6.944e6	5.798e6	1.001	1.20	1.24	87214.8	YES	NO	db	db	1011.1...
13	123478-HxCDD	36.02	6.446e6	5.113e6	0.996	1.26	1.24	82869.7	YES	NO	bd	bd	1008.7...
14	Total-heptadoxins	40.66	1.670e2	1.486e2	1.088	1.12	1.05	0.0	NO	NO	bb	bb	0.028
15	1234678-HpCDD	40.27	5.468e6	5.342e6	1.039	1.02	1.05	19002.3	YES	NO	bb	bb	1010.6...
16	OCDD	45.01	8.523e6	9.997e6	0.920	0.85	0.89	89206.2	YES	NO	bb	bb	1981.7...

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

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## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.77	1.334e6	1.787e6	0.702	0.75	0.77	11389.3	YES	NO	bb	bb	200.466
2	Total-tetrafurans	24.87	8.544e3	1.186e4	0.727	0.72	0.77	70.8	YES	NO	bb	bb	1.264
3	Total-tetrafurans	24.67	1.054e3	1.493e3	0.727	0.71	0.77	9.1	YES	NO	db	db	0.158
4	Total-tetrafurans	24.55	1.152e4	1.641e4	0.727	0.70	0.77	91.4	YES	NO	bd	bd	1.731
5	23478-PeCDF	31.27	8.034e6	5.310e6	0.786	1.51	1.55	25734.3	YES	NO	bb	bb	1006.1...
6	Total-pentafurans	31.00	7.155e3	5.348e3	0.654	1.34	1.55	24.5	YES	NO	bb	bb	1.108
7	Total-pentafurans	30.22	6.707e3	3.991e3	0.654	1.68	1.55	18.6	YES	NO	bb	bb	0.948
8	12378-PeCDF	29.93	7.598e6	4.979e6	0.679	1.53	1.55	24983.0	YES	NO	bb	bb	1049.7...
9	Total-pentafurans	29.57	3.743e3	2.429e3	0.654	1.54	1.55	12.5	YES	NO	bd	bd	0.547
10	Total-pentafurans	28.85	2.348e4	1.505e4	0.654	1.56	1.55	59.4	YES	NO	bb	bb	3.415
11	123678-HxCDF	35.04	8.729e6	6.976e6	1.091	1.25	1.24	82564.4	YES	NO	db	db	1005.9...
12	123478-HxCDF	34.90	7.954e6	6.371e6	1.166	1.25	1.24	76946.6	YES	NO	bd	bd	988.542
13	Total-hexafurans	34.75	7.748e3	5.706e3	1.141	1.36	1.24	87.3	YES	NO	bb	bb	0.913
14	Total-hexafurans	33.44	5.026e3	3.534e3	1.141	1.42	1.24	38.8	YES	NO	db	bb	0.581
15	123789-HxCDF	36.93	7.107e6	5.643e6	1.137	1.26	1.24	69330.3	YES	NO	bb	bb	962.631
16	Total-hexafurans	36.53	1.628e4	1.267e4	1.141	1.29	1.24	124.4	YES	NO	dd	bd	1.966
17	Total-hexafurans	36.13	1.100e5	8.424e4	1.141	1.31	1.24	706.6	YES	NO	dd	dd	13.189
18	234678-HxCDF	35.89	8.440e6	6.648e6	1.140	1.27	1.24	79492.3	YES	NO	bd	bd	997.904
19	1234789-HpCDF	41.01	4.891e6	4.848e6	0.953	1.01	1.05	12213.8	YES	NO	bb	bb	1050.4...
20	Total-heptafurans	39.43	9.256e3	7.833e3	0.978	1.18	1.05	24.5	YES	NO	bb	bb	1.656
21	1234678-HpCDF	38.77	5.729e6	5.700e6	1.003	1.01	1.05	16498.3	YES	NO	bb	bb	1001.5...
22	OCDF	45.25	8.007e6	9.001e6	0.778	0.89	0.89	16387...	YES	NO	bb	bb	2152.5...
23	2378-TCDD	26.42	1.623e6	2.053e6	1.149	0.79	0.77	15719.4	YES	NO	bb	bb	201.416
24	Total-tetradiioxins	26.03	3.492e4	4.469e4	1.024	0.78	0.77	261.5	YES	NO	bb	bb	4.891
25	Total-tetradiioxins	25.59	3.088e2	4.283e2	1.024	0.72	0.77	3.2	YES	NO	bb	bb	0.045
26	Total-tetradiioxins	25.29	1.293e3	1.946e3	1.024	0.66	0.77	15.2	YES	NO	bb	bb	0.199
27	Total-pentadiioxins	30.29	1.049e3	6.224e2	1.502	1.68	1.55	4.4	YES	NO	dd	db	0.090
28	Total-pentadiioxins	30.15	1.847e3	1.302e3	1.502	1.42	1.55	8.1	YES	NO	dd	dd	0.170
29	Total-pentadiioxins	29.93	6.137e3	4.352e3	1.502	1.41	1.55	24.1	YES	NO	bd	bd	0.567
30	12378-PeCDD	31.53	7.500e6	4.933e6	1.022	1.52	1.55	35906.6	YES	NO	bb	bb	987.154
31	Total-pentadiioxins	30.86	8.777e3	5.596e3	1.502	1.57	1.55	39.8	YES	NO	bd	bb	0.776
32	Total-hexadiioxins	36.92	3.612e4	2.906e4	1.005	1.24	1.24	377.1	YES	NO	bb	bb	5.383
33	123789-HxCDD	36.52	6.387e6	5.242e6	0.907	1.22	1.24	81996.1	YES	NO	bb	bb	1063.9...
34	123678-HxCDD	36.14	6.944e6	5.798e6	1.001	1.20	1.24	87214.8	YES	NO	db	db	1011.1...
35	123478-HxCDD	36.02	6.446e6	5.113e6	0.996	1.26	1.24	82869.7	YES	NO	bd	bd	1008.7...
36	Total-heptadiioxins	40.66	1.670e2	1.486e2	1.088	1.12	1.05	0.0	NO	NO	bb	bb	0.028
37	1234678-HpCDD	40.27	5.468e6	5.342e6	1.039	1.02	1.05	19002.3	YES	NO	bb	bb	1010.6...

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:35:04 Pacific Standard Time

**ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk**

**TotalTEQ,Furans,Dioxins**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	OCDD	45.01	8.523e6	9.997e6	0.920	0.85	0.89	89206.2	YES	NO	bb	bb	1981.7...

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.64	6.068e3					0.7	NO		bb		
2	FUNCTION1 PFK	21.78	2.376e4					1.4	NO		bb		
3	FUNCTION1 PFK	26.65	6.322e3					0.8	NO		bb		
4	FUNCTION1 PFK	26.20	6.018e3					0.7	NO		bb		
5	FUNCTION1 PFK	24.62	4.147e4					1.9	NO		bb		

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	31.96	1.329e6					11.3	YES		db		0.000
2	FUNCTION2 PFK	29.68	9.729e6					13.1	YES		dd		0.000
3	FUNCTION2 PFK	29.12	3.197e6					12.0	YES		dd		0.000
4	FUNCTION2 PFK	28.11	2.639e5					6.8	YES		bd		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	35.58	5.268e3					0.6	NO		bb		0.000
2	FUNCTION3 PFK	35.20	2.459e4					1.4	NO		bb		0.000
3	FUNCTION3 PFK	34.94	1.904e4					1.3	NO		bb		0.000
4	FUNCTION3 PFK	34.64	1.893e4					1.6	NO		bb		0.000
5	FUNCTION3 PFK	34.45	3.091e4					1.7	NO		bb		0.000
6	FUNCTION3 PFK	34.20	2.876e3					0.6	NO		bb		0.000
7	FUNCTION3 PFK	34.01	8.291e4					2.8	NO		bb		0.000
8	FUNCTION3 PFK	37.45	2.878e4					1.5	NO		bb		0.000
9	FUNCTION3 PFK	37.14	1.025e4					1.2	NO		bb		0.000
10	FUNCTION3 PFK	36.92	2.201e4					1.4	NO		bb		0.000
11	FUNCTION3 PFK	36.82	6.882e3					0.7	NO		bb		0.000
12	FUNCTION3 PFK	36.27	2.697e4					1.6	NO		bb		0.000
13	FUNCTION3 PFK	35.83	1.096e4					1.2	NO		bb		0.000



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:35:04 Pacific Standard Time

**ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk**

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.36	1.487e4					2.2	NO		db		
2	FUNCTION4 PFK	40.28	5.399e4					2.8	NO		bd		
3	FUNCTION4 PFK	39.84	7.632e3					1.3	NO		bb		
4	FUNCTION4 PFK	39.63	5.817e3					1.3	NO		bb		
5	FUNCTION4 PFK	39.58	2.233e4					2.4	NO		bb		
6	FUNCTION4 PFK	39.26	1.840e3					0.6	NO		bb		
7	FUNCTION4 PFK	39.15	1.821e4					2.0	NO		bb		
8	FUNCTION4 PFK	38.75	4.539e3					0.9	NO		bb		
9	FUNCTION4 PFK	38.40	3.735e3					0.9	NO		bb		
10	FUNCTION4 PFK	42.22	2.101e4					1.9	NO		bb		
11	FUNCTION4 PFK	41.91	9.871e3					1.2	NO		bb		
12	FUNCTION4 PFK	41.56	2.609e4					2.3	NO		bb		
13	FUNCTION4 PFK	40.96	8.343e3					1.4	NO		bb		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.55	1.986e4					1.8	NO		bb		
2	FUNCTION5 PFK	44.84	1.038e4					2.0	NO		bb		
3	FUNCTION5 PFK	44.32	5.641e3					1.1	NO		bb		
4	FUNCTION5 PFK	44.16	5.508e3					1.3	NO		bb		
5	FUNCTION5 PFK	43.92	3.533e3					1.2	NO		bb		
6	FUNCTION5 PFK	43.74	1.099e4					1.6	NO		bb		
7	FUNCTION5 PFK	43.65	5.197e4					3.3	YES		db		
8	FUNCTION5 PFK	43.53	1.828e4					2.1	NO		bd		
9	FUNCTION5 PFK	42.94	8.618e3					1.5	NO		bb		
10	FUNCTION5 PFK	42.73	1.271e3					0.6	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
 Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 11:35:04 Pacific Standard Time

**ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk**

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.02	8.181e1					1.9	NO		bb		0.000
2	FUNCTION1 HXCD...	26.42	2.971e2					5.1	YES		bb		0.000
3	FUNCTION1 HXCD...	25.83	8.848e1					2.3	NO		db		0.000
4	FUNCTION1 HXCD...	25.77	1.170e2					2.5	NO		dd		0.000
5	FUNCTION1 HXCD...	25.59	1.285e2					2.6	NO		bd		0.000
6	FUNCTION1 HXCD...	24.84	1.183e2					1.2	NO		bb		0.000
7	FUNCTION1 HXCD...	24.11	7.501e1					1.5	NO		bb		0.000
8	FUNCTION1 HXCD...	22.26	7.865e1					3.6	YES		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.55	8.739e2					12.4	YES		bb		0.000
2	FUNCTION2 HPCD...	31.16	9.100e3					161.2	YES		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.02	1.011e3					23.2	YES		dd		0.000
2	FUNCTION3 OCDPE	35.92	4.171e2					12.8	YES		bd		0.000
3	FUNCTION3 OCDPE	35.05	6.001e2					12.0	YES		db		0.000
4	FUNCTION3 OCDPE	34.90	4.386e2					11.4	YES		bd		0.000
5	FUNCTION3 OCDPE	36.94	5.713e2					12.4	YES		bb		0.000
6	FUNCTION3 OCDPE	36.52	9.647e2					21.7	YES		bb		0.000
7	FUNCTION3 OCDPE	36.14	1.116e3					24.0	YES		db		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	41.03	4.935e2					7.5	YES		bb		0.000
2	FUNCTION4 NCDPE	40.28	7.486e2					12.2	YES		bb		0.000
3	FUNCTION4 NCDPE	38.78	6.004e2					9.6	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld  
Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time  
Printed: Monday, March 06, 2023 11:35:04 Pacific Standard Time

ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

**ETHERS6**

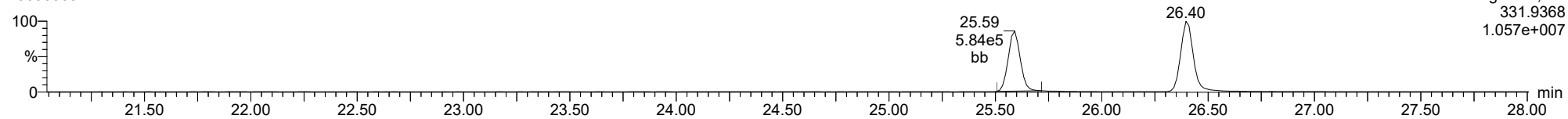
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.26	1.761e3					22.2	YES		db		0.000
2	FUNCTION5 DCDPE	45.02	1.661e3					24.0	YES		bd		0.000

**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS5CW, **Name:** 23030309, **Date:** 03-Mar-2023, **Time:** 15:47:43, **Conditions:** AUTOSPEC01, **User:** pk

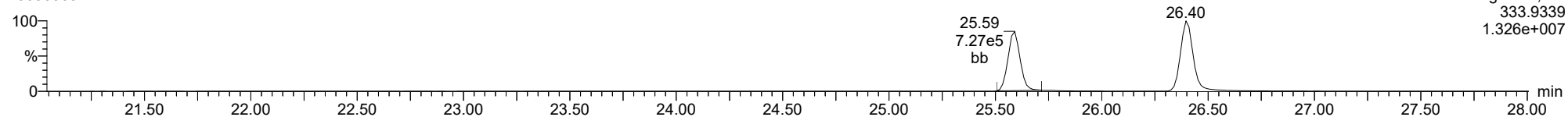
**13C-1234-TCDD**

23030309



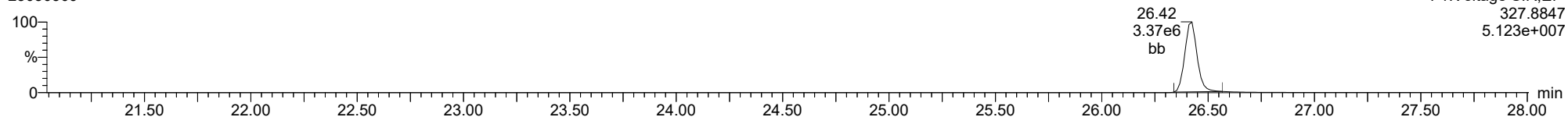
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23030309



**37CL-2378-TCDD**

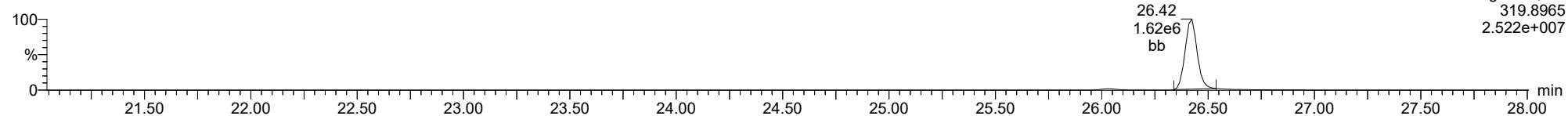
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

**2378-TCDD**

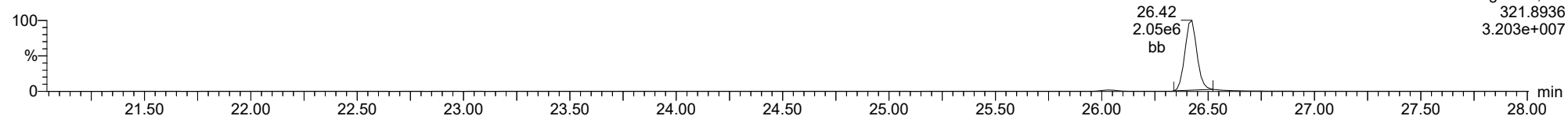
23030309



F1:Voltage SIR,EI+  
319.8965  
2.522e+007

**2378-TCDD**

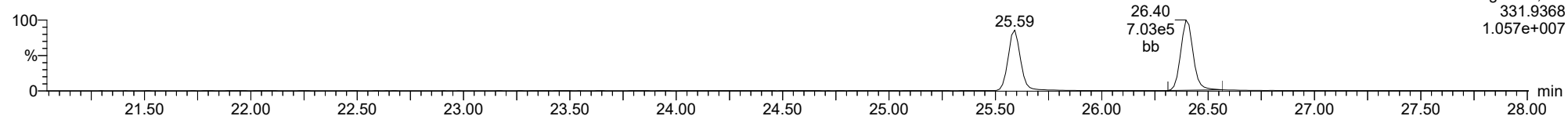
23030309



F1:Voltage SIR,EI+  
321.8936  
3.203e+007

**13C-2378-TCDD**

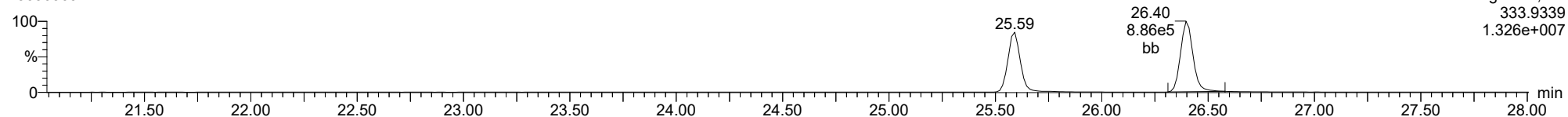
23030309



F1:Voltage SIR,EI+  
331.9368  
1.057e+007

**13C-2378-TCDD**

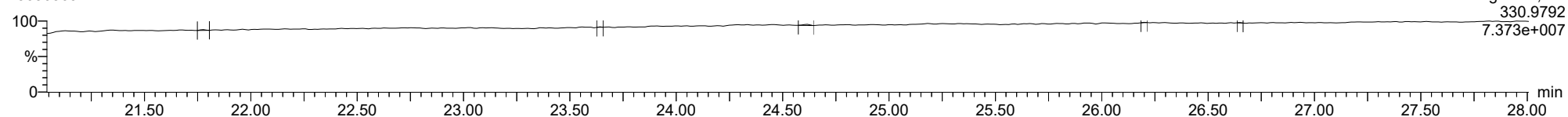
23030309



F1:Voltage SIR,EI+  
333.9339  
1.326e+007

**FUNCTION1 PFK**

23030309

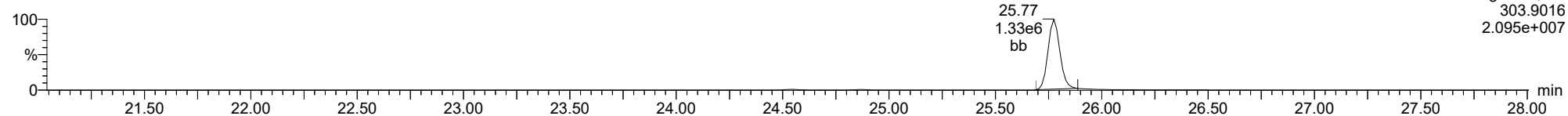


F1:Voltage SIR,EI+  
330.9792  
7.373e+007

ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

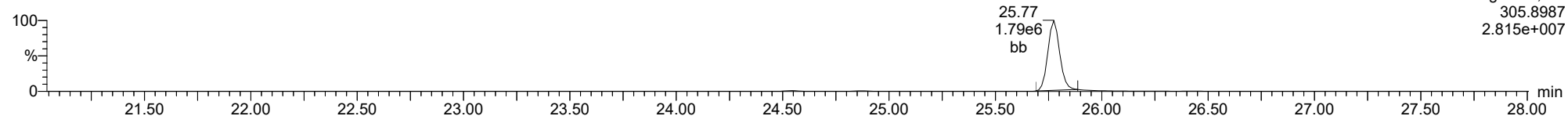
**2378-TCDF**

23030309



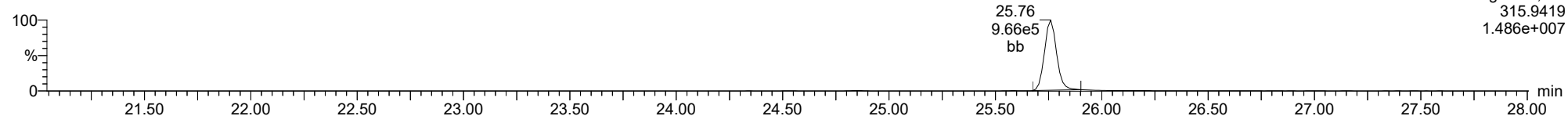
**2378-TCDF**

23030309



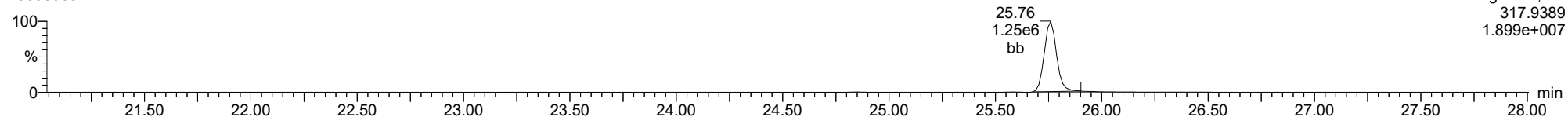
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23030309



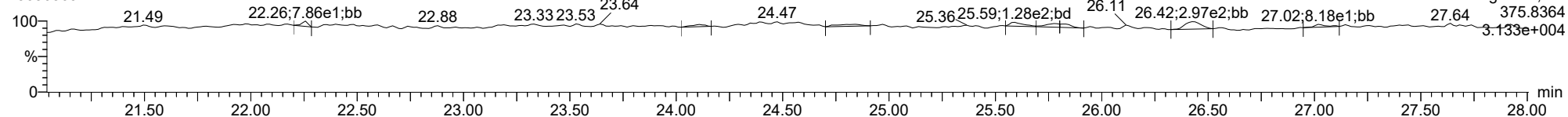
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23030309



**FUNCTION1 HXCDE**

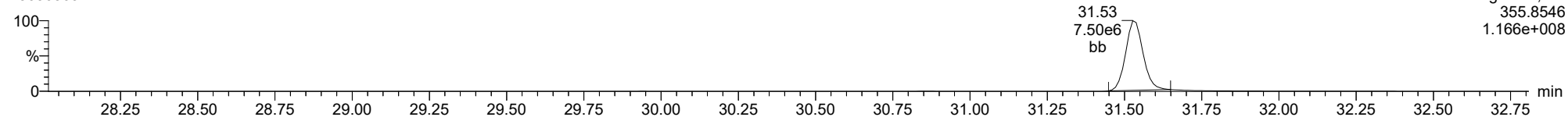
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

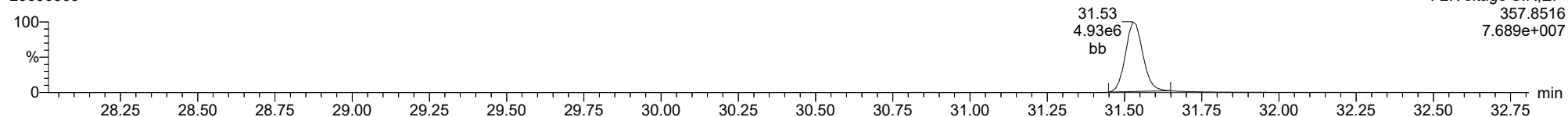
**12378-PeCDD**

23030309



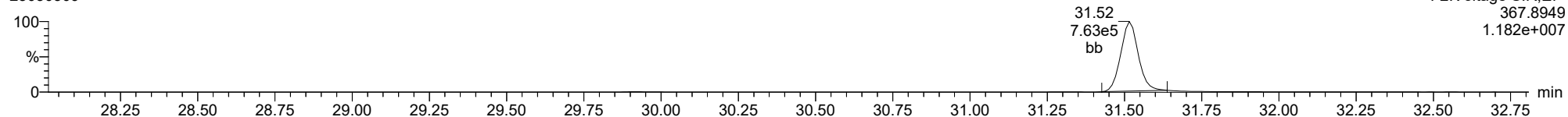
**12378-PeCDD**

23030309



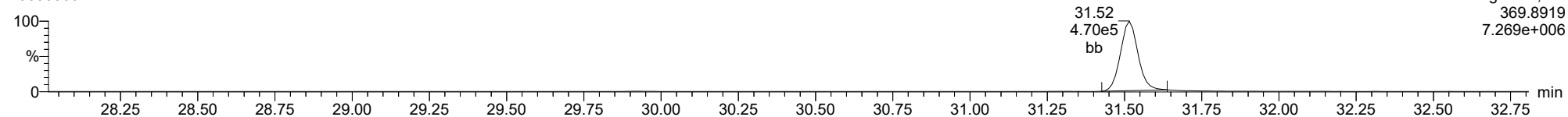
**13C-12378-PeCDD**

23030309



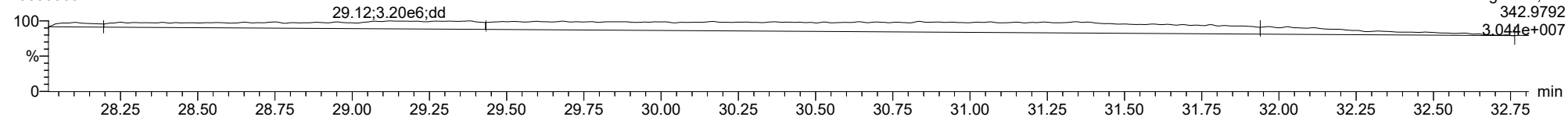
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23030309



**FUNCTION2 PFK**

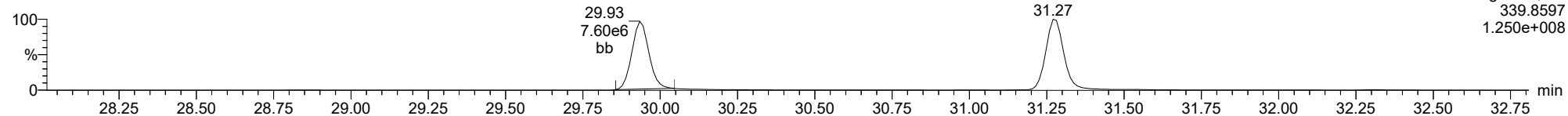
23030309



ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

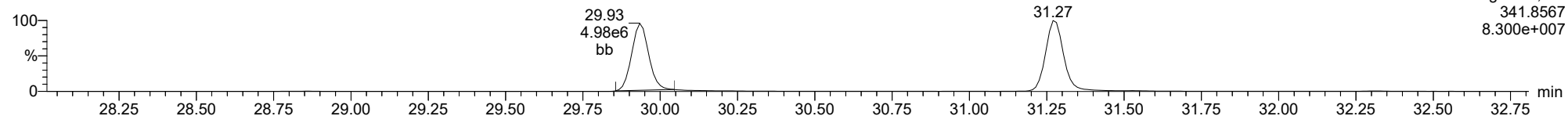
**12378-PeCDF**

23030309



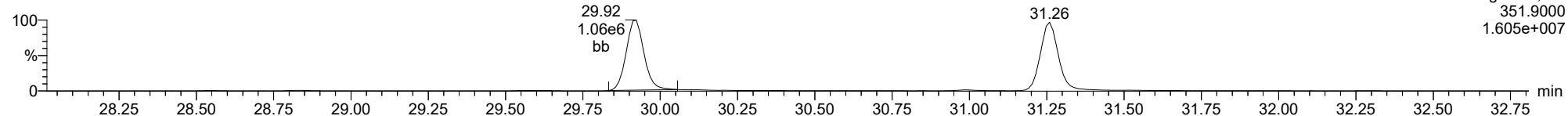
**12378-PeCDF**

23030309



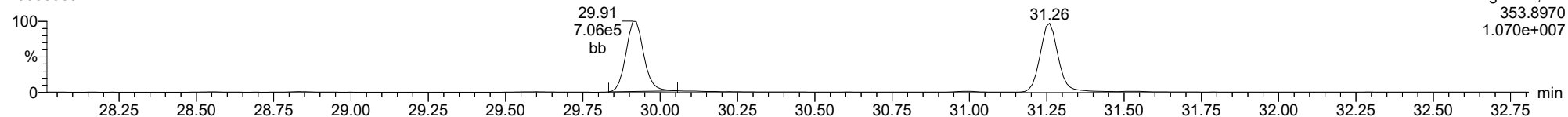
**13C-12378-PeCDF**

23030309



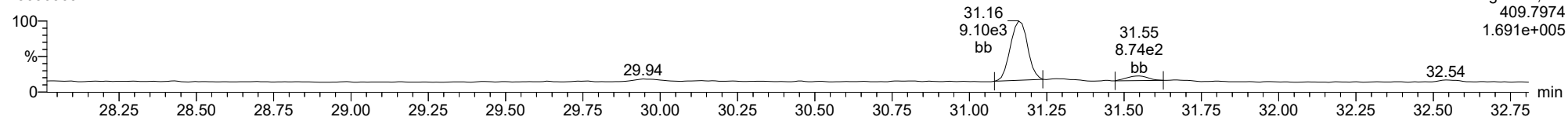
**13C-12378-PeCDF**

23030309



**FUNCTION2 HPCDPE**

23030309

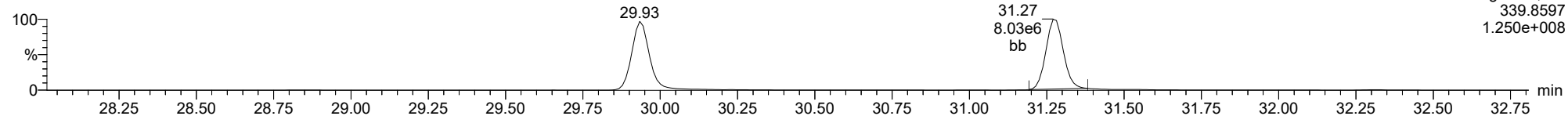




ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

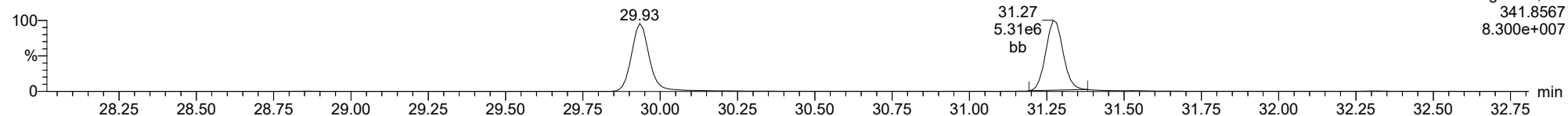
**23478-PeCDF**

23030309



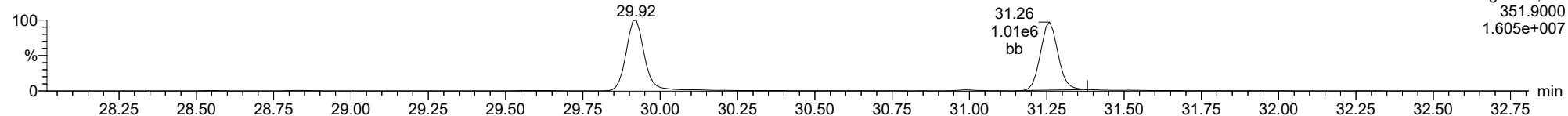
**23478-PeCDF**

23030309



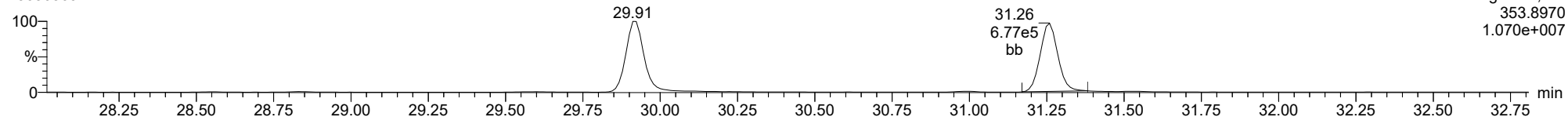
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23030309



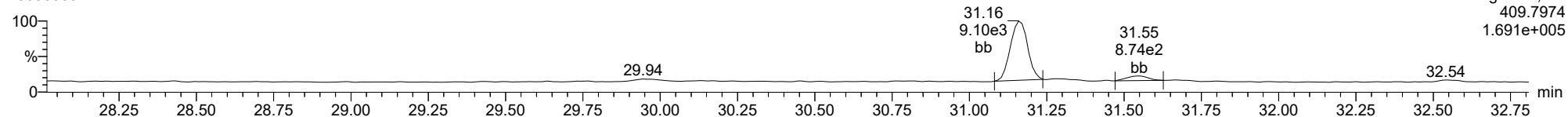
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23030309



**FUNCTION2 HPCDPE**

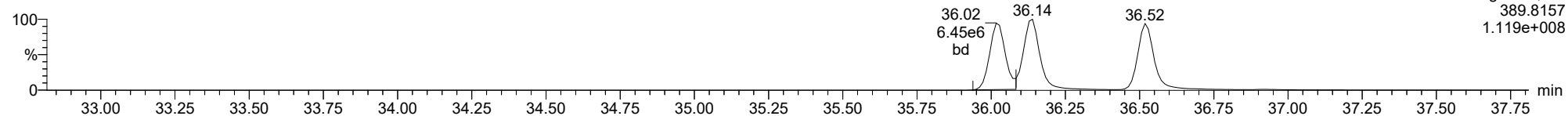
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

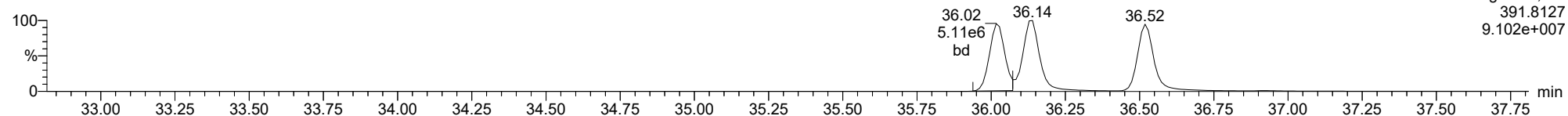
**123478-HxCDD**

23030309



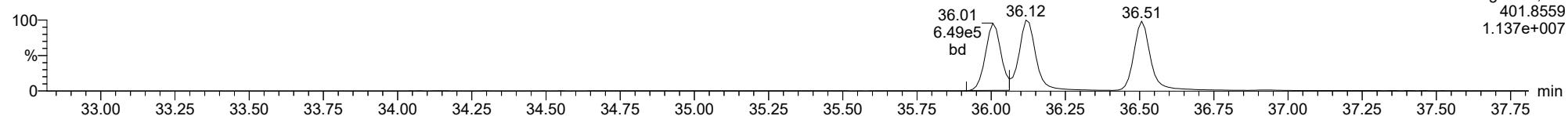
**123478-HxCDD**

23030309



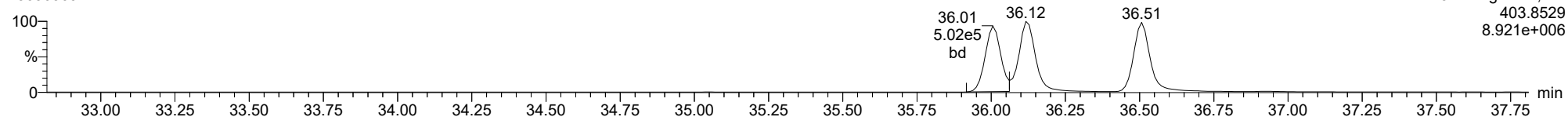
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23030309



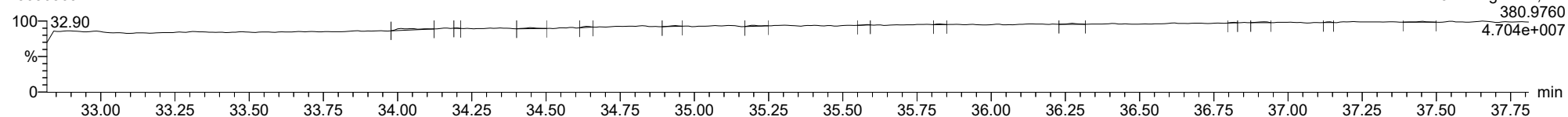
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23030309



**FUNCTION3 PFK**

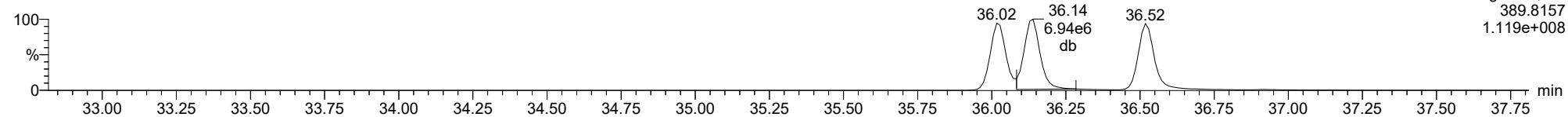
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

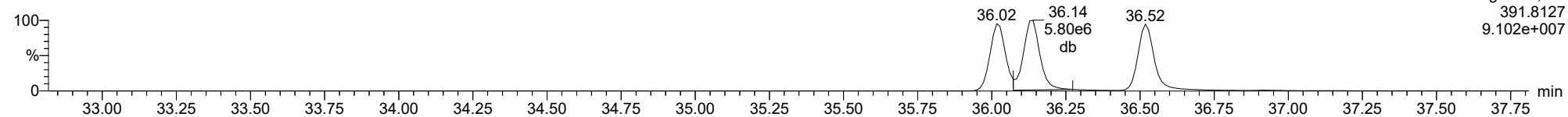
**123678-HxCDD**

23030309



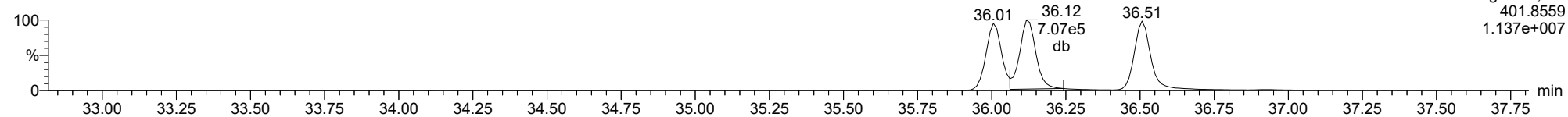
**123678-HxCDD**

23030309



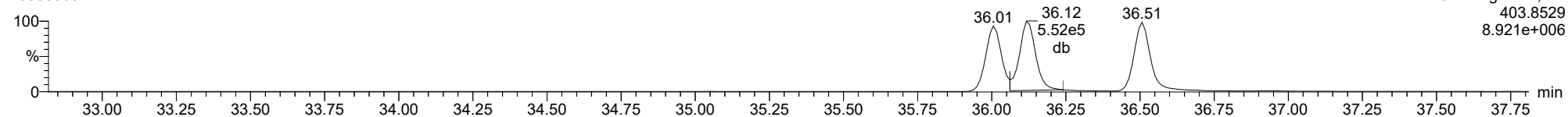
**13C-123678-HxCDD**

23030309



**13C-123678-HxCDD**

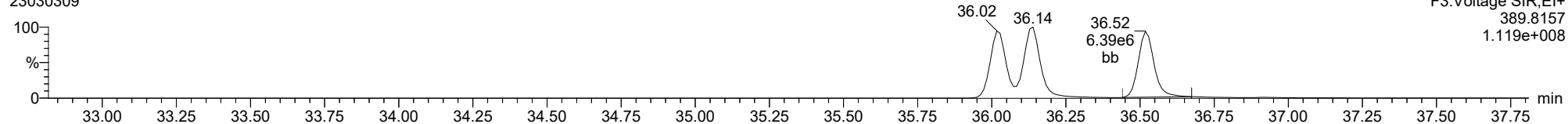
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

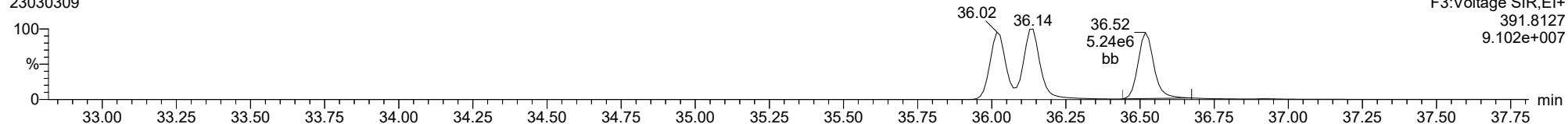
**123789-HxCDD**

23030309



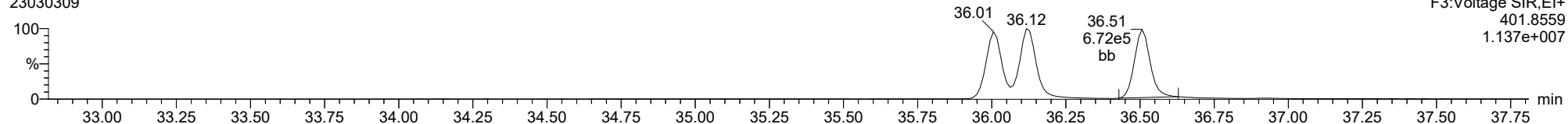
**123789-HxCDD**

23030309



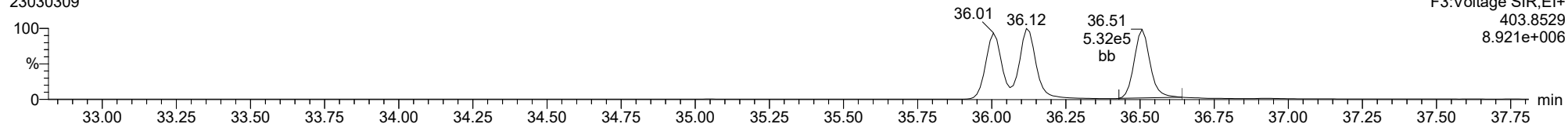
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**13C-123789-HxCDD**

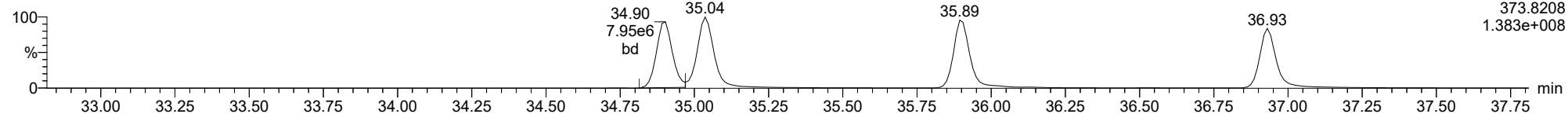
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

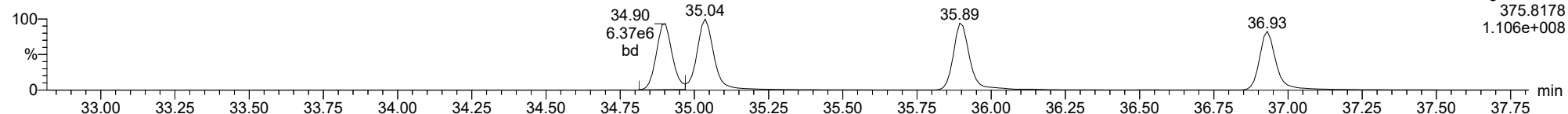
123478-HxCDF

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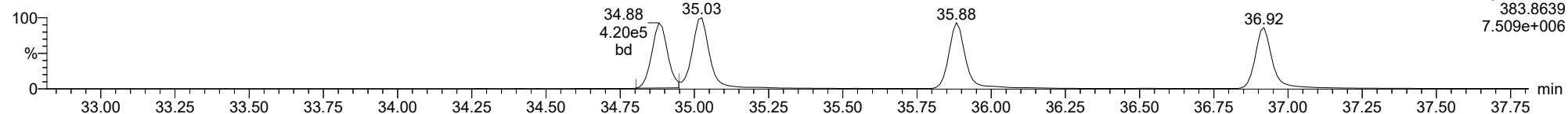
123478-HxCDF

23030309



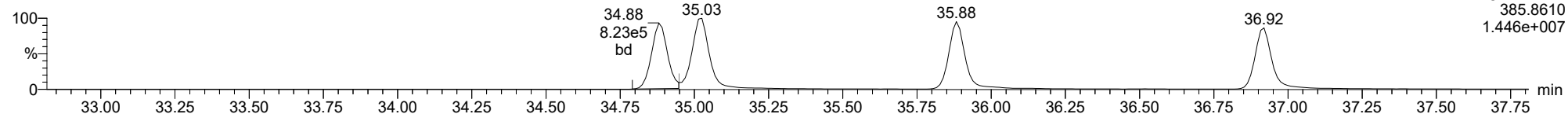
13C-123478-HxCDF

23030309



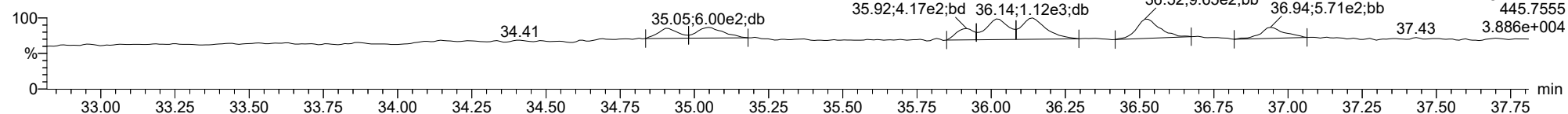
13C-123478-HxCDF

23030309



FUNCTION3 OCDPE

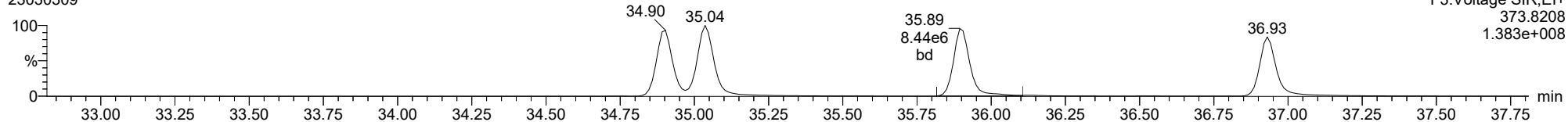
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

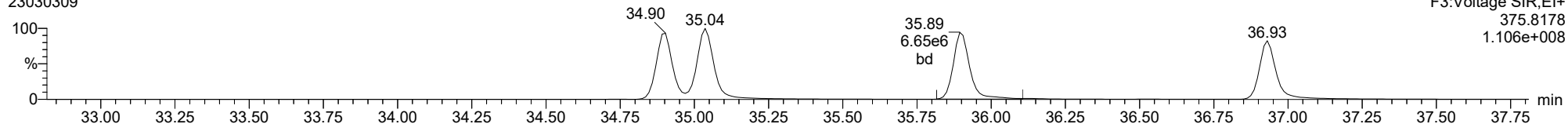
**234678-HxCDF**

23030309



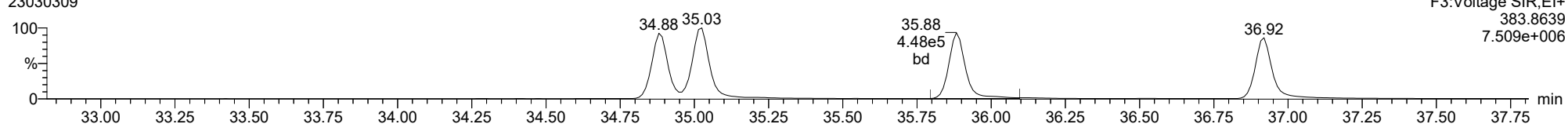
**234678-HxCDF**

23030309



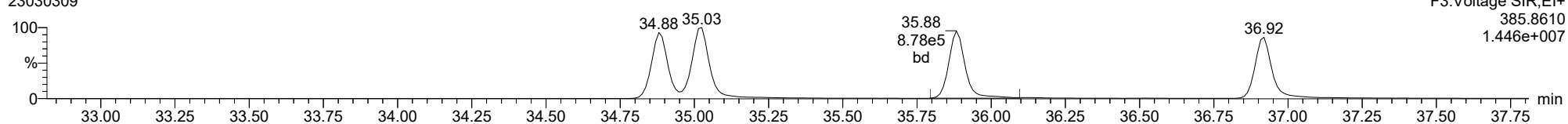
**13C-234678-HxCDF**

23030309



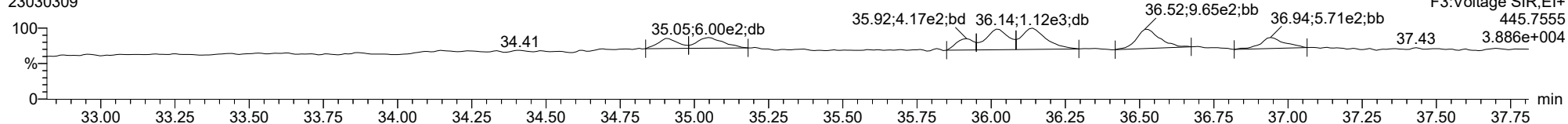
**13C-234678-HxCDF**

23030309



**FUNCTION3 OCDPE**

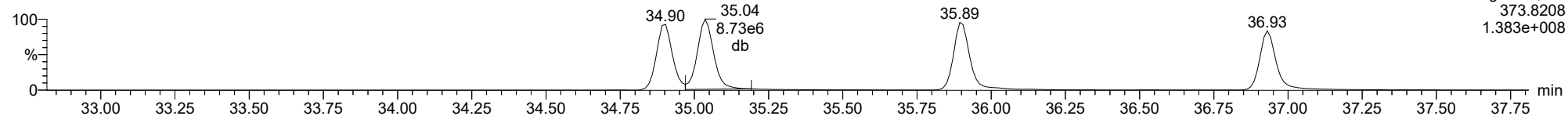
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

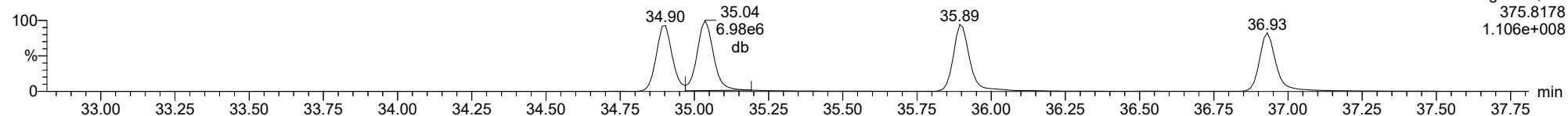
**123678-HxCDF**

23030309



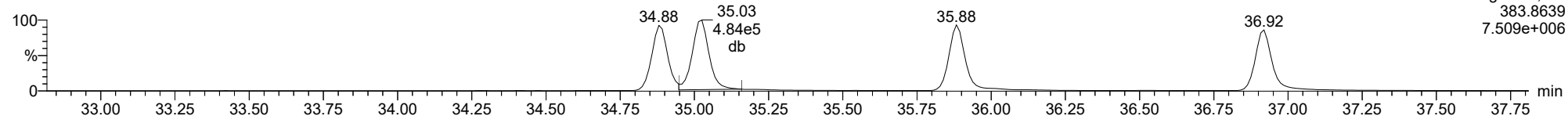
**123678-HxCDF**

23030309



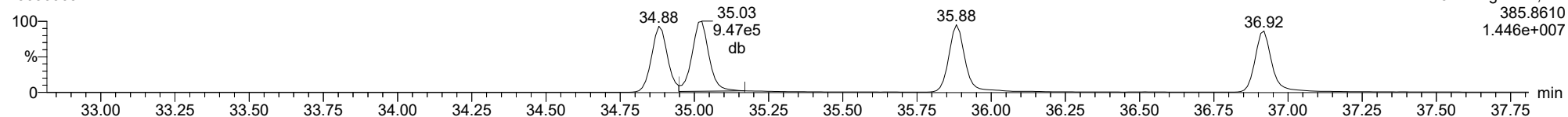
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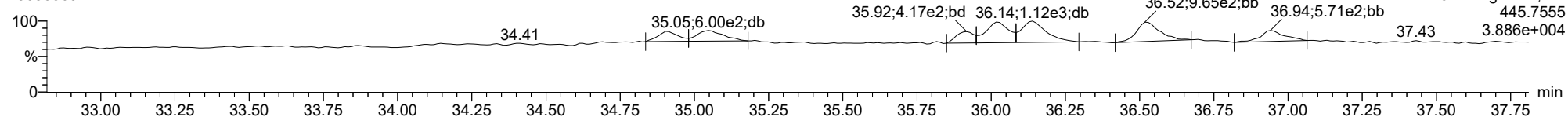
**13C-123678-HxCDF**

23030309



**FUNCTION3 OCDPE**

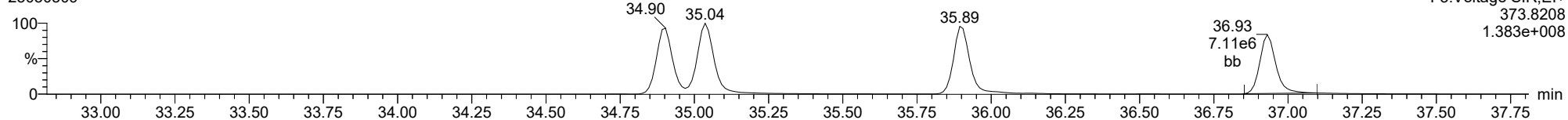
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

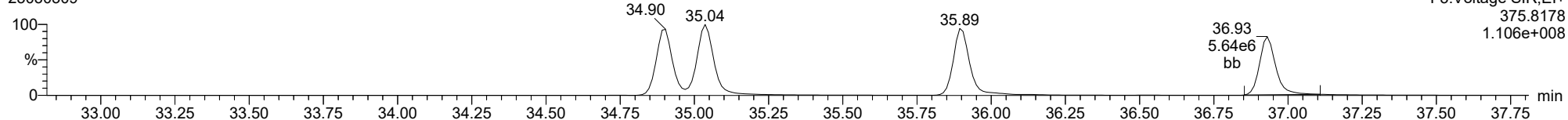
123789-HxCDF

23030309



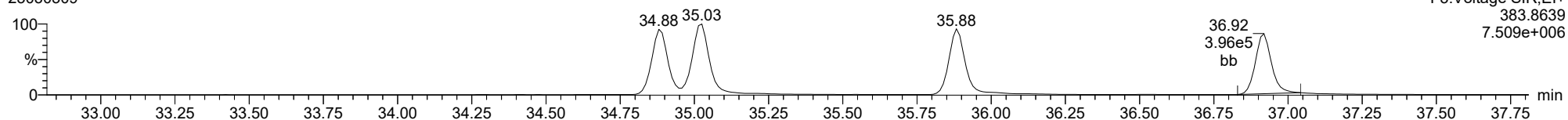
123789-HxCDF

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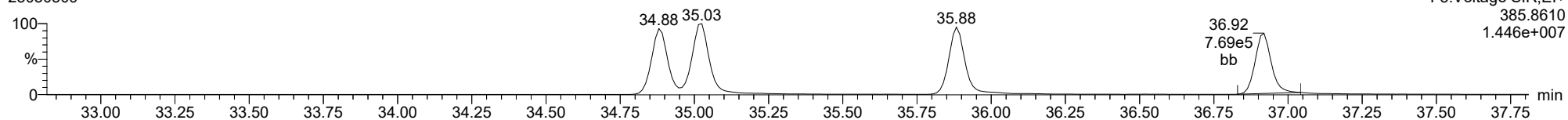
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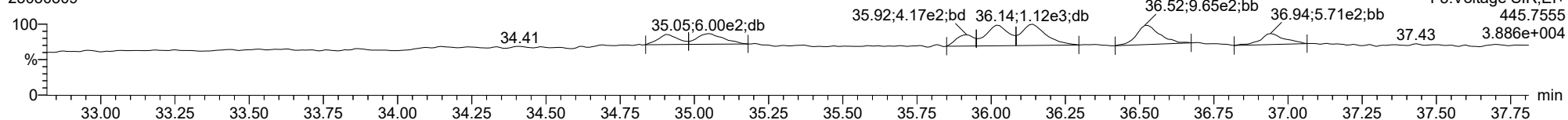
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FUNCTION3 OCDPE

23030309

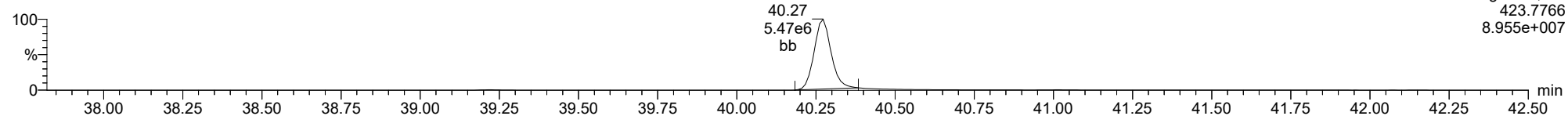




ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

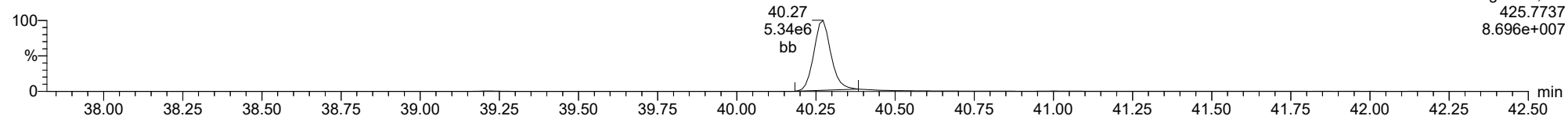
**1234678-HpCDD**

23030309



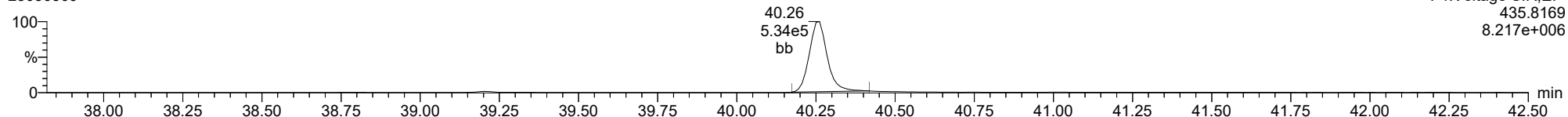
**1234678-HpCDD**

23030309



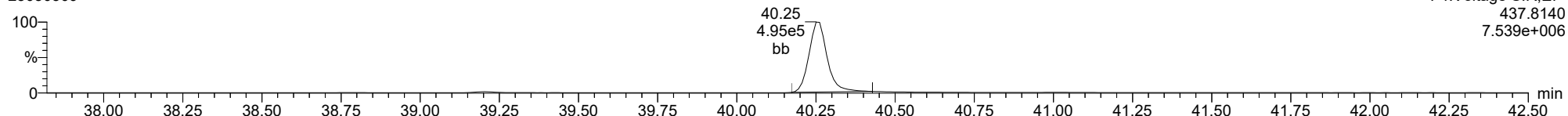
**13C-1234678-HpCDD**

23030309



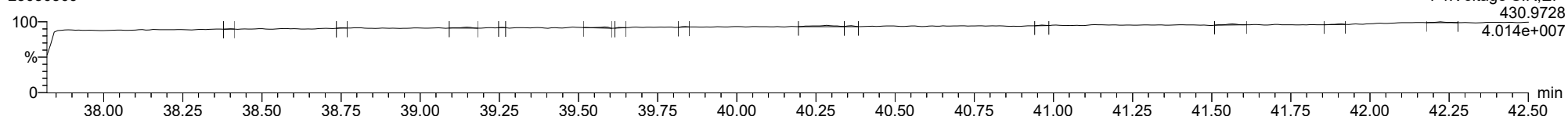
**13C-1234678-HpCDD**

23030309



**FUNCTION4 PFK**

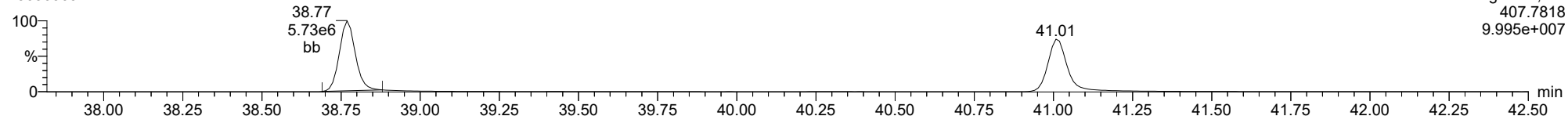
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDF**

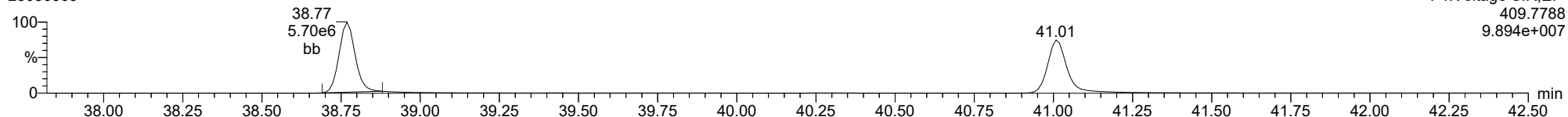
23030309



F4:Voltage SIR,EI+  
407.7818  
9.995e+007

**1234678-HpCDF**

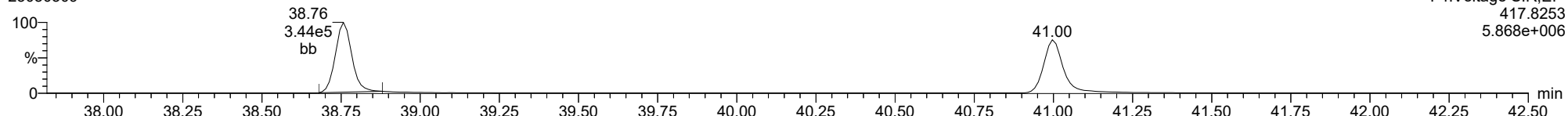
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F4:Voltage SIR,EI+  
409.7788  
9.894e+007

**13C-1234678-HpCDF**

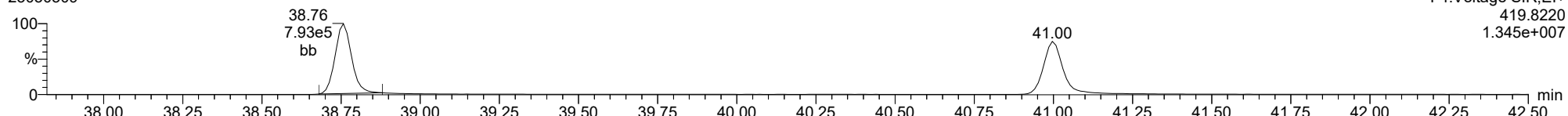
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F4:Voltage SIR,EI+  
417.8253  
5.868e+006

**13C-1234678-HpCDF**

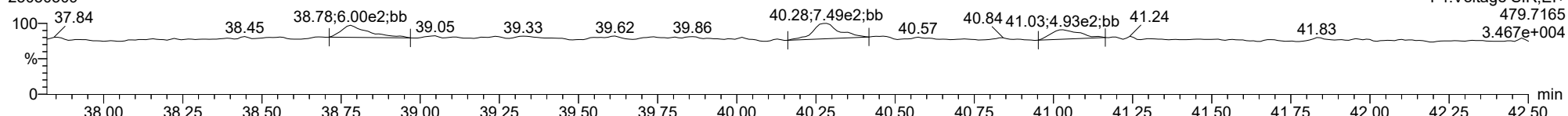
23030309



F4:Voltage SIR,EI+  
419.8220  
1.345e+007

**FUNCTION4 NCDPE**

23030309

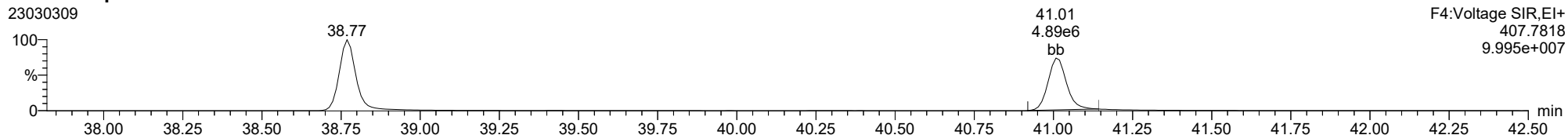


F4:Voltage SIR,EI+  
479.7165  
3.467e+004

ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

**1234789-HpCDF**

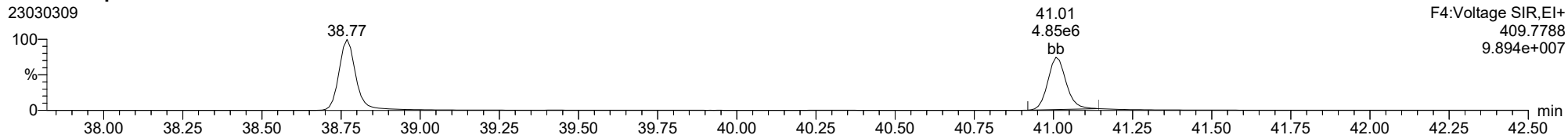
23030309



F4:Voltage SIR,EI+  
407.7818  
9.995e+007

**1234789-HpCDF**

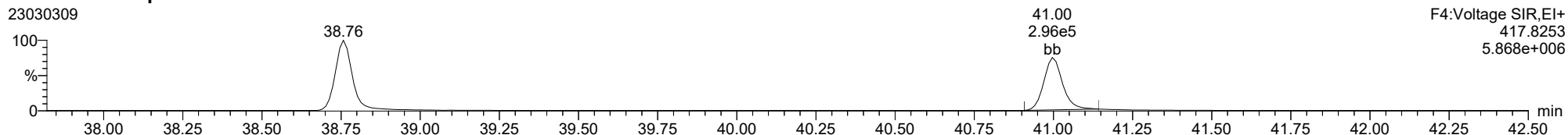
23030309



F4:Voltage SIR,EI+  
409.7788  
9.894e+007

**13C-1234789-HpCDF**

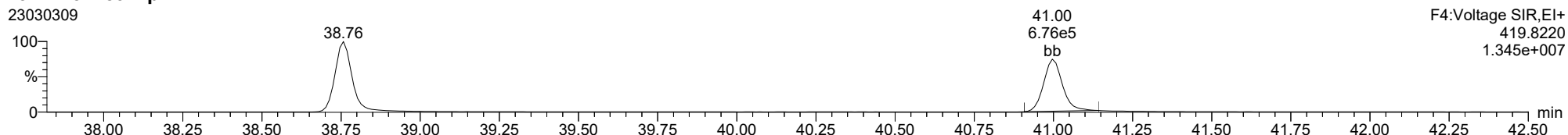
23030309



F4:Voltage SIR,EI+  
417.8253  
5.868e+006

**13C-1234789-HpCDF**

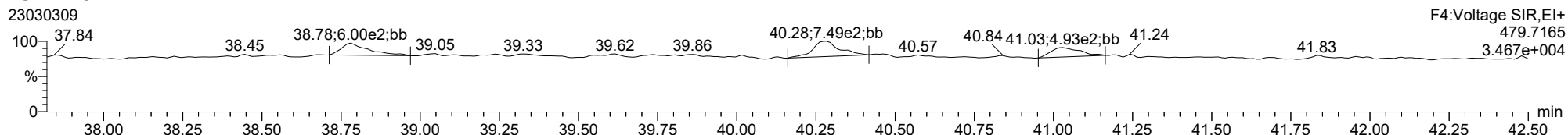
23030309



F4:Voltage SIR,EI+  
419.8220  
1.345e+007

**FUNCTION4 NCDPE**

23030309

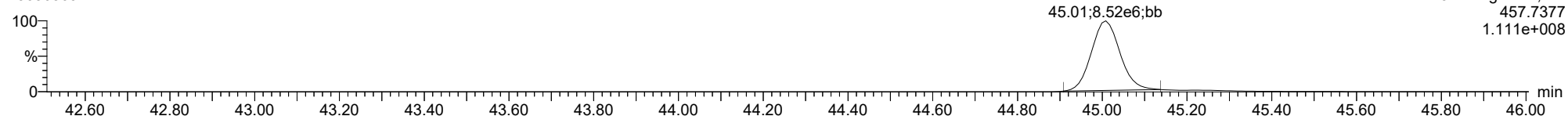


F4:Voltage SIR,EI+  
479.7165  
3.467e+004

ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

**OCDD**

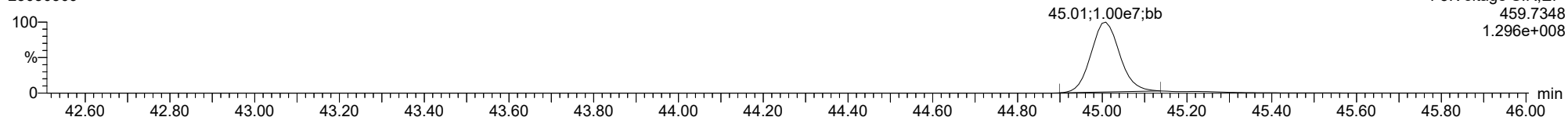
23030309



F5:Voltage SIR,EI+  
457.7377  
1.111e+008

**OCDD**

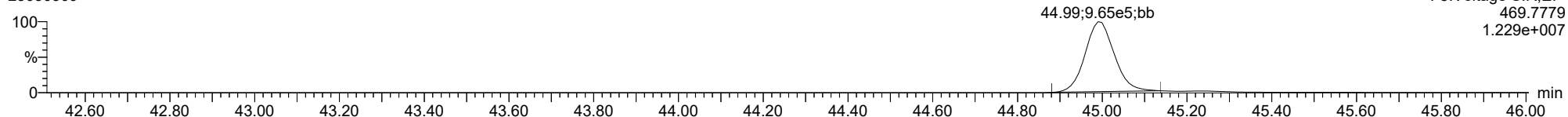
23030309



F5:Voltage SIR,EI+  
459.7348  
1.296e+008

**13C-OCDD**

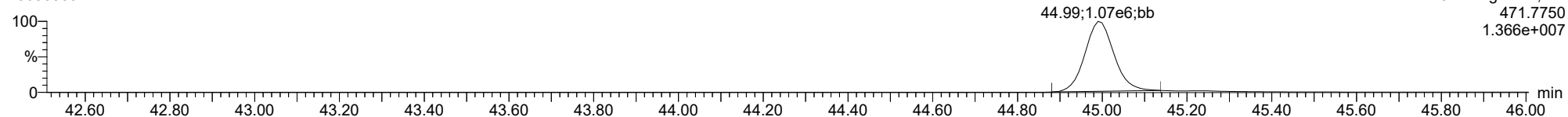
23030309



F5:Voltage SIR,EI+  
469.7779  
1.229e+007

**13C-OCDD**

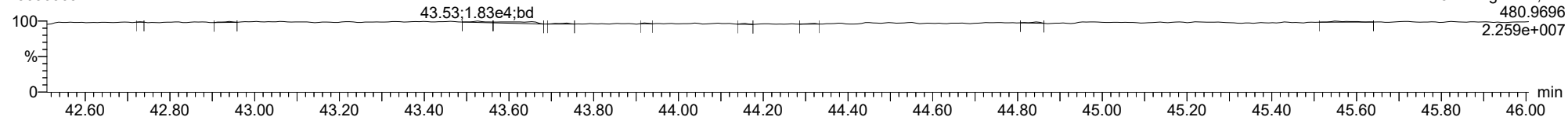
23030309



F5:Voltage SIR,EI+  
471.7750  
1.366e+007

**FUNCTION5 PFK**

23030309

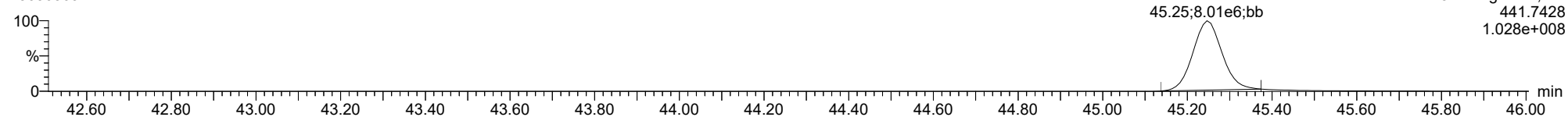


F5:Voltage SIR,EI+  
480.9696  
2.259e+007

ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

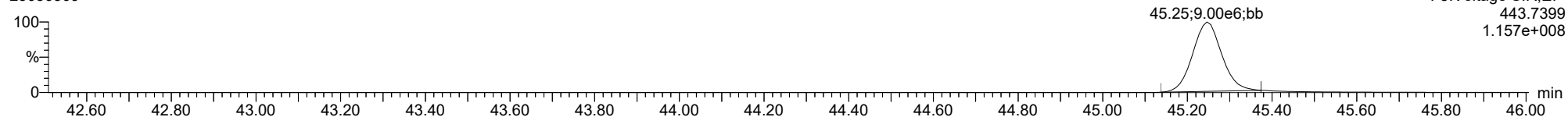
**OCDF**

23030309



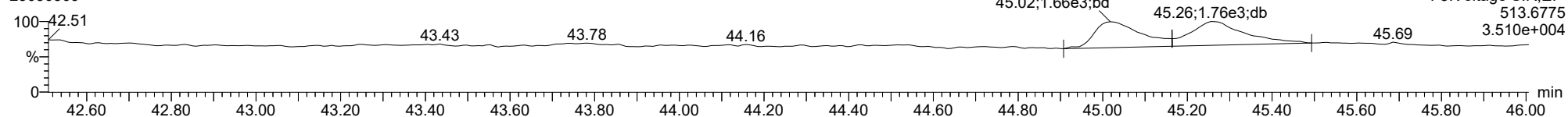
**OCDF**

23030309



**FUNCTION5 DCDPE**

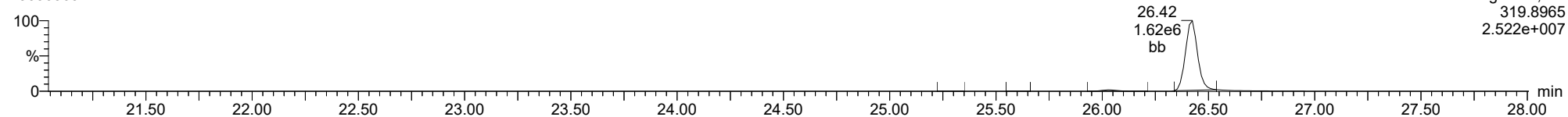
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

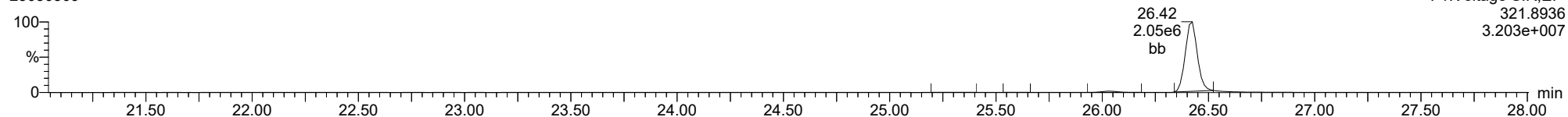
**Total-tetradioxins**

23030309



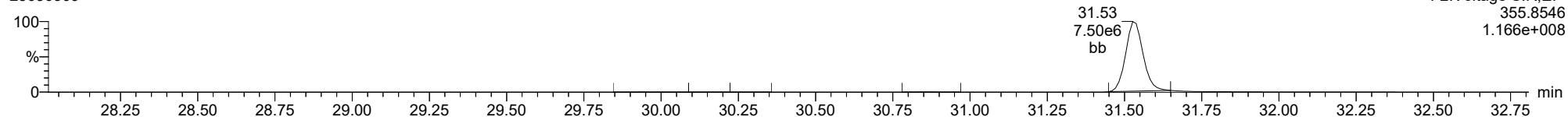
**Total-tetradioxins**

23030309



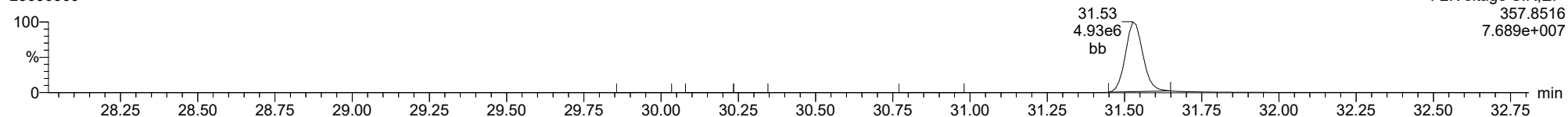
**Total-pentadioxins**

23030309



**Total-pentadioxins**

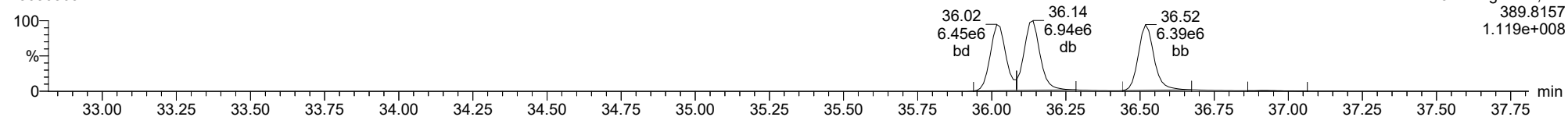
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

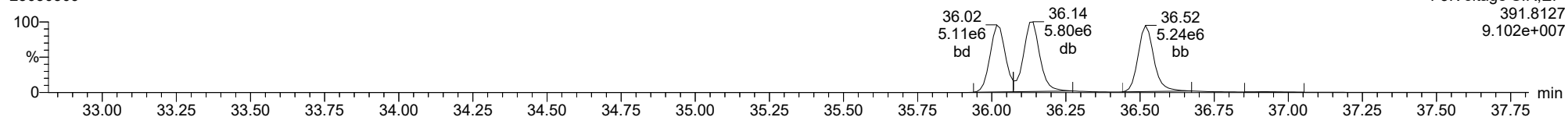
**Total-hexadioxins**

23030309



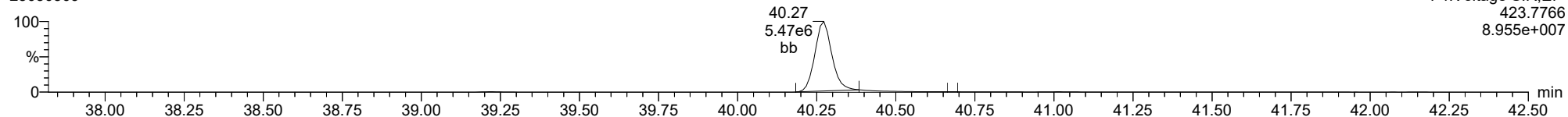
**Total-hexadioxins**

23030309



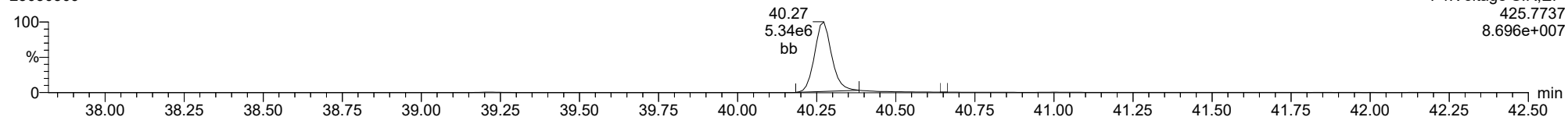
**Total-heptadioxins**

23030309



**Total-heptadioxins**

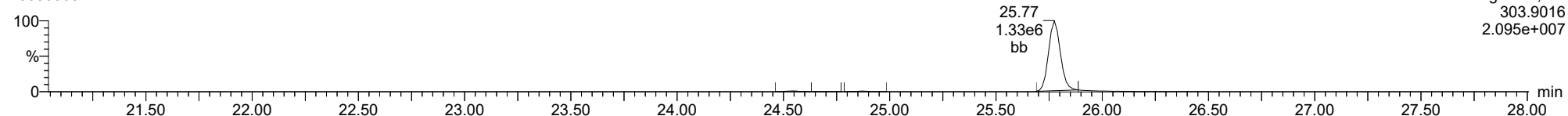
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ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

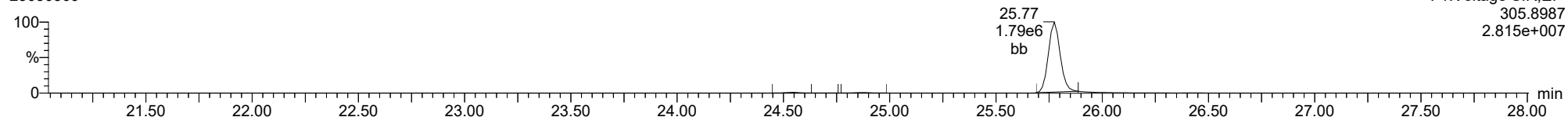
**Total-tetrafurans**

23030309



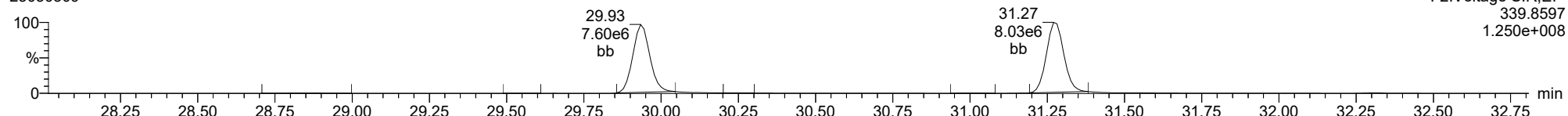
**Total-tetrafurans**

23030309



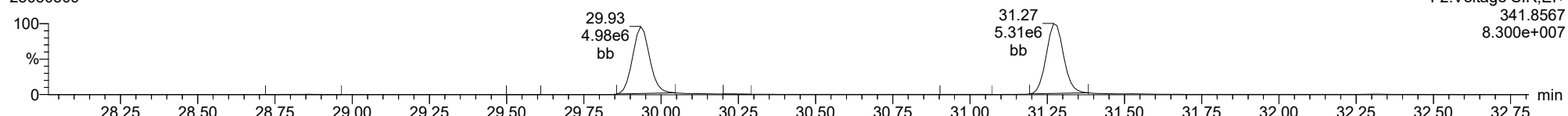
**Total-pentafurans**

23030309



**Total-pentafurans**

23030309

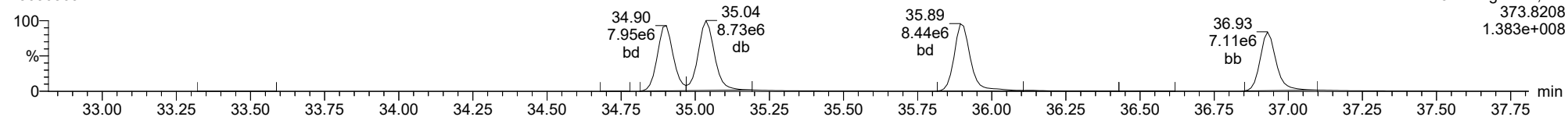




ID: CS5CW, Name: 23030309, Date: 03-Mar-2023, Time: 15:47:43, Conditions: AUTOSPEC01, User: pk

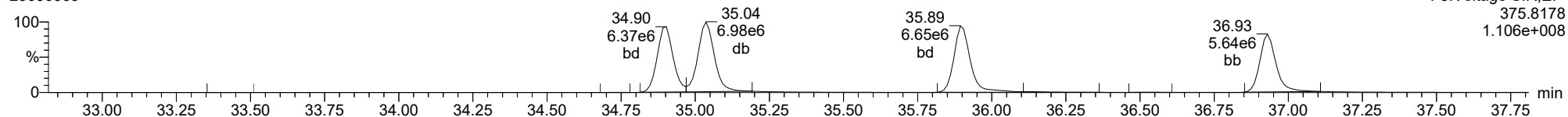
**Total-hexafurans**

23030309



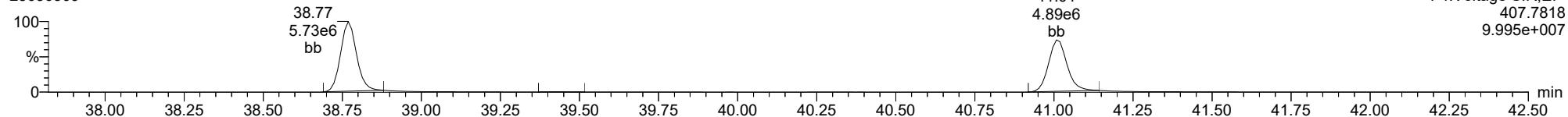
**Total-hexafurans**

23030309



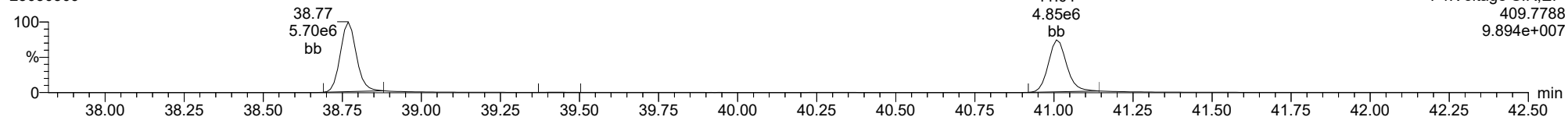
**Total-heptafurans**

23030309



**Total-heptafurans**

23030309



Dataset: T:\Autospec\Processed Data Batch\230303IHCIV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:19 Pacific Standard Time

Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.774	1.000	5.338e4	7.452e4	0.702	0.716	0.770	1163	2029	8.36e5	1.13e6	718.7	556.3	NO	bb	bb	9.838
12378-PeCDF	29.934	1.000	2.214e5	1.526e5	0.679	1.451	1.550	3022	2812	3.24e6	2.15e6	1073.8	764.7	NO	bb	bd	51.391
23478-PeCDF	31.271	1.000	2.350e5	1.508e5	0.786	1.559	1.550	3022	2812	3.42e6	2.23e6	1131.6	792.3	NO	bb	bb	48.980
123478-HxCDF	34.903	1.001	2.903e5	2.325e5	1.166	1.248	1.240	3142	2543	4.30e6	3.42e6	1370.1	1344.7	NO	bd	bd	48.245
234678-HxCDF	35.905	1.001	2.873e5	2.291e5	1.140	1.254	1.240	3142	2543	4.27e6	3.38e6	1358.7	1330.7	NO	bb	bb	50.224
123678-HxCDF	35.036	1.001	3.271e5	2.812e5	1.091	1.163	1.240	3142	2543	4.70e6	3.76e6	1497.0	1479.3	NO	db	db	47.992
123789-HxCDF	36.930	1.001	2.403e5	1.952e5	1.137	1.231	1.240	3142	2543	3.49e6	2.77e6	1110.7	1088.1	NO	bb	bb	49.077
1234678-HpCDF	38.769	1.000	2.051e5	2.017e5	1.003	1.017	1.050	2774	2508	3.29e6	3.29e6	1185.4	1309.8	NO	bb	bb	51.838
1234789-HpCDF	41.008	1.000	1.584e5	1.578e5	0.953	1.004	1.050	2774	2508	2.19e6	2.22e6	790.9	884.0	NO	bb	bb	48.461
OCDF	45.237	1.006	2.094e5	2.177e5	0.778	0.962	0.890	1876	1660	2.24e6	2.46e6	1194.3	1483.7	NO	bd	bb	103.506
2378-TCDD	26.424	1.001	6.583e4	8.225e4	1.149	0.800	0.770	1514	1206	9.92e5	1.24e6	654.9	1028.2	NO	bb	bb	9.815
12378-PeCDD	31.538	1.001	2.257e5	1.459e5	1.022	1.547	1.550	2000	2144	3.28e6	2.13e6	1638.2	994.7	NO	bb	bb	48.547
123478-HxCDD	36.016	1.000	2.316e5	1.815e5	0.996	1.276	1.240	2983	1710	3.62e6	3.01e6	1214.5	1762.3	NO	bd	bd	50.799
123678-HxCDD	36.139	1.001	2.694e5	2.159e5	1.001	1.248	1.240	2983	1710	3.76e6	3.05e6	1260.5	1785.9	NO	db	db	50.174
123789-HxCDD	36.518	1.011	2.330e5	1.844e5	0.907	1.263	1.240	2983	1710	3.29e6	2.69e6	1104.0	1571.7	NO	bd	bb	51.608
1234678-HpCDD	40.272	1.001	1.962e5	1.803e5	1.039	1.088	1.050	2922	2339	2.72e6	2.60e6	932.5	1113.0	NO	bd	bb	49.199
OCDD	44.999	1.000	2.234e5	2.618e5	0.920	0.853	0.890	1774	1393	2.65e6	3.06e6	1496.5	2199.2	NO	bb	bb	99.422
13C-2378-TCDF	25.760	1.007	7.988e5	1.054e6	1.620	0.758	0.770	2799	1492	1.21e7	1.60e7	4320.8	10737.9	NO	bb	bb	96.925
13C-12378-PeCDF	29.923	1.169	6.425e5	4.290e5	1.240	1.498	1.550	3398	4585	8.78e6	5.86e6	2583.4	1278.4	NO	bd	bd	73.193
13C-23478-PeCDF	31.259	1.222	6.035e5	3.982e5	1.118	1.515	1.550	3398	4585	8.73e6	5.79e6	2568.3	1261.6	NO	bb	bb	75.943
13C-123478-HxCDF	34.880	0.955	3.186e5	6.107e5	1.168	0.522	0.510	2913	2215	4.74e6	9.25e6	1627.4	4175.4	NO	bd	bd	92.972
13C-123678-HxCDF	35.014	0.959	3.885e5	7.735e5	1.386	0.502	0.510	2913	2215	5.29e6	1.03e7	1816.0	4636.7	NO	dd	db	97.958
13C-234678-HxCDF	35.883	0.983	3.009e5	6.013e5	1.129	0.500	0.510	2913	2215	4.56e6	8.94e6	1567.0	4037.6	NO	bb	bb	93.371
13C-123789-HxCDF	36.908	1.011	2.634e5	5.171e5	0.932	0.509	0.510	2913	2215	3.83e6	7.41e6	1313.2	3346.2	NO	bb	bb	97.906
13C-1234678-HpCDF	38.757	1.062	2.395e5	5.428e5	0.895	0.441	0.440	2666	4327	3.79e6	8.70e6	1422.6	2009.5	NO	bb	bb	102.148
13C-1234789-HpCDF	40.997	1.123	1.971e5	4.875e5	0.770	0.404	0.440	2666	4327	2.64e6	6.15e6	990.0	1422.1	NO	bb	bb	103.953
13C-1234-TCDD	25.591	0.000	5.239e5	6.562e5	1.000	0.798	0.770	2541	1448	8.13e6	1.01e7	3200.8	6994.1	NO	bb	bb	100.000
13C-2378-TCDD	26.396	1.031	5.859e5	7.277e5	1.152	0.805	0.770	2541	1448	8.48e6	1.06e7	3338.5	7327.1	NO	bb	bb	96.583
13C-12378-PeCDD	31.515	1.232	4.640e5	2.850e5	0.829	1.628	1.550	1690	813	6.82e6	4.16e6	4037.7	5122.1	NO	bb	bb	76.570
13C-123478-HxCDD	36.005	0.986	4.566e5	3.601e5	0.995	1.268	1.240	2230	1571	7.33e6	5.72e6	3288.3	3642.7	NO	bd	bd	95.938
13C-123678-HxCDD	36.117	0.989	5.277e5	4.388e5	1.157	1.203	1.240	2230	1571	7.53e6	5.98e6	3378.3	3806.0	NO	db	db	97.660
13C-1234678-HpCDD	40.250	1.102	3.788e5	3.578e5	0.840	1.059	1.050	1327	2781	5.06e6	4.73e6	3813.0	1700.4	NO	bd	bb	102.476
13C-OCDD	44.981	1.232	5.015e5	5.594e5	0.767	0.896	0.890	2228	1562	5.65e6	6.37e6	2536.4	4080.5	NO	bb	bb	161.563
13C-123789-HxCDD	36.507	0.000	4.814e5	3.742e5	1.000	1.287	1.240	2230	1571	7.02e6	5.48e6	3149.1	3490.5	NO	bb	bb	100.000
37CL-2378-TCDD	26.424	1.033	1.324e5		1.288			2249		1.92e6		853.0			bb		8.714

Dataset: T:\Autospec\Processed Data Batch\230303\HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:19 Pacific Standard Time

**ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk**

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.271	0.865	6.666e4	8.755e4	0.802	0.761	0.770	1163	2029	1.09e6	1.45e6	933.7	713.4	NO	bb	bb	10.382
1289-TCDF	27.272	1.059	5.306e4	7.400e4	0.678	0.717	0.770	1163	2029	8.00e5	1.11e6	688.3	549.0	NO	bb	db	10.112
13468-PECDF	27.130	0.907	5.428e5	3.536e5	1.246	1.535	1.550	921	1306	8.56e6	5.56e6	9287.8	4254.6	NO	bb	bb	67.124
12389-PECDF	32.307	1.080	2.363e5	1.551e5	0.496	1.524	1.550	3022	2812	3.29e6	2.19e6	1088.1	777.6	NO	bb	bb	73.589
123468-HXCDF	33.231	0.953	3.102e5	2.472e5	1.169	1.255	1.240	3142	2543	4.60e6	3.67e6	1465.3	1443.2	NO	bb	bb	51.304
1368-TCDD	23.557	0.892	6.641e4	8.365e4	1.015	0.794	0.770	1514	1206	1.07e6	1.32e6	704.3	1092.4	NO	bb	bb	11.251
1289-TCDD	27.017	1.023	6.055e4	8.062e4	0.909	0.751	0.770	1514	1206	8.59e5	1.12e6	567.6	932.6	NO	bd	bd	11.826
12479-PECDD	28.819	0.914	4.776e5	3.067e5	2.301	1.557	1.550	2000	2144	4.46e6	2.89e6	2227.8	1348.6	NO	bb	bb	45.504
12389-PECDD	31.928	1.013	2.675e5	1.746e5	1.184	1.532	1.550	2000	2144	3.96e6	2.51e6	1980.6	1171.6	NO	bb	bb	49.870
124679-HXCDD	34.011	0.945	2.545e5	2.054e5	1.115	1.239	1.240	2983	1710	3.72e6	3.05e6	1245.7	1780.9	NO	bb	bb	50.484
1234679-HPCDD	39.225	0.975	2.082e5	2.022e5	1.137	1.029	1.050	2922	2339	3.21e6	3.09e6	1099.8	1322.5	NO	bb	bb	49.010
Total-tetrafurans			1.731e5		0.727			1163		2.72e6							30.332
Total-penta1			5.428e5					921		8.56e6							67.124
Total-penta-furans			7.375e5		0.654			3022		1.06e7							184.995
Total-hexa-furans			1.455e6		1.141			3142		2.14e7							246.841
Total-hepta-furans			3.635e5		0.978			2774		5.48e6							100.299
Total-Furans			3.482e6		0.922			1163		5.10e7							733.097
Total-tetradiioxins			3.292e5		1.024			1514		4.53e6							56.345
Total-pentadiioxins			9.708e5		1.502			2000		1.17e7							143.922
Total-hexadiioxins			9.885e5		1.005			2983		1.44e7							203.065
Total-heptadiioxins			4.044e5		1.088			2922		5.94e6							98.208
Total-Dioxins			2.916e6		1.130			1514		3.92e7							600.962
Total-TEQ			6.398e6					1514		9.02e7							1334.059
FUNCTION1 PFK			0.000e0					539943		0.00e0							
FUNCTION2 PFK			2.253e6					228820		1.84e6							0.000
FUNCTION3 PFK			3.977e4					386595		8.75e5							0.000
FUNCTION4 PFK			7.296e4					280107		2.70e6							
FUNCTION5 PFK			1.323e3					209307		1.46e5							
FUNCTION1 HXCD...			6.633e2					708		9.34e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			5.152e2					1165		9.44e3							0.000
FUNCTION3 OCDPE			5.246e2					459		6.83e3							0.000
FUNCTION4 NCDPE			4.889e2					641		6.04e3							0.000
FUNCTION5 DCDPE			0.000e0					644		0.00e0							

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303IHCIV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:19 Pacific Standard Time

**Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50**

**Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27**

**ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk**

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	5.306e4	7.400e4	0.678	0.72	0.77	688.3	YES	NO	bb	db	10.112
2	2378-TCDF	25.77	5.338e4	7.452e4	0.702	0.72	0.77	718.7	YES	NO	bb	bb	9.838
3	1368-TCDF	22.27	6.666e4	8.755e4	0.802	0.76	0.77	933.7	YES	NO	bb	bb	10.382

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.13	5.428e5	3.536e5	1.246	1.54	1.55	9287.8	YES	NO	bb	bb	67.124

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDF	32.31	2.363e5	1.551e5	0.496	1.52	1.55	1088.1	YES	NO	bb	bb	73.589
2	23478-PeCDF	31.27	2.350e5	1.508e5	0.786	1.56	1.55	1131.6	YES	NO	bb	bb	48.980
3	12378-PeCDF	29.93	2.214e5	1.526e5	0.679	1.45	1.55	1073.8	YES	NO	bb	bd	51.391
4	Total-pentafurans	28.79	4.479e4	3.002e4	0.654	1.49	1.55	225.2	YES	NO	bb	bb	11.035

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123478-HxCDF	34.90	2.903e5	2.325e5	1.166	1.25	1.24	1370.1	YES	NO	bd	bd	48.245
2	123468-HxCDF	33.23	3.102e5	2.472e5	1.169	1.26	1.24	1465.3	YES	NO	bb	bb	51.304
3	123789-HxCDF	36.93	2.403e5	1.952e5	1.137	1.23	1.24	1110.7	YES	NO	bb	bb	49.077
4	234678-HxCDF	35.91	2.873e5	2.291e5	1.140	1.25	1.24	1358.7	YES	NO	bb	bb	50.224
5	123678-HxCDF	35.04	3.271e5	2.812e5	1.091	1.16	1.24	1497.0	YES	NO	db	db	47.992

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.77	2.051e5	2.017e5	1.003	1.02	1.05	1185.4	YES	NO	bb	bb	51.838
2	1234789-HpCDF	41.01	1.584e5	1.578e5	0.953	1.00	1.05	790.9	YES	NO	bb	bb	48.461

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:19 Pacific Standard Time

**ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	5.306e4	7.400e4	0.678	0.72	0.77	688.3	YES	NO	bb	db	10.112
2	2378-TCDF	25.77	5.338e4	7.452e4	0.702	0.72	0.77	718.7	YES	NO	bb	bb	9.838
3	1368-TCDF	22.27	6.666e4	8.755e4	0.802	0.76	0.77	933.7	YES	NO	bb	bb	10.382
4	12389-PECDF	32.31	2.363e5	1.551e5	0.496	1.52	1.55	1088.1	YES	NO	bb	bb	73.589
5	23478-PeCDF	31.27	2.350e5	1.508e5	0.786	1.56	1.55	1131.6	YES	NO	bb	bb	48.980
6	12378-PeCDF	29.93	2.214e5	1.526e5	0.679	1.45	1.55	1073.8	YES	NO	bb	bd	51.391
7	Total-pentafurans	28.79	4.479e4	3.002e4	0.654	1.49	1.55	225.2	YES	NO	bb	bb	11.035
8	123478-HxCDF	34.90	2.903e5	2.325e5	1.166	1.25	1.24	1370.1	YES	NO	bd	bd	48.245
9	123468-HxCDF	33.23	3.102e5	2.472e5	1.169	1.26	1.24	1465.3	YES	NO	bb	bb	51.304
10	123789-HxCDF	36.93	2.403e5	1.952e5	1.137	1.23	1.24	1110.7	YES	NO	bb	bb	49.077
11	234678-HxCDF	35.91	2.873e5	2.291e5	1.140	1.25	1.24	1358.7	YES	NO	bb	bb	50.224
12	123678-HxCDF	35.04	3.271e5	2.812e5	1.091	1.16	1.24	1497.0	YES	NO	db	db	47.992
13	1234678-HpCDF	38.77	2.051e5	2.017e5	1.003	1.02	1.05	1185.4	YES	NO	bb	bb	51.838
14	1234789-HpCDF	41.01	1.584e5	1.578e5	0.953	1.00	1.05	790.9	YES	NO	bb	bb	48.461
15	OCDF	45.24	2.094e5	2.177e5	0.778	0.96	0.89	1194.3	YES	NO	bd	bb	103.506
16	13468-PECDF	27.13	5.428e5	3.536e5	1.246	1.54	1.55	9287.8	YES	NO	bb	bb	67.124

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	25.60	3.327e4	3.983e4	1.024	0.84	0.77	333.8	YES	NO	bd	bb	5.433
2	Total-tetradoxins	25.04	8.004e2	1.202e3	1.024	0.67	0.77	7.4	YES	NO	bb	db	0.149
3	Total-tetradoxins	24.74	2.704e3	4.097e3	1.024	0.66	0.77	17.7	YES	NO	bb	bd	0.506
4	1368-TCDD	23.56	6.641e4	8.365e4	1.015	0.79	0.77	704.3	YES	NO	bb	bb	11.251
5	1289-TCDD	27.02	6.055e4	8.062e4	0.909	0.75	0.77	567.6	YES	NO	bd	bd	11.826
6	Total-tetradoxins	26.76	1.054e2	1.391e2	1.024	0.76	0.77	2.1	NO	NO	bb	bb	0.018
7	2378-TCDD	26.42	6.583e4	8.225e4	1.149	0.80	0.77	654.9	YES	NO	bb	bb	9.815
8	Total-tetradoxins	26.10	9.949e4	1.339e5	1.024	0.74	0.77	703.4	YES	NO	bb	bb	17.347

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.93	2.675e5	1.746e5	1.184	1.53	1.55	1980.6	YES	NO	bb	bb	49.870
2	12378-PeCDD	31.54	2.257e5	1.459e5	1.022	1.55	1.55	1638.2	YES	NO	bb	bb	48.547
3	12479-PECDD	28.82	4.776e5	3.067e5	2.301	1.56	1.55	2227.8	YES	NO	bb	bb	45.504

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\2303031HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:19 Pacific Standard Time

**ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk**

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HxCDD	34.01	2.545e5	2.054e5	1.115	1.24	1.24	1245.7	YES	NO	bb	bb	50.484
2	123789-HxCDD	36.52	2.330e5	1.844e5	0.907	1.26	1.24	1104.0	YES	NO	bd	bb	51.608
3	123678-HxCDD	36.14	2.694e5	2.159e5	1.001	1.25	1.24	1260.5	YES	NO	db	db	50.174
4	123478-HxCDD	36.02	2.316e5	1.815e5	0.996	1.28	1.24	1214.5	YES	NO	bd	bd	50.799

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234679-HPCDD	39.23	2.082e5	2.022e5	1.137	1.03	1.05	1099.8	YES	NO	bb	bb	49.010
2	1234678-HpCDD	40.27	1.962e5	1.803e5	1.039	1.09	1.05	932.5	YES	NO	bd	bb	49.199

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	25.60	3.327e4	3.983e4	1.024	0.84	0.77	333.8	YES	NO	bd	bb	5.433
2	Total-tetradoxins	25.04	8.004e2	1.202e3	1.024	0.67	0.77	7.4	YES	NO	bb	db	0.149
3	Total-tetradoxins	24.74	2.704e3	4.097e3	1.024	0.66	0.77	17.7	YES	NO	bb	bd	0.506
4	1368-TCDD	23.56	6.641e4	8.365e4	1.015	0.79	0.77	704.3	YES	NO	bb	bb	11.251
5	1289-TCDD	27.02	6.055e4	8.062e4	0.909	0.75	0.77	567.6	YES	NO	bd	bd	11.826
6	Total-tetradoxins	26.76	1.054e2	1.391e2	1.024	0.76	0.77	2.1	NO	NO	bb	bb	0.018
7	2378-TCDD	26.42	6.583e4	8.225e4	1.149	0.80	0.77	654.9	YES	NO	bb	bb	9.815
8	Total-tetradoxins	26.10	9.949e4	1.339e5	1.024	0.74	0.77	703.4	YES	NO	bb	bb	17.347
9	12389-PECDD	31.93	2.675e5	1.746e5	1.184	1.53	1.55	1980.6	YES	NO	bb	bb	49.870
10	12378-PeCDD	31.54	2.257e5	1.459e5	1.022	1.55	1.55	1638.2	YES	NO	bb	bb	48.547
11	12479-PECDD	28.82	4.776e5	3.067e5	2.301	1.56	1.55	2227.8	YES	NO	bb	bb	45.504
12	124679-HxCDD	34.01	2.545e5	2.054e5	1.115	1.24	1.24	1245.7	YES	NO	bb	bb	50.484
13	123789-HxCDD	36.52	2.330e5	1.844e5	0.907	1.26	1.24	1104.0	YES	NO	bd	bb	51.608
14	123678-HxCDD	36.14	2.694e5	2.159e5	1.001	1.25	1.24	1260.5	YES	NO	db	db	50.174
15	123478-HxCDD	36.02	2.316e5	1.815e5	0.996	1.28	1.24	1214.5	YES	NO	bd	bd	50.799
16	1234679-HPCDD	39.23	2.082e5	2.022e5	1.137	1.03	1.05	1099.8	YES	NO	bb	bb	49.010
17	1234678-HpCDD	40.27	1.962e5	1.803e5	1.039	1.09	1.05	932.5	YES	NO	bd	bb	49.199
18	OCDD	45.00	2.234e5	2.618e5	0.920	0.85	0.89	1496.5	YES	NO	bb	bb	99.422

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230303\HICV.qld  
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 Printed: Monday, March 06, 2023 14:47:19 Pacific Standard Time

ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	5.306e4	7.400e4	0.678	0.72	0.77	688.3	YES	NO	bb	db	10.112
2	2378-TCDF	25.77	5.338e4	7.452e4	0.702	0.72	0.77	718.7	YES	NO	bb	bb	9.838
3	1368-TCDF	22.27	6.666e4	8.755e4	0.802	0.76	0.77	933.7	YES	NO	bb	bb	10.382
4	12389-PECDF	32.31	2.363e5	1.551e5	0.496	1.52	1.55	1088.1	YES	NO	bb	bb	73.589
5	23478-PeCDF	31.27	2.350e5	1.508e5	0.786	1.56	1.55	1131.6	YES	NO	bb	bb	48.980
6	12378-PeCDF	29.93	2.214e5	1.526e5	0.679	1.45	1.55	1073.8	YES	NO	bb	bd	51.391
7	Total-pentafurans	28.79	4.479e4	3.002e4	0.654	1.49	1.55	225.2	YES	NO	bb	bb	11.035
8	123478-HxCDF	34.90	2.903e5	2.325e5	1.166	1.25	1.24	1370.1	YES	NO	bd	bd	48.245
9	123468-HxCDF	33.23	3.102e5	2.472e5	1.169	1.26	1.24	1465.3	YES	NO	bb	bb	51.304
10	123789-HxCDF	36.93	2.403e5	1.952e5	1.137	1.23	1.24	1110.7	YES	NO	bb	bb	49.077
11	234678-HxCDF	35.91	2.873e5	2.291e5	1.140	1.25	1.24	1358.7	YES	NO	bb	bb	50.224
12	123678-HxCDF	35.04	3.271e5	2.812e5	1.091	1.16	1.24	1497.0	YES	NO	db	db	47.992
13	1234678-HpCDF	38.77	2.051e5	2.017e5	1.003	1.02	1.05	1185.4	YES	NO	bb	bb	51.838
14	1234789-HpCDF	41.01	1.584e5	1.578e5	0.953	1.00	1.05	790.9	YES	NO	bb	bb	48.461
15	OCDF	45.24	2.094e5	2.177e5	0.778	0.96	0.89	1194.3	YES	NO	bd	bb	103.506
16	13468-PECDF	27.13	5.428e5	3.536e5	1.246	1.54	1.55	9287.8	YES	NO	bb	bb	67.124
17	Total-tetradiioxins	25.60	3.327e4	3.983e4	1.024	0.84	0.77	333.8	YES	NO	bd	bb	5.433
18	Total-tetradiioxins	25.04	8.004e2	1.202e3	1.024	0.67	0.77	7.4	YES	NO	bb	db	0.149
19	Total-tetradiioxins	24.74	2.704e3	4.097e3	1.024	0.66	0.77	17.7	YES	NO	bb	bd	0.506
20	1368-TCDD	23.56	6.641e4	8.365e4	1.015	0.79	0.77	704.3	YES	NO	bb	bb	11.251
21	1289-TCDD	27.02	6.055e4	8.062e4	0.909	0.75	0.77	567.6	YES	NO	bd	bd	11.826
22	Total-tetradiioxins	26.76	1.054e2	1.391e2	1.024	0.76	0.77	2.1	NO	NO	bb	bb	0.018
23	2378-TCDD	26.42	6.583e4	8.225e4	1.149	0.80	0.77	654.9	YES	NO	bb	bb	9.815
24	Total-tetradiioxins	26.10	9.949e4	1.339e5	1.024	0.74	0.77	703.4	YES	NO	bb	bb	17.347
25	12389-PECDD	31.93	2.675e5	1.746e5	1.184	1.53	1.55	1980.6	YES	NO	bb	bb	49.870
26	12378-PeCDD	31.54	2.257e5	1.459e5	1.022	1.55	1.55	1638.2	YES	NO	bb	bb	48.547
27	12479-PECDD	28.82	4.776e5	3.067e5	2.301	1.56	1.55	2227.8	YES	NO	bb	bb	45.504
28	124679-HXCDD	34.01	2.545e5	2.054e5	1.115	1.24	1.24	1245.7	YES	NO	bb	bb	50.484
29	123789-HxCDD	36.52	2.330e5	1.844e5	0.907	1.26	1.24	1104.0	YES	NO	bd	bb	51.608
30	123678-HxCDD	36.14	2.694e5	2.159e5	1.001	1.25	1.24	1260.5	YES	NO	db	db	50.174
31	123478-HxCDD	36.02	2.316e5	1.815e5	0.996	1.28	1.24	1214.5	YES	NO	bd	bd	50.799
32	1234679-HPCDD	39.23	2.082e5	2.022e5	1.137	1.03	1.05	1099.8	YES	NO	bb	bb	49.010
33	1234678-HpCDD	40.27	1.962e5	1.803e5	1.039	1.09	1.05	932.5	YES	NO	bd	bb	49.199
34	OCDD	45.00	2.234e5	2.618e5	0.920	0.85	0.89	1496.5	YES	NO	bb	bb	99.422

Dataset: T:\Autospec\Processed Data Batch\230303IHICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:19 Pacific Standard Time

ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.14	2.253e6					8.0	YES		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.08	3.977e4					2.3	NO		bb		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	41.32	4.162e3					0.8	NO		bb		
2	FUNCTION4 PFK	40.68	1.340e4					1.2	NO		bb		
3	FUNCTION4 PFK	40.50	1.024e4					1.3	NO		bb		
4	FUNCTION4 PFK	40.07	1.056e4					1.2	NO		bb		
5	FUNCTION4 PFK	39.50	1.007e4					1.4	NO		bb		
6	FUNCTION4 PFK	42.14	1.085e4					1.0	NO		bb		
7	FUNCTION4 PFK	42.10	6.400e3					1.1	NO		bb		
8	FUNCTION4 PFK	41.87	1.885e3					0.6	NO		bb		
9	FUNCTION4 PFK	41.61	5.389e3					0.9	NO		bb		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.23	1.323e3					0.7	NO		bb		



ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	26.55	1.589e2					2.0	NO		db		0.000
2	FUNCTION1 HXCD...	26.42	1.755e2					3.2	YES		bd		0.000
3	FUNCTION1 HXCD...	25.59	9.854e1					1.9	NO		bb		0.000
4	FUNCTION1 HXCD...	23.87	7.096e1					1.9	NO		bb		0.000
5	FUNCTION1 HXCD...	23.56	8.003e1					2.4	NO		bb		0.000
6	FUNCTION1 HXCD...	22.40	7.940e1					1.8	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	30.33	1.101e2					1.7	NO		bb		0.000
2	FUNCTION2 HPCD...	28.89	7.875e1					1.7	NO		bb		0.000
3	FUNCTION2 HPCD...	31.17	3.263e2					4.7	YES		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.51	1.586e2					5.0	YES		bb		0.000
2	FUNCTION3 OCDPE	36.13	1.909e2					4.9	YES		db		0.000
3	FUNCTION3 OCDPE	35.99	1.751e2					5.1	YES		bd		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	41.06	1.247e2					2.2	NO		db		0.000
2	FUNCTION4 NCDPE	40.94	7.187e1					1.7	NO		bd		0.000
3	FUNCTION4 NCDPE	40.37	7.003e1					1.7	NO		db		0.000
4	FUNCTION4 NCDPE	40.26	2.223e2					3.8	YES		bd		0.000

**ETHERS6**

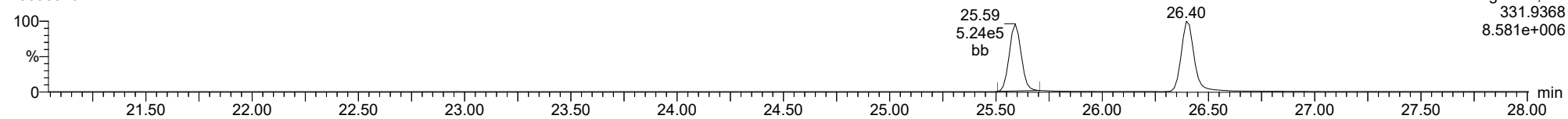
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1													

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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

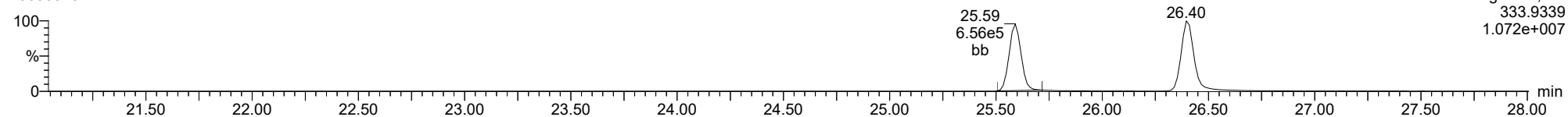
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23030310



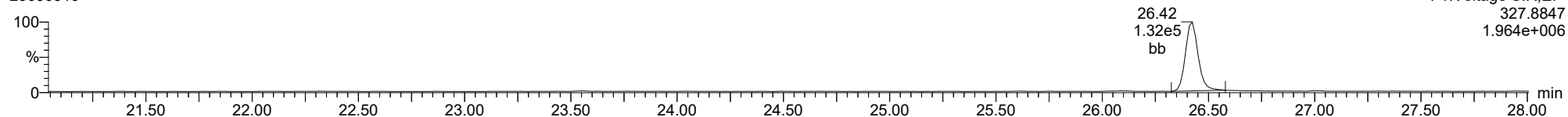
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23030310



**37CL-2378-TCDD**

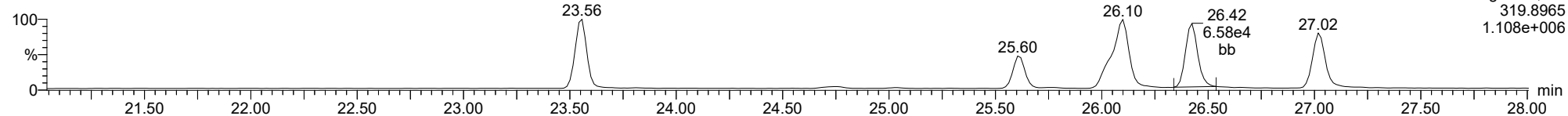
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

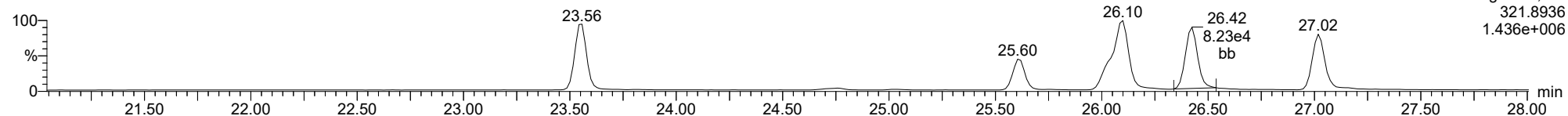
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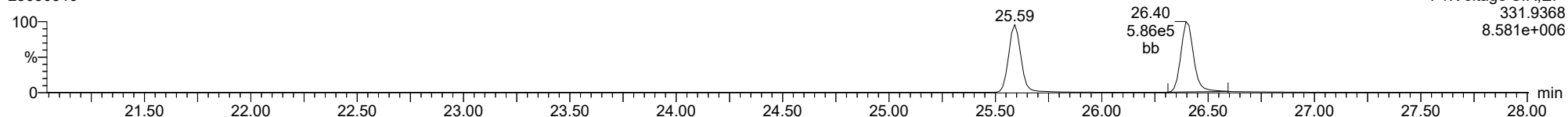
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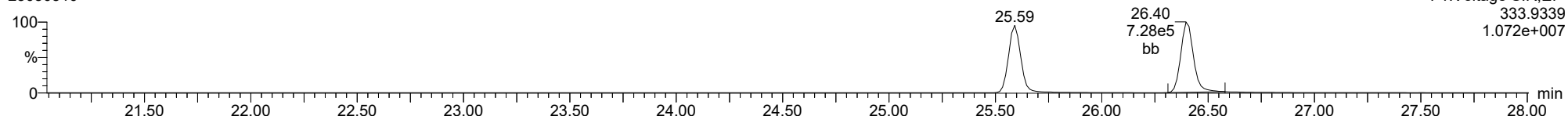
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23030310



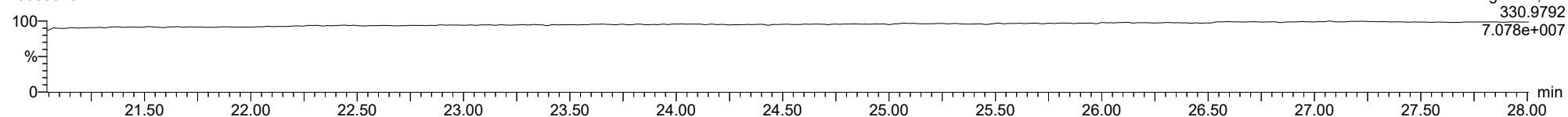
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23030310



**FUNCTION1 PFK**

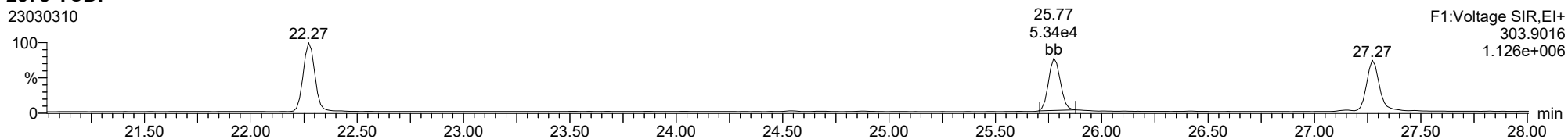
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

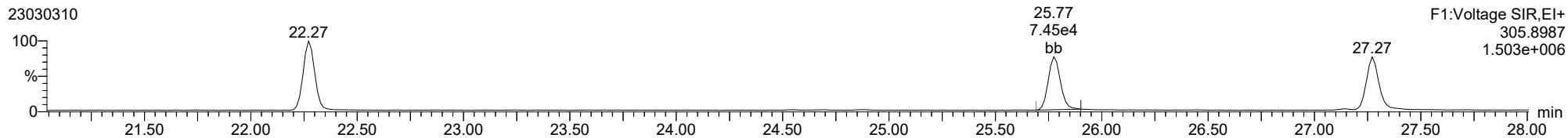
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23030310



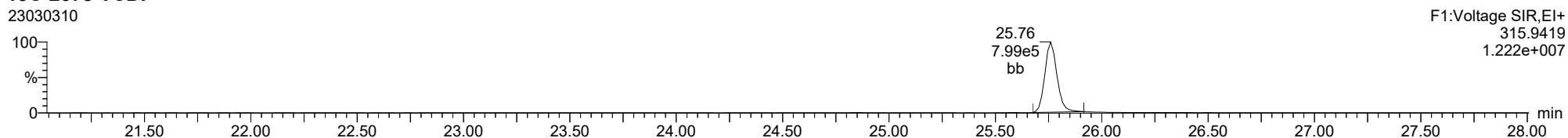
**2378-TCDF**

23030310



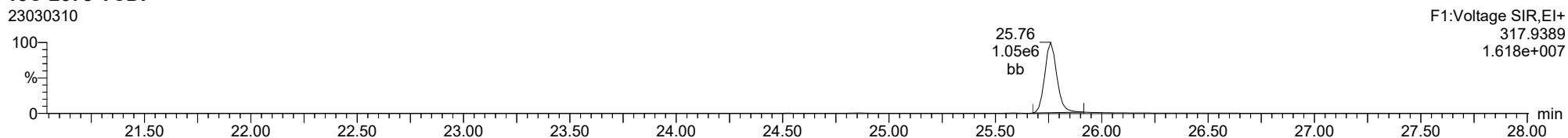
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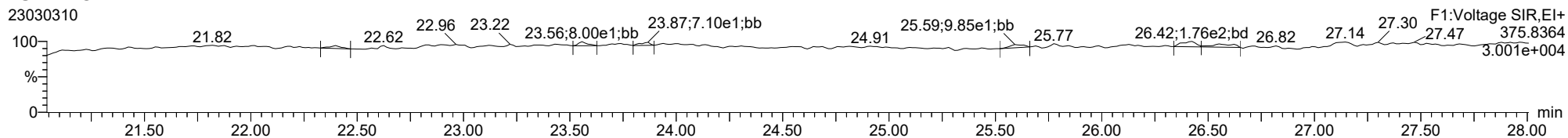
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23030310



**FUNCTION1 HXCDPE**

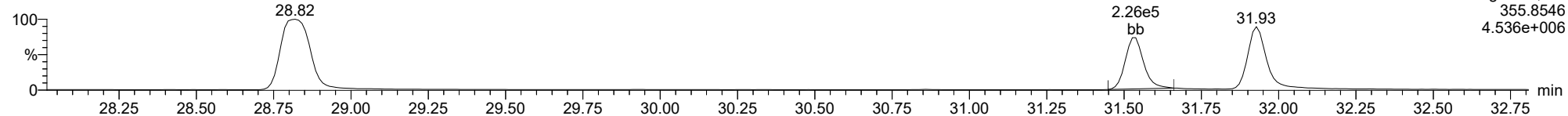
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

**12378-PeCDD**

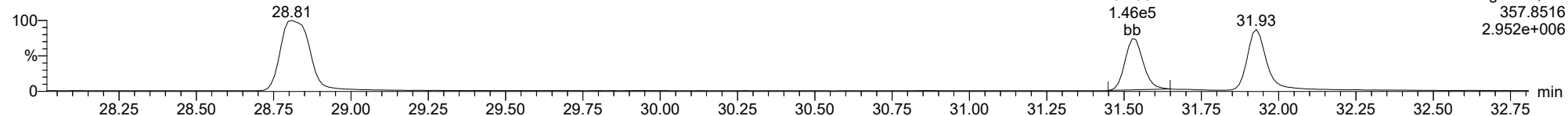
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F2:Voltage SIR,EI+  
357.8516  
4.536e+006

**12378-PeCDD**

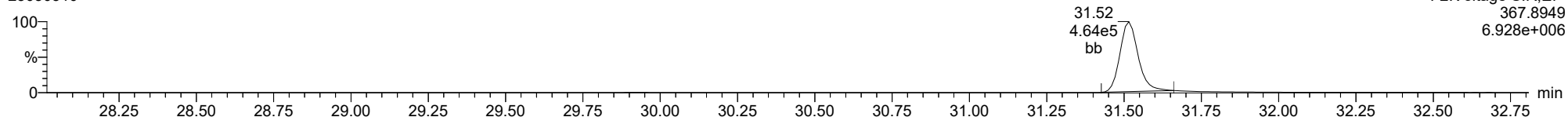
23030310



F2:Voltage SIR,EI+  
357.8516  
2.952e+006

**13C-12378-PeCDD**

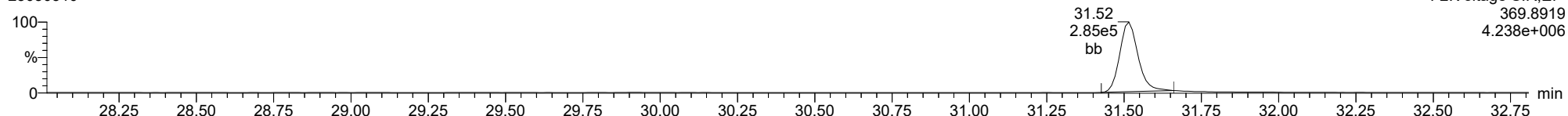
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F2:Voltage SIR,EI+  
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6.928e+006

**13C-12378-PeCDD**

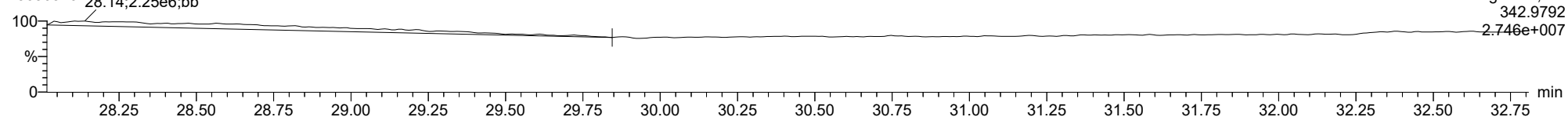
23030310



F2:Voltage SIR,EI+  
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4.238e+006

**FUNCTION2 PFK**

23030310

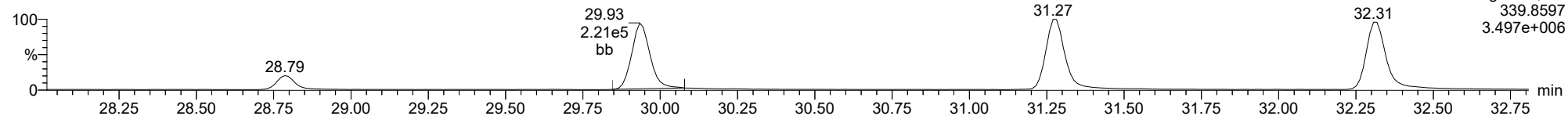


F2:Voltage SIR,EI+  
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2.746e+007

ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

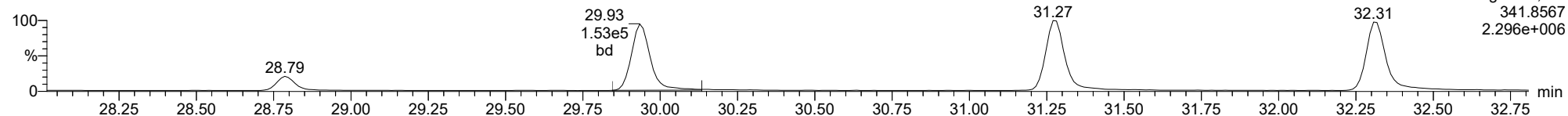
**12378-PeCDF**

23030310



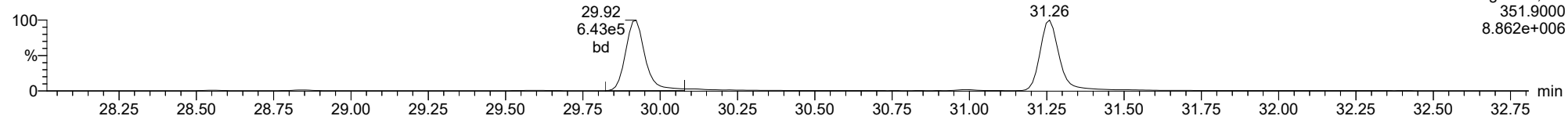
**12378-PeCDF**

23030310



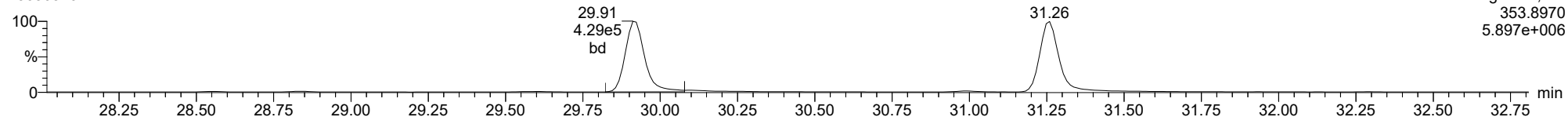
**13C-12378-PeCDF**

23030310



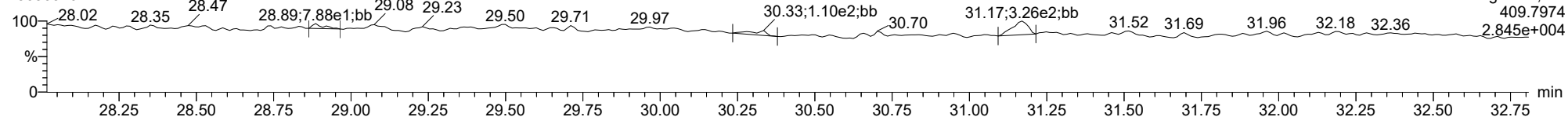
**13C-12378-PeCDF**

23030310



**FUNCTION2 HPCDPE**

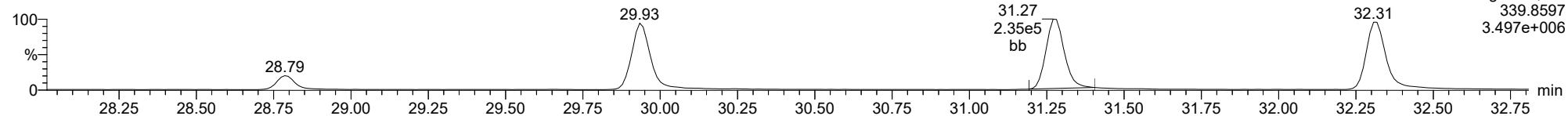
23030310



ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

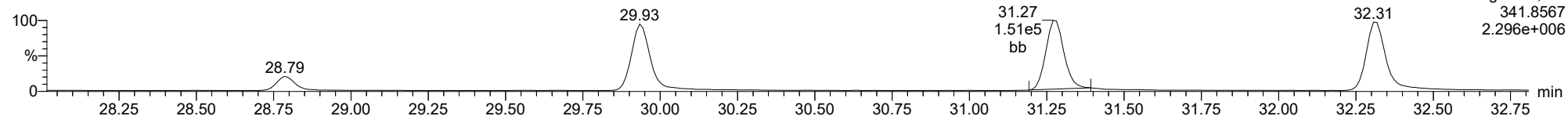
**23478-PeCDF**

23030310



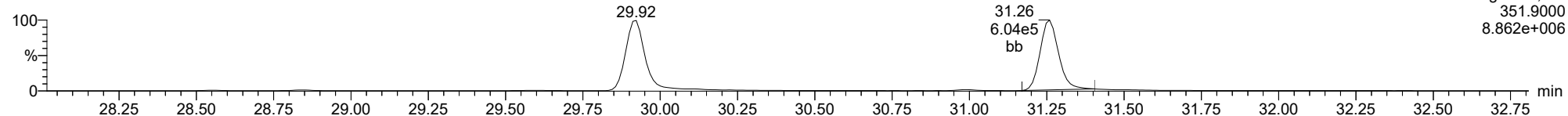
**23478-PeCDF**

23030310



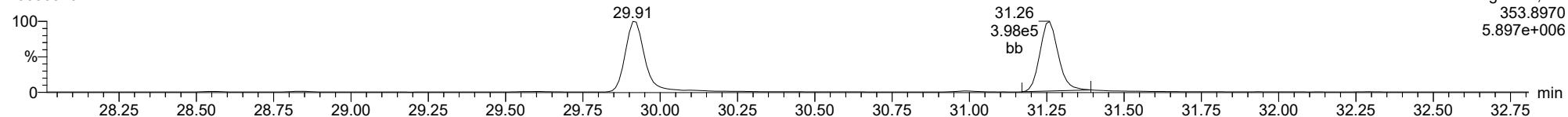
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23030310



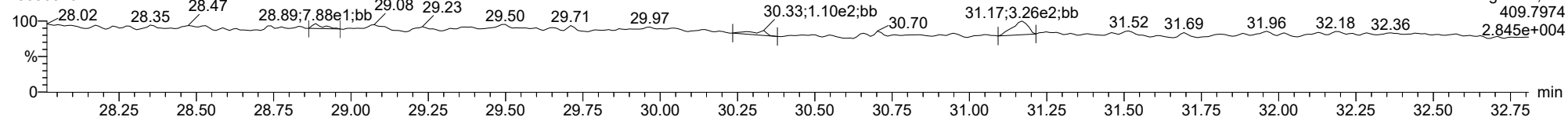
**13C-23478-PeCDF**

23030310



**FUNCTION2 HPCDPE**

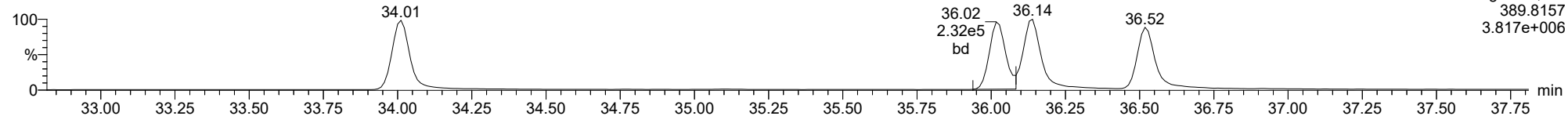
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

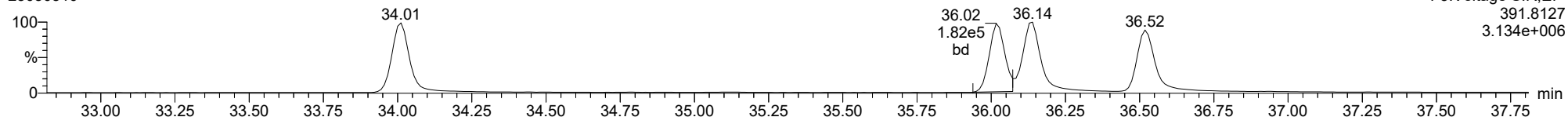
**123478-HxCDD**

23030310



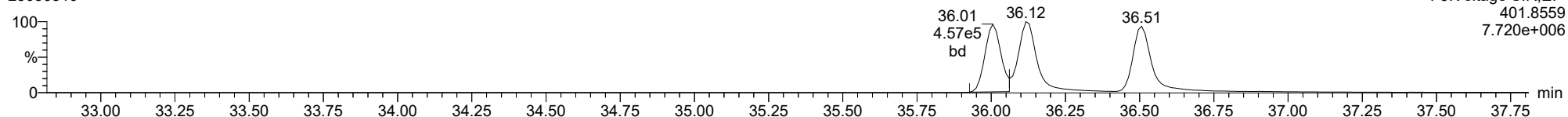
**123478-HxCDD**

23030310



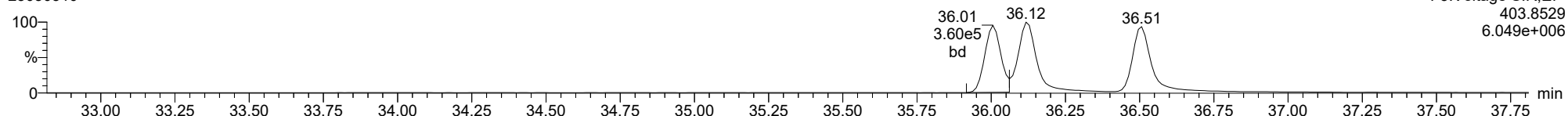
**13C-123478-HxCDD**

23030310



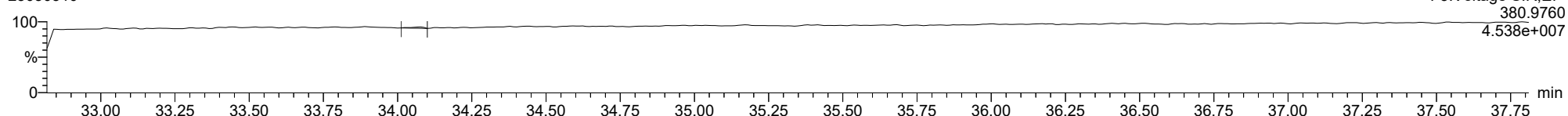
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23030310



**FUNCTION3 PFK**

23030310

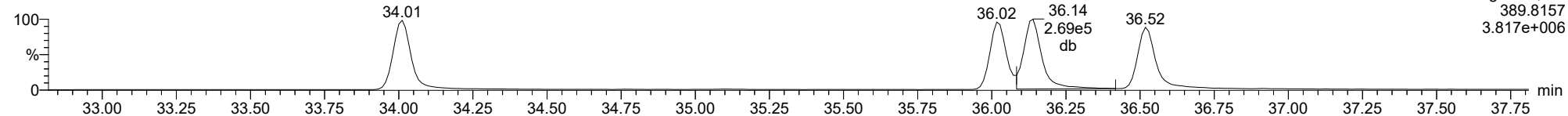




ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

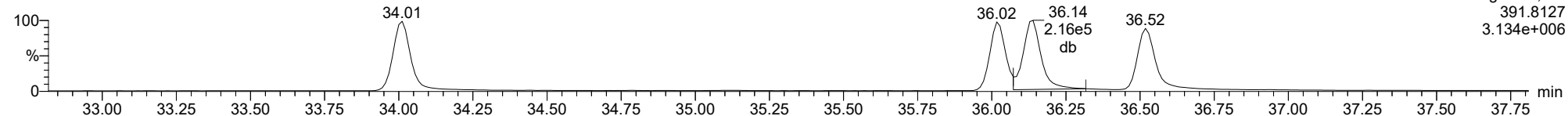
**123678-HxCDD**

23030310



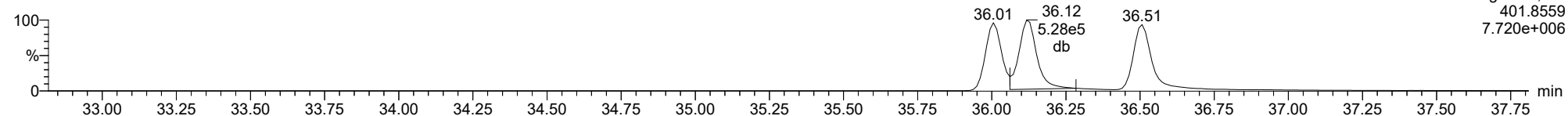
**123678-HxCDD**

23030310



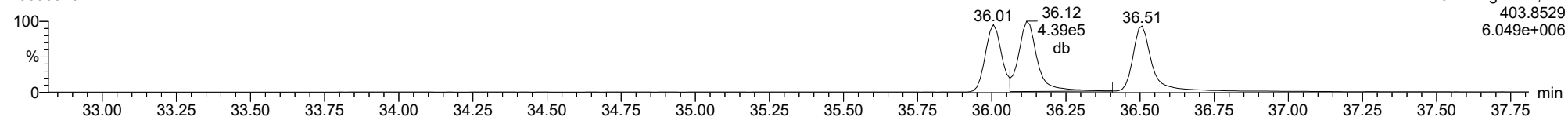
**13C-123678-HxCDD**

23030310



**13C-123678-HxCDD**

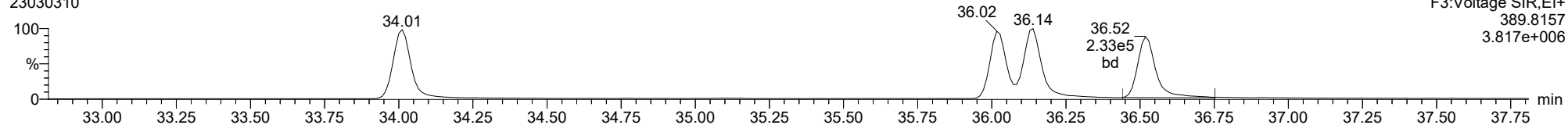
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

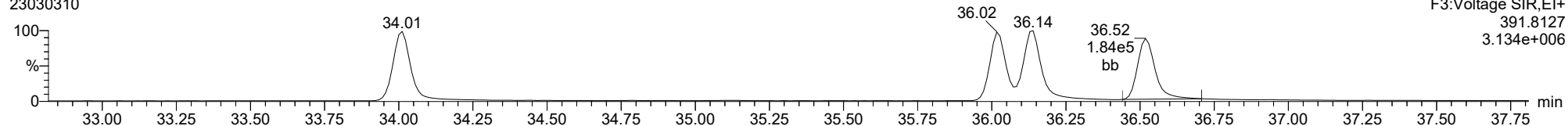
**123789-HxCDD**

23030310



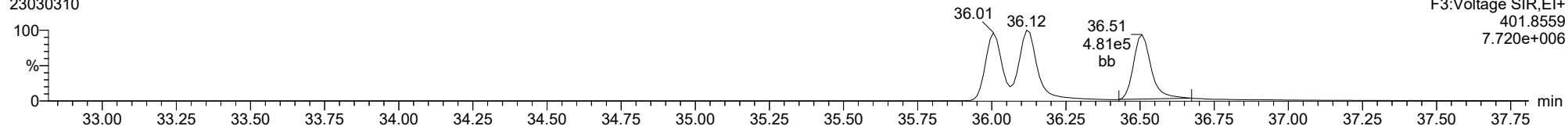
**123789-HxCDD**

23030310



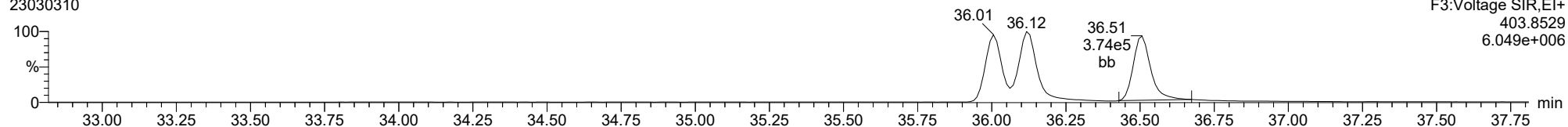
**13C-123789-HxCDD**

23030310



**13C-123789-HxCDD**

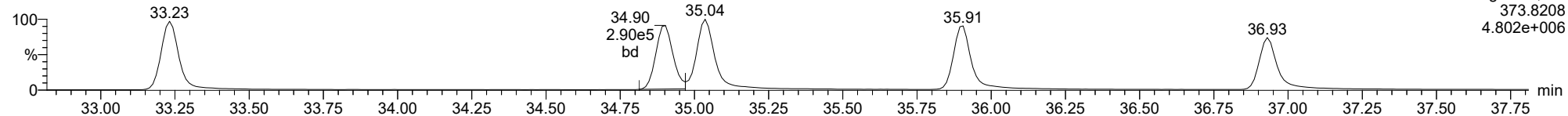
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

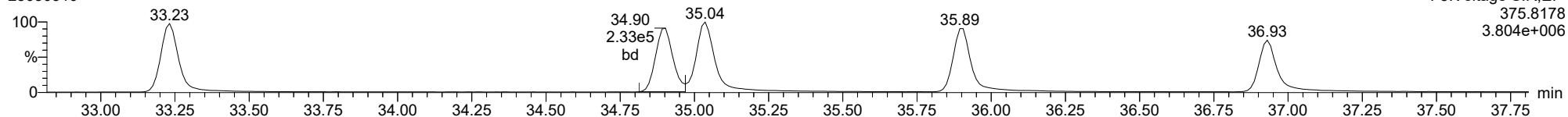
123478-HxCDF

23030310



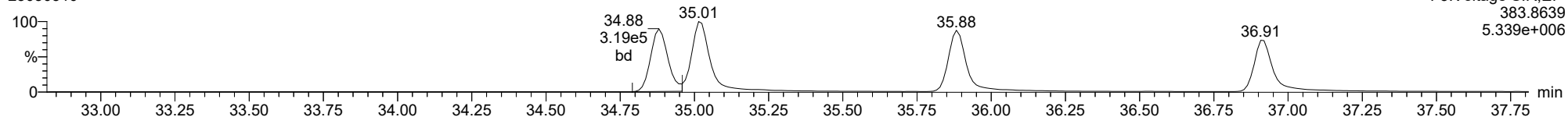
123478-HxCDF

23030310



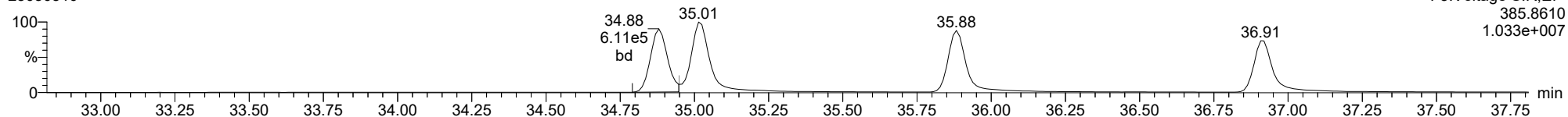
13C-123478-HxCDF

23030310



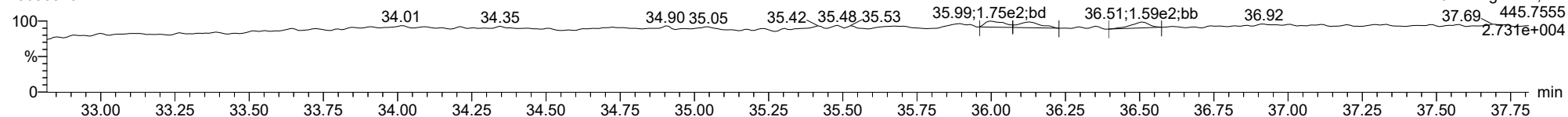
13C-123478-HxCDF

23030310



FUNCTION3 OCDPE

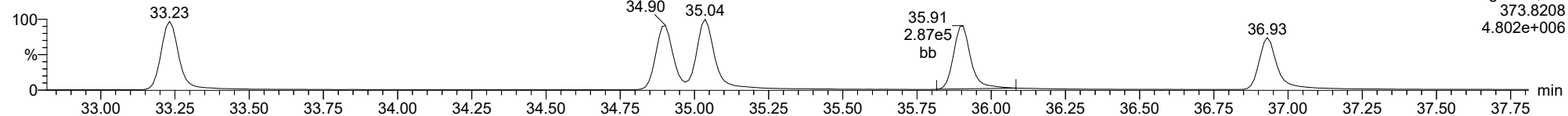
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

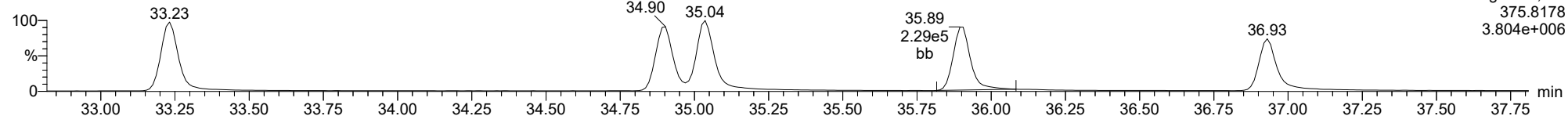
**234678-HxCDF**

23030310



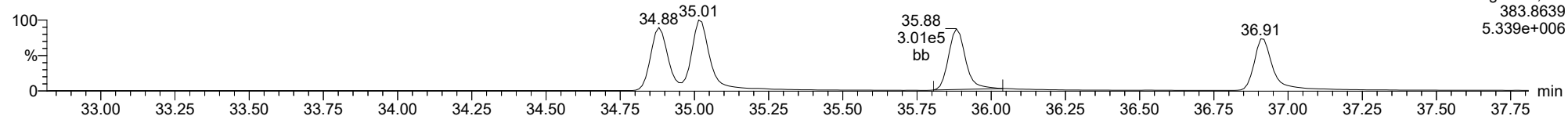
**234678-HxCDF**

23030310



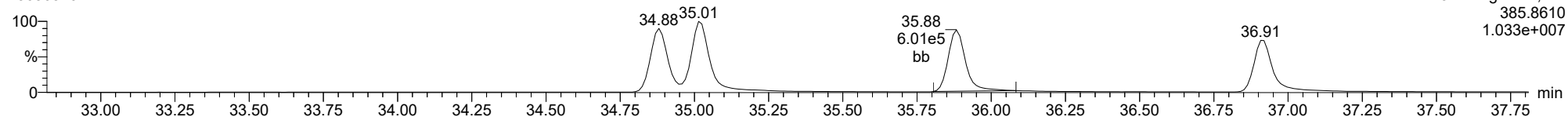
**13C-234678-HxCDF**

23030310



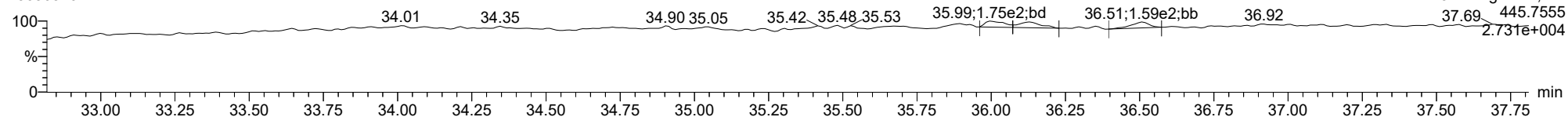
**13C-234678-HxCDF**

23030310



**FUNCTION3 OCDPE**

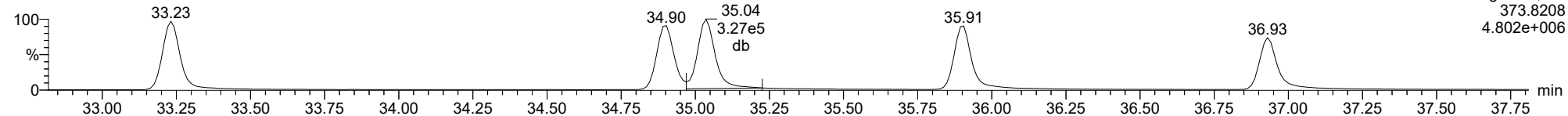
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

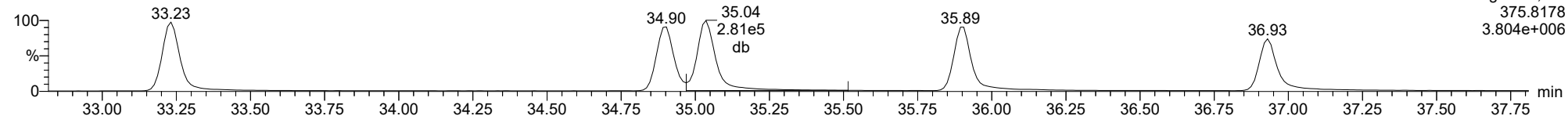
**123678-HxCDF**

23030310



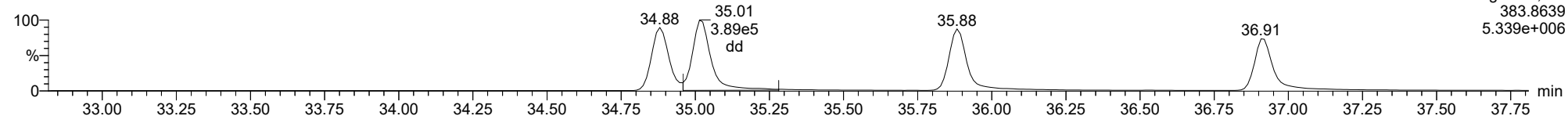
**123678-HxCDF**

23030310



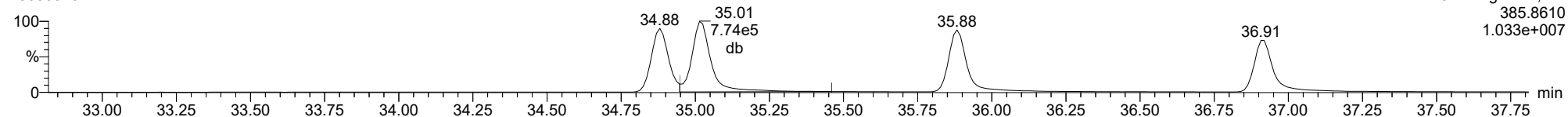
**13C-123678-HxCDF**

23030310



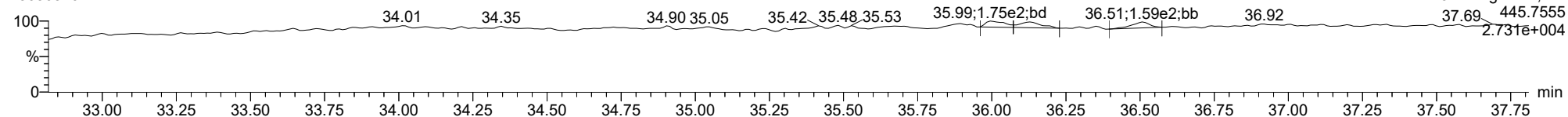
**13C-123678-HxCDF**

23030310



**FUNCTION3 OCDPE**

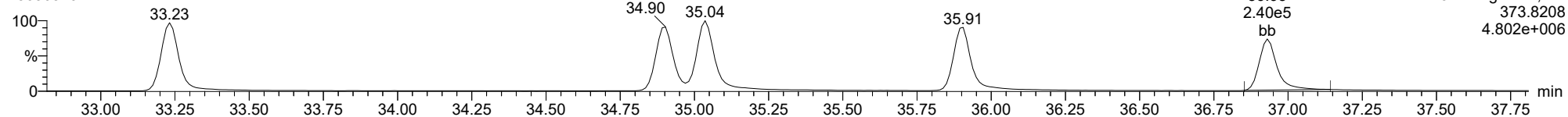
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

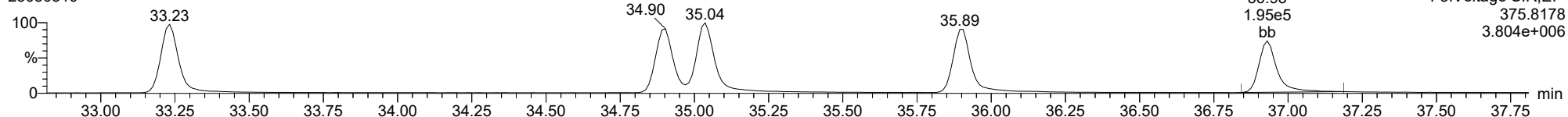
**123789-HxCDF**

23030310



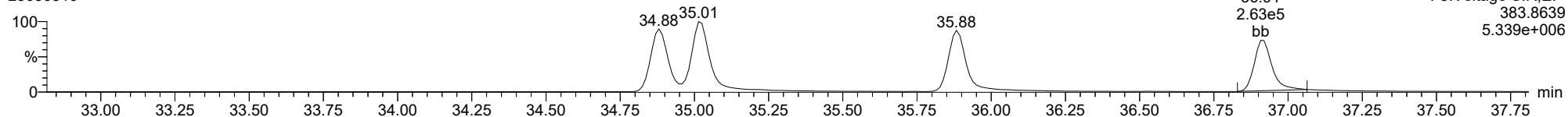
**123789-HxCDF**

23030310



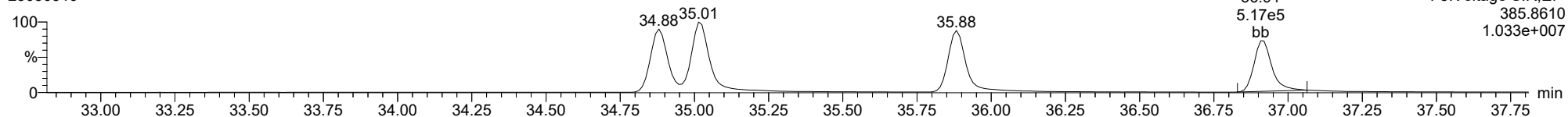
**13C-123789-HxCDF**

23030310



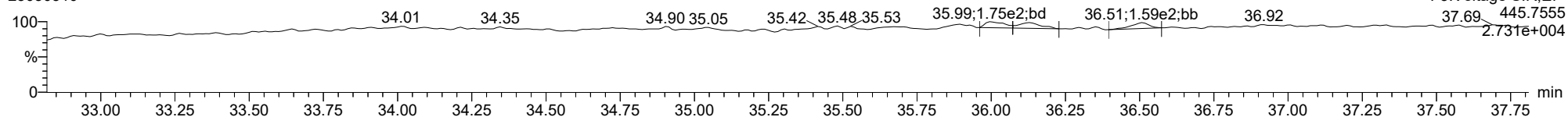
**13C-123789-HxCDF**

23030310



**FUNCTION3 OCDPE**

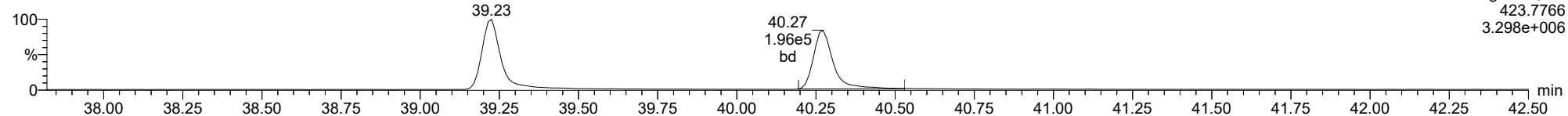
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDD**

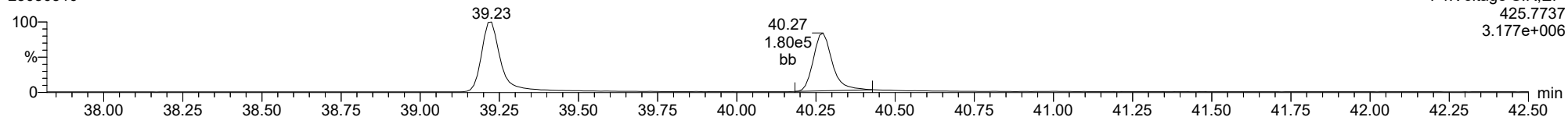
23030310



F4:Voltage SIR,EI+  
423.7766  
3.298e+006

**1234678-HpCDD**

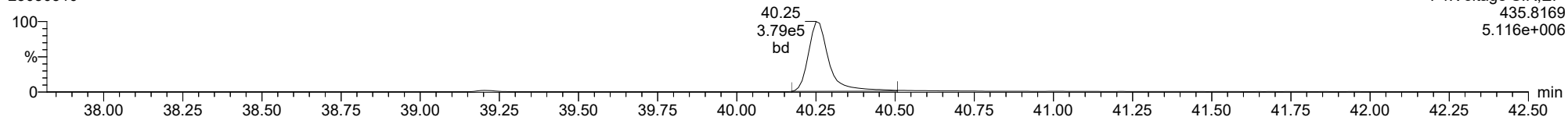
23030310



F4:Voltage SIR,EI+  
425.7737  
3.177e+006

**13C-1234678-HpCDD**

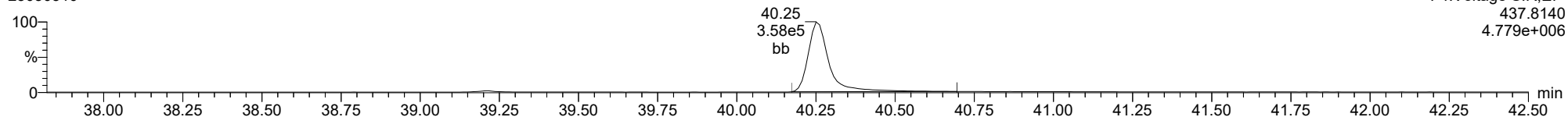
23030310



F4:Voltage SIR,EI+  
435.8169  
5.116e+006

**13C-1234678-HpCDD**

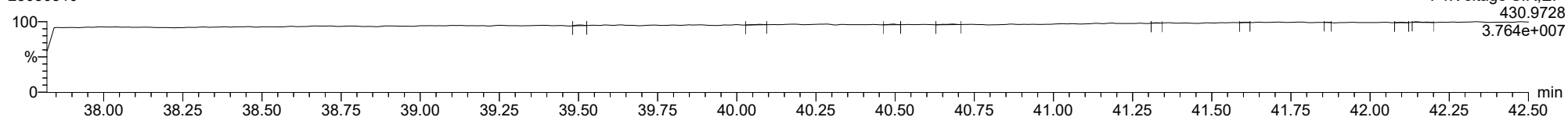
23030310



F4:Voltage SIR,EI+  
437.8140  
4.779e+006

**FUNCTION4 PFK**

23030310

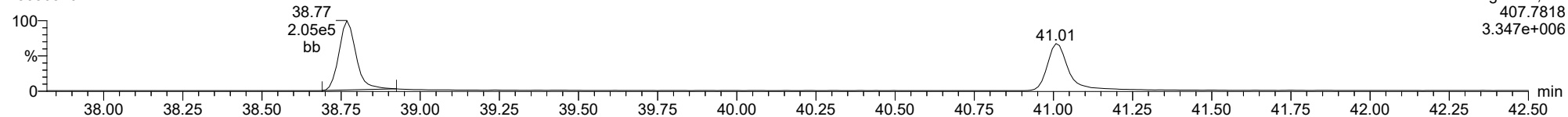


F4:Voltage SIR,EI+  
430.9728  
3.764e+007

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1234678-HpCDF

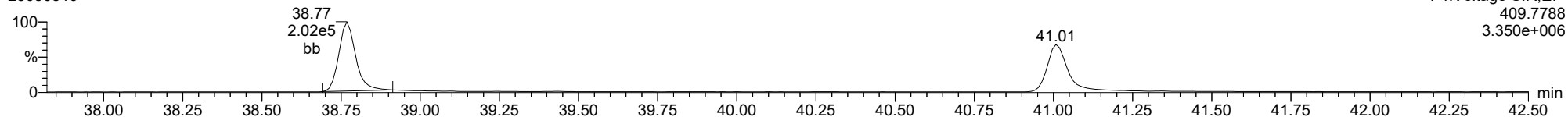
23030310



F4:Voltage SIR,EI+  
407.7818  
3.347e+006

1234678-HpCDF

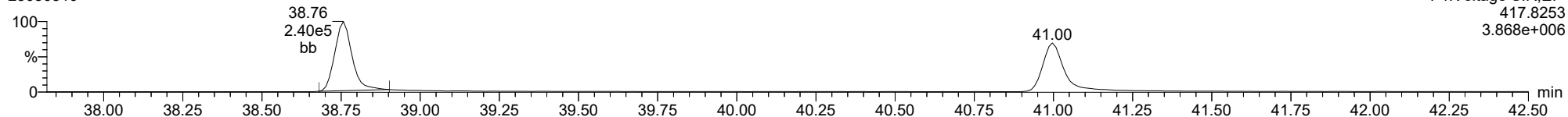
23030310



F4:Voltage SIR,EI+  
409.7788  
3.350e+006

13C-1234678-HpCDF

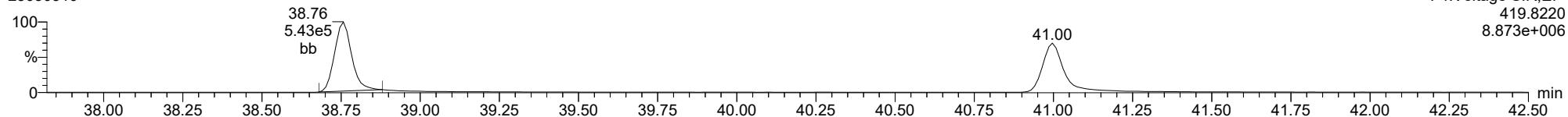
23030310



F4:Voltage SIR,EI+  
417.8253  
3.868e+006

13C-1234678-HpCDF

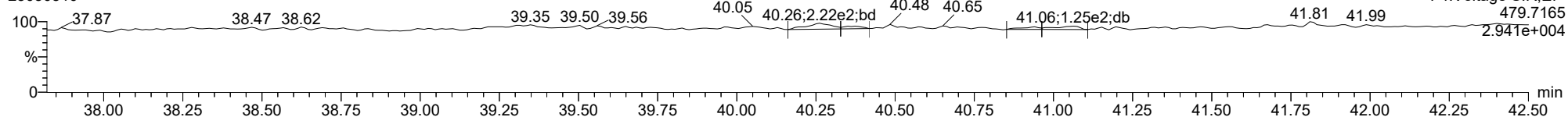
23030310



F4:Voltage SIR,EI+  
419.8220  
8.873e+006

FUNCTION4 NCDPE

23030310



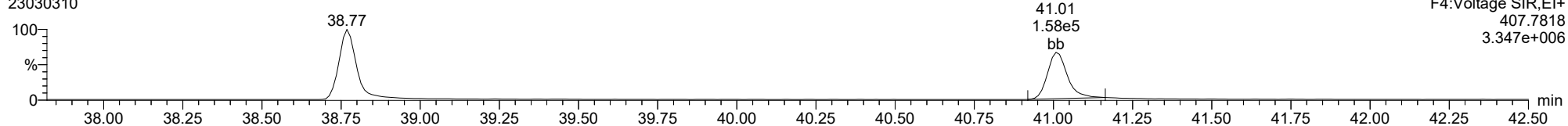
F4:Voltage SIR,EI+  
479.7165  
2.941e+004



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**1234789-HpCDF**

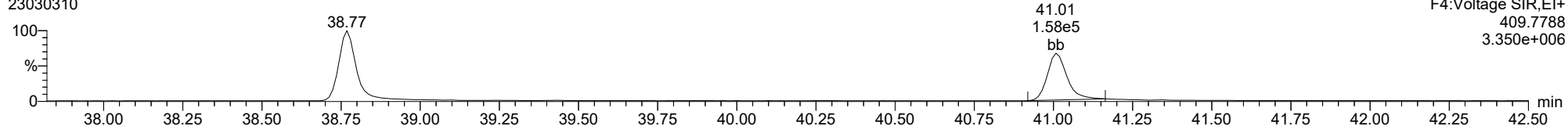
23030310



F4:Voltage SIR,EI+  
407.7818  
3.347e+006

**1234789-HpCDF**

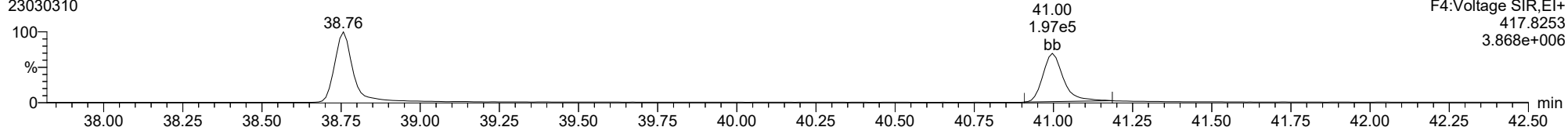
23030310



F4:Voltage SIR,EI+  
409.7788  
3.350e+006

**13C-1234789-HpCDF**

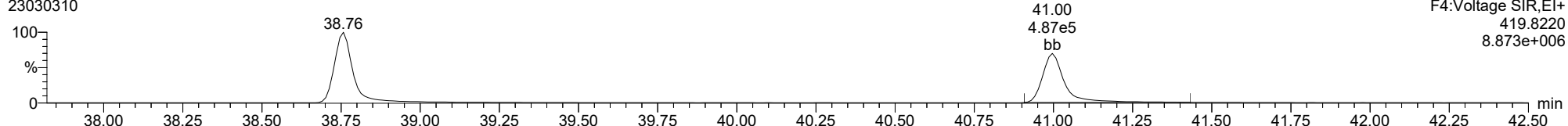
23030310



F4:Voltage SIR,EI+  
417.8253  
3.868e+006

**13C-1234789-HpCDF**

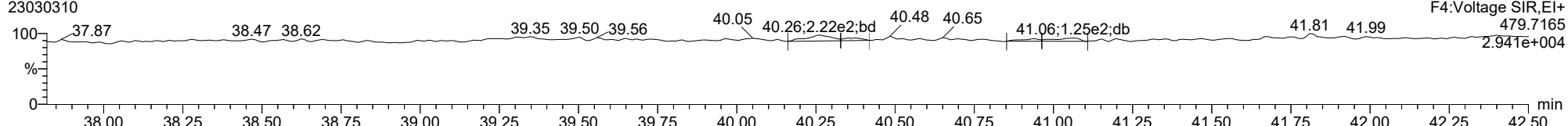
23030310



F4:Voltage SIR,EI+  
419.8220  
8.873e+006

**FUNCTION4 NCDPE**

23030310

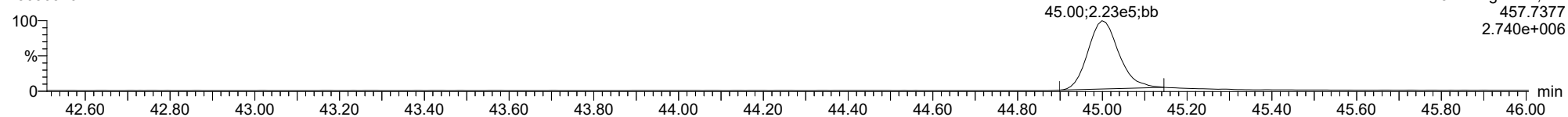


F4:Voltage SIR,EI+  
479.7165  
2.941e+004

ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

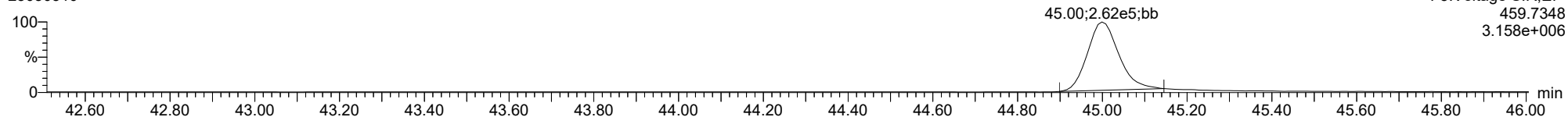
**OCDD**

23030310



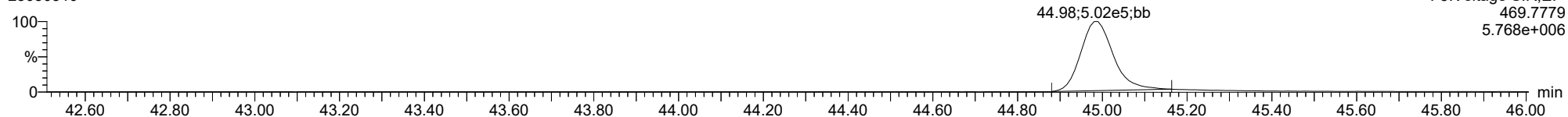
**OCDD**

23030310



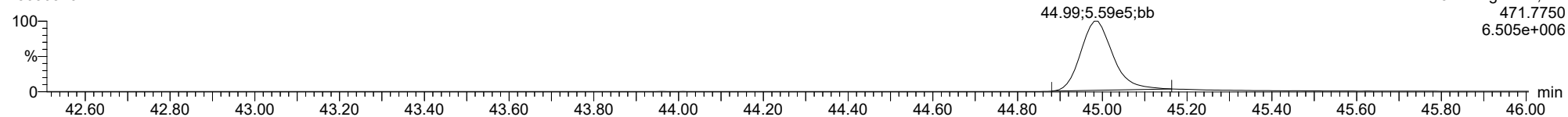
**13C-OCDD**

23030310



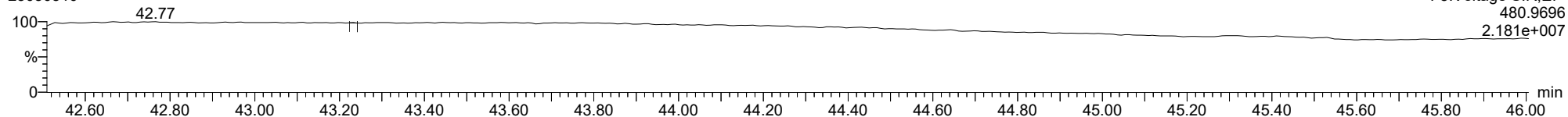
**13C-OCDD**

23030310



**FUNCTION5 PFK**

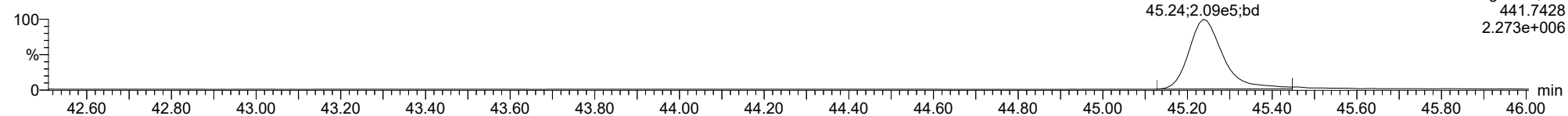
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

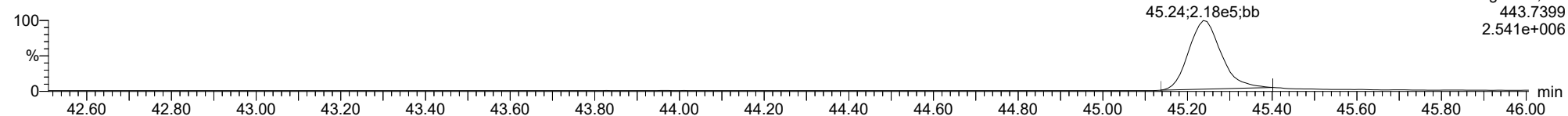
**OCDF**

23030310



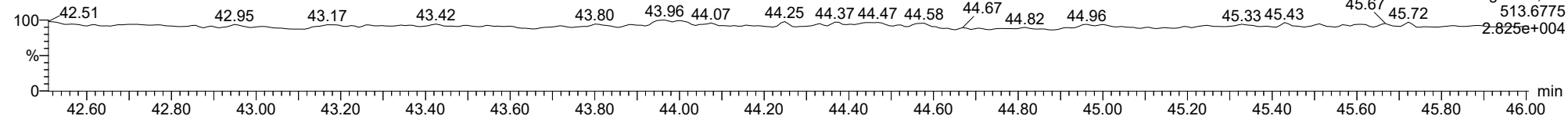
**OCDF**

23030310



**FUNCTION5 DCDPE**

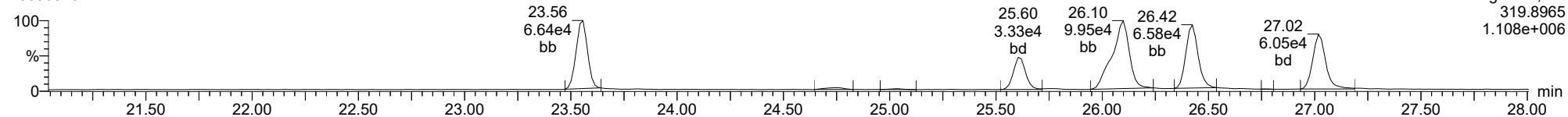
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

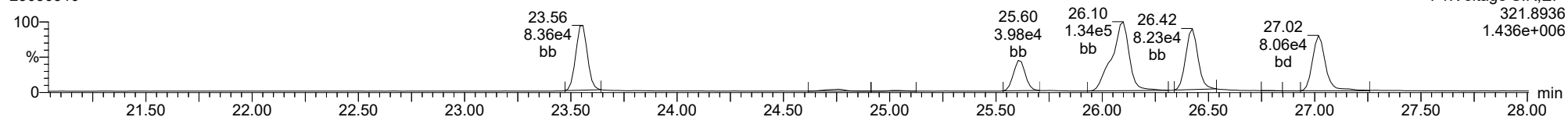
**Total-tetradioxins**

23030310



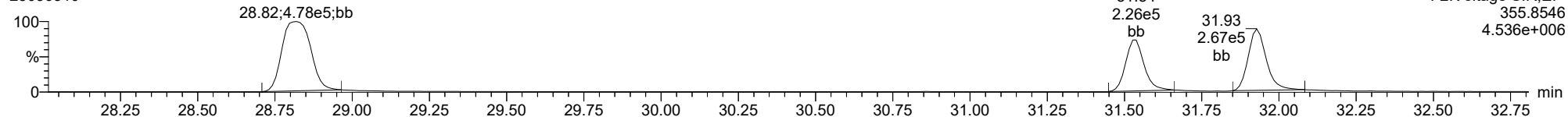
**Total-tetradioxins**

23030310



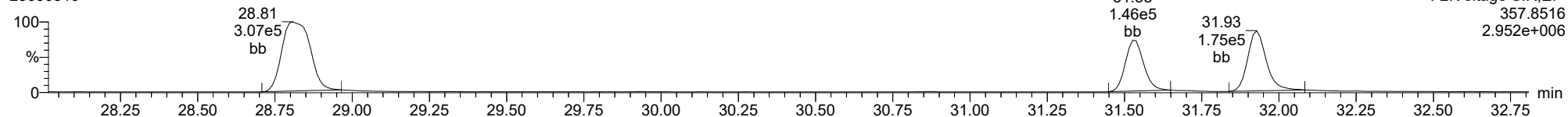
**Total-pentadioxins**

23030310



**Total-pentadioxins**

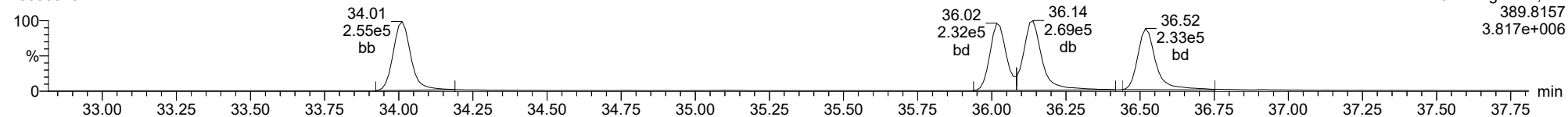
23030310



ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

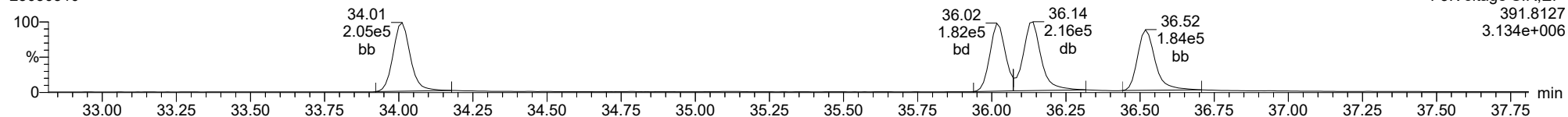
**Total-hexadioxins**

23030310



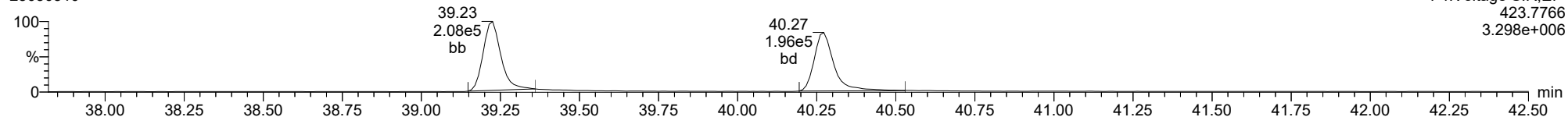
**Total-hexadioxins**

23030310



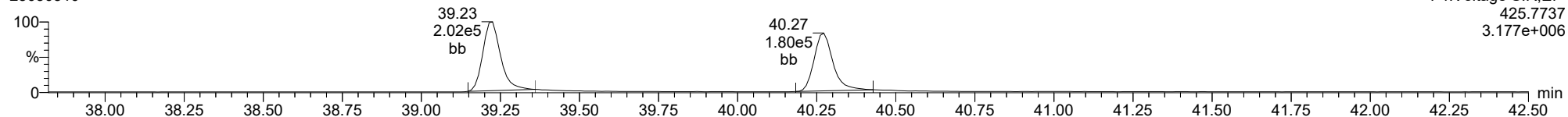
**Total-heptadioxins**

23030310



**Total-heptadioxins**

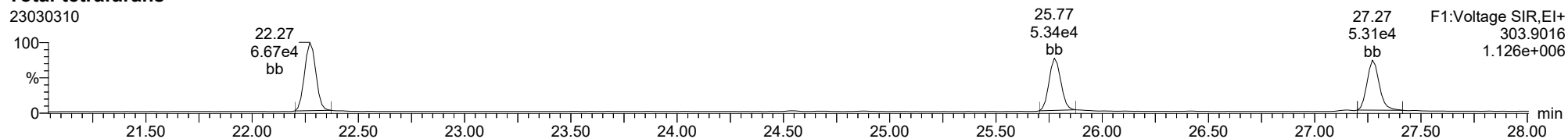
23030310



ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

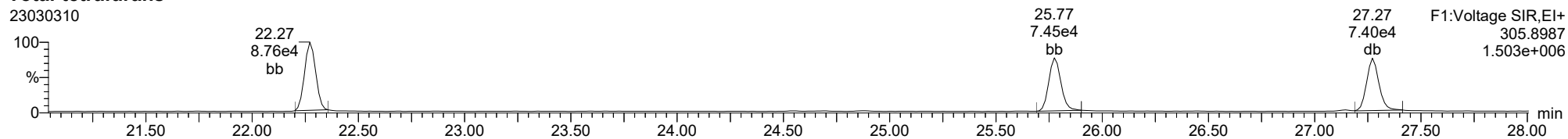
**Total-tetrafurans**

23030310



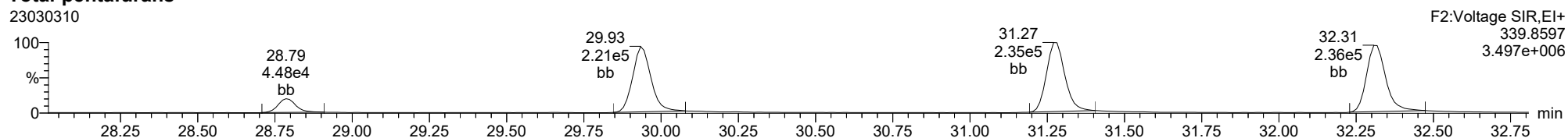
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23030310



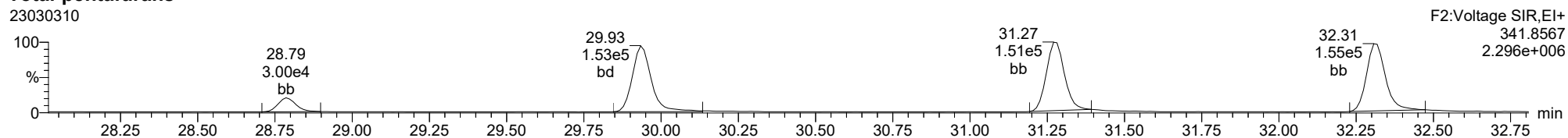
**Total-pentafurans**

23030310



**Total-pentafurans**

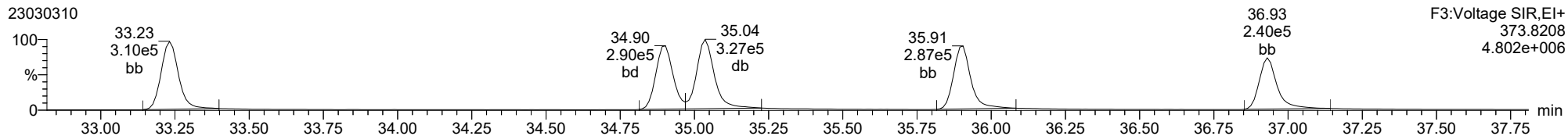
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ID: ICVCW, Name: 23030310, Date: 03-Mar-2023, Time: 16:36:24, Conditions: AUTOSPEC01, User: pk

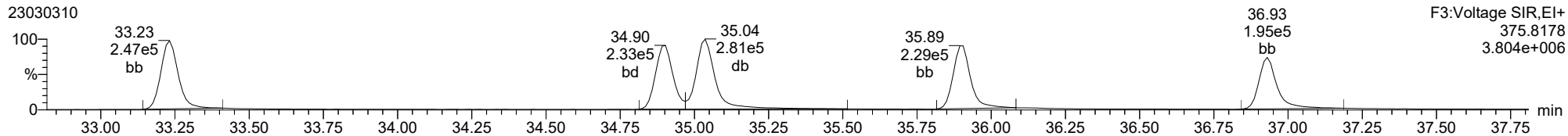
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23030310



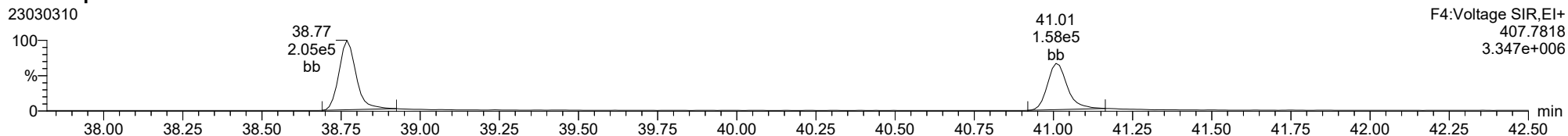
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23030310



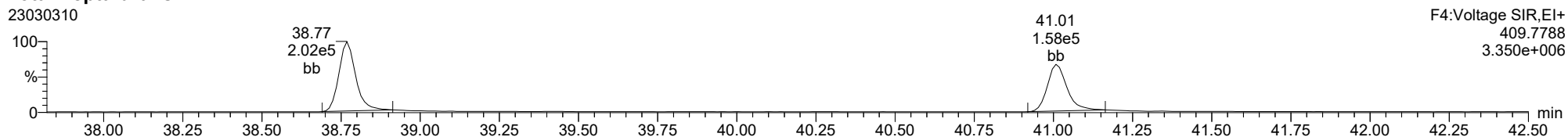
**Total-heptafurans**

23030310



**Total-heptafurans**

23030310



Dataset: T:\Autospec\Processed Data Batch\230303IHCIV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.774	1.000	4.131e4	5.488e4	0.702	0.753	0.770	1493	2220	6.02e5	8.13e5	403.0	366.2	NO	bb	bb	10.126
12378-PeCDF	29.934	1.000	2.094e5	1.387e5	0.679	1.510	1.550	3237	2768	3.10e6	2.08e6	956.2	750.8	NO	bb	bb	47.721
23478-PeCDF	31.282	1.001	2.189e5	1.466e5	0.786	1.493	1.550	3237	2768	3.25e6	2.13e6	1004.6	769.0	NO	bb	bb	48.580
123478-HxCDF	34.903	1.001	2.702e5	2.168e5	1.166	1.247	1.240	2948	2161	4.14e6	3.34e6	1404.3	1544.7	NO	bd	bd	47.304
234678-HxCDF	35.905	1.001	2.808e5	2.345e5	1.140	1.198	1.240	2948	2161	4.05e6	3.23e6	1375.6	1495.3	NO	bb	bd	52.050
123678-HxCDF	35.036	1.000	3.125e5	2.496e5	1.091	1.252	1.240	2948	2161	4.44e6	3.55e6	1506.3	1641.4	NO	db	db	51.387
123789-HxCDF	36.931	1.000	2.304e5	1.857e5	1.137	1.240	1.240	2948	2161	3.37e6	2.68e6	1143.7	1240.6	NO	bb	bb	48.904
1234678-HpCDF	38.769	1.000	1.725e5	1.737e5	1.003	0.993	1.050	2044	2260	2.71e6	2.74e6	1326.3	1210.9	NO	bb	bb	47.690
1234789-HpCDF	41.008	1.000	1.395e5	1.236e5	0.953	1.128	1.050	2044	2260	1.71e6	1.64e6	836.3	725.6	NO	bd	bb	53.601
OCDF	45.237	1.005	1.863e5	1.970e5	0.778	0.946	0.890	1162	1746	2.03e6	2.27e6	1745.6	1302.8	NO	bd	bb	95.021
2378-TCDD	26.424	1.001	4.111e4	5.488e4	1.149	0.749	0.770	1210	797	6.31e5	8.06e5	521.2	1010.5	NO	bb	bb	9.017
12378-PeCDD	31.538	1.001	2.212e5	1.442e5	1.022	1.534	1.550	2794	1649	3.14e6	2.05e6	1124.1	1244.9	NO	bb	bb	50.849
123478-HxCDD	36.017	1.000	2.147e5	1.744e5	0.996	1.231	1.240	3133	1871	3.31e6	2.68e6	1055.8	1434.4	NO	bd	bd	50.696
123678-HxCDD	36.139	1.001	2.532e5	2.091e5	1.001	1.211	1.240	3133	1871	3.49e6	2.85e6	1112.6	1520.4	NO	db	db	51.126
123789-HxCDD	36.518	1.011	2.114e5	1.814e5	0.907	1.166	1.240	3133	1871	3.08e6	2.54e6	982.1	1355.5	NO	bb	bd	51.723
1234678-HpCDD	40.273	1.000	1.700e5	1.663e5	1.039	1.022	1.050	1948	2105	2.22e6	2.15e6	1138.4	1022.1	NO	bd	bd	52.721
OCDD	45.000	1.000	2.152e5	2.483e5	0.920	0.867	0.890	885	1554	2.46e6	2.84e6	2785.0	1828.9	NO	bb	bb	97.150
13C-2378-TCDF	25.760	1.007	5.853e5	7.688e5	1.620	0.761	0.770	1921	2018	8.54e6	1.13e7	4445.5	5599.2	NO	bb	bb	89.420
13C-12378-PeCDF	29.923	1.169	6.466e5	4.272e5	1.240	1.513	1.550	2442	3390	8.85e6	5.90e6	3622.7	1739.1	NO	bb	bd	92.612
13C-23478-PeCDF	31.259	1.222	5.702e5	3.869e5	1.118	1.474	1.550	2442	3390	8.42e6	5.62e6	3447.3	1659.1	NO	bb	bb	91.616
13C-123478-HxCDF	34.881	0.955	2.992e5	5.837e5	1.168	0.513	0.510	2430	2952	4.46e6	8.67e6	1835.4	2935.2	NO	bd	bd	95.179
13C-123678-HxCDF	35.025	0.959	3.347e5	6.682e5	1.386	0.501	0.510	2430	2952	4.76e6	9.19e6	1958.9	3111.9	NO	db	db	91.102
13C-234678-HxCDF	35.883	0.983	2.956e5	5.730e5	1.129	0.516	0.510	2430	2952	4.27e6	8.35e6	1756.5	2829.2	NO	bb	bb	96.885
13C-123789-HxCDF	36.919	1.011	2.519e5	4.965e5	0.932	0.507	0.510	2430	2952	3.69e6	7.15e6	1518.9	2421.6	NO	bb	bb	101.167
13C-1234678-HpCDF	38.758	1.062	2.307e5	4.931e5	0.895	0.468	0.440	2487	3339	3.35e6	7.56e6	1347.2	2263.7	NO	bd	bb	101.839
13C-1234789-HpCDF	40.997	1.123	1.602e5	3.548e5	0.770	0.452	0.440	2487	3339	2.05e6	4.72e6	823.7	1413.6	NO	bb	bb	84.268
13C-1234-TCDD	25.591	0.000	4.152e5	5.195e5	1.000	0.799	0.770	2224	1360	6.53e6	8.14e6	2938.6	5984.1	NO	bb	bb	100.000
13C-2378-TCDD	26.396	1.031	4.083e5	5.184e5	1.152	0.788	0.770	2224	1360	5.76e6	7.36e6	2588.5	5411.0	NO	bb	bb	86.032
13C-12378-PeCDD	31.516	1.232	4.323e5	2.709e5	0.829	1.595	1.550	1217	913	6.32e6	3.99e6	5187.9	4362.9	NO	bb	bb	90.774
13C-123478-HxCDD	36.006	0.986	4.338e5	3.372e5	0.995	1.286	1.240	3851	1371	6.85e6	5.33e6	1778.6	3884.7	NO	bd	bd	97.589
13C-123678-HxCDD	36.117	0.989	5.114e5	3.919e5	1.157	1.305	1.240	3851	1371	7.20e6	5.65e6	1870.4	4120.3	NO	db	db	98.370
13C-1234678-HpCDD	40.262	1.103	3.166e5	2.972e5	0.840	1.065	1.050	1699	1520	4.20e6	3.95e6	2473.2	2598.3	NO	bb	bb	92.030
13C-OCDD	44.990	1.232	5.160e5	5.214e5	0.767	0.990	0.890	2001	1870	5.29e6	5.84e6	2645.0	3123.1	NO	bd	bb	170.247
13C-123789-HxCDD	36.507	0.000	4.452e5	3.487e5	1.000	1.277	1.240	3851	1371	6.49e6	5.07e6	1686.5	3694.9	NO	bb	bb	100.000
37CL-2378-TCDD	26.424	1.033	9.071e4		1.288			1721		1.34e6		776.4			bb		7.536



Dataset: T:\Autospec\Processed Data Batch\230303\HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.271	0.865	5.764e4	7.805e4	0.802	0.738	0.770	1493	2220	9.22e5	1.25e6	617.6	564.2	NO	bb	bb	12.503
1289-TCDF	27.272	1.059	3.446e4	4.665e4	0.678	0.739	0.770	1493	2220	5.07e5	6.62e5	339.5	298.3	NO	bb	db	8.835
13468-PECDF	27.130	0.907	3.611e5	2.330e5	1.246	1.550	1.550	743	1090	5.44e6	3.55e6	7323.2	3255.0	NO	bb	bb	44.390
12389-PECDF	32.318	1.080	2.101e5	1.516e5	0.496	1.387	1.550	3237	2768	2.95e6	1.97e6	910.6	713.0	NO	bb	bd	67.866
123468-HXCDF	33.231	0.953	2.880e5	2.384e5	1.169	1.208	1.240	2948	2161	4.12e6	3.25e6	1397.4	1503.0	NO	bb	bb	51.002
1368-TCDD	23.557	0.892	5.668e4	7.180e4	1.015	0.789	0.770	1210	797	9.15e5	1.16e6	755.8	1460.4	NO	bb	bb	13.654
1289-TCDD	27.017	1.023	3.648e4	4.783e4	0.909	0.763	0.770	1210	797	5.40e5	6.90e5	445.8	865.4	NO	bb	bb	10.012
12479-PECDD	28.819	0.914	3.593e5	2.367e5	2.301	1.518	1.550	2794	1649	3.42e6	2.21e6	1224.5	1341.7	NO	bb	bb	36.832
12389-PECDD	31.928	1.013	2.423e5	1.700e5	1.184	1.426	1.550	2794	1649	3.48e6	2.31e6	1246.0	1399.4	NO	bb	bd	49.543
124679-HXCDD	34.011	0.945	2.330e5	1.909e5	1.115	1.220	1.240	3133	1871	3.38e6	2.76e6	1078.1	1473.6	NO	bb	bb	49.292
1234679-HPCDD	39.225	0.974	2.020e5	1.832e5	1.137	1.103	1.050	1948	2105	2.83e6	2.72e6	1451.0	1293.3	NO	bd	bb	55.196
Total-tetrafurans			1.346e5		0.727			1493		2.05e6							31.724
Total-penta1			3.611e5					743		5.44e6							44.390
Total-pentafurans			6.730e5		0.654			3237		9.80e6							172.856
Total-hexafurans			1.382e6		1.141			2948		2.01e7							250.647
Total-heptafurans			3.120e5		0.978			2044		4.42e6							101.291
Total-Furans			3.049e6		0.922			1493		4.39e7							695.930
Total-tetradoxins			2.249e5		1.024			1210		3.13e6							54.516
Total-pentadoxins			8.229e5		1.502			2794		1.00e7							137.223
Total-hexadoxins			9.123e5		1.005			3133		1.32e7							202.837
Total-heptadoxins			3.720e5		1.088			1948		5.04e6							107.918
Total-Dioxins			2.547e6		1.130			1210		3.39e7							599.643
Total-TEQ			5.596e6					1210		7.78e7							1295.573
FUNCTION1 PFK			7.521e6					557945		8.00e6							
FUNCTION2 PFK			4.110e5					226700		1.13e7							0.000
FUNCTION3 PFK			8.443e6					414812		2.82e6							0.000
FUNCTION4 PFK			2.598e7					304689		2.22e7							
FUNCTION5 PFK			7.163e4					189891		2.74e6							
FUNCTION1 HXCD...			3.794e2					593		5.61e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			8.042e2					818		1.73e4							0.000
FUNCTION3 OCDPE			9.563e1					429		1.87e3							0.000
FUNCTION4 NCDPE			0.000e0					545		0.00e0							
FUNCTION5 DCDPE			0.000e0					542		0.00e0							

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303IHCIV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

Method: T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50

Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	3.446e4	4.665e4	0.678	0.74	0.77	339.5	YES	NO	bb	db	8.835
2	2378-TCDF	25.77	4.131e4	5.488e4	0.702	0.75	0.77	403.0	YES	NO	bb	bb	10.126
3	Total-tetrafurans	24.86	6.389e2	7.978e2	0.727	0.80	0.77	6.2	YES	NO	bb	bb	0.146
4	Total-tetrafurans	24.55	5.238e2	5.981e2	0.727	0.88	0.77	6.0	YES	NO	bb	bb	0.114
5	1368-TCDF	22.27	5.764e4	7.805e4	0.802	0.74	0.77	617.6	YES	NO	bb	bb	12.503

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.13	3.611e5	2.330e5	1.246	1.55	1.55	7323.2	YES	NO	bb	bb	44.390

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDF	32.32	2.101e5	1.516e5	0.496	1.39	1.55	910.6	YES	NO	bb	bd	67.866
2	23478-PeCDF	31.28	2.189e5	1.466e5	0.786	1.49	1.55	1004.6	YES	NO	bb	bb	48.580
3	12378-PeCDF	29.93	2.094e5	1.387e5	0.679	1.51	1.55	956.2	YES	NO	bb	bb	47.721
4	Total-pentafurans	28.80	3.458e4	2.311e4	0.654	1.50	1.55	155.8	YES	NO	bb	bb	8.688

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123478-HxCDF	34.90	2.702e5	2.168e5	1.166	1.25	1.24	1404.3	YES	NO	bd	bd	47.304
2	123468-HxCDF	33.23	2.880e5	2.384e5	1.169	1.21	1.24	1397.4	YES	NO	bb	bb	51.002
3	123789-HxCDF	36.93	2.304e5	1.857e5	1.137	1.24	1.24	1143.7	YES	NO	bb	bb	48.904
4	234678-HxCDF	35.91	2.808e5	2.345e5	1.140	1.20	1.24	1375.6	YES	NO	bb	bd	52.050
5	123678-HxCDF	35.04	3.125e5	2.496e5	1.091	1.25	1.24	1506.3	YES	NO	db	db	51.387

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.01	1.395e5	1.236e5	0.953	1.13	1.05	836.3	YES	NO	bd	bb	53.601
2	1234678-HpCDF	38.77	1.725e5	1.737e5	1.003	0.99	1.05	1326.3	YES	NO	bb	bb	47.690

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\2303031HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

**ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	3.446e4	4.665e4	0.678	0.74	0.77	339.5	YES	NO	bb	db	8.835
2	2378-TCDF	25.77	4.131e4	5.488e4	0.702	0.75	0.77	403.0	YES	NO	bb	bb	10.126
3	Total-tetrafurans	24.86	6.389e2	7.978e2	0.727	0.80	0.77	6.2	YES	NO	bb	bb	0.146
4	Total-tetrafurans	24.55	5.238e2	5.981e2	0.727	0.88	0.77	6.0	YES	NO	bb	bb	0.114
5	1368-TCDF	22.27	5.764e4	7.805e4	0.802	0.74	0.77	617.6	YES	NO	bb	bb	12.503
6	12389-PECDF	32.32	2.101e5	1.516e5	0.496	1.39	1.55	910.6	YES	NO	bb	bd	67.866
7	23478-PeCDF	31.28	2.189e5	1.466e5	0.786	1.49	1.55	1004.6	YES	NO	bb	bb	48.580
8	12378-PeCDF	29.93	2.094e5	1.387e5	0.679	1.51	1.55	956.2	YES	NO	bb	bb	47.721
9	Total-pentafurans	28.80	3.458e4	2.311e4	0.654	1.50	1.55	155.8	YES	NO	bb	bb	8.688
10	123478-HxCDF	34.90	2.702e5	2.168e5	1.166	1.25	1.24	1404.3	YES	NO	bd	bd	47.304
11	123468-HXCDF	33.23	2.880e5	2.384e5	1.169	1.21	1.24	1397.4	YES	NO	bb	bb	51.002
12	123789-HxCDF	36.93	2.304e5	1.857e5	1.137	1.24	1.24	1143.7	YES	NO	bb	bb	48.904
13	234678-HxCDF	35.91	2.808e5	2.345e5	1.140	1.20	1.24	1375.6	YES	NO	bb	bd	52.050
14	123678-HxCDF	35.04	3.125e5	2.496e5	1.091	1.25	1.24	1506.3	YES	NO	db	db	51.387
15	1234789-HpCDF	41.01	1.395e5	1.236e5	0.953	1.13	1.05	836.3	YES	NO	bd	bb	53.601
16	1234678-HpCDF	38.77	1.725e5	1.737e5	1.003	0.99	1.05	1326.3	YES	NO	bb	bb	47.690
17	OCDF	45.24	1.863e5	1.970e5	0.778	0.95	0.89	1745.6	YES	NO	bd	bb	95.021
18	13468-PECDF	27.13	3.611e5	2.330e5	1.246	1.55	1.55	7323.2	YES	NO	bb	bb	44.390

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDD	23.56	5.668e4	7.180e4	1.015	0.79	0.77	755.8	YES	NO	bb	bb	13.654
2	1289-TCDD	27.02	3.648e4	4.783e4	0.909	0.76	0.77	445.8	YES	NO	bb	bb	10.012
3	2378-TCDD	26.42	4.111e4	5.488e4	1.149	0.75	0.77	521.2	YES	NO	bb	bb	9.017
4	Total-tetradoxins	26.10	6.719e4	8.697e4	1.024	0.77	0.77	561.8	YES	NO	bb	bb	16.242
5	Total-tetradoxins	25.60	2.343e4	2.963e4	1.024	0.79	0.77	301.6	YES	NO	bb	bb	5.591

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.93	2.423e5	1.700e5	1.184	1.43	1.55	1246.0	YES	NO	bb	bd	49.543
2	12378-PeCDD	31.54	2.212e5	1.442e5	1.022	1.53	1.55	1124.1	YES	NO	bb	bb	50.849
3	12479-PECDD	28.82	3.593e5	2.367e5	2.301	1.52	1.55	1224.5	YES	NO	bb	bb	36.832

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\2303031\HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

**ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk**

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HxCDD	34.01	2.330e5	1.909e5	1.115	1.22	1.24	1078.1	YES	NO	bb	bb	49.292
2	123789-HxCDD	36.52	2.114e5	1.814e5	0.907	1.17	1.24	982.1	YES	NO	bb	bd	51.723
3	123678-HxCDD	36.14	2.532e5	2.091e5	1.001	1.21	1.24	1112.6	YES	NO	db	db	51.126
4	123478-HxCDD	36.02	2.147e5	1.744e5	0.996	1.23	1.24	1055.8	YES	NO	bd	bd	50.696

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.27	1.700e5	1.663e5	1.039	1.02	1.05	1138.4	YES	NO	bd	bd	52.721
2	1234679-HPCDD	39.23	2.020e5	1.832e5	1.137	1.10	1.05	1451.0	YES	NO	bd	bb	55.196

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDD	23.56	5.668e4	7.180e4	1.015	0.79	0.77	755.8	YES	NO	bb	bb	13.654
2	1289-TCDD	27.02	3.648e4	4.783e4	0.909	0.76	0.77	445.8	YES	NO	bb	bb	10.012
3	2378-TCDD	26.42	4.111e4	5.488e4	1.149	0.75	0.77	521.2	YES	NO	bb	bb	9.017
4	Total-tetradoxins	26.10	6.719e4	8.697e4	1.024	0.77	0.77	561.8	YES	NO	bb	bb	16.242
5	Total-tetradoxins	25.60	2.343e4	2.963e4	1.024	0.79	0.77	301.6	YES	NO	bb	bb	5.591
6	12389-PECDD	31.93	2.423e5	1.700e5	1.184	1.43	1.55	1246.0	YES	NO	bb	bd	49.543
7	12378-PeCDD	31.54	2.212e5	1.442e5	1.022	1.53	1.55	1124.1	YES	NO	bb	bb	50.849
8	12479-PECDD	28.82	3.593e5	2.367e5	2.301	1.52	1.55	1224.5	YES	NO	bb	bb	36.832
9	124679-HxCDD	34.01	2.330e5	1.909e5	1.115	1.22	1.24	1078.1	YES	NO	bb	bb	49.292
10	123789-HxCDD	36.52	2.114e5	1.814e5	0.907	1.17	1.24	982.1	YES	NO	bb	bd	51.723
11	123678-HxCDD	36.14	2.532e5	2.091e5	1.001	1.21	1.24	1112.6	YES	NO	db	db	51.126
12	123478-HxCDD	36.02	2.147e5	1.744e5	0.996	1.23	1.24	1055.8	YES	NO	bd	bd	50.696
13	1234678-HpCDD	40.27	1.700e5	1.663e5	1.039	1.02	1.05	1138.4	YES	NO	bd	bd	52.721
14	1234679-HPCDD	39.23	2.020e5	1.832e5	1.137	1.10	1.05	1451.0	YES	NO	bd	bb	55.196
15	OCDD	45.00	2.152e5	2.483e5	0.920	0.87	0.89	2785.0	YES	NO	bb	bb	97.150

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230303\HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	3.446e4	4.665e4	0.678	0.74	0.77	339.5	YES	NO	bb	db	8.835
2	2378-TCDF	25.77	4.131e4	5.488e4	0.702	0.75	0.77	403.0	YES	NO	bb	bb	10.126
3	Total-tetrafurans	24.86	6.389e2	7.978e2	0.727	0.80	0.77	6.2	YES	NO	bb	bb	0.146
4	Total-tetrafurans	24.55	5.238e2	5.981e2	0.727	0.88	0.77	6.0	YES	NO	bb	bb	0.114
5	1368-TCDF	22.27	5.764e4	7.805e4	0.802	0.74	0.77	617.6	YES	NO	bb	bb	12.503
6	12389-PECDF	32.32	2.101e5	1.516e5	0.496	1.39	1.55	910.6	YES	NO	bb	bd	67.866
7	23478-PeCDF	31.28	2.189e5	1.466e5	0.786	1.49	1.55	1004.6	YES	NO	bb	bb	48.580
8	12378-PeCDF	29.93	2.094e5	1.387e5	0.679	1.51	1.55	956.2	YES	NO	bb	bb	47.721
9	Total-pentafurans	28.80	3.458e4	2.311e4	0.654	1.50	1.55	155.8	YES	NO	bb	bb	8.688
10	123478-HxCDF	34.90	2.702e5	2.168e5	1.166	1.25	1.24	1404.3	YES	NO	bd	bd	47.304
11	123468-HxCDF	33.23	2.880e5	2.384e5	1.169	1.21	1.24	1397.4	YES	NO	bb	bb	51.002
12	123789-HxCDF	36.93	2.304e5	1.857e5	1.137	1.24	1.24	1143.7	YES	NO	bb	bb	48.904
13	234678-HxCDF	35.91	2.808e5	2.345e5	1.140	1.20	1.24	1375.6	YES	NO	bb	bd	52.050
14	123678-HxCDF	35.04	3.125e5	2.496e5	1.091	1.25	1.24	1506.3	YES	NO	db	db	51.387
15	1234789-HpCDF	41.01	1.395e5	1.236e5	0.953	1.13	1.05	836.3	YES	NO	bd	bb	53.601
16	1234678-HpCDF	38.77	1.725e5	1.737e5	1.003	0.99	1.05	1326.3	YES	NO	bb	bb	47.690
17	OCDF	45.24	1.863e5	1.970e5	0.778	0.95	0.89	1745.6	YES	NO	bd	bb	95.021
18	13468-PECDF	27.13	3.611e5	2.330e5	1.246	1.55	1.55	7323.2	YES	NO	bb	bb	44.390
19	1368-TCDD	23.56	5.668e4	7.180e4	1.015	0.79	0.77	755.8	YES	NO	bb	bb	13.654
20	1289-TCDD	27.02	3.648e4	4.783e4	0.909	0.76	0.77	445.8	YES	NO	bb	bb	10.012
21	2378-TCDD	26.42	4.111e4	5.488e4	1.149	0.75	0.77	521.2	YES	NO	bb	bb	9.017
22	Total-tetradiioxins	26.10	6.719e4	8.697e4	1.024	0.77	0.77	561.8	YES	NO	bb	bb	16.242
23	Total-tetradiioxins	25.60	2.343e4	2.963e4	1.024	0.79	0.77	301.6	YES	NO	bb	bb	5.591
24	12389-PECDD	31.93	2.423e5	1.700e5	1.184	1.43	1.55	1246.0	YES	NO	bb	bd	49.543
25	12378-PeCDD	31.54	2.212e5	1.442e5	1.022	1.53	1.55	1124.1	YES	NO	bb	bb	50.849
26	12479-PECDD	28.82	3.593e5	2.367e5	2.301	1.52	1.55	1224.5	YES	NO	bb	bb	36.832
27	124679-HXCDD	34.01	2.330e5	1.909e5	1.115	1.22	1.24	1078.1	YES	NO	bb	bb	49.292
28	123789-HxCDD	36.52	2.114e5	1.814e5	0.907	1.17	1.24	982.1	YES	NO	bb	bd	51.723
29	123678-HxCDD	36.14	2.532e5	2.091e5	1.001	1.21	1.24	1112.6	YES	NO	db	db	51.126
30	123478-HxCDD	36.02	2.147e5	1.744e5	0.996	1.23	1.24	1055.8	YES	NO	bd	bd	50.696
31	1234678-HpCDD	40.27	1.700e5	1.663e5	1.039	1.02	1.05	1138.4	YES	NO	bd	bd	52.721
32	1234679-HPCDD	39.23	2.020e5	1.832e5	1.137	1.10	1.05	1451.0	YES	NO	bd	bb	55.196
33	OCDD	45.00	2.152e5	2.483e5	0.920	0.87	0.89	2785.0	YES	NO	bb	bb	97.150

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303IHICV.qld  
Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

**ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk**

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.45	3.397e6					9.1	YES		db		
2	FUNCTION1 PFK	22.00	4.124e6					5.2	YES		bd		

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230303\HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

## PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.25	2.674e4					2.5	NO		db		0.000
2	FUNCTION2 PFK	28.20	5.558e3					1.1	NO		dd		0.000
3	FUNCTION2 PFK	28.15	1.333e4					1.7	NO		bd		0.000
4	FUNCTION2 PFK	28.11	4.408e3					0.8	NO		bb		0.000
5	FUNCTION2 PFK	30.52	5.287e3					0.9	NO		bd		0.000
6	FUNCTION2 PFK	30.38	1.568e4					1.4	NO		bb		0.000
7	FUNCTION2 PFK	30.23	2.380e4					1.5	NO		db		0.000
8	FUNCTION2 PFK	30.10	2.694e4					1.7	NO		bd		0.000
9	FUNCTION2 PFK	29.99	2.076e3					0.5	NO		bb		0.000
10	FUNCTION2 PFK	29.89	7.421e3					1.2	NO		bb		0.000
11	FUNCTION2 PFK	29.80	6.022e3					0.5	NO		bb		0.000
12	FUNCTION2 PFK	29.62	1.101e4					1.2	NO		bb		0.000
13	FUNCTION2 PFK	29.52	2.200e4					2.0	NO		bb		0.000
14	FUNCTION2 PFK	29.42	7.036e3					1.0	NO		bb		0.000
15	FUNCTION2 PFK	29.29	2.309e4					2.2	NO		bb		0.000
16	FUNCTION2 PFK	29.03	1.036e4					1.7	NO		db		0.000
17	FUNCTION2 PFK	29.00	8.382e3					1.3	NO		bd		0.000
18	FUNCTION2 PFK	28.80	5.680e3					0.9	NO		bb		0.000
19	FUNCTION2 PFK	28.70	1.413e4					1.3	NO		bb		0.000
20	FUNCTION2 PFK	28.60	2.690e3					0.7	NO		bb		0.000
21	FUNCTION2 PFK	32.35	9.362e3					1.3	NO		bd		0.000
22	FUNCTION2 PFK	32.28	5.282e3					0.9	NO		bb		0.000
23	FUNCTION2 PFK	31.94	5.478e3					0.6	NO		bb		0.000
24	FUNCTION2 PFK	31.86	9.539e3					1.3	NO		bb		0.000
25	FUNCTION2 PFK	31.70	8.598e3					0.9	NO		bb		0.000
26	FUNCTION2 PFK	31.56	1.164e4					1.5	NO		bb		0.000
27	FUNCTION2 PFK	31.44	9.870e3					1.2	NO		bb		0.000
28	FUNCTION2 PFK	31.37	5.651e3					1.2	NO		bb		0.000
29	FUNCTION2 PFK	31.16	3.906e3					0.7	NO		db		0.000
30	FUNCTION2 PFK	31.10	5.259e3					1.0	NO		bd		0.000
31	FUNCTION2 PFK	31.00	2.220e3					0.5	NO		bb		0.000
32	FUNCTION2 PFK	30.93	4.197e3					0.6	NO		bb		0.000
33	FUNCTION2 PFK	30.84	1.813e4					1.7	NO		bb		0.000
34	FUNCTION2 PFK	30.68	6.046e3					1.3	NO		db		0.000
35	FUNCTION2 PFK	30.64	6.706e3					1.2	NO		dd		0.000
36	FUNCTION2 PFK	30.58	1.475e4					1.4	NO		dd		0.000
37	FUNCTION2 PFK	32.74	9.704e3					1.1	NO		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303IHICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION2 PFK	32.61	1.975e3					0.6	NO		bb		0.000
39	FUNCTION2 PFK	32.55	1.171e3					0.5	NO		bb		0.000
40	FUNCTION2 PFK	32.51	7.325e3					1.0	NO		db		0.000
41	FUNCTION2 PFK	32.45	9.340e3					1.3	NO		dd		0.000
42	FUNCTION2 PFK	32.41	1.322e4					1.9	NO		dd		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.70	5.175e4					1.9	NO		bb		0.000
2	FUNCTION3 PFK	35.52	3.681e5					3.3	YES		bb		0.000
3	FUNCTION3 PFK	34.42	8.023e6					1.5	NO		bb		0.000

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.67	5.668e6					23.1	YES		db		
2	FUNCTION4 PFK	39.84	1.814e7					26.9	YES		dd		
3	FUNCTION4 PFK	38.09	2.173e6					22.8	YES		bd		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	42.82	4.953e3					1.4	NO		bb		
2	FUNCTION5 PFK	45.79	4.078e3					1.3	NO		db		
3	FUNCTION5 PFK	45.76	2.296e3					0.8	NO		bd		
4	FUNCTION5 PFK	45.37	1.499e4					1.8	NO		bb		
5	FUNCTION5 PFK	45.31	3.040e3					1.0	NO		bb		
6	FUNCTION5 PFK	44.94	1.866e3					0.7	NO		bb		
7	FUNCTION5 PFK	44.62	4.342e3					1.3	NO		bb		
8	FUNCTION5 PFK	43.85	4.909e3					1.2	NO		bb		
9	FUNCTION5 PFK	43.55	9.698e3					1.7	NO		bb		
10	FUNCTION5 PFK	43.31	1.818e4					2.2	NO		bb		
11	FUNCTION5 PFK	43.18	3.274e3					1.0	NO		bb		



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230303\HICV.qld  
 Last Altered: Monday, March 06, 2023 11:49:27 Pacific Standard Time  
 Printed: Monday, March 06, 2023 14:47:33 Pacific Standard Time

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.14	7.703e1					2.6	NO		bb		0.000
2	FUNCTION1 HXCD...	25.58	1.369e2					3.0	NO		bb		0.000
3	FUNCTION1 HXCD...	24.29	7.654e1					1.4	NO		bb		0.000
4	FUNCTION1 HXCD...	23.49	8.895e1					2.4	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.41	1.026e2					2.4	NO		db		0.000
2	FUNCTION2 HPCD...	32.32	1.299e2					2.2	NO		bd		0.000
3	FUNCTION2 HPCD...	31.19	1.035e2					3.9	YES		db		0.000
4	FUNCTION2 HPCD...	31.15	2.274e2					6.9	YES		bd		0.000
5	FUNCTION2 HPCD...	29.21	1.504e2					2.9	NO		bb		0.000
6	FUNCTION2 HPCD...	28.77	9.035e1					2.8	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.51	9.563e1					4.4	YES		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS6**

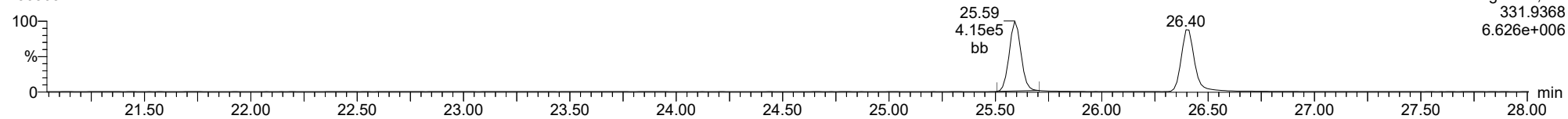
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1													

**Method:** T:\Autospec\Methods\Dioxin230303.mdb 03 Mar 2023 14:58:50  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 10:57:27

**ID:** CS3W2, **Name:** 23030311, **Date:** 03-Mar-2023, **Time:** 17:25:01, **Conditions:** AUTOSPEC01, **User:** pk

**13C-1234-TCDD**

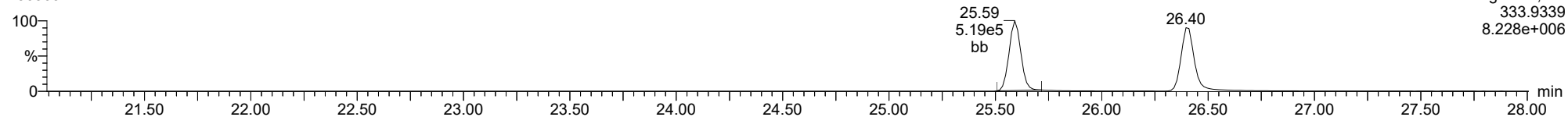
23030311



F1:Voltage SIR,El+  
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6.626e+006

**13C-1234-TCDD**

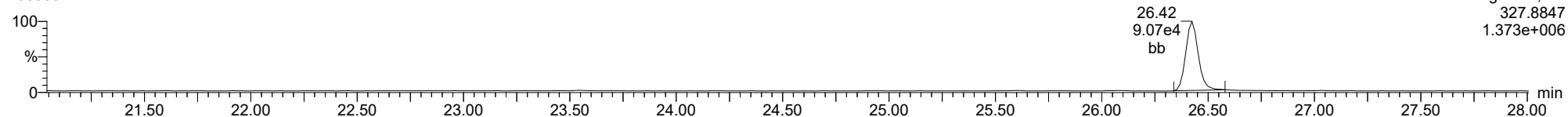
23030311



F1:Voltage SIR,El+  
333.9339  
8.228e+006

**37CL-2378-TCDD**

23030311

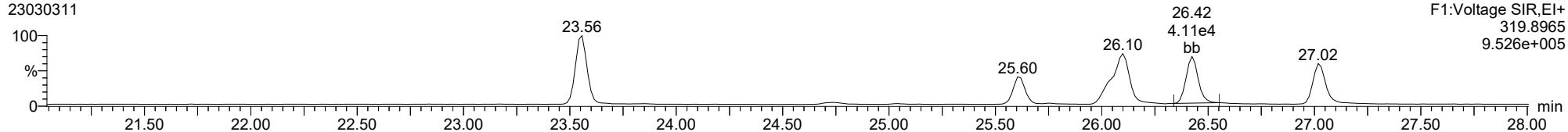


F1:Voltage SIR,El+  
327.8847  
1.373e+006

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

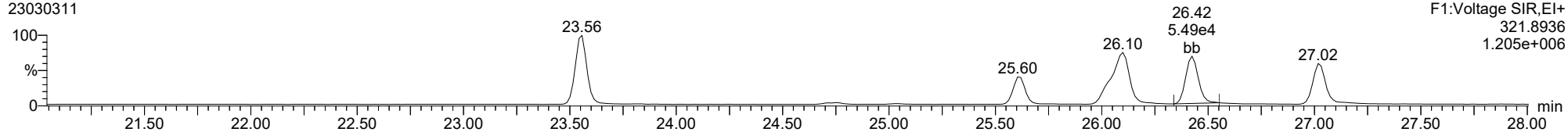
**2378-TCDD**

23030311



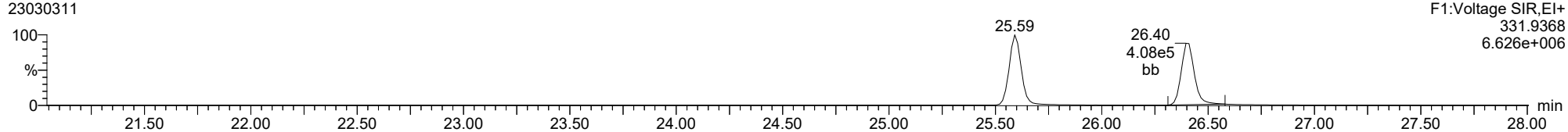
**2378-TCDD**

23030311



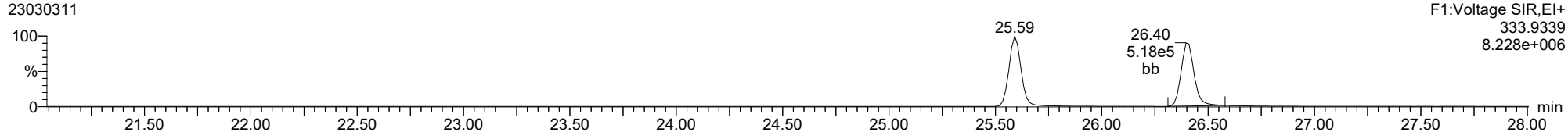
**13C-2378-TCDD**

23030311



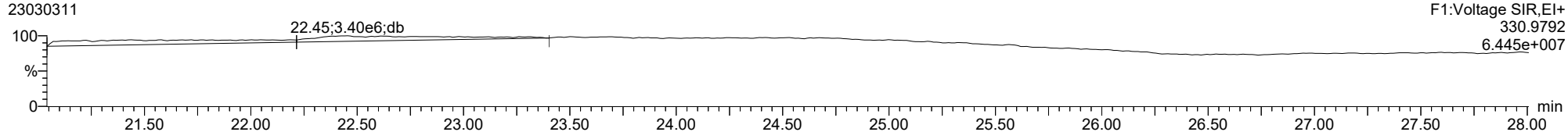
**13C-2378-TCDD**

23030311



**FUNCTION1 PFK**

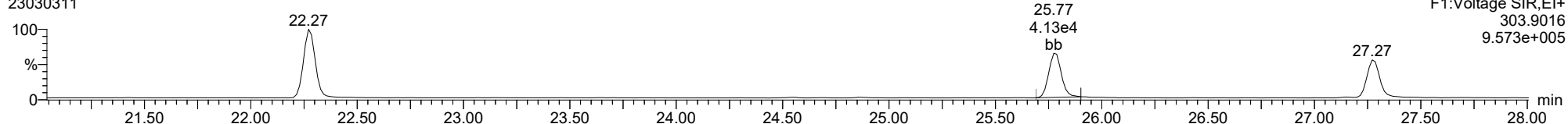
23030311



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

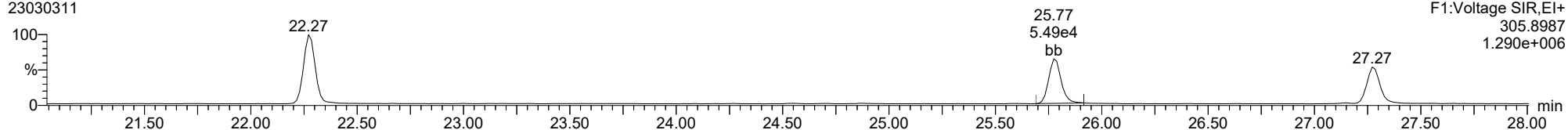
**2378-TCDF**

23030311



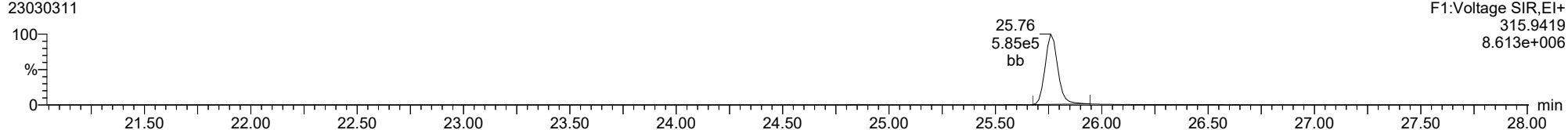
**2378-TCDF**

23030311



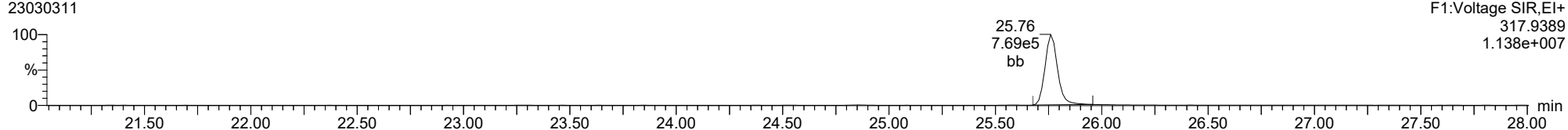
**13C-2378-TCDF**

23030311



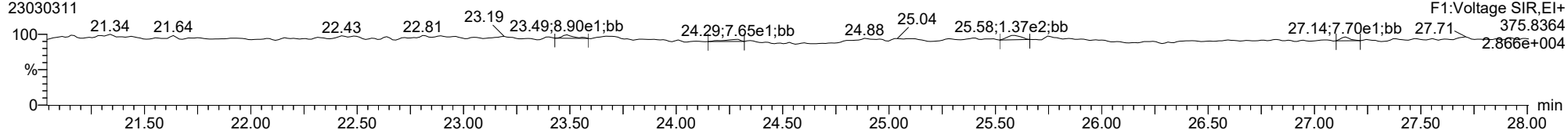
**13C-2378-TCDF**

23030311



**FUNCTION1 HXCDPE**

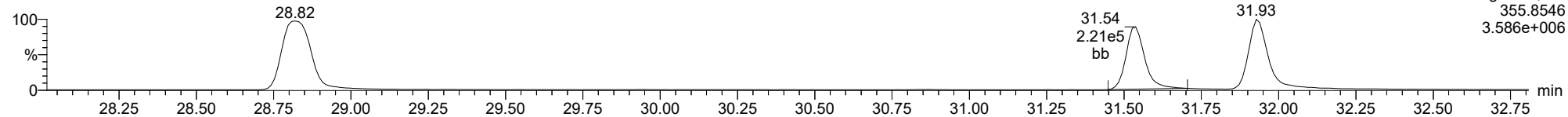
23030311



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

**12378-PeCDD**

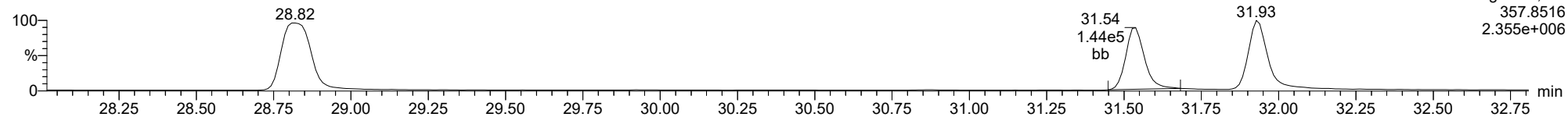
23030311



F2:Voltage SIR,EI+  
355.8546  
 $3.586 \times 10^6$

**12378-PeCDD**

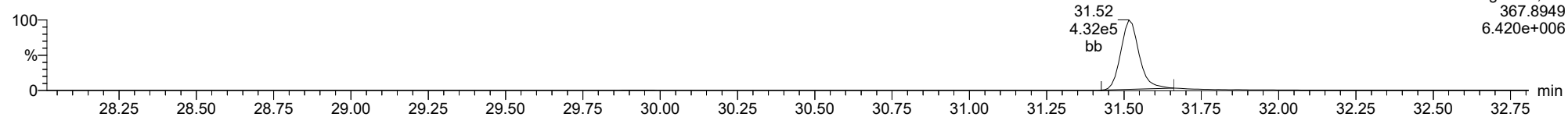
23030311



F2:Voltage SIR,EI+  
357.8516  
 $2.355 \times 10^6$

**13C-12378-PeCDD**

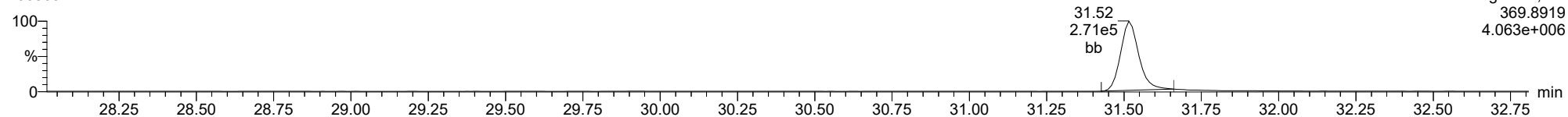
23030311



F2:Voltage SIR,EI+  
367.8949  
 $6.420 \times 10^6$

**13C-12378-PeCDD**

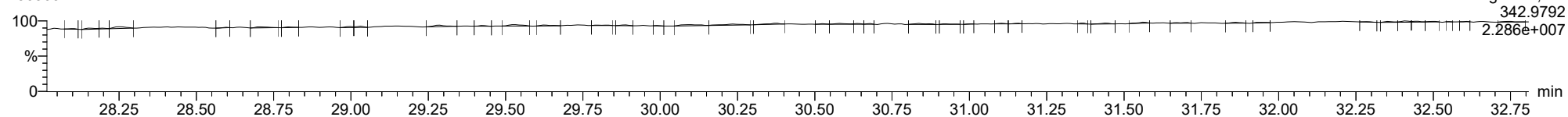
23030311



F2:Voltage SIR,EI+  
369.8919  
 $4.063 \times 10^6$

**FUNCTION2 PFK**

23030311

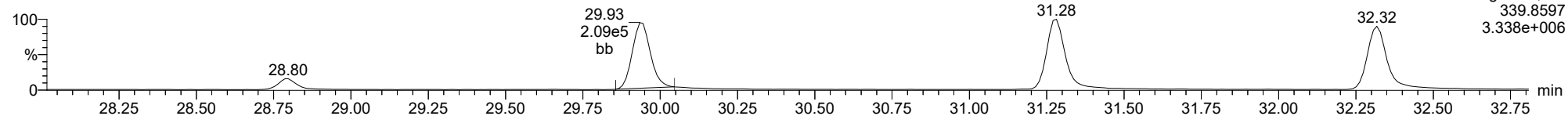


F2:Voltage SIR,EI+  
342.9792  
 $2.286 \times 10^7$

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

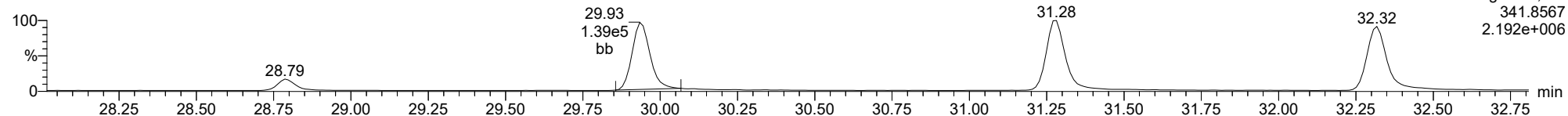
**12378-PeCDF**

23030311



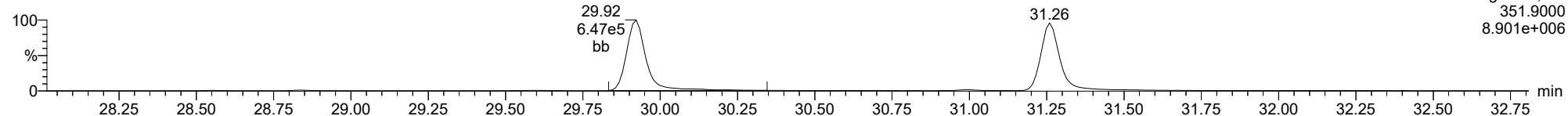
**12378-PeCDF**

23030311



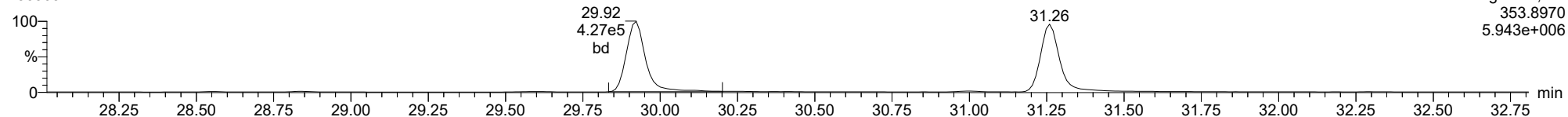
**13C-12378-PeCDF**

23030311



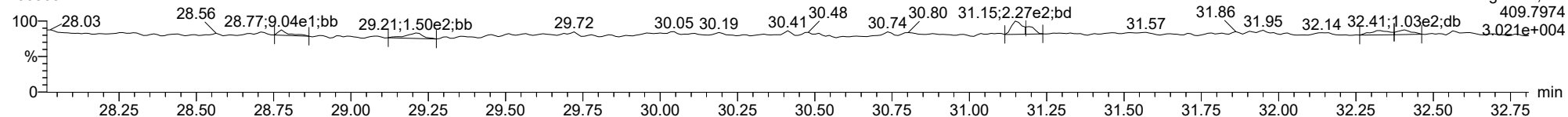
**13C-12378-PeCDF**

23030311



**FUNCTION2 HPCDPE**

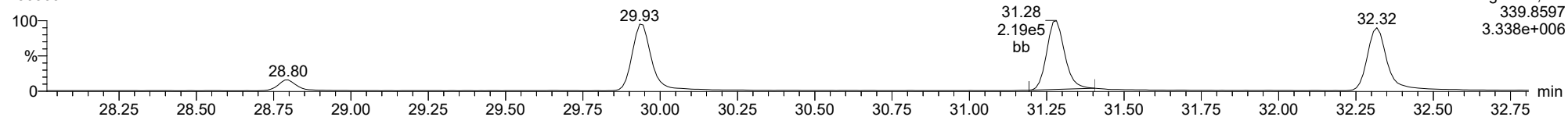
23030311



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

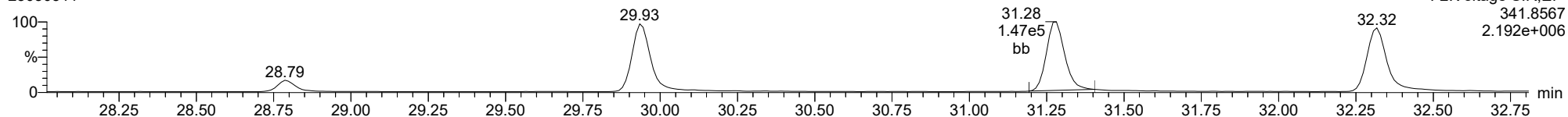
**23478-PeCDF**

23030311



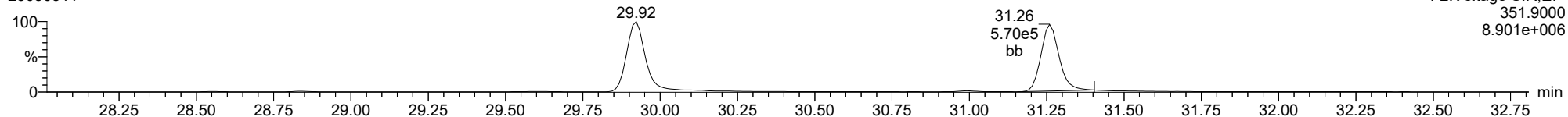
**23478-PeCDF**

23030311



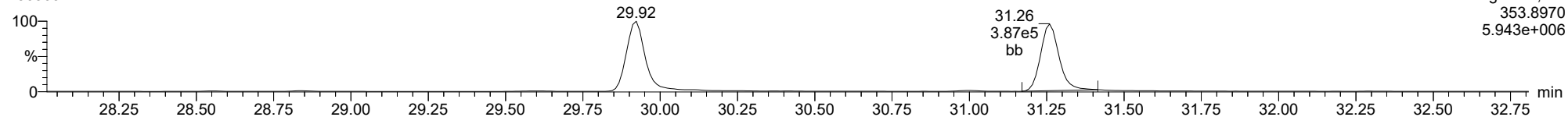
**13C-23478-PeCDF**

23030311



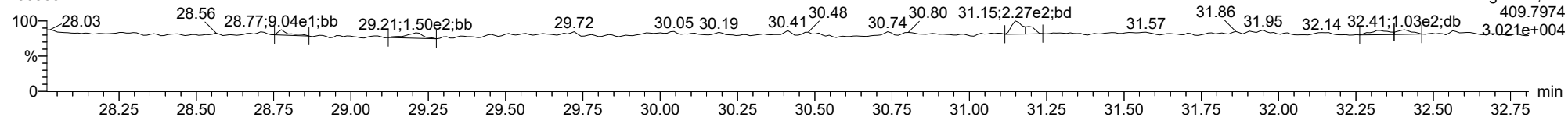
**13C-23478-PeCDF**

23030311



**FUNCTION2 HPCDPE**

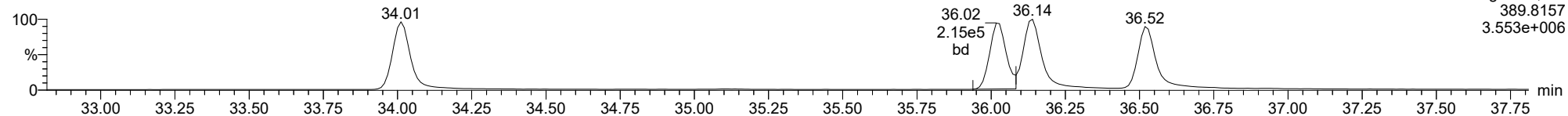
23030311



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

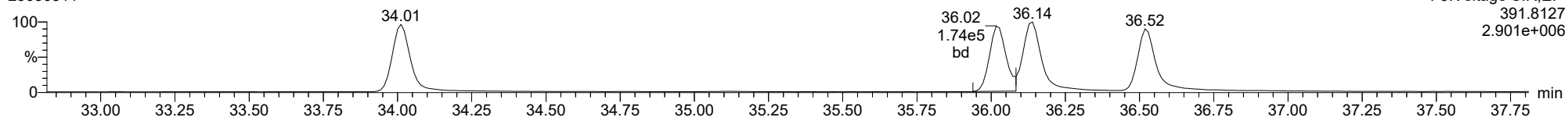
**123478-HxCDD**

23030311



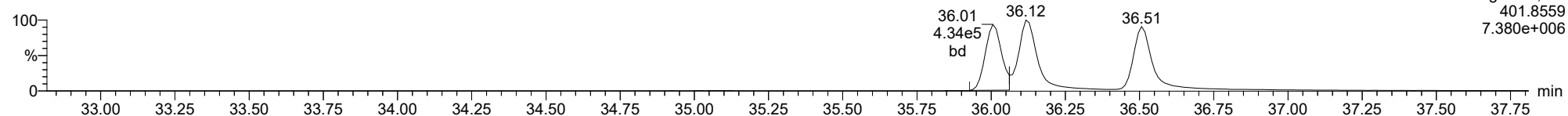
**123478-HxCDD**

23030311



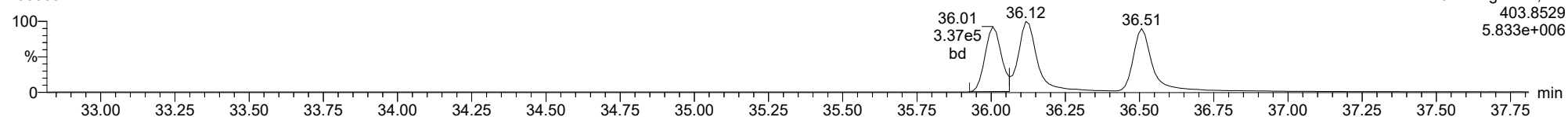
**13C-123478-HxCDD**

23030311



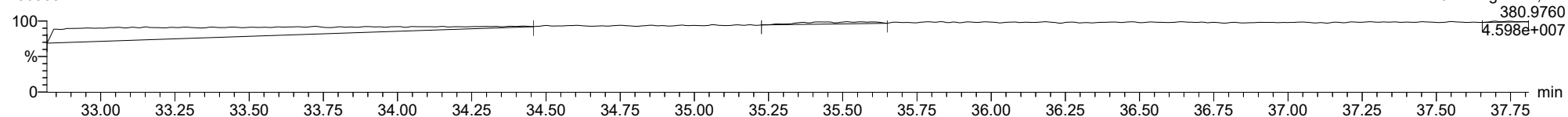
**13C-123478-HxCDD**

23030311



**FUNCTION3 PFK**

23030311

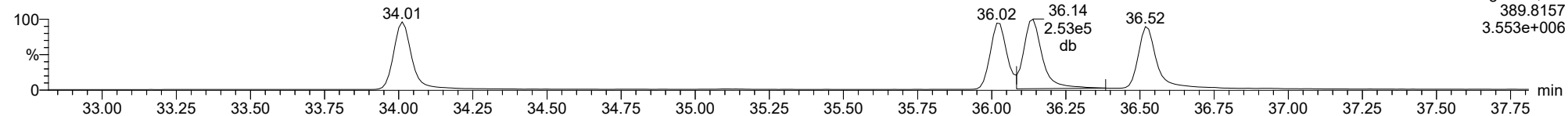




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**123678-HxCDD**

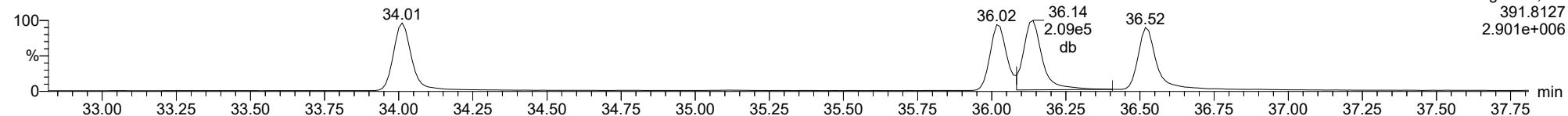
23030311



F3:Voltage SIR,EI+  
389.8157  
3.553e+006

**123678-HxCDD**

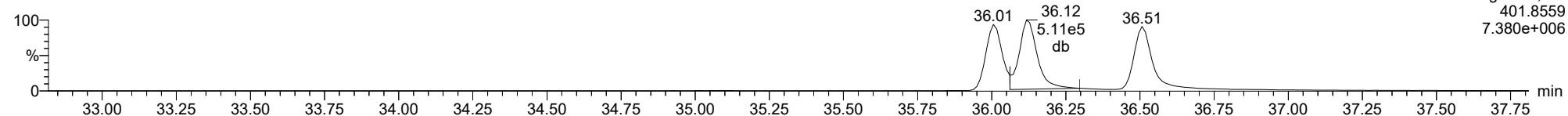
23030311



F3:Voltage SIR,EI+  
391.8127  
2.901e+006

**13C-123678-HxCDD**

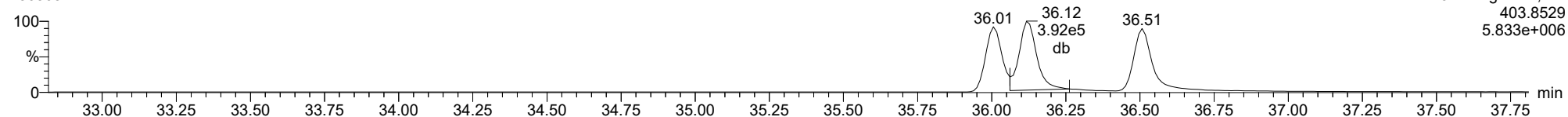
23030311



F3:Voltage SIR,EI+  
401.8559  
7.380e+006

**13C-123678-HxCDD**

23030311

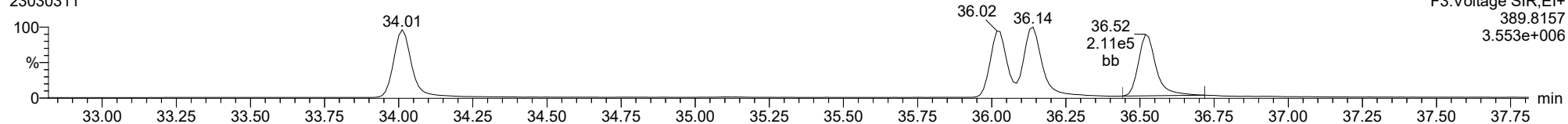


F3:Voltage SIR,EI+  
403.8529  
5.833e+006

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

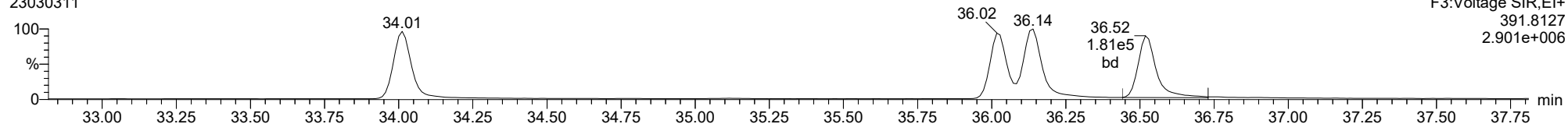
**123789-HxCDD**

23030311



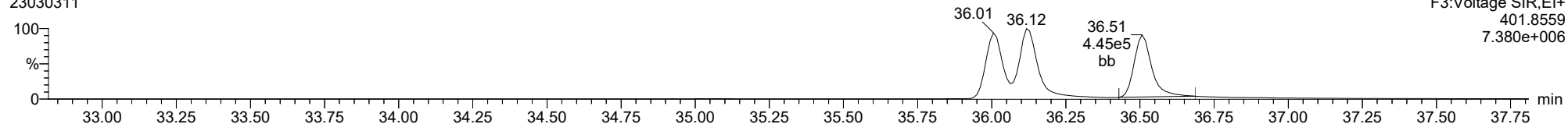
**123789-HxCDD**

23030311



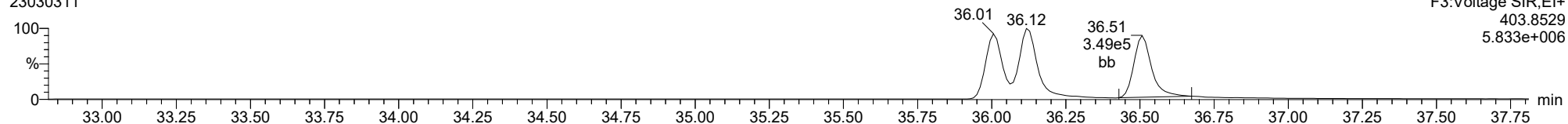
**13C-123789-HxCDD**

23030311



**13C-123789-HxCDD**

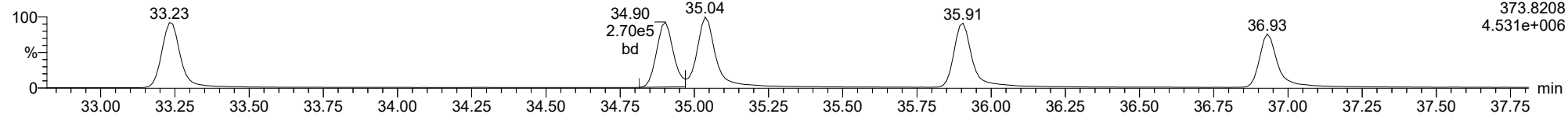
23030311



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

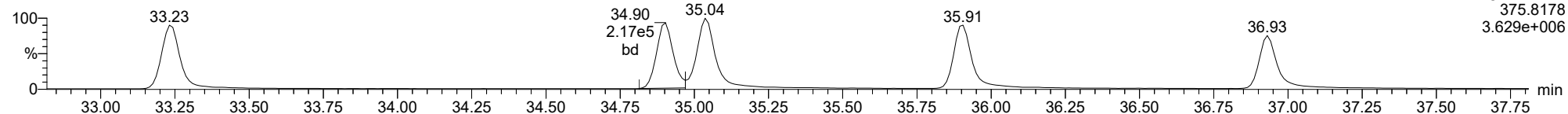
**123478-HxCDF**

23030311



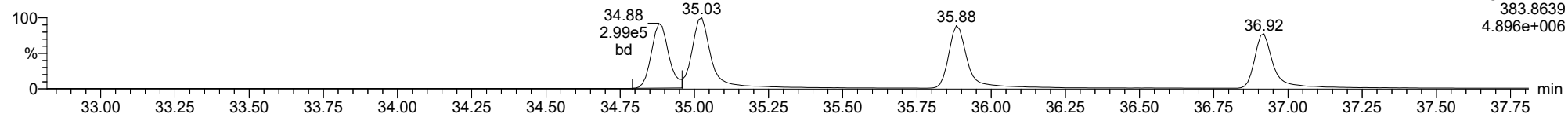
**123478-HxCDF**

23030311



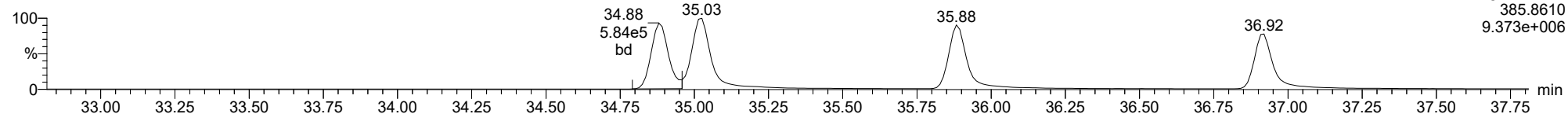
**13C-123478-HxCDF**

23030311



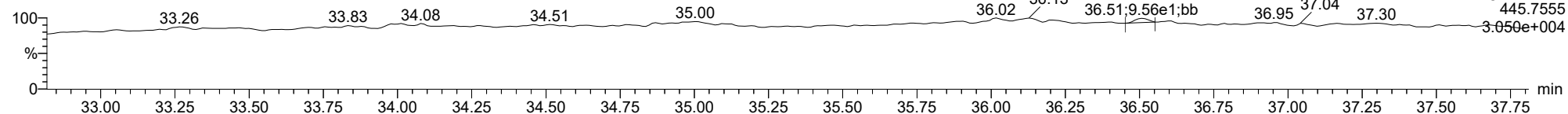
**13C-123478-HxCDF**

23030311



**FUNCTION3 OCDPE**

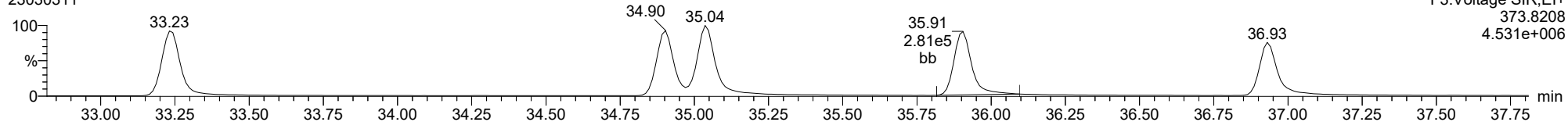
23030311



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**234678-HxCDF**

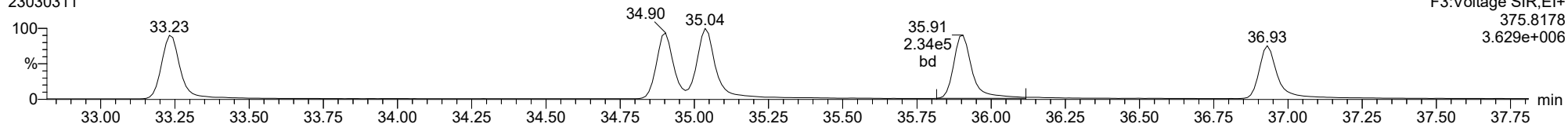
23030311



F3:Voltage SIR,EI+  
373.8208  
4.531e+006

**234678-HxCDF**

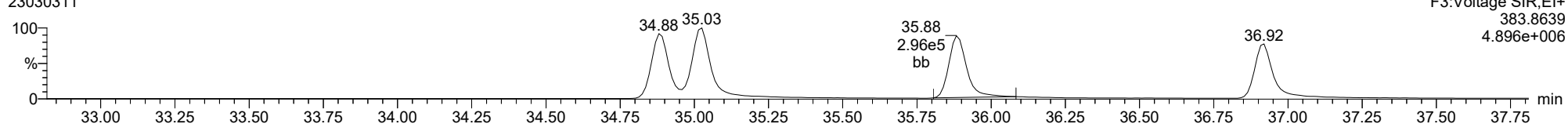
23030311



F3:Voltage SIR,EI+  
375.8178  
3.629e+006

**13C-234678-HxCDF**

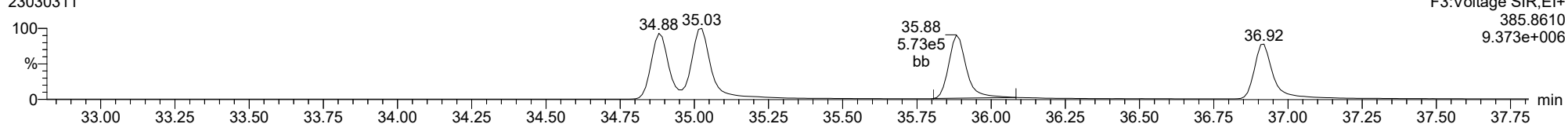
23030311



F3:Voltage SIR,EI+  
383.8639  
4.896e+006

**13C-234678-HxCDF**

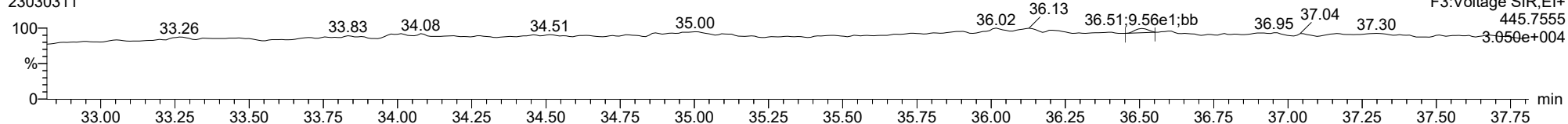
23030311



F3:Voltage SIR,EI+  
385.8610  
9.373e+006

**FUNCTION3 OCDPE**

23030311

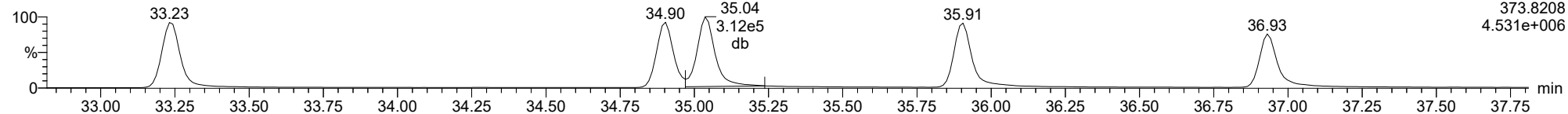


F3:Voltage SIR,EI+  
445.7555  
3.050e+004

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

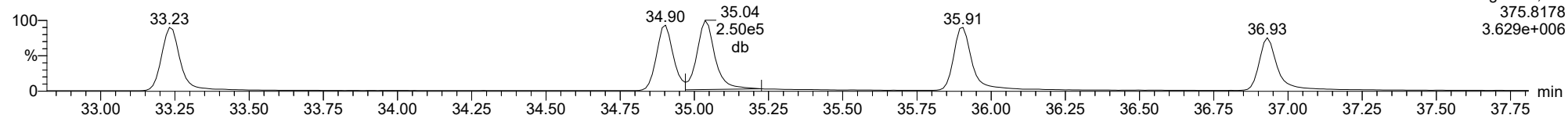
123678-HxCDF

23030311



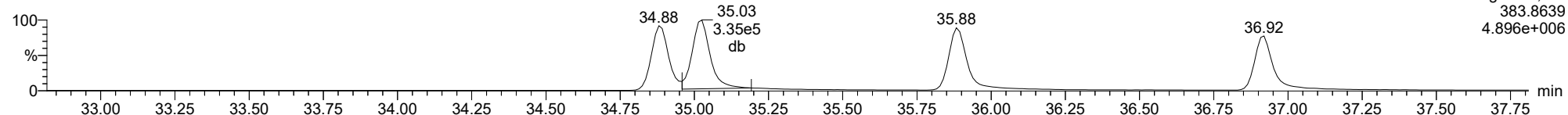
123678-HxCDF

23030311



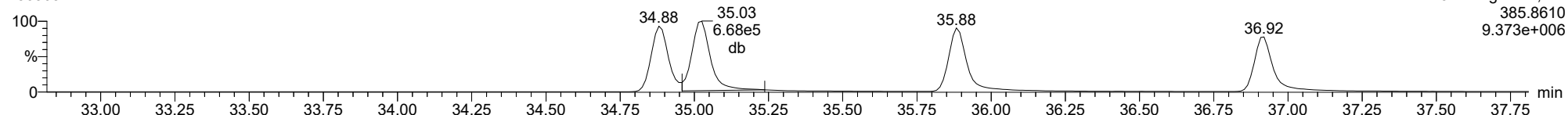
13C-123678-HxCDF

23030311



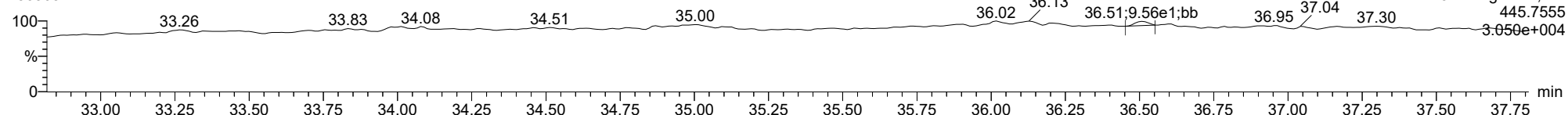
13C-123678-HxCDF

23030311



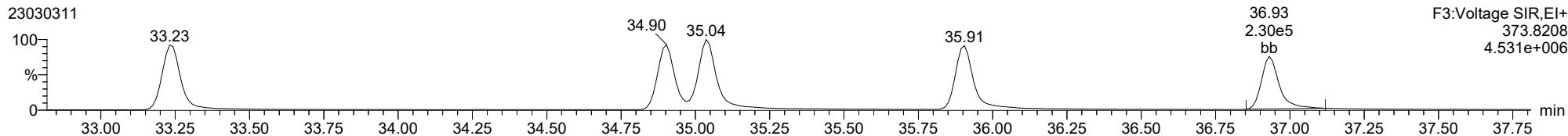
FUNCTION3 OCDPE

23030311

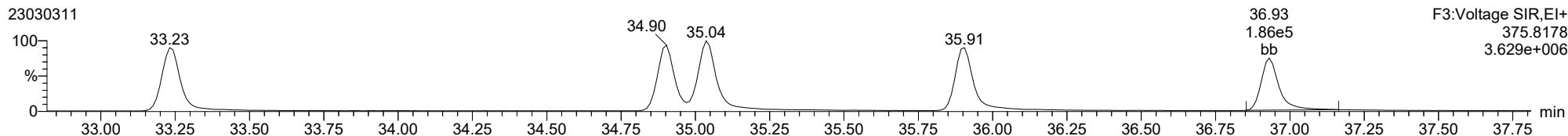


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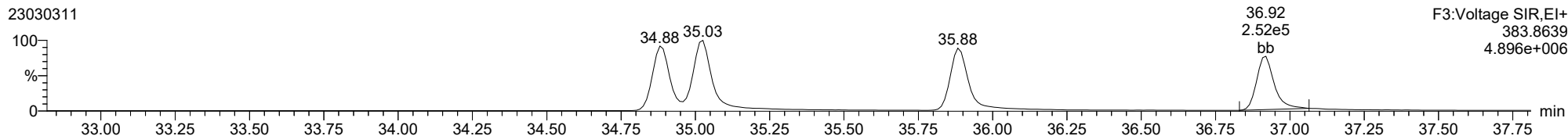
123789-HxCDF



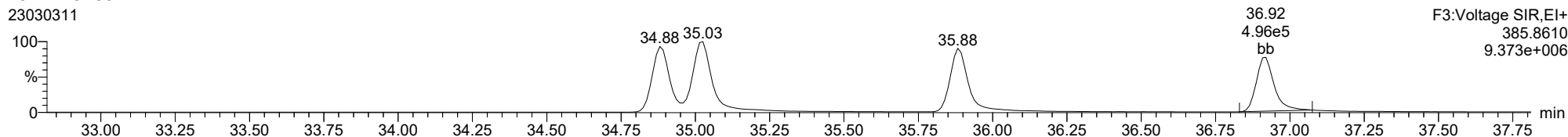
123789-HxCDF



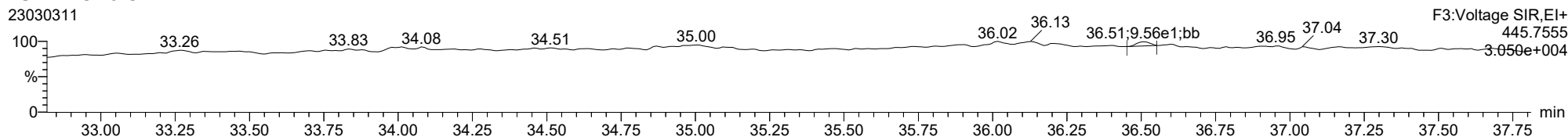
13C-123789-HxCDF



13C-123789-HxCDF



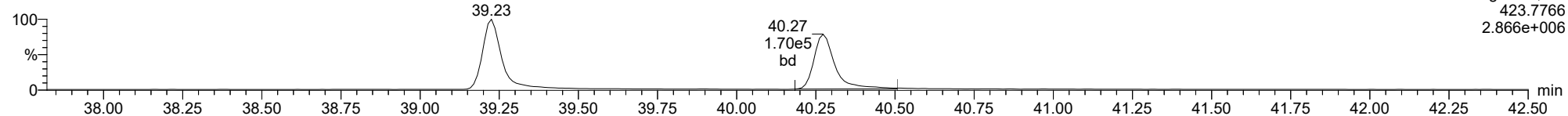
FUNCTION3 OCDPE



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDD**

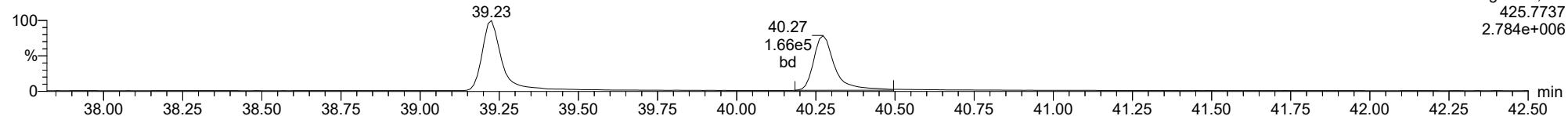
23030311



F4:Voltage SIR,EI+  
423.7766  
2.866e+006

**1234678-HpCDD**

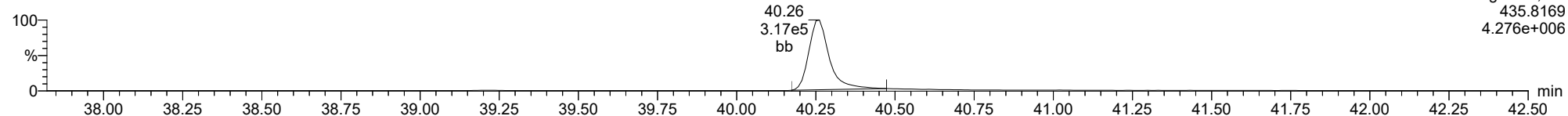
23030311



F4:Voltage SIR,EI+  
425.7737  
2.784e+006

**13C-1234678-HpCDD**

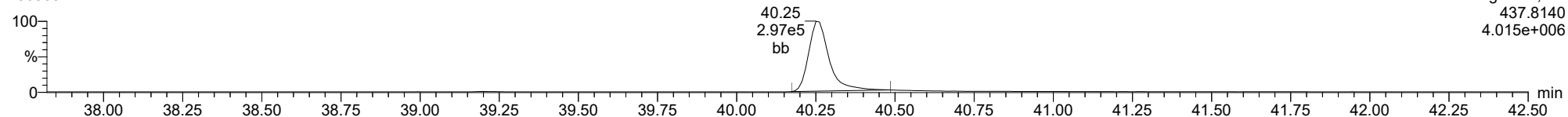
23030311



F4:Voltage SIR,EI+  
435.8169  
4.276e+006

**13C-1234678-HpCDD**

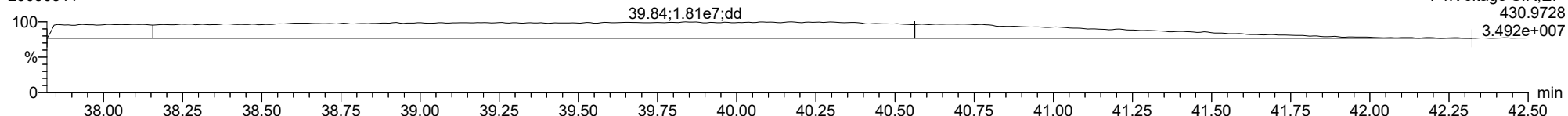
23030311



F4:Voltage SIR,EI+  
437.8140  
4.015e+006

**FUNCTION4 PFK**

23030311

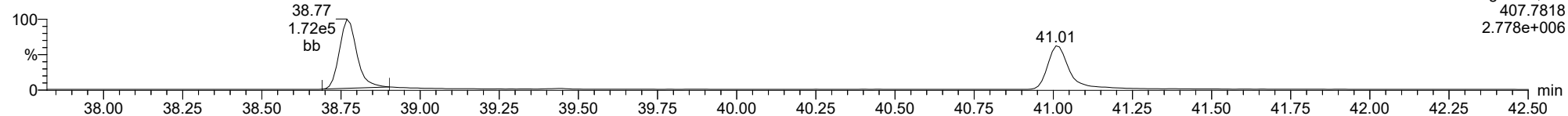


F4:Voltage SIR,EI+  
430.9728  
3.492e+007

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1234678-HpCDF

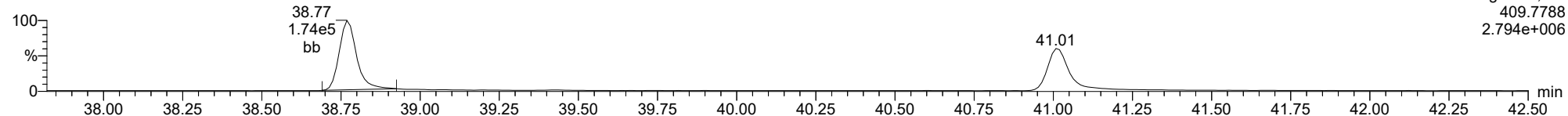
23030311



F4:Voltage SIR,El+  
407.7818  
2.778e+006

1234678-HpCDF

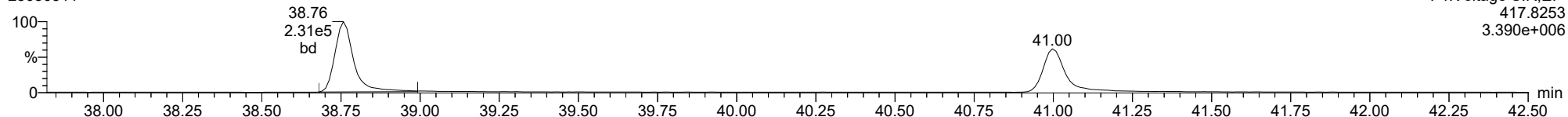
23030311



F4:Voltage SIR,El+  
409.7788  
2.794e+006

13C-1234678-HpCDF

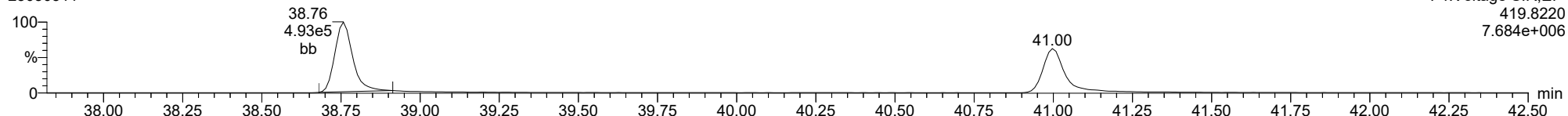
23030311



F4:Voltage SIR,El+  
417.8253  
3.390e+006

13C-1234678-HpCDF

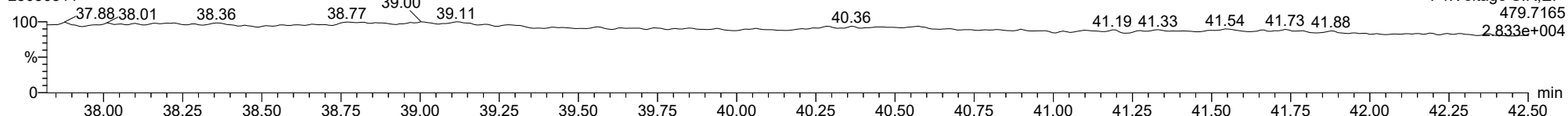
23030311



F4:Voltage SIR,El+  
419.8220  
7.684e+006

FUNCTION4 NCDPE

23030311



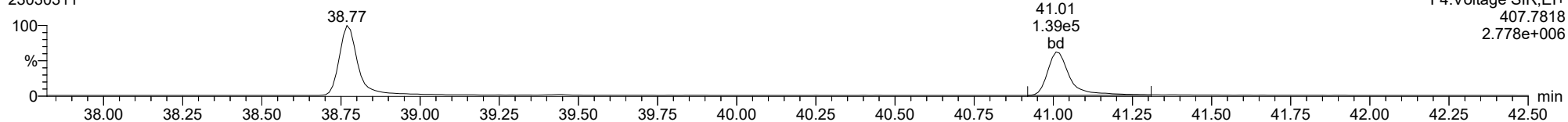
F4:Voltage SIR,El+  
479.7165  
2.833e+004



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1234789-HpCDF

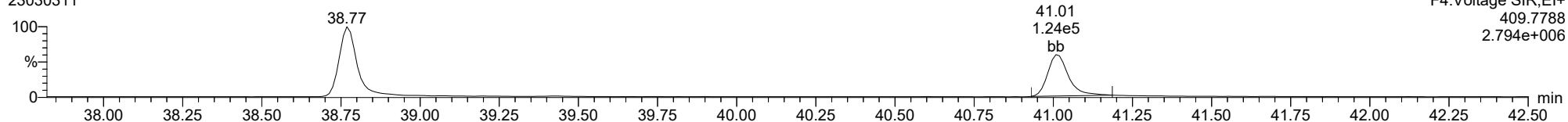
23030311



F4:Voltage SIR,El+  
409.7788  
2.778e+006

1234789-HpCDF

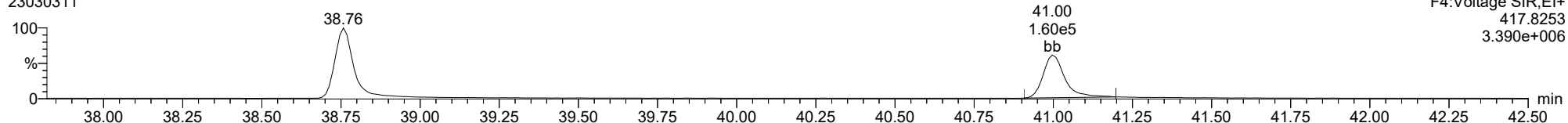
23030311



F4:Voltage SIR,El+  
409.7788  
2.794e+006

13C-1234789-HpCDF

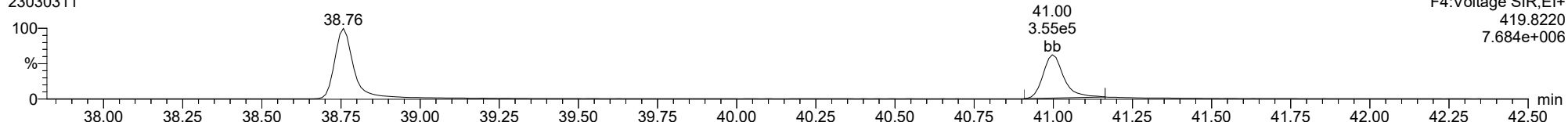
23030311



F4:Voltage SIR,El+  
417.8253  
3.390e+006

13C-1234789-HpCDF

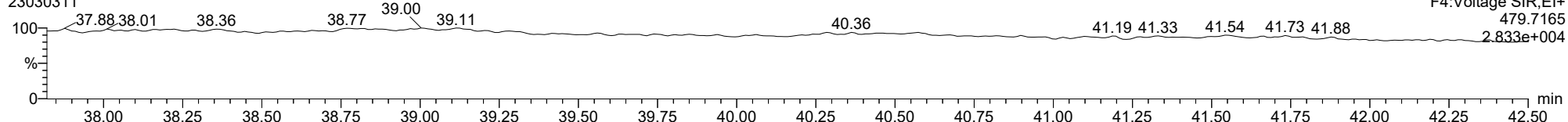
23030311



F4:Voltage SIR,El+  
419.8220  
7.684e+006

FUNCTION4 NCDPE

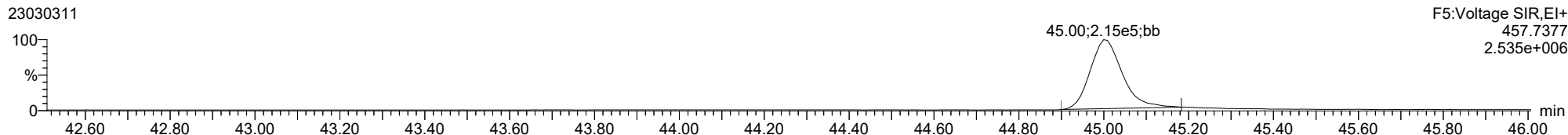
23030311



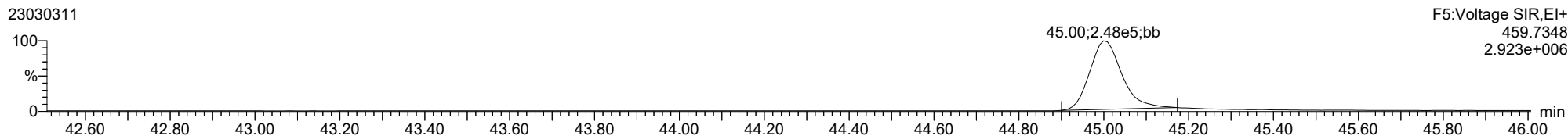
F4:Voltage SIR,El+  
479.7165  
2.833e+004

ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

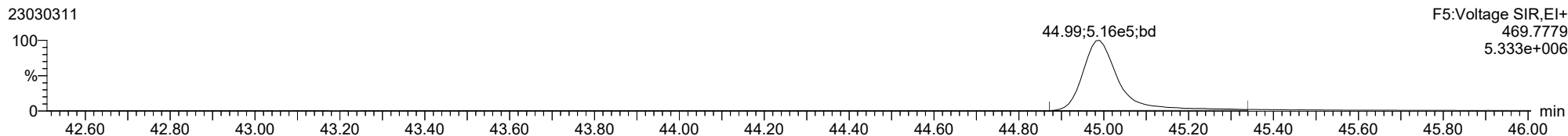
**OCDD**



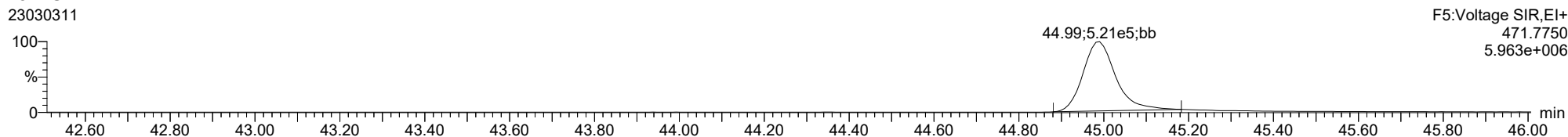
**OCDD**



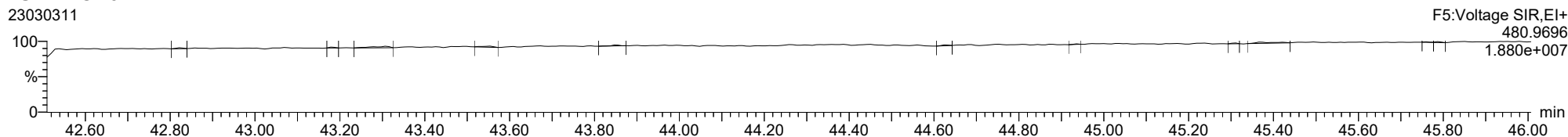
**13C-OCDD**



**13C-OCDD**



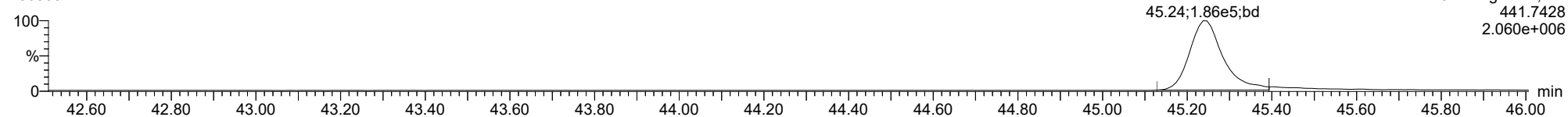
**FUNCTIONS PFK**



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

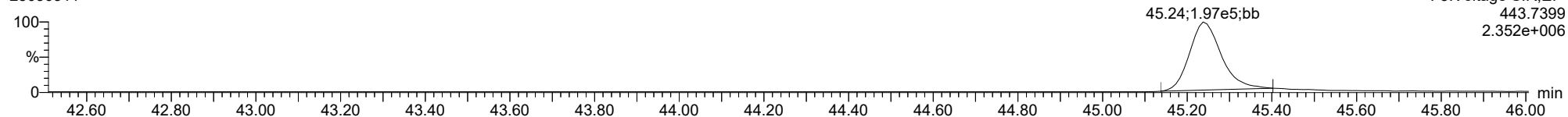
**OCDF**

23030311



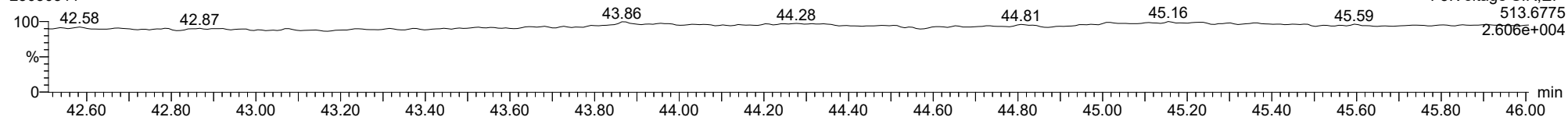
**OCDF**

23030311



**FUNCTION5 DCDPE**

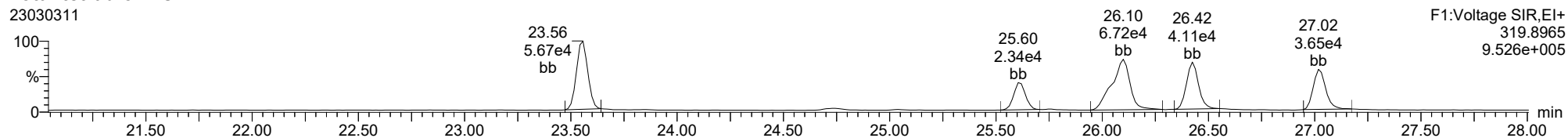
23030311



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

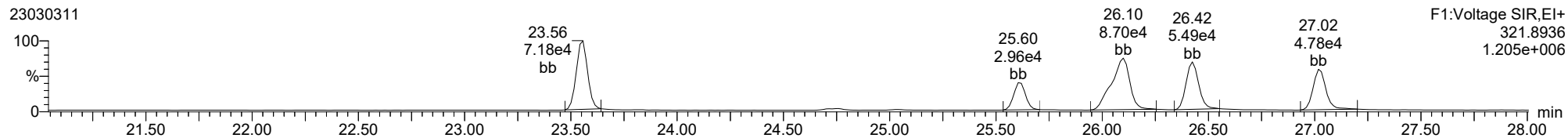
**Total-tetradioxins**

23030311



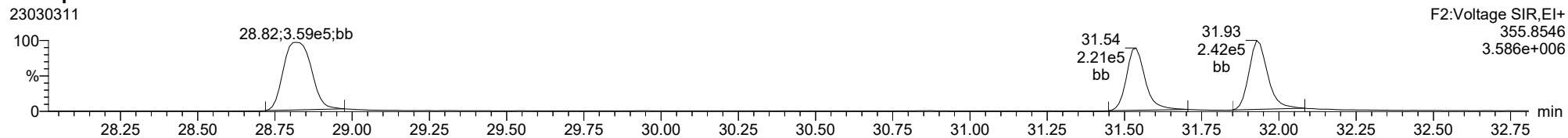
**Total-tetradioxins**

23030311



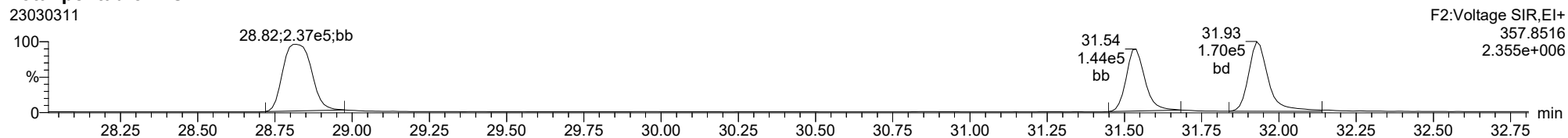
**Total-pentadioxins**

23030311



**Total-pentadioxins**

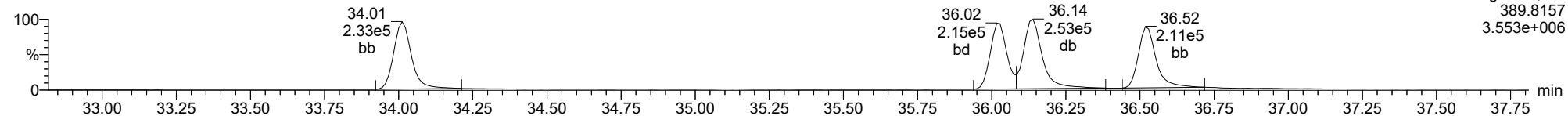
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ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

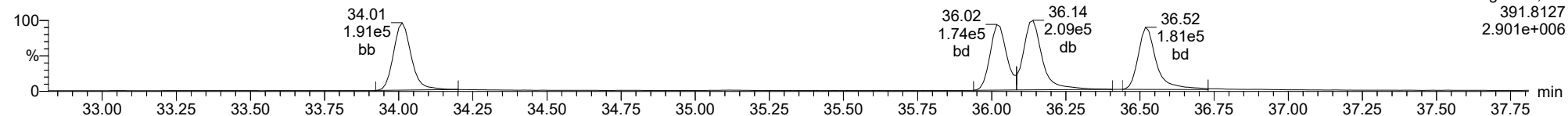
**Total-hexadioxins**

23030311



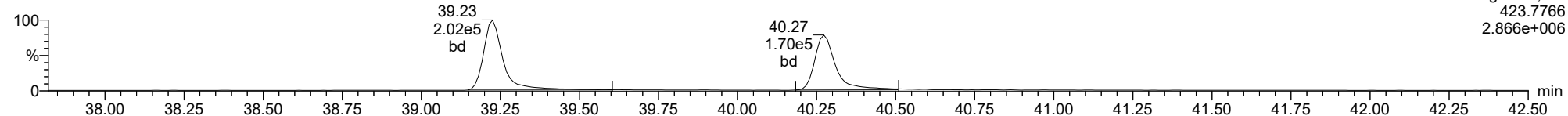
**Total-hexadioxins**

23030311



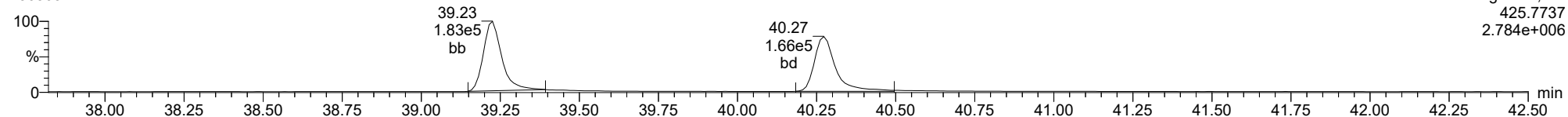
**Total-heptadioxins**

23030311



**Total-heptadioxins**

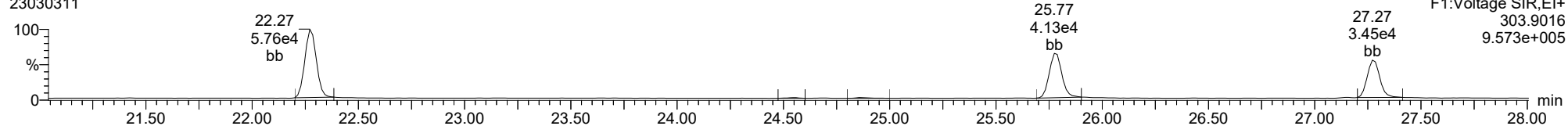
23030311



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

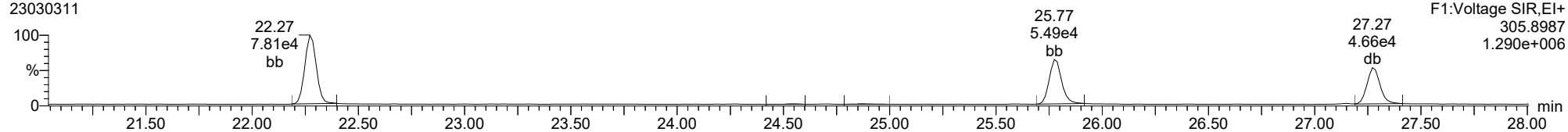
**Total-tetrafurans**

23030311



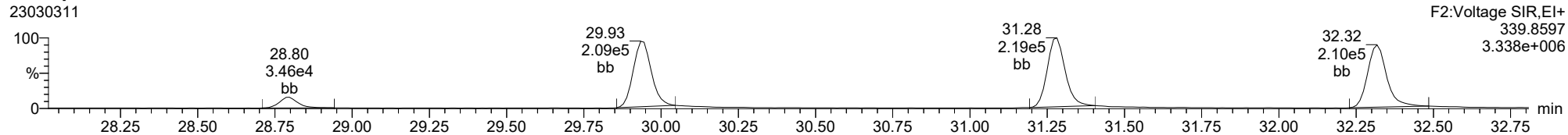
**Total-tetrafurans**

23030311



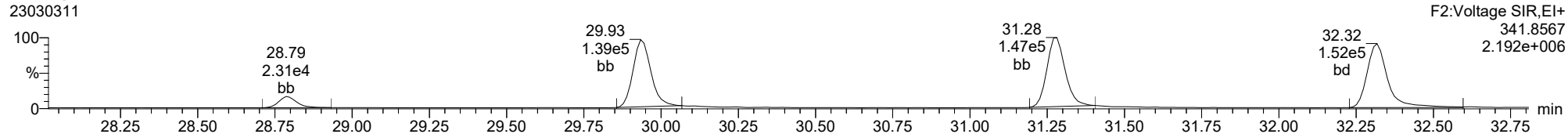
**Total-pentafurans**

23030311



**Total-pentafurans**

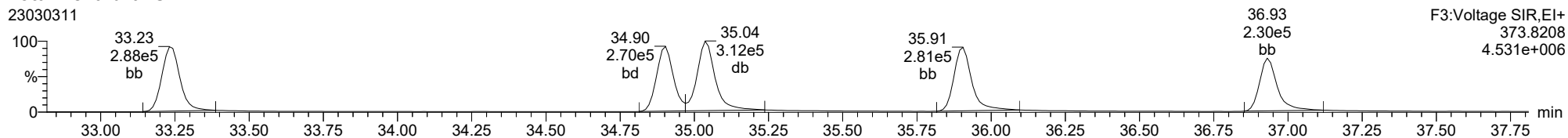
23030311



ID: CS3W2, Name: 23030311, Date: 03-Mar-2023, Time: 17:25:01, Conditions: AUTOSPEC01, User: pk

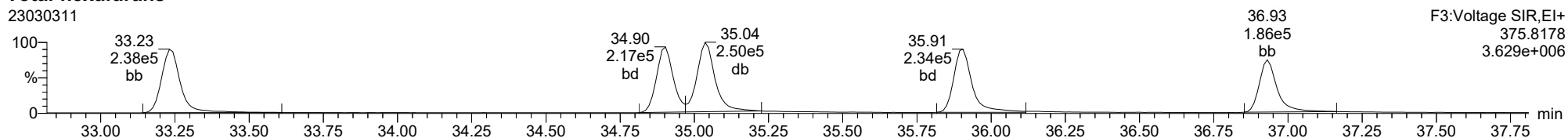
**Total-hexafurans**

23030311



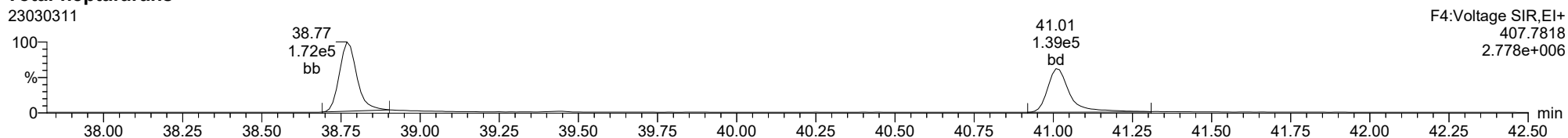
**Total-hexafurans**

23030311



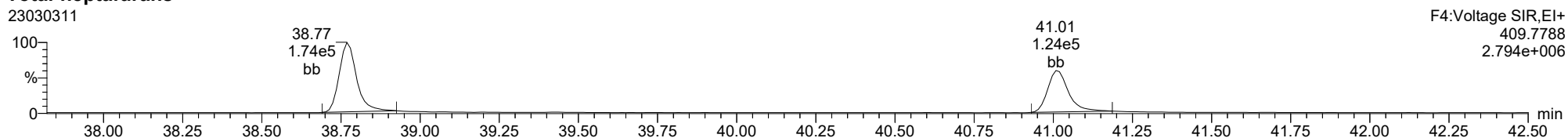
**Total-heptafurans**

23030311



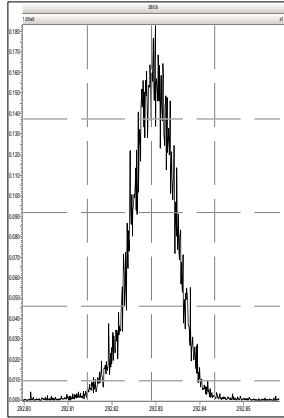
**Total-heptafurans**

23030311

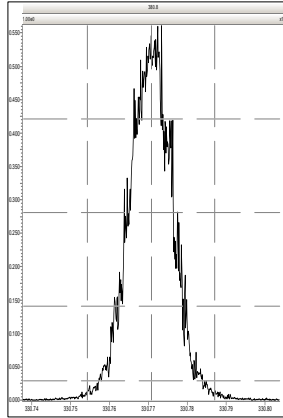


Printed: Friday, March 03, 2023 18:18:18 Pacific Standard Time

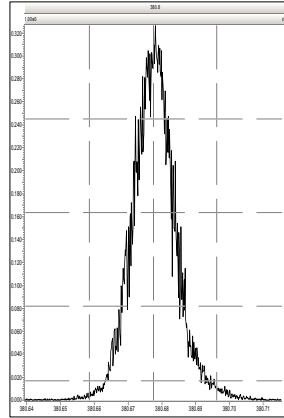
M 292.9824 R 13158



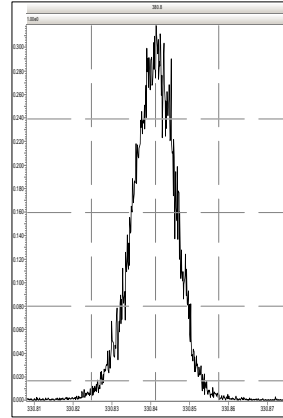
M 330.9792 R 12771



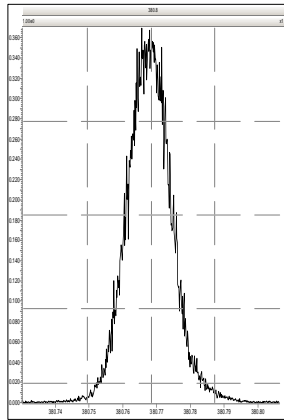
M 380.9760 R 12507



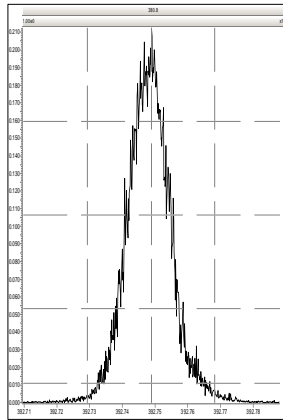
M 330.9792 R 13122



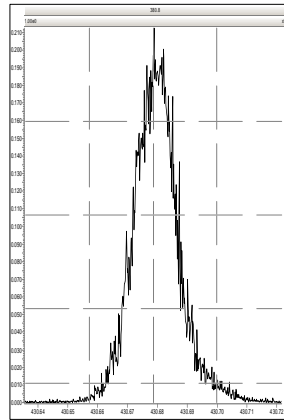
M 380.9760 R 12286



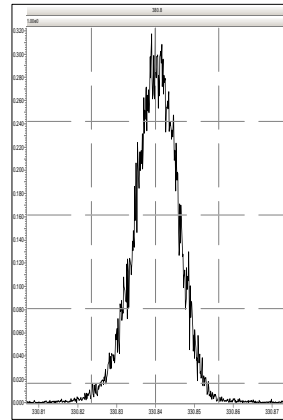
M 392.9760 R 11881



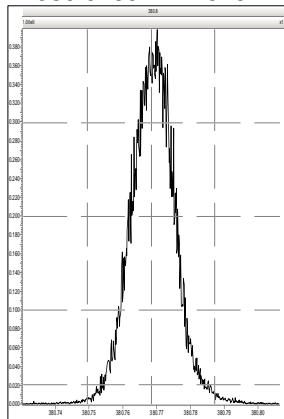
M 430.9728 R 12354



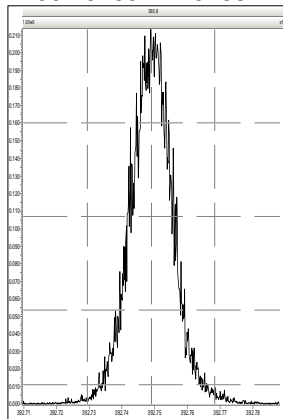
M 330.9792 R 12857



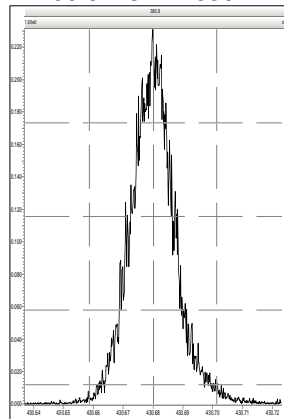
M 380.9760 R 12570



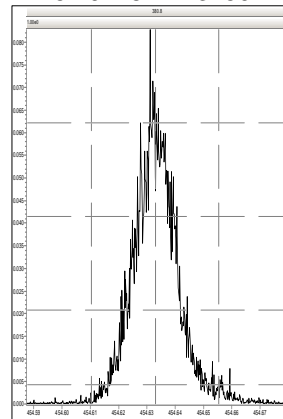
M 392.9760 R 13166



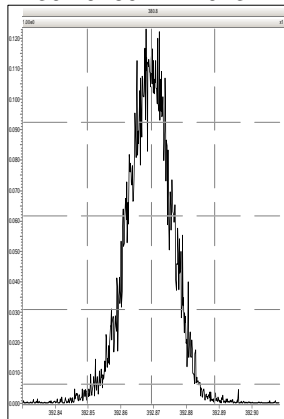
M 430.9728 R 13307



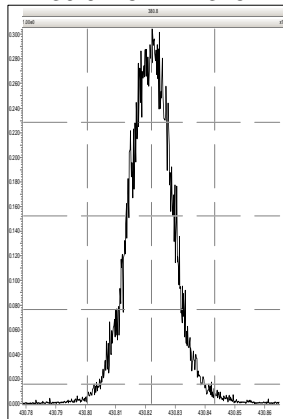
M 454.9728 R 13450



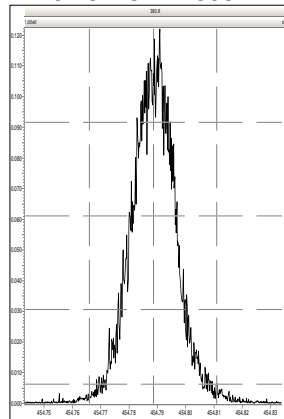
M 392.9760 R 12923



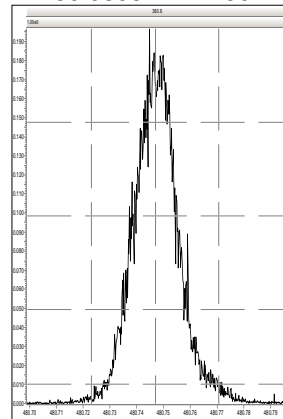
M 430.9728 R 12345



M 454.9728 R 13094



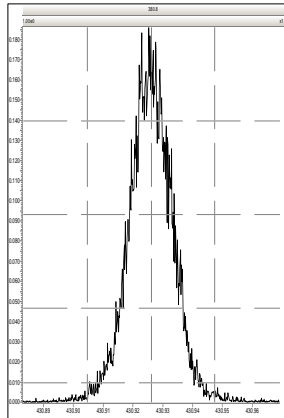
M 480.9696 R 12230



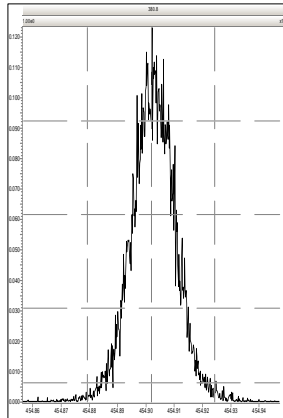


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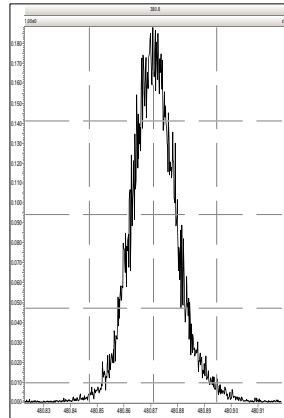
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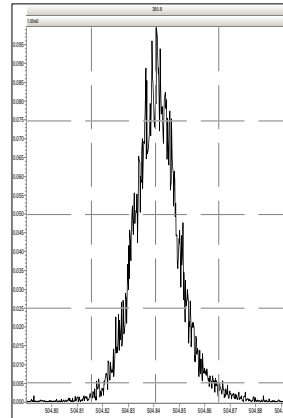
M 454.9728 R 13400



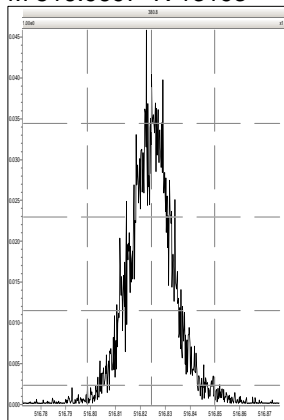
M 480.9696 R 11904



M 504.9696 R 12168



M 516.9697 R 13193

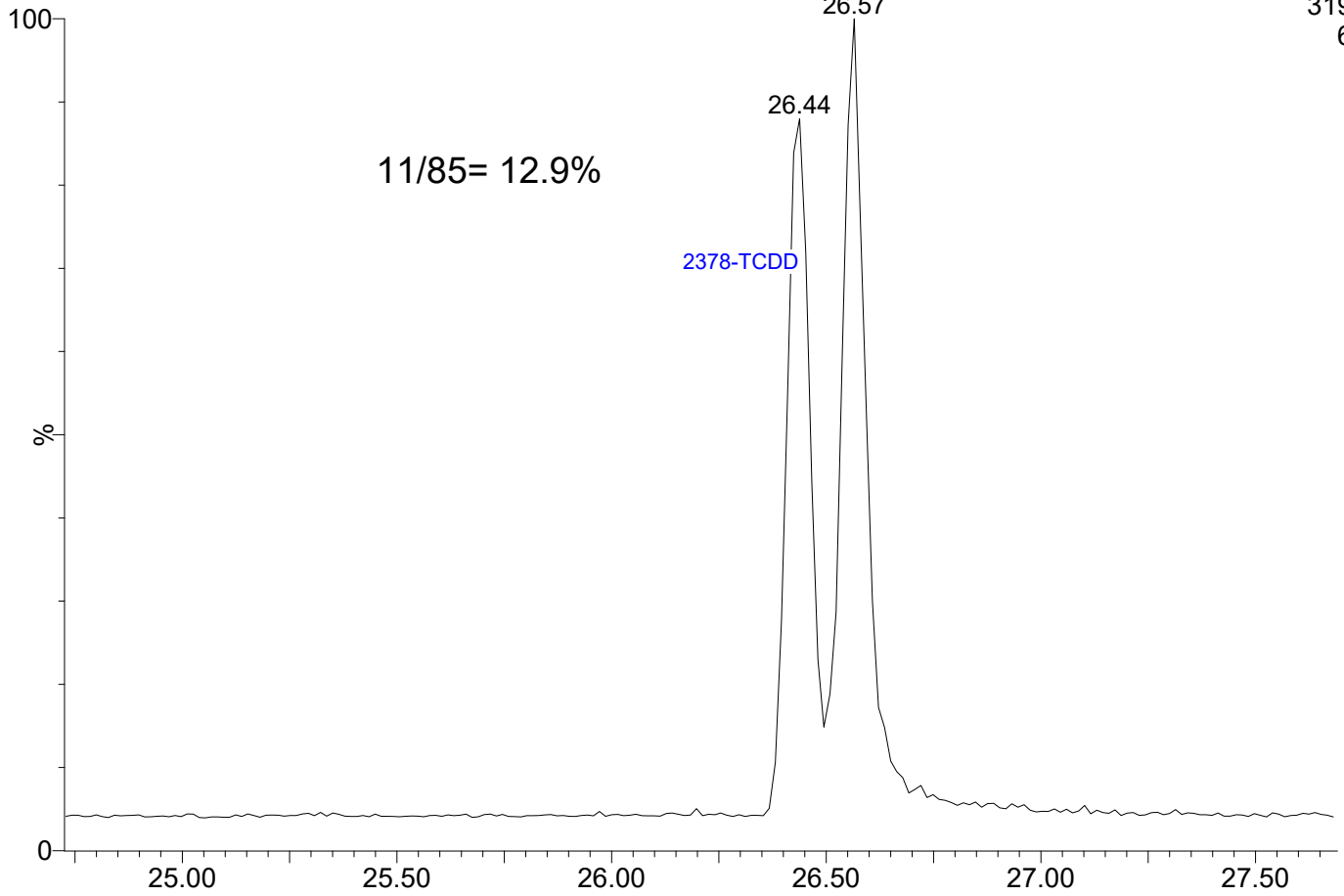


23030312

1: Voltage SIR 14 Channels EI+

319.8965

6.52e5

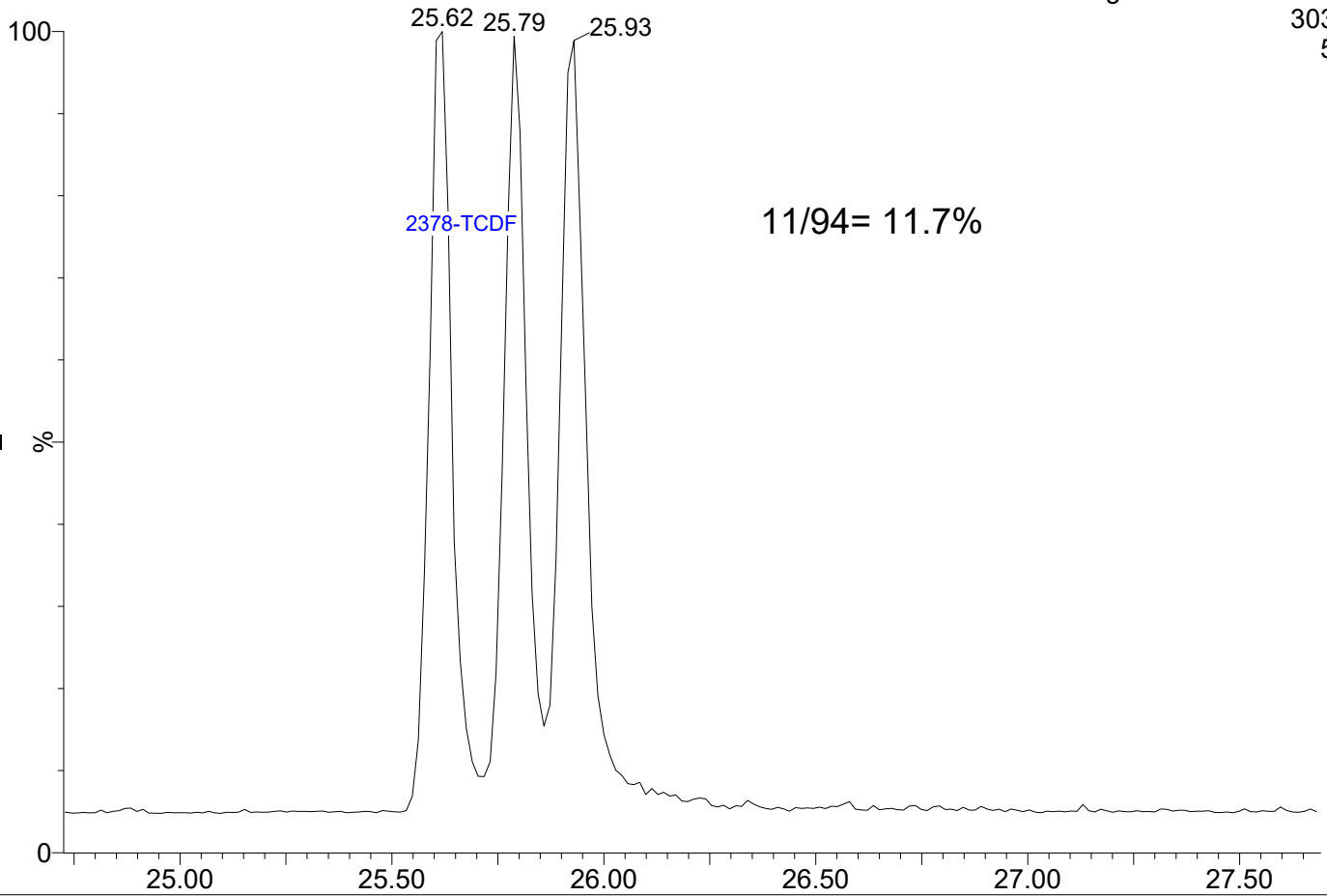


23030312

1: Voltage SIR 14 Channels EI+

303.9016

5.59e5





**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 1613B**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GC00015

**Laboratory ID:** SLC0045-SCV1

**Sequence:** SLC0045

**Sequence Name:** ICVCW

**Standard ID:** H008219

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
2,3,7,8-TCDF	10.000	9.84	-1.6	
2,3,7,8-TCDD	10.000	9.81	-1.9	
1,2,3,7,8-PeCDF	50.000	51.4	2.8	
2,3,4,7,8-PeCDF	50.000	49.0	-2.0	
1,2,3,7,8-PeCDD	50.000	48.5	-2.9	
1,2,3,4,7,8-HxCDF	50.000	48.2	-3.5	
1,2,3,6,7,8-HxCDF	50.000	48.0	-4.0	
2,3,4,6,7,8-HxCDF	50.000	50.2	0.4	
1,2,3,7,8,9-HxCDF	50.000	49.1	-1.8	
1,2,3,4,7,8-HxCDD	50.000	50.8	1.6	
1,2,3,6,7,8-HxCDD	50.000	50.2	0.3	
1,2,3,7,8,9-HxCDD	50.000	51.6	3.2	
1,2,3,4,6,7,8-HpCDF	50.000	51.8	3.7	
1,2,3,4,7,8,9-HpCDF	50.000	48.5	-3.1	
1,2,3,4,6,7,8-HpCDD	50.000	49.2	-1.6	
OCDF	100.00	104	3.5	
OCDD	100.00	99.4	-0.6	
13C12-2,3,7,8-TCDF	100.00	96.9	-3.1	
13C12-2,3,7,8-TCDD	100.00	96.6	-3.4	
13C12-1,2,3,7,8-PeCDF	100.00	73.2	-26.8	
13C12-2,3,4,7,8-PeCDF	100.00	75.9	-24.1	
13C12-1,2,3,7,8-PeCDD	100.00	76.6	-23.4	
13C12-1,2,3,4,7,8-HxCDF	100.00	93.0	-7.0	
13C12-1,2,3,6,7,8-HxCDF	100.00	98.0	-2.0	
13C12-2,3,4,6,7,8-HxCDF	100.00	93.4	-6.6	
13C12-1,2,3,7,8,9-HxCDF	100.00	97.9	-2.1	
13C12-1,2,3,4,7,8-HxCDD	100.00	95.9	-4.1	
13C12-1,2,3,6,7,8-HxCDD	100.00	97.7	-2.3	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	102	2.1	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	104	4.0	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	102	2.5	
13C12-OCDD	200.00	162	-19.2	
37Cl4-2,3,7,8-TCDD	10.000	8.71	-12.9	



**SECOND-SOURCE CALIBRATION VERIFICATION**  
**EPA 1613B**

**Laboratory:** Analytical Resources, LLC

**Client:** Anchor QEA, LLC

**Calibration:** GC00015

**Sequence:** SLC0045

**SDG:** 23D0063

**Project:** AOC5 MR Phase 1

**Laboratory ID:** SLC0045-SCV1

**Sequence Name:** ICVCW

**Standard ID:** H008219

\* Indicates values outside of QC limits



**SECOND-SOURCE  
CALIBRATION VERIFICATION**

**EPA 1613B**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GC00015

**Laboratory ID:** SLC0045-SCV1

**Sequence:** SLC0045

**Standard ID:** H008219

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
OCDF	100.00	104	3.5	
OCDD	100.00	99.4	-0.6	
13C12-2,3,7,8-TCDF	100.00	96.9	-3.1	
13C12-2,3,7,8-TCDD	100.00	96.6	-3.4	
13C12-1,2,3,7,8-PeCDF	100.00	73.2	-26.8	
13C12-2,3,4,7,8-PeCDF	100.00	75.9	-24.1	
13C12-1,2,3,7,8-PeCDD	100.00	76.6	-23.4	
13C12-1,2,3,4,7,8-HxCDF	100.00	93.0	-7.0	
13C12-1,2,3,6,7,8-HxCDF	100.00	98.0	-2.0	
13C12-2,3,4,6,7,8-HxCDF	100.00	93.4	-6.6	
13C12-1,2,3,7,8,9-HxCDF	100.00	97.9	-2.1	
13C12-1,2,3,4,7,8-HxCDD	100.00	95.9	-4.1	
13C12-1,2,3,6,7,8-HxCDD	100.00	97.7	-2.3	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	102	2.1	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	104	4.0	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	102	2.5	
13C12-OCDD	200.00	162	-19.2	
37Cl4-2,3,7,8-TCDD	10.000	8.71	-12.9	

\* Values outside of QC limits



INITIAL CALIBRATION CHECK  
EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor OEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23030302

Calibration Date: 03/03/2023

Sequence: SLC0045

Injection Date: 03/03/23

Lab Sample ID: SLC0045-ICV1

Injection Time: 09:51

Sequence Name: CS3W1

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2,3,7,8-TCDF	A	10.000	9.55	0.7015272	0.6699659		-4.5	+/-16
2,3,7,8-TCDD	A	10.000	9.45	1.1486620	1.0855020		-5.5	+/-22
1,2,3,7,8-PeCDF	A	50.000	49.6	0.6792300	0.6743560		-0.7	+/-18
2,3,4,7,8-PeCDF	A	50.000	47.5	0.7861704	0.7472986		-4.9	+/-18
1,2,3,7,8-PeCDD	A	50.000	49.7	1.0218450	1.0147700		-0.7	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	47.1	1.1660380	1.0988190		-5.8	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	49.6	1.0907410	1.0813380		-0.9	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	49.3	1.1396990	1.1246750		-1.3	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	47.0	1.1370930	1.0679460		-6.1	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	50.1	0.9955689	0.9966266		0.1	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	49.6	1.0009380	0.9938861		-0.7	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	54.2	0.9071139	0.9838286		8.5	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	47.5	1.0029930	0.9526502		-5.0	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	50.2	0.9531152	0.9573187		0.4	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	47.6	1.0390130	0.9895371		-4.8	+/-14
OCDF	A	100.00	88.6	0.7778078	0.6890651		-11.4	+/-37
OCDD	A	100.00	98.4	0.9199537	0.9055309		-1.6	+/-21
13C12-2,3,7,8-TCDF	A	100.00	94.0	1.6201960	1.5232274		-6.0	+/-29
13C12-2,3,7,8-TCDD	A	100.00	102	1.1524090	1.1727116		1.8	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	92.2	1.2404520	1.1438587		-7.8	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	87.6	1.1177860	0.9791895		-12.4	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	84.3	0.8288129	0.6985475		-15.7	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	84.0	1.1683050	0.9815313		-16.0	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	74.6	1.3864660	1.0348865		-25.4	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	88.7	1.1292560	1.0010969		-11.3	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	99.9	0.9317541	0.9305560		-0.1	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	93.5	0.9950393	0.9299453		-6.5	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	86.9	1.1566890	1.0052205		-13.1	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	95.3	0.8952017	0.8530837		-4.7	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	98.7	0.7697516	0.7594900		-1.3	+/-23

\* Values outside of QC limits



**INITIAL CALIBRATION CHECK**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>AUTOSPEC01</u>	Calibration:	<u>GC00015</u>
Lab File ID:	<u>23030302</u>	Calibration Date:	<u>03/03/2023</u>
Sequence:	<u>SLC0045</u>	Injection Date:	<u>03/03/23</u>
Lab Sample ID:	<u>SLC0045-ICV1</u>	Injection Time:	<u>09:51</u>
Sequence Name:	<u>CS3W1</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	105	0.8401226	0.8828452		5.1	+/-28
13C12-OCDD	A	200.00	214	0.7674714	0.8220320		7.1	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.05	1.2878040	1.1649542		-9.5	

\* Values outside of QC limits



INITIAL CALIBRATION CHECK  
EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23050922A

Calibration Date: 03/03/2023

Sequence: SLE0060

Injection Date: 05/10/23

Lab Sample ID: SLE0060-ICV1

Injection Time: 06:11

Sequence Name: CS3K6

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2,3,7,8-TCDF	A	10.000	11.0	0.7015272	0.7737050		10.3	+/-16
2,3,7,8-TCDD	A	10.000	9.04	1.1486620	1.0384220		-9.6	+/-22
1,2,3,7,8-PeCDF	A	50.000	54.5	0.6792300	0.7407199		9.1	+/-18
2,3,4,7,8-PeCDF	A	50.000	52.1	0.7861704	0.8186656		4.1	+/-18
1,2,3,7,8-PeCDD	A	50.000	51.6	1.0218450	1.0554720		3.3	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	47.0	1.1660380	1.0970340		-5.9	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	48.8	1.0907410	1.0651550		-2.3	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	47.5	1.1396990	1.0829980		-5.0	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	50.6	1.1370930	1.1514780		1.3	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	48.1	0.9955689	0.9576144		-3.8	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	46.9	1.0009380	0.9398602		-6.1	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	51.9	0.9071139	0.9422093		3.9	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	52.8	1.0029930	1.0587960		5.6	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	53.7	0.9531152	1.0231130		7.3	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	54.8	1.0390130	1.1390650		9.6	+/-14
OCDF	A	100.00	101	0.7778078	0.7851392		0.9	+/-37
OCDD	A	100.00	96.9	0.9199537	0.8914075		-3.1	+/-21
13C12-2,3,7,8-TCDF	A	100.00	101	1.6201960	1.6313265		0.7	+/-29
13C12-2,3,7,8-TCDD	A	100.00	105	1.1524090	1.2065254		4.7	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	113	1.2404520	1.3965750		12.6	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	116	1.1177860	1.2971413		16.0	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	106	0.8288129	0.8792768		6.1	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	87.1	1.1683050	1.0175557		-12.9	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	90.1	1.3864660	1.2497577		-9.9	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	96.1	1.1292560	1.0852654		-3.9	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	95.0	0.9317541	0.8847847		-5.0	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	91.6	0.9950393	0.9117499		-8.4	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	93.1	1.1566890	1.0764412		-6.9	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	104	0.8952017	0.9336111		4.3	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	110	0.7697516	0.8442228		9.7	+/-23

\* Values outside of QC limits





**INITIAL CALIBRATION CHECK**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>AUTOSPEC01</u>	Calibration:	<u>GC00015</u>
Lab File ID:	<u>23050922A</u>	Calibration Date:	<u>03/03/2023</u>
Sequence:	<u>SLE0060</u>	Injection Date:	<u>05/10/23</u>
Lab Sample ID:	<u>SLE0060-ICV1</u>	Injection Time:	<u>06:11</u>
Sequence Name:	<u>CS3K6</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	92.8	0.8401226	0.7797636		-7.2	+/-28
13C12-OCDD	A	200.00	229	0.7674714	0.8787232		14.5	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	8.79	1.2878040	1.1320644		-12.1	

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:19:18 Pacific Daylight Time

**Method: T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56**  
**Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27**

**ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk**

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.661	1.000	2.833e4	3.785e4	0.702	0.748	0.770	978	1317	4.21e5	5.57e5	430.5	422.9	NO	bb	bb	11.029
12378-PeCDF	29.822	1.001	1.642e5	1.070e5	0.679	1.534	1.550	2681	2521	2.44e6	1.56e6	910.1	618.1	NO	bb	bb	54.526
23478-PeCDF	31.159	1.001	1.683e5	1.101e5	0.786	1.528	1.550	2681	2521	2.52e6	1.63e6	938.5	646.5	NO	bb	bb	52.067
123478-HxCDF	34.780	1.001	1.628e5	1.320e5	1.166	1.233	1.240	2940	2313	2.46e6	1.99e6	838.2	860.1	NO	bd	bd	47.041
234678-HxCDF	35.783	1.001	1.741e5	1.362e5	1.140	1.278	1.240	2940	2313	2.46e6	1.97e6	837.2	851.5	NO	bd	bb	47.512
123678-HxCDF	34.914	1.000	1.875e5	1.640e5	1.091	1.144	1.240	2940	2313	2.59e6	2.08e6	882.1	899.6	NO	db	db	48.827
123789-HxCDF	36.807	1.000	1.434e5	1.256e5	1.137	1.142	1.240	2940	2313	1.98e6	1.65e6	675.2	715.0	NO	bb	bb	50.633
1234678-HpCDF	38.646	1.000	1.370e5	1.240e5	1.003	1.105	1.050	2331	2337	1.93e6	1.88e6	827.4	805.7	NO	bd	bb	52.782
1234789-HpCDF	40.874	1.000	1.144e5	1.137e5	0.953	1.007	1.050	2331	2337	1.50e6	1.46e6	645.6	623.5	NO	bd	bb	53.672
OCDF	45.062	1.006	1.713e5	1.931e5	0.778	0.887	0.890	2255	2246	2.02e6	2.28e6	895.2	1014.3	NO	bb	bb	100.943
2378-TCDD	26.311	1.001	2.905e4	3.664e4	1.149	0.793	0.770	1372	1124	4.39e5	5.33e5	319.7	474.7	NO	bb	bb	9.040
12378-PeCDD	31.415	1.001	1.452e5	9.805e4	1.022	1.481	1.550	1821	1797	2.13e6	1.34e6	1168.5	747.6	NO	bb	bb	51.645
123478-HxCDD	35.905	1.001	1.271e5	1.034e5	0.996	1.229	1.240	2153	2064	2.03e6	1.62e6	942.4	786.5	NO	bd	bd	48.094
123678-HxCDD	36.017	1.000	1.464e5	1.208e5	1.001	1.212	1.240	2153	2064	2.16e6	1.79e6	1005.2	865.5	NO	db	db	46.949
123789-HxCDD	36.407	1.011	1.411e5	1.062e5	0.907	1.328	1.240	2153	2064	1.98e6	1.58e6	919.0	763.1	NO	bd	bb	51.934
1234678-HpCDD	40.139	1.000	1.214e5	1.131e5	1.039	1.073	1.050	2308	1701	1.61e6	1.50e6	698.4	882.2	NO	bd	bd	54.815
OCDD	44.824	1.000	1.928e5	2.209e5	0.920	0.873	0.890	2511	3071	2.31e6	2.65e6	920.4	862.2	NO	bb	bb	96.897
13C-2378-TCDF	25.647	1.007	3.744e5	4.808e5	1.620	0.779	0.770	1748	1265	5.28e6	6.83e6	3018.8	5395.1	NO	bb	bb	100.687
13C-12378-PeCDF	29.800	1.170	4.347e5	2.975e5	1.240	1.462	1.550	3590	2399	6.29e6	4.15e6	1753.3	1729.4	NO	bb	bd	112.586
13C-23478-PeCDF	31.137	1.222	4.141e5	2.659e5	1.118	1.557	1.550	3590	2399	5.94e6	3.85e6	1654.0	1605.8	NO	bb	bb	116.046
13C-123478-HxCDF	34.758	0.955	1.813e5	3.560e5	1.168	0.509	0.510	2094	2890	2.66e6	5.26e6	1267.9	1819.9	NO	bd	bd	87.097
13C-123678-HxCDF	34.903	0.959	2.196e5	4.404e5	1.386	0.498	0.510	2094	2890	2.94e6	5.83e6	1404.7	2017.4	NO	db	dd	90.140
13C-234678-HxCDF	35.760	0.983	1.841e5	3.891e5	1.129	0.473	0.510	2094	2890	2.63e6	5.27e6	1253.8	1822.0	NO	bb	bb	96.104
13C-123789-HxCDF	36.797	1.011	1.555e5	3.117e5	0.932	0.499	0.510	2094	2890	2.33e6	4.60e6	1111.8	1590.5	NO	bb	bb	94.959
13C-1234678-HpCDF	38.635	1.062	1.522e5	3.408e5	0.895	0.447	0.440	2501	3454	2.38e6	5.34e6	953.4	1545.3	NO	bb	bb	104.291
13C-1234789-HpCDF	40.863	1.123	1.337e5	3.121e5	0.770	0.428	0.440	2501	3454	1.72e6	3.83e6	686.8	1108.0	NO	bd	bd	109.675
13C-1234-TCDD	25.478	0.000	2.293e5	2.950e5	1.000	0.777	0.770	1421	1258	3.46e6	4.45e6	2437.0	3538.3	NO	bb	bb	100.000
13C-2378-TCDD	26.283	1.032	2.759e5	3.566e5	1.152	0.774	0.770	1421	1258	3.90e6	5.03e6	2742.6	3996.2	NO	bb	bb	104.696
13C-12378-PeCDD	31.393	1.232	2.861e5	1.749e5	0.829	1.636	1.550	1546	974	3.96e6	2.45e6	2561.9	2516.3	NO	bb	bd	106.089
13C-123478-HxCDD	35.883	0.986	2.698e5	2.117e5	0.995	1.275	1.240	2812	1823	4.04e6	3.17e6	1438.1	1740.6	NO	bd	bd	91.630
13C-123678-HxCDD	36.006	0.990	3.135e5	2.549e5	1.157	1.230	1.240	2812	1823	4.33e6	3.51e6	1539.2	1925.5	NO	db	db	93.062
13C-1234678-HpCDD	40.128	1.103	2.222e5	1.896e5	0.840	1.172	1.050	1783	1853	2.83e6	2.61e6	1586.2	1408.9	NO	bb	bb	92.815
13C-OCDD	44.805	1.231	4.407e5	4.874e5	0.767	0.904	0.890	3468	3280	4.68e6	5.12e6	1350.4	1561.6	NO	bd	bd	228.992
13C-123789-HxCDD	36.384	0.000	2.976e5	2.305e5	1.000	1.291	1.240	2812	1823	4.12e6	3.28e6	1463.4	1799.4	NO	bd	bb	100.000
37CL-2378-TCDD	26.311	1.033	5.935e4		1.288			1291		8.58e5		664.4			bb		8.791

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
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ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.172	0.864	3.392e4	4.563e4	0.802	0.743	0.770	978	1317	5.41e5	7.19e5	553.0	545.6	NO	bb	bb	11.606
1289-TCDF	27.159	1.059	2.437e4	3.410e4	0.678	0.715	0.770	978	1317	3.70e5	5.02e5	378.0	381.0	NO	bb	db	10.084
13468-PECDF	27.017	0.907	2.494e5	1.653e5	1.246	1.509	1.550	867	846	3.74e6	2.52e6	4317.6	2973.4	NO	bb	bb	45.444
12389-PECDF	32.195	1.080	1.495e5	9.683e4	0.496	1.543	1.550	2681	2521	2.10e6	1.39e6	783.0	550.7	NO	bb	bb	67.771
123468-HXCDF	33.109	0.953	1.681e5	1.343e5	1.169	1.251	1.240	2940	2313	2.43e6	1.94e6	826.7	839.1	NO	bb	bb	48.130
1368-TCDD	23.444	0.892	2.829e4	3.576e4	1.015	0.791	0.770	1372	1124	4.42e5	5.50e5	321.9	489.2	NO	bb	bb	9.973
1289-TCDD	26.904	1.024	2.505e4	3.016e4	0.909	0.831	0.770	1372	1124	3.53e5	4.40e5	257.4	391.7	NO	bd	bd	9.604
12479-PECDD	28.697	0.914	2.410e5	1.554e5	2.301	1.551	1.550	1821	1797	2.24e6	1.48e6	1231.3	821.7	NO	bb	bb	37.361
12389-PECDD	31.805	1.013	1.548e5	1.029e5	1.184	1.505	1.550	1821	1797	2.28e6	1.49e6	1249.4	829.5	NO	bb	bb	47.240
124679-HXCDD	33.889	0.944	1.385e5	1.083e5	1.115	1.279	1.240	2153	2064	2.01e6	1.66e6	934.7	803.3	NO	bb	bb	45.966
1234679-HPCDD	39.103	0.975	1.301e5	1.157e5	1.137	1.124	1.050	2308	1701	1.87e6	1.76e6	809.9	1036.7	NO	bd	bb	52.509
Total-tetrafurans			8.684e4		0.727			978		1.34e6							32.803
Total-penta1			2.494e5					867		3.74e6							45.444
Total-pentafurans			5.087e5		0.654			2681		7.45e6							183.727
Total-hexafurans			8.359e5		1.141			2940		1.19e7							242.143
Total-heptafurans			2.514e5		0.978			2331		3.43e6							106.454
Total-Furans			2.104e6		0.922			978		2.99e7							711.514
Total-tetradoxins			1.379e5		1.024			1372		1.85e6							47.921
Total-pentadoxins			5.410e5		1.502			1821		6.65e6							136.246
Total-hexadoxins			5.531e5		1.005			2153		8.18e6							192.943
Total-heptadoxins			2.517e5		1.088			2308		3.49e6							107.394
Total-Dioxins			1.676e6		1.130			1372		2.25e7							581.402
Total-TEQ			3.780e6					1372		5.24e7							1292.916
FUNCTION1 PFK			1.668e5					186971		3.41e6							
FUNCTION2 PFK			8.113e5					106552		3.34e6							0.000
FUNCTION3 PFK			4.076e4					172503		1.24e6							0.000
FUNCTION4 PFK			1.993e5					140525		6.20e6							
FUNCTION5 PFK			0.000e0					116429		0.00e0							
FUNCTION1 HXCD...			5.753e2					520		8.04e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			4.123e2					631		7.31e3							0.000
FUNCTION3 OCDPE			1.152e2					622		1.82e3							0.000
FUNCTION4 NCDPE			1.143e2					628		4.46e3							0.000
FUNCTION5 DCDPE			7.330e1					570		1.31e3							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509\HA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:19:18 Pacific Daylight Time

**Method: T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56**

**Calibration: T:\Autospec\Curves\230303\CIH.cdb 06 Mar 2023 11:57:27**

**ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk**

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.66	2.833e4	3.785e4	0.702	0.75	0.77	430.5	YES	NO	bb	bb	11.029
2	Total-tetrafurans	23.99	2.198e2	3.057e2	0.727	0.72	0.77	4.9	YES	NO	db	bb	0.085
3	1368-TCDF	22.17	3.392e4	4.563e4	0.802	0.74	0.77	553.0	YES	NO	bb	bb	11.606
4	1289-TCDF	27.16	2.437e4	3.410e4	0.678	0.71	0.77	378.0	YES	NO	bb	db	10.084

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDFF	27.02	2.494e5	1.653e5	1.246	1.51	1.55	4317.6	YES	NO	bb	bb	45.444

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.16	1.683e5	1.101e5	0.786	1.53	1.55	938.5	YES	NO	bb	bb	52.067
2	12378-PeCDF	29.82	1.642e5	1.070e5	0.679	1.53	1.55	910.1	YES	NO	bb	bb	54.526
3	Total-pentafurans	28.67	2.684e4	1.639e4	0.654	1.64	1.55	147.3	YES	NO	bb	bb	9.363
4	12389-PECDF	32.20	1.495e5	9.683e4	0.496	1.54	1.55	783.0	YES	NO	bb	bb	67.771

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	234678-HxCDF	35.78	1.741e5	1.362e5	1.140	1.28	1.24	837.2	YES	NO	bd	bb	47.512
2	123678-HxCDF	34.91	1.875e5	1.640e5	1.091	1.14	1.24	882.1	YES	NO	db	db	48.827
3	123478-HxCDF	34.78	1.628e5	1.320e5	1.166	1.23	1.24	838.2	YES	NO	bd	bd	47.041
4	123468-HxCDF	33.11	1.681e5	1.343e5	1.169	1.25	1.24	826.7	YES	NO	bb	bb	48.130
5	123789-HxCDF	36.81	1.434e5	1.256e5	1.137	1.14	1.24	675.2	YES	NO	bb	bb	50.633

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.87	1.144e5	1.137e5	0.953	1.01	1.05	645.6	YES	NO	bd	bb	53.672
2	1234678-HpCDF	38.65	1.370e5	1.240e5	1.003	1.11	1.05	827.4	YES	NO	bd	bb	52.782

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
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**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.66	2.833e4	3.785e4	0.702	0.75	0.77	430.5	YES	NO	bb	bb	11.029
2	Total-tetrafurans	23.99	2.198e2	3.057e2	0.727	0.72	0.77	4.9	YES	NO	db	bb	0.085
3	1368-TCDF	22.17	3.392e4	4.563e4	0.802	0.74	0.77	553.0	YES	NO	bb	bb	11.606
4	23478-PeCDF	31.16	1.683e5	1.101e5	0.786	1.53	1.55	938.5	YES	NO	bb	bb	52.067
5	12378-PeCDF	29.82	1.642e5	1.070e5	0.679	1.53	1.55	910.1	YES	NO	bb	bb	54.526
6	Total-pentafurans	28.67	2.684e4	1.639e4	0.654	1.64	1.55	147.3	YES	NO	bb	bb	9.363
7	1289-TCDF	27.16	2.437e4	3.410e4	0.678	0.71	0.77	378.0	YES	NO	bb	db	10.084
8	234678-HxCDF	35.78	1.741e5	1.362e5	1.140	1.28	1.24	837.2	YES	NO	bd	bb	47.512
9	123678-HxCDF	34.91	1.875e5	1.640e5	1.091	1.14	1.24	882.1	YES	NO	db	db	48.827
10	123478-HxCDF	34.78	1.628e5	1.320e5	1.166	1.23	1.24	838.2	YES	NO	bd	bd	47.041
11	123468-HXCDF	33.11	1.681e5	1.343e5	1.169	1.25	1.24	826.7	YES	NO	bb	bb	48.130
12	12389-PECDF	32.20	1.495e5	9.683e4	0.496	1.54	1.55	783.0	YES	NO	bb	bb	67.771
13	123789-HxCDF	36.81	1.434e5	1.256e5	1.137	1.14	1.24	675.2	YES	NO	bb	bb	50.633
14	1234789-HpCDF	40.87	1.144e5	1.137e5	0.953	1.01	1.05	645.6	YES	NO	bd	bb	53.672
15	1234678-HpCDF	38.65	1.370e5	1.240e5	1.003	1.11	1.05	827.4	YES	NO	bd	bb	52.782
16	OCDF	45.06	1.713e5	1.931e5	0.778	0.89	0.89	895.2	YES	NO	bb	bb	100.943
17	13468-PECDF	27.02	2.494e5	1.653e5	1.246	1.51	1.55	4317.6	YES	NO	bb	bb	45.444

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.99	4.269e4	5.250e4	1.024	0.81	0.77	309.9	YES	NO	bb	bb	14.692
2	Total-tetradioxins	25.51	1.285e4	1.703e4	1.024	0.75	0.77	139.2	YES	NO	bb	bb	4.612
3	1368-TCDD	23.44	2.829e4	3.576e4	1.015	0.79	0.77	321.9	YES	NO	bb	bb	9.973
4	1289-TCDD	26.90	2.505e4	3.016e4	0.909	0.83	0.77	257.4	YES	NO	bd	bd	9.604
5	2378-TCDD	26.31	2.905e4	3.664e4	1.149	0.79	0.77	319.7	YES	NO	bb	bb	9.040

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.81	1.548e5	1.029e5	1.184	1.50	1.55	1249.4	YES	NO	bb	bb	47.240
2	12378-PeCDD	31.42	1.452e5	9.805e4	1.022	1.48	1.55	1168.5	YES	NO	bb	bb	51.645
3	12479-PECDD	28.70	2.410e5	1.554e5	2.301	1.55	1.55	1231.3	YES	NO	bb	bb	37.361

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.41	1.411e5	1.062e5	0.907	1.33	1.24	919.0	YES	NO	bd	bb	51.934
2	123678-HxCDD	36.02	1.464e5	1.208e5	1.001	1.21	1.24	1005.2	YES	NO	db	db	46.949
3	123478-HxCDD	35.91	1.271e5	1.034e5	0.996	1.23	1.24	942.4	YES	NO	bd	bd	48.094
4	124679-HXCDD	33.89	1.385e5	1.083e5	1.115	1.28	1.24	934.7	YES	NO	bb	bb	45.966

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.14	1.214e5	1.131e5	1.039	1.07	1.05	698.4	YES	NO	bd	bd	54.815
2	Total-heptadioxins	39.67	1.621e2	1.542e2	1.088	1.05	1.05	2.5	NO	NO	bb	bb	0.071
3	1234679-HPCDD	39.10	1.301e5	1.157e5	1.137	1.12	1.05	809.9	YES	NO	bd	bb	52.509

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	25.99	4.269e4	5.250e4	1.024	0.81	0.77	309.9	YES	NO	bb	bb	14.692
2	Total-tetradoxins	25.51	1.285e4	1.703e4	1.024	0.75	0.77	139.2	YES	NO	bb	bb	4.612
3	1368-TCDD	23.44	2.829e4	3.576e4	1.015	0.79	0.77	321.9	YES	NO	bb	bb	9.973
4	1289-TCDD	26.90	2.505e4	3.016e4	0.909	0.83	0.77	257.4	YES	NO	bd	bd	9.604
5	2378-TCDD	26.31	2.905e4	3.664e4	1.149	0.79	0.77	319.7	YES	NO	bb	bb	9.040
6	12389-PECDD	31.81	1.548e5	1.029e5	1.184	1.50	1.55	1249.4	YES	NO	bb	bb	47.240
7	12378-PeCDD	31.42	1.452e5	9.805e4	1.022	1.48	1.55	1168.5	YES	NO	bb	bb	51.645
8	12479-PECDD	28.70	2.410e5	1.554e5	2.301	1.55	1.55	1231.3	YES	NO	bb	bb	37.361
9	123789-HxCDD	36.41	1.411e5	1.062e5	0.907	1.33	1.24	919.0	YES	NO	bd	bb	51.934
10	123678-HxCDD	36.02	1.464e5	1.208e5	1.001	1.21	1.24	1005.2	YES	NO	db	db	46.949
11	123478-HxCDD	35.91	1.271e5	1.034e5	0.996	1.23	1.24	942.4	YES	NO	bd	bd	48.094
12	124679-HXCDD	33.89	1.385e5	1.083e5	1.115	1.28	1.24	934.7	YES	NO	bb	bb	45.966
13	1234678-HpCDD	40.14	1.214e5	1.131e5	1.039	1.07	1.05	698.4	YES	NO	bd	bd	54.815
14	Total-heptadioxins	39.67	1.621e2	1.542e2	1.088	1.05	1.05	2.5	NO	NO	bb	bb	0.071
15	1234679-HPCDD	39.10	1.301e5	1.157e5	1.137	1.12	1.05	809.9	YES	NO	bd	bb	52.509
16	OCDD	44.82	1.928e5	2.209e5	0.920	0.87	0.89	920.4	YES	NO	bb	bb	96.897

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

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## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.66	2.833e4	3.785e4	0.702	0.75	0.77	430.5	YES	NO	bb	bb	11.029
2	Total-tetrafurans	23.99	2.198e2	3.057e2	0.727	0.72	0.77	4.9	YES	NO	db	bb	0.085
3	1368-TCDF	22.17	3.392e4	4.563e4	0.802	0.74	0.77	553.0	YES	NO	bb	bb	11.606
4	23478-PeCDF	31.16	1.683e5	1.101e5	0.786	1.53	1.55	938.5	YES	NO	bb	bb	52.067
5	12378-PeCDF	29.82	1.642e5	1.070e5	0.679	1.53	1.55	910.1	YES	NO	bb	bb	54.526
6	Total-pentafurans	28.67	2.684e4	1.639e4	0.654	1.64	1.55	147.3	YES	NO	bb	bb	9.363
7	1289-TCDF	27.16	2.437e4	3.410e4	0.678	0.71	0.77	378.0	YES	NO	bb	db	10.084
8	234678-HxCDF	35.78	1.741e5	1.362e5	1.140	1.28	1.24	837.2	YES	NO	bd	bb	47.512
9	123678-HxCDF	34.91	1.875e5	1.640e5	1.091	1.14	1.24	882.1	YES	NO	db	db	48.827
10	123478-HxCDF	34.78	1.628e5	1.320e5	1.166	1.23	1.24	838.2	YES	NO	bd	bd	47.041
11	123468-HXCDF	33.11	1.681e5	1.343e5	1.169	1.25	1.24	826.7	YES	NO	bb	bb	48.130
12	12389-PECDF	32.20	1.495e5	9.683e4	0.496	1.54	1.55	783.0	YES	NO	bb	bb	67.771
13	123789-HxCDF	36.81	1.434e5	1.256e5	1.137	1.14	1.24	675.2	YES	NO	bb	bb	50.633
14	1234789-HpCDF	40.87	1.144e5	1.137e5	0.953	1.01	1.05	645.6	YES	NO	bd	bb	53.672
15	1234678-HpCDF	38.65	1.370e5	1.240e5	1.003	1.11	1.05	827.4	YES	NO	bd	bb	52.782
16	OCDF	45.06	1.713e5	1.931e5	0.778	0.89	0.89	895.2	YES	NO	bb	bb	100.943
17	13468-PECDF	27.02	2.494e5	1.653e5	1.246	1.51	1.55	4317.6	YES	NO	bb	bb	45.444
18	Total-tetradioxins	25.99	4.269e4	5.250e4	1.024	0.81	0.77	309.9	YES	NO	bb	bb	14.692
19	Total-tetradioxins	25.51	1.285e4	1.703e4	1.024	0.75	0.77	139.2	YES	NO	bb	bb	4.612
20	1368-TCDD	23.44	2.829e4	3.576e4	1.015	0.79	0.77	321.9	YES	NO	bb	bb	9.973
21	1289-TCDD	26.90	2.505e4	3.016e4	0.909	0.83	0.77	257.4	YES	NO	bd	bd	9.604
22	2378-TCDD	26.31	2.905e4	3.664e4	1.149	0.79	0.77	319.7	YES	NO	bb	bb	9.040
23	12389-PECDD	31.81	1.548e5	1.029e5	1.184	1.50	1.55	1249.4	YES	NO	bb	bb	47.240
24	12378-PeCDD	31.42	1.452e5	9.805e4	1.022	1.48	1.55	1168.5	YES	NO	bb	bb	51.645
25	12479-PECDD	28.70	2.410e5	1.554e5	2.301	1.55	1.55	1231.3	YES	NO	bb	bb	37.361
26	123789-HxCDD	36.41	1.411e5	1.062e5	0.907	1.33	1.24	919.0	YES	NO	bd	bb	51.934
27	123678-HxCDD	36.02	1.464e5	1.208e5	1.001	1.21	1.24	1005.2	YES	NO	db	db	46.949
28	123478-HxCDD	35.91	1.271e5	1.034e5	0.996	1.23	1.24	942.4	YES	NO	bd	bd	48.094
29	124679-HXCDD	33.89	1.385e5	1.083e5	1.115	1.28	1.24	934.7	YES	NO	bb	bb	45.966
30	1234678-HpCDD	40.14	1.214e5	1.131e5	1.039	1.07	1.05	698.4	YES	NO	bd	bd	54.815
31	Total-heptadioxins	39.67	1.621e2	1.542e2	1.088	1.05	1.05	2.5	NO	NO	bb	bb	0.071
32	1234679-HPCDD	39.10	1.301e5	1.157e5	1.137	1.12	1.05	809.9	YES	NO	bd	bb	52.509
33	OCDD	44.82	1.928e5	2.209e5	0.920	0.87	0.89	920.4	YES	NO	bb	bb	96.897

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	24.22	2.429e4					1.4	NO		bb		
2	FUNCTION1 PFK	23.39	1.595e3					0.5	NO		db		
3	FUNCTION1 PFK	23.34	3.170e3					0.6	NO		bd		
4	FUNCTION1 PFK	23.25	1.690e4					2.0	NO		bb		
5	FUNCTION1 PFK	22.71	6.558e3					1.0	NO		bb		
6	FUNCTION1 PFK	22.55	2.929e3					0.6	NO		bb		
7	FUNCTION1 PFK	22.23	2.749e3					0.6	NO		bb		
8	FUNCTION1 PFK	22.16	1.798e4					1.2	NO		bb		
9	FUNCTION1 PFK	27.89	1.093e3					0.4	NO		bb		
10	FUNCTION1 PFK	27.65	1.387e4					1.4	NO		db		
11	FUNCTION1 PFK	27.55	1.835e4					1.3	NO		bd		
12	FUNCTION1 PFK	26.49	4.792e3					0.7	NO		bb		
13	FUNCTION1 PFK	26.37	6.824e3					0.9	NO		bb		
14	FUNCTION1 PFK	26.33	1.226e3					0.5	NO		bb		
15	FUNCTION1 PFK	25.96	9.664e3					1.1	NO		bb		
16	FUNCTION1 PFK	25.49	1.043e3					0.4	NO		bb		
17	FUNCTION1 PFK	25.10	4.537e3					0.7	NO		bb		
18	FUNCTION1 PFK	24.60	1.489e4					1.1	NO		db		
19	FUNCTION1 PFK	24.49	1.324e4					1.4	NO		bd		
20	FUNCTION1 PFK	24.29	1.094e3					0.4	NO		bb		



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.50	4.136e3					1.3	NO		bd		0.000
2	FUNCTION2 PFK	29.09	3.921e3					1.2	NO		bb		0.000
3	FUNCTION2 PFK	28.31	7.596e5					13.8	YES		bb		0.000
4	FUNCTION2 PFK	32.69	2.528e3					0.9	NO		db		0.000
5	FUNCTION2 PFK	32.65	9.250e2					0.6	NO		bd		0.000
6	FUNCTION2 PFK	32.38	5.159e2					0.4	NO		bb		0.000
7	FUNCTION2 PFK	32.13	2.221e3					0.9	NO		bb		0.000
8	FUNCTION2 PFK	31.97	2.641e3					1.0	NO		bb		0.000
9	FUNCTION2 PFK	31.92	2.615e3					1.0	NO		bb		0.000
10	FUNCTION2 PFK	31.00	1.370e3					0.7	NO		bb		0.000
11	FUNCTION2 PFK	30.29	5.611e3					1.4	NO		db		0.000
12	FUNCTION2 PFK	30.20	1.006e4					1.6	NO		bd		0.000
13	FUNCTION2 PFK	30.11	2.084e3					0.7	NO		bb		0.000
14	FUNCTION2 PFK	30.06	2.666e3					1.1	NO		bb		0.000
15	FUNCTION2 PFK	29.97	9.710e2					0.8	NO		bb		0.000
16	FUNCTION2 PFK	29.89	4.635e2					0.4	NO		bb		0.000
17	FUNCTION2 PFK	29.86	5.619e2					0.5	NO		bb		0.000
18	FUNCTION2 PFK	29.76	3.692e3					1.4	NO		bb		0.000
19	FUNCTION2 PFK	29.53	4.722e3					1.6	NO		db		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.20	6.042e3					1.5	NO		bb		0.000
2	FUNCTION3 PFK	33.23	1.798e4					2.7	NO		bb		0.000
3	FUNCTION3 PFK	32.87	1.674e4					3.0	NO		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:19:18 Pacific Daylight Time

**ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk**

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.35	5.806e3					1.5	NO		bb		
2	FUNCTION4 PFK	39.17	2.454e3					1.0	NO		bb		
3	FUNCTION4 PFK	39.01	1.382e4					1.5	NO		bb		
4	FUNCTION4 PFK	38.96	8.035e2					0.5	NO		bb		
5	FUNCTION4 PFK	38.51	7.936e3					1.5	NO		db		
6	FUNCTION4 PFK	38.47	2.410e3					0.8	NO		bd		
7	FUNCTION4 PFK	38.30	2.244e3					0.8	NO		bb		
8	FUNCTION4 PFK	38.23	6.389e3					1.4	NO		bb		
9	FUNCTION4 PFK	38.18	9.474e3					1.7	NO		bb		
10	FUNCTION4 PFK	37.97	6.614e3					1.9	NO		bb		
11	FUNCTION4 PFK	37.91	2.830e3					0.9	NO		bb		
12	FUNCTION4 PFK	41.67	4.090e3					1.3	NO		db		
13	FUNCTION4 PFK	41.63	5.393e3					1.2	NO		bd		
14	FUNCTION4 PFK	41.41	3.945e3					1.2	NO		bb		
15	FUNCTION4 PFK	41.20	1.135e4					1.8	NO		bb		
16	FUNCTION4 PFK	40.99	3.929e3					1.1	NO		bb		
17	FUNCTION4 PFK	40.82	7.332e3					1.3	NO		bb		
18	FUNCTION4 PFK	40.68	6.838e2					0.4	NO		bb		
19	FUNCTION4 PFK	40.37	8.156e2					0.4	NO		db		
20	FUNCTION4 PFK	40.33	4.038e3					1.3	NO		dd		
21	FUNCTION4 PFK	40.29	7.026e3					1.8	NO		bd		
22	FUNCTION4 PFK	40.13	8.300e3					1.5	NO		db		
23	FUNCTION4 PFK	40.06	3.488e3					1.0	NO		bd		
24	FUNCTION4 PFK	40.01	3.303e3					1.1	NO		db		
25	FUNCTION4 PFK	39.97	4.549e3					1.2	NO		bd		
26	FUNCTION4 PFK	39.49	1.325e3					0.6	NO		db		
27	FUNCTION4 PFK	39.46	1.441e3					0.6	NO		bd		
28	FUNCTION4 PFK	42.91	1.561e4					1.9	NO		db		
29	FUNCTION4 PFK	42.81	8.663e2					0.5	NO		bd		
30	FUNCTION4 PFK	42.77	6.177e2					0.4	NO		bb		
31	FUNCTION4 PFK	42.69	3.302e3					0.9	NO		bb		
32	FUNCTION4 PFK	42.56	1.632e4					2.2	NO		db		
33	FUNCTION4 PFK	42.45	1.486e4					2.2	NO		bd		
34	FUNCTION4 PFK	42.08	8.282e2					0.5	NO		bb		
35	FUNCTION4 PFK	41.88	6.700e3					1.5	NO		db		
36	FUNCTION4 PFK	41.83	3.705e3					1.2	NO		bd		
37	FUNCTION4 PFK	41.72	4.664e3					1.3	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:19:18 Pacific Daylight Time

ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.80	9.468e1					3.6	YES		bb		0.000
2	FUNCTION1 HXCD...	24.73	1.625e2					3.8	YES		bb		0.000
3	FUNCTION1 HXCD...	23.97	3.182e2					8.0	YES		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.82	7.326e1					2.6	NO		bb		0.000
2	FUNCTION2 HPCD...	31.52	9.804e1					2.4	NO		bb		0.000
3	FUNCTION2 HPCD...	31.03	1.556e2					3.7	YES		bb		0.000
4	FUNCTION2 HPCD...	29.72	8.539e1					2.8	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	33.23	1.152e2					2.9	NO		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.00	1.143e2					7.1	YES		bb		0.000

**ETHERS6**

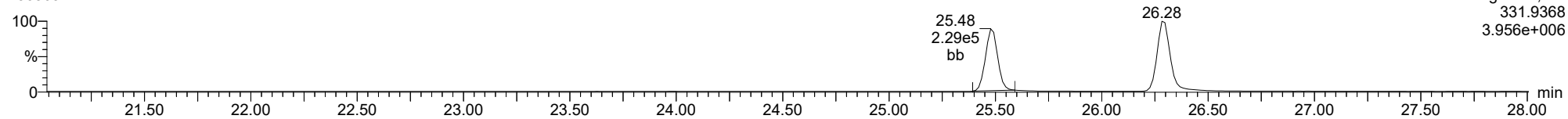
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.48	7.330e1					2.3	NO		bb		0.000

**Method:** T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

**ID:** CS3K6, **Name:** 23050922, **Date:** 10-May-2023, **Time:** 06:11:05, **Conditions:** AUTOSPEC01, **User:** pk

**13C-1234-TCDD**

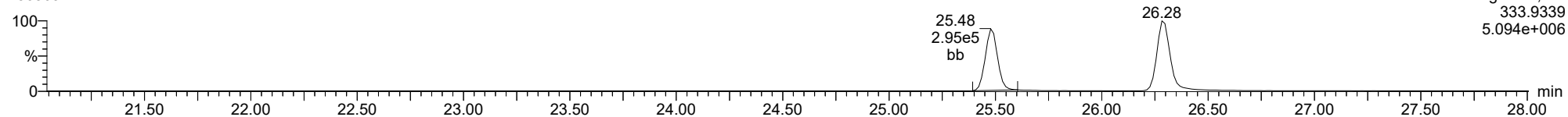
23050922



F1:Voltage SIR,El+  
331.9368  
3.956e+006

**13C-1234-TCDD**

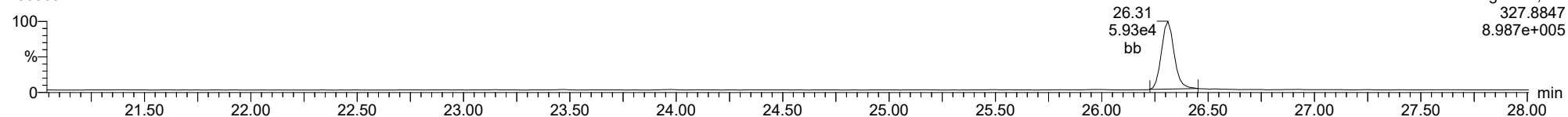
23050922



F1:Voltage SIR,El+  
333.9339  
5.094e+006

**37CL-2378-TCDD**

23050922

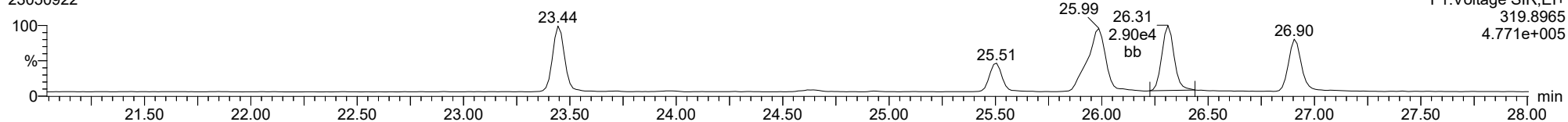


F1:Voltage SIR,El+  
327.8847  
8.987e+005

ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

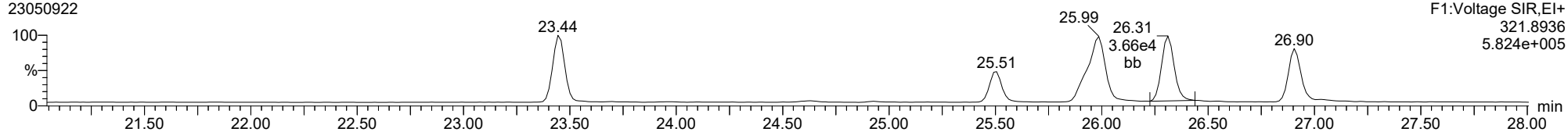
**2378-TCDD**

23050922



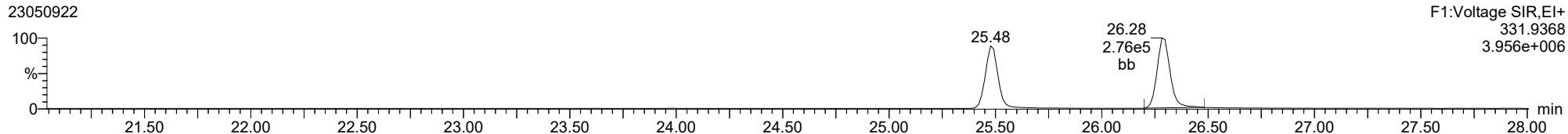
**2378-TCDD**

23050922



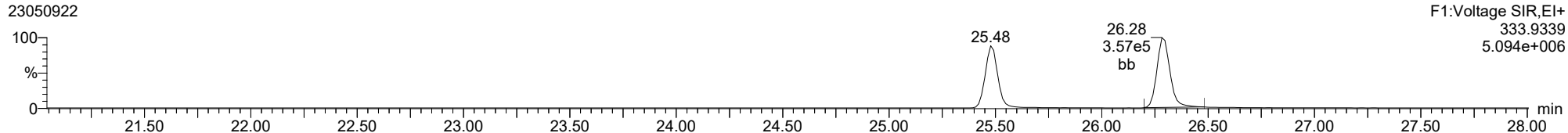
**13C-2378-TCDD**

23050922



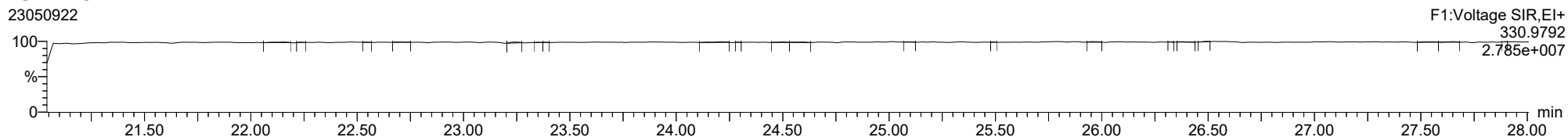
**13C-2378-TCDD**

23050922



**FUNCTION1 PFK**

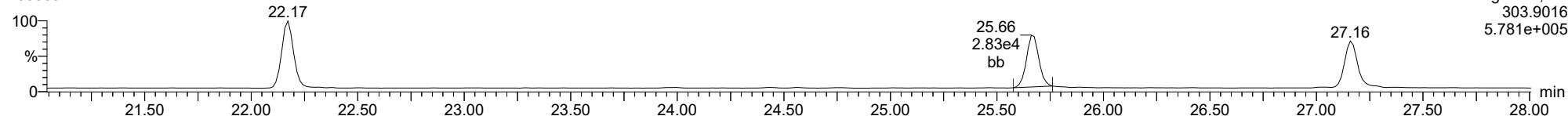
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

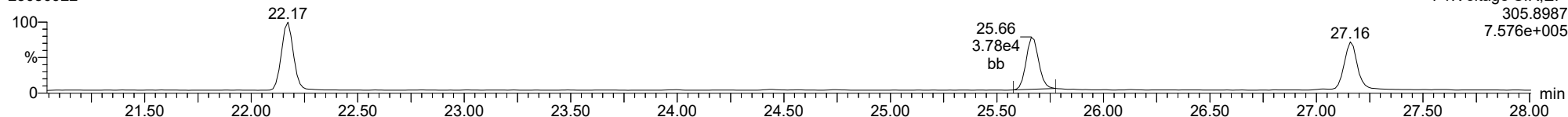
**2378-TCDF**

23050922



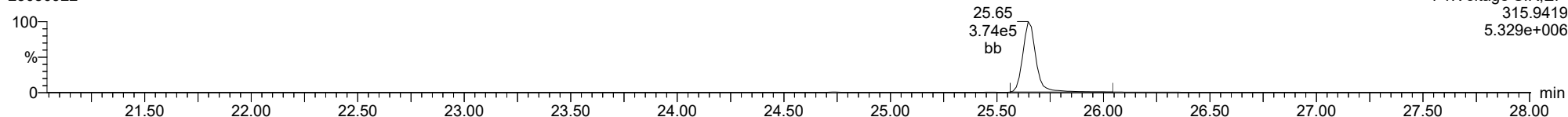
**2378-TCDF**

23050922



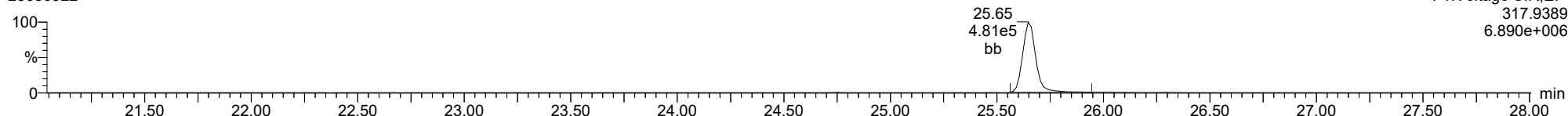
**13C-2378-TCDF**

23050922



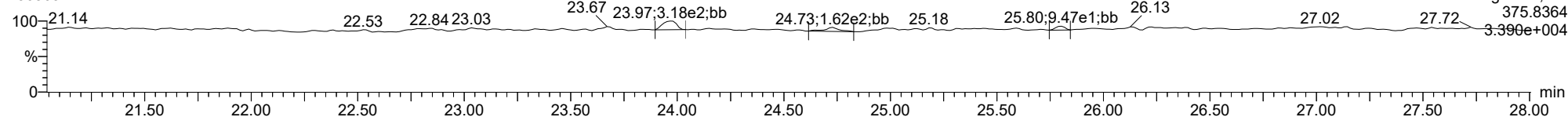
**13C-2378-TCDF**

23050922



**FUNCTION1 HXCDPE**

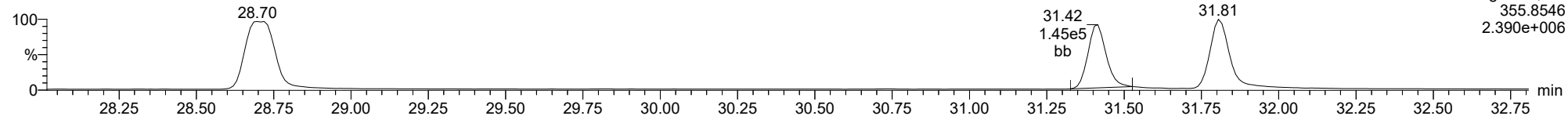
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

**12378-PeCDD**

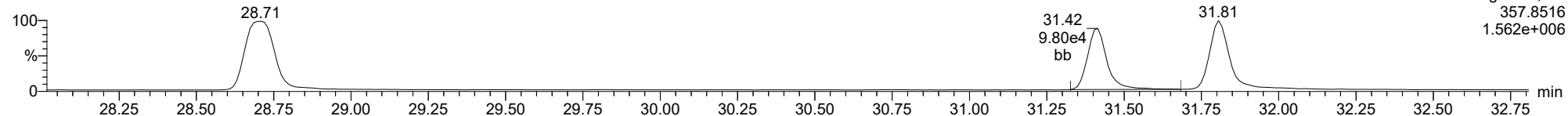
23050922



F2:Voltage SIR,EI+  
355.8546  
2.390e+006

**12378-PeCDD**

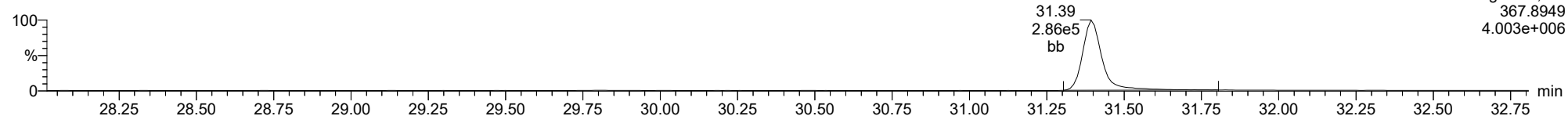
23050922



F2:Voltage SIR,EI+  
357.8516  
1.562e+006

**13C-12378-PeCDD**

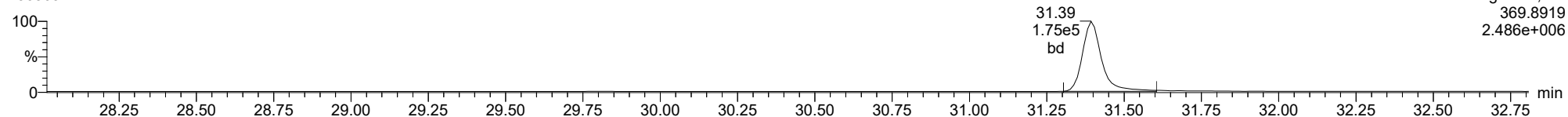
23050922



F2:Voltage SIR,EI+  
367.8949  
4.003e+006

**13C-12378-PeCDD**

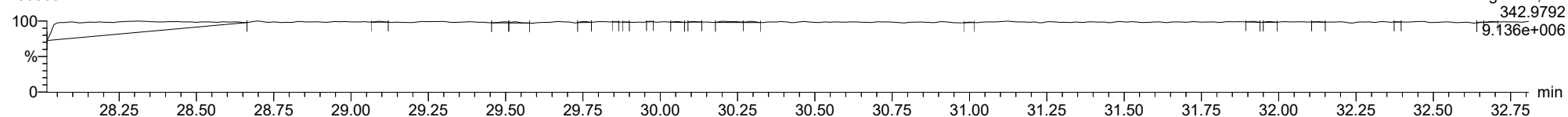
23050922



F2:Voltage SIR,EI+  
369.8919  
2.486e+006

**FUNCTION2 PFK**

23050922

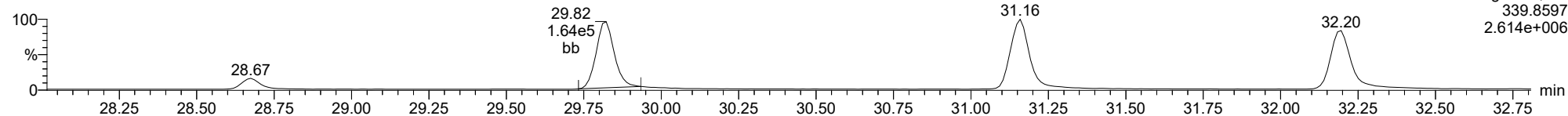


F2:Voltage SIR,EI+  
342.9792  
9.136e+006

ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

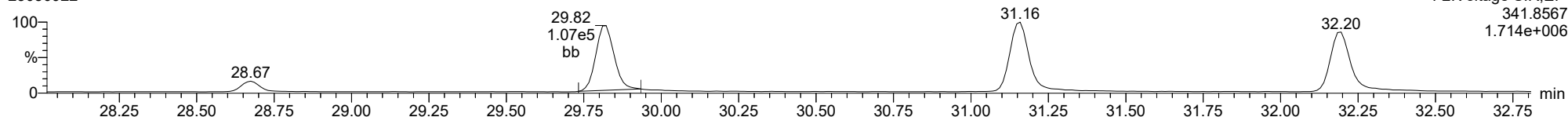
**12378-PeCDF**

23050922



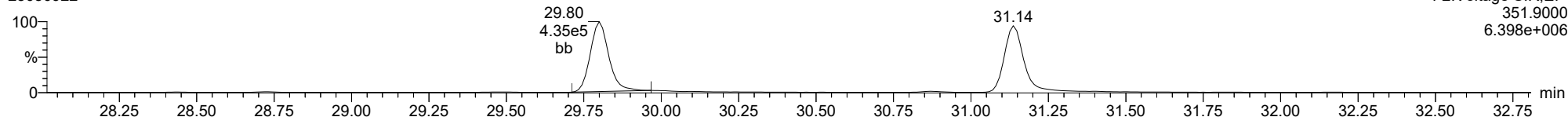
**12378-PeCDF**

23050922



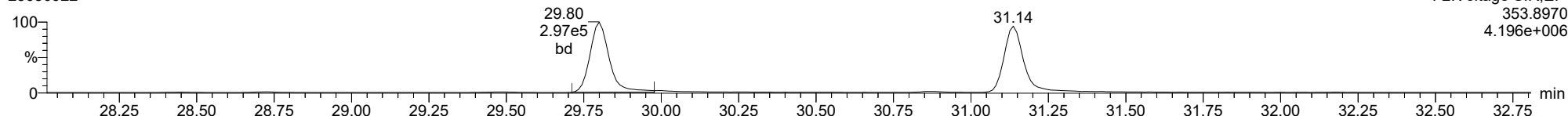
**13C-12378-PeCDF**

23050922



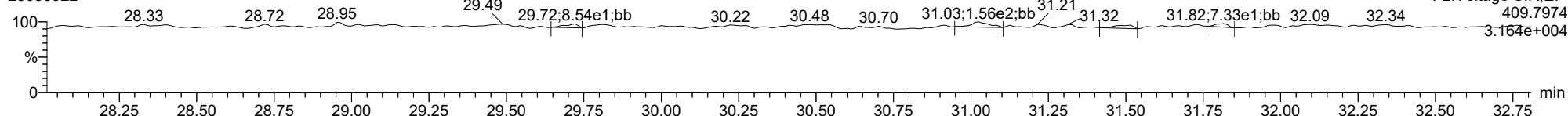
**13C-12378-PeCDF**

23050922



**FUNCTION2 HPCDPE**

23050922

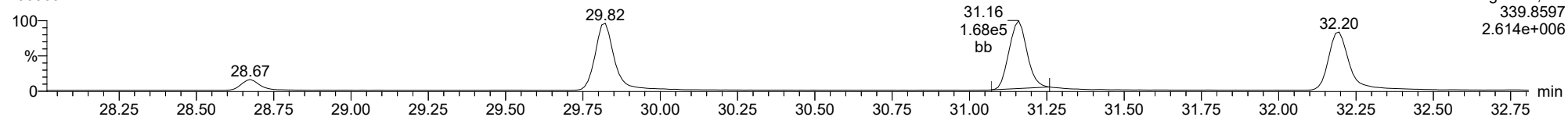




ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

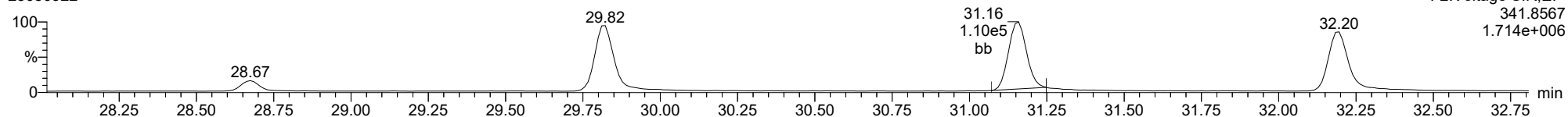
**23478-PeCDF**

23050922



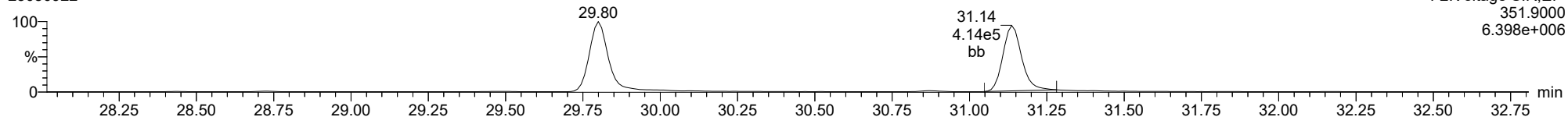
**23478-PeCDF**

23050922



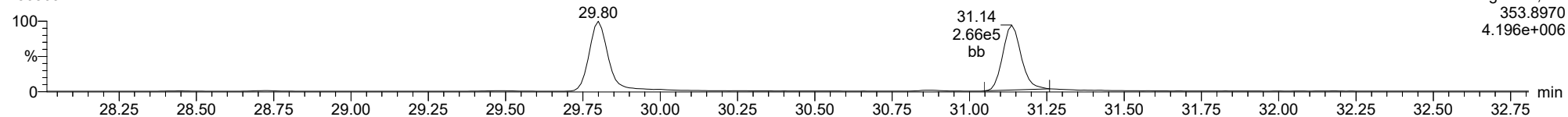
**13C-23478-PeCDF**

23050922



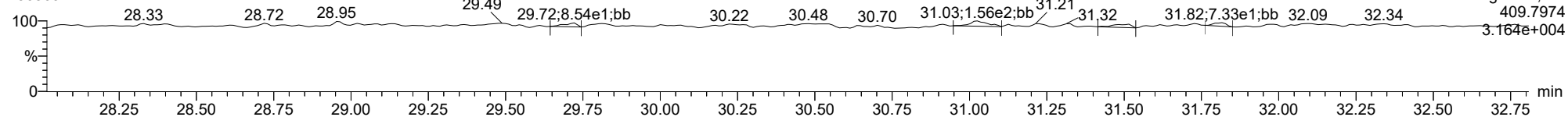
**13C-23478-PeCDF**

23050922



**FUNCTION2 HPCDPE**

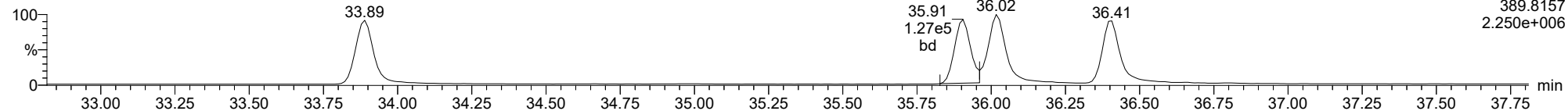
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

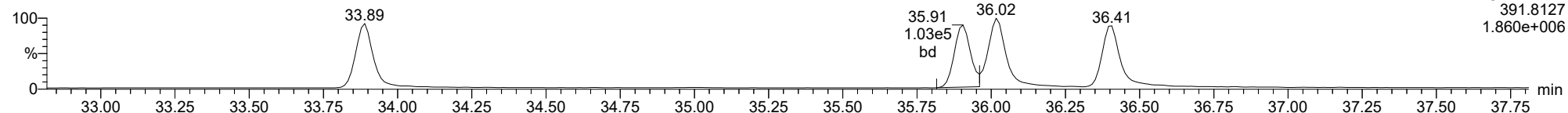
**123478-HxCDD**

23050922



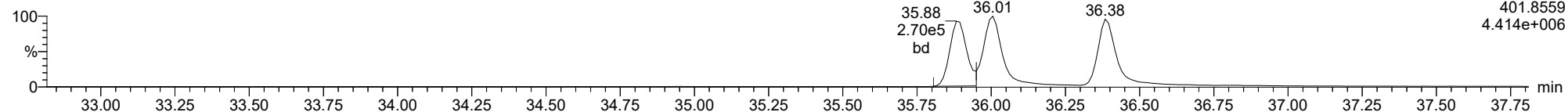
**123478-HxCDD**

23050922



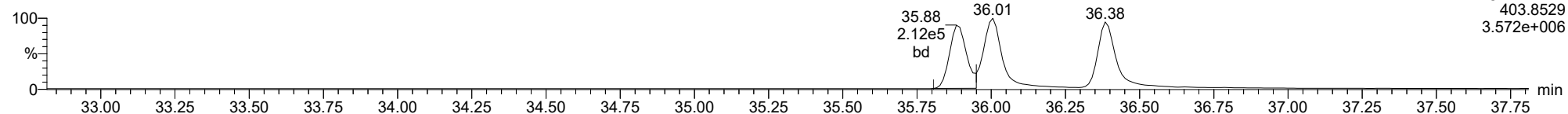
**13C-123478-HxCDD**

23050922



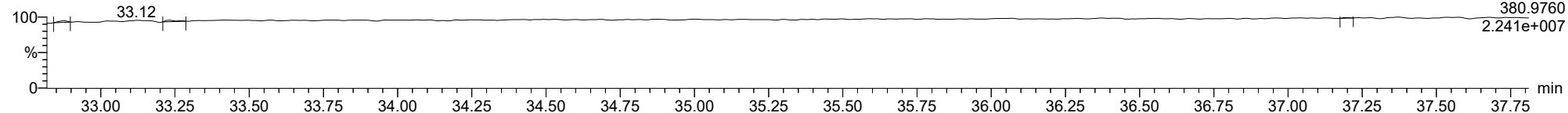
**13C-123478-HxCDD**

23050922



**FUNCTION3 PFK**

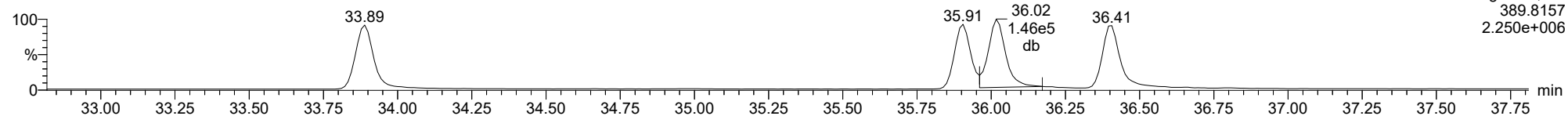
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

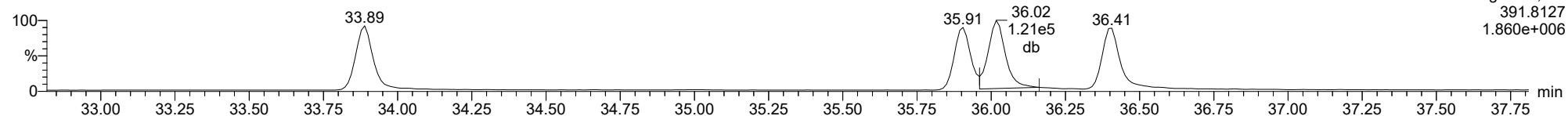
**123678-HxCDD**

23050922



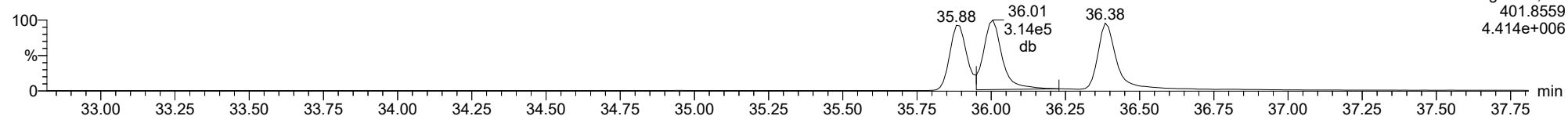
**123678-HxCDD**

23050922



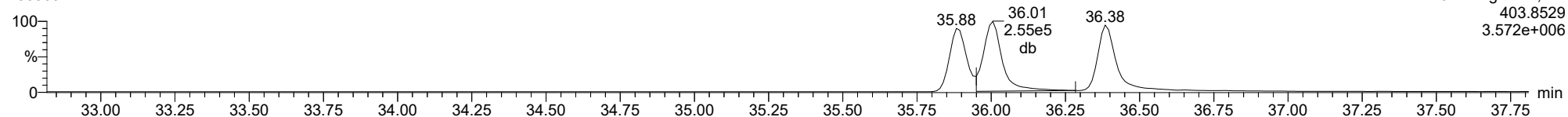
**13C-123678-HxCDD**

23050922



**13C-123678-HxCDD**

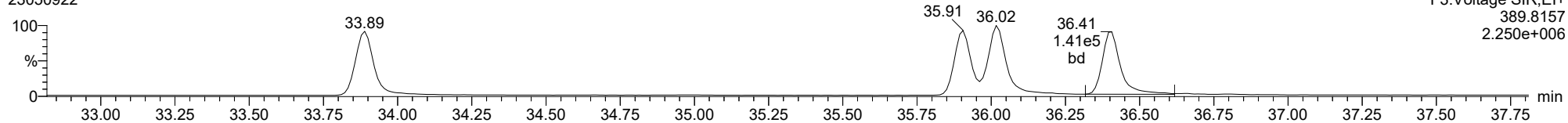
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

**123789-HxCDD**

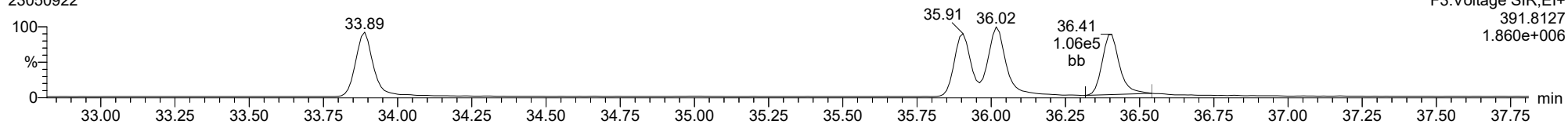
23050922



F3:Voltage SIR,EI+  
389.8157  
2.250e+006

**123789-HxCDD**

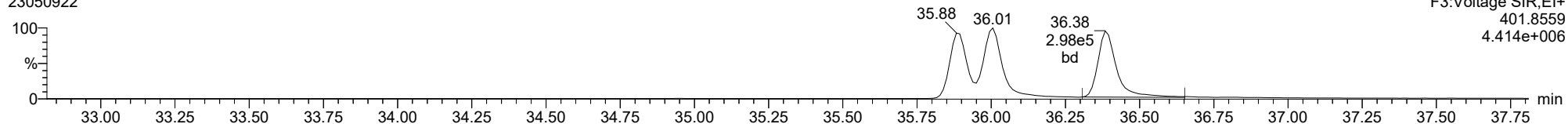
23050922



F3:Voltage SIR,EI+  
391.8127  
1.860e+006

**13C-123789-HxCDD**

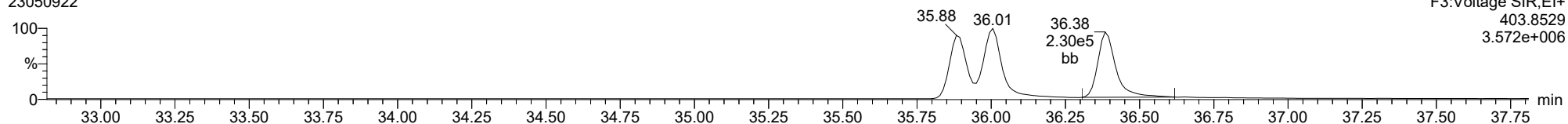
23050922



F3:Voltage SIR,EI+  
401.8559  
4.414e+006

**13C-123789-HxCDD**

23050922

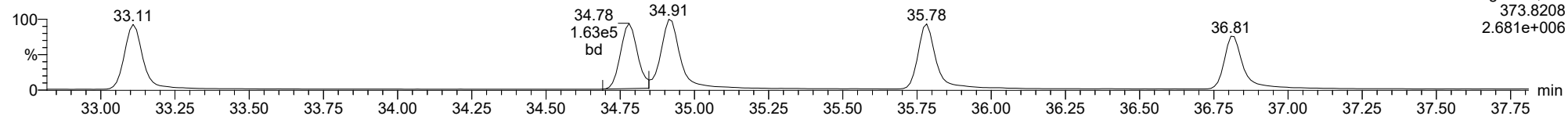


F3:Voltage SIR,EI+  
403.8529  
3.572e+006

ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

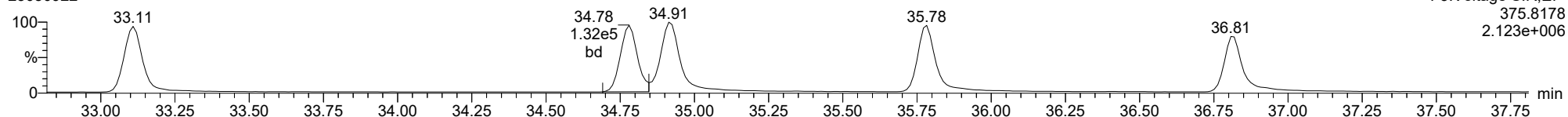
**123478-HxCDF**

23050922



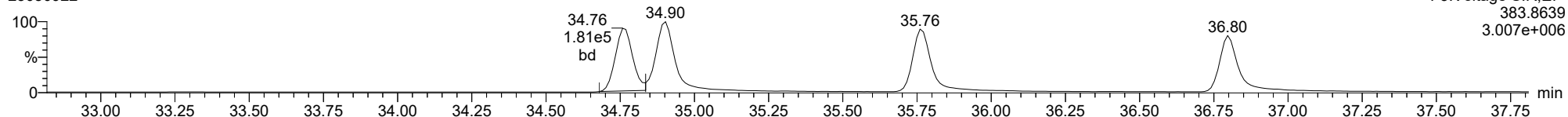
**123478-HxCDF**

23050922



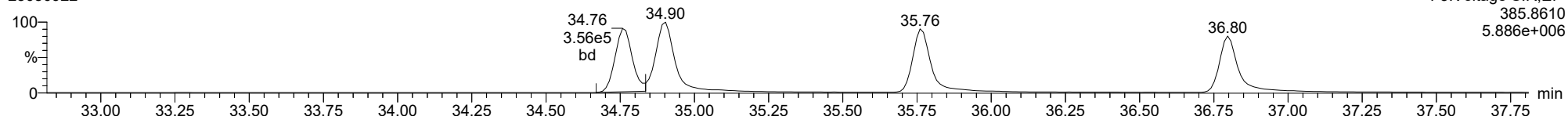
**13C-123478-HxCDF**

23050922



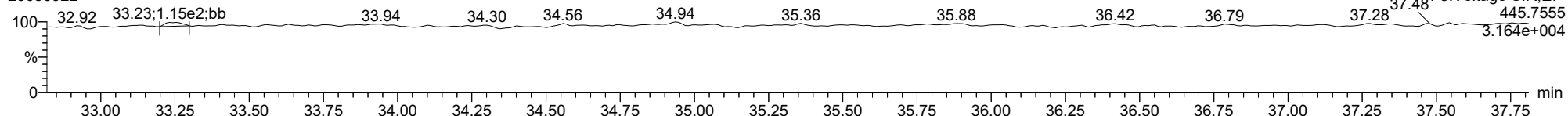
**13C-123478-HxCDF**

23050922



**FUNCTION3 OCDPE**

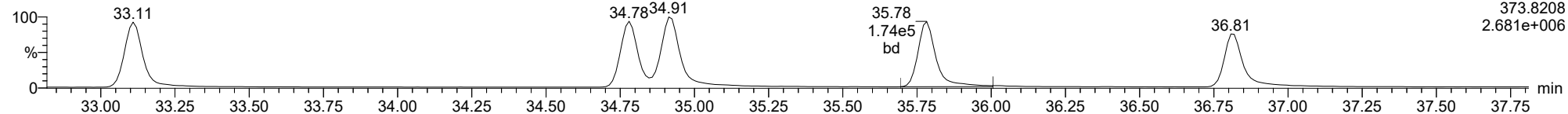
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

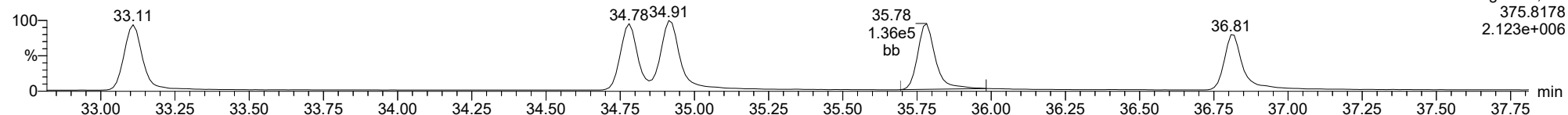
**234678-HxCDF**

23050922



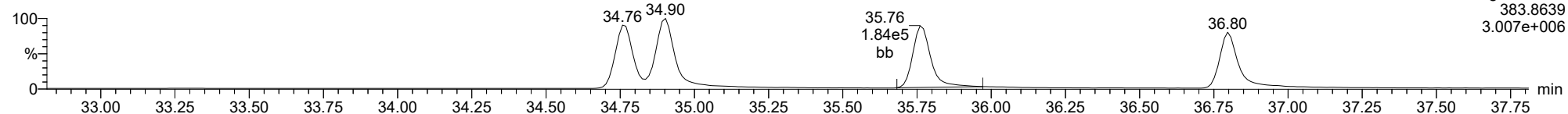
**234678-HxCDF**

23050922



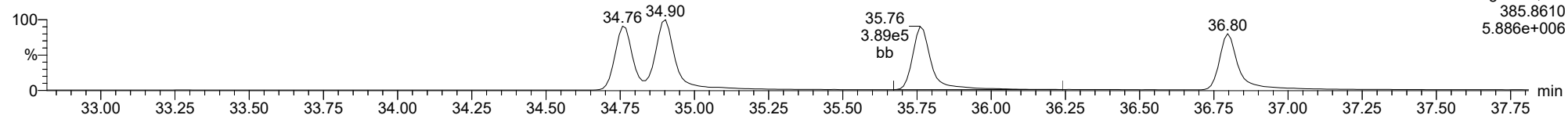
**13C-234678-HxCDF**

23050922



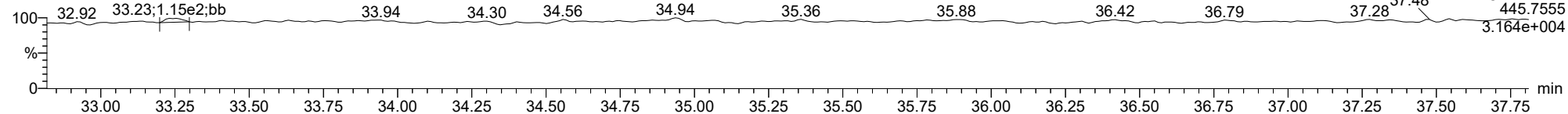
**13C-234678-HxCDF**

23050922



**FUNCTION3 OCDPE**

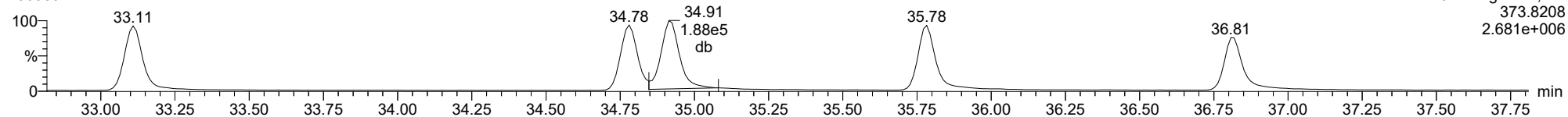
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

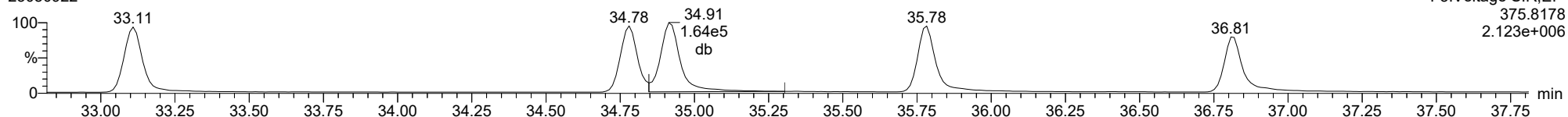
**123678-HxCDF**

23050922



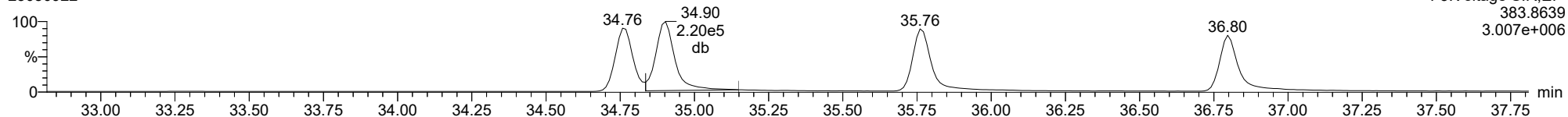
**123678-HxCDF**

23050922



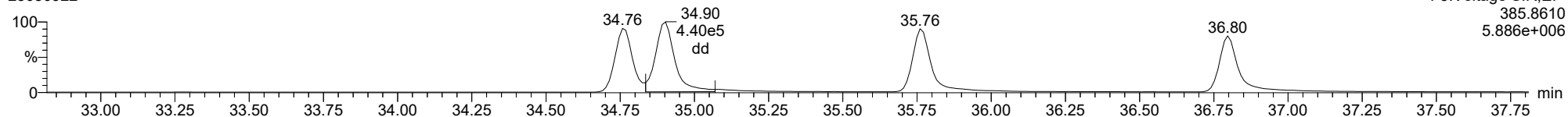
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23050922



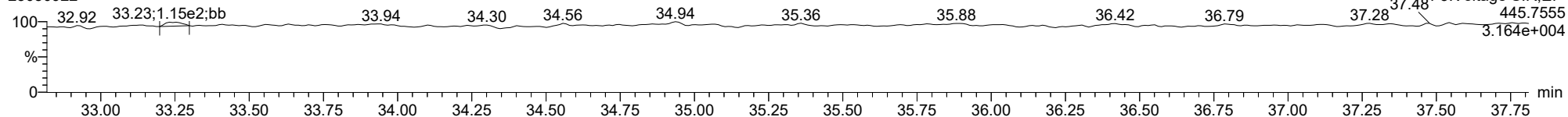
**13C-123678-HxCDF**

23050922



**FUNCTION3 OCDPE**

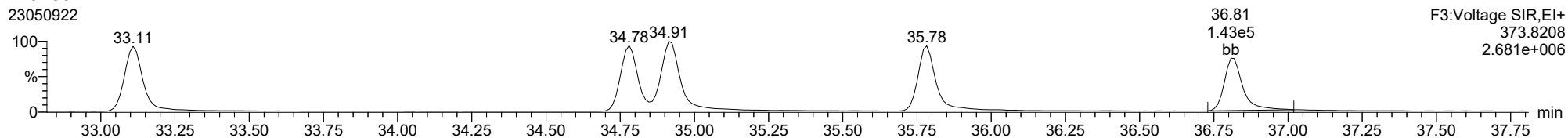
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ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

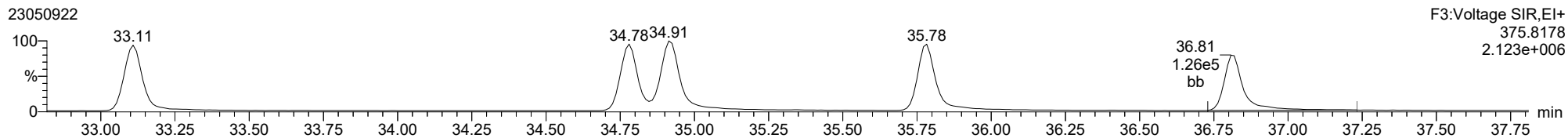
**123789-HxCDF**

23050922



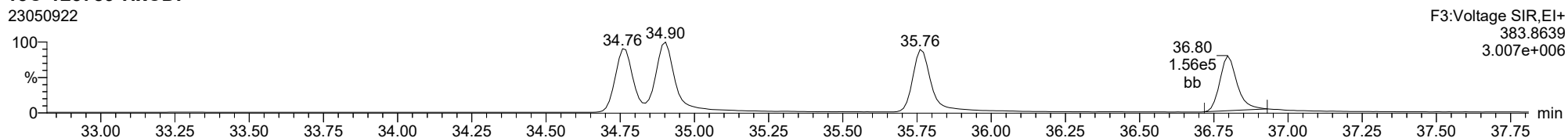
**123789-HxCDF**

23050922



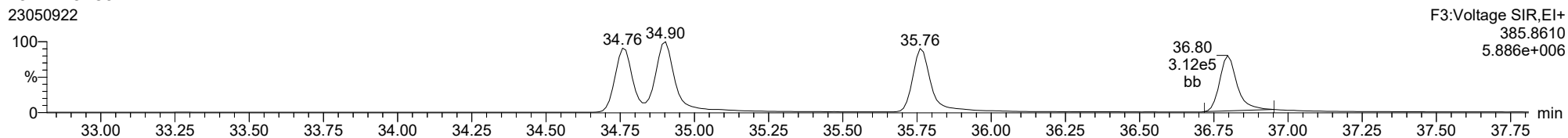
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23050922



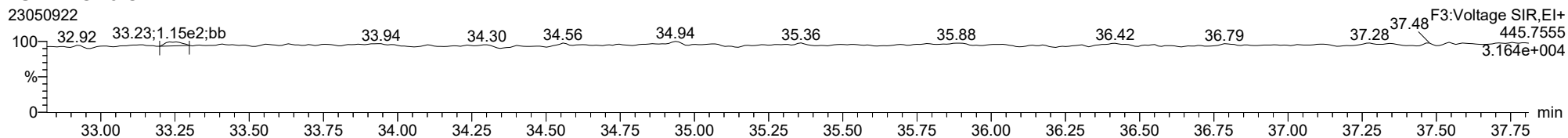
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23050922



**FUNCTION3 OCDPE**

23050922

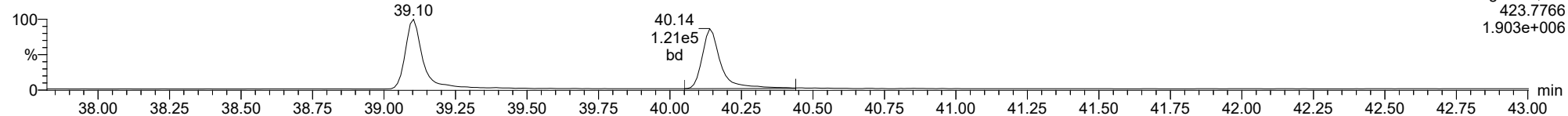




ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

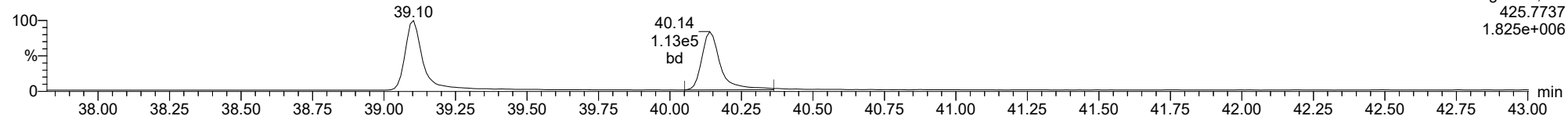
**1234678-HpCDD**

23050922



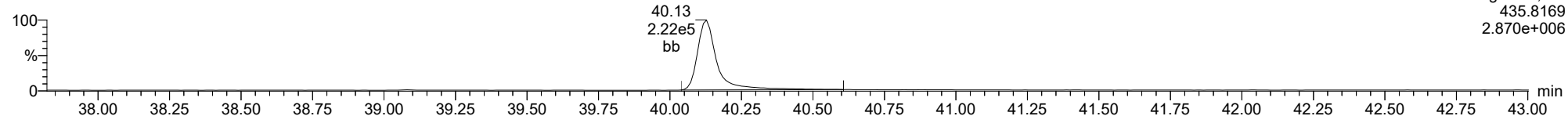
**1234678-HpCDD**

23050922



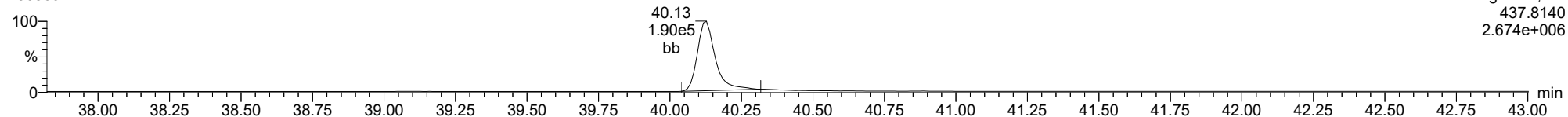
**13C-1234678-HpCDD**

23050922



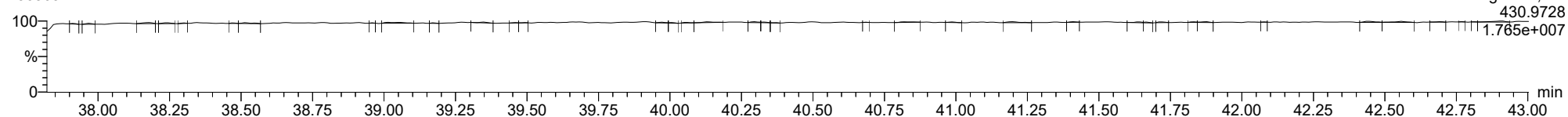
**13C-1234678-HpCDD**

23050922



**FUNCTION4 PFK**

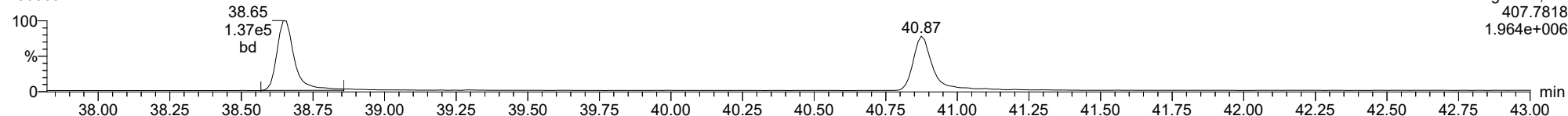
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ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

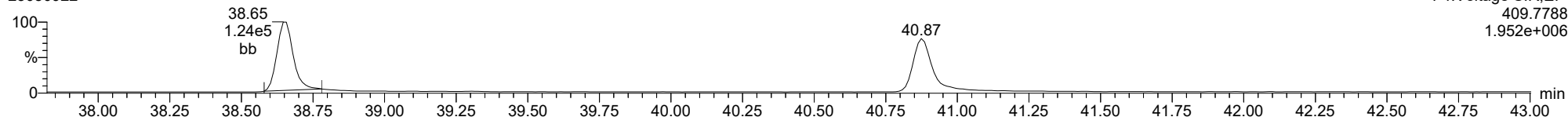
**1234678-HpCDF**

23050922



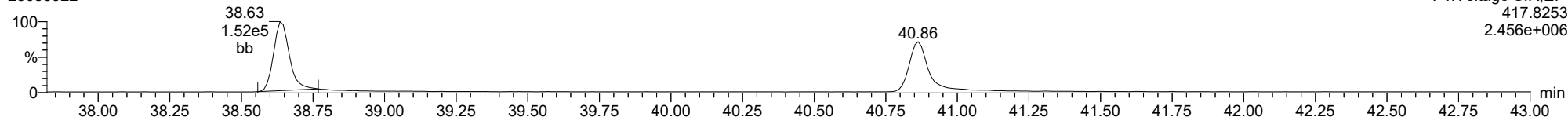
**1234678-HpCDF**

23050922



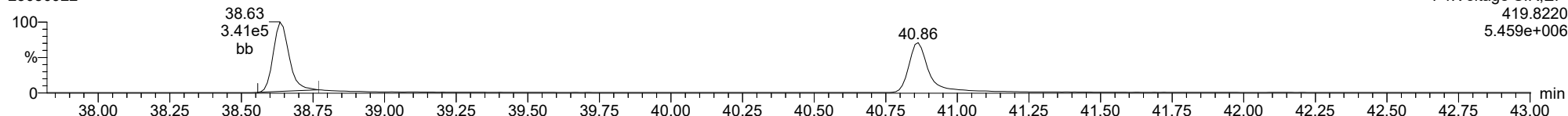
**13C-1234678-HpCDF**

23050922



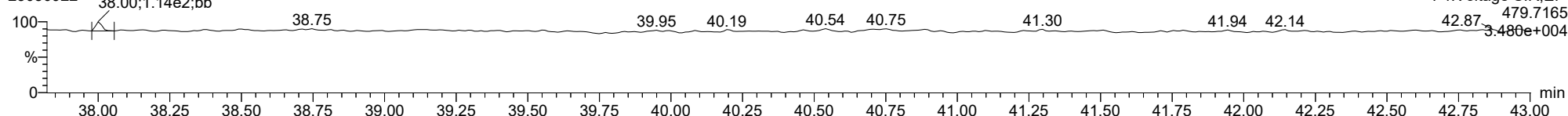
**13C-1234678-HpCDF**

23050922



**FUNCTION4 NCDPE**

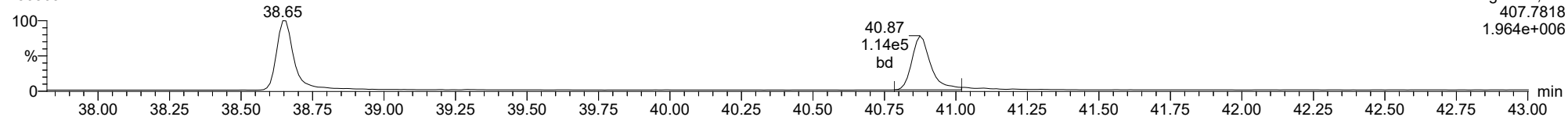
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ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

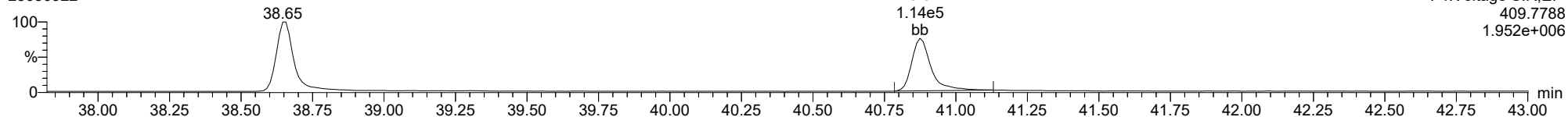
**1234789-HpCDF**

23050922



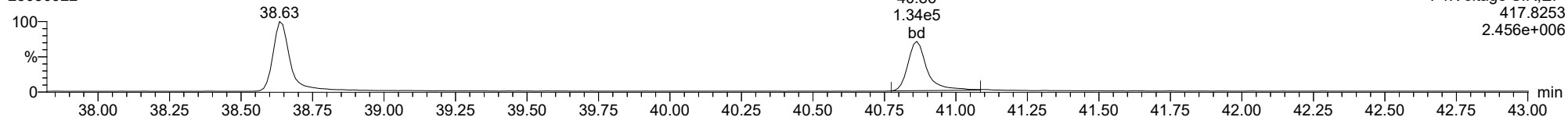
**1234789-HpCDF**

23050922



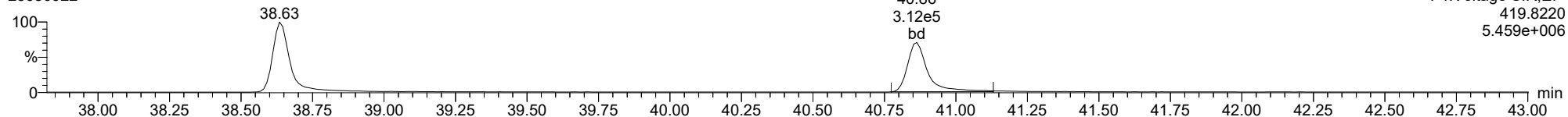
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23050922



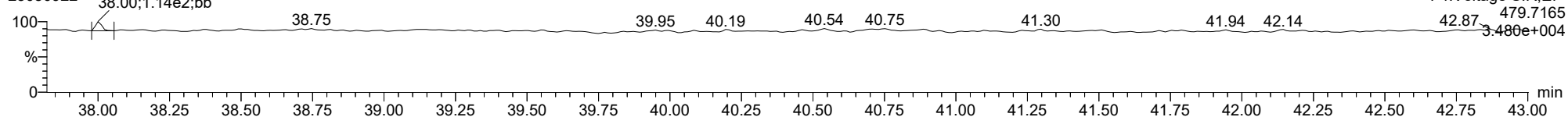
**13C-1234789-HpCDF**

23050922



**FUNCTION4 NCDPE**

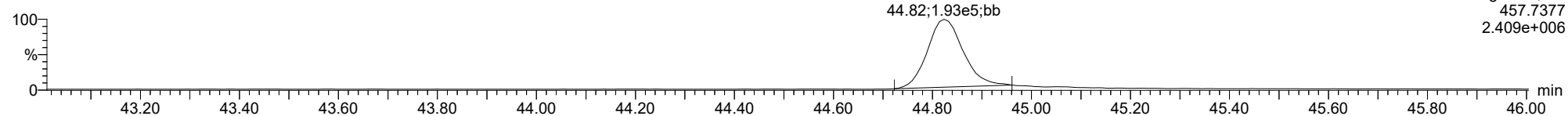
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ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

**OCDD**

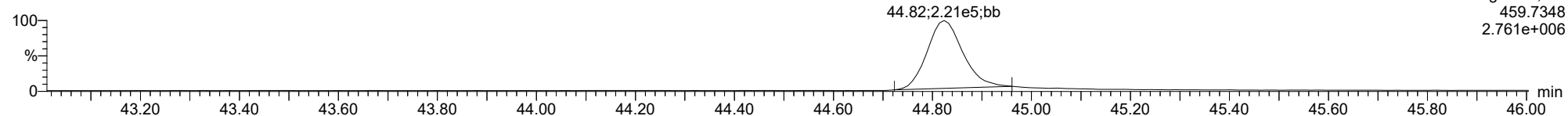
23050922



F5:Voltage SIR,EI+  
457.7377  
2.409e+006

**OCDD**

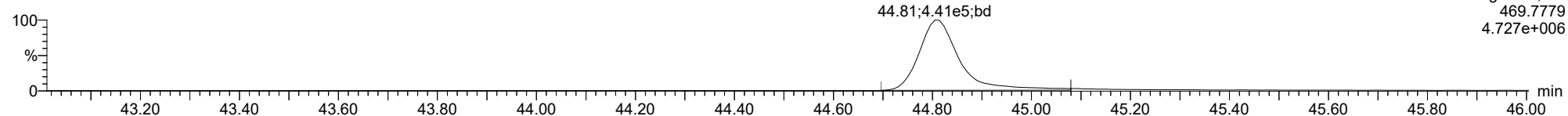
23050922



F5:Voltage SIR,EI+  
459.7348  
2.761e+006

**13C-OCDD**

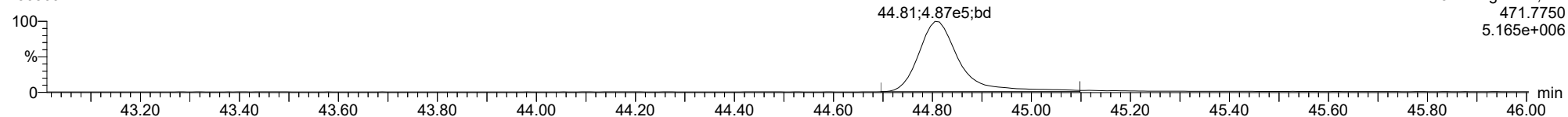
23050922



F5:Voltage SIR,EI+  
469.7779  
4.727e+006

**13C-OCDD**

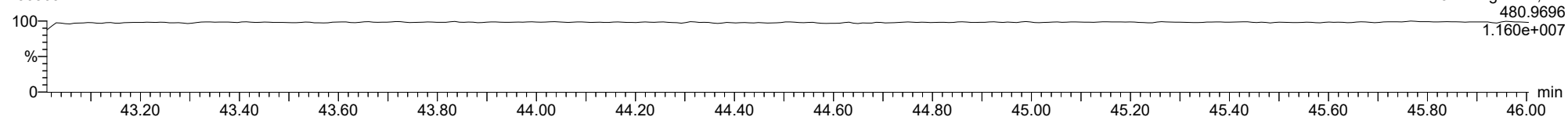
23050922



F5:Voltage SIR,EI+  
471.7750  
5.165e+006

**FUNCTION5 PFK**

23050922

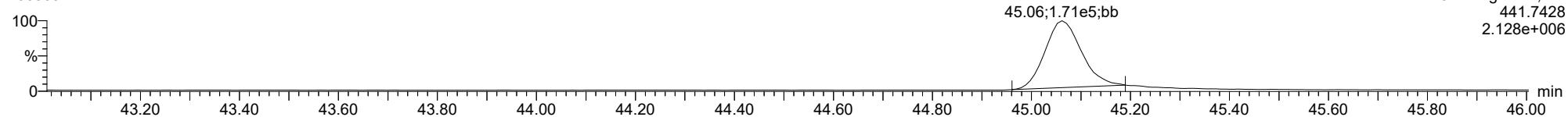


F5:Voltage SIR,EI+  
480.9696  
1.160e+007

ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

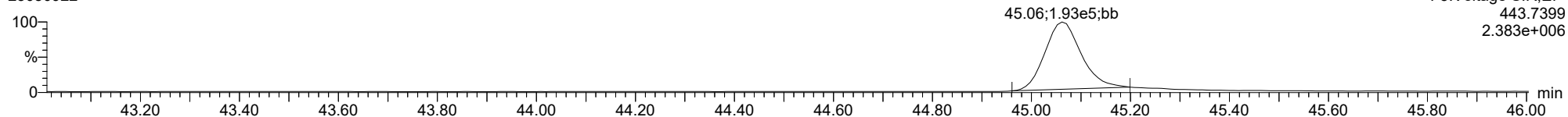
**OCDF**

23050922



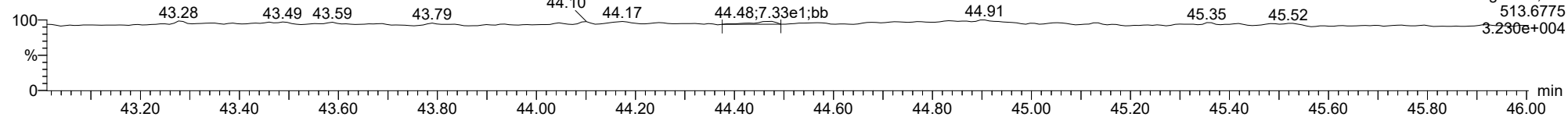
**OCDF**

23050922



**FUNCTION5 DCDPE**

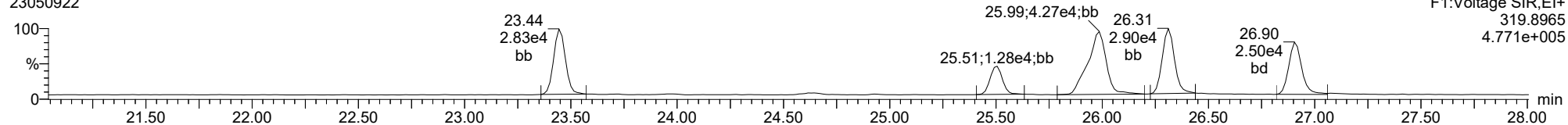
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

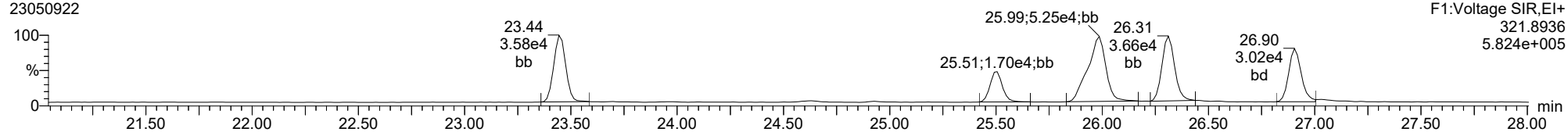
**Total-tetradioxins**

23050922



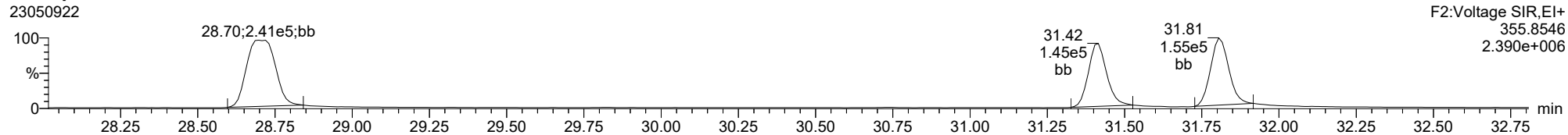
**Total-tetradioxins**

23050922



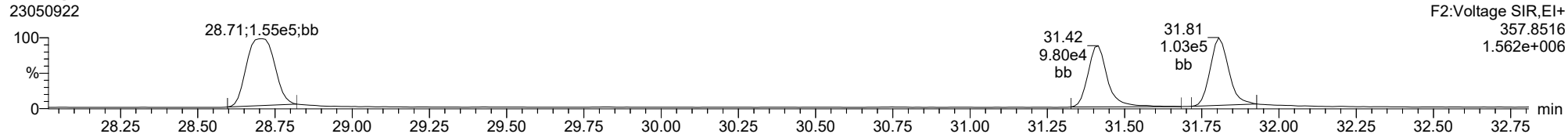
**Total-pentadioxins**

23050922



**Total-pentadioxins**

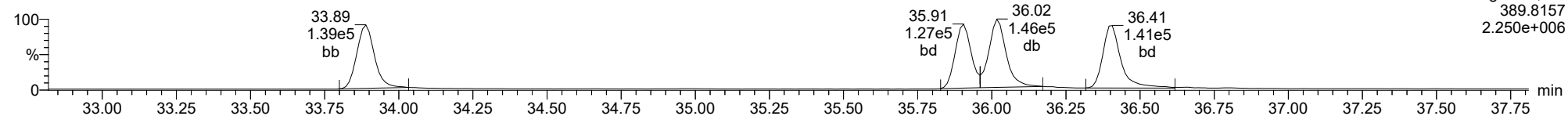
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ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

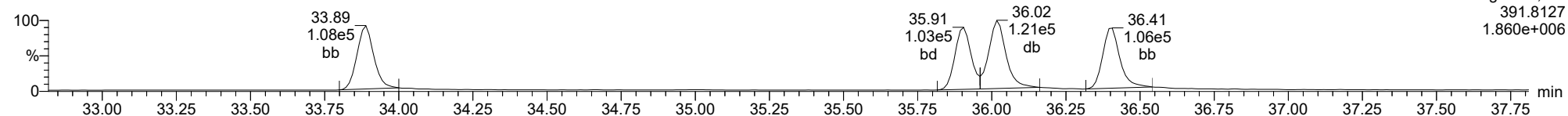
**Total-hexadioxins**

23050922



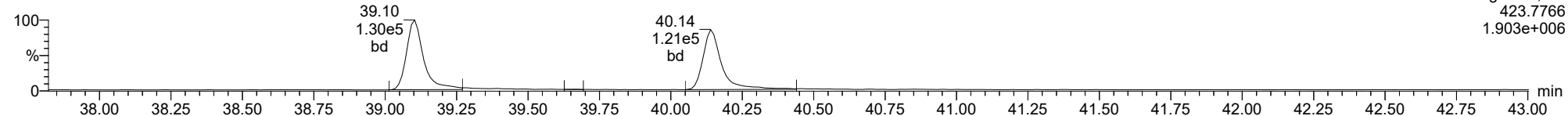
**Total-hexadioxins**

23050922



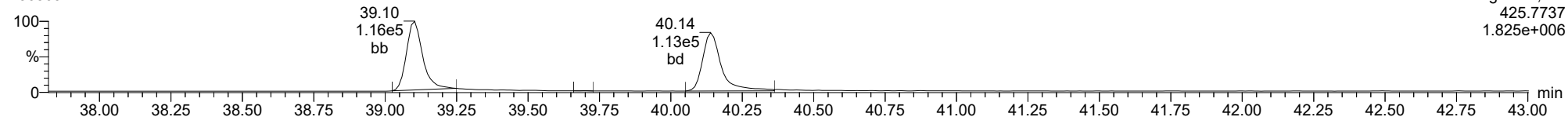
**Total-heptadioxins**

23050922



**Total-heptadioxins**

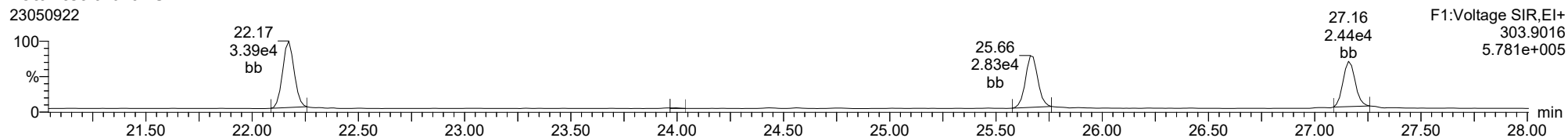
23050922



ID: CS3K6, Name: 23050922, Date: 10-May-2023, Time: 06:11:05, Conditions: AUTOSPEC01, User: pk

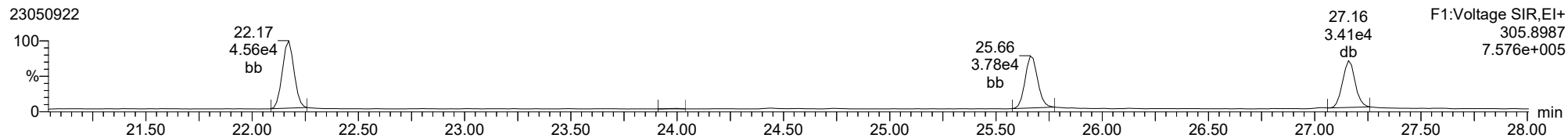
**Total-tetrafurans**

23050922



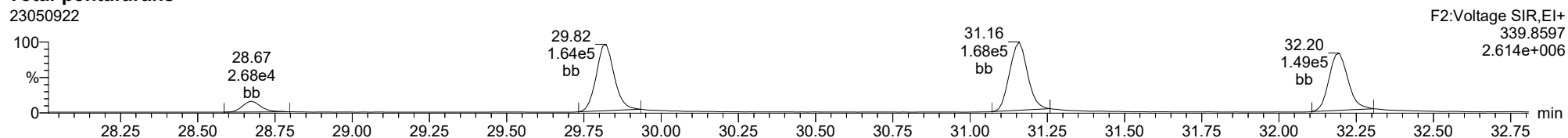
**Total-tetrafurans**

23050922



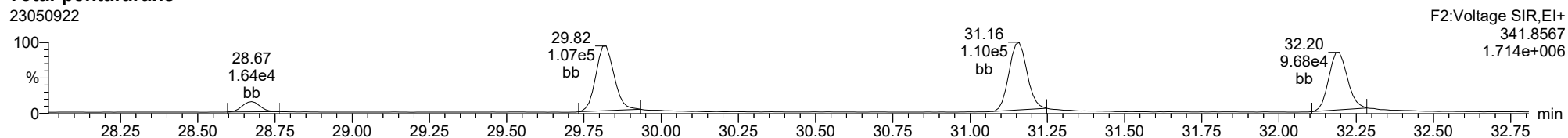
**Total-pentafurans**

23050922



**Total-pentafurans**

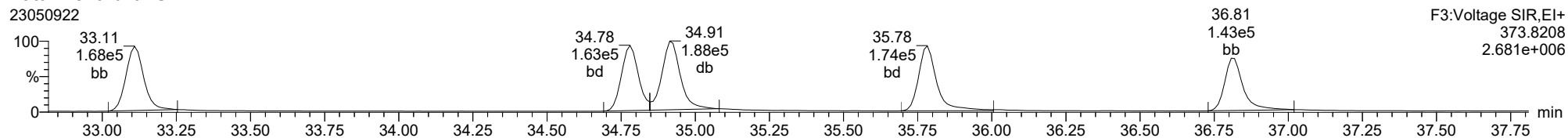
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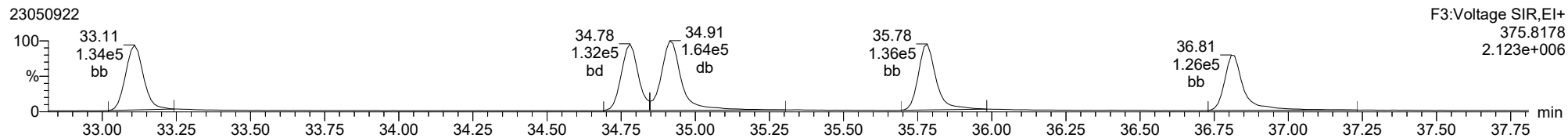


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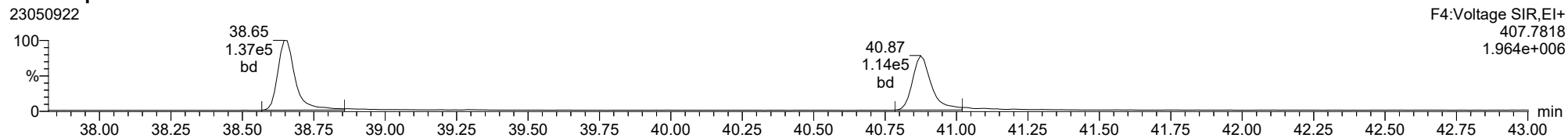
**Total-hexafurans**



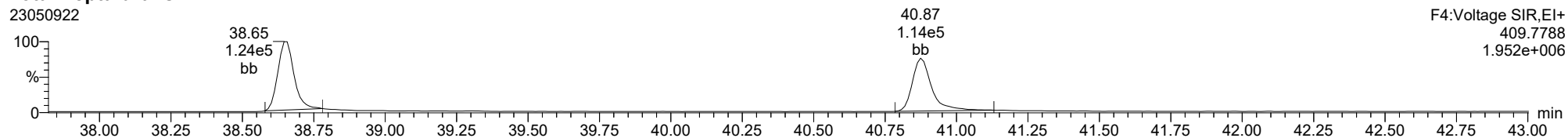
**Total-hexafurans**



**Total-heptafurans**

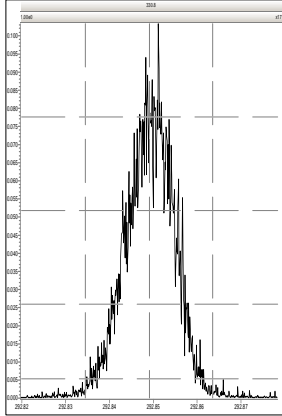


**Total-heptafurans**

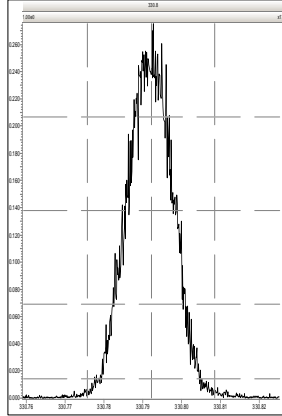


Printed: Wednesday, May 10, 2023 07:03:56 Pacific Daylight Time

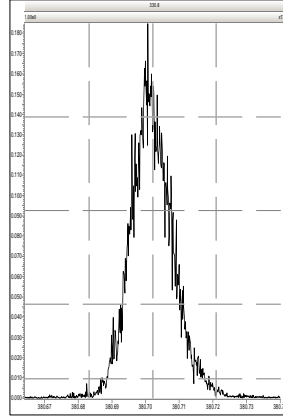
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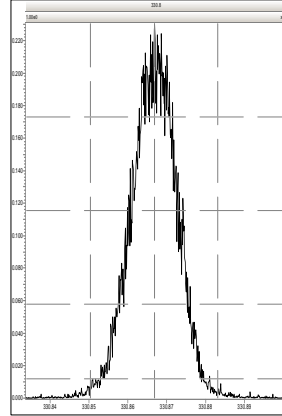
M 330.9792 R 12736



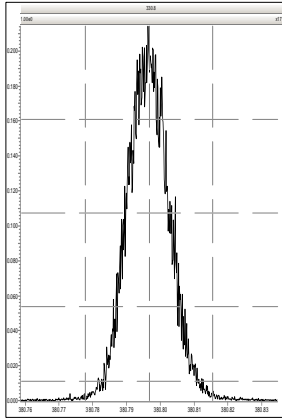
M 380.9760 R 14414



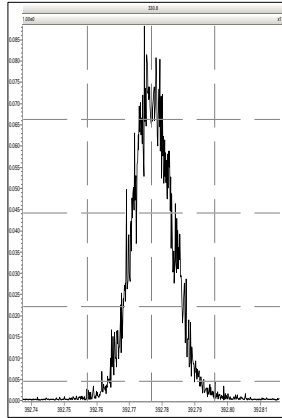
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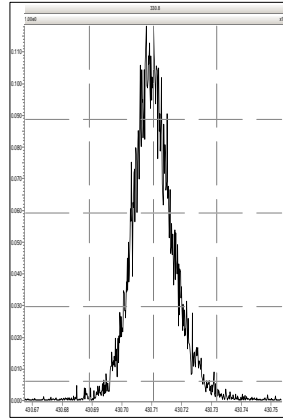
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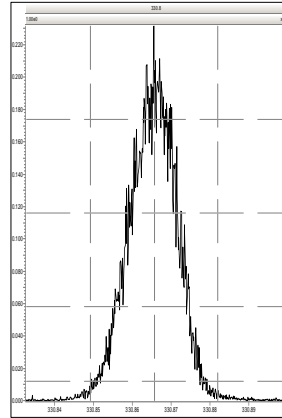
M 392.9760 R 14124



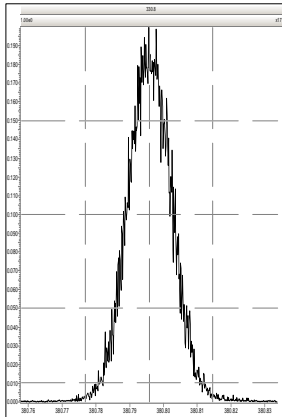
M 430.9728 R 13588



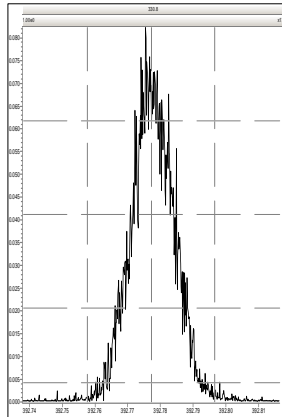
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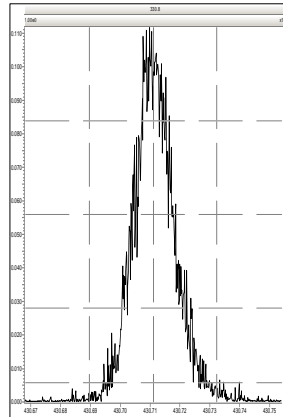
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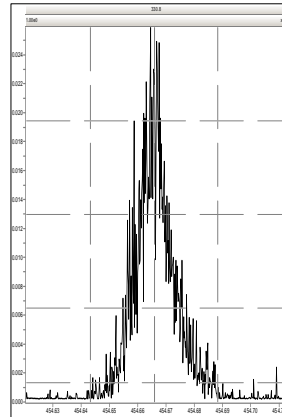
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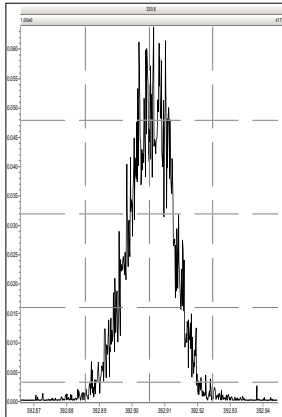
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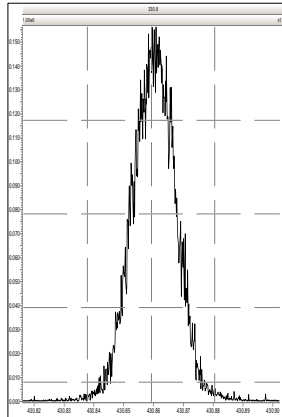
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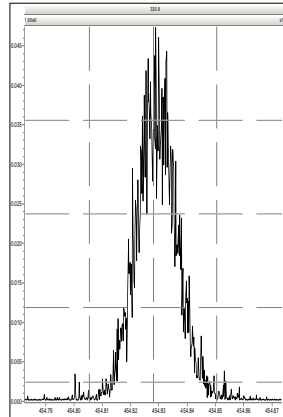
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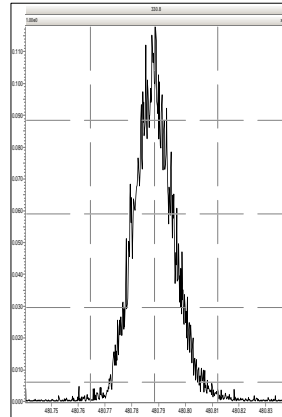
M 430.9728 R 13750



M 454.9728 R 13416

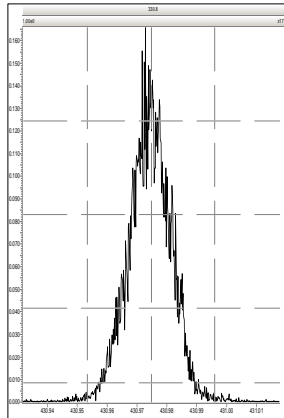


M 480.9696 R 14264

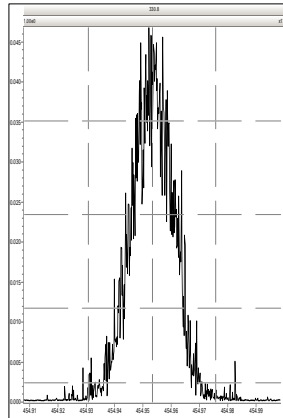


Printed: Wednesday, May 10, 2023 07:03:56 Pacific Daylight Time

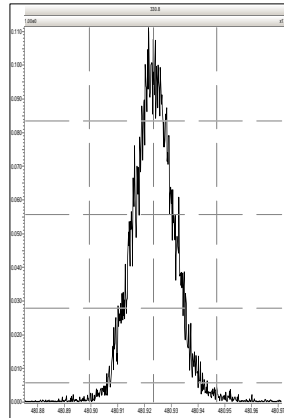
M 430.9728 R 13337



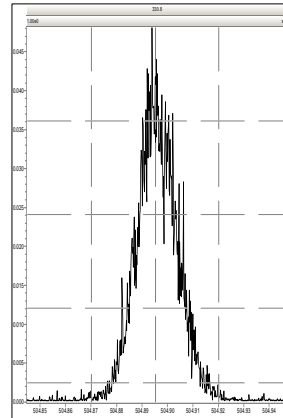
M 454.9728 R 14329



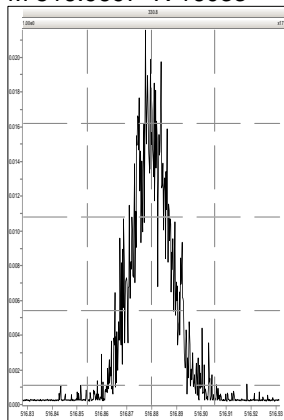
M 480.9696 R 14414



M 504.9696 R 14481



M 516.9697 R 16033

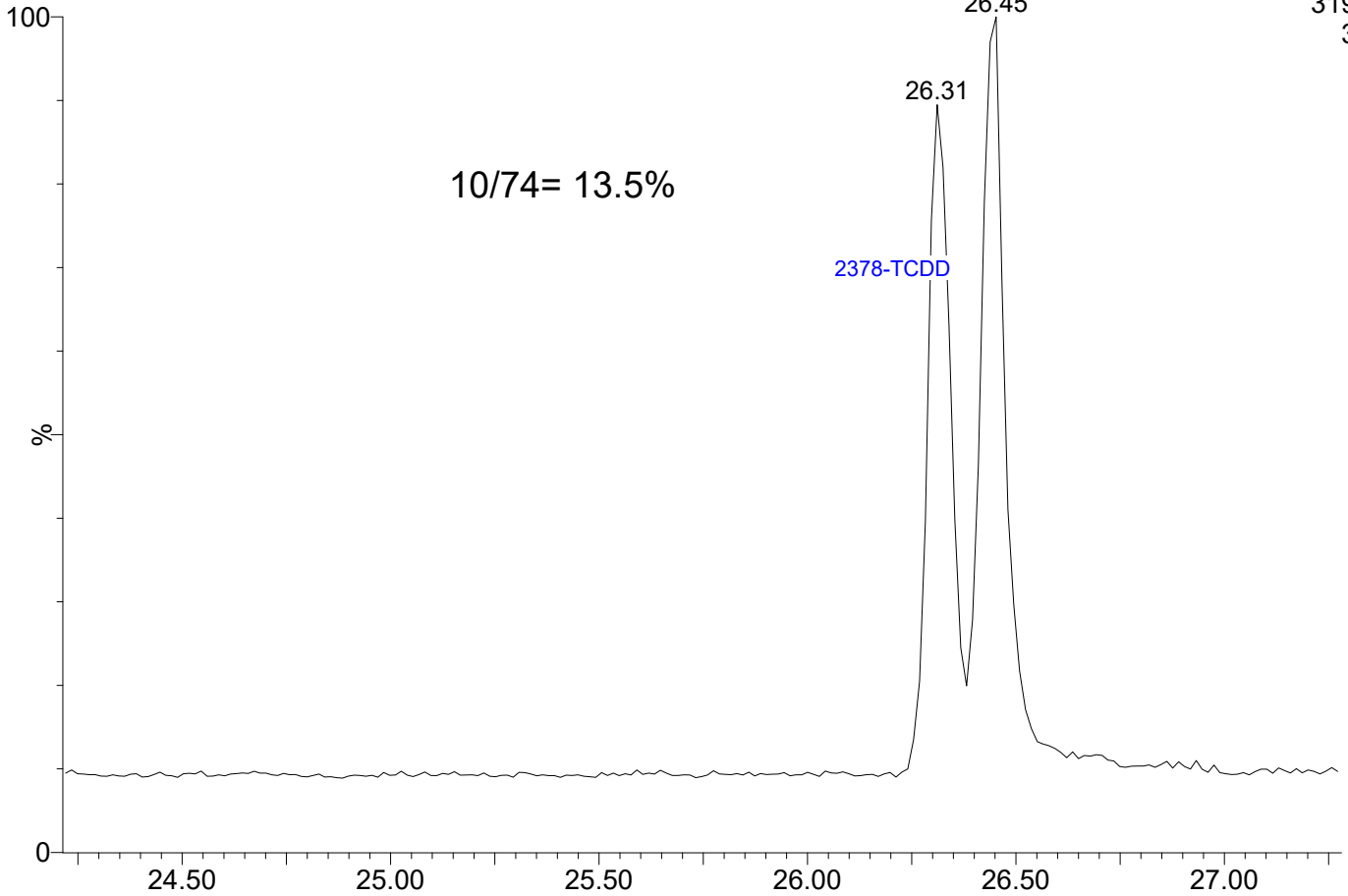


23050923

1: Voltage SIR 14 Channels EI+

319.8965

3.33e5

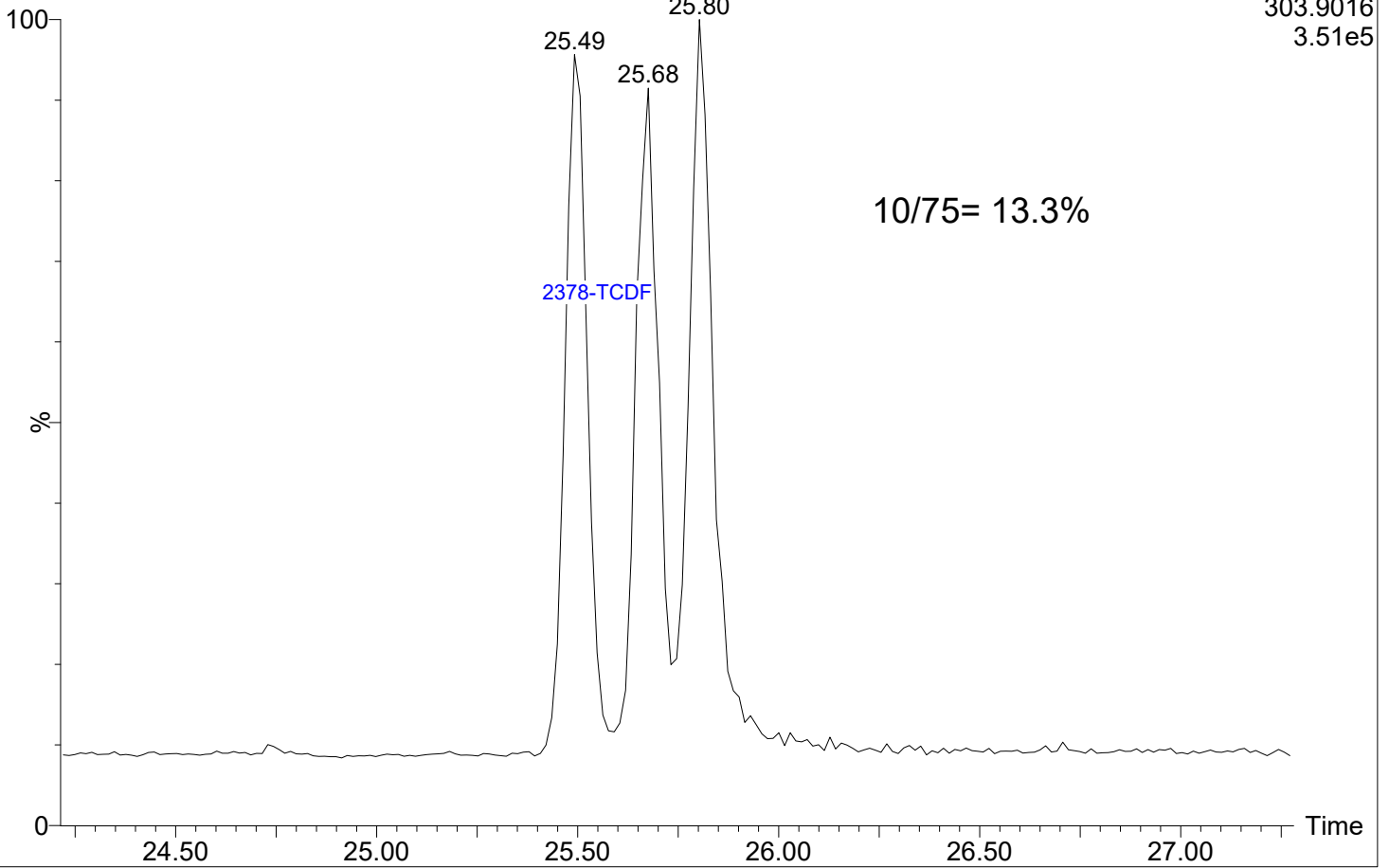


23050923

1: Voltage SIR 14 Channels EI+

303.9016

3.51e5





INITIAL CALIBRATION CHECK  
EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23051102

Calibration Date: 03/03/2023

Sequence: SLE0195

Injection Date: 05/11/23

Lab Sample ID: SLE0195-ICV1

Injection Time: 11:47

Sequence Name: CS3L1

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2,3,7,8-TCDF	A	10.000	11.3	0.7015272	0.7961262		13.5	+/-16
2,3,7,8-TCDD	A	10.000	9.70	1.1486620	1.1144230		-3.0	+/-22
1,2,3,7,8-PeCDF	A	50.000	58.0	0.6792300	0.7879694		16.0	+/-18
2,3,4,7,8-PeCDF	A	50.000	55.5	0.7861704	0.8726477		11.0	+/-18
1,2,3,7,8-PeCDD	A	50.000	52.9	1.0218450	1.0810680		5.8	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	48.6	1.1660380	1.1339290		-2.8	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	47.7	1.0907410	1.0414210		-4.5	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	49.2	1.1396990	1.1217330		-1.6	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	49.1	1.1370930	1.1163120		-1.8	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	48.4	0.9955689	0.9635854		-3.2	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	47.2	1.0009380	0.9444560		-5.6	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	51.1	0.9071139	0.9269435		2.2	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	51.6	1.0029930	1.0344240		3.1	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	52.2	0.9531152	0.9959848		4.5	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	53.5	1.0390130	1.1124720		7.1	+/-14
OCDF	A	100.00	106	0.7778078	0.8219952		5.7	+/-37
OCDD	A	100.00	103	0.9199537	0.9463229		2.9	+/-21
13C12-2,3,7,8-TCDF	A	100.00	107	1.6201960	1.7267206		6.6	+/-29
13C12-2,3,7,8-TCDD	A	100.00	105	1.1524090	1.2072736		4.8	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	115	1.2404520	1.4326250		15.5	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	122	1.1177860	1.3622139		21.9	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	108	0.8288129	0.8954882		8.0	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	90.9	1.1683050	1.0616184		-9.1	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	91.0	1.3864660	1.2612977		-9.0	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	95.2	1.1292560	1.0749766		-4.8	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	98.5	0.9317541	0.9178581		-1.5	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	96.7	0.9950393	0.9621537		-3.3	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	97.0	1.1566890	1.1223274		-3.0	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	124	0.8952017	1.1067874		23.6	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	127	0.7697516	0.9775428		27.0	+/-23

\* Values outside of QC limits



**INITIAL CALIBRATION CHECK**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>AUTOSPEC01</u>	Calibration:	<u>GC00015</u>
Lab File ID:	<u>23051102</u>	Calibration Date:	<u>03/03/2023</u>
Sequence:	<u>SLE0195</u>	Injection Date:	<u>05/11/23</u>
Lab Sample ID:	<u>SLE0195-ICV1</u>	Injection Time:	<u>11:47</u>
Sequence Name:	<u>CS3L1</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	111	0.8401226	0.9325436		11.0	+/-28
13C12-OCDD	A	200.00	280	0.7674714	1.0761066		40.2	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	8.96	1.2878040	1.1534118		-10.4	

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

**Method: T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16**  
**Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27**

**ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk**

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.704	1.001	4.322e4	5.716e4	0.702	0.756	0.770	934	1387	6.22e5	8.50e5	665.1	612.8	NO	bb	bb	11.348
12378-PeCDF	29.844	1.000	2.521e5	1.600e5	0.679	1.576	1.550	2895	2411	3.86e6	2.46e6	1334.5	1022.4	NO	bb	bb	58.005
23478-PeCDF	31.181	1.001	2.638e5	1.702e5	0.786	1.550	1.550	2895	2411	4.00e6	2.60e6	1380.6	1078.1	NO	bb	bb	55.500
123478-HxCDF	34.802	1.000	2.476e5	2.005e5	1.166	1.235	1.240	2727	1682	3.81e6	3.10e6	1397.7	1844.8	NO	bd	bd	48.623
234678-HxCDF	35.805	1.000	2.513e5	1.976e5	1.140	1.271	1.240	2727	1682	3.82e6	3.12e6	1400.7	1851.9	NO	bb	bb	49.212
123678-HxCDF	34.947	1.001	2.737e5	2.154e5	1.091	1.271	1.240	2727	1682	3.87e6	3.12e6	1418.8	1852.6	NO	db	db	47.739
123789-HxCDF	36.841	1.001	2.128e5	1.687e5	1.137	1.262	1.240	2727	1682	3.11e6	2.40e6	1140.9	1424.3	NO	bb	bb	49.086
1234678-HpCDF	38.680	1.000	2.091e5	2.171e5	1.003	0.963	1.050	2804	2693	3.44e6	3.46e6	1227.1	1284.7	NO	bb	bb	51.567
1234789-HpCDF	40.897	1.000	1.837e5	1.788e5	0.953	1.027	1.050	2804	2693	2.62e6	2.59e6	935.5	960.0	NO	bb	bb	52.249
OCDF	45.089	1.006	3.187e5	3.399e5	0.778	0.938	0.890	2153	1826	3.68e6	4.10e6	1710.6	2244.7	NO	bb	bb	105.681
2378-TCDD	26.339	1.001	4.263e4	5.562e4	1.149	0.766	0.770	1468	763	6.43e5	7.91e5	437.9	1036.9	NO	bb	bd	9.702
12378-PeCDD	31.438	1.001	2.161e5	1.374e5	1.022	1.572	1.550	2996	1875	3.26e6	2.05e6	1087.5	1090.8	NO	bb	bb	52.898
123478-HxCDD	35.928	1.000	1.904e5	1.547e5	0.996	1.231	1.240	3445	3171	3.12e6	2.48e6	904.5	783.4	NO	bd	bd	48.394
123678-HxCDD	36.039	1.000	2.210e5	1.737e5	1.001	1.272	1.240	3445	3171	3.23e6	2.61e6	938.4	823.1	NO	db	db	47.179
123789-HxCDD	36.429	1.011	1.920e5	1.677e5	0.907	1.145	1.240	3445	3171	2.95e6	2.46e6	857.8	775.7	NO	bb	bd	51.093
1234678-HpCDD	40.161	1.000	1.955e5	1.907e5	1.039	1.025	1.050	2210	2115	2.65e6	2.65e6	1201.1	1255.2	NO	bd	bd	53.535
OCDD	44.851	1.000	3.591e5	3.992e5	0.920	0.900	0.890	2324	1403	4.41e6	4.91e6	1896.9	3499.3	NO	bb	bb	102.866
13C-2378-TCDF	25.675	1.007	5.521e5	7.088e5	1.620	0.779	0.770	1447	1875	7.74e6	1.01e7	5349.8	5372.1	NO	bb	bb	106.575
13C-12378-PeCDF	29.833	1.170	6.380e5	4.081e5	1.240	1.563	1.550	4710	2612	9.37e6	6.03e6	1989.2	2307.6	NO	bb	bb	115.492
13C-23478-PeCDF	31.159	1.222	6.072e5	3.875e5	1.118	1.567	1.550	4710	2612	8.85e6	5.80e6	1879.8	2221.7	NO	bb	bb	121.867
13C-123478-HxCDF	34.791	0.955	2.677e5	5.229e5	1.168	0.512	0.510	1681	2357	4.08e6	7.95e6	2425.7	3373.7	NO	bd	bd	90.868
13C-123678-HxCDF	34.925	0.959	3.355e5	6.037e5	1.386	0.556	0.510	1681	2357	4.43e6	8.62e6	2636.4	3658.7	NO	db	db	90.972
13C-234678-HxCDF	35.794	0.983	2.696e5	5.309e5	1.129	0.508	0.510	1681	2357	4.03e6	7.88e6	2397.7	3343.5	NO	bb	bb	95.193
13C-123789-HxCDF	36.819	1.011	2.288e5	4.546e5	0.932	0.503	0.510	1681	2357	3.42e6	6.82e6	2031.9	2893.6	NO	bb	bb	98.509
13C-1234678-HpCDF	38.668	1.062	2.538e5	5.703e5	0.895	0.445	0.440	2322	3717	4.11e6	9.23e6	1769.3	2484.1	NO	bb	bb	123.636
13C-1234789-HpCDF	40.886	1.123	2.356e5	4.923e5	0.770	0.479	0.440	2322	3717	3.06e6	6.63e6	1315.8	1784.1	NO	bd	bb	126.995
13C-1234-TCDD	25.506	0.000	3.252e5	4.050e5	1.000	0.803	0.770	1813	1111	5.00e6	6.25e6	2755.6	5629.5	NO	bb	bb	100.000
13C-2378-TCDD	26.311	1.032	3.894e5	4.922e5	1.152	0.791	0.770	1813	1111	5.54e6	7.06e6	3057.0	6357.4	NO	bb	bb	104.761
13C-12378-PeCDD	31.416	1.232	4.075e5	2.464e5	0.829	1.654	1.550	1227	1495	5.47e6	3.36e6	4459.9	2249.4	NO	bb	bd	108.045
13C-123478-HxCDD	35.917	0.986	4.004e5	3.160e5	0.995	1.267	1.240	1593	2047	6.24e6	4.87e6	3915.2	2379.5	NO	bd	bd	96.695
13C-123678-HxCDD	36.028	0.989	4.597e5	3.760e5	1.157	1.223	1.240	1593	2047	6.65e6	5.31e6	4172.1	2592.8	NO	db	db	97.029
13C-1234678-HpCDD	40.150	1.102	3.603e5	3.341e5	0.840	1.079	1.050	1765	2013	4.96e6	4.54e6	2813.3	2255.8	NO	bb	bb	111.001
13C-OCDD	44.833	1.231	7.622e5	8.404e5	0.767	0.907	0.890	2512	2675	8.73e6	9.52e6	3474.4	3558.2	NO	bd	bd	280.429
13C-123789-HxCDD	36.418	0.000	4.122e5	3.324e5	1.000	1.240	1.240	1593	2047	6.02e6	4.88e6	3780.9	2384.4	NO	bb	bb	100.000
37CL-2378-TCDD	26.339	1.033	8.422e4		1.288			1525		1.23e6		807.4			bb		8.956

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.201	0.865	4.984e4	6.614e4	0.802	0.754	0.770	934	1387	8.19e5	1.10e6	877.0	792.1	NO	bb	bb	11.476
1289-TCDF	27.187	1.059	3.684e4	5.035e4	0.678	0.732	0.770	934	1387	5.78e5	7.51e5	618.6	541.4	NO	bb	bb	10.200
13468-PECDF	27.045	0.907	3.400e5	2.236e5	1.246	1.521	1.550	868	1166	5.23e6	3.47e6	6027.9	2974.7	NO	bb	bb	43.222
12389-PECDF	32.217	1.080	2.428e5	1.516e5	0.496	1.602	1.550	2895	2411	3.57e6	2.23e6	1234.2	923.3	NO	bb	bb	75.941
123468-HXCDF	33.131	0.952	2.457e5	1.997e5	1.169	1.230	1.240	2727	1682	3.62e6	2.92e6	1329.1	1737.0	NO	bb	bb	48.200
1368-TCDD	23.472	0.892	4.085e4	4.993e4	1.015	0.818	0.770	1468	763	6.40e5	7.89e5	435.9	1034.3	NO	bb	bb	10.142
1289-TCDD	26.933	1.024	3.590e4	4.331e4	0.909	0.829	0.770	1468	763	5.14e5	6.02e5	350.2	789.3	NO	bb	bd	9.887
12479-PECDD	28.719	0.914	3.556e5	2.277e5	2.301	1.562	1.550	2996	1875	3.40e6	2.10e6	1135.3	1117.7	NO	bb	bb	38.755
12389-PECDD	31.839	1.013	2.433e5	1.504e5	1.184	1.617	1.550	2996	1875	3.47e6	2.16e6	1159.5	1152.2	NO	bb	bb	50.869
124679-HXCDD	33.911	0.944	1.967e5	1.614e5	1.115	1.218	1.240	3445	3171	2.95e6	2.47e6	857.6	777.6	NO	bb	bb	44.811
1234679-HPCDD	39.125	0.975	2.200e5	2.154e5	1.137	1.021	1.050	2210	2115	3.29e6	3.15e6	1486.7	1491.0	NO	bd	bd	55.148
Total-tetrafurans			1.306e5		0.727			934		2.03e6							33.198
Total-penta1			3.400e5					868		5.23e6							43.222
Total-pentafurans			7.990e5		0.654			2895		1.21e7							199.351
Total-hexafurans			1.231e6		1.141			2727		1.82e7							242.860
Total-heptafurans			3.928e5		0.978			2804		6.06e6							103.816
Total-Furans			3.212e6		0.922			934		4.73e7							728.128
Total-tetradoxins			2.015e5		1.024			1468		2.74e6							50.335
Total-pentadoxins			8.158e5		1.502			2996		1.01e7							142.661
Total-hexadoxins			8.000e5		1.005			3445		1.23e7							191.477
Total-heptadoxins			4.178e5		1.088			2210		5.98e6							109.236
Total-Dioxins			2.594e6		1.130			1468		3.55e7							596.575
Total-TEQ			5.806e6					1468		8.29e7							1324.703
FUNCTION1 PFK			9.500e5					447280		1.96e7							
FUNCTION2 PFK			6.178e5					349751		1.53e7							0.000
FUNCTION3 PFK			2.021e7					521018		2.09e8							0.000
FUNCTION4 PFK			3.077e7					529237		1.54e8							
FUNCTION5 PFK			6.884e6					294380		6.72e7							
FUNCTION1 HXCD...			1.269e3					536		1.36e4							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			7.076e2					842		1.37e4							0.000
FUNCTION3 OCDPE			6.182e2					518		8.88e3							0.000
FUNCTION4 NCDPE			7.888e2					652		1.53e4							0.000
FUNCTION5 DCDPE			3.781e2					588		7.22e3							0.000



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.19	3.684e4	5.035e4	0.678	0.73	0.77	618.6	YES	NO	bb	bb	10.200
2	Total-tetrafurans	27.06	3.309e2	4.433e2	0.727	0.75	0.77	6.9	YES	NO	bb	bb	0.084
3	2378-TCDF	25.70	4.322e4	5.716e4	0.702	0.76	0.77	665.1	YES	NO	bb	bb	11.348
4	Total-tetrafurans	24.62	3.490e2	4.710e2	0.727	0.74	0.77	7.6	YES	NO	db	bb	0.089
5	1368-TCDF	22.20	4.984e4	6.614e4	0.802	0.75	0.77	877.0	YES	NO	bb	bb	11.476

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.05	3.400e5	2.236e5	1.246	1.52	1.55	6027.9	YES	NO	bb	bb	43.222

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDF	32.22	2.428e5	1.516e5	0.496	1.60	1.55	1234.2	YES	NO	bb	bb	75.941
2	23478-PeCDF	31.18	2.638e5	1.702e5	0.786	1.55	1.55	1380.6	YES	NO	bb	bb	55.500
3	Total-pentafurans	30.09	1.598e2	1.094e2	0.654	1.46	1.55	1.5	NO	NO	bb	bb	0.040
4	12378-PeCDF	29.84	2.521e5	1.600e5	0.679	1.58	1.55	1334.5	YES	NO	bb	bb	58.005
5	Total-pentafurans	28.70	4.012e4	2.571e4	0.654	1.56	1.55	221.0	YES	NO	bb	bb	9.865

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123478-HxCDF	34.80	2.476e5	2.005e5	1.166	1.23	1.24	1397.7	YES	NO	bd	bd	48.623
2	123468-HxCDF	33.13	2.457e5	1.997e5	1.169	1.23	1.24	1329.1	YES	NO	bb	bb	48.200
3	123789-HxCDF	36.84	2.128e5	1.687e5	1.137	1.26	1.24	1140.9	YES	NO	bb	bb	49.086
4	234678-HxCDF	35.81	2.513e5	1.976e5	1.140	1.27	1.24	1400.7	YES	NO	bb	bb	49.212
5	123678-HxCDF	34.95	2.737e5	2.154e5	1.091	1.27	1.24	1418.8	YES	NO	db	db	47.739

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.90	1.837e5	1.788e5	0.953	1.03	1.05	935.5	YES	NO	bb	bb	52.249
2	1234678-HpCDF	38.68	2.091e5	2.171e5	1.003	0.96	1.05	1227.1	YES	NO	bb	bb	51.567

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

**ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.19	3.684e4	5.035e4	0.678	0.73	0.77	618.6	YES	NO	bb	bb	10.200
2	Total-tetrafurans	27.06	3.309e2	4.433e2	0.727	0.75	0.77	6.9	YES	NO	bb	bb	0.084
3	2378-TCDF	25.70	4.322e4	5.716e4	0.702	0.76	0.77	665.1	YES	NO	bb	bb	11.348
4	Total-tetrafurans	24.62	3.490e2	4.710e2	0.727	0.74	0.77	7.6	YES	NO	db	bb	0.089
5	1368-TCDF	22.20	4.984e4	6.614e4	0.802	0.75	0.77	877.0	YES	NO	bb	bb	11.476
6	12389-PECDF	32.22	2.428e5	1.516e5	0.496	1.60	1.55	1234.2	YES	NO	bb	bb	75.941
7	23478-PeCDF	31.18	2.638e5	1.702e5	0.786	1.55	1.55	1380.6	YES	NO	bb	bb	55.500
8	Total-pentafurans	30.09	1.598e2	1.094e2	0.654	1.46	1.55	1.5	NO	NO	bb	bb	0.040
9	12378-PeCDF	29.84	2.521e5	1.600e5	0.679	1.58	1.55	1334.5	YES	NO	bb	bb	58.005
10	Total-pentafurans	28.70	4.012e4	2.571e4	0.654	1.56	1.55	221.0	YES	NO	bb	bb	9.865
11	123478-HxCDF	34.80	2.476e5	2.005e5	1.166	1.23	1.24	1397.7	YES	NO	bd	bd	48.623
12	123468-HxCDF	33.13	2.457e5	1.997e5	1.169	1.23	1.24	1329.1	YES	NO	bb	bb	48.200
13	123789-HxCDF	36.84	2.128e5	1.687e5	1.137	1.26	1.24	1140.9	YES	NO	bb	bb	49.086
14	234678-HxCDF	35.81	2.513e5	1.976e5	1.140	1.27	1.24	1400.7	YES	NO	bb	bb	49.212
15	123678-HxCDF	34.95	2.737e5	2.154e5	1.091	1.27	1.24	1418.8	YES	NO	db	db	47.739
16	1234789-HpCDF	40.90	1.837e5	1.788e5	0.953	1.03	1.05	935.5	YES	NO	bb	bb	52.249
17	1234678-HpCDF	38.68	2.091e5	2.171e5	1.003	0.96	1.05	1227.1	YES	NO	bb	bb	51.567
18	OCDF	45.09	3.187e5	3.399e5	0.778	0.94	0.89	1710.6	YES	NO	bb	bb	105.681
19	13468-PECDF	27.05	3.400e5	2.236e5	1.246	1.52	1.55	6027.9	YES	NO	bb	bb	43.222

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	26.93	3.590e4	4.331e4	0.909	0.83	0.77	350.2	YES	NO	bb	bd	9.887
2	2378-TCDD	26.34	4.263e4	5.562e4	1.149	0.77	0.77	437.9	YES	NO	bb	bd	9.702
3	Total-tetradiioxins	26.01	6.085e4	7.756e4	1.024	0.78	0.77	420.7	YES	NO	bd	bb	15.328
4	Total-tetradiioxins	25.53	1.951e4	2.421e4	1.024	0.81	0.77	204.2	YES	NO	bb	bb	4.842
5	Total-tetradiioxins	24.67	1.730e3	2.187e3	1.024	0.79	0.77	15.2	YES	NO	bb	bb	0.434
6	1368-TCDD	23.47	4.085e4	4.993e4	1.015	0.82	0.77	435.9	YES	NO	bb	bb	10.142

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12479-PECDD	28.72	3.556e5	2.277e5	2.301	1.56	1.55	1135.3	YES	NO	bb	bb	38.755
2	12389-PECDD	31.84	2.433e5	1.504e5	1.184	1.62	1.55	1159.5	YES	NO	bb	bb	50.869
3	12378-PeCDD	31.44	2.161e5	1.374e5	1.022	1.57	1.55	1087.5	YES	NO	bb	bb	52.898
4	Total-pentadiioxins	30.76	8.365e2	5.267e2	1.502	1.59	1.55	4.4	YES	NO	bb	bb	0.139

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

**ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk**

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.43	1.920e5	1.677e5	0.907	1.14	1.24	857.8	YES	NO	bb	bd	51.093
2	123678-HxCDD	36.04	2.210e5	1.737e5	1.001	1.27	1.24	938.4	YES	NO	db	db	47.179
3	123478-HxCDD	35.93	1.904e5	1.547e5	0.996	1.23	1.24	904.5	YES	NO	bd	bd	48.394
4	124679-HXCDD	33.91	1.967e5	1.614e5	1.115	1.22	1.24	857.6	YES	NO	bb	bb	44.811

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptadioxins	40.42	2.271e3	1.908e3	1.088	1.19	1.05	16.6	YES	NO	dd	dd	0.553
2	1234678-HpCDD	40.16	1.955e5	1.907e5	1.039	1.03	1.05	1201.1	YES	NO	bd	bd	53.535
3	1234679-HPCDD	39.13	2.200e5	2.154e5	1.137	1.02	1.05	1486.7	YES	NO	bd	bd	55.148

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	26.93	3.590e4	4.331e4	0.909	0.83	0.77	350.2	YES	NO	bb	bd	9.887
2	2378-TCDD	26.34	4.263e4	5.562e4	1.149	0.77	0.77	437.9	YES	NO	bb	bd	9.702
3	Total-tetradioxins	26.01	6.085e4	7.756e4	1.024	0.78	0.77	420.7	YES	NO	bd	bb	15.328
4	Total-tetradioxins	25.53	1.951e4	2.421e4	1.024	0.81	0.77	204.2	YES	NO	bb	bb	4.842
5	Total-tetradioxins	24.67	1.730e3	2.187e3	1.024	0.79	0.77	15.2	YES	NO	bb	bb	0.434
6	1368-TCDD	23.47	4.085e4	4.993e4	1.015	0.82	0.77	435.9	YES	NO	bb	bb	10.142
7	12479-PECDD	28.72	3.556e5	2.277e5	2.301	1.56	1.55	1135.3	YES	NO	bb	bb	38.755
8	12389-PECDD	31.84	2.433e5	1.504e5	1.184	1.62	1.55	1159.5	YES	NO	bb	bb	50.869
9	12378-PeCDD	31.44	2.161e5	1.374e5	1.022	1.57	1.55	1087.5	YES	NO	bb	bb	52.898
10	Total-pentadioxins	30.76	8.365e2	5.267e2	1.502	1.59	1.55	4.4	YES	NO	bb	bb	0.139
11	123789-HxCDD	36.43	1.920e5	1.677e5	0.907	1.14	1.24	857.8	YES	NO	bb	bd	51.093
12	123678-HxCDD	36.04	2.210e5	1.737e5	1.001	1.27	1.24	938.4	YES	NO	db	db	47.179
13	123478-HxCDD	35.93	1.904e5	1.547e5	0.996	1.23	1.24	904.5	YES	NO	bd	bd	48.394
14	124679-HXCDD	33.91	1.967e5	1.614e5	1.115	1.22	1.24	857.6	YES	NO	bb	bb	44.811
15	Total-heptadioxins	40.42	2.271e3	1.908e3	1.088	1.19	1.05	16.6	YES	NO	dd	dd	0.553
16	1234678-HpCDD	40.16	1.955e5	1.907e5	1.039	1.03	1.05	1201.1	YES	NO	bd	bd	53.535
17	1234679-HPCDD	39.13	2.200e5	2.154e5	1.137	1.02	1.05	1486.7	YES	NO	bd	bd	55.148
18	OCDD	44.85	3.591e5	3.992e5	0.920	0.90	0.89	1896.9	YES	NO	bb	bb	102.866

## Quantify Totals Report MassLynx V4.1 SCN909

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ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.19	3.684e4	5.035e4	0.678	0.73	0.77	618.6	YES	NO	bb	bb	10.200
2	Total-tetrafurans	27.06	3.309e2	4.433e2	0.727	0.75	0.77	6.9	YES	NO	bb	bb	0.084
3	2378-TCDF	25.70	4.322e4	5.716e4	0.702	0.76	0.77	665.1	YES	NO	bb	bb	11.348
4	Total-tetrafurans	24.62	3.490e2	4.710e2	0.727	0.74	0.77	7.6	YES	NO	db	bb	0.089
5	1368-TCDF	22.20	4.984e4	6.614e4	0.802	0.75	0.77	877.0	YES	NO	bb	bb	11.476
6	12389-PECDF	32.22	2.428e5	1.516e5	0.496	1.60	1.55	1234.2	YES	NO	bb	bb	75.941
7	23478-PeCDF	31.18	2.638e5	1.702e5	0.786	1.55	1.55	1380.6	YES	NO	bb	bb	55.500
8	Total-pentafurans	30.09	1.598e2	1.094e2	0.654	1.46	1.55	1.5	NO	NO	bb	bb	0.040
9	12378-PeCDF	29.84	2.521e5	1.600e5	0.679	1.58	1.55	1334.5	YES	NO	bb	bb	58.005
10	Total-pentafurans	28.70	4.012e4	2.571e4	0.654	1.56	1.55	221.0	YES	NO	bb	bb	9.865
11	123478-HxCDF	34.80	2.476e5	2.005e5	1.166	1.23	1.24	1397.7	YES	NO	bd	bd	48.623
12	123468-HXCDF	33.13	2.457e5	1.997e5	1.169	1.23	1.24	1329.1	YES	NO	bb	bb	48.200
13	123789-HxCDF	36.84	2.128e5	1.687e5	1.137	1.26	1.24	1140.9	YES	NO	bb	bb	49.086
14	234678-HxCDF	35.81	2.513e5	1.976e5	1.140	1.27	1.24	1400.7	YES	NO	bb	bb	49.212
15	123678-HxCDF	34.95	2.737e5	2.154e5	1.091	1.27	1.24	1418.8	YES	NO	db	db	47.739
16	1234789-HpCDF	40.90	1.837e5	1.788e5	0.953	1.03	1.05	935.5	YES	NO	bb	bb	52.249
17	1234678-HpCDF	38.68	2.091e5	2.171e5	1.003	0.96	1.05	1227.1	YES	NO	bb	bb	51.567
18	OCDF	45.09	3.187e5	3.399e5	0.778	0.94	0.89	1710.6	YES	NO	bb	bb	105.681
19	13468-PECDF	27.05	3.400e5	2.236e5	1.246	1.52	1.55	6027.9	YES	NO	bb	bb	43.222
20	1289-TCDD	26.93	3.590e4	4.331e4	0.909	0.83	0.77	350.2	YES	NO	bb	bd	9.887
21	2378-TCDD	26.34	4.263e4	5.562e4	1.149	0.77	0.77	437.9	YES	NO	bb	bd	9.702
22	Total-tetradioxins	26.01	6.085e4	7.756e4	1.024	0.78	0.77	420.7	YES	NO	bd	bb	15.328
23	Total-tetradioxins	25.53	1.951e4	2.421e4	1.024	0.81	0.77	204.2	YES	NO	bb	bb	4.842
24	Total-tetradioxins	24.67	1.730e3	2.187e3	1.024	0.79	0.77	15.2	YES	NO	bb	bb	0.434
25	1368-TCDD	23.47	4.085e4	4.993e4	1.015	0.82	0.77	435.9	YES	NO	bb	bb	10.142
26	12479-PECDD	28.72	3.556e5	2.277e5	2.301	1.56	1.55	1135.3	YES	NO	bb	bb	38.755
27	12389-PECDD	31.84	2.433e5	1.504e5	1.184	1.62	1.55	1159.5	YES	NO	bb	bb	50.869
28	12378-PeCDD	31.44	2.161e5	1.374e5	1.022	1.57	1.55	1087.5	YES	NO	bb	bb	52.898
29	Total-pentadioxins	30.76	8.365e2	5.267e2	1.502	1.59	1.55	4.4	YES	NO	bb	bb	0.139
30	123789-HxCDD	36.43	1.920e5	1.677e5	0.907	1.14	1.24	857.8	YES	NO	bb	bd	51.093
31	123678-HxCDD	36.04	2.210e5	1.737e5	1.001	1.27	1.24	938.4	YES	NO	db	db	47.179
32	123478-HxCDD	35.93	1.904e5	1.547e5	0.996	1.23	1.24	904.5	YES	NO	bd	bd	48.394
33	124679-HXCDD	33.91	1.967e5	1.614e5	1.115	1.22	1.24	857.6	YES	NO	bb	bb	44.811
34	Total-heptadioxins	40.42	2.271e3	1.908e3	1.088	1.19	1.05	16.6	YES	NO	dd	dd	0.553
35	1234678-HpCDD	40.16	1.955e5	1.907e5	1.039	1.03	1.05	1201.1	YES	NO	bd	bd	53.535
36	1234679-HPCDD	39.13	2.200e5	2.154e5	1.137	1.02	1.05	1486.7	YES	NO	bd	bd	55.148
37	OCDD	44.85	3.591e5	3.992e5	0.920	0.90	0.89	1896.9	YES	NO	bb	bb	102.866

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk****PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.64	2.880e4					1.2	NO		bb		
2	FUNCTION1 PFK	23.57	5.175e3					0.8	NO		bb		
3	FUNCTION1 PFK	23.39	2.707e4					1.6	NO		bb		
4	FUNCTION1 PFK	22.55	2.990e4					1.8	NO		bb		
5	FUNCTION1 PFK	22.45	5.448e3					0.9	NO		bb		
6	FUNCTION1 PFK	21.89	1.062e4					0.9	NO		bb		
7	FUNCTION1 PFK	21.37	1.196e5					2.0	NO		bb		
8	FUNCTION1 PFK	21.21	1.474e4					1.4	NO		db		
9	FUNCTION1 PFK	21.16	5.710e4					2.8	NO		bd		
10	FUNCTION1 PFK	25.93	1.208e4					0.9	NO		db		
11	FUNCTION1 PFK	25.87	1.249e4					1.0	NO		bd		
12	FUNCTION1 PFK	25.73	9.167e3					0.8	NO		bb		
13	FUNCTION1 PFK	25.28	3.443e4					0.8	NO		bb		
14	FUNCTION1 PFK	25.15	3.014e4					1.9	NO		bb		
15	FUNCTION1 PFK	25.01	4.056e3					0.6	NO		bb		
16	FUNCTION1 PFK	24.97	2.086e4					1.1	NO		bb		
17	FUNCTION1 PFK	24.87	2.769e3					0.4	NO		bb		
18	FUNCTION1 PFK	24.77	1.896e4					1.6	NO		db		
19	FUNCTION1 PFK	24.73	2.604e4					1.7	NO		bd		
20	FUNCTION1 PFK	24.43	1.689e4					1.5	NO		bb		
21	FUNCTION1 PFK	24.28	1.959e5					3.2	YES		bb		
22	FUNCTION1 PFK	24.18	2.769e4					2.0	NO		db		
23	FUNCTION1 PFK	24.14	4.322e4					1.6	NO		dd		
24	FUNCTION1 PFK	24.05	2.610e4					1.8	NO		bd		
25	FUNCTION1 PFK	23.91	1.319e4					0.8	NO		bb		
26	FUNCTION1 PFK	27.74	1.503e4					1.3	NO		bb		
27	FUNCTION1 PFK	27.31	9.040e3					0.8	NO		bb		
28	FUNCTION1 PFK	27.13	1.266e4					1.0	NO		bb		
29	FUNCTION1 PFK	27.06	1.923e4					1.4	NO		bb		
30	FUNCTION1 PFK	26.51	2.888e3					0.5	NO		bb		
31	FUNCTION1 PFK	26.40	8.666e4					2.4	NO		bb		
32	FUNCTION1 PFK	26.30	1.203e4					1.2	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.79	4.225e4					1.7	NO		bd		0.000
2	FUNCTION2 PFK	28.67	2.883e4					1.7	NO		db		0.000
3	FUNCTION2 PFK	28.61	6.399e3					0.8	NO		bd		0.000
4	FUNCTION2 PFK	28.40	1.531e4					1.4	NO		db		0.000
5	FUNCTION2 PFK	28.34	1.330e4					1.6	NO		dd		0.000
6	FUNCTION2 PFK	28.31	2.259e4					1.8	NO		dd		0.000
7	FUNCTION2 PFK	28.24	5.952e4					2.8	NO		bd		0.000
8	FUNCTION2 PFK	28.10	2.475e4					1.9	NO		bb		0.000
9	FUNCTION2 PFK	31.49	1.129e3					0.3	NO		bb		0.000
10	FUNCTION2 PFK	31.42	1.819e4					1.1	NO		bb		0.000
11	FUNCTION2 PFK	30.83	6.171e3					1.0	NO		bb		0.000
12	FUNCTION2 PFK	30.78	7.224e3					1.0	NO		bb		0.000
13	FUNCTION2 PFK	30.65	6.404e3					0.7	NO		bb		0.000
14	FUNCTION2 PFK	30.48	1.388e3					0.4	NO		bb		0.000
15	FUNCTION2 PFK	30.32	1.074e4					1.1	NO		bb		0.000
16	FUNCTION2 PFK	30.19	1.572e3					0.4	NO		bb		0.000
17	FUNCTION2 PFK	29.84	4.931e3					0.7	NO		bb		0.000
18	FUNCTION2 PFK	29.74	2.240e3					0.6	NO		bb		0.000
19	FUNCTION2 PFK	29.68	6.139e3					1.1	NO		bb		0.000
20	FUNCTION2 PFK	29.33	3.266e4					1.4	NO		bb		0.000
21	FUNCTION2 PFK	29.21	1.972e4					1.3	NO		bb		0.000
22	FUNCTION2 PFK	29.08	1.256e3					0.3	NO		bb		0.000
23	FUNCTION2 PFK	28.94	3.939e4					2.0	NO		db		0.000
24	FUNCTION2 PFK	28.85	2.085e4					1.2	NO		dd		0.000
25	FUNCTION2 PFK	32.77	7.433e3					0.9	NO		bb		0.000
26	FUNCTION2 PFK	32.72	1.174e4					1.0	NO		db		0.000
27	FUNCTION2 PFK	32.63	1.047e4					0.7	NO		bd		0.000
28	FUNCTION2 PFK	32.41	1.766e4					1.2	NO		bb		0.000
29	FUNCTION2 PFK	32.21	1.315e3					0.3	NO		bb		0.000
30	FUNCTION2 PFK	32.16	6.572e3					1.0	NO		bb		0.000
31	FUNCTION2 PFK	31.89	4.845e4					2.0	NO		bb		0.000
32	FUNCTION2 PFK	31.85	9.250e3					1.0	NO		db		0.000
33	FUNCTION2 PFK	31.81	1.533e4					1.3	NO		dd		0.000
34	FUNCTION2 PFK	31.75	2.711e4					1.9	NO		dd		0.000
35	FUNCTION2 PFK	31.70	1.286e4					1.1	NO		dd		0.000
36	FUNCTION2 PFK	31.64	2.816e4					1.4	NO		dd		0.000
37	FUNCTION2 PFK	31.56	2.853e4					1.6	NO		bd		0.000

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

## PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	32.90	8.421e5					49.3	YES		dd		0.000
2	FUNCTION3 PFK	32.86	1.452e6					50.5	YES		bd		0.000
3	FUNCTION3 PFK	35.35	5.859e4					2.3	NO		db		0.000
4	FUNCTION3 PFK	35.28	3.238e4					1.3	NO		bd		0.000
5	FUNCTION3 PFK	34.56	6.081e3					0.5	NO		bb		0.000
6	FUNCTION3 PFK	34.41	2.575e4					0.8	NO		bb		0.000
7	FUNCTION3 PFK	34.22	5.819e4					3.3	YES		db		0.000
8	FUNCTION3 PFK	34.19	1.944e5					4.6	YES		dd		0.000
9	FUNCTION3 PFK	34.08	4.601e5					8.4	YES		dd		0.000
10	FUNCTION3 PFK	33.98	5.167e5					11.9	YES		dd		0.000
11	FUNCTION3 PFK	33.91	3.134e5					14.2	YES		dd		0.000
12	FUNCTION3 PFK	33.87	2.741e5					16.2	YES		dd		0.000
13	FUNCTION3 PFK	33.55	3.651e6					27.8	YES		dd		0.000
14	FUNCTION3 PFK	33.43	3.238e6					31.8	YES		dd		0.000
15	FUNCTION3 PFK	33.26	1.676e6					37.5	YES		dd		0.000
16	FUNCTION3 PFK	33.19	3.582e6					40.9	YES		dd		0.000
17	FUNCTION3 PFK	33.02	1.829e6					46.5	YES		dd		0.000
18	FUNCTION3 PFK	33.00	1.907e6					46.2	YES		dd		0.000
19	FUNCTION3 PFK	37.74	6.296e3					0.7	NO		bb		0.000
20	FUNCTION3 PFK	37.41	1.077e4					0.9	NO		bb		0.000
21	FUNCTION3 PFK	37.29	6.934e3					0.6	NO		bb		0.000
22	FUNCTION3 PFK	36.89	3.654e4					1.7	NO		bb		0.000
23	FUNCTION3 PFK	36.81	9.196e3					0.7	NO		bb		0.000
24	FUNCTION3 PFK	36.76	2.061e3					0.4	NO		bb		0.000
25	FUNCTION3 PFK	36.70	2.476e3					0.4	NO		bb		0.000
26	FUNCTION3 PFK	36.61	1.093e4					0.8	NO		bb		0.000
27	FUNCTION3 PFK	35.81	5.935e3					0.6	NO		bb		0.000
28	FUNCTION3 PFK	35.72	6.948e3					0.7	NO		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

**ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk**

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.78	1.444e6					31.7	YES		dd		
2	FUNCTION4 PFK	38.69	1.361e6					33.9	YES		dd		
3	FUNCTION4 PFK	38.59	6.117e6					36.4	YES		dd		
4	FUNCTION4 PFK	38.27	8.689e6					45.6	YES		dd		
5	FUNCTION4 PFK	37.90	5.030e6					56.1	YES		bd		
6	FUNCTION4 PFK	41.65	8.462e4					1.9	NO		bb		
7	FUNCTION4 PFK	41.60	4.556e4					1.3	NO		bb		
8	FUNCTION4 PFK	41.24	2.973e4					0.9	NO		bb		
9	FUNCTION4 PFK	40.76	8.146e4					1.9	NO		bb		
10	FUNCTION4 PFK	40.63	2.012e4					1.4	NO		db		
11	FUNCTION4 PFK	40.57	9.981e3					0.9	NO		dd		
12	FUNCTION4 PFK	40.54	9.851e3					0.8	NO		bd		
13	FUNCTION4 PFK	40.50	7.478e3					0.8	NO		bb		
14	FUNCTION4 PFK	40.21	2.358e4					0.9	NO		bb		
15	FUNCTION4 PFK	40.02	1.303e4					0.5	NO		bb		
16	FUNCTION4 PFK	39.94	2.337e4					1.5	NO		bb		
17	FUNCTION4 PFK	39.73	2.910e4					1.8	NO		db		
18	FUNCTION4 PFK	39.56	4.708e5					8.6	YES		dd		
19	FUNCTION4 PFK	39.46	9.271e5					11.5	YES		dd		
20	FUNCTION4 PFK	39.36	5.086e5					14.5	YES		dd		
21	FUNCTION4 PFK	38.85	5.704e6					29.0	YES		dd		
22	FUNCTION4 PFK	42.95	1.122e4					1.0	NO		bb		
23	FUNCTION4 PFK	42.85	2.314e3					0.4	NO		bb		
24	FUNCTION4 PFK	42.77	2.214e4					1.4	NO		db		
25	FUNCTION4 PFK	42.71	3.029e4					1.7	NO		dd		
26	FUNCTION4 PFK	42.63	1.266e4					0.7	NO		bd		
27	FUNCTION4 PFK	42.36	3.316e4					1.5	NO		db		
28	FUNCTION4 PFK	42.32	1.320e4					1.1	NO		bd		
29	FUNCTION4 PFK	42.20	9.200e3					0.7	NO		bb		
30	FUNCTION4 PFK	42.07	1.080e4					0.9	NO		bb		



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

**ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk**

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.51	1.186e6					24.9	YES		dd		
2	FUNCTION5 PFK	43.47	2.758e5					26.1	YES		dd		
3	FUNCTION5 PFK	43.38	7.839e5					31.0	YES		dd		
4	FUNCTION5 PFK	43.32	7.881e5					32.8	YES		dd		
5	FUNCTION5 PFK	43.26	1.608e6					35.9	YES		dd		
6	FUNCTION5 PFK	43.06	1.370e6					44.6	YES		bd		
7	FUNCTION5 PFK	45.96	5.255e3					0.8	NO		bb		
8	FUNCTION5 PFK	45.87	1.739e4					1.4	NO		bb		
9	FUNCTION5 PFK	45.70	9.707e3					1.6	NO		bb		
10	FUNCTION5 PFK	45.45	9.933e2					0.4	NO		bb		
11	FUNCTION5 PFK	45.21	1.926e3					0.5	NO		db		
12	FUNCTION5 PFK	45.18	3.856e3					0.7	NO		bd		
13	FUNCTION5 PFK	45.03	2.743e3					0.6	NO		bb		
14	FUNCTION5 PFK	44.92	1.138e4					1.4	NO		db		
15	FUNCTION5 PFK	44.89	2.576e3					0.7	NO		bd		
16	FUNCTION5 PFK	44.85	1.937e4					1.7	NO		bb		
17	FUNCTION5 PFK	44.66	1.283e4					1.5	NO		bb		
18	FUNCTION5 PFK	44.59	1.005e4					1.1	NO		bb		
19	FUNCTION5 PFK	44.46	2.847e3					0.7	NO		bb		
20	FUNCTION5 PFK	44.20	1.202e3					0.4	NO		bb		
21	FUNCTION5 PFK	43.85	2.546e5					8.8	YES		db		
22	FUNCTION5 PFK	43.80	5.158e5					10.8	YES		dd		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.81	1.232e2					3.2	YES		bb		0.000
2	FUNCTION1 HXCD...	27.03	1.241e2					3.3	YES		bb		0.000
3	FUNCTION1 HXCD...	26.33	1.109e2					3.2	YES		bb		0.000
4	FUNCTION1 HXCD...	25.49	1.849e2					3.2	YES		bb		0.000
5	FUNCTION1 HXCD...	23.32	7.333e1					2.6	NO		bb		0.000
6	FUNCTION1 HXCD...	21.40	1.166e2					3.7	YES		db		0.000
7	FUNCTION1 HXCD...	21.35	9.482e1					3.6	YES		dd		0.000
8	FUNCTION1 HXCD...	21.30	4.412e2					2.8	NO		bd		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:23:55 Pacific Daylight Time

**ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk**

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.40	7.537e1					2.6	NO		bb		0.000
2	FUNCTION2 HPCD...	31.42	9.151e1					2.1	NO		bb		0.000
3	FUNCTION2 HPCD...	31.08	2.572e2					4.4	YES		bb		0.000
4	FUNCTION2 HPCD...	29.81	1.151e2					2.5	NO		bb		0.000
5	FUNCTION2 HPCD...	29.43	9.114e1					2.8	NO		bb		0.000
6	FUNCTION2 HPCD...	29.16	7.722e1					1.9	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.42	2.182e2					6.4	YES		bb		0.000
2	FUNCTION3 OCDPE	36.04	2.003e2					5.5	YES		db		0.000
3	FUNCTION3 OCDPE	35.91	1.996e2					5.3	YES		bd		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.87	7.091e1					3.6	YES		bb		0.000
2	FUNCTION4 NCDPE	42.52	1.154e2					2.8	NO		db		0.000
3	FUNCTION4 NCDPE	42.45	8.886e1					2.5	NO		dd		0.000
4	FUNCTION4 NCDPE	42.36	8.493e1					2.3	NO		bd		0.000
5	FUNCTION4 NCDPE	40.93	7.533e1					3.0	NO		bb		0.000
6	FUNCTION4 NCDPE	40.62	1.520e2					2.6	NO		bb		0.000
7	FUNCTION4 NCDPE	40.15	1.173e2					3.6	YES		bb		0.000
8	FUNCTION4 NCDPE	37.86	8.404e1					3.1	YES		bb		0.000

**ETHERS6**

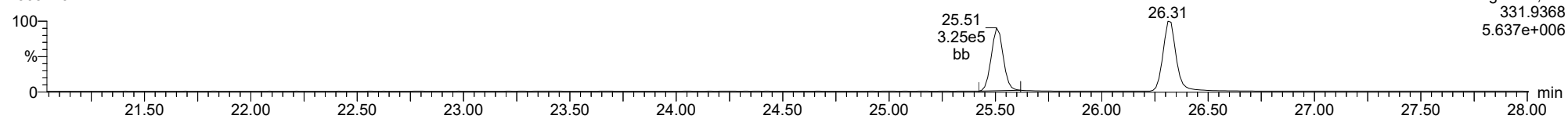
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.88	1.782e2					5.3	YES		db		0.000
2	FUNCTION5 DCDPE	44.85	1.184e2					4.8	YES		bd		0.000
3	FUNCTION5 DCDPE	45.17	8.141e1					2.2	NO		bb		0.000

Method: T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16  
Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

**13C-1234-TCDD**

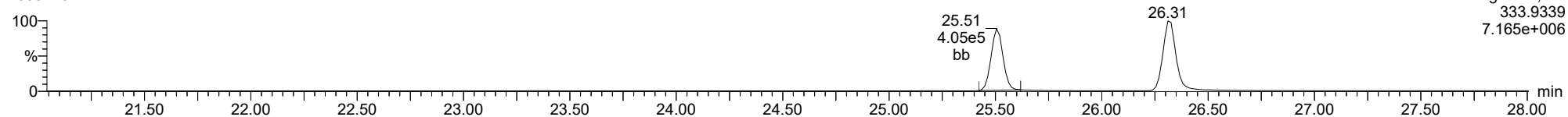
23051102



F1:Voltage SIR,EI+  
331.9368  
5.637e+006

**13C-1234-TCDD**

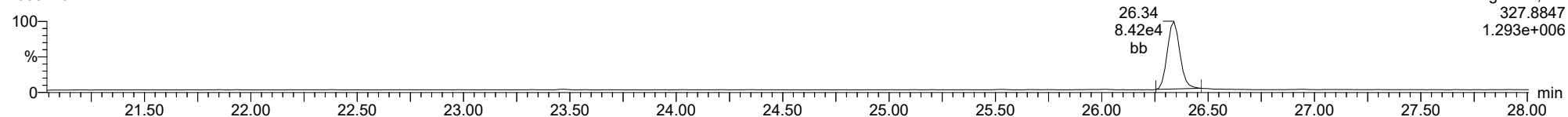
23051102



F1:Voltage SIR,EI+  
333.9339  
7.165e+006

**37CL-2378-TCDD**

23051102

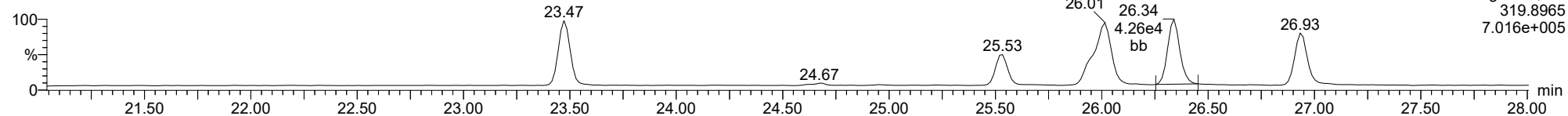


F1:Voltage SIR,EI+  
327.8847  
1.293e+006

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

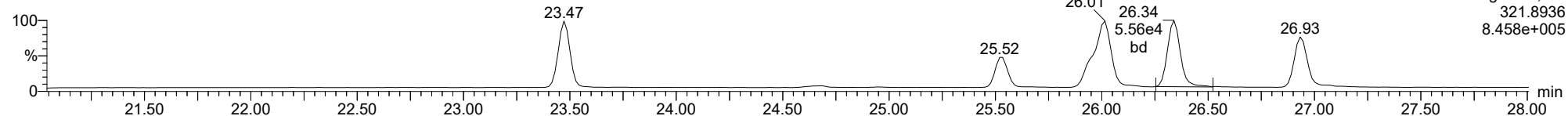
**2378-TCDD**

23051102



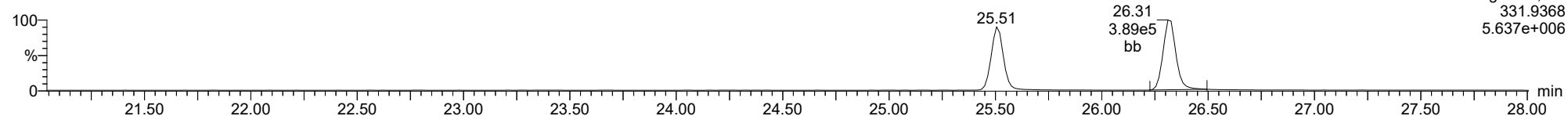
**2378-TCDD**

23051102



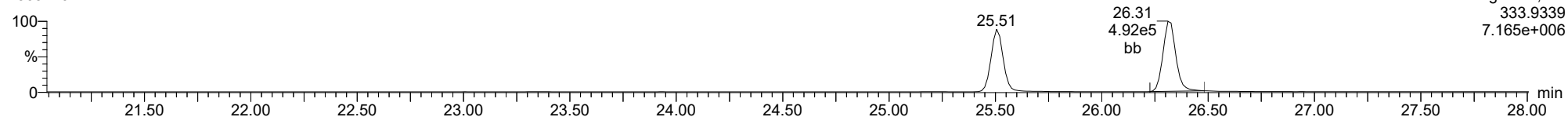
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23051102



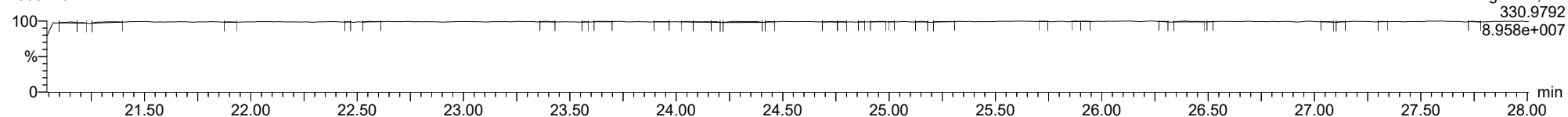
**13C-2378-TCDD**

23051102



**FUNCTION1 PFK**

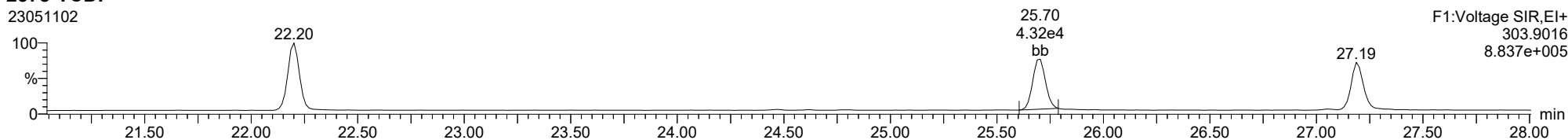
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ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

**2378-TCDF**

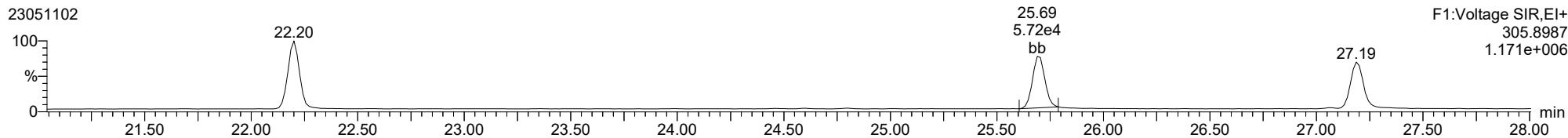
23051102



F1:Voltage SIR,EI+  
303.9016  
8.837e+005

**2378-TCDF**

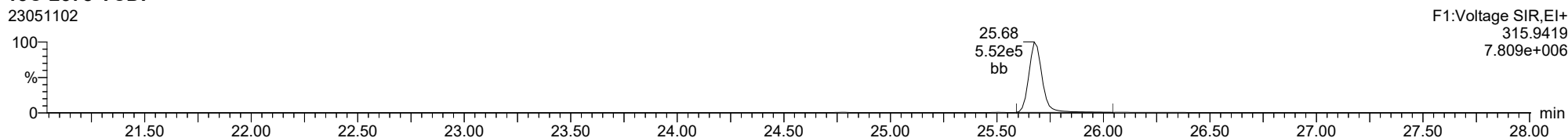
23051102



F1:Voltage SIR,EI+  
305.8987  
1.171e+006

**13C-2378-TCDF**

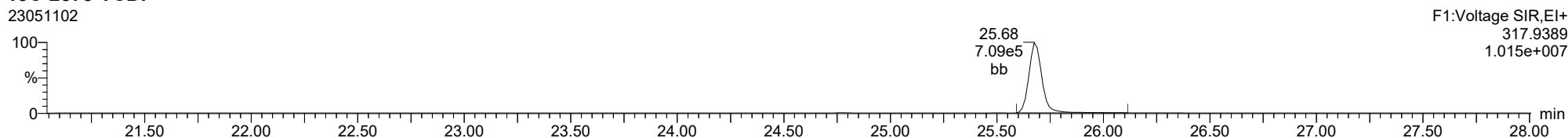
23051102



F1:Voltage SIR,EI+  
315.9419  
7.809e+006

**13C-2378-TCDF**

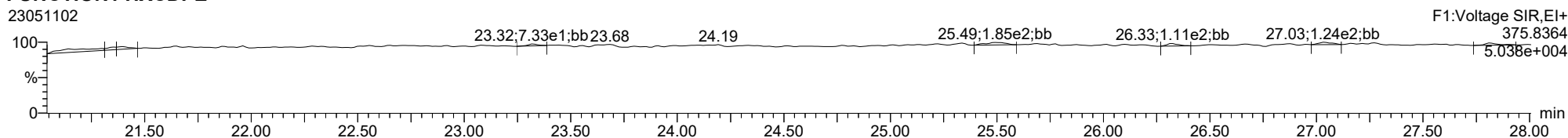
23051102



F1:Voltage SIR,EI+  
317.9389  
1.015e+007

**FUNCTION1 HXCDPE**

23051102

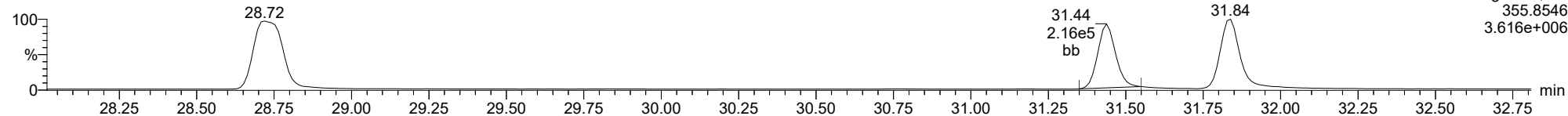


F1:Voltage SIR,EI+  
375.8364  
5.038e+004

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

**12378-PeCDD**

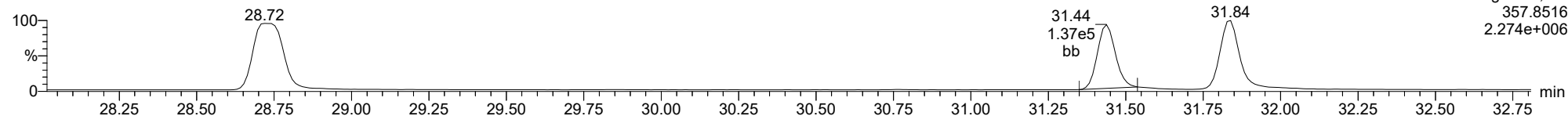
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F2:Voltage SIR,EI+  
355.8546  
3.616e+006

**12378-PeCDD**

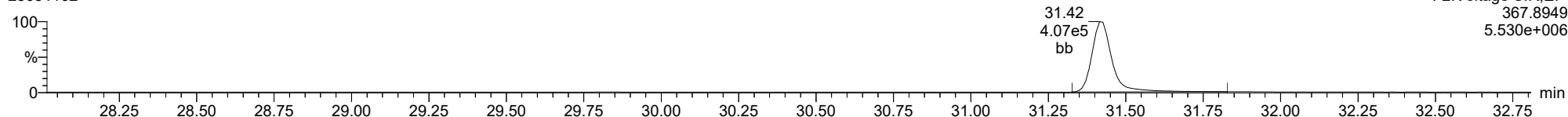
23051102



F2:Voltage SIR,EI+  
357.8516  
2.274e+006

**13C-12378-PeCDD**

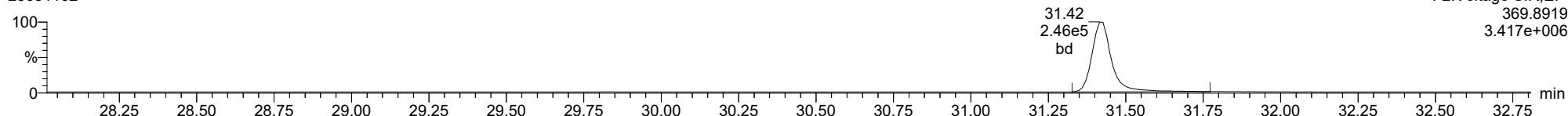
23051102



F2:Voltage SIR,EI+  
367.8949  
5.530e+006

**13C-12378-PeCDD**

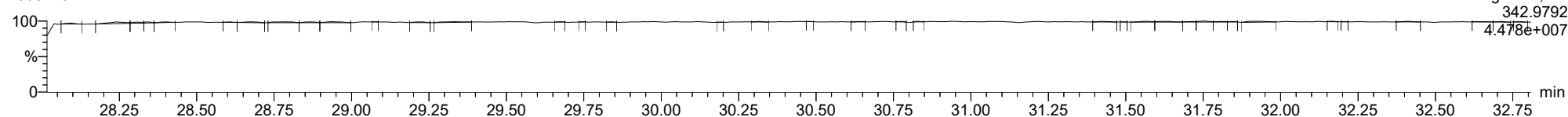
23051102



F2:Voltage SIR,EI+  
369.8919  
3.417e+006

**FUNCTION2 PFK**

23051102

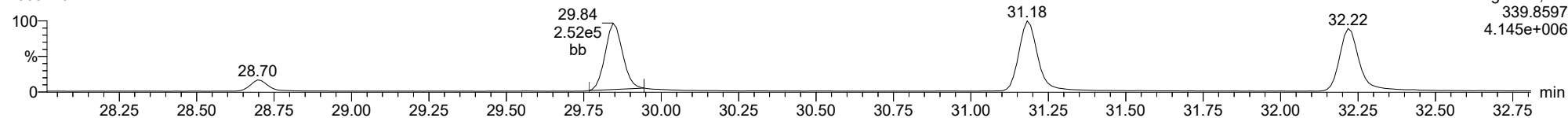


F2:Voltage SIR,EI+  
342.9792  
4.478e+007

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

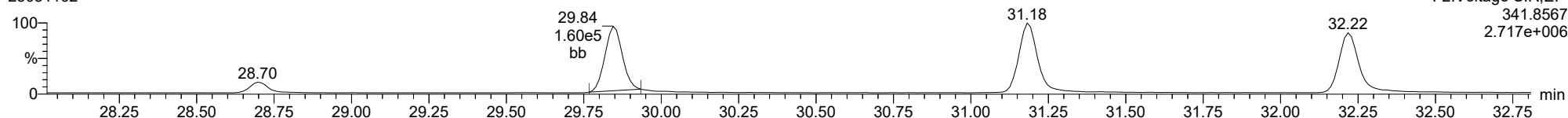
**12378-PeCDF**

23051102



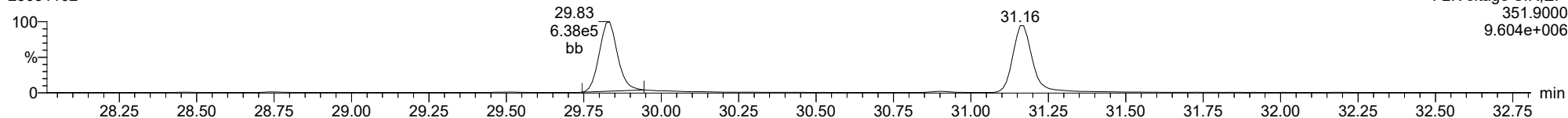
**12378-PeCDF**

23051102



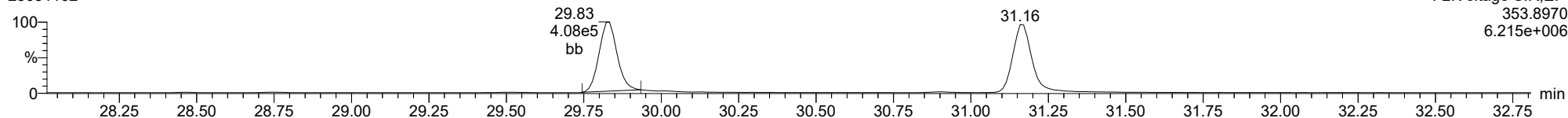
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23051102



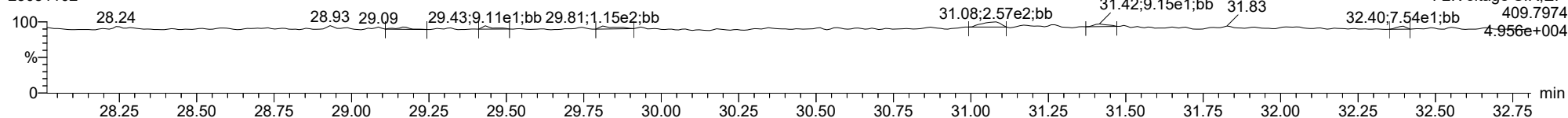
**13C-12378-PeCDF**

23051102



**FUNCTION2 HPCDPE**

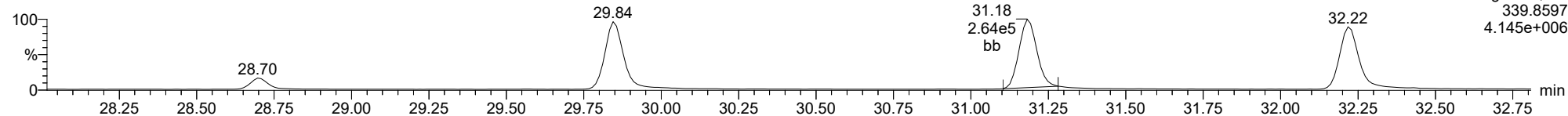
23051102



ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

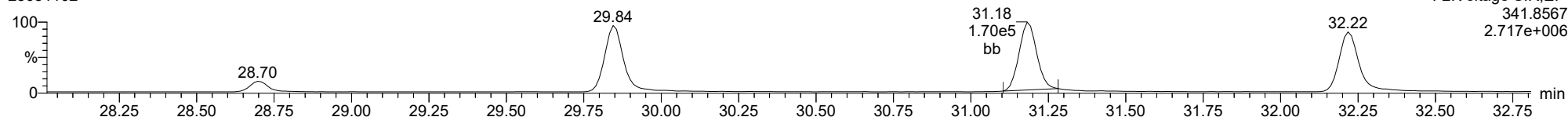
**23478-PeCDF**

23051102



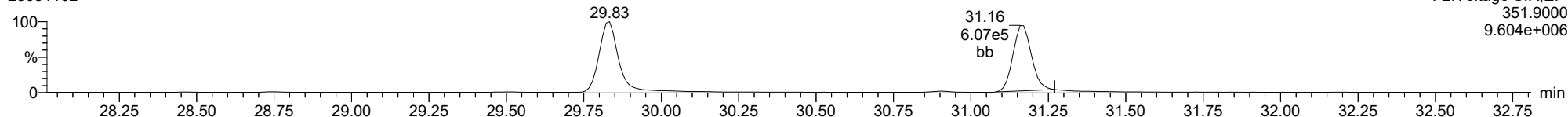
**23478-PeCDF**

23051102



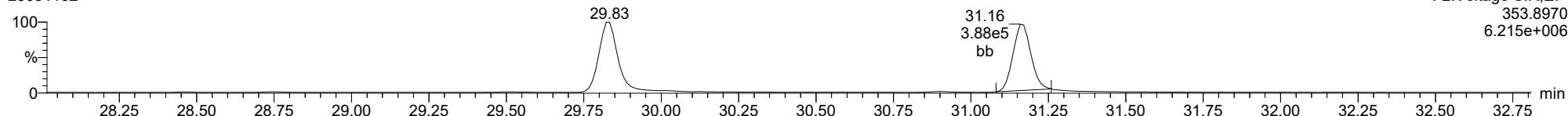
**13C-23478-PeCDF**

23051102



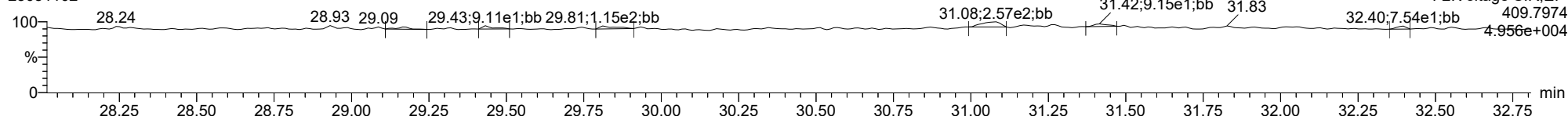
**13C-23478-PeCDF**

23051102



**FUNCTION2 HPCDPE**

23051102

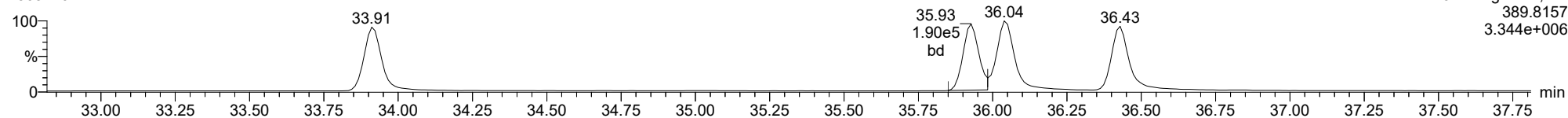




ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

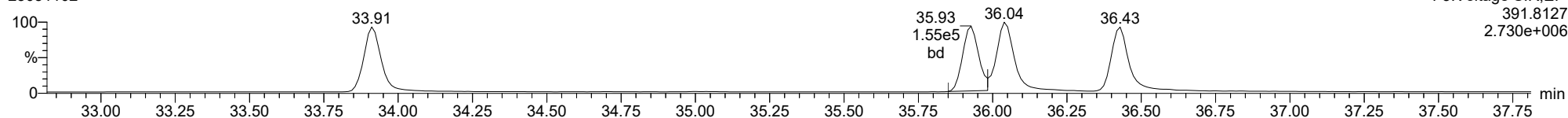
**123478-HxCDD**

23051102



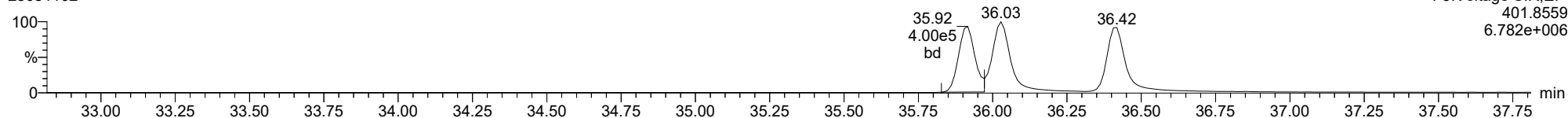
**123478-HxCDD**

23051102



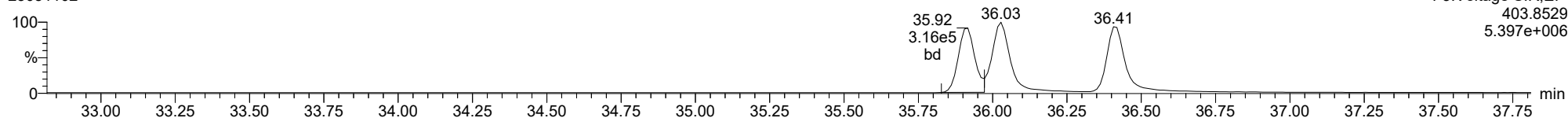
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23051102



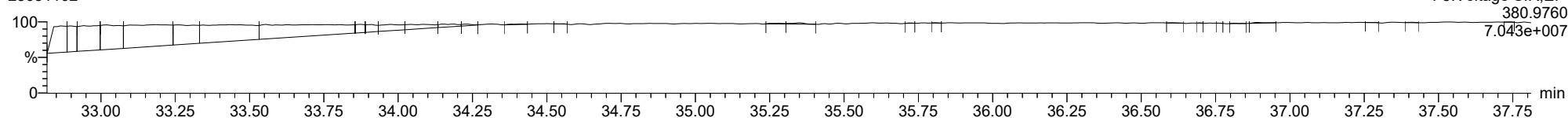
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23051102



**FUNCTION3 PFK**

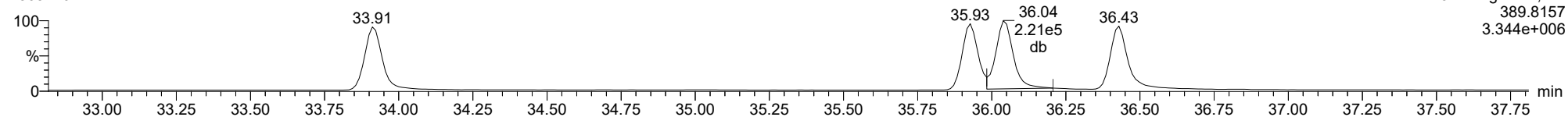
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ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

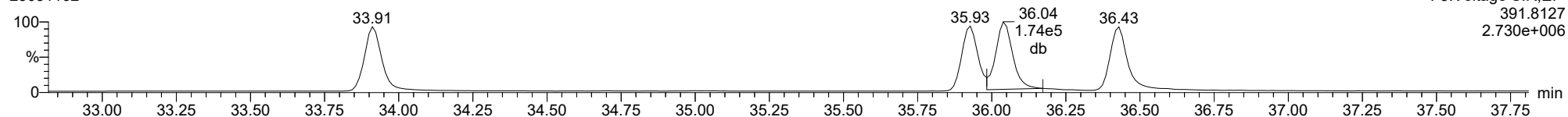
**123678-HxCDD**

23051102



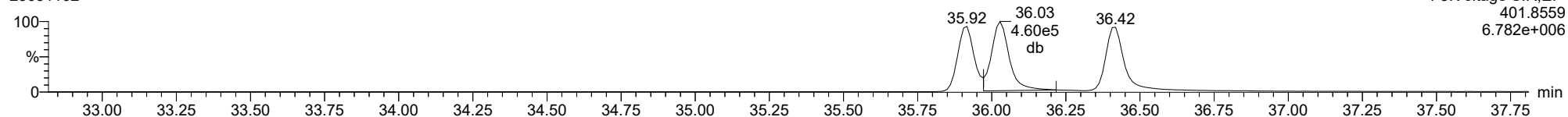
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23051102



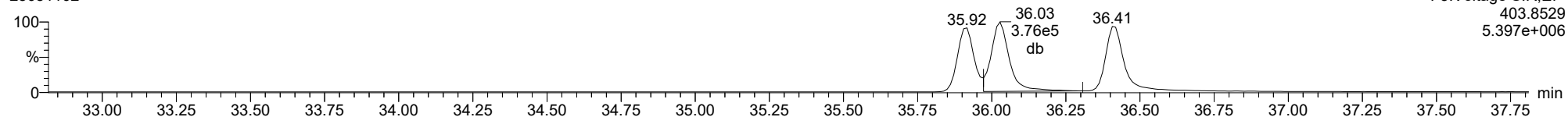
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23051102



**13C-123678-HxCDD**

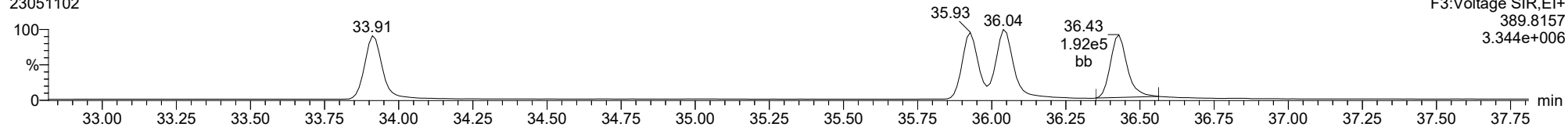
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ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

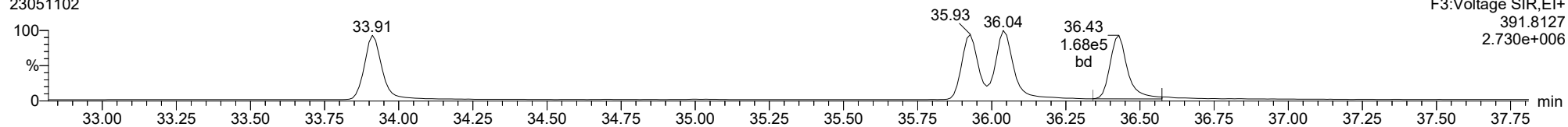
**123789-HxCDD**

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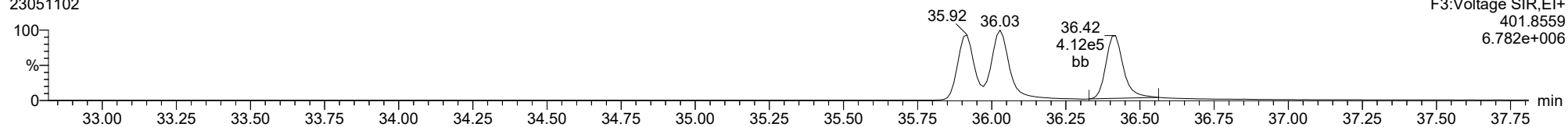
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23051102



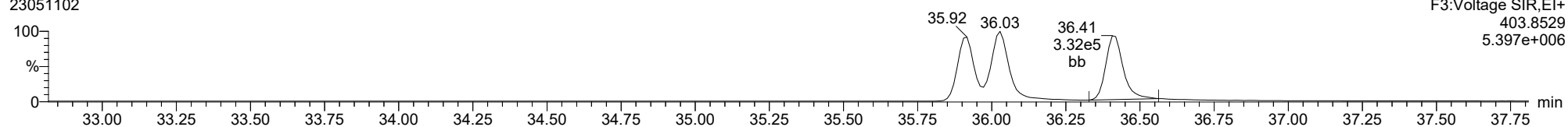
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**13C-123789-HxCDD**

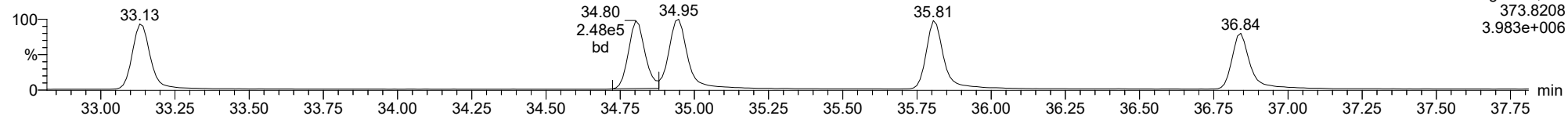
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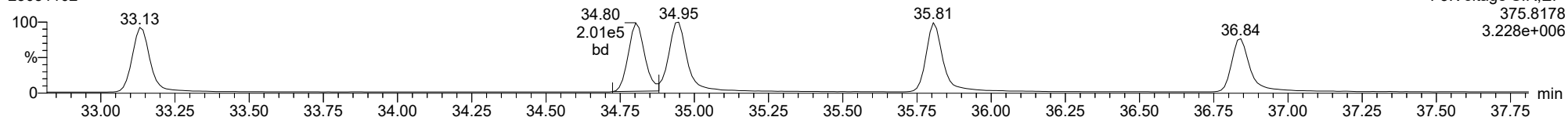
123478-HxCDF

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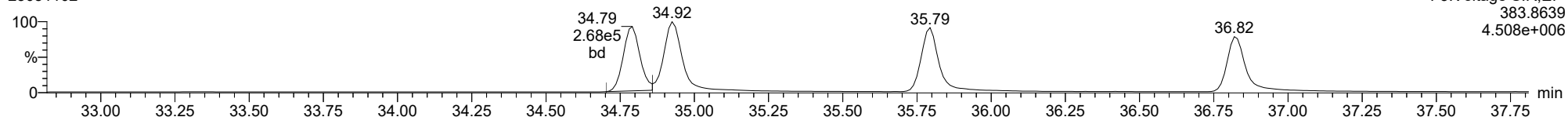
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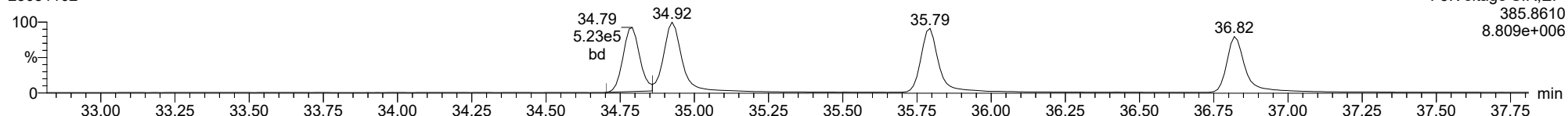
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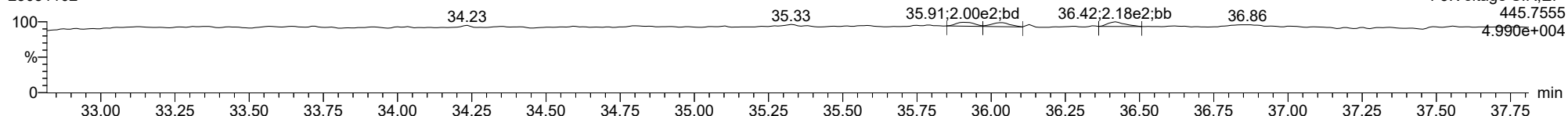
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FUNCTION3 OCDPE

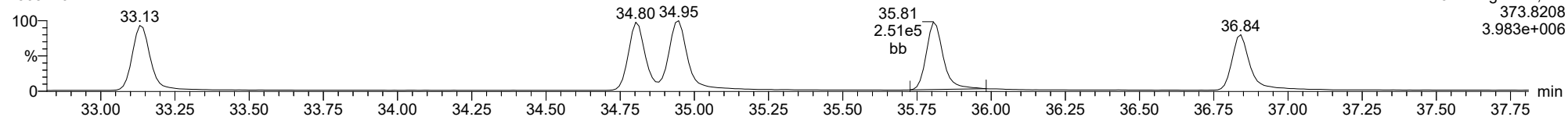
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ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

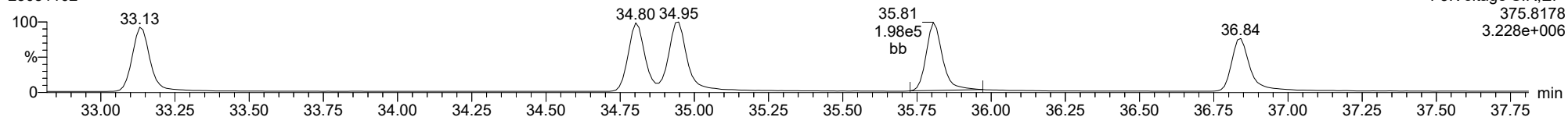
**234678-HxCDF**

23051102



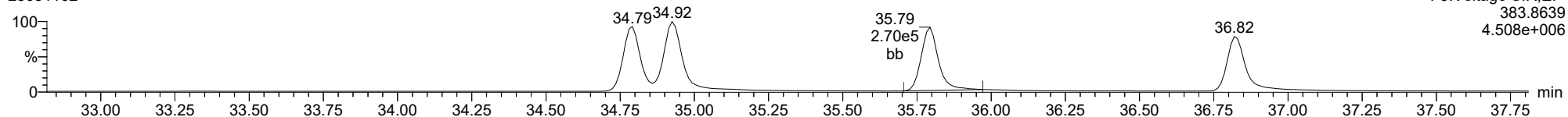
**234678-HxCDF**

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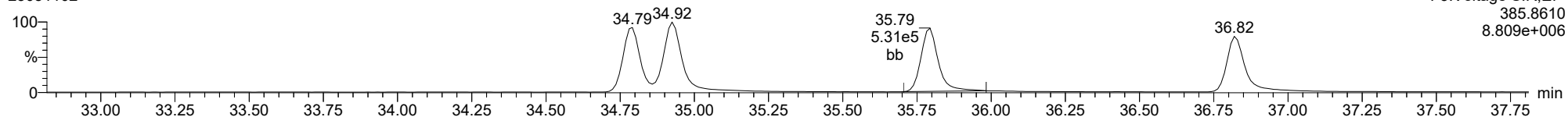
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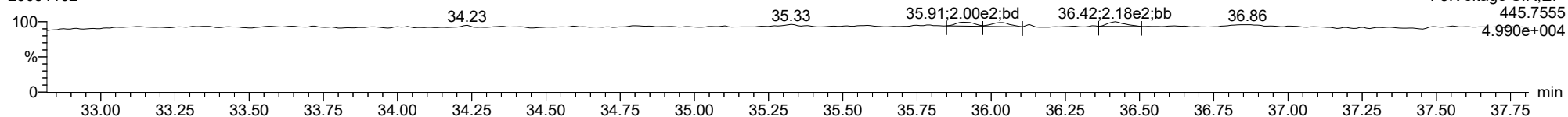
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23051102



**FUNCTION3 OCDPE**

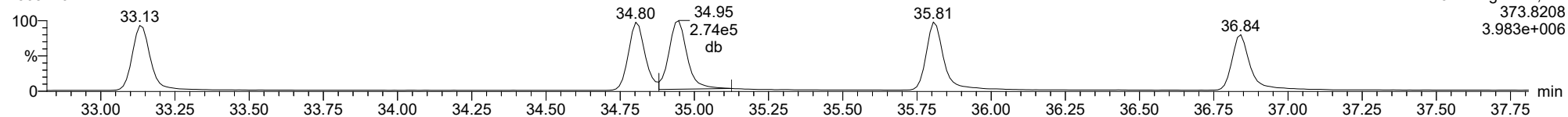
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ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

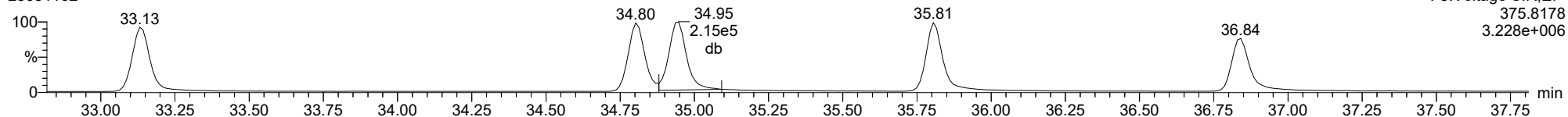
123678-HxCDF

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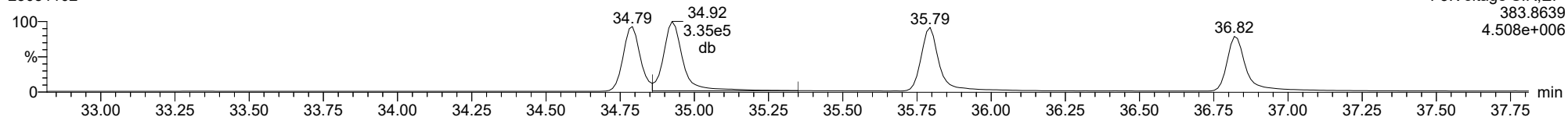
123678-HxCDF

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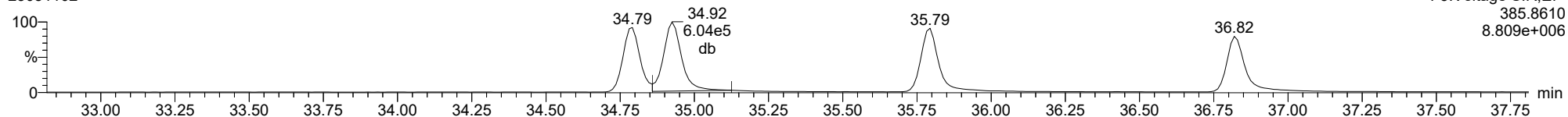
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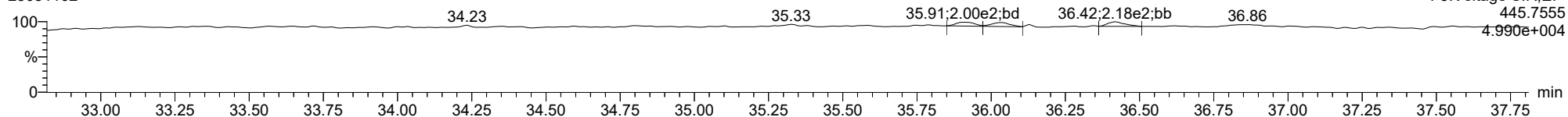
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FUNCTION3 OCDPE

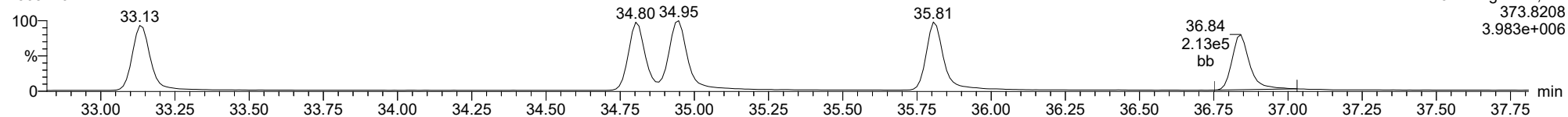
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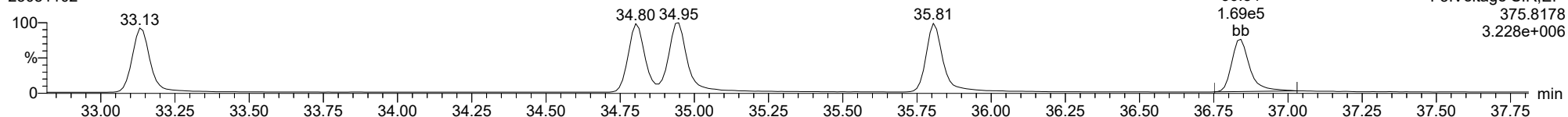
123789-HxCDF

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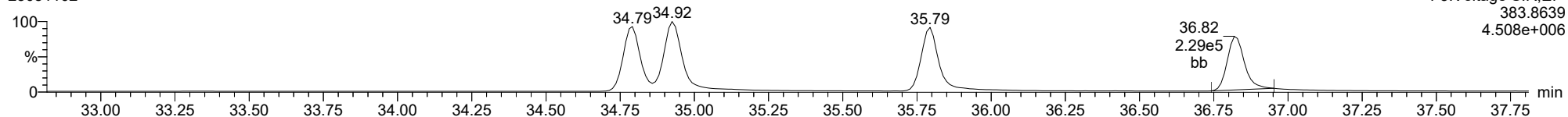
123789-HxCDF

23051102



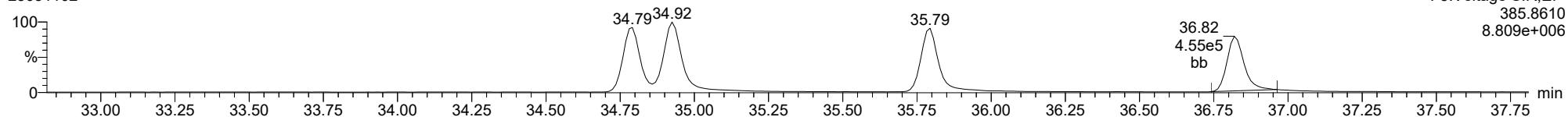
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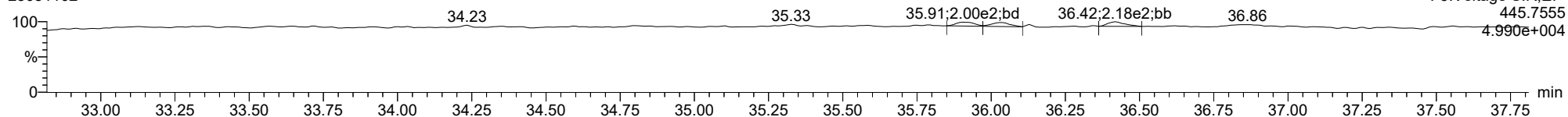
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FUNCTION3 OCDPE

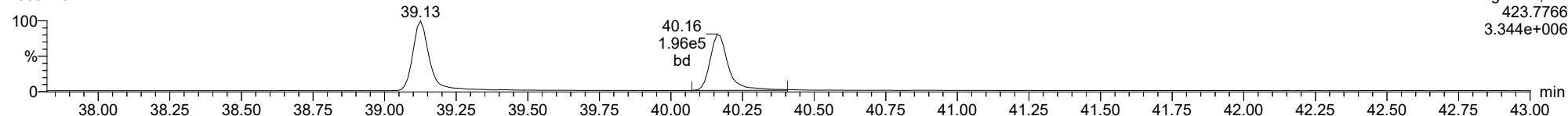
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ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

1234678-HpCDD

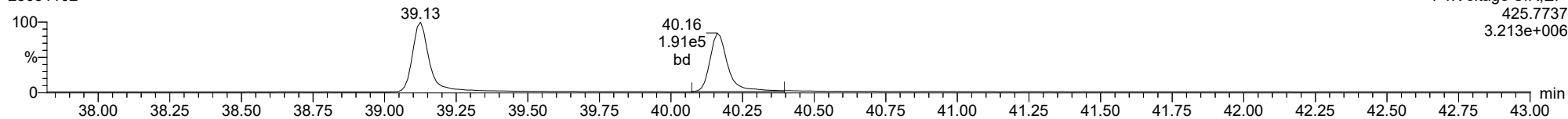
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F4:Voltage SIR,El+  
423.7766  
3.344e+006

1234678-HpCDD

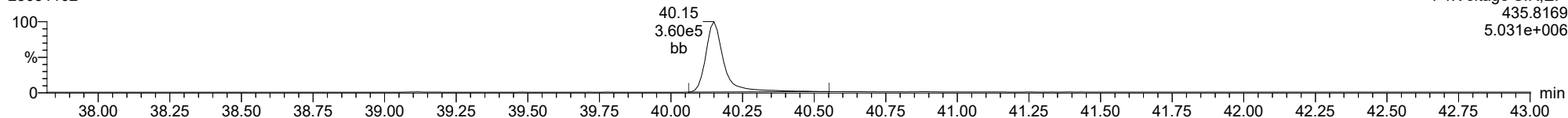
23051102



F4:Voltage SIR,El+  
425.7737  
3.213e+006

13C-1234678-HpCDD

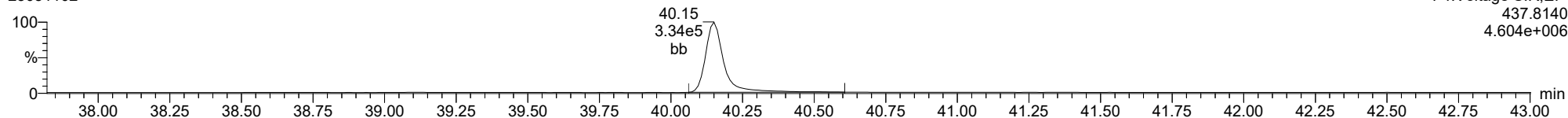
23051102



F4:Voltage SIR,El+  
435.8169  
5.031e+006

13C-1234678-HpCDD

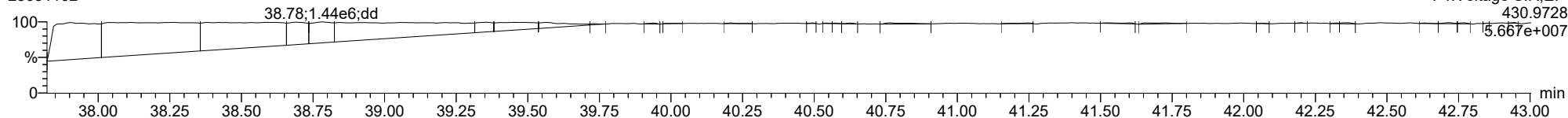
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F4:Voltage SIR,El+  
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4.604e+006

FUNCTION4 PFK

23051102



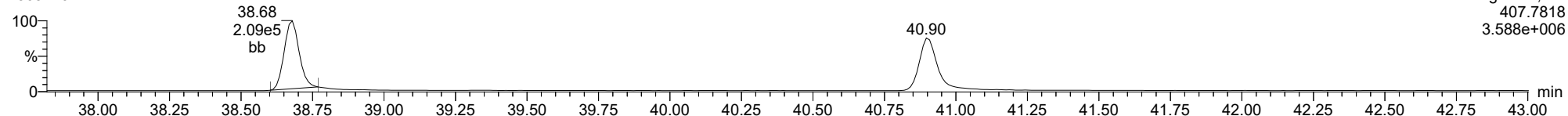
F4:Voltage SIR,El+  
430.9728  
5.667e+007



ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDF**

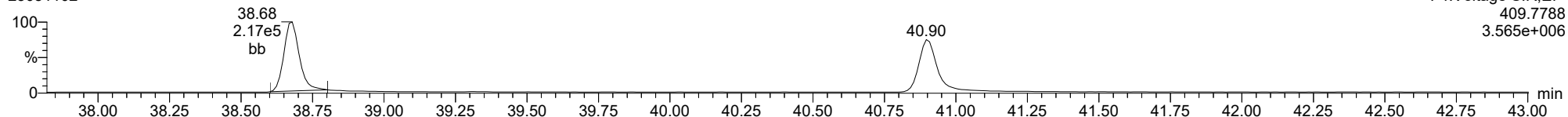
23051102



F4:Voltage SIR,El+  
407.7818  
3.588e+006

**1234678-HpCDF**

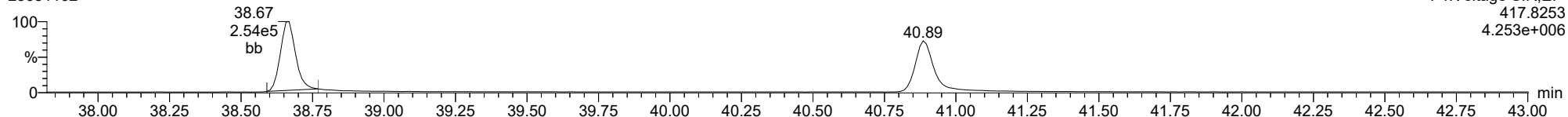
23051102



F4:Voltage SIR,El+  
409.7788  
3.565e+006

**13C-1234678-HpCDF**

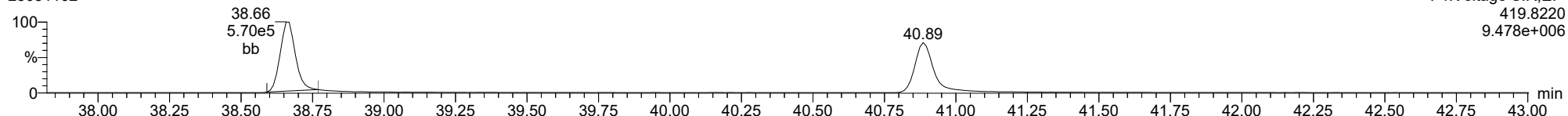
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F4:Voltage SIR,El+  
417.8253  
4.253e+006

**13C-1234678-HpCDF**

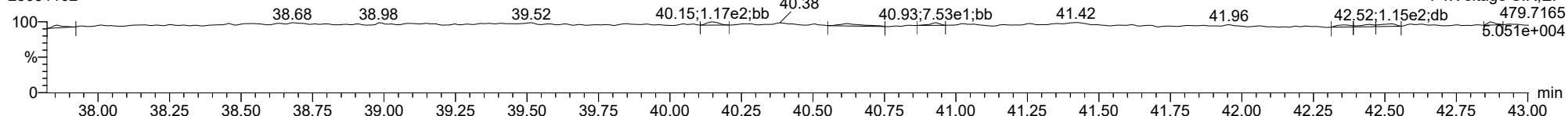
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F4:Voltage SIR,El+  
419.8220  
9.478e+006

**FUNCTION4 NCDPE**

23051102

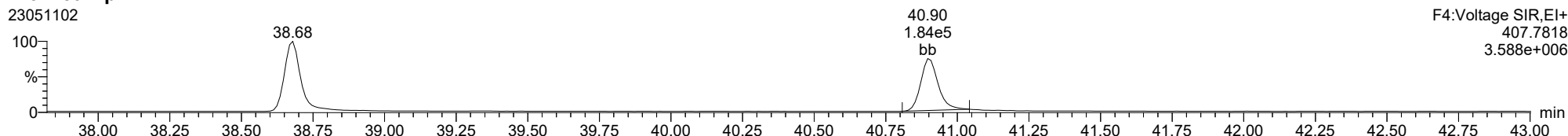


F4:Voltage SIR,El+  
479.7165  
5.051e+004

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF

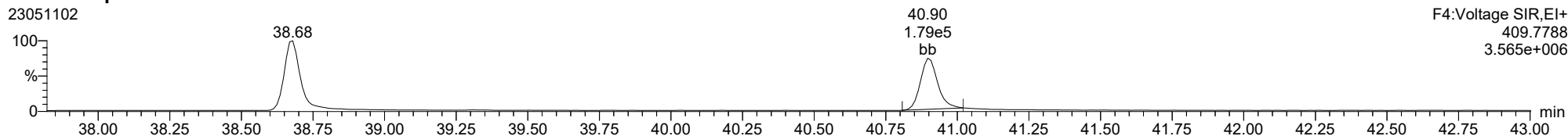
23051102



F4:Voltage SIR,EI+  
407.7818  
3.588e+006

1234789-HpCDF

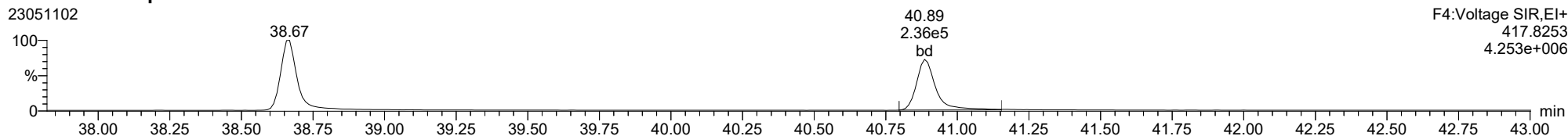
23051102



F4:Voltage SIR,EI+  
409.7788  
3.565e+006

13C-1234789-HpCDF

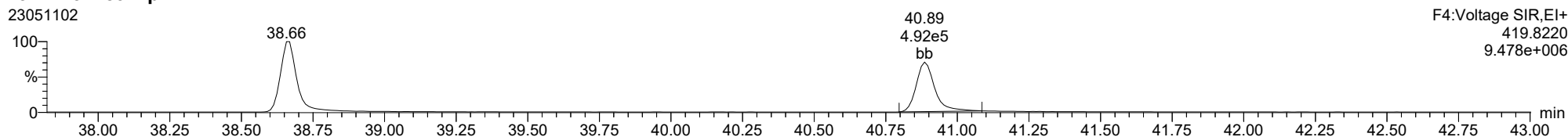
23051102



F4:Voltage SIR,EI+  
417.8253  
4.253e+006

13C-1234789-HpCDF

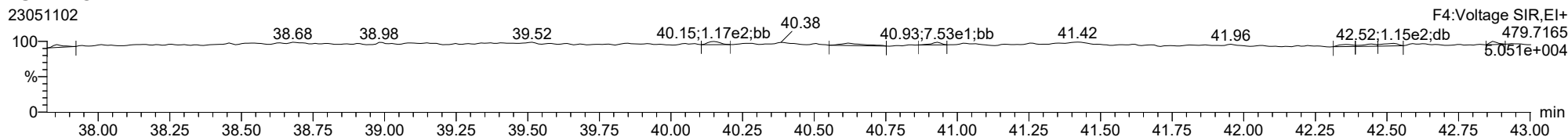
23051102



F4:Voltage SIR,EI+  
419.8220  
9.478e+006

FUNCTION4 NCDPE

23051102

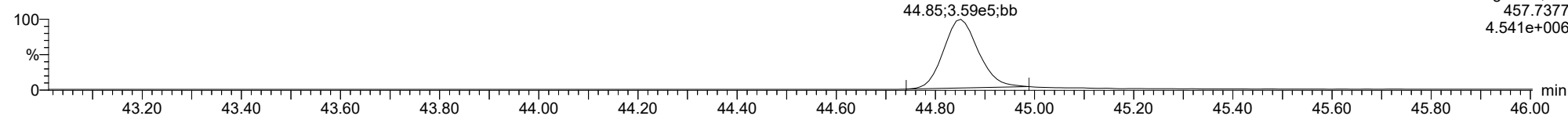


F4:Voltage SIR,EI+  
479.7165  
5.051e+004

ID: CS3L1, Name: 23051102, Date: 11-May-2023, Time: 11:47:03, Conditions: AUTOSPEC01, User: pk

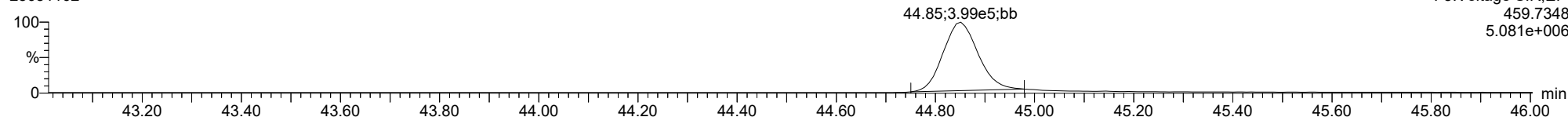
**OCDD**

23051102



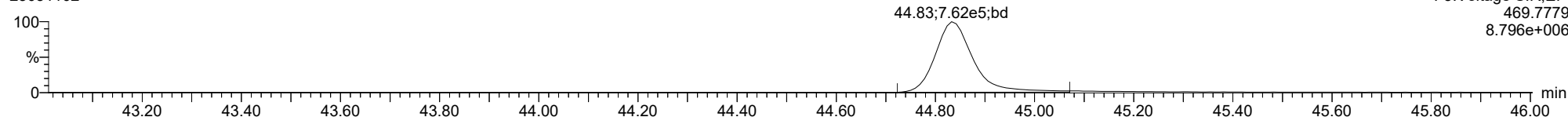
**OCDD**

23051102



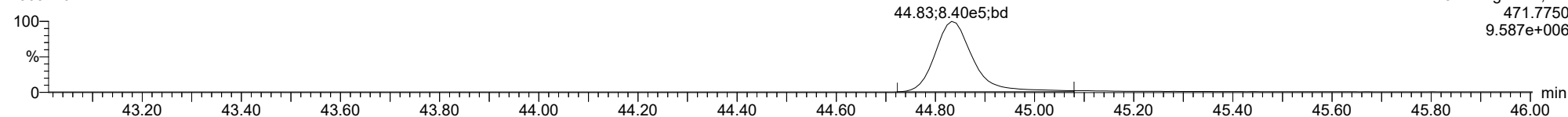
**13C-OCDD**

23051102



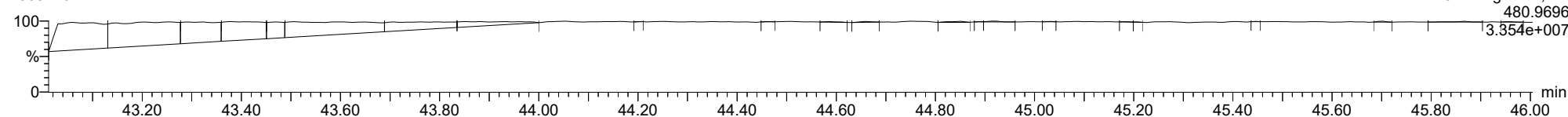
**13C-OCDD**

23051102



**FUNCTION5 PFK**

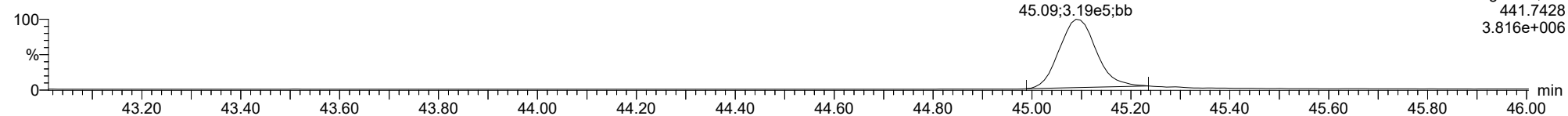
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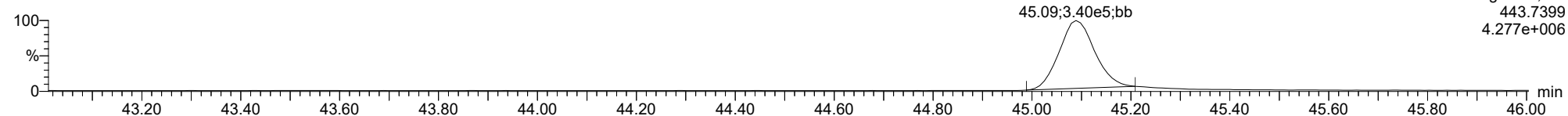
**OCDF**

23051102



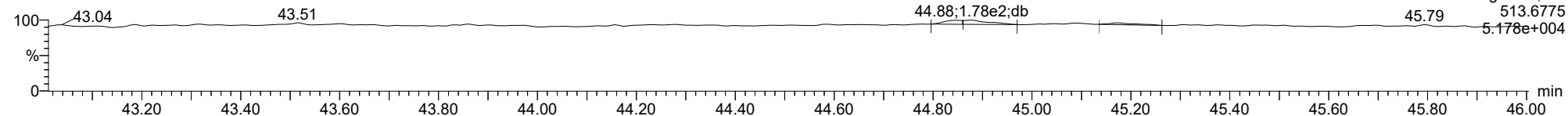
**OCDF**

23051102



**FUNCTION5 DCDPE**

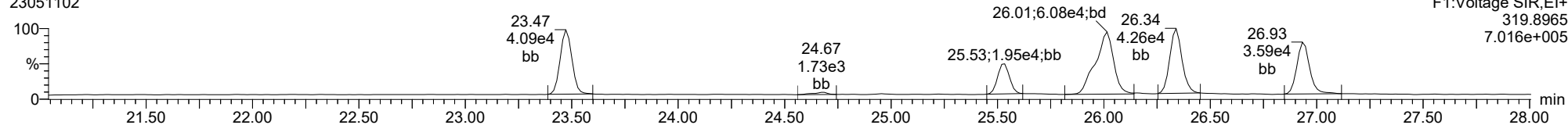
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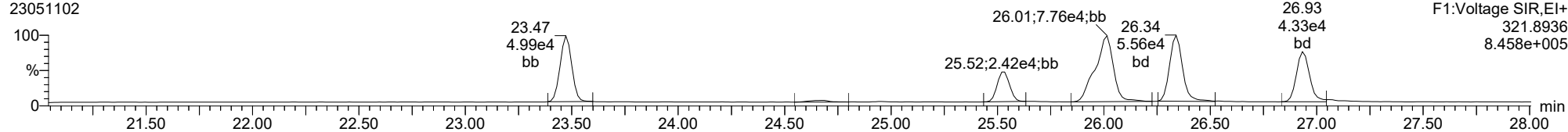
**Total-tetradioxins**

23051102



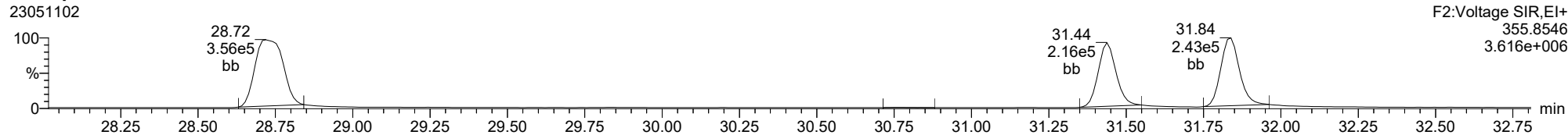
**Total-tetradioxins**

23051102



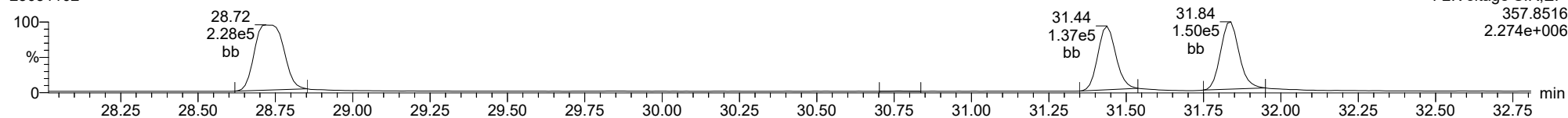
**Total-pentadioxins**

23051102



**Total-pentadioxins**

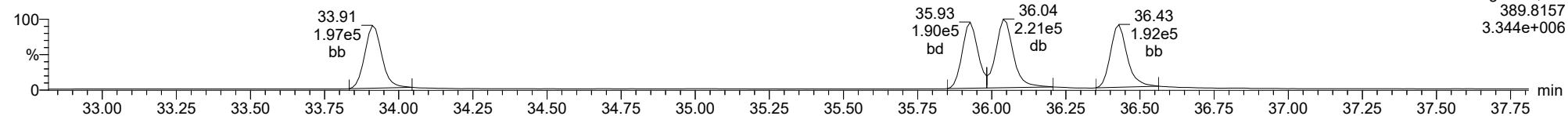
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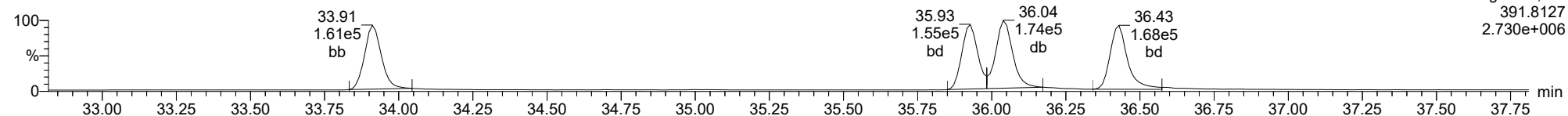
**Total-hexadioxins**

23051102



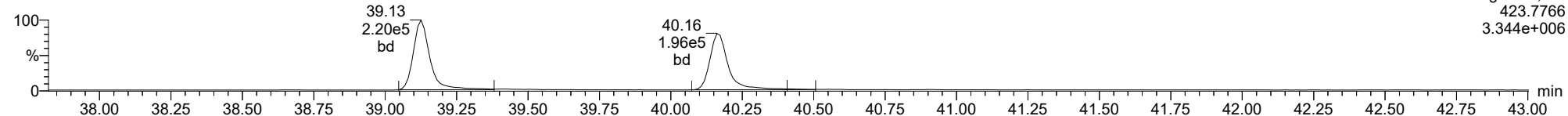
**Total-hexadioxins**

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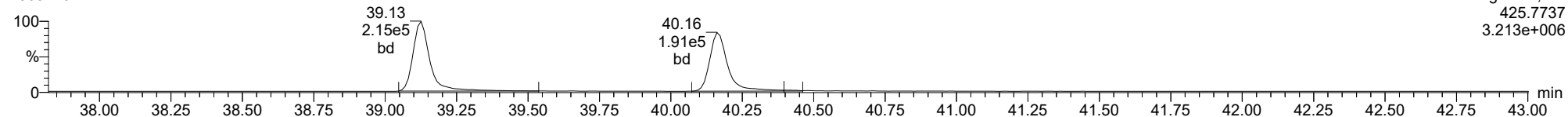
**Total-heptadioxins**

23051102



**Total-heptadioxins**

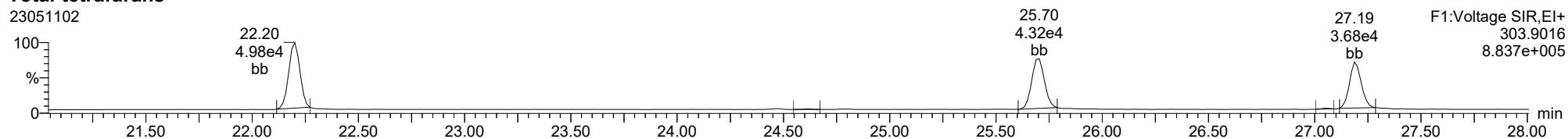
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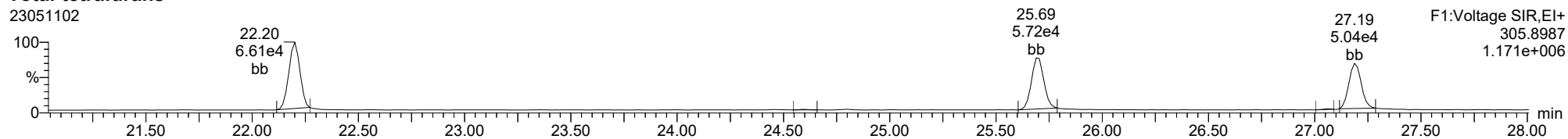
**Total-tetrafurans**

23051102



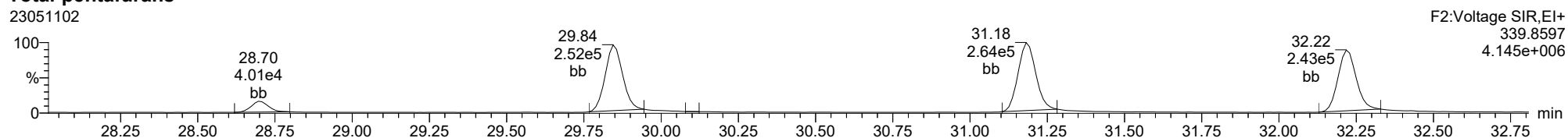
**Total-tetrafurans**

23051102



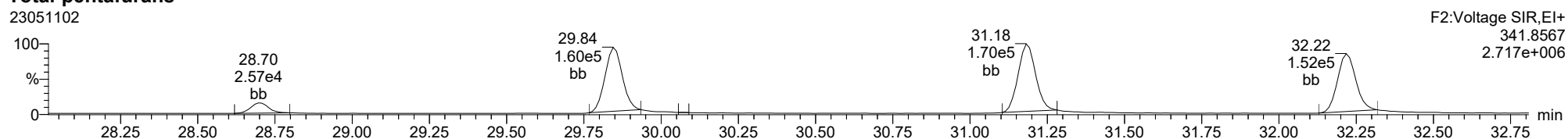
**Total-pentafurans**

23051102



**Total-pentafurans**

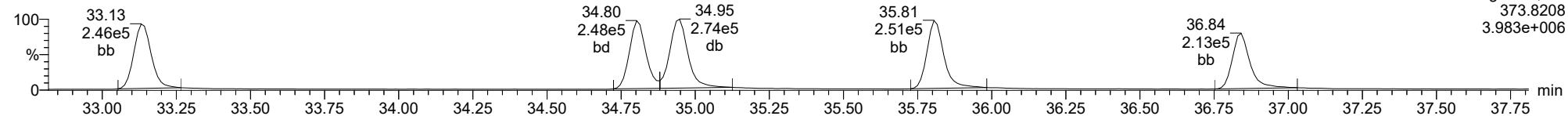
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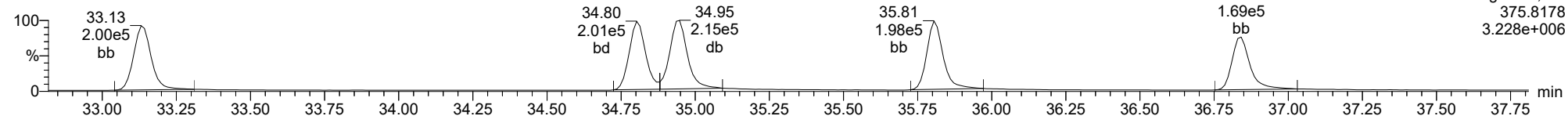
**Total-hexafurans**

23051102



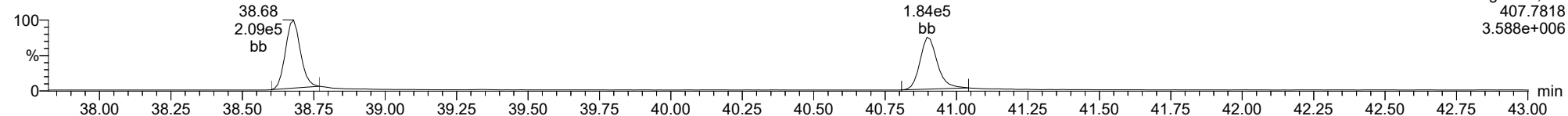
**Total-hexafurans**

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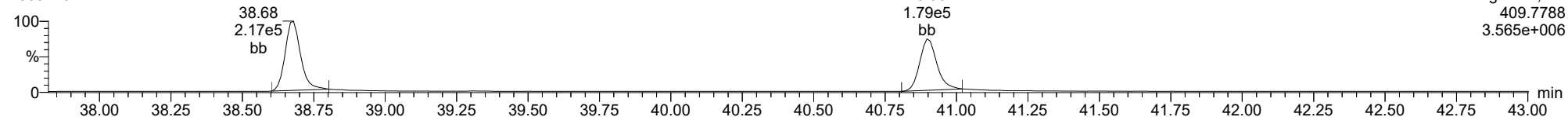
**Total-heptafurans**

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**Total-heptafurans**

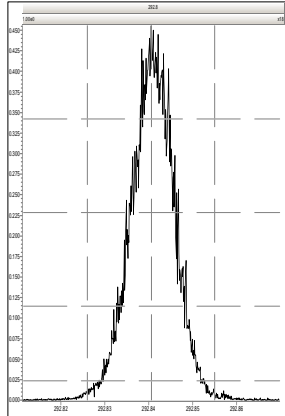
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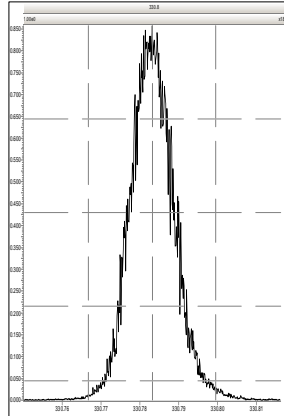


Printed: Thursday, May 11, 2023 11:45:18 Pacific Daylight Time

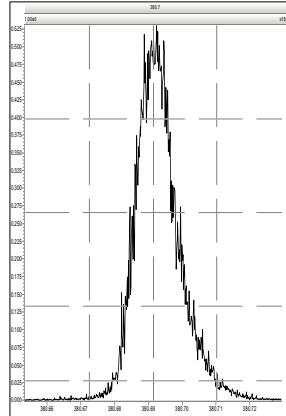
M 292.9824 R 13029



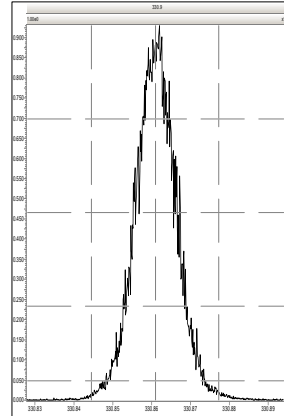
M 330.9792 R 12658



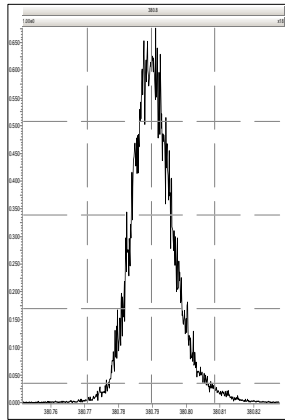
M 380.9760 R 13123



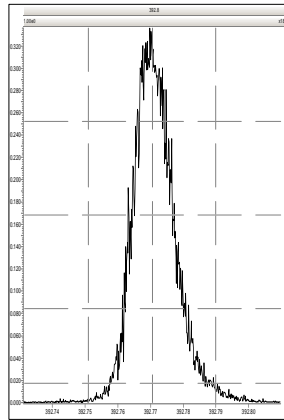
M 330.9792 R 13440



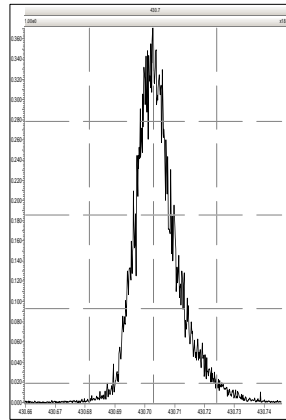
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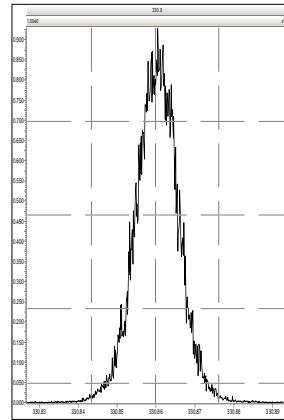
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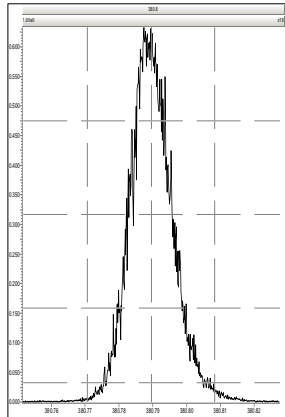
M 430.9728 R 13026



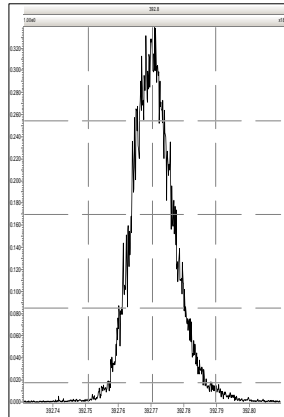
M 330.9792 R 12953



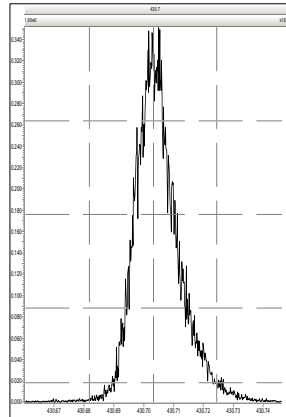
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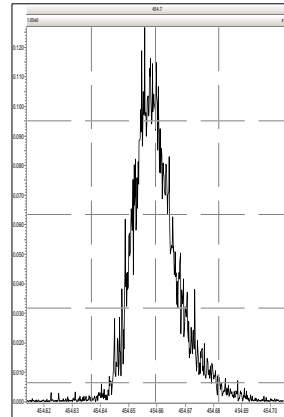
M 392.9760 R 13664



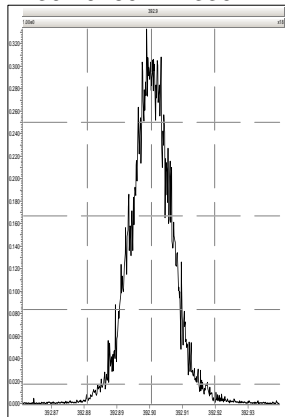
M 430.9728 R 12660



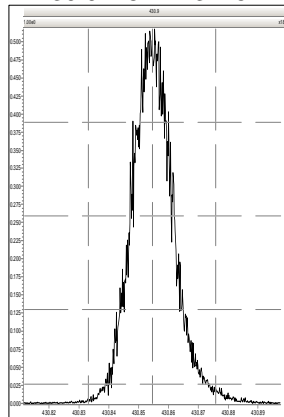
M 454.9728 R 12377



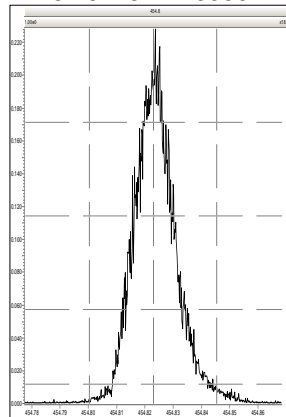
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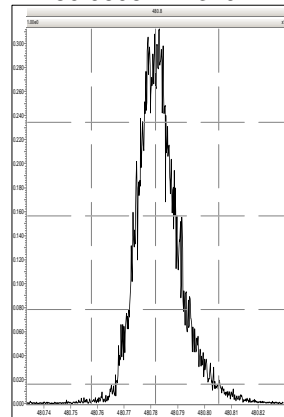
M 430.9728 R 13125



M 454.9728 R 13550

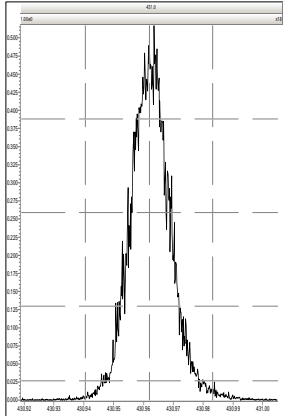


M 480.9696 R 13194

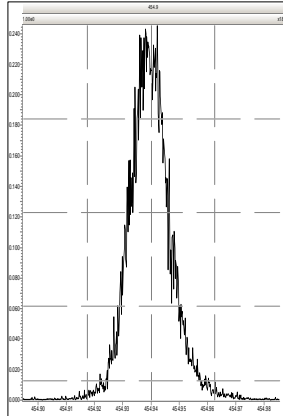


Printed: Thursday, May 11, 2023 11:45:18 Pacific Daylight Time

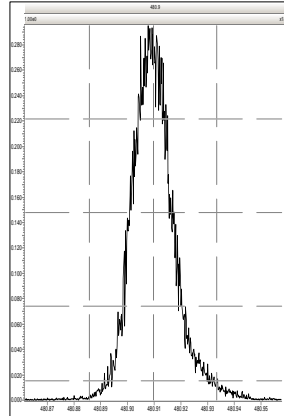
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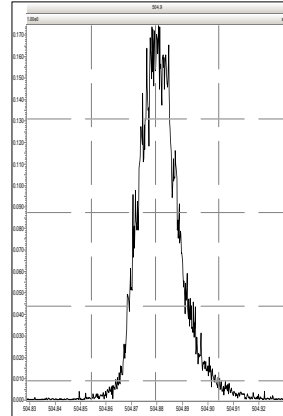
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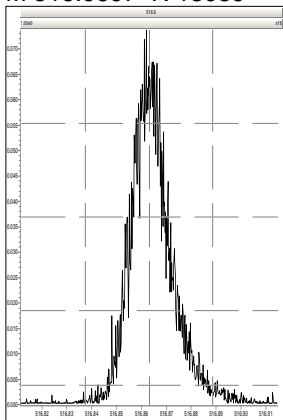
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M 504.9696 R 13892



M 516.9697 R 13089

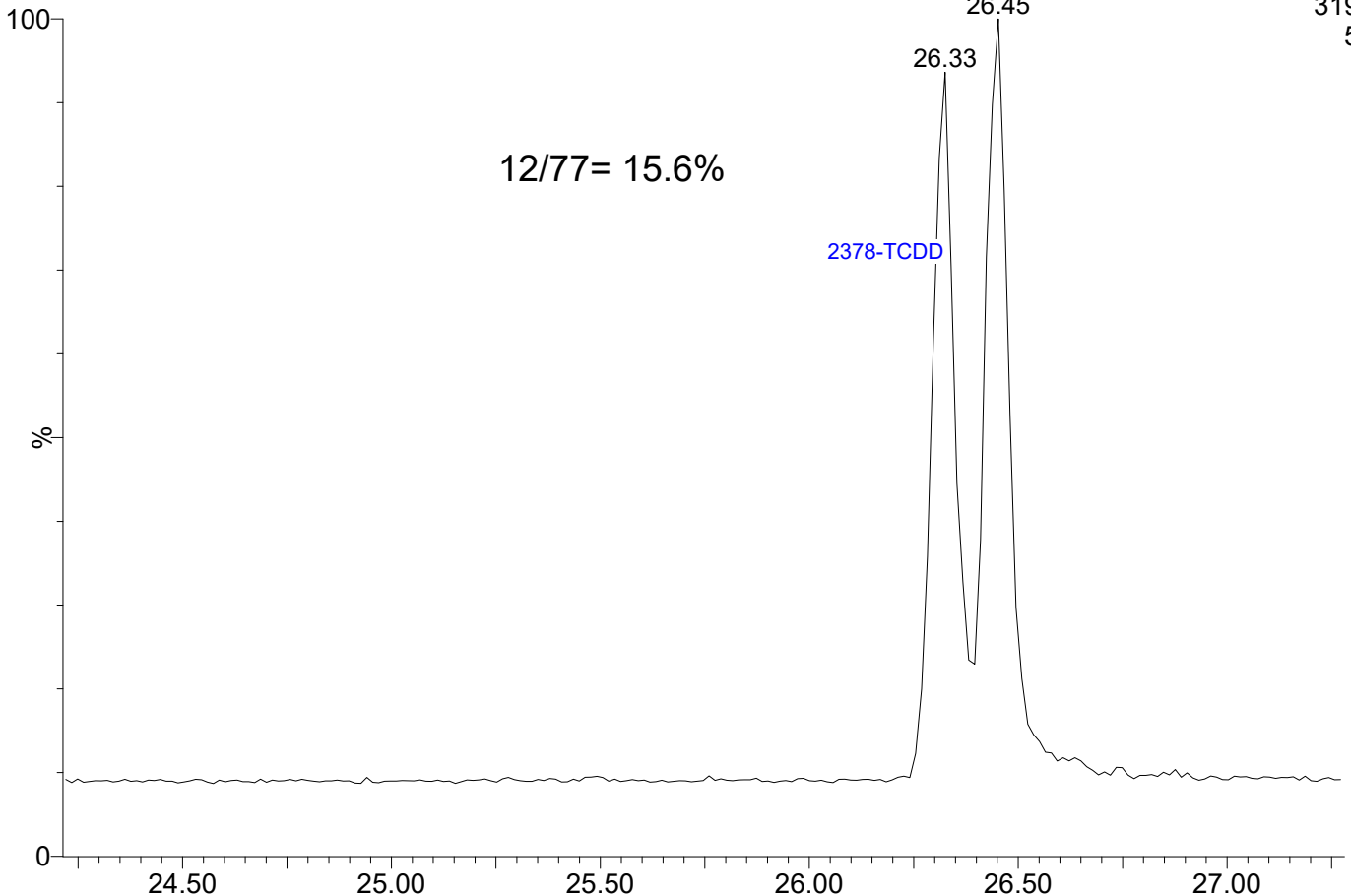


23051103

1: Voltage SIR 14 Channels EI+

319.8965

5.13e5

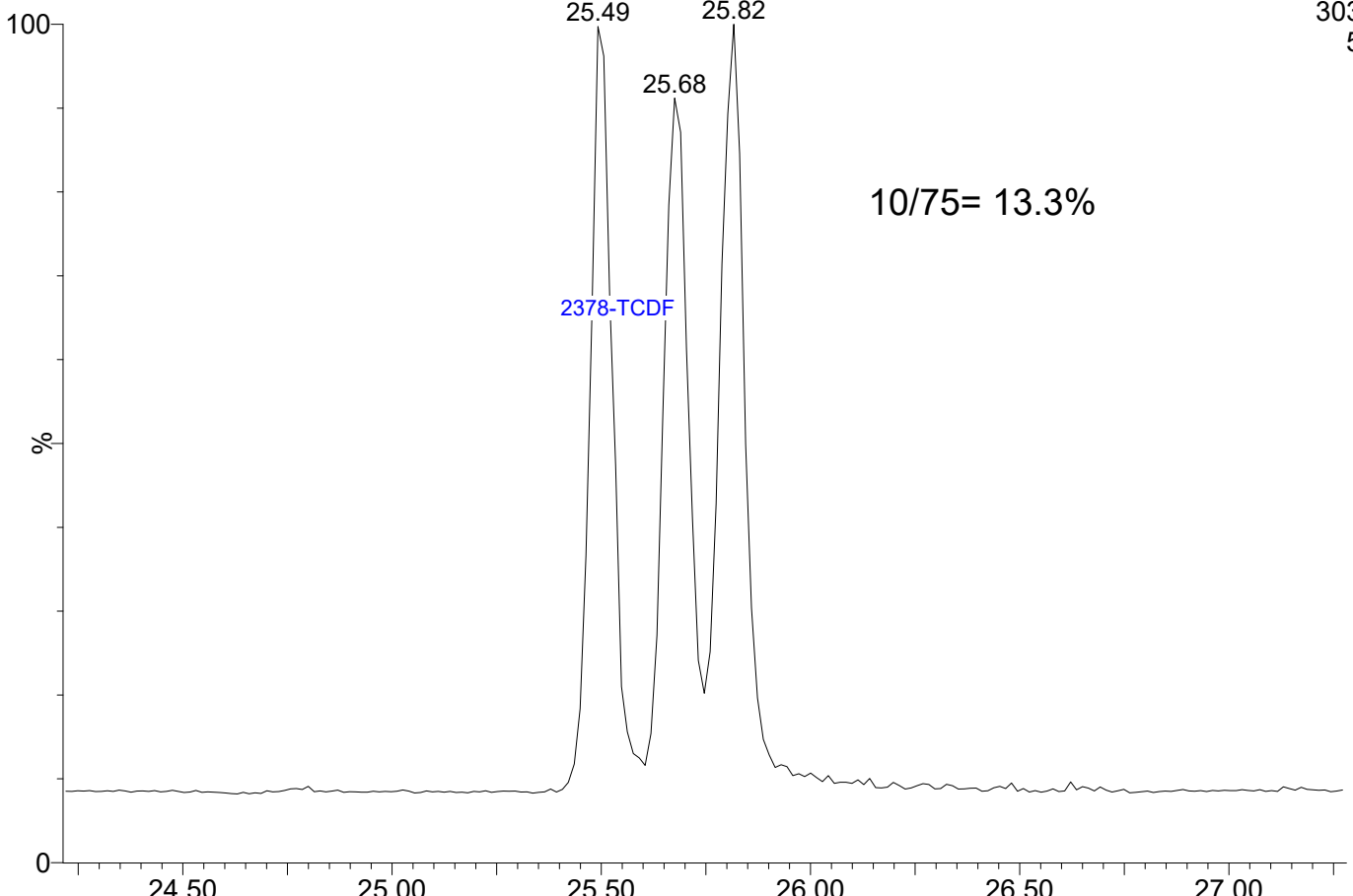


23051103

1: Voltage SIR 14 Channels EI+

303.9016

5.57e5





INITIAL CALIBRATION CHECK  
EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23051502

Calibration Date: 03/03/2023

Sequence: SLE0240

Injection Date: 05/15/23

Lab Sample ID: SLE0240-ICV1

Injection Time: 12:04

Sequence Name: CS3L5

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2,3,7,8-TCDF	A	10.000	9.89	0.7015272	0.6939211		-1.1	+/-16
2,3,7,8-TCDD	A	10.000	9.57	1.1486620	1.0993400		-4.3	+/-22
1,2,3,7,8-PeCDF	A	50.000	53.5	0.6792300	0.7270081		7.0	+/-18
2,3,4,7,8-PeCDF	A	50.000	52.7	0.7861704	0.8290223		5.5	+/-18
1,2,3,7,8-PeCDD	A	50.000	49.2	1.0218450	1.0051380		-1.6	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	50.4	1.1660380	1.1762900		0.9	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	52.9	1.0907410	1.1545610		5.9	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	48.9	1.1396990	1.1138350		-2.3	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	49.8	1.1370930	1.1319400		-0.5	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	51.6	0.9955689	1.0276800		3.2	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	50.2	1.0009380	1.0045590		0.4	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	55.8	0.9071139	1.0131230		11.7	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	49.5	1.0029930	0.9921724		-1.1	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	53.1	0.9531152	1.0123520		6.2	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	54.1	1.0390130	1.1239430		8.2	+/-14
OCDF	A	100.00	97.5	0.7778078	0.7584415		-2.5	+/-37
OCDD	A	100.00	101	0.9199537	0.9277312		0.8	+/-21
13C12-2,3,7,8-TCDF	A	100.00	103	1.6201960	1.6649104		2.8	+/-29
13C12-2,3,7,8-TCDD	A	100.00	106	1.1524090	1.2220758		6.0	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	103	1.2404520	1.2818698		3.3	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	106	1.1177860	1.1830970		5.8	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	103	0.8288129	0.8568411		3.4	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	96.6	1.1683050	1.1288353		-3.4	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	92.6	1.3864660	1.2836764		-7.4	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	103	1.1292560	1.1596850		2.7	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	107	0.9317541	0.9966117		7.0	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	96.6	0.9950393	0.9608064		-3.4	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	95.4	1.1566890	1.1032369		-4.6	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	117	0.8952017	1.0467117		16.9	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	118	0.7697516	0.9071448		17.8	+/-23

\* Values outside of QC limits



**INITIAL CALIBRATION CHECK**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Instrument ID:	<u>AUTOSPEC01</u>	Calibration:	<u>GC00015</u>
Lab File ID:	<u>23051502</u>	Calibration Date:	<u>03/03/2023</u>
Sequence:	<u>SLE0240</u>	Injection Date:	<u>05/15/23</u>
Lab Sample ID:	<u>SLE0240-ICV1</u>	Injection Time:	<u>12:04</u>
Sequence Name:	<u>CS3L5</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	108	0.8401226	0.9031674		7.5	+/-18
13C12-OCDD	A	200.00	253	0.7674714	0.9727219		26.7	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.16	1.2878040	1.1796328		-8.4	+/-21

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
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 Printed: Tuesday, May 16, 2023 08:56:51 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.704	1.001	4.040e4	5.683e4	0.702	0.711	0.770	923	1457	6.15e5	8.94e5	666.3	613.6	NO	bb	bb	9.892
12378-PeCDF	29.856	1.000	2.394e5	1.527e5	0.679	1.567	1.550	2416	2523	3.73e6	2.35e6	1543.6	930.6	NO	bb	bb	53.517
23478-PeCDF	31.204	1.001	2.503e5	1.624e5	0.786	1.541	1.550	2416	2523	3.83e6	2.54e6	1586.3	1007.5	NO	bb	bb	52.725
123478-HxCDF	34.825	1.001	2.722e5	2.154e5	1.166	1.264	1.240	2933	2690	4.19e6	3.33e6	1427.9	1239.4	NO	bd	bd	50.440
234678-HxCDF	35.827	1.001	2.668e5	2.076e5	1.140	1.285	1.240	2933	2690	4.18e6	3.26e6	1424.3	1213.1	NO	bb	bb	48.865
123678-HxCDF	34.958	1.001	3.108e5	2.335e5	1.091	1.331	1.240	2933	2690	4.38e6	3.42e6	1494.6	1270.5	NO	db	db	52.925
123789-HxCDF	36.853	1.000	2.317e5	1.826e5	1.137	1.269	1.240	2933	2690	3.48e6	2.79e6	1186.2	1036.0	NO	bb	bb	49.773
1234678-HpCDF	38.691	1.000	1.886e5	1.927e5	1.003	0.979	1.050	2449	2762	3.12e6	3.22e6	1275.2	1165.3	NO	bb	bb	49.461
1234789-HpCDF	40.919	1.000	1.592e5	1.781e5	0.953	0.894	1.050	2449	2762	2.34e6	2.44e6	957.3	882.5	NO	bb	bd	53.108
OCDF	45.117	1.006	2.572e5	2.847e5	0.778	0.903	0.890	1250	1313	3.13e6	3.44e6	2507.3	2620.5	NO	bb	bb	97.510
2378-TCDD	26.354	1.001	5.084e4	6.223e4	1.149	0.817	0.770	1240	1017	7.51e5	9.49e5	605.5	932.9	NO	bd	bb	9.571
12378-PeCDD	31.449	1.000	2.222e5	1.402e5	1.022	1.585	1.550	2636	1899	3.50e6	2.22e6	1326.9	1167.8	NO	bb	bb	49.182
123478-HxCDD	35.939	1.000	1.996e5	1.630e5	0.996	1.225	1.240	1811	1965	3.29e6	2.68e6	1817.5	1362.2	NO	bd	bd	51.613
123678-HxCDD	36.050	1.000	2.255e5	1.815e5	1.001	1.243	1.240	1811	1965	3.48e6	2.81e6	1920.2	1431.0	NO	db	db	50.181
123789-HxCDD	36.440	1.011	2.073e5	1.767e5	0.907	1.173	1.240	1811	1965	3.28e6	2.70e6	1812.7	1373.2	NO	bb	bb	55.843
1234678-HpCDD	40.184	1.001	1.906e5	1.821e5	1.039	1.047	1.050	2038	1977	2.66e6	2.50e6	1306.7	1264.7	NO	bd	bd	54.087
OCDD	44.879	1.000	3.093e5	3.535e5	0.920	0.875	0.890	1818	1355	3.84e6	4.40e6	2109.8	3250.0	NO	bb	bb	100.845
13C-2378-TCDF	25.690	1.007	6.151e5	7.860e5	1.620	0.783	0.770	2058	2513	9.15e6	1.18e7	4446.0	4714.6	NO	bb	bb	102.760
13C-12378-PeCDF	29.844	1.169	6.510e5	4.278e5	1.240	1.522	1.550	3920	2845	9.87e6	6.52e6	2518.0	2292.3	NO	bb	bb	103.339
13C-23478-PeCDF	31.181	1.222	5.955e5	4.001e5	1.118	1.488	1.550	3920	2845	9.25e6	6.15e6	2358.7	2162.6	NO	bb	bb	105.843
13C-123478-HxCDF	34.802	0.955	2.813e5	5.478e5	1.168	0.513	0.510	2551	3001	4.53e6	8.73e6	1776.7	2909.1	NO	bd	bd	96.622
13C-123678-HxCDF	34.936	0.959	3.214e5	6.214e5	1.386	0.517	0.510	2551	3001	4.65e6	9.06e6	1820.8	3020.7	NO	db	db	92.586
13C-234678-HxCDF	35.805	0.983	3.003e5	5.514e5	1.129	0.545	0.510	2551	3001	4.48e6	8.69e6	1754.9	2896.9	NO	bb	bb	102.695
13C-123789-HxCDF	36.841	1.011	2.498e5	4.821e5	0.932	0.518	0.510	2551	3001	3.86e6	7.39e6	1514.6	2462.2	NO	bb	bb	106.961
13C-1234678-HpCDF	38.680	1.062	2.343e5	5.345e5	0.895	0.438	0.440	3354	3199	3.96e6	8.94e6	1179.6	2793.8	NO	bb	bb	116.925
13C-1234789-HpCDF	40.908	1.123	2.039e5	4.624e5	0.770	0.441	0.440	3354	3199	2.86e6	6.45e6	852.4	2015.2	NO	bb	bb	117.849
13C-1234-TCDD	25.520	0.000	3.729e5	4.687e5	1.000	0.796	0.770	2321	1166	6.01e6	7.49e6	2587.8	6419.3	NO	bb	bb	100.000
13C-2378-TCDD	26.325	1.032	4.521e5	5.764e5	1.152	0.784	0.770	2321	1166	6.77e6	8.69e6	2915.1	7450.9	NO	bb	bb	106.045
13C-12378-PeCDD	31.438	1.232	4.443e5	2.768e5	0.829	1.605	1.550	1062	942	6.37e6	3.93e6	5992.9	4176.6	NO	bd	bd	103.382
13C-123478-HxCDD	35.928	0.986	4.009e5	3.047e5	0.995	1.316	1.240	2559	1753	6.28e6	4.87e6	2455.2	2779.9	NO	bd	bd	96.560
13C-123678-HxCDD	36.039	0.989	4.554e5	3.549e5	1.157	1.283	1.240	2559	1753	6.59e6	5.22e6	2574.6	2979.2	NO	db	db	95.379
13C-1234678-HpCDD	40.161	1.102	3.423e5	3.210e5	0.840	1.066	1.050	1612	1590	4.96e6	4.63e6	3074.5	2913.5	NO	bb	bb	107.504
13C-OCDD	44.861	1.231	6.804e5	7.484e5	0.767	0.909	0.890	2055	2617	8.13e6	9.03e6	3957.5	3450.5	NO	bb	bb	253.487
13C-123789-HxCDD	36.429	0.000	4.079e5	3.266e5	1.000	1.249	1.240	2559	1753	6.60e6	5.05e6	2579.3	2882.4	NO	bb	bb	100.000
37CL-2378-TCDD	26.354	1.033	9.927e4		1.288			1235		1.49e6		1204.8			bb		9.160

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
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 Printed: Tuesday, May 16, 2023 08:56:51 Pacific Daylight Time

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.215	0.865	4.777e4	6.437e4	0.802	0.742	0.770	923	1457	7.66e5	1.03e6	830.7	703.4	NO	bb	bb	9.986
1289-TCDF	27.201	1.059	3.628e4	5.262e4	0.678	0.689	0.770	923	1457	5.50e5	8.10e5	596.1	555.6	NO	bb	bb	9.359
13468-PECDF	27.060	0.907	3.571e5	2.312e5	1.246	1.544	1.550	622	1045	5.61e6	3.64e6	9027.8	3482.7	NO	bb	bb	43.747
12389-PECDF	32.240	1.080	2.343e5	1.513e5	0.496	1.548	1.550	2416	2523	3.57e6	2.27e6	1479.7	898.7	NO	bb	bb	72.006
123468-HXCDF	33.153	0.953	2.764e5	2.185e5	1.169	1.265	1.240	2933	2690	4.19e6	3.29e6	1427.8	1224.3	NO	bb	bb	51.065
1368-TCDD	23.486	0.892	4.646e4	5.747e4	1.015	0.808	0.770	1240	1017	7.40e5	9.08e5	596.3	892.3	NO	bb	bb	9.952
1289-TCDD	26.947	1.024	4.168e4	5.412e4	0.909	0.770	0.770	1240	1017	6.24e5	7.67e5	502.9	753.4	NO	bb	bd	10.250
12479-PECDD	28.753	0.915	3.672e5	2.392e5	2.301	1.535	1.550	2636	1899	3.48e6	2.29e6	1319.2	1207.8	NO	bb	bb	36.538
12389-PECDD	31.850	1.013	2.465e5	1.596e5	1.184	1.544	1.550	2636	1899	3.82e6	2.42e6	1450.0	1277.0	NO	bb	bb	47.581
124679-HXCDD	33.933	0.944	2.140e5	1.755e5	1.115	1.220	1.240	1811	1965	3.20e6	2.60e6	1765.4	1324.1	NO	bb	bb	49.477
1234679-HPCDD	39.137	0.974	1.971e5	1.876e5	1.137	1.051	1.050	2038	1977	3.20e6	2.98e6	1568.1	1509.1	NO	bb	bb	51.018
Total-tetrafurans			1.247e5		0.727			923		1.94e6							29.291
Total-penta1			3.571e5					622		5.61e6							43.747
Total-pentafurans			7.629e5		0.654			2416		1.17e7							187.730
Total-hexafurans			1.358e6		1.141			2933		2.04e7							253.069
Total-heptafurans			3.489e5		0.978			2449		5.49e6							102.889
Total-Furans			3.209e6		0.922			923		4.83e7							714.236
Total-tetradoxins			2.321e5		1.024			1240		3.20e6							49.982
Total-pentadoxins			8.358e5		1.502			2636		1.08e7							133.302
Total-hexadoxins			8.464e5		1.005			1811		1.33e7							207.114
Total-heptadoxins			3.878e5		1.088			2038		5.86e6							105.106
Total-Dioxins			2.611e6		1.130			1240		3.70e7							596.349
Total-TEQ			5.820e6					1240		8.53e7							1310.585
FUNCTION1 PFK			1.554e8					401938		1.17e7							
FUNCTION2 PFK			7.950e6					215460		1.52e7							0.000
FUNCTION3 PFK			1.036e6					299829		2.39e7							0.000
FUNCTION4 PFK			3.783e5					289199		1.07e7							
FUNCTION5 PFK			8.508e3					206041		3.19e5							
FUNCTION1 HXCD...			5.713e2					559		6.15e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			1.585e2					569		2.86e3							0.000
FUNCTION3 OCDPE			0.000e0					532		0.00e0							
FUNCTION4 NCDPE			7.108e2					724		1.26e4							0.000
FUNCTION5 DCDPE			0.000e0					530		0.00e0							

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:56:51 Pacific Daylight Time

**Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07****Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27****ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk****TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.20	3.628e4	5.262e4	0.678	0.69	0.77	596.1	YES	NO	bb	bb	9.359
2	Total-tetrafurans	27.06	2.445e2	3.175e2	0.727	0.77	0.77	6.7	YES	NO	bb	bb	0.055
3	2378-TCDF	25.70	4.040e4	5.683e4	0.702	0.71	0.77	666.3	YES	NO	bb	bb	9.892
4	1368-TCDF	22.21	4.777e4	6.437e4	0.802	0.74	0.77	830.7	YES	NO	bb	bb	9.986

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.06	3.571e5	2.312e5	1.246	1.54	1.55	9027.8	YES	NO	bb	bb	43.747

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDF	32.24	2.343e5	1.513e5	0.496	1.55	1.55	1479.7	YES	NO	bb	bb	72.006
2	23478-PeCDF	31.20	2.503e5	1.624e5	0.786	1.54	1.55	1586.3	YES	NO	bb	bb	52.725
3	12378-PeCDF	29.86	2.394e5	1.527e5	0.679	1.57	1.55	1543.6	YES	NO	bb	bb	53.517
4	Total-pentafurans	28.71	3.899e4	2.532e4	0.654	1.54	1.55	252.4	YES	NO	bb	bb	9.481

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	234678-HxCDF	35.83	2.668e5	2.076e5	1.140	1.29	1.24	1424.3	YES	NO	bb	bb	48.865
2	123678-HxCDF	34.96	3.108e5	2.335e5	1.091	1.33	1.24	1494.6	YES	NO	db	db	52.925
3	123478-HxCDF	34.82	2.722e5	2.154e5	1.166	1.26	1.24	1427.9	YES	NO	bd	bd	50.440
4	123468-HxCDF	33.15	2.764e5	2.185e5	1.169	1.26	1.24	1427.8	YES	NO	bb	bb	51.065
5	123789-HxCDF	36.85	2.317e5	1.826e5	1.137	1.27	1.24	1186.2	YES	NO	bb	bb	49.773

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.92	1.592e5	1.781e5	0.953	0.89	1.05	957.3	YES	NO	bb	bd	53.108
2	Total-heptafurans	39.36	8.638e2	8.971e2	0.978	0.96	1.05	4.9	YES	NO	bb	dd	0.251
3	Total-heptafurans	39.10	2.608e2	2.322e2	0.978	1.12	1.05	3.0	NO	NO	db	bd	0.070
4	1234678-HpCDF	38.69	1.886e5	1.927e5	1.003	0.98	1.05	1275.2	YES	NO	bb	bb	49.461



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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Printed: Tuesday, May 16, 2023 08:56:51 Pacific Daylight Time

**ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk****Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.20	3.628e4	5.262e4	0.678	0.69	0.77	596.1	YES	NO	bb	bb	9.359
2	Total-tetrafurans	27.06	2.445e2	3.175e2	0.727	0.77	0.77	6.7	YES	NO	bb	bb	0.055
3	2378-TCDF	25.70	4.040e4	5.683e4	0.702	0.71	0.77	666.3	YES	NO	bb	bb	9.892
4	1368-TCDF	22.21	4.777e4	6.437e4	0.802	0.74	0.77	830.7	YES	NO	bb	bb	9.986
5	12389-PECDF	32.24	2.343e5	1.513e5	0.496	1.55	1.55	1479.7	YES	NO	bb	bb	72.006
6	23478-PeCDF	31.20	2.503e5	1.624e5	0.786	1.54	1.55	1586.3	YES	NO	bb	bb	52.725
7	12378-PeCDF	29.86	2.394e5	1.527e5	0.679	1.57	1.55	1543.6	YES	NO	bb	bb	53.517
8	Total-pentafurans	28.71	3.899e4	2.532e4	0.654	1.54	1.55	252.4	YES	NO	bb	bb	9.481
9	234678-HxCDF	35.83	2.668e5	2.076e5	1.140	1.29	1.24	1424.3	YES	NO	bb	bb	48.865
10	123678-HxCDF	34.96	3.108e5	2.335e5	1.091	1.33	1.24	1494.6	YES	NO	db	db	52.925
11	123478-HxCDF	34.82	2.722e5	2.154e5	1.166	1.26	1.24	1427.9	YES	NO	bd	bd	50.440
12	123468-HXCDF	33.15	2.764e5	2.185e5	1.169	1.26	1.24	1427.8	YES	NO	bb	bb	51.065
13	123789-HxCDF	36.85	2.317e5	1.826e5	1.137	1.27	1.24	1186.2	YES	NO	bb	bb	49.773
14	1234789-HpCDF	40.92	1.592e5	1.781e5	0.953	0.89	1.05	957.3	YES	NO	bb	bd	53.108
15	Total-heptafurans	39.36	8.638e2	8.971e2	0.978	0.96	1.05	4.9	YES	NO	bb	dd	0.251
16	Total-heptafurans	39.10	2.608e2	2.322e2	0.978	1.12	1.05	3.0	NO	NO	db	bd	0.070
17	1234678-HpCDF	38.69	1.886e5	1.927e5	1.003	0.98	1.05	1275.2	YES	NO	bb	bb	49.461
18	OCDF	45.12	2.572e5	2.847e5	0.778	0.90	0.89	2507.3	YES	NO	bb	bb	97.510
19	13468-PECDF	27.06	3.571e5	2.312e5	1.246	1.54	1.55	9027.8	YES	NO	bb	bb	43.747

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	26.95	4.168e4	5.412e4	0.909	0.77	0.77	502.9	YES	NO	bb	bd	10.250
2	2378-TCDD	26.35	5.084e4	6.223e4	1.149	0.82	0.77	605.5	YES	NO	bd	bb	9.571
3	Total-tetradioxins	26.03	6.903e4	8.918e4	1.024	0.77	0.77	581.9	YES	NO	bb	bb	15.019
4	Total-tetradioxins	25.53	2.255e4	2.836e4	1.024	0.80	0.77	275.6	YES	NO	bb	bd	4.833
5	Total-tetradioxins	24.95	4.174e2	5.228e2	1.024	0.80	0.77	6.0	YES	NO	bb	bb	0.089
6	Total-tetradioxins	24.69	1.151e3	1.684e3	1.024	0.68	0.77	15.9	YES	NO	db	db	0.269
7	1368-TCDD	23.49	4.646e4	5.747e4	1.015	0.81	0.77	596.3	YES	NO	bb	bb	9.952

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12479-PECDD	28.75	3.672e5	2.392e5	2.301	1.53	1.55	1319.2	YES	NO	bb	bb	36.538
2	12389-PECDD	31.85	2.465e5	1.596e5	1.184	1.54	1.55	1450.0	YES	NO	bb	bb	47.581
3	12378-PeCDD	31.45	2.222e5	1.402e5	1.022	1.58	1.55	1326.9	YES	NO	bb	bb	49.182

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk****HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.44	2.073e5	1.767e5	0.907	1.17	1.24	1812.7	YES	NO	bb	bb	55.843
2	123678-HxCDD	36.05	2.255e5	1.815e5	1.001	1.24	1.24	1920.2	YES	NO	db	db	50.181
3	123478-HxCDD	35.94	1.996e5	1.630e5	0.996	1.22	1.24	1817.5	YES	NO	bd	bd	51.613
4	124679-HXCDD	33.93	2.140e5	1.755e5	1.115	1.22	1.24	1765.4	YES	NO	bb	bb	49.477

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.18	1.906e5	1.821e5	1.039	1.05	1.05	1306.7	YES	NO	bd	bd	54.087
2	1234679-HPCDD	39.14	1.971e5	1.876e5	1.137	1.05	1.05	1568.1	YES	NO	bb	bb	51.018

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	26.95	4.168e4	5.412e4	0.909	0.77	0.77	502.9	YES	NO	bb	bd	10.250
2	2378-TCDD	26.35	5.084e4	6.223e4	1.149	0.82	0.77	605.5	YES	NO	bd	bb	9.571
3	Total-tetradoxins	26.03	6.903e4	8.918e4	1.024	0.77	0.77	581.9	YES	NO	bb	bb	15.019
4	Total-tetradoxins	25.53	2.255e4	2.836e4	1.024	0.80	0.77	275.6	YES	NO	bb	bd	4.833
5	Total-tetradoxins	24.95	4.174e2	5.228e2	1.024	0.80	0.77	6.0	YES	NO	bb	bb	0.089
6	Total-tetradoxins	24.69	1.151e3	1.684e3	1.024	0.68	0.77	15.9	YES	NO	db	db	0.269
7	1368-TCDD	23.49	4.646e4	5.747e4	1.015	0.81	0.77	596.3	YES	NO	bb	bb	9.952
8	12479-PECDD	28.75	3.672e5	2.392e5	2.301	1.53	1.55	1319.2	YES	NO	bb	bb	36.538
9	12389-PECDD	31.85	2.465e5	1.596e5	1.184	1.54	1.55	1450.0	YES	NO	bb	bb	47.581
10	12378-PeCDD	31.45	2.222e5	1.402e5	1.022	1.58	1.55	1326.9	YES	NO	bb	bb	49.182
11	123789-HxCDD	36.44	2.073e5	1.767e5	0.907	1.17	1.24	1812.7	YES	NO	bb	bb	55.843
12	123678-HxCDD	36.05	2.255e5	1.815e5	1.001	1.24	1.24	1920.2	YES	NO	db	db	50.181
13	123478-HxCDD	35.94	1.996e5	1.630e5	0.996	1.22	1.24	1817.5	YES	NO	bd	bd	51.613
14	124679-HXCDD	33.93	2.140e5	1.755e5	1.115	1.22	1.24	1765.4	YES	NO	bb	bb	49.477
15	1234678-HpCDD	40.18	1.906e5	1.821e5	1.039	1.05	1.05	1306.7	YES	NO	bd	bd	54.087
16	1234679-HPCDD	39.14	1.971e5	1.876e5	1.137	1.05	1.05	1568.1	YES	NO	bb	bb	51.018
17	OCDD	44.88	3.093e5	3.535e5	0.920	0.88	0.89	2109.8	YES	NO	bb	bb	100.845

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

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ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.20	3.628e4	5.262e4	0.678	0.69	0.77	596.1	YES	NO	bb	bb	9.359
2	Total-tetrafurans	27.06	2.445e2	3.175e2	0.727	0.77	0.77	6.7	YES	NO	bb	bb	0.055
3	2378-TCDF	25.70	4.040e4	5.683e4	0.702	0.71	0.77	666.3	YES	NO	bb	bb	9.892
4	1368-TCDF	22.21	4.777e4	6.437e4	0.802	0.74	0.77	830.7	YES	NO	bb	bb	9.986
5	12389-PECDF	32.24	2.343e5	1.513e5	0.496	1.55	1.55	1479.7	YES	NO	bb	bb	72.006
6	23478-PeCDF	31.20	2.503e5	1.624e5	0.786	1.54	1.55	1586.3	YES	NO	bb	bb	52.725
7	12378-PeCDF	29.86	2.394e5	1.527e5	0.679	1.57	1.55	1543.6	YES	NO	bb	bb	53.517
8	Total-pentafurans	28.71	3.899e4	2.532e4	0.654	1.54	1.55	252.4	YES	NO	bb	bb	9.481
9	234678-HxCDF	35.83	2.668e5	2.076e5	1.140	1.29	1.24	1424.3	YES	NO	bb	bb	48.865
10	123678-HxCDF	34.96	3.108e5	2.335e5	1.091	1.33	1.24	1494.6	YES	NO	db	db	52.925
11	123478-HxCDF	34.82	2.722e5	2.154e5	1.166	1.26	1.24	1427.9	YES	NO	bd	bd	50.440
12	123468-HXCDF	33.15	2.764e5	2.185e5	1.169	1.26	1.24	1427.8	YES	NO	bb	bb	51.065
13	123789-HxCDF	36.85	2.317e5	1.826e5	1.137	1.27	1.24	1186.2	YES	NO	bb	bb	49.773
14	1234789-HpCDF	40.92	1.592e5	1.781e5	0.953	0.89	1.05	957.3	YES	NO	bb	bd	53.108
15	Total-heptafurans	39.36	8.638e2	8.971e2	0.978	0.96	1.05	4.9	YES	NO	bb	dd	0.251
16	Total-heptafurans	39.10	2.608e2	2.322e2	0.978	1.12	1.05	3.0	NO	NO	db	bd	0.070
17	1234678-HpCDF	38.69	1.886e5	1.927e5	1.003	0.98	1.05	1275.2	YES	NO	bb	bb	49.461
18	OCDF	45.12	2.572e5	2.847e5	0.778	0.90	0.89	2507.3	YES	NO	bb	bb	97.510
19	13468-PECDF	27.06	3.571e5	2.312e5	1.246	1.54	1.55	9027.8	YES	NO	bb	bb	43.747
20	1289-TCDD	26.95	4.168e4	5.412e4	0.909	0.77	0.77	502.9	YES	NO	bb	bd	10.250
21	2378-TCDD	26.35	5.084e4	6.223e4	1.149	0.82	0.77	605.5	YES	NO	bd	bb	9.571
22	Total-tetradiioxins	26.03	6.903e4	8.918e4	1.024	0.77	0.77	581.9	YES	NO	bb	bb	15.019
23	Total-tetradiioxins	25.53	2.255e4	2.836e4	1.024	0.80	0.77	275.6	YES	NO	bb	bd	4.833
24	Total-tetradiioxins	24.95	4.174e2	5.228e2	1.024	0.80	0.77	6.0	YES	NO	bb	bb	0.089
25	Total-tetradiioxins	24.69	1.151e3	1.684e3	1.024	0.68	0.77	15.9	YES	NO	db	db	0.269
26	1368-TCDD	23.49	4.646e4	5.747e4	1.015	0.81	0.77	596.3	YES	NO	bb	bb	9.952
27	12479-PECDD	28.75	3.672e5	2.392e5	2.301	1.53	1.55	1319.2	YES	NO	bb	bb	36.538
28	12389-PECDD	31.85	2.465e5	1.596e5	1.184	1.54	1.55	1450.0	YES	NO	bb	bb	47.581
29	12378-PeCDD	31.45	2.222e5	1.402e5	1.022	1.58	1.55	1326.9	YES	NO	bb	bb	49.182
30	123789-HxCDD	36.44	2.073e5	1.767e5	0.907	1.17	1.24	1812.7	YES	NO	bb	bb	55.843
31	123678-HxCDD	36.05	2.255e5	1.815e5	1.001	1.24	1.24	1920.2	YES	NO	db	db	50.181
32	123478-HxCDD	35.94	1.996e5	1.630e5	0.996	1.22	1.24	1817.5	YES	NO	bd	bd	51.613
33	124679-HXCDD	33.93	2.140e5	1.755e5	1.115	1.22	1.24	1765.4	YES	NO	bb	bb	49.477
34	1234678-HpCDD	40.18	1.906e5	1.821e5	1.039	1.05	1.05	1306.7	YES	NO	bd	bd	54.087
35	1234679-HPCDD	39.14	1.971e5	1.876e5	1.137	1.05	1.05	1568.1	YES	NO	bb	bb	51.018
36	OCDD	44.88	3.093e5	3.535e5	0.920	0.88	0.89	2109.8	YES	NO	bb	bb	100.845

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:56:51 Pacific Daylight Time

**ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk****PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	26.54	1.554e8					29.1	YES		bb		

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.41	1.617e5					2.9	NO		bd		0.000
2	FUNCTION2 PFK	32.10	2.079e4					1.8	NO		bb		0.000
3	FUNCTION2 PFK	31.62	1.136e3					0.5	NO		bb		0.000
4	FUNCTION2 PFK	31.54	1.053e4					1.6	NO		bb		0.000
5	FUNCTION2 PFK	30.96	1.519e3					0.6	NO		bb		0.000
6	FUNCTION2 PFK	30.84	5.867e3					1.0	NO		bb		0.000
7	FUNCTION2 PFK	30.79	1.610e3					0.7	NO		bb		0.000
8	FUNCTION2 PFK	30.56	8.562e3					1.3	NO		bb		0.000
9	FUNCTION2 PFK	30.32	6.892e3					1.1	NO		bb		0.000
10	FUNCTION2 PFK	29.28	5.996e3					1.3	NO		bb		0.000
11	FUNCTION2 PFK	29.14	2.767e4					4.3	YES		db		0.000
12	FUNCTION2 PFK	29.10	1.181e5					6.1	YES		dd		0.000
13	FUNCTION2 PFK	28.35	7.570e6					45.7	YES		bd		0.000
14	FUNCTION2 PFK	32.46	9.087e3					1.7	NO		db		0.000

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:56:51 Pacific Daylight Time

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

## PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.17	1.536e4					1.6	NO		bb		0.000
2	FUNCTION3 PFK	34.12	7.653e3					1.5	NO		bb		0.000
3	FUNCTION3 PFK	33.97	1.489e4					1.7	NO		bb		0.000
4	FUNCTION3 PFK	33.70	3.740e3					0.6	NO		bb		0.000
5	FUNCTION3 PFK	33.61	1.814e4					2.3	NO		bb		0.000
6	FUNCTION3 PFK	33.52	1.497e4					1.7	NO		db		0.000
7	FUNCTION3 PFK	33.42	3.620e4					1.7	NO		dd		0.000
8	FUNCTION3 PFK	33.37	1.230e4					1.8	NO		dd		0.000
9	FUNCTION3 PFK	33.31	5.471e4					3.9	YES		dd		0.000
10	FUNCTION3 PFK	33.23	8.024e4					3.5	YES		dd		0.000
11	FUNCTION3 PFK	33.18	6.105e4					4.3	YES		dd		0.000
12	FUNCTION3 PFK	33.04	9.148e4					3.5	YES		dd		0.000
13	FUNCTION3 PFK	33.00	5.427e4					3.5	YES		dd		0.000
14	FUNCTION3 PFK	32.92	5.174e3					1.2	NO		bd		0.000
15	FUNCTION3 PFK	35.40	6.996e3					0.8	NO		bb		0.000
16	FUNCTION3 PFK	35.33	1.295e4					1.2	NO		bb		0.000
17	FUNCTION3 PFK	35.25	2.743e3					0.5	NO		bb		0.000
18	FUNCTION3 PFK	35.20	1.015e3					0.3	NO		bb		0.000
19	FUNCTION3 PFK	35.01	6.735e3					1.0	NO		bb		0.000
20	FUNCTION3 PFK	34.95	5.994e4					3.0	NO		db		0.000
21	FUNCTION3 PFK	34.82	9.679e3					1.3	NO		dd		0.000
22	FUNCTION3 PFK	34.78	2.211e4					1.7	NO		bd		0.000
23	FUNCTION3 PFK	34.68	1.554e4					1.3	NO		bb		0.000
24	FUNCTION3 PFK	34.62	7.175e3					1.1	NO		db		0.000
25	FUNCTION3 PFK	34.59	1.086e4					1.4	NO		bd		0.000
26	FUNCTION3 PFK	34.55	3.606e4					2.4	NO		db		0.000
27	FUNCTION3 PFK	34.47	7.237e3					1.0	NO		bd		0.000
28	FUNCTION3 PFK	34.42	3.369e4					2.8	NO		db		0.000
29	FUNCTION3 PFK	34.35	5.477e4					2.5	NO		dd		0.000
30	FUNCTION3 PFK	34.26	2.292e4					1.8	NO		bd		0.000
31	FUNCTION3 PFK	37.24	1.200e4					1.7	NO		bb		0.000
32	FUNCTION3 PFK	36.98	1.191e4					1.0	NO		bb		0.000
33	FUNCTION3 PFK	36.87	1.879e4					1.3	NO		db		0.000
34	FUNCTION3 PFK	36.80	1.009e4					1.3	NO		dd		0.000
35	FUNCTION3 PFK	36.73	3.076e4					2.3	NO		dd		0.000
36	FUNCTION3 PFK	36.69	5.760e3					0.9	NO		bd		0.000
37	FUNCTION3 PFK	36.61	4.346e4					3.4	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:56:51 Pacific Daylight Time

**ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk****PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	36.35	2.928e4					1.9	NO		bb		0.000
39	FUNCTION3 PFK	36.26	9.788e3					1.2	NO		db		0.000
40	FUNCTION3 PFK	36.23	5.699e3					0.9	NO		bd		0.000
41	FUNCTION3 PFK	35.97	3.074e4					1.2	NO		db		0.000
42	FUNCTION3 PFK	35.93	1.011e4					1.5	NO		bd		0.000
43	FUNCTION3 PFK	35.81	1.769e4					1.5	NO		bb		0.000
44	FUNCTION3 PFK	35.69	9.127e3					1.3	NO		bb		0.000
45	FUNCTION3 PFK	35.65	1.325e3					0.4	NO		bb		0.000
46	FUNCTION3 PFK	35.48	1.265e3					0.4	NO		bb		0.000
47	FUNCTION3 PFK	37.52	7.553e3					1.0	NO		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

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**ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk****PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.34	2.051e4					1.3	NO		bb		
2	FUNCTION4 PFK	40.07	2.427e4					1.7	NO		bb		
3	FUNCTION4 PFK	39.96	1.689e4					1.6	NO		db		
4	FUNCTION4 PFK	39.93	9.677e3					1.5	NO		bd		
5	FUNCTION4 PFK	39.86	7.340e3					0.6	NO		bb		
6	FUNCTION4 PFK	39.31	4.706e3					0.8	NO		bb		
7	FUNCTION4 PFK	39.19	6.178e3					1.0	NO		db		
8	FUNCTION4 PFK	39.16	3.406e3					0.6	NO		bd		
9	FUNCTION4 PFK	39.09	5.501e3					1.0	NO		bb		
10	FUNCTION4 PFK	38.76	4.656e3					0.8	NO		bb		
11	FUNCTION4 PFK	38.12	2.627e4					1.6	NO		db		
12	FUNCTION4 PFK	38.03	2.231e4					1.5	NO		bd		
13	FUNCTION4 PFK	37.97	4.647e3					1.0	NO		bb		
14	FUNCTION4 PFK	37.90	2.596e4					2.0	NO		bb		
15	FUNCTION4 PFK	42.97	2.708e4					1.4	NO		bb		
16	FUNCTION4 PFK	42.55	1.531e4					1.7	NO		bb		
17	FUNCTION4 PFK	42.38	2.436e4					2.0	NO		bb		
18	FUNCTION4 PFK	42.33	5.375e3					0.9	NO		bb		
19	FUNCTION4 PFK	42.16	1.158e4					1.5	NO		bb		
20	FUNCTION4 PFK	42.01	1.136e4					1.4	NO		bb		
21	FUNCTION4 PFK	41.92	4.388e3					0.8	NO		bb		
22	FUNCTION4 PFK	41.84	1.706e4					1.5	NO		bb		
23	FUNCTION4 PFK	41.68	5.479e3					0.8	NO		bb		
24	FUNCTION4 PFK	41.50	2.834e4					1.6	NO		db		
25	FUNCTION4 PFK	41.41	1.460e4					1.5	NO		bd		
26	FUNCTION4 PFK	41.35	6.979e3					1.2	NO		bb		
27	FUNCTION4 PFK	41.31	1.035e4					1.4	NO		bb		
28	FUNCTION4 PFK	41.25	4.610e3					0.9	NO		bb		
29	FUNCTION4 PFK	41.13	9.126e3					1.4	NO		bb		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.95	8.508e3					1.5	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

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**ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk****ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.51	1.747e2					5.5	YES		bb		0.000
2	FUNCTION1 HXCD...	25.28	1.056e2					3.1	YES		bb		0.000
3	FUNCTION1 HXCD...	21.75	2.909e2					2.3	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.06	1.585e2					5.0	YES		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.85	2.794e2					2.0	NO		bb		0.000
2	FUNCTION4 NCDPE	42.13	1.126e2					6.4	YES		bb		0.000
3	FUNCTION4 NCDPE	40.14	7.272e1					2.3	NO		bb		0.000
4	FUNCTION4 NCDPE	39.39	1.687e2					4.1	YES		bb		0.000
5	FUNCTION4 NCDPE	39.06	7.747e1					2.6	NO		bb		0.000

**ETHERS6**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

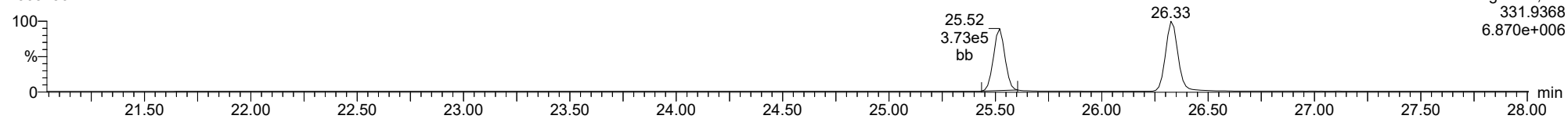


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**ID:** CS3L5, **Name:** 23051502, **Date:** 15-May-2023, **Time:** 12:04:17, **Conditions:** AUTOSPEC01, **User:** pk

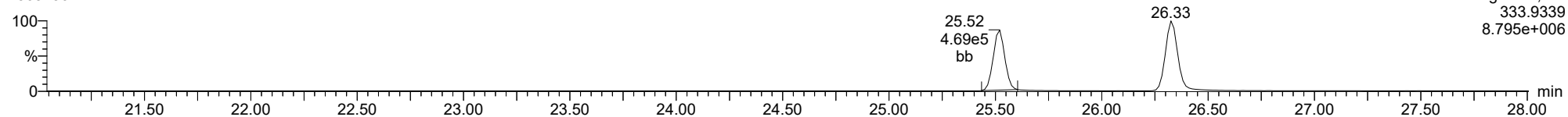
**13C-1234-TCDD**

23051502



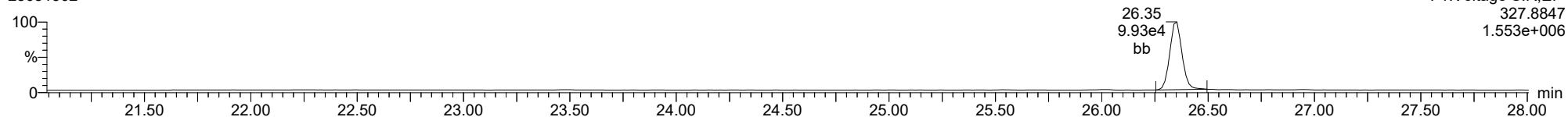
**13C-1234-TCDD**

23051502



**37CL-2378-TCDD**

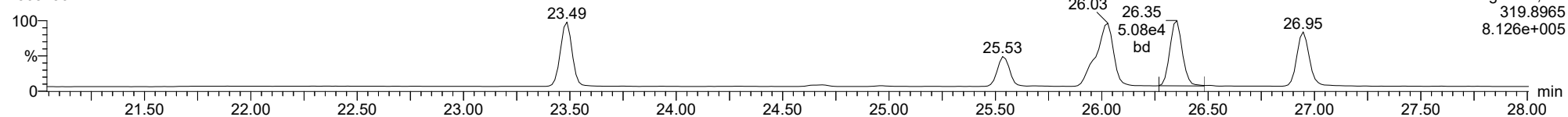
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ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

**2378-TCDD**

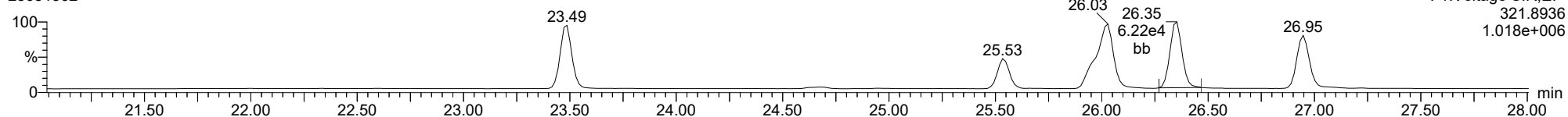
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F1:Voltage SIR,EI+  
319.8965  
8.126e+005

**2378-TCDD**

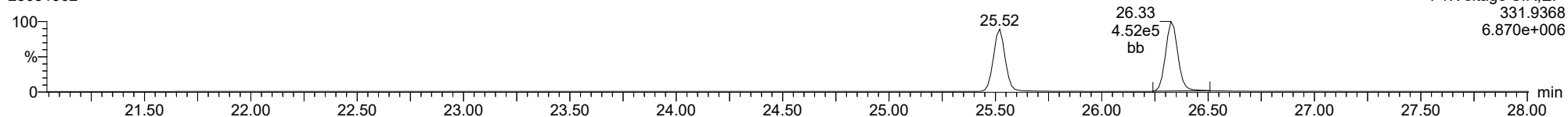
23051502



F1:Voltage SIR,EI+  
321.8936  
1.018e+006

**13C-2378-TCDD**

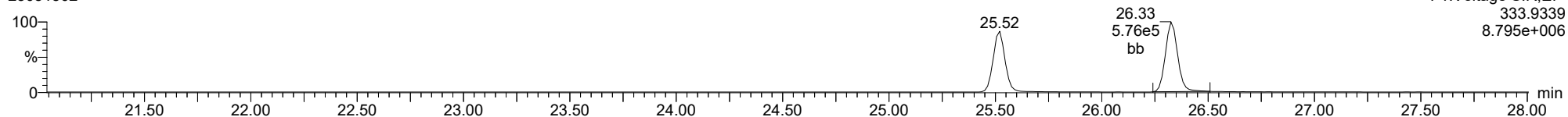
23051502



F1:Voltage SIR,EI+  
331.9368  
6.870e+006

**13C-2378-TCDD**

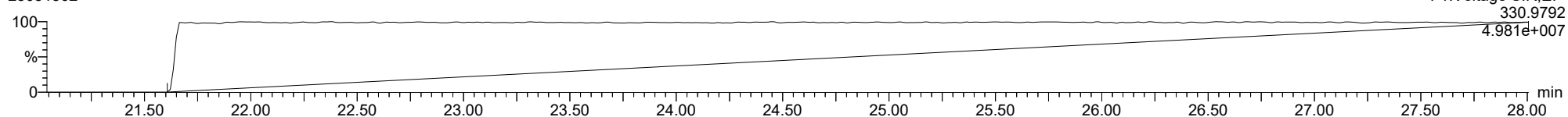
23051502



F1:Voltage SIR,EI+  
333.9339  
8.795e+006

**FUNCTION1 PFK**

23051502

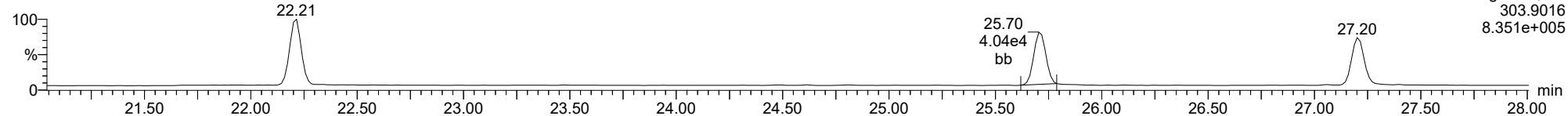


F1:Voltage SIR,EI+  
330.9792  
4.981e+007

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

**2378-TCDF**

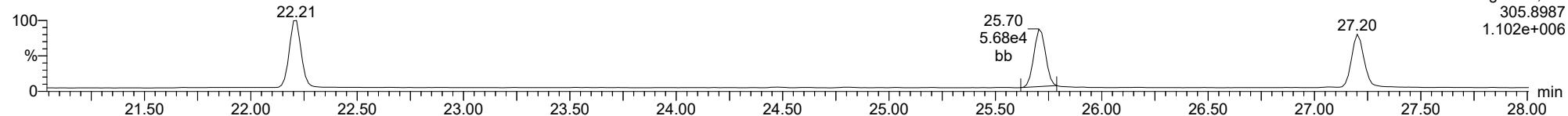
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F1:Voltage SIR,EI+  
303.9016  
8.351e+005

**2378-TCDF**

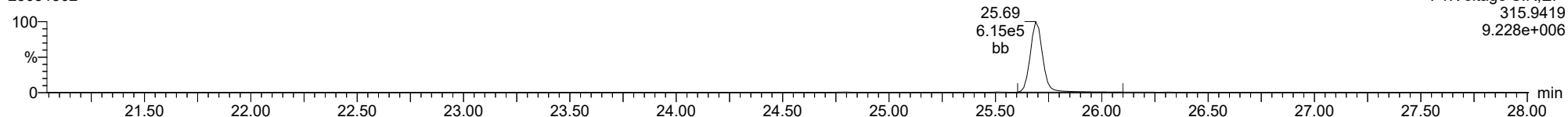
23051502



F1:Voltage SIR,EI+  
305.8987  
1.102e+006

**13C-2378-TCDF**

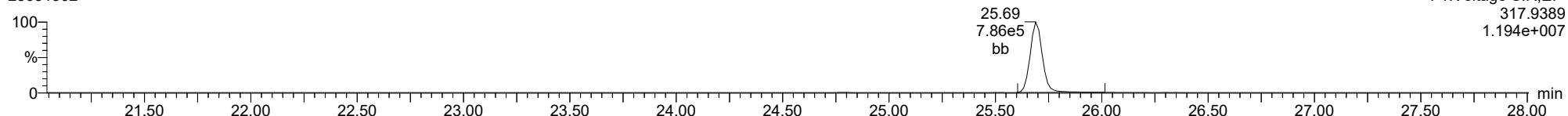
23051502



F1:Voltage SIR,EI+  
315.9419  
9.228e+006

**13C-2378-TCDF**

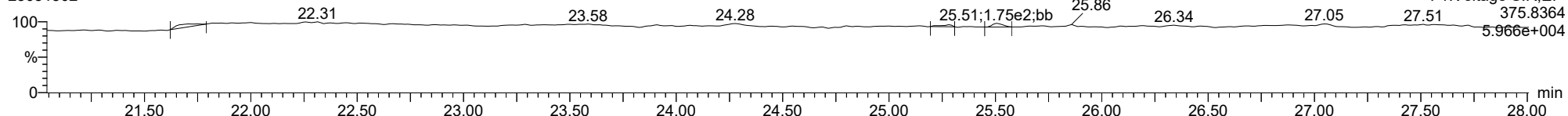
23051502



F1:Voltage SIR,EI+  
317.9389  
1.194e+007

**FUNCTION1 HXCDPE**

23051502

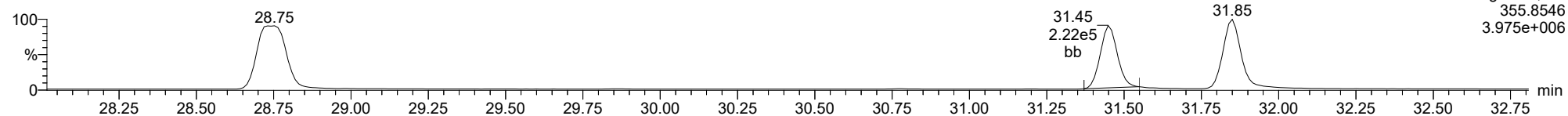


F1:Voltage SIR,EI+  
375.8364  
5.966e+004

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

**12378-PeCDD**

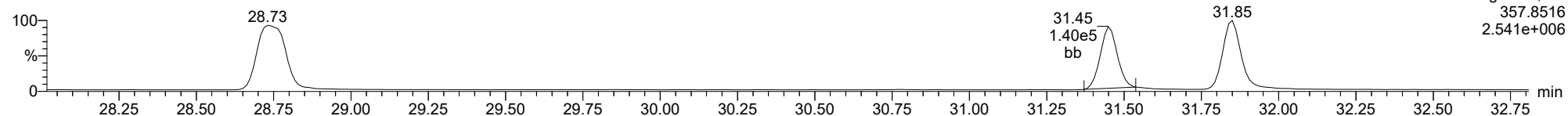
23051502



F2:Voltage SIR,EI+  
355.8546  
3.975e+006

**12378-PeCDD**

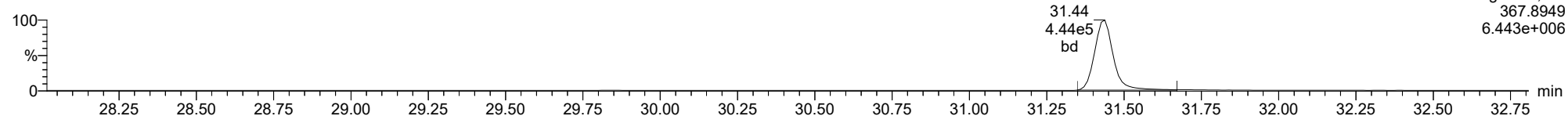
23051502



F2:Voltage SIR,EI+  
357.8516  
2.541e+006

**13C-12378-PeCDD**

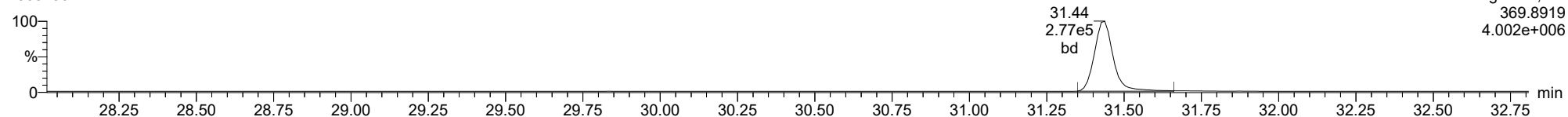
23051502



F2:Voltage SIR,EI+  
367.8949  
6.443e+006

**13C-12378-PeCDD**

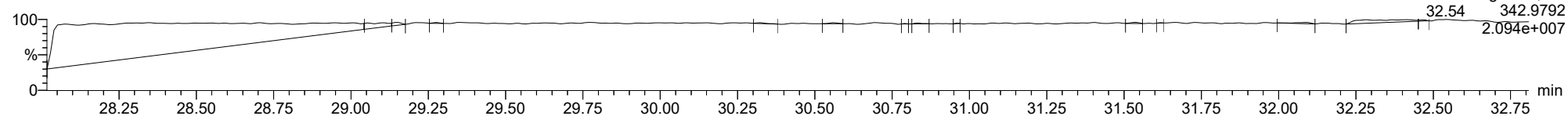
23051502



F2:Voltage SIR,EI+  
369.8919  
4.002e+006

**FUNCTION2 PFK**

23051502

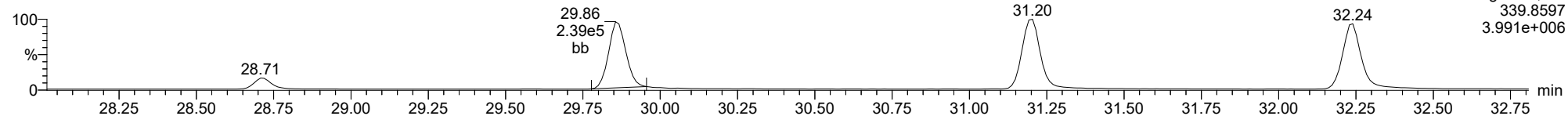


F2:Voltage SIR,EI+  
342.9792  
2.094e+007

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

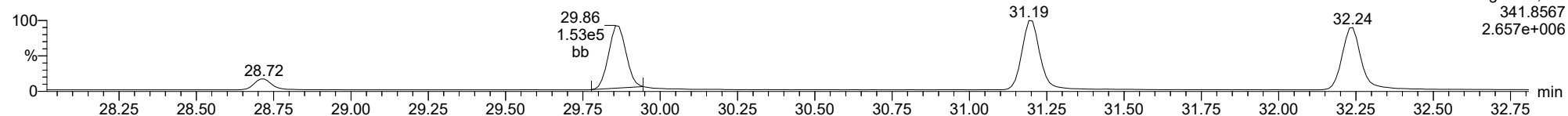
**12378-PeCDF**

23051502



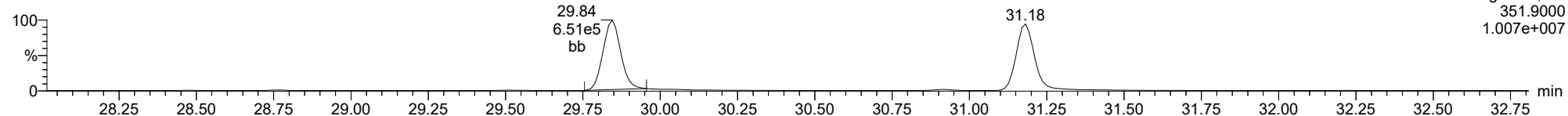
**12378-PeCDF**

23051502



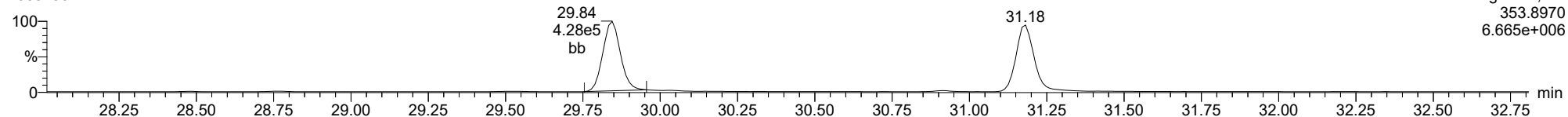
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23051502



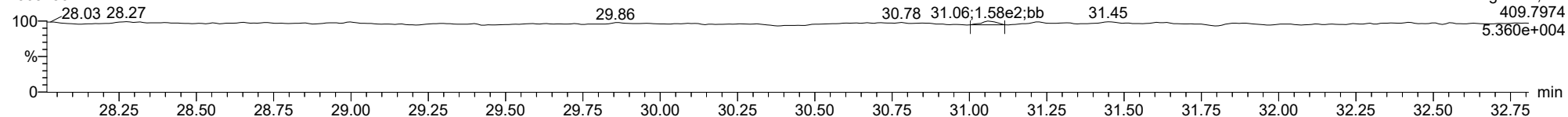
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23051502



**FUNCTION2 HPCDPE**

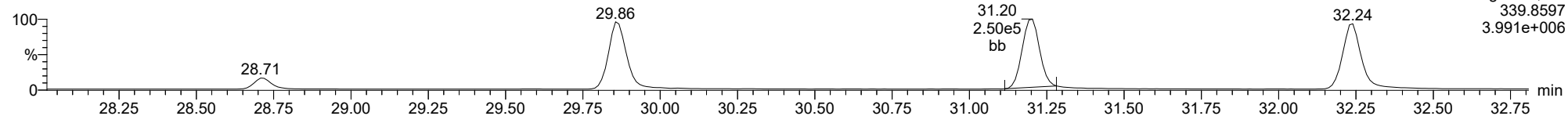
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

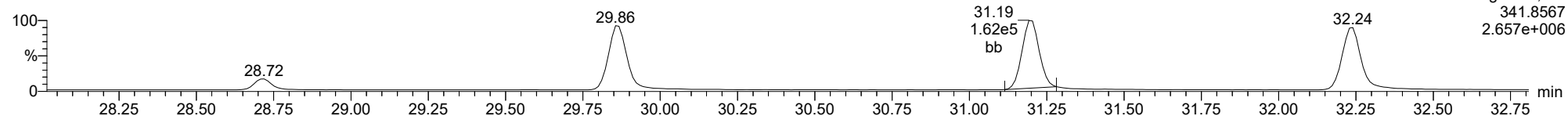
**23478-PeCDF**

23051502



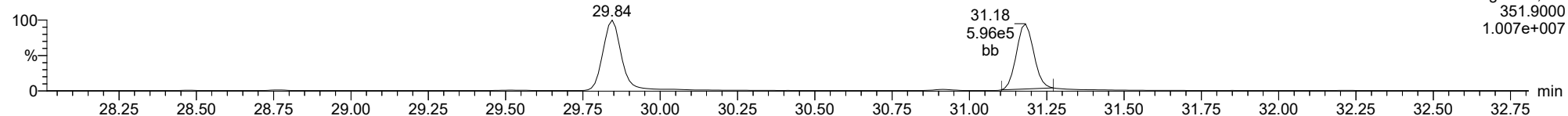
**23478-PeCDF**

23051502



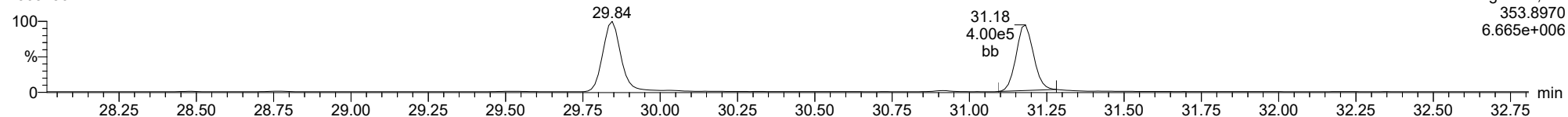
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23051502



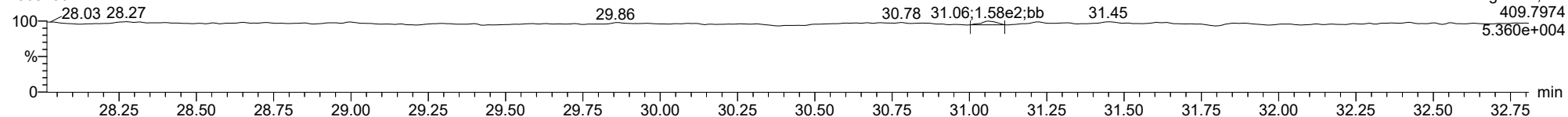
**13C-23478-PeCDF**

23051502



**FUNCTION2 HPCDPE**

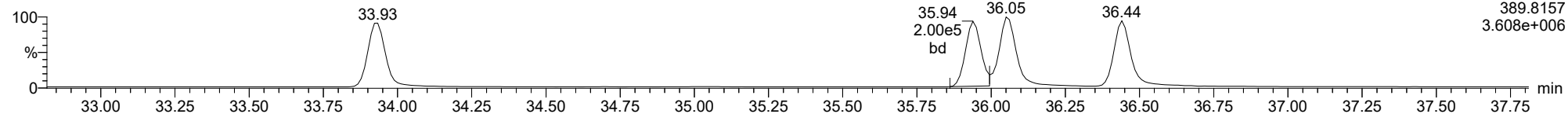
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

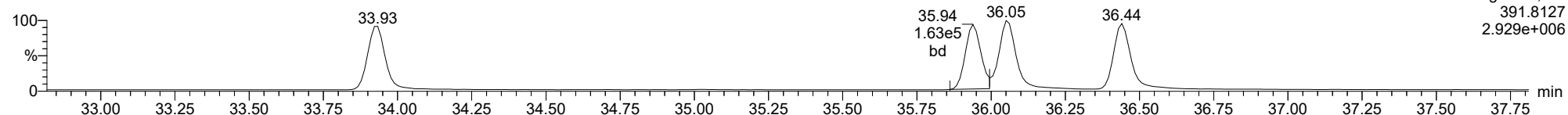
**123478-HxCDD**

23051502



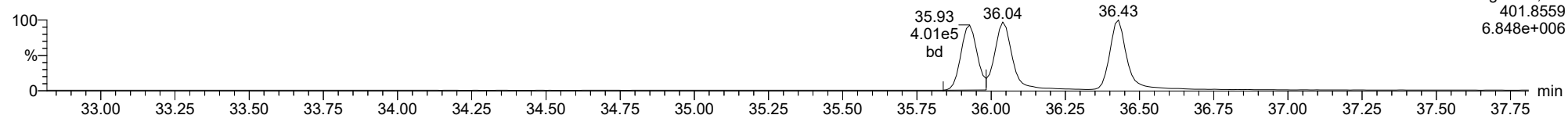
**123478-HxCDD**

23051502



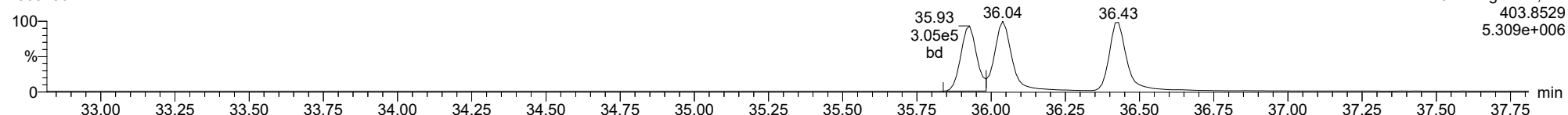
**13C-123478-HxCDD**

23051502



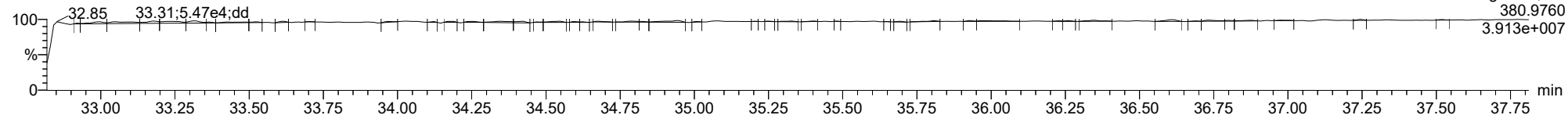
**13C-123478-HxCDD**

23051502



**FUNCTION3 PFK**

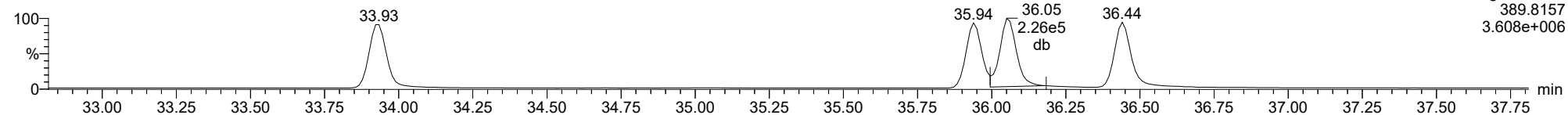
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

**123678-HxCDD**

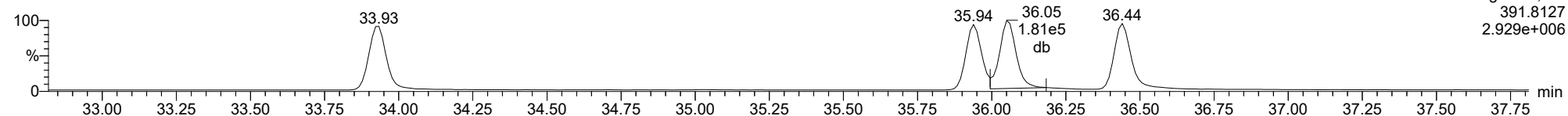
23051502



F3:Voltage SIR,EI+  
389.8157  
3.608e+006

**123678-HxCDD**

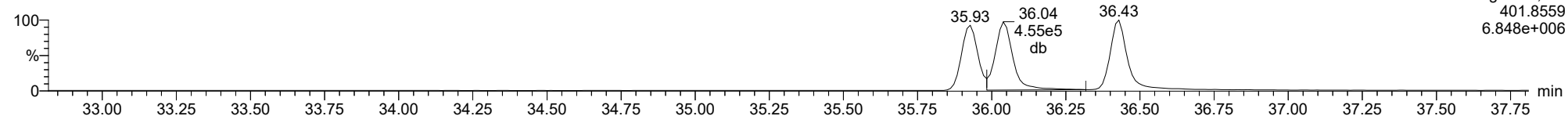
23051502



F3:Voltage SIR,EI+  
391.8127  
2.929e+006

**13C-123678-HxCDD**

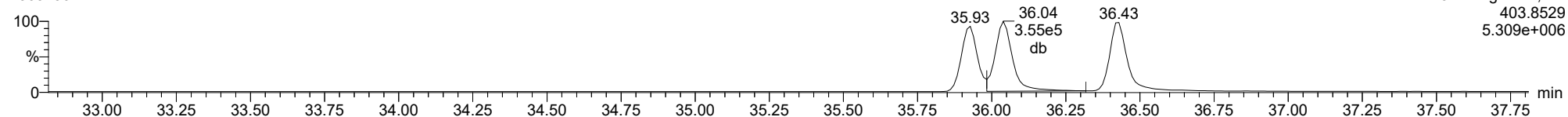
23051502



F3:Voltage SIR,EI+  
401.8559  
6.848e+006

**13C-123678-HxCDD**

23051502



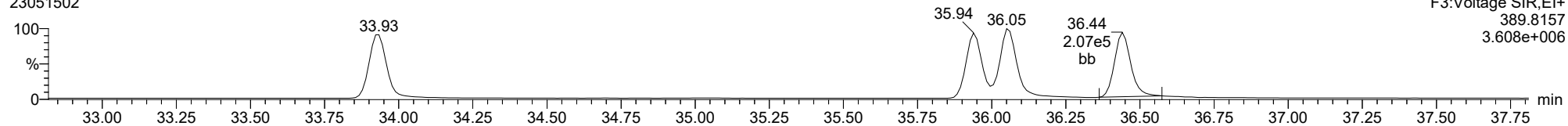
F3:Voltage SIR,EI+  
403.8529  
5.309e+006



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

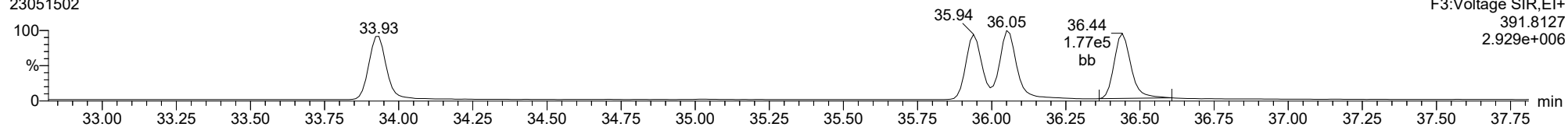
**123789-HxCDD**

23051502



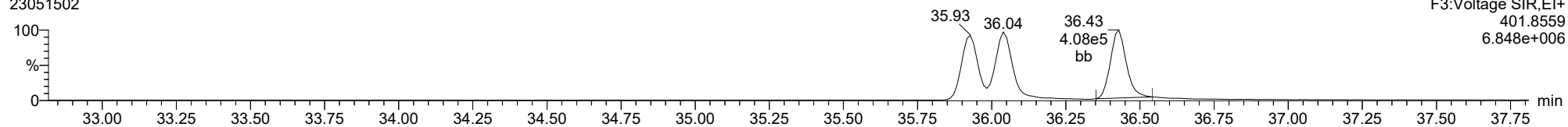
**123789-HxCDD**

23051502



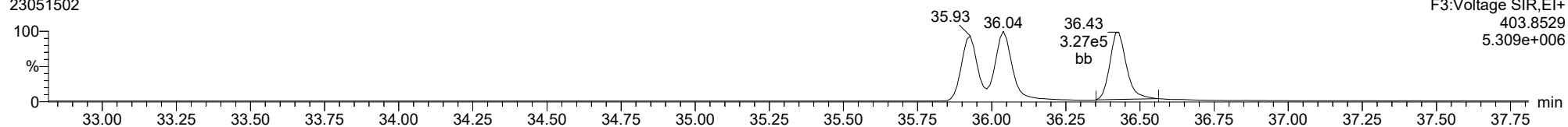
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23051502



**13C-123789-HxCDD**

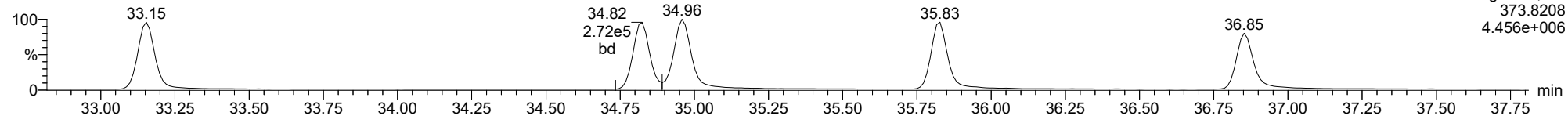
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

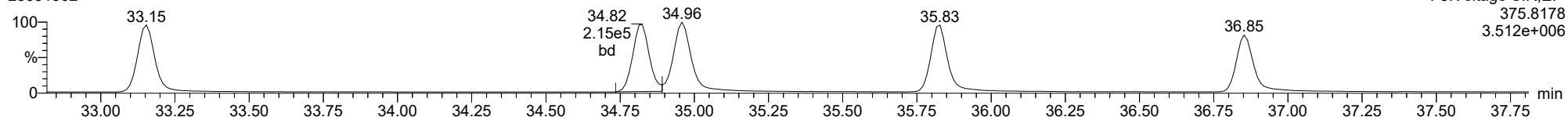
**123478-HxCDF**

23051502



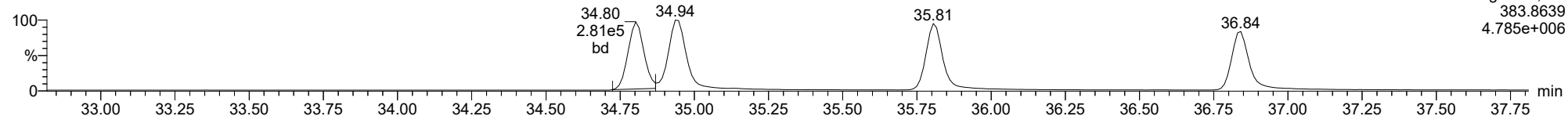
**123478-HxCDF**

23051502



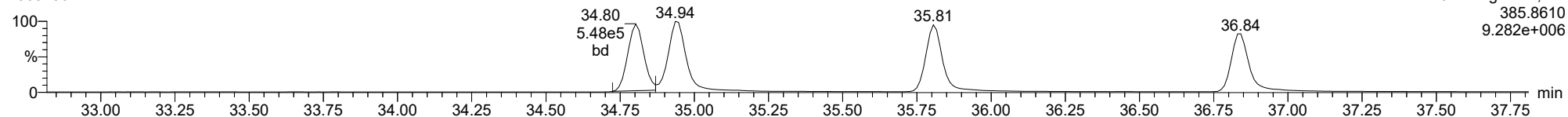
**13C-123478-HxCDF**

23051502



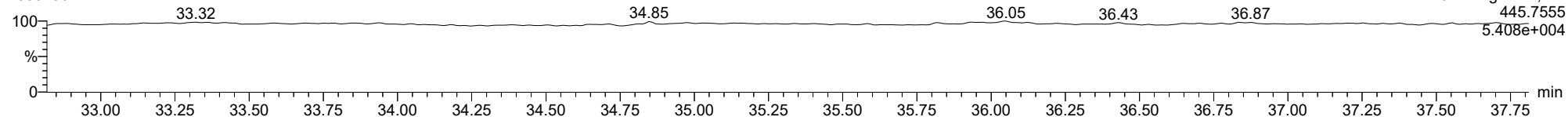
**13C-123478-HxCDF**

23051502



**FUNCTION3 OCDPE**

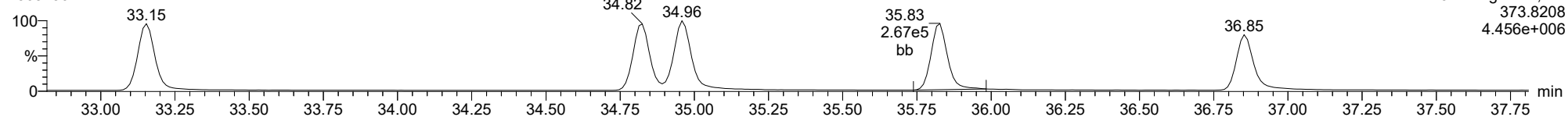
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

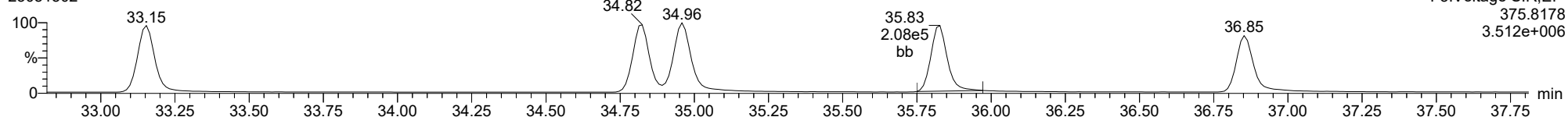
**234678-HxCDF**

23051502



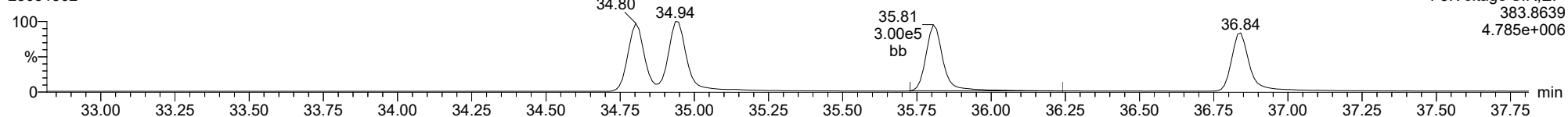
**234678-HxCDF**

23051502



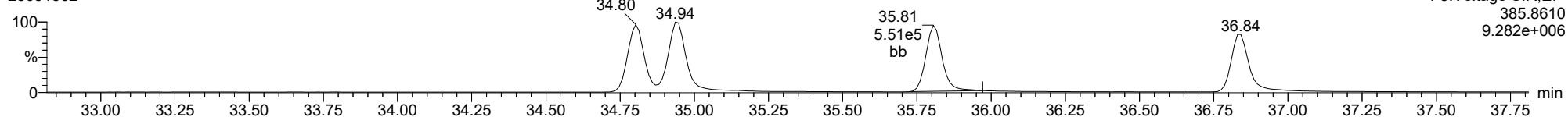
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23051502



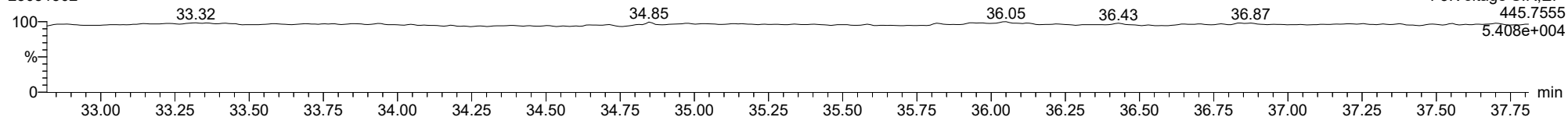
**13C-234678-HxCDF**

23051502



**FUNCTION3 OCDPE**

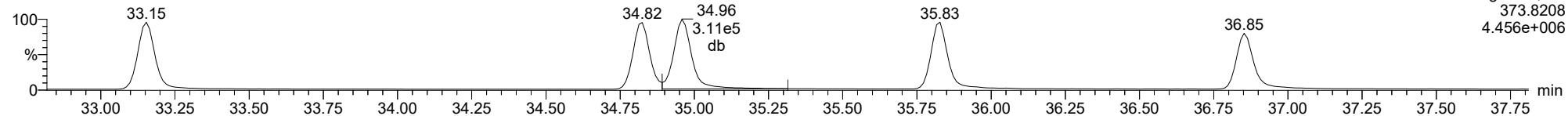
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ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

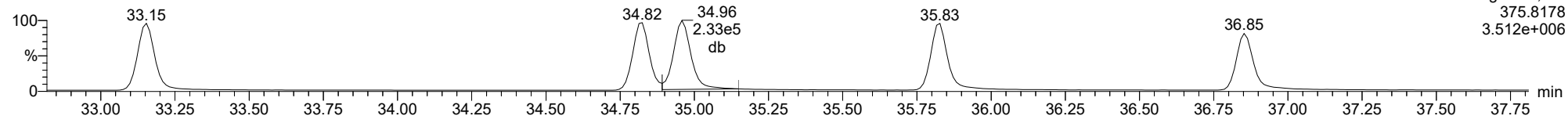
**123678-HxCDF**

23051502



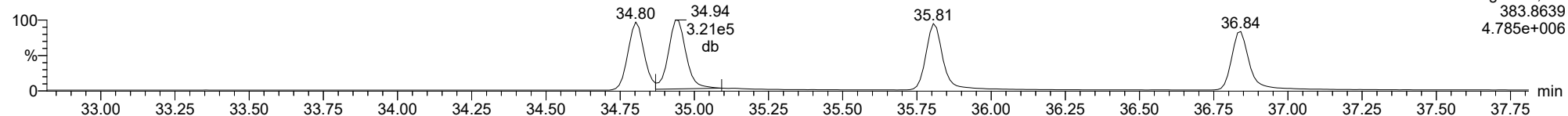
**123678-HxCDF**

23051502



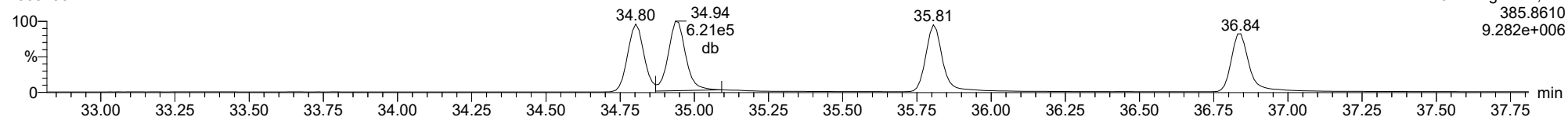
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23051502



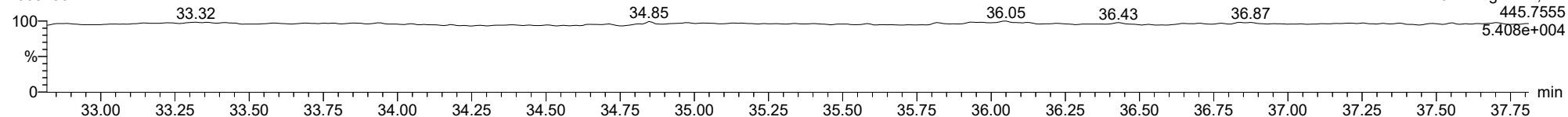
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23051502



**FUNCTION3 OCDPE**

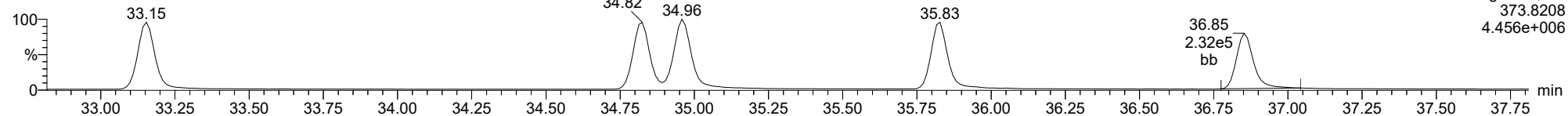
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

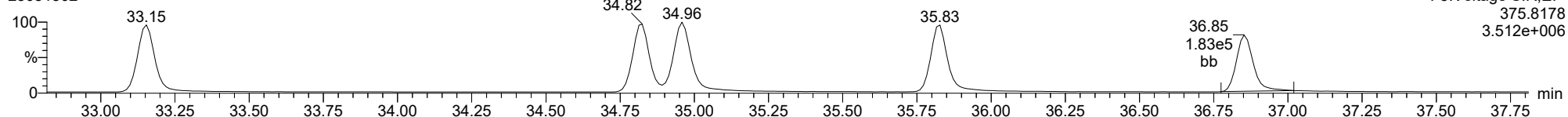
123789-HxCDF

23051502



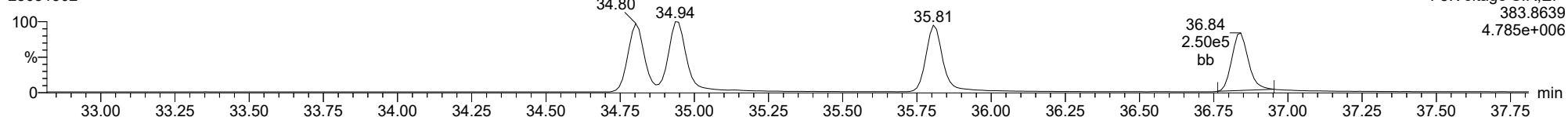
123789-HxCDF

23051502



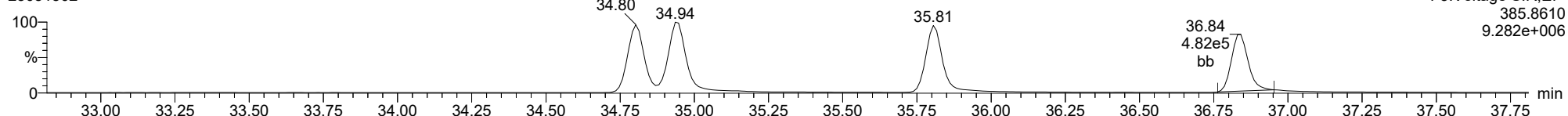
13C-123789-HxCDF

23051502



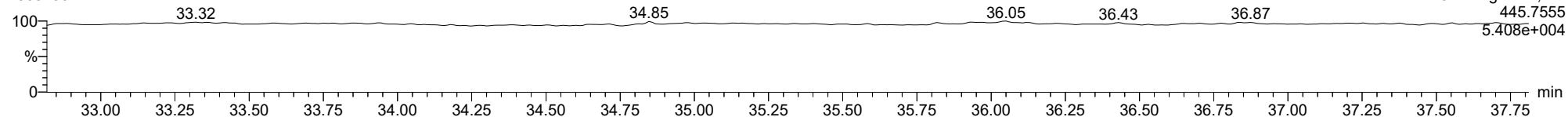
13C-123789-HxCDF

23051502



FUNCTION3 OCDPE

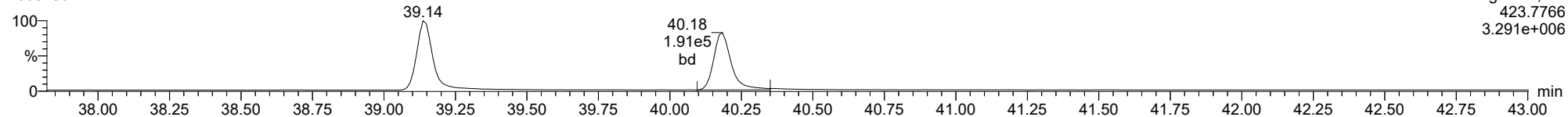
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ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

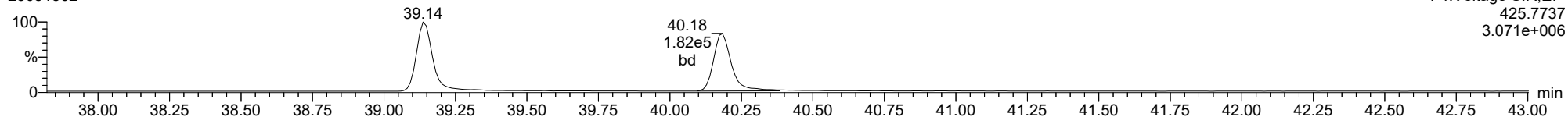
1234678-HpCDD

23051502



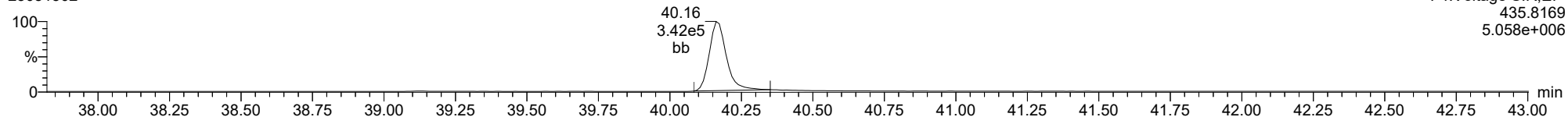
1234678-HpCDD

23051502



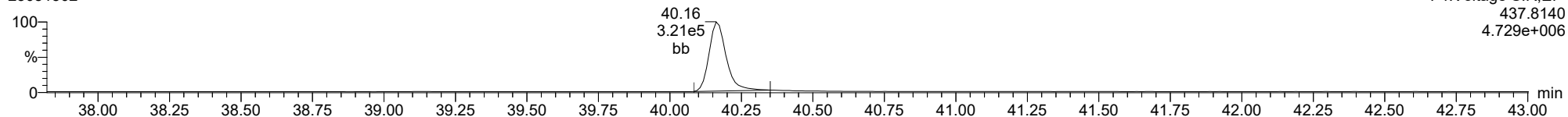
13C-1234678-HpCDD

23051502



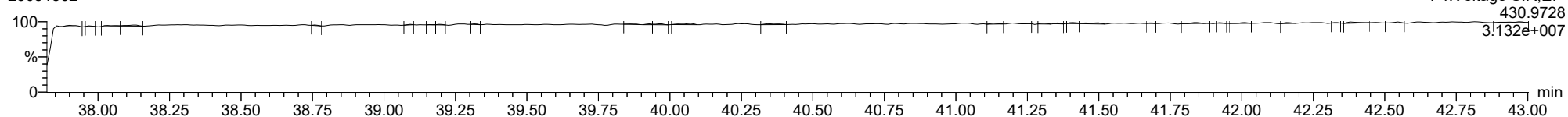
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23051502



FUNCTION4 PFK

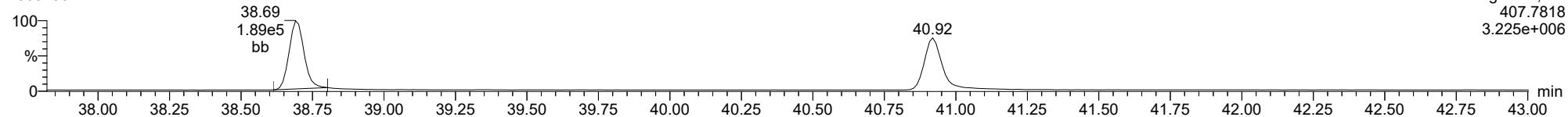
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ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

1234678-HpCDF

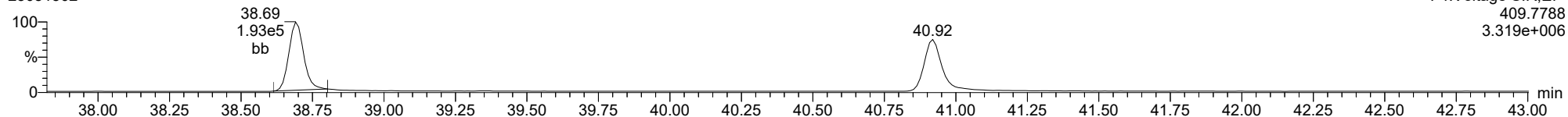
23051502



F4:Voltage SIR,EI+  
407.7818  
3.225e+006

1234678-HpCDF

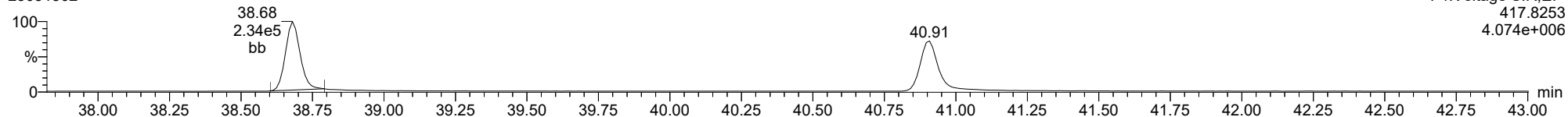
23051502



F4:Voltage SIR,EI+  
409.7788  
3.319e+006

13C-1234678-HpCDF

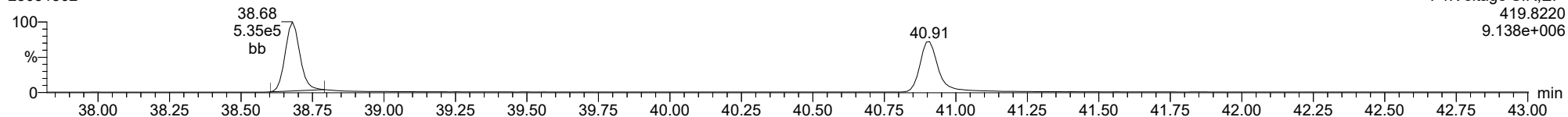
23051502



F4:Voltage SIR,EI+  
417.8253  
4.074e+006

13C-1234678-HpCDF

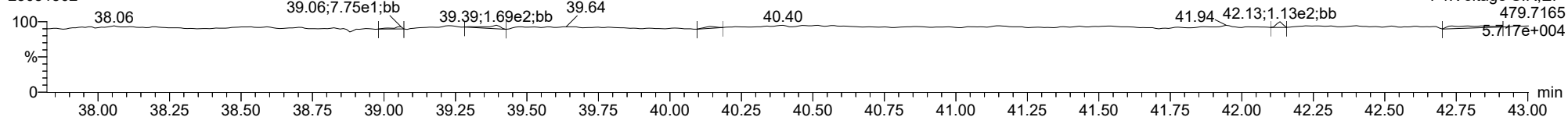
23051502



F4:Voltage SIR,EI+  
419.8220  
9.138e+006

FUNCTION4 NCDPE

23051502

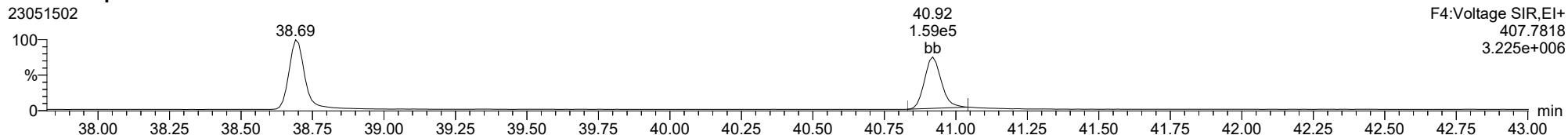


F4:Voltage SIR,EI+  
479.7165  
5.717e+004

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF

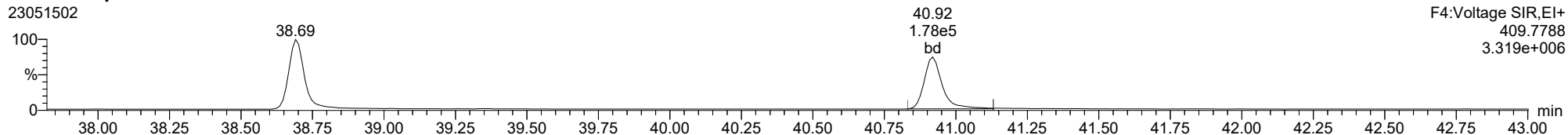
23051502



F4:Voltage SIR,EI+  
407.7818  
3.225e+006

1234789-HpCDF

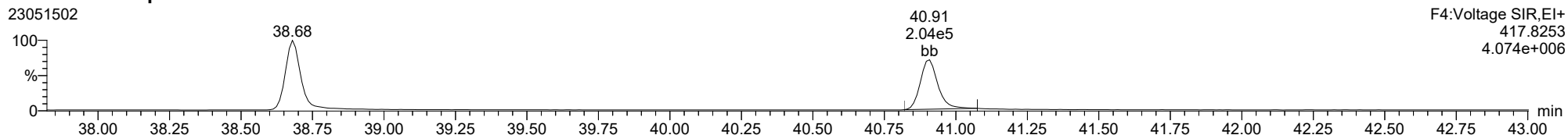
23051502



F4:Voltage SIR,EI+  
409.7788  
3.319e+006

13C-1234789-HpCDF

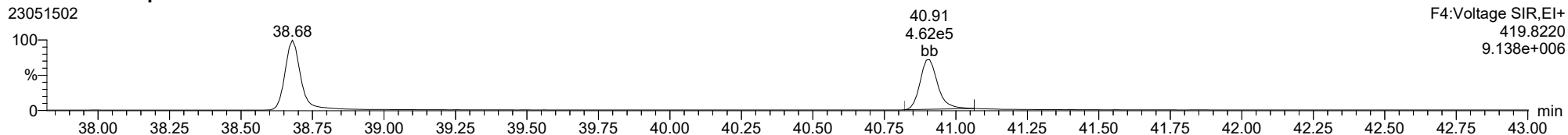
23051502



F4:Voltage SIR,EI+  
417.8253  
4.074e+006

13C-1234789-HpCDF

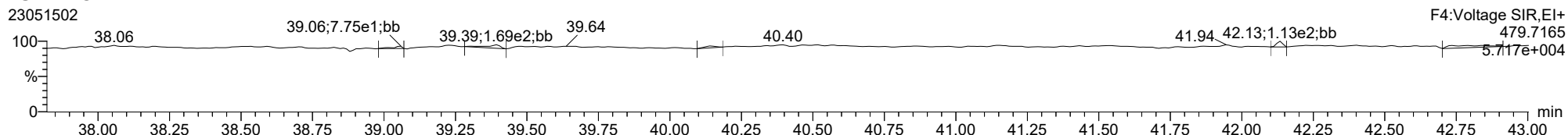
23051502



F4:Voltage SIR,EI+  
419.8220  
9.138e+006

FUNCTION4 NCDPE

23051502



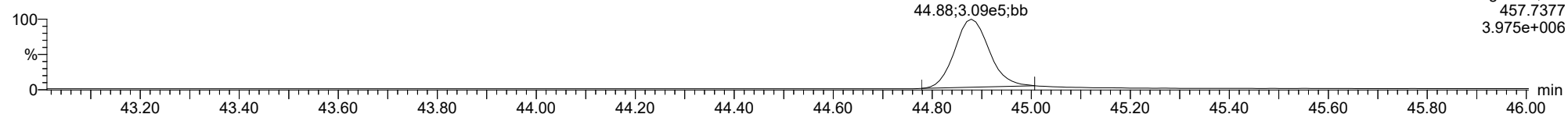
F4:Voltage SIR,EI+  
479.7165  
5.717e+004



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

**OCDD**

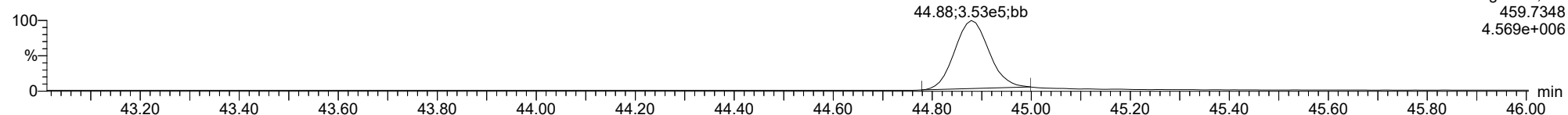
23051502



F5:Voltage SIR,EI+  
457.7377  
3.975e+006

**OCDD**

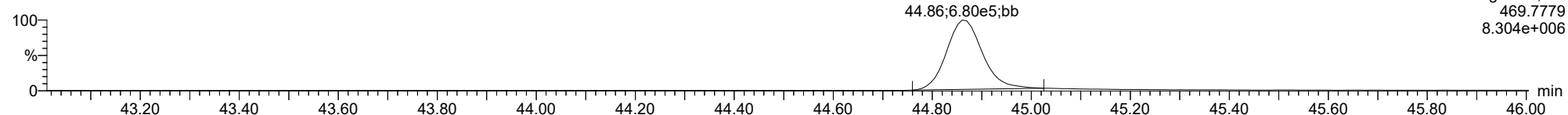
23051502



F5:Voltage SIR,EI+  
459.7348  
4.569e+006

**13C-OCDD**

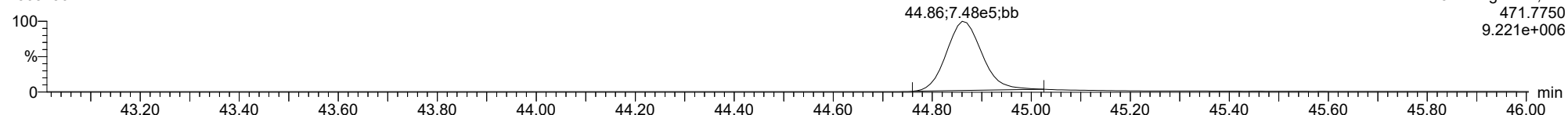
23051502



F5:Voltage SIR,EI+  
469.7779  
8.304e+006

**13C-OCDD**

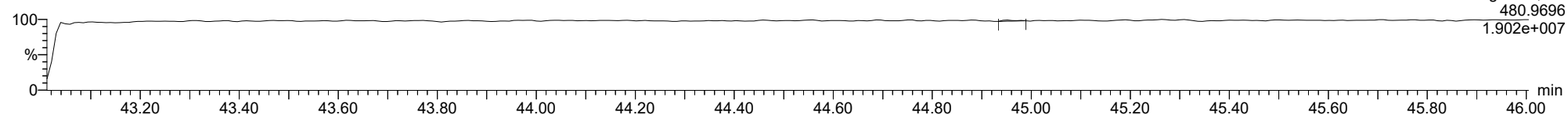
23051502



F5:Voltage SIR,EI+  
471.7750  
9.221e+006

**FUNCTION5 PFK**

23051502



F5:Voltage SIR,EI+  
480.9696  
1.902e+007

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

**OCDF**

23051502

100  
%  
0

43.20 43.40 43.60 43.80 44.00 44.20 44.40 44.60 44.80 45.00 45.20 45.40 45.60 45.80 46.00 min

45.12;2.57e5;bb

F5:Voltage SIR,EI+  
441.7428  
3.240e+006

**OCDF**

23051502

100  
%  
0

43.20 43.40 43.60 43.80 44.00 44.20 44.40 44.60 44.80 45.00 45.20 45.40 45.60 45.80 46.00 min

45.12;2.85e5;bb

F5:Voltage SIR,EI+  
443.7399  
3.562e+006

**FUNCTION5 DCDPE**

23051502

100  
%  
0

43.20 43.40 43.60 43.80 44.00 44.20 44.40 44.60 44.80 45.00 45.20 45.40 45.60 45.80 46.00 min

43.24

44.23

44.88

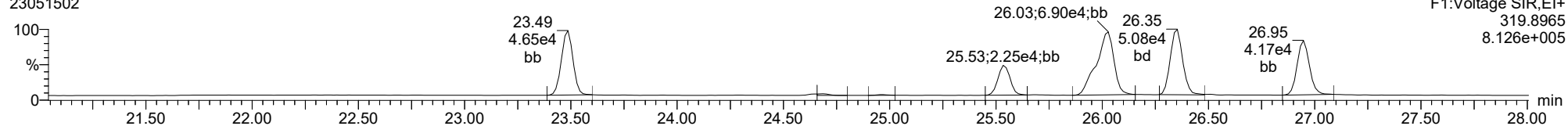
45.32

F5:Voltage SIR,EI+  
513.6775  
5.448e+004

ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

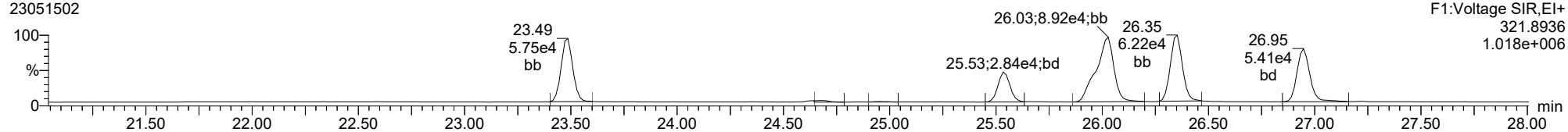
**Total-tetradioxins**

23051502



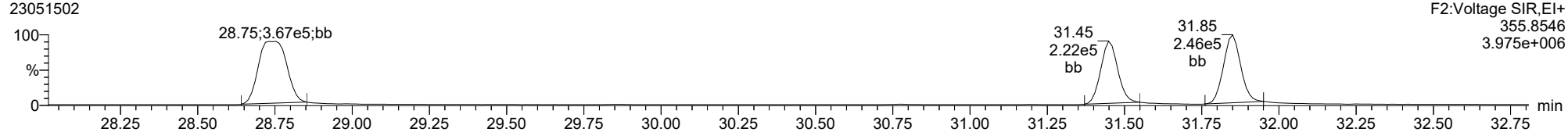
**Total-tetradioxins**

23051502



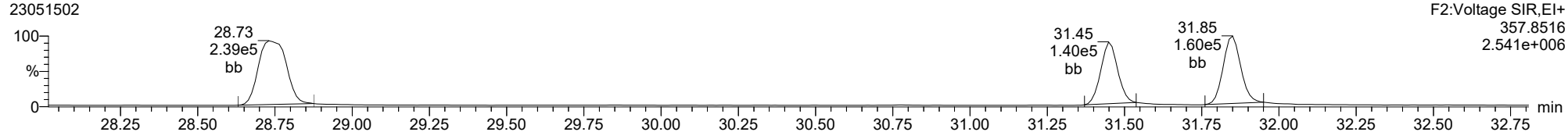
**Total-pentadioxins**

23051502



**Total-pentadioxins**

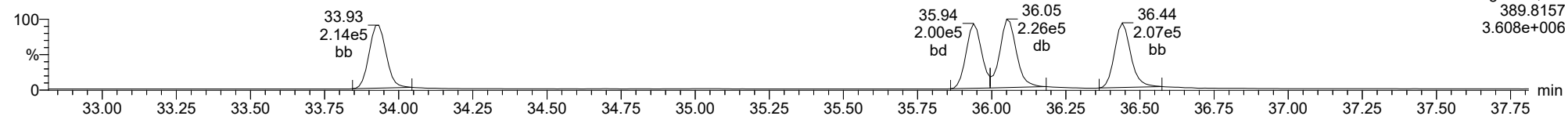
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

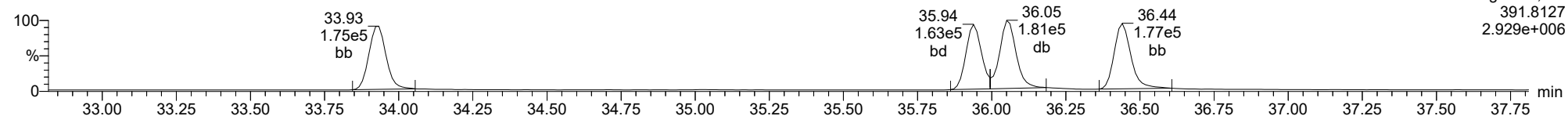
**Total-hexadioxins**

23051502



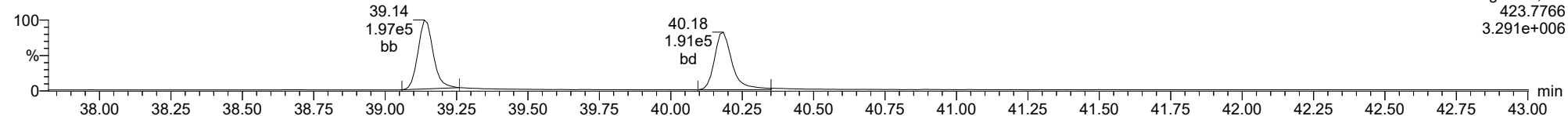
**Total-hexadioxins**

23051502



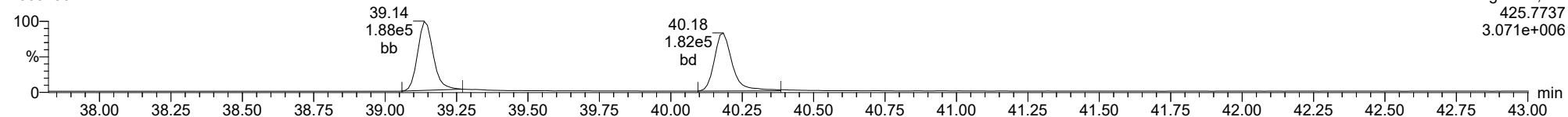
**Total-heptadioxins**

23051502



**Total-heptadioxins**

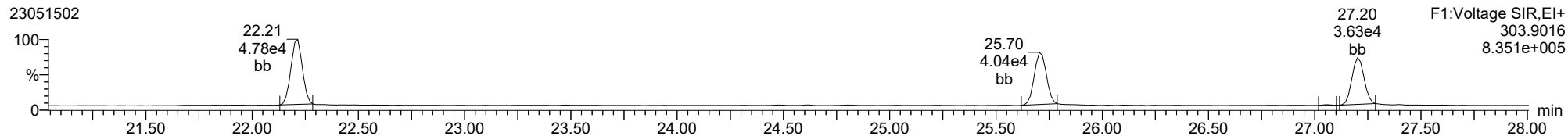
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

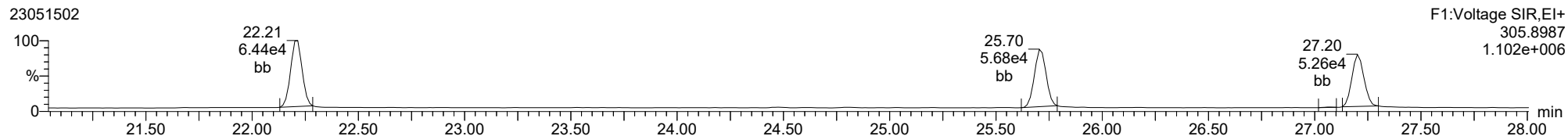
**Total-tetrafurans**

23051502



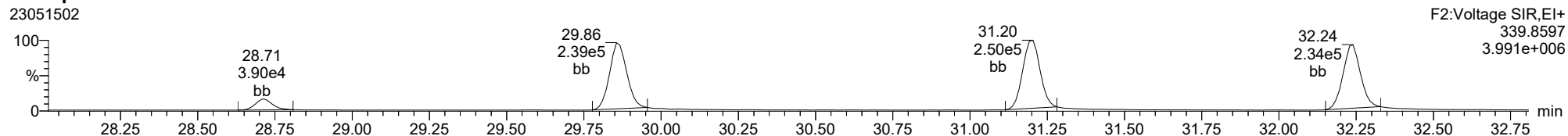
**Total-tetrafurans**

23051502



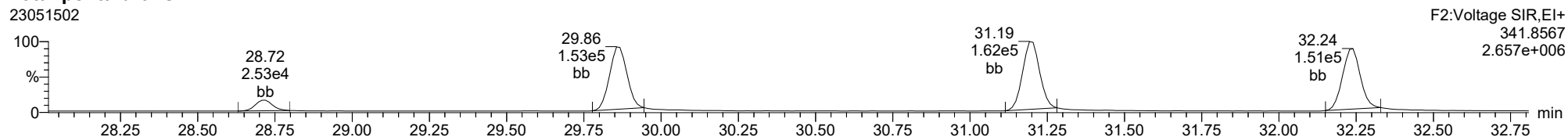
**Total-pentafurans**

23051502



**Total-pentafurans**

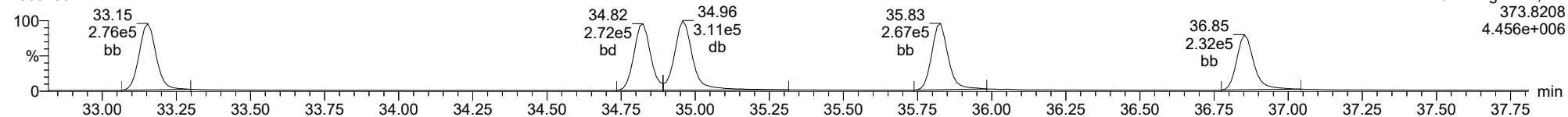
23051502



ID: CS3L5, Name: 23051502, Date: 15-May-2023, Time: 12:04:17, Conditions: AUTOSPEC01, User: pk

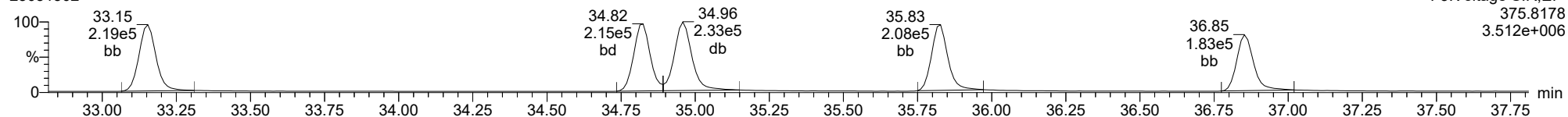
**Total-hexafurans**

23051502



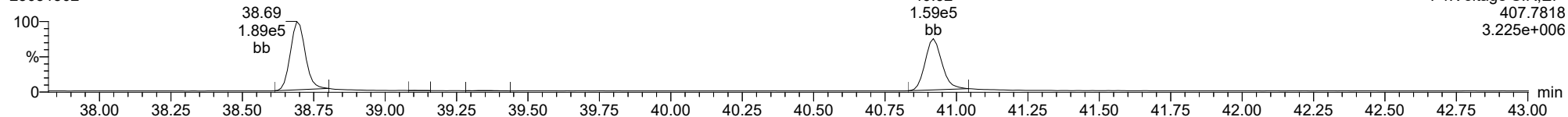
**Total-hexafurans**

23051502



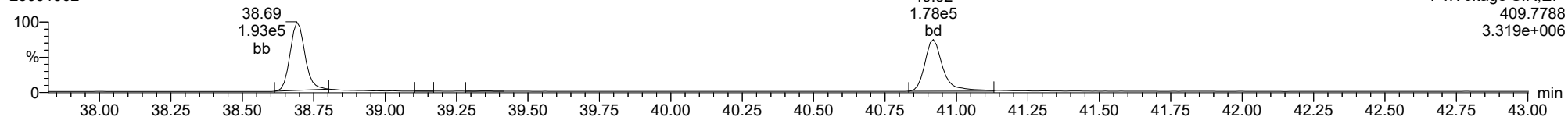
**Total-heptafurans**

23051502



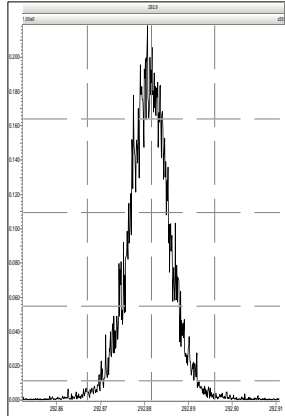
**Total-heptafurans**

23051502

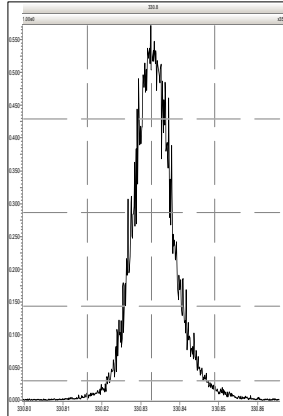


Printed: Monday, May 15, 2023 11:54:10 Pacific Daylight Time

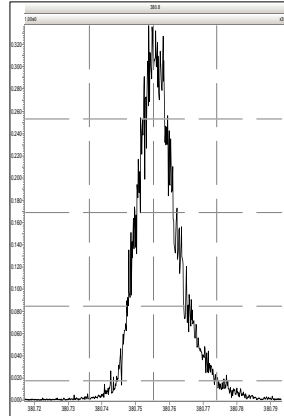
M 292.9824 R 13661



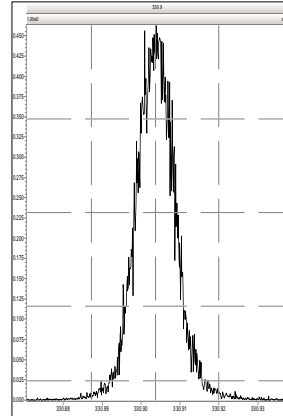
M 330.9792 R 12922



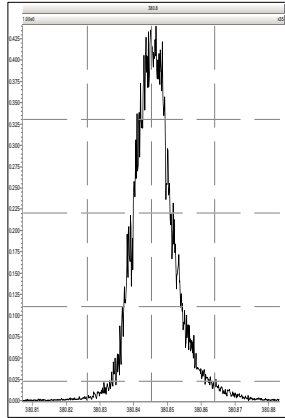
M 380.9760 R 13421



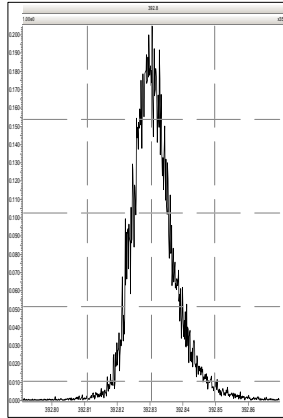
M 330.9792 R 14579



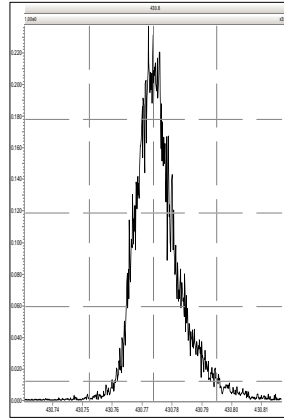
M 380.9760 R 13803



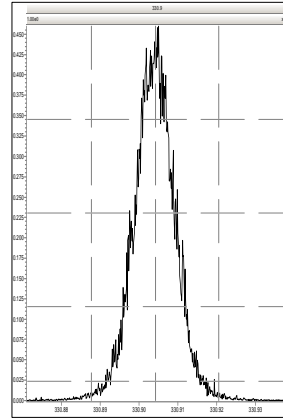
M 392.9760 R 13889



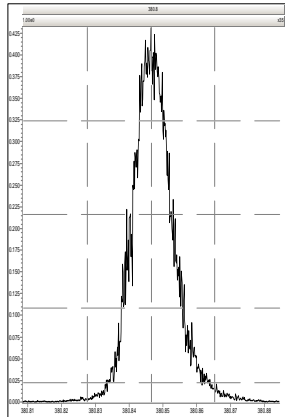
M 430.9728 R 13197



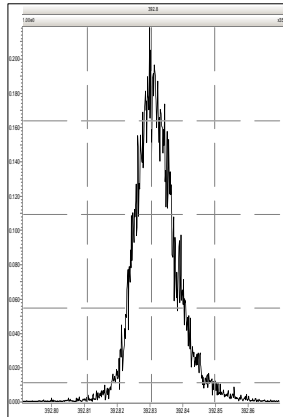
M 330.9792 R 14621



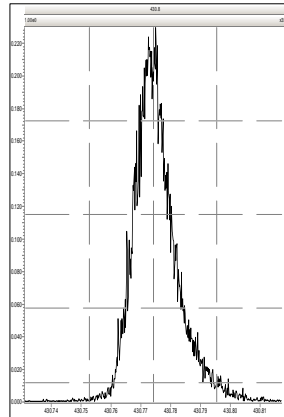
M 380.9760 R 14145



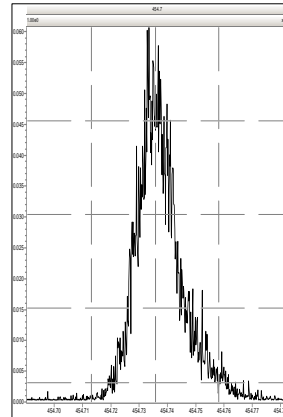
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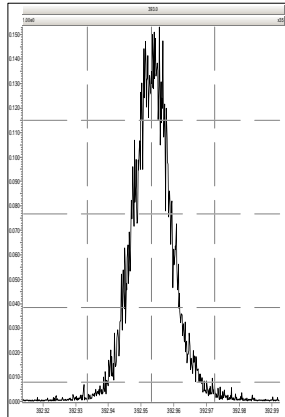
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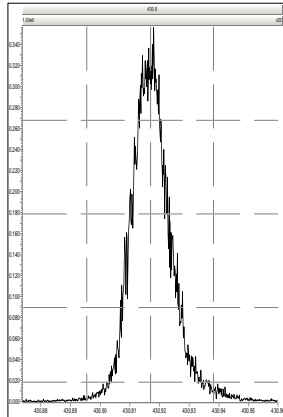
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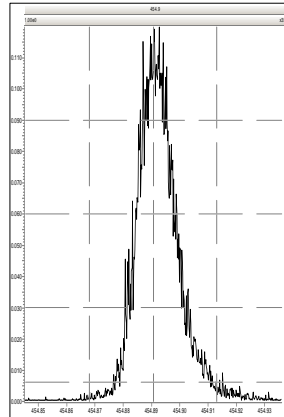
M 392.9760 R 14055



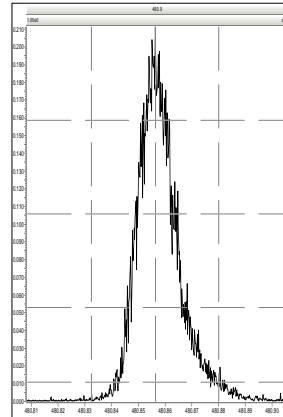
M 430.9728 R 13516



M 454.9728 R 14285

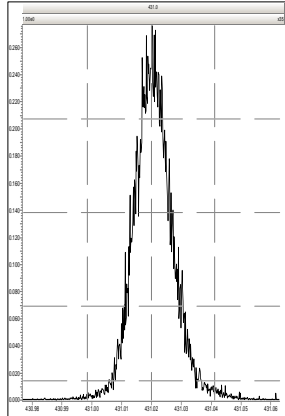


M 480.9696 R 14086

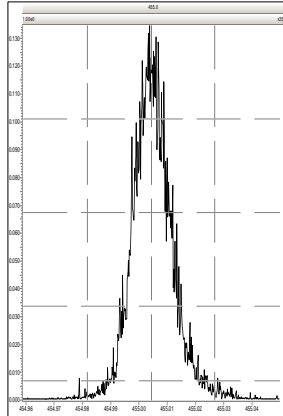


Printed: Monday, May 15, 2023 11:54:10 Pacific Daylight Time

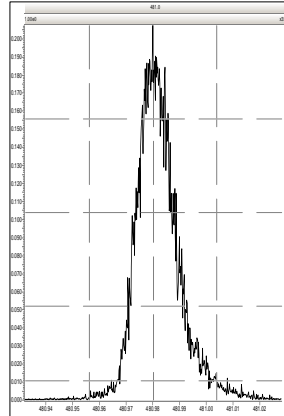
M 430.9728 R 15301



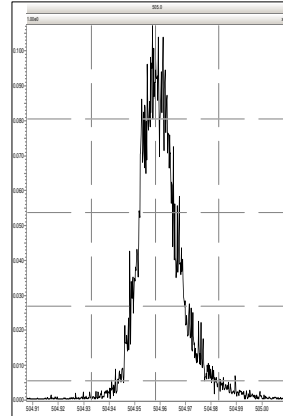
M 454.9728 R 14627



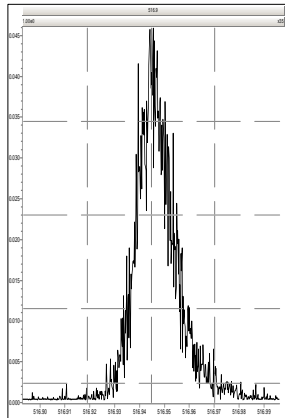
M 480.9696 R 14024



M 504.9696 R 13370



M 516.9697 R 15483





23051503

1: Voltage SIR 14 Channels EI+

100

319.8965  
6.31e5

8/82= 9.8%

2378-TCDD

26.34 26.47

%

0

24.50 25.00 25.50 26.00 26.50 27.00

23051503

1: Voltage SIR 14 Channels EI+

100

303.9016  
6.05e5

7/75= 9.3%

2378-TCDF

25.52 25.69 25.83

%

0

24.50 25.00 25.50 26.00 26.50 27.00

Time



CONTINUING CALIBRATION CHECK  
EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23030311

Calibration Date: 03/03/2023

Sequence: SLC0045

Injection Date: 03/03/23

Lab Sample ID: SLC0045-CCV1

Injection Time: 17:25

Sequence Name: CS3V4

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	10.1	0.7015272	0.7103909		1.3	+/-16
2,3,7,8-TCDD	A	10.000	9.02	1.1486620	1.0358000		-9.8	+/-22
1,2,3,7,8-PeCDF	A	50.000	47.7	0.6792300	0.6482723		-4.6	+/-18
2,3,4,7,8-PeCDF	A	50.000	48.6	0.7861704	0.7638484		-2.8	+/-18
1,2,3,7,8-PeCDD	A	50.000	50.8	1.0218450	1.0391930		1.7	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	47.3	1.1660380	1.1031690		-5.4	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	51.4	1.0907410	1.1209930		2.8	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	52.1	1.1396990	1.1864330		4.1	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	48.9	1.1370930	1.1121660		-2.2	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	50.7	0.9955689	1.0094320		1.4	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	51.1	1.0009380	1.0234880		2.3	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	51.7	0.9071139	0.9383686		3.4	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	47.7	1.0029930	0.9566603		-4.6	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	53.6	0.9531152	1.0217610		7.2	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	52.7	1.0390130	1.0955650		5.4	+/-14
OCDF	A	100.00	95.0	0.7778078	0.7390842		-5.0	+/-37
OCDD	A	100.00	97.1	0.9199537	0.8937318		-2.9	+/-21
13C12-2,3,7,8-TCDF	A	100.00	89.4	1.6201960	1.4487738		-10.6	+/-29
13C12-2,3,7,8-TCDD	A	100.00	86.0	1.1524090	0.9914363		-14.0	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	92.6	1.2404520	1.1488109		-7.4	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	91.6	1.1177860	1.0240744		-8.4	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	90.8	0.8288129	0.7523463		-9.2	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	95.2	1.1683050	1.1119828		-4.8	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	91.1	1.3864660	1.2630996		-8.9	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	96.9	1.1292560	1.0940819		-3.1	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	101	0.9317541	0.9426254		1.2	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	97.6	0.9950393	0.9710534		-2.4	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	98.4	1.1566890	1.1378328		-1.6	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	102	0.8952017	0.9116661		1.8	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	84.3	0.7697516	0.6486548		-15.7	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	92.0	0.8401226	0.7731635		-8.0	+/-28
13C12-OCDD	A	200.00	170	0.7674714	0.6532994		-14.9	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	7.54	1.2878040	0.9705402		-24.6	

\* Values outside of QC limits

\* Values outside of QC limits

\* Values outside of QC limits



**SECOND-SOURCE  
CONTINUING CALIBRATION CHECK  
EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23030310

Calibration Date: 03/03/2023

Sequence: SLC0045

Injection Date: 03/03/23

Lab Sample ID: SLC0045-SCV1

Injection Time: 16:36

Sequence Name: ICVCW

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	9.84	0.7015272	0.6901560		-1.6	
2,3,7,8-TCDD	A	10.000	9.81	1.1486620	1.1273700		-1.9	
1,2,3,7,8-PeCDF	A	50.000	51.4	0.6792300	0.6981249		2.8	
2,3,4,7,8-PeCDF	A	50.000	49.0	0.7861704	0.7701368		-2.0	
1,2,3,7,8-PeCDD	A	50.000	48.5	1.0218450	0.9921504		-2.9	
1,2,3,4,7,8-HxCDF	A	50.000	48.2	1.1660380	1.1251100		-3.5	
1,2,3,6,7,8-HxCDF	A	50.000	48.0	1.0907410	1.0469270		-4.0	
2,3,4,6,7,8-HxCDF	A	50.000	50.2	1.1396990	1.1448090		0.4	
1,2,3,7,8,9-HxCDF	A	50.000	49.1	1.1370930	1.1161010		-1.8	
1,2,3,4,7,8-HxCDD	A	50.000	50.8	0.9955689	1.0114830		1.6	
1,2,3,6,7,8-HxCDD	A	50.000	50.2	1.0009380	1.0044310		0.3	
1,2,3,7,8,9-HxCDD	A	50.000	51.6	0.9071139	8347.938		3.2	
1,2,3,4,6,7,8-HpCDF	A	50.000	51.8	1.0029930	1.0398620		3.7	
1,2,3,4,7,8,9-HpCDF	A	50.000	48.5	0.9531152	0.9237809		-3.1	
1,2,3,4,6,7,8-HpCDD	A	50.000	49.2	1.0390130	1.0223590		-1.6	
OCDF	A	100.00	104	0.7778078	0.8050743		3.5	
OCDD	A	100.00	99.4	0.9199537	0.9146365		-0.6	
13C12-2,3,7,8-TCDF	A	100.00	96.9	1.6201960	1.5703703		-3.1	
13C12-2,3,7,8-TCDD	A	100.00	96.6	1.1524090	1.1130294		-3.4	
13C12-1,2,3,7,8-PeCDF	A	100.00	73.2	1.2404520	0.9079224		-26.8	
13C12-2,3,4,7,8-PeCDF	A	100.00	75.9	1.1177860	0.8488817		-24.1	
13C12-1,2,3,7,8-PeCDD	A	100.00	76.6	0.8288129	0.6346243		-23.4	
13C12-1,2,3,4,7,8-HxCDF	A	100.00	93.0	1.1683050	1.0861993		-7.0	
13C12-1,2,3,6,7,8-HxCDF	A	100.00	98.0	1.3864660	1.3581552		-2.0	
13C12-2,3,4,6,7,8-HxCDF	A	100.00	93.4	1.1292560	1.0544008		-6.6	
13C12-1,2,3,7,8,9-HxCDF	A	100.00	97.9	0.9317541	0.9122440		-2.1	
13C12-1,2,3,4,7,8-HxCDD	A	100.00	95.9	0.9950393	0.9546162		-4.1	
13C12-1,2,3,6,7,8-HxCDD	A	100.00	97.7	1.1566890	1.1296183		-2.3	
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	102	0.8952017	0.9144345		2.1	
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	104	0.7697516	0.8001798		4.0	
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	102	0.8401226	0.8609226		2.5	
13C12-OCDD	A	200.00	162	0.7674714	0.6199758		-19.2	
37C14-2,3,7,8-TCDD	A	10.000	8.71	1.2878040	1.1221835		-12.9	

\* Values outside of QC limits



**CONTINUING CALIBRATION CHECK**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23050929

Calibration Date: 03/03/2023

Sequence: SLE0060

Injection Date: 05/10/23

Lab Sample ID: SLE0060-CCV1

Injection Time: 12:00

Sequence Name: CS3K7

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	9.95	0.7015272	0.6982223		-0.5	+/-16
2,3,7,8-TCDD	A	10.000	9.74	1.1486620	1.1184930		-2.6	+/-22
1,2,3,7,8-PeCDF	A	50.000	54.8	0.6792300	0.7446449		9.6	+/-18
2,3,4,7,8-PeCDF	A	50.000	53.0	0.7861704	0.8325767		5.9	+/-18
1,2,3,7,8-PeCDD	A	50.000	53.7	1.0218450	1.0983240		7.5	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	47.6	1.1660380	1.1095710		-4.8	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	49.3	1.0907410	1.0763230		-1.3	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	48.8	1.1396990	1.1119500		-2.4	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	47.7	1.1370930	1.0856550		-4.5	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	49.4	0.9955689	0.9842592		-1.1	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	46.4	1.0009380	0.9287160		-7.2	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	54.1	0.9071139	0.9808322		8.1	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	49.2	1.0029930	0.9877123		-1.5	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	51.7	0.9531152	0.9859591		3.4	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	53.3	1.0390130	1.1084210		6.7	+/-14
OCDF	A	100.00	94.7	0.7778078	0.7365286		-5.3	+/-37
OCDD	A	100.00	97.3	0.9199537	0.8947287		-2.7	+/-21
13C12-2,3,7,8-TCDF	A	100.00	97.4	1.6201960	1.5777053		-2.6	+/-29
13C12-2,3,7,8-TCDD	A	100.00	102	1.1524090	1.1788101		2.3	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	111	1.2404520	1.3719304		10.6	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	118	1.1177860	1.3216622		18.2	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	105	0.8288129	0.8696980		4.9	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	81.3	1.1683050	0.9499910		-18.7	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	73.2	1.3864660	1.0145449		-26.8	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	84.2	1.1292560	0.9511515		-15.8	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	88.7	0.9317541	0.8260421		-11.3	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	87.8	0.9950393	0.8739820		-12.2	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	81.4	1.1566890	0.9410898		-18.6	+/-15 *
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	102	0.8952017	0.9137090		2.1	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	105	0.7697516	0.8097005		5.2	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	96.2	0.8401226	0.8080542		-3.8	+/-28
13C12-OCDD	A	200.00	246	0.7674714	0.9434296		22.9	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	8.97	1.2878040	1.1548526		-10.3	

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
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 Printed: Thursday, May 11, 2023 11:21:13 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.676	1.001	2.510e4	3.131e4	0.702	0.802	0.770	716	738	4.06e5	4.94e5	567.2	669.7	NO	bb	bb	9.953
12378-PeCDF	29.822	1.000	1.582e5	1.034e5	0.679	1.531	1.550	2199	1528	2.56e6	1.64e6	1162.9	1073.7	NO	bb	bb	54.815
23478-PeCDF	31.159	1.000	1.690e5	1.127e5	0.786	1.500	1.550	2199	1528	2.60e6	1.76e6	1181.4	1152.9	NO	bb	bb	52.951
123478-HxCDF	34.780	1.000	1.776e5	1.433e5	1.166	1.239	1.240	1821	2254	2.78e6	2.26e6	1524.9	1004.3	NO	bd	bd	47.579
234678-HxCDF	35.783	1.000	1.771e5	1.448e5	1.140	1.223	1.240	1821	2254	2.79e6	2.26e6	1531.4	1001.5	NO	bb	bb	48.783
123678-HxCDF	34.925	1.001	1.848e5	1.476e5	1.091	1.252	1.240	1821	2254	2.91e6	2.31e6	1597.8	1023.2	NO	db	db	49.339
123789-HxCDF	36.819	1.000	1.522e5	1.208e5	1.137	1.261	1.240	1821	2254	2.41e6	1.91e6	1326.4	846.0	NO	bb	bb	47.738
1234678-HpCDF	38.658	1.000	1.379e5	1.369e5	1.003	1.007	1.050	1853	1598	2.37e6	2.33e6	1276.7	1455.9	NO	bb	bb	49.238
1234789-HpCDF	40.886	1.000	1.218e5	1.212e5	0.953	1.004	1.050	1853	1598	1.81e6	1.80e6	977.7	1127.3	NO	bb	bb	51.723
OCDF	45.071	1.006	2.019e5	2.211e5	0.778	0.913	0.890	1142	2752	2.41e6	2.68e6	2109.3	973.1	NO	bb	bb	94.693
2378-TCDD	26.311	1.000	2.996e4	3.756e4	1.149	0.798	0.770	953	770	4.36e5	5.72e5	457.1	742.5	NO	bd	bb	9.737
12378-PeCDD	31.416	1.000	1.478e5	9.675e4	1.022	1.528	1.550	1524	1248	2.32e6	1.52e6	1523.6	1214.5	NO	bb	bb	53.742
123478-HxCDD	35.905	1.000	1.442e5	1.177e5	0.996	1.225	1.240	1349	1523	2.33e6	1.89e6	1729.1	1244.2	NO	bd	bd	49.432
123678-HxCDD	36.028	1.001	1.470e5	1.191e5	1.001	1.234	1.240	1349	1523	2.41e6	1.88e6	1785.8	1231.9	NO	db	db	46.392
123789-HxCDD	36.407	1.011	1.502e5	1.208e5	0.907	1.243	1.240	1349	1523	2.48e6	1.97e6	1838.0	1291.4	NO	bb	bb	54.063
1234678-HpCDD	40.151	1.001	1.431e5	1.295e5	1.039	1.105	1.050	1502	1441	2.13e6	2.00e6	1420.3	1386.8	NO	bd	bb	53.340
OCDD	44.833	1.000	2.394e5	2.745e5	0.920	0.872	0.890	1905	2464	3.05e6	3.51e6	1599.8	1424.2	NO	bb	bb	97.258
13C-2378-TCDF	25.661	1.007	3.496e5	4.583e5	1.620	0.763	0.770	1556	1158	5.24e6	6.79e6	3366.2	5863.4	NO	bb	bb	97.377
13C-12378-PeCDF	29.811	1.169	4.254e5	2.771e5	1.240	1.535	1.550	3322	1749	6.49e6	4.20e6	1952.8	2399.7	NO	bb	bb	110.599
13C-23478-PeCDF	31.148	1.222	4.096e5	2.671e5	1.118	1.533	1.550	3322	1749	6.20e6	4.02e6	1865.2	2295.4	NO	bb	bb	118.239
13C-123478-HxCDF	34.769	0.955	1.960e5	3.824e5	1.168	0.513	0.510	1724	1531	3.15e6	6.13e6	1828.0	4007.6	NO	bd	bd	81.314
13C-123678-HxCDF	34.903	0.959	2.093e5	4.084e5	1.386	0.512	0.510	1724	1531	3.29e6	6.36e6	1906.9	4153.5	NO	db	db	73.175
13C-234678-HxCDF	35.772	0.983	1.960e5	3.831e5	1.129	0.512	0.510	1724	1531	3.15e6	6.07e6	1826.7	3962.3	NO	bb	bb	84.228
13C-123789-HxCDF	36.808	1.011	1.696e5	3.333e5	0.932	0.509	0.510	1724	1531	2.77e6	5.36e6	1609.4	3502.7	NO	bb	bb	88.655
13C-1234678-HpCDF	38.646	1.062	1.707e5	3.856e5	0.895	0.443	0.440	1992	2647	2.93e6	6.57e6	1472.0	2481.6	NO	bb	bb	102.067
13C-1234789-HpCDF	40.875	1.123	1.554e5	3.376e5	0.770	0.460	0.440	1992	2647	2.23e6	4.92e6	1118.0	1859.8	NO	bb	bb	105.190
13C-1234-TCDD	25.492	0.000	2.268e5	2.853e5	1.000	0.795	0.770	1620	1032	3.46e6	4.33e6	2133.5	4195.6	NO	bb	bb	100.000
13C-2378-TCDD	26.297	1.032	2.652e5	3.385e5	1.152	0.784	0.770	1620	1032	4.06e6	5.13e6	2507.9	4970.2	NO	bb	bb	102.291
13C-12378-PeCDD	31.404	1.232	2.780e5	1.674e5	0.829	1.661	1.550	1055	877	4.14e6	2.47e6	3925.5	2817.9	NO	bd	bb	104.933
13C-123478-HxCDD	35.895	0.986	2.963e5	2.358e5	0.995	1.257	1.240	1048	1474	4.88e6	3.91e6	4655.9	2653.1	NO	bd	bd	87.834
13C-123678-HxCDD	36.006	0.989	3.209e5	2.521e5	1.157	1.273	1.240	1048	1474	5.08e6	4.04e6	4842.5	2742.2	NO	db	db	81.361
13C-1234678-HpCDD	40.128	1.103	2.510e5	2.410e5	0.840	1.041	1.050	1555	1401	3.85e6	3.71e6	2476.3	2649.8	NO	bb	bb	96.183
13C-OCDD	44.815	1.231	5.458e5	6.029e5	0.767	0.905	0.890	1531	1803	6.45e6	7.14e6	4211.4	3959.4	NO	bd	bd	245.854
13C-123789-HxCDD	36.396	0.000	3.408e5	2.680e5	1.000	1.272	1.240	1048	1474	5.28e6	4.17e6	5035.6	2828.3	NO	bb	bb	100.000
37CL-2378-TCDD	26.311	1.032	5.914e4		1.288			1196		8.80e5		735.7			bb		8.968

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:21:13 Pacific Daylight Time

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.173	0.864	2.840e4	3.974e4	0.802	0.715	0.770	716	738	4.57e5	6.66e5	638.4	902.5	NO	bb	bb	10.523
1289-TCDF	27.173	1.059	2.345e4	3.169e4	0.678	0.740	0.770	716	738	3.56e5	4.81e5	497.1	652.3	NO	db	bb	10.068
13468-PECDF	27.031	0.907	2.319e5	1.548e5	1.246	1.498	1.550	618	737	3.50e6	2.33e6	5656.8	3168.3	NO	bb	bb	44.157
12389-PECDF	32.195	1.080	1.637e5	1.076e5	0.496	1.522	1.550	2199	1528	2.51e6	1.67e6	1143.5	1090.2	NO	bb	bb	77.806
123468-HXCDF	33.120	0.953	1.740e5	1.398e5	1.169	1.245	1.240	1821	2254	2.69e6	2.15e6	1479.6	955.4	NO	bb	bb	46.417
1368-TCDD	23.458	0.892	2.635e4	3.233e4	1.015	0.815	0.770	953	770	4.19e5	4.97e5	439.5	645.3	NO	bb	bb	9.574
1289-TCDD	26.919	1.024	2.379e4	3.106e4	0.909	0.766	0.770	953	770	3.53e5	4.49e5	370.6	583.8	NO	bb	bb	9.999
12479-PECDD	28.697	0.914	2.435e5	1.553e5	2.301	1.567	1.550	1524	1248	2.35e6	1.50e6	1544.5	1204.0	NO	bb	bb	38.910
12389-PECDD	31.817	1.013	1.763e5	1.113e5	1.184	1.584	1.550	1524	1248	2.75e6	1.71e6	1801.2	1370.1	NO	bb	bb	54.551
124679-HXCDD	33.900	0.944	1.465e5	1.182e5	1.115	1.239	1.240	1349	1523	2.28e6	1.86e6	1687.2	1223.6	NO	bb	bb	44.590
1234679-HPCDD	39.103	0.975	1.479e5	1.435e5	1.137	1.031	1.050	1502	1441	2.42e6	2.35e6	1613.5	1631.8	NO	bb	bb	52.100
Total-tetrafurans			7.780e4		0.727			716		1.23e6							30.862
Total-penta1			2.319e5					618		3.50e6							44.157
Total-pentafurans			5.166e5		0.654			2199		8.07e6							194.955
Total-hexafurans			8.658e5		1.141			1821		1.36e7							239.855
Total-heptafurans			2.596e5		0.978			1853		4.18e6							100.961
Total-Furans			2.154e6		0.922			716		3.30e7							705.484
Total-tetradoxins			1.364e5		1.024			953		1.87e6							49.763
Total-pentadoxins			5.675e5		1.502			1524		7.42e6							147.203
Total-hexadoxins			5.881e5		1.005			1349		9.51e6							194.585
Total-heptadoxins			2.910e5		1.088			1502		4.56e6							105.440
Total-Dioxins			1.823e6		1.130			953		2.64e7							594.249
Total-TEQ			3.976e6					953		5.94e7							1299.733
FUNCTION1 PFK			1.489e5					279083		4.20e6							
FUNCTION2 PFK			1.321e5					179131		4.77e6							0.000
FUNCTION3 PFK			5.122e6					303675		2.50e6							0.000
FUNCTION4 PFK			1.487e5					184400		4.09e6							
FUNCTION5 PFK			6.967e4					148407		2.41e6							
FUNCTION1 HXCD...			3.381e2					611		4.55e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			4.931e2					724		9.61e3							0.000
FUNCTION3 OCDPE			1.546e2					565		2.28e3							0.000
FUNCTION4 NCDPE			1.575e2					671		4.08e3							0.000
FUNCTION5 DCDPE			1.472e2					596		2.67e3							0.000



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
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Method: T:\Autospec\Methods\Dioxin230509.mdb 10 May 2023 07:46:56

Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.17	2.345e4	3.169e4	0.678	0.74	0.77	497.1	YES	NO	db	bb	10.068
2	Total-tetrafurans	27.05	5.574e2	6.711e2	0.727	0.83	0.77	11.8	YES	NO	bd	bb	0.209
3	2378-TCDF	25.68	2.510e4	3.131e4	0.702	0.80	0.77	567.2	YES	NO	bb	bb	9.953
4	Total-tetrafurans	24.45	2.900e2	3.477e2	0.727	0.83	0.77	9.3	YES	NO	bd	bd	0.109
5	1368-TCDF	22.17	2.840e4	3.974e4	0.802	0.71	0.77	638.4	YES	NO	bb	bb	10.523

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.03	2.319e5	1.548e5	1.246	1.50	1.55	5656.8	YES	NO	bb	bb	44.157

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.16	1.690e5	1.127e5	0.786	1.50	1.55	1181.4	YES	NO	bb	bb	52.951
2	12378-PeCDF	29.82	1.582e5	1.034e5	0.679	1.53	1.55	1162.9	YES	NO	bb	bb	54.815
3	Total-pentafurans	28.67	2.566e4	1.665e4	0.654	1.54	1.55	183.7	YES	NO	bb	bb	9.382
4	12389-PECDF	32.20	1.637e5	1.076e5	0.496	1.52	1.55	1143.5	YES	NO	bb	bb	77.806

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.82	1.522e5	1.208e5	1.137	1.26	1.24	1326.4	YES	NO	bb	bb	47.738
2	234678-HxCDF	35.78	1.771e5	1.448e5	1.140	1.22	1.24	1531.4	YES	NO	bb	bb	48.783
3	123678-HxCDF	34.92	1.848e5	1.476e5	1.091	1.25	1.24	1597.8	YES	NO	db	db	49.339
4	123478-HxCDF	34.78	1.776e5	1.433e5	1.166	1.24	1.24	1524.9	YES	NO	bd	bd	47.579
5	123468-HxCDF	33.12	1.740e5	1.398e5	1.169	1.24	1.24	1479.6	YES	NO	bb	bb	46.417

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.89	1.218e5	1.212e5	0.953	1.00	1.05	977.7	YES	NO	bb	bb	51.723
2	1234678-HpCDF	38.66	1.379e5	1.369e5	1.003	1.01	1.05	1276.7	YES	NO	bb	bb	49.238

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk**

**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.17	2.345e4	3.169e4	0.678	0.74	0.77	497.1	YES	NO	db	bb	10.068
2	Total-tetrafurans	27.05	5.574e2	6.711e2	0.727	0.83	0.77	11.8	YES	NO	bd	bb	0.209
3	2378-TCDF	25.68	2.510e4	3.131e4	0.702	0.80	0.77	567.2	YES	NO	bb	bb	9.953
4	Total-tetrafurans	24.45	2.900e2	3.477e2	0.727	0.83	0.77	9.3	YES	NO	bd	bd	0.109
5	1368-TCDF	22.17	2.840e4	3.974e4	0.802	0.71	0.77	638.4	YES	NO	bb	bb	10.523
6	23478-PeCDF	31.16	1.690e5	1.127e5	0.786	1.50	1.55	1181.4	YES	NO	bb	bb	52.951
7	12378-PeCDF	29.82	1.582e5	1.034e5	0.679	1.53	1.55	1162.9	YES	NO	bb	bb	54.815
8	Total-pentafurans	28.67	2.566e4	1.665e4	0.654	1.54	1.55	183.7	YES	NO	bb	bb	9.382
9	12389-PECDF	32.20	1.637e5	1.076e5	0.496	1.52	1.55	1143.5	YES	NO	bb	bb	77.806
10	123789-HxCDF	36.82	1.522e5	1.208e5	1.137	1.26	1.24	1326.4	YES	NO	bb	bb	47.738
11	234678-HxCDF	35.78	1.771e5	1.448e5	1.140	1.22	1.24	1531.4	YES	NO	bb	bb	48.783
12	123678-HxCDF	34.92	1.848e5	1.476e5	1.091	1.25	1.24	1597.8	YES	NO	db	db	49.339
13	123478-HxCDF	34.78	1.776e5	1.433e5	1.166	1.24	1.24	1524.9	YES	NO	bd	bd	47.579
14	123468-HXCDF	33.12	1.740e5	1.398e5	1.169	1.24	1.24	1479.6	YES	NO	bb	bb	46.417
15	1234789-HpCDF	40.89	1.218e5	1.212e5	0.953	1.00	1.05	977.7	YES	NO	bb	bb	51.723
16	1234678-HpCDF	38.66	1.379e5	1.369e5	1.003	1.01	1.05	1276.7	YES	NO	bb	bb	49.238
17	OCDF	45.07	2.019e5	2.211e5	0.778	0.91	0.89	2109.3	YES	NO	bb	bb	94.693
18	13468-PECDF	27.03	2.319e5	1.548e5	1.246	1.50	1.55	5656.8	YES	NO	bb	bb	44.157

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	23.74	2.033e2	2.706e2	1.024	0.75	0.77	3.6	YES	NO	bb	db	0.077
2	1368-TCDD	23.46	2.635e4	3.233e4	1.015	0.82	0.77	439.5	YES	NO	bb	bb	9.574
3	1289-TCDD	26.92	2.379e4	3.106e4	0.909	0.77	0.77	370.6	YES	NO	bb	bb	9.999
4	2378-TCDD	26.31	2.996e4	3.756e4	1.149	0.80	0.77	457.1	YES	NO	bd	bb	9.737
5	Total-tetradioxins	25.99	4.248e4	5.319e4	1.024	0.80	0.77	477.0	YES	NO	bb	bb	15.474
6	Total-tetradioxins	25.51	1.363e4	1.667e4	1.024	0.82	0.77	217.7	YES	NO	bd	bd	4.901

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.82	1.763e5	1.113e5	1.184	1.58	1.55	1801.2	YES	NO	bb	bb	54.551
2	12378-PeCDD	31.42	1.478e5	9.675e4	1.022	1.53	1.55	1523.6	YES	NO	bb	bb	53.742
3	12479-PECDD	28.70	2.435e5	1.553e5	2.301	1.57	1.55	1544.5	YES	NO	bb	bb	38.910

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.41	1.502e5	1.208e5	0.907	1.24	1.24	1838.0	YES	NO	bb	bb	54.063
2	123678-HxCDD	36.03	1.470e5	1.191e5	1.001	1.23	1.24	1785.8	YES	NO	db	db	46.392
3	123478-HxCDD	35.91	1.442e5	1.177e5	0.996	1.22	1.24	1729.1	YES	NO	bd	bd	49.432
4	Total-hexadioxins	35.05	2.554e2	1.830e2	1.005	1.40	1.24	5.3	YES	NO	db	bb	0.079
5	Total-hexadioxins	34.10	8.367e1	7.691e1	1.005	1.09	1.24	2.4	NO	NO	bb	bb	0.029
6	124679-HXCDD	33.90	1.465e5	1.182e5	1.115	1.24	1.24	1687.2	YES	NO	bb	bb	44.590

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.15	1.431e5	1.295e5	1.039	1.11	1.05	1420.3	YES	NO	bd	bb	53.340
2	1234679-HPCDD	39.10	1.479e5	1.435e5	1.137	1.03	1.05	1613.5	YES	NO	bb	bb	52.100

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	23.74	2.033e2	2.706e2	1.024	0.75	0.77	3.6	YES	NO	bb	db	0.077
2	1368-TCDD	23.46	2.635e4	3.233e4	1.015	0.82	0.77	439.5	YES	NO	bb	bb	9.574
3	1289-TCDD	26.92	2.379e4	3.106e4	0.909	0.77	0.77	370.6	YES	NO	bb	bb	9.999
4	2378-TCDD	26.31	2.996e4	3.756e4	1.149	0.80	0.77	457.1	YES	NO	bd	bb	9.737
5	Total-tetradioxins	25.99	4.248e4	5.319e4	1.024	0.80	0.77	477.0	YES	NO	bb	bb	15.474
6	Total-tetradioxins	25.51	1.363e4	1.667e4	1.024	0.82	0.77	217.7	YES	NO	bd	bd	4.901
7	12389-PECDD	31.82	1.763e5	1.113e5	1.184	1.58	1.55	1801.2	YES	NO	bb	bb	54.551
8	12378-PeCDD	31.42	1.478e5	9.675e4	1.022	1.53	1.55	1523.6	YES	NO	bb	bb	53.742
9	12479-PECDD	28.70	2.435e5	1.553e5	2.301	1.57	1.55	1544.5	YES	NO	bb	bb	38.910
10	123789-HxCDD	36.41	1.502e5	1.208e5	0.907	1.24	1.24	1838.0	YES	NO	bb	bb	54.063
11	123678-HxCDD	36.03	1.470e5	1.191e5	1.001	1.23	1.24	1785.8	YES	NO	db	db	46.392
12	123478-HxCDD	35.91	1.442e5	1.177e5	0.996	1.22	1.24	1729.1	YES	NO	bd	bd	49.432
13	Total-hexadioxins	35.05	2.554e2	1.830e2	1.005	1.40	1.24	5.3	YES	NO	db	bb	0.079
14	Total-hexadioxins	34.10	8.367e1	7.691e1	1.005	1.09	1.24	2.4	NO	NO	bb	bb	0.029
15	124679-HXCDD	33.90	1.465e5	1.182e5	1.115	1.24	1.24	1687.2	YES	NO	bb	bb	44.590
16	OCDD	44.83	2.394e5	2.745e5	0.920	0.87	0.89	1599.8	YES	NO	bb	bb	97.258
17	1234678-HpCDD	40.15	1.431e5	1.295e5	1.039	1.11	1.05	1420.3	YES	NO	bd	bb	53.340
18	1234679-HPCDD	39.10	1.479e5	1.435e5	1.137	1.03	1.05	1613.5	YES	NO	bb	bb	52.100

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld  
 Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
 Printed: Thursday, May 11, 2023 11:21:13 Pacific Daylight Time

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.17	2.345e4	3.169e4	0.678	0.74	0.77	497.1	YES	NO	db	bb	10.068
2	Total-tetrafurans	27.05	5.574e2	6.711e2	0.727	0.83	0.77	11.8	YES	NO	bd	bb	0.209
3	2378-TCDF	25.68	2.510e4	3.131e4	0.702	0.80	0.77	567.2	YES	NO	bb	bb	9.953
4	Total-tetrafurans	24.45	2.900e2	3.477e2	0.727	0.83	0.77	9.3	YES	NO	bd	bd	0.109
5	1368-TCDF	22.17	2.840e4	3.974e4	0.802	0.71	0.77	638.4	YES	NO	bb	bb	10.523
6	23478-PeCDF	31.16	1.690e5	1.127e5	0.786	1.50	1.55	1181.4	YES	NO	bb	bb	52.951
7	12378-PeCDF	29.82	1.582e5	1.034e5	0.679	1.53	1.55	1162.9	YES	NO	bb	bb	54.815
8	Total-pentafurans	28.67	2.566e4	1.665e4	0.654	1.54	1.55	183.7	YES	NO	bb	bb	9.382
9	12389-PECDF	32.20	1.637e5	1.076e5	0.496	1.52	1.55	1143.5	YES	NO	bb	bb	77.806
10	123789-HxCDF	36.82	1.522e5	1.208e5	1.137	1.26	1.24	1326.4	YES	NO	bb	bb	47.738
11	234678-HxCDF	35.78	1.771e5	1.448e5	1.140	1.22	1.24	1531.4	YES	NO	bb	bb	48.783
12	123678-HxCDF	34.92	1.848e5	1.476e5	1.091	1.25	1.24	1597.8	YES	NO	db	db	49.339
13	123478-HxCDF	34.78	1.776e5	1.433e5	1.166	1.24	1.24	1524.9	YES	NO	bd	bd	47.579
14	123468-HXCDF	33.12	1.740e5	1.398e5	1.169	1.24	1.24	1479.6	YES	NO	bb	bb	46.417
15	1234789-HpCDF	40.89	1.218e5	1.212e5	0.953	1.00	1.05	977.7	YES	NO	bb	bb	51.723
16	1234678-HpCDF	38.66	1.379e5	1.369e5	1.003	1.01	1.05	1276.7	YES	NO	bb	bb	49.238
17	OCDF	45.07	2.019e5	2.211e5	0.778	0.91	0.89	2109.3	YES	NO	bb	bb	94.693
18	13468-PECDF	27.03	2.319e5	1.548e5	1.246	1.50	1.55	5656.8	YES	NO	bb	bb	44.157
19	Total-tetradioxins	23.74	2.033e2	2.706e2	1.024	0.75	0.77	3.6	YES	NO	bb	db	0.077
20	1368-TCDD	23.46	2.635e4	3.233e4	1.015	0.82	0.77	439.5	YES	NO	bb	bb	9.574
21	1289-TCDD	26.92	2.379e4	3.106e4	0.909	0.77	0.77	370.6	YES	NO	bb	bb	9.999
22	2378-TCDD	26.31	2.996e4	3.756e4	1.149	0.80	0.77	457.1	YES	NO	bd	bb	9.737
23	Total-tetradioxins	25.99	4.248e4	5.319e4	1.024	0.80	0.77	477.0	YES	NO	bb	bb	15.474
24	Total-tetradioxins	25.51	1.363e4	1.667e4	1.024	0.82	0.77	217.7	YES	NO	bd	bd	4.901
25	12389-PECDD	31.82	1.763e5	1.113e5	1.184	1.58	1.55	1801.2	YES	NO	bb	bb	54.551
26	12378-PeCDD	31.42	1.478e5	9.675e4	1.022	1.53	1.55	1523.6	YES	NO	bb	bb	53.742
27	12479-PECDD	28.70	2.435e5	1.553e5	2.301	1.57	1.55	1544.5	YES	NO	bb	bb	38.910
28	123789-HxCDD	36.41	1.502e5	1.208e5	0.907	1.24	1.24	1838.0	YES	NO	bb	bb	54.063
29	123678-HxCDD	36.03	1.470e5	1.191e5	1.001	1.23	1.24	1785.8	YES	NO	db	db	46.392
30	123478-HxCDD	35.91	1.442e5	1.177e5	0.996	1.22	1.24	1729.1	YES	NO	bd	bd	49.432
31	Total-hexadioxins	35.05	2.554e2	1.830e2	1.005	1.40	1.24	5.3	YES	NO	db	bb	0.079
32	Total-hexadioxins	34.10	8.367e1	7.691e1	1.005	1.09	1.24	2.4	NO	NO	bb	bb	0.029
33	124679-HXCDD	33.90	1.465e5	1.182e5	1.115	1.24	1.24	1687.2	YES	NO	bb	bb	44.590
34	OCDD	44.83	2.394e5	2.745e5	0.920	0.87	0.89	1599.8	YES	NO	bb	bb	97.258
35	1234678-HpCDD	40.15	1.431e5	1.295e5	1.039	1.11	1.05	1420.3	YES	NO	bd	bb	53.340
36	1234679-HPCDD	39.10	1.479e5	1.435e5	1.137	1.03	1.05	1613.5	YES	NO	bb	bb	52.100

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230509\HA.qld  
Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time  
Printed: Thursday, May 11, 2023 11:21:13 Pacific Daylight Time

**ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk**

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	26.98	1.918e3					0.5	NO		bb		
2	FUNCTION1 PFK	26.69	2.222e4					1.1	NO		bb		
3	FUNCTION1 PFK	26.47	1.405e4					1.0	NO		bb		
4	FUNCTION1 PFK	25.52	3.013e4					1.6	NO		bb		
5	FUNCTION1 PFK	24.52	2.180e3					0.6	NO		bb		
6	FUNCTION1 PFK	24.46	1.617e4					1.0	NO		bb		
7	FUNCTION1 PFK	24.25	1.503e4					1.6	NO		bb		
8	FUNCTION1 PFK	24.15	2.129e3					0.5	NO		bb		
9	FUNCTION1 PFK	23.75	1.210e4					1.2	NO		bb		
10	FUNCTION1 PFK	22.98	2.370e3					0.6	NO		bb		
11	FUNCTION1 PFK	22.94	2.311e3					0.6	NO		bb		
12	FUNCTION1 PFK	22.29	9.133e3					1.3	NO		bb		
13	FUNCTION1 PFK	21.42	2.012e3					0.5	NO		bb		
14	FUNCTION1 PFK	21.17	2.068e3					0.5	NO		bb		
15	FUNCTION1 PFK	21.13	7.392e3					1.0	NO		bb		
16	FUNCTION1 PFK	27.43	2.562e3					0.6	NO		bb		
17	FUNCTION1 PFK	27.24	5.147e3					0.8	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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 Printed: Thursday, May 11, 2023 11:21:13 Pacific Daylight Time

**ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk**

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	30.78	8.381e3					1.9	NO		bd		0.000
2	FUNCTION2 PFK	30.69	1.194e4					1.5	NO		bb		0.000
3	FUNCTION2 PFK	29.79	4.364e3					1.1	NO		bb		0.000
4	FUNCTION2 PFK	29.58	2.785e3					0.8	NO		bb		0.000
5	FUNCTION2 PFK	29.45	9.948e3					1.6	NO		bb		0.000
6	FUNCTION2 PFK	29.40	1.085e4					1.6	NO		bb		0.000
7	FUNCTION2 PFK	29.25	1.862e3					0.6	NO		bb		0.000
8	FUNCTION2 PFK	29.21	7.606e3					1.7	NO		bb		0.000
9	FUNCTION2 PFK	29.02	9.474e3					2.1	NO		bb		0.000
10	FUNCTION2 PFK	28.91	2.716e3					0.6	NO		bb		0.000
11	FUNCTION2 PFK	28.56	7.164e3					1.7	NO		bb		0.000
12	FUNCTION2 PFK	28.52	2.488e3					0.7	NO		bb		0.000
13	FUNCTION2 PFK	28.37	2.937e3					0.7	NO		bb		0.000
14	FUNCTION2 PFK	32.73	7.108e3					1.6	NO		bb		0.000
15	FUNCTION2 PFK	32.40	4.166e3					1.0	NO		bb		0.000
16	FUNCTION2 PFK	32.20	1.275e3					0.6	NO		bb		0.000
17	FUNCTION2 PFK	32.16	8.558e2					0.4	NO		bb		0.000
18	FUNCTION2 PFK	31.66	3.613e3					0.8	NO		bb		0.000
19	FUNCTION2 PFK	31.46	5.032e3					1.0	NO		db		0.000
20	FUNCTION2 PFK	31.43	3.203e3					0.9	NO		bd		0.000
21	FUNCTION2 PFK	31.24	3.480e3					1.1	NO		bb		0.000
22	FUNCTION2 PFK	30.98	1.204e4					1.5	NO		bb		0.000
23	FUNCTION2 PFK	30.83	8.764e3					1.2	NO		db		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.65	2.533e6					4.9	YES		bb		0.000
2	FUNCTION3 PFK	36.26	2.589e6					3.3	YES		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk**

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.03	3.015e4					2.6	NO		bb		
2	FUNCTION4 PFK	37.98	5.563e3					1.2	NO		bb		
3	FUNCTION4 PFK	42.64	4.479e3					1.1	NO		bb		
4	FUNCTION4 PFK	42.48	6.452e3					1.4	NO		bb		
5	FUNCTION4 PFK	41.55	7.414e3					1.2	NO		bb		
6	FUNCTION4 PFK	41.24	1.032e4					1.8	NO		bb		
7	FUNCTION4 PFK	41.11	1.055e3					0.5	NO		bb		
8	FUNCTION4 PFK	40.75	2.240e3					0.7	NO		bb		
9	FUNCTION4 PFK	39.86	1.408e4					1.6	NO		bb		
10	FUNCTION4 PFK	39.73	1.021e4					1.5	NO		bb		
11	FUNCTION4 PFK	39.50	5.051e3					1.3	NO		db		
12	FUNCTION4 PFK	39.47	6.422e3					1.3	NO		bd		
13	FUNCTION4 PFK	39.40	6.594e3					1.2	NO		bb		
14	FUNCTION4 PFK	39.19	2.475e4					1.9	NO		bb		
15	FUNCTION4 PFK	38.37	7.719e3					1.4	NO		bb		
16	FUNCTION4 PFK	38.23	6.183e3					1.5	NO		bb		

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.06	4.251e3					0.7	NO		bd		
2	FUNCTION5 PFK	45.76	4.029e3					1.4	NO		bb		
3	FUNCTION5 PFK	45.65	6.683e3					1.4	NO		bb		
4	FUNCTION5 PFK	45.60	1.385e3					0.6	NO		bb		
5	FUNCTION5 PFK	45.57	1.215e3					0.6	NO		bb		
6	FUNCTION5 PFK	44.66	5.778e3					1.6	NO		db		
7	FUNCTION5 PFK	44.62	5.534e3					1.4	NO		dd		
8	FUNCTION5 PFK	44.58	1.268e4					1.5	NO		bd		
9	FUNCTION5 PFK	44.42	3.141e3					1.1	NO		bb		
10	FUNCTION5 PFK	44.19	1.861e3					0.8	NO		bb		
11	FUNCTION5 PFK	43.47	6.620e3					1.5	NO		bb		
12	FUNCTION5 PFK	43.26	1.048e4					1.7	NO		bb		
13	FUNCTION5 PFK	43.12	6.014e3					1.7	NO		db		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk**

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	26.40	7.106e1					1.5	NO		db		0.000
2	FUNCTION1 HXCD...	26.30	1.547e2					3.9	YES		bd		0.000
3	FUNCTION1 HXCD...	21.13	1.123e2					2.1	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.25	1.183e2					4.7	YES		bb		0.000
2	FUNCTION2 HPCD...	31.15	1.055e2					3.1	YES		db		0.000
3	FUNCTION2 HPCD...	31.06	9.733e1					2.3	NO		bd		0.000
4	FUNCTION2 HPCD...	29.83	7.466e1					1.8	NO		bb		0.000
5	FUNCTION2 HPCD...	28.74	9.733e1					1.3	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.37	8.067e1					2.4	NO		bb		0.000
2	FUNCTION3 OCDPE	34.37	7.393e1					1.6	NO		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.54	7.696e1					2.6	NO		db		0.000
2	FUNCTION4 NCDPE	38.50	8.049e1					3.5	YES		bd		0.000

**ETHERS6**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.74	7.603e1					2.4	NO		bb		0.000
2	FUNCTION5 DCDPE	43.29	7.114e1					2.1	NO		bb		0.000

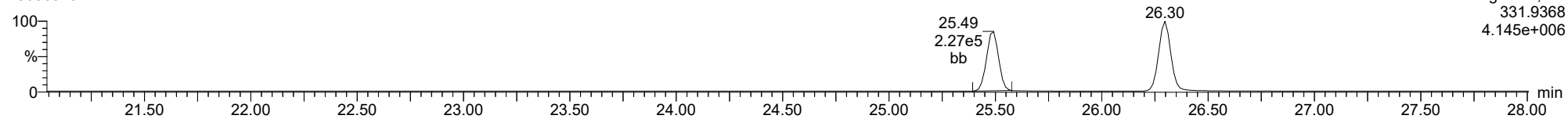


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**ID:** CS3K7, **Name:** 23050929, **Date:** 10-May-2023, **Time:** 12:00:32, **Conditions:** AUTOSPEC01, **User:** pk

**13C-1234-TCDD**

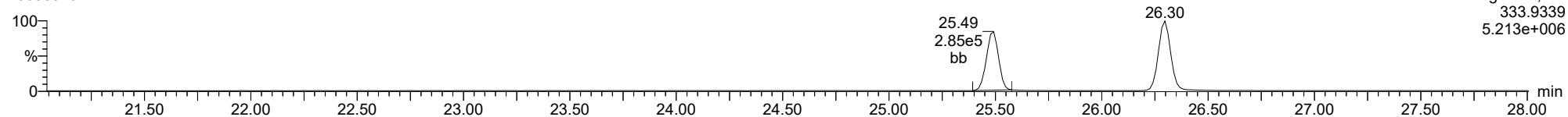
23050929



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**13C-1234-TCDD**

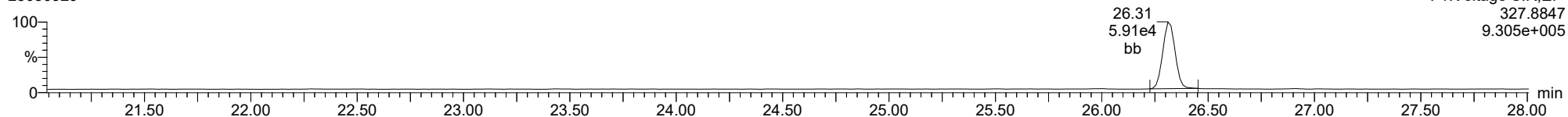
23050929



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**37CL-2378-TCDD**

23050929

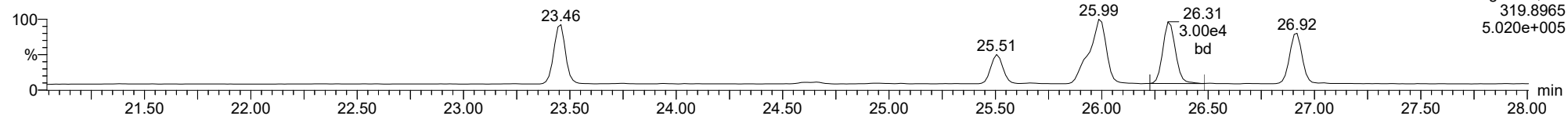


F1:Voltage SIR,El+  
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ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

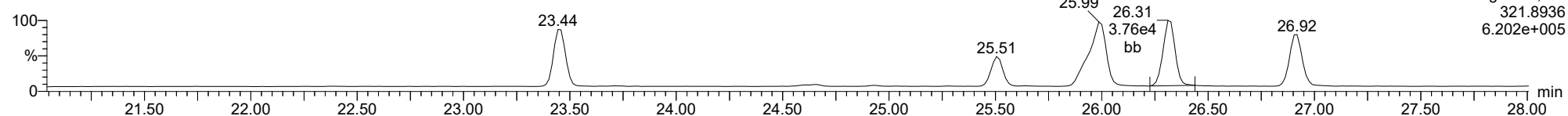
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23050929



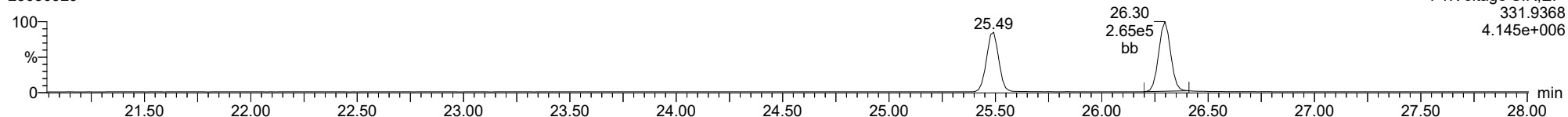
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23050929



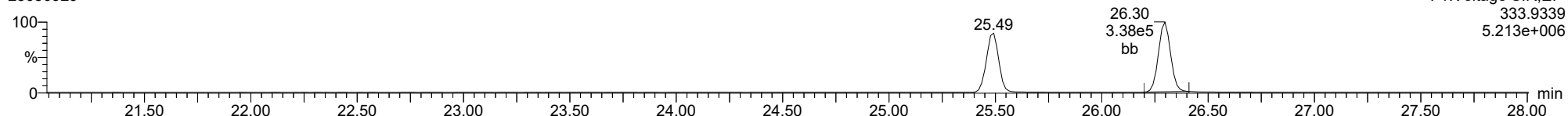
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23050929



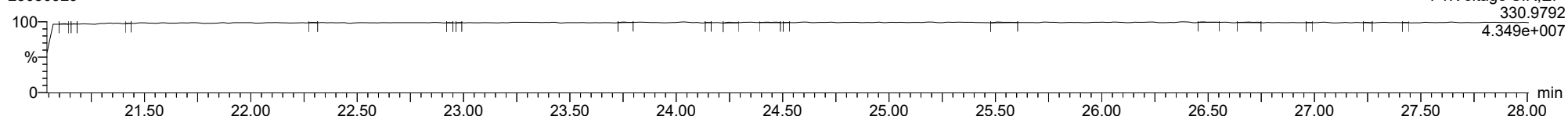
**13C-2378-TCDD**

23050929



**FUNCTION1 PFK**

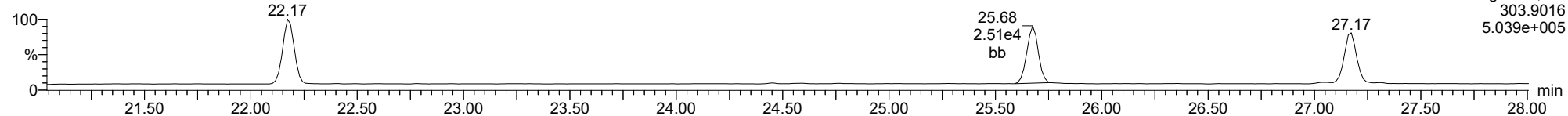
23050929



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

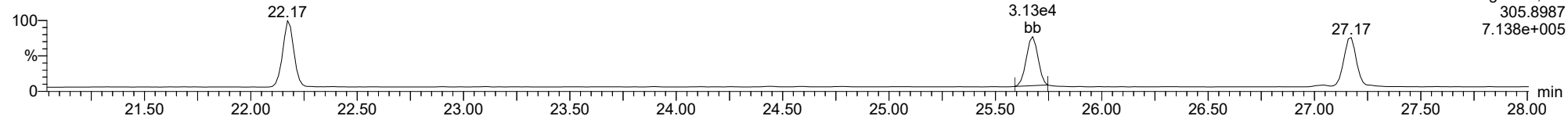
**2378-TCDF**

23050929



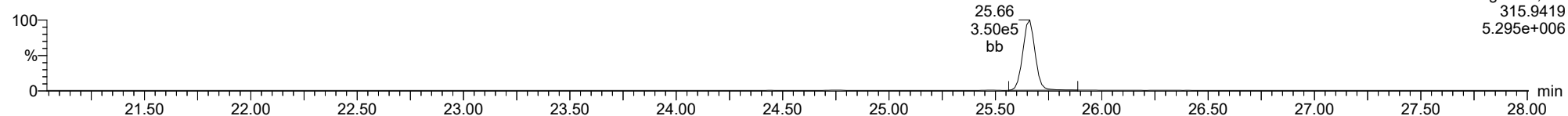
**2378-TCDF**

23050929



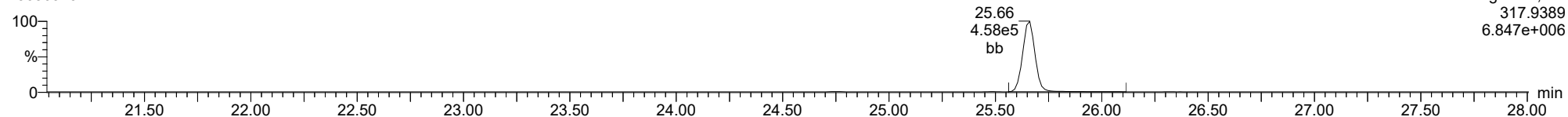
**13C-2378-TCDF**

23050929



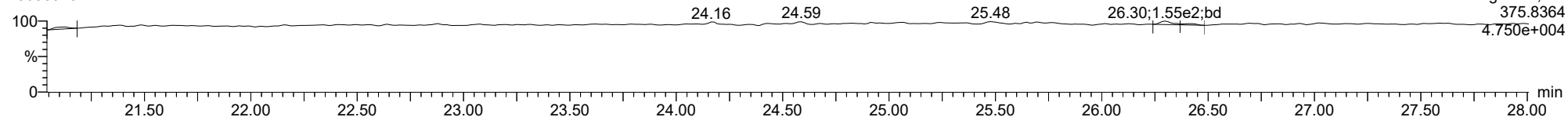
**13C-2378-TCDF**

23050929



**FUNCTION1 HXCDPE**

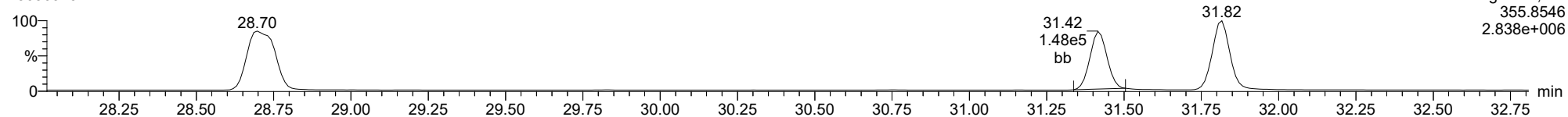
23050929



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**12378-PeCDD**

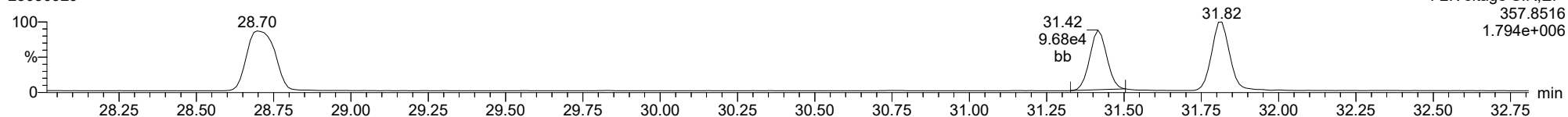
23050929



F2:Voltage SIR,EI+  
355.8546  
2.838e+006

**12378-PeCDD**

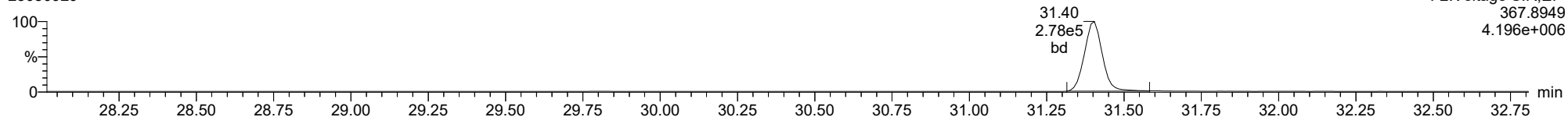
23050929



F2:Voltage SIR,EI+  
357.8516  
1.794e+006

**13C-12378-PeCDD**

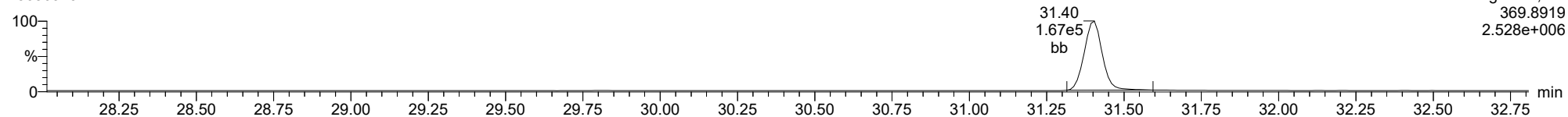
23050929



F2:Voltage SIR,EI+  
367.8949  
4.196e+006

**13C-12378-PeCDD**

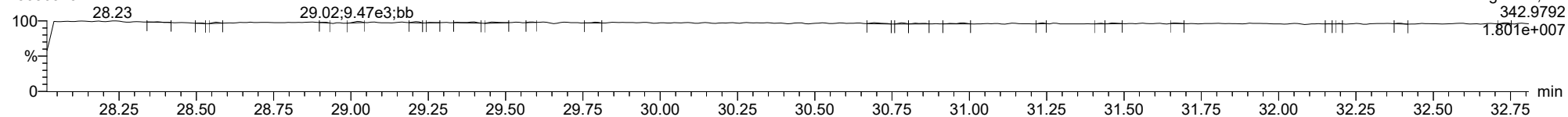
23050929



F2:Voltage SIR,EI+  
369.8919  
2.528e+006

**FUNCTION2 PFK**

23050929

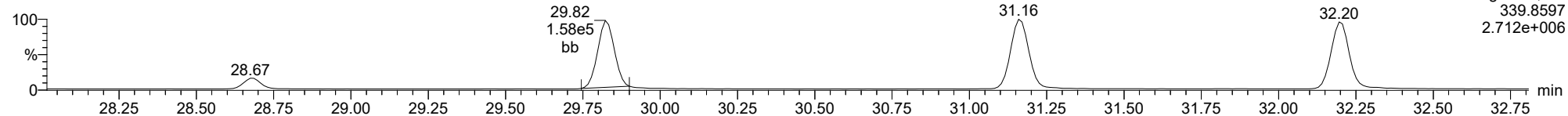


F2:Voltage SIR,EI+  
342.9792  
1.801e+007

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

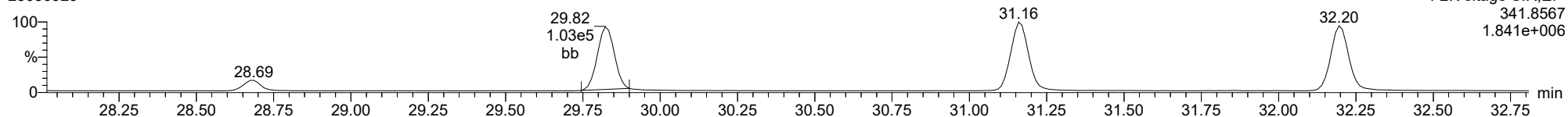
**12378-PeCDF**

23050929



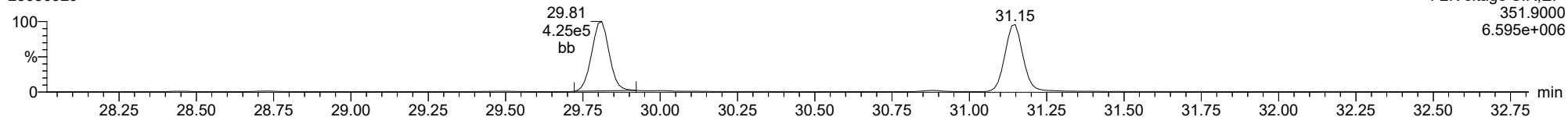
**12378-PeCDF**

23050929



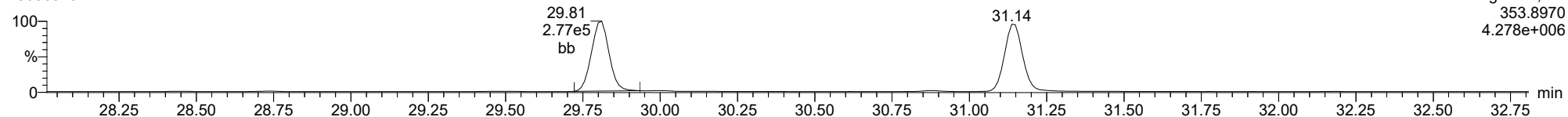
**13C-12378-PeCDF**

23050929



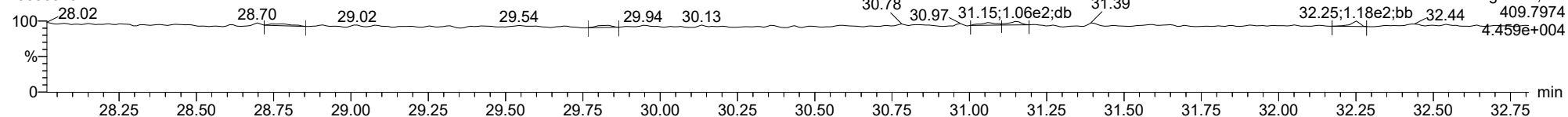
**13C-12378-PeCDF**

23050929



**FUNCTION2 HPCDPE**

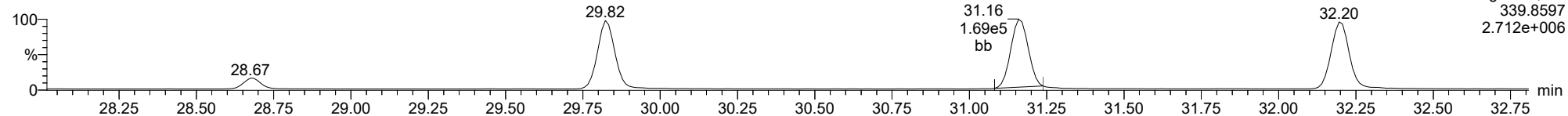
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ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

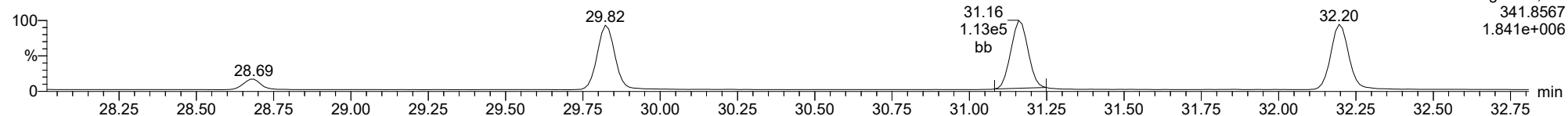
**23478-PeCDF**

23050929



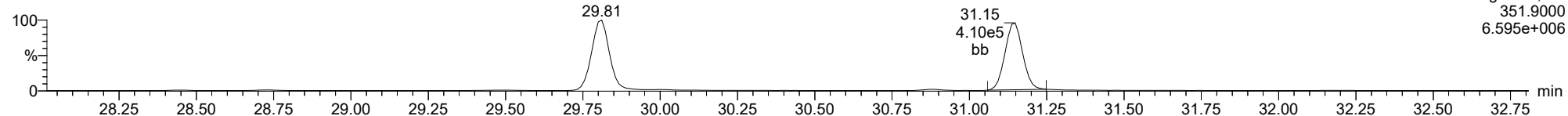
**23478-PeCDF**

23050929



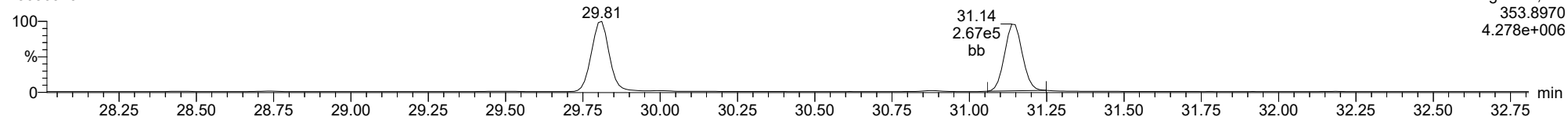
**13C-23478-PeCDF**

23050929



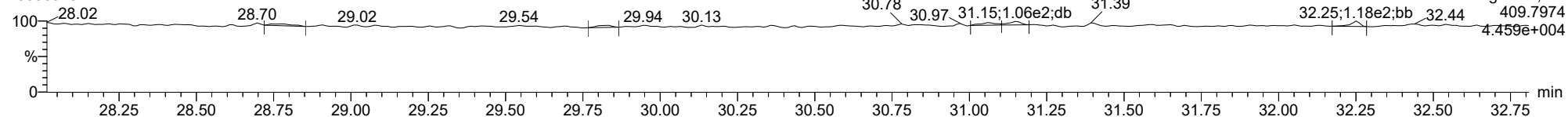
**13C-23478-PeCDF**

23050929



**FUNCTION2 HPCDPE**

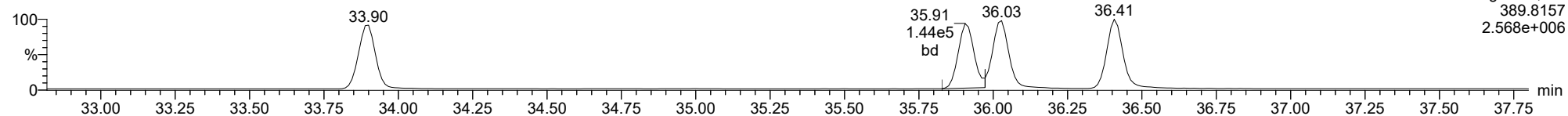
23050929



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**123478-HxCDD**

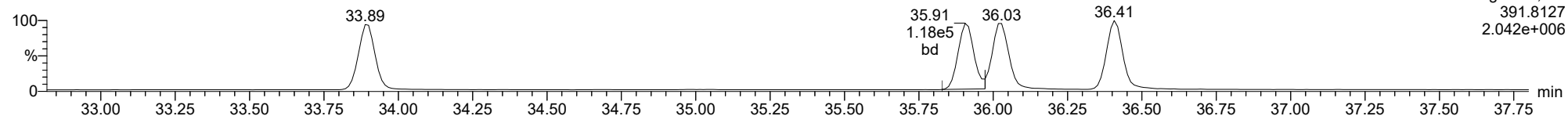
23050929



F3:Voltage SIR,El+  
389.8157  
2.568e+006

**123478-HxCDD**

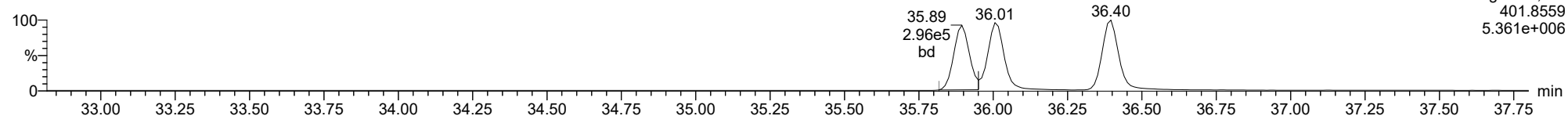
23050929



F3:Voltage SIR,El+  
391.8127  
2.042e+006

**13C-123478-HxCDD**

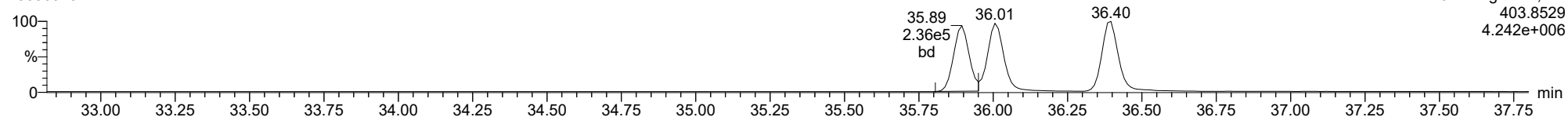
23050929



F3:Voltage SIR,El+  
401.8559  
5.361e+006

**13C-123478-HxCDD**

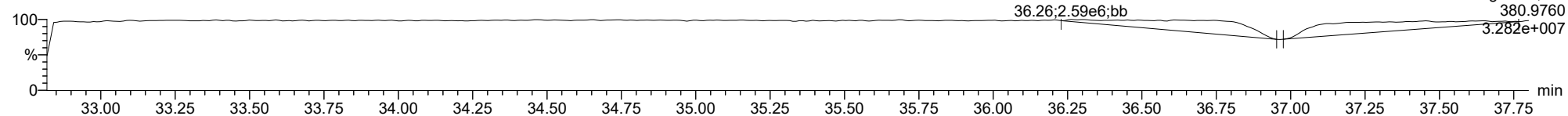
23050929



F3:Voltage SIR,El+  
403.8529  
4.242e+006

**FUNCTION3 PFK**

23050929

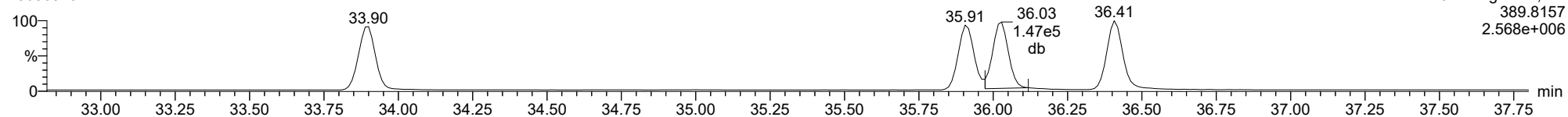


F3:Voltage SIR,El+  
380.9760  
3.282e+007

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

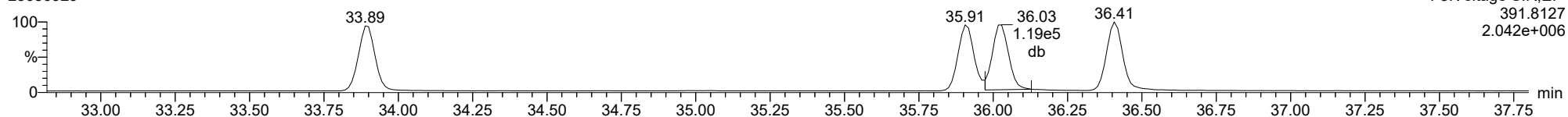
**123678-HxCDD**

23050929



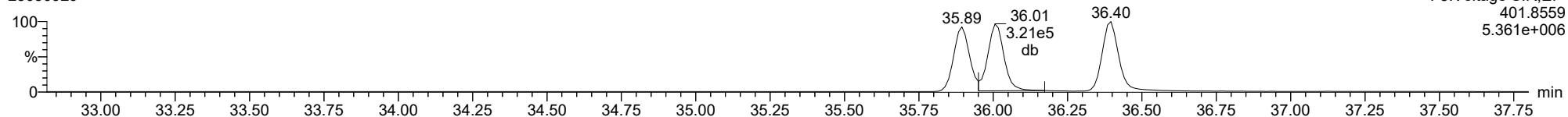
**123678-HxCDD**

23050929



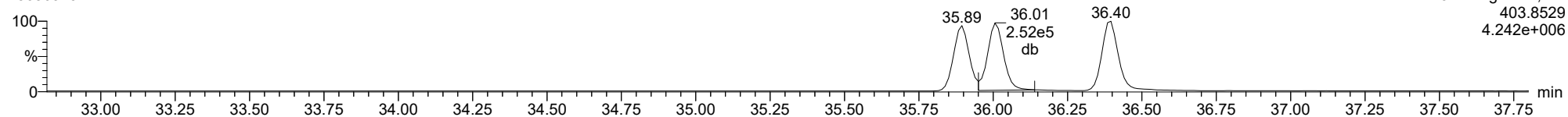
**13C-123678-HxCDD**

23050929



**13C-123678-HxCDD**

23050929

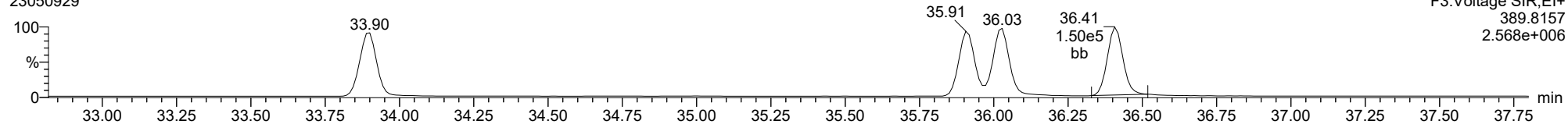




ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**123789-HxCDD**

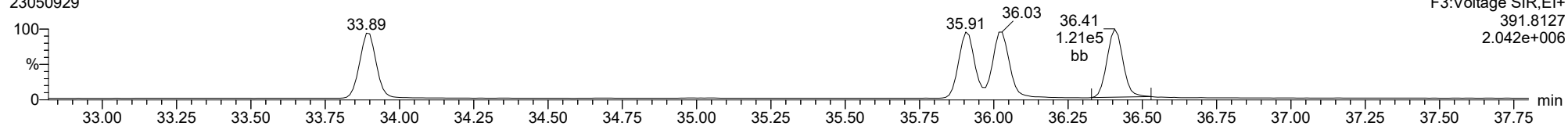
23050929



F3:Voltage SIR,EI+  
389.8157  
2.568e+006

**123789-HxCDD**

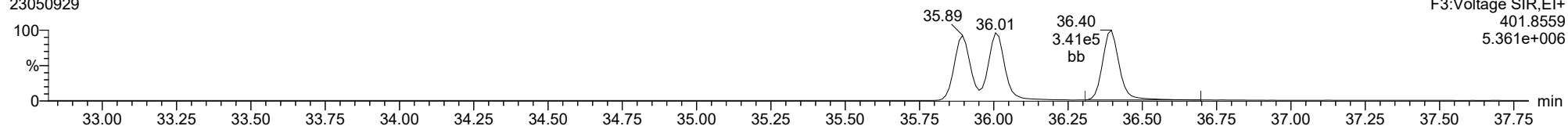
23050929



F3:Voltage SIR,EI+  
391.8127  
2.042e+006

**13C-123789-HxCDD**

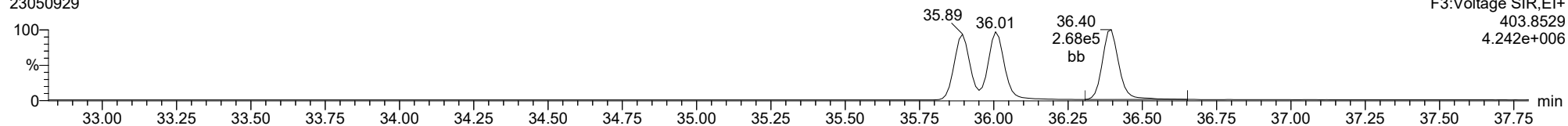
23050929



F3:Voltage SIR,EI+  
401.8559  
5.361e+006

**13C-123789-HxCDD**

23050929

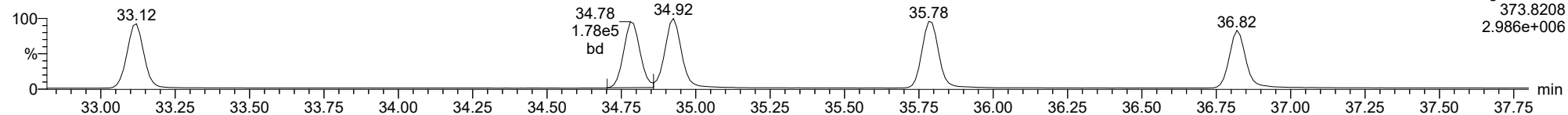


F3:Voltage SIR,EI+  
403.8529  
4.242e+006

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

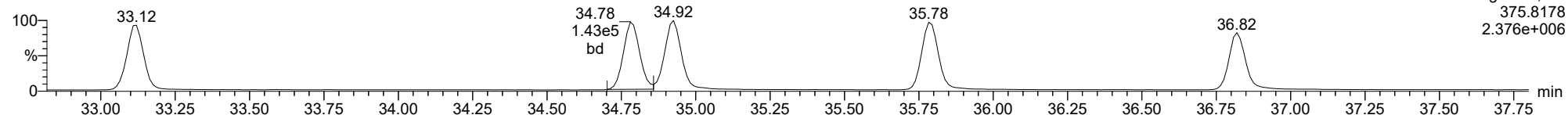
**123478-HxCDF**

23050929



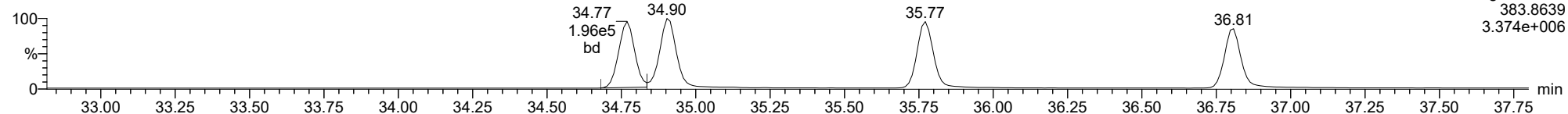
**123478-HxCDF**

23050929



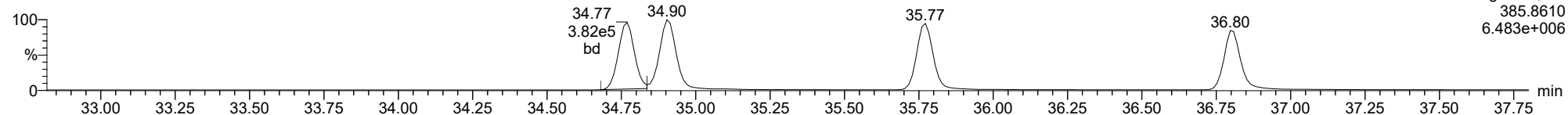
**13C-123478-HxCDF**

23050929



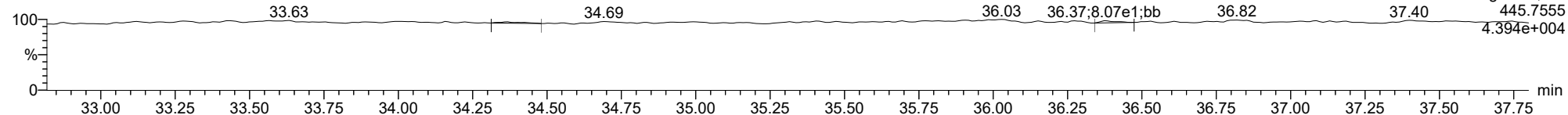
**13C-123478-HxCDF**

23050929



**FUNCTION3 OCDPE**

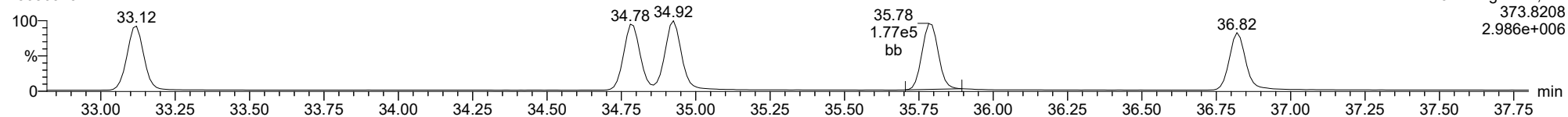
23050929



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

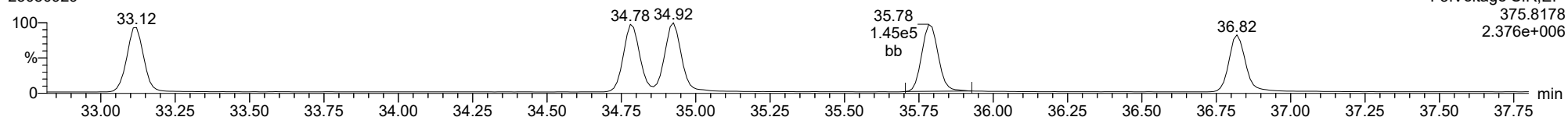
**234678-HxCDF**

23050929



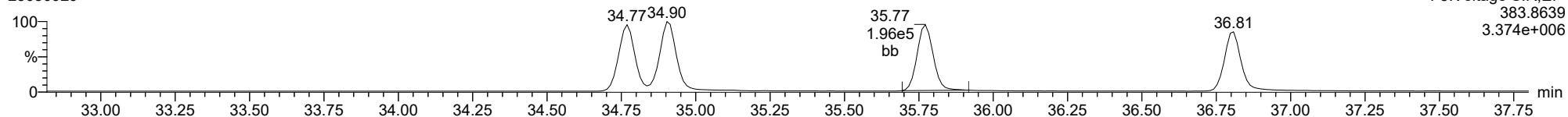
**234678-HxCDF**

23050929



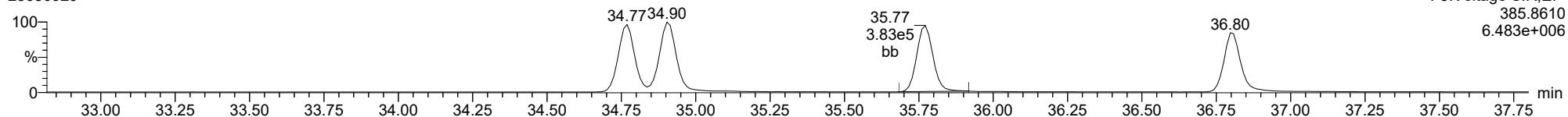
**13C-234678-HxCDF**

23050929



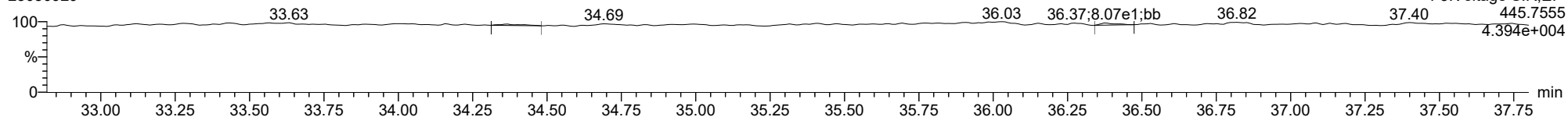
**13C-234678-HxCDF**

23050929



**FUNCTION3 OCDPE**

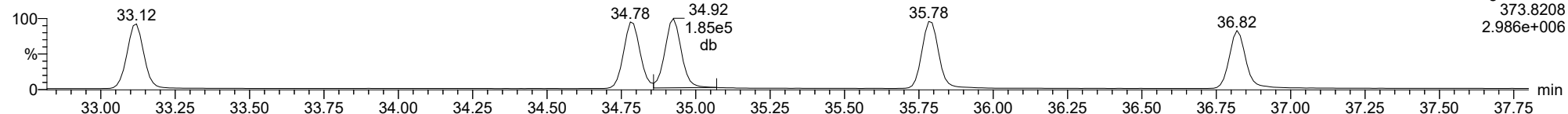
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ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

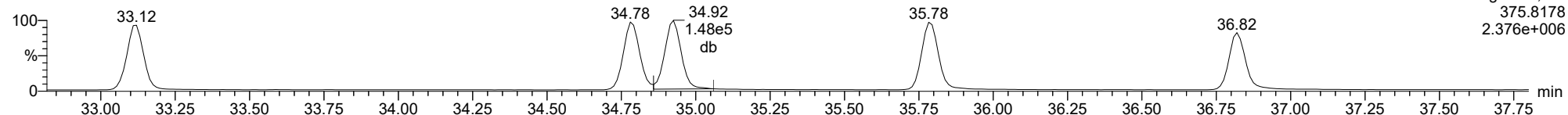
**123678-HxCDF**

23050929



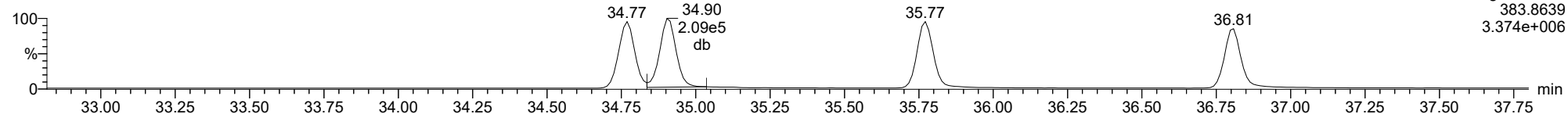
**123678-HxCDF**

23050929



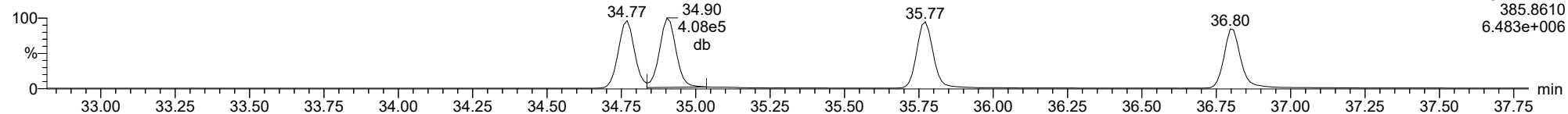
**13C-123678-HxCDF**

23050929



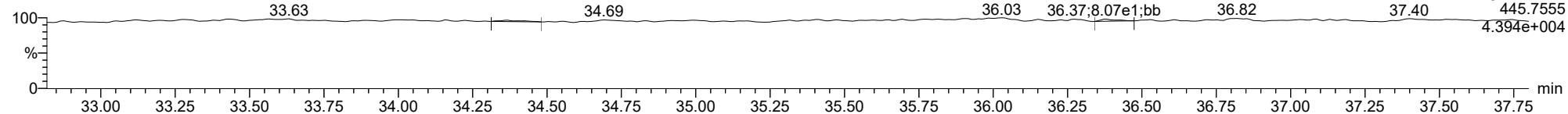
**13C-123678-HxCDF**

23050929



**FUNCTION3 OCDPE**

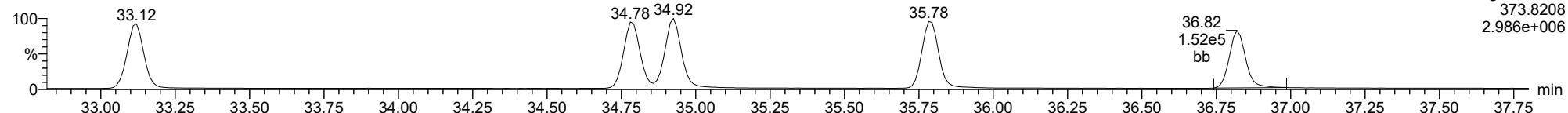
23050929



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**123789-HxCDF**

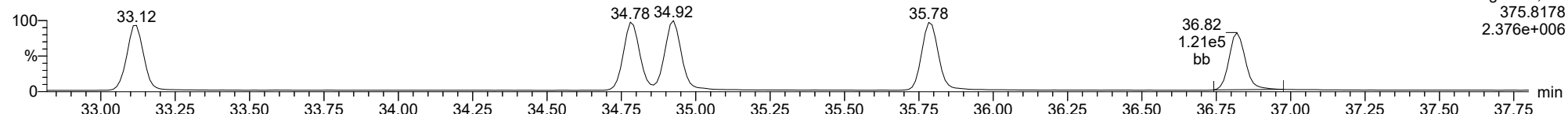
23050929



F3:Voltage SIR,EI+  
373.8208  
2.986e+006

**123789-HxCDF**

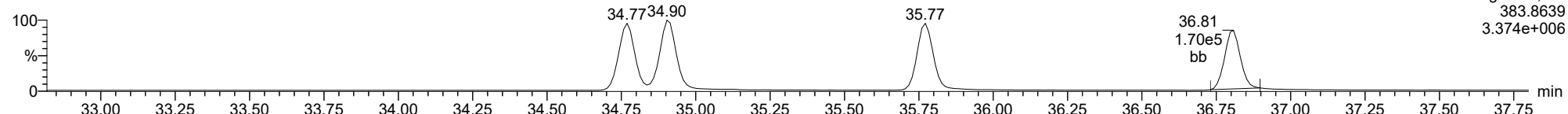
23050929



F3:Voltage SIR,EI+  
375.8178  
2.376e+006

**13C-123789-HxCDF**

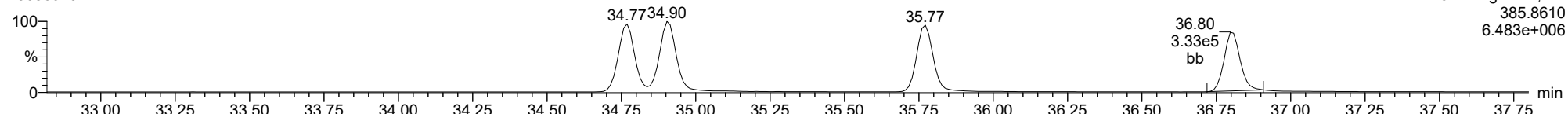
23050929



F3:Voltage SIR,EI+  
383.8639  
3.374e+006

**13C-123789-HxCDF**

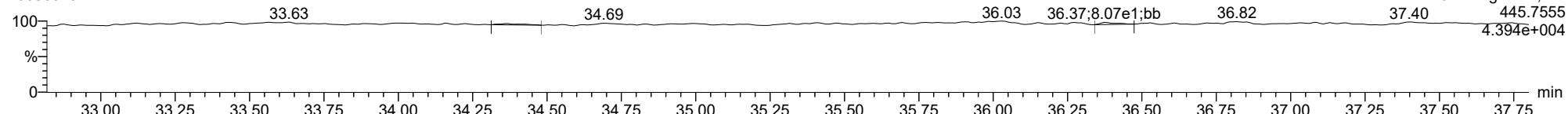
23050929



F3:Voltage SIR,EI+  
385.8610  
6.483e+006

**FUNCTION3 OCDPE**

23050929

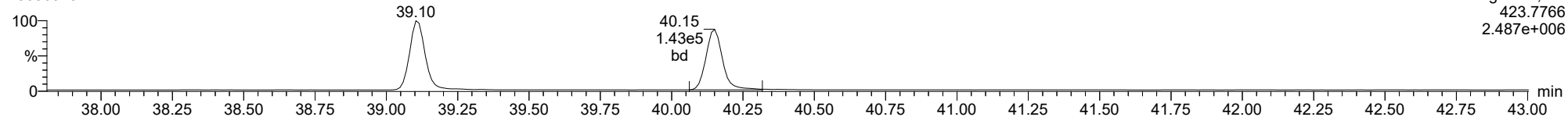


F3:Voltage SIR,EI+  
445.7555  
4.394e+004

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDD**

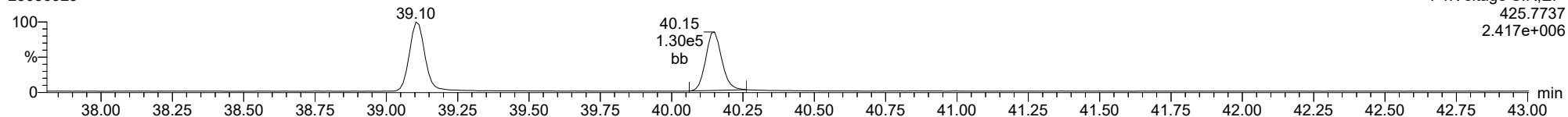
23050929



F4:Voltage SIR,El+  
423.7766  
2.487e+006

**1234678-HpCDD**

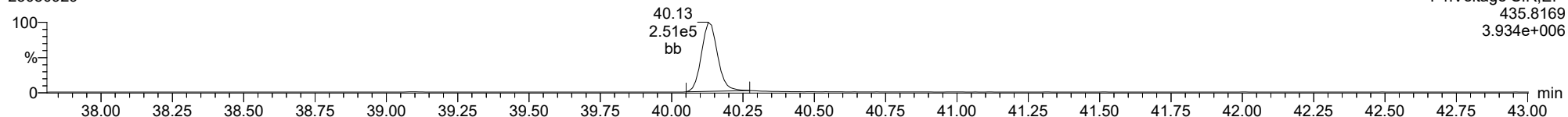
23050929



F4:Voltage SIR,El+  
425.7737  
2.417e+006

**13C-1234678-HpCDD**

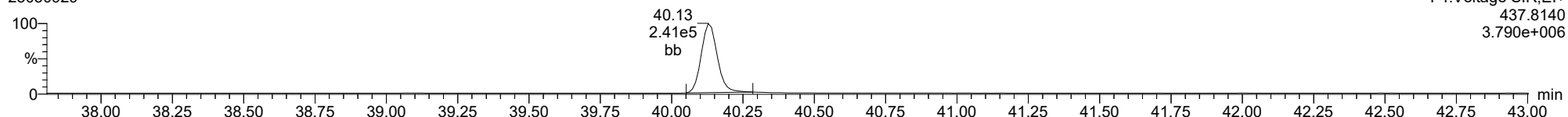
23050929



F4:Voltage SIR,El+  
435.8169  
3.934e+006

**13C-1234678-HpCDD**

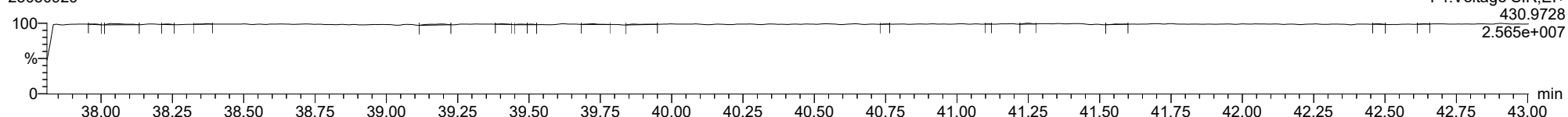
23050929



F4:Voltage SIR,El+  
437.8140  
3.790e+006

**FUNCTION4 PFK**

23050929

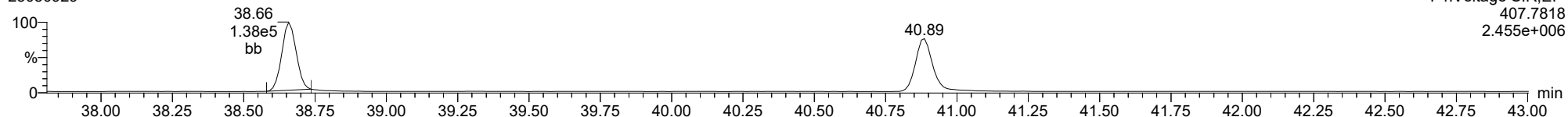


F4:Voltage SIR,El+  
430.9728  
2.565e+007

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDF**

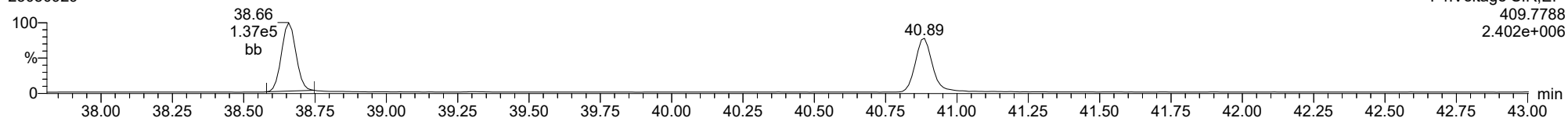
23050929



F4:Voltage SIR,EI+  
407.7818  
2.455e+006

**1234678-HpCDF**

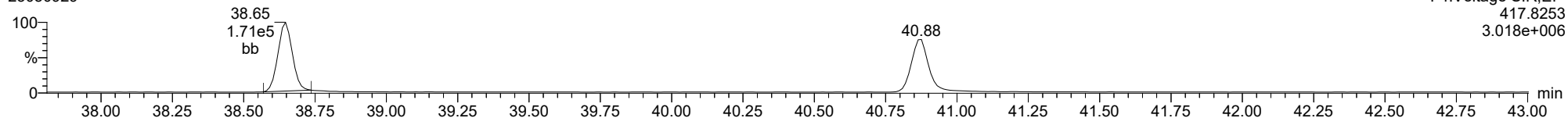
23050929



F4:Voltage SIR,EI+  
409.7788  
2.402e+006

**13C-1234678-HpCDF**

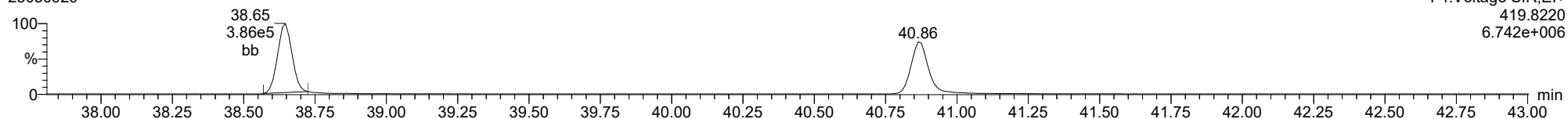
23050929



F4:Voltage SIR,EI+  
417.8253  
3.018e+006

**13C-1234678-HpCDF**

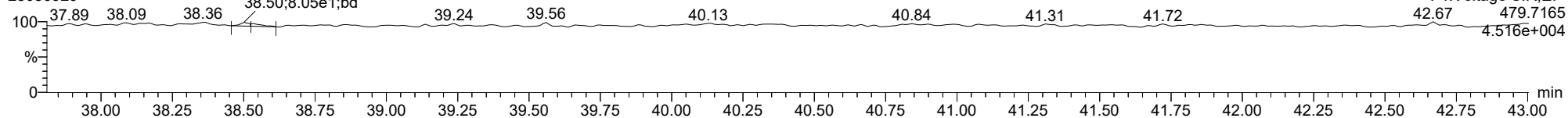
23050929



F4:Voltage SIR,EI+  
419.8220  
6.742e+006

**FUNCTION4 NCDPE**

23050929

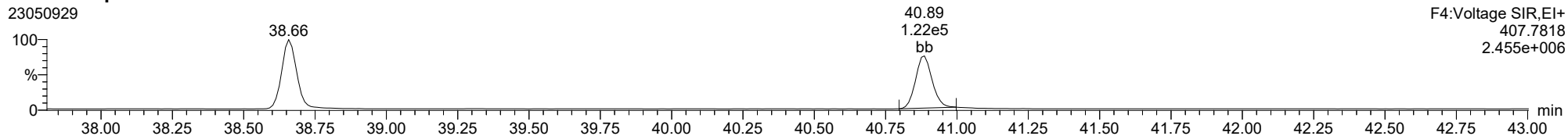


F4:Voltage SIR,EI+  
479.7165  
4.516e+004

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**1234789-HpCDF**

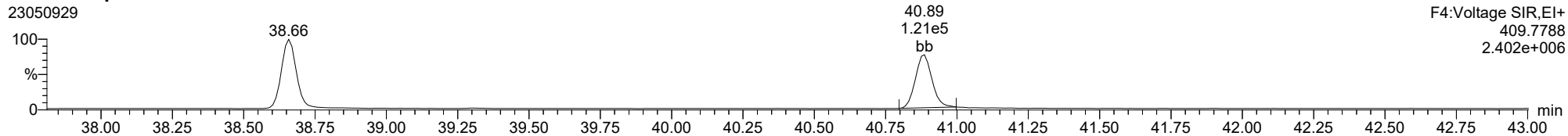
23050929



F4:Voltage SIR,EI+  
407.7818  
2.455e+006

**1234789-HpCDF**

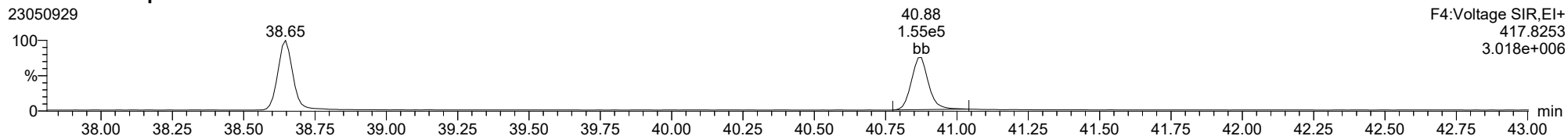
23050929



F4:Voltage SIR,EI+  
409.7788  
2.402e+006

**13C-1234789-HpCDF**

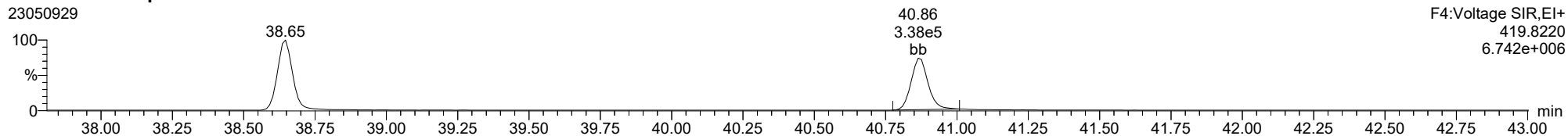
23050929



F4:Voltage SIR,EI+  
417.8253  
3.018e+006

**13C-1234789-HpCDF**

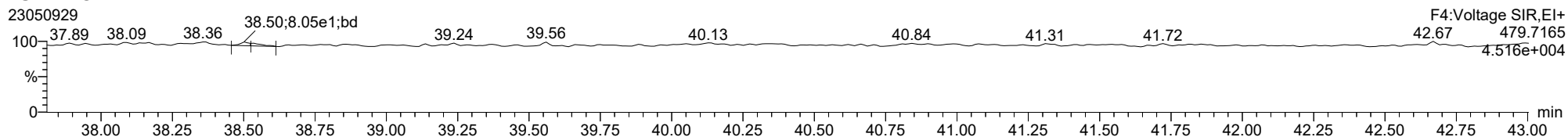
23050929



F4:Voltage SIR,EI+  
419.8220  
6.742e+006

**FUNCTION4 NCDPE**

23050929



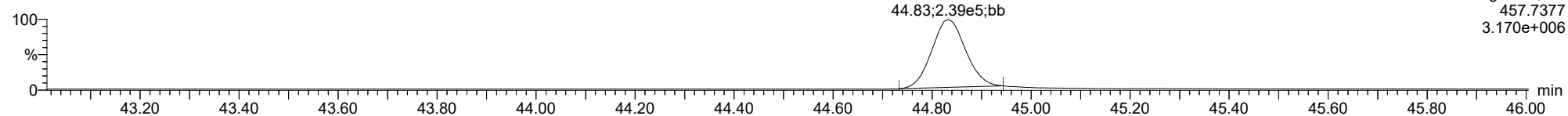
F4:Voltage SIR,EI+  
479.7165  
4.516e+004



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

**OCDD**

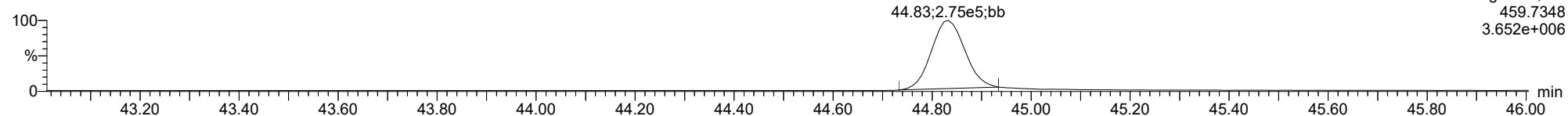
23050929



F5:Voltage SIR,EI+  
457.7377  
3.170e+006

**OCDD**

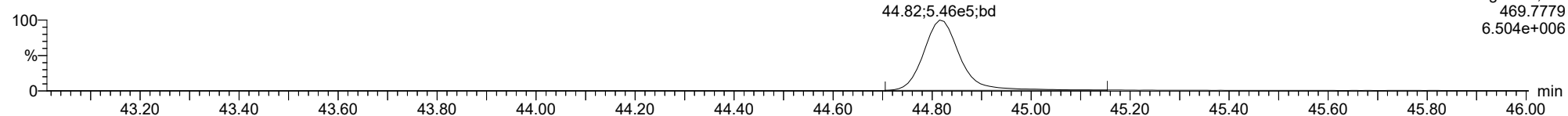
23050929



F5:Voltage SIR,EI+  
459.7348  
3.652e+006

**13C-OCDD**

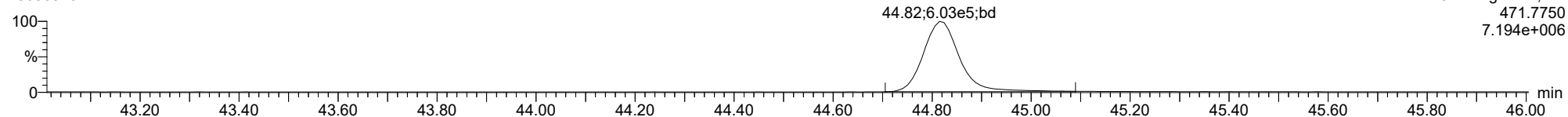
23050929



F5:Voltage SIR,EI+  
469.7779  
6.504e+006

**13C-OCDD**

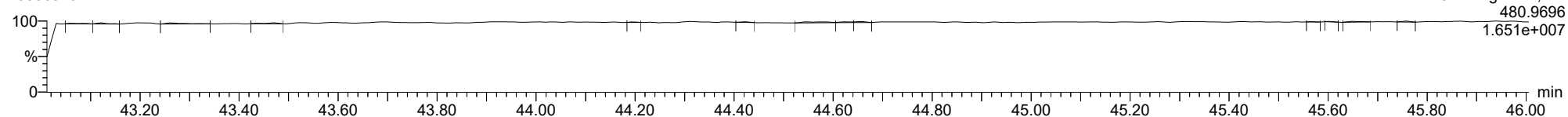
23050929



F5:Voltage SIR,EI+  
471.7750  
7.194e+006

**FUNCTION5 PFK**

23050929

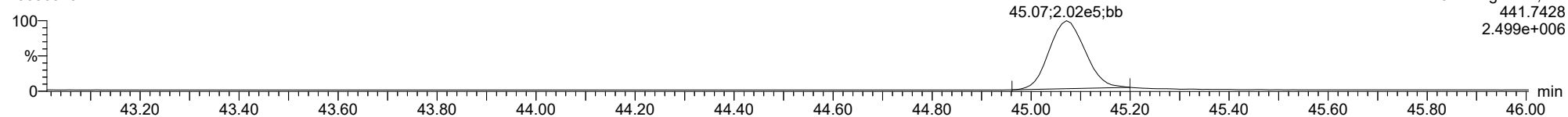


F5:Voltage SIR,EI+  
480.9696  
1.651e+007

ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

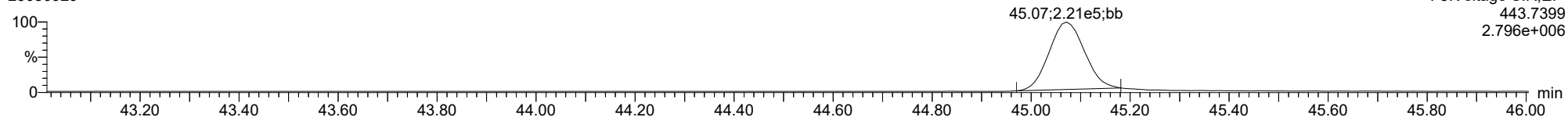
**OCDF**

23050929



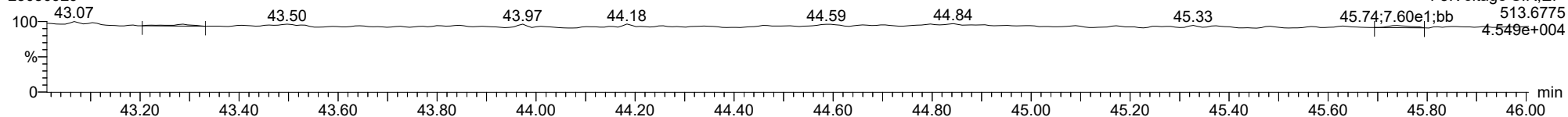
**OCDF**

23050929



**FUNCTION5 DCDPE**

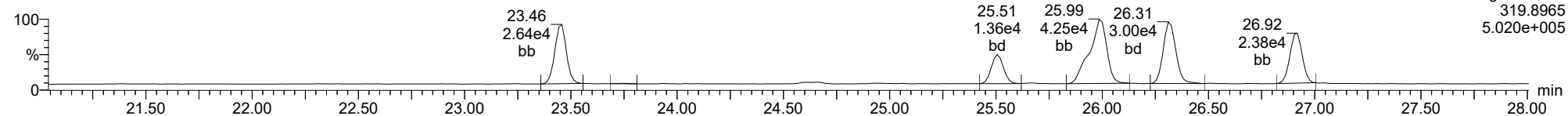
23050929



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

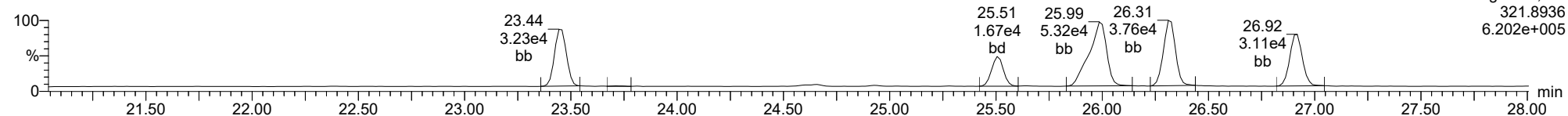
**Total-tetradioxins**

23050929



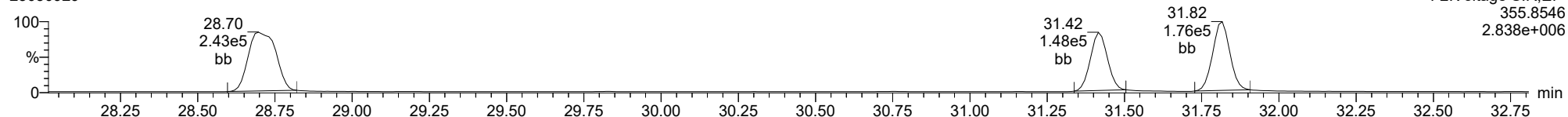
**Total-tetradioxins**

23050929



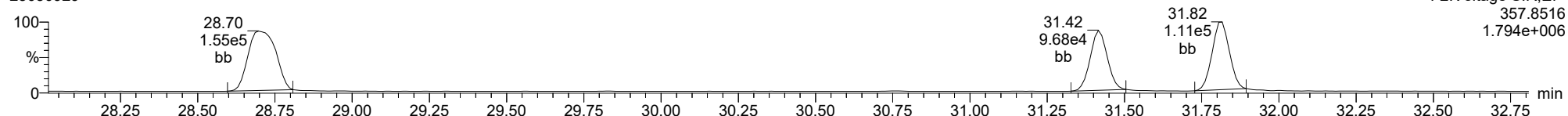
**Total-pentadioxins**

23050929



**Total-pentadioxins**

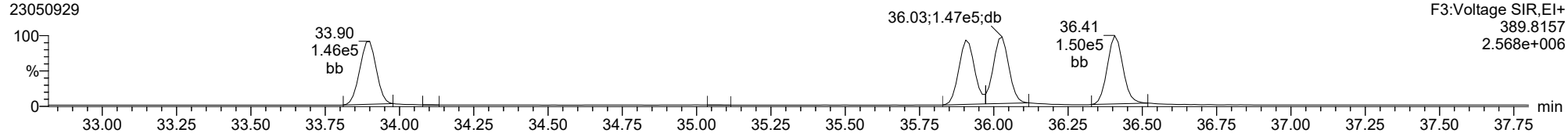
23050929



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

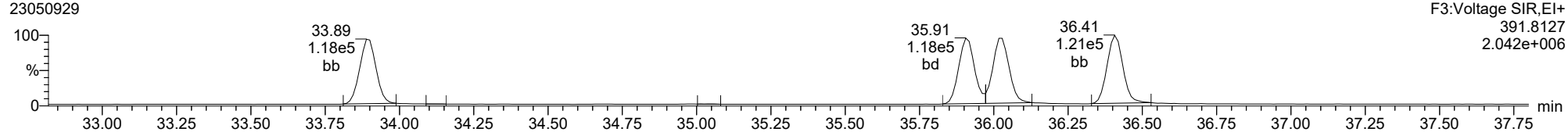
**Total-hexadioxins**

23050929



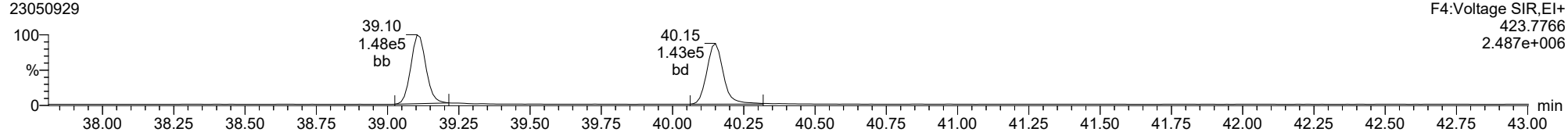
**Total-hexadioxins**

23050929



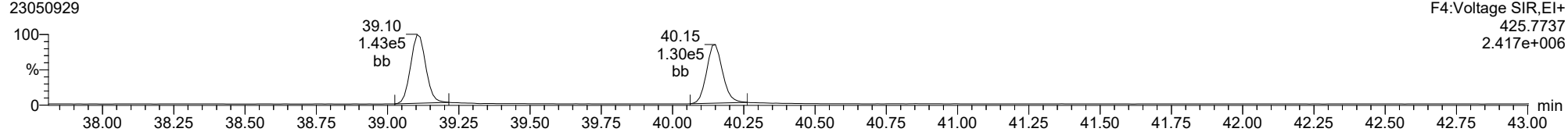
**Total-heptadioxins**

23050929



**Total-heptadioxins**

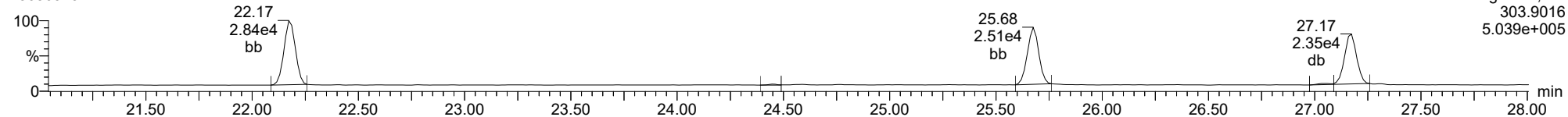
23050929



ID: CS3K7, Name: 23050929, Date: 10-May-2023, Time: 12:00:32, Conditions: AUTOSPEC01, User: pk

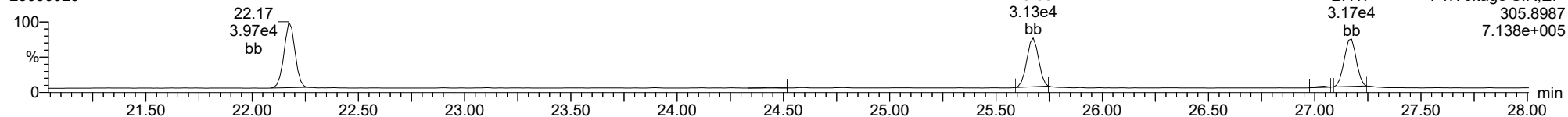
**Total-tetrafurans**

23050929



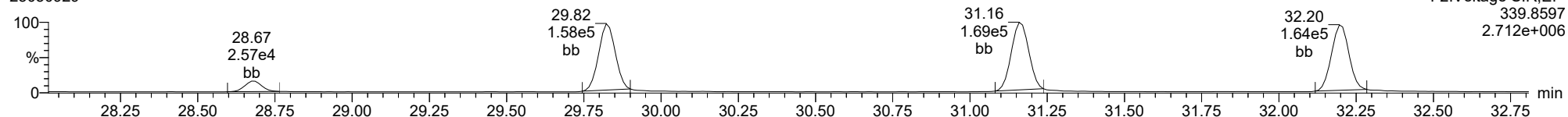
**Total-tetrafurans**

23050929



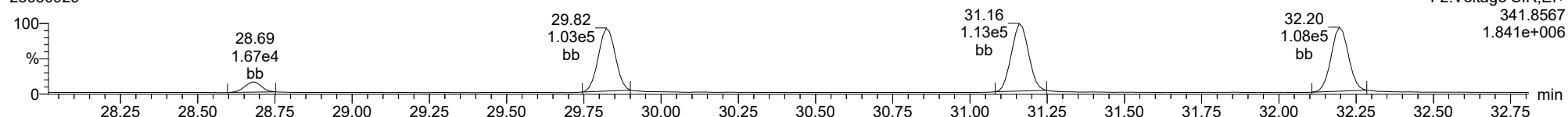
**Total-pentafurans**

23050929



**Total-pentafurans**

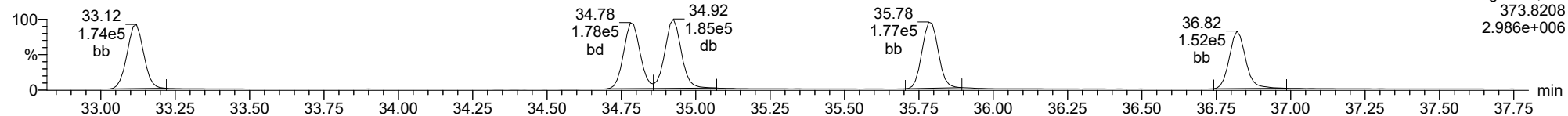
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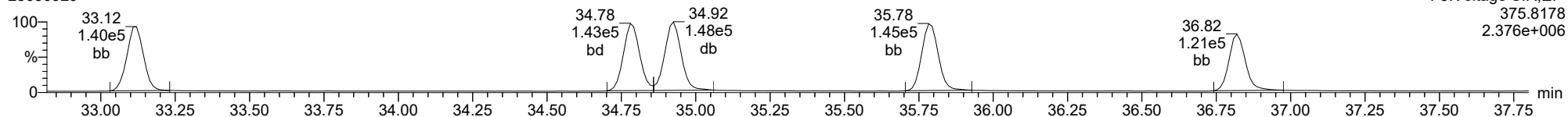
**Total-hexafurans**

23050929



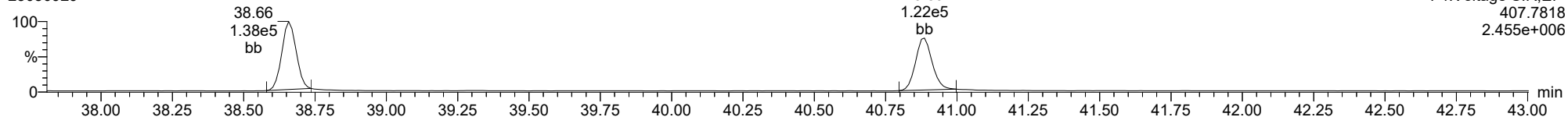
**Total-hexafurans**

23050929



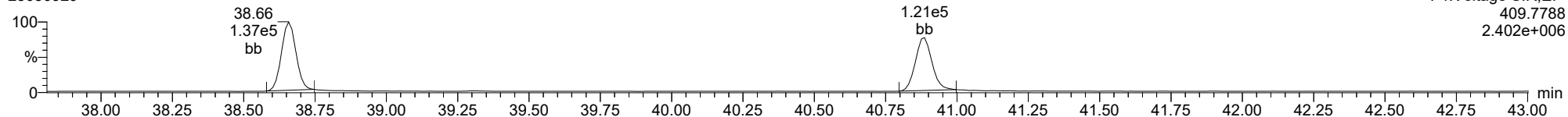
**Total-heptafurans**

23050929



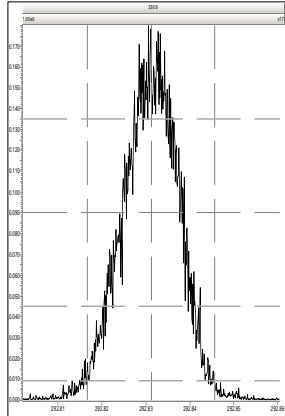
**Total-heptafurans**

23050929

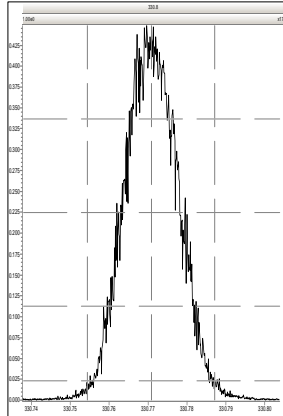


Printed: Wednesday, May 10, 2023 12:53:32 Pacific Daylight Time

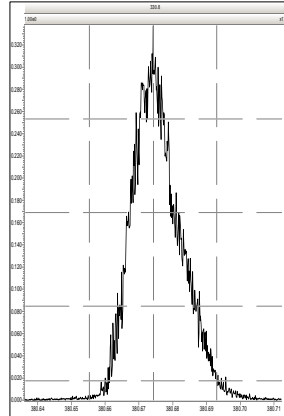
M 292.9824 R 10460



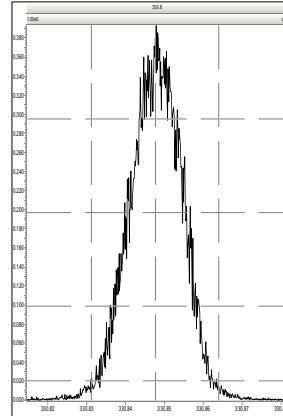
M 330.9792 R 11092



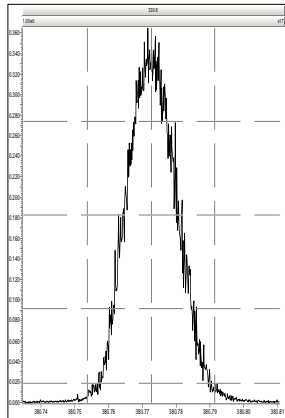
M 380.9760 R 11608



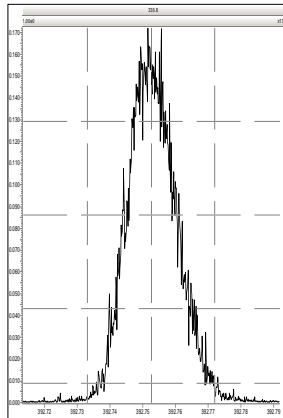
M 330.9792 R 11205



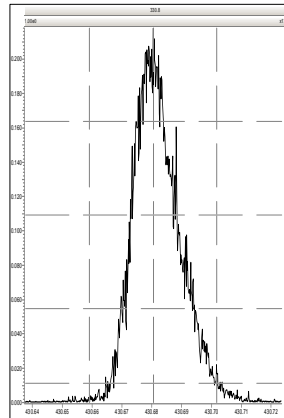
M 380.9760 R 11961



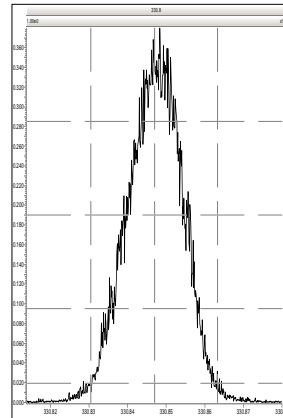
M 392.9760 R 12301



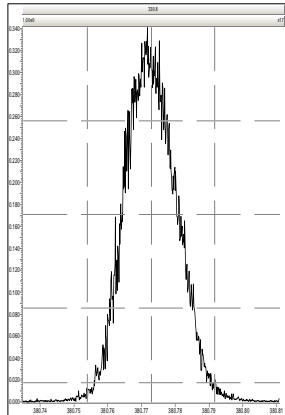
M 430.9728 R 12406



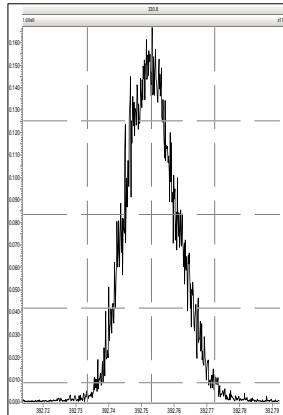
M 330.9792 R 10776



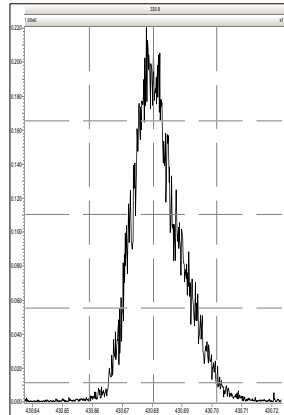
M 380.9760 R 10846



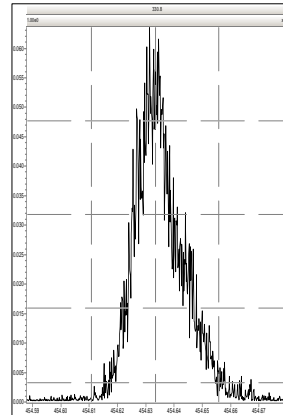
M 392.9760 R 11467



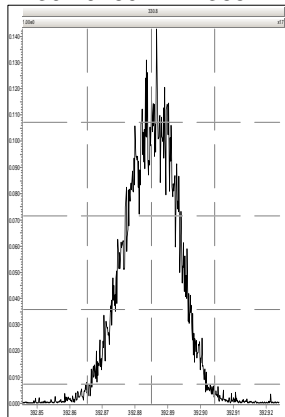
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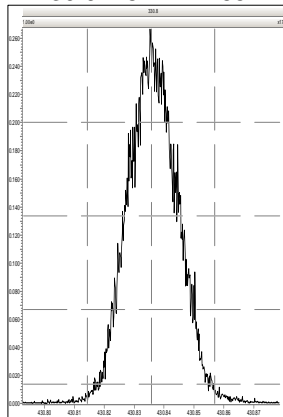
M 454.9728 R 12507



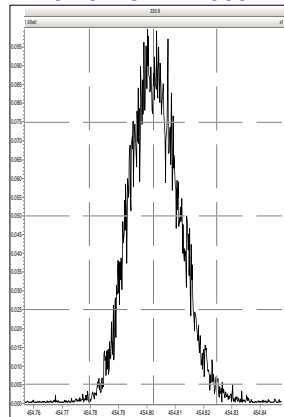
M 392.9760 R 11365



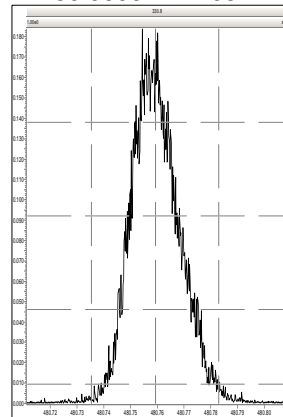
M 430.9728 R 11765



M 454.9728 R 11905

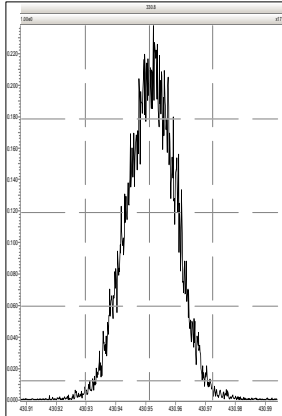


M 480.9696 R 12081

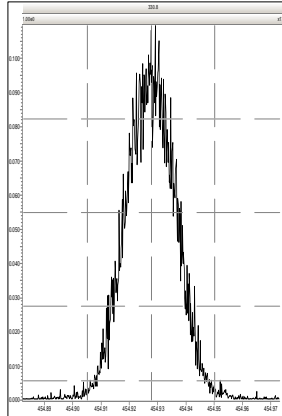


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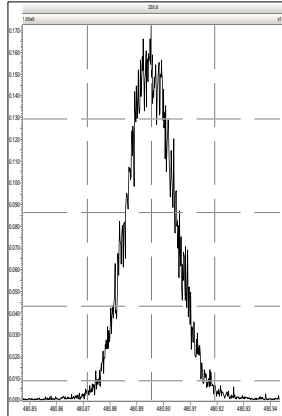
M 430.9728 R 11911



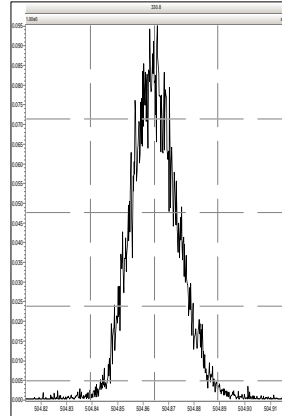
M 454.9728 R 11655



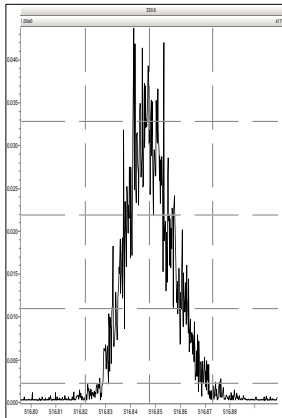
M 480.9696 R 11772



M 504.9696 R 12801



M 516.9697 R 13125



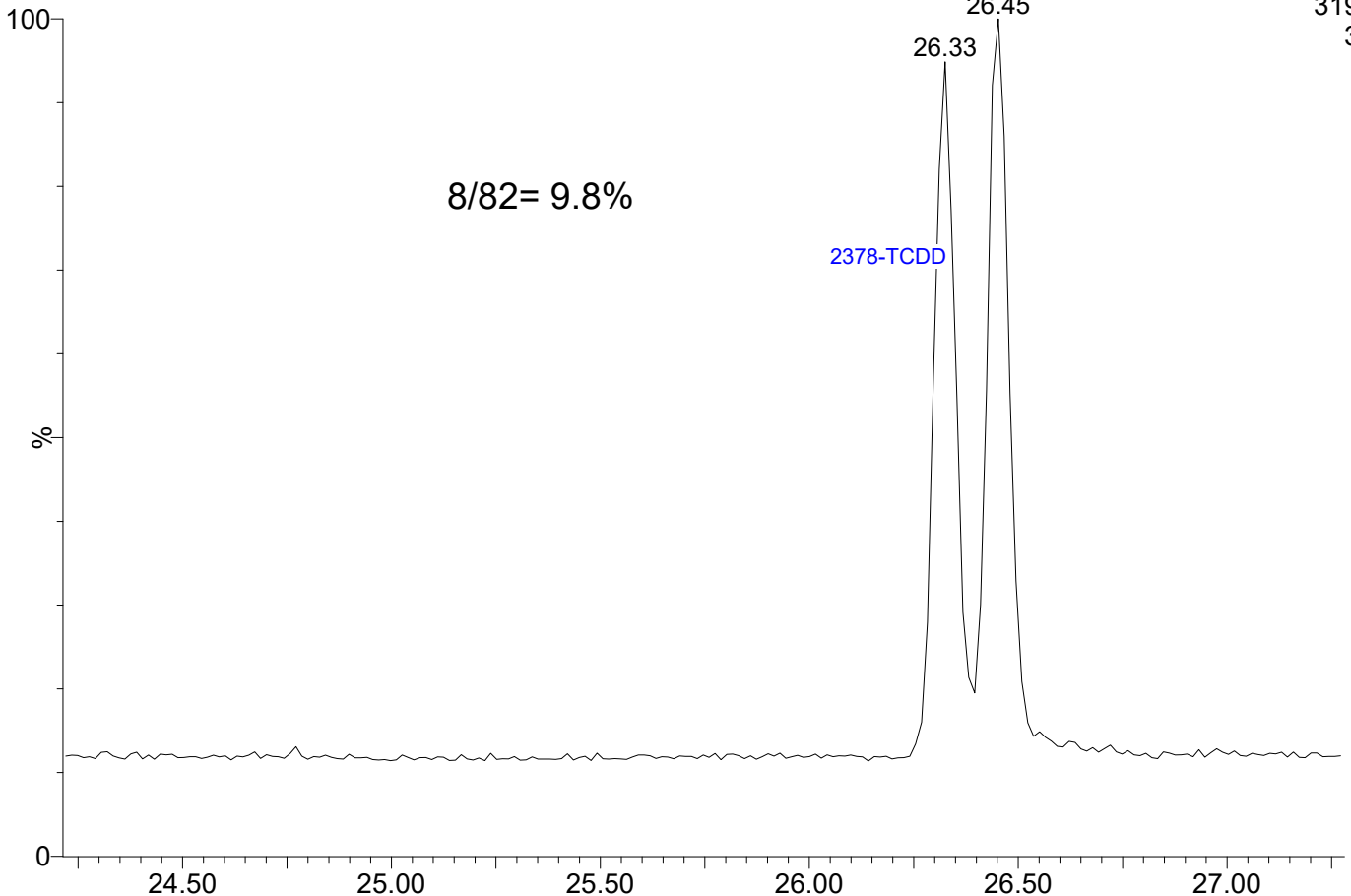


23050930

1: Voltage SIR 14 Channels EI+

319.8965

3.75e5



8/82 = 9.8%

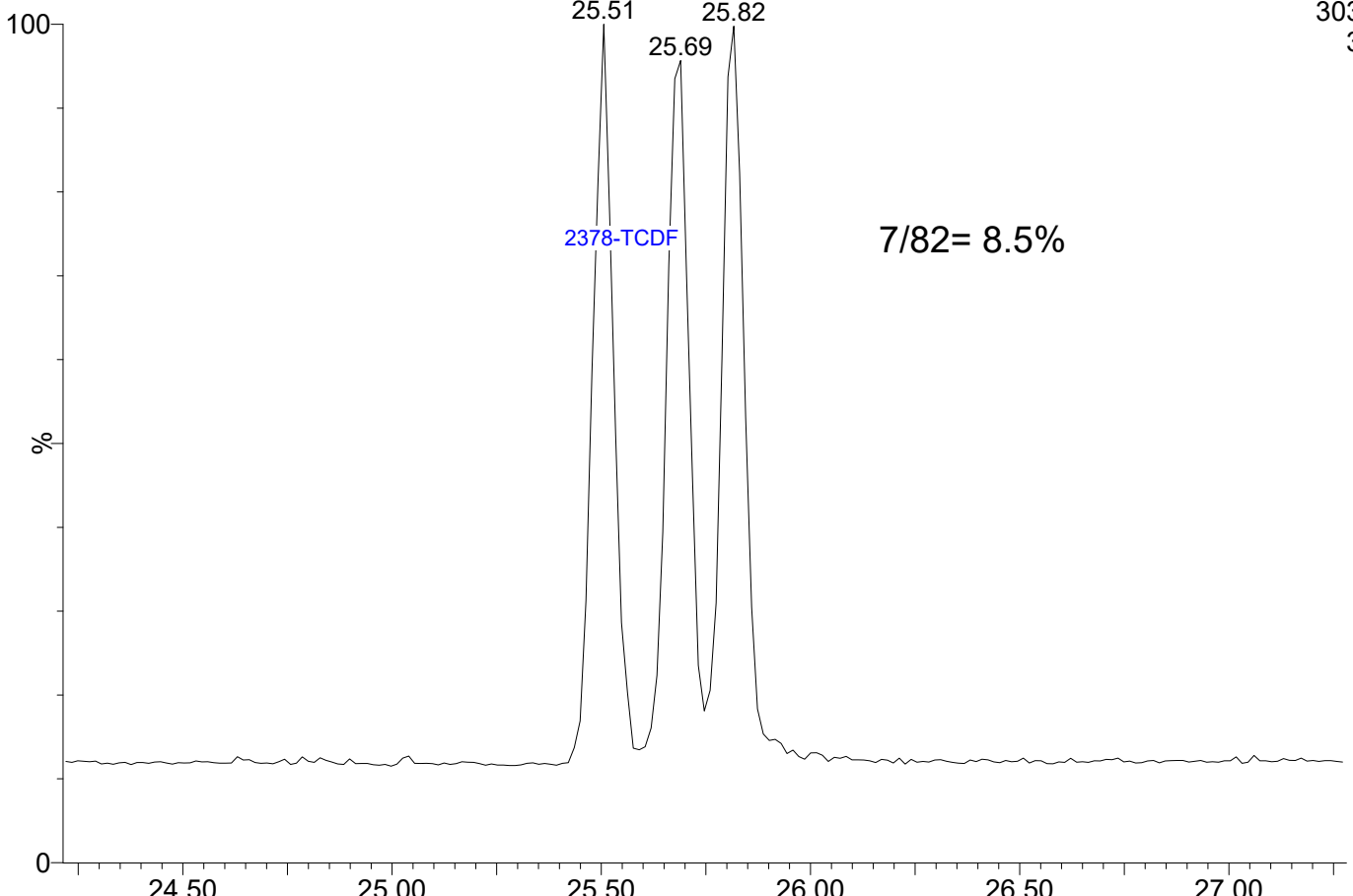
2378-TCDD

23050930

1: Voltage SIR 14 Channels EI+

303.9016

3.78e5



2378-TCDF

7/82 = 8.5%



**CONTINUING CALIBRATION CHECK**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23051114

Calibration Date: 03/03/2023

Sequence: SLE0195

Injection Date: 05/11/23

Lab Sample ID: SLE0195-CCV1

Injection Time: 22:25

Sequence Name: CS3L2

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	9.89	0.7015272	0.6937794		-1.1	+/-16
2,3,7,8-TCDD	A	10.000	9.11	1.1486620	1.0460900		-8.9	+/-22
1,2,3,7,8-PeCDF	A	50.000	55.5	0.6792300	0.7536280		11.0	+/-18
2,3,4,7,8-PeCDF	A	50.000	51.7	0.7861704	0.8123450		3.3	+/-18
1,2,3,7,8-PeCDD	A	50.000	52.4	1.0218450	1.0715310		4.9	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	46.4	1.1660380	1.0813790		-7.3	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	48.4	1.0907410	1.0568320		-3.1	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	49.5	1.1396990	1.1293030		-0.9	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	47.8	1.1370930	1.0872600		-4.4	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	46.7	0.9955689	0.9304375		-6.5	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	44.8	1.0009380	0.8969553		-10.4	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	50.2	0.9071139	0.9100182		0.3	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	47.1	1.0029930	0.9443442		-5.8	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	49.3	0.9531152	0.9399038		-1.4	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	49.4	1.0390130	1.0257910		-1.3	+/-14
OCDF	A	100.00	90.5	0.7778078	0.7041192		-9.5	+/-37
OCDD	A	100.00	97.5	0.9199537	0.8965455		-2.5	+/-21
13C12-2,3,7,8-TCDF	A	100.00	91.8	1.6201960	1.4869295		-8.2	+/-29
13C12-2,3,7,8-TCDD	A	100.00	103	1.1524090	1.1924213		3.5	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	100	1.2404520	1.2454252		0.4	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	108	1.1177860	1.2121989		8.4	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	103	0.8288129	0.8554209		3.2	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	81.9	1.1683050	0.9568487		-18.1	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	72.8	1.3864660	1.0086636		-27.2	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	83.8	1.1292560	0.9458570		-16.2	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	87.2	0.9317541	0.8122633		-12.8	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	94.5	0.9950393	0.9402523		-5.5	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	87.7	1.1566890	1.0148766		-12.3	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	90.5	0.8952017	0.8104256		-9.5	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	95.5	0.7697516	0.7353286		-4.5	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	92.2	0.8401226	0.7748597		-7.8	+/-28
13C12-OCDD	A	200.00	212	0.7674714	0.8138546		6.0	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	8.90	1.2878040	1.1462135		-11.0	

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:27:42 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.704	1.001	3.943e4	5.265e4	0.702	0.749	0.770	846	1087	6.32e5	8.16e5	746.8	751.0	NO	bb	bb	9.890
12378-PeCDF	29.855	1.001	2.552e5	1.637e5	0.679	1.559	1.550	2064	1862	3.98e6	2.52e6	1928.9	1355.7	NO	bb	bb	55.477
23478-PeCDF	31.192	1.001	2.661e5	1.734e5	0.786	1.534	1.550	2064	1862	4.22e6	2.76e6	2044.8	1482.7	NO	bb	bb	51.665
123478-HxCDF	34.813	1.001	3.054e5	2.439e5	1.166	1.252	1.240	1537	2260	4.82e6	3.88e6	3135.3	1714.6	NO	bd	bd	46.370
234678-HxCDF	35.816	1.000	3.163e5	2.508e5	1.140	1.261	1.240	1537	2260	5.05e6	4.11e6	3289.0	1818.9	NO	bd	bb	49.544
123678-HxCDF	34.958	1.001	3.109e5	2.550e5	1.091	1.219	1.240	1537	2260	4.88e6	3.93e6	3178.5	1738.6	NO	db	db	48.446
123789-HxCDF	36.852	1.001	2.540e5	2.149e5	1.137	1.182	1.240	1537	2260	3.83e6	3.12e6	2493.1	1378.5	NO	bb	bd	47.809
1234678-HpCDF	38.690	1.000	2.025e5	2.038e5	1.003	0.993	1.050	1865	1911	3.41e6	3.47e6	1831.4	1815.5	NO	bb	bb	47.076
1234789-HpCDF	40.919	1.000	1.858e5	1.811e5	0.953	1.026	1.050	1865	1911	2.69e6	2.66e6	1444.5	1393.5	NO	bb	bb	49.307
OCDF	45.117	1.006	2.871e5	3.214e5	0.778	0.893	0.890	841	1844	3.58e6	3.85e6	4256.8	2088.4	NO	bb	bb	90.526
2378-TCDD	26.339	1.000	4.869e4	6.265e4	1.149	0.777	0.770	1231	1149	7.45e5	9.95e5	604.9	865.8	NO	bb	bb	9.107
12378-PeCDD	31.449	1.001	2.465e5	1.626e5	1.022	1.516	1.550	1998	1973	3.76e6	2.49e6	1880.5	1260.6	NO	bb	bb	52.431
123478-HxCDD	35.939	1.001	2.573e5	2.072e5	0.996	1.242	1.240	1925	1554	4.21e6	3.31e6	2185.4	2126.8	NO	bd	bd	46.729
123678-HxCDD	36.050	1.000	2.653e5	2.180e5	1.001	1.217	1.240	1925	1554	4.24e6	3.56e6	2201.0	2288.1	NO	db	db	44.806
123789-HxCDD	36.440	1.011	2.618e5	2.105e5	0.907	1.244	1.240	1925	1554	4.12e6	3.39e6	2137.7	2178.9	NO	bb	bb	50.160
1234678-HpCDD	40.184	1.001	2.156e5	2.064e5	1.039	1.044	1.050	1739	1787	3.24e6	3.12e6	1864.7	1744.6	NO	bb	bb	49.364
OCDD	44.869	1.000	3.609e5	4.138e5	0.920	0.872	0.890	1853	3418	4.42e6	5.11e6	2384.1	1494.4	NO	bb	bb	97.456
13C-2378-TCDF	25.675	1.007	5.826e5	7.446e5	1.620	0.782	0.770	1354	1086	8.78e6	1.11e7	6489.3	10262.4	NO	bb	bd	91.775
13C-12378-PeCDF	29.833	1.170	6.721e5	4.395e5	1.240	1.529	1.550	2915	2408	1.05e7	6.89e6	3606.4	2861.2	NO	bb	bb	100.401
13C-23478-PeCDF	31.170	1.222	6.532e5	4.287e5	1.118	1.524	1.550	2915	2408	1.02e7	6.71e6	3502.9	2786.5	NO	bb	bb	108.446
13C-123478-HxCDF	34.791	0.955	3.455e5	6.705e5	1.168	0.515	0.510	2305	1605	5.31e6	1.04e7	2305.0	6502.7	NO	bd	bd	81.901
13C-123678-HxCDF	34.936	0.959	3.651e5	7.059e5	1.386	0.517	0.510	2305	1605	5.73e6	1.09e7	2487.9	6801.5	NO	db	db	72.751
13C-234678-HxCDF	35.805	0.983	3.397e5	6.646e5	1.129	0.511	0.510	2305	1605	5.51e6	1.07e7	2392.1	6666.0	NO	bb	bb	83.759
13C-123789-HxCDF	36.830	1.011	2.859e5	5.765e5	0.932	0.496	0.510	2305	1605	4.67e6	9.42e6	2027.7	5867.7	NO	bb	bb	87.176
13C-1234678-HpCDF	38.679	1.062	2.664e5	5.941e5	0.895	0.448	0.440	1450	2925	4.43e6	9.89e6	3055.5	3380.9	NO	bb	bb	90.530
13C-1234789-HpCDF	40.896	1.123	2.414e5	5.394e5	0.770	0.447	0.440	1450	2925	3.52e6	7.78e6	2424.7	2659.0	NO	bb	bb	95.528
13C-1234-TCDD	25.506	0.000	3.961e5	4.964e5	1.000	0.798	0.770	1622	1163	6.23e6	7.81e6	3841.0	6718.0	NO	bb	bb	100.000
13C-2378-TCDD	26.325	1.032	4.670e5	5.974e5	1.152	0.782	0.770	1622	1163	7.05e6	8.99e6	4346.9	7734.2	NO	bb	bb	103.472
13C-12378-PeCDD	31.427	1.232	4.743e5	2.892e5	0.829	1.640	1.550	1585	1003	7.20e6	4.46e6	4543.6	4441.4	NO	bd	bd	103.210
13C-123478-HxCDD	35.917	0.986	5.658e5	4.326e5	0.995	1.308	1.240	1193	2088	9.23e6	7.31e6	7735.6	3501.5	NO	bd	bd	94.494
13C-123678-HxCDD	36.039	0.990	6.020e5	4.756e5	1.157	1.266	1.240	1193	2088	9.23e6	7.27e6	7741.8	3482.1	NO	db	db	87.740
13C-1234678-HpCDD	40.161	1.103	4.118e5	4.110e5	0.840	1.002	1.050	1496	2023	6.31e6	5.98e6	4216.8	2957.2	NO	bb	bd	92.232
13C-OCDD	44.860	1.232	8.196e5	9.087e5	0.767	0.902	0.890	2838	2920	9.67e6	1.07e7	3406.9	3653.8	NO	bb	bb	212.087
13C-123789-HxCDD	36.418	0.000	5.938e5	4.680e5	1.000	1.269	1.240	1193	2088	9.56e6	7.50e6	8017.7	3594.6	NO	bb	bb	100.000
37CL-2378-TCDD	26.339	1.033	1.023e5		1.288			1077		1.60e6		1486.7			bd		8.901

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.201	0.865	4.511e4	5.963e4	0.802	0.757	0.770	846	1087	7.38e5	9.49e5	871.6	873.3	NO	bb	bb	9.846
1289-TCDF	27.201	1.059	3.768e4	4.959e4	0.678	0.760	0.770	846	1087	5.55e5	7.49e5	655.8	689.6	NO	db	bb	9.698
13468-PECDF	27.045	0.907	3.968e5	2.640e5	1.246	1.503	1.550	727	685	6.10e6	4.11e6	8392.3	5994.9	NO	bb	bb	47.696
12389-PECDF	32.229	1.080	2.636e5	1.701e5	0.496	1.550	1.550	2064	1862	4.02e6	2.61e6	1947.4	1399.4	NO	bb	bb	78.602
123468-HXCDF	33.142	0.953	2.968e5	2.368e5	1.169	1.254	1.240	1537	2260	4.52e6	3.64e6	2939.4	1609.2	NO	bb	bb	44.924
1368-TCDD	23.472	0.892	4.403e4	5.609e4	1.015	0.785	0.770	1231	1149	7.19e5	9.11e5	584.2	792.8	NO	bd	bb	9.264
1289-TCDD	26.933	1.023	4.341e4	5.324e4	0.909	0.815	0.770	1231	1149	6.51e5	8.05e5	528.4	700.6	NO	bd	bb	9.993
12479-PECDD	28.719	0.914	3.913e5	2.521e5	2.301	1.552	1.550	1998	1973	3.86e6	2.50e6	1930.0	1268.7	NO	bb	bb	36.618
12389-PECDD	31.839	1.013	2.879e5	1.841e5	1.184	1.564	1.550	1998	1973	4.45e6	2.88e6	2227.4	1459.3	NO	bb	bb	52.224
124679-HXCDD	33.922	0.945	2.555e5	2.118e5	1.115	1.206	1.240	1925	1554	4.12e6	3.33e6	2140.0	2139.2	NO	bb	bb	41.960
1234679-HPCDD	39.136	0.975	2.334e5	2.235e5	1.137	1.044	1.050	1739	1787	3.95e6	3.82e6	2270.3	2136.3	NO	bb	bb	48.853
Total-tetrafurans			1.226e5		0.727			846		1.93e6							29.530
Total-penta1			3.968e5					727		6.10e6							47.696
Total-pentafurans			8.247e5		0.654			2064		1.28e7							194.900
Total-hexafurans			1.483e6		1.141			1537		2.31e7							237.092
Total-heptafurans			3.883e5		0.978			1865		6.11e6							96.383
Total-Furans			3.503e6		0.922			846		5.37e7							696.128
Total-tetradoxins			2.287e5		1.024			1231		3.19e6							47.878
Total-pentadoxins			9.275e5		1.502			1998		1.21e7							141.536
Total-hexadoxins			1.040e6		1.005			1925		1.67e7							183.655
Total-heptadoxins			4.490e5		1.088			1739		7.19e6							98.216
Total-Dioxins			3.006e6		1.130			1231		4.36e7							568.741
Total-TEQ			6.509e6					1231		9.72e7							1264.869
FUNCTION1 PFK			0.000e0					308315		0.00e0							
FUNCTION2 PFK			1.243e5					140186		3.38e6							0.000
FUNCTION3 PFK			0.000e0					302811		0.00e0							
FUNCTION4 PFK			3.227e5					223644		7.51e6							
FUNCTION5 PFK			1.043e5					133923		3.43e6							
FUNCTION1 HXCD...			4.233e2					712		7.20e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			7.116e2					668		1.16e4							0.000
FUNCTION3 OCDPE			0.000e0					626		0.00e0							
FUNCTION4 NCDPE			1.560e2					740		3.08e3							0.000
FUNCTION5 DCDPE			8.402e1					783		1.94e3							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:27:42 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

**TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.20	3.768e4	4.959e4	0.678	0.76	0.77	655.8	YES	NO	db	bb	9.698
2	2378-TCDF	25.70	3.943e4	5.265e4	0.702	0.75	0.77	746.8	YES	NO	bb	bb	9.890
3	Total-tetrafurans	24.79	4.007e2	5.274e2	0.727	0.76	0.77	7.5	YES	NO	bb	bb	0.096
4	1368-TCDF	22.20	4.511e4	5.963e4	0.802	0.76	0.77	871.6	YES	NO	bb	bb	9.846

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.05	3.968e5	2.640e5	1.246	1.50	1.55	8392.3	YES	NO	bb	bb	47.696

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDF	32.23	2.636e5	1.701e5	0.496	1.55	1.55	1947.4	YES	NO	bb	bb	78.602
2	23478-PeCDF	31.19	2.661e5	1.734e5	0.786	1.53	1.55	2044.8	YES	NO	bb	bb	51.665
3	12378-PeCDF	29.86	2.552e5	1.637e5	0.679	1.56	1.55	1928.9	YES	NO	bb	bb	55.477
4	Total-pentafurans	28.71	3.978e4	2.590e4	0.654	1.54	1.55	301.5	YES	NO	bb	bb	9.157

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123478-HxCDF	34.81	3.054e5	2.439e5	1.166	1.25	1.24	3135.3	YES	NO	bd	bd	46.370
2	123468-HxCDF	33.14	2.968e5	2.368e5	1.169	1.25	1.24	2939.4	YES	NO	bb	bb	44.924
3	123789-HxCDF	36.85	2.540e5	2.149e5	1.137	1.18	1.24	2493.1	YES	NO	bb	bd	47.809
4	234678-HxCDF	35.82	3.163e5	2.508e5	1.140	1.26	1.24	3289.0	YES	NO	bd	bb	49.544
5	123678-HxCDF	34.96	3.109e5	2.550e5	1.091	1.22	1.24	3178.5	YES	NO	db	db	48.446

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.92	1.858e5	1.811e5	0.953	1.03	1.05	1444.5	YES	NO	bb	bb	49.307
2	1234678-HpCDF	38.69	2.025e5	2.038e5	1.003	0.99	1.05	1831.4	YES	NO	bb	bb	47.076

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
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**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.20	3.768e4	4.959e4	0.678	0.76	0.77	655.8	YES	NO	db	bb	9.698
2	2378-TCDF	25.70	3.943e4	5.265e4	0.702	0.75	0.77	746.8	YES	NO	bb	bb	9.890
3	Total-tetrafurans	24.79	4.007e2	5.274e2	0.727	0.76	0.77	7.5	YES	NO	bb	bb	0.096
4	1368-TCDF	22.20	4.511e4	5.963e4	0.802	0.76	0.77	871.6	YES	NO	bb	bb	9.846
5	12389-PECDF	32.23	2.636e5	1.701e5	0.496	1.55	1.55	1947.4	YES	NO	bb	bb	78.602
6	23478-PeCDF	31.19	2.661e5	1.734e5	0.786	1.53	1.55	2044.8	YES	NO	bb	bb	51.665
7	12378-PeCDF	29.86	2.552e5	1.637e5	0.679	1.56	1.55	1928.9	YES	NO	bb	bb	55.477
8	Total-pentafurans	28.71	3.978e4	2.590e4	0.654	1.54	1.55	301.5	YES	NO	bb	bb	9.157
9	123478-HxCDF	34.81	3.054e5	2.439e5	1.166	1.25	1.24	3135.3	YES	NO	bd	bd	46.370
10	123468-HxCDF	33.14	2.968e5	2.368e5	1.169	1.25	1.24	2939.4	YES	NO	bb	bb	44.924
11	123789-HxCDF	36.85	2.540e5	2.149e5	1.137	1.18	1.24	2493.1	YES	NO	bb	bd	47.809
12	234678-HxCDF	35.82	3.163e5	2.508e5	1.140	1.26	1.24	3289.0	YES	NO	bd	bb	49.544
13	123678-HxCDF	34.96	3.109e5	2.550e5	1.091	1.22	1.24	3178.5	YES	NO	db	db	48.446
14	1234789-HpCDF	40.92	1.858e5	1.811e5	0.953	1.03	1.05	1444.5	YES	NO	bb	bb	49.307
15	1234678-HpCDF	38.69	2.025e5	2.038e5	1.003	0.99	1.05	1831.4	YES	NO	bb	bb	47.076
16	OCDF	45.12	2.871e5	3.214e5	0.778	0.89	0.89	4256.8	YES	NO	bb	bb	90.526
17	13468-PECDF	27.05	3.968e5	2.640e5	1.246	1.50	1.55	8392.3	YES	NO	bb	bb	47.696

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	26.93	4.341e4	5.324e4	0.909	0.82	0.77	528.4	YES	NO	bd	bb	9.993
2	2378-TCDD	26.34	4.869e4	6.265e4	1.149	0.78	0.77	604.9	YES	NO	bb	bb	9.107
3	Total-tetradioxins	26.01	7.023e4	9.111e4	1.024	0.77	0.77	600.5	YES	NO	bb	bd	14.800
4	Total-tetradioxins	25.53	2.230e4	2.908e4	1.024	0.77	0.77	275.6	YES	NO	bd	bb	4.714
5	1368-TCDD	23.47	4.403e4	5.609e4	1.015	0.78	0.77	584.2	YES	NO	bd	bb	9.264

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.84	2.879e5	1.841e5	1.184	1.56	1.55	2227.4	YES	NO	bb	bb	52.224
2	12378-PeCDD	31.45	2.465e5	1.626e5	1.022	1.52	1.55	1880.5	YES	NO	bb	bb	52.431
3	Total-pentadioxins	30.79	1.039e3	6.751e2	1.502	1.54	1.55	7.7	YES	NO	bb	bb	0.149
4	Total-pentadioxins	29.86	7.814e2	5.187e2	1.502	1.51	1.55	5.7	YES	NO	bb	bb	0.113
5	12479-PECDD	28.72	3.913e5	2.521e5	2.301	1.55	1.55	1930.0	YES	NO	bb	bb	36.618

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#### HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123678-HxCDD	36.05	2.653e5	2.180e5	1.001	1.22	1.24	2201.0	YES	NO	db	db	44.806
2	123478-HxCDD	35.94	2.573e5	2.072e5	0.996	1.24	1.24	2185.4	YES	NO	bd	bd	46.729
3	124679-HxCDD	33.92	2.555e5	2.118e5	1.115	1.21	1.24	2140.0	YES	NO	bb	bb	41.960
4	123789-HxCDD	36.44	2.618e5	2.105e5	0.907	1.24	1.24	2137.7	YES	NO	bb	bb	50.160

#### HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.18	2.156e5	2.064e5	1.039	1.04	1.05	1864.7	YES	NO	bb	bb	49.364
2	1234679-HPCDD	39.14	2.334e5	2.235e5	1.137	1.04	1.05	2270.3	YES	NO	bb	bb	48.853

#### Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	26.93	4.341e4	5.324e4	0.909	0.82	0.77	528.4	YES	NO	bd	bb	9.993
2	2378-TCDD	26.34	4.869e4	6.265e4	1.149	0.78	0.77	604.9	YES	NO	bb	bb	9.107
3	Total-tetradoxins	26.01	7.023e4	9.111e4	1.024	0.77	0.77	600.5	YES	NO	bb	bd	14.800
4	Total-tetradoxins	25.53	2.230e4	2.908e4	1.024	0.77	0.77	275.6	YES	NO	bd	bb	4.714
5	1368-TCDD	23.47	4.403e4	5.609e4	1.015	0.78	0.77	584.2	YES	NO	bd	bb	9.264
6	12389-PECDD	31.84	2.879e5	1.841e5	1.184	1.56	1.55	2227.4	YES	NO	bb	bb	52.224
7	12378-PeCDD	31.45	2.465e5	1.626e5	1.022	1.52	1.55	1880.5	YES	NO	bb	bb	52.431
8	Total-pentadoxins	30.79	1.039e3	6.751e2	1.502	1.54	1.55	7.7	YES	NO	bb	bb	0.149
9	Total-pentadoxins	29.86	7.814e2	5.187e2	1.502	1.51	1.55	5.7	YES	NO	bb	bb	0.113
10	12479-PECDD	28.72	3.913e5	2.521e5	2.301	1.55	1.55	1930.0	YES	NO	bb	bb	36.618
11	123678-HxCDD	36.05	2.653e5	2.180e5	1.001	1.22	1.24	2201.0	YES	NO	db	db	44.806
12	123478-HxCDD	35.94	2.573e5	2.072e5	0.996	1.24	1.24	2185.4	YES	NO	bd	bd	46.729
13	124679-HxCDD	33.92	2.555e5	2.118e5	1.115	1.21	1.24	2140.0	YES	NO	bb	bb	41.960
14	123789-HxCDD	36.44	2.618e5	2.105e5	0.907	1.24	1.24	2137.7	YES	NO	bb	bb	50.160
15	1234678-HpCDD	40.18	2.156e5	2.064e5	1.039	1.04	1.05	1864.7	YES	NO	bb	bb	49.364
16	1234679-HPCDD	39.14	2.334e5	2.235e5	1.137	1.04	1.05	2270.3	YES	NO	bb	bb	48.853
17	OCDD	44.87	3.609e5	4.138e5	0.920	0.87	0.89	2384.1	YES	NO	bb	bb	97.456



## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:27:42 Pacific Daylight Time

ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.20	3.768e4	4.959e4	0.678	0.76	0.77	655.8	YES	NO	db	bb	9.698
2	2378-TCDF	25.70	3.943e4	5.265e4	0.702	0.75	0.77	746.8	YES	NO	bb	bb	9.890
3	Total-tetrafurans	24.79	4.007e2	5.274e2	0.727	0.76	0.77	7.5	YES	NO	bb	bb	0.096
4	1368-TCDF	22.20	4.511e4	5.963e4	0.802	0.76	0.77	871.6	YES	NO	bb	bb	9.846
5	12389-PECDF	32.23	2.636e5	1.701e5	0.496	1.55	1.55	1947.4	YES	NO	bb	bb	78.602
6	23478-PeCDF	31.19	2.661e5	1.734e5	0.786	1.53	1.55	2044.8	YES	NO	bb	bb	51.665
7	12378-PeCDF	29.86	2.552e5	1.637e5	0.679	1.56	1.55	1928.9	YES	NO	bb	bb	55.477
8	Total-pentafurans	28.71	3.978e4	2.590e4	0.654	1.54	1.55	301.5	YES	NO	bb	bb	9.157
9	123478-HxCDF	34.81	3.054e5	2.439e5	1.166	1.25	1.24	3135.3	YES	NO	bd	bd	46.370
10	123468-HXCDF	33.14	2.968e5	2.368e5	1.169	1.25	1.24	2939.4	YES	NO	bb	bb	44.924
11	123789-HxCDF	36.85	2.540e5	2.149e5	1.137	1.18	1.24	2493.1	YES	NO	bb	bd	47.809
12	234678-HxCDF	35.82	3.163e5	2.508e5	1.140	1.26	1.24	3289.0	YES	NO	bd	bb	49.544
13	123678-HxCDF	34.96	3.109e5	2.550e5	1.091	1.22	1.24	3178.5	YES	NO	db	db	48.446
14	1234789-HpCDF	40.92	1.858e5	1.811e5	0.953	1.03	1.05	1444.5	YES	NO	bb	bb	49.307
15	1234678-HpCDF	38.69	2.025e5	2.038e5	1.003	0.99	1.05	1831.4	YES	NO	bb	bb	47.076
16	OCDF	45.12	2.871e5	3.214e5	0.778	0.89	0.89	4256.8	YES	NO	bb	bb	90.526
17	13468-PECDF	27.05	3.968e5	2.640e5	1.246	1.50	1.55	8392.3	YES	NO	bb	bb	47.696
18	1289-TCDD	26.93	4.341e4	5.324e4	0.909	0.82	0.77	528.4	YES	NO	bd	bb	9.993
19	2378-TCDD	26.34	4.869e4	6.265e4	1.149	0.78	0.77	604.9	YES	NO	bb	bb	9.107
20	Total-tetradiioxins	26.01	7.023e4	9.111e4	1.024	0.77	0.77	600.5	YES	NO	bb	bd	14.800
21	Total-tetradiioxins	25.53	2.230e4	2.908e4	1.024	0.77	0.77	275.6	YES	NO	bd	bb	4.714
22	1368-TCDD	23.47	4.403e4	5.609e4	1.015	0.78	0.77	584.2	YES	NO	bd	bb	9.264
23	12389-PECDD	31.84	2.879e5	1.841e5	1.184	1.56	1.55	2227.4	YES	NO	bb	bb	52.224
24	12378-PeCDD	31.45	2.465e5	1.626e5	1.022	1.52	1.55	1880.5	YES	NO	bb	bb	52.431
25	Total-pentadiioxins	30.79	1.039e3	6.751e2	1.502	1.54	1.55	7.7	YES	NO	bb	bb	0.149
26	Total-pentadiioxins	29.86	7.814e2	5.187e2	1.502	1.51	1.55	5.7	YES	NO	bb	bb	0.113
27	12479-PECDD	28.72	3.913e5	2.521e5	2.301	1.55	1.55	1930.0	YES	NO	bb	bb	36.618
28	123678-HxCDD	36.05	2.653e5	2.180e5	1.001	1.22	1.24	2201.0	YES	NO	db	db	44.806
29	123478-HxCDD	35.94	2.573e5	2.072e5	0.996	1.24	1.24	2185.4	YES	NO	bd	bd	46.729
30	124679-HXCDD	33.92	2.555e5	2.118e5	1.115	1.21	1.24	2140.0	YES	NO	bb	bb	41.960
31	123789-HxCDD	36.44	2.618e5	2.105e5	0.907	1.24	1.24	2137.7	YES	NO	bb	bb	50.160
32	1234678-HpCDD	40.18	2.156e5	2.064e5	1.039	1.04	1.05	1864.7	YES	NO	bb	bb	49.364
33	1234679-HPCDD	39.14	2.334e5	2.235e5	1.137	1.04	1.05	2270.3	YES	NO	bb	bb	48.853
34	OCDD	44.87	3.609e5	4.138e5	0.920	0.87	0.89	2384.1	YES	NO	bb	bb	97.456

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:27:42 Pacific Daylight Time

**ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk**

**PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.07	7.564e3					1.5	NO		bb		0.000
2	FUNCTION2 PFK	31.98	1.202e4					1.5	NO		bb		0.000
3	FUNCTION2 PFK	31.75	2.731e3					0.5	NO		bb		0.000
4	FUNCTION2 PFK	30.93	3.537e3					1.1	NO		bb		0.000
5	FUNCTION2 PFK	30.00	3.482e3					1.1	NO		bb		0.000
6	FUNCTION2 PFK	29.81	4.030e3					1.2	NO		bb		0.000
7	FUNCTION2 PFK	29.41	1.898e3					0.7	NO		bb		0.000
8	FUNCTION2 PFK	29.02	2.572e3					1.0	NO		bb		0.000
9	FUNCTION2 PFK	28.96	2.030e3					0.7	NO		bb		0.000
10	FUNCTION2 PFK	28.82	4.472e3					1.5	NO		bb		0.000
11	FUNCTION2 PFK	28.36	1.346e4					1.7	NO		db		0.000
12	FUNCTION2 PFK	28.26	1.399e4					2.3	NO		dd		0.000
13	FUNCTION2 PFK	28.23	6.670e3					1.8	NO		dd		0.000
14	FUNCTION2 PFK	28.12	2.958e4					2.7	NO		dd		0.000
15	FUNCTION2 PFK	28.07	2.023e3					1.0	NO		bd		0.000
16	FUNCTION2 PFK	32.72	3.888e3					0.8	NO		bb		0.000
17	FUNCTION2 PFK	32.67	4.188e3					1.1	NO		bb		0.000
18	FUNCTION2 PFK	32.63	2.029e3					0.8	NO		bb		0.000
19	FUNCTION2 PFK	32.42	4.165e3					1.2	NO		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:27:42 Pacific Daylight Time

**ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk**

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.14	2.470e3					0.6	NO		bb		
2	FUNCTION4 PFK	39.96	4.167e4					2.6	NO		bb		
3	FUNCTION4 PFK	39.58	4.875e3					1.0	NO		bb		
4	FUNCTION4 PFK	39.20	3.848e3					0.8	NO		bb		
5	FUNCTION4 PFK	38.97	7.177e3					1.3	NO		bb		
6	FUNCTION4 PFK	38.56	2.634e4					1.7	NO		bb		
7	FUNCTION4 PFK	38.21	2.835e4					2.0	NO		db		
8	FUNCTION4 PFK	38.13	2.367e4					2.3	NO		bd		
9	FUNCTION4 PFK	37.98	2.169e3					0.9	NO		bb		
10	FUNCTION4 PFK	37.90	1.207e3					0.5	NO		bb		
11	FUNCTION4 PFK	42.91	1.116e4					1.0	NO		bb		
12	FUNCTION4 PFK	42.78	1.841e3					0.6	NO		bb		
13	FUNCTION4 PFK	42.63	8.757e3					1.4	NO		db		
14	FUNCTION4 PFK	42.59	7.912e3					1.3	NO		bd		
15	FUNCTION4 PFK	42.53	7.571e3					1.4	NO		bb		
16	FUNCTION4 PFK	42.29	8.654e3					1.2	NO		bb		
17	FUNCTION4 PFK	42.19	2.999e3					0.7	NO		bb		
18	FUNCTION4 PFK	41.81	8.338e3					0.8	NO		bb		
19	FUNCTION4 PFK	41.28	3.344e3					0.8	NO		db		
20	FUNCTION4 PFK	41.21	8.322e3					1.0	NO		bd		
21	FUNCTION4 PFK	41.10	2.128e4					1.8	NO		db		
22	FUNCTION4 PFK	41.05	1.076e4					1.1	NO		dd		
23	FUNCTION4 PFK	40.99	7.785e3					1.5	NO		bd		
24	FUNCTION4 PFK	40.76	2.921e4					1.9	NO		bb		
25	FUNCTION4 PFK	40.64	1.837e4					1.8	NO		bb		
26	FUNCTION4 PFK	40.45	2.460e4					1.6	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:27:42 Pacific Daylight Time

**ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk**

**PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.97	9.096e3					1.2	NO		bd		
2	FUNCTION5 PFK	44.81	7.144e3					1.6	NO		bb		
3	FUNCTION5 PFK	44.62	2.241e3					0.8	NO		db		
4	FUNCTION5 PFK	44.59	2.871e3					1.0	NO		bd		
5	FUNCTION5 PFK	44.34	2.273e3					0.8	NO		bb		
6	FUNCTION5 PFK	44.14	4.242e3					1.1	NO		db		
7	FUNCTION5 PFK	44.07	4.507e3					1.3	NO		bd		
8	FUNCTION5 PFK	43.93	9.348e3					1.4	NO		db		
9	FUNCTION5 PFK	43.85	7.736e3					1.4	NO		bd		
10	FUNCTION5 PFK	43.76	6.467e2					0.5	NO		bb		
11	FUNCTION5 PFK	43.73	2.082e3					0.8	NO		bb		
12	FUNCTION5 PFK	43.65	7.860e2					0.5	NO		bb		
13	FUNCTION5 PFK	43.55	2.335e3					1.0	NO		bb		
14	FUNCTION5 PFK	43.39	4.652e3					0.2	NO		bb		
15	FUNCTION5 PFK	43.29	5.541e3					2.0	NO		bb		
16	FUNCTION5 PFK	45.69	3.174e3					1.2	NO		db		
17	FUNCTION5 PFK	45.59	1.359e4					2.2	NO		bd		
18	FUNCTION5 PFK	45.50	2.107e3					0.9	NO		bb		
19	FUNCTION5 PFK	45.36	2.613e3					1.1	NO		bb		
20	FUNCTION5 PFK	45.24	4.693e3					1.1	NO		db		
21	FUNCTION5 PFK	45.19	4.918e3					1.6	NO		bd		
22	FUNCTION5 PFK	45.12	2.892e3					0.7	NO		bb		
23	FUNCTION5 PFK	45.02	4.782e3					1.2	NO		db		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.06	1.063e2					2.3	NO		bb		0.000
2	FUNCTION1 HXCD...	26.31	8.217e1					2.7	NO		bb		0.000
3	FUNCTION1 HXCD...	25.70	8.935e1					2.3	NO		bb		0.000
4	FUNCTION1 HXCD...	25.51	1.455e2					2.8	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld  
 Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time  
 Printed: Friday, May 12, 2023 13:27:42 Pacific Daylight Time

**ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk**

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	28.74	1.059e2					2.0	NO		bb		0.000
2	FUNCTION2 HPCD...	28.50	8.412e1					2.0	NO		bb		0.000
3	FUNCTION2 HPCD...	32.07	8.121e1					1.7	NO		bb		0.000
4	FUNCTION2 HPCD...	31.43	8.993e1					2.5	NO		bb		0.000
5	FUNCTION2 HPCD...	31.07	2.767e2					7.0	YES		bb		0.000
6	FUNCTION2 HPCD...	29.57	7.374e1					2.1	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	41.04	7.544e1					2.0	NO		bb		0.000
2	FUNCTION4 NCDPE	38.71	8.055e1					2.1	NO		bb		0.000

**ETHERS6**

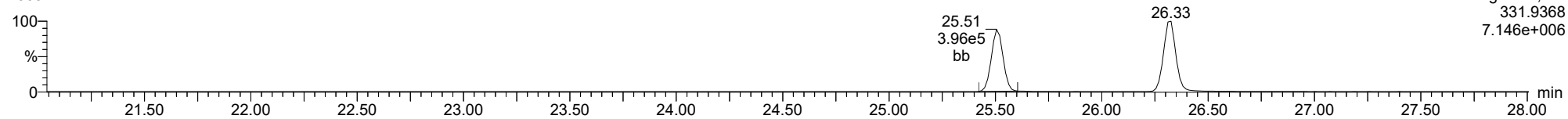
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.86	8.402e1					2.5	NO		bb		0.000

Method: T:\Autospec\Methods\Dioxin230511.mdb 12 May 2023 08:38:16  
Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

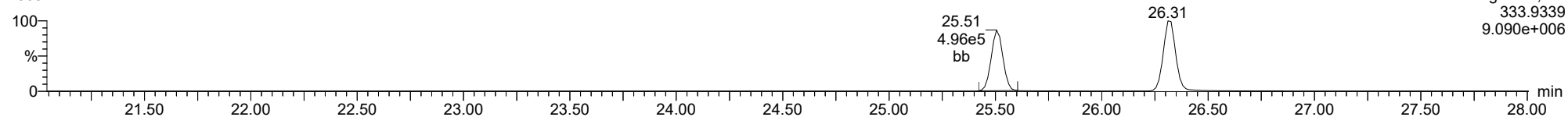
**13C-1234-TCDD**

23051114



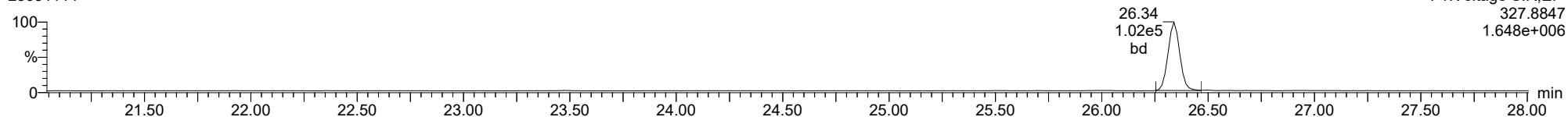
**13C-1234-TCDD**

23051114



**37CL-2378-TCDD**

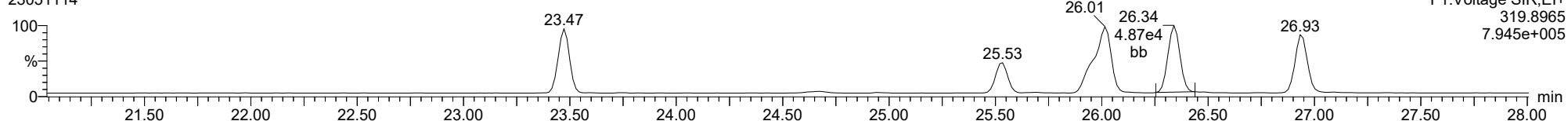
23051114



ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

**2378-TCDD**

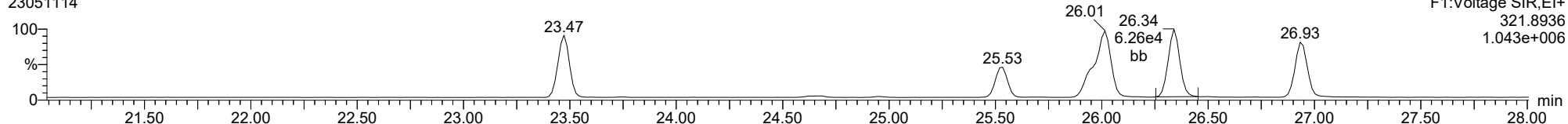
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F1:Voltage SIR,EI+  
319.8965  
7.945e+005

**2378-TCDD**

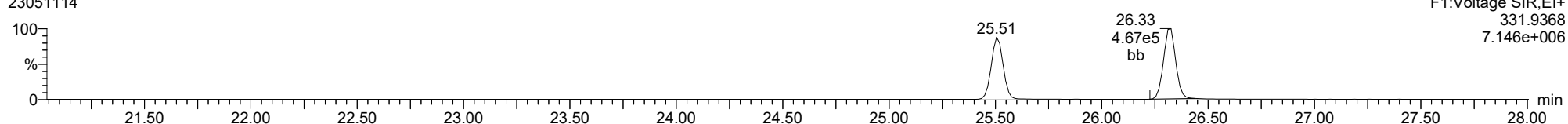
23051114



F1:Voltage SIR,EI+  
321.8936  
1.043e+006

**13C-2378-TCDD**

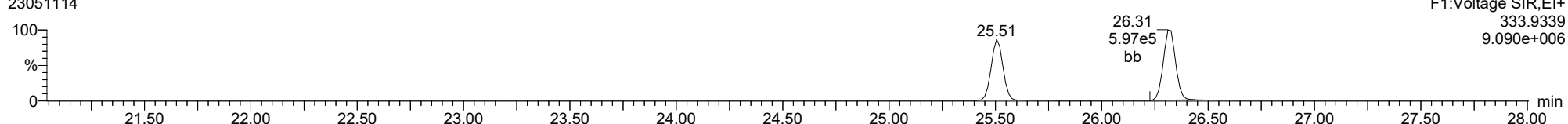
23051114



F1:Voltage SIR,EI+  
331.9368  
7.146e+006

**13C-2378-TCDD**

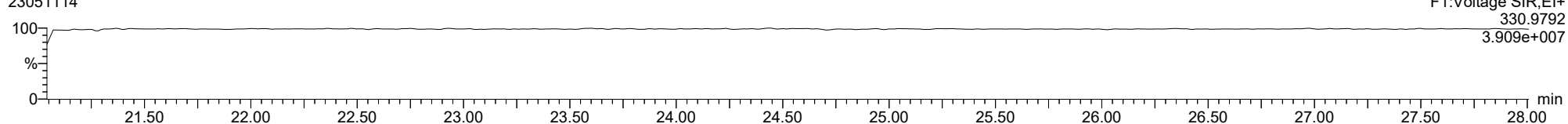
23051114



F1:Voltage SIR,EI+  
333.9339  
9.090e+006

**FUNCTION1 PFK**

23051114

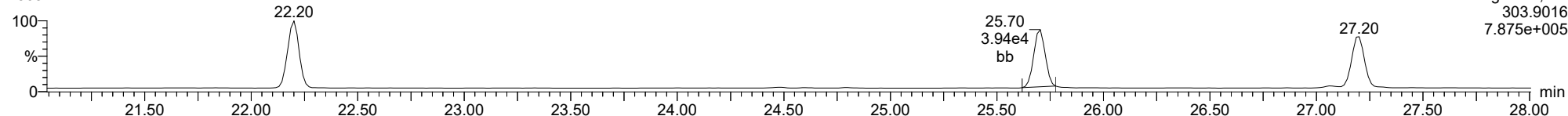


F1:Voltage SIR,EI+  
330.9792  
3.909e+007

ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

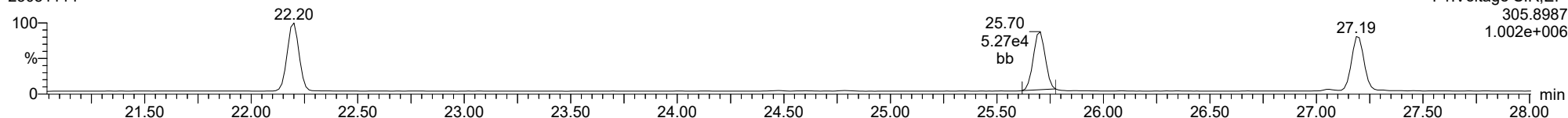
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23051114



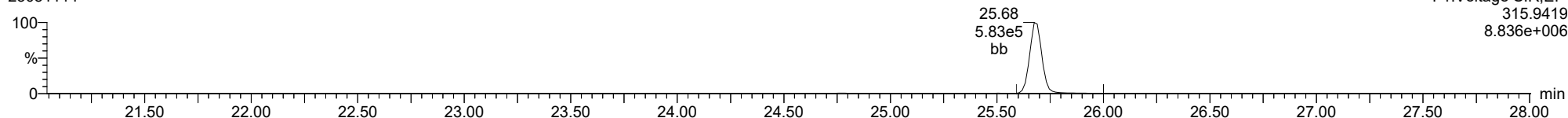
**2378-TCDF**

23051114



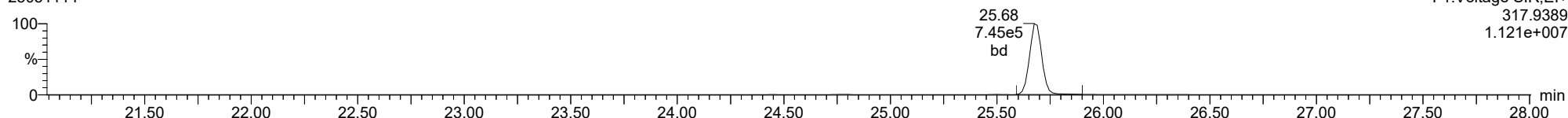
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23051114



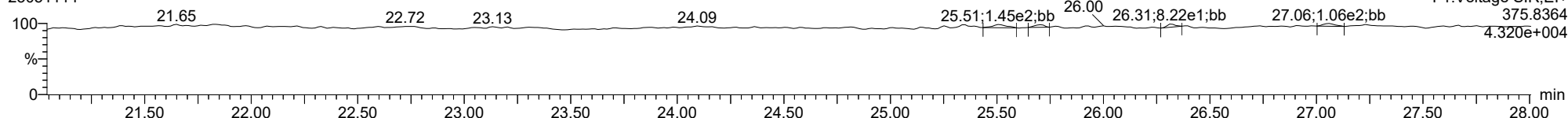
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23051114



**FUNCTION1 HXCDFE**

23051114

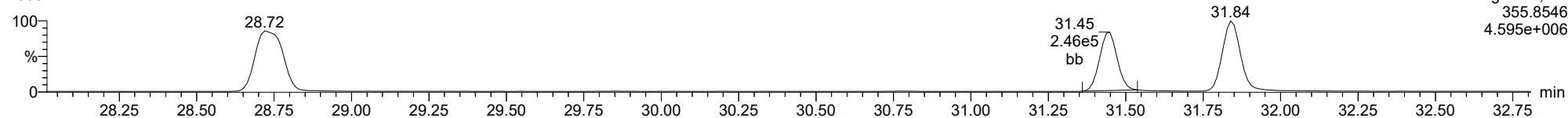




ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

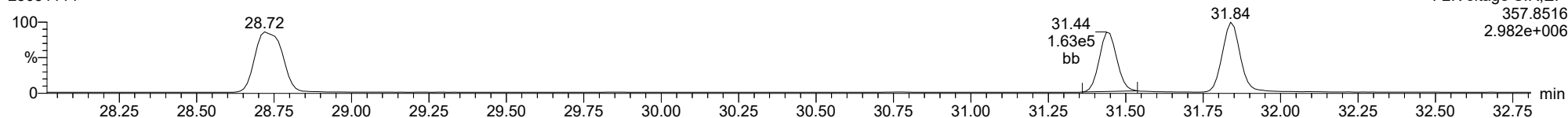
**12378-PeCDD**

23051114



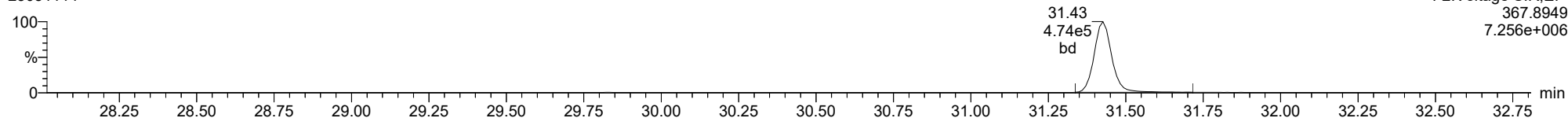
**12378-PeCDD**

23051114



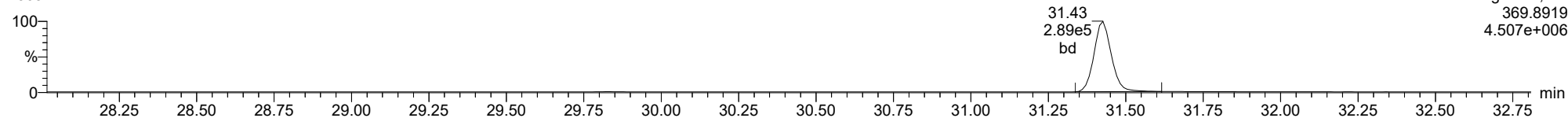
**13C-12378-PeCDD**

23051114



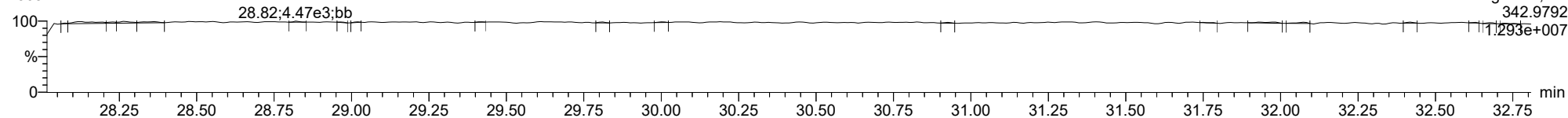
**13C-12378-PeCDD**

23051114



**FUNCTION2 PFK**

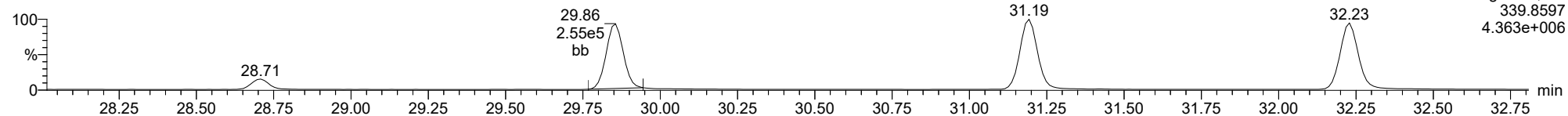
23051114



ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

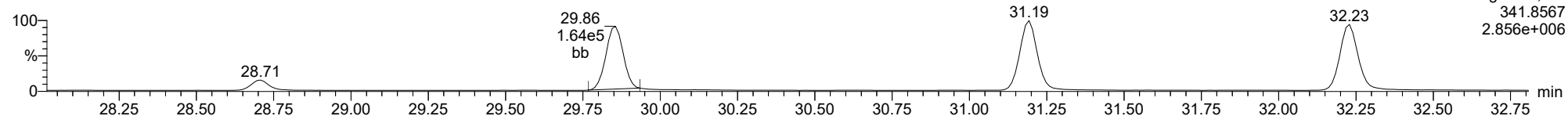
**12378-PeCDF**

23051114



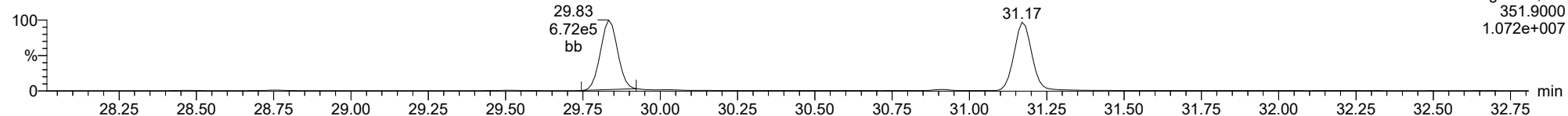
**12378-PeCDF**

23051114



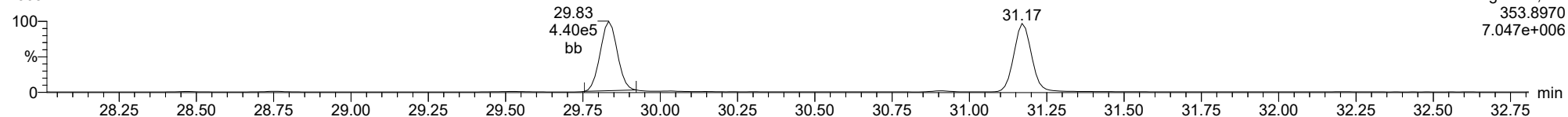
**13C-12378-PeCDF**

23051114



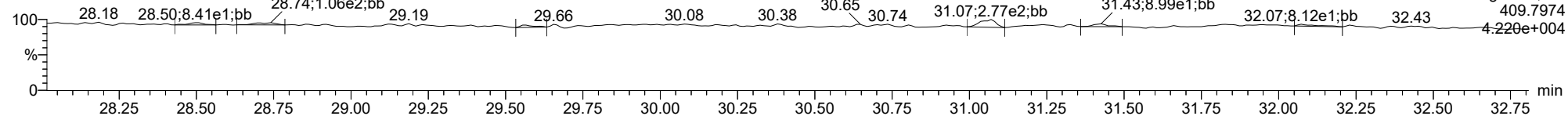
**13C-12378-PeCDF**

23051114



**FUNCTION2 HPCDPE**

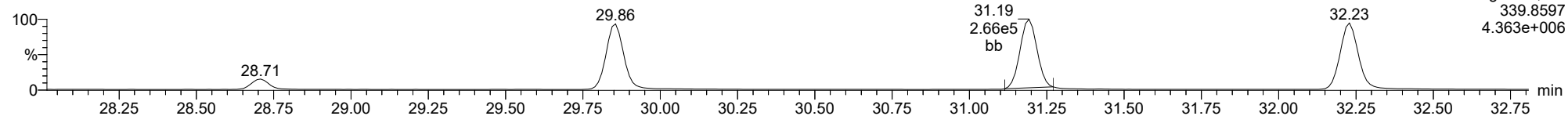
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

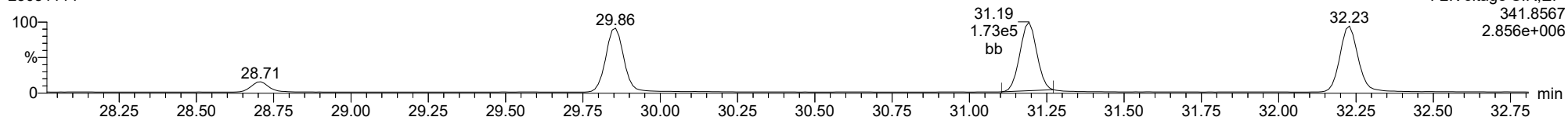
**23478-PeCDF**

23051114



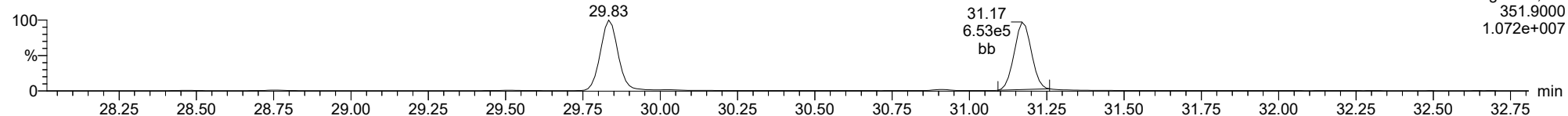
**23478-PeCDF**

23051114



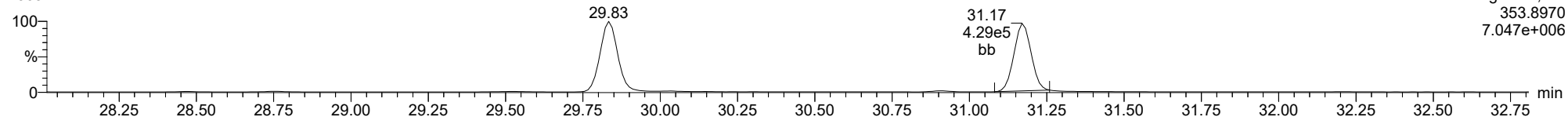
**13C-23478-PeCDF**

23051114



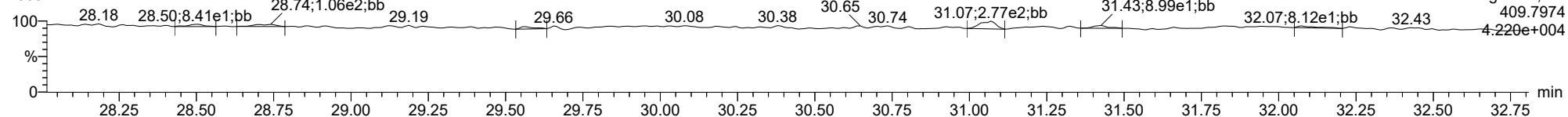
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23051114



**FUNCTION2 HPCDPE**

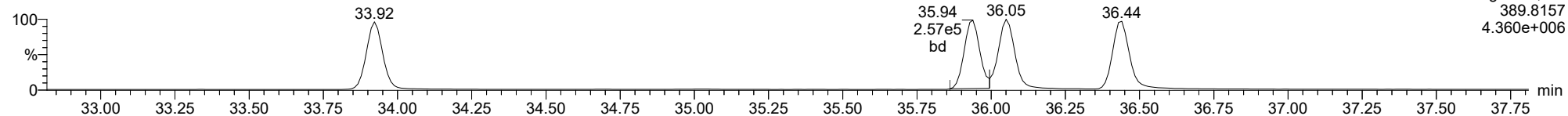
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

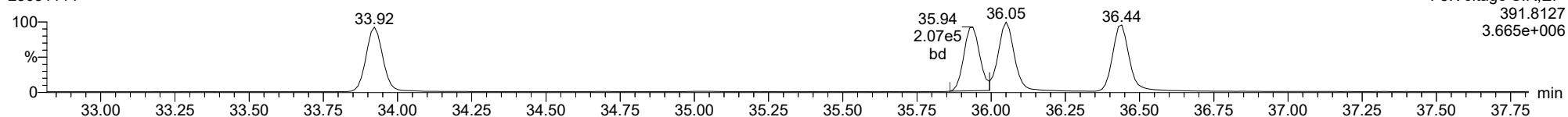
**123478-HxCDD**

23051114



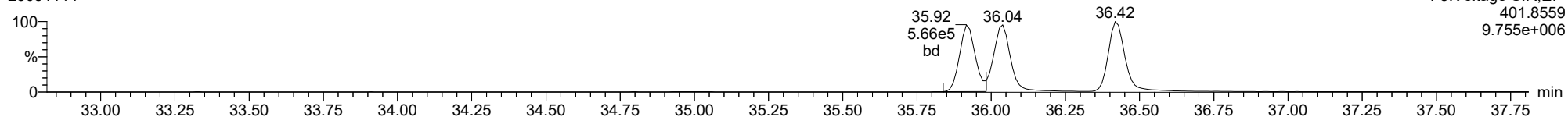
**123478-HxCDD**

23051114



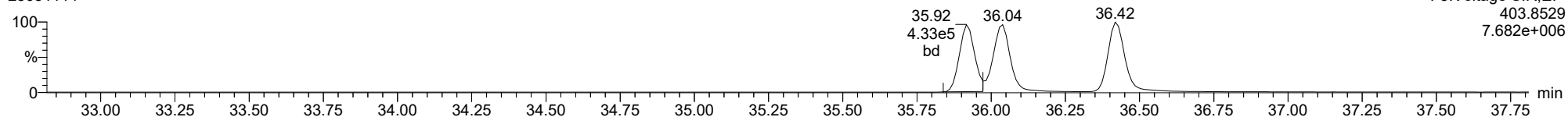
**13C-123478-HxCDD**

23051114



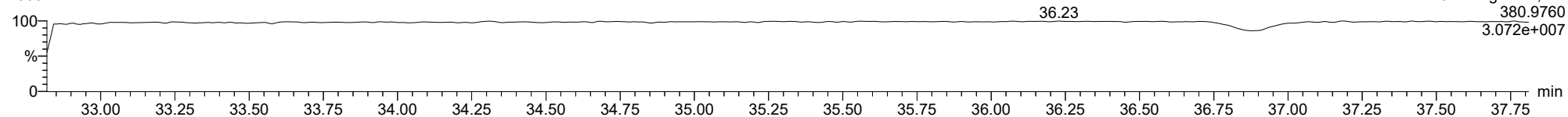
**13C-123478-HxCDD**

23051114



**FUNCTION3 PFK**

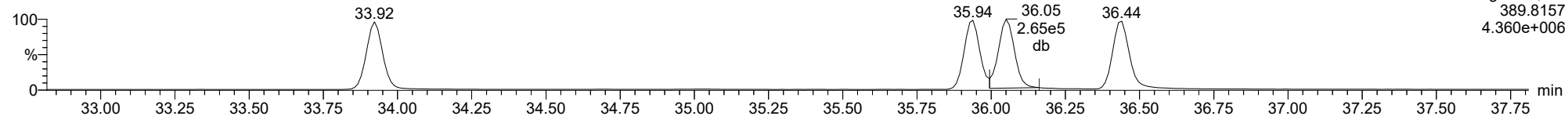
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

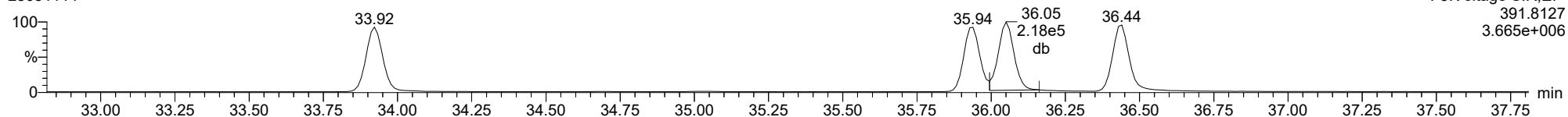
**123678-HxCDD**

23051114



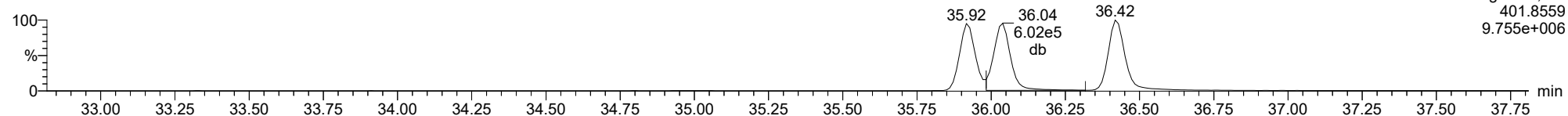
**123678-HxCDD**

23051114



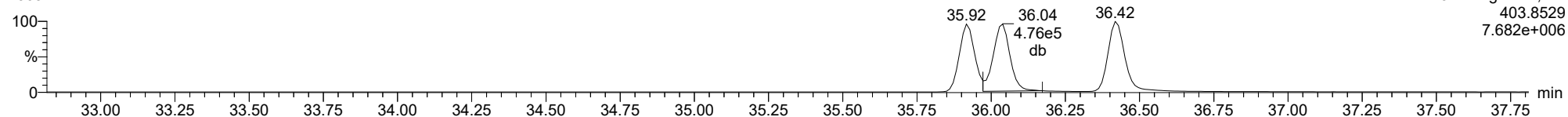
**13C-123678-HxCDD**

23051114



**13C-123678-HxCDD**

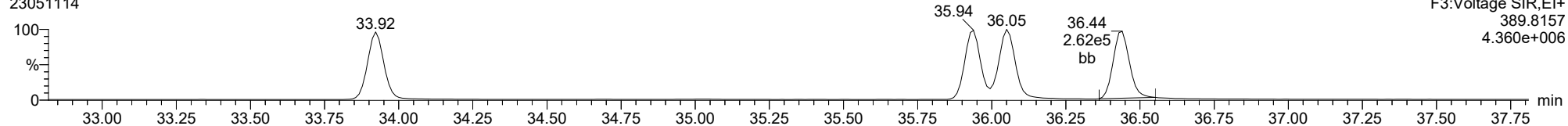
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

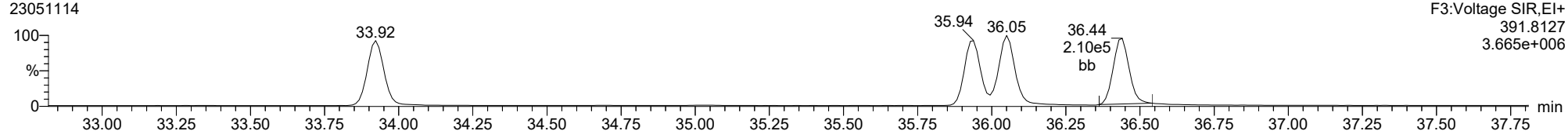
**123789-HxCDD**

23051114



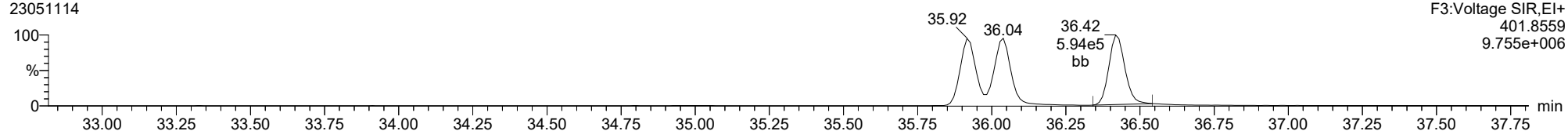
**123789-HxCDD**

23051114



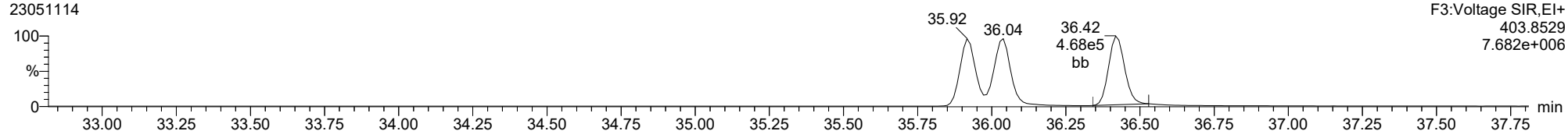
**13C-123789-HxCDD**

23051114



**13C-123789-HxCDD**

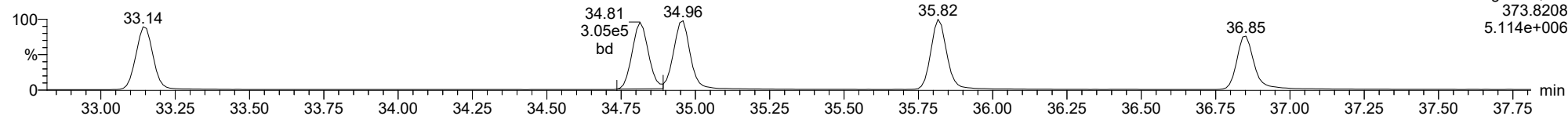
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

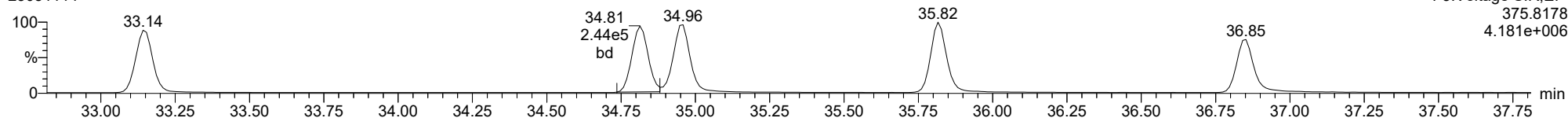
123478-HxCDF

23051114



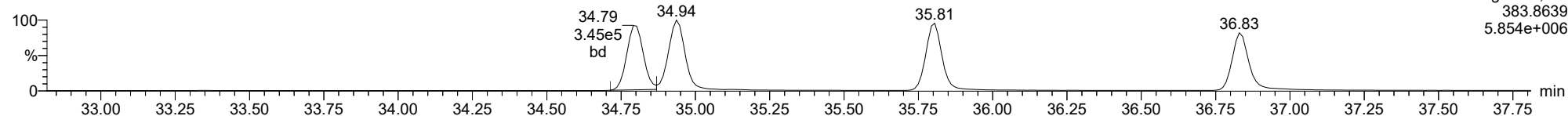
123478-HxCDF

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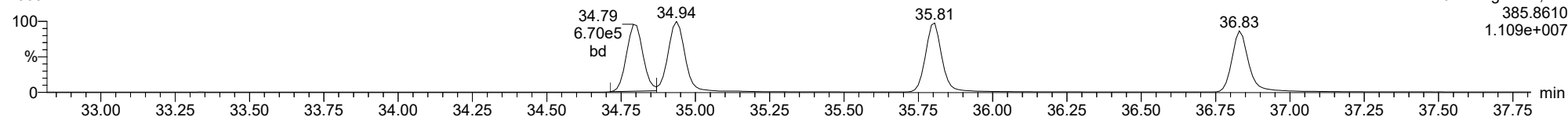
13C-123478-HxCDF

23051114



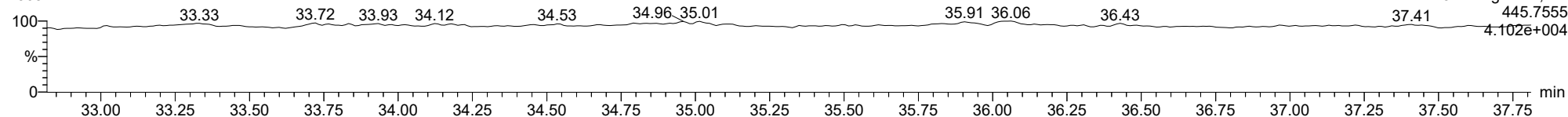
13C-123478-HxCDF

23051114



FUNCTION3 OCDPE

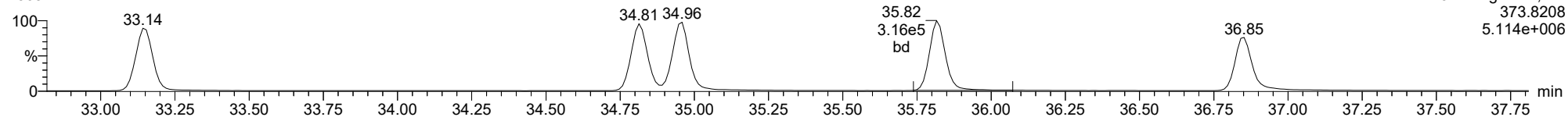
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

**234678-HxCDF**

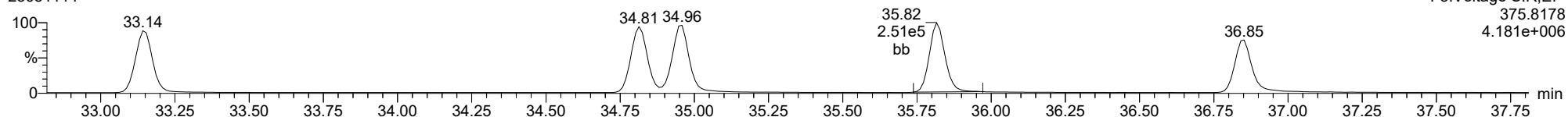
23051114



F3:Voltage SIR,EI+  
373.8208  
5.114e+006

**234678-HxCDF**

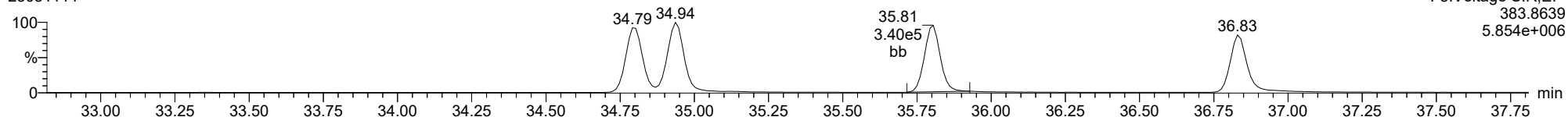
23051114



F3:Voltage SIR,EI+  
375.8178  
4.181e+006

**13C-234678-HxCDF**

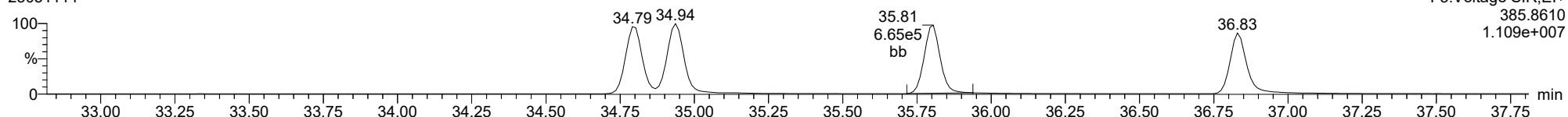
23051114



F3:Voltage SIR,EI+  
383.8639  
5.854e+006

**13C-234678-HxCDF**

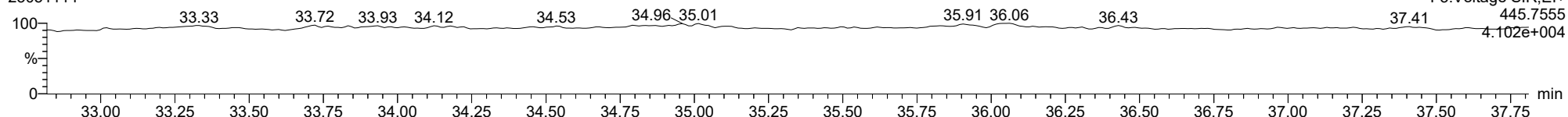
23051114



F3:Voltage SIR,EI+  
385.8610  
1.109e+007

**FUNCTION3 OCDPE**

23051114



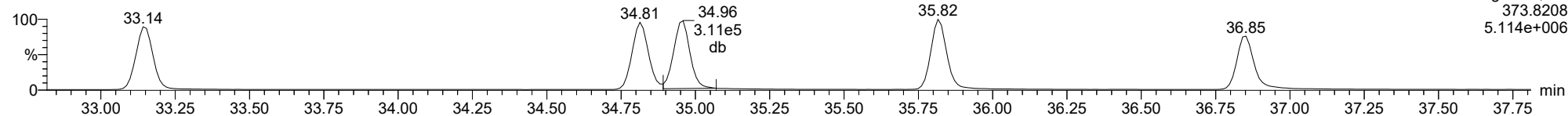
F3:Voltage SIR,EI+  
445.7555  
4.102e+004



ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

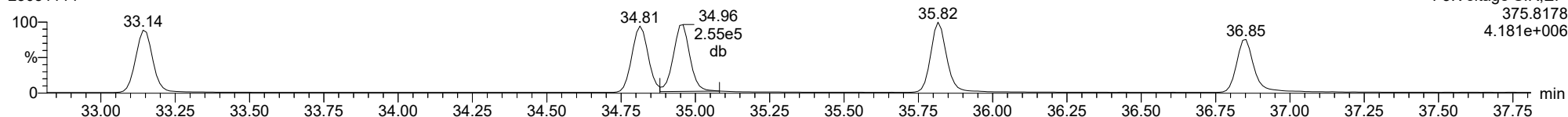
123678-HxCDF

23051114



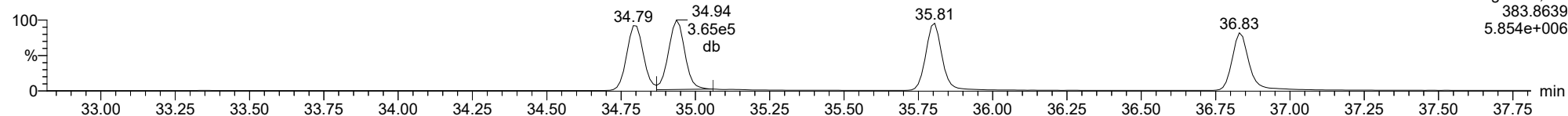
123678-HxCDF

23051114



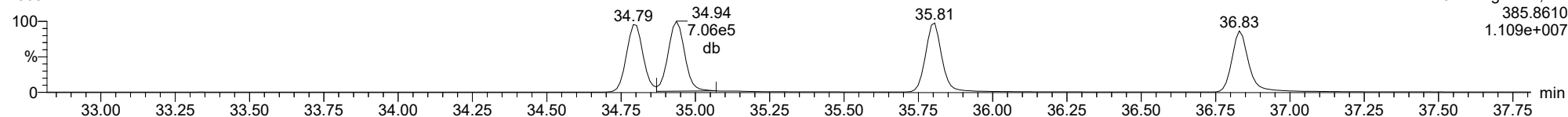
13C-123678-HxCDF

23051114



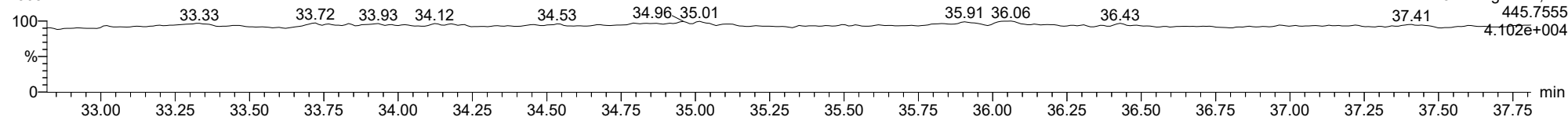
13C-123678-HxCDF

23051114



FUNCTION3 OCDPE

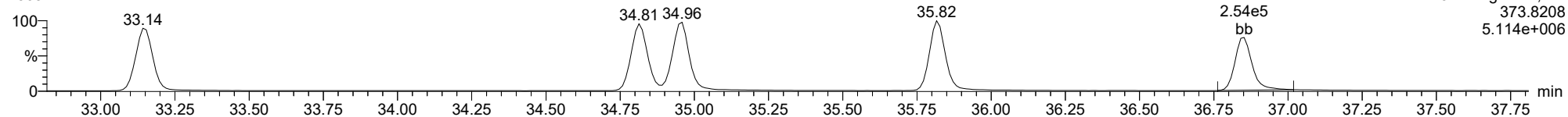
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

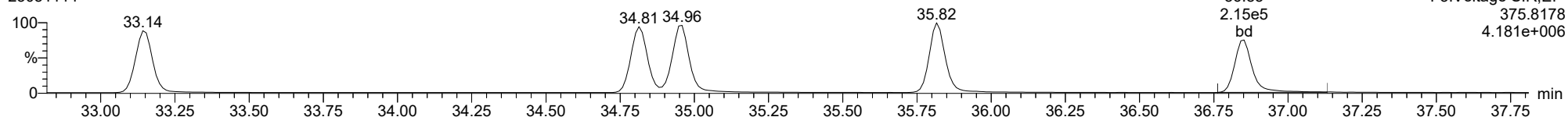
123789-HxCDF

23051114



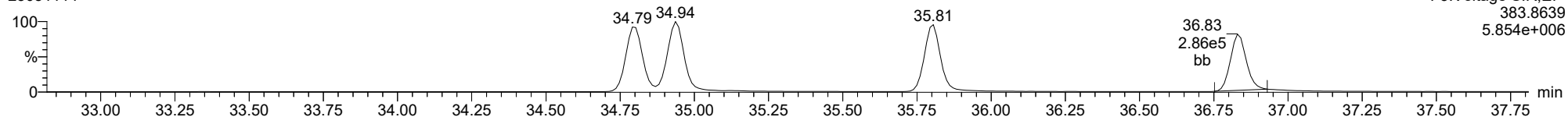
123789-HxCDF

23051114



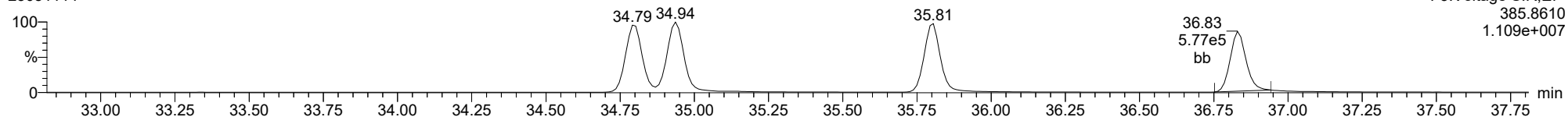
13C-123789-HxCDF

23051114



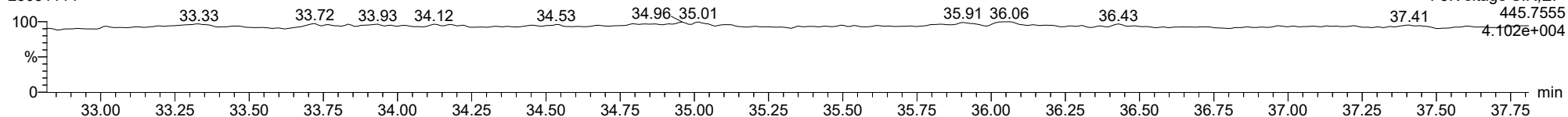
13C-123789-HxCDF

23051114



FUNCTION3 OCDPE

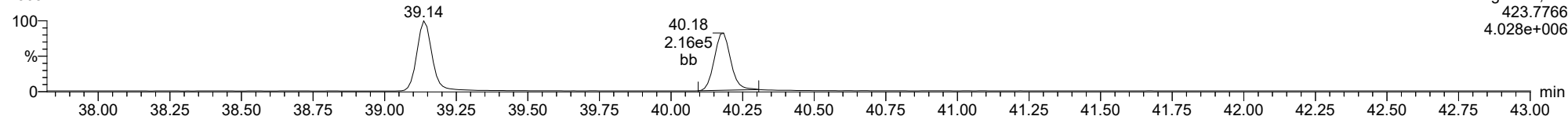
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

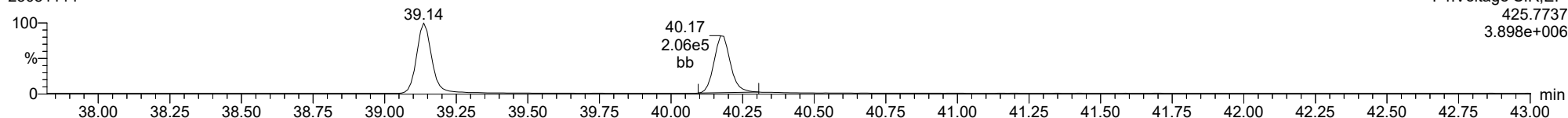
**1234678-HpCDD**

23051114



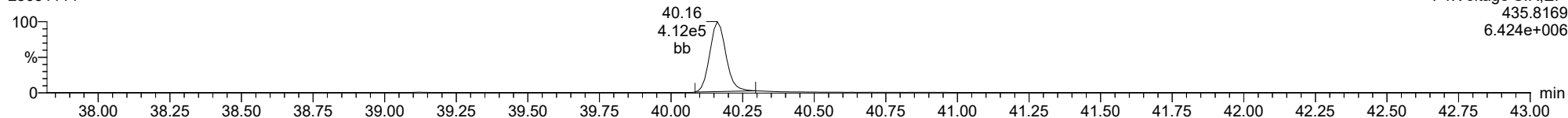
**1234678-HpCDD**

23051114



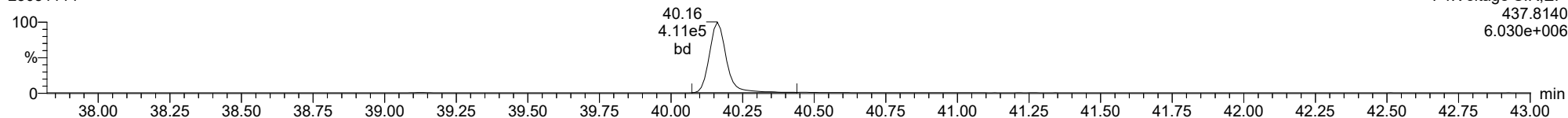
**13C-1234678-HpCDD**

23051114



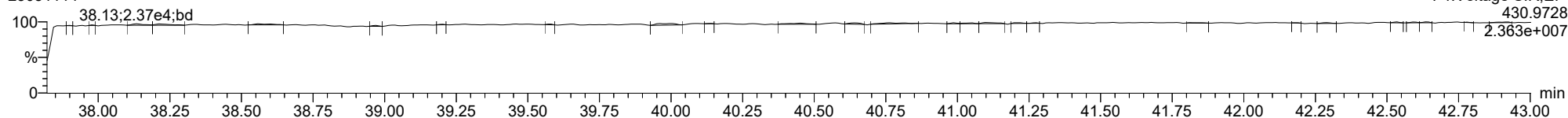
**13C-1234678-HpCDD**

23051114



**FUNCTION4 PFK**

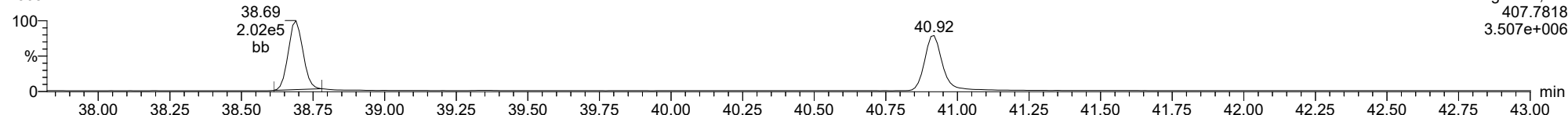
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

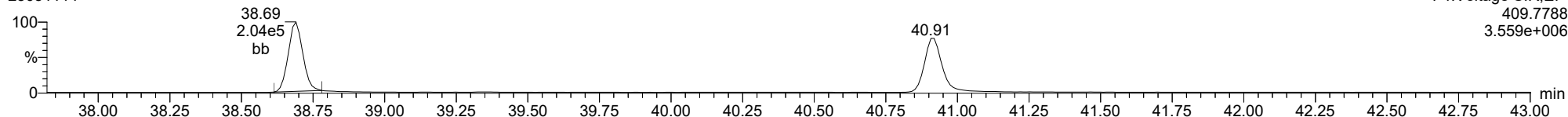
**1234678-HpCDF**

23051114



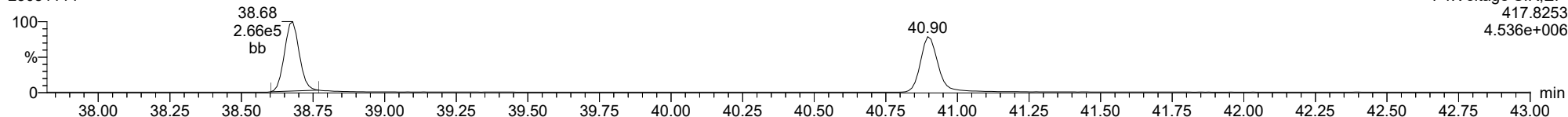
**1234678-HpCDF**

23051114



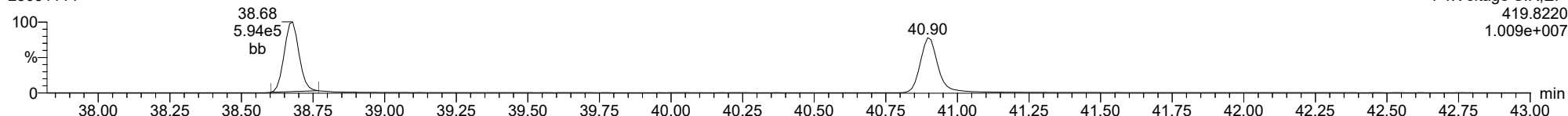
**13C-1234678-HpCDF**

23051114



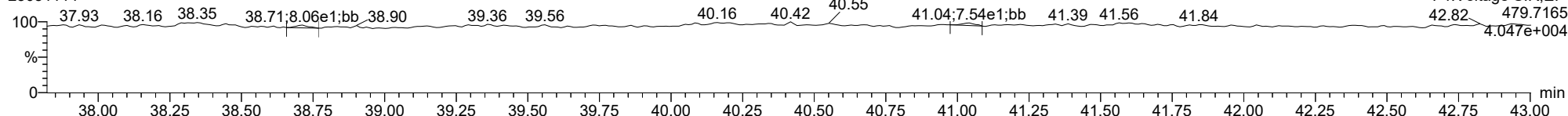
**13C-1234678-HpCDF**

23051114



**FUNCTION4 NCDPE**

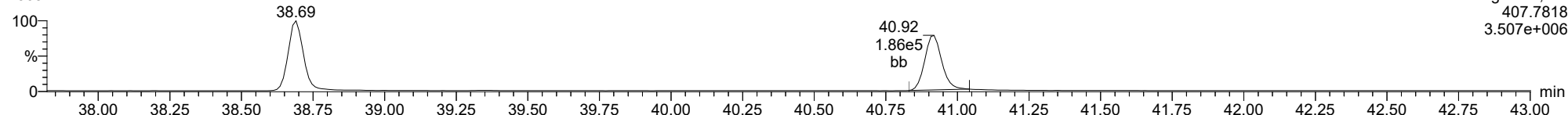
23051114



ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

**1234789-HpCDF**

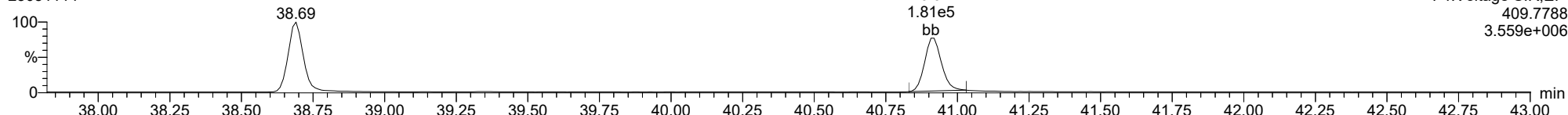
23051114



F4:Voltage SIR,EI+  
407.7818  
3.507e+006

**1234789-HpCDF**

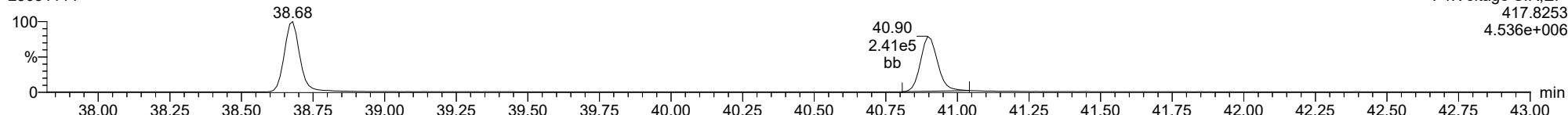
23051114



F4:Voltage SIR,EI+  
409.7788  
3.559e+006

**13C-1234789-HpCDF**

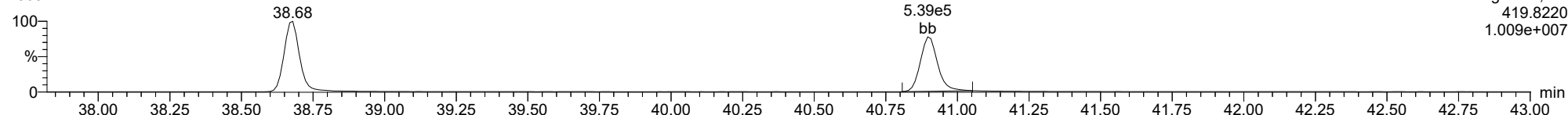
23051114



F4:Voltage SIR,EI+  
417.8253  
4.536e+006

**13C-1234789-HpCDF**

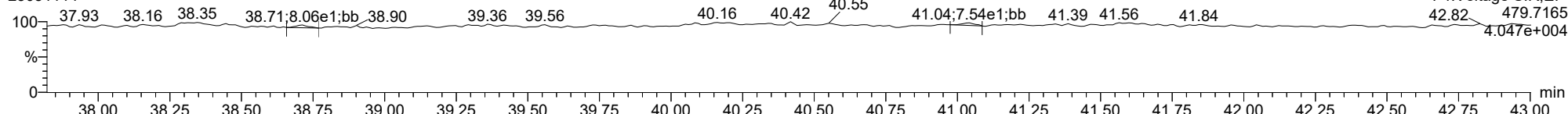
23051114



F4:Voltage SIR,EI+  
419.8220  
1.009e+007

**FUNCTION4 NCDPE**

23051114

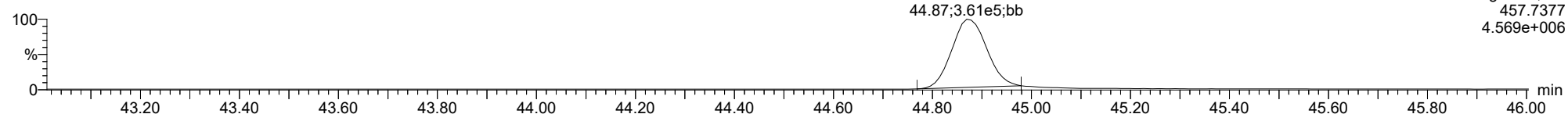


F4:Voltage SIR,EI+  
479.7165  
4.047e+004

ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

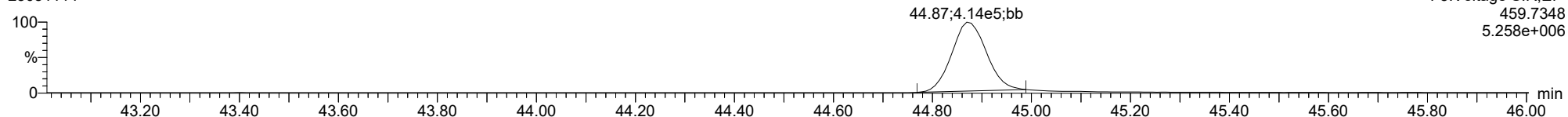
**OCDD**

23051114



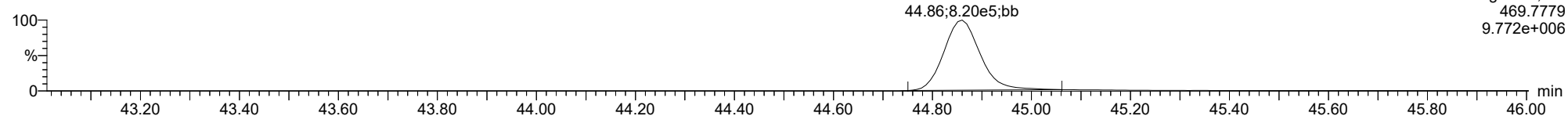
**OCDD**

23051114



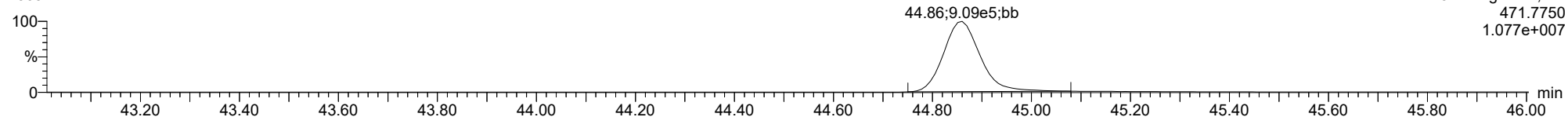
**13C-OCDD**

23051114



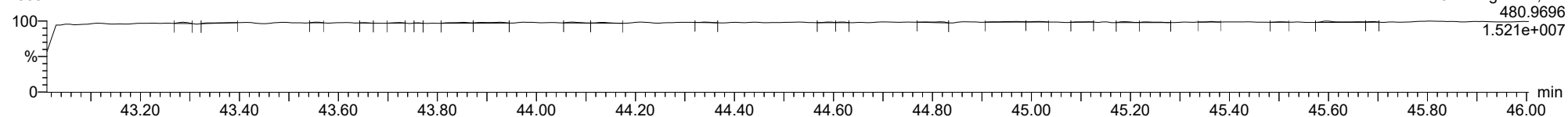
**13C-OCDD**

23051114



**FUNCTION5 PFK**

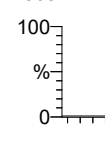
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

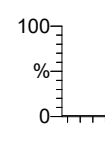
**OCDF**

23051114



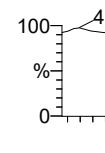
**OCDF**

23051114



**FUNCTION5 DCDPE**

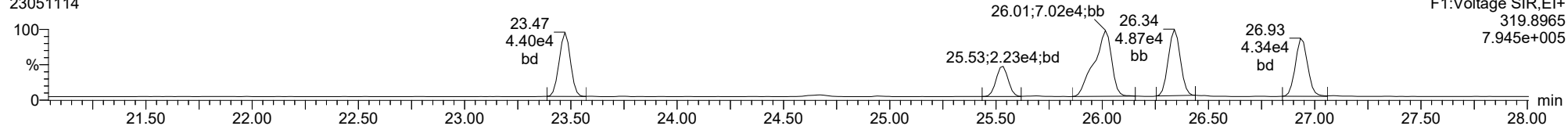
23051114



ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

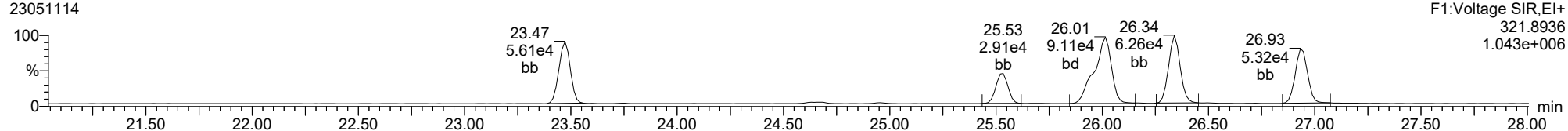
**Total-tetradioxins**

23051114



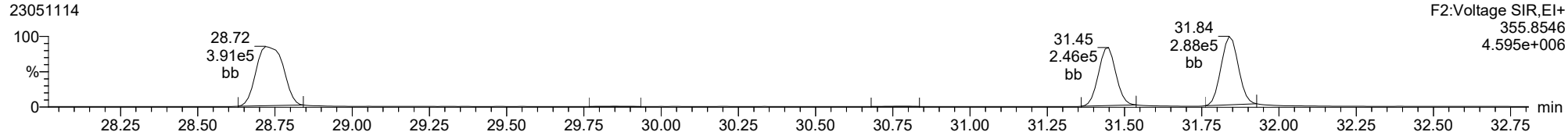
**Total-tetradioxins**

23051114



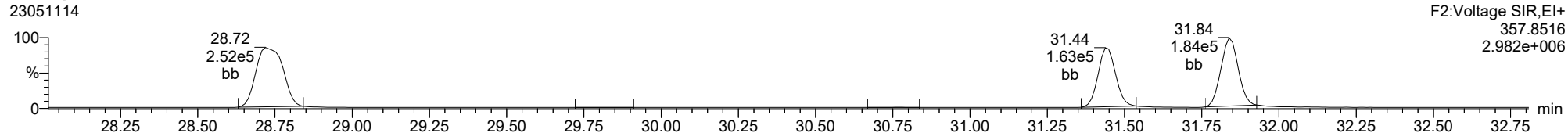
**Total-pentadioxins**

23051114



**Total-pentadioxins**

23051114

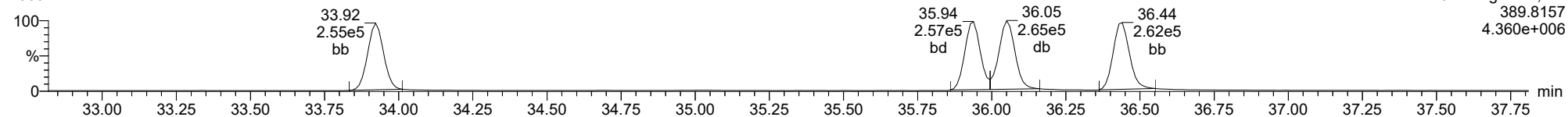




ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

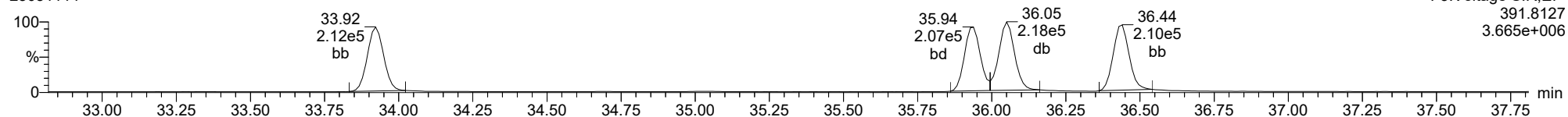
**Total-hexadioxins**

23051114



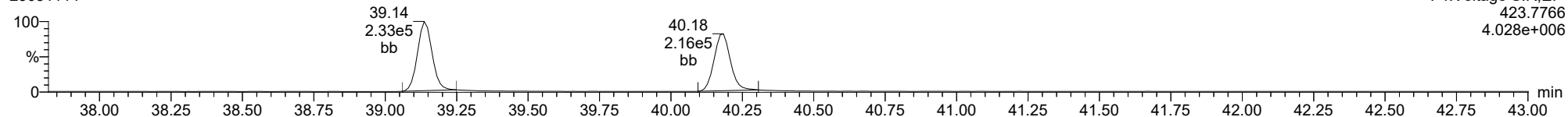
**Total-hexadioxins**

23051114



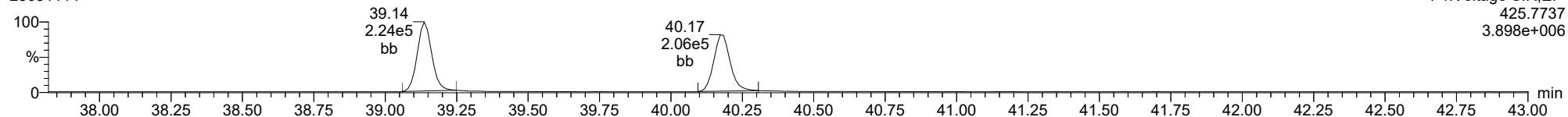
**Total-heptadioxins**

23051114



**Total-heptadioxins**

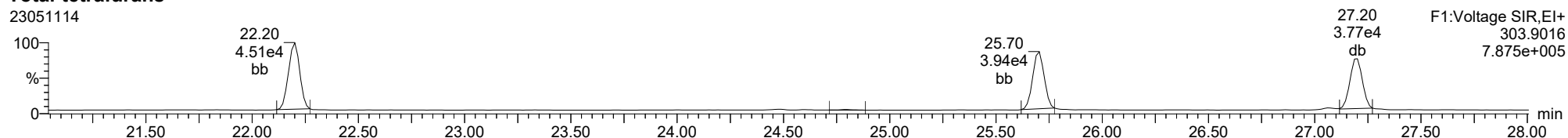
23051114



ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

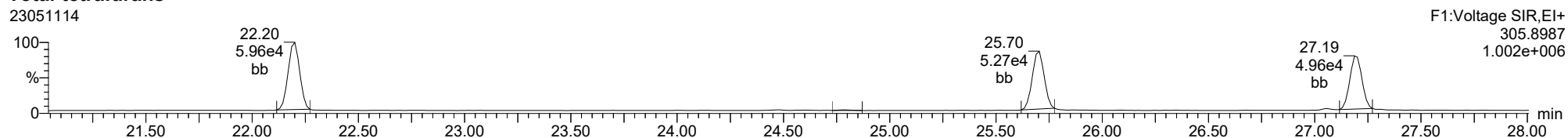
**Total-tetrafurans**

23051114



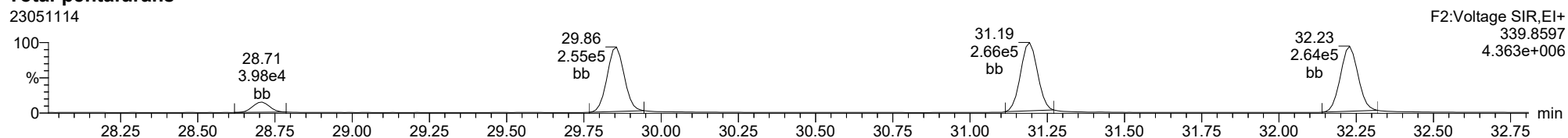
**Total-tetrafurans**

23051114



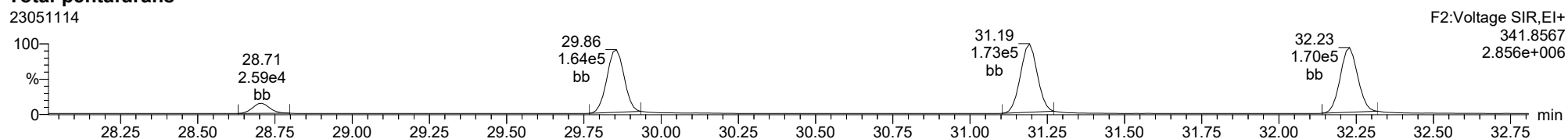
**Total-pentafurans**

23051114



**Total-pentafurans**

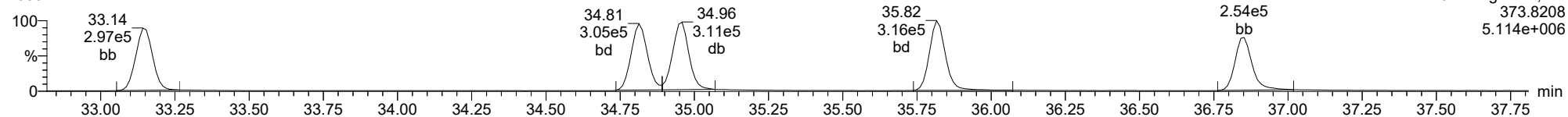
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ID: CS3L2, Name: 23051114, Date: 11-May-2023, Time: 22:25:28, Conditions: AUTOSPEC01, User: pk

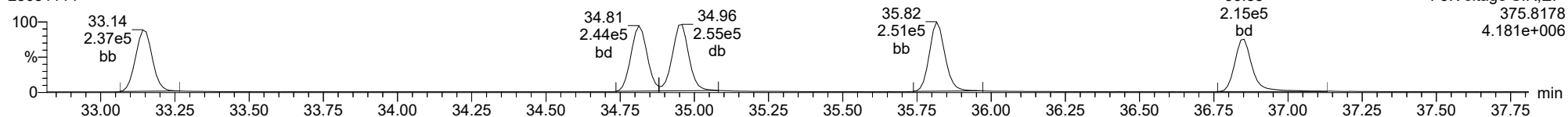
**Total-hexafurans**

23051114



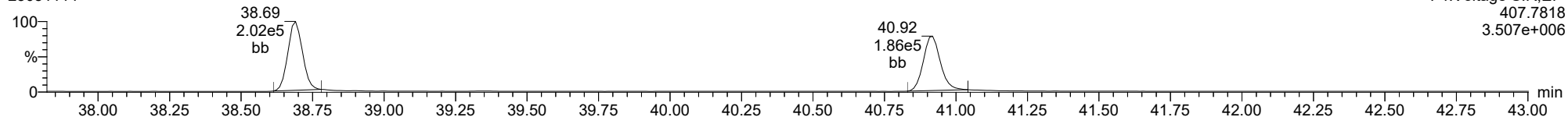
**Total-hexafurans**

23051114



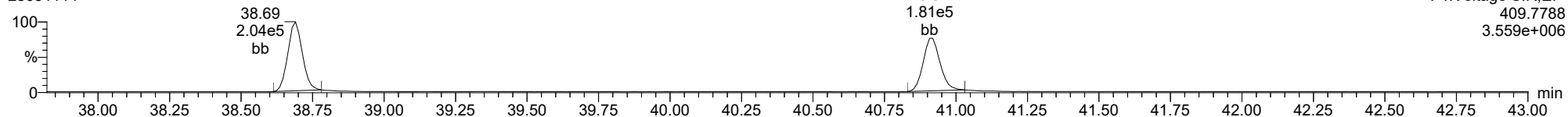
**Total-heptafurans**

23051114



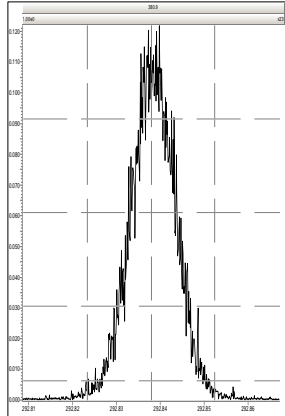
**Total-heptafurans**

23051114

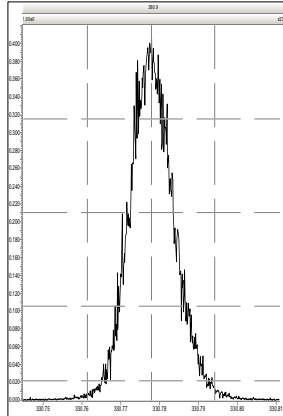


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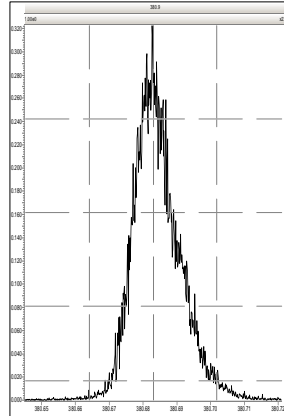
M 292.9824 R 12660



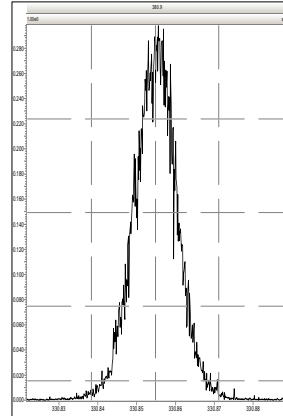
M 330.9792 R 12853



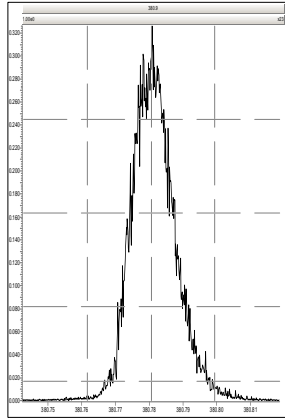
M 380.9760 R 11611



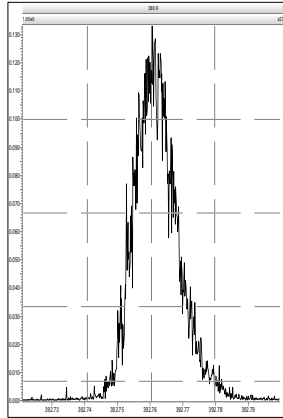
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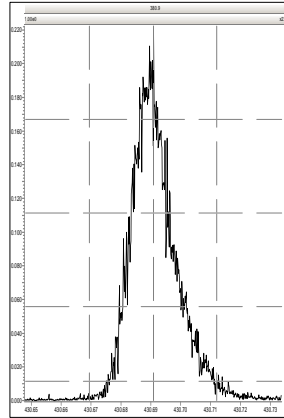
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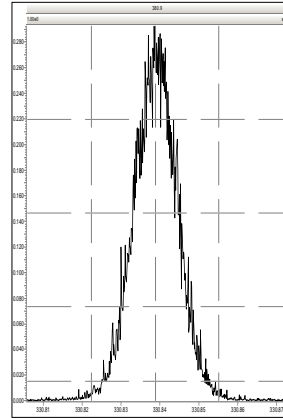
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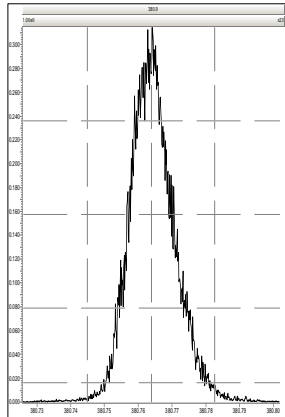
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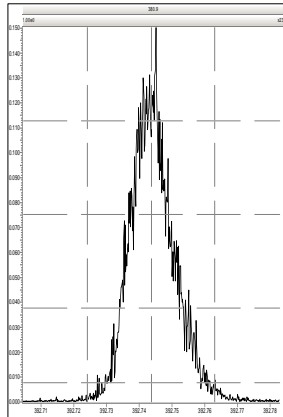
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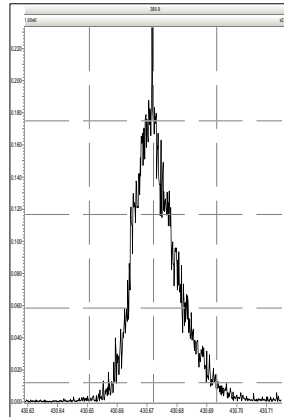
M 380.9760 R 12821



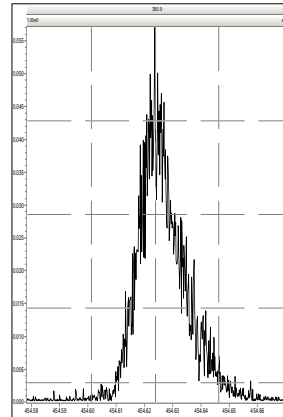
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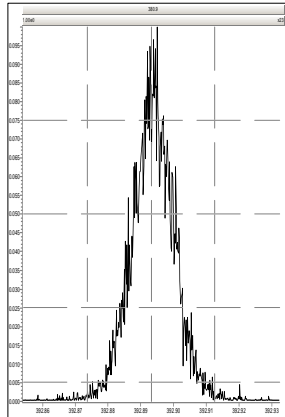
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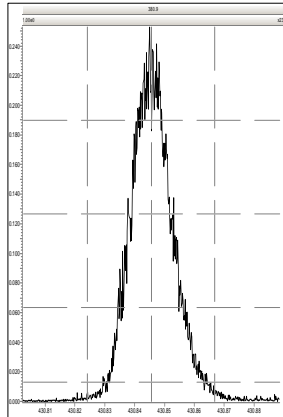
M 454.9728 R 13033



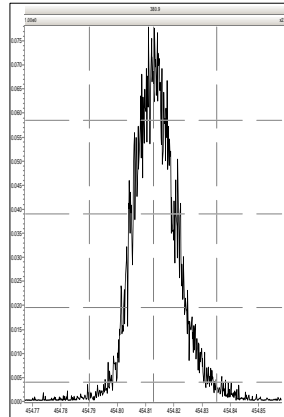
M 392.9760 R 13742



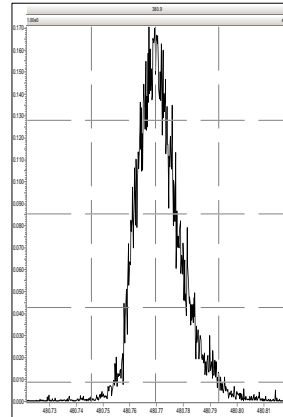
M 430.9728 R 13479



M 454.9728 R 13662

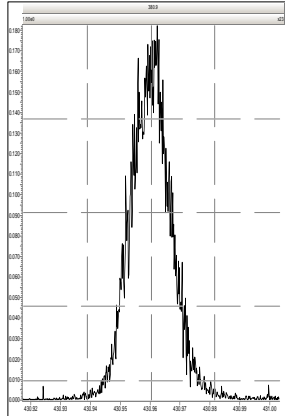


M 480.9696 R 12631

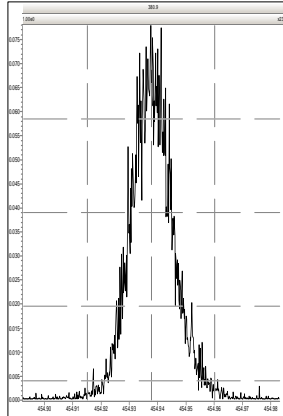


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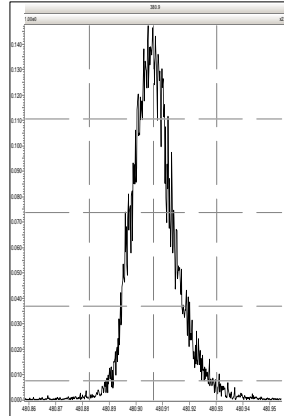
M 430.9728 R 14259



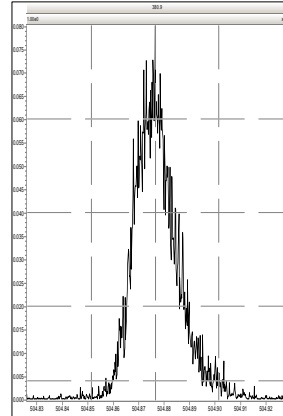
M 454.9728 R 14582



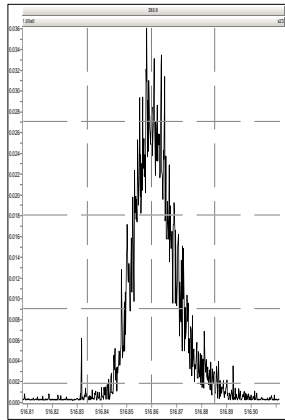
M 480.9696 R 13700



M 504.9696 R 14627

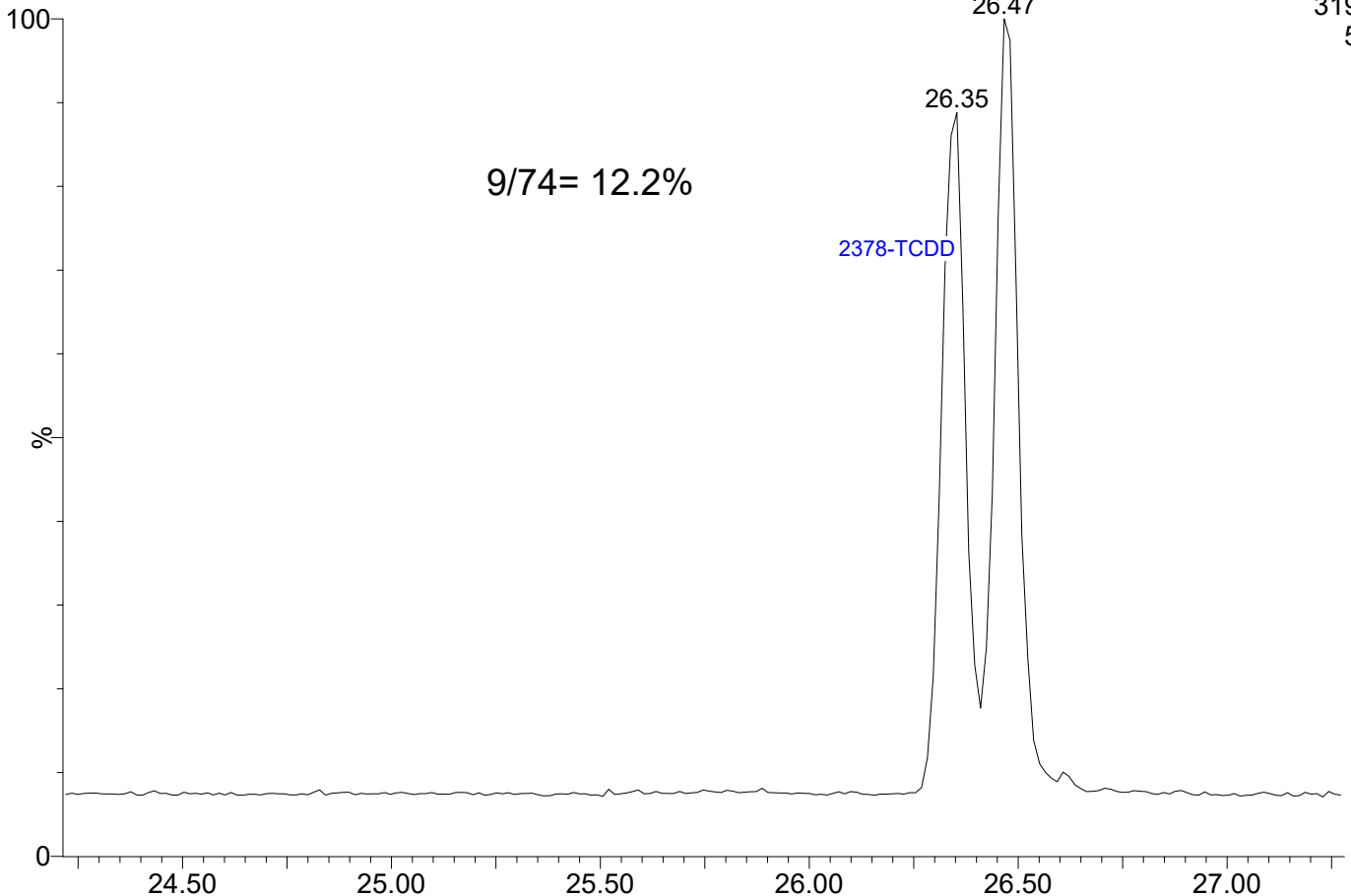


M 516.9697 R 14360



23051115

1: Voltage SIR 14 Channels EI+



319.8965  
5.28e5

9/74 = 12.2%

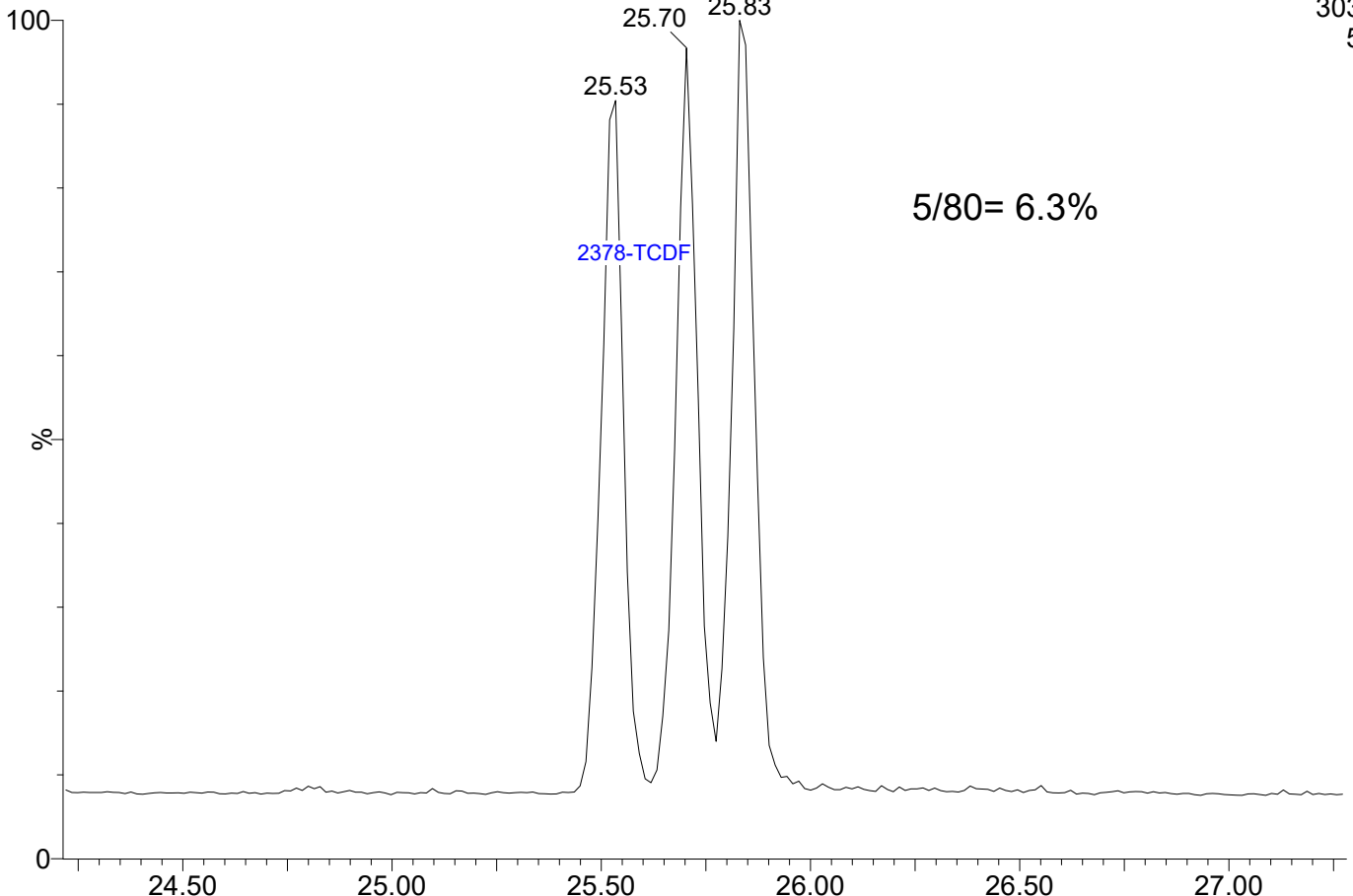
2378-TCDD

26.35

26.47

23051115

1: Voltage SIR 14 Channels EI+



303.9016  
5.06e5

5/80 = 6.3%

2378-TCDF

25.53

25.70

25.83



CONTINUING CALIBRATION CHECK  
EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23051514

Calibration Date: 03/03/2023

Sequence: SLE0240

Injection Date: 05/15/23

Lab Sample ID: SLE0240-CCV1

Injection Time: 22:11

Sequence Name: CS3L6

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	10.2	0.7015272	0.7149168		1.9	+/-16
2,3,7,8-TCDD	A	10.000	9.82	1.1486620	1.1281570		-1.8	+/-22
1,2,3,7,8-PeCDF	A	50.000	56.4	0.6792300	0.7661250		12.8	+/-18
2,3,4,7,8-PeCDF	A	50.000	54.1	0.7861704	0.8501949		8.1	+/-18
1,2,3,7,8-PeCDD	A	50.000	47.9	1.0218450	0.9797968		-4.1	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	49.7	1.1660380	1.1598580		-0.5	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	48.5	1.0907410	1.0578330		-3.0	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	49.9	1.1396990	1.1363610		-0.3	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	51.0	1.1370930	1.1592830		2.0	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	47.8	0.9955689	0.9517617		-4.4	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	46.8	1.0009380	0.9378222		-6.3	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	52.9	0.9071139	0.9600998		5.8	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	49.9	1.0029930	1.0005080		-0.2	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	54.0	0.9531152	1.0296760		8.0	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	53.8	1.0390130	1.1182300		7.6	+/-14
OCDF	A	100.00	106	0.7778078	0.8258599		6.2	+/-37
OCDD	A	100.00	100	0.9199537	0.9228810		0.3	+/-21
13C12-2,3,7,8-TCDF	A	100.00	100	1.6201960	1.6255936		0.3	+/-29
13C12-2,3,7,8-TCDD	A	100.00	104	1.1524090	1.2039719		4.5	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	98.1	1.2404520	1.2168875		-1.9	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	104	1.1177860	1.1573303		3.5	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	104	0.8288129	0.8629286		4.1	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	88.5	1.1683050	1.0338890		-11.5	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	91.0	1.3864660	1.2620349		-9.0	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	92.0	1.1292560	1.0388909		-8.0	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	108	0.9317541	1.0064048		8.0	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	94.9	0.9950393	0.9443758		-5.1	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	91.3	1.1566890	1.0555649		-8.7	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	101	0.8952017	0.9075554		1.4	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	102	0.7697516	0.7852041		2.0	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	95.4	0.8401226	0.8015891		-4.6	+/-18
13C12-OCDD	A	200.00	219	0.7674714	0.8407195		9.5	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.17	1.2878040	1.1804638		-8.3	+/-21

\* Values outside of QC limits

\* Values outside of QC limits

\* Values outside of QC limits



Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
 Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time  
 Printed: Tuesday, May 16, 2023 08:59:47 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.690	1.001	4.079e4	5.430e4	0.702	0.751	0.770	906	1357	6.36e5	8.58e5	702.6	632.7	NO	bb	bb	10.191
12378-PeCDF	29.845	1.001	2.343e5	1.471e5	0.679	1.593	1.550	3063	2461	3.61e6	2.31e6	1179.4	938.0	NO	bb	bb	56.397
23478-PeCDF	31.181	1.001	2.457e5	1.569e5	0.786	1.566	1.550	3063	2461	3.78e6	2.40e6	1233.6	976.1	NO	bb	bb	54.072
123478-HxCDF	34.803	1.000	2.646e5	2.023e5	1.166	1.308	1.240	2613	2832	4.05e6	3.16e6	1550.0	1116.2	NO	bd	bd	49.735
234678-HxCDF	35.805	1.000	2.532e5	2.064e5	1.140	1.227	1.240	2613	2832	3.88e6	3.15e6	1484.1	1113.9	NO	bb	bb	49.854
123678-HxCDF	34.947	1.001	2.974e5	2.224e5	1.091	1.337	1.240	2613	2832	4.23e6	3.22e6	1617.9	1138.6	NO	dd	db	48.491
123789-HxCDF	36.841	1.001	2.596e5	1.946e5	1.137	1.334	1.240	2613	2832	3.58e6	2.81e6	1370.6	992.5	NO	bd	bb	50.976
1234678-HpCDF	38.680	1.000	1.787e5	1.748e5	1.003	1.022	1.050	3090	2315	2.97e6	2.95e6	960.2	1275.1	NO	bb	bb	49.876
1234789-HpCDF	40.908	1.001	1.569e5	1.578e5	0.953	0.994	1.050	3090	2315	2.23e6	2.19e6	722.4	945.6	NO	bb	bb	54.016
OCDF	45.098	1.006	2.572e5	2.834e5	0.778	0.908	0.890	2246	1563	3.02e6	3.32e6	1343.5	2126.8	NO	bb	bb	106.178
2378-TCDD	26.325	1.001	4.970e4	6.144e4	1.149	0.809	0.770	1106	1109	7.42e5	9.39e5	671.5	846.6	NO	bd	bb	9.821
12378-PeCDD	31.438	1.001	2.081e5	1.378e5	1.022	1.510	1.550	1905	1405	3.14e6	2.10e6	1646.7	1492.3	NO	bb	bb	47.943
123478-HxCDD	35.928	1.001	1.928e5	1.571e5	0.996	1.227	1.240	3039	2294	3.09e6	2.47e6	1016.1	1077.8	NO	bd	bd	47.800
123678-HxCDD	36.039	1.000	2.114e5	1.740e5	1.001	1.215	1.240	3039	2294	3.26e6	2.71e6	1073.6	1181.4	NO	db	db	46.847
123789-HxCDD	36.429	1.011	2.119e5	1.619e5	0.907	1.309	1.240	3039	2294	3.13e6	2.52e6	1030.8	1098.2	NO	bd	bb	52.921
1234678-HpCDD	40.173	1.001	1.772e5	1.718e5	1.039	1.032	1.050	2667	2340	2.49e6	2.38e6	932.3	1018.2	NO	bd	bd	53.812
OCDD	44.861	1.000	2.775e5	3.267e5	0.920	0.849	0.890	1397	1865	3.46e6	3.95e6	2473.4	2116.9	NO	bb	bb	100.318
13C-2378-TCDF	25.676	1.007	5.815e5	7.486e5	1.620	0.777	0.770	1668	1283	8.36e6	1.06e7	5007.9	8255.2	NO	bb	bd	100.333
13C-12378-PeCDF	29.822	1.170	5.962e5	3.995e5	1.240	1.492	1.550	4698	3278	9.16e6	6.04e6	1950.4	1842.2	NO	bb	bb	98.100
13C-23478-PeCDF	31.159	1.222	5.673e5	3.796e5	1.118	1.495	1.550	4698	3278	8.82e6	5.78e6	1877.1	1764.7	NO	bb	bb	103.538
13C-123478-HxCDF	34.791	0.956	2.724e5	5.326e5	1.168	0.512	0.510	2094	3355	4.16e6	8.24e6	1986.3	2456.4	NO	bd	bd	88.495
13C-123678-HxCDF	34.925	0.959	3.343e5	6.483e5	1.386	0.516	0.510	2094	3355	4.56e6	8.89e6	2177.3	2651.4	NO	dd	db	91.025
13C-234678-HxCDF	35.794	0.983	2.738e5	5.351e5	1.129	0.512	0.510	2094	3355	4.09e6	7.96e6	1952.4	2373.0	NO	bb	bb	91.998
13C-123789-HxCDF	36.819	1.011	2.643e5	5.193e5	0.932	0.509	0.510	2094	3355	3.87e6	7.67e6	1850.4	2285.8	NO	bb	bb	108.012
13C-1234678-HpCDF	38.669	1.062	2.192e5	4.875e5	0.895	0.450	0.440	2766	3367	3.54e6	8.11e6	1281.2	2407.5	NO	bb	bb	101.380
13C-1234789-HpCDF	40.886	1.123	1.841e5	4.273e5	0.770	0.431	0.440	2766	3367	2.60e6	5.98e6	940.8	1777.3	NO	bb	bb	102.007
13C-1234-TCDD	25.492	0.000	3.623e5	4.559e5	1.000	0.795	0.770	1746	1210	5.65e6	7.08e6	3233.7	5853.6	NO	bb	bb	100.000
13C-2378-TCDD	26.311	1.032	4.303e5	5.548e5	1.152	0.776	0.770	1746	1210	6.43e6	8.07e6	3679.7	6670.6	NO	bb	bb	104.474
13C-12378-PeCDD	31.416	1.232	4.354e5	2.707e5	0.829	1.609	1.550	1036	1079	6.18e6	3.83e6	5961.3	3553.1	NO	bd	bd	104.116
13C-123478-HxCDD	35.905	0.986	4.103e5	3.250e5	0.995	1.263	1.240	1921	2135	6.54e6	5.15e6	3404.1	2414.1	NO	bd	bd	94.908
13C-123678-HxCDD	36.028	0.990	4.500e5	3.719e5	1.157	1.210	1.240	1921	2135	6.78e6	5.37e6	3531.6	2517.4	NO	db	db	91.257
13C-1234678-HpCDD	40.151	1.103	3.219e5	3.022e5	0.840	1.065	1.050	1721	2253	4.61e6	4.35e6	2676.6	1932.4	NO	bb	bb	95.413
13C-OCDD	44.852	1.232	6.187e5	6.905e5	0.767	0.896	0.890	2260	2063	7.38e6	8.18e6	3263.5	3962.7	NO	bb	bb	219.088
13C-123789-HxCDD	36.407	0.000	4.336e5	3.450e5	1.000	1.257	1.240	1921	2135	6.58e6	5.27e6	3422.8	2469.9	NO	bb	bb	100.000
37CL-2378-TCDD	26.325	1.033	9.659e4		1.288			1551		1.45e6		931.4			bb		9.166

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
 Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time  
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ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.187	0.864	4.964e4	6.557e4	0.802	0.757	0.770	906	1357	8.11e5	1.07e6	894.9	785.4	NO	bb	bb	10.808
1289-TCDF	27.187	1.059	3.877e4	5.157e4	0.678	0.752	0.770	906	1357	5.83e5	7.77e5	643.4	572.7	NO	bb	bb	10.018
13468-PECDF	27.031	0.906	3.640e5	2.405e5	1.246	1.513	1.550	744	863	5.44e6	3.60e6	7313.0	4167.2	NO	bb	bb	48.710
12389-PECDF	32.218	1.080	2.281e5	1.442e5	0.496	1.582	1.550	3063	2461	3.39e6	2.14e6	1106.9	871.2	NO	bb	bb	75.335
123468-HXCDF	33.131	0.952	2.550e5	2.030e5	1.169	1.256	1.240	2613	2832	3.79e6	3.02e6	1451.1	1067.9	NO	bb	bb	48.667
1368-TCDD	23.458	0.892	4.501e4	5.591e4	1.015	0.805	0.770	1106	1109	7.21e5	8.99e5	652.1	810.3	NO	bb	bb	10.089
1289-TCDD	26.919	1.023	3.926e4	5.161e4	0.909	0.761	0.770	1106	1109	5.71e5	7.28e5	516.1	656.4	NO	bd	bd	10.151
12479-PECDD	28.708	0.914	3.502e5	2.276e5	2.301	1.539	1.550	1905	1405	3.38e6	2.18e6	1774.6	1550.8	NO	bb	bb	35.552
12389-PECDD	31.828	1.013	2.365e5	1.525e5	1.184	1.551	1.550	1905	1405	3.54e6	2.31e6	1859.0	1644.1	NO	bb	bb	46.557
124679-HXCDD	33.911	0.944	2.038e5	1.732e5	1.115	1.177	1.240	3039	2294	3.13e6	2.54e6	1030.2	1106.5	NO	bb	bd	45.971
1234679-HPCDD	39.126	0.974	1.814e5	1.732e5	1.137	1.047	1.050	2667	2340	2.86e6	2.74e6	1070.6	1172.1	NO	bb	bb	49.976
Total-tetrafurans			1.303e5		0.727			906		2.05e6							31.266
Total-penta1			3.640e5					744		5.44e6							48.710
Total-penta furans			7.463e5		0.654			3063		1.14e7							195.524
Total-hexa furans			1.330e6		1.141			2613		1.95e7							247.722
Total-hepta furans			3.356e5		0.978			3090		5.20e6							103.893
Total-Furans			3.163e6		0.922			906		4.66e7							733.293
Total-tetradiioxins			2.257e5		1.024			1106		3.10e6							50.622
Total-pentadiioxins			7.948e5		1.502			1905		1.01e7							130.052
Total-hexadiioxins			8.199e5		1.005			3039		1.26e7							193.539
Total-heptadiioxins			3.586e5		1.088			2667		5.34e6							103.788
Total-Dioxins			2.476e6		1.130			1106		3.46e7							578.319
Total-TEQ			5.640e6					1106		8.12e7							1311.612
FUNCTION1 PFK			1.893e5					256604		4.75e6							
FUNCTION2 PFK			2.317e5					132260		6.56e6							0.000
FUNCTION3 PFK			0.000e0					207626		0.00e0							
FUNCTION4 PFK			2.959e5					168728		3.41e6							
FUNCTION5 PFK			3.975e4					156596		1.73e6							
FUNCTION1 HXCD...			6.826e2					545		8.38e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			8.723e2					877		2.03e4							0.000
FUNCTION3 OCDPE			3.673e2					507		6.29e3							0.000
FUNCTION4 NCDPE			1.503e2					680		2.31e3							0.000
FUNCTION5 DCDPE			9.019e1					620		3.27e3							0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

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**Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07****Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27****ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk****TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.19	3.877e4	5.157e4	0.678	0.75	0.77	643.4	YES	NO	bb	bb	10.018
2	Total-tetrafurans	27.06	4.063e2	4.664e2	0.727	0.87	0.77	9.8	YES	NO	bb	bb	0.090
3	2378-TCDF	25.69	4.079e4	5.430e4	0.702	0.75	0.77	702.6	YES	NO	bb	bb	10.191
4	Total-tetrafurans	24.79	3.771e2	5.011e2	0.727	0.75	0.77	7.3	YES	NO	bb	bb	0.091
5	Total-tetrafurans	24.60	2.846e2	3.805e2	0.727	0.75	0.77	5.9	YES	NO	bb	db	0.069
6	1368-TCDF	22.19	4.964e4	6.557e4	0.802	0.76	0.77	894.9	YES	NO	bb	bb	10.808

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.03	3.640e5	2.405e5	1.246	1.51	1.55	7313.0	YES	NO	bb	bb	48.710

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDF	32.22	2.281e5	1.442e5	0.496	1.58	1.55	1106.9	YES	NO	bb	bb	75.335
2	23478-PeCDF	31.18	2.457e5	1.569e5	0.786	1.57	1.55	1233.6	YES	NO	bb	bb	54.072
3	12378-PeCDF	29.84	2.343e5	1.471e5	0.679	1.59	1.55	1179.4	YES	NO	bb	bb	56.397
4	Total-pentafurans	28.70	3.821e4	2.353e4	0.654	1.62	1.55	191.3	YES	NO	bb	bb	9.721

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123678-HxCDF	34.95	2.974e5	2.224e5	1.091	1.34	1.24	1617.9	YES	NO	dd	db	48.491
2	123478-HxCDF	34.80	2.646e5	2.023e5	1.166	1.31	1.24	1550.0	YES	NO	bd	bd	49.735
3	123468-HXCDF	33.13	2.550e5	2.030e5	1.169	1.26	1.24	1451.1	YES	NO	bb	bb	48.667
4	123789-HxCDF	36.84	2.596e5	1.946e5	1.137	1.33	1.24	1370.6	YES	NO	bd	bb	50.976
5	234678-HxCDF	35.81	2.532e5	2.064e5	1.140	1.23	1.24	1484.1	YES	NO	bb	bb	49.854

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.91	1.569e5	1.578e5	0.953	0.99	1.05	722.4	YES	NO	bb	bb	54.016
2	1234678-HpCDF	38.68	1.787e5	1.748e5	1.003	1.02	1.05	960.2	YES	NO	bb	bb	49.876

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.19	3.877e4	5.157e4	0.678	0.75	0.77	643.4	YES	NO	bb	bb	10.018
2	Total-tetrafurans	27.06	4.063e2	4.664e2	0.727	0.87	0.77	9.8	YES	NO	bb	bb	0.090
3	2378-TCDF	25.69	4.079e4	5.430e4	0.702	0.75	0.77	702.6	YES	NO	bb	bb	10.191
4	Total-tetrafurans	24.79	3.771e2	5.011e2	0.727	0.75	0.77	7.3	YES	NO	bb	bb	0.091
5	Total-tetrafurans	24.60	2.846e2	3.805e2	0.727	0.75	0.77	5.9	YES	NO	bb	db	0.069
6	1368-TCDF	22.19	4.964e4	6.557e4	0.802	0.76	0.77	894.9	YES	NO	bb	bb	10.808
7	12389-PECDF	32.22	2.281e5	1.442e5	0.496	1.58	1.55	1106.9	YES	NO	bb	bb	75.335
8	23478-PeCDF	31.18	2.457e5	1.569e5	0.786	1.57	1.55	1233.6	YES	NO	bb	bb	54.072
9	12378-PeCDF	29.84	2.343e5	1.471e5	0.679	1.59	1.55	1179.4	YES	NO	bb	bb	56.397
10	Total-pentafurans	28.70	3.821e4	2.353e4	0.654	1.62	1.55	191.3	YES	NO	bb	bb	9.721
11	123678-HxCDF	34.95	2.974e5	2.224e5	1.091	1.34	1.24	1617.9	YES	NO	dd	db	48.491
12	123478-HxCDF	34.80	2.646e5	2.023e5	1.166	1.31	1.24	1550.0	YES	NO	bd	bd	49.735
13	123468-HXCDF	33.13	2.550e5	2.030e5	1.169	1.26	1.24	1451.1	YES	NO	bb	bb	48.667
14	123789-HxCDF	36.84	2.596e5	1.946e5	1.137	1.33	1.24	1370.6	YES	NO	bd	bb	50.976
15	234678-HxCDF	35.81	2.532e5	2.064e5	1.140	1.23	1.24	1484.1	YES	NO	bb	bb	49.854
16	1234789-HpCDF	40.91	1.569e5	1.578e5	0.953	0.99	1.05	722.4	YES	NO	bb	bb	54.016
17	1234678-HpCDF	38.68	1.787e5	1.748e5	1.003	1.02	1.05	960.2	YES	NO	bb	bb	49.876
18	OCDF	45.10	2.572e5	2.834e5	0.778	0.91	0.89	1343.5	YES	NO	bb	bb	106.178
19	13468-PECDF	27.03	3.640e5	2.405e5	1.246	1.51	1.55	7313.0	YES	NO	bb	bb	48.710

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.94	5.331e2	6.536e2	1.024	0.82	0.77	6.3	YES	NO	bb	bb	0.118
2	Total-tetradioxins	24.64	1.845e3	2.171e3	1.024	0.85	0.77	14.9	YES	NO	bb	bb	0.398
3	Total-tetradioxins	23.71	1.796e2	2.379e2	1.024	0.75	0.77	4.0	YES	NO	bb	bb	0.041
4	1368-TCDD	23.46	4.501e4	5.591e4	1.015	0.80	0.77	652.1	YES	NO	bb	bb	10.089
5	1289-TCDD	26.92	3.926e4	5.161e4	0.909	0.76	0.77	516.1	YES	NO	bd	bd	10.151
6	2378-TCDD	26.33	4.970e4	6.144e4	1.149	0.81	0.77	671.5	YES	NO	bd	bb	9.821
7	Total-tetradioxins	26.00	6.731e4	8.662e4	1.024	0.78	0.77	642.6	YES	NO	bb	bd	15.255
8	Total-tetradioxins	25.52	2.189e4	2.602e4	1.024	0.84	0.77	298.0	YES	NO	bd	bb	4.748

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk****PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.83	2.365e5	1.525e5	1.184	1.55	1.55	1859.0	YES	NO	bb	bb	46.557
2	12378-PeCDD	31.44	2.081e5	1.378e5	1.022	1.51	1.55	1646.7	YES	NO	bb	bb	47.943
3	12479-PECDD	28.71	3.502e5	2.276e5	2.301	1.54	1.55	1774.6	YES	NO	bb	bb	35.552

**HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HXCDD	33.91	2.038e5	1.732e5	1.115	1.18	1.24	1030.2	YES	NO	bb	bd	45.971
2	123789-HxCDD	36.43	2.119e5	1.619e5	0.907	1.31	1.24	1030.8	YES	NO	bd	bb	52.921
3	123678-HxCDD	36.04	2.114e5	1.740e5	1.001	1.21	1.24	1073.6	YES	NO	db	db	46.847
4	123478-HxCDD	35.93	1.928e5	1.571e5	0.996	1.23	1.24	1016.1	YES	NO	bd	bd	47.800

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.17	1.772e5	1.718e5	1.039	1.03	1.05	932.3	YES	NO	bd	bd	53.812
2	1234679-HPCDD	39.13	1.814e5	1.732e5	1.137	1.05	1.05	1070.6	YES	NO	bb	bb	49.976

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk****Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradoxins	24.94	5.331e2	6.536e2	1.024	0.82	0.77	6.3	YES	NO	bb	bb	0.118
2	Total-tetradoxins	24.64	1.845e3	2.171e3	1.024	0.85	0.77	14.9	YES	NO	bb	bb	0.398
3	Total-tetradoxins	23.71	1.796e2	2.379e2	1.024	0.75	0.77	4.0	YES	NO	bb	bb	0.041
4	1368-TCDD	23.46	4.501e4	5.591e4	1.015	0.80	0.77	652.1	YES	NO	bb	bb	10.089
5	1289-TCDD	26.92	3.926e4	5.161e4	0.909	0.76	0.77	516.1	YES	NO	bd	bd	10.151
6	2378-TCDD	26.33	4.970e4	6.144e4	1.149	0.81	0.77	671.5	YES	NO	bd	bb	9.821
7	Total-tetradoxins	26.00	6.731e4	8.662e4	1.024	0.78	0.77	642.6	YES	NO	bb	bd	15.255
8	Total-tetradoxins	25.52	2.189e4	2.602e4	1.024	0.84	0.77	298.0	YES	NO	bd	bb	4.748
9	12389-PECDD	31.83	2.365e5	1.525e5	1.184	1.55	1.55	1859.0	YES	NO	bb	bb	46.557
10	12378-PeCDD	31.44	2.081e5	1.378e5	1.022	1.51	1.55	1646.7	YES	NO	bb	bb	47.943
11	12479-PECDD	28.71	3.502e5	2.276e5	2.301	1.54	1.55	1774.6	YES	NO	bb	bb	35.552
12	124679-HXCDD	33.91	2.038e5	1.732e5	1.115	1.18	1.24	1030.2	YES	NO	bb	bd	45.971
13	123789-HxCDD	36.43	2.119e5	1.619e5	0.907	1.31	1.24	1030.8	YES	NO	bd	bb	52.921
14	123678-HxCDD	36.04	2.114e5	1.740e5	1.001	1.21	1.24	1073.6	YES	NO	db	db	46.847
15	123478-HxCDD	35.93	1.928e5	1.571e5	0.996	1.23	1.24	1016.1	YES	NO	bd	bd	47.800
16	1234678-HpCDD	40.17	1.772e5	1.718e5	1.039	1.03	1.05	932.3	YES	NO	bd	bd	53.812
17	1234679-HPCDD	39.13	1.814e5	1.732e5	1.137	1.05	1.05	1070.6	YES	NO	bb	bb	49.976
18	OCDD	44.86	2.775e5	3.267e5	0.920	0.85	0.89	2473.4	YES	NO	bb	bb	100.318

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## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.19	3.877e4	5.157e4	0.678	0.75	0.77	643.4	YES	NO	bb	bb	10.018
2	Total-tetrafurans	27.06	4.063e2	4.664e2	0.727	0.87	0.77	9.8	YES	NO	bb	bb	0.090
3	2378-TCDF	25.69	4.079e4	5.430e4	0.702	0.75	0.77	702.6	YES	NO	bb	bb	10.191
4	Total-tetrafurans	24.79	3.771e2	5.011e2	0.727	0.75	0.77	7.3	YES	NO	bb	bb	0.091
5	Total-tetrafurans	24.60	2.846e2	3.805e2	0.727	0.75	0.77	5.9	YES	NO	bb	db	0.069
6	1368-TCDF	22.19	4.964e4	6.557e4	0.802	0.76	0.77	894.9	YES	NO	bb	bb	10.808
7	12389-PECDF	32.22	2.281e5	1.442e5	0.496	1.58	1.55	1106.9	YES	NO	bb	bb	75.335
8	23478-PeCDF	31.18	2.457e5	1.569e5	0.786	1.57	1.55	1233.6	YES	NO	bb	bb	54.072
9	12378-PeCDF	29.84	2.343e5	1.471e5	0.679	1.59	1.55	1179.4	YES	NO	bb	bb	56.397
10	Total-pentafurans	28.70	3.821e4	2.353e4	0.654	1.62	1.55	191.3	YES	NO	bb	bb	9.721
11	123678-HxCDF	34.95	2.974e5	2.224e5	1.091	1.34	1.24	1617.9	YES	NO	dd	db	48.491
12	123478-HxCDF	34.80	2.646e5	2.023e5	1.166	1.31	1.24	1550.0	YES	NO	bd	bd	49.735
13	123468-HXCDF	33.13	2.550e5	2.030e5	1.169	1.26	1.24	1451.1	YES	NO	bb	bb	48.667
14	123789-HxCDF	36.84	2.596e5	1.946e5	1.137	1.33	1.24	1370.6	YES	NO	bd	bb	50.976
15	234678-HxCDF	35.81	2.532e5	2.064e5	1.140	1.23	1.24	1484.1	YES	NO	bb	bb	49.854
16	1234789-HpCDF	40.91	1.569e5	1.578e5	0.953	0.99	1.05	722.4	YES	NO	bb	bb	54.016
17	1234678-HpCDF	38.68	1.787e5	1.748e5	1.003	1.02	1.05	960.2	YES	NO	bb	bb	49.876
18	OCDF	45.10	2.572e5	2.834e5	0.778	0.91	0.89	1343.5	YES	NO	bb	bb	106.178
19	13468-PECDF	27.03	3.640e5	2.405e5	1.246	1.51	1.55	7313.0	YES	NO	bb	bb	48.710
20	Total-tetradioxins	24.94	5.331e2	6.536e2	1.024	0.82	0.77	6.3	YES	NO	bb	bb	0.118
21	Total-tetradioxins	24.64	1.845e3	2.171e3	1.024	0.85	0.77	14.9	YES	NO	bb	bb	0.398
22	Total-tetradioxins	23.71	1.796e2	2.379e2	1.024	0.75	0.77	4.0	YES	NO	bb	bb	0.041
23	1368-TCDD	23.46	4.501e4	5.591e4	1.015	0.80	0.77	652.1	YES	NO	bb	bb	10.089
24	1289-TCDD	26.92	3.926e4	5.161e4	0.909	0.76	0.77	516.1	YES	NO	bd	bd	10.151
25	2378-TCDD	26.33	4.970e4	6.144e4	1.149	0.81	0.77	671.5	YES	NO	bd	bb	9.821
26	Total-tetradioxins	26.00	6.731e4	8.662e4	1.024	0.78	0.77	642.6	YES	NO	bb	bd	15.255
27	Total-tetradioxins	25.52	2.189e4	2.602e4	1.024	0.84	0.77	298.0	YES	NO	bd	bb	4.748
28	12389-PECDD	31.83	2.365e5	1.525e5	1.184	1.55	1.55	1859.0	YES	NO	bb	bb	46.557
29	12378-PeCDD	31.44	2.081e5	1.378e5	1.022	1.51	1.55	1646.7	YES	NO	bb	bb	47.943
30	12479-PECDD	28.71	3.502e5	2.276e5	2.301	1.54	1.55	1774.6	YES	NO	bb	bb	35.552
31	124679-HXCDD	33.91	2.038e5	1.732e5	1.115	1.18	1.24	1030.2	YES	NO	bb	bd	45.971
32	123789-HxCDD	36.43	2.119e5	1.619e5	0.907	1.31	1.24	1030.8	YES	NO	bd	bb	52.921
33	123678-HxCDD	36.04	2.114e5	1.740e5	1.001	1.21	1.24	1073.6	YES	NO	db	db	46.847
34	123478-HxCDD	35.93	1.928e5	1.571e5	0.996	1.23	1.24	1016.1	YES	NO	bd	bd	47.800
35	1234678-HpCDD	40.17	1.772e5	1.718e5	1.039	1.03	1.05	932.3	YES	NO	bd	bd	53.812
36	1234679-HPCDD	39.13	1.814e5	1.732e5	1.137	1.05	1.05	1070.6	YES	NO	bb	bb	49.976
37	OCDD	44.86	2.775e5	3.267e5	0.920	0.85	0.89	2473.4	YES	NO	bb	bb	100.318

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:59:47 Pacific Daylight Time

**ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk****PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	24.64	9.004e3					0.8	NO		bb		
2	FUNCTION1 PFK	24.55	6.851e3					0.9	NO		bb		
3	FUNCTION1 PFK	24.49	1.243e4					1.4	NO		bb		
4	FUNCTION1 PFK	23.91	1.097e4					1.3	NO		bb		
5	FUNCTION1 PFK	23.43	1.948e3					0.5	NO		bb		
6	FUNCTION1 PFK	23.25	3.700e3					0.6	NO		bb		
7	FUNCTION1 PFK	22.45	1.071e4					1.3	NO		bb		
8	FUNCTION1 PFK	22.37	5.875e3					0.9	NO		bb		
9	FUNCTION1 PFK	21.81	1.676e3					0.5	NO		bb		
10	FUNCTION1 PFK	27.33	1.931e4					1.1	NO		bb		
11	FUNCTION1 PFK	27.17	2.334e4					1.1	NO		bb		
12	FUNCTION1 PFK	27.00	1.275e4					1.0	NO		db		
13	FUNCTION1 PFK	26.92	6.401e3					1.1	NO		bd		
14	FUNCTION1 PFK	26.86	1.964e4					1.7	NO		bb		
15	FUNCTION1 PFK	26.48	5.601e3					0.9	NO		bb		
16	FUNCTION1 PFK	26.21	1.041e4					1.3	NO		bb		
17	FUNCTION1 PFK	25.58	5.256e3					0.9	NO		bb		
18	FUNCTION1 PFK	25.05	2.346e4					1.3	NO		bb		



## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

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ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

## PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.65	3.143e3					1.0	NO		bd		0.000
2	FUNCTION2 PFK	28.57	3.469e3					1.0	NO		bb		0.000
3	FUNCTION2 PFK	28.49	9.887e2					0.4	NO		bb		0.000
4	FUNCTION2 PFK	28.33	2.784e3					0.7	NO		db		0.000
5	FUNCTION2 PFK	28.30	2.121e3					0.7	NO		dd		0.000
6	FUNCTION2 PFK	28.25	1.270e3					0.4	NO		bd		0.000
7	FUNCTION2 PFK	30.11	3.882e3					1.2	NO		db		0.000
8	FUNCTION2 PFK	30.07	9.726e3					1.9	NO		dd		0.000
9	FUNCTION2 PFK	30.02	1.515e4					1.7	NO		dd		0.000
10	FUNCTION2 PFK	29.93	1.308e4					1.9	NO		dd		0.000
11	FUNCTION2 PFK	29.84	4.684e3					1.1	NO		dd		0.000
12	FUNCTION2 PFK	29.80	1.264e4					1.9	NO		dd		0.000
13	FUNCTION2 PFK	29.73	7.797e3					1.5	NO		bd		0.000
14	FUNCTION2 PFK	29.54	1.332e3					0.5	NO		bb		0.000
15	FUNCTION2 PFK	29.48	1.572e3					0.7	NO		bb		0.000
16	FUNCTION2 PFK	29.37	4.720e2					0.3	NO		bb		0.000
17	FUNCTION2 PFK	29.30	4.983e2					0.3	NO		bb		0.000
18	FUNCTION2 PFK	29.19	2.133e3					0.6	NO		bb		0.000
19	FUNCTION2 PFK	29.01	7.925e3					1.8	NO		bb		0.000
20	FUNCTION2 PFK	28.86	7.920e3					1.0	NO		db		0.000
21	FUNCTION2 PFK	28.76	9.448e3					1.5	NO		dd		0.000
22	FUNCTION2 PFK	28.69	5.567e3					1.3	NO		dd		0.000
23	FUNCTION2 PFK	31.77	2.728e3					0.7	NO		db		0.000
24	FUNCTION2 PFK	31.71	3.016e3					0.8	NO		bd		0.000
25	FUNCTION2 PFK	31.62	3.553e3					0.9	NO		bb		0.000
26	FUNCTION2 PFK	31.56	4.766e3					1.4	NO		db		0.000
27	FUNCTION2 PFK	31.50	1.699e3					0.4	NO		bd		0.000
28	FUNCTION2 PFK	31.29	9.496e3					0.9	NO		db		0.000
29	FUNCTION2 PFK	31.19	2.564e3					0.7	NO		bd		0.000
30	FUNCTION2 PFK	31.07	1.694e3					0.6	NO		bb		0.000
31	FUNCTION2 PFK	31.03	3.195e3					0.9	NO		bb		0.000
32	FUNCTION2 PFK	30.91	6.024e3					1.9	NO		db		0.000
33	FUNCTION2 PFK	30.88	9.102e3					1.9	NO		dd		0.000
34	FUNCTION2 PFK	30.78	1.414e4					1.3	NO		bd		0.000
35	FUNCTION2 PFK	30.69	5.330e3					1.0	NO		bb		0.000
36	FUNCTION2 PFK	30.61	2.169e3					0.7	NO		bb		0.000
37	FUNCTION2 PFK	30.42	6.888e3					1.3	NO		bb		0.000

ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

**PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION2 PFK	30.28	3.073e3					1.0	NO		bb		0.000
39	FUNCTION2 PFK	32.76	2.046e3					0.6	NO		bb		0.000
40	FUNCTION2 PFK	32.70	3.122e3					0.8	NO		bb		0.000
41	FUNCTION2 PFK	32.54	2.196e3					0.8	NO		bb		0.000
42	FUNCTION2 PFK	32.44	5.722e3					1.6	NO		bb		0.000
43	FUNCTION2 PFK	32.31	4.071e3					1.2	NO		bb		0.000
44	FUNCTION2 PFK	32.25	6.983e2					0.5	NO		bb		0.000
45	FUNCTION2 PFK	32.21	7.948e2					0.5	NO		bb		0.000
46	FUNCTION2 PFK	32.11	2.986e3					0.8	NO		bb		0.000
47	FUNCTION2 PFK	31.98	6.780e3					0.9	NO		bb		0.000
48	FUNCTION2 PFK	31.92	3.083e3					0.8	NO		bb		0.000
49	FUNCTION2 PFK	31.82	3.116e3					1.4	NO		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.98	1.075e3					0.6	NO		bb		
2	FUNCTION4 PFK	38.49	5.330e3					1.4	NO		bb		
3	FUNCTION4 PFK	38.04	1.775e5					1.8	NO		bb		
4	FUNCTION4 PFK	42.60	7.330e3					1.5	NO		bb		
5	FUNCTION4 PFK	42.16	9.513e3					1.3	NO		bb		
6	FUNCTION4 PFK	41.71	6.058e3					1.2	NO		bb		
7	FUNCTION4 PFK	41.13	2.871e3					0.8	NO		bb		
8	FUNCTION4 PFK	40.75	1.698e4					1.8	NO		bb		
9	FUNCTION4 PFK	40.22	9.356e3					2.4	NO		bb		
10	FUNCTION4 PFK	40.17	1.063e3					0.6	NO		bb		
11	FUNCTION4 PFK	40.13	2.226e3					0.7	NO		bb		
12	FUNCTION4 PFK	39.79	2.994e4					2.0	NO		db		
13	FUNCTION4 PFK	39.65	1.365e4					1.7	NO		dd		
14	FUNCTION4 PFK	39.54	1.135e4					1.8	NO		bd		
15	FUNCTION4 PFK	39.03	1.656e3					0.6	NO		bb		

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:59:47 Pacific Daylight Time

**ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk****PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.01	6.246e3					1.6	NO		bd		
2	FUNCTION5 PFK	43.54	2.901e3					0.9	NO		bb		
3	FUNCTION5 PFK	43.45	9.035e3					1.4	NO		bb		
4	FUNCTION5 PFK	45.74	7.552e2					0.5	NO		bb		
5	FUNCTION5 PFK	45.50	6.062e2					0.4	NO		bb		
6	FUNCTION5 PFK	45.46	1.809e3					0.8	NO		bb		
7	FUNCTION5 PFK	45.40	2.074e3					0.8	NO		bb		
8	FUNCTION5 PFK	44.80	1.449e3					0.6	NO		bb		
9	FUNCTION5 PFK	44.61	1.315e3					0.6	NO		bb		
10	FUNCTION5 PFK	44.42	1.392e3					0.6	NO		db		
11	FUNCTION5 PFK	44.37	9.353e3					1.6	NO		bd		
12	FUNCTION5 PFK	44.04	2.812e3					1.1	NO		db		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.68	8.630e1					2.4	NO		bb		0.000
2	FUNCTION1 HXCD...	26.01	1.372e2					2.4	NO		bb		0.000
3	FUNCTION1 HXCD...	25.48	1.345e2					3.5	YES		bb		0.000
4	FUNCTION1 HXCD...	22.60	1.127e2					2.1	NO		bb		0.000
5	FUNCTION1 HXCD...	22.38	1.224e2					2.7	NO		bb		0.000
6	FUNCTION1 HXCD...	21.65	8.950e1					2.3	NO		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

**ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.98	9.206e1					1.9	NO		bb		0.000
2	FUNCTION2 HPCD...	31.14	1.135e2					1.9	NO		db		0.000
3	FUNCTION2 HPCD...	31.07	1.192e2					5.3	YES		dd		0.000
4	FUNCTION2 HPCD...	31.04	2.507e2					6.5	YES		bd		0.000
5	FUNCTION2 HPCD...	30.84	7.269e1					1.2	NO		bb		0.000
6	FUNCTION2 HPCD...	30.26	7.199e1					2.5	NO		bb		0.000
7	FUNCTION2 HPCD...	29.76	7.145e1					1.6	NO		bb		0.000
8	FUNCTION2 HPCD...	29.05	8.063e1					2.2	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.04	8.449e1					2.4	NO		db		0.000
2	FUNCTION3 OCDPE	35.91	1.310e2					4.8	YES		bd		0.000
3	FUNCTION3 OCDPE	34.60	8.113e1					2.7	NO		bb		0.000
4	FUNCTION3 OCDPE	32.91	7.069e1					2.4	NO		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.66	7.427e1					1.2	NO		bd		0.000
2	FUNCTION4 NCDPE	38.81	7.599e1					2.2	NO		db		0.000

**ETHERS6**

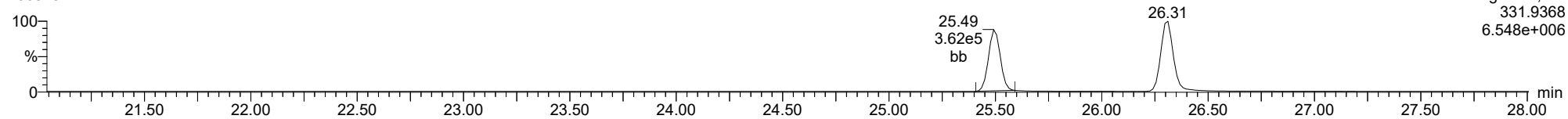
	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.36	9.019e1					5.3	YES		bb		0.000

**Method:** T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07  
**Calibration:** T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

**ID:** CS3L6, **Name:** 23051514, **Date:** 15-May-2023, **Time:** 22:11:03, **Conditions:** AUTOSPEC01, **User:** pk

**13C-1234-TCDD**

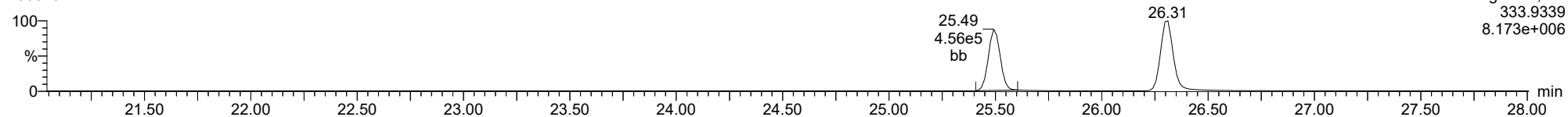
23051514



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6.548e+006

**13C-1234-TCDD**

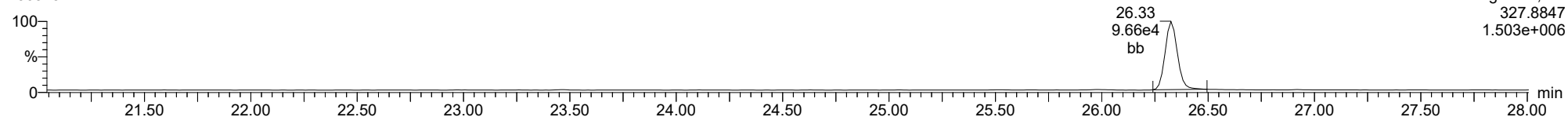
23051514



F1:Voltage SIR,EI+  
333.9339  
8.173e+006

**37CL-2378-TCDD**

23051514

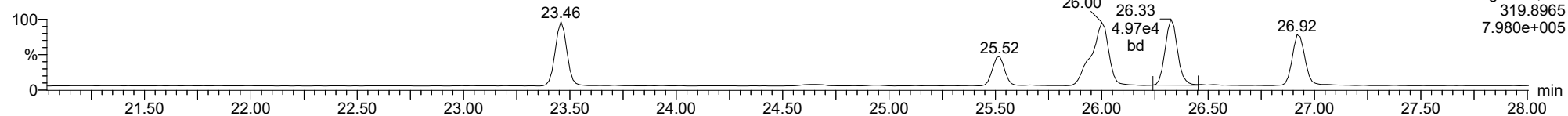


F1:Voltage SIR,EI+  
327.8847  
1.503e+006

ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

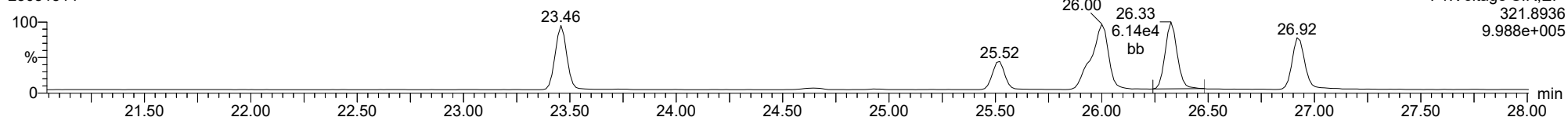
**2378-TCDD**

23051514



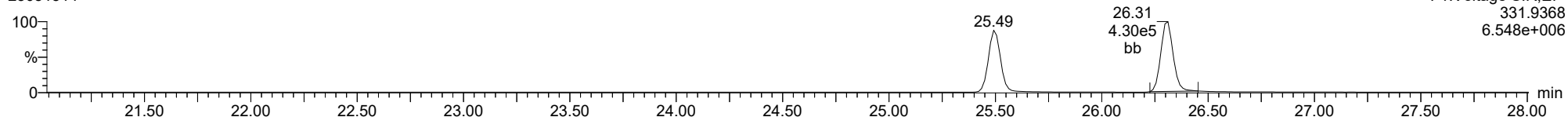
**2378-TCDD**

23051514



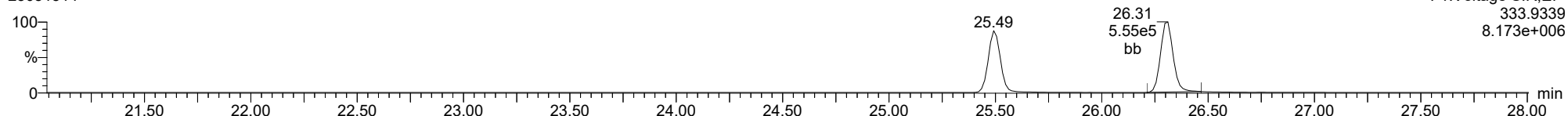
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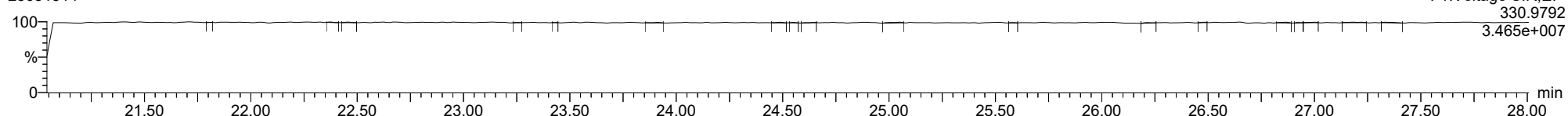
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23051514



**FUNCTION1 PFK**

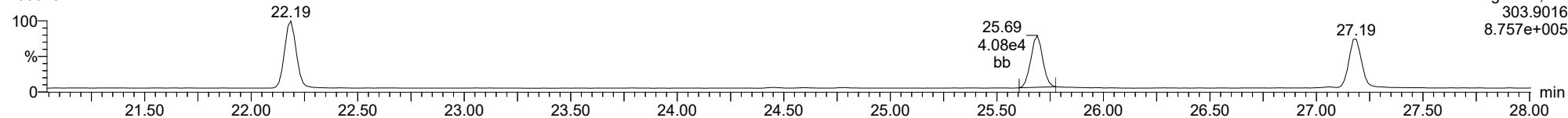
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

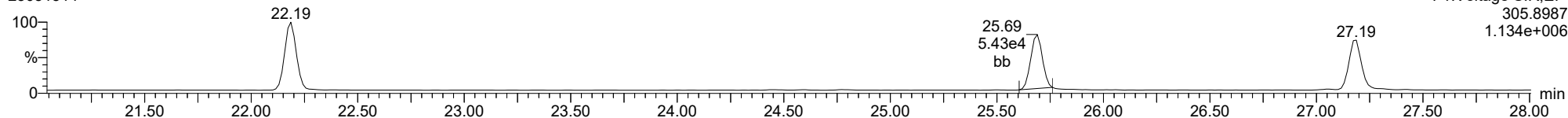
**2378-TCDF**

23051514



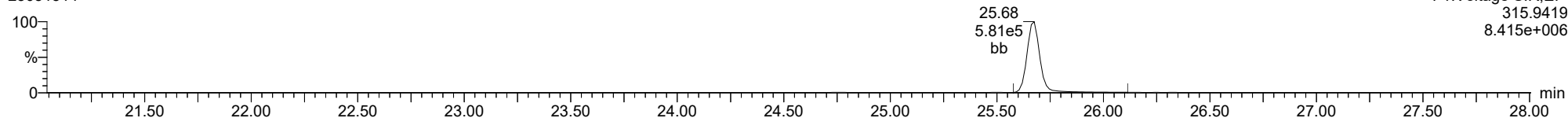
**2378-TCDF**

23051514



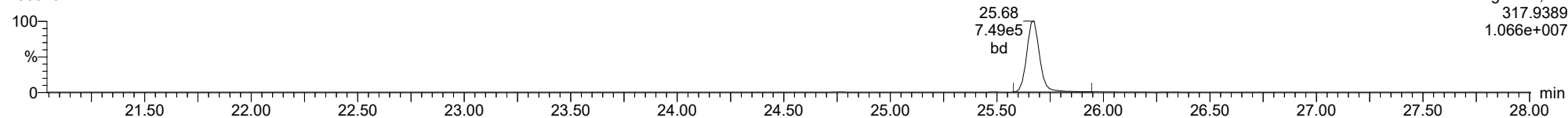
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23051514



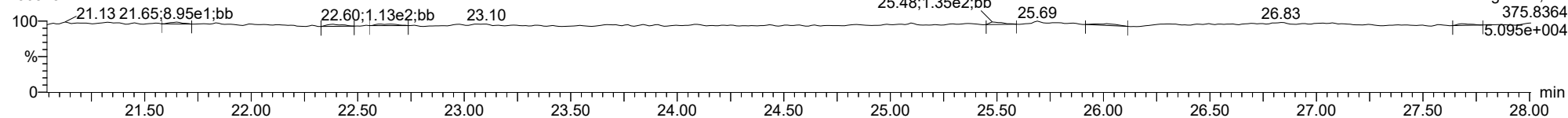
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23051514



**FUNCTION1 HXCDPE**

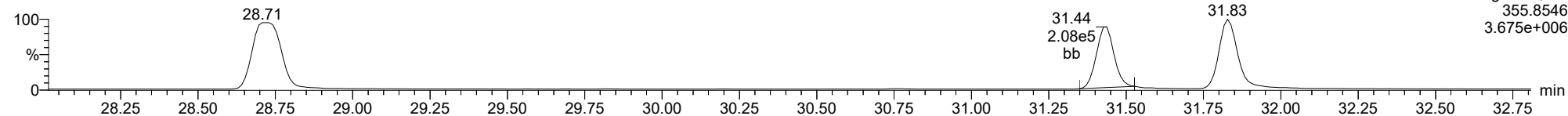
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

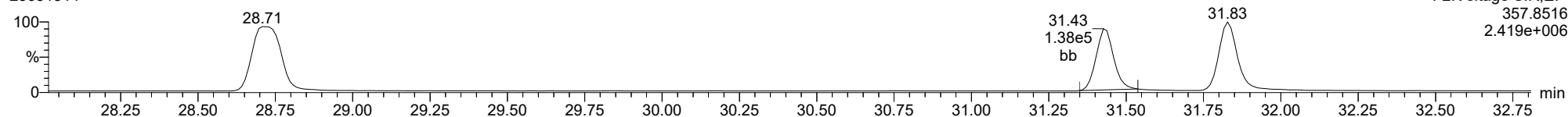
**12378-PeCDD**

23051514



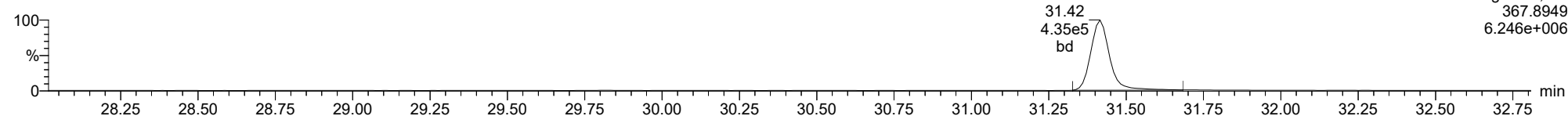
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23051514



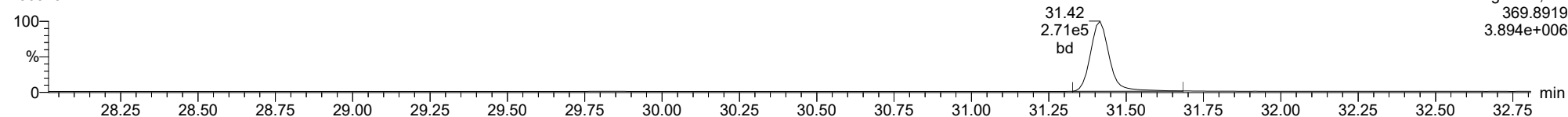
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23051514



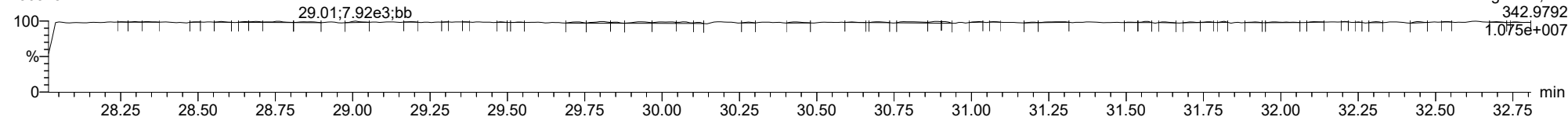
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23051514



**FUNCTION2 PFK**

23051514

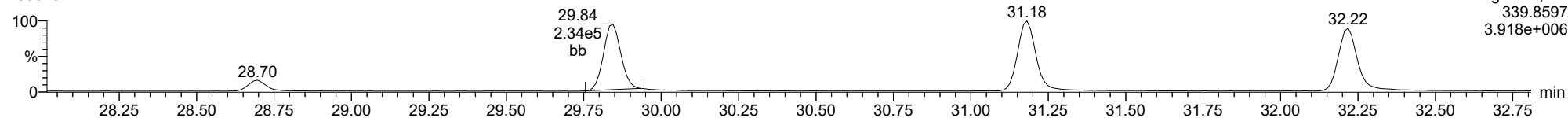




ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

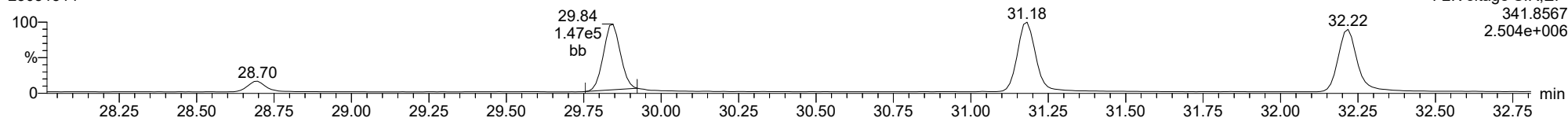
**12378-PeCDF**

23051514



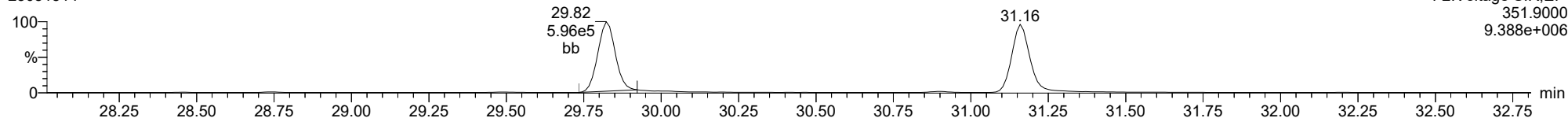
**12378-PeCDF**

23051514



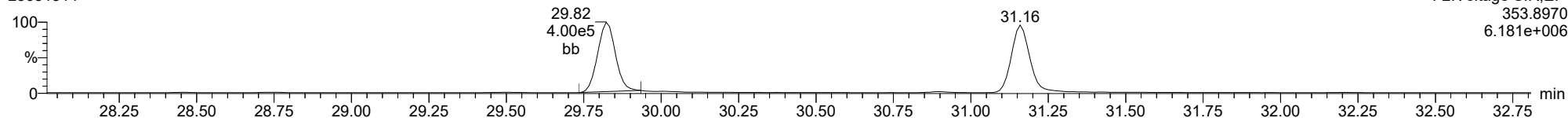
**13C-12378-PeCDF**

23051514



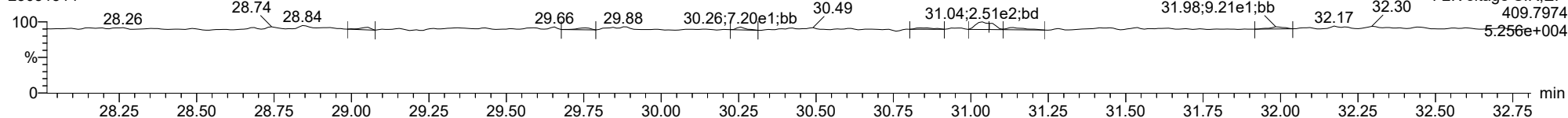
**13C-12378-PeCDF**

23051514



**FUNCTION2 HPCDPE**

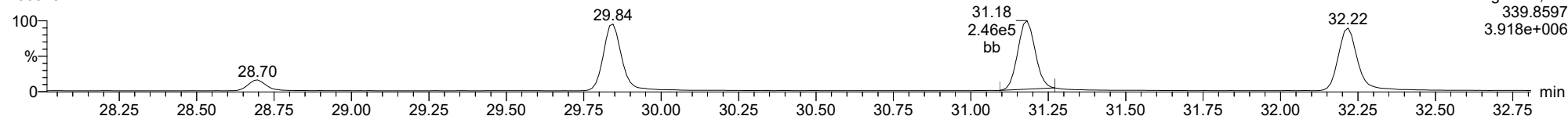
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

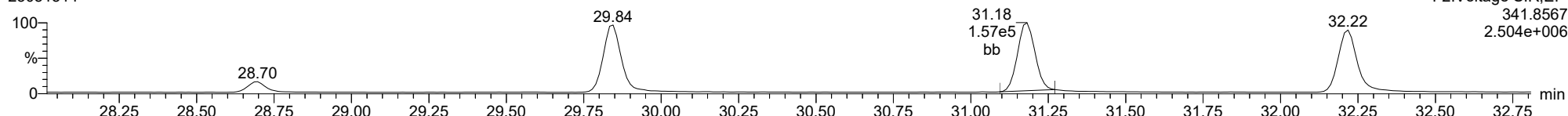
**23478-PeCDF**

23051514



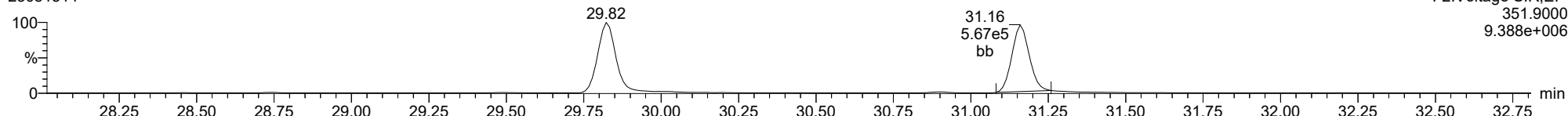
**23478-PeCDF**

23051514



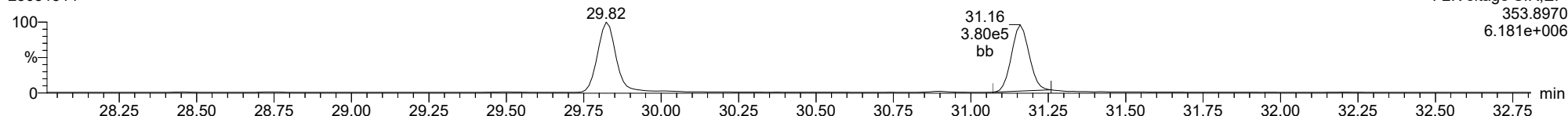
**13C-23478-PeCDF**

23051514



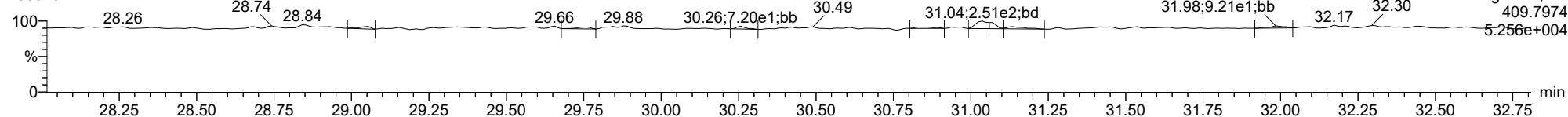
**13C-23478-PeCDF**

23051514



**FUNCTION2 HPCDPE**

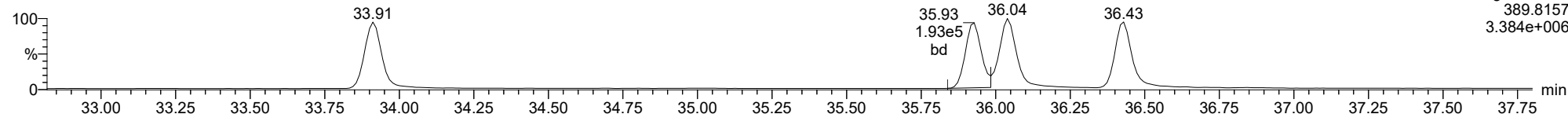
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

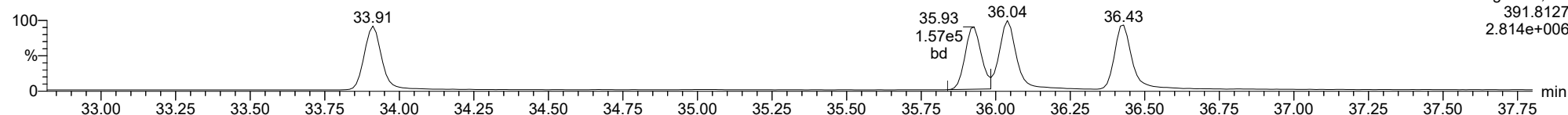
**123478-HxCDD**

23051514



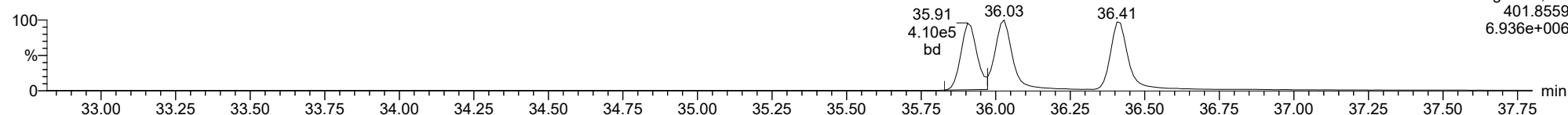
**123478-HxCDD**

23051514



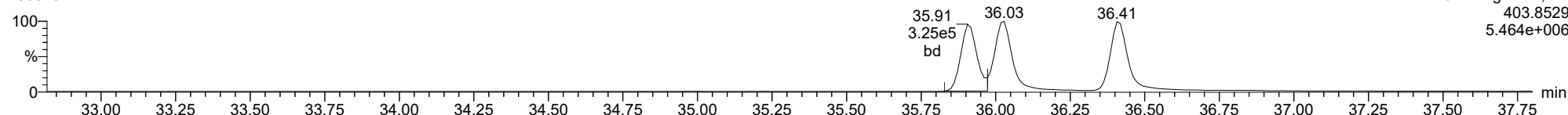
**13C-123478-HxCDD**

23051514



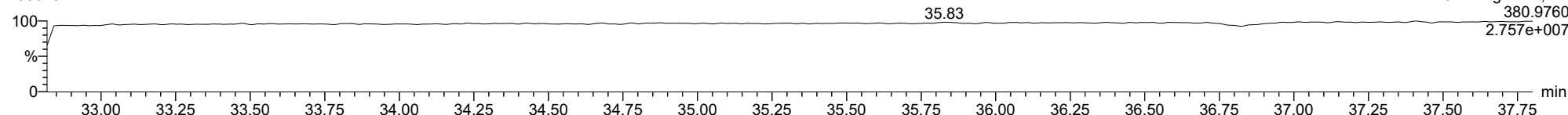
**13C-123478-HxCDD**

23051514



**FUNCTION3 PFK**

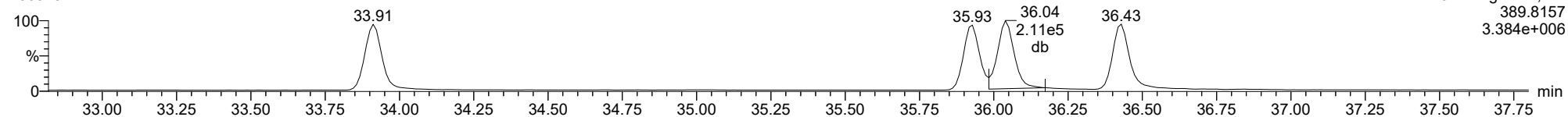
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

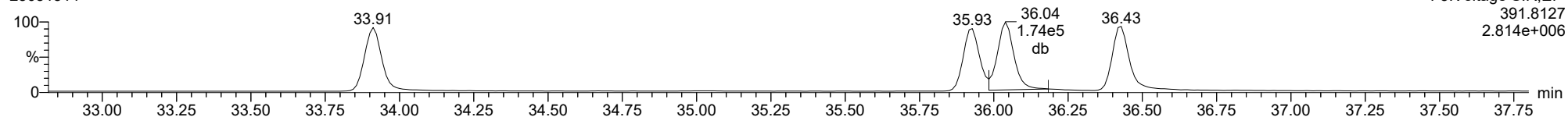
**123678-HxCDD**

23051514



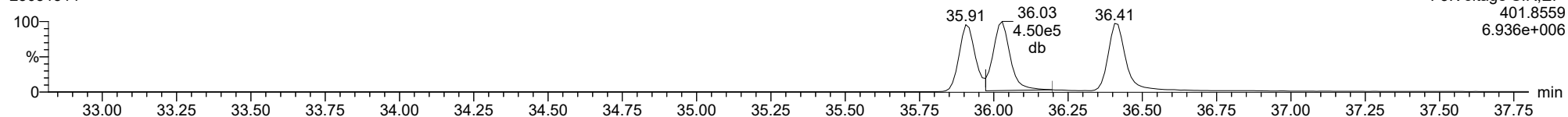
**123678-HxCDD**

23051514



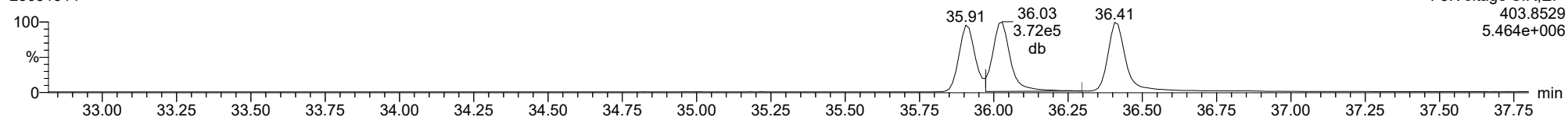
**13C-123678-HxCDD**

23051514



**13C-123678-HxCDD**

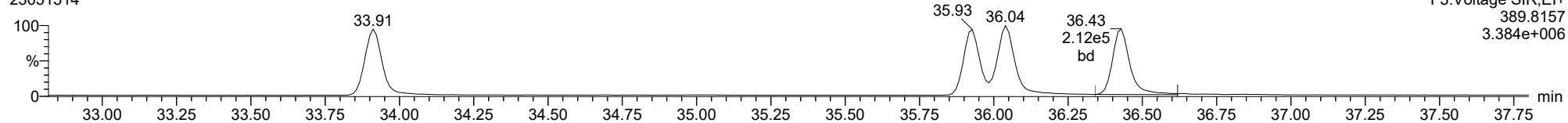
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

**123789-HxCDD**

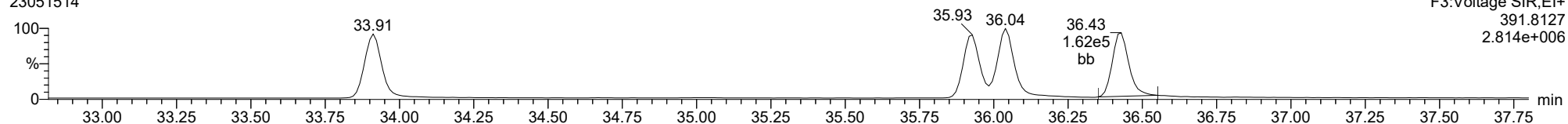
23051514



F3:Voltage SIR,EI+  
389.8157  
3.384e+006

**123789-HxCDD**

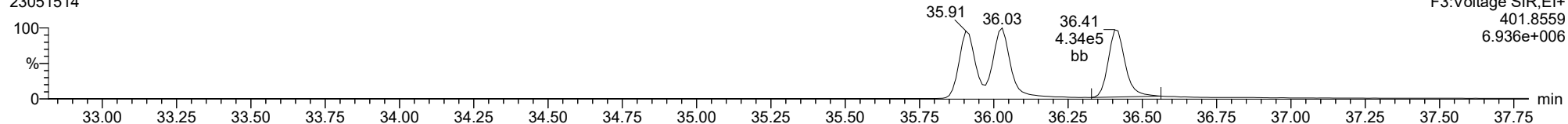
23051514



F3:Voltage SIR,EI+  
391.8127  
2.814e+006

**13C-123789-HxCDD**

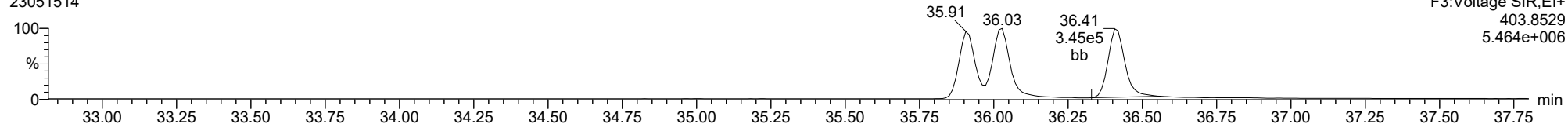
23051514



F3:Voltage SIR,EI+  
401.8559  
6.936e+006

**13C-123789-HxCDD**

23051514

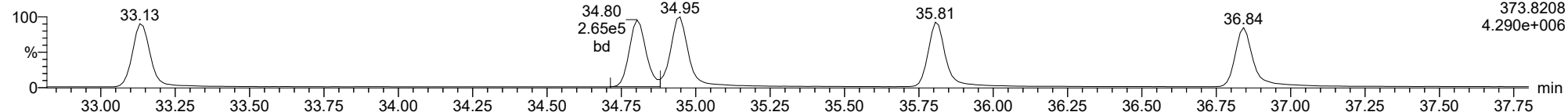


F3:Voltage SIR,EI+  
403.8529  
5.464e+006

ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

**123478-HxCDF**

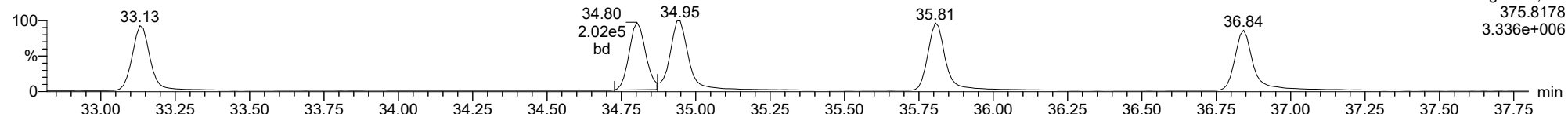
23051514



F3:Voltage SIR,EI+  
373.8208  
4.290e+006

**123478-HxCDF**

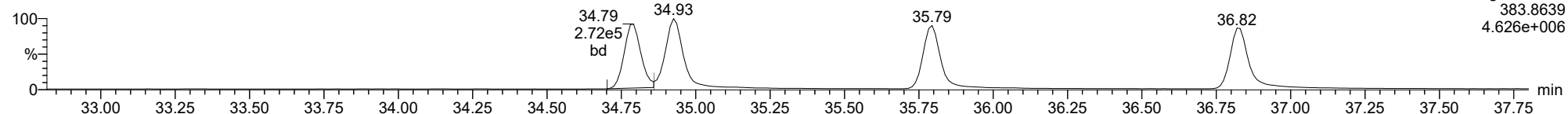
23051514



F3:Voltage SIR,EI+  
375.8178  
3.336e+006

**13C-123478-HxCDF**

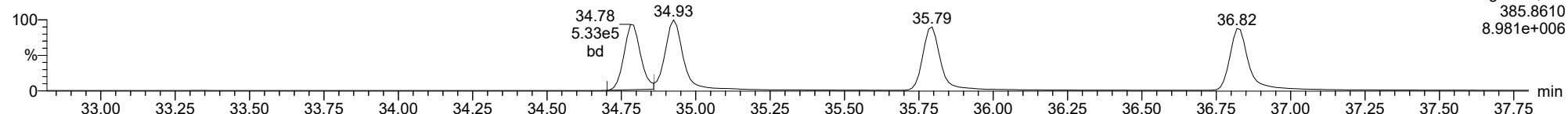
23051514



F3:Voltage SIR,EI+  
383.8639  
4.626e+006

**13C-123478-HxCDF**

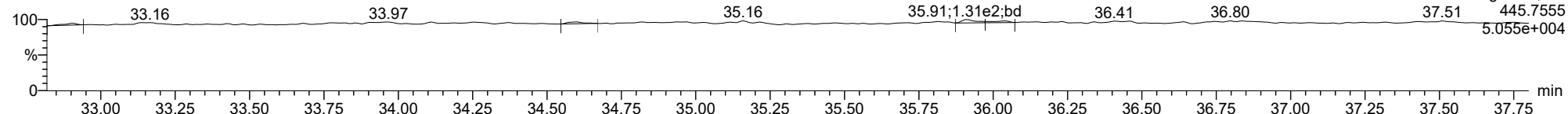
23051514



F3:Voltage SIR,EI+  
385.8610  
8.981e+006

**FUNCTION3 OCDPE**

23051514

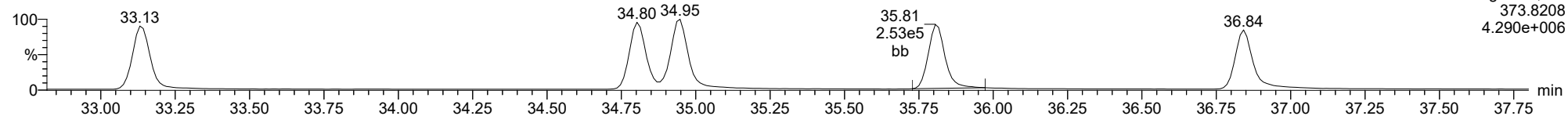


F3:Voltage SIR,EI+  
37.51 445.7555  
5.055e+004

ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

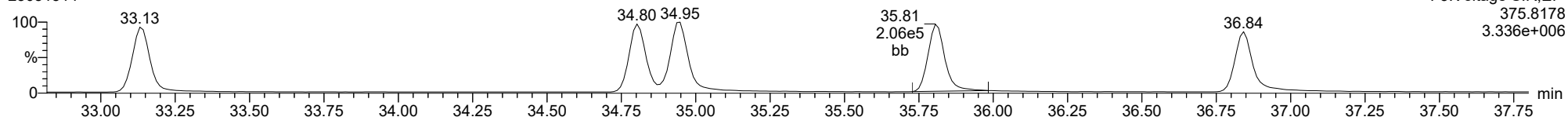
**234678-HxCDF**

23051514



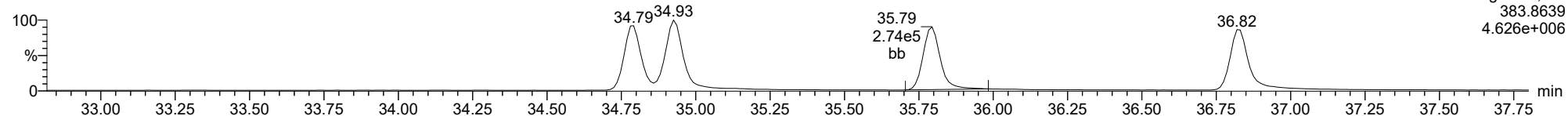
**234678-HxCDF**

23051514



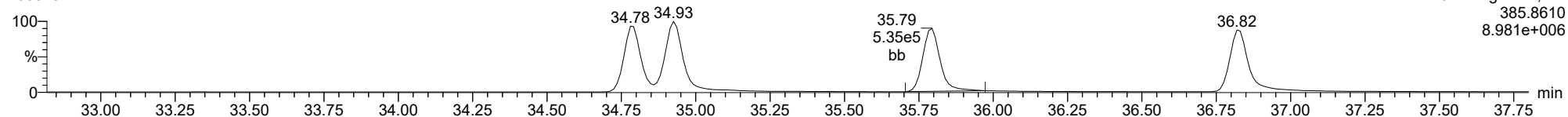
**13C-234678-HxCDF**

23051514



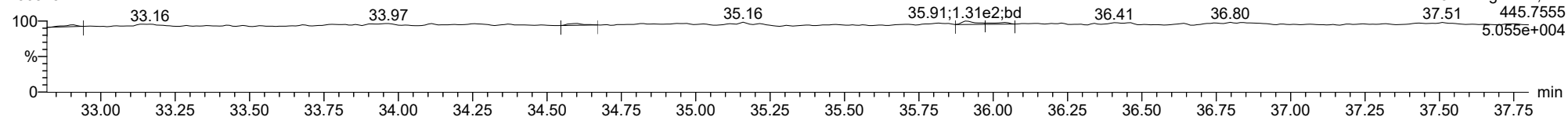
**13C-234678-HxCDF**

23051514



**FUNCTION3 OCDPE**

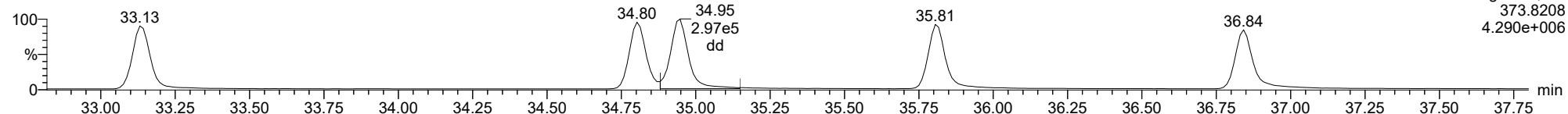
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

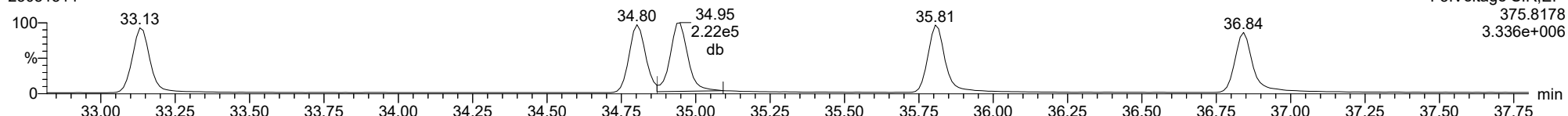
**123678-HxCDF**

23051514



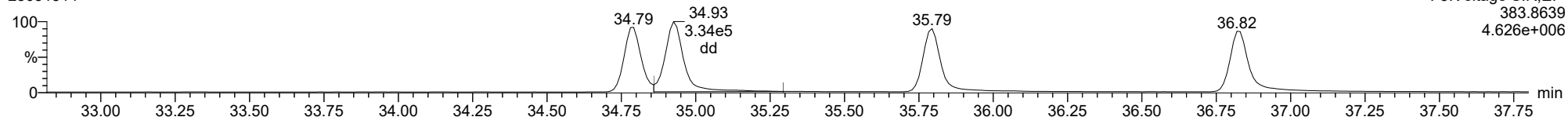
**123678-HxCDF**

23051514



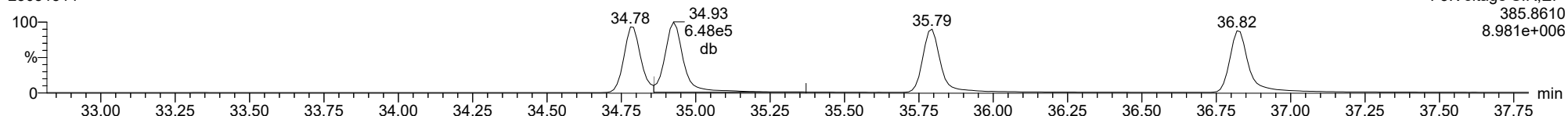
**13C-123678-HxCDF**

23051514



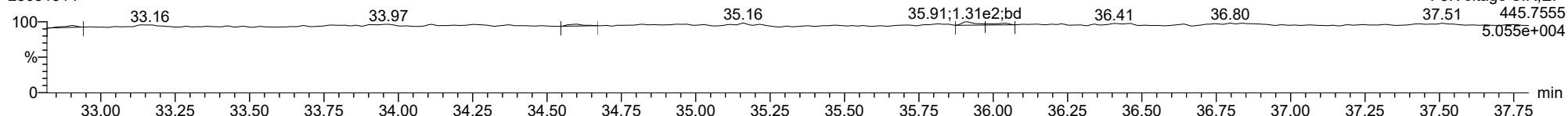
**13C-123678-HxCDF**

23051514



**FUNCTION3 OCDPE**

23051514

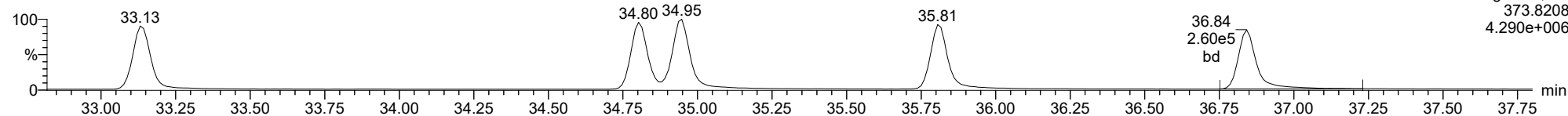




ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

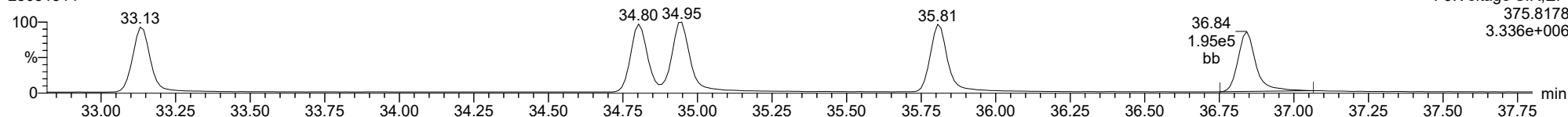
**123789-HxCDF**

23051514



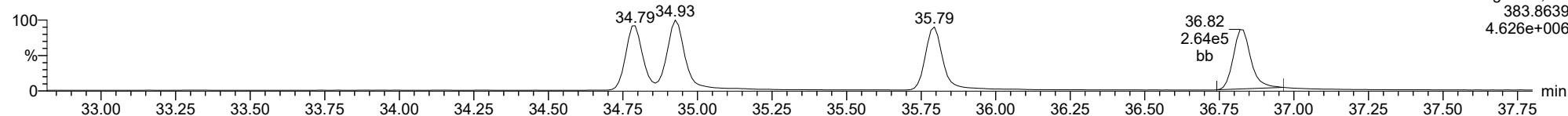
**123789-HxCDF**

23051514



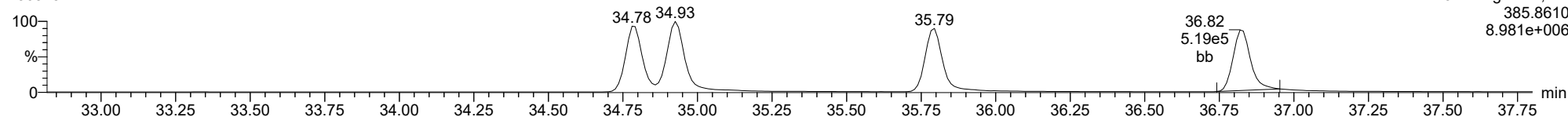
**13C-123789-HxCDF**

23051514



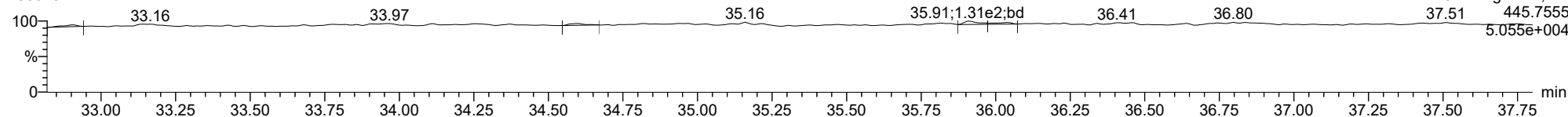
**13C-123789-HxCDF**

23051514



**FUNCTION3 OCDPE**

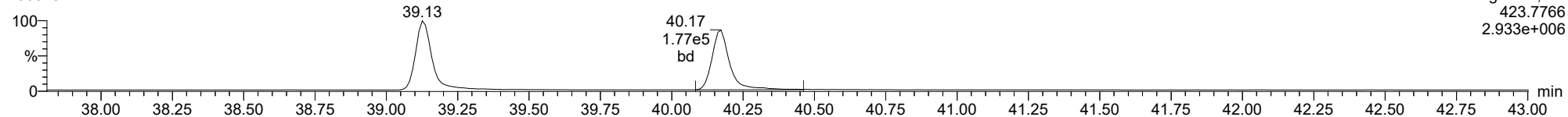
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDD**

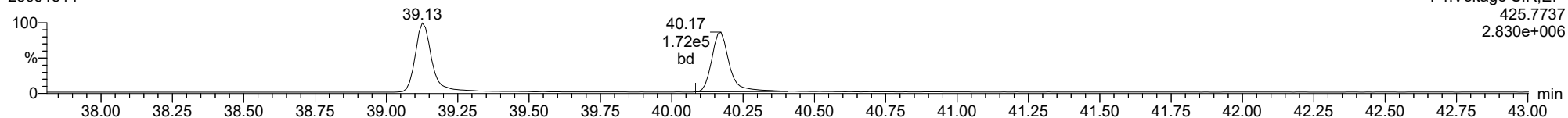
23051514



F4:Voltage SIR,EI+  
423.7766  
2.933e+006

**1234678-HpCDD**

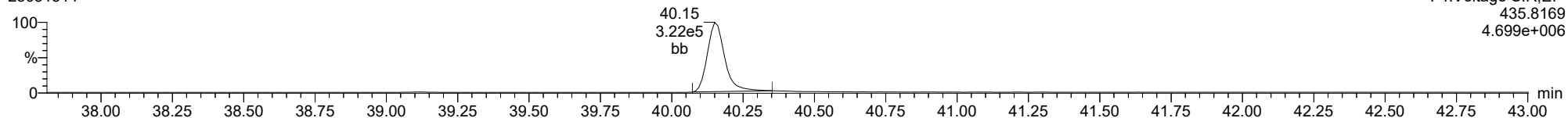
23051514



F4:Voltage SIR,EI+  
425.7737  
2.830e+006

**13C-1234678-HpCDD**

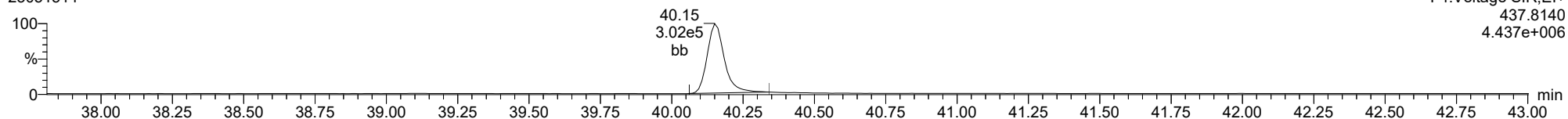
23051514



F4:Voltage SIR,EI+  
435.8169  
4.699e+006

**13C-1234678-HpCDD**

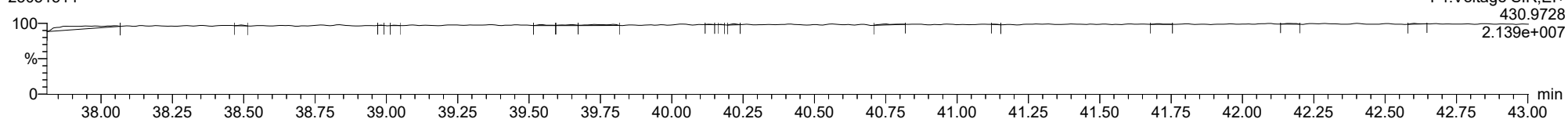
23051514



F4:Voltage SIR,EI+  
437.8140  
4.437e+006

**FUNCTION4 PFK**

23051514

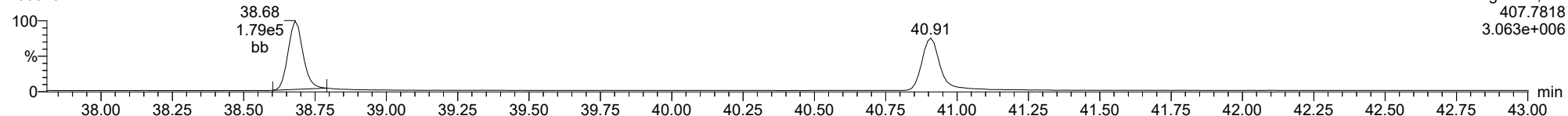


F4:Voltage SIR,EI+  
430.9728  
2.139e+007

ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

1234678-HpCDF

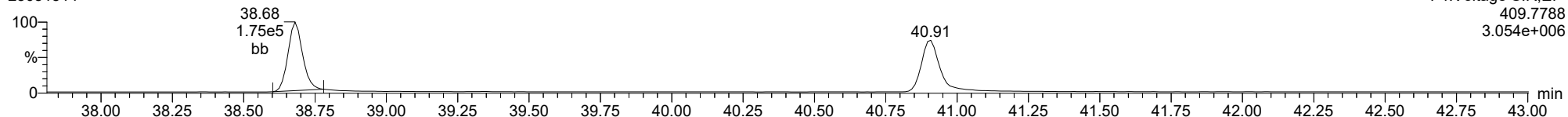
23051514



F4:Voltage SIR,El+  
407.7818  
3.063e+006

1234678-HpCDF

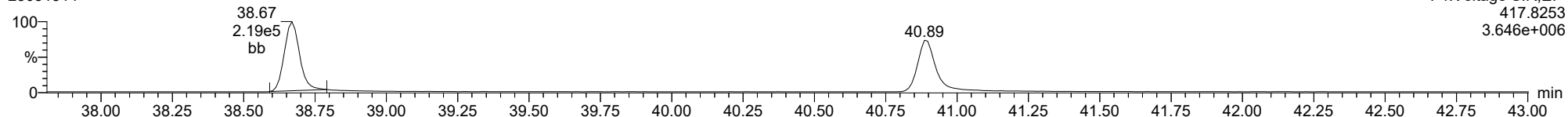
23051514



F4:Voltage SIR,El+  
409.7788  
3.054e+006

13C-1234678-HpCDF

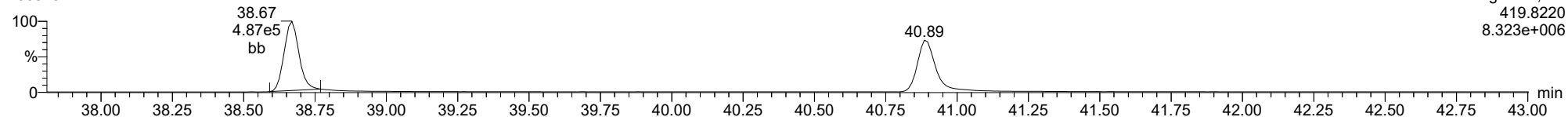
23051514



F4:Voltage SIR,El+  
417.8253  
3.646e+006

13C-1234678-HpCDF

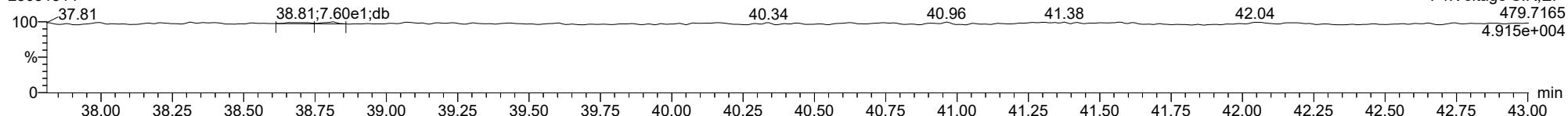
23051514



F4:Voltage SIR,El+  
419.8220  
8.323e+006

FUNCTION4 NCDPE

23051514

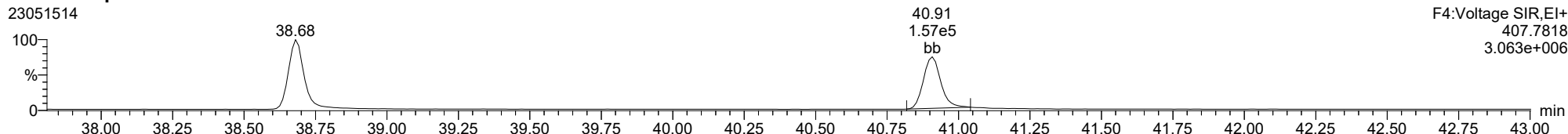


F4:Voltage SIR,El+  
479.7165  
4.915e+004

ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

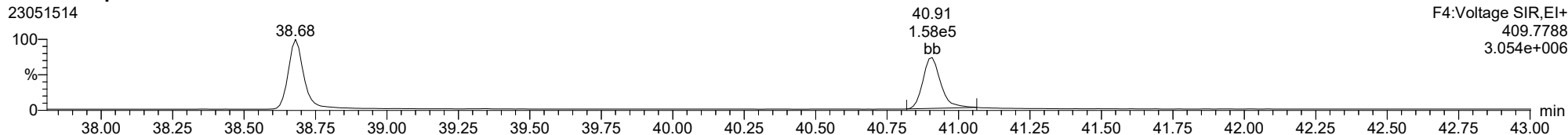
**1234789-HpCDF**

23051514



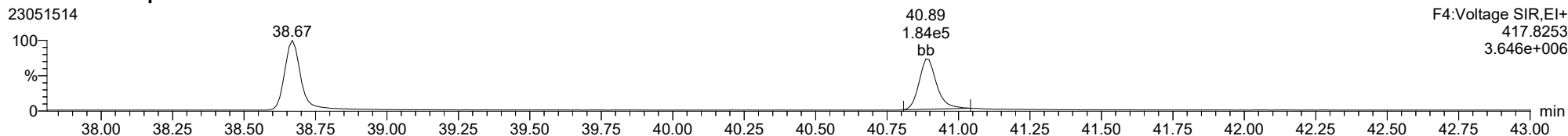
**1234789-HpCDF**

23051514



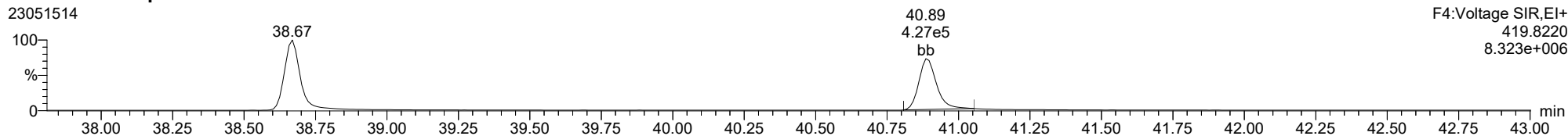
**13C-1234789-HpCDF**

23051514



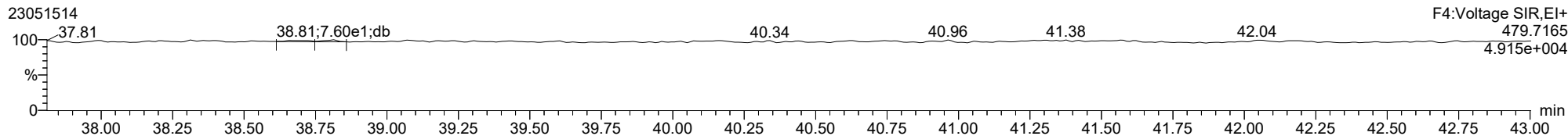
**13C-1234789-HpCDF**

23051514



**FUNCTION4 NCDPE**

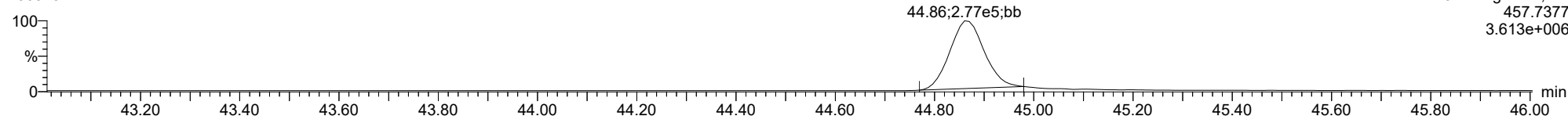
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ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

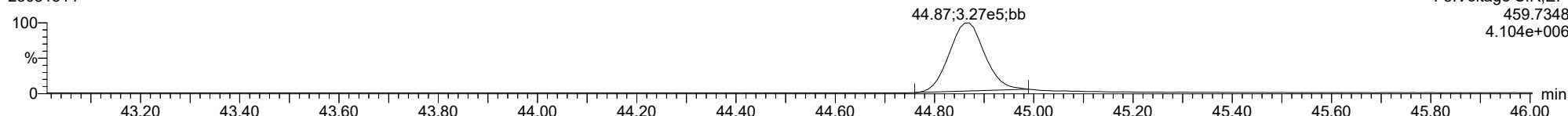
**OCDD**

23051514



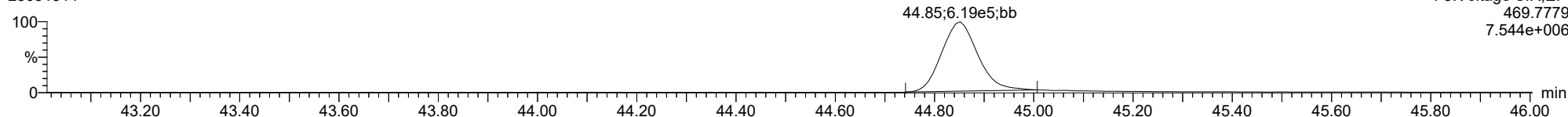
**OCDD**

23051514



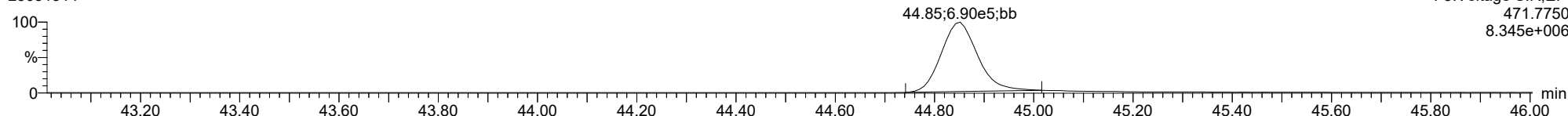
**13C-OCDD**

23051514



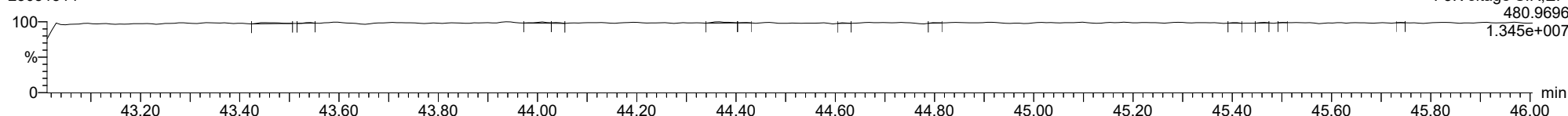
**13C-OCDD**

23051514



**FUNCTION5 PFK**

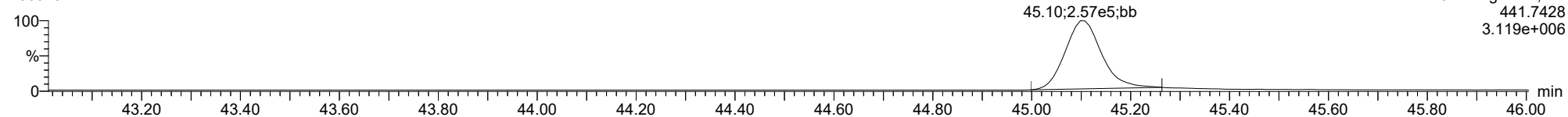
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

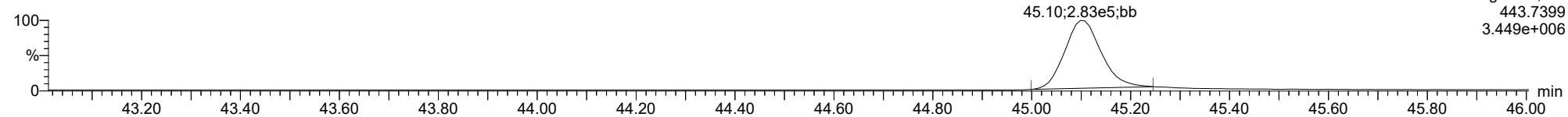
**OCDF**

23051514



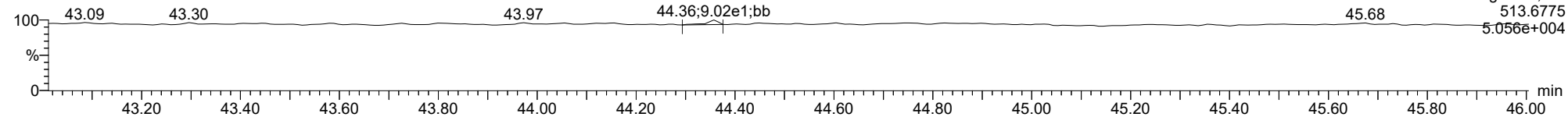
**OCDF**

23051514



**FUNCTION5 DCDPE**

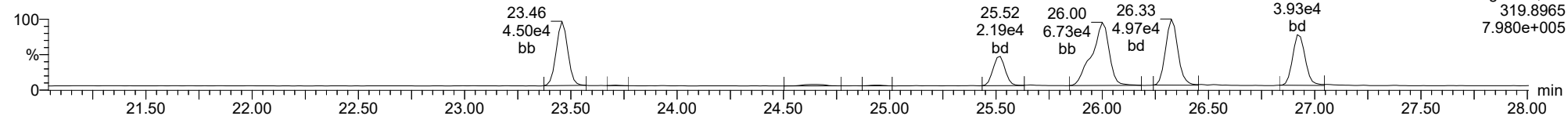
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

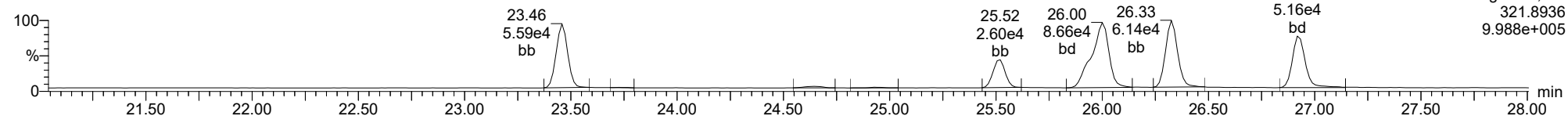
**Total-tetradioxins**

23051514



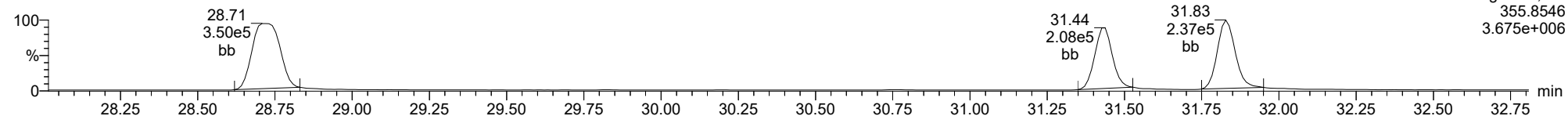
**Total-tetradioxins**

23051514



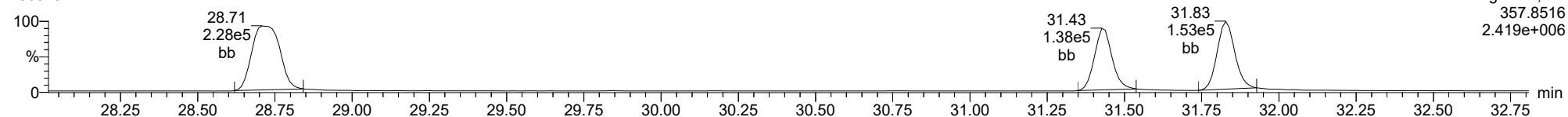
**Total-pentadioxins**

23051514



**Total-pentadioxins**

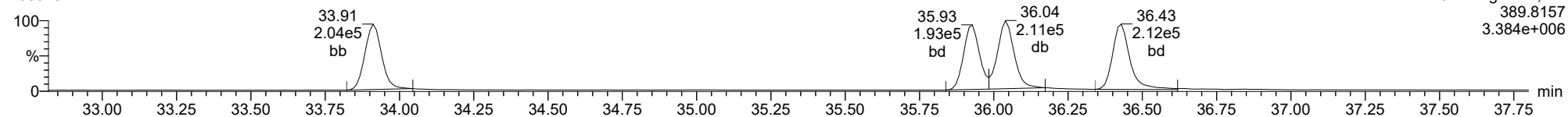
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

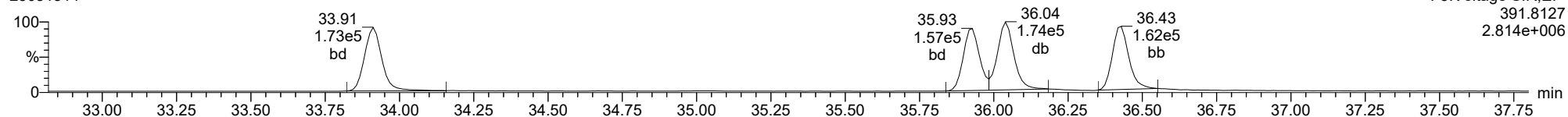
**Total-hexadioxins**

23051514



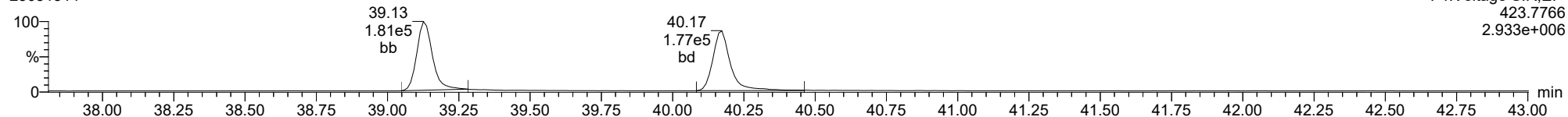
**Total-hexadioxins**

23051514



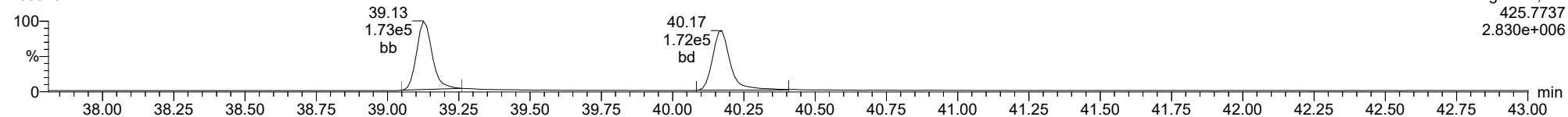
**Total-heptadioxins**

23051514



**Total-heptadioxins**

23051514

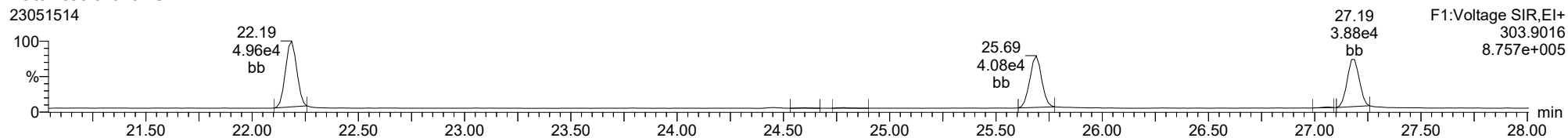




ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

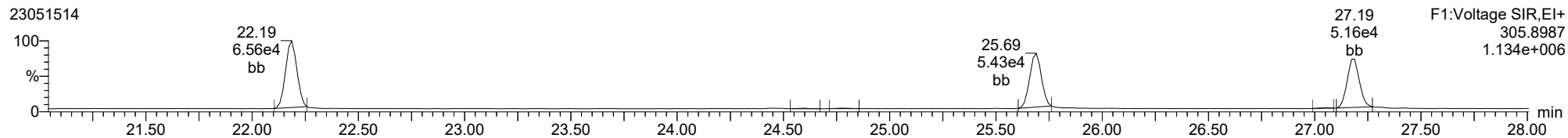
**Total-tetrafurans**

23051514



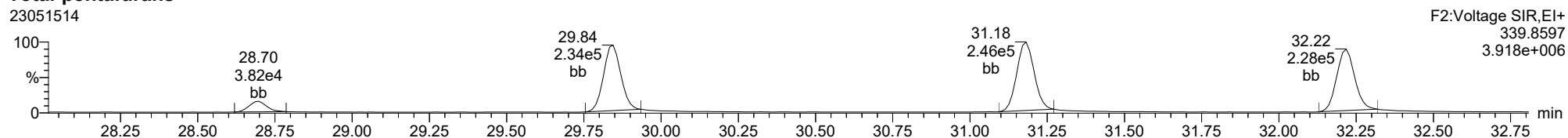
**Total-tetrafurans**

23051514



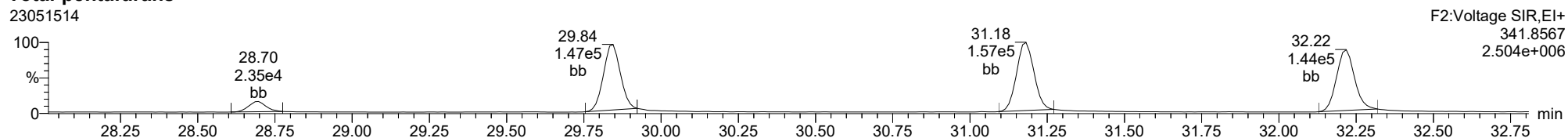
**Total-pentafurans**

23051514



**Total-pentafurans**

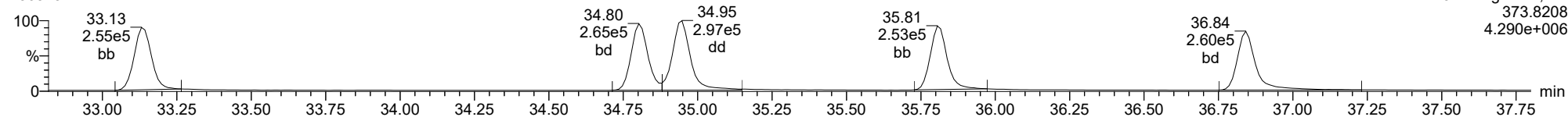
23051514



ID: CS3L6, Name: 23051514, Date: 15-May-2023, Time: 22:11:03, Conditions: AUTOSPEC01, User: pk

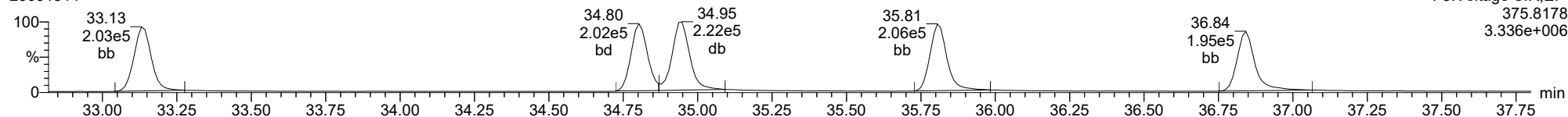
**Total-hexafurans**

23051514



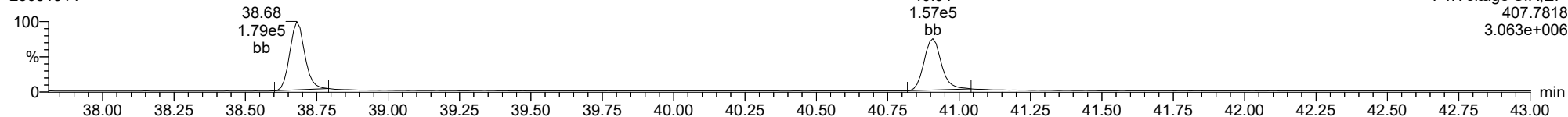
**Total-hexafurans**

23051514



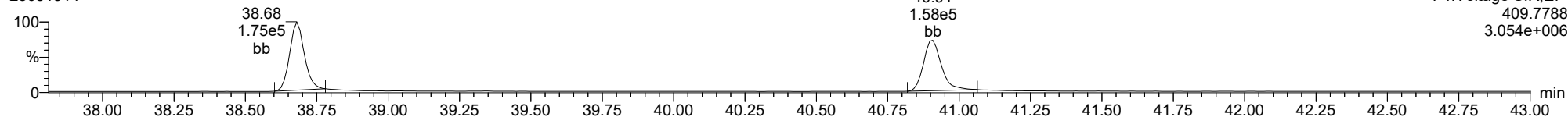
**Total-heptafurans**

23051514

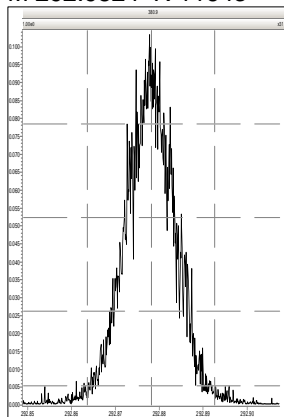


**Total-heptafurans**

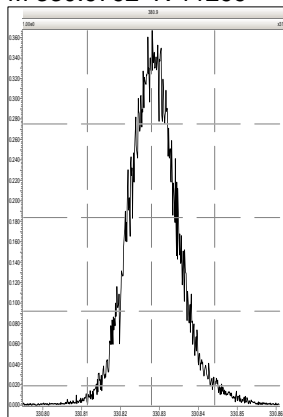
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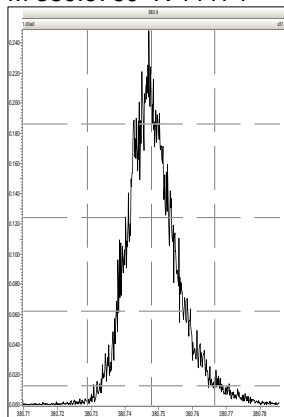
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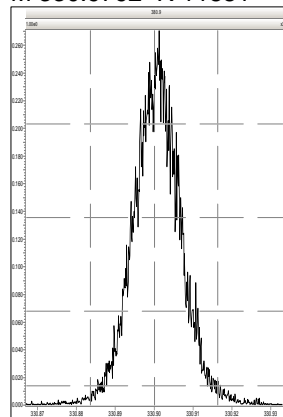
M 330.9792 R 11299



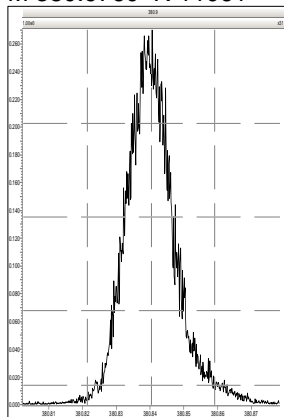
M 380.9760 R 11174



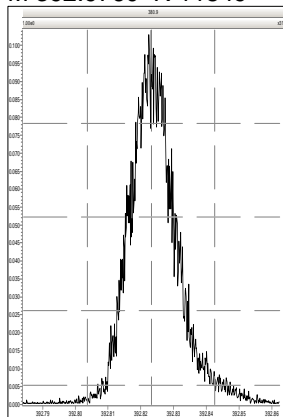
M 330.9792 R 11881



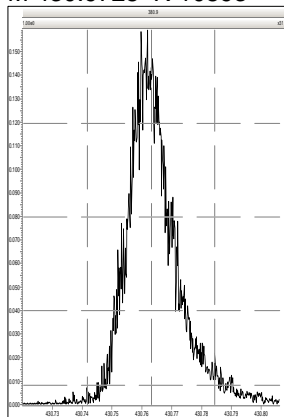
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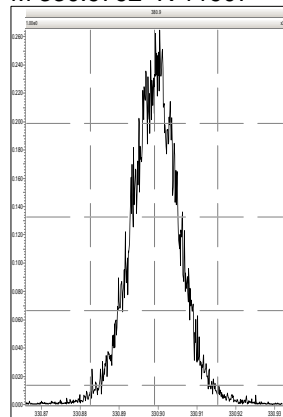
M 392.9760 R 11849



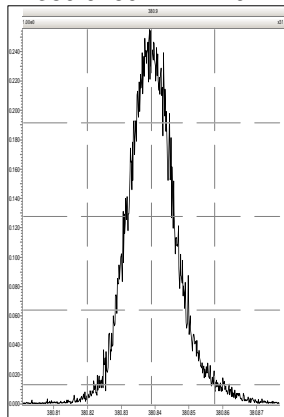
M 430.9728 R 10893



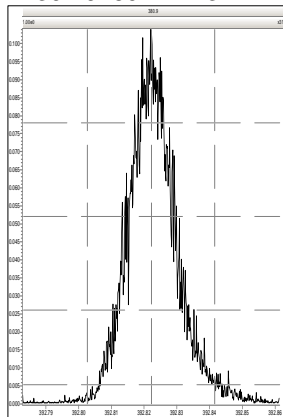
M 330.9792 R 11907



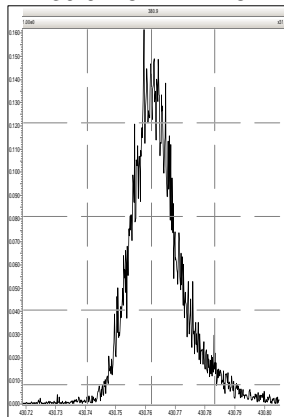
M 380.9760 R 11779



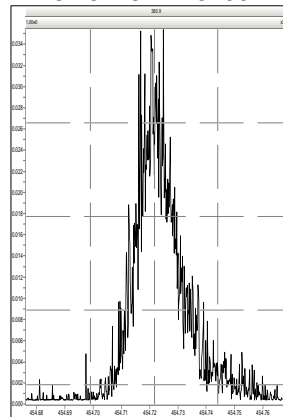
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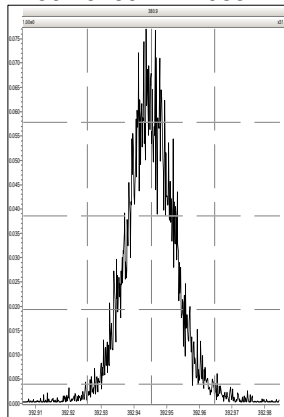
M 430.9728 R 11218



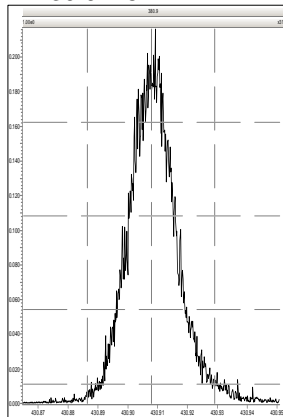
M 454.9728 R 13700



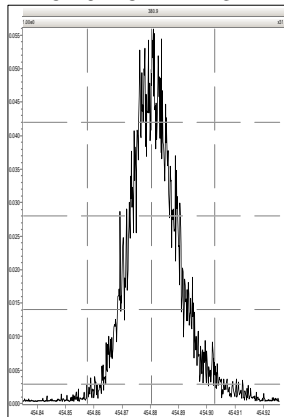
M 392.9760 R 11983



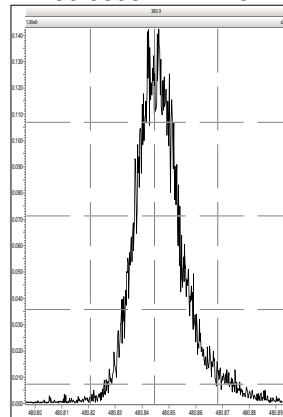
M 430.9728 R 11221



M 454.9728 R 11737

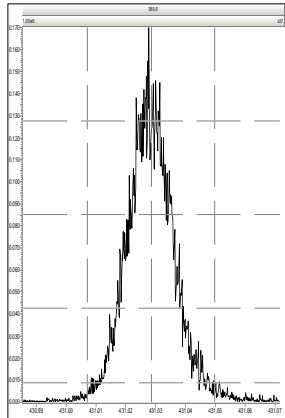


M 480.9696 R 11118

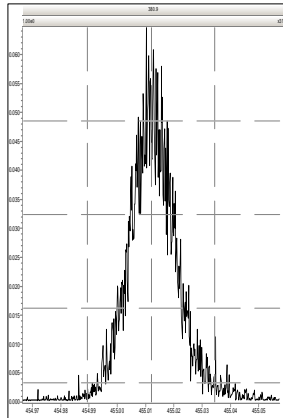


Printed: Monday, May 15, 2023 23:04:07 Pacific Daylight Time

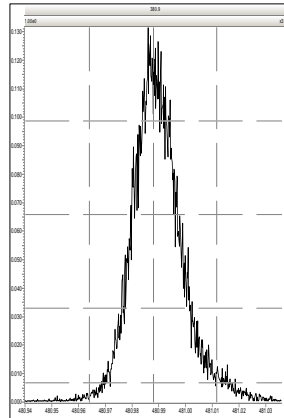
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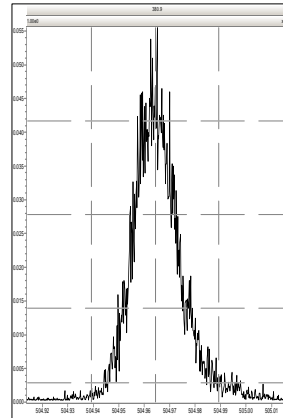
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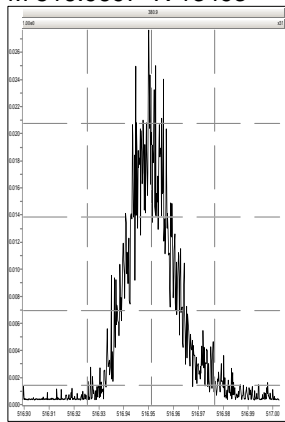
M 480.9696 R 11940



M 504.9696 R 12290



M 516.9697 R 13493

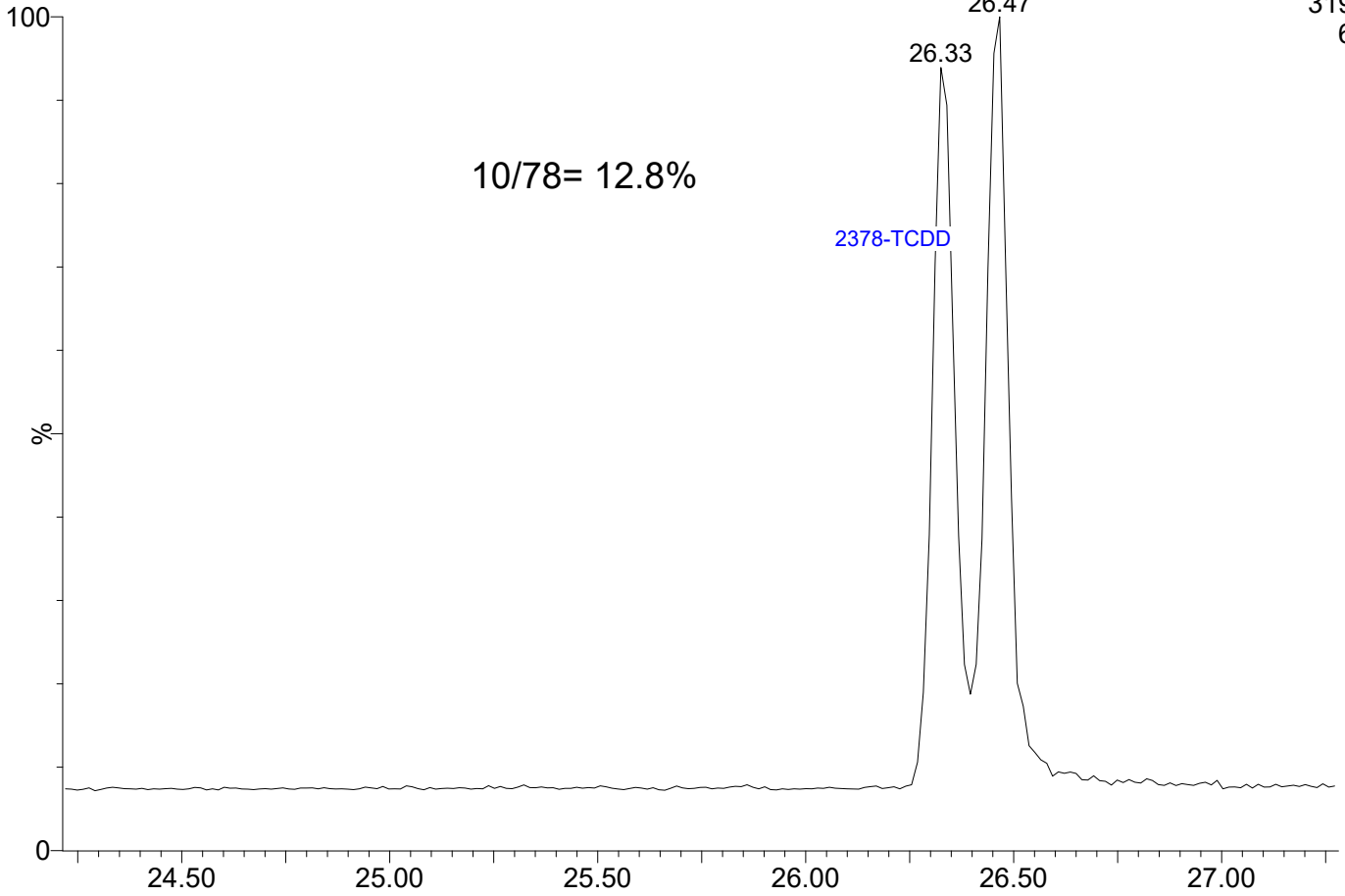


23051515

1: Voltage SIR 14 Channels EI+

319.8965

6.34e5

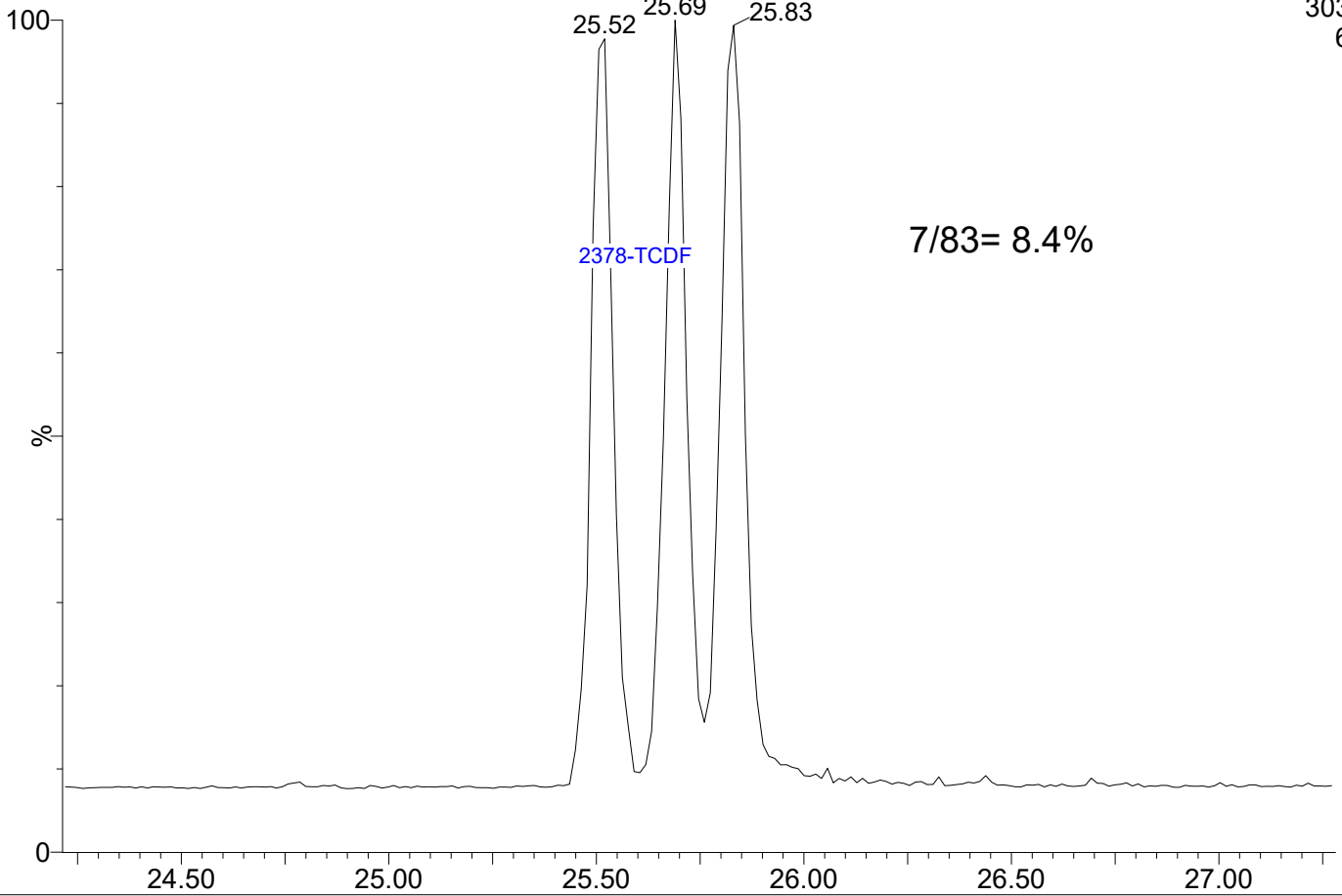


23051515

1: Voltage SIR 14 Channels EI+

303.9016

6.08e5





CONTINUING CALIBRATION CHECK  
EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: AUTOSPEC01

Calibration: GC00015

Lab File ID: 23051526

Calibration Date: 03/03/2023

Sequence: SLE0240

Injection Date: 05/16/23

Lab Sample ID: SLE0240-CCV2

Injection Time: 08:05

Sequence Name: CS3L7

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	10.1	0.7015272	0.7090247		1.1	+/-16
2,3,7,8-TCDD	A	10.000	9.31	1.1486620	1.0689890		-6.9	+/-22
1,2,3,7,8-PeCDF	A	50.000	54.9	0.6792300	0.7454946		9.8	+/-18
2,3,4,7,8-PeCDF	A	50.000	51.5	0.7861704	0.8089710		2.9	+/-18
1,2,3,7,8-PeCDD	A	50.000	48.0	1.0218450	0.9817005		-3.9	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	47.5	1.1660380	1.1074420		-5.0	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	47.9	1.0907410	1.0446630		-4.2	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	49.4	1.1396990	1.1252650		-1.3	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	48.9	1.1370930	1.1119600		-2.2	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	49.6	0.9955689	0.9873793		-0.8	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	45.8	1.0009380	0.9176556		-8.3	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	53.1	0.9071139	0.9637581		6.2	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	51.1	1.0029930	1.0256180		2.3	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	51.0	0.9531152	0.9723439		2.0	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	48.0	1.0390130	0.9979494		-4.0	+/-14
OCDF	A	100.00	107	0.7778078	0.8341833		7.2	+/-37
OCDD	A	100.00	98.9	0.9199537	0.9094742		-1.1	+/-21
13C12-2,3,7,8-TCDF	A	100.00	98.8	1.6201960	1.6007915		-1.2	+/-29
13C12-2,3,7,8-TCDD	A	100.00	105	1.1524090	1.2068566		4.7	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	97.5	1.2404520	1.2090651		-2.5	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	103	1.1177860	1.1543834		3.3	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	103	0.8288129	0.8552024		3.2	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	90.2	1.1683050	1.0538789		-9.8	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	88.1	1.3864660	1.2216561		-11.9	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	91.3	1.1292560	1.0308361		-8.7	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	111	0.9317541	1.0299077		10.5	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	93.6	0.9950393	0.9310020		-6.4	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	92.1	1.1566890	1.0653856		-7.9	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	97.2	0.8952017	0.8701154		-2.8	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	99.4	0.7697516	0.7651148		-0.6	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	94.0	0.8401226	0.7896770		-6.0	+/-18
13C12-OCDD	A	200.00	213	0.7674714	0.8172795		6.5	+/-52
37C14-2,3,7,8-TCDD	A	10.000	8.92	1.2878040	1.1491003		-10.8	+/-21

\* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld  
 Last Altered: Tuesday, May 16, 2023 13:02:24 Pacific Daylight Time  
 Printed: Tuesday, May 16, 2023 13:09:00 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07  
 Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27

ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.676	1.001	3.440e4	4.579e4	0.702	0.751	0.770	947	1127	5.32e5	7.07e5	561.4	626.8	NO	bb	bb	10.107
12378-PeCDF	29.822	1.000	1.948e5	1.236e5	0.679	1.575	1.550	3163	2201	3.03e6	1.91e6	956.4	866.7	NO	bb	bb	54.878
23478-PeCDF	31.159	1.000	1.994e5	1.305e5	0.786	1.528	1.550	3163	2201	3.06e6	2.00e6	967.9	910.9	NO	bb	bb	51.450
123478-HxCDF	34.791	1.001	2.184e5	1.742e5	1.166	1.254	1.240	2395	2042	3.44e6	2.67e6	1437.1	1310.0	NO	bd	bd	47.487
234678-HxCDF	35.794	1.001	2.180e5	1.722e5	1.140	1.265	1.240	2395	2042	3.39e6	2.71e6	1415.6	1327.8	NO	bb	bb	49.367
123678-HxCDF	34.925	1.000	2.372e5	1.921e5	1.091	1.235	1.240	2395	2042	3.36e6	2.75e6	1403.5	1348.6	NO	db	db	47.888
123789-HxCDF	36.830	1.001	2.167e5	1.686e5	1.137	1.285	1.240	2395	2042	3.07e6	2.41e6	1282.8	1179.8	NO	bd	bb	48.895
1234678-HpCDF	38.668	1.000	1.521e5	1.481e5	1.003	1.026	1.050	1800	2218	2.49e6	2.44e6	1384.4	1099.6	NO	bb	bb	51.128
1234789-HpCDF	40.885	1.000	1.267e5	1.236e5	0.953	1.025	1.050	1800	2218	1.86e6	1.81e6	1031.6	817.8	NO	bb	bb	51.009
OCDF	45.089	1.006	2.114e5	2.473e5	0.778	0.855	0.890	1608	4524	2.46e6	2.73e6	1532.8	603.1	NO	bb	bd	107.248
2378-TCDD	26.311	1.001	3.947e4	5.168e4	1.149	0.764	0.770	1045	1233	6.02e5	7.53e5	575.8	610.9	NO	bb	bb	9.306
12378-PeCDD	31.415	1.000	1.788e5	1.178e5	1.022	1.518	1.550	2526	2115	2.75e6	1.79e6	1088.9	847.2	NO	bb	bb	48.036
123478-HxCDD	35.905	1.000	1.708e5	1.384e5	0.996	1.234	1.240	1764	2467	2.71e6	2.24e6	1538.5	906.5	NO	bd	bd	49.589
123678-HxCDD	36.028	1.001	1.815e5	1.474e5	1.001	1.231	1.240	1764	2467	2.80e6	2.30e6	1585.6	934.0	NO	db	db	45.840
123789-HxCDD	36.407	1.011	1.733e5	1.503e5	0.907	1.153	1.240	1764	2467	2.65e6	2.19e6	1503.3	887.4	NO	bb	bd	53.122
1234678-HpCDD	40.150	1.000	1.351e5	1.300e5	1.039	1.039	1.050	3137	1881	2.03e6	1.92e6	646.0	1022.5	NO	bb	bb	48.024
OCDD	44.842	1.000	2.355e5	2.646e5	0.920	0.890	0.890	2322	1366	2.96e6	3.34e6	1272.7	2442.4	NO	bb	bb	98.861
13C-2378-TCDF	25.647	1.007	4.946e5	6.364e5	1.620	0.777	0.770	1232	1312	6.87e6	9.05e6	5576.2	6898.4	NO	bb	bd	98.802
13C-12378-PeCDF	29.811	1.170	5.215e5	3.327e5	1.240	1.567	1.550	2522	2465	7.82e6	5.00e6	3102.1	2026.7	NO	bb	bb	97.470
13C-23478-PeCDF	31.148	1.223	4.879e5	3.278e5	1.118	1.488	1.550	2522	2465	7.43e6	4.93e6	2946.4	2001.5	NO	bb	bb	103.274
13C-123478-HxCDF	34.769	0.955	2.368e5	4.723e5	1.168	0.502	0.510	1808	2095	3.63e6	7.24e6	2008.0	3456.8	NO	bd	bd	90.206
13C-123678-HxCDF	34.914	0.959	2.622e5	5.597e5	1.386	0.468	0.510	1808	2095	3.79e6	7.50e6	2099.1	3580.0	NO	db	dd	88.113
13C-234678-HxCDF	35.771	0.983	2.356e5	4.580e5	1.129	0.514	0.510	1808	2095	3.56e6	6.98e6	1969.8	3331.7	NO	bb	bb	91.285
13C-123789-HxCDF	36.808	1.011	2.320e5	4.609e5	0.932	0.503	0.510	1808	2095	3.53e6	6.98e6	1954.1	3333.3	NO	bb	bb	110.534
13C-1234678-HpCDF	38.657	1.062	1.767e5	4.088e5	0.895	0.432	0.440	1805	3272	2.93e6	6.61e6	1624.9	2020.2	NO	bb	bb	97.198
13C-1234789-HpCDF	40.874	1.123	1.594e5	3.554e5	0.770	0.449	0.440	1805	3272	2.26e6	5.02e6	1252.3	1534.5	NO	bb	bb	99.398
13C-1234-TCDD	25.478	0.000	3.105e5	3.960e5	1.000	0.784	0.770	1453	1191	4.77e6	6.09e6	3281.2	5108.4	NO	bb	bb	100.000
13C-2378-TCDD	26.297	1.032	3.755e5	4.772e5	1.152	0.787	0.770	1453	1191	5.44e6	6.94e6	3747.9	5827.4	NO	bb	bb	104.725
13C-12378-PeCDD	31.404	1.233	3.713e5	2.329e5	0.829	1.594	1.550	1159	950	5.09e6	3.24e6	4392.8	3405.3	NO	bb	bd	103.184
13C-123478-HxCDD	35.894	0.986	3.503e5	2.761e5	0.995	1.269	1.240	2584	1525	5.70e6	4.44e6	2204.5	2913.0	NO	bd	bd	93.564
13C-123678-HxCDD	36.006	0.989	3.980e5	3.189e5	1.157	1.248	1.240	2584	1525	5.84e6	4.70e6	2261.7	3078.6	NO	db	db	92.106
13C-1234678-HpCDD	40.139	1.103	2.766e5	2.547e5	0.840	1.086	1.050	1958	1477	3.85e6	3.68e6	1963.7	2488.0	NO	bd	bb	93.995
13C-OCDD	44.833	1.232	5.210e5	5.788e5	0.767	0.900	0.890	2555	2324	6.22e6	6.94e6	2432.7	2984.4	NO	bb	bb	212.980
13C-123789-HxCDD	36.396	0.000	3.749e5	2.979e5	1.000	1.258	1.240	2584	1525	5.75e6	4.60e6	2226.6	3013.9	NO	bb	bb	100.000
37CL-2378-TCDD	26.311	1.033	8.119e4		1.288			1232		1.20e6		972.5			bb		8.923

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld  
 Last Altered: Tuesday, May 16, 2023 13:02:24 Pacific Daylight Time  
 Printed: Tuesday, May 16, 2023 13:09:00 Pacific Daylight Time

ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.172	0.865	4.126e4	5.590e4	0.802	0.738	0.770	947	1127	6.75e5	8.88e5	712.6	787.3	NO	bb	bb	10.718
1289-TCDF	27.173	1.059	3.352e4	4.125e4	0.678	0.813	0.770	947	1127	4.78e5	5.97e5	504.7	529.3	NO	bb	bb	9.751
13468-PECDF	27.017	0.906	3.161e5	2.077e5	1.246	1.522	1.550	699	847	4.67e6	3.14e6	6679.3	3706.8	NO	bb	bb	49.197
12389-PECDF	32.195	1.080	1.868e5	1.199e5	0.496	1.557	1.550	3163	2201	2.77e6	1.80e6	874.1	817.1	NO	bb	bb	72.324
123468-HXCDF	33.120	0.953	2.242e5	1.735e5	1.169	1.292	1.240	2395	2042	3.25e6	2.56e6	1356.2	1256.2	NO	bb	bb	47.974
1368-TCDD	23.444	0.891	3.730e4	4.631e4	1.015	0.805	0.770	1045	1233	5.88e5	7.07e5	563.2	572.9	NO	bb	bb	9.657
1289-TCDD	26.904	1.023	3.289e4	4.163e4	0.909	0.790	0.770	1045	1233	4.76e5	6.15e5	455.1	499.0	NO	bb	bd	9.618
12479-PECDD	28.697	0.914	2.975e5	1.969e5	2.301	1.511	1.550	2526	2115	2.85e6	1.91e6	1129.7	902.2	NO	bb	bb	35.552
12389-PECDD	31.816	1.013	2.027e5	1.402e5	1.184	1.446	1.550	2526	2115	3.01e6	1.93e6	1191.3	913.2	NO	bb	bb	47.941
124679-HXCDD	33.900	0.944	1.766e5	1.405e5	1.115	1.257	1.240	1764	2467	2.62e6	2.08e6	1485.6	842.8	NO	bb	bb	45.374
1234679-HPCDD	39.114	0.974	1.518e5	1.431e5	1.137	1.061	1.050	3137	1881	2.34e6	2.23e6	747.4	1185.0	NO	bb	bb	48.828
Total-tetrafurans			1.092e5		0.727			947		1.68e6							30.576
Total-penta1			3.161e5					699		4.67e6							49.197
Total-pentafurans			6.111e5		0.654			3163		9.32e6							187.862
Total-hexafurans			1.114e6		1.141			2395		1.65e7							241.611
Total-heptafurans			2.788e5		0.978			1800		4.35e6							102.137
Total-Furans			2.641e6		0.922			947		3.90e7							718.631
Total-tetradoxins			1.851e5		1.024			1045		2.53e6							47.968
Total-pentadoxins			6.790e5		1.502			2526		8.61e6							131.529
Total-hexadoxins			7.021e5		1.005			1764		1.08e7							193.925
Total-heptadoxins			2.869e5		1.088			3137		4.37e6							96.852
Total-Dioxins			2.089e6		1.130			1045		2.93e7							569.134
Total-TEQ			4.730e6					1045		6.83e7							1287.765
FUNCTION1 PFK			1.236e5					179971		3.99e6							
FUNCTION2 PFK			1.696e5					78726		4.74e6							0.000
FUNCTION3 PFK			1.482e5					163279		3.96e6							0.000
FUNCTION4 PFK			1.034e5					137883		3.30e6							
FUNCTION5 PFK			8.446e4					103589		2.92e6							
FUNCTION1 HXCD...			1.046e2					464		2.26e3							0.000
FUNCTION1 HPCD...																	
FUNCTION2 HPCD...			5.291e2					547		9.58e3							0.000
FUNCTION3 OCDPE			3.864e2					477		4.30e3							0.000
FUNCTION4 NCDPE			2.456e2					508		4.85e3							0.000
FUNCTION5 DCDPE			0.000e0					443		0.00e0							



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld

Last Altered: Tuesday, May 16, 2023 13:02:24 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 13:09:00 Pacific Daylight Time

**Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07****Calibration: T:\Autospec\Curves\230303ICIH.cdb 06 Mar 2023 11:57:27****ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk****TF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.17	3.352e4	4.125e4	0.678	0.81	0.77	504.7	YES	NO	bb	bb	9.751
2	2378-TCDF	25.68	3.440e4	4.579e4	0.702	0.75	0.77	561.4	YES	NO	bb	bb	10.107
3	1368-TCDF	22.17	4.126e4	5.590e4	0.802	0.74	0.77	712.6	YES	NO	bb	bb	10.718

**PP**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.02	3.161e5	2.077e5	1.246	1.52	1.55	6679.3	YES	NO	bb	bb	49.197

**PF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDF	29.82	1.948e5	1.236e5	0.679	1.58	1.55	956.4	YES	NO	bb	bb	54.878
2	Total-pentafurans	28.67	3.016e4	2.013e4	0.654	1.50	1.55	149.1	YES	NO	bb	bb	9.211
3	12389-PECDF	32.20	1.868e5	1.199e5	0.496	1.56	1.55	874.1	YES	NO	bb	bb	72.324
4	23478-PeCDF	31.16	1.994e5	1.305e5	0.786	1.53	1.55	967.9	YES	NO	bb	bb	51.450

**HF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.83	2.167e5	1.686e5	1.137	1.28	1.24	1282.8	YES	NO	bd	bb	48.895
2	234678-HxCDF	35.79	2.180e5	1.722e5	1.140	1.27	1.24	1415.6	YES	NO	bb	bb	49.367
3	123678-HxCDF	34.92	2.372e5	1.921e5	1.091	1.23	1.24	1403.5	YES	NO	db	db	47.888
4	123478-HxCDF	34.79	2.184e5	1.742e5	1.166	1.25	1.24	1437.1	YES	NO	bd	bd	47.487
5	123468-HXCDF	33.12	2.242e5	1.735e5	1.169	1.29	1.24	1356.2	YES	NO	bb	bb	47.974

**HPF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.67	1.521e5	1.481e5	1.003	1.03	1.05	1384.4	YES	NO	bb	bb	51.128
2	1234789-HpCDF	40.89	1.267e5	1.236e5	0.953	1.03	1.05	1031.6	YES	NO	bb	bb	51.009

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk****Furans,TF,PP,PF,HF,HPF,OF**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.17	3.352e4	4.125e4	0.678	0.81	0.77	504.7	YES	NO	bb	bb	9.751
2	2378-TCDF	25.68	3.440e4	4.579e4	0.702	0.75	0.77	561.4	YES	NO	bb	bb	10.107
3	1368-TCDF	22.17	4.126e4	5.590e4	0.802	0.74	0.77	712.6	YES	NO	bb	bb	10.718
4	12378-PeCDF	29.82	1.948e5	1.236e5	0.679	1.58	1.55	956.4	YES	NO	bb	bb	54.878
5	Total-pentafurans	28.67	3.016e4	2.013e4	0.654	1.50	1.55	149.1	YES	NO	bb	bb	9.211
6	12389-PECDF	32.20	1.868e5	1.199e5	0.496	1.56	1.55	874.1	YES	NO	bb	bb	72.324
7	23478-PeCDF	31.16	1.994e5	1.305e5	0.786	1.53	1.55	967.9	YES	NO	bb	bb	51.450
8	123789-HxCDF	36.83	2.167e5	1.686e5	1.137	1.28	1.24	1282.8	YES	NO	bd	bb	48.895
9	234678-HxCDF	35.79	2.180e5	1.722e5	1.140	1.27	1.24	1415.6	YES	NO	bb	bb	49.367
10	123678-HxCDF	34.92	2.372e5	1.921e5	1.091	1.23	1.24	1403.5	YES	NO	db	db	47.888
11	123478-HxCDF	34.79	2.184e5	1.742e5	1.166	1.25	1.24	1437.1	YES	NO	bd	bd	47.487
12	123468-HXCDF	33.12	2.242e5	1.735e5	1.169	1.29	1.24	1356.2	YES	NO	bb	bb	47.974
13	1234678-HpCDF	38.67	1.521e5	1.481e5	1.003	1.03	1.05	1384.4	YES	NO	bb	bb	51.128
14	1234789-HpCDF	40.89	1.267e5	1.236e5	0.953	1.03	1.05	1031.6	YES	NO	bb	bb	51.009
15	OCDF	45.09	2.114e5	2.473e5	0.778	0.85	0.89	1532.8	YES	NO	bb	bd	107.248
16	13468-PECDF	27.02	3.161e5	2.077e5	1.246	1.52	1.55	6679.3	YES	NO	bb	bb	49.197

**TD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	26.90	3.289e4	4.163e4	0.909	0.79	0.77	455.1	YES	NO	bb	bd	9.618
2	2378-TCDD	26.31	3.947e4	5.168e4	1.149	0.76	0.77	575.8	YES	NO	bb	bb	9.306
3	Total-tetradoxins	25.99	5.753e4	7.118e4	1.024	0.81	0.77	572.5	YES	NO	bb	bd	14.737
4	Total-tetradoxins	25.51	1.775e4	2.249e4	1.024	0.79	0.77	251.6	YES	NO	bd	bb	4.608
5	Total-tetradoxins	23.71	1.682e2	2.052e2	1.024	0.82	0.77	3.1	NO	NO	bb	bb	0.043
6	1368-TCDD	23.44	3.730e4	4.631e4	1.015	0.81	0.77	563.2	YES	NO	bb	bb	9.657

**PD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12479-PECDD	28.70	2.975e5	1.969e5	2.301	1.51	1.55	1129.7	YES	NO	bb	bb	35.552
2	12389-PECDD	31.82	2.027e5	1.402e5	1.184	1.45	1.55	1191.3	YES	NO	bb	bb	47.941
3	12378-PeCDD	31.42	1.788e5	1.178e5	1.022	1.52	1.55	1088.9	YES	NO	bb	bb	48.036

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk****HD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.41	1.733e5	1.503e5	0.907	1.15	1.24	1503.3	YES	NO	bb	bd	53.122
2	123678-HxCDD	36.03	1.815e5	1.474e5	1.001	1.23	1.24	1585.6	YES	NO	db	db	45.840
3	123478-HxCDD	35.91	1.708e5	1.384e5	0.996	1.23	1.24	1538.5	YES	NO	bd	bd	49.589
4	124679-HxCDD	33.90	1.766e5	1.405e5	1.115	1.26	1.24	1485.6	YES	NO	bb	bb	45.374

**HPD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.15	1.351e5	1.300e5	1.039	1.04	1.05	646.0	YES	NO	bb	bb	48.024
2	1234679-HPCDD	39.11	1.518e5	1.431e5	1.137	1.06	1.05	747.4	YES	NO	bb	bb	48.828

**Dioxins,TD,PD,HD,HPD,OD**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	26.90	3.289e4	4.163e4	0.909	0.79	0.77	455.1	YES	NO	bb	bd	9.618
2	2378-TCDD	26.31	3.947e4	5.168e4	1.149	0.76	0.77	575.8	YES	NO	bb	bb	9.306
3	Total-tetradoxins	25.99	5.753e4	7.118e4	1.024	0.81	0.77	572.5	YES	NO	bb	bd	14.737
4	Total-tetradoxins	25.51	1.775e4	2.249e4	1.024	0.79	0.77	251.6	YES	NO	bd	bb	4.608
5	Total-tetradoxins	23.71	1.682e2	2.052e2	1.024	0.82	0.77	3.1	NO	NO	bb	bb	0.043
6	1368-TCDD	23.44	3.730e4	4.631e4	1.015	0.81	0.77	563.2	YES	NO	bb	bb	9.657
7	12479-PECDD	28.70	2.975e5	1.969e5	2.301	1.51	1.55	1129.7	YES	NO	bb	bb	35.552
8	12389-PECDD	31.82	2.027e5	1.402e5	1.184	1.45	1.55	1191.3	YES	NO	bb	bb	47.941
9	12378-PeCDD	31.42	1.788e5	1.178e5	1.022	1.52	1.55	1088.9	YES	NO	bb	bb	48.036
10	123789-HxCDD	36.41	1.733e5	1.503e5	0.907	1.15	1.24	1503.3	YES	NO	bb	bd	53.122
11	123678-HxCDD	36.03	1.815e5	1.474e5	1.001	1.23	1.24	1585.6	YES	NO	db	db	45.840
12	123478-HxCDD	35.91	1.708e5	1.384e5	0.996	1.23	1.24	1538.5	YES	NO	bd	bd	49.589
13	124679-HxCDD	33.90	1.766e5	1.405e5	1.115	1.26	1.24	1485.6	YES	NO	bb	bb	45.374
14	1234678-HpCDD	40.15	1.351e5	1.300e5	1.039	1.04	1.05	646.0	YES	NO	bb	bb	48.024
15	1234679-HPCDD	39.11	1.518e5	1.431e5	1.137	1.06	1.05	747.4	YES	NO	bb	bb	48.828
16	OCDD	44.84	2.355e5	2.646e5	0.920	0.89	0.89	1272.7	YES	NO	bb	bb	98.861

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld

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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

## TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.17	3.352e4	4.125e4	0.678	0.81	0.77	504.7	YES	NO	bb	bb	9.751
2	2378-TCDF	25.68	3.440e4	4.579e4	0.702	0.75	0.77	561.4	YES	NO	bb	bb	10.107
3	1368-TCDF	22.17	4.126e4	5.590e4	0.802	0.74	0.77	712.6	YES	NO	bb	bb	10.718
4	12378-PeCDF	29.82	1.948e5	1.236e5	0.679	1.58	1.55	956.4	YES	NO	bb	bb	54.878
5	Total-pentafurans	28.67	3.016e4	2.013e4	0.654	1.50	1.55	149.1	YES	NO	bb	bb	9.211
6	12389-PECDF	32.20	1.868e5	1.199e5	0.496	1.56	1.55	874.1	YES	NO	bb	bb	72.324
7	23478-PeCDF	31.16	1.994e5	1.305e5	0.786	1.53	1.55	967.9	YES	NO	bb	bb	51.450
8	123789-HxCDF	36.83	2.167e5	1.686e5	1.137	1.28	1.24	1282.8	YES	NO	bd	bb	48.895
9	234678-HxCDF	35.79	2.180e5	1.722e5	1.140	1.27	1.24	1415.6	YES	NO	bb	bb	49.367
10	123678-HxCDF	34.92	2.372e5	1.921e5	1.091	1.23	1.24	1403.5	YES	NO	db	db	47.888
11	123478-HxCDF	34.79	2.184e5	1.742e5	1.166	1.25	1.24	1437.1	YES	NO	bd	bd	47.487
12	123468-HXCDF	33.12	2.242e5	1.735e5	1.169	1.29	1.24	1356.2	YES	NO	bb	bb	47.974
13	1234678-HpCDF	38.67	1.521e5	1.481e5	1.003	1.03	1.05	1384.4	YES	NO	bb	bb	51.128
14	1234789-HpCDF	40.89	1.267e5	1.236e5	0.953	1.03	1.05	1031.6	YES	NO	bb	bb	51.009
15	OCDF	45.09	2.114e5	2.473e5	0.778	0.85	0.89	1532.8	YES	NO	bb	bd	107.248
16	13468-PECDF	27.02	3.161e5	2.077e5	1.246	1.52	1.55	6679.3	YES	NO	bb	bb	49.197
17	1289-TCDD	26.90	3.289e4	4.163e4	0.909	0.79	0.77	455.1	YES	NO	bb	bd	9.618
18	2378-TCDD	26.31	3.947e4	5.168e4	1.149	0.76	0.77	575.8	YES	NO	bb	bb	9.306
19	Total-tetradiioxins	25.99	5.753e4	7.118e4	1.024	0.81	0.77	572.5	YES	NO	bb	bd	14.737
20	Total-tetradiioxins	25.51	1.775e4	2.249e4	1.024	0.79	0.77	251.6	YES	NO	bd	bb	4.608
21	Total-tetradiioxins	23.71	1.682e2	2.052e2	1.024	0.82	0.77	3.1	NO	NO	bb	bb	0.043
22	1368-TCDD	23.44	3.730e4	4.631e4	1.015	0.81	0.77	563.2	YES	NO	bb	bb	9.657
23	12479-PECDD	28.70	2.975e5	1.969e5	2.301	1.51	1.55	1129.7	YES	NO	bb	bb	35.552
24	12389-PECDD	31.82	2.027e5	1.402e5	1.184	1.45	1.55	1191.3	YES	NO	bb	bb	47.941
25	12378-PeCDD	31.42	1.788e5	1.178e5	1.022	1.52	1.55	1088.9	YES	NO	bb	bb	48.036
26	123789-HxCDD	36.41	1.733e5	1.503e5	0.907	1.15	1.24	1503.3	YES	NO	bb	bd	53.122
27	123678-HxCDD	36.03	1.815e5	1.474e5	1.001	1.23	1.24	1585.6	YES	NO	db	db	45.840
28	123478-HxCDD	35.91	1.708e5	1.384e5	0.996	1.23	1.24	1538.5	YES	NO	bd	bd	49.589
29	124679-HXCDD	33.90	1.766e5	1.405e5	1.115	1.26	1.24	1485.6	YES	NO	bb	bb	45.374
30	1234678-HpCDD	40.15	1.351e5	1.300e5	1.039	1.04	1.05	646.0	YES	NO	bb	bb	48.024
31	1234679-HPCDD	39.11	1.518e5	1.431e5	1.137	1.06	1.05	747.4	YES	NO	bb	bb	48.828
32	OCDD	44.84	2.355e5	2.646e5	0.920	0.89	0.89	1272.7	YES	NO	bb	bb	98.861

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld

Last Altered: Tuesday, May 16, 2023 13:02:24 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 13:09:00 Pacific Daylight Time

**ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk****PFK1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.25	1.492e3					0.6	NO		bb		
2	FUNCTION1 PFK	21.21	3.280e3					0.7	NO		bb		
3	FUNCTION1 PFK	26.45	1.197e3					0.5	NO		bb		
4	FUNCTION1 PFK	25.59	1.129e4					1.3	NO		db		
5	FUNCTION1 PFK	25.51	4.418e3					1.0	NO		bd		
6	FUNCTION1 PFK	25.10	9.526e3					1.7	NO		bb		
7	FUNCTION1 PFK	24.35	6.939e3					1.2	NO		bb		
8	FUNCTION1 PFK	24.31	5.586e3					1.0	NO		bb		
9	FUNCTION1 PFK	24.02	1.477e3					0.6	NO		bb		
10	FUNCTION1 PFK	23.70	3.851e3					0.8	NO		db		
11	FUNCTION1 PFK	23.66	5.159e3					1.0	NO		bd		
12	FUNCTION1 PFK	22.99	9.816e3					1.4	NO		bb		
13	FUNCTION1 PFK	22.82	1.087e4					1.4	NO		bb		
14	FUNCTION1 PFK	22.62	4.168e3					1.1	NO		bb		
15	FUNCTION1 PFK	22.50	1.267e3					0.5	NO		bb		
16	FUNCTION1 PFK	21.64	1.297e3					0.5	NO		bb		
17	FUNCTION1 PFK	21.59	7.436e3					1.3	NO		bb		
18	FUNCTION1 PFK	21.37	1.191e4					0.9	NO		bb		
19	FUNCTION1 PFK	27.85	1.305e3					0.5	NO		bb		
20	FUNCTION1 PFK	27.57	6.863e3					1.4	NO		db		
21	FUNCTION1 PFK	27.53	1.005e4					1.7	NO		bd		
22	FUNCTION1 PFK	26.98	4.379e3					0.9	NO		bb		

## Quantify Totals Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld

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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

## PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.01	2.794e3					1.3	NO		bd		0.000
2	FUNCTION2 PFK	28.90	3.208e3					1.2	NO		bb		0.000
3	FUNCTION2 PFK	28.83	6.882e3					2.1	NO		bb		0.000
4	FUNCTION2 PFK	28.71	6.942e3					2.2	NO		db		0.000
5	FUNCTION2 PFK	28.64	6.461e3					1.5	NO		dd		0.000
6	FUNCTION2 PFK	28.53	5.165e3					2.1	NO		dd		0.000
7	FUNCTION2 PFK	28.49	4.569e3					2.1	NO		dd		0.000
8	FUNCTION2 PFK	28.43	2.923e3					1.3	NO		bd		0.000
9	FUNCTION2 PFK	28.24	4.113e3					1.4	NO		db		0.000
10	FUNCTION2 PFK	28.18	3.885e3					1.8	NO		bd		0.000
11	FUNCTION2 PFK	28.13	2.570e3					1.2	NO		bb		0.000
12	FUNCTION2 PFK	30.98	9.167e3					1.8	NO		bd		0.000
13	FUNCTION2 PFK	30.88	2.569e3					0.8	NO		bb		0.000
14	FUNCTION2 PFK	30.52	6.203e3					1.7	NO		bb		0.000
15	FUNCTION2 PFK	30.39	3.816e3					1.2	NO		db		0.000
16	FUNCTION2 PFK	30.35	3.733e3					1.6	NO		bd		0.000
17	FUNCTION2 PFK	30.12	8.473e2					0.6	NO		bb		0.000
18	FUNCTION2 PFK	29.94	3.585e2					0.4	NO		bb		0.000
19	FUNCTION2 PFK	29.90	4.199e2					0.5	NO		bb		0.000
20	FUNCTION2 PFK	29.86	2.302e3					1.4	NO		db		0.000
21	FUNCTION2 PFK	29.81	2.525e3					1.4	NO		bd		0.000
22	FUNCTION2 PFK	29.76	1.137e3					0.7	NO		bb		0.000
23	FUNCTION2 PFK	29.62	2.079e3					1.1	NO		bb		0.000
24	FUNCTION2 PFK	29.37	4.899e3					1.6	NO		bb		0.000
25	FUNCTION2 PFK	29.21	3.101e3					1.2	NO		db		0.000
26	FUNCTION2 PFK	29.13	6.920e3					1.9	NO		bd		0.000
27	FUNCTION2 PFK	29.05	3.345e3					1.5	NO		db		0.000
28	FUNCTION2 PFK	32.37	3.486e3					1.0	NO		bb		0.000
29	FUNCTION2 PFK	32.20	7.538e3					1.8	NO		db		0.000
30	FUNCTION2 PFK	32.15	1.450e3					0.9	NO		bd		0.000
31	FUNCTION2 PFK	31.97	1.469e3					0.9	NO		bb		0.000
32	FUNCTION2 PFK	31.87	2.180e3					0.9	NO		bb		0.000
33	FUNCTION2 PFK	31.82	2.273e3					1.3	NO		db		0.000
34	FUNCTION2 PFK	31.78	4.482e3					1.6	NO		dd		0.000
35	FUNCTION2 PFK	31.73	1.347e4					2.8	NO		bd		0.000
36	FUNCTION2 PFK	31.60	2.563e3					1.5	NO		bb		0.000
37	FUNCTION2 PFK	31.45	1.159e3					0.8	NO		db		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld

Last Altered: Tuesday, May 16, 2023 13:02:24 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 13:09:00 Pacific Daylight Time

**ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk****PFK2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION2 PFK	31.42	2.229e3					0.9	NO		dd		0.000
39	FUNCTION2 PFK	31.38	8.154e2					0.7	NO		bd		0.000
40	FUNCTION2 PFK	31.27	1.825e3					0.9	NO		db		0.000
41	FUNCTION2 PFK	31.23	4.335e3					1.9	NO		dd		0.000
42	FUNCTION2 PFK	31.17	2.458e3					1.1	NO		bd		0.000
43	FUNCTION2 PFK	31.09	1.072e4					2.2	NO		db		0.000
44	FUNCTION2 PFK	32.65	2.585e3					0.8	NO		bb		0.000
45	FUNCTION2 PFK	32.55	1.632e3					1.0	NO		bb		0.000

**PFK3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	36.70	7.932e3					1.5	NO		bb		0.000
2	FUNCTION3 PFK	36.53	5.183e3					1.1	NO		bb		0.000
3	FUNCTION3 PFK	36.43	2.233e4					2.5	NO		db		0.000
4	FUNCTION3 PFK	36.24	1.078e4					1.3	NO		bd		0.000
5	FUNCTION3 PFK	35.77	3.516e3					1.1	NO		bb		0.000
6	FUNCTION3 PFK	35.63	4.047e3					1.1	NO		bb		0.000
7	FUNCTION3 PFK	35.47	7.133e3					1.4	NO		bb		0.000
8	FUNCTION3 PFK	35.25	3.574e3					1.0	NO		bb		0.000
9	FUNCTION3 PFK	34.35	2.380e3					0.7	NO		bb		0.000
10	FUNCTION3 PFK	33.52	5.533e3					1.3	NO		bb		0.000
11	FUNCTION3 PFK	33.33	7.859e3					1.4	NO		bb		0.000
12	FUNCTION3 PFK	33.15	3.719e3					0.9	NO		bb		0.000
13	FUNCTION3 PFK	32.92	6.293e3					1.2	NO		bb		0.000
14	FUNCTION3 PFK	37.39	7.244e3					1.5	NO		bb		0.000
15	FUNCTION3 PFK	37.30	8.505e3					1.7	NO		db		0.000
16	FUNCTION3 PFK	37.22	1.967e4					1.9	NO		bd		0.000
17	FUNCTION3 PFK	36.84	2.252e4					2.5	NO		bb		0.000

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld

Last Altered: Tuesday, May 16, 2023 13:02:24 Pacific Daylight Time

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**ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk****PFK4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.94	3.391e3					0.9	NO		bb		
2	FUNCTION4 PFK	40.51	9.381e3					1.6	NO		bb		
3	FUNCTION4 PFK	40.41	2.189e3					0.8	NO		bb		
4	FUNCTION4 PFK	39.79	5.432e3					1.0	NO		bb		
5	FUNCTION4 PFK	39.66	8.310e3					1.4	NO		bb		
6	FUNCTION4 PFK	39.29	1.715e3					0.7	NO		bb		
7	FUNCTION4 PFK	38.76	2.819e3					1.0	NO		bb		
8	FUNCTION4 PFK	38.47	6.487e3					1.4	NO		db		
9	FUNCTION4 PFK	38.41	6.051e3					1.7	NO		bd		
10	FUNCTION4 PFK	37.90	1.055e4					1.9	NO		db		
11	FUNCTION4 PFK	37.85	1.021e3					0.6	NO		bd		
12	FUNCTION4 PFK	42.90	7.954e2					0.5	NO		bb		
13	FUNCTION4 PFK	42.56	1.234e3					0.6	NO		bb		
14	FUNCTION4 PFK	42.24	1.781e3					0.7	NO		bb		
15	FUNCTION4 PFK	42.20	5.786e3					1.1	NO		bb		
16	FUNCTION4 PFK	41.39	7.031e2					0.5	NO		bb		
17	FUNCTION4 PFK	41.34	7.361e2					0.5	NO		bb		
18	FUNCTION4 PFK	41.24	8.507e3					1.8	NO		db		
19	FUNCTION4 PFK	41.17	9.642e3					1.9	NO		dd		
20	FUNCTION4 PFK	41.12	1.398e4					2.3	NO		bd		
21	FUNCTION4 PFK	41.05	2.858e3					1.0	NO		bb		



**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

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**ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk****PFK5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.43	3.298e3					1.0	NO		bb		
2	FUNCTION5 PFK	43.39	1.584e3					0.9	NO		bb		
3	FUNCTION5 PFK	43.25	3.390e3					1.1	NO		db		
4	FUNCTION5 PFK	43.21	1.534e3					0.8	NO		bd		
5	FUNCTION5 PFK	43.13	1.518e3					0.9	NO		bb		
6	FUNCTION5 PFK	45.56	2.571e3					1.3	NO		bb		
7	FUNCTION5 PFK	45.49	3.177e3					1.5	NO		db		
8	FUNCTION5 PFK	45.45	6.600e3					1.6	NO		bd		
9	FUNCTION5 PFK	45.32	3.099e3					1.3	NO		bb		
10	FUNCTION5 PFK	45.11	1.829e3					0.8	NO		bb		
11	FUNCTION5 PFK	44.90	3.620e3					1.0	NO		bb		
12	FUNCTION5 PFK	44.74	4.441e3					1.3	NO		bb		
13	FUNCTION5 PFK	44.64	6.001e3					1.8	NO		bb		
14	FUNCTION5 PFK	44.59	1.286e3					0.8	NO		bb		
15	FUNCTION5 PFK	44.49	4.514e3					1.3	NO		db		
16	FUNCTION5 PFK	44.44	4.379e3					1.9	NO		bd		
17	FUNCTION5 PFK	44.40	4.117e2					0.4	NO		bb		
18	FUNCTION5 PFK	44.19	2.005e3					1.0	NO		db		
19	FUNCTION5 PFK	44.16	2.322e3					1.2	NO		bd		
20	FUNCTION5 PFK	44.03	3.937e3					1.1	NO		bb		
21	FUNCTION5 PFK	43.84	2.866e3					1.4	NO		bb		
22	FUNCTION5 PFK	45.90	1.528e3					0.8	NO		db		
23	FUNCTION5 PFK	45.79	1.145e4					1.6	NO		bd		
24	FUNCTION5 PFK	45.69	7.109e3					1.4	NO		bb		

**ETHERS1**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.57	1.046e2					4.9	YES		bb		0.000

**ETHERS2**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

**Quantify Totals Report MassLynx MassLynx V4.1 SCN909**

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld

Last Altered: Tuesday, May 16, 2023 13:02:24 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 13:09:00 Pacific Daylight Time

**ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk****ETHERS3**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.11	7.144e1					2.9	NO		db		0.000
2	FUNCTION2 HPCD...	31.03	2.714e2					9.6	YES		bd		0.000
3	FUNCTION2 HPCD...	30.18	7.282e1					2.4	NO		bb		0.000
4	FUNCTION2 HPCD...	28.34	1.135e2					2.7	NO		bb		0.000

**ETHERS4**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.99	1.325e2					2.9	NO		bb		0.000
2	FUNCTION3 OCDPE	33.29	1.552e2					3.0	NO		bb		0.000
3	FUNCTION3 OCDPE	33.06	9.871e1					3.2	YES		bb		0.000

**ETHERS5**

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.69	7.001e1					2.4	NO		bb		0.000
2	FUNCTION4 NCDPE	42.90	7.153e1					3.6	YES		bb		0.000
3	FUNCTION4 NCDPE	41.49	1.041e2					3.5	YES		bb		0.000

**ETHERS6**

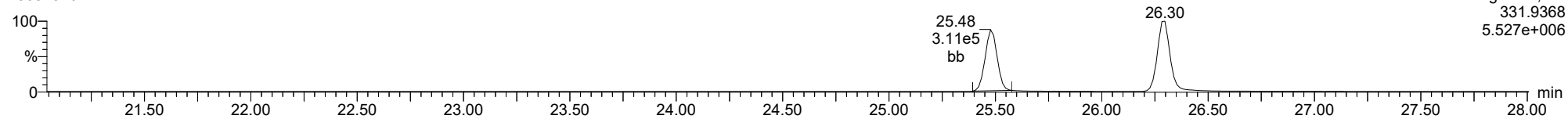
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1													

Method: T:\Autospec\Methods\Dioxin230515.mdb 15 May 2023 14:58:07  
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

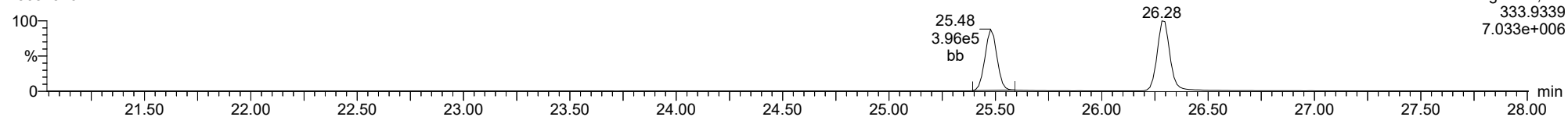
**13C-1234-TCDD**

23051526



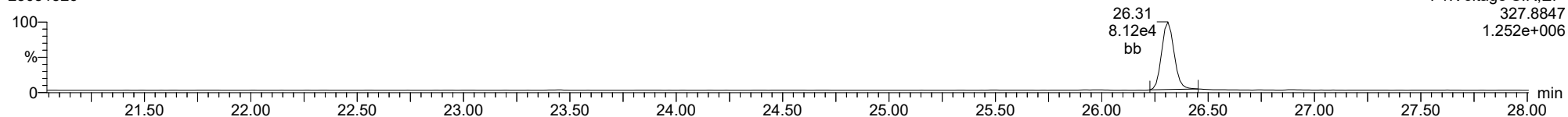
**13C-1234-TCDD**

23051526



**37CL-2378-TCDD**

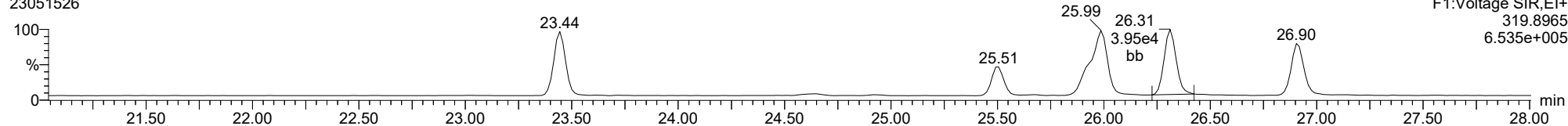
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

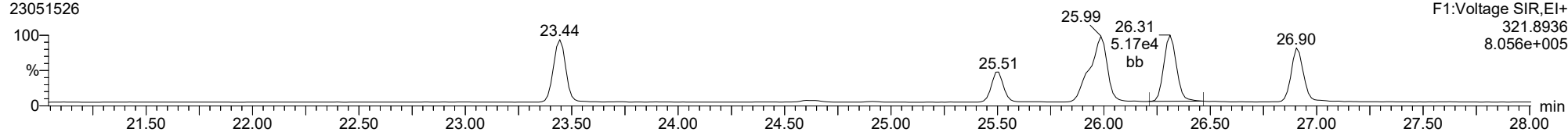
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23051526



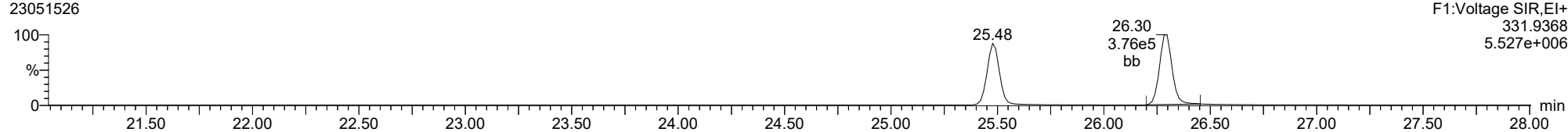
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23051526



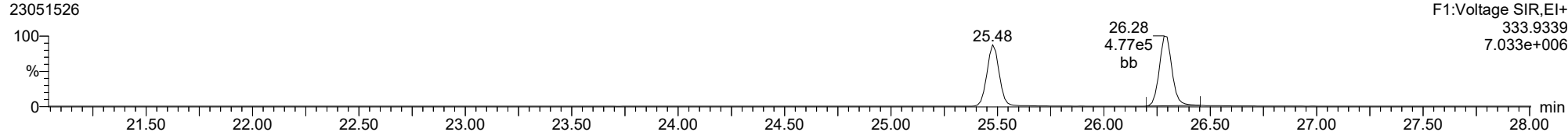
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23051526



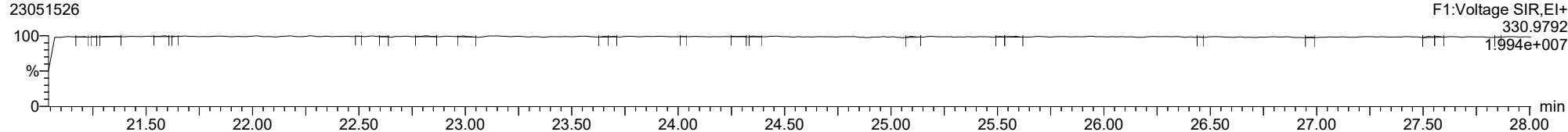
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23051526



**FUNCTION1 PFK**

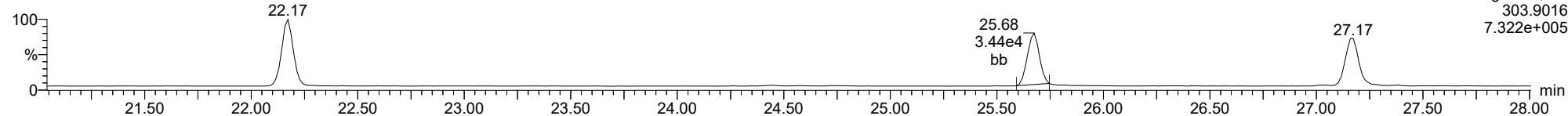
23051526



ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

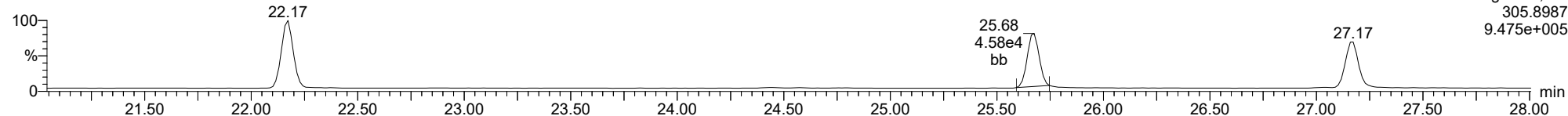
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23051526



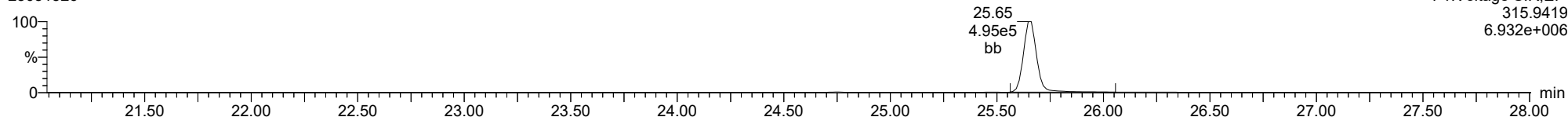
**2378-TCDF**

23051526



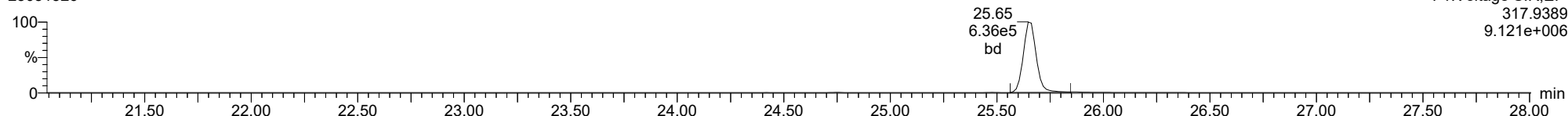
**13C-2378-TCDF**

23051526



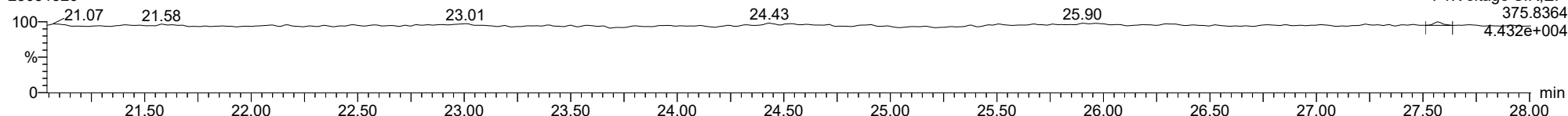
**13C-2378-TCDF**

23051526



**FUNCTION1 HXCDPE**

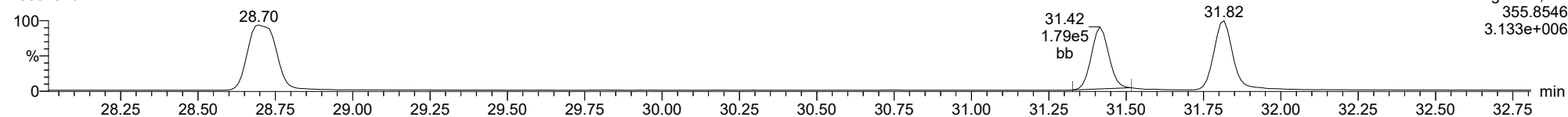
23051526



ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

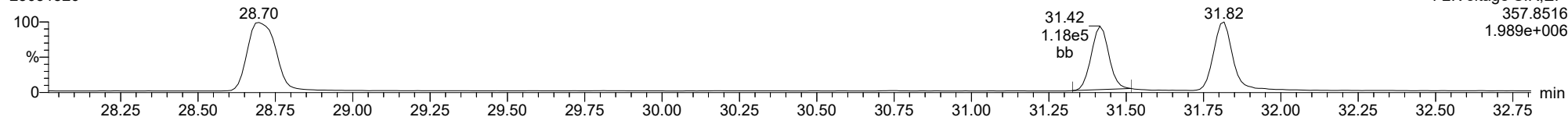
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23051526



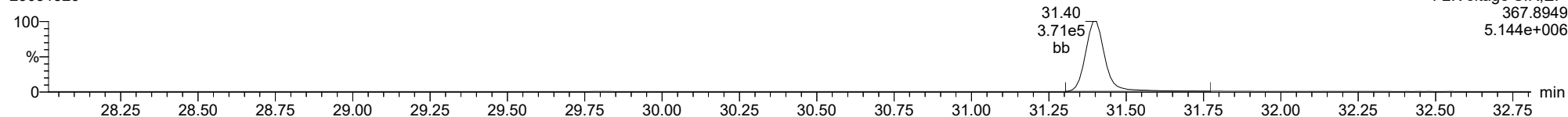
**12378-PeCDD**

23051526



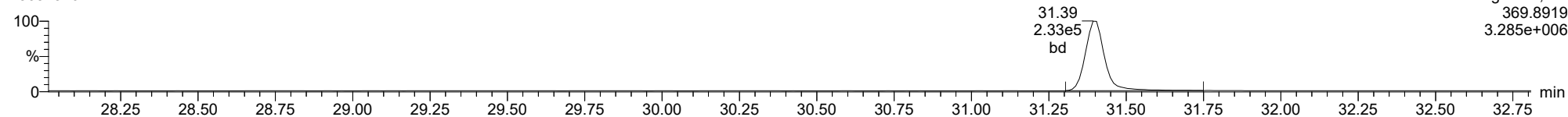
**13C-12378-PeCDD**

23051526



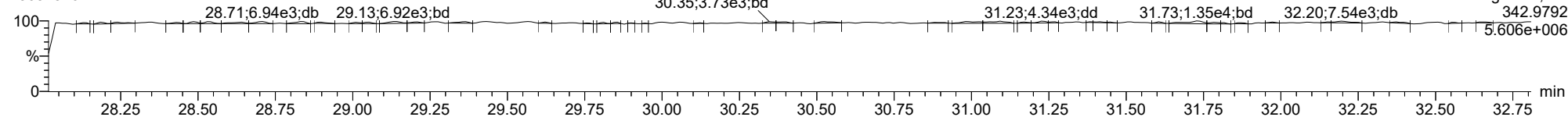
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23051526



**FUNCTION2 PFK**

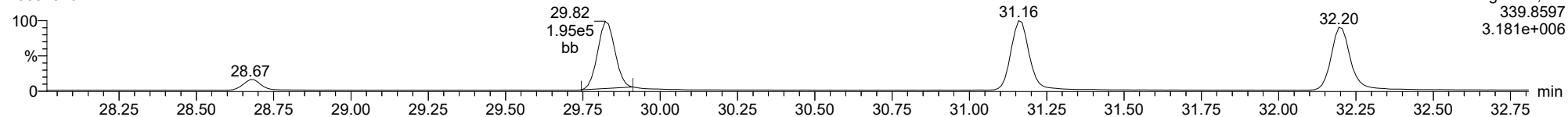
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

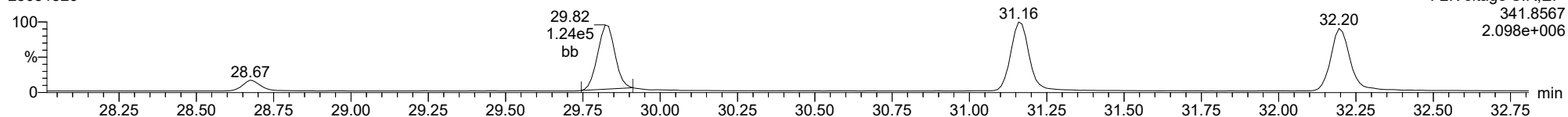
**12378-PeCDF**

23051526



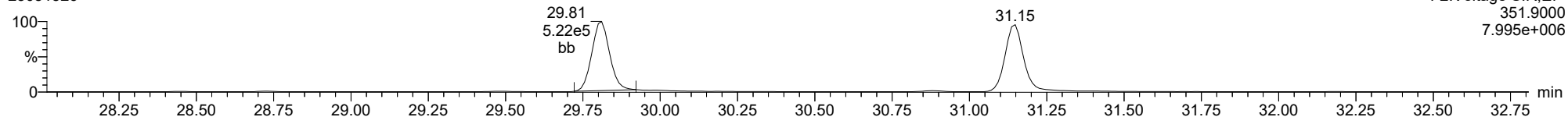
**12378-PeCDF**

23051526



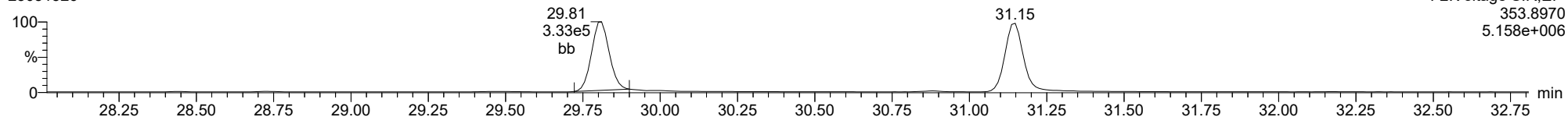
**13C-12378-PeCDF**

23051526



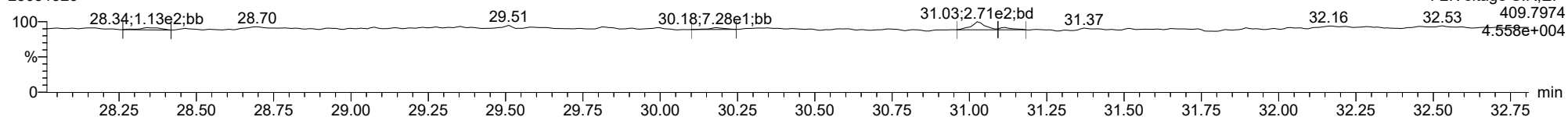
**13C-12378-PeCDF**

23051526



**FUNCTION2 HPCDPE**

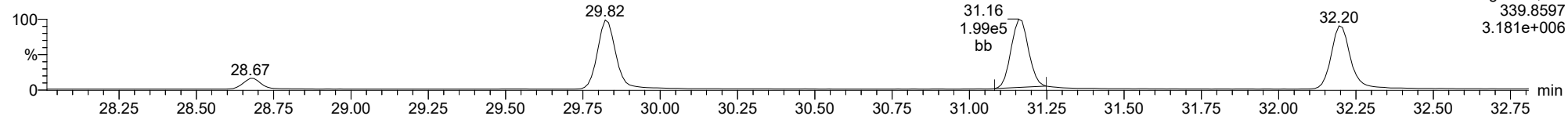
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

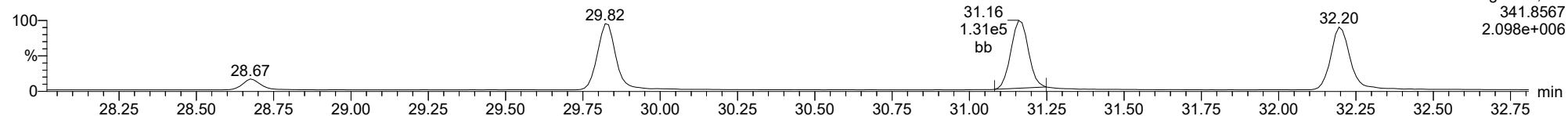
**23478-PeCDF**

23051526



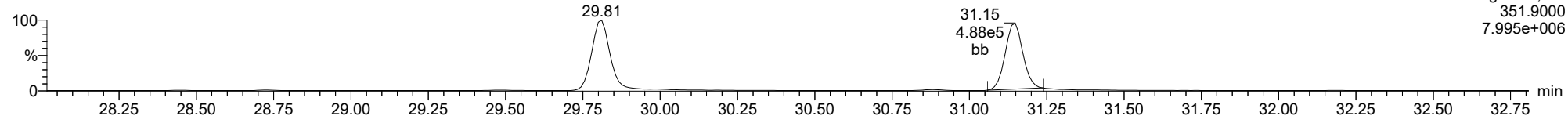
**23478-PeCDF**

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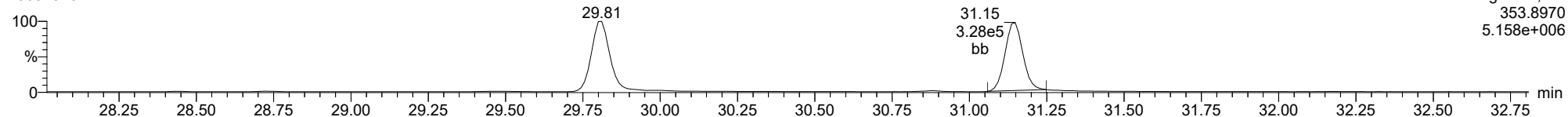
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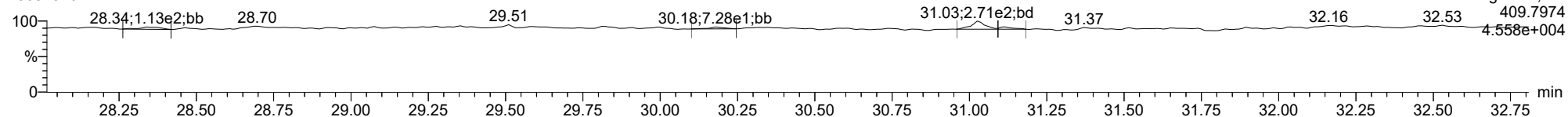
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**FUNCTION2 HPCDPE**

23051526

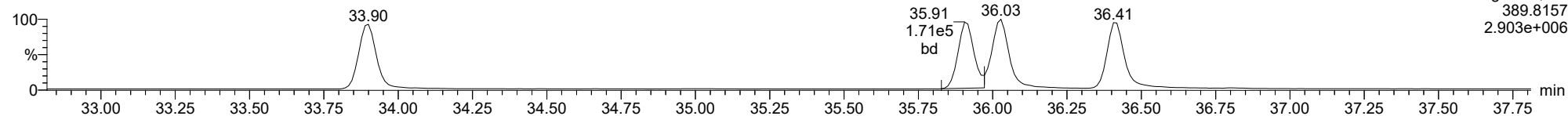




ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

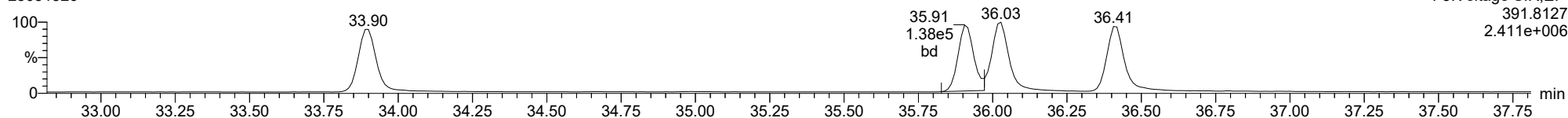
**123478-HxCDD**

23051526



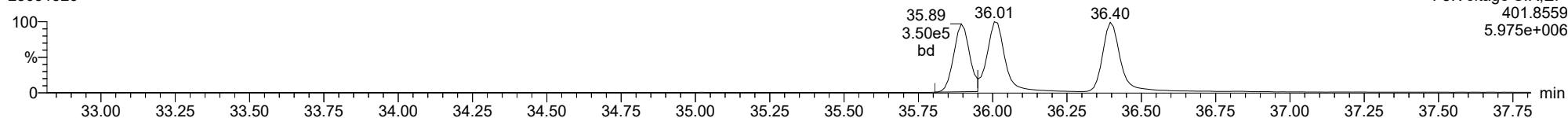
**123478-HxCDD**

23051526



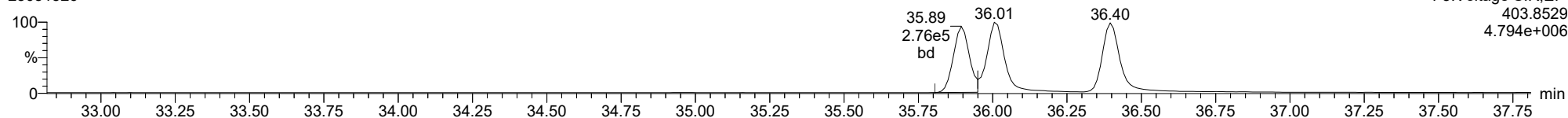
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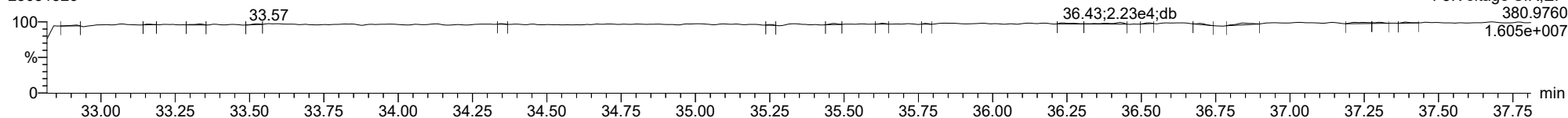
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**FUNCTION3 PFK**

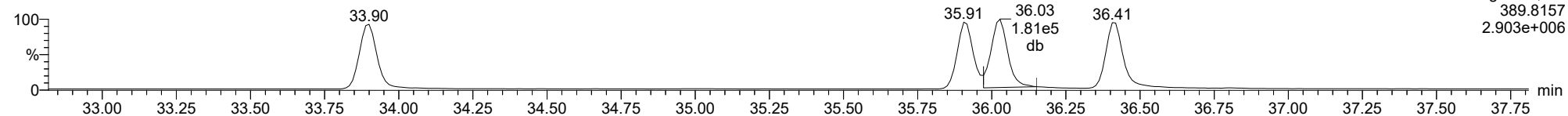
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

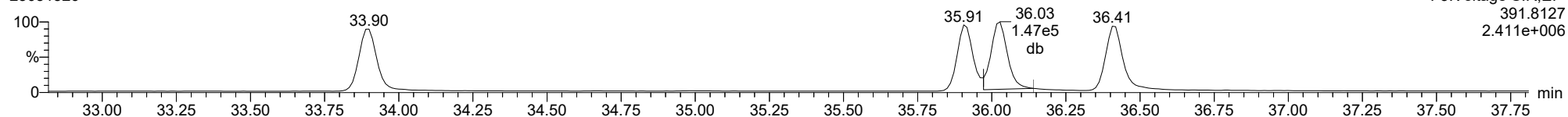
**123678-HxCDD**

23051526



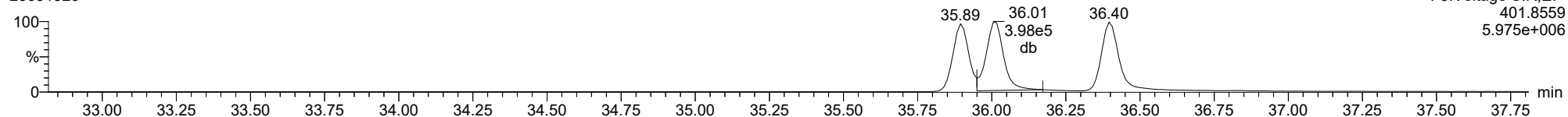
**123678-HxCDD**

23051526



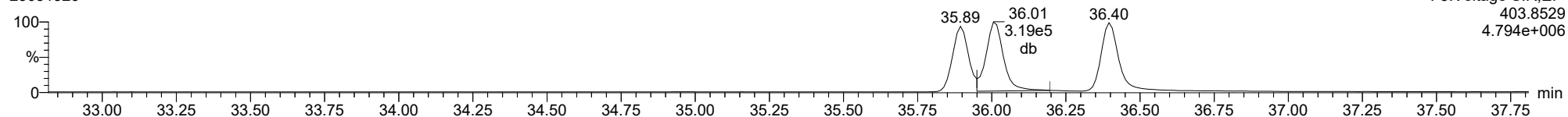
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**13C-123678-HxCDD**

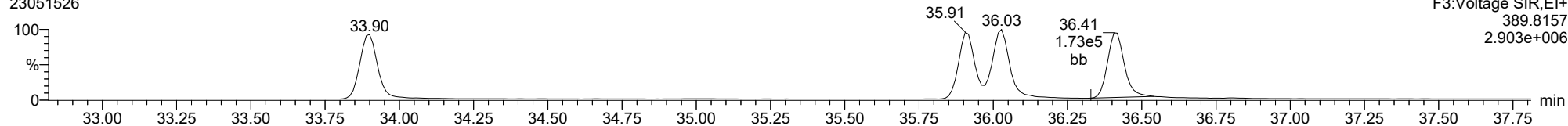
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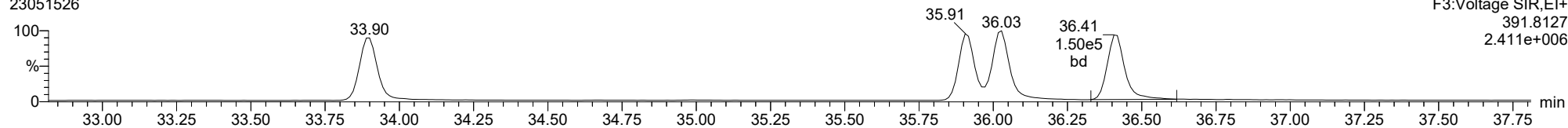
**123789-HxCDD**

23051526



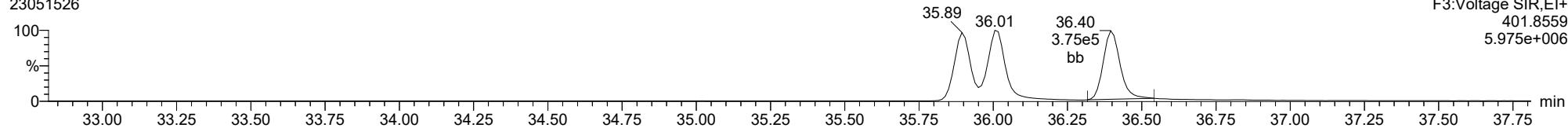
**123789-HxCDD**

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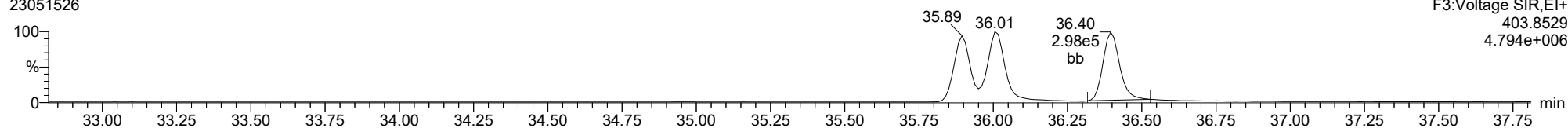
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**13C-123789-HxCDD**

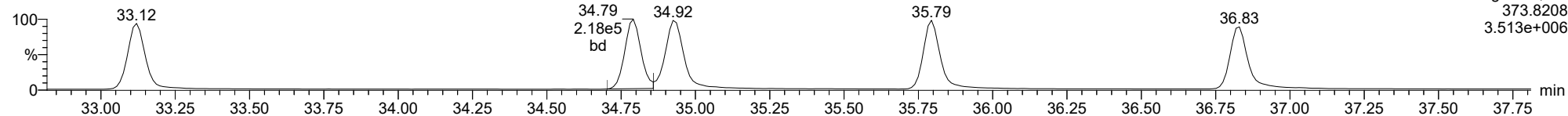
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

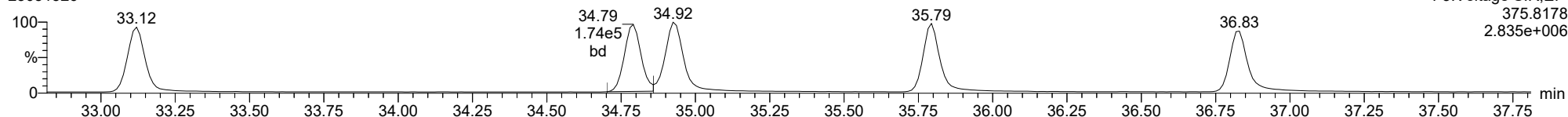
**123478-HxCDF**

23051526



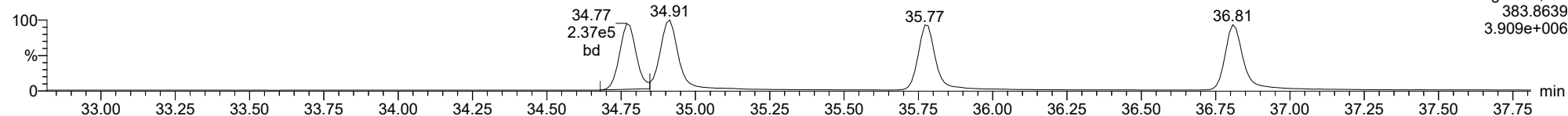
**123478-HxCDF**

23051526



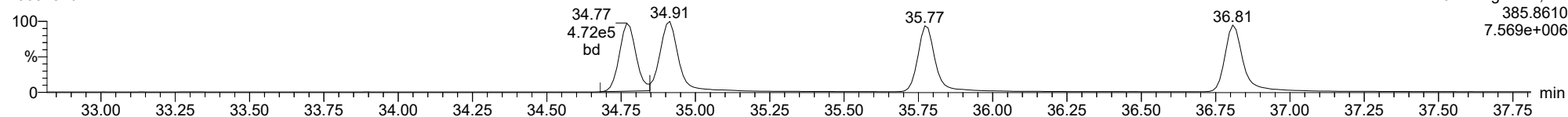
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23051526



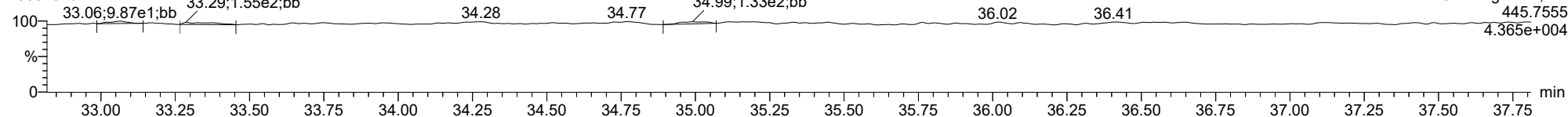
**13C-123478-HxCDF**

23051526



**FUNCTION3 OCDPE**

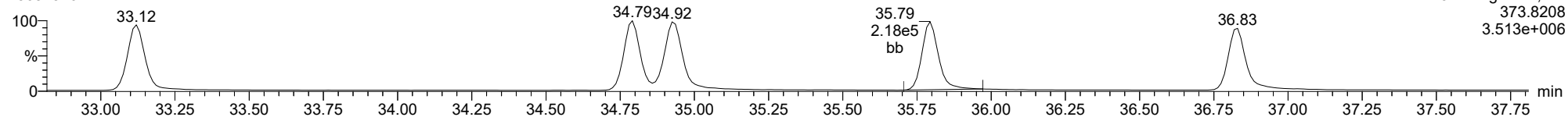
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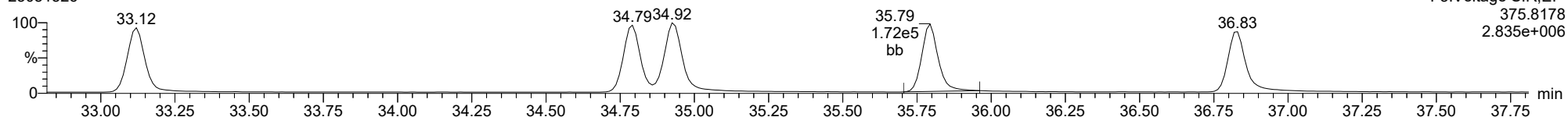
**234678-HxCDF**

23051526



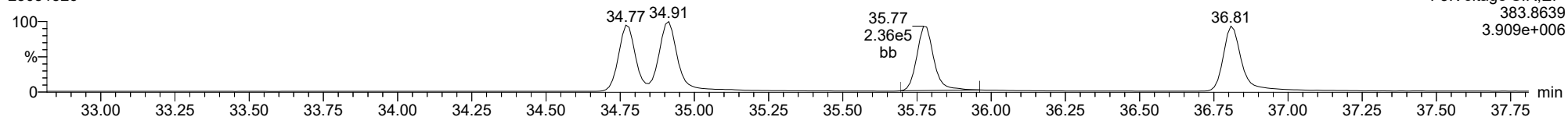
**234678-HxCDF**

23051526



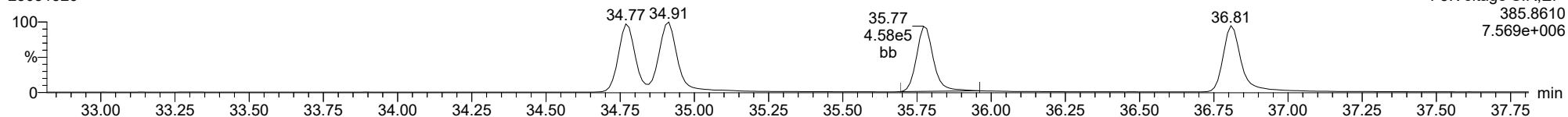
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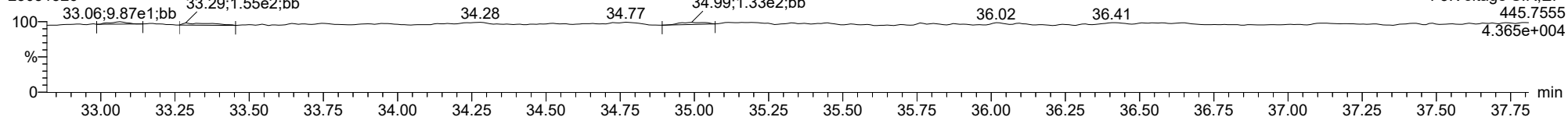
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**FUNCTION3 OCDPE**

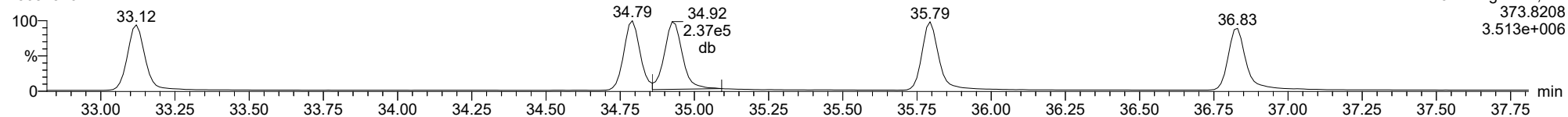
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

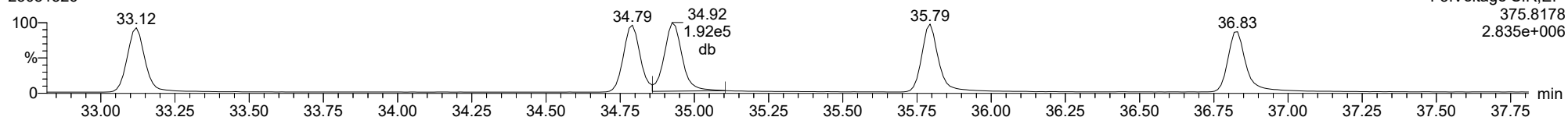
**123678-HxCDF**

23051526



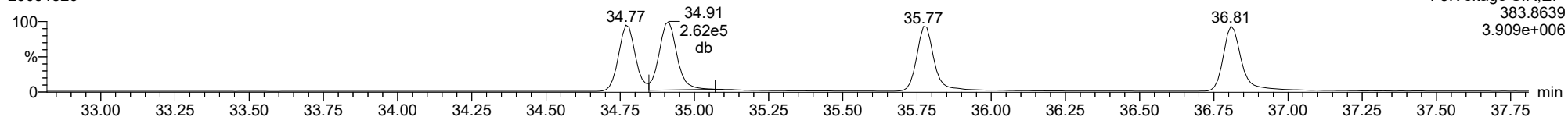
**123678-HxCDF**

23051526



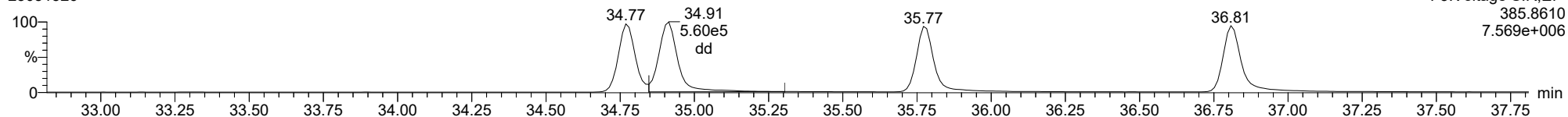
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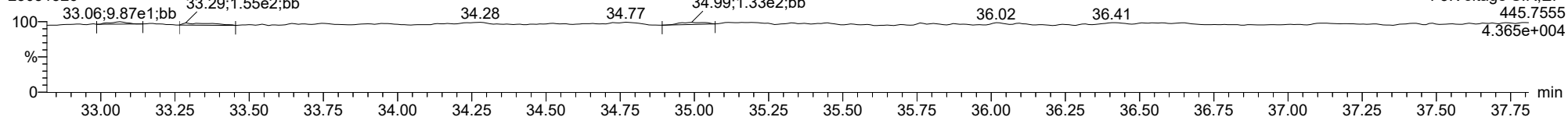
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**FUNCTION3 OCDPE**

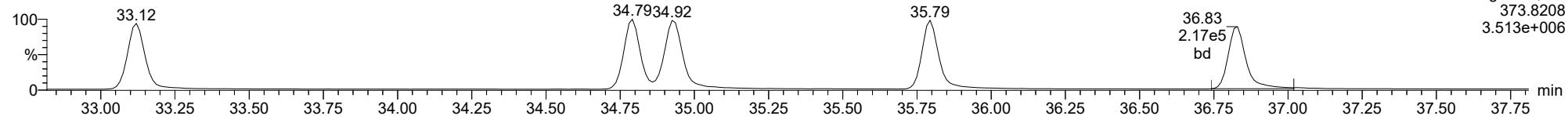
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

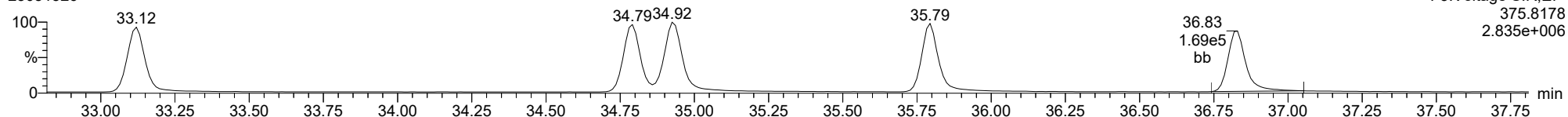
**123789-HxCDF**

23051526



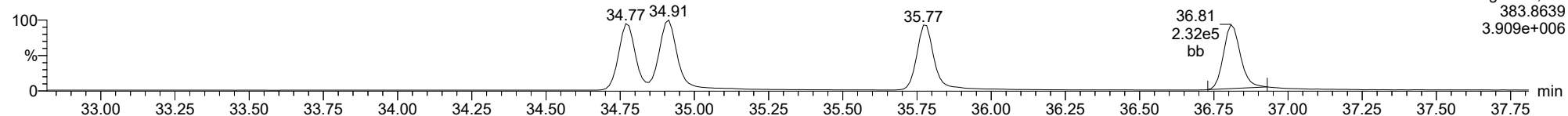
**123789-HxCDF**

23051526



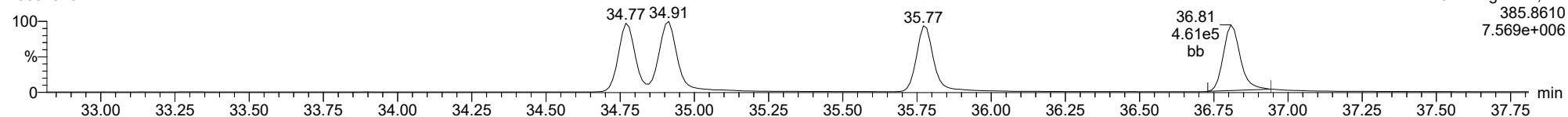
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23051526



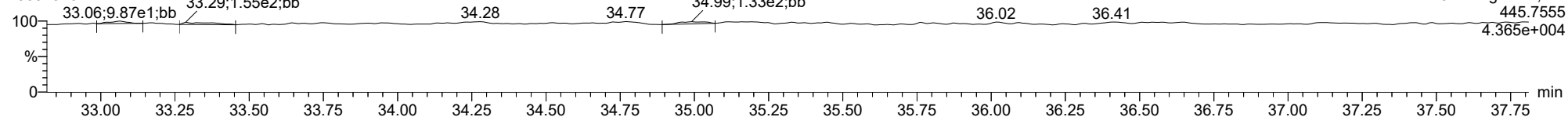
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**FUNCTION3 OCDPE**

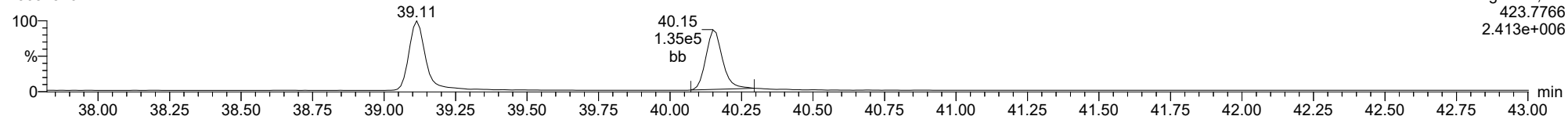
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

**1234678-HpCDD**

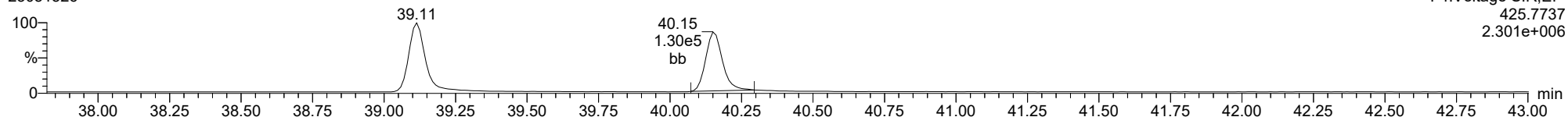
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F4:Voltage SIR,EI+  
423.7766  
2.413e+006

**1234678-HpCDD**

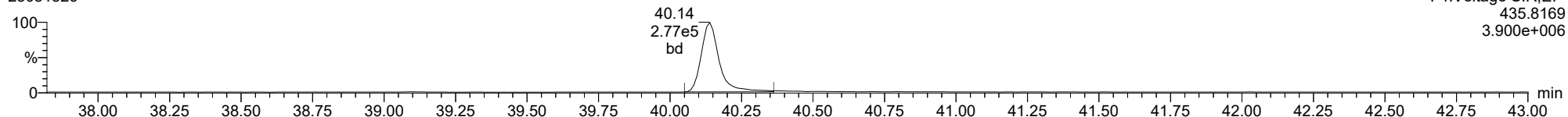
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F4:Voltage SIR,EI+  
425.7737  
2.301e+006

**13C-1234678-HpCDD**

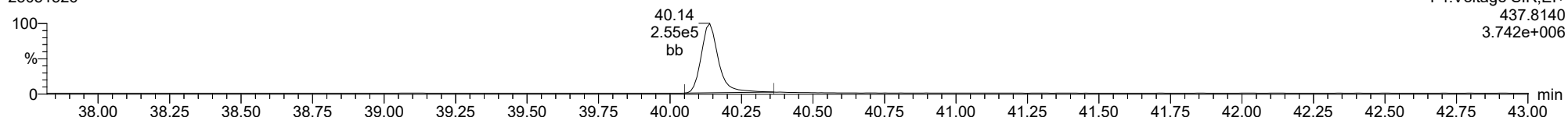
23051526



F4:Voltage SIR,EI+  
435.8169  
3.900e+006

**13C-1234678-HpCDD**

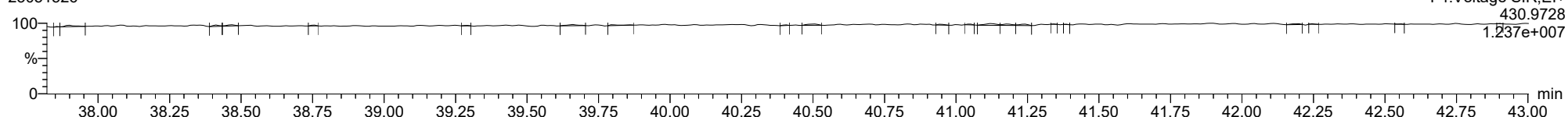
23051526



F4:Voltage SIR,EI+  
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3.742e+006

**FUNCTION4 PFK**

23051526



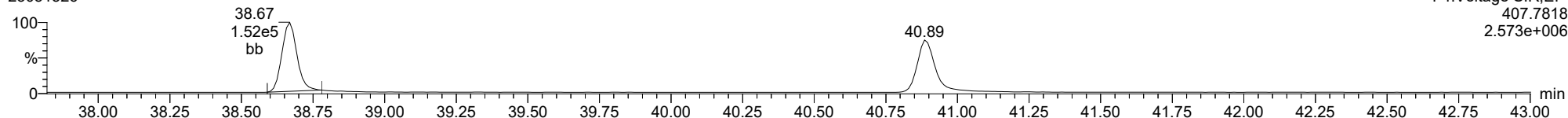
F4:Voltage SIR,EI+  
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1.237e+007



ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

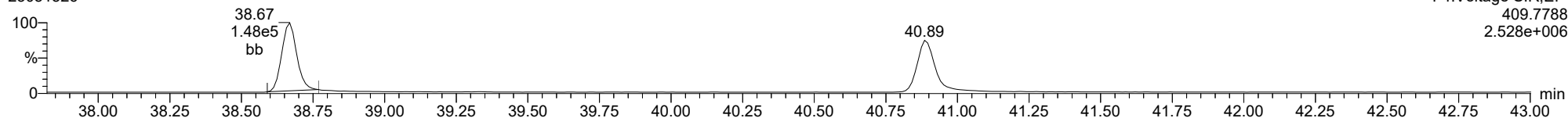
1234678-HpCDF

23051526



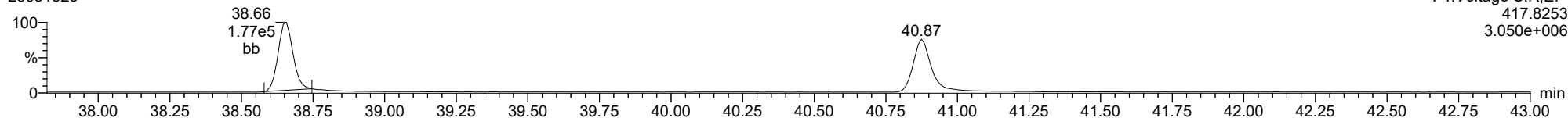
1234678-HpCDF

23051526



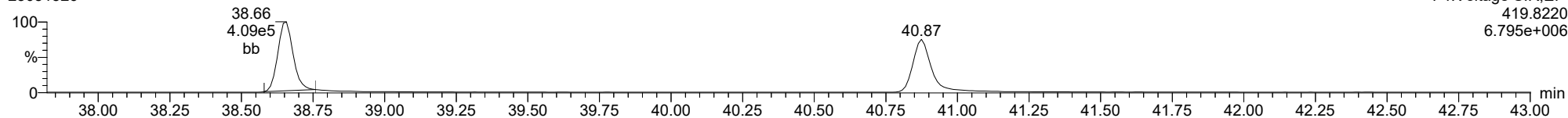
13C-1234678-HpCDF

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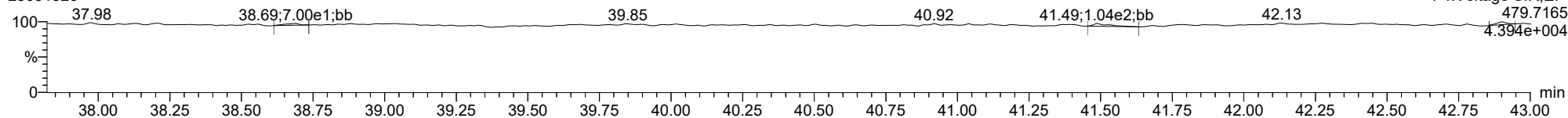
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FUNCTION4 NCDPE

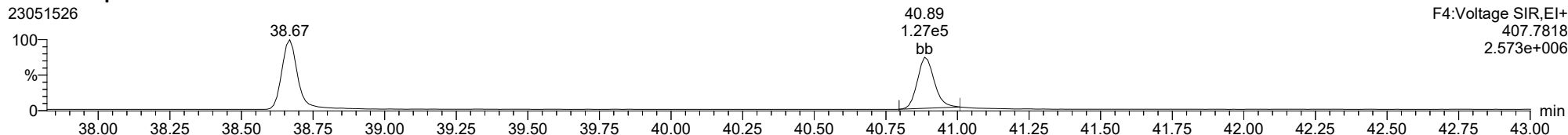
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

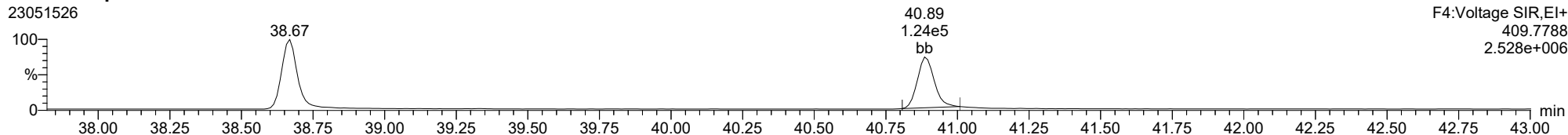
1234789-HpCDF

23051526



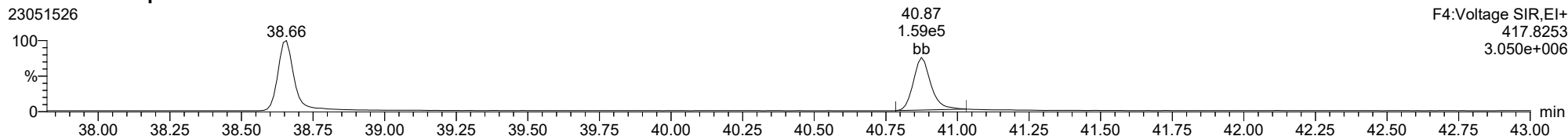
1234789-HpCDF

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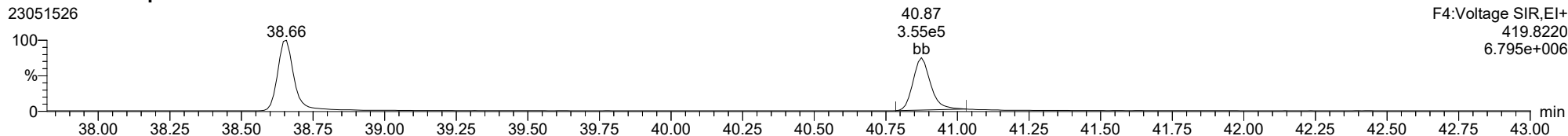
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23051526



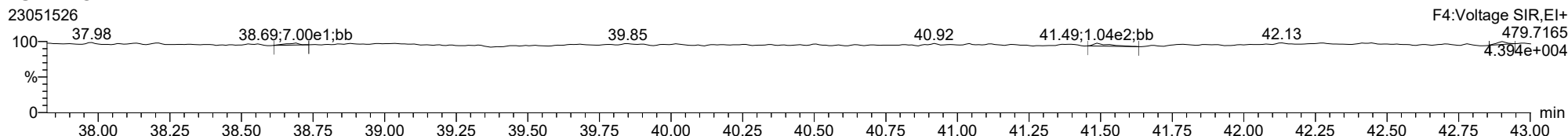
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FUNCTION4 NCDPE

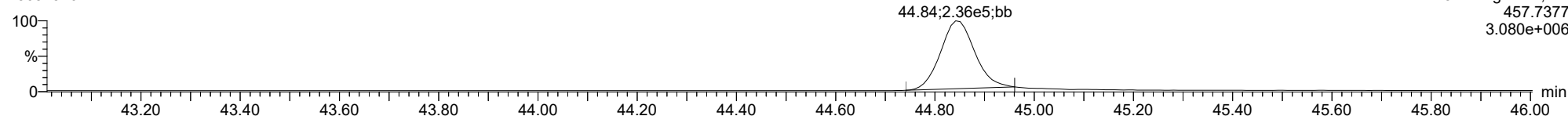
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

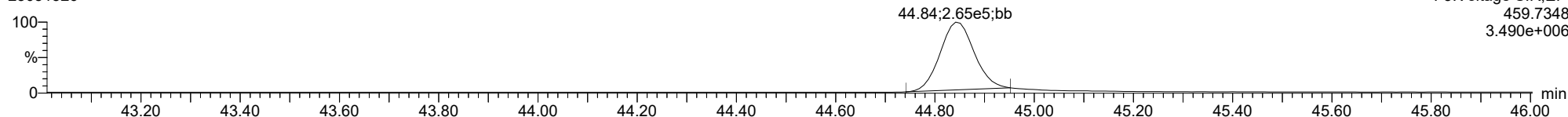
**OCDD**

23051526



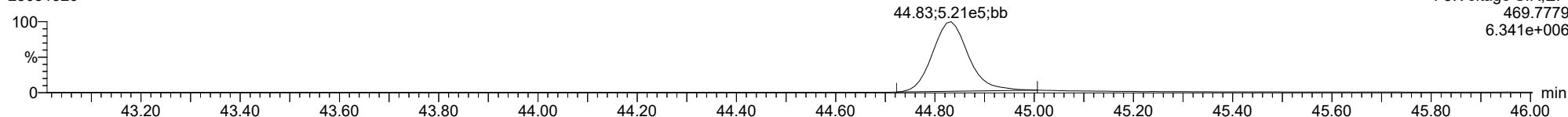
**OCDD**

23051526



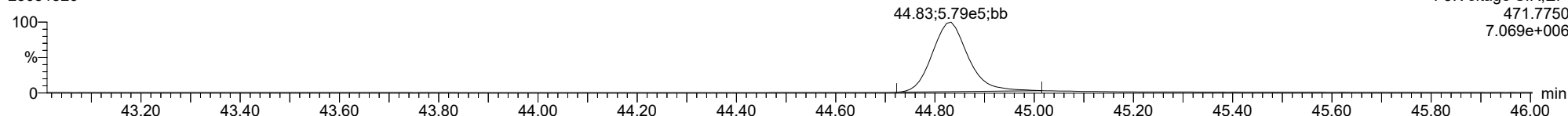
**13C-OCDD**

23051526



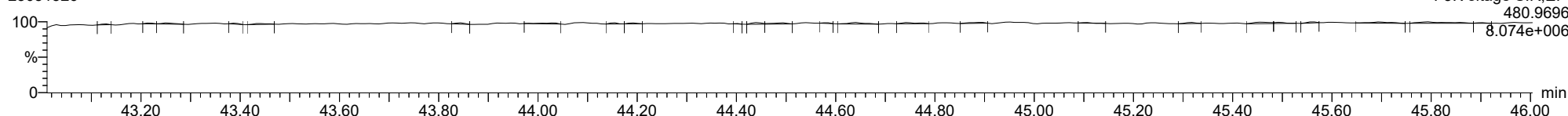
**13C-OCDD**

23051526

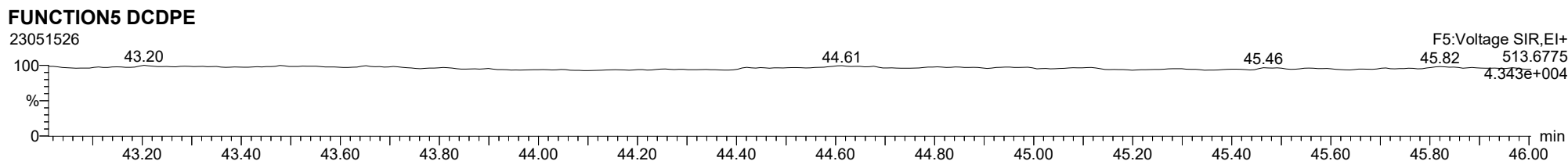
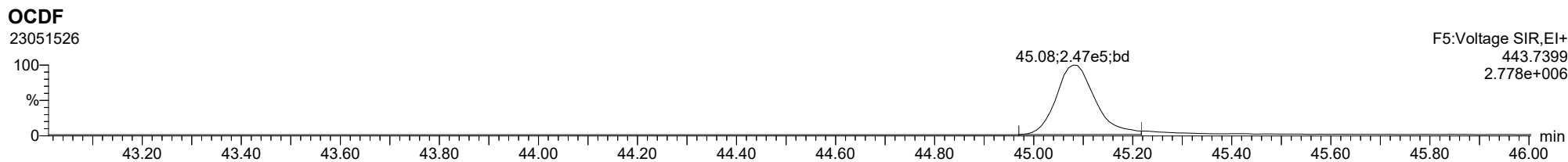
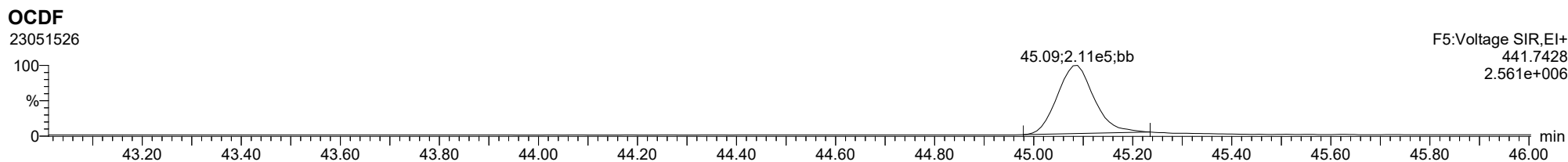


**FUNCTION5 PFK**

23051526



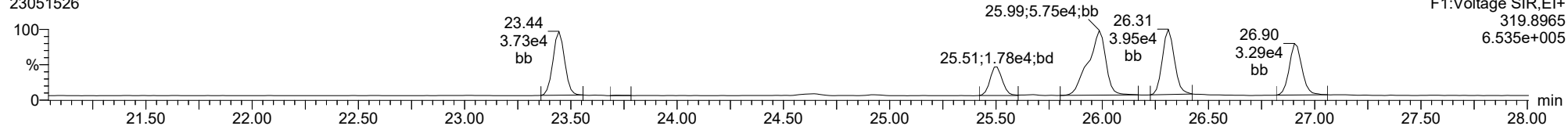
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

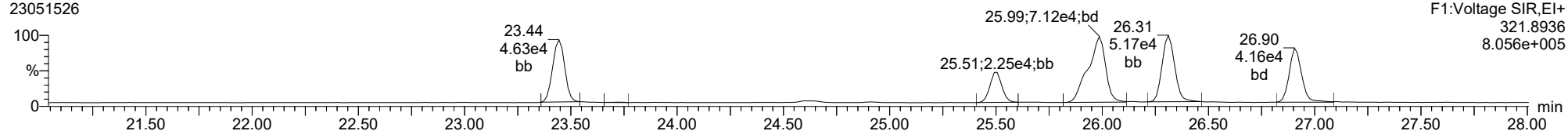
**Total-tetradioxins**

23051526



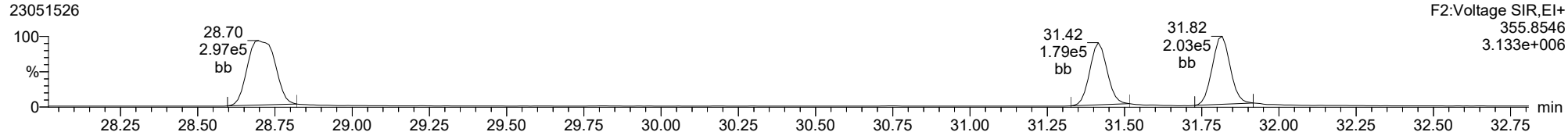
**Total-tetradioxins**

23051526



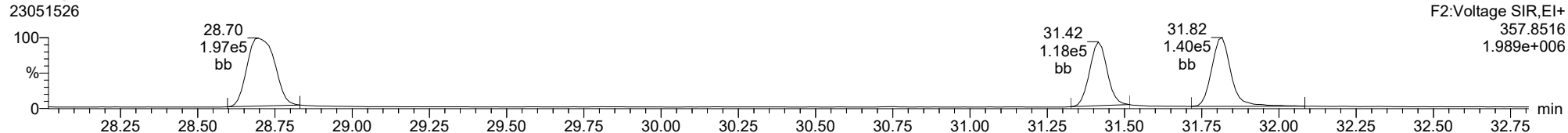
**Total-pentadioxins**

23051526



**Total-pentadioxins**

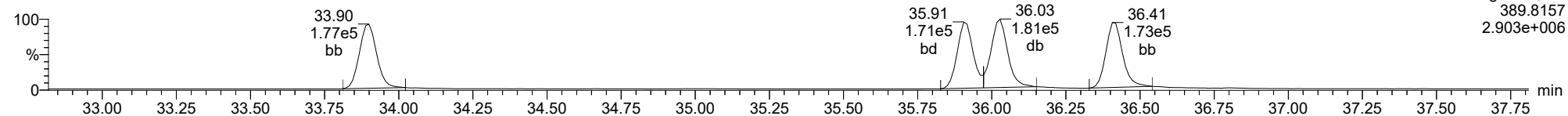
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

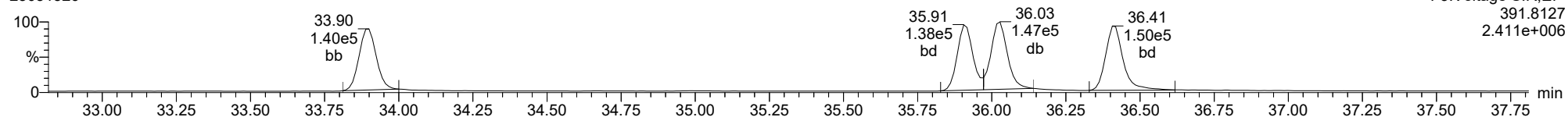
**Total-hexadioxins**

23051526



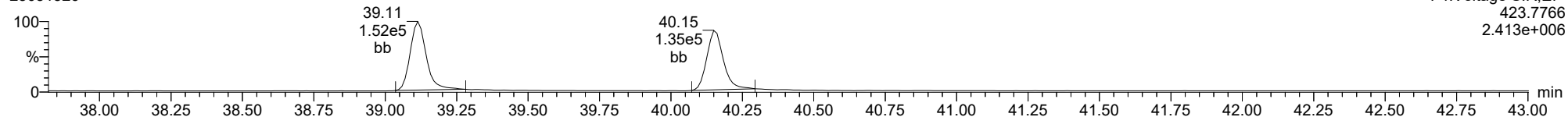
**Total-hexadioxins**

23051526



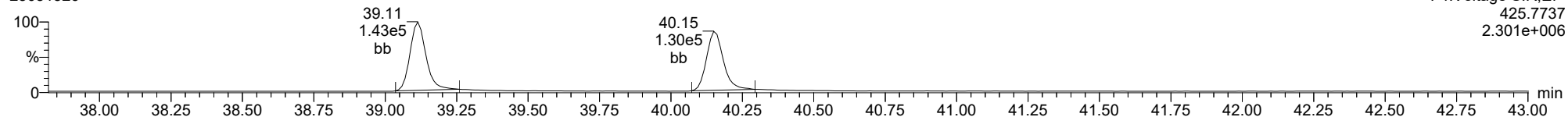
**Total-heptadioxins**

23051526



**Total-heptadioxins**

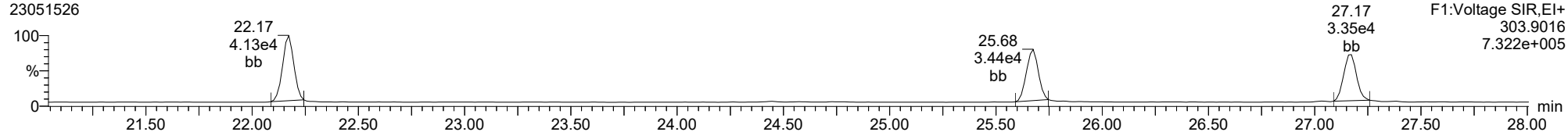
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ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

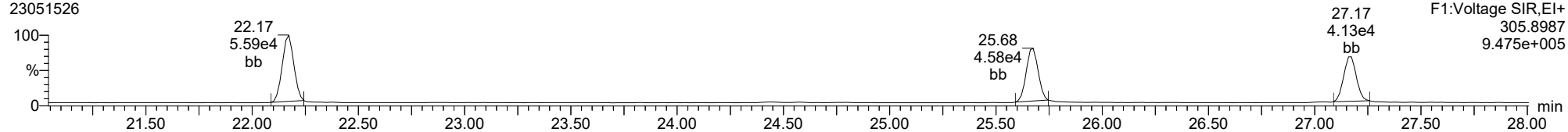
**Total-tetrafurans**

23051526



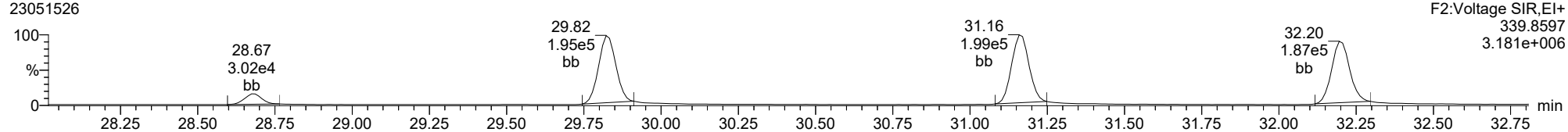
**Total-tetrafurans**

23051526



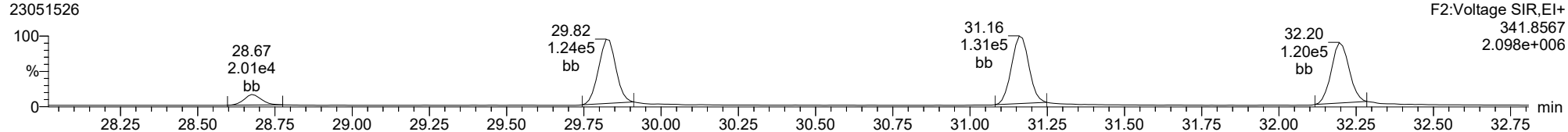
**Total-pentafurans**

23051526



**Total-pentafurans**

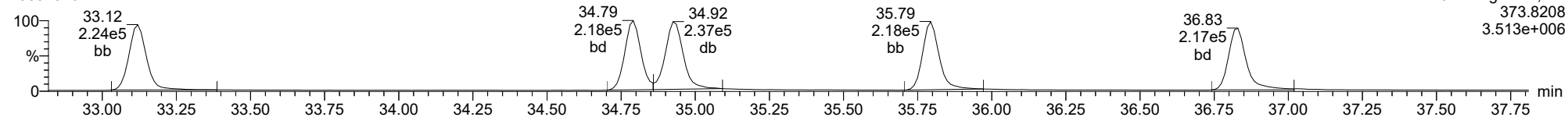
23051526



ID: CS3L7, Name: 23051526, Date: 16-May-2023, Time: 08:05:52, Conditions: AUTOSPEC01, User: pk

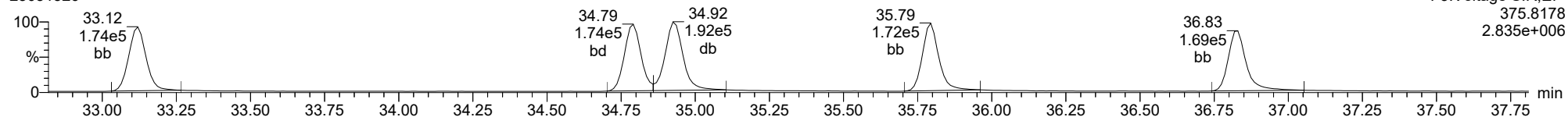
**Total-hexafurans**

23051526



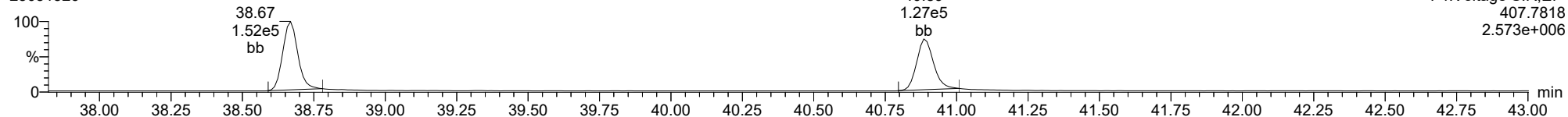
**Total-hexafurans**

23051526



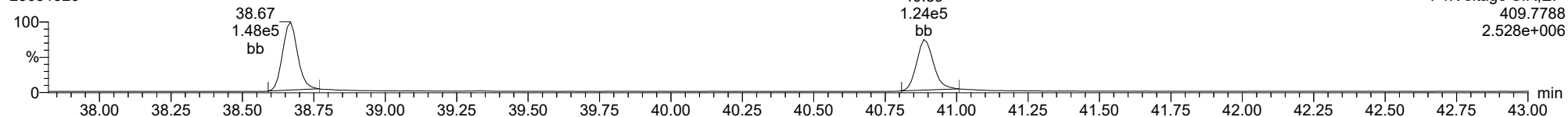
**Total-heptafurans**

23051526



**Total-heptafurans**

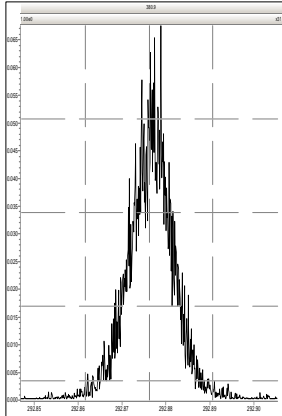
23051526



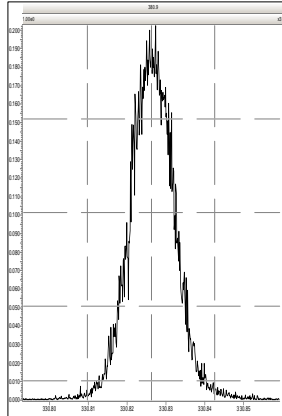


Printed: Tuesday, May 16, 2023 08:58:55 Pacific Daylight Time

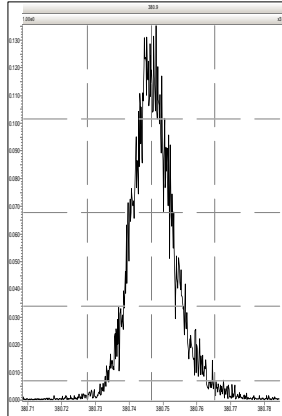
M 292.9824 R 13333



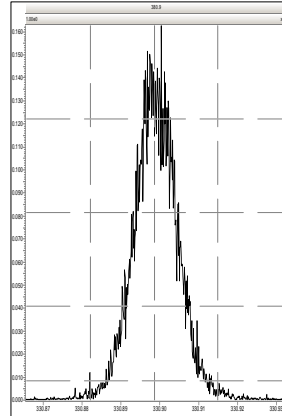
M 330.9792 R 12574



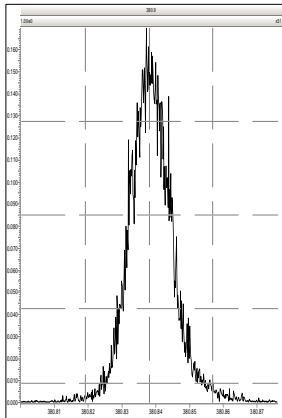
M 380.9760 R 13552



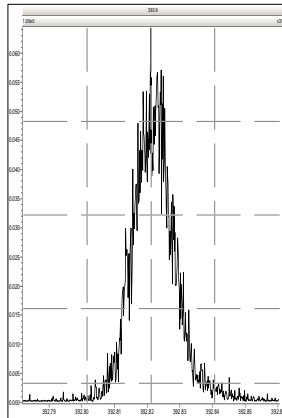
M 330.9792 R 12953



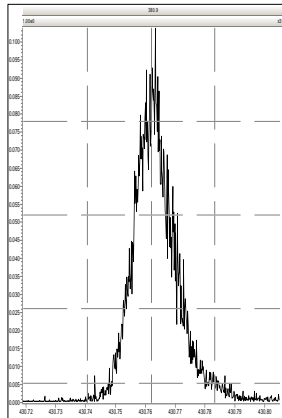
M 380.9760 R 12728



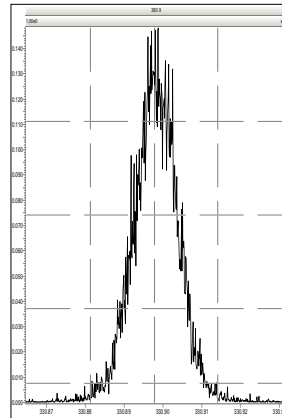
M 392.9760 R 13405



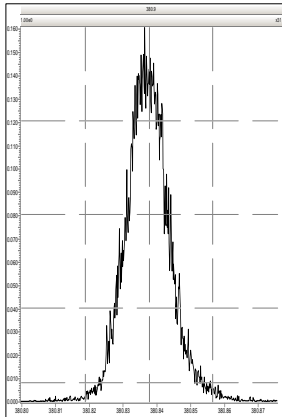
M 430.9728 R 13699



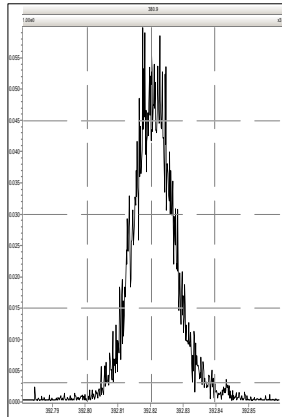
M 330.9792 R 13203



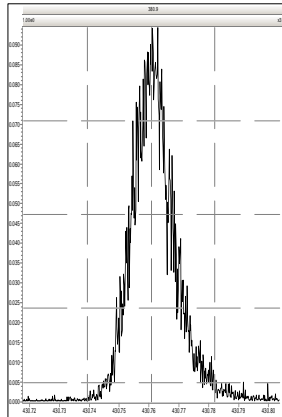
M 380.9760 R 13134



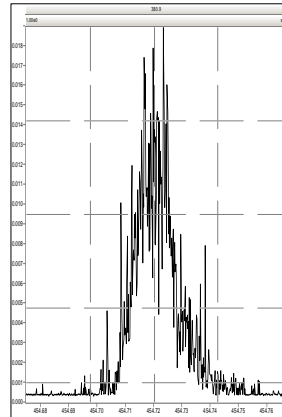
M 392.9760 R 14245



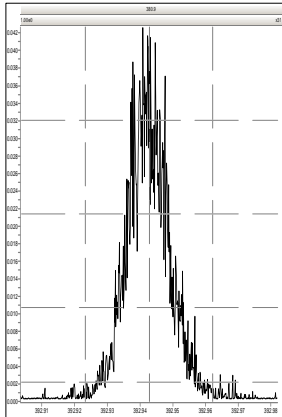
M 430.9728 R 13853



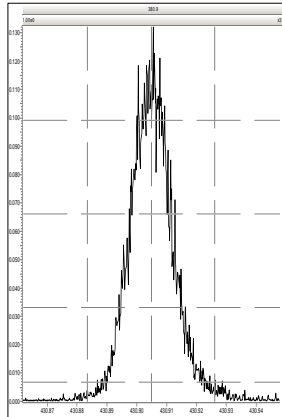
M 454.9728 R 15668



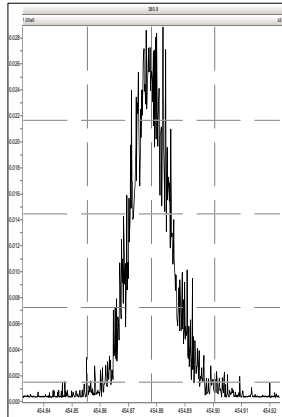
M 392.9760 R 13552



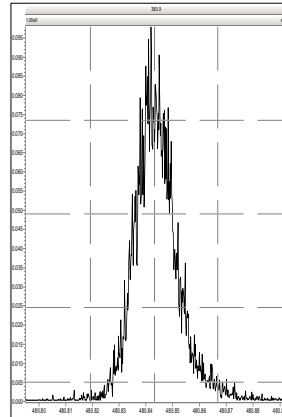
M 430.9728 R 13021



M 454.9728 R 14619

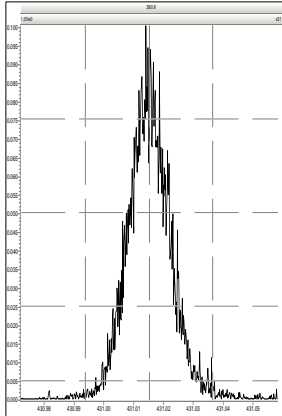


M 480.9696 R 13227

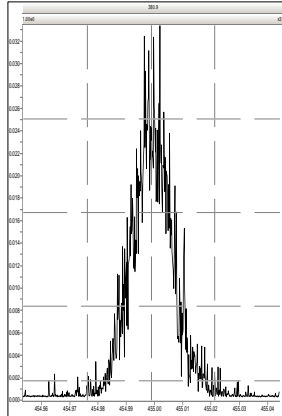


Printed: Tuesday, May 16, 2023 08:58:55 Pacific Daylight Time

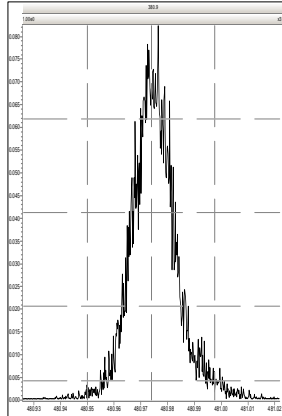
M 430.9728 R 13675



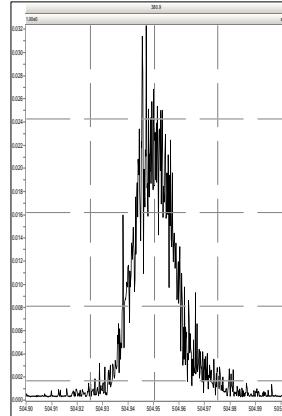
M 454.9728 R 14468



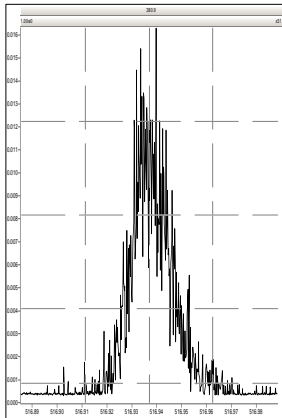
M 480.9696 R 12574



M 504.9696 R 13590



M 516.9697 R 15982

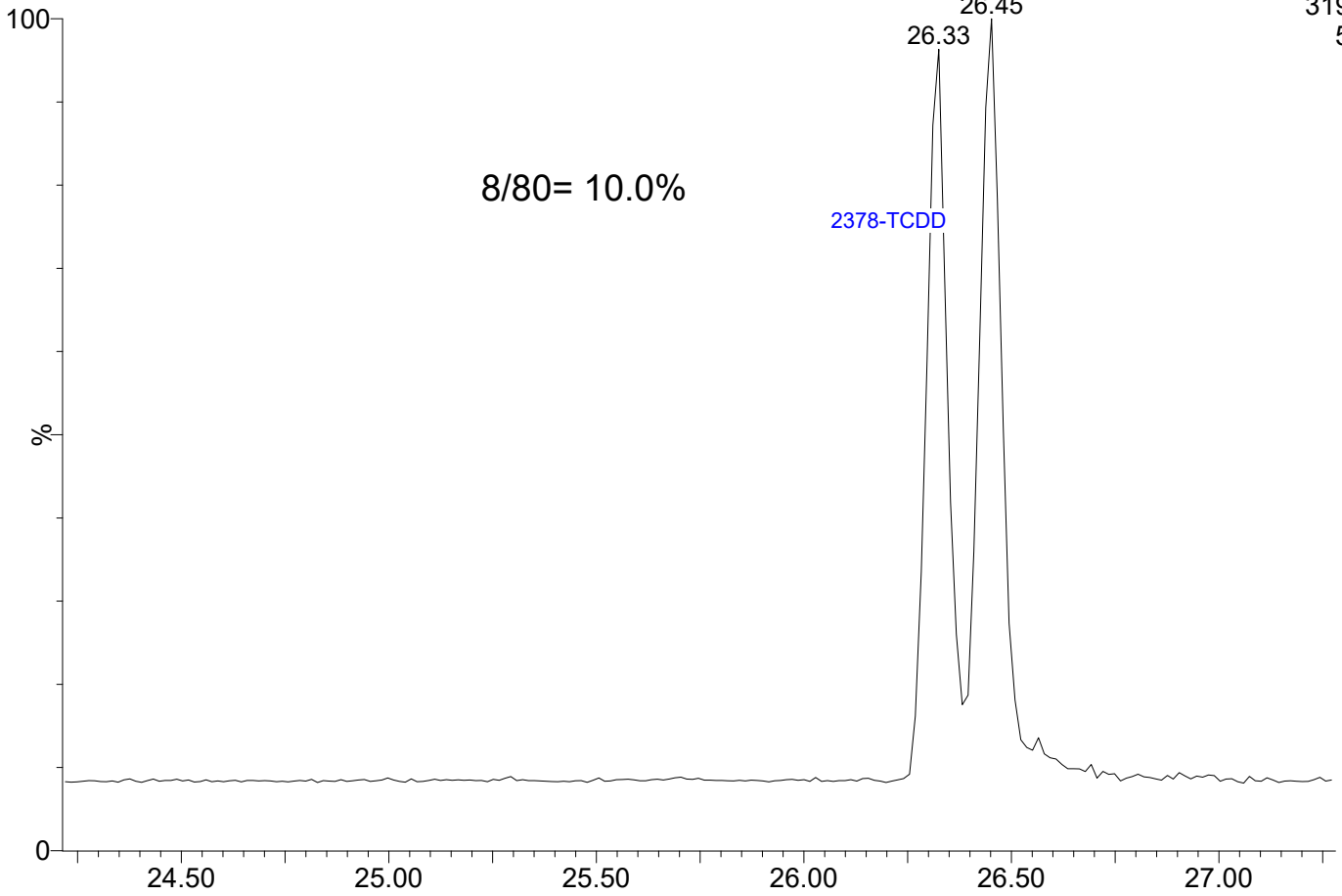


23051527

1: Voltage SIR 14 Channels EI+

319.8965

5.09e5



8/80= 10.0%

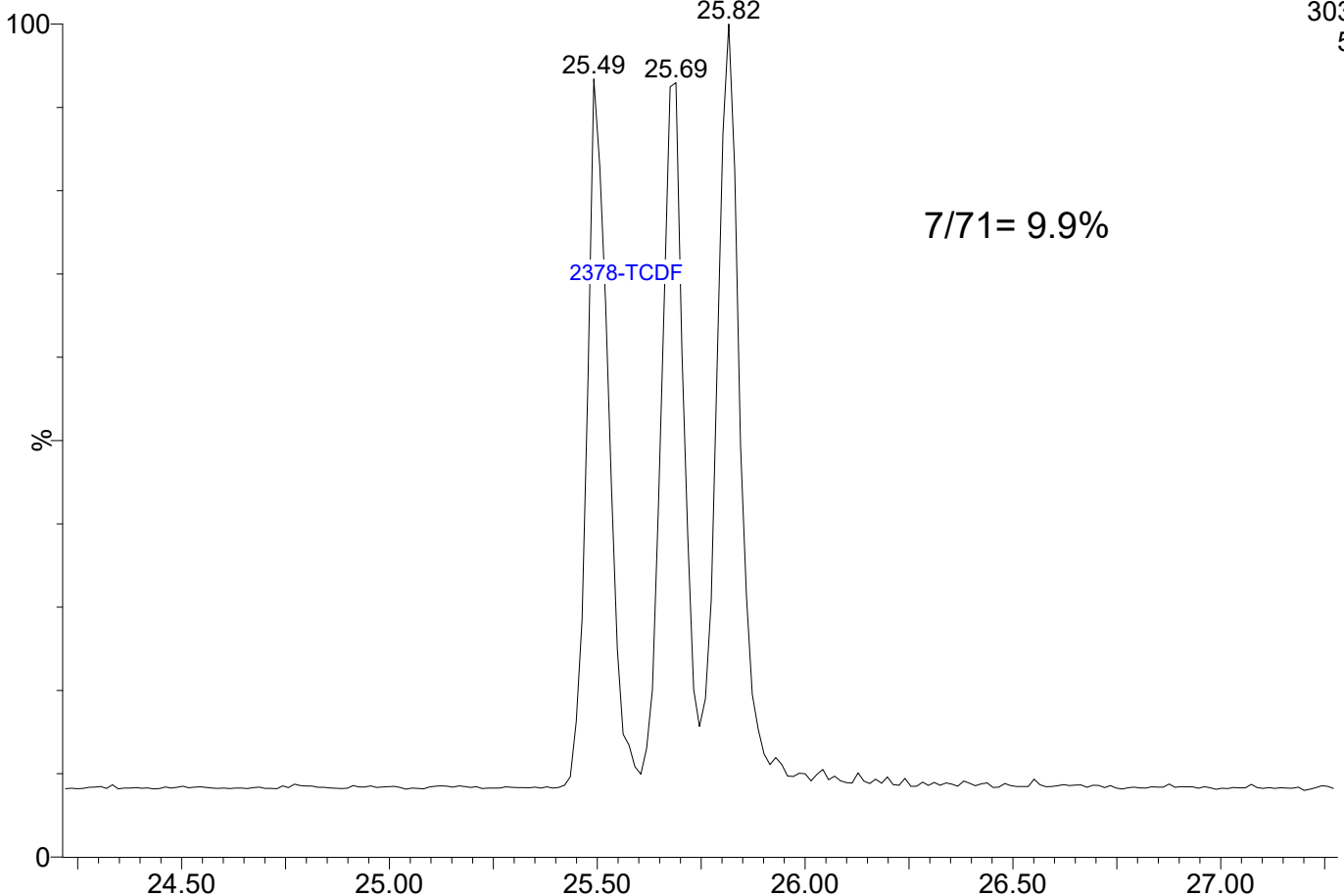
2378-TCDD

23051527

1: Voltage SIR 14 Channels EI+

303.9016

5.14e5



7/71= 9.9%

2378-TCDF



**CDD/CDF CHROMATOGRAPHIC  
RESOLUTION SUMMARY  
EPA 1613B**

Lab Name: Analytical Resources, LLC SDG: 23D0063  
Instrument .ID: AUTOSPEC01 Lab File ID: 23030303  
Date Analyzed: 03/03/23 Time Analyzed: 10:39  
Lab Sample ID: SLC0045-RES1 Sequence: SLC0045

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 8.8

3467-TCDF/2378-TCDF: 8.2

Quality Control (QC) Limits:  $\leq 25\%$

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SLC0045-ICV1	CS3W1	23030302	03/03/2023	09:51
SLC0045-RES1	ISCW1	23030303	03/03/2023	10:39
SLC0045-CAL1	CSLCW	23030304	03/03/2023	11:28
SLC0045-CAL2	CS1CW	23030305	03/03/2023	12:23
SLC0045-CAL3	CS2CW	23030306	03/03/2023	13:16
SLC0045-CAL4	CS3CW	23030307	03/03/2023	14:06
SLC0045-CAL5	CS4CW	23030308	03/03/2023	14:59
SLC0045-CAL6	CS5CW	23030309	03/03/2023	15:47
SLC0045-SCV1	ICVCW	23030310	03/03/2023	16:36
SLC0045-CCV1	CS3V4	23030311	03/03/2023	17:25
SLC0045-RES2	ISCV4	23030312	03/03/2023	18:18





**CDD/CDF CHROMATOGRAPHIC  
RESOLUTION SUMMARY  
EPA 1613B**

Lab Name: Analytical Resources, LLC SDG: 23D0063  
 Instrument .ID: AUTOSPEC01 Lab File ID: 23050923  
 Date Analyzed: 05/10/23 Time Analyzed: 07:03  
 Lab Sample ID: SLE0060-RES1 Sequence: SLE0060

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 13.5

3467-TCDF/2378-TCDF: 13.3

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
BLD0657-BLK2	Blank	23050121A	05/02/2023	02:53
BLD0657-BS2	LCS	23050122A	05/02/2023	03:42
SLE0060-ICV1	CS3K6	23050922A	05/10/2023	06:11
SLE0060-RES1	ISCK6	23050923	05/10/2023	07:03
BLD0657-SRM1	Reference	23050924	05/10/2023	07:55
BLD0657-DUP1	Duplicate	23050925	05/10/2023	08:44
SLE0060-CCV1	CS3K7	23050929	05/10/2023	12:00
SLE0060-RES2	ISCK7	23050930	05/10/2023	12:53



**CDD/CDF CHROMATOGRAPHIC  
RESOLUTION SUMMARY  
EPA 1613B**

Lab Name:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Instrument .ID:	<u>AUTOSPEC01</u>	Lab File ID:	<u>23050930</u>
Date Analyzed:	<u>05/10/23</u>	Time Analyzed:	<u>12:53</u>
Lab Sample ID:	<u>SLE0060-RES2</u>	Sequence:	<u>SLE0060</u>

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 9.8

3467-TCDF/2378-TCDF: 8.5

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
BLD0657-BLK2	Blank	23050121A	05/02/2023	02:53
BLD0657-BS2	LCS	23050122A	05/02/2023	03:42
SLE0060-ICV1	CS3K6	23050922A	05/10/2023	06:11
SLE0060-RES1	ISCK6	23050923	05/10/2023	07:03
BLD0657-SRM1	Reference	23050924	05/10/2023	07:55
BLD0657-DUP1	Duplicate	23050925	05/10/2023	08:44
SLE0060-CCV1	CS3K7	23050929	05/10/2023	12:00
SLE0060-RES2	ISCK7	23050930	05/10/2023	12:53



**CDD/CDF CHROMATOGRAPHIC  
 RESOLUTION SUMMARY  
 EPA 1613B**

Lab Name: <u>Analytical Resources, LLC</u>	SDG: <u>23D0063</u>
Instrument .ID: <u>AUTOSPEC01</u>	Lab File ID: <u>23051103</u>
Date Analyzed: <u>05/11/23</u>	Time Analyzed: <u>12:39</u>
Lab Sample ID: <u>SLE0195-RES1</u>	Sequence: <u>SLE0195</u>

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 15.6

3467-TCDF/2378-TCDF: 13.3

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SLE0195-ICV1	CS3L1	23051102	05/11/2023	11:47
SLE0195-RES1	ISCL1	23051103	05/11/2023	12:39
23D0063-03	LDW23-SS1819	23051104	05/11/2023	13:49
SLE0195-CCV1	CS3L2	23051114	05/11/2023	22:25
SLE0195-RES2	ISCL2	23051115	05/11/2023	23:18





**CDD/CDF CHROMATOGRAPHIC  
RESOLUTION SUMMARY  
EPA 1613B**

Lab Name:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Instrument .ID:	<u>AUTOSPEC01</u>	Lab File ID:	<u>23051115</u>
Date Analyzed:	<u>05/11/23</u>	Time Analyzed:	<u>23:18</u>
Lab Sample ID:	<u>SLE0195-RES2</u>	Sequence:	<u>SLE0195</u>

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD:	<u>12.2</u>
3467-TCDF/2378-TCDF:	<u>6.3</u>

Quality Control (QC) Limits:  $\leq 25\%$

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SLE0195-ICV1	CS3L1	23051102	05/11/2023	11:47
SLE0195-RES1	ISCL1	23051103	05/11/2023	12:39
23D0063-03	LDW23-SS1819	23051104	05/11/2023	13:49
SLE0195-CCV1	CS3L2	23051114	05/11/2023	22:25
SLE0195-RES2	ISCL2	23051115	05/11/2023	23:18







**CDD/CDF CHROMATOGRAPHIC  
RESOLUTION SUMMARY  
EPA 1613B**

Lab Name:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Instrument .ID:	<u>AUTOSPEC01</u>	Lab File ID:	<u>23051527</u>
Date Analyzed:	<u>05/16/23</u>	Time Analyzed:	<u>08:58</u>
Lab Sample ID:	<u>SLE0240-RES3</u>	Sequence:	<u>SLE0240</u>

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD:	<u>10</u>
3467-TCDF/2378-TCDF:	<u>9.9</u>

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SLE0240-ICV1	CS3L5	23051502	05/15/2023	12:04
SLE0240-RES1	ISCL5	23051503	05/15/2023	12:58
23D0063-01	LDW23-SS1818	23051504	05/15/2023	13:59
SLE0240-CCV1	CS3L6	23051514	05/15/2023	22:11
SLE0240-RES2	ISCL6	23051515	05/15/2023	23:04
SLE0240-CCV2	CS3L7	23051526	05/16/2023	08:05
SLE0240-RES3	ISCL7	23051527	05/16/2023	08:58



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLC0045

Instrument: AUTOSPEC01

Calibration: GC00015

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CS3W1	SLC0045-ICV1	23030302	NA	03/03/23 09:51
ISCW1	SLC0045-RES1	23030303	NA	03/03/23 10:39
CSLCW	SLC0045-CAL1	23030304	NA	03/03/23 11:28
CS1CW	SLC0045-CAL2	23030305	NA	03/03/23 12:23
CS2CW	SLC0045-CAL3	23030306	NA	03/03/23 13:16
CS3CW	SLC0045-CAL4	23030307	NA	03/03/23 14:06
CS4CW	SLC0045-CAL5	23030308	NA	03/03/23 14:59
CS5CW	SLC0045-CAL6	23030309	NA	03/03/23 15:47
ICVCW	SLC0045-SCV1	23030310	NA	03/03/23 16:36
CS3V4	SLC0045-CCV1	23030311	NA	03/03/23 17:25
ISCV4	SLC0045-RES2	23030312	NA	03/03/23 18:18



ANALYSIS SEQUENCE

SLC0045

Instrument: AUTOSPEC01      HRGCMS Column ID: K2310  
Calibration ID: GC00015      Tune File: FEB0923\_1-5  
EM Voltage: 350      Resolution check times : 9:51, 18:18

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLC0045-ICV1	CS3W1	QC		1	K009821		03/03/2023 09:51	23030302	PK	
SLC0045-RES1	ISCW1	QC		2	L002084		03/03/2023 10:39	23030303	PK	
SLC0045-CAL1	CSLCW	QC		3	I005460		03/03/2023 11:28	23030304	PK	
SLC0045-CAL2	CS1CW	QC		4	I005456		03/03/2023 12:23	23030305	PK	
SLC0045-CAL3	CS2CW	QC		5	I005457		03/03/2023 13:16	23030306	PK	
SLC0045-CAL4	CS3CW	QC		6	K009821		03/03/2023 14:06	23030307	PK	
SLC0045-CAL5	CS4CW	QC		7	I005458		03/03/2023 14:59	23030308	PK	
SLC0045-CAL6	CS5CW	QC		8	I005459		03/03/2023 15:47	23030309	PK	
SLC0045-SCV1	ICVCW	QC		9	H008219		03/03/2023 16:36	23030310	PK	
SLC0045-CCV1	CS3V4	QC		10	K009821		03/03/2023 17:25	23030311	PK	
SLC0045-RES2	ISCV4	QC		11	L002084		03/03/2023 18:18	23030312	PK	

Dataset: T:\Autospec\Processed Data Batch\230303\CIH.qld

Last Altered: Monday, March 06, 2023 10:57:27 Pacific Standard Time

Printed: Monday, March 06, 2023 10:58:44 Pacific Standard Time

3/6/23 PK

Event	Details	Sample ID
Process Extract		
Process Integrate		
Process Calibrate		
Process Quantify		
Dataset Created		
Peak deleted	Sample:23030304, Compound:TD, RT:26.410	1
Peak deleted	Sample:23030304, Compound:OD, RT:44.990	1
Peak deleted	Sample:23030304, Compound:TF, RT:25.774	1
Pre modification peak	Sample:23030305, Compound:TF, RT:25.774	2
Peak modified	Sample:23030305, Compound:TF, RT:25.774	2
Pre modification peak	Sample:23030304, Compound:HPD, RT:40.261	1
Peak modified	Sample:23030304, Compound:HPD, RT:40.261	1
Peak deleted	Sample:23030308, Compound:PF, RT:32.328	5
Peak deleted	Sample:23030309, Compound:PF, RT:32.307	6
Peak deleted	Sample:23030309, Compound:HF, RT:33.220	6
Peak deleted	Sample:23030309, Compound:TD, RT:27.017	6
Peak deleted	Sample:23030309, Compound:PD, RT:31.995	6
Peak deleted	Sample:23030309, Compound:PD, RT:31.917	6
Peak deleted	Sample:23030308, Compound:HD, RT:34.000	5
Peak deleted	Sample:23030308, Compound:HPD, RT:39.225	5
Peak deleted	Sample:23030309, Compound:HPD, RT:39.214	6
Pre modification peak	Sample:23030305, Compound:OF, RT:45.237	2
Peak modified	Sample:23030305, Compound:OF, RT:45.237	2
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230303\CIH.qld'	



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0060

Instrument: AUTOSPEC01

Calibration: GC00015

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Blank	BLD0657-BLK2	23050121A	Solid	05/02/23 02:53
LCS	BLD0657-BS2	23050122A	Solid	05/02/23 03:42
CS3K6	SLE0060-ICV1	23050922A	NA	05/10/23 06:11
ISCK6	SLE0060-RES1	23050923	NA	05/10/23 07:03
Reference	BLD0657-SRM1	23050924	Solid	05/10/23 07:55
LDW23-SS1818	BLD0657-DUP1	23050925	Solid	05/10/23 08:44
CS3K7	SLE0060-CCV1	23050929	NA	05/10/23 12:00
ISCK7	SLE0060-RES2	23050930	NA	05/10/23 12:53





ANALYSIS SEQUENCE

SLE0060

Instrument: AUTOSPEC01      HRGCMS Column ID: L2313  
Calibration ID: GC00015      Tune File: mar2023\_1-5  
EM Voltage: 350      Resolution check times : 07:03, 12:53

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLE0060-ICV1	CS3K6	QC		1	K009821		05/10/2023 06:11	23050922A	PK	
SLE0060-RES1	ISCK6	QC		2	L002084		05/10/2023 07:03	23050923	PK	
BLD0657-BLK2	Blank	QC		3		K011414	05/02/2023 02:53	23050121A	PK	
BLD0657-BS2	LCS	QC		4		K011414	05/02/2023 03:42	23050122A	PK	
BLD0657-SRM1	Reference	QC		5		K011414	05/10/2023 07:55	23050924	PK	
BLD0657-DUP1	Duplicate	QC		6		K011414	05/10/2023 08:44	23050925	PK	
23D0063-01	LDW23-SS1818	1613B Dioxin	C 02	7		K011414	05/10/2023 09:33	23050926	PK	
23D0136-01	LDW23-SS1804	1613B Dioxin	A 06	8		K011414	05/10/2023 11:11	23050928	PK	
SLE0060-CCV1	CS3K7	QC		9	K009821		05/10/2023 12:00	23050929	PK	
SLE0060-RES2	ISCK7	QC		10	L002084		05/10/2023 12:53	23050930	PK	

Dataset: T:\Autospec\Processed Data Batch\230509IHA.qld

Last Altered: Wednesday, May 10, 2023 16:18:06 Pacific Daylight Time

Printed: Wednesday, May 10, 2023 16:21:36 Pacific Daylight Time

5/10/23 PK

Event	Details	Sample ID
Process Extract		
Process Integrate		
Process Quantify		
Dataset Created		
Peak deleted	Sample:23050930, Compound:13C-123789-HxCDD, RT:36.373	9
Pre modification peak	Sample:23050924, Compound:PF, RT:31.192	3
Peak modified	Sample:23050924, Compound:PF, RT:31.192	3
Pre modification peak	Sample:23050924, Compound:HD, RT:36.072	3
Peak modified	Sample:23050924, Compound:HD, RT:36.072	3
Pre modification peak	Sample:23050925, Compound:HF, RT:35.905	4
Peak modified	Sample:23050925, Compound:HF, RT:35.905	4
Peak added	Sample:23050925, Compound:HF, RT:35.905	4
Peak added	Sample:23050925, Compound:HF, RT:35.883	4
Peak modified	Sample:23050925, Compound:HF, RT:35.905	4
Pre modification peak	Sample:23050926, Compound:HF, RT:34.802	5
Peak modified	Sample:23050926, Compound:HF, RT:34.802	5
Peak deleted	Sample:23050926, Compound:HF, RT:34.925	5
Peak deleted	Sample:23050926, Compound:HD, RT:36.039	5
Pre modification peak	Sample:23050927, Compound:HF, RT:35.849	6
Peak modified	Sample:23050927, Compound:HF, RT:35.849	6
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230509IHA.qld'	
Peak deleted	Sample:23050924, Compound:TF, RT:25.195	3
Peak deleted	Sample:23050924, Compound:TF, RT:25.011	3
Peak deleted	Sample:23050925, Compound:TF, RT:26.777	4
Peak deleted	Sample:23050925, Compound:TF, RT:26.226	4
Peak added	Sample:23050925, Compound:HF, RT:35.861	4
Peak added	Sample:23050925, Compound:HF, RT:35.871	4
Peak modified	Sample:23050925, Compound:HF, RT:35.871	4
Peak deleted	Sample:23050927, Compound:TF, RT:26.749	6
Peak deleted	Sample:23050927, Compound:TD, RT:25.223	6
Peak deleted	Sample:23050928, Compound:HPF, RT:40.183	7
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230509IHA.qld'	



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0195

Instrument: AUTOSPEC01

Calibration: GC00015

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CS3L1	SLE0195-ICV1	23051102	NA	05/11/23 11:47
ISCL1	SLE0195-RES1	23051103	NA	05/11/23 12:39
LDW23-SS1819	23D0063-03	23051104	Solid	05/11/23 13:49
CS3L2	SLE0195-CCV1	23051114	NA	05/11/23 22:25
ISCL2	SLE0195-RES2	23051115	NA	05/11/23 23:18



ANALYSIS SEQUENCE

SLE0195

Instrument: AUTOSPEC01      HRGCMS Column ID: 12313  
Calibration ID: GC00015      Tune File: MAR2023\_1-5  
EM Voltage: 350      Resolution check times : 11:45, 23:18

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLE0195-ICV1	CS3L1	QC		1	K009821		05/11/2023 11:47	23051102	PK	
SLE0195-RES1	ISCL1	QC		2	L002084		05/11/2023 12:39	23051103	PK	
23D0063-03	LDW23-SS1819	1613B Dioxin	C 02	3			05/11/2023 13:49	23051104	PK	
BLD0710-BLK2	Blank	QC		4		K011414				
BLD0710-BS2	LCS	QC		5		K011414				
BLD0710-SRM1	Reference	QC		6		K011414	05/11/2023 15:05	23051105	PK	
BLD0710-DUP1	Duplicate	QC		7		K011414	05/11/2023 15:53	23051106	PK	
23D0393-02	LDW23-SS1223	1613B Dioxin	C 01	8		K011414	05/11/2023 16:42	23051107	PK	
23D0393-10	LDW23-SS1097	1613B Dioxin	C 01	9		K011414	05/11/2023 17:31	23051108	PK	
23D0393-11	LDW23-SS1114	1613B Dioxin	C 01	10		K011414	05/11/2023 18:20	23051109	PK	
23D0393-13	LDW23-IT1086	1613B Dioxin	C 01	11		K011414	05/11/2023 19:09	23051110	PK	
23D0393-23	LDW23-IT1043	1613B Dioxin	C 01	12		K011414	05/11/2023 19:58	23051111	PK	
23D0394-02	LDW23-SS1071	1613B Dioxin	C 01	13		K011414	05/11/2023 20:47	23051112	PK	
23D0394-03	LDW23-IT1071	1613B Dioxin	C 01	14		K011414	05/11/2023 21:36	23051113	PK	
SLE0195-CCV1	CS3L2	QC		15	K009821		05/11/2023 22:25	23051114	PK	
SLE0195-RES2	ISCL2	QC		16	L002084		05/11/2023 23:18	23051115	PK	

Dataset: T:\Autospec\Processed Data Batch\230511IH.qld

Last Altered: Friday, May 12, 2023 13:01:55 Pacific Daylight Time

Printed: Friday, May 12, 2023 13:07:53 Pacific Daylight Time 5/12/23 PK

Event	Details	Sample ID
Dataset Created		
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230511IH.qld'	
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230511IH.qld'	
Peak added	Sample:23051107, Compound:HF, RT:36.841	6
Peak added	Sample:23051107, Compound:HF, RT:36.852	6
Peak added	Sample:23051112, Compound:HD, RT:35.081	11
Peak added	Sample:23051112, Compound:HD, RT:35.081	11
Peak deleted	Sample:23051115, Compound:13C-123789-HxCDD, RT:36.406	14
Peak deleted	Sample:23051110, Compound:TF, RT:25.704	9
Peak deleted	Sample:23051110, Compound:PF, RT:31.203	9
Peak deleted	Sample:23051111, Compound:PF, RT:29.844	10
Peak deleted	Sample:23051104, Compound:TF, RT:21.805	3
Peak deleted	Sample:23051104, Compound:PF, RT:30.257	3
Peak deleted	Sample:23051105, Compound:TF, RT:27.257	4
Peak deleted	Sample:23051105, Compound:PF, RT:29.109	4
Peak deleted	Sample:23051106, Compound:TF, RT:26.862	5
Peak deleted	Sample:23051107, Compound:HPF, RT:40.172	6
Peak deleted	Sample:23051108, Compound:PP, RT:26.692	7
Peak deleted	Sample:23051108, Compound:PF, RT:29.287	7
Peak deleted	Sample:23051108, Compound:PF, RT:30.713	7
Peak deleted	Sample:23051108, Compound:HF, RT:36.931	7
Peak deleted	Sample:23051108, Compound:HPF, RT:39.694	7
Peak deleted	Sample:23051110, Compound:TF, RT:23.952	9
Peak deleted	Sample:23051110, Compound:TD, RT:23.472	9
Peak deleted	Sample:23051110, Compound:HD, RT:35.771	9
Peak deleted	Sample:23051111, Compound:PP, RT:27.017	10
Peak deleted	Sample:23051111, Compound:PF, RT:29.020	10
Peak deleted	Sample:23051111, Compound:HPF, RT:40.974	10
Peak deleted	Sample:23051112, Compound:PP, RT:26.791	11
Peak deleted	Sample:23051112, Compound:TD, RT:26.466	11
Peak deleted	Sample:23051112, Compound:TD, RT:25.972	11
Peak deleted	Sample:23051113, Compound:PP, RT:27.794	12
Peak deleted	Sample:23051113, Compound:HF, RT:36.930	12
Peak modified	Sample:23051105, Compound:TD, RT:26.368	4
Peak modified	Sample:23051105, Compound:HD, RT:35.961	4
Peak modified	Sample:23051107, Compound:TD, RT:26.353	6
Peak modified	Sample:23051111, Compound:HPF, RT:40.885	10
Peak modified	Sample:23051111, Compound:PD, RT:31.426	10
Peak modified	Sample:23051112, Compound:PF, RT:31.204	11
Peak modified	Sample:23051112, Compound:HF, RT:36.841	11
Peak modified	Sample:23051113, Compound:TD, RT:26.339	12
Peak modified	Sample:23051112, Compound:HD, RT:35.081	11
Peak modified	Sample:23051112, Compound:HD, RT:35.081	11
Pre modification peak	Sample:23051105, Compound:TD, RT:26.368	4
Pre modification peak	Sample:23051105, Compound:HD, RT:35.961	4
Pre modification peak	Sample:23051107, Compound:TD, RT:26.353	6
Pre modification peak	Sample:23051111, Compound:HPF, RT:40.885	10
Pre modification peak	Sample:23051111, Compound:PD, RT:31.426	10
Pre modification peak	Sample:23051112, Compound:PF, RT:31.204	11
Pre modification peak	Sample:23051112, Compound:HF, RT:36.841	11
Pre modification peak	Sample:23051113, Compound:TD, RT:26.339	12
Pre modification peak	Sample:23051112, Compound:HD, RT:35.081	11
Process Extract		
Process Integrate		
Process Quantify		



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 1613B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0240

Instrument: AUTOSPEC01

Calibration: GC00015

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CS3L5	SLE0240-ICV1	23051502	NA	05/15/23 12:04
ISCL5	SLE0240-RES1	23051503	NA	05/15/23 12:58
LDW23-SS1818	23D0063-01	23051504	Solid	05/15/23 13:59
CS3L6	SLE0240-CCV1	23051514	NA	05/15/23 22:11
ISCL6	SLE0240-RES2	23051515	NA	05/15/23 23:04
CS3L7	SLE0240-CCV2	23051526	NA	05/16/23 08:05
ISCL7	SLE0240-RES3	23051527	NA	05/16/23 08:58



ANALYSIS SEQUENCE

SLE0240

Instrument: AUTOSPEC01      HRGCMS Column ID: L2313  
 Calibration ID: GC00015      Tune File: MAR2023\_1-5  
 EM Voltage: 350      Resolution check times : 11:54, 23:04, 08:58

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLE0240-ICV1	CS3L5	QC		1	K009821		05/15/2023 12:04	23051502	PK	
SLE0240-RES1	ISCL5	QC		2	L002084		05/15/2023 12:58	23051503	PK	
23D0063-01	LDW23-SS1818	1613B Dioxin	C 02	3			05/15/2023 13:59	23051504	PK	
BLD0507-BLK1	Blank	QC		4		K011414	05/15/2023 14:50	23051505	PK	
BLD0507-BS1	LCS	QC		5		K011414	05/15/2023 15:38	23051506	PK	
BLD0507-BSD1	LCS Dup	QC		6		K011414	05/15/2023 16:28	23051507	PK	
23D0359-11	MW5-0423	1613B Dioxin	A 01	7		K011414	05/15/2023 17:17	23051508	PK	
23D0412-06	MWCP5-041323	1613B Dioxin	B 01	8		K011414	05/15/2023 18:06	23051509	PK	
23D0412-07	MWCP6-041323	1613B Dioxin	B 01	9		K011414	05/15/2023 18:55	23051510	PK	
BLD0547-BLK1	Blank	QC		10		K011414	05/15/2023 19:44	23051511	PK	
BLD0547-BS1	LCS	QC		11		K011414	05/15/2023 20:33	23051512	PK	
BLD0547-BSD1	LCS Dup	QC		12		K011414	05/15/2023 21:22	23051513	PK	
SLE0240-CCV1	CS3L6	QC		13	K009821		05/15/2023 22:11	23051514	PK	
SLE0240-RES2	ISCL6	QC		14	L002084		05/15/2023 23:04	23051515	PK	
23D0359-01	DUP01-0423	1613B Dioxin	A 01	15		K011414	05/15/2023 23:55	23051516	PK	
23D0359-02	MW9-0423	1613B Dioxin	A 01	16		K011414	05/16/2023 00:45	23051517	PK	
23D0359-03	MW8-0423	1613B Dioxin	A 01	17		K011414	05/16/2023 01:34	23051518	PK	
23D0359-04	MW3-0423	1613B Dioxin	A 01	18		K011414	05/16/2023 02:23	23051519	PK	
23D0359-05	MW4-0423	1613B Dioxin	A 01	19		K011414	05/16/2023 03:11	23051520	PK	
23D0359-06	MW7-0423	1613B Dioxin	A 01	20		K011414	05/16/2023 04:01	23051521	PK	
23D0359-07	MW1-0423	1613B Dioxin	A 01	21		K011414	05/16/2023 04:49	23051522	PK	
23D0359-09	MW6-0423	1613B Dioxin	A 01	22		K011414	05/16/2023 05:39	23051523	PK	



ANALYSIS SEQUENCE

SLE0240

Instrument: AUTOSPEC01      HRGCMS Column ID: L2313  
Calibration ID: GC00015      Tune File: MAR2023\_1-5  
EM Voltage: 350      Resolution check times : 11:54, 23:04, 08:58

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
23D0359-10	MW2-0423	1613B Dioxin	A 01	23		K011414	05/16/2023 06:27	23051524	PK	
23D0476-03	45-334 April Sample	1613B Dioxin	A 01	24		K011414	05/16/2023 07:16	23051525	PK	
SLE0240-CCV2	CS3L7	QC		25	K009821		05/16/2023 08:05	23051526	PK	
SLE0240-RES3	ISCL7	QC		26	L002084		05/16/2023 08:58	23051527	PK	



Dataset: T:\Autospec\Processed Data Batch\230515D1.qld

Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 08:55:50 Pacific Daylight Time

5/16/23 pk

Event	Details	Sample ID
Process Extract		
Process Integrate		
Process Quantify		
Dataset Created		
Pre modification peak	Sample:23051504, Compound:HF, RT:36.819	3
Peak modified	Sample:23051504, Compound:HF, RT:36.819	3
Pre modification peak	Sample:23051504, Compound:PD, RT:31.460	3
Peak modified	Sample:23051504, Compound:PD, RT:31.460	3
Peak deleted	Sample:23051505, Compound:PF, RT:29.878	4
Pre modification peak	Sample:23051505, Compound:OF, RT:45.125	4
Peak modified	Sample:23051505, Compound:OF, RT:45.125	4
Pre modification peak	Sample:23051505, Compound:OF, RT:45.107	4
Peak modified	Sample:23051505, Compound:OF, RT:45.107	4
Peak deleted	Sample:23051508, Compound:TF, RT:25.704	7
Peak deleted	Sample:23051508, Compound:TF, RT:25.788	7
Peak deleted	Sample:23051508, Compound:TF, RT:25.605	7
Peak deleted	Sample:23051508, Compound:PF, RT:31.204	7
Peak deleted	Sample:23051508, Compound:HF, RT:36.830	7
Peak deleted	Sample:23051508, Compound:HF, RT:36.930	7
Peak deleted	Sample:23051508, Compound:HPF, RT:40.908	7
Peak deleted	Sample:23051508, Compound:PD, RT:31.460	7
Peak deleted	Sample:23051508, Compound:HD, RT:36.440	7
Peak deleted	Sample:23051509, Compound:PF, RT:31.192	8
Peak deleted	Sample:23051509, Compound:OF, RT:45.107	8
Peak deleted	Sample:23051509, Compound:OF, RT:45.071	8
Peak deleted	Sample:23051509, Compound:OF, RT:45.190	8
Peak deleted	Sample:23051509, Compound:OF, RT:44.943	8
Peak deleted	Sample:23051509, Compound:PD, RT:31.427	8
Peak deleted	Sample:23051510, Compound:TF, RT:25.675	9
Peak deleted	Sample:23051510, Compound:TF, RT:25.774	9
Peak deleted	Sample:23051510, Compound:HF, RT:34.825	9
Peak deleted	Sample:23051510, Compound:HPF, RT:38.691	9
Peak deleted	Sample:23051510, Compound:TD, RT:26.325	9
Pre modification peak	Sample:23051510, Compound:OD, RT:44.870	9
Peak modified	Sample:23051510, Compound:OD, RT:44.870	9
Pre modification peak	Sample:23051511, Compound:OD, RT:44.888	10
Peak modified	Sample:23051511, Compound:OD, RT:44.888	10
Peak deleted	Sample:23051515, Compound:13C-1234-TCDD, RT:25.591	14
Peak deleted	Sample:23051515, Compound:13C-1234-TCDD, RT:25.506	14
Peak deleted	Sample:23051515, Compound:13C-1234-TCDD, RT:25.463	14
Peak deleted	Sample:23051515, Compound:13C-123789-HxCDD, RT:36.384	14
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230515D1.qld'	
Peak deleted	Sample:23051504, Compound:TF, RT:24.136	3
Peak deleted	Sample:23051504, Compound:TF, RT:26.452	3
Peak deleted	Sample:23051504, Compound:TF, RT:26.354	3
Peak deleted	Sample:23051504, Compound:PF, RT:29.087	3
Pre modification peak	Sample:23051504, Compound:PF, RT:28.808	3
Peak modified	Sample:23051504, Compound:PF, RT:28.808	3
Peak deleted	Sample:23051504, Compound:HF, RT:35.159	3
Peak deleted	Sample:23051504, Compound:HPF, RT:39.705	3
Peak added	Sample:23051504, Compound:PD, RT:28.764	3
Peak added	Sample:23051504, Compound:PD, RT:28.786	3
Peak deleted	Sample:23051506, Compound:PF, RT:30.914	5
Peak deleted	Sample:23051507, Compound:PF, RT:30.156	6
Peak deleted	Sample:23051507, Compound:HF, RT:32.560	6

Dataset: T:\Autospec\Processed Data Batch\230515D1.qld  
Last Altered: Tuesday, May 16, 2023 08:53:08 Pacific Daylight Time  
Printed: Tuesday, May 16, 2023 08:55:50 Pacific Daylight Time

Event	Details	Sample ID
Peak deleted	Sample:23051508, Compound:TF, RT:23.204	7
Peak deleted	Sample:23051508, Compound:HPF, RT:39.950	7
Peak deleted	Sample:23051508, Compound:HPF, RT:39.404	7
Peak deleted	Sample:23051508, Compound:TD, RT:23.500	7
Peak deleted	Sample:23051508, Compound:HPD, RT:40.429	7
Peak deleted	Sample:23051509, Compound:TF, RT:26.961	8
Peak deleted	Sample:23051509, Compound:TF, RT:25.817	8
Peak deleted	Sample:23051509, Compound:TF, RT:23.006	8
Peak deleted	Sample:23051509, Compound:PF, RT:30.569	8
Peak deleted	Sample:23051509, Compound:HPF, RT:38.412	8
Peak deleted	Sample:23051509, Compound:TD, RT:25.548	8
Peak deleted	Sample:23051509, Compound:PD, RT:28.574	8
Peak deleted	Sample:23051510, Compound:TF, RT:22.737	9
Peak deleted	Sample:23051510, Compound:TF, RT:22.413	9
Peak deleted	Sample:23051510, Compound:TF, RT:25.365	9
Peak deleted	Sample:23051510, Compound:TF, RT:25.124	9
Peak deleted	Sample:23051510, Compound:TF, RT:24.319	9
Peak deleted	Sample:23051510, Compound:Dioxins,TD,PD,HD,HPD,OD, RT:21.494	9
Peak deleted	Sample:23051511, Compound:TF, RT:23.218	10
Peak deleted	Sample:23051512, Compound:TD, RT:26.961	11
Peak deleted	Sample:23051512, Compound:PD, RT:31.159	11
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230515D1.qld'	

Dataset: T:\Autospec\Processed Data Batch\230515D2.qld

Last Altered: Tuesday, May 16, 2023 13:25:49 Pacific Daylight Time

Printed: Tuesday, May 16, 2023 13:26:57 Pacific Daylight Time

5/16/23 pk

Event	Details	Sample ID
Process Extract		
Process Integrate		
Process Quantify		
Dataset Created		
Peak deleted	Sample:23051516, Compound:PF, RT:29.822	1
Peak deleted	Sample:23051516, Compound:TD, RT:26.325	1
Pre modification peak	Sample:23051516, Compound:OD, RT:44.833	1
Peak modified	Sample:23051516, Compound:OD, RT:44.833	1
Peak deleted	Sample:23051517, Compound:TD, RT:26.297	2
Peak deleted	Sample:23051519, Compound:HF, RT:35.794	4
Peak deleted	Sample:23051520, Compound:HPF, RT:38.680	5
Pre modification peak	Sample:23051521, Compound:OD, RT:44.833	6
Peak modified	Sample:23051521, Compound:OD, RT:44.833	6
Peak deleted	Sample:23051521, Compound:PF, RT:31.181	6
Pre modification peak	Sample:23051522, Compound:OD, RT:44.833	7
Peak modified	Sample:23051522, Compound:OD, RT:44.833	7
Pre modification peak	Sample:23051522, Compound:OD, RT:44.869	7
Peak modified	Sample:23051522, Compound:OD, RT:44.869	7
Pre modification peak	Sample:23051525, Compound:OD, RT:44.851	10
Peak modified	Sample:23051525, Compound:OD, RT:44.851	10
Peak deleted	Sample:23051525, Compound:HPF, RT:38.668	10
Peak deleted	Sample:23051516, Compound:TF, RT:22.483	1
Peak deleted	Sample:23051519, Compound:HD, RT:35.772	4
Peak deleted	Sample:23051520, Compound:TF, RT:22.808	5
Peak deleted	Sample:23051523, Compound:TD, RT:24.206	8
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230515D2.qld'	
Pre modification peak	Sample:23051524, Compound:13C-123478-HxCDF, RT:34.769	9
Peak modified	Sample:23051524, Compound:13C-123478-HxCDF, RT:34.769	9
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\230515D2.qld'	



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLC0045

Instrument: AUTOSPEC01

Sample ID: SLC0045-ICV1

Calibration: GC00015

File ID: 23030302

Analyzed: 03/03/23 09:51

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	94.0	71 - 129	25.7745	25.76487	0.0096	N/A	
13C12-2,3,7,8-TCDD	100.00	102	82 - 118	26.4242	26.40287	0.0213	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	92.2	76 - 124	29.9337	29.92235	0.0114	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	87.6	77 - 123	31.2707	31.2611	0.0096	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	84.3	62 - 138	31.5268	31.5192	0.0076	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	84.0	76 - 124	34.8915	34.88393	0.0076	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	74.6	70 - 130	35.0363	35.02318	0.0131	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	88.7	73 - 127	35.8942	35.88653	0.0077	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	99.9	74 - 126	36.9303	36.91718	0.0131	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	93.5	85 - 115	36.0167	36.00728	0.0094	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	86.9	85 - 115	36.1393	36.12053	0.0188	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	95.3	78 - 122	38.7685	38.7593	0.0092	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	98.7	77 - 123	41.008	40.99867	0.0093	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	105	72 - 128	40.2615	40.25773	0.0038	N/A	
13C12-OCDD	200.00	107	48 - 152	44.9993	44.98705	0.0122	N/A	
37Cl4-2,3,7,8-TCDD	10.000	90.5	0 - 200	26.4383	26.42402	0.0143	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC SDG: 23D0063  
Client: Anchor QEA, LLC Project: AOC5 MR Phase 1  
Sequence: SLC0045 Instrument: AUTOSPEC01  
Sample ID: SLC0045-SCV1 Calibration: GC00015  
File ID: 23030310 Analyzed: 03/03/23 16:36

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	96.9	0 - 200	25.7602	25.76487	-0.0047	N/A	
13C12-2,3,7,8-TCDD	100.00	96.6	0 - 200	26.3958	26.40287	-0.0071	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	73.2	0 - 200	29.9225	29.92235	0.0001	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	75.9	0 - 200	31.2593	31.2611	-0.0018	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	76.6	0 - 200	31.5155	31.5192	-0.0037	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	93.0	0 - 200	34.8802	34.88393	-0.0037	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	98.0	0 - 200	35.014	35.02318	-0.0092	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	93.4	0 - 200	35.8828	35.88653	-0.0037	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	97.9	0 - 200	36.9078	36.91718	-0.0094	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	95.9	0 - 200	36.0053	36.00728	-0.0020	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	97.7	0 - 200	36.1168	36.12053	-0.0037	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	102	0 - 200	38.7573	38.7593	-0.0020	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	104	0 - 200	40.9967	40.99867	-0.0020	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	102	0 - 200	40.2502	40.25773	-0.0075	N/A	
13C12-OCDD	200.00	80.8	0 - 200	44.9807	44.98705	-0.0064	N/A	
37C14-2,3,7,8-TCDD	10.000	87.1	0 - 200	26.4242	26.42402	0.0002	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLC0045</u>	Instrument:	<u>AUTOSPEC01</u>
Sample ID:	<u>SLC0045-CCV1</u>	Calibration:	<u>GC00015</u>
File ID:	<u>23030311</u>	Analyzed:	<u>03/03/23 17:25</u>

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	89.4	71 - 129	25.7602	25.76487	-0.0047	N/A	
13C12-2,3,7,8-TCDD	100.00	86.0	82 - 118	26.3958	26.40287	-0.0071	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	92.6	76 - 124	29.9225	29.92235	0.0001	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	91.6	77 - 123	31.2593	31.2611	-0.0018	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	90.8	62 - 138	31.5157	31.5192	-0.0035	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	95.2	76 - 124	34.8805	34.88393	-0.0034	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	91.1	70 - 130	35.0253	35.02318	0.0021	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	96.9	73 - 127	35.883	35.88653	-0.0035	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	101	74 - 126	36.9193	36.91718	0.0021	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	97.6	85 - 115	36.0057	36.00728	-0.0016	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	98.4	85 - 115	36.117	36.12053	-0.0035	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	102	78 - 122	38.7577	38.7593	-0.0016	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	84.3	77 - 123	40.997	40.99867	-0.0017	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	92.0	72 - 128	40.2617	40.25773	0.0040	N/A	
13C12-OCDD	200.00	85.1	48 - 152	44.9903	44.98705	0.0032	N/A	
37C14-2,3,7,8-TCDD	10.000	75.4	0 - 200	26.424	26.42402	0.0000	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0060</u>	Instrument:	<u>AUTOSPEC01</u>
Sample ID:	<u>BLD0657-BLK2</u>	Calibration:	<u>GC00015</u>
File ID:	<u>23050121A</u>	Analyzed:	<u>05/02/23 02:53</u>

Surrogate Compound	Spike Level ng/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.00	81.8	24 - 169	25.5202	25.76487	-0.2447	N/A	
13C12-2,3,7,8-TCDD	200.00	92.9	25 - 164	26.1558	26.40287	-0.2471	N/A	
13C12-1,2,3,7,8-PeCDF	200.00	91.5	24 - 185	29.6692	29.92235	-0.2532	N/A	
13C12-2,3,4,7,8-PeCDF	200.00	95.7	21 - 178	31.0062	31.2611	-0.2549	N/A	
13C12-1,2,3,7,8-PeCDD	200.00	59.7	25 - 181	31.2623	31.5192	-0.2569	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.00	106	26 - 152	34.6388	34.88393	-0.2451	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.00	117	26 - 123	34.7837	35.02318	-0.2395	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.00	111	28 - 136	35.6527	35.88653	-0.2338	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.00	99.2	29 - 147	36.6888	36.91718	-0.2284	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.00	99.7	32 - 141	35.7642	36.00728	-0.2431	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.00	104	28 - 130	35.8867	36.12053	-0.2338	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.00	107	28 - 143	38.5247	38.7593	-0.2346	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.00	98.2	26 - 138	40.7418	40.99867	-0.2569	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.00	89.9	23 - 140	40.0065	40.25773	-0.2512	N/A	
13C12-OCDD	400.00	92.1	17 - 157	44.6693	44.98705	-0.3178	N/A	
37C14-2,3,7,8-TCDD	80.000	93.5	35 - 197	26.17	26.42402	-0.2540	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0060</u>	Instrument:	<u>AUTOSPEC01</u>
Sample ID:	<u>BLD0657-BS2</u>	Calibration:	<u>GC00015</u>
File ID:	<u>23050122A</u>	Analyzed:	<u>05/02/23 03:42</u>

Surrogate Compound	Spike Level ng/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.00	81.7	24 - 169	25.5202	25.76487	-0.2447	N/A	
13C12-2,3,7,8-TCDD	200.00	94.7	25 - 164	26.1558	26.40287	-0.2471	N/A	
13C12-1,2,3,7,8-PeCDF	200.00	94.7	24 - 185	29.669	29.92235	-0.2534	N/A	
13C12-2,3,4,7,8-PeCDF	200.00	92.4	21 - 178	31.0058	31.2611	-0.2553	N/A	
13C12-1,2,3,7,8-PeCDD	200.00	65.3	25 - 181	31.2622	31.5192	-0.2570	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.00	101	26 - 152	34.6388	34.88393	-0.2451	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.00	99.1	26 - 123	34.7837	35.02318	-0.2395	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.00	100	28 - 136	35.6527	35.88653	-0.2338	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.00	95.2	29 - 147	36.6888	36.91718	-0.2284	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.00	100	32 - 141	35.7642	36.00728	-0.2431	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.00	93.4	28 - 130	35.8867	36.12053	-0.2338	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.00	109	28 - 143	38.5358	38.7593	-0.2235	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.00	91.0	26 - 138	40.7418	40.99867	-0.2569	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.00	94.1	23 - 140	40.0177	40.25773	-0.2400	N/A	
13C12-OCDD	400.00	86.8	17 - 157	44.6602	44.98705	-0.3269	N/A	
37C14-2,3,7,8-TCDD	80.000	95.1	35 - 197	26.17	26.42402	-0.2540	N/A	

\* Values outside of QC limits





**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC SDG: 23D0063  
Client: Anchor QEA, LLC Project: AOC5 MR Phase 1  
Sequence: SLE0060 Instrument: AUTOSPEC01  
Sample ID: SLE0060-ICV1 Calibration: GC00015  
File ID: 23050922A Analyzed: 05/10/23 06:11

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	101	71 - 129	25.6472	25.76487	-0.1177	N/A	
13C12-2,3,7,8-TCDD	100.00	105	82 - 118	26.2828	26.40287	-0.1201	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	113	76 - 124	29.7997	29.92235	-0.1227	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	116	77 - 123	31.1368	31.2611	-0.1243	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	106	62 - 138	31.393	31.5192	-0.1262	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	87.1	76 - 124	34.7577	34.88393	-0.1262	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	90.1	70 - 130	34.9025	35.02318	-0.1207	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	96.1	73 - 127	35.7603	35.88653	-0.1262	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	95.0	74 - 126	36.7965	36.91718	-0.1207	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	91.6	85 - 115	35.8828	36.00728	-0.1245	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	93.1	85 - 115	36.0055	36.12053	-0.1150	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	104	78 - 122	38.6348	38.7593	-0.1245	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	110	77 - 123	40.8632	40.99867	-0.1355	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	92.8	72 - 128	40.1278	40.25773	-0.1299	N/A	
13C12-OCDD	200.00	114	48 - 152	44.8052	44.98705	-0.1819	N/A	
37C14-2,3,7,8-TCDD	10.000	87.9	0 - 200	26.311	26.42402	-0.1130	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0060</u>	Instrument:	<u>AUTOSPEC01</u>
Sample ID:	<u>BLD0657-SRM1</u>	Calibration:	<u>GC00015</u>
File ID:	<u>23050924</u>	Analyzed:	<u>05/10/23 07:55</u>

Surrogate Compound	Spike Level ng/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.40	91.8	24 - 169	25.6755	25.76487	-0.0894	N/A	
13C12-2,3,7,8-TCDD	199.40	98.3	25 - 164	26.311	26.40287	-0.0919	N/A	
13C12-1,2,3,7,8-PeCDF	199.40	104	24 - 185	29.8332	29.92235	-0.0892	N/A	
13C12-2,3,4,7,8-PeCDF	199.40	107	21 - 178	31.1702	31.2611	-0.0909	N/A	
13C12-1,2,3,7,8-PeCDD	199.40	96.7	25 - 181	31.4263	31.5192	-0.0929	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.40	77.4	26 - 152	34.7912	34.88393	-0.0927	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.40	71.8	26 - 123	34.936	35.02318	-0.0872	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.40	81.1	28 - 136	35.8162	35.88653	-0.0703	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.40	85.6	29 - 147	36.83	36.91718	-0.0872	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.40	85.0	32 - 141	35.9498	36.00728	-0.0575	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.40	80.6	28 - 130	36.0612	36.12053	-0.0593	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.40	78.2	28 - 143	38.6683	38.7593	-0.0910	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.40	93.1	26 - 138	40.8967	40.99867	-0.1020	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.40	80.1	23 - 140	40.1612	40.25773	-0.0965	N/A	
13C12-OCDD	398.80	88.2	17 - 157	44.851	44.98705	-0.1361	N/A	
37C14-2,3,7,8-TCDD	79.761	91.7	35 - 197	26.3393	26.42402	-0.0847	N/A	

\* Values outside of QC limits



## SURROGATE RECOVERY AND RT SUMMARY EPA 1613B

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0060</u>	Instrument:	<u>AUTOSPEC01</u>
Sample ID:	<u>BLD0657-DUP1</u>	Calibration:	<u>GC00015</u>
File ID:	<u>23050925</u>	Analyzed:	<u>05/10/23 08:44</u>

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.95	103	24 - 169	25.7035	25.76487	-0.0614	N/A	
13C12-2,3,7,8-TCDD	199.95	111	25 - 164	26.3533	26.40287	-0.0496	N/A	
13C12-1,2,3,7,8-PeCDF	199.95	123	24 - 185	29.8553	29.92235	-0.0671	N/A	
13C12-2,3,4,7,8-PeCDF	199.95	128	21 - 178	31.1922	31.2611	-0.0689	N/A	
13C12-1,2,3,7,8-PeCDD	199.95	119	25 - 181	31.4485	31.5192	-0.0707	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.95	89.8	26 - 152	34.8467	34.88393	-0.0372	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.95	81.6	26 - 123	34.9915	35.02318	-0.0317	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.95	88.6	28 - 136	35.8938	35.88653	0.0073	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.95	63.1	29 - 147	36.8743	36.91718	-0.0429	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.95	95.9	32 - 141	36.0165	36.00728	0.0092	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.95	88.6	28 - 130	36.1278	36.12053	0.0073	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.95	101	28 - 143	38.7013	38.7593	-0.0580	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.95	106	26 - 138	40.9295	40.99867	-0.0692	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.95	96.7	23 - 140	40.1942	40.25773	-0.0635	N/A	
13C12-OCDD	399.90	110	17 - 157	44.9053	44.98705	-0.0818	N/A	
37C14-2,3,7,8-TCDD	79.981	104	35 - 197	26.3673	26.42402	-0.0567	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC SDG: 23D0063  
 Client: Anchor QEA, LLC Project: AOC5 MR Phase 1  
 Sequence: SLE0060 Instrument: AUTOSPEC01  
 Sample ID: SLE0060-CCV1 Calibration: GC00015  
 File ID: 23050929 Analyzed: 05/10/23 12:00

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	97.4	71 - 129	25.6613	25.76487	-0.1036	N/A	
13C12-2,3,7,8-TCDD	100.00	102	82 - 118	26.297	26.40287	-0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	111	76 - 124	29.8112	29.92235	-0.1112	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	118	77 - 123	31.1482	31.2611	-0.1129	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	105	62 - 138	31.4043	31.5192	-0.1149	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	81.3	76 - 124	34.769	34.88393	-0.1149	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	73.2	70 - 130	34.9028	35.02318	-0.1204	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	84.2	73 - 127	35.7718	35.88653	-0.1147	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	88.7	74 - 126	36.808	36.91718	-0.1092	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	87.8	85 - 115	35.8945	36.00728	-0.1128	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	81.4	85 - 115	36.0058	36.12053	-0.1147	N/A	*
13C12-1,2,3,4,6,7,8-HpCDF	100.00	102	78 - 122	38.6465	38.7593	-0.1128	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	105	77 - 123	40.875	40.99867	-0.1237	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	96.2	72 - 128	40.1283	40.25773	-0.1294	N/A	
13C12-OCDD	200.00	123	48 - 152	44.8152	44.98705	-0.1719	N/A	
37C14-2,3,7,8-TCDD	10.000	89.7	0 - 200	26.3112	26.42402	-0.1128	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0195

Instrument: AUTOSPEC01

Sample ID: SLE0195-ICV1

Calibration: GC00015

File ID: 23051102

Analyzed: 05/11/23 11:47

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	107	71 - 129	25.6753	25.76487	-0.0896	N/A	
13C12-2,3,7,8-TCDD	100.00	105	82 - 118	26.311	26.40287	-0.0919	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	115	76 - 124	29.8332	29.92235	-0.0892	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	122	77 - 123	31.1592	31.2611	-0.1019	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	108	62 - 138	31.4155	31.5192	-0.1037	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	90.9	76 - 124	34.7912	34.88393	-0.0927	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	91.0	70 - 130	34.925	35.02318	-0.0982	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	95.2	73 - 127	35.794	35.88653	-0.0925	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	98.5	74 - 126	36.819	36.91718	-0.0982	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	96.7	85 - 115	35.9165	36.00728	-0.0908	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	97.0	85 - 115	36.0278	36.12053	-0.0927	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	124	78 - 129	38.6683	38.7593	-0.0910	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	127	77 - 129	40.8855	40.99867	-0.1132	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	111	72 - 128	40.1502	40.25773	-0.1075	N/A	
13C12-OCDD	200.00	140	48 - 152	44.8327	44.98705	-0.1544	N/A	
37Cl4-2,3,7,8-TCDD	10.000	89.6	0 - 200	26.3392	26.42402	-0.0848	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0195</u>	Instrument:	<u>AUTOSPEC01</u>
Sample ID:	<u>23D0063-03</u>	Calibration:	<u>GC00015</u>
File ID:	<u>23051104</u>	Analyzed:	<u>05/11/23 13:49</u>

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.93	92.4	24 - 169	25.6897	25.76487	-0.0752	N/A	
13C12-2,3,7,8-TCDD	199.93	95.0	25 - 164	26.3253	26.40287	-0.0776	N/A	
13C12-1,2,3,7,8-PeCDF	199.93	104	24 - 185	29.8333	29.92235	-0.0891	N/A	
13C12-2,3,4,7,8-PeCDF	199.93	112	21 - 178	31.1702	31.2611	-0.0909	N/A	
13C12-1,2,3,7,8-PeCDD	199.93	102	25 - 181	31.4377	31.5192	-0.0815	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.93	81.5	26 - 152	34.8025	34.88393	-0.0814	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.93	77.0	26 - 123	34.9473	35.02318	-0.0759	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.93	83.2	28 - 136	35.8275	35.88653	-0.0590	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.93	82.6	29 - 147	36.8303	36.91718	-0.0869	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.93	87.2	32 - 141	35.95	36.00728	-0.0573	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.93	85.9	28 - 130	36.0725	36.12053	-0.0480	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.93	98.3	28 - 143	38.6797	38.7593	-0.0796	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.93	104	26 - 138	40.8968	40.99867	-0.1019	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.93	89.6	23 - 140	40.1613	40.25773	-0.0964	N/A	
13C12-OCDD	399.86	105	17 - 157	44.8695	44.98705	-0.1176	N/A	
37C14-2,3,7,8-TCDD	79.973	95.8	35 - 197	26.3393	26.42402	-0.0847	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0195</u>	Instrument:	<u>AUTOSPEC01</u>
Sample ID:	<u>SLE0195-CCV1</u>	Calibration:	<u>GC00015</u>
File ID:	<u>23051114</u>	Analyzed:	<u>05/11/23 22:25</u>

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	91.8	71 - 129	25.6753	25.76487	-0.0896	N/A	
13C12-2,3,7,8-TCDD	100.00	103	82 - 118	26.3252	26.40287	-0.0777	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	100	76 - 124	29.8333	29.92235	-0.0891	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	108	77 - 123	31.1702	31.2611	-0.0909	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	103	62 - 138	31.4265	31.5192	-0.0927	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	81.9	76 - 124	34.7912	34.88393	-0.0927	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	72.8	70 - 130	34.936	35.02318	-0.0872	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	83.8	73 - 127	35.805	35.88653	-0.0815	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	87.2	74 - 126	36.83	36.91718	-0.0872	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	94.5	85 - 115	35.9165	36.00728	-0.0908	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	87.7	85 - 115	36.039	36.12053	-0.0815	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	90.5	78 - 122	38.6793	38.7593	-0.0800	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	95.5	77 - 123	40.8965	40.99867	-0.1022	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	92.2	72 - 128	40.1613	40.25773	-0.0964	N/A	
13C12-OCDD	200.00	106	48 - 152	44.8602	44.98705	-0.1269	N/A	
37C14-2,3,7,8-TCDD	10.000	89.0	0 - 200	26.3392	26.42402	-0.0848	N/A	

\* Values outside of QC limits



**SURROGATE RECOVERY AND RT SUMMARY  
EPA 1613B**

Laboratory:	Analytical Resources, LLC	SDG:	23D0063
Client:	Anchor QEA, LLC	Project:	AOC5 MR Phase 1
Sequence:	SLE0240	Instrument:	AUTOSPEC01
Sample ID:	SLE0240-ICV1	Calibration:	GC00015
File ID:	23051502	Analyzed:	05/15/23 12:04

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	103	71 - 129	25.6895	25.76487	-0.0754	N/A	
13C12-2,3,7,8-TCDD	100.00	106	82 - 118	26.3252	26.40287	-0.0777	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	103	76 - 124	29.8445	29.92235	-0.0779	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	106	77 - 123	31.1813	31.2611	-0.0798	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	103	62 - 138	31.4377	31.5192	-0.0815	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	96.6	76 - 124	34.8023	34.88393	-0.0816	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	92.6	70 - 130	34.936	35.02318	-0.0872	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	103	73 - 127	35.8052	35.88653	-0.0813	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	107	74 - 126	36.8413	36.91718	-0.0759	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	96.6	85 - 115	35.9277	36.00728	-0.0796	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	95.4	85 - 115	36.0392	36.12053	-0.0813	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	117	78 - 122	38.6798	38.7593	-0.0795	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	118	77 - 123	40.908	40.99867	-0.0907	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	108	82 - 118	40.1615	40.25773	-0.0962	N/A	
13C12-OCDD	200.00	127	48 - 152	44.8605	44.98705	-0.1266	N/A	
37Cl4-2,3,7,8-TCDD	10.000	91.6	79 - 121	26.3535	26.42402	-0.0705	N/A	

\* Values outside of QC limits





## SURROGATE RECOVERY AND RT SUMMARY EPA 1613B

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0240</u>	Instrument:	<u>AUTOSPEC01</u>
Sample ID:	<u>23D0063-01</u>	Calibration:	<u>GC00015</u>
File ID:	<u>23051504</u>	Analyzed:	<u>05/15/23 13:59</u>

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.95	89.5	24 - 169	25.6897	25.76487	-0.0752	N/A	
13C12-2,3,7,8-TCDD	199.95	98.0	25 - 164	26.3253	26.40287	-0.0776	N/A	
13C12-1,2,3,7,8-PeCDF	199.95	89.5	24 - 185	29.8445	29.92235	-0.0779	N/A	
13C12-2,3,4,7,8-PeCDF	199.95	95.9	21 - 178	31.1815	31.2611	-0.0796	N/A	
13C12-1,2,3,7,8-PeCDD	199.95	104	25 - 181	31.4378	31.5192	-0.0814	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.95	78.9	26 - 152	34.8025	34.88393	-0.0814	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.95	79.6	26 - 123	34.9473	35.02318	-0.0759	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.95	81.6	28 - 136	35.8165	35.88653	-0.0700	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.95	94.6	29 - 147	36.8415	36.91718	-0.0757	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.95	89.9	32 - 141	35.9278	36.00728	-0.0795	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.95	90.3	28 - 130	36.0503	36.12053	-0.0702	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.95	86.1	28 - 143	38.68	38.7593	-0.0793	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.95	86.8	26 - 138	40.9082	40.99867	-0.0905	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.95	92.2	23 - 140	40.1728	40.25773	-0.0849	N/A	
13C12-OCDD	399.90	100	17 - 157	44.879	44.98705	-0.1081	N/A	
37C14-2,3,7,8-TCDD	79.981	94.1	35 - 197	26.3535	26.42402	-0.0705	N/A	

\* Values outside of QC limits





**SURROGATE RECOVERY AND RT SUMMARY**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC SDG: 23D0063  
 Client: Anchor QEA, LLC Project: AOC5 MR Phase 1  
 Sequence: SLE0240 Instrument: AUTOSPEC01  
 Sample ID: SLE0240-CCV2 Calibration: GC00015  
 File ID: 23051526 Analyzed: 05/16/23 08:05

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	98.8	71 - 129	25.6472	25.76487	-0.1177	N/A	
13C12-2,3,7,8-TCDD	100.00	105	82 - 118	26.297	26.40287	-0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	97.5	76 - 124	29.811	29.92235	-0.1114	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	103	77 - 123	31.1478	31.2611	-0.1133	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	103	62 - 138	31.404	31.5192	-0.1152	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	90.2	76 - 124	34.769	34.88393	-0.1149	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	88.1	70 - 130	34.9137	35.02318	-0.1095	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	91.3	73 - 127	35.7715	35.88653	-0.1150	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	111	74 - 126	36.8077	36.91718	-0.1095	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	93.6	85 - 115	35.8942	36.00728	-0.1131	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	92.1	85 - 115	36.0055	36.12053	-0.1150	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	97.2	78 - 122	38.657	38.7593	-0.1023	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	99.4	77 - 123	40.8742	40.99867	-0.1245	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	94.0	82 - 118	40.1388	40.25773	-0.1189	N/A	
13C12-OCDD	200.00	106	48 - 152	44.8325	44.98705	-0.1546	N/A	
37Cl4-2,3,7,8-TCDD	10.000	89.2	79 - 121	26.3112	26.42402	-0.1128	N/A	

\* Values outside of QC limits



## HOLDING TIME SUMMARY

**Analysis: EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/25/23 14:15	21	14	05/15/23 13:59	20	365	*
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/25/23 14:15	21	14	05/11/23 13:49	16	365	*
Duplicate BLD0657-DUP1	04/04/23 10:02	04/04/23 15:10	04/25/23 14:15	21	14	05/10/23 08:44	15	365	*

\* Indicates hold time exceedance.



**METHOD DETECTION  
AND REPORTING LIMITS**  
**EPA 1613B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: AUTOSPEC01

Analyte	MDL	RL	Units
2,3,7,8-TCDF	0.058	1.00	ng/kg
2,3,7,8-TCDD	0.150	1.00	ng/kg
1,2,3,7,8-PeCDF	0.240	1.00	ng/kg
2,3,4,7,8-PeCDF	0.220	1.00	ng/kg
1,2,3,7,8-PeCDD	0.170	1.00	ng/kg
1,2,3,4,7,8-HxCDF	0.280	1.00	ng/kg
1,2,3,6,7,8-HxCDF	0.200	1.00	ng/kg
2,3,4,6,7,8-HxCDF	0.170	1.00	ng/kg
1,2,3,7,8,9-HxCDF	0.190	1.00	ng/kg
1,2,3,4,7,8-HxCDD	0.170	1.00	ng/kg
1,2,3,6,7,8-HxCDD	0.180	1.00	ng/kg
1,2,3,7,8,9-HxCDD	0.220	1.00	ng/kg
1,2,3,4,6,7,8-HpCDF	0.210	1.00	ng/kg
1,2,3,4,7,8,9-HpCDF	0.240	1.00	ng/kg
1,2,3,4,6,7,8-HpCDD	0.560	2.50	ng/kg
OCDF	1.10	2.50	ng/kg
OCDD	4.60	10.0	ng/kg
Total TCDF		1.00	ng/kg
Total TCDD		1.00	ng/kg
Total PeCDF		1.00	ng/kg
Total PeCDD		1.00	ng/kg
Total HxCDF		1.00	ng/kg
Total HxCDD		1.00	ng/kg
Total HpCDF		1.00	ng/kg
Total HpCDD		1.00	ng/kg



**CS3WT**

**Calibration and Verification Solution (EPA-1613CS3)  
combined with Window Defining and 2,3,7,8-TCDD  
Resolution Testing Congeners**

**PRODUCT CODE:** CS3WT  
**LOT NUMBER:** CS3WT0918  
**SOLVENT(S):** Nonane/Toluene  
**DATE PREPARED:** (mm/dd/yyyy) 10/24/2018  
**LAST TESTED:** (mm/dd/yyyy) 10/29/2018  
**EXPIRY DATE:** (mm/dd/yyyy) 10/29/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DESCRIPTION:**

CS3WT is a solution/mixture of native and  $^{13}\text{C}_{12}$ -labelled chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

CS3WT was designed and prepared to be used as a HRMS calibration standard according to U.S. EPA Method 1613B.

It is to be used for calibration verification in place of EPA-1613CS3 (Lot: 13CS30918). It also contains the PCDD and PCDF window defining congeners for a DB-5 (or equivalent) capillary column as well as the TCDD isomers required to test and confirm the resolution of 2,3,7,8-TCDD.

The individual  $^{13}\text{C}$ -labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of  $\geq 99\%$ . The 2,3,7,8- $^{37}\text{Cl}_4$ -tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic ( $^{37}\text{Cl}$ ) purity of  $\geq 95\%$ . The individual native 2,3,7,8-substituted PCDD and PCDF congeners all have chemical purities of >98%; the other congeners (window defining and resolution testing) should only be considered semi-quantitative.

This current lot of CS3WT is to be used with the 1613 calibration solutions having the following lot numbers:

<b><u>PRODUCT CODE</u></b>	<b><u>LOT NUMBER</u></b>
EPA-1613CS1	13CS10918
EPA-1613CS2	13CS20918
EPA-1613CS3	13CS30918
EPA-1613CS4	13CS40918
EPA-1613CS5	13CS50918
EPA-1613CSL	13CSL0918
EPA-1613CS0.5	13CS0.50918

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 3 for further details.
- Only the 2,3,7,8-substituted PCDDs and PCDFs should be used for quantitation. The other congeners (window defining and 2378-TCDD resolution testing) should be considered semi-quantitative (within  $\pm 20\%$  of their design value). Impurities have been identified where possible.

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*



**Table A: CS3WT; Components and Concentrations (ng/ml, in nonane/4.5% toluene)**

**QUANTITATIVE ANALYTES (ng/ml, ±5%)**

**Native PCDDs & PCDFs:**

2,3,7,8-TCDD	10
2,3,7,8-TCDF	10
1,2,3,7,8-PeCDD	50
1,2,3,7,8-PeCDF	50
2,3,4,7,8-PeCDF	50
1,2,3,4,7,8-HxCDD	50
1,2,3,6,7,8-HxCDD	50
1,2,3,7,8,9-HxCDD	50
1,2,3,4,7,8-HxCDF	50
1,2,3,6,7,8-HxCDF	50
1,2,3,7,8,9-HxCDF	50
2,3,4,6,7,8-HxCDF	50
1,2,3,4,6,7,8-HpCDD (WD)	50
1,2,3,4,6,7,8-HpCDF (WD)	50
1,2,3,4,7,8,9-HpCDF (WD)	50
OCDD	100
OCDF	100

**Labelled PCDDs & PCDFs:**

<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100
<sup>13</sup> C <sub>12</sub> -OCDD	200

**Cleanup Standard:**

<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	10
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**Internal Standards:**

<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	100

**SEMI-QUANTITATIVE ANALYTES (ng/ml, ±20%)**

**Window Definers:\***

1,3,6,8-TCDD	10
1,2,8,9-TCDD	10
1,3,6,8-TCDF	10
1,2,8,9-TCDF	10
1,2,4,6,8/1,2,4,7,9-PeCDD	50
1,2,3,8,9-PeCDD	50
1,3,4,6,8-PeCDF	50
1,2,3,8,9-PeCDF	50
1,2,4,6,7,9-HxCDD	50
1,2,3,4,6,8-HxCDF	50
1,2,3,4,6,7,9-HpCDD	50

**2378-TCDD Resolution Testing Isomers:**

1,2,3,4-TCDD	5
1,2,3,7/1,2,3,8-TCDD	5
1,2,3,9-TCDD	10

---

\* 1,2,3,4,6,7-HxCDD (last eluting HxCDD) not included; coelutes with 1,2,3,7,8,9-HxCDD. Use 1,2,3,4,6,7,9-HpCDD to set window.

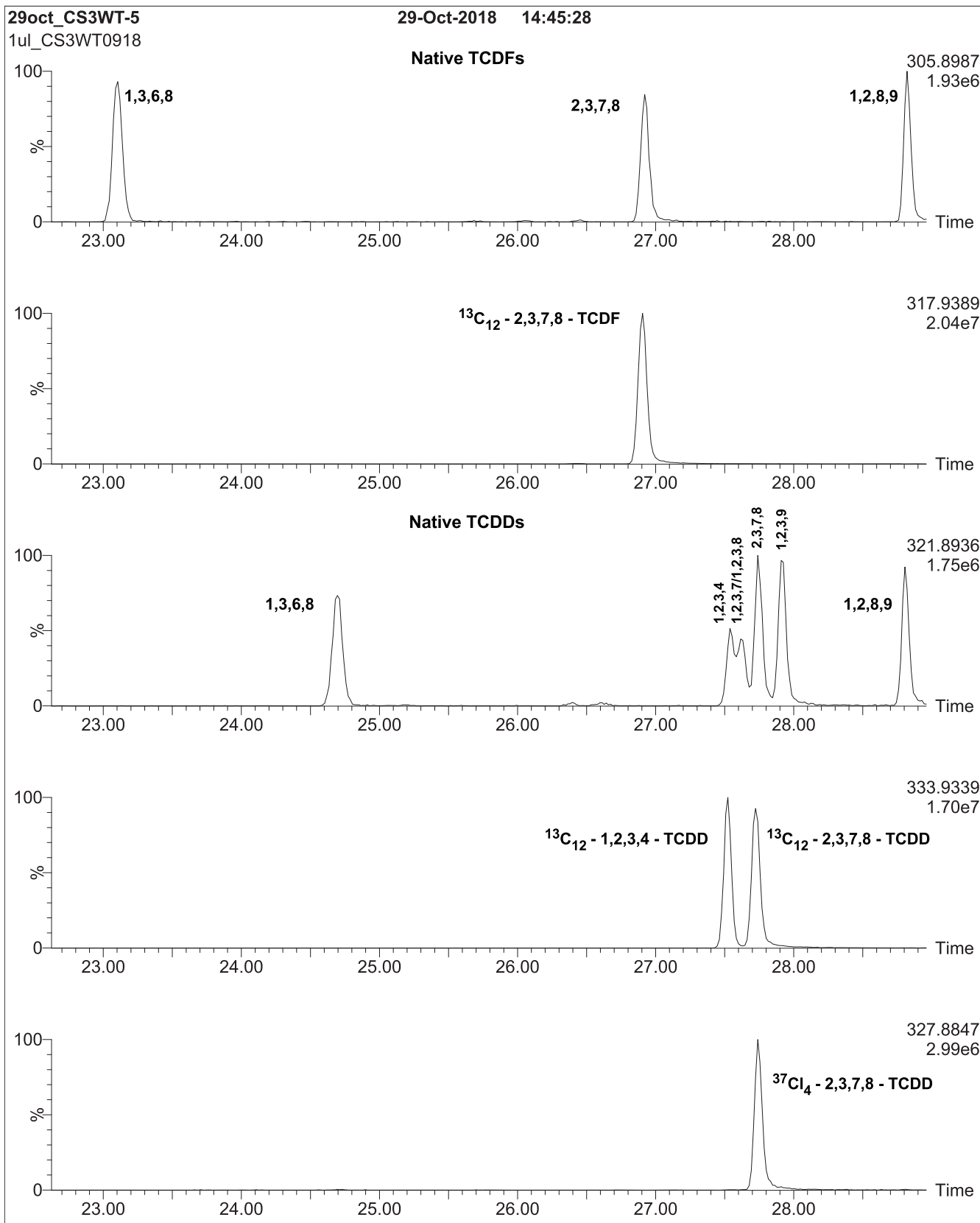
\* 1,2,3,4,8,9-HxCDF (last eluting HxCDF) not included; can interfere with 1,2,3,7,8,9-HxCDF. Use 1,2,3,4,6,7,8-HpCDF to set window.

WD – Window Definer

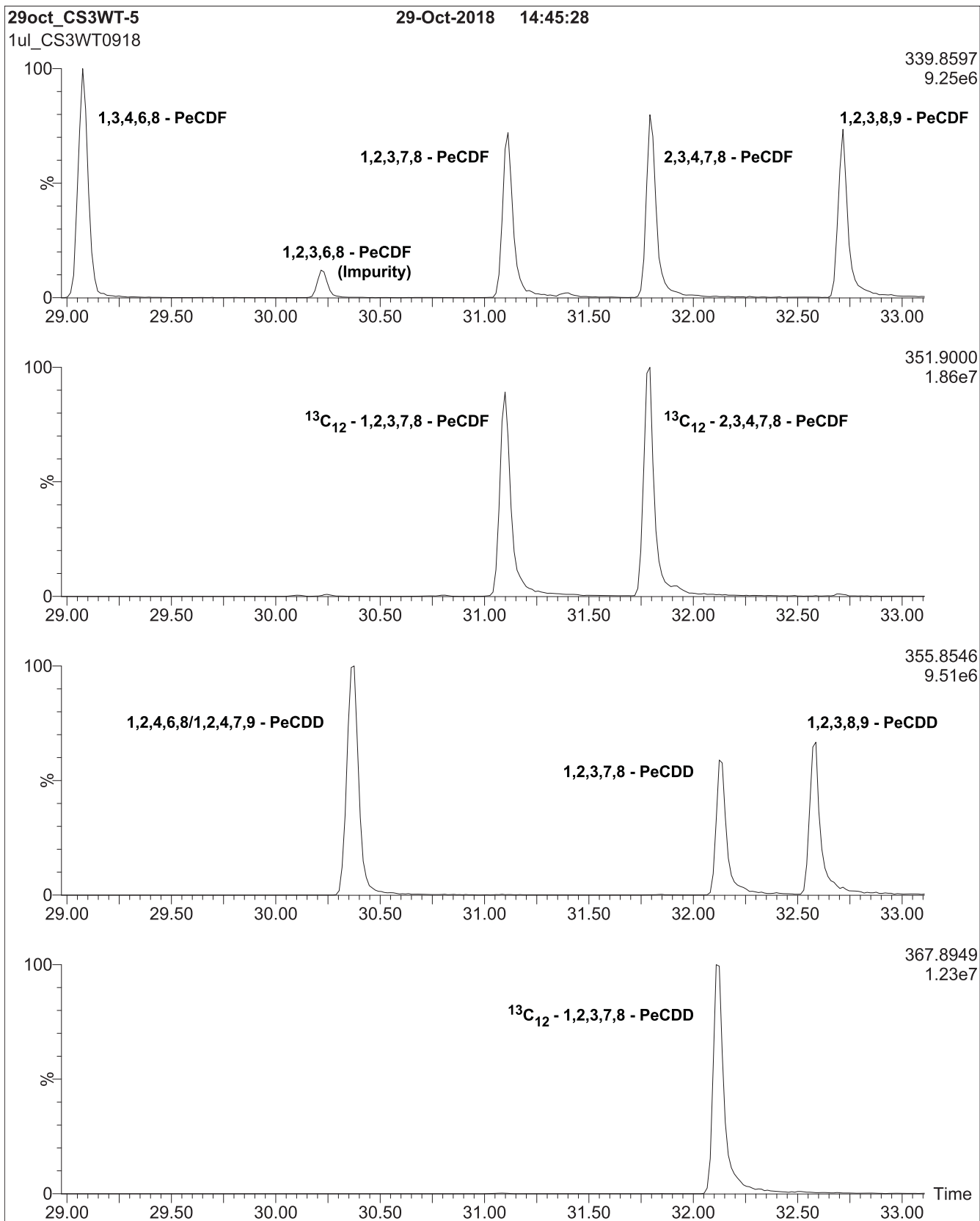
Certified By:   
B.G. Chittim, General Manager

Date: 10/30/2018  
(mm/dd/yyyy)

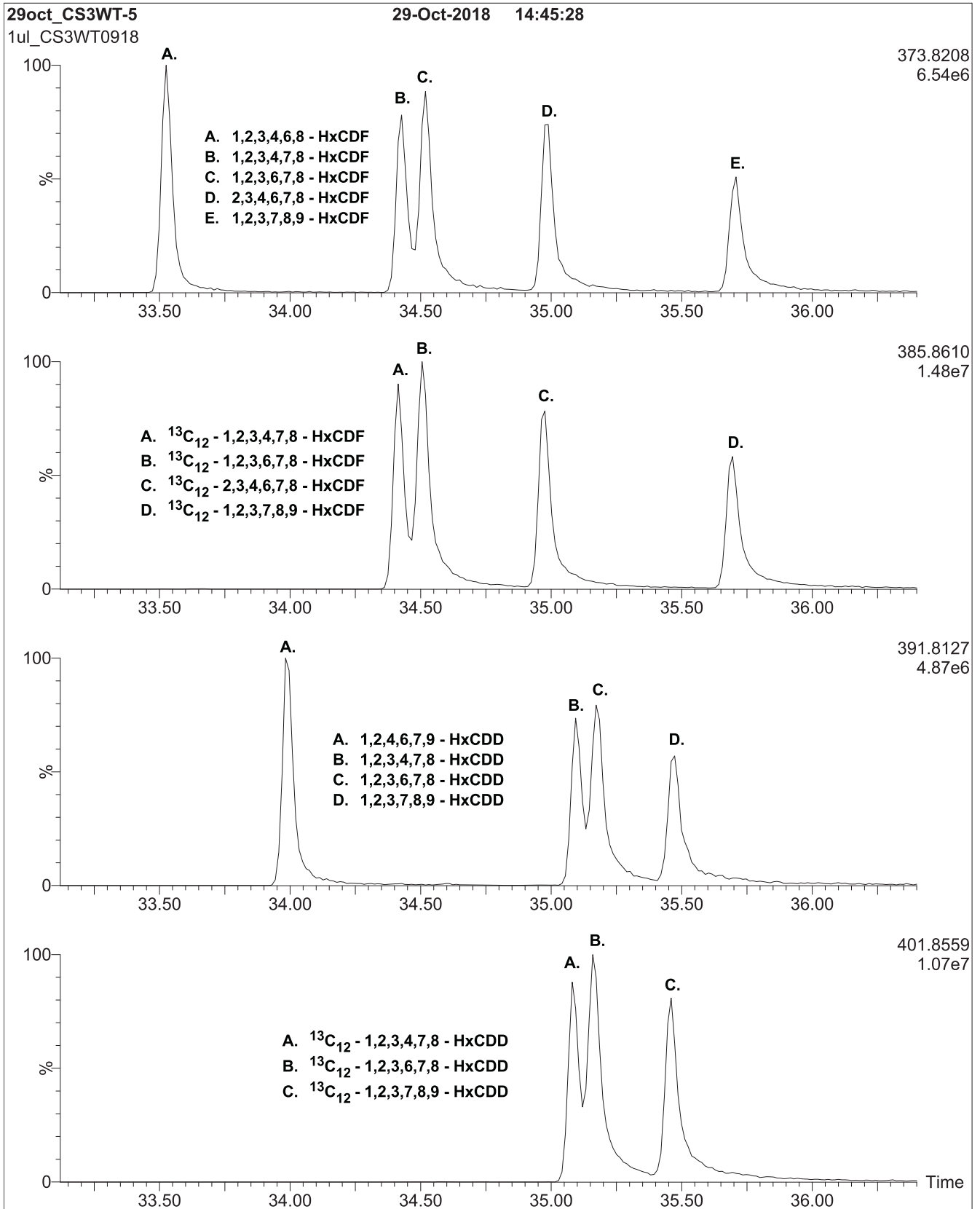
**Figure 1:** CS3WT; HRGC/HRMS Data (60 m DB-5 Column)



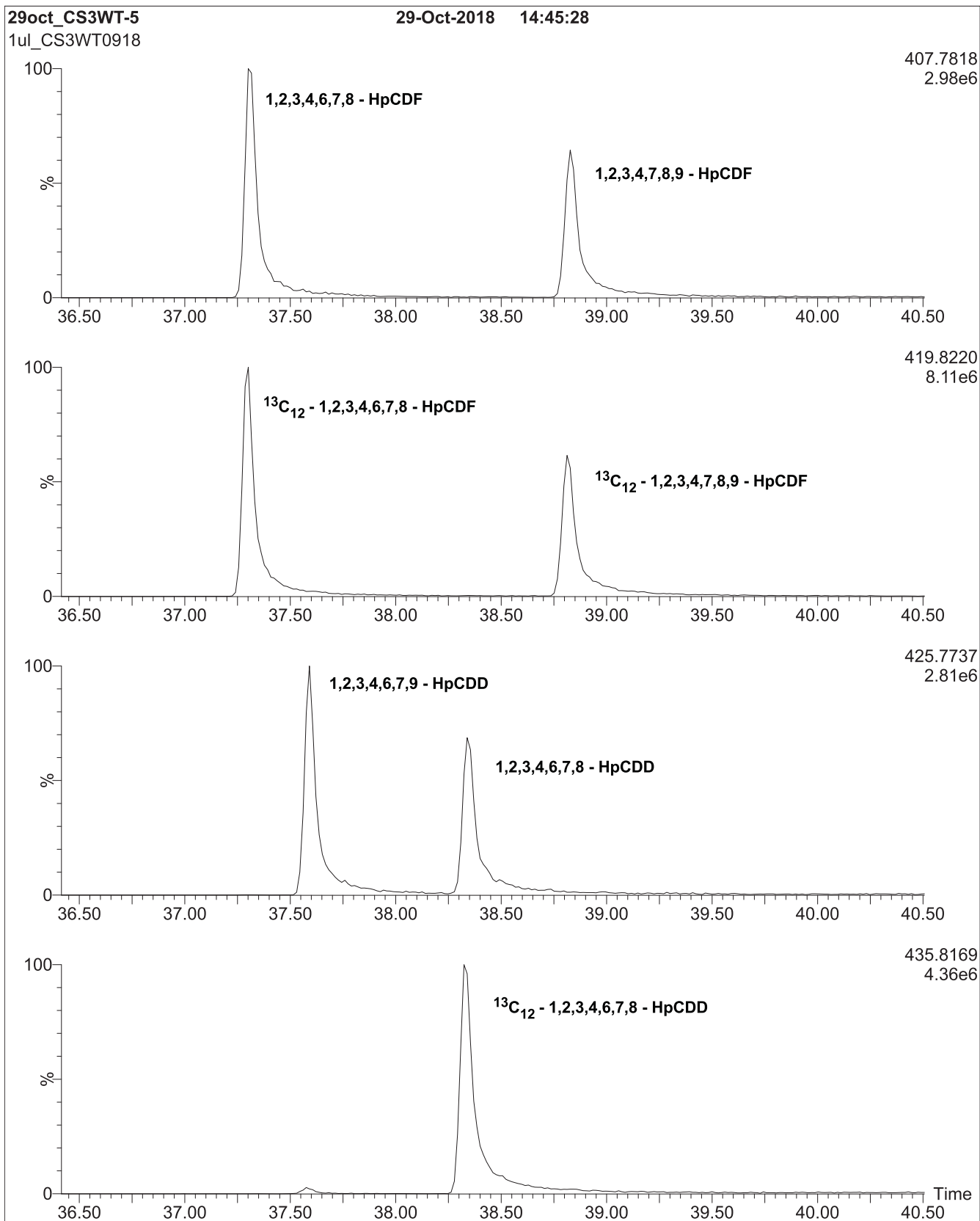
**Figure 1: CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**



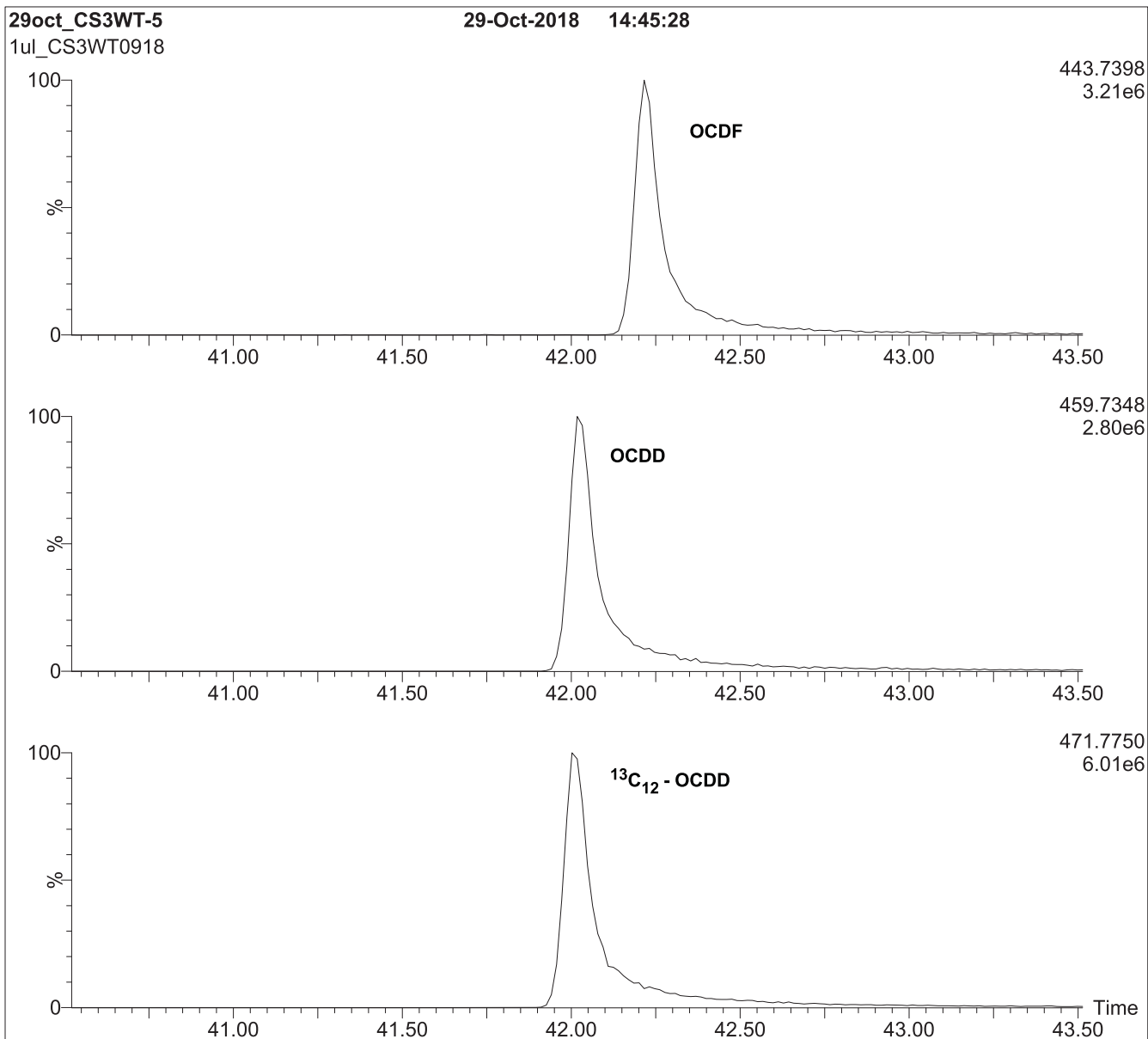
**Figure 1: CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**



**HRGC/HRMS:**

Agilent 6890N (HRGC)  
Autospec Ultima (HRMS)

**Chromatographic Conditions:**

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min

Injector: 280 °C (Splitless Injection)

Ionization: EI+

Detector: 280 °C

SIR at 10,000 mass resolving power

Oven: 150 °C (1 min)

12 °C/min to 200 °C

3 °C/min to 235 °C

235 °C (8 min)

8 °C/min to 310 °C

310 °C (8 min)



**EPA-1613CVS**

**U.S. EPA Method 1613 Calibration and Verification Solutions  
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5**

<b><u>PRODUCT CODES:</u></b>	EPA-1613CVS	<b><u>LOT NUMBERS:</u></b>	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

<b><u>SOLVENT(S):</u></b>	Nonane/Toluene
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/22/2019
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/24/2019
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/24/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoules in a cool, dark place

<b>I005456</b>
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1613 CS1 CAL STD  
Expires 10/24/2026  
*Prepared By Joshua Rains 6/23/2020*

**DESCRIPTION:**

EPA-1613CVS is a series of 5 calibration solutions containing native (<sup>12</sup>C<sub>12</sub>) and mass-labelled (<sup>13</sup>C<sub>12</sub> and <sup>37</sup>Cl<sub>4</sub>) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual <sup>13</sup>C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-<sup>37</sup>Cl<sub>4</sub>-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (<sup>37</sup>Cl) purity of ≥95%.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • [info@well-labs.com](mailto:info@well-labs.com)

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations

Table B: 5-point HRGC/HRMS Calibration and RRF Summary

Table C: 7-point HRGC/HRMS Calibration and RRF Summary

Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 3 for further details.



### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
	CS1	CS2	CS3	CS4	CS5	CSL	CS0.5
<b>Native PCDDs and PCDFs:</b>							
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
<b>Labelled PCDDs and PCDFs:</b>							
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -OCDD	200	200	200	200	200	200	200
<b>Cleanup Standard:</b>							
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
<b>Internal Standards:</b>							
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By:   
B.G. Chittim, General Manager

Date: 10/25/2019  
(mm/dd/yyyy)

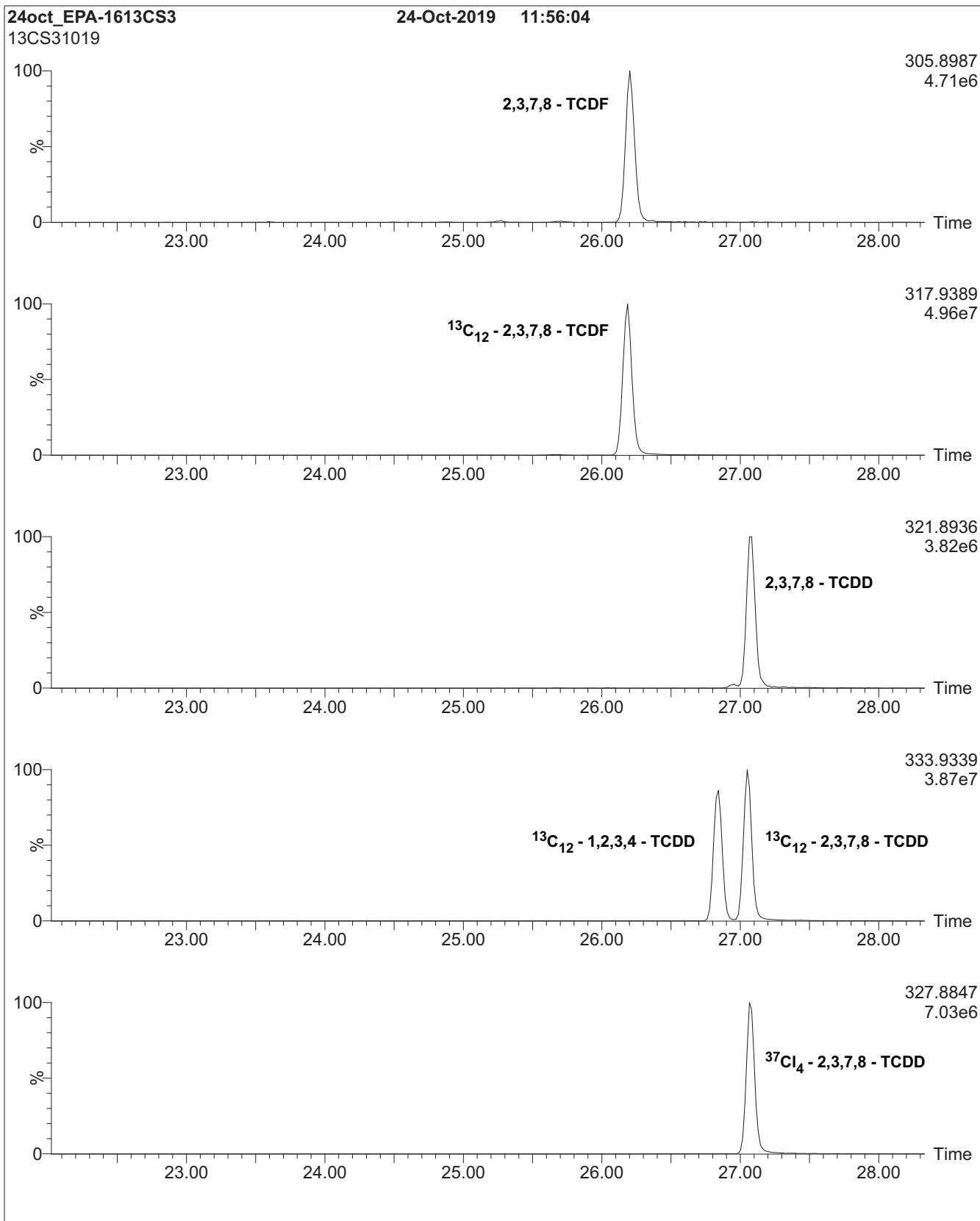
**Table B: EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

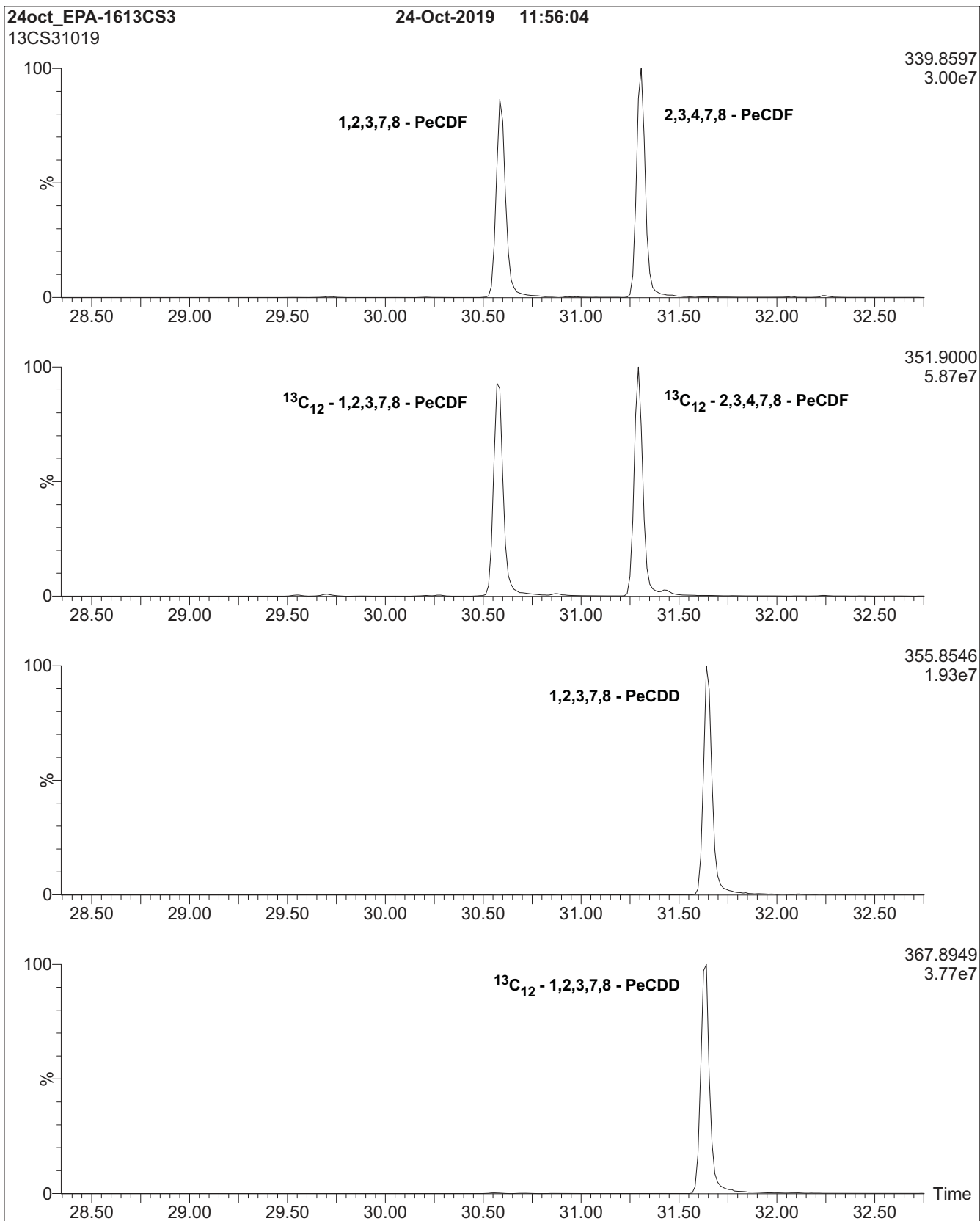
**Table C: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
7-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

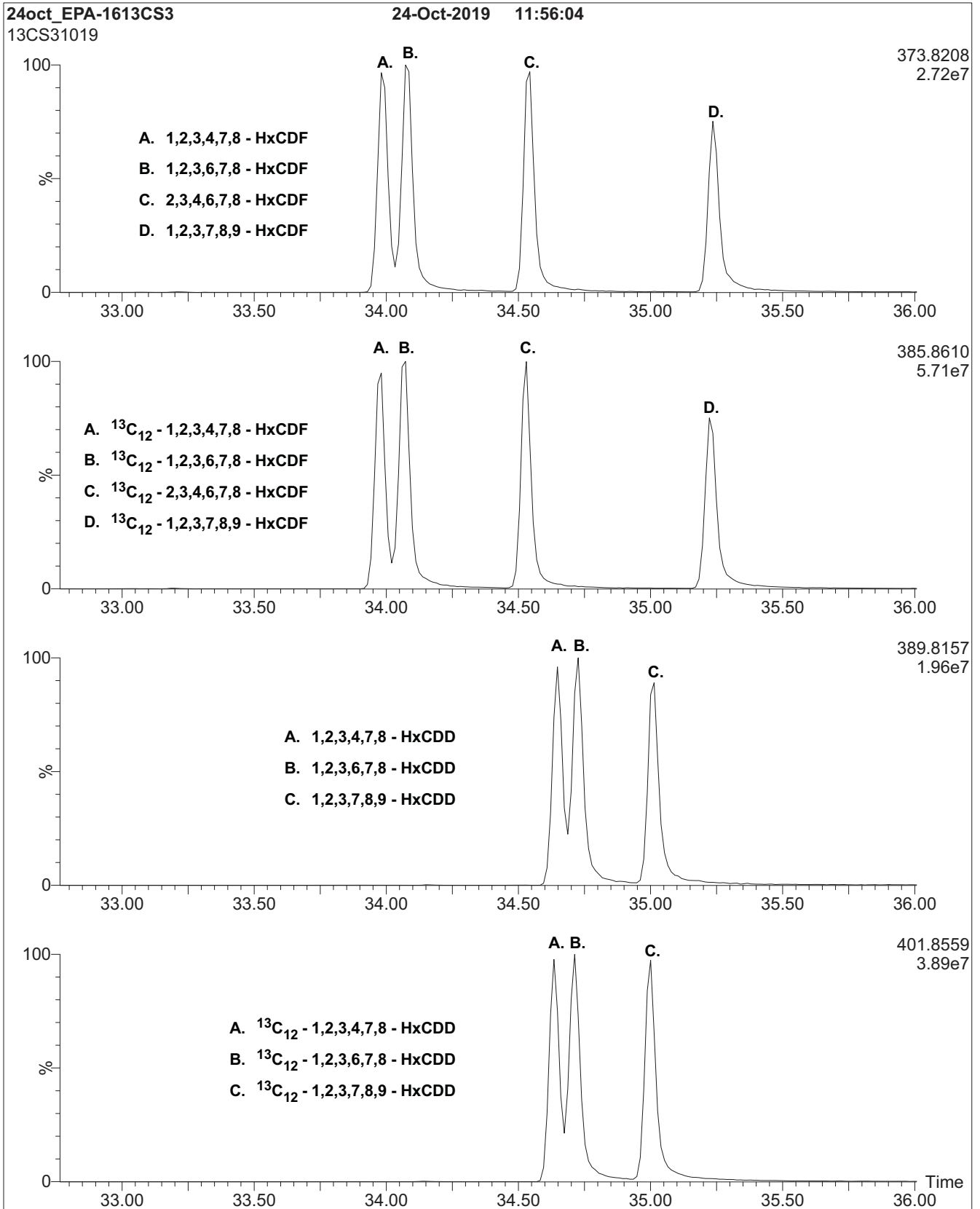
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



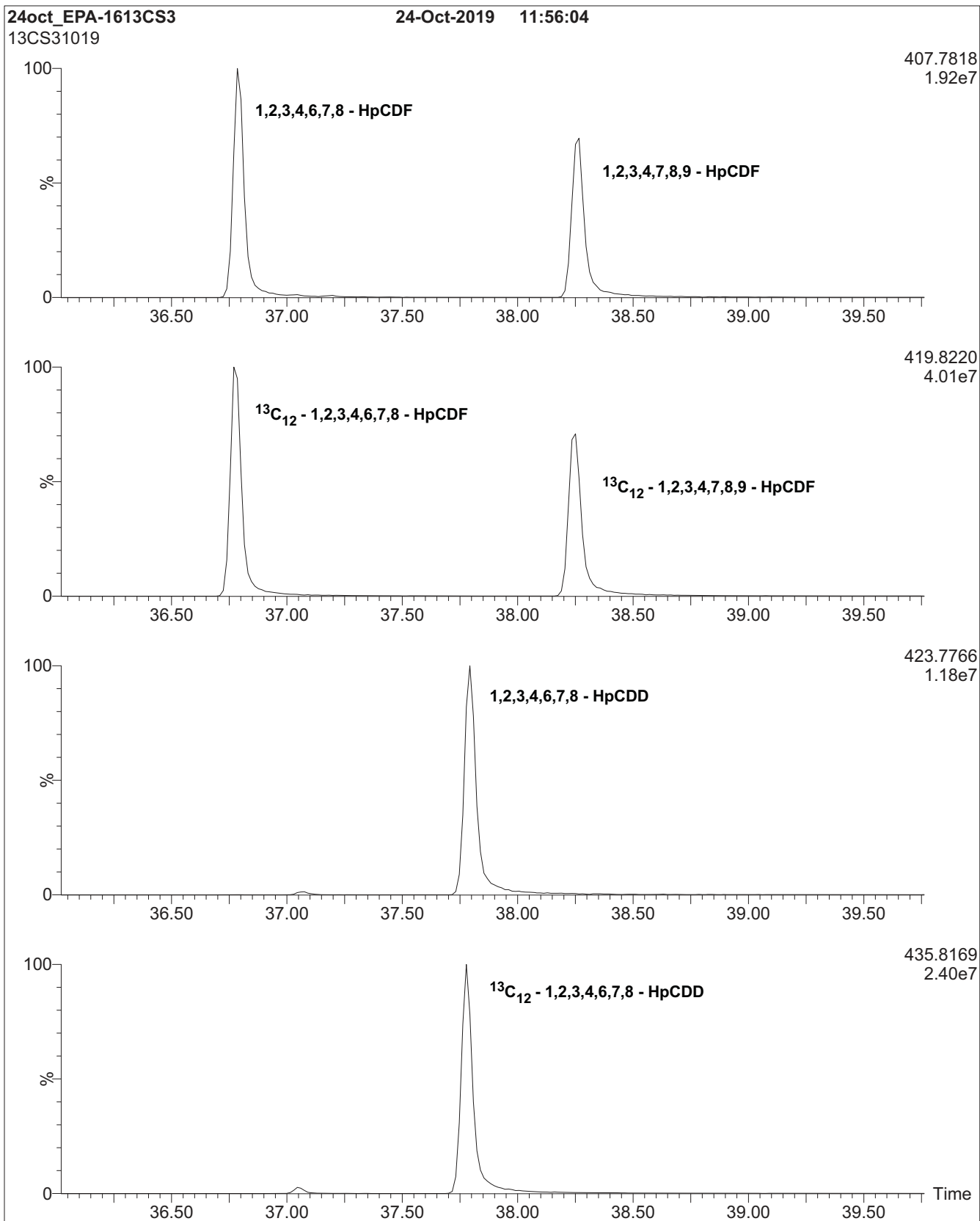
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

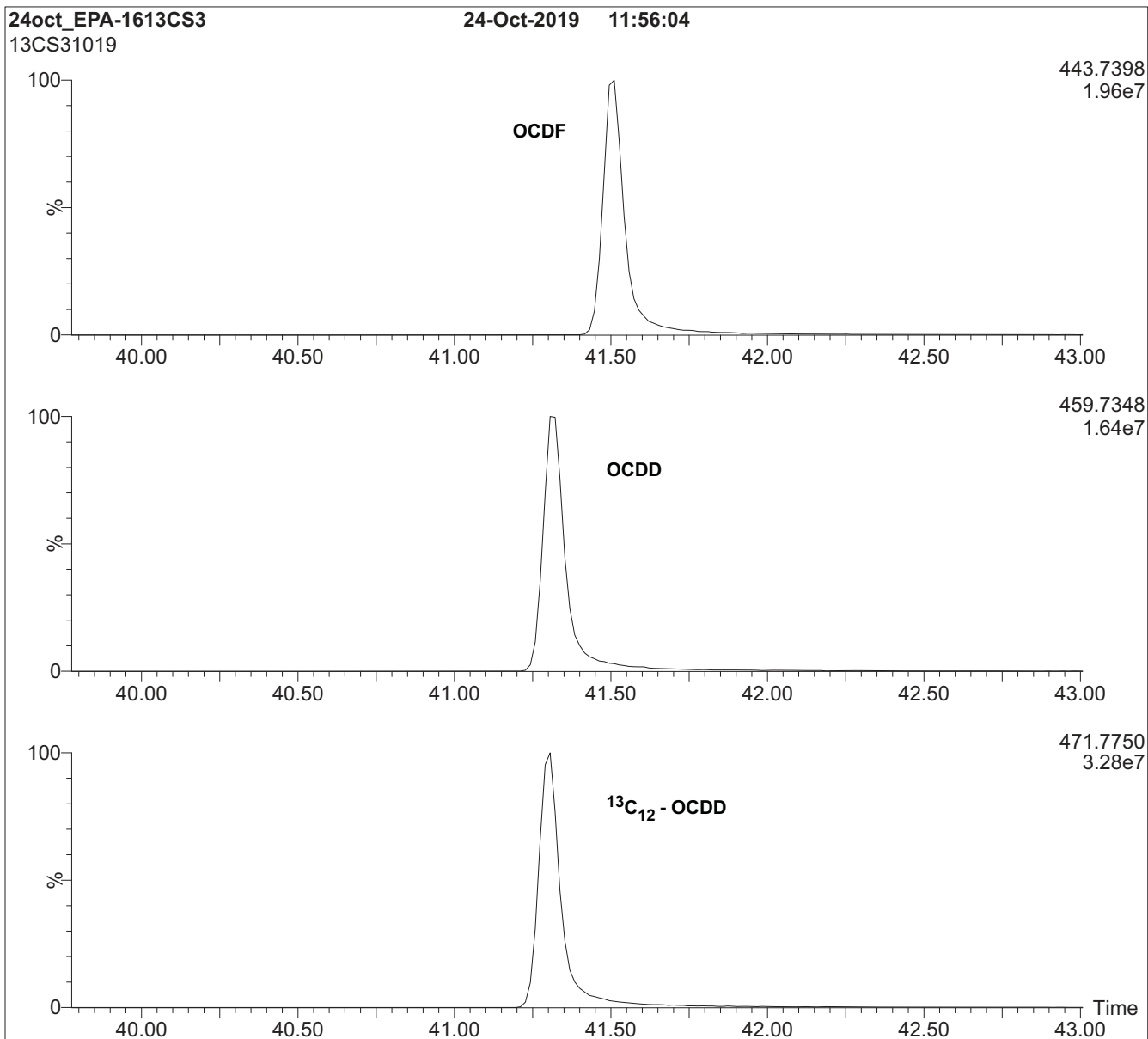


**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**





**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**HRGC/HRMS:**

Agilent 6890N (HRGC)  
Autospec Ultima (HRMS)

**Chromatographic Conditions:**

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min

Injector: 280 °C (Splitless Injection)

Ionization: EI+

Detector: 280 °C

SIR at 10,000 mass resolving power

Oven: 150 °C (1 min)

12 °C/min to 200 °C

3 °C/min to 235 °C

235 °C (8 min)

8 °C/min to 310 °C

310 °C (8 min)



**EPA-1613CVS**

**U.S. EPA Method 1613 Calibration and Verification Solutions  
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5**

<b><u>PRODUCT CODES:</u></b>	EPA-1613CVS	<b><u>LOT NUMBERS:</u></b>	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

<b><u>SOLVENT(S):</u></b>	Nonane/Toluene
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/22/2019
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/24/2019
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/24/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoules in a cool, dark place

<b>1005457</b>
1613 CS2 CAL STD
Expires 10/24/2026
<i>Prepared By Joshua Rains 6/23/2020</i>

**DESCRIPTION:**

EPA-1613CVS is a series of 5 calibration solutions containing native (<sup>12</sup>C<sub>12</sub>) and mass-labelled (<sup>13</sup>C<sub>12</sub> and <sup>37</sup>Cl<sub>4</sub>) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual <sup>13</sup>C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-<sup>37</sup>Cl<sub>4</sub>-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (<sup>37</sup>Cl) purity of ≥95%.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations

Table B: 5-point HRGC/HRMS Calibration and RRF Summary

Table C: 7-point HRGC/HRMS Calibration and RRF Summary

Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 3 for further details.

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
	CS1	CS2	CS3	CS4	CS5	CSL	CS0.5
<b>Native PCDDs and PCDFs:</b>							
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
<b>Labelled PCDDs and PCDFs:</b>							
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -OCDD	200	200	200	200	200	200	200
<b>Cleanup Standard:</b>							
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
<b>Internal Standards:</b>							
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By:   
B.G. Chittim, General Manager

Date: 10/25/2019  
(mm/dd/yyyy)

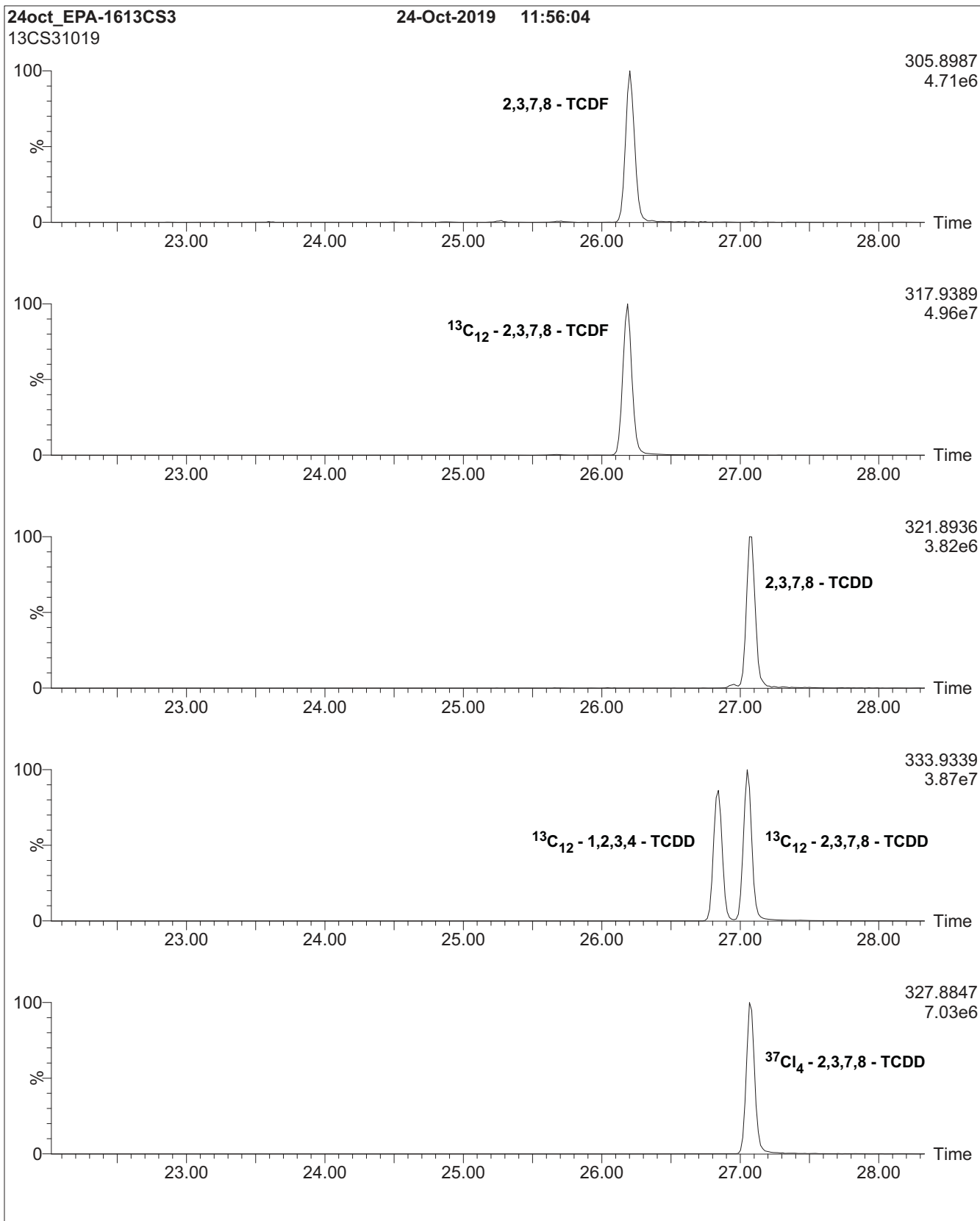
**Table B: EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

**Table C: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
7-point HRGC/HRMS Calibration and RRF Summary**

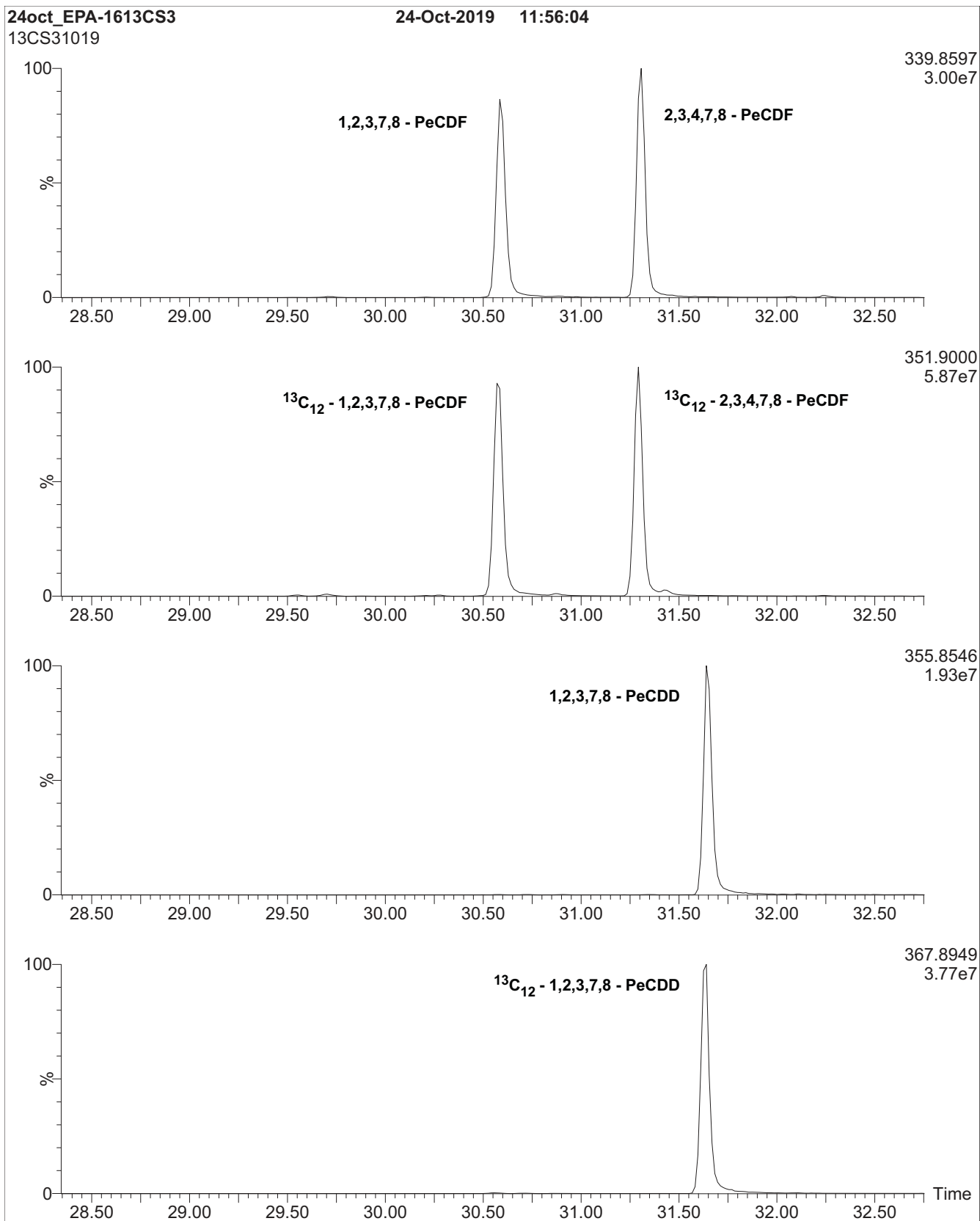
Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

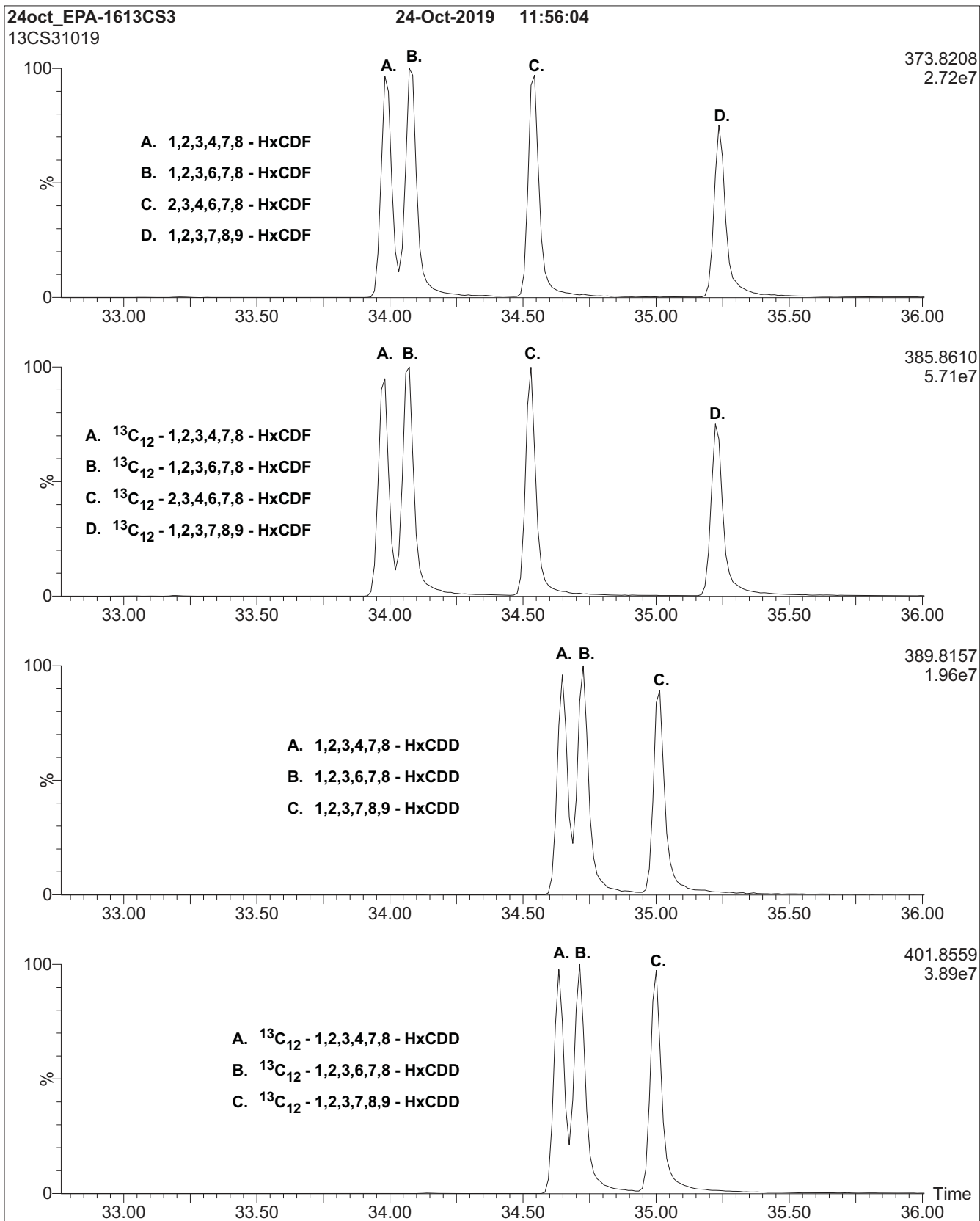




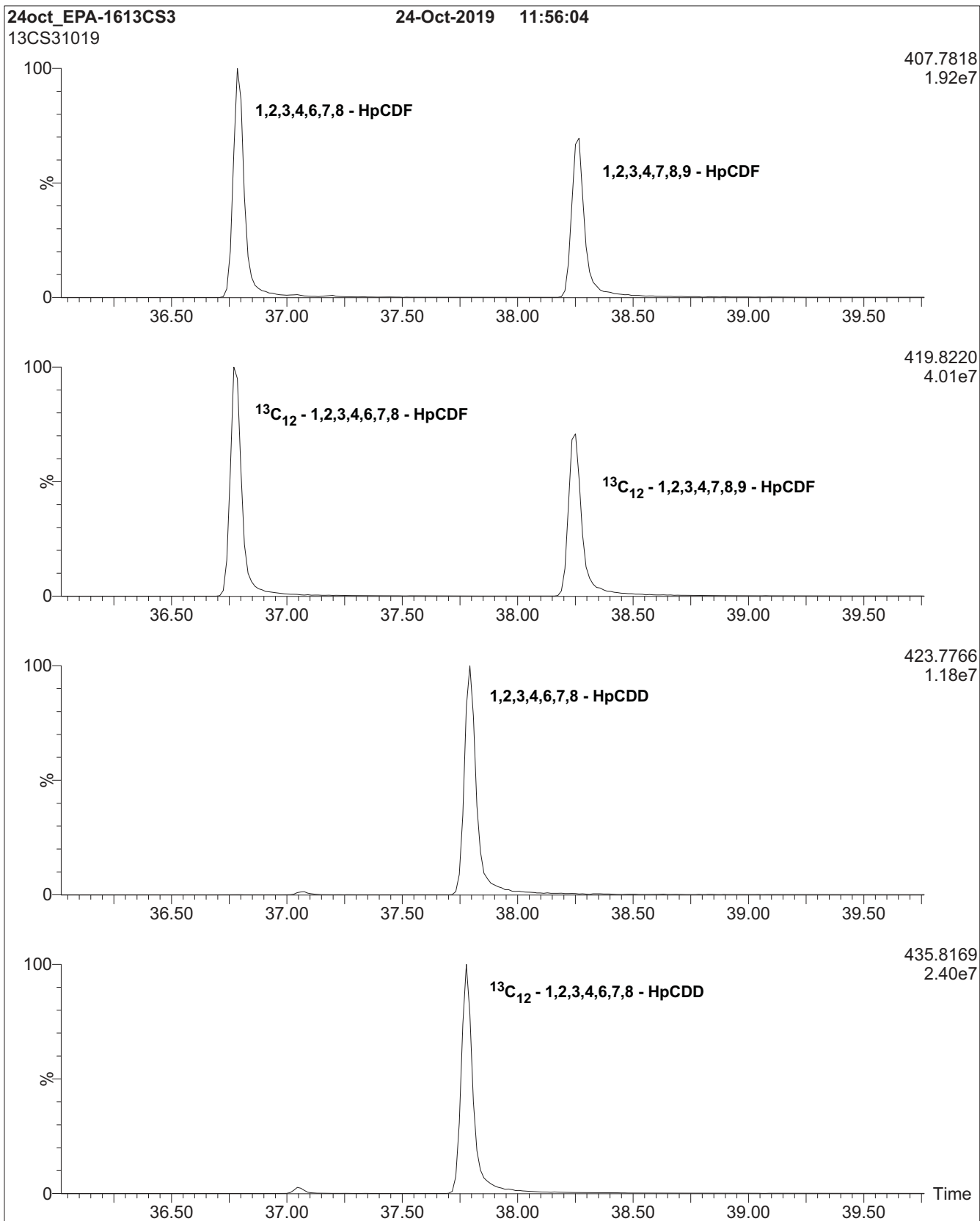
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



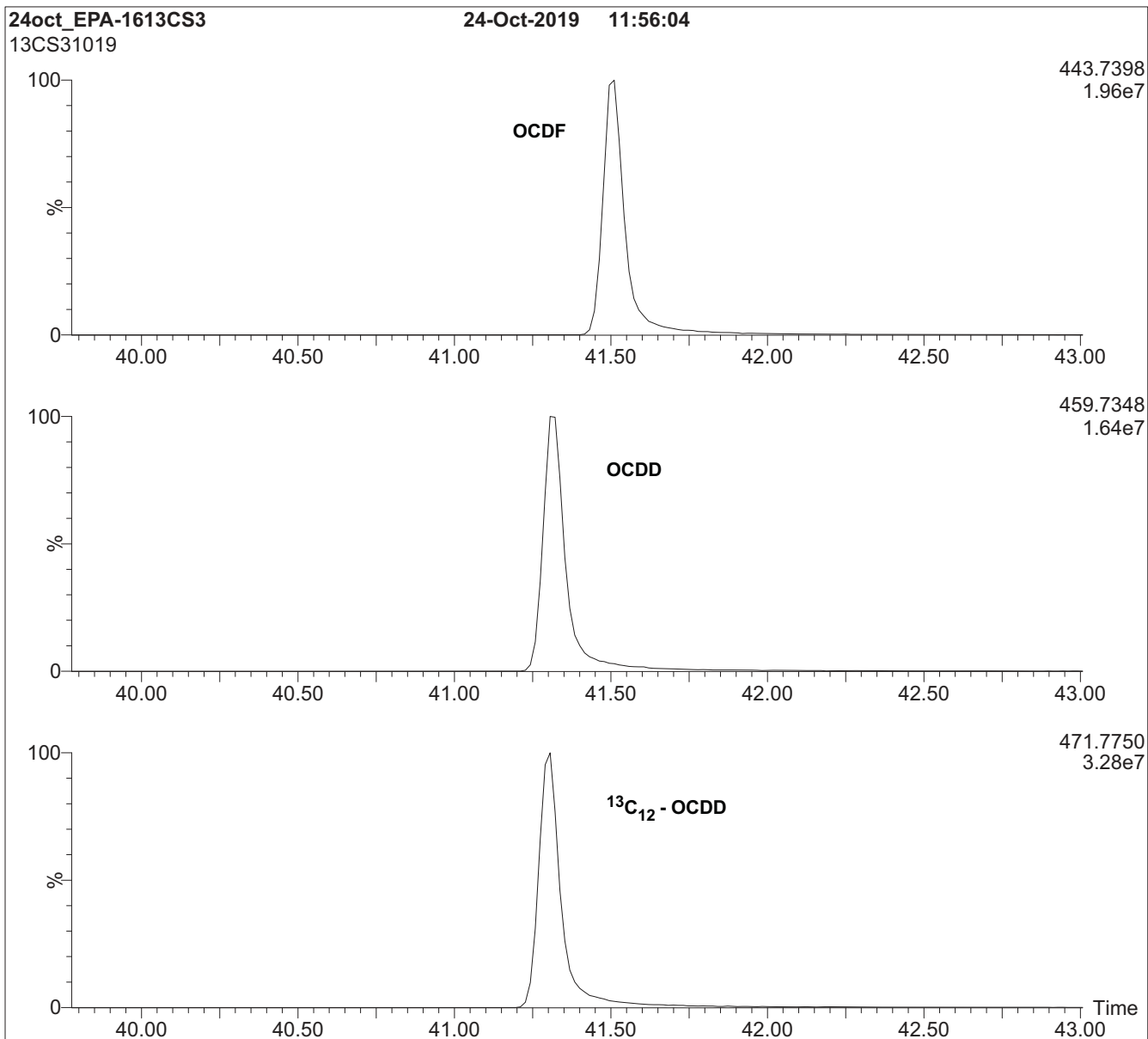
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1:** EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)



**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**HRGC/HRMS:**

Agilent 6890N (HRGC)  
Autospec Ultima (HRMS)

**Chromatographic Conditions:**

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min

Injector: 280 °C (Splitless Injection)

Ionization: EI+

Detector: 280 °C

SIR at 10,000 mass resolving power

Oven: 150 °C (1 min)

12 °C/min to 200 °C

3 °C/min to 235 °C

235 °C (8 min)

8 °C/min to 310 °C

310 °C (8 min)



**EPA-1613CVS**

**U.S. EPA Method 1613 Calibration and Verification Solutions  
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5**

<b><u>PRODUCT CODES:</u></b>	EPA-1613CVS	<b><u>LOT NUMBERS:</u></b>	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

<b><u>SOLVENT(S):</u></b>	Nonane/Toluene
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/22/2019
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/24/2019
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/24/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoules in a cool, dark place

<b>1005458</b>
1613 CS4 CAL STD
Expires 10/24/2026
<i>Prepared By Joshua Rains 6/23/2020</i>

**DESCRIPTION:**

EPA-1613CVS is a series of 5 calibration solutions containing native (<sup>12</sup>C<sub>12</sub>) and mass-labelled (<sup>13</sup>C<sub>12</sub> and <sup>37</sup>Cl<sub>4</sub>) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual <sup>13</sup>C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-<sup>37</sup>Cl<sub>4</sub>-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (<sup>37</sup>Cl) purity of ≥95%.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • [info@well-labs.com](mailto:info@well-labs.com)

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations

Table B: 5-point HRGC/HRMS Calibration and RRF Summary

Table C: 7-point HRGC/HRMS Calibration and RRF Summary

Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 3 for further details.

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
	CS1	CS2	CS3	CS4	CS5	CSL	CS0.5
<b>Native PCDDs and PCDFs:</b>							
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
<b>Labelled PCDDs and PCDFs:</b>							
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -OCDD	200	200	200	200	200	200	200
<b>Cleanup Standard:</b>							
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
<b>Internal Standards:</b>							
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By:   
B.G. Chittim, General Manager

Date: 10/25/2019  
(mm/dd/yyyy)



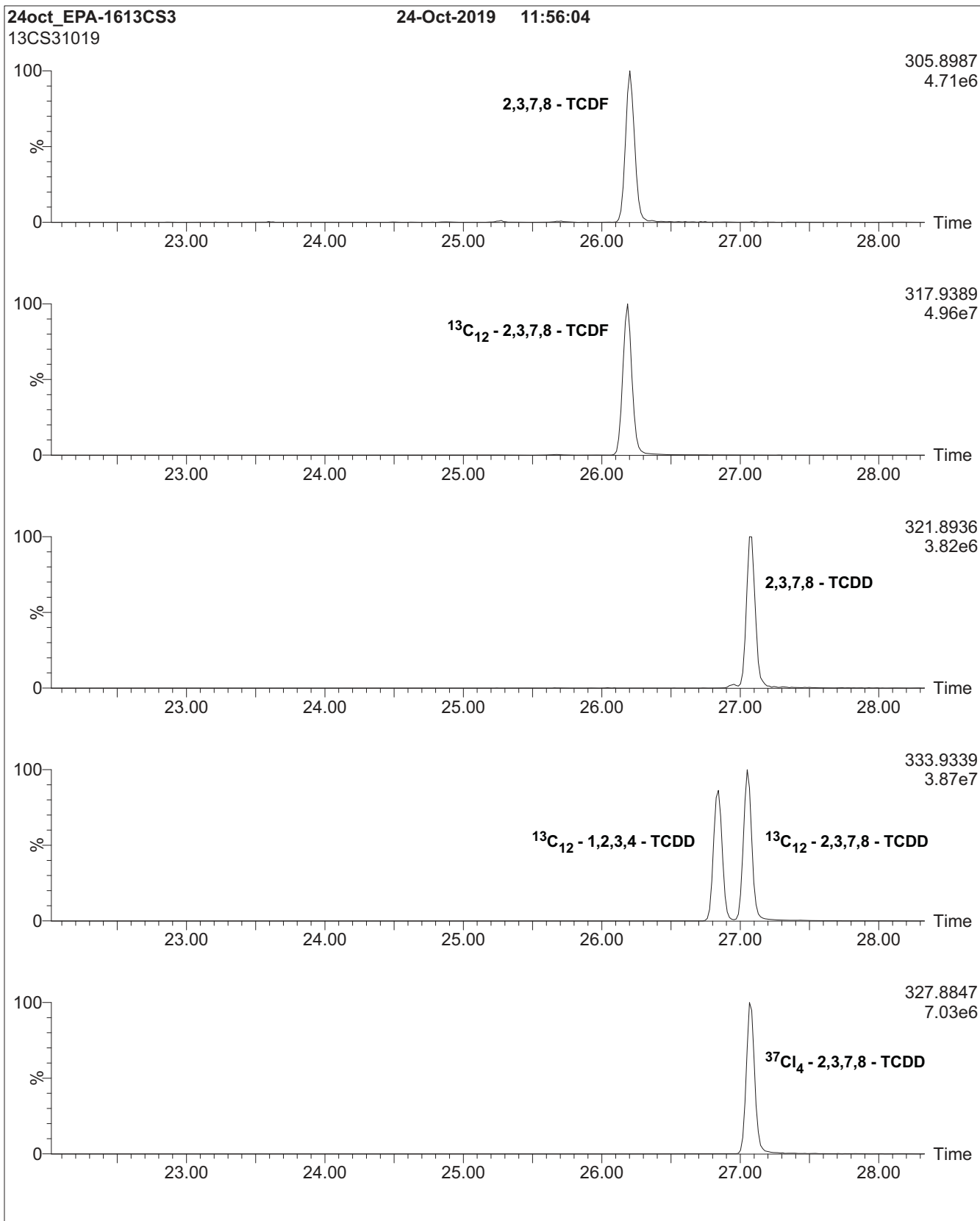
**Table B: EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

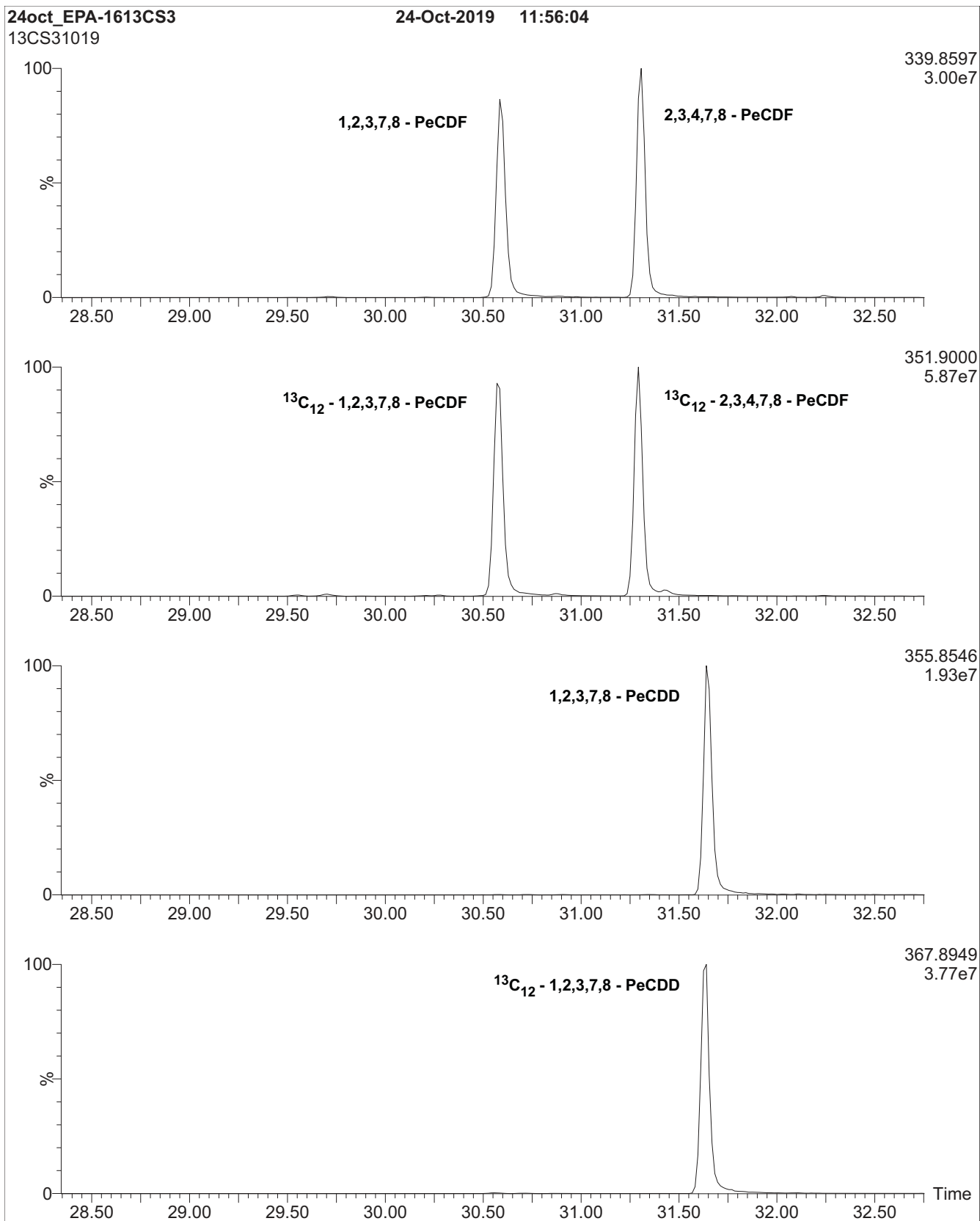
**Table C: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
7-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

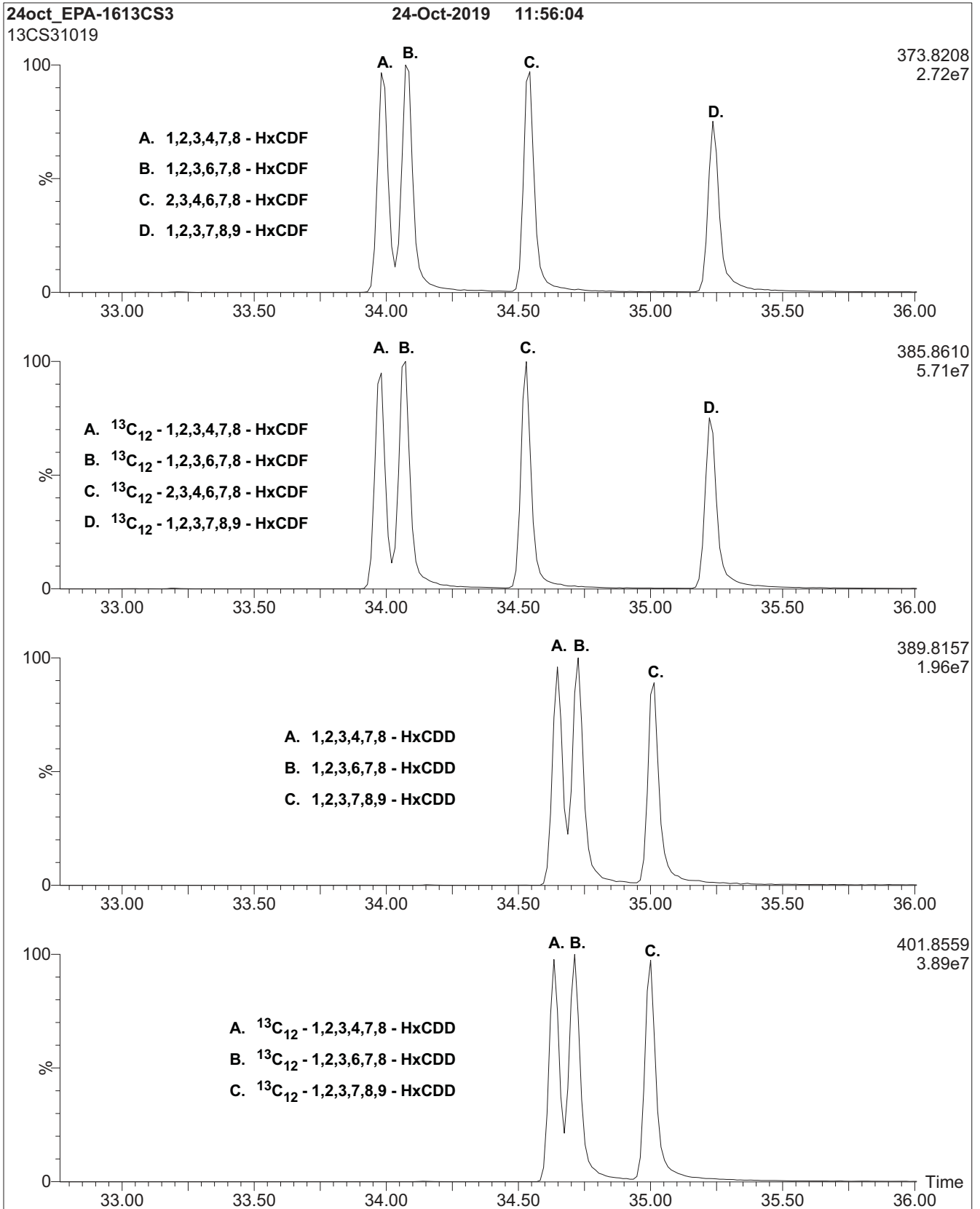
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



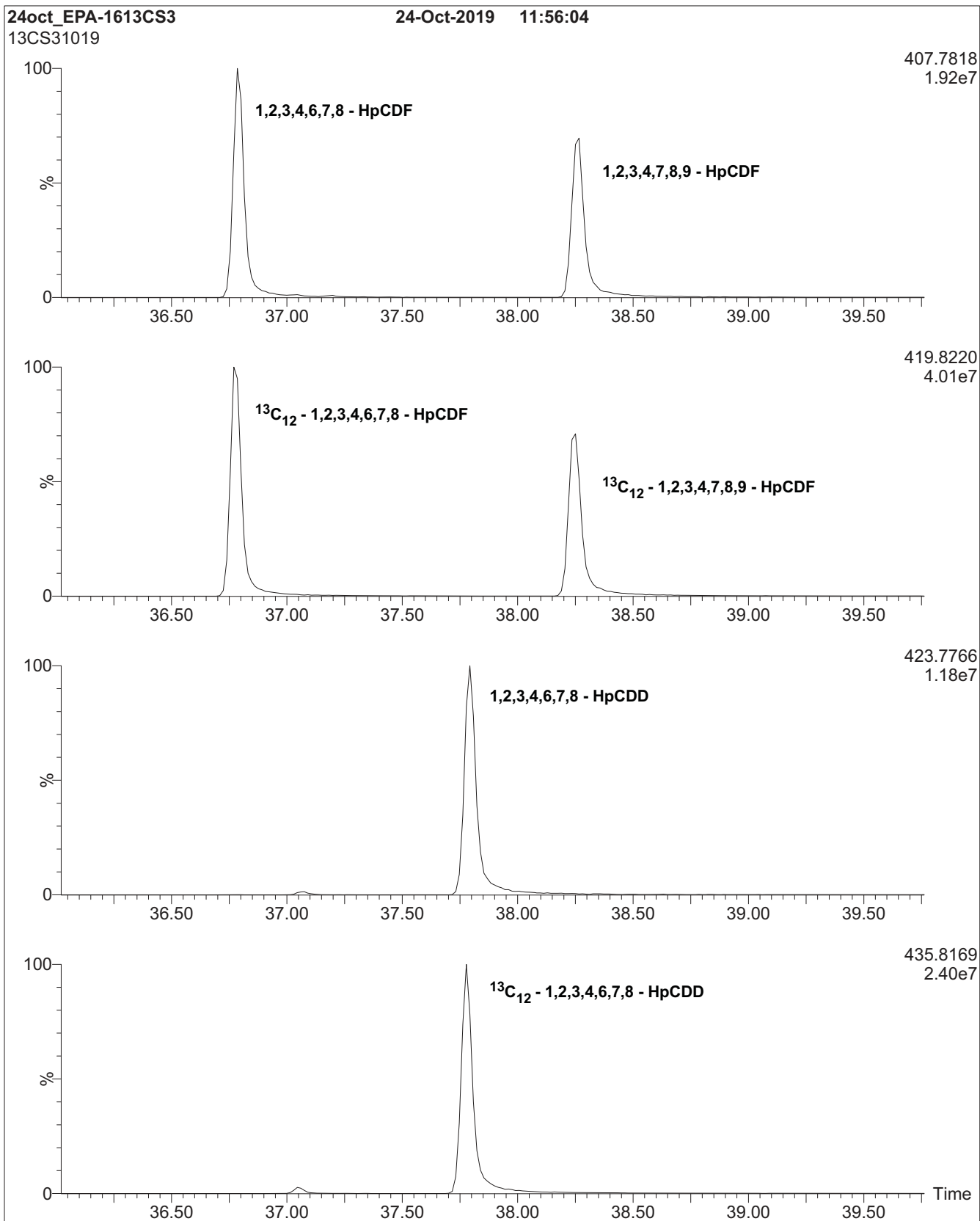
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



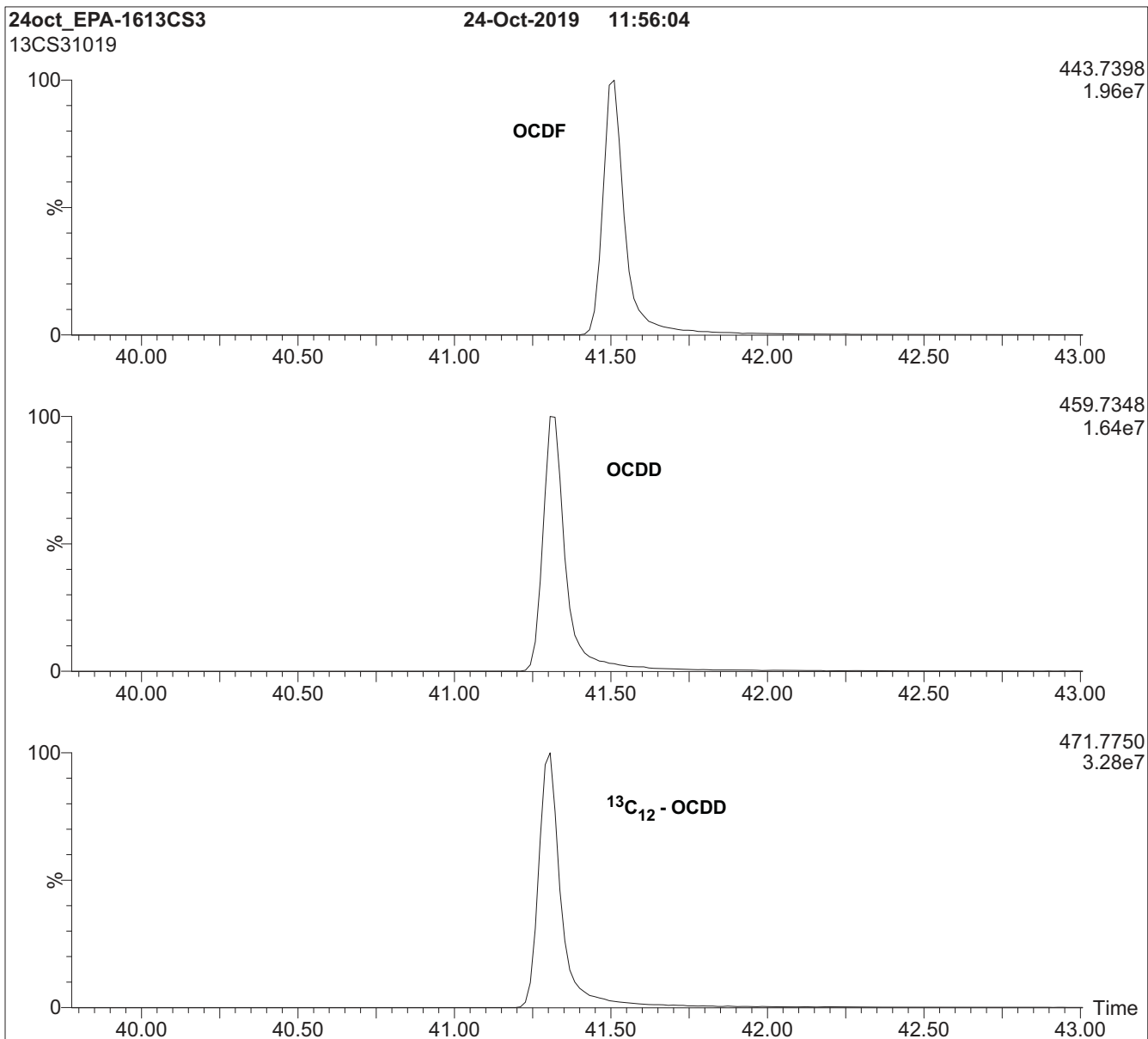
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1:** EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)



**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**HRGC/HRMS:**

Agilent 6890N (HRGC)  
Autospec Ultima (HRMS)

**Chromatographic Conditions:**

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min

Injector: 280 °C (Splitless Injection)

Ionization: EI+

Detector: 280 °C

SIR at 10,000 mass resolving power

Oven: 150 °C (1 min)

12 °C/min to 200 °C

3 °C/min to 235 °C

235 °C (8 min)

8 °C/min to 310 °C

310 °C (8 min)



**EPA-1613CVS**

**U.S. EPA Method 1613 Calibration and Verification Solutions  
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5**

<b><u>PRODUCT CODES:</u></b>	EPA-1613CVS	<b><u>LOT NUMBERS:</u></b>	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

<b><u>SOLVENT(S):</u></b>	Nonane/Toluene
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/22/2019
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/24/2019
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/24/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoules in a cool, dark place

<b>I005459</b>
1613 CS5 CAL STD
Expires 10/24/2026
<i>Prepared By Joshua Rains 6/23/2020</i>

**DESCRIPTION:**

EPA-1613CVS is a series of 5 calibration solutions containing native (<sup>12</sup>C<sub>12</sub>) and mass-labelled (<sup>13</sup>C<sub>12</sub> and <sup>37</sup>Cl<sub>4</sub>) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual <sup>13</sup>C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-<sup>37</sup>Cl<sub>4</sub>-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (<sup>37</sup>Cl) purity of ≥95%.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com



**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations

Table B: 5-point HRGC/HRMS Calibration and RRF Summary

Table C: 7-point HRGC/HRMS Calibration and RRF Summary

Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 3 for further details.

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
	CS1	CS2	CS3	CS4	CS5	CSL	CS0.5
<b>Native PCDDs and PCDFs:</b>							
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
<b>Labelled PCDDs and PCDFs:</b>							
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -OCDD	200	200	200	200	200	200	200
<b>Cleanup Standard:</b>							
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
<b>Internal Standards:</b>							
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By:   
B.G. Chittim, General Manager

Date: 10/25/2019  
(mm/dd/yyyy)

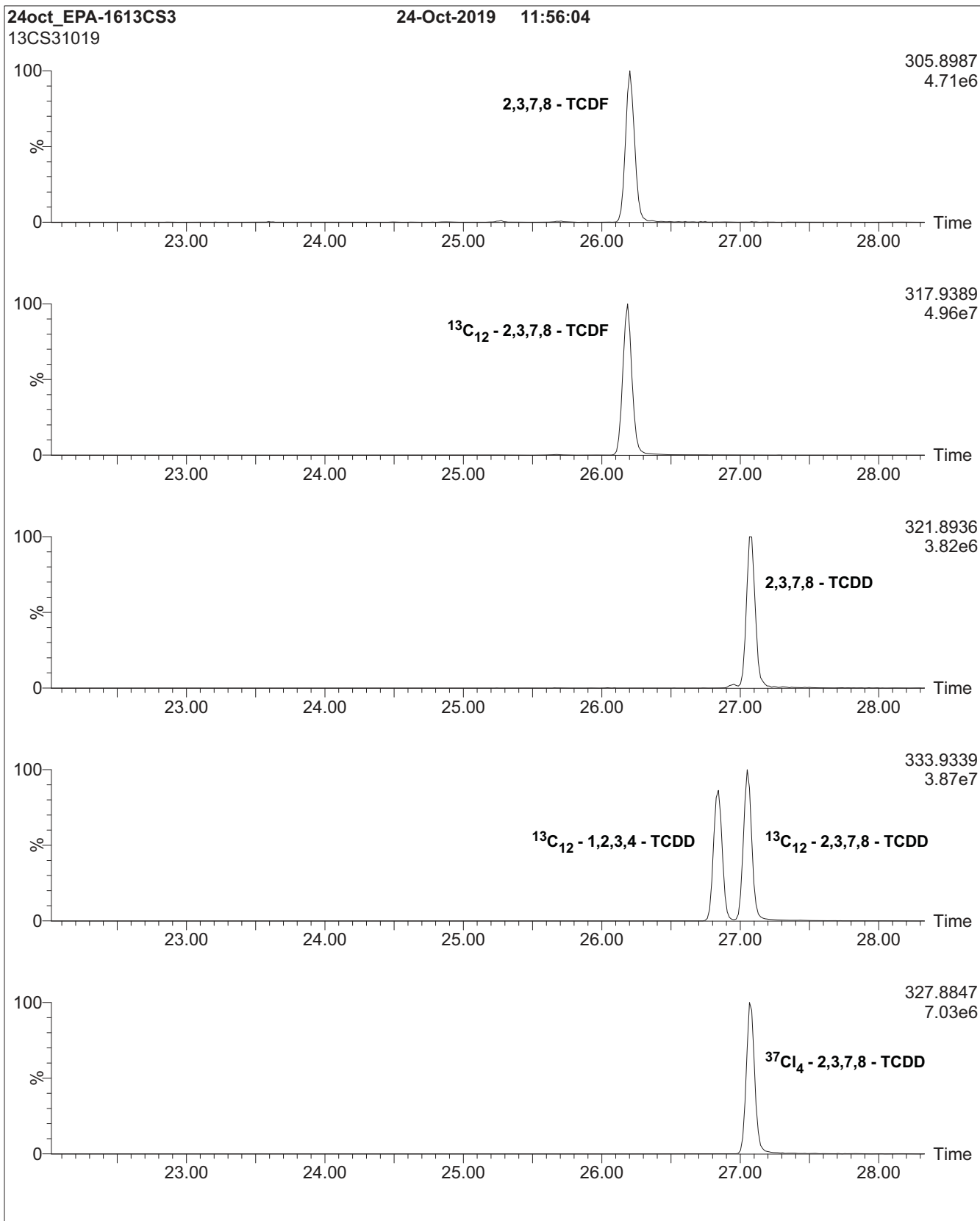
**Table B: EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

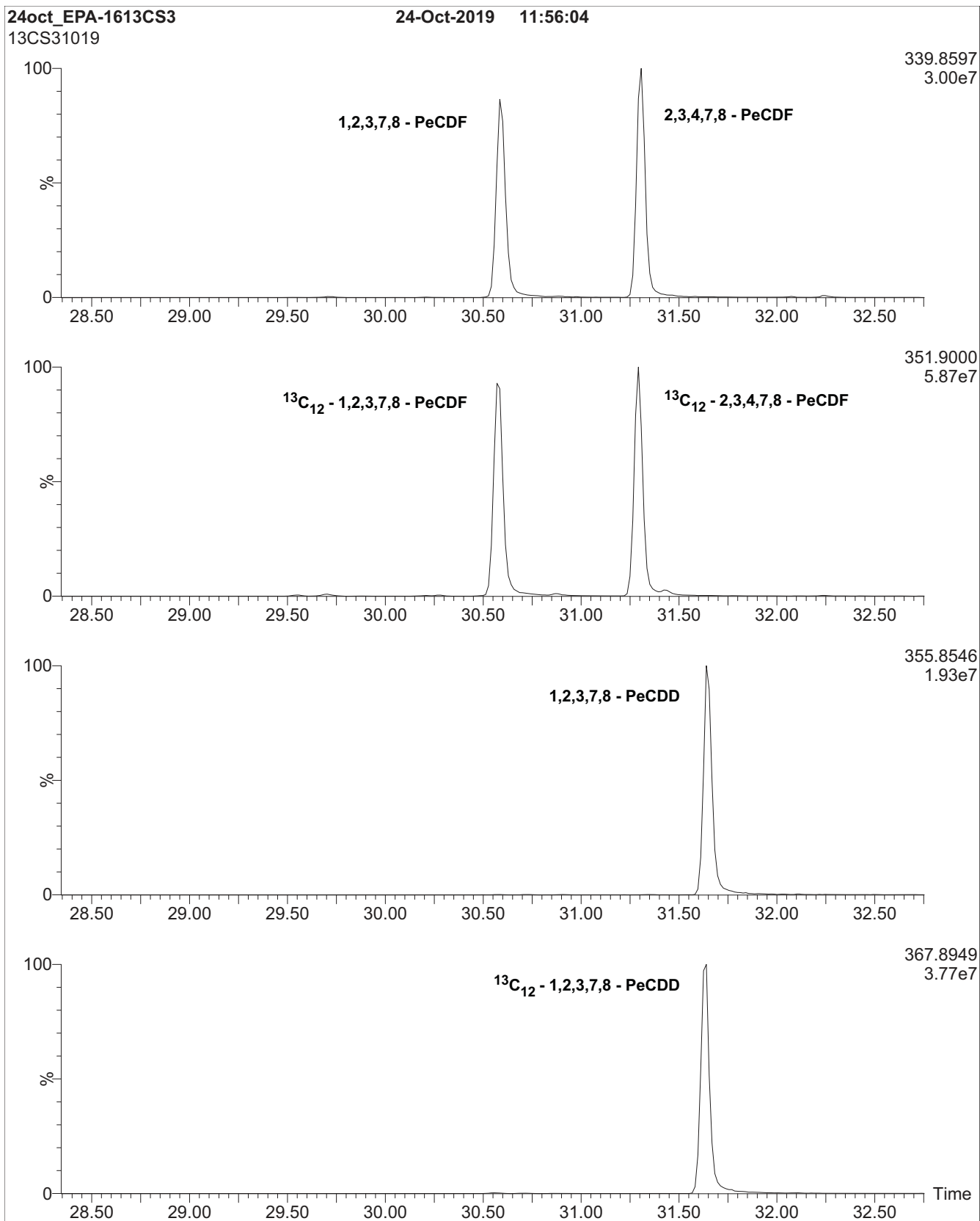
**Table C: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
7-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

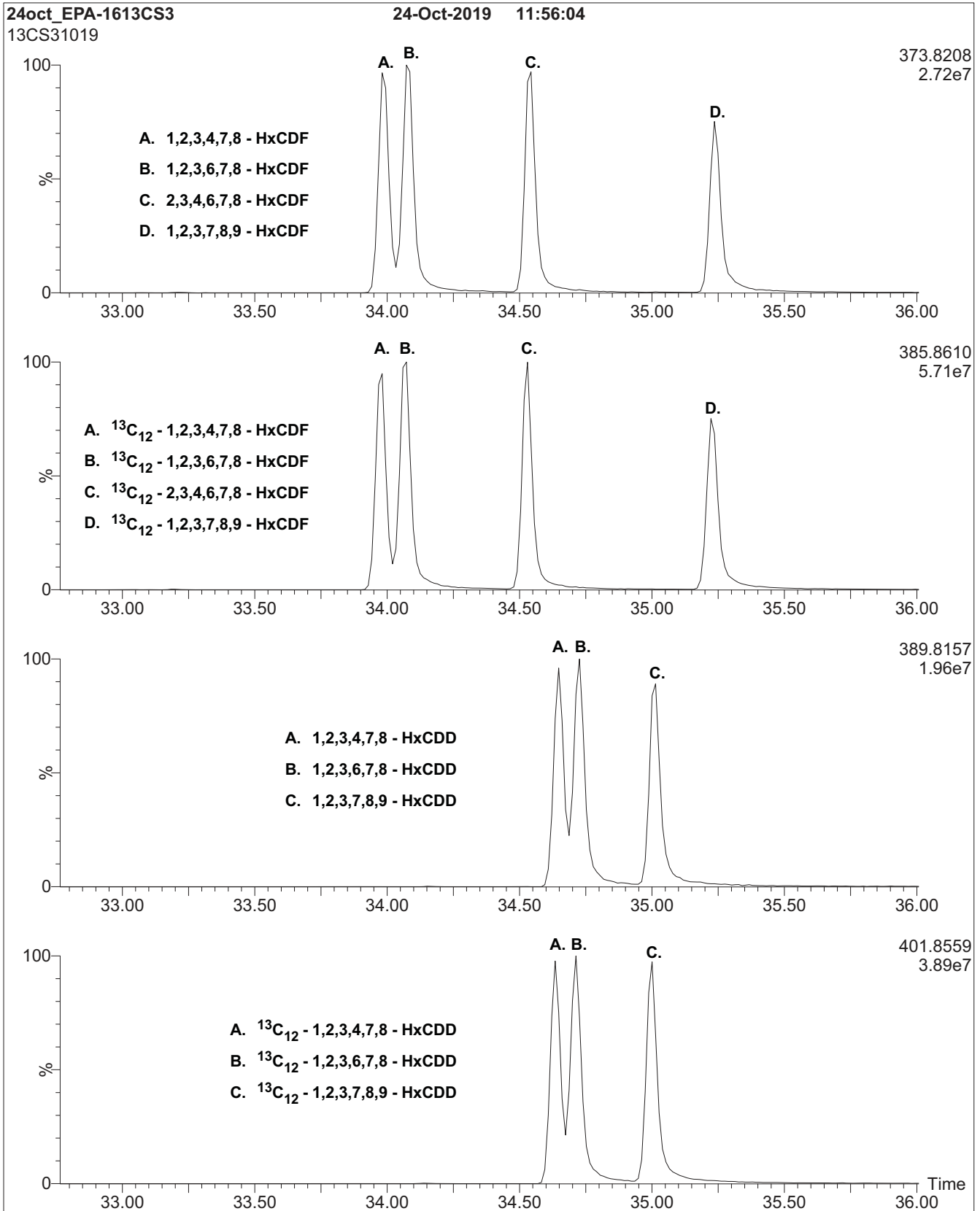
**Figure 1:** EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)



**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

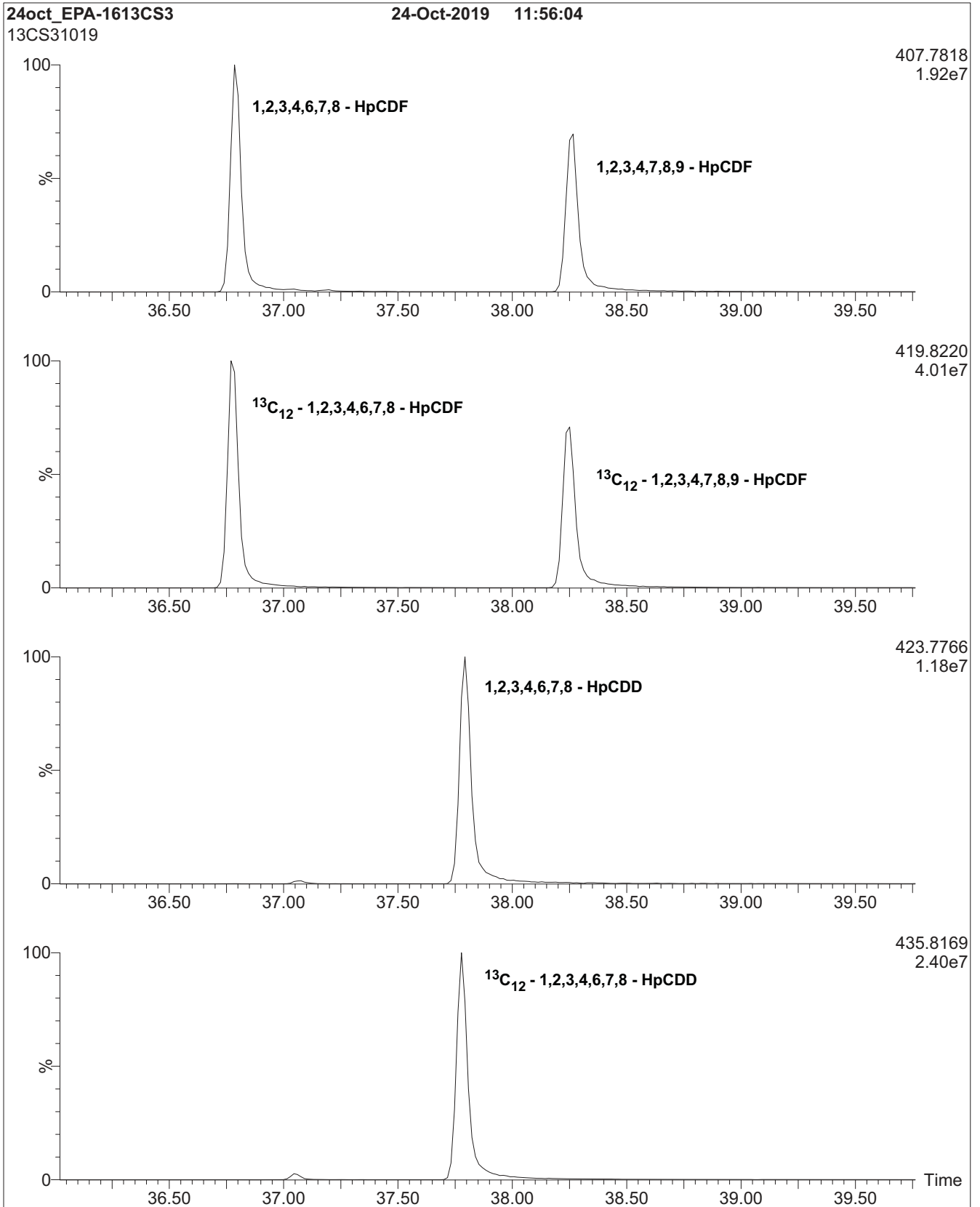


**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

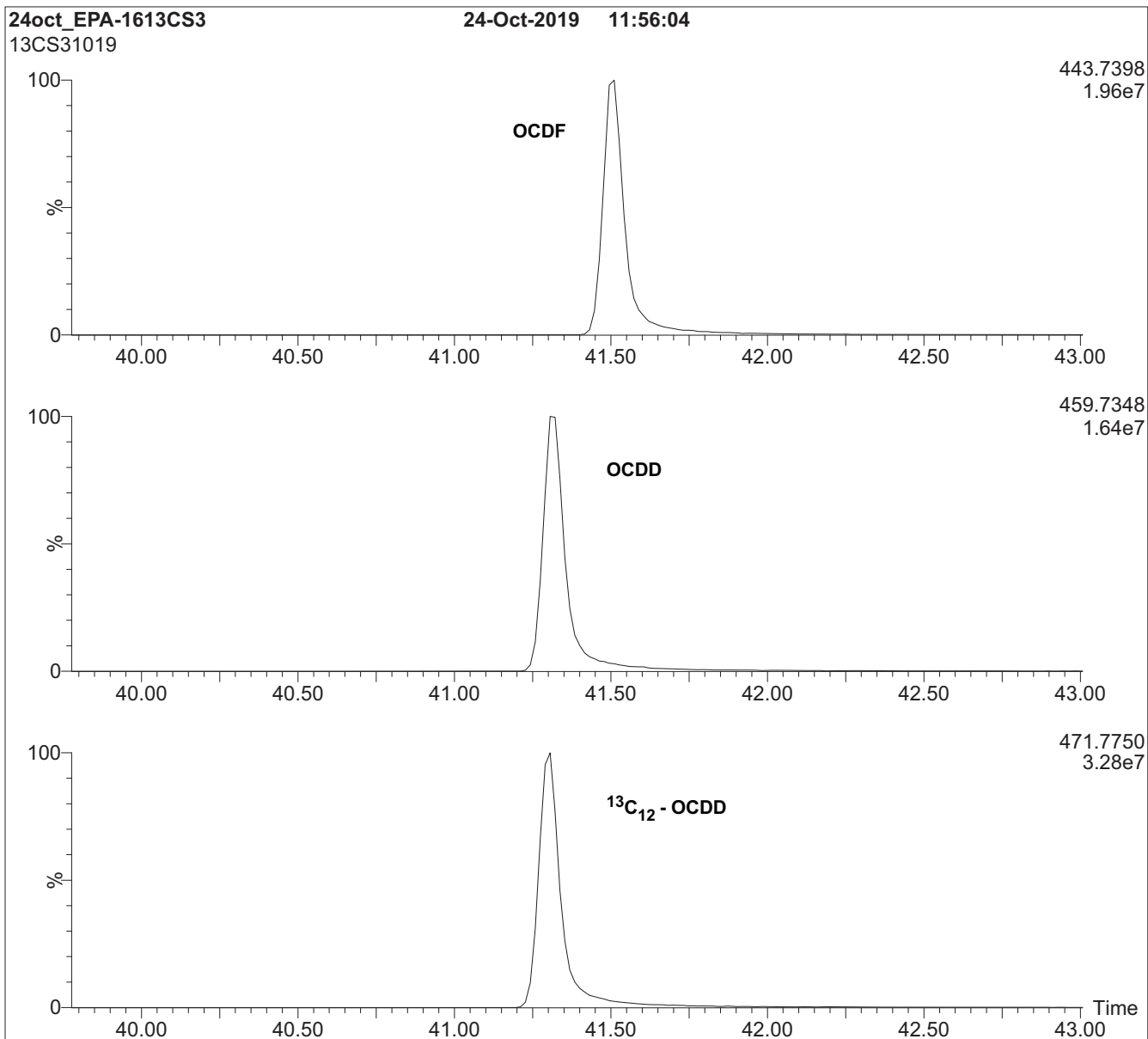




**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**HRGC/HRMS:**

Agilent 6890N (HRGC)  
Autospec Ultima (HRMS)

**Chromatographic Conditions:**

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min

Injector: 280 °C (Splitless Injection)

Ionization: EI+

Detector: 280 °C

SIR at 10,000 mass resolving power

Oven: 150 °C (1 min)

12 °C/min to 200 °C

3 °C/min to 235 °C

235 °C (8 min)

8 °C/min to 310 °C

310 °C (8 min)



**EPA-1613CVS**

**U.S. EPA Method 1613 Calibration and Verification Solutions  
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5**

<b><u>PRODUCT CODES:</u></b>	EPA-1613CVS	<b><u>LOT NUMBERS:</u></b>	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

<b><u>SOLVENT(S):</u></b>	Nonane/Toluene
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/22/2019
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/24/2019
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/24/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoules in a cool, dark place

<b>I005460</b>
1613 CSL CAL STD
Expires 10/24/2026
<i>Prepared By Joshua Rains 6/23/2020</i>

**DESCRIPTION:**

EPA-1613CVS is a series of 5 calibration solutions containing native (<sup>12</sup>C<sub>12</sub>) and mass-labelled (<sup>13</sup>C<sub>12</sub> and <sup>37</sup>Cl<sub>4</sub>) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual <sup>13</sup>C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-<sup>37</sup>Cl<sub>4</sub>-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (<sup>37</sup>Cl) purity of ≥95%.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations

Table B: 5-point HRGC/HRMS Calibration and RRF Summary

Table C: 7-point HRGC/HRMS Calibration and RRF Summary

Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 3 for further details.

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
	CS1	CS2	CS3	CS4	CS5	CSL	CS0.5
<b>Native PCDDs and PCDFs:</b>							
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
<b>Labelled PCDDs and PCDFs:</b>							
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -OCDD	200	200	200	200	200	200	200
<b>Cleanup Standard:</b>							
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
<b>Internal Standards:</b>							
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	100	100	100	100	100	100	100
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By:   
B.G. Chittim, General Manager

Date: 10/25/2019  
(mm/dd/yyyy)

**Table B: EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

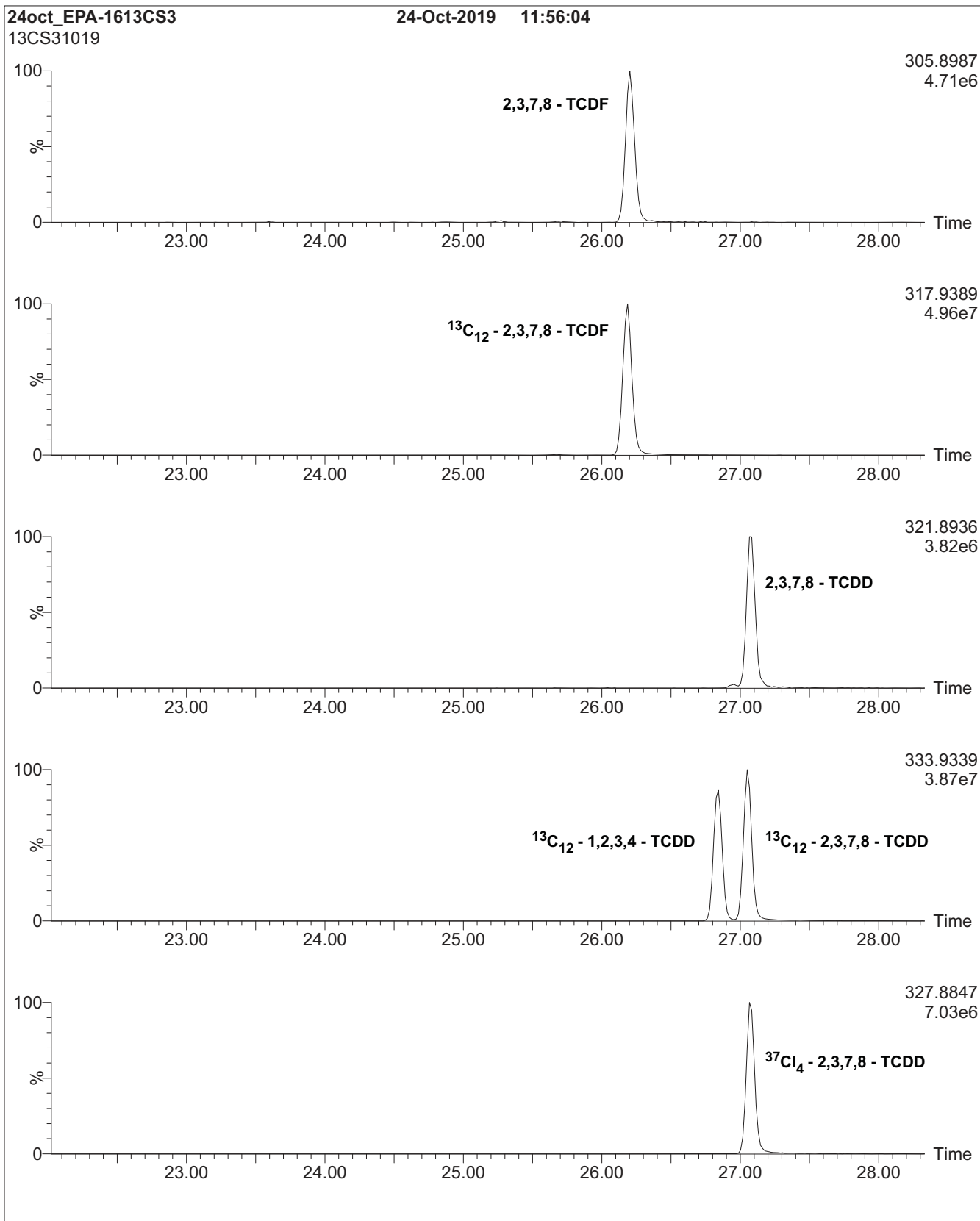
Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

**Table C: EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5);  
7-point HRGC/HRMS Calibration and RRF Summary**

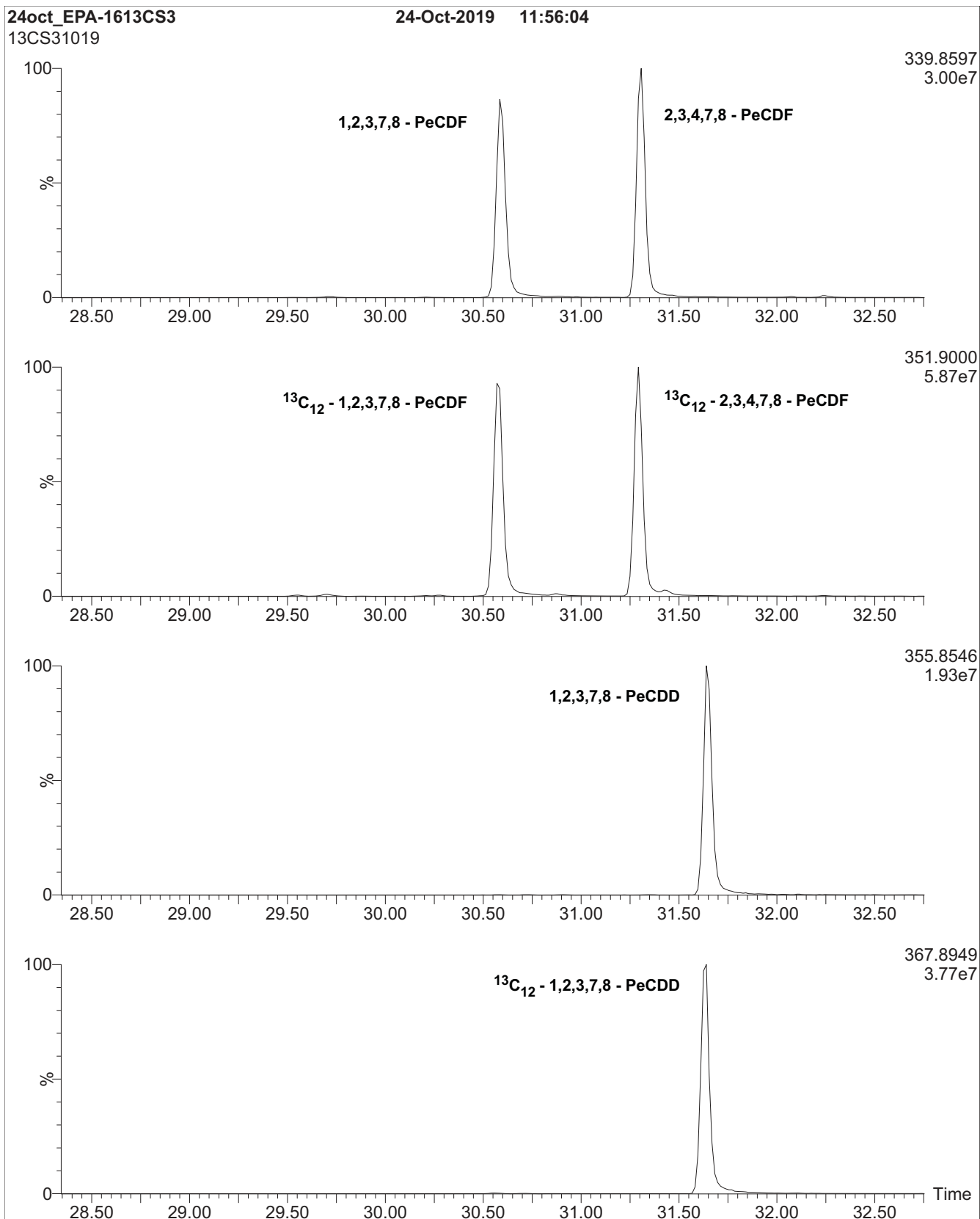
Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
<sup>13</sup> C <sub>12</sub> -OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99



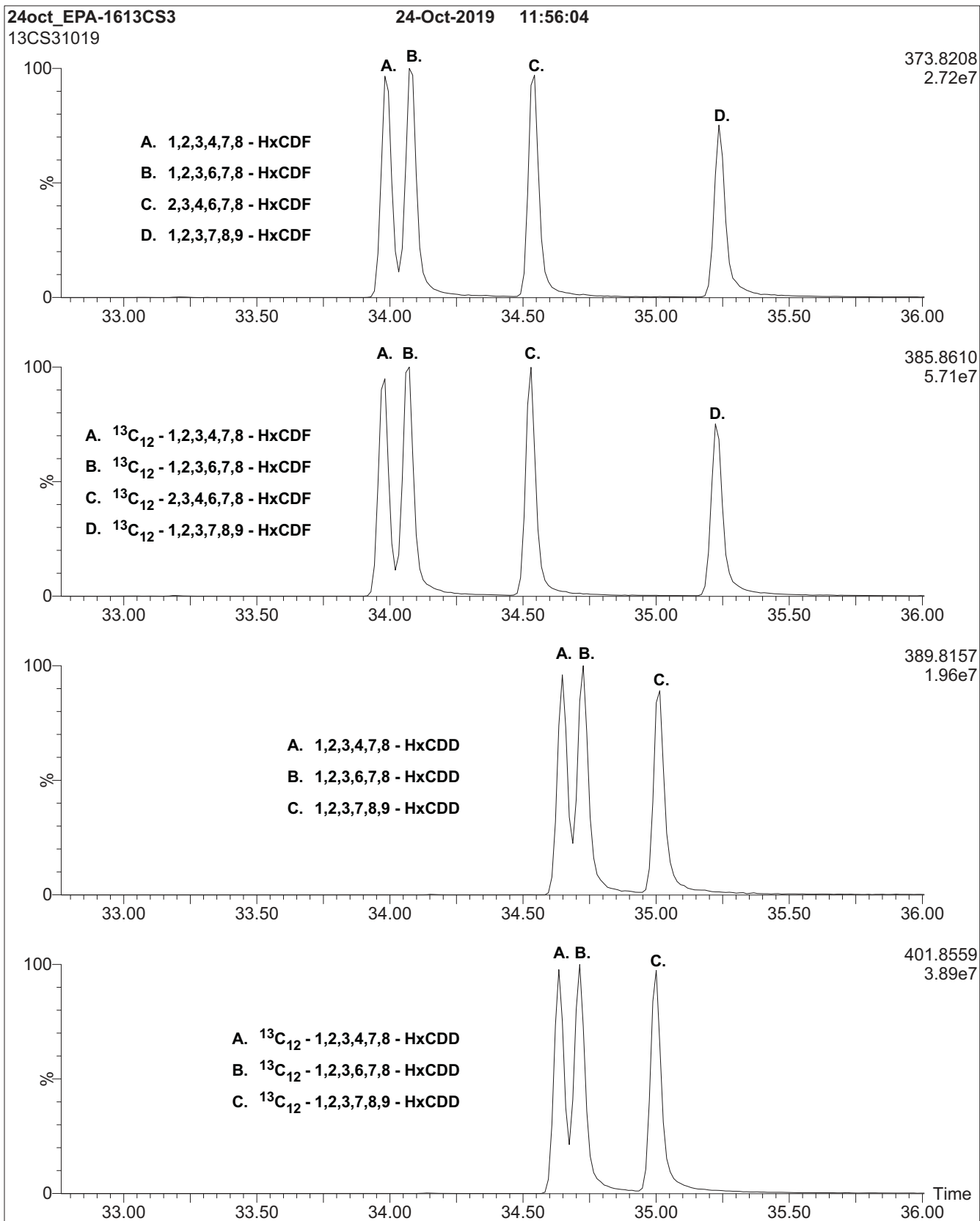
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



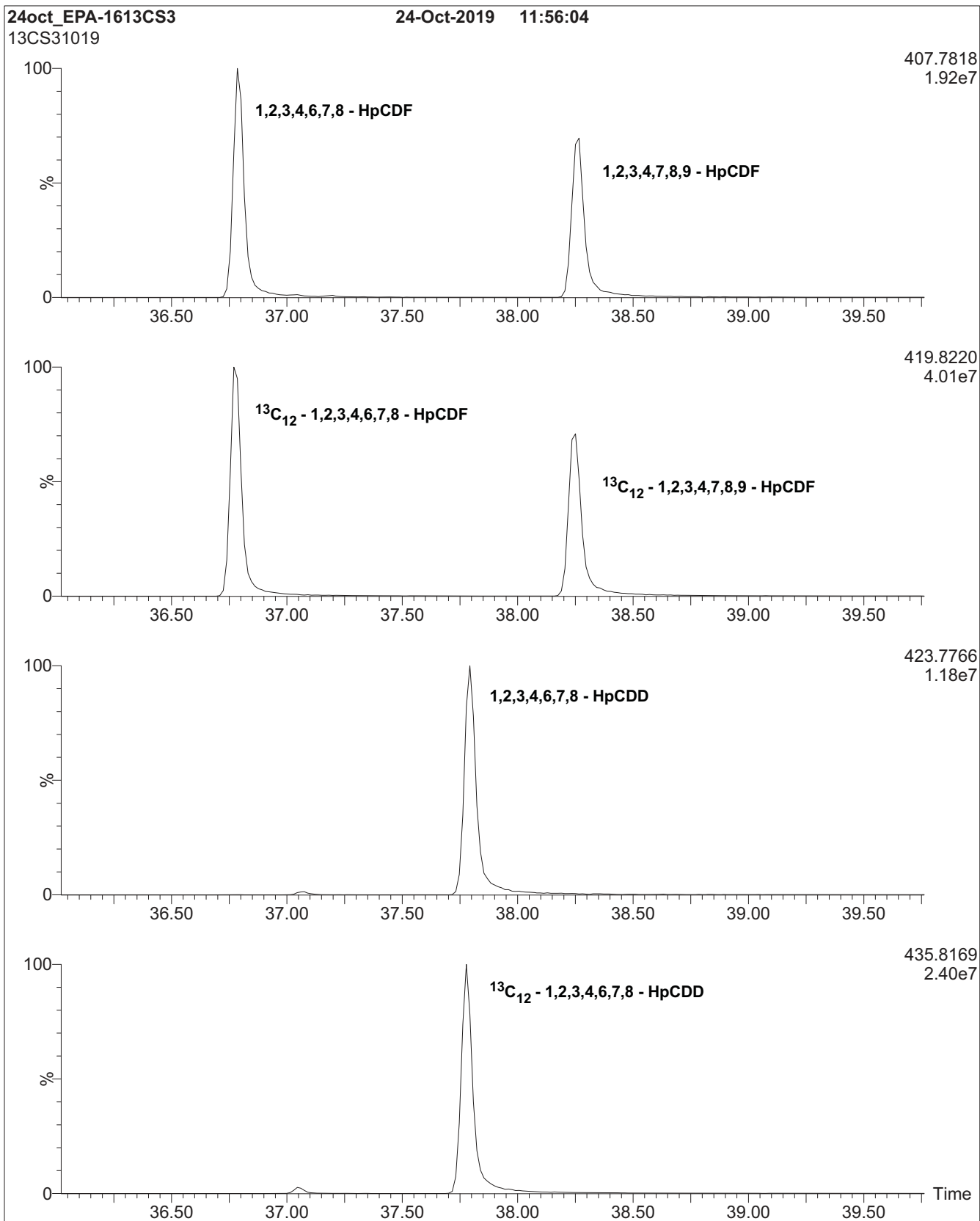
**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



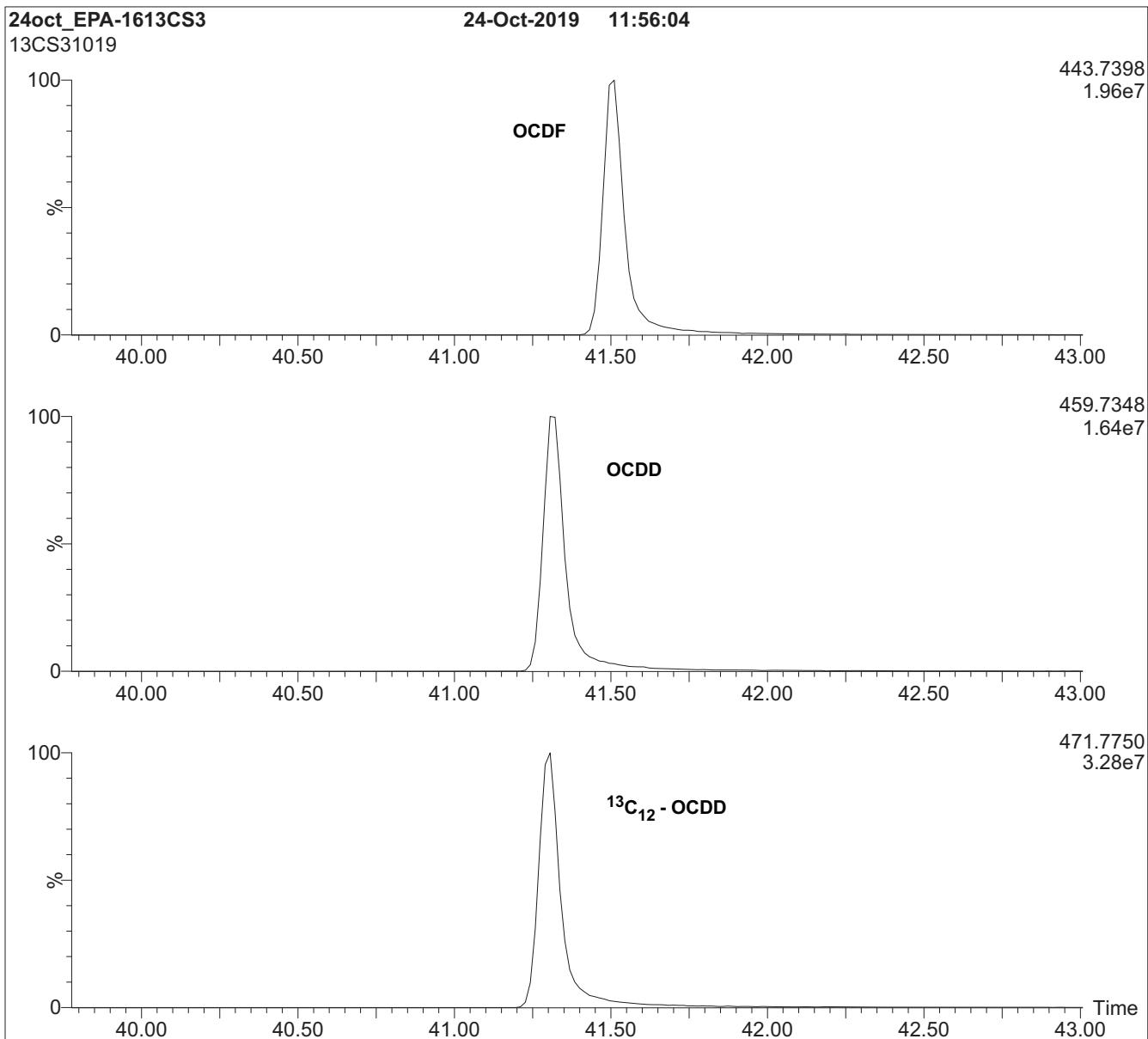
**Figure 1:** EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)



**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



**HRGC/HRMS:**

Agilent 6890N (HRGC)  
Autospec Ultima (HRMS)

**Chromatographic Conditions:**

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min

Injector: 280 °C (Splitless Injection)

Ionization: EI+

Detector: 280 °C

SIR at 10,000 mass resolving power

Oven: 150 °C (1 min)

12 °C/min to 200 °C

3 °C/min to 235 °C

235 °C (8 min)

8 °C/min to 310 °C

310 °C (8 min)



**EPA-1613PAR**

**U.S. EPA Method 1613 Native PCDD/PCDF  
Precision and Recovery Stock Solution**

**PRODUCT CODE:** EPA-1613PAR  
**LOT NUMBER:** 13PAR1021  
**SOLVENT(S):** Nonane/Toluene  
**DATE PREPARED:** (mm/dd/yyyy) 10/25/2021  
**LAST TESTED:** (mm/dd/yyyy) 11/03/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 11/03/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

J013397  
Rec'd. JR  
12/20/21

**DESCRIPTION:**

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.

The individual PCDDs and PCDFs all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

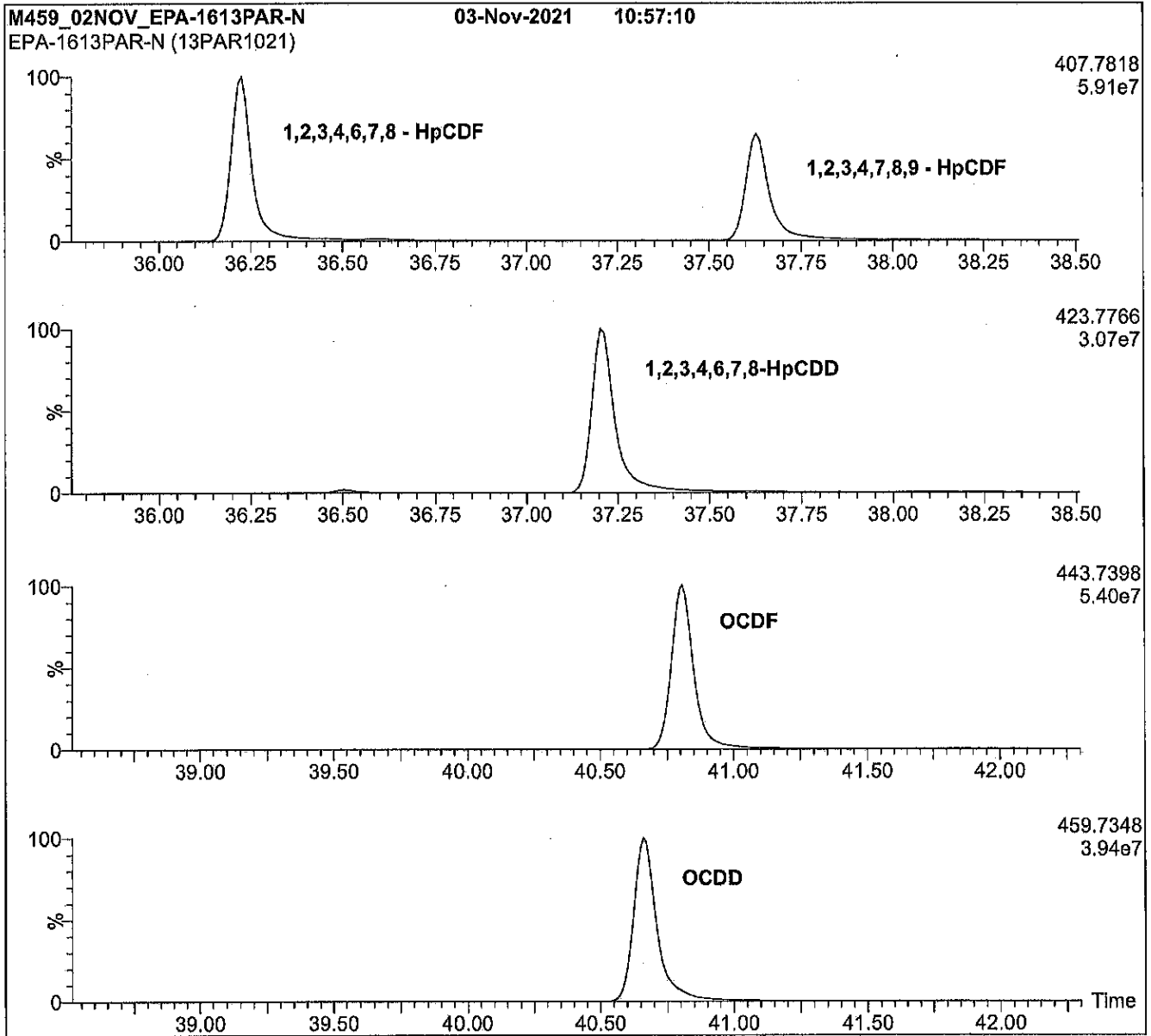
**Table A: EPA-1613PAR; Components and Concentrations (ng/mL, ± 5% in nonane/2.4% toluene)**

Compound	Acronym	CAS #	Concentration (ng/mL)
<b>PCDDs:</b>			
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	2,3,7,8-TCDD	1746-01-6	40.0
1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin	1,2,3,7,8-PeCDD	40321-76-4	200
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	1,2,3,4,7,8-HxCDD	39227-28-6	200
1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	1,2,3,6,7,8-HxCDD	57653-85-7	200
1,2,3,7,8,9-Hexachlorodibenzo- <i>p</i> -dioxin	1,2,3,7,8,9-HxCDD	19408-74-3	200
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	1,2,3,4,6,7,8-HpCDD	35822-46-9	200
Octachlorodibenzo- <i>p</i> -dioxin	OCDD	3268-87-9	400
<b>PCDFs:</b>			
2,3,7,8-Tetrachlorodibenzofuran	2,3,7,8-TCDF	51207-31-9	40.0
1,2,3,7,8-Pentachlorodibenzofuran	1,2,3,7,8-PeCDF	57117-41-6	200
2,3,4,7,8-Pentachlorodibenzofuran	2,3,4,7,8-PeCDF	57117-31-4	200
1,2,3,4,7,8-Hexachlorodibenzofuran	1,2,3,4,7,8-HxCDF	70648-26-9	200
1,2,3,6,7,8-Hexachlorodibenzofuran	1,2,3,6,7,8-HxCDF	57117-44-9	200
1,2,3,7,8,9-Hexachlorodibenzofuran	1,2,3,7,8,9-HxCDF	72918-21-9	200
2,3,4,6,7,8-Hexachlorodibenzofuran	2,3,4,6,7,8-HxCDF	60851-34-5	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	1,2,3,4,6,7,8-HpCDF	67562-39-4	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	1,2,3,4,7,8,9-HpCDF	55673-89-7	200
Octachlorodibenzofuran	OCDF	39001-02-0	400

Certified By:   
 B.G. Chittim, General Manager

Date: 11/05/2021  
(mm/dd/yyyy)

**Figure 1: EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**



**Conditions for Figure 1:**

Agilent 6890N HRGC  
Autospec Ultima HRMS

**Chromatographic Conditions:**

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W	
Flow:	Constant at 1.4 mL/min	Oven:
Injector:	280°C (Splitless Injection)	150°C (1 min)
Ionization:	EI+	12°C/min to 200°C
Detector:	280°C	3°C/min to 235°C
	SIR at 10,000 mass resolving power	235°C (8 min)
		8°C/min to 310°C
		310°C (8 min)





**EPA-1613PAR**

**U.S. EPA Method 1613 Native PCDD/PCDF  
Precision and Recovery Stock Solution**

**PRODUCT CODE:** EPA-1613PAR  
**LOT NUMBER:** 13PAR1021  
**SOLVENT(S):** Nonane/Toluene  
**DATE PREPARED:** (mm/dd/yyyy) 10/25/2021  
**LAST TESTED:** (mm/dd/yyyy) 11/03/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 11/03/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

J013397  
Rec'd. JR  
12/20/21

**DESCRIPTION:**

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.

The individual PCDDs and PCDFs all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

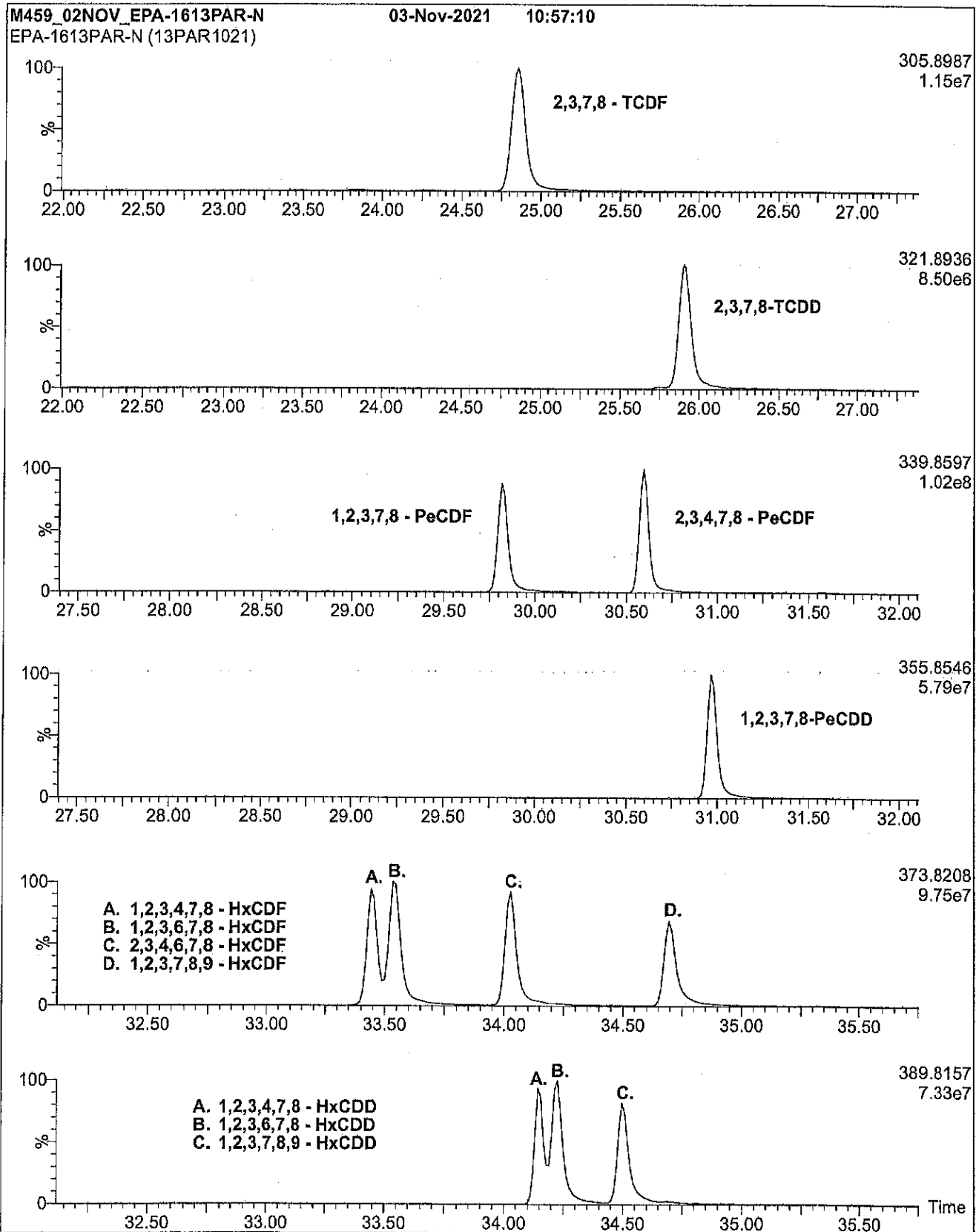
**Table A: EPA-1613PAR; Components and Concentrations (ng/mL, ± 5% in nonane/2.4% toluene)**

Compound	Acronym	CAS #	Concentration (ng/mL)
<b>PCDDs:</b>			
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	2,3,7,8-TCDD	1746-01-6	40.0
1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin	1,2,3,7,8-PeCDD	40321-76-4	200
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	1,2,3,4,7,8-HxCDD	39227-28-6	200
1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	1,2,3,6,7,8-HxCDD	57653-85-7	200
1,2,3,7,8,9-Hexachlorodibenzo- <i>p</i> -dioxin	1,2,3,7,8,9-HxCDD	19408-74-3	200
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	1,2,3,4,6,7,8-HpCDD	35822-46-9	200
Octachlorodibenzo- <i>p</i> -dioxin	OCDD	3268-87-9	400
<b>PCDFs:</b>			
2,3,7,8-Tetrachlorodibenzofuran	2,3,7,8-TCDF	51207-31-9	40.0
1,2,3,7,8-Pentachlorodibenzofuran	1,2,3,7,8-PeCDF	57117-41-6	200
2,3,4,7,8-Pentachlorodibenzofuran	2,3,4,7,8-PeCDF	57117-31-4	200
1,2,3,4,7,8-Hexachlorodibenzofuran	1,2,3,4,7,8-HxCDF	70648-26-9	200
1,2,3,6,7,8-Hexachlorodibenzofuran	1,2,3,6,7,8-HxCDF	57117-44-9	200
1,2,3,7,8,9-Hexachlorodibenzofuran	1,2,3,7,8,9-HxCDF	72918-21-9	200
2,3,4,6,7,8-Hexachlorodibenzofuran	2,3,4,6,7,8-HxCDF	60851-34-5	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	1,2,3,4,6,7,8-HpCDF	67562-39-4	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	1,2,3,4,7,8,9-HpCDF	55673-89-7	200
Octachlorodibenzofuran	OCDF	39001-02-0	400

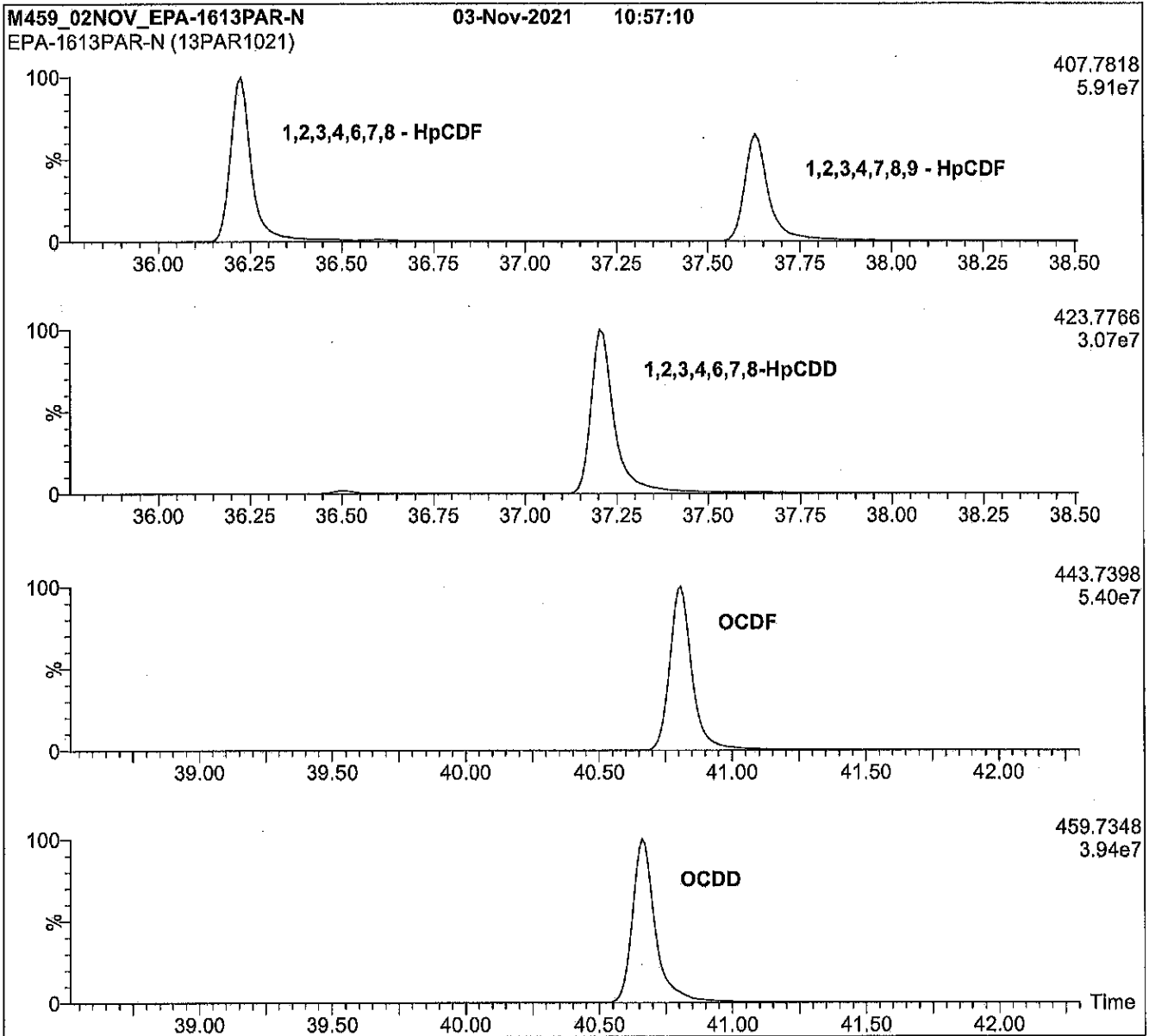
Certified By:   
 B.G. Chittim, General Manager

Date: 11/05/2021  
(mm/dd/yyyy)

**Figure 1: EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**



**Conditions for Figure 1:**

Agilent 6890N HRGC  
Autospec Ultima HRMS

**Chromatographic Conditions:**

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W	
Flow:	Constant at 1.4 mL/min	Oven: 150°C (1 min)
Injector:	280°C (Splitless Injection)	12°C/min to 200°C
Ionization:	EI+	3°C/min to 235°C
Detector:	280°C	235°C (8 min)
	SIR at 10,000 mass resolving power	8°C/min to 310°C
		310°C (8 min)



K9821

**CS3WT**

**Calibration and Verification Solution (EPA-1613CS3)  
combined with Window Defining and 2,3,7,8-TCDD  
Resolution Testing Congeners**

**PRODUCT CODE:** CS3WT  
**LOT NUMBER:** CS3WT1021  
**SOLVENT(S):** Nonane/Toluene  
**DATE PREPARED:** (mm/dd/yyyy) 11/01/2021  
**LAST TESTED:** (mm/dd/yyyy) 11/02/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 11/02/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DESCRIPTION:**

CS3WT is a solution/mixture of native ( $^{12}\text{C}_{12}$ ) and mass-labelled ( $^{13}\text{C}_{12}$ ) polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Tables A and B.

CS3WT is an HRGC/HRMS calibration solution that was designed and prepared to be used according to U.S. EPA Method 1613, Revision B, in place of EPA-1613CS3 (lot: 13CS31021). Additionally, it contains the PCDD and PCDF isomers required to set retention time windows as well as test and establish isomer specificity for 2,3,7,8-TCDD on a DB-5 (or equivalent) capillary column.

The individual  $^{13}\text{C}$ -labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of  $\geq 99\%$ . The 2,3,7,8-( $^{37}\text{Cl}_4$ )tetrachlorodibenzo-*p*-dioxin has a chemical purity of >98% and an isotopic ( $^{37}\text{Cl}$ ) purity of  $\geq 95\%$ . The individual native 2,3,7,8-substituted PCDD and PCDF congeners all have chemical purities of >98%; the other congeners (window defining and resolution testing) should only be considered semi-quantitative.

This current lot of CS3WT is to be used with the 1613 calibration solutions having the following lot numbers:

<b><u>PRODUCT CODE</u></b>	<b><u>LOT NUMBER</u></b>
EPA-1613CS1	13CS11021
EPA-1613CS2	13CS21021
EPA-1613CS3	13CS31021
EPA-1613CS4	13CS41021
EPA-1613CS5	13CS51021
EPA-1613CSL	13CSL1021
EPA-1613CS0.5	13CS0.51021

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
**519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

### INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

### HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) has been assigned to the quantitative components in this product. A maximum combined percent relative uncertainty of  $\pm 20\%$  has been assigned to the semi-quantitative components in this product.

### TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*



**Table A: CS3WT; Quantitative Components and Concentrations (ng/mL, ± 5%, in nonane/4.5% toluene)**

Compound	Designation <sup>a</sup>	Acronym	CAS #	Concentration (ng/mL)
<b>Native PCDDs:</b>				
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin		2,3,7,8-TCDD	1746-01-6	10.0
1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin		1,2,3,7,8-PeCDD	40321-76-4	50.0
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin		1,2,3,4,7,8-HxCDD	39227-28-6	50.0
1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -dioxin		1,2,3,6,7,8-HxCDD	57653-85-7	50.0
1,2,3,7,8,9-Hexachlorodibenzo- <i>p</i> -dioxin	Last HxCDD <sup>b</sup>	1,2,3,7,8,9-HxCDD	19408-74-3	50.0
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	Last HpCDD	1,2,3,4,6,7,8-HpCDD	35822-46-9	50.0
Octachlorodibenzo- <i>p</i> -dioxin		OCDD	3268-87-9	100
<b>Native PCDFs:</b>				
2,3,7,8-Tetrachlorodibenzofuran		2,3,7,8-TCDF	51207-31-9	10.0
1,2,3,7,8-Pentachlorodibenzofuran		1,2,3,7,8-PeCDF	57117-41-6	50.0
2,3,4,7,8-Pentachlorodibenzofuran		2,3,4,7,8-PeCDF	57117-31-4	50.0
1,2,3,4,7,8-Hexachlorodibenzofuran		1,2,3,4,7,8-HxCDF	70648-26-9	50.0
1,2,3,6,7,8-Hexachlorodibenzofuran		1,2,3,6,7,8-HxCDF	57117-44-9	50.0
1,2,3,7,8,9-Hexachlorodibenzofuran		1,2,3,7,8,9-HxCDF	72918-21-9	50.0
2,3,4,6,7,8-Hexachlorodibenzofuran		2,3,4,6,7,8-HxCDF	60851-34-5	50.0
1,2,3,4,6,7,8-Heptachlorodibenzofuran	First HpCDF <sup>c</sup>	1,2,3,4,6,7,8-HpCDF	67562-39-4	50.0
1,2,3,4,7,8,9-Heptachlorodibenzofuran	Last HpCDF	1,2,3,4,7,8,9-HpCDF	55673-89-7	50.0
Octachlorodibenzofuran		OCDF	39001-02-0	100
<b>Mass-Labelled PCDDs:</b>				
2,3,7,8-Tetrachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin		<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	76523-40-5	100
1,2,3,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin		<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	109719-79-1	100
1,2,3,4,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin		<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	109719-80-4	100
1,2,3,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin		<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	109719-81-5	100
1,2,3,4,6,7,8-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin		<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	109719-83-7	100
Octachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin		<sup>13</sup> C <sub>12</sub> -OCDD	114423-97-1	200
<b>Mass-Labelled PCDFs:</b>				
2,3,7,8-Tetrachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	89059-46-1	100
1,2,3,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	109719-77-9	100
2,3,4,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	116843-02-8	100
1,2,3,4,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	114423-98-2	100
1,2,3,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	116843-03-9	100
1,2,3,7,8,9-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	116843-04-0	100
2,3,4,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	116843-05-1	100
1,2,3,4,6,7,8-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	109719-84-8	100
1,2,3,4,7,8,9-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran		<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	109719-94-0	100
<b>Cleanup Standard:</b>				
2,3,7,8-( <sup>37</sup> Cl <sub>4</sub> )Tetrachlorodibenzo- <i>p</i> -dioxin		<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	85508-50-5	10.0
<b>Internal Standards:</b>				
1,2,3,4-Tetrachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin		<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	114423-99-3	100
1,2,3,7,8,9-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin		<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	109719-82-6	100

<sup>a</sup> First/Last eluting isomer for the specified homologue group (see Table B for additional Window Definers).

<sup>b,c</sup> – see Table B for footnote.



**Table B: CS3WT; Semi-Quantitative Components and Concentrations (ng/mL, ± 20%, in nonane/4.5% toluene)**

Compound	Designation <sup>a</sup>	Acronym	CAS #	Concentration (ng/mL)
<b>PCDD Window Definers:</b>				
1,3,6,8-Tetrachlorodibenzo- <i>p</i> -dioxin	First TCDD	1,3,6,8-TCDD	33423-92-6	10.0
1,2,8,9-Tetrachlorodibenzo- <i>p</i> -dioxin	Last TCDD	1,2,8,9-TCDD	62470-54-6	10.0
1,2,4,6,8-/1,2,4,7,9-Pentachlorodibenzo- <i>p</i> -dioxin	First PeCDD	1,2,4,6,8-PeCDD	71998-76-0	50.0 <sup>d</sup>
		1,2,4,7,9-PeCDD	82291-37-0	
1,2,3,8,9-Pentachlorodibenzo- <i>p</i> -dioxin	Last PeCDD	1,2,3,8,9-PeCDD	71925-18-3	50.0
1,2,4,6,7,9-Hexachlorodibenzo- <i>p</i> -dioxin	First HxCDD	1,2,4,6,7,9-HxCDD	39227-62-8	50.0
1,2,3,4,6,7,9-Heptachlorodibenzo- <i>p</i> -dioxin	First HpCDD	1,2,3,4,6,7,9-HpCDD	58200-70-7	50.0
<b>PCDF Window Definers:</b>				
1,3,6,8-Tetrachlorodibenzofuran	First TCDF	1,3,6,8-TCDF	71998-72-6	10.0
1,2,8,9-Tetrachlorodibenzofuran	Last TCDF	1,2,8,9-TCDF	70648-22-5	10.0
1,3,4,6,8-Pentachlorodibenzofuran	First PeCDF	1,3,4,6,8-PeCDF	83704-55-6	50.0
1,2,3,8,9-Pentachlorodibenzofuran	Last PeCDF	1,2,3,8,9-PeCDF	83704-54-5	50.0
1,2,3,4,6,8-Hexachlorodibenzofuran	First HxCDF	1,2,3,4,6,8-HxCDF	69698-60-8	50.0
<b>2,3,7,8-TCDD Resolution Testing Isomers:</b>				
1,2,3,4-Tetrachlorodibenzo- <i>p</i> -dioxin		1,2,3,4-TCDD	30746-58-8	5.00
1,2,3,7-/1,2,3,8-Tetrachlorodibenzo- <i>p</i> -dioxin		1,2,3,7-TCDD	67028-18-6	5.00 <sup>d</sup>
		1,2,3,8-TCDD	53555-02-5	
1,2,3,9-Tetrachlorodibenzo- <i>p</i> -dioxin		1,2,3,9-TCDD	71669-26-6	10.0

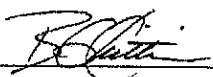
<sup>a</sup> First/Last eluting isomer for the specified homologue group (see Table A for additional Window Definers).

<sup>b</sup> 1,2,3,4,6,7-HxCDD (last eluting HxCDD) not included; coelutes with 1,2,3,7,8,9-HxCDD on a 60 m DB-5 column. Use 1,2,3,7,8,9-HxCDD (see Table A) and 1,2,3,4,6,7,9-HpCDD to approximate the end of the HxCDD window.

<sup>c</sup> 1,2,3,4,8,9-HxCDF (last eluting HxCDF) not included; can interfere with 1,2,3,7,8,9-HxCDF on a 60 m DB-5 column. Use 1,2,3,4,6,7,8-HpCDF (see Table A) to approximate the end of the HxCDF window.

<sup>d</sup> Total concentration of isomers.

Certified By: \_\_\_\_\_



B.G. Chittim, General Manager

Date: 11/05/2021

(mm/dd/yyyy)

**Figure 1:** CS3WT; HRGC/HRMS Data (60 m DB-5 Column)

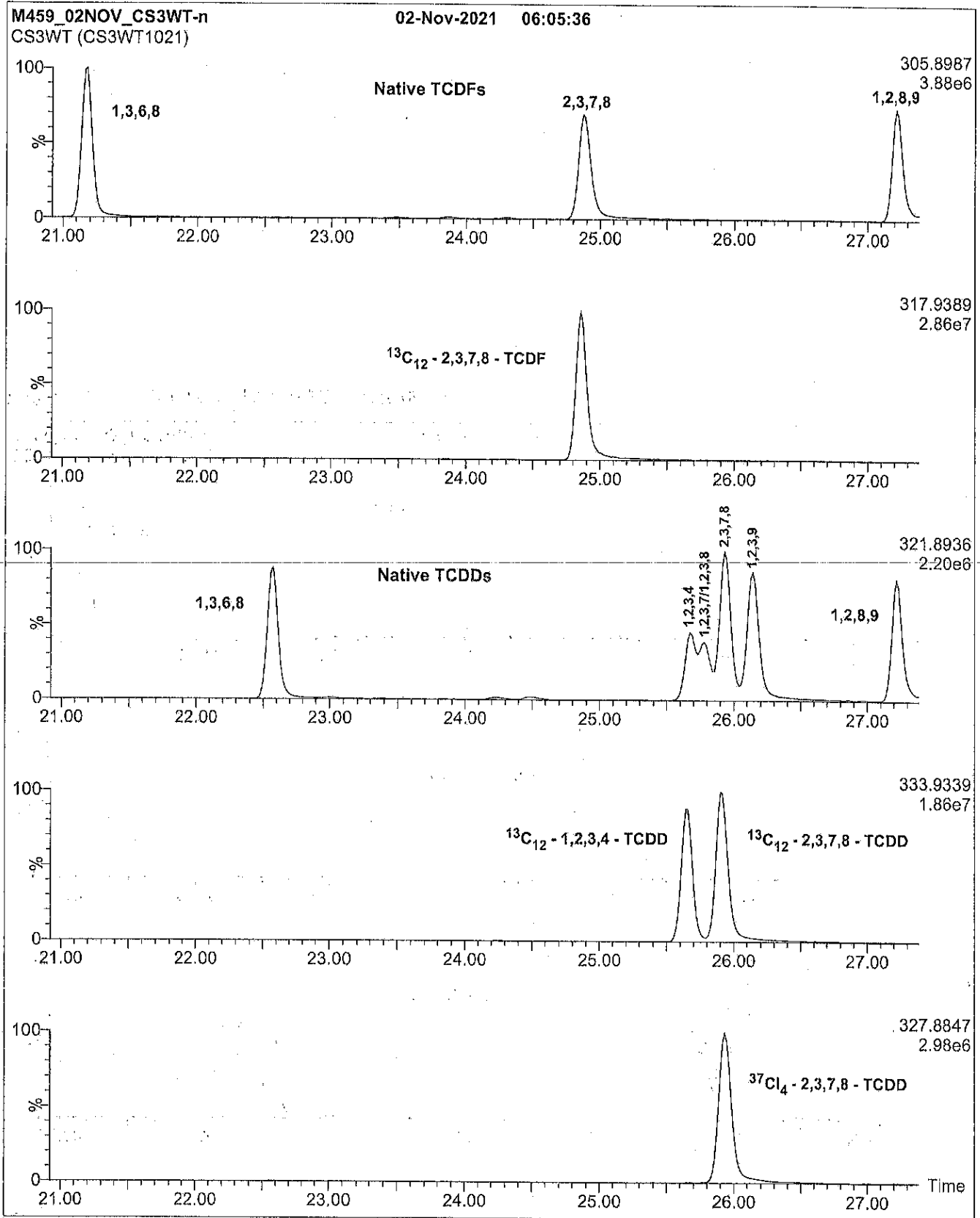
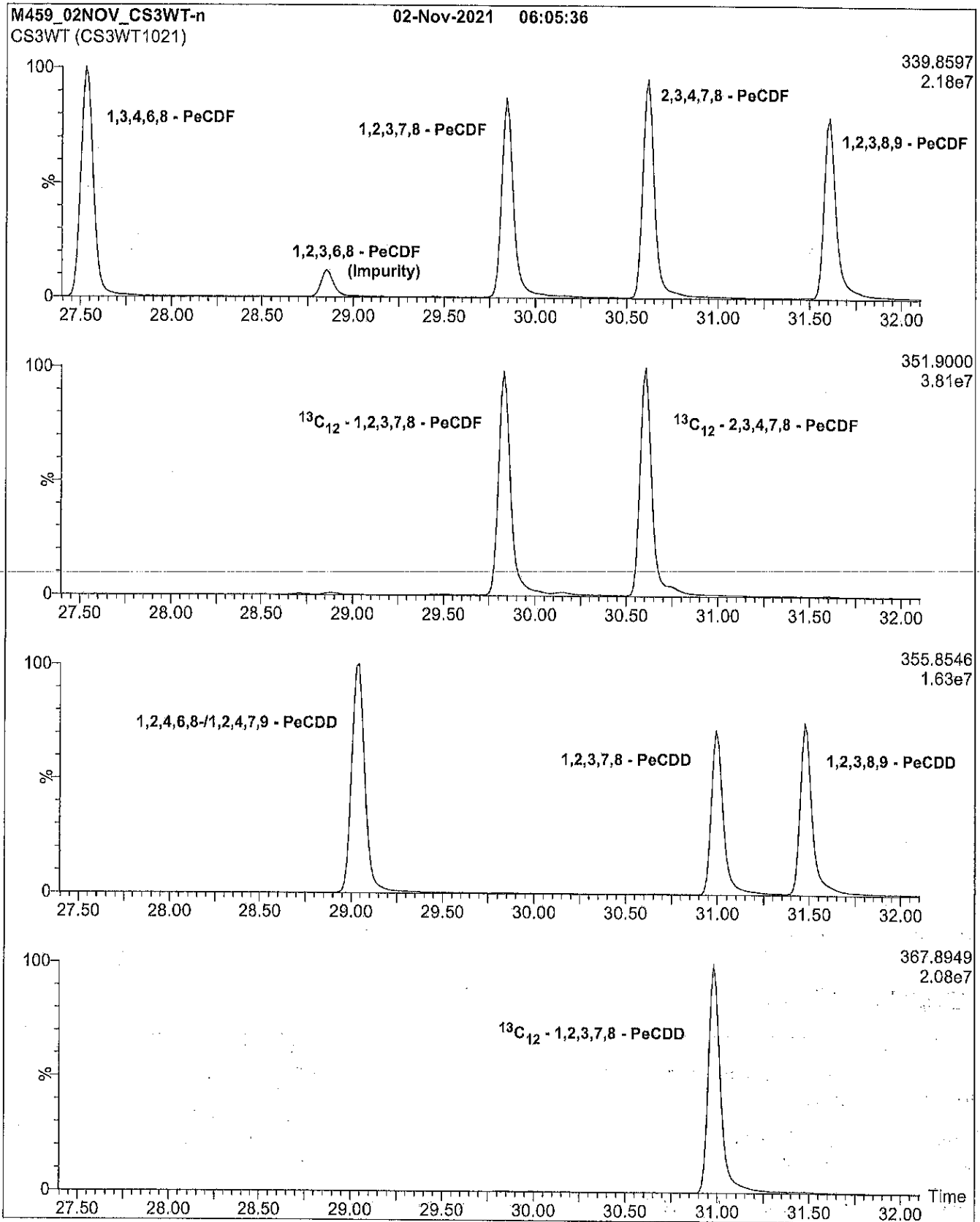
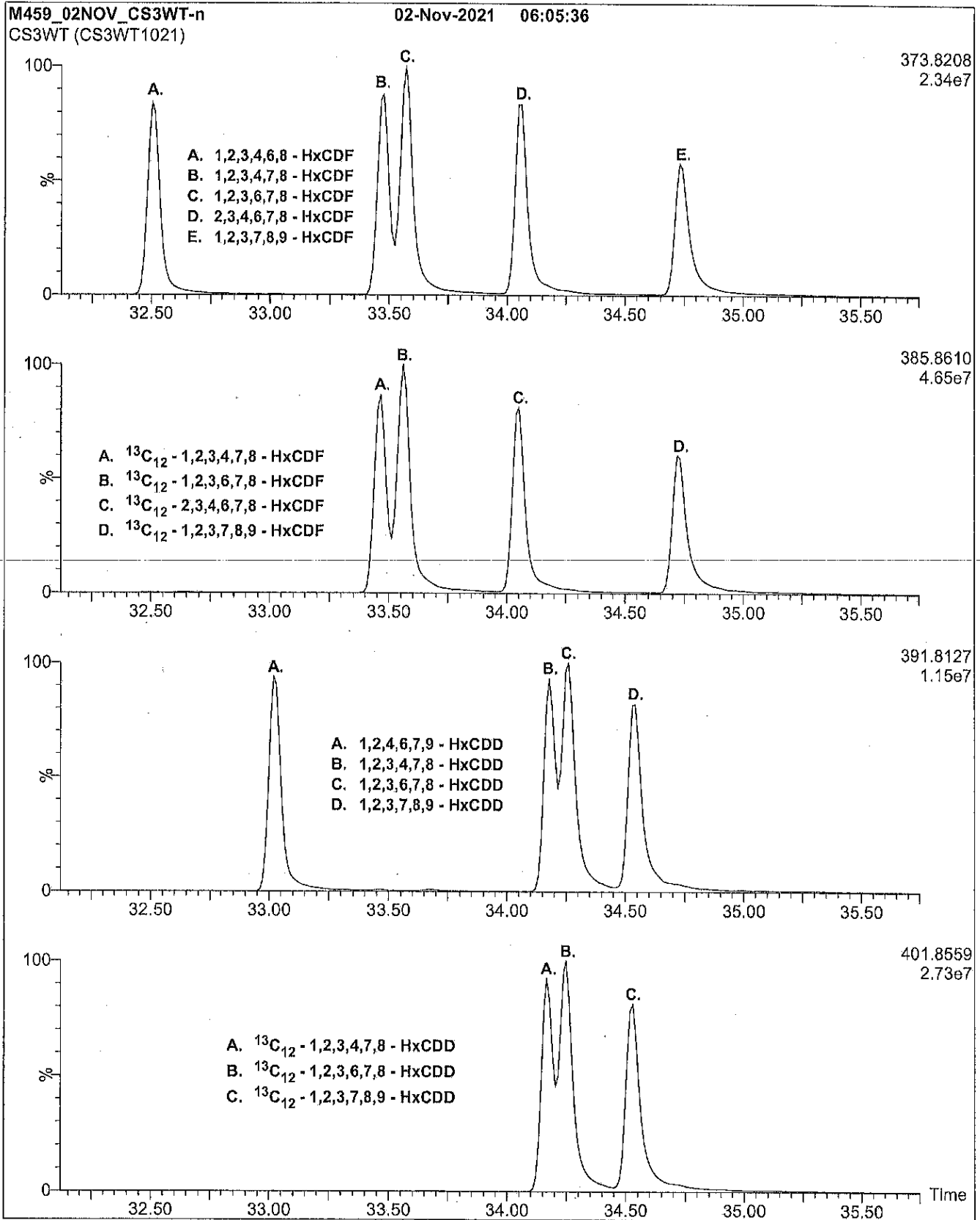


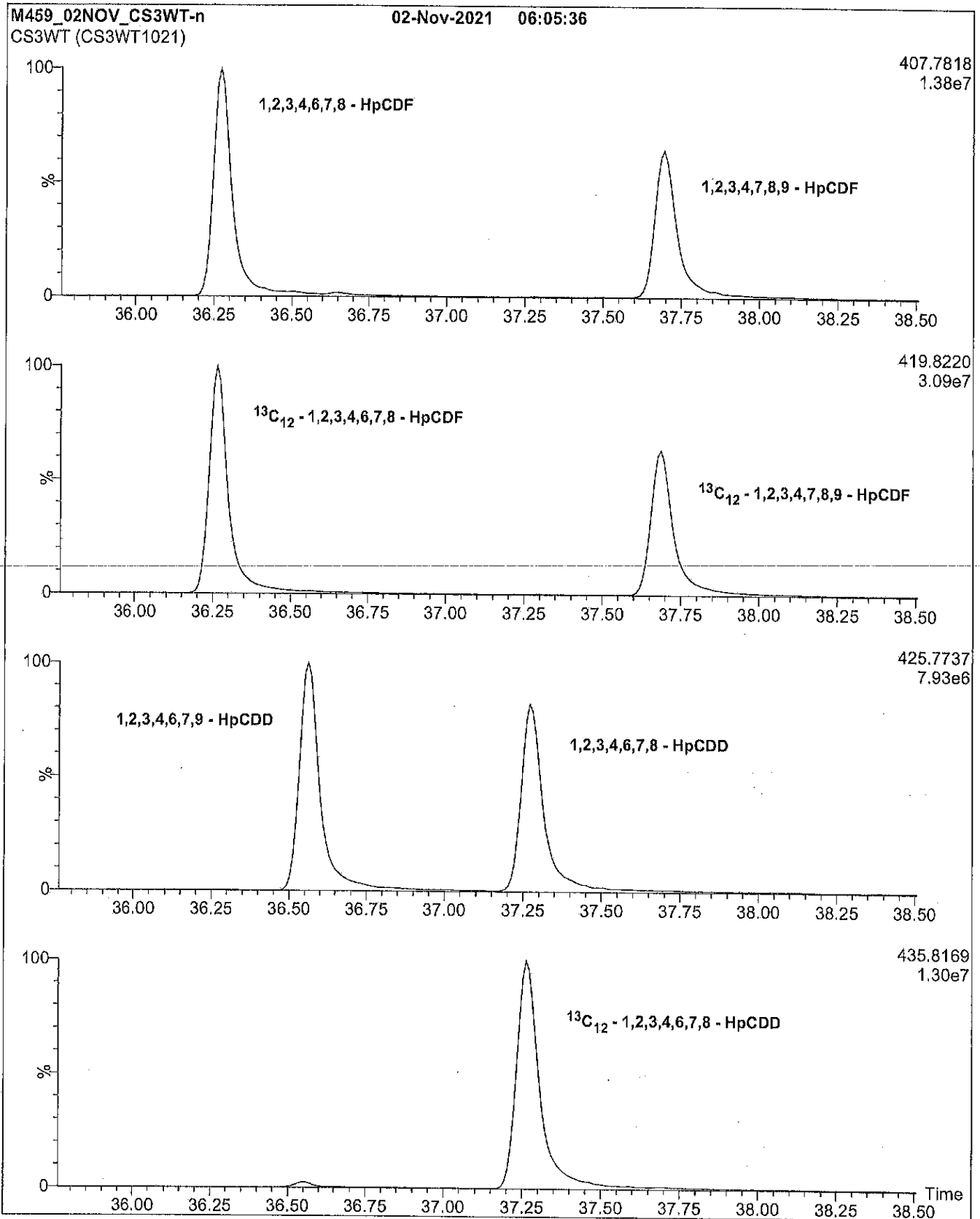
Figure 1: CS3WT; HRGC/HRMS Data (60 m DB-5 Column)



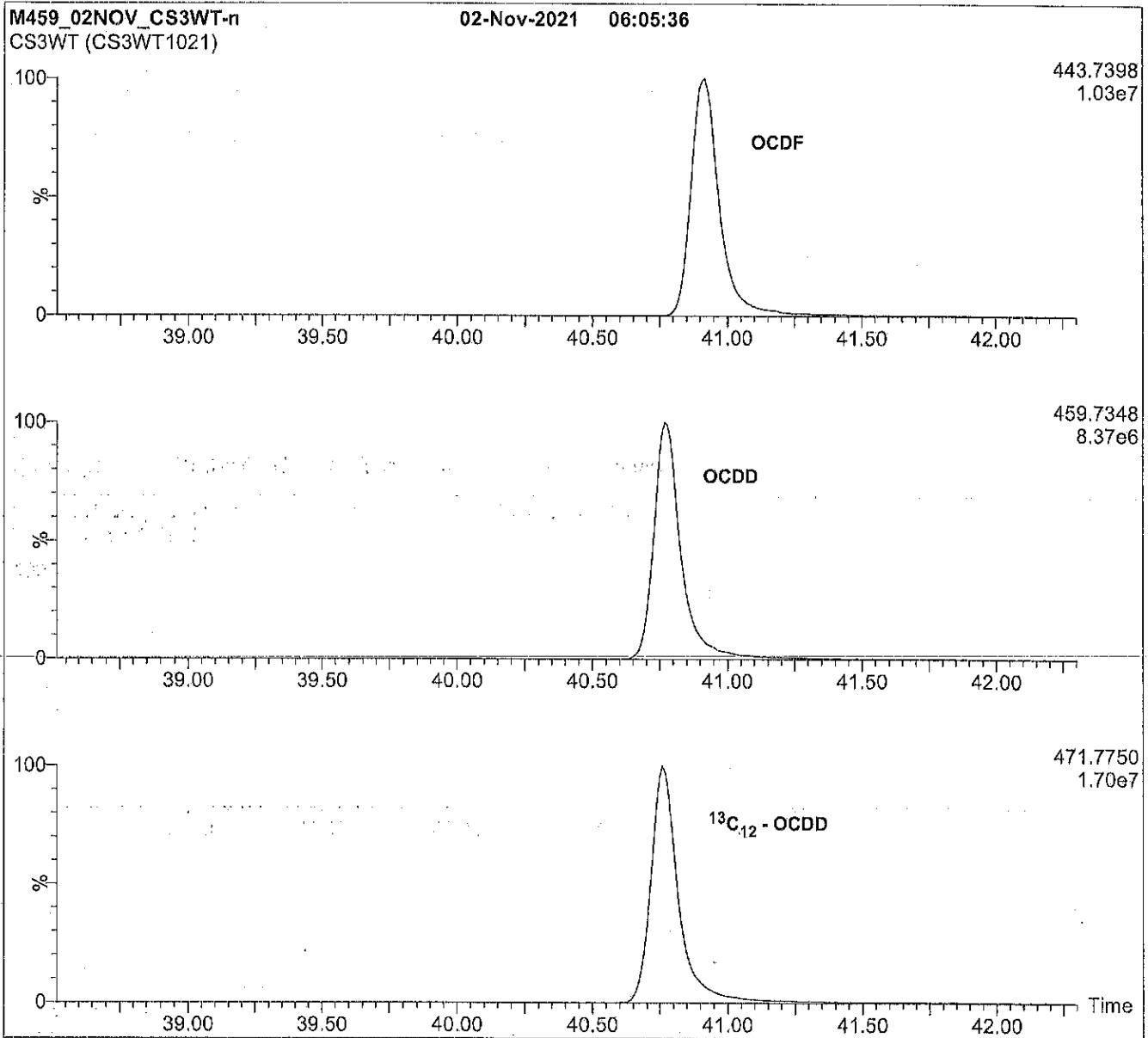
**Figure 1: CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1:** CS3WT; HRGC/HRMS Data (60 m DB-5 Column)



**Conditions for Figure 1:**

Agilent 6890N HRGC  
Autospec Ultima HRMS

**Chromatographic Conditions:**

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1.4 mL/min  
Injector: 280°C (Splitless Injection)

Ionization: EI+  
Detector: 280°C

SIR at 10,000 mass resolving power

Oven: 150°C (1 min)  
12°C/min to 200°C  
3°C/min to 235°C  
235°C (8 min)  
8°C/min to 310°C  
310°C (8 min)



**EPA-1613LCS**

**U.S. EPA Method 1613  
Labelled Compound Stock Solution**

**PRODUCT CODE:** EPA-1613LCS  
**LOT NUMBER:** 13LCS1021  
**SOLVENT(S):** Nonane/Toluene  
**DATE PREPARED:** (mm/dd/yyyy) 10/29/2021  
**LAST TESTED:** (mm/dd/yyyy) 10/31/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 10/31/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

K 9985  
JK Reed  
10/27/22

**DESCRIPTION:**

EPA-1613LCS is a solution/mixture of mass-labelled ( $^{13}\text{C}_{12}$ ) polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613LCS was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.

The individual  $^{13}\text{C}$ -labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of  $\geq 99\%$ .

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations  
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

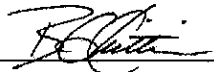


\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*



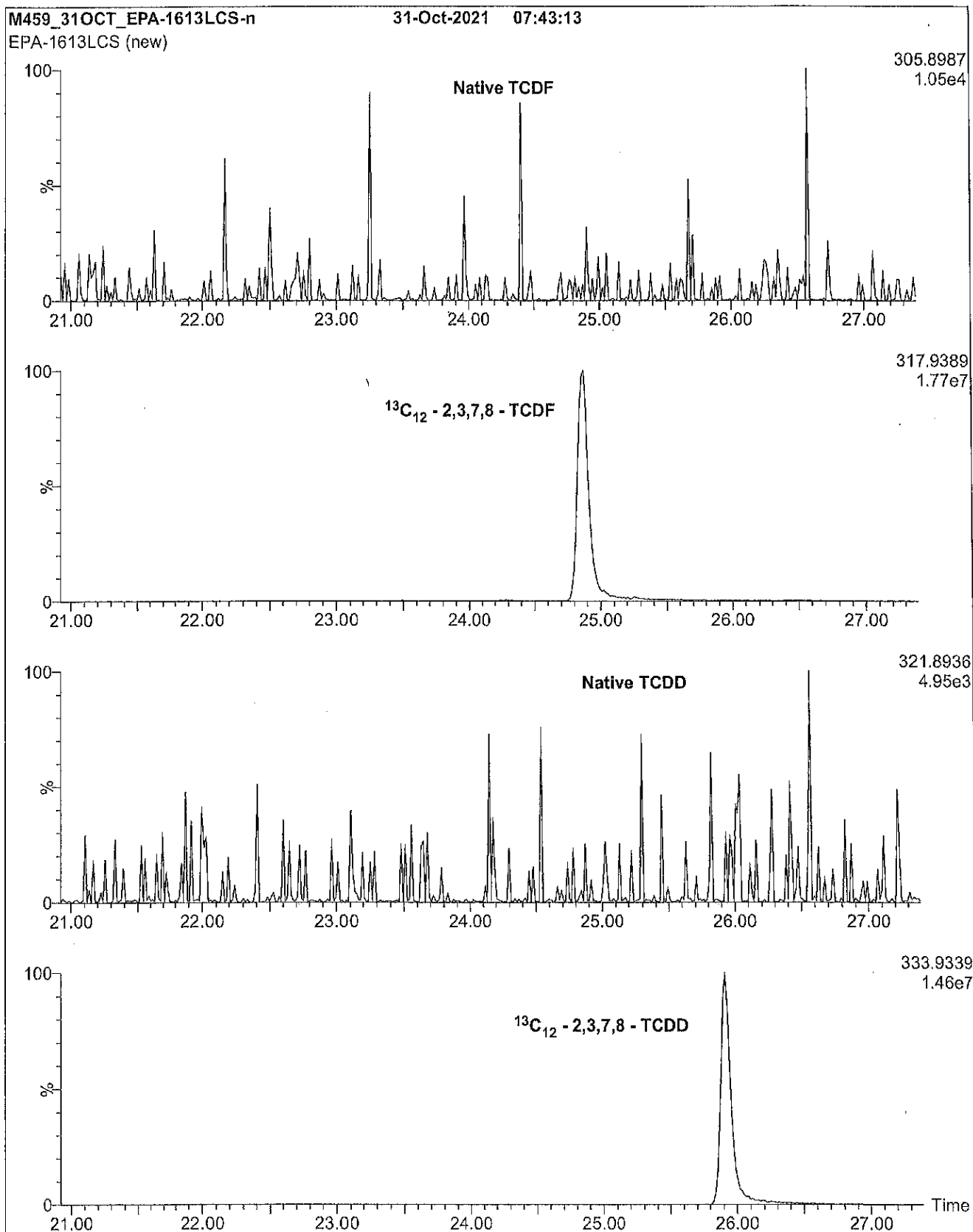
**Table A: EPA-1613LCS; Components and Concentrations (ng/mL, ± 5% in nonane/3.2% toluene)**

Compound	Acronym	CAS #	Concentration (ng/mL)
<b>Mass-Labelled PCDDs:</b>			
2,3,7,8-Tetrachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	76523-40-5	100
1,2,3,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	109719-79-1	100
1,2,3,4,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	109719-80-4	100
1,2,3,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	109719-81-5	100
1,2,3,4,6,7,8-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	109719-83-7	100
Octachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -OCDD	114423-97-1	200
<b>Mass-Labelled PCDFs:</b>			
2,3,7,8-Tetrachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	89059-46-1	100
1,2,3,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	109719-77-9	100
2,3,4,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	116843-02-8	100
1,2,3,4,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	114423-98-2	100
1,2,3,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	116843-03-9	100
1,2,3,7,8,9-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	116843-04-0	100
2,3,4,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	116843-05-1	100
1,2,3,4,6,7,8-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	109719-84-8	100
1,2,3,4,7,8,9-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	109719-94-0	100

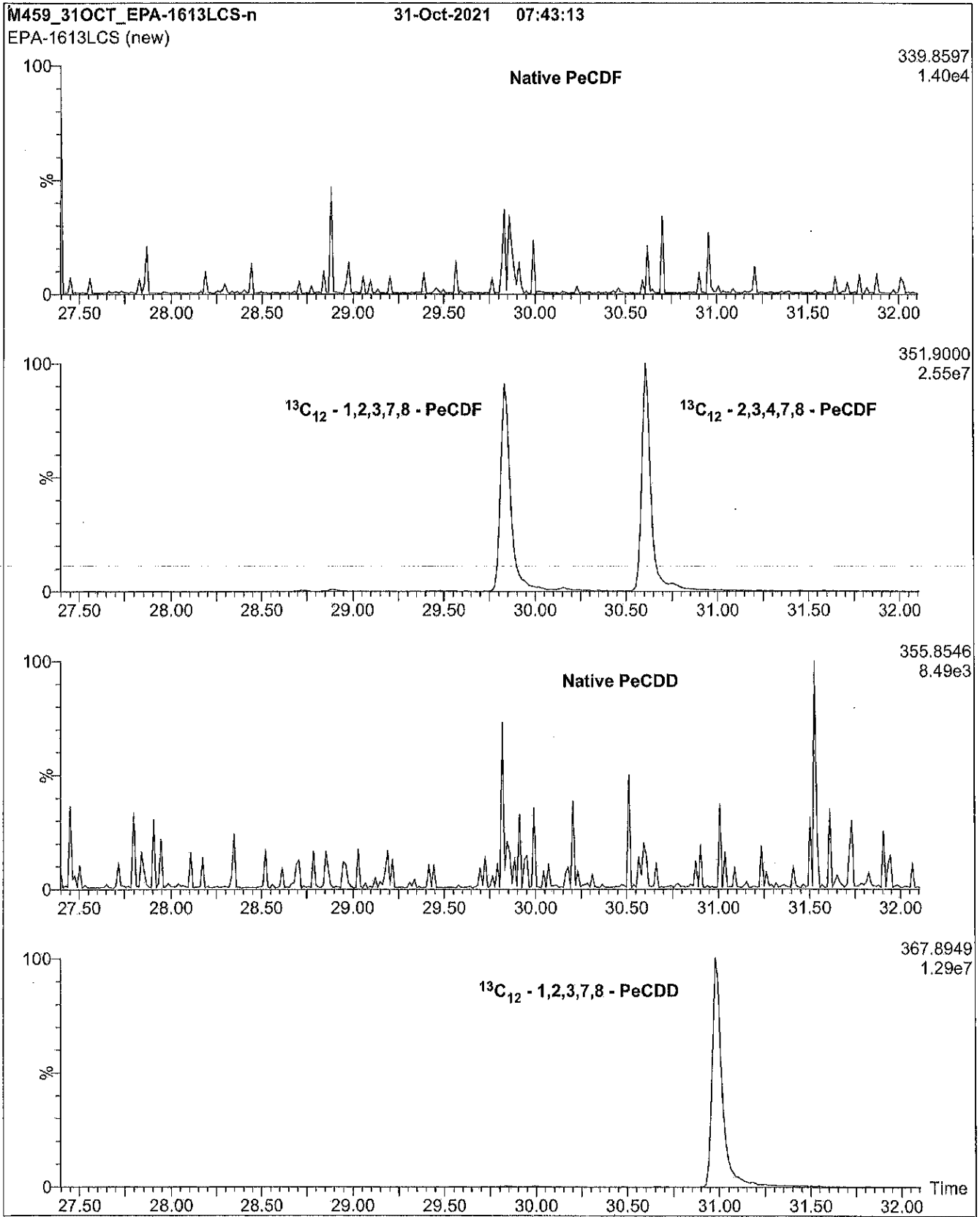
Certified By:   
 B.G. Chittim, General Manager

Date: 11/05/2021  
(mm/dd/yyyy)

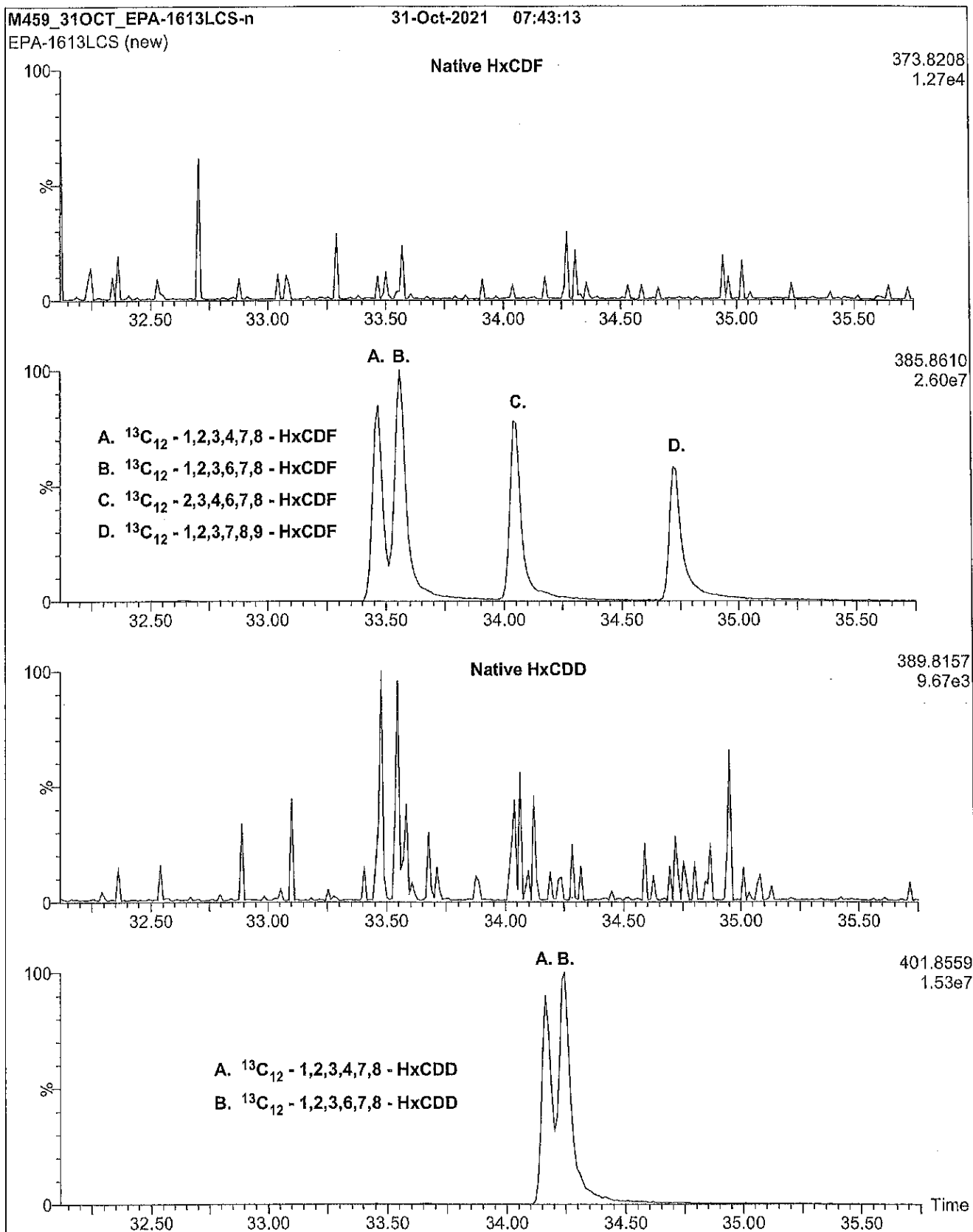
**Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**



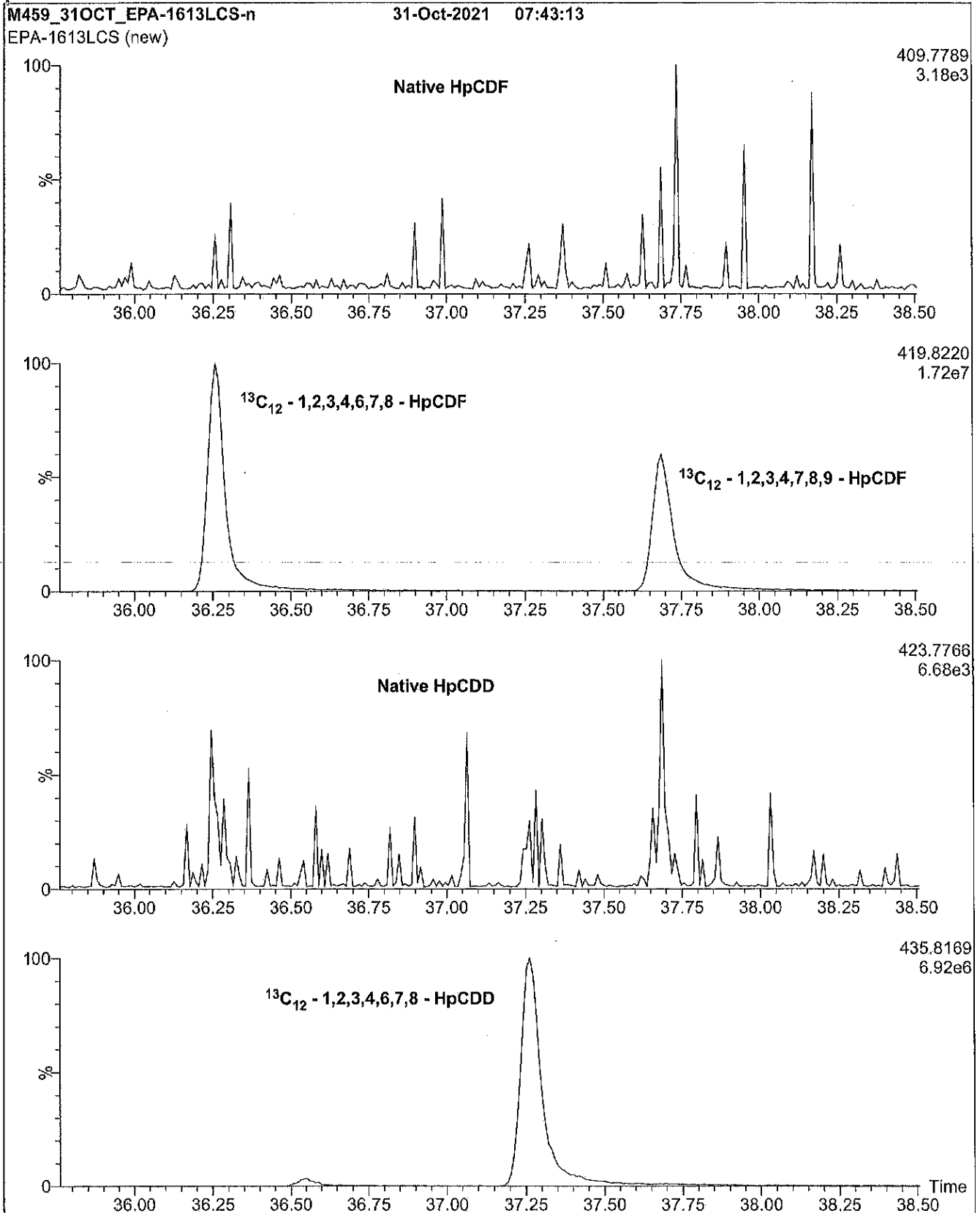
**Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**



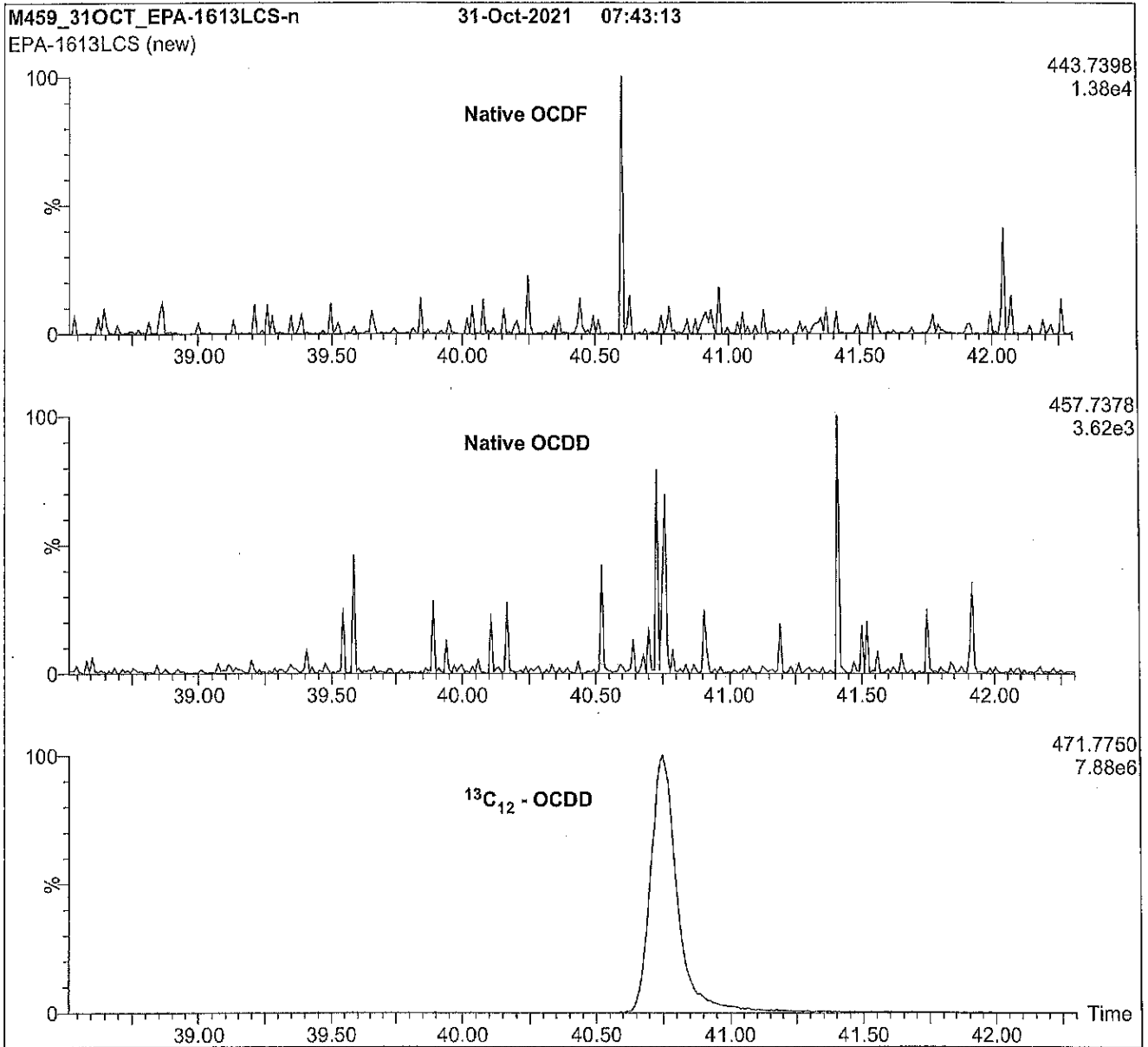
**Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**



**Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**



**Conditions for Figure 1:**

Agilent 6890N HRGC  
 Autospec Ultima HRMS

**Chromatographic Conditions:**

Column:	60 m DB-5 (0.25 mm id, 0.25 μm film thickness) Agilent J&W	
Flow:	Constant at 1.4 mL/min	Oven: 150°C (1 min)
Injector:	280°C (Splitless Injection)	12°C/min to 200°C
Ionization:	Ei+	3°C/min to 235°C
Detector:	280°C	235°C (8 min)
	SIR at 10,000 mass resolving power	8°C/min to 310°C
		310°C (8 min)



**EPA-1613CSS**

**U.S. EPA Method 1613 Cleanup Standard  
Spiking Solution**

**PRODUCT CODE:** EPA-1613CSS  
**LOT NUMBER:** 13CSS1021  
**SOLVENT(S):** Nonane  
**DATE PREPARED:** (mm/dd/yyyy) 10/29/2021  
**LAST TESTED:** (mm/dd/yyyy) 10/31/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 10/31/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

*K 9986  
Recd. JK  
10/27/22*

**DESCRIPTION:**

EPA-1613CSS contains 2,3,7,8-(<sup>37</sup>Cl<sub>4</sub>)tetrachlorodibenzo-*p*-dioxin at the concentration given in Table A.  
 EPA-1613CSS was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.  
 2,3,7,8-(<sup>37</sup>Cl<sub>4</sub>)Tetrachlorodibenzo-*p*-dioxin has a chemical purity of >98% and an isotopic (<sup>37</sup>Cl) purity of ≥95%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution  
 Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**Table A: EPA-1613CSS; Components and Concentrations (ng/mL, ± 5% in nonane)**

Compound	Acronym	CAS #	Concentration (ng/mL)
2,3,7,8-( <sup>37</sup> Cl <sub>4</sub> )Tetrachlorodibenzo- <i>p</i> -dioxin	<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	85508-50-5	40.0

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim, General Manager  
 Date: 11/05/2021  
(mm/dd/yyyy)

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

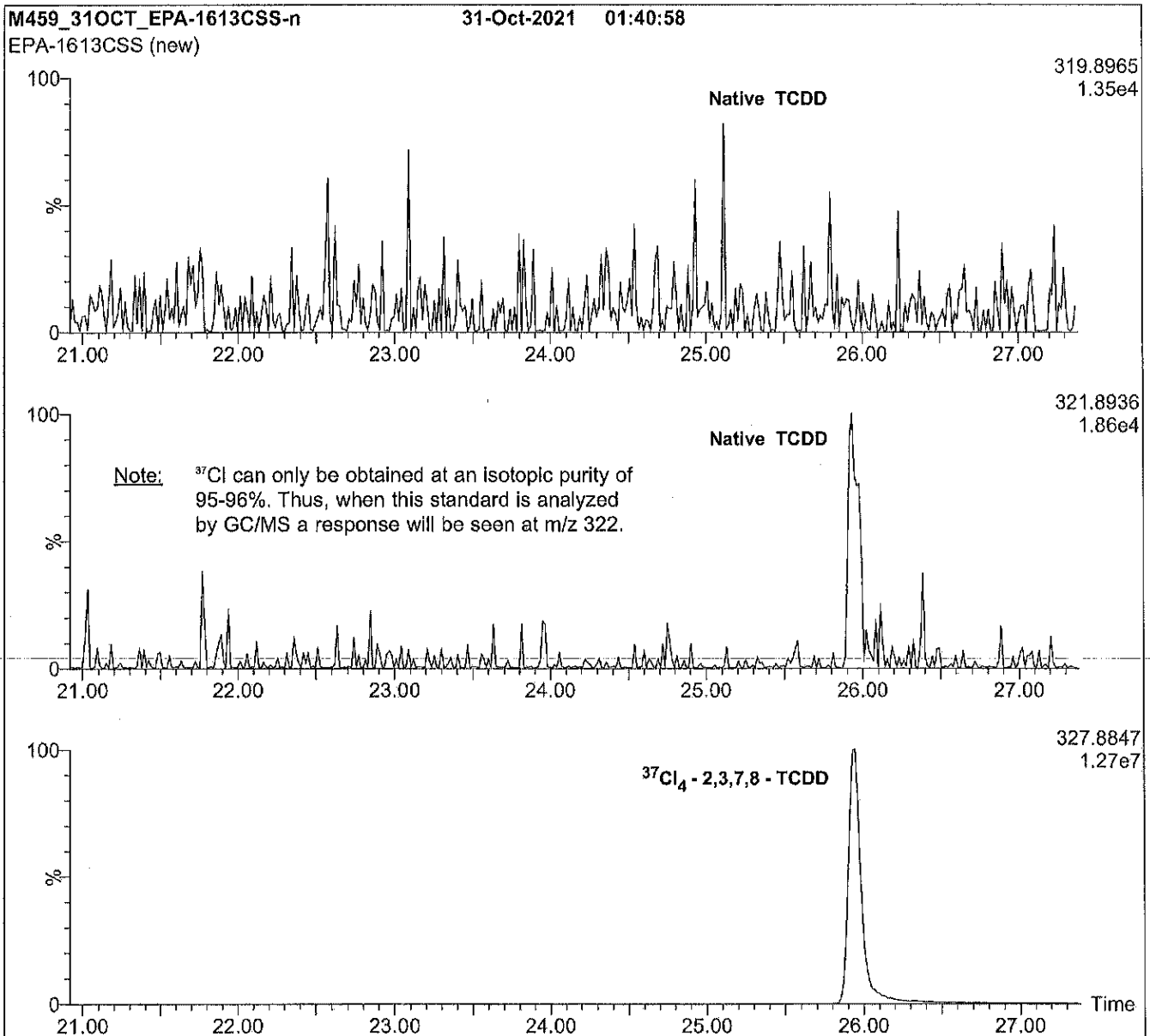
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*



**Figure 1: EPA-1613CSS; HRGC/HRMS Data (60 m DB-5 Column)**



**Conditions for Figure 1:**

Agilent 6890N HRGC  
Autospec Ultima HRMS

**Chromatographic Conditions:**

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W	
Flow:	Constant at 1.4 mL/min	Oven: 150°C (1 min)
Injector:	280°C (Splitless Injection)	12°C/min to 200°C
Ionization:	EI+	3°C/min to 235°C
Detector:	280°C	235°C (8 min)
	SIR at 10,000 mass resolving power	8°C/min to 310°C
		310°C (8 min)



**EPA-1613LCS**

**U.S. EPA Method 1613**  
**Labelled Compound Stock Solution**

**PRODUCT CODE:** EPA-1613LCS  
**LOT NUMBER:** 13LCS1021  
**SOLVENT(S):** Nonane/Toluene  
**DATE PREPARED:** (mm/dd/yyyy) 10/29/2021  
**LAST TESTED:** (mm/dd/yyyy) 10/31/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 10/31/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

L 1259

**DESCRIPTION:**

EPA-1613LCS is a solution/mixture of mass-labelled ( $^{13}\text{C}_{12}$ ) polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613LCS was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.

The individual  $^{13}\text{C}$ -labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of  $\geq 99\%$ .

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations  
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

### **HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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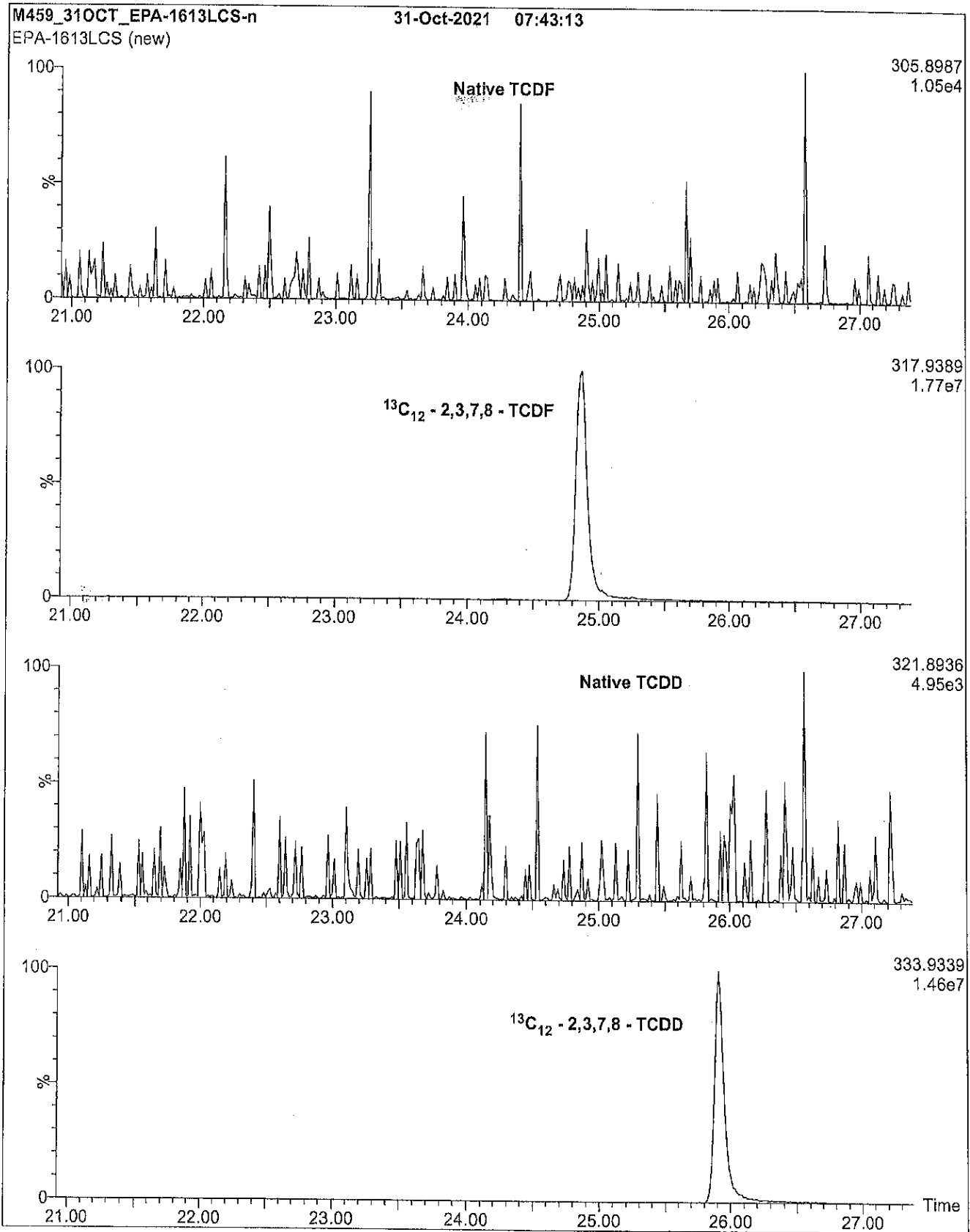
**Table A: EPA-1613LCS; Components and Concentrations (ng/mL, ± 5% in nonane/3.2% toluene)**

Compound	Acronym	CAS #	Concentration (ng/mL)
<b>Mass-Labelled PCDDs:</b>			
2,3,7,8-Tetrachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	76523-40-5	100
1,2,3,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	109719-79-1	100
1,2,3,4,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	109719-80-4	100
1,2,3,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	109719-81-5	100
1,2,3,4,6,7,8-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	109719-83-7	100
Octachloro( <sup>13</sup> C <sub>12</sub> )dibenzo- <i>p</i> -dioxin	<sup>13</sup> C <sub>12</sub> -OCDD	114423-97-1	200
<b>Mass-Labelled PCDFs:</b>			
2,3,7,8-Tetrachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	89059-46-1	100
1,2,3,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	109719-77-9	100
2,3,4,7,8-Pentachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	116843-02-8	100
1,2,3,4,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	114423-98-2	100
1,2,3,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	116843-03-9	100
1,2,3,7,8,9-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	116843-04-0	100
2,3,4,6,7,8-Hexachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	116843-05-1	100
1,2,3,4,6,7,8-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	109719-84-8	100
1,2,3,4,7,8,9-Heptachloro( <sup>13</sup> C <sub>12</sub> )dibenzofuran	<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	109719-94-0	100

Certified By:   
 B.G. Chittim, General Manager

Date: 11/05/2021  
(mm/dd/yyyy)

Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)



**Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

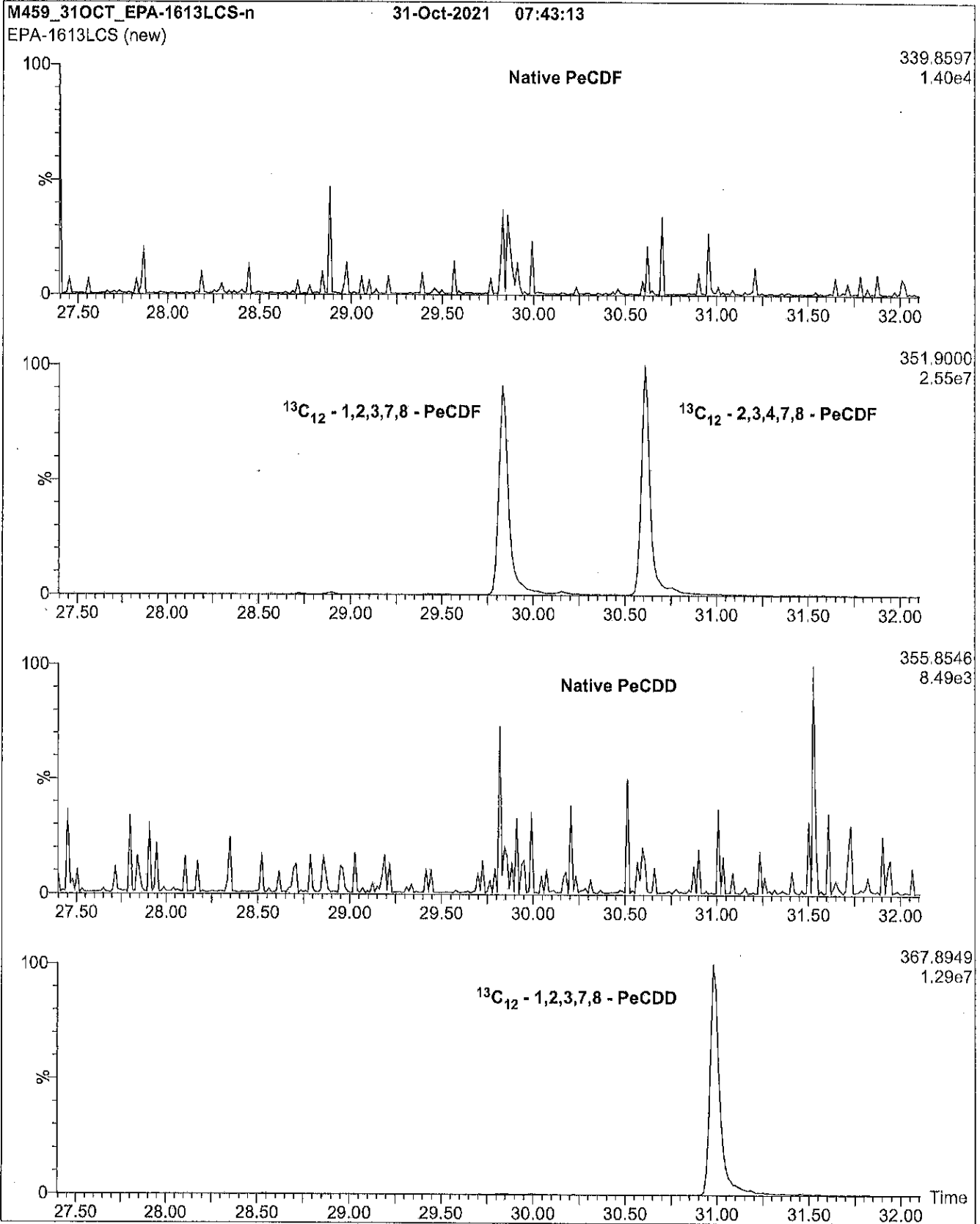


Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)

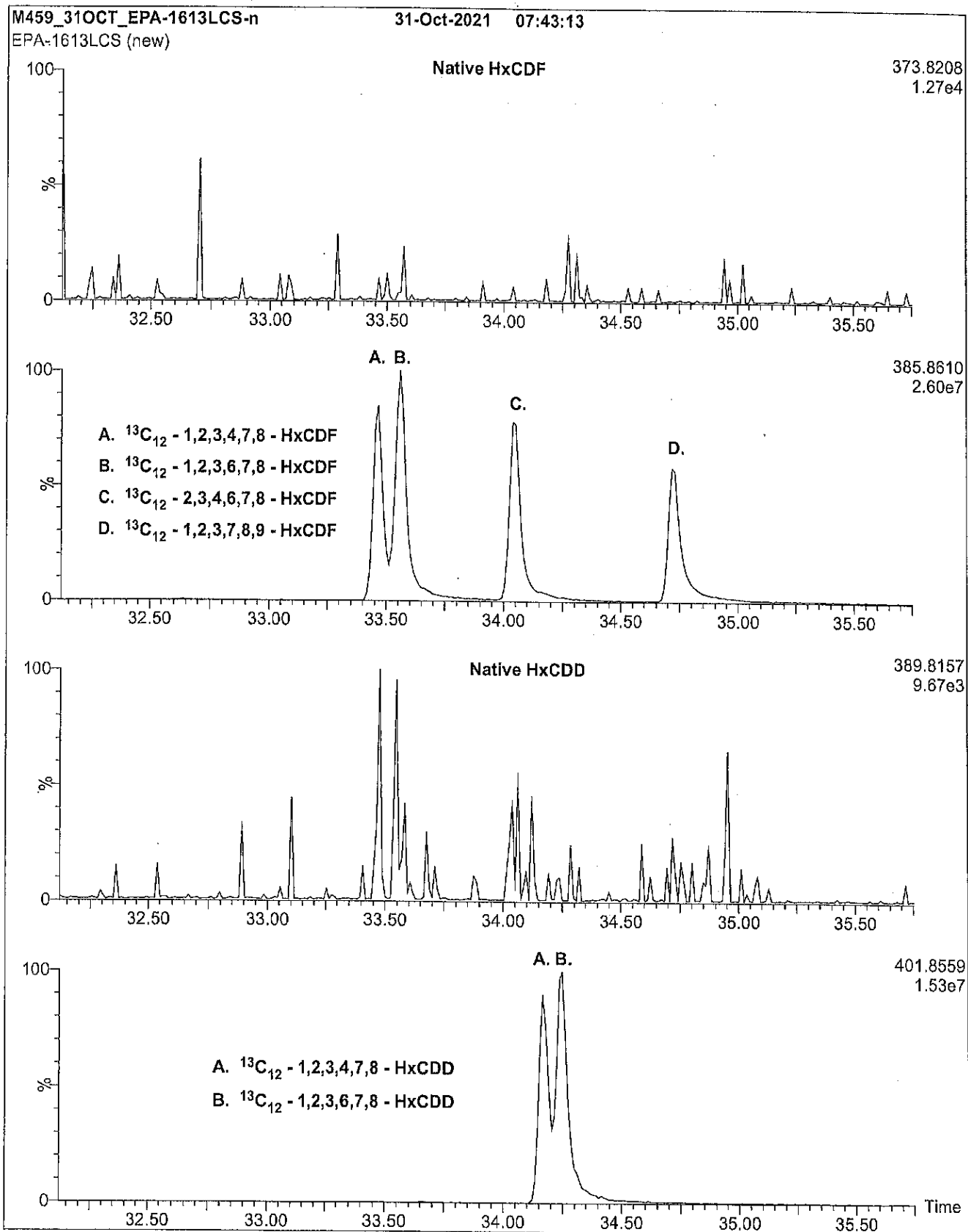
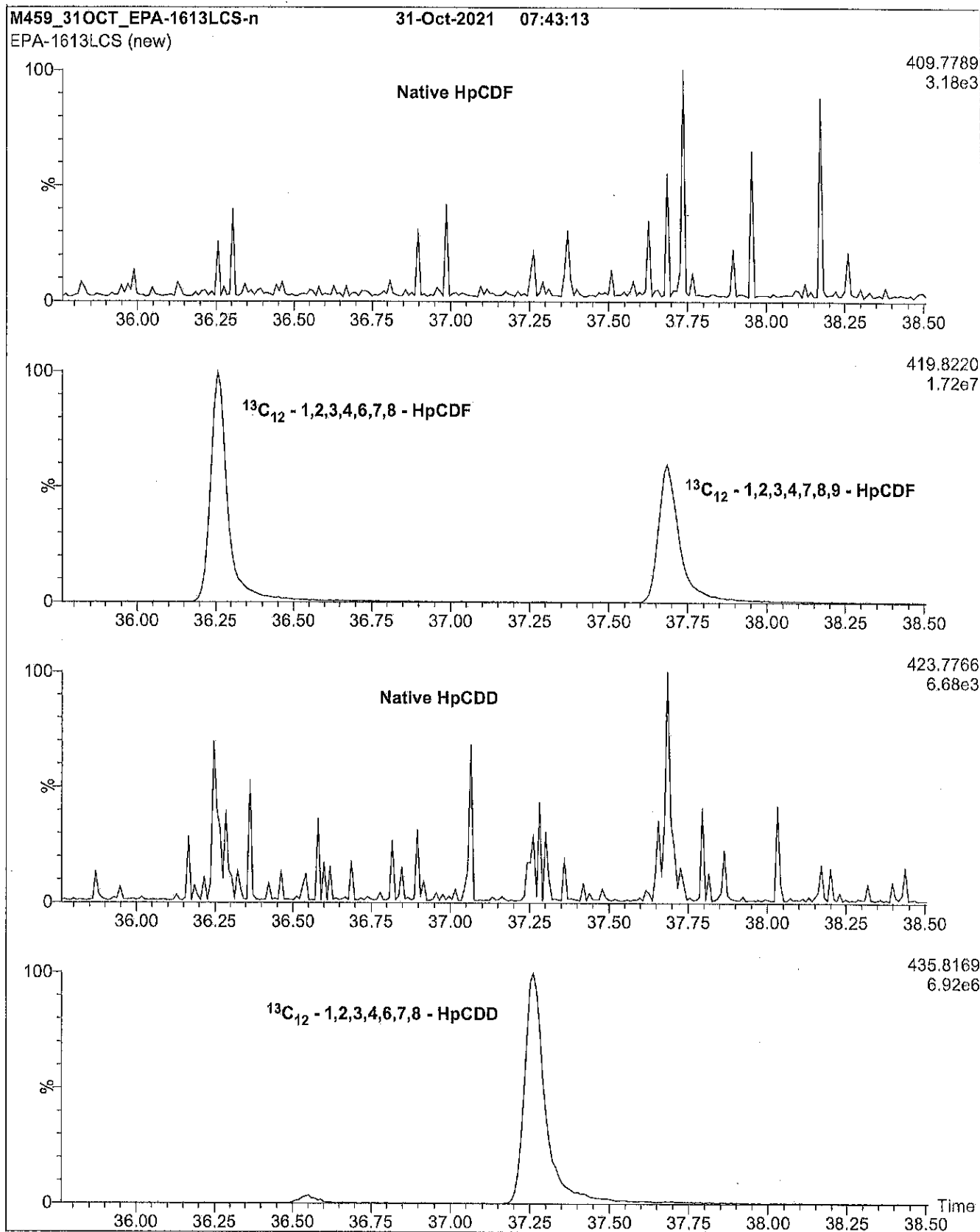
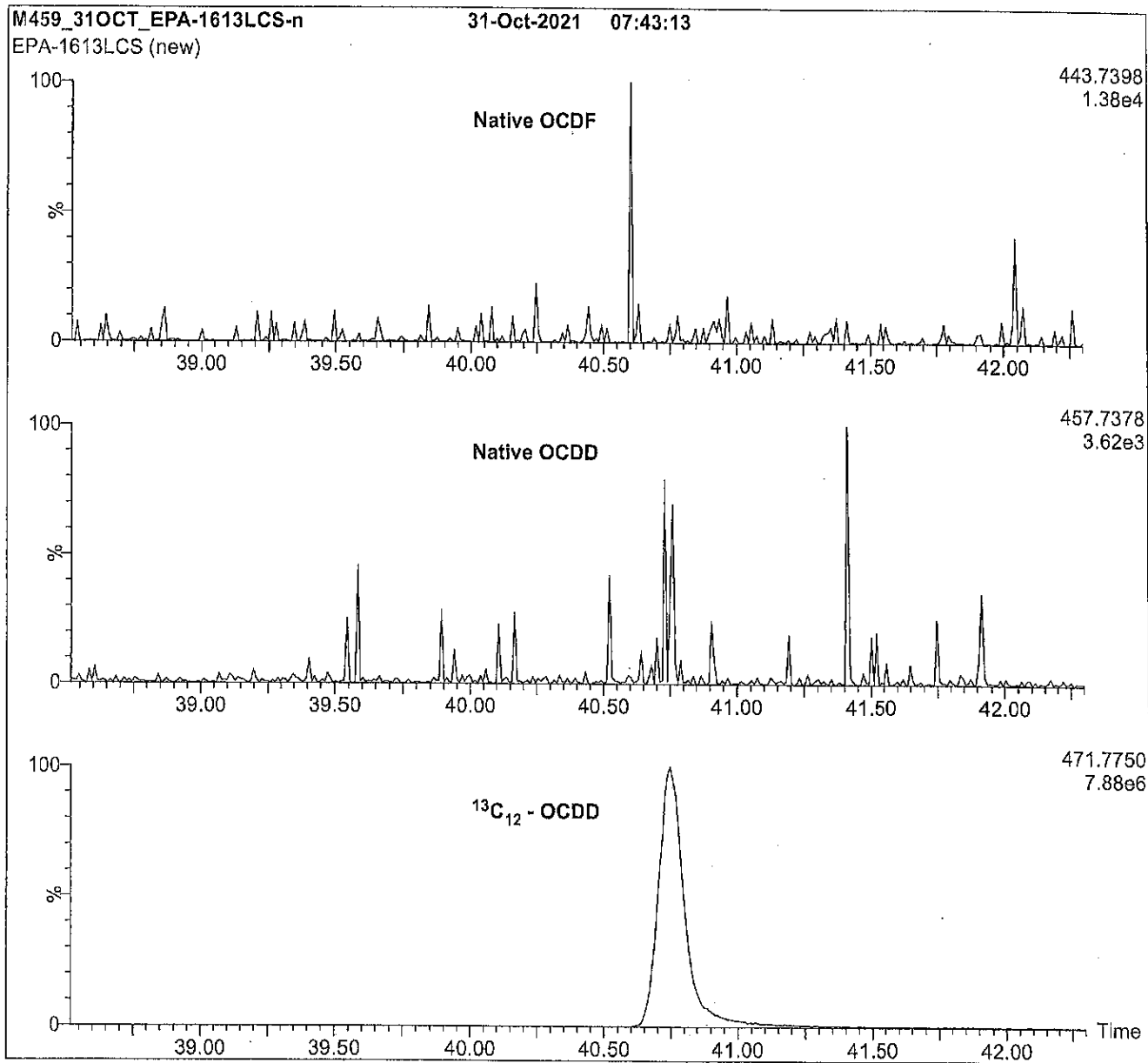


Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)





**Figure 1: EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**



**Conditions for Figure 1:**

Agilent 6890N HRGC  
Autospec Ultima HRMS

**Chromatographic Conditions:**

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1.4 mL/min	Oven:	150°C (1 min)
Injector:	280°C (Splitless Injection)		12°C/min to 200°C
Ionization:	El+		3°C/min to 235°C
Detector:	280°C		235°C (8 min)
	SIR at 10,000 mass resolving power		8°C/min to 310°C
			310°C (8 min)

Recipient Copy

CHAIN-OF-CUSTODY RECORD

COC No. 15600

Order Number: CB015015

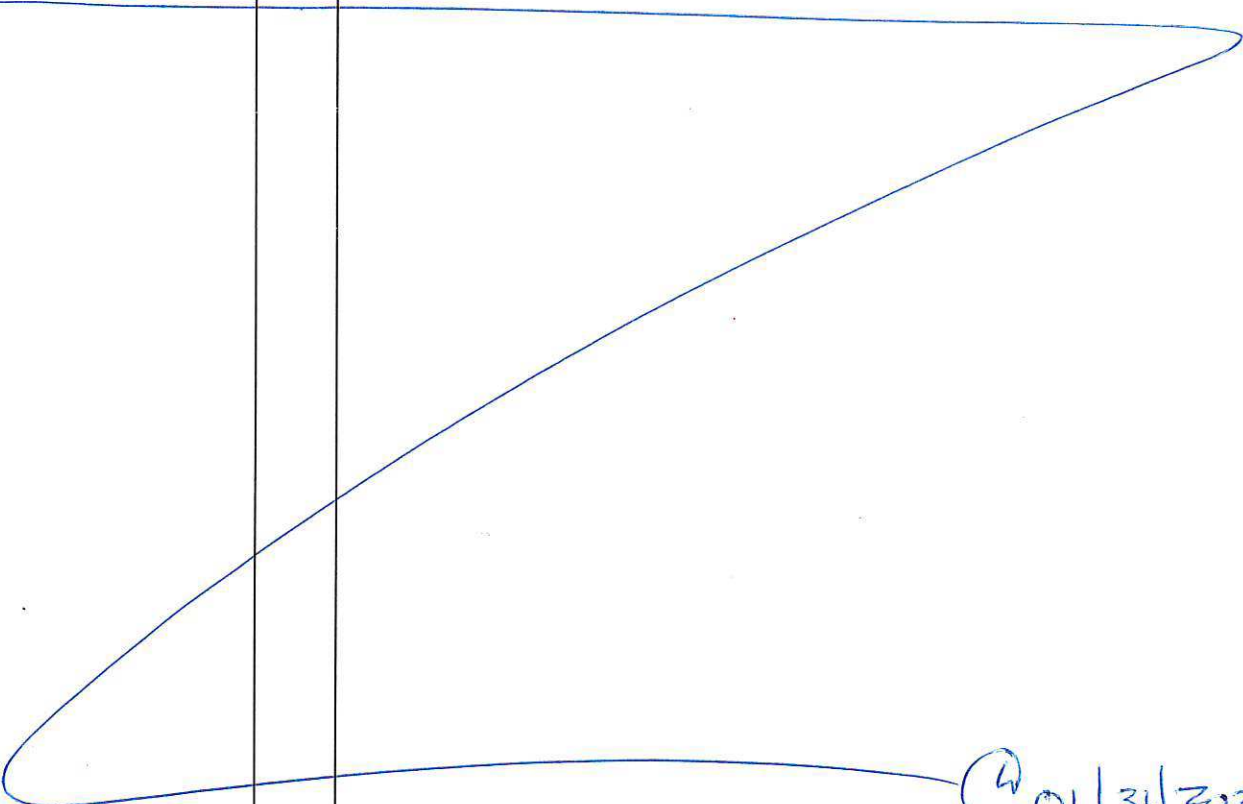
Date Shipped: 1/31/2023

AirBill No(s):

From: QATS LABORATORY  
2700 CHANDLER AVENUE, BLDG. B  
LAS VEGAS, NV 89120  
PHONE: 1-702-895-8712


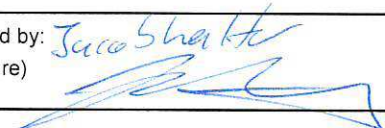
To: SUE DUNNIHOO  
ANALYTICAL RESOURCES INC.  
4611 S. 134TH PLACE SUITE 100  
TUKWILA WA 98168  
250-695-6207

633163298570

Sample ID	Qty	Description/Remarks	→ Catalogue Number
PSRM0172 - L&A1273	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0173 - L&A1274	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0174 - <del>L&amp;A1274</del> <sup>SS-1</sup> <del>SS-1</del> <sup>SS-1</sup> L&A1275	1	PUGET SOUND SEDIMENT RM	PS-SRM
			
PUGET SOUND SRM FOR THE DUWAMISH AOC5 PROJECT			

④ 01/31/2023

Please use the enclosed Sample Preparation Instructions. If catalogue number(s) are listed at the top of the Sample Preparation Instructions use the Sample Preparation Instructions with catalogue number(s) matching the catalogue number(s) of each of the samples listed above.

Relinquished by: (Signature) 	Date/Time (1400) 01/31/2023	Received by: 	Date/Time 02/06/23 1415
Custody Seal(s): <u>Present</u> /Absent	Remarks:		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time



Analytical Standard Record  
Standard ID: L002084

Printed: 3/2/2023 8:59:18AM

Description:	Dioxin ISC Mix	Expires:	24-Feb-2024
Standard Type:	Other	Prepared:	24-Feb-2023
Solvent:	Nonane	Prepared By:	Peter Kepler
Final Volume (mls):	1	Department:	HRGCMS
Vials:	1	Last Edit:	24-Feb-2023 11:19 by PK
Vendor:	NA	Lot #:	1234
Vendor Catalog #:			

**Comments**

Stock: H9902: 2378-TCDF, 3467-TCDF, 2348-TCDF, 1278-TCDD, 2378-TCDD. each @ 1000 ng/mL

10 ul to 1 mL FV in Nonane. Final Conc = 10 ng/mL. Analytes and units not available in Element.

Analyte	CAS Number	Concentration	Units
2,3,7,8-TCDF	51207-31-9	10	ug/mL
2,3,7,8-TCDD	1746-01-6	10	ug/mL



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471B**  
Total Metals

LDW23-SS1818
--------------

Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-01 A      SDG: 23D0063  
 Sampled: 04/04/23 10:02      Prepared: 04/24/23 16:45      File ID: SMM 04-25-23-071  
 % Solids: 38.85      Preparation: SMM EPA 7471B      Analyzed: 04/25/23 14:27  
 Batch: BLD0580      Sequence: SLD0354      Initial/Final: 0.28 g Wet / 50 mL  
 Instrument: HYDRA      Calibration: GD00060

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.186	1	0.00965	0.0460	



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471B**  
Total Metals

<b>LDW23-SS1819</b>
---------------------

Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-03 A      SDG: 23D0063  
 Sampled: 04/04/23 12:52      Prepared: 04/24/23 16:45      File ID: SMM 04-25-23-072  
 % Solids: 34.62      Preparation: SMM EPA 7471B      Analyzed: 04/25/23 14:29  
 Batch: BLD0580      Sequence: SLD0354      Initial/Final: 0.2 g Wet / 50 mL  
 Instrument: HYDRA      Calibration: GD00060

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.185	1	0.0152	0.0722	



**PREPARATION BATCH SUMMARY**  
**EPA 7471B**

Laboratory: Analytical Resources, LLC SDG: 23D0063  
Client: Anchor QEA, LLC Project: AOC5 MR Phase 1  
Batch: BLD0580 Batch Matrix: Solid Preparation: SMM EPA 7471B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01	SMM 04-25-23-071	04/24/23 16:45	Store frozen; FROZEN VOLUME USED
LDW23-SS1819	23D0063-03	SMM 04-25-23-072	04/24/23 16:45	Store frozen; FROZEN VOLUME USED
Blank	BLD0580-BLK1	SMM 04-25-23-045	04/24/23 16:45	
LCS	BLD0580-BS1	SMM 04-25-23-046	04/24/23 16:45	



# Mercury Digestion Log

Prep Code: SMM Balance ID: BAL10 Matrix: SOI  
 Analyst: VR Block ID: 9 Date: 04/24/23  
 Bath Temp: 98 Start Time: 1543 End Time: 1645

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) Volume (mL)	Final Volume (mL)	# KMnO <sub>4</sub> Aliquots	CLP	Comments
23A328-08	D		0.269	50			
23A467-01	A		0.229				
↓ -02			0.261				
↓ -03			0.256				
↓ -04			0.263				
↓ -05			0.260				
↓ -06			0.249				
↓ -07			0.278				
↓ -08			0.258				
↓ -09	↓		0.262				
23C108-02	D		0.240				
↓ -06			0.270				
↓ -07			0.252				
↓ -08			0.284				
↓ -09			0.275				
23D27-01			0.274				
↓ -03	↓		0.264				
23D63-01	A		0.280				
↓ -03	↓		0.200				
BLD500-bk	—		—				23A467-01
↓ -15	—		—				↓
↓ -dup	—		0.228				
↓ -M3	—		0.228				
↓ -MSD	—		0.230	↓	↓		↓
—	—		—	—	—		—

Chemical/Reagent ID:

HNO<sub>3</sub>: L2618 H<sub>2</sub>SO<sub>4</sub>: L923 HCl: —  
 5% K<sub>2</sub>S<sub>2</sub>O<sub>8</sub>: L3350 5% KMnO<sub>4</sub>: K11727 Digest Tube Lot: 2210117





# Mercury Digestion Log

Prep Code: SUM Balance ID: BAL10 Matrix: SDI  
 Analyst: AR Block ID: 9 Date: 04/24/23  
 Bath Temp: 90 Start Time: 1543 End Time: 1645

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) Volume (mL)	Final Volume (mL)	# KMnO <sub>4</sub> Aliquots	CLP	Comments
23A328-08	D		0.267	50			
23A467-01	A		0.229				
↓ -02			0.261				
↓ -03			0.236				
↓ -04			0.263				
↓ -05			0.260				
↓ -06			0.249				
↓ -07			0.278				
↓ -08			0.258				
↓ -09	↓		0.262				
23C108-02	D		0.240				
↓ -06			0.270				
↓ -07			0.252				
↓ -08			0.284				
↓ -09			0.275				
23D27-01			0.274				
↓ -03	↓		0.264				
23D63-01	A		0.280				
↓ -03	↓		0.200				
BLS80-blk	—		—				23A467-01
↓ -B5	—		—				↓
↓ -dnd	—		0.228				
↓ -M3	—		0.228				
↓ -MSD	—		0.230	↓	↓		↓
—	—	—	—	—	—	—	—

Chemical/Reagent ID:

HNO<sub>3</sub>: L2678 H<sub>2</sub>SO<sub>4</sub>: L923 HCl: —  
 5% K<sub>2</sub>S<sub>2</sub>O<sub>8</sub>: L3350 5% KMnO<sub>4</sub>: K11727 Digest Tube Lot: 2210117





**Form I**  
**METHOD BLANK DATA SHEET**  
**EPA 7471B**  
Total Metals

<b>Blank</b>
--------------

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Batch: BLD0580

Laboratory ID: BLD0580-BLK1

Prepared: 04/24/23 16:45

Matrix: Solid

Preparation: SMM EPA 7471B

Analyzed: 04/25/23 13:26

Sequence: SLD0354

Calibration: GD00060

Instrument: HYDRA

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	ND	1	0.00525	0.0250	U



**LCS / LCS DUPLICATE RECOVERY**

**EPA 7471B**

Total Metals

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Analyzed:	<u>04/25/23 13:29</u>
Batch:	<u>BLD0580</u>	Laboratory ID:	<u>BLD0580-BS1</u>
Preparation:	<u>SMM EPA 7471B</u>	Sequence Name:	<u>LCS</u>
Initial/Final:	<u>0.2 g / 50 mL</u>		

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Mercury	0.500	0.460		92.0	80 - 120

\* Indicates values outside of QC limits



### INITIAL CALIBRATION DATA

#### EPA 7471B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GD00060

Instrument: HYDRA

Calibration Date: 04/25/2023 14:43

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Mercury	0	0	0.0001	6660000	0.0005	6334000	0.001	6288000	0.002	6022000	0.005	5852600



Sample ID	Mean	Units	Date	Method
SEQ-CAL1	37	PPB	25 Apr 2023 11:13:41	ARI 5 ppb (NO 0.05)
SEQ-CAL2	666	PPB	25 Apr 2023 11:16:02	ARI 5 ppb (NO 0.05)
SEQ-CAL3	3167	PPB	25 Apr 2023 11:18:23	ARI 5 ppb (NO 0.05)
SEQ-CAL4	6288	PPB	25 Apr 2023 11:20:44	ARI 5 ppb (NO 0.05)
SEQ-CAL5	12044	PPB	25 Apr 2023 11:23:05	ARI 5 ppb (NO 0.05)
SEQ-CAL6	29263	PPB	25 Apr 2023 11:25:24	ARI 5 ppb (NO 0.05)
SEQ-ICV	108.5% 4.3381	PPB ✓	25 Apr 2023 11:30:52	ARI 5 ppb (NO 0.05)
SEQ-ICB	-0.0393	PPB ✓	25 Apr 2023 11:33:10	ARI 5 ppb (NO 0.05)
SEQ-CRL	73.3% 0.0733	PPB ✓	25 Apr 2023 11:35:31	ARI 5 ppb (NO 0.05)
SEQ-CCV	109.0% 4.3617	PPB ✓	25 Apr 2023 11:37:53	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0385	PPB ✓	25 Apr 2023 11:40:12	ARI 5 ppb (NO 0.05)
BLD0505-BLK1	-0.0328	PPB	25 Apr 2023 11:42:33	ARI 5 ppb (NO 0.05)
BLD0505-BS1	1.8258	PPB ✓	25 Apr 2023 11:44:52	ARI 5 ppb (NO 0.05)
SEQ-CCV	106.8% 4.2726	PPB ✓	25 Apr 2023 11:47:11	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0384	PPB ✓	25 Apr 2023 11:49:30	ARI 5 ppb (NO 0.05)
SEQ-CCV	105.7% 4.2263	PPB ✓	25 Apr 2023 12:19:10	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0373	PPB ✓	25 Apr 2023 12:21:29	ARI 5 ppb (NO 0.05)
23A0455-01	0.4884	PPB	25 Apr 2023 12:23:50	ARI 5 ppb (NO 0.05)
BLD0505-DUP1	0.4335	PPB	25 Apr 2023 12:26:08	ARI 5 ppb (NO 0.05)
BLD0505-MS1	1.4211	PPB ✓	25 Apr 2023 12:28:28	ARI 5 ppb (NO 0.05)
BLD0505-MSD1	1.6078	PPB ✓	25 Apr 2023 12:30:46	ARI 5 ppb (NO 0.05)
23A0455-02	0.4293	PPB	25 Apr 2023 12:33:06	ARI 5 ppb (NO 0.05)
23A0455-03	0.5362	PPB	25 Apr 2023 12:35:24	ARI 5 ppb (NO 0.05)
23A0455-04	0.4379	PPB	25 Apr 2023 12:37:44	ARI 5 ppb (NO 0.05)
23A0455-05	0.0080	PPB	25 Apr 2023 12:40:03	ARI 5 ppb (NO 0.05)
23A0455-06	0.6722	PPB	25 Apr 2023 12:42:23	ARI 5 ppb (NO 0.05)
23A0455-07	0.4136	PPB	25 Apr 2023 12:44:43	ARI 5 ppb (NO 0.05)
SEQ-CCV	105.8% 4.2308	PPB ✓	25 Apr 2023 12:47:04	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0370	PPB ✓	25 Apr 2023 12:49:22	ARI 5 ppb (NO 0.05)
23A0455-08	0.3391	PPB	25 Apr 2023 12:51:43	ARI 5 ppb (NO 0.05)
23A0455-09	0.3223	PPB	25 Apr 2023 12:54:04	ARI 5 ppb (NO 0.05)
23A0455-10	0.5955	PPB	25 Apr 2023 12:56:25	ARI 5 ppb (NO 0.05)
23A0455-11	0.3914	PPB	25 Apr 2023 12:58:44	ARI 5 ppb (NO 0.05)
23A0455-12	0.4066	PPB	25 Apr 2023 13:01:03	ARI 5 ppb (NO 0.05)
23A0455-13	0.4000	PPB	25 Apr 2023 13:03:22	ARI 5 ppb (NO 0.05)
23A0455-14	0.3413	PPB	25 Apr 2023 13:05:41	ARI 5 ppb (NO 0.05)
23A0455-15	0.1962	PPB	25 Apr 2023 13:08:00	ARI 5 ppb (NO 0.05)
23A0455-16	0.4328	PPB	25 Apr 2023 13:10:19	ARI 5 ppb (NO 0.05)
23A0455-17	0.3597	PPB	25 Apr 2023 13:12:38	ARI 5 ppb (NO 0.05)
SEQ-CCV	103.7% 4.1499	PPB ✓	25 Apr 2023 13:14:59	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0371	PPB ✓	25 Apr 2023 13:17:17	ARI 5 ppb (NO 0.05)
23A0455-18	0.0536	PPB	25 Apr 2023 13:19:38	ARI 5 ppb (NO 0.05)
23D0008-01	0.3094	PPB	25 Apr 2023 13:21:59	ARI 5 ppb (NO 0.05)
23D0008-03	0.4447	PPB	25 Apr 2023 13:24:19	ARI 5 ppb (NO 0.05)
BLD0580-BLK1	-0.0315	PPB	25 Apr 2023 13:26:40	ARI 5 ppb (NO 0.05)
BLD0580-BS1	1.8403	PPB ✓	25 Apr 2023 13:29:01	ARI 5 ppb (NO 0.05)
23A0467-01	0.4074	PPB	25 Apr 2023 13:31:20	ARI 5 ppb (NO 0.05)
BLD0580-DUP1	0.4022	PPB	25 Apr 2023 13:33:39	ARI 5 ppb (NO 0.05)
BLD0580-MS1	1.5094	PPB ✓	25 Apr 2023 13:35:59	ARI 5 ppb (NO 0.05)
BLD0580-MSD1	1.6054	PPB ✓	25 Apr 2023 13:38:19	ARI 5 ppb (NO 0.05)
23A0328-08	0.4022	PPB	25 Apr 2023 13:40:39	ARI 5 ppb (NO 0.05)
SEQ-CCV	101.8% 4.0729	PPB ✓	25 Apr 2023 13:42:58	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0373	PPB ✓	25 Apr 2023 13:45:16	ARI 5 ppb (NO 0.05)
23A0467-02	0.5447	PPB	25 Apr 2023 13:47:38	ARI 5 ppb (NO 0.05)
23A0467-03	0.5788	PPB	25 Apr 2023 13:49:58	ARI 5 ppb (NO 0.05)
23A0467-04	0.4825	PPB	25 Apr 2023 13:52:17	ARI 5 ppb (NO 0.05)
23A0467-05	0.6829	PPB	25 Apr 2023 13:54:37	ARI 5 ppb (NO 0.05)
23A0467-06	0.3974	PPB	25 Apr 2023 13:56:58	ARI 5 ppb (NO 0.05)
23A0467-07	0.3710	PPB	25 Apr 2023 13:59:19	ARI 5 ppb (NO 0.05)
23A0467-08	0.6868	PPB	25 Apr 2023 14:01:40	ARI 5 ppb (NO 0.05)

# SMM 04-25-23

Method: ARI 5 ppb (NO 0.05)

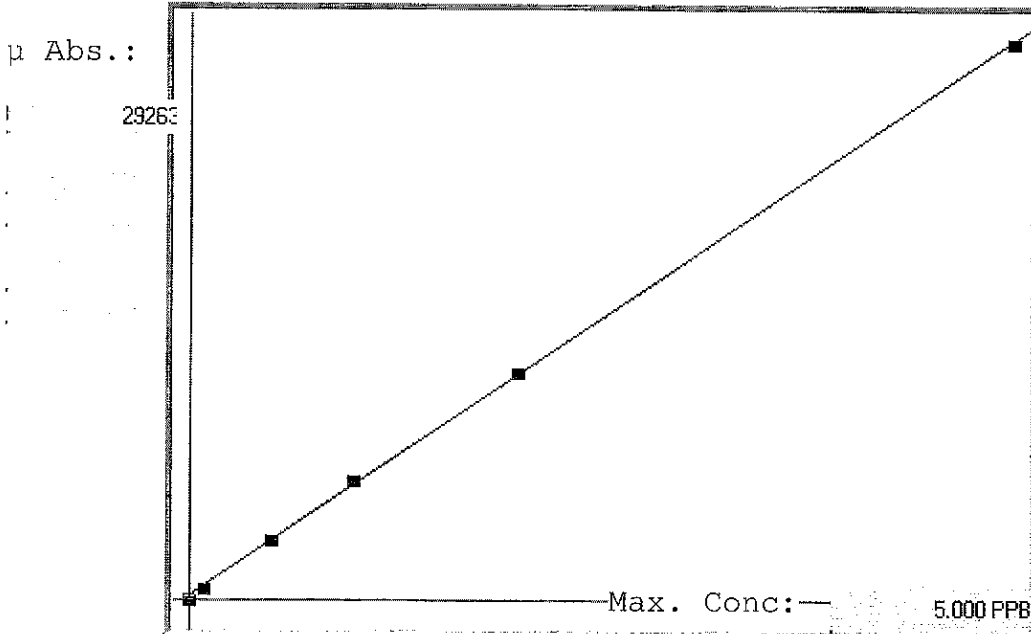
Operator: Admin

Date of Analysis: 25 Apr 2023 11:07:49

Sample ID	Mean	Units	Date	Method
23A0467-09	0.3009	PPB	25 Apr 2023 14:04:00	ARI 5 ppb (NO 0.05)
23C0108-02	0.6421	PPB	25 Apr 2023 14:06:19	ARI 5 ppb (NO 0.05)
23C0108-06	0.6187	PPB	25 Apr 2023 14:08:39	ARI 5 ppb (NO 0.05)
SEQ-CCV	101.7% 4.0677	PPB ✓	25 Apr 2023 14:10:59	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0395	PPB ✓	25 Apr 2023 14:13:17	ARI 5 ppb (NO 0.05)
23C0108-07	0.4551	PPB	25 Apr 2023 14:15:40	ARI 5 ppb (NO 0.05)
23C0108-08	0.4974	PPB	25 Apr 2023 14:17:59	ARI 5 ppb (NO 0.05)
23C0108-09	0.4383	PPB	25 Apr 2023 14:20:19	ARI 5 ppb (NO 0.05)
23D0037-01	0.3366	PPB	25 Apr 2023 14:22:38	ARI 5 ppb (NO 0.05)
23D0037-03	0.3606	PPB	25 Apr 2023 14:24:59	ARI 5 ppb (NO 0.05)
23D0063-01	0.4057	PPB	25 Apr 2023 14:27:19	ARI 5 ppb (NO 0.05)
23D0063-03	0.2557	PPB	25 Apr 2023 14:29:39	ARI 5 ppb (NO 0.05)
SEQ-CCV	100.6% 4.0238	PPB ✓	25 Apr 2023 14:32:00	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0373	PPB ✓	25 Apr 2023 14:34:18	ARI 5 ppb (NO 0.05)

ARI 5 ppb (NO 0.05)

Linear



A= 0.0000e+000

B= 1.7144e-004

C= -3.7253e-002

Rho= 0.9998786

Accept=Accepted

Accepted Date=

04/25/23 11:30

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
SEQ-CAL1 - Blank	0.000	-0.031	-0.031	37	0.000	37	37	37		
SEQ-CAL2 - 0.1 PPB	0.100	0.077	-0.023	666	0.7 %	660	667	671		
SEQ-CAL3 - 0.5 PPB	0.500	0.506	0.006	3167	0.3 %	3168	3177	3157		
SEQ-CAL4 - 1.0 PPB	1.000	1.041	0.041	6287	0.5 %	6322	6251	6290		
SEQ-CAL5 - 2.0 PPB	2.000	2.028	0.028	12044	0.5 %	12094	11954	12085		
SEQ-CAL6 - 5.0 PPB	5.000	4.980	-0.020	29263	0.6 %	29483	29094	29213		

### Mercury Analysis Log

Analyst: ML

Date: 04/25/23

Instrument: HYDAP

Page: 1 of 3

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
SEA -CA11	SMM	1X		
-CA12				
-CA13				
-CA14				
-CA15				
-CA16				
-ICV			✓ 4.33	
-ICB			✓ 0.039	
-CRL			✓ 0.073	
-CCV			✓ 4.36	
↓ -CCB			✓ -0.038	
BLDOSOS -BIKI				
↓ -BS1			✓ 1.825	91.2 I.R
SEA -CCV			✓ 4.27	
↓ -CCB			✓ -0.038	
↓ -CCV			✓ 4.22	
↓ -CCB			✓ -0.037	
23A0455 -01				
BLDOSOS -DUPI				NO RPD
↓ -MS1			✓ 1.421	93.2 I.R
↓ -MSD1			✓ 1.607	111.9 I.R
23A0455 -02				
↓ -03				
↓ -04				
↓ -05				
↓ -06				
↓ -07				
SEA -CCV			✓ 4.23	
↓ -CCB			✓ -0.037	
23A0455 -08				

Chemical/Reagent ID:  
10% SnCl<sub>2</sub>: L4336

14% NH<sub>2</sub>OH/NaCl: L4337

Standard ID:  
Standard: L4459-L4464

ICV/CCV: L4456



## Mercury Analysis Log

Analyst:             
 Instrument:           

Date:             
 Page: 2 of 3

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
-09				
-10				
-11				
-12				
-13				
-14				
-15				
-16				
√ -17				
SEQ -CCV			√ 4.14	
↓ -CCB			√ -0.037	
23A0455 -18				
23D0008 -01				
↓ -03				
BLD0580 -BIK1				
↓ -BS1			√ 1.84	92 % R
23A0467 -01				
BLD0580 -DUP1				NO RPD
↓ -MS1			√ 1.509	110.2 % R
↓ -MSD1			√ 1.605	119.8 % R
23A0328 -08				
SEQ -CCV			√ 4.07	
↓ -CCB			√ -0.037	
23A0467 -02				
-03				
-04				
-05				
-06				
-07				
-08				

Chemical/Reagent ID:  
 10% SnCl<sub>2</sub>:           

14% NH<sub>2</sub>OH/NaCl:           

Standard ID:  
 Standard:           

ICV/CCV:

# Mercury Analysis Log

Analyst: \_\_\_\_\_  
 Instrument: \_\_\_\_\_

Date: \_\_\_\_\_  
 Page: 3 of 3

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
↓				
23C0108 -09				
23C0108 -02				
↓				
23C0108 -06				
SEA -CCV			✓ 4.06	
↓				
23C0108 -CCB			✓ -0.039	
23C0108 -07				
↓				
23C0108 -08				
↓				
23C0108 -09				
23D0037 -01				
↓				
23D0037 -03				
23D0063 -01				
↓				
23D0063 -03				
SEA -CCV			✓ 4.02	
↓	↓	↓		
23D0063 -CCB				
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5;"> <p>ML 09/25/23</p> </div>				

Chemical/Reagent ID:  
 10% SnCl<sub>2</sub>: \_\_\_\_\_  
 Standard ID:  
 Standard: \_\_\_\_\_

14% NH<sub>2</sub>OH/NaCl: \_\_\_\_\_  
 ICV/CCV: \_\_\_\_\_



INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 7471B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: HYDRA

Calibration: GD00060

Control Limit: +/- 20.00%

Sequence: SLD0354

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLD0354-ICV1	Mercury	0.0040000	0.00434	108	mg/L	EPA 7471B
SLD0354-CCV1	Mercury	0.0040000	0.00436	109	mg/L	EPA 7471B
SLD0354-CCV2	Mercury	0.0040000	0.00427	107	mg/L	EPA 7471B
SLD0354-CCV3	Mercury	0.0040000	0.00423	106	mg/L	EPA 7471B
SLD0354-CCV4	Mercury	0.0040000	0.00423	106	mg/L	EPA 7471B
SLD0354-CCV5	Mercury	0.0040000	0.00415	104	mg/L	EPA 7471B
SLD0354-CCV6	Mercury	0.0040000	0.00407	102	mg/L	EPA 7471B
SLD0354-CCV7	Mercury	0.0040000	0.00407	102	mg/L	EPA 7471B
SLD0354-CCV8	Mercury	0.0040000	0.00402	101	mg/L	EPA 7471B

\* Values outside of QC limits



**INSTRUMENT BLANKS**  
**EPA 7471B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: HYDRA

Calibration: GD00060

Sequence: SLD0354

Date Analyzed: 04/25/23 11:33

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLD0354-ICB1	Mercury	-0.000039	0.000021	0.000100	mg/L	
SLD0354-CCB1	Mercury	-0.000039	0.000021	0.000100	mg/L	
SLD0354-CCB2	Mercury	-0.000038	0.000021	0.000100	mg/L	
SLD0354-CCB3	Mercury	-0.000037	0.000021	0.000100	mg/L	
SLD0354-CCB4	Mercury	-0.000037	0.000021	0.000100	mg/L	
SLD0354-CCB5	Mercury	-0.000037	0.000021	0.000100	mg/L	
SLD0354-CCB6	Mercury	-0.000037	0.000021	0.000100	mg/L	
SLD0354-CCB7	Mercury	-0.000040	0.000021	0.000100	mg/L	
SLD0354-CCB8	Mercury	-0.000037	0.000021	0.000100	mg/L	



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 7471B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLD0354

Instrument: HYDRA

Calibration: GD00060

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SLD0354-CAL1	SMM 04-25-23-001	NA	04/25/23 11:13
Cal Standard	SLD0354-CAL2	SMM 04-25-23-002	NA	04/25/23 11:16
Cal Standard	SLD0354-CAL3	SMM 04-25-23-003	NA	04/25/23 11:18
Cal Standard	SLD0354-CAL4	SMM 04-25-23-004	NA	04/25/23 11:20
Cal Standard	SLD0354-CAL5	SMM 04-25-23-005	NA	04/25/23 11:23
Cal Standard	SLD0354-CAL6	SMM 04-25-23-006	NA	04/25/23 11:25
Initial Cal Check	SLD0354-ICV1	SMM 04-25-23-007	NA	04/25/23 11:30
Initial Cal Blank	SLD0354-ICB1	SMM 04-25-23-008	NA	04/25/23 11:33
Instrument RL Check	SLD0354-CRL1	SMM 04-25-23-009	NA	04/25/23 11:35
Calibration Check	SLD0354-CCV1	SMM 04-25-23-010	NA	04/25/23 11:37
Calibration Blank	SLD0354-CCB1	SMM 04-25-23-011	NA	04/25/23 11:40
Calibration Check	SLD0354-CCV2	SMM 04-25-23-014	NA	04/25/23 11:47
Calibration Blank	SLD0354-CCB2	SMM 04-25-23-015	NA	04/25/23 11:49
Calibration Check	SLD0354-CCV3	SMM 04-25-23-016	NA	04/25/23 12:19
Calibration Blank	SLD0354-CCB3	SMM 04-25-23-017	NA	04/25/23 12:21
Calibration Check	SLD0354-CCV4	SMM 04-25-23-028	NA	04/25/23 12:47
Calibration Blank	SLD0354-CCB4	SMM 04-25-23-029	NA	04/25/23 12:49
Calibration Check	SLD0354-CCV5	SMM 04-25-23-040	NA	04/25/23 13:14
Calibration Blank	SLD0354-CCB5	SMM 04-25-23-041	NA	04/25/23 13:17
Blank	BLD0580-BLK1	SMM 04-25-23-045	Solid	04/25/23 13:26
LCS	BLD0580-BS1	SMM 04-25-23-046	Solid	04/25/23 13:29
Calibration Check	SLD0354-CCV6	SMM 04-25-23-052	NA	04/25/23 13:42
Calibration Blank	SLD0354-CCB6	SMM 04-25-23-053	NA	04/25/23 13:45
Calibration Check	SLD0354-CCV7	SMM 04-25-23-064	NA	04/25/23 14:10
Calibration Blank	SLD0354-CCB7	SMM 04-25-23-065	NA	04/25/23 14:13
LDW23-SS1818	23D0063-01	SMM 04-25-23-071	Solid	04/25/23 14:27
LDW23-SS1819	23D0063-03	SMM 04-25-23-072	Solid	04/25/23 14:29
Calibration Check	SLD0354-CCV8	SMM 04-25-23-073	NA	04/25/23 14:32
Calibration Blank	SLD0354-CCB8	SMM 04-25-23-074	NA	04/25/23 14:34



**DETECTION LEVEL STANDARD**  
**EPA 7471B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: HYDRA

Calibration: GD00060

Sequence: SLD0354

Lab Sample ID: SLD0354-CRL1

Analyte	True	Found	%R	Units	QC Limits
Mercury	0.000100	0.000073	73.3	mg/L	70 - 130

\* Values outside of QC limits



## HOLDING TIME SUMMARY

**Analysis: EPA 7471B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/24/23 16:45	20	28	04/25/23 14:27	21	28	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/24/23 16:45	20	28	04/25/23 14:29	21	28	

\* Indicates hold time exceedance.



**Analytical Resources, LLC**  
Analytical Chemists and Consultants

## METHOD DETECTION AND REPORTING LIMITS

**EPA 7471B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: HYDRA

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
Mercury	0.00525	0.0250	mg/kg



300 Technology Drive  
 Christiansburg, VA 24073 USA  
 inorganicventures.com

 P: 800-669-6799/540-585-3030  
 F: 540-585-3012  
 info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
 Catalog Number: CGHG1  
 Lot Number: S2-HG711246  
 Matrix: 5% (v/v) HNO<sub>3</sub>  
 Value / Analyte(s): 1 000 µg/mL ea:  
 Mercury  
 Starting Material: Hg Metal  
 Starting Material Lot#: 1959  
 Starting Material Purity: 99.9993%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 1000 ± 3 µg/mL  
**Density:** 1.026 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>1004 ± 6 µg/mL</b> ICP Assay NIST SRM 3133 Lot Number: 160921
<b>Assay Method #2</b>	<b>998 ± 3 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>1001 ± 3 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i})^2]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000210	M Eu < 0.000210	O Na < 0.000626	M Se < 0.008100	M Zn < 0.000810
M Al < 0.000161	O Fe < 0.001600	M Nb < 0.000410	O Si < 0.000626	M Zr < 0.000410
M As < 0.002500	M Ga < 0.000210	M Nd < 0.000210	M Sm < 0.000210	
O Au < 0.001700	M Gd < 0.000210	O Ni < 0.001400	M Sn < 0.000410	
M B < 0.008500	M Ge < 0.000410	M Os < 0.003900	O Sr < 0.000110	
M Ba < 0.000210	M Hf < 0.000210	O P < 0.029000	M Ta < 0.000210	
O Be < 0.000110	s Hg < 0.000210	M Pb < 0.000210	M Tb < 0.000210	
M Bi < 0.001100	M Ho < 0.000210	M Pd < 0.003500	M Te < 0.005700	
O Ca < 0.004754	M In < 0.000210	M Pr < 0.000210	M Th < 0.000210	
M Cd < 0.000210	M Ir < 0.000210	M Pt < 0.000210	O Ti < 0.000430	
M Ce < 0.000210	O K < 0.000731	M Rb < 0.000210	O Tl < 0.005400	
M Co < 0.000210	M La < 0.000210	M Re < 0.000210	M Tm < 0.000210	
O Cr < 0.003300	O Li < 0.000110	M Rh < 0.001100	M U < 0.000410	
M Cs < 0.000410	M Lu < 0.000210	M Ru < 0.000810	M V < 0.000210	
M Cu < 0.000810	O Mg < 0.000104	O S < 0.022000	M W < 0.001100	
M Dy < 0.000210	O Mn < 0.000430	M Sb < 0.000210	M Y < 0.000210	
M Er < 0.000210	M Mo < 0.000210	M Sc < 0.000210	M Yb < 0.000210	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 200.59 +2 4 Hg(OH)(aq) 1+  
**Chemical Compatibility** - Stable in HNO<sub>3</sub>. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

**Stability** - 2-100 ppb levels not stable in 1% HNO<sub>3</sub> / LDPE container, stable in 10% HNO<sub>3</sub> packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO<sub>3</sub> packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO<sub>3</sub> / LDPE container.

**Hg Containing Samples (Preparation and Solution)** - Metal (soluble in HNO<sub>3</sub>); Oxide (Soluble in HNO<sub>3</sub>); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

November 18, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **November 18, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Prepared By:**

Uyen Truong  
Supervisor, Product Documentation



**Certificate Approved By:**

Michael Booth  
Director, Technical



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
Catalog Number: QCP-QCS-4  
Lot Number: R2-MEB695951  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 5 µg/mL ea:  
Mercury

**Second Source:** Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Mercury, Hg	5.011 ± 0.023 µg/mL		

**Density:** 1.035 g/mL (measured at 20 ± 4 °C)

### Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u^2_{char} + u^2_{bb} + u^2_{Its} + u^2_{ts})^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2(u_{char i})^2]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char a})$$

$X_a$  = mean of Assay Method  $A$  with

$u_{char a}$  = the standard uncertainty of characterization Method  $A$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u^2_{char a} + u^2_{bb} + u^2_{Its} + u^2_{ts})^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### **4.0 TRACEABILITY TO NIST**

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### **4.1 Thermometer Calibration**

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### **4.2 Balance Calibration**

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### **4.3 Glassware Calibration**

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### **5.0 TRACE METALLIC IMPURITIES (TMI ) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)**

N/A

#### **6.0 INTENDED USE**

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### **7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL**

##### **7.1 Storage and Handling Recommendations**

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

#### **8.0 HAZARDOUS INFORMATION**

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

#### **9.0 HOMOGENEITY**

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

#### **10.0 QUALITY STANDARD DOCUMENTATION**

##### **10.1 ISO 9001 Quality Management System Registration**

- QSR Certificate Number QSR-1034

##### **10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"**

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

August 20, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **August 20, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

### Certificate Approved By:

Michael Booth  
Director, Quality Control



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director





**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**SM 2540 G-97**

LDW23-SS1818
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Laboratory: Analytical Resources, LLC

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment      Laboratory ID: 23D0063-01 D      SDG: 23D0063

Sampled: 04/04/23 10:02      Prepared: 04/05/23 16:25      File ID:

% Solids: 38.85      Preparation: No Prep Wet Chem      Analyzed: 04/05/23 16:26

Batch: BLD0126      Sequence:

Instrument: BAL2      Calibration: 5 g Wet / 5 g

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	38.85	1	0.04	0.04	





**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**SM 2540 G-97**

<b>LDW23-SC1818</b>
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Laboratory: Analytical Resources, LLC

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment      Laboratory ID: 23D0063-02 D      SDG: 23D0063

Sampled: 04/04/23 10:25      Prepared: 04/05/23 16:25      File ID:

% Solids: 44.23      Preparation: No Prep Wet Chem      Analyzed: 04/05/23 16:26

Batch: BLD0126      Sequence:      Initial/Final: 5 g Wet / 5 g

Instrument: BAL2      Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	44.23	1	0.04	0.04	



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**SM 2540 G-97**

<b>LDW23-SS1819</b>
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Laboratory: Analytical Resources, LLC

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment      Laboratory ID: 23D0063-03 D      SDG: 23D0063

Sampled: 04/04/23 12:52      Prepared: 04/05/23 16:25      File ID:

% Solids: 34.62      Preparation: No Prep Wet Chem      Analyzed: 04/05/23 16:26

Batch: BLD0126      Sequence:

Instrument: BAL2      Calibration: 5 g Wet / 5 g

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	34.62	1	0.04	0.04	



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**SM 2540 G-97**

<b>LDW23-SC1819</b>
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Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-04 D      SDG: 23D0063  
 Sampled: 04/04/23 13:12      Prepared: 04/05/23 16:25      File ID:  
 % Solids: 41.53      Preparation: No Prep Wet Chem      Analyzed: 04/05/23 16:26  
 Batch: BLD0126      Sequence:  
 Instrument: BAL2      Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	41.53	1	0.04	0.04	



## PREPARATION BATCH SUMMARY

**SM 2540 G-97**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Batch:	<u>BLD0126</u>	Batch Matrix:	<u>Solid</u>
		Preparation:	<u>No Prep Wet Chem</u>

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01		04/05/23 16:25	
LDW23-SC1818	23D0063-02		04/05/23 16:25	
LDW23-SS1819	23D0063-03		04/05/23 16:25	
LDW23-SC1819	23D0063-04		04/05/23 16:25	
Blank	BLD0126-BLK1		04/05/23 16:25	
LDW23-SS1818	BLD0126-DUP1		04/05/23 16:25	

TOTAL SOLIDS/VOLATILE SOLIDS (TS / TVS) BENCHSHEET for Solid samples											Batch:		BLD0126			
Method: PSEP 1986, SM2540, EPA 160.1											Date:		4/5/2023 16:26			
(dry at 104 (12-24 hr) then combust at 550 (30 min))											Analyst:		UW			
Instrumentation			Drying Ovens:			12			Analytical Balance:			BAL2				
			Muffle Furnace:			2										
<b>Batch drying time</b>						<b>Oven Temps, °C</b>						TVS (mg/kg dry wt) calculated as: Final ash wt (g) = (min ash wt - tare wt) TVS (mg/kg) = [(Dry wt-Ash wt)/ (dry weight)] *1,000,000 if ash wt > dry wt, "Chk for Err" if dry wt-ash wt < 0.001 g, "< (1/dry wt)*1,000,000				
record times as mm/dd/yy hh:mm			TS (%) calculated as:			Start Temp			106							
date/time in oven:			Final dry wt (g) = (Dry Wt - Tare Wt)			Dry Cycle 1			105							
date/time out:			TS = (Final Dry Wt)/ (grams Sample-Tare)			Dry Cycle 2										
elapsed hrs =			16.7			OK			Dry Cycle 3							
<b>Balance Calibration Check</b>																
Record weights to 4 places																
Cal Weight ID:		CV-02	CV-02	CV-02	CV-02	CV-02				CV-02	CV-02	CV-02				
Date & Time:		4/5/23 16:25	4/5/23 16:30	4/6/23 10:10												
Cal Wt (g):		10.0000	9.9999	9.9999	10.0000											
		Cal OK!	Cal OK!	Cal OK!												
Sample ID	Dish #	Tare Wt. (g)	Dish & Sample (g)	Dry Wt 104C (grams)			dry Wt (g)	TS (%)	Notes	ASH WT 550C (grams)			Ash Wt (g)	TVS		Notes
				1	2	3				1	2	3		(mg/kg)	(%)	
BLD0126-BLK1	1	1.0373	0.0000	1.0374			0.0001	-0.01%								
23D0042-26	2	1.0547	9.8035	7.4196			6.3649	72.75%								
23D0063-01	3	1.0306	5.9753	2.9516			1.9210	38.85%								
BLD0126-DUP1	4	1.0260	6.1223	3.0152			1.9892	39.03%	RPD=0.5							
23D0063-02	5	1.0507	7.5649	3.9322			2.8815	44.23%								
23D0063-03	6	1.0211	7.0088	3.0938			2.0727	34.62%								
23D0063-04	7	1.0290	7.5271	3.7278			2.6988	41.53%								
23D0079-01	8	1.0363	6.5438	1.8484			0.8121	14.75%								
23D0095-01	9	1.0340	8.2434	4.9994			3.9654	55.00%								
23D0098-02	10	1.0581	7.2229	2.3138			1.2557	20.37%								

**NOTE: Do not enter data in blue shaded cells as they are calculated fields. Green shaded cells MAY be altered if a reweigh is called for.**

TOTAL SOLIDS (TS) BENCHSHEET for Solid samples						Batch:	BLD0577		
Method: Total Solids, Metals Correction						Date:	4/20/2023 16:44		
dry at 104°C (12-24 hr)						Analyst:	AR		
Instrumentation		Drying Oven:	OVEN07		Analytical Balance:	BAL10			
<b>Batch drying time</b>				TS (%) calculated as: Final dry wt (g) = (Dry Wt - Tare Wt) TS = (Final Dry Wt)/ (grams Sample-Tare)					
record times as mm/dd/yy hh:mm									
date/time in oven:	4/20/2023 17:05		Temp in:					106 °C	
date/time out:	4/21/2023 15:10		Temp out:					106 °C	
elapsed hrs =	22.1	OK							
Sample ID	Tare Weight (g)	Tare + Sample Weight (g)	Tare + Sample Dry Weight @ 104°C (g)			dry Wt (g)	TS (%)	Notes	
			1	2	3				
23D0008-01	0.9870	10.0380	5.2460			4.2590	47.06%		
23D0008-03	0.9830	10.0190	4.9420			3.9590	43.81%		
23D0037-01	1.0040	10.0560	5.7500			4.7460	52.43%		
23D0037-03	0.9760	10.0850	6.6680			5.6920	62.49%		
23D0063-01	1.0100	10.0310	4.7300			3.7200	41.24%		
23D0063-03	1.0270	10.0730	4.4210			3.3940	37.52%		
23D0437-01	1.0170	10.0250	9.9920			8.9750	99.63%		
23D0437-02	1.0000	10.0400	9.6240			8.6240	95.40%		
23D0495-01	1.0460	10.0170	9.7930			8.7470	97.50%		



**Form I**  
**METHOD BLANK DATA SHEET**  
**SM 2540 G-97**  
TotalAnalytes

<b>Blank</b>
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Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Batch: BLD0126

Laboratory ID: BLD0126-BLK1

Prepared: 04/05/23 16:25

Matrix: Solid

Preparation: No Prep Wet Chem

Analyzed: 04/05/23 16:26

Sequence:

Calibration:

Instrument: BAL2

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	ND	1	0.04	0.04	U



**DUPLICATES**  
**SM 2540 G-97**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Laboratory ID: BLD0126-DUP1

Batch: BLD0126

Lab Source ID: 23D0063-01

Preparation: No Prep Wet Chem

Initial/Final: 5 g / 5 g

Source Sample Name: LDW23-SS1818

% Solids: 38.85

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Total Solids	20	38.85	39.03	0.469	

\*: Values outside of QC limits

L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD





## HOLDING TIME SUMMARY

**Analysis: SM 2540 G-97**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/05/23 16:25	1	28	04/05/23 16:26	1	28	
LDW23-SC1818 23D0063-02	04/04/23 10:25	04/04/23 15:10	04/05/23 16:25	1	28	04/05/23 16:26	1	28	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/05/23 16:25	1	28	04/05/23 16:26	1	28	
LDW23-SC1819 23D0063-04	04/04/23 13:12	04/04/23 15:10	04/05/23 16:25	1	28	04/05/23 16:26	1	28	
Duplicate BLD0126-DUP1	04/04/23 10:02	04/04/23 15:10	04/05/23 16:25	1	28	04/05/23 16:26	1	28	

\* Indicates hold time exceedance.



**Analytical Resources, LLC**  
Analytical Chemists and Consultants

## METHOD DETECTION AND REPORTING LIMITS

**SM 2540 G-97**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument:

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
Total Solids	0.04	0.04	%



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6020B**  
Total Metals

LDW23-SS1818
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Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-01 A      SDG: 23D0063  
 Sampled: 04/04/23 10:02      Prepared: 04/26/23 12:19      File ID: XDT\_m1230510A-123  
 % Solids: 38.85      Preparation: SWN EPA 3050B      Analyzed: 05/11/23 01:44  
 Batch: BLD0578      Sequence: SLE0204      Initial/Final: 1.014 g Wet / 50 mL  
 Instrument: ICPMS1      Calibration: GE00040

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-47-3	Chromium	30.7	20	0.66	1.27	
7439-92-1	Lead	30.2	20	0.13	0.25	
7440-22-4	Silver	0.29	20	0.06	0.51	J



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**

LDW23-SS1819

**EPA 6020B**

Total Metals

Laboratory: Analytical Resources, LLC

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment

Laboratory ID: 23D0063-03 A

SDG: 23D0063

Sampled: 04/04/23 12:52

Prepared: 04/26/23 12:19

File ID: XDT\_m1230510A-124

% Solids: 34.62

Preparation: SWN EPA 3050B

Analyzed: 05/11/23 01:49

Batch: BLD0578

Sequence: SLE0204

Initial/Final: 1.04 g Wet / 50 mL

Instrument: ICPMS1

Calibration: GE00040

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-47-3	Chromium	34.7	20	0.72	1.39	
7439-92-1	Lead	32.3	20	0.14	0.28	
7440-22-4	Silver	0.32	20	0.06	0.56	J





### Digestion Log

Analyst: MPZ Date: 4/25/23 - 4/26/23 Time: 1040-1219 Balance ID: BA10  
 Matrix: SWN Block ID: 3 Block Temp: 95°C Thermometer: 20-2

ARI Sample ID	Btl #	pH<2	Prep Code: <u>SWN</u>		Prep Code:		Comments
			Initial Wt (g) Vol (mL)	Final Vol (mL)	Initial Wt (g) Vol (mL)	Final Vol (mL)	
<u>23A467-01</u>	<u>A</u>		<u>1.033</u>	<u>50</u>			
<u>-02</u>			<u>1.069</u>				
<u>-03</u>			<u>1.018</u>				
<u>-04</u>			<u>1.079</u>				
<u>-05</u>			<u>1.044</u>				
<u>-06</u>			<u>1.040</u>				
<u>-07</u>			<u>1.046</u>				
<u>-08</u>			<u>1.023</u>				
<u>-09</u>			<u>1.072</u>				
<u>23C108-02</u>	<u>D</u>		<u>1.075</u>				
<u>-06</u>			<u>1.059</u>				
<u>-07</u>			<u>1.059</u>				
<u>-08</u>			<u>1.072</u>				
<u>-09</u>			<u>1.050</u>				
<u>23D37-01</u>			<u>1.021</u>				
<u>-03</u>			<u>1.060</u>				
<u>23D63-01</u>	<u>A</u>		<u>1.040</u>		<u>0.014</u>		
<u>-03</u>			<u>1.040</u>				
<u>BLD578-btk</u>							<u>23A467-01</u>
<u>-bs</u>							
<u>-dup</u>			<u>1.037</u>				
<u>-ms</u>			<u>1.032</u>				
<u>-msd</u>			<u>1.032</u>				
<u>---</u>			<u>---</u>				
<u>---</u>			<u>---</u>				
<u>---</u>			<u>---</u>				

Chemical/Reagent ID:

HNO<sub>3</sub>: L4188 1:1 HNO<sub>3</sub>: L4200 HCl: --- H<sub>2</sub>O<sub>2</sub>: K11056  
 Tube Lot#: 221017 Boiling Chip Lot#: --- (DoD Only)



**Form I**  
**METHOD BLANK DATA SHEET**  
**EPA 6020B**  
Total Metals

<b>Blank</b>
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Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Batch: BLD0578

Laboratory ID: BLD0578-BLK1

Prepared: 04/26/23 12:19

Matrix: Solid

Preparation: SWN EPA 3050B

Analyzed: 05/10/23 20:44

Sequence: SLE0204

Calibration: GE00040

Instrument: ICPMS1

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7440-47-3	Chromium-52	ND	20	0.26	0.50	U
7439-92-1	Lead-208	ND	20	0.05	0.10	U
7440-22-4	Silver-107	ND	20	0.02	0.20	U







**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Control Limit: +/- 10.00%

Sequence: SLE0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0204-ICV1	Chromium-52	50.000	52.9	106	ug/L	EPA 6020B
	Chromium-53	50.000	51.3	103	ug/L	EPA 6020B
	Lead-208	50.000	52.6	105	ug/L	EPA 6020B
	Silver-107	50.000	50.8	102	ug/L	EPA 6020B
SLE0204-CCV1	Chromium-52	50.000	51.5	103	ug/L	EPA 6020B
	Chromium-53	50.000	50.5	101	ug/L	EPA 6020B
	Lead-208	50.000	50.3	101	ug/L	EPA 6020B
	Silver-107	50.000	50.1	100	ug/L	EPA 6020B
SLE0204-CCV2	Chromium-52	50.000	49.6	99.2	ug/L	EPA 6020B
	Chromium-53	50.000	49.3	98.6	ug/L	EPA 6020B
	Lead-208	50.000	50.8	102	ug/L	EPA 6020B
	Silver-107	50.000	48.8	97.6	ug/L	EPA 6020B
SLE0204-CCV3	Chromium-52	50.000	50.1	100	ug/L	EPA 6020B
	Chromium-53	50.000	49.4	98.7	ug/L	EPA 6020B
	Lead-208	50.000	50.4	101	ug/L	EPA 6020B
	Silver-107	50.000	49.2	98.5	ug/L	EPA 6020B
SLE0204-CCV4	Chromium-52	50.000	50.6	101	ug/L	EPA 6020B
	Chromium-53	50.000	49.5	99.0	ug/L	EPA 6020B
	Lead-208	50.000	51.7	103	ug/L	EPA 6020B
	Silver-107	50.000	49.8	99.6	ug/L	EPA 6020B
SLE0204-CCV5	Chromium-52	50.000	51.1	102	ug/L	EPA 6020B
	Chromium-53	50.000	49.5	98.9	ug/L	EPA 6020B
	Lead-208	50.000	52.8	106	ug/L	EPA 6020B
	Silver-107	50.000	48.1	96.2	ug/L	EPA 6020B
SLE0204-CCV6	Chromium-52	50.000	49.2	98.3	ug/L	EPA 6020B
	Chromium-53	50.000	49.2	98.4	ug/L	EPA 6020B
	Lead-208	50.000	49.6	99.2	ug/L	EPA 6020B
	Silver-107	50.000	47.6	95.1	ug/L	EPA 6020B
SLE0204-CCV7	Chromium-52	50.000	49.7	99.4	ug/L	EPA 6020B
	Chromium-53	50.000	48.4	96.8	ug/L	EPA 6020B
	Lead-208	50.000	50.5	101	ug/L	EPA 6020B
	Silver-107	50.000	48.6	97.2	ug/L	EPA 6020B
SLE0204-CCV8	Chromium-52	50.000	50.7	101	ug/L	EPA 6020B
	Chromium-53	50.000	49.7	99.4	ug/L	EPA 6020B



**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Control Limit: +/- 10.00%

Sequence: SLE0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0204-CCV8	Lead-208	50.000	50.1	100	ug/L	EPA 6020B
	Silver-107	50.000	49.5	99.1	ug/L	EPA 6020B
SLE0204-CCV9	Chromium-52	50.000	49.4	98.8	ug/L	EPA 6020B
	Chromium-53	50.000	48.4	96.8	ug/L	EPA 6020B
	Lead-208	50.000	52.2	104	ug/L	EPA 6020B
	Silver-107	50.000	48.8	97.6	ug/L	EPA 6020B
SLE0204-CCVA	Chromium-52	50.000	50.2	100	ug/L	EPA 6020B
	Chromium-53	50.000	49.4	98.7	ug/L	EPA 6020B
	Lead-208	50.000	51.6	103	ug/L	EPA 6020B
	Silver-107	50.000	48.9	97.9	ug/L	EPA 6020B
SLE0204-CCVB	Chromium-52	50.000	50.3	101	ug/L	EPA 6020B
	Chromium-53	50.000	49.0	98.1	ug/L	EPA 6020B
	Lead-208	50.000	51.7	103	ug/L	EPA 6020B
	Silver-107	50.000	48.8	97.6	ug/L	EPA 6020B
SLE0204-CCVC	Chromium-52	50.000	49.0	98.0	ug/L	EPA 6020B
	Chromium-53	50.000	48.4	96.7	ug/L	EPA 6020B
	Lead-208	50.000	51.2	102	ug/L	EPA 6020B
	Silver-107	50.000	48.1	96.2	ug/L	EPA 6020B
SLE0204-CCVD	Chromium-52	50.000	49.9	99.8	ug/L	EPA 6020B
	Chromium-53	50.000	48.9	97.8	ug/L	EPA 6020B
	Lead-208	50.000	53.3	107	ug/L	EPA 6020B
	Silver-107	50.000	46.0	92.1	ug/L	EPA 6020B
SLE0204-CCVE	Chromium-52	50.000	48.9	97.7	ug/L	EPA 6020B
	Chromium-53	50.000	48.1	96.3	ug/L	EPA 6020B
	Lead-208	50.000	54.9	110	ug/L	EPA 6020B
	Silver-107	50.000	46.3	92.6	ug/L	EPA 6020B
SLE0204-CCVF	Chromium-52	50.000	48.7	97.4	ug/L	EPA 6020B
	Chromium-53	50.000	47.7	95.4	ug/L	EPA 6020B
	Lead-208	50.000	55.3	111	ug/L	EPA 6020B
	Silver-107	50.000	45.7	91.5	ug/L	EPA 6020B
SLE0204-CCVG	Chromium-52	50.000	49.5	99.0	ug/L	EPA 6020B
	Chromium-53	50.000	48.8	97.5	ug/L	EPA 6020B
	Lead-208	50.000	55.0	110	ug/L	EPA 6020B
	Silver-107	50.000	46.7	93.3	ug/L	EPA 6020B



**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Control Limit: +/- 10.00%

Sequence: SLE0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0204-CCVH	Chromium-52	50.000	49.5	99.0	ug/L	EPA 6020B
	Chromium-53	50.000	48.3	96.7	ug/L	EPA 6020B
	Lead-208	50.000	55.5	111	ug/L	EPA 6020B
	Silver-107	50.000	46.7	93.4	ug/L	EPA 6020B
SLE0204-CCVI	Chromium-52	50.000	50.2	100	ug/L	EPA 6020B
	Chromium-53	50.000	48.3	96.6	ug/L	EPA 6020B
	Lead-208	50.000	54.3	109	ug/L	EPA 6020B
	Silver-107	50.000	46.8	93.5	ug/L	EPA 6020B
SLE0204-CCVJ	Chromium-52	50.000	49.8	99.7	ug/L	EPA 6020B
	Chromium-53	50.000	49.3	98.5	ug/L	EPA 6020B
	Lead-208	50.000	55.8	112	ug/L	EPA 6020B
	Silver-107	50.000	45.7	91.4	ug/L	EPA 6020B

\* Values outside of QC limits



**INSTRUMENT BLANKS**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/10/23 16:19

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-IBL1	Chromium-52	0.0110	0.26	0.500	ug/L	
SLE0204-IBL1	Chromium-53	0.00400	0.239	0.500	ug/L	
SLE0204-IBL1	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-IBL1	Silver-107	0.00400	0.022	0.200	ug/L	
SLE0204-ICB1	Chromium-52	0.0170	0.26	0.500	ug/L	
SLE0204-ICB1	Chromium-53	-0.00200	0.239	0.500	ug/L	
SLE0204-ICB1	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-ICB1	Silver-107	0.00200	0.022	0.200	ug/L	
SLE0204-CCB1	Chromium-52	0.00600	0.26	0.500	ug/L	
SLE0204-CCB1	Chromium-53	-0.00500	0.239	0.500	ug/L	
SLE0204-CCB1	Lead-208	0.00	0.0513	0.100	ug/L	
SLE0204-CCB1	Silver-107	0.00200	0.022	0.200	ug/L	
SLE0204-IBL2	Chromium-52	0.0130	0.26	0.500	ug/L	
SLE0204-IBL2	Chromium-53	0.00600	0.239	0.500	ug/L	
SLE0204-IBL2	Lead-208	0.00200	0.0513	0.100	ug/L	
SLE0204-IBL2	Silver-107	0.00800	0.022	0.200	ug/L	
SLE0204-CCB2	Chromium-52	0.0230	0.26	0.500	ug/L	
SLE0204-CCB2	Chromium-53	0.0280	0.239	0.500	ug/L	
SLE0204-CCB2	Lead-208	0.0300	0.0513	0.100	ug/L	
SLE0204-CCB2	Silver-107	0.0300	0.022	0.200	ug/L	
SLE0204-CCB3	Chromium-52	-0.0200	0.26	0.500	ug/L	
SLE0204-CCB3	Chromium-53	-0.00800	0.239	0.500	ug/L	
SLE0204-CCB3	Lead-208	0.00400	0.0513	0.100	ug/L	
SLE0204-CCB3	Silver-107	0.00600	0.022	0.200	ug/L	
SLE0204-IBL3	Chromium-52	-0.0220	0.26	0.500	ug/L	
SLE0204-IBL3	Chromium-53	-0.0170	0.239	0.500	ug/L	
SLE0204-IBL3	Lead-208	0.00400	0.0513	0.100	ug/L	
SLE0204-IBL3	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-CCB4	Chromium-52	-0.0320	0.26	0.500	ug/L	
SLE0204-CCB4	Chromium-53	-0.0110	0.239	0.500	ug/L	
SLE0204-CCB4	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-CCB4	Silver-107	0.00100	0.022	0.200	ug/L	
SLE0204-IBL4	Chromium-52	-0.00700	0.26	0.500	ug/L	
SLE0204-IBL4	Chromium-53	0.00500	0.239	0.500	ug/L	
SLE0204-IBL4	Lead-208	0.00400	0.0513	0.100	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/10/23 19:33

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-IBL4	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-IBL5	Chromium-52	0.0360	0.26	0.500	ug/L	
SLE0204-IBL5	Chromium-53	0.0240	0.239	0.500	ug/L	
SLE0204-IBL5	Lead-208	0.00300	0.0513	0.100	ug/L	
SLE0204-IBL5	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-CCB5	Chromium-52	-0.0410	0.26	0.500	ug/L	
SLE0204-CCB5	Chromium-53	-0.0180	0.239	0.500	ug/L	
SLE0204-CCB5	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-CCB5	Silver-107	0.00100	0.022	0.200	ug/L	
SLE0204-CCB6	Chromium-52	-0.0280	0.26	0.500	ug/L	
SLE0204-CCB6	Chromium-53	-0.0190	0.239	0.500	ug/L	
SLE0204-CCB6	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-CCB6	Silver-107	0.00400	0.022	0.200	ug/L	
SLE0204-IBL6	Chromium-52	-0.0170	0.26	0.500	ug/L	
SLE0204-IBL6	Chromium-53	0.00200	0.239	0.500	ug/L	
SLE0204-IBL6	Lead-208	0.00	0.0513	0.100	ug/L	
SLE0204-IBL6	Silver-107	0.00200	0.022	0.200	ug/L	
SLE0204-CCB7	Chromium-52	-0.00900	0.26	0.500	ug/L	
SLE0204-CCB7	Chromium-53	0.0110	0.239	0.500	ug/L	
SLE0204-CCB7	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-CCB7	Silver-107	0.00300	0.022	0.200	ug/L	
SLE0204-IBL7	Chromium-52	-0.0510	0.26	0.500	ug/L	
SLE0204-IBL7	Chromium-53	-0.0130	0.239	0.500	ug/L	
SLE0204-IBL7	Lead-208	0.00	0.0513	0.100	ug/L	
SLE0204-IBL7	Silver-107	0.00200	0.022	0.200	ug/L	
SLE0204-CCB8	Chromium-52	-0.0260	0.26	0.500	ug/L	
SLE0204-CCB8	Chromium-53	-0.00500	0.239	0.500	ug/L	
SLE0204-CCB8	Lead-208	0.00	0.0513	0.100	ug/L	
SLE0204-CCB8	Silver-107	0.00200	0.022	0.200	ug/L	
SLE0204-IBL8	Chromium-52	0.0300	0.26	0.500	ug/L	
SLE0204-IBL8	Chromium-53	0.0250	0.239	0.500	ug/L	
SLE0204-IBL8	Lead-208	0.275	0.0513	0.100	ug/L	
SLE0204-IBL8	Silver-107	0.00800	0.022	0.200	ug/L	
SLE0204-CCB9	Chromium-52	-0.0280	0.26	0.500	ug/L	
SLE0204-CCB9	Chromium-53	-0.0110	0.239	0.500	ug/L	
SLE0204-CCB9	Lead-208	0.00700	0.0513	0.100	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/10/23 23:28

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-CCB9	Silver-107	0.00300	0.022	0.200	ug/L	
SLE0204-IBL9	Chromium-52	-0.0200	0.26	0.500	ug/L	
SLE0204-IBL9	Chromium-53	-0.00900	0.239	0.500	ug/L	
SLE0204-IBL9	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-IBL9	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-CCBA	Chromium-52	-0.0330	0.26	0.500	ug/L	
SLE0204-CCBA	Chromium-53	-0.00800	0.239	0.500	ug/L	
SLE0204-CCBA	Lead-208	0.00200	0.0513	0.100	ug/L	
SLE0204-CCBA	Silver-107	0.00200	0.022	0.200	ug/L	
SLE0204-IBLA	Chromium-52	-0.0310	0.26	0.500	ug/L	
SLE0204-IBLA	Chromium-53	-0.0120	0.239	0.500	ug/L	
SLE0204-IBLA	Lead-208	0.00400	0.0513	0.100	ug/L	
SLE0204-IBLA	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-CCBB	Chromium-52	-0.0160	0.26	0.500	ug/L	
SLE0204-CCBB	Chromium-53	-0.0100	0.239	0.500	ug/L	
SLE0204-CCBB	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-CCBB	Silver-107	0.00100	0.022	0.200	ug/L	
SLE0204-CCBC	Chromium-52	0.0180	0.26	0.500	ug/L	
SLE0204-CCBC	Chromium-53	-0.00300	0.239	0.500	ug/L	
SLE0204-CCBC	Lead-208	0.00100	0.0513	0.100	ug/L	
SLE0204-CCBC	Silver-107	0.00300	0.022	0.200	ug/L	
SLE0204-IBLB	Chromium-52	-0.0440	0.26	0.500	ug/L	
SLE0204-IBLB	Chromium-53	0.00800	0.239	0.500	ug/L	
SLE0204-IBLB	Lead-208	0.00	0.0513	0.100	ug/L	
SLE0204-IBLB	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-CCBD	Chromium-52	-0.0360	0.26	0.500	ug/L	
SLE0204-CCBD	Chromium-53	-0.00800	0.239	0.500	ug/L	
SLE0204-CCBD	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-CCBD	Silver-107	0.00100	0.022	0.200	ug/L	
SLE0204-IBLC	Chromium-52	0.0230	0.26	0.500	ug/L	
SLE0204-IBLC	Chromium-53	-0.00900	0.239	0.500	ug/L	
SLE0204-IBLC	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLE0204-IBLC	Silver-107	0.00	0.022	0.200	ug/L	
SLE0204-IBLD	Chromium-52	-0.0450	0.26	0.500	ug/L	
SLE0204-IBLD	Chromium-53	-0.00600	0.239	0.500	ug/L	
SLE0204-IBLD	Lead-208	-0.00100	0.0513	0.100	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/11/23 03:20

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-IBLD	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-CCBE	Chromium-52	-0.0500	0.26	0.500	ug/L	
SLE0204-CCBE	Chromium-53	-0.0140	0.239	0.500	ug/L	
SLE0204-CCBE	Lead-208	-0.00200	0.0513	0.100	ug/L	
SLE0204-CCBE	Silver-107	0.00200	0.022	0.200	ug/L	
SLE0204-IBLE	Chromium-52	-0.0460	0.26	0.500	ug/L	
SLE0204-IBLE	Chromium-53	-0.00500	0.239	0.500	ug/L	
SLE0204-IBLE	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-IBLE	Silver-107	0.00	0.022	0.200	ug/L	
SLE0204-IBLF	Chromium-52	-0.0490	0.26	0.500	ug/L	
SLE0204-IBLF	Chromium-53	-0.00100	0.239	0.500	ug/L	
SLE0204-IBLF	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-IBLF	Silver-107	0.00	0.022	0.200	ug/L	
SLE0204-CCBF	Chromium-52	-0.0610	0.26	0.500	ug/L	
SLE0204-CCBF	Chromium-53	-0.00600	0.239	0.500	ug/L	
SLE0204-CCBF	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-CCBF	Silver-107	0.00100	0.022	0.200	ug/L	
SLE0204-CCBG	Chromium-52	0.0140	0.26	0.500	ug/L	
SLE0204-CCBG	Chromium-53	-0.00900	0.239	0.500	ug/L	
SLE0204-CCBG	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-CCBG	Silver-107	0.00100	0.022	0.200	ug/L	
SLE0204-IBLG	Chromium-52	0.0210	0.26	0.500	ug/L	
SLE0204-IBLG	Chromium-53	0.00400	0.239	0.500	ug/L	
SLE0204-IBLG	Lead-208	0.00	0.0513	0.100	ug/L	
SLE0204-IBLG	Silver-107	0.00300	0.022	0.200	ug/L	
SLE0204-CCBH	Chromium-52	-0.00600	0.26	0.500	ug/L	
SLE0204-CCBH	Chromium-53	-0.00800	0.239	0.500	ug/L	
SLE0204-CCBH	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-CCBH	Silver-107	0.00100	0.022	0.200	ug/L	
SLE0204-IBLH	Chromium-52	0.0130	0.26	0.500	ug/L	
SLE0204-IBLH	Chromium-53	0.00100	0.239	0.500	ug/L	
SLE0204-IBLH	Lead-208	-0.00400	0.0513	0.100	ug/L	
SLE0204-IBLH	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-CCBI	Chromium-52	0.00400	0.26	0.500	ug/L	
SLE0204-CCBI	Chromium-53	0.00100	0.239	0.500	ug/L	
SLE0204-CCBI	Lead-208	-0.00300	0.0513	0.100	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/11/23 06:42

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-CCBI	Silver-107	0.00100	0.022	0.200	ug/L	
SLE0204-IBLI	Chromium-52	0.0160	0.26	0.500	ug/L	
SLE0204-IBLI	Chromium-53	0.00500	0.239	0.500	ug/L	
SLE0204-IBLI	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-IBLI	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-IBLJ	Chromium-52	0.00900	0.26	0.500	ug/L	
SLE0204-IBLJ	Chromium-53	-0.00200	0.239	0.500	ug/L	
SLE0204-IBLJ	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-IBLJ	Silver-107	-0.00100	0.022	0.200	ug/L	
SLE0204-CCBJ	Chromium-52	0.0140	0.26	0.500	ug/L	
SLE0204-CCBJ	Chromium-53	-0.00300	0.239	0.500	ug/L	
SLE0204-CCBJ	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLE0204-CCBJ	Silver-107	0.00100	0.022	0.200	ug/L	





## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0204</u>	Instrument:	<u>ICPMS1</u>
		Calibration:	<u>GE00040</u>

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SLE0204-CAL1	XDT_m1230510A-008	NA	05/10/23 15:47
CAL 1 - LOW CHECK	SLE0204-CAL2	XDT_m1230510A-009	NA	05/10/23 15:51
CAL 2	SLE0204-CAL3	XDT_m1230510A-010	NA	05/10/23 15:56
CAL 3	SLE0204-CAL4	XDT_m1230510A-011	NA	05/10/23 16:01
CAL 4	SLE0204-CAL5	XDT_m1230510A-012	NA	05/10/23 16:05
CAL 5	SLE0204-CAL6	XDT_m1230510A-013	NA	05/10/23 16:12
RINSE	SLE0204-IBL1	XDT_m1230510A-014	NA	05/10/23 16:19
Initial Cal Check	SLE0204-ICV1	XDT_m1230510A-016	NA	05/10/23 16:25
Initial Cal Blank	SLE0204-ICB1	XDT_m1230510A-017	NA	05/10/23 16:32
Calibration Check	SLE0204-CCV1	XDT_m1230510A-018	NA	05/10/23 16:37
Calibration Blank	SLE0204-CCB1	XDT_m1230510A-019	NA	05/10/23 16:44
Instrument RL Check	SLE0204-CRL1	XDT_m1230510A-020	NA	05/10/23 16:49
Interference Check A	SLE0204-IFA1	XDT_m1230510A-021	NA	05/10/23 16:56
Interference Check B	SLE0204-IFB1	XDT_m1230510A-022	NA	05/10/23 17:00
LR200	SLE0204-HCV1	XDT_m1230510A-023	NA	05/10/23 17:06
LR300	SLE0204-HCV2	XDT_m1230510A-024	NA	05/10/23 17:11
Instrument Blank	SLE0204-IBL2	XDT_m1230510A-025	NA	05/10/23 17:18
Calibration Check	SLE0204-CCV2	XDT_m1230510A-026	NA	05/10/23 17:24
Calibration Blank	SLE0204-CCB2	XDT_m1230510A-027	NA	05/10/23 17:32
Calibration Check	SLE0204-CCV3	XDT_m1230510A-029	NA	05/10/23 17:41
Calibration Blank	SLE0204-CCB3	XDT_m1230510A-030	NA	05/10/23 17:49
ZZZZZ	BLD0687-BLK2	XDT_m1230510A-031	Solid	05/10/23 17:54
ZZZZZ	BLD0687-BS2	XDT_m1230510A-033	Solid	05/10/23 18:05
ZZZZZ	BLE0298-BLK1	XDT_m1230510A-034	Water	05/10/23 18:11
ZZZZZ	BLE0298-BS1	XDT_m1230510A-035	Water	05/10/23 18:15
ZZZZZ	23D0297-01	XDT_m1230510A-037	Solid	05/10/23 18:27
ZZZZZ	23D0297-01	XDT_m1230510A-037	Solid	05/10/23 18:27
ZZZZZ	BLD0728-DUP2	XDT_m1230510A-038	Solid	05/10/23 18:32
Instrument Blank	SLE0204-IBL3	XDT_m1230510A-040	NA	05/10/23 18:41



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Check	SLE0204-CCV4	XDT_m1230510A-041	NA	05/10/23 18:45
Calibration Blank	SLE0204-CCB4	XDT_m1230510A-042	NA	05/10/23 18:53
ZZZZZ	BLE0143-BLK1	XDT_m1230510A-045	Solid	05/10/23 19:07
ZZZZZ	BLE0143-BS1	XDT_m1230510A-047	Solid	05/10/23 19:19
ZZZZZ	BLD0728-MS2	XDT_m1230510A-048	Solid	05/10/23 19:23
Instrument Blank	SLE0204-IBL4	XDT_m1230510A-050	NA	05/10/23 19:33
Instrument Blank	SLE0204-IBL5	XDT_m1230510A-052	NA	05/10/23 19:44
Calibration Check	SLE0204-CCV5	XDT_m1230510A-053	NA	05/10/23 19:48
Calibration Blank	SLE0204-CCB5	XDT_m1230510A-054	NA	05/10/23 19:56
Calibration Check	SLE0204-CCV6	XDT_m1230510A-057	NA	05/10/23 20:30
Calibration Blank	SLE0204-CCB6	XDT_m1230510A-058	NA	05/10/23 20:37
Blank	BLD0578-BLK1	XDT_m1230510A-059	Solid	05/10/23 20:44
LCS	BLD0578-BS1	XDT_m1230510A-060	Solid	05/10/23 20:48
ZZZZZ	BLE0072-BLK1	XDT_m1230510A-061	Solid	05/10/23 20:53
ZZZZZ	23D0394-01	XDT_m1230510A-063	Solid	05/10/23 21:02
ZZZZZ	23D0394-01	XDT_m1230510A-063	Solid	05/10/23 21:02
ZZZZZ	23D0394-01	XDT_m1230510A-063	Solid	05/10/23 21:02
ZZZZZ	BLD0687-DUP2	XDT_m1230510A-064	Solid	05/10/23 21:07
ZZZZZ	BLD0687-MS2	XDT_m1230510A-065	Solid	05/10/23 21:12
ZZZZZ	BLD0687-MSD2	XDT_m1230510A-066	Solid	05/10/23 21:16
ZZZZZ	BLD0687-PS2	XDT_m1230510A-067	Solid	05/10/23 21:21
Instrument Blank	SLE0204-IBL6	XDT_m1230510A-068	NA	05/10/23 21:25
Calibration Check	SLE0204-CCV7	XDT_m1230510A-069	NA	05/10/23 21:29
Calibration Blank	SLE0204-CCB7	XDT_m1230510A-070	NA	05/10/23 21:37
ZZZZZ	23A0467-02	XDT_m1230510A-071	Solid	05/10/23 21:41
ZZZZZ	23A0467-02	XDT_m1230510A-071	Solid	05/10/23 21:41
ZZZZZ	23A0467-02	XDT_m1230510A-071	Solid	05/10/23 21:41
ZZZZZ	23A0467-04	XDT_m1230510A-073	Solid	05/10/23 21:50
ZZZZZ	23A0467-04	XDT_m1230510A-073	Solid	05/10/23 21:50



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23A0467-04	XDT_m1230510A-073	Solid	05/10/23 21:50
ZZZZZ	23A0467-05	XDT_m1230510A-074	Solid	05/10/23 21:54
ZZZZZ	23A0467-05	XDT_m1230510A-074	Solid	05/10/23 21:54
ZZZZZ	23A0467-05	XDT_m1230510A-074	Solid	05/10/23 21:54
ZZZZZ	23A0467-01	XDT_m1230510A-075	Solid	05/10/23 21:59
ZZZZZ	23A0467-01	XDT_m1230510A-075	Solid	05/10/23 21:59
ZZZZZ	23A0467-01	XDT_m1230510A-075	Solid	05/10/23 21:59
Instrument Blank	SLE0204-IBL7	XDT_m1230510A-080	NA	05/10/23 22:21
Calibration Check	SLE0204-CCV8	XDT_m1230510A-081	NA	05/10/23 22:25
Calibration Blank	SLE0204-CCB8	XDT_m1230510A-082	NA	05/10/23 22:32
ZZZZZ	23A0467-06	XDT_m1230510A-083	Solid	05/10/23 22:37
ZZZZZ	23A0467-06	XDT_m1230510A-083	Solid	05/10/23 22:37
ZZZZZ	23A0467-06	XDT_m1230510A-083	Solid	05/10/23 22:37
ZZZZZ	23A0467-07	XDT_m1230510A-084	Solid	05/10/23 22:41
ZZZZZ	23A0467-07	XDT_m1230510A-084	Solid	05/10/23 22:41
ZZZZZ	23A0467-07	XDT_m1230510A-084	Solid	05/10/23 22:41
ZZZZZ	23A0467-08	XDT_m1230510A-085	Solid	05/10/23 22:46
ZZZZZ	23A0467-08	XDT_m1230510A-085	Solid	05/10/23 22:46
ZZZZZ	23A0467-08	XDT_m1230510A-085	Solid	05/10/23 22:46
ZZZZZ	23A0467-09	XDT_m1230510A-086	Solid	05/10/23 22:50
ZZZZZ	23A0467-09	XDT_m1230510A-086	Solid	05/10/23 22:50
ZZZZZ	23A0467-09	XDT_m1230510A-086	Solid	05/10/23 22:50
ZZZZZ	23D0393-04	XDT_m1230510A-087	Solid	05/10/23 22:54
ZZZZZ	BLE0072-DUP1	XDT_m1230510A-088	Solid	05/10/23 22:59
ZZZZZ	BLE0072-MS1	XDT_m1230510A-089	Solid	05/10/23 23:03
ZZZZZ	BLE0072-MSD1	XDT_m1230510A-090	Solid	05/10/23 23:08
Instrument Blank	SLE0204-IBL8	XDT_m1230510A-092	NA	05/10/23 23:16
Calibration Check	SLE0204-CCV9	XDT_m1230510A-093	NA	05/10/23 23:21
Calibration Blank	SLE0204-CCB9	XDT_m1230510A-094	NA	05/10/23 23:28



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23C0071-01	XDT_m1230510A-095	Solid	05/10/23 23:33
ZZZZZ	23C0071-01	XDT_m1230510A-095	Solid	05/10/23 23:33
ZZZZZ	23C0071-01	XDT_m1230510A-095	Solid	05/10/23 23:33
ZZZZZ	23C0071-02	XDT_m1230510A-096	Solid	05/10/23 23:37
ZZZZZ	23C0071-02	XDT_m1230510A-096	Solid	05/10/23 23:37
ZZZZZ	23C0071-02	XDT_m1230510A-096	Solid	05/10/23 23:37
ZZZZZ	23C0071-04	XDT_m1230510A-098	Solid	05/10/23 23:46
ZZZZZ	23C0071-04	XDT_m1230510A-098	Solid	05/10/23 23:46
ZZZZZ	23C0071-04	XDT_m1230510A-098	Solid	05/10/23 23:46
ZZZZZ	23C0071-05	XDT_m1230510A-099	Solid	05/10/23 23:50
ZZZZZ	23C0071-05	XDT_m1230510A-099	Solid	05/10/23 23:50
ZZZZZ	23C0071-05	XDT_m1230510A-099	Solid	05/10/23 23:50
ZZZZZ	23C0071-06	XDT_m1230510A-100	Solid	05/10/23 23:55
ZZZZZ	23C0071-06	XDT_m1230510A-100	Solid	05/10/23 23:55
ZZZZZ	23C0071-06	XDT_m1230510A-100	Solid	05/10/23 23:55
ZZZZZ	23C0109-02	XDT_m1230510A-101	Solid	05/10/23 23:59
ZZZZZ	23C0109-02	XDT_m1230510A-101	Solid	05/10/23 23:59
ZZZZZ	23C0109-02	XDT_m1230510A-101	Solid	05/10/23 23:59
ZZZZZ	23C0109-03	XDT_m1230510A-102	Solid	05/11/23 00:03
ZZZZZ	23C0109-03	XDT_m1230510A-102	Solid	05/11/23 00:03
ZZZZZ	23C0109-03	XDT_m1230510A-102	Solid	05/11/23 00:03
ZZZZZ	23C0108-02	XDT_m1230510A-103	Solid	05/11/23 00:08
ZZZZZ	23C0108-02	XDT_m1230510A-103	Solid	05/11/23 00:08
ZZZZZ	23C0108-02	XDT_m1230510A-103	Solid	05/11/23 00:08
Instrument Blank	SLE0204-IBL9	XDT_m1230510A-104	NA	05/11/23 00:12
Calibration Check	SLE0204-CCVA	XDT_m1230510A-105	NA	05/11/23 00:16
Calibration Blank	SLE0204-CCBA	XDT_m1230510A-106	NA	05/11/23 00:24
ZZZZZ	23C0108-06	XDT_m1230510A-107	Solid	05/11/23 00:28
ZZZZZ	23C0108-06	XDT_m1230510A-107	Solid	05/11/23 00:28



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23C0108-06	XDT_m1230510A-107	Solid	05/11/23 00:28
ZZZZZ	23C0108-07	XDT_m1230510A-108	Solid	05/11/23 00:32
ZZZZZ	23C0108-07	XDT_m1230510A-108	Solid	05/11/23 00:32
ZZZZZ	23C0108-07	XDT_m1230510A-108	Solid	05/11/23 00:32
ZZZZZ	23C0108-08	XDT_m1230510A-109	Solid	05/11/23 00:37
ZZZZZ	23C0108-08	XDT_m1230510A-109	Solid	05/11/23 00:37
ZZZZZ	23C0108-08	XDT_m1230510A-109	Solid	05/11/23 00:37
ZZZZZ	23C0108-09	XDT_m1230510A-110	Solid	05/11/23 00:41
ZZZZZ	23C0108-09	XDT_m1230510A-110	Solid	05/11/23 00:41
ZZZZZ	23C0108-09	XDT_m1230510A-110	Solid	05/11/23 00:41
ZZZZZ	23D0008-03	XDT_m1230510A-112	Solid	05/11/23 00:50
ZZZZZ	23D0008-03	XDT_m1230510A-112	Solid	05/11/23 00:50
ZZZZZ	23D0008-03	XDT_m1230510A-112	Solid	05/11/23 00:50
ZZZZZ	23D0037-01	XDT_m1230510A-113	Solid	05/11/23 00:54
ZZZZZ	23D0037-01	XDT_m1230510A-113	Solid	05/11/23 00:54
ZZZZZ	23D0037-01	XDT_m1230510A-113	Solid	05/11/23 00:54
ZZZZZ	23D0037-03	XDT_m1230510A-114	Solid	05/11/23 00:59
ZZZZZ	23D0037-03	XDT_m1230510A-114	Solid	05/11/23 00:59
ZZZZZ	23D0037-03	XDT_m1230510A-114	Solid	05/11/23 00:59
Instrument Blank	SLE0204-IBLA	XDT_m1230510A-116	NA	05/11/23 01:08
Calibration Check	SLE0204-CCVB	XDT_m1230510A-117	NA	05/11/23 01:12
Calibration Blank	SLE0204-CCBB	XDT_m1230510A-118	NA	05/11/23 01:19
Calibration Check	SLE0204-CCVC	XDT_m1230510A-120	NA	05/11/23 01:28
Calibration Blank	SLE0204-CCBC	XDT_m1230510A-121	NA	05/11/23 01:35
LDW23-SS1818	23D0063-01	XDT_m1230510A-123	Solid	05/11/23 01:44
LDW23-SS1818	23D0063-01	XDT_m1230510A-123	Solid	05/11/23 01:44
LDW23-SS1818	23D0063-01	XDT_m1230510A-123	Solid	05/11/23 01:44
LDW23-SS1819	23D0063-03	XDT_m1230510A-124	Solid	05/11/23 01:49
LDW23-SS1819	23D0063-03	XDT_m1230510A-124	Solid	05/11/23 01:49



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
LDW23-SS1819	23D0063-03	XDT_m1230510A-124	Solid	05/11/23 01:49
Instrument Blank	SLE0204-IBLB	XDT_m1230510A-131	NA	05/11/23 02:21
Calibration Check	SLE0204-CCVD	XDT_m1230510A-132	NA	05/11/23 02:26
Calibration Blank	SLE0204-CCBD	XDT_m1230510A-133	NA	05/11/23 02:33
Instrument Blank	SLE0204-IBLC	XDT_m1230510A-138	NA	05/11/23 02:57
ZZZZZ	23D0477-21	XDT_m1230510A-141	Water	05/11/23 03:11
ZZZZZ	23D0477-22	XDT_m1230510A-142	Water	05/11/23 03:15
Instrument Blank	SLE0204-IBLD	XDT_m1230510A-143	NA	05/11/23 03:20
Calibration Check	SLE0204-CCVE	XDT_m1230510A-144	NA	05/11/23 03:24
Calibration Blank	SLE0204-CCBE	XDT_m1230510A-145	NA	05/11/23 03:31
Instrument Blank	SLE0204-IBLE	XDT_m1230510A-150	NA	05/11/23 03:57
Instrument Blank	SLE0204-IBLF	XDT_m1230510A-155	NA	05/11/23 04:21
Calibration Check	SLE0204-CCVF	XDT_m1230510A-156	NA	05/11/23 04:26
Calibration Blank	SLE0204-CCBF	XDT_m1230510A-157	NA	05/11/23 04:33
Calibration Check	SLE0204-CCVG	XDT_m1230510A-159	NA	05/11/23 04:42
Calibration Blank	SLE0204-CCBG	XDT_m1230510A-160	NA	05/11/23 04:49
Instrument Blank	SLE0204-IBLG	XDT_m1230510A-170	NA	05/11/23 05:33
Calibration Check	SLE0204-CCVH	XDT_m1230510A-171	NA	05/11/23 05:38
Calibration Blank	SLE0204-CCBH	XDT_m1230510A-172	NA	05/11/23 05:45
Instrument Blank	SLE0204-IBLH	XDT_m1230510A-182	NA	05/11/23 06:31
Calibration Check	SLE0204-CCVI	XDT_m1230510A-183	NA	05/11/23 06:35
Calibration Blank	SLE0204-CCBI	XDT_m1230510A-184	NA	05/11/23 06:42
Instrument Blank	SLE0204-IBLI	XDT_m1230510A-189	NA	05/11/23 07:05
ZZZZZ	23D0636-01	XDT_m1230510A-190	Water	05/11/23 07:09
ZZZZZ	BLE0298-DUP1	XDT_m1230510A-191	Water	05/11/23 07:14
ZZZZZ	BLE0298-MS1	XDT_m1230510A-192	Water	05/11/23 07:19
ZZZZZ	BLE0298-MSD1	XDT_m1230510A-193	Water	05/11/23 07:25
Instrument Blank	SLE0204-IBLJ	XDT_m1230510A-194	NA	05/11/23 07:29
Calibration Check	SLE0204-CCVJ	XDT_m1230510A-195	NA	05/11/23 07:34



### ANALYSIS BATCH (SEQUENCE) SUMMARY

#### EPA 6020B

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Blank	SLE0204-CCBJ	XDT_m1230510A-196	NA	05/11/23 07:41



**ICP INTERFERENCE CHECK SAMPLE**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Standard ID: L004688

Lab Sample ID	Analyte	True	Found	%R	Units
SLE0204-IFA1	Chromium-52	0	0.6610		ug/L
	Chromium-53	0	1.7410		ug/L
	Lead-208	0	0.0270		ug/L
	Silver-107	0	0.0050		ug/L

\* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.





**ICP INTERFERENCE CHECK SAMPLE**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Standard ID: L004688

Lab Sample ID	Analyte	True	Found	%R	Units
SLE0204-IFB1	Chromium-52	20.000	20.186	101	ug/L
	Chromium-53	20.000	21.276	106	ug/L
	Lead-208	0	0.0180		ug/L
	Silver-107	20.000	18.002	90.0	ug/L

\* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.



**DETECTION LEVEL STANDARD**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Lab Sample ID: SLE0204-CRL1

Analyte	True	Found	%R	Units	QC Limits
Chromium-52	0.50000	0.523	105	ug/L	50 - 150
Chromium-53	0.50000	0.501	100	ug/L	50 - 150
Lead-208	0.10000	0.107	107	ug/L	50 - 150
Silver-107	0.20000	0.202	101	ug/L	50 - 150

\* Values outside of QC limits



**HIGH-CONCENTRATION  
CALIBRATION VERIFICATION  
EPA 6020B**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00040

**Laboratory ID:** SLE0204-HCV1

**Sequence:** SLE0204

**Standard ID:** L004780

<b>ANALYTE</b>	<b>EXPECTED (ug/L)</b>	<b>FOUND (ug/L)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
Chromium-52	200.00	198	-0.8	10.00
Chromium-53	200.00	195	-2.5	10.00
Lead-208	200.00	200	0.004	10.00
Silver-107	200.00	194	-3.2	10.00

\* Values outside of QC limits



## HIGH-CONCENTRATION CALIBRATION VERIFICATION

### EPA 6020B

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00040

**Laboratory ID:** SLE0204-HCV2

**Sequence:** SLE0204

**Standard ID:** L004781

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Chromium-52	300.00	306	1.9	10.00
Chromium-53	300.00	295	-1.7	10.00
Lead-208	300.00	317	5.5	10.00
Silver-107	300.00	311	3.6	10.00

\* Values outside of QC limits



## HOLDING TIME SUMMARY

**Analysis: EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/26/23 12:19	22	180	05/11/23 01:44	37	180	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/26/23 12:19	21	180	05/11/23 01:49	37	180	

\* Indicates hold time exceedance.



**METHOD DETECTION  
AND REPORTING LIMITS**  
**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: ICPMS1

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
Chromium-52	0.26	0.50	mg/kg
Chromium-53	0.24	0.50	mg/kg
Lead-208	0.05	0.10	mg/kg
Silver-107	0.02	0.20	mg/kg

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGCU10  
Lot Number: P2-CU682108  
Matrix: 3% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Copper  
Starting Material: Cu Metal  
Starting Material Lot#: 2095  
Starting Material Purity: 99.9996%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10013 ± 30 µg/mL  
**Density:** 1.032 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9977 ± 50 µg/mL</b> ICP Assay NIST SRM 3114 Lot Number: 121207
<b>Assay Method #2</b>	<b>10024 ± 26 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10007 ± 46 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.007542	M Eu < 0.000942	O Na < 0.001434	M Se < 0.016971	M Zn < 0.005657
O Al < 0.000609	O Fe < 0.008700	M Nb < 0.000942	O Si < 0.003052	M Zr < 0.000942
M As < 0.010371	M Ga < 0.000942	M Nd < 0.000942	M Sm < 0.000942	
M Au < 0.001885	M Gd < 0.000942	M Ni < 0.003781	M Sn < 0.005657	
O B < 0.003663	M Ge < 0.005657	M Os < 0.000942	M Sr < 0.000942	
M Ba < 0.004253	M Hf < 0.000942	O P < 0.031668	M Ta < 0.000942	
M Be < 0.000942	O Hg < 0.007064	M Pb < 0.005789	M Tb < 0.000942	
M Bi < 0.000942	M Ho < 0.000942	M Pd < 0.000942	M Te < 0.004714	
O Ca < 0.002304	M In < 0.000942	M Pr < 0.000942	M Th < 0.000942	
M Cd < 0.000942	M Ir < 0.000942	M Pt < 0.000942	O Ti < 0.002801	
M Ce < 0.000942	O K < 0.000763	M Rb < 0.000942	M Tl < 0.000942	
M Co < 0.001890	M La < 0.000942	M Re < 0.000942	M Tm < 0.000942	
M Cr < 0.005657	O Li < 0.000243	i Rh <	M U < 0.000942	
M Cs < 0.000942	M Lu < 0.000942	M Ru < 0.039588	M V < 0.003771	
s Cu <	O Mg < 0.000320	O S < 0.007174	M W < 0.005657	
M Dy < 0.000942	O Mn < 0.000793	M Sb < 0.001885	M Y < 0.000942	
M Er < 0.000942	M Mo < 0.005657	M Sc < 0.000942	M Yb < 0.000942	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 63.55 +2 6 Cu(H<sub>2</sub>O)<sub>6</sub>2+

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Cu Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub> ); Oxides ( Soluble in HCl ); Ores ( Dissolve in HCl / HNO<sub>3</sub>).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

August 24, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **August 24, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGPB10  
Lot Number: S2-PB713228  
Matrix: 0.5% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Lead  
Starting Material: Lead Nitrate  
Starting Material Lot#: 2343  
Starting Material Purity: 99.9995%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10042 ± 31 µg/mL  
**Density:** 1.015 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10024 ± 41 µg/mL**  
ICP Assay NIST SRM 3128 Lot Number: 101026

**Assay Method #2**      **10054 ± 32 µg/mL**  
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i})^2 / (\sum(1/(u_{char\ j})^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.000310	M Eu < 0.000310	M Na < 0.001470	M Se < 0.009100	O Zn < 0.006155
O Al < 0.017098	O Fe < 0.002496	M Nb < 0.000310	O Si < 0.003761	O Zr < 0.001700
M As < 0.003100	M Ga < 0.000310	M Nd < 0.000310	M Sm < 0.000310	
M Au < 0.000910	M Gd < 0.000310	O Ni < 0.001709	M Sn < 0.001300	
O B < 0.005600	M Ge < 0.002200	M Os < 0.000310	O Sr < 0.000444	
O Ba < 0.007865	M Hf < 0.000310	O P < 0.038000	M Ta < 0.000310	
O Be < 0.000320	M Hg < 0.002200	s Pb < 0.000610	M Tb < 0.000610	
M Bi < 0.028000	M Ho < 0.000310	M Pd < 0.000610	M Te < 0.000310	
O Ca < 0.019834	M In < 0.000310	M Pr < 0.000310	M Th < 0.000310	
O Cd < 0.000630	M Ir < 0.000310	M Pt < 0.000910	O Ti < 0.005129	
M Ce < 0.004787	O K < 0.008207	M Rb < 0.006700	M Tl < 0.016000	
M Co < 0.000610	M La < 0.001900	M Re < 0.000310	M Tm < 0.000310	
O Cr < 0.001500	O Li < 0.000110	O Rh < 0.007700	M U < 0.000310	
M Cs < 0.006100	M Lu < 0.000310	M Ru < 0.001300	M V < 0.001600	
M Cu < 0.001600	O Mg < 0.003317	O S < 0.052000	M W < 0.000910	
M Dy < 0.000310	O Mn < 0.001600	O Sb < 0.015000	M Y < 0.000310	
M Er < 0.000310	M Mo < 0.000610	O Sc < 0.000630	M Yb < 0.000310	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 207.20 +2 6 Pb(H<sub>2</sub>O)<sub>6</sub>+2

**Chemical Compatibility** - Soluble in HCl, HF and HNO<sub>3</sub>. Avoid H<sub>2</sub>SO<sub>4</sub>. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Pb Containing Samples (Preparation and Solution)** -Metal (Best dissolved in 1:1 H<sub>2</sub>O / HNO<sub>3</sub> ); Oxides (The many different Pb oxides are soluble in HNO<sub>3</sub> with the exception of PbO<sub>2</sub> which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H<sub>2</sub>O / HNO<sub>3</sub> ); Organic Matrices (Dry ash and dissolve in dilute HCl).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

January 10, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **January 10, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGZN10  
Lot Number: S2-ZN711249  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Zinc  
Starting Material: Zinc Metal  
Starting Material Lot#: 2349  
Starting Material Purity: 99.9988%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9992 ± 30 µg/mL  
**Density:** 1.029 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9981 ± 56 µg/mL</b> ICP Assay NIST SRM 3168a Lot Number: 120629
<b>Assay Method #2</b>	<b>9987 ± 32 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10002 ± 32 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.002000	M Eu < 0.000500	O Na < 0.008713	M Se < 0.048000	s Zn <
O Al < 0.011000	O Fe < 0.015467	M Nb < 0.000500	O Si < 0.007842	M Zr < 0.000500
O As < 0.012000	M Ga < 0.004900	M Nd < 0.000500	M Sm < 0.000500	
M Au < 0.006500	M Gd < 0.000500	O Ni < 0.003049	M Sn < 0.002614	
O B < 0.019000	M Ge < 0.009100	M Os < 0.000500	M Sr < 0.000500	
M Ba < 0.000500	M Hf < 0.000500	O P < 0.059000	M Ta < 0.000500	
O Be < 0.000230	O Hg < 0.003800	M Pb < 0.016774	M Tb < 0.000500	
M Bi < 0.002400	M Ho < 0.000500	M Pd < 0.001000	M Te < 0.017000	
O Ca < 0.052283	M In < 0.003500	M Pr < 0.000500	M Th < 0.000500	
O Cd < 0.000588	M Ir < 0.001000	M Pt < 0.000500	M Ti < 0.002000	
M Ce < 0.000500	O K < 0.017209	M Rb < 0.002500	M Tl < 0.000500	
M Co < 0.000653	M La < 0.000500	M Re < 0.000500	M Tm < 0.000500	
O Cr < 0.001089	O Li < 0.000230	M Rh < 0.000500	M U < 0.000500	
M Cs < 0.000500	M Lu < 0.000500	M Ru < 0.005000	M V < 0.000500	
O Cu < 0.001938	O Mg < 0.000871	O S < 0.048000	M W < 0.001000	
M Dy < 0.000500	O Mn < 0.000172	M Sb < 0.004300	M Y < 0.000500	
M Er < 0.000500	M Mo < 0.001500	O Sc < 0.000900	M Yb < 0.000500	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 65.39 +2 4 Zn(OH)(aq)1+

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Zn Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub>); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO<sub>3</sub>); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

November 22, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **November 22, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGSE10  
Lot Number: S2-SE711004  
Matrix: 3% (v/v) HNO3  
Value / Analyte(s): 10 000 µg/mL ea:  
Selenium  
Starting Material: Se Metal  
Starting Material Lot#: 1962  
Starting Material Purity: 99.9991%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9955 ± 61 µg/mL  
**Density:** 1.035 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **9955 ± 50 µg/mL**  
ICP Assay NIST SRM 3149 Lot Number: 100901

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/(u_{char\ i}^2)))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char}$  =  $[\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

**4.0 TRACEABILITY TO NIST**

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

**4.1 Thermometer Calibration**

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

**4.2 Balance Calibration**

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

**4.3 Glassware Calibration**

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

**5.0 TRACE METALLIC IMPURITIES (TMI ) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)**

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.002242	M	Eu <	0.000373	O Na	0.013654	s	Se <		O Zn	0.002374
M Al	0.004450	M	Fe	0.008478	O Nb <	0.002975	O Si	0.006249	M Zr <	0.001868	
O As <	0.022040	M	Ga <	0.000373	M Nd <	0.000373	M Sm <	0.000373			
M Au <	0.000373	M	Gd <	0.000373	O Ni	0.001843	M Sn	0.000847			
O B <	0.007714	M	Ge <	0.002616	M Os <	0.000373	M Sr <	0.001121			
M Ba <	0.001495	M	Hf <	0.000373	O P <	0.022040	M Ta <	0.000373			
M Be <	0.001495	M	Hg <	0.002240	M Pb	0.006358	M Tb <	0.006353			
M Bi <	0.000373	M	Ho <	0.000373	M Pd <	0.000373	M Te <	0.012707			
O Ca	0.006530	M	In <	0.000373	M Pr <	0.001495	M Th <	0.002990			
M Cd	0.001165	M	Ir <	0.000373	M Pt <	0.000373	M Ti <	0.003363			
M Ce <	0.000373	O K	0.001999	M Rb <	0.001868	M Tl	0.008584				
M Co <	0.000373	M La <	0.001121	M Re <	0.000373	M Tm <	0.000373				
M Cr	0.002861	O Li	0.000062	M Rh <	0.000373	M U <	0.000373				
M Cs <	0.001121	M Lu <	0.000373	M Ru <	0.001493	M V <	0.000747				
M Cu <	0.000747	O Mg	0.001156	O S	0.024591	M W <	0.002242				
M Dy <	0.000373	M Mn <	0.000373	M Sb <	0.002242	M Y <	0.000373				
M Er <	0.000373	O Mo <	0.003195	M Sc <	0.001121	M Yb <	0.000373				

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

**6.0 INTENDED USE**

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

**7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL**

**7.1 Storage and Handling Recommendations**

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 78.96 +4 6 H<sub>2</sub>SeO<sub>3</sub>

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>,H<sub>3</sub>PO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub> and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.

**Stability** - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Se Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub>); Oxides ( readily soluble in water); Minerals and alloys (acid digestion with HNO<sub>3</sub>or HNO<sub>3</sub> / HF ); Organic Matrices (acid digestion with hot concentrated H<sub>2</sub>SO<sub>4</sub> accompanied by the careful dropwise addition of H<sub>2</sub>O<sub>2</sub> until clear).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences (underlined indicates severe)</b>
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

November 17, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **November 17, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Prepared By:**

Uyen Truong  
Supervisor, Product Documentation



**Certificate Approved By:**

Michael Booth  
Director, Technical



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGMO10  
Lot Number: S2-MO706255  
Matrix: H2O  
tr. NH4OH  
Value / Analyte(s): 10 000 µg/mL ea:  
Molybdenum  
Starting Material: Ammonium Molybdate  
Starting Material Lot#: 2361  
Starting Material Purity: 99.9893%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10026 ± 47 µg/mL  
**Density:** 1.011 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10032 ± 68 µg/mL**  
ICP Assay NIST SRM 3134 Lot Number: 130418

**Assay Method #2**      **10020 ± 65 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i})^2]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000590	M Eu < 0.000300	M Na < 0.008739	M Se < 0.008000	M Zn < 0.005942
M Al < 0.005592	M Fe < 0.006500	M Nb < 0.029000	i Si < 0.001800	M Zr < 0.001800
M As < 0.002100	M Ga < 0.000300	i Nd < 0.000300	M Sm < 0.000300	
M Au < 0.000300	M Gd < 0.000300	M Ni < 0.008000	M Sn < 0.008900	
M B < 0.003300	M Ge < 0.000300	M Os < 0.000590	M Sr < 0.001747	
M Ba < 0.016778	M Hf < 0.001800	i P < 0.004200	M Ta < 0.004200	
M Be < 0.000890	M Hg < 0.003300	M Pb < 0.000300	M Tb < 0.000300	
M Bi < 0.000890	M Ho < 0.000300	M Pd < 0.001800	M Te < 0.021000	
O Ca < 0.062920	M In < 0.032000	M Pr < 0.013000	M Th < 0.000300	
O Cd < 0.026000	M Ir < 0.000300	M Pt < 0.000300	O Ti < 0.032000	
M Ce < 0.008300	M K < 1.293372	M Rb < 0.045442	M Tl < 0.012584	
M Co < 0.005942	M La < 0.000300	M Re < 0.000300	M Tm < 0.000300	
M Cr < 0.005243	O Li < 0.000594	M Rh < 0.000300	M U < 0.005300	
M Cs < 0.005243	M Lu < 0.000300	M Ru < 0.079000	M V < 0.000890	
M Cu < 0.022371	M Mg < 0.005592	i S < 0.873900	M W < 0.873900	
M Dy < 0.000300	M Mn < 0.005900	M Sb < 0.015031	M Y < 0.000300	
M Er < 0.000300	s Mo < 0.001200	M Sc < 0.001200	M Yb < 0.000300	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 95.94 +6 6,7,8,9

[MoO4]-2(chemical form as received)

**Chemical Compatibility** -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5]-2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

**Stability** - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4]-2 chemically stable for years in 1% NH4OH in a LDPE container.

**Mo Containing Samples (Preparation and Solution)** -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl ).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br1 60,190Os2+,190Pt 2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

July 04, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **July 04, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGTL10  
Lot Number: T2-TL714687  
Matrix: 5% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Thallium  
Starting Material: TINO<sub>3</sub>  
Starting Material Lot#: 2118  
Starting Material Purity: 99.9998%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10030 ± 42 µg/mL  
**Density:** 1.036 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10040 ± 43 µg/mL**  
ICP Assay NIST SRM 3158 Lot Number: 151215

**Assay Method #2**      **10010 ± 65 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.000200	M Eu < 0.000200	O Na < 0.002489	M Se < 0.011019	O Zn < 0.002298
O Al < 0.004184	O Fe < 0.002824	M Nb < 0.000200	O Si < 0.003760	M Zr < 0.000200
M As < 0.002003	M Ga < 0.000200	M Nd < 0.000200	M Sm < 0.000200	
O Au < 0.002824	M Gd < 0.000200	M Ni < 0.001724	M Sn < 0.000601	
O B < 0.004184	M Ge < 0.000801	M Os < 0.000198	O Sr < 0.000313	
M Ba < 0.000400	M Hf < 0.000200	O P < 0.010460	M Ta < 0.000200	
O Be < 0.000104	M Hg < 0.000794	M Pb < 0.000811	M Tb < 0.000200	
M Bi < 0.005209	M Ho < 0.000200	M Pd < 0.000400	M Te < 0.005008	
O Ca < 0.002436	M In < 0.000200	M Pr < 0.000200	M Th < 0.000200	
M Cd < 0.001318	M Ir < 0.000198	M Pt < 0.000801	O Ti < 0.001255	
M Ce < 0.000200	O K < 0.006175	M Rb < 0.000200	s Tl <	
M Co < 0.000601	M La < 0.000200	M Re < 0.000200	M Tm < 0.000200	
M Cr < 0.000801	O Li < 0.000177	M Rh < 0.000200	M U < 0.000200	
M Cs < 0.003606	M Lu < 0.000200	M Ru < 0.000397	M V < 0.002203	
M Cu < 0.001001	O Mg < 0.000529	O S < 0.015690	M W < 0.000601	
M Dy < 0.000200	M Mn < 0.000801	M Sb < 0.000400	M Y < 0.000200	
M Er < 0.000200	M Mo < 0.001202	O Sc < 0.000711	M Yb < 0.000200	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 204.38 +1 6 Ti(H<sub>2</sub>O)<sub>6</sub>+  
**Chemical Compatibility** - Soluble in HCl, HNO<sub>3</sub>, and H<sub>2</sub>SO<sub>4</sub>. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Ti Containing Samples )Preparation and Solution)** -Metal (Best dissolved in HNO<sub>3</sub> which forms chiefly the Ti<sup>3+</sup> ion.); Oxide (The thallic oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt<sub>0</sub> followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

February 08, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **February 08, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGCD10  
Lot Number: S2-CD710508  
Matrix: 3% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Cadmium  
Starting Material: Cd Metal  
Starting Material Lot#: 1953  
Starting Material Purity: 99.9995%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10008 ± 30 µg/mL  
**Density:** 1.029 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10010 ± 32 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #2</b>	<b>10011 ± 30 µg/mL</b> ICP Assay NIST SRM 3108 Lot Number: 130116
<b>Assay Method #3</b>	<b>10003 ± 30 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i})^2]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

O Ag < 0.003200	O Eu < 0.002500	O Na < 0.005499	M Se < 0.005700	O Zn < 0.001100
O Al < 0.008903	O Fe < 0.000602	M Nb < 0.000400	O Si < 0.016758	O Zr < 0.002600
M As < 0.003600	M Ga < 0.001200	M Nd < 0.000800	M Sm < 0.000400	
M Au < 0.000810	M Gd < 0.000400	M Ni < 0.003600	M Sn < 0.003200	
O B < 0.004189	O Ge < 0.012000	M Os < 0.000810	O Sr < 0.000330	
M Ba < 0.002400	M Hf < 0.000400	O P < 0.022000	M Ta < 0.000800	
M Be < 0.000400	M Hg < 0.001700	M Pb < 0.002400	M Tb < 0.000400	
M Bi < 0.000400	M Ho < 0.000400	M Pd < 0.001200	M Te < 0.008000	
O Ca < 0.011259	O In < 0.013000	M Pr < 0.000400	M Th < 0.000400	
s Cd < 0.000400	M Ir < 0.000410	M Pt < 0.000400	O Ti < 0.000602	
M Ce < 0.000400	O K < 0.005237	M Rb < 0.004400	M Tl < 0.000523	
M Co < 0.000400	M La < 0.000400	M Re < 0.000400	M Tm < 0.000400	
O Cr < 0.005100	O Li < 0.000054	M Rh < 0.000400	M U < 0.000400	
M Cs < 0.002400	M Lu < 0.000400	M Ru < 0.002500	M V < 0.002000	
O Cu < 0.004800	O Mg < 0.000288	O S < 0.022000	M W < 0.000400	
M Dy < 0.000400	O Mn < 0.000860	O Sb < 0.018000	M Y < 0.000400	
M Er < 0.000400	M Mo < 0.001600	O Sc < 0.000430	M Yb < 0.000400	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 112.41 +2 4 Cd<sub>2</sub>(OH) (aq)<sub>3+</sub> and Cd(OH)(aq)

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> , and HF. Avoid basic media forming insoluble carbonate and hydroxide.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO<sub>3</sub> / LDPE container.

**Cd Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub>); Oxides (soluble in HCl or HNO<sub>3</sub>); Ores (dissolve in HCl /HNO<sub>3</sub> then take to fumes with H<sub>2</sub>SO<sub>4</sub>. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

November 01, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **November 01, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGMN10  
Lot Number: S2-MN704240  
Matrix: 3% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Manganese  
Starting Material: Mn Metal  
Starting Material Lot#: 2275  
Starting Material Purity: 99.9909%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10011 ± 30 µg/mL  
**Density:** 1.035 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9989 ± 69 µg/mL</b> ICP Assay NIST SRM 3132 Lot Number: 050429
<b>Assay Method #2</b>	<b>10011 ± 25 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10024 ± 47 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method  $A$  with

$u_{char\ a}$  = the standard uncertainty of characterization Method  $A$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.001500	M Eu < 0.000730	O Na 0.176097	M Se < 0.006600	M Zn 0.009925
O Al 0.004322	M Fe < 0.650000	M Nb < 0.000730	O Si 0.097654	M Zr < 0.000730
M As < 0.008000	M Ga 0.004322	M Nd < 0.001500	M Sm < 0.000730	
M Au < 0.000730	M Gd < 0.000730	M Ni 0.024013	M Sn < 0.002200	
M B 0.068838	M Ge < 0.004400	M Os < 0.000730	O Sr 0.000928	
M Ba < 0.001500	M Hf < 0.000730	i P <	M Ta < 0.000730	
M Be < 0.000730	M Hg < 0.002200	M Pb 0.007364	M Tb < 0.000730	
M Bi < 0.003000	M Ho < 0.000730	M Pd < 0.000730	M Te < 0.019000	
O Ca 0.062434	M In < 0.003000	M Pr < 0.000730	M Th < 0.000730	
M Cd < 0.001500	M Ir < 0.000730	M Pt < 0.000730	O Ti < 0.006500	
M Ce < 0.007300	O K 0.006403	M Rb < 0.006600	M Tl < 0.000730	
O Co 0.014728	M La < 0.003000	M Re < 0.000730	M Tm < 0.000730	
O Cr 0.272151	O Li 0.000416	M Rh < 0.003000	M U < 0.001500	
M Cs < 0.000730	M Lu < 0.000730	M Ru < 0.004400	M V < 0.000730	
O Cu 0.007684	O Mg 0.320177	i S <	M W < 0.004400	
M Dy < 0.001500	s Mn <	M Sb < 0.021000	O Y 0.001360	
M Er < 0.001500	M Mo 0.010245	O Sc < 0.004100	M Yb < 0.000730	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 54.94 +2 6 Mn(H<sub>2</sub>O)<sub>6</sub>2+

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO<sub>3</sub>/LDPE container.

**Mn Containing Samples (Preparation and Solution)** -Metal (Soluble in dilute acids ); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H<sub>2</sub>SO<sub>4</sub> and heat to SO<sub>3</sub> fumes - dense white fumes).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16 O,37Cl18O,40Ar15 N,38Ar17O,36Ar18O 1H ,38Ar16O1H,37Cl17 O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

April 17, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **April 17, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



**1.0 ACCREDITATION / REGISTRATION**

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



**2.0 PRODUCT DESCRIPTION**

Product Code: Single Analyte Custom Grade Solution  
 Catalog Number: CGSB10  
 Lot Number: R2-SB688559  
 Matrix: 3% (v/v) HNO3  
 3% (w/v) tartaric acid  
 Value / Analyte(s): 10 000 µg/mL ea:  
 Antimony  
 Starting Material: Antimony Metal  
 Starting Material Lot#: 1857  
 Starting Material Purity: 99.9894%

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 10003 ± 47 µg/mL  
**Density:** 1.061 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

**Assay Method #1 10003 ± 41 µg/mL**  
 ICP Assay NIST SRM 3102a Lot Number: 140911

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

**Characterization of CRM/RM by Two or More Methods**

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i) (X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$   
 $w_i$  = the weighting factors for each method calculated using the inverse square of the variance:  
 $w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2  
 $u_{char} = [\sum((w_i)^2 (u_{char i}^2))]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method  
 $u_{bb}$  = bottle to bottle homogeneity standard uncertainty  
 $u_{lts}$  = long term stability standard uncertainty (storage)  
 $u_{ts}$  = transport stability standard uncertainty

**Characterization of CRM/RM by One Method**

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with  
 $u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2  
 $u_{char a}$  = the errors from characterization  
 $u_{bb}$  = bottle to bottle homogeneity standard uncertainty  
 $u_{lts}$  = long term stability standard uncertainty (storage)  
 $u_{ts}$  = transport stability standard uncertainty

#### 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### 5.0 TRACE METALLIC IMPURITIES (TMI ) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.000200	M Eu <	0.000300	O Na	0.140000	M Se <	0.007300	O Zn	0.005000
M Al	0.003200	O Fe	0.060000	M Nb <	0.000100	O Si	0.150000	O Zr <	0.006300
M As <	0.004400	M Ga <	0.000400	M Nd <	0.000100	M Sm <	0.000100		
M Au <	0.000210	M Gd <	0.000100	O Ni	0.004800	M Sn <	0.001800		
M B <	0.011000	M Ge <	0.000600	M Os <	0.000110	O Sr	0.000750		
O Ba <	0.004900	M Hf <	0.000100	O P	0.540000	M Ta	0.003300		
M Be <	0.000400	M Hg <	0.000110	M Pb <	0.000400	M Tb <	0.000100		
M Bi <	0.000200	M Ho <	0.000100	M Pd <	0.000210	M Te <	0.000600		
O Ca	0.110000	M In <	0.000100	M Pr <	0.001600	M Th <	0.000100		
M Cd <	0.000200	M Ir <	0.000110	M Pt <	0.000600	M Ti <	0.002800		
M Ce	0.006500	O K	0.020000	M Rb <	0.001000	M Tl <	0.000100		
M Co <	0.000200	O La <	0.016000	M Re <	0.000100	M Tm <	0.000100		
M Cr	0.006900	O Li <	0.000430	M Rh <	0.000300	M U <	0.000100		
M Cs <	0.000200	M Lu <	0.000100	M Ru <	0.000310	M V <	0.000800		
M Cu <	0.000600	O Mg	0.021000	n S <		M W <	0.000200		
M Dy <	0.000100	O Mn	0.001900	s Sb <		M Y <	0.000100		
M Er <	0.000100	M Mo <	0.000500	O Sc <	0.002300	M Yb <	0.000100		

M - Checked by ICP-MS      O - Checked by ICP-OES      i - Spectral Interference  
n - Not Checked For      s - Solution Standard Element

#### 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations



- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 121.75 +3 6 Sb(O)C4H4O6-1

**Chemical Compatibility** -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.

**Stability** - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.

**Sb Containing Samples (Preparation and Solution)** -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides ( Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences (underlined indicates severe)</b>
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

April 30, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **April 30, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGAS10  
Lot Number: T2-AS718260  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Arsenic  
Starting Material: As Metal  
Starting Material Lot#: 2208  
Starting Material Purity: 99.9971%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10060 ± 40 µg/mL  
**Density:** 1.037 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10062 ± 46 µg/mL**  
ICP Assay NIST SRM 3103a Lot Number: 100818

**Assay Method #2**      **10055 ± 76 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method  $A$  with

$u_{char a}$  = the standard uncertainty of characterization Method  $A$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.003200	M Eu < 0.000530	O Na < 0.032544	M Se < 0.006300	O Zn < 0.001952
M Al < 0.007593	O Fe < 0.001475	O Nb < 0.012000	O Si < 0.238658	O Zr < 0.004100
s As < 0.000530	M Ga < 0.000530	M Nd < 0.000530	M Sm < 0.000530	
M Au < 0.003100	M Gd < 0.000530	M Ni < 0.002100	M Sn < 0.000530	
M B < 0.026035	M Ge < 0.001600	M Os < 0.000520	M Sr < 0.000530	
M Ba < 0.000530	M Hf < 0.000530	O P < 0.043000	M Ta < 0.000530	
O Be < 0.000360	M Hg < 0.001600	M Pb < 0.002100	M Tb < 0.000530	
M Bi < 0.000530	M Ho < 0.000530	M Pd < 0.001100	M Te < 0.004700	
O Ca < 0.004339	M In < 0.023000	M Pr < 0.005300	M Th < 0.000530	
M Cd < 0.001100	M Ir < 0.000520	M Pt < 0.000530	O Ti < 0.002300	
M Ce < 0.000530	O K < 0.002061	M Rb < 0.000530	M Tl < 0.000530	
M Co < 0.000530	M La < 0.001100	M Re < 0.000530	M Tm < 0.000530	
O Cr < 0.001800	O Li < 0.000120	M Rh < 0.000530	M U < 0.000530	
M Cs < 0.005300	M Lu < 0.000530	M Ru < 0.000520	M V < 0.002700	
M Cu < 0.001600	O Mg < 0.000154	O S < 0.028205	M W < 0.012000	
M Dy < 0.000530	O Mn < 0.000154	M Sb < 0.000530	M Y < 0.000530	
M Er < 0.000530	M Mo < 0.000530	O Sc < 0.001700	M Yb < 0.000530	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 74.92 ; mix of +3 and +5 ; 6 ; H3AsO4 and HAsO2

**Chemical Compatibility** - Arsenic has no cationic chemistry. It is soluble in HCl, HNO3, H3PO4, H2SO4 and HF aqueous matrices water and NH4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

**Stability** - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container.

**As Containing Samples (Preparation and Solution)** - Metal (soluble in 1:1 H2O / HNO3 ); Oxides (the oxide exists in crystalline and amorphous forms where the amorphous form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powdered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K2CO3 and KNO3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na2CO3 / Na2O2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO3).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37C I,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

## 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

## 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

May 10, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **May 10, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

### Certificate Prepared By:

Uyen Truong  
Supervisor, Product Documentation



### Certificate Approved By:

Michael Booth  
Director, Technical



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director



## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGBA10  
Lot Number: R2-BA692576  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Barium  
Starting Material: Barium Nitrate  
Starting Material Lot#: 1969  
Starting Material Purity: 99.9982%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10022 ± 30 µg/mL  
**Density:** 1.025 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10018 ± 50 µg/mL</b> ICP Assay NIST SRM 3104a Lot Number: 140909
<b>Assay Method #2</b>	<b>10023 ± 31 µg/mL</b> Gravimetric NIST SRM Lot Number: See Sec. 4.2
<b>Assay Method #3</b>	<b>10023 ± 30 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char i})^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an UPLA-Filtered Clean Room. An UPLA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000410	O Eu < 0.005200	O Na < 0.004610	M Se < 0.003700	O Zn < 0.000658
M Al < 0.003100	O Fe < 0.015707	M Nb < 0.000210	O Si < 0.005573	M Zr < 0.001300
M As < 0.001300	M Ga < 0.000210	M Nd < 0.000210	O Sm < 0.021000	
M Au < 0.001300	M Gd < 0.000210	M Ni < 0.000810	M Sn < 0.000410	
O B < 0.005200	M Ge < 0.002500	M Os < 0.000410	O Sr < 0.003850	
s Ba < 0.000320	M Hf < 0.000810	O P < 0.026000	M Ta < 0.000410	
O Be < 0.000320	M Hg < 0.000210	M Pb < 0.002300	M Tb < 0.000210	
M Bi < 0.000210	M Ho < 0.000210	M Pd < 0.000210	M Te < 0.001900	
O Ca < 0.007093	M In < 0.000210	M Pr < 0.000210	M Th < 0.000210	
M Cd < 0.000210	M Ir < 0.000210	M Pt < 0.000210	M Ti < 0.002100	
M Ce < 0.001300	O K < 0.035467	M Rb < 0.002100	M Tl < 0.000210	
M Co < 0.000410	O La < 0.005200	M Re < 0.000210	M Tm < 0.000410	
M Cr < 0.001700	O Li < 0.000630	M Rh < 0.000210	M U < 0.000210	
M Cs < 0.003300	M Lu < 0.001700	M Ru < 0.000210	O V < 0.005200	
M Cu < 0.001300	O Mg < 0.000861	O S < 0.268539	M W < 0.000410	
M Dy < 0.000210	M Mn < 0.000410	M Sb < 0.001300	O Y < 0.005200	
M Er < 0.001300	M Mo < 0.000410	M Sc < 0.000410	M Yb < 0.001300	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 137.33 +2 6 Ba(H<sub>2</sub>O)<sub>6</sub>+2

**Chemical Compatibility** - Soluble in HCl, and HNO<sub>3</sub>. Avoid H<sub>2</sub>SO<sub>4</sub>, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO<sub>3</sub> / LDPE container.

**Ba Containing Samples (Preparation and Solution)** -Metal(is best dissolved in diluted HNO<sub>3</sub> ); Ores( Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent BaSO<sub>4</sub> precipitate ); Organic Matrices (dry ash and dissolve in dilute HCl.)

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

May 11, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **May 11, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGBE10  
Lot Number: R2-BE692992  
Matrix: 6% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Beryllium  
Starting Material: Beryllium Acetate  
Starting Material Lot#: 2281  
Starting Material Purity: 99.9998%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10032 ± 41 µg/mL  
**Density:** 1.128 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10042 ± 67 µg/mL**  
ICP Assay NIST SRM 3105a Lot Number: 090514

**Assay Method #2**      **10025 ± 51 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.001100	M Eu < 0.000270	O Na < 0.040962	M Se < 0.005000	M Zn < 0.013054
O Al < 0.016205	O Fe < 0.015754	M Nb < 0.000270	O Si < 0.024307	O Zr < 0.001900
M As < 0.002900	M Ga < 0.000270	M Nd < 0.000270	M Sm < 0.000270	
M Au < 0.000520	M Gd < 0.000270	M Ni < 0.003700	M Sn < 0.000790	
M B < 0.091000	M Ge < 0.000270	M Os < 0.000260	M Sr < 0.000630	
M Ba < 0.002700	M Hf < 0.000270	O P < 0.066000	M Ta < 0.000270	
s Be < 0.000530	M Hg < 0.000520	M Pb < 0.000270	M Tb < 0.000270	
M Bi < 0.072022	M Ho < 0.000270	M Pd < 0.000520	M Te < 0.003700	
O Ca < 0.000790	M In < 0.000790	M Pr < 0.000270	M Th < 0.000270	
M Cd < 0.000270	M Ir < 0.000260	M Pt < 0.000270	O Ti < 0.000400	
M Ce < 0.000270	O K < 0.045014	M Rb < 0.000270	M Tl < 0.000790	
O Co < 0.003200	M La < 0.000270	M Re < 0.000270	M Tm < 0.000270	
O Cr < 0.001800	O Li < 0.000660	M Rh < 0.001100	M U < 0.000270	
M Cs < 0.001440	M Lu < 0.000270	M Ru < 0.000260	M V < 0.000790	
M Cu < 0.002100	O Mg < 0.016205	i S < 0.000270	M W < 0.000530	
M Dy < 0.000270	M Mn < 0.001215	M Sb < 0.000270	M Y < 0.000270	
M Er < 0.000270	M Mo < 0.000530	O Sc < 0.000930	M Yb < 0.000270	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 9.01 +2 4 Be(H<sub>2</sub>O)<sub>4</sub>+2

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> and HF aqueous matrices. Stable with all metals and inorganic anions.

**Stability** - 2-100 ppb levels stable for months in 1 % HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO<sub>3</sub> / LDPE container.

**Be Containing Samples (Preparation and Solution)** - Meta I(is best dissolved in diluted H<sub>2</sub>SO<sub>4</sub> ); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO<sub>4</sub> fusion); Ores (H<sub>2</sub>SO<sub>4</sub>/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION, PERIOD OF VALIDITY AND REVISION HISTORY

**11.1 Certification Issue Date**

May 13, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **May 13, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**11.4 Revision Status**

- Revision 1 - Revised on Thursday, Jan 14, 2021 by utruong. Revision was made for the following reason: Modified Section 7 Chemical Form in Solution.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



**1.0 ACCREDITATION / REGISTRATION**

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



**2.0 PRODUCT DESCRIPTION**

Product Code: Single Analyte Custom Grade Solution  
 Catalog Number: CGCO10  
 Lot Number: R2-CO695285  
 Matrix: 3% (v/v) HNO3  
 Value / Analyte(s): 10 000 µg/mL ea:  
 Cobalt  
 Starting Material: Co Metal  
 Starting Material Lot#: 2326  
 Starting Material Purity: 99.9934%

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 10012 ± 31 µg/mL  
**Density:** 1.056 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

- Assay Method #1**      **10031 ± 67 µg/mL**  
 ICP Assay NIST SRM 3113 Lot Number: 190630
  
- Assay Method #2**      **10019 ± 32 µg/mL**  
 EDTA NIST SRM 928 Lot Number: 928
  
- Assay Method #3**      **10000 ± 35 µg/mL**  
 Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/CRM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i) (X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char i})^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an UPLA-Filtered Clean Room. An UPLA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag	0.014660	M Eu	<	0.000590	O Na	0.007534	M Se	<	0.019000	M Zn	0.003461	
M Al	<	0.024000	M Fe	0.050905	M Nb	<	0.000590	O Si	0.075340	M Zr	<	0.001200
i As	<		M Ga	<	0.000590	M Nd	<	0.000590	M Sm	<	0.000590	
M Au	<	0.004100	M Gd	<	0.000590	O Ni	0.427608	M Sn	<	0.001200		
M B	<	0.031000	M Ge	<	0.003000	M Os	<	0.000590	O Sr	<	0.000260	
M Ba	<	0.000590	M Hf	<	0.000590	n P	<		M Ta	<	0.001200	
O Be	<	0.001300	M Hg	<	0.001800	M Pb	0.003257	M Tb	<	0.000590		
M Bi	<	0.003000	M Ho	<	0.000590	M Pd	<	0.000590	M Te	<	0.005300	
O Ca	0.010588	M In	<	0.001200	M Pr	<	0.000590	M Th	<	0.000590		
M Cd	<	0.004700	M Ir	<	0.001200	M Pt	<	0.002400	M Ti	<	0.014000	
M Ce	<	0.000590	O K	0.008144	M Rb	<	0.000590	M Tl	0.002647			
s Co	<		M La	<	0.000590	M Re	<	0.000590	M Tm	<	0.000590	
M Cr	<	0.021000	O Li	<	0.000130	M Rh	<	0.000590	M U	<	0.000590	
M Cs	<	0.002400	M Lu	<	0.000590	M Ru	<	0.007100	O V	<	0.000880	
M Cu	0.189369	O Mg	0.001893	n S	<			M W	<	0.000590		
M Dy	<	0.000590	M Mn	<	0.001800	M Sb	<	0.003600	M Y	<	0.000590	
M Er	<	0.000590	M Mo	<	0.002400	O Sc	<	0.001600	M Yb	<	0.000590	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 58.93 +2 6 Co(H<sub>2</sub>O)<sub>6</sub><sup>2+</sup>

**Chemical Compatibility** - Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Co Containing Samples (Preparation and Solution)** - Metal (soluble in HNO<sub>3</sub>); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO<sub>3</sub>).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

August 04, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **August 04, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGAG10  
Lot Number: S2-AG712977  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Silver  
Starting Material: Ag Shot  
Starting Material Lot#: 2289  
Starting Material Purity: 99.9951%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10051 ± 30 µg/mL  
**Density:** 1.056 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10051 ± 52 µg/mL</b> ICP Assay NIST SRM 3151 Lot Number: 160729
<b>Assay Method #2</b>	<b>10051 ± 19 µg/mL</b> Volhard NIST SRM 999c Lot Number: 999c
<b>Assay Method #3</b>	<b>10049 ± 31 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s Ag <	M Eu <	0.000260	O Na	0.003811	M Se <	0.003900	O Zn	0.048146	
M Al	0.002688	O Fe	0.006419	M Nb <	0.000260	O Si	0.005215	M Zr <	0.000260
M As <	0.001100	M Ga <	0.000260	M Nd <	0.000260	M Sm <	0.000260		
M Au <	0.000260	M Gd <	0.000260	O Ni	0.001765	M Sn	0.020060		
O B <	0.004300	M Ge <	0.002300	M Os <	0.001100	O Sr <	0.000110		
M Ba <	0.000520	M Hf <	0.000260	O P <	0.017000	M Ta <	0.000260		
O Be <	0.001100	M Hg <	0.000770	M Pb <	0.003600	M Tb <	0.000260		
M Bi	0.004814	M Ho <	0.000260	M Pd	0.044134	M Te <	0.009000		
O Ca	0.005215	M In	0.003691	M Pr <	0.000260	M Th <	0.000260		
M Cd <	0.000260	M Ir <	0.000520	M Pt <	0.001100	O Ti <	0.000440		
M Ce <	0.002100	O K <	0.008700	M Rb <	0.001100	M Tl <	0.004100		
O Co <	0.000330	M La <	0.000260	M Re <	0.000260	M Tm <	0.000260		
O Cr <	0.002500	O Li <	0.000110	M Rh <	0.000520	M U <	0.000260		
M Cs <	0.002600	M Lu <	0.000260	M Ru <	0.000260	M V <	0.000260		
O Cu	0.357085	O Mg	0.001203	O S <	0.017000	M W <	0.000260		
M Dy <	0.000260	O Mn <	0.000220	M Sb <	0.014000	M Y <	0.000260		
M Er <	0.000260	M Mo <	0.000260	O Sc <	0.000220	M Yb <	0.000260		

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 107.87 +1 6 Ag(H<sub>2</sub>O)<sub>6</sub><sup>+</sup>  
**Chemical Compatibility** - Stable in HNO<sub>3</sub>, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [ AgCl<sub>x</sub>1-x] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite, bromide, chloride, iodide, carbonate, chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.

**Stability** - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Ag Containing Samples (Preparation and Solution)** - Metal (Soluble in HNO<sub>3</sub>); Oxides (Soluble in HNO<sub>3</sub>); Ores (Digestion with conc. HNO<sub>3</sub>).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

December 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **December 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Prepared By:**

Uyen Truong  
Supervisor, Product Documentation



**Certificate Approved By:**

Michael Booth  
Director, Technical



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGCR(3)10  
Lot Number: S2-CR709784  
Matrix: 10% (v/v) HNO3  
Value / Analyte(s): 10 000 µg/mL ea:  
Chromium  
Starting Material: Cr Metal  
Starting Material Lot#: 2328  
Starting Material Purity: 99.9951%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10027 ± 41 µg/mL  
**Density:** 1.072 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10027 ± 40 µg/mL**  
ICP Assay NIST SRM 3112a Lot Number: 170630

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$   
 $w_i$  = the weighting factors for each method calculated using the inverse square of the variance:  
 $w_i = (1/u_{char\ i}^2) / (\sum(1/(u_{char\ i}^2)))$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2  
 $u_{char}$  =  $[\sum((w_i)^2 (u_{char\ i})^2)]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method  
 $u_{bb}$  = bottle to bottle homogeneity standard uncertainty  
 $u_{Its}$  = long term stability standard uncertainty (storage)  
 $u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char\ a})$$

$X_a$  = mean of Assay Method A with  
 $u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2  
 $u_{char\ a}$  = the errors from characterization  
 $u_{bb}$  = bottle to bottle homogeneity standard uncertainty  
 $u_{Its}$  = long term stability standard uncertainty (storage)  
 $u_{ts}$  = transport stability standard uncertainty

#### 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.001700	M	Eu <	0.003400	O	Na	0.090372	M	Se <	0.012000	O	Zn <	0.006100
M Al	0.034916	O	Fe	0.246471	M	Nb <	0.017000	n	Si <		M	Zr <	0.007800
M As <	0.028000	O	Ga <	0.013000	M	Nd <	0.013000	M	Sm <	0.006900			
M Au <	0.001700	M	Gd <	0.000560	M	Ni	0.016020	M	Sn	0.006983			
O B <	0.025000	O	Ge <	0.014000	M	Os <	0.000560	M	Sr	0.006367			
M Ba <	0.008900	M	Hf <	0.000560	i	P <		M	Ta <	0.000560			
M Be <	0.013000	M	Hg <	0.001700	M	Pb	0.010064	M	Tb <	0.000560			
M Bi <	0.002300	M	Ho <	0.000560	M	Pd <	0.021000	M	Te <	0.010000			
O Ca	0.075995	M	In <	0.000560	M	Pr <	0.001700	M	Th <	0.000560			
M Cd <	0.000560	M	Ir <	0.000560	M	Pt <	0.001200	O	Ti	0.013555			
M Ce <	0.001200	O	K	0.043132	i	Rb <		M	Tl <	0.000560			
M Co <	0.002600	M	La <	0.001200	M	Re <	0.001200	O	Tm <	0.013000			
s Cr <		O	Li	0.000390	M	Rh <	0.095000	M	U <	0.000560			
M Cs <	0.007800	M	Lu <	0.000560	M	Ru <	0.087000	O	V	0.014993			
O Cu	0.007599	O	Mg	0.000883	i	S <		M	W <	0.049000			
M Dy <	0.000560	M	Mn	0.008626	M	Sb <	0.003400	M	Y <	0.001700			
M Er <	0.019000	M	Mo <	0.032000	M	Sc	0.003080	M	Yb <	0.000560			

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

#### 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations



- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 52.00 +3 6 Cr(H<sub>2</sub>O)<sub>6</sub>3+

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Cr<sub>3</sub> Containing Samples (Preparation and Solution)** -Metal (soluble in HCl ); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with KHSO<sub>4</sub> and extraction with hot KCl. The residue fused with Na<sub>2</sub>CO<sub>3</sub> and KClO<sub>3</sub>, 3:1. B. Fusion with NaKSO<sub>4</sub> and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na<sub>2</sub>O<sub>2</sub> or NaOH and KNO<sub>3</sub> or NaOH and Na<sub>2</sub>O<sub>2</sub>. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, <, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

**10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"**

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

October 26, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **October 26, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



**1.0 ACCREDITATION / REGISTRATION**

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



**2.0 PRODUCT DESCRIPTION**

Product Code: Single Analyte Custom Grade Solution  
 Catalog Number: CGNI10  
 Lot Number: P2-NI686384  
 Matrix: 3% (v/v) HNO3  
 Value / Analyte(s): 10 000 µg/mL ea:  
 Nickel  
 Starting Material: Ni Metal  
 Starting Material Lot#: 2277 and 2282  
 Starting Material Purity: 99.9992%

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 9979 ± 30 µg/mL  
**Density:** 1.038 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

- Assay Method #1**      **9971 ± 54 µg/mL**  
 ICP Assay NIST SRM 3136 Lot Number: 120619
  
- Assay Method #2**      **9970 ± 32 µg/mL**  
 EDTA NIST SRM 928 Lot Number: 928
  
- Assay Method #3**      **9993 ± 33 µg/mL**  
 Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char\ i})^2)]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag	0.002606	M Eu	<	0.001100	O Na	0.004965	O Se	<	0.067000	M Zn	0.006578	
M Al	<	0.013000	O Fe	0.018618	M Nb	<	0.001100	O Si	0.010923	M Zr	<	0.001100
O As	<	0.067000	M Ga	<	0.001100	M Nd	<	0.001100	M Sm	<	0.001100	
M Au	<	0.002100	M Gd	<	0.001100	s Ni	<		M Sn	<	0.016000	
M B	<	0.017000	M Ge	<	0.004200	M Os	0.002110	O Sr	<	0.000940		
M Ba	<	0.001100	M Hf	<	0.001100	i P	<		M Ta	<	0.001100	
O Be	<	0.000410	M Hg	0.014895	M Pb	0.006578	M Tb	<	0.001100			
M Bi	<	0.004200	M Ho	<	0.001100	M Pd	<	0.001100	M Te	<	0.015000	
O Ca	0.003351	M In	<	0.001100	M Pr	<	0.001100	M Th	<	0.001100		
M Cd	0.001365	M Ir	0.004716	M Pt	<	0.001100	M Ti	<	0.004200			
M Ce	<	0.001100	O K	0.004716	M Rb	<	0.001100	M Tl	<	0.001100		
O Co	0.017377	M La	<	0.001100	M Re	0.001737	M Tm	<	0.001100			
O Cr	<	0.006700	O Li	<	0.000140	M Rh	<	0.006300	M U	<	0.001100	
M Cs	<	0.007300	M Lu	<	0.001100	M Ru	<	0.019000	M V	<	0.002100	
M Cu	0.004096	O Mg	0.000372	i S	<			M W	<	0.006300		
M Dy	<	0.001100	O Mn	<	0.001900	M Sb	0.005833	O Y	<	0.000540		
M Er	<	0.001100	M Mo	<	0.008400	M Sc	<	0.002100	M Yb	<	0.001100	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 58.69 +2 6 Ni(H<sub>2</sub>O)<sub>6</sub><sup>2+</sup>

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Ni Containing Samples (Preparation and Solution)** -Metal (Soluble in HNO<sub>3</sub>); Oxides ( Soluble in HCl ); Ores (Dissolve in HCl / HNO<sub>3</sub>).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGV10  
Lot Number: S2-V711005  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Vanadium  
Starting Material: Vanadium Pentoxide  
Starting Material Lot#: 1782  
Starting Material Purity: 99.9877%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10014 ± 30 µg/mL  
**Density:** 1.104 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10017 ± 42 µg/mL**  
ICP Assay NIST SRM 3165 Lot Number: 160906

**Assay Method #2**      **10013 ± 30 µg/mL**  
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.000110	M Eu < 0.000110	O Na 0.120000	M Se < 0.009400	M Zn 0.009400
O Al 0.120000	O Fe 0.460000	M Nb < 0.001300	O Si 0.270000	M Zr < 0.002900
M As < 0.000210	M Ga < 0.009300	M Nd < 0.000610	M Sm < 0.000110	
M Au < 0.004700	M Gd < 0.000110	M Ni 0.012000	M Sn 0.003900	
M B 0.051000	M Ge < 0.000410	M Os < 0.000110	O Sr 0.007100	
M Ba 0.003600	M Hf < 0.000110	O P < 0.034000	M Ta < 0.000110	
O Be < 0.000560	M Hg < 0.000410	M Pb 0.001400	M Tb < 0.000110	
M Bi < 0.000210	M Ho < 0.000110	M Pd < 0.000410	M Te < 0.000110	
O Ca 0.730000	M In < 0.000110	M Pr < 0.000110	M Th < 0.000210	
M Cd < 0.000610	M Ir < 0.000110	M Pt < 0.000110	M Ti 0.017000	
M Ce < 0.000610	M K 0.052000	M Rb < 0.000310	M Tl < 0.000110	
M Co < 0.001300	M La < 0.000410	M Re 0.001700	M Tm < 0.000110	
O Cr 0.170000	M Li < 0.000810	M Rh < 0.000110	M U < 0.000410	
M Cs 0.005600	M Lu < 0.000110	M Ru < 0.000110	s V <	
M Cu < 0.001300	M Mg 0.053000	i S <	M W 0.002000	
M Dy < 0.000110	M Mn 0.007900	M Sb 0.078000	M Y < 0.000110	
M Er < 0.000110	M Mo 0.094000	M Sc < 0.000410	M Yb < 0.000110	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 50.94 +5 6 H<sub>2</sub>V10O<sub>28</sub>-

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub> and strong basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**V Containing Samples (Preparation and Solution)** -Metal (Fusion with NaOH or KOH in NiO or Na<sub>2</sub>CO<sub>3</sub> / KNO<sub>3</sub>); Oxides (V<sub>2</sub>O<sub>3</sub> - use HCl, V<sub>2</sub>O<sub>4</sub> - use HCl or HNO<sub>3</sub>, V<sub>2</sub>O<sub>5</sub> - use concentrated acids); Ores (Na<sub>2</sub>CO<sub>3</sub> / KNO<sub>3</sub> in PtO caution - nitrates attack PtO followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V<sub>2</sub>O<sub>5</sub> above) .

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

**10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"**

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

December 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **December 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGAL10  
Lot Number: T2-AL716102  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Aluminum  
Starting Material: Aluminum Nitrate Nonahydrate  
Starting Material Lot#: 2460  
Starting Material Purity: 99.9938%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10049 ± 31 µg/mL  
**Density:** 1.087 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10059 ± 40 µg/mL</b> ICP Assay NIST SRM 3101a Lot Number: 140903
<b>Assay Method #2</b>	<b>10044 ± 26 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10049 ± 35 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char i})^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.002100	M Eu < 0.002100	O Na < 0.352819	M Se < 0.005200	M Zn < 0.006018
s Al < 0.002100	O Fe < 0.074714	M Nb < 0.000520	O Si < 0.017848	O Zr < 0.004358
M As < 0.008716	O Ga < 0.112072	M Nd < 0.000520	M Sm < 0.000520	
M Au < 0.008400	M Gd < 0.001100	O Ni < 0.006000	M Sn < 0.000747	
O B < 0.014000	M Ge < 0.005200	M Os < 0.000650	O Sr < 0.000518	
O Ba < 0.012867	M Hf < 0.004100	n P < 0.000520	M Ta < 0.000520	
O Be < 0.000270	M Hg < 0.002000	M Pb < 0.002282	M Tb < 0.000520	
M Bi < 0.001930	M Ho < 0.000520	M Pd < 0.000520	M Te < 0.001100	
O Ca < 0.076790	M In < 0.002100	M Pr < 0.000520	M Th < 0.000520	
M Cd < 0.000520	M Ir < 0.000650	M Pt < 0.000520	O Ti < 0.001930	
M Ce < 0.001100	O K < 0.043583	M Rb < 0.000520	M Tl < 0.000520	
O Co < 0.005400	M La < 0.002100	M Re < 0.000520	M Tm < 0.000520	
O Cr < 0.006018	O Li < 0.000112	M Rh < 0.000520	M U < 0.000520	
M Cs < 0.000643	M Lu < 0.000520	M Ru < 0.002000	M V < 0.001286	
O Cu < 0.008300	O Mg < 0.068488	i S < 0.000520	M W < 0.009800	
M Dy < 0.002100	O Mn < 0.000913	M Sb < 0.003100	M Y < 0.001100	
M Er < 0.000520	M Mo < 0.005396	O Sc < 0.000950	M Yb < 0.000520	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 26.98 +3 6 Al(H<sub>2</sub>O)<sub>6</sub>+3

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, vF and v<sub>2</sub>SO<sub>4</sub>. Avoid neutral media. Soluble in strongly basic NaOH forming the Al(OH)<sub>4</sub>(H<sub>2</sub>O)<sub>2</sub><sup>-</sup> species. Stable with most metals and inorganic anions. The phosphate is insoluble in water and only slightly soluble in acid.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Al Containing Samples (Preparation and Solution)** -Metal (Best dissolved in HCl / HNO<sub>3</sub> ); a- Al<sub>2</sub>O<sub>3</sub> (Na<sub>2</sub>CO<sub>3</sub> fusion in PtO);

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 27 amu	30 ppt	N/A	12C15N, 13C14N, 1H12C14N, 11B16O, 54Cr2+, 54Fe2+
ICP-OES 167.078 nm	0.1/0.009 µg/mL	1	Fe
ICP-OES 394.401 nm	0.05/0.006 µg/mL	1	U, Ce
ICP-OES 396.152 nm	0.03/0.006 µg/mL	1	Mo, Zr, Ce

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

March 22, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **March 22, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGK10  
Lot Number: S2-K711973  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Potassium  
Starting Material: KNO<sub>3</sub>  
Starting Material Lot#: 2313  
Starting Material Purity: 99.9971%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9992 ± 30 µg/mL  
**Density:** 1.024 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9987 ± 24 µg/mL</b> Gravimetric NIST SRM Lot Number: See Sec. 4.2
<b>Assay Method #2</b>	<b>10004 ± 84 µg/mL</b> ICP Assay NIST SRM 3141a Lot Number: 140813
<b>Assay Method #3</b>	<b>10007 ± 45 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.001400	M Eu < 0.000660	O Na < 0.246220	M Se < 0.007900	O Zn < 0.018056
O Al < 0.001592	O Fe < 0.005909	M Nb < 0.000660	O Si < 0.011490	O Zr < 0.001600
M As < 0.005300	M Ga < 0.000660	M Nd < 0.000660	M Sm < 0.000660	
M Au < 0.002000	M Gd < 0.000660	O Ni < 0.004900	M Sn < 0.000660	
O B < 0.005600	M Ge < 0.002000	M Os < 0.003300	O Sr < 0.000055	
O Ba < 0.000860	M Hf < 0.000660	O P < 0.032000	M Ta < 0.000660	
O Be < 0.000082	M Hg < 0.002000	M Pb < 0.002300	M Tb < 0.000660	
M Bi < 0.006600	M Ho < 0.000660	M Pd < 0.000660	M Te < 0.017000	
O Ca < 0.031187	M In < 0.000660	M Pr < 0.000660	M Th < 0.000660	
O Cd < 0.000450	M Ir < 0.000660	M Pt < 0.002700	M Ti < 0.000660	
M Ce < 0.000660	s K <	M Rb < 0.476026	M Tl < 0.000660	
O Co < 0.000780	M La < 0.000660	M Re < 0.000660	M Tm < 0.000660	
O Cr < 0.000541	O Li < 0.000084	M Rh < 0.000660	M U < 0.000660	
M Cs < 0.000660	M Lu < 0.000660	M Ru < 0.000660	O V < 0.001100	
M Cu < 0.002700	O Mg < 0.006237	O S < 0.027905	M W < 0.000660	
M Dy < 0.000660	O Mn < 0.000476	M Sb < 0.000660	M Y < 0.000660	
M Er < 0.000660	M Mo < 0.000660	O Sc < 0.000340	O Yb < 0.000270	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 39.10 +1 (6) K+(aq)

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> and HF aqueous matrices. Avoid use of HClO<sub>4</sub> due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO<sub>4</sub><sup>-</sup>.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**K Containing Samples (Preparation and Solution)** - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion )

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

December 10, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **December 10, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGMG10  
Lot Number: S2-MG704239  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Magnesium  
Starting Material: Magnesium Metal  
Starting Material Lot#: 2168  
Starting Material Purity: 99.9984%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10053 ± 30 µg/mL  
**Density:** 1.053 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10022 ± 62 µg/mL</b> ICP Assay NIST SRM 3131a Lot Number: 140110
<b>Assay Method #2</b>	<b>10078 ± 26 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10033 ± 26 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O Ag	0.002106	M	Eu <	0.000910	O Na	0.071075	O Se <	0.048000	O Zn	0.003299
M Al	0.003553	M	Fe	0.002538	M Nb <	0.000460	O Si <	0.032000	O Zr <	0.002700
M As <	0.001400	M	Ga <	0.000460	M Nd <	0.000910	M Sm <	0.000460		
M Au <	0.001400	M	Gd <	0.000460	O Ni <	0.001600	M Sn <	0.002300		
O B	0.006853	M	Ge <	0.001400	M Os <	0.000460	O Sr	0.000279		
O Ba	0.000964	M	Hf <	0.000460	O P	0.015230	M Ta <	0.000460		
O Be <	0.000120	M	Hg <	0.000460	M Pb <	0.000460	M Tb <	0.000460		
M Bi <	0.000460	M	Ho <	0.000460	M Pd <	0.003200	M Te <	0.007300		
O Ca	0.053306	M	In <	0.000460	M Pr <	0.000460	M Th <	0.000460		
O Cd <	0.000360	M	Ir <	0.000460	M Pt <	0.001900	O Ti <	0.001700		
M Ce <	0.002300	M	K	0.048229	M Rb	0.002411	M Tl	0.003046		
M Co <	0.000910	M	La <	0.002800	M Re <	0.000460	M Tm <	0.000460		
M Cr <	0.002300	O	Li	0.027922	M Rh <	0.000460	M U <	0.000460		
M Cs	0.001040	M	Lu <	0.000460	M Ru <	0.000460	M V <	0.000460		
O Cu <	0.003000	s	Mg <		O S <	0.190000	M W <	0.000460		
M Dy <	0.000460	O	Mn	0.015230	M Sb	0.020814	O Y <	0.000720		
M Er <	0.000460	M	Mo <	0.000910	O Sc <	0.000480	M Yb <	0.000460		

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 24.31 +2 6 Mg(H<sub>2</sub>O)<sub>6</sub>+2

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, and H<sub>2</sub>SO<sub>4</sub> avoid HF, H<sub>3</sub>PO<sub>4</sub> and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO<sub>3</sub> / LDPE container.

**Mg Containing Samples (Preparation and Solution)** -Metal (Best dissolved in diluted HNO<sub>3</sub> ); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

April 23, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **April 23, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGCA10  
Lot Number: T2-CA716103  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Calcium  
Starting Material: CaCO<sub>3</sub>  
Starting Material Lot#: 2472  
Starting Material Purity: 99.9950%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10005 ± 30 µg/mL  
**Density:** 1.039 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10005 ± 45 µg/mL</b> ICP Assay NIST SRM 3109a Lot Number: 130213
<b>Assay Method #2</b>	<b>10005 ± 25 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10005 ± 31 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.001200	M Eu < 0.001200	O Na < 0.006112	M Se < 0.024000	M Zn < 0.005362
M Al < 0.065419	O Fe < 0.009115	M Nb < 0.001200	O Si < 0.139417	O Zr < 0.006700
O As < 0.013000	M Ga < 0.015000	M Nd < 0.020000	M Sm < 0.001200	
M Au < 0.017000	M Gd < 0.004800	O Ni < 0.000793	M Sn < 0.003600	
O B < 0.001179	M Ge < 0.003600	M Os < 0.001200	M Sr < 0.081505	
O Ba < 0.002788	M Hf < 0.001200	O P < 0.041000	M Ta < 0.001200	
O Be < 0.000410	M Hg < 0.004800	M Pb < 0.001608	M Tb < 0.001200	
M Bi < 0.001608	M Ho < 0.001200	M Pd < 0.001200	M Te < 0.003600	
s Ca <	M In < 0.001200	M Pr < 0.000257	M Th < 0.001200	
O Cd < 0.001300	M Ir < 0.001200	M Pt < 0.003600	O Ti < 0.001900	
M Ce < 0.001029	O K < 0.009759	M Rb < 0.001200	M Tl < 0.001200	
O Co < 0.000418	M La < 0.001823	M Re < 0.001200	M Tm < 0.001200	
O Cr < 0.003324	O Li < 0.007300	M Rh < 0.001200	M U < 0.002144	
M Cs < 0.007399	M Lu < 0.000128	M Ru < 0.001200	M V < 0.001286	
O Cu < 0.011000	M Mg < 1.286934	O S < 0.055767	O W < 0.024000	
M Dy < 0.002400	O Mn < 0.004611	M Sb < 0.009600	O Y < 0.000536	
M Er < 0.002400	M Mo < 0.003539	O Sc < 0.001400	M Yb < 0.001200	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.



## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 40.08 +2 6 Ca(H<sub>2</sub>O)<sub>6</sub>+2

**Chemical Compatibility** - Soluble in HCl and HNO<sub>3</sub>. Avoid H<sub>2</sub>SO<sub>4</sub>, vF, v3PO<sub>4</sub> and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO<sub>3</sub> / LDPE container.

**Ca Containing Samples )Preparation and Solution** -Metal ( best dissolved in diluted HNO<sub>3</sub> ); Ores ( Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO<sub>2</sub>). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO<sub>3</sub>. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na<sub>2</sub>CO<sub>3</sub> followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O <sup>2</sup> 12C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

March 14, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **March 14, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

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## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGNA10  
Lot Number: T2-NA717221  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Sodium  
Starting Material: Na<sub>2</sub>CO<sub>3</sub>  
Starting Material Lot#: 2358 and 2453  
Starting Material Purity: 99.9977%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9977 ± 30 µg/mL  
**Density:** 1.033 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9974 ± 18 µg/mL</b> Gravimetric NIST SRM Lot Number: See Sec. 4.2
<b>Assay Method #2</b>	<b>9977 ± 34 µg/mL</b> ICP Assay NIST SRM 3152a Lot Number: 200413
<b>Assay Method #3</b>	<b>9987 ± 31 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.000930	M Eu < 0.000930	s Na <	M Se < 0.003800	O Zn < 0.000138
M Al < 0.004409	O Fe < 0.002393	M Nb < 0.000930	O Si < 0.056696	O Zr < 0.003200
O As < 0.023000	M Ga < 0.000930	M Nd < 0.000930	M Sm < 0.000930	
O Au < 0.004100	M Gd < 0.000930	O Ni < 0.003000	M Sn < 0.002800	
O B < 0.001385	M Ge < 0.004700	M Os < 0.000930	O Sr < 0.000251	
M Ba < 0.004031	M Hf < 0.000930	O P < 0.010205	M Ta < 0.000930	
O Be < 0.000130	M Hg < 0.000930	M Pb < 0.000930	M Tb < 0.000930	
M Bi < 0.000930	M Ho < 0.000930	M Pd < 0.000930	M Te < 0.001900	
O Ca < 0.176388	M In < 0.000930	M Pr < 0.000930	M Th < 0.000352	
O Cd < 0.000860	M Ir < 0.000930	M Pt < 0.000930	O Ti < 0.000592	
M Ce < 0.001900	O K < 0.302380	M Rb < 0.000930	M Tl < 0.000930	
O Co < 0.001800	O La < 0.002100	M Re < 0.000930	M Tm < 0.000930	
M Cr < 0.002800	O Li < 0.000031	M Rh < 0.000930	M U < 0.000930	
M Cs < 0.000930	M Lu < 0.000930	M Ru < 0.001900	O V < 0.001600	
O Cu < 0.003900	O Mg < 0.026458	O S < 0.040317	O W < 0.028000	
M Dy < 0.000930	O Mn < 0.000740	M Sb < 0.000930	O Y < 0.000860	
M Er < 0.000930	O Mo < 0.003600	O Sc < 0.000610	O Yb < 0.000250	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 22.99 +1 (6) Na+(aq) largely ionic in nature

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> and HF aqueous matrices. Stable with all metals and inorganic anions.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Na Containing Samples (Preparation and Solution)** - Metal (Dissolves very rapidly in water); Ores (Lithium carbonate fusion in graphite crucible followed by HCl dissolution - blank levels of Na in lithium carbonate critical); Organic Matrices (Sulfuric / peroxide digestion or nitric/sulfuric/perchloric acid decomposition).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 23 amu	310 ppt	n/a	46Ti+2 , 46Ca+2
ICP-OES 330.237 nm	2.0 / 0.09 µg/mL	1	Pd, Zn
ICP-OES 588.995 nm	0.03 / 0.006 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 589.595 nm	0.07 / 0.00009 µg/mL	1	2nd order radiation from R.E.s on some optical designs

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

April 20, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **April 20, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGU1  
Lot Number: S2-U707914  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 1 000 µg/mL ea:  
Uranium  
Starting Material: Uranyl Nitrate Hexahydrate  
Starting Material Lot#: P2-2322  
Starting Material Purity: 99.9997%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 999 ± 5 µg/mL  
**Density:** 1.010 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **998 ± 5 µg/mL**  
ICP Assay NIST SRM 3164 Lot Number: 080521

**Assay Method #2**      **1001 ± 6 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char}$  =  $[\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Certified Abundance:

#### IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000270	M Eu < 0.000270	M Na < 0.011000	M Se < 0.009300	M Zn < 0.002358
M Al < 0.011000	M Fe < 0.003222	M Nb < 0.000270	M Si < 0.160000	M Zr < 0.001100
M As < 0.002400	M Ga < 0.000270	M Nd < 0.000270	M Sm < 0.000270	
M Au < 0.000270	M Gd < 0.000270	M Ni < 0.020000	M Sn < 0.011000	
M B < 0.000270	M Ge < 0.000800	M Os < 0.001900	M Sr < 0.000270	
M Ba < 0.003800	M Hf < 0.000270	i P <	M Ta < 0.000270	
M Be < 0.000270	M Hg < 0.000540	M Pb < 0.002200	M Tb < 0.000270	
M Bi < 0.000270	M Ho < 0.000270	M Pd < 0.000540	M Te < 0.003800	
M Ca < 0.140000	M In < 0.000270	M Pr < 0.000270	M Th < 0.000129	
M Cd < 0.000270	M Ir < 0.000270	M Pt < 0.000270	M Ti < 0.002700	
M Ce < 0.000540	O K < 0.250000	M Rb < 0.000800	M Tl < 0.000270	
M Co < 0.000800	M La < 0.000117	M Re < 0.064000	M Tm < 0.000270	
M Cr < 0.000943	M Li < 0.003000	M Rh < 0.000270	s U <	
M Cs < 0.000106	M Lu < 0.000270	M Ru < 0.000540	M V < 0.000540	
M Cu < 0.001100	M Mg < 0.003000	i S <	M W < 0.000540	
M Dy < 0.000270	M Mn < 0.006900	M Sb < 0.000270	M Y < 0.000270	
M Er < 0.000270	M Mo < 0.006400	M Sc < 0.000540	M Yb < 0.000270	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element



## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 238.03 +6 8 UO<sub>2</sub><sup>2+</sup>(uranyl)

**Chemical Compatibility** - Soluble in HCl and HNO<sub>3</sub>. Avoid H<sub>3</sub>PO<sub>4</sub>. H<sub>2</sub>SO<sub>4</sub> and HF matrices should not be a problem depending upon [U]. Although the UO<sub>2</sub><sup>2+</sup> ion is distinctly basic, any U+4 will precipitate in basic media. UO<sub>2</sub><sup>2+</sup>salts are generally soluble in water and UO<sub>2</sub><sup>2+</sup> is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF<sub>4</sub> and UF<sub>6</sub> are water soluble.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**U Containing Samples (Preparation and Solution)** -Metal (Dissolves rapidly in HCl and HNO<sub>3</sub>); Oxide (Soluble in HNO<sub>3</sub>); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO<sub>3</sub>. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H<sub>2</sub>SO<sub>4</sub>.)

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

**10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"**

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

August 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **August 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
Catalog Number: AR-ICVMS-2  
Lot Number: T2-MEB719895  
Matrix: 3% (v/v) HNO3  
tr. HF  
Value / Analyte(s): 2.5 µg/mL ea:  
Molybdenum, Antimony

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	2.499 ± 0.015 µg/mL	Molybdenum, Mo	2.500 ± 0.017 µg/mL

Density: 1.014 g/mL (measured at 20 ± 4 °C)

### Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Sb	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i})^2 / (\sum(1/(u_{char i})^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char i})^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

N/A

#### 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20°  $\pm$  4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**HF Note:** This standard should not be prepared or stored in glass.

#### 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

#### 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

#### 10.0 QUALITY STANDARD DOCUMENTATION

##### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

##### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

**10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"**

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

June 06, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **June 06, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	AR-ICVMS-3	
Lot Number:	T2-MEB719896	
Matrix:	7% (v/v) HNO3	
Value / Analyte(s):	250 µg/mL ea:	
	Aluminum,	Calcium,
	Iron,	Potassium,
	Magnesium,	Sodium,
	4 µg/mL ea:	
	Selenium,	
	2.5 µg/mL ea:	
	Thorium,	Thallium,
	Uranium,	Vanadium,
	Zinc,	Manganese,
	Cadmium,	Cobalt,
	Chromium,	Copper,
	Arsenic,	Barium,
	Beryllium,	Nickel,
	Lead,	Silver

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	250.0 ± 0.9 µg/mL	Arsenic, As	2.500 ± 0.018 µg/mL
Barium, Ba	2.501 ± 0.013 µg/mL	Beryllium, Be	2.501 ± 0.015 µg/mL
Cadmium, Cd	2.501 ± 0.013 µg/mL	Calcium, Ca	250.0 ± 1.3 µg/mL
Chromium, Cr	2.500 ± 0.015 µg/mL	Cobalt, Co	2.500 ± 0.014 µg/mL
Copper, Cu	2.500 ± 0.014 µg/mL	Iron, Fe	250.0 ± 1.0 µg/mL
Lead, Pb	2.500 ± 0.013 µg/mL	Magnesium, Mg	250.0 ± 1.3 µg/mL
Manganese, Mn	2.500 ± 0.014 µg/mL	Nickel, Ni	2.500 ± 0.014 µg/mL
Potassium, K	250.0 ± 1.2 µg/mL	Selenium, Se	4.002 ± 0.024 µg/mL
Silver, Ag	2.501 ± 0.017 µg/mL	Sodium, Na	250.0 ± 1.2 µg/mL
Thallium, Tl	2.500 ± 0.017 µg/mL	Thorium, Th	2.499 ± 0.013 µg/mL
Uranium, U	2.501 ± 0.015 µg/mL	Vanadium, V	2.500 ± 0.014 µg/mL
Zinc, Zn	2.500 ± 0.014 µg/mL		

**Density:** 1.042 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
Ba	ICP Assay	3104a	140909
Ba	Calculated		See Sec. 4.2
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Ni	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2



V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{\text{CRM/RM}}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum (w_i) (X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{\text{char } i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum (1/u_{\text{char } j}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{\text{char}} = [\sum (w_i)^2 (u_{\text{char } i}^2)]^{1/2}$  where  $u_{\text{char } i}$  are the errors from each characterization method

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{\text{CRM/RM}}$ , where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a) (u_{\text{char } a})$$

$X_a$  = mean of Assay Method A with

$u_{\text{char } a}$  = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{\text{char } a}$  = the errors from characterization

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Certified Abundance:

##### IV's Certified Abundance

<u>Isotope</u>	<u>Atom %</u>
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

#### 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

#### 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Note:** This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

June 06, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **June 06, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

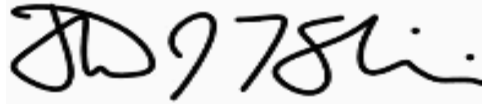
- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
 Catalog Number: AR-6020ICS-0A10  
 Lot Number: T2-MEB719898  
 Matrix: 1.4% (v/v) HNO3  
 Value / Analyte(s):  
 1 000 µg/mL ea:  
 Chloride,  
 200 µg/mL ea:  
 Carbon,  
 100 µg/mL ea:  
 Calcium, Aluminum,  
 Iron, Potassium,  
 Magnesium, Sodium,  
 Phosphorus, Sulfur,  
 2 µg/mL ea:  
 Titanium, Molybdenum

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.4 µg/mL	Calcium, Ca	100.0 ± 0.5 µg/mL
Carbon, C	200.1 ± 0.5 µg/mL	Chloride, Cl	1 000 ± 5 µg/mL
Iron, Fe	100.0 ± 0.5 µg/mL	Magnesium, Mg	100.0 ± 0.5 µg/mL
Molybdenum, Mo	2.001 ± 0.014 µg/mL	Phosphorus, P	100.0 ± 0.6 µg/mL
Potassium, K	100.0 ± 0.5 µg/mL	Sodium, Na	100.0 ± 0.5 µg/mL
Sulfur, S	100.0 ± 0.5 µg/mL	Titanium, Ti	2.001 ± 0.015 µg/mL

**Density:** 1.009 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	P2-S680745
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i) (X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI ) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

June 07, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **June 07, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

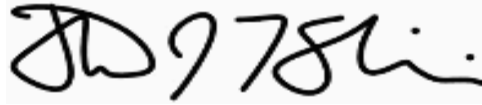
- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director





**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6020B UCT-KED**

LDW23-SS1818
--------------

Total Metals

Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-01 A      SDG: 23D0063  
 Sampled: 04/04/23 10:02      Prepared: 04/26/23 12:19      File ID: XDT\_m1230510A-123  
 % Solids: 38.85      Preparation: SWN EPA 3050B      Analyzed: 05/11/23 01:44  
 Batch: BLD0578      Sequence: SLE0204      Initial/Final: 1.014 g Wet / 50 mL  
 Instrument: ICPMS1      Calibration: GE00040

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	15.6	20	0.10	0.51	
7440-43-9	Cadmium	0.32	20	0.08	0.25	
7440-50-8	Copper	70.0	20	0.89	1.27	
7440-66-6	Zinc	138	20	7.4	15.2	





**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6020B UCT-KED**  
Total Metals

LDW23-SS1819
--------------

Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-03 A      SDG: 23D0063  
 Sampled: 04/04/23 12:52      Prepared: 04/26/23 12:19      File ID: XDT\_m1230510A-124  
 % Solids: 34.62      Preparation: SWN EPA 3050B      Analyzed: 05/11/23 01:49  
 Batch: BLD0578      Sequence: SLE0204      Initial/Final: 1.04 g Wet / 50 mL  
 Instrument: ICPMS1      Calibration: GE00040

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	21.7	20	0.11	0.56	
7440-43-9	Cadmium	0.49	20	0.08	0.28	
7440-50-8	Copper	81.4	20	0.48	1.39	
7440-66-6	Zinc	158	20	8.1	16.7	



**PREPARATION BATCH SUMMARY**

**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC                                  SDG: 23D0063  
Client: Anchor QEA, LLC    Project: AOC5 MR Phase 1  
Batch: BLD0578                      Batch Matrix: Solid                                  Preparation: SWN EPA 3050B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01	XDT_m1230510A-123	04/26/23 12:19	
LDW23-SS1819	23D0063-03	XDT_m1230510A-124	04/26/23 12:19	
Blank	BLD0578-BLK1	XDT_m1230510A-059	04/26/23 12:19	
LCS	BLD0578-BS1	XDT_m1230510A-060	04/26/23 12:19	



### Digestion Log

Analyst: MPZ Date: 4/25/23 - 4/26/23 Time: 1040-1219 Balance ID: BA10  
 Matrix: SWN Block ID: 3 Block Temp: 95°C Thermometer: 20-2

ARI Sample ID	Btl #	pH<2	Prep Code: <u>SWN</u>		Prep Code:		Comments
			Initial Wt (g) Vol (mL)	Final Vol (mL)	Initial Wt (g) Vol (mL)	Final Vol (mL)	
<u>Z3A467-01</u>	<u>A</u>		<u>1.033</u>	<u>50</u>			
<u>-02</u>			<u>1.069</u>				
<u>-03</u>			<u>1.018</u>				
<u>-04</u>			<u>1.079</u>				
<u>-05</u>			<u>1.044</u>				
<u>-06</u>			<u>1.040</u>				
<u>-07</u>			<u>1.046</u>				
<u>-08</u>			<u>1.023</u>				
<u>-09</u>			<u>1.072</u>				
<u>Z3C108-02</u>	<u>D</u>		<u>1.075</u>				
<u>-06</u>			<u>1.059</u>				
<u>-07</u>			<u>1.059</u>				
<u>-08</u>			<u>1.072</u>				
<u>-09</u>			<u>1.050</u>				
<u>Z3D37-01</u>			<u>1.021</u>				
<u>-03</u>			<u>1.060</u>				
<u>Z3D63-01</u>	<u>A</u>		<u>1.040</u>		<u>0.014</u>		
<u>-03</u>			<u>1.040</u>				
<u>BLD578-btk</u>							<u>Z3A467-01</u>
<u>-bs</u>							
<u>-dup</u>			<u>1.037</u>				
<u>-ms</u>			<u>1.032</u>				
<u>-msd</u>			<u>1.032</u>				
<u>-</u>			<u>-</u>				
<u>-</u>			<u>-</u>				
<u>-</u>			<u>-</u>				

Chemical/Reagent ID:

HNO<sub>3</sub>: L4188 1:1 HNO<sub>3</sub>: L4200 HCl: - H<sub>2</sub>O<sub>2</sub>: K11056  
 Tube Lot#: 221017 Boiling Chip Lot#: - (DoD Only)



**Form I**  
**METHOD BLANK DATA SHEET**  
**EPA 6020B UCT-KED**  
Total Metals

<b>Blank</b>
--------------

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Batch: BLD0578

Laboratory ID: BLD0578-BLK1

Prepared: 04/26/23 12:19

Matrix: Solid

Preparation: SWN EPA 3050B

Analyzed: 05/10/23 20:44

Sequence: SLE0204

Calibration: GE00040

Instrument: ICPMS1

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic-75a	ND	20	0.04	0.20	U
7440-43-9	Cadmium-111	ND	20	0.03	0.10	U
7440-50-8	Copper-63	ND	20	0.17	0.50	U
7440-50-8	Copper-65	ND	20	0.35	0.50	U
7440-66-6	Zinc-66	ND	20	2.9	6.0	U



**LCS / LCS DUPLICATE RECOVERY**  
**EPA 6020B UCT-KED**  
Total Metals

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Analyzed:	<u>05/10/23 20:48</u>
Batch:	<u>BLD0578</u>	Laboratory ID:	<u>BLD0578-BS1</u>
Preparation:	<u>SWN EPA 3050B</u>	Sequence Name:	<u>LCS</u>
Initial/Final:	<u>1 g / 50 mL</u>		

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Arsenic-75a	25.0	25.0		99.9	80 - 120
Cadmium-111	25.0	25.2		101	80 - 120
Copper-63	25.0	27.0		108	80 - 120
Copper-65	25.0	27.0		108	80 - 120
Zinc-66	80.0	81.5		102	80 - 120

\* Indicates values outside of QC limits



**INITIAL CALIBRATION DATA**

**EPA 6020B**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GE00040

Instrument: ICPMS1

Calibration Date: 05/10/2023 15:47

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Silver-107	0	0	0.2	15570	10	16140.9	20	15789.15	50	15195.72	100	15002.63
Chromium-52	0	0	0.5	31020	10	15441.1	20	15000.05	50	14462.12	100	14509.21
Chromium-53	0	0	0.5	1694	10	1654.9	20	1689.3	50	1689.16	100	1684.98
Lead-208	0	0	0.1	90610	10	90331.7	20	89339.2	50	87570.58	100	84871.84



## INITIAL CALIBRATION DATA

### EPA 6020B

Laboratory: Analytical Resources, LLC

Instrument: ICPMS1

Calibration: GE00040

Calibration Date: 5/10/2023

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Silver-107	12949.73	49.1	0.9999		0.998	
Chromium-52	15072.08	65.2	1.0000		0.998	
Chromium-53	1402.057	49.0	1.0000		0.998	
Lead-208	73787.22	49.1	0.9997		0.998	



**INITIAL CALIBRATION DATA**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GE00040

Instrument: ICPMS1

Calibration Date: 05/10/2023 15:47

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Arsenic-75a	0	0	0.2	245	10	247.9	20	243.5	50	239.7	100	242.13
Cadmium-111	0	0	0.1	210	10	235.4	20	233.45	50	230.1	100	233.47
Cadmium-114	0	0	0.1	700	10	607.9	20	614.8	50	592.84	100	599.85
Copper-63	0	0	0.5	5004	10	4375	20	4306.25	50	4084.54	100	4030.52
Copper-65	0	0	0.5	2594	10	2169.7	20	2190.8	50	2078.94	100	2074.73
Zinc-66	0	0	6	522.8333	10	539	20	516.55	50	492.7	100	498.85
Zinc-67	0	0	6	86.16666	10	89.3	20	86.65	50	79.74	100	81.23





**INITIAL CALIBRATION DATA**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC  
Calibration: GE00040

Instrument: ICPMS1  
Calibration Date: 5/10/2023

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Arsenic-75a	203.0383	49.0	1.0000		0.998	
Cadmium-111	190.4033	49.2	0.9999		0.998	
Cadmium-114	519.2317	49.6	0.9999		0.998	
Copper-63	3633.385	49.9	0.9998		0.998	
Copper-65	1851.362	50.1	0.9999		0.998	
Zinc-66	428.3222	49.1	0.9998		0.998	
Zinc-67	70.51444	49.3	0.9996		0.998	



# ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 5/10/23 Analyst: MS Sequence: SLEΦ2Φ4 Cal: GEΦΦΦ4Φ

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
	✓	SEQ-CAL1	—		
	✓	↓ -CAL2	—		
	✓	↓ -CAL3	—		S <sub>CT</sub> ↑ (New cones)
		SEQ-CAL1	LS276		
		↓ -CAL2	LS225		
		↓ -CAL3	LS226		
		↓ -CAL4	LS227		
		↓ -CAL5	LS228		
		↓ -CAL6	LS229		
		↓ -IBL1	—		
		↓ -ICV1	L3575		
		↓ -ICB1	LS276		
		↓ -CCV1	LS228		
		↓ -CCB1	LS276		
		↓ -CRL1	LS226		
		↓ -IFA1	L4688		C <sub>r</sub> <sup>S3</sup> ↑
		↓ -IFB1	L4689		
		↓ -HCV1	L478Φ		D <sub>n</sub> <sup>-1</sup> noisy - Cd < 100
		↓ -HCV2	L4781		
		↓ -IBL2	—		
		↓ -CCV2			
		↓ -CCB2			
	✓	↓ -CAL1			
		↓ -CCV3			



# ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 5/10/23 Analyst: MB Sequence: \_\_\_\_\_ Cal: \_\_\_\_\_

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CCB3			
		BLDΦ687-BLK2	SWN	20	Ag, Zn only
	✓	↓ -BS2	↓	↓	STD Mode noisy ↓
E→D		↓ -BS2	↓	↓	
		BLEΦ298-BLK1	REN		
		↓ -BS1	↓		
		BLEΦΦ77-MS2		2	As, Co, Zn only
		230Φ297-Φ1	SWN	100	Ba, Cr only
		BLDΦ728-DUP2			Ba, Cr RPD↑
	✓	↓ -MS2	↓	↓	STD Mode noisy ↓
		SEQ-IBL3			
		↓ -CCV4			
		↓ -CCB4			
		BLEΦ3Φ1-BLK1	REN		
		↓ -BS1	↓		
		BLEΦ143-BLK1	SWN	20	
	✓	↓ -BS1	↓	↓	Std Mode noisy
		↓ -BS1	↓	↓	
		BLDΦ728-MS2		100	Ba, Cr, R↑ Ba, Cr only
		230Φ348-Φ1	REN	20	Pb only
		SEQ-IBL4			
		230Φ374-Φ3	REN	2	Pb only
		SEQ-IBL5			
		↓ -CCV5			





# ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 5/10/23 Analyst: MS Sequence: \_\_\_\_\_ Cal: \_\_\_\_\_

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CCBS			
	✓	Rinse			Break in Analysis - Flushed Sample into
	✓	SEQ-CALI			Be Removed
		↓ -CCV6			
		↓ -CCBG			
		BLDΦ578-BLK1	SWN	20	
		↓ -BS1	↓	↓	
		BLEΦΦ72-BLK1			
		↓ -BS1			Std Mode no. 34 No Ag, Cr, Pb
		23DΦ394-Φ1			Ag, Cr, Pb, Zn only
		BLDΦ687-DUP2			
		↓ -MS2			
		↓ -MSD2			Ag % R ↓
		↓ -PS2	↓	↓	60ul K7409 ↓
		SEQ-IBLG			
		↓ -CCV7			
		↓ -CCB7			
		23AΦ467-Φ2	SWN	20	
		↓ -Φ3	↓	↓	Std Mode no. 34 No Ag, Cr, Pb
		↓ -Φ4			
		↓ -Φ5			
		↓ -Φ1			
		BLDΦ578-DUP1			
		↓ -MS1	↓	↓	Ag % R ↓



# ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 5/10/23 Analyst: MS Sequence: \_\_\_\_\_ Cal: \_\_\_\_\_

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		BLOΦ578-MSD1	SWN	20	
		↓ -PSI	↓	↓	60ml K7409
		SEQ-IBL7			
		↓ -CCV8			
		↓ -CCB8			
		23AΦ467-Φ6	SWN	20	
		↓ -Φ7	↓	↓	
		↓ -Φ8	↓	↓	
		↓ -Φ9	↓	↓	
		230Φ392-Φ4			In <sup>+</sup> , Dn <sup>+</sup> / As, Cu, Pb, Zn <sup>+</sup> / Cr only
		BLEΦΦ72-DUP1			
		↓ -MS1	↓	↓	
		↓ -MSD1	↓	↓	
		↓ -PSI	↓	↓	60ml K7409
		SEQ-IBL8			
		↓ -CCV9			
		↓ -CCB9			
		23CΦΦ71-Φ1	SWN	20	
		↓ -Φ2	↓	↓	
		↓ -Φ3	↓	↓	Std made noisy
		↓ -Φ4	↓	↓	No Ag, Cr, Pb
		↓ -Φ5	↓	↓	
		↓ -Φ6	↓	↓	
		23CΦ1Φ9-Φ2	↓	↓	





# ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 5/10/23 Analyst: MB Sequence: \_\_\_\_\_ Cal: \_\_\_\_\_

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		23CΦ1Φ9-Φ3	SWN	20	
		23CΦ1Φ8-Φ2	↓	↓	
		SEQ-IBL9			
		↓ -CCVA			
		↓ -CCBA			
		23CΦ1Φ8-Φ6	SWN	20	
		↓ -Φ7	↓	↓	
		↓ -Φ8	↓	↓	
		↓ -Φ9	↓	↓	
		230ΦΦ8-Φ1			Std Mode no. 74
		↓ -Φ3			No Ag, Cr, Pb
		230ΦΦ37-Φ1			
		↓ -Φ3			
		↓ -Φ2	↓	↓	
		SEQ-IBLA			
		↓ -CCVB			
		↓ -CCBB			
	✓	↓ -CALI			
		↓ -CCVC			
		↓ -CCBC			
		230ΦΦ37-Φ4	SWN	20	
		230ΦΦ63-Φ1	↓	↓	
		↓ -Φ3	↓	↓	
		230Φ452-Φ1	REN	2	Pb only



# ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 5/10/23 Analyst: MB Sequence: \_\_\_\_\_ Cal: \_\_\_\_\_

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		230Φ462-Φ1	REN	2	Pb only
		23EΦ135-Φ1	↓		
		↓ -Φ2	↓		
		↓ -Φ3	↓		
		↓ -Φ4	↓		
		SEQ IBLB			
		↓ -CCVD			
		↓ -CCBD			
		23EΦ138-Φ1	REN	2	
		23EΦ139-Φ1	↓	↓	
		↓ -Φ2	↓	↓	
		↓ -Φ3	↓	↓	
		SEQ IBLC			
		23EΦ136-Φ1	REN		
		23EΦ137-Φ1	↓		
		230Φ477-21	↓		
		↓ -22	↓		
		SEQ-IBLD			
		↓ -CCVE			
		↓ -CCBE			
		230Φ477-11	REN	2	No Pb
		↓ -13	↓	↓	↓
		↓ -Φ2	↓		
		230Φ48Φ-Φ1	↓	5	↓





# ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 5/10/23 Analyst: MS Sequence:            Cal:           

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-IBLE			
		230φ537-φ5	REN	5	Cr only
		BLEφ12φ-DUP3	↓	↓	↓
		-MS3	↓	↓	↓
		-MS03	↓	↓	↓
		SEQ-IBLF			
		-CCVF			Pb↑
		-CCBF			
	✓	-CALI			
		-CCVG			
		-CCBG			
		230φ477-φ4	REN		No Pb
		-φ6	↓		↓
		-φ8	↓		↓
		-φ	↓		↓
		-12	↓		↓
		-2φ	↓		↓
		BLEφ1φφ-DUP1			
		-MS1	↓		↓
		-MS01	↓		↓
		SEQ-IBLG			
		-CCVH			Pb↑
		-CCBH			
		230φ477-14	REN		No Pb





# ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 5/10/23 Analyst: MB Sequence: \_\_\_\_\_ Cal: \_\_\_\_\_

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		230Φ477-16	REN		No Pb
		↓ -18	↓		↓
		↓ -Φ1			
		↓ -Φ3			
		↓ -Φ7			
		↓ -Φ9			
		↓ -15			
		230Φ487-Φ2	↓	5	
		SEQ-IBLH			
		↓ -CCVI			
		↓ -CCBI			
		230Φ487-Φ6	REN	2	
		↓ -Φ5	↓	↓	
		↓ -Φ4			
		↓ -Φ3	↓		
		SEQ-IBLI			
		230Φ636-Φ1	REN	10	No Pb
		BLEΦ298-DUPI	↓	↓	↓
		↓ -MSI			
		↓ -MSO1	↓	↓	
		SEQ-IBLJ			
		↓ -CCVJ			Pb↑
		↓ -CCBJ			
		Rinse/DI			

## Performance Check Report

### Sample ID: STD Performance Check

Sample Date/Time: Wednesday, May 10, 2023 14:43:46

Sample Description:

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth

Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.149

MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Dual Detector Mode: Pulse

Acq. Dead Time (ns): 35

Current Dead Time (ns): 35

Torch Z position (mm): 0.00

### Summary

Analyte	Mass	Meas. Intens.	Mean	Net Intens.	Mean	Net Intens. SD	Net Intens. RSD	Mode
Be	9.0		5723.5		5723.480	56.895	1.0	Standard
In	114.9		69596.5		-341751.511	924.539	0.3	Standard
U	238.1		90402.3		90402.284	679.988	0.8	Standard
[ CeO	155.9		1526.9		0.017	0.000	1.7	Standard
> Ce	139.9		87807.4		87807.445	764.748	0.9	Standard
[ Ce++	70.0		422.3		0.005	0.000	1.5	Standard
Bkgd	220.0		6.3		6.300	3.351	53.2	Standard

### Current Conditions File Data

Current Value	Description
0.92	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1600.00	Analog Stage Voltage
1000.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-10.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.92	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

Sample ID: STD Performance Check

Report Date/Time: Wednesday, May 10, 2023 14:45:50

Page 1

## SmartTune Wizard - Summary

### Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 5/10/2023 2:43:45 PM

End Time: 5/10/2023 2:52:33 PM

### STD Performance Check - [Failed]

Obtained Intensity (Be 9): 5723.48

Obtained Intensity (In 115): 69596.54

Obtained Intensity (U 238): 90402.28

Obtained Intensity (Bkgd 220): 6.30 - <Target not achieved>

Obtained Formula (Ce++ 70 / Ce 140): 0.005 (=422.34 / 87807.44)

Obtained Formula (CeO 156 / Ce 140): 0.017 (=1526.95 / 87807.44)

Obtained RSD (Be 9): 0.0099

Obtained RSD (In 115): 0.0027

Obtained RSD (U 238): 0.0075

### Torch Alignment - [Passed]

Vertical	Horizontal	Intensity
0.90 mm	0.96 mm	88181.32

### Nebulizer Gas Flow STD/KED [NEB] - [Passed] Optimum value(s): 0.92

Obtained Intensity (In 115): 84673.19

Obtained Formula (CeO 156 / Ce 140): 0.0203 (=2063.15 / 101494.26)

### Mass Calibration and Resolution - [Passed] Optimum value(s): N/A

Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.700)

Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.688)

Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.698)

Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.701)

QID STD/DRC - Optimum value(s): Correlation Coefficient = 0.999; Intercept = -15.80

KED Mode QID - Optimum value(s): Correlation Coefficient = 0.987; Intercept = -15.94

## SmartTune Wizard - Details

### Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

### Optimization Status

Start Time: 5/10/2023 2:43:45 PM

### STD Performance Check

#### Optimization Settings:

Method: STD Performance Check.mth.  
Intensity Criterion: Be 9 > 2000  
Intensity Criterion: In 115 > 40000  
Intensity Criterion: U 238 > 30000  
Intensity Criterion: Bkgd 220 <= 5  
Formula Criterion: Ce++ 70 / Ce 140 <= 0.03  
Formula Criterion: CeO 156 / Ce 140 <= 0.025  
RSD Criterion: Be 9.0122 < 0.05  
RSD Criterion: In 114.904 < 0.05  
RSD Criterion: U 238.05 < 0.05

#### Optimization Results:

##### Initial Try

Obtained Intensity (Be 9): 5723.48  
Obtained Intensity (In 115): 69596.54  
Obtained Intensity (U 238): 90402.28  
Obtained Intensity (Bkgd 220): 6.30 - <Target not achieved>  
Obtained Formula (Ce++ 70 / Ce 140): 0.005 (=422.34 / 87807.44)  
Obtained Formula (CeO 156 / Ce 140): 0.017 (=1526.95 / 87807.44)  
Obtained RSD (Be 9): 0.0099  
Obtained RSD (In 115): 0.0027  
Obtained RSD (U 238): 0.0075

[Failed]

[Failed]

### Torch Alignment

#### Optimization Settings:

Method: Torch Alignment.mth.  
Intensity Criterion: In 115 Maximum

#### Optimization Results:

	Vertical	Horizontal	Intensity
[Passed]	0.90 mm	0.96 mm	88181.32

### Nebulizer Gas Flow STD/KED [NEB]

#### Optimization Settings:

Method: Optimize.mth.  
Initial Try - Start/End/Step: 0.89/0.96/0.01.  
Intensity Criterion: In 115 Maximum  
Formula Criterion: CeO 156 / Ce 140 <= 0.025

#### Optimization Results:

##### Initial Try

Obtained Intensity (In 115): 84673.19  
Obtained Formula (CeO 156 / Ce 140): 0.0203 (=2063.15 / 101494.26)

[Passed] optimum value(s): 0.92

Mass Calibration and Resolution

Optimization Settings:

Method: Tuning.mth.  
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun  
Iterations: 6  
Target accuracy (+/- amu): 0.05 for Mass Cal. and 0.03 for Resolution  
Peak height (%) for Res. Opt.: 10

Optimization Results:

Initial Try

Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.663) - <Target not achieved>  
Target/Obtained mass (23.985/23.975), Target/Obtained resolution (0.7/0.695)  
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.699)  
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.684)  
[Failed]

Retry 1

Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.700)  
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.688)  
Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.698)  
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.701)

[Passed] Optimum value(s): N/A

QID STD/DRC

Optimization Settings:

Method: QID Calibration.mth.  
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:

Initial Try

Optimum value(s): Correlation Coefficient = 0.999; Intercept = -15.80

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-16	46294.9
Mg	24	41	-16	32452.8
In	115	41	-13	86971.9
Ce	140	41	-12	102732
Pb	208	41	-11.5	62146.9
U	238	41	-11.5	114360

KED Mode QID

Optimization Settings:

Method: QID Calibration.mth.  
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:

Initial Try

Optimum value(s): Correlation Coefficient = 0.987; Intercept = -15.94

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-16	37509.2
Mg	24	41	-15.5	70742.7
In	115	41	-13	125291
Ce	140	41	-11.5	108660
Pb	208	41	-11	62379.9

U 238 41 -10.5 141719

End Time: 5/10/2023 2:52:33 PM

## SmartTune Wizard - Summary

### Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 5/10/2023 2:52:35 PM

End Time: 5/10/2023 2:53:50 PM

KED Mode QID - Optimum value(s): Correlation Coefficient = 0.998; Intercept = -16.07

## SmartTune Wizard - Details

### Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\wizard\SmartTune\ARISmartTuneDailyUCT.swz

### Optimization Status

Start Time: 5/10/2023 2:52:35 PM

KED Mode QID

Optimization Settings:

Method: QID Calibration.mth.

Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:

Initial Try

Optimum value(s): Correlation Coefficient = 0.998; Intercept = -16.07

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-16	38908.9
Mg	24	41	-15.5	65678.6
In	115	41	-12.5	124315
Ce	140	41	-11.5	108152
Pb	208	41	-11	62408
U	238	41	-11	146831

End Time: 5/10/2023 2:53:50 PM



## Performance Check Report

### Sample ID: STD Performance Check

Sample Date/Time: Wednesday, May 10, 2023 14:53:54

Sample Description:

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth

Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.157

MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Dual Detector Mode: Pulse

Acq. Dead Time (ns): 35

Current Dead Time (ns): 35

Torch Z position (mm): 0.00

### Summary

Analyte	Mass	Meas. Intens.	Mean	Net Intens.	Mean	Net Intens. SD	Net Intens. RSD	Mode
Be	9.0		6511.5	6511.484		145.377	2.2	Standard
In	114.9		81325.5	81325.516		897.738	1.1	Standard
U	238.1		113291.7	113291.661		1664.283	1.5	Standard
[	CeO	155.9		1966.6	0.020	0.000	2.4	Standard
>	Ce	139.9		98993.0	98993.030	999.094	1.0	Standard
[	Ce++	70.0		668.1	0.007	0.000	3.1	Standard
	Bkgd	220.0		1.1	1.133	0.650	57.3	Standard

### Current Conditions File Data

Current Value	Description
0.92	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1600.00	Analog Stage Voltage
1000.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-10.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.92	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

Sample ID: STD Performance Check

Report Date/Time: Wednesday, May 10, 2023 14:55:58

Page 1

## SmartTune Wizard - Summary

### Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 5/10/2023 2:53:54 PM

End Time: 5/10/2023 2:55:58 PM

STD Performance Check - [Passed] Optimum value(s): N/A

Obtained Intensity (Be 9): 6511.48

Obtained Intensity (In 115): 81325.52

Obtained Intensity (U 238): 113291.66

Obtained Intensity (Bkgd 220): 1.13

Obtained Formula (Ce++ 70 / Ce 140): 0.007 (=668.15 / 98993.03)

Obtained Formula (CeO 156 / Ce 140): 0.020 (=1966.60 / 98993.03)

Obtained RSD (Be 9): 0.0223

Obtained RSD (In 115): 0.0110

Obtained RSD (U 238): 0.0147

## SmartTune Wizard - Details

### Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\wizard\SmartTune\ARISmartTuneDailyUCT.swz

### Optimization Status

Start Time: 5/10/2023 2:53:54 PM

### STD Performance Check

#### Optimization Settings:

Method: STD Performance Check.mth.  
Intensity Criterion: Be 9 > 2000  
Intensity Criterion: In 115 > 40000  
Intensity Criterion: U 238 > 30000  
Intensity Criterion: Bkgd 220 <= 5  
Formula Criterion: Ce++ 70 / Ce 140 <= 0.03  
Formula Criterion: Ce0 156 / Ce 140 <= 0.025  
RSD Criterion: Be 9.0122 < 0.05  
RSD Criterion: In 114.904 < 0.05  
RSD Criterion: U 238.05 < 0.05

#### Optimization Results:

##### Initial Try

Obtained Intensity (Be 9): 6511.48  
Obtained Intensity (In 115): 81325.52  
Obtained Intensity (U 238): 113291.66  
Obtained Intensity (Bkgd 220): 1.13  
Obtained Formula (Ce++ 70 / Ce 140): 0.007 (=668.15 / 98993.03)  
Obtained Formula (Ce0 156 / Ce 140): 0.020 (=1966.60 / 98993.03)  
Obtained RSD (Be 9): 0.0223  
Obtained RSD (In 115): 0.0110  
Obtained RSD (U 238): 0.0147

[Passed] Optimum value(s): N/A

End Time: 5/10/2023 2:55:58 PM

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1

Sample Dil Factor:

DEL

Comments:

Sample Date/Time: Wednesday, May 10, 2023 15:28:05

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L				24207	2	Standard
[>	Sc	45	ug/L				474403	0	Standard
	Cr	52	ug/L				8456	1	Standard
	Cr	53	ug/L				81	14	Standard
[>	Ge	72	ug/L				28967	4	KED
	Ni	60	ug/L				19	10	KED
	Ni	62	ug/L				5	78	KED
	Cu	63	ug/L				43	9	KED
	Cu	65	ug/L				24	15	KED
	Zn	66	ug/L				19	22	KED
	Zn	67	ug/L				2	173	KED
	As	75	ug/L				1	33	KED
	Y	89	ug/L				49674	0	Standard
	Kr	83	ug/L				32	42	Standard
[>	In-1	115	ug/L				6259	5	KED
	Cd	111	ug/L				0	100	KED
	Cd	114	ug/L				0	206	KED
[>	In	115	ug/L				474692	1	Standard
	Ag	107	ug/L				12	31	Standard
	Ba	135	ug/L				15	25	Standard
	Ba	137	ug/L				31	30	Standard
[>	Tb	159	ug/L				170775	0	Standard
	Pb	208	ug/L				201	12	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL2

Sample Dil Factor:

DEL

Comments:

Sample Date/Time: Wednesday, May 10, 2023 15:32:34

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode	
C	13		ug/L			24207	25883	2	Standard	
[>	Sc	45	ug/L			474403	523902	3	Standard	
	Cr	52	0.500	ug/L	0.021	4	8456	15234	1	Standard
	Cr	53	0.500	ug/L	0.020	4	81	873	1	Standard
[>	Ge	72	ug/L			28967	29195	0	KED	
	Ni	60	0.500	ug/L	0.034	6	19	780	6	KED
	Ni	62	0.500	ug/L	0.050	10	5	116	9	KED
	Cu	63	0.500	ug/L	0.026	5	43	2412	4	KED
	Cu	65	0.500	ug/L	0.034	6	24	1190	5	KED
	Zn	66	6.000	ug/L	0.090	1	19	3153	0	KED
	Zn	67	6.000	ug/L	0.211	3	2	498	3	KED
	As	75	0.200	ug/L	0.040	19	1	51	18	KED
	Y	89		ug/L		49674	50949	1	Standard	
	Kr	83		ug/L		32	51	16	Standard	
[>	In-1	115		ug/L		6259	6039	1	KED	
	Cd	111	0.100	ug/L	0.020	19	0	23	18	KED
	Cd	114	0.100	ug/L	0.009	9	0	63	7	KED
[>	In	115		ug/L		474692	480250	1	Standard	
	Ag	107	0.200	ug/L	0.005	2	12	3172	2	Standard
	Ba	135	0.500	ug/L	0.016	3	15	2622	4	Standard
	Ba	137	0.500	ug/L	0.009	1	31	4621	2	Standard
[>	Tb	159		ug/L		170775	172878	1	Standard	
	Pb	208	0.100	ug/L	0.002	2	201	9324	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL3

Sample Dil Factor:

DEL

Comments:

Sample Date/Time: Wednesday, May 10, 2023 15:37:02

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24207	29617	2	Standard
[> Sc	45		ug/L			474403	621120	0	Standard
[ Cr	52	10.000	ug/L	0.223	2	8456	152564	2	Standard
[ Cr	53	9.997	ug/L	0.230	2	81	16498	2	Standard
[> Ge	72		ug/L			28967	29364	0	KED
[ Ni	60	9.999	ug/L	0.134	1	19	14840	1	KED
[ Ni	62	10.001	ug/L	0.349	3	5	2328	3	KED
[ Cu	63	9.997	ug/L	0.249	2	43	42394	2	KED
[ Cu	65	9.998	ug/L	0.087	0	24	21761	0	KED
[ Zn	66	9.987	ug/L	0.291	2	19	5247	2	KED
[ Zn	67	10.157	ug/L	0.430	4	2	885	3	KED
[ As	75	10.000	ug/L	0.358	3	1	2452	3	KED
[ Y	89		ug/L			49674	52739	0	Standard
[ Kr	83		ug/L			32	46	26	Standard
[> In-1	115		ug/L			6259	6173	3	KED
[ Cd	111	10.000	ug/L	0.443	4	0	2332	4	KED
[ Cd	114	10.000	ug/L	0.345	3	0	6021	3	KED
[> In	115		ug/L			474692	482786	2	Standard
[ Ag	107	10.000	ug/L	0.201	2	12	164963	1	Standard
[ Ba	135	10.001	ug/L	0.476	4	15	53839	2	Standard
[ Ba	137	10.001	ug/L	0.260	2	31	95966	0	Standard
[> Tb	159		ug/L			170775	178874	0	Standard
[ Pb	208	10.000	ug/L	0.139	1	201	905833	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 15:47:22

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13	ug/L				23729	0	Standard
> Sc	45	ug/L				509000	1	Standard
Cr	52	ug/L				8828	1	Standard
Cr	53	ug/L				74	13	Standard
> Ge	72	ug/L				29303	1	KED
Ni	60	ug/L				5	21	KED
Ni	62	ug/L				1	100	KED
Cu	63	ug/L				34	20	KED
Cu	65	ug/L				19	27	KED
Zn	66	ug/L				23	32	KED
Zn	67	ug/L				5	0	KED
As	75	ug/L				3	9	KED
Y	89	ug/L				48310	2	Standard
Kr	83	ug/L				47	34	Standard
> In-1	115	ug/L				6273	3	KED
Cd	111	ug/L				2	49	KED
Cd	114	ug/L				4	66	KED
> In	115	ug/L				463649	3	Standard
Ag	107	ug/L				35	3	Standard
Ba	135	ug/L				24	20	Standard
Ba	137	ug/L				33	18	Standard
> Tb	159	ug/L				169186	2	Standard
Pb	208	ug/L				224	10	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL2

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 15:51:51

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	25525	0	Standard
[> Sc	45		ug/L			509000	512472	1	Standard
Cr	52	0.500	ug/L	0.020	4	8828	15510	0	Standard
Cr	53	0.500	ug/L	0.011	2	74	847	3	Standard
[> Ge	72		ug/L			29303	29478	0	KED
Ni	60	0.500	ug/L	0.012	2	5	719	3	KED
Ni	62	0.500	ug/L	0.073	14	1	114	13	KED
Cu	63	0.500	ug/L	0.023	4	34	2502	5	KED
Cu	65	0.500	ug/L	0.009	1	19	1297	1	KED
Zn	66	6.000	ug/L	0.034	0	23	3137	0	KED
Zn	67	6.000	ug/L	0.410	6	5	517	5	KED
As	75	0.200	ug/L	0.016	8	3	49	7	KED
Y	89		ug/L			48310	49051	0	Standard
Kr	83		ug/L			47	36	14	Standard
[> In-1	115		ug/L			6273	6139	4	KED
Cd	111	0.100	ug/L	0.032	31	2	21	31	KED
Cd	114	0.100	ug/L	0.017	16	4	70	16	KED
[> In	115		ug/L			463649	458533	2	Standard
Ag	107	0.200	ug/L	0.006	3	35	3114	1	Standard
Ba	135	0.500	ug/L	0.031	6	24	2588	4	Standard
Ba	137	0.500	ug/L	0.021	4	33	4565	3	Standard
[> Tb	159		ug/L			169186	175328	1	Standard
Pb	208	0.100	ug/L	0.002	2	224	9061	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL3

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 15:56:19

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	28227	5	Standard
[>	Sc	45	ug/L			509000	547188	1	Standard
	Cr	52	10.001	ug/L	0.180	8828	154411	2	Standard
	Cr	53	10.000	ug/L	0.148	74	16549	0	Standard
[>	Ge	72		ug/L		29303	30268	1	KED
	Ni	60	10.001	ug/L	0.091	5	15465	0	KED
	Ni	62	10.001	ug/L	0.274	1	2447	1	KED
	Cu	63	9.996	ug/L	0.164	34	43750	0	KED
	Cu	65	9.995	ug/L	0.109	19	21697	1	KED
	Zn	66	10.019	ug/L	0.157	23	5390	0	KED
	Zn	67	10.037	ug/L	0.375	5	893	2	KED
	As	75	10.000	ug/L	0.098	3	2479	0	KED
	Y	89		ug/L		48310	52333	3	Standard
	Kr	83		ug/L		47	35	29	Standard
[>	In-1	115		ug/L		6273	6321	4	KED
	Cd	111	10.000	ug/L	0.361	2	2354	2	KED
	Cd	114	10.000	ug/L	0.490	4	6079	0	KED
[>	In	115		ug/L		463649	495399	2	Standard
	Ag	107	10.000	ug/L	0.327	35	161409	1	Standard
	Ba	135	10.000	ug/L	0.202	24	54582	0	Standard
	Ba	137	9.999	ug/L	0.141	33	95918	1	Standard
[>	Tb	159		ug/L		169186	178590	0	Standard
	Pb	208	10.000	ug/L	0.024	224	903317	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL4

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:01:02

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	29878	4	Standard
[> Sc	45		ug/L			509000	545359	2	Standard
Cr	52	20.025	ug/L	0.642	3	8828	300001	2	Standard
Cr	53	20.105	ug/L	0.478	2	74	33786	1	Standard
[> Ge	72		ug/L			29303	30442	0	KED
Ni	60	19.876	ug/L	0.260	1	5	30161	1	KED
Ni	62	20.030	ug/L	0.349	1	1	4958	1	KED
Cu	63	19.912	ug/L	0.144	0	34	86125	1	KED
Cu	65	20.015	ug/L	0.243	1	19	43816	1	KED
Zn	66	19.772	ug/L	0.229	1	23	10331	1	KED
Zn	67	19.846	ug/L	0.513	2	5	1733	2	KED
As	75	19.906	ug/L	0.056	0	3	4870	0	KED
Y	89		ug/L			48310	53094	1	Standard
Kr	83		ug/L			47	41	20	Standard
[> In-1	115		ug/L			6273	6343	2	KED
Cd	111	19.953	ug/L	0.881	4	2	4669	3	KED
Cd	114	20.027	ug/L	0.435	2	4	12296	1	KED
[> In	115		ug/L			463649	489391	1	Standard
Ag	107	19.959	ug/L	0.325	1	35	315783	3	Standard
Ba	135	19.968	ug/L	0.582	2	24	106955	1	Standard
Ba	137	20.045	ug/L	0.402	2	33	191641	0	Standard
[> Tb	159		ug/L			169186	179464	1	Standard
Pb	208	19.937	ug/L	0.237	1	224	1786784	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL5

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:05:54

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	25400	2	Standard
[> Sc	45		ug/L			509000	558473	1	Standard
Cr	52	49.655	ug/L	0.911	1	8828	723106	2	Standard
Cr	53	49.854	ug/L	0.903	1	74	84458	2	Standard
[> Ge	72		ug/L			29303	30015	2	KED
Ni	60	49.697	ug/L	0.680	1	5	72172	3	KED
Ni	62	49.505	ug/L	0.762	1	1	11513	2	KED
Cu	63	49.635	ug/L	1.321	2	34	204227	4	KED
Cu	65	49.687	ug/L	0.309	0	19	103947	1	KED
Zn	66	49.611	ug/L	1.423	2	23	24635	4	KED
Zn	67	49.320	ug/L	1.429	2	5	3987	4	KED
As	75	49.951	ug/L	0.505	1	3	11985	2	KED
Y	89		ug/L			48310	50964	0	Standard
Kr	83		ug/L			47	54	10	Standard
[> In-1	115		ug/L			6273	6292	0	KED
Cd	111	49.924	ug/L	0.530	1	2	11505	0	KED
Cd	114	49.773	ug/L	0.306	0	4	29642	0	KED
[> In	115		ug/L			463649	482571	0	Standard
Ag	107	49.781	ug/L	0.756	1	35	759786	0	Standard
Ba	135	49.982	ug/L	0.497	0	24	263565	1	Standard
Ba	137	50.029	ug/L	0.399	0	33	473061	0	Standard
[> Tb	159		ug/L			169186	178836	0	Standard
Pb	208	49.835	ug/L	0.541	1	224	4378529	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL6

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:12:26

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	28122	4	Standard
[> Sc	45		ug/L			509000	558930	1	Standard
Cr	52	100.051	ug/L	0.647	0	8828	1450921	2	Standard
Cr	53	99.871	ug/L	2.158	2	74	168498	0	Standard
[> Ge	72		ug/L			29303	30158	2	KED
Ni	60	99.810	ug/L	1.688	1	5	144647	0	KED
Ni	62	99.827	ug/L	1.638	1	1	23190	3	KED
Cu	63	99.425	ug/L	2.145	2	34	403052	1	KED
Cu	65	99.706	ug/L	2.344	2	19	207473	1	KED
Zn	66	100.020	ug/L	2.199	2	23	49885	1	KED
Zn	67	100.026	ug/L	1.801	1	5	8123	2	KED
As	75	100.105	ug/L	1.080	1	3	24213	1	KED
Y	89		ug/L			48310	51944	4	Standard
Kr	83		ug/L			47	57	13	Standard
[> In-1	115		ug/L			6273	6458	1	KED
Cd	111	99.701	ug/L	0.430	0	2	23347	1	KED
Cd	114	99.566	ug/L	0.654	0	4	59985	0	KED
[> In	115		ug/L			463649	450932	0	Standard
Ag	107	101.152	ug/L	1.685	1	35	1500263	1	Standard
Ba	135	101.705	ug/L	0.844	0	24	531312	1	Standard
Ba	137	101.623	ug/L	2.092	2	33	949210	1	Standard
[> Tb	159		ug/L			169186	178763	1	Standard
Pb	208	99.203	ug/L	0.769	0	224	8487184	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:19:38

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	24581	4	Standard
[> Sc	45		ug/L			509000	533088	2	Standard
Cr	52	0.011	ug/L	0.014	123	8828	9404	4	Standard
Cr	53	0.004	ug/L	0.001	25	74	84	4	Standard
[> Ge	72		ug/L			29303	30002	0	KED
Ni	60	0.000	ug/L	0.001	370	5	5	33	KED
Ni	62	-0.000	ug/L	0.008	4930	1	1	100	KED
Cu	63	0.003	ug/L	0.000	18	34	46	4	KED
Cu	65	0.001	ug/L	0.006	428	19	22	50	KED
Zn	66	0.007	ug/L	0.022	332	23	27	39	KED
Zn	67	-0.025	ug/L	0.062	245	5	3	132	KED
As	75	0.004	ug/L	0.003	71	3	4	17	KED
Y	89		ug/L			48310	48443	1	Standard
Kr	83		ug/L			47	46	13	Standard
[> In-1	115		ug/L			6273	6574	1	KED
Cd	111	-0.006	ug/L	0.004	71	2	0	100	KED
Cd	114	-0.002	ug/L	0.005	343	4	3	89	KED
[> In	115		ug/L			463649	469846	4	Standard
Ag	107	0.004	ug/L	0.001	32	35	105	21	Standard
Ba	135	-0.001	ug/L	0.000	15	24	19	0	Standard
Ba	137	0.000	ug/L	0.001	351	33	37	31	Standard
[> Tb	159		ug/L			169186	173731	3	Standard
Pb	208	0.001	ug/L	0.000	37	224	311	8	Standard

## Sample Information

Sample Date/Time: Wednesday, May 10, 2023 16:12:26

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.m

Mass Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

## Calibration

Analyte	Mass	r Corr Coef	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Sc	45							
Cr	52	<b>1.0000</b>	0.026	0.50	10	20	50	100
Cr	53	<b>1.0000</b>	0.003	0.50	10	20	50	100
Ge	72							
Ni	60	<b>1.0000</b>	0.048	0.50	10	20	50	100
Ni	62	<b>0.9999</b>	0.008	0.50	10	20	50	100
Cu	63	<b>0.9999</b>	0.134	0.50	10	20	50	100
Cu	65	<b>1.0000</b>	0.069	0.50	10	20	50	100
Zn	66	<b>1.0000</b>	0.017	6.00	10	20	50	100
Zn	67	<b>0.9999</b>	0.003	6.00	10	20	50	100
As	75	<b>1.0000</b>	0.008	0.20	10	20	50	100
Y	89							
Kr	83							
In-1	115							
Cd	111	<b>1.0000</b>	0.036	0.10	10	20	50	100
Cd	114	<b>1.0000</b>	0.093	0.10	10	20	50	100
In	115							
Ag	107	<b>0.9998</b>	0.033	0.20	10	20	50	100
Ba	135	<b>0.9995</b>	0.012	0.50	10	20	50	100
Ba	137	<b>0.9996</b>	0.021	0.50	10	20	50	100
Tb	159							
Pb	208	<b>0.9999</b>	0.479	0.10	10	20	50	100

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICV1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:25:31

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	29797	4	Standard
[> Sc	45		ug/L			509000	564850	0	Standard
Cr	52	52.907	ug/L	1.586	2	8828	780016	3	Standard
Cr	53	51.308	ug/L	1.827	3	74	87546	3	Standard
[> Ge	72		ug/L			29303	31782	0	KED
Ni	60	50.903	ug/L	0.178	0	5	77766	0	KED
Ni	62	51.012	ug/L	1.334	2	1	12489	2	KED
Cu	63	52.299	ug/L	0.986	1	34	223527	2	KED
Cu	65	51.383	ug/L	1.337	2	19	112722	2	KED
Zn	66	50.838	ug/L	0.626	1	23	26741	1	KED
Zn	67	50.580	ug/L	0.623	1	5	4332	0	KED
As	75	48.181	ug/L	0.178	0	3	12285	0	KED
Y	89		ug/L			48310	52288	1	Standard
Kr	83		ug/L			47	44	15	Standard
[> In-1	115		ug/L			6273	6677	2	KED
Cd	111	51.665	ug/L	1.744	3	2	12504	2	KED
Cd	114	51.793	ug/L	1.375	2	4	32251	0	KED
[> In	115		ug/L			463649	478187	2	Standard
Ag	107	50.790	ug/L	1.892	3	35	798375	1	Standard
Ba	135	49.978	ug/L	0.851	1	24	276825	1	Standard
Ba	137	50.115	ug/L	0.177	0	33	496417	2	Standard
[> Tb	159		ug/L			169186	183312	0	Standard
Pb	208	52.638	ug/L	1.364	2	224	4617664	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICB1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:32:43

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	26356	3	Standard
[> Sc	45		ug/L			509000	539338	1	Standard
Cr	52	0.017	ug/L	0.016	94	8828	9587	1	Standard
Cr	53	-0.002	ug/L	0.002	123	74	75	6	Standard
[> Ge	72		ug/L			29303	30568	2	KED
Ni	60	0.001	ug/L	0.003	424	5	6	69	KED
Ni	62	0.005	ug/L	0.012	239	1	3	91	KED
Cu	63	0.005	ug/L	0.004	81	34	57	30	KED
Cu	65	0.004	ug/L	0.005	126	19	28	37	KED
Zn	66	0.020	ug/L	0.026	126	23	34	38	KED
Zn	67	-0.003	ug/L	0.045	1369	5	5	66	KED
As	75	0.007	ug/L	0.008	127	3	4	43	KED
Y	89		ug/L			48310	50406	2	Standard
Kr	83		ug/L			47	43	11	Standard
[> In-1	115		ug/L			6273	6493	1	KED
Cd	111	-0.002	ug/L	0.004	232	2	1	50	KED
Cd	114	-0.006	ug/L	0.004	65	4	1	176	KED
[> In	115		ug/L			463649	465713	1	Standard
Ag	107	0.002	ug/L	0.001	51	35	73	26	Standard
Ba	135	-0.001	ug/L	0.001	199	24	21	28	Standard
Ba	137	0.000	ug/L	0.001	389	33	36	31	Standard
[> Tb	159		ug/L			169186	175668	1	Standard
Pb	208	0.001	ug/L	0.000	62	224	286	10	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:37:25

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	26594	2	Standard
[>	Sc	45	ug/L			509000	564599	1	Standard
	Cr	52	ug/L	0.725	1	8828	758784	2	Standard
	Cr	53	ug/L	0.353	0	74	86184	1	Standard
[>	Ge	72	ug/L			29303	32146	1	KED
	Ni	60	ug/L	1.173	2	5	76549	1	KED
	Ni	62	ug/L	0.276	0	1	12146	1	KED
	Cu	63	ug/L	0.346	0	34	214938	0	KED
	Cu	65	ug/L	1.054	2	19	109970	1	KED
	Zn	66	ug/L	1.259	2	23	26518	1	KED
	Zn	67	ug/L	1.507	2	5	4360	2	KED
	As	75	ug/L	1.019	2	3	12812	1	KED
	Y	89	ug/L			48310	53576	2	Standard
	Kr	83	ug/L			47	42	34	Standard
[>	In-1	115	ug/L			6273	6756	1	KED
	Cd	111	ug/L	0.968	1	2	12162	1	KED
	Cd	114	ug/L	0.242	0	4	31925	1	KED
[>	In	115	ug/L			463649	482029	1	Standard
	Ag	107	ug/L	0.827	1	35	794203	0	Standard
	Ba	135	ug/L	0.673	1	24	277141	0	Standard
	Ba	137	ug/L	0.397	0	33	491965	0	Standard
[>	Tb	159	ug/L			169186	185684	1	Standard
	Pb	208	ug/L	0.957	1	224	4467825	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:44:37

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode	
C	13		ug/L			23729	26575	3	Standard	
[>	Sc	45	ug/L			509000	541589	1	Standard	
	Cr	52	0.006	ug/L	0.013	8828	9483	2	Standard	
	Cr	53	-0.005	ug/L	0.004	74	70	11	Standard	
[>	Ge	72		ug/L		29303	32305	1	KED	
	Ni	60	0.002	ug/L	0.001	5	8	13	KED	
	Ni	62	-0.001	ug/L	0.013	2070	1	173	KED	
	Cu	63	0.001	ug/L	0.001	105	34	41	9	KED
	Cu	65	-0.005	ug/L	0.001	17	19	11	16	KED
	Zn	66	0.005	ug/L	0.012	245	23	28	24	KED
	Zn	67	0.023	ug/L	0.035	153	5	8	35	KED
	As	75	0.004	ug/L	0.006	144	3	4	37	KED
	Y	89		ug/L		48310	50243	2	Standard	
	Kr	83		ug/L		47	43	16	Standard	
[>	In-1	115		ug/L		6273	6862	1	KED	
	Cd	111	0.003	ug/L	0.002	70	2	3	17	KED
	Cd	114	-0.002	ug/L	0.003	174	4	3	50	KED
[>	In	115		ug/L		463649	462636	4	Standard	
	Ag	107	0.002	ug/L	0.001	43	35	67	20	Standard
	Ba	135	0.000	ug/L	0.001	237	24	26	15	Standard
	Ba	137	-0.000	ug/L	0.001	187	33	29	26	Standard
[>	Tb	159		ug/L		169186	175175	2	Standard	
	Pb	208	0.000	ug/L	0.000	67	224	267	6	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CRL1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:49:18

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	29745	3	Standard
[> Sc	45		ug/L			509000	544043	0	Standard
Cr	52	0.523	ug/L	0.009	1	8828	16764	1	Standard
Cr	53	0.501	ug/L	0.008	1	74	901	2	Standard
[> Ge	72		ug/L			29303	32168	0	KED
Ni	60	0.493	ug/L	0.024	4	5	767	4	KED
Ni	62	0.476	ug/L	0.072	15	1	120	14	KED
Cu	63	0.708	ug/L	0.010	1	34	3101	2	KED
Cu	65	0.727	ug/L	0.032	4	19	1635	3	KED
Zn	66	6.250	ug/L	0.152	2	23	3349	2	KED
Zn	67	6.111	ug/L	0.086	1	5	535	0	KED
As	75	0.213	ug/L	0.006	2	3	58	3	KED
Y	89		ug/L			48310	50496	2	Standard
Kr	83		ug/L			47	45	12	Standard
[> In-1	115		ug/L			6273	6541	2	KED
Cd	111	0.113	ug/L	0.021	18	2	29	16	KED
Cd	114	0.097	ug/L	0.023	23	4	64	22	KED
[> In	115		ug/L			463649	478093	1	Standard
Ag	107	0.202	ug/L	0.006	2	35	3206	1	Standard
Ba	135	0.482	ug/L	0.013	2	24	2696	3	Standard
Ba	137	0.483	ug/L	0.017	3	33	4821	3	Standard
[> Tb	159		ug/L			169186	178239	1	Standard
Pb	208	0.107	ug/L	0.004	4	224	9331	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFA1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 16:56:08

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	82148	4	Standard
[>	Sc	45	ug/L			509000	540030	1	Standard
	Cr	52	ug/L	0.017	2	8828	18570	2	Standard
	Cr	53	ug/L	0.086	4	74	2916	6	Standard
[>	Ge	72	ug/L			29303	28977	0	KED
	Ni	60	ug/L	0.017	15	5	154	13	KED
	Ni	62	ug/L	0.014	11	1	28	11	KED
	Cu	63	ug/L	0.002	5	34	186	5	KED
	Cu	65	ug/L	0.012	37	19	84	28	KED
	Zn	66	ug/L	0.053	17	23	172	13	KED
	Zn	67	ug/L	0.085	31	5	26	25	KED
	As	75	ug/L	0.012	45	3	9	31	KED
	Y	89	ug/L			48310	49648	3	Standard
	Kr	83	ug/L			47	65	18	Standard
[>	In-1	115	ug/L			6273	5999	0	KED
	Cd	111	ug/L	0.020	45	2	11	38	KED
	Cd	114	ug/L	0.012	42	4	19	34	KED
[>	In	115	ug/L			463649	441167	0	Standard
	Ag	107	ug/L	0.000	7	35	104	5	Standard
	Ba	135	ug/L	0.007	5	24	599	5	Standard
	Ba	137	ug/L	0.005	4	33	1070	4	Standard
[>	Tb	159	ug/L			169186	167906	0	Standard
	Pb	208	ug/L	0.000	0	224	2394	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFB1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:00:36

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	80778	1	Standard
[> Sc	45		ug/L			509000	530617	1	Standard
Cr	52	20.186	ug/L	0.671	3	8828	285340	4	Standard
Cr	53	21.276	ug/L	0.553	2	74	34155	4	Standard
[> Ge	72		ug/L			29303	27650	1	KED
Ni	60	20.512	ug/L	0.872	4	5	27258	3	KED
Ni	62	20.858	ug/L	0.487	2	1	4443	1	KED
Cu	63	20.580	ug/L	0.468	2	34	76522	1	KED
Cu	65	20.103	ug/L	0.651	3	19	38370	2	KED
Zn	66	19.662	ug/L	0.585	2	23	9009	2	KED
Zn	67	17.951	ug/L	1.720	9	5	1340	8	KED
As	75	19.651	ug/L	0.451	2	3	4360	1	KED
Y	89		ug/L			48310	48740	2	Standard
Kr	83		ug/L			47	74	13	Standard
[> In-1	115		ug/L			6273	6028	0	KED
Cd	111	18.519	ug/L	0.593	3	2	4049	2	KED
Cd	114	18.365	ug/L	0.516	2	4	10330	2	KED
[> In	115		ug/L			463649	447152	1	Standard
Ag	107	18.002	ug/L	0.130	0	35	264803	2	Standard
Ba	135	0.109	ug/L	0.010	9	24	587	6	Standard
Ba	137	0.104	ug/L	0.002	1	33	994	1	Standard
[> Tb	159		ug/L			169186	168627	2	Standard
Pb	208	0.018	ug/L	0.001	2	224	1705	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV1

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:06:47

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	26329	2	Standard
> Sc	45		ug/L			509000	556001	2	Standard
Cr	52	198.368	ug/L	1.458	0	8828	2851709	2	Standard
Cr	53	195.087	ug/L	0.307	0	74	327408	2	Standard
> Ge	72		ug/L			29303	29227	1	KED
Ni	60	191.945	ug/L	3.999	2	5	269634	1	KED
Ni	62	186.640	ug/L	4.629	2	1	42024	3	KED
Cu	63	187.668	ug/L	2.643	1	34	737510	2	KED
Cu	65	185.711	ug/L	3.770	2	19	374570	1	KED
Zn	66	189.266	ug/L	0.834	0	23	91483	1	KED
Zn	67	186.660	ug/L	4.772	2	5	14685	1	KED
As	75	193.838	ug/L	1.289	0	3	45439	0	KED
Y	89		ug/L			48310	49992	1	Standard
Kr	83		ug/L			47	83	11	Standard
> In-1	115		ug/L			6273	5371	18	KED
Cd	111	219.502	ug/L	43.976	20	2	41729	4	KED
Cd	114	220.074	ug/L	39.817	18	4	107921	4	KED
> In	115		ug/L			463649	435715	1	Standard
Ag	107	193.623	ug/L	0.562	0	35	2774950	2	Standard
Ba	135	193.128	ug/L	4.604	2	24	974609	1	Standard
Ba	137	193.380	ug/L	2.785	1	33	1745084	0	Standard
> Tb	159		ug/L			169186	171188	2	Standard
Pb	208	200.008	ug/L	5.919	2	224	16378774	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV2

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:11:16

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	29606	4	Standard
[> Sc	45		ug/L			509000	552654	1	Standard
Cr	52	305.580	ug/L	3.631	1	8828	4362199	2	Standard
Cr	53	294.803	ug/L	0.531	0	74	491755	1	Standard
[> Ge	72		ug/L			29303	28899	0	KED
Ni	60	290.897	ug/L	5.116	1	5	404100	2	KED
Ni	62	288.363	ug/L	1.622	0	1	64187	0	KED
Cu	63	287.043	ug/L	2.289	0	34	1115281	0	KED
Cu	65	287.453	ug/L	2.535	0	19	573363	1	KED
Zn	66	285.291	ug/L	2.722	0	23	136335	0	KED
Zn	67	287.574	ug/L	3.024	1	5	22370	1	KED
As	75	305.011	ug/L	1.315	0	3	70699	0	KED
Y	89		ug/L			48310	49758	1	Standard
Kr	83		ug/L			47	116	11	Standard
[> In-1	115		ug/L			6273	6204	3	KED
Cd	111	292.818	ug/L	9.764	3	2	65819	0	KED
Cd	114	294.321	ug/L	10.877	3	4	170207	1	KED
[> In	115		ug/L			463649	405906	0	Standard
Ag	107	310.853	ug/L	5.576	1	35	4149787	1	Standard
Ba	135	294.858	ug/L	8.523	2	24	1386297	2	Standard
Ba	137	299.321	ug/L	3.477	1	33	2516816	1	Standard
[> Tb	159		ug/L			169186	154666	1	Standard
Pb	208	316.508	ug/L	5.627	1	224	23425103	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL2

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:18:27

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	28126	2	Standard
[> Sc	45		ug/L			509000	570158	2	Standard
Cr	52	0.013	ug/L	0.019	142	8828	10078	2	Standard
Cr	53	0.006	ug/L	0.004	67	74	93	8	Standard
[> Ge	72		ug/L			29303	34258	1	KED
Ni	60	0.006	ug/L	0.003	41	5	15	27	KED
Ni	62	0.004	ug/L	0.015	410	1	3	124	KED
Cu	63	0.003	ug/L	0.003	95	34	54	23	KED
Cu	65	0.003	ug/L	0.001	51	19	29	9	KED
Zn	66	0.019	ug/L	0.018	97	23	38	26	KED
Zn	67	0.031	ug/L	0.055	177	5	9	52	KED
As	75	0.013	ug/L	0.005	36	3	7	17	KED
Y	89		ug/L			48310	52547	0	Standard
Kr	83		ug/L			47	52	20	Standard
[> In-1	115		ug/L			6273	7246	0	KED
Cd	111	-0.000	ug/L	0.008	8315	2	2	78	KED
Cd	114	-0.000	ug/L	0.003	1197	4	4	43	KED
[> In	115		ug/L			463649	497647	2	Standard
Ag	107	0.008	ug/L	0.002	18	35	175	12	Standard
Ba	135	0.002	ug/L	0.001	54	24	40	19	Standard
Ba	137	0.004	ug/L	0.002	44	33	80	23	Standard
[> Tb	159		ug/L			169186	187495	1	Standard
Pb	208	0.002	ug/L	0.000	19	224	437	6	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV2

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:24:49

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23729	28216	2	Standard
[> Sc	45		ug/L			509000	614310	2	Standard
Cr	52	49.614	ug/L	0.154	0	8828	796164	2	Standard
Cr	53	49.306	ug/L	0.655	1	74	91479	1	Standard
[> Ge	72		ug/L			29303	33882	0	KED
Ni	60	48.761	ug/L	0.591	1	5	79418	1	KED
Ni	62	49.065	ug/L	1.020	2	1	12807	2	KED
Cu	63	50.335	ug/L	0.792	1	34	229335	1	KED
Cu	65	49.788	ug/L	0.248	0	19	116447	0	KED
Zn	66	49.118	ug/L	1.011	2	23	27541	1	KED
Zn	67	51.803	ug/L	0.793	1	5	4730	2	KED
As	75	50.107	ug/L	0.465	0	3	13619	0	KED
Y	89		ug/L			48310	55027	0	Standard
Kr	83		ug/L			47	46	15	Standard
[> In-1	115		ug/L			6273	7119	3	KED
Cd	111	50.184	ug/L	1.227	2	2	12949	0	KED
Cd	114	50.175	ug/L	0.566	1	4	33318	2	KED
[> In	115		ug/L			463649	504029	0	Standard
Ag	107	48.797	ug/L	0.760	1	35	808976	1	Standard
Ba	135	49.515	ug/L	0.138	0	24	289131	0	Standard
Ba	137	49.043	ug/L	0.770	1	33	512033	0	Standard
[> Tb	159		ug/L			169186	194827	2	Standard
Pb	208	50.847	ug/L	1.120	2	224	4739539	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB2

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:32:02

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode	
C	13		ug/L			23729	27340	2	Standard	
[>	Sc	45	ug/L			509000	580003	1	Standard	
	Cr	52	0.023	ug/L	0.039	8828	10405	7	Standard	
	Cr	53	0.028	ug/L	0.037	74	133	50	Standard	
[>	Ge	72	ug/L			29303	34295	1	KED	
	Ni	60	0.001	ug/L	0.003	5	7	66	KED	
	Ni	62	-0.004	ug/L	0.008	1	1	173	KED	
	Cu	63	0.000	ug/L	0.002	34	41	15	KED	
	Cu	65	-0.000	ug/L	0.005	8359	19	22	46	KED
	Zn	66	0.009	ug/L	0.009	100	23	32	15	KED
	Zn	67	-0.004	ug/L	0.023	606	5	6	34	KED
	As	75	0.008	ug/L	0.012	144	3	5	54	KED
	Y	89		ug/L		48310	53554	1	Standard	
	Kr	83		ug/L		47	59	14	Standard	
[>	In-1	115		ug/L		6273	7121	2	KED	
	Cd	111	-0.001	ug/L	0.002	159	2	2	24	KED
	Cd	114	-0.001	ug/L	0.001	145	4	4	24	KED
[>	In	115		ug/L		463649	495495	2	Standard	
	Ag	107	0.030	ug/L	0.033	110	35	527	103	Standard
	Ba	135	0.024	ug/L	0.030	120	24	169	102	Standard
	Ba	137	0.026	ug/L	0.031	123	33	303	108	Standard
[>	Tb	159		ug/L		169186	184923	3	Standard	
	Pb	208	0.030	ug/L	0.029	98	224	2932	93	Standard

## ICP-MS Quantitative Analysis - Summary Report

**Sample ID: SEQ-CAL1**

**Sample Dil Factor:**

**Comments:**

**Sample Date/Time: Wednesday, May 10, 2023 17:37:21**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	<b>C</b>	<b>13</b>	ug/L				26311	4	Standard
[>	<b>Sc</b>	<b>45</b>	ug/L				566891	1	Standard
	<b>Cr</b>	<b>52</b>	ug/L				10103	1	Standard
	<b>Cr</b>	<b>53</b>	ug/L				90	11	Standard
[>	<b>Ge</b>	<b>72</b>	ug/L				32698	0	KED
	<b>Ni</b>	<b>60</b>	ug/L				3	50	KED
	<b>Ni</b>	<b>62</b>	ug/L				3	34	KED
	<b>Cu</b>	<b>63</b>	ug/L				24	19	KED
	<b>Cu</b>	<b>65</b>	ug/L				17	11	KED
	<b>Zn</b>	<b>66</b>	ug/L				20	48	KED
	<b>Zn</b>	<b>67</b>	ug/L				3	132	KED
	<b>As</b>	<b>75</b>	ug/L				3	45	KED
	<b>Y</b>	<b>89</b>	ug/L				53020	2	Standard
	<b>Kr</b>	<b>83</b>	ug/L				39	12	Standard
[>	<b>In-1</b>	<b>115</b>	ug/L				7060	1	KED
	<b>Cd</b>	<b>111</b>	ug/L				2	89	KED
	<b>Cd</b>	<b>114</b>	ug/L				3	68	KED
[>	<b>In</b>	<b>115</b>	ug/L				494263	2	Standard
	<b>Ag</b>	<b>107</b>	ug/L				53	2	Standard
	<b>Ba</b>	<b>135</b>	ug/L				15	33	Standard
	<b>Ba</b>	<b>137</b>	ug/L				16	52	Standard
[>	<b>Tb</b>	<b>159</b>	ug/L				184968	0	Standard
	<b>Pb</b>	<b>208</b>	ug/L				252	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV3

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:41:49

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	27086	4	Standard
[>	Sc	45	ug/L			566891	602734	1	Standard
	Cr	52	50.087	0.634	1	10103	788886	3	Standard
	Cr	53	49.352	0.393	0	90	89874	2	Standard
[>	Ge	72	ug/L			32698	34111	1	KED
	Ni	60	48.892	0.532	1	3	80169	1	KED
	Ni	62	49.253	0.220	0	3	12944	1	KED
	Cu	63	49.622	1.349	2	24	227559	1	KED
	Cu	65	48.368	0.349	0	17	113892	1	KED
	Zn	66	50.735	0.721	1	20	28634	1	KED
	Zn	67	50.136	0.936	1	3	4607	3	KED
	As	75	49.751	0.619	1	3	13613	0	KED
	Y	89	ug/L			53020	55757	1	Standard
	Kr	83	ug/L			39	41	29	Standard
[>	In-1	115	ug/L			7060	7062	1	KED
	Cd	111	50.589	1.752	3	2	12950	2	KED
	Cd	114	50.362	0.801	1	3	33178	2	KED
[>	In	115	ug/L			494263	496605	2	Standard
	Ag	107	49.227	0.708	1	53	803963	0	Standard
	Ba	135	50.459	2.381	4	15	290080	2	Standard
	Ba	137	50.527	1.528	3	16	519526	0	Standard
[>	Tb	159	ug/L			184968	193060	1	Standard
	Pb	208	50.413	1.135	2	252	4657369	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB3

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:49:02

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	26387	1	Standard
[>	Sc	45	ug/L			566891	577127	1	Standard
	Cr	52	-0.020	0.010	47	10103	9985	2	Standard
	Cr	53	-0.008	0.004	53	90	78	9	Standard
[>	Ge	72	ug/L			32698	34100	1	KED
	Ni	60	-0.002	0.001	33	3	0	173	KED
	Ni	62	-0.005	0.007	131	3	1	100	KED
	Cu	63	0.000	0.001	191	24	26	12	KED
	Cu	65	-0.001	0.001	121	17	15	21	KED
	Zn	66	0.001	0.003	512	20	22	9	KED
	Zn	67	-0.023	0.020	89	3	1	100	KED
	As	75	0.000	0.005	4102	3	3	37	KED
	Y	89				53020	51769	1	Standard
	Kr	83				39	35	17	Standard
[>	In-1	115	ug/L			7060	7354	2	KED
	Cd	111	0.007	0.014	201	2	4	87	KED
	Cd	114	0.027	0.026	94	3	22	82	KED
[>	In	115	ug/L			494263	493687	2	Standard
	Ag	107	0.006	0.006	98	53	153	65	Standard
	Ba	135	0.003	0.007	220	15	33	118	Standard
	Ba	137	0.004	0.006	151	16	60	111	Standard
[>	Tb	159	ug/L			184968	186545	0	Standard
	Pb	208	0.004	0.006	143	252	643	86	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0687-BLK2**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 17:54:17**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	37670	3	Standard
> Sc	45		ug/L			566891	603363	1	Standard
Cr	52	-0.001	ug/L	0.027	4639	10103	10740	2	Standard
Cr	53	0.001	ug/L	0.013	1768	90	97	22	Standard
> Ge	72		ug/L			32698	33573	2	KED
Ni	60	0.004	ug/L	0.004	101	3	10	66	KED
Ni	62	-0.003	ug/L	0.011	368	3	2	114	KED
Cu	63	0.070	ug/L	0.006	8	24	340	8	KED
Cu	65	0.065	ug/L	0.006	9	17	166	7	KED
Zn	66	0.172	ug/L	0.045	25	20	116	21	KED
Zn	67	0.168	ug/L	0.041	24	3	19	17	KED
As	75	-0.003	ug/L	0.006	226	3	2	60	KED
Y	89		ug/L			53020	54713	1	Standard
Kr	83		ug/L			39	42	18	Standard
> In-1	115		ug/L			7060	7281	1	KED
Cd	111	0.005	ug/L	0.002	48	2	3	15	KED
Cd	114	-0.001	ug/L	0.004	367	3	2	121	KED
> In	115		ug/L			494263	517690	1	Standard
Ag	107	-0.000	ug/L	0.000	105	53	50	14	Standard
Ba	135	0.005	ug/L	0.000	6	15	45	2	Standard
Ba	137	0.008	ug/L	0.001	16	16	98	12	Standard
> Tb	159		ug/L			184968	194843	1	Standard
Pb	208	0.008	ug/L	0.001	9	252	1056	6	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLE0687-BS2

Sample Dil Factor: 20

DEL

Comments:

Sample Date/Time: Wednesday, May 10, 2023 17:58:46

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	33195	2	Standard
> Sc	45		ug/L			566891	555862	11	Standard
Cr	52	27.319	ug/L	2.314	8	10103	398623	3	Standard
Cr	53	27.123	ug/L	2.036	7	90	45316	4	Standard
> Ge	72		ug/L			32698	34536	1	KED
Ni	60	26.277	ug/L	0.423	1	3	43618	0	KED
Ni	62	25.531	ug/L	0.733	2	3	6793	1	KED
Cu	63	26.428	ug/L	0.996	3	24	122696	2	KED
Cu	65	26.366	ug/L	0.643	2	17	62849	1	KED
Zn	66	81.431	ug/L	3.435	4	20	46502	2	KED
Zn	67	77.856	ug/L	1.691	2	3	7239	2	KED
As	75	24.595	ug/L	0.132	0	3	6815	0	KED
Y	89		ug/L			53020	50937	11	Standard
Kr	83		ug/L			39	43	2	Standard
> In-1	115		ug/L			7060	7171	0	KED
Cd	111	25.205	ug/L	0.178	0	2	6555	0	KED
Cd	114	25.527	ug/L	0.381	1	3	17079	1	KED
> In	115		ug/L			494263	475075	13	Standard
Ag	107	26.777	ug/L	2.851	10	53	414464	4	Standard
Ba	135	26.576	ug/L	2.759	10	15	144886	4	Standard
Ba	137	26.205	ug/L	2.206	8	16	255882	5	Standard
> Tb	159		ug/L			184968	178000	9	Standard
Pb	208	27.358	ug/L	1.891	6	252	2320134	3	Standard

BLD

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLE0687-BS2

Sample Dil Factor: 20

Comments:

Sample Date/Time: Wednesday, May 10, 2023 18:05:25

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc.	Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13			ug/L			26311	33167	3	Standard
[> Sc	45			ug/L			566891	617917	1	Standard
Cr	52	26.566		ug/L	0.336	1	10103	434021	0	Standard
Cr	53	25.839		ug/L	0.203	0	90	48285	2	Standard
[> Ge	72			ug/L			32698	35114	0	KED
Ni	60	26.149		ug/L	0.318	1	3	44138	1	KED
Ni	62	26.557		ug/L	0.236	0	3	7185	1	KED
Cu	63	26.719		ug/L	0.111	0	24	126165	0	KED
Cu	65	26.523		ug/L	0.868	3	17	64298	3	KED
Zn	66	81.101		ug/L	0.657	0	20	47108	0	KED
Zn	67	79.743		ug/L	2.633	3	3	7539	3	KED
As	75	25.028		ug/L	0.475	1	3	7052	1	KED
Y	89			ug/L			53020	54777	2	Standard
Kr	83			ug/L			39	56	25	Standard
[> In-1	115			ug/L			7060	7190	2	KED
Cd	111	25.907		ug/L	1.333	5	2	6749	2	KED
Cd	114	25.906		ug/L	0.432	1	3	17376	2	KED
[> In	115			ug/L			494263	529323	0	Standard
Ag	107	25.138		ug/L	0.889	3	53	437657	3	Standard
Ba	135	25.018		ug/L	0.513	2	15	153411	1	Standard
Ba	137	25.193		ug/L	0.818	3	16	276243	3	Standard
[> Tb	159			ug/L			184968	195659	1	Standard
Pb	208	26.664		ug/L	0.249	0	252	2496863	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0298-BLK1**

Sample Dil Factor:

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 18:11:10**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	38063	2	Standard
> Sc	45		ug/L			566891	597496	2	Standard
Cr	52	<b>-0.003</b>	ug/L	0.011	446	10103	10607	1	Standard
Cr	53	<b>0.015</b>	ug/L	0.002	15	90	121	5	Standard
> Ge	72		ug/L			32698	34566	1	KED
Ni	60	<b>0.005</b>	ug/L	0.001	13	3	12	9	KED
Ni	62	<b>0.002</b>	ug/L	0.007	416	3	3	50	KED
Cu	63	<b>0.028</b>	ug/L	0.004	15	24	154	12	KED
Cu	65	<b>0.030</b>	ug/L	0.004	12	17	90	10	KED
Zn	66	<b>0.367</b>	ug/L	0.046	12	20	231	10	KED
Zn	67	<b>0.380</b>	ug/L	0.094	24	3	39	22	KED
As	75	<b>-0.002</b>	ug/L	0.003	112	3	2	26	KED
Y	89		ug/L			53020	53718	2	Standard
Kr	83		ug/L			39	38	21	Standard
> In-1	115		ug/L			7060	7412	2	KED
Cd	111	<b>-0.002</b>	ug/L	0.004	224	2	1	50	KED
Cd	114	<b>-0.001</b>	ug/L	0.002	306	3	2	38	KED
> In	115		ug/L			494263	508864	4	Standard
Ag	107	<b>0.001</b>	ug/L	0.001	103	53	76	30	Standard
Ba	135	<b>0.044</b>	ug/L	0.001	3	15	276	7	Standard
Ba	137	<b>0.041</b>	ug/L	0.002	5	16	448	2	Standard
> Tb	159		ug/L			184968	189447	1	Standard
Pb	208	<b>0.003</b>	ug/L	0.001	15	252	551	7	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0298-BS1**

Sample Dil Factor:

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 18:15:38**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	41219	2	Standard
> Sc	45		ug/L			566891	595237	2	Standard
Cr	52	<b>26.019</b>	ug/L	0.637	2	10103	409724	2	Standard
Cr	53	<b>25.701</b>	ug/L	0.388	1	90	46253	0	Standard
> Ge	72		ug/L			32698	33724	2	KED
Ni	60	<b>26.223</b>	ug/L	0.188	0	3	42515	3	KED
Ni	62	<b>25.826</b>	ug/L	0.457	1	3	6712	3	KED
Cu	63	<b>27.023</b>	ug/L	0.029	0	24	122552	2	KED
Cu	65	<b>26.364</b>	ug/L	0.662	2	17	61404	4	KED
Zn	66	<b>84.748</b>	ug/L	0.880	1	20	47269	1	KED
Zn	67	<b>82.421</b>	ug/L	2.653	3	3	7480	1	KED
As	75	<b>25.246</b>	ug/L	0.327	1	3	6830	1	KED
Y	89		ug/L			53020	55215	3	Standard
Kr	83		ug/L			39	61	32	Standard
> In-1	115		ug/L			7060	7117	3	KED
Cd	111	<b>26.003</b>	ug/L	0.830	3	2	6706	1	KED
Cd	114	<b>25.869</b>	ug/L	1.271	4	3	17159	2	KED
> In	115		ug/L			494263	501527	1	Standard
Ag	107	<b>25.380</b>	ug/L	0.349	1	53	418726	1	Standard
Ba	135	<b>25.446</b>	ug/L	0.398	1	15	147835	0	Standard
Ba	137	<b>25.147</b>	ug/L	0.112	0	16	261267	1	Standard
> Tb	159		ug/L			184968	192205	0	Standard
Pb	208	<b>25.898</b>	ug/L	0.210	0	252	2382531	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0077-MS2**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 18:21:17**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	40376	1	Standard
[> Sc	45		ug/L			566891	644293	2	Standard
Cr	52	13.646	ug/L	0.334	2	10103	237982	1	Standard
Cr	53	13.650	ug/L	0.413	3	90	26636	3	Standard
[> Ge	72		ug/L			32698	35599	1	KED
Ni	60	14.278	ug/L	0.608	4	3	24427	3	KED
Ni	62	14.855	ug/L	0.778	5	3	4078	6	KED
Cu	63	17.856	ug/L	0.146	0	24	85486	1	KED
Cu	65	17.890	ug/L	0.181	1	17	43971	1	KED
Zn	66	44.470	ug/L	0.482	1	20	26195	0	KED
Zn	67	44.109	ug/L	0.983	2	3	4229	1	KED
As	75	14.390	ug/L	0.229	1	3	4111	0	KED
Y	89		ug/L			53020	82049	1	Standard
Kr	83		ug/L			39	44	35	Standard
[> In-1	115		ug/L			7060	7585	1	KED
Cd	111	13.396	ug/L	0.268	2	2	3686	3	KED
Cd	114	12.937	ug/L	0.159	1	3	9156	1	KED
[> In	115		ug/L			494263	520828	1	Standard
Ag	107	13.168	ug/L	0.834	6	53	225463	4	Standard
Ba	135	18.146	ug/L	0.439	2	15	109466	0	Standard
Ba	137	18.016	ug/L	0.372	2	16	194342	1	Standard
[> Tb	159		ug/L			184968	198562	2	Standard
Pb	208	13.622	ug/L	0.430	3	252	1294148	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0297-01**

Sample Dil Factor: **100**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 18:27:27**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	43660	3	Standard
> Sc	45		ug/L			566891	632000	0	Standard
Cr	52	<b>2.036</b>	ug/L	0.025	1	10103	44431	0	Standard
Cr	53	<b>2.030</b>	ug/L	0.034	1	90	3972	1	Standard
> Ge	72		ug/L			32698	35701	1	KED
Ni	60	<b>2.054</b>	ug/L	0.066	3	3	3527	2	KED
Ni	62	<b>2.148</b>	ug/L	0.146	6	3	593	4	KED
Cu	63	<b>3.160</b>	ug/L	0.088	2	24	15197	4	KED
Cu	65	<b>3.168</b>	ug/L	0.115	3	17	7823	3	KED
Zn	66	<b>13.507</b>	ug/L	0.376	2	20	7993	1	KED
Zn	67	<b>13.075</b>	ug/L	0.153	1	3	1260	2	KED
As	75	<b>0.552</b>	ug/L	0.034	6	3	161	7	KED
Y	89		ug/L			53020	79010	1	Standard
Kr	83		ug/L			39	41	17	Standard
> In-1	115		ug/L			7060	7693	2	KED
Cd	111	<b>0.040</b>	ug/L	0.009	23	2	13	17	KED
Cd	114	<b>0.048</b>	ug/L	0.010	21	3	37	18	KED
> In	115		ug/L			494263	523935	1	Standard
Ag	107	<b>0.024</b>	ug/L	0.002	7	53	473	6	Standard
Ba	135	<b>6.728</b>	ug/L	0.172	2	15	40843	2	Standard
Ba	137	<b>6.775</b>	ug/L	0.223	3	16	73515	1	Standard
> Tb	159		ug/L			184968	202392	1	Standard
Pb	208	<b>12.755</b>	ug/L	0.082	0	252	1235605	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0728-DUP2**

Sample Dil Factor: **100**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 18:32:26**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	44324	2	Standard
> Sc	45		ug/L			566891	616246	1	Standard
Cr	52	<b>3.859</b>	ug/L	0.104	2	10103	72247	0	Standard
Cr	53	<b>3.763</b>	ug/L	0.033	0	90	7097	1	Standard
> Ge	72		ug/L			32698	35016	1	KED
Ni	60	<b>3.217</b>	ug/L	0.049	1	3	5417	1	KED
Ni	62	<b>3.072</b>	ug/L	0.041	1	3	831	0	KED
Cu	63	<b>5.765</b>	ug/L	0.101	1	24	27162	1	KED
Cu	65	<b>5.632</b>	ug/L	0.198	3	17	13623	1	KED
Zn	66	<b>25.143</b>	ug/L	0.668	2	20	14575	1	KED
Zn	67	<b>24.719</b>	ug/L	0.461	1	3	2332	0	KED
As	75	<b>0.890</b>	ug/L	0.054	6	3	253	5	KED
Y	89		ug/L			53020	86822	2	Standard
Kr	83		ug/L			39	38	5	Standard
> In-1	115		ug/L			7060	7818	1	KED
Cd	111	<b>0.092</b>	ug/L	0.014	15	2	28	15	KED
Cd	114	<b>0.078</b>	ug/L	0.020	25	3	60	24	KED
> In	115		ug/L			494263	505786	3	Standard
Ag	107	<b>0.019</b>	ug/L	0.001	7	53	378	3	Standard
Ba	135	<b>12.943</b>	ug/L	0.471	3	15	75798	1	Standard
Ba	137	<b>12.936</b>	ug/L	0.581	4	16	135424	1	Standard
> Tb	159		ug/L			184968	196469	1	Standard
Pb	208	<b>25.694</b>	ug/L	0.107	0	252	2416204	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLD0728-MS2

Sample Dil Factor: 100

DEL

Comments:

Sample Date/Time: Wednesday, May 10, 2023 18:36:54

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	43287	3	Standard
[> Sc	45		ug/L			566891	591647	10	Standard
Cr	52	9.452	ug/L	0.588	6	10103	154071	5	Standard
Cr	53	9.291	ug/L	0.725	7	90	16595	2	Standard
[> Ge	72		ug/L			32698	35179	0	KED
Ni	60	8.374	ug/L	0.172	2	3	14163	1	KED
Ni	62	8.570	ug/L	0.258	3	3	2325	3	KED
Cu	63	10.707	ug/L	0.135	1	24	50663	1	KED
Cu	65	10.695	ug/L	0.305	2	17	25987	3	KED
Zn	66	41.005	ug/L	0.450	1	20	23871	0	KED
Zn	67	43.282	ug/L	1.509	3	3	4102	4	KED
As	75	5.955	ug/L	0.067	1	3	1683	0	KED
Y	89		ug/L			53020	82678	9	Standard
Kr	83		ug/L			39	48	26	Standard
[> In-1	115		ug/L			7060	7566	2	KED
Cd	111	5.358	ug/L	0.095	1	2	1472	2	KED
Cd	114	5.303	ug/L	0.159	2	3	3745	3	KED
[> In	115		ug/L			494263	487343	10	Standard
Ag	107	4.919	ug/L	0.394	8	53	78463	4	Standard
Ba	135	79.346	ug/L	6.937	8	15	445104	2	Standard
Ba	137	79.361	ug/L	5.203	6	16	797381	4	Standard
[> Tb	159		ug/L			184968	188193	8	Standard
Pb	208	31.645	ug/L	1.866	5	252	2841204	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL3

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 18:41:23

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	28394	4	Standard
[> Sc	45		ug/L			566891	585732	2	Standard
Cr	52	-0.022	ug/L	0.003	13	10103	10113	1	Standard
Cr	53	-0.017	ug/L	0.007	42	90	63	22	Standard
[> Ge	72		ug/L			32698	33367	0	KED
Ni	60	0.004	ug/L	0.002	58	3	9	34	KED
Ni	62	0.007	ug/L	0.028	390	3	5	141	KED
Cu	63	0.007	ug/L	0.006	84	24	54	46	KED
Cu	65	0.001	ug/L	0.006	513	17	20	71	KED
Zn	66	0.082	ug/L	0.030	36	20	66	24	KED
Zn	67	0.049	ug/L	0.088	181	3	8	96	KED
As	75	-0.002	ug/L	0.004	182	3	2	36	KED
Y	89		ug/L			53020	53017	1	Standard
Kr	83		ug/L			39	46	26	Standard
[> In-1	115		ug/L			7060	7227	2	KED
Cd	111	-0.004	ug/L	0.006	150	2	1	114	KED
Cd	114	-0.002	ug/L	0.000	5	3	1	4	KED
[> In	115		ug/L			494263	495365	1	Standard
Ag	107	-0.001	ug/L	0.001	81	53	38	35	Standard
Ba	135	0.002	ug/L	0.002	109	15	27	49	Standard
Ba	137	0.005	ug/L	0.001	12	16	66	8	Standard
[> Tb	159		ug/L			184968	186655	1	Standard
Pb	208	0.004	ug/L	0.000	3	252	641	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV4

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 18:45:51

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	28727	4	Standard
[> Sc	45		ug/L			566891	609014	3	Standard
Cr	52	50.570	ug/L	0.762	1	10103	804391	2	Standard
Cr	53	49.489	ug/L	1.195	2	90	91015	1	Standard
[> Ge	72		ug/L			32698	34132	2	KED
Ni	60	50.592	ug/L	1.395	2	3	82971	0	KED
Ni	62	50.224	ug/L	3.628	7	3	13194	5	KED
Cu	63	50.541	ug/L	1.378	2	24	231886	1	KED
Cu	65	49.221	ug/L	0.899	1	17	115932	0	KED
Zn	66	51.252	ug/L	1.016	1	20	28936	0	KED
Zn	67	52.016	ug/L	2.220	4	3	4779	2	KED
As	75	50.828	ug/L	0.713	1	3	13915	1	KED
Y	89		ug/L			53020	56257	1	Standard
Kr	83		ug/L			39	47	10	Standard
[> In-1	115		ug/L			7060	7295	0	KED
Cd	111	50.371	ug/L	0.324	0	2	13324	0	KED
Cd	114	51.434	ug/L	0.839	1	3	35003	1	KED
[> In	115		ug/L			494263	503811	3	Standard
Ag	107	49.821	ug/L	1.108	2	53	825169	1	Standard
Ba	135	50.659	ug/L	2.522	4	15	295308	1	Standard
Ba	137	49.729	ug/L	1.869	3	16	518499	0	Standard
[> Tb	159		ug/L			184968	191232	2	Standard
Pb	208	51.742	ug/L	0.772	1	252	4734666	1	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB4

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 18:53:04

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	27100	6	Standard
[> Sc	45		ug/L			566891	604751	2	Standard
Cr	52	-0.032	ug/L	0.003	8	10103	10287	2	Standard
Cr	53	-0.011	ug/L	0.003	28	90	76	7	Standard
[> Ge	72		ug/L			32698	35074	2	KED
Ni	60	-0.000	ug/L	0.000	30	3	3	0	KED
Ni	62	-0.008	ug/L	0.008	107	3	1	173	KED
Cu	63	0.006	ug/L	0.002	32	24	52	14	KED
Cu	65	0.002	ug/L	0.002	76	17	24	19	KED
Zn	66	-0.002	ug/L	0.009	530	20	21	25	KED
Zn	67	0.004	ug/L	0.011	296	3	4	24	KED
As	75	-0.001	ug/L	0.002	282	3	3	17	KED
Y	89		ug/L			53020	52811	0	Standard
Kr	83		ug/L			39	43	26	Standard
[> In-1	115		ug/L			7060	7273	3	KED
Cd	111	0.001	ug/L	0.005	577	2	2	57	KED
Cd	114	0.001	ug/L	0.006	392	3	4	91	KED
[> In	115		ug/L			494263	514317	0	Standard
Ag	107	0.001	ug/L	0.001	153	53	64	20	Standard
Ba	135	-0.000	ug/L	0.001	153	15	13	28	Standard
Ba	137	0.001	ug/L	0.001	65	16	26	22	Standard
[> Tb	159		ug/L			184968	191895	0	Standard
Pb	208	0.001	ug/L	0.000	16	252	332	4	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0301-BLK1**

Sample Dil Factor:

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 18:57:58**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	36132	2	Standard
> Sc	45		ug/L			566891	602137	1	Standard
Cr	52	<b>0.039</b>	ug/L	0.002	4	10103	11333	1	Standard
Cr	53	<b>0.041</b>	ug/L	0.004	11	90	170	5	Standard
> Ge	72		ug/L			32698	35755	1	KED
Ni	60	<b>0.009</b>	ug/L	0.006	72	3	19	55	KED
Ni	62	<b>-0.006</b>	ug/L	0.012	205	3	1	173	KED
Cu	63	<b>0.054</b>	ug/L	0.004	7	24	286	5	KED
Cu	65	<b>0.049</b>	ug/L	0.005	11	17	139	8	KED
Zn	66	<b>0.501</b>	ug/L	0.016	3	20	318	1	KED
Zn	67	<b>0.537</b>	ug/L	0.123	22	3	55	21	KED
As	75	<b>-0.004</b>	ug/L	0.005	131	3	2	60	KED
Y	89		ug/L			53020	53484	1	Standard
Kr	83		ug/L			39	42	9	Standard
> In-1	115		ug/L			7060	7514	4	KED
Cd	111	<b>-0.003</b>	ug/L	0.004	162	2	1	69	KED
Cd	114	<b>0.001</b>	ug/L	0.007	593	3	4	120	KED
> In	115		ug/L			494263	515717	1	Standard
Ag	107	<b>-0.001</b>	ug/L	0.001	165	53	41	59	Standard
Ba	135	<b>0.032</b>	ug/L	0.003	7	15	208	8	Standard
Ba	137	<b>0.034</b>	ug/L	0.005	15	16	380	13	Standard
> Tb	159		ug/L			184968	188567	0	Standard
Pb	208	<b>0.013</b>	ug/L	0.001	6	252	1422	6	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0301-BS1**

Sample Dil Factor:

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 19:02:26**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	39347	2	Standard
> Sc	45		ug/L			566891	602736	1	Standard
Cr	52	<b>25.728</b>	ug/L	0.632	2	10103	410293	1	Standard
Cr	53	<b>25.069</b>	ug/L	0.544	2	90	45686	0	Standard
> Ge	72		ug/L			32698	35760	0	KED
Ni	60	<b>24.931</b>	ug/L	0.329	1	3	42859	2	KED
Ni	62	<b>25.470</b>	ug/L	0.338	1	3	7019	2	KED
Cu	63	<b>26.115</b>	ug/L	0.703	2	24	125575	2	KED
Cu	65	<b>25.523</b>	ug/L	0.337	1	17	63008	1	KED
Zn	66	<b>81.836</b>	ug/L	1.535	1	20	48404	0	KED
Zn	67	<b>77.435</b>	ug/L	1.924	2	3	7455	1	KED
As	75	<b>24.221</b>	ug/L	0.419	1	3	6951	2	KED
Y	89		ug/L			53020	55246	3	Standard
Kr	83		ug/L			39	38	17	Standard
> In-1	115		ug/L			7060	7223	4	KED
Cd	111	<b>25.786</b>	ug/L	0.757	2	2	6750	1	KED
Cd	114	<b>25.761</b>	ug/L	0.217	0	3	17358	3	KED
> In	115		ug/L			494263	502123	3	Standard
Ag	107	<b>25.046</b>	ug/L	0.929	3	53	413450	2	Standard
Ba	135	<b>25.125</b>	ug/L	0.881	3	15	146049	0	Standard
Ba	137	<b>24.829</b>	ug/L	0.821	3	16	258081	0	Standard
> Tb	159		ug/L			184968	192140	0	Standard
Pb	208	<b>26.135</b>	ug/L	0.277	1	252	2403344	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0143-BLK1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 19:07:19**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	33143	1	Standard
[> Sc	45		ug/L			566891	616779	2	Standard
[ Cr	52	<b>-0.028</b>	ug/L	0.019	69	10103	10547	0	Standard
[ Cr	53	<b>-0.006</b>	ug/L	0.003	40	90	86	4	Standard
[> Ge	72		ug/L			32698	34454	0	KED
[ Ni	60	<b>0.008</b>	ug/L	0.004	46	3	16	35	KED
[ Ni	62	<b>-0.003</b>	ug/L	0.008	272	3	2	86	KED
[ Cu	63	<b>0.012</b>	ug/L	0.003	29	24	79	20	KED
[ Cu	65	<b>0.008</b>	ug/L	0.007	86	17	36	43	KED
[ Zn	66	<b>0.171</b>	ug/L	0.019	11	20	119	8	KED
[ Zn	67	<b>0.203</b>	ug/L	0.083	40	3	22	33	KED
[ As	75	<b>-0.003</b>	ug/L	0.003	91	3	2	28	KED
Y	89		ug/L			53020	56743	3	Standard
Kr	83		ug/L			39	53	27	Standard
[> In-1	115		ug/L			7060	7418	0	KED
[ Cd	111	<b>-0.004</b>	ug/L	0.002	51	2	1	43	KED
[ Cd	114	<b>-0.001</b>	ug/L	0.004	676	3	2	100	KED
[> In	115		ug/L			494263	513562	2	Standard
[ Ag	107	<b>0.001</b>	ug/L	0.001	216	53	66	31	Standard
[ Ba	135	<b>0.034</b>	ug/L	0.003	9	15	215	6	Standard
[ Ba	137	<b>0.034</b>	ug/L	0.001	1	16	377	3	Standard
[> Tb	159		ug/L			184968	193668	0	Standard
[ Pb	208	<b>0.007</b>	ug/L	0.000	3	252	869	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLE0143-BS1

Sample Dil Factor: 20

DEL

Comments:

Sample Date/Time: Wednesday, May 10, 2023 19:11:48

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	31606	2	Standard
> Sc	45		ug/L			566891	583965	11	Standard
Cr	52	27.552	ug/L	2.680	9	10103	422084	3	Standard
Cr	53	27.385	ug/L	2.342	8	90	48042	3	Standard
> Ge	72		ug/L			32698	33602	2	KED
Ni	60	26.623	ug/L	0.960	3	3	42975	0	KED
Ni	62	26.995	ug/L	0.969	3	3	6985	1	KED
Cu	63	27.153	ug/L	0.763	2	24	122630	0	KED
Cu	65	26.767	ug/L	0.624	2	17	62066	0	KED
Zn	66	82.288	ug/L	2.082	2	20	45718	0	KED
Zn	67	78.775	ug/L	1.406	1	3	7124	0	KED
As	75	25.075	ug/L	0.969	3	3	6756	1	KED
Y	89		ug/L			53020	52675	13	Standard
Kr	83		ug/L			39	52	36	Standard
> In-1	115		ug/L			7060	7562	3	KED
Cd	111	24.984	ug/L	0.283	1	2	6850	1	KED
Cd	114	24.822	ug/L	0.916	3	3	17500	0	KED
> In	115		ug/L			494263	489071	10	Standard
Ag	107	26.745	ug/L	1.759	6	53	428268	4	Standard
Ba	135	27.408	ug/L	2.670	9	15	154205	1	Standard
Ba	137	27.186	ug/L	2.617	9	16	273527	2	Standard
> Tb	159		ug/L			184968	184312	10	Standard
Pb	208	28.250	ug/L	2.382	8	252	2477210	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0143-BS1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 19:19:15**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	30379	2	Standard
> Sc	45		ug/L			566891	608076	1	Standard
Cr	52	<b>26.503</b>	ug/L	0.345	1	10103	426187	2	Standard
Cr	53	<b>26.098</b>	ug/L	0.180	0	90	47989	1	Standard
> Ge	72		ug/L			32698	35900	1	KED
Ni	60	<b>25.767</b>	ug/L	0.436	1	3	44460	0	KED
Ni	62	<b>26.190</b>	ug/L	0.532	2	3	7243	0	KED
Cu	63	<b>27.050</b>	ug/L	0.206	0	24	130578	1	KED
Cu	65	<b>26.509</b>	ug/L	0.178	0	17	65696	1	KED
Zn	66	<b>81.108</b>	ug/L	0.527	0	20	48170	2	KED
Zn	67	<b>77.729</b>	ug/L	0.535	0	3	7513	1	KED
As	75	<b>24.804</b>	ug/L	0.297	1	3	7144	1	KED
Y	89		ug/L			53020	55160	3	Standard
Kr	83		ug/L			39	68	12	Standard
> In-1	115		ug/L			7060	7460	2	KED
Cd	111	<b>25.512</b>	ug/L	0.374	1	2	6904	3	KED
Cd	114	<b>24.977</b>	ug/L	0.596	2	3	17384	2	KED
> In	115		ug/L			494263	513378	4	Standard
Ag	107	<b>26.260</b>	ug/L	0.377	1	53	443361	3	Standard
Ba	135	<b>26.060</b>	ug/L	1.712	6	15	154721	2	Standard
Ba	137	<b>25.388</b>	ug/L	1.063	4	16	269741	2	Standard
> Tb	159		ug/L			184968	194271	3	Standard
Pb	208	<b>26.682</b>	ug/L	0.951	3	252	2478789	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0728-MS2**

Sample Dil Factor: **100**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 19:23:43**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	32572	2	Standard
> Sc	45		ug/L			566891	634781	1	Standard
Cr	52	<b>8.923</b>	ug/L	0.181	2	10103	157301	3	Standard
Cr	53	<b>8.784</b>	ug/L	0.118	1	90	16931	2	Standard
> Ge	72		ug/L			32698	35227	2	KED
Ni	60	<b>7.934</b>	ug/L	0.171	2	3	13433	0	KED
Ni	62	<b>8.105</b>	ug/L	0.290	3	3	2202	3	KED
Cu	63	<b>10.173</b>	ug/L	0.317	3	24	48187	1	KED
Cu	65	<b>10.080</b>	ug/L	0.557	5	17	24508	3	KED
Zn	66	<b>38.423</b>	ug/L	0.769	2	20	22395	0	KED
Zn	67	<b>40.690</b>	ug/L	1.664	4	3	3860	3	KED
As	75	<b>5.570</b>	ug/L	0.174	3	3	1576	1	KED
Y	89		ug/L			53020	85393	1	Standard
Kr	83		ug/L			39	44	27	Standard
> In-1	115		ug/L			7060	7444	0	KED
Cd	111	<b>5.163</b>	ug/L	0.104	2	2	1395	1	KED
Cd	114	<b>5.160</b>	ug/L	0.024	0	3	3586	0	KED
> In	115		ug/L			494263	516165	3	Standard
Ag	107	<b>4.702</b>	ug/L	0.128	2	53	79838	0	Standard
Ba	135	<b>76.355</b>	ug/L	3.843	5	15	456151	2	Standard
Ba	137	<b>75.875</b>	ug/L	3.822	5	16	810591	3	Standard
> Tb	159		ug/L			184968	202938	1	Standard
Pb	208	<b>30.231</b>	ug/L	0.583	1	252	2935613	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0348-01**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 19:28:33**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	25448	5	Standard
> Sc	45		ug/L			566891	529281	3	Standard
Cr	52	0.440	ug/L	0.008	1	10103	15429	3	Standard
Cr	53	1.137	ug/L	0.039	3	90	1900	3	Standard
> Ge	72		ug/L			32698	27739	0	KED
Ni	60	1.356	ug/L	0.067	4	3	1811	5	KED
Ni	62	1.314	ug/L	0.157	11	3	283	10	KED
Cu	63	1.848	ug/L	0.018	0	24	6912	0	KED
Cu	65	1.781	ug/L	0.011	0	17	3424	0	KED
Zn	66	16.919	ug/L	0.501	2	20	7776	2	KED
Zn	67	15.634	ug/L	0.215	1	3	1170	0	KED
As	75	1.258	ug/L	0.034	2	3	282	3	KED
Y	89		ug/L			53020	48610	0	Standard
Kr	83		ug/L			39	43	19	Standard
> In-1	115		ug/L			7060	5801	2	KED
Cd	111	0.005	ug/L	0.004	92	2	2	33	KED
Cd	114	0.010	ug/L	0.009	90	3	7	62	KED
> In	115		ug/L			494263	443792	0	Standard
Ag	107	0.001	ug/L	0.001	64	53	62	14	Standard
Ba	135	0.370	ug/L	0.025	6	15	1916	6	Standard
Ba	137	0.371	ug/L	0.010	2	16	3427	3	Standard
> Tb	159		ug/L			184968	173759	1	Standard
Pb	208	0.116	ug/L	0.001	1	252	9874	2	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL4

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 19:33:27

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	24223	2	Standard
[> Sc	45		ug/L			566891	575088	3	Standard
Cr	52	-0.007	ug/L	0.012	171	10103	10143	3	Standard
Cr	53	0.005	ug/L	0.011	218	90	100	18	Standard
[> Ge	72		ug/L			32698	30306	11	KED
Ni	60	0.002	ug/L	0.002	106	3	6	56	KED
Ni	62	-0.008	ug/L	0.004	58	3	1	86	KED
Cu	63	0.004	ug/L	0.003	73	24	36	26	KED
Cu	65	0.003	ug/L	0.003	113	17	21	26	KED
Zn	66	0.070	ug/L	0.009	13	20	54	19	KED
Zn	67	0.035	ug/L	0.010	28	3	6	17	KED
As	75	-0.004	ug/L	0.002	52	3	1	25	KED
Y	89		ug/L			53020	52486	2	Standard
Kr	83		ug/L			39	40	9	Standard
[> In-1	115		ug/L			7060	6912	1	KED
Cd	111	-0.006	ug/L	0.002	35	2	0	86	KED
Cd	114	-0.002	ug/L	0.003	164	3	1	103	KED
[> In	115		ug/L			494263	502957	1	Standard
Ag	107	-0.001	ug/L	0.001	187	53	45	43	Standard
Ba	135	0.001	ug/L	0.001	180	15	19	34	Standard
Ba	137	0.003	ug/L	0.001	33	16	49	21	Standard
[> Tb	159		ug/L			184968	186751	0	Standard
Pb	208	0.004	ug/L	0.000	10	252	622	5	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0374-03**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 19:40:00**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	27470	2	Standard
> Sc	45		ug/L			566891	535366	2	Standard
Cr	52	1.485	ug/L	0.027	1	10103	30025	1	Standard
Cr	53	2.427	ug/L	0.053	2	90	4007	4	Standard
> Ge	72		ug/L			32698	26716	2	KED
Ni	60	0.991	ug/L	0.067	6	3	1276	8	KED
Ni	62	0.904	ug/L	0.041	4	3	188	2	KED
Cu	63	1.735	ug/L	0.003	0	24	6252	2	KED
Cu	65	1.743	ug/L	0.055	3	17	3228	5	KED
Zn	66	1.685	ug/L	0.077	4	20	761	6	KED
Zn	67	2.401	ug/L	0.167	6	3	175	8	KED
As	75	0.727	ug/L	0.067	9	3	158	8	KED
Y	89		ug/L			53020	49651	1	Standard
Kr	83		ug/L			39	38	15	Standard
> In-1	115		ug/L			7060	5871	1	KED
Cd	111	0.008	ug/L	0.007	86	2	3	41	KED
Cd	114	0.009	ug/L	0.009	96	3	7	63	KED
> In	115		ug/L			494263	457235	0	Standard
Ag	107	-0.000	ug/L	0.001	375	53	46	22	Standard
Ba	135	19.449	ug/L	0.234	1	15	103026	0	Standard
Ba	137	19.409	ug/L	0.370	1	16	183823	1	Standard
> Tb	159		ug/L			184968	175956	0	Standard
Pb	208	0.110	ug/L	0.002	1	252	9480	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL5

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 19:44:29

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	24303	5	Standard
[> Sc	45		ug/L			566891	576791	3	Standard
Cr	52	0.036	ug/L	0.027	76	10103	10807	3	Standard
Cr	53	0.024	ug/L	0.004	15	90	133	5	Standard
[> Ge	72		ug/L			32698	33136	1	KED
Ni	60	0.001	ug/L	0.002	203	3	5	66	KED
Ni	62	-0.000	ug/L	0.009	6668	3	3	69	KED
Cu	63	-0.001	ug/L	0.001	138	24	20	24	KED
Cu	65	-0.001	ug/L	0.003	284	17	15	37	KED
Zn	66	0.053	ug/L	0.010	18	20	50	9	KED
Zn	67	0.042	ug/L	0.022	52	3	7	25	KED
As	75	-0.004	ug/L	0.006	153	3	2	68	KED
Y	89		ug/L			53020	52970	2	Standard
Kr	83		ug/L			39	34	8	Standard
[> In-1	115		ug/L			7060	6842	2	KED
Cd	111	-0.005	ug/L	0.007	143	2	0	173	KED
Cd	114	-0.003	ug/L	0.002	57	3	1	90	KED
[> In	115		ug/L			494263	506336	1	Standard
Ag	107	-0.001	ug/L	0.000	21	53	30	18	Standard
Ba	135	0.002	ug/L	0.001	49	15	26	21	Standard
Ba	137	0.003	ug/L	0.001	35	16	48	23	Standard
[> Tb	159		ug/L			184968	187814	2	Standard
Pb	208	0.003	ug/L	0.000	5	252	556	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV5

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 19:48:57

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	24269	4	Standard
[> Sc	45		ug/L			566891	590553	1	Standard
Cr	52	51.066	ug/L	0.308	0	10103	787666	1	Standard
Cr	53	49.455	ug/L	0.522	1	90	88228	1	Standard
[> Ge	72		ug/L			32698	33288	2	KED
Ni	60	49.520	ug/L	1.070	2	3	79212	1	KED
Ni	62	50.158	ug/L	1.195	2	3	12858	0	KED
Cu	63	50.304	ug/L	2.007	3	24	225023	1	KED
Cu	65	50.399	ug/L	1.418	2	17	115756	1	KED
Zn	66	51.639	ug/L	1.107	2	20	28433	1	KED
Zn	67	50.767	ug/L	0.397	0	3	4551	1	KED
As	75	49.807	ug/L	1.104	2	3	13296	0	KED
Y	89		ug/L			53020	54784	0	Standard
Kr	83		ug/L			39	47	4	Standard
[> In-1	115		ug/L			7060	6811	3	KED
Cd	111	51.475	ug/L	1.428	2	2	12706	0	KED
Cd	114	51.093	ug/L	1.398	2	3	32450	1	KED
[> In	115		ug/L			494263	508399	2	Standard
Ag	107	48.081	ug/L	1.462	3	53	803607	0	Standard
Ba	135	48.411	ug/L	0.773	1	15	285047	1	Standard
Ba	137	48.840	ug/L	0.572	1	16	514273	2	Standard
[> Tb	159		ug/L			184968	194510	1	Standard
Pb	208	52.796	ug/L	1.254	2	252	4913375	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB5

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 19:56:10

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	23676	7	Standard
[>	Sc	45	ug/L			566891	595773	0	Standard
	Cr	52	ug/L	0.018	43	10103	9984	3	Standard
	Cr	53	ug/L	0.005	27	90	63	14	Standard
[>	Ge	72	ug/L			32698	32613	1	KED
	Ni	60	ug/L	0.001	345	3	4	49	KED
	Ni	62	ug/L	0.005	5394	3	3	34	KED
	Cu	63	ug/L	0.003	144	24	33	39	KED
	Cu	65	ug/L	0.002	574	17	16	24	KED
	Zn	66	ug/L	0.002	15	20	12	8	KED
	Zn	67	ug/L	0.045	306	3	5	78	KED
	As	75	ug/L	0.004	298	3	2	33	KED
	Y	89	ug/L			53020	54754	2	Standard
	Kr	83	ug/L			39	36	18	Standard
[>	In-1	115	ug/L			7060	7291	3	KED
	Cd	111	ug/L	0.009	818	2	2	94	KED
	Cd	114	ug/L	0.001	91	3	4	26	KED
[>	In	115	ug/L			494263	530983	2	Standard
	Ag	107	ug/L	0.001	69	53	74	16	Standard
	Ba	135	ug/L	0.001	164	15	12	45	Standard
	Ba	137	ug/L	0.001	103	16	31	44	Standard
[>	Tb	159	ug/L			184968	189359	0	Standard
	Pb	208	ug/L	0.000	20	252	351	5	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 20:21:08

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			26311	30742	2	Standard
[> Sc	45		ug/L			566891	624857	1	Standard
Cr	52	0.084	ug/L	0.034	40	10103	12489	5	Standard
Cr	53	0.132	ug/L	0.039	29	90	350	22	Standard
[> Ge	72		ug/L			32698	35356	3	KED
Ni	60	0.546	ug/L	0.226	41	3	922	37	KED
Ni	62	0.552	ug/L	0.142	25	3	153	22	KED
Cu	63	0.023	ug/L	0.003	11	24	133	9	KED
Cu	65	0.022	ug/L	0.011	48	17	72	36	KED
Zn	66	0.601	ug/L	0.108	17	20	372	12	KED
Zn	67	0.587	ug/L	0.108	18	3	59	13	KED
As	75	-0.003	ug/L	0.003	102	3	2	26	KED
Y	89		ug/L			53020	55653	0	Standard
Kr	83		ug/L			39	54	22	Standard
[> In-1	115		ug/L			7060	7908	3	KED
Cd	111	-0.003	ug/L	0.007	242	2	1	124	KED
Cd	114	0.001	ug/L	0.004	386	3	4	68	KED
[> In	115		ug/L			494263	523603	3	Standard
Ag	107	0.000	ug/L	0.001	196	53	64	19	Standard
Ba	135	0.121	ug/L	0.027	22	15	751	23	Standard
Ba	137	0.118	ug/L	0.013	11	16	1298	13	Standard
[> Tb	159		ug/L			184968	191054	1	Standard
Pb	208	0.005	ug/L	0.000	7	252	724	4	Standard

## ICP-MS Quantitative Analysis - Summary Report

**Sample ID: SEQ-CAL1**

**Sample Dil Factor:**

**Comments:**

**Sample Date/Time: Wednesday, May 10, 2023 20:26:00**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L				27881	1	Standard
[>	Sc	45	ug/L				600447	1	Standard
	Cr	52	ug/L				10860	1	Standard
	Cr	53	ug/L				113	5	Standard
[>	Ge	72	ug/L				35776	2	KED
	Ni	60	ug/L				145	17	KED
	Ni	62	ug/L				28	29	KED
	Cu	63	ug/L				53	12	KED
	Cu	65	ug/L				29	13	KED
	Zn	66	ug/L				87	12	KED
	Zn	67	ug/L				19	11	KED
	As	75	ug/L				2	44	KED
	Y	89	ug/L				55660	0	Standard
	Kr	83	ug/L				44	13	Standard
[>	In-1	115	ug/L				7587	4	KED
	Cd	111	ug/L				4	13	KED
	Cd	114	ug/L				1	106	KED
[>	In	115	ug/L				519229	3	Standard
	Ag	107	ug/L				33	13	Standard
[>	Tb	159	ug/L				190542	1	Standard
	Pb	208	ug/L				524	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV6

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 20:30:26

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File:

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	29050	1	Standard
[> Sc	45		ug/L			600447	626146	0	Standard
Cr	52	49.167	ug/L	0.927	1	10860	804779	2	Standard
Cr	53	49.187	ug/L	0.914	1	113	93067	2	Standard
[> Ge	72		ug/L			35776	35306	0	KED
Ni	60	48.708	ug/L	1.092	2	145	82805	2	KED
Ni	62	48.519	ug/L	1.369	2	28	13221	2	KED
Cu	63	49.493	ug/L	0.730	1	53	234973	1	KED
Cu	65	49.388	ug/L	0.330	0	29	120371	1	KED
Zn	66	50.574	ug/L	1.281	2	87	29610	2	KED
Zn	67	50.034	ug/L	0.468	0	19	4773	1	KED
As	75	49.621	ug/L	0.526	1	2	14052	0	KED
Y	89		ug/L			55660	56069	3	Standard
Kr	83		ug/L			44	62	6	Standard
[> In-1	115		ug/L			7587	7367	0	KED
Cd	111	50.587	ug/L	0.561	1	4	13516	1	KED
Cd	114	50.851	ug/L	0.642	1	1	34948	1	KED
[> In	115		ug/L			519229	515799	3	Standard
Ag	107	47.565	ug/L	1.435	3	33	806664	2	Standard
[> Tb	159		ug/L			190542	197846	0	Standard
Pb	208	49.588	ug/L	0.492	0	524	4695653	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB6

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 20:37:35

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	30403	3	Standard
[> Sc	45		ug/L			600447	612688	0	Standard
Cr	52	-0.028	ug/L	0.012	42	10860	10643	1	Standard
Cr	53	-0.019	ug/L	0.007	33	113	80	16	Standard
[> Ge	72		ug/L			35776	35407	2	KED
Ni	60	-0.008	ug/L	0.005	61	145	130	8	KED
Ni	62	-0.052	ug/L	0.015	29	28	13	28	KED
Cu	63	0.002	ug/L	0.001	24	53	64	6	KED
Cu	65	-0.001	ug/L	0.004	251	29	25	35	KED
Zn	66	-0.024	ug/L	0.007	30	87	72	4	KED
Zn	67	-0.091	ug/L	0.043	47	19	10	36	KED
As	75	0.010	ug/L	0.003	36	2	4	22	KED
Y	89		ug/L			55660	55266	2	Standard
Kr	83		ug/L			44	45	19	Standard
[> In-1	115		ug/L			7587	7638	0	KED
Cd	111	-0.008	ug/L	0.000	0	4	1		KED
Cd	114	0.002	ug/L	0.001	80	1	3	34	KED
[> In	115		ug/L			519229	538099	1	Standard
Ag	107	0.004	ug/L	0.001	16	33	101	10	Standard
[> Tb	159		ug/L			190542	193312	1	Standard
Pb	208	0.001	ug/L	0.000	34	524	610	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0578-BLK1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 20:44:18**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	40138	4	Standard
[> Sc	45		ug/L			600447	621245	1	Standard
[ Cr	52	<b>0.003</b>	ug/L	0.001	45	10860	11280	1	Standard
[ Cr	53	<b>0.007</b>	ug/L	0.004	47	113	131	4	Standard
[> Ge	72		ug/L			35776	35226	1	KED
[ Ni	60	<b>0.016</b>	ug/L	0.020	127	145	170	19	KED
[ Ni	62	<b>0.011</b>	ug/L	0.039	354	28	31	33	KED
[ Cu	63	<b>0.003</b>	ug/L	0.003	102	53	67	23	KED
[ Cu	65	<b>0.007</b>	ug/L	0.002	30	29	46	11	KED
[ Zn	66	<b>0.068</b>	ug/L	0.015	22	87	125	6	KED
[ Zn	67	<b>0.057</b>	ug/L	0.101	177	19	24	38	KED
[ As	75	<b>-0.003</b>	ug/L	0.003	105	2	1	78	KED
Y	89		ug/L			55660	55969	0	Standard
Kr	83		ug/L			44	39	14	Standard
[> In-1	115		ug/L			7587	7906	1	KED
[ Cd	111	<b>-0.007</b>	ug/L	0.008	103	4	2	98	KED
[ Cd	114	<b>0.002</b>	ug/L	0.005	193	1	3	93	KED
[> In	115		ug/L			519229	537592	1	Standard
[ Ag	107	<b>0.005</b>	ug/L	0.004	76	33	119	54	Standard
[> Tb	159		ug/L			190542	199925	0	Standard
[ Pb	208	<b>0.006</b>	ug/L	0.005	84	524	1100	41	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0578-BS1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 20:48:43**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	37980	2	Standard
[> Sc	45		ug/L			600447	626934	1	Standard
[ Cr	52	<b>25.864</b>	ug/L	0.160	0	10860	429230	1	Standard
[ Cr	53	<b>25.501</b>	ug/L	0.209	0	113	48367	2	Standard
[> Ge	72		ug/L			35776	35083	0	KED
[ Ni	60	<b>26.314</b>	ug/L	0.807	3	145	44509	2	KED
[ Ni	62	<b>25.633</b>	ug/L	0.562	2	28	6954	1	KED
[ Cu	63	<b>27.020</b>	ug/L	0.634	2	53	127486	1	KED
[ Cu	65	<b>27.020</b>	ug/L	0.828	3	29	65447	2	KED
[ Zn	66	<b>81.453</b>	ug/L	3.084	3	87	47326	3	KED
[ Zn	67	<b>77.935</b>	ug/L	0.929	1	19	7377	0	KED
[ As	75	<b>24.974</b>	ug/L	0.394	1	2	7029	1	KED
Y	89		ug/L			55660	56955	1	Standard
Kr	83		ug/L			44	48	19	Standard
[> In-1	115		ug/L			7587	7518	2	KED
[ Cd	111	<b>25.173</b>	ug/L	0.343	1	4	6865	2	KED
[ Cd	114	<b>25.138</b>	ug/L	0.825	3	1	17623	1	KED
[> In	115		ug/L			519229	527783	1	Standard
[ Ag	107	<b>25.955</b>	ug/L	0.935	3	33	450479	2	Standard
[> Tb	159		ug/L			190542	197638	2	Standard
[ Pb	208	<b>26.529</b>	ug/L	0.826	3	524	2508791	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0072-BLK1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 20:53:08**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	37385	3	Standard
[> Sc	45		ug/L			600447	615099	2	Standard
[ Cr	52	<b>0.015</b>	ug/L	0.013	88	10860	11362	1	Standard
[ Cr	53	<b>0.002</b>	ug/L	0.005	210	113	120	5	Standard
[> Ge	72		ug/L			35776	34993	1	KED
[ Ni	60	<b>0.065</b>	ug/L	0.008	12	145	250	4	KED
[ Ni	62	<b>0.021</b>	ug/L	0.042	200	28	33	34	KED
[ Cu	63	<b>0.010</b>	ug/L	0.004	39	53	97	17	KED
[ Cu	65	<b>0.009</b>	ug/L	0.003	34	29	51	16	KED
[ Zn	66	<b>0.232</b>	ug/L	0.032	13	87	219	8	KED
[ Zn	67	<b>0.207</b>	ug/L	0.030	14	19	38	7	KED
[ As	75	<b>0.001</b>	ug/L	0.009	1125	2	2	105	KED
Y	89		ug/L			55660	55904	3	Standard
Kr	83		ug/L			44	43	15	Standard
[> In-1	115		ug/L			7587	7454	2	KED
[ Cd	111	<b>-0.002</b>	ug/L	0.002	84	4	3	15	KED
[ Cd	114	<b>0.003</b>	ug/L	0.002	75	1	3	40	KED
[> In	115		ug/L			519229	537278	1	Standard
[ Ag	107	<b>0.005</b>	ug/L	0.002	53	33	116	35	Standard
[> Tb	159		ug/L			190542	195405	3	Standard
[ Pb	208	<b>0.006</b>	ug/L	0.001	16	524	1060	4	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0072-BS1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 20:57:33**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	36094	2	Standard
[> Sc	45		ug/L			600447	572755	(10)	Standard
Cr	52	27.852	ug/L	2.315	8	10860	419085	4	Standard
Cr	53	27.110	ug/L	1.969	7	113	46728	4	Standard
[> Ge	72		ug/L			35776	35198	0	KED
Ni	60	25.504	ug/L	0.222	0	145	43291	1	KED
Ni	62	25.791	ug/L	0.614	2	28	7019	1	KED
Cu	63	26.575	ug/L	0.425	1	53	125806	1	KED
Cu	65	26.358	ug/L	0.294	1	29	64056	1	KED
Zn	66	79.691	ug/L	1.477	1	87	46463	1	KED
Zn	67	76.937	ug/L	1.501	1	19	7307	2	KED
As	75	24.014	ug/L	0.245	1	2	6781	0	KED
Y	89		ug/L			55660	53298	9	Standard
Kr	83		ug/L			44	53	40	Standard
[> In-1	115		ug/L			7587	7340	4	KED
Cd	111	25.290	ug/L	0.565	2	4	6730	1	KED
Cd	114	25.211	ug/L	0.729	2	1	17251	1	KED
[> In	115		ug/L			519229	495969	(9)	Standard
Ag	107	26.638	ug/L	2.172	8	33	432404	2	Standard
[> Tb	159		ug/L			190542	186305	(10)	Standard
Pb	208	27.713	ug/L	2.476	8	524	2455977	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0394-01**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:02:34**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	49327	2	Standard
> Sc	45		ug/L			600447	731706	2	Standard
Cr	52	<b>12.124</b>	ug/L	0.147	1	10860	241826	1	Standard
Cr	53	<b>12.156</b>	ug/L	0.116	0	113	26975	1	Standard
> Ge	72		ug/L			35776	34902	1	KED
Ni	60	<b>10.919</b>	ug/L	0.231	2	145	18456	0	KED
Ni	62	<b>10.987</b>	ug/L	0.493	4	28	2979	2	KED
Cu	63	<b>24.875</b>	ug/L	0.831	3	53	116737	1	KED
Cu	65	<b>24.816</b>	ug/L	0.603	2	29	59790	0	KED
Zn	66	<b>53.146</b>	ug/L	1.002	1	87	30749	0	KED
Zn	67	<b>51.278</b>	ug/L	1.131	2	19	4834	0	KED
As	75	<b>5.436</b>	ug/L	0.145	2	2	1523	2	KED
Y	89		ug/L			55660	260380	0	Standard
Kr	83		ug/L			44	76	23	Standard
> In-1	115		ug/L			7587	7321	2	KED
Cd	111	<b>0.108</b>	ug/L	0.008	7	4	32	8	KED
Cd	114	<b>0.152</b>	ug/L	0.016	10	1	105	10	KED
> In	115		ug/L			519229	519189	4	Standard
Ag	107	<b>0.100</b>	ug/L	0.001	0	33	1748	4	Standard
> Tb	159		ug/L			190542	217094	0	Standard
Pb	208	<b>9.840</b>	ug/L	0.276	2	524	1022869	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0687-DUP2**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:07:50**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	48948	3	Standard
> Sc	45		ug/L			600447	717992	2	Standard
Cr	52	<b>12.278</b>	ug/L	0.108	0	10860	240147	1	Standard
Cr	53	<b>12.202</b>	ug/L	0.281	2	113	26574	3	Standard
> Ge	72		ug/L			35776	34652	1	KED
Ni	60	<b>11.215</b>	ug/L	0.148	1	145	18817	0	KED
Ni	62	<b>10.981</b>	ug/L	0.055	0	28	2958	1	KED
Cu	63	<b>24.789</b>	ug/L	0.125	0	53	115536	1	KED
Cu	65	<b>25.011</b>	ug/L	0.663	2	29	59828	1	KED
Zn	66	<b>52.626</b>	ug/L	0.823	1	87	30233	1	KED
Zn	67	<b>51.295</b>	ug/L	1.023	1	19	4802	2	KED
As	75	<b>5.303</b>	ug/L	0.187	3	2	1475	2	KED
Y	89		ug/L			55660	264619	1	Standard
Kr	83		ug/L			44	89	9	Standard
> In-1	115		ug/L			7587	7338	4	KED
Cd	111	<b>0.127</b>	ug/L	0.015	11	4	37	6	KED
Cd	114	<b>0.124</b>	ug/L	0.007	5	1	86	9	KED
> In	115		ug/L			519229	507795	1	Standard
Ag	107	<b>0.096</b>	ug/L	0.003	3	33	1642	4	Standard
> Tb	159		ug/L			190542	217783	1	Standard
Pb	208	<b>9.267</b>	ug/L	0.055	0	524	966473	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0687-MS2**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:12:15**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	43798	4	Standard
[> Sc	45		ug/L			600447	712380	2	Standard
[ Cr	52	<b>33.848</b>	ug/L	0.696	2	10860	634231	2	Standard
[ Cr	53	<b>33.218</b>	ug/L	0.454	1	113	71537	1	Standard
[> Ge	72		ug/L			35776	34769	1	KED
[ Ni	60	<b>35.480</b>	ug/L	0.262	0	145	59435	1	KED
[ Ni	62	<b>35.792</b>	ug/L	0.375	1	28	9613	2	KED
[ Cu	63	<b>49.044</b>	ug/L	0.181	0	53	229305	0	KED
[ Cu	65	<b>49.587</b>	ug/L	0.401	0	29	119023	1	KED
[ Zn	66	<b>127.164</b>	ug/L	1.063	0	87	73182	0	KED
[ Zn	67	<b>123.226</b>	ug/L	4.628	3	19	11545	2	KED
[ As	75	<b>28.650</b>	ug/L	0.300	1	2	7990	0	KED
Y	89		ug/L			55660	263207	0	Standard
Kr	83		ug/L			44	70	9	Standard
[> In-1	115		ug/L			7587	7271	0	KED
[ Cd	111	<b>24.050</b>	ug/L	0.279	1	4	6344	0	KED
[ Cd	114	<b>24.062</b>	ug/L	0.530	2	1	16324	2	KED
[> In	115		ug/L			519229	498952	2	Standard
[ Ag	107	<b>20.136</b>	ug/L	0.422	2	33	330380	0	Standard
[> Tb	159		ug/L			190542	217190	0	Standard
[ Pb	208	<b>31.824</b>	ug/L	0.401	1	524	3308209	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0687-MSD2**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:16:40**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	42886	5	Standard
> Sc	45		ug/L			600447	713189	2	Standard
Cr	52	<b>32.799</b>	ug/L	0.728	2	10860	615560	1	Standard
Cr	53	<b>32.872</b>	ug/L	0.464	1	113	70870	1	Standard
> Ge	72		ug/L			35776	34920	2	KED
Ni	60	<b>34.594</b>	ug/L	0.175	0	145	58202	1	KED
Ni	62	<b>34.631</b>	ug/L	1.105	3	28	9337	1	KED
Cu	63	<b>47.676</b>	ug/L	1.144	2	53	223798	0	KED
Cu	65	<b>47.132</b>	ug/L	2.056	4	29	113539	2	KED
Zn	66	<b>125.287</b>	ug/L	2.668	2	87	72401	1	KED
Zn	67	<b>124.246</b>	ug/L	1.881	1	19	11692	1	KED
As	75	<b>27.961</b>	ug/L	0.434	1	2	7831	1	KED
Y	89		ug/L			55660	247812	1	Standard
Kr	83		ug/L			44	69	20	Standard
> In-1	115		ug/L			7587	7305	2	KED
Cd	111	<b>24.552</b>	ug/L	0.448	1	4	6504	0	KED
Cd	114	<b>24.586</b>	ug/L	1.060	4	1	16749	3	KED
> In	115		ug/L			519229	504337	3	Standard
Ag	107	<b>17.259</b>	ug/L	0.157	0	33	286300	2	Standard
> Tb	159		ug/L			190542	221250	1	Standard
Pb	208	<b>30.874</b>	ug/L	0.352	1	524	3269435	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0687-PS2**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:21:05**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			27881	48757	4	Standard
[>	Sc	45		ug/L			600447	729719	3	Standard
	Cr	52	33.107	ug/L	0.489	1	10860	635718	2	Standard
	Cr	53	32.943	ug/L	0.273	0	113	72672	2	Standard
[>	Ge	72		ug/L			35776	34959	1	KED
	Ni	60	36.373	ug/L	0.157	0	145	61261	1	KED
	Ni	62	36.640	ug/L	0.186	0	28	9894	1	KED
	Cu	63	49.754	ug/L	0.930	1	53	233872	1	KED
	Cu	65	49.585	ug/L	0.881	1	29	119664	2	KED
	Zn	66	132.457	ug/L	3.739	2	87	76640	2	KED
	Zn	67	126.800	ug/L	2.433	1	19	11947	1	KED
	As	75	30.260	ug/L	0.577	1	2	8485	0	KED
	Y	89		ug/L			55660	274282	1	Standard
	Kr	83		ug/L			44	81	11	Standard
[>	In-1	115		ug/L			7587	7422	1	KED
	Cd	111	25.084	ug/L	0.224	0	4	6753	0	KED
	Cd	114	25.290	ug/L	0.359	1	1	17510	0	KED
[>	In	115		ug/L			519229	501845	2	Standard
	Ag	107	24.345	ug/L	0.418	1	33	401777	1	Standard
[>	Tb	159		ug/L			190542	220281	1	Standard
	Pb	208	32.333	ug/L	0.276	0	524	3409321	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL6

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 21:25:31

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			27881	28733	3	Standard
[>	Sc	45	ug/L			600447	603287	2	Standard
	Cr	52	-0.017	0.014	80	10860	10646	3	Standard
	Cr	53	0.002	0.010	424	113	118	17	Standard
[>	Ge	72	ug/L			35776	35096	0	KED
	Ni	60	0.102	0.008	7	145	314	4	KED
	Ni	62	0.112	0.027	23	28	58	12	KED
	Cu	63	0.004	0.001	33	53	71	8	KED
	Cu	65	0.005	0.009	160	29	41	51	KED
	Zn	66	0.017	0.010	60	87	95	6	KED
	Zn	67	-0.043	0.035	81	19	15	21	KED
	As	75	0.000	0.003	2492	2	2	44	KED
	Y	89	ug/L			55660	53844	3	Standard
	Kr	83	ug/L			44	50	7	Standard
[>	In-1	115	ug/L			7587	7525	0	KED
	Cd	111	-0.003	0.002	62	4	3	17	KED
	Cd	114	0.004	0.006	149	1	4	90	KED
[>	In	115	ug/L			519229	512731	3	Standard
	Ag	107	0.002	0.000	11	33	68	8	Standard
[>	Tb	159	ug/L			190542	193475	1	Standard
	Pb	208	0.000	0.000	135	524	539	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV7

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 21:29:56

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	27927	5	Standard
[> Sc	45		ug/L			600447	636370	1	Standard
Cr	52	49.675	ug/L	0.721	1	10860	826310	2	Standard
Cr	53	48.401	ug/L	0.534	1	113	93080	2	Standard
[> Ge	72		ug/L			35776	34775	2	KED
Ni	60	49.673	ug/L	0.162	0	145	83169	2	KED
Ni	62	50.020	ug/L	0.731	1	28	13424	2	KED
Cu	63	50.381	ug/L	1.600	3	53	235511	1	KED
Cu	65	49.220	ug/L	1.166	2	29	118121	0	KED
Zn	66	51.392	ug/L	1.224	2	87	29629	2	KED
Zn	67	52.114	ug/L	1.313	2	19	4897	4	KED
As	75	50.182	ug/L	0.760	1	2	13995	0	KED
Y	89		ug/L			55660	56443	3	Standard
Kr	83		ug/L			44	49	15	Standard
[> In-1	115		ug/L			7587	7362	1	KED
Cd	111	49.881	ug/L	1.210	2	4	13314	1	KED
Cd	114	50.034	ug/L	1.724	3	1	34349	1	KED
[> In	115		ug/L			519229	514927	3	Standard
Ag	107	48.588	ug/L	2.233	4	33	822157	2	Standard
[> Tb	159		ug/L			190542	200300	2	Standard
Pb	208	50.450	ug/L	1.358	2	524	4835024	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB7

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 21:37:06

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	26930	5	Standard
[> Sc	45		ug/L			600447	613915	1	Standard
Cr	52	-0.009	ug/L	0.004	42	10860	10962	2	Standard
Cr	53	0.011	ug/L	0.007	64	113	135	7	Standard
[> Ge	72		ug/L			35776	34316	3	KED
Ni	60	0.071	ug/L	0.027	37	145	257	19	KED
Ni	62	0.060	ug/L	0.053	89	28	43	33	KED
Cu	63	0.023	ug/L	0.025	111	53	158	76	KED
Cu	65	0.023	ug/L	0.027	118	29	82	79	KED
Zn	66	-0.028	ug/L	0.029	104	87	68	26	KED
Zn	67	-0.033	ug/L	0.051	155	19	15	30	KED
As	75	0.014	ug/L	0.024	172	2	6	112	KED
Y	89		ug/L			55660	54932	0	Standard
Kr	83		ug/L			44	48	18	Standard
[> In-1	115		ug/L			7587	7637	1	KED
Cd	111	-0.009	ug/L	0.007	75	4	1	124	KED
Cd	114	-0.000	ug/L	0.003	3557	1	1	113	KED
[> In	115		ug/L			519229	519681	1	Standard
Ag	107	0.003	ug/L	0.000	6	33	78	5	Standard
[> Tb	159		ug/L			190542	193231	0	Standard
Pb	208	0.001	ug/L	0.000	30	524	613	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-02**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:41:32**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	45032	3	Standard
[> Sc	45		ug/L			600447	742114	2	Standard
[ Cr	52	<b>15.234</b>	ug/L	0.188	1	10860	304818	3	Standard
[ Cr	53	<b>14.955</b>	ug/L	0.198	1	113	33634	2	Standard
[> Ge	72		ug/L			35776	34523	2	KED
[ Ni	60	<b>13.744</b>	ug/L	0.476	3	145	22932	0	KED
[ Ni	62	<b>13.777</b>	ug/L	0.715	5	28	3687	2	KED
[ Cu	63	<b>35.145</b>	ug/L	1.144	3	53	163083	1	KED
[ Cu	65	<b>34.406</b>	ug/L	1.355	3	29	81948	1	KED
[ Zn	66	<b>67.279</b>	ug/L	2.612	3	87	38459	1	KED
[ Zn	67	<b>66.917</b>	ug/L	3.870	5	19	6229	3	KED
[ As	75	<b>7.207</b>	ug/L	0.238	3	2	1996	1	KED
[ Y	89		ug/L			55660	305809	2	Standard
[ Kr	83		ug/L			44	67	10	Standard
[> In-1	115		ug/L			7587	7350	2	KED
[ Cd	111	<b>0.179</b>	ug/L	0.026	14	4	51	12	KED
[ Cd	114	<b>0.231</b>	ug/L	0.005	2	1	160	4	KED
[> In	115		ug/L			519229	505016	3	Standard
[ Ag	107	<b>0.154</b>	ug/L	0.013	8	33	2584	4	Standard
[> Tb	159		ug/L			190542	223968	1	Standard
[ Pb	208	<b>14.203</b>	ug/L	0.190	1	524	1522706	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-03**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:45:57**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	42622	4	Standard
[> Sc	45		ug/L			600447	690566	8	Standard
Cr	52	15.019	ug/L	0.756	5	10860	279010	4	Standard
Cr	53	14.873	ug/L	0.661	4	113	31049	4	Standard
[> Ge	72		ug/L			35776	34971	0	KED
Ni	60	12.825	ug/L	0.224	1	145	21699	1	KED
Ni	62	13.074	ug/L	0.636	4	28	3549	5	KED
Cu	63	30.875	ug/L	0.469	1	53	145218	1	KED
Cu	65	31.639	ug/L	0.368	1	29	76384	0	KED
Zn	66	60.680	ug/L	0.755	1	87	35170	1	KED
Zn	67	58.931	ug/L	1.790	3	19	5565	3	KED
As	75	6.862	ug/L	0.217	3	2	1927	3	KED
Y	89		ug/L			55660	279514	1	Standard
Kr	83		ug/L			44	93	4	Standard
[> In-1	115		ug/L			7587	7541	3	KED
Cd	111	0.206	ug/L	0.031	15	4	60	12	KED
Cd	114	0.210	ug/L	0.029	13	1	149	12	KED
[> In	115		ug/L			519229	467677	10	Standard
Ag	107	0.158	ug/L	0.011	6	33	2457	6	Standard
[> Tb	159		ug/L			190542	208844	7	Standard
Pb	208	14.122	ug/L	0.952	6	524	1406990	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-04**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:50:22**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	42039	1	Standard
> Sc	45		ug/L			600447	722307	1	Standard
Cr	52	<b>15.403</b>	ug/L	0.058	0	10860	299782	1	Standard
Cr	53	<b>15.134</b>	ug/L	0.260	1	113	33122	1	Standard
> Ge	72		ug/L			35776	34398	1	KED
Ni	60	<b>13.305</b>	ug/L	0.513	3	145	22132	2	KED
Ni	62	<b>13.397</b>	ug/L	0.866	6	28	3575	5	KED
Cu	63	<b>36.367</b>	ug/L	0.976	2	53	168193	1	KED
Cu	65	<b>36.194</b>	ug/L	1.342	3	29	85923	2	KED
Zn	66	<b>67.215</b>	ug/L	1.956	2	87	38301	1	KED
Zn	67	<b>67.347</b>	ug/L	2.218	3	19	6251	2	KED
As	75	<b>8.338</b>	ug/L	0.373	4	2	2301	3	KED
Y	89		ug/L			55660	280878	1	Standard
Kr	83		ug/L			44	83	13	Standard
> In-1	115		ug/L			7587	7122	1	KED
Cd	111	<b>0.253</b>	ug/L	0.034	13	4	69	11	KED
Cd	114	<b>0.270</b>	ug/L	0.039	14	1	180	15	KED
> In	115		ug/L			519229	504674	3	Standard
Ag	107	<b>0.171</b>	ug/L	0.006	3	33	2876	3	Standard
> Tb	159		ug/L			190542	219689	1	Standard
Pb	208	<b>16.464</b>	ug/L	0.545	3	524	1730980	1	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-05**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:54:47**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	42806	1	Standard
[> Sc	45		ug/L			600447	716286	1	Standard
[ Cr	52	<b>14.519</b>	ug/L	0.159	1	10860	281010	2	Standard
[ Cr	53	<b>14.343</b>	ug/L	0.209	1	113	31134	0	Standard
[> Ge	72		ug/L			35776	35309	1	KED
[ Ni	60	<b>11.887</b>	ug/L	0.160	1	145	20315	0	KED
[ Ni	62	<b>12.515</b>	ug/L	0.232	1	28	3432	3	KED
[ Cu	63	<b>30.686</b>	ug/L	0.194	0	53	145729	2	KED
[ Cu	65	<b>30.856</b>	ug/L	0.789	2	29	75198	0	KED
[ Zn	66	<b>59.607</b>	ug/L	0.519	0	87	34885	2	KED
[ Zn	67	<b>59.174</b>	ug/L	0.672	1	19	5643	3	KED
[ As	75	<b>6.641</b>	ug/L	0.158	2	2	1883	3	KED
Y	89		ug/L			55660	284193	1	Standard
Kr	83		ug/L			44	70	37	Standard
[> In-1	115		ug/L			7587	7365	0	KED
[ Cd	111	<b>0.162</b>	ug/L	0.039	24	4	47	21	KED
[ Cd	114	<b>0.184</b>	ug/L	0.024	12	1	128	12	KED
[> In	115		ug/L			519229	495838	1	Standard
[ Ag	107	<b>0.144</b>	ug/L	0.007	4	33	2379	5	Standard
[> Tb	159		ug/L			190542	222154	1	Standard
[ Pb	208	<b>13.638</b>	ug/L	0.162	1	524	1450648	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-01**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 21:59:12**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	44599	4	Standard
[> Sc	45		ug/L			600447	731713	0	Standard
[ Cr	52	<b>14.739</b>	ug/L	0.210	1	10860	291190	1	Standard
[ Cr	53	<b>14.638</b>	ug/L	0.276	1	113	32460	2	Standard
[> Ge	72		ug/L			35776	35401	1	KED
[ Ni	60	<b>12.912</b>	ug/L	0.463	3	145	22105	1	KED
[ Ni	62	<b>13.360</b>	ug/L	0.173	1	28	3671	2	KED
[ Cu	63	<b>30.949</b>	ug/L	0.224	0	53	147347	1	KED
[ Cu	65	<b>30.919</b>	ug/L	0.887	2	29	75545	1	KED
[ Zn	66	<b>59.526</b>	ug/L	1.559	2	87	34920	1	KED
[ Zn	67	<b>58.622</b>	ug/L	1.849	3	19	5602	1	KED
[ As	75	<b>6.546</b>	ug/L	0.025	0	2	1860	2	KED
Y	89		ug/L			55660	287110	1	Standard
Kr	83		ug/L			44	80	8	Standard
[> In-1	115		ug/L			7587	7523	1	KED
[ Cd	111	<b>0.226</b>	ug/L	0.023	10	4	65	8	KED
[ Cd	114	<b>0.271</b>	ug/L	<u>0.051</u>	18	1	192	19	KED
[> In	115		ug/L			519229	509267	1	Standard
[ Ag	107	<b>0.139</b>	ug/L	0.004	2	33	2357	2	Standard
[> Tb	159		ug/L			190542	226516	2	Standard
[ Pb	208	<b>13.207</b>	ug/L	0.260	1	524	1431982	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0578-DUP1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:03:37**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	45160	2	Standard
[> Sc	45		ug/L			600447	709676	1	Standard
[ Cr	52	<b>15.013</b>	ug/L	0.150	0	10860	287439	2	Standard
[ Cr	53	<b>14.978</b>	ug/L	0.160	1	113	32210	0	Standard
[> Ge	72		ug/L			35776	35230	1	KED
[ Ni	60	<b>13.396</b>	ug/L	0.331	2	145	22823	1	KED
[ Ni	62	<b>13.330</b>	ug/L	0.172	1	28	3645	2	KED
[ Cu	63	<b>30.968</b>	ug/L	0.110	0	53	146728	1	KED
[ Cu	65	<b>31.310</b>	ug/L	0.657	2	29	76161	2	KED
[ Zn	66	<b>63.015</b>	ug/L	0.738	1	87	36788	0	KED
[ Zn	67	<b>62.204</b>	ug/L	1.138	1	19	5916	2	KED
[ As	75	<b>6.961</b>	ug/L	0.186	2	2	1968	1	KED
Y	89		ug/L			55660	283560	1	Standard
Kr	83		ug/L			44	85	22	Standard
[> In-1	115		ug/L			7587	7404	1	KED
[ Cd	111	<b>0.232</b>	ug/L	0.043	18	4	66	17	KED
[ Cd	114	<b>0.233</b>	ug/L	0.017	7	1	162	8	KED
[> In	115		ug/L			519229	492481	0	Standard
[ Ag	107	<b>0.145</b>	ug/L	0.004	2	33	2386	3	Standard
[> Tb	159		ug/L			190542	220224	3	Standard
[ Pb	208	<b>13.158</b>	ug/L	0.300	2	524	1386701	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0578-MS1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:08:02**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	41520	3	Standard
> Sc	45		ug/L			600447	717446	3	Standard
Cr	52	<b>33.556</b>	ug/L	0.650	1	10860	633326	3	Standard
Cr	53	<b>33.648</b>	ug/L	0.689	2	113	72972	2	Standard
> Ge	72		ug/L			35776	35212	3	KED
Ni	60	<b>35.184</b>	ug/L	2.100	5	145	59616	2	KED
Ni	62	<b>34.676</b>	ug/L	1.662	4	28	9422	1	KED
Cu	63	<b>52.193</b>	ug/L	2.020	3	53	246942	1	KED
Cu	65	<b>52.053</b>	ug/L	2.137	4	29	126415	1	KED
Zn	66	<b>126.817</b>	ug/L	6.484	5	87	73838	2	KED
Zn	67	<b>124.720</b>	ug/L	2.442	1	19	11832	1	KED
As	75	<b>27.696</b>	ug/L	0.850	3	2	7818	0	KED
Y	89		ug/L			55660	271396	0	Standard
Kr	83		ug/L			44	100	14	Standard
> In-1	115		ug/L			7587	7455	2	KED
Cd	111	<b>22.716</b>	ug/L	0.408	1	4	6142	1	KED
Cd	114	<b>22.248</b>	ug/L	0.741	3	1	15469	2	KED
> In	115		ug/L			519229	514419	4	Standard
Ag	107	<b>18.205</b>	ug/L	0.801	4	33	307640	0	Standard
> Tb	159		ug/L			190542	221393	0	Standard
Pb	208	<b>33.456</b>	ug/L	0.468	1	524	3545238	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0578-MSD1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:12:27**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	44015	3	Standard
[> Sc	45		ug/L			600447	721052	3	Standard
[ Cr	52	<b>36.977</b>	ug/L	0.616	1	10860	700011	2	Standard
[ Cr	53	<b>37.171</b>	ug/L	1.010	2	113	80983	2	Standard
[> Ge	72		ug/L			35776	34237	2	KED
[ Ni	60	<b>39.106</b>	ug/L	0.914	2	145	64469	0	KED
[ Ni	62	<b>38.644</b>	ug/L	0.795	2	28	10214	0	KED
[ Cu	63	<b>57.815</b>	ug/L	0.699	1	53	266134	1	KED
[ Cu	65	<b>57.115</b>	ug/L	0.664	1	29	134960	1	KED
[ Zn	66	<b>142.699</b>	ug/L	4.197	2	87	80822	0	KED
[ Zn	67	<b>135.117</b>	ug/L	3.802	2	19	12463	1	KED
[ As	75	<b>30.878</b>	ug/L	0.621	2	2	8478	0	KED
[ Y	89		ug/L			55660	287252	1	Standard
[ Kr	83		ug/L			44	95	12	Standard
[> In-1	115		ug/L			7587	7377	2	KED
[ Cd	111	<b>25.360</b>	ug/L	0.541	2	4	6784	0	KED
[ Cd	114	<b>25.469</b>	ug/L	0.366	1	1	17530	3	KED
[> In	115		ug/L			519229	497333	1	Standard
[ Ag	107	<b>19.764</b>	ug/L	0.913	4	33	323142	2	Standard
[> Tb	159		ug/L			190542	219212	0	Standard
[ Pb	208	<b>37.388</b>	ug/L	0.368	0	524	3923097	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLD0578-PS1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:16:52**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			27881	45372	6	Standard
[>	Sc	45		ug/L			600447	718540	2	Standard
	Cr	52	36.741	ug/L	0.599	1	10860	693185	1	Standard
	Cr	53	36.056	ug/L	0.837	2	113	78288	0	Standard
[>	Ge	72		ug/L			35776	34859	1	KED
	Ni	60	37.401	ug/L	0.136	0	145	62811	1	KED
	Ni	62	38.589	ug/L	0.944	2	28	10387	2	KED
	Cu	63	56.121	ug/L	0.896	1	53	263033	0	KED
	Cu	65	55.252	ug/L	1.012	1	29	132930	0	KED
	Zn	66	138.618	ug/L	1.496	1	87	79980	1	KED
	Zn	67	132.100	ug/L	4.039	3	19	12408	2	KED
	As	75	30.730	ug/L	0.687	2	2	8591	0	KED
	Y	89		ug/L			55660	288018	2	Standard
	Kr	83		ug/L			44	80	8	Standard
[>	In-1	115		ug/L			7587	7491	3	KED
	Cd	111	24.290	ug/L	0.743	3	4	6597	1	KED
	Cd	114	24.183	ug/L	0.272	1	1	16899	2	KED
[>	In	115		ug/L			519229	508102	0	Standard
	Ag	107	24.891	ug/L	0.312	1	33	416033	1	Standard
[>	Tb	159		ug/L			190542	220946	1	Standard
	Pb	208	37.236	ug/L	0.193	0	524	3937864	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL7

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 22:21:18

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			27881	27642	4	Standard
[>	Sc	45	ug/L			600447	603813	2	Standard
	Cr	52	-0.051	0.021	41	10860	10122	2	Standard
	Cr	53	-0.013	0.005	41	113	90	8	Standard
[>	Ge	72	ug/L			35776	35433	2	KED
	Ni	60	0.021	0.007	33	145	179	6	KED
	Ni	62	0.047	0.030	63	28	41	20	KED
	Cu	63	0.002	0.002	110	53	62	15	KED
	Cu	65	0.002	0.001	43	29	34	5	KED
	Zn	66	-0.045	0.015	32	87	60	13	KED
	Zn	67	-0.092	0.078	84	19	10	71	KED
	As	75	-0.000	0.004	850	2	2	48	KED
	Y	89	ug/L			55660	56192	1	Standard
	Kr	83	ug/L			44	38	7	Standard
[>	In-1	115	ug/L			7587	7673	1	KED
	Cd	111	-0.008	0.003	40	4	1	50	KED
	Cd	114	0.003	0.005	205	1	3	104	KED
[>	In	115	ug/L			519229	511235	2	Standard
	Ag	107	0.002	0.000	5	33	62	0	Standard
[>	Tb	159	ug/L			190542	202248	1	Standard
	Pb	208	-0.000	0.000	102	524	535	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV8

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 22:25:43

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	27192	3	Standard
[> Sc	45		ug/L			600447	608622	1	Standard
Cr	52	50.684	ug/L	0.378	0	10860	805976	1	Standard
Cr	53	49.678	ug/L	1.026	2	113	91340	1	Standard
[> Ge	72		ug/L			35776	35568	0	KED
Ni	60	48.330	ug/L	0.870	1	145	82768	1	KED
Ni	62	48.442	ug/L	0.639	1	28	13298	1	KED
Cu	63	49.417	ug/L	0.579	1	53	236363	1	KED
Cu	65	48.231	ug/L	1.469	3	29	118414	2	KED
Zn	66	49.608	ug/L	0.551	1	87	29261	1	KED
Zn	67	49.324	ug/L	1.186	2	19	4740	2	KED
As	75	49.969	ug/L	0.076	0	2	14256	0	KED
Y	89		ug/L			55660	56809	4	Standard
Kr	83		ug/L			44	47	18	Standard
[> In-1	115		ug/L			7587	7389	1	KED
Cd	111	49.546	ug/L	1.061	2	4	13275	1	KED
Cd	114	49.494	ug/L	0.422	0	1	34117	1	KED
[> In	115		ug/L			519229	506372	2	Standard
Ag	107	49.532	ug/L	0.924	1	33	824893	2	Standard
[> Tb	159		ug/L			190542	201346	2	Standard
Pb	208	50.146	ug/L	1.169	2	524	4830970	1	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB8

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 22:32:53

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	27637	6	Standard
[> Sc	45		ug/L			600447	601964	1	Standard
Cr	52	-0.026	ug/L	0.016	62	10860	10474	1	Standard
Cr	53	-0.005	ug/L	0.003	63	113	103	4	Standard
[> Ge	72		ug/L			35776	36137	1	KED
Ni	60	0.016	ug/L	0.012	73	145	174	12	KED
Ni	62	-0.044	ug/L	0.014	32	28	16	24	KED
Cu	63	0.002	ug/L	0.003	112	53	66	21	KED
Cu	65	0.002	ug/L	0.001	67	29	33	8	KED
Zn	66	-0.036	ug/L	0.015	41	87	66	12	KED
Zn	67	-0.081	ug/L	0.028	34	19	12	24	KED
As	75	0.003	ug/L	0.007	258	2	3	65	KED
Y	89		ug/L			55660	54450	2	Standard
Kr	83		ug/L			44	43	21	Standard
[> In-1	115		ug/L			7587	7720	2	KED
Cd	111	-0.009	ug/L	0.005	57	4	1	91	KED
Cd	114	0.002	ug/L	0.003	180	1	2	70	KED
[> In	115		ug/L			519229	507656	1	Standard
Ag	107	0.002	ug/L	0.001	25	33	67	14	Standard
[> Tb	159		ug/L			190542	194063	1	Standard
Pb	208	0.000	ug/L	0.000	133	524	566	8	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-06**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:37:19**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	44112	4	Standard
> Sc	45		ug/L			600447	709054	2	Standard
Cr	52	<b>13.866</b>	ug/L	0.406	2	10860	266055	0	Standard
Cr	53	<b>14.000</b>	ug/L	0.297	2	113	30081	1	Standard
> Ge	72		ug/L			35776	34999	2	KED
Ni	60	<b>11.928</b>	ug/L	0.327	2	145	20201	1	KED
Ni	62	<b>11.602</b>	ug/L	0.091	0	28	3155	1	KED
Cu	63	<b>30.347</b>	ug/L	0.908	2	53	142788	1	KED
Cu	<b>65</b>	<b>29.640</b>	ug/L	1.166	3	29	71581	1	KED
Zn	<b>66</b>	<b>67.932</b>	ug/L	2.944	4	87	39370	2	KED
Zn	<b>67</b>	<b>65.305</b>	ug/L	2.153	3	19	6167	1	KED
As	<b>75</b>	<b>7.893</b>	ug/L	0.118	1	2	2217	1	KED
Y	89		ug/L			55660	269034	2	Standard
Kr	83		ug/L			44	83	10	Standard
> In-1	115		ug/L			7587	7517	0	KED
Cd	111	<b>0.202</b>	ug/L	0.025	12	4	59	11	KED
Cd	114	<b>0.197</b>	ug/L	0.029	14	1	139	14	KED
> In	115		ug/L			519229	510602	1	Standard
Ag	107	<b>0.120</b>	ug/L	0.002	1	33	2052	2	Standard
> Tb	159		ug/L			190542	219802	3	Standard
Pb	208	<b>11.171</b>	ug/L	0.325	2	524	1174869	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-07**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:41:44**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	42440	3	Standard
[> Sc	45		ug/L			600447	715357	1	Standard
[ Cr	52	<b>12.859</b>	ug/L	0.040	0	10860	250000	1	Standard
[ Cr	53	<b>13.009</b>	ug/L	0.357	2	113	28218	3	Standard
[> Ge	72		ug/L			35776	34864	1	KED
[ Ni	60	<b>13.775</b>	ug/L	0.257	1	145	23223	1	KED
[ Ni	62	<b>13.798</b>	ug/L	0.584	4	28	3734	5	KED
[ Cu	63	<b>24.510</b>	ug/L	0.357	1	53	114927	0	KED
[ Cu	65	<b>24.470</b>	ug/L	0.195	0	29	58904	0	KED
[ Zn	66	<b>53.122</b>	ug/L	1.279	2	87	30701	1	KED
[ Zn	67	<b>53.087</b>	ug/L	0.536	1	19	4999	0	KED
[ As	75	<b>6.441</b>	ug/L	0.043	0	2	1803	0	KED
[ Y	89		ug/L			55660	266859	1	Standard
[ Kr	83		ug/L			44	73	3	Standard
[> In-1	115		ug/L			7587	7219	2	KED
[ Cd	111	<b>0.125</b>	ug/L	0.023	18	4	36	14	KED
[ Cd	114	<b>0.155</b>	ug/L	0.036	23	1	106	25	KED
[> In	115		ug/L			519229	505027	1	Standard
[ Ag	107	<b>0.096</b>	ug/L	0.002	2	33	1635	3	Standard
[> Tb	159		ug/L			190542	222110	1	Standard
[ Pb	208	<b>9.491</b>	ug/L	0.215	2	524	1009179	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-08**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:46:09**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	42216	5	Standard
[> Sc	45		ug/L			600447	737126	2	Standard
[ Cr	52	<b>15.985</b>	ug/L	0.581	3	10860	316818	1	Standard
[ Cr	53	<b>15.684</b>	ug/L	0.237	1	113	35018	1	Standard
[> Ge	72		ug/L			35776	34661	1	KED
[ Ni	60	<b>13.792</b>	ug/L	0.237	1	145	23115	0	KED
[ Ni	62	<b>13.986</b>	ug/L	0.109	0	28	3761	1	KED
[ Cu	63	<b>36.202</b>	ug/L	0.537	1	53	168737	0	KED
[ Cu	65	<b>36.196</b>	ug/L	0.297	0	29	86607	0	KED
[ Zn	66	<b>68.237</b>	ug/L	0.710	1	87	39187	0	KED
[ Zn	67	<b>64.700</b>	ug/L	1.108	1	19	6053	0	KED
[ As	75	<b>7.814</b>	ug/L	0.160	2	2	2174	0	KED
Y	89		ug/L			55660	305716	1	Standard
Kr	83		ug/L			44	94	9	Standard
[> In-1	115		ug/L			7587	7387	3	KED
[ Cd	111	<b>0.230</b>	ug/L	0.034	14	4	65	10	KED
[ Cd	114	<b>0.189</b>	ug/L	0.020	10	1	132	12	KED
[> In	115		ug/L			519229	504320	1	Standard
[ Ag	107	<b>0.173</b>	ug/L	0.003	1	33	2906	2	Standard
[> Tb	159		ug/L			190542	220823	3	Standard
[ Pb	208	<b>16.723</b>	ug/L	0.540	3	524	1766569	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23A0467-09**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:50:34**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	36941	3	Standard
[> Sc	45		ug/L			600447	707482	1	Standard
Cr	52	<b>13.403</b>	ug/L	0.125	0	10860	257172	1	Standard
Cr	53	<b>12.977</b>	ug/L	0.121	0	113	27843	2	Standard
[> Ge	72		ug/L			35776	35020	0	KED
Ni	60	<b>12.070</b>	ug/L	0.218	1	145	20458	1	KED
Ni	62	<b>12.224</b>	ug/L	0.385	3	28	3325	3	KED
Cu	63	<b>25.027</b>	ug/L	0.373	1	53	117881	1	KED
Cu	65	<b>24.754</b>	ug/L	0.415	1	29	59854	1	KED
Zn	66	<b>60.844</b>	ug/L	0.755	1	87	35314	0	KED
Zn	67	<b>108.303</b>	ug/L	2.395	2	19	10225	1	KED
As	75	<b>5.746</b>	ug/L	0.088	1	2	1616	1	KED
Y	89		ug/L			55660	254580	0	Standard
Kr	83		ug/L			44	77	7	Standard
[> In-1	115		ug/L			7587	7416	2	KED
Cd	111	<b>0.125</b>	ug/L	0.025	19	4	37	19	KED
Cd	114	<b>0.136</b>	ug/L	0.011	7	1	95	8	KED
[> In	115		ug/L			519229	494495	1	Standard
Ag	107	<b>0.103</b>	ug/L	0.004	3	33	1702	2	Standard
[> Tb	159		ug/L			190542	218399	1	Standard
Pb	208	<b>11.623</b>	ug/L	0.140	1	524	1215246	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0393-04**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:54:53**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	28956	0	Standard
> Sc	45		ug/L			600447	632927	2	Standard
Cr	52	<b>83.030</b>	ug/L	1.894	2	10860	1365955	3	Standard
Cr	53	<b>82.553</b>	ug/L	2.117	2	113	157762	1	Standard
> Ge	72		ug/L			35776	31287	1	KED
Ni	60	<b>23.659</b>	ug/L	0.556	2	145	35697	0	KED
Ni	62	<b>27.194</b>	ug/L	0.581	2	28	6576	0	KED
Cu	63	<b>2498.049</b>	ug/L	48.349	1	53	10506397	1	KED
Cu	65	<b>2569.123</b>	ug/L	57.301	2	29	5546287	0	KED
Zn	66	<b>7354.329</b>	ug/L	288.789	3	87	3803532	3	KED
Zn	67	<b>6774.525</b>	ug/L	131.191	1	19	570411	2	KED
As	75	<b>1054.444</b>	ug/L	16.893	1	2	264562	0	KED
Y	89		ug/L			55660	282337	3	Standard
Kr	83		ug/L			44	108	15	Standard
> In-1	115		ug/L			7587	16696	0	KED
Cd	111	<b>2.127</b>	ug/L	0.026	1	4	1296	1	KED
Cd	114	<b>2.036</b>	ug/L	0.022	1	1	3175	0	KED
> In	115		ug/L			519229	910777	0	Standard
Ag	107	<b>0.753</b>	ug/L	0.018	2	33	22621	2	Standard
> Tb	159		ug/L			190542	158646	1	Standard
Pb	208	<b>1211.380</b>	ug/L	38.633	3	524	91952848	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0072-DUP1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 22:59:18**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	30314	5	Standard
> Sc	45		ug/L			600447	626535	3	Standard
Cr	52	<b>85.240</b>	ug/L	2.397	2	10860	1386839	0	Standard
Cr	53	<b>84.038</b>	ug/L	2.060	2	113	158948	2	Standard
> Ge	72		ug/L			35776	30534	0	KED
Ni	60	<b>24.774</b>	ug/L	0.555	2	145	36484	2	KED
Ni	62	<b>29.303</b>	ug/L	0.311	1	28	6915	0	KED
Cu	63	<b>2817.731</b>	ug/L	58.540	2	53	11567687	2	KED
Cu	65	<b>2764.990</b>	ug/L	27.962	1	29	5826764	0	KED
Zn	66	<b>7637.721</b>	ug/L	56.656	0	87	3856088	0	KED
Zn	67	<b>7060.766</b>	ug/L	69.114	0	19	580207	0	KED
As	75	<b>1082.369</b>	ug/L	5.384	0	2	265078	0	KED
Y	89		ug/L			55660	316457	1	Standard
Kr	83		ug/L			44	93	15	Standard
> In-1	115		ug/L			7587	15962	1	KED
Cd	111	<b>2.478</b>	ug/L	0.072	2	4	1442	3	KED
Cd	114	<b>2.439</b>	ug/L	0.022	0	1	3635	0	KED
> In	115		ug/L			519229	899865	0	Standard
Ag	107	<b>0.832</b>	ug/L	0.021	2	33	24686	1	Standard
> Tb	159		ug/L			190542	160807	0	Standard
Pb	208	<b>1201.329</b>	ug/L	19.280	1	524	92444349	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0072-MS1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:03:43**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	27291	5	Standard
> Sc	45		ug/L			600447	608593	1	Standard
Cr	52	<b>110.095</b>	ug/L	3.295	2	10860	1737242	1	Standard
Cr	53	<b>108.219</b>	ug/L	1.529	1	113	198841	0	Standard
> Ge	72		ug/L			35776	29436	2	KED
Ni	60	<b>48.982</b>	ug/L	1.875	3	145	69379	1	KED
Ni	62	<b>54.981</b>	ug/L	2.524	4	28	12479	1	KED
Cu	63	<b>3042.849</b>	ug/L	134.473	4	53	12033133	1	KED
Cu	65	<b>3048.235</b>	ug/L	86.303	2	29	6189784	1	KED
Zn	66	<b>7993.790</b>	ug/L	257.905	3	87	3888434	0	KED
Zn	67	<b>7334.042</b>	ug/L	256.573	3	19	580633	0	KED
As	75	<b>1176.119</b>	ug/L	32.073	2	2	277546	0	KED
Y	89		ug/L			55660	297960	0	Standard
Kr	83		ug/L			44	105	19	Standard
> In-1	115		ug/L			7587	15976	1	KED
Cd	111	<b>10.853</b>	ug/L	0.123	1	4	6294	0	KED
Cd	114	<b>10.994</b>	ug/L	0.247	2	1	16388	2	KED
> In	115		ug/L			519229	904235	1	Standard
Ag	107	<b>4.491</b>	ug/L	0.132	2	33	133599	1	Standard
> Tb	159		ug/L			190542	157324	0	Standard
Pb	208	<b>1280.635</b>	ug/L	22.743	1	524	96414758	1	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0072-MSD1**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:08:08**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	26877	3	Standard
> Sc	45		ug/L			600447	611441	1	Standard
Cr	52	<b>111.436</b>	ug/L	3.976	3	10860	1766516	2	Standard
Cr	53	<b>110.105</b>	ug/L	4.573	4	113	203202	2	Standard
> Ge	72		ug/L			35776	29152	0	KED
Ni	60	<b>48.618</b>	ug/L	0.881	1	145	68250	2	KED
Ni	62	<b>51.789</b>	ug/L	1.011	1	28	11653	2	KED
Cu	63	<b>2806.959</b>	ug/L	37.381	1	53	11000916	0	KED
Cu	65	<b>2816.731</b>	ug/L	71.420	2	29	5666231	1	KED
Zn	66	<b>8265.905</b>	ug/L	136.269	1	87	3984176	1	KED
Zn	67	<b>7616.692</b>	ug/L	44.699	0	19	597534	0	KED
As	75	<b>1296.431</b>	ug/L	11.821	0	2	303108	0	KED
Y	89		ug/L			55660	289686	0	Standard
Kr	83		ug/L			44	106	18	Standard
> In-1	115		ug/L			7587	16333	1	KED
Cd	111	<b>11.000</b>	ug/L	0.211	1	4	6521	0	KED
Cd	114	<b>10.726</b>	ug/L	0.114	1	1	16343	0	KED
> In	115		ug/L			519229	951207	3	Standard
Ag	107	<b>4.378</b>	ug/L	0.114	2	33	136944	1	Standard
> Tb	159		ug/L			190542	157453	1	Standard
Pb	208	<b>1380.771</b>	ug/L	20.785	1	524	104030860	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLE0072-PS1

Sample Dil Factor: 20

Comments:

Sample Date/Time: Wednesday, May 10, 2023 23:12:33

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	27119	1	Standard
> Sc	45		ug/L			600447	605688	1	Standard
Cr	52	107.946	ug/L	4.648	4	10860	1695312	3	Standard
Cr	53	105.056	ug/L	2.621	2	113	192093	1	Standard
> Ge	72		ug/L			35776	29173	1	KED
Ni	60	48.441	ug/L	1.072	2	145	68035	1	KED
Ni	62	51.887	ug/L	1.933	3	28	11679	2	KED
Cu	63	2659.663	ug/L	25.993	0	53	10431378	0	KED
Cu	65	2674.653	ug/L	89.805	3	29	5383864	2	KED
Zn	66	7740.478	ug/L	41.895	0	87	3733813	1	KED
Zn	67	7109.067	ug/L	112.602	1	19	558068	0	KED
As	75	1097.144	ug/L	7.742	0	2	256700	0	KED
Y	89		ug/L			55660	287334	1	Standard
Kr	83		ug/L			44	88	2	Standard
> In-1	115		ug/L			7587	15754	1	KED
Cd	111	11.382	ug/L	0.376	3	4	6507	1	KED
Cd	114	11.428	ug/L	0.447	3	1	16790	2	KED
> In	115		ug/L			519229	924163	2	Standard
Ag	107	11.450	ug/L	0.297	2	33	347999	1	Standard
> Tb	159		ug/L			190542	158980	1	Standard
Pb	208	1253.989	ug/L	4.849	0	524	95406487	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL8

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 23:16:59

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	22829	2	Standard
[> Sc	45		ug/L			600447	564251	0	Standard
Cr	52	0.030	ug/L	0.034	113	10860	10641	4	Standard
Cr	53	0.025	ug/L	0.031	125	113	148	35	Standard
[> Ge	72		ug/L			35776	31647	0	KED
Ni	60	0.041	ug/L	0.020	47	145	190	15	KED
Ni	62	0.027	ug/L	0.012	44	28	31	9	KED
Cu	63	0.082	ug/L	0.007	8	53	398	7	KED
Cu	65	0.082	ug/L	0.013	15	29	205	13	KED
Zn	66	0.206	ug/L	0.036	17	87	185	10	KED
Zn	67	0.094	ug/L	0.046	48	19	25	15	KED
As	75	0.075	ug/L	0.010	13	2	20	12	KED
Y	89		ug/L			55660	54412	1	Standard
Kr	83		ug/L			44	53	15	Standard
[> In-1	115		ug/L			7587	6568	3	KED
Cd	111	-0.012	ug/L	0.002	18	4	0	86	KED
Cd	114	0.002	ug/L	0.001	26	1	2	8	KED
[> In	115		ug/L			519229	523168	3	Standard
Ag	107	0.008	ug/L	0.008	104	33	168	86	Standard
[> Tb	159		ug/L			190542	194825	1	Standard
Pb	208	0.275	ug/L	0.271	98	524	25917	95	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV9

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 23:21:24

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	24653	5	Standard
[> Sc	45		ug/L			600447	591563	1	Standard
Cr	52	49.379	ug/L	0.755	1	10860	763476	1	Standard
Cr	53	48.410	ug/L	0.314	0	113	86533	1	Standard
[> Ge	72		ug/L			35776	32024	1	KED
Ni	60	49.999	ug/L	0.359	0	145	77097	2	KED
Ni	62	50.338	ug/L	0.599	1	28	12440	0	KED
Cu	63	50.853	ug/L	0.479	0	53	218983	1	KED
Cu	65	50.279	ug/L	0.509	1	29	111154	1	KED
Zn	66	50.970	ug/L	0.590	1	87	27069	2	KED
Zn	67	51.946	ug/L	1.180	2	19	4493	1	KED
As	75	50.153	ug/L	1.115	2	2	12882	1	KED
Y	89		ug/L			55660	54346	3	Standard
Kr	83		ug/L			44	41	30	Standard
[> In-1	115		ug/L			7587	6872	2	KED
Cd	111	49.954	ug/L	1.477	2	4	12444	0	KED
Cd	114	50.060	ug/L	0.658	1	1	32090	1	KED
[> In	115		ug/L			519229	500870	0	Standard
Ag	107	48.812	ug/L	0.335	0	33	804173	0	Standard
[> Tb	159		ug/L			190542	196347	1	Standard
Pb	208	52.229	ug/L	0.704	1	524	4907728	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB9

Sample Dil Factor:

Comments:

Sample Date/Time: Wednesday, May 10, 2023 23:28:34

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			27881	24509	6	Standard
[>	Sc	45	ug/L			600447	583759	2	Standard
	Cr	52	ug/L	0.018	66	10860	10137	2	Standard
	Cr	53	ug/L	0.006	52	113	90	13	Standard
[>	Ge	72	ug/L			35776	33371	3	KED
	Ni	60	ug/L	0.007	114	145	125	11	KED
	Ni	62	ug/L	0.022	152	28	22	22	KED
	Cu	63	ug/L	0.007	43	53	120	27	KED
	Cu	65	ug/L	0.005	27	29	69	15	KED
	Zn	66	ug/L	0.018	3110	87	81	10	KED
	Zn	67	ug/L	0.009	14	19	12	8	KED
	As	75	ug/L	0.007	31	2	8	20	KED
	Y	89	ug/L			55660	54110	1	Standard
	Kr	83	ug/L			44	46	13	Standard
[>	In-1	115	ug/L			7587	6862	2	KED
	Cd	111	ug/L	0.004	201	4	3	34	KED
	Cd	114	ug/L	0.004	180	1	2	81	KED
[>	In	115	ug/L			519229	515794	3	Standard
	Ag	107	ug/L	0.001	26	33	82	17	Standard
[>	Tb	159	ug/L			190542	195697	2	Standard
	Pb	208	ug/L	0.000	1	524	1220	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0071-01**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:33:00**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	41800	4	Standard
[> Sc	45		ug/L			600447	694893	1	Standard
[ Cr	52	<b>14.760</b>	ug/L	0.330	2	10860	276862	1	Standard
[ Cr	53	<b>14.749</b>	ug/L	0.355	2	113	31060	2	Standard
[> Ge	72		ug/L			35776	33387	1	KED
[ Ni	60	<b>12.096</b>	ug/L	0.354	2	145	19540	1	KED
[ Ni	62	<b>12.236</b>	ug/L	0.141	1	28	3173	2	KED
[ Cu	63	<b>34.440</b>	ug/L	0.616	1	53	154616	0	KED
[ Cu	65	<b>33.554</b>	ug/L	0.420	1	29	77335	1	KED
[ Zn	66	<b>61.897</b>	ug/L	0.534	0	87	34249	1	KED
[ Zn	67	<b>60.911</b>	ug/L	2.396	3	19	5489	2	KED
[ As	75	<b>7.068</b>	ug/L	0.157	2	2	1894	2	KED
[ Y	89		ug/L			55660	279345	1	Standard
[ Kr	83		ug/L			44	90	13	Standard
[> In-1	115		ug/L			7587	6934	2	KED
[ Cd	111	<b>0.195</b>	ug/L	0.047	24	4	52	21	KED
[ Cd	114	<b>0.219</b>	ug/L	0.014	6	1	143	8	KED
[> In	115		ug/L			519229	517494	0	Standard
[ Ag	107	<b>0.165</b>	ug/L	0.003	1	33	2844	1	Standard
[> Tb	159		ug/L			190542	224144	0	Standard
[ Pb	208	<b>14.987</b>	ug/L	0.095	0	524	1608279	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0071-02**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:37:25**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	41920	5	Standard
[> Sc	45		ug/L			600447	707279	1	Standard
Cr	52	<b>13.606</b>	ug/L	0.173	1	10860	260824	2	Standard
Cr	53	<b>13.450</b>	ug/L	0.128	0	113	28839	1	Standard
[> Ge	72		ug/L			35776	33813	2	KED
Ni	60	<b>12.474</b>	ug/L	0.318	2	145	20402	0	KED
Ni	62	<b>12.568</b>	ug/L	0.337	2	28	3298	0	KED
Cu	63	<b>27.102</b>	ug/L	0.625	2	53	123211	0	KED
Cu	65	<b>26.633</b>	ug/L	0.700	2	29	62154	0	KED
Zn	66	<b>53.856</b>	ug/L	2.290	4	87	30171	1	KED
Zn	67	<b>53.534</b>	ug/L	0.966	1	19	4890	3	KED
As	75	<b>6.504</b>	ug/L	0.322	4	2	1764	2	KED
Y	89		ug/L			55660	279415	2	Standard
Kr	83		ug/L			44	85	14	Standard
[> In-1	115		ug/L			7587	7109	2	KED
Cd	111	<b>0.169</b>	ug/L	0.030	17	4	47	16	KED
Cd	114	<b>0.154</b>	ug/L	0.036	23	1	103	20	KED
[> In	115		ug/L			519229	506285	1	Standard
Ag	107	<b>0.112</b>	ug/L	0.003	2	33	1899	2	Standard
[> Tb	159		ug/L			190542	221252	0	Standard
Pb	208	<b>10.941</b>	ug/L	0.016	0	524	1159070	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0071-03**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:41:50**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc.	Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13			ug/L			27881	41624	4	Standard
[> Sc	45			ug/L			600447	641883	(18)	Standard
Cr	52	16.175		ug/L	2.585	15	10860	274088	4	Standard
Cr	53	16.107		ug/L	2.732	16	113	30688	3	Standard
[> Ge	72			ug/L			35776	33460	0	KED
Ni	60	13.007		ug/L	0.126	0	145	21054	1	KED
Ni	62	12.937		ug/L	0.251	1	28	3360	1	KED
Cu	63	34.231		ug/L	0.569	1	53	154049	2	KED
Cu	65	33.408		ug/L	0.682	2	29	77167	1	KED
Zn	66	66.941		ug/L	2.382	3	87	37107	2	KED
Zn	67	64.779		ug/L	1.290	1	19	5850	1	KED
As	75	7.501		ug/L	0.124	1	2	2015	1	KED
Y	89			ug/L			55660	272445	5	Standard
Kr	83			ug/L			44	93	25	Standard
[> In-1	115			ug/L			7587	7083	2	KED
Cd	111	0.206		ug/L	0.024	11	4	56	9	KED
Cd	114	0.231		ug/L	0.024	10	1	153	9	KED
[> In	115			ug/L			519229	441955	(19)	Standard
Ag	107	0.171		ug/L	0.035	20	33	2452	1	Standard
[> Tb	159			ug/L			190542	205536	(15)	Standard
Pb	208	15.984		ug/L	2.361	14	524	1548517	2	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0071-04**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:46:15**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	41611	5	Standard
> Sc	45		ug/L			600447	699791	2	Standard
Cr	52	<b>14.261</b>	ug/L	0.110	0	10860	269809	2	Standard
Cr	53	<b>14.245</b>	ug/L	0.285	2	113	30206	1	Standard
> Ge	72		ug/L			35776	33878	0	KED
Ni	60	<b>12.340</b>	ug/L	0.198	1	145	20233	1	KED
Ni	62	<b>11.929</b>	ug/L	0.375	3	28	3139	2	KED
Cu	63	<b>32.200</b>	ug/L	0.998	3	53	146699	2	KED
Cu	65	<b>31.622</b>	ug/L	0.386	1	29	73963	1	KED
Zn	66	<b>61.960</b>	ug/L	0.332	0	87	34789	0	KED
Zn	67	<b>62.225</b>	ug/L	1.387	2	19	5691	1	KED
As	75	<b>7.169</b>	ug/L	0.232	3	2	1949	2	KED
Y	89		ug/L			55660	273102	1	Standard
Kr	83		ug/L			44	73	25	Standard
> In-1	115		ug/L			7587	6963	1	KED
Cd	111	<b>0.182</b>	ug/L	0.016	8	4	49	9	KED
Cd	114	<b>0.260</b>	ug/L	0.013	4	1	170	3	KED
> In	115		ug/L			519229	502263	0	Standard
Ag	107	<b>0.134</b>	ug/L	0.006	4	33	2247	4	Standard
> Tb	159		ug/L			190542	223559	0	Standard
Pb	208	<b>13.661</b>	ug/L	0.263	1	524	1462194	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0071-05**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:50:40**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	40115	3	Standard
[> Sc	45		ug/L			600447	696541	1	Standard
[ Cr	52	<b>13.972</b>	ug/L	0.171	1	10860	263366	0	Standard
[ Cr	53	<b>14.084</b>	ug/L	0.546	3	113	29722	2	Standard
[> Ge	72		ug/L			35776	34063	0	KED
[ Ni	60	<b>12.153</b>	ug/L	0.004	0	145	20035	0	KED
[ Ni	62	<b>12.203</b>	ug/L	0.252	2	28	3228	2	KED
[ Cu	63	<b>30.621</b>	ug/L	0.182	0	53	140286	1	KED
[ Cu	65	<b>30.888</b>	ug/L	0.529	1	29	72636	1	KED
[ Zn	66	<b>61.152</b>	ug/L	1.552	2	87	34527	3	KED
[ Zn	67	<b>60.193</b>	ug/L	0.541	0	19	5536	0	KED
[ As	75	<b>6.442</b>	ug/L	0.173	2	2	1761	2	KED
[ Y	89		ug/L			55660	267558	1	Standard
[ Kr	83		ug/L			44	67	5	Standard
[> In-1	115		ug/L			7587	7095	0	KED
[ Cd	111	<b>0.200</b>	ug/L	0.033	16	4	55	15	KED
[ Cd	114	<b>0.229</b>	ug/L	0.041	17	1	153	18	KED
[> In	115		ug/L			519229	499273	1	Standard
[ Ag	107	<b>0.139</b>	ug/L	0.012	8	33	2310	7	Standard
[> Tb	159		ug/L			190542	219835	0	Standard
[ Pb	208	<b>14.358</b>	ug/L	0.249	1	524	1511199	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0071-06**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:55:05**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	40341	3	Standard
> Sc	45		ug/L			600447	679727	1	Standard
Cr	52	<b>13.576</b>	ug/L	0.280	2	10860	250134	2	Standard
Cr	53	<b>13.642</b>	ug/L	0.301	2	113	28109	1	Standard
> Ge	72		ug/L			35776	33903	1	KED
Ni	60	<b>11.924</b>	ug/L	0.282	2	145	19565	1	KED
Ni	62	<b>11.936</b>	ug/L	0.534	4	28	3142	3	KED
Cu	63	<b>27.743</b>	ug/L	0.140	0	53	126506	1	KED
Cu	65	<b>27.736</b>	ug/L	0.201	0	29	64920	1	KED
Zn	66	<b>58.405</b>	ug/L	1.496	2	87	32817	2	KED
Zn	67	<b>57.184</b>	ug/L	1.965	3	19	5233	1	KED
As	75	<b>5.879</b>	ug/L	0.200	3	2	1600	2	KED
Y	89		ug/L			55660	253187	1	Standard
Kr	83		ug/L			44	62	15	Standard
> In-1	115		ug/L			7587	7134	2	KED
Cd	111	<b>0.173</b>	ug/L	0.033	19	4	48	16	KED
Cd	114	<b>0.200</b>	ug/L	0.032	15	1	134	17	KED
> In	115		ug/L			519229	507129	2	Standard
Ag	107	<b>0.133</b>	ug/L	0.005	4	33	2255	2	Standard
> Tb	159		ug/L			190542	221170	1	Standard
Pb	208	<b>19.884</b>	ug/L	0.450	2	524	2104767	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0109-02**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Wednesday, May 10, 2023 23:59:24**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			27881	41351	4	Standard
[>	Sc	45	ug/L			600447	689065	1	Standard
	Cr	<b>52</b>	ug/L	0.115	0	10860	248242	1	Standard
	Cr	<b>53</b>	ug/L	0.146	1	113	27430	2	Standard
[>	Ge	72	ug/L			35776	33601	1	KED
	Ni	60	ug/L	0.105	0	145	17839	1	KED
	Ni	62	ug/L	0.166	1	28	2861	0	KED
	Cu	63	ug/L	0.776	2	53	169002	1	KED
	Cu	65	ug/L	1.137	3	29	86342	1	KED
	Zn	66	ug/L	0.498	0	87	30188	0	KED
	Zn	67	ug/L	1.758	3	19	4714	2	KED
	As	75	ug/L	0.093	1	2	2260	0	KED
	Y	89	ug/L			55660	253081	2	Standard
	Kr	83	ug/L			44	70	4	Standard
[>	In-1	115	ug/L			7587	7085	2	KED
	Cd	111	ug/L	0.018	10	4	49	8	KED
	Cd	114	ug/L	0.014	7	1	116	9	KED
[>	In	115	ug/L			519229	506436	3	Standard
	Ag	107	ug/L	0.009	6	33	2360	2	Standard
[>	Tb	159	ug/L			190542	218914	0	Standard
	Pb	208	ug/L	0.026	0	524	1365955	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0109-03**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:03:49**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	44730	2	Standard
[> Sc	45		ug/L			600447	695996	0	Standard
[ Cr	52	<b>13.163</b>	ug/L	0.197	1	10860	248690	1	Standard
[ Cr	53	<b>12.957</b>	ug/L	0.368	2	113	27345	2	Standard
[> Ge	72		ug/L			35776	33265	1	KED
[ Ni	60	<b>11.039</b>	ug/L	0.401	3	145	17780	2	KED
[ Ni	62	<b>11.096</b>	ug/L	0.292	2	28	2868	1	KED
[ Cu	63	<b>33.534</b>	ug/L	0.794	2	53	150033	2	KED
[ Cu	65	<b>33.030</b>	ug/L	0.499	1	29	75849	0	KED
[ Zn	66	<b>55.322</b>	ug/L	0.971	1	87	30504	0	KED
[ Zn	67	<b>55.166</b>	ug/L	1.585	2	19	4957	3	KED
[ As	75	<b>8.674</b>	ug/L	0.314	3	2	2315	2	KED
Y	89		ug/L			55660	251821	1	Standard
Kr	83		ug/L			44	67	20	Standard
[> In-1	115		ug/L			7587	6853	1	KED
[ Cd	111	<b>0.200</b>	ug/L	0.020	10	4	53	7	KED
[ Cd	114	<b>0.185</b>	ug/L	0.031	16	1	119	14	KED
[> In	115		ug/L			519229	504230	4	Standard
[ Ag	107	<b>0.143</b>	ug/L	0.009	6	33	2395	1	Standard
[> Tb	159		ug/L			190542	215455	1	Standard
[ Pb	208	<b>13.720</b>	ug/L	0.338	2	524	1415046	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0108-02**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:08:08**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	43300	5	Standard
[> Sc	45		ug/L			600447	713310	1	Standard
[ Cr	52	<b>16.422</b>	ug/L	0.161	0	10860	314787	1	Standard
[ Cr	53	<b>16.361</b>	ug/L	0.435	2	113	35354	3	Standard
[> Ge	72		ug/L			35776	32638	0	KED
[ Ni	60	<b>15.409</b>	ug/L	0.351	2	145	24305	2	KED
[ Ni	62	<b>15.069</b>	ug/L	0.298	1	28	3813	1	KED
[ Cu	63	<b>38.928</b>	ug/L	0.502	1	53	170861	0	KED
[ Cu	65	<b>39.033</b>	ug/L	0.216	0	29	87953	1	KED
[ Zn	66	<b>75.753</b>	ug/L	0.903	1	87	40958	1	KED
[ Zn	67	<b>73.795</b>	ug/L	1.061	1	19	6499	1	KED
[ As	75	<b>8.223</b>	ug/L	0.084	1	2	2154	0	KED
Y	89		ug/L			55660	331620	1	Standard
Kr	83		ug/L			44	85	5	Standard
[> In-1	115		ug/L			7587	7151	0	KED
[ Cd	111	<b>0.175</b>	ug/L	0.028	15	4	49	14	KED
[ Cd	114	<b>0.189</b>	ug/L	0.041	21	1	127	20	KED
[> In	115		ug/L			519229	494671	2	Standard
[ Ag	107	<b>0.155</b>	ug/L	0.005	3	33	2553	5	Standard
[> Tb	159		ug/L			190542	226865	1	Standard
[ Pb	208	<b>15.700</b>	ug/L	0.343	2	524	1704869	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL9

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 00:12:34

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	26146	3	Standard
[> Sc	45		ug/L			600447	573930	1	Standard
Cr	52	-0.020	ug/L	0.012	58	10860	10084	3	Standard
Cr	53	-0.009	ug/L	0.008	84	113	92	15	Standard
[> Ge	72		ug/L			35776	32582	1	KED
Ni	60	0.015	ug/L	0.010	68	145	155	11	KED
Ni	62	0.005	ug/L	0.030	607	28	27	28	KED
Cu	63	0.014	ug/L	0.002	14	53	111	6	KED
Cu	65	0.010	ug/L	0.005	55	29	48	25	KED
Zn	66	-0.030	ug/L	0.021	69	87	63	16	KED
Zn	67	-0.067	ug/L	0.011	16	19	12	9	KED
As	75	0.003	ug/L	0.005	152	2	2	44	KED
Y	89		ug/L			55660	54155	0	Standard
Kr	83		ug/L			44	38	2	Standard
[> In-1	115		ug/L			7587	6900	0	KED
Cd	111	-0.012	ug/L	0.002	17	4	0	86	KED
Cd	114	-0.002	ug/L	0.002	101	1	0	207	KED
[> In	115		ug/L			519229	511559	0	Standard
Ag	107	-0.001	ug/L	0.000	5	33	10	10	Standard
[> Tb	159		ug/L			190542	194216	1	Standard
Pb	208	0.001	ug/L	0.000	31	524	634	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVA

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 00:16:59

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	25538	4	Standard
[> Sc	45		ug/L			600447	594963	3	Standard
Cr	52	50.178	ug/L	0.793	1	10860	779879	1	Standard
Cr	53	49.353	ug/L	1.384	2	113	88670	0	Standard
[> Ge	72		ug/L			35776	34074	1	KED
Ni	60	48.680	ug/L	0.968	1	145	79858	2	KED
Ni	62	47.611	ug/L	0.229	0	28	12521	1	KED
Cu	63	49.180	ug/L	0.308	0	53	225338	1	KED
Cu	65	48.634	ug/L	0.916	1	29	114372	0	KED
Zn	66	48.427	ug/L	0.650	1	87	27362	1	KED
Zn	67	50.458	ug/L	2.031	4	19	4643	2	KED
As	75	49.054	ug/L	1.109	2	2	13404	0	KED
Y	89		ug/L			55660	54653	1	Standard
Kr	83		ug/L			44	55	9	Standard
[> In-1	115		ug/L			7587	7138	3	KED
Cd	111	49.973	ug/L	2.395	4	4	12921	0	KED
Cd	114	49.890	ug/L	1.571	3	1	33197	1	KED
[> In	115		ug/L			519229	506488	1	Standard
Ag	107	48.935	ug/L	1.204	2	33	815045	1	Standard
[> Tb	159		ug/L			190542	196385	0	Standard
Pb	208	51.586	ug/L	0.606	1	524	4848875	1	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBA

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 00:24:09

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	25562	4	Standard
[> Sc	45		ug/L			600447	584484	0	Standard
Cr	52	-0.033	ug/L	0.013	38	10860	10071	2	Standard
Cr	53	-0.008	ug/L	0.004	52	113	96	8	Standard
[> Ge	72		ug/L			35776	33932	0	KED
Ni	60	-0.017	ug/L	0.007	39	145	109	9	KED
Ni	62	-0.031	ug/L	0.030	96	28	19	40	KED
Cu	63	0.003	ug/L	0.001	48	53	64	10	KED
Cu	65	0.004	ug/L	0.003	56	29	38	15	KED
Zn	66	-0.058	ug/L	0.002	3	87	50	2	KED
Zn	67	-0.135	ug/L	0.031	23	19	6	45	KED
As	75	0.007	ug/L	0.004	63	2	3	30	KED
Y	89		ug/L			55660	54405	2	Standard
Kr	83		ug/L			44	37	28	Standard
[> In-1	115		ug/L			7587	7340	1	KED
Cd	111	-0.008	ug/L	0.006	81	4	1	86	KED
Cd	114	0.001	ug/L	0.002	175	1	2	47	KED
[> In	115		ug/L			519229	506728	1	Standard
Ag	107	0.002	ug/L	0.001	46	33	59	22	Standard
[> Tb	159		ug/L			190542	195679	1	Standard
Pb	208	0.002	ug/L	0.000	5	524	691	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0108-06**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:28:35**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	42152	3	Standard
[> Sc	45		ug/L			600447	701617	2	Standard
[ Cr	52	<b>13.784</b>	ug/L	0.159	1	10860	261945	2	Standard
[ Cr	53	<b>13.824</b>	ug/L	0.149	1	113	29404	2	Standard
[> Ge	72		ug/L			35776	33631	1	KED
[ Ni	60	<b>11.683</b>	ug/L	0.169	1	145	19022	2	KED
[ Ni	62	<b>11.656</b>	ug/L	0.112	0	28	3046	0	KED
[ Cu	63	<b>32.720</b>	ug/L	0.427	1	53	147993	1	KED
[ Cu	65	<b>32.727</b>	ug/L	0.710	2	29	75985	2	KED
[ Zn	66	<b>58.096</b>	ug/L	1.862	3	87	32377	1	KED
[ Zn	67	<b>57.353</b>	ug/L	1.009	1	19	5208	1	KED
[ As	75	<b>8.068</b>	ug/L	0.212	2	2	2178	2	KED
Y	89		ug/L			55660	268399	1	Standard
Kr	83		ug/L			44	84	7	Standard
[> In-1	115		ug/L			7587	7254	0	KED
[ Cd	111	<b>0.183</b>	ug/L	0.012	6	4	52	5	KED
[ Cd	114	<b>0.196</b>	ug/L	0.027	13	1	134	13	KED
[> In	115		ug/L			519229	505482	0	Standard
[ Ag	107	<b>0.143</b>	ug/L	0.008	5	33	2409	6	Standard
[> Tb	159		ug/L			190542	222718	0	Standard
[ Pb	208	<b>13.876</b>	ug/L	0.125	0	524	1479618	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0108-07**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:32:59**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	40027	8	Standard
> Sc	45		ug/L			600447	698775	1	Standard
Cr	52	<b>14.213</b>	ug/L	0.080	0	10860	268577	1	Standard
Cr	53	<b>14.164</b>	ug/L	0.155	1	113	30003	2	Standard
> Ge	72		ug/L			35776	33832	0	KED
Ni	60	<b>11.465</b>	ug/L	0.137	1	145	18781	0	KED
Ni	62	<b>11.563</b>	ug/L	0.199	1	28	3040	2	KED
Cu	63	<b>33.675</b>	ug/L	0.564	1	53	153215	1	KED
Cu	65	<b>32.656</b>	ug/L	0.151	0	29	76276	0	KED
Zn	66	<b>57.957</b>	ug/L	1.470	2	87	32501	2	KED
Zn	67	<b>55.816</b>	ug/L	1.269	2	19	5099	1	KED
As	75	<b>8.291</b>	ug/L	0.137	1	2	2251	1	KED
Y	89		ug/L			55660	265350	3	Standard
Kr	83		ug/L			44	74	5	Standard
> In-1	115		ug/L			7587	7022	2	KED
Cd	111	<b>0.241</b>	ug/L	<u>0.056</u>	23	4	65	23	KED
Cd	114	<b>0.248</b>	ug/L	<u>0.041</u>	16	1	163	15	KED
> In	115		ug/L			519229	507693	0	Standard
Ag	107	<b>0.154</b>	ug/L	0.006	3	33	2596	4	Standard
> Tb	159		ug/L			190542	218126	0	Standard
Pb	208	<b>14.843</b>	ug/L	0.185	1	524	1550062	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0108-08**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:37:25**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	38717	0	Standard
[> Sc	45		ug/L			600447	703681	1	Standard
[ Cr	52	<b>13.446</b>	ug/L	0.155	1	10860	256553	0	Standard
[ Cr	53	<b>13.362</b>	ug/L	0.125	0	113	28507	1	Standard
[> Ge	72		ug/L			35776	33183	1	KED
[ Ni	60	<b>12.093</b>	ug/L	0.381	3	145	19417	2	KED
[ Ni	62	<b>12.156</b>	ug/L	0.093	0	28	3133	2	KED
[ Cu	63	<b>28.972</b>	ug/L	0.594	2	53	129274	0	KED
[ Cu	65	<b>28.921</b>	ug/L	0.252	0	29	66254	0	KED
[ Zn	66	<b>56.544</b>	ug/L	1.297	2	87	31099	1	KED
[ Zn	67	<b>56.684</b>	ug/L	1.162	2	19	5079	1	KED
[ As	75	<b>6.999</b>	ug/L	0.103	1	2	1864	1	KED
Y	89		ug/L			55660	267168	0	Standard
Kr	83		ug/L			44	76	8	Standard
[> In-1	115		ug/L			7587	6892	3	KED
[ Cd	111	<b>0.172</b>	ug/L	0.019	11	4	46	9	KED
[ Cd	114	<b>0.224</b>	ug/L	0.026	11	1	145	14	KED
[> In	115		ug/L			519229	502886	1	Standard
[ Ag	107	<b>0.124</b>	ug/L	0.000	0	33	2079	1	Standard
[> Tb	159		ug/L			190542	220269	0	Standard
[ Pb	208	<b>11.496</b>	ug/L	0.252	2	524	1212380	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23C0108-09**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:41:50**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	36163	3	Standard
> Sc	45		ug/L			600447	675390	2	Standard
Cr	52	<b>11.612</b>	ug/L	0.348	2	10860	214261	1	Standard
Cr	53	<b>11.687</b>	ug/L	0.277	2	113	23940	1	Standard
> Ge	72		ug/L			35776	33264	0	KED
Ni	60	<b>9.904</b>	ug/L	0.159	1	145	15969	1	KED
Ni	62	<b>9.757</b>	ug/L	0.454	4	28	2526	4	KED
Cu	63	<b>26.785</b>	ug/L	0.607	2	53	119830	1	KED
Cu	65	<b>26.312</b>	ug/L	0.547	2	29	60427	1	KED
Zn	66	<b>52.519</b>	ug/L	0.742	1	87	28964	0	KED
Zn	67	<b>51.518</b>	ug/L	2.705	5	19	4630	5	KED
As	75	<b>6.060</b>	ug/L	0.120	1	2	1618	1	KED
Y	89		ug/L			55660	234210	0	Standard
Kr	83		ug/L			44	67	25	Standard
> In-1	115		ug/L			7587	7065	1	KED
Cd	111	<b>0.155</b>	ug/L	0.017	10	4	43	10	KED
Cd	114	<b>0.153</b>	ug/L	0.016	10	1	102	11	KED
> In	115		ug/L			519229	505119	2	Standard
Ag	107	<b>0.108</b>	ug/L	0.003	3	33	1821	3	Standard
> Tb	159		ug/L			190542	217502	2	Standard
Pb	208	<b>10.645</b>	ug/L	0.144	1	524	1108469	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0008-01**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:46:09**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	36904	6	Standard
[> Sc	45		ug/L			600447	658482	(8)	Standard
[ Cr	52	13.364	ug/L	1.275	9	10860	237528	1	Standard
[ Cr	53	13.224	ug/L	1.165	8	113	26285	3	Standard
[> Ge	72		ug/L			35776	33385	1	KED
[ Ni	60	11.756	ug/L	0.301	2	145	18995	0	KED
[ Ni	62	11.718	ug/L	0.482	4	28	3038	2	KED
[ Cu	63	26.959	ug/L	0.285	1	53	121042	0	KED
[ Cu	65	26.749	ug/L	0.537	2	29	61646	0	KED
[ Zn	66	95.776	ug/L	0.264	0	87	52948	1	KED
[ Zn	67	93.257	ug/L	3.356	3	19	8393	2	KED
[ As	75	5.155	ug/L	0.087	1	2	1382	0	KED
[ Y	89		ug/L			55660	267607	3	Standard
[ Kr	83		ug/L			44	82	18	Standard
[> In-1	115		ug/L			7587	7025	1	KED
[ Cd	111	0.159	ug/L	0.028	17	4	44	17	KED
[ Cd	114	0.164	ug/L	0.003	1	1	109	1	KED
[> In	115		ug/L			519229	476583	(10)	Standard
[ Ag	107	0.109	ug/L	0.012	10	33	1730	1	Standard
[> Tb	159		ug/L			190542	212482	(8)	Standard
[ Pb	208	11.065	ug/L	1.013	9	524	1119922	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0008-03**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:50:34**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	35181	3	Standard
> Sc	45		ug/L			600447	694840	0	Standard
Cr	52	<b>12.759</b>	ug/L	0.166	1	10860	241055	1	Standard
Cr	53	<b>12.803</b>	ug/L	0.260	2	113	26979	2	Standard
> Ge	72		ug/L			35776	32911	1	KED
Ni	60	<b>11.463</b>	ug/L	0.048	0	145	18267	0	KED
Ni	62	<b>11.716</b>	ug/L	0.618	5	28	2995	5	KED
Cu	63	<b>30.419</b>	ug/L	0.228	0	53	134653	1	KED
Cu	65	<b>30.125</b>	ug/L	0.324	1	29	68448	1	KED
Zn	66	<b>63.456</b>	ug/L	1.666	2	87	34603	1	KED
Zn	67	<b>61.360</b>	ug/L	1.215	1	19	5452	2	KED
As	75	<b>6.807</b>	ug/L	0.171	2	2	1798	1	KED
Y	89		ug/L			55660	270124	3	Standard
Kr	83		ug/L			44	94	9	Standard
> In-1	115		ug/L			7587	7021	2	KED
Cd	111	<b>0.179</b>	ug/L	0.037	20	4	49	17	KED
Cd	114	<b>0.173</b>	ug/L	0.024	14	1	114	16	KED
> In	115		ug/L			519229	499685	2	Standard
Ag	107	<b>0.116</b>	ug/L	0.008	6	33	1932	4	Standard
> Tb	159		ug/L			190542	221804	0	Standard
Pb	208	<b>11.749</b>	ug/L	0.083	0	524	1247680	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0037-01**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:54:53**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	37636	5	Standard
[> Sc	45		ug/L			600447	685486	0	Standard
[ Cr	52	<b>16.521</b>	ug/L	0.526	3	10860	304236	2	Standard
[ Cr	53	<b>16.594</b>	ug/L	0.435	2	113	34456	2	Standard
[> Ge	72		ug/L			35776	32742	0	KED
[ Ni	60	<b>12.901</b>	ug/L	0.250	1	145	20434	1	KED
[ Ni	62	<b>12.820</b>	ug/L	0.316	2	28	3258	1	KED
[ Cu	63	<b>32.180</b>	ug/L	0.702	2	53	141691	1	KED
[ Cu	65	<b>32.801</b>	ug/L	0.389	1	29	74144	0	KED
[ Zn	66	<b>71.544</b>	ug/L	1.069	1	87	38808	0	KED
[ Zn	67	<b>69.189</b>	ug/L	1.002	1	19	6114	2	KED
[ As	75	<b>7.614</b>	ug/L	0.071	0	2	2001	1	KED
Y	89		ug/L			55660	259985	1	Standard
Kr	83		ug/L			44	85	9	Standard
[> In-1	115		ug/L			7587	7023	1	KED
[ Cd	111	<b>0.137</b>	ug/L	0.009	6	4	38	7	KED
[ Cd	114	<b>0.144</b>	ug/L	0.012	8	1	95	6	KED
[> In	115		ug/L			519229	496722	1	Standard
[ Ag	107	<b>0.113</b>	ug/L	0.004	3	33	1883	2	Standard
[> Tb	159		ug/L			190542	218818	0	Standard
[ Pb	208	<b>17.415</b>	ug/L	0.324	1	524	1824272	1	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0037-03**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 00:59:18**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	37582	3	Standard
[> Sc	45		ug/L			600447	669281	2	Standard
[ Cr	52	<b>22.029</b>	ug/L	0.384	1	10860	392004	2	Standard
[ Cr	53	<b>21.690</b>	ug/L	0.339	1	113	43926	1	Standard
[> Ge	72		ug/L			35776	32667	2	KED
[ Ni	60	<b>18.945</b>	ug/L	0.600	3	145	29864	0	KED
[ Ni	62	<b>18.494</b>	ug/L	0.363	1	28	4678	1	KED
[ Cu	63	<b>103.407</b>	ug/L	2.883	2	53	454006	0	KED
[ Cu	65	<b>102.730</b>	ug/L	1.556	1	29	231623	2	KED
[ Zn	66	<b>178.533</b>	ug/L	4.616	2	87	96485	2	KED
[ Zn	67	<b>170.011</b>	ug/L	2.949	1	19	14964	3	KED
[ As	75	<b>16.375</b>	ug/L	0.240	1	2	4291	1	KED
[ Y	89		ug/L			55660	241132	1	Standard
[ Kr	83		ug/L			44	73	26	Standard
[> In-1	115		ug/L			7587	6780	0	KED
[ Cd	111	<b>0.418</b>	ug/L	<u>0.049</u>	11	4	106	10	KED
[ Cd	114	<b>0.454</b>	ug/L	<u>0.060</u>	13	1	288	12	KED
[> In	115		ug/L			519229	502468	3	Standard
[ Ag	107	<b>0.118</b>	ug/L	0.002	1	33	1979	1	Standard
[> Tb	159		ug/L			190542	213368	0	Standard
[ Pb	208	<b>48.910</b>	ug/L	0.730	1	524	4994590	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0037-02**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 01:03:43**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	42891	2	Standard
[> Sc	45		ug/L			600447	690386	1	Standard
Cr	52	15.879	ug/L	0.081	0	10860	295013	1	Standard
Cr	53	15.797	ug/L	0.231	1	113	33044	2	Standard
[> Ge	72		ug/L			35776	32570	1	KED
Ni	60	15.329	ug/L	0.559	3	145	24120	2	KED
Ni	62	15.503	ug/L	0.390	2	28	3914	1	KED
Cu	63	35.760	ug/L	0.959	2	53	156594	1	KED
Cu	65	34.988	ug/L	0.447	1	29	78674	2	KED
Zn	66	81.273	ug/L	1.022	1	87	43842	1	KED
Zn	67	78.630	ug/L	2.118	2	19	6908	1	KED
As	75	6.077	ug/L	0.117	1	2	1589	0	KED
Y	89		ug/L			55660	293531	0	Standard
Kr	83		ug/L			44	81	11	Standard
[> In-1	115		ug/L			7587	6877	0	KED
Cd	111	0.163	ug/L	0.024	14	4	44	14	KED
Cd	114	0.184	ug/L	0.033	18	1	119	17	KED
[> In	115		ug/L			519229	497287	2	Standard
Ag	107	0.123	ug/L	0.006	4	33	2042	6	Standard
[> Tb	159		ug/L			190542	220337	0	Standard
Pb	208	18.272	ug/L	0.349	1	524	1927197	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLA

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 01:08:09

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	24843	3	Standard
[> Sc	45		ug/L			600447	570538	2	Standard
Cr	52	-0.031	ug/L	0.013	43	10860	9866	1	Standard
Cr	53	-0.012	ug/L	0.015	128	113	86	27	Standard
[> Ge	72		ug/L			35776	32250	0	KED
Ni	60	0.020	ug/L	0.011	56	145	161	10	KED
Ni	62	0.016	ug/L	0.016	99	28	29	13	KED
Cu	63	0.008	ug/L	0.002	30	53	81	12	KED
Cu	65	0.004	ug/L	0.004	103	29	34	24	KED
Zn	66	-0.028	ug/L	0.030	106	87	64	25	KED
Zn	67	-0.109	ug/L	0.034	30	19	8	35	KED
As	75	0.001	ug/L	0.002	122	2	2	20	KED
Y	89		ug/L			55660	53022	1	Standard
Kr	83		ug/L			44	46	24	Standard
[> In-1	115		ug/L			7587	6858	1	KED
Cd	111	-0.010	ug/L	0.009	88	4	1	173	KED
Cd	114	0.000	ug/L	0.003	915	1	1	106	KED
[> In	115		ug/L			519229	507926	2	Standard
Ag	107	-0.001	ug/L	0.000	23	33	12	37	Standard
[> Tb	159		ug/L			190542	192482	2	Standard
Pb	208	0.004	ug/L	0.004	126	524	860	50	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVB

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 01:12:34

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			27881	24688	5	Standard
[> Sc	45		ug/L			600447	587821	1	Standard
Cr	52	50.267	ug/L	0.836	1	10860	772260	3	Standard
Cr	53	49.039	ug/L	1.119	2	113	87116	3	Standard
[> Ge	72		ug/L			35776	33250	0	KED
Ni	60	48.819	ug/L	0.971	1	145	78156	1	KED
Ni	62	48.209	ug/L	1.520	3	28	12372	2	KED
Cu	63	49.620	ug/L	0.752	1	53	221871	1	KED
Cu	65	48.668	ug/L	0.371	0	29	111709	0	KED
Zn	66	50.023	ug/L	1.122	2	87	27580	1	KED
Zn	67	49.741	ug/L	2.604	5	19	4468	4	KED
As	75	49.558	ug/L	0.239	0	2	13218	0	KED
Y	89		ug/L			55660	53986	1	Standard
Kr	83		ug/L			44	40	28	Standard
[> In-1	115		ug/L			7587	7116	3	KED
Cd	111	48.527	ug/L	2.801	5	4	12510	3	KED
Cd	114	48.916	ug/L	3.450	7	1	32427	4	KED
[> In	115		ug/L			519229	497812	2	Standard
Ag	107	48.787	ug/L	0.812	1	33	798652	0	Standard
[> Tb	159		ug/L			190542	199063	0	Standard
Pb	208	51.680	ug/L	0.781	1	524	4923450	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBB

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 01:19:44

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			27881	24490	0	Standard
[>	Sc	45		ug/L			600447	572095	1	Standard
	Cr	52	-0.016	ug/L	0.007	47	10860	10114	2	Standard
	Cr	53	-0.010	ug/L	0.005	52	113	90	10	Standard
[>	Ge	72		ug/L			35776	33107	1	KED
	Ni	60	-0.019	ug/L	0.017	93	145	104	25	KED
	Ni	62	-0.036	ug/L	0.021	57	28	17	29	KED
	Cu	63	0.007	ug/L	0.003	36	53	81	14	KED
	Cu	65	0.011	ug/L	0.011	102	29	50	46	KED
	Zn	66	-0.055	ug/L	0.037	66	87	50	38	KED
	Zn	67	-0.111	ug/L	0.077	68	19	8	81	KED
	As	75	0.006	ug/L	0.002	30	2	3	15	KED
	Y	89		ug/L			55660	53252	4	Standard
	Kr	83		ug/L			44	46	16	Standard
[>	In-1	115		ug/L			7587	7049	3	KED
	Cd	111	-0.011	ug/L	0.007	58	4	0	173	KED
	Cd	114	-0.001	ug/L	0.002	226	1	1	94	KED
[>	In	115		ug/L			519229	500651	2	Standard
	Ag	107	0.001	ug/L	0.001	50	33	55	22	Standard
[>	Tb	159		ug/L			190542	194761	1	Standard
	Pb	208	0.001	ug/L	0.000	22	524	665	5	Standard

## ICP-MS Quantitative Analysis - Summary Report

**Sample ID: SEQ-CAL1**

**Sample Dil Factor:**

**Comments:**

**Sample Date/Time: Thursday, May 11, 2023 01:24:09**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L				23951	1	Standard
[>	Sc	45	ug/L				579638	2	Standard
	Cr	52	ug/L				10138	1	Standard
	Cr	53	ug/L				92	13	Standard
[>	Ge	72	ug/L				33052	2	KED
	Ni	60	ug/L				97	25	KED
	Ni	62	ug/L				15	49	KED
	Cu	63	ug/L				198	57	KED
	Cu	65	ug/L				107	77	KED
	Zn	66	ug/L				67	36	KED
	Zn	67	ug/L				15	13	KED
	As	75	ug/L				4	114	KED
	Y	89	ug/L				53627	1	Standard
	Kr	83	ug/L				34	20	Standard
[>	In-1	115	ug/L				7114	5	KED
	Cd	111	ug/L				2	24	KED
	Cd	114	ug/L				0	293	KED
[>	In	115	ug/L				522018	2	Standard
	Ag	107	ug/L				24	23	Standard
[>	Tb	159	ug/L				194588	1	Standard
	Pb	208	ug/L				589	8	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVC

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 01:28:35

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	24643	4	Standard
[> Sc	45		ug/L			579638	604497	1	Standard
Cr	52	48.978	ug/L	0.531	1	10138	773644	2	Standard
Cr	53	48.354	ug/L	0.493	1	92	88313	2	Standard
[> Ge	72		ug/L			33052	33370	0	KED
Ni	60	49.324	ug/L	1.040	2	97	79207	1	KED
Ni	62	47.977	ug/L	1.281	2	15	12345	1	KED
Cu	63	49.978	ug/L	1.244	2	198	224398	1	KED
Cu	65	48.605	ug/L	0.688	1	107	112041	0	KED
Zn	66	50.089	ug/L	0.902	1	67	27704	1	KED
Zn	67	50.597	ug/L	2.408	4	15	4559	4	KED
As	75	49.659	ug/L	1.424	2	4	13295	2	KED
Y	89		ug/L			53627	55035	2	Standard
Kr	83		ug/L			34	50	21	Standard
[> In-1	115		ug/L			7114	7142	0	KED
Cd	111	49.790	ug/L	0.467	0	2	12894	1	KED
Cd	114	49.917	ug/L	0.583	1	0	33256	1	KED
[> In	115		ug/L			522018	505738	4	Standard
Ag	107	48.105	ug/L	1.906	3	24	799289	0	Standard
[> Tb	159		ug/L			194588	199862	1	Standard
Pb	208	51.228	ug/L	1.038	2	589	4900055	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBC

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 01:35:45

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	24390	5	Standard
[> Sc	45		ug/L			579638	570057	2	Standard
Cr	52	0.018	ug/L	0.030	170	10138	10227	2	Standard
Cr	53	-0.003	ug/L	0.005	170	92	86	11	Standard
[> Ge	72		ug/L			33052	34200	3	KED
Ni	60	0.005	ug/L	0.011	211	97	109	18	KED
Ni	62	-0.016	ug/L	0.016	101	15	12	32	KED
Cu	63	-0.017	ug/L	0.005	27	198	128	14	KED
Cu	65	-0.024	ug/L	0.005	19	107	55	15	KED
Zn	66	-0.023	ug/L	0.025	111	67	57	28	KED
Zn	67	-0.062	ug/L	0.046	74	15	10	40	KED
As	75	-0.005	ug/L	0.005	104	4	3	37	KED
Y	89		ug/L			53627	53691	4	Standard
Kr	83		ug/L			34	40	9	Standard
[> In-1	115		ug/L			7114	7219	0	KED
Cd	111	-0.004	ug/L	0.006	147	2	1	114	KED
Cd	114	0.000	ug/L	0.002	907	0	0	218	KED
[> In	115		ug/L			522018	508569	2	Standard
Ag	107	0.003	ug/L	0.001	30	24	77	18	Standard
[> Tb	159		ug/L			194588	192635	1	Standard
Pb	208	0.001	ug/L	0.001	55	589	699	8	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0037-04**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 01:40:10**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	37083	2	Standard
[> Sc	45		ug/L			579638	666315	2	Standard
Cr	52	14.778	ug/L	0.414	2	10138	265352	2	Standard
Cr	53	14.846	ug/L	0.408	2	92	29949	2	Standard
[> Ge	72		ug/L			33052	33256	2	KED
Ni	60	13.070	ug/L	0.294	2	97	20983	0	KED
Ni	62	13.519	ug/L	0.640	4	15	3476	2	KED
Cu	63	33.896	ug/L	0.667	1	198	151715	0	KED
Cu	65	34.294	ug/L	1.367	3	107	78776	1	KED
Zn	66	78.001	ug/L	1.335	1	67	42946	0	KED
Zn	67	76.310	ug/L	3.075	4	15	6841	2	KED
As	75	7.516	ug/L	0.211	2	4	2008	1	KED
Y	89		ug/L			53627	253479	2	Standard
Kr	83		ug/L			34	67	14	Standard
[> In-1	115		ug/L			7114	7022	2	KED
Cd	111	0.173	ug/L	0.026	14	2	46	15	KED
Cd	114	0.168	ug/L	0.032	19	0	110	19	KED
[> In	115		ug/L			522018	501570	2	Standard
Ag	107	0.124	ug/L	0.008	6	24	2072	3	Standard
[> Tb	159		ug/L			194588	216254	2	Standard
Pb	208	24.655	ug/L	0.542	2	589	2551303	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0063-01**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 01:44:35**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	36093	5	Standard
> Sc	45		ug/L			579638	675816	1	Standard
Cr	52	<b>12.093</b>	ug/L	0.292	2	10138	222478	3	Standard
Cr	53	<b>11.925</b>	ug/L	0.087	0	92	24429	1	Standard
> Ge	72		ug/L			33052	32692	0	KED
Ni	60	<b>10.569</b>	ug/L	0.056	0	97	16704	0	KED
Ni	62	<b>10.693</b>	ug/L	0.267	2	15	2708	2	KED
Cu	63	<b>28.415</b>	ug/L	0.362	1	198	125086	0	KED
Cu	<b>65</b>	<b>27.586</b>	ug/L	0.411	1	107	62347	1	KED
Zn	66	<b>54.295</b>	ug/L	1.764	3	67	29412	2	KED
Zn	67	<b>54.009</b>	ug/L	0.750	1	15	4767	0	KED
As	75	<b>6.145</b>	ug/L	0.125	2	4	1615	1	KED
Y	89		ug/L			53627	247657	1	Standard
Kr	83		ug/L			34	70	10	Standard
> In-1	115		ug/L			7114	6869	3	KED
Cd	111	<b>0.128</b>	ug/L	0.034	26	2	33	26	KED
Cd	114	<b>0.143</b>	ug/L	0.032	22	0	91	23	KED
> In	115		ug/L			522018	498017	1	Standard
Ag	107	<b>0.114</b>	ug/L	0.004	3	24	1886	1	Standard
> Tb	159		ug/L			194588	218860	2	Standard
Pb	208	<b>11.885</b>	ug/L	0.301	2	589	1244967	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0063-03**

Sample Dil Factor: **20**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 01:49:00**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	35499	1	Standard
[> Sc	45		ug/L			579638	667168	1	Standard
[ Cr	52	<b>12.476</b>	ug/L	0.197	1	10138	226180	1	Standard
[ Cr	53	<b>12.216</b>	ug/L	0.084	0	92	24701	1	Standard
[> Ge	72		ug/L			33052	32239	3	KED
[ Ni	60	<b>10.330</b>	ug/L	0.214	2	97	16096	1	KED
[ Ni	62	<b>10.576</b>	ug/L	0.168	1	15	2640	2	KED
[ Cu	63	<b>29.293</b>	ug/L	0.285	0	198	127139	2	KED
[ Cu	65	<b>28.863</b>	ug/L	0.751	2	107	64290	0	KED
[ Zn	66	<b>56.772</b>	ug/L	2.696	4	67	30296	1	KED
[ Zn	67	<b>55.840</b>	ug/L	3.137	5	15	4854	2	KED
[ As	75	<b>7.812</b>	ug/L	0.264	3	4	2022	1	KED
[ Y	89		ug/L			53627	245815	2	Standard
[ Kr	83		ug/L			34	64	9	Standard
[> In-1	115		ug/L			7114	6861	2	KED
[ Cd	111	<b>0.175</b>	ug/L	0.040	22	2	45	19	KED
[ Cd	114	<b>0.161</b>	ug/L	0.030	18	0	103	17	KED
[> In	115		ug/L			522018	506848	1	Standard
[ Ag	107	<b>0.117</b>	ug/L	0.005	4	24	1968	5	Standard
[> Tb	159		ug/L			194588	214654	2	Standard
[ Pb	208	<b>11.626</b>	ug/L	0.374	3	589	1194319	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0452-01**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 01:53:19**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	<b>C</b>	<b>13</b>	ug/L			23951	105848	5	Standard
[>	<b>Sc</b>	<b>45</b>	ug/L			579638	461044	2	Standard
	<b>Cr</b>	<b>52</b>	ug/L	0.016	0	10138	38630	2	Standard
	<b>Cr</b>	<b>53</b>	ug/L	0.084	3	92	3048	1	Standard
[>	<b>Ge</b>	<b>72</b>	ug/L			33052	25757	1	KED
	<b>Ni</b>	<b>60</b>	ug/L	0.094	2	97	4995	2	KED
	<b>Ni</b>	<b>62</b>	ug/L	0.157	3	15	800	4	KED
	<b>Cu</b>	<b>63</b>	ug/L	0.004	1	198	1539	0	KED
	<b>Cu</b>	<b>65</b>	ug/L	0.035	8	107	780	7	KED
	<b>Zn</b>	<b>66</b>	ug/L	0.241	8	67	1243	8	KED
	<b>Zn</b>	<b>67</b>	ug/L	0.296	10	15	205	9	KED
	<b>As</b>	<b>75</b>	ug/L	0.017	12	4	31	10	KED
	<b>Y</b>	<b>89</b>	ug/L			53627	44123	1	Standard
	<b>Kr</b>	<b>83</b>	ug/L			34	34	27	Standard
[>	<b>In-1</b>	<b>115</b>	ug/L			7114	5449	7	KED
	<b>Cd</b>	<b>111</b>	ug/L	0.004	11	2	8	13	KED
	<b>Cd</b>	<b>114</b>	ug/L	0.009	35	0	13	39	KED
[>	<b>In</b>	<b>115</b>	ug/L			522018	421633	1	Standard
	<b>Ag</b>	<b>107</b>	ug/L	0.005	111	24	76	82	Standard
[>	<b>Tb</b>	<b>159</b>	ug/L			194588	165473	1	Standard
	<b>Pb</b>	<b>208</b>	ug/L	0.001	1	589	3659	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0462-01**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 01:58:08**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	27229	5	Standard
[> Sc	45		ug/L			579638	536374	1	Standard
Cr	52	0.130	ug/L	0.034	26	10138	11176	4	Standard
Cr	53	0.395	ug/L	0.027	6	92	725	7	Standard
[> Ge	72		ug/L			33052	27488	2	KED
Ni	60	1.680	ug/L	0.028	1	97	2301	2	KED
Ni	62	1.689	ug/L	0.045	2	15	370	1	KED
Cu	63	0.581	ug/L	0.032	5	198	2311	3	KED
Cu	65	0.564	ug/L	0.036	6	107	1158	5	KED
Zn	66	1.179	ug/L	0.101	8	67	591	5	KED
Zn	67	1.938	ug/L	0.261	13	15	156	14	KED
As	75	0.362	ug/L	0.010	2	4	83	0	KED
Y	89		ug/L			53627	49793	3	Standard
Kr	83		ug/L			34	47	16	Standard
[> In-1	115		ug/L			7114	5876	2	KED
Cd	111	0.015	ug/L	0.008	49	2	5	28	KED
Cd	114	0.019	ug/L	0.008	42	0	10	38	KED
[> In	115		ug/L			522018	482911	0	Standard
Ag	107	0.000	ug/L	0.000	276	24	24	20	Standard
[> Tb	159		ug/L			194588	180457	1	Standard
Pb	208	0.029	ug/L	0.001	2	589	3029	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0135-01**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 02:03:57**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	37969	3	Standard
[> Sc	45		ug/L			579638	547722	2	Standard
Cr	52	0.714	ug/L	0.028	3	10138	19664	2	Standard
Cr	53	0.678	ug/L	0.015	2	92	1207	0	Standard
[> Ge	72		ug/L			33052	30087	2	KED
Ni	60	0.612	ug/L	0.033	5	97	975	6	KED
Ni	62	0.639	ug/L	0.038	5	15	162	7	KED
Cu	63	5.288	ug/L	0.088	1	198	21568	0	KED
Cu	65	5.255	ug/L	0.116	2	107	11007	0	KED
Zn	66	140.941	ug/L	1.920	1	67	70163	1	KED
Zn	67	133.083	ug/L	3.879	2	15	10786	2	KED
As	75	1.106	ug/L	0.012	1	4	270	1	KED
Y	89		ug/L			53627	51171	1	Standard
Kr	83		ug/L			34	71	15	Standard
[> In-1	115		ug/L			7114	6329	1	KED
Cd	111	0.112	ug/L	0.013	12	2	27	12	KED
Cd	114	0.097	ug/L	0.002	2	0	57	2	KED
[> In	115		ug/L			522018	493757	1	Standard
Ag	107	0.009	ug/L	0.001	7	24	170	6	Standard
[> Tb	159		ug/L			194588	185755	1	Standard
Pb	208	0.563	ug/L	0.020	3	589	50598	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0135-02**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 02:08:22**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc.	Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13			ug/L			23951	36538	6	Standard
[> Sc	45			ug/L			579638	578838	2	Standard
Cr	52	<b>0.519</b>		ug/L	0.007	1	10138	17866	2	Standard
Cr	53	<b>0.988</b>		ug/L	0.059	5	92	1818	5	Standard
[> Ge	72			ug/L			33052	29808	1	KED
Ni	60	<b>0.569</b>		ug/L	0.017	2	97	904	3	KED
Ni	62	<b>0.530</b>		ug/L	0.027	5	15	135	3	KED
<b>Cu</b>	63	<b>3.554</b>		ug/L	0.126	3	198	14417	2	KED
Cu	65	<b>3.585</b>		ug/L	0.056	1	107	7470	0	KED
<b>Zn</b>	66	<b>2.359</b>		ug/L	0.068	2	67	1222	1	KED
Zn	67	<b>2.363</b>		ug/L	0.363	15	15	203	14	KED
As	75	<b>1.123</b>		ug/L	0.031	2	4	272	1	KED
Y	89			ug/L			53627	59933	0	Standard
Kr	83			ug/L			34	63	13	Standard
[> In-1	115			ug/L			7114	6300	2	KED
Cd	111	<b>0.004</b>		ug/L	0.009	216	2	2	66	KED
Cd	114	<b>0.010</b>		ug/L	0.002	17	0	6	16	KED
[> In	115			ug/L			522018	486907	0	Standard
Ag	107	<b>0.007</b>		ug/L	0.000	2	24	141	1	Standard
[> Tb	159			ug/L			194588	189476	1	Standard
Pb	208	<b>0.205</b>		ug/L	0.005	2	589	19197	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0135-03**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 02:12:47**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	38119	4	Standard
[> Sc	45		ug/L			579638	558704	1	Standard
Cr	52	0.554	ug/L	0.023	4	10138	17750	3	Standard
Cr	53	0.562	ug/L	0.027	4	92	1036	4	Standard
[> Ge	72		ug/L			33052	30571	1	KED
Ni	60	0.746	ug/L	0.032	4	97	1186	2	KED
Ni	62	0.744	ug/L	0.118	15	15	189	14	KED
Cu	63	5.766	ug/L	0.128	2	198	23876	0	KED
Cu	65	5.570	ug/L	0.189	3	107	11848	2	KED
Zn	66	60.188	ug/L	2.507	4	67	30468	2	KED
Zn	67	58.288	ug/L	1.458	2	15	4810	3	KED
As	75	0.270	ug/L	0.016	6	4	70	6	KED
Y	89		ug/L			53627	54774	3	Standard
Kr	83		ug/L			34	70	10	Standard
[> In-1	115		ug/L			7114	6555	0	KED
Cd	111	0.049	ug/L	0.020	40	2	13	34	KED
Cd	114	0.048	ug/L	0.005	9	0	29	9	KED
[> In	115		ug/L			522018	515795	2	Standard
Ag	107	0.008	ug/L	0.001	14	24	168	11	Standard
[> Tb	159		ug/L			194588	191287	1	Standard
Pb	208	0.846	ug/L	0.012	1	589	78051	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0135-04**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 02:17:12**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	38665	4	Standard
[> Sc	45		ug/L			579638	566861	1	Standard
Cr	52	0.728	ug/L	0.010	1	10138	20546	2	Standard
Cr	53	0.803	ug/L	0.062	7	92	1465	8	Standard
[> Ge	72		ug/L			33052	31153	1	KED
Ni	60	1.149	ug/L	0.046	3	97	1813	4	KED
Ni	62	1.105	ug/L	0.081	7	15	280	5	KED
Cu	63	6.771	ug/L	0.129	1	198	28541	0	KED
Cu	65	6.596	ug/L	0.167	2	107	14285	3	KED
Zn	66	65.082	ug/L	0.876	1	67	33581	0	KED
Zn	67	61.094	ug/L	4.276	6	15	5132	5	KED
As	75	0.523	ug/L	0.041	7	4	134	6	KED
Y	89		ug/L			53627	59942	1	Standard
Kr	83		ug/L			34	76	13	Standard
[> In-1	115		ug/L			7114	6559	2	KED
Cd	111	0.061	ug/L	0.030	48	2	16	42	KED
Cd	114	0.056	ug/L	0.002	4	0	34	6	KED
[> In	115		ug/L			522018	504265	0	Standard
Ag	107	0.008	ug/L	0.001	12	24	164	11	Standard
[> Tb	159		ug/L			194588	192160	1	Standard
Pb	208	2.595	ug/L	0.038	1	589	239201	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLB

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 02:21:38

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	21544	3	Standard
[> Sc	45		ug/L			579638	545161	2	Standard
Cr	52	-0.044	ug/L	0.022	49	10138	8919	2	Standard
Cr	53	0.008	ug/L	0.003	39	92	100	4	Standard
[> Ge	72		ug/L			33052	30281	2	KED
Ni	60	0.028	ug/L	0.008	27	97	130	5	KED
Ni	62	0.036	ug/L	0.016	46	15	22	16	KED
Cu	63	0.014	ug/L	0.008	60	198	236	11	KED
Cu	65	0.010	ug/L	0.009	99	107	118	16	KED
Zn	66	-0.013	ug/L	0.015	120	67	55	13	KED
Zn	67	-0.085	ug/L	0.021	24	15	7	25	KED
As	75	-0.007	ug/L	0.006	79	4	2	60	KED
Y	89		ug/L			53627	50064	2	Standard
Kr	83		ug/L			34	67	16	Standard
[> In-1	115		ug/L			7114	6136	0	KED
Cd	111	-0.004	ug/L	0.007	168	2	0	173	KED
Cd	114	-0.001	ug/L	0.000	12	0	0	50	KED
[> In	115		ug/L			522018	493408	1	Standard
Ag	107	-0.001	ug/L	0.000	30	24	7	66	Standard
[> Tb	159		ug/L			194588	186807	0	Standard
Pb	208	-0.000	ug/L	0.000	396	589	558	4	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVD

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 02:26:03

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	21516	4	Standard
[> Sc	45		ug/L			579638	550260	3	Standard
Cr	52	49.898	ug/L	0.736	1	10138	717062	2	Standard
Cr	53	48.905	ug/L	0.774	1	92	81286	2	Standard
[> Ge	72		ug/L			33052	30601	1	KED
Ni	60	49.258	ug/L	1.105	2	97	72531	1	KED
Ni	62	49.062	ug/L	0.777	1	15	11579	2	KED
Cu	63	50.423	ug/L	1.755	3	198	207598	2	KED
Cu	65	50.155	ug/L	0.422	0	107	106033	2	KED
Zn	66	51.110	ug/L	1.440	2	67	25916	1	KED
Zn	67	50.481	ug/L	0.741	1	15	4171	0	KED
As	75	49.333	ug/L	0.457	0	4	12111	0	KED
Y	89		ug/L			53627	51421	2	Standard
Kr	83		ug/L			34	50	35	Standard
[> In-1	115		ug/L			7114	6373	2	KED
Cd	111	51.144	ug/L	0.617	1	2	11817	1	KED
Cd	114	51.111	ug/L	1.372	2	0	30374	0	KED
[> In	115		ug/L			522018	491126	0	Standard
Ag	107	46.025	ug/L	0.868	1	24	743507	2	Standard
[> Tb	159		ug/L			194588	193039	1	Standard
Pb	208	53.346	ug/L	0.719	1	589	4928316	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBD

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 02:33:12

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			23951	20958	3	Standard
[>	Sc	45	ug/L			579638	544844	3	Standard
	Cr	52	ug/L	0.007	18	10138	9030	2	Standard
	Cr	53	ug/L	0.008	108	92	73	17	Standard
[>	Ge	72	ug/L			33052	30925	2	KED
	Ni	60	ug/L	0.032	345	97	106	47	KED
	Ni	62	ug/L	0.041	236	15	19	51	KED
	Cu	63	ug/L	0.031	286	198	232	57	KED
	Cu	65	ug/L	0.019	572	107	108	39	KED
	Zn	66	ug/L	0.026	68	67	43	32	KED
	Zn	67	ug/L	0.023	26	15	7	25	KED
	As	75	ug/L	0.013	106	4	7	46	KED
	Y	89	ug/L			53627	51661	1	Standard
	Kr	83	ug/L			34	57	21	Standard
[>	In-1	115	ug/L			7114	6496	1	KED
	Cd	111	ug/L	0.006	191	2	1	114	KED
	Cd	114	ug/L	0.000	5	0	0	21	KED
[>	In	115	ug/L			522018	495425	0	Standard
	Ag	107	ug/L	0.000	9	24	44	4	Standard
[>	Tb	159	ug/L			194588	187990	1	Standard
	Pb	208	ug/L	0.000	9	589	317	8	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0138-01**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 02:37:38**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	26731	3	Standard
[> Sc	45		ug/L			579638	510919	2	Standard
[ Cr	52	<b>3.536</b>	ug/L	0.053	1	10138	55491	1	Standard
[ Cr	53	<b>3.450</b>	ug/L	0.048	1	92	5401	3	Standard
[> Ge	72		ug/L			33052	27574	0	KED
[ Ni	60	<b>0.373</b>	ug/L	0.022	5	97	576	5	KED
[ Ni	62	<b>0.368</b>	ug/L	0.037	9	15	91	8	KED
[ Cu	63	<b>2.632</b>	ug/L	0.032	1	198	9922	1	KED
[ Cu	65	<b>2.576</b>	ug/L	0.005	0	107	4991	0	KED
[ Zn	66	<b>1.731</b>	ug/L	0.144	8	67	845	6	KED
[ Zn	67	<b>1.654</b>	ug/L	0.275	16	15	135	14	KED
[ As	75	<b>0.040</b>	ug/L	0.010	23	4	12	17	KED
Y	89		ug/L			53627	46957	1	Standard
Kr	83		ug/L			34	50	22	Standard
[> In-1	115		ug/L			7114	5630	4	KED
[ Cd	111	<b>0.012</b>	ug/L	0.007	62	2	4	35	KED
[ Cd	114	<b>0.005</b>	ug/L	0.002	32	0	2	32	KED
[> In	115		ug/L			522018	454440	3	Standard
[ Ag	107	<b>0.001</b>	ug/L	0.001	86	24	35	32	Standard
[> Tb	159		ug/L			194588	177445	0	Standard
[ Pb	208	<b>0.009</b>	ug/L	0.000	4	589	1292	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0139-01**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 02:42:27**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	25305	6	Standard
[> Sc	45		ug/L			579638	495840	2	Standard
[ Cr	52	<b>6.970</b>	ug/L	0.074	1	10138	97727	1	Standard
[ Cr	53	<b>6.889</b>	ug/L	0.140	2	92	10389	3	Standard
[> Ge	72		ug/L			33052	26357	0	KED
[ Ni	60	<b>0.396</b>	ug/L	0.027	6	97	579	5	KED
[ Ni	62	<b>0.351</b>	ug/L	0.046	13	15	83	10	KED
[ Cu	63	<b>2.634</b>	ug/L	0.022	0	198	9492	0	KED
[ Cu	65	<b>2.580</b>	ug/L	0.023	0	107	4779	1	KED
[ Zn	66	<b>1.552</b>	ug/L	0.050	3	67	730	2	KED
[ Zn	67	<b>1.324</b>	ug/L	0.279	21	15	106	19	KED
[ As	75	<b>0.037</b>	ug/L	0.004	10	4	11	7	KED
Y	89		ug/L			53627	45441	0	Standard
Kr	83		ug/L			34	40	33	Standard
[> In-1	115		ug/L			7114	5374	2	KED
[ Cd	111	<b>0.009</b>	ug/L	0.014	150	2	3	78	KED
[ Cd	114	<b>0.027</b>	ug/L	0.012	46	0	13	43	KED
[> In	115		ug/L			522018	432964	3	Standard
[ Ag	107	<b>0.001</b>	ug/L	0.000	45	24	31	12	Standard
[> Tb	159		ug/L			194588	174764	1	Standard
[ Pb	208	<b>0.034</b>	ug/L	0.001	1	589	3409	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0139-02**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 02:47:16**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	26683	4	Standard
[> Sc	45		ug/L			579638	489659	3	Standard
[ Cr	52	<b>3.753</b>	ug/L	0.073	1	10138	55912	1	Standard
[ Cr	53	<b>3.762</b>	ug/L	0.018	0	92	5636	2	Standard
[> Ge	72		ug/L			33052	26552	0	KED
[ Ni	60	<b>0.369</b>	ug/L	0.018	4	97	549	4	KED
[ Ni	62	<b>0.345</b>	ug/L	0.078	22	15	83	18	KED
[ Cu	63	<b>2.510</b>	ug/L	0.028	1	198	9120	0	KED
[ Cu	65	<b>2.433</b>	ug/L	0.067	2	107	4546	3	KED
[ Zn	66	<b>1.083</b>	ug/L	0.028	2	67	529	2	KED
[ Zn	67	<b>0.817</b>	ug/L	0.129	15	15	71	12	KED
[ As	75	<b>0.036</b>	ug/L	0.011	29	4	11	19	KED
Y	89		ug/L			53627	46118	3	Standard
Kr	83		ug/L			34	36	7	Standard
[> In-1	115		ug/L			7114	5389	1	KED
[ Cd	111	<b>0.017</b>	ug/L	0.006	33	2	5	21	KED
[ Cd	114	<b>0.010</b>	ug/L	0.007	70	0	5	65	KED
[> In	115		ug/L			522018	441133	2	Standard
[ Ag	107	<b>-0.001</b>	ug/L	0.000	46	24	12	31	Standard
[> Tb	159		ug/L			194588	175179	1	Standard
[ Pb	208	<b>0.007</b>	ug/L	0.001	12	589	1111	6	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0139-03**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 02:53:05**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	26767	4	Standard
[> Sc	45		ug/L			579638	504015	1	Standard
[ Cr	52	<b>3.513</b>	ug/L	0.093	2	10138	54463	4	Standard
[ Cr	53	<b>3.463</b>	ug/L	0.043	1	92	5348	3	Standard
[> Ge	72		ug/L			33052	26771	0	KED
[ Ni	60	<b>0.451</b>	ug/L	0.023	5	97	659	4	KED
[ Ni	62	<b>0.489</b>	ug/L	0.039	8	15	113	6	KED
[ Cu	63	<b>2.660</b>	ug/L	0.052	1	198	9732	0	KED
[ Cu	65	<b>2.699</b>	ug/L	0.079	2	107	5073	1	KED
[ Zn	66	<b>1.768</b>	ug/L	0.133	7	67	836	6	KED
[ Zn	67	<b>1.750</b>	ug/L	0.245	13	15	139	13	KED
[ As	75	<b>0.035</b>	ug/L	0.007	21	4	11	15	KED
Y	89		ug/L			53627	46971	2	Standard
Kr	83		ug/L			34	48	12	Standard
[> In-1	115		ug/L			7114	5586	1	KED
[ Cd	111	<b>0.010</b>	ug/L	0.005	47	2	3	25	KED
[ Cd	114	<b>0.010</b>	ug/L	0.004	41	0	5	37	KED
[> In	115		ug/L			522018	433798	0	Standard
[ Ag	107	<b>0.002</b>	ug/L	0.001	54	24	53	34	Standard
[> Tb	159		ug/L			194588	175484	1	Standard
[ Pb	208	<b>0.014</b>	ug/L	0.001	5	589	1719	2	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLC

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 02:57:55

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	20581	4	Standard
[> Sc	45		ug/L			579638	514460	2	Standard
Cr	52	0.023	ug/L	0.028	121	10138	9300	1	Standard
Cr	53	-0.009	ug/L	0.001	15	92	67	3	Standard
[> Ge	72		ug/L			33052	29561	0	KED
Ni	60	0.037	ug/L	0.010	28	97	139	10	KED
Ni	62	0.010	ug/L	0.040	389	15	16	54	KED
Cu	63	-0.030	ug/L	0.002	8	198	57	16	KED
Cu	65	-0.036	ug/L	0.003	6	107	22	22	KED
Zn	66	-0.017	ug/L	0.016	93	67	52	15	KED
Zn	67	-0.107	ug/L	0.041	38	15	5	57	KED
As	75	-0.007	ug/L	0.005	67	4	2	53	KED
Y	89		ug/L			53627	48791	1	Standard
Kr	83		ug/L			34	54	43	Standard
[> In-1	115		ug/L			7114	6083	2	KED
Cd	111	-0.002	ug/L	0.005	315	2	1	69	KED
Cd	114	0.002	ug/L	0.002	123	0	1	90	KED
[> In	115		ug/L			522018	488801	1	Standard
Ag	107	-0.000	ug/L	0.000	49	24	18	11	Standard
[> Tb	159		ug/L			194588	184314	1	Standard
Pb	208	-0.001	ug/L	0.000	30	589	479	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0136-01**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 03:02:15**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	32770	3	Standard
[> Sc	45		ug/L			579638	557739	0	Standard
Cr	52	67.274	ug/L	2.653	3	10138	976668	3	Standard
Cr	53	66.446	ug/L	0.652	0	92	111934	1	Standard
[> Ge	72		ug/L			33052	29236	0	KED
Ni	60	1.121	ug/L	0.050	4	97	1661	3	KED
Ni	62	1.234	ug/L	0.177	14	15	292	14	KED
Cu	63	7.027	ug/L	0.005	0	198	27797	0	KED
Cu	65	6.877	ug/L	0.141	2	107	13973	2	KED
Zn	66	6.382	ug/L	0.084	1	67	3144	1	KED
Zn	67	6.911	ug/L	0.750	10	15	557	9	KED
As	75	2.137	ug/L	0.056	2	4	504	2	KED
Y	89		ug/L			53627	87368	1	Standard
Kr	83		ug/L			34	57	10	Standard
[> In-1	115		ug/L			7114	6172	2	KED
Cd	111	0.003	ug/L	0.007	235	2	2	57	KED
Cd	114	0.015	ug/L	0.010	69	0	8	65	KED
[> In	115		ug/L			522018	485517	3	Standard
Ag	107	0.011	ug/L	0.000	2	24	199	4	Standard
[> Tb	159		ug/L			194588	194873	2	Standard
Pb	208	1.553	ug/L	0.050	3	589	145383	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23E0137-01**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 03:06:34**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			23951	35755	6	Standard
[>	Sc	45	ug/L			579638	535473	2	Standard
	Cr	52	0.338	ug/L	0.032	10138	14033	5	Standard
	Cr	53	0.343	ug/L	0.012	92	639	4	Standard
[>	Ge	72		ug/L		33052	29985	1	KED
	Ni	60	0.275	ug/L	0.028	97	484	6	KED
	Ni	62	0.284	ug/L	0.052	15	80	14	KED
	<b>Cu</b>	63	<b>4.731</b>	ug/L	0.041	198	19250	1	KED
	Cu	65	4.659	ug/L	0.101	107	9738	2	KED
	Zn	66	45.233	ug/L	0.593	67	22489	2	KED
	Zn	67	42.656	ug/L	1.352	15	3456	3	KED
	As	75	0.172	ug/L	0.015	4	45	9	KED
	Y	89		ug/L		53627	51488	2	Standard
	Kr	83		ug/L		34	48	35	Standard
[>	In-1	115		ug/L		7114	6231	1	KED
	Cd	111	0.026	ug/L	0.011	2	7	30	KED
	Cd	114	0.040	ug/L	0.007	0	23	17	KED
[>	In	115		ug/L		522018	499250	1	Standard
	Ag	107	0.004	ug/L	0.001	24	86	10	Standard
[>	Tb	159		ug/L		194588	189397	1	Standard
	Pb	208	0.787	ug/L	0.023	589	71873	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-21**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 03:11:23**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	33248	2	Standard
[> Sc	45		ug/L			579638	537208	1	Standard
Cr	52	0.097	ug/L	0.020	20	10138	10742	2	Standard
Cr	53	0.104	ug/L	0.004	3	92	253	3	Standard
[> Ge	72		ug/L			33052	29942	2	KED
Ni	60	0.000	ug/L	0.010	5753	97	88	17	KED
Ni	62	0.026	ug/L	0.014	53	15	20	14	KED
Cu	63	0.081	ug/L	0.008	9	198	505	6	KED
Cu	65	0.080	ug/L	0.008	10	107	262	4	KED
Zn	66	0.867	ug/L	0.118	13	67	490	11	KED
Zn	67	0.698	ug/L	0.164	23	15	70	16	KED
As	75	0.000	ug/L	0.007	1825	4	4	43	KED
Y	89		ug/L			53627	50819	1	Standard
Kr	83		ug/L			34	50	11	Standard
[> In-1	115		ug/L			7114	6279	2	KED
Cd	111	0.005	ug/L	0.002	39	2	3	17	KED
Cd	114	0.004	ug/L	0.002	46	0	2	39	KED
[> In	115		ug/L			522018	507431	1	Standard
Ag	107	-0.000	ug/L	0.001	2064	24	23	46	Standard
[> Tb	159		ug/L			194588	187192	0	Standard
Pb	208	0.021	ug/L	0.001	6	589	2460	4	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-22**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 03:15:49**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	33216	5	Standard
[> Sc	45		ug/L			579638	540455	2	Standard
Cr	52	<b>0.193</b>	ug/L	0.007	3	10138	12141	2	Standard
Cr	53	<b>0.213</b>	ug/L	0.006	2	92	432	1	Standard
[> Ge	72		ug/L			33052	29934	2	KED
Ni	60	<b>-0.016</b>	ug/L	0.007	43	97	65	13	KED
Ni	62	<b>-0.013</b>	ug/L	0.015	121	15	11	28	KED
<b>Cu</b>	63	<b>0.144</b>	ug/L	0.010	6	198	760	2	KED
Cu	65	<b>0.145</b>	ug/L	0.007	4	107	398	4	KED
<b>Zn</b>	66	<b>0.558</b>	ug/L	0.016	2	67	337	2	KED
Zn	67	<b>0.635</b>	ug/L	0.206	32	15	65	24	KED
<b>As</b>	75	<b>-0.008</b>	ug/L	0.004	48	4	2	48	KED
Y	89		ug/L			53627	51381	1	Standard
Kr	83		ug/L			34	43	45	Standard
[> In-1	115		ug/L			7114	6475	1	KED
Cd	111	<b>-0.005</b>	ug/L	0.004	87	2	0	100	KED
Cd	114	<b>-0.001</b>	ug/L	0.000	18	0	0	91	KED
[> In	115		ug/L			522018	506450	0	Standard
Ag	107	<b>-0.000</b>	ug/L	0.000	27	24	15	13	Standard
[> Tb	159		ug/L			194588	190548	0	Standard
<b>Pb</b>	208	<b>0.003</b>	ug/L	0.001	18	589	829	5	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLD

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 03:20:15

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	21935	7	Standard
[> Sc	45		ug/L			579638	534807	2	Standard
Cr	52	-0.045	ug/L	0.003	6	10138	8736	2	Standard
Cr	53	-0.006	ug/L	0.004	69	92	75	6	Standard
[> Ge	72		ug/L			33052	29971	2	KED
Ni	60	0.025	ug/L	0.011	45	97	123	11	KED
Ni	62	0.043	ug/L	0.040	95	15	24	37	KED
Cu	63	-0.031	ug/L	0.002	6	198	53	16	KED
Cu	65	-0.033	ug/L	0.009	26	107	29	59	KED
Zn	66	-0.013	ug/L	0.015	121	67	54	12	KED
Zn	67	-0.060	ug/L	0.096	158	15	9	80	KED
As	75	-0.009	ug/L	0.009	99	4	1	108	KED
Y	89		ug/L			53627	51479	1	Standard
Kr	83		ug/L			34	55	15	Standard
[> In-1	115		ug/L			7114	6208	1	KED
Cd	111	-0.000	ug/L	0.004	3385	2	1	50	KED
Cd	114	0.001	ug/L	0.004	255	0	1	184	KED
[> In	115		ug/L			522018	496396	1	Standard
Ag	107	-0.001	ug/L	0.000	8	24	8	12	Standard
[> Tb	159		ug/L			194588	186482	2	Standard
Pb	208	-0.001	ug/L	0.000	16	589	459	5	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVE

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 03:24:41

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	22807	7	Standard
[> Sc	45		ug/L			579638	556000	2	Standard
Cr	52	48.851	ug/L	0.760	1	10138	709575	1	Standard
Cr	53	48.141	ug/L	0.705	1	92	80877	3	Standard
[> Ge	72		ug/L			33052	29925	0	KED
Ni	60	50.748	ug/L	0.354	0	97	73083	1	KED
Ni	62	50.531	ug/L	1.699	3	15	11660	3	KED
Cu	63	51.681	ug/L	0.769	1	198	208097	1	KED
Cu	65	50.635	ug/L	1.471	2	107	104669	2	KED
Zn	66	51.834	ug/L	0.857	1	67	25705	1	KED
Zn	67	50.952	ug/L	0.559	1	15	4117	0	KED
As	75	50.274	ug/L	0.907	1	4	12069	1	KED
Y	89		ug/L			53627	50922	0	Standard
Kr	83		ug/L			34	59	6	Standard
[> In-1	115		ug/L			7114	6455	1	KED
Cd	111	50.608	ug/L	1.004	1	2	11844	0	KED
Cd	114	51.083	ug/L	1.456	2	0	30752	1	KED
[> In	115		ug/L			522018	489404	3	Standard
Ag	107	46.320	ug/L	1.660	3	24	744936	0	Standard
[> Tb	159		ug/L			194588	189215	1	Standard
Pb	208	54.914	ug/L	0.055	0	589	4973228	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBE

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 03:31:51

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			23951	22233	3	Standard
[>	Sc	45	ug/L			579638	549986	1	Standard
	Cr	52	ug/L	0.020	40	10138	8905	3	Standard
	Cr	53	ug/L	0.005	36	92	64	12	Standard
[>	Ge	72	ug/L			33052	30190	2	KED
	Ni	60	ug/L	0.003	15	97	57	10	KED
	Ni	62	ug/L	0.013	257	15	13	24	KED
	Cu	63	ug/L	0.004	12	198	38	45	KED
	Cu	65	ug/L	0.002	6	107	15	30	KED
	Zn	66	ug/L	0.013	18	67	26	23	KED
	Zn	67	ug/L	0.024	15	15	1	100	KED
	As	75	ug/L	0.006	114	4	2	56	KED
	Y	89	ug/L			53627	49886	1	Standard
	Kr	83	ug/L			34	40	18	Standard
[>	In-1	115	ug/L			7114	6635	3	KED
	Cd	111	ug/L	0.000	41	2	1		KED
	Cd	114	ug/L	0.002	42	0	3	37	KED
[>	In	115	ug/L			522018	502273	1	Standard
	Ag	107	ug/L	0.002	86	24	62	52	Standard
[>	Tb	159	ug/L			194588	186108	1	Standard
	Pb	208	ug/L	0.002	146	589	411	53	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-11**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 03:36:16**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	31765	4	Standard
[> Sc	45		ug/L			579638	563677	2	Standard
Cr	52	<b>0.516</b>	ug/L	0.028	5	10138	17347	1	Standard
Cr	53	<b>0.528</b>	ug/L	0.028	5	92	987	7	Standard
[> Ge	72		ug/L			33052	31098	3	KED
Ni	60	<b>0.485</b>	ug/L	0.004	0	97	817	3	KED
Ni	62	<b>0.513</b>	ug/L	0.019	3	15	137	2	KED
Cu	63	<b>4.141</b>	ug/L	0.127	3	198	17492	1	KED
Cu	65	<b>4.064</b>	ug/L	0.150	3	107	8818	0	KED
Zn	66	<b>14.845</b>	ug/L	0.550	3	67	7690	1	KED
Zn	67	<b>13.795</b>	ug/L	1.052	7	15	1168	6	KED
As	75	<b>0.979</b>	ug/L	0.034	3	4	248	1	KED
Y	89		ug/L			53627	58044	1	Standard
Kr	83		ug/L			34	40	45	Standard
[> In-1	115		ug/L			7114	6522	1	KED
Cd	111	<b>0.010</b>	ug/L	0.015	148	2	4	81	KED
Cd	114	<b>0.024</b>	ug/L	0.022	92	0	15	90	KED
[> In	115		ug/L			522018	517383	2	Standard
Ag	107	<b>0.005</b>	ug/L	0.001	12	24	112	7	Standard
[> Tb	159		ug/L			194588	192288	0	Standard
Pb	208	<b>0.297</b>	ug/L	0.004	1	589	27902	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-13**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 03:40:42**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	33420	6	Standard
[> Sc	45		ug/L			579638	597184	2	Standard
Cr	52	<b>0.086</b>	ug/L	0.003	3	10138	11761	2	Standard
Cr	53	<b>0.672</b>	ug/L	0.020	3	92	1306	5	Standard
[> Ge	72		ug/L			33052	29672	0	KED
Ni	60	<b>0.873</b>	ug/L	0.063	7	97	1333	7	KED
Ni	62	<b>0.796</b>	ug/L	0.037	4	15	196	3	KED
Cu	63	<b>2.671</b>	ug/L	0.041	1	198	10832	1	KED
Cu	65	<b>2.604</b>	ug/L	0.067	2	107	5428	2	KED
Zn	66	<b>4.566</b>	ug/L	0.064	1	67	2300	0	KED
Zn	67	<b>4.512</b>	ug/L	0.361	8	15	374	8	KED
As	75	<b>8.446</b>	ug/L	0.070	0	4	2013	0	KED
Y	89		ug/L			53627	52902	3	Standard
Kr	83		ug/L			34	40	29	Standard
[> In-1	115		ug/L			7114	6338	3	KED
Cd	111	<b>0.044</b>	ug/L	0.017	39	2	12	35	KED
Cd	114	<b>0.047</b>	ug/L	0.021	45	0	28	48	KED
[> In	115		ug/L			522018	485458	1	Standard
Ag	107	<b>0.007</b>	ug/L	0.001	11	24	130	8	Standard
[> Tb	159		ug/L			194588	190390	1	Standard
Pb	208	<b>0.116</b>	ug/L	0.005	4	589	11107	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-02**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 03:45:01**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	38314	4	Standard
[> Sc	45		ug/L			579638	646981	2	Standard
Cr	52	0.888	ug/L	0.023	2	10138	26120	2	Standard
Cr	53	1.076	ug/L	0.017	1	92	2203	2	Standard
[> Ge	72		ug/L			33052	29945	1	KED
Ni	60	1.543	ug/L	0.011	0	97	2310	0	KED
Ni	62	1.604	ug/L	0.107	6	15	384	5	KED
Cu	63	8.861	ug/L	0.062	0	198	35851	0	KED
Cu	65	8.710	ug/L	0.233	2	107	18094	1	KED
Zn	66	59.363	ug/L	1.858	3	67	29443	1	KED
Zn	67	55.640	ug/L	1.116	2	15	4497	2	KED
As	75	13.552	ug/L	0.241	1	4	3258	0	KED
Y	89		ug/L			53627	53454	1	Standard
Kr	83		ug/L			34	42	31	Standard
[> In-1	115		ug/L			7114	6255	2	KED
Cd	111	0.095	ug/L	0.028	29	2	23	26	KED
Cd	114	0.094	ug/L	0.028	29	0	55	31	KED
[> In	115		ug/L			522018	483384	2	Standard
Ag	107	0.020	ug/L	0.003	14	24	338	11	Standard
[> Tb	159		ug/L			194588	187521	0	Standard
Pb	208	0.498	ug/L	0.005	1	589	45223	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0480-01**

Sample Dil Factor: **5**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 03:49:51**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	70854	3	Standard
[> Sc	45		ug/L			579638	449320	6	Standard
Cr	52	7.887	ug/L	0.328	4	10138	99022	2	Standard
Cr	53	7.426	ug/L	0.154	2	92	10131	4	Standard
[> Ge	72		ug/L			33052	25478	2	KED
Ni	60	1.547	ug/L	0.066	4	97	1969	4	KED
Ni	62	1.644	ug/L	0.112	6	15	334	4	KED
Cu	63	0.100	ug/L	0.014	13	198	497	9	KED
Cu	65	0.093	ug/L	0.018	19	107	246	10	KED
Zn	66	11.574	ug/L	0.487	4	67	4924	2	KED
Zn	67	10.735	ug/L	0.983	9	15	747	6	KED
As	75	0.044	ug/L	0.003	6	4	12	3	KED
Y	89		ug/L			53627	44728	0	Standard
Kr	83		ug/L			34	46	9	Standard
[> In-1	115		ug/L			7114	5192	0	KED
Cd	111	0.170	ug/L	0.024	13	2	33	13	KED
Cd	114	0.224	ug/L	0.028	12	0	108	11	KED
[> In	115		ug/L			522018	411063	1	Standard
Ag	107	0.000	ug/L	0.000	143	24	23	26	Standard
[> Tb	159		ug/L			194588	163966	1	Standard
Pb	208	0.025	ug/L	0.001	5	589	2473	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLE

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 03:57:41

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			23951	20319	5	Standard
[>	Sc	45	ug/L			579638	499605	1	Standard
	Cr	52	ug/L	0.012	25	10138	8150	1	Standard
	Cr	53	ug/L	0.004	73	92	71	6	Standard
[>	Ge	72	ug/L			33052	27777	0	KED
	Ni	60	ug/L	0.014	58	97	50	38	KED
	Ni	62	ug/L	0.031	991	15	12	52	KED
	Cu	63	ug/L	0.004	10	198	38	34	KED
	Cu	65	ug/L	0.001	2	107	20	9	KED
	Zn	66	ug/L	0.043	96	67	36	55	KED
	Zn	67	ug/L	0.097	163	15	8	81	KED
	As	75	ug/L	0.004	52	4	1	50	KED
	Y	89	ug/L			53627	46991	0	Standard
	Kr	83	ug/L			34	40	50	Standard
[>	In-1	115	ug/L			7114	5646	3	KED
	Cd	111	ug/L	0.003	50	2	0	86	KED
	Cd	114	ug/L	0.006	134	0	2	115	KED
[>	In	115	ug/L			522018	478274	1	Standard
	Ag	107	ug/L	0.001	134	24	15	56	Standard
[>	Tb	159	ug/L			194588	177490	1	Standard
	Pb	208	ug/L	0.000	8	589	291	9	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0537-05**

Sample Dil Factor: **5**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 04:02:31**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			23951	25567	1	Standard
[>	Sc	45	ug/L			579638	570472	2	Standard
	<b>Cr</b>	<b>52</b>	ug/L	0.013	34	10138	10522	1	Standard
	Cr	53	ug/L	0.007	4	92	368	5	Standard
[>	Ge	72	ug/L			33052	27813	1	KED
	Ni	60	ug/L	0.020	17	97	238	9	KED
	Ni	62	ug/L	0.051	32	15	46	23	KED
	Cu	63	ug/L	0.008	13	198	394	9	KED
	Cu	65	ug/L	0.007	12	107	198	5	KED
	Zn	66	ug/L	0.053	16	67	201	13	KED
	Zn	67	ug/L	0.135	24	15	53	17	KED
	As	75	ug/L	0.057	6	4	200	5	KED
	Y	89	ug/L			53627	51535	1	Standard
	Kr	83	ug/L			34	35	18	Standard
[>	In-1	115	ug/L			7114	5808	1	KED
	Cd	111	ug/L	0.003	97	2	1	43	KED
	Cd	114	ug/L	0.006	216	0	1	180	KED
[>	In	115	ug/L			522018	466235	0	Standard
	Ag	107	ug/L	0.001	647	24	23	38	Standard
[>	Tb	159	ug/L			194588	184807	1	Standard
	Pb	208	ug/L	0.001	10	589	1353	5	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0120-DUP3**

Sample Dil Factor: **5**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 04:06:50**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	25921	4	Standard
[> Sc	45		ug/L			579638	571398	1	Standard
Cr	52	<b>0.026</b>	ug/L	0.018	67	10138	10378	1	Standard
Cr	53	<b>0.167</b>	ug/L	0.014	8	92	378	6	Standard
[> Ge	72		ug/L			33052	27769	2	KED
Ni	60	<b>0.146</b>	ug/L	0.011	7	97	276	3	KED
Ni	62	<b>0.101</b>	ug/L	0.050	49	15	34	30	KED
Cu	63	<b>0.017</b>	ug/L	0.017	97	198	231	27	KED
Cu	65	<b>0.013</b>	ug/L	0.008	62	107	114	13	KED
Zn	66	<b>0.357</b>	ug/L	0.064	17	67	220	12	KED
Zn	67	<b>0.443</b>	ug/L	0.103	23	15	46	14	KED
As	75	<b>0.944</b>	ug/L	0.075	7	4	213	5	KED
Y	89		ug/L			53627	51598	1	Standard
Kr	83		ug/L			34	38	23	Standard
[> In-1	115		ug/L			7114	5735	1	KED
Cd	111	<b>0.007</b>	ug/L	0.003	39	2	3	17	KED
Cd	114	<b>0.005</b>	ug/L	0.004	80	0	2	73	KED
[> In	115		ug/L			522018	473625	1	Standard
Ag	107	<b>-0.000</b>	ug/L	0.000	51	24	15	25	Standard
[> Tb	159		ug/L			194588	184642	1	Standard
Pb	208	<b>0.006</b>	ug/L	0.000	7	589	1104	4	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0120-MS3**

Sample Dil Factor: **5**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 04:11:40**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	26225	3	Standard
> Sc	45		ug/L			579638	578116	3	Standard
Cr	52	<b>4.784</b>	ug/L	0.234	4	10138	81350	3	Standard
Cr	53	<b>4.812</b>	ug/L	0.226	4	92	8479	1	Standard
> Ge	72		ug/L			33052	28372	0	KED
Ni	60	<b>5.500</b>	ug/L	0.057	1	97	7584	1	KED
Ni	62	<b>5.488</b>	ug/L	0.209	3	15	1212	2	KED
Cu	63	<b>5.297</b>	ug/L	0.107	2	198	20376	2	KED
Cu	65	<b>5.293</b>	ug/L	0.035	0	107	10457	1	KED
Zn	66	<b>17.411</b>	ug/L	0.199	1	67	8225	1	KED
Zn	67	<b>16.806</b>	ug/L	0.629	3	15	1296	2	KED
As	75	<b>6.246</b>	ug/L	0.164	2	4	1424	1	KED
Y	89		ug/L			53627	53132	2	Standard
Kr	83		ug/L			34	51	45	Standard
> In-1	115		ug/L			7114	5936	1	KED
Cd	111	<b>5.302</b>	ug/L	0.017	0	2	1142	1	KED
Cd	114	<b>5.212</b>	ug/L	0.091	1	0	2887	3	KED
> In	115		ug/L			522018	478703	2	Standard
Ag	107	<b>4.852</b>	ug/L	0.119	2	24	76442	4	Standard
> Tb	159		ug/L			194588	185283	0	Standard
Pb	208	<b>5.696</b>	ug/L	0.049	0	589	505647	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0120-MSD3**

Sample Dil Factor: **5**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 04:17:29**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	26543	2	Standard
> Sc	45		ug/L			579638	587593	2	Standard
Cr	52	<b>4.909</b>	ug/L	0.087	1	10138	84614	2	Standard
Cr	53	<b>4.941</b>	ug/L	0.054	1	92	8855	2	Standard
> Ge	72		ug/L			33052	29168	1	KED
Ni	60	<b>5.411</b>	ug/L	0.139	2	97	7671	2	KED
Ni	62	<b>5.517</b>	ug/L	0.086	1	15	1253	1	KED
Cu	63	<b>5.427</b>	ug/L	0.106	1	198	21457	1	KED
Cu	65	<b>5.392</b>	ug/L	0.133	2	107	10947	1	KED
Zn	66	<b>17.608</b>	ug/L	0.518	2	67	8549	1	KED
Zn	67	<b>16.790</b>	ug/L	0.367	2	15	1332	3	KED
As	75	<b>6.344</b>	ug/L	0.141	2	4	1487	0	KED
Y	89		ug/L			53627	54403	3	Standard
Kr	83		ug/L			34	43	19	Standard
> In-1	115		ug/L			7114	6065	1	KED
Cd	111	<b>5.441</b>	ug/L	0.071	1	2	1198	1	KED
Cd	114	<b>5.437</b>	ug/L	0.220	4	0	3075	2	KED
> In	115		ug/L			522018	480828	1	Standard
Ag	107	<b>4.983</b>	ug/L	0.032	0	24	78821	0	Standard
> Tb	159		ug/L			194588	183019	2	Standard
Pb	208	<b>5.992</b>	ug/L	0.152	2	589	525164	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLF

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 04:21:55

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	21528	5	Standard
[> Sc	45		ug/L			579638	504587	2	Standard
Cr	52	-0.049	ug/L	0.013	26	10138	8189	4	Standard
Cr	53	-0.001	ug/L	0.010	914	92	78	20	Standard
[> Ge	72		ug/L			33052	29052	2	KED
Ni	60	-0.027	ug/L	0.002	9	97	48	6	KED
Ni	62	-0.020	ug/L	0.008	39	15	9	20	KED
Cu	63	-0.035	ug/L	0.001	4	198	38	13	KED
Cu	65	-0.041	ug/L	0.002	5	107	12	31	KED
Zn	66	-0.064	ug/L	0.013	20	67	28	24	KED
Zn	67	-0.122	ug/L	0.028	22	15	4	49	KED
As	75	-0.007	ug/L	0.008	108	4	2	81	KED
Y	89		ug/L			53627	49637	1	Standard
Kr	83		ug/L			34	38	20	Standard
[> In-1	115		ug/L			7114	6027	1	KED
Cd	111	-0.003	ug/L	0.007	226	2	1	114	KED
Cd	114	0.000	ug/L	0.002	394	0	0	180	KED
[> In	115		ug/L			522018	479515	1	Standard
Ag	107	-0.000	ug/L	0.000	299	24	20	32	Standard
[> Tb	159		ug/L			194588	179966	0	Standard
Pb	208	-0.003	ug/L	0.000	6	589	288	5	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVF

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 04:26:21

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	21819	4	Standard
[> Sc	45		ug/L			579638	537241	1	Standard
Cr	52	48.713	ug/L	0.418	0	10138	683894	1	Standard
Cr	53	47.716	ug/L	0.941	1	92	77447	2	Standard
[> Ge	72		ug/L			33052	28563	3	KED
Ni	60	50.357	ug/L	1.050	2	97	69185	1	KED
Ni	62	49.360	ug/L	2.641	5	15	10859	2	KED
Cu	63	50.236	ug/L	1.591	3	198	192937	0	KED
Cu	65	49.314	ug/L	2.387	4	107	97191	1	KED
Zn	66	51.840	ug/L	1.972	3	67	24518	1	KED
Zn	67	50.726	ug/L	2.388	4	15	3909	3	KED
As	75	49.845	ug/L	2.221	4	4	11411	2	KED
Y	89		ug/L			53627	50469	1	Standard
Kr	83		ug/L			34	51	9	Standard
[> In-1	115		ug/L			7114	6035	1	KED
Cd	111	50.348	ug/L	1.040	2	2	11017	1	KED
Cd	114	49.801	ug/L	1.740	3	0	28030	2	KED
[> In	115		ug/L			522018	483754	2	Standard
Ag	107	45.747	ug/L	1.559	3	24	727585	1	Standard
[> Tb	159		ug/L			194588	186391	1	Standard
Pb	208	55.271	ug/L	0.646	1	589	4930661	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBF

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 04:33:31

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			23951	21106	1	Standard
[> Sc	45		ug/L			579638	522344	0	Standard
Cr	52	-0.061	ug/L	0.019	31	10138	8310	2	Standard
Cr	53	-0.006	ug/L	0.004	59	92	73	8	Standard
[> Ge	72		ug/L			33052	29478	2	KED
Ni	60	-0.012	ug/L	0.009	77	97	69	16	KED
Ni	62	0.005	ug/L	0.010	201	15	15	12	KED
Cu	63	-0.037	ug/L	0.002	5	198	30	27	KED
Cu	65	-0.038	ug/L	0.004	9	107	18	41	KED
Zn	66	-0.070	ug/L	0.007	9	67	26	15	KED
Zn	67	-0.130	ug/L	0.025	19	15	3	50	KED
As	75	-0.005	ug/L	0.003	62	4	2	26	KED
Y	89		ug/L			53627	49249	1	Standard
Kr	83		ug/L			34	43	24	Standard
[> In-1	115		ug/L			7114	6244	2	KED
Cd	111	-0.002	ug/L	0.009	593	2	1	124	KED
Cd	114	0.002	ug/L	0.004	251	0	1	184	KED
[> In	115		ug/L			522018	496790	2	Standard
Ag	107	0.001	ug/L	0.001	101	24	40	40	Standard
[> Tb	159		ug/L			194588	181353	2	Standard
Pb	208	-0.003	ug/L	0.000	9	589	283	9	Standard

## ICP-MS Quantitative Analysis - Summary Report

**Sample ID: SEQ-CAL1**

**Sample Dil Factor:**

**Comments:**

**Sample Date/Time: Thursday, May 11, 2023 04:37:57**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	<b>C</b>	<b>13</b>	ug/L				21210	4	Standard
[>	<b>Sc</b>	<b>45</b>	ug/L				512571	4	Standard
	<b>Cr</b>	<b>52</b>	ug/L				7952	2	Standard
	<b>Cr</b>	<b>53</b>	ug/L				75	19	Standard
[>	<b>Ge</b>	<b>72</b>	ug/L				28784	1	KED
	<b>Ni</b>	<b>60</b>	ug/L				75	11	KED
	<b>Ni</b>	<b>62</b>	ug/L				12	56	KED
	<b>Cu</b>	<b>63</b>	ug/L				53	8	KED
	<b>Cu</b>	<b>65</b>	ug/L				25	37	KED
	<b>Zn</b>	<b>66</b>	ug/L				52	8	KED
	<b>Zn</b>	<b>67</b>	ug/L				8	13	KED
	<b>As</b>	<b>75</b>	ug/L				3	33	KED
	<b>Y</b>	<b>89</b>	ug/L				50088	0	Standard
	<b>Kr</b>	<b>83</b>	ug/L				44	32	Standard
[>	<b>In-1</b>	<b>115</b>	ug/L				6034	0	KED
	<b>Cd</b>	<b>111</b>	ug/L				1	34	KED
	<b>Cd</b>	<b>114</b>	ug/L				1	102	KED
[>	<b>In</b>	<b>115</b>	ug/L				486697	0	Standard
	<b>Ag</b>	<b>107</b>	ug/L				29	39	Standard
[>	<b>Tb</b>	<b>159</b>	ug/L				178618	1	Standard
	<b>Pb</b>	<b>208</b>	ug/L				534	9	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVG

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 04:42:23

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	22837	2	Standard
[> Sc	45		ug/L			512571	535240	2	Standard
Cr	52	49.491	ug/L	0.986	1	7952	690998	3	Standard
Cr	53	48.754	ug/L	0.390	0	75	78819	1	Standard
[> Ge	72		ug/L			28784	29525	1	KED
Ni	60	50.055	ug/L	0.415	0	75	71110	0	KED
Ni	62	49.979	ug/L	1.344	2	12	11377	1	KED
Cu	63	50.840	ug/L	1.123	2	53	201840	1	KED
Cu	65	49.659	ug/L	0.970	1	25	101204	1	KED
Zn	66	50.552	ug/L	0.931	1	52	24728	0	KED
Zn	67	49.626	ug/L	2.134	4	8	3950	3	KED
As	75	48.478	ug/L	0.311	0	3	11483	0	KED
Y	89		ug/L			50088	50850	3	Standard
Kr	83		ug/L			44	46	16	Standard
[> In-1	115		ug/L			6034	6252	1	KED
Cd	111	49.549	ug/L	0.377	0	1	11233	2	KED
Cd	114	50.157	ug/L	0.178	0	1	29252	1	KED
[> In	115		ug/L			486697	479759	2	Standard
Ag	107	46.667	ug/L	0.707	1	29	736349	2	Standard
[> Tb	159		ug/L			178618	186665	1	Standard
Pb	208	55.001	ug/L	1.042	1	534	4913677	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBG

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 04:49:32

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			21210	21997	3	Standard
[>	Sc	45	ug/L			512571	533122	1	Standard
	Cr	52	0.014	0.006	43	7952	8458	2	Standard
	Cr	53	-0.009	0.006	71	75	64	15	Standard
[>	Ge	72	ug/L			28784	29712	0	KED
	Ni	60	-0.021	0.008	39	75	48	24	KED
	Ni	62	-0.024	0.000	0	12	7	0	KED
	Cu	63	-0.005	0.001	17	53	36	9	KED
	Cu	65	-0.004	0.002	41	25	17	22	KED
	Zn	66	-0.068	0.025	37	52	20	59	KED
	Zn	67	-0.059	0.041	70	8	3	86	KED
	As	75	-0.003	0.005	212	3	3	37	KED
	Y	89	ug/L			50088	49727	2	Standard
	Kr	83	ug/L			44	43	24	Standard
[>	In-1	115	ug/L			6034	6050	0	KED
	Cd	111	-0.004	0.003	57	1	0	86	KED
	Cd	114	0.000	0.004	6243	1	1	192	KED
[>	In	115	ug/L			486697	490182	1	Standard
	Ag	107	0.001	0.001	61	29	45	23	Standard
[>	Tb	159	ug/L			178618	181329	1	Standard
	Pb	208	-0.003	0.001	22	534	307	18	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-04**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 04:53:59**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	41125	4	Standard
[> Sc	45		ug/L			512571	553406	2	Standard
Cr	52	0.370	ug/L	0.014	3	7952	13862	0	Standard
Cr	53	0.421	ug/L	0.015	3	75	784	3	Standard
[> Ge	72		ug/L			28784	29957	1	KED
Ni	60	0.870	ug/L	0.040	4	75	1330	3	KED
Ni	62	0.872	ug/L	0.054	6	12	214	6	KED
Cu	63	2.805	ug/L	0.089	3	53	11350	2	KED
Cu	65	2.680	ug/L	0.062	2	25	5568	2	KED
Zn	66	10.735	ug/L	0.292	2	52	5370	1	KED
Zn	67	10.167	ug/L	0.647	6	8	827	5	KED
As	75	1.857	ug/L	0.005	0	3	450	1	KED
Y	89		ug/L			50088	52074	0	Standard
Kr	83		ug/L			44	43	2	Standard
[> In-1	115		ug/L			6034	6279	0	KED
Cd	111	0.015	ug/L	0.005	32	1	5	21	KED
Cd	114	0.018	ug/L	0.004	21	1	11	19	KED
[> In	115		ug/L			486697	500655	1	Standard
Ag	107	0.002	ug/L	0.001	40	29	55	19	Standard
[> Tb	159		ug/L			178618	186090	1	Standard
Pb	208	0.043	ug/L	0.002	3	534	4388	2	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-06**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 04:58:24**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	37818	3	Standard
[> Sc	45		ug/L			512571	620959	3	Standard
Cr	52	0.750	ug/L	0.035	4	7952	21630	0	Standard
Cr	53	0.850	ug/L	0.037	4	75	1682	2	Standard
[> Ge	72		ug/L			28784	28362	2	KED
Ni	60	1.873	ug/L	0.124	6	75	2627	7	KED
Ni	62	2.080	ug/L	0.104	5	12	466	2	KED
Cu	63	6.207	ug/L	0.041	0	53	23720	1	KED
Cu	65	5.944	ug/L	0.210	3	25	11654	1	KED
Zn	66	13.939	ug/L	0.181	1	52	6588	1	KED
Zn	67	13.056	ug/L	0.606	4	8	1005	6	KED
As	75	13.044	ug/L	0.191	1	3	2970	0	KED
Y	89		ug/L			50088	52960	3	Standard
Kr	83		ug/L			44	37	12	Standard
[> In-1	115		ug/L			6034	5947	1	KED
Cd	111	0.186	ug/L	0.014	7	1	41	5	KED
Cd	114	0.208	ug/L	0.016	7	1	116	6	KED
[> In	115		ug/L			486697	479901	1	Standard
Ag	107	0.012	ug/L	0.001	8	29	218	5	Standard
[> Tb	159		ug/L			178618	184864	1	Standard
Pb	208	0.644	ug/L	0.011	1	534	57486	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-08**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:02:49**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	35079	4	Standard
[> Sc	45		ug/L			512571	617244	2	Standard
Cr	52	0.125	ug/L	0.020	15	7952	11566	2	Standard
Cr	53	0.244	ug/L	0.006	2	75	546	4	Standard
[> Ge	72		ug/L			28784	27855	1	KED
Ni	60	0.829	ug/L	0.066	7	75	1181	6	KED
Ni	62	0.946	ug/L	0.098	10	12	215	9	KED
Cu	63	3.890	ug/L	0.068	1	53	14619	1	KED
Cu	65	3.923	ug/L	0.106	2	25	7565	1	KED
Zn	66	3.697	ug/L	0.051	1	52	1753	2	KED
Zn	67	3.953	ug/L	0.258	6	8	304	5	KED
As	75	20.959	ug/L	0.676	3	3	4684	1	KED
Y	89		ug/L			50088	50382	1	Standard
Kr	83		ug/L			44	40	12	Standard
[> In-1	115		ug/L			6034	5808	2	KED
Cd	111	0.055	ug/L	0.019	34	1	13	27	KED
Cd	114	0.072	ug/L	0.029	40	1	40	39	KED
[> In	115		ug/L			486697	470446	1	Standard
Ag	107	0.006	ug/L	0.000	7	29	123	6	Standard
[> Tb	159		ug/L			178618	183524	1	Standard
Pb	208	0.140	ug/L	0.003	1	534	12872	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-10**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:07:14**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	36815	5	Standard
[> Sc	45		ug/L			512571	612003	2	Standard
Cr	52	0.190	ug/L	0.013	7	7952	12489	1	Standard
Cr	53	0.324	ug/L	0.013	4	75	687	5	Standard
[> Ge	72		ug/L			28784	27936	0	KED
Ni	60	0.814	ug/L	0.060	7	75	1165	6	KED
Ni	62	0.884	ug/L	0.083	9	12	202	8	KED
Cu	63	3.939	ug/L	0.170	4	53	14843	3	KED
Cu	65	3.916	ug/L	0.044	1	25	7575	0	KED
Zn	66	4.135	ug/L	0.215	5	52	1961	5	KED
Zn	67	4.277	ug/L	0.228	5	8	329	4	KED
As	75	20.891	ug/L	0.311	1	3	4684	0	KED
Y	89		ug/L			50088	50782	1	Standard
Kr	83		ug/L			44	56	10	Standard
[> In-1	115		ug/L			6034	5897	1	KED
Cd	111	0.072	ug/L	0.012	16	1	16	14	KED
Cd	114	0.084	ug/L	0.026	31	1	47	31	KED
[> In	115		ug/L			486697	476512	1	Standard
Ag	107	0.005	ug/L	0.001	21	29	111	17	Standard
[> Tb	159		ug/L			178618	184815	0	Standard
Pb	208	0.113	ug/L	0.001	0	534	10555	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-12**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:11:39**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	37614	3	Standard
[> Sc	45		ug/L			512571	541924	1	Standard
Cr	52	0.444	ug/L	0.005	1	7952	14603	1	Standard
Cr	53	0.458	ug/L	0.009	2	75	828	2	Standard
[> Ge	72		ug/L			28784	29366	1	KED
Ni	60	0.438	ug/L	0.038	8	75	694	6	KED
Ni	62	0.467	ug/L	0.046	9	12	118	9	KED
Cu	63	4.007	ug/L	0.099	2	53	15872	0	KED
Cu	65	3.821	ug/L	0.120	3	25	7768	2	KED
Zn	66	15.485	ug/L	0.769	4	52	7568	3	KED
Zn	67	14.598	ug/L	0.300	2	8	1161	2	KED
As	75	1.412	ug/L	0.061	4	3	336	5	KED
Y	89		ug/L			50088	54650	2	Standard
Kr	83		ug/L			44	40	21	Standard
[> In-1	115		ug/L			6034	6075	2	KED
Cd	111	0.006	ug/L	0.008	134	1	2	57	KED
Cd	114	0.005	ug/L	0.010	194	1	4	138	KED
[> In	115		ug/L			486697	485971	1	Standard
Ag	107	0.001	ug/L	0.001	66	29	45	23	Standard
[> Tb	159		ug/L			178618	187970	2	Standard
Pb	208	0.026	ug/L	0.001	3	534	2930	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-20**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:16:05**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	40097	3	Standard
[> Sc	45		ug/L			512571	603458	1	Standard
Cr	52	<b>0.809</b>	ug/L	0.013	1	7952	21936	1	Standard
Cr	53	<b>0.815</b>	ug/L	0.006	0	75	1573	2	Standard
[> Ge	72		ug/L			28784	28977	2	KED
Ni	60	<b>1.925</b>	ug/L	0.145	7	75	2754	5	KED
Ni	62	<b>1.888</b>	ug/L	0.139	7	12	433	5	KED
Cu	63	<b>8.198</b>	ug/L	0.187	2	53	31985	1	KED
Cu	65	<b>8.011</b>	ug/L	0.219	2	25	16040	1	KED
Zn	66	<b>2.547</b>	ug/L	0.146	5	52	1273	5	KED
Zn	67	<b>2.986</b>	ug/L	0.210	7	8	241	8	KED
As	75	<b>2.558</b>	ug/L	0.105	4	3	598	5	KED
Y	89		ug/L			50088	93417	2	Standard
Kr	83		ug/L			44	48	4	Standard
[> In-1	115		ug/L			6034	6056	1	KED
Cd	111	<b>0.001</b>	ug/L	0.004	303	1	1	50	KED
Cd	114	<b>0.013</b>	ug/L	0.008	56	1	8	49	KED
[> In	115		ug/L			486697	499578	1	Standard
Ag	107	<b>0.009</b>	ug/L	0.001	8	29	184	6	Standard
[> Tb	159		ug/L			178618	188351	0	Standard
Pb	208	<b>0.237</b>	ug/L	0.005	1	534	21965	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0106-DUP1**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:20:30**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	41033	4	Standard
[> Sc	45		ug/L			512571	600732	2	Standard
Cr	52	0.798	ug/L	0.026	3	7952	21676	3	Standard
Cr	53	0.812	ug/L	0.040	4	75	1561	6	Standard
[> Ge	72		ug/L			28784	29419	1	KED
Ni	60	1.815	ug/L	0.049	2	75	2643	0	KED
Ni	62	1.980	ug/L	0.134	6	12	461	6	KED
Cu	63	8.139	ug/L	0.123	1	53	32242	0	KED
Cu	65	8.017	ug/L	0.020	0	25	16304	1	KED
Zn	66	2.465	ug/L	0.142	5	52	1252	4	KED
Zn	67	2.747	ug/L	0.140	5	8	226	6	KED
As	75	2.471	ug/L	0.116	4	3	586	2	KED
Y	89		ug/L			50088	90128	3	Standard
Kr	83		ug/L			44	61	25	Standard
[> In-1	115		ug/L			6034	6203	0	KED
Cd	111	0.010	ug/L	0.007	76	1	3	43	KED
Cd	114	0.008	ug/L	0.004	42	1	6	34	KED
[> In	115		ug/L			486697	491241	1	Standard
Ag	107	0.008	ug/L	0.001	9	29	165	7	Standard
[> Tb	159		ug/L			178618	190226	0	Standard
Pb	208	0.240	ug/L	0.006	2	534	22402	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0106-MS1**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:24:50**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	39760	3	Standard
[> Sc	45		ug/L			512571	584445	1	Standard
Cr	52	24.504	ug/L	0.768	3	7952	378151	3	Standard
Cr	53	24.330	ug/L	0.333	1	75	42999	2	Standard
[> Ge	72		ug/L			28784	29130	0	KED
Ni	60	29.233	ug/L	0.300	1	75	41006	0	KED
Ni	62	28.687	ug/L	1.279	4	12	6447	3	KED
Cu	63	35.588	ug/L	0.038	0	53	139434	0	KED
Cu	65	35.292	ug/L	0.441	1	25	70972	0	KED
Zn	66	85.618	ug/L	1.238	1	52	41287	0	KED
Zn	67	85.737	ug/L	1.395	1	8	6729	1	KED
As	75	28.239	ug/L	0.482	1	3	6601	0	KED
Y	89		ug/L			50088	90513	2	Standard
Kr	83		ug/L			44	48	20	Standard
[> In-1	115		ug/L			6034	6109	2	KED
Cd	111	26.780	ug/L	0.465	1	1	5932	0	KED
Cd	114	26.945	ug/L	0.773	2	1	15357	3	KED
[> In	115		ug/L			486697	492130	1	Standard
Ag	107	24.738	ug/L	0.495	2	29	400420	2	Standard
[> Tl	159		ug/L			178618	191727	1	Standard
Pb	208	29.314	ug/L	0.364	1	534	2689958	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0106-MSD1**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:29:39**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	38779	2	Standard
[> Sc	45		ug/L			512571	593612	0	Standard
Cr	52	24.128	ug/L	0.502	2	7952	378325	1	Standard
Cr	53	23.584	ug/L	0.272	1	75	42336	1	Standard
[> Ge	72		ug/L			28784	29134	1	KED
Ni	60	28.208	ug/L	0.262	0	75	39574	1	KED
Ni	62	28.944	ug/L	0.377	1	12	6506	1	KED
Cu	63	35.573	ug/L	0.102	0	53	139393	1	KED
Cu	65	35.339	ug/L	0.595	1	25	71081	2	KED
Zn	66	89.540	ug/L	0.536	0	52	43185	2	KED
Zn	67	85.104	ug/L	1.844	2	8	6679	0	KED
As	75	27.745	ug/L	0.236	0	3	6486	1	KED
Y	89		ug/L			50088	91556	2	Standard
Kr	83		ug/L			44	59	21	Standard
[> In-1	115		ug/L			6034	6041	2	KED
Cd	111	26.686	ug/L	0.564	2	1	5845	0	KED
Cd	114	26.924	ug/L	1.283	4	1	15164	2	KED
[> In	115		ug/L			486697	492919	2	Standard
Ag	107	24.337	ug/L	1.058	4	29	394333	2	Standard
[> Tb	159		ug/L			178618	189477	1	Standard
Pb	208	29.445	ug/L	0.796	2	534	2669694	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLG

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 05:33:59

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	23042	4	Standard
[> Sc	45		ug/L			512571	504065	2	Standard
Cr	52	0.021	ug/L	0.003	14	7952	8096	2	Standard
Cr	53	0.004	ug/L	0.004	98	75	80	8	Standard
[> Ge	72		ug/L			28784	29215	1	KED
Ni	60	-0.017	ug/L	0.006	36	75	52	16	KED
Ni	62	-0.032	ug/L	0.022	68	12	5	88	KED
Cu	63	-0.004	ug/L	0.002	43	53	40	17	KED
Cu	65	-0.002	ug/L	0.004	230	25	22	39	KED
Zn	66	-0.055	ug/L	0.018	32	52	26	31	KED
Zn	67	-0.018	ug/L	0.028	158	8	6	31	KED
As	75	-0.007	ug/L	0.001	16	3	2	12	KED
Y	89		ug/L			50088	47701	0	Standard
Kr	83		ug/L			44	36	21	Standard
[> In-1	115		ug/L			6034	6006	0	KED
Cd	111	0.001	ug/L	0.009	596	1	1	100	KED
Cd	114	0.002	ug/L	0.005	220	1	2	118	KED
[> In	115		ug/L			486697	485981	4	Standard
Ag	107	0.003	ug/L	0.002	91	29	71	52	Standard
[> Tb	159		ug/L			178618	179589	0	Standard
Pb	208	0.000	ug/L	0.006	1138	534	580	82	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVH

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 05:38:25

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	23250	6	Standard
[> Sc	45		ug/L			512571	528228	1	Standard
Cr	52	49.500	ug/L	0.901	1	7952	681993	1	Standard
Cr	53	48.349	ug/L	0.150	0	75	77149	1	Standard
[> Ge	72		ug/L			28784	30008	0	KED
Ni	60	48.196	ug/L	0.665	1	75	69599	1	KED
Ni	62	47.638	ug/L	0.836	1	12	11023	1	KED
Cu	63	48.752	ug/L	0.851	1	53	196743	1	KED
Cu	65	49.349	ug/L	0.352	0	25	102234	1	KED
Zn	66	49.407	ug/L	0.678	1	52	24567	0	KED
Zn	67	49.504	ug/L	0.874	1	8	4006	1	KED
As	75	48.304	ug/L	0.703	1	3	11630	1	KED
Y	89		ug/L			50088	50276	3	Standard
Kr	83		ug/L			44	66	8	Standard
[> In-1	115		ug/L			6034	6120	0	KED
Cd	111	51.184	ug/L	0.659	1	1	11358	0	KED
Cd	114	51.083	ug/L	0.638	1	1	29165	1	KED
[> In	115		ug/L			486697	478764	0	Standard
Ag	107	46.724	ug/L	0.422	0	29	735777	0	Standard
[> Tb	159		ug/L			178618	184982	1	Standard
Pb	208	55.526	ug/L	1.157	2	534	4914953	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBH

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 05:45:34

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			21210	22826	1	Standard
[>	Sc	45		ug/L			512571	514605	2	Standard
	Cr	52	-0.006	ug/L	0.008	138	7952	7911	3	Standard
	Cr	53	-0.008	ug/L	0.004	46	75	63	11	Standard
[>	Ge	72		ug/L			28784	29448	0	KED
	Ni	60	-0.017	ug/L	0.016	91	75	53	40	KED
	Ni	62	-0.007	ug/L	0.017	238	12	11	33	KED
	Cu	63	-0.004	ug/L	0.007	195	53	40	68	KED
	Cu	65	-0.003	ug/L	0.001	21	25	20	5	KED
	Zn	66	-0.051	ug/L	0.018	36	52	29	30	KED
	Zn	67	-0.082	ug/L	0.024	29	8	1	100	KED
	As	75	0.006	ug/L	0.006	98	3	5	26	KED
	Y	89		ug/L			50088	48607	1	Standard
	Kr	83		ug/L			44	52	12	Standard
[>	In-1	115		ug/L			6034	6091	2	KED
	Cd	111	-0.003	ug/L	0.004	139	1	0	100	KED
	Cd	114	0.002	ug/L	0.002	90	1	2	45	KED
[>	In	115		ug/L			486697	473300	0	Standard
	Ag	107	0.001	ug/L	0.000	11	29	50	5	Standard
[>	Tb	159		ug/L			178618	179990	0	Standard
	Pb	208	-0.003	ug/L	0.001	15	534	251	17	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-14**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:50:01**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	40592	5	Standard
[> Sc	45		ug/L			512571	625583	3	Standard
Cr	52	0.332	ug/L	0.007	1	7952	15056	3	Standard
Cr	53	1.924	ug/L	0.015	0	75	3723	3	Standard
[> Ge	72		ug/L			28784	28463	2	KED
Ni	60	1.957	ug/L	0.061	3	75	2750	1	KED
Ni	62	2.020	ug/L	0.030	1	12	455	1	KED
Cu	63	9.385	ug/L	0.272	2	53	35960	2	KED
Cu	65	9.404	ug/L	0.188	2	25	18493	0	KED
Zn	66	10.817	ug/L	0.187	1	52	5141	1	KED
Zn	67	11.789	ug/L	0.263	2	8	911	2	KED
As	75	20.812	ug/L	0.559	2	3	4753	0	KED
Y	89		ug/L			50088	53972	1	Standard
Kr	83		ug/L			44	42	15	Standard
[> In-1	115		ug/L			6034	6071	0	KED
Cd	111	0.141	ug/L	0.013	8	1	32	8	KED
Cd	114	0.100	ug/L	0.004	4	1	57	5	KED
[> In	115		ug/L			486697	454002	2	Standard
Ag	107	0.026	ug/L	0.002	7	29	414	5	Standard
[> Tb	159		ug/L			178618	181226	2	Standard
Pb	208	0.990	ug/L	0.014	1	534	86358	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-16**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:54:26**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	43420	6	Standard
[> Sc	45		ug/L			512571	546125	1	Standard
Cr	52	0.647	ug/L	0.033	5	7952	17577	4	Standard
Cr	53	0.675	ug/L	0.033	4	75	1193	4	Standard
[> Ge	72		ug/L			28784	30240	0	KED
Ni	60	0.675	ug/L	0.035	5	75	1059	4	KED
Ni	62	0.602	ug/L	0.023	3	12	153	3	KED
Cu	63	5.711	ug/L	0.106	1	53	23274	1	KED
Cu	65	5.569	ug/L	0.142	2	25	11649	2	KED
Zn	66	29.892	ug/L	0.254	0	52	15000	0	KED
Zn	67	28.725	ug/L	0.734	2	8	2346	2	KED
[ As	75	3.914	ug/L	0.061	1	3	953	1	KED
Y	89		ug/L			50088	54733	0	Standard
Kr	83		ug/L			44	45	8	Standard
[> In-1	115		ug/L			6034	6139	2	KED
Cd	111	0.037	ug/L	0.002	5	1	9	5	KED
Cd	114	0.014	ug/L	0.004	28	1	8	22	KED
[> In	115		ug/L			486697	497849	1	Standard
Ag	107	0.003	ug/L	0.001	25	29	85	15	Standard
[> Tb	159		ug/L			178618	190840	1	Standard
[ Pb	208	0.300	ug/L	0.005	1	534	27994	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-18**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 05:58:51**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	41506	5	Standard
[> Sc	45		ug/L			512571	563971	1	Standard
Cr	52	0.879	ug/L	0.056	6	7952	21514	2	Standard
Cr	53	0.921	ug/L	0.009	1	75	1650	1	Standard
[> Ge	72		ug/L			28784	29591	0	KED
Ni	60	0.841	ug/L	0.034	4	75	1274	4	KED
Ni	62	0.988	ug/L	0.174	17	12	238	16	KED
Cu	63	3.718	ug/L	0.097	2	53	14845	2	KED
Cu	65	3.603	ug/L	0.056	1	25	7384	1	KED
Zn	66	16.875	ug/L	0.347	2	52	8310	1	KED
Zn	67	16.131	ug/L	1.579	9	8	1292	9	KED
[ As	75	1.797	ug/L	0.041	2	3	430	1	KED
Y	89		ug/L			50088	56214	2	Standard
Kr	83		ug/L			44	30	21	Standard
[> In-1	115		ug/L			6034	6314	4	KED
Cd	111	0.008	ug/L	0.006	69	1	3	31	KED
Cd	114	0.011	ug/L	0.006	60	1	7	52	KED
[> In	115		ug/L			486697	482029	1	Standard
Ag	107	0.005	ug/L	0.001	24	29	115	18	Standard
[> Tb	159		ug/L			178618	192728	0	Standard
[ Pb	208	0.200	ug/L	0.003	1	534	19033	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-01**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:03:17**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	35873	2	Standard
[> Sc	45		ug/L			512571	619987	1	Standard
Cr	52	1.104	ug/L	0.004	0	7952	27252	2	Standard
Cr	53	1.258	ug/L	0.032	2	75	2444	3	Standard
[> Ge	72		ug/L			28784	29585	1	KED
Ni	60	1.906	ug/L	0.066	3	75	2788	4	KED
Ni	62	1.874	ug/L	0.068	3	12	440	2	KED
Cu	63	11.407	ug/L	0.361	3	53	45418	2	KED
Cu	65	10.967	ug/L	0.111	1	25	22416	0	KED
Zn	66	60.525	ug/L	0.205	0	52	29659	1	KED
Zn	67	58.668	ug/L	1.256	2	8	4678	1	KED
As	75	14.694	ug/L	0.332	2	3	3490	1	KED
Y	89		ug/L			50088	54055	0	Standard
Kr	83		ug/L			44	48	13	Standard
[> In-1	115		ug/L			6034	6021	0	KED
Cd	111	0.100	ug/L	0.018	17	1	23	16	KED
Cd	114	0.090	ug/L	0.014	15	1	51	15	KED
[> In	115		ug/L			486697	482814	0	Standard
Ag	107	0.034	ug/L	0.002	6	29	575	6	Standard
[> Tb	159		ug/L			178618	185868	0	Standard
Pb	208	1.077	ug/L	0.010	0	534	96390	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-03**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:07:42**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	43263	3	Standard
[> Sc	45		ug/L			512571	531042	1	Standard
Cr	52	0.707	ug/L	0.019	2	7952	17913	1	Standard
Cr	53	0.767	ug/L	0.021	2	75	1306	3	Standard
[> Ge	72		ug/L			28784	29609	0	KED
Ni	60	0.786	ug/L	0.054	6	75	1195	5	KED
Ni	62	0.839	ug/L	0.050	5	12	204	5	KED
Cu	63	5.822	ug/L	0.067	1	53	23229	0	KED
Cu	65	5.535	ug/L	0.116	2	25	11336	1	KED
Zn	66	13.078	ug/L	0.235	1	52	6456	0	KED
Zn	67	12.540	ug/L	0.549	4	8	1007	4	KED
[ As	75	1.716	ug/L	0.082	4	3	411	5	KED
Y	89		ug/L			50088	53989	0	Standard
Kr	83		ug/L			44	57	29	Standard
[> In-1	115		ug/L			6034	6197	2	KED
Cd	111	0.015	ug/L	0.005	29	1	5	21	KED
Cd	114	0.014	ug/L	0.014	94	1	9	80	KED
[> In	115		ug/L			486697	493755	1	Standard
Ag	107	0.089	ug/L	0.007	7	29	1466	6	Standard
[> Tb	159		ug/L			178618	188017	0	Standard
[ Pb	208	0.305	ug/L	0.004	1	534	28030	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-07**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:12:07**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	36616	2	Standard
[> Sc	45		ug/L			512571	609800	2	Standard
Cr	52	0.487	ug/L	0.028	5	7952	17107	3	Standard
Cr	53	0.596	ug/L	0.001	0	75	1187	2	Standard
[> Ge	72		ug/L			28784	28812	2	KED
Ni	60	1.347	ug/L	0.050	3	75	1939	0	KED
Ni	62	1.268	ug/L	0.098	7	12	293	6	KED
Cu	63	10.734	ug/L	0.298	2	53	41615	0	KED
Cu	65	10.264	ug/L	0.203	1	25	20429	0	KED
Zn	66	7.755	ug/L	0.118	1	52	3746	1	KED
Zn	67	8.262	ug/L	0.482	5	8	648	3	KED
As	75	27.631	ug/L	0.581	2	3	6386	0	KED
Y	89		ug/L			50088	52863	1	Standard
Kr	83		ug/L			44	45	7	Standard
[> In-1	115		ug/L			6034	5973	0	KED
Cd	111	0.142	ug/L	0.021	14	1	32	13	KED
Cd	114	0.136	ug/L	0.023	17	1	76	16	KED
[> In	115		ug/L			486697	471762	1	Standard
Ag	107	0.032	ug/L	0.001	3	29	520	5	Standard
[> Tb	159		ug/L			178618	184829	1	Standard
Pb	208	2.682	ug/L	0.056	2	534	237695	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-09**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:16:32**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	35157	5	Standard
[> Sc	45		ug/L			512571	618826	2	Standard
Cr	52	0.520	ug/L	0.025	4	7952	17896	2	Standard
Cr	53	0.627	ug/L	0.026	4	75	1260	3	Standard
[> Ge	72		ug/L			28784	28728	0	KED
Ni	60	1.391	ug/L	0.040	2	75	1996	3	KED
Ni	62	1.401	ug/L	0.054	3	12	322	2	KED
Cu	63	10.972	ug/L	0.175	1	53	42431	1	KED
Cu	65	10.761	ug/L	0.087	0	25	21361	0	KED
Zn	66	7.901	ug/L	0.123	1	52	3805	2	KED
Zn	67	8.117	ug/L	0.560	6	8	635	6	KED
As	75	29.103	ug/L	0.478	1	3	6709	1	KED
Y	89		ug/L			50088	55720	3	Standard
Kr	83		ug/L			44	47	21	Standard
[> In-1	115		ug/L			6034	6067	2	KED
Cd	111	0.152	ug/L	0.036	23	1	35	24	KED
Cd	114	0.154	ug/L	0.026	16	1	88	18	KED
[> In	115		ug/L			486697	464844	1	Standard
Ag	107	0.031	ug/L	0.002	7	29	503	6	Standard
[> Tb	159		ug/L			178618	185300	1	Standard
Pb	208	2.712	ug/L	0.064	2	534	240965	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0477-15**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:20:52**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc.	Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13			ug/L			21210	39624	4	Standard
[> Sc	45			ug/L			512571	537265	2	Standard
Cr	52	1.179		ug/L	0.044	3	7952	24668	3	Standard
Cr	53	1.177		ug/L	0.016	1	75	1987	3	Standard
[> Ge	72			ug/L			28784	29689	1	KED
Ni	60	1.227		ug/L	0.038	3	75	1828	1	KED
Ni	62	1.280		ug/L	0.124	9	12	306	10	KED
Cu	63	25.781		ug/L	1.054	4	53	102918	2	KED
<b>Cu</b>	<b>65</b>	<b>25.054</b>		ug/L	0.251	1	25	51356	0	KED
<b>Zn</b>	<b>66</b>	<b>49.987</b>		ug/L	1.395	2	52	24584	1	KED
Zn	67	48.808		ug/L	1.051	2	8	3907	0	KED
<b>As</b>	<b>75</b>	<b>7.808</b>		ug/L	0.282	3	3	1862	2	KED
Y	89			ug/L			50088	56736	3	Standard
Kr	83			ug/L			44	47	12	Standard
[> In-1	115			ug/L			6034	6201	2	KED
Cd	111	0.093		ug/L	0.012	13	1	22	9	KED
Cd	114	0.076		ug/L	0.022	28	1	44	25	KED
[> In	115			ug/L			486697	493967	0	Standard
Ag	107	0.082		ug/L	0.002	2	29	1368	2	Standard
[> Tb	159			ug/L			178618	190178	2	Standard
Pb	208	5.513		ug/L	0.179	3	534	502033	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0487-02**

Sample Dil Factor: **5**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:26:41**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	35825	0	Standard
[> Sc	45		ug/L			512571	562560	1	Standard
Cr	52	1.220	ug/L	0.017	1	7952	26415	1	Standard
Cr	53	1.264	ug/L	0.015	1	75	2229	1	Standard
[> Ge	72		ug/L			28784	29752	1	KED
Ni	60	6.548	ug/L	0.096	1	75	9441	0	KED
Ni	62	6.686	ug/L	0.384	5	12	1544	5	KED
Cu	63	0.176	ug/L	0.010	5	53	761	4	KED
Cu	65	0.180	ug/L	0.017	9	25	395	8	KED
Zn	66	0.527	ug/L	0.056	10	52	313	7	KED
Zn	67	0.901	ug/L	0.142	15	8	80	13	KED
As	75	15.233	ug/L	0.237	1	3	3638	1	KED
Y	89		ug/L			50088	79316	0	Standard
Kr	83		ug/L			44	40	4	Standard
[> In-1	115		ug/L			6034	6266	0	KED
Cd	111	0.003	ug/L	0.013	536	1	2	137	KED
Cd	114	0.004	ug/L	0.000	0	1	3	0	KED
[> In	115		ug/L			486697	468178	0	Standard
Ag	107	0.005	ug/L	0.000	7	29	112	6	Standard
[> Tb	159		ug/L			178618	187920	2	Standard
Pb	208	0.034	ug/L	0.001	3	534	3577	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLH

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 06:31:07

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	23115	4	Standard
[> Sc	45		ug/L			512571	517740	2	Standard
Cr	52	0.013	ug/L	0.006	48	7952	8202	1	Standard
Cr	53	0.001	ug/L	0.008	1453	75	77	19	Standard
[> Ge	72		ug/L			28784	29261	1	KED
Ni	60	-0.015	ug/L	0.011	73	75	55	29	KED
Ni	62	-0.018	ug/L	0.018	103	12	8	44	KED
Cu	63	-0.005	ug/L	0.001	27	53	33	17	KED
Cu	65	-0.001	ug/L	0.005	613	25	24	43	KED
Zn	66	-0.060	ug/L	0.017	28	52	24	33	KED
Zn	67	-0.082	ug/L	0.000	0	8	1		KED
As	75	-0.004	ug/L	0.009	212	3	2	72	KED
Y	89		ug/L			50088	49988	1	Standard
Kr	83		ug/L			44	55	15	Standard
[> In-1	115		ug/L			6034	6137	0	KED
Cd	111	-0.003	ug/L	0.004	144	1	0	100	KED
Cd	114	-0.001	ug/L	0.002	176	1	0	180	KED
[> In	115		ug/L			486697	486698	2	Standard
Ag	107	-0.001	ug/L	0.001	57	29	12	77	Standard
[> Tb	159		ug/L			178618	183514	1	Standard
Pb	208	-0.004	ug/L	0.000	3	534	240	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVI

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 06:35:33

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			21210	23784	6	Standard
[>	Sc	45		ug/L			512571	524165	1	Standard
	Cr	52	50.223	ug/L	1.690	3	7952	686346	2	Standard
	Cr	53	48.285	ug/L	0.163	0	75	76453	1	Standard
[>	Ge	72		ug/L			28784	29553	1	KED
	Ni	60	49.754	ug/L	0.656	1	75	70745	0	KED
	Ni	62	50.882	ug/L	3.005	5	12	11590	4	KED
	Cu	63	50.319	ug/L	1.412	2	53	199933	1	KED
	Cu	65	49.530	ug/L	0.589	1	25	101036	0	KED
	Zn	66	50.795	ug/L	1.374	2	52	24867	1	KED
	Zn	67	50.525	ug/L	1.241	2	8	4025	1	KED
	As	75	50.135	ug/L	0.843	1	3	11885	1	KED
	Y	89		ug/L			50088	50673	2	Standard
	Kr	83		ug/L			44	55	21	Standard
[>	In-1	115		ug/L			6034	6213	2	KED
	Cd	111	49.407	ug/L	1.725	3	1	11124	0	KED
	Cd	114	50.485	ug/L	1.873	3	1	29245	1	KED
[>	In	115		ug/L			486697	478603	2	Standard
	Ag	107	46.759	ug/L	0.518	1	29	736095	2	Standard
[>	Tb	159		ug/L			178618	187493	1	Standard
	Pb	208	54.257	ug/L	1.080	1	534	4867949	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBI

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 06:42:43

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			21210	22705	3	Standard
[>	Sc	45	ug/L			512571	510222	2	Standard
	Cr	52	ug/L	0.015	349	7952	7968	2	Standard
	Cr	53	ug/L	0.003	207	75	77	6	Standard
[>	Ge	72	ug/L			28784	29563	0	KED
	Ni	60	ug/L	0.008	38	75	48	23	KED
	Ni	62	ug/L	0.032	151	12	8	87	KED
	Cu	63	ug/L	0.002	42	53	33	27	KED
	Cu	65	ug/L	0.004	155	25	20	43	KED
	Zn	66	ug/L	0.010	15	52	22	22	KED
	Zn	67	ug/L	0.060	118	8	4	107	KED
	As	75	ug/L	0.007	315	3	4	37	KED
	Y	89	ug/L			50088	49119	4	Standard
	Kr	83	ug/L			44	40	5	Standard
[>	In-1	115	ug/L			6034	6359	0	KED
	Cd	111	ug/L	0.005	126	1	2	43	KED
	Cd	114	ug/L	0.004	182	1	2	92	KED
[>	In	115	ug/L			486697	484923	2	Standard
	Ag	107	ug/L	0.002	141	29	45	50	Standard
[>	Tb	159	ug/L			178618	182782	1	Standard
	Pb	208	ug/L	0.000	6	534	264	6	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0487-06**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:47:09**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	32134	4	Standard
[> Sc	45		ug/L			512571	622588	1	Standard
Cr	52	0.373	ug/L	0.016	4	7952	15647	2	Standard
Cr	53	0.480	ug/L	0.009	1	75	994	3	Standard
[> Ge	72		ug/L			28784	28304	2	KED
Ni	60	1.014	ug/L	0.054	5	75	1452	2	KED
Ni	62	1.030	ug/L	0.099	9	12	236	7	KED
Cu	63	0.040	ug/L	0.006	14	53	205	8	KED
Cu	65	0.036	ug/L	0.013	35	25	94	23	KED
Zn	66	0.740	ug/L	0.013	1	52	398	4	KED
Zn	67	1.054	ug/L	0.107	10	8	88	6	KED
As	75	19.230	ug/L	0.660	3	3	4366	1	KED
Y	89		ug/L			50088	69538	3	Standard
Kr	83		ug/L			44	30	16	Standard
[> In-1	115		ug/L			6034	5855	1	KED
Cd	111	0.005	ug/L	0.005	108	1	2	43	KED
Cd	114	0.001	ug/L	0.003	349	1	1	112	KED
[> In	115		ug/L			486697	442888	2	Standard
Ag	107	0.002	ug/L	0.000	14	29	52	5	Standard
[> Tb	159		ug/L			178618	176146	1	Standard
Pb	208	0.007	ug/L	0.000	4	534	1141	2	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0487-05**

Sample Dil Factor: **2**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:51:34**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	32551	2	Standard
[> Sc	45		ug/L			512571	622587	2	Standard
Cr	52	0.412	ug/L	0.016	3	7952	16267	3	Standard
Cr	53	0.486	ug/L	0.013	2	75	1004	5	Standard
[> Ge	72		ug/L			28784	27718	2	KED
Ni	60	1.154	ug/L	0.065	5	75	1610	4	KED
Ni	62	1.189	ug/L	0.121	10	12	266	10	KED
Cu	63	0.037	ug/L	0.001	3	53	189	3	KED
Cu	65	0.039	ug/L	0.008	21	25	99	15	KED
Zn	66	0.454	ug/L	0.039	8	52	259	7	KED
Zn	67	0.737	ug/L	0.045	6	8	62	3	KED
As	75	17.452	ug/L	0.167	0	3	3882	1	KED
Y	89		ug/L			50088	70299	3	Standard
Kr	83		ug/L			44	43	23	Standard
[> In-1	115		ug/L			6034	5780	1	KED
Cd	111	0.008	ug/L	0.010	120	1	3	62	KED
Cd	114	0.001	ug/L	0.004	267	1	1	106	KED
[> In	115		ug/L			486697	454628	1	Standard
Ag	107	0.001	ug/L	0.000	19	29	44	6	Standard
[> Tb	159		ug/L			178618	178896	0	Standard
Pb	208	0.003	ug/L	0.001	20	534	808	7	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0487-04**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 06:55:54**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc.	Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13			ug/L			21210	43951	2	Standard
[> Sc	45			ug/L			512571	611223	0	Standard
Cr	52	<b>0.674</b>		ug/L	0.028	4	7952	20103	2	Standard
Cr	53	<b>0.801</b>		ug/L	0.030	3	75	1567	4	Standard
[> Ge	72			ug/L			28784	27657	2	KED
Ni	60	<b>4.379</b>		ug/L	0.108	2	75	5891	1	KED
Ni	62	<b>4.412</b>		ug/L	0.139	3	12	951	2	KED
Cu	63	<b>5.152</b>		ug/L	0.035	0	53	19209	2	KED
Cu	65	<b>5.031</b>		ug/L	0.155	3	25	9622	1	KED
Zn	66	<b>9.989</b>		ug/L	0.373	3	52	4615	1	KED
Zn	67	<b>10.437</b>		ug/L	0.353	3	8	784	4	KED
As	75	<b>4.605</b>		ug/L	0.101	2	3	1024	1	KED
Y	89			ug/L			50088	69977	3	Standard
Kr	83			ug/L			44	36	15	Standard
[> In-1	115			ug/L			6034	5721	3	KED
Cd	111	<b>0.307</b>		ug/L	0.017	5	1	65	3	KED
Cd	114	<b>0.269</b>		ug/L	0.048	17	1	143	14	KED
[> In	115			ug/L			486697	463308	0	Standard
Ag	107	<b>0.017</b>		ug/L	0.002	11	29	289	9	Standard
[> Tb	159			ug/L			178618	184294	0	Standard
Pb	208	<b>0.306</b>		ug/L	0.004	1	534	27565	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0487-03**

Sample Dil Factor:

Comments:

Sample Date/Time: **Thursday, May 11, 2023 07:00:43**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc.	Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13			ug/L			21210	34930	6	Standard
[> Sc	45			ug/L			512571	627875	1	Standard
Cr	52	<b>0.380</b>		ug/L	0.019	5	7952	15891	1	Standard
Cr	53	<b>0.553</b>		ug/L	0.025	4	75	1139	4	Standard
[> Ge	72			ug/L			28784	27514	0	KED
Ni	60	<b>2.436</b>		ug/L	0.075	3	75	3293	3	KED
Ni	62	<b>2.256</b>		ug/L	0.038	1	12	490	1	KED
Cu	63	<b>1.485</b>		ug/L	0.027	1	53	5545	1	KED
Cu	65	<b>1.415</b>		ug/L	0.035	2	25	2711	2	KED
Zn	66	<b>1.359</b>		ug/L	0.066	4	52	668	4	KED
Zn	67	<b>1.908</b>		ug/L	0.317	16	8	149	15	KED
As	75	<b>1.535</b>		ug/L	0.082	5	3	342	5	KED
Y	89			ug/L			50088	68173	1	Standard
Kr	83			ug/L			44	43	9	Standard
[> In-1	115			ug/L			6034	5812	3	KED
Cd	111	<b>0.046</b>		ug/L	0.015	32	1	11	24	KED
Cd	114	<b>0.042</b>		ug/L	0.011	26	1	23	25	KED
[> In	115			ug/L			486697	461876	0	Standard
Ag	107	<b>0.004</b>		ug/L	0.000	2	29	84	1	Standard
[> Tb	159			ug/L			178618	183150	1	Standard
Pb	208	<b>0.017</b>		ug/L	0.001	6	534	2074	4	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLI

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 07:05:10

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	24777	4	Standard
[> Sc	45		ug/L			512571	495765	2	Standard
Cr	52	0.016	ug/L	0.006	40	7952	7890	2	Standard
Cr	53	0.005	ug/L	0.003	57	75	79	6	Standard
[> Ge	72		ug/L			28784	28451	2	KED
Ni	60	-0.016	ug/L	0.012	71	75	52	29	KED
Ni	62	-0.014	ug/L	0.001	8	12	9	0	KED
Cu	63	-0.005	ug/L	0.002	38	53	34	20	KED
Cu	65	-0.005	ug/L	0.002	41	25	15	25	KED
Zn	66	-0.054	ug/L	0.016	29	52	26	25	KED
Zn	67	-0.064	ug/L	0.039	60	8	3	91	KED
As	75	-0.005	ug/L	0.004	96	3	2	36	KED
Y	89		ug/L			50088	48564	3	Standard
Kr	83		ug/L			44	48	37	Standard
[> In-1	115		ug/L			6034	5785	2	KED
Cd	111	0.003	ug/L	0.007	204	1	2	65	KED
Cd	114	0.000	ug/L	0.002	881	1	1	94	KED
[> In	115		ug/L			486697	478635	2	Standard
Ag	107	-0.001	ug/L	0.000	34	29	12	45	Standard
[> Tb	159		ug/L			178618	179215	1	Standard
Pb	208	-0.003	ug/L	0.000	11	534	261	10	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **23D0636-01**

Sample Dil Factor: **10**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 07:09:36**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			21210	27281	2	Standard
[>	Sc	45	ug/L			512571	527974	2	Standard
	Cr	<b>52</b>	ug/L	0.004	0	7952	15415	2	Standard
	Cr	<b>53</b>	ug/L	0.057	10	75	962	8	Standard
[>	Ge	72	ug/L			28784	27707	0	KED
	Ni	<b>60</b>	ug/L	0.030	3	75	1400	2	KED
	Ni	<b>62</b>	ug/L	0.145	14	12	219	14	KED
	Cu	<b>63</b>	ug/L	0.041	2	53	6275	1	KED
	Cu	<b>65</b>	ug/L	0.063	3	25	3263	3	KED
	Zn	<b>66</b>	ug/L	0.013	0	52	1827	0	KED
	Zn	<b>67</b>	ug/L	0.276	7	8	280	6	KED
	As	<b>75</b>	ug/L	0.028	5	3	120	4	KED
	Y	89	ug/L			50088	65167	0	Standard
	Kr	83	ug/L			44	40	24	Standard
[>	In-1	115	ug/L			6034	5801	4	KED
	Cd	<b>111</b>	ug/L	0.006	1388	1	1	69	KED
	Cd	<b>114</b>	ug/L	0.004	74	1	3	50	KED
[>	In	115	ug/L			486697	473435	2	Standard
	Ag	<b>107</b>	ug/L	0.000	28	29	48	9	Standard
[>	Tb	<b>159</b>	ug/L			178618	186385	0	Standard
	Pb	<b>208</b>	ug/L	0.012	1	534	66913	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0298-DUP1**

Sample Dil Factor: **10**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 07:14:25**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	28530	3	Standard
[> Sc	45		ug/L			512571	538334	0	Standard
[ Cr	52	<b>0.537</b>	ug/L	0.030	5	7952	15807	2	Standard
[ Cr	53	<b>0.592</b>	ug/L	0.045	7	75	1040	6	Standard
[> Ge	72		ug/L			28784	28724	0	KED
[ Ni	60	<b>0.998</b>	ug/L	0.070	6	75	1452	6	KED
[ Ni	62	<b>1.102</b>	ug/L	0.076	6	12	256	6	KED
[ Cu	63	<b>1.729</b>	ug/L	0.041	2	53	6729	2	KED
[ Cu	65	<b>1.667</b>	ug/L	0.038	2	25	3329	1	KED
[ Zn	66	<b>4.091</b>	ug/L	0.104	2	52	1995	2	KED
[ Zn	67	<b>4.288</b>	ug/L	0.718	16	8	339	16	KED
[ As	75	<b>0.560</b>	ug/L	0.031	5	3	132	5	KED
Y	89		ug/L			50088	65772	1	Standard
Kr	83		ug/L			44	57	36	Standard
[> In-1	115		ug/L			6034	6012	3	KED
[ Cd	111	<b>0.014</b>	ug/L	0.018	129	1	4	81	KED
[ Cd	114	<b>0.010</b>	ug/L	0.002	16	1	6	16	KED
[> In	115		ug/L			486697	480605	1	Standard
[ Ag	107	<b>0.001</b>	ug/L	0.000	42	29	38	10	Standard
[> Tb	159		ug/L			178618	189596	0	Standard
[ Pb	208	<b>0.754</b>	ug/L	0.014	1	534	68955	2	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0298-MS1**

Sample Dil Factor: **10**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 07:19:15**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	27955	5	Standard
[> Sc	45		ug/L			512571	525581	2	Standard
[ Cr	52	<b>2.936</b>	ug/L	0.034	1	7952	47911	2	Standard
[ Cr	53	<b>2.885</b>	ug/L	0.053	1	75	4653	3	Standard
[> Ge	72		ug/L			28784	28593	2	KED
[ Ni	60	<b>3.498</b>	ug/L	0.051	1	75	4881	1	KED
[ Ni	62	<b>3.654</b>	ug/L	0.214	5	12	816	3	KED
[ Cu	63	<b>4.341</b>	ug/L	0.156	3	53	16732	0	KED
[ Cu	65	<b>4.320</b>	ug/L	0.187	4	25	8544	2	KED
[ Zn	66	<b>12.514</b>	ug/L	0.258	2	52	5966	0	KED
[ Zn	67	<b>11.781</b>	ug/L	0.398	3	8	914	5	KED
[ As	75	<b>3.033</b>	ug/L	0.163	5	3	698	2	KED
Y	89		ug/L			50088	67142	3	Standard
Kr	83		ug/L			44	37	12	Standard
[> In-1	115		ug/L			6034	5883	2	KED
[ Cd	111	<b>2.582</b>	ug/L	0.073	2	1	552	1	KED
[ Cd	114	<b>2.689</b>	ug/L	0.054	2	1	1476	1	KED
[> In	115		ug/L			486697	479355	0	Standard
[ Ag	107	<b>2.061</b>	ug/L	0.025	1	29	32527	1	Standard
[> Tb	159		ug/L			178618	182686	0	Standard
[ Pb	208	<b>3.600</b>	ug/L	0.075	2	534	315263	1	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: **BLE0298-MSD1**

Sample Dil Factor: **10**

Comments:

Sample Date/Time: **Thursday, May 11, 2023 07:25:04**

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	28749	4	Standard
[> Sc	45		ug/L			512571	530124	2	Standard
[ Cr	52	<b>2.822</b>	ug/L	0.034	1	7952	46777	2	Standard
[ Cr	53	<b>2.760</b>	ug/L	0.057	2	75	4491	1	Standard
[> Ge	72		ug/L			28784	28834	0	KED
[ Ni	60	<b>3.466</b>	ug/L	0.040	1	75	4878	1	KED
[ Ni	62	<b>3.268</b>	ug/L	0.068	2	12	738	2	KED
[ Cu	63	<b>4.176</b>	ug/L	0.095	2	53	16242	2	KED
[ Cu	65	<b>4.187</b>	ug/L	0.061	1	25	8358	1	KED
[ Zn	66	<b>12.041</b>	ug/L	0.301	2	52	5792	2	KED
[ Zn	67	<b>11.364</b>	ug/L	0.700	6	8	890	6	KED
[ As	75	<b>2.958</b>	ug/L	0.065	2	3	687	1	KED
Y	89		ug/L			50088	66898	0	Standard
Kr	83		ug/L			44	43	18	Standard
[> In-1	115		ug/L			6034	6008	3	KED
[ Cd	111	<b>2.402</b>	ug/L	0.153	6	1	524	3	KED
[ Cd	114	<b>2.457</b>	ug/L	0.086	3	1	1378	4	KED
[> In	115		ug/L			486697	486503	2	Standard
[ Ag	107	<b>2.042</b>	ug/L	0.032	1	29	32695	0	Standard
[> Tb	159		ug/L			178618	185233	0	Standard
[ Pb	208	<b>3.411</b>	ug/L	0.010	0	534	302959	0	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLJ

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 07:29:54

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	23093	3	Standard
[> Sc	45		ug/L			512571	491451	2	Standard
Cr	52	0.009	ug/L	0.012	138	7952	7733	3	Standard
Cr	53	-0.002	ug/L	0.007	369	75	69	16	Standard
[> Ge	72		ug/L			28784	28042	0	KED
Ni	60	-0.015	ug/L	0.005	33	75	53	12	KED
Ni	62	-0.007	ug/L	0.014	191	12	10	26	KED
Cu	63	-0.006	ug/L	0.002	28	53	28	24	KED
Cu	65	-0.003	ug/L	0.002	74	25	19	20	KED
Zn	66	-0.049	ug/L	0.032	65	52	28	52	KED
Zn	67	-0.031	ug/L	0.025	81	8	5	33	KED
As	75	-0.007	ug/L	0.005	79	3	2	53	KED
Y	89		ug/L			50088	47507	2	Standard
Kr	83		ug/L			44	39	2	Standard
[> In-1	115		ug/L			6034	5851	3	KED
Cd	111	0.002	ug/L	0.005	256	1	1	50	KED
Cd	114	-0.001	ug/L	0.002	208	1	0	188	KED
[> In	115		ug/L			486697	482259	2	Standard
Ag	107	-0.001	ug/L	0.000	48	29	13	55	Standard
[> Tb	159		ug/L			178618	176757	2	Standard
Pb	208	-0.003	ug/L	0.000	11	534	247	12	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVJ

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 07:34:20

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	23085	4	Standard
[> Sc	45		ug/L			512571	510290	2	Standard
Cr	52	49.845	ug/L	0.659	1	7952	663306	1	Standard
Cr	53	49.254	ug/L	0.241	0	75	75919	1	Standard
[> Ge	72		ug/L			28784	28502	0	KED
Ni	60	49.022	ug/L	0.991	2	75	67228	1	KED
Ni	62	49.233	ug/L	0.674	1	12	10820	1	KED
Cu	63	51.028	ug/L	1.049	2	53	195577	1	KED
Cu	65	50.266	ug/L	0.362	0	25	98899	0	KED
Zn	66	50.246	ug/L	1.428	2	52	23728	2	KED
Zn	67	49.533	ug/L	0.241	0	8	3807	0	KED
As	75	49.156	ug/L	0.750	1	3	11240	1	KED
Y	89		ug/L			50088	49783	0	Standard
Kr	83		ug/L			44	61	7	Standard
[> In-1	115		ug/L			6034	6026	1	KED
Cd	111	50.412	ug/L	0.446	0	1	11014	0	KED
Cd	114	50.125	ug/L	0.823	1	1	28176	2	KED
[> In	115		ug/L			486697	469523	3	Standard
Ag	107	45.677	ug/L	1.580	3	29	704992	1	Standard
[> Tb	159		ug/L			178618	183887	1	Standard
Pb	208	55.762	ug/L	1.321	2	534	4906643	0	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBJ

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 07:41:29

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			21210	23317	1	Standard
[>	Sc	45	ug/L			512571	498254	1	Standard
	Cr	52	0.014	0.004	27	7952	7906	0	Standard
	Cr	53	-0.003	0.007	202	75	68	15	Standard
[>	Ge	72	ug/L			28784	28666	1	KED
	Ni	60	0.001	0.015	3020	75	76	29	KED
	Ni	62	-0.014	0.037	258	12	9	87	KED
	Cu	63	0.008	0.019	252	53	83	90	KED
	Cu	65	0.012	0.028	241	25	48	116	KED
	Zn	66	-0.042	0.036	85	52	33	53	KED
	Zn	67	-0.033	0.041	123	8	5	57	KED
	As	75	0.007	0.018	259	3	5	77	KED
	Y	89	ug/L			50088	47888	0	Standard
	Kr	83	ug/L			44	58	21	Standard
[>	In-1	115	ug/L			6034	5978	1	KED
	Cd	111	0.003	0.005	168	1	2	49	KED
	Cd	114	0.000	0.002	2472	1	1	86	KED
[>	In	115	ug/L			486697	472919	2	Standard
	Ag	107	0.001	0.001	115	29	41	35	Standard
[>	Tb	159	ug/L			178618	178659	0	Standard
	Pb	208	-0.003	0.000	7	534	267	7	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 07:45:55

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	25958	3	Standard
[> Sc	45		ug/L			512571	564678	1	Standard
Cr	52	0.004	ug/L	0.014	382	7952	8811	1	Standard
Cr	53	-0.007	ug/L	0.004	53	75	70	7	Standard
[> Ge	72		ug/L			28784	28993	1	KED
Ni	60	-0.013	ug/L	0.008	60	75	58	17	KED
Ni	62	-0.023	ug/L	0.009	37	12	7	25	KED
Cu	63	-0.003	ug/L	0.001	50	53	43	14	KED
Cu	65	-0.002	ug/L	0.003	109	25	20	24	KED
Zn	66	-0.015	ug/L	0.013	81	52	45	14	KED
Zn	67	-0.000	ug/L	0.052	15913	8	8	48	KED
As	75	-0.008	ug/L	0.008	108	3	2	96	KED
Y	89		ug/L			50088	54349	1	Standard
Kr	83		ug/L			44	48	48	Standard
[> In-1	115		ug/L			6034	6353	3	KED
Cd	111	-0.000	ug/L	0.005	1172	1	1	69	KED
Cd	114	-0.001	ug/L	0.002	166	1	0	205	KED
[> In	115		ug/L			486697	523133	3	Standard
Ag	107	0.000	ug/L	0.001	200	29	36	26	Standard
[> Tb	159		ug/L			178618	196229	1	Standard
Pb	208	-0.002	ug/L	0.000	12	534	414	3	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 07:50:21

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			21210	26612	5	Standard
[>	Sc	45	ug/L			512571	549525	3	Standard
	Cr	52	0.023	0.007	31	7952	8850	1	Standard
	Cr	53	-0.003	0.001	43	75	75	5	Standard
[>	Ge	72	ug/L			28784	29286	2	KED
	Ni	60	-0.020	0.016	81	75	48	43	KED
	Ni	62	-0.013	0.024	188	12	10	54	KED
	Cu	63	-0.003	0.003	86	53	43	25	KED
	Cu	65	-0.003	0.002	53	25	19	14	KED
	Zn	66	-0.008	0.028	351	52	49	25	KED
	Zn	67	-0.001	0.051	3767	8	8	48	KED
	As	75	-0.011	0.003	28	3	1	57	KED
	Y	89	ug/L			50088	54172	0	Standard
	Kr	83	ug/L			44	42	13	Standard
[>	In-1	115	ug/L			6034	6173	0	KED
	Cd	111	0.001	0.004	340	1	1	50	KED
	Cd	114	0.001	0.004	339	1	1	115	KED
[>	In	115	ug/L			486697	514395	3	Standard
	Ag	107	0.000	0.000	1870	29	31	18	Standard
[>	Tb	159	ug/L			178618	194120	0	Standard
	Pb	208	-0.002	0.000	15	534	381	7	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 07:54:47

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	25778	3	Standard
[> Sc	45		ug/L			512571	553078	2	Standard
Cr	52	0.011	ug/L	0.009	77	7952	8737	2	Standard
Cr	53	0.005	ug/L	0.006	133	75	89	11	Standard
[> Ge	72		ug/L			28784	29423	0	KED
Ni	60	-0.011	ug/L	0.006	56	75	60	14	KED
Ni	62	-0.004	ug/L	0.027	647	12	12	50	KED
Cu	63	-0.006	ug/L	0.002	29	53	32	21	KED
Cu	65	-0.005	ug/L	0.002	36	25	15	25	KED
Zn	66	-0.005	ug/L	0.045	918	52	51	42	KED
Zn	67	-0.018	ug/L	0.037	204	8	6	41	KED
As	75	-0.010	ug/L	0.002	19	3	1	33	KED
Y	89		ug/L			50088	54582	3	Standard
Kr	83		ug/L			44	37	19	Standard
[> In-1	115		ug/L			6034	6229	3	KED
Cd	111	-0.003	ug/L	0.004	129	1	0	100	KED
Cd	114	-0.000	ug/L	0.002	1785	1	1	98	KED
[> In	115		ug/L			486697	520624	1	Standard
Ag	107	-0.001	ug/L	0.000	61	29	22	26	Standard
[> Tb	159		ug/L			178618	196970	0	Standard
Pb	208	-0.002	ug/L	0.000	7	534	358	4	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 07:59:12

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	23586	4	Standard
[> Sc	45		ug/L			512571	467022	2	Standard
Cr	52	0.007	ug/L	0.015	218	7952	7326	2	Standard
Cr	53	-0.002	ug/L	0.004	211	75	65	11	Standard
[> Ge	72		ug/L			28784	27849	0	KED
Ni	60	-0.039	ug/L	0.002	6	75	20	15	KED
Ni	62	-0.040	ug/L	0.018	44	12	3	100	KED
Cu	63	-0.009	ug/L	0.001	14	53	19	26	KED
Cu	65	-0.009	ug/L	0.004	40	25	6	103	KED
Zn	66	-0.064	ug/L	0.006	9	52	21	13	KED
Zn	67	-0.090	ug/L	0.029	32	8	1	173	KED
As	75	-0.004	ug/L	0.006	157	3	2	44	KED
Y	89		ug/L			50088	45718	0	Standard
Kr	83		ug/L			44	45	4	Standard
[> In-1	115		ug/L			6034	5676	2	KED
Cd	111	-0.001	ug/L	0.011	1009	1	1	173	KED
Cd	114	0.000	ug/L	0.002	909	1	1	90	KED
[> In	115		ug/L			486697	443034	2	Standard
Ag	107	-0.001	ug/L	0.000	30	29	8	66	Standard
[> Tb	159		ug/L			178618	170677	0	Standard
Pb	208	-0.005	ug/L	0.000	5	534	131	15	Standard

## ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 08:03:38

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

	Analyte Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13	ug/L			21210	23858	2	Standard
[>	Sc	45	ug/L			512571	471059	2	Standard
	Cr	52	0.009	0.006	67	7952	7422	1	Standard
	Cr	53	-0.006	0.006	86	75	60	12	Standard
[>	Ge	72	ug/L			28784	28025	1	KED
	Ni	60	-0.034	0.005	13	75	27	22	KED
	Ni	62	-0.022	0.015	70	12	7	43	KED
	Cu	63	-0.007	0.001	15	53	25	17	KED
	Cu	65	-0.009	0.004	40	25	6	103	KED
	Zn	66	-0.072	0.014	19	52	17	34	KED
	Zn	67	-0.090	0.015	16	8	1	86	KED
	As	75	-0.003	0.005	147	3	3	32	KED
	Y	89	ug/L			50088	46999	2	Standard
	Kr	83	ug/L			44	50	21	Standard
[>	In-1	115	ug/L			6034	5675	3	KED
	Cd	111	-0.001	0.011	1342	1	1	173	KED
	Cd	114	0.004	0.002	47	1	3	33	KED
[>	In	115	ug/L			486697	453748	1	Standard
	Ag	107	-0.001	0.000	9	29	5	33	Standard
[>	Tb	159	ug/L			178618	170230	0	Standard
	Pb	208	-0.005	0.000	5	534	110	18	Standard



## ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI

Sample Dil Factor:

Comments:

Sample Date/Time: Thursday, May 11, 2023 08:08:04

Number of Replicates: 3

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8\_DailyMethod\_KED\_UCT.mth

Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac

Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\051023\_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			21210	23298	4	Standard
[> Sc	45		ug/L			512571	476857	3	Standard
Cr	52	0.009	ug/L	0.007	78	7952	7511	2	Standard
Cr	53	-0.004	ug/L	0.002	35	75	63	0	Standard
[> Ge	72		ug/L			28784	27968	1	KED
Ni	60	-0.032	ug/L	0.007	20	75	30	28	KED
Ni	62	-0.031	ug/L	0.017	56	12	5	66	KED
Cu	63	-0.009	ug/L	0.001	9	53	17	19	KED
Cu	65	-0.008	ug/L	0.002	24	25	9	40	KED
Zn	66	-0.050	ug/L	0.005	10	52	27	7	KED
Zn	67	-0.073	ug/L	0.015	20	8	2	43	KED
As	75	-0.008	ug/L	0.004	46	3	1	43	KED
Y	89		ug/L			50088	46307	0	Standard
Kr	83		ug/L			44	41	18	Standard
[> In-1	115		ug/L			6034	5740	3	KED
Cd	111	0.007	ug/L	0.012	183	1	2	88	KED
Cd	114	-0.002	ug/L	0.000	8	1	0	124	KED
[> In	115		ug/L			486697	464061	3	Standard
Ag	107	-0.001	ug/L	0.000	23	29	10	43	Standard
[> Tb	159		ug/L			178618	172358	0	Standard
Pb	208	-0.005	ug/L	0.000	2	534	118	7	Standard



**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Control Limit: +/- 10.00%

Sequence: SLE0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0204-ICV1	Arsenic-75a	50.000	48.2	96.4	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	51.7	103	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	51.8	104	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	52.3	105	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	51.4	103	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.6	101	ug/L	PA 6020B UCT-KE
SLE0204-CCV1	Arsenic-75a	50.000	49.7	99.4	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.7	99.3	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.7	99.5	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.6	99.1	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.9	99.7	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.3	101	ug/L	PA 6020B UCT-KE
SLE0204-CCV2	Arsenic-75a	50.000	50.1	100	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.8	99.6	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.1	98.2	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.8	104	ug/L	PA 6020B UCT-KE
SLE0204-CCV3	Arsenic-75a	50.000	49.8	99.5	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	48.4	96.7	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.7	101	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.1	100	ug/L	PA 6020B UCT-KE
SLE0204-CCV4	Arsenic-75a	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	51.4	103	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.5	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.2	98.4	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.3	103	ug/L	PA 6020B UCT-KE



**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Control Limit: +/- 10.00%

Sequence: SLE0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0204-CCV4	Zinc-67	50.000	52.0	104	ug/L	PA 6020B UCT-KE
SLE0204-CCV5	Arsenic-75a	50.000	49.8	99.6	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	51.5	103	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	51.1	102	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.6	103	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.8	102	ug/L	PA 6020B UCT-KE
SLE0204-CCV6	Arsenic-75a	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.9	102	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.5	99.0	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.4	98.8	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.0	100	ug/L	PA 6020B UCT-KE
SLE0204-CCV7	Arsenic-75a	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.2	98.4	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.4	103	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	52.1	104	ug/L	PA 6020B UCT-KE
SLE0204-CCV8	Arsenic-75a	50.000	50.0	99.9	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.5	99.1	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.5	99.0	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.4	98.8	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	48.2	96.5	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.3	98.6	ug/L	PA 6020B UCT-KE
SLE0204-CCV9	Arsenic-75a	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.0	99.9	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.1	100	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.9	102	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.3	101	ug/L	PA 6020B UCT-KE



**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Control Limit: +/- 10.00%

Sequence: SLE0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0204-CCV9	Zinc-66	50.000	51.0	102	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.9	104	ug/L	PA 6020B UCT-KE
SLE0204-CCVA	Arsenic-75a	50.000	49.1	98.1	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.0	99.9	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.2	98.4	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	48.6	97.3	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	48.4	96.9	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.5	101	ug/L	PA 6020B UCT-KE
	Arsenic-75a	50.000	49.6	99.1	ug/L	PA 6020B UCT-KE
SLE0204-CCVB	Cadmium-111	50.000	48.5	97.1	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	48.9	97.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	48.7	97.3	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.7	99.5	ug/L	PA 6020B UCT-KE
	Arsenic-75a	50.000	49.7	99.3	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.8	99.6	ug/L	PA 6020B UCT-KE
SLE0204-CCVC	Cadmium-114	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	48.6	97.2	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.1	100	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Arsenic-75a	50.000	49.3	98.7	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	51.1	102	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	51.1	102	ug/L	PA 6020B UCT-KE
SLE0204-CCVD	Copper-63	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.1	102	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.5	101	ug/L	PA 6020B UCT-KE
	Arsenic-75a	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	51.1	102	ug/L	PA 6020B UCT-KE
SLE0204-CCVE	Copper-63	50.000	51.7	103	ug/L	PA 6020B UCT-KE



**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Control Limit: +/- 10.00%

Sequence: SLE0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0204-CCVE	Copper-65	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.8	104	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.0	102	ug/L	PA 6020B UCT-KE
SLE0204-CCVF	Arsenic-75a	50.000	49.8	99.7	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.8	99.6	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.3	98.6	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.8	104	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.7	101	ug/L	PA 6020B UCT-KE
	Arsenic-75a	50.000	48.5	97.0	ug/L	PA 6020B UCT-KE
SLE0204-CCVG	Cadmium-111	50.000	49.5	99.1	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.7	99.3	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.6	99.3	ug/L	PA 6020B UCT-KE
	Arsenic-75a	50.000	48.3	96.6	ug/L	PA 6020B UCT-KE
SLE0204-CCVH	Cadmium-111	50.000	51.2	102	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	51.1	102	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	48.8	97.5	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.3	98.7	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.4	98.8	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.5	99.0	ug/L	PA 6020B UCT-KE
	Arsenic-75a	50.000	50.1	100	ug/L	PA 6020B UCT-KE
SLE0204-CCVI	Cadmium-111	50.000	49.4	98.8	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.5	101	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.5	99.1	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.5	101	ug/L	PA 6020B UCT-KE
	Arsenic-75a	50.000	49.2	98.3	ug/L	PA 6020B UCT-KE
SLE0204-CCVJ	Cadmium-111	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.1	100	ug/L	PA 6020B UCT-KE



**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Control Limit: +/- 10.00%

Sequence: SLE0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0204-CCVJ	Copper-63	50.000	51.0	102	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.5	99.1	ug/L	PA 6020B UCT-KE

\* Values outside of QC limits



**INSTRUMENT BLANKS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/10/23 16:19

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-IBL1	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SLE0204-IBL1	Cadmium-111	-0.00600	0.03	0.100	ug/L	
SLE0204-IBL1	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLE0204-IBL1	Copper-63	0.00300	0.173	0.500	ug/L	
SLE0204-IBL1	Copper-65	0.00100	0.35	0.500	ug/L	
SLE0204-IBL1	Zinc-66	0.0070	2.92	6.00	ug/L	
SLE0204-IBL1	Zinc-67	-0.0250	0.94	6.00	ug/L	
SLE0204-ICB1	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SLE0204-ICB1	Cadmium-111	-0.00200	0.03	0.100	ug/L	
SLE0204-ICB1	Cadmium-114	-0.00600	0.04	0.100	ug/L	
SLE0204-ICB1	Copper-63	0.00500	0.173	0.500	ug/L	
SLE0204-ICB1	Copper-65	0.00400	0.35	0.500	ug/L	
SLE0204-ICB1	Zinc-66	0.0200	2.92	6.00	ug/L	
SLE0204-ICB1	Zinc-67	-0.0030	0.94	6.00	ug/L	
SLE0204-CCB1	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SLE0204-CCB1	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLE0204-CCB1	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLE0204-CCB1	Copper-63	0.00100	0.173	0.500	ug/L	
SLE0204-CCB1	Copper-65	-0.00500	0.35	0.500	ug/L	
SLE0204-CCB1	Zinc-66	0.0050	2.92	6.00	ug/L	
SLE0204-CCB1	Zinc-67	0.0230	0.94	6.00	ug/L	
SLE0204-IBL2	Arsenic-75a	0.0130	0.0373	0.200	ug/L	
SLE0204-IBL2	Cadmium-111	0.00	0.03	0.100	ug/L	
SLE0204-IBL2	Cadmium-114	0.00	0.04	0.100	ug/L	
SLE0204-IBL2	Copper-63	0.00300	0.173	0.500	ug/L	
SLE0204-IBL2	Copper-65	0.00300	0.35	0.500	ug/L	
SLE0204-IBL2	Zinc-66	0.0190	2.92	6.00	ug/L	
SLE0204-IBL2	Zinc-67	0.0310	0.94	6.00	ug/L	
SLE0204-CCB2	Arsenic-75a	0.00800	0.0373	0.200	ug/L	
SLE0204-CCB2	Cadmium-111	-0.00100	0.03	0.100	ug/L	
SLE0204-CCB2	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLE0204-CCB2	Copper-63	0.00	0.173	0.500	ug/L	
SLE0204-CCB2	Copper-65	0.00	0.35	0.500	ug/L	
SLE0204-CCB2	Zinc-66	0.0090	2.92	6.00	ug/L	
SLE0204-CCB2	Zinc-67	-0.0040	0.94	6.00	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/10/23 17:49

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-CCB3	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SLE0204-CCB3	Cadmium-111	0.00700	0.03	0.100	ug/L	
SLE0204-CCB3	Cadmium-114	0.0270	0.04	0.100	ug/L	
SLE0204-CCB3	Copper-63	0.00	0.173	0.500	ug/L	
SLE0204-CCB3	Copper-65	-0.00100	0.35	0.500	ug/L	
SLE0204-CCB3	Zinc-66	0.0010	2.92	6.00	ug/L	
SLE0204-CCB3	Zinc-67	-0.0230	0.94	6.00	ug/L	
SLE0204-IBL3	Arsenic-75a	-0.00200	0.0373	0.200	ug/L	
SLE0204-IBL3	Cadmium-111	-0.00400	0.03	0.100	ug/L	
SLE0204-IBL3	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLE0204-IBL3	Copper-63	0.00700	0.173	0.500	ug/L	
SLE0204-IBL3	Copper-65	0.00100	0.35	0.500	ug/L	
SLE0204-IBL3	Zinc-66	0.0820	2.92	6.00	ug/L	
SLE0204-IBL3	Zinc-67	0.0490	0.94	6.00	ug/L	
SLE0204-CCB4	Arsenic-75a	-0.00100	0.0373	0.200	ug/L	
SLE0204-CCB4	Cadmium-111	0.00100	0.03	0.100	ug/L	
SLE0204-CCB4	Cadmium-114	0.00100	0.04	0.100	ug/L	
SLE0204-CCB4	Copper-63	0.00600	0.173	0.500	ug/L	
SLE0204-CCB4	Copper-65	0.00200	0.35	0.500	ug/L	
SLE0204-CCB4	Zinc-66	-0.0020	2.92	6.00	ug/L	
SLE0204-CCB4	Zinc-67	0.0040	0.94	6.00	ug/L	
SLE0204-IBL4	Arsenic-75a	-0.00400	0.0373	0.200	ug/L	
SLE0204-IBL4	Cadmium-111	-0.00600	0.03	0.100	ug/L	
SLE0204-IBL4	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLE0204-IBL4	Copper-63	0.00400	0.173	0.500	ug/L	
SLE0204-IBL4	Copper-65	0.00300	0.35	0.500	ug/L	
SLE0204-IBL4	Zinc-66	0.0700	2.92	6.00	ug/L	
SLE0204-IBL4	Zinc-67	0.0350	0.94	6.00	ug/L	
SLE0204-IBL5	Arsenic-75a	-0.00400	0.0373	0.200	ug/L	
SLE0204-IBL5	Cadmium-111	-0.00500	0.03	0.100	ug/L	
SLE0204-IBL5	Cadmium-114	-0.00300	0.04	0.100	ug/L	
SLE0204-IBL5	Copper-63	-0.00100	0.173	0.500	ug/L	
SLE0204-IBL5	Copper-65	-0.00100	0.35	0.500	ug/L	
SLE0204-IBL5	Zinc-66	0.0530	2.92	6.00	ug/L	
SLE0204-IBL5	Zinc-67	0.0420	0.94	6.00	ug/L	
SLE0204-CCB5	Arsenic-75a	-0.00100	0.0373	0.200	ug/L	





**INSTRUMENT BLANKS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/10/23 19:56

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-CCB5	Cadmium-111	0.00100	0.03	0.100	ug/L	
SLE0204-CCB5	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-CCB5	Copper-63	0.00200	0.173	0.500	ug/L	
SLE0204-CCB5	Copper-65	0.00	0.35	0.500	ug/L	
SLE0204-CCB5	Zinc-66	-0.0150	2.92	6.00	ug/L	
SLE0204-CCB5	Zinc-67	0.0150	0.94	6.00	ug/L	
SLE0204-CCB6	Arsenic-75a	0.0100	0.0373	0.200	ug/L	
SLE0204-CCB6	Cadmium-111	-0.00800	0.03	0.100	ug/L	
SLE0204-CCB6	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-CCB6	Copper-63	0.00200	0.173	0.500	ug/L	
SLE0204-CCB6	Copper-65	-0.00100	0.35	0.500	ug/L	
SLE0204-CCB6	Zinc-66	-0.0240	2.92	6.00	ug/L	
SLE0204-CCB6	Zinc-67	-0.0910	0.94	6.00	ug/L	
SLE0204-IBL6	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SLE0204-IBL6	Cadmium-111	-0.00300	0.03	0.100	ug/L	
SLE0204-IBL6	Cadmium-114	0.00400	0.04	0.100	ug/L	
SLE0204-IBL6	Copper-63	0.00400	0.173	0.500	ug/L	
SLE0204-IBL6	Copper-65	0.00500	0.35	0.500	ug/L	
SLE0204-IBL6	Zinc-66	0.0170	2.92	6.00	ug/L	
SLE0204-IBL6	Zinc-67	-0.0430	0.94	6.00	ug/L	
SLE0204-CCB7	Arsenic-75a	0.0140	0.0373	0.200	ug/L	
SLE0204-CCB7	Cadmium-111	-0.00900	0.03	0.100	ug/L	
SLE0204-CCB7	Cadmium-114	0.00	0.04	0.100	ug/L	
SLE0204-CCB7	Copper-63	0.0230	0.173	0.500	ug/L	
SLE0204-CCB7	Copper-65	0.0230	0.35	0.500	ug/L	
SLE0204-CCB7	Zinc-66	-0.0280	2.92	6.00	ug/L	
SLE0204-CCB7	Zinc-67	-0.0330	0.94	6.00	ug/L	
SLE0204-IBL7	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SLE0204-IBL7	Cadmium-111	-0.00800	0.03	0.100	ug/L	
SLE0204-IBL7	Cadmium-114	0.00300	0.04	0.100	ug/L	
SLE0204-IBL7	Copper-63	0.00200	0.173	0.500	ug/L	
SLE0204-IBL7	Copper-65	0.00200	0.35	0.500	ug/L	
SLE0204-IBL7	Zinc-66	-0.0450	2.92	6.00	ug/L	
SLE0204-IBL7	Zinc-67	-0.0920	0.94	6.00	ug/L	
SLE0204-CCB8	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SLE0204-CCB8	Cadmium-111	-0.00900	0.03	0.100	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/10/23 22:32

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-CCB8	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-CCB8	Copper-63	0.00200	0.173	0.500	ug/L	
SLE0204-CCB8	Copper-65	0.00200	0.35	0.500	ug/L	
SLE0204-CCB8	Zinc-66	-0.0360	2.92	6.00	ug/L	
SLE0204-CCB8	Zinc-67	-0.0810	0.94	6.00	ug/L	
SLE0204-IBL8	Arsenic-75a	0.0750	0.0373	0.200	ug/L	
SLE0204-IBL8	Cadmium-111	-0.0120	0.03	0.100	ug/L	
SLE0204-IBL8	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-IBL8	Copper-63	0.0820	0.173	0.500	ug/L	
SLE0204-IBL8	Copper-65	0.0820	0.35	0.500	ug/L	
SLE0204-IBL8	Zinc-66	0.206	2.92	6.00	ug/L	
SLE0204-IBL8	Zinc-67	0.0940	0.94	6.00	ug/L	
SLE0204-CCB9	Arsenic-75a	0.0230	0.0373	0.200	ug/L	
SLE0204-CCB9	Cadmium-111	-0.00200	0.03	0.100	ug/L	
SLE0204-CCB9	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-CCB9	Copper-63	0.0160	0.173	0.500	ug/L	
SLE0204-CCB9	Copper-65	0.0180	0.35	0.500	ug/L	
SLE0204-CCB9	Zinc-66	0.0010	2.92	6.00	ug/L	
SLE0204-CCB9	Zinc-67	-0.0630	0.94	6.00	ug/L	
SLE0204-IBL9	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SLE0204-IBL9	Cadmium-111	-0.0120	0.03	0.100	ug/L	
SLE0204-IBL9	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLE0204-IBL9	Copper-63	0.0140	0.173	0.500	ug/L	
SLE0204-IBL9	Copper-65	0.0100	0.35	0.500	ug/L	
SLE0204-IBL9	Zinc-66	-0.0300	2.92	6.00	ug/L	
SLE0204-IBL9	Zinc-67	-0.0670	0.94	6.00	ug/L	
SLE0204-CCBA	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SLE0204-CCBA	Cadmium-111	-0.00800	0.03	0.100	ug/L	
SLE0204-CCBA	Cadmium-114	0.00100	0.04	0.100	ug/L	
SLE0204-CCBA	Copper-63	0.00300	0.173	0.500	ug/L	
SLE0204-CCBA	Copper-65	0.00400	0.35	0.500	ug/L	
SLE0204-CCBA	Zinc-66	-0.0580	2.92	6.00	ug/L	
SLE0204-CCBA	Zinc-67	-0.135	0.94	6.00	ug/L	
SLE0204-IBLA	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SLE0204-IBLA	Cadmium-111	-0.0100	0.03	0.100	ug/L	
SLE0204-IBLA	Cadmium-114	0.00	0.04	0.100	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/11/23 01:08

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-IBLA	Copper-63	0.00800	0.173	0.500	ug/L	
SLE0204-IBLA	Copper-65	0.00400	0.35	0.500	ug/L	
SLE0204-IBLA	Zinc-66	-0.0280	2.92	6.00	ug/L	
SLE0204-IBLA	Zinc-67	-0.109	0.94	6.00	ug/L	
SLE0204-CCBB	Arsenic-75a	0.00600	0.0373	0.200	ug/L	
SLE0204-CCBB	Cadmium-111	-0.0110	0.03	0.100	ug/L	
SLE0204-CCBB	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLE0204-CCBB	Copper-63	0.00700	0.173	0.500	ug/L	
SLE0204-CCBB	Copper-65	0.0110	0.35	0.500	ug/L	
SLE0204-CCBB	Zinc-66	-0.0550	2.92	6.00	ug/L	
SLE0204-CCBB	Zinc-67	-0.111	0.94	6.00	ug/L	
SLE0204-CCBC	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	
SLE0204-CCBC	Cadmium-111	-0.00400	0.03	0.100	ug/L	
SLE0204-CCBC	Cadmium-114	0.00	0.04	0.100	ug/L	
SLE0204-CCBC	Copper-63	-0.0170	0.173	0.500	ug/L	
SLE0204-CCBC	Copper-65	-0.0240	0.35	0.500	ug/L	
SLE0204-CCBC	Zinc-66	-0.0230	2.92	6.00	ug/L	
SLE0204-CCBC	Zinc-67	-0.0620	0.94	6.00	ug/L	
SLE0204-IBLB	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SLE0204-IBLB	Cadmium-111	-0.00400	0.03	0.100	ug/L	
SLE0204-IBLB	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLE0204-IBLB	Copper-63	0.0140	0.173	0.500	ug/L	
SLE0204-IBLB	Copper-65	0.0100	0.35	0.500	ug/L	
SLE0204-IBLB	Zinc-66	-0.0130	2.92	6.00	ug/L	
SLE0204-IBLB	Zinc-67	-0.0850	0.94	6.00	ug/L	
SLE0204-CCBD	Arsenic-75a	0.0120	0.0373	0.200	ug/L	
SLE0204-CCBD	Cadmium-111	-0.00300	0.03	0.100	ug/L	
SLE0204-CCBD	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLE0204-CCBD	Copper-63	0.0110	0.173	0.500	ug/L	
SLE0204-CCBD	Copper-65	0.00300	0.35	0.500	ug/L	
SLE0204-CCBD	Zinc-66	-0.0380	2.92	6.00	ug/L	
SLE0204-CCBD	Zinc-67	-0.0870	0.94	6.00	ug/L	
SLE0204-IBLC	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SLE0204-IBLC	Cadmium-111	-0.00200	0.03	0.100	ug/L	
SLE0204-IBLC	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-IBLC	Copper-63	-0.0300	0.173	0.500	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/11/23 02:57

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-IBLC	Copper-65	-0.0360	0.35	0.500	ug/L	
SLE0204-IBLC	Zinc-66	-0.0170	2.92	6.00	ug/L	
SLE0204-IBLC	Zinc-67	-0.107	0.94	6.00	ug/L	
SLE0204-IBLD	Arsenic-75a	-0.00900	0.0373	0.200	ug/L	
SLE0204-IBLD	Cadmium-111	0.00	0.03	0.100	ug/L	
SLE0204-IBLD	Cadmium-114	0.00100	0.04	0.100	ug/L	
SLE0204-IBLD	Copper-63	-0.0310	0.173	0.500	ug/L	
SLE0204-IBLD	Copper-65	-0.0330	0.35	0.500	ug/L	
SLE0204-IBLD	Zinc-66	-0.0130	2.92	6.00	ug/L	
SLE0204-IBLD	Zinc-67	-0.0600	0.94	6.00	ug/L	
SLE0204-CCBE	Arsenic-75a	-0.00600	0.0373	0.200	ug/L	
SLE0204-CCBE	Cadmium-111	-0.00100	0.03	0.100	ug/L	
SLE0204-CCBE	Cadmium-114	0.00400	0.04	0.100	ug/L	
SLE0204-CCBE	Copper-63	-0.0350	0.173	0.500	ug/L	
SLE0204-CCBE	Copper-65	-0.0400	0.35	0.500	ug/L	
SLE0204-CCBE	Zinc-66	-0.0710	2.92	6.00	ug/L	
SLE0204-CCBE	Zinc-67	-0.155	0.94	6.00	ug/L	
SLE0204-IBLE	Arsenic-75a	-0.00800	0.0373	0.200	ug/L	
SLE0204-IBLE	Cadmium-111	-0.00500	0.03	0.100	ug/L	
SLE0204-IBLE	Cadmium-114	0.00400	0.04	0.100	ug/L	
SLE0204-IBLE	Copper-63	-0.0340	0.173	0.500	ug/L	
SLE0204-IBLE	Copper-65	-0.0360	0.35	0.500	ug/L	
SLE0204-IBLE	Zinc-66	-0.0450	2.92	6.00	ug/L	
SLE0204-IBLE	Zinc-67	-0.0590	0.94	6.00	ug/L	
SLE0204-IBLF	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SLE0204-IBLF	Cadmium-111	-0.00300	0.03	0.100	ug/L	
SLE0204-IBLF	Cadmium-114	0.00	0.04	0.100	ug/L	
SLE0204-IBLF	Copper-63	-0.0350	0.173	0.500	ug/L	
SLE0204-IBLF	Copper-65	-0.0410	0.35	0.500	ug/L	
SLE0204-IBLF	Zinc-66	-0.0640	2.92	6.00	ug/L	
SLE0204-IBLF	Zinc-67	-0.122	0.94	6.00	ug/L	
SLE0204-CCBF	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	
SLE0204-CCBF	Cadmium-111	-0.00200	0.03	0.100	ug/L	
SLE0204-CCBF	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-CCBF	Copper-63	-0.0370	0.173	0.500	ug/L	
SLE0204-CCBF	Copper-65	-0.0380	0.35	0.500	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/11/23 04:33

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-CCBF	Zinc-66	-0.0700	2.92	6.00	ug/L	
SLE0204-CCBF	Zinc-67	-0.130	0.94	6.00	ug/L	
SLE0204-CCBG	Arsenic-75a	-0.00300	0.0373	0.200	ug/L	
SLE0204-CCBG	Cadmium-111	-0.00400	0.03	0.100	ug/L	
SLE0204-CCBG	Cadmium-114	0.00	0.04	0.100	ug/L	
SLE0204-CCBG	Copper-63	-0.00500	0.173	0.500	ug/L	
SLE0204-CCBG	Copper-65	-0.00400	0.35	0.500	ug/L	
SLE0204-CCBG	Zinc-66	-0.0680	2.92	6.00	ug/L	
SLE0204-CCBG	Zinc-67	-0.0590	0.94	6.00	ug/L	
SLE0204-IBLG	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SLE0204-IBLG	Cadmium-111	0.00100	0.03	0.100	ug/L	
SLE0204-IBLG	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-IBLG	Copper-63	-0.00400	0.173	0.500	ug/L	
SLE0204-IBLG	Copper-65	-0.00200	0.35	0.500	ug/L	
SLE0204-IBLG	Zinc-66	-0.0550	2.92	6.00	ug/L	
SLE0204-IBLG	Zinc-67	-0.0180	0.94	6.00	ug/L	
SLE0204-CCBH	Arsenic-75a	0.00600	0.0373	0.200	ug/L	
SLE0204-CCBH	Cadmium-111	-0.00300	0.03	0.100	ug/L	
SLE0204-CCBH	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-CCBH	Copper-63	-0.00400	0.173	0.500	ug/L	
SLE0204-CCBH	Copper-65	-0.00300	0.35	0.500	ug/L	
SLE0204-CCBH	Zinc-66	-0.0510	2.92	6.00	ug/L	
SLE0204-CCBH	Zinc-67	-0.0820	0.94	6.00	ug/L	
SLE0204-IBLH	Arsenic-75a	-0.00400	0.0373	0.200	ug/L	
SLE0204-IBLH	Cadmium-111	-0.00300	0.03	0.100	ug/L	
SLE0204-IBLH	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLE0204-IBLH	Copper-63	-0.00500	0.173	0.500	ug/L	
SLE0204-IBLH	Copper-65	-0.00100	0.35	0.500	ug/L	
SLE0204-IBLH	Zinc-66	-0.0600	2.92	6.00	ug/L	
SLE0204-IBLH	Zinc-67	-0.0820	0.94	6.00	ug/L	
SLE0204-CCBI	Arsenic-75a	0.00200	0.0373	0.200	ug/L	
SLE0204-CCBI	Cadmium-111	0.00400	0.03	0.100	ug/L	
SLE0204-CCBI	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLE0204-CCBI	Copper-63	-0.00500	0.173	0.500	ug/L	
SLE0204-CCBI	Copper-65	-0.00300	0.35	0.500	ug/L	
SLE0204-CCBI	Zinc-66	-0.0640	2.92	6.00	ug/L	



**INSTRUMENT BLANKS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Date Analyzed: 05/11/23 06:42

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0204-CCBI	Zinc-67	-0.0510	0.94	6.00	ug/L	
SLE0204-IBLI	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	
SLE0204-IBLI	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLE0204-IBLI	Cadmium-114	0.00	0.04	0.100	ug/L	
SLE0204-IBLI	Copper-63	-0.00500	0.173	0.500	ug/L	
SLE0204-IBLI	Copper-65	-0.00500	0.35	0.500	ug/L	
SLE0204-IBLI	Zinc-66	-0.0540	2.92	6.00	ug/L	
SLE0204-IBLI	Zinc-67	-0.0640	0.94	6.00	ug/L	
SLE0204-IBLJ	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SLE0204-IBLJ	Cadmium-111	0.00200	0.03	0.100	ug/L	
SLE0204-IBLJ	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLE0204-IBLJ	Copper-63	-0.00600	0.173	0.500	ug/L	
SLE0204-IBLJ	Copper-65	-0.00300	0.35	0.500	ug/L	
SLE0204-IBLJ	Zinc-66	-0.0490	2.92	6.00	ug/L	
SLE0204-IBLJ	Zinc-67	-0.0310	0.94	6.00	ug/L	
SLE0204-CCBJ	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SLE0204-CCBJ	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLE0204-CCBJ	Cadmium-114	0.00	0.04	0.100	ug/L	
SLE0204-CCBJ	Copper-63	0.00800	0.173	0.500	ug/L	
SLE0204-CCBJ	Copper-65	0.0120	0.35	0.500	ug/L	
SLE0204-CCBJ	Zinc-66	-0.0420	2.92	6.00	ug/L	
SLE0204-CCBJ	Zinc-67	-0.0330	0.94	6.00	ug/L	



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SLE0204-CAL1	XDT_m1230510A-008	NA	05/10/23 15:47
CAL 1 - LOW CHECK	SLE0204-CAL2	XDT_m1230510A-009	NA	05/10/23 15:51
CAL 2	SLE0204-CAL3	XDT_m1230510A-010	NA	05/10/23 15:56
CAL 3	SLE0204-CAL4	XDT_m1230510A-011	NA	05/10/23 16:01
CAL 4	SLE0204-CAL5	XDT_m1230510A-012	NA	05/10/23 16:05
CAL 5	SLE0204-CAL6	XDT_m1230510A-013	NA	05/10/23 16:12
RINSE	SLE0204-IBL1	XDT_m1230510A-014	NA	05/10/23 16:19
Initial Cal Check	SLE0204-ICV1	XDT_m1230510A-016	NA	05/10/23 16:25
Initial Cal Blank	SLE0204-ICB1	XDT_m1230510A-017	NA	05/10/23 16:32
Calibration Check	SLE0204-CCV1	XDT_m1230510A-018	NA	05/10/23 16:37
Calibration Blank	SLE0204-CCB1	XDT_m1230510A-019	NA	05/10/23 16:44
Instrument RL Check	SLE0204-CRL1	XDT_m1230510A-020	NA	05/10/23 16:49
Interference Check A	SLE0204-IFA1	XDT_m1230510A-021	NA	05/10/23 16:56
Interference Check B	SLE0204-IFB1	XDT_m1230510A-022	NA	05/10/23 17:00
LR200	SLE0204-HCV1	XDT_m1230510A-023	NA	05/10/23 17:06
LR300	SLE0204-HCV2	XDT_m1230510A-024	NA	05/10/23 17:11
Instrument Blank	SLE0204-IBL2	XDT_m1230510A-025	NA	05/10/23 17:18
Calibration Check	SLE0204-CCV2	XDT_m1230510A-026	NA	05/10/23 17:24
Calibration Blank	SLE0204-CCB2	XDT_m1230510A-027	NA	05/10/23 17:32
Calibration Check	SLE0204-CCV3	XDT_m1230510A-029	NA	05/10/23 17:41
Calibration Blank	SLE0204-CCB3	XDT_m1230510A-030	NA	05/10/23 17:49
ZZZZZ	BLD0687-BLK2	XDT_m1230510A-031	Solid	05/10/23 17:54
ZZZZZ	BLD0687-BS2	XDT_m1230510A-033	Solid	05/10/23 18:05
ZZZZZ	BLE0298-BLK1	XDT_m1230510A-034	Water	05/10/23 18:11
ZZZZZ	BLE0298-BS1	XDT_m1230510A-035	Water	05/10/23 18:15
ZZZZZ	BLE0077-MS2	XDT_m1230510A-036	Water	05/10/23 18:21
Instrument Blank	SLE0204-IBL3	XDT_m1230510A-040	NA	05/10/23 18:41
Calibration Check	SLE0204-CCV4	XDT_m1230510A-041	NA	05/10/23 18:45
Calibration Blank	SLE0204-CCB4	XDT_m1230510A-042	NA	05/10/23 18:53



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	BLE0143-BLK1	XDT_m1230510A-045	Solid	05/10/23 19:07
ZZZZZ	BLE0143-BS1	XDT_m1230510A-047	Solid	05/10/23 19:19
Instrument Blank	SLE0204-IBL4	XDT_m1230510A-050	NA	05/10/23 19:33
Instrument Blank	SLE0204-IBL5	XDT_m1230510A-052	NA	05/10/23 19:44
Calibration Check	SLE0204-CCV5	XDT_m1230510A-053	NA	05/10/23 19:48
Calibration Blank	SLE0204-CCB5	XDT_m1230510A-054	NA	05/10/23 19:56
Calibration Check	SLE0204-CCV6	XDT_m1230510A-057	NA	05/10/23 20:30
Calibration Blank	SLE0204-CCB6	XDT_m1230510A-058	NA	05/10/23 20:37
Blank	BLD0578-BLK1	XDT_m1230510A-059	Solid	05/10/23 20:44
LCS	BLD0578-BS1	XDT_m1230510A-060	Solid	05/10/23 20:48
ZZZZZ	BLE0072-BLK1	XDT_m1230510A-061	Solid	05/10/23 20:53
ZZZZZ	BLE0072-BS1	XDT_m1230510A-062	Solid	05/10/23 20:57
ZZZZZ	23D0394-01	XDT_m1230510A-063	Solid	05/10/23 21:02
ZZZZZ	BLD0687-DUP2	XDT_m1230510A-064	Solid	05/10/23 21:07
ZZZZZ	BLD0687-MS2	XDT_m1230510A-065	Solid	05/10/23 21:12
ZZZZZ	BLD0687-MSD2	XDT_m1230510A-066	Solid	05/10/23 21:16
Instrument Blank	SLE0204-IBL6	XDT_m1230510A-068	NA	05/10/23 21:25
Calibration Check	SLE0204-CCV7	XDT_m1230510A-069	NA	05/10/23 21:29
Calibration Blank	SLE0204-CCB7	XDT_m1230510A-070	NA	05/10/23 21:37
ZZZZZ	23A0467-02	XDT_m1230510A-071	Solid	05/10/23 21:41
ZZZZZ	23A0467-02	XDT_m1230510A-071	Solid	05/10/23 21:41
ZZZZZ	23A0467-02	XDT_m1230510A-071	Solid	05/10/23 21:41
ZZZZZ	23A0467-02	XDT_m1230510A-071	Solid	05/10/23 21:41
ZZZZZ	23A0467-03	XDT_m1230510A-072	Solid	05/10/23 21:45
ZZZZZ	23A0467-03	XDT_m1230510A-072	Solid	05/10/23 21:45
ZZZZZ	23A0467-03	XDT_m1230510A-072	Solid	05/10/23 21:45
ZZZZZ	23A0467-03	XDT_m1230510A-072	Solid	05/10/23 21:45
ZZZZZ	23A0467-04	XDT_m1230510A-073	Solid	05/10/23 21:50
ZZZZZ	23A0467-04	XDT_m1230510A-073	Solid	05/10/23 21:50





## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0204</u>	Instrument:	<u>ICPMS1</u>
		Calibration:	<u>GE00040</u>

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23A0467-04	XDT_m1230510A-073	Solid	05/10/23 21:50
ZZZZZ	23A0467-04	XDT_m1230510A-073	Solid	05/10/23 21:50
ZZZZZ	23A0467-05	XDT_m1230510A-074	Solid	05/10/23 21:54
ZZZZZ	23A0467-05	XDT_m1230510A-074	Solid	05/10/23 21:54
ZZZZZ	23A0467-05	XDT_m1230510A-074	Solid	05/10/23 21:54
ZZZZZ	23A0467-05	XDT_m1230510A-074	Solid	05/10/23 21:54
ZZZZZ	23A0467-05	XDT_m1230510A-074	Solid	05/10/23 21:54
ZZZZZ	23A0467-01	XDT_m1230510A-075	Solid	05/10/23 21:59
ZZZZZ	23A0467-01	XDT_m1230510A-075	Solid	05/10/23 21:59
ZZZZZ	23A0467-01	XDT_m1230510A-075	Solid	05/10/23 21:59
ZZZZZ	23A0467-01	XDT_m1230510A-075	Solid	05/10/23 21:59
Instrument Blank	SLE0204-IBL7	XDT_m1230510A-080	NA	05/10/23 22:21
Calibration Check	SLE0204-CCV8	XDT_m1230510A-081	NA	05/10/23 22:25
Calibration Blank	SLE0204-CCB8	XDT_m1230510A-082	NA	05/10/23 22:32
ZZZZZ	23A0467-06	XDT_m1230510A-083	Solid	05/10/23 22:37
ZZZZZ	23A0467-06	XDT_m1230510A-083	Solid	05/10/23 22:37
ZZZZZ	23A0467-06	XDT_m1230510A-083	Solid	05/10/23 22:37
ZZZZZ	23A0467-06	XDT_m1230510A-083	Solid	05/10/23 22:37
ZZZZZ	23A0467-07	XDT_m1230510A-084	Solid	05/10/23 22:41
ZZZZZ	23A0467-07	XDT_m1230510A-084	Solid	05/10/23 22:41
ZZZZZ	23A0467-07	XDT_m1230510A-084	Solid	05/10/23 22:41
ZZZZZ	23A0467-07	XDT_m1230510A-084	Solid	05/10/23 22:41
ZZZZZ	23A0467-08	XDT_m1230510A-085	Solid	05/10/23 22:46
ZZZZZ	23A0467-08	XDT_m1230510A-085	Solid	05/10/23 22:46
ZZZZZ	23A0467-08	XDT_m1230510A-085	Solid	05/10/23 22:46
ZZZZZ	23A0467-08	XDT_m1230510A-085	Solid	05/10/23 22:46
ZZZZZ	23A0467-09	XDT_m1230510A-086	Solid	05/10/23 22:50
ZZZZZ	23A0467-09	XDT_m1230510A-086	Solid	05/10/23 22:50
ZZZZZ	23A0467-09	XDT_m1230510A-086	Solid	05/10/23 22:50
ZZZZZ	23A0467-09	XDT_m1230510A-086	Solid	05/10/23 22:50



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Instrument Blank	SLE0204-IBL8	XDT_m1230510A-092	NA	05/10/23 23:16
Calibration Check	SLE0204-CCV9	XDT_m1230510A-093	NA	05/10/23 23:21
Calibration Blank	SLE0204-CCB9	XDT_m1230510A-094	NA	05/10/23 23:28
ZZZZZ	23C0071-01	XDT_m1230510A-095	Solid	05/10/23 23:33
ZZZZZ	23C0071-01	XDT_m1230510A-095	Solid	05/10/23 23:33
ZZZZZ	23C0071-01	XDT_m1230510A-095	Solid	05/10/23 23:33
ZZZZZ	23C0071-01	XDT_m1230510A-095	Solid	05/10/23 23:33
ZZZZZ	23C0071-02	XDT_m1230510A-096	Solid	05/10/23 23:37
ZZZZZ	23C0071-02	XDT_m1230510A-096	Solid	05/10/23 23:37
ZZZZZ	23C0071-02	XDT_m1230510A-096	Solid	05/10/23 23:37
ZZZZZ	23C0071-02	XDT_m1230510A-096	Solid	05/10/23 23:37
ZZZZZ	23C0071-03	XDT_m1230510A-097	Solid	05/10/23 23:41
ZZZZZ	23C0071-03	XDT_m1230510A-097	Solid	05/10/23 23:41
ZZZZZ	23C0071-03	XDT_m1230510A-097	Solid	05/10/23 23:41
ZZZZZ	23C0071-03	XDT_m1230510A-097	Solid	05/10/23 23:41
ZZZZZ	23C0071-04	XDT_m1230510A-098	Solid	05/10/23 23:46
ZZZZZ	23C0071-04	XDT_m1230510A-098	Solid	05/10/23 23:46
ZZZZZ	23C0071-04	XDT_m1230510A-098	Solid	05/10/23 23:46
ZZZZZ	23C0071-04	XDT_m1230510A-098	Solid	05/10/23 23:46
ZZZZZ	23C0071-05	XDT_m1230510A-099	Solid	05/10/23 23:50
ZZZZZ	23C0071-05	XDT_m1230510A-099	Solid	05/10/23 23:50
ZZZZZ	23C0071-05	XDT_m1230510A-099	Solid	05/10/23 23:50
ZZZZZ	23C0071-05	XDT_m1230510A-099	Solid	05/10/23 23:50
ZZZZZ	23C0071-06	XDT_m1230510A-100	Solid	05/10/23 23:55
ZZZZZ	23C0071-06	XDT_m1230510A-100	Solid	05/10/23 23:55
ZZZZZ	23C0071-06	XDT_m1230510A-100	Solid	05/10/23 23:55
ZZZZZ	23C0071-06	XDT_m1230510A-100	Solid	05/10/23 23:55
ZZZZZ	23C0109-02	XDT_m1230510A-101	Solid	05/10/23 23:59
ZZZZZ	23C0109-02	XDT_m1230510A-101	Solid	05/10/23 23:59



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23C0109-02	XDT_m1230510A-101	Solid	05/10/23 23:59
ZZZZZ	23C0109-02	XDT_m1230510A-101	Solid	05/10/23 23:59
ZZZZZ	23C0109-03	XDT_m1230510A-102	Solid	05/11/23 00:03
ZZZZZ	23C0109-03	XDT_m1230510A-102	Solid	05/11/23 00:03
ZZZZZ	23C0109-03	XDT_m1230510A-102	Solid	05/11/23 00:03
ZZZZZ	23C0109-03	XDT_m1230510A-102	Solid	05/11/23 00:03
ZZZZZ	23C0108-02	XDT_m1230510A-103	Solid	05/11/23 00:08
ZZZZZ	23C0108-02	XDT_m1230510A-103	Solid	05/11/23 00:08
ZZZZZ	23C0108-02	XDT_m1230510A-103	Solid	05/11/23 00:08
ZZZZZ	23C0108-02	XDT_m1230510A-103	Solid	05/11/23 00:08
Instrument Blank	SLE0204-IBL9	XDT_m1230510A-104	NA	05/11/23 00:12
Calibration Check	SLE0204-CCVA	XDT_m1230510A-105	NA	05/11/23 00:16
Calibration Blank	SLE0204-CCBA	XDT_m1230510A-106	NA	05/11/23 00:24
ZZZZZ	23C0108-06	XDT_m1230510A-107	Solid	05/11/23 00:28
ZZZZZ	23C0108-06	XDT_m1230510A-107	Solid	05/11/23 00:28
ZZZZZ	23C0108-06	XDT_m1230510A-107	Solid	05/11/23 00:28
ZZZZZ	23C0108-06	XDT_m1230510A-107	Solid	05/11/23 00:28
ZZZZZ	23C0108-07	XDT_m1230510A-108	Solid	05/11/23 00:32
ZZZZZ	23C0108-07	XDT_m1230510A-108	Solid	05/11/23 00:32
ZZZZZ	23C0108-07	XDT_m1230510A-108	Solid	05/11/23 00:32
ZZZZZ	23C0108-07	XDT_m1230510A-108	Solid	05/11/23 00:32
ZZZZZ	23C0108-08	XDT_m1230510A-109	Solid	05/11/23 00:37
ZZZZZ	23C0108-08	XDT_m1230510A-109	Solid	05/11/23 00:37
ZZZZZ	23C0108-08	XDT_m1230510A-109	Solid	05/11/23 00:37
ZZZZZ	23C0108-08	XDT_m1230510A-109	Solid	05/11/23 00:37
ZZZZZ	23C0108-09	XDT_m1230510A-110	Solid	05/11/23 00:41
ZZZZZ	23C0108-09	XDT_m1230510A-110	Solid	05/11/23 00:41
ZZZZZ	23C0108-09	XDT_m1230510A-110	Solid	05/11/23 00:41
ZZZZZ	23C0108-09	XDT_m1230510A-110	Solid	05/11/23 00:41



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23D0008-01	XDT_m1230510A-111	Solid	05/11/23 00:46
ZZZZZ	23D0008-01	XDT_m1230510A-111	Solid	05/11/23 00:46
ZZZZZ	23D0008-01	XDT_m1230510A-111	Solid	05/11/23 00:46
ZZZZZ	23D0008-01	XDT_m1230510A-111	Solid	05/11/23 00:46
ZZZZZ	23D0008-03	XDT_m1230510A-112	Solid	05/11/23 00:50
ZZZZZ	23D0008-03	XDT_m1230510A-112	Solid	05/11/23 00:50
ZZZZZ	23D0008-03	XDT_m1230510A-112	Solid	05/11/23 00:50
ZZZZZ	23D0008-03	XDT_m1230510A-112	Solid	05/11/23 00:50
ZZZZZ	23D0037-01	XDT_m1230510A-113	Solid	05/11/23 00:54
ZZZZZ	23D0037-01	XDT_m1230510A-113	Solid	05/11/23 00:54
ZZZZZ	23D0037-01	XDT_m1230510A-113	Solid	05/11/23 00:54
ZZZZZ	23D0037-01	XDT_m1230510A-113	Solid	05/11/23 00:54
ZZZZZ	23D0037-03	XDT_m1230510A-114	Solid	05/11/23 00:59
ZZZZZ	23D0037-03	XDT_m1230510A-114	Solid	05/11/23 00:59
ZZZZZ	23D0037-03	XDT_m1230510A-114	Solid	05/11/23 00:59
ZZZZZ	23D0037-03	XDT_m1230510A-114	Solid	05/11/23 00:59
ZZZZZ	23D0037-02	XDT_m1230510A-115	Solid	05/11/23 01:03
Instrument Blank	SLE0204-IBLA	XDT_m1230510A-116	NA	05/11/23 01:08
Calibration Check	SLE0204-CCVB	XDT_m1230510A-117	NA	05/11/23 01:12
Calibration Blank	SLE0204-CCBB	XDT_m1230510A-118	NA	05/11/23 01:19
Calibration Check	SLE0204-CCVC	XDT_m1230510A-120	NA	05/11/23 01:28
Calibration Blank	SLE0204-CCBC	XDT_m1230510A-121	NA	05/11/23 01:35
ZZZZZ	23D0037-04	XDT_m1230510A-122	Solid	05/11/23 01:40
LDW23-SS1818	23D0063-01	XDT_m1230510A-123	Solid	05/11/23 01:44
LDW23-SS1818	23D0063-01	XDT_m1230510A-123	Solid	05/11/23 01:44
LDW23-SS1818	23D0063-01	XDT_m1230510A-123	Solid	05/11/23 01:44
LDW23-SS1818	23D0063-01	XDT_m1230510A-123	Solid	05/11/23 01:44
LDW23-SS1819	23D0063-03	XDT_m1230510A-124	Solid	05/11/23 01:49
LDW23-SS1819	23D0063-03	XDT_m1230510A-124	Solid	05/11/23 01:49



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0204</u>	Instrument:	<u>ICPMS1</u>
		Calibration:	<u>GE00040</u>

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
LDW23-SS1819	23D0063-03	XDT_m1230510A-124	Solid	05/11/23 01:49
LDW23-SS1819	23D0063-03	XDT_m1230510A-124	Solid	05/11/23 01:49
Instrument Blank	SLE0204-IBLB	XDT_m1230510A-131	NA	05/11/23 02:21
Calibration Check	SLE0204-CCVD	XDT_m1230510A-132	NA	05/11/23 02:26
Calibration Blank	SLE0204-CCBD	XDT_m1230510A-133	NA	05/11/23 02:33
Instrument Blank	SLE0204-IBLC	XDT_m1230510A-138	NA	05/11/23 02:57
ZZZZZ	23D0477-21	XDT_m1230510A-141	Water	05/11/23 03:11
ZZZZZ	23D0477-21	XDT_m1230510A-141	Water	05/11/23 03:11
ZZZZZ	23D0477-21	XDT_m1230510A-141	Water	05/11/23 03:11
ZZZZZ	23D0477-22	XDT_m1230510A-142	Water	05/11/23 03:15
ZZZZZ	23D0477-22	XDT_m1230510A-142	Water	05/11/23 03:15
ZZZZZ	23D0477-22	XDT_m1230510A-142	Water	05/11/23 03:15
Instrument Blank	SLE0204-IBLD	XDT_m1230510A-143	NA	05/11/23 03:20
Calibration Check	SLE0204-CCVE	XDT_m1230510A-144	NA	05/11/23 03:24
Calibration Blank	SLE0204-CCBE	XDT_m1230510A-145	NA	05/11/23 03:31
ZZZZZ	23D0477-11	XDT_m1230510A-146	Water	05/11/23 03:36
ZZZZZ	23D0477-11	XDT_m1230510A-146	Water	05/11/23 03:36
ZZZZZ	23D0477-11	XDT_m1230510A-146	Water	05/11/23 03:36
ZZZZZ	23D0477-13	XDT_m1230510A-147	Water	05/11/23 03:40
ZZZZZ	23D0477-13	XDT_m1230510A-147	Water	05/11/23 03:40
ZZZZZ	23D0477-13	XDT_m1230510A-147	Water	05/11/23 03:40
ZZZZZ	23D0477-02	XDT_m1230510A-148	Water	05/11/23 03:45
ZZZZZ	23D0477-02	XDT_m1230510A-148	Water	05/11/23 03:45
ZZZZZ	23D0477-02	XDT_m1230510A-148	Water	05/11/23 03:45
Instrument Blank	SLE0204-IBLE	XDT_m1230510A-150	NA	05/11/23 03:57
Instrument Blank	SLE0204-IBLF	XDT_m1230510A-155	NA	05/11/23 04:21
Calibration Check	SLE0204-CCVF	XDT_m1230510A-156	NA	05/11/23 04:26
Calibration Blank	SLE0204-CCBF	XDT_m1230510A-157	NA	05/11/23 04:33
Calibration Check	SLE0204-CCVG	XDT_m1230510A-159	NA	05/11/23 04:42



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Blank	SLE0204-CCBG	XDT_m1230510A-160	NA	05/11/23 04:49
ZZZZZ	23D0477-04	XDT_m1230510A-161	Water	05/11/23 04:53
ZZZZZ	23D0477-04	XDT_m1230510A-161	Water	05/11/23 04:53
ZZZZZ	23D0477-04	XDT_m1230510A-161	Water	05/11/23 04:53
ZZZZZ	23D0477-06	XDT_m1230510A-162	Water	05/11/23 04:58
ZZZZZ	23D0477-06	XDT_m1230510A-162	Water	05/11/23 04:58
ZZZZZ	23D0477-06	XDT_m1230510A-162	Water	05/11/23 04:58
ZZZZZ	23D0477-08	XDT_m1230510A-163	Water	05/11/23 05:02
ZZZZZ	23D0477-08	XDT_m1230510A-163	Water	05/11/23 05:02
ZZZZZ	23D0477-08	XDT_m1230510A-163	Water	05/11/23 05:02
ZZZZZ	23D0477-10	XDT_m1230510A-164	Water	05/11/23 05:07
ZZZZZ	23D0477-10	XDT_m1230510A-164	Water	05/11/23 05:07
ZZZZZ	23D0477-10	XDT_m1230510A-164	Water	05/11/23 05:07
ZZZZZ	23D0477-12	XDT_m1230510A-165	Water	05/11/23 05:11
ZZZZZ	23D0477-12	XDT_m1230510A-165	Water	05/11/23 05:11
ZZZZZ	23D0477-12	XDT_m1230510A-165	Water	05/11/23 05:11
ZZZZZ	23D0477-20	XDT_m1230510A-166	Water	05/11/23 05:16
ZZZZZ	23D0477-20	XDT_m1230510A-166	Water	05/11/23 05:16
ZZZZZ	23D0477-20	XDT_m1230510A-166	Water	05/11/23 05:16
Instrument Blank	SLE0204-IBLG	XDT_m1230510A-170	NA	05/11/23 05:33
Calibration Check	SLE0204-CCVH	XDT_m1230510A-171	NA	05/11/23 05:38
Calibration Blank	SLE0204-CCBH	XDT_m1230510A-172	NA	05/11/23 05:45
ZZZZZ	23D0477-14	XDT_m1230510A-173	Water	05/11/23 05:50
ZZZZZ	23D0477-14	XDT_m1230510A-173	Water	05/11/23 05:50
ZZZZZ	23D0477-14	XDT_m1230510A-173	Water	05/11/23 05:50
ZZZZZ	23D0477-16	XDT_m1230510A-174	Water	05/11/23 05:54
ZZZZZ	23D0477-16	XDT_m1230510A-174	Water	05/11/23 05:54
ZZZZZ	23D0477-16	XDT_m1230510A-174	Water	05/11/23 05:54
ZZZZZ	23D0477-18	XDT_m1230510A-175	Water	05/11/23 05:58



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23D0477-18	XDT_m1230510A-175	Water	05/11/23 05:58
ZZZZZ	23D0477-18	XDT_m1230510A-175	Water	05/11/23 05:58
ZZZZZ	23D0477-01	XDT_m1230510A-176	Water	05/11/23 06:03
ZZZZZ	23D0477-01	XDT_m1230510A-176	Water	05/11/23 06:03
ZZZZZ	23D0477-01	XDT_m1230510A-176	Water	05/11/23 06:03
ZZZZZ	23D0477-03	XDT_m1230510A-177	Water	05/11/23 06:07
ZZZZZ	23D0477-03	XDT_m1230510A-177	Water	05/11/23 06:07
ZZZZZ	23D0477-03	XDT_m1230510A-177	Water	05/11/23 06:07
ZZZZZ	23D0477-07	XDT_m1230510A-178	Water	05/11/23 06:12
ZZZZZ	23D0477-07	XDT_m1230510A-178	Water	05/11/23 06:12
ZZZZZ	23D0477-07	XDT_m1230510A-178	Water	05/11/23 06:12
ZZZZZ	23D0477-09	XDT_m1230510A-179	Water	05/11/23 06:16
ZZZZZ	23D0477-09	XDT_m1230510A-179	Water	05/11/23 06:16
ZZZZZ	23D0477-09	XDT_m1230510A-179	Water	05/11/23 06:16
ZZZZZ	23D0477-15	XDT_m1230510A-180	Water	05/11/23 06:20
ZZZZZ	23D0477-15	XDT_m1230510A-180	Water	05/11/23 06:20
ZZZZZ	23D0477-15	XDT_m1230510A-180	Water	05/11/23 06:20
ZZZZZ	23D0487-02	XDT_m1230510A-181	Water	05/11/23 06:26
Instrument Blank	SLE0204-IBLH	XDT_m1230510A-182	NA	05/11/23 06:31
Calibration Check	SLE0204-CCVI	XDT_m1230510A-183	NA	05/11/23 06:35
Calibration Blank	SLE0204-CCBI	XDT_m1230510A-184	NA	05/11/23 06:42
ZZZZZ	23D0487-06	XDT_m1230510A-185	Water	05/11/23 06:47
ZZZZZ	23D0487-05	XDT_m1230510A-186	Water	05/11/23 06:51
ZZZZZ	23D0487-04	XDT_m1230510A-187	Water	05/11/23 06:55
ZZZZZ	23D0487-03	XDT_m1230510A-188	Water	05/11/23 07:00
Instrument Blank	SLE0204-IBLI	XDT_m1230510A-189	NA	05/11/23 07:05
ZZZZZ	23D0636-01	XDT_m1230510A-190	Water	05/11/23 07:09
ZZZZZ	23D0636-01	XDT_m1230510A-190	Water	05/11/23 07:09
ZZZZZ	23D0636-01	XDT_m1230510A-190	Water	05/11/23 07:09



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0204

Instrument: ICPMS1

Calibration: GE00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23D0636-01	XDT_m1230510A-190	Water	05/11/23 07:09
ZZZZZ	BLE0298-DUP1	XDT_m1230510A-191	Water	05/11/23 07:14
ZZZZZ	BLE0298-MS1	XDT_m1230510A-192	Water	05/11/23 07:19
ZZZZZ	BLE0298-MSD1	XDT_m1230510A-193	Water	05/11/23 07:25
Instrument Blank	SLE0204-IBLJ	XDT_m1230510A-194	NA	05/11/23 07:29
Calibration Check	SLE0204-CCVJ	XDT_m1230510A-195	NA	05/11/23 07:34
Calibration Blank	SLE0204-CCBJ	XDT_m1230510A-196	NA	05/11/23 07:41





**ICP INTERFERENCE CHECK SAMPLE**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Standard ID: L004688

Lab Sample ID	Analyte	True	Found	%R	Units
SLE0204-IFA1	Arsenic-75a	0	0.0260		ug/L
	Cadmium-111	0	0.0430		ug/L
	Cadmium-114	0	0.0270		ug/L
	Copper-63	0	0.0390		ug/L
	Copper-65	0	0.0330		ug/L
	Zinc-66	0	0.3120		ug/L
	Zinc-67	0	0.2690		ug/L

\* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.



**ICP INTERFERENCE CHECK SAMPLE**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Standard ID: L004688

Lab Sample ID	Analyte	True	Found	%R	Units
SLE0204-IFB1	Arsenic-75a	20.000	19.651	98.3	ug/L
	Cadmium-111	20.000	18.519	92.6	ug/L
	Cadmium-114	20.000	18.365	91.8	ug/L
	Copper-63	20.000	20.580	103	ug/L
	Copper-65	20.000	20.103	101	ug/L
	Zinc-66	20.000	19.662	98.3	ug/L
	Zinc-67	20.000	17.951	89.8	ug/L

\* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.



**DETECTION LEVEL STANDARD**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: ICPMS1

Calibration: GE00040

Sequence: SLE0204

Lab Sample ID: SLE0204-CRL1

Analyte	True	Found	%R	Units	QC Limits
Arsenic-75a	0.20000	0.213	107	ug/L	50 - 150
Cadmium-111	0.10000	0.113	113	ug/L	50 - 150
Cadmium-114	0.10000	0.0970	97.0	ug/L	50 - 150
Copper-63	0.50000	0.708	142	ug/L	50 - 150
Copper-65	0.50000	0.727	145	ug/L	50 - 150
Zinc-66	6.0000	6.25	104	ug/L	50 - 150
Zinc-67	6.0000	6.11	102	ug/L	50 - 150

\* Values outside of QC limits



**HIGH-CONCENTRATION  
CALIBRATION VERIFICATION  
EPA 6020B UCT-KED**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00040

**Laboratory ID:** SLE0204-HCV1

**Sequence:** SLE0204

**Standard ID:** L004780

<b>ANALYTE</b>	<b>EXPECTED (ug/L)</b>	<b>FOUND (ug/L)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
Arsenic-75a	200.00	194	-3.1	10.00
Cadmium-111	200.00	220	9.8	10.00
Cadmium-114	200.00	220	10.0	10.00
Copper-63	200.00	188	-6.2	10.00
Copper-65	200.00	186	-7.1	10.00
Zinc-66	200.00	189	-5.4	10.00
Zinc-67	200.00	187	-6.7	10.00

\* Values outside of QC limits



## HIGH-CONCENTRATION CALIBRATION VERIFICATION

### EPA 6020B UCT-KED

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Calibration:** GE00040

**Laboratory ID:** SLE0204-HCV2

**Sequence:** SLE0204

**Standard ID:** L004781

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	300.00	305	1.7	10.00
Cadmium-111	300.00	293	-2.4	10.00
Cadmium-114	300.00	294	-1.9	10.00
Copper-63	300.00	287	-4.3	10.00
Copper-65	300.00	287	-4.2	10.00
Zinc-66	300.00	285	-4.9	10.00
Zinc-67	300.00	288	-4.1	10.00

\* Values outside of QC limits



## HOLDING TIME SUMMARY

**Analysis: EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/26/23 12:19	22	180	05/11/23 01:44	37	180	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/26/23 12:19	21	180	05/11/23 01:49	37	180	

\* Indicates hold time exceedance.



**METHOD DETECTION  
AND REPORTING LIMITS**  
**EPA 6020B UCT-KED**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: ICPMS1

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
Arsenic-75a	0.04	0.20	mg/kg
Cadmium-111	0.03	0.10	mg/kg
Cadmium-114	0.04	0.10	mg/kg
Copper-63	0.17	0.50	mg/kg
Copper-65	0.35	0.50	mg/kg
Zinc-66	2.9	6.0	mg/kg
Zinc-67	0.9	6.0	mg/kg

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
 Catalog Number: CGCU10  
 Lot Number: P2-CU682108  
 Matrix: 3% (v/v) HNO<sub>3</sub>  
 Value / Analyte(s): 10 000 µg/mL ea:  
                                   Copper  
 Starting Material: Cu Metal  
 Starting Material Lot#: 2095  
 Starting Material Purity: 99.9996%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10013 ± 30 µg/mL  
**Density:** 1.032 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9977 ± 50 µg/mL</b> ICP Assay NIST SRM 3114 Lot Number: 121207
<b>Assay Method #2</b>	<b>10024 ± 26 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10007 ± 46 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.007542	M Eu < 0.000942	O Na < 0.001434	M Se < 0.016971	M Zn < 0.005657
O Al < 0.000609	O Fe < 0.008700	M Nb < 0.000942	O Si < 0.003052	M Zr < 0.000942
M As < 0.010371	M Ga < 0.000942	M Nd < 0.000942	M Sm < 0.000942	
M Au < 0.001885	M Gd < 0.000942	M Ni < 0.003781	M Sn < 0.005657	
O B < 0.003663	M Ge < 0.005657	M Os < 0.000942	M Sr < 0.000942	
M Ba < 0.004253	M Hf < 0.000942	O P < 0.031668	M Ta < 0.000942	
M Be < 0.000942	O Hg < 0.007064	M Pb < 0.005789	M Tb < 0.000942	
M Bi < 0.000942	M Ho < 0.000942	M Pd < 0.000942	M Te < 0.004714	
O Ca < 0.002304	M In < 0.000942	M Pr < 0.000942	M Th < 0.000942	
M Cd < 0.000942	M Ir < 0.000942	M Pt < 0.000942	O Ti < 0.002801	
M Ce < 0.000942	O K < 0.000763	M Rb < 0.000942	M Tl < 0.000942	
M Co < 0.001890	M La < 0.000942	M Re < 0.000942	M Tm < 0.000942	
M Cr < 0.005657	O Li < 0.000243	i Rh <	M U < 0.000942	
M Cs < 0.000942	M Lu < 0.000942	M Ru < 0.039588	M V < 0.003771	
s Cu <	O Mg < 0.000320	O S < 0.007174	M W < 0.005657	
M Dy < 0.000942	O Mn < 0.000793	M Sb < 0.001885	M Y < 0.000942	
M Er < 0.000942	M Mo < 0.005657	M Sc < 0.000942	M Yb < 0.000942	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 63.55 +2 6 Cu(H<sub>2</sub>O)<sub>6</sub><sup>2+</sup>

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Cu Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub> ); Oxides ( Soluble in HCl ); Ores ( Dissolve in HCl / HNO<sub>3</sub>).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

August 24, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **August 24, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGPB10  
Lot Number: S2-PB713228  
Matrix: 0.5% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Lead  
Starting Material: Lead Nitrate  
Starting Material Lot#: 2343  
Starting Material Purity: 99.9995%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10042 ± 31 µg/mL  
**Density:** 1.015 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10024 ± 41 µg/mL**  
ICP Assay NIST SRM 3128 Lot Number: 101026

**Assay Method #2**      **10054 ± 32 µg/mL**  
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.000310	M Eu < 0.000310	M Na < 0.001470	M Se < 0.009100	O Zn < 0.006155
O Al < 0.017098	O Fe < 0.002496	M Nb < 0.000310	O Si < 0.003761	O Zr < 0.001700
M As < 0.003100	M Ga < 0.000310	M Nd < 0.000310	M Sm < 0.000310	
M Au < 0.000910	M Gd < 0.000310	O Ni < 0.001709	M Sn < 0.001300	
O B < 0.005600	M Ge < 0.002200	M Os < 0.000310	O Sr < 0.000444	
O Ba < 0.007865	M Hf < 0.000310	O P < 0.038000	M Ta < 0.000310	
O Be < 0.000320	M Hg < 0.002200	s Pb < 0.000610	M Tb < 0.000610	
M Bi < 0.028000	M Ho < 0.000310	M Pd < 0.000610	M Te < 0.000310	
O Ca < 0.019834	M In < 0.000310	M Pr < 0.000310	M Th < 0.000310	
O Cd < 0.000630	M Ir < 0.000310	M Pt < 0.000910	O Ti < 0.005129	
M Ce < 0.004787	O K < 0.008207	M Rb < 0.006700	M Tl < 0.016000	
M Co < 0.000610	M La < 0.001900	M Re < 0.000310	M Tm < 0.000310	
O Cr < 0.001500	O Li < 0.000110	O Rh < 0.007700	M U < 0.000310	
M Cs < 0.006100	M Lu < 0.000310	M Ru < 0.001300	M V < 0.001600	
M Cu < 0.001600	O Mg < 0.003317	O S < 0.052000	M W < 0.000910	
M Dy < 0.000310	O Mn < 0.001600	O Sb < 0.015000	M Y < 0.000310	
M Er < 0.000310	M Mo < 0.000610	O Sc < 0.000630	M Yb < 0.000310	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 207.20 +2 6 Pb(H<sub>2</sub>O)<sub>6</sub>+2

**Chemical Compatibility** - Soluble in HCl, HF and HNO<sub>3</sub>. Avoid H<sub>2</sub>SO<sub>4</sub>. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Pb Containing Samples (Preparation and Solution)** -Metal (Best dissolved in 1:1 H<sub>2</sub>O / HNO<sub>3</sub> ); Oxides (The many different Pb oxides are soluble in HNO<sub>3</sub> with the exception of PbO<sub>2</sub> which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H<sub>2</sub>O / HNO<sub>3</sub> ); Organic Matrices (Dry ash and dissolve in dilute HCl).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

January 10, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **January 10, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGZN10  
Lot Number: S2-ZN711249  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Zinc  
Starting Material: Zinc Metal  
Starting Material Lot#: 2349  
Starting Material Purity: 99.9988%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9992 ± 30 µg/mL  
**Density:** 1.029 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9981 ± 56 µg/mL</b> ICP Assay NIST SRM 3168a Lot Number: 120629
<b>Assay Method #2</b>	<b>9987 ± 32 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10002 ± 32 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.002000	M Eu < 0.000500	O Na < 0.008713	M Se < 0.048000	s Zn <
O Al < 0.011000	O Fe < 0.015467	M Nb < 0.000500	O Si < 0.007842	M Zr < 0.000500
O As < 0.012000	M Ga < 0.004900	M Nd < 0.000500	M Sm < 0.000500	
M Au < 0.006500	M Gd < 0.000500	O Ni < 0.003049	M Sn < 0.002614	
O B < 0.019000	M Ge < 0.009100	M Os < 0.000500	M Sr < 0.000500	
M Ba < 0.000500	M Hf < 0.000500	O P < 0.059000	M Ta < 0.000500	
O Be < 0.000230	O Hg < 0.003800	M Pb < 0.016774	M Tb < 0.000500	
M Bi < 0.002400	M Ho < 0.000500	M Pd < 0.001000	M Te < 0.017000	
O Ca < 0.052283	M In < 0.003500	M Pr < 0.000500	M Th < 0.000500	
O Cd < 0.000588	M Ir < 0.001000	M Pt < 0.000500	M Ti < 0.002000	
M Ce < 0.000500	O K < 0.017209	M Rb < 0.002500	M Tl < 0.000500	
M Co < 0.000653	M La < 0.000500	M Re < 0.000500	M Tm < 0.000500	
O Cr < 0.001089	O Li < 0.000230	M Rh < 0.000500	M U < 0.000500	
M Cs < 0.000500	M Lu < 0.000500	M Ru < 0.005000	M V < 0.000500	
O Cu < 0.001938	O Mg < 0.000871	O S < 0.048000	M W < 0.001000	
M Dy < 0.000500	O Mn < 0.000172	M Sb < 0.004300	M Y < 0.000500	
M Er < 0.000500	M Mo < 0.001500	O Sc < 0.000900	M Yb < 0.000500	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 65.39 +2 4 Zn(OH)(aq)1+

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Zn Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub>); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO<sub>3</sub>); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

November 22, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **November 22, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**


- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGSE10  
Lot Number: S2-SE711004  
Matrix: 3% (v/v) HNO3  
Value / Analyte(s): 10 000 µg/mL ea:  
Selenium  
Starting Material: Se Metal  
Starting Material Lot#: 1962  
Starting Material Purity: 99.9991%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9955 ± 61 µg/mL  
**Density:** 1.035 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **9955 ± 50 µg/mL**  
ICP Assay NIST SRM 3149 Lot Number: 100901

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$   
 $w_i$  = the weighting factors for each method calculated using the inverse square of the variance:  
 $w_i = (1/u_{char i}^2) / (\sum(1/(u_{char i}^2)))$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2  
 $u_{char}$  =  $[\sum(w_i)^2 (u_{char i})^2]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method  
 $u_{bb}$  = bottle to bottle homogeneity standard uncertainty  
 $u_{Its}$  = long term stability standard uncertainty (storage)  
 $u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char a})$$

$X_a$  = mean of Assay Method A with  
 $u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2  
 $u_{char a}$  = the errors from characterization  
 $u_{bb}$  = bottle to bottle homogeneity standard uncertainty  
 $u_{Its}$  = long term stability standard uncertainty (storage)  
 $u_{ts}$  = transport stability standard uncertainty

**4.0 TRACEABILITY TO NIST**

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

**4.1 Thermometer Calibration**

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

**4.2 Balance Calibration**

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

**4.3 Glassware Calibration**

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

**5.0 TRACE METALLIC IMPURITIES (TMI ) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)**

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.002242	M	Eu <	0.000373	O Na	0.013654	s	Se <		O Zn	0.002374
M Al	0.004450	M	Fe	0.008478	O Nb <	0.002975	O Si	0.006249	M Zr <	0.001868	
O As <	0.022040	M	Ga <	0.000373	M Nd <	0.000373	M Sm <	0.000373			
M Au <	0.000373	M	Gd <	0.000373	O Ni	0.001843	M Sn	0.000847			
O B <	0.007714	M	Ge <	0.002616	M Os <	0.000373	M Sr <	0.001121			
M Ba <	0.001495	M	Hf <	0.000373	O P <	0.022040	M Ta <	0.000373			
M Be <	0.001495	M	Hg <	0.002240	M Pb	0.006358	M Tb <	0.006353			
M Bi <	0.000373	M	Ho <	0.000373	M Pd <	0.000373	M Te <	0.012707			
O Ca	0.006530	M	In <	0.000373	M Pr <	0.001495	M Th <	0.002990			
M Cd	0.001165	M	Ir <	0.000373	M Pt <	0.000373	M Ti <	0.003363			
M Ce <	0.000373	O K	0.001999	M Rb <	0.001868	M Tl	0.008584				
M Co <	0.000373	M La <	0.001121	M Re <	0.000373	M Tm <	0.000373				
M Cr	0.002861	O Li	0.000062	M Rh <	0.000373	M U <	0.000373				
M Cs <	0.001121	M Lu <	0.000373	M Ru <	0.001493	M V <	0.000747				
M Cu <	0.000747	O Mg	0.001156	O S	0.024591	M W <	0.002242				
M Dy <	0.000373	M Mn <	0.000373	M Sb <	0.002242	M Y <	0.000373				
M Er <	0.000373	O Mo <	0.003195	M Sc <	0.001121	M Yb <	0.000373				

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

**6.0 INTENDED USE**

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

**7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL**

**7.1 Storage and Handling Recommendations**

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 78.96 +4 6 H<sub>2</sub>SeO<sub>3</sub>

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>,H<sub>3</sub>PO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub> and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.

**Stability** - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Se Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub>); Oxides ( readily soluble in water); Minerals and alloys (acid digestion with HNO<sub>3</sub>or HNO<sub>3</sub> / HF ); Organic Matrices (acid digestion with hot concentrated H<sub>2</sub>SO<sub>4</sub> accompanied by the careful dropwise addition of H<sub>2</sub>O<sub>2</sub> until clear).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

November 17, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **November 17, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Prepared By:**

Uyen Truong  
Supervisor, Product Documentation



**Certificate Approved By:**

Michael Booth  
Director, Technical



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGMO10  
Lot Number: S2-MO706255  
Matrix: H2O  
tr. NH4OH  
Value / Analyte(s): 10 000 µg/mL ea:  
Molybdenum  
Starting Material: Ammonium Molybdate  
Starting Material Lot#: 2361  
Starting Material Purity: 99.9893%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10026 ± 47 µg/mL  
**Density:** 1.011 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10032 ± 68 µg/mL**  
ICP Assay NIST SRM 3134 Lot Number: 130418

**Assay Method #2**      **10020 ± 65 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000590	M Eu < 0.000300	M Na < 0.008739	M Se < 0.008000	M Zn < 0.005942
M Al < 0.005592	M Fe < 0.006500	M Nb < 0.029000	i Si < 0.001800	M Zr < 0.001800
M As < 0.002100	M Ga < 0.000300	i Nd < 0.000300	M Sm < 0.000300	
M Au < 0.000300	M Gd < 0.000300	M Ni < 0.008000	M Sn < 0.008900	
M B < 0.003300	M Ge < 0.000300	M Os < 0.000590	M Sr < 0.001747	
M Ba < 0.016778	M Hf < 0.001800	i P < 0.004200	M Ta < 0.004200	
M Be < 0.000890	M Hg < 0.003300	M Pb < 0.000300	M Tb < 0.000300	
M Bi < 0.000890	M Ho < 0.000300	M Pd < 0.001800	M Te < 0.021000	
O Ca < 0.062920	M In < 0.032000	M Pr < 0.013000	M Th < 0.000300	
O Cd < 0.026000	M Ir < 0.000300	M Pt < 0.000300	O Ti < 0.032000	
M Ce < 0.008300	M K < 1.293372	M Rb < 0.045442	M Tl < 0.012584	
M Co < 0.005942	M La < 0.000300	M Re < 0.000300	M Tm < 0.000300	
M Cr < 0.005243	O Li < 0.000594	M Rh < 0.000300	M U < 0.005300	
M Cs < 0.005243	M Lu < 0.000300	M Ru < 0.079000	M V < 0.000890	
M Cu < 0.022371	M Mg < 0.005592	i S < 0.873900	M W < 0.873900	
M Dy < 0.000300	M Mn < 0.005900	M Sb < 0.015031	M Y < 0.000300	
M Er < 0.000300	s Mo < 0.000300	M Sc < 0.001200	M Yb < 0.000300	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 95.94 +6 6,7,8,9

[MoO<sub>4</sub>]<sup>2-</sup>(chemical form as received)

**Chemical Compatibility** -Mo is received in a NH<sub>4</sub>OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO<sub>4</sub>]<sup>2-</sup> is soluble in concentrated HCl [MoOCl<sub>5</sub>]<sup>2-</sup>, dilute HF / HNO<sub>3</sub> [MoOF<sub>5</sub>]<sup>2-</sup> and basic media [MoO<sub>4</sub>]<sup>2-</sup>. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO<sub>4</sub>]<sup>2-</sup> chemical form.

**Stability** - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF<sub>5</sub>]<sup>2-</sup> for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm single element solutions as the [MoO<sub>4</sub>]<sup>2-</sup> chemically stable for years in 1% NH<sub>4</sub>OH in a LDPE container.

**Mo Containing Samples (Preparation and Solution)** -Metal (Soluble in HF / HNO<sub>3</sub> or hot dilute HCl); Oxide (soluble in HF or NH<sub>4</sub>OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl ).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br1 60,190Os2+,190Pt 2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

July 04, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **July 04, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGTL10  
Lot Number: T2-TL714687  
Matrix: 5% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Thallium  
Starting Material: TINO<sub>3</sub>  
Starting Material Lot#: 2118  
Starting Material Purity: 99.9998%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10030 ± 42 µg/mL  
**Density:** 1.036 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10040 ± 43 µg/mL**  
ICP Assay NIST SRM 3158 Lot Number: 151215

**Assay Method #2**      **10010 ± 65 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.000200	M Eu < 0.000200	O Na < 0.002489	M Se < 0.011019	O Zn < 0.002298
O Al < 0.004184	O Fe < 0.002824	M Nb < 0.000200	O Si < 0.003760	M Zr < 0.000200
M As < 0.002003	M Ga < 0.000200	M Nd < 0.000200	M Sm < 0.000200	
O Au < 0.002824	M Gd < 0.000200	M Ni < 0.001724	M Sn < 0.000601	
O B < 0.004184	M Ge < 0.000801	M Os < 0.000198	O Sr < 0.000313	
M Ba < 0.000400	M Hf < 0.000200	O P < 0.010460	M Ta < 0.000200	
O Be < 0.000104	M Hg < 0.000794	M Pb < 0.000811	M Tb < 0.000200	
M Bi < 0.005209	M Ho < 0.000200	M Pd < 0.000400	M Te < 0.005008	
O Ca < 0.002436	M In < 0.000200	M Pr < 0.000200	M Th < 0.000200	
M Cd < 0.001318	M Ir < 0.000198	M Pt < 0.000801	O Ti < 0.001255	
M Ce < 0.000200	O K < 0.006175	M Rb < 0.000200	s Tl <	
M Co < 0.000601	M La < 0.000200	M Re < 0.000200	M Tm < 0.000200	
M Cr < 0.000801	O Li < 0.000177	M Rh < 0.000200	M U < 0.000200	
M Cs < 0.003606	M Lu < 0.000200	M Ru < 0.000397	M V < 0.002203	
M Cu < 0.001001	O Mg < 0.000529	O S < 0.015690	M W < 0.000601	
M Dy < 0.000200	M Mn < 0.000801	M Sb < 0.000400	M Y < 0.000200	
M Er < 0.000200	M Mo < 0.001202	O Sc < 0.000711	M Yb < 0.000200	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 204.38 +1 6 Ti(H<sub>2</sub>O)<sub>6</sub><sup>+</sup>  
**Chemical Compatibility** - Soluble in HCl, HNO<sub>3</sub>, and H<sub>2</sub>SO<sub>4</sub>. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Ti Containing Samples )Preparation and Solution)** -Metal (Best dissolved in HNO<sub>3</sub> which forms chiefly the Ti<sup>+</sup> ion.); Oxide (The thalious oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt<sub>0</sub> followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

February 08, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **February 08, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGCD10  
Lot Number: S2-CD710508  
Matrix: 3% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Cadmium  
Starting Material: Cd Metal  
Starting Material Lot#: 1953  
Starting Material Purity: 99.9995%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10008 ± 30 µg/mL  
**Density:** 1.029 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10010 ± 32 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #2</b>	<b>10011 ± 30 µg/mL</b> ICP Assay NIST SRM 3108 Lot Number: 130116
<b>Assay Method #3</b>	<b>10003 ± 30 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

O Ag < 0.003200	O Eu < 0.002500	O Na < 0.005499	M Se < 0.005700	O Zn < 0.001100
O Al < 0.008903	O Fe < 0.000602	M Nb < 0.000400	O Si < 0.016758	O Zr < 0.002600
M As < 0.003600	M Ga < 0.001200	M Nd < 0.000800	M Sm < 0.000400	
M Au < 0.000810	M Gd < 0.000400	M Ni < 0.003600	M Sn < 0.003200	
O B < 0.004189	O Ge < 0.012000	M Os < 0.000810	O Sr < 0.000330	
M Ba < 0.002400	M Hf < 0.000400	O P < 0.022000	M Ta < 0.000800	
M Be < 0.000400	M Hg < 0.001700	M Pb < 0.002400	M Tb < 0.000400	
M Bi < 0.000400	M Ho < 0.000400	M Pd < 0.001200	M Te < 0.008000	
O Ca < 0.011259	O In < 0.013000	M Pr < 0.000400	M Th < 0.000400	
s Cd < 0.000400	M Ir < 0.000410	M Pt < 0.000400	O Ti < 0.000602	
M Ce < 0.000400	O K < 0.005237	M Rb < 0.004400	M Tl < 0.000523	
M Co < 0.000400	M La < 0.000400	M Re < 0.000400	M Tm < 0.000400	
O Cr < 0.005100	O Li < 0.000054	M Rh < 0.000400	M U < 0.000400	
M Cs < 0.002400	M Lu < 0.000400	M Ru < 0.002500	M V < 0.002000	
O Cu < 0.004800	O Mg < 0.000288	O S < 0.022000	M W < 0.000400	
M Dy < 0.000400	O Mn < 0.000860	O Sb < 0.018000	M Y < 0.000400	
M Er < 0.000400	M Mo < 0.001600	O Sc < 0.000430	M Yb < 0.000400	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 112.41 +2 4 Cd<sub>2</sub>(OH)<sub>3</sub><sup>+</sup> and Cd(OH)(aq)

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, and HF. Avoid basic media forming insoluble carbonate and hydroxide.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO<sub>3</sub> / LDPE container.

**Cd Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub>); Oxides (soluble in HCl or HNO<sub>3</sub>); Ores (dissolve in HCl /HNO<sub>3</sub> then take to fumes with H<sub>2</sub>SO<sub>4</sub>. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

November 01, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **November 01, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGMN10  
Lot Number: S2-MN704240  
Matrix: 3% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Manganese  
Starting Material: Mn Metal  
Starting Material Lot#: 2275  
Starting Material Purity: 99.9909%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10011 ± 30 µg/mL  
**Density:** 1.035 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9989 ± 69 µg/mL</b> ICP Assay NIST SRM 3132 Lot Number: 050429
<b>Assay Method #2</b>	<b>10011 ± 25 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10024 ± 47 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i})^2 / (\sum(1/(u_{char\ j})^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.001500	M Eu < 0.000730	O Na 0.176097	M Se < 0.006600	M Zn 0.009925
O Al 0.004322	M Fe < 0.650000	M Nb < 0.000730	O Si 0.097654	M Zr < 0.000730
M As < 0.008000	M Ga 0.004322	M Nd < 0.001500	M Sm < 0.000730	
M Au < 0.000730	M Gd < 0.000730	M Ni 0.024013	M Sn < 0.002200	
M B 0.068838	M Ge < 0.004400	M Os < 0.000730	O Sr 0.000928	
M Ba < 0.001500	M Hf < 0.000730	i P <	M Ta < 0.000730	
M Be < 0.000730	M Hg < 0.002200	M Pb 0.007364	M Tb < 0.000730	
M Bi < 0.003000	M Ho < 0.000730	M Pd < 0.000730	M Te < 0.019000	
O Ca 0.062434	M In < 0.003000	M Pr < 0.000730	M Th < 0.000730	
M Cd < 0.001500	M Ir < 0.000730	M Pt < 0.000730	O Ti < 0.006500	
M Ce < 0.007300	O K 0.006403	M Rb < 0.006600	M Tl < 0.000730	
O Co 0.014728	M La < 0.003000	M Re < 0.000730	M Tm < 0.000730	
O Cr 0.272151	O Li 0.000416	M Rh < 0.003000	M U < 0.001500	
M Cs < 0.000730	M Lu < 0.000730	M Ru < 0.004400	M V < 0.000730	
O Cu 0.007684	O Mg 0.320177	i S <	M W < 0.004400	
M Dy < 0.001500	s Mn <	M Sb < 0.021000	O Y 0.001360	
M Er < 0.001500	M Mo 0.010245	O Sc < 0.004100	M Yb < 0.000730	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 54.94 +2 6 Mn(H<sub>2</sub>O)<sub>6</sub>2+

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO<sub>3</sub>/LDPE container.

**Mn Containing Samples (Preparation and Solution)** -Metal (Soluble in dilute acids ); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H<sub>2</sub>SO<sub>4</sub> and heat to SO<sub>3</sub> fumes - dense white fumes).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16 O,37Cl18O,40Ar15 N,38Ar17O,36Ar18O 1H ,38Ar16O1H,37Cl17 O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

April 17, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **April 17, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



**1.0 ACCREDITATION / REGISTRATION**

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



**2.0 PRODUCT DESCRIPTION**

Product Code: Single Analyte Custom Grade Solution  
 Catalog Number: CGSB10  
 Lot Number: R2-SB688559  
 Matrix: 3% (v/v) HNO3  
 3% (w/v) tartaric acid  
 Value / Analyte(s): 10 000 µg/mL ea:  
 Antimony  
 Starting Material: Antimony Metal  
 Starting Material Lot#: 1857  
 Starting Material Purity: 99.9894%

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 10003 ± 47 µg/mL  
**Density:** 1.061 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

**Assay Method #1 10003 ± 41 µg/mL**  
 ICP Assay NIST SRM 3102a Lot Number: 140911

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

**Characterization of CRM/RM by Two or More Methods**

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i) (X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$   
 $w_i$  = the weighting factors for each method calculated using the inverse square of the variance:  
 $w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2  
 $u_{char} = [\sum((w_i)^2 (u_{char i})^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method  
 $u_{bb}$  = bottle to bottle homogeneity standard uncertainty  
 $u_{lts}$  = long term stability standard uncertainty (storage)  
 $u_{ts}$  = transport stability standard uncertainty

**Characterization of CRM/RM by One Method**

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with  
 $u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2  
 $u_{char a}$  = the errors from characterization  
 $u_{bb}$  = bottle to bottle homogeneity standard uncertainty  
 $u_{lts}$  = long term stability standard uncertainty (storage)  
 $u_{ts}$  = transport stability standard uncertainty



#### 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### 5.0 TRACE METALLIC IMPURITIES (TMI ) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.000200	M Eu <	0.000300	O Na	0.140000	M Se <	0.007300	O Zn	0.005000
M Al	0.003200	O Fe	0.060000	M Nb <	0.000100	O Si	0.150000	O Zr <	0.006300
M As <	0.004400	M Ga <	0.000400	M Nd <	0.000100	M Sm <	0.000100		
M Au <	0.000210	M Gd <	0.000100	O Ni	0.004800	M Sn <	0.001800		
M B <	0.011000	M Ge <	0.000600	M Os <	0.000110	O Sr	0.000750		
O Ba <	0.004900	M Hf <	0.000100	O P	0.540000	M Ta	0.003300		
M Be <	0.000400	M Hg <	0.000110	M Pb <	0.000400	M Tb <	0.000100		
M Bi <	0.000200	M Ho <	0.000100	M Pd <	0.000210	M Te <	0.000600		
O Ca	0.110000	M In <	0.000100	M Pr <	0.001600	M Th <	0.000100		
M Cd <	0.000200	M Ir <	0.000110	M Pt <	0.000600	M Ti <	0.002800		
M Ce	0.006500	O K	0.020000	M Rb <	0.001000	M Tl <	0.000100		
M Co <	0.000200	O La <	0.016000	M Re <	0.000100	M Tm <	0.000100		
M Cr	0.006900	O Li <	0.000430	M Rh <	0.000300	M U <	0.000100		
M Cs <	0.000200	M Lu <	0.000100	M Ru <	0.000310	M V <	0.000800		
M Cu <	0.000600	O Mg	0.021000	n S <		M W <	0.000200		
M Dy <	0.000100	O Mn	0.001900	s Sb <		M Y <	0.000100		
M Er <	0.000100	M Mo <	0.000500	O Sc <	0.002300	M Yb <	0.000100		

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

#### 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 121.75 +3 6 Sb(O)C4H4O6-1

**Chemical Compatibility** -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.

**Stability** - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.

**Sb Containing Samples (Preparation and Solution)** -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides ( Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences (underlined indicates severe)</b>
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

April 30, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **April 30, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGAS10  
Lot Number: T2-AS718260  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Arsenic  
Starting Material: As Metal  
Starting Material Lot#: 2208  
Starting Material Purity: 99.9971%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10060 ± 40 µg/mL  
**Density:** 1.037 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10062 ± 46 µg/mL**  
ICP Assay NIST SRM 3103a Lot Number: 100818

**Assay Method #2**      **10055 ± 76 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.003200	M Eu < 0.000530	O Na < 0.032544	M Se < 0.006300	O Zn < 0.001952
M Al < 0.007593	O Fe < 0.001475	O Nb < 0.012000	O Si < 0.238658	O Zr < 0.004100
s As < 0.000530	M Ga < 0.000530	M Nd < 0.000530	M Sm < 0.000530	
M Au < 0.003100	M Gd < 0.000530	M Ni < 0.002100	M Sn < 0.000530	
M B < 0.026035	M Ge < 0.001600	M Os < 0.000520	M Sr < 0.000530	
M Ba < 0.000530	M Hf < 0.000530	O P < 0.043000	M Ta < 0.000530	
O Be < 0.000360	M Hg < 0.001600	M Pb < 0.002100	M Tb < 0.000530	
M Bi < 0.000530	M Ho < 0.000530	M Pd < 0.001100	M Te < 0.004700	
O Ca < 0.004339	M In < 0.023000	M Pr < 0.005300	M Th < 0.000530	
M Cd < 0.001100	M Ir < 0.000520	M Pt < 0.000530	O Ti < 0.002300	
M Ce < 0.000530	O K < 0.002061	M Rb < 0.000530	M Tl < 0.000530	
M Co < 0.000530	M La < 0.001100	M Re < 0.000530	M Tm < 0.000530	
O Cr < 0.001800	O Li < 0.000120	M Rh < 0.000530	M U < 0.000530	
M Cs < 0.005300	M Lu < 0.000530	M Ru < 0.000520	M V < 0.002700	
M Cu < 0.001600	O Mg < 0.000154	O S < 0.028205	M W < 0.012000	
M Dy < 0.000530	O Mn < 0.000154	M Sb < 0.000530	M Y < 0.000530	
M Er < 0.000530	M Mo < 0.000530	O Sc < 0.001700	M Yb < 0.000530	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 74.92 ; mix of +3 and +5 ; 6 ; H3AsO4 and HAsO2

**Chemical Compatibility** - Arsenic has no cationic chemistry. It is soluble in HCl, HNO3, H3PO4, H2SO4 and HF aqueous matrices water and NH4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

**Stability** - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container.

**As Containing Samples (Preparation and Solution)** - Metal (soluble in 1:1 H2O / HNO3 ); Oxides (the oxide exists in crystalline and amorphous forms where the amorphous form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powdered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K2CO3 and KNO3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na2CO3 / Na2O2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO3).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37C I,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

## 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

## 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

May 10, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **May 10, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

### Certificate Prepared By:

Uyen Truong  
Supervisor, Product Documentation



### Certificate Approved By:

Michael Booth  
Director, Technical



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director



## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGBA10  
Lot Number: R2-BA692576  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Barium  
Starting Material: Barium Nitrate  
Starting Material Lot#: 1969  
Starting Material Purity: 99.9982%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10022 ± 30 µg/mL  
**Density:** 1.025 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10018 ± 50 µg/mL</b> ICP Assay NIST SRM 3104a Lot Number: 140909
<b>Assay Method #2</b>	<b>10023 ± 31 µg/mL</b> Gravimetric NIST SRM Lot Number: See Sec. 4.2
<b>Assay Method #3</b>	<b>10023 ± 30 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/CRM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char\ i})^2)]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an UPLA-Filtered Clean Room. An UPLA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.000410	O Eu < 0.005200	O Na < 0.004610	M Se < 0.003700	O Zn < 0.000658
M Al < 0.003100	O Fe < 0.015707	M Nb < 0.000210	O Si < 0.005573	M Zr < 0.001300
M As < 0.001300	M Ga < 0.000210	M Nd < 0.000210	O Sm < 0.021000	
M Au < 0.001300	M Gd < 0.000210	M Ni < 0.000810	M Sn < 0.000410	
O B < 0.005200	M Ge < 0.002500	M Os < 0.000410	O Sr < 0.003850	
s Ba < 0.000320	M Hf < 0.000810	O P < 0.026000	M Ta < 0.000410	
O Be < 0.000320	M Hg < 0.000210	M Pb < 0.002300	M Tb < 0.000210	
M Bi < 0.000210	M Ho < 0.000210	M Pd < 0.000210	M Te < 0.001900	
O Ca < 0.007093	M In < 0.000210	M Pr < 0.000210	M Th < 0.000210	
M Cd < 0.000210	M Ir < 0.000210	M Pt < 0.000210	M Ti < 0.002100	
M Ce < 0.001300	O K < 0.035467	M Rb < 0.002100	M Tl < 0.000210	
M Co < 0.000410	O La < 0.005200	M Re < 0.000210	M Tm < 0.000410	
M Cr < 0.001700	O Li < 0.000630	M Rh < 0.000210	M U < 0.000210	
M Cs < 0.003300	M Lu < 0.001700	M Ru < 0.000210	O V < 0.005200	
M Cu < 0.001300	O Mg < 0.000861	O S < 0.268539	M W < 0.000410	
M Dy < 0.000210	M Mn < 0.000410	M Sb < 0.001300	O Y < 0.005200	
M Er < 0.001300	M Mo < 0.000410	M Sc < 0.000410	M Yb < 0.001300	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 137.33 +2 6 Ba(H<sub>2</sub>O)<sub>6</sub>+2

**Chemical Compatibility** - Soluble in HCl, and HNO<sub>3</sub>. Avoid H<sub>2</sub>SO<sub>4</sub>, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO<sub>3</sub> / LDPE container.

**Ba Containing Samples (Preparation and Solution)** -Metal(is best dissolved in diluted HNO<sub>3</sub> ); Ores( Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent BaSO<sub>4</sub> precipitate ); Organic Matrices (dry ash and dissolve in dilute HCl.)

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences (underlined indicates severe)</b>
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

May 11, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **May 11, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGBE10  
Lot Number: R2-BE692992  
Matrix: 6% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Beryllium  
Starting Material: Beryllium Acetate  
Starting Material Lot#: 2281  
Starting Material Purity: 99.9998%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10032 ± 41 µg/mL  
**Density:** 1.128 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10042 ± 67 µg/mL</b> ICP Assay NIST SRM 3105a Lot Number: 090514
<b>Assay Method #2</b>	<b>10025 ± 51 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char}$  =  $[\sum(w_i)^2 (u_{char\ i}^2)]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.001100	M Eu < 0.000270	O Na < 0.040962	M Se < 0.005000	M Zn < 0.013054
O Al < 0.016205	O Fe < 0.015754	M Nb < 0.000270	O Si < 0.024307	O Zr < 0.001900
M As < 0.002900	M Ga < 0.000270	M Nd < 0.000270	M Sm < 0.000270	
M Au < 0.000520	M Gd < 0.000270	M Ni < 0.003700	M Sn < 0.000790	
M B < 0.091000	M Ge < 0.000270	M Os < 0.000260	M Sr < 0.000630	
M Ba < 0.002700	M Hf < 0.000270	O P < 0.066000	M Ta < 0.000270	
s Be < 0.000530	M Hg < 0.000520	M Pb < 0.000270	M Tb < 0.000270	
M Bi < 0.072022	M Ho < 0.000270	M Pd < 0.000520	M Te < 0.003700	
O Ca < 0.000790	M In < 0.000790	M Pr < 0.000270	M Th < 0.000270	
M Cd < 0.000270	M Ir < 0.000260	M Pt < 0.000270	O Ti < 0.000400	
M Ce < 0.000270	O K < 0.045014	M Rb < 0.000270	M Tl < 0.000790	
O Co < 0.003200	M La < 0.000270	M Re < 0.000270	M Tm < 0.000270	
O Cr < 0.001800	O Li < 0.000660	M Rh < 0.001100	M U < 0.000270	
M Cs < 0.001440	M Lu < 0.000270	M Ru < 0.000260	M V < 0.000790	
M Cu < 0.002100	O Mg < 0.016205	i S < 0.000270	M W < 0.000530	
M Dy < 0.000270	M Mn < 0.001215	M Sb < 0.000270	M Y < 0.000270	
M Er < 0.000270	M Mo < 0.000530	O Sc < 0.000930	M Yb < 0.000270	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 9.01 +2 4 Be(H<sub>2</sub>O)<sub>4</sub>+2

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> and HF aqueous matrices. Stable with all metals and inorganic anions.

**Stability** - 2-100 ppb levels stable for months in 1 % HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO<sub>3</sub> / LDPE container.

**Be Containing Samples (Preparation and Solution)** - Meta I(is best dissolved in diluted H<sub>2</sub>SO<sub>4</sub> ); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO<sub>4</sub> fusion); Ores (H<sub>2</sub>SO<sub>4</sub>/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION, PERIOD OF VALIDITY AND REVISION HISTORY

**11.1 Certification Issue Date**

May 13, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **May 13, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**11.4 Revision Status**

- Revision 1 - Revised on Thursday, Jan 14, 2021 by utruong. Revision was made for the following reason: Modified Section 7 Chemical Form in Solution.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



**1.0 ACCREDITATION / REGISTRATION**

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



**2.0 PRODUCT DESCRIPTION**

Product Code: Single Analyte Custom Grade Solution  
 Catalog Number: CGCO10  
 Lot Number: R2-CO695285  
 Matrix: 3% (v/v) HNO3  
 Value / Analyte(s): 10 000 µg/mL ea:  
 Cobalt  
 Starting Material: Co Metal  
 Starting Material Lot#: 2326  
 Starting Material Purity: 99.9934%

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 10012 ± 31 µg/mL  
**Density:** 1.056 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

- Assay Method #1**      **10031 ± 67 µg/mL**  
 ICP Assay NIST SRM 3113 Lot Number: 190630
  
- Assay Method #2**      **10019 ± 32 µg/mL**  
 EDTA NIST SRM 928 Lot Number: 928
  
- Assay Method #3**      **10000 ± 35 µg/mL**  
 Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/CRM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i) X_i$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i})^2]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an UPLA-Filtered Clean Room. An UPLA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag	0.014660	M Eu	<	0.000590	O Na	0.007534	M Se	<	0.019000	M Zn	0.003461	
M Al	<	0.024000	M Fe	0.050905	M Nb	<	0.000590	O Si	0.075340	M Zr	<	0.001200
i As	<		M Ga	<	0.000590	M Nd	<	0.000590	M Sm	<	0.000590	
M Au	<	0.004100	M Gd	<	0.000590	O Ni	0.427608	M Sn	<	0.001200		
M B	<	0.031000	M Ge	<	0.003000	M Os	<	0.000590	O Sr	<	0.000260	
M Ba	<	0.000590	M Hf	<	0.000590	n P	<		M Ta	<	0.001200	
O Be	<	0.001300	M Hg	<	0.001800	M Pb	0.003257	M Tb	<	0.000590		
M Bi	<	0.003000	M Ho	<	0.000590	M Pd	<	0.000590	M Te	<	0.005300	
O Ca	0.010588	M In	<	0.001200	M Pr	<	0.000590	M Th	<	0.000590		
M Cd	<	0.004700	M Ir	<	0.001200	M Pt	<	0.002400	M Ti	<	0.014000	
M Ce	<	0.000590	O K	0.008144	M Rb	<	0.000590	M Tl	0.002647			
s Co	<		M La	<	0.000590	M Re	<	0.000590	M Tm	<	0.000590	
M Cr	<	0.021000	O Li	<	0.000130	M Rh	<	0.000590	M U	<	0.000590	
M Cs	<	0.002400	M Lu	<	0.000590	M Ru	<	0.007100	O V	<	0.000880	
M Cu	0.189369	O Mg	0.001893	n S	<			M W	<	0.000590		
M Dy	<	0.000590	M Mn	<	0.001800	M Sb	<	0.003600	M Y	<	0.000590	
M Er	<	0.000590	M Mo	<	0.002400	O Sc	<	0.001600	M Yb	<	0.000590	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 58.93 +2 6 Co(H<sub>2</sub>O)<sub>6</sub><sup>2+</sup>

**Chemical Compatibility** - Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Co Containing Samples (Preparation and Solution)** - Metal (soluble in HNO<sub>3</sub>); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO<sub>3</sub>).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

August 04, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **August 04, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGAG10  
Lot Number: S2-AG712977  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Silver  
Starting Material: Ag Shot  
Starting Material Lot#: 2289  
Starting Material Purity: 99.9951%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10051 ± 30 µg/mL  
**Density:** 1.056 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10051 ± 52 µg/mL</b> ICP Assay NIST SRM 3151 Lot Number: 160729
<b>Assay Method #2</b>	<b>10051 ± 19 µg/mL</b> Volhard NIST SRM 999c Lot Number: 999c
<b>Assay Method #3</b>	<b>10049 ± 31 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

s Ag <	M Eu <	0.000260	O Na	0.003811	M Se <	0.003900	O Zn	0.048146	
M Al	0.002688	O Fe	0.006419	M Nb <	0.000260	O Si	0.005215	M Zr <	0.000260
M As <	0.001100	M Ga <	0.000260	M Nd <	0.000260	M Sm <	0.000260		
M Au <	0.000260	M Gd <	0.000260	O Ni	0.001765	M Sn	0.020060		
O B <	0.004300	M Ge <	0.002300	M Os <	0.001100	O Sr <	0.000110		
M Ba <	0.000520	M Hf <	0.000260	O P <	0.017000	M Ta <	0.000260		
O Be <	0.001100	M Hg <	0.000770	M Pb <	0.003600	M Tb <	0.000260		
M Bi	0.004814	M Ho <	0.000260	M Pd	0.044134	M Te <	0.009000		
O Ca	0.005215	M In	0.003691	M Pr <	0.000260	M Th <	0.000260		
M Cd <	0.000260	M Ir <	0.000520	M Pt <	0.001100	O Ti <	0.000440		
M Ce <	0.002100	O K <	0.008700	M Rb <	0.001100	M Tl <	0.004100		
O Co <	0.000330	M La <	0.000260	M Re <	0.000260	M Tm <	0.000260		
O Cr <	0.002500	O Li <	0.000110	M Rh <	0.000520	M U <	0.000260		
M Cs <	0.002600	M Lu <	0.000260	M Ru <	0.000260	M V <	0.000260		
O Cu	0.357085	O Mg	0.001203	O S <	0.017000	M W <	0.000260		
M Dy <	0.000260	O Mn <	0.000220	M Sb <	0.014000	M Y <	0.000260		
M Er <	0.000260	M Mo <	0.000260	O Sc <	0.000220	M Yb <	0.000260		

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 107.87 +1 6 Ag(H<sub>2</sub>O)<sub>6</sub><sup>+</sup>  
**Chemical Compatibility** - Stable in HNO<sub>3</sub>, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [ AgCl<sub>x</sub>1-x] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite, bromide, chloride, iodide, carbonate, chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.

**Stability** - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Ag Containing Samples (Preparation and Solution)** - Metal (Soluble in HNO<sub>3</sub>); Oxides (Soluble in HNO<sub>3</sub>); Ores (Digestion with conc. HNO<sub>3</sub>).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

December 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **December 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Prepared By:**

Uyen Truong  
Supervisor, Product Documentation



**Certificate Approved By:**

Michael Booth  
Director, Technical



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGCR(3)10  
Lot Number: S2-CR709784  
Matrix: 10% (v/v) HNO3  
Value / Analyte(s): 10 000 µg/mL ea:  
Chromium  
Starting Material: Cr Metal  
Starting Material Lot#: 2328  
Starting Material Purity: 99.9951%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10027 ± 41 µg/mL  
**Density:** 1.072 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10027 ± 40 µg/mL**  
ICP Assay NIST SRM 3112a Lot Number: 170630

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/(u_{char\ i}^2)))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char}$  =  $[\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty



#### 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.001700	M	Eu <	0.003400	O	Na	0.090372	M	Se <	0.012000	O	Zn <	0.006100
M Al	0.034916	O	Fe	0.246471	M	Nb <	0.017000	n	Si <		M	Zr <	0.007800
M As <	0.028000	O	Ga <	0.013000	M	Nd <	0.013000	M	Sm <	0.006900			
M Au <	0.001700	M	Gd <	0.000560	M	Ni	0.016020	M	Sn	0.006983			
O B <	0.025000	O	Ge <	0.014000	M	Os <	0.000560	M	Sr	0.006367			
M Ba <	0.008900	M	Hf <	0.000560	i	P <		M	Ta <	0.000560			
M Be <	0.013000	M	Hg <	0.001700	M	Pb	0.010064	M	Tb <	0.000560			
M Bi <	0.002300	M	Ho <	0.000560	M	Pd <	0.021000	M	Te <	0.010000			
O Ca	0.075995	M	In <	0.000560	M	Pr <	0.001700	M	Th <	0.000560			
M Cd <	0.000560	M	Ir <	0.000560	M	Pt <	0.001200	O	Ti	0.013555			
M Ce <	0.001200	O	K	0.043132	i	Rb <		M	Tl <	0.000560			
M Co <	0.002600	M	La <	0.001200	M	Re <	0.001200	O	Tm <	0.013000			
s Cr <		O	Li	0.000390	M	Rh <	0.095000	M	U <	0.000560			
M Cs <	0.007800	M	Lu <	0.000560	M	Ru <	0.087000	O	V	0.014993			
O Cu	0.007599	O	Mg	0.000883	i	S <		M	W <	0.049000			
M Dy <	0.000560	M	Mn	0.008626	M	Sb <	0.003400	M	Y <	0.001700			
M Er <	0.019000	M	Mo <	0.032000	M	Sc	0.003080	M	Yb <	0.000560			

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

#### 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 52.00 +3 6 Cr(H<sub>2</sub>O)<sub>6</sub>3+

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Cr<sub>3</sub> Containing Samples (Preparation and Solution)** -Metal (soluble in HCl ); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with KHSO<sub>4</sub> and extraction with hot KCl. The residue fused with Na<sub>2</sub>CO<sub>3</sub> and KClO<sub>3</sub>, 3:1. B. Fusion with NaKSO<sub>4</sub> and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na<sub>2</sub>O<sub>2</sub> or NaOH and KNO<sub>3</sub> or NaOH and Na<sub>2</sub>O<sub>2</sub>. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, <, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

October 26, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **October 26, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

### Certificate Approved By:

Michael Booth  
Director, Quality Control



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director



## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGNI10  
Lot Number: P2-NI686384  
Matrix: 3% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Nickel  
Starting Material: Ni Metal  
Starting Material Lot#: 2277 and 2282  
Starting Material Purity: 99.9992%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9979 ± 30 µg/mL  
**Density:** 1.038 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9971 ± 54 µg/mL</b> ICP Assay NIST SRM 3136 Lot Number: 120619
<b>Assay Method #2</b>	<b>9970 ± 32 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>9993 ± 33 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char i})^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag	0.002606	M Eu	<	0.001100	O Na	0.004965	O Se	<	0.067000	M Zn	0.006578	
M Al	<	0.013000	O Fe	0.018618	M Nb	<	0.001100	O Si	0.010923	M Zr	<	0.001100
O As	<	0.067000	M Ga	<	0.001100	M Nd	<	0.001100	M Sm	<	0.001100	
M Au	<	0.002100	M Gd	<	0.001100	s Ni	<		M Sn	<	0.016000	
M B	<	0.017000	M Ge	<	0.004200	M Os	0.002110	O Sr	<	0.000940		
M Ba	<	0.001100	M Hf	<	0.001100	i P	<		M Ta	<	0.001100	
O Be	<	0.000410	M Hg	0.014895	M Pb	0.006578	M Tb	<	0.001100			
M Bi	<	0.004200	M Ho	<	0.001100	M Pd	<	0.001100	M Te	<	0.015000	
O Ca	0.003351	M In	<	0.001100	M Pr	<	0.001100	M Th	<	0.001100		
M Cd	0.001365	M Ir	0.004716	M Pt	<	0.001100	M Ti	<	0.004200			
M Ce	<	0.001100	O K	0.004716	M Rb	<	0.001100	M Tl	<	0.001100		
O Co	0.017377	M La	<	0.001100	M Re	0.001737	M Tm	<	0.001100			
O Cr	<	0.006700	O Li	<	0.000140	M Rh	<	0.006300	M U	<	0.001100	
M Cs	<	0.007300	M Lu	<	0.001100	M Ru	<	0.019000	M V	<	0.002100	
M Cu	0.004096	O Mg	0.000372	i S	<			M W	<	0.006300		
M Dy	<	0.001100	O Mn	<	0.001900	M Sb	0.005833	O Y	<	0.000540		
M Er	<	0.001100	M Mo	<	0.008400	M Sc	<	0.002100	M Yb	<	0.001100	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 58.69 +2 6 Ni(H<sub>2</sub>O)<sub>6</sub><sup>2+</sup>

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub>. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Ni Containing Samples (Preparation and Solution)** -Metal (Soluble in HNO<sub>3</sub>); Oxides ( Soluble in HCl ); Ores (Dissolve in HCl / HNO<sub>3</sub>).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGV10  
Lot Number: S2-V711005  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Vanadium  
Starting Material: Vanadium Pentoxide  
Starting Material Lot#: 1782  
Starting Material Purity: 99.9877%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10014 ± 30 µg/mL  
**Density:** 1.104 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **10017 ± 42 µg/mL**  
ICP Assay NIST SRM 3165 Lot Number: 160906

**Assay Method #2**      **10013 ± 30 µg/mL**  
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000110	M Eu < 0.000110	O Na 0.120000	M Se < 0.009400	M Zn 0.009400
O Al 0.120000	O Fe 0.460000	M Nb < 0.001300	O Si 0.270000	M Zr < 0.002900
M As < 0.000210	M Ga < 0.009300	M Nd < 0.000610	M Sm < 0.000110	
M Au < 0.004700	M Gd < 0.000110	M Ni 0.012000	M Sn 0.003900	
M B 0.051000	M Ge < 0.000410	M Os < 0.000110	O Sr 0.007100	
M Ba 0.003600	M Hf < 0.000110	O P < 0.034000	M Ta < 0.000110	
O Be < 0.000560	M Hg < 0.000410	M Pb 0.001400	M Tb < 0.000110	
M Bi < 0.000210	M Ho < 0.000110	M Pd < 0.000410	M Te < 0.000110	
O Ca 0.730000	M In < 0.000110	M Pr < 0.000110	M Th < 0.000210	
M Cd < 0.000610	M Ir < 0.000110	M Pt < 0.000110	M Ti 0.017000	
M Ce < 0.000610	M K 0.052000	M Rb < 0.000310	M Tl < 0.000110	
M Co < 0.001300	M La < 0.000410	M Re 0.001700	M Tm < 0.000110	
O Cr 0.170000	M Li < 0.000810	M Rh < 0.000110	M U < 0.000410	
M Cs 0.005600	M Lu < 0.000110	M Ru < 0.000110	s V <	
M Cu < 0.001300	M Mg 0.053000	i S <	M W 0.002000	
M Dy < 0.000110	M Mn 0.007900	M Sb 0.078000	M Y < 0.000110	
M Er < 0.000110	M Mo 0.094000	M Sc < 0.000410	M Yb < 0.000110	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 50.94 +5 6 H<sub>2</sub>V<sub>10</sub>O<sub>28</sub>4-

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HF, H<sub>3</sub>PO<sub>4</sub> and strong basic media. Stable with most metals and inorganic anions in acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**V Containing Samples (Preparation and Solution)** -Metal (Fusion with NaOH or KOH in NiO or Na<sub>2</sub>CO<sub>3</sub> / KNO<sub>3</sub>); Oxides (V<sub>2</sub>O<sub>3</sub> - use HCl, V<sub>2</sub>O<sub>4</sub> - use HCl or HNO<sub>3</sub>, V<sub>2</sub>O<sub>5</sub> - use concentrated acids); Ores (Na<sub>2</sub>CO<sub>3</sub> / KNO<sub>3</sub> in PtO caution - nitrates attack PtO followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V<sub>2</sub>O<sub>5</sub> above) .

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

December 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **December 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

### 11.3 Period of Validity


- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

### Certificate Approved By:

Thomas Kozikowski  
Manager, Quality Control



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
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## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGAL10  
Lot Number: T2-AL716102  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Aluminum  
Starting Material: Aluminum Nitrate Nonahydrate  
Starting Material Lot#: 2460  
Starting Material Purity: 99.9938%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10049 ± 31 µg/mL  
**Density:** 1.087 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10059 ± 40 µg/mL</b> ICP Assay NIST SRM 3101a Lot Number: 140903
<b>Assay Method #2</b>	<b>10044 ± 26 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10049 ± 35 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.002100	M Eu < 0.002100	O Na 0.352819	M Se < 0.005200	M Zn 0.006018
s Al < 0.002100	O Fe 0.074714	M Nb < 0.000520	O Si 0.017848	O Zr 0.004358
M As 0.008716	O Ga 0.112072	M Nd < 0.000520	M Sm < 0.000520	
M Au < 0.008400	M Gd < 0.001100	O Ni < 0.006000	M Sn 0.000747	
O B < 0.014000	M Ge < 0.005200	M Os < 0.000650	O Sr 0.000518	
O Ba 0.012867	M Hf < 0.004100	n P < 0.000520	M Ta < 0.000520	
O Be < 0.000270	M Hg < 0.002000	M Pb 0.002282	M Tb < 0.000520	
M Bi 0.001930	M Ho < 0.000520	M Pd < 0.000520	M Te < 0.001100	
O Ca 0.076790	M In < 0.002100	M Pr < 0.000520	M Th < 0.000520	
M Cd < 0.000520	M Ir < 0.000650	M Pt < 0.000520	O Ti 0.001930	
M Ce < 0.001100	O K 0.043583	M Rb < 0.000520	M Tl < 0.000520	
O Co < 0.005400	M La < 0.002100	M Re < 0.000520	M Tm < 0.000520	
O Cr 0.006018	O Li 0.000112	M Rh < 0.000520	M U < 0.000520	
M Cs 0.000643	M Lu < 0.000520	M Ru < 0.002000	M V 0.001286	
O Cu < 0.008300	O Mg 0.068488	i S < 0.000520	M W < 0.009800	
M Dy < 0.002100	O Mn 0.000913	M Sb < 0.003100	M Y < 0.001100	
M Er < 0.000520	M Mo 0.005396	O Sc < 0.000950	M Yb < 0.000520	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 26.98 +3 6 Al(H<sub>2</sub>O)<sub>6</sub>+3

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, vF and v<sub>2</sub>SO<sub>4</sub>. Avoid neutral media. Soluble in strongly basic NaOH forming the Al(OH)<sub>4</sub>(H<sub>2</sub>O)<sub>2</sub><sup>-</sup> species. Stable with most metals and inorganic anions. The phosphate is insoluble in water and only slightly soluble in acid.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Al Containing Samples (Preparation and Solution)** -Metal (Best dissolved in HCl / HNO<sub>3</sub> ); a- Al<sub>2</sub>O<sub>3</sub> (Na<sub>2</sub>CO<sub>3</sub> fusion in PtO);

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 27 amu	30 ppt	N/A	12C15N, 13C14N, 1H12C14N, 11B16O, 54Cr2+, 54Fe2+
ICP-OES 167.078 nm	0.1/0.009 µg/mL	1	Fe
ICP-OES 394.401 nm	0.05/0.006 µg/mL	1	U, Ce
ICP-OES 396.152 nm	0.03/0.006 µg/mL	1	Mo, Zr, Ce

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

March 22, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **March 22, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGK10  
Lot Number: S2-K711973  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Potassium  
Starting Material: KNO<sub>3</sub>  
Starting Material Lot#: 2313  
Starting Material Purity: 99.9971%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9992 ± 30 µg/mL  
**Density:** 1.024 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9987 ± 24 µg/mL</b> Gravimetric NIST SRM Lot Number: See Sec. 4.2
<b>Assay Method #2</b>	<b>10004 ± 84 µg/mL</b> ICP Assay NIST SRM 3141a Lot Number: 140813
<b>Assay Method #3</b>	<b>10007 ± 45 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i})^2]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.001400	M Eu < 0.000660	O Na 0.246220	M Se < 0.007900	O Zn 0.018056
O Al 0.001592	O Fe 0.005909	M Nb < 0.000660	O Si 0.011490	O Zr < 0.001600
M As < 0.005300	M Ga < 0.000660	M Nd < 0.000660	M Sm < 0.000660	
M Au < 0.002000	M Gd < 0.000660	O Ni < 0.004900	M Sn < 0.000660	
O B < 0.005600	M Ge < 0.002000	M Os < 0.003300	O Sr 0.000055	
O Ba < 0.000860	M Hf < 0.000660	O P < 0.032000	M Ta < 0.000660	
O Be < 0.000082	M Hg < 0.002000	M Pb < 0.002300	M Tb < 0.000660	
M Bi < 0.006600	M Ho < 0.000660	M Pd < 0.000660	M Te < 0.017000	
O Ca 0.031187	M In < 0.000660	M Pr < 0.000660	M Th < 0.000660	
O Cd < 0.000450	M Ir < 0.000660	M Pt < 0.002700	M Ti < 0.000660	
M Ce < 0.000660	s K <	M Rb 0.476026	M Tl < 0.000660	
O Co < 0.000780	M La < 0.000660	M Re < 0.000660	M Tm < 0.000660	
O Cr 0.000541	O Li < 0.000084	M Rh < 0.000660	M U < 0.000660	
M Cs < 0.000660	M Lu < 0.000660	M Ru < 0.000660	O V < 0.001100	
M Cu < 0.002700	O Mg 0.006237	O S 0.027905	M W < 0.000660	
M Dy < 0.000660	O Mn 0.000476	M Sb < 0.000660	M Y < 0.000660	
M Er < 0.000660	M Mo < 0.000660	O Sc < 0.000340	O Yb < 0.000270	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 39.10 +1 (6) K+(aq)

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> and HF aqueous matrices. Avoid use of HClO<sub>4</sub> due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO<sub>4</sub><sup>-</sup>.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**K Containing Samples (Preparation and Solution)** - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion )

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

December 10, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **December 10, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**


- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGMG10  
Lot Number: S2-MG704239  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Magnesium  
Starting Material: Magnesium Metal  
Starting Material Lot#: 2168  
Starting Material Purity: 99.9984%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10053 ± 30 µg/mL  
**Density:** 1.053 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10022 ± 62 µg/mL</b> ICP Assay NIST SRM 3131a Lot Number: 140110
<b>Assay Method #2</b>	<b>10078 ± 26 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10033 ± 26 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O Ag	0.002106	M	Eu <	0.000910	O Na	0.071075	O Se <	0.048000	O Zn	0.003299
M Al	0.003553	M	Fe	0.002538	M Nb <	0.000460	O Si <	0.032000	O Zr <	0.002700
M As <	0.001400	M	Ga <	0.000460	M Nd <	0.000910	M Sm <	0.000460		
M Au <	0.001400	M	Gd <	0.000460	O Ni <	0.001600	M Sn <	0.002300		
O B	0.006853	M	Ge <	0.001400	M Os <	0.000460	O Sr	0.000279		
O Ba	0.000964	M	Hf <	0.000460	O P	0.015230	M Ta <	0.000460		
O Be <	0.000120	M	Hg <	0.000460	M Pb <	0.000460	M Tb <	0.000460		
M Bi <	0.000460	M	Ho <	0.000460	M Pd <	0.003200	M Te <	0.007300		
O Ca	0.053306	M	In <	0.000460	M Pr <	0.000460	M Th <	0.000460		
O Cd <	0.000360	M	Ir <	0.000460	M Pt <	0.001900	O Ti <	0.001700		
M Ce <	0.002300	M	K	0.048229	M Rb	0.002411	M Tl	0.003046		
M Co <	0.000910	M	La <	0.002800	M Re <	0.000460	M Tm <	0.000460		
M Cr <	0.002300	O	Li	0.027922	M Rh <	0.000460	M U <	0.000460		
M Cs	0.001040	M	Lu <	0.000460	M Ru <	0.000460	M V <	0.000460		
O Cu <	0.003000	s	Mg <		O S <	0.190000	M W <	0.000460		
M Dy <	0.000460	O	Mn	0.015230	M Sb	0.020814	O Y <	0.000720		
M Er <	0.000460	M	Mo <	0.000910	O Sc <	0.000480	M Yb <	0.000460		

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 24.31 +2 6 Mg(H<sub>2</sub>O)<sub>6</sub>+2  
**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, and H<sub>2</sub>SO<sub>4</sub> avoid HF, H<sub>3</sub>PO<sub>4</sub> and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO<sub>3</sub> / LDPE container.

**Mg Containing Samples (Preparation and Solution)** -Metal (Best dissolved in diluted HNO<sub>3</sub> ); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

April 23, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **April 23, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGCA10  
Lot Number: T2-CA716103  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Calcium  
Starting Material: CaCO<sub>3</sub>  
Starting Material Lot#: 2472  
Starting Material Purity: 99.9950%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10005 ± 30 µg/mL  
**Density:** 1.039 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>10005 ± 45 µg/mL</b> ICP Assay NIST SRM 3109a Lot Number: 130213
<b>Assay Method #2</b>	<b>10005 ± 25 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>10005 ± 31 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char j}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum(w_i)^2 (u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ( $\mu\text{g/mL}$ )

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3  $\mu\text{m}$ .

M Ag < 0.001200	M Eu < 0.001200	O Na < 0.006112	M Se < 0.024000	M Zn < 0.005362
M Al < 0.065419	O Fe < 0.009115	M Nb < 0.001200	O Si < 0.139417	O Zr < 0.006700
O As < 0.013000	M Ga < 0.015000	M Nd < 0.020000	M Sm < 0.001200	
M Au < 0.017000	M Gd < 0.004800	O Ni < 0.000793	M Sn < 0.003600	
O B < 0.001179	M Ge < 0.003600	M Os < 0.001200	M Sr < 0.081505	
O Ba < 0.002788	M Hf < 0.001200	O P < 0.041000	M Ta < 0.001200	
O Be < 0.000410	M Hg < 0.004800	M Pb < 0.001608	M Tb < 0.001200	
M Bi < 0.001608	M Ho < 0.001200	M Pd < 0.001200	M Te < 0.003600	
s Ca <	M In < 0.001200	M Pr < 0.000257	M Th < 0.001200	
O Cd < 0.001300	M Ir < 0.001200	M Pt < 0.003600	O Ti < 0.001900	
M Ce < 0.001029	O K < 0.009759	M Rb < 0.001200	M Tl < 0.001200	
O Co < 0.000418	M La < 0.001823	M Re < 0.001200	M Tm < 0.001200	
O Cr < 0.003324	O Li < 0.007300	M Rh < 0.001200	M U < 0.002144	
M Cs < 0.007399	M Lu < 0.000128	M Ru < 0.001200	M V < 0.001286	
O Cu < 0.011000	M Mg < 1.286934	O S < 0.055767	O W < 0.024000	
M Dy < 0.002400	O Mn < 0.004611	M Sb < 0.009600	O Y < 0.000536	
M Er < 0.002400	M Mo < 0.003539	O Sc < 0.001400	M Yb < 0.001200	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 40.08 +2 6 Ca(H<sub>2</sub>O)<sub>6</sub>+2  
**Chemical Compatibility** - Soluble in HCl and HNO<sub>3</sub>. Avoid H<sub>2</sub>SO<sub>4</sub>, vF, v3PO<sub>4</sub> and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO<sub>3</sub> / LDPE container.

**Ca Containing Samples )Preparation and Solution** -Metal ( best dissolved in diluted HNO<sub>3</sub> ); Ores ( Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO<sub>2</sub>). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO<sub>3</sub>. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na<sub>2</sub>CO<sub>3</sub> followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences (underlined indicates severe)</b>
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

March 14, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **March 14, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**


- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGNA10  
Lot Number: T2-NA717221  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 10 000 µg/mL ea:  
Sodium  
Starting Material: Na<sub>2</sub>CO<sub>3</sub>  
Starting Material Lot#: 2358 and 2453  
Starting Material Purity: 99.9977%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 9977 ± 30 µg/mL  
**Density:** 1.033 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>9974 ± 18 µg/mL</b> Gravimetric NIST SRM Lot Number: See Sec. 4.2
<b>Assay Method #2</b>	<b>9977 ± 34 µg/mL</b> ICP Assay NIST SRM 3152a Lot Number: 200413
<b>Assay Method #3</b>	<b>9987 ± 31 µg/mL</b> Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i) (X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i})^2 / (\sum(1/(u_{char\ j})^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char\ i})^2)]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000930	M Eu < 0.000930	s Na <	M Se < 0.003800	O Zn < 0.000138
M Al < 0.004409	O Fe < 0.002393	M Nb < 0.000930	O Si < 0.056696	O Zr < 0.003200
O As < 0.023000	M Ga < 0.000930	M Nd < 0.000930	M Sm < 0.000930	
O Au < 0.004100	M Gd < 0.000930	O Ni < 0.003000	M Sn < 0.002800	
O B < 0.001385	M Ge < 0.004700	M Os < 0.000930	O Sr < 0.000251	
M Ba < 0.004031	M Hf < 0.000930	O P < 0.010205	M Ta < 0.000930	
O Be < 0.000130	M Hg < 0.000930	M Pb < 0.000930	M Tb < 0.000930	
M Bi < 0.000930	M Ho < 0.000930	M Pd < 0.000930	M Te < 0.001900	
O Ca < 0.176388	M In < 0.000930	M Pr < 0.000930	M Th < 0.000352	
O Cd < 0.000860	M Ir < 0.000930	M Pt < 0.000930	O Ti < 0.000592	
M Ce < 0.001900	O K < 0.302380	M Rb < 0.000930	M Tl < 0.000930	
O Co < 0.001800	O La < 0.002100	M Re < 0.000930	M Tm < 0.000930	
M Cr < 0.002800	O Li < 0.000031	M Rh < 0.000930	M U < 0.000930	
M Cs < 0.000930	M Lu < 0.000930	M Ru < 0.001900	O V < 0.001600	
O Cu < 0.003900	O Mg < 0.026458	O S < 0.040317	O W < 0.028000	
M Dy < 0.000930	O Mn < 0.000740	M Sb < 0.000930	O Y < 0.000860	
M Er < 0.000930	O Mo < 0.003600	O Sc < 0.000610	O Yb < 0.000250	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 22.99 +1 (6) Na+(aq) largely ionic in nature

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> and HF aqueous matrices. Stable with all metals and inorganic anions.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO<sub>3</sub> / LDPE container.

**Na Containing Samples (Preparation and Solution)** - Metal (Dissolves very rapidly in water); Ores (Lithium carbonate fusion in graphite crucible followed by HCl dissolution - blank levels of Na in lithium carbonate critical); Organic Matrices (Sulfuric / peroxide digestion or nitric/sulfuric/perchloric acid decomposition).

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

<b>Technique/Line</b>	<b>Estimated D.L.</b>	<b>Order</b>	<b>Interferences</b> (underlined indicates severe)
ICP-MS 23 amu	310 ppt	n/a	46Ti+2 , 46Ca+2
ICP-OES 330.237 nm	2.0 / 0.09 µg/mL	1	Pd, Zn
ICP-OES 588.995 nm	0.03 / 0.006 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 589.595 nm	0.07 / 0.00009 µg/mL	1	2nd order radiation from R.E.s on some optical designs

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

April 20, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **April 20, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**


- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGU1  
Lot Number: S2-U707914  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 1 000 µg/mL ea:  
Uranium  
Starting Material: Uranyl Nitrate Hexahydrate  
Starting Material Lot#: P2-2322  
Starting Material Purity: 99.9997%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 999 ± 5 µg/mL  
**Density:** 1.010 g/mL (measured at 20 ± 4 °C)

### Assay Information:

**Assay Method #1**      **998 ± 5 µg/mL**  
ICP Assay NIST SRM 3164 Lot Number: 080521

**Assay Method #2**      **1001 ± 6 µg/mL**  
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .



### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char}$  =  $[\sum(w_i)^2 (u_{char\ i})^2]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

### Certified Abundance:

#### IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000270	M Eu < 0.000270	M Na < 0.011000	M Se < 0.009300	M Zn < 0.002358
M Al < 0.011000	M Fe < 0.003222	M Nb < 0.000270	M Si < 0.160000	M Zr < 0.001100
M As < 0.002400	M Ga < 0.000270	M Nd < 0.000270	M Sm < 0.000270	
M Au < 0.000270	M Gd < 0.000270	M Ni < 0.020000	M Sn < 0.011000	
M B < 0.000270	M Ge < 0.000800	M Os < 0.001900	M Sr < 0.000270	
M Ba < 0.003800	M Hf < 0.000270	i P <	M Ta < 0.000270	
M Be < 0.000270	M Hg < 0.000540	M Pb < 0.002200	M Tb < 0.000270	
M Bi < 0.000270	M Ho < 0.000270	M Pd < 0.000540	M Te < 0.003800	
M Ca < 0.140000	M In < 0.000270	M Pr < 0.000270	M Th < 0.000129	
M Cd < 0.000270	M Ir < 0.000270	M Pt < 0.000270	M Ti < 0.002700	
M Ce < 0.000540	O K < 0.250000	M Rb < 0.000800	M Tl < 0.000270	
M Co < 0.000800	M La < 0.000117	M Re < 0.064000	M Tm < 0.000270	
M Cr < 0.000943	M Li < 0.003000	M Rh < 0.000270	s U <	
M Cs < 0.000106	M Lu < 0.000270	M Ru < 0.000540	M V < 0.000540	
M Cu < 0.001100	M Mg < 0.003000	i S <	M W < 0.000540	
M Dy < 0.000270	M Mn < 0.006900	M Sb < 0.000270	M Y < 0.000270	
M Er < 0.000270	M Mo < 0.006400	M Sc < 0.000540	M Yb < 0.000270	

M - Checked by ICP-MS    O - Checked by ICP-OES    i - Spectral Interference  
n - Not Checked For    s - Solution Standard Element

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 238.03 +6 8 UO<sub>2</sub><sup>2+</sup>(uranyl)

**Chemical Compatibility** - Soluble in HCl and HNO<sub>3</sub>. Avoid H<sub>3</sub>PO<sub>4</sub>. H<sub>2</sub>SO<sub>4</sub> and HF matrices should not be a problem depending upon [U]. Although the UO<sub>2</sub><sup>2+</sup> ion is distinctly basic, any U+4 will precipitate in basic media. UO<sub>2</sub><sup>2+</sup>salts are generally soluble in water and UO<sub>2</sub><sup>2+</sup> is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF<sub>4</sub> and UF<sub>6</sub> are water soluble.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**U Containing Samples (Preparation and Solution)** -Metal (Dissolves rapidly in HCl and HNO<sub>3</sub>); Oxide (Soluble in HNO<sub>3</sub>); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO<sub>3</sub>. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H<sub>2</sub>SO<sub>4</sub>.)

**Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):**

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

**10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"**

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

August 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **August 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Michael Booth  
Director, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
Catalog Number: AR-ICVMS-2  
Lot Number: T2-MEB719895  
Matrix: 3% (v/v) HNO3  
tr. HF  
Value / Analyte(s): 2.5 µg/mL ea:  
Molybdenum, Antimony

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	2.499 ± 0.015 µg/mL	Molybdenum, Mo	2.500 ± 0.017 µg/mL

Density: 1.014 g/mL (measured at 20 ± 4 °C)

### Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Sb	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char\ i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i})^2 / (\sum(1/(u_{char\ i})^2))$$

$$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k(u^2_{char} + u^2_{bb} + u^2_{Its} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

$u_{char}$  =  $[\sum((w_i)^2(u_{char\ i})^2)]^{1/2}$  where  $u_{char\ i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char\ a})$$

$X_a$  = mean of Assay Method A with

$u_{char\ a}$  = the standard uncertainty of characterization Method A

$$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k(u^2_{char\ a} + u^2_{bb} + u^2_{Its} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{Its}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

#### 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**HF Note:** This standard should not be prepared or stored in glass.

#### 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

#### 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

#### 10.0 QUALITY STANDARD DOCUMENTATION

##### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

##### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

**10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"**

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

June 06, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **June 06, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**


- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



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Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
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## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	AR-ICVMS-3	
Lot Number:	T2-MEB719896	
Matrix:	7% (v/v) HNO3	
Value / Analyte(s):	250 µg/mL ea:	
	Aluminum,	Calcium,
	Iron,	Potassium,
	Magnesium,	Sodium,
	4 µg/mL ea:	
	Selenium,	
	2.5 µg/mL ea:	
	Thorium,	Thallium,
	Uranium,	Vanadium,
	Zinc,	Manganese,
	Cadmium,	Cobalt,
	Chromium,	Copper,
	Arsenic,	Barium,
	Beryllium,	Nickel,
	Lead,	Silver

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	250.0 ± 0.9 µg/mL	Arsenic, As	2.500 ± 0.018 µg/mL
Barium, Ba	2.501 ± 0.013 µg/mL	Beryllium, Be	2.501 ± 0.015 µg/mL
Cadmium, Cd	2.501 ± 0.013 µg/mL	Calcium, Ca	250.0 ± 1.3 µg/mL
Chromium, Cr	2.500 ± 0.015 µg/mL	Cobalt, Co	2.500 ± 0.014 µg/mL
Copper, Cu	2.500 ± 0.014 µg/mL	Iron, Fe	250.0 ± 1.0 µg/mL
Lead, Pb	2.500 ± 0.013 µg/mL	Magnesium, Mg	250.0 ± 1.3 µg/mL
Manganese, Mn	2.500 ± 0.014 µg/mL	Nickel, Ni	2.500 ± 0.014 µg/mL
Potassium, K	250.0 ± 1.2 µg/mL	Selenium, Se	4.002 ± 0.024 µg/mL
Silver, Ag	2.501 ± 0.017 µg/mL	Sodium, Na	250.0 ± 1.2 µg/mL
Thallium, Tl	2.500 ± 0.017 µg/mL	Thorium, Th	2.499 ± 0.013 µg/mL
Uranium, U	2.501 ± 0.015 µg/mL	Vanadium, V	2.500 ± 0.014 µg/mL
Zinc, Zn	2.500 ± 0.014 µg/mL		

**Density:** 1.042 g/mL (measured at 20 ± 4 °C)

**Assay Information:**



ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
Ba	ICP Assay	3104a	140909
Ba	Calculated		See Sec. 4.2
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Ni	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2

V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{\text{CRM/RM}}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i) (X_i)$$

$X_i$  = mean of Assay Method  $i$  with standard uncertainty  $u_{\text{char } i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/(u_{\text{char } j}^2)))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2 (u_{\text{char } i}^2)]^{1/2}$  where  $u_{\text{char } i}$  are the errors from each characterization method

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{\text{CRM/RM}}$ , where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a) (u_{\text{char } a})$$

$X_a$  = mean of Assay Method A with

$u_{\text{char } a}$  = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

$k$  = coverage factor = 2

$u_{\text{char } a}$  = the errors from characterization

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Certified Abundance:

##### IV's Certified Abundance

<u>Isotope</u>	<u>Atom %</u>
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

#### 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

##### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

##### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

##### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

#### 5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

#### 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Note:** This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

June 06, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **June 06, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director



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inorganicventures.com

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## 1.0 ACCREDITATION / REGISTRATION

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## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
 Catalog Number: AR-6020ICS-0A10  
 Lot Number: T2-MEB719898  
 Matrix: 1.4% (v/v) HNO<sub>3</sub>  
 Value / Analyte(s):  
     1 000 µg/mL ea:  
         Chloride,  
         200 µg/mL ea:  
             Carbon,  
             100 µg/mL ea:  
                 Calcium, Aluminum,  
                 Iron, Potassium,  
                 Magnesium, Sodium,  
                 Phosphorus, Sulfur,  
         2 µg/mL ea:  
             Titanium, Molybdenum

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.4 µg/mL	Calcium, Ca	100.0 ± 0.5 µg/mL
Carbon, C	200.1 ± 0.5 µg/mL	Chloride, Cl	1 000 ± 5 µg/mL
Iron, Fe	100.0 ± 0.5 µg/mL	Magnesium, Mg	100.0 ± 0.5 µg/mL
Molybdenum, Mo	2.001 ± 0.014 µg/mL	Phosphorus, P	100.0 ± 0.6 µg/mL
Potassium, K	100.0 ± 0.5 µg/mL	Sodium, Na	100.0 ± 0.5 µg/mL
Sulfur, S	100.0 ± 0.5 µg/mL	Titanium, Ti	2.001 ± 0.015 µg/mL

**Density:** 1.009 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	P2-S680745
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{\text{CRM/RM}}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i) (X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{\text{char } i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2 (u_{\text{char } i}^2)]^{1/2}$  where  $u_{\text{char } i}$  are the errors from each characterization method

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{\text{CRM/RM}}$ , where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a) (u_{\text{char } a})$$

$X_a$  = mean of Assay Method A with

$u_{\text{char } a}$  = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$  = the errors from characterization

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 TRACE METALLIC IMPURITIES (TMI ) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

## 6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

## 8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## 9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

### 10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### 10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

June 07, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **June 07, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

**11.3 Period of Validity**

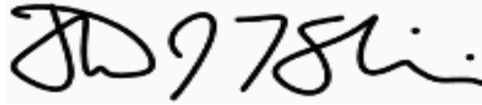
- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

**12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

**Certificate Approved By:**

Thomas Kozikowski  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
Chairman / Senior Technical Director







**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 9060A m**

<b>LDW23-SS1818</b>
---------------------

Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-01 A      SDG: 23D0063  
 Sampled: 04/04/23 10:02      Prepared: 05/13/23 14:02      File ID: CubeData\_05222023@1029-058  
 % Solids: 38.85      Preparation: No Prep Wet Chem      Analyzed: 05/20/23 17:14  
 Batch: BLE0415      Sequence: SLE0228      Initial/Final: 0.5541 g Wet / 0.5541 g  
 Instrument: TOC Cube      Calibration: GE00052

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	3.04	1	0.02	0.02	



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 9060A m**

LDW23-SC1818
--------------

Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-02 A      SDG: 23D0063  
 Sampled: 04/04/23 10:25      Prepared: 05/13/23 14:02      File ID: CubeData\_05222023@1029-059  
 % Solids: 44.23      Preparation: No Prep Wet Chem      Analyzed: 05/20/23 17:44  
 Batch: BLE0415      Sequence: SLE0228      Initial/Final: 0.4287 g Wet / 0.4287 g  
 Instrument: TOC Cube      Calibration: GE00052

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	2.47	1	0.02	0.02	



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 9060A m**

<b>LDW23-SS1819</b>
---------------------

Laboratory: Analytical Resources, LLC  
 Client: Anchor QEA, LLC  
 Project: AOC5 MR Phase 1  
 Matrix: Sediment      Laboratory ID: 23D0063-03 A      SDG: 23D0063  
 Sampled: 04/04/23 12:52      Prepared: 05/13/23 14:02      File ID: CubeData\_05222023@1029-060  
 % Solids: 34.62      Preparation: No Prep Wet Chem      Analyzed: 05/20/23 18:14  
 Batch: BLE0415      Sequence: SLE0228      Initial/Final: 0.5117 g Wet / 0.5117 g  
 Instrument: TOC Cube      Calibration: GE00052

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	3.65	1	0.02	0.02	



**Form I**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 9060A m**

<b>LDW23-SC1819</b>
---------------------

Laboratory: Analytical Resources, LLC

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Sediment      Laboratory ID: 23D0063-04 A      SDG: 23D0063

Sampled: 04/04/23 13:12      Prepared: 05/13/23 14:02      File ID: CubeData\_05222023@1029-061

% Solids: 41.53      Preparation: No Prep Wet Chem      Analyzed: 05/20/23 18:44

Batch: BLE0415      Sequence: SLE0228      Initial/Final: 0.5369 g Wet / 0.5369 g

Instrument: TOC Cube      Calibration: GE00052

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	2.73	1	0.02	0.02	



## PREPARATION BATCH SUMMARY

### EPA 9060A m

Laboratory: Analytical Resources, LLC SDG: 23D0063  
Client: Anchor QEA, LLC Project: AOC5 MR Phase 1  
Batch: BLE0415 Batch Matrix: Solid Preparation: No Prep Wet Chem

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW23-SS1818	23D0063-01	<del>eData_05222023@1029-</del>	05/13/23 14:02	
LDW23-SC1818	23D0063-02	<del>eData_05222023@1029-</del>	05/13/23 14:02	
LDW23-SS1819	23D0063-03	<del>eData_05222023@1029-</del>	05/13/23 14:02	
LDW23-SC1819	23D0063-04	<del>eData_05222023@1029-</del>	05/13/23 14:02	
Blank	BLE0415-BLK1	<del>eData_05222023@1029-</del>	05/13/23 14:02	
LCS	BLE0415-BS1	<del>eData_05222023@1029-</del>	05/13/23 14:02	
MRL Check	BLE0415-MRL1	<del>eData_05222023@1029-</del>	05/13/23 14:02	
Reference	BLE0415-SRM1	<del>eData_05222023@1029-</del>	05/13/23 14:02	



**Form I**  
**METHOD BLANK DATA SHEET**  
**EPA 9060A m**  
TotalAnalytes

<b>Blank</b>
--------------

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Batch: BLE0415

Laboratory ID: BLE0415-BLK1

Prepared: 05/13/23 14:02

Matrix: Solid

Preparation: No Prep Wet Chem

Analyzed: 05/19/23 15:36

Sequence: SLE0228

Calibration: GE00052

Instrument: TOC Cube

CAS NO.	Analyte	Concentration (% wet)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	ND	1	0.02	0.02	U



**LCS / LCS DUPLICATE RECOVERY**  
**EPA 9060A m**

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Matrix:	<u>Solid</u>	Analyzed:	<u>05/19/23 16:37</u>
Batch:	<u>BLE0415</u>	Laboratory ID:	<u>BLE0415-BS1</u>
Preparation:	<u>No Prep Wet Chem</u>	Sequence Name:	<u>LCS</u>
Initial/Final:	<u>0.0209 g / 0.0209 g</u>		

COMPOUND	SPIKE ADDED (% wet)	LCS CONCENTRATION (% wet)	Q	LCS % REC. #	QC LIMITS REC.
Total Organic Carbon	44.4	44.0		99.0	80 - 120

\* Indicates values outside of QC limits



## ANALYSIS BATCH (SEQUENCE) SUMMARY

### EPA 9060A m

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sequence: SLE0228

Instrument: TOC Cube

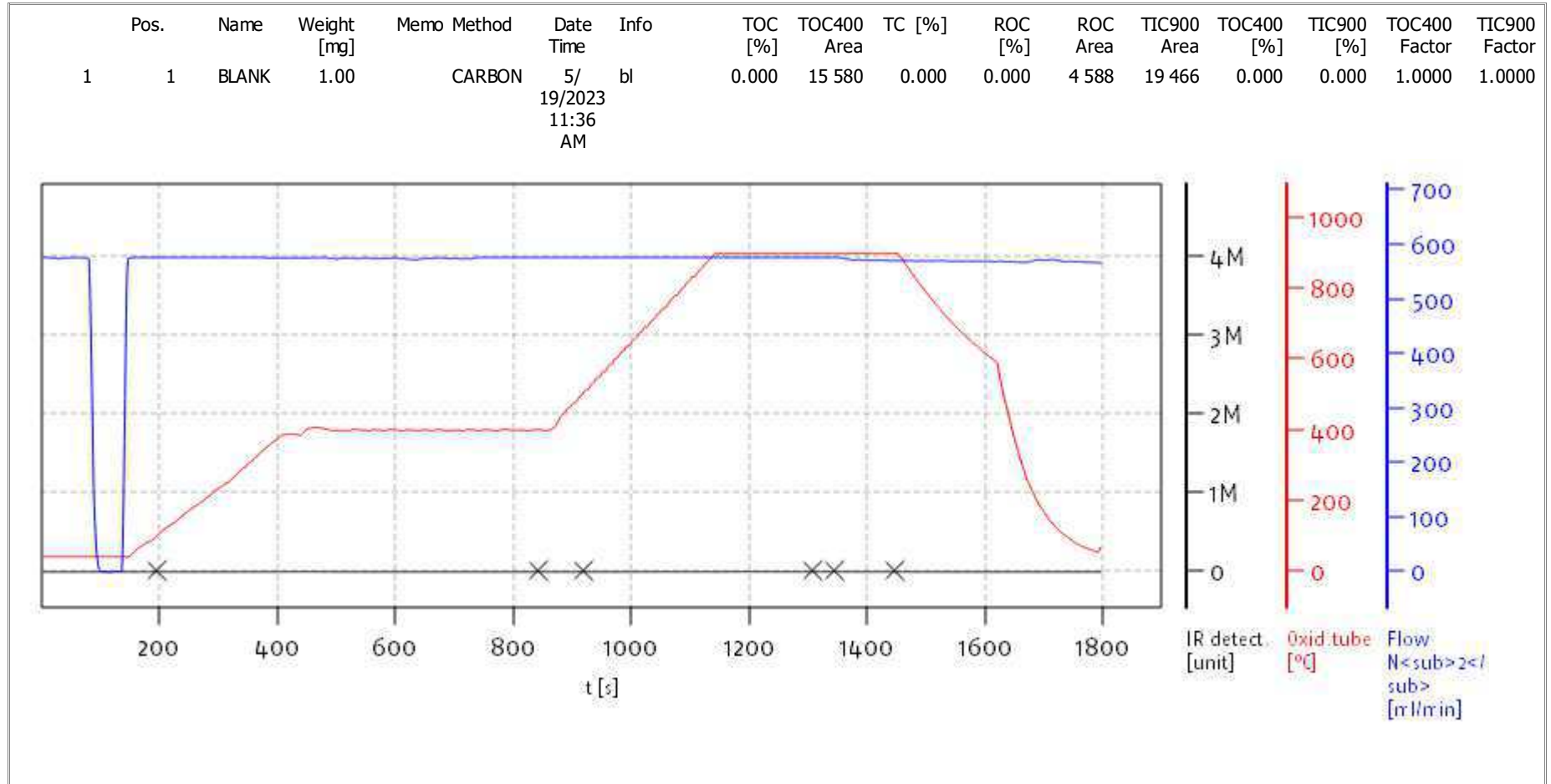
Calibration: GE00052

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Initial Cal Blank	SLE0228-ICB1	CubeData_05222023@1029-004	NA	05/19/23 13:36
MRL Check	BLE0415-MRL1	CubeData_05222023@1029-006	Solid	05/19/23 14:36
Blank	BLE0415-BLK1	CubeData_05222023@1029-008	Solid	05/19/23 15:36
LCS	BLE0415-BS1	CubeData_05222023@1029-010	Solid	05/19/23 16:37
Reference	BLE0415-SRM1	CubeData_05222023@1029-012	Solid	05/19/23 17:37
Calibration Check	SLE0228-CCV1	CubeData_05222023@1029-015	NA	05/19/23 19:07
Calibration Blank	SLE0228-CCB1	CubeData_05222023@1029-016	NA	05/19/23 19:37
Calibration Check	SLE0228-CCV2	CubeData_05222023@1029-027	NA	05/20/23 01:09
Calibration Blank	SLE0228-CCB2	CubeData_05222023@1029-028	NA	05/20/23 01:39
Calibration Check	SLE0228-CCV3	CubeData_05222023@1029-039	NA	05/20/23 07:10
Calibration Blank	SLE0228-CCB3	CubeData_05222023@1029-040	NA	05/20/23 07:40
Calibration Check	SLE0228-CCV4	CubeData_05222023@1029-050	NA	05/20/23 13:12
Calibration Blank	SLE0228-CCB4	CubeData_05222023@1029-051	NA	05/20/23 13:42
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LDW23-SC1818	23D0063-02	CubeData_05222023@1029-059	Solid	05/20/23 17:44
LDW23-SS1819	23D0063-03	CubeData_05222023@1029-060	Solid	05/20/23 18:14
LDW23-SC1819	23D0063-04	CubeData_05222023@1029-061	Solid	05/20/23 18:44
Calibration Check	SLE0228-CCV5	CubeData_05222023@1029-062	NA	05/20/23 19:14
Calibration Blank	SLE0228-CCB5	CubeData_05222023@1029-063	NA	05/20/23 19:44
Calibration Blank	SLE0228-CCB6	CubeData_05222023@1029-073	NA	05/21/23 12:48
Calibration Check	SLE0228-CCV6	CubeData_05222023@1029-074	NA	05/21/23 13:20





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Balance: BAL3  
Analyst: CDE



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Access: solITOC superuser

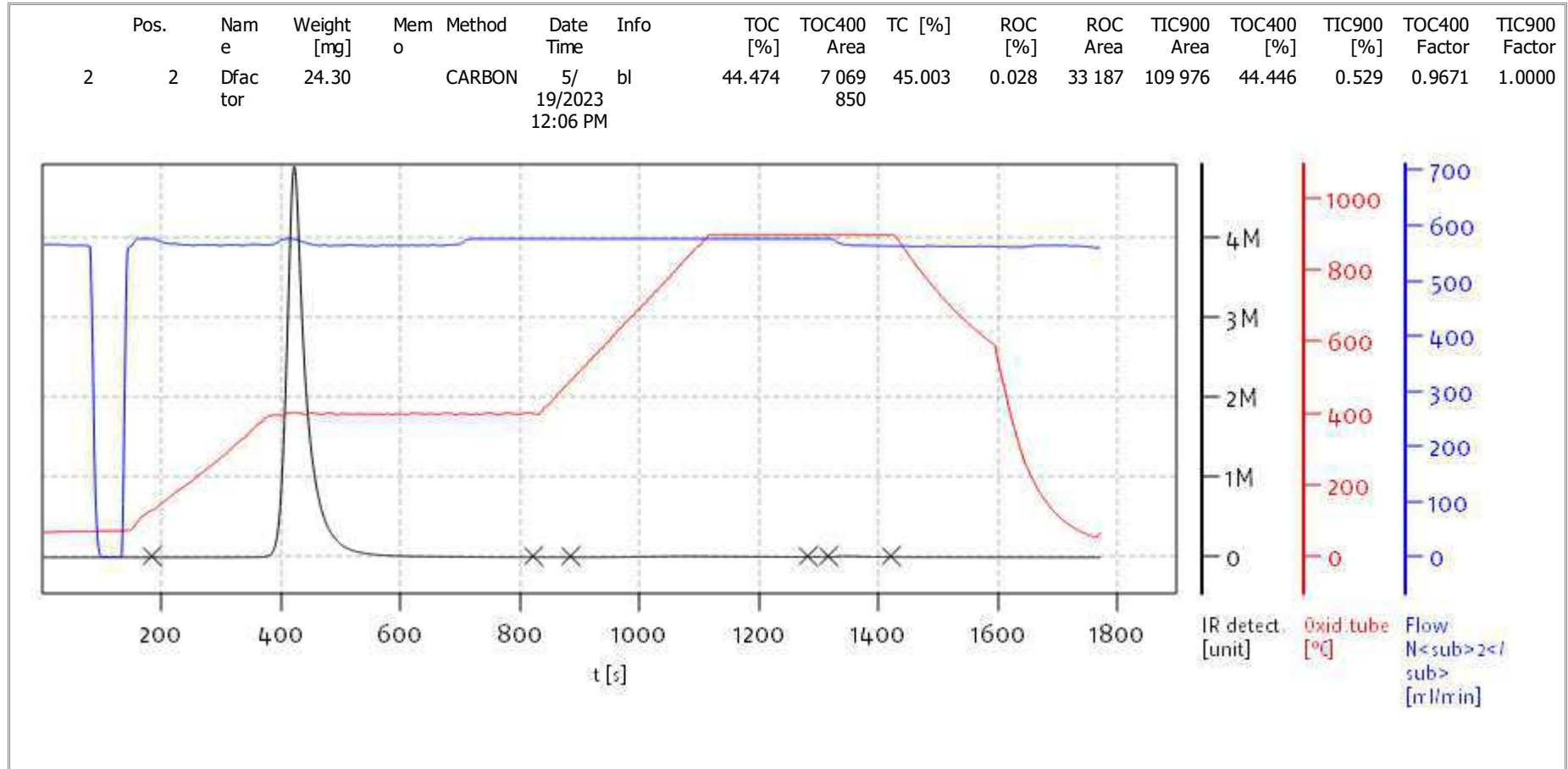
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Serial No: 0300.181017  
Mode CCC



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Balance: BAL3  
Analyst: CDE



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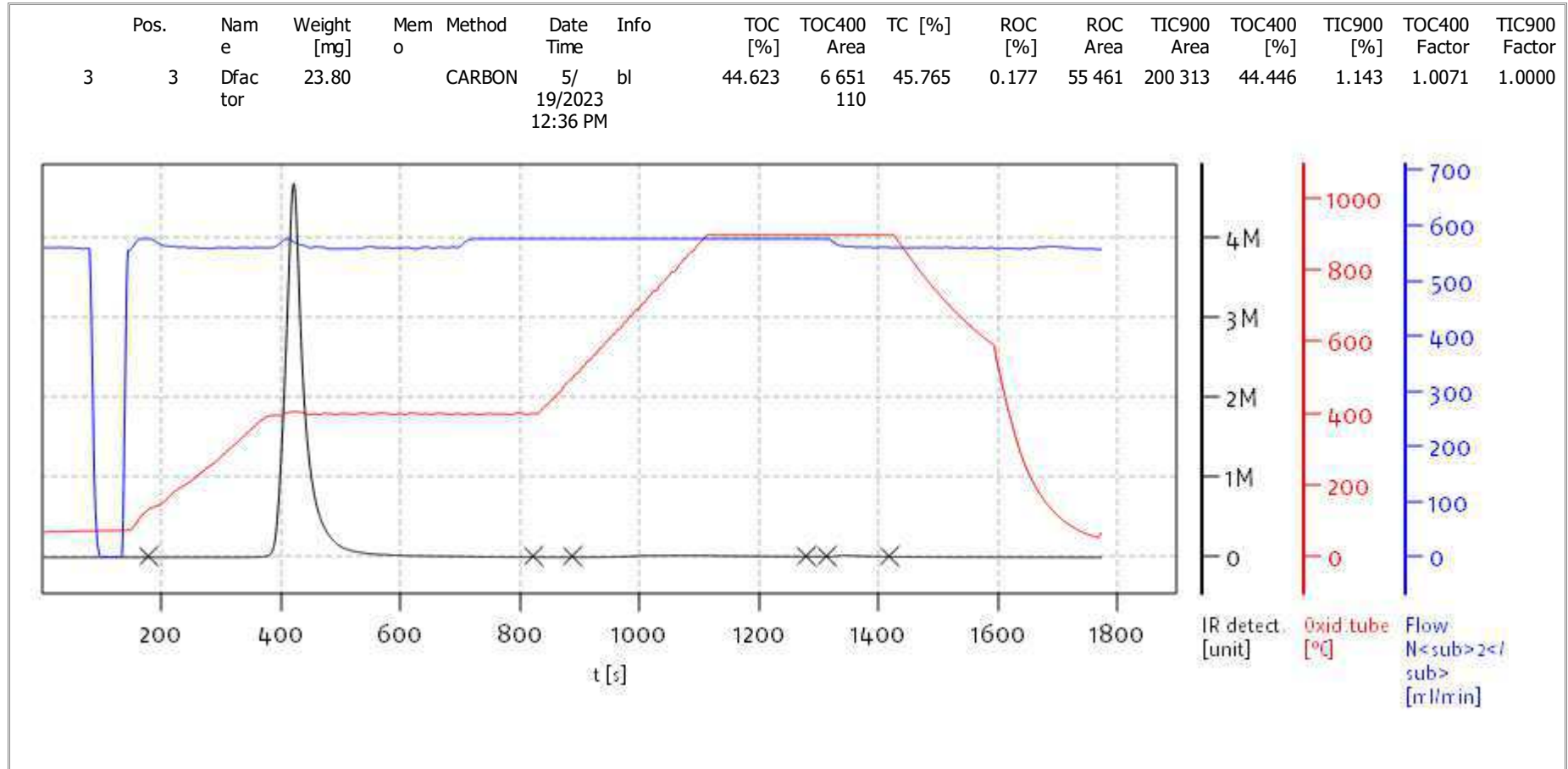
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Analyst: CDE



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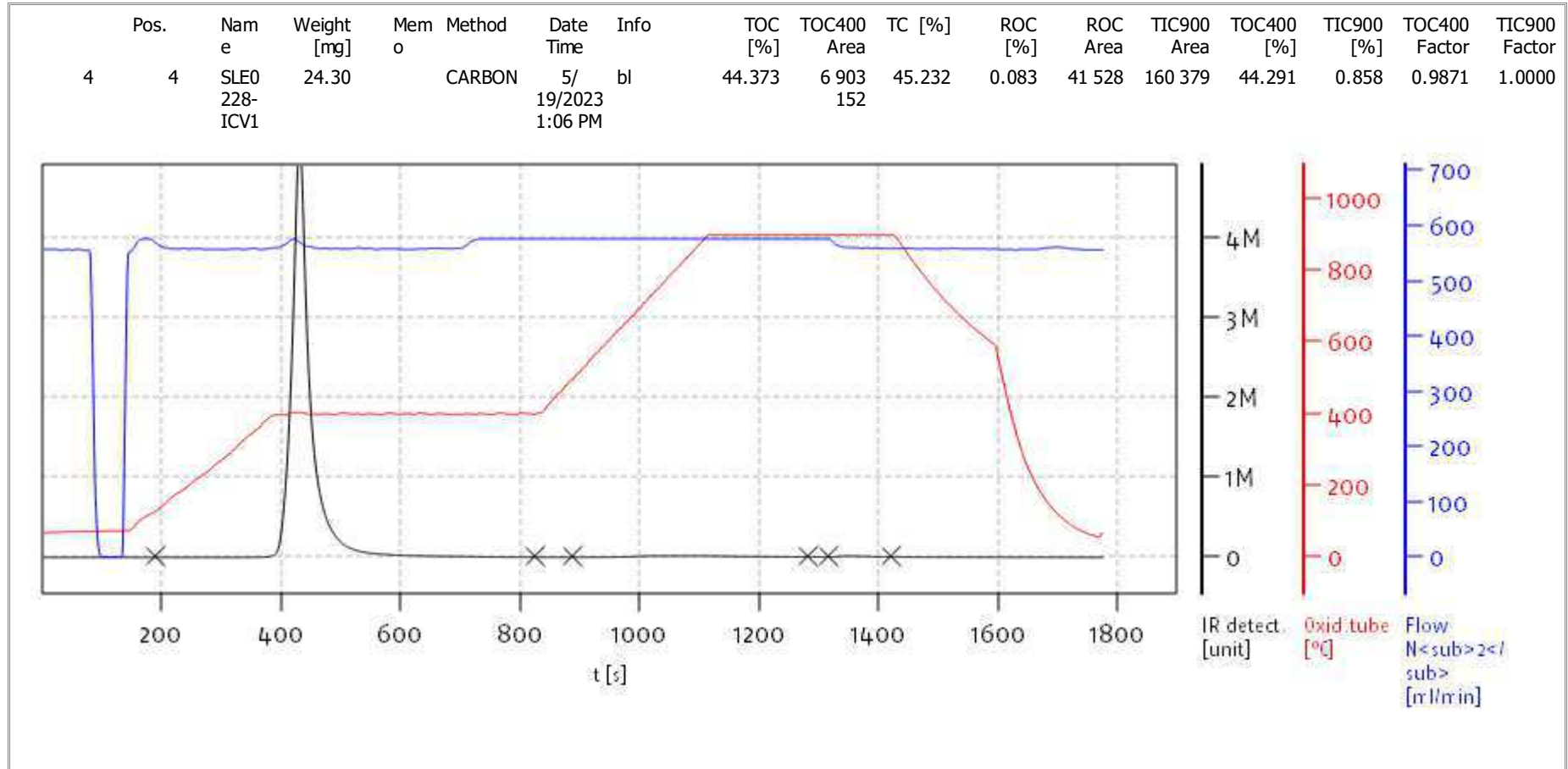
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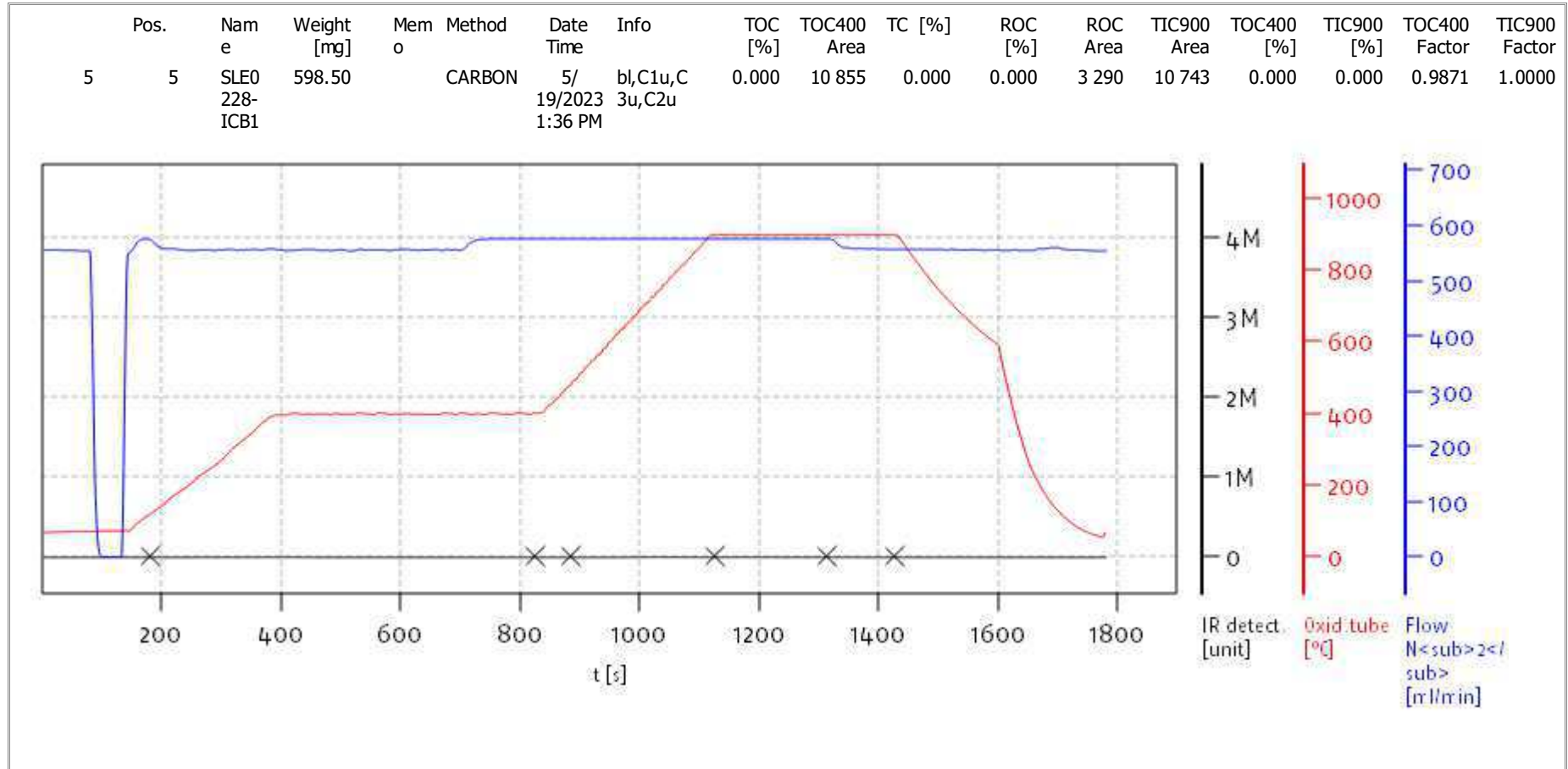
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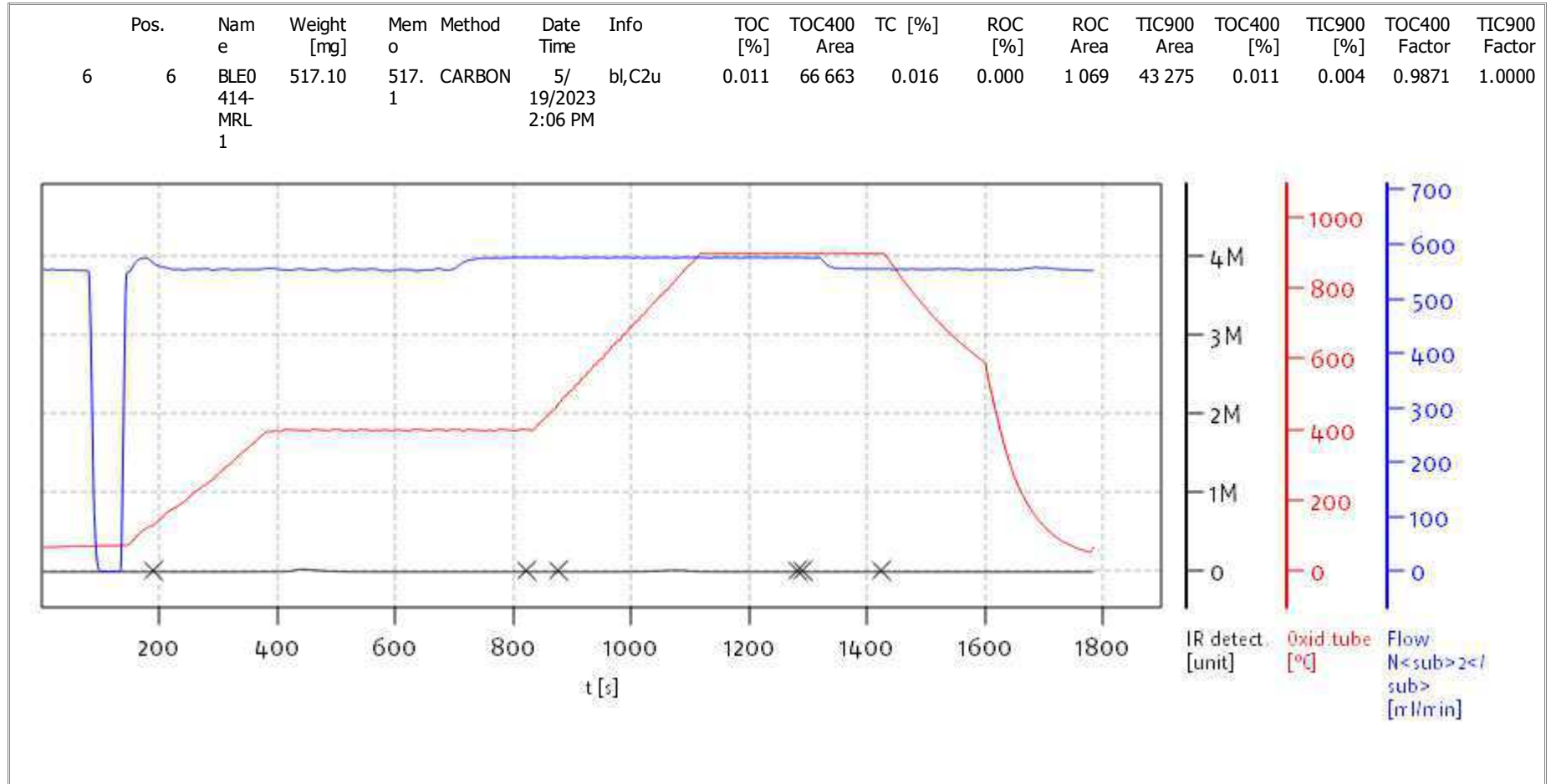
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Analyst: CDE



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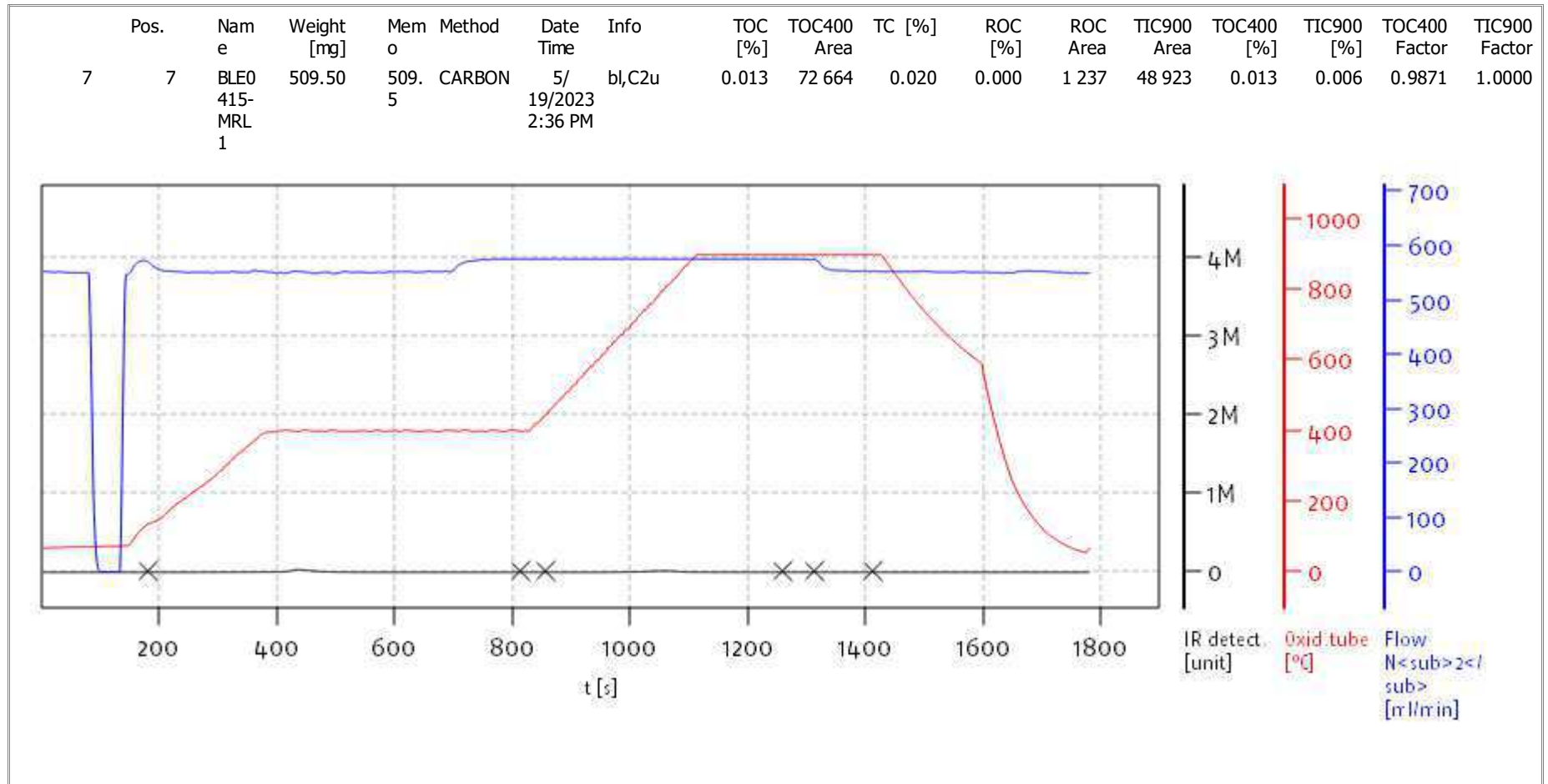


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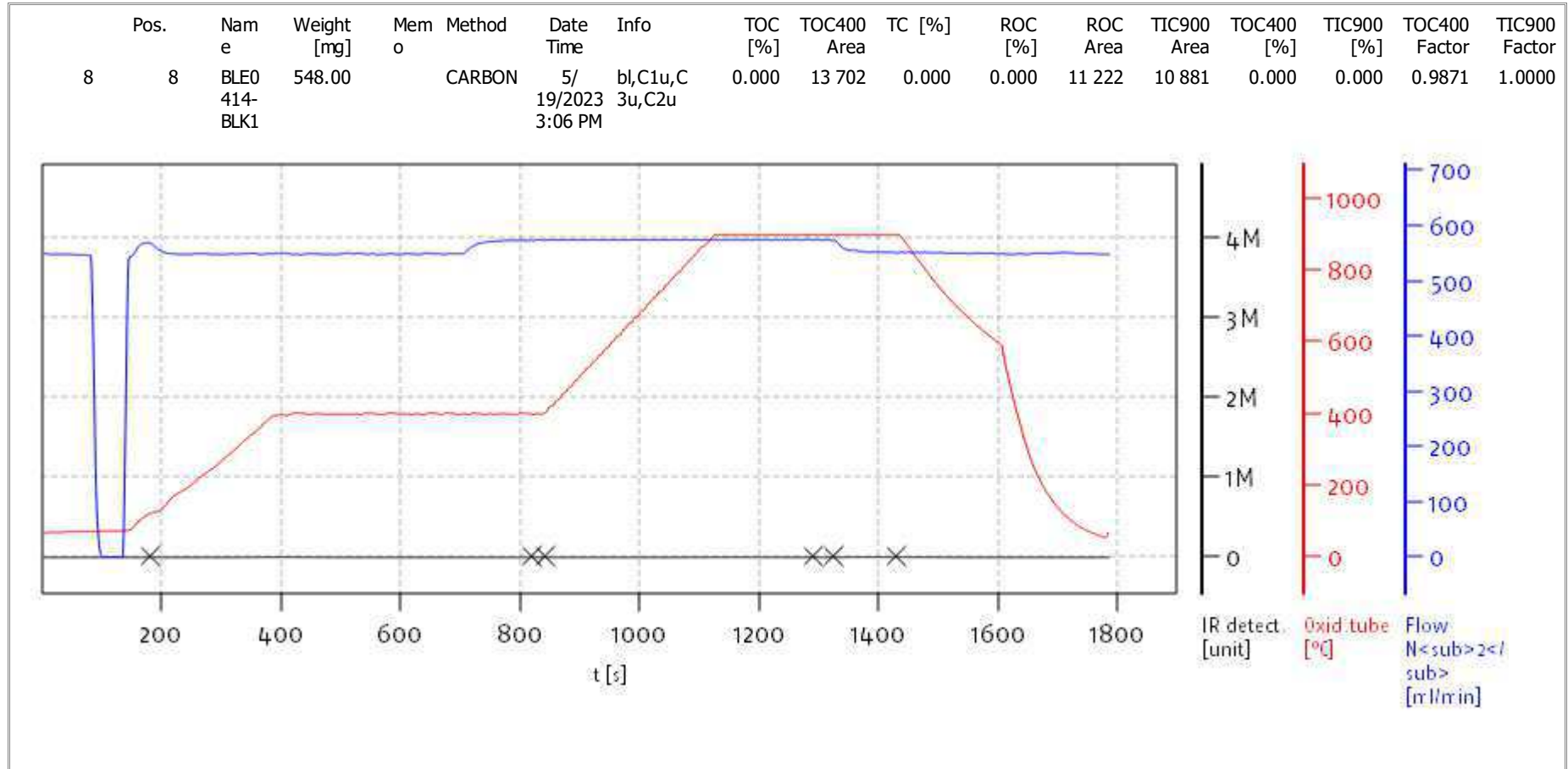
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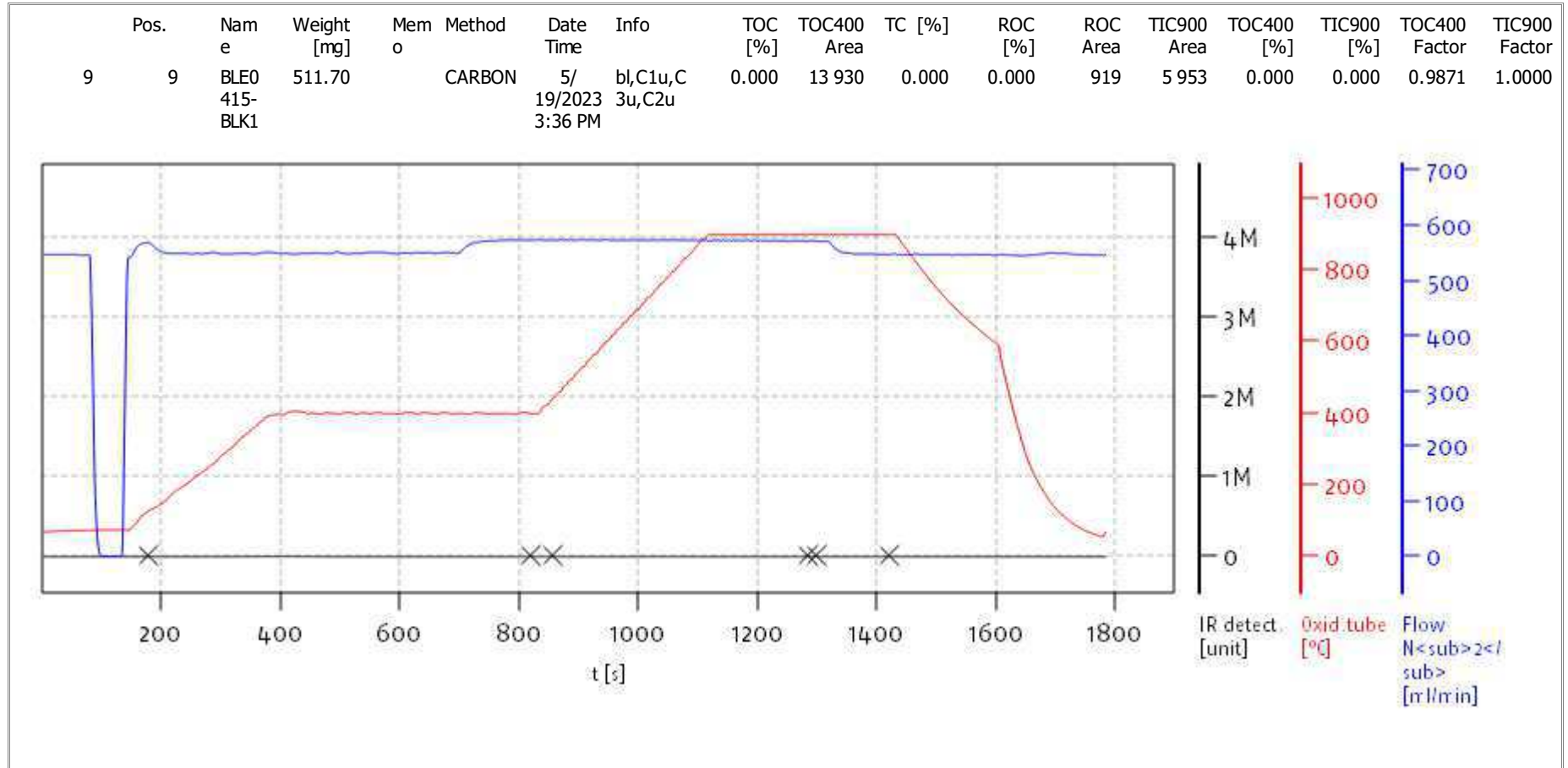


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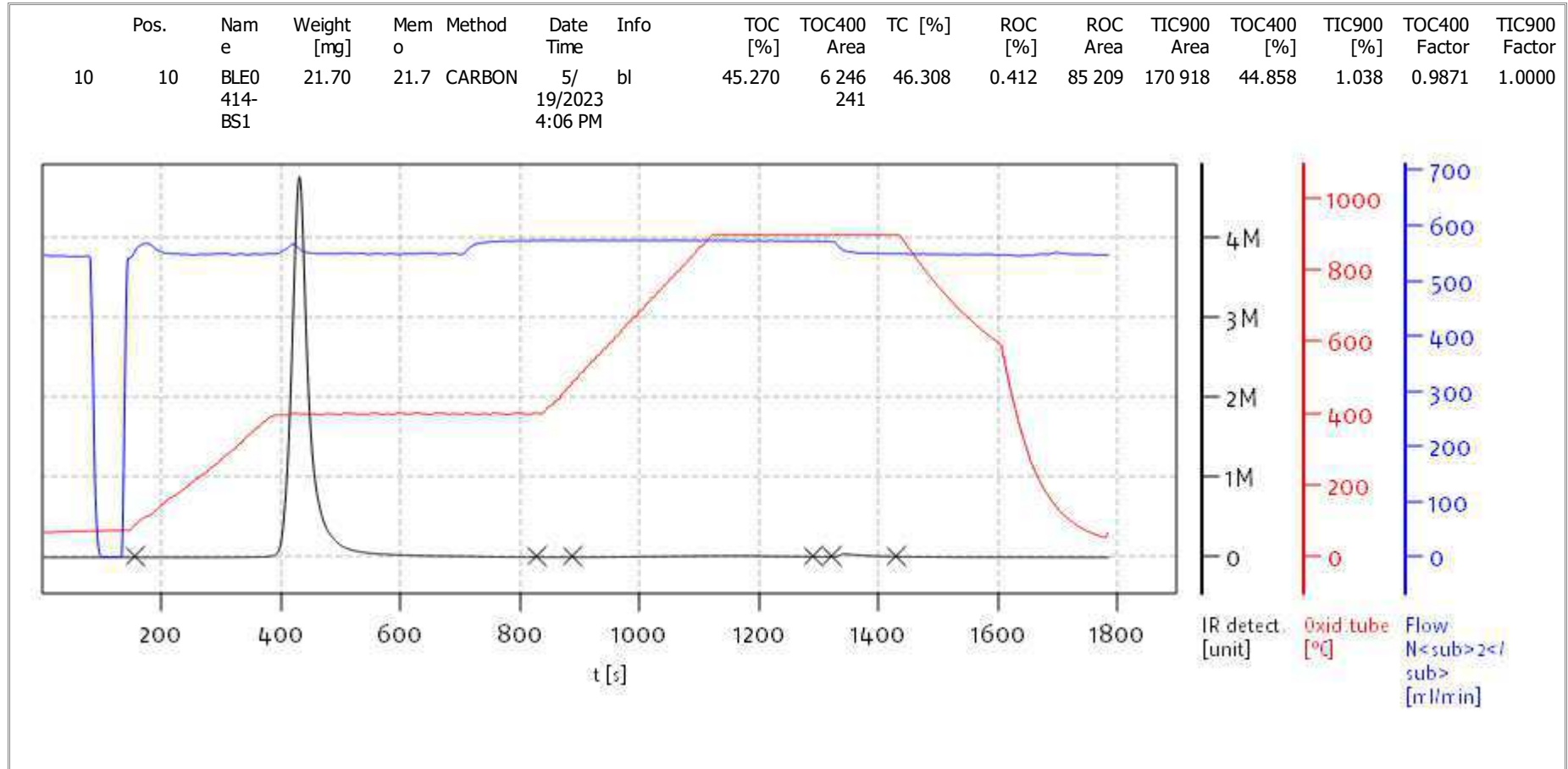
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Analyst: CDE



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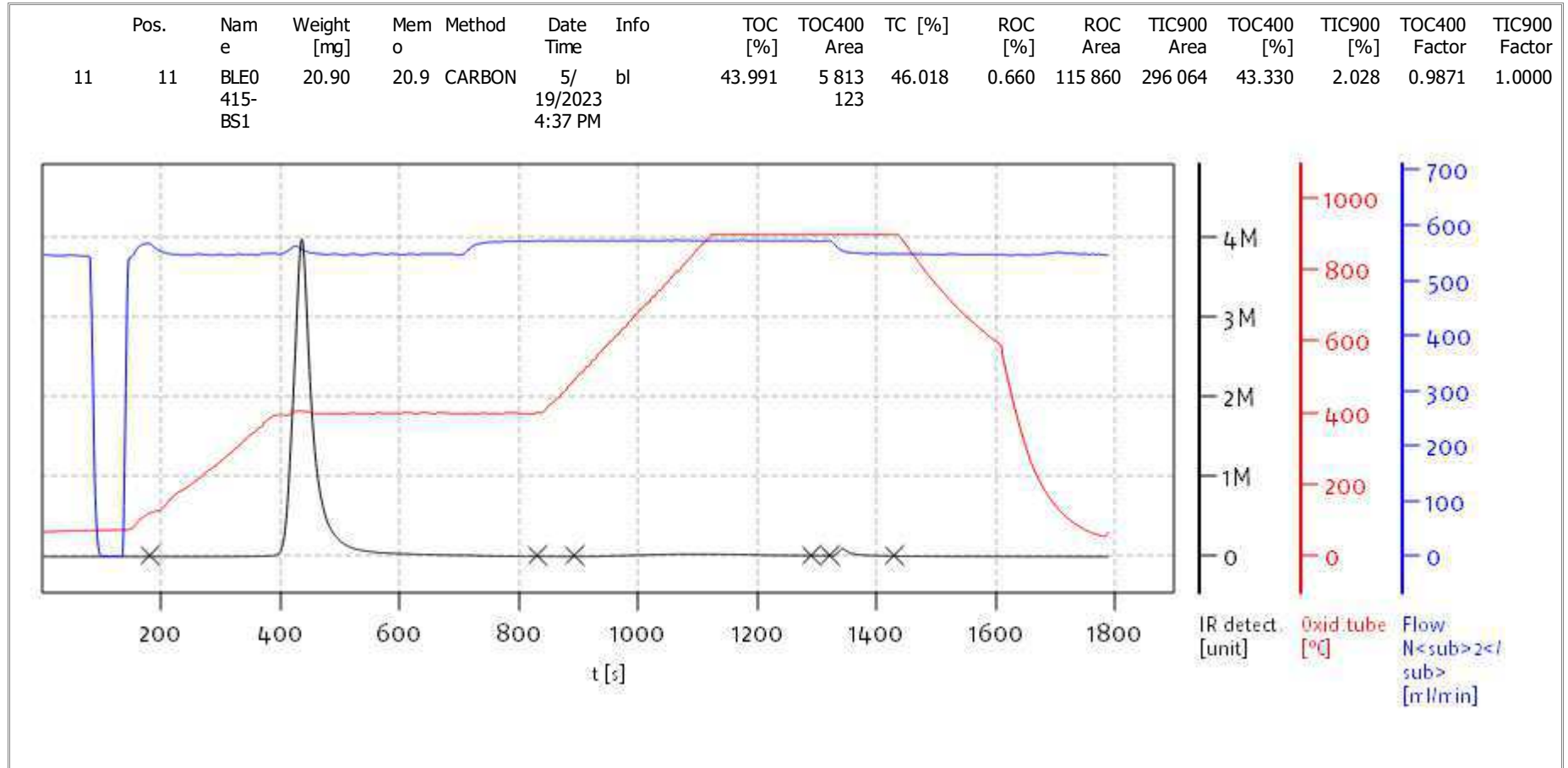
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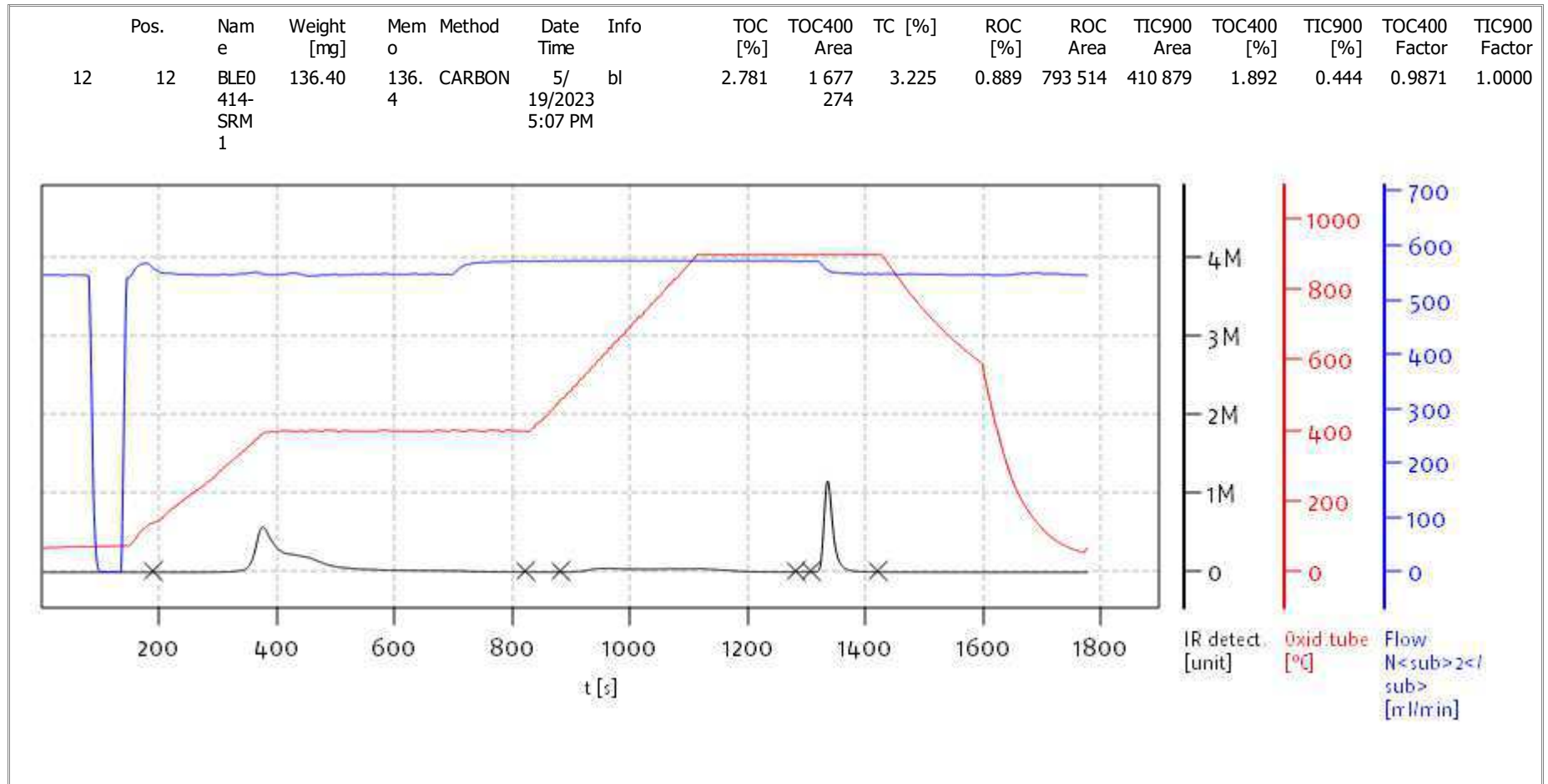
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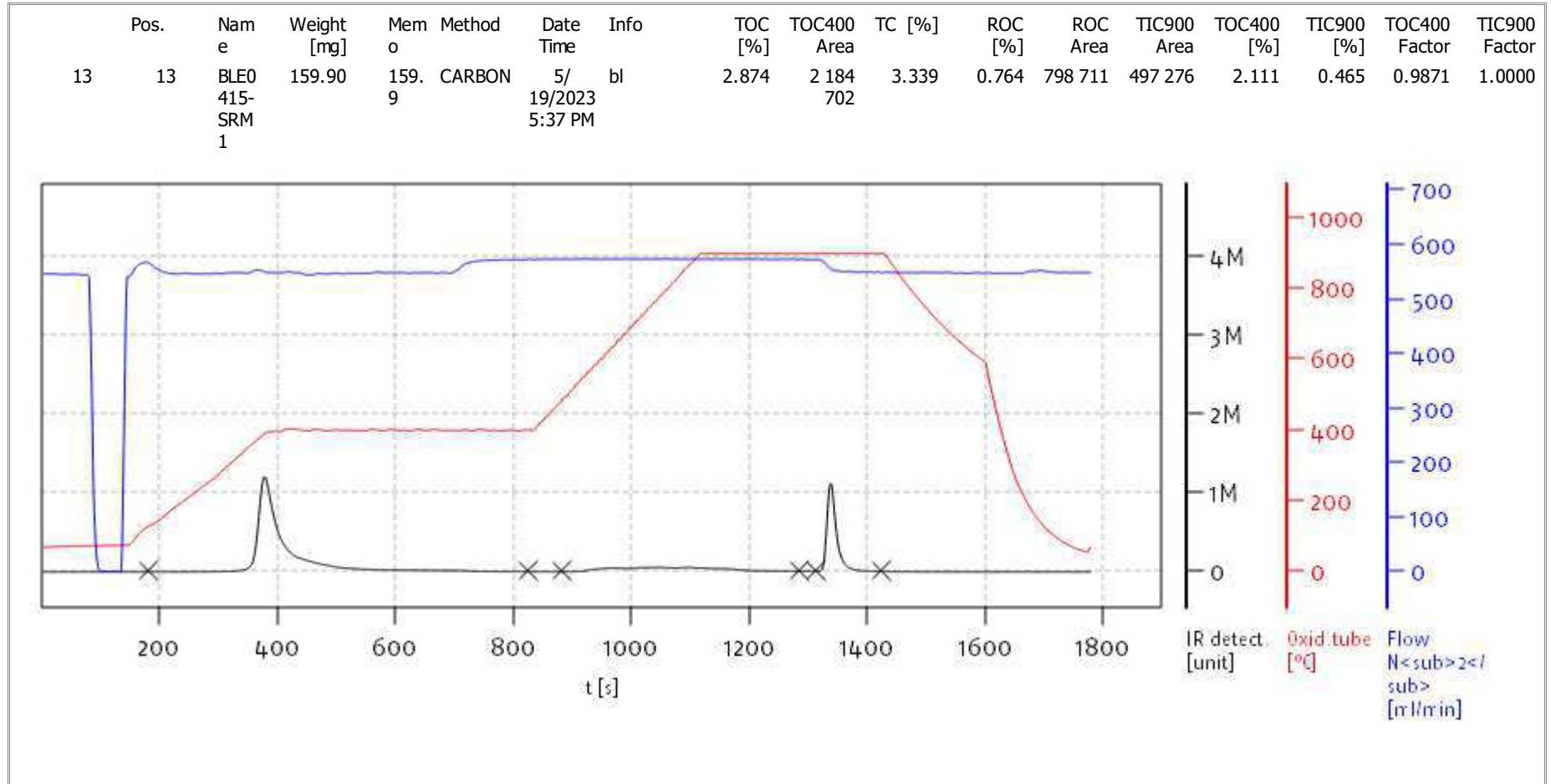
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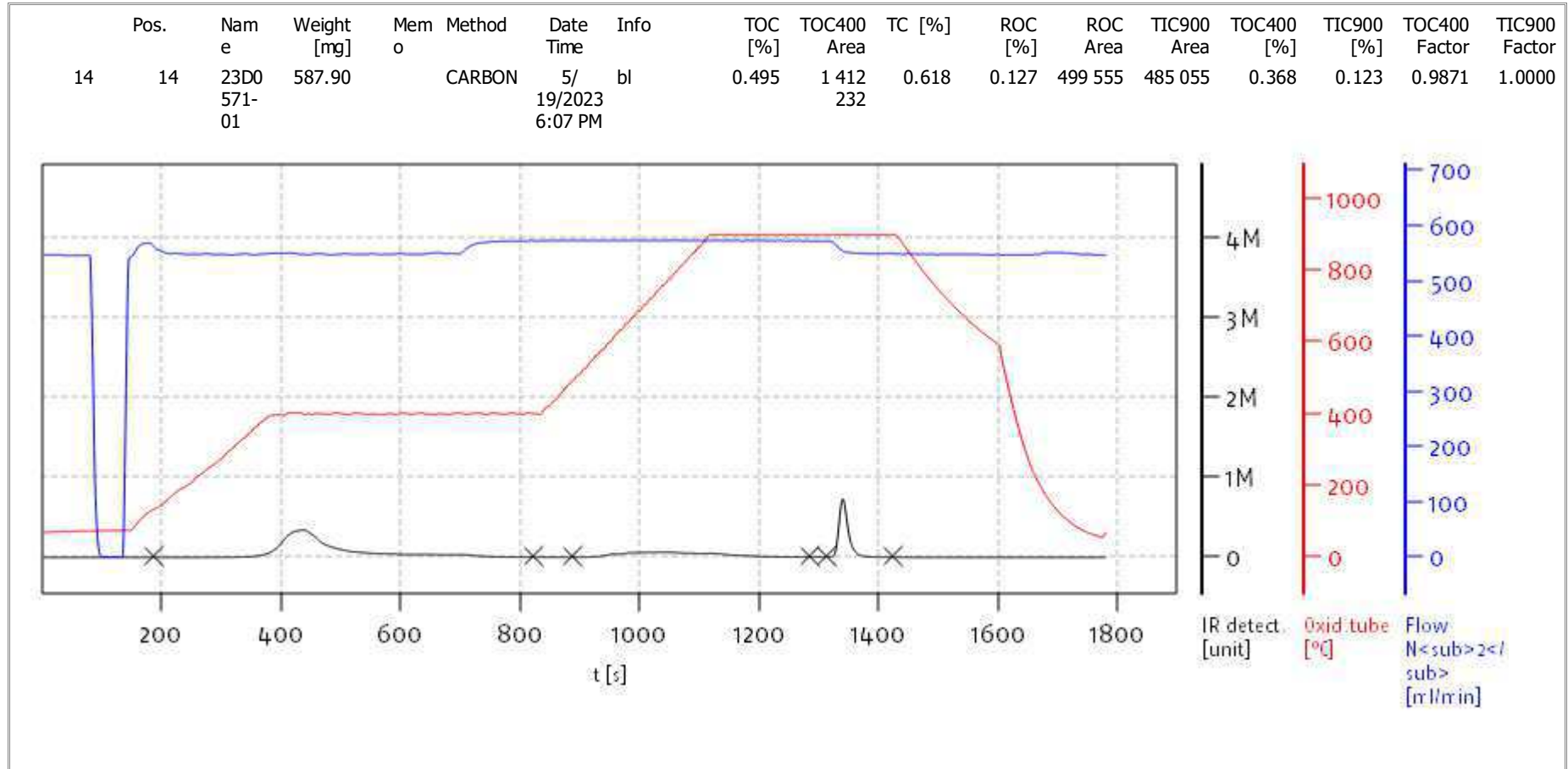
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Analyst: CDE



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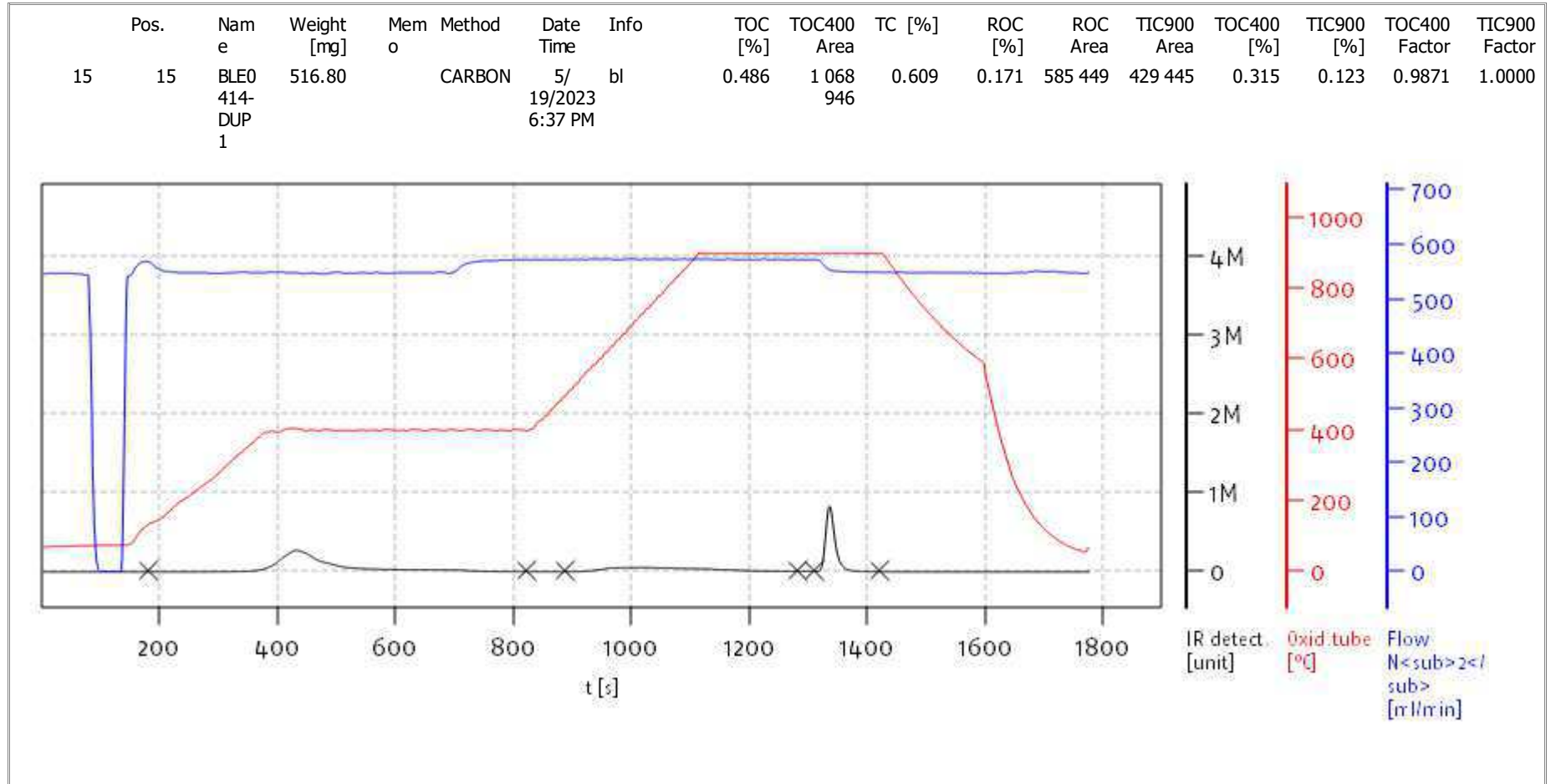


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Access: solITOC superuser

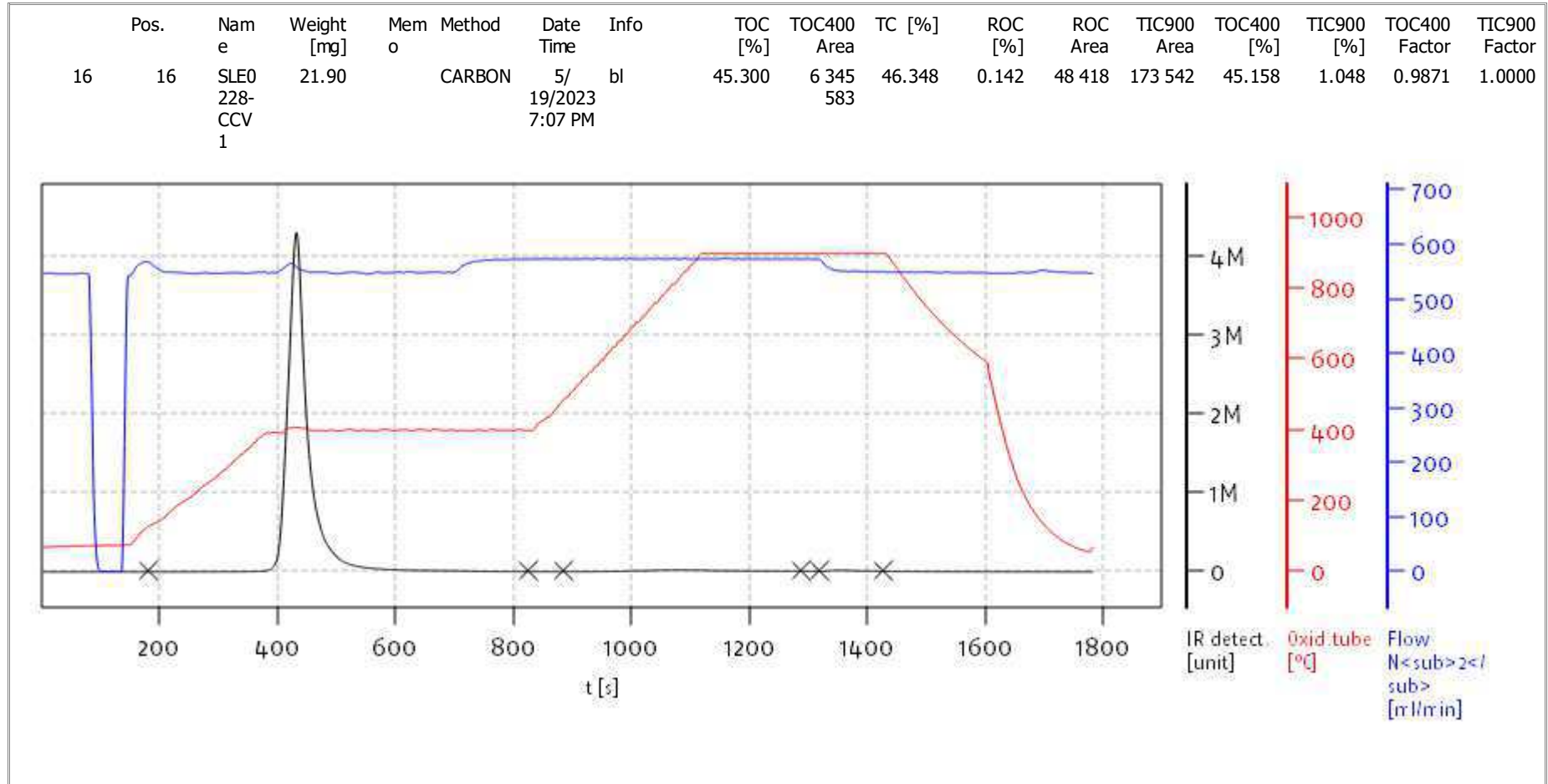
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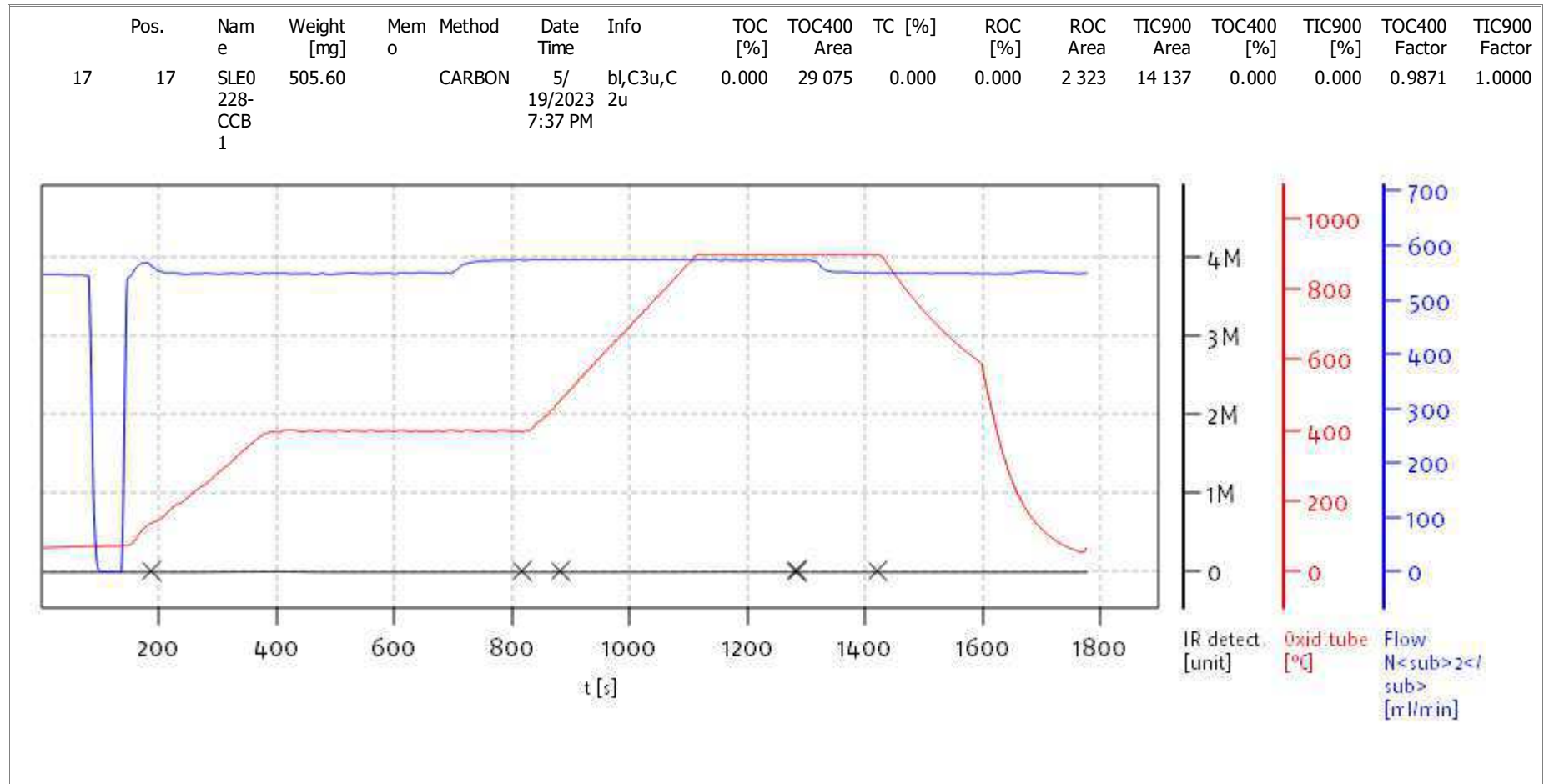


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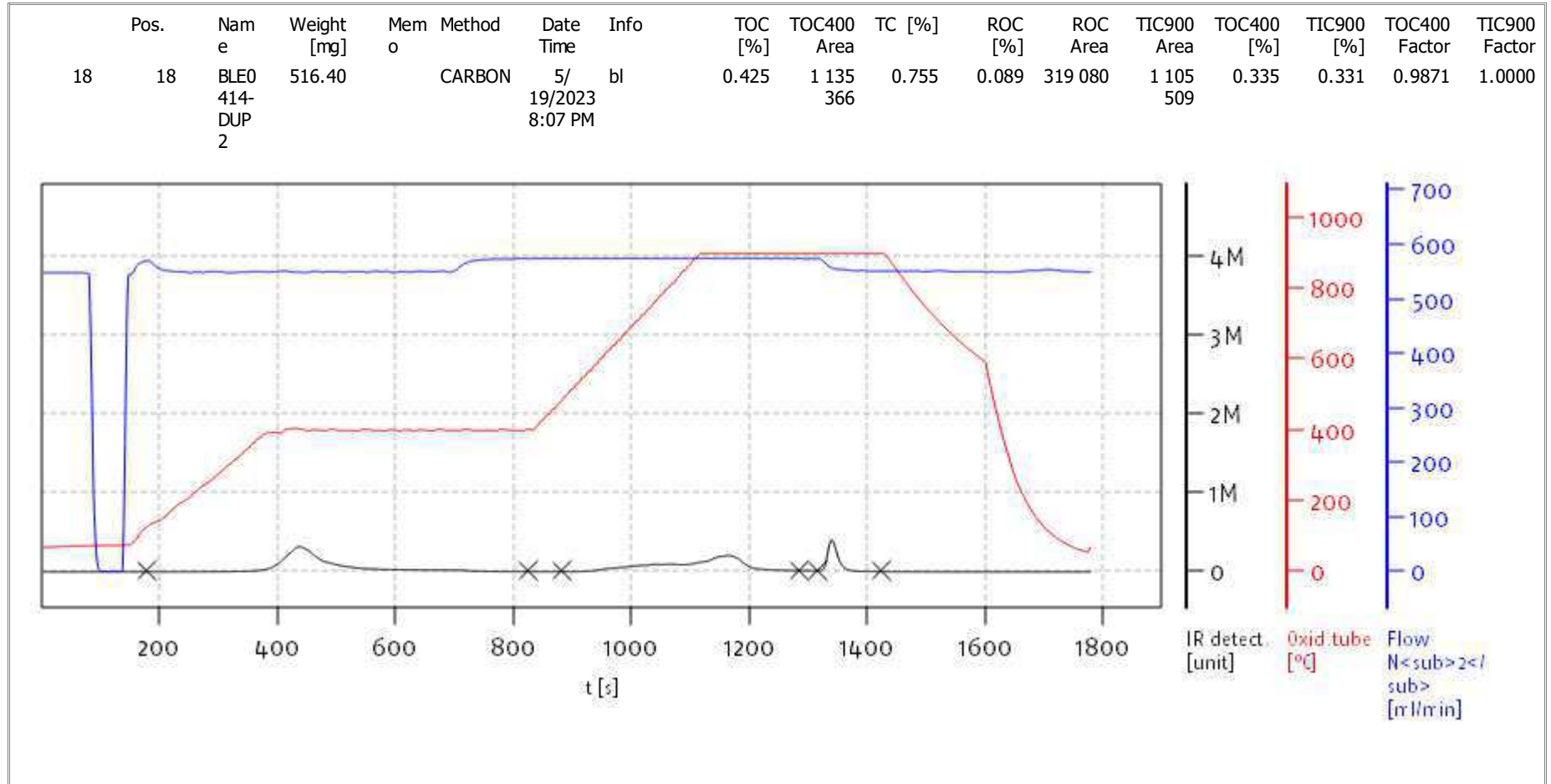
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Balance: BAL3  
Analyst: CDE



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Access: solITOC superuser

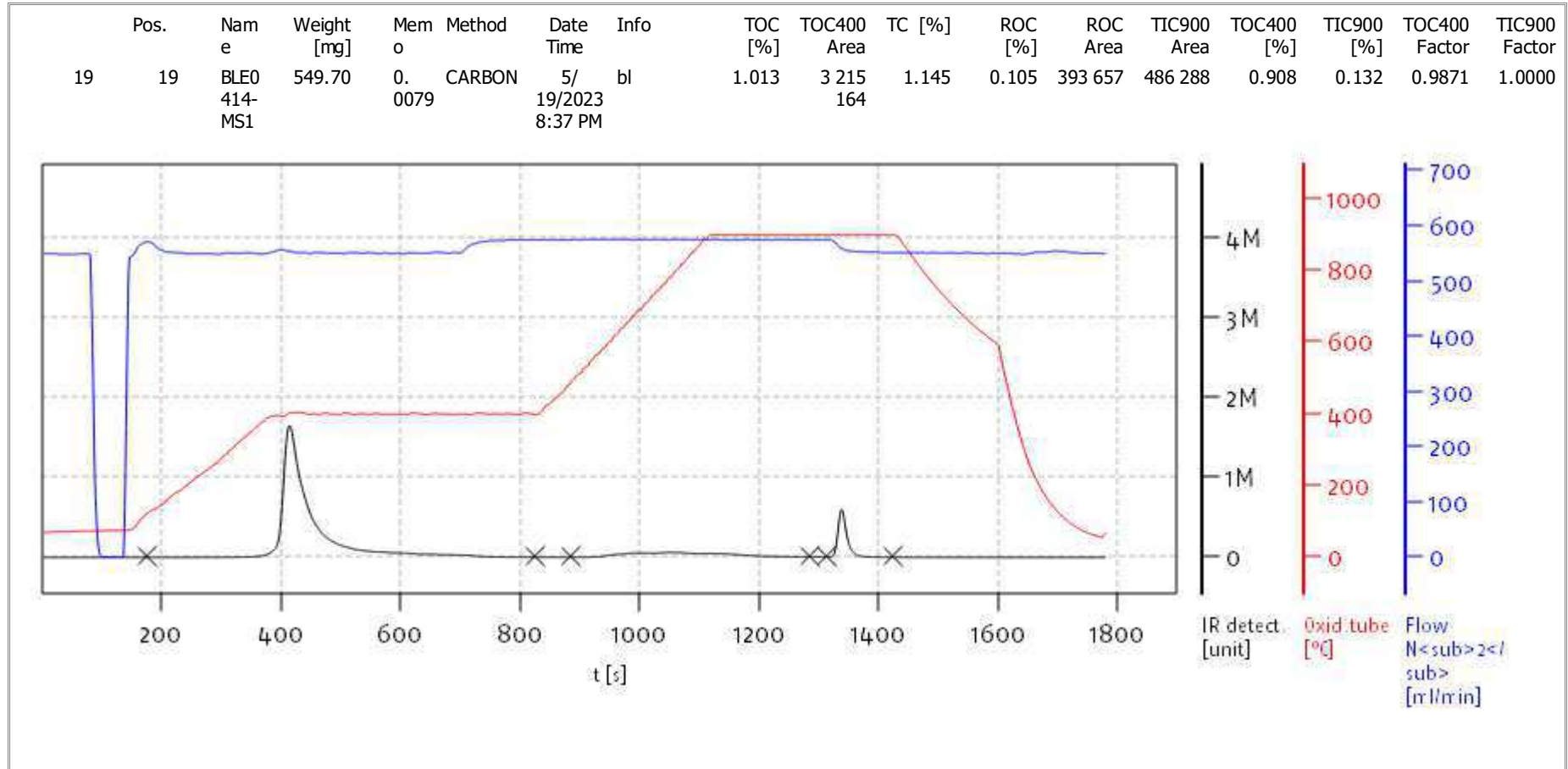
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Mode CCC



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Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

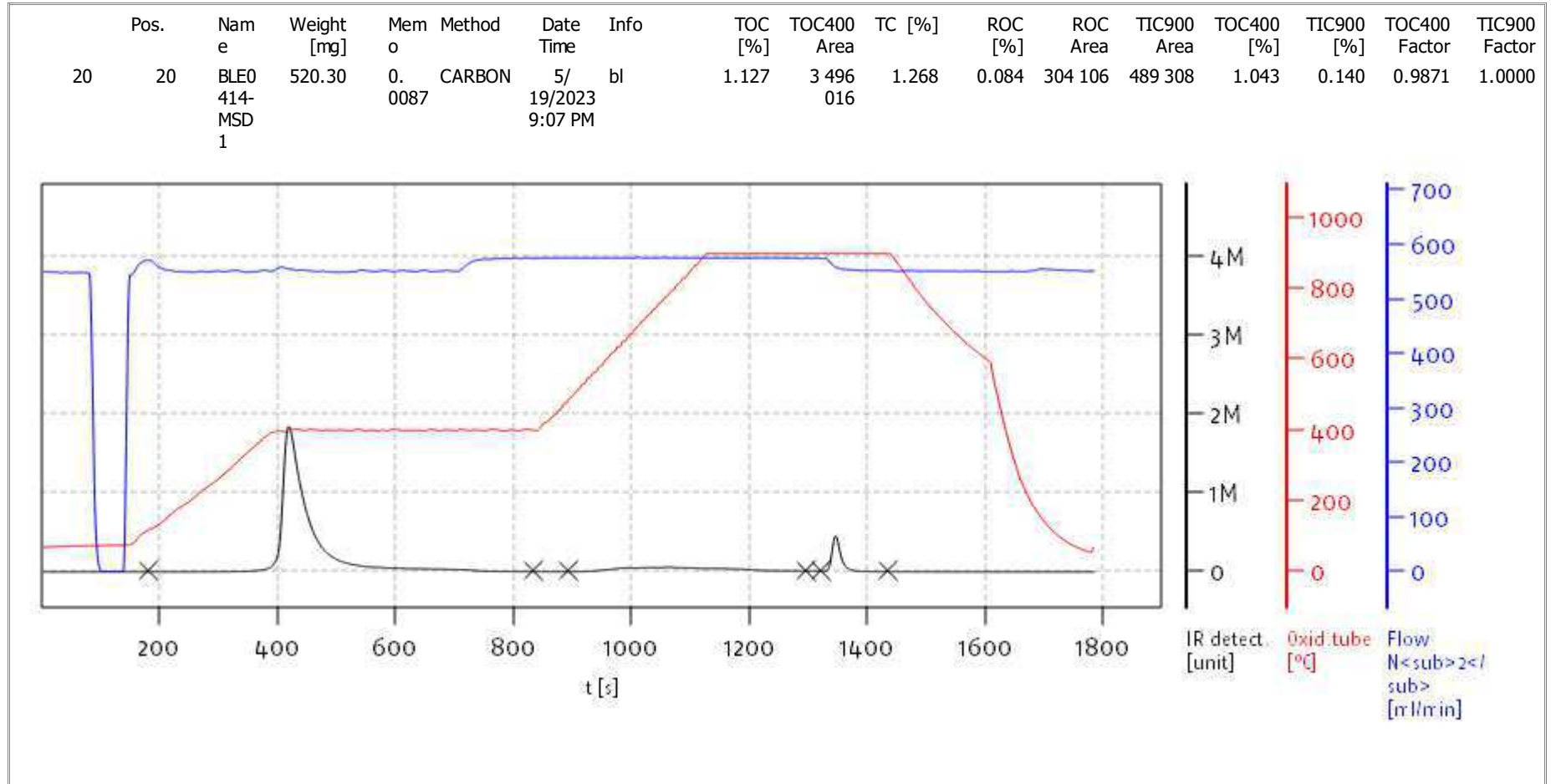
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Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

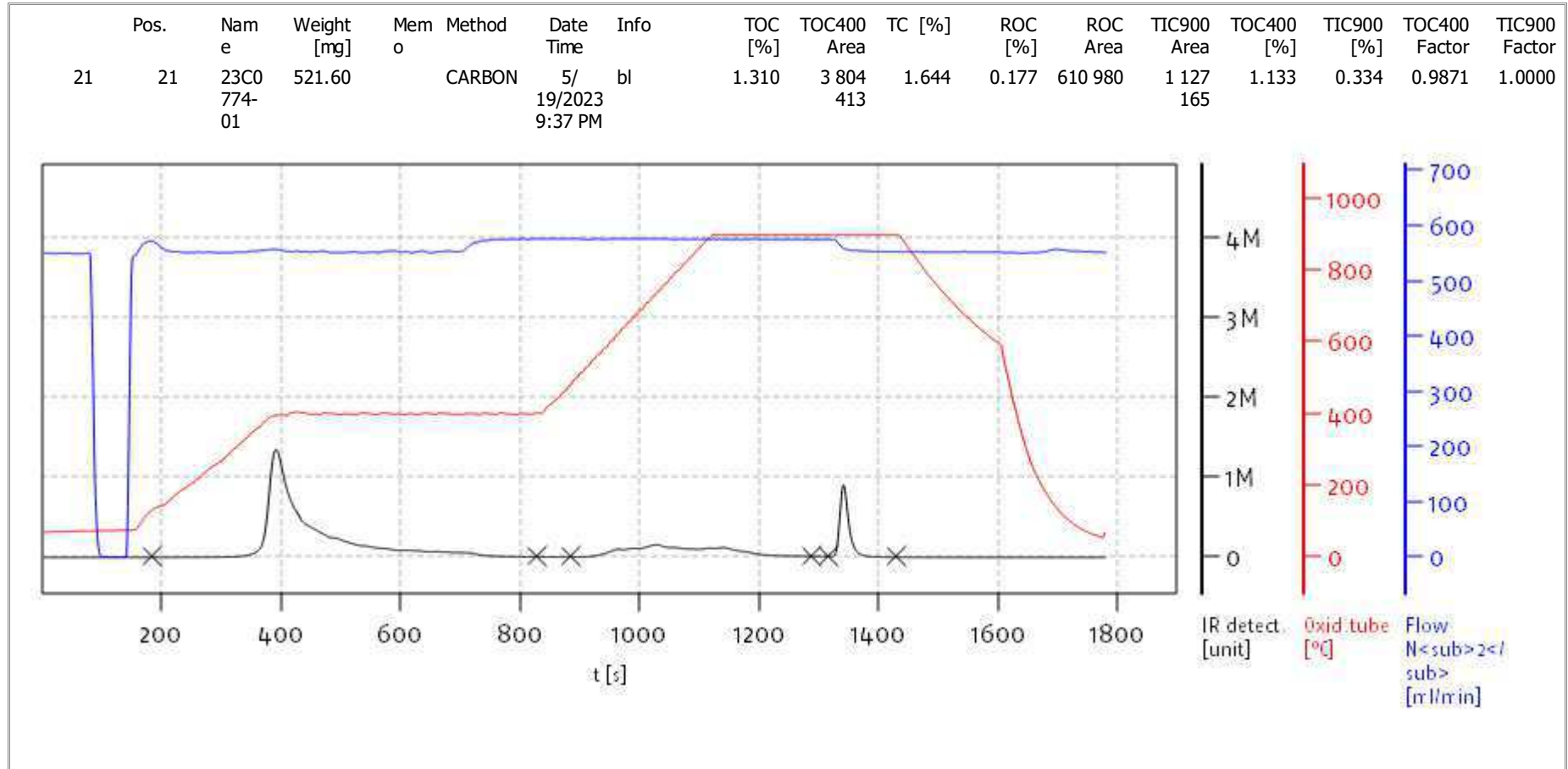
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Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

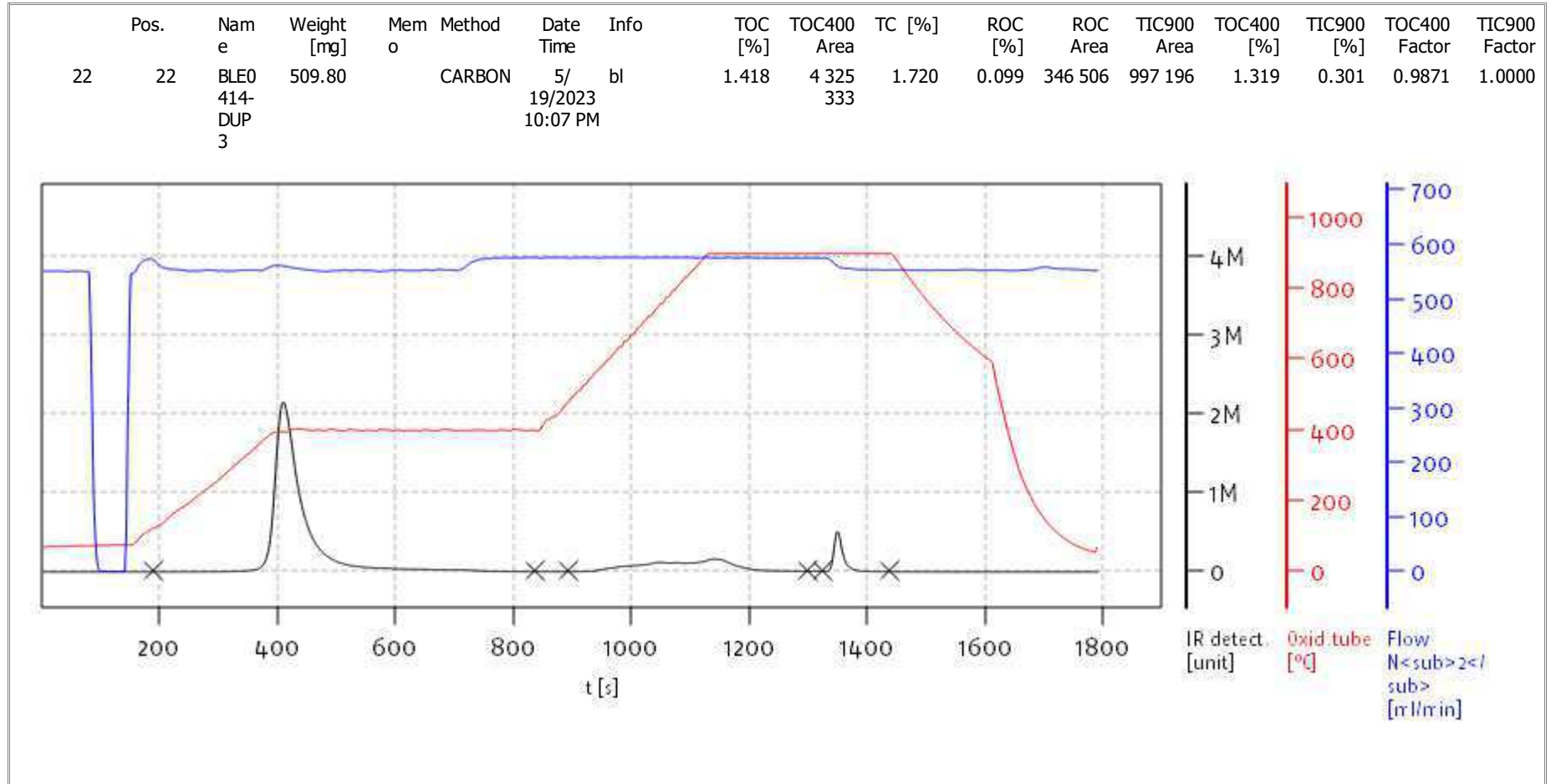
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Mode CCC



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Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Mon May 22 10:19:17 2023

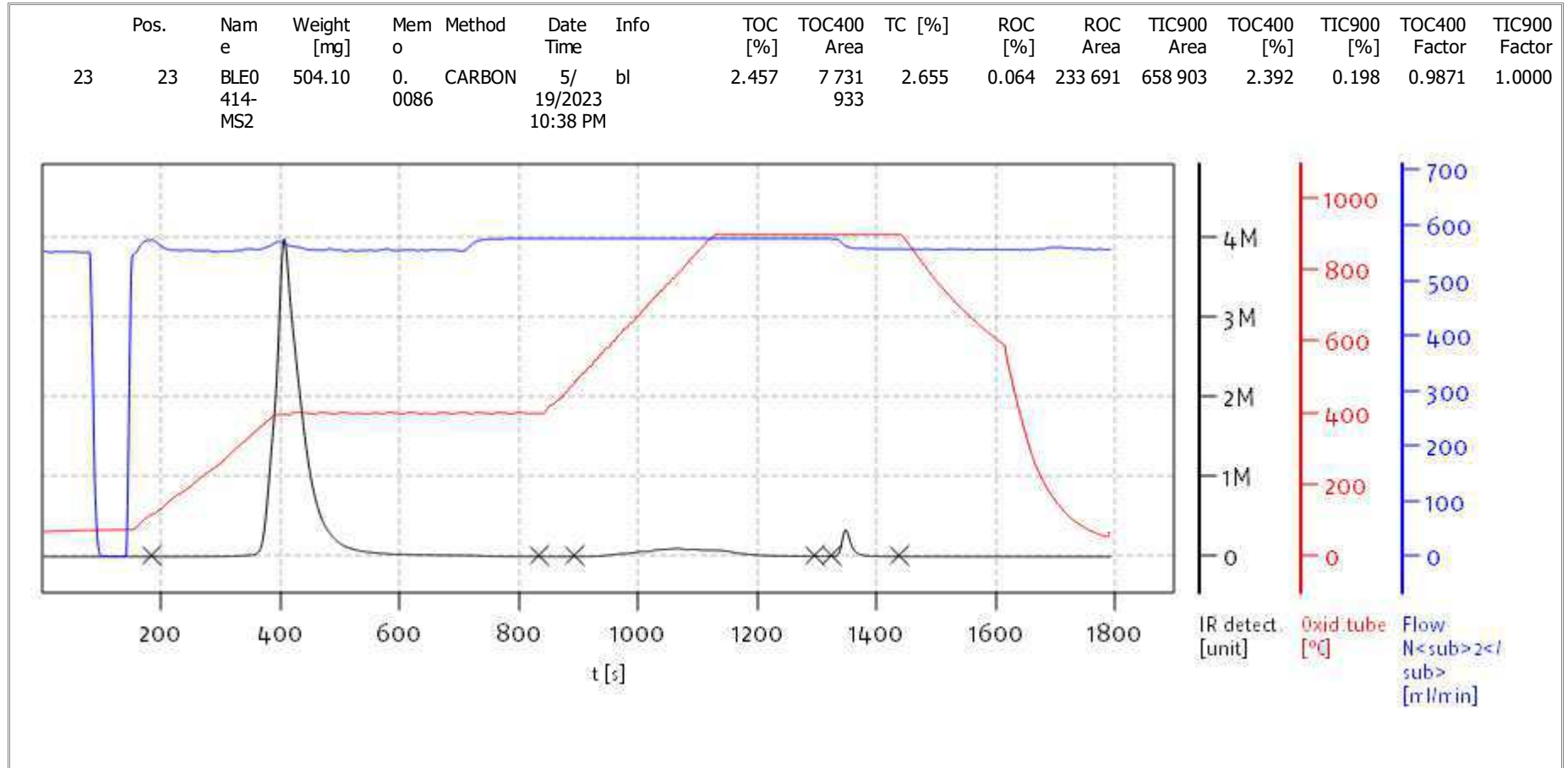


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Mode CCC





Soli TOC Cube, Carbon  
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Analyst: CDE



Name:

Access: solITOC superuser

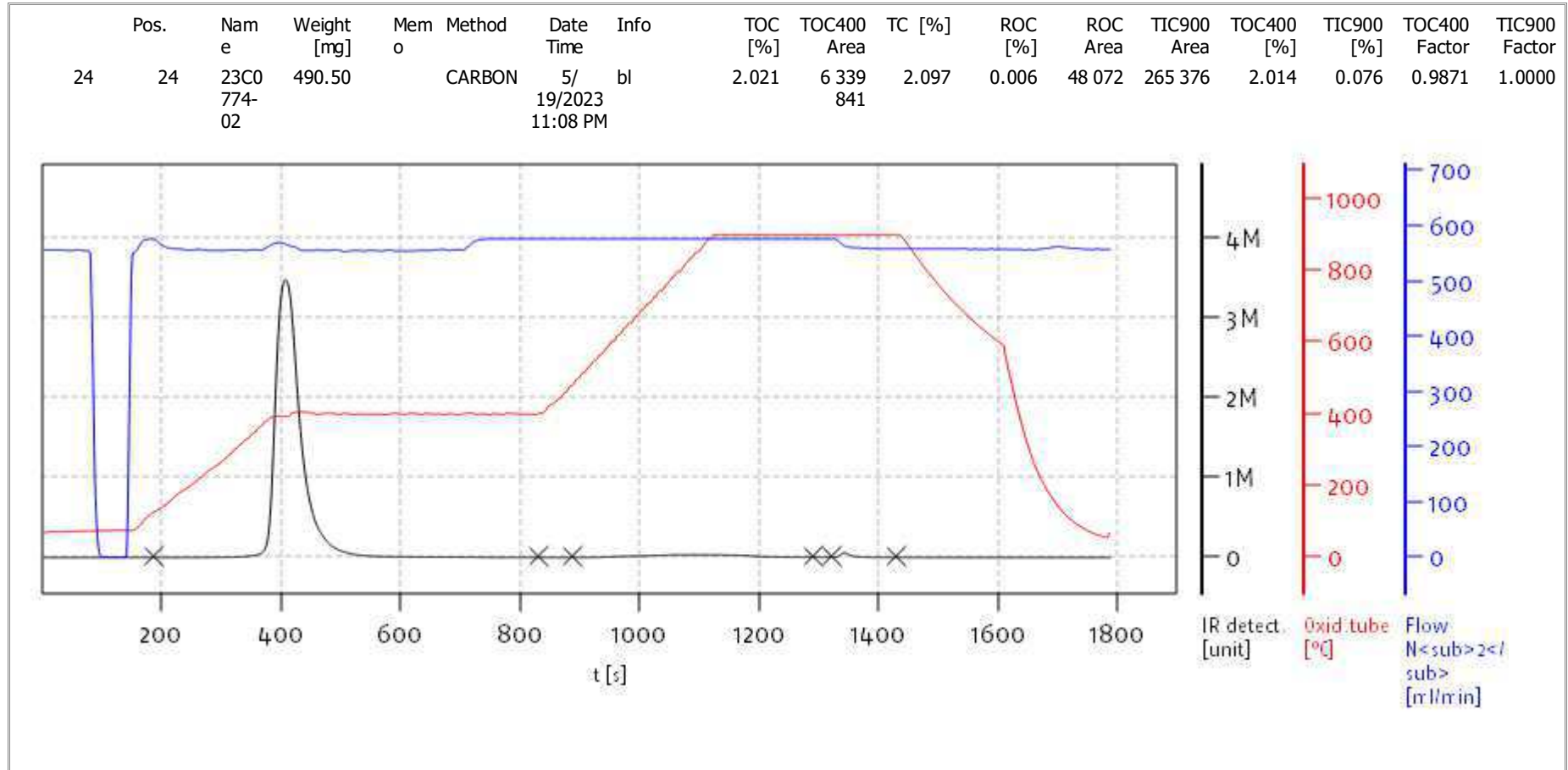
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Mon May 22 10:19:17 2023

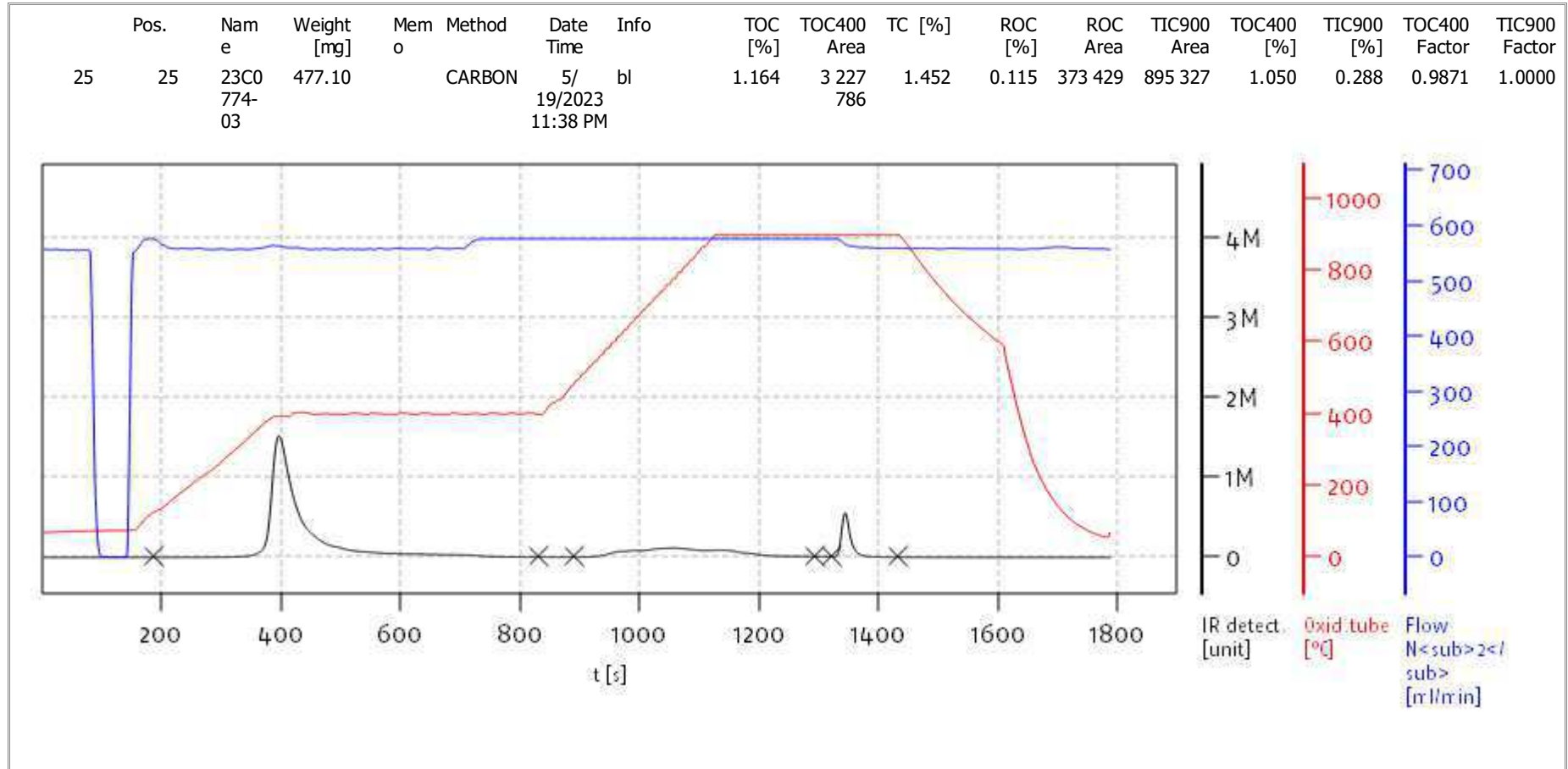


solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
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Name:

Access: solITOC superuser

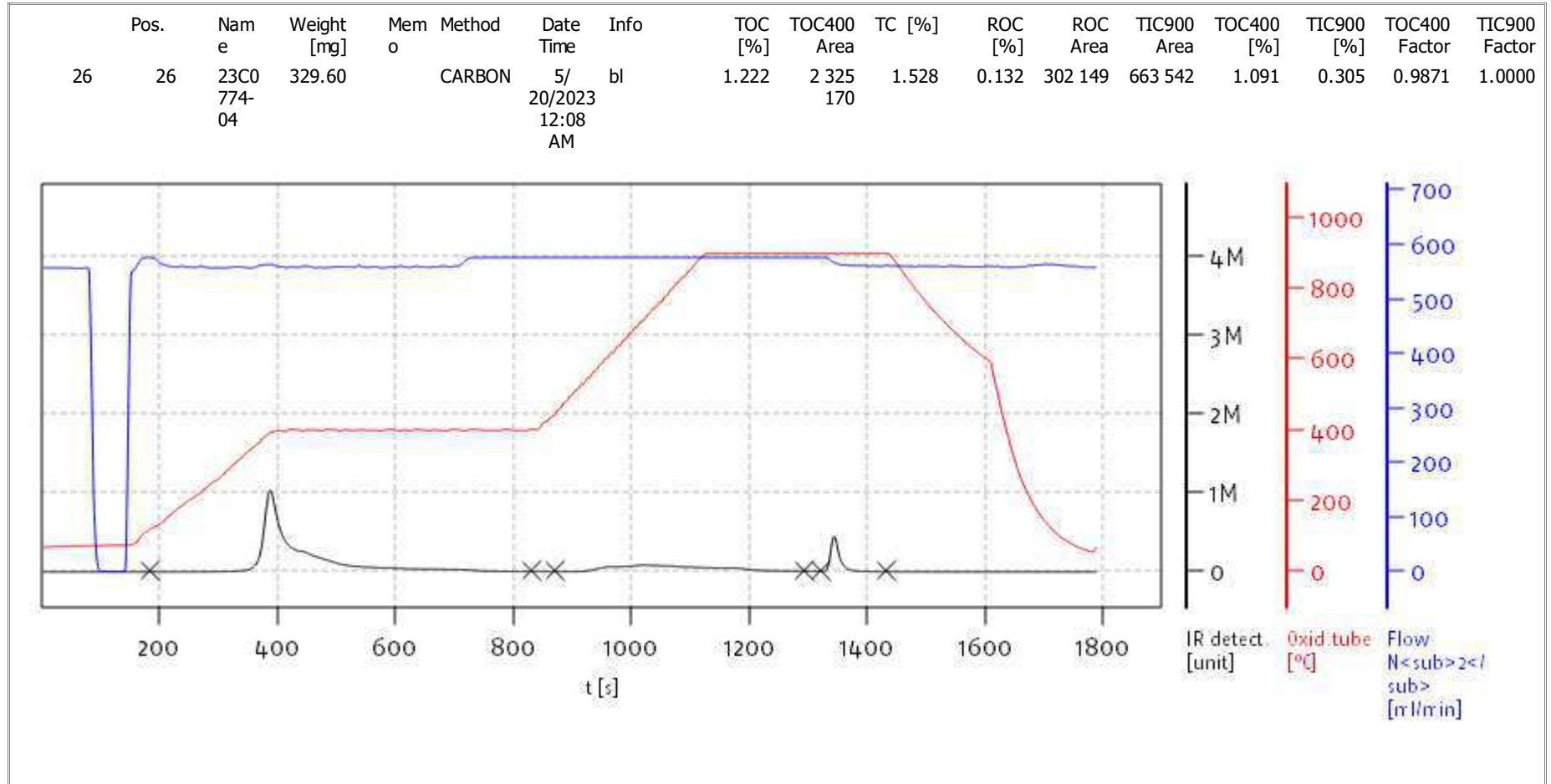
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Soli TOC Cube, Carbon  
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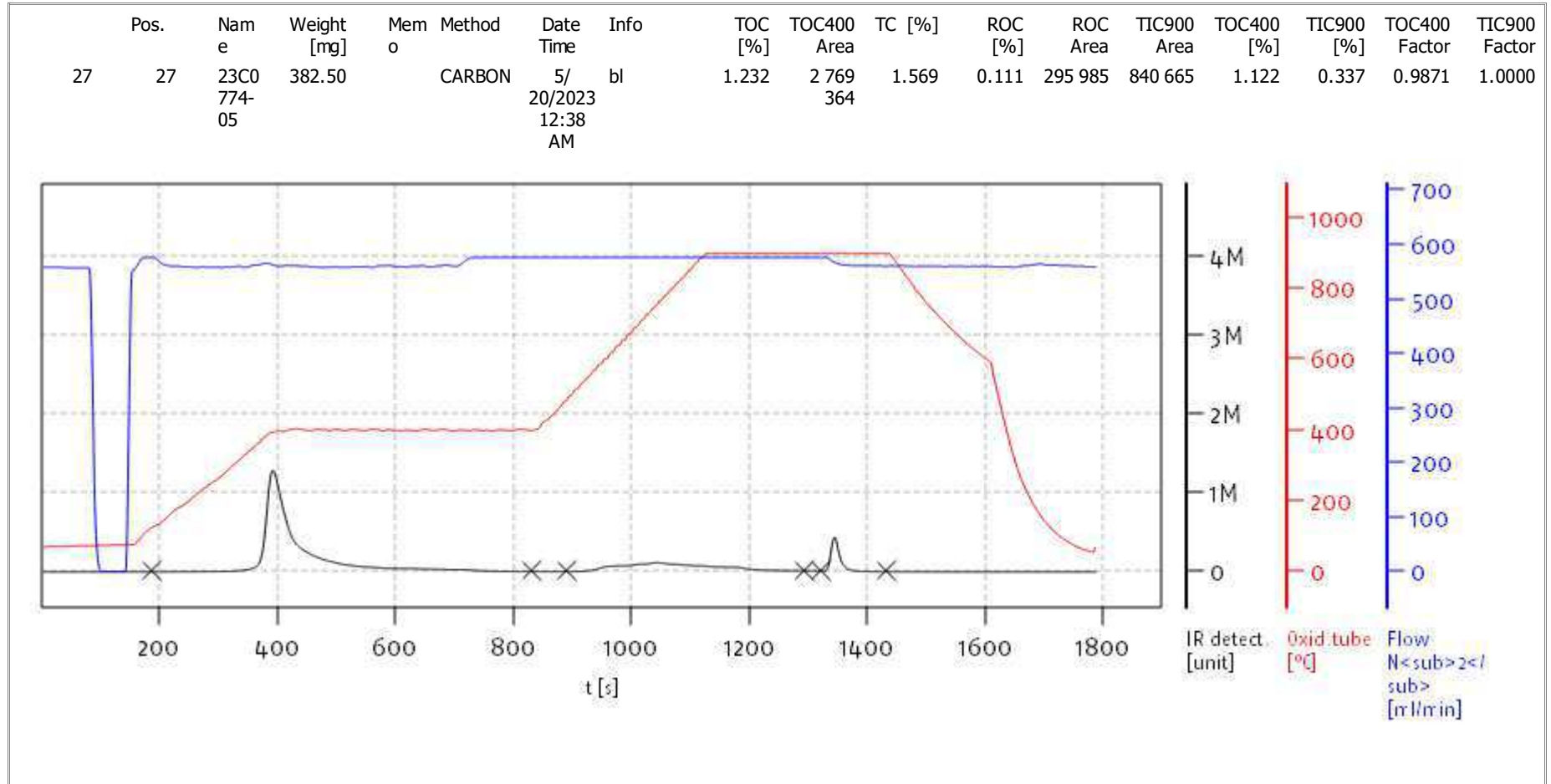
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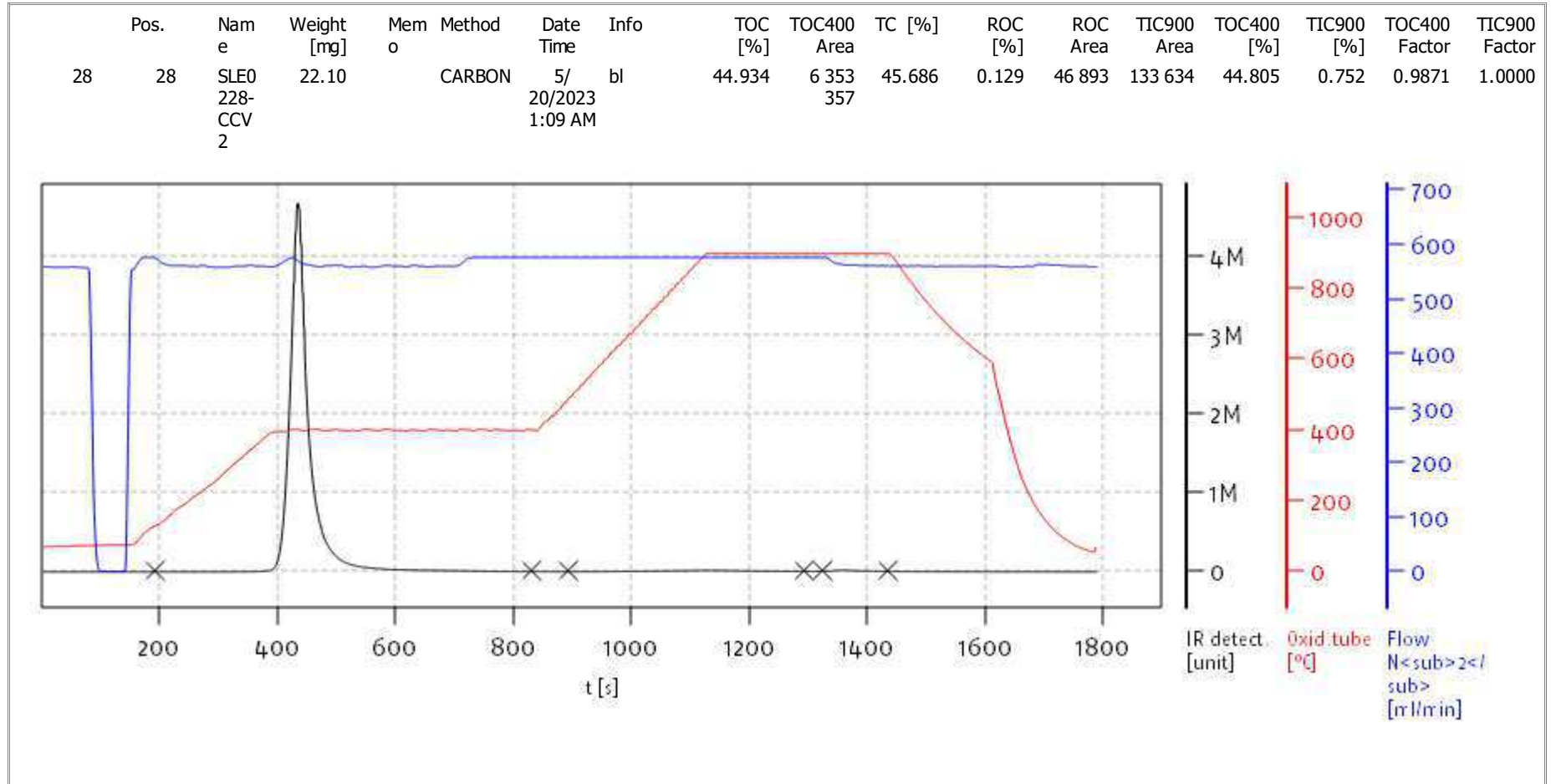
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solITOC V2.0.2 (31015f9) 2018-11-19  
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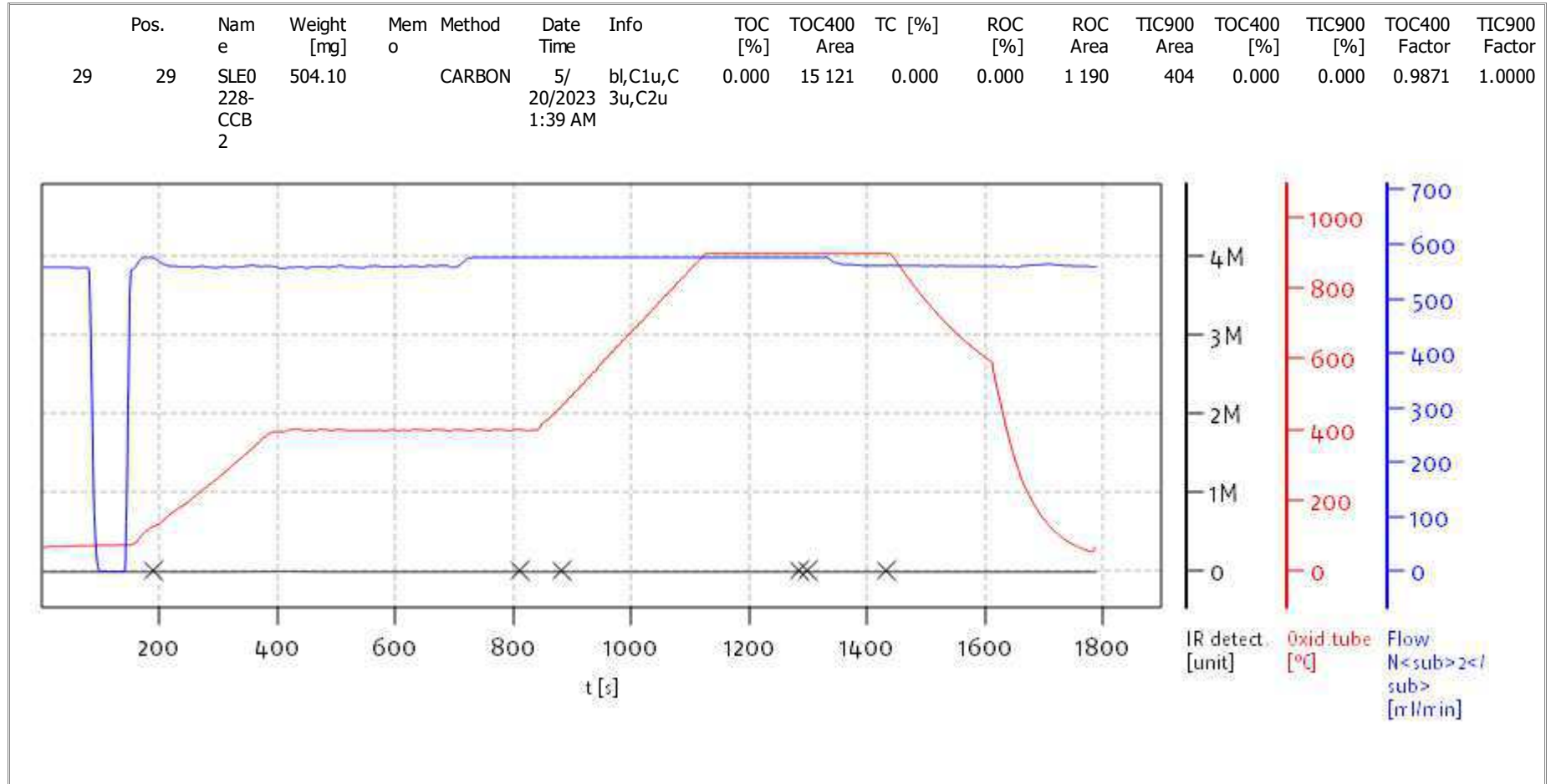
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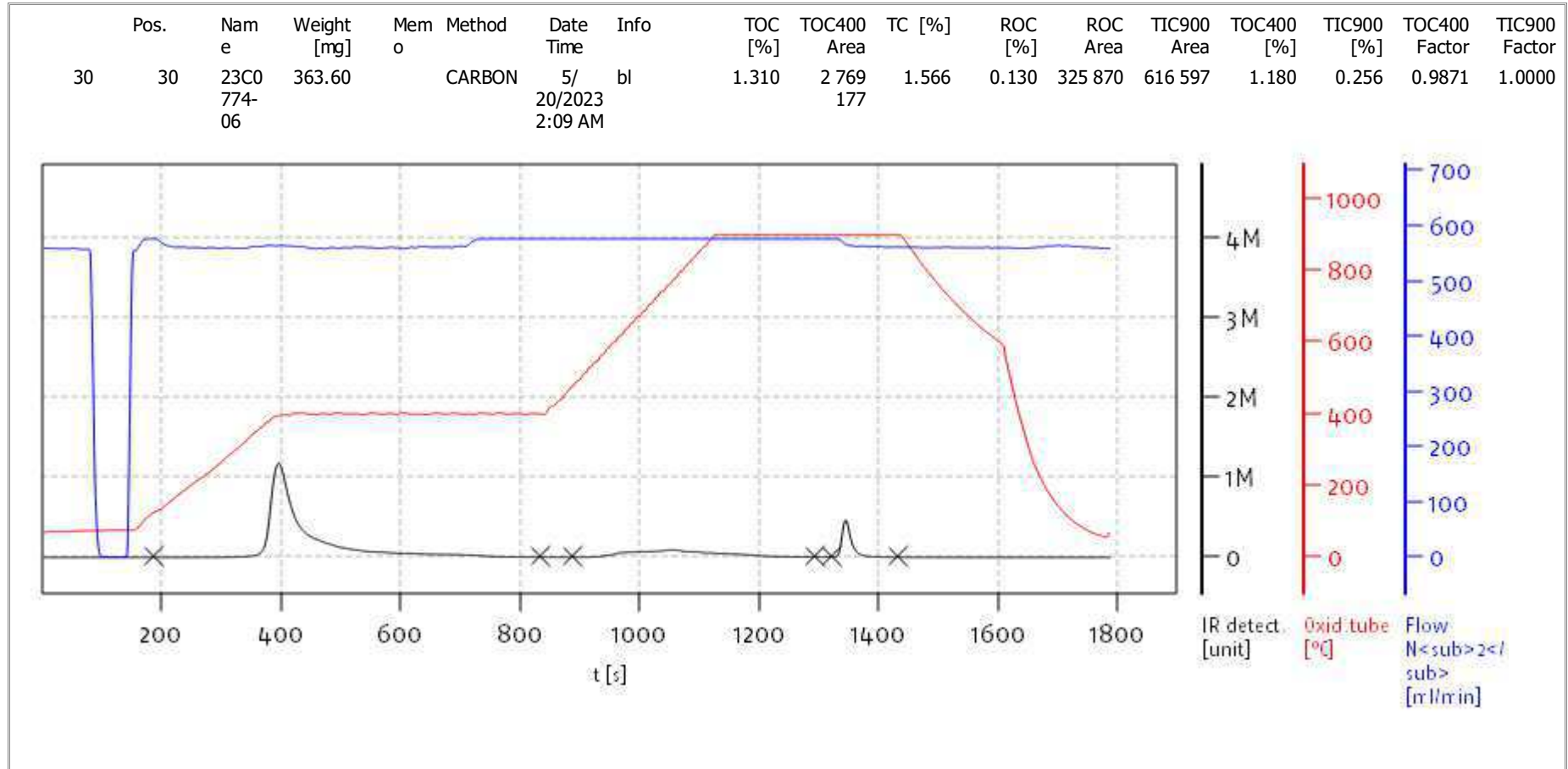
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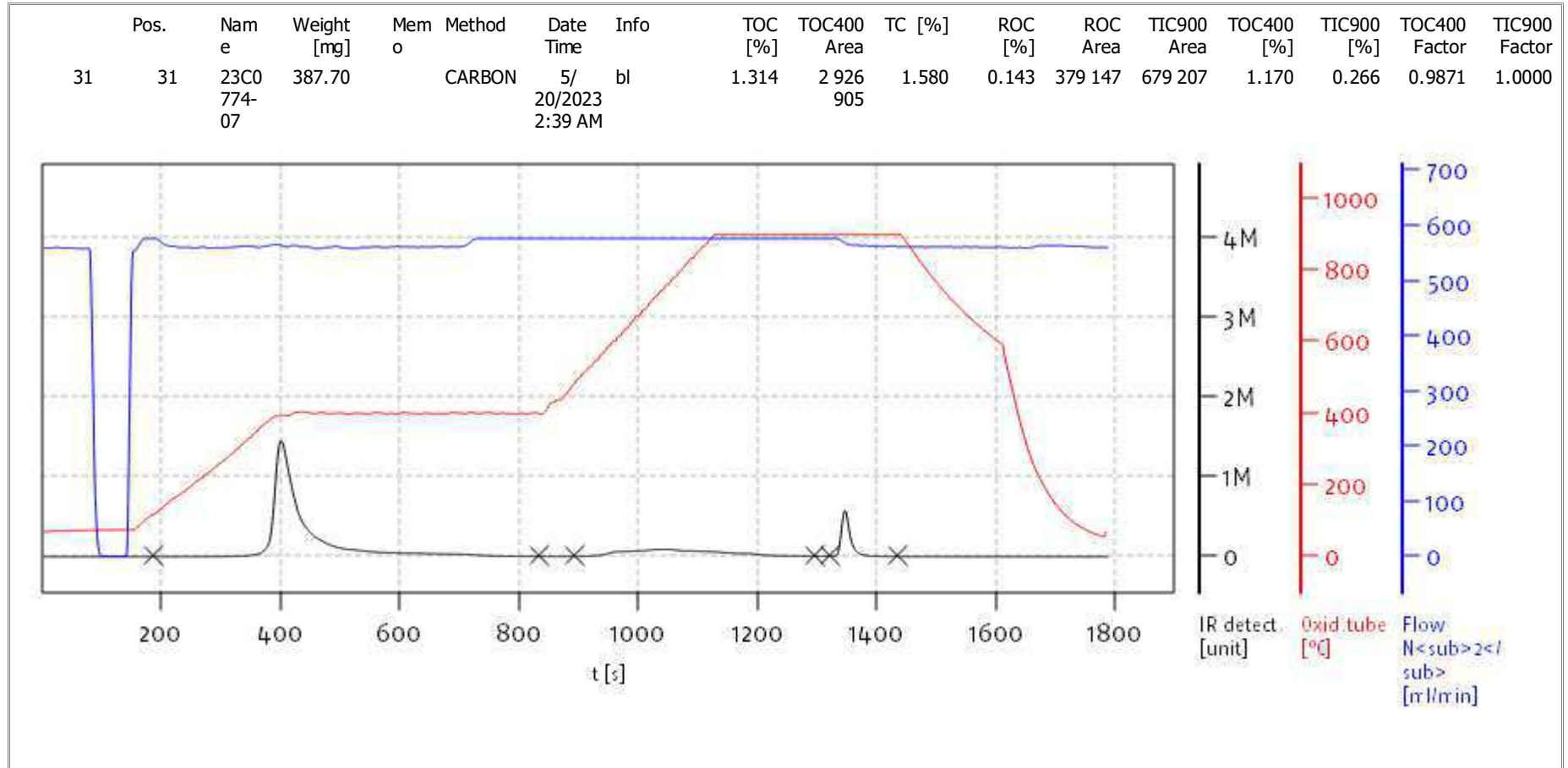


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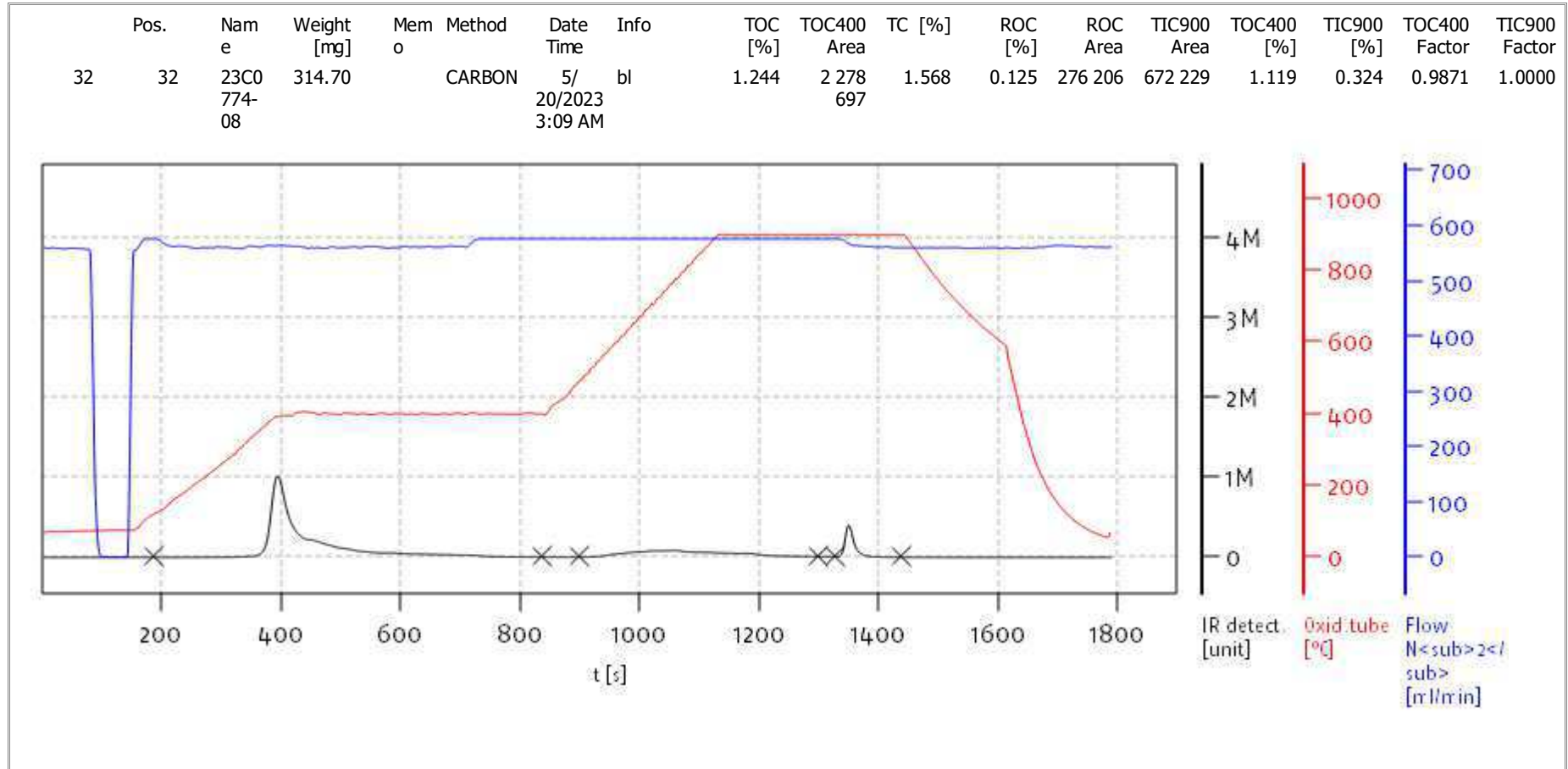
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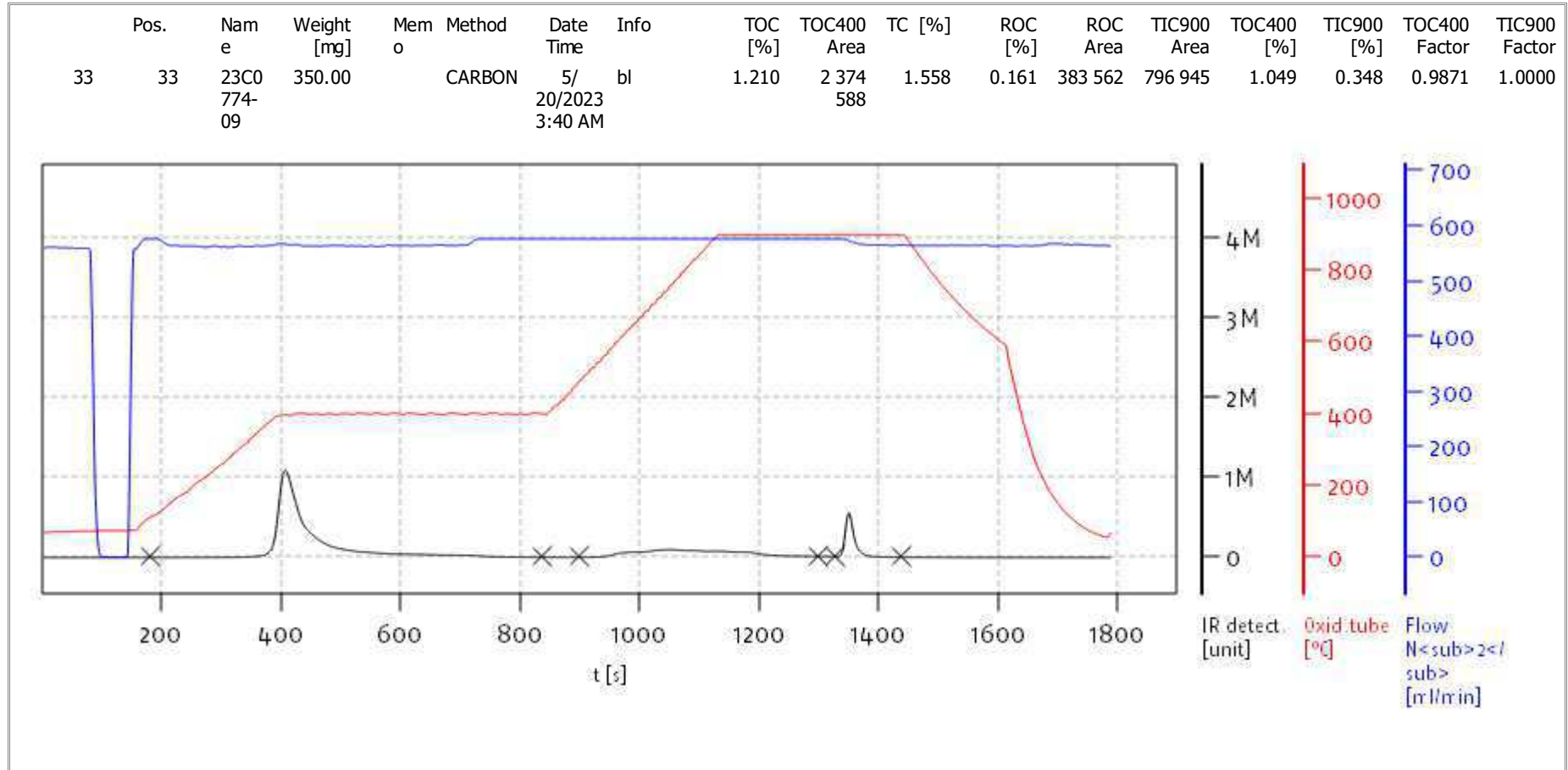


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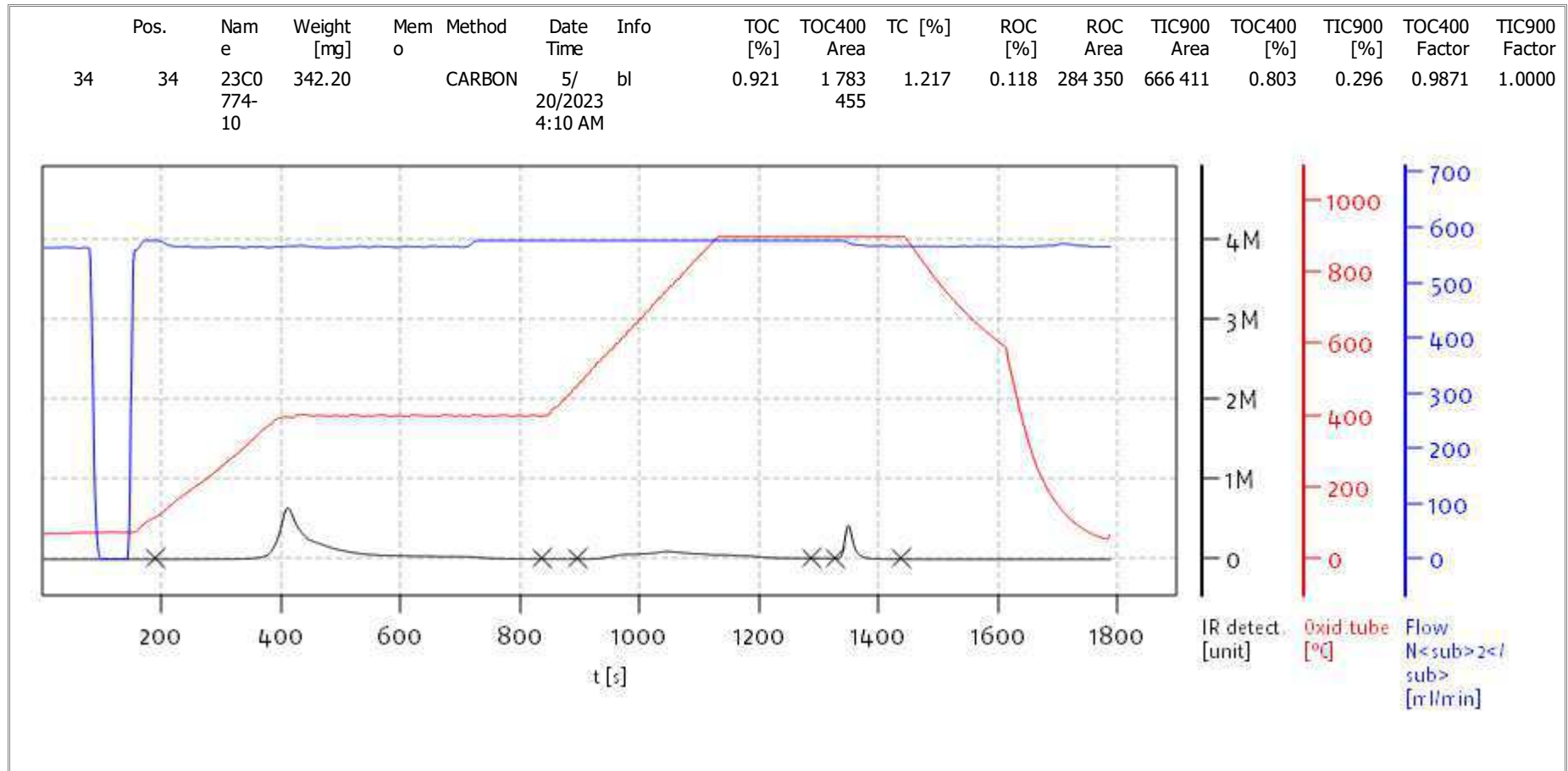
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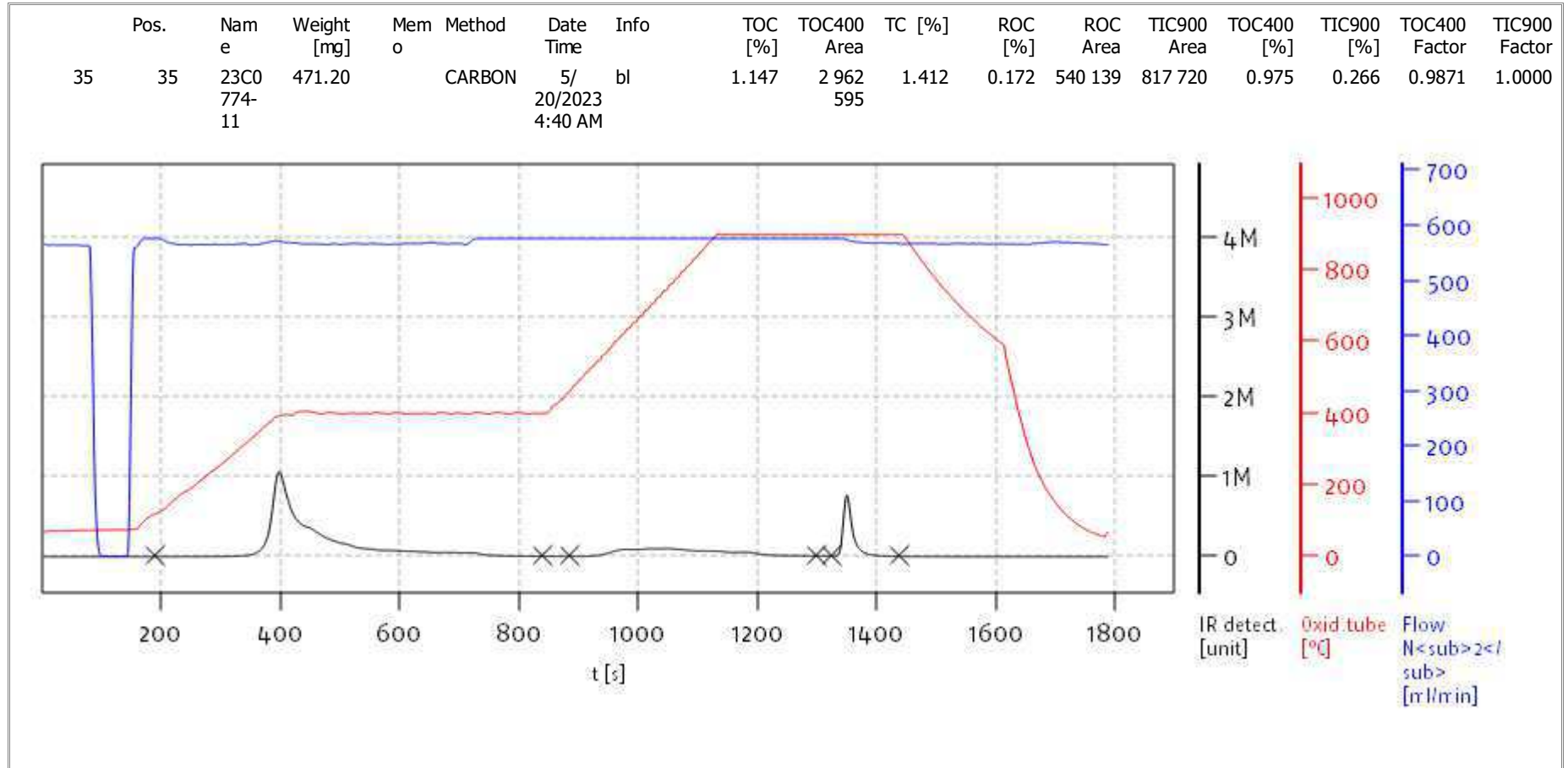
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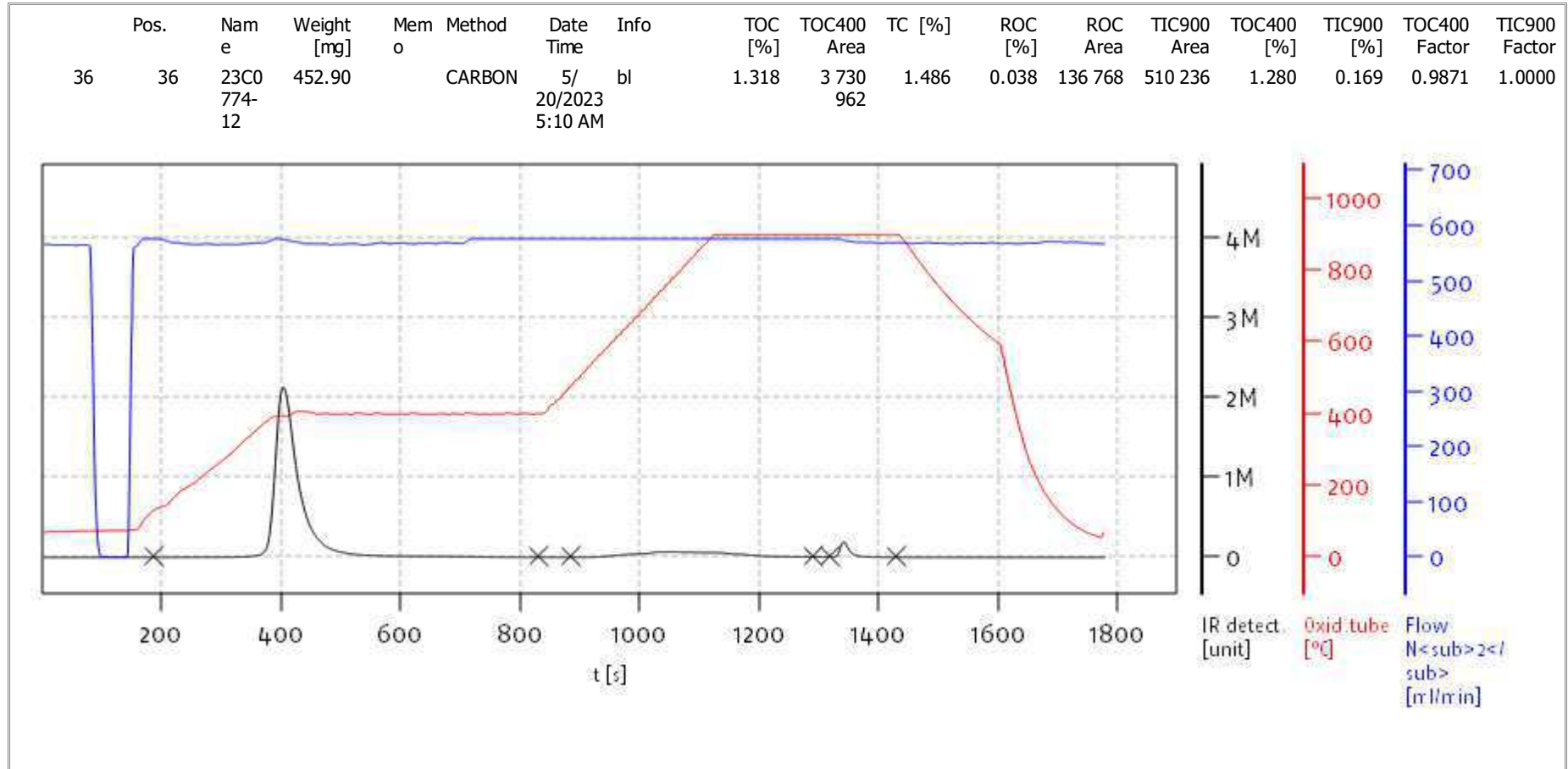
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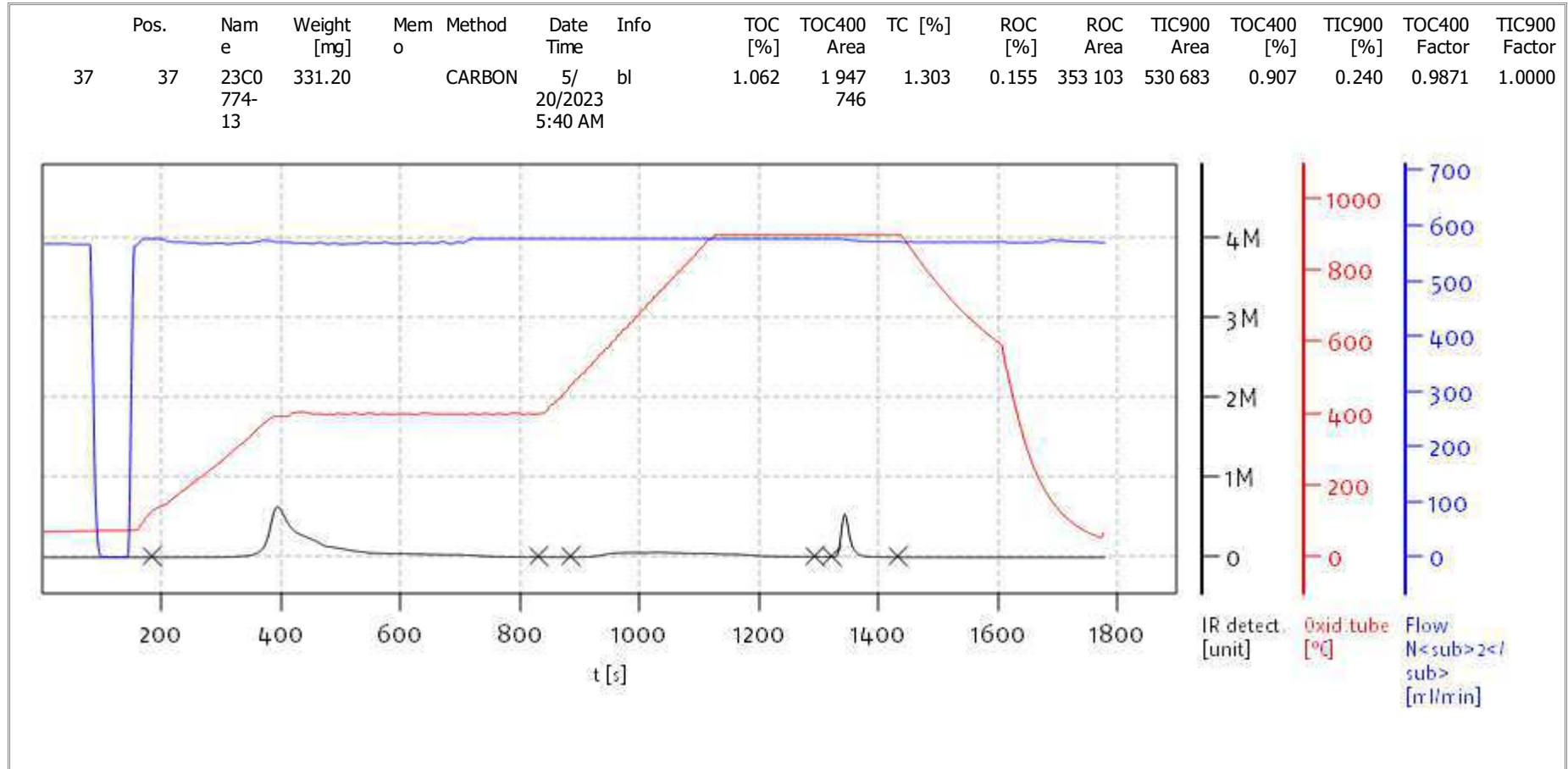
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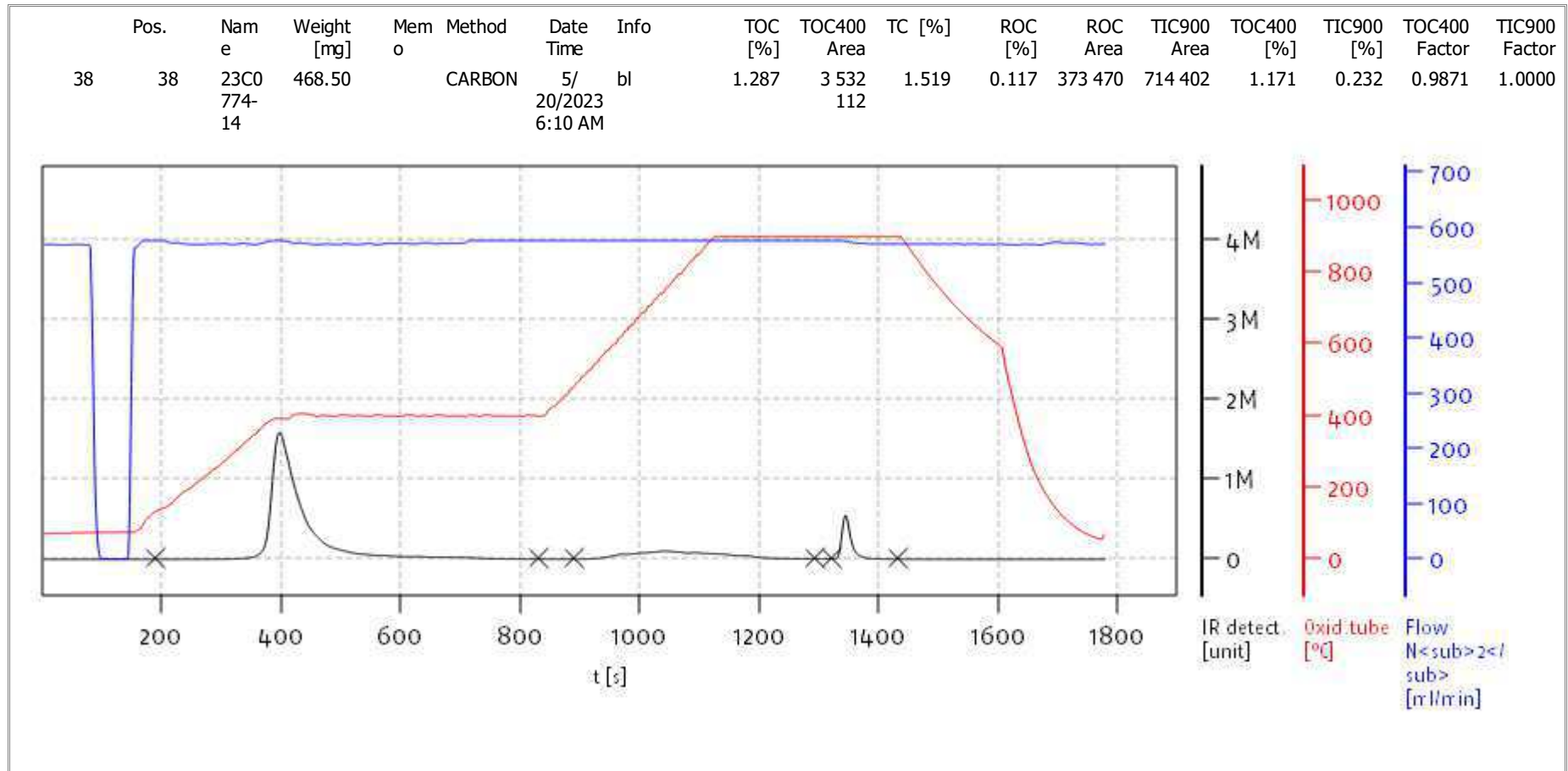
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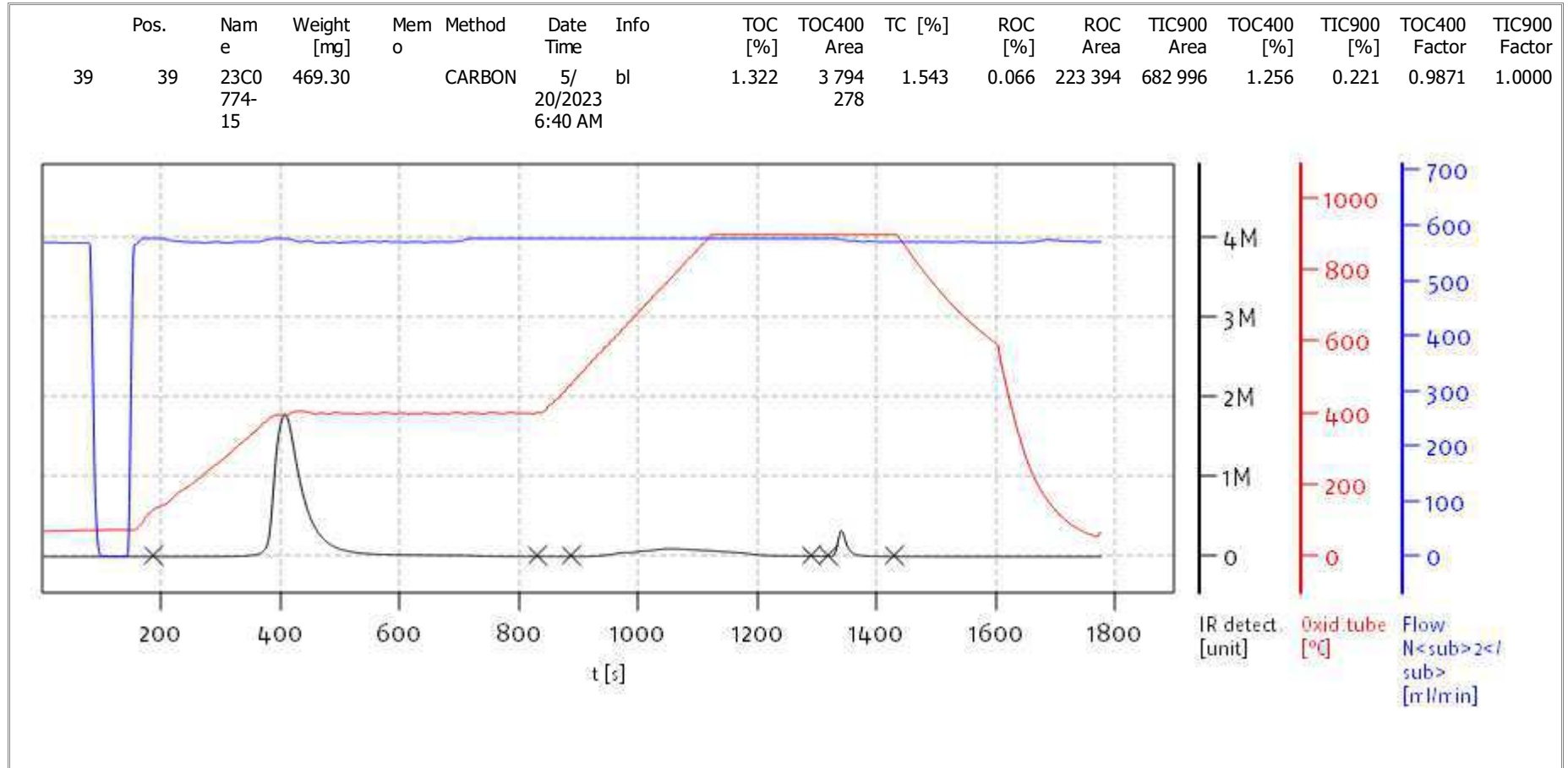


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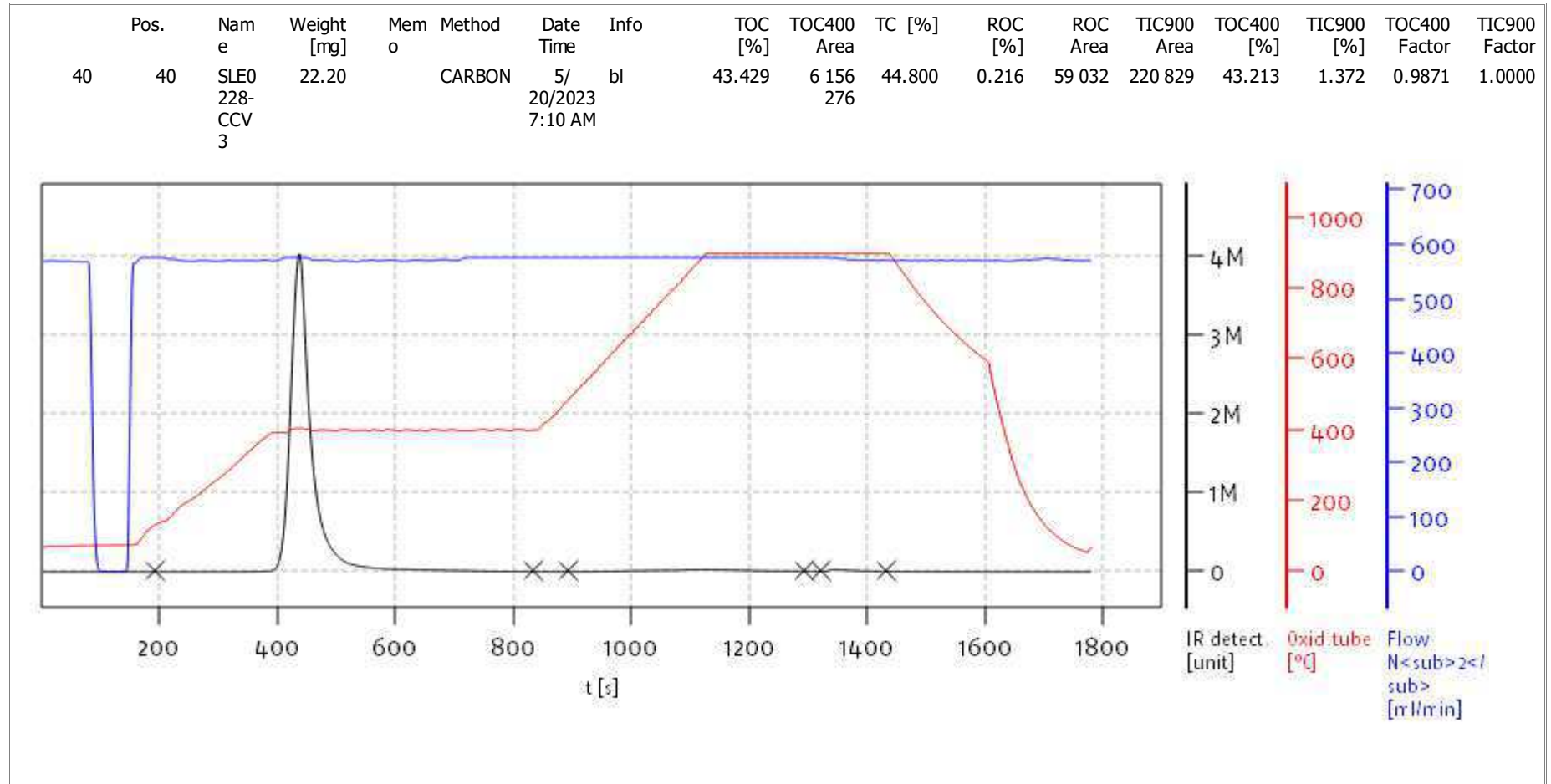
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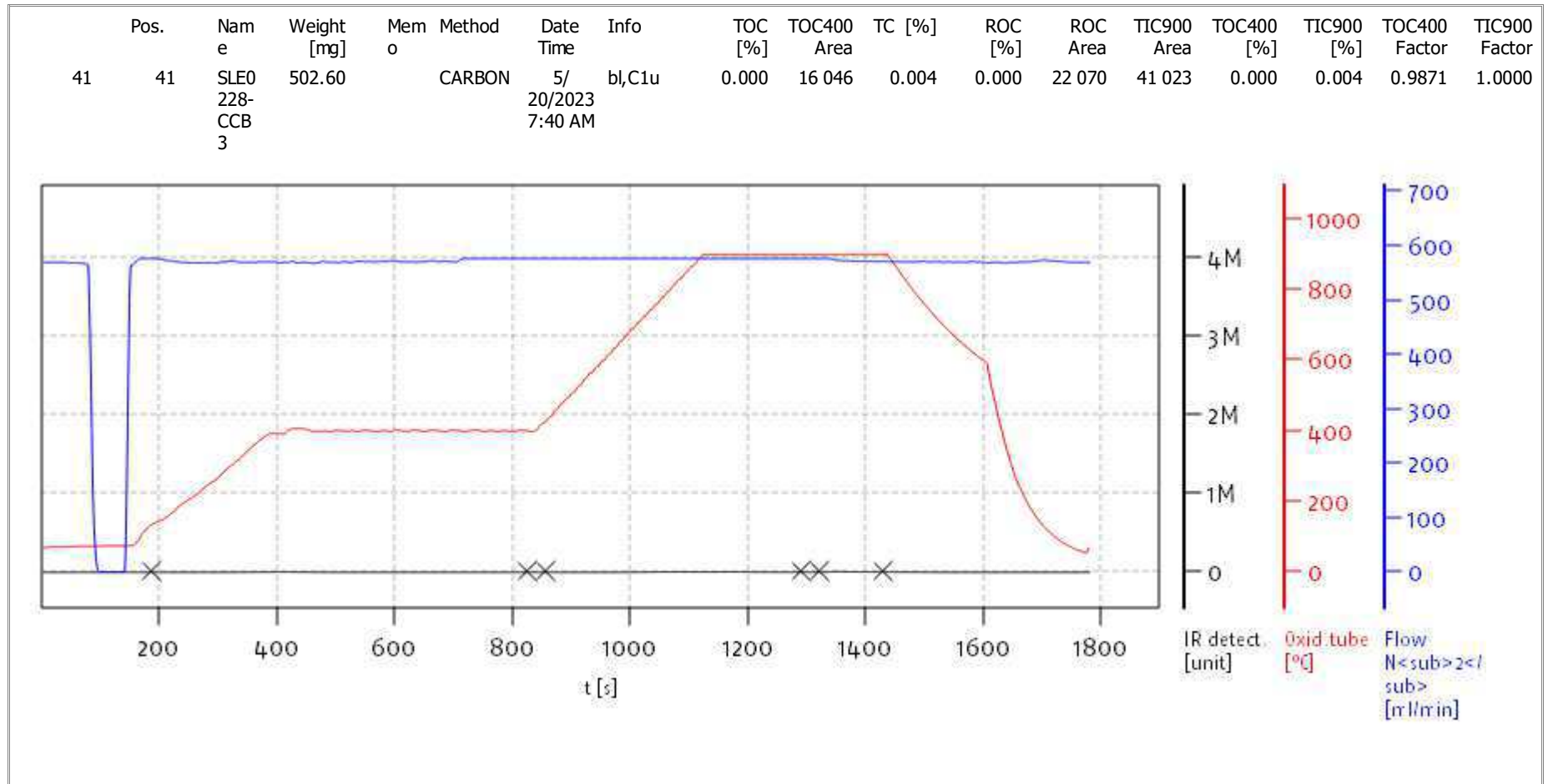


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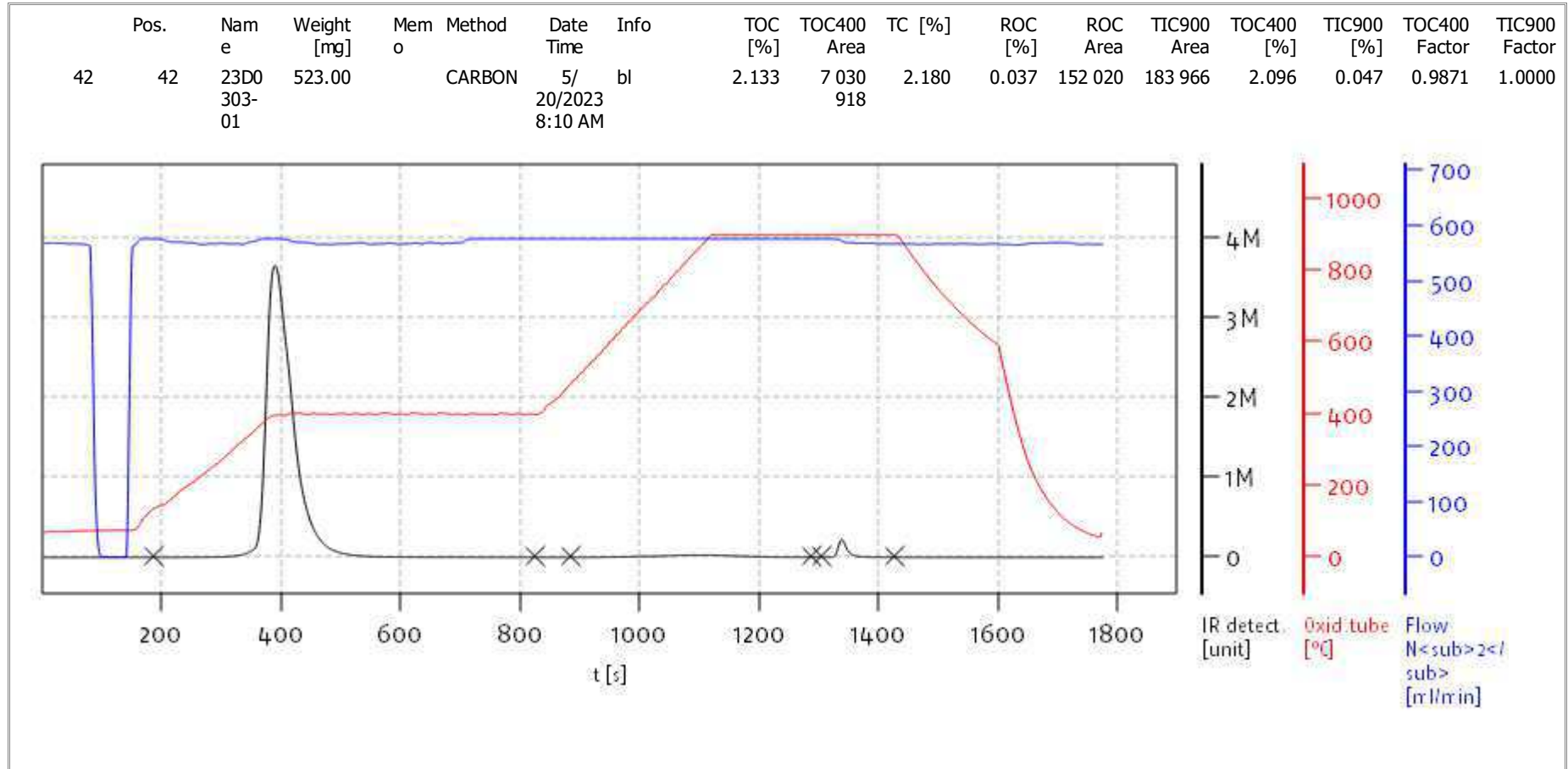
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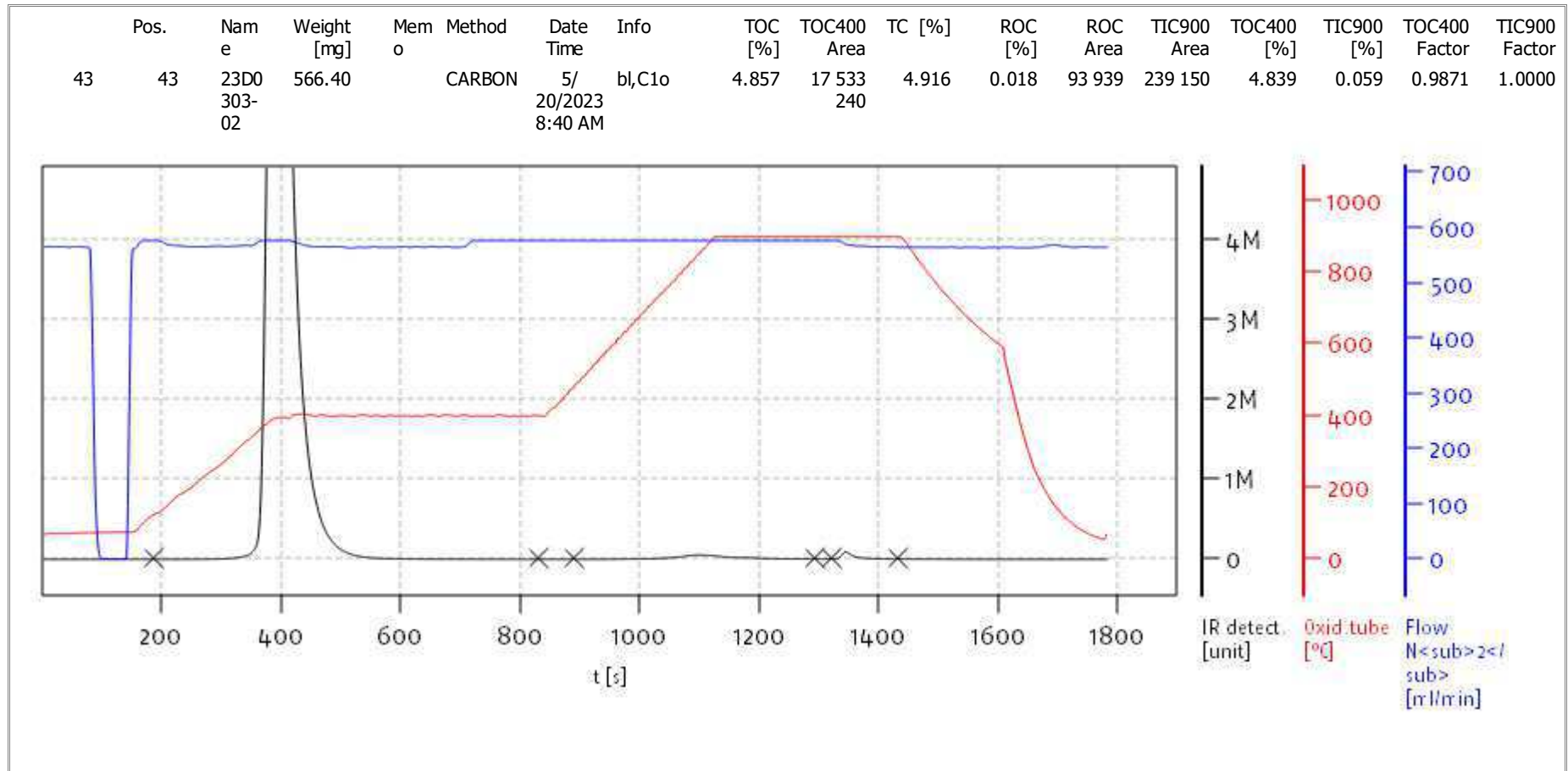
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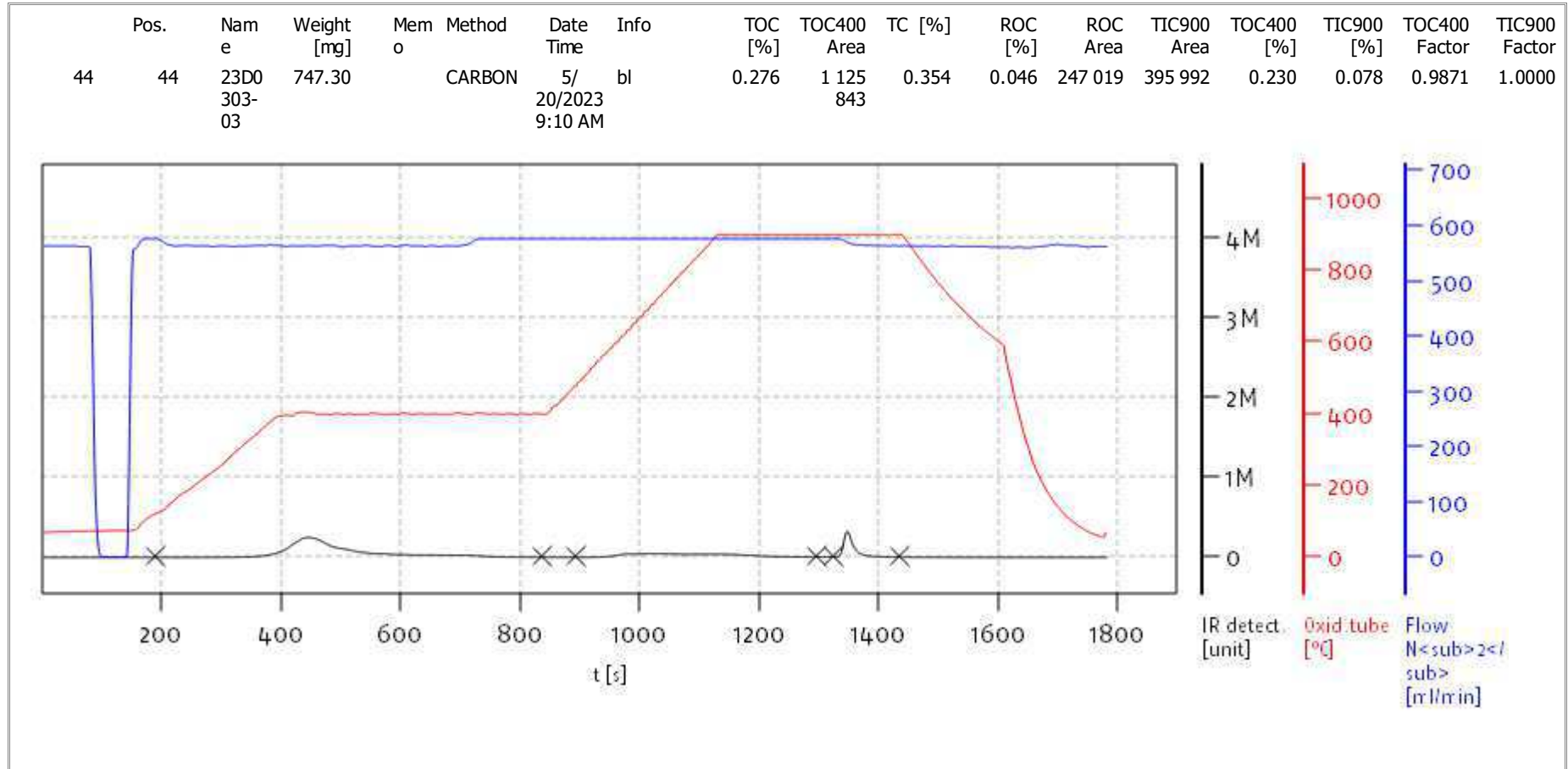
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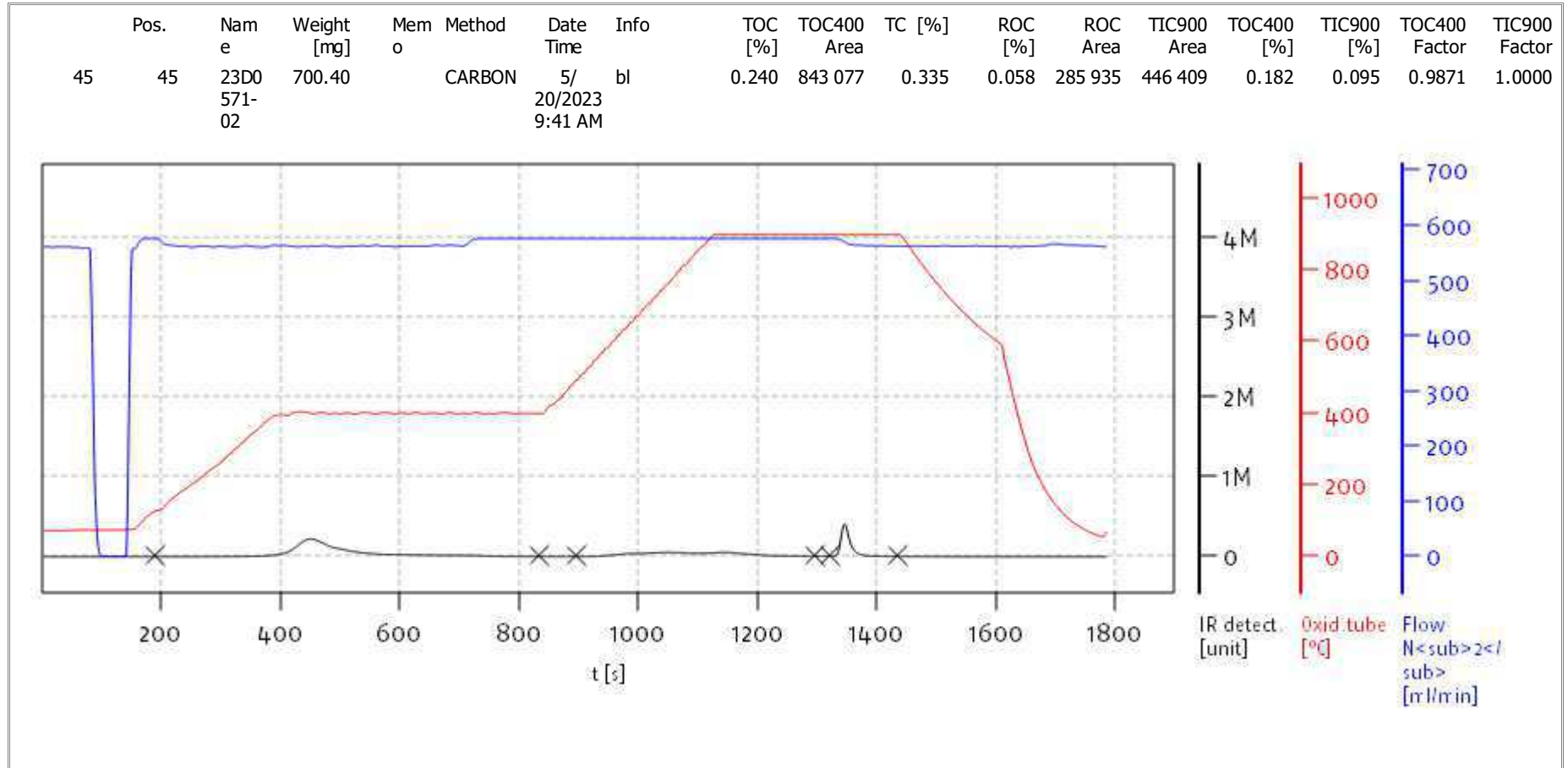
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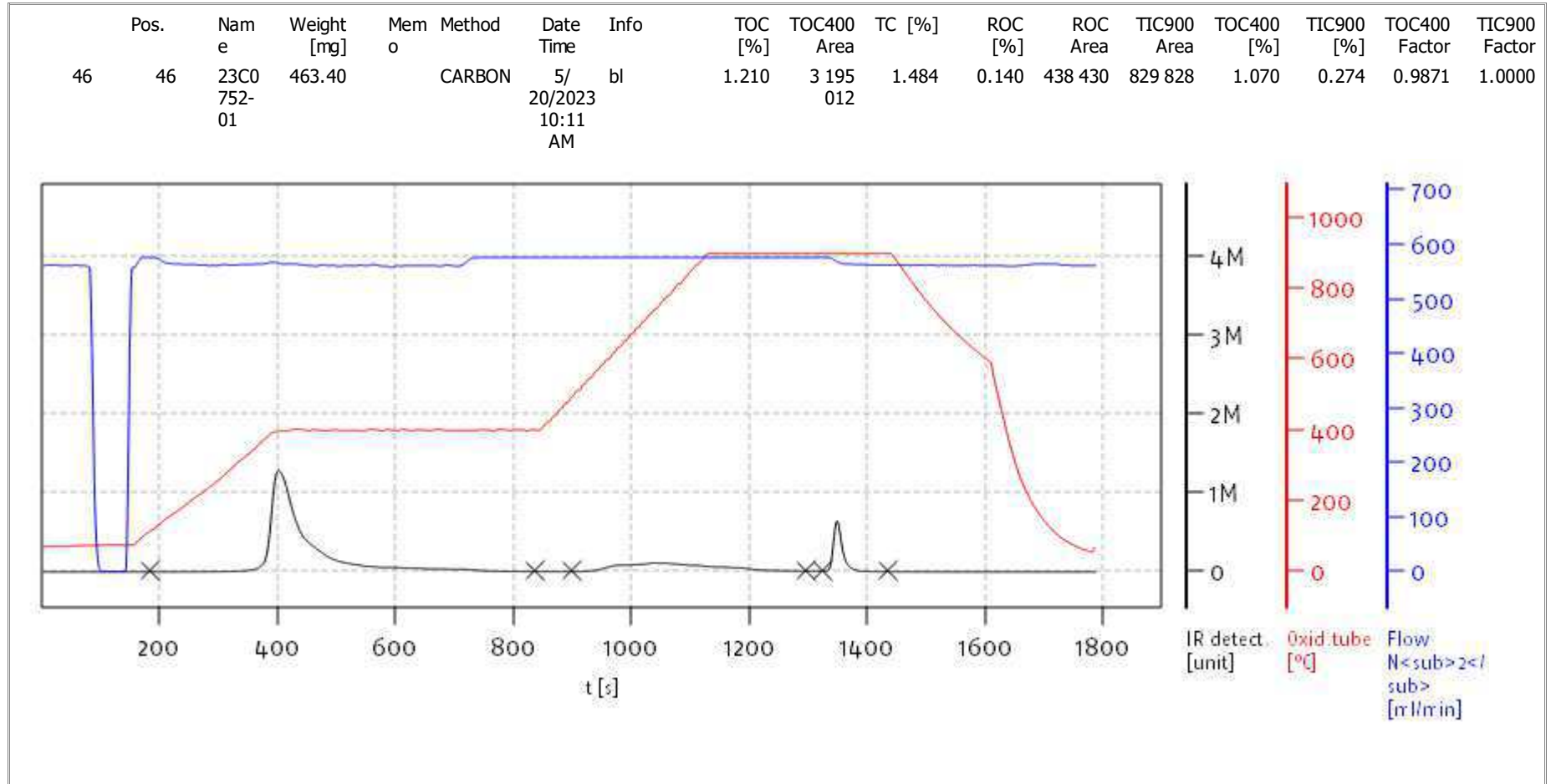
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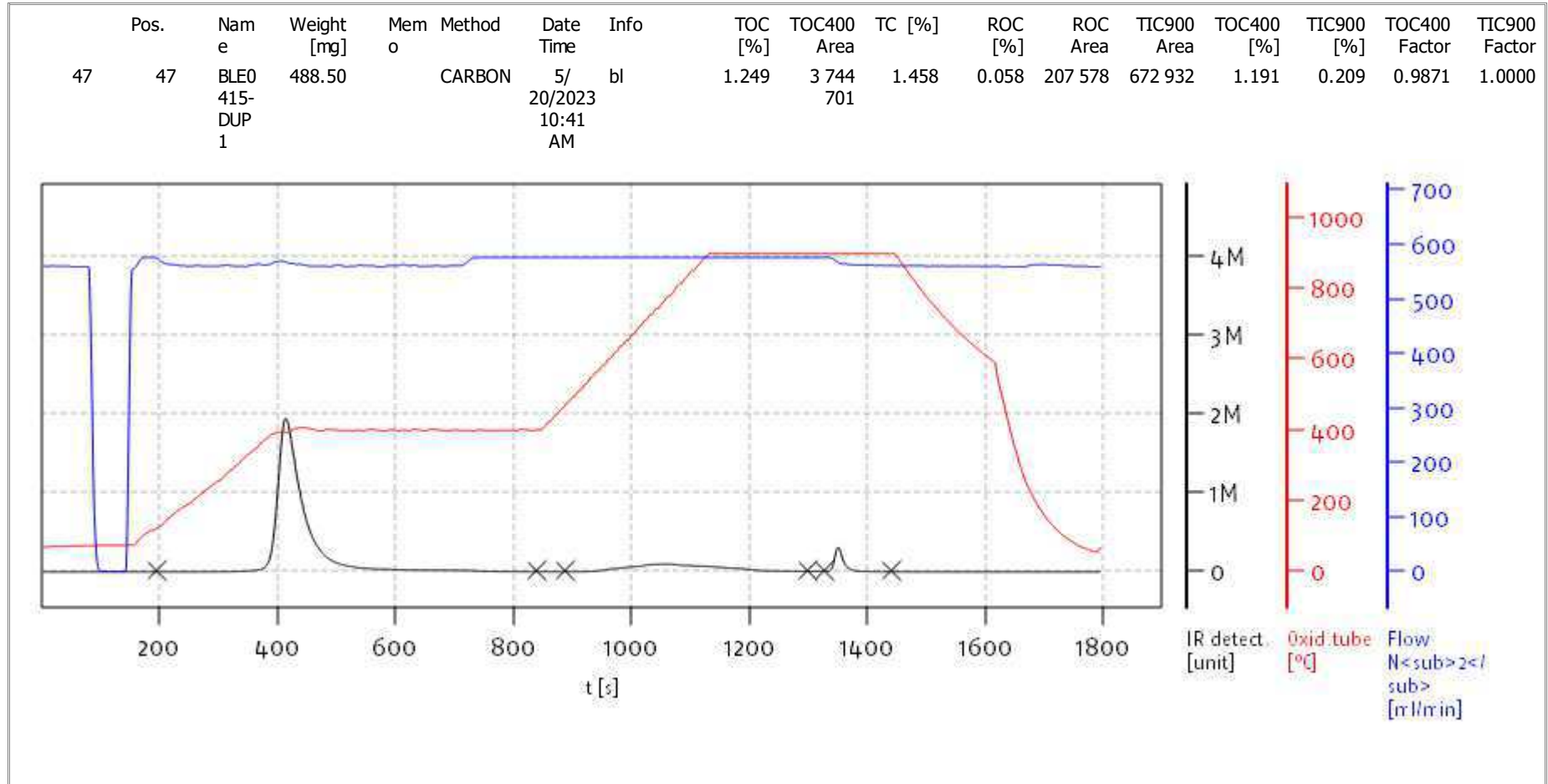


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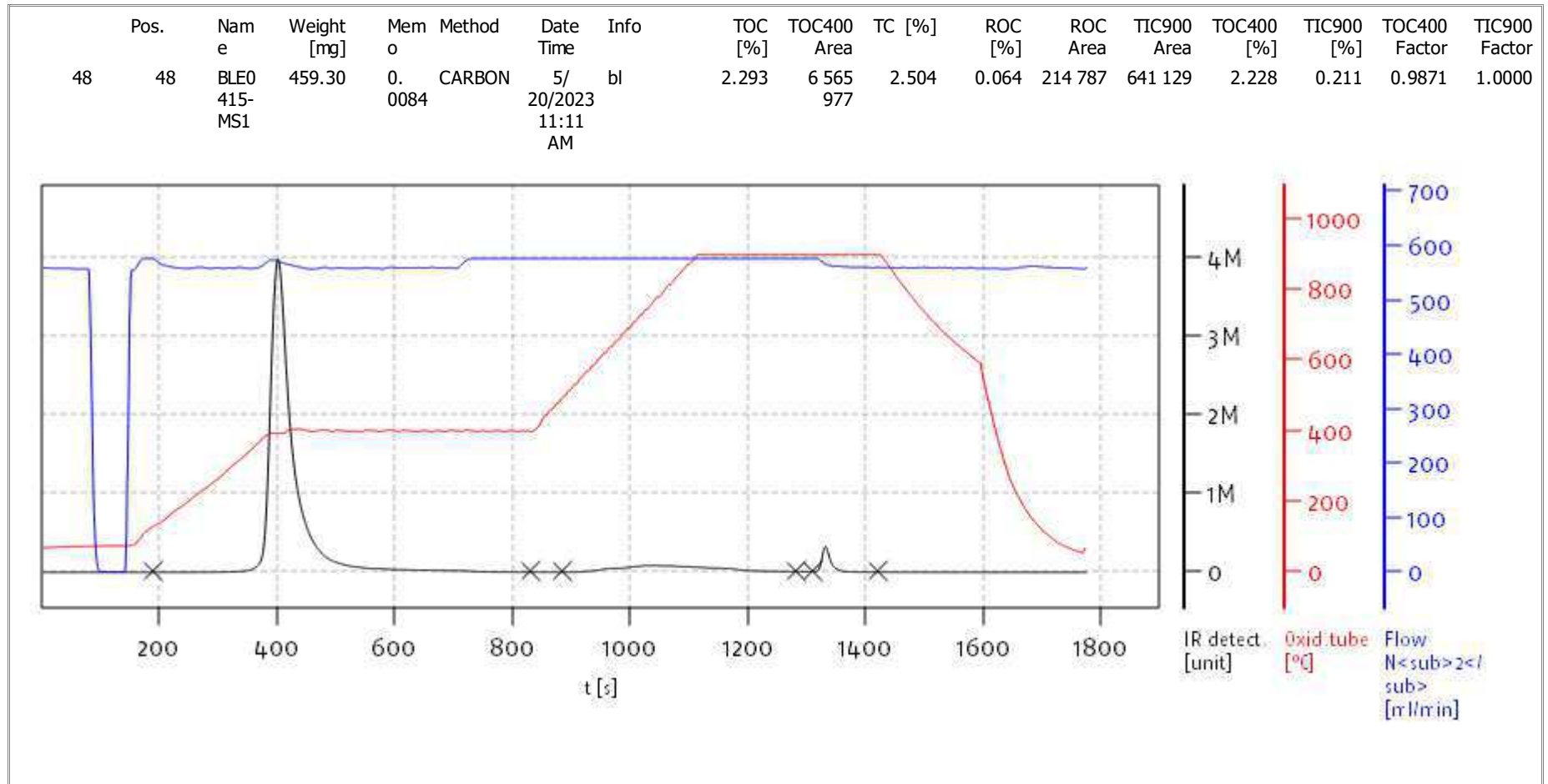
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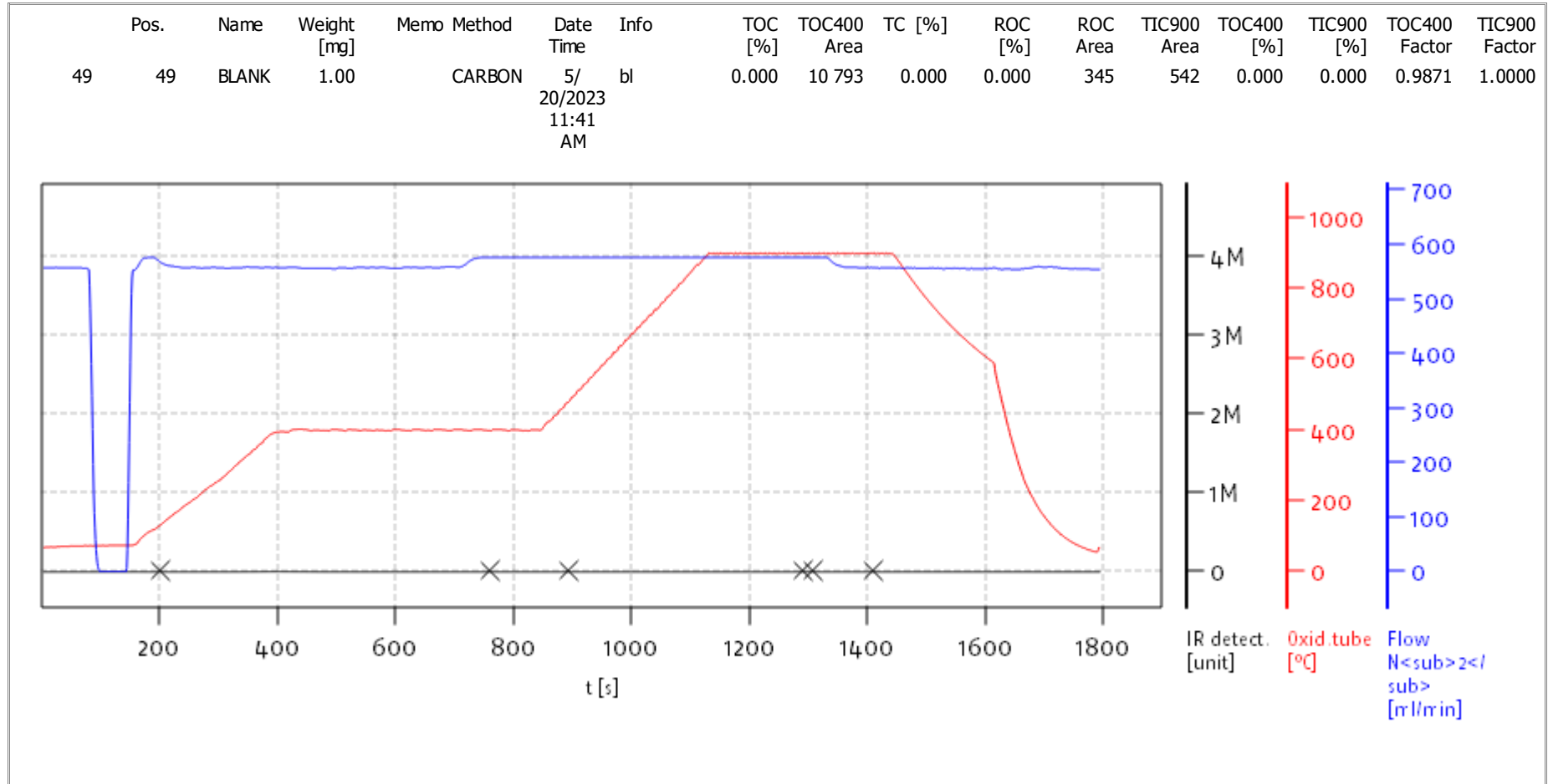


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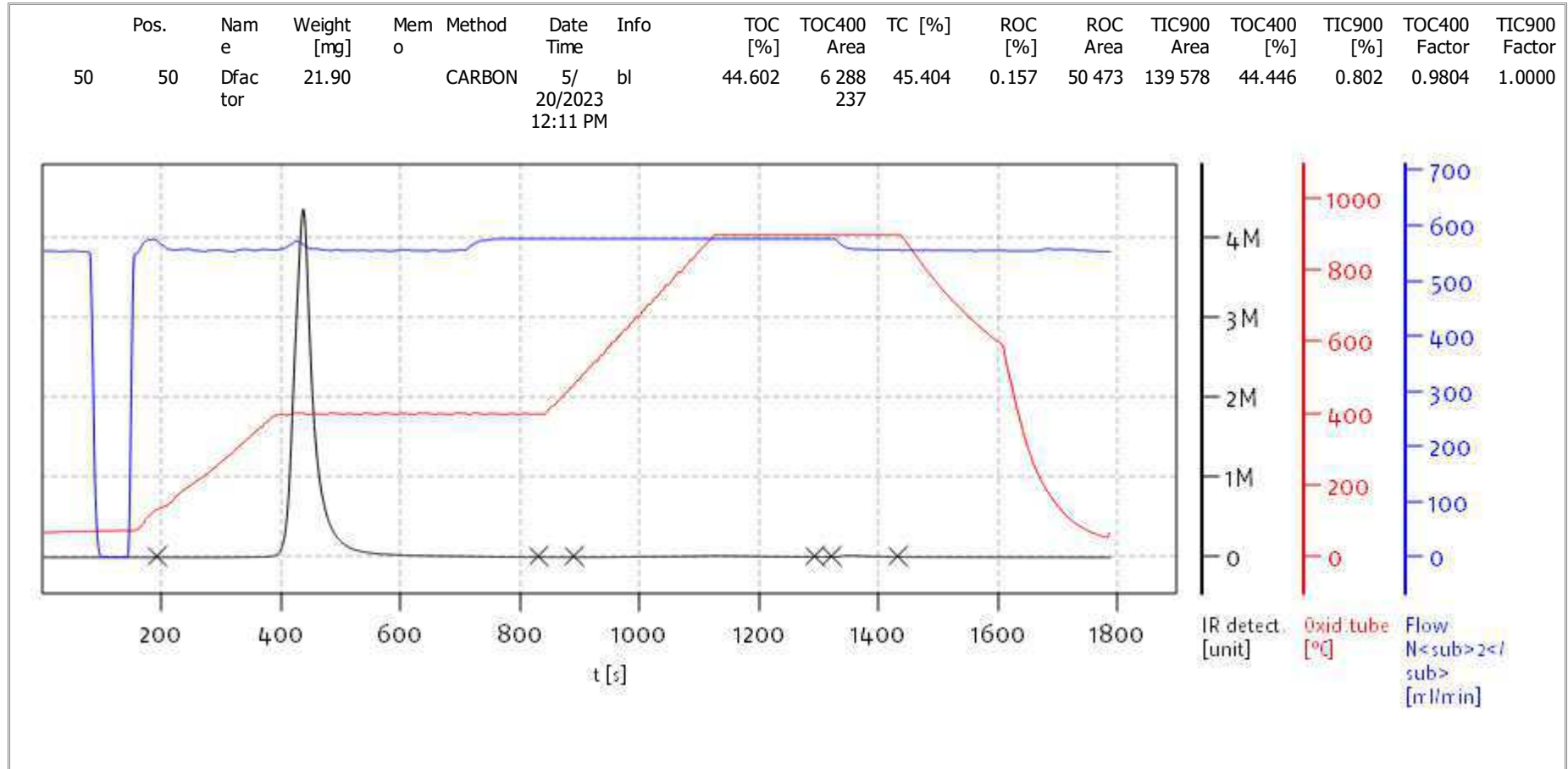
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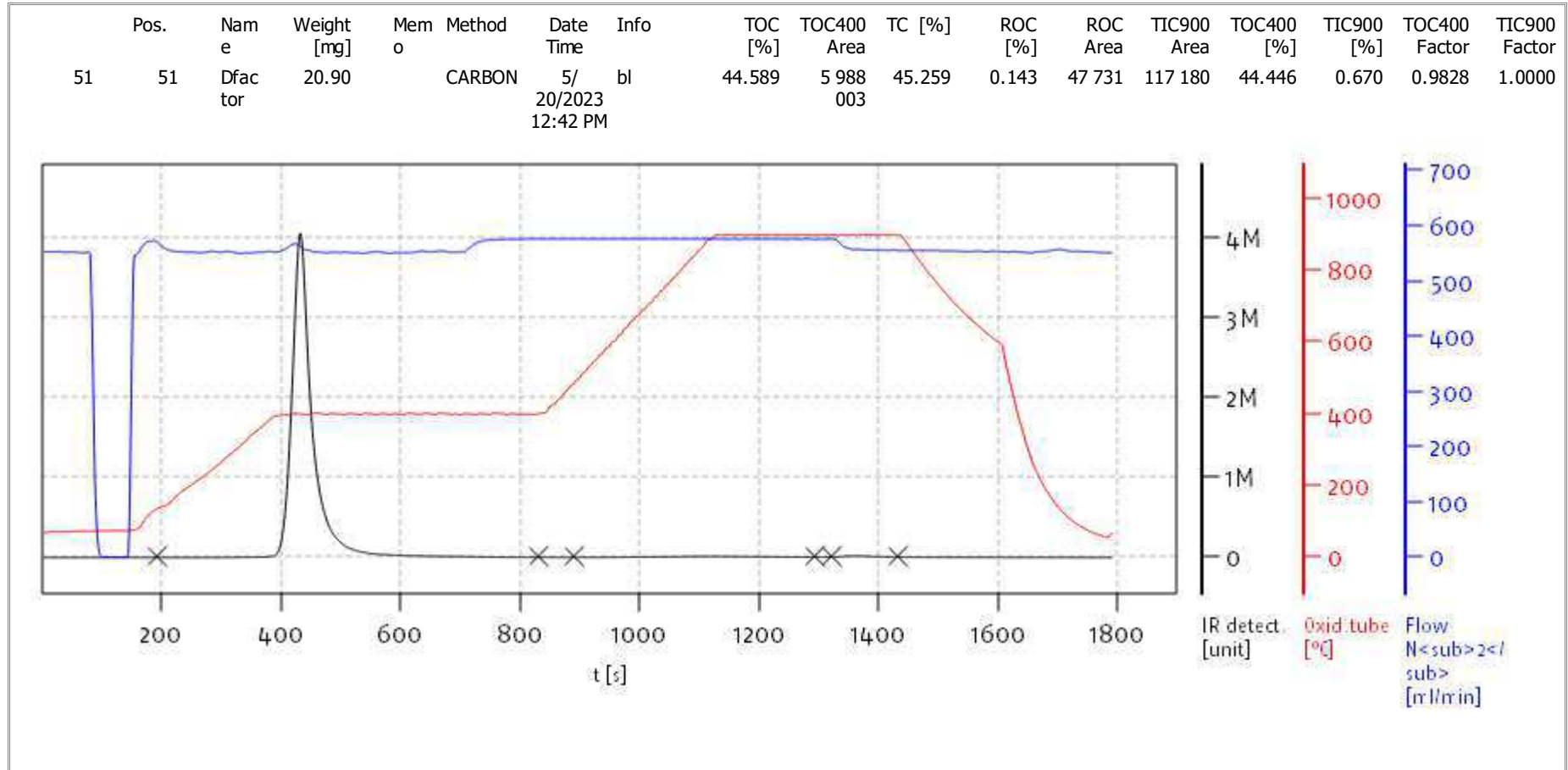
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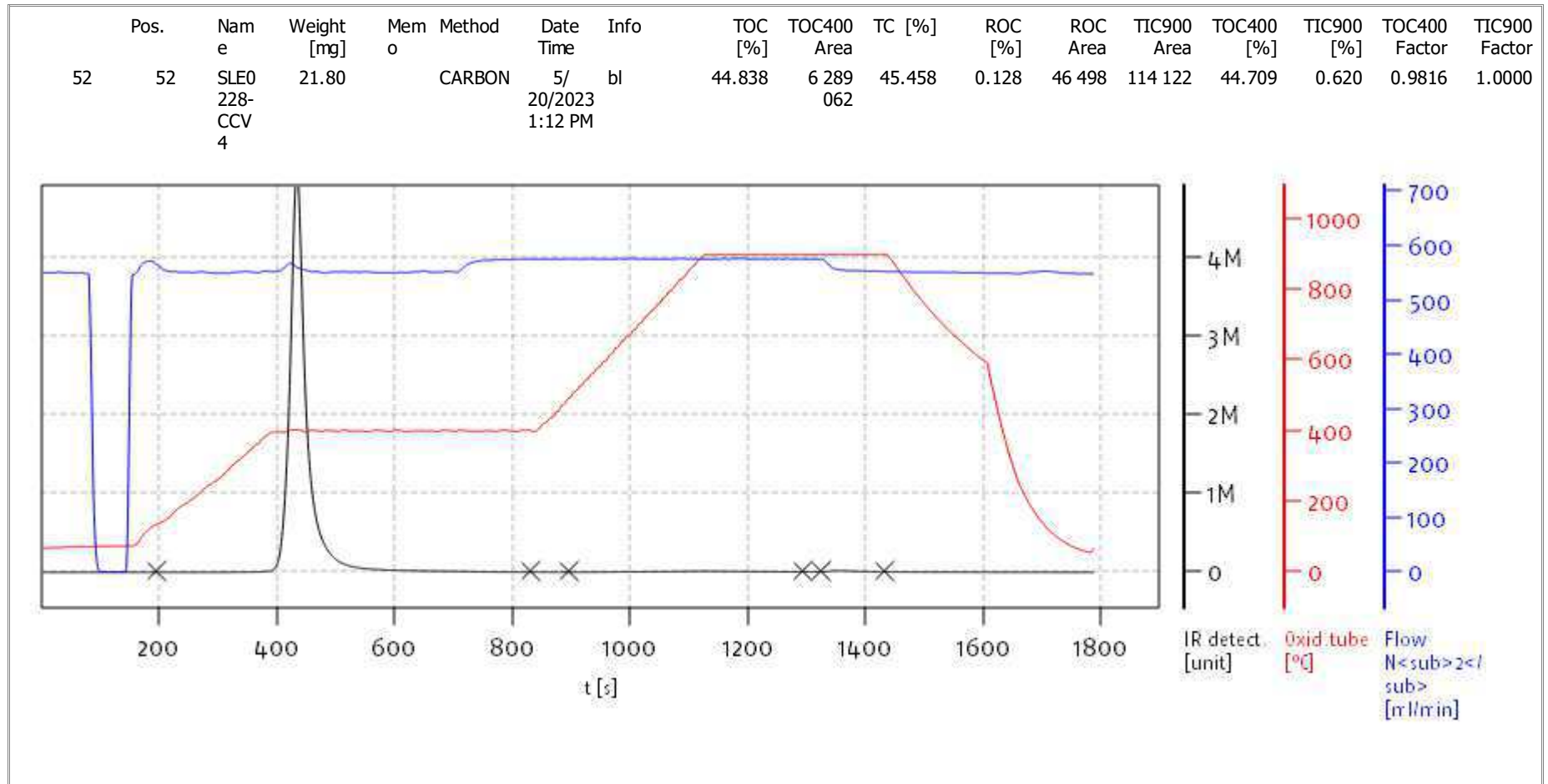
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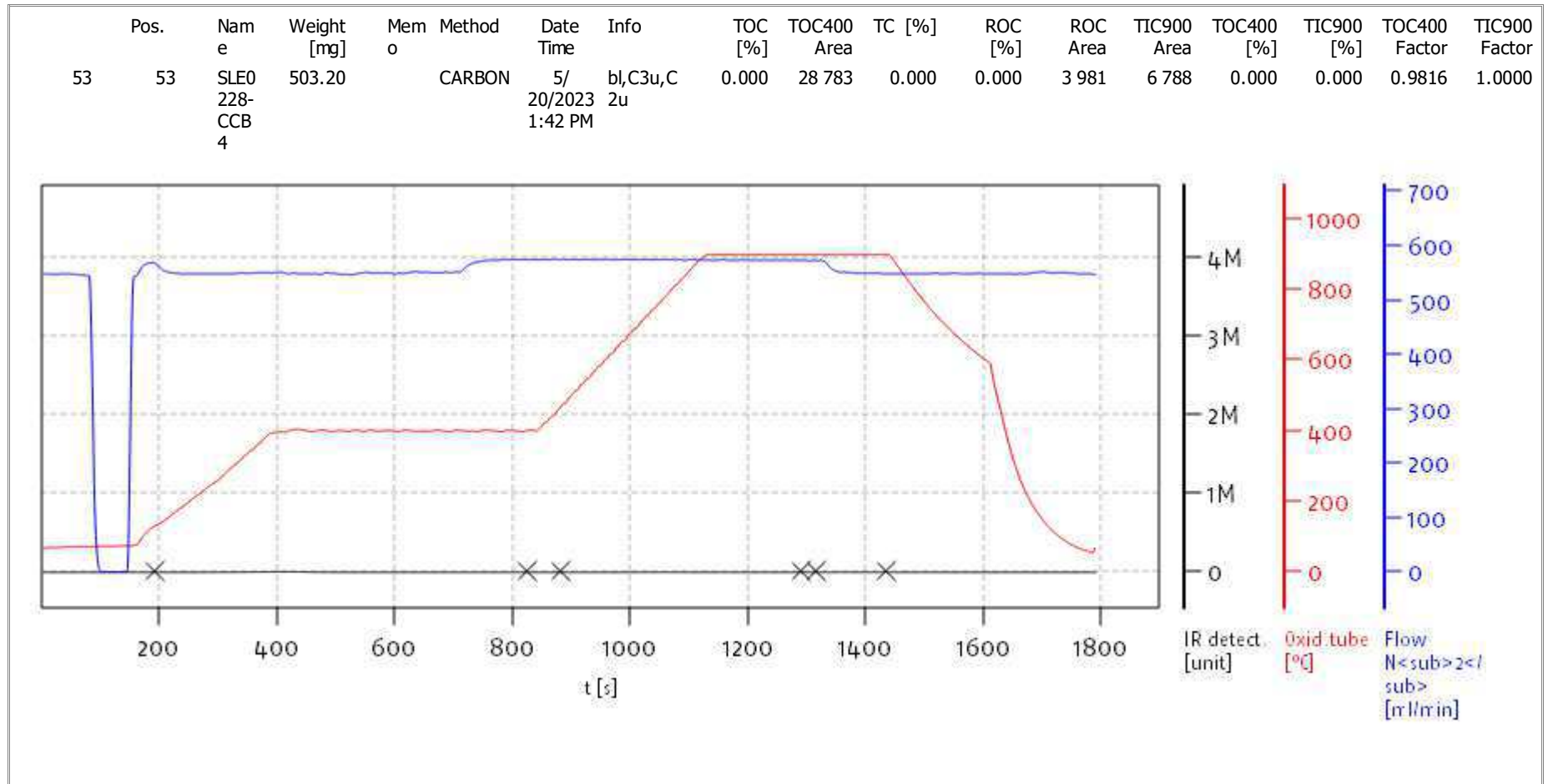
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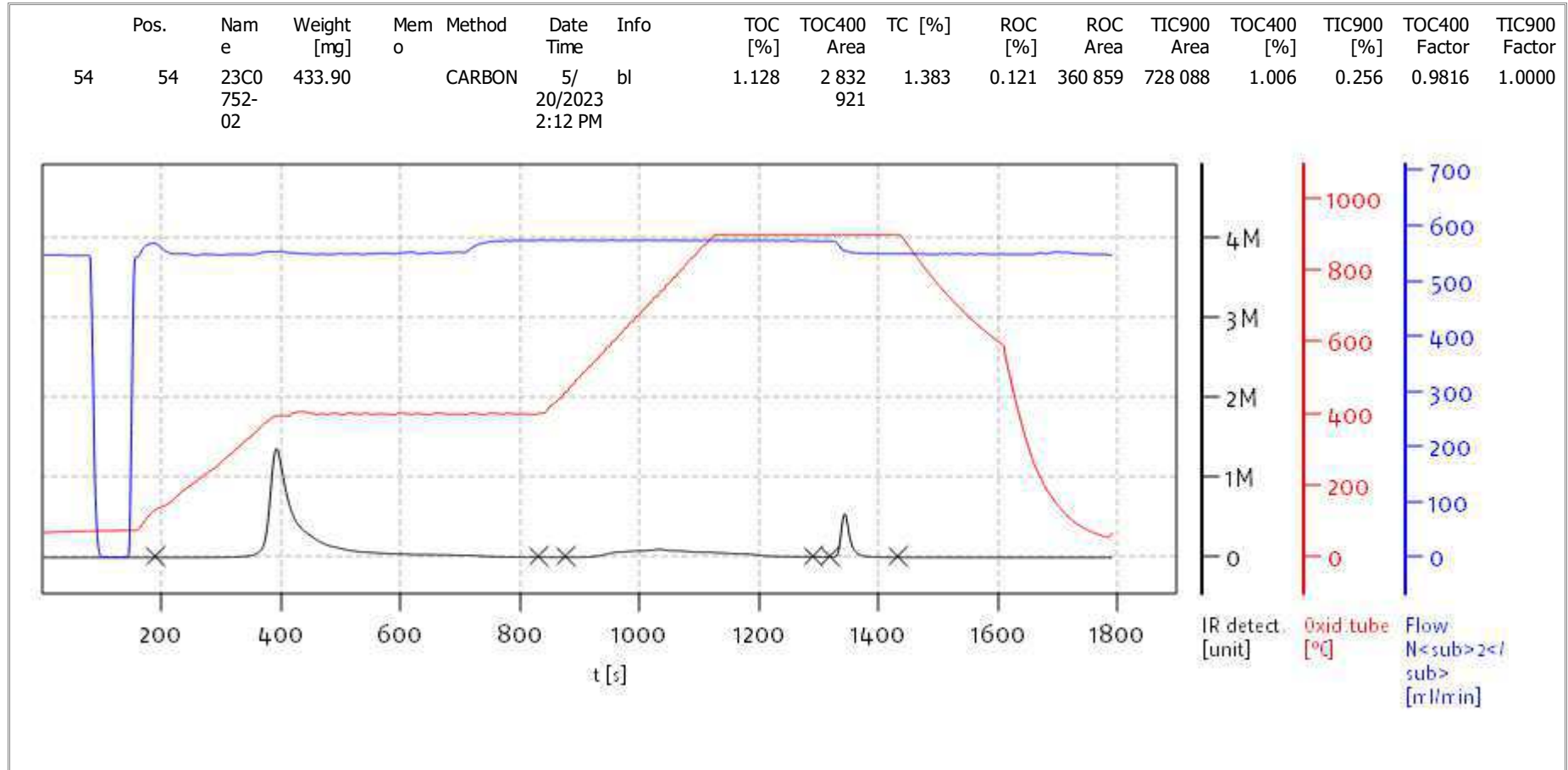
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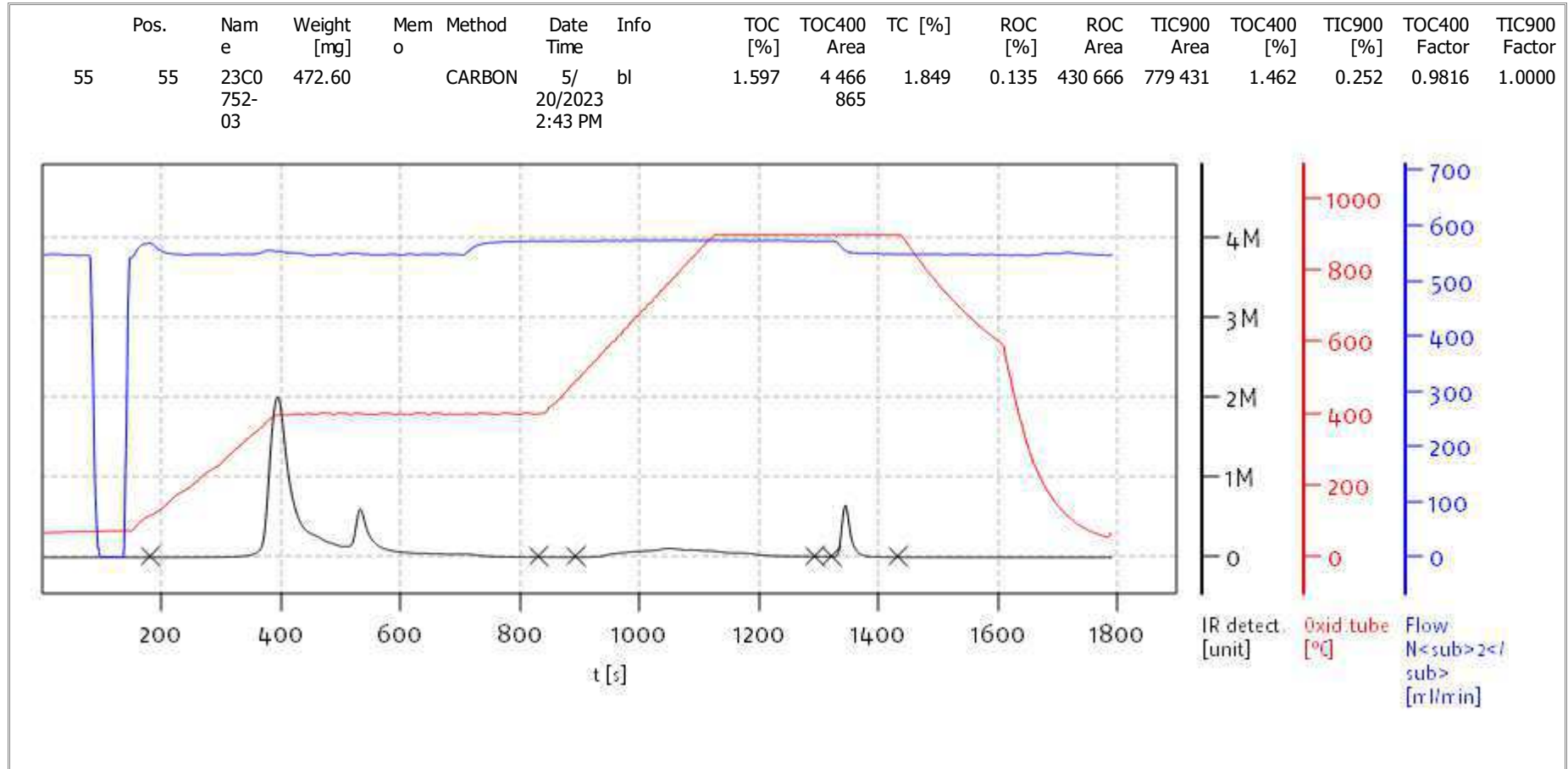


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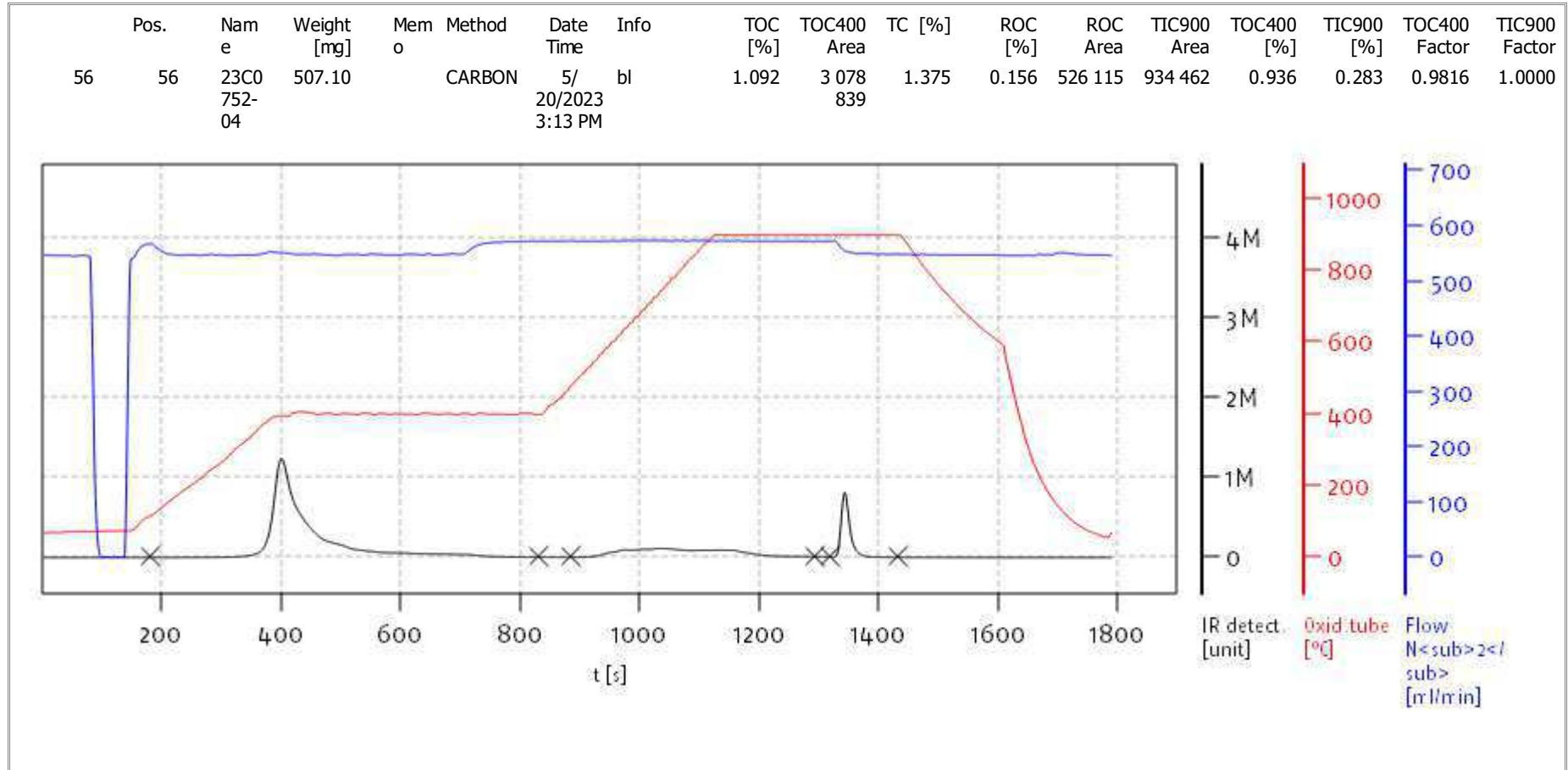
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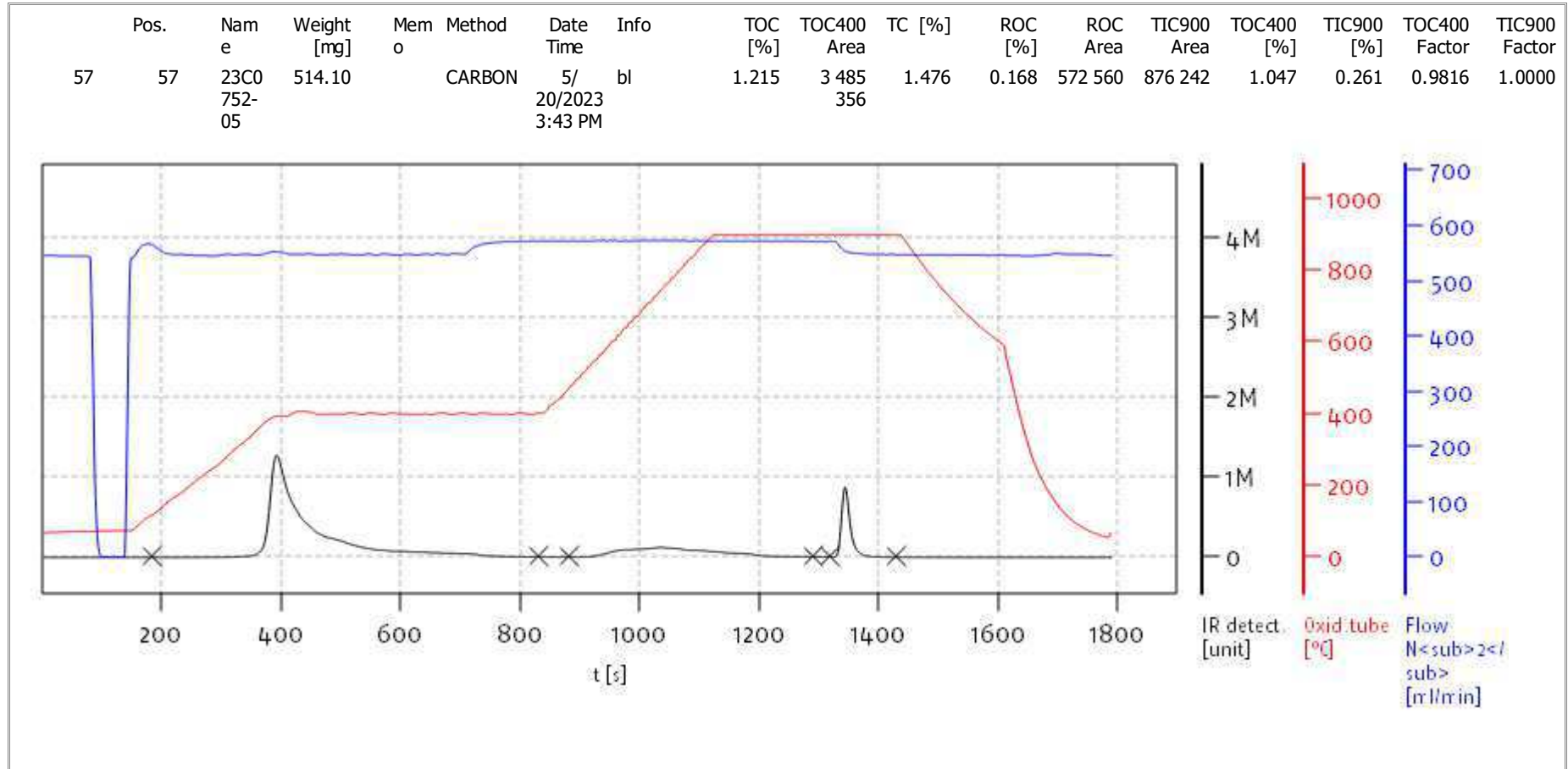


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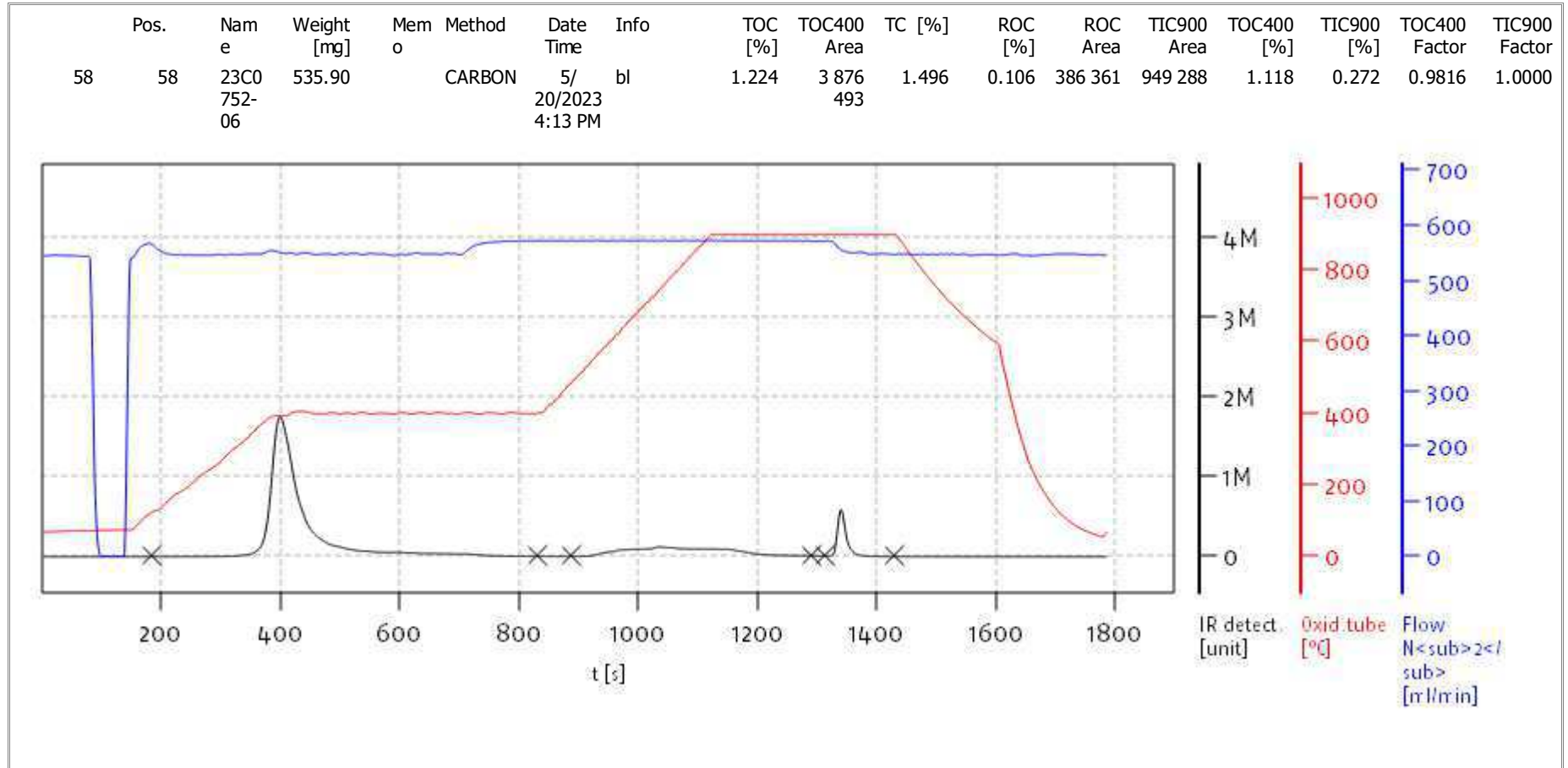
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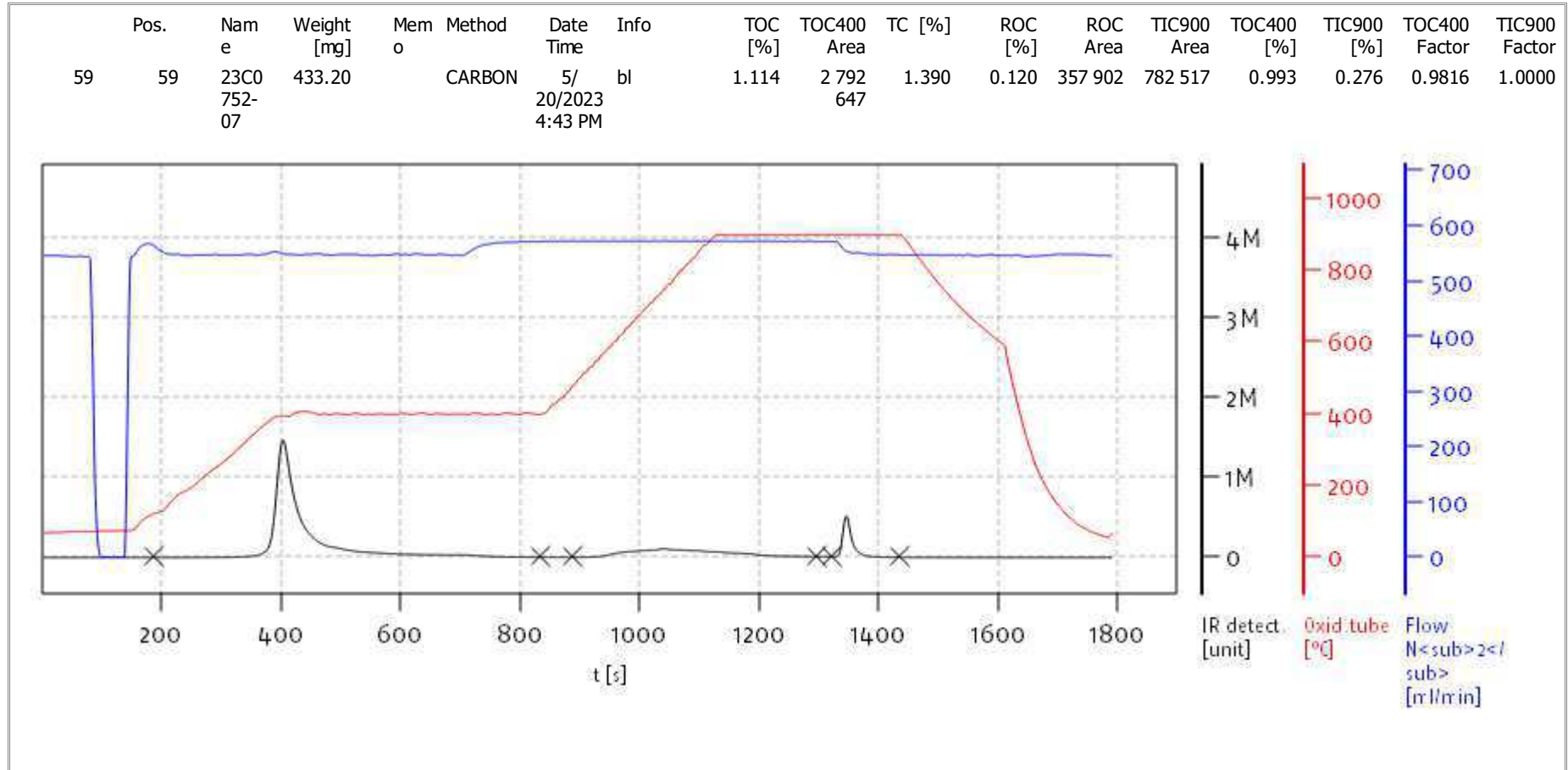
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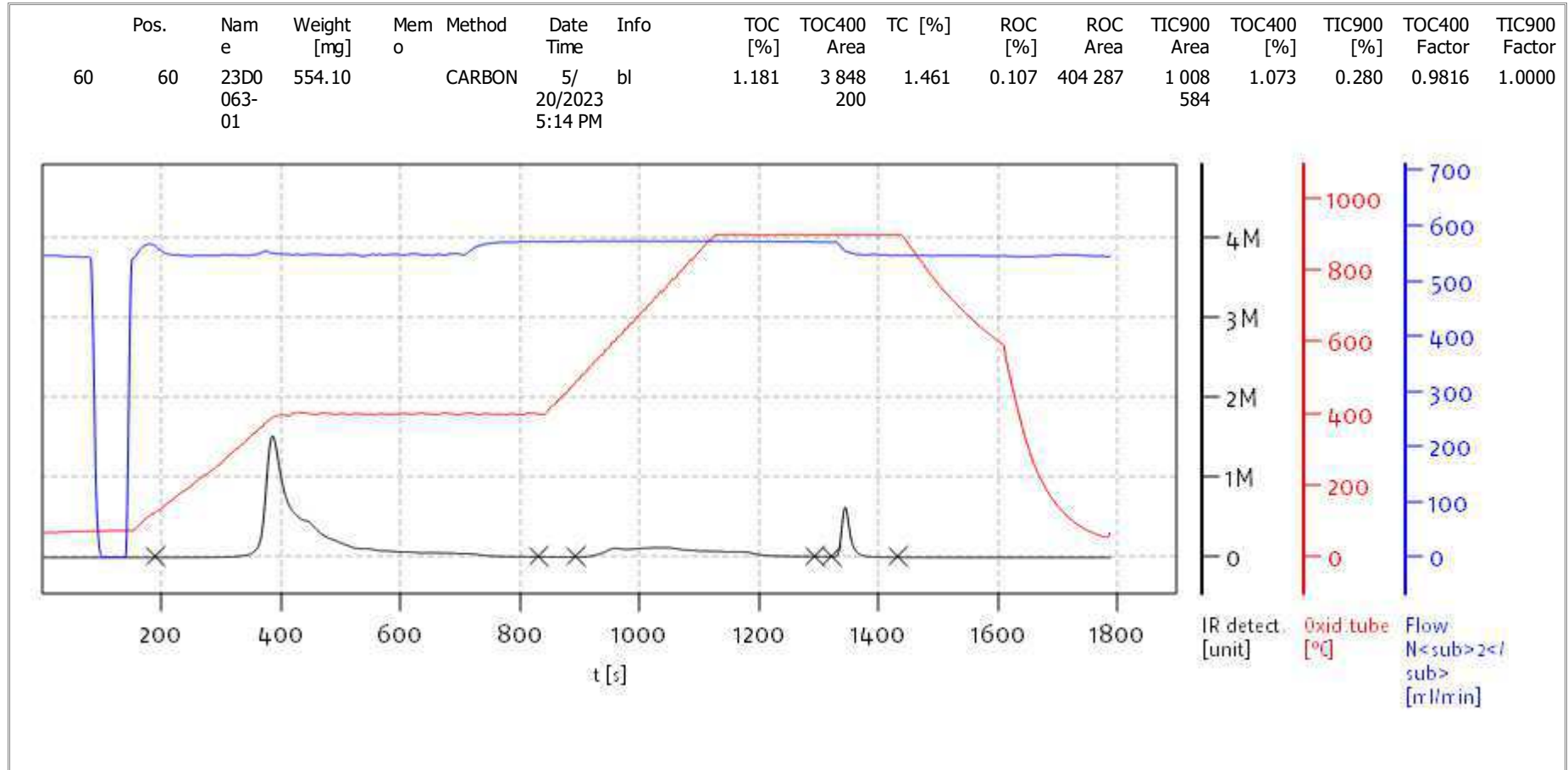
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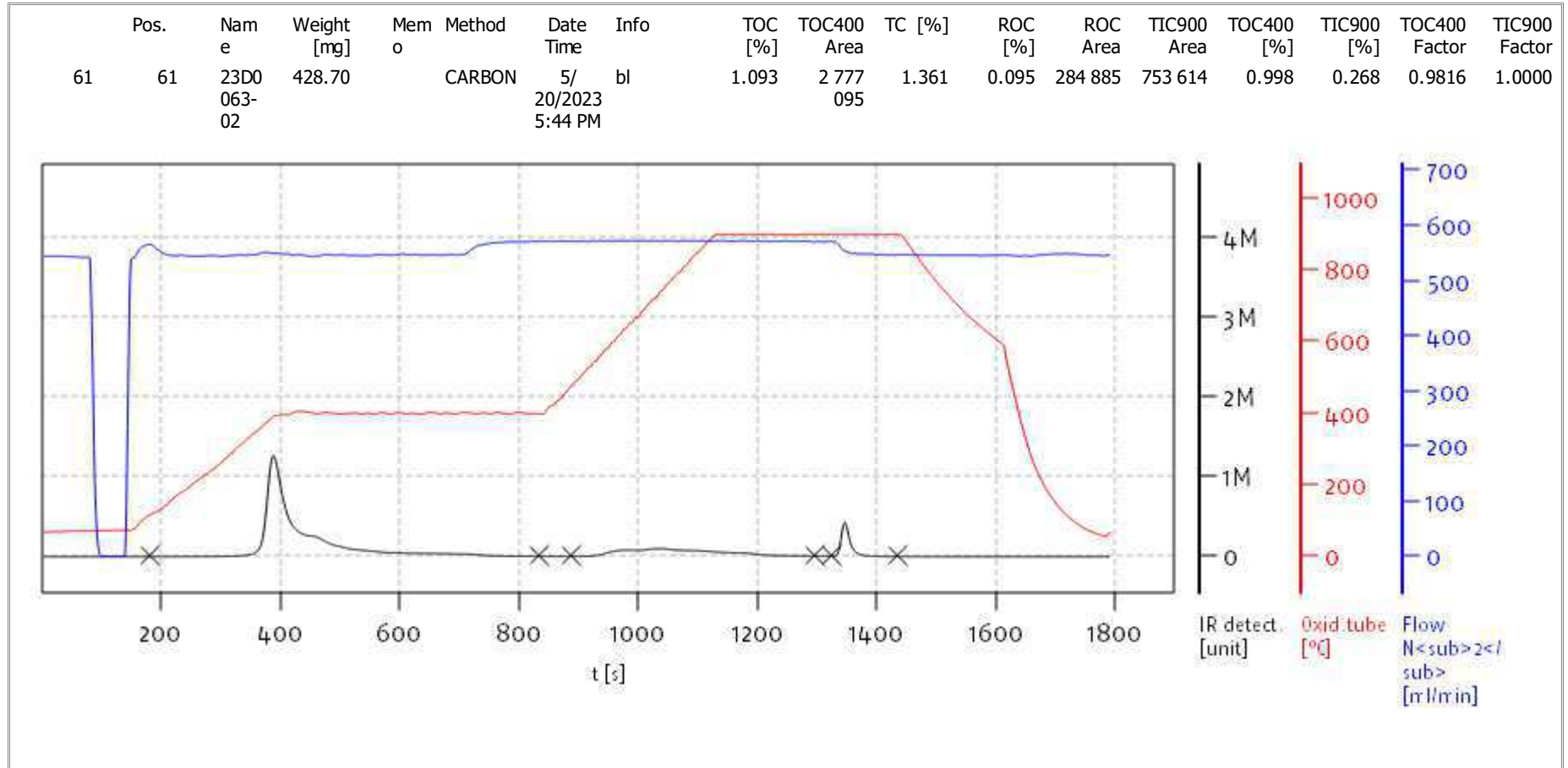
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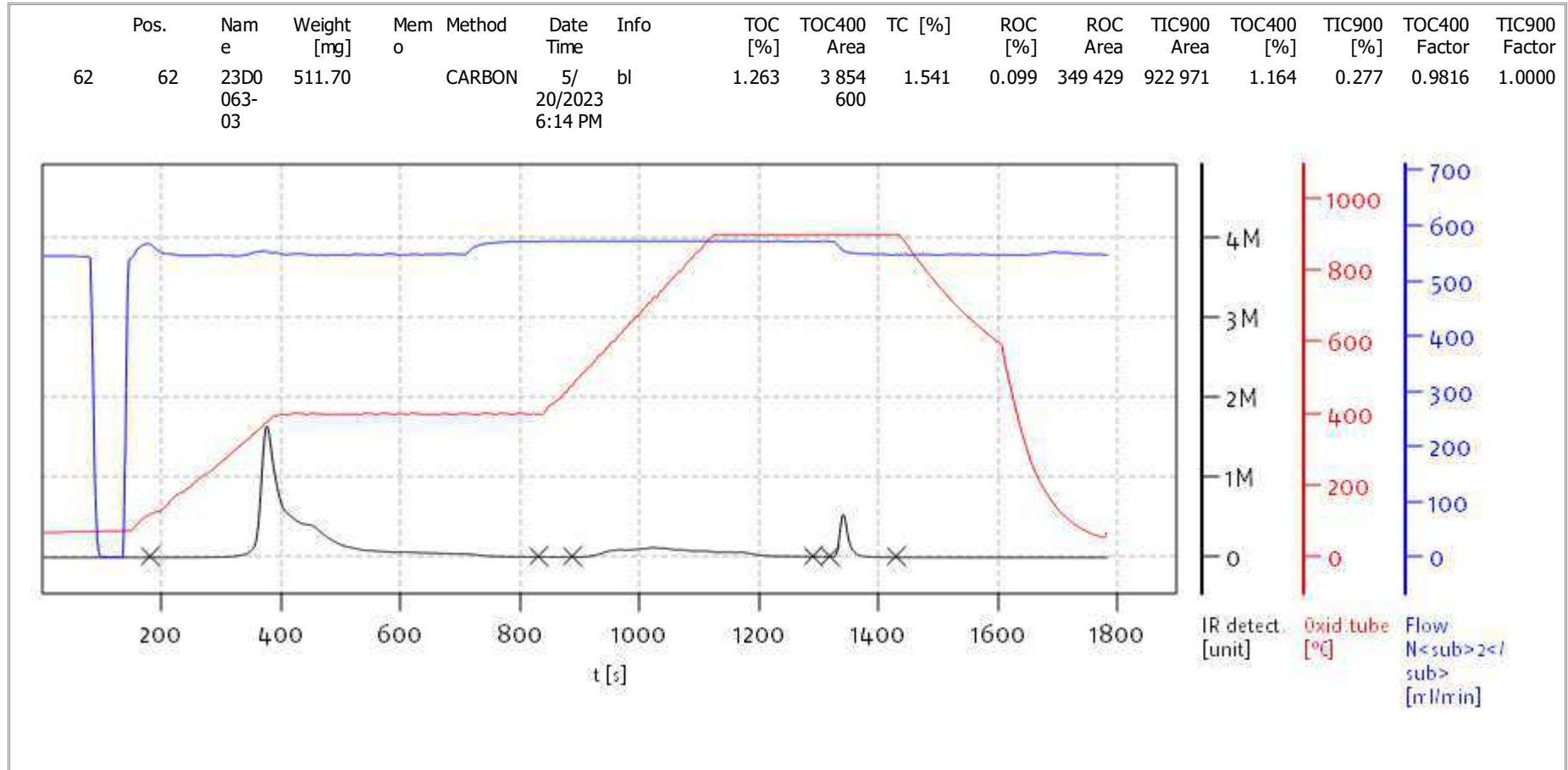
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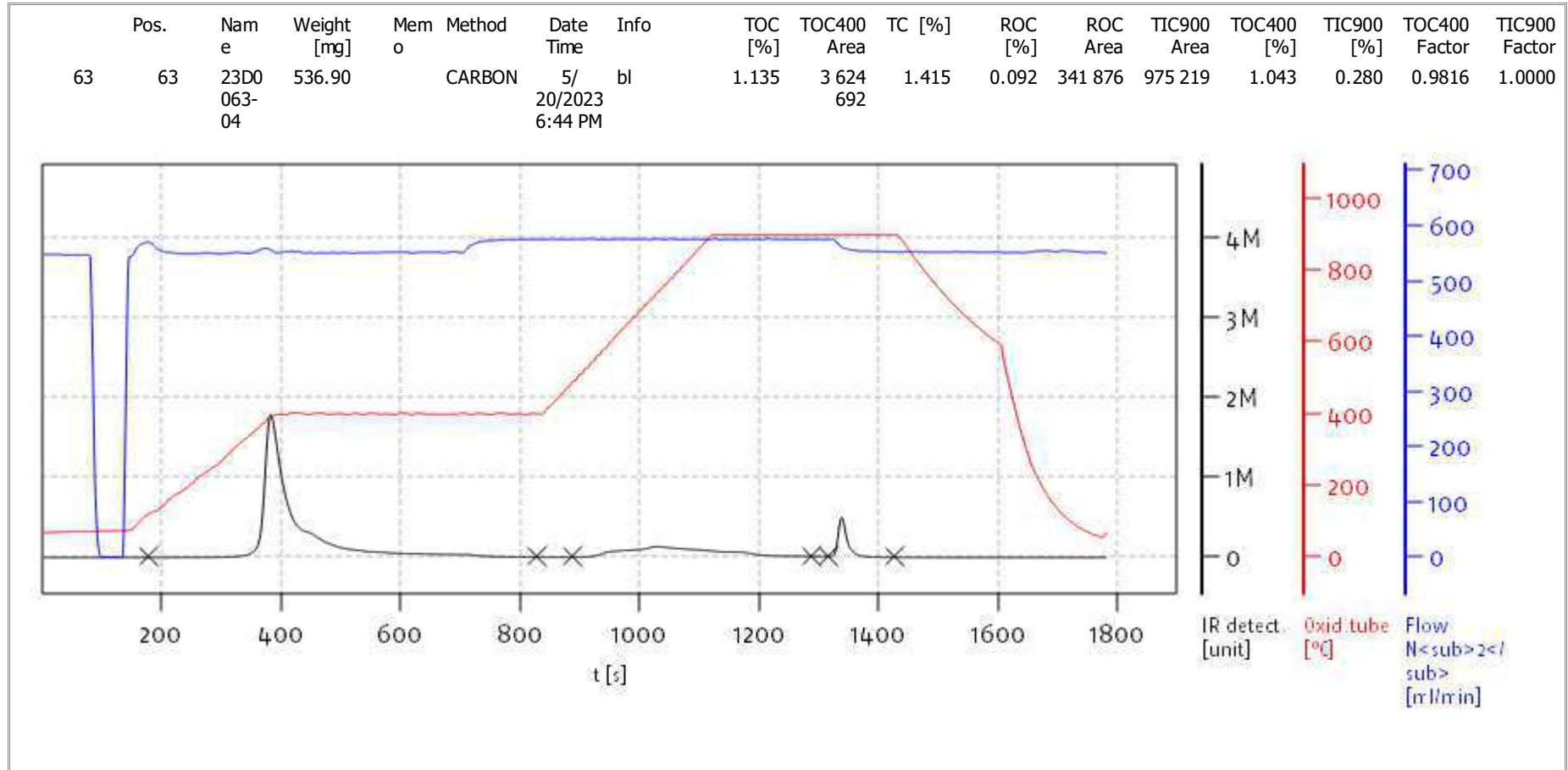


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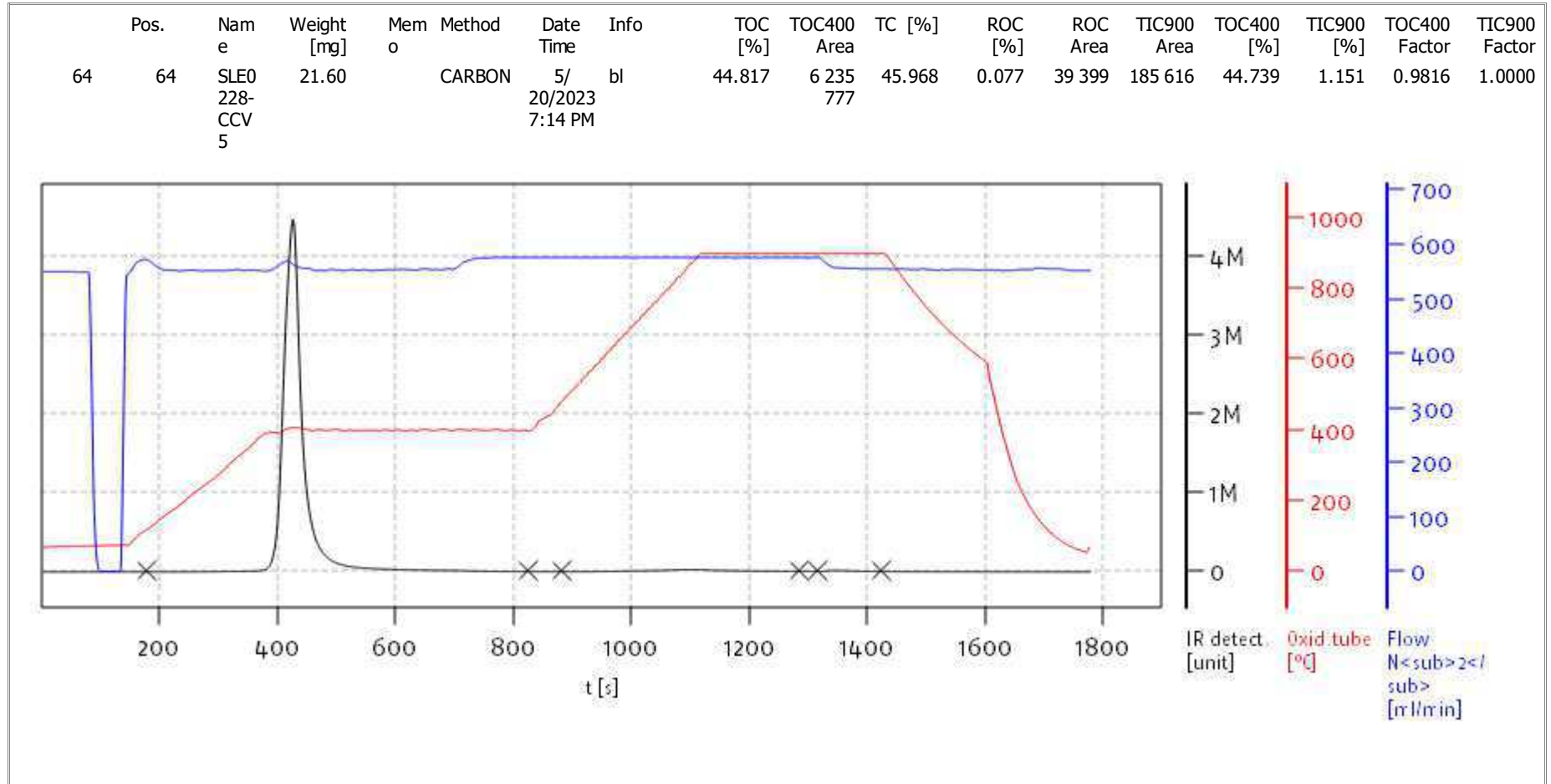
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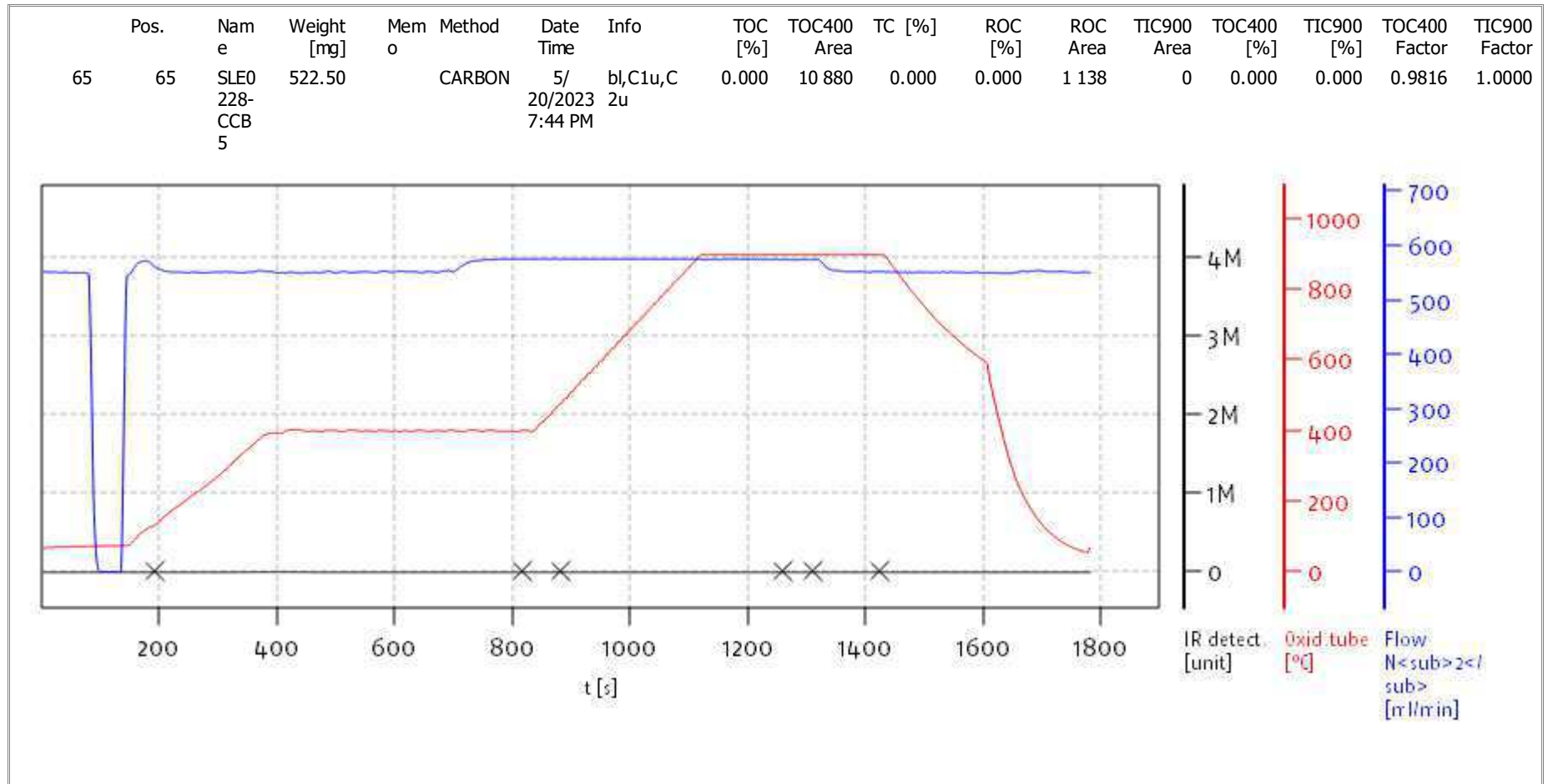


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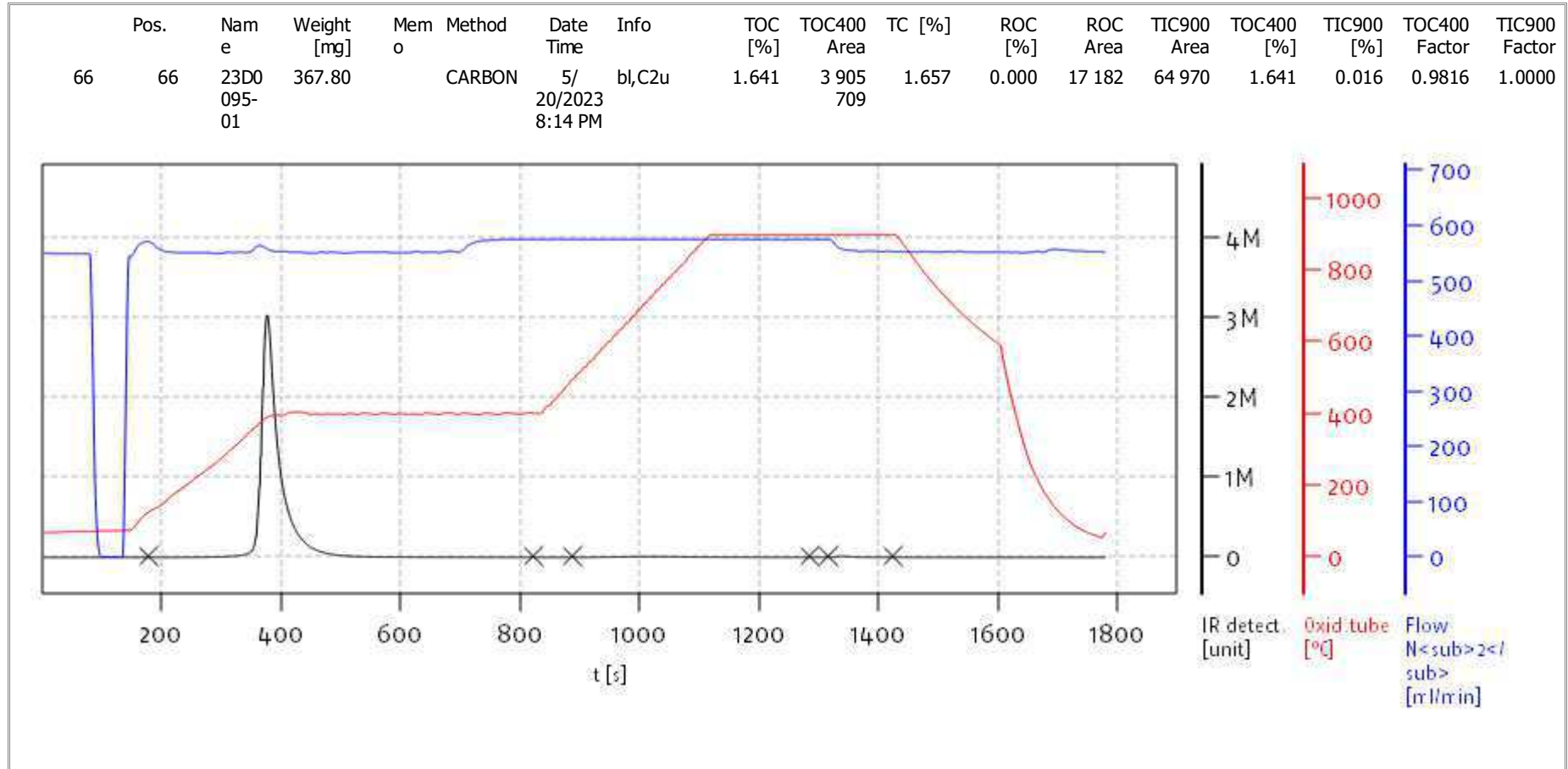
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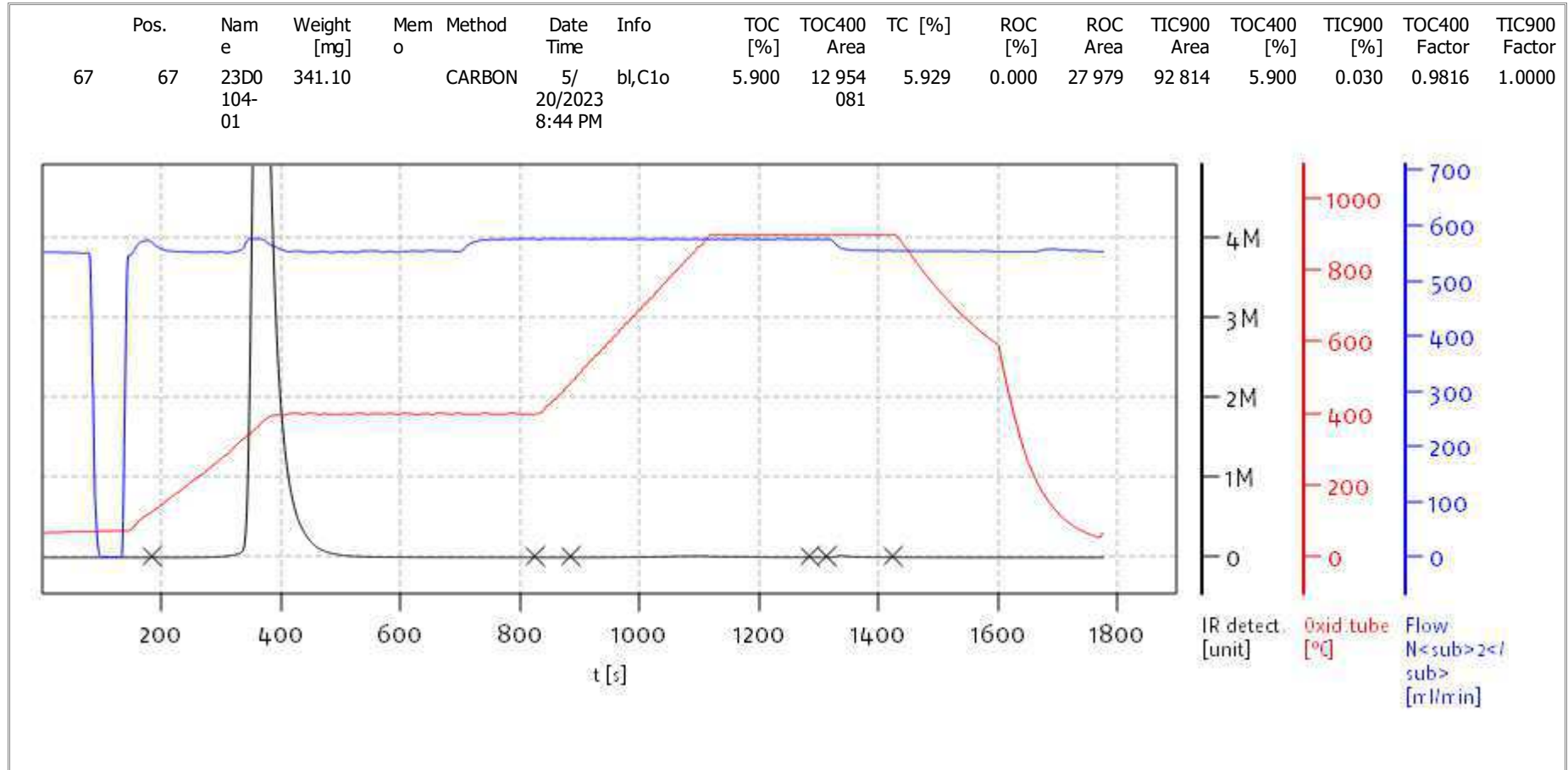
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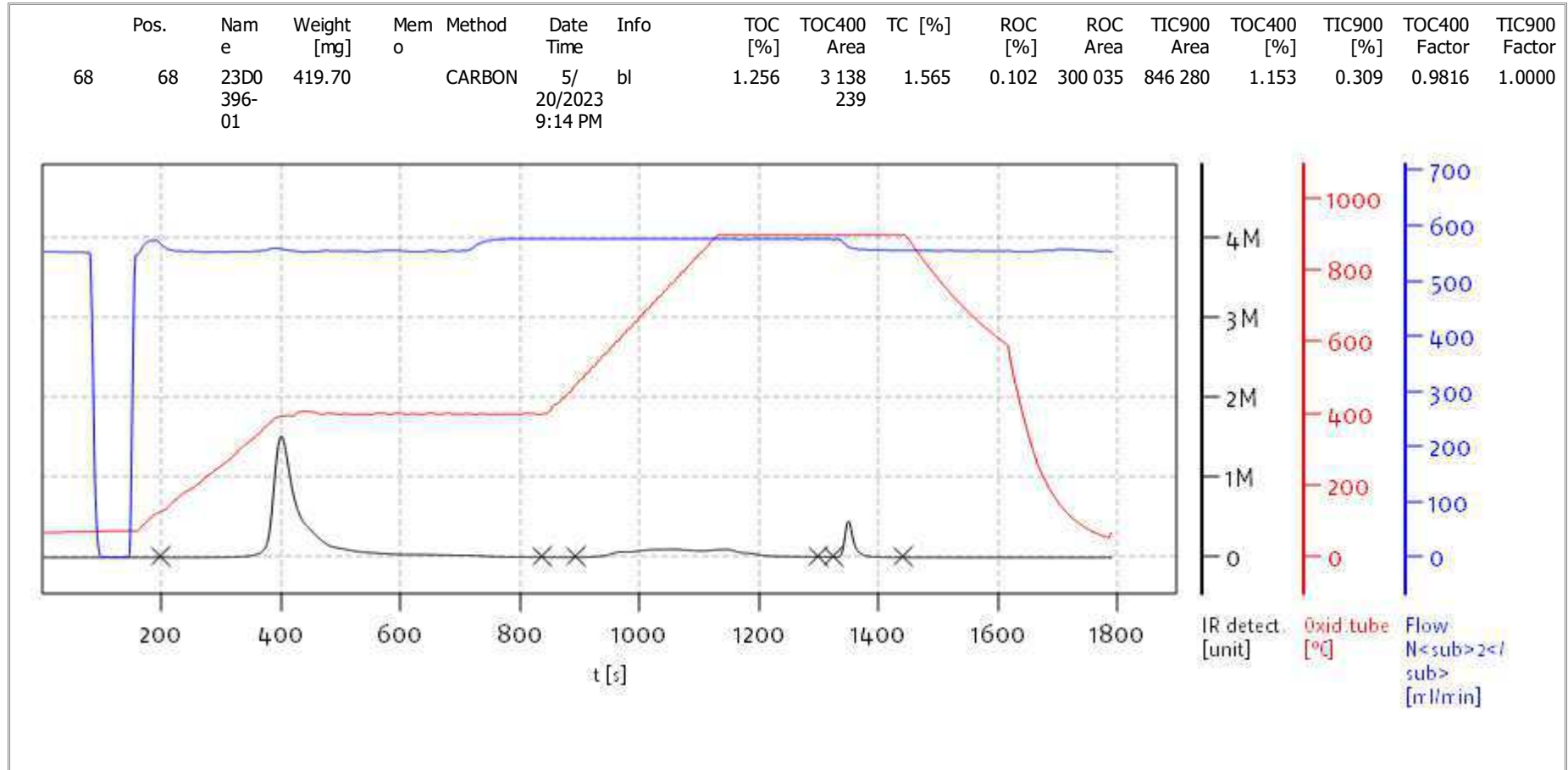
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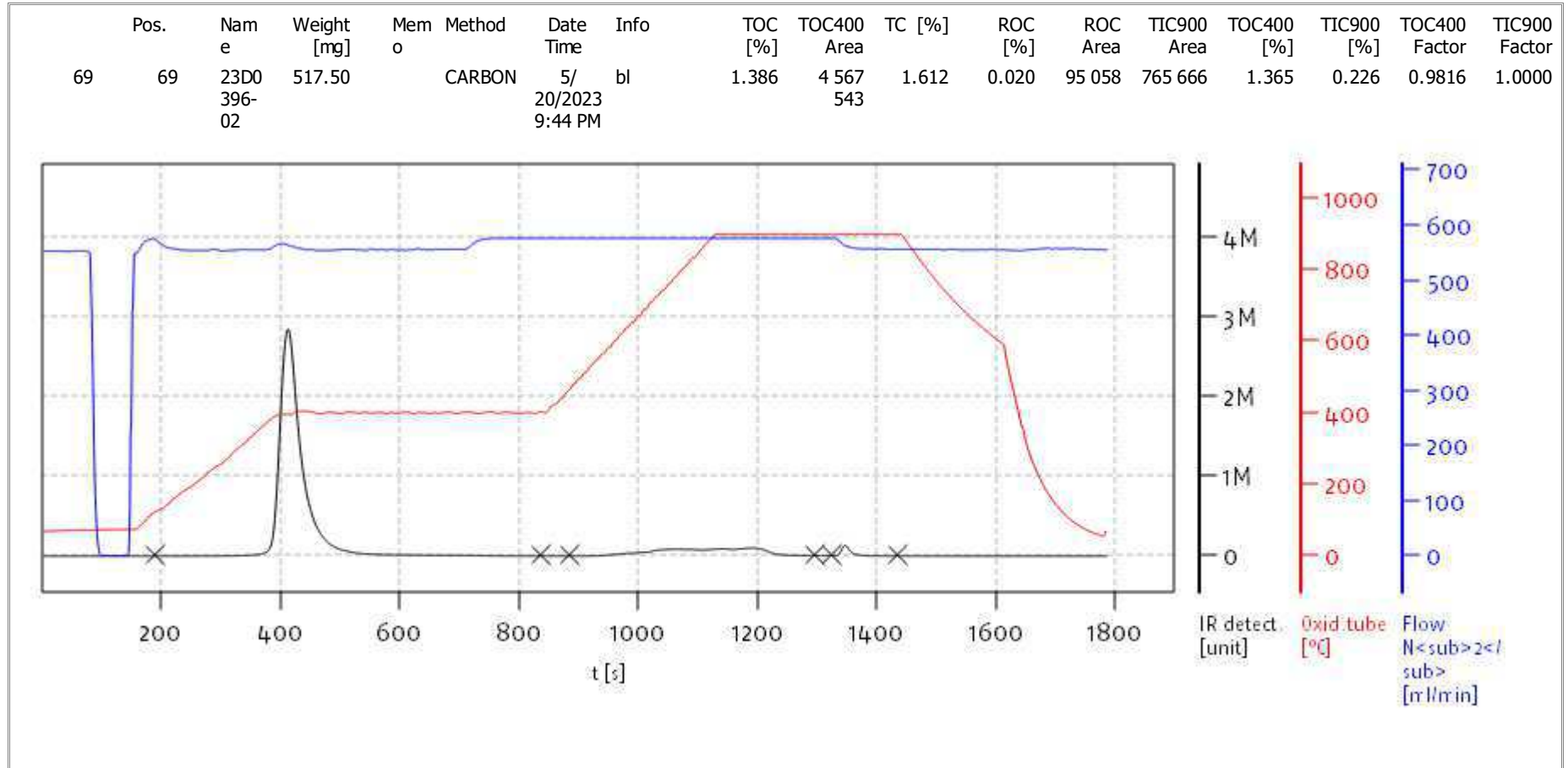
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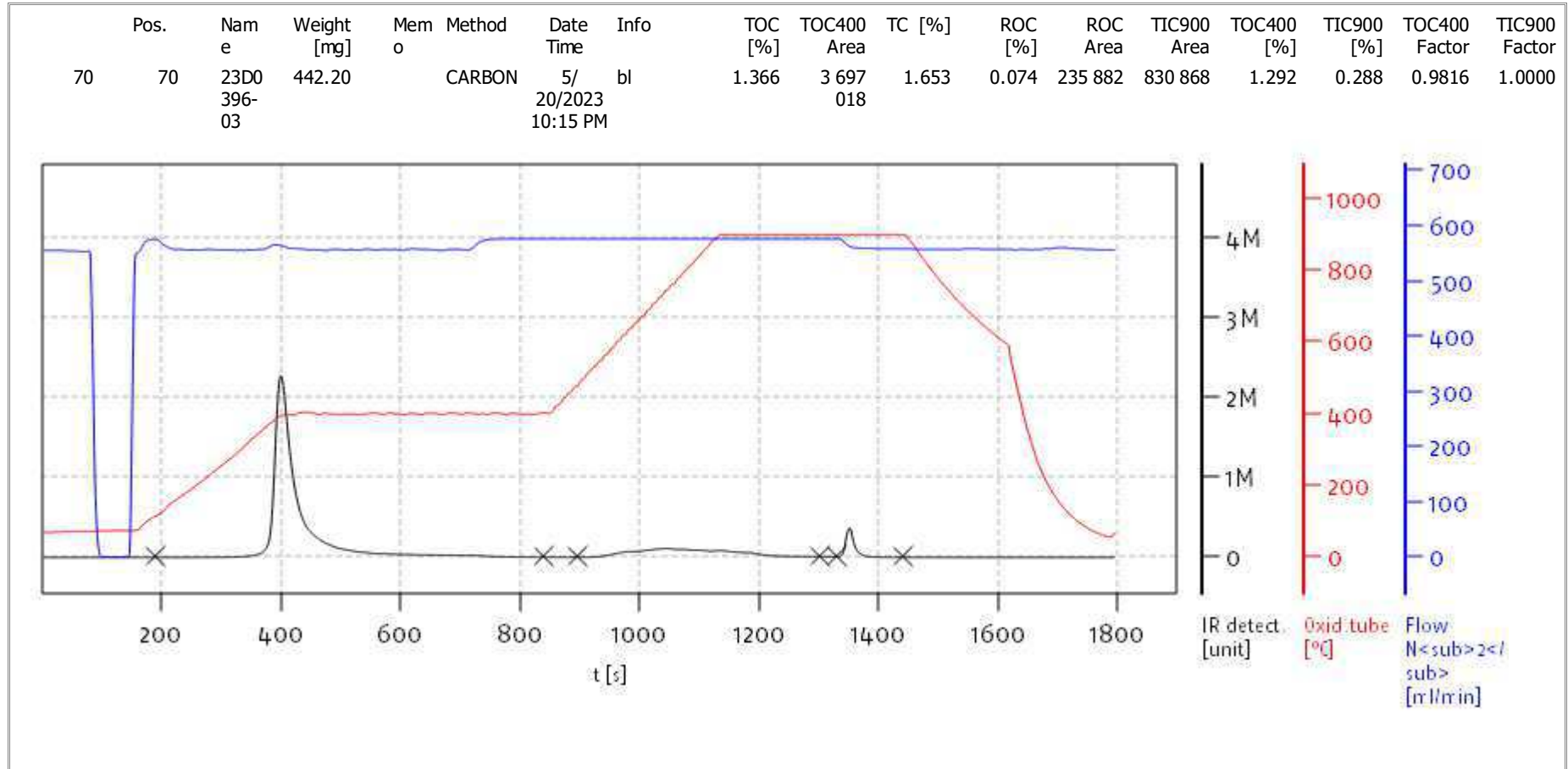
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Soli TOC Cube, Carbon  
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Analyst: CDE



Name:

Access: solITOC superuser

Date: Mon May 22 10:19:17 2023

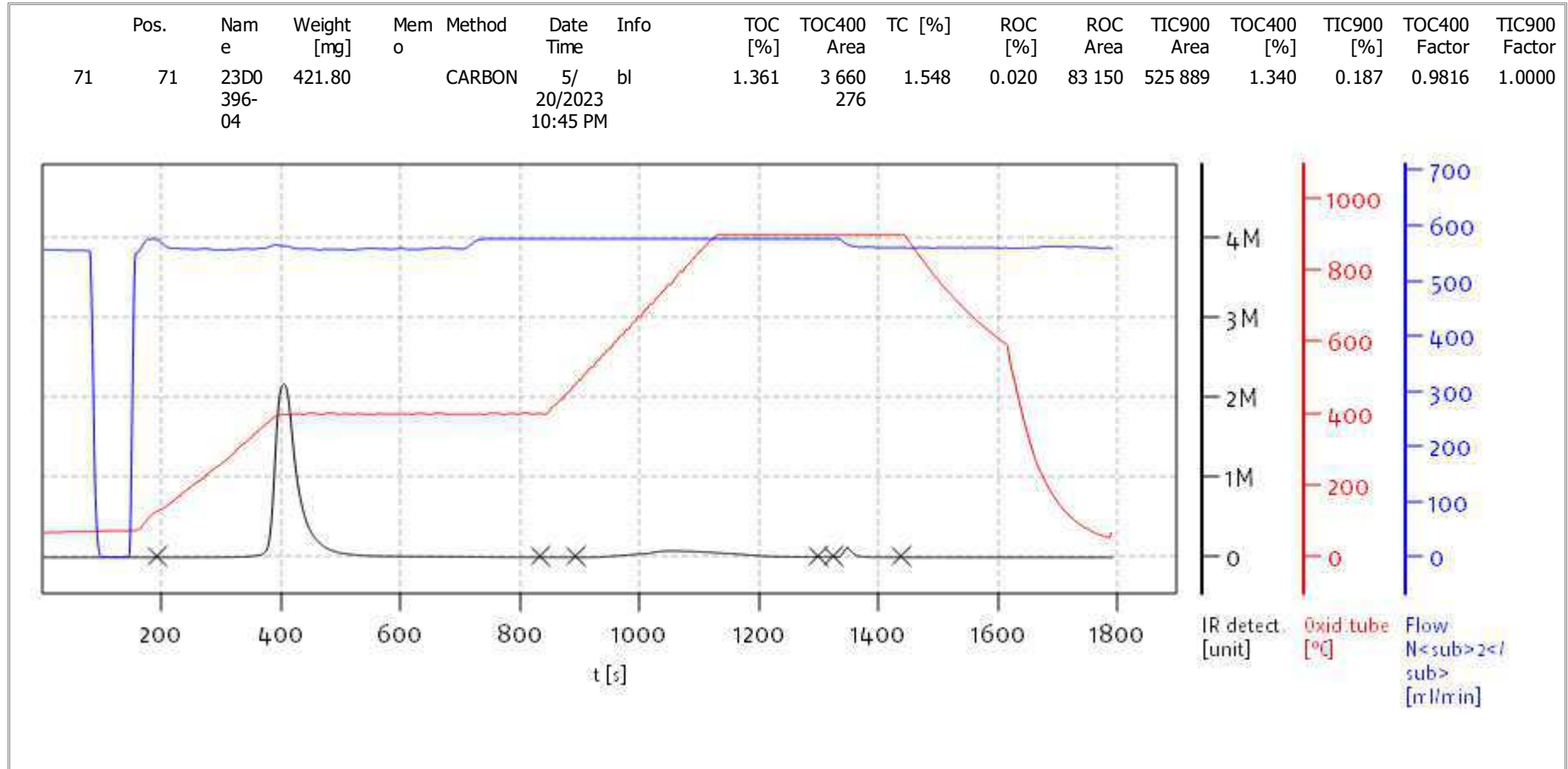


solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

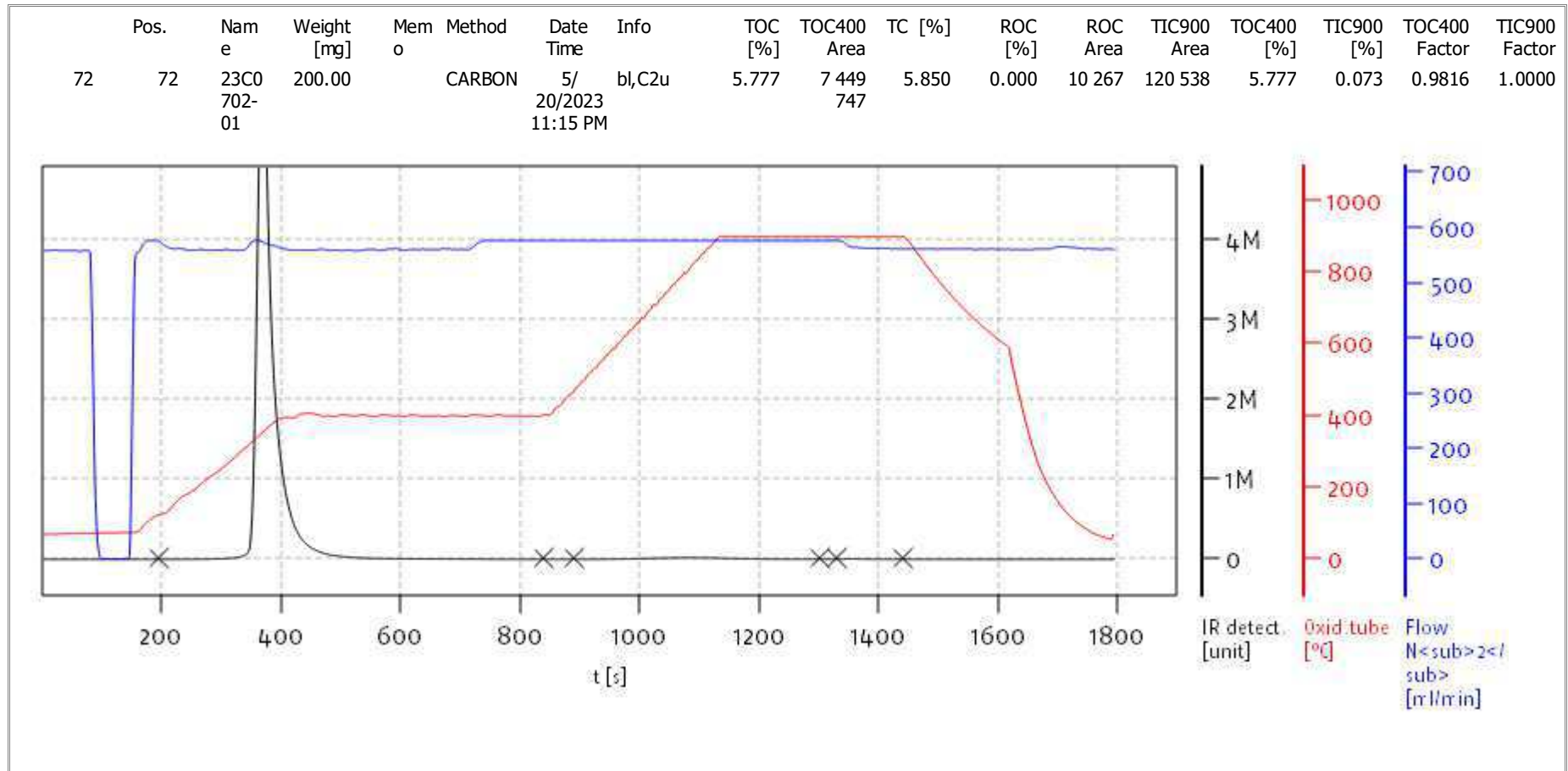
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Mon May 22 10:19:17 2023

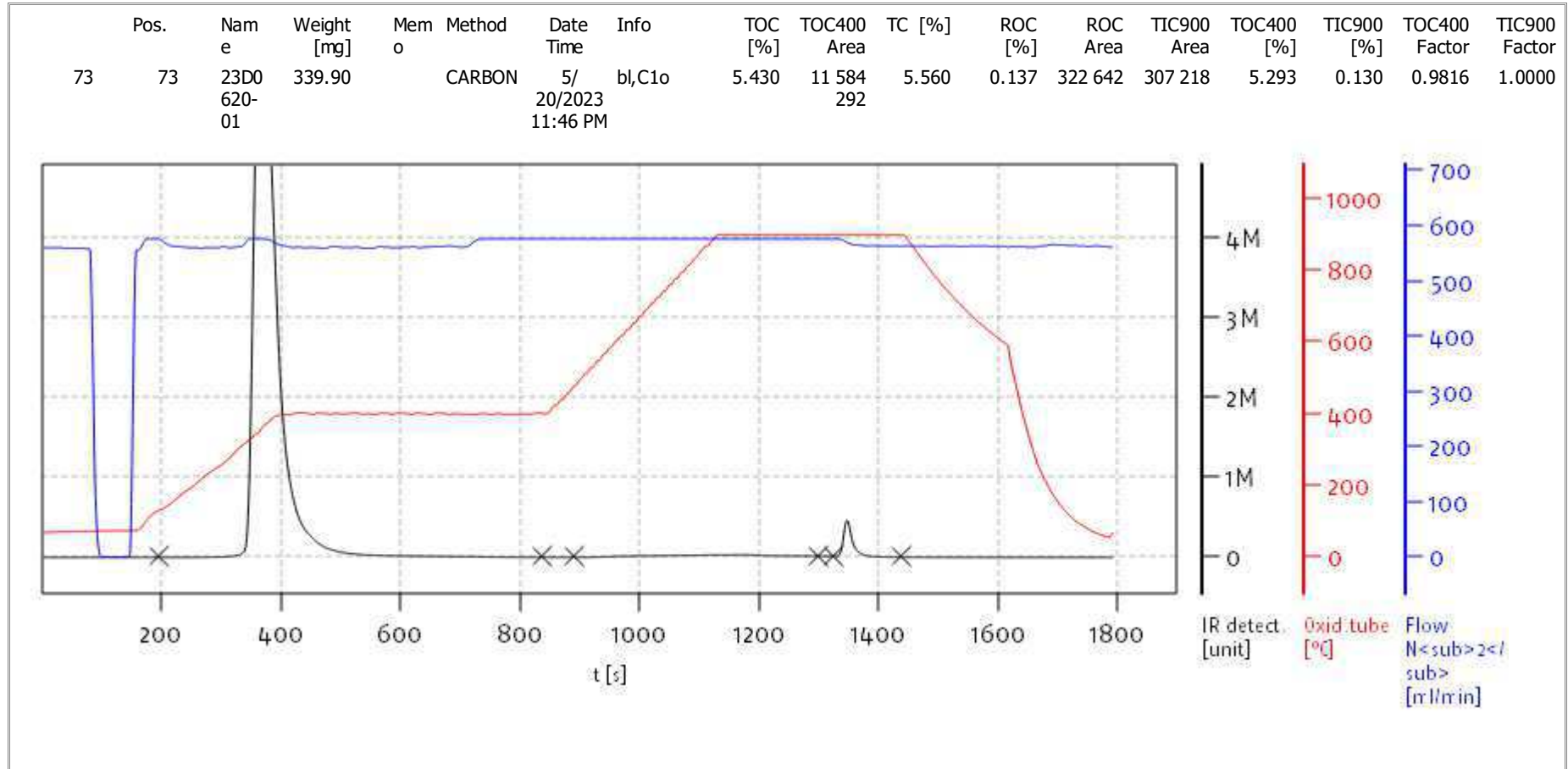


solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

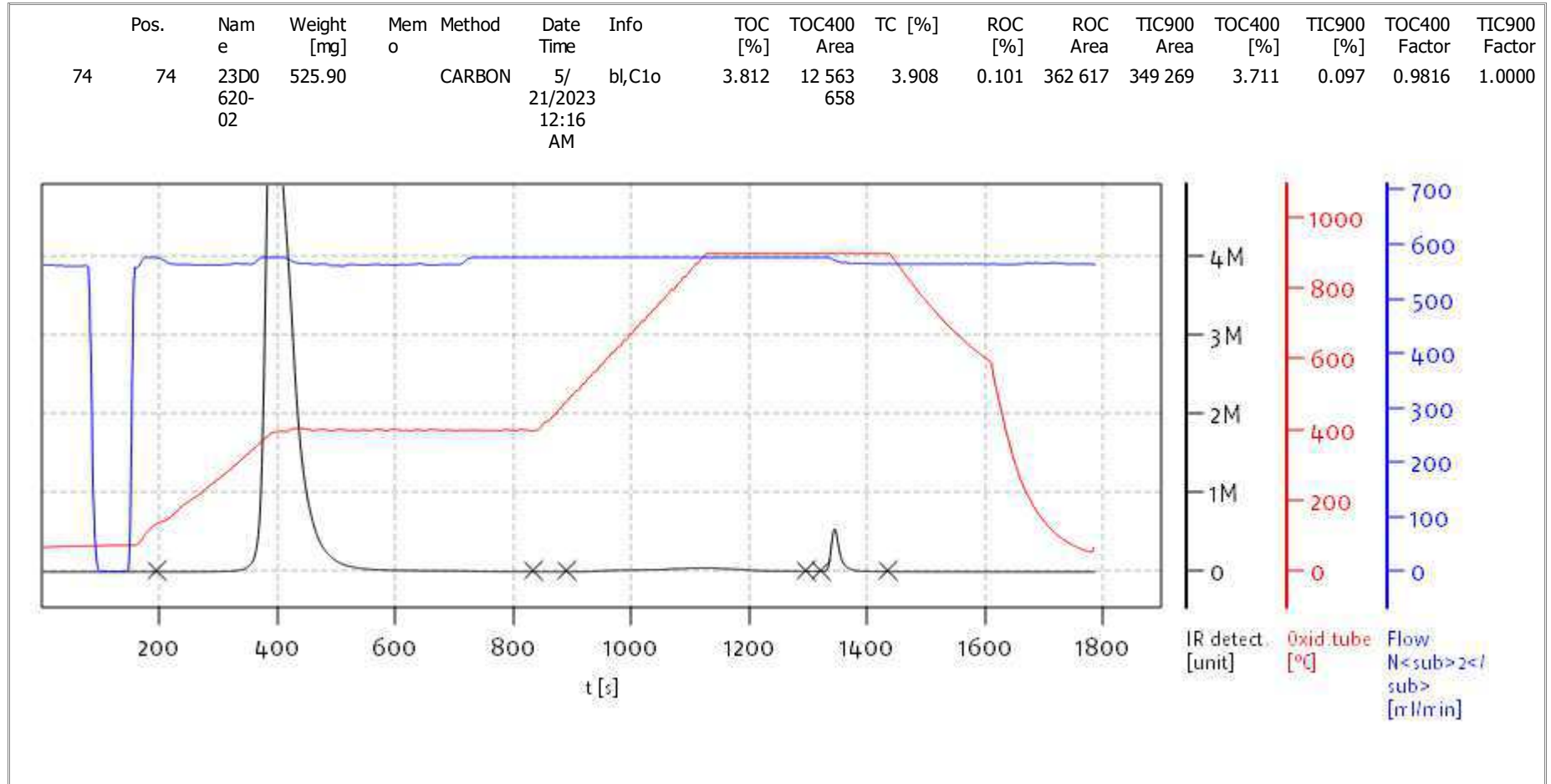
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

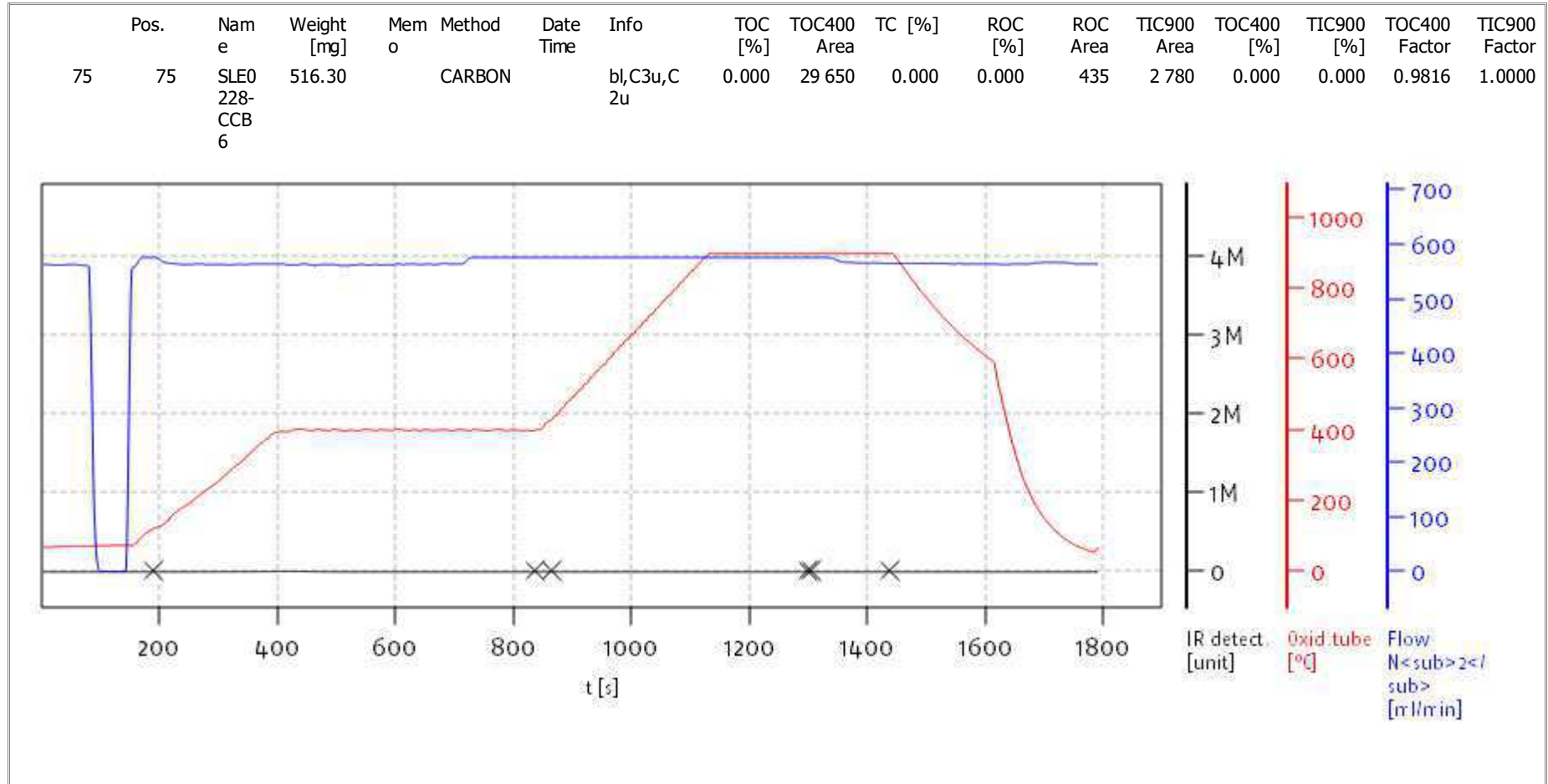
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Soli TOC Cube, Carbon  
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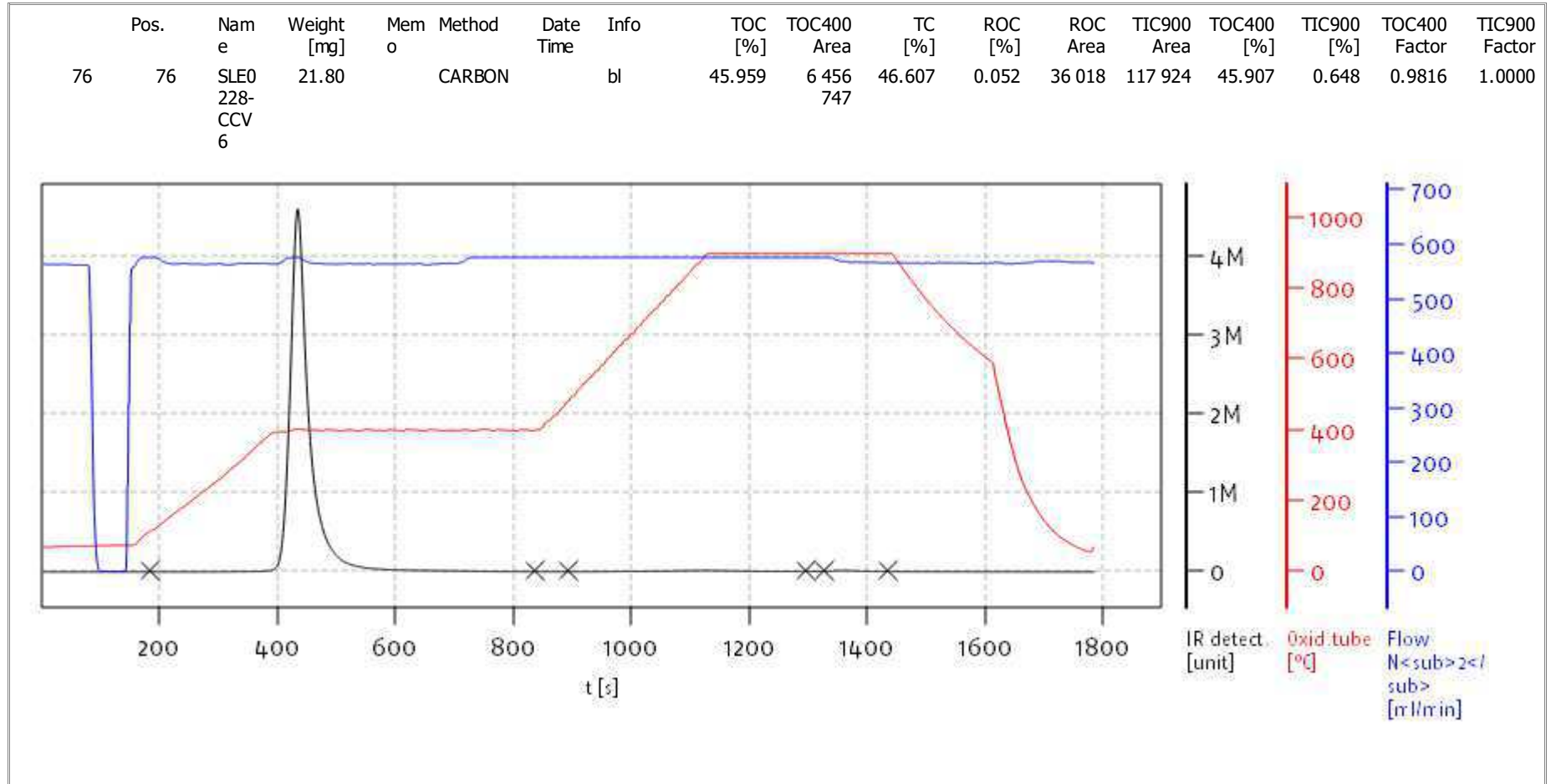
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
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Soli TOC Cube, Carbon  
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Date: Mon May 22 10:19:17 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
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## ANALYSIS BATCH (SEQUENCE) SUMMARY

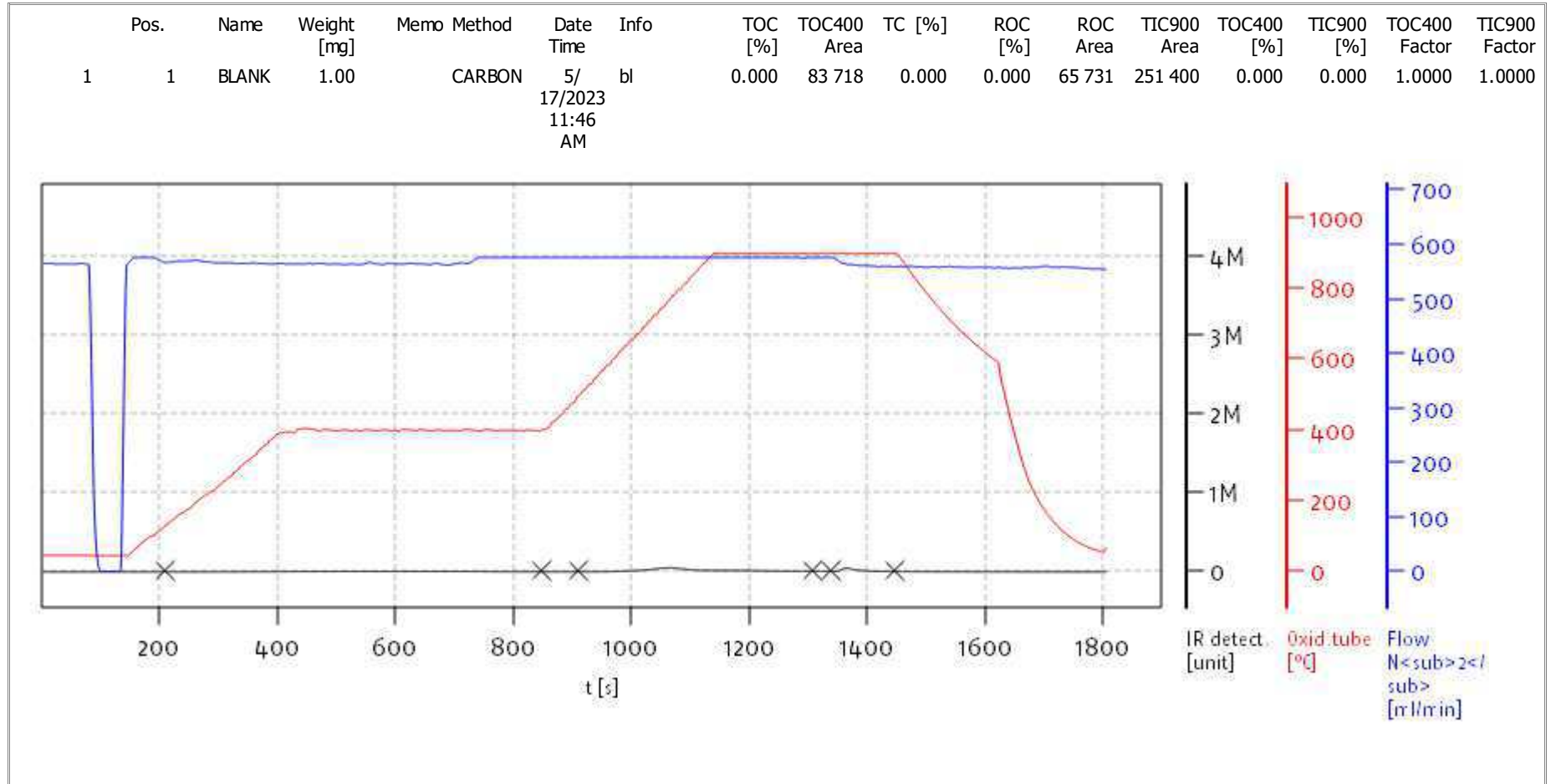
### EPA 9060A m

Laboratory:	<u>Analytical Resources, LLC</u>	SDG:	<u>23D0063</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>AOC5 MR Phase 1</u>
Sequence:	<u>SLE0270</u>	Instrument:	<u>TOC Cube</u>
		Calibration:	<u>GE00052</u>

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SLE0270-CAL1	CubeData_05182023@1024b-101	NA	05/17/23 12:46
Cal Standard	SLE0270-CAL2	CubeData_05182023@1024b-102	NA	05/17/23 13:16
Cal Standard	SLE0270-CAL3	CubeData_05182023@1024b-103	NA	05/17/23 13:46
Cal Standard	SLE0270-CAL4	CubeData_05182023@1024b-104	NA	05/17/23 14:16
Cal Standard	SLE0270-CAL5	CubeData_05182023@1024b-105	NA	05/17/23 14:47
Cal Standard	SLE0270-CAL6	CubeData_05182023@1024b-106	NA	05/17/23 15:17
Cal Standard	SLE0270-CAL7	CubeData_05182023@1024b-107	NA	05/17/23 15:47
Cal Standard	SLE0270-CAL8	CubeData_05182023@1024b-108	NA	05/17/23 16:17
Cal Standard	SLE0270-CAL9	CubeData_05182023@1024b-109	NA	05/17/23 16:47
Cal Standard	SLE0270-CALA	CubeData_05182023@1024b-110	NA	05/17/23 17:17
Cal Standard	SLE0270-CALB	CubeData_05182023@1024b-111	NA	05/17/23 17:47
Cal Standard	SLE0270-CALC	CubeData_05182023@1024b-112	NA	05/17/23 18:18
Cal Standard	SLE0270-CALD	CubeData_05182023@1024b-113	NA	05/17/23 18:48
Cal Standard	SLE0270-CALE	CubeData_05182023@1024b-114	NA	05/17/23 19:18
Cal Standard	SLE0270-CALF	CubeData_05182023@1024b-115	NA	05/17/23 19:48
Cal Standard	SLE0270-CALG	CubeData_05182023@1024b-116	NA	05/17/23 20:18
Cal Standard	SLE0270-CALH	CubeData_05182023@1024b-117	NA	05/17/23 20:48
Cal Standard	SLE0270-CALI	CubeData_05182023@1024b-118	NA	05/17/23 21:19
Cal Standard	SLE0270-CALJ	CubeData_05182023@1024b-119	NA	05/17/23 21:49
Cal Standard	SLE0270-CALK	CubeData_05182023@1024b-120	NA	05/17/23 22:19
Initial Cal Check	SLE0270-ICV1	CubeData_05182023@1024b-128	NA	05/18/23 02:21
Initial Cal Blank	SLE0270-ICB1	CubeData_05182023@1024b-127	NA	05/18/23 02:51
Calibration Check	SLE0270-CCV1	CubeData_05182023@1024b-126	NA	05/18/23 04:21
Calibration Blank	SLE0270-CCB1	CubeData_05182023@1024b-125	NA	05/18/23 04:52
Cal Standard	SLE0270-CALL	CubeData_05182023@1024b-121	NA	05/18/23 09:47
Cal Standard	SLE0270-CALM	CubeData_05182023@1024b-122	NA	05/18/23 09:48
Cal Standard	SLE0270-CALN	CubeData_05182023@1024b-123	NA	05/18/23 09:49
Cal Standard	SLE0270-CALO	CubeData_05182023@1024b-124	NA	05/18/23 09:49



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Thu May 18 09:43:39 2023

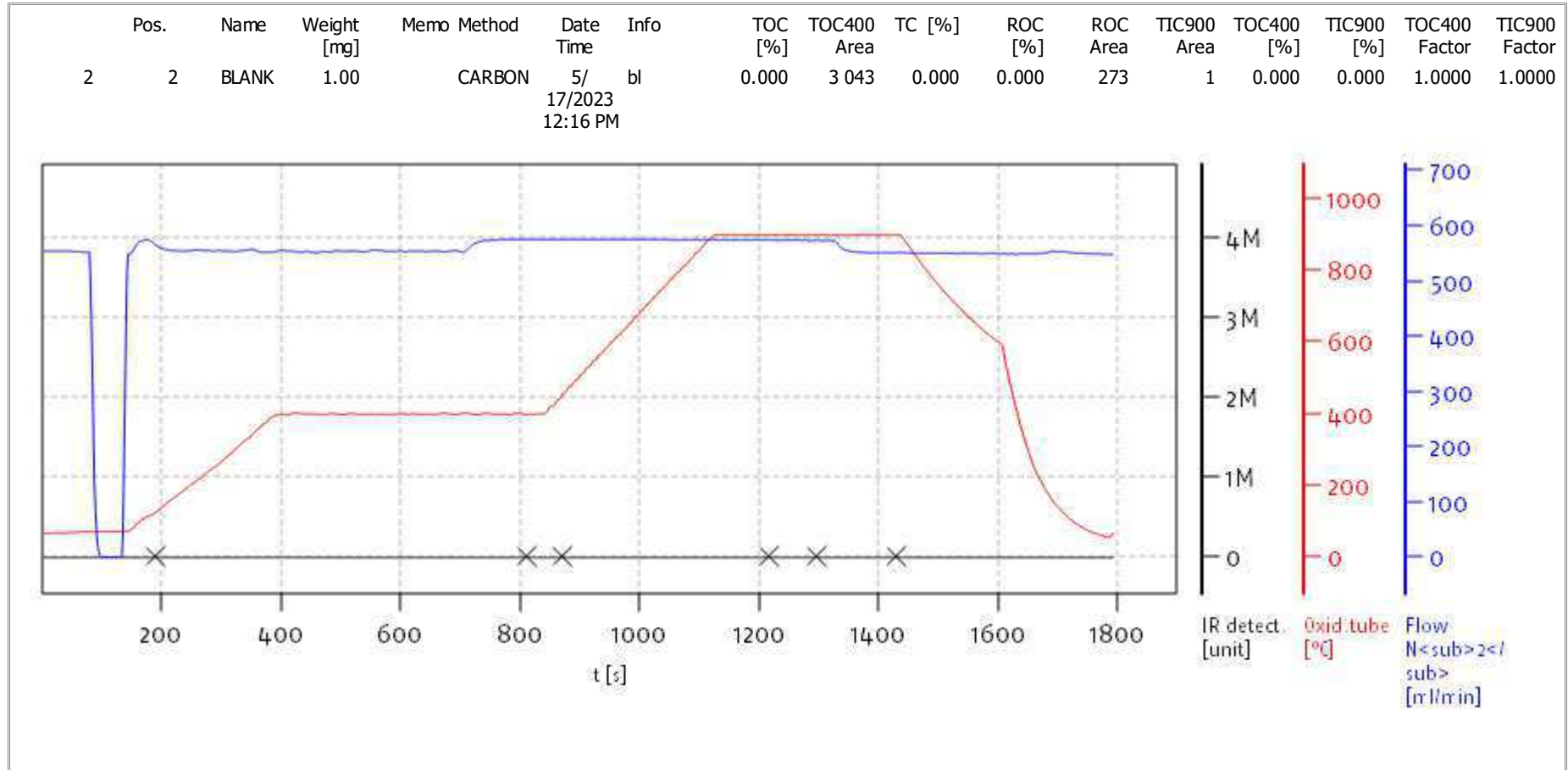


solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
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Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

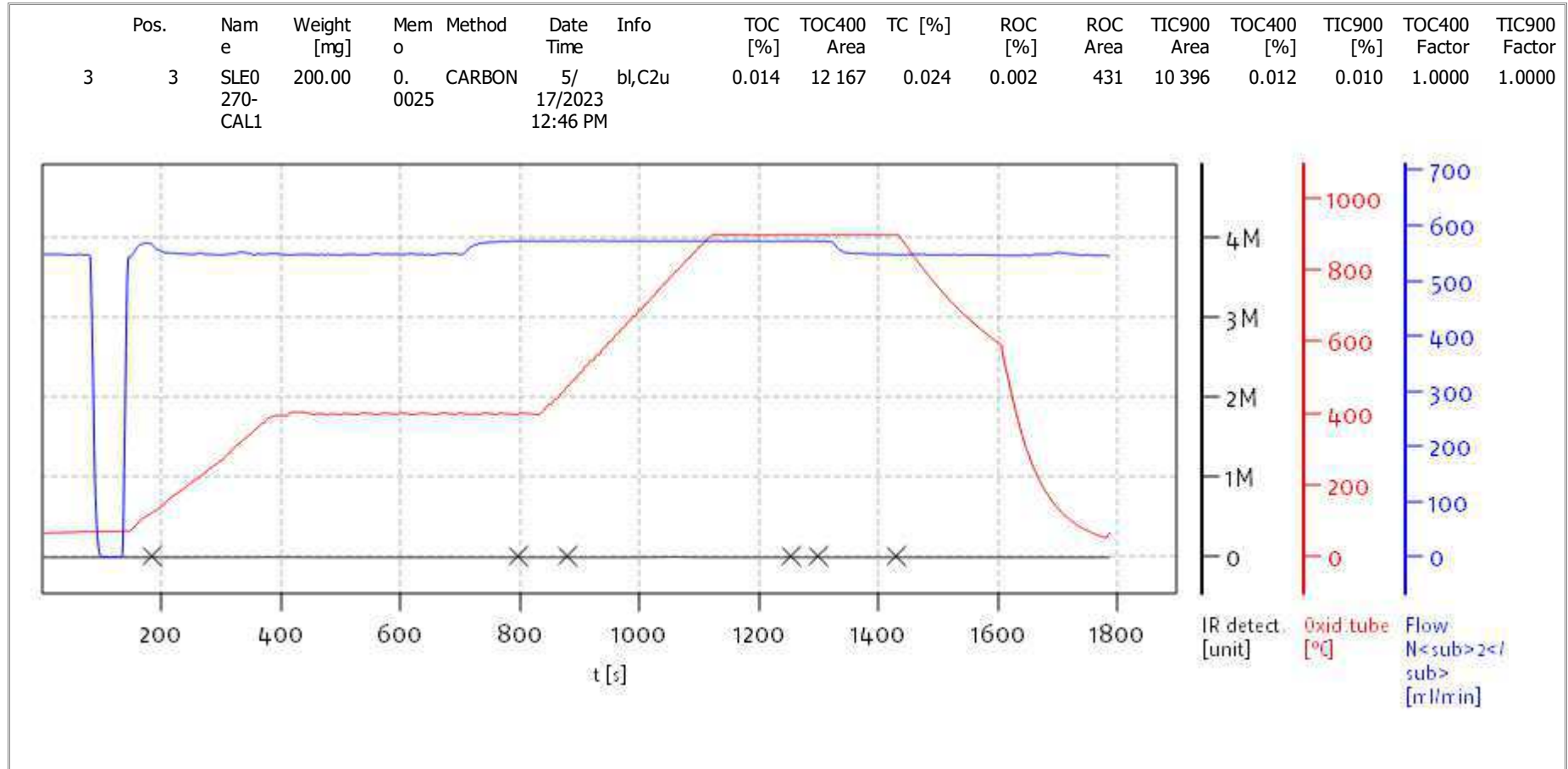
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Soli TOC Cube, Carbon  
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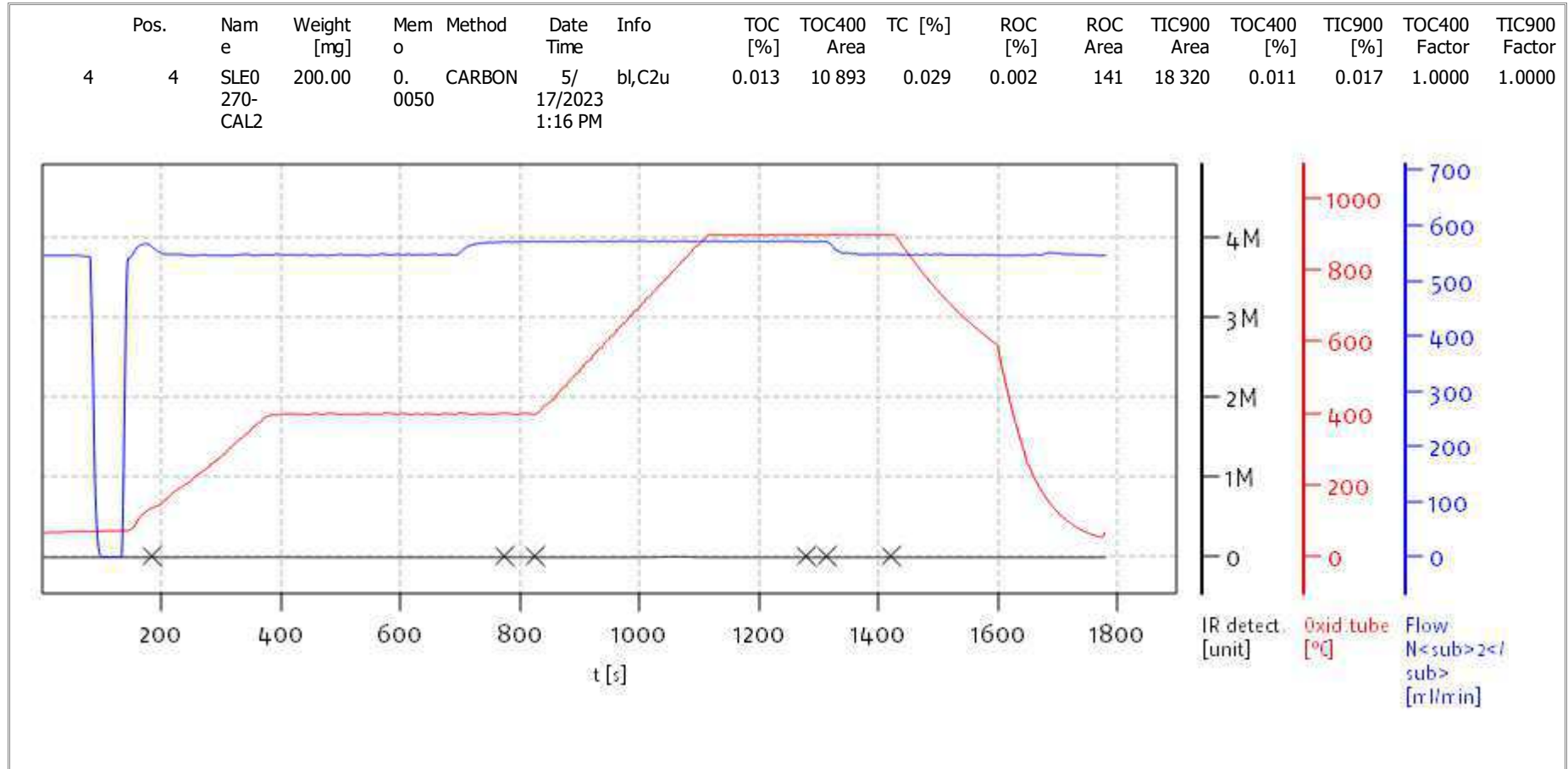


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Soli TOC Cube, Carbon  
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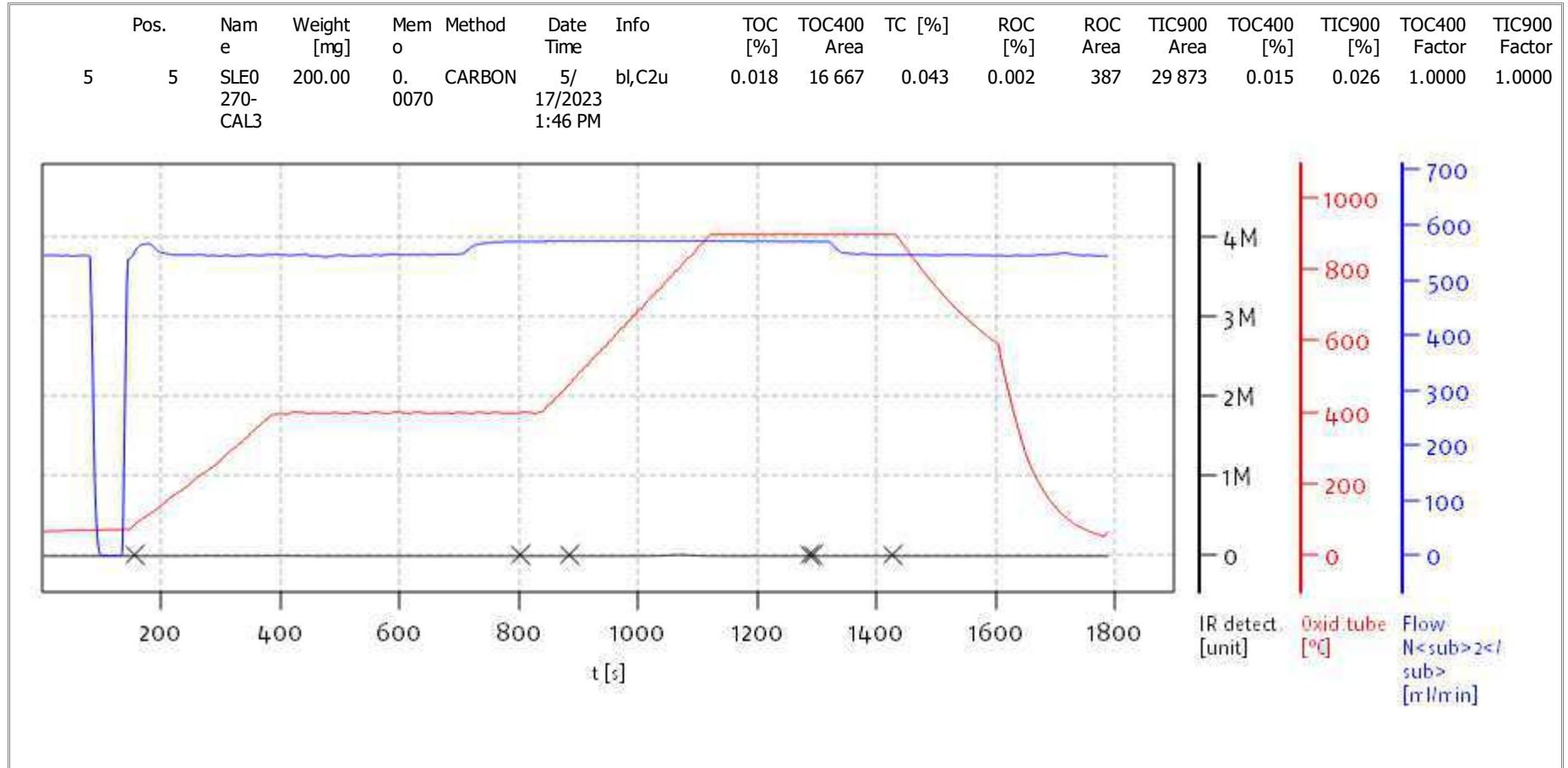
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Soli TOC Cube, Carbon  
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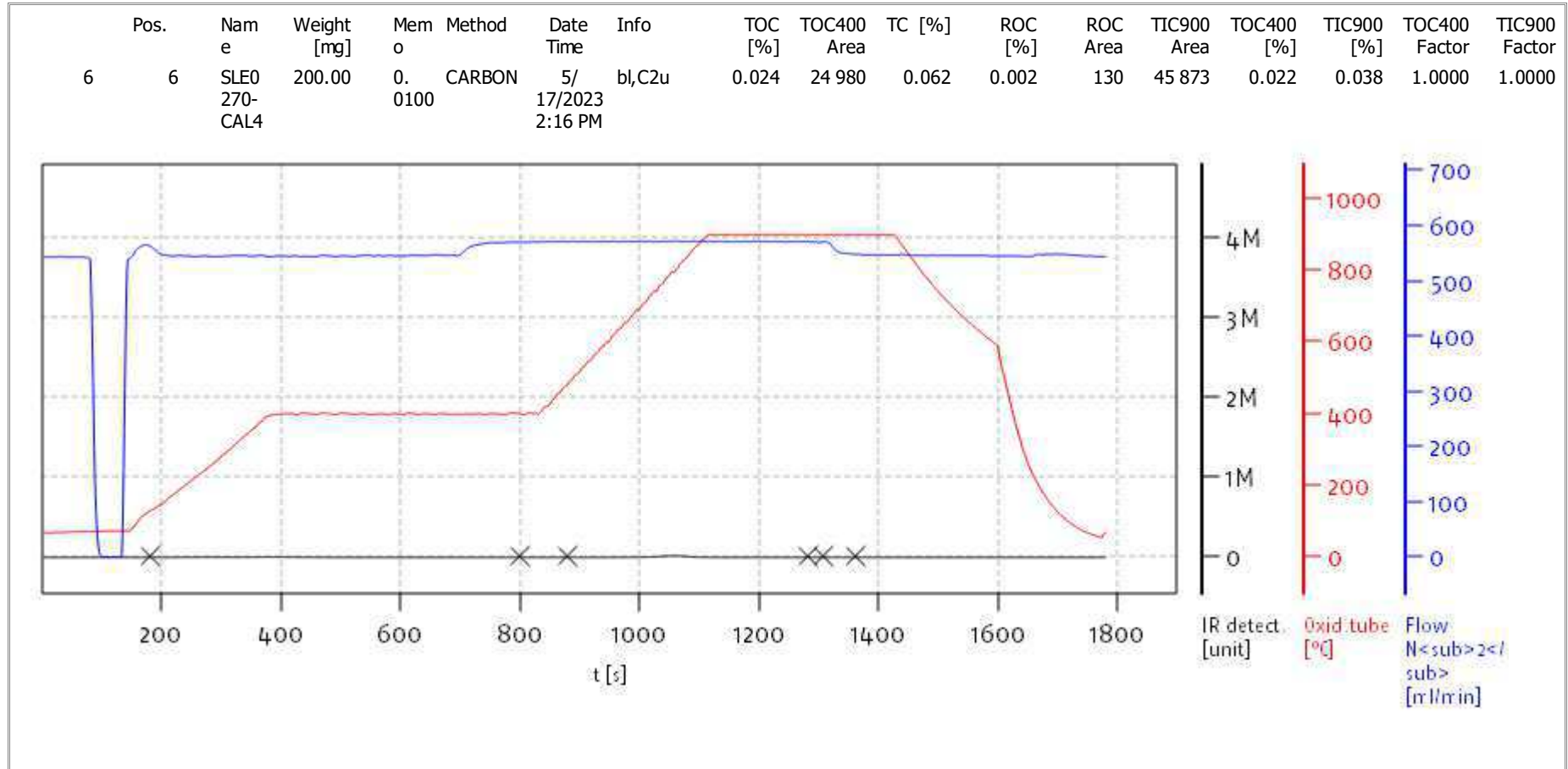
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Mode CCC



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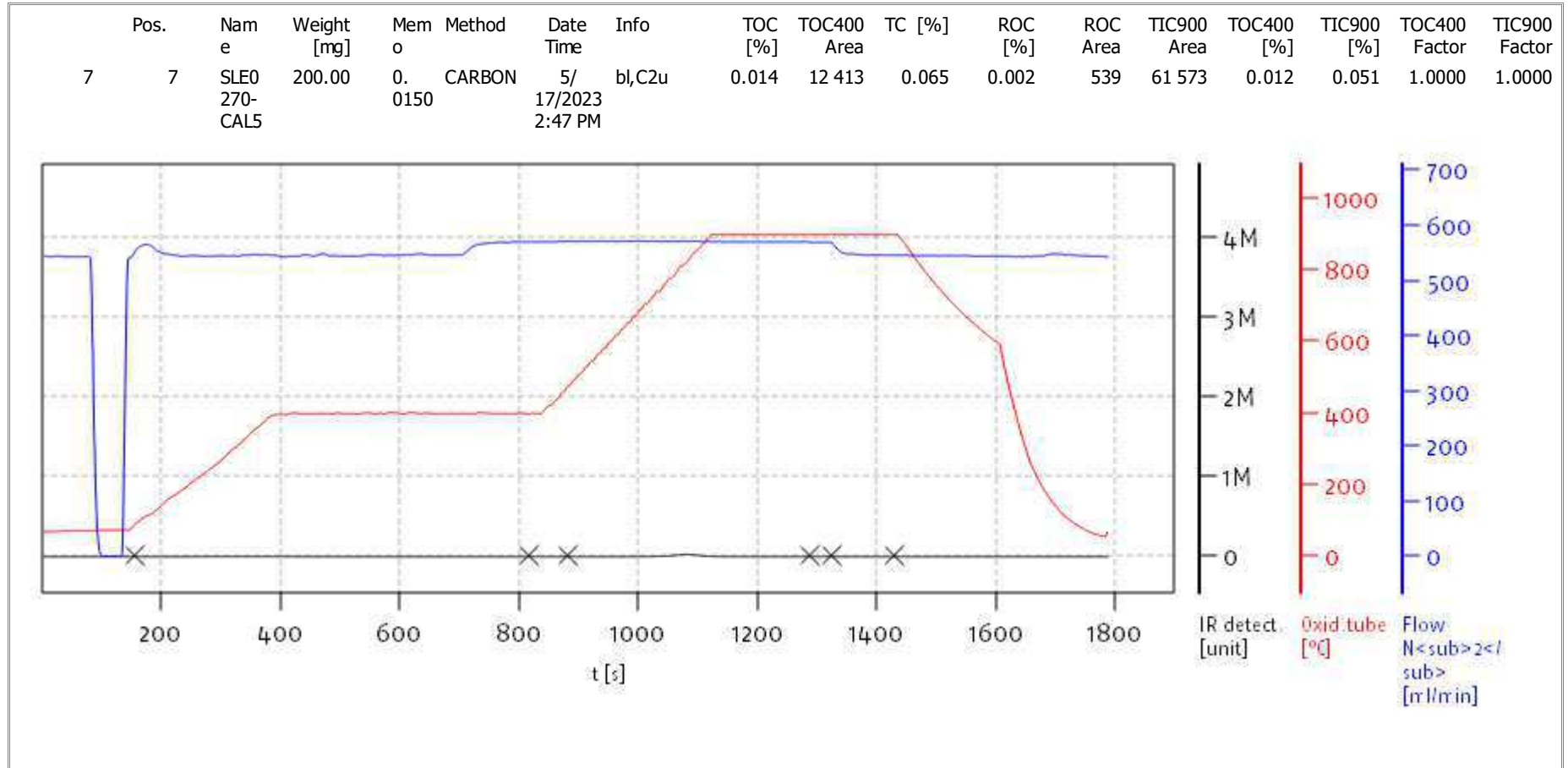
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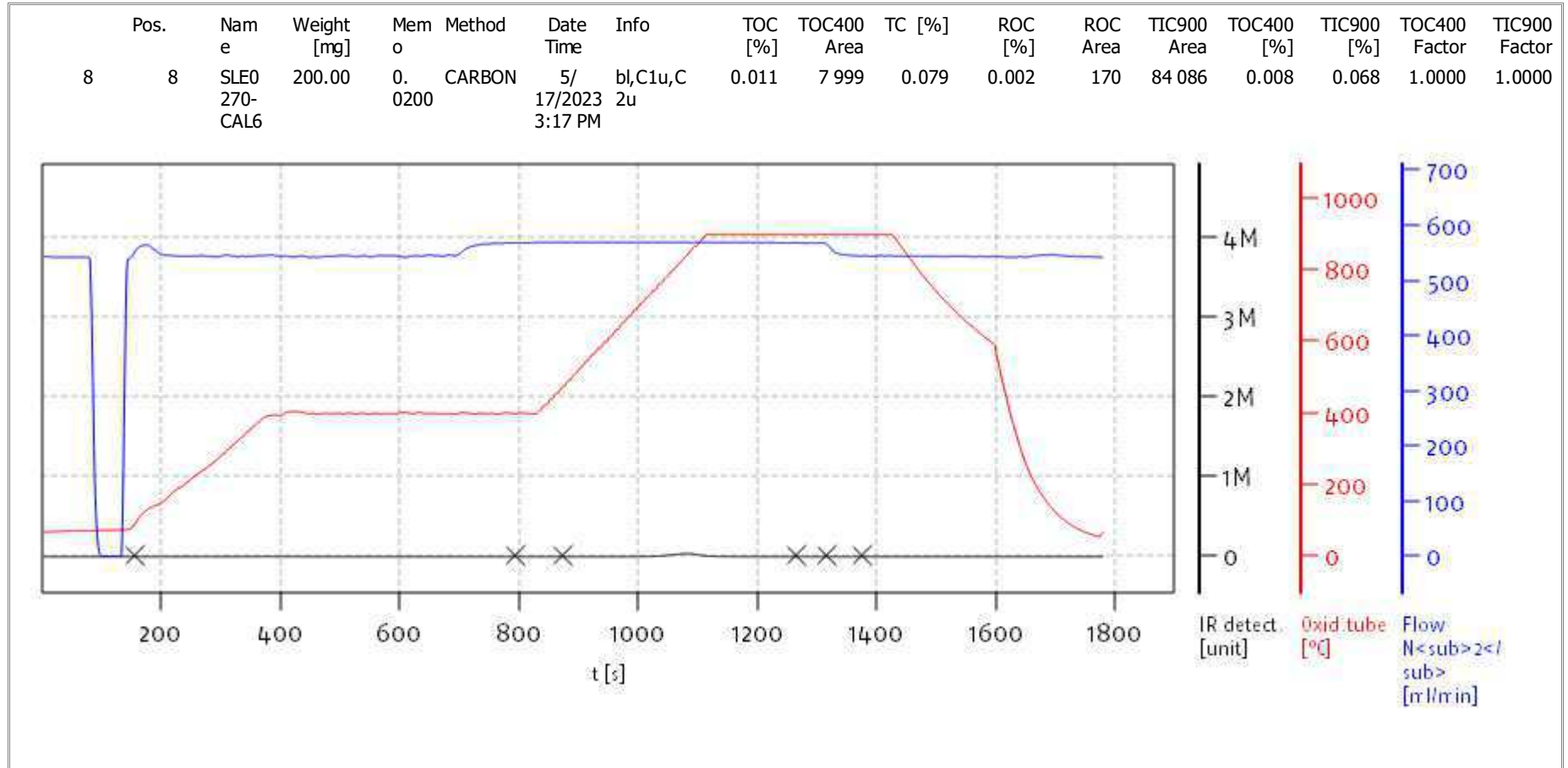
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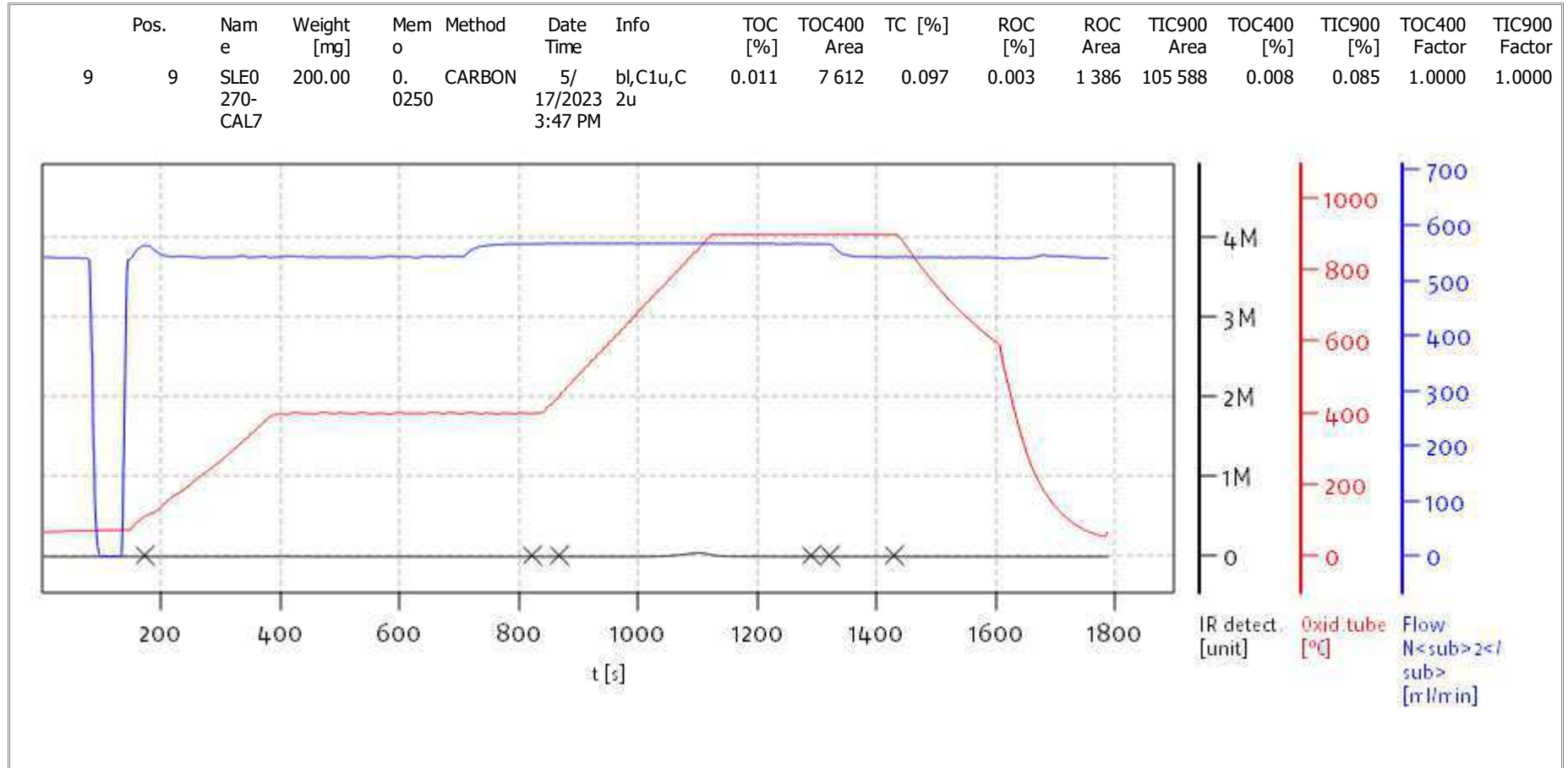
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Soli TOC Cube, Carbon  
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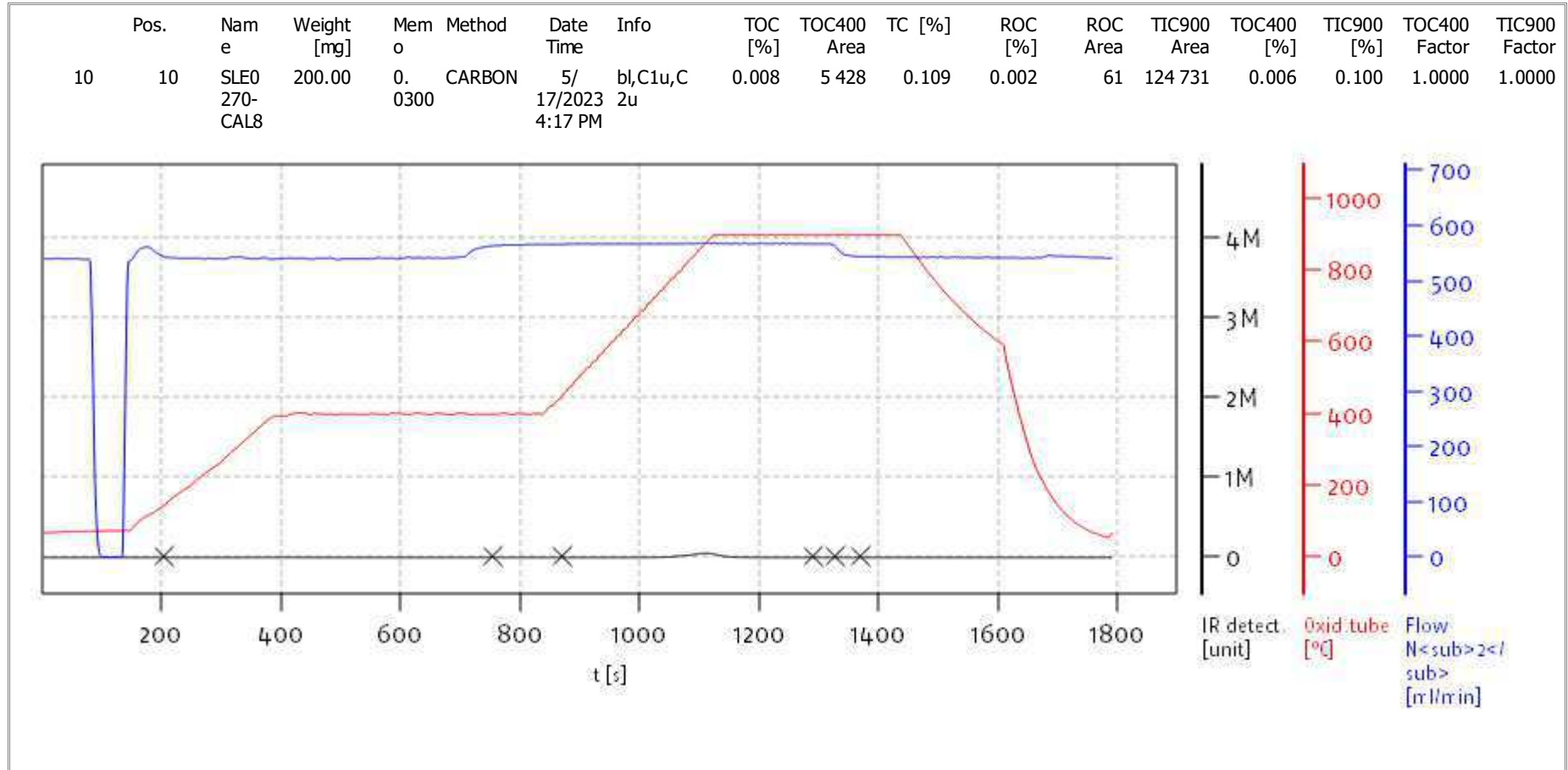


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Soli TOC Cube, Carbon  
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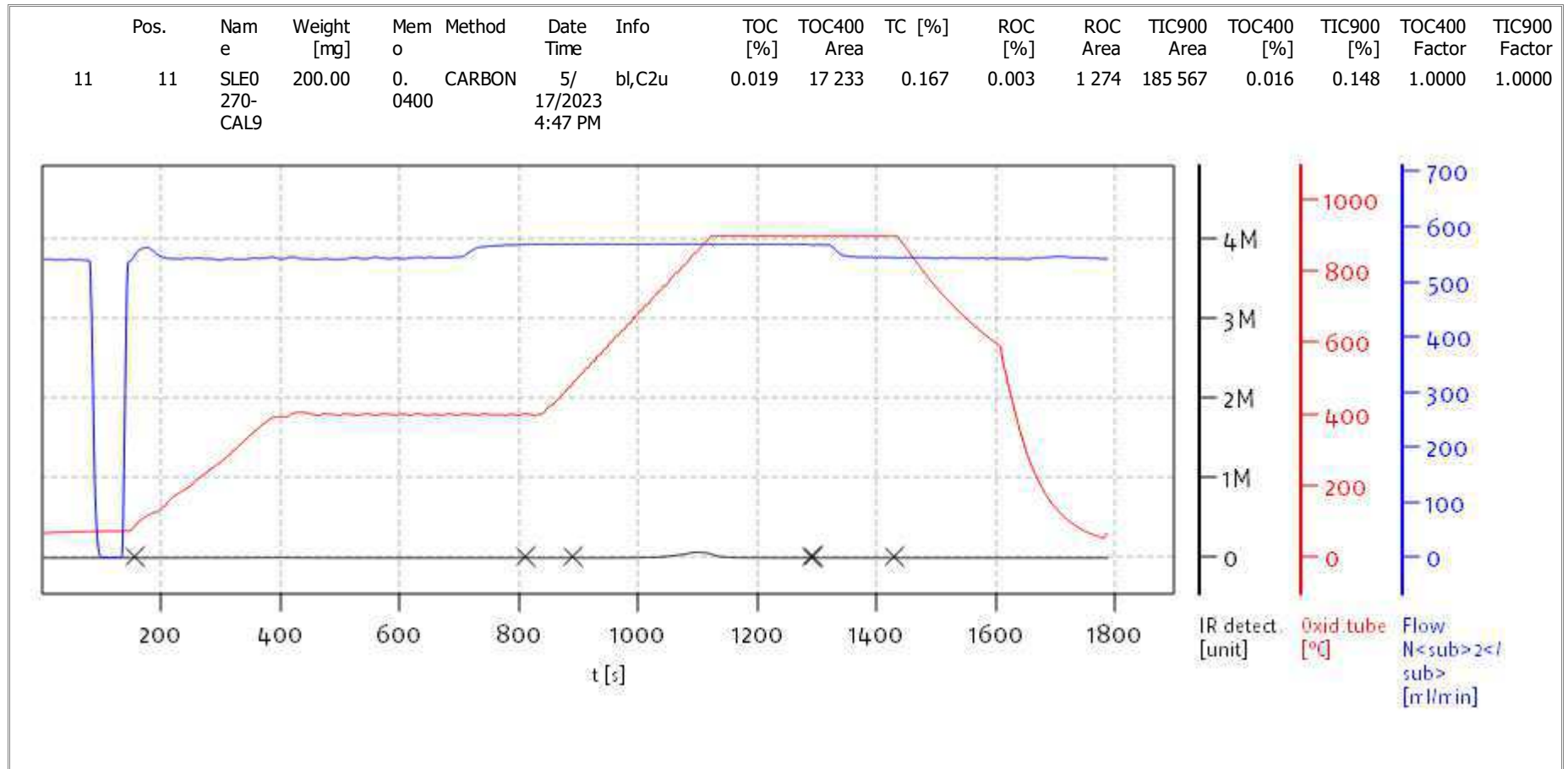
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
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Name:

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Date: Thu May 18 09:43:39 2023

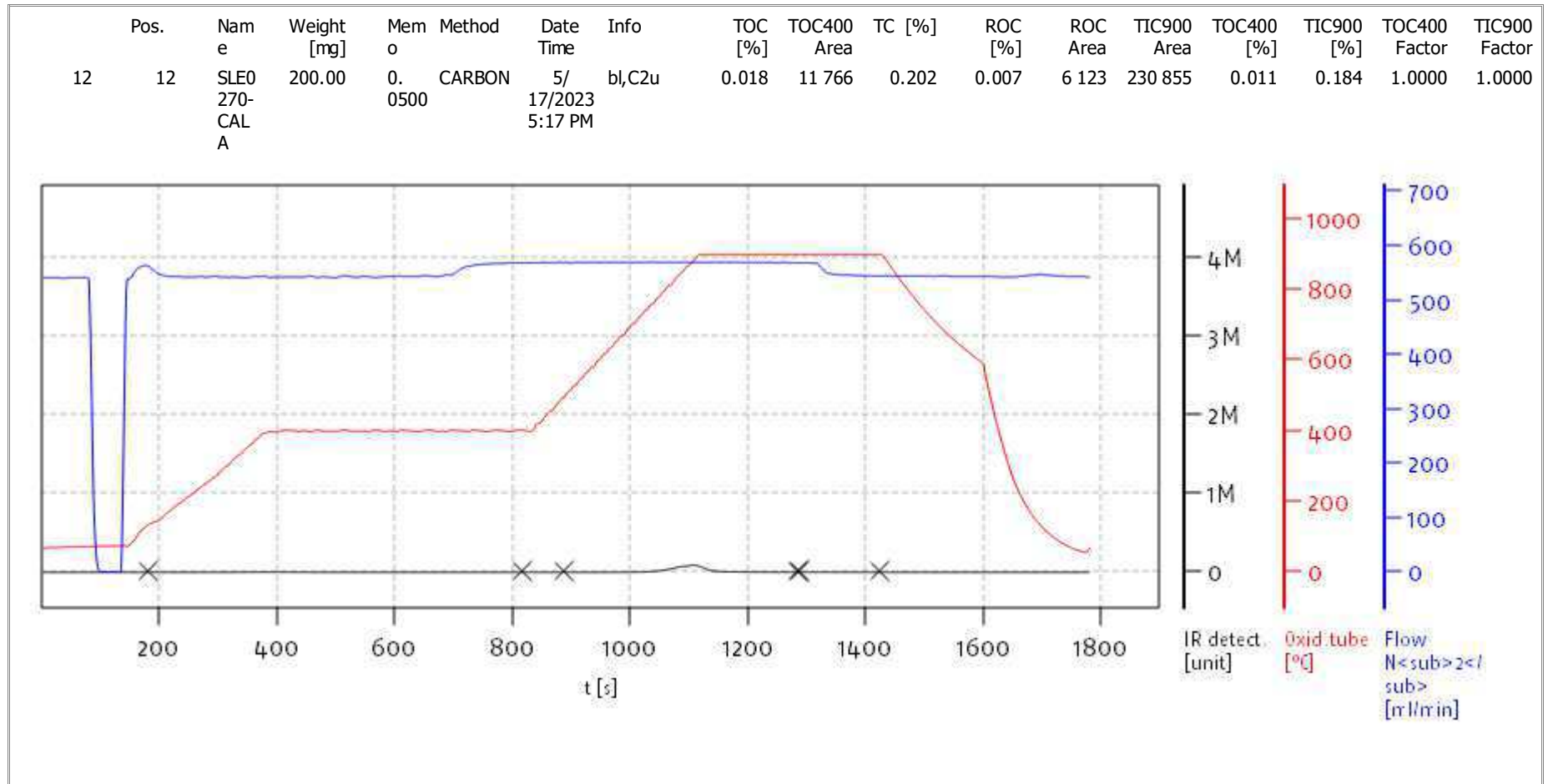


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Serial No: 0300.181017  
Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
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Name:

Access: solITOC superuser

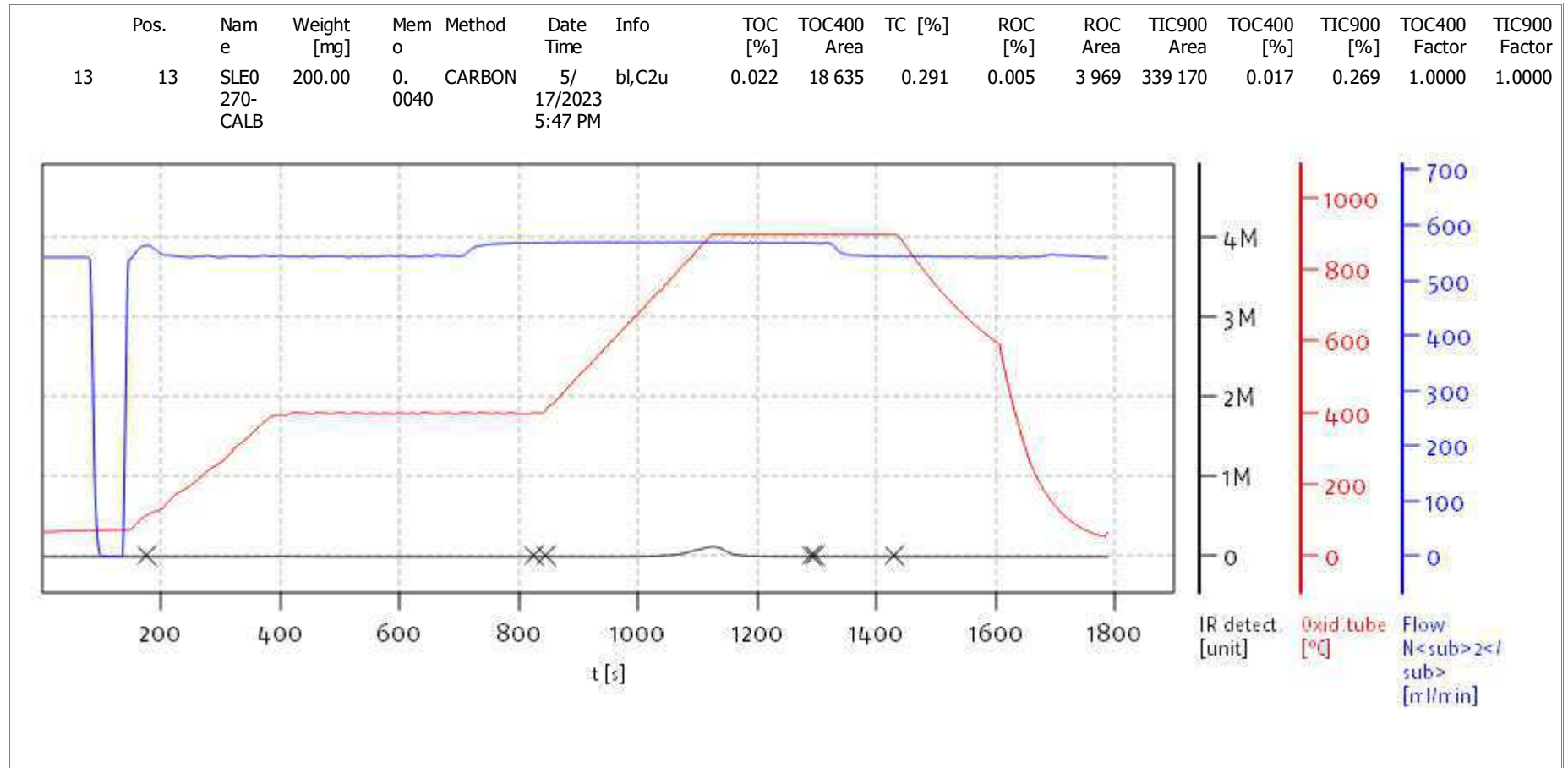
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Soli TOC Cube, Carbon  
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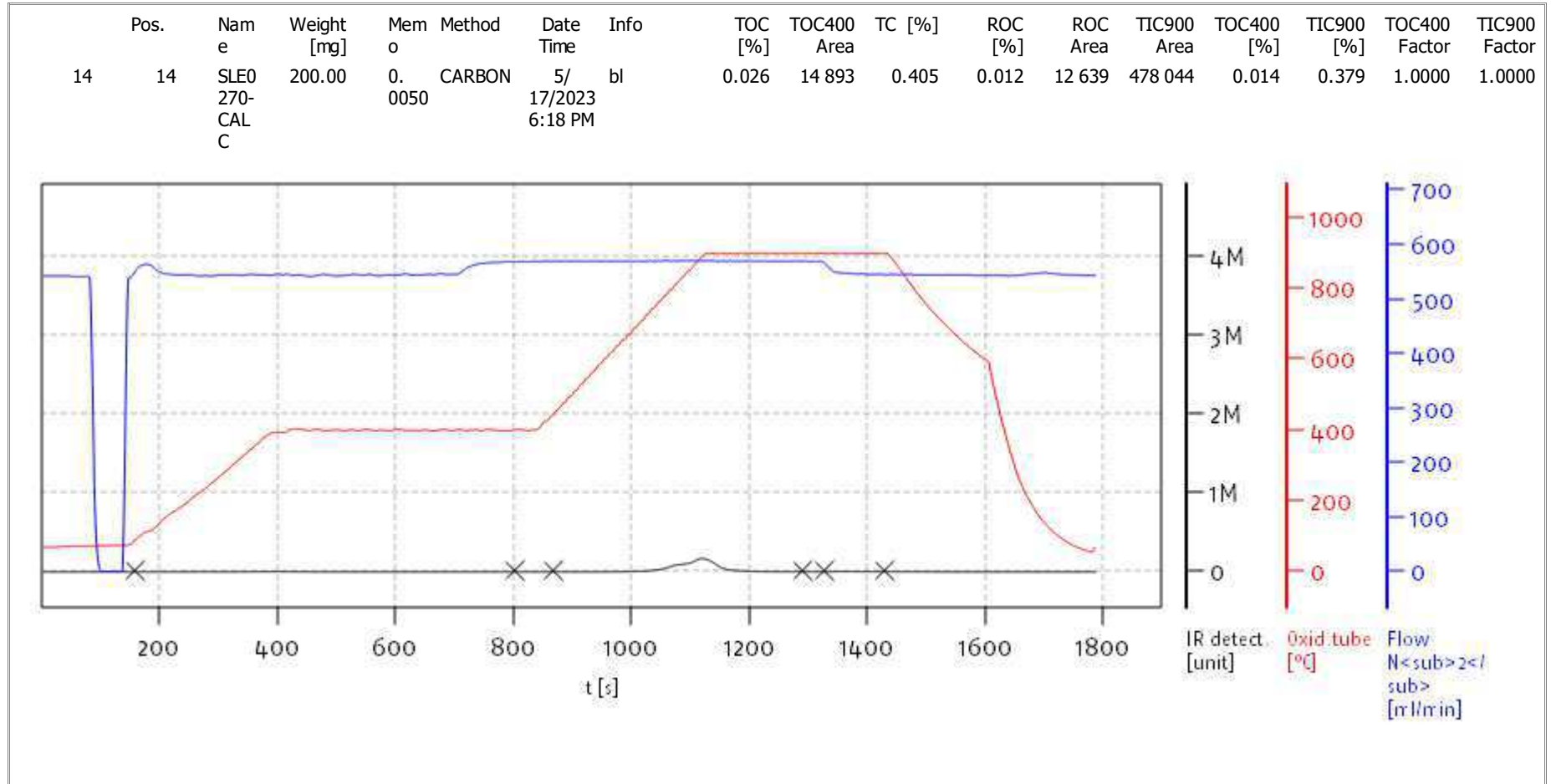
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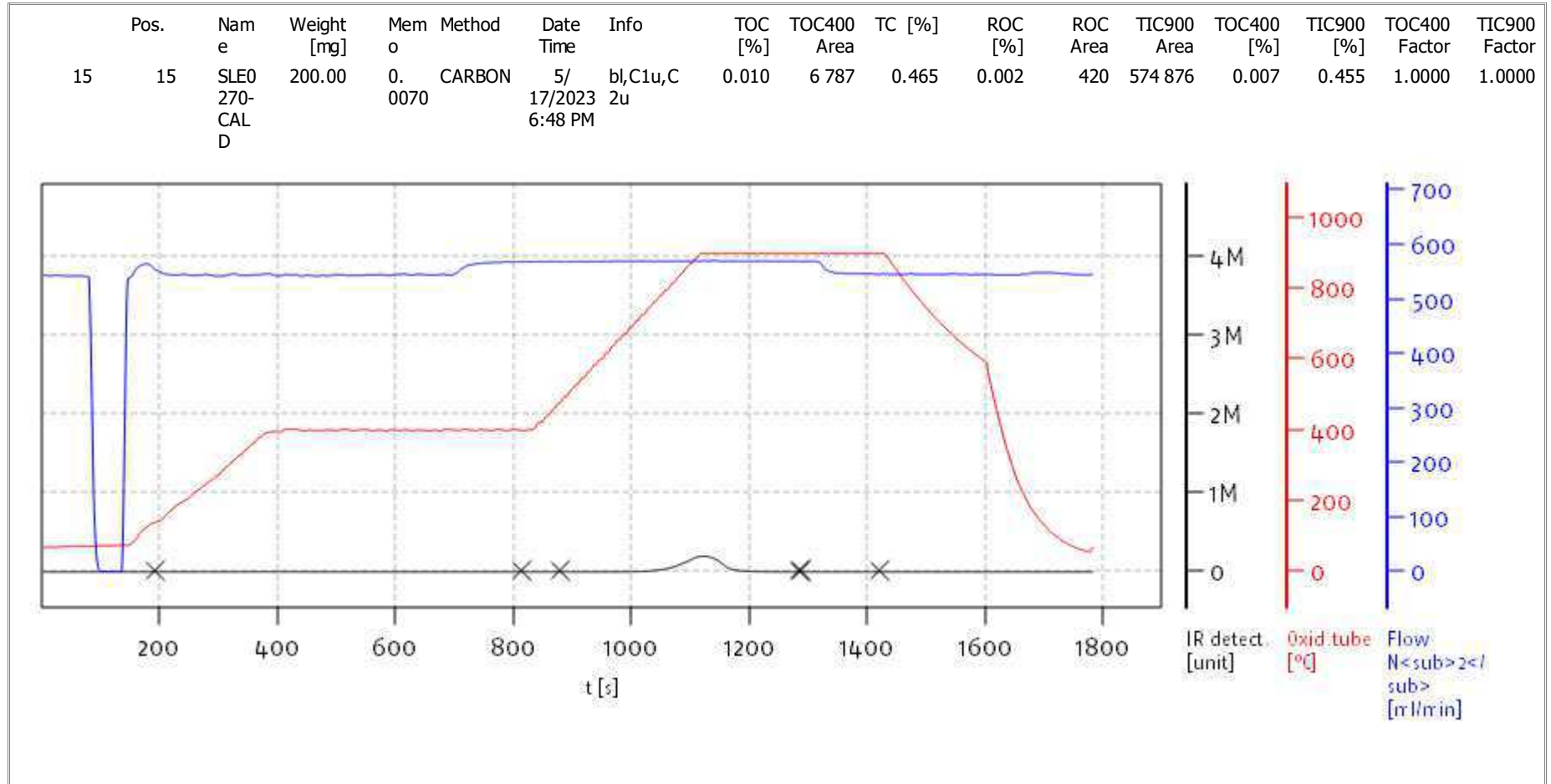
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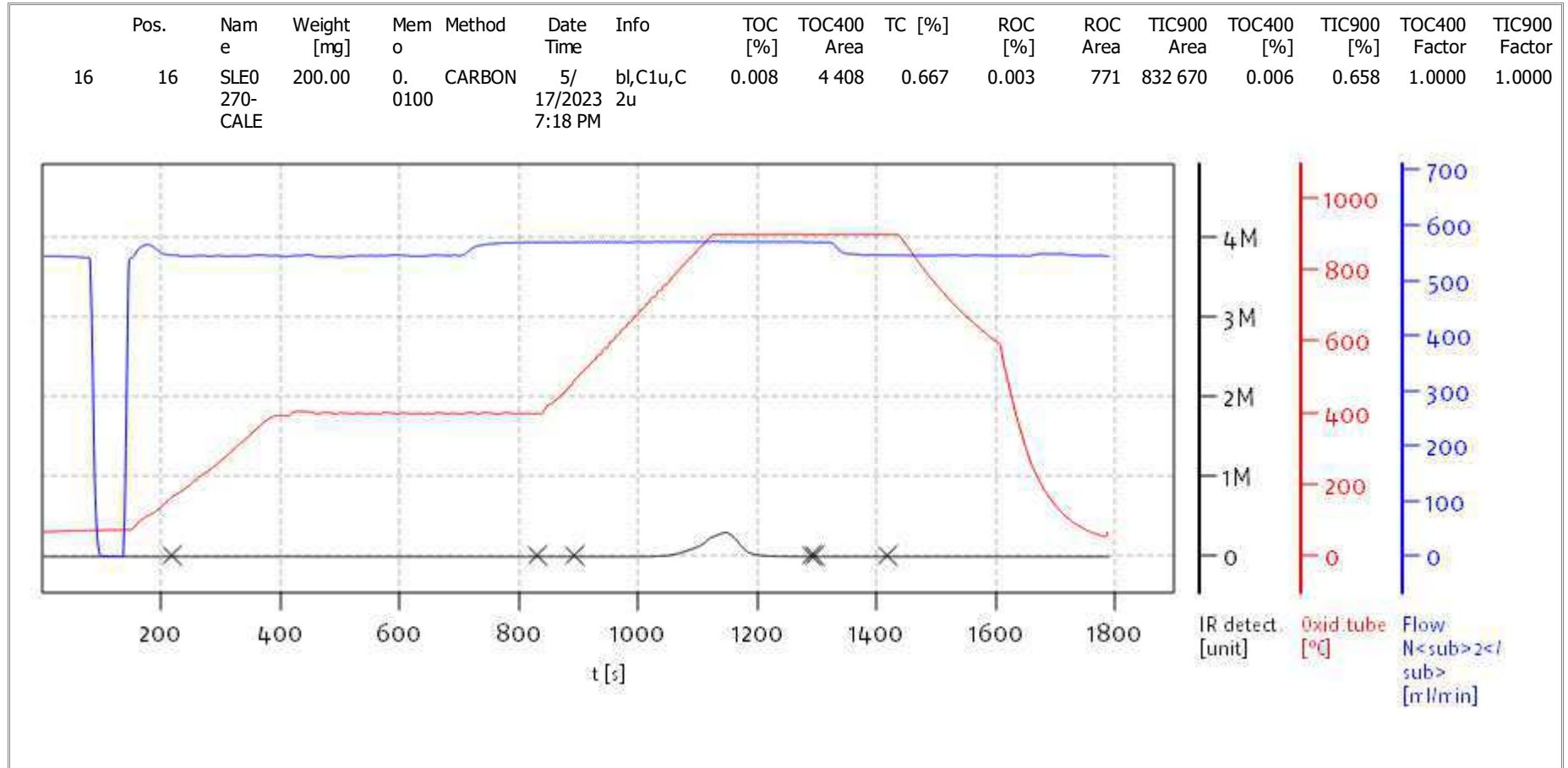
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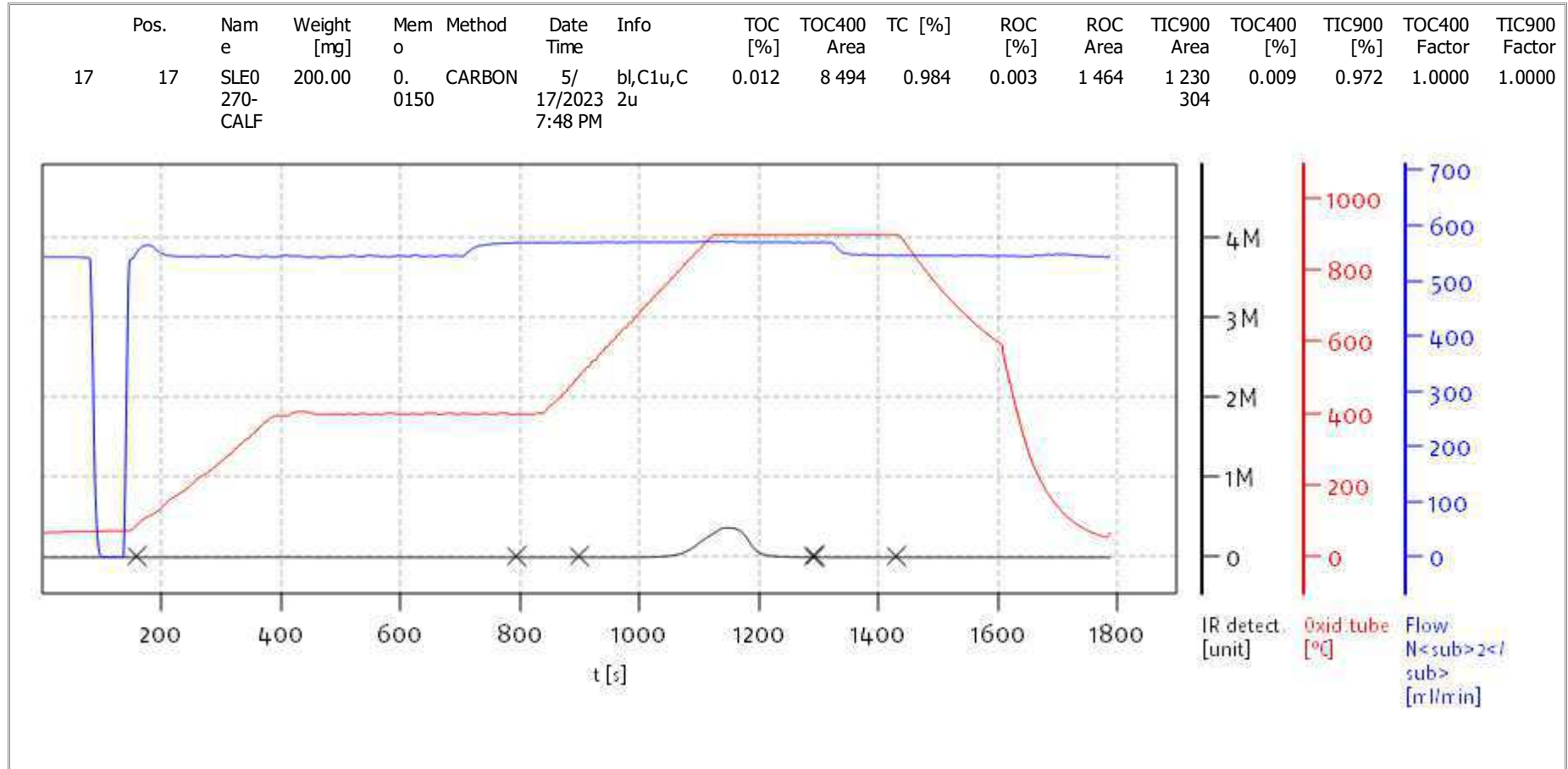
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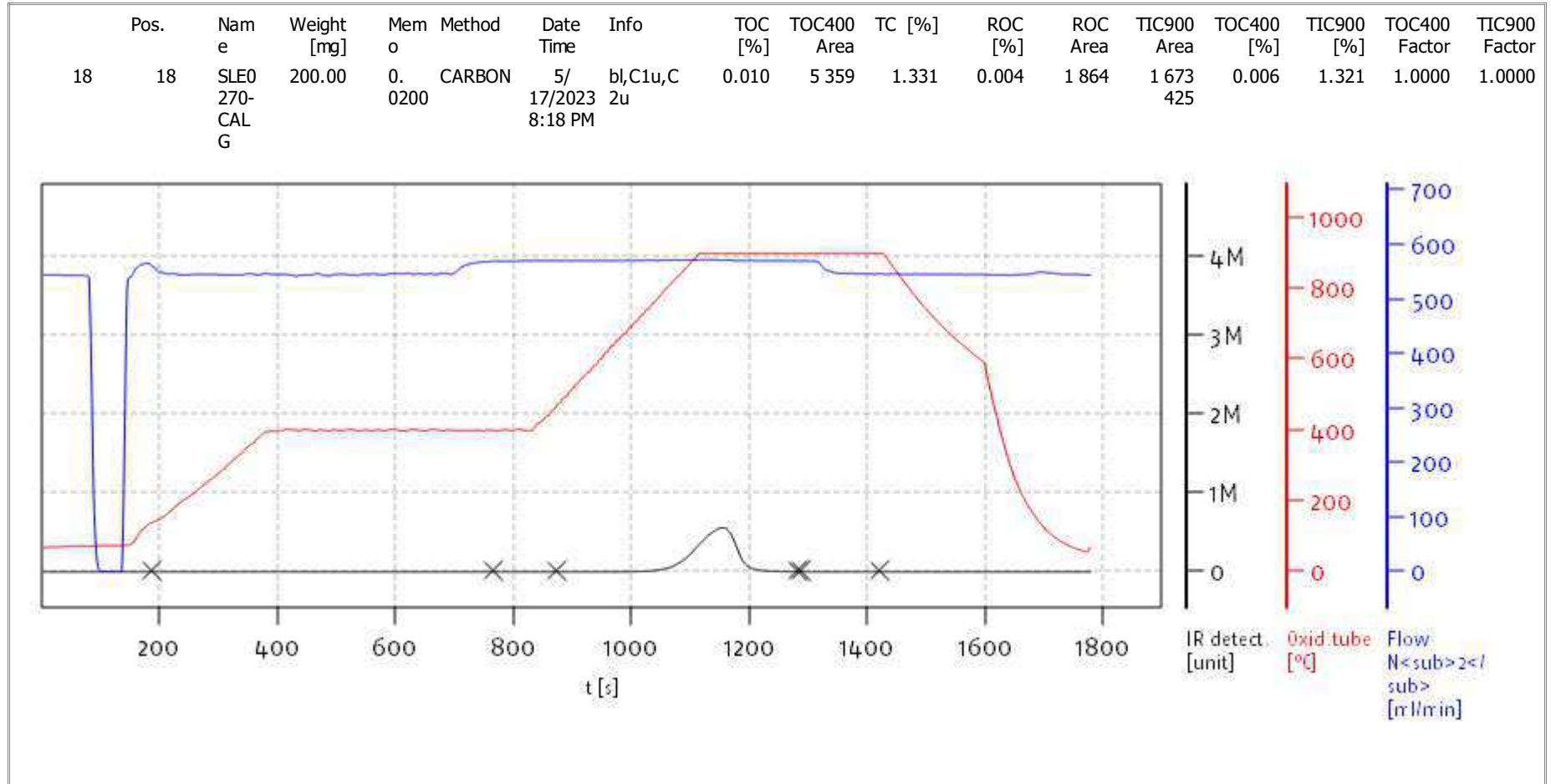


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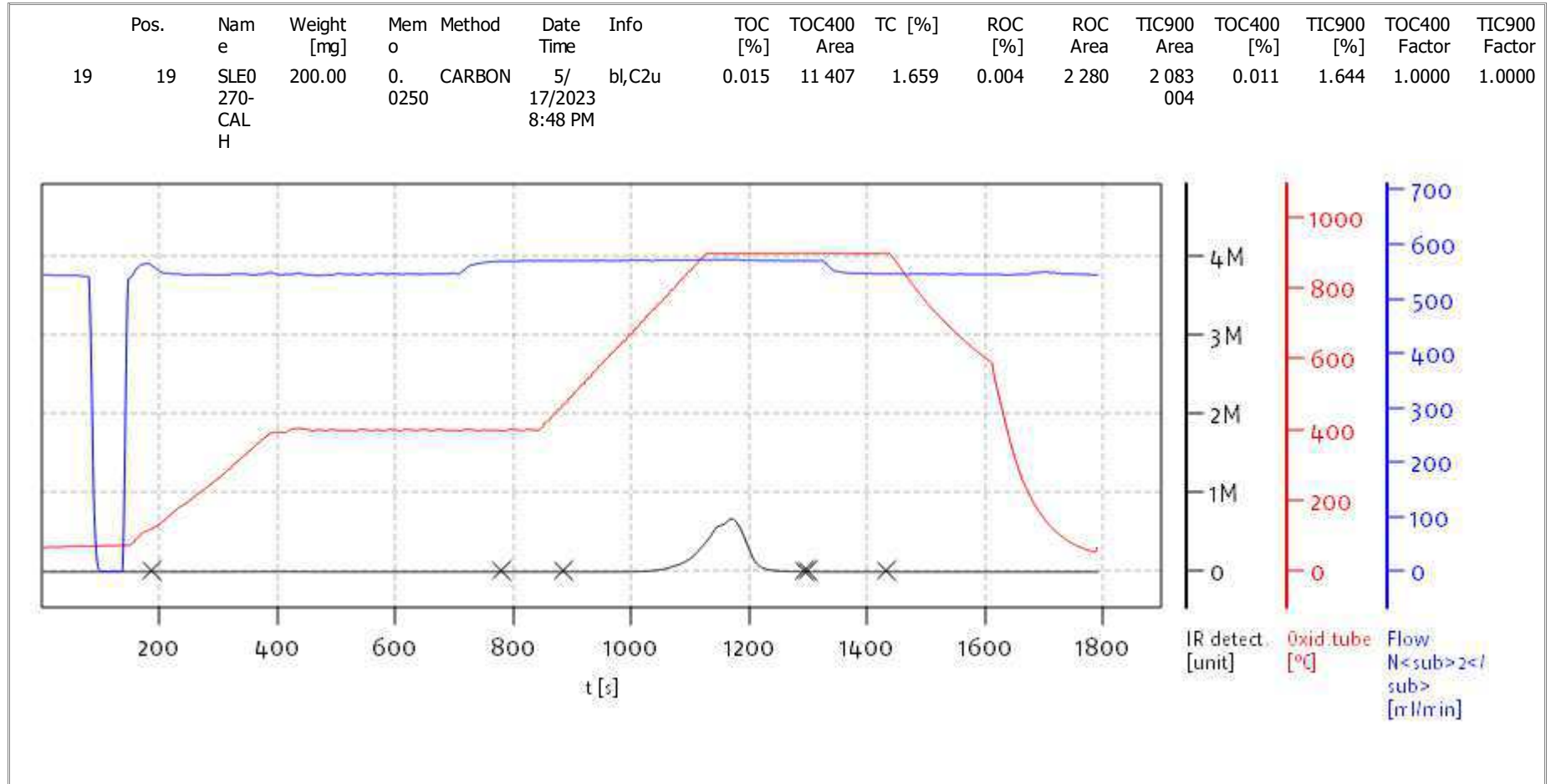
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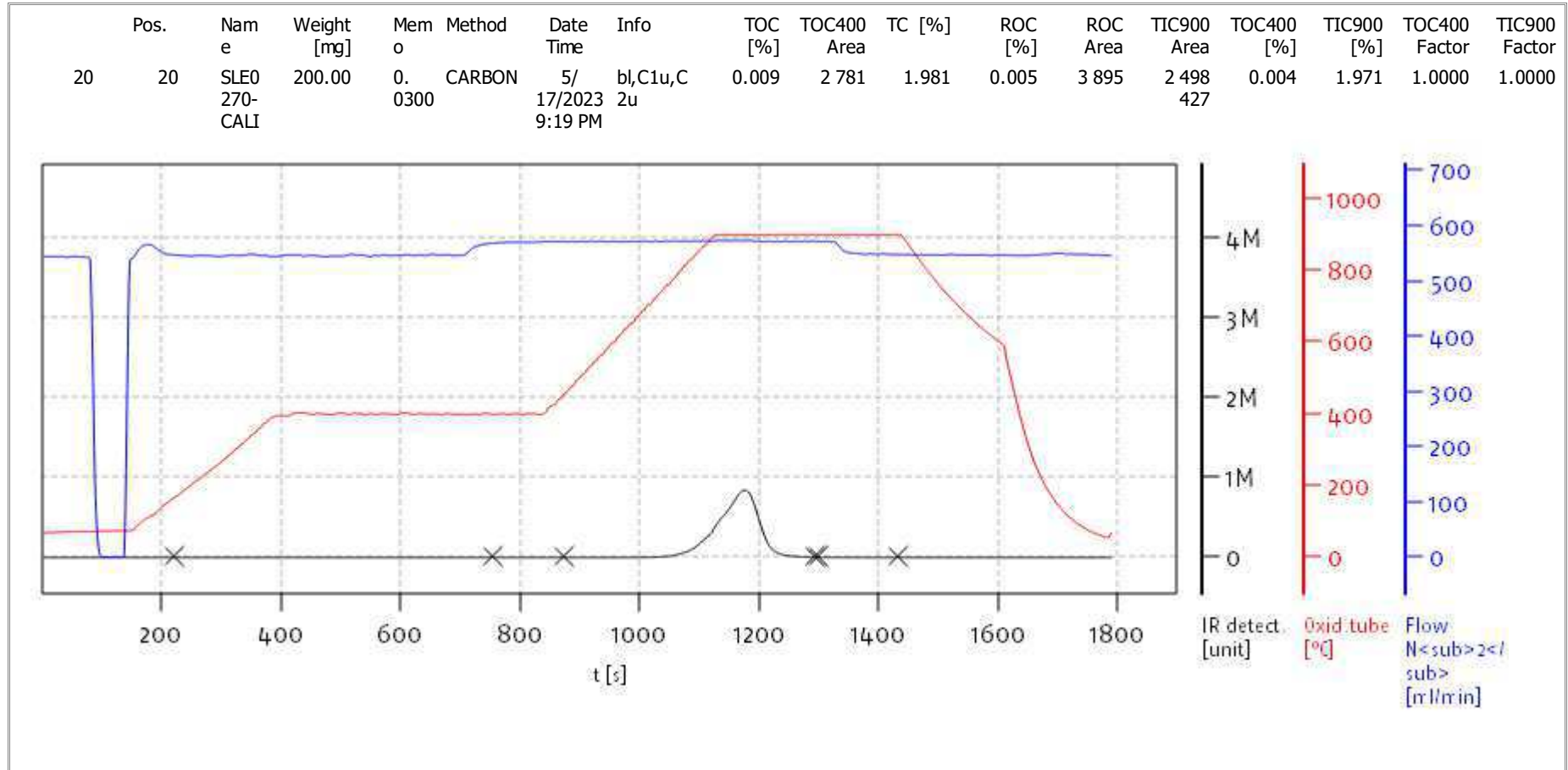


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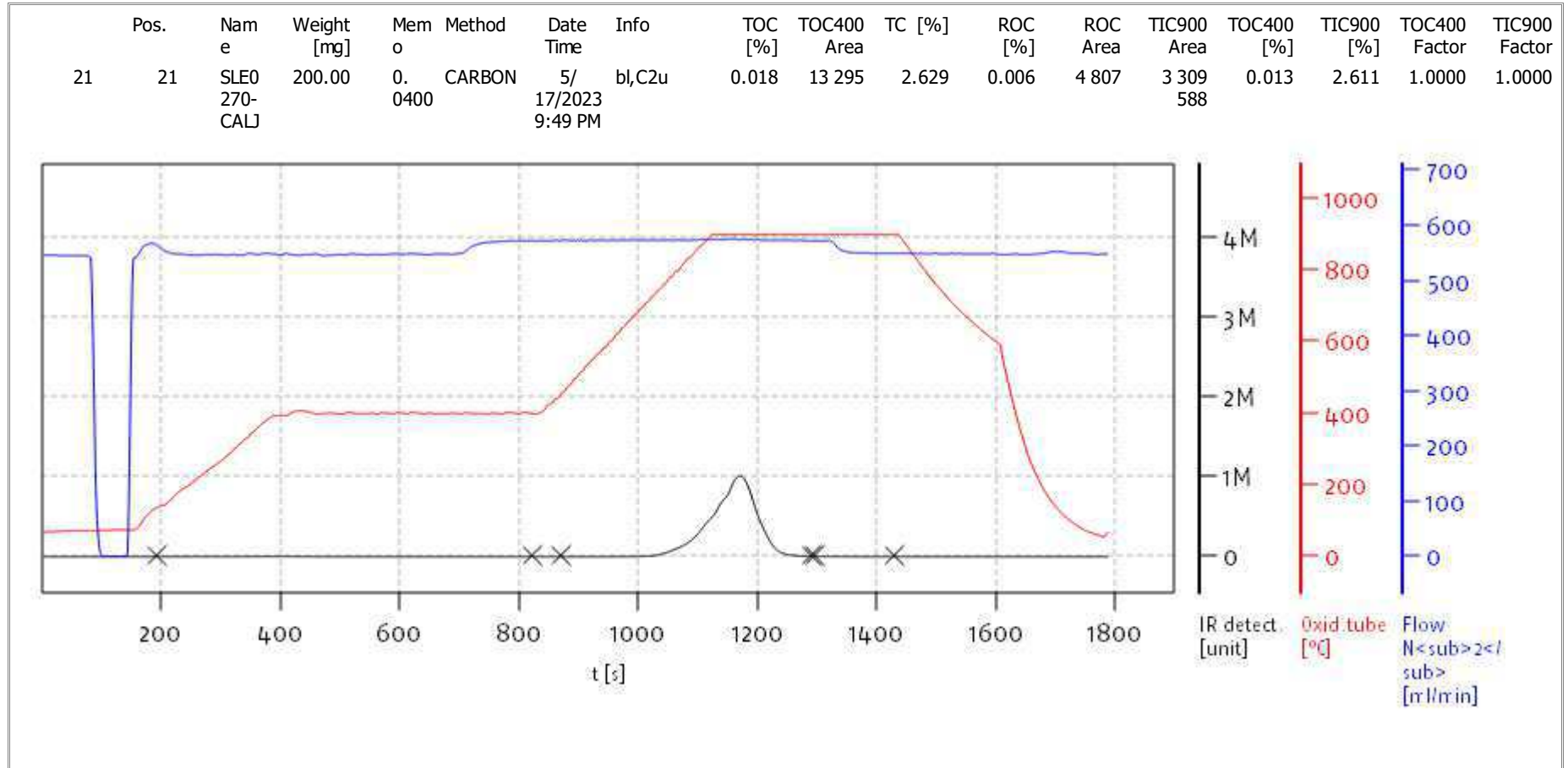
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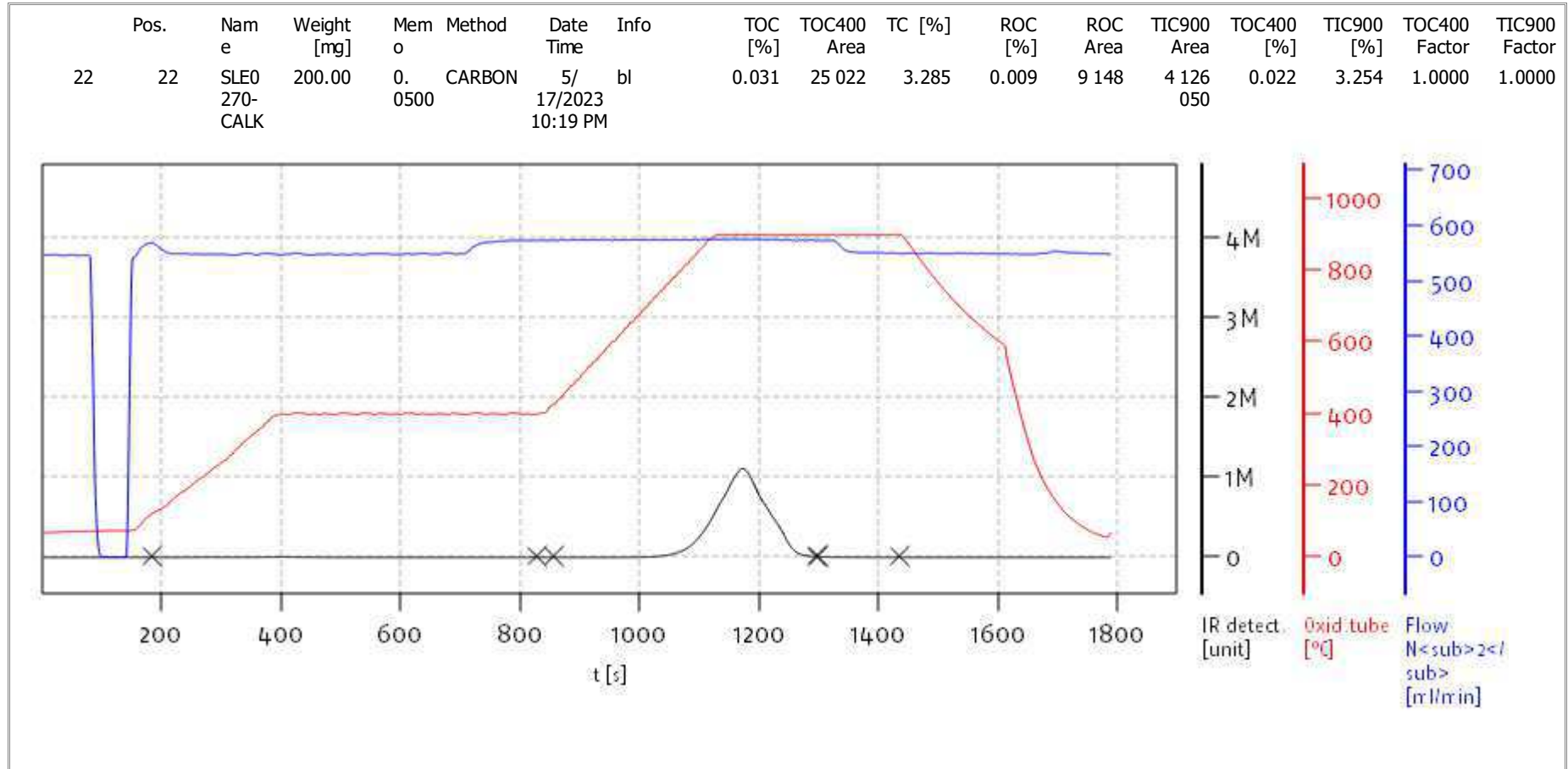
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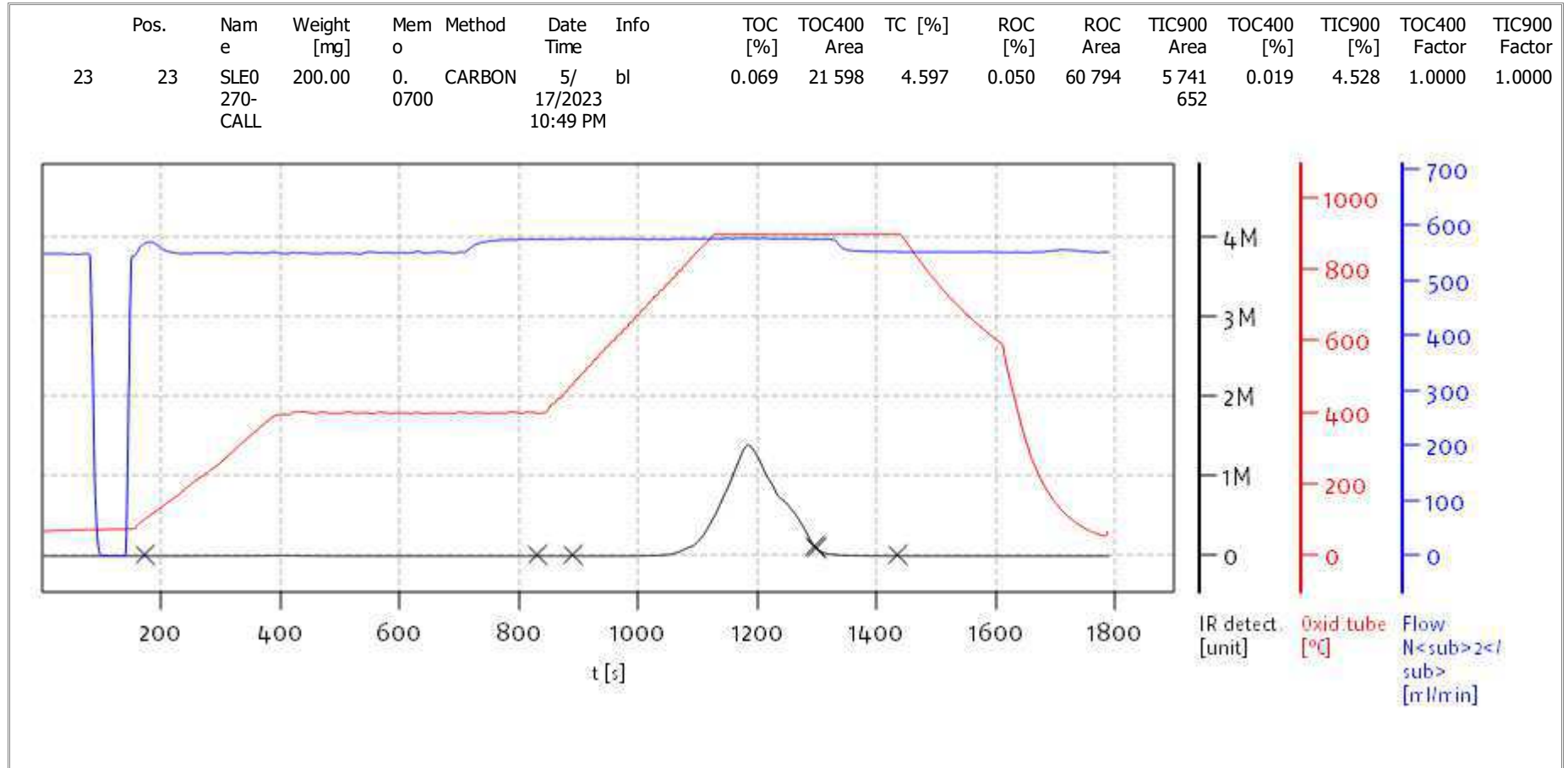
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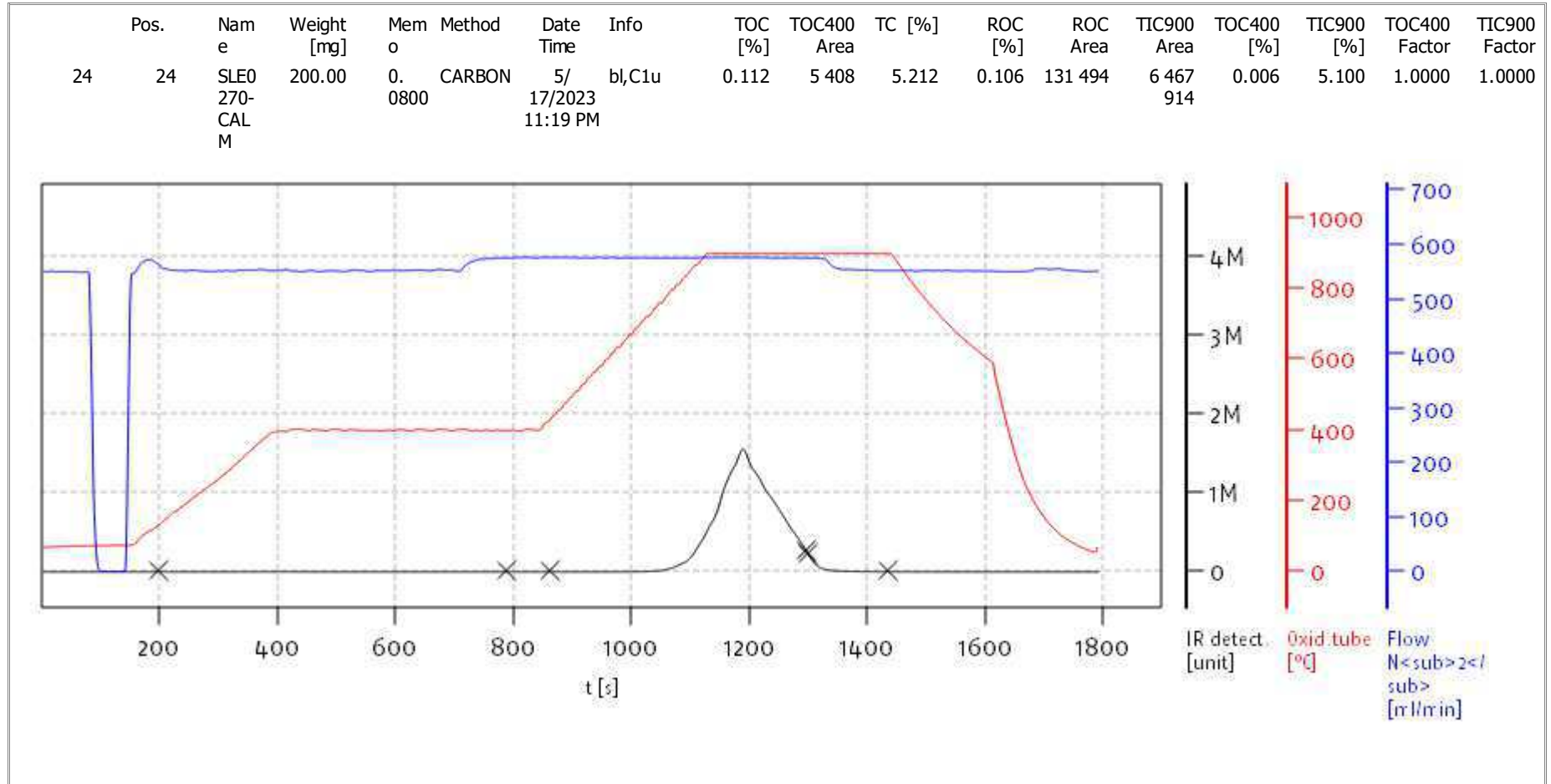
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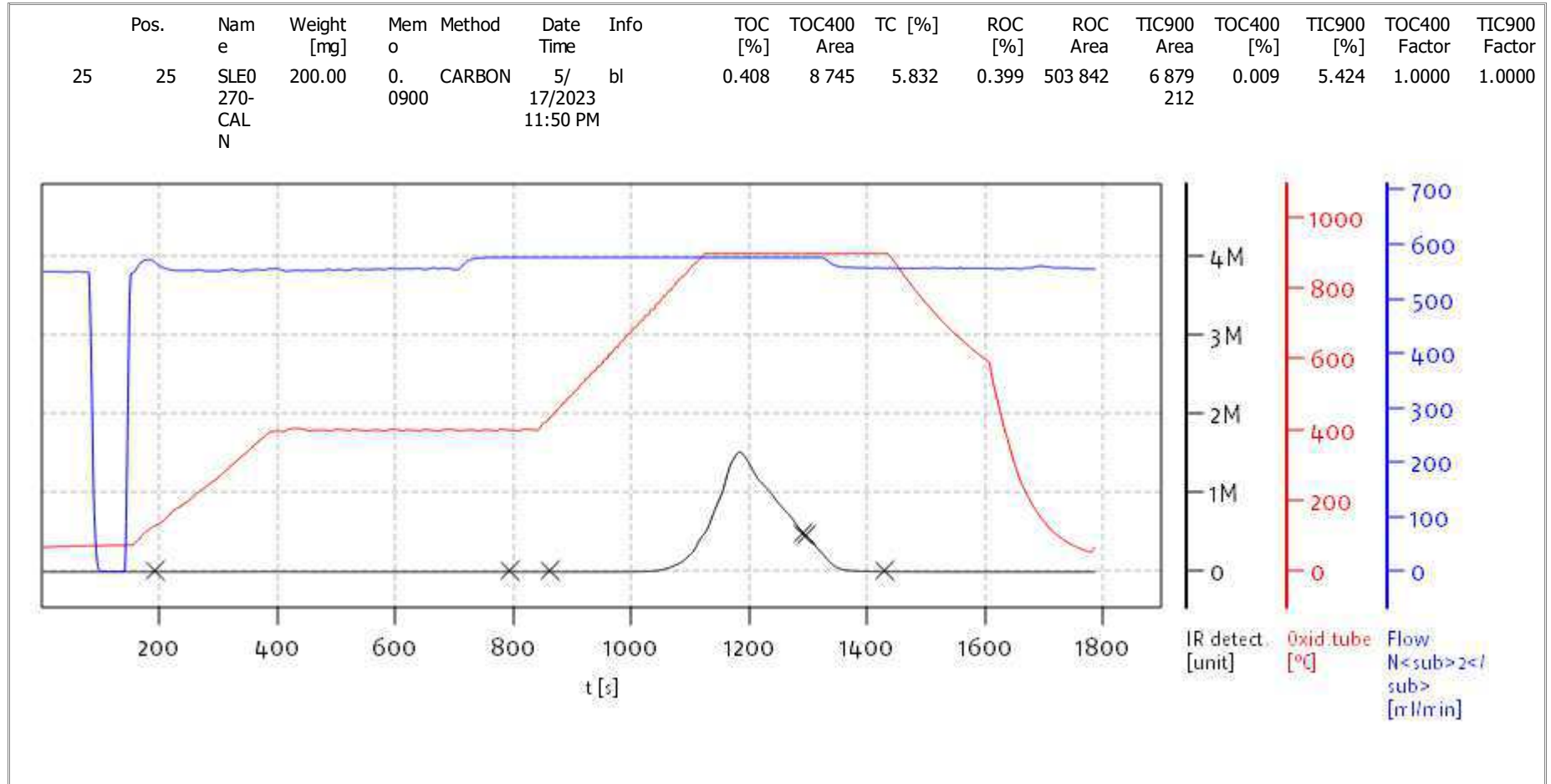
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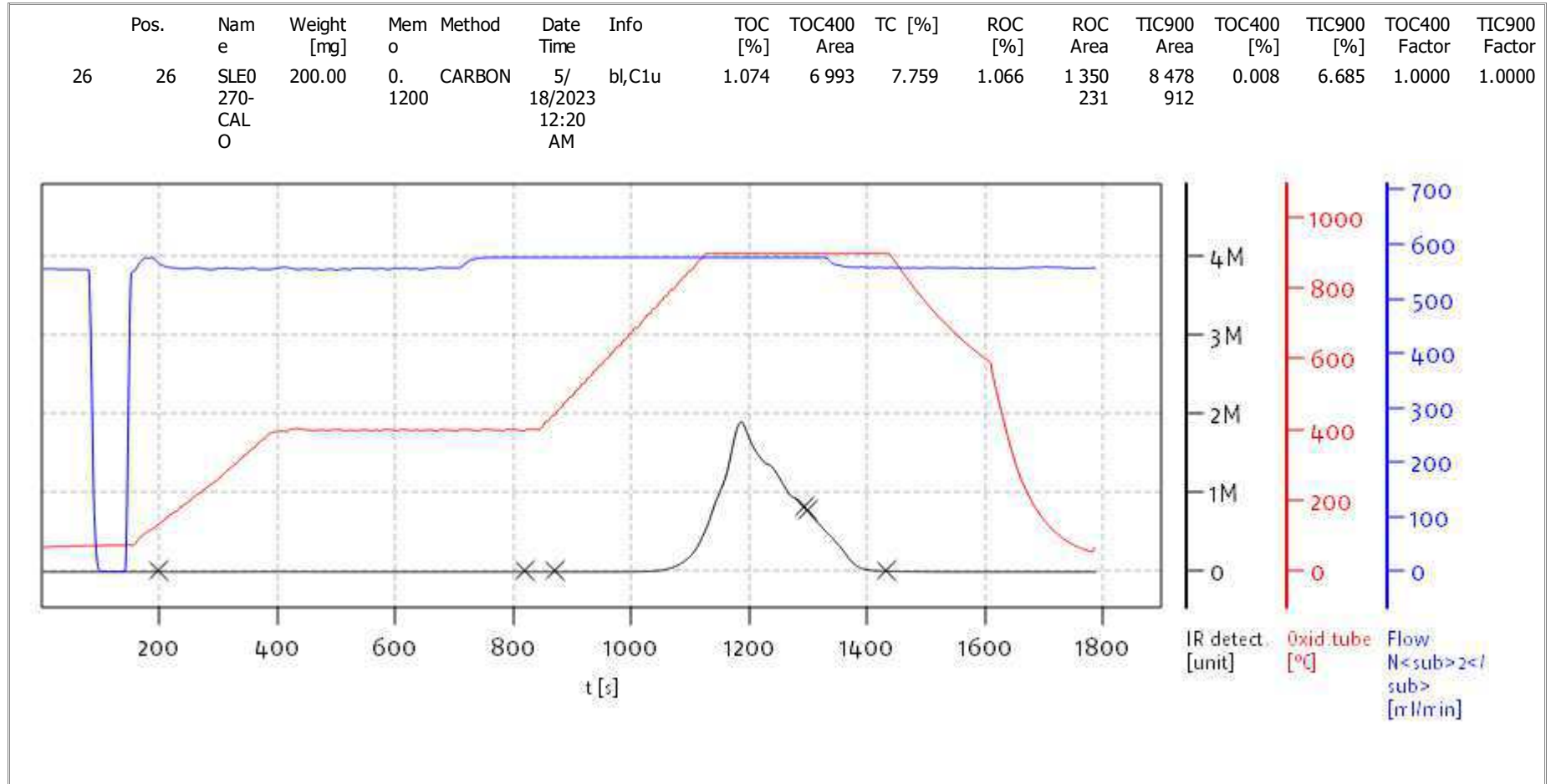


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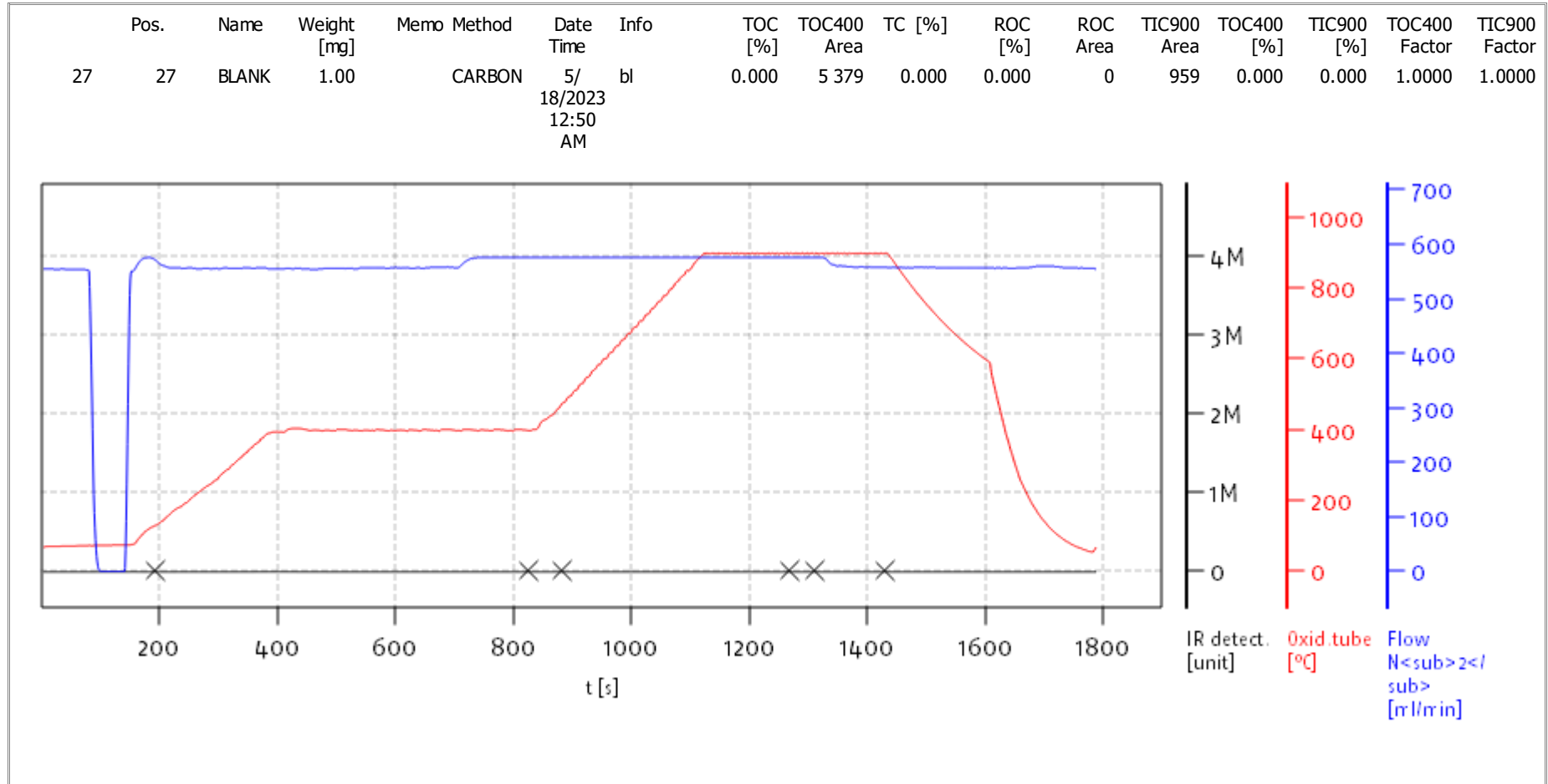
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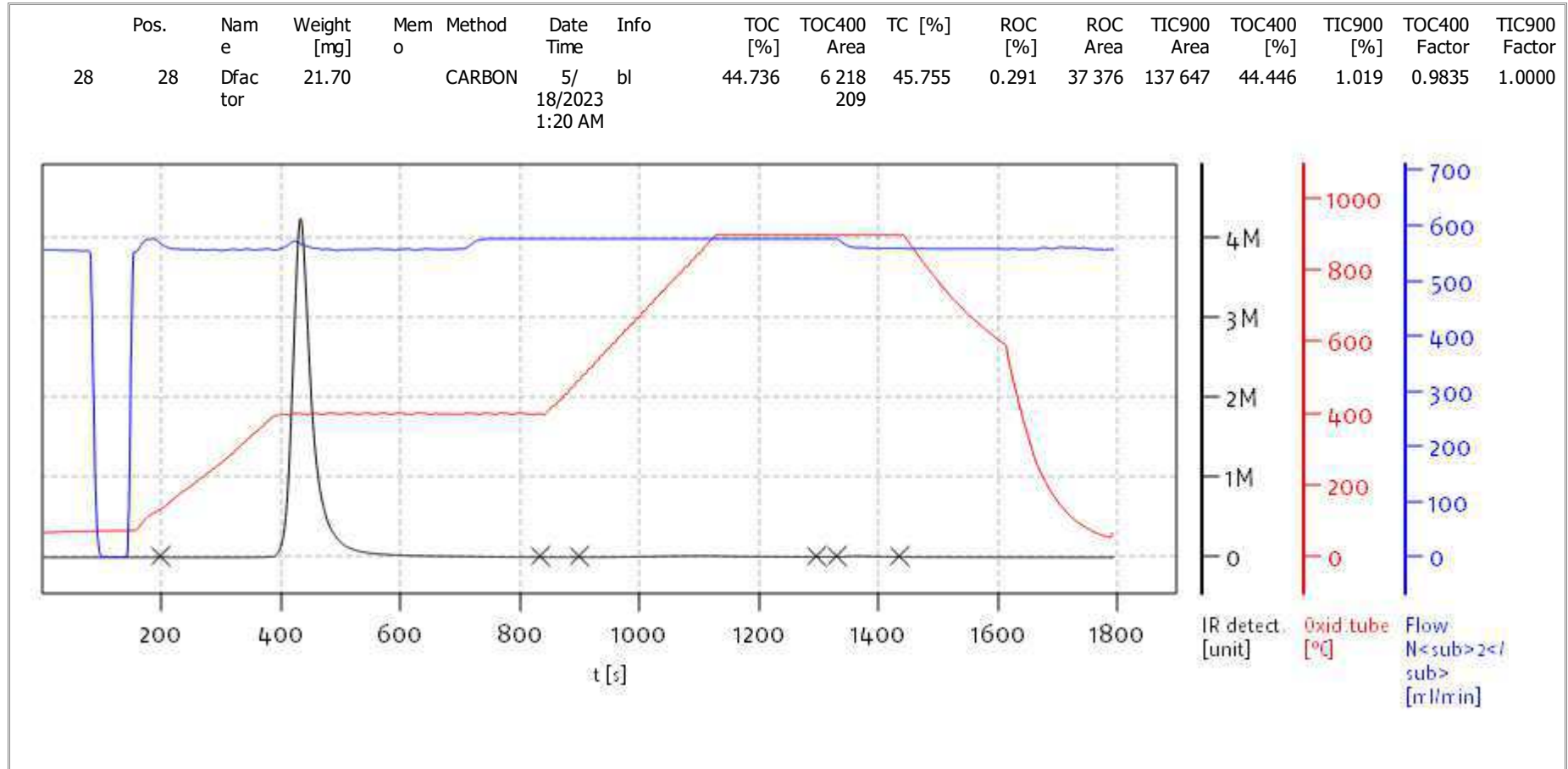


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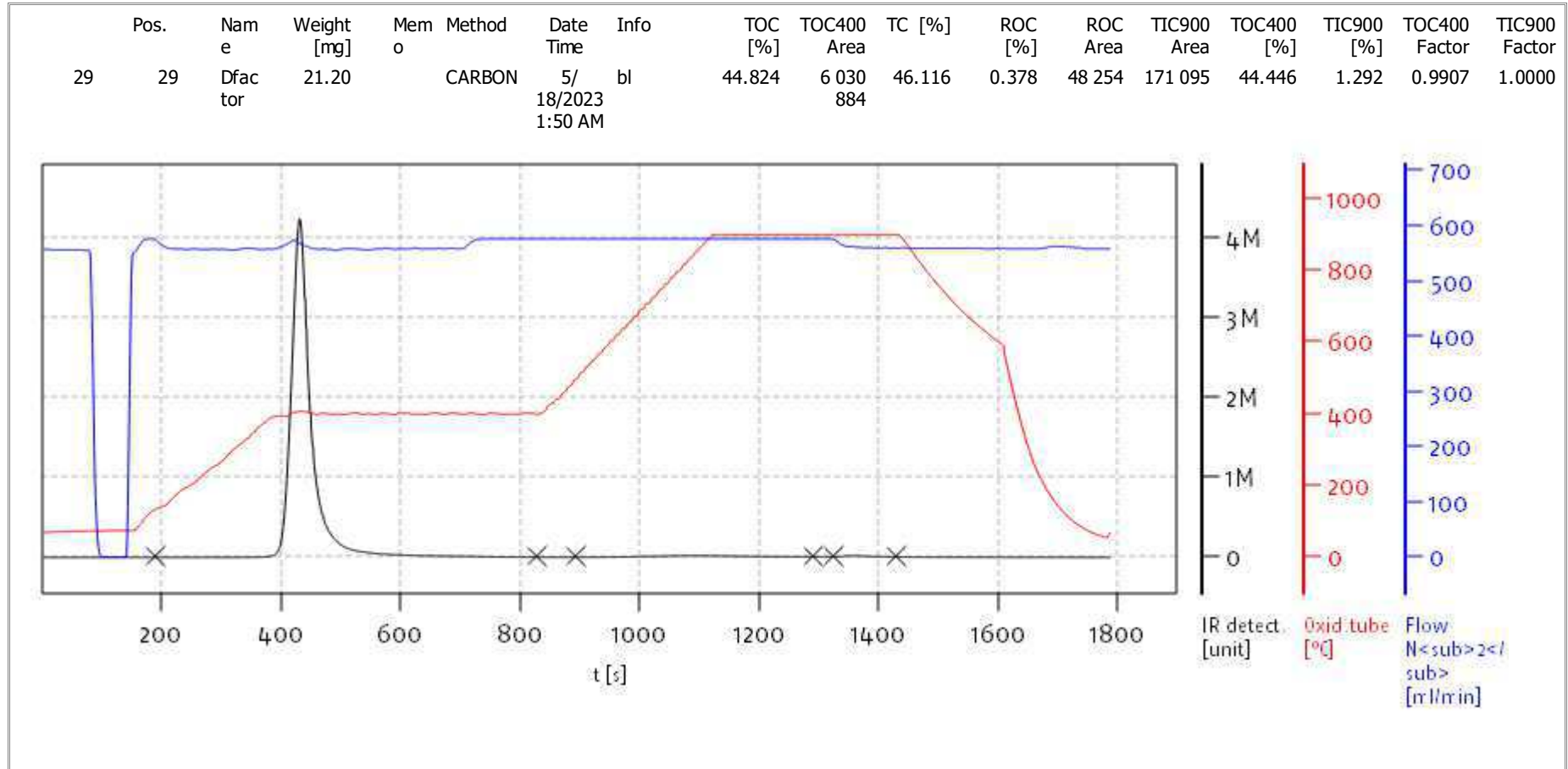
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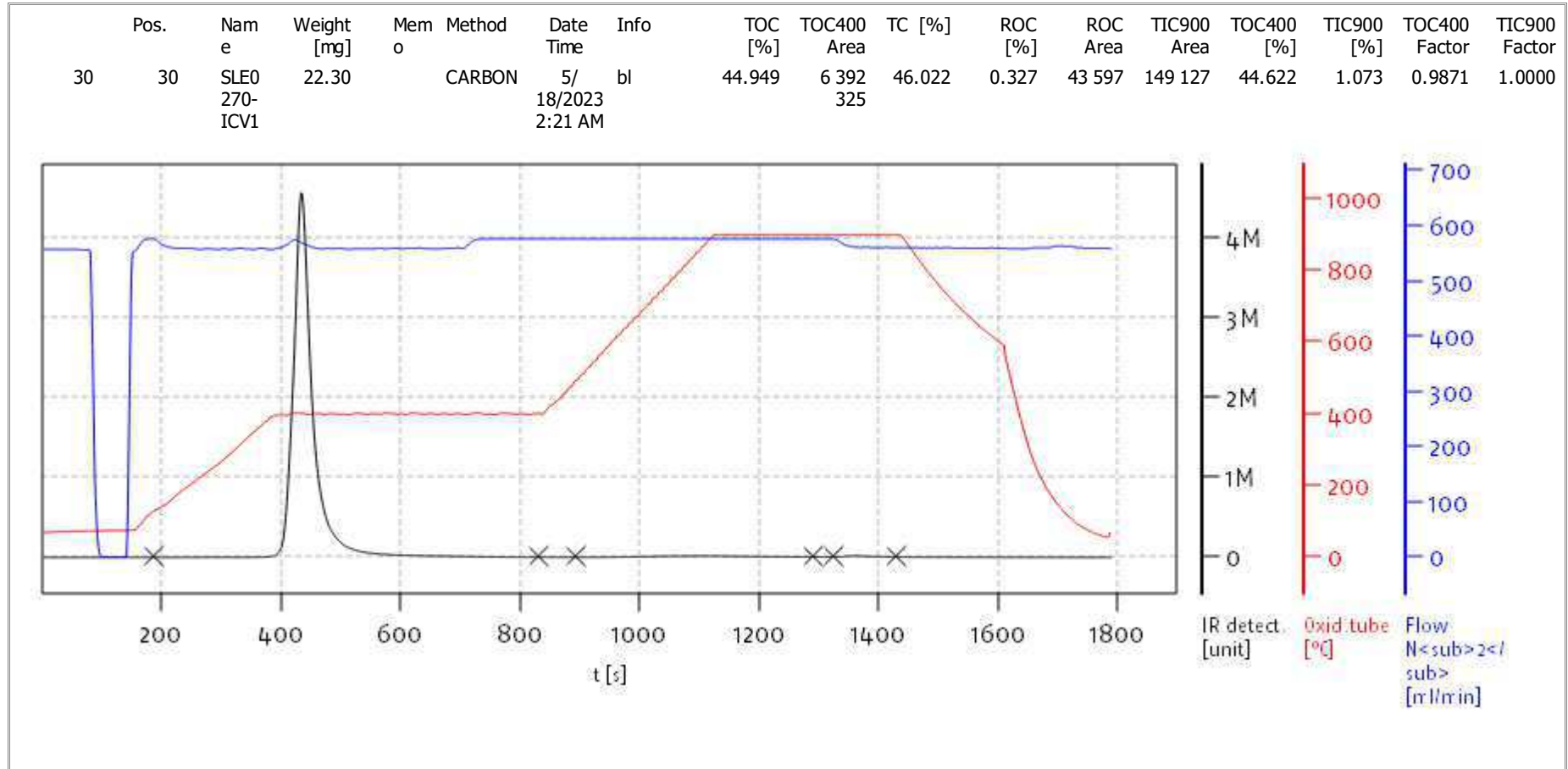
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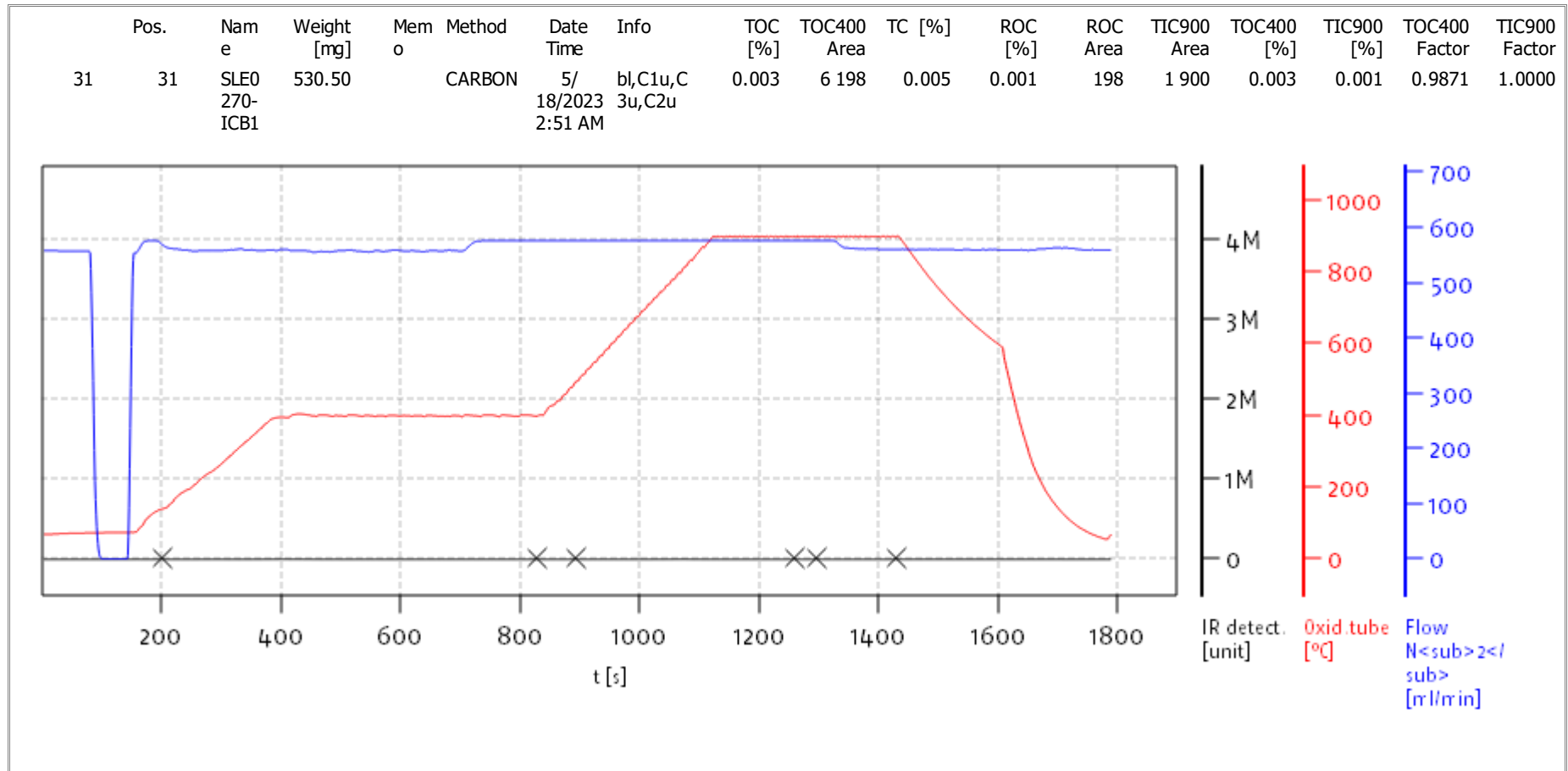
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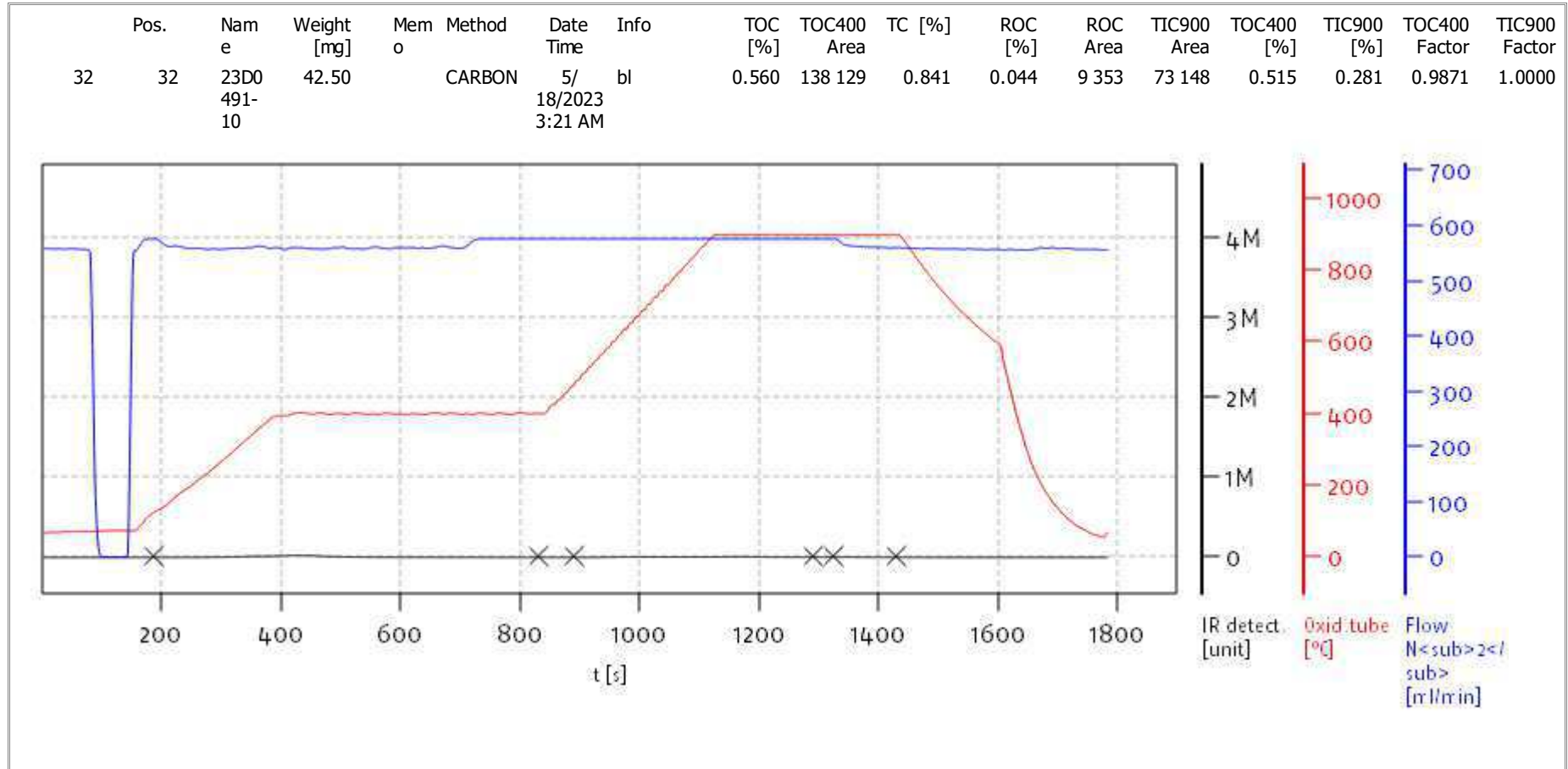
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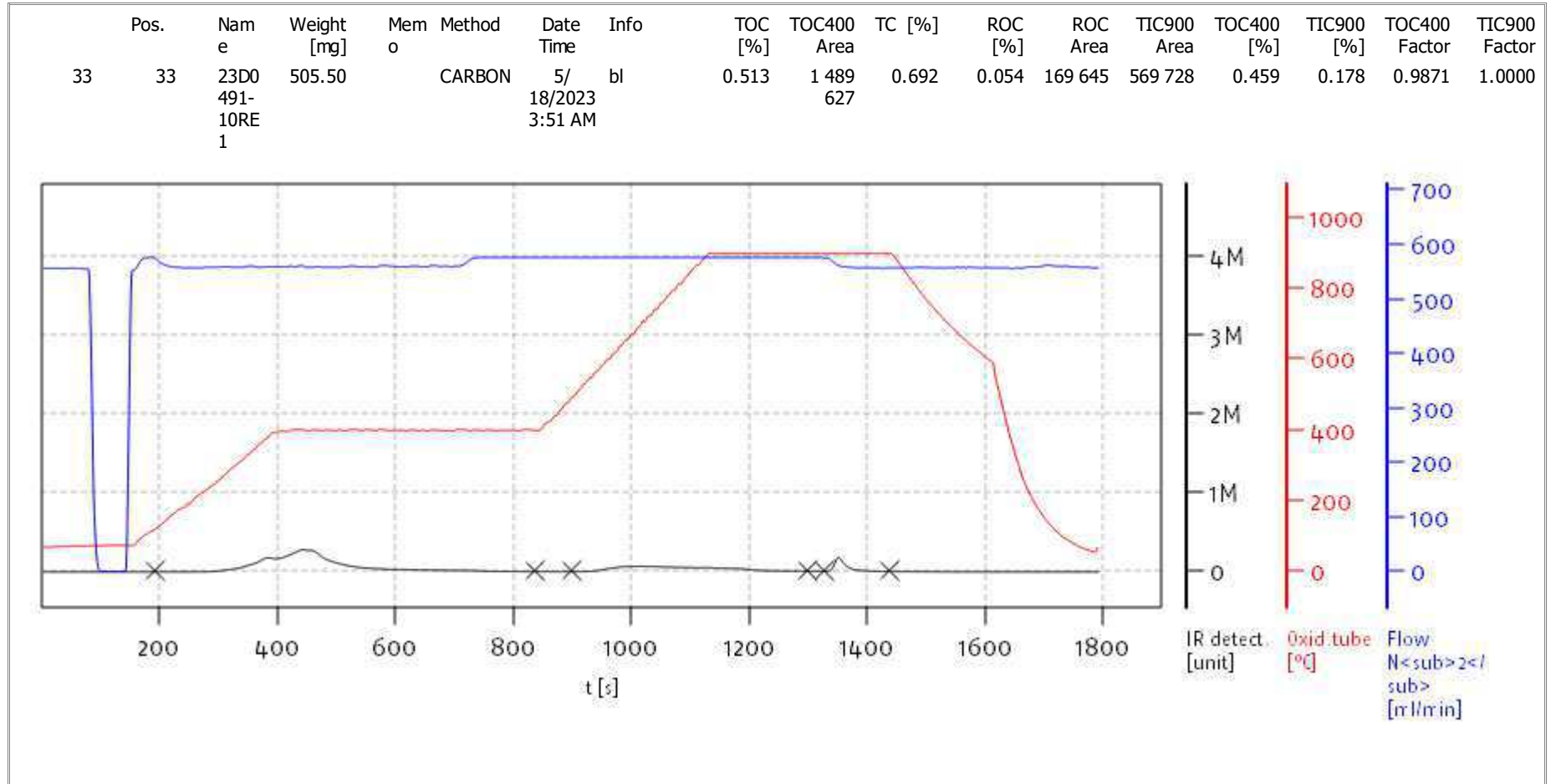
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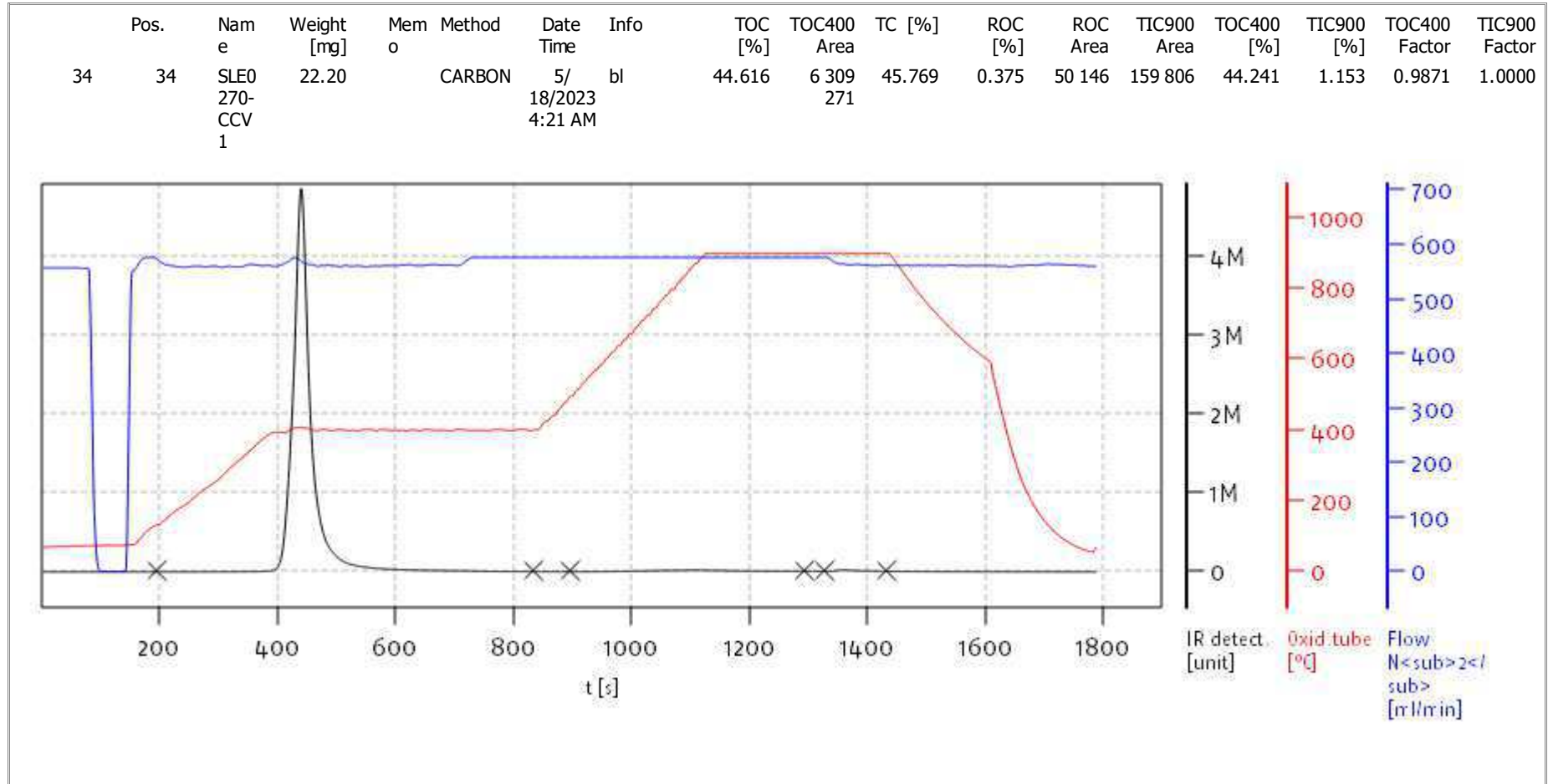


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Name:

Access: solITOC superuser

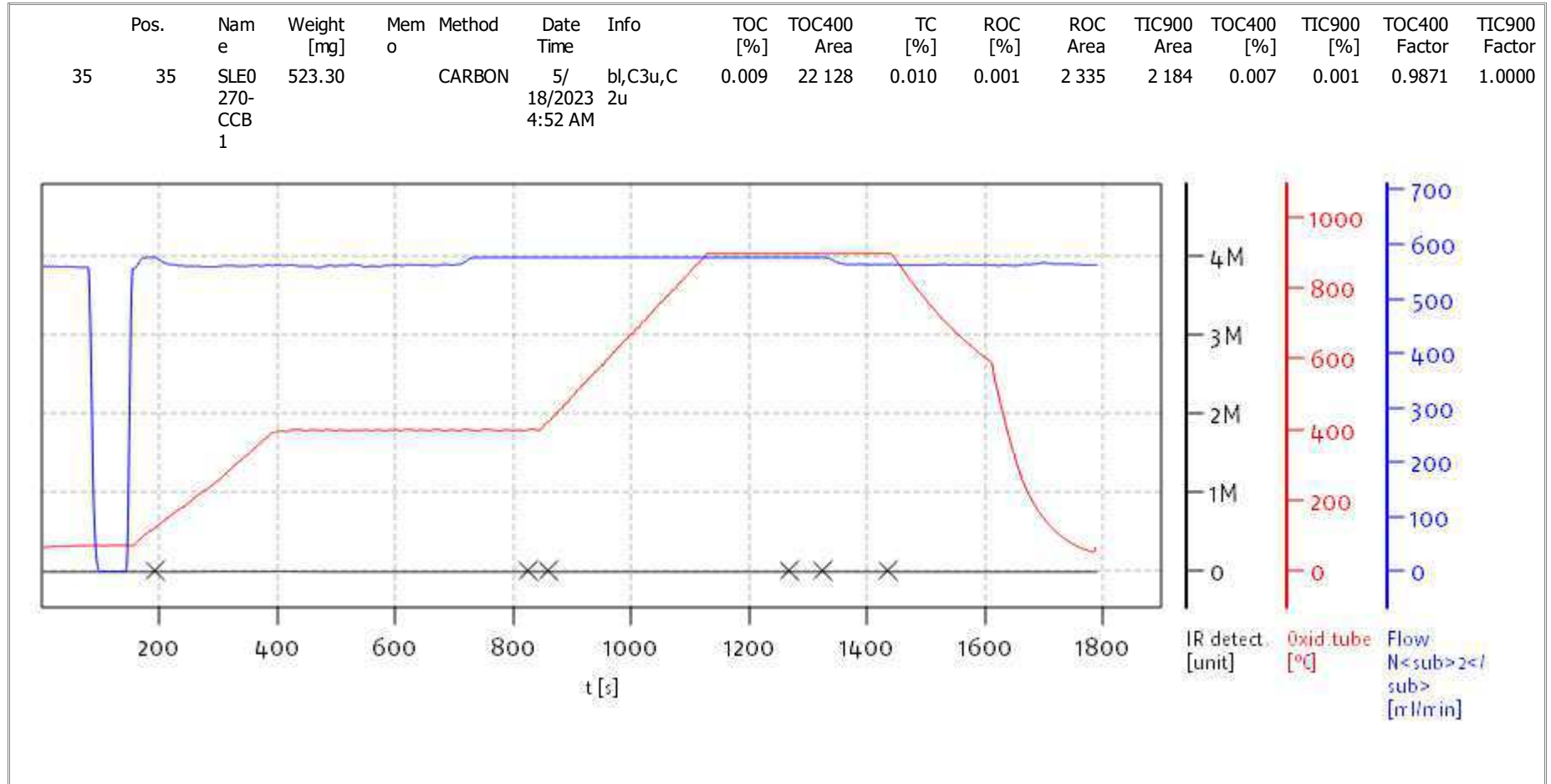
Date: Thu May 18 09:43:39 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Thu May 18 09:43:39 2023

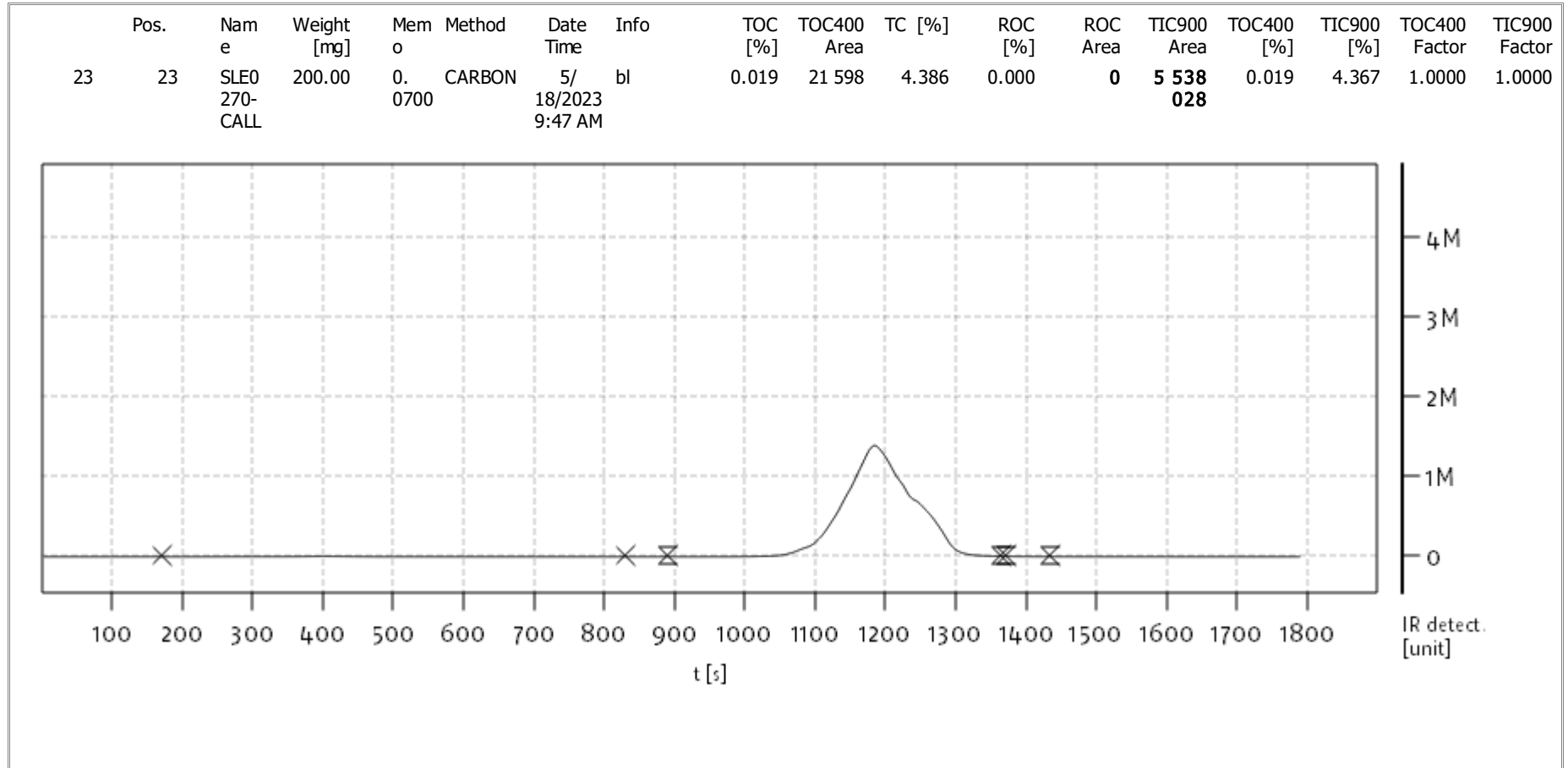


solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

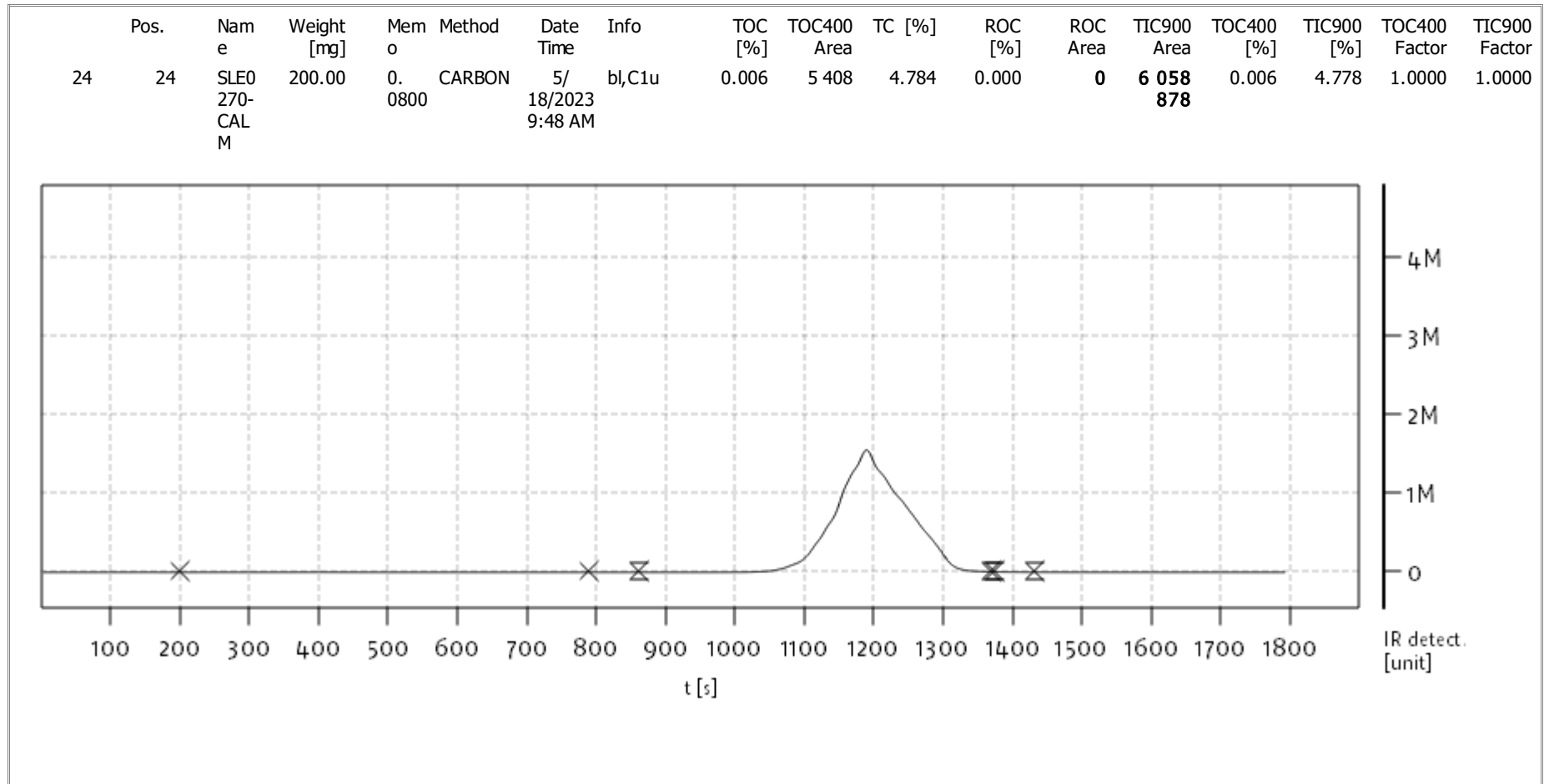
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

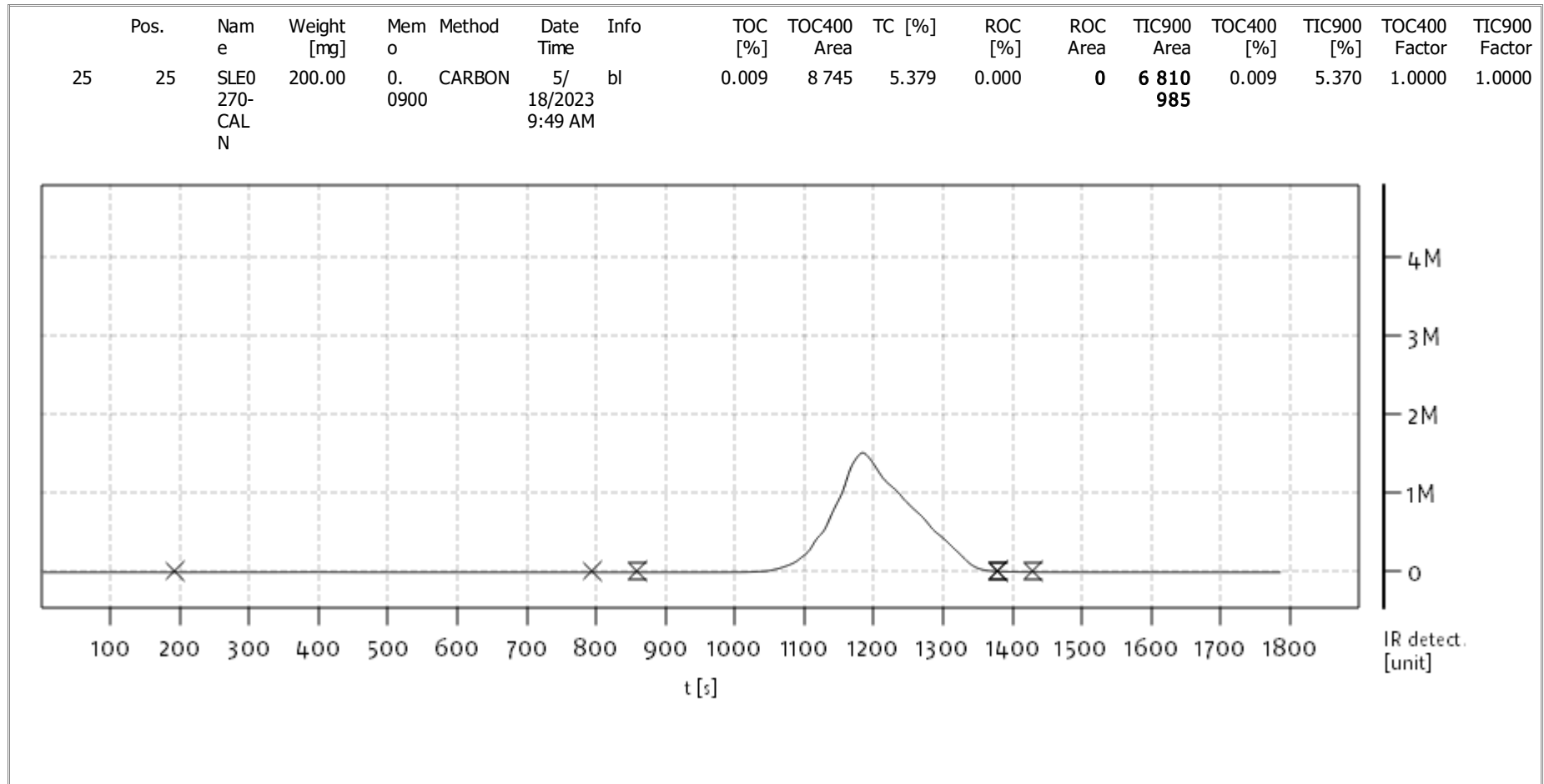
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

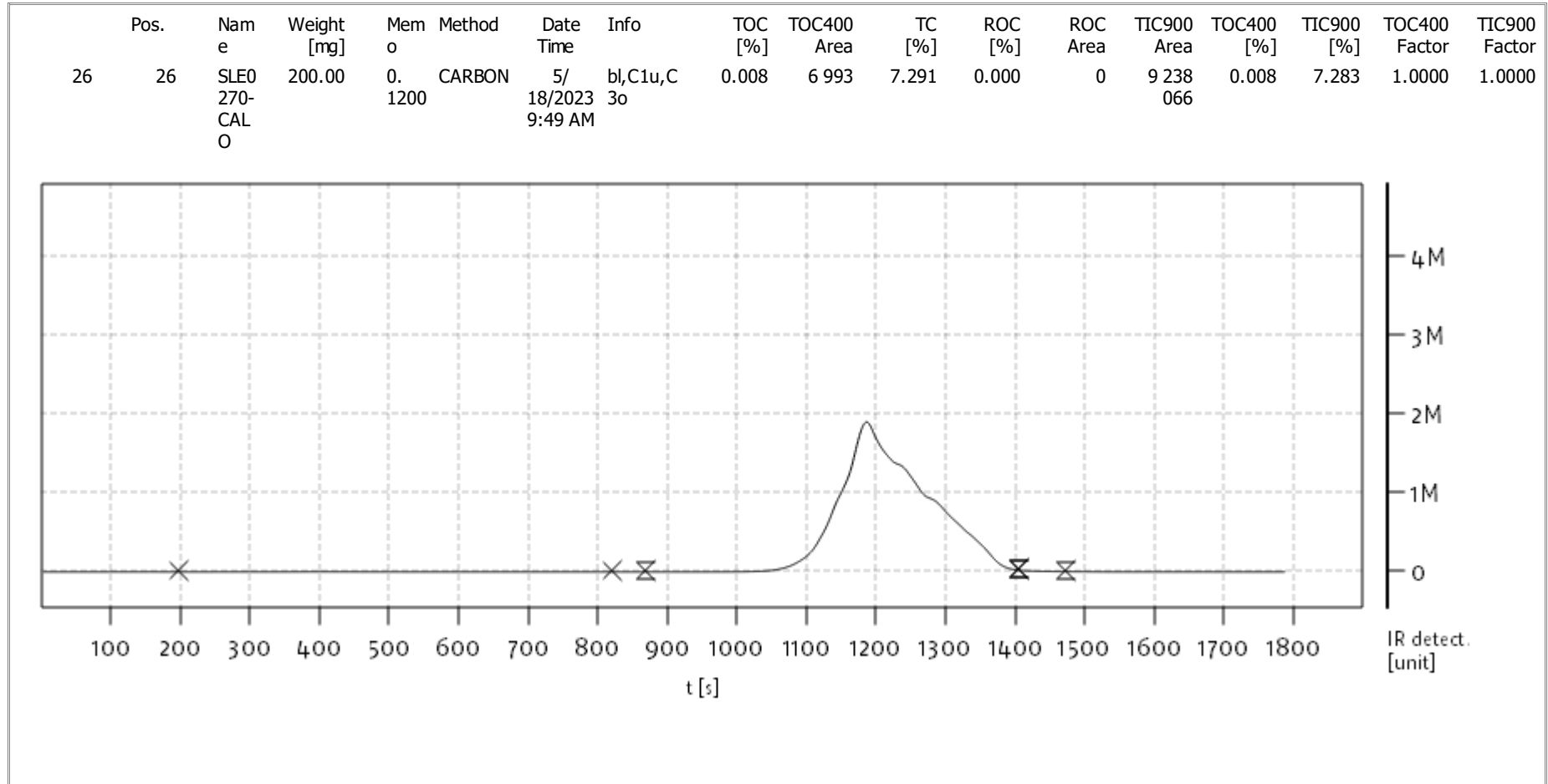
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Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Thu May 18 09:50:12 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



## INITIAL CALIBRATION DATA

### EPA 9060A m

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GE00052

Instrument: TOC Cube

Calibration Date: 05/17/2023 10:07

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Total Organic Carbon	0.0081413	2824365	0.015378	1908831	0.02171	2161539	0.030153	2354094	0.04523	1647690	0.060306	1529782
Total Carbon	0.0081413	2824365	0.015378	1908831	0.02171	2161539	0.030153	2354094	0.04523	1647690	0.060306	1529782
Total Inorganic Carbon	0.0081413	2824365	0.015378	1908831	0.02171	2161539	0.030153	2354094	0.04523	1647690	0.060306	1529782
% Soot	0.0081413	2824365	0.015378	1908831	0.02171	2161539	0.030153	2354094	0.04523	1647690	0.060306	1529782



## INITIAL CALIBRATION DATA

### EPA 9060A m

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GE00052

Instrument: TOC Cube

Calibration Date: 05/17/2023 10:07

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Total Organic Carbon	0.075081	1526165	0.092268	1411324	0.12031	1696235	0.15107	1646548	0.24	1507392	0.306	1652209
Total Carbon	0.075081	1526165	0.092268	1411324	0.12031	1696235	0.15107	1646548	0.24	1507392	0.306	1652209
Total Inorganic Carbon	0.075081	1526165	0.092268	1411324	0.12031	1696235	0.15107	1646548	0.24	1507392	0.306	1652209
% Soot	0.075081	1526165	0.092268	1411324	0.12031	1696235	0.15107	1646548	0.24	1507392	0.306	1652209



**INITIAL CALIBRATION DATA**

**EPA 9060A m**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GE00052

Instrument: TOC Cube

Calibration Date: 05/17/2023 10:07

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Total Organic Carbon	0.426	1366392	0.606	1382589	0.894	1387318	1.206	1393572	1.506	1392225	1.806	1387100
Total Carbon	0.426	1366392	0.606	1382589	0.894	1387318	1.206	1393572	1.506	1392225	1.806	1387100
Total Inorganic Carbon	0.426	1366392	0.606	1382589	0.894	1387318	1.206	1393572	1.506	1392225	1.806	1387100
% Soot	0.426	1366392	0.606	1382589	0.894	1387318	1.206	1393572	1.506	1392225	1.806	1387100



### INITIAL CALIBRATION DATA

#### EPA 9060A m

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GE00052

Instrument: TOC Cube

Calibration Date: 05/17/2023 10:07

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Total Organic Carbon	2.406	1383080	2.988	1392309	4.206	1321832	4.788	1266559	5.394	1264318	7.152	1292654
Total Carbon	2.406	1383080	2.988	1392309	4.206	1321832	4.788	1266559	5.394	1264318	7.152	1292654
Total Inorganic Carbon	2.406	1383080	2.988	1392309	4.206	1321832	4.788	1266559	5.394	1264318	7.152	1292654
% Soot	2.406	1383080	2.988	1392309	4.206	1321832	4.788	1266559	5.394	1264318	7.152	1292654





## INITIAL CALIBRATION DATA

### EPA 9060A m

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Calibration: GE00052

Instrument: TOC Cube

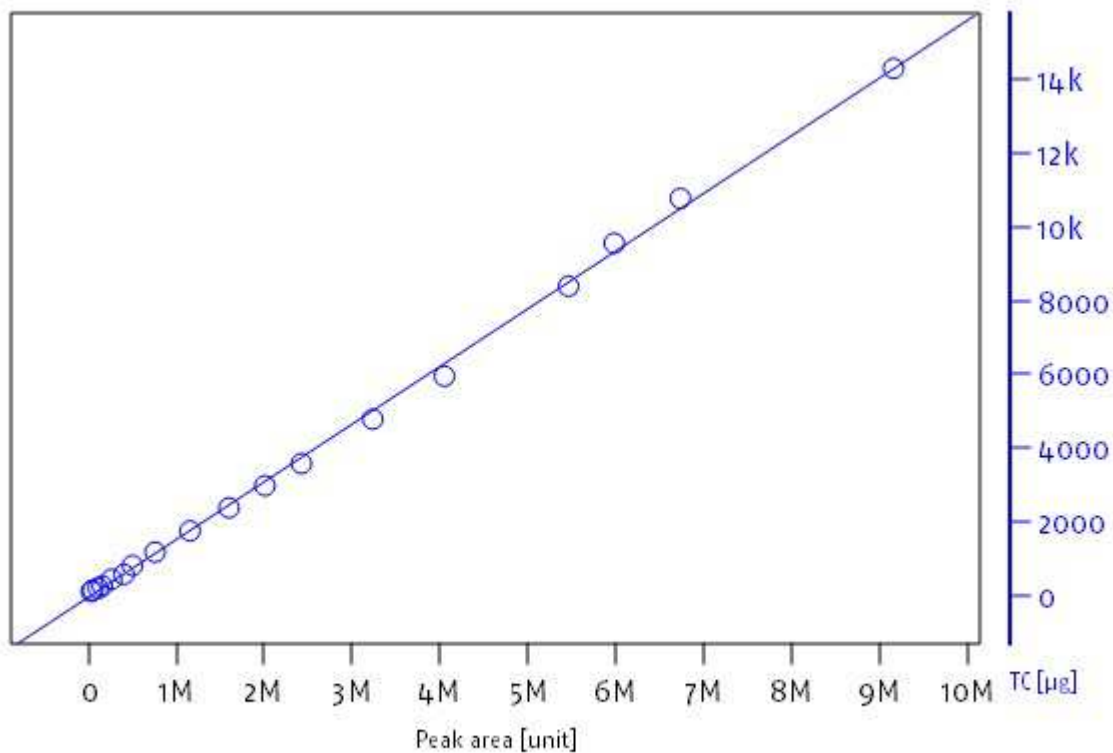
Calibration Date: 05/17/2023 10:07

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Total Organic Carbon	1587338	23.9	0.9987			
Total Carbon	1587338	23.9	0.9987			
Total Inorganic Carbon	1587338	23.9	0.9987			
% Soot	1587338	23.9	0.9987			

### Calibration parameters TC, Whole range

a	+9.122373e-03
b	+1.560792e-06
c	+0.000000e+00
d	+0.000000e+00
e	+0.000000e+00
r	0.998690
r_old	0.998690
Proc.-SD	155.562438 µg

### Calibration graph TC, Whole range



Name:

Access: solITOC superuser

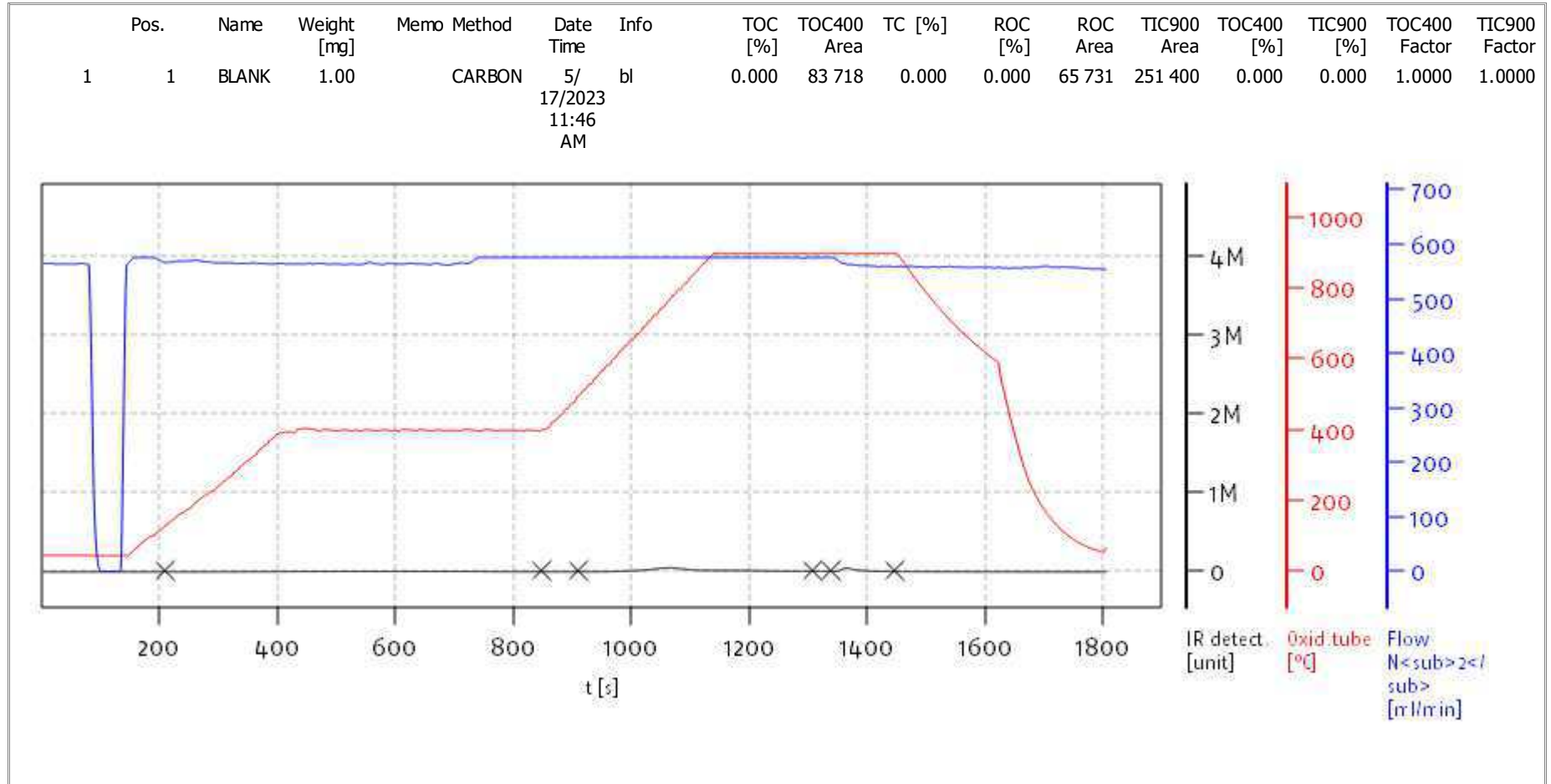
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solITOC V2.0.2 (31015f9) 2018-11-19  
 Serial No: 0300.181017  
 Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

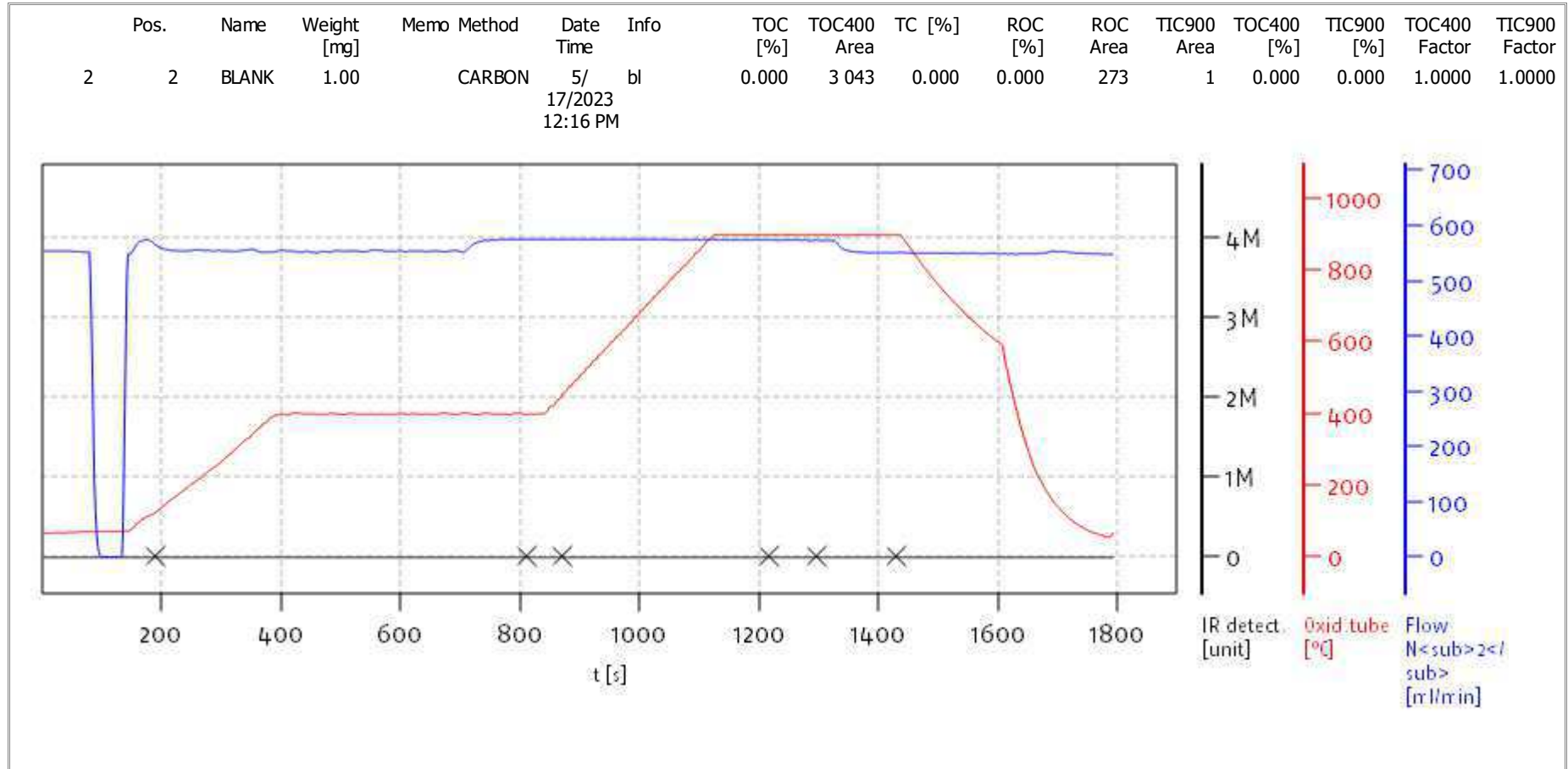
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

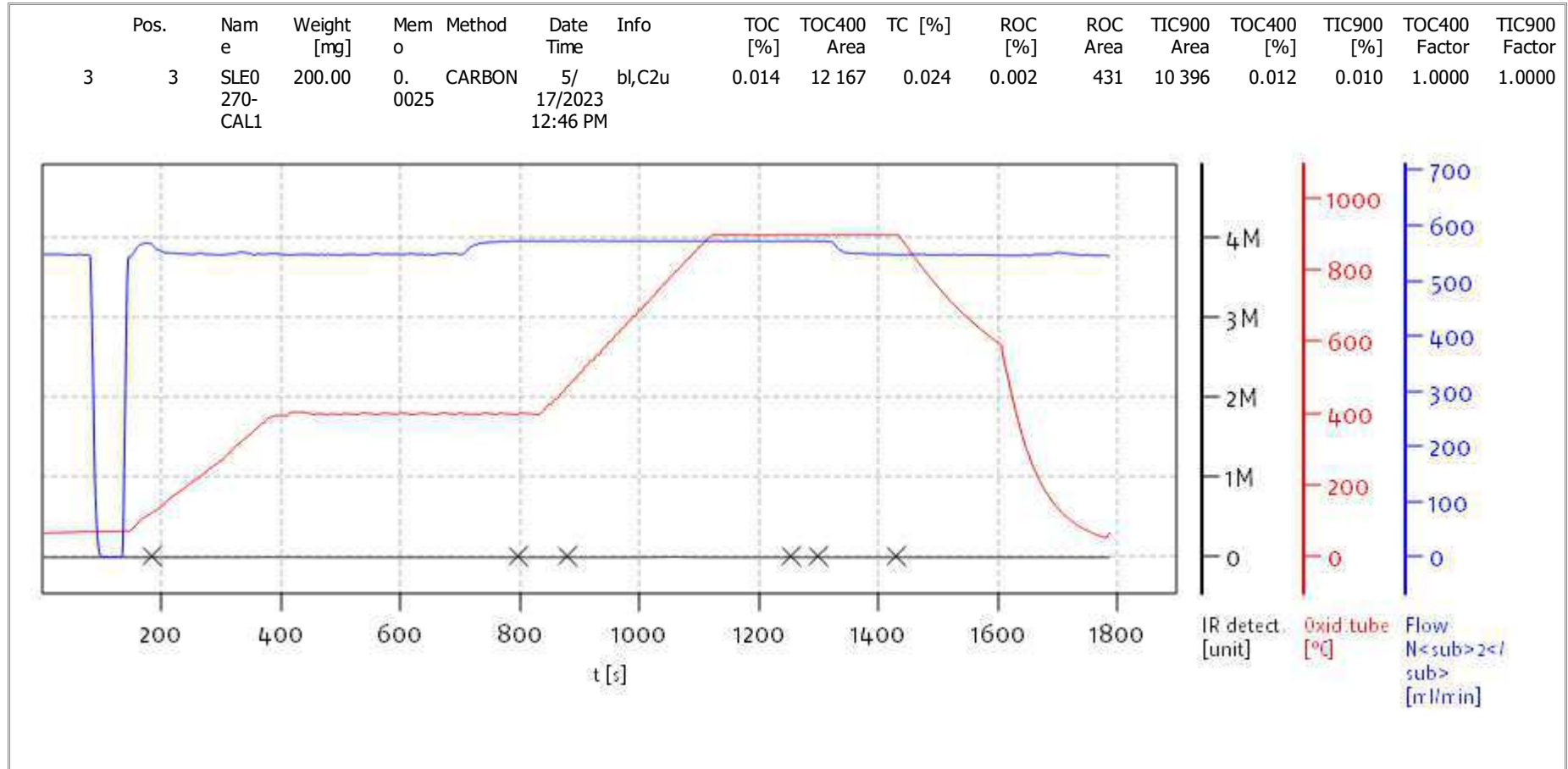
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

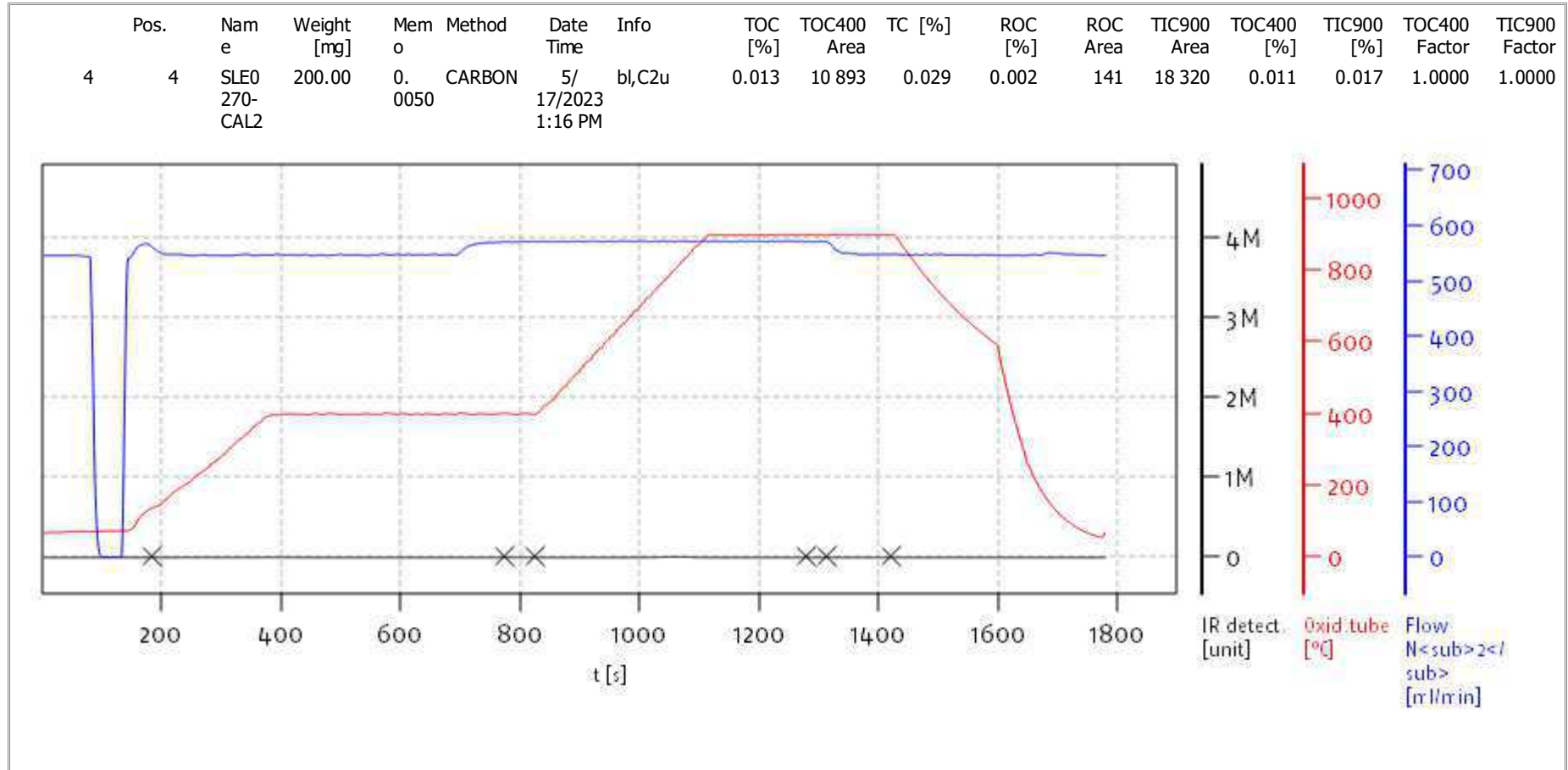
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

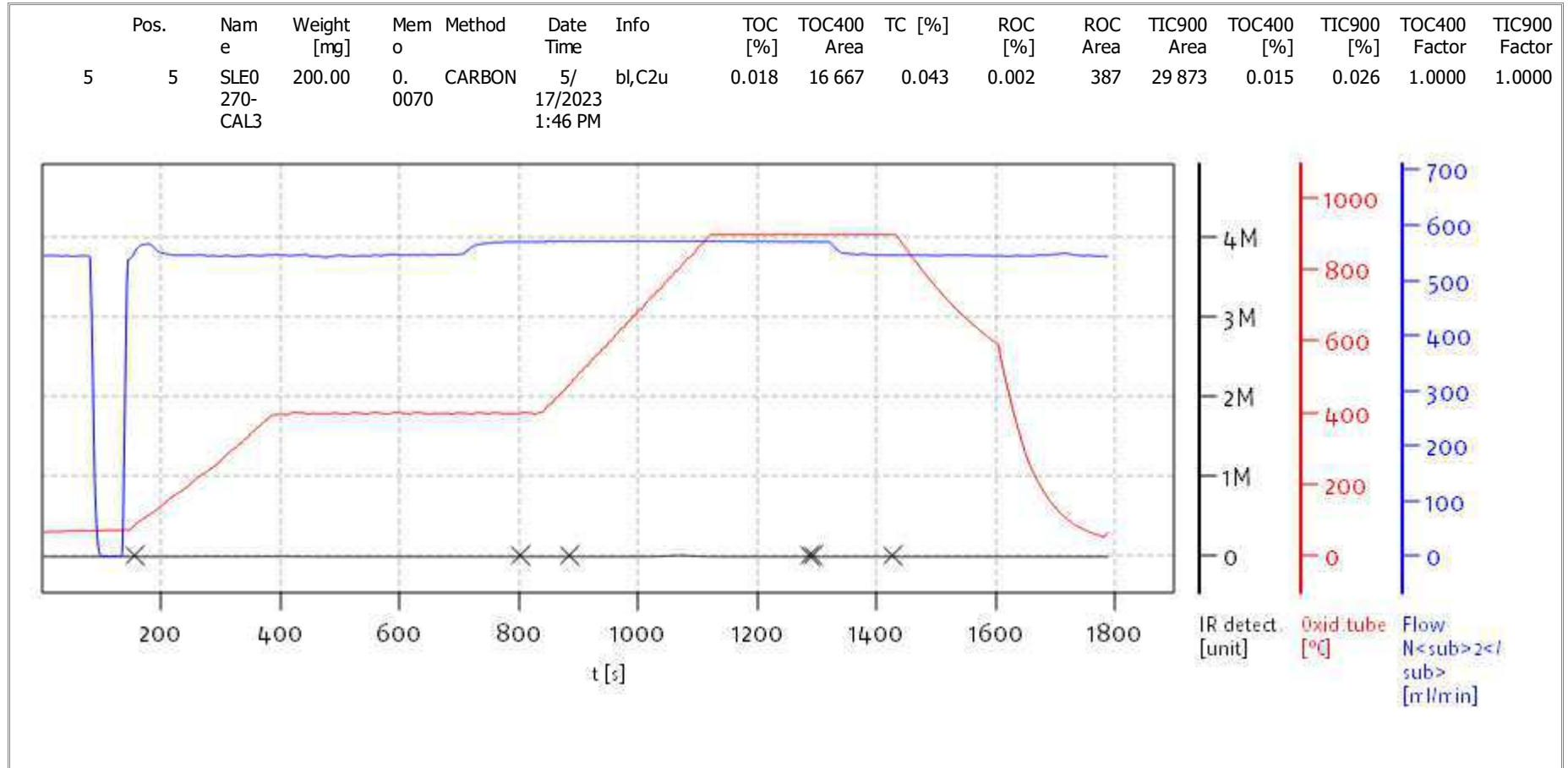
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Thu May 18 09:43:39 2023

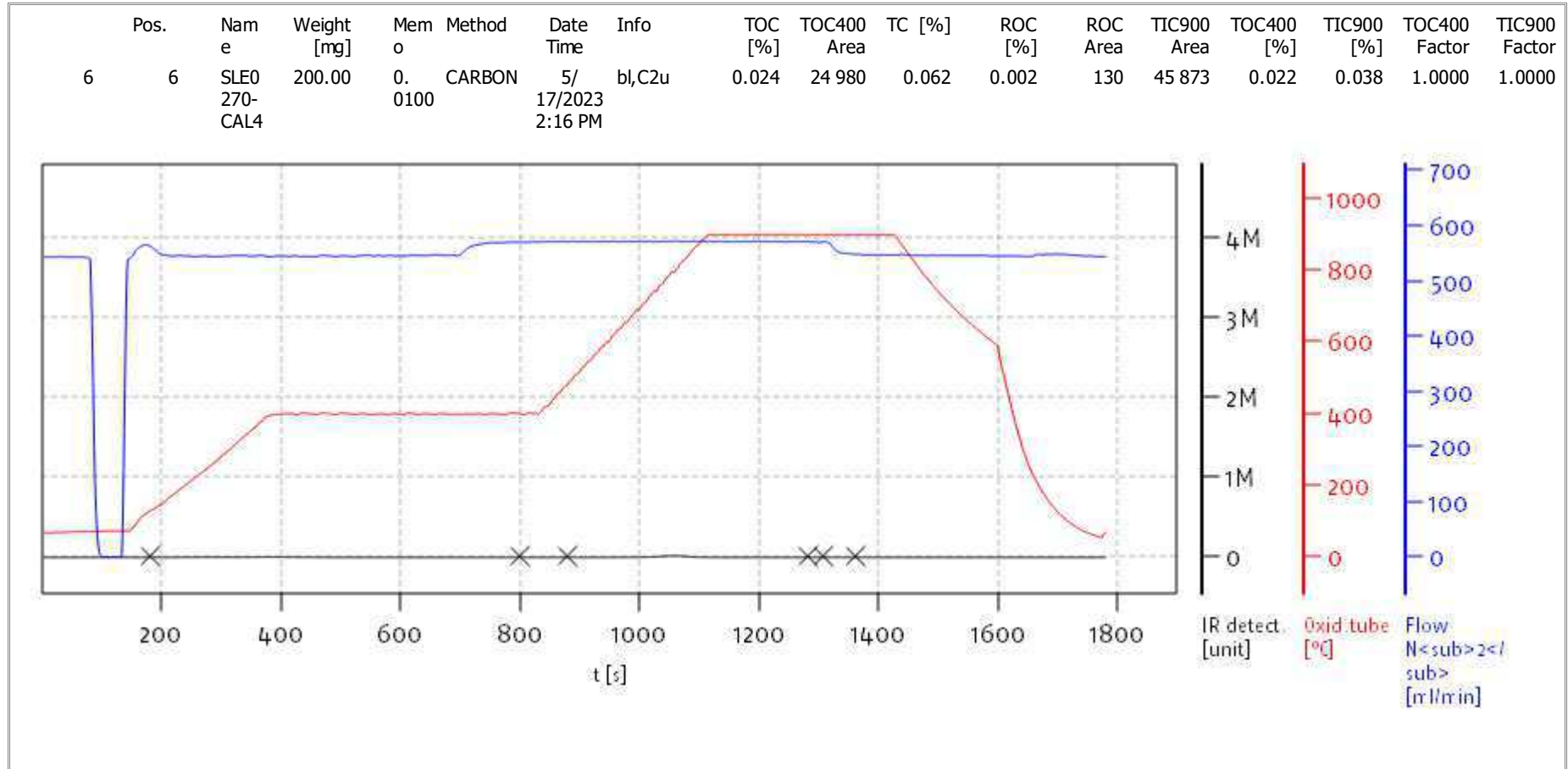


solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Thu May 18 09:43:39 2023

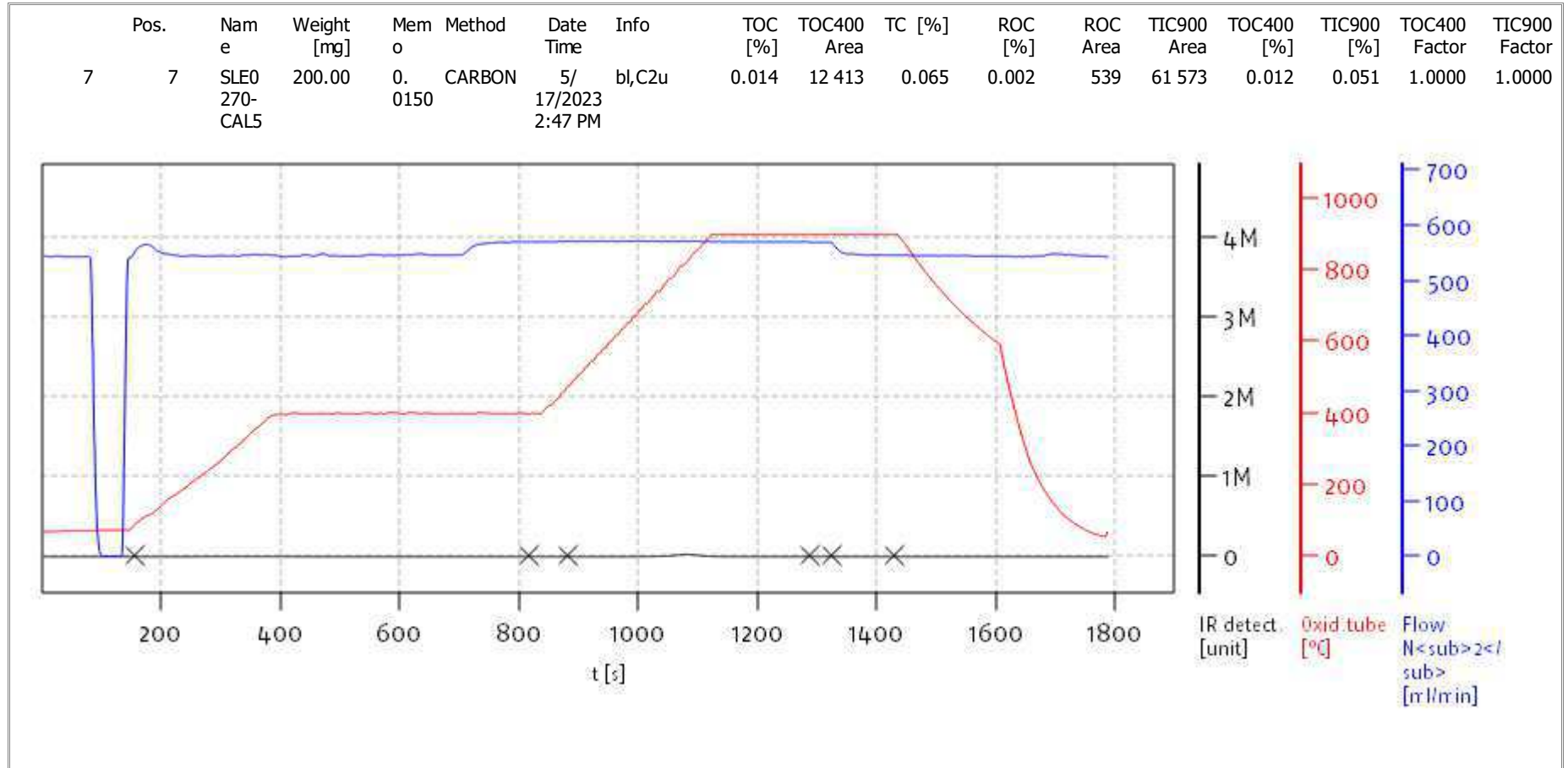


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Name:

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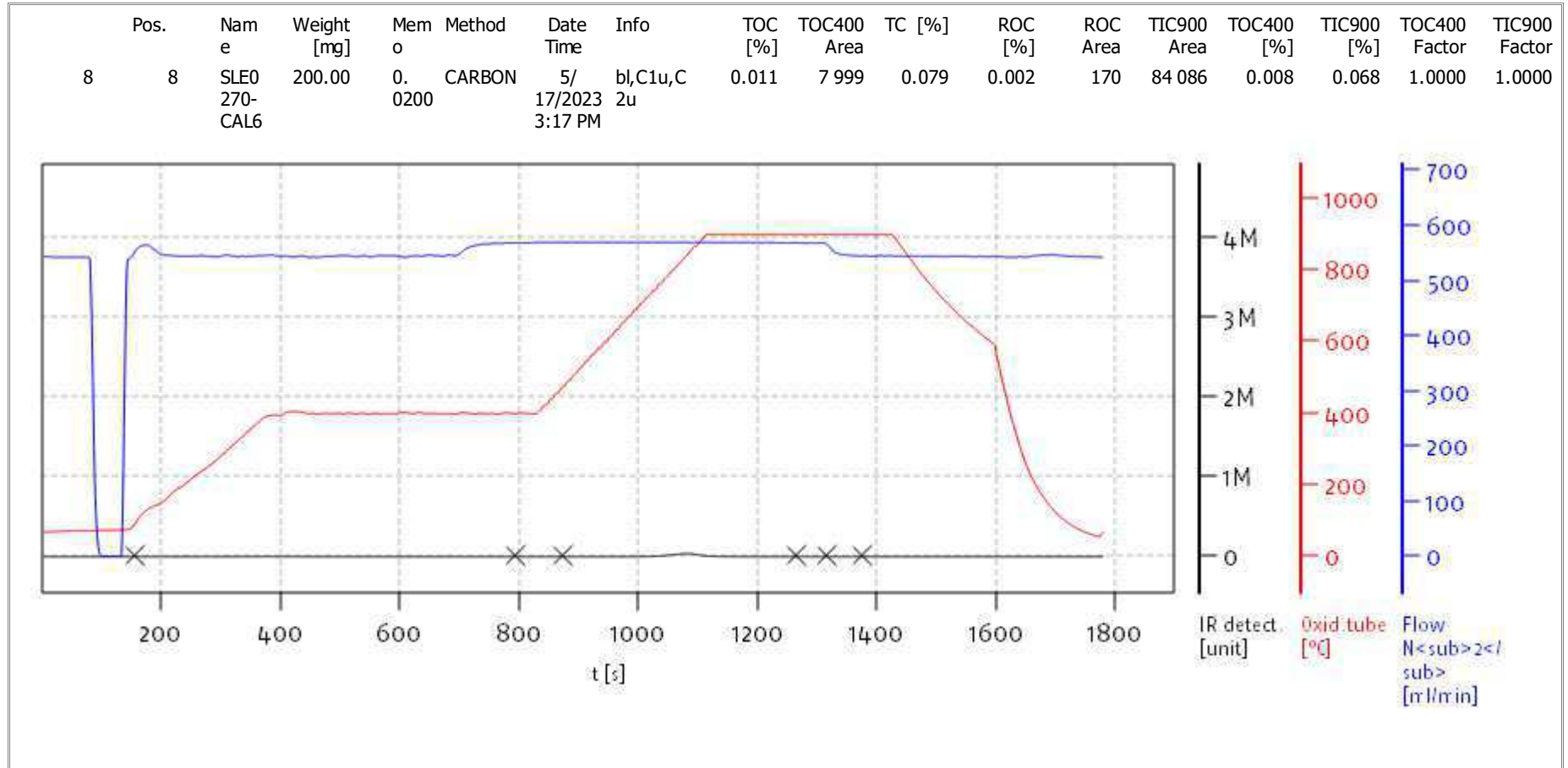
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Balance: BAL3  
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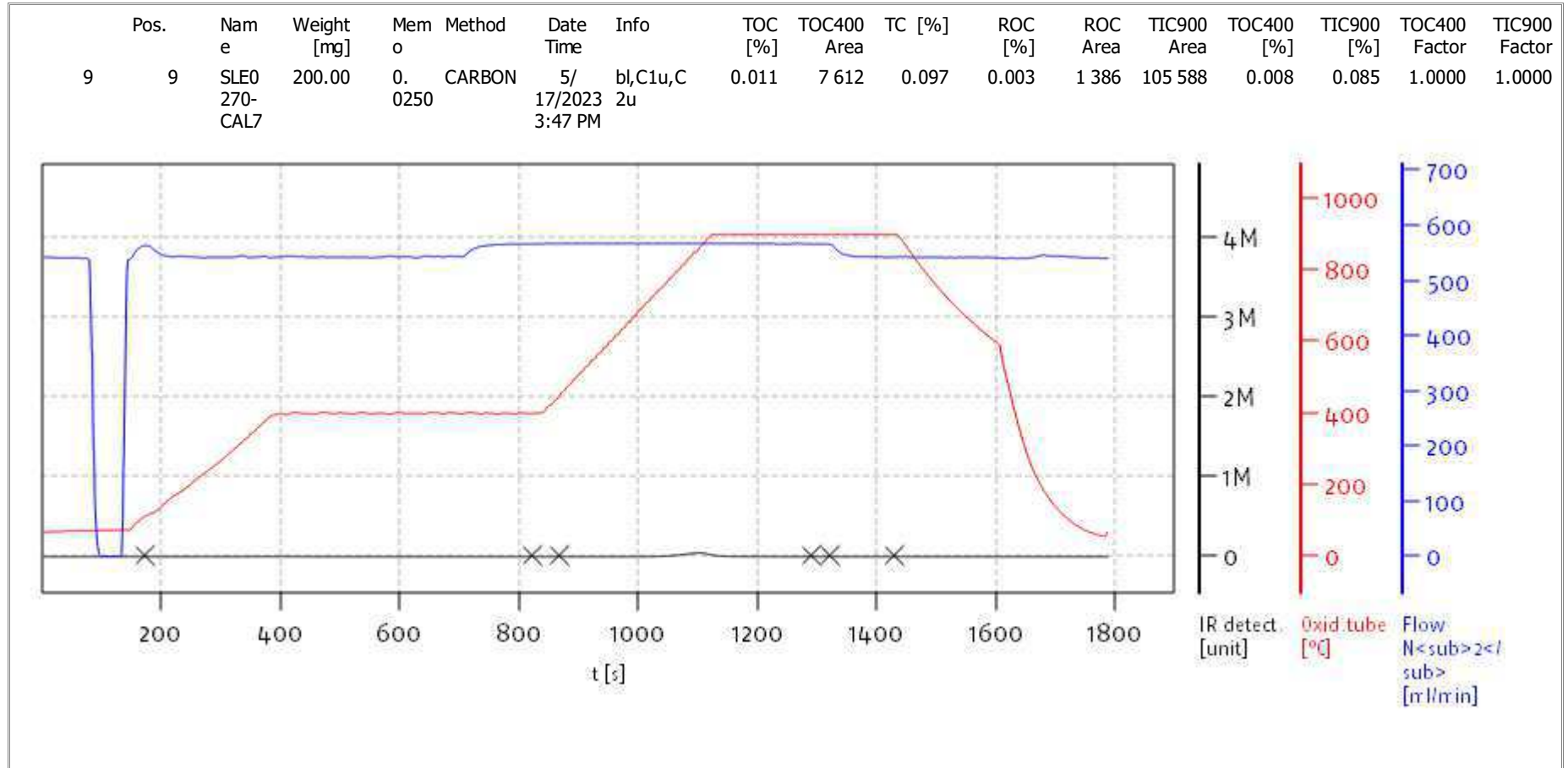
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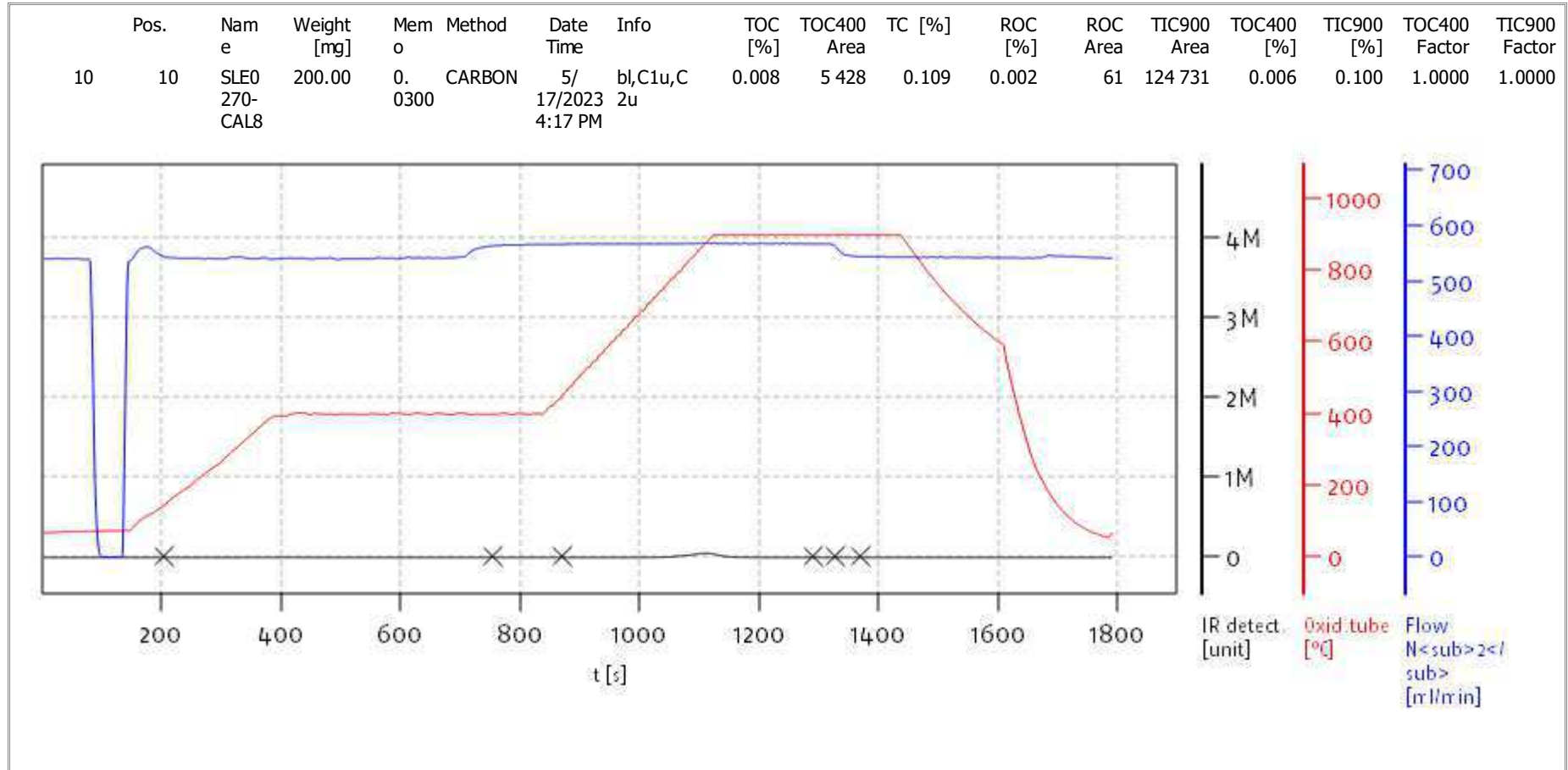
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Mode CCC



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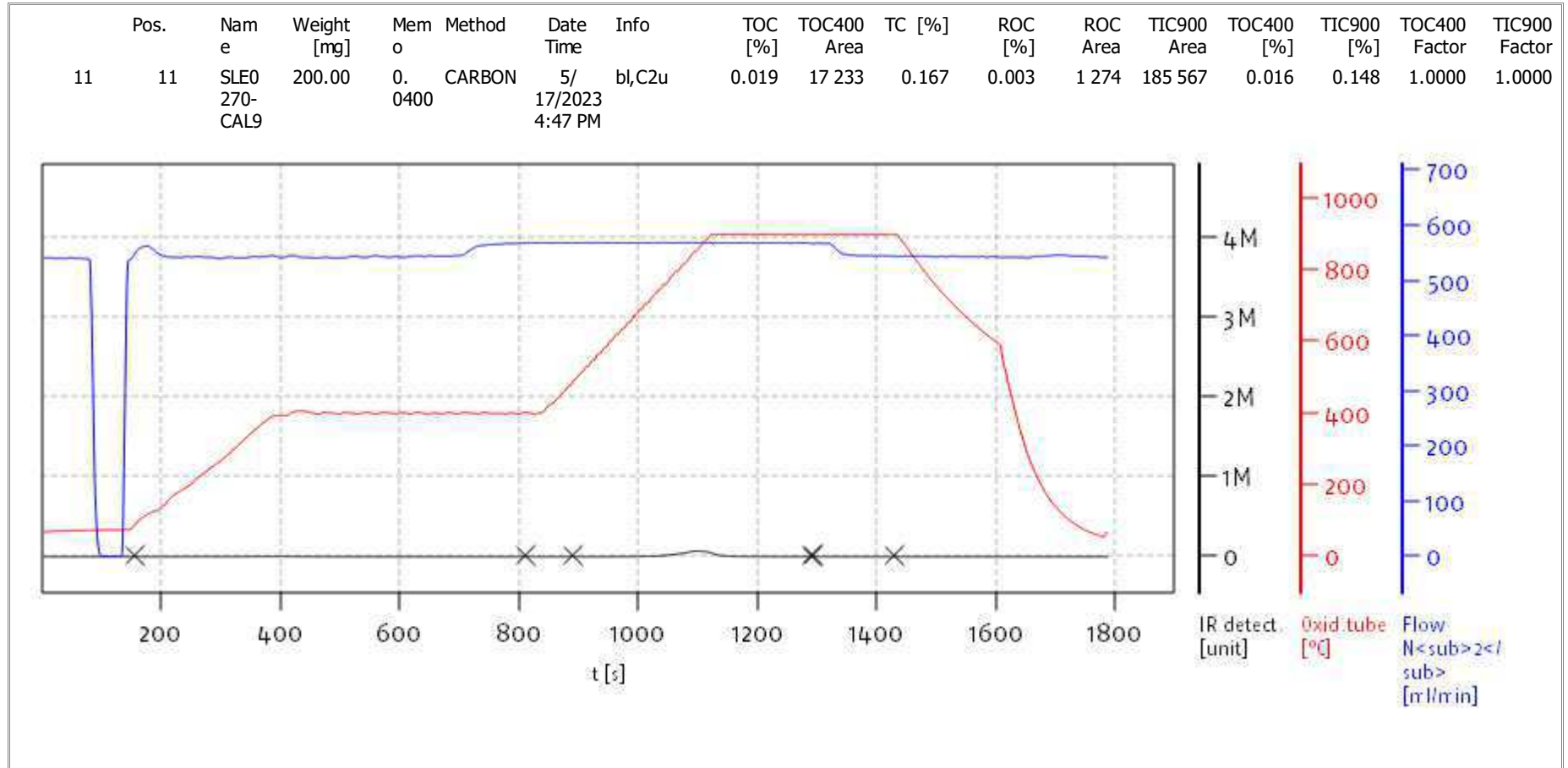
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Mode CCC



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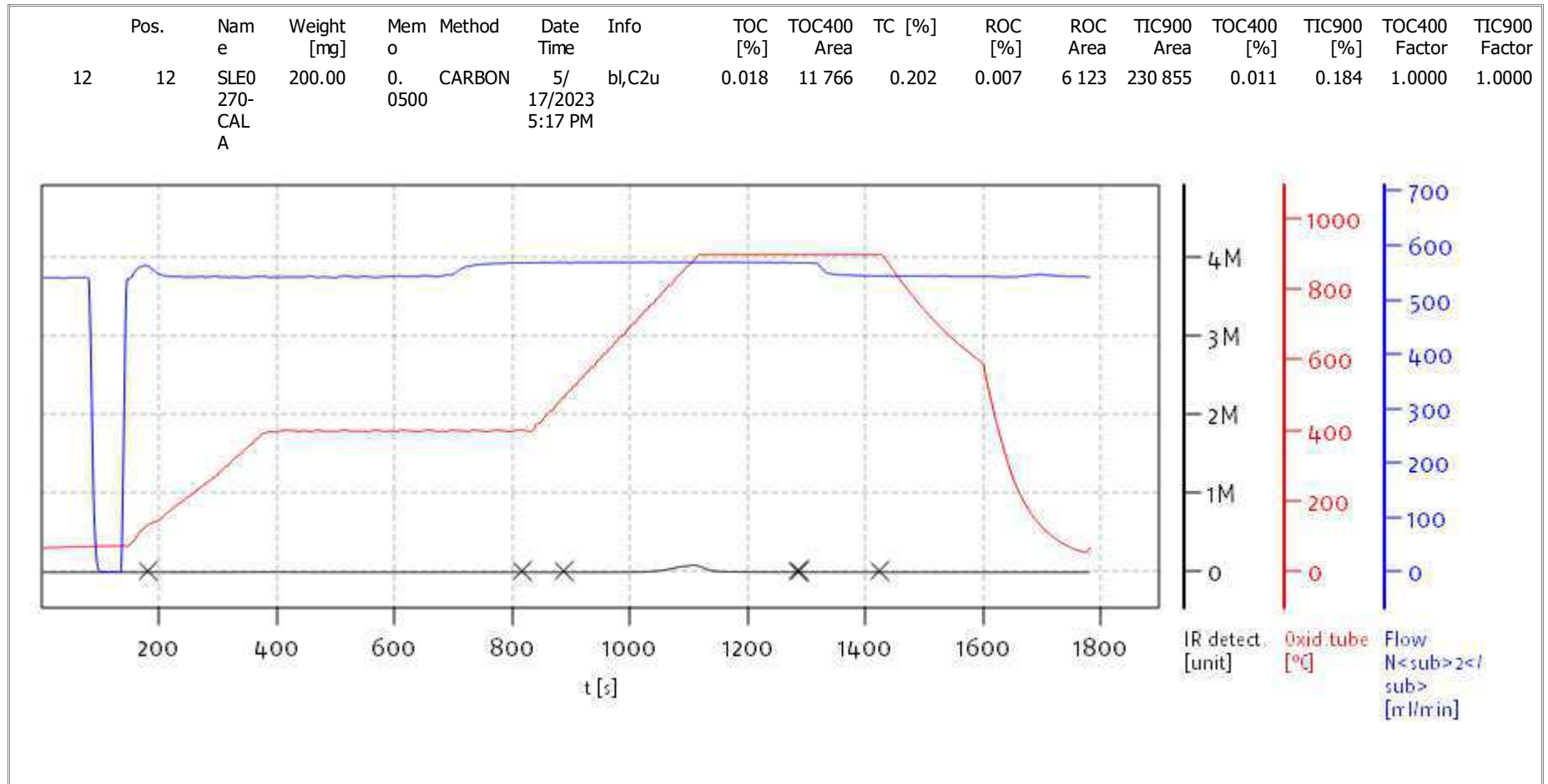
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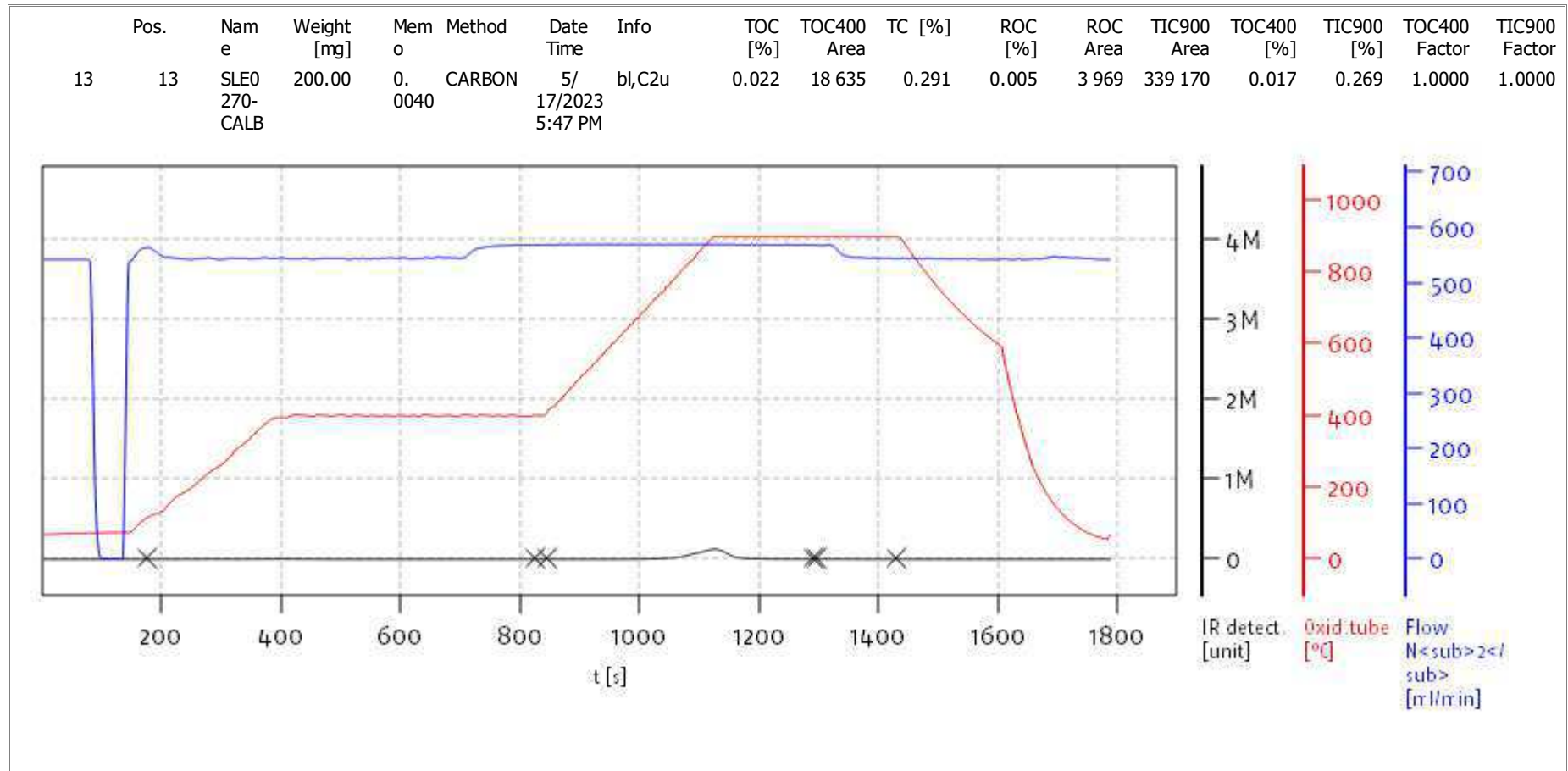


solITOC V2.0.2 (31015f9) 2018-11-19  
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Analyst: CDE



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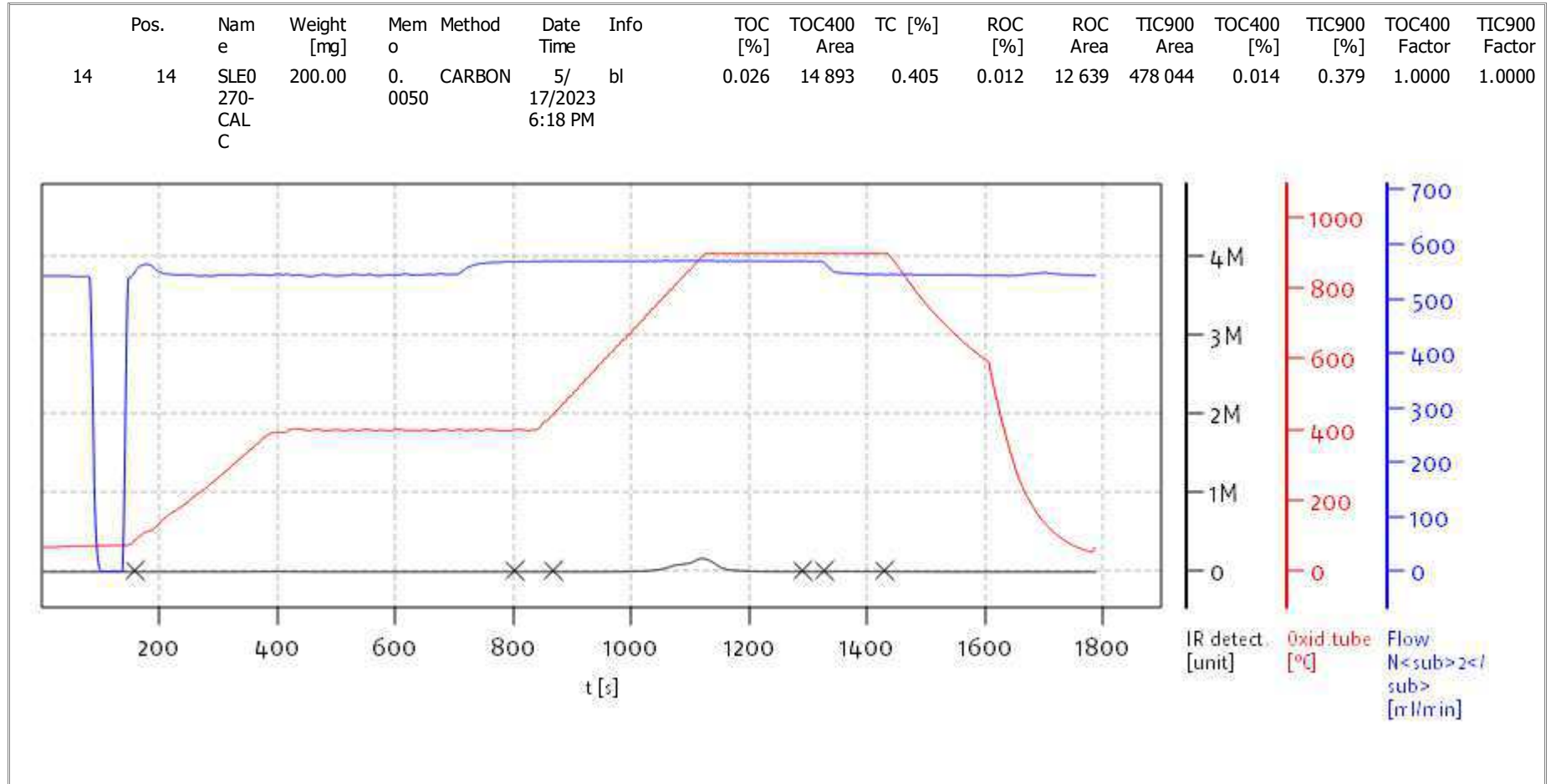
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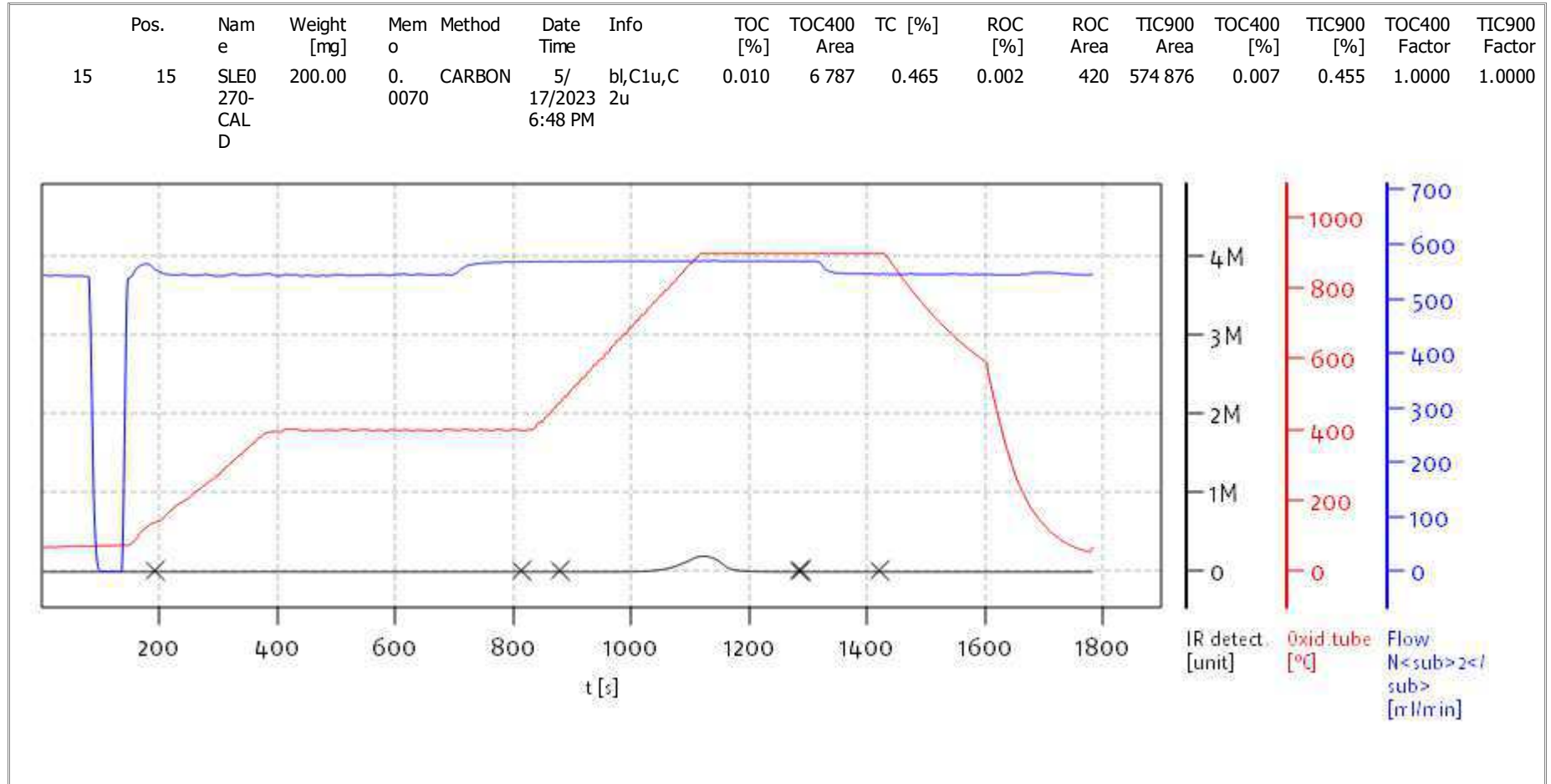


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Name:

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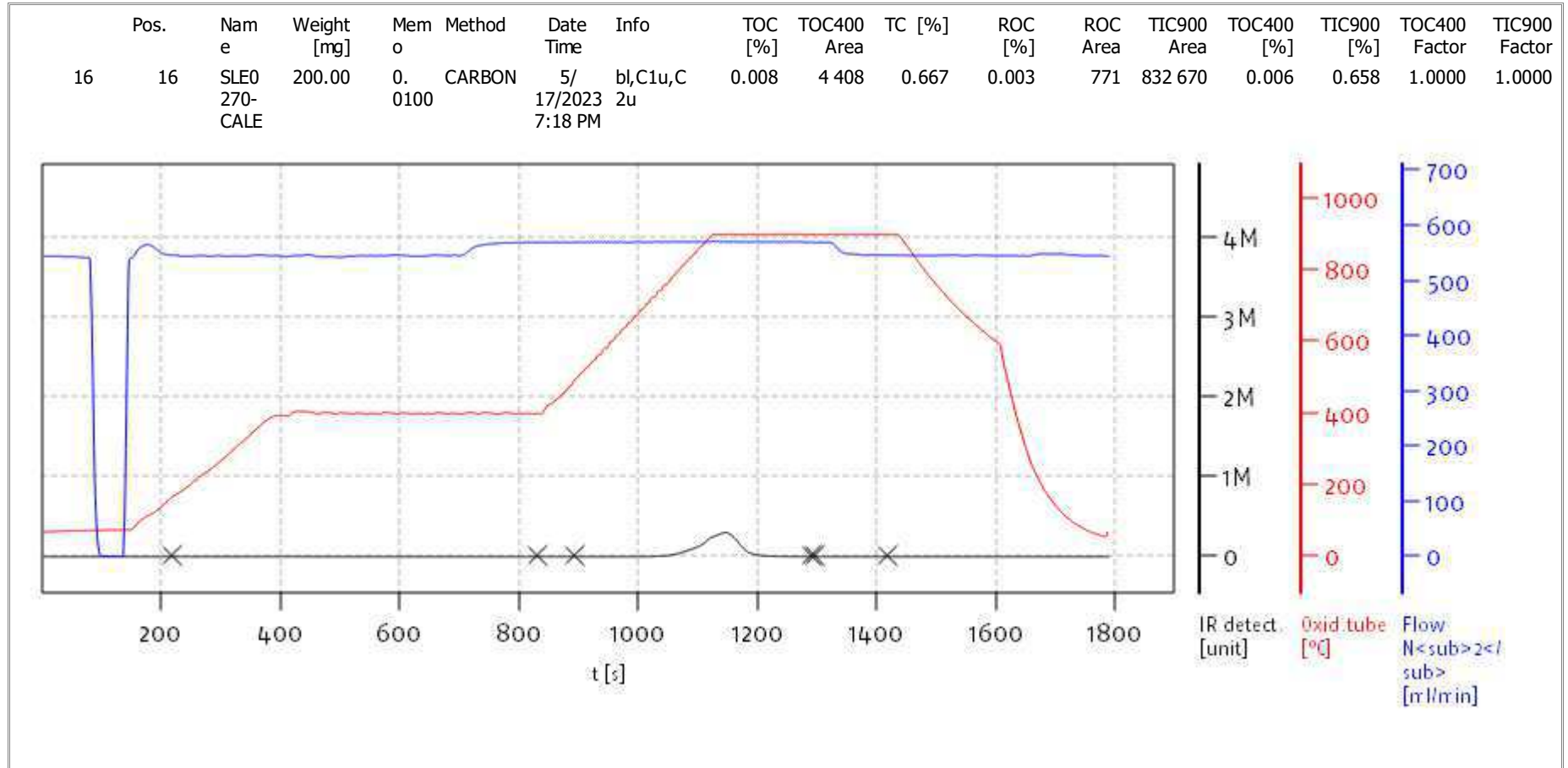
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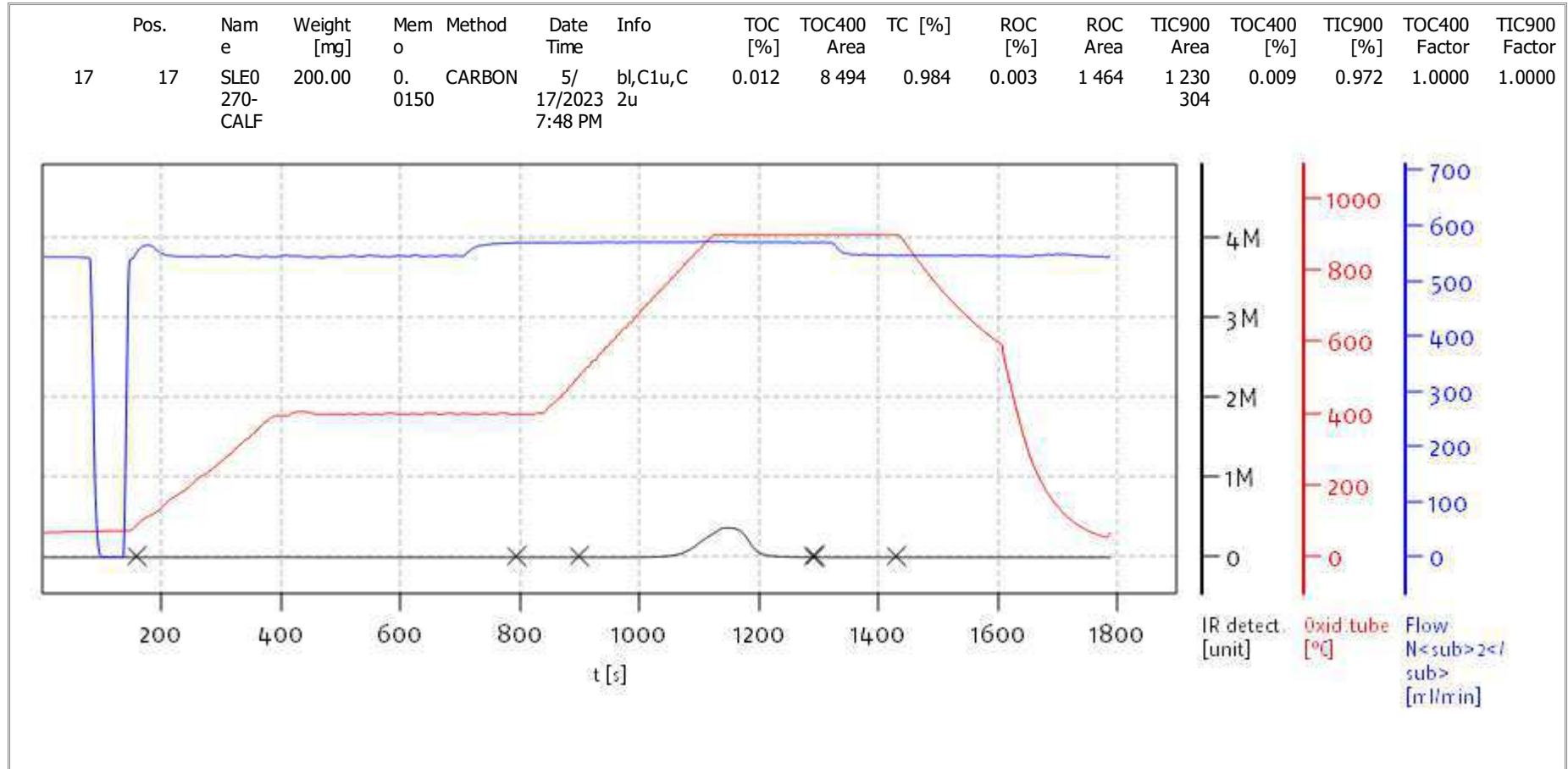
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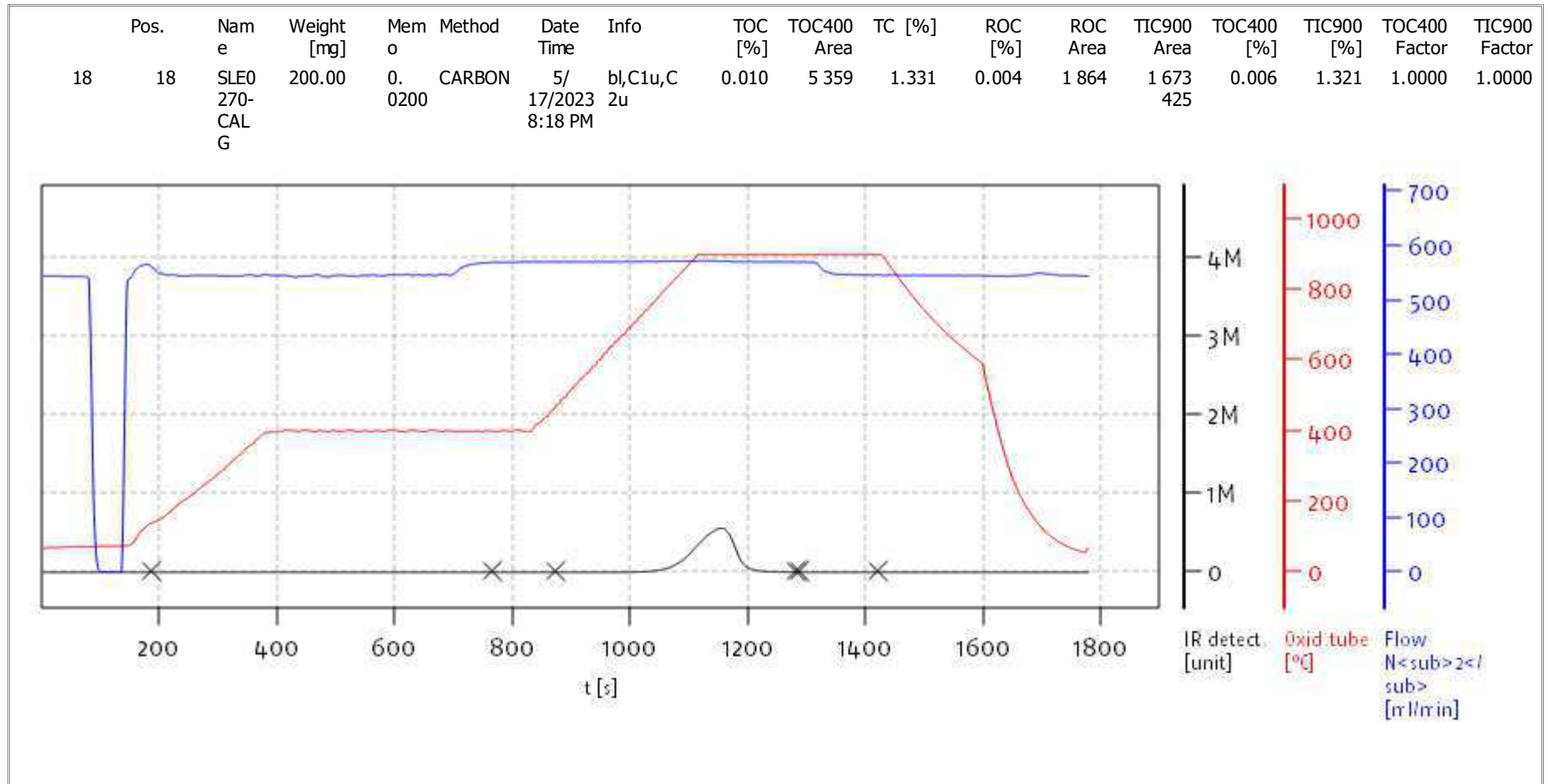
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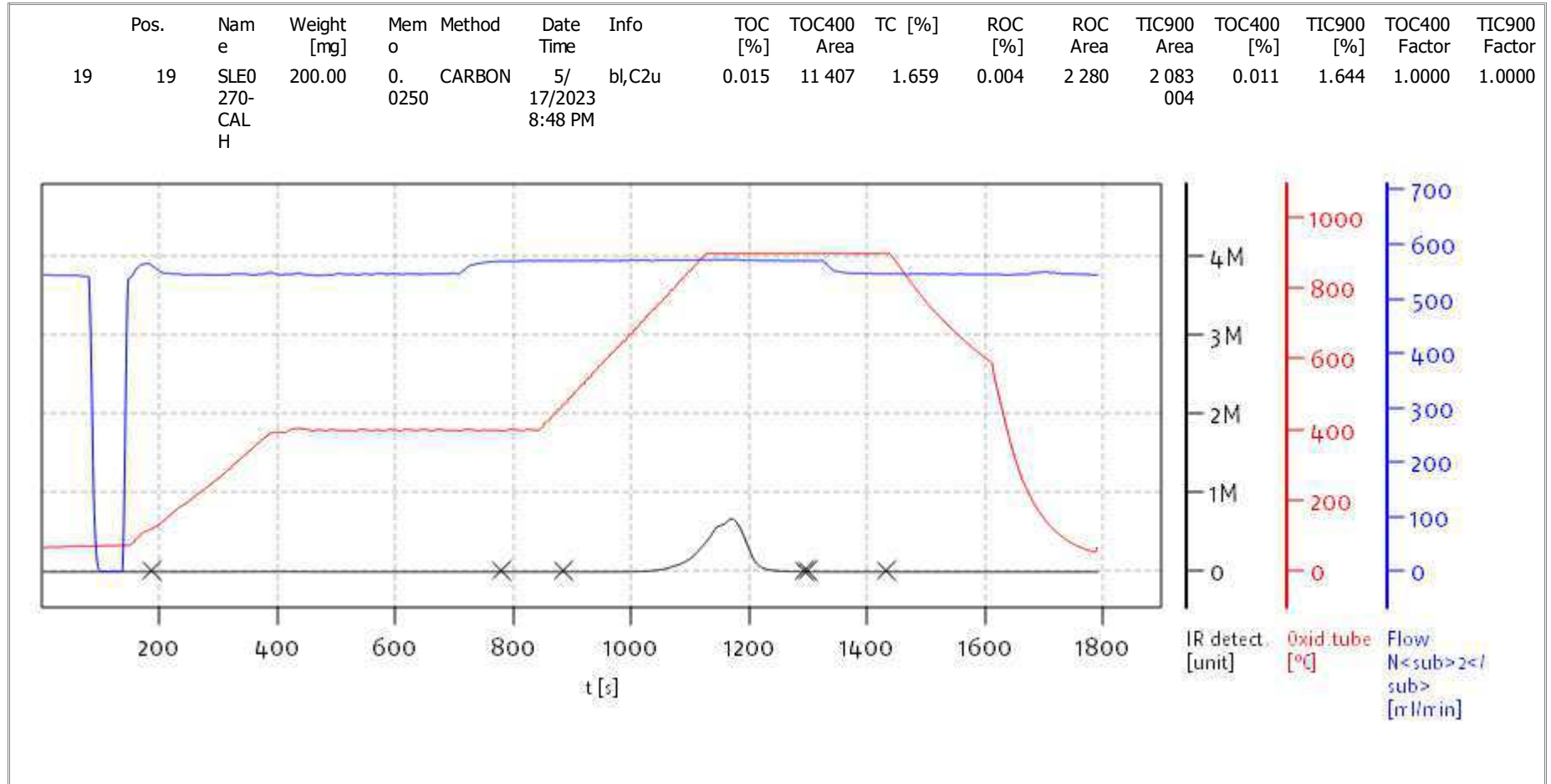
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Soli TOC Cube, Carbon  
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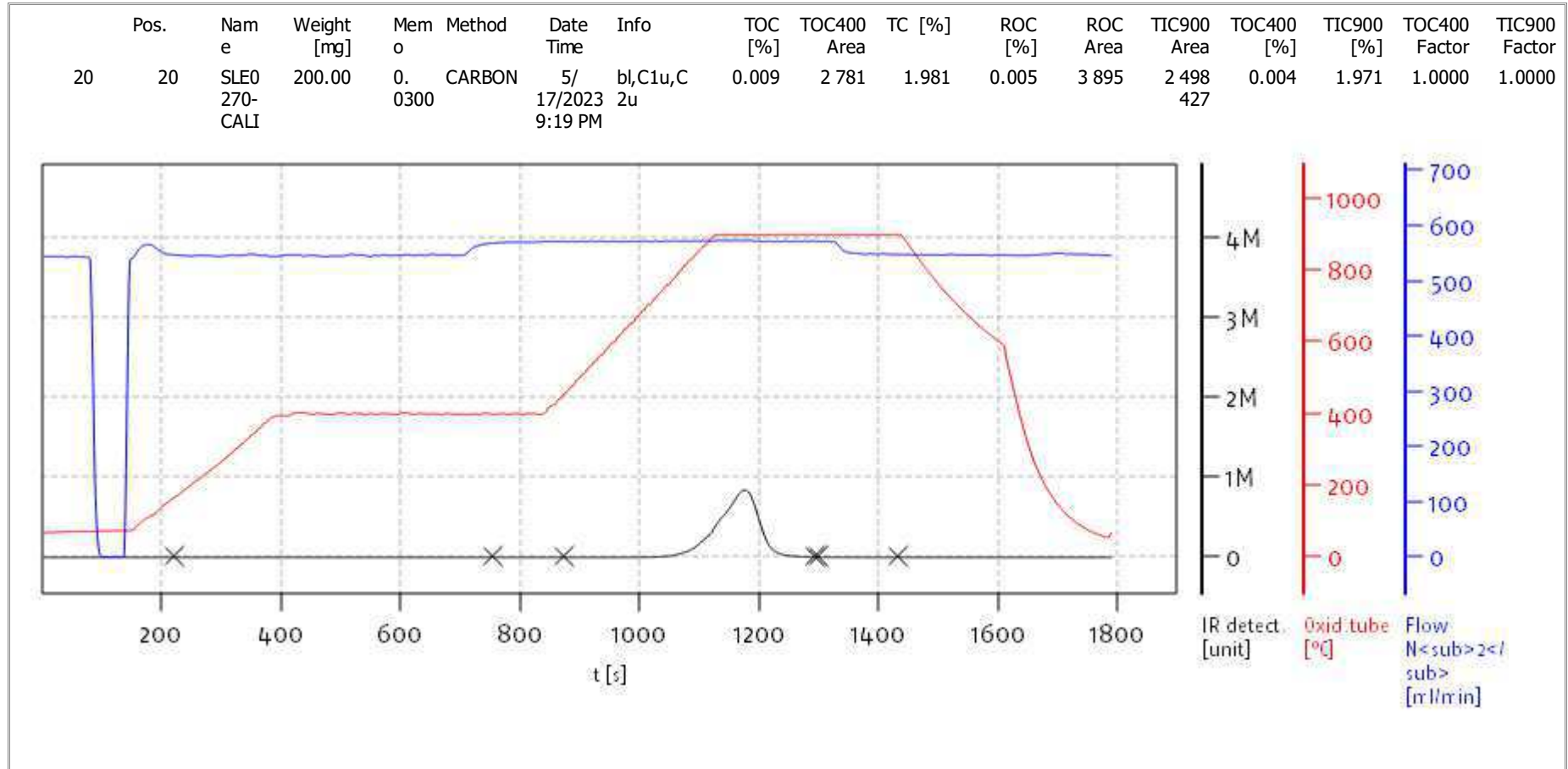
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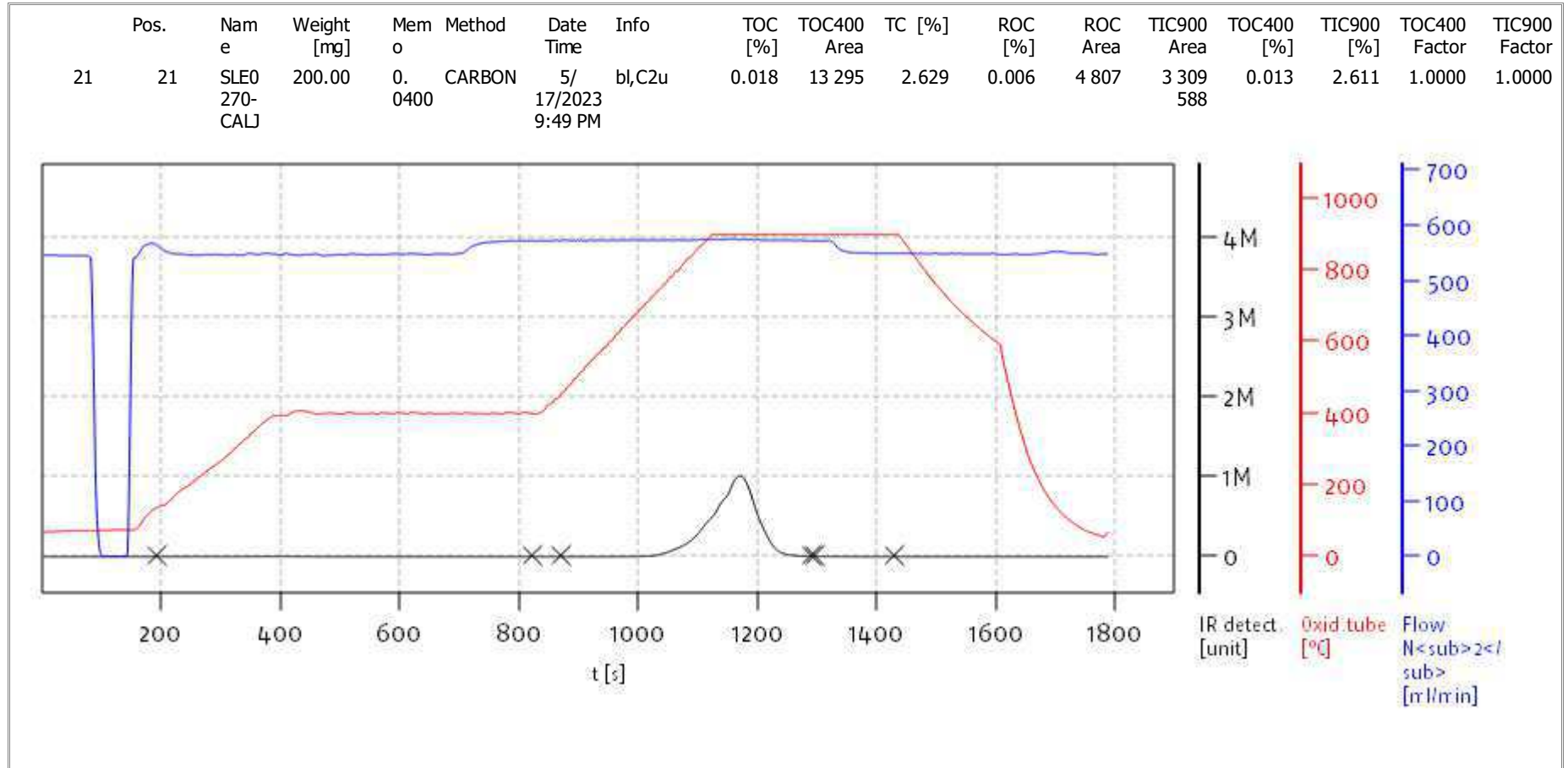


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Soli TOC Cube, Carbon  
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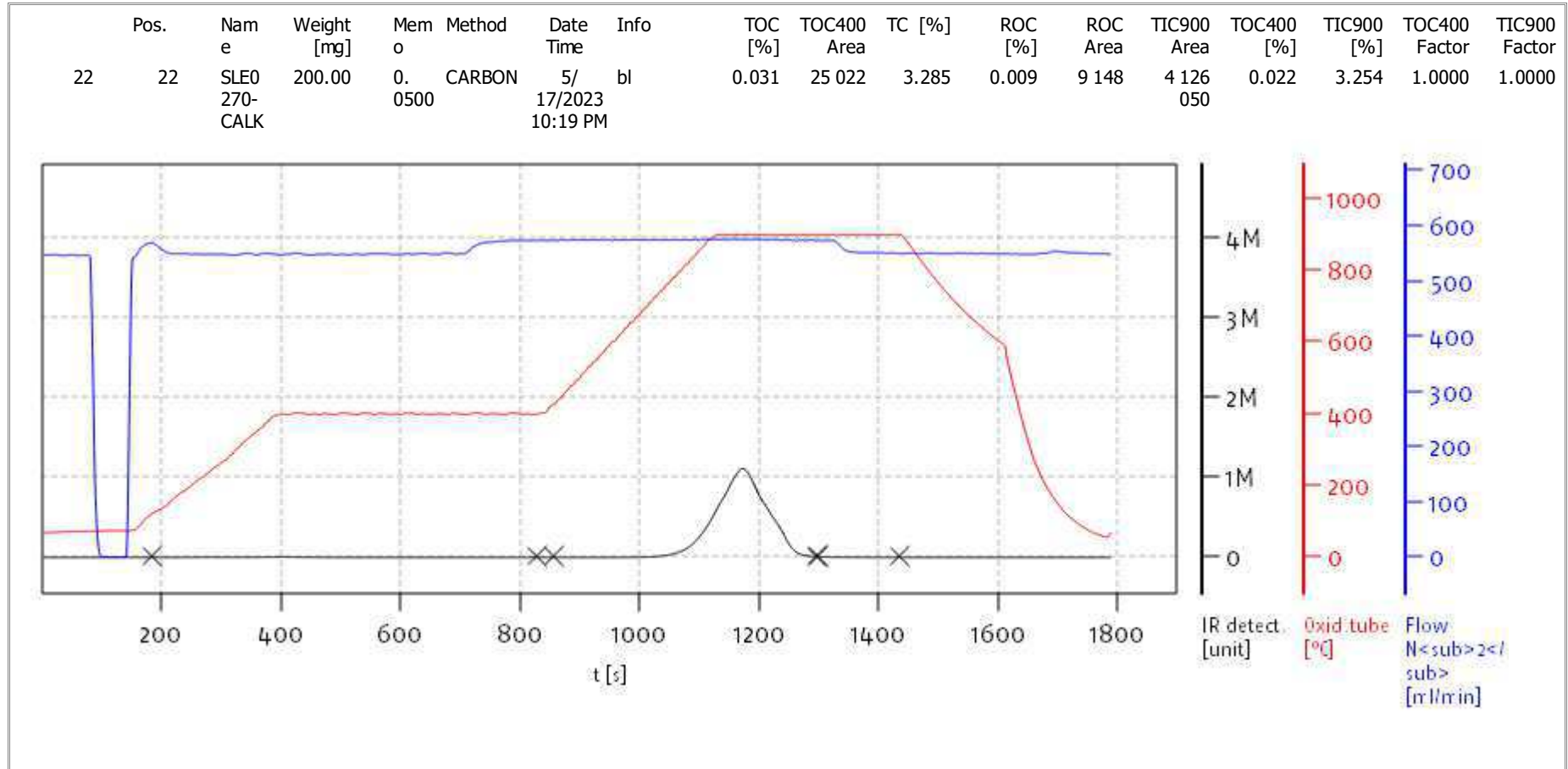
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Soli TOC Cube, Carbon  
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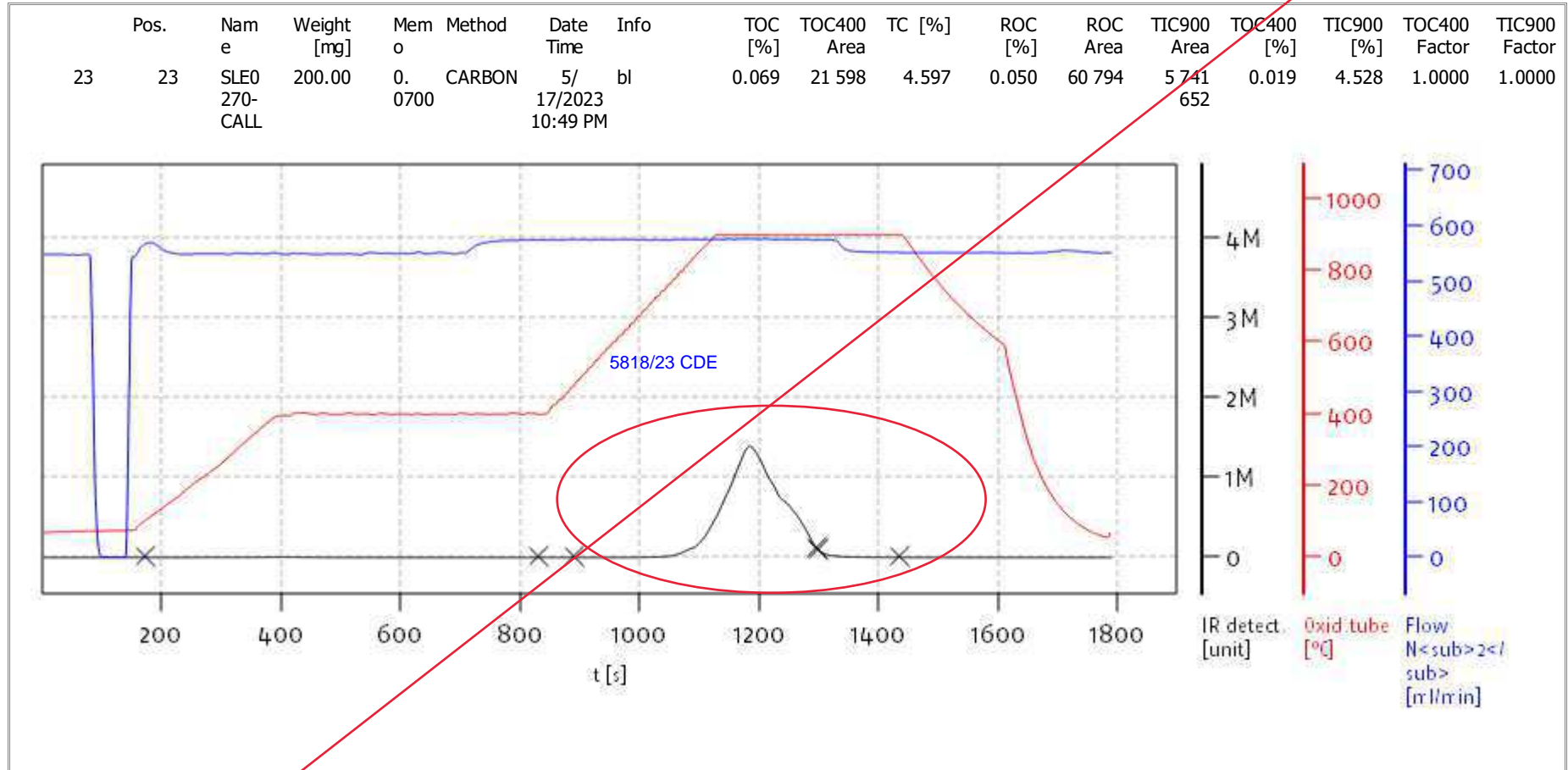


solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

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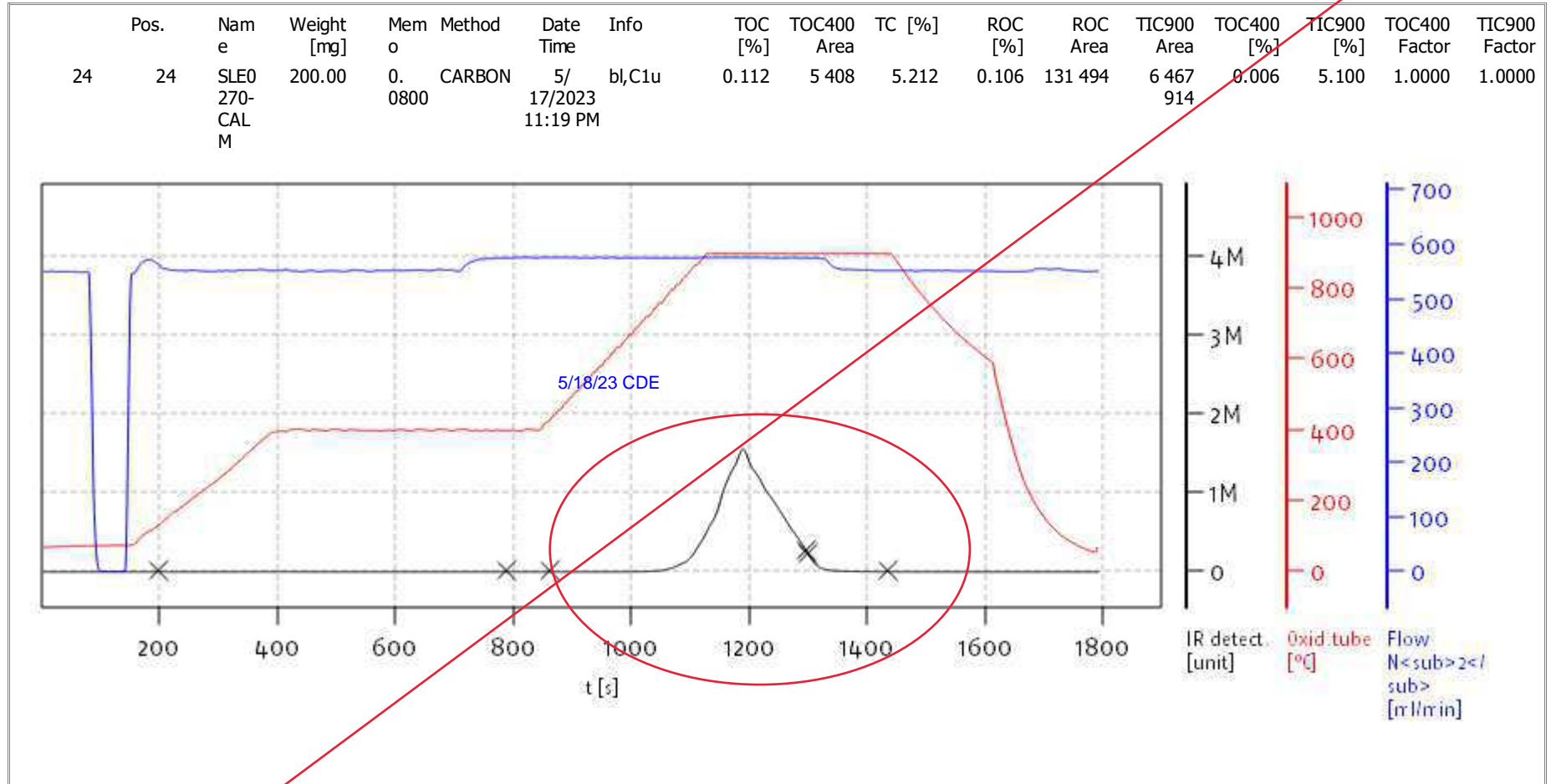
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



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Access: solITOC superuser

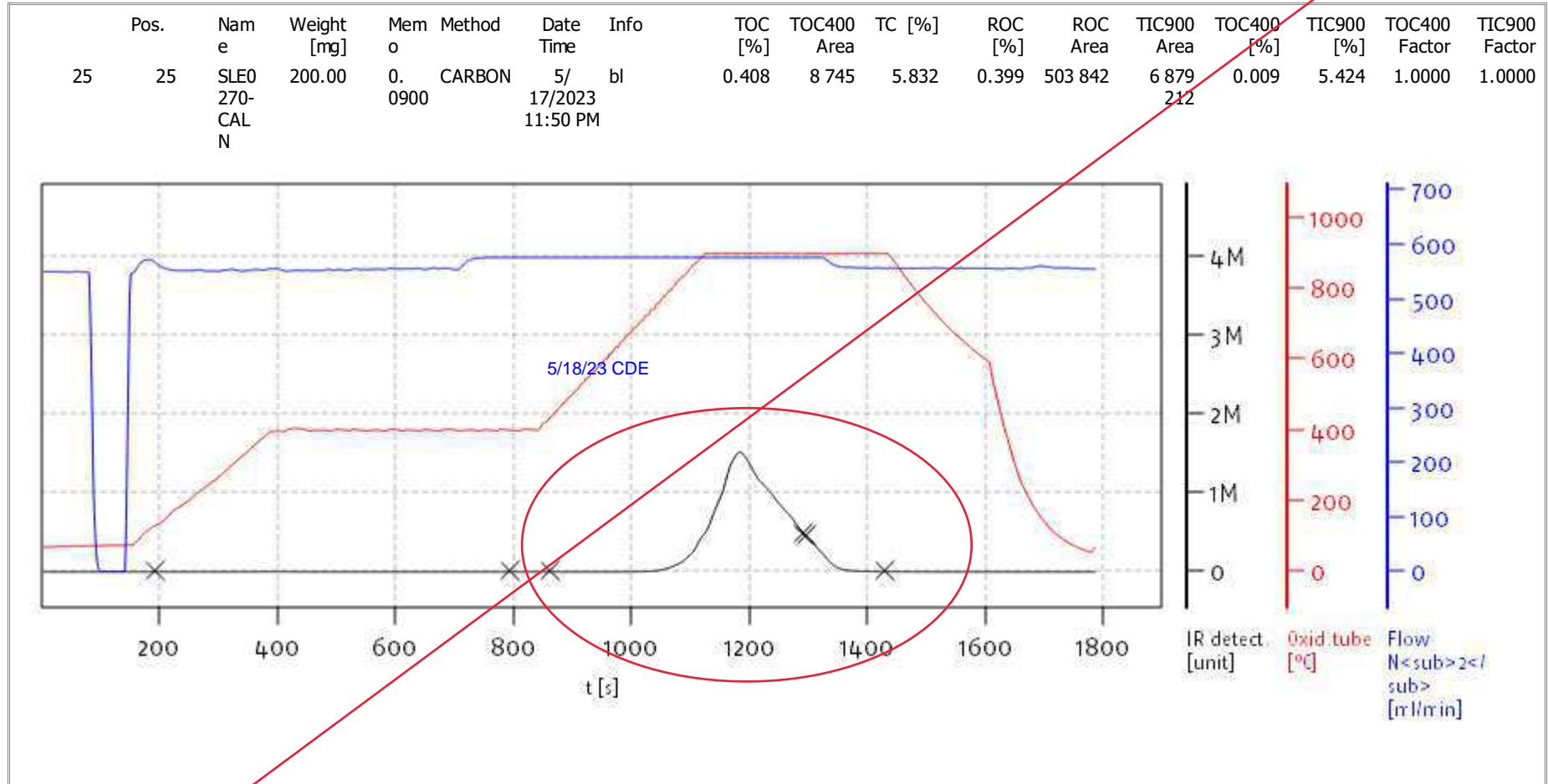
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: soliTOC superuser

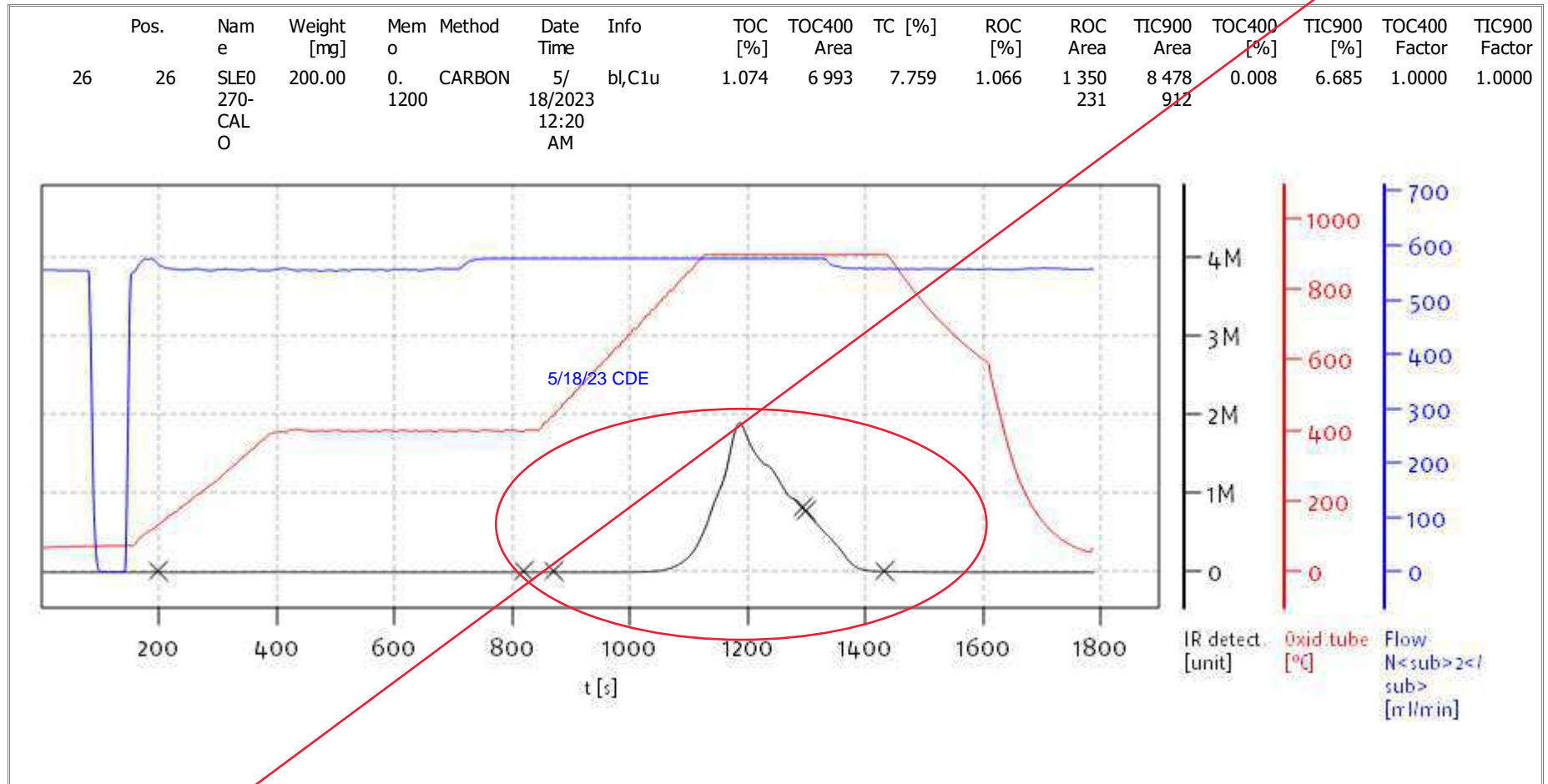
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soliTOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

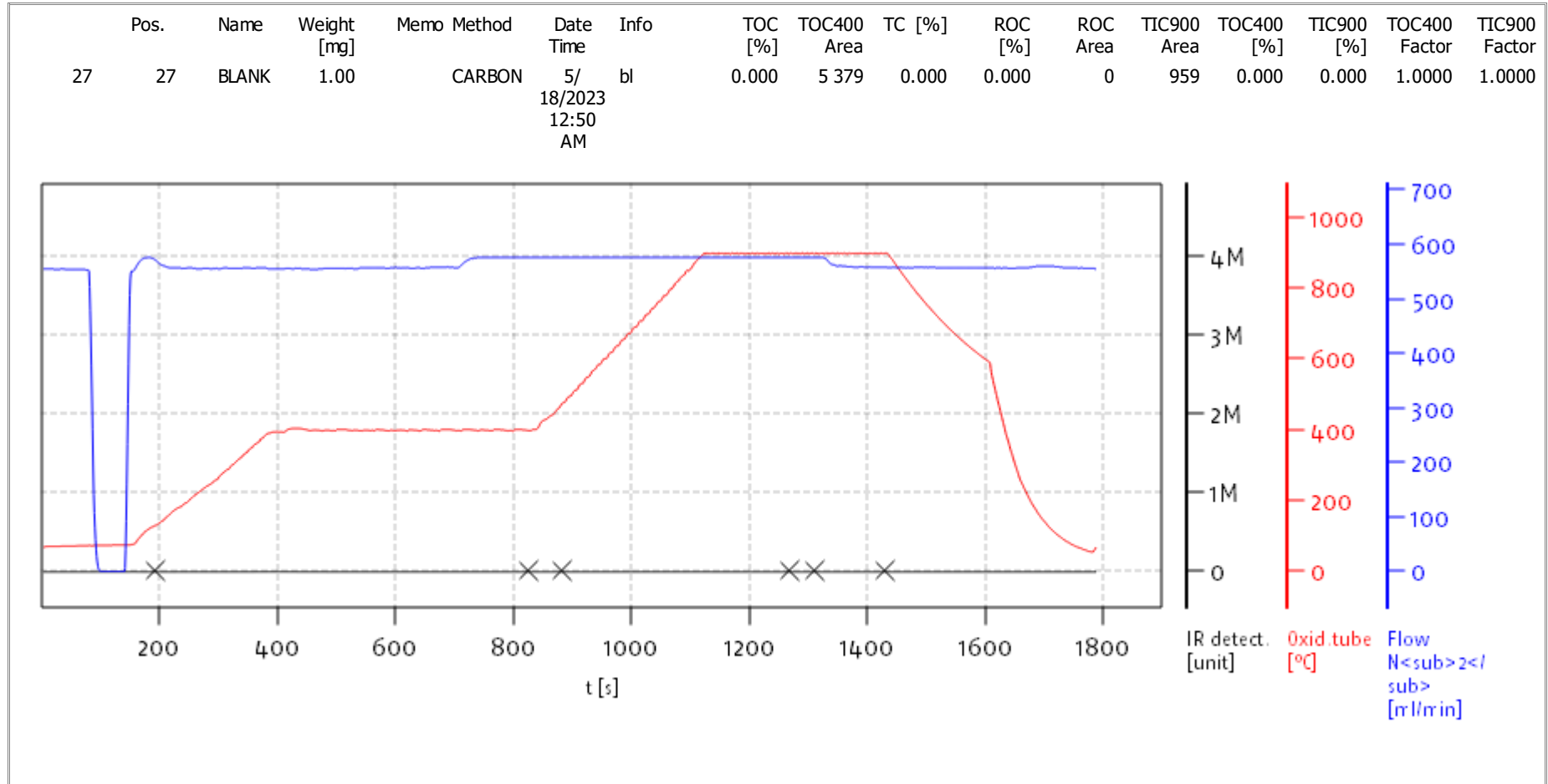
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solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

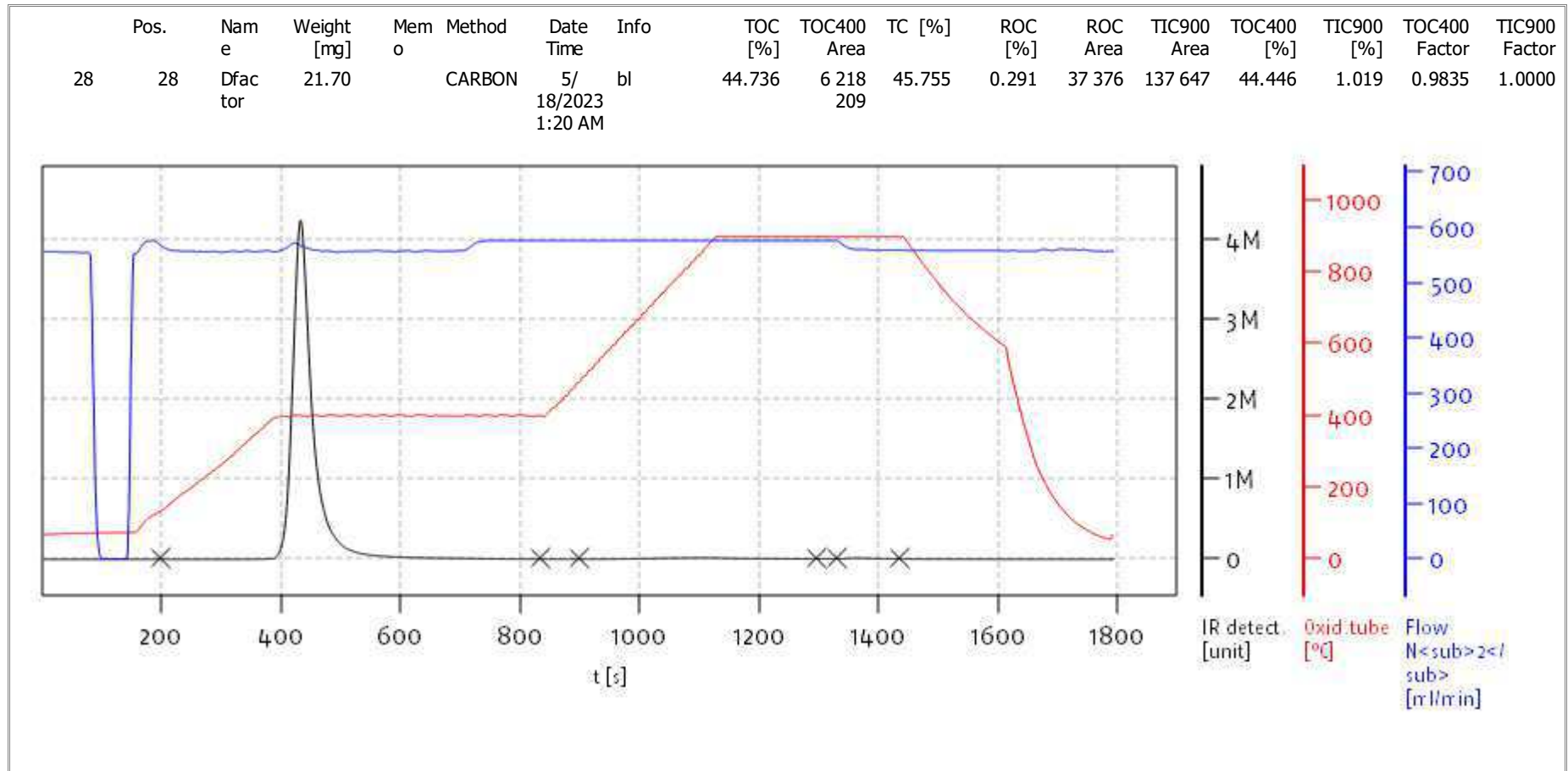
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

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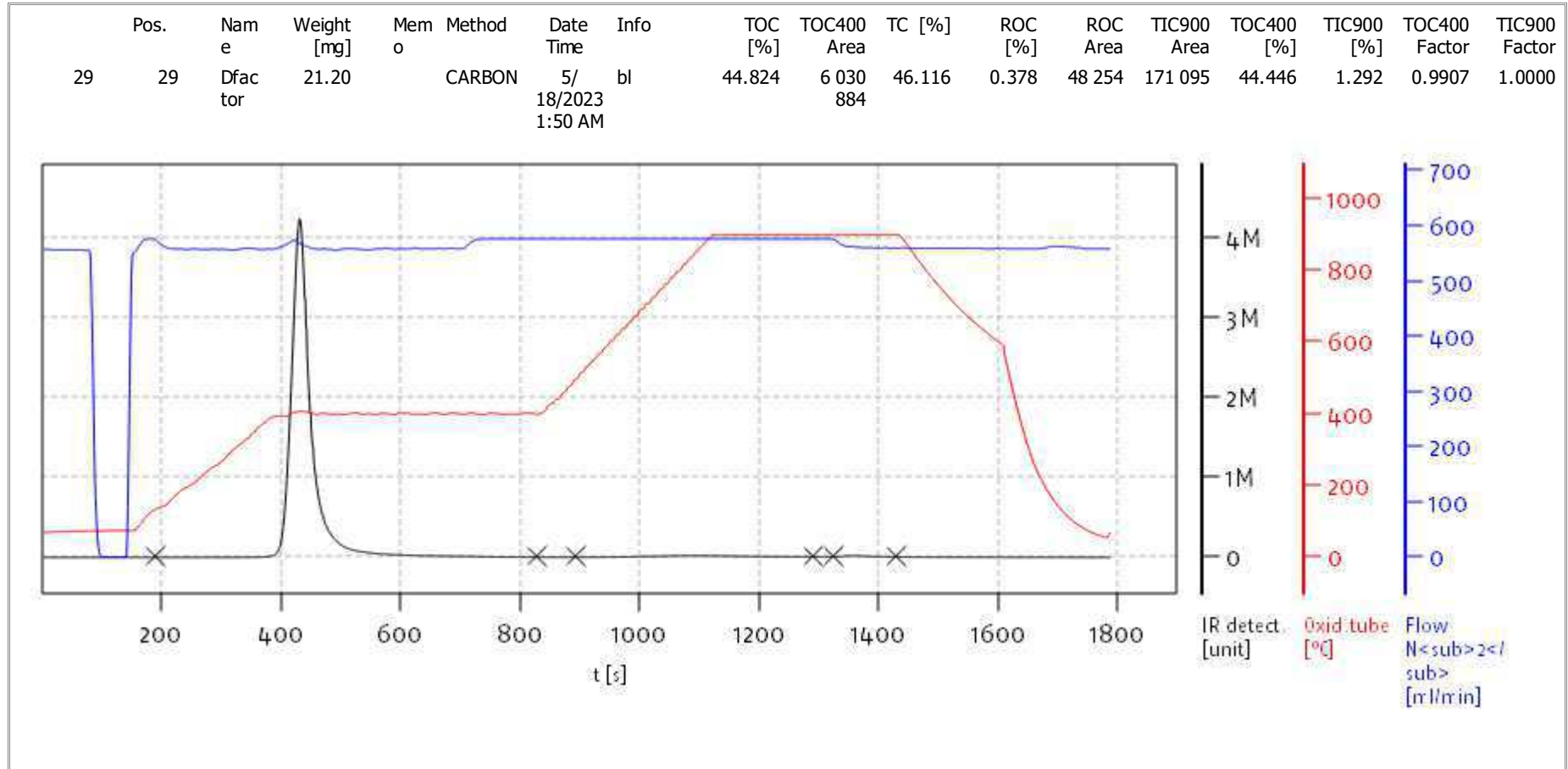


solITOC V2.0.2 (31015f9) 2018-11-19  
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Mode CCC





Soli TOC Cube, Carbon  
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Analyst: CDE



Name:

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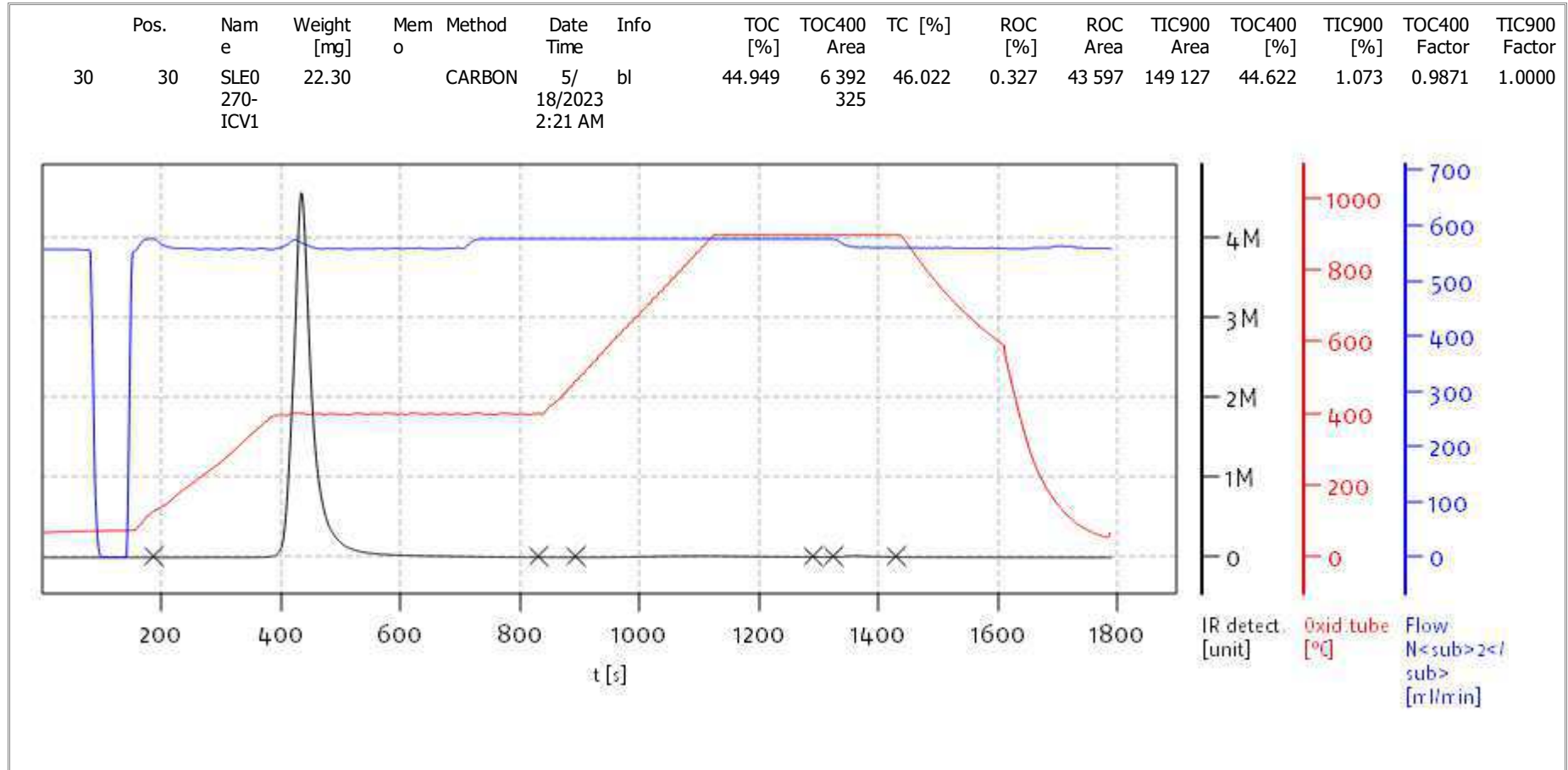
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solITOC V2.0.2 (31015f9) 2018-11-19  
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Soli TOC Cube, Carbon  
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Date: Thu May 18 09:43:39 2023

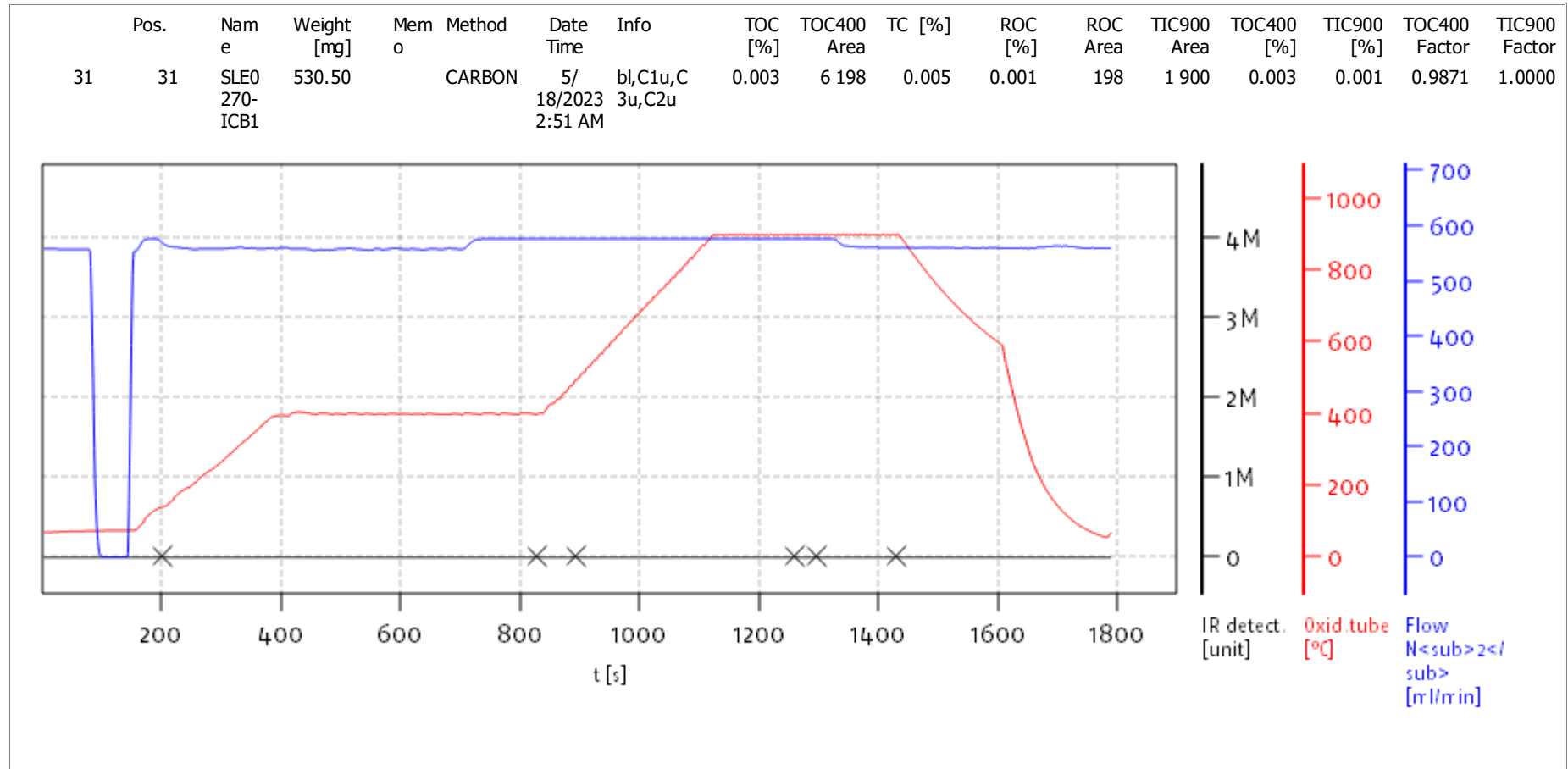


solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

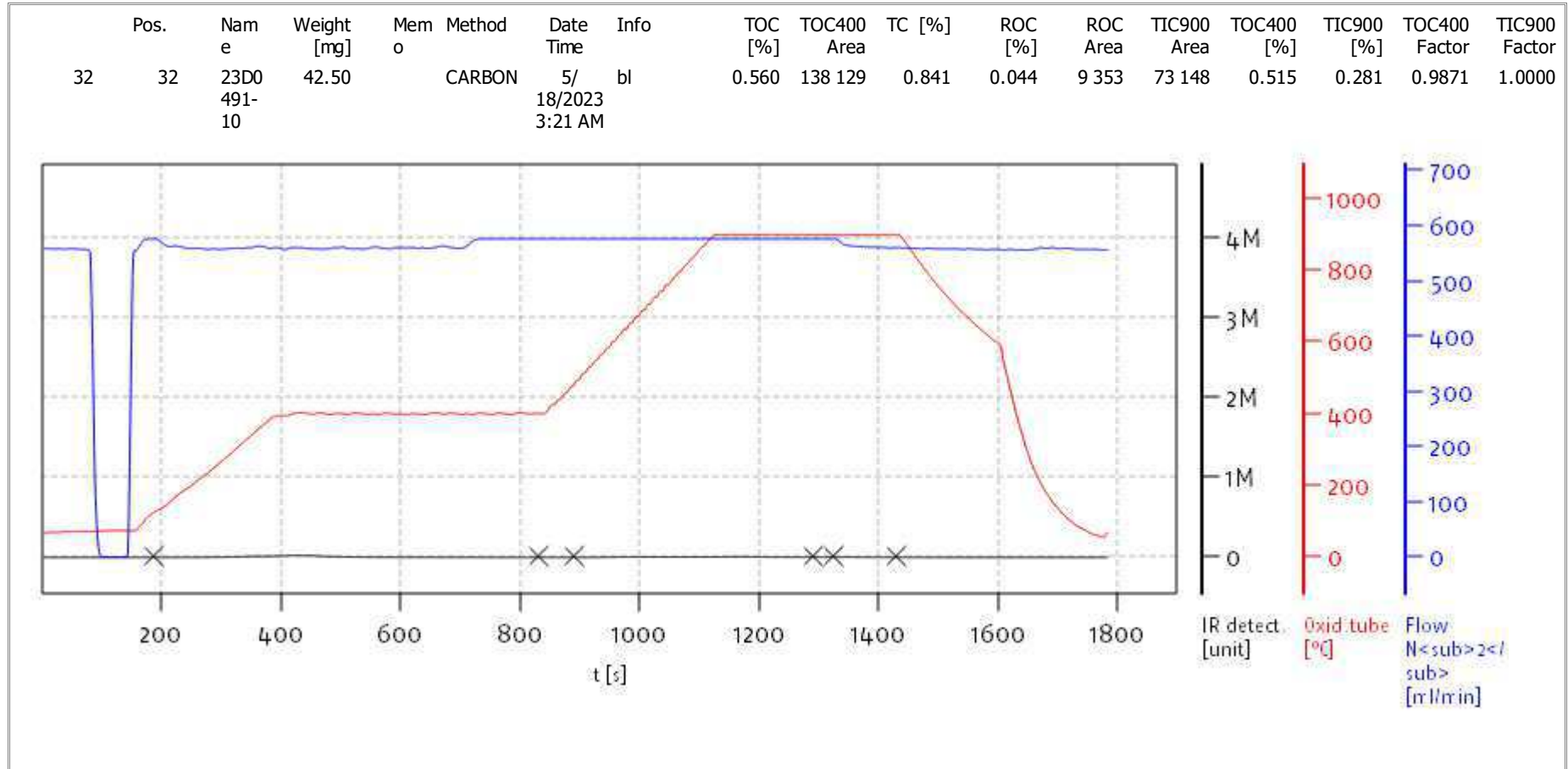
Date: Thu May 18 09:43:39 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

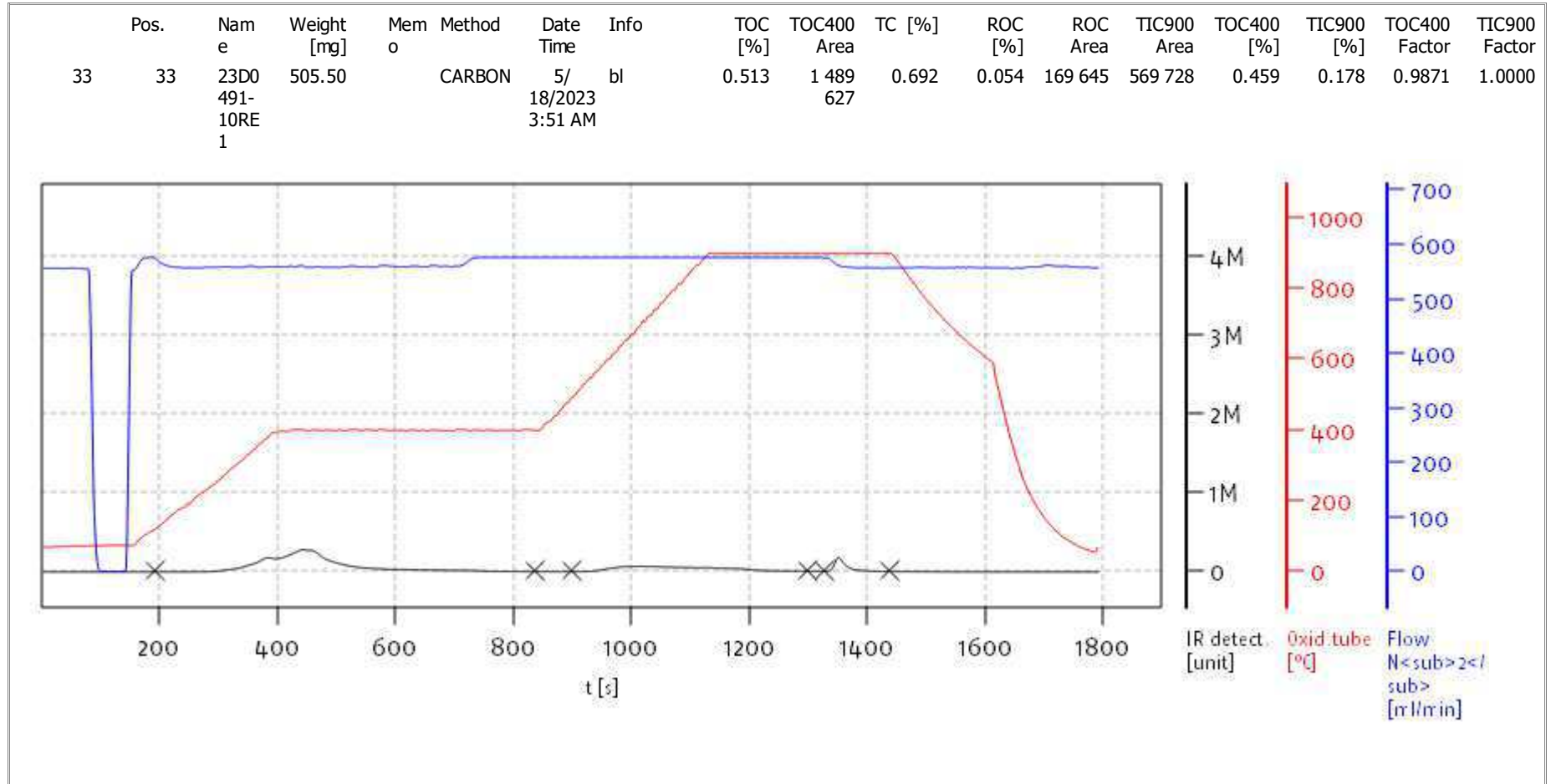
Date: Thu May 18 09:43:39 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

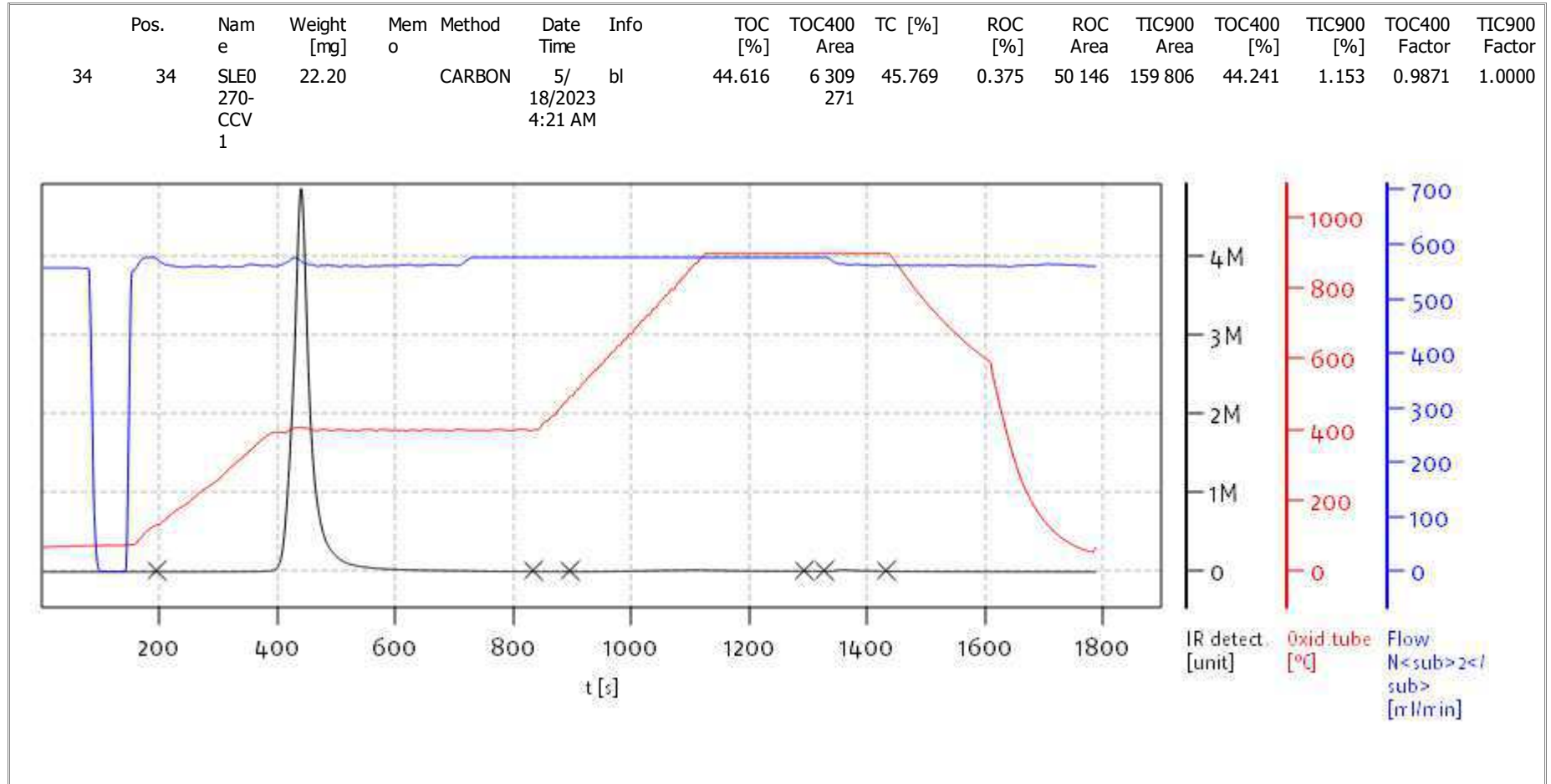
Date: Thu May 18 09:43:39 2023



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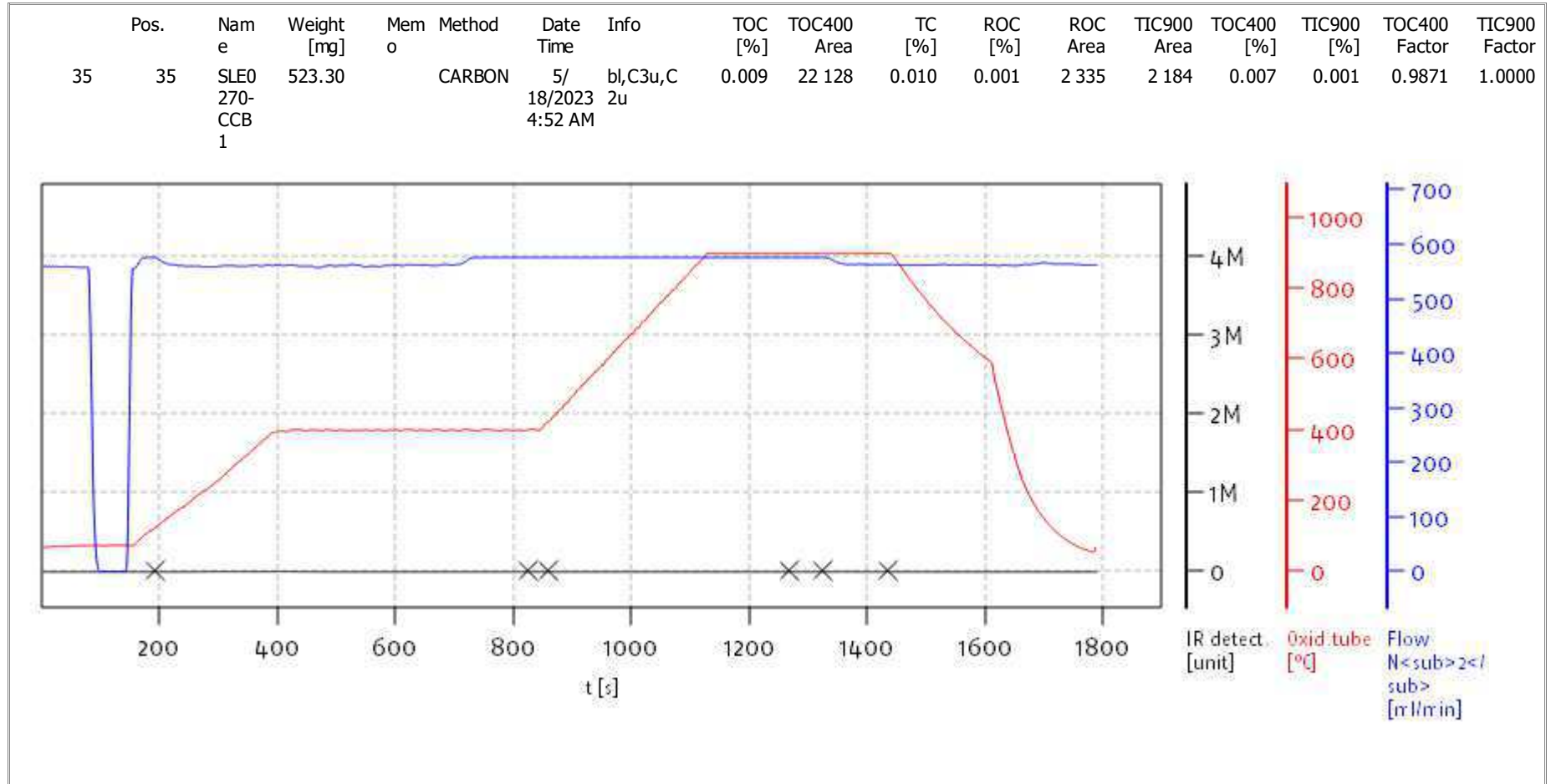
Date: Thu May 18 09:43:39 2023



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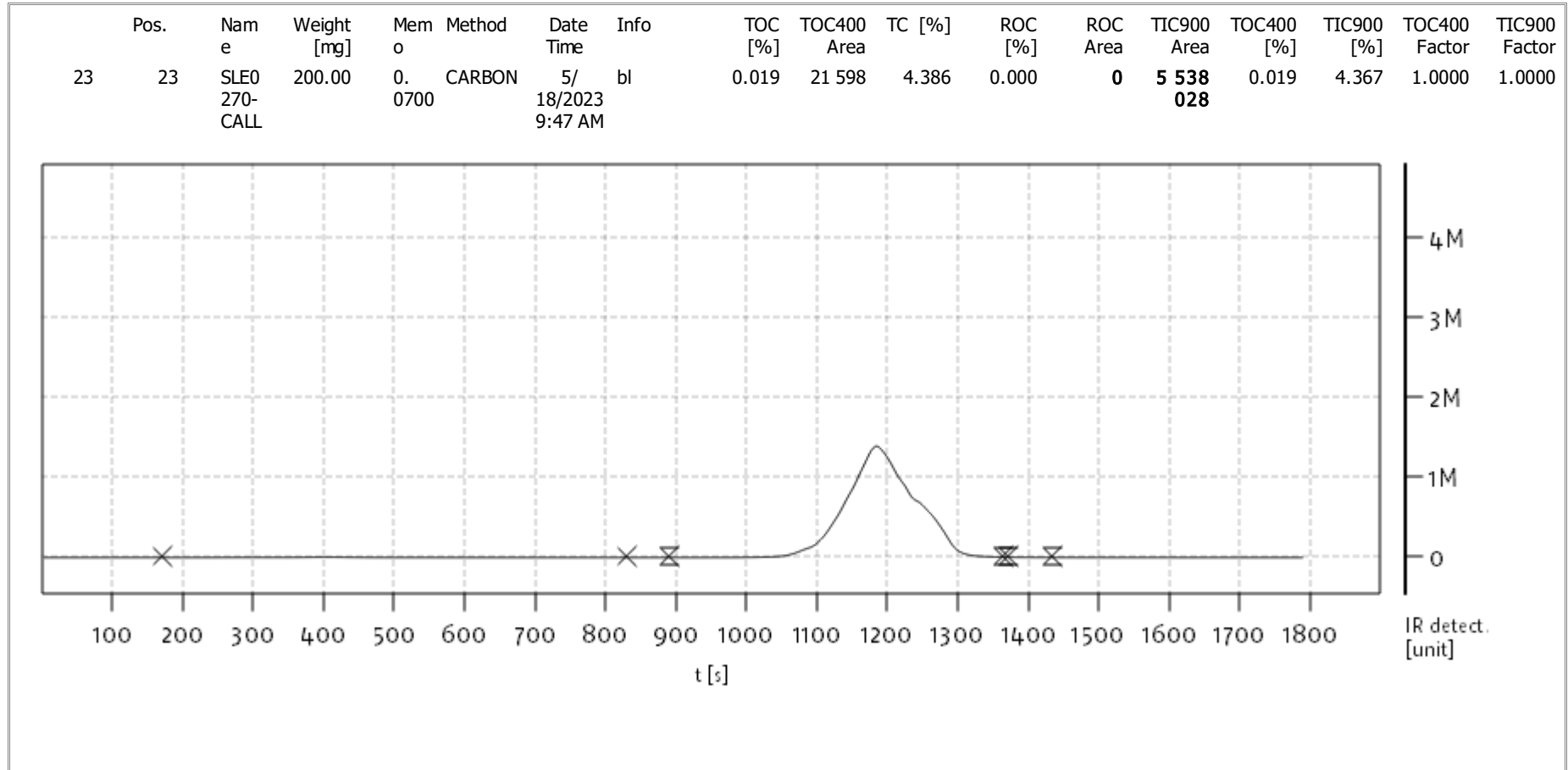
Date: Thu May 18 09:43:39 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
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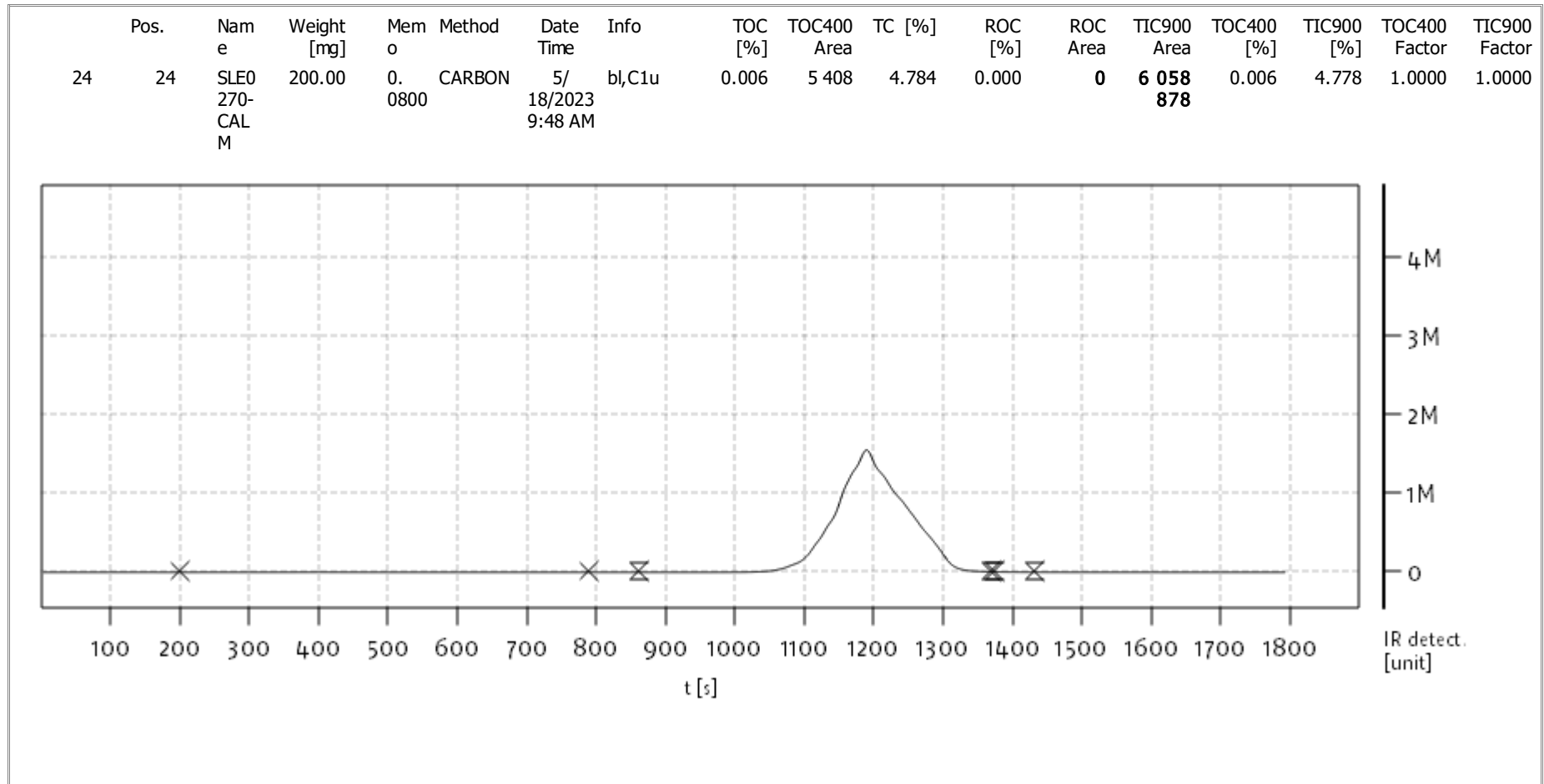
Date: Thu May 18 09:50:12 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

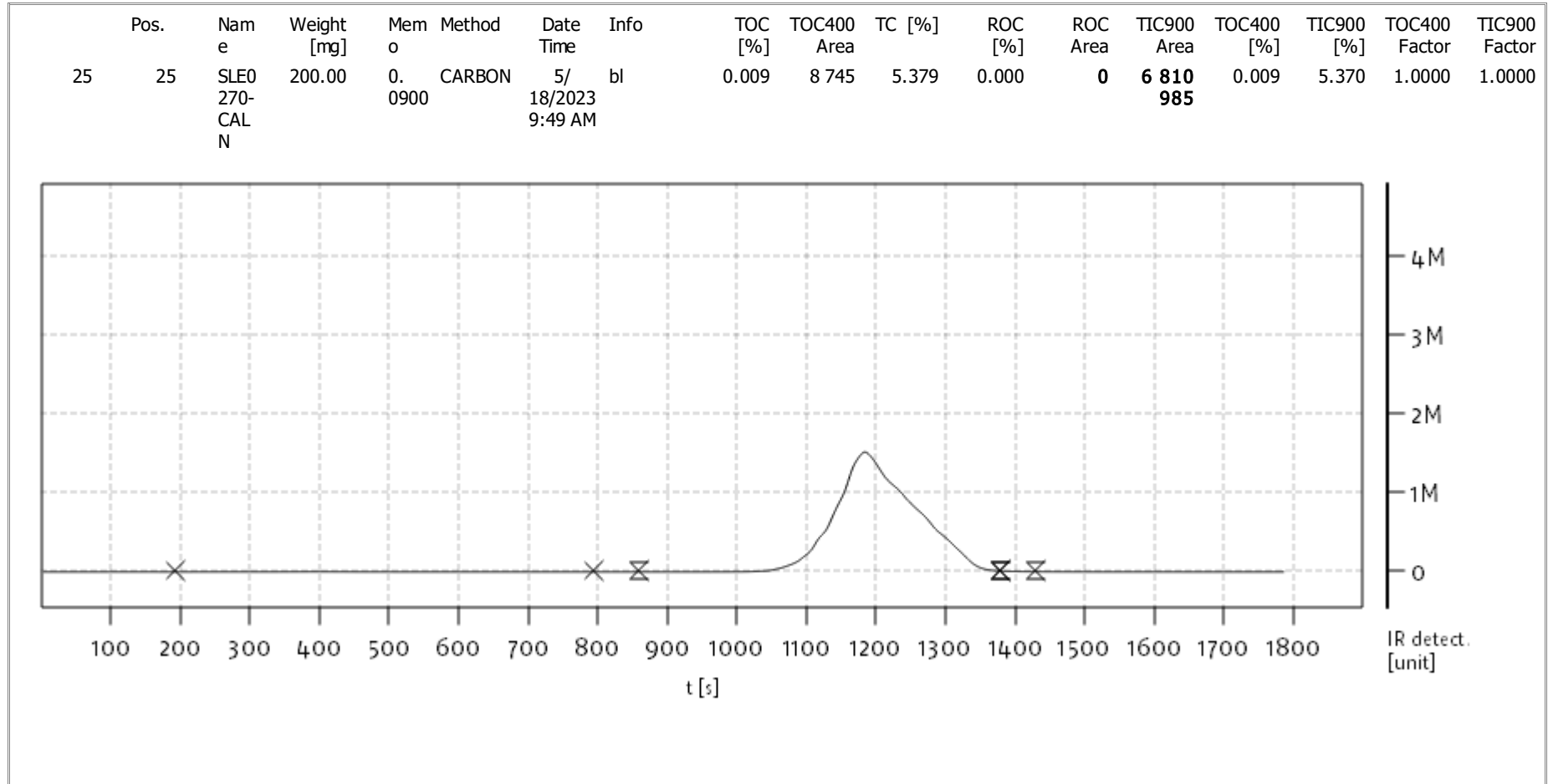
Date: Thu May 18 09:50:12 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Thu May 18 09:50:12 2023

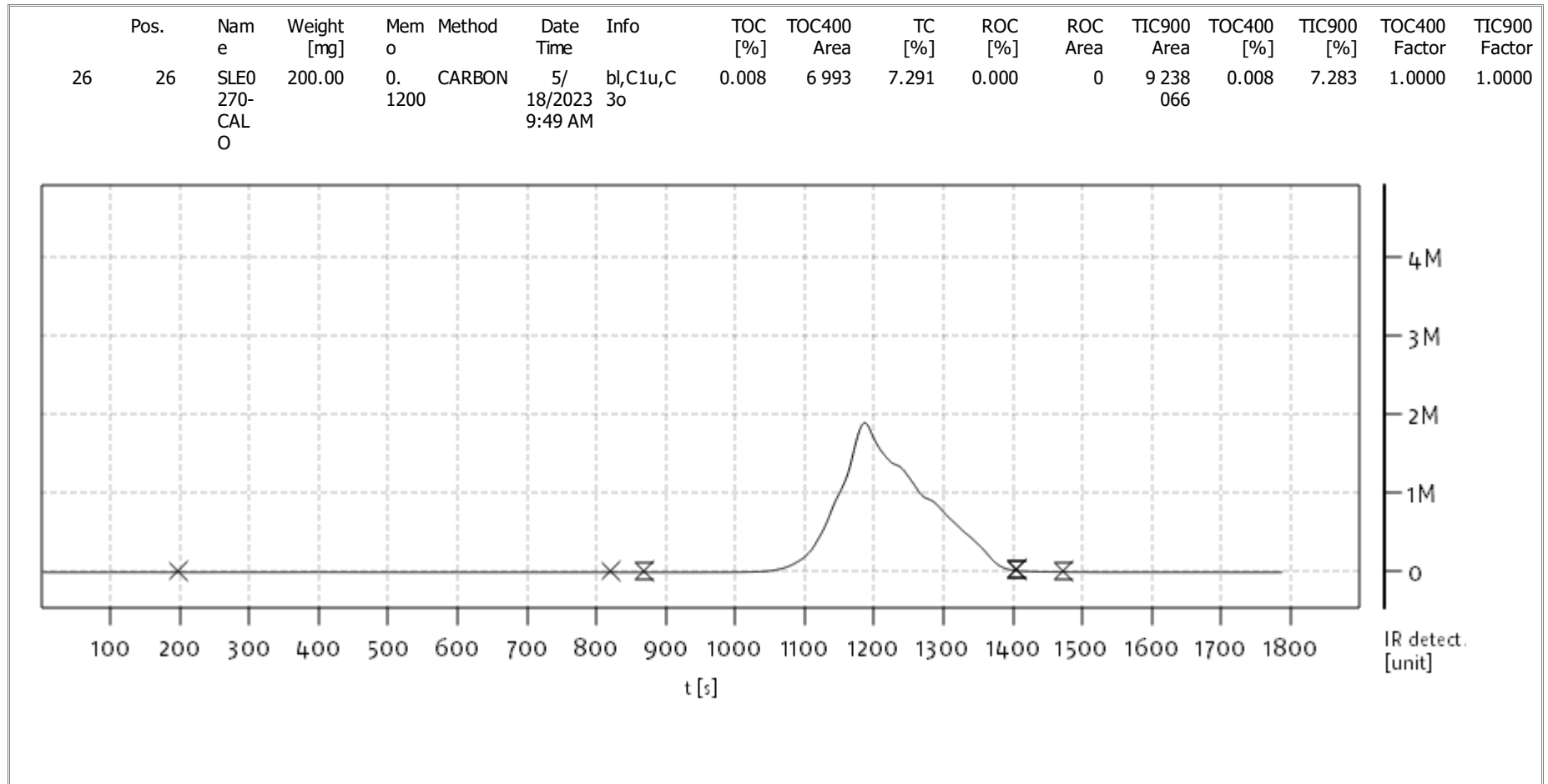


solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC





Soli TOC Cube, Carbon  
Balance: BAL3  
Analyst: CDE



Name:

Access: solITOC superuser

Date: Thu May 18 09:50:12 2023



solITOC V2.0.2 (31015f9) 2018-11-19  
Serial No: 0300.181017  
Mode CCC



**INSTRUMENT BLANKS**  
**EPA 9060A m**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: TOC Cube

Calibration: GE00052

Sequence: SLE0228

Date Analyzed: 05/19/23 13:36

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0228-ICB1	Total Organic Carbon	0.00	0.02	0.02	%	
SLE0228-CCB1	Total Organic Carbon	0.00	0.02	0.02	%	
SLE0228-CCB2	Total Organic Carbon	0.00	0.02	0.02	%	
SLE0228-CCB3	Total Organic Carbon	0.00	0.02	0.02	%	
SLE0228-CCB4	Total Organic Carbon	0.00	0.02	0.02	%	
SLE0228-CCB5	Total Organic Carbon	0.00	0.02	0.02	%	
SLE0228-CCB6	Total Organic Carbon	0.00	0.02	0.02	%	



**INSTRUMENT BLANKS**  
**EPA 9060A m**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: TOC Cube

Calibration: GE00052

Sequence: SLE0270

Date Analyzed: 05/18/23 02:51

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0270-ICB1	Total Organic Carbon	0.003	0.02	0.02	%	
SLE0270-CCB1	Total Organic Carbon	0.009	0.02	0.02	%	



**INITIAL AND CONTINUING  
CALIBRATION CHECK**  
**EPA 9060A m**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: TOC Cube

Calibration: GE00052

Control Limit: +/- 10.00%

Sequence: SLE0228

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0228-ICV1	Total Organic Carbon	44.446	44.4	99.8	%	EPA 9060A m
SLE0228-CCV1	Total Organic Carbon	44.446	45.3	102	%	EPA 9060A m
SLE0228-CCV2	Total Organic Carbon	44.446	44.9	101	%	EPA 9060A m
SLE0228-CCV3	Total Organic Carbon	44.446	43.4	97.7	%	EPA 9060A m
SLE0228-CCV4	Total Organic Carbon	44.446	44.8	101	%	EPA 9060A m
SLE0228-CCV5	Total Organic Carbon	44.446	44.8	101	%	EPA 9060A m
SLE0228-CCV6	Total Organic Carbon	44.446	46.0	103	%	EPA 9060A m

\* Values outside of QC limits



**INITIAL AND CONTINUING  
CALIBRATION CHECK  
EPA 9060A m**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Instrument ID: TOC Cube

Calibration: GE00052

Control Limit: +/- 10.00%

Sequence: SLE0270

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0270-ICV1	Total Organic Carbon	44.446	45.4	102	%	EPA 9060A m
	Total Carbon	44.446	45.4	102	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	45.4		%	EPA 9060A m
	% Soot	0.0000	45.4		%	EPA 9060A m
SLE0270-CCV1	Total Organic Carbon	44.446	45.2	102	%	EPA 9060A m
	Total Carbon	44.446	45.2	102	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	45.2		%	EPA 9060A m
	% Soot	0.0000	45.2		%	EPA 9060A m

\* Values outside of QC limits



**STANDARD REFERENCE MATERIAL RECOVERY**

**EPA 9060A m**

**Laboratory:** Analytical Resources, LLC

**SDG:** 23D0063

**Client:** Anchor QEA, LLC

**Project:** AOC5 MR Phase 1

**Matrix:** Solid

**Laboratory ID:** BLE0415-SRM1

**Batch:** BLE0415

**Initial/Final:** 0.1599 g / 0.1599 g

**Preparation:** No Prep Wet Chem

**Analyzed:** 05/19/2023 17:37

**Standard ID:** L000790

**Expires:** 05/19/2024

**Standard Lot#:** NA

**Description:** 1941B - Organics in Marine Sediment (Conv

ANALYTE	TRUE (% wet)	FOUND (% wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Total Organic Carbon	2.9900	2.87	0.02	0.02		96.1	80 - 120

\* Values outside of QC limits



## HOLDING TIME SUMMARY

**Analysis: EPA 9060A m**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	05/13/23 14:02	39	14	05/20/23 17:14			*
LDW23-SC1818 23D0063-02	04/04/23 10:25	04/04/23 15:10	05/13/23 14:02	39	14	05/20/23 17:44			*
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	05/13/23 14:02	39	14	05/20/23 18:14			*
LDW23-SC1819 23D0063-04	04/04/23 13:12	04/04/23 15:10	05/13/23 14:02	39	14	05/20/23 18:44			*

\* Indicates hold time exceedance.



**METHOD DETECTION  
AND REPORTING LIMITS**

**EPA 9060A m**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument: TOC Cube

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
Total Organic Carbon	0.02	0.02	%





# National Institute of Standards & Technology

## Certificate of Analysis

### Standard Reference Material® 1941b

#### Organics in Marine Sediment

This Standard Reference Material (SRM) is marine sediment collected at the mouth of the Baltimore (MD) Harbor. SRM 1941b is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides in marine sediment and similar matrices. Information values are also provided for total organic carbon (TOC), total carbon, hydrogen, and nitrogen. All of the constituents for which certified, reference, and information values are provided in SRM 1941b were naturally present in the sediment before processing. A unit of SRM 1941b consists of a bottle containing 50 g of radiation-sterilized, freeze-dried sediment.

**Certified Mass Fraction Values:** Certified mass fraction values for PAHs, PCB congeners, and chlorinated pesticides are provided in Table 1 through Table 3. The certified values for the PAHs, PCB congeners, and chlorinated pesticides are based on the agreement of results obtained at NIST from two or more chemically independent analytical techniques along with results from an interlaboratory comparison study [1]. A NIST certified value is a value for which NIST has the highest confidence in its accuracy in that all known or suspected sources of bias have been investigated or taken into account [1].

**Reference Mass Fraction Values:** Reference mass fraction values for additional PAHs (some in combination), additional PCB congeners, and additional chlorinated pesticides are provided in Table 4 through Table 7. Reference values for alkylated PAH groups are provided in Table 8 and for selected hopanes and steranes in Table 9. A reference value for total organic carbon is provided in Table 10. Reference values are noncertified values that are the best estimate of the true value; however, the values do not meet the NIST criteria for certification and are provided with associated uncertainties that may reflect only measurement precision, may not include all sources of uncertainty, or may reflect a lack of sufficient statistical agreement among multiple analytical methods [1].

**Information Mass Fraction Values:** Information mass fraction values are provided in Table 11 for carbon, hydrogen, and nitrogen. An information value is considered to be a value that will be of use to the SRM user, but insufficient information is available to assess the uncertainty associated with the value [1]. Information values cannot be used to establish metrological traceability.

**Expiration of Certification:** The certification of SRM 1941b is valid, within the measurement uncertainty specified, until **01 October 2020**, provided the SRM is handled and stored in accordance with the instructions given in this certificate (see "Instructions for Handling, Storage, and Use"). This certification is nullified if the SRM is damaged, contaminated, or otherwise modified.

**Maintenance of SRM Certification:** NIST will monitor this SRM over the period of its certification. If substantive technical changes occur that affect the certification before the expiration of this certificate, NIST will notify the purchaser. Registration (see attached sheet or register online) will facilitate notification.

Coordination of the technical measurements leading to the certification of this material was under the leadership of M.M. Schantz and S.A. Wise of the NIST Chemical Sciences Division.

Analytical measurements for the certification of SRM 1941b were performed at NIST by J.R. Kucklick, B.J. Porter, D.L. Poster, M.M. Schantz, P. Schubert, S. Tutschku, and L.L. Yu of the NIST Chemical Sciences Division.

Carlos A. Gonzalez, Chief  
Chemical Sciences Division

Measurements for TOC were provided by a commercial laboratory and T.L. Wade of the Geochemical and Environmental Research Group, Texas A&M University (College Station, TX). The carbon, hydrogen, and nitrogen data were provided by a commercial laboratory. Results for the PAHs, PCBs, and chlorinated pesticides from 38 laboratories (see Appendix A) that participated in an interlaboratory comparison exercise coordinated by NIST were used. Results for the alkylated PAH groups, hopanes, and steranes from 33 laboratories (see Appendix B) that participated in another interlaboratory comparison exercise coordinated by NIST were also used.

Collection and preparation of SRM 1941b were performed by M.P. Cronise and C.N. Fales of the NIST Office of Reference Materials and B.J. Porter and M.M. Schantz of the NIST Chemical Sciences Division. The sediment material was collected with the assistance of G.G. Lauenstein, J. Collier, and J. Lewis (National Oceanic and Atmospheric Administration, Silver Spring, MD).

Consultation on the statistical design of the experimental work and evaluation of the data were provided by S.D. Leigh and J.H. Yen of the NIST Statistical Engineering Division.

Support aspects involved in the issuance of this SRM were coordinated through the NIST Office of Reference Materials.

## INSTRUCTIONS FOR HANDLING, STORAGE, AND USE

**Handling:** This material is naturally occurring marine sediment from an urban area and may contain constituents of unknown toxicities; therefore, caution and care should be exercised during its handling and use.

**Storage:** SRM 1941b must be stored in its original bottle at temperatures less than 30 °C and away from direct sunlight.

**Use:** Prior to removal of subsamples for analysis, the contents of the bottle should be mixed. The mass fractions of constituents in SRM 1941b are reported on a dry-mass basis. The SRM, as received, contains a mass fraction of approximately 2.4 % moisture (see "Conversion to Dry-Mass Basis"). The sediment sample should be dried to a constant mass before weighing for analysis; or a separate subsample of the sediment should be removed from the bottle at the time of analysis and dried to determine the mass fraction on a dry-mass basis. If the constituents of interest are volatile, then the moisture must be determined with a separate subsample.

## PREPARATION AND ANALYSIS<sup>(1)</sup>

**Sample Collection and Preparation:** The sediment used to prepare this SRM was collected from the Chesapeake Bay at the mouth of the Baltimore (MD) Harbor near the Francis Scott Key Bridge (39°12.3'N and 76°31.4'W). This location is very near the site where SRM 1941 and SRM 1941a were collected. The sediment was collected using a Kynar-coated modified Van Veen-type grab sampler. A total of approximately 3300 kg of wet sediment was collected from the site. The sediment was freeze-dried, sieved at 150 µm (100 % passing), homogenized in a cone blender, radiation sterilized (<sup>60</sup>Co), and then packaged in screw-capped amber glass bottles each containing approximately 50 g.

**Conversion to Dry-Mass Basis:** The results for the constituents in SRM 1941b are reported on a dry-mass basis; however, the material "as received" contains residual moisture. The amount of moisture in SRM 1941b was determined by measuring the mass loss after freeze-drying subsamples of 1.1 g to 1.3 g for four days at 1 Pa with a -10 °C shelf temperature and a -50 °C condenser temperature. The moisture content in SRM 1941b at the time of the certification analyses was 2.39 % ± 0.08 % (95 % confidence level). Analytical results for the organic constituents were determined on an as-received basis and then converted to a dry-mass basis by dividing by the conversion factor of 0.9761 (gram dry mass per gram as-received mass).

**Polycyclic Aromatic Hydrocarbons:** The general approach used for the value assignment of the PAHs in SRM 1941b was similar to that reported in detail elsewhere [2]. The approach consisted of combining results from analyses using various combinations of different extraction techniques and solvents, clean-up/isolation procedures, and chromatographic separation and detection techniques: Soxhlet extraction and pressurized-fluid extraction (PFE) using dichloromethane (DCM) or a hexane/acetone mixture, cleanup of the extracts using solid-phase extraction (SPE) or normal-phase liquid chromatography (LC), followed by analysis using the following techniques: (1) reversed-phase liquid chromatography with fluorescence detection (LC-FL) analysis of the total PAH fraction, (2) reversed-phase

<sup>(1)</sup> Certain commercial equipment, instruments or materials are identified in this certificate to adequately specify the experimental procedure. Such identification does not imply recommendation or endorsement by the National Institute of Standards and Technology.

LC-FL analysis of isomeric PAH fractions isolated by normal-phase LC (i.e., multidimensional LC), (3) gas chromatography/mass spectrometry (GC/MS) analysis of the PAH fraction on three stationary phases of different selectivity, i.e., a 5 % (all column compositions are given as mole fractions in %) phenyl-substituted methylpolysiloxane phase, a 50 % phenyl-substituted methylpolysiloxane phase, and a relatively non-polar proprietary phase.

Three sets of GC/MS results, designated as GC/MS (I), GC/MS (II), and GC/MS (III), were obtained using three columns with different selectivities for the separation of PAHs. For GC/MS (I) analyses, duplicate subsamples of approximately 1 g from ten bottles of SRM 1941b were extracted using PFE with DCM. Copper powder was added to the extract to remove elemental sulfur. The concentrated extract was passed through an aminopropyl SPE cartridge and eluted with 2 % DCM in hexane (all solvent concentrations are given as volume fractions in %). The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-5 MS, J&W Scientific, Folsom, CA). The GC/MS (II) analyses were performed using 5 g subsamples from six bottles of SRM 1941b. These samples were extracted using PFE with DCM. The high molecular mass compounds were removed from the extracts using size exclusion chromatography (SEC) with a preparative-scale divinylbenzene-polystyrene column (10 μm particle size with 10 nm diameter pores), and the sulfur was removed from the extracts by adding copper powder. The concentrated extract was passed through an aminopropyl SPE cartridge and eluted with 10 % DCM in hexane. The analysis was by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 50 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-17 MS, J&W Scientific). For the GC/MS (III), 9 g subsamples from six bottles of SRM 1941b were Soxhlet-extracted for 18 h with 250 mL of a mixture of 50 % hexane/50 % acetone. Copper powder was added to the extract to remove elemental sulfur, and the concentrated extract was passed through a silica SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a relatively non-polar proprietary phase (0.25 μm film thickness; DB-XLB, J&W Scientific).

Two sets of LC-FL results, designated as LC-FL (total) and LC-FL (isomer), were used in the certification process. For the LC-FL (total), subsamples of approximately 1 g from six bottles of SRM 1941b were extracted using PFE with a mixture of 50 % hexane/50 % acetone. The extracts were concentrated and then processed through an aminopropylsilane SPE cartridge using 2 % DCM in hexane to obtain the total PAH fraction. For the LC-FL (isomer), a 5 g subsample from the six bottles was extracted using PFE with DCM and processed through an aminopropylsilane SPE cartridge using 10 % DCM in hexane; the PAH fraction was then fractionated further on a semi-preparative aminopropylsilane column (μBondapak NH<sub>2</sub>, 9 mm i.d. × 30 cm, Waters Associates, Milford, MA) to isolate isomeric PAH fractions as described previously [3–6]. The total PAH fraction and the isomeric PAH fractions were analyzed using a 5 μm particle-size polymeric octadecylsilane (C<sub>18</sub>) column (4.6 mm i.d. × 25 cm, Hypersil-PAH, Keystone Scientific, Inc., Bellefonte, PA) with wavelength-programmed fluorescence detection [4,5].

For the GC/MS and LC-FL measurements described above, selected perdeuterated PAHs were added to the sediment prior to solvent extraction for use as internal standards for quantification purposes.

In addition to the analyses performed at NIST, SRM 1941b was used in an interlaboratory comparison exercise in 1999 as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment [7]. Results from 38 laboratories that participated in this exercise were used as the sixth data set in the determination of the certified values for PAHs in SRM 1941b. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest.

**Homogeneity Assessment for PAHs:** The homogeneity of SRM 1941b was assessed by analyzing duplicate samples of approximately 1 g from ten bottles selected by stratified random sampling. Samples were extracted, processed, and analyzed as described above for GC/MS (I). No statistically significant differences among bottles were observed for the PAHs at this sample size.

**PAH Isomers of Molecular Mass 300 and 302:** For the determination of the molecular mass 300 and 302 isomers, three subsamples of approximately 5 g each were extracted using PFE with DCM. The extracts were then concentrated with a solvent change to hexane and passed through an aminopropyl SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 50 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-17MS, J&W Scientific). Perdeuterated dibenzo[*a,i*]pyrene was added to the sediment prior to extraction for use as an internal standard [8].

**PCBs and Chlorinated Pesticides:** The general approach used for the determination of PCBs and chlorinated pesticides in SRM 1941b consisted of combining results from analyses using various combinations of different extraction techniques and solvents, cleanup/isolation procedures, and chromatographic separation and detection techniques. Techniques and solvents included Soxhlet extraction and PFE using DCM or a hexane/acetone mixture.

clean-up/isolation using SPE or LC, followed by analysis using GC/MS and gas chromatography with electron capture detection (GC-ECD) on two columns with different selectivity for the separation of PCBs and chlorinated pesticides. The analytical methods are described in detail elsewhere [2].

Six sets of results were obtained and designated as GC-ECD (I) A and B, GC/MS (I) A and B, GC/MS (II), and Interlaboratory Comparison Exercise. For the GC-ECD (I) analyses, approximately 10 g subsamples from six bottles of SRM 1941b were extracted using PFE with DCM. Copper powder was added to the extract to remove elemental sulfur, and SEC, as described above, was used to remove the high molecular mass compounds. The concentrated extract was then fractionated on a semi-preparative aminopropylsilane column to isolate two fractions containing: (1) the PCBs and lower-polarity pesticides and (2) the more polar pesticides. GC-ECD analyses of the two fractions were performed on two columns of different selectivities for PCB separations: 0.25 mm × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-5, J&W Scientific), and a 0.25 mm × 60 m fused silica capillary column with a non-polar proprietary phase (0.25 μm film thickness; DB-XLB, J&W Scientific). The results from the 5 % phenyl phase are designated as GC-ECD (IA) and the results from the proprietary phase are designated as GC-ECD (IB). For the GC-ECD analyses, two PCB congeners that are not significantly present in the sediment extract (PCB 103 and PCB 198 [9,10]) and endosulfan I-*d*<sub>4</sub>, 4,4'-DDE-*d*<sub>8</sub>, 4,4'-DD-*d*<sub>8</sub>, and 4,4'-DDT-*d*<sub>8</sub> were added to the sediment prior to extraction for use as internal standards for quantification purposes.

Two sets of results were obtained by GC/MS. For GC/MS (I), approximately 9 g subsamples from six bottles were Soxhlet- extracted with a mixture of 50 % hexane/50 % acetone for approximately 18 h. Copper powder was added to the extract to remove elemental sulfur, and the concentrated extract was passed through a silica SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS with two ionization modes, electron impact (EI) and negative ion chemical ionization (NICI). The GC/MS EI method, GC/MS (IA), used a 0.25 mm i.d. × 60 m fused silica capillary column with a relatively non-polar proprietary phase (0.25 μm film thickness; DB-XLB, J&W Scientific). The GC/MS NICI method, GC/MS (IB), used a 0.25 mm i.d. × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-5MS, J&W Scientific). The GC/MS (II) results were obtained in the same manner as the GC/MS (IA) analyses except that three subsamples were Soxhlet-extracted with DCM for approximately 18 h. For the GC/MS analyses, selected carbon-13 labeled PCB congeners and chlorinated pesticides were added to the sediment prior to extraction for use as internal standards for quantification purposes.

In addition to the analyses performed at NIST, SRM 1941b was used in an interlaboratory comparison exercise in 1999 as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment [7]. Results from 38 laboratories that participated in this exercise were used as the sixth data set in the determination of the certified values for PCB congeners and chlorinated pesticides in SRM 1941b. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest.

The reference value for PCB 77 was determined from a separate fraction. The samples were extracted and processed as for GC-ECD (I) above. The first (PCB and lower-polarity pesticide) fraction from the semi-preparative aminopropylsilane column was further fractionated using a Cosmosil PYE (pyrenylethyl group bonded) column (5 μm particle size, 4.6 mm i.d. × 25 cm; Phenomenex, Torrance, CA) [11]. Three fractions were collected: the first fraction contained the pesticides and multi-*ortho* PCBs, the second fraction contained the polychlorinated naphthalenes, non-*ortho* PCB congeners, and some mono-*ortho* PCB congeners, and the third fraction removed the residual planar compounds from the column. The second fraction was analyzed by GC/MS NICI using the same column as GC/MS (IB) above. Carbon-13 labeled PCB 77 was used as an internal standard for quantification purposes.

**Alkylated PAH Groups, Hopanes, and Steranes:** SRM 1941b was used in an interlaboratory comparison exercise in 2011 [12]. Results from 33 laboratories that participated in this exercise were used in the determination of the reference values for alkylated PAH groups, hopanes, and steranes in SRM 1941b. Note that not all laboratories returned data for each analyte. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest. For the alkylated PAHs, the majority of the laboratories (>90 %) used the parent PAH for determination of the response factor for the corresponding alkylated group.

**Total Organic Carbon (TOC):** Two laboratories provided results for TOC using similar procedures. Briefly, subsamples of approximately 200 mg were reacted with 6 mol/L hydrochloric acid and rinsed with deionized water prior to combustion in a gas fusion furnace. The carbon monoxide and carbon dioxide produced were measured and compared to a blank for calculation of the percent TOC. Each laboratory analyzed subsamples from three bottles of SRM 1941b. One of the laboratories also analyzed three subsamples from three bottles of SRM 1941b for carbon, hydrogen, and nitrogen.

Table 1. Certified Mass Fraction Values for PAHs in SRM 1941b

PAHs	Mass Fractions <sup>(a)</sup> ( $\mu\text{g}/\text{kg}$ )	
Naphthalene <sup>(b,c,d,e,f,g)</sup>	848	$\pm 95^{(h)}$
Fluorene <sup>(b,c,d,e,f,g)</sup>	85	$\pm 15^{(h)}$
Phenanthrene <sup>(b,c,d,e,f,g)</sup>	406	$\pm 44^{(h)}$
Anthracene <sup>(b,c,d,e,f,g)</sup>	184	$\pm 18^{(h)}$
3-Methylphenanthrene <sup>(b,c,d)</sup>	105	$\pm 13^{(h)}$
2-Methylphenanthrene <sup>(b,c,d)</sup>	128	$\pm 14^{(h)}$
1-Methylphenanthrene <sup>(b,c,d,g)</sup>	73.2	$\pm 5.9^{(h)}$
Fluoranthene <sup>(b,c,d,e,f,g)</sup>	651	$\pm 50^{(h)}$
Pyrene <sup>(b,c,d,e,f,g)</sup>	581	$\pm 39^{(h)}$
Benz[ <i>a</i> ]anthracene <sup>(b,c,d,e,f,g)</sup>	335	$\pm 25^{(h)}$
Chrysene <sup>(d,f)</sup>	291	$\pm 31^{(h)}$
Triphenylene <sup>(d,f)</sup>	108	$\pm 5^{(i)}$
Benzo[ <i>b</i> ]fluoranthene <sup>(c,e)</sup>	453	$\pm 21^{(h)}$
Benzo[ <i>k</i> ]fluoranthene <sup>(b,c,d,e)</sup>	225	$\pm 18^{(h)}$
Benzo[ <i>e</i> ]pyrene <sup>(b,c,d,g)</sup>	325	$\pm 25^{(h)}$
Benzo[ <i>a</i> ]pyrene <sup>(b,c,d,f,g)</sup>	358	$\pm 17^{(h)}$
Perylene <sup>(b,c,d,f,g)</sup>	397	$\pm 45^{(h)}$
Benzo[ <i>ghi</i> ]perylene <sup>(b,c,d,f,g)</sup>	307	$\pm 45^{(h)}$
Indeno[1,2,3- <i>cd</i> ]pyrene <sup>(b,c,d,f,g)</sup>	341	$\pm 57^{(h)}$
Dibenz[ <i>a,j</i> ]anthracene <sup>(b,c,d,f)</sup>	48.9	$\pm 4.6^{(h)}$
Dibenz[ <i>a,c</i> ]anthracene <sup>(c,f)</sup>	36.7	$\pm 5.2^{(h)}$
Dibenz[ <i>a,h</i> ]anthracene <sup>(c,f)</sup>	53	$\pm 10^{(h)}$
Benzo[ <i>b</i> ]chrysene <sup>(b,c,d,f)</sup>	53	$\pm 12^{(h)}$
Picene <sup>(b,c,d)</sup>	46.6	$\pm 4.7^{(h)}$

<sup>(a)</sup> Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

<sup>(b)</sup> GC/MS (I) on 5 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.

<sup>(c)</sup> GC/MS (II) on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.

<sup>(d)</sup> GC/MS (III) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

<sup>(e)</sup> LC-FL (total) of total PAH fraction after PFE with DCM.

<sup>(f)</sup> LC-FL (isomer) of isomeric PAH fractions after PFE with DCM.

<sup>(g)</sup> 1999 Interlaboratory Comparison Study [7] with 21 to 29 laboratories submitting data for each PAH.

<sup>(h)</sup> Certified values are weighted means of the results from two to six analytical methods [13]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

<sup>(i)</sup> The certified value is an unweighted mean of the results from two analytical methods. The uncertainty listed with the value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled, within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the value is metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

Table 2. Certified Mass Fraction Values for PCB Congeners<sup>(a)</sup> in SRM 1941b

PCB Congeners		Mass Fractions <sup>(b)</sup> ( $\mu\text{g}/\text{kg}$ )
PCB	8 (2,4'-Dichlorobiphenyl) <sup>(c,d,e,f,g)</sup>	1.65 $\pm$ 0.19 <sup>(h)</sup>
PCB	18 (2,2',5-Trichlorobiphenyl) <sup>(c,d,e,f,g)</sup>	2.39 $\pm$ 0.29 <sup>(h)</sup>
PCB	28 (2,4,4'-Trichlorobiphenyl) <sup>(c,d,e,f,g)</sup>	4.52 $\pm$ 0.57 <sup>(h)</sup>
PCB	31 (2,4',5-Trichlorobiphenyl) <sup>(c,e,f)</sup>	3.18 $\pm$ 0.41 <sup>(h)</sup>
PCB	44 (2,2',3,5'-Tetrachlorobiphenyl) <sup>(c,d,e,f,g)</sup>	3.85 $\pm$ 0.20 <sup>(i)</sup>
PCB	49 (2,2',4,5'-Tetrachlorobiphenyl) <sup>(c,d,e,f)</sup>	4.34 $\pm$ 0.28 <sup>(i)</sup>
PCB	52 (2,2',5,5'-Tetrachlorobiphenyl) <sup>(c,d,e,f,g)</sup>	5.24 $\pm$ 0.28 <sup>(i)</sup>
PCB	66 (2,3',4,4'-Tetrachlorobiphenyl) <sup>(c,e,f,g,j)</sup>	4.96 $\pm$ 0.53 <sup>(i)</sup>
PCB	87 (2,2',3,4,5'-Pentachlorobiphenyl) <sup>(c,d,f,j)</sup>	1.14 $\pm$ 0.16 <sup>(h)</sup>
PCB	95 (2,2',3,5',6-Pentachlorobiphenyl) <sup>(c,e,f,g)</sup>	3.93 $\pm$ 0.62 <sup>(i)</sup>
PCB	99 (2,2',4,4',5-Pentachlorobiphenyl) <sup>(c,d,e,f,g)</sup>	2.90 $\pm$ 0.36 <sup>(i)</sup>
PCB	101 (2,2',4,5,5'-Pentachlorobiphenyl) <sup>(c,e,f,g,j)</sup>	5.11 $\pm$ 0.34 <sup>(i)</sup>
PCB	105 (2,3,3',4,4'-Pentachlorobiphenyl) <sup>(c,d,e,f,g,j)</sup>	1.43 $\pm$ 0.10 <sup>(i)</sup>
PCB	110 (2,3,3',4',6-Pentachlorobiphenyl) <sup>(c,e,f,j)</sup>	4.62 $\pm$ 0.36 <sup>(i)</sup>
PCB	118 (2,3',4,4',5-Pentachlorobiphenyl) <sup>(c,d,e,f,g,j)</sup>	4.23 $\pm$ 0.19 <sup>(i)</sup>
PCB	128 (2,2',3,3',4,4'-Hexachlorobiphenyl) <sup>(c,d,e,f,g,j)</sup>	0.696 $\pm$ 0.044 <sup>(i)</sup>
PCB	138 (2,2',3,4,4',5'-Hexachlorobiphenyl) <sup>(c,e,f,j)</sup>	3.60 $\pm$ 0.28 <sup>(i)</sup>
PCB	149 (2,2',3,4',5,6-Hexachlorobiphenyl) <sup>(c,d,e,j)</sup>	4.35 $\pm$ 0.26 <sup>(h)</sup>
PCB	153 (2,2',4,4',5,5'-Hexachlorobiphenyl) <sup>(c,d,e,f,g,j)</sup>	5.47 $\pm$ 0.32 <sup>(i)</sup>
PCB	156 (2,3,3',4,4',5-Hexachlorobiphenyl) <sup>(c,d,e,f,j)</sup>	0.507 $\pm$ 0.090 <sup>(h)</sup>
PCB	170 (2,2',3,3',4,4',5-Heptachlorobiphenyl) <sup>(c,d,e,f,g,j)</sup>	1.35 $\pm$ 0.09 <sup>(i)</sup>
PCB	180 (2,2',3,4,4',5,5'-Heptachlorobiphenyl) <sup>(c,d,e,f,g,j)</sup>	3.24 $\pm$ 0.51 <sup>(i)</sup>
PCB	183 (2,2',3,4,4',5,6-Heptachlorobiphenyl) <sup>(c,d,e,j)</sup>	0.979 $\pm$ 0.087 <sup>(h)</sup>
PCB	187 (2,2',3,4',5,5',6-Heptachlorobiphenyl) <sup>(c,d,e,f,g,j)</sup>	2.17 $\pm$ 0.22 <sup>(i)</sup>
PCB	194 (2,2',3,3',4,4',5,5'-Octachlorobiphenyl) <sup>(c,d,e,j)</sup>	1.04 $\pm$ 0.06 <sup>(h)</sup>
PCB	195 (2,2',3,3',4,4',5,6-Octachlorobiphenyl) <sup>(c,e,g,j)</sup>	0.645 $\pm$ 0.060 <sup>(i)</sup>
PCB	201 (2,2',3,3',4,5',6,6'-Octachlorobiphenyl) <sup>(c,e,j)</sup>	0.777 $\pm$ 0.034 <sup>(h)</sup>
PCB	206 (2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl) <sup>(c,e,f,g,j)</sup>	2.42 $\pm$ 0.19 <sup>(i)</sup>
PCB	209 Decachlorobiphenyl <sup>(c,d,e,f,g,j)</sup>	4.86 $\pm$ 0.45 <sup>(i)</sup>

<sup>(a)</sup> PCB congeners are numbered according to the scheme proposed by Ballschmiter and Zell [9] and later revised by Schulte and Malisch [10] to conform to IUPAC rules, except PCB 201. Under the Ballschmiter and Zell numbering system, the IUPAC PCB 201 is listed as PCB 200.

<sup>(b)</sup> Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

<sup>(c)</sup> GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

<sup>(d)</sup> GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.

<sup>(e)</sup> GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).

<sup>(f)</sup> GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.

<sup>(g)</sup> 1999 Interlaboratory Comparison Study [7] with 13 to 31 laboratories submitting data for each PCB congener.

<sup>(h)</sup> Certified values are unweighted means of the results from three to five analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled, within method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

<sup>(i)</sup> Certified values are weighted means of the results from three to six analytical methods [13]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

<sup>(j)</sup> GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

Table 3. Certified Mass Fraction Values for Chlorinated Pesticides in SRM 1941b

Chlorinated Pesticides	Mass Fractions <sup>(a)</sup> ( $\mu\text{g}/\text{kg}$ )
Hexachlorobenzene <sup>(b,c,d,e)</sup>	5.83 $\pm$ 0.38 <sup>(f)</sup>
<i>cis</i> -Chlordane <sup>(b,c,d,e,g)</sup>	0.85 $\pm$ 0.11 <sup>(h)</sup>
<i>trans</i> -Chlordane <sup>(b,c,e)</sup>	0.566 $\pm$ 0.093 <sup>(f)</sup>
<i>cis</i> -Nonachlor <sup>(b,e,g)</sup>	0.378 $\pm$ 0.053 <sup>(h)</sup>
<i>trans</i> -Nonachlor <sup>(b,c,d,e,g)</sup>	0.438 $\pm$ 0.073 <sup>(f)</sup>
4,4'-DDE <sup>(b,d,e,g)</sup>	3.22 $\pm$ 0.28 <sup>(h)</sup>
4,4'-DDD <sup>(b,d,e,g)</sup>	4.66 $\pm$ 0.46 <sup>(h)</sup>

<sup>(a)</sup> Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

<sup>(b)</sup> GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

<sup>(c)</sup> GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

<sup>(d)</sup> GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.

<sup>(e)</sup> 1999 Interlaboratory Comparison Study [7] with 13 to 31 laboratories submitting data for each pesticide.

<sup>(f)</sup> Certified values are unweighted means of the results from three to five analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled, within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

<sup>(g)</sup> GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.

<sup>(h)</sup> Certified values are weighted means of the results from three to five analytical methods [13]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the chlorinated pesticides listed and the values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

Table 4. Reference Mass Fraction Values for PAHs in SRM 1941b

PAHs	Mass Fractions <sup>(a)</sup>		
	(µg/kg)		
1-Methylnaphthalene <sup>(b,c,d,e)</sup>	127	±	14 <sup>(f)</sup>
2-Methylnaphthalene <sup>(b,c,d,e)</sup>	276	±	53 <sup>(f)</sup>
2,6-Dimethylnaphthalene <sup>(b,c,d,e)</sup>	75.9	±	4.5 <sup>(f)</sup>
2,3,5-Trimethylnaphthalene <sup>(b,c,d,e)</sup>	25.5	±	5.1 <sup>(f)</sup>
Biphenyl <sup>(b,c,d,e)</sup>	74.0	±	8.0 <sup>(f)</sup>
Acenaphthylene <sup>(b,c,d,e)</sup>	53.3	±	6.4 <sup>(f)</sup>
Acenaphthene <sup>(b,c,d,e)</sup>	38.4	±	5.2 <sup>(f)</sup>
9-Methylphenanthrene <sup>(c)</sup>	63.5	±	2.5 <sup>(g)</sup>
4-Methylphenanthrene and 9-Methylphenanthrene <sup>(b,d)</sup>	80.1	±	4.8 <sup>(f)</sup>
2-Methylanthracene <sup>(c,d)</sup>	36	±	15 <sup>(f)</sup>
8-Methylfluoranthene <sup>(b)</sup>	49.5	±	2.7 <sup>(g)</sup>
7-Methylfluoranthene <sup>(b)</sup>	45.4	±	1.5 <sup>(g)</sup>
1-Methylfluoranthene <sup>(b)</sup>	42.4	±	2.1 <sup>(g)</sup>
3-Methylfluoranthene <sup>(b)</sup>	28.8	±	1.3 <sup>(g)</sup>
2-Methylpyrene <sup>(b)</sup>	78.7	±	4.0 <sup>(g)</sup>
4-Methylpyrene <sup>(b)</sup>	66.4	±	2.6 <sup>(g)</sup>
1-Methylpyrene <sup>(b)</sup>	52.5	±	2.3 <sup>(g)</sup>
Acephenanthrene <sup>(d)</sup>	30.5	±	1.9 <sup>(g)</sup>
Benzo[ <i>c</i> ]phenanthrene <sup>(b,c,d)</sup>	58	±	15 <sup>(f)</sup>
Benzo[ <i>a</i> ]fluoranthene <sup>(b,c,d)</sup>	73	±	18 <sup>(f)</sup>
Benzo[ <i>j</i> ]fluoranthene <sup>(c)</sup>	217	±	5 <sup>(g)</sup>
Indeno[1,2,3- <i>cd</i> ]fluoranthene <sup>(d)</sup>	9.63	±	0.34 <sup>(g)</sup>
Pentaphene <sup>(d)</sup>	25.3	±	1.0 <sup>(g)</sup>

<sup>(a)</sup> Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

<sup>(b)</sup> GC/MS (I) on 5 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.

<sup>(c)</sup> GC/MS (II) on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.

<sup>(d)</sup> GC/MS (III) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

<sup>(e)</sup> 1999 Interlaboratory Comparison Study [7] with 14 to 26 laboratories submitting data for each PAH.

<sup>(f)</sup> Reference values are weighted means of the results from two to four analytical methods [13]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of PAHs listed as determined by the methods indicated. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

<sup>(g)</sup> Reference values are the means of results obtained by NIST using one analytical technique. The expanded uncertainty,  $U$ , is calculated as  $U = k u_c$ , where  $u_c$  is one standard deviation of the analyte mean, and the coverage factor,  $k$ , is determined from the Student's  $t$ -distribution for the associated degrees of freedom (19 for footnote b and 5 for footnotes c and d) and 95 % confidence level for each analyte. The measurand is the total mass fraction of the PAHs listed as determined by the method indicated. The values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.



Table 5. Reference Mass Fraction Values for PAHs of Molecular Mass 300 and 302 in SRM 1941b

PAHs of Molecular Mass 300 and 302	Mass Fractions <sup>(a,b,c)</sup> ( $\mu\text{g}/\text{kg}$ )
Coronene	72.6 $\pm$ 4.7
Dibenzo[ <i>b,e</i> ]fluoranthene	10.3 $\pm$ 0.3
Naphtho[1,2- <i>b</i> ]fluoranthene	91.0 $\pm$ 3.1
Naphtho[1,2- <i>k</i> ]fluoranthene and Naphtho[2,3- <i>j</i> ]fluoranthene	79.8 $\pm$ 2.5
Naphtho[2,3- <i>b</i> ]fluoranthene	23.5 $\pm$ 0.3
Dibenzo[ <i>b,k</i> ]fluoranthene	95.6 $\pm$ 3.1
Dibenzo[ <i>a,k</i> ]fluoranthene	26.6 $\pm$ 0.4
Dibenzo[ <i>j,l</i> ]fluoranthene	63.8 $\pm$ 1.8
Dibenzo[ <i>a,l</i> ]pyrene	11.1 $\pm$ 1.0
Naphtho[2,3- <i>k</i> ]fluoranthene	10.7 $\pm$ 0.6
Naphtho[1,2- <i>a</i> ]pyrene	16.7 $\pm$ 1.4
Naphtho[2,3- <i>e</i> ]pyrene	33.2 $\pm$ 2.3
Dibenzo[ <i>a,e</i> ]pyrene	76.1 $\pm$ 3.6
Naphtho[2,1- <i>a</i> ]pyrene	59.2 $\pm$ 1.8
Dibenzo[ <i>e,i</i> ]pyrene	35.0 $\pm$ 2.4
Naphtho[2,3- <i>a</i> ]pyrene	16.5 $\pm$ 0.6
Benzo[ <i>b</i> ]perylene	38.2 $\pm$ 1.2
Dibenzo[ <i>a,i</i> ]pyrene	25.5 $\pm$ 1.0
Dibenzo[ <i>a,h</i> ]pyrene	6.94 $\pm$ 0.29

<sup>(a)</sup> Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

<sup>(b)</sup> Reference values are the means of results obtained by NIST using one analytical technique. The expanded uncertainty,  $U$ , is calculated as  $U = ku_c$ , where  $u_c$  is one standard deviation of the analyte mean, and the coverage factor,  $k$ , is determined from the Student's  $t$ -distribution for two degrees of freedom and 95 % confidence level for each analyte. The measurand is the total mass fraction of the constituent listed as determined by the method indicated. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

<sup>(c)</sup> GC/MS on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM [8].

Table 6. Reference Mass Fraction Values for PCB Congeners<sup>(a)</sup> in SRM 1941b

PCB Congeners			Mass Fractions <sup>(b,c)</sup> ( $\mu\text{g}/\text{kg}$ )		
PCB	45	(2,2',3,6-Tetrachlorobiphenyl) <sup>(d,e)</sup>	0.73	$\pm$	0.12
PCB	56	(2,3,3',4'-Tetrachlorobiphenyl) <sup>(d,f,g)</sup>	1.21	$\pm$	0.11
PCB	63	(2,3,4',5-Tetrachlorobiphenyl) <sup>(e,f,g)</sup>	0.213	$\pm$	0.040
PCB	70	(2,3',4',5-Tetrachlorobiphenyl) <sup>(e,f,g)</sup>	4.99	$\pm$	0.29
PCB	74	(2,4,4',5-Tetrachlorobiphenyl) <sup>(e,f,g)</sup>	2.04	$\pm$	0.15
PCB	77	(3,3',4,4'-Tetrachlorobiphenyl) <sup>(h)</sup>	0.31	$\pm$	0.03
PCB	107	(2,3,3',4',5-Pentachlorobiphenyl) <sup>(d,e,f,g)</sup>	0.628	$\pm$	0.028
PCB	132	(2,2',3,3',4,6'-Hexachlorobiphenyl) <sup>(d,f,g)</sup>	1.28	$\pm$	0.27
PCB	146	(2,2',3,4',5,5'-Hexachlorobiphenyl) <sup>(e,f,g)</sup>	1.22	$\pm$	0.12
PCB	158	(2,3,3',4,4',6-Hexachlorobiphenyl) <sup>(d,e,f,g)</sup>	0.65	$\pm$	0.15
PCB	163	(2,3,3',4',5,6-Hexachlorobiphenyl) <sup>(e,f,g)</sup>	1.28	$\pm$	0.06
PCB	174	(2,2',3,3',4,5,6'-Heptachlorobiphenyl) <sup>(d,e,f,g)</sup>	1.51	$\pm$	0.39
PCB	193	(2,3,3',4',5,5',6-Heptachlorobiphenyl) <sup>(d,e,f,g)</sup>	0.292	$\pm$	0.075

<sup>(a)</sup> PCB congeners are numbered according to the scheme proposed by Ballschmiter and Zell [9] and later revised by Schulte and Malisch [10] to conform with IUPAC rules, except PCB 107. Under the Ballschmiter and Zell numbering system, the IUPAC PCB 107 is listed as PCB 108.

<sup>(b)</sup> Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

<sup>(c)</sup> For these PCB congeners except PCB 77, the reference values are unweighted means of the results from two to four analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled within-method variance following the ISO/JCGM Guide [14,15]. For PCB 77, the reference value is the mean of results obtained by NIST using one analytical technique. The expanded uncertainty,  $U$ , is calculated as  $U = kuc$ , where  $u_c$  is one standard deviation of the analyte mean, and the coverage factor,  $k$ , is determined from the Student's  $t$ -distribution corresponding to two degrees of freedom and 95 % confidence level for PCB 77. The measurand is the total mass fraction of the PCB Congeners listed as determined by the method or methods indicated. The values listed are metrologically traceable to the SI unit of mass, expressed as microgram per kilogram on a dry-mass basis.

<sup>(d)</sup> GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.

<sup>(e)</sup> GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).

<sup>(f)</sup> GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

<sup>(g)</sup> GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

<sup>(h)</sup> GC/MS NICI on a 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC-ECD (I) fractionated using a PYE column.

Table 7. Reference Mass Fraction Values for Selected Chlorinated Pesticides in SRM 1941b

Chlorinated Pesticides	Mass Fractions <sup>(a,b)</sup> ( $\mu\text{g}/\text{kg}$ )
2,4'-DDE <sup>(c,d)</sup>	0.38 $\pm$ 0.12
4,4'-DDT <sup>(e,f)</sup>	1.12 $\pm$ 0.42

<sup>(a)</sup> Mass Fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

<sup>(b)</sup> The reference values are unweighted means of the results from two analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled, within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the chlorinated pesticides listed as determined by the methods indicated. The values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

<sup>(c)</sup> GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

<sup>(d)</sup> GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).

<sup>(e)</sup> GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.

<sup>(f)</sup> 1999 Interlaboratory Comparison Study [7] with 10 laboratories submitting data for 4,4'-DDT.

Table 8. Reference Mass Fraction Values for Alkylated PAH Groups in SRM 1941b

Alkylated PAH Group	Mass Fraction <sup>(a,b)</sup> ( $\mu\text{g}/\text{kg}$ )
C2-decalins	18 $\pm$ 5
C4-decalins	41 $\pm$ 4
C2-naphthalenes	187 $\pm$ 53
C3-naphthalenes	158 $\pm$ 42
C1-benzothiophenes	25 $\pm$ 14
C2-benzothiophenes	20 $\pm$ 11
C3-benzothiophenes	22 $\pm$ 13
C4-benzothiophenes	18 $\pm$ 5
C1-fluorenes	57 $\pm$ 18
C2-fluorenes	122 $\pm$ 43
C3-fluorenes	128 $\pm$ 31
C1-phenanthrenes/anthracenes	313 $\pm$ 99
C2-phenanthrenes/anthracenes	247 $\pm$ 62
C3-phenanthrenes/anthracenes	165 $\pm$ 46
C4-phenanthrenes/anthracenes	87 $\pm$ 36
C1-dibenzothiophenes	54 $\pm$ 13
C2-dibenzothiophenes	91 $\pm$ 18
C3-dibenzothiophenes	84 $\pm$ 15
C4-dibenzothiophenes	57 $\pm$ 13
C1-fluoranthenes/pyrenes	252 $\pm$ 48
C2-fluoranthenes/pyrenes	205 $\pm$ 38
C3-fluoranthenes/pyrenes	102 $\pm$ 22
C4-fluoranthenes/pyrenes	121 $\pm$ 59
C1-benzanthracenes/chrysenes/triphenylenes	208 $\pm$ 43
C2-benzanthracenes/chrysenes/triphenylenes	120 $\pm$ 24
C3-benzanthracenes/chrysenes/triphenylenes	73 $\pm$ 31
C4-benzanthracenes/chrysenes/triphenylenes	41 $\pm$ 11

<sup>(a)</sup> The reference mass fraction value reported on a dry-mass basis is the median of results using one analytical technique. The expanded uncertainty,  $U$ , is calculated as  $U = ku_c$ , where  $u_c$  is one standard deviation of the median, and the coverage factor,  $k = 2$ . The measurand is the total mass fraction of the alkylated PAH groups listed as determined by the interlaboratory study methods. The values listed are metrologically traceable to the SI unit of mass fraction, expressed as micrograms per kilogram on a dry-mass basis.

<sup>(b)</sup> Data from the interlaboratory study [12].

Table 9. Reference Mass Fraction Values for Hopanes and Steranes in SRM 1941b

Hopane or Sterane	Mass Fraction <sup>(a,b)</sup> (µg/kg)
17α(H)-22,29,30-Trisnorhopane	54 ± 18
17α(H)-21β(H)-30-Norhopane	137 ± 21
17α(H)-21β(H)-30-Hopane	215 ± 44
17α(H)-21β(H)-22R-Homohopane	44 ± 10
17α(H)-21β(H)-22S-Homohopane	48 ± 13
5α(H)-14α(H),17α(H)-Cholestane 20R	41 ± 11
5α(H)-14β(H),17β(H)-Cholestane 20R	27 ± 6
5α(H)-14β(H),17β(H)-24-Methylcholestane 20R	21 ± 8
5α(H)-14α(H),17α(H)-24-Ethylcholestane 20R	19 ± 5
5α(H)-14β(H),17β(H)-24-Ethylcholestane 20R	41 ± 9

- <sup>(a)</sup> The reference mass fraction value reported on a dry-mass basis is the median of results using one analytical technique. The expanded uncertainty,  $U$ , is calculated as  $U = k u_c$ , where  $u_c$  is one standard deviation of the median, and the coverage factor,  $k = 2$ . The measurand is the total mass fraction of the constituent listed as determined by the methods used during the interlaboratory study. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
- <sup>(b)</sup> Data from the interlaboratory study [12].

Table 10. Reference Mass Fraction Value for Total Organic Carbon in SRM 1941b

Total Organic Carbon (TOC)	2.99 % ± 0.24 % <sup>(a,b)</sup>
----------------------------	----------------------------------

- <sup>(a)</sup> Mass fraction is reported on a dry-mass basis; material as received contains approximately 2.4 % moisture.
- <sup>(b)</sup> The reference value for total organic carbon is a weighted mean value from routine measurements made by two laboratories [21]. The uncertainty listed is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance. The reporting follows the ISO/JCGM Guides [2]. The measurand is the total mass fraction of TOC listed as determined by the methods indicated. The values listed are metrologically traceable to the SI unit of mass, expressed as a percent on a dry-mass basis.

Table 11. Information Mass Fraction Values for Carbon, Hydrogen, and Nitrogen in SRM 1941b

Elements	Mass Fractions <sup>(a)</sup> (%)
Carbon	3.3
Hydrogen	1.2
Nitrogen	<0.5

- <sup>(a)</sup> Mass fraction is reported on a dry-mass basis; material as received contains approximately 2.4 % moisture.

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**Certificate Revision History:** 16 January 2015 (Corrected IUPAC name for PCB-56 and PCB-107; editorial changes); 10 June 2014 (Units corrected from mg/kg to µg/kg in Tables 8 and 9; editorial changes); 10 April 2012 (Reference value added for alkylated PAH groups, hopanes, and steranes; extension of certification period; editorial changes); 16 August 2004 (Reference values for the butyl tins removed; editorial changes); 15 July 2002 (Original certificate date).

Users of this SRM should ensure that the Certificate of Analysis in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail [srminfo@nist.gov](mailto:srminfo@nist.gov); or via the Internet at <http://www.nist.gov/srm>.

## APPENDIX A

The laboratories listed below performed measurements that contributed to the certification of PAHs, PCBs, and chlorinated pesticides in SRM 1941b Organics in Marine Sediment.

Arthur D. Little, Inc; Cambridge, MA  
Axys Analytical Services; Sidney, BC, Canada  
B & B Laboratories; College Station, TX  
Battelle Ocean Sciences; Duxbury, MA  
Bedford Institute of Oceanography; Dartmouth, NS, Canada  
California Department of Fish and Game; Rancho Cordova, CA  
Central Contra Costa Sanitary District; Martinez, CA  
Chesapeake Biological Laboratory; Solomons, MD  
Centro de Investigaciones Energeticas Medioambientales y Tecnologicas; Madrid, Spain  
City of Los Angeles Environmental Monitoring Division; Playa del Rey, CA  
City of San Jose Environmental Services Department; San Jose, CA  
Columbia Analytical Services; Kelso, WA  
East Bay Municipal Utility District; Oakland, CA  
Florida Department of Environmental Protection; Tallahassee, FL  
Manchester Environmental Laboratory; Port Orchard, WA  
Murray State University; Murray, KY  
Massachusetts Water Resources Authority Central Lab; Winthrop, MA  
National Research Council of Canada; Ottawa, Ontario, Canada  
National Oceanic and Atmospheric Association (NOAA), National Marine Fisheries Service (NMFS), Auke Bay Laboratory; Juneau, AK  
NOAA, National Ocean Service/Center for Coastal Environmental Health and Biomolecular Research; Charleston, SC  
NOAA, NMFS, Sandy Hook Marine Laboratory; Highlands, NJ  
NOAA, NMFS, Northwest Fisheries Science Center; Seattle, WA  
Orange County Sanitation District; Fountain Valley, CA  
Philip Analytical Services; Burlington, Ontario, Canada  
Serv de Hidrografia Naval; Buenos Aires, Argentina  
Skidaway Institute of Technology; Savannah, GA  
Southwest Laboratory of Oklahoma; Broken Arrow, OK  
Severn Trent Knoxville Laboratory; Knoxville, TN  
Texas A&M University, Geochemical and Environmental Research Group; College Station, TX  
Texas Parks and Wildlife Department; San Marcos, TX  
University of California at Los Angeles, Institute of Geophysics and Planetary Physics; Los Angeles, CA  
University of Connecticut, Environmental Research Institute; Storrs, CT  
University of Rhode Island, Graduate School of Oceanography; Narragansett, RI  
US Department of Agriculture, Environmental Chemistry Laboratory; Beltsville, MD  
US Environmental Protection Agency, Atlantic Ecology Division; Narragansett, RI  
US Geological Survey, National Water Quality Laboratory; Denver, CO  
Woods Hole Group Environmental Lab; Raynham, MA  
Wright State University; Dayton, OH

## APPENDIX B

The laboratories listed below performed measurements that contributed to the certification of alkylated PAH groups, hopanes, and steranes in SRM 1941b Organics in Marine Sediment.

Alpha Analytical, Inc.; Mansfield, MA  
Analytical Resources, Inc.; Tukwila, WA  
Axy's Analytical Services; Sydney, BC, Canada  
Battelle Analytical & Environmental Chemistry Laboratory; Duxbury, MA  
Center for Laboratory Sciences; Pasco, WA  
Columbia Analytical Services; Jacksonville, FL  
Columbia Analytical Services; Rochester, NY  
Columbia Analytical Services, Kelso, WA  
Florida Department of Environmental Protection; Tallahassee, FL  
Florida International University; North Miami, FL  
Michigan Department of Natural Resources and Environment; Lansing, MI  
Mississippi State Chemical Laboratory; Mississippi State, MS  
NIST; Charleston, SC  
NIST; Gaithersburg, MD  
NOAA/NCCOS/NOS; Charleston, SC  
NOAA/NMFS/Alaska Fisheries Science Center; Juneau, AK  
NY State Department of Health; Albany, NY  
Pace Analytical Services, Inc. Minneapolis; Minneapolis, MN  
RJ Lee Group, Inc; Monroeville, PA  
TDI/B&B Laboratories, Inc.; College Station, TX  
TestAmerica Laboratories; Mobile, AL  
TestAmerica Laboratories; West Sacramento, CA  
TestAmerica Laboratories; University Park, IL  
TestAmerica Laboratories; Schriever, LA  
TestAmerica Laboratories; Edison, NJ  
TestAmerica Laboratories; Knoxville, TN  
TestAmerica Laboratories; Pittsburgh, PA  
TestAmerica Laboratories; South Burlington, VT  
TestAmerica Laboratories; Tacoma, WA  
US Army Engineer Research and Development Center; Vicksburg, MS  
USGS Columbia Environmental Research Center; Columbia, MO  
University of Iowa, State Hygienic Laboratory; Iowa City, IO  
Washington State Public Health Laboratories; Shoreline, WA



Date of Issue:  
31 March 2014

## SAFETY DATA SHEET

### 1. SUBSTANCE AND SOURCE IDENTIFICATION

#### Product Identifier

**SRM Number:** 1941b  
**SRM Name:** Organics in Marine Sediment  
**Other Means of Identification:** Not applicable.

#### Recommended Use of This Material and Restrictions of Use

This Standard Reference Material (SRM) is marine sediment collected at the mouth of the Baltimore (MD) Harbor. SRM 1941b is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides in marine sediment and similar matrices. All of the constituents for which certified, reference, and information values are provided in SRM 1941b were naturally present in the sediment before processing. A unit of SRM 1941b consists of a bottle containing 50 g of radiation-sterilized, freeze-dried sediment.

#### Company Information

National Institute of Standards and Technology  
Standard Reference Materials Program  
100 Bureau Drive, Stop 2300  
Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200  
FAX: 301-948-3730  
E-mail: SRMMSDS@nist.gov  
Website: <http://www.nist.gov/srm>

Emergency Telephone ChemTrec:  
1-800-424-9300 (North America)  
+1-703-527-3887 (International)

### 2. HAZARDS IDENTIFICATION

#### Classification

**Physical Hazard:** Not classified.  
**Health Hazard:** Not classified.

#### Label Elements

**Symbol**  
No Symbol/Pictogram

**Signal Word**  
Not applicable.

**Hazard Statement(s):** Not applicable.

**Precautionary Statement(s):** Not applicable.

**Hazards Not Otherwise Classified:** Not applicable.

**Ingredients(s) with Unknown Acute Toxicity:** Not applicable.

### 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

**Substance:** Marine sediment

**Other Designations:** Sediment.

This material is naturally occurring marine sediment from an urban area. The material contains trace amounts of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and should be handled with care. Components are listed in compliance with OSHA's 29 CFR 1910.1200; for the actual values see the Certificate of Analysis.

Hazardous Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
Marine Sediment	Not available	Not available	23D0063 CLPLIKE (Rev0) - Page 4450 of 4464 100



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#### 4. FIRST AID MEASURES

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##### Description of First Aid Measures:

**Inhalation:** If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

**Skin Contact:** Wash skin with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.

**Ingestion:** If adverse effects occur after ingestion, seek medical treatment.

**Most Important Symptoms/Effects, Acute and Delayed:** May cause irritation.

**Indication of any immediate medical attention and special treatment needed, if necessary:** If any of the above symptoms are present, seek medical attention if needed.

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#### 5. FIRE FIGHTING MEASURES

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**Fire and Explosion Hazards:** Negligible fire hazard. Avoid generating dust. See Section 9, "Physical and Chemical Properties" for flammability properties.

##### Extinguishing Media:

Suitable: Use extinguishing media appropriate for surrounding fire.

Unsuitable: None listed.

**Specific Hazards Arising from the Chemical:** None listed.

**Special Protective Equipment and Precautions for Fire-Fighters:** Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

**NFPA Ratings** (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 1

Fire = 0

Reactivity = 0

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#### 6. ACCIDENTAL RELEASE MEASURES

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**Personal Precautions, Protective Equipment and Emergency Procedures:** Any accumulated material on surfaces should be removed and properly disposed of. Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

**Methods and Materials for Containment and Clean up:** Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

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#### 7. HANDLING AND STORAGE

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**Safe Handling Precautions:** Minimize dust generation and accumulation on surfaces. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. See Section 8, "Exposure Controls and Personal Protection".

**Storage:** Store and handling in accordance with all current regulations and standards.

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#### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**Exposure Limits:** No occupational exposure limits have been established for marine sediment. This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. The exposure limits for Particulates Not Otherwise Regulated (PNOR) are applicable.

OSHA (PEL): 15 mg/m<sup>3</sup> (TWA, total particulates not otherwise regulated)

OSHA (PEL) 5 mg/m<sup>3</sup> (TWA, respirable particulates not otherwise regulated)

NIOSH (REL): 10 mg/m<sup>3</sup> (TWA, total particulates not otherwise regulated, 8 h)

NIOSH (REL): 5 mg/m<sup>3</sup> (TWA, respirable particulates not otherwise regulated)

**Engineering Controls:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**Personal Protection:** In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

**Respiratory Protection:** If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

**Eye/Face Protection:** Wear splash resistant safety goggles with a face shield. An eye wash station should be readily available near areas of use.

**Skin and Body Protection:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Descriptive Properties:

<b>Appearance</b> (physical state, color, etc.):	amorphous powder
<b>Molecular Formula:</b>	not applicable
<b>Molar Mass (g/mol):</b>	not applicable
<b>Odor:</b>	not available
<b>Odor threshold:</b>	not available
<b>pH:</b>	not available
<b>Evaporation rate:</b>	not applicable
<b>Melting point/freezing point (°C):</b>	not available
<b>Specific Gravity (water=1)</b>	not available
<b>Vapor Pressure (mmHg):</b>	not applicable
<b>Vapor Density (air = 1):</b>	not applicable
<b>Viscosity (cP):</b>	not applicable
<b>Solubility(ies):</b>	not available
<b>Partition coefficient (n-octanol/water):</b>	not available
<b>Particle Size:</b>	<150 µm

### Thermal Stability Properties:

<b>Autoignition Temperature (°C):</b>	not available
<b>Thermal Decomposition (°C):</b>	not available
<b>Initial boiling point and boiling range (°C):</b>	not available
<b>Explosive Limits, LEL (Volume %):</b>	not available
<b>Explosive Limits, UEL (Volume %):</b>	not available
<b>Flash Point (°C):</b>	not available
<b>Flammability (solid, gas):</b>	not available

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** Stable at normal temperatures and pressure.

**Stability:**   X   Stable        Unstable

**Possible Hazardous Reactions:** None listed.

**Conditions to Avoid:** Avoid generating dust.

**Incompatible Materials:** None listed.

**Fire/Explosion Information:** See Section 5, "Fire Fighting Measures".

**Hazardous Decomposition:** Thermal decomposition will produce oxides of carbon.

**Hazardous Polymerization:**        Will Occur   X   Will Not Occur

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## 11. TOXICOLOGICAL INFORMATION

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Route of Exposure:  Inhalation  Skin  Ingestion

**Symptoms Related to the Physical, Chemical and Toxicological Characteristics:** Generated dust may cause irritation if inhaled.

**Potential Health Effects (Acute, Chronic and Delayed):**

**Inhalation:** Generated dust may cause irritation.

**Skin Contact:** May cause mechanical irritation.

**Eye Contact:** May cause mechanical irritation.

**Ingestion:** No data available.

**Numerical Measures of Toxicity:**

**Acute Toxicity:** Not classified; no data available.

**Skin Corrosion/Irritation:** Not classified; no data available.

**Serious Eye damage/ Eye irritation:** Not classified; no data available.

**Respiratory Sensitization:** Not classified; no data available.

**Skin Sensitization:** Not classified; no data available.

**Germ Cell Mutagenicity:** Not classified; no data available.

**Carcinogenicity:** Not classified.

**Listed as a Carcinogen/Potential Carcinogen**  Yes  No  
Marine sediment is not listed by NTP, IARC or OSHA as a carcinogen.

**Reproductive Toxicity:** Not classified; no data available.

**Specific Target Organ Toxicity, Single Exposure:** Not classified; no data available.

**Specific Target Organ Toxicity, Repeated Exposure:** Not classified; no data available.

**Aspiration Hazard:** Not classified; no data available.

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity Data:** No data available.

**Persistence and Degradability:** No data available.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

**Other Adverse effects:** No data available.

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## 13. DISPOSAL CONSIDERATIONS

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**Waste Disposal:** Dispose of waste in accordance with all applicable federal, state, and local regulations.

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## 14. TRANSPORTATION INFORMATION

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**U.S. DOT and IATA:** Not regulated by DOT or IATA.

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## 15. REGULATORY INFORMATION

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**U.S. Regulations:**

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH: No.  
CHRONIC HEALTH: No.  
FIRE: No.  
REACTIVE: No.  
PRESSURE: No.

**State Regulations:**

California Proposition 65: Not listed.

**U.S. TSCA Inventory:** Not listed.

**TSCA 12(b), Export Notification:** Not listed.

**Canadian Regulations:**

WHMIS Information: Not provided for this material.

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**16. OTHER INFORMATION**

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**Issue Date:** 31 March 2014

**Sources:** 29 CFR Occupational Health and Safety Office (OSHA) 1910.1000, *Limits for Air Contaminants*, Table Z-1; available at [http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9992](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9992) (accessed Mar 2014).

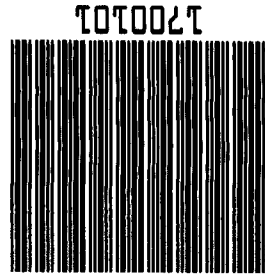
Center for Disease Control (CDC) NIOSH Pocket Guide to Chemical Hazards, *Particulates not otherwise regulated*; available at <http://www.cdc.gov/niosh/npg/npgd0480.html> (accessed Mar 2014).

**Key of Acronyms:**

ACGIH	American Conference of Governmental Industrial Hygienists	NRC	Nuclear Regulatory Commission
ALI	Annual Limit on Intake	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EC50	Effective Concentration, 50 %	RM	Reference Material
EINECS	European Inventory of Existing Commercial Chemical Substances	RQ	Reportable Quantity
EPCRA	Emergency Planning and Community Right-to-Know Act	RTECS	Registry of Toxic Effects of Chemical Substances
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transportation Agency	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
LC50	Lethal Concentration, 50 %	STEL	Short Term Exposure Limit
LD50	Lethal Dose, 50 %	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TPQ	Threshold Planning Quantity
MSDS	Material Safety Data Sheet	TSCA	Toxic Substances Control Act
NFPA	National Fire Protection Association	TWA	Time Weighted Average
NIOSH	National Institute for Occupational Safety and Health	UEL	Upper Explosive Limit
NIST	National Institute of Standards and Technology	WHMIS	Workplace Hazardous Materials Information System

**Disclaimer:** Physical and chemical data contained in this SDS are provided only for use in assessing the hazardous nature of the material. The SDS was prepared carefully, using current references; however, NIST does not certify the data in the SDS. The certified values for this material are given in the NIST Certificate of Analysis.

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730. <http://www.nist.gov/srm>



Weight	
# of pieces	
Packed by	
Picked by	

9/21/16 04:04 PM

NOT FOR HUMAN CONSUMPTION,  
LABORATORY USE ONLY.

1 / EACH

Organics in Marine Sediment

Total qty:

1941B

0 EACH

0

1 EACH

1 EACH

Order	UOM	Ship	UOM	B/O	UOM	Item	Description
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Order discrepancies (other than back ordered items) must be reported to our Customer Relations Department at 301-975-6776 within 5 days of receipt of shipment or this order will be considered complete. NIST SRMs/RMs are generally not returnable - with the exception of defective goods or shipments made in error by NIST. To return a SRM/RM, please call for instructions and a Return SRM/RM Authorization Number before shipment. Returns WILL NOT BE ACCEPTED without prior authorization.

Ship via	UFS Ground	Description	
Salesmen	MCMIDM2	Instructions	
Contact	DAVE MITCHELL	Prof	
		Truck#	
		Blanket	
		Ship from	

DAVE MITCHELL  
ANALYTICAL RESOURCES INC  
4611 S 134TH PLACE  
SUITE 100  
TUKWILA, WA 98168-3240  
1 (206) 695-6205

DAVE MITCHELL  
ANALYTICAL RESOURCES INC  
4611 S 134TH PLACE  
SUITE 100  
TUKWILA, WA 98168-3240  
1 (206) 695-6205

Ship to: 68456



MP Biomedicals, LLC

29525 Fountain Parkway  
Solon, Ohio 44139

Telephone: 440/337-1200  
Toll Free: 800/854-0530

Fax: 440/337-1180  
web: www.mpbio.com

## Certificate of Analysis

**Product Description:** Microcrystalline Cellulose Powder\_  
**Catalog Number:** 191499\_  
**Lot:** Q9483\_

<b>Formula:</b> (C <sub>6</sub> H <sub>10</sub> O <sub>5</sub> ) <sub>n</sub> <b>CAS #:</b> 9004-34-6 <b>Physical Description:</b> White Powder	<b>Formula Weight:</b> N/A <b>Storage:</b> 15 - 30°C
---	---

Test	Specification	Result
Identity Test	Passes	Passes
Purity	97.0 - 102.0%	97.0 - 102.0%
Moisture	<5.0%	3.4%
Particle Size/Mesh	Wt %	
+60 mesh	<8%	<1%
+200 mesh	>45%	55%
pH	5 - 7	6.73
Residue on Ignition	<0.05%	<0.05%
Water Soluble Substances	<12.0 mg/5 g	4.5 mg/5 g
Heavy Metals	<10 ppm	<10 ppm

**H001822**

Microcrystalline Cellulose Powder (TOC)  
Expires 11/30/2022  
*Prepared By Casey English 2/22/2019*

Identification A & B: Passes  
Bulk Density: 0.29 g/ml  
Bulk Density (graduated cylinder): 0.31 g/ml  
Conductivity: 18 µS/cm  
Starch: Negative  
Ether Soluble Substances: 0.01%  
Total Aerobic microbial Count: 100 cfu/g  
Total Mold and Yeast Count: 20 cfu/g  
Staphylococcus aureus: Absent/1 g  
Pseudomonas aeruginosa: Absent/1 g  
E. coli: Absent/1 g  
Salmonella: Absent/10 g  
Particle size:

- 450 mesh: 77%  
- d10: 37 um  
- d50: 139 um  
- d90: 271 um  
TUP: <9/600 cm<sup>2</sup>  
Degree of brightness: >88%  
Powder flow-angle of repose: <42°  
Recommended Retest Date: 11/30/2022



07/26/2018 - John Huang, PhD  
MP Biomedicals, LLC.  
Quality Control Manager

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<mailto:biotech@mpbio.com>  
<http://www.mpbio.com>

Online Ordering, MSDSs, certificates of analysis and data sheets now available on our web site  
Technical Service: 1-800-279-5490 (440-337-1200) Customer Service: 1-800-854-0530 (440-337-1200)



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Identity Test	Passes	Passes
Purity	97.0 - 102.0%	97.0 - 102.0%
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Particle Size/Mesh	Wt %	
+60 mesh	<8%	<1%
+200 mesh	>45%	55%
pH	5 - 7	6.73
Residue on Ignition	<0.05%	<0.05%
Water Soluble Substances	<12.0 mg/5 g	4.5 mg/5 g
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## HOLDING TIME SUMMARY

**Analysis: ASTM D2216**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW23-SS1818 23D0063-01	04/04/23 10:02	04/04/23 15:10	04/10/23 14:41	6	28	04/11/23 07:14	7	28	
LDW23-SS1819 23D0063-03	04/04/23 12:52	04/04/23 15:10	04/10/23 14:41	6	28	04/11/23 07:14	7	28	

\* Indicates hold time exceedance.



**Analytical Resources, LLC**  
Analytical Chemists and Consultants

**METHOD DETECTION  
AND REPORTING LIMITS**  
**ASTM D2216**

Laboratory: Analytical Resources, LLC

SDG: 23D0063

Client: Anchor QEA, LLC

Project: AOC5 MR Phase 1

Matrix: Solid

Instrument:

<b>Analyte</b>	<b>MDL</b>	<b>RL</b>	<b>Units</b>
Total Solids		0.01	%



TOTAL SOLIDS BENCHSHEET						Batch:	BLD0093	
Method: PSEP 1986						Date:	4/5/2023 9:22	
(dry at 103-105 C)						Analyst:	CR	
Instrumentation						Drying Oven:	15	
						Analytical Balance:	B1439298002	
Batch drying time								
Record times as mm/dd/yy hh:mm			Oven Temp, C	TS (%) calculated as:		Oven Temps, °C		
Date/time in oven:	4/5/2023 11:33		103	Final dry wt (g) = (Dry Wt - Tare Wt)		Start Temp:	103	
Date/time out:	4/6/2023 8:47		103	TS = (Final Dry Wt X 100)/ (sample & dish -dish tare)		End Temp:	103	
Elapsed hrs:	21.2							
SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted		
23D0063-01	0.0800	11.5200	5.0200	4.94	43.18%	Yes		
23D0063-02	0.8100	12.1600	5.7700	4.96	43.70%	Yes		
23D0063-03	0.8100	11.3200	4.5000	3.69	35.11%	Yes		
23D0063-04	0.7900	11.7400	5.3200	4.53	41.37%	Yes		

<b>TOTAL SOLIDS BENCHSHEET</b>		Batch:	BLD0093
Method: PSEP 1986		Date:	4/5/2023 9:22
(dry at 103-105 C)		Analyst:	CL
<b>Instrumentation</b>		Drying Oven:	015
		Analytical Balance:	B13929 J202

<b>Batch drying time</b>		Oven Temp, C	TS (%) calculated as:	<b>Oven Temps, °C</b>	
Record times as mm/dd/yy hh:mm			Final dry wt (g) = (Dry Wt - Tare Wt)	Start Temp:	103
Date/time in oven:	4/5/23 11:33	103	TS = (Final Dry Wt X 100) / (sample & dish - dish tare)	End Temp:	103
Date/time out:	4/6/23 08:47				
Elapsed hrs:	0.0				

SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted
23D0063-01 A	0.80	11.52	5.02			No YES
23D0063-02 I	0.81	12.10	5.77			No YES
23D0063-03 I	0.81	11.32	4.50			No YES
23D0063-04 A	0.79	11.74	5.32			No YES

T/S + Screens  
2 copies